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CorelDRAW User's Manual - Version 4.0

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Master Contents List

Introduction to this Book _____ **1 to 8**

Section 1: CorelDRAW _____ **9 to 360**

Table of contents i to v

Index Index 1 to 16

Section 2: CorelPHOTO-PAINT _____ **361 to 411**

Table of contents vi to vii

Index Index 17 to 21

Section 3: CorelMOVE _____ **413 to 502**

Table of contents viii to ix

Index Index 22 to 26

Section 4: CorelMOSAIC _____ **503 to 508**

Table of contents x

Section 5: CorelTRACE _____ **509 to 514**

Table of contents x

Section 6: CorelSHOW _____ **515 to 520**

Table of contents x

Section 7: CorelCHART _____ **521 to 586**

Table of contents xi to xii

Index Index 27 to 29

| | |
|--|-----------|
| Introduction | I |
| About this book | 3 |
| If you need help | 4 |
| Using the Corel Libraries Catalog | 8 |
| 1 CorelDRAW Basics | 9 |
| Starting CorelDRAW | 10 |
| Exploring the CorelDRAW screen | 10 |
| Using CorelDRAW dialog boxes | 13 |
| Using CorelDRAW Roll-Ups | 15 |
| Opening an existing drawing | 16 |
| Setting up a new drawing | 17 |
| Saving a new drawing | 19 |
| Using the right mouse button | 20 |
| Undoing mistakes | 20 |
| Setting up the CorelDRAW work environment | 20 |
| Exiting CorelDRAW | 21 |
| 2 Drawing Objects | 23 |
| Using the drawing tools | 24 |
| Drawing rectangles and squares | 25 |
| Drawing ellipses and circles | 25 |
| Drawing lines and curves | 26 |
| Drawing dimension lines | 31 |
| 3 Selecting Objects | 33 |
| Selecting single objects | 34 |
| Selecting multiple objects | 35 |
| Deselecting objects | 35 |
| Selecting next and superimposed objects | 36 |
| Selecting groups of objects | 36 |
| Selecting child objects | 36 |
| 4 Moving, Copying, and Deleting Objects | 37 |
| Moving objects | 38 |
| Copying objects | 41 |
| Deleting objects | 42 |

| | | |
|----------|---|-----------|
| 5 | Viewing Your Work | 43 |
| | Working in Editable Preview or wireframe view | 44 |
| | Scrolling the Drawing Window | 44 |
| | Using the Zoom tool | 45 |
| | Viewing facing pages | 47 |
| | Commands for controlling the display of objects | 48 |
| 6 | Filling Objects | 51 |
| | Selecting and applying fills | 52 |
| | Making objects transparent | 53 |
| | Filling with black, white, and shades of gray | 54 |
| | Filling with uniform colors | 54 |
| | Filling with fountains (gradient fills) | 56 |
| | Filling with two-color and full-color patterns | 62 |
| | Filling with PostScript textures | 67 |
| | Filling with bitmap textures | 68 |
| | Creating and editing patterns fills | 73 |
| | Creating clipping holes or masks | 78 |
| | Choosing halftone screens | 80 |
| | Copying an object's fill | 83 |
| | Changing the default fill attributes | 84 |
| 7 | Outlining Objects | 85 |
| | Selecting and applying outlines | 86 |
| | Removing an object's outline | 87 |
| | Outlining with black, white, and shades of gray | 88 |
| | Choosing Outline Pen attributes | 89 |
| | Editing arrowheads | 92 |
| | Creating arrowheads and line ending shapes | 93 |
| | Creating calligraphic outlines | 94 |
| | Choosing an outline color | 95 |
| | Choosing halftone screens | 96 |
| | Copying an object's outline | 97 |
| | Changing the default outline attributes | 98 |
| 8 | Transforming Objects | 99 |
| | Rotating and skewing objects | 100 |
| | Stretching, scaling, and mirroring objects | 102 |
| | Clearing transformations | 104 |
| | Repeating and undoing the last operation | 104 |

| | | |
|-----------|--|------------|
| 9 | Shaping Objects | 105 |
| | Shaping objects with the A tool | 106 |
| | Shaping rectangles | 107 |
| | Shaping ellipses to create arcs and pie wedges | 108 |
| | Converting rectangles, ellipses, and text to curve objects | 109 |
| | Shaping lines and curves | 110 |
| | Editing nodes and segments | 115 |
| 10 | Arranging Objects | 125 |
| | Reordering overlapping objects | 126 |
| | Grouping and ungrouping objects | 126 |
| | Combining objects and breaking them apart | 127 |
| | Using rulers, grids, guidelines, and guide objects | 130 |
| | Using the Snap To and Align commands | 133 |
| | Using layers | 137 |
| | Welding objects | 142 |
| 11 | Working with Text | 143 |
| | Adding text to your drawing | 144 |
| | Editing and formatting text | 151 |
| | Copying text attributes | 163 |
| | Changing the default text attributes | 163 |
| | Adding bullets to Paragraph text | 164 |
| | Kerning text | 165 |
| | Using the Spell Checker | 167 |
| | Using the thesaurus | 169 |
| | Finding and replacing text | 170 |
| | Fitting text to a path | 172 |
| | Changing the shape of the Paragraph text frame | 176 |
| | Extracting and merging back text | 177 |
| | Converting Artistic text to curves | 180 |
| 12 | Working with Colors | 181 |
| | Creating colors | 182 |
| | Choosing and customizing palettes | 188 |

| | | |
|-----------|--|------------|
| 13 | Creating Special Effects | 191 |
| | Adding perspective to an object | 192 |
| | Shaping objects with envelopes | 195 |
| | Blending objects | 204 |
| | Contouring objects | 222 |
| | Drawing PowerLines | 225 |
| 14 | Using Styles | 233 |
| | Understanding basic style concepts | 234 |
| | Style formats | 237 |
| 15 | Creating a Graphics Database | 239 |
| | Introducing Object Data | 240 |
| | The SubPar Canada story - an Object Data example | 241 |
| | Object Data Command Reference | 247 |
| 16 | Working with Bitmaps | 253 |
| | Selecting a bitmap | 254 |
| | Rotating and skewing a bitmap | 254 |
| | Tracing a bitmap | 254 |
| | Cropping a bitmap | 258 |
| | Coloring a monochrome bitmap | 259 |
| | Applying a halftone screen to a bitmap | 259 |
| | Hiding bitmaps | 260 |
| 17 | Working with Other Applications | 261 |
| | Object Linking and Embedding | 262 |
| | Linking objects in CoreIDRAW | 264 |
| | Embedding objects in CoreIDRAW | 268 |
| | Importing files from other applications | 270 |
| | Exporting files for use in other applications | 272 |
| | Using the Windows Clipboard | 277 |
| 18 | Managing and Printing Files | 279 |
| | Managing files | 280 |
| | Managing multi-page documents | 282 |
| | Printing files | 286 |
| | Using the Print dialog box | 287 |
| | Using Print Merge | 300 |

| | | |
|--------------------|--|------------|
| 19 | Creating Color Separations _____ | 303 |
| | Overprinting and trapping | 304 |
| | About CorelDRAW's color separator | 308 |
| | Preparing images for color separation | 309 |
| | Using the Prepress Tools | 310 |
| | Printing color separations | 315 |
| Appendix A: | Customizing CorelDRAW _____ | 319 |
| Appendix B: | Creating and Modifying Typefaces _____ | 327 |
| Appendix C: | PostScript Textures _____ | 339 |
| Appendix D: | Summary of Precision Features _____ | 351 |
| Appendix E: | Suggested Reading List _____ | 355 |
| Appendix F: | Using the Autographix Slide Service _____ | 359 |

| | | |
|----------|--|------------|
| 1 | Introduction | 361 |
| | The CorelPHOTO-PAINT screen | 363 |
| | Using online Help | 364 |
| | Displaying tools | 364 |
| | Using roll-ups | 365 |
| | Adjusting tool settings | 365 |
| | Manipulating fills, gradients, and textures | 366 |
| | Applying canvas patterns | 366 |
| | Using colors | 367 |
| | Adjusting color tolerance | 368 |
| 2 | Selection, Display, and Retouch Tools | 369 |
| | Using selection and display tools | 370 |
| | Retouching pictures | 371 |
| 3 | Using Painting and Drawing Tools | 375 |
| | Painting tools | 376 |
| | Drawing lines and curves | 381 |
| | Drawing rectangles | 382 |
| | Drawing ellipses | 383 |
| | Drawing polygons | 383 |
| | Entering text | 384 |
| 4 | Using Filters | 385 |
| | Enhancement and correction filters | 386 |
| | Special effects filters | 391 |
| 5 | Manipulating Files and External Devices | 399 |
| | Opening and saving files | 400 |
| | Using the Clipboard | 400 |
| | Resampling an image | 400 |
| | Converting image formats | 401 |
| | Transforming pictures | 402 |
| | Displaying information about an image | 402 |
| | Window commands | 402 |
| | Preferences | 402 |
| | Scanning | 403 |
| | Calibrating your display monitor | 404 |
| | Editing a tone map | 405 |
| | Splitting channels | 407 |

5 - continued

| | |
|------------------------------------|-----|
| Combining channels | 407 |
| Printing files | 408 |
| Choosing options | 408 |
| Printing separations | 409 |
| Using the prepress tools | 410 |
| Calibrating a printer | 411 |

| | | |
|----------|--|------------|
| 1 | Introduction | 413 |
| | CorelMOVE Basics | 414 |
| | Exploring the CorelMOVE screen | 414 |
| | Setting up a new animation | 416 |
| | Opening an animation | 417 |
| | Saving an animation | 417 |
| | Setting the size of the Animation window | 417 |
| | Specifying animation options | 418 |
| | Exiting CorelMOVE | 420 |
| 2 | Creating Single-cel Actors and Props | 421 |
| | Resizing the Paint Window | 423 |
| | Undoing mistakes in the Paint window | 423 |
| | Using the Paint Palette | 424 |
| | Creating special effects | 432 |
| | Saving a new actor or prop | 436 |
| | Undoing special effects | 436 |
| | Using the Zoom command | 436 |
| | Editing actors and props | 437 |
| 3 | Creating Multiple-cel Actors | 439 |
| | Inserting and removing cels | 440 |
| | Applying special effects | 441 |
| | Moving through the cels of an actor | 441 |
| | Using Onion Skin | 441 |
| | Duplicating cels | 443 |
| | Reversing cels | 443 |
| | Editing multiple-cel actors | 443 |
| 4 | Creating Sounds | 445 |
| | Recording a sound | 446 |
| | Using the Sound Information dialog box | 447 |
| | Editing Sounds | 448 |
| 5 | Placing Actors, Props and Sounds in the Animation | 453 |
| | Placing actors and props | 454 |
| | Arranging layers | 454 |
| | Managing objects | 455 |

| | | |
|------------------|---|------------|
| 6 | Adding Action _____ | 459 |
| | Creating and editing paths | 460 |
| | Editing paths | 460 |
| | Registration | 464 |
| | Adding prop transitions | 464 |
| 7 | Editing and Playing the Animation _____ | 469 |
| | Adjusting actors and props | 470 |
| | Using the Cel Sequencer Roll-Up | 472 |
| | Adding Cues | 476 |
| | Using the Timelines Roll-Up | 479 |
| | Viewing the animation | 482 |
| | Playing the animation | 482 |
| 8 | Importing Animation Objects _____ | 485 |
| | Importing objects | 486 |
| | Editing Imported Objects | 487 |
| 9 | Working with Other Applications _____ | 489 |
| | Creating actors and props using CorelDRAW | 490 |
| | Creating objects using other applications | 494 |
| | Creating objects using existing files | 495 |
| | Editing objects created in other applications | 495 |
| | Changing the object type | 496 |
| | Using the Windows clipboard | 496 |
| 10 | Exporting an Animation _____ | 497 |
| | Exporting to a movie | 498 |
| | Playing a movie | 498 |
| Appendix: | Principles of Animation _____ | 499 |

CoreIMOSAIC - An Overview _____ 503

| | |
|--|-----|
| The CoreIMOSAIC screen | 503 |
| File management | 504 |
| File manipulation | 505 |
| Using CoreIMOSAIC | 505 |
| Navigating CoreIMOSAIC online Help | 507 |

CoreTRACE - An Overview _____ 509

| | |
|--|-----|
| The CoreTRACE screen | 510 |
| Using online Help | 510 |
| Tracing methods | 511 |
| Using CoreTRACE | 512 |
| Importing traced files into CoreDRAW | 514 |

CoreSHOW - An Overview _____ 515

| | |
|-------------------------------|-----|
| The CoreSHOW screen | 516 |
| Using online Help | 516 |
| Using CoreSHOW | 517 |

| | | |
|----------|---|------------|
| 1 | Introduction | 521 |
| | Starting CorelCHART | 522 |
| | Exploring the CorelCHART screen | 522 |
| | A note about annotations | 526 |
| | Anatomy of a chart | 527 |
| | Exploring the Data Manager | 527 |
| | Opening an existing chart | 529 |
| | Building a new chart | 529 |
| | Working with other applications: OLE, DDE, importing, exporting | 530 |
| | Using online Help | 531 |
| | Exiting CorelCHART | 531 |
| 2 | Working with Chart Data | 533 |
| | Data Manager basics | 534 |
| | Importing data | 536 |
| | Tagging cells | 536 |
| | Using formulas in Data Manager | 537 |
| | Formatting in the Data Manager | 538 |
| | Sorting Cells | 540 |
| | Searching and Replacing in the Data Manager | 540 |
| | Using the Data Manager grid | 541 |
| | Setting up DDE Links with other applications | 541 |
| | Exporting chart data | 542 |
| | Saving a chart file | 542 |
| | Printing from the Data Manager | 543 |
| | Moving between Data Manager and Chart View | 543 |
| 3 | Building Your Chart | 545 |
| | Setting up your page | 546 |
| | Changing chart types | 546 |
| | Applying template information from another chart | 546 |
| | Showing and hiding chart elements | 547 |
| | Swapping groups and series | 547 |
| | Reversing the order within series and groups | 547 |
| | Manipulating the scale range | 548 |
| | Changing the numeric format on axis scales | 548 |
| | Showing, hiding, and changing grid lines | 548 |
| | Making combination charts | 549 |
| | Designing special chart types | 550 |
| | Using the 3D Roll-Up | 554 |

| | | |
|----------|---|------------|
| 4 | Finishing Your Chart _____ | 555 |
| | Resizing the charting frame and other chart elements | 556 |
| | Changing typographic features of chart elements | 556 |
| | Creating annotations | 556 |
| | Applying colors to chart elements | 557 |
| | Applying fountains, patterns, or bitmap textures to chart elements | 559 |
| | Adding pictographs to a chart | 563 |
| | Importing graphics | 564 |
| | Linking your chart to a destination file | 564 |
| | Exporting your chart | 565 |
| | Printing your chart | 565 |
| | Constrain features when creating and resizing annotation objects | 567 |
| 5 | Four Quick Lessons _____ | 569 |
| | Lesson 1 | 570 |
| | Lesson 2 | 572 |
| | Lesson 3 | 576 |
| | Lesson 4 | 578 |
| 6 | Choosing the Right Chart Type _____ | 583 |
| | Chart design: A few tips and hints | 585 |



Introduction

Welcome to CorelDRAW 4, the world's premiere PC graphics package. A year has passed since we revolutionized the world of graphics software with the introduction of CorelDRAW 3.0. Our goal then was to create the first all-in-one graphics package, complete with powerful yet easy-to-use drawing, charting, painting and presentation tools.

The revolution continues with CorelDRAW 4. Drawing on ideas and suggestions from our users (and a few of our own), we've elevated graphics software to yet another level in power and ease of use. Now, more than ever, CorelDRAW is the answer to all your graphics needs.

CorelDRAW ... the complete graphics solution

CorelDRAW includes the following applications:

CorelDRAW—a vector-based drawing program with extensive text-handling and precision-drawing features that make it the ideal tool for virtually any design project—from logos and product packaging to technical illustrations and advertisements.

CorelPHOTO-PAINT—a powerful paint and photo retouching application featuring numerous image enhancing filters for improving the quality of scanned images, plus special effects filters that can dramatically alter the the appearance of your images.

CorelCHART—a charting program for building charts and graphs of all types—from simple bar and pie graphs to 3D area and pictographs. You can enter chart data from scratch into the program's Data Manager, or import files from several popular spreadsheet and database programs.

CorelMOVE—an animation program that lets you create both simple and complex animations. Used on their own or in CorelSHOW, animations you create in CorelMOVE can turn a dull presentation into an spectacular multimedia event.

CorelTRACE—converts bitmap images (the kind that paint programs like CorelPHOTO-PAINT and scanners create) into vector graphic images.

CorelMOSAIC—lets you view entire subdirectories of images on screen before opening one. You can use it to store images in compressed libraries and perform batch operations such as printing and exporting on groups of files.

CorelSHOW—lets you assemble printed or on-screen presentations using objects from CorelDRAW, CorelCHART, CorelPHOTO-PAINT, CorelMOVE and other programs that support Windows Object Linking and Embedding (OLE).

Getting started

You're probably anxious to learn about CorelDRAW and try it out. We recommend that you follow these steps:

1. Fill out your registration card before it gets put out of sight (and mind) and mail it to us.
2. Install Microsoft Windows Version 3.1 (purchased separately) and learn how to use it. Do not attempt to install or use CorelDRAW until you are comfortable using Microsoft Windows.
3. Install CorelDRAW on your hard disk. Instructions are provided in the *Installation Reference Guide*.

What next?

If you're new to CorelDRAW and have a CD-ROM drive, we suggest you view the accompanying CD-ROM Tour first. The tour introduces each application in the COREL graphics toolkit and demonstrates how you can use them to create commercial-quality artwork, documents, and multi-media productions.

After viewing the tour, you can try the lessons in the Learning CorelDRAW online tutorial. To access the tutorial, start Windows and double-click the Learning CorelDRAW icon in the Corel Graphics program group. (The icon won't appear if you chose not to install the tutorial. You can install using the same procedure described in "If Help is not installed" at the end of this chapter.) It's also a good idea to read through this manual, trying out features not covered in the Tour and tutorial. CorelDRAW is a multi-featured package, and although you may only use a fraction of its capabilities at first, there is no substitute for time spent experimenting with the software.

Those familiar with the program should consult Notes to Upgraders in the Reference section of the online help to learn about the new features we've added in CorelDRAW 4.

If you have questions about a feature, please consult this manual first. If you can't find the answer to your question in here, give us a call. We'll try our best to help you.

About this book

The *CorelDRAW User's Guide* is divided into seven sections. The first one describes how to use CorelDRAW. The remaining sections describe how to use CorelCHART, CorelPHOTO-PAINT and the other applications in the COREL graphics toolkit.

Each section is divided into chapters that cover a specific set of tasks. For example, Chapter 11 in the CorelDRAW section covers working with text. Chapters begin with an overview of the tasks and introduce task-related concepts and terms. If you're new to CorelDRAW, reading the chapter overviews is a great way to get acquainted with each program's features and capabilities.

Note that each section has its own index located at the back of the book.

About the CorelMOSAIC, SHOW, and TRACE documentation

Documentation for these applications is provided primarily in an online Help file which is accessible from within the application by pressing F1. Sections 4 through 6 of the book, however, contain overviews of each these applications and step-by-step instructions for some commonly-performed tasks. If you're not familiar with Windows, you'll want to read the section that follows on using Help.

References to Help

As you're reading through the user's guide, you'll encounter cross-references to information in the online Help provided for each application. Most of the cross-references instruct you to search for a specific word or phrase in Help.

► To search for information in Help:

1. Press F1 to open Help.
2. Click the Search button.
3. Type the word or phrase specified in the cross-reference.
4. Click the Show Topics button.
The name of a Help topic(s) with the referenced information appears.
5. Choose the desired topic and click the Go To Button to display it.

Conventions used in this book

The CorelDRAW documentation uses the following conventions:

General Conventions

- “Choose” when used in reference to commands means to carry out the command by clicking it with the mouse or by using keyboard equivalents—for example, the Del key used in place of the Delete command.
- “Choose the OK button” means to click the OK button with the mouse or press the Enter key to carry out the action.
- A dialog box option is “enabled” when a check mark appears beside it, or its button contains a black dot (blue on color monitors). The absence of a check mark or black dot means the option is “disabled.”

Mouse conventions

- Except for CorelTRACE, all applications use both mouse buttons. Each application assumes you’ve programmed the left mouse button as the primary mouse button. Whenever a procedure requires you to use the secondary mouse button, the documentation refers to it as the right mouse button.

Keyboard conventions

- Carrying out commands or procedures with keys frequently involves pressing two or three keys, either together or in succession. For example, Ctrl+F1 means to hold down the Ctrl key while pressing F1, and Alt, C means to press the Alt key, and then release it, before pressing C.
- “Arrow keys” or “Cursor keys” are collective terms for the Up, Down, Left, and Right Arrow keys.

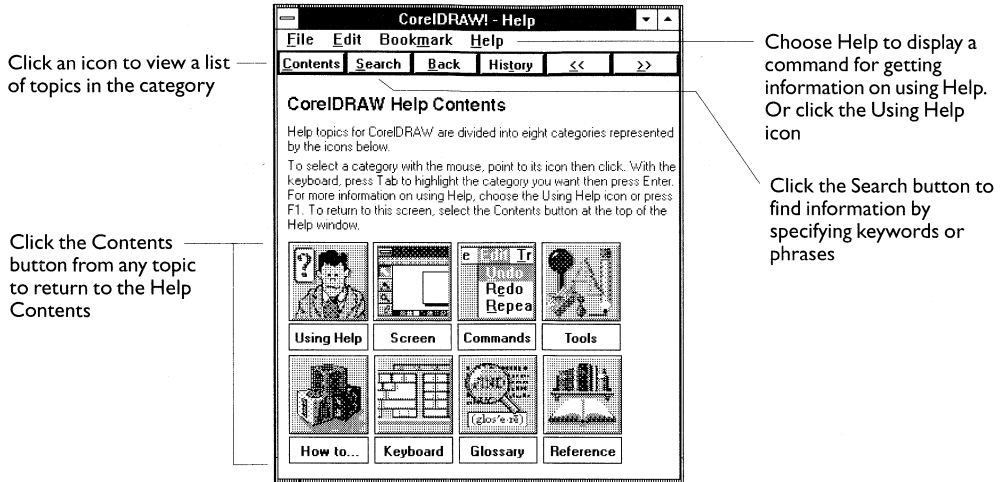
If you need help

CorelDRAW and its companion applications come with extensive online Help. You can access Help while you work by pressing the F1 key. When the Help window appears, you get information on commands, instructions on performing tasks, definitions for terms, and more. You can also get help on dialog box options or parts of the screen.

Note: Installing Help is optional for all CorelDRAW applications except CorelSHOW, CorelTRACE and CorelMOSAIC. If a message appears indicating that Help is not installed for one of the other applications, you can install it by following the procedure at the end of this chapter.

What's in Help

The Help topics are divided into up to eight categories, depending on the application. Each category is represented by an icon in the Help contents window.



The following table describes the information available in each of CorelDRAW's Help topic categories. Although the other applications have fewer categories than CorelDRAW, those that they have in common contain the same type of information.

| Choose this icon... | For: |
|---------------------|--|
| Using Help | instructions on the Windows Help system. |
| Screen | information about parts of the CorelDRAW screen. |
| Commands | descriptions of the drop-down menus and the commands they contain. |
| Tools | information on the purpose and operation of the drawing and editing tools. |
| How to | step-by-step instructions on how to perform a variety of common tasks. |
| Keyboard | a list of keyboard and mouse shortcuts you can use to carry out commands and perform various other program functions. |
| Glossary | definitions of terms used in CorelDRAW and the graphic arts industry. |
| Reference | technical information on using CorelDRAW with other programs and various hardware devices. You'll also find a summary of what's new in CorelDRAW 4 and information about COREL's product support services. |

Getting Help

You can get Help in a number of ways. The method you use often depends on the type of information you are searching for.

Help Contents : Displayed by pressing F1, the Help Contents shows the major categories of Help available. From here you can move to more specific information. To return to the Help Contents from any topic, click the Contents button at the top of the Help window.

Help on commands or open dialog boxes : With a dialog box open or a menu command highlighted, you can press F1 to get Help on that dialog box or command.

Help on screen items : Choosing Screen/Menu Help from the Help menu, or pressing Shift+F1, changes the mouse pointer to a question mark. You can then click an item on the screen—for example, a tool icon—to display information about that item.

Roll-Ups and unavailable menu commands that are dimmed are considered screen items.

Help on a specific topic : Choosing Search For Help On from the Help menu or pressing Ctrl+F1 displays a dialog box in which you can search for topics that contain a specific term or phrase.

The same dialog box can also be accessed from the Help window by clicking the Search button.

Jumping to other topics in Help

Topics in Help are often cross-referenced with other related topics. A cross-reference appears as text with a solid underline (and in green on color monitors). To jump to the related topic, click the text, or press the Tab key to highlight it and press Enter. Clicking the Back button takes you back to the previous topic.

Displaying definitions

Sometimes words or phrases (usually terms), appear underscored with a broken line (green on color monitors). When you click these words or phrases, a box appears with a definition or additional information. You can also use the keyboard to display definitions by pressing the Tab key to highlight the text and pressing Enter.

Browsing topics

The Browse buttons (< and >) in the Help window allow you to view topics that have been grouped in a sequence. Clicking the > button takes you to the next topic in the sequence, while the < takes you to the previous topic. If the topic isn't part of a sequence, the Browse buttons will be dimmed.

Viewing Help while you work

You can have the Help window display on top of all other windows by choosing Always on Top from the Help menu in the Help window. This lets you refer to Help while you work. You can move or resize the Help window if it covers an area of the active window.

Learning to use Help

The Windows Help system provides several other features, such as bookmarks for marking topics you refer to frequently and annotations that let you attach comments to Help topics. You can learn more about these and other Help system features from within the Help window.

► To get help on Help:

1. Press F1 to open the Help window.
2. Do any of the following:
 - Press F1.
 - Click the Using Help icon.
 - From the Help menu, choose How to Use Help.

If Help is not installed

Help is an installable option for all applications in the COREL graphics toolkit except CorelSHOW, CorelTRACE and CorelMOSAIC. If you initially choose not to install Help for the other applications, you can install it later using the following procedure.

► To install Help:

1. Insert the CorelDRAW Setup disk (disk 1) in your floppy disk drive. Or, if you have a CD-ROM drive, insert the CorelDRAW CD-ROM disk.
2. From the Program Manager File menu, choose Run.
3. Type the drive letter followed by :\`setup`, then choose OK.
4. Follow the instructions on the screen.
When the installation options window appears, click the Custom Installation button.
5. Choose the Some option.
6. Choose Help and any other options you want to install. Make sure you clear the check boxes for any options you don't want to install.
7. Click the Continue button and follow the instructions that appear on the screen.

Using the Corel Libraries Catalog

CorelDRAW comes with libraries of ready-to-use clipart images, symbols, animations and sound clips.

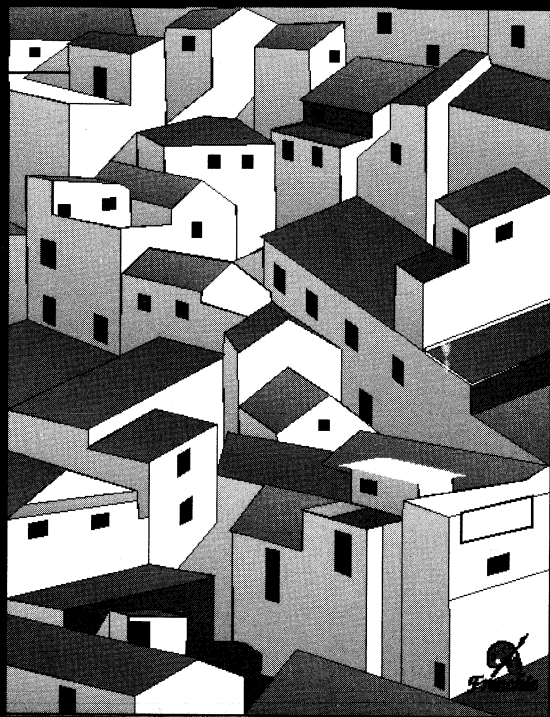
The entire collection of images is provided in uncompressed format on CD-ROM disk. All the symbols and a selection of clipart is also available on floppy disk. Clipart on the floppy disks, however, is in compressed format. To use the images, you must first expand the files using CorelMOSAIC. For step-by-step instructions on how to do this, search for "clipart" in CorelMOSAIC's online Help.

We've provided an illustrated guide to the CorelDRAW clipart libraries. As you browse through the guide, you'll notice symbols at the top of each page. These symbols indicate the category (animals, maps, flags, sports, and so on) of the images on the page. We use symbols instead of names because we've tried to make this a universal reference. Regardless of their language, CorelDRAW users around the world will use the same guide.

A file named "INDEX40.CDR" in the "CLIPART" directory cross-references the symbols to the names of the CD-ROM directories in which images in each category are stored. You can print this file from CorelDRAW. See Chapter 18 in the CorelDRAW section of this book for information on printing files.

SECTION

1



COREL DRAW

CHAPTER

1

CorelDRAW Basics

This chapter familiarizes you with the main components of the CorelDRAW screen and teaches you a few basic skills you'll use every time you work with the program. You'll learn how to:

- Start CorelDRAW
- Use CorelDRAW's dialog boxes and Roll-Ups
- Open an existing drawing and set up a new one
- Save a drawing
- Use the right mouse button
- Undo mistakes
- Set up the CorelDRAW work environment
- Exit CorelDRAW

A reminder to new Windows users

If CorelDRAW is your first Windows program, you should learn some basic Windows techniques, such as choosing commands and resizing windows, before starting CorelDRAW.

Starting CoreIDRAW

To use CoreIDRAW, you must first start Windows by typing:

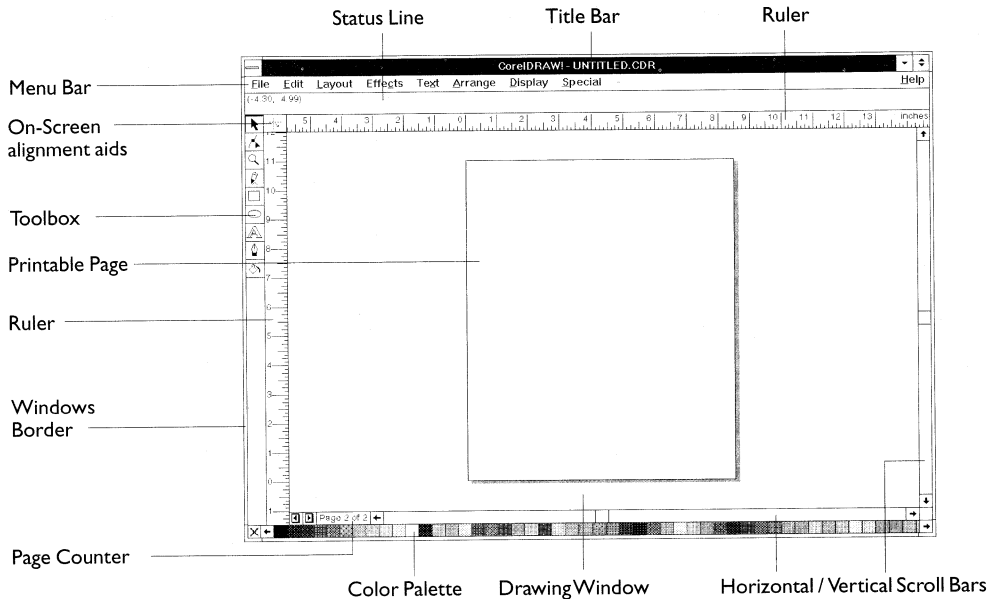
WIN

at the DOS prompt (C:>) and then pressing Enter. The Program Manager appears. Double-click the CoreIDRAW icon to start the application.



Exploring the CoreIDRAW screen

The CoreIDRAW screen consists of the following key components:



Windows border: Used to scale the CoreIDRAW window. Scaling is useful when you have other Windows applications running.

Title bar: In addition to displaying the name of the file being worked on, the title bar is used to reposition the CoreIDRAW window on the screen.

The arrow icons on the right end of the title bar can expand the CoreIDRAW window to full screen size or reduce the window to an icon.

Menu bar: Contains the names of the nine menus. Clicking on a menu name displays a list of commands for accessing CoreIDRAW's functions.

Horizontal/Vertical Scroll Bars: Used to pan the current viewing window. Panning is particularly useful when you are using a zoomed-in view.










» **Tip:**

CorelDRAW has an auto-panning feature that scrolls the view automatically when you drag beyond the edges of the Drawing Window. You can disable this feature with the Preferences command in the Special menu.

Drawing Window: The large white portion of the screen is the Drawing Window. The rectangle in the center with the drop shadow represents your printable page. Normally, only the part of your drawing that falls within this rectangle will be printed.

When you draw in editable preview mode, (the default drawing mode), both the outlines and the fills of the objects are drawn. When you draw in wireframe view, only the outline or “skeleton” of the objects is drawn. In wireframe view, the screen redraws more quickly. However, if your system is a high-end one with plenty of memory resources, you may notice very little difference in performance. You can switch to wireframe view by choosing Edit Wireframe from the Display menu.

Toolbox: The toolbox gives you quick access to the most common operations in CorelDRAW. It contains the following tools:

| Tool | Used for |
|--|--|
|  Pick tool | Selecting and transforming objects |
|  Shape tool | Shaping objects |
|  Zoom tool | Changing the viewing window |
|  Pencil tool | Drawing lines/curves, Powerlines and Dimension Lines |
|  Rectangle tool | Drawing rectangles/squares |
|  Ellipse tool | Drawing ellipses/circles |
|  Text tool | Adding text and symbols |
|  Outline tool | Setting outline attributes |
|  Fill tool | Setting fill attributes |

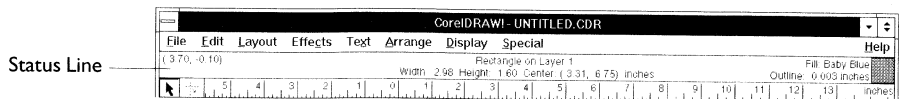
» **Tip:**

If you double-click the gray area below the Fill tool, CorelDRAW moves the toolbox away from the edge of the Drawing Window. You can then drag it wherever you want. Double-clicking on the toolbox's control menu box returns it to its default location.

These tools are described in detail in subsequent chapters of this manual.

You can position the toolbox anywhere in the Drawing Window by double-clicking the gray strip below the Fill tool and then dragging its title bar. To return it to its default position, double-click the button at the top left of the gray strip. You can also move the toolbox by choosing Floating Toolbox from the Display menu. This, too, allows you to drag the toolbox using its title bar. Choosing Floating Toolbox again returns it to its default location.

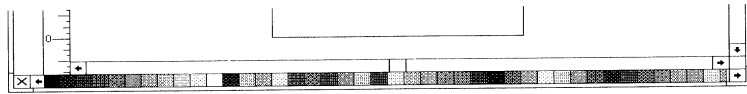
Status Line: The Status Line appears at the top of the screen, just below the menu bar. It gives you information on your currently selected object, or action.



You can use the Show Status Line command in the Display menu to hide the Status Line. We recommend that you always work with it visible, as it provides a wealth of useful information.

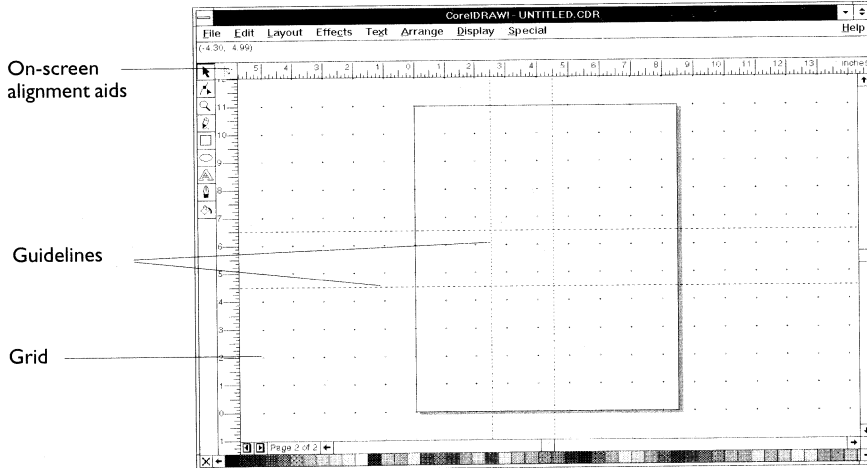
Rulers: CorelDRAW provides optional rulers at the edges of your Drawing Window for determining the size and position of objects. You display the rulers by choosing Show Rulers from the Display menu. To move the (0,0) point of the rulers, click the icon at the junction of the rulers and drag the cursor to anywhere on the page. The new zero point of the rulers will be where you release the mouse button. As you scroll the Drawing Window, the rulers move to reflect your position on the page. The rulers are described in more detail in “Using Rulers, Grids, Guidelines and Guide Objects” in Chapter 10.

Color Palette: CorelDRAW provides an on-screen Color Palette for selecting Outline and Fill colors. When you select Show Color Palette, it appears along the bottom of the screen as follows:



For more information, see “Methods of selecting and applying fills” and “Methods of selecting and applying outlines” in Chapters 6 and 7 respectively.

On-screen alignment aids: Aligning objects in your drawing is done with the Grid and Guidelines. Both have a “snap” option that, when enabled, forces objects into perfect horizontal and/or vertical alignment.



In addition to snapping to the Grid and Guidelines, you can have objects snap to other objects. This feature is useful for drawing objects of the same dimension and for aligning objects with each other.

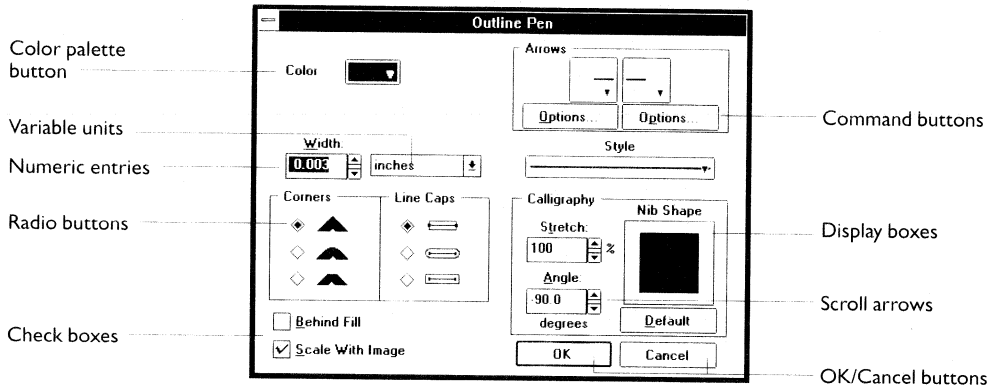
The Grid and Guidelines are described in more detail in “Using rulers, grids, guidelines and guide objects” in Chapter 10. The Snap to

Objects feature is described in “Aligning objects to other objects”, also in Chapter 10.

Page Counter : CorelDRAW allows you to create multi-page documents. The number of pages in the document is displayed in the Page Counter box in the bottom left corner of the Drawing Window. You go to a particular page using the page forward and page back arrows to the left of the Page Counter box, or using your keyboard’s Page Up and Page Down keys. Alternatively, you can choose Go to Page from the Layout menu. For more information on multi-page documents, see “Setting up a new drawing” later in this Chapter and “Managing multi-page documents” in Chapter 18.

Using CorelDRAW dialog boxes

CorelDRAW uses dialog boxes which let you control operations like printing and changing text attributes. If you are familiar with other Windows applications, you’ll find using these dialog boxes easy.



Here is a typical dialog box, and a description of the various types of controls.

Radio buttons : Used to present two or more mutually exclusive choices. You must pick one of the choices by clicking on the associated button to highlight it. If you’re using the 3D-look, these will appear as recessed diamonds. On monochrome screens, they appear as flat circular buttons.

Check boxes : Enable/disable a particular command option. The option is enabled when a check mark appears in the check box; it is disabled when the check box is empty.

Command buttons : Cause an action to occur, such as resetting dialog box values or presenting you with a supplementary dialog box.

Numeric entries : Used to enter numeric values. You can either type in the values, or use the attached scroll arrows.

Scroll arrows : Used to change values in numeric entry boxes with the mouse. The top arrow increases the value displayed; the bottom arrow decreases it. You can either click the arrow to change the value by a single increment or hold the mouse button down on the arrow to cause the value to change continuously. For more rapid scrolling, click and hold the mouse button down on the bar between the arrows, then drag up or down.

Variable units : Allow you to set the units for the selected option. The units are only associated with the option they are beside, allowing you to use inches in one dialog box and points in another. To change units, click the downward-pointing arrow beside the units, and click the desired units in the drop-down menu. When you select a different unit, the value is automatically converted.

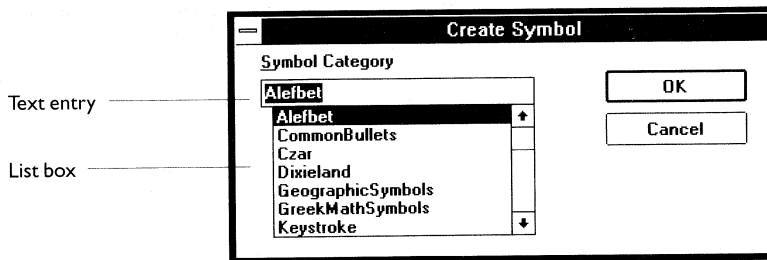
Display boxes : Are included in some of the dialog boxes to give you a visual representation of your current selection. As you change the selection, the graphic shown in the display box changes to reflect your choice.

Drop-down list boxes : Are included in some of the dialog boxes to give you a drop-down list of several options. You select an option from the list by clicking on it.

OK button : Click this button to enter your choices and return to editing your drawing.

Cancel button : Click this button to cause CorelDRAW to ignore any changes you've made to the dialog box options and return to the Drawing Window.

Text entries : Some fields allow you to enter text strings. click the existing string to select it for editing. You can then edit the string using the keyboard.



The Home key jumps the cursor to the beginning of the string; End jumps the cursor to the end of the string. Del deletes characters following the cursor; Backspace deletes characters before the cursor. You can highlight a portion of the text string by dragging the cursor across it. Highlighted text may then be deleted by pressing the Del or Backspace key. You can replace the text by typing in new text.

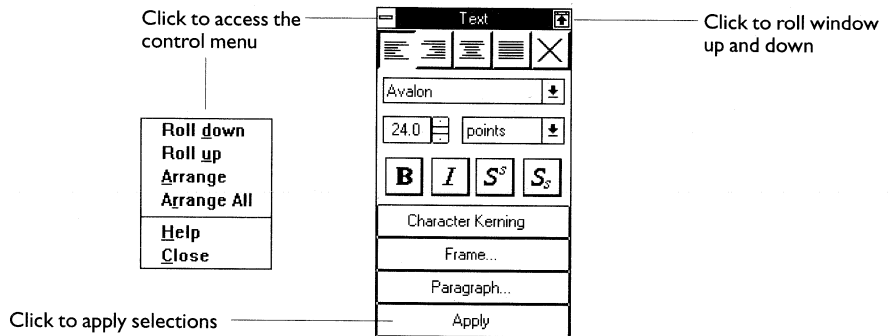
List boxes : Allow you to select an item from a list. Scroll through the list using the scroll bar, and select an item by double-clicking on it, or clicking it and then clicking on OK.

For a more detailed discussion of Windows dialog boxes, consult your Microsoft Windows User's Guide.

Using CorelDRAW Roll-Ups

CorelDRAW's "Roll-Up windows", or "Roll-Ups", are dialog boxes that remain on screen and active as long as you want them there. You use them to control many of CorelDRAW's operations. They streamline the operations, since you don't have to repeatedly access a dialog box through a menu command to fine tune a certain parameter.

We call them Roll-Ups because you can roll them up like window shades leaving just their title bar visible until they're needed again. The roll-up functions are also accessible through CorelDRAW's



regular dialog boxes and menu commands.

The Roll-Up shown here is used to select text attributes. The procedures that follow apply to all Roll-Ups; the operation of the controls specific to each Roll-Up is described throughout the manual.

» Tip:

You can specify how you want opened Roll-Ups displayed each time you start CorelDRAW. See Appendix A for details.

► To carry out your selections:

- Click the Apply button.

► To roll a window up and down:

Do one of the following:

- Click the arrow in the top right corner.
- Click the control menu box and choose Roll up or Roll down.
- Double-click the Roll-Up title.

► To close a Roll-Up:

Do one of the following:

- Click the control menu box and choose Close.
- Click and hold down the mouse button anywhere within the window (except the Title Bar) and press the Esc key.
- Double-click the control menu box.

- ▶ **To move a Roll-Up:**
 - Point to the title bar, hold the left mouse button down and drag to the desired location.

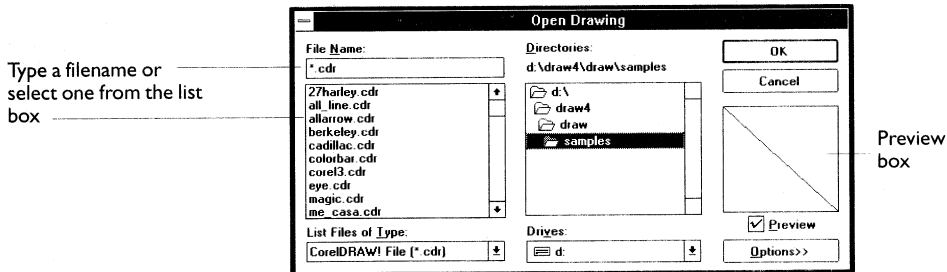
- ▶ **To arrange open Roll-Ups:**
 1. Click the control menu box.
 2. Do one of the following:
 - Choose Arrange to roll-up the active window and move it to one of the top corners of the Drawing Window.
 - Choose Arrange All to roll up all open windows and move them to the top corners of the Drawing Window.

- ▶ **To get Help on an open Roll-Up:**

Do one of the following:

 - Press Shift + F1 and click the Roll-Up.
 - Click the control menu box and choose Help.

Opening an existing drawing



» Tip:

The titles of drawings last opened or saved appear at the bottom of the File menu. Up to four names are displayed. To open a listed file, simply click it.

- ▶ **To open an existing drawing:**
 1. Choose Open from the File menu.
The Open Drawing dialog box appears.
 2. In the list box, click once on the file you want to open, or type its name in the File Name box.
If the drawing is in CorelDRAW 3 format or later and it was saved with an image header, you will see a small representation of it in the Preview box.
If it is in another drive or directory, select the drive from the Drives box and the directory from the Directories box.
Clicking the Options button lets you search for files using either keywords or CorelMOSAIC, a visual file manager that comes with CorelDRAW. See Chapter 18, "Managing and Printing Files", for details.
 3. Click OK or double-click the filename.

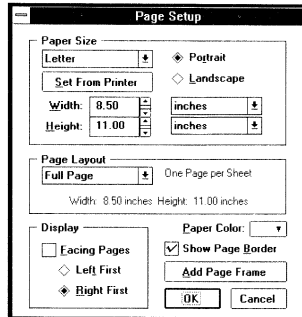
Setting up a new drawing

» **Shortcut:**

Ctrl + N opens a new drawing.

To open a new drawing page, select New from the File menu. If you're working on a drawing when you select New and haven't yet saved the most recent changes, CorelDRAW prompts you to save them. Then, a new drawing page appears.

When you begin a project, you usually start by setting up the page size and orientation. You do this by choosing Page Setup from the Layout menu and selecting from the following options from the Page Setup dialog box:



Paper Size : Sets the dimensions of the page. click the Paper Size box and choose one of the 19 paper sizes from the pop-up list. Or, choose a custom size by selecting Custom from the pop-up list and then typing the page dimensions in the Width and Height boxes. (You can specify a page size of up to 30x30 inches). If you're creating slides, choose Slide to select page dimensions with the same aspect ratio as a 35mm slide.

If you select Set from Printer, CorelDRAW will query your currently installed printer for the page size and orientation. The dimensions will appear in the Width and Height boxes.

Orientation : Click Portrait if you want the vertical dimension of your page to be longer than the horizontal dimension. If you want the opposite, click Landscape.

When you print the drawing, CorelDRAW will alert you if the Printable Page and printer page orientation (as specified with the Printer Setup command) do not match. Choose Yes if you want CorelDRAW to change the printer orientation to match Printable Page.

Paper Color : Displays a dialog box that lets you color the Preview screen (and the Drawing Window, if you are working in the editable preview) to match the background of your drawing or the paper you plan to print it on. The color you choose is for viewing and information only; it does not print. If you want a color background that does print, choose Add Page Frame.

Show Page Border : The page border is the rectangle with the drop shadow that appears in the Drawing Window. This option is enabled by default. If you disable it, it's a good idea to enable it again before printing since it represents the paper size of your print-

» **Note:**

If you have already created style templates, you may want to base your new drawing on one of those templates.

Choose the New From Template command from the File menu. In the Load Template dialog box that appears, select a template (.CDT) to base your drawing on.*

The template is loaded into CorelDRAW. You apply the template styles from the Styles Roll-Up.

For more information on creating templates, see Chapter 14.

able page. This way, you'll see whether any parts of your drawing fall outside the border and won't get printed as a result.

Note: The page border represents the paper size of your printable page, not the actual image area which includes device-specific margins.

Add Page Frame: Puts a printable background frame the same size as the page on the screen. It's given the default fill and outline, which you can change the same way as you would any other CorelDRAW object.

The Page Setup options that are displayed when you open CorelDRAW are the options you used in your most recent CorelDRAW session. When change the Page Setup options during your current CorelDRAW session, the new options become the defaults.

Setting up a multi-page document

CorelDRAW allows you to create documents with up to 999 pages. When you add pages, page icons in the bottom left corner of the screen indicate the number of pages your document contains, and which page is currently selected.

► To add new pages to your drawing:

1. Choose Insert Page from the Layout menu.
The Insert New Page dialog box appears.
2. Enter the number of pages you want to add. Choose After Current to insert them after the current page, or Before Current to insert them before the current page.
3. Choose OK.

The new drawing pages are added to the document. The Page Counter at the bottom left of the Drawing Window is updated to reflect the number of pages the document contains, and which page is current.

To go to a different page, click the page forward and page back icons at the bottom of the Drawing Window, or use the Page Down and Page Up keys on your keyboard. You can also use the Go To Page dialog box to enter the page number to which you want to go. You access it by choosing Go To Page from the Layout menu, or by clicking the gray area beside the page forward icon at the bottom of the drawing window. To go forward or back five pages, click the page forward or page back icon with the right mouse button. If you have facing pages displayed, you'll move forward or back ten pages.

You delete pages by selecting Delete Page from the Layout menu, and entering the numbers of the pages you want to delete.

For more information on working with multi-page documents, refer to "Managing multi-page documents" in Chapter 18.

» **Shortcut:**

Pressing Ctrl and clicking the page forward icon takes you to the last page of the document.

Pressing Ctrl and clicking the page back icon takes you to the first page.

Saving a new drawing

The Save command displays a dialog box that allows you to give a new drawing a filename and to specify a location in which to store it. You can also store notes with your drawing and assign keywords to help you locate it.

» **Shortcut:**

Pressing **Ctrl S**
saves a file.

» **Note:**

CorelDRAW provides backup features that save your work automatically. Even with these features, you should save your work often.

Information about the backup features is available in CorelDRAW's online Help—search for “backup.”

► **To save a new file for the first time:**

1. Choose Save from the File menu.

The Save Drawing dialog box appears.

2. Do one of the following:

- To save the drawing in the current drive and directory, type a name of up to eight characters in the File Name box. CorelDRAW automatically adds the .CDR extension.
- To save the drawing in a different drive or directory, type the entire path name in the File Name box. Or, select the drive from the Drives box and the directory from the Directories box.

3. Type any keywords and notes you want to store with the file. For more information, see “Adding keywords and notes” in Chapter 18.

4. Choose OK.

Once you've saved a file, you can use the Save command at any time to save any further changes you make. Use the Save As command to save the drawing under a new name or in a different directory.

To save only certain objects in your drawing, select them before you choose the Save command. Then, click Selected Only in the Save Drawing dialog box.

About image headers

When you save a drawing, CorelDRAW creates a small bitmap representation of it. This representation appears in the Open Drawing dialog box, allowing you to see what's in a file before opening it.

You can specify the type (color or monochrome) and the resolution of the header when you save the file. The image header has no impact on printed output.

Using the right mouse button

The right mouse button is used to make a copy of an object as you move it, and to display the Object menu. Commands in this menu allow you to attach notes to objects and store their attributes in a style sheet. For details, see Chapter 14, “Using Styles” and Chapter 15, “Creating a Graphics Database”.

You can also program the right mouse button to perform any one of these tasks:

- Select the Shape tool
- Toggle between a 2x zoom and normal view
- Display your drawing in full-screen preview
- Display the Edit Text dialog box

For more information see, Appendix A, “Customizing CorelDRAW”.

Note: Even with another function assigned to the right mouse button, you can still use it to access the Object menu by clicking and holding the button down on an object.

Undoing mistakes

CorelDRAW remembers previous actions you performed during the current session. If you make a mistake or changed your mind, the Undo command in the Edit menu can usually reverse the action. There is no limit to the number of Undo levels you can have. You specify the number of Undo levels by choosing the Preferences command in the Special menu. Actions you cannot undo are:

- Change of view (zooming, scrolling, etc.)
- File operation (open, saving, importing, etc.)
- Object selection operation

The Undo command changes depending on the last action—for example, “Undo Fill” or “Undo Rotate”. If the action cannot be undone, or there are no actions to be undone, the command is grayed.

Immediately after using Undo, the Redo command becomes available, allowing you to restore what you just undid.

Setting up the CorelDRAW work environment

You can customize the CorelDRAW work environment to suit the way you work. For example, using commands in the Display menu, you can have CorelDRAW display the rulers and grid each time you start the program. Other preferences are set by choosing the Preferences command in the Special menu. These include items such as hiding the page border, changing settings which determine where duplicated objects are placed and how small text is displayed on the screen. For more information about setting preferences, see Appendix A.

The remaining preferences are set in your CorelDRAW INI files, which are text files that you can edit using a text editor like Windows Notepad. Settings in this file affect such things as how frequently CorelDRAW creates backup files, whether CorelDRAW is maximized on your screen, and so on. For more information on the INI files, search for "CORELDRW.INI" in the online Help.

Exiting CorelDRAW

» **Shortcut:**

*Pressing Alt + F4 exits
CorelDRAW.*

Choosing Exit from the File menu ends the current CorelDRAW session. If you've made any changes since you last saved your file, CorelDRAW prompts you to save the file before exiting. Click Yes to save the changes. If you've made any changes to your template, CorelDRAW prompts you to save the modified template before exiting.

Drawing Objects

CorelDRAW provides three tools for drawing objects: the Pencil tool, the Rectangle tool and the Ellipse tool. With only three tools to work with you might think you'd be limited to creating simple geometric shapes. But even the most complex illustrations are constructed from basic elements such as lines and curves, so there's really no limit to the shapes you can create in CorelDRAW.






The Pencil tool is the most versatile of the drawing tools. Its most obvious function is drawing lines and curves. You can also use it to add dimensions to your drawings, to draw PowerLines—a feature that helps to give your work a hand-drawn look, and to trace bit-mapped images. See Chapter 16, “Working With Bitmaps.”

The technique you use to draw is essentially the same for each of the tools: select the tool, click anywhere on the page, and drag the mouse. If you hold down the Ctrl key as you drag, the motion of the mouse can be constrained to drawing squares, circles or straight lines.



All new objects are given a default fill and outline. You can change the defaults at any time by choosing the Fill or Outline tools with no objects selected. For more information, see “Changing the default fill attributes” in Chapter 6 and “Changing the default outline attributes” in Chapter 7.



Using the drawing tools

These are the drawing icons in the toolbox:




-  For drawing lines and curves in freehand mode
-  For drawing lines and curves in Bézier mode
-  For drawing dimension lines
-  For drawing rectangles and squares
-  For drawing ellipses and circles


The selected tool remains enabled after you have drawn the object so that you can add another object of the same type.

When you draw an object with one of these tools, it becomes the currently selected object. This allows you to use many of the menu commands and the  and  tools to change its attributes.

Choose either the  tool or the  tool immediately after using one of the three drawing tools to move, transform, or shape the object.

Shortcut for temporarily activating the tool

When using one of the three drawing tools, you can quickly activate the  tool to select or transform another object by pressing the spacebar once. Normally, you would have to move your cursor over to the toolbox and click to activate the  tool, move back, and select the new object. If you press the spacebar while using the  tool, the tool that you were last using becomes active. This allows you to draw objects, quickly reposition or transform them, and then draw additional objects of the same type, without having to move your cursor over to the toolbox.

If you press the spacebar while using the Text tool, however, it generates a space character. Pressing the Ctrl key and the spacebar while editing Paragraph or Artistic text onscreen activates the  tool.


When you change between drawing tools, with or without the space bar, the currently-selected object remains selected. However, when more than one object is selected, pressing the spacebar or changing drawing tools deselects them.

Drawing rectangles and squares





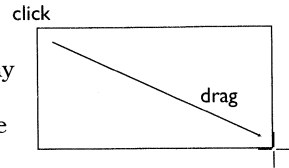
Rectangle tool

» **Shortcut:**

Pressing F6 selects the  tool.

► To draw a rectangle:

1. Click on the  tool. The cursor changes to a .
2. Move your cursor to the point in the drawing area where you want to place a corner.
3. Depress the mouse and drag in any direction. As you drag, a rectangle forms, with one corner fixed where you began to drag, and the other corner following the cursor. Continue dragging until the rectangle is the desired size.
4. Release the mouse to complete the action.



► To draw a square:


- Hold down the Constrain key (Ctrl) while dragging to draw a square. Be sure to release the mouse before releasing the Ctrl key.

Drawing ellipses and circles





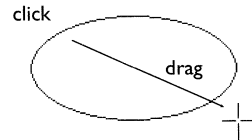
Ellipse tool

» **Shortcut:**

Pressing F7 selects the  tool.

► To draw an ellipse:

1. Click the  tool. The cursor changes to a .
2. The ellipse you draw fits inside an imaginary rectangle. Move the cursor to the point where you want one corner of the defining rectangle to be.
3. Depress the mouse button and drag. As you drag, an ellipse appears. You can change the shape by dragging in different directions.
4. When you are satisfied with the shape of the ellipse, release the mouse button.



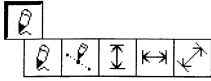
► To draw a circle:

- Hold down the Constrain key (Ctrl) while dragging to draw a circle. Make sure you release the mouse button before releasing the Ctrl key.

Drawing from the center out




Holding down the Shift key draws the rectangle or ellipse from the center out. Holding down the Ctrl and Shift keys draws a square or circle from the center out.

Drawing lines and curves



Pencil tool

Choosing a drawing mode

The  tool is used to draw lines and curves, and shapes combining line and curve paths. When you click the  tool, a message appears on the status line indicating which of the two drawing modes—Bézier or freehand—is currently selected. If you hold down the mouse when you click the  tool, a flyout menu appears with an icon for each of the two drawing modes. When you're drawing irregular shapes with perfectly straight lines and angles, either mode will do. But when drawing curves, your choice of drawing mode will depend on the level of precision you need. Regardless of the mode you use, the same tools and techniques are used to edit, transform, and outline the paths you create.

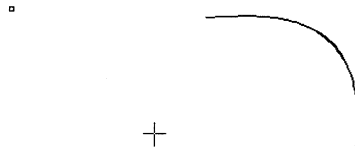
When you use the freehand mode, you draw by dragging the cursor in much the same way as you move a pencil on paper. The program tracks the cursor's movement across the screen and places nodes at various points along the path you are drawing. Because it is difficult to control the mouse, your curves may get quite bumpy. For this reason, the freehand mode is best for doing quick sketches in which precision isn't critical.

Bézier mode, on the other hand, is a connect-the-dots method of drawing. You specify the start and end nodes of each curve, which CorelDRAW then connects. Since you control the placement of nodes, it's easy to draw smooth, flowing curves. Use this mode if you want to draw with precision.



To draw in Freehand mode, just click and drag.


When you release the mouse button, nodes are placed along the path you drew.






To draw in Bézier mode, click to set down the nodes.

CorelDRAW connects the nodes to form a path.

» **Shortcut:**


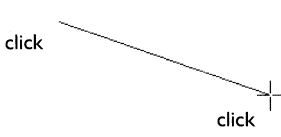
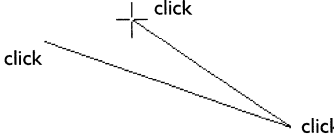

Pressing **F5** activates the  tool.

► **To switch between drawing modes:**

- If the  tool is displayed, click it to choose the Bézier drawing mode. If the  tool is displayed, click it and hold down the mouse. Choose  from the flyout menu.

Drawing in freehand mode

► To draw straight lines:

1. Click on the  tool to draw straight lines and curves. The cursor appears as a + .
2. Move the cursor to where you want the line to start and click once.
3. Move your cursor towards the position for the other endpoint. You will notice a “rubberband” line, which follows your cursor.
4. When the line is the desired length and orientation, click once to freeze the line in position.
5. If you want to draw a second straight line connected to the first, continue with the  tool, and click again on the endpoint of the last segment. If you click to start a line within five pixels of the end of the last line, CorelDRAW connects the two lines. To adjust the default distance, use the AutoJoin option, found in the Curves section of the Preferences dialog box. See Appendix A, “Customizing CorelDRAW” for details.
6. Move your cursor to draw the second segment. Click once when you have the desired second segment positioned correctly. Repeat steps 5 and 6 to draw as many segments as required. Remember that you must click at two points—the beginning and end of the segment.

► To draw multi-segment lines or polygons:

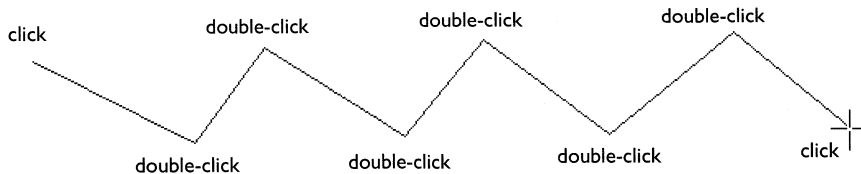
- Follow the technique just described, but double-click to finish each line and start the next. Remember to click only once when you finish drawing the final segment.

» Tip:

Holding down the **Ctrl** key while drawing a straight line constrains it to horizontal, vertical or an angle which is a multiple of 15°.

You can change this angle by choosing the Preferences command from the Special menu.



Make sure you release the mouse button before releasing the **Ctrl** key to ensure the final result is constrained.








» **Tip:**

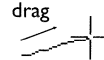
Wait until CorelDRAW has redrawn your curve before drawing another line, so you can see what you're doing. Even the most complex curves shouldn't take more than a few seconds to draw.

» **Note:**

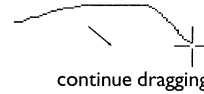
For AutoJoin to work when adding a curve or line segment to the end of an existing curve/line object, you must first select the existing curve/line with the  tool, then use the  tool to draw the added segment.

► **To draw a curve:**

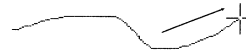
1. Click on the  tool. (If the  tool is displayed, click and hold on it, and then choose  from the flyout menu.) Your cursor appears as a . Draw the curve by dragging the cursor along the desired path. Don't worry if you don't follow the desired path exactly. You can quickly clean it up using the  tool, as described in "Shaping objects" in Chapter .




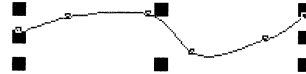
To erase part of the path you've drawn, hold down the Shift key *while continuing to drag*, and retrace the portion of the path you want to remove. When you release the Shift key, you'll resume drawing your curve.



2. When you reach the end of your curve, release the mouse.





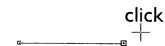
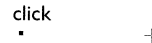
3. To draw a second curve connected to the first, continue with the  tool, starting your drag from the endpoint of the last segment. As long as you are within five pixels of the end of the other segment, CorelDRAW automatically joins them. To adjust the default distance, use the AutoJoin option, in the Curves section of the Preferences dialog box under the Special menu.



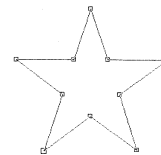
Drawing in Bézier mode

► **To draw straight lines:**

1. Click on the  tool. Your cursor changes to a .
2. Move the cursor to where you want the line to start and click once. Don't move the mouse as you click, or you'll begin drawing a curve instead of a straight line.
3. Move the cursor to where you want the line to end, then click once. A single line segment will be drawn between the two points.

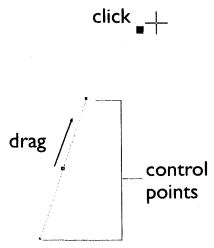
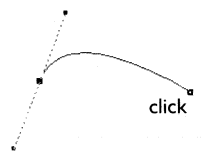
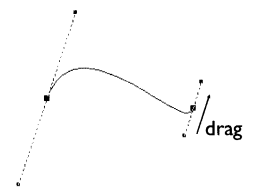
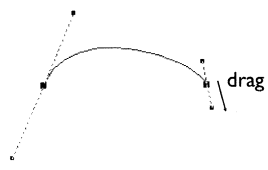


4. Continue moving the cursor and clicking to create as many connected line segments as you need. If you make a mistake, use the Undo command in the Edit menu to delete the last segment. To draw a closed shape, click top of the first node. To draw a line segment that is not connected to the previous one, press the Spacebar twice before you define the start point.




Continue moving the cursor and clicking to create your shape.

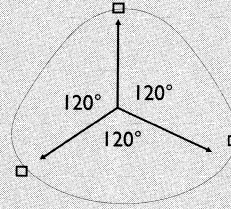
► **To draw curves:**

1. Position the cursor where you want the curve to start.
2. Press and hold down the mouse. A node appears, indicating the start point of the curve.
3. Drag in the direction you want the curve drawn. As you drag, two control points move in opposite directions from the node. The distance between the control points and the node determines the height or depth of the curve. The angle of the control points determines the curve's slope.
4. When the control points are in the desired position, release the mouse. Holding down the Ctrl key as you position the control points forces them to move in 15° increments. To change this angle, use the Curves button in the Preferences dialog box. See "Setting preferences" in Appendix A for details.
5. Move the cursor to where you want the curve segment to end, then press and hold the mouse. A second node is set down and connected to the first.
6. Drag to position the control points that will determine the height and slope of the next curve segment. To draw a curve with no change of direction (i.e., a curve with one bump) drag in the direction the curve is moving through the end node. Dragging in the opposite direction creates a curve with a smooth change in direction (i.e., a curve with two bumps).
7. Release the mouse. The curve segment will be redrawn between the two points.
8. Repeat steps 5 through 7 as many times as required. To draw a closed shape, click top of the first node and drag. To draw a curve segment that is unconnected to the previous one, press the Spacebar twice before you define the start point of the new segment.

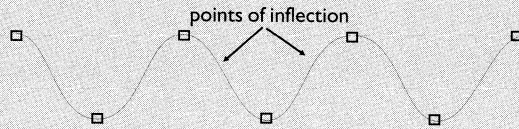
Rules of thumb for drawing curves

Ideally, you create curves using as few nodes as possible. You can use the  tool later to add more nodes if moving the existing nodes and control points doesn't result in the desired shape. Three rules of thumb for determining how many nodes you should use are:

- For curves moving in one direction, you need a node about every 120 degrees.

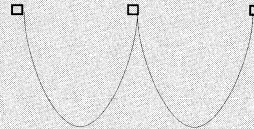


- For curves changing direction smoothly, you need a node at every two

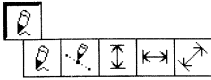


“points of inflection”. A point of inflection is a point at which the direction of the curve changes.










- For curves changing direction at a cusp (pointed corner), you need a node for every cusp.

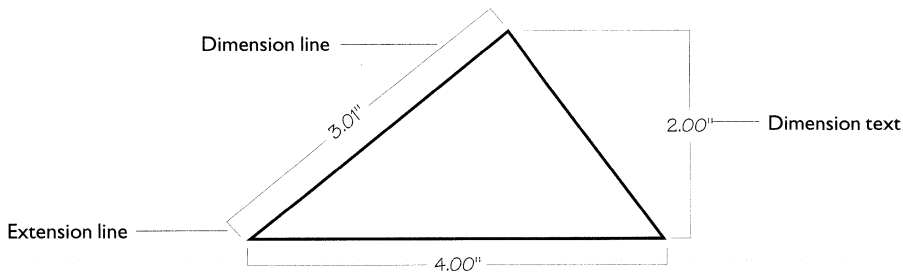


Drawing dimension lines





Pencil tool

Dimension lines are commonly used in technical illustrations to show the size of objects or the distance between them. The example below shows a dimension line, dimension text, and extension line. You can add them to your drawing using the ,  and  icons in the Pencil tool flyout menu. The  tool is used for drawing vertical dimension lines, the  tool for horizontal, and the  tool for angular. If you use the  (horizontal tool) tool to draw a vertical line, you get a value of 0.00. The same applies if you use the  or  tools (vertical or angular tools) to draw lines which are not vertical or angular. You must use the appropriate tool for the type of line you are drawing.



► To draw a dimension line:

1. Click and hold the  tool.
2. Choose one of the dimension tools from the flyout menu.
The cursor changes to a .
3. Choose Snap to Objects from the Layout menu. (You don't need to enable Snap to Objects, but using it makes precise measuring easier. See "Aligning objects to other objects" in Chapter 10 for a discussion of the Snap to Objects feature.)
4. Click where you want to begin measuring. Drag toward the point where you want to stop measuring.
A dimension line appears and stretches in the direction you drag. Hold down the Ctrl key to draw a straight dimension line.
5. When you reach the desired endpoint, click. If you have Snap to Objects enabled, the cursor will snap to the end of the line.
6. Drag up and down to establish the extension line height for a horizontal dimension line, or left and right to establish it for a vertical dimension line. Drag diagonally to establish the dimension line height for a diagonal dimension line.
7. Drag left and right to establish the placement of the dimension text for a horizontal dimension line, or up and down to establish it for a vertical dimension line. Drag diagonally to establish the dimension text placement for a diagonal dimension line.
8. Click the mouse.

»Tip:



Since dimension lines can be used to measure the distance between any two points, you can use them to determine dimensions for grouped, combined or multiple-selected objects. (The Status Line doesn't provide dimension information for these types of objects.)

» Tip:

Holding down the **Ctrl** key when drawing an angular dimension line constrains the angle to increments of 15 degrees, or to the value you've specified for the **Constrain Angle** setting in the **Preferences** dialog box.

extension lines are drawn in accordance with the distance you dragged them before you clicked.

The dimension text value is expressed in the same units as the horizontal rulers. (The rulers use the unit specified for **Horizontal Grid Frequency** in the **Grid Setup** dialog box.)

You can change the color of selected dimension text by clicking on a color in the on-screen palette, or by using the  icon in the  menu. Likewise, you can change the color of a selected dimension line by clicking with the right mouse button on a color in the on-screen palette.

Specifying the dimension text placement and orientation

Settings in the **Preferences** dialog box allow you to specify the dimension text's orientation and its placement on the dimension line.

► To specify the dimension text placement and orientation:

1. Choose **Preferences** from the **Special** menu.

2. Click the **Dimension** button.

The **Dimension Preferences** dialog box is displayed.

3. Choose **Horizontal Label** to have dimension text placed horizontally.

If you choose this option, the text is placed horizontally even if the dimension line is diagonal or vertical. If you don't choose this option, the dimension text is placed at the same angle as the dimension line.

4. Select **Center Label** to center dimension text on the dimension line.

If you select this option, the text is centered on the dimension line, provided you drag inside the extension lines when establishing the placement of the dimension text (refer to step 7 and 8 above in "To draw a dimension line"). If you drag outside the extension lines when establishing the dimension text placement, the text will not be centered, even if this option is chosen.

5. Click **OK**.


You can also change the placement of the dimension text by selecting it and dragging it to a new location. As you drag, the extension lines change size in accordance with the distance you drag the text away from the dimension line.


Editing the dimension text: The dimension text is assigned the default font and point size. You can change the point size by selecting it and then stretching and scaling with the mouse, or by selecting a point size from the **Text Roll-Up**. You can also use the **Text Roll-Up** to change the font. Refer to Chapter 11, "Working With Text" for details. You can apply all the special effects and transformations to dimension text that you can apply to other **CorelDRAW** objects.


» Note:

Refer to **Appendix A** for information on changing the **Format Type of dimension text**.

Selecting Objects


When you create an object, CorelDRAW selects it so that you can begin working with it right away. To work with an existing object, however, you must first select it with the  tool. Once an object is selected, you can use the editing tools and menu commands to modifying its appearance and position on the screen.

You can identify a selected object by the eight small boxes that appear around it. These *handles* allow you to stretch, scale, rotate, and skew objects, as you'll learn in Chapter 8. The invisible rectangle formed by the handles is called a *highlighting box*. Notice the small hollow *nodes* that appear along the object's outline. In Chapter 9, you'll discover how manipulating these nodes with the  tool changes an object's shape.



A single object can be selected by clicking on it with the  tool. Selecting multiple objects involves dragging a dotted rectangle (called a *marquee box*) around the objects. The Select All command in the Edit menu also allows you to select all objects in the Drawing Window.

For complex drawings with many objects or superimposed objects, you'll find it more convenient to cycle through the objects using the Tab key.

Selecting single objects

If the object has a fill and you're working in Editable Preview, choose the  tool and select the object by clicking anywhere on its outline or interior. If it has no fill or you're working in wireframe view, you must click its outline.

»Tip:

You can temporarily activate the  tool when using any of the drawing tools except the Text tool by pressing the spacebar. If you press the spacebar again while using the  tool, the drawing tool that you were last using becomes active.

Note: If the multilayer selection is turned on in the Layers Roll-Up, you can select objects on any layer that isn't locked. If multilayer selection is off, then you can only select objects on the active layer. See "Using layers" in Chapter 10 for information about multilayer selection.



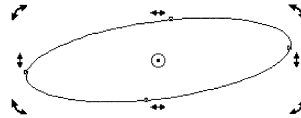
Click on object to select it



Standard (stretching & scaling) highlighting box

Clicking on a selected object


If you click an object that is already selected, you enter a second mode, which allows you to rotate and skew the object using the highlighting box. The highlighting box changes from blocks to arrows.





Rotation and skewing highlighting box

Subsequent clicking on the object's outline toggles you between stretch/scale and rotate/skew modes.

Status Line


When you select an object with the  tool, the Status Line indicates the type of object selected (i.e., text, rectangle, ellipse, bitmap or curve) and its outline and fill.


If you select a group of objects with the  tool, the Status Line indicates that you've selected a group, and the number of objects it contains. If you select more than one object or group with the  tool, the Status Line indicates the number of objects selected. In this case, each group counts as a single object.

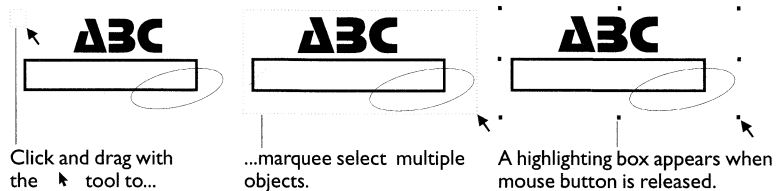
Selecting multiple objects


» **Tip:**

Choosing Select All in the Edit menu is a quick way of selecting all objects in the current drawing.

A quick way to select one or more objects is to use the marquee option. Using the  tool, you can drag a dotted marquee rectangle so that it entirely encloses the objects that you want to select. When you release the mouse, the objects are selected. You must start your drag on a white space.

You can also multiple-select objects by holding down the Shift key and using the  tool to click each object you want to select. A single highlighting box enclosing all objects appears, and the nodes of the selected objects are displayed.



You can use the multiple-select feature (Shift key plus ) to change the complement of objects selected.

You can also use the marquee select in conjunction with the Shift key. However, an already-selected object that falls in the marquee will become deselected.

Once you've selected multiple objects, you can manipulate them as though they were a single object. For example, if you click without pressing the Shift key on one of the multiple objects selected, you will enter rotate/skew mode.

Deselecting objects


Deselecting objects

To deselect an object, click anywhere that is not an outline or highlighting box/marker. In other words, click any white space. You can also press the Esc key. The highlighting box disappears, indicating that no objects are selected.

Deselecting multiple objects

To deselect multiple objects, click any white space. All selected objects become deselected. To deselect a single object in a group, hold down the Shift key and click on the object.

Selecting next and superimposed objects

Pressing the Tab key when the  tool is active selects the next object in the graphic. Pressing the Shift and Tab keys together selects the previous object in the graphic. Repeatedly pressing the Tab key cycles through all objects. To verify which object is selected, check the status line. The Tab key does not select dynamically-linked groups.

When you have two identical objects superimposed, there is no unique point available for selection. In such cases, look at the status line or Preview window to determine if the object selected is the desired one. If not, cycle through all objects by pressing the Tab key, until you've selected the one you want.

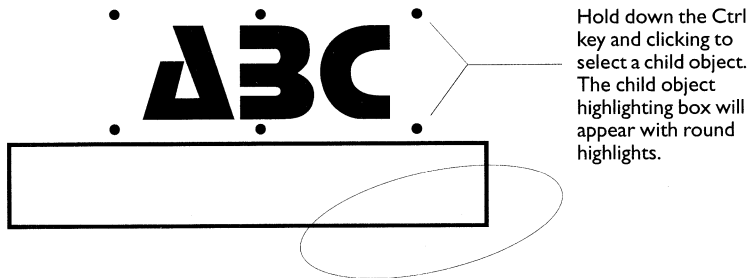
In wireframe mode, the superimposed objects would appear as one. In Editable Preview they can appear as either one or two, depending on the drawing order. If the object with the thinner outline is beneath, it will be hidden. If it is on top, it will be readily distinguishable.

Selecting groups of objects

To select a group of objects, click any object in the group. All operations apply to the entire group. A highlighting box appears around the entire group, and the status line indicates that you've selected a group. Groups are discussed in Chapter 10, "Arranging Objects".

Selecting child objects

Child objects are single objects which are part of a group of objects. To select a child object, hold down the Ctrl key and click the object. The highlighting box that appears around the selected child object is as shown here.



Once you've selected a child object, you can apply the same attributes and transformations to it as you can to any other object. When it is deselected, it becomes part of the group of objects again, so that it is affected by any actions you perform on the group.

Moving, Copying, and Deleting Objects

Moving, copying, and deleting objects are basic operations you'll perform over and over again. Like many operations in CorelDRAW, there are at least two ways to perform them. For instance, you can move objects by dragging them with the mouse or by entering values in a dialog box. You may have the option of using the keyboard—the Del key, for example, can be used to delete objects.

For copying objects, CorelDRAW provides a Duplicate and a Clone command located on the Edit menu. Both commands create replicas. However, changes you make to an object will be applied to its clones, but not its replicas.

The Copy and Paste commands on the Edit menu offer another way to copy objects. They let you copy selected objects to the Windows Clipboard. From there, you can paste them into another drawing or Windows application.


If you make a mistake while performing any of these operations, you can choose the Undo command on the Edit menu to reverse the operation.


Moving objects

You can move objects by dragging them with the mouse; choosing the Move command on the Arrange menu; or by nudging them with the arrow keys on your keyboard.

Moving objects using the mouse

► **To move an object using the mouse:**

1. Select the object using the  tool.
2. Depress the mouse while pointing to a spot on the object's outline, or within a filled area of a filled object in Editable Preview mode. A dotted highlighting box appears.
3. Drag it to the desired location.

You must drag the cursor by at least three pixels to begin moving the object. This is to prevent accidental movement. Once you've exceeded the three-pixel safety zone, the cursor temporarily changes to the move cursor, , and the dotted highlighting box appears. By default, the object does not redraw if you pause while dragging, since redrawing each time you pause may slow you down.

To have the object redraw when you pause, you must change a setting in the CORELDRW.INI file. For details, see the "Software-Related Information" section in the Reference portion of CorelDRAW's online Help.

4. Release the mouse when the object is positioned correctly.

You can save time by selecting and moving with a single mouse action. If you select an object by pressing and holding down the mouse, you can immediately start moving it by dragging. Remember to move your cursor at least three pixels to start the move action.

» **Tip:**

If you use the Ctrl key while moving an object, the movement will be constrained to be either horizontal or vertical from its original starting point.

Constrain is only in effect when the Ctrl key is held down. Therefore, you should release the mouse button before releasing the Ctrl key to ensure the final result is constrained.

Leaving a copy of the original object

If you press the right mouse button while moving an object, a copy of the object is left behind in its original position. This works even if you've assigned another function to the right mouse button using the Mouse option in the Preferences dialog box. Pressing the + key on numeric keypad also leaves a copy behind. The Leave Original option is disabled when the object you are moving is part of a group. For information on grouping objects, see Chapter 10, Arranging Objects. .

Status Line

The Status Line helps you set precise values for moving by giving you a numerical readout of the change in position. Specifically, it shows you how much the object moves horizontally (dx) and vertically (dy), the total distance moved, and the angle of movement.

Moving objects using the Move command

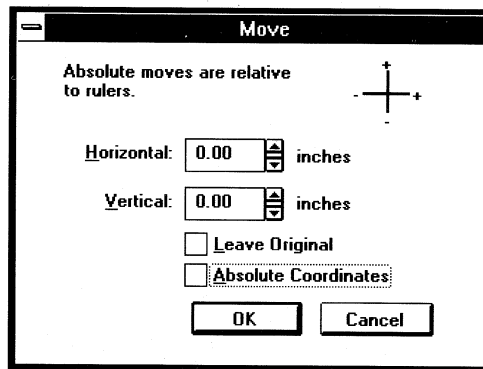
The Move command gives precise control over the placement of an object or group of objects. The dialog box that appears when you select the command allows you to:

- Move objects a specific distance
- Move objects to an exact location by specifying coordinates
- Move a copy of the object rather than the object itself

► To move an object a specified distance:

1. Select the object (or group of objects) you want to move.
2. Choose Move from the Arrange menu.

The Move dialog box appears.



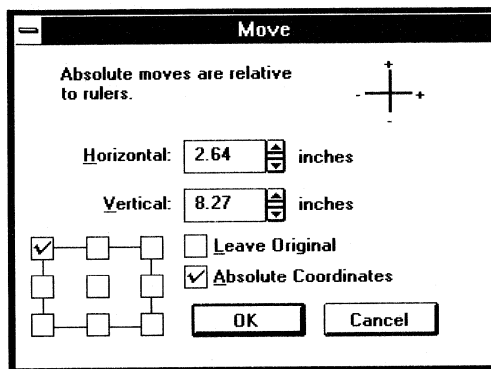
3. Enter the distance you want the object moved in the horizontal and vertical boxes.
Positive values move the object up and to the right; negative values move it down and to the left.
4. Click Leave Original if you want to have a copy of the object left behind. (This option is grayed out if the object you're moving is part of a group of objects. See Chapter 10, "Arranging Objects", for information on grouping objects.)
5. Choose OK.

» Shortcut:

Pressing **Alt + F7** opens the Move dialog box.

► **To move an object to an exact location:**

1. To move an object to an exact location, you must specify a set of coordinates. You'll need to display the rulers to do this. Choose Show Rulers from the Display menu to display them.
2. Select the object (or objects) you want to move.
3. Click Absolute Coordinates. A box similar to the highlighting box that encloses a selected object appears. The nodes allow you to specify which part of the object will lie on the selected coordinates. For example, if you want the object centered on the coordinates, click the center node.



4. Click the desired node.
5. Enter the horizontal and vertical coordinates.
To pinpoint the object's new location before selecting Move, use the ruler crosshairs. This resets the ruler origins (the point where "0" appears on each ruler), allowing you to enter zeros for the coordinates. Refer to the description of the Show Rulers command in Chapter 10, "Arranging Objects" chapter for information about the ruler crosshairs.
6. Click Leave Original if you want to move a copy of the object. Choose OK.

Moving objects in increments by nudging

The cursor keys on your keyboard allow you to move or "nudge" selected objects in the direction indicated by the arrow on the key. If you hold the key down, the object will move in continuous steps. The Nudge setting in the Preferences dialog box controls how far objects move each time you press one of the cursor keys. For details, see Appendix A, "Customizing CorelDRAW".

Copying objects

Objects can be copied using the Duplicate and Clone commands in the Edit menu. You can also use the Windows Clipboard.

Duplicating objects

To create a copy of a selected object, choose Duplicate from the Edit menu. The copy will be offset slightly to the upper right of the original and placed on top as shown below. The new copy is automatically selected.



You can use this feature to quickly create drop shadow effects as shown below:



» **Notes:**

Duplicated clones become clones of the original master.

Clones or masters cut/copied to the clipboard individually are treated as regular objects.

Clones or masters cut/copied to the clipboard as a group are treated as new master/clone sets. For example, changes to the original master are not passed on to the new clone when it is pasted in.

To set the amount of offset for the duplicate's position, use the Preferences command in the Special menu. You may want to set the offset to 0, so that the duplicate is placed right on top of the original object. In that case, instead of setting the offset to 0, select the object and press the "+" key on your numeric keypad.

Cloning objects

Cloning differs from duplicating in that most changes made to the original object (the "master") are automatically applied to the clone. For example, if you change the original's fill, the clone's fill changes as well.

However, if you select a clone and change one of its attributes, the attribute you changed is no longer dependent on the master. For example, when you select a clone and change its fill, the fill will no longer change when you change the master's fill. Likewise, if you stretch a clone, it will no longer stretch when you stretch its master.

To clone an object, select Clone from the Edit menu. As with duplicated objects, the clone is offset by the amount specified with the Preferences command.

To determine which object is the master and which are the clones in a group of objects use the Object menu. When you click a master object with the right mouse button, the Object menu appears, with a command for selecting its clone(s). When you click with the right mouse button on a clone, the Object menu appears, with a command for selecting its master.

Note : You cannot clone a clone. However, you can duplicate one. The duplicate will respond to the alterations you apply to the master.

Cloning objects with special effects

When you apply an Envelope or Perspective to a master object, it is applied to the clone object(s). However, CorelDRAW's other special effects (Blend, Extrude, PowerLine, and Contour) are not applied to the clone object.

Using the Clipboard to copy objects

The Clipboard is a temporary storage area used to transfer text and graphics between Windows applications. You can also use it to move objects between CorelDRAW files.

To cut or copy an object to the Clipboard, select it and then choose Cut or Copy from the Edit menu. (Cut removes the object from the drawing; Copy puts a copy of it on the Clipboard.) Once it's on the Clipboard, choose Paste from the Edit menu to place a copy of the object into another CorelDRAW file or Windows application.

The object remains on the Clipboard until you cut or copy another object onto it from CorelDRAW or from another Windows application. Only one object can be placed on the clipboard at a time.

Note: Objects pasted into other CorelDRAW files maintain their attributes. This isn't always the case when you paste objects into other applications, however. For more information on what attributes may be lost, search for "Clipboard, limitations of" in CorelDRAW's online Help.

» Shortcut:

Ctrl + X cuts objects to the Clipboard.

» Shortcut:

Pressing Ctrl + C copies selected objects to the Clipboard; pressing Ctrl + V pastes them from the Clipboard.

Deleting objects

To delete an object, select it and then choose Delete from the Edit menu, or press the Del key.

You can use the Cut command to remove a selected object and place it on the Clipboard.

Viewing Your Work

CorelDRAW provides two ways of viewing your work on the screen: Editable Preview and wireframe view. In Editable Preview, objects are displayed in full color with all their attributes showing. Wireframe view shows objects as skeleton outlines for faster screen redrawing.

In both views, you can magnify or reduce the size of a drawing to get a closer look at some detail or to get an overview of everything on the page. To see what lies outside the current viewing area, use the scroll bars to move different parts of your drawing into view.

If you're working on a multi-page drawing, you can have facing pages displayed on screen.

CorelDRAW also features an extensive set of commands and preference settings for controlling the display of objects. You'll find the following ones especially useful when working on complex projects:

- Layers lets you organize drawings in layers and display only those layers you're currently working on.
- Interruptible Display saves time by allowing you to choose a menu command or tool without waiting for the screen to complete redrawing.
- Greek Text Below displays Paragraph text below a certain size as small squares for faster redrawing.
- Show Bitmaps can be used to conceal bitmaps, which may take a long time to redraw.

Working in Editable Preview or wireframe view

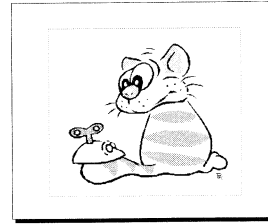
» **Shortcut:**
Pressing Shift+F9
toggles you between
Wireframe View and
Editable Preview

Editable Preview is the default view you'll probably use to create and edit most of your drawing. It shows outlines, fills (except Post-Script textures and halftone screens), and text attributes as they will appear when printed.

To switch to wireframe view, select Edit Wireframe from the Display menu. Only the outlines of your objects are displayed. Depending on your system's capabilities, you may find that editing the wireframes is faster than editing the full-color objects. To switch back to the Editable Preview, choose Edit Wireframe again.



Wireframe View

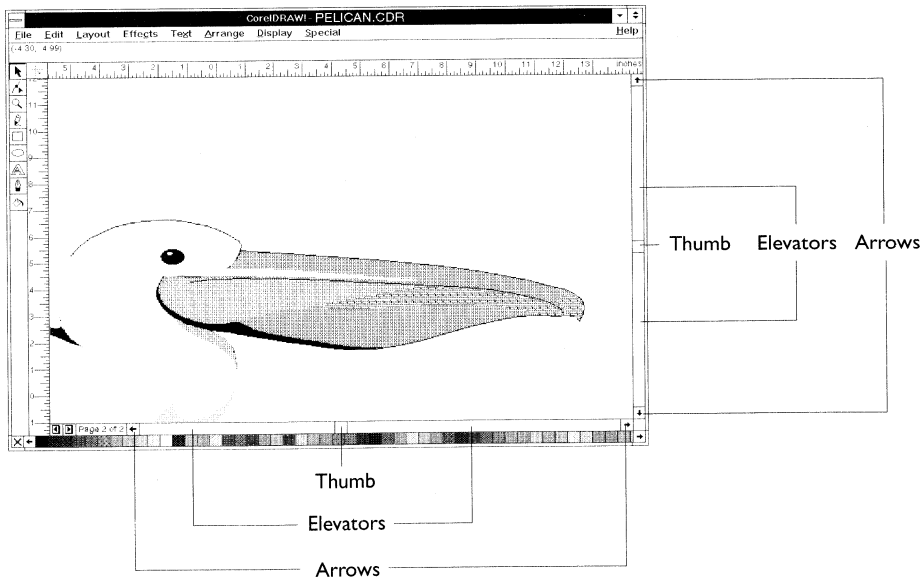


Editable Preview

Scrolling the Drawing Window

The scroll bars at the edges of the screen window let you move your viewing window to see portions of your drawing which are outside the current viewing area. If the rulers are displayed, they automatically pan to reflect your position on the page.

The illustration below shows the three parts that make up the scroll bars:



Scroll bar arrows: Clicking on a scroll bar arrow moves the viewing window over by 10% of your current view in the selected direction. This will cause the objects on your screen to appear to move in the opposite direction.

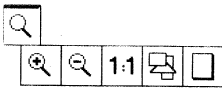
Scroll bar elevators: Clicking on a scroll bar elevator pans you over to a view directly adjacent to your current view in the selected direction.

Scroll bar thumb: The thumb can be dragged to move your view in any direction. If the rulers are displayed, they automatically move to reflect the scroll bar thumb's position.

Auto-panning

CorelDRAW provides an auto-panning option, which you can enable with the Preferences command in the Special menu. When auto-panning is enabled, your page will scroll automatically whenever you drag a selected object or a marquee box beyond the visible portion of the working surface of the Drawing Window.


Using the Zoom tool







Zoom tool

The Zoom tool is actually five tools in one. When you click it, a flyout menu with five options for adjusting the viewing area in the Drawing Window appears.


Zoom in

Using the  tool, you can zoom in on objects to view them at a magnified size, and then zoom out again to view them at their original size.

► To zoom in:

1. Click  and then choose  from the flyout menu. The cursor changes to a .
2. Position the  cursor at the top left corner of the area to be zoomed, as shown here.

» **Shortcut:**

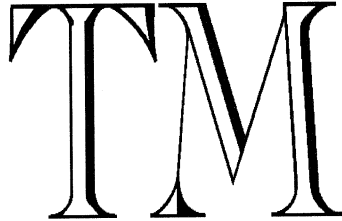
Pressing F2 selects the  option.




3. Depress the mouse and drag the cursor down and to the right. A dotted rectangle appears, referred to as a “marquee”.







4. Continue to size the marquee by dragging the cursor until the objects you want to zoom in on are completely enclosed in the marquee.
5. Release the mouse. CorelDRAW will redraw the screen, zooming in on the enclosed objects. The zoom factor is adjusted so that the entire area enclosed appears in the magnified view.



You can reselect the  tool to get an even closer look.


The maximum magnification depends on your monitor and display card characteristics. One pixel on the screen represents .001" at maximum zoom.

Zoom out


Click , and then choose  from the flyout menu. You are returned to the view you were at before the last zoom-in. If there was no previous zoom-in, or if you changed your view most recently by selecting 1:1, , or , CorelDRAW zooms out by a factor of two.


The zoom-out limit occurs when you reach one of the limits of the 32" by 32" drawing area. The area shown depends on the aspect ratio of your display.

You can customize the right mouse button so that when you click it, your view of the Drawing Window is magnified by a factor of two. For details, see “Assigning a function to the right mouse button” in Appendix A.



» **Shortcut:**
Pressing F3 selects the  option.

» Shortcuts:



Pressing F4 selects the  option.

Pressing Shift + F4 selects the  option.


View all objects

Sometimes your drawings may contain objects that extend beyond the view in the Drawing Window, causing them to appear cut off. To view all the objects in a drawing, click  and choose  from the flyout menu. This changes the current viewing magnification to fit your entire graphic in the displayable screen window. This is a quick way to see everything you've drawn.

View all objects on the drawing page

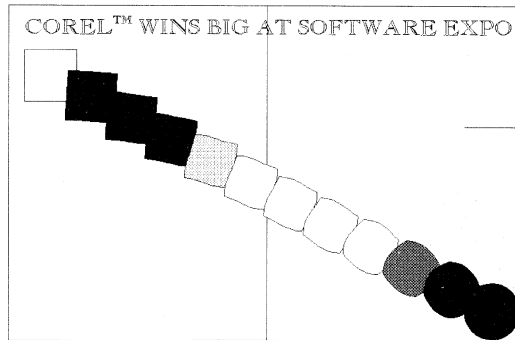
Choosing  from the  flyout menu changes the current viewing magnification to show you the entire drawing page.

View objects at actual size

Selecting 1:1 from the  flyout menu changes the current viewing magnification so that an inch on your screen corresponds approximately to an inch of the printed page. The portion of the page you will see depends on your monitor. Microsoft Windows controls what it believes the actual size is. On some monitors, this may not be exact.

Viewing facing pages

When you're working with a multi-page document, you can have two pages facing one another on your screen. With this view enabled, you can position objects across both pages. You can also blend an object on one page with an object on the facing page. This is handy for folded documents, such as pamphlets and brochures.



Facing pages view allows cross-page effects and object placement.

To view facing pages, choose Page Setup from the Layout menu and click Display Facing Pages. When you choose OK to close the dialog box, you'll see the first two pages of your document displayed side by side. Advance to the next page and the next two appear. For more information about multi-page documents, see "Setting up a new drawing" in Chapter 1 and "Managing multi-page documents" in Chapter 18.

Commands for controlling the display of objects

The following commands allow you to control what, when, and how objects are displayed on the screen.

» **Shortcut:**

Pressing **Ctrl + W** or clicking on a scroll bar thumb refreshes the Drawing Window.

Refresh Window—Display menu

Choosing Refresh Window from the Display menu redraws objects in the Drawing Window, and clears the screen of remnants left over from earlier CorelDRAW manipulations. It also resumes drawing after a display interrupt. You can refresh the Drawing Window from both the wireframe view and the Editable Preview.

Show Bitmaps—Display menu

When you disable Show Bitmaps in the Display menu, bitmap images will display as empty rectangles in wireframe view.

You may want to use this feature after you've traced a bitmap with the **ℓ** tool and are editing the result with the **↵** tool. It can save you time, especially if you are zoomed in on a detail, since the more you zoom in, the longer it takes to redraw.

This command does not affect the way bitmaps are drawn in Editable Preview or when you preview your drawing.

Preview Selected Only—Display menu

CorelDRAW allows you to preview all objects, or selected objects only in the Preview window. Previewing selected objects reduces redrawing time, and allows you to identify superimposed objects. To enable this option, choose Preview Selected Only from the Display menu: A check mark appears beside the menu item. Now, you can select certain items in your drawing and press **F9** to then move to the Full-Screen Preview.

» **Shortcut:**

Pressing **F9** toggles between full screen preview and normal view.

» **Tip:**

You can program the secondary mouse button to toggle between full screen preview and normal display view. See Appendix A for details.

Show Preview—Display menu

Choosing Show Preview from the Display menu displays a fully detailed version of your drawing without any of the CorelDRAW interface showing. The object's fills and outlines are displayed, even if you are drawing in wireframe view.

You'll notice that when the objects are filled and outlined, the time it takes to redraw the screen is longer than in the wireframe view. The screen preview gives you a very good representation of how your graphic will appear on most output devices. CorelDRAW includes some special features that take advantage of the capabilities of PostScript printer drivers, but they can't be displayed in the Preview window. The following features will appear in your printed output, but not in the Preview or Drawing Windows:

- CorelDRAW PostScript Texture fills
- PostScript Halftone Screen effects

Note that PostScript Texture fills and Halftone Screen effects do not appear in the Preview or Drawing Windows because Microsoft Windows does not have a PostScript interpreter built in.

Preferences—Special menu

The Preferences command displays controls for fine-tuning many of CorelDRAW's features. The controls that affect the display of objects on the screen are:

Display : Clicking on this button displays controls that affect the redraw speed of the screen. The Greek Text Below option, for example, speeds up screen redrawing by simplifying Paragraph text below a certain size. For more information about this and other controls, see "Setting display preferences" in Appendix A.


Interruptible display : With this option selected, you can interrupt a screen redraw by pressing any key or clicking the mouse. The drawing will stop after the current object is completed. If the current object is a complex one, such as a Fountain Fill or text string, you may have to wait a moment or two. You shouldn't perform any mouse actions during this time, since they will be stored in the buffer and executed when the Preview stops. Pressing the mouse again will restart the drawing of the Drawing Window.

Layers Roll-Up—Arrange menu

You can display only the layers you are currently working on. This saves time by reducing the amount of screen redrawing. For more information about Layers, see "Using layers" in Chapter 10.

Filling Objects

A fill is a color or pattern inside a closed object. CorelDRAW provides a vast assortment of fills including spot color, process color, fountain (gradient) fills, patterns, and textures. For each fill type, there are controls that allow you to modify the predefined fills supplied with the program. The pattern fills, for instance, can be resized and painted with different colors. You can even create your own patterns using graphics created in CorelDRAW or imported from other programs.

The  tool and its flyout menu are the primary means of selecting fills. There's also a palette along the bottom of the screen from which you can choose spot and process colors. CorelDRAW provides a roll-up for selecting and editing patterns and fountains. Roll-ups stay open on the screen, which makes experimenting with different options and settings quick and easy.

Editable Preview shows your fill selections on screen, unless you have chosen a PostScript texture or halftone screen effect. You need to check the Status Line to determine an object's fill in wireframe view.

With the exception of the PostScript textures and halftone screens mentioned above, all of CorelDRAW's fills will print on both PostScript and non-PostScript printers.

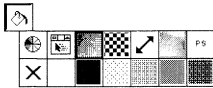
Selecting and applying fills

You can fill objects with any of the following fill options:


- Uniform colors or shades of gray (Spot or Process)
- Fountain Fills (linear, radial, and conical)
- Two-Color and Full-Color Patterns supplied with CorelDRAW or ones created by you
- Halftone Screens
- PostScript Textures
- Bitmap Textures

Methods of selecting and applying fills

CorelDRAW gives you four ways to select fills: a flyout menu, a roll-up, a palette along the bottom of the screen, and an assortment of dialog boxes. Regardless of the method you use, select the object you want to fill first, then choose the fill.

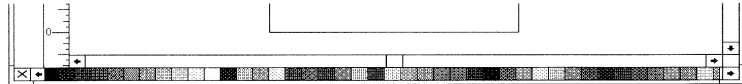



Fill tool

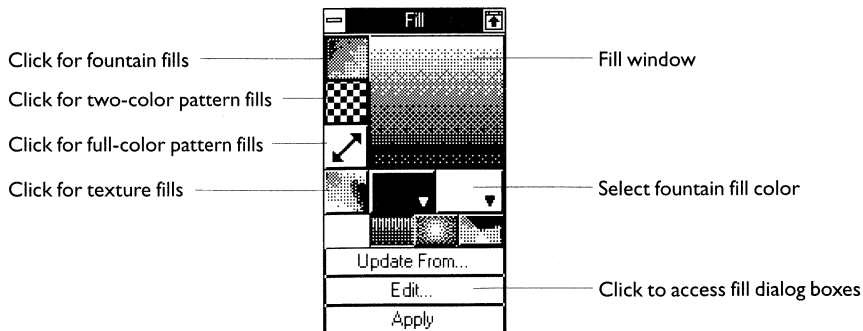
The  tool flyout menu : The flyout menu gives you quick access to white, black, five shades of gray, and an icon (X) for removing fills. For more information about selecting fills from the flyout, see

“Filling with black, white, and shades of gray” later in this chapter.

The on-screen color palette : Lets you select Fill colors by clicking the mouse button. The Show Color Palette command in the Display menu turns the palette on and off and loads it with colors from one of four color palettes. (For a discussion of color palettes, see Chapter 12, “Working with Colors.”)



The Fill Roll-Up : Clicking on  in the Fill tool flyout menu opens the Fill Roll-Up shown below. You can use it to fill objects with fountains, patterns, and textures. Roll-ups are dialog boxes that remain open on your screen even after you’ve made selections from them. This allows you to make numerous changes to your drawing without having to reopen an appropriate dialog box each time. They also let you to see the effects of your selections immediately.



You can also use the roll-up to edit an object's fill—for example, to change the colors in a fountain. To do this, get the object's fill into the roll-up's preview box by clicking the Update From button, and then on the object. Make the required changes, then click Apply to apply the revised fill to any selected objects.

Dialog boxes : These give you access to all available attributes, plus controls for specifying certain attributes with numeric precision. You display the dialog boxes by clicking icons in the ⌘ flyout menu or clicking the Edit button in the Fill Roll-Up.

Making objects transparent

To create objects with no fill, select × from the Fill flyout menu. If you have no objects selected when you select ×, a dialog box will appear, prompting you to choose the types of objects to apply this fill to. Click Graphics and choose OK. Now when you draw objects, you'll see only their outlines. Objects underneath an unfilled object will be visible. To remove the fill from an object, select the object and then click ×. Or, select the object and click the × at the extreme left of the on-screen color palette. The fill portion of the Status Line will show the × icon.

Filling open and closed paths

You can fill closed objects like rectangles, ellipses and text but not open paths. Sometimes an object looks closed, but is in fact an open path whose two ends overlap but are not joined. Check the Status Line. It indicates when a path is open by displaying "Open Path" next to the fill: indicator. To fill an open path, you must close it first by joining the two ends. See "Shaping Lines and Curves" in Chapter 9, "Shaping Objects".

If you fill a curve object that contains both open and closed subpaths, then the open paths will be filled as though the two ends were connected with a straight line. In the first picture, the face and the signature are separate objects. Since the signature is an open path, it will not fill.

When they are combined into a single object using the Combine command in the Arrange menu, both the face and the signature are filled, even though the signature remains an open path.



Filling with black, white, and shades of gray

Choosing black, white or any of the shades of gray in the Fill flyout menu only changes the color of an object's fill; it does not affect the object's PostScript halftone screen settings.

To do your entire drawing in shades of gray, leave the color as BLACK and adjust the % Tint setting in the Uniform Color dialog box. Do the same for outline colors in the Outline Color dialog box. Remember, if you're using a PostScript printer and want to have access to the PostScript halftone screen settings, you must use Spot color to specify your grays. This is because the angles and frequencies are already set for Process colors. A description of PostScript halftone screens follows later in this chapter.

If you are going to print to a black and white printer, or import your drawing into a page layout package which does not support color printing, then you only need to use BLACK and associated tints of gray.

Filling with uniform colors


A Uniform fill is a solid color, including black, white and shades of gray.

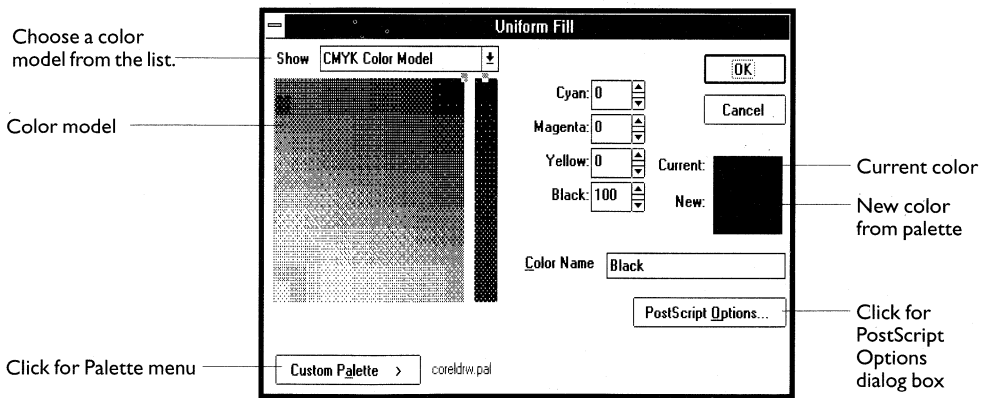
» **Shortcut:**


Selecting an object and then pressing **SHIFT+F11** displays the Uniform Fill dialog box that was last used to specify an object's fill color.

Choosing a fill color

The palette along the bottom of the screen (displayed using the Show Palette command in the Display menu) gives you quick access to predefined colors for filling selected objects with. Click on a color, or use the Fill Roll-Up to choose a color. See the instructions later in this chapter for details.

To mix your own colors or select predefined ones by name, use the Uniform Fill dialog box. To access it, click the  icon in Fill tool fly-out. The following dialog box appears:



This dialog box uses the CMYK process to define colors. It is one of six such dialog boxes. The one above is similar to the one that appears the first time you select an outline color with the  tool.

These dialog boxes contain color selection controls for setting the color of the selected object's fill. A sample of the object's Fill Color appears in the top right portion of the box. Underneath it is the color's name. CorelDRAW lets you define your color using one of two color specification methods: Spot or Process. The Process color method includes three models for creating colors: CMYK, RGB, and HSB. These models are discussed in the Chapter 12, "Working with Colors." You should try to use the same method for all objects in your drawing.


The color you specify in the Uniform Fill dialog box will be applied to the selected object when you click OK. The Uniform Fill dialog box options are discussed in detail in Chapter 12, "Creating Colors and Managing Color Palettes."

► **To choose Uniform colors using the on-screen color palette:**

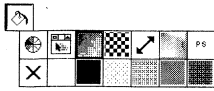
1. If the palette is not displayed, choose Show Color Palette from the Display menu. From the command's submenu, choose the palette you want to use. For more information about color palettes, see Chapter 12, "Working with Colors".
2. Select the object you want to fill.
3. Choose a color from the palette by clicking on it.

To scroll the palette one color at a time, click an arrow at either end of the palette with the primary mouse button. Click with the secondary mouse button to scroll the width of the screen.

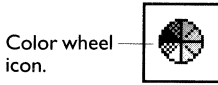
► **To choose uniform colors using the Uniform Color dialog box:**

1. Select the object you want to fill.
2. In the Fill tool menu, click the  icon.
3. Do one of the following:
 - To choose a color by sight, choose one of the palettes from the Show box, then click the color.
 - If you want a lighter shade of a selected Spot color, type or select a value in the %Tint box.
 - If you have a palette displayed and want to choose a color by name, click the Show color names check box, and then click the name. The Search String option lets you locate a Pantone Spot color by typing part of the name. As you type, the list of names scrolls to the color that most closely matches what you type. You do not need to type the word "Pantone".
 - To create a Process color, choose CMYK, RGB, or HSB from the Model box. Create the color you want using the numeric controls or the color adjustment markers. For more information, see Chapter 12, "Working with Colors".
4. Choose OK.

Filling with fountains (gradient fills)



Fill tool.



Color wheel icon.

Fountain fills blend two colors or tints of color. You can use a dialog box or the Fill Roll-Up to create fountains.

► To create fountains using the Fountain Fill dialog box:

1. Select the object you want to fill.
2. Click the Fill tool and then on the Fountain fill icon. The Fountain Fill dialog box appears:

The screenshot shows the 'Fountain Fill' dialog box with the following sections and annotations:

- Colors:** 'From' and 'To' color selection buttons. Annotation: 'Select start and end colors'.
- Center Offset:** 'Horizontal' and 'Vertical' percentage input fields. Annotation: 'Set precise offset values'.
- Type:** Radio buttons for 'Linear', 'Radial', and 'Conical'. Annotation: 'Select a fountain fill type'.
- Options:** 'Angle' (90.0), 'Steps' (20), and 'Edge Pad' (0) input fields. Annotation: 'Click to edit Step value'.
- Presets:** A list box for saving and deleting fill presets. Annotation: 'Add favorite fountain fills to Preset list box by assigning a name, and clicking on Save'.
- Buttons:** 'PostScript Options...', 'OK', and 'Cancel' buttons. Annotation: 'Click and drag inside window to edit fill settings'.

3. Choose the options you want (they're described below), then click OK.

Using the Fountain Fill dialog box

The Fountain Fill dialog box contains the following options for creating fountain fills:

Colors: To determine the range of color for fountain fills, you define the starting and ending colors. You specify colors using the color setting controls and selection palettes. To choose a starting color, click the color button below From. A color palette appears. Select the starting color from the palette. You choose an ending color in the same way, by clicking on the color button below To.

If you are creating color separations using Spot color, you should only create fountains between two tints of the same Spot color. This restriction does not apply if you are printing directly to a color printer like the HP PaintJet. However, if you do specify a Spot color that is not a tint of the other Spot color, the separator will convert both Spot colors to their nearest CMYK equivalent.

You can also specify the intermediate colors of the fountain fill or apply a rainbow effect to your fountain fill using the Custom Fountain Fill dialog box. For more information, see "Creating custom fountains" later in this chapter .

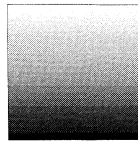
Type: You have a choice of Linear, Radial, and Conical fountains. A Linear fountain changes color in one direction as specified by the Fountain Angle, while a Radial fountain changes color in concentric circles from the center of the object outwards. A Conical fountain

» **Shortcut:**

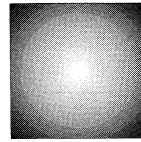
Pressing **F11** opens the Fountain Fill dialog box.

changes color in conical shapes from the start color to the end color in clockwise and counterclockwise directions.

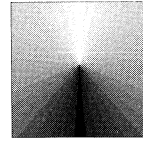
When you click Linear in the Fountain Fill dialog box, a linear fill is displayed in the sample tile. Clicking on Radial displays a radial fill, and clicking on Conical, a conical fill. The difference is shown in the following examples:



Linear Fill



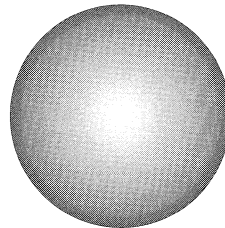
Radial Fill



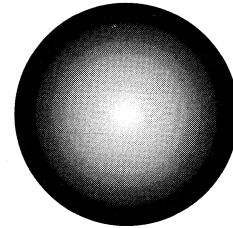
Conical Fill

Edge Pad: When you fill an object with a fountain, CorelDRAW actually fills the object's highlighting box. The object itself acts as a window through which the fountain is displayed. For circles and irregularly shaped objects, this means that the first and/or last few bands of the color may fall outside the object. Edge Padding compensates for this by allowing you to increase the amount of start and end color in the fountain.

When you enter a value in the Edge Pad box, you're telling CorelDRAW what percentage of the object's highlighting box you want filled with the start and end color. The maximum value you can enter is 45%.




30% Edge Padding



20% Edge Padding

» **Note:**

Controls in the print Options and Print & Preview dialog boxes determine the number of stripes printers use to produce the fountain. They also affect the way CorelDRAW displays fountains. For more information, see "Printing Fountain Fills" in Chapter 18.

Steps: Clicking on  beside the Steps box allows you to enter the number of stripes you want the printer to use to print the fountain fill and also the number you want the screen to use to display the fountain fill. The value you enter here overrides the Fountain Steps setting in the Print Options dialog box and the Preview Fountain Steps option in the Preferences Display dialog box. For more information about these settings, refer to "Fountain Steps" in Chapter 18 and "Setting Display Preferences" in Appendix A.

Angle: For linear and conical fountains, you specify the fountain's direction in degrees. The angle describes the direction of gradation from the first color specified to the second color specified. Enter the angle in the Angle box, or use the scroll arrows to specify a value. The angle increases from 0 degrees counterclockwise through 360 degrees. The fountain in the preview box changes as you adjust the angle.

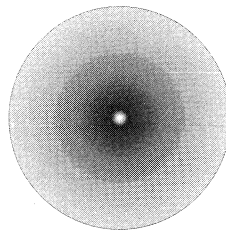
» Tip:

Holding the Ctrl key while dragging constrains your movement to increments of 10% for radial fountains and 15 degrees for linear fountains.

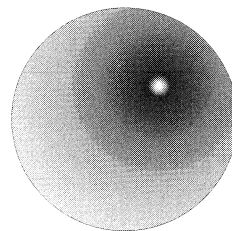
You can also adjust the angle of linear and conical fills interactively. To adjust it for linear fills, point to the preview box and hold down the primary mouse button. A directional line appears. Drag to set the angle you want, then release the mouse button. You adjust the angle for conical fills in the same way, except you use the right mouse button, or the Shift key together with the left mouse button, instead.

If you rotate an object with a linear or conical fountain fill, the fountain angle automatically changes to maintain its original angle relative to the object.

Center Offset: You can offset the center of Radial and Conical fountains fill so that it no longer coincides with the center of the object. To do this, enter percentage values in the Horizontal and Vertical Center Offset boxes. Negative values shift the center down and to the left; positive values shift it up and to the right. The fountain in the preview box shows how the fountain appears with the specified values.



0% Center Offset



15% Horizontal and Vertical Offset

You can also offset the center of radial and conical fills interactively. Point to the preview box and hold down the primary mouse button. A set of crosshairs appears. Drag to where you want the center to be, then release the mouse button.






PostScript Options: Displays a dialog box in which you specify the halftone screen used to print the fountains. This feature is available only if you're using Spot color to create the fountain. For more information, see "Choosing halftone screens" later in this chapter.

» Tip:

Holding down the Ctrl key while moving the crosshairs causes them to move in increments of 10% horizontally and/or vertically.

Creating fountains using the Fill Roll-Up

► To create fountains using the Fill Roll-Up:

1. Access the roll-up by clicking on  in the Fill flyout menu.
2. Click the fountain fill icon, .
3. The three buttons above Update From allow you to specify linear, radial, or conical fills. Clicking on  specifies a radial fill, on  specifies a linear fill, and on , a conical fill.
4. To choose the fountain fill's starting color, click the left color button below the display box. A color palette appears. To choose a color, click it. If you want a color that doesn't appear in the palette, click the More button. The Fountain Fill color options dialog box appears, which offers a greater selection of colors.

5. To choose an ending color, click the right color button below the preview box. A color palette appears. Choose an ending color from the palette in the same way as you choose a starting color. The preview box shows the fountain with the colors you selected.
6. To apply it to the selected object, click Apply.

► **To offset the center of radial and conical fountains:**

1. Click the preview box and hold the mouse button down. A crosshair appears.
2. Move the cursor anywhere in the box to adjust the offset. When you release the mouse button, the fill redraws with the offset you selected.
3. Click Apply to apply the fill to a selected object.

► **To change the angle of a linear fountain:**

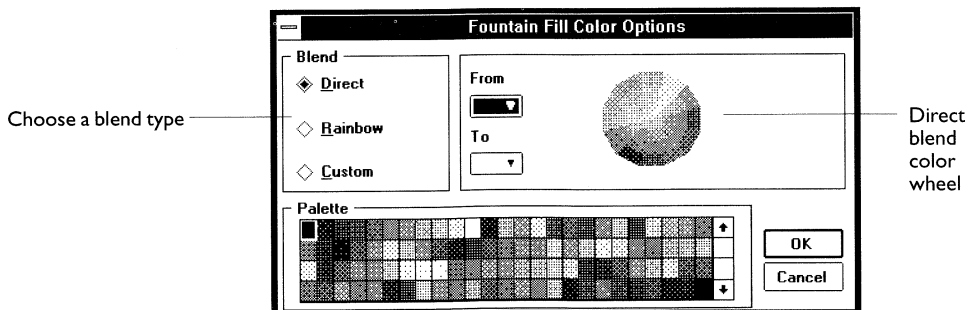
1. Click the preview box and hold down the mouse button. A directional line appears.
2. Drag to set the angle.
3. Release the mouse button when you've rotated the line to the desired angle.
4. Click Apply to apply the angle to the selected object.

► **To change the angle of a conical fountain:**



1. Click the preview box and hold down the right mouse button, or hold down the Shift key and press the left mouse button. A directional line appears.
2. Drag to set the angle.
3. Release the right mouse button (or the left mouse button and the Shift key) when you've rotated the line to the desired angle.
4. Click Apply to apply it to a selected object.

Creating custom fountains

You customize a fountain fill using the Options button in the Fountain Fill dialog box. When you click it, the Fountain Fill Color Options dialog box appears. You can choose from three types of custom fountain blends: Direct, Rainbow, and Custom.



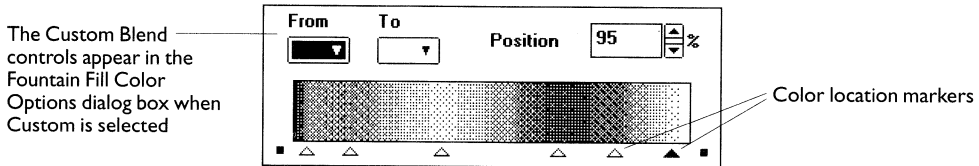
Direct: When you select Direct, CorelDRAW takes the intermediate fountain colors from along a straight line from the start color to the end color across the color wheel. Direct is the default fountain fill type.

Rainbow: When you select Rainbow, CorelDRAW takes the intermediate fountain colors from a path around the color wheel. You can specify the direction the path takes. Click the  icon to specify a clockwise direction, or on  to specify a counterclockwise direction. The fill colors of the start and end colors coincide with the endpoints of the arc. This method gives a wider spectrum of colors to the fountain effect, hence the option name Rainbow.

Custom: Selecting Custom allows you to specify the intermediate colors in the fountain fill. You can specify up to 99 intermediate colors from the Palette at the bottom of the dialog box. As you add colors, the Preview box updates to reflect your choices.

► **To specify the intermediate fountain colors:**

1. Click the Custom button in the Fountain Fill Color Options dialog box. The dialog box changes to reveal the following:



2. Click the small filled square at either of the lower corners end of the color preview strip.

A color location marker (filled triangle) appears along the bottom of the Preview strip. It remains filled as long as it is the currently selected marker. When you click on another one, it becomes the currently-selected marker, and all previously selected markers become unfilled. You can also select several markers at once by holding down the Shift key and clicking on them.

3. Drag the color location marker to where you want to place the intermediate color.

As you drag, the percentage value in the Position box changes to reflect the marker's position. You can also enter a number in the Position box. The currently-selected location marker moves to the specified location.

4. Click a color in the color palette below the strip.

The color is added to the fountain fill in the Preview box at the location of the currently-selected marker. It blends with the start and end colors, or any other intermediate colors surrounding it.

Repeat these steps until you've selected as many intermediate colors as you want. Each time you add an intermediate color, the fountain fill in the Preview strip is updated to reflect your selection.

» **Shortcut:**

To add a color location marker to the Preview box, position the cursor where you want to add the color and double-click.

Double-clicking on the color location marker deletes it.

After you add a color, you can move it to a different location in the fountain by clicking on its marker and dragging it to another position. To delete a color, select its color marker and press the Del key.

5. Click OK.

Saving a custom fountain fill

You can save any fountain fill using the Fountain Fill dialog box controls. To save the fill, click inside the Presets box. A text cursor will appear. Enter a file name and click the Save button (you don't need to enter a file type). The name is added to the list of custom fills available from the Presets list box.

Selecting a custom fountain fill from the Presets list

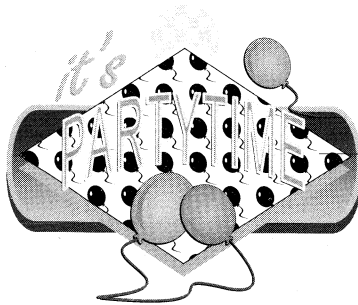
The Presets list contains a list of the fountain fills you've created and saved. To load one, click the Presets box and select one from the list. The fill is loaded into the Fountain Fill dialog box. To delete a fill from the Presets list, select it, and click Delete.

Note : The number you enter in the Steps box of the Fountain Fill dialog box affects the way the appearance of the Custom fountain fill. The Custom fountain is made up of the start and end colors, and those specified at each of the Step divisions. If you enter five Steps, for example, the custom fountain will use the colors at the 0%, 25%, 50%, 75% and 100% positions in the Preview box. If you haven't specified a color at the 25% position, the fountain will use the intermediate color that is there.

The default number of steps CorelDRAW uses to display fountain fills on screen is 20. The default number used to print them is 64. The number you enter in the Steps box in the Fountain Fill dialog box overrides the default for both on-screen display and printing. If no number is specified there, CorelDRAW uses the number specified in the Preview Fountain Steps box of the Preferences dialog box for on-screen display, and the number in the Fountain Steps box in the print Options dialog box for printing.


Filling with two-color and full-color patterns

The  icon in the Fill flyout and Fill Roll-Up fills objects with two-color bitmapped patterns provided with CorelDRAW. Among these are standard hatching patterns used in drafting, landscape design, and cartography. Others are useful for creating backgrounds or motifs, as in the example shown here.




This graphic uses a balloon pattern fill as a background for the text

If you want a pattern that's not contained in the CorelDRAW library, you can create your own with CorelPHOTO-PAINT or other paint programs. For simple patterns, use CorelDRAW's built-in Two-color Pattern editor. You can also design a pattern with the drawing tools and then save it as a two-color or full-color pattern. This is done using the Create Pattern command in the Special menu. Both of these methods are discussed later in this chapter.

In addition to two-color patterns, CorelDRAW offers an extensive selection of full-color patterns. You access them by clicking the  icon in the Fill flyout and Fill Roll-Up. The full-color patterns can be edited like any other object in CorelDRAW.

Pattern fills can be selected from a dialog box or from the Fill Roll-Up.

► To select a pattern from a dialog box:

1. Select the object, and then choose  from the Fill tool flyout. The following dialog box appears:

Click to access Two-Color Pattern Editor dialog box

Resize tiles by changing Width and Height settings

Adjust first tile placement

Offset rows and columns

The preview box in the upper middle of the dialog box is for displaying a sample tile of the patterns. It also shows the tiling of the selected pattern.

2. To view the palette of patterns, click anywhere in the pattern preview box.
3. Double-click a pattern to select it, or click it and then on OK.
4. To apply the pattern to a selected object, click OK.

Using the options in the dialog box, you can adjust the size of the tiles, determine their placement inside the object, and, in the case of two-color patterns, add color to them.

Using the Two- and Full-Color Pattern dialog boxes

In addition to letting you view and select patterns, the Two- and Full-Color Pattern dialog boxes provide options that allow you to import, access a Two-color Pattern editor, and change the colors, tile size, and offset.

Import : Displays a dialog box that lets you create a pattern from an imported graphic. For more information, see “Importing graphics for use as patterns” later in this chapter.

Load (full-color patterns) : Click Load. The Load Full-Color Pattern dialog box appears. The default file type “PAT” appears in the File Name box, since full-color patterns are stored with the extension “PAT”.

Select the drive and directory in which the PAT files are stored (usually the CUSTOM subdirectory).

A list of pattern file names appears in the File Name box. To view a sample tile of the pattern before you select it, click its file name.

To select a pattern, click it and then click OK.

You’ll return to the Full-Color Pattern dialog box, where the pattern is displayed in the preview box. Whether the selected pattern has a color or monochrome image header, it will appear in color in the preview box. You can change the colors of the patterns. For more information, see “Editing full-color pattern fills” later in this chapter.

To apply the pattern to a selected object, click OK. If you accessed the patterns from the roll-up, click Apply.

Create (two-color patterns) : Displays a Two-color Pattern editor which lets you create and edit patterns. For more information, see “Creating two-color patterns fills using the Two-color Pattern editor” later in this chapter.

Back/Front (two-color patterns) : When you color a two-color pattern, you specify a foreground and a background color. The foreground color is applied to pixels in the pattern that were originally black; the background color is applied to those that were originally white. You can apply colors to your pattern from the Two-Color Pattern dialog box.

- To choose a background color, click the color swatch beside Back. A color palette appears. To choose a color from the palette, click it. To choose or mix a color from a more detailed dialog box, click More.
- To choose a foreground color, click the color square beside Front. To choose or mix a color from a more detailed dialog box, click More.

The sample tile in the dialog box shows exactly how the pattern will look with the colors you've chosen. Click OK to apply the colored pattern to a selected object.

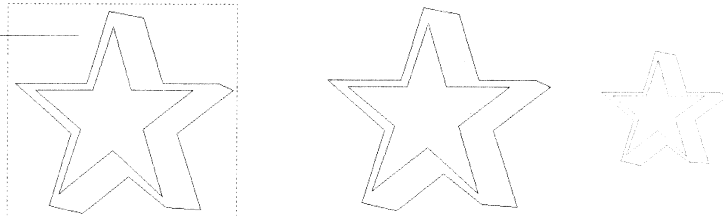
In addition to the colors in the palette, you can use ones that you create yourself. For instructions on creating colors, see Chapter 12, "Working with Colors."

Tile Size : A pattern is made up of tiles that are repeated across an object in much the same way that tiles are on a kitchen floor. By adjusting the tile size, you specify how often the pattern repeats.

To change the tile size, click Tiling in the Two-Color Pattern dialog box. The Tile Size, First Tile Offset and Row/Column Offset options appear. To adjust the tile height and width, enter a value in the Width and Height boxes, or click the scroll arrows until the value you want appears. The size of the sample tile changes to reflect the values as you scroll. When you click OK, you return to the drawing window, and the new tile size is applied to the selected object.

Because the patterns are bitmaps, the tile size you select may affect how the pattern looks when printed. If you make the tile too large, curved and diagonal lines will appear jagged. If you make the tile too small, it will look smudged. The more tiles there are, the longer your drawing will take to print.

The more white space around the graphic, the smaller it will appear when tiled



When you import two-color patterns or create them yourself with the Create Pattern feature, their original width-to-height ratio may not be maintained. As a result, patterns that are significantly longer in one dimension than the other will appear stretched or squeezed out of shape. You can restore the proper proportions by adjusting the tile size.

Because of the difference between screen resolution and printer resolution, the tiles you see on screen may not be an accurate representation of what will be printed. For example, you may see three circles of a pattern in an object on your screen. When you print the drawing, however, there may be three circles and one pixel in that object. To get the closest possible representation of what will be printed, zoom in on the pattern as closely as possible before you print.

First Tile Offset: To adjust the placement of the tiles in the pattern, click Tiling in the Two-Color Pattern dialog box. The Tile Size, First Tile Offset, and Row/Column Offset options that appear allow you to adjust tile orientation.


The X Offset control allows you to shift the entire pattern horizontally; the Y Offset control lets you shift it vertically. You specify the amount of offset as a percentage of the tile height and width. If your tile is one inch high, for example, and you specify a vertical tile offset of 50, the entire pattern is shifted down by half an inch. Likewise, if your tile is two inches wide and you specify a horizontal tile offset of 50, the pattern is shifted over by one inch.

Row/Column Offset: You can also specify the row or column offset by clicking on either Row or Column in the Row/Column Offset box. Row and column offsets are specified as a percentage of the tile's height or width. For example, if you wanted objects in one row of the pattern to be offset a distance which is half the width of the objects in the next row, you would enter a row offset value of 50.

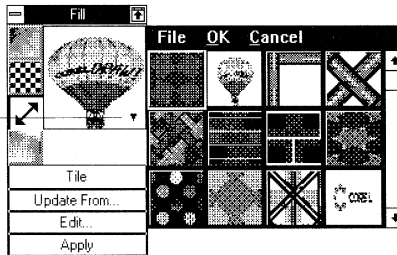
When you've entered offset values, click OK. The offset values are applied to the pattern in the selected object.

Choosing and editing patterns using the Fill Roll-Up

► To choose patterns from the Fill Roll-Up:

1. Click , then click anywhere inside the preview box. A palette of full-color patterns appears.


Click here to open a palette of full-color patterns



2. Double-click a pattern to select it. The pattern will be displayed in the roll-up's preview box.
3. Click Apply to apply the pattern to a selected object.

Before you apply the pattern to an object, you can edit the tile size and offset by clicking on Edit. The Full-Color Pattern dialog box is displayed.

To delete a full-color pattern from the palette, click the pattern and select Delete Item from the palette's File menu.

You select two-color patterns from the roll-up using the  icon.

► To color two-color patterns:

1. Select the two-color pattern you want to color.
2. Choose a foreground color by clicking on the left color button beneath the preview box. A color palette will appear.

3. Click the color you want.
4. Select a background color in the same way, by clicking on the right color button beneath the preview box.
5. To apply the pattern to a selected object, click Apply.
For greater color selection, access the Uniform Fill dialog box by clicking on More.

► **To adjust Tile Size and Offset:**

1. Display the pattern by clicking the Update From button, then selecting the object containing it.
2. Click the Tile button. Two rectangles representing adjacent pattern tiles appears in your object.
3. To size the pattern, drag the node in the bottom right corner of the left square. You can move it in any direction to make the squares larger or smaller.

To adjust the offset, click and hold anywhere within the right square. You can move it vertically with respect to the left square. If you move it down as far as it will go, you can also move it horizontally with respect to the bottom edge of the left square. Drag the right square to the location you want, and release the mouse button. To apply a shift to the whole pattern, click anywhere in the left rectangle and drag.

4. Click Apply.

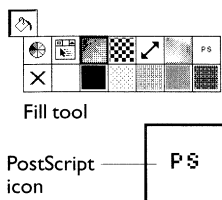
CorelDRAW alters the pattern's tile orientation in accordance with the relative position of the right square to the left.

For greater precision, click Edit and enter numeric values in the Tile Size and Offset boxes.

» **Tip:**

If you hold down the Ctrl key while resizing the pattern squares on screen, the tile size will be constrained to its original aspect ratio.

Filling with PostScript textures



You can fill your objects with sophisticated PostScript filling algorithms if you are printing to a PostScript printer. To access the PostScript Texture dialog box, click PS at the end of the Fill flyout menu.

The PostScript Textures dialog box allows you to select the name of the PostScript effect, and enter up to five parameters. To select a particular texture, scroll through the list of names until the name of the desired texture is visible. Then, click it.

When you click the name, the five parameters automatically change. You can adjust any of the parameters to customize the texture to suit your application.

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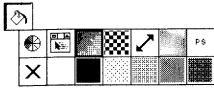
The wings in this graphic contain a PostScript fill.

These textures do not appear in the Drawing Window. Instead, the object is filled with a pattern made up of the letters PS. However, the "Fill:" portion of the Status Line contains the name of the texture used. You must print to see the results of your PostScript Textures selection. To save print time and print only those objects filled with a PostScript texture, use the Selected Objects Only option in the Print dialog box.

When printing color separations, PostScript Textures print as black and opaque.

The current library of PostScript Textures for CorelDRAW is included in Appendix C.

Filling with bitmap textures



Fill tool



Bitmap texture icon

In addition to two-color pattern and PostScript texture fills, you can fill objects with bitmap textures. CorelDRAW provides over 100 textures, such as water colors, gravel, clouds, minerals, recycled paper, and more. Using the Texture Fill's random number generator and color selector, you can choose from millions of variations for each texture. Unlike PostScript texture fills, bitmap texture fills display on your screen, and will print to any printer.

Bitmap texture fills increase your file's size considerably and take a long time to display and print. You may want to avoid filling very large objects with them. For the same reason, you may want to limit the number of objects you fill with a bitmap texture fill. Depending on its memory resources, your system may not be able to create certain bitmap texture fills. If this happens, you'll get the message, "Error generating texture" or "Insufficient memory to generate texture." To get around this problem, you should continue to make the object smaller until you can apply the texture to it. Then, resize the object back to its original size.

Bitmap texture fills display on color and monochrome monitors, however, a monochrome screen may not give you a good representation of the texture.

► To fill an object with a bitmap texture fill:

1. Select the object, then click beside the in the flyout menu. The Texture Fill dialog box shown below appears:

Select a Texture Library

Select a Texture from the list box

Texture attribute settings can be adjusted here





Preview window

Click here to preview attribute changes

Select new colors for textures by clicking here to reveal color palette

2. From the Texture Library box, choose the library that has the texture fill you want. The texture fills stored in the selected library are displayed in the Texture List.
3. Click a texture fill in the Texture List. It's displayed in the preview box.
4. Change any of the texture parameters you wish to change (they're described later in this section).
5. Click the Preview button to see the effects of your selections.
6. Click OK to apply the fill to the selected object.

Changing the texture number, color, and parameters using the random selector

Rather than selecting them yourself, you can let CorelDRAW choose texture parameters and colors randomly. The  icons beside the texture number, color, and parameters let you turn the random selector on and off. To turn it on, click on an  icon so it's selected. It becomes highlighted and changes to the unlocked state, . Now when you click on the Preview button, the texture number and any colors and parameters that are unlocked will change randomly. Each time you click on the Preview button with the  icons unlocked, you'll get a different variation of the texture fill in the Preview box. To apply a variation to a selected object, click OK.

Changing the texture parameters

In addition to a texture's colors, there are many texture parameters you can modify, such as density, softness, contrast, and brightness. When you select a texture, its parameters are listed below the Texture List. You can modify the parameters to alter the texture's appearance. How dramatically its appearance is altered depends on the parameter and on the degree to which you change it.

Texture Number : When you select a texture from the Texture List, it's displayed in the Preview box and its texture number appears in the Texture # box. There are 32,768 texture numbers for each texture fill—from 0 to 32,767. You can experiment with different variations of a texture by entering a value in the Texture Number box and then clicking on the Preview button.

You can save the variation with a name in case you want to use it later. Refer to “Modifying and Saving Texture Fills” later in this section for instructions.

Texture Color : When you select a texture from the Texture List, the colors it contains are displayed below the Preview box. Each color is represented by a color button. To change the color, click the color button and choose a new one from the pop-up palette. To choose or mix a color from a more detailed dialog box, click the More button at the bottom of the palette. When you've chosen a color, the color button is updated to reflect your choice. Click the Preview button to see the effect of the new color on the texture fill.

If you like a certain variation of a texture fill that appears while CorelDRAW is randomly generating different colors, click OK to apply it to a selected object. You can save it under its own name in case you want to use it later. Refer to “Modifying and saving texture fills” later in this section for instructions.

Other Texture Parameters : In addition to texture number and the texture colors, many textures contain parameters that you can adjust. Examples of these are density, softness, grain, contrast, and brightness. Following are descriptions of the functions of some of these parameters.

- **Softness:** Affects the size and number of shapes in the texture. The higher the value, the fewer and larger the shapes.
- **Density:** Affects the amount of chaos in the texture. The greater the density value, the greater the amount of chaos.
- **Grain:** Affects the colors' intensity. The higher the grain, the greater the intensity.
- **Rainbow Grain:** Affects the colors' intensity and shifts the colors' values, creating a rainbow effect. The greater the value, the greater the colors' intensity, and the higher the shift in the color value. This creates a rainbow effect.

You can determine the functions of the remaining parameters by their names.

Transforming objects with bitmap texture fills

When you stretch an object filled with a texture fill, the texture fill resizes along with it. This can produce a rough or "pixelated" effect causing the texture to lose some of its sharpness, depending on how much you resize the object.

To avoid this problem, remove the texture fill from the object, stretch it, and apply the fill again.

When you rotate an object filled with a bitmap texture, the fill does not rotate along with the object, but maintains its orientation.

Modifying and saving texture fills

There are two types of texture fills: Style textures and User textures. The procedure for saving them is different.

Style Textures: A Style texture fill is one from which other texture fills are derived. "Cosmic Energy", for example, is a Style texture, while "Cosmic Energy2" and "Cosmic Energy3" are User textures derived from it. Style textures are stored in the Styles library. You can modify a Style texture using the Texture Fill dialog box and apply it to a selected object. The modified texture is saved on the object only; the original texture fill remains unchanged.

To save the modified Style texture under its own name, click the Save As button. The Save Texture As dialog box appears. Enter a filename of up to 32 characters in the Texture Name box. Then click the library to save it to in the Library List. (You cannot save to the Style library.) You can create a new library by entering a new name in the Library Name box. The new library's name will be added to the Library List. The modified style texture will appear in the Texture List of the library you choose.

User Textures: User texture fills are those derived from Style textures. User textures are stored in the User libraries. When you select a User texture fill, the name of the Style it's derived from appears below the Texture List. You can modify User textures and

» Tip:

When you are experimenting with different settings, the Selected Objects Only option in the Print dialog box saves printing time.

apply them to selected objects. Use the Save As command to save a modified fill under a new name. Use the Save command to overwrite the original fill.

Deleting Texture fills

You can delete User texture fills using the Delete command in the Texture Fill dialog box. You cannot delete Style texture fills.

Blending objects filled with Texture fills



What happens when you blend two objects filled with Bitmap Texture fills depends on whether they are filled with different variations of the same texture style. If they are, intermediate texture fills are generated and applied to the intermediate shapes. For example, if you blend two objects filled with different variations of “Mineral, Swirled 5 Colors”, intermediate texture fills are generated for the intermediate shapes.

If you blend two objects filled with different texture fills, the intermediate shapes are filled with the top object’s fill.

Blending two objects in which only one object is filled with a texture fill results in intermediate shapes that are filled with the fill of the object without the texture fill.

Choosing bitmap textures using the Fill Roll-Up

► To choose bitmap textures using the Fill Roll-Up:

1. Click  in the Fill flyout menu to access the roll-up.
2. Click  at the top of the roll-up. The first texture fill appears in the roll-up display box.

3. Click anywhere inside the display box.




The pop-up palette of texture fills appears.

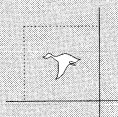
To change to a different texture fill library, choose Load Texture Library from the palette’s File menu. Or, click the Texture Library box above the Update From button and choose a library from the list. To modify a texture fill, click Edit to access the Texture Fill dialog box. To delete a texture fill, select it and then choose Delete Texture from the palette’s File menu. To select a texture fill, click it. It will appear in the roll-up display box.

4. Click Apply to apply the texture fill to a selected object.

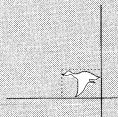
Understanding Pattern Tiling

Patterns are laid out as a series of tiles in the object you are filling. The way you marquee the graphic determines how large it appears *within* the tile: the more white space you include with the graphic, the smaller it will be. If you crop the graphic so that it extends outside the marquee box, the patterns will touch.

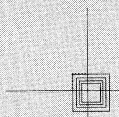
If you want to stagger the pattern as shown in the example, use the Tile Offset options in the Two-color Pattern and Full-color Pattern dialog boxes. These boxes appear when you click on either  or  in the  tool menu.



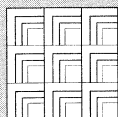
Click, hold, and drag a marquee box around the graphic to create a pattern.



If you marquee just the graphic, the resulting pattern will appear larger.



Marquee just part of the graphic if you want the patterns to touch.




Creating and editing patterns fills

You can edit two- and full-color pattern fills and create them by:

- Using the Create Pattern command in the Special menu
- Using the Two-Color Pattern Editor
- Using the Import command in the pattern dialog box

Creating pattern fills using the Create Pattern command

The Create Pattern command in the Special menu lets you create your own two-color and full-color fill patterns. Two-color patterns you create are added to those already available through the two-color icon in the  menu and the Fill Roll-Up. Full-color patterns you create are also added to the library of full-color patterns available by clicking the full-color pattern icon, provided you save them in the same directory as the rest of the full-color patterns.

You can use virtually any graphic to create your pattern: a simple shape, a piece of text, a colored vector illustration, or even an imported bitmap image. The graphic becomes a *tile* that repeats in all directions inside the object you are filling.

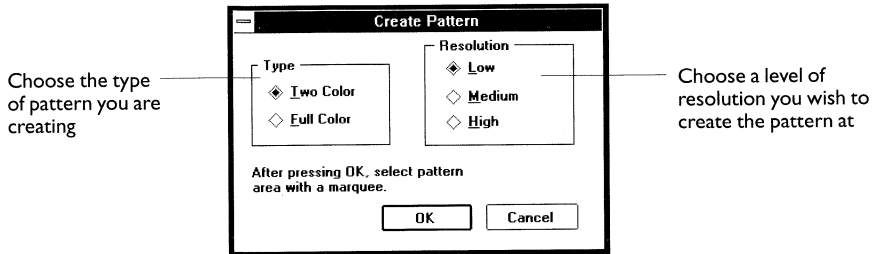
While the patterns can be as complex as you like, the more complex they are, the longer they take to print. This is especially true with two-color patterns, since they're bitmaps, which usually print more slowly than vectors.

When you create a two-color pattern, keep the following in mind:

- Rounded shapes and diagonal lines tend to look rough when printed, especially when you enlarge the pattern by increasing the tile size.
- Two-color patterns that are significantly longer in one dimension than the other get stretched or squeezed out of shape. You can restore the proper proportions though, by adjusting the size of the tiles.
- When you create a two-color pattern, CorelDRAW converts it to a dithered black and white image. If the pattern contained a lot of detail or color, much of it will be lost in this conversion. Color images also tend to suffer from a problem called "Moiré patterns", an unwanted checkered effect that's very difficult to avoid.



► **To create a pattern:**

1. Load the two-color or full-color graphic you want to convert. You can also draw a full-color graphic from scratch using any of CorelDRAW's tools and features. The graphic can be any size.
2. Choose Create Pattern from the Special menu. The following dialog box appears:



3. Choose the type of pattern you want to create. If you choose two-color, you must specify the resolution.
Resolution refers to the number of pixels CorelDRAW uses to represent patterns. As a rule, the higher the resolution, the sharper it looks when printed or scaled. In some cases, however, the resolution you select has little or no impact on the pattern's appearance. Rectangular shapes and vertical or horizontal lines, for example, look equally good at low or high resolution. The same is true of patterns less than a 1/4" square. Larger patterns with curves and diagonal lines are best created at Medium or High resolution.
4. Select the graphic by holding down the mouse button and dragging a marquee box around it.
The way you marquee the graphic affects the tiling of the pattern and how the graphic will look in the object it's filling. For more information, see "Understanding pattern tiling" earlier in this chapter .
5. When you release the mouse button, a prompt appears asking you whether you want to create a pattern from the selected area. Respond appropriately. If you're creating a two-color pattern, the new pattern is automatically added to the pattern library. If you're creating a full-color pattern, another dialog box appears, prompting you to name the pattern.

Creating two-color pattern fills using the Two-Color Pattern Editor

CorelDRAW provides a Two-color Pattern editor for creating two-color patterns. To access the editor, click  in the Fill flyout menu. Then, click Create. Alternatively, from the Fill Roll-Up, click , then on Edit, and then on Create.

The editor consists of a drawing area and two sets of controls for varying the size of the pattern and the drawing pen. Each square in the drawing area represents a pixel. You control the number of pix-

els with the Bitmap Size option, which determines the pattern's resolution.

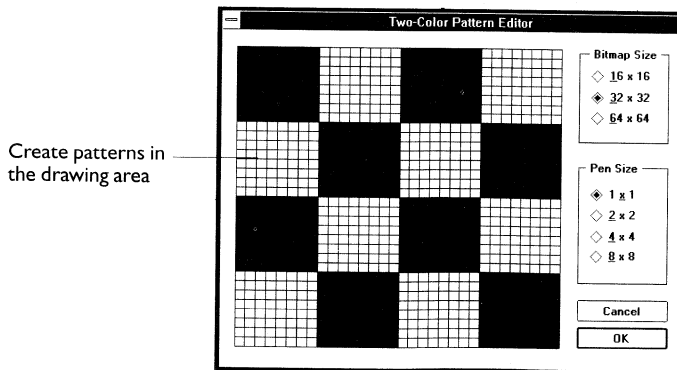
You have a choice of creating a pattern in one of three sizes: 16 by 16, 32 by 32, or 64 by 64 pixels. Use the smallest size to create patterns made up of rectangular shapes and horizontal or vertical lines. For patterns with curves and diagonal lines, use one of the other two sizes. If you click one of the Bitmap Size options, whatever you've drawn up to that point will be erased. If you click OK without drawing anything, you'll create an empty pattern. These take up space in the library palette, so it's best to delete them.

When you draw, click with the primary mouse button to make a pixel black, and the secondary mouse button to clear a black pixel. The Pen Size option lets you specify how many pixels are changed each time you click. Holding down the mouse button as you draw lets you change a wide area of pixels.

As you draw, think about how you want the pattern to appear in the object you are filling. If you want adjacent tiles to touch, as shown in the example, then draw to the edges of the drawing area. Conversely, if you want space around the pattern, leave at least one layer of pixels at the edges of the drawing area uncolored. When you've finished drawing, click OK. The Two-Color Pattern dialog box reappears, with the pattern you just created assigned to the first available palette square. Select the pattern by clicking on it. Choose the Tiling command to adjust the tile orientation. Click the Back and Front buttons to apply foreground and background color.

Using the Two-Color Pattern Editor to edit two-color patterns

Two-color patterns created at low resolution (to a maximum of 64 by 64 pixels) can be edited with CorelDRAW's built-in Two-Color Pattern Editor. To edit higher resolution patterns, you must use a Paint program such as CorelPHOTO-PAINT or the one supplied with Windows.



To edit a pattern using the Two-color Pattern editor, select the pattern from the Two-Color Pattern dialog box so that it's displayed in the preview box. You can select a pattern that comes with CorelDRAW, or one that you've created using the bitmap pattern

editor. Click Create. The Two-color Pattern editor appears, with the selected pattern in the drawing area. (If the pattern's resolution is greater than 64 by 64 pixels, it won't appear in the drawing area.) You edit the pattern in the same way you use the editor to create patterns: click the left mouse button to make a pixel black, and the right mouse button to remove a black pixel. When you've finished editing, click OK. You return to the Two-Color Pattern dialog box, where your edited pattern will be displayed in the preview box.

Creating a two-color pattern from a full-color graphic

Even with their limitations, two-color patterns offer one distinct advantage over their full-color counterparts: you can apply up to two colors to the pattern by selecting them from a dialog box. You can return to the dialog box to change the colors at any time. Changing the color of a full-color pattern on the other hand, is more involved. For this reason, you may want to save some of the simpler full-color graphics you create as two-color patterns.

Transforming objects with full-color or two-color pattern fills

Although an object filled with a two- or full-color pattern can be transformed with any of the tools and features CorelDRAW provides, the size and orientation of the pattern remain unchanged.


Importing graphics for use as patterns

You can create patterns from images in any of the formats CorelDRAW imports, such as scanned images and graphics created in programs like CorelPHOTO-PAINT. All objects in the imported graphic are rendered as dithered black and white images. So, if the graphic contains more than two colors, you may get undesirable results. You can assign foreground and background colors to it, but, you cannot edit the pattern's shape. This editing is best done in the package in which the image originated.

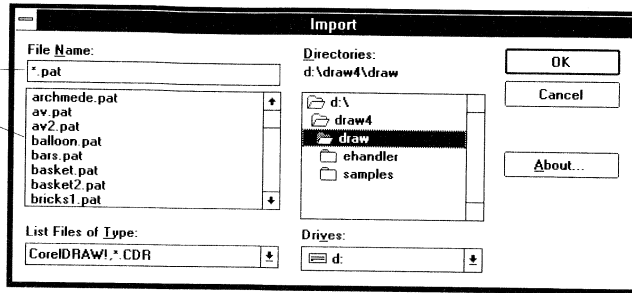
Provided they don't exceed 256 by 256 pixels, the two-color patterns you import will be brought in at the same resolution at which they were created. Those exceeding the limit will be reduced to 256 by 256. If you want to edit the pattern with CorelDRAW's Two-color Pattern editor, you'll have to reduce the resolution to 64 by 64 before importing it. The bitmap quality may suffer when reduced to this lower resolution.

Any white space around the pattern is considered part of the pattern. This affects how large the pattern will appear when it's tiled. Before importing it, you may want to use your Paint program to crop any unnecessary white space.

► To import patterns using the Fill Roll-Up:

1. Click  and then click anywhere in the preview box. Choose Import Pattern from the File menu.
The Import dialog box appears.

Type the name of the pattern file to import or select a file from the listbox



2. Enter the filename in the File Name box and choose the appropriate directory.
3. Click OK. The file you selected will be imported and added to the end of the two-color pattern palette.

To delete a two-color pattern, click it in the pattern palette, and choose Delete Item from the File menu.

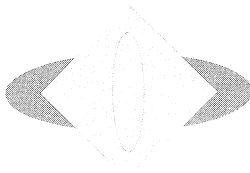
Editing full-color patterns

You can edit both full-color patterns you create and those that come with CorelDRAW just like any other object. For example, you can change the colors in a pattern or reshape one of its elements. To edit a full-color pattern, load it into CorelDRAW by using the Open command in the File menu. (You'll need to choose PAT in the List Files of Type box). You can edit the pattern and then save it using Save or Save As from the File menu. When you return to the Load Full-Color Pattern dialog box, you'll find the revised pattern in the selection list.

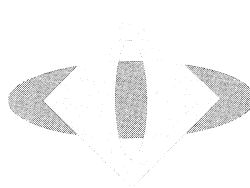
When the pattern appears on your drawing page, it is surrounded by an invisible bounding box (not to be confused with the highlighting box) that defines its size. The size and location of the bounding box window does not change; if you move, stretch, or scale the pattern, the bounding box does not move, stretch, or scale with it. A pattern consists of the contents of the bounding box when you save it. If you move the pattern entirely outside the bounding box, you'll save an empty pattern. If you stretch the pattern, only the part of it that remains within the bounding box will be saved.

Since you cannot see the bounding box, we recommend you move, stretch, or scale the pattern using the Create Pattern command in the Special menu. This method allows you to save the pattern regardless of its size. Create Pattern is discussed earlier in this chapter.

Creating clipping holes or masks





When the light gray square and ellipse are separate objects, you cannot see through the hole.



When the two objects are combined, the inner ellipse becomes transparent.

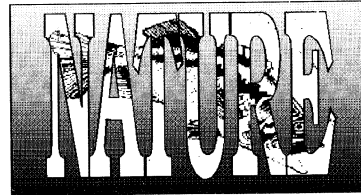
You often want objects to contain holes in the interior, such as the ellipse in the middle of the square shown here. The square consists of two closed curve paths, one defining the outer edge and one defining the hole in the middle. If you want the hole to be transparent so that you can see whatever is behind the square through the hole, you must use the Combine command in the Arrange menu as follows:

1. Select the objects to be combined using the  tool.
2. Choose Combine from the Arrange menu.
3. Fill the resultant object using the  tool.

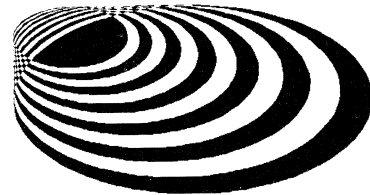
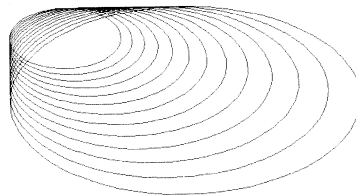
When printing masks and holes created using the Combine command to a Level 1 PostScript printer, you are limited to approximately 125 nodes in your object. If you are using text as your mask, this translates to a limit of about 5 to 10 characters. You can overcome this PostScript limitation by changing the PSComplexity Threshold setting in the CORELPRN.INI file. For details, search for "CORELPRN.INI" in the online Help file.

Some examples

You can create some striking graphic effects using Combine to create clipping holes or masks. In the first example, the word "Nature" and a rectangle are selected and combined into a single object. When the result is filled with a fountain fill, the word "Nature" is cut out of the filled rectangle. This becomes apparent when a bitmap is placed behind.



Below, ellipses are drawn using the Repeat command.

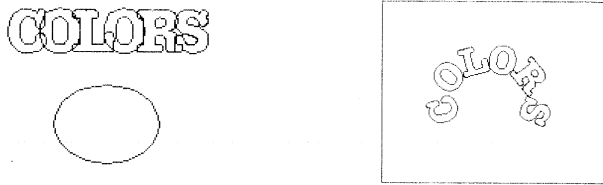


When combined into a single object and filled, a striped effect occurs.

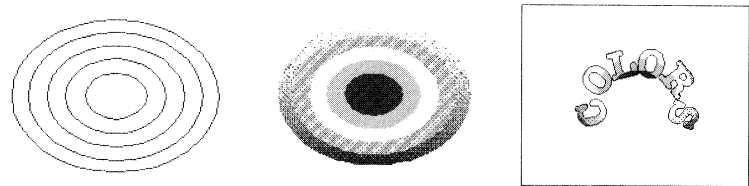
A fountain fill reveals how they are filled as a single object. The white areas are actually transparent regions, as you can see when text is placed behind the object.



In the final example, we created letters striped with various colors. We fit the word COLORS to an ellipse, then deleted the ellipse. Next, we drew a rectangle around the word COLORS. We selected and combined the objects and filled the resulting object with white to create a mask.



To form the color rings, we drew a series of concentric ellipses using the Repeat command. We filled each ellipse with a different fill color. Two of the ellipses were filled with a fountain fill.



Finally, we placed the mask on top of the colored rings, using the Align command in the Arrange menu.

Choosing halftone screens

» Note:

Specifying halftone screen settings for fills of individual objects overrides any screen frequency you select for the drawing using the print Options dialog box (see “Using the Options dialog box” in Chapter 18).

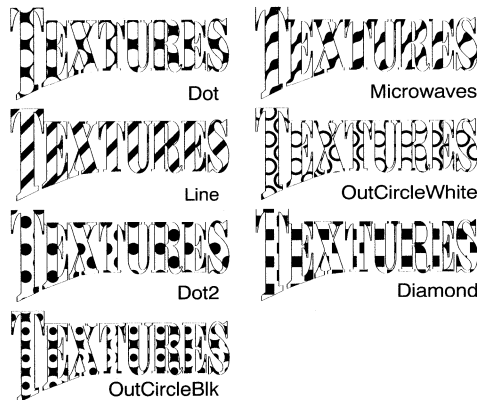
This allows you to assign special screen characteristics to some objects in your drawing, and have the rest print using the printer’s default screen settings.

A halftone screen is a pattern of dots or lines applied to an object for commercial printing purposes or for creating special effects. You can apply screens to individual objects filled with Spot color or to an entire drawing at print time. See “Specifying a screen frequency for your drawing” in Chapter 18. Halftone screens are not displayed on your screen; you must print to see their effect on your drawing.

Halftone screens have three attributes which you can adjust to achieve the desired effects: screen type, frequency and angle.

Screen type

The available screen types include line, dot, circle, and a variety of others. You can get some dramatic effects using the various Halftone Screen types. A few are shown here using 45% tint, with 10 lines per inch at 45 degrees. You must use less than 100% tint to see the halftone effects (40% to 60% is best).



Screen frequencies

Screen frequency is measured in lines per inch (lpi).

You can achieve some dramatic effects by using a low value, e.g., 10, for the screen frequency. If you are sending your files to a high-resolution output device, such as the Linotronic, and you don’t want the screen pattern to be apparent, use a value of 100 or more. If you are outputting to a standard 300 dpi laser printer, choose a value between 60 and 80. If you go higher, you won’t have very many gray levels when you print. Below is a table showing the relationship between screen frequency and the number of gray levels:

If you are reproducing your output for distribution and you will be photocopying, use a coarse screen frequency, maximum 60 lpi.

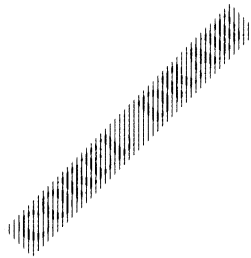


| Screen Frequency | Number of Gray Levels at: | | |
|------------------|---------------------------|---------|----------|
| | 300 dpi | 600 dpi | 1200 dpi |
| 30 lines/inch | 101 | 401 | 1600 |
| 60 lines/inch | 26 | 101 | 401 |
| 100 lines/inch | 10 | 37 | 145 |
| 120 lines/inch | 7 | 26 | 101 |

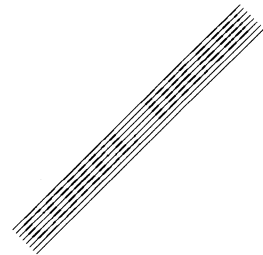
Screen angle

This option controls the angle of the screen. The angle is most noticeable when used with a low Screen Frequency setting.

Be careful if you are creating special effects with coarse line screens, and then rotating, skewing, scaling or stretching the object. It may significantly change the effect, since the Halftone Screen Angle remains constant when you rotate, skew, scale or stretch an object.

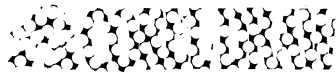


Screen not rotated with object.



Screen angle must be changed to match the angle of rotation.

Below are some examples of the printed results when you change the Halftone screen settings with a 45% Tint:



Line @ 0°, 100 per inch



Dot @ 90°, 10 per inch



Line @ 60°, 10 per inch



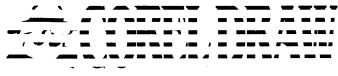
Line @ 90°, 10 per inch



Dot @ 60°, 10 per inch



Dot @ 0°, 40 per inch



Line @ 0°, 10 per inch



Line @ 0°, 40 per inch






Dot @ 60°, 60 per inch



Dot @ 0°, 100 per inch

Specifying halftone screen frequencies affects only objects that have not been assigned other screens from the PostScript Controls dialog box.


► **To apply a screen to an object:**

1. Select the object whose settings you want to specify.
2. Click the  tool. From the  flyout menu, click .
3. Click the PostScript Options button. (It's only available if the object you selected in Step 1 was filled with Spot color.) The PostScript Controls dialog box appears.
4. Choose the screen frequency type you want. Specify the frequency and angle values, as discussed above.
5. Choose OK.

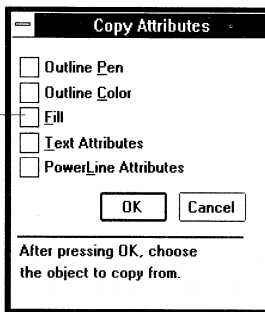
Copying an object's fill



You can copy the fill from one object to another using either the Copy Style From command in the Edit menu, or the Update From button in the Fill Roll-Up. The fill includes the fill color and pattern, along with any PostScript Halftone Screen settings.

► To copy an object's fill using the Copy Attributes From command:


1. Use the  tool to select the object(s) you want to copy a fill to.
2. Choose Copy Attributes From from the Edit menu. The following dialog box appears:

Select the attribute you want to copy. In this case, enable Fill





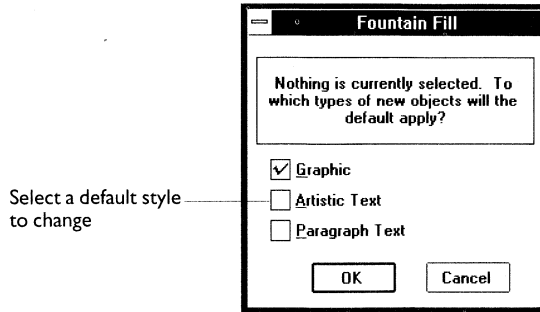
3. Click Fill.
4. Choose OK. Your cursor changes to a .
5. Click the object whose fill you want to copy. The cursor remains on screen until you select an object. You can select an object which is currently part of a group.
6. When you select an object, the cursor returns to the , indicating that the attributes have been copied.

► To copy an object's fill using the Fill Roll-Up:

1. Select the object(s) you want to copy a fill to.
2. Click Update From in the roll-up.
3. With the  that appears, click the object whose fill you want to copy.
4. Click Apply.

Changing the default fill attributes

If you have no objects selected when you choose an icon except for  from the  tool flyout menu, the following dialog box appears:




This dialog box allows you to change the default fill for all new non-text objects, for Artistic text only, or for Paragraph text only. When you've made your selection, choose OK. The appropriate dialog box will appear. Specify the fill you want, then choose OK. When you subsequently add the type of object specified, CorelDRAW fills it with the new default fill.

Changing defaults from the Fill Roll-Up

You can also use the Fill Roll-Up to change the defaults. With no objects selected, click the icon in the roll-up that corresponds to the type of fill you want, select the fill, then click Apply. The dialog box shown above appears, allowing you to specify to which types of objects you want to apply the default fill. Make your selection, then click OK.

Outlining Objects

Just as you can control how objects in your drawing are filled, you can also control how they are outlined. Specifying an outline involves choosing a color plus an assortment of pen attributes, such as line width, line caps, and corner shapes. You can also adjust the pen's nib shape, a powerful feature that mimics the style characteristic of a calligraphic pen.

The color palette at the bottom of the screen is the quickest way to choose an outline color—select an object and click on a color with the right mouse button. To access the pen attributes, you use the  tool and its flyout menu. The menu offers a selection of pre-set outline widths and colors, plus an icon that opens a dialog box with controls for the pen attributes. You can also select colors and pen attributes from the Pen Roll-Up. Because roll-ups stay open on the screen, they are more convenient to use than dialog boxes, especially when you're experimenting with different options and settings.

When working in Editable Preview, you can see your outline attribute selections, except for PostScript halftone screen effects. If you're working in wireframe view, you must select the object and check the status line to determine its outline attributes.

Except for PostScript halftone screens, all CorelDRAW's outline attributes will print on both non-PostScript and PostScript printers.



Selecting and applying outlines

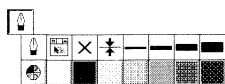
An outline includes color, corner shapes, and line caps. Types of outlines you can apply include:

- None (no outline)
- A line of uniform width or varying width (Calligraphic outlines)
- A solid or dashed line ending with line ending shape
- A patterned line created by applying a halftone screen

Methods of selecting and applying outlines

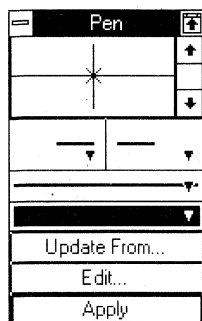
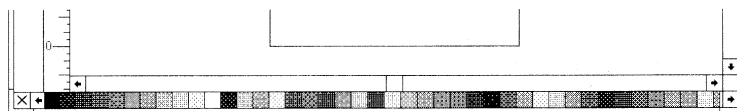
CorelDRAW gives you four ways to select outlines attributes: a flyout menu, a roll-up, a palette along the bottom of the screen, and dialog boxes. Regardless of the method you use, select the object you want to outline first, then choose the attributes.



The  tool flyout menu : The  flyout gives you quick access to various preset widths and colors plus an icon (X) for removing outline attributes. If you select outline colors from the flyout, make sure you read “Outlining with black, white, and shades of gray” later in this chapter.






Pen tool

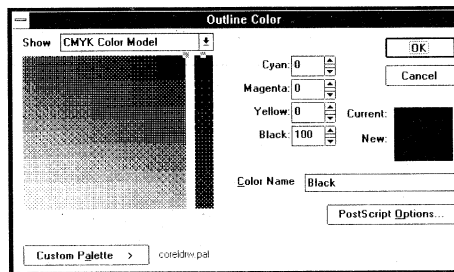
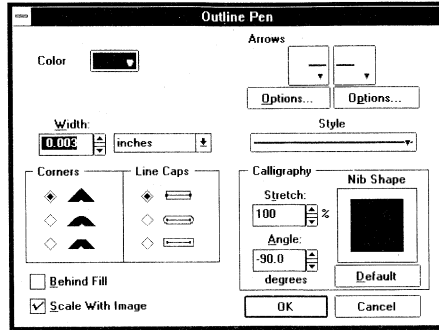
The on-screen color palette : Lets you select outline colors by clicking the right mouse button. The Show Color Palette command on the Display menu turns the palette on and off and loads it with colors from one of four color palettes. For a discussion of color palettes, see Chapter 12, “Working with Colors”.





The Pen Roll-Up : Clicking  on the  tool flyout menu opens the Pen Roll-Up shown here.

The Pen Roll-Up is used to select line widths, line styles, line ending shapes, and outline colors. The roll-up can also be used to edit an object’s outline. First, place the object’s outline into the Roll-Up’s Preview box by clicking on the Update From button, and then on the object. Make the required changes, then click Apply to apply the revised outline to the object.

The Outline Pen and Outline Color dialog boxes : These give you access to all available attributes, plus controls for specifying certain attributes with numeric precision. Display the dialog boxes by clicking the  and  icons on the  tool flyout menu. From the Pen Roll-Up, click Edit to display the Outline Pen dialog box. Click the More button in the roll-up's color palette to display the Outline Color dialog box.



Removing an object's outline

To remove a selected object's outline, choose  from the Outline flyout menu. Or, click the  at the left end of the color palette with the right mouse button. The object's outline is removed; only its fill is visible. The object's outline will not appear in the Drawing Window if you're working in the Editable Preview, but a skeleton outline will appear if you're working in wireframe view.

To remove an object's outline using the roll-up, click the down scroll arrow until a cross in the line thickness field appears. This setting is for no outline. Click Apply to remove an outline from a selected object.

Outlining with black, white, and shades of gray



Choosing black, white, or any shade of gray on the Outline flyout menu changes only the color of an object's outline; it does not affect the object's PostScript halftone screen settings.

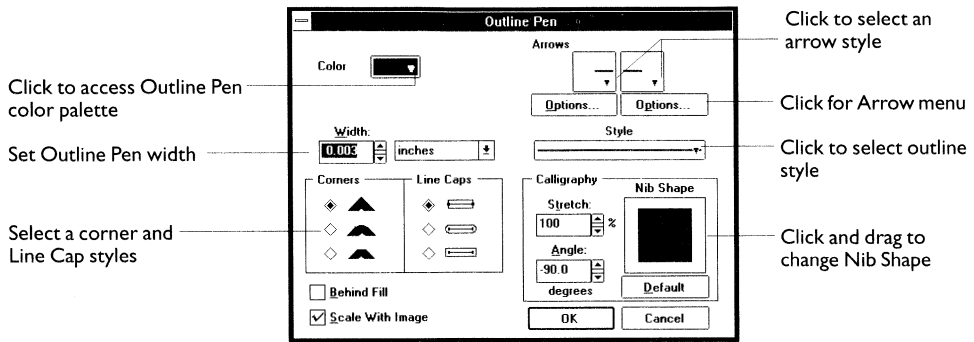
To do your entire drawing in shades of gray, leave the color as black and adjust the % Tint setting in the Outline Color dialog boxes. Do the same for fill colors in the Uniform Color dialog box. If you're using a PostScript printer and want to access the PostScript halftone screen settings, you must use Spot color to specify your grays. A description of PostScript halftone screens follows later in this chapter.

If you print to a black and white printer or import your drawing into a page layout package which does not support color printing, you only need to use the color black and associated tints of gray.

Choosing Outline Pen attributes

► To choose Pen attributes from the Outline Pen dialog box:

1. Select the object you want to outline.
2. Select the  tool.
3. Click the  icon. The following dialog box appears:



4. Choose the attributes you want (they're described below), then choose OK.

Using the Outline Pen dialog box

The Outline Pen dialog box provides options for changing an outline's color, width, and style; adding line ending shapes; creating calligraphic pen effects, and more. The dialog box options are:

Color: Click the color palette icon, then click a color in the palette. Click the More button to display the Outline Color dialog box, where you can create colors and select them by name. See "Choosing an outline color" later in this chapter.

Arrows: CorelDRAW provides a variety of arrowheads and other line ending shapes. You can also create your own with the drawing tools using the Create Arrow command in the Special menu. The method is discussed later in this chapter.

In the Arrows section of the Outline Pen dialog box are two boxes which show the currently selected arrowhead styles. To apply an arrowhead to the start of the line, click the left box, then click an arrowhead. Click the right box to apply an arrowhead to the other end of the line.

You can swap the arrowheads by clicking on either of the Options buttons, and then clicking on Swap.


To remove an arrowhead from a line, click the appropriate box under Arrows and select the first option (a line with no arrowhead).

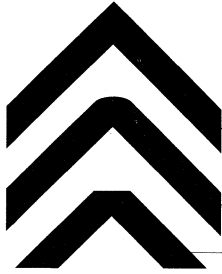
Width: Type or select the line thickness you want. To use a different unit of measurement, select it from the Units box. CorelDRAW automatically converts the Width value.

» **Shortcut:**

Selecting an object and pressing **F12** opens the Outline Pen dialog box.

» **Tip:**

To determine which end is the beginning of a line, click on the line with the  tool and press the Home key. The beginning node is highlighted. To determine which is the end of the line, select it and press the End key.



Corners: This field gives you three choices for drawing outlines which contain sharp corners.

Mitered corner

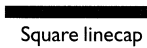
Rounded corner

Beveled corner

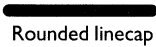
The first option draws a *mitered* corner in which the outer edges of the two joining lines are extended until they meet. You may need to adjust the Miter Limit setting in the Preferences dialog box to prevent corner points from extending too far. See “Setting preferences” in Appendix A for details.

The second option rounds off the point where the two lines meet.

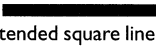
The third option bevels or flattens the corner.



Square linecap



Rounded linecap



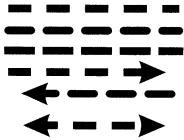
Extended square linecap

Line Caps: This field gives you a choice of three line cap types.

The first option squares the line off at the endpoint (so there is no projection beyond the endpoint). The second option creates a semi-circular arc with a diameter equal to the line thickness of the endpoint. The third option squares off the line and extends it beyond the endpoint for a distance equal to half the line thickness.

When you choose a line cap, it applies to both ends of a line, and all segment endings of dashed lines.

Style: Click the box to display a list of dashed and dotted line styles you can use to outline the selected object. To select a style, click it.



In the examples shown at left, you’ll notice some dashes have rounded ends. These are created by choosing Round as the Line Cap type. To create a dotted line, apply round caps to a style that has short, widely spaced segments. Because round line caps project beyond the endpoints of the dashes, the only way to create dotted lines with perfectly round segments is by editing a file in the CorelDRAW directory called CORELDRW.DOT. You can also use this file to add your own dashed and dotted line styles. For details, search for “CORELDRW.DOT” in CorelDRAW’s online Help.

To change dashed or dotted lines into solid ones, select the first style in the list.

Calligraphy: Calligraphic outlines vary in thickness, giving objects a hand-drawn appearance. For more information, see “Creating calligraphic outlines” later in this chapter.

Outline in front of fill



Outline behind fill

Behind Fill: To draw an object’s outline behind its fill, click Behind Fill. A check mark appears in the box. (Click the box again to disable it.) The effect becomes more noticeable with thicker lines, as shown at left.

This option is particularly important with text. You will normally want it enabled when you are creating outlined text. This way, the recognizable filled region retains the character form as it was originally designed. If the outline is behind the Fill, only half the outline is visible, which results in outlines appearing to be half their specified thickness.

» **Tip:**


Objects with thin outlines in CorelDRAW may not print properly on some printers and from certain software packages. If you have this problem, try using a slightly heavier outline.

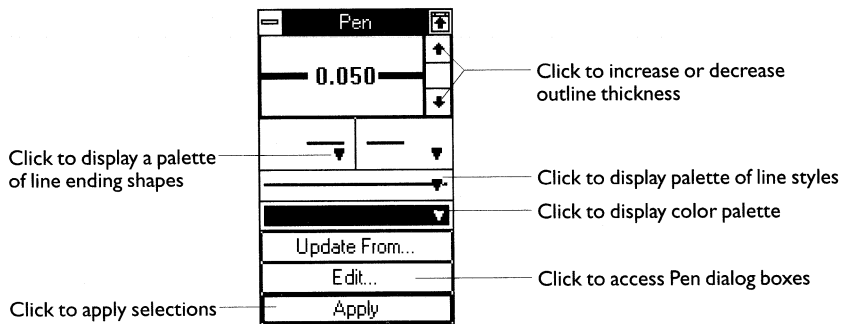
Scale with Image : When you select this option, CorelDRAW automatically changes an object's outline as you scale the object. When the object is enlarged, its outline becomes thicker; when an object is reduced, the outline is reduced also. As you scale the object, CorelDRAW updates the pen width in the dialog box to reflect the new value.

When an object is rotated, and Scale with Image is enabled, the pen shape angle, used for calligraphic pen effects, is rotated with the object so that the object's appearance remains unchanged. The pen shape angle displayed in the dialog box is updated to reflect the new value as you rotate the object. If this option is disabled, the object's outline thickness is not affected when you scale the object and its appearance may be changed.

Selecting Outline Pen attributes from the Pen Roll-Up

► **To select Outline Pen attributes:**

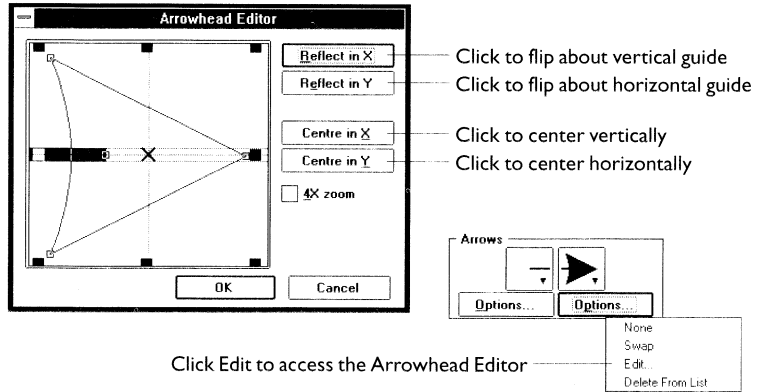
1. Select the object you want to outline.
2. Click  in the Outline Pen flyout menu to access the roll-up.



3. Choose the attributes you want, then click Apply to apply them to the selected object.

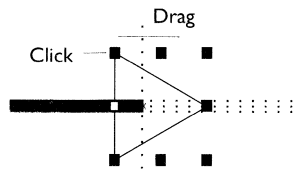
Editing arrowheads

To edit an arrowhead, select it so it's displayed in the Arrows field of the Outline Pen dialog box. Click Options and then select Edit from the drop-down list. The Arrowhead Editor appears. It allows you to size the arrowhead and position it with respect to the endpoint of the line, using the following options:

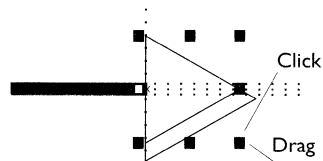


Reference line : The solid black line represents the line the arrowheads will be applied to. While the line in your drawing may be thicker or thinner, the one here has a relative thickness of 1/2 inch. This is to help you gauge the size of the arrowhead with respect to the line. The size of the arrowhead is determined by the thickness of the line in your drawing.

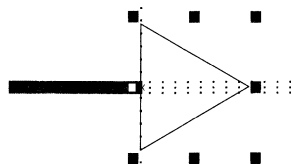
Guidelines : Allow you to position the arrowhead precisely. The node you're using to move the arrowhead snaps to the guideline as you get close to it.



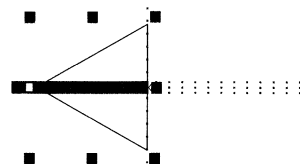
If you want the arrowhead applied to the very tip of the line, click on one of the hollow nodes and drag toward the vertical guideline.



To increase arrowhead size, click on a corner handle, drag diagonally, and...



...click on Center in Y to center the arrowhead on the reference line.



Reflect in X flips the arrowhead vertically.

Moving nodes : Allow you to move the arrowhead by dragging the hollow markers along its outline. You can also move the reference line by dragging the hollow marker at the end of the line.

Stretching/scaling handles : Allow you to stretch the arrowhead by dragging the solid side markers, or scale it by dragging the solid corner markers.

Reflect in X : Flips the arrowhead about the vertical guideline.

Reflect in Y : Flips the arrowhead about the center-most horizontal guideline.

Center in X/Center in Y : Centers the arrowhead horizontally or vertically with respect to the cross at the center of the Arrow Head Editor. Use these commands after stretching or scaling if you want to center the arrowhead on the line.

4X zoom : Magnifies the arrowhead by a factor of four, allowing precise positioning.

When you've edited the arrowhead, choose OK. The new arrowhead is displayed in the dialog box. Choose OK to apply it to a selected line.

Creating arrowheads and line ending shapes

You can use the drawing tools to create your own arrowheads and line ending shapes. You can save up to 100 different arrows in the arrows file.

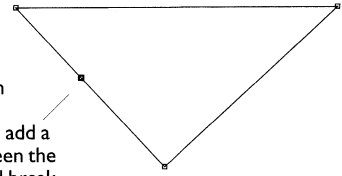
When you draw the arrowhead, don't worry about size. You can adjust it later using the Arrow Head Editor.


Your arrowhead can consist of multiple objects, as pictured here. If you use more than one object, you must combine them with the Combine command before creating the arrowhead.



Arrowheads can be constructed using two or more objects.

To create an outlined arrowhead, add a node between the corners and break the shape there.



To create an outlined arrowhead (rather than a filled one) use the  tool to break the object(s) at a node. If you've drawn objects with angles (e.g., rectangles, triangles), convert them to curves, add a node between the corners, and break the shape at the node.

The Fill and Outline attributes assigned to the arrowhead are irrelevant at this point. When you apply it to a line, the arrowhead assumes the same outline color as the line itself. If you created an arrowhead with no fill, the thickness of the outline will match the thickness of the line.

When you're satisfied with the arrowhead you've drawn, select it, and then choose Create Arrow from the Special menu to save it. This adds it to the end of the list of arrowheads in the Arrowhead Selection dialog box.

Creating calligraphic outlines

At the bottom of the Outline Pen dialog box are the Calligraphy options for controlling the shape of the pen. They let you create calligraphic pen effects for your outlines by allowing you to define the outline pen's shape and orientation.

» **Note:**

When you choose any of the line widths from the Outline Pen flyout, the pen is changed to the specified width with Angle = 0°. Stretch = 100%. Other settings for the selected lines including Corners, Caps, Behind Fill and ScaleWith Image are not affected.

Normally, your outline pen shape is a square of a specified width.

You can make thicker and thinner outlines and change the outline angle by changing the value in the Stretch and Angle fields. To stretch and reduce the outline pen square, enter a percentage value in the Stretch field. When it's set to the default value, 100%, the nib shape is a square. To change the pen's orientation, enter a percentage value in the Angle field. When it's set to the default value, 0%, the pen is horizontal. Click the Default button to quickly reset the angle and stretch to 0° and 100% respectively.

You can also click in the Nib Shape box to change the width and angle of the pen interactively. The cursor changes to crosshairs once it's moved into the Nib Shape box. Hold the mouse down and drag it to change the width and angle of the pen. The values in the Stretch and Angle fields change to reflect the adjustments as you make them. Release the mouse once you have the desired width and angle.

A width of 0.001" prints the thinnest line possible. A line width of 0.001" appears as 1/300" when proofed on a typical laser printer but prints much thinner on higher resolution printers. If you want no line, choose the X (None) setting in the \downarrow flyout menu. You can change the width units by clicking on the unit displayed (e.g., "inches"). A drop-down menu appears. Click one of inches, millimeters, picas and points, or fractional points. The value is automatically converted.



pen = .02", 0° 100%



pen = .04", 42° 14%



pen = .10", 0° 1%



pen = .10", 90° 1%

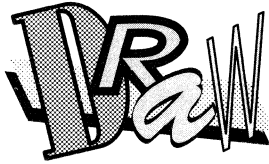


pen = .12", -48° 12%



pen = .12", 42° 12%


If you change the Corners setting to round corners, the pen shape display changes to an ellipse.

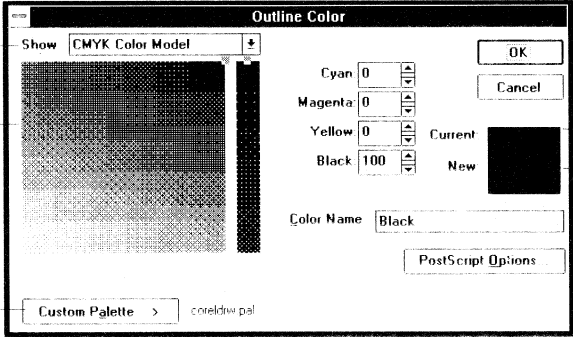


The example below shows how different outline pen shapes can affect the appearance of text. Notice that the “D” has rounded corners; the “R” has a thick outline with miter corners in front of the fill; the “a” has a calligraphic pen with the outline behind the fill; the “W” has a thin outline on top of the fill with rounded corners.

Choosing an outline color

The palette along the bottom of the screen (displayed using the Show Palette command in the Display menu) gives you quick access to predefined colors for outlining with. Click on a color with the right mouse button. You can use the Pen Roll-Up to select colors. For details, see “Choosing an outline color from the Pen Roll-Up” later in this chapter.

To mix your own custom colors or select predefined ones by name, use the Outline Pen dialog box. To access it, click the  icon in Outline Pen tool flyout, or click Edit in the roll-up and click More. The following dialog box appears:




Select a color model from the list box

Click and drag in this window to create a custom color...

...or, click to select a color from the palette

Displays current and new outline

Enter new color name for custom colors

This dialog box uses the CMYK process to define colors. It is one of six different dialog boxes you can use. The one shown above is almost identical to the dialog box that appears the first time you select a Uniform Fill Color using the  tool.

These dialog boxes contain color selection controls for setting the color of the selected object's outline. A sample of the object's Outline Color appears in the top right portion of the box. Underneath it is the color's name.


CorelDRAW lets you define your color using one of two methods: Spot or Process. If you choose the Process color method, three models for creating colors become available: CMYK, RGB, and HSB. (These models are discussed in detail in the Chapter 12, “Working with Colors”.) You can change from one to the other at any time. However, you should use the same method for all objects in your drawing if possible.

The Outline Color dialog box that is displayed anytime *after your first use of CorelDRAW* will be the one you used most recently. The color you specify in this dialog box will be applied to the selected object when you choose OK. The Outline Color dialog box options are discussed in detail in Chapter 12, “Working with Colors”.

Choosing an outline color from the Pen Roll-Up

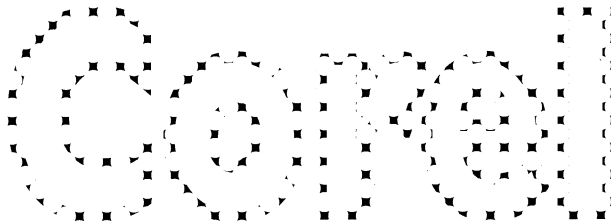
The Pen Roll-Up offers another way of selecting outline colors.

► **To choose an outline color from the Outline Pen Roll-Up:**

1. Click  in the Outline Pen flyout menu to access the roll-up.
2. Click the bar above Update From. A pop-up color palette appears. Click More to access the Select Color dialog box for additional colors.
3. To select a color, click it. To apply it to the outline of a selected object, click Apply.

Choosing halftone screens

If you are printing to a PostScript printer, you can fill an outline with a halftone screen pattern. This option is available only if your outline color is a Spot color. The controls for specifying halftone screens are accessed by clicking the PostScript Options button in the Outline Color dialog box. These controls are identical to those used to specify screen patterns for object fills. For more information, see “Choosing halftone screens” in Chapter 6.





Graphic outlined with halftone dot screen.

Copying an object's outline

CorelDRAW allows you to quickly copy an object's outline from one object to another.



► To copy an object's outline:

1. Use the  tool to select the object(s) you want to copy an outline to (the destination).
2. Choose Copy Style From on the Edit menu.
3. Choose Outline Pen and/or Outline Color. Choose OK.
4. The cursor changes to a special  cursor.
5. Click the outline of the object from which you want to copy the attributes (the source). If the object is filled, you can click either the outline or interior. The special cursor remains on the screen until you select an object.
6. When you've selected an object, the outline attributes are assigned to the destination object.

Copying an object's outline using the Pen Roll-Up



The Outline Pen Roll-Up provides a quick way to copy outline attributes from one object to another.

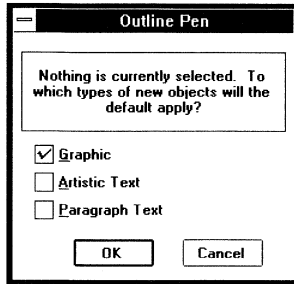
► To copy an object's outline using the Pen Roll-Up:

1. Access the Roll-Up from the  flyout menu.
2. Select the object(s) you want to copy an outline to (the destination).
3. Click Update From in the roll-up.
4. With the  that appears, click the object that you want to copy the attributes from (the source).
5. Click Apply.

The outline attributes are copied to the selected destination object.

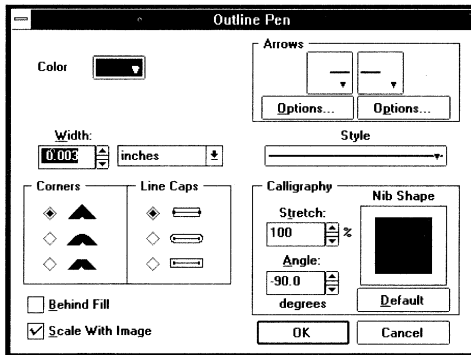
Changing the default outline attributes

When you add an object to your drawing, CorelDRAW automatically draws it with the outline attributes you select in the Outline Pen dialog box. To change these, make sure no objects in your drawing are selected, and click  in the  flyout menu. The following dialog box appears:



» **Shortcut:**
Pressing *F12* opens either of the Outline Pen dialog boxes shown here.

In this dialog box, you choose whether to set outline attributes for all objects, Artistic text only, or Paragraph text only. Subsequent objects will be drawn with the attributes you've specified for the particular object type. You can change the outline attributes as often as you like. Make your selection, then choose OK. The following dialog box appears:



Using the controls in this dialog box, you specify outline attributes such as the shape and thickness of the pen, and the color and style. You can also choose line ending shapes to apply to the ends of your lines.

Changing defaults from the Pen Roll-Up

To change the default outline attributes from the roll-up, make sure no objects are selected, then access the roll-up from the Outline flyout. Using the roll-up's controls, specify the default outline attributes, then click Apply. The Outline Pen for New Object dialog box appears. Assign the default attributes to either all objects, Artistic text only, or Paragraph text only by clicking the appropriate option. Choose OK to apply the changes.

Transforming Objects

Transforming an object in CorelDRAW means to change its orientation or appearance without altering its basic shape. The transformations you can apply are: Stretch, Scale, Rotate, Skew, and Mirror.

You can perform any of these transformations with the mouse or by choosing commands on the Effects menu. Using the command option allows you to enter exact values for precise transformations. Some precision is also possible with mouse transformations. For example, rotating an object while holding down the Ctrl key forces it to rotate in increments of 15 degrees (or any amount you specify).

As you transform objects with the mouse, you'll notice that it's the object's highlighting box that follows the cursor and not the object itself. This is done to keep the program's operating speed up. When you release the mouse, the object is redrawn in its new form.

Whether you use the command or mouse option, CorelDRAW can transform a copy of the object rather than the object itself. With a command, this is done by selecting an option in a dialog box. With the mouse, just press the + key on the numeric keypad or the right mouse button as you're dragging.

Note: The Move command is discussed in Chapter 4, "Moving, Copying, and Deleting Objects".

Rotating and skewing objects

Rotating an object turns it clockwise or counterclockwise at the angle you specify. Skewing slants the object. You can rotate and skew objects by dragging them or by entering values in a dialog box.



When you first select an object, the normal stretch/scale highlighting box appears. You can recognize it by its handles. To rotate or skew an object, you must enter the Rotate/Skew mode by:

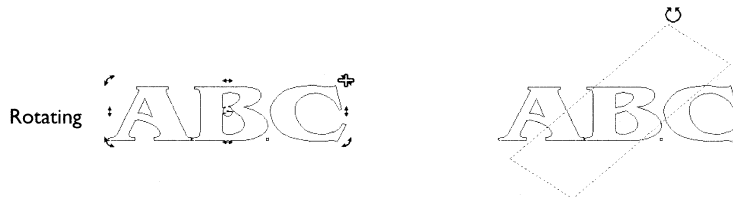
- Clicking once on the outline of a selected object, or,
- Double clicking on the outline of an unselected object.

This method allows you to change quickly and easily between Stretch/Scale and Rotate/Skew operations. You can move an object when it is in either mode.

► To rotate or skew an object using the mouse:

1. Enter Rotate/Skew mode, as described above.
2. Move the cursor over one of the corner handles until it changes to a + .
3. Rotate the object about its center of rotation by dragging the selected handle in the desired direction.

A dotted highlighting box represents the object while you are rotating it.



4. Release the mouse when the object is at the desired angle.
The object is redrawn. To leave a copy of the original object, press the + key on the numeric keypad or press the right mouse button before you release the mouse.



When you've rotated or skewed the object, the highlighting box is redrawn to fit the new object, but with sides that are horizontal and vertical. This makes it difficult to return to the original orientation of the object, so you should make sure that you want it transformed. If not, select Undo from the Edit menu before proceeding.

» Tips:

Holding down the Ctrl key as you drag constrains the angle to increments of 15 degrees.

You can change this angle with the Constrain Angle command in the Preferences dialog box. (See "Setting preferences" in Appendix A)

Using the Status Line with Rotate & Skew

The Status Line helps you set precise values for rotating and skewing by giving you a numerical read-out of the angle. If you are rotating an object that has already been rotated, the displayed angle refers to the value of the current rotation, not the cumulative angle of the object.

» **Shortcut:**

Pressing **Alt + F8** opens the Rotate & Skew dialog box.

► **To rotate or skew an object using the Rotate & Skew command:**

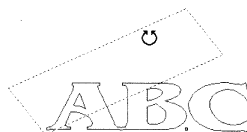
1. Select the object(s) you want to rotate or skew.
2. Select Rotate & skew from the Effects menu.
3. Type or select the angle you want in the numeric entry boxes. If you want to leave a copy of the original object, click Leave Original.
4. Choose OK.

Moving an object's center of rotation

A special marker appears in the center of the selected object's highlighting box. This marker represents the *center of rotation*. You may move the center by dragging it. Only the center point moves. Rotate the object about the new center of rotation by dragging one of the highlighting box's corners in the desired direction. Once you move an object's center of rotation, the center remains where you last placed it.



Drag



Stretching, scaling, and mirroring objects

» Tips:

Holding down the **Ctrl** key as you drag stretches/scales in increments of 100%.

Holding down the **Shift** key stretches/scales from the center of the object out.



Holding both keys down applies both actions.

“Stretching” refers to changing an object’s shape by lengthening or shortening it in one direction, causing the object’s aspect ratio to change. “Scaling” refers to changing an object’s length and width at the same time, maintaining its aspect ratio.

Mirror refers to a special type of stretching. If you drag one of the side handles right across the object so that it appears beside the original object, you’ll create a reflection.

Note: CorelDRAW uses the object’s center as a reference when transforming with the Stretch & Mirror command, and a corner handle on the highlighting box when stretching and scaling with the mouse.

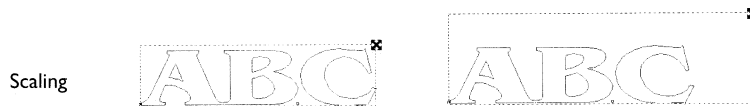
► To stretch or scale an object using the mouse:

1. Select the object using the  tool.
2. Move the cursor over one of the side, top, or bottom handles to stretch the object, or one of the corner handles to scale it. The mouse pointer changes to a .

If you have been rotating or skewing the object, you can return to stretching and scaling by clicking anywhere on the selected object’s outline.



3. Drag the handle in the desired direction. A dotted highlighting box will grow or shrink as you drag.



4. Release the mouse when the object is the desired size.

► To mirror an object:

- Hold down the **Ctrl** key while dragging a side handle across the object, instead of away from it.



► To stretch, scale, or mirror an object using the Stretch & Mirror command:

1. Select the object(s) you want to stretch or scale.
2. Choose Stretch & Mirror from the Effects menu.
3. To stretch an object, type or select the amount of vertical or horizontal stretch you want.

» Shortcut:

Pressing **Alt + F9** opens the Stretch & Mirror dialog box.

To scale an object, type or select equal values for horizontal and vertical stretch.

To create a mirror image, choose either the horizontal or vertical Mirror option.

Select Leave Original to transform a copy of the selected object while leaving the original behind.

4. Choose OK.

Note: When you scale an object, CorelDRAW scales the thickness of the Outline automatically, provided the Scale with Image option in the Outline Pen dialog box is enabled. However, when you stretch an object, the outline thickness is not maintained, even if Scale with Image is enabled. When you stretch an object, its aspect ratio is not maintained, and the object's outline is scaled only in the direction of the stretch, i.e., either horizontally or vertically.

When you scale an object by dragging the corner handles, CorelDRAW constrains your action to keep the aspect ratio of the object constant. If you want to distort the aspect ratio of an object, stretch it by dragging the side handles.

Using the Status Line with Stretch & Scale

The Status Line helps you set precise values for stretching and scaling by giving you a numerical value. If you are stretching or scaling an object which has already been stretched or scaled, the displayed value refers to the current transformation, and not the cumulative amount. A negative number indicates a reflection.

Clearing transformations

» Shortcut:

Ctrl + Z undoes the last operation.

To reset all rotation and skew transformations to 0°, choose Clear Transformations from the Effects menu. It resets all transformations to 0°, and returns the center of rotation to the object's center. It also resets all scaling and stretching transformations applied to the object since it was first created. This is especially useful if you've applied several transformations to an object, and want to return to the object's original size and orientation.

When applied to a group, this command clears only transformations made to the group; those made to the objects before they were grouped are not cleared.

Note: Clear Transformations clears effects applied with the Rotate & Skew and Stretch & Mirror commands. It does not, however, affect any changes made to an object's position with the Move command in the Arrange menu.

Repeating and undoing the last operation

The Repeat command on the Edit menu allows you to apply the transformation that you just completed to another object.

If your last transformation included leaving a copy of the original, using Repeat also leaves a copy of the selected object.

CorelDRAW keeps track of the transformations you applied during the current session and undoes one each time you choose the Undo command from the Edit menu. The Undo Levels setting in the Preferences dialog box determines the number of transformations you're able to undo. The default is four, and the maximum is 99. For more information, see "Setting preferences" in Appendix A.




Transforming bitmaps and objects with pattern fills


You can rotate and skew bitmaps like any other object. However, the resolution of a rotated bitmap is reduced to 128 by 128 pixels when you're working in the Editable Preview. When you're working in Wireframe View, rotated bitmaps appear as gray triangles with a white triangle representing the bitmap's upper left corner. See "Rotating and skewing bitmaps" in Chapter 16 for more information. . .


You can print rotated and skewed bitmaps on a PostScript and non-PostScript printers.


Although an object filled with a two-color or full-color pattern or a bitmap texture fill can be transformed with any of the tools and features CorelDRAW provides, the size and orientation of the pattern remains unchanged.

Shaping Objects

Objects created with the , , and  tools are constructed from basic elements called paths. A line, for example, is a path drawn between a start point and an endpoint. Circles and rectangles are represented by paths as well.


The  tool allows you to change the characteristics of the path and the endpoints, or “nodes”, which allow you to reshape the object. For example, you can convert a straight line to a curve and manipulate the curve to shape it any way you want.


To edit paths and nodes, you first convert the object to curves. This step isn't necessary for objects drawn with the  tool (they are automatically drawn as curves), nor for rounding the corners of rectangles or for creating arcs and pie wedges from ellipses.




In addition to the  tool, CorelDRAW provides a roll-up that you use to reshape objects. Commands in the roll-up let you add and delete nodes, join them together or break them apart.


Shaping objects with the tool

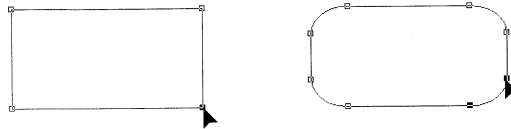
» **Shortcut:**


Pressing the **F10** key selects the  tool.

When you select an object with the  tool, you can move, scale, stretch, rotate, skew, and reflect it. These operations transform an object without changing its basic shape.


To change the basic shape of the object, you use the  tool. You can use the  tool with all the different types of objects. How you use the  tool varies for each object type, as the following examples show:

Modifying a rectangle with the  tool rounds the corners:





Modifying an ellipse with the  tool makes an arc/wedge:








Modifying a line/curve with the  tool changes the shape:




Selecting objects using the tool


To edit an object in CorelDRAW, you must select it first. If an object is selected when you choose the  tool, it remains selected. The cursor changes to a . For a selected object, the highlighting box disappears, and the shape and location of the nodes on the outline may change, depending on the type of object.

If no object is selected, or if you want to select a different object, select it with the  tool by clicking on it. As with the  tool, the part of the object you click depends on the view you are working in and whether the object has a fill. In wireframe view, and for unfilled objects in Editable Preview, you must click the object's outline. For filled objects in Editable Preview, you can click anywhere on the object.



You can edit only one object at a time with the  tool. If more than one object is selected when you choose the  tool, they all become deselected and you have to choose the desired object with the  tool.

For text and curve objects, you can select one or more nodes with the  tool by clicking on them, using Shift-click or marquee selecting them. Selected nodes are displayed as filled black squares.


» **Note:**

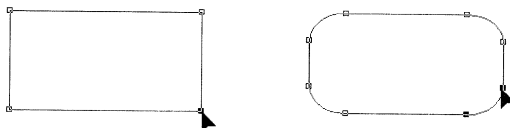
The  tool is also used to adjust text spacing and crop bitmaps. See Chapter 16, "Working with Bitmaps" for details.

Shaping rectangles

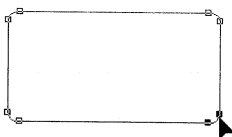
The  tool lets you round the corners of objects drawn with the  tool.

► **To create a rounded rectangle:**

1. Using the  tool, select the rectangle.
2. Drag one of the corner nodes along the edge of the rectangle. As you drag, the four corner nodes will divide into two nodes, each with a rounded corner in between. The more you drag, the rounder the corners become.



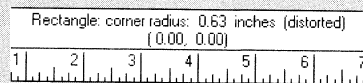
3. Adjust the amount of rounding by dragging one of the nodes towards or away from its associated corner.



Status Line


The Status Line displays the radius of the rounded corner. The units of measurement are controlled by the Grid Frequency units, which are set using Grid Setup in the Layout menu.

If you stretch or skew a rectangle, the rounded corners will no longer be perfectly circular, but will become elliptical.




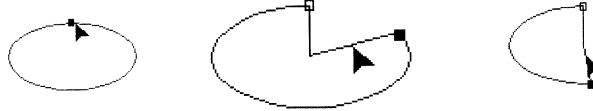
The Status Line radius value will no longer be accurate, as indicated by the word “(distorted)” following the radius measurement.


Shaping ellipses to create arcs and pie wedges

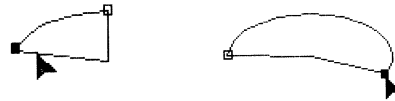
To make an arc or a pie wedge, you first draw a circle or ellipse, and then modify it using the  tool.

► To create an arc or a pie wedge:

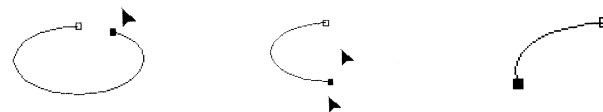
1. Using the  tool, select the ellipse.



2. At the top or bottom of the ellipse is a single node. Drag this node around the edge of the ellipse. As you drag , the node divides into two nodes with the arc in between.



3. Drag either of these nodes to size and position the arc.



If you drag inside the ellipse, you get a pie wedge. If you drag outside the ellipse, you get a simple arc. You can alternate between the two.

Aligning arcs and wedges

To help align arcs and wedges about the center point, the highlighting box remains the size of a full ellipse. This allows you to align several segments about a center point using the Align command in the Arrange menu. You have to surround the ellipse completely (although most of it may not be visible) when using a marquee to select arcs or wedges.

Status Line

The Status Line displays the angle of the nodes at either end of the arc relative to 0°, which is at the 3 o'clock position. The Status Line also indicates the total angle subtended by the arc, assuming an undistorted circle. If the ellipse is not circular, the angle given is followed by "(distorted)". This means that a 45° angle will be an eighth of the way around the ellipse, rather than actually being at 45°.

» Tip:


If you hold down the Ctrl key, the angle of the node will be constrained to 15° increments. You can change this angle through the Preferences command in the Special menu.

Be sure to release the mouse button before releasing the Ctrl key to ensure the final result is constrained.

Converting rectangles, ellipses, and text to curve objects




» **Note:**

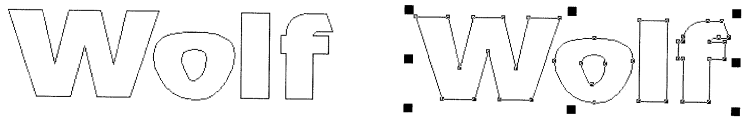
Once an object is converted to curves, the only way to return it to its original object type is by choosing **Undo** from the **Edit** menu. However, choosing **Undo** will only work if the number of subsequent operations you performed since converting the object to curves does not exceed the number of **Undo** levels available.

To convert rectangles, ellipses, and Artistic text to curves, choose the **Convert to Curves** command in the **Arrange** menu. It takes the selected item and reduces it to a single curve/line object so that you can use the  tool to shape it.

Converting Artistic text to curves

You can convert Artistic text to a series of curves. (Paragraph text cannot be converted.) This is especially useful when you want to modify character shapes, perhaps in a logo design.

To convert a text string to curves, select it with the  tool and then choose **Convert to Curves**. The text string is redrawn as a single line/curve object with the nodes showing. You can now use the  tool to add, delete, or move nodes to alter the shape of the characters. Below are two examples of using the  tool to alter or link character shapes.



Once you've converted a text string to curves, you can no longer edit it using the text editing features. CorelDRAW treats it as any other object made up of lines and curves. Therefore, you should use the text features like interactive kerning to position and size your characters first, before converting the string to curves.




To modify only part of a text string such as a single letter, consider creating your word(s) as two separate text objects. This way, you can convert some to curves and leave others as editable text objects.

After applying **Convert to Curves** to a text string, anywhere characters overlap will not be filled. Use **Break Apart** to break the word into separate curves, so that the entire character will be filled.

To create the “counters” (transparent holes) for characters constructed with more than one subpath—the letters “b” and “o” for example, apply the **Combine** command to them.




Shaping lines and curves

The  tool allows you to change the basic shape of a curve by moving the segments that make up the curve or its “nodes” and “control points”. Use the Node Edit Roll-up to add and delete nodes, join two end nodes, change the nodes, type and so on. See “Editing nodes and segments” later in this chapter for details.


Some basic terms and concepts

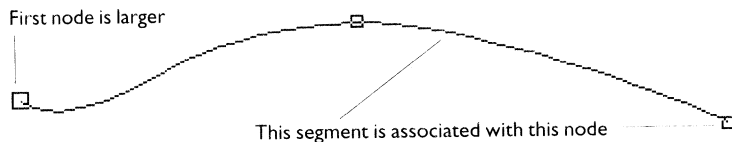
All objects in CorelDRAW are constructed from basic elements called paths. Think of a path as the skeleton that gives an object its underlying shape. The flesh is the outline and fill attributes you apply to the object.

A path can be open, like a line, or closed, like a circle. It can be made up of a single segment or many that are joined. At the end of each segment is a hollow square called a “node”. The “control points” are the small black squares attached to each node by a dashed line.


Only curve objects have nodes and control points that can be freely manipulated. Objects that are not curve objects (i.e., those created with , ,  tools), can be converted to curve using the Convert to Curves command in the Arrange menu.

Selecting the parts of a curve object

When you select a curve object with the  tool, it appears like this.




To indicate the start of the curve, the first node is drawn larger than the others. All other nodes are at the *end* of an associated segment.

Once you’ve selected the curve that you want to edit, use the  tool to select nodes or segments. Most of the selection features, such as Multiple Select, Deselect, and Marquee Select work the same for nodes as they do for objects.

When you select a node, you also select the segment that precedes it in the curve, except if it’s the first node in the curve. Similarly, when you select a segment, you also select the node at the end of it.

The Status Line displays the type of node and its associated segment.

You can select nodes/segments in the currently selected object only. To select a node or segment in another object, you must first click the other object with the  tool.

» Tip:

Pressing the Home key selects the first node on the selected path. Pressing End selects the path’s last node.

► **To select a single node or segment:**

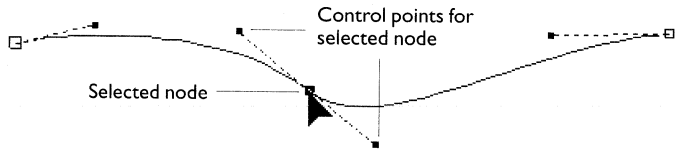
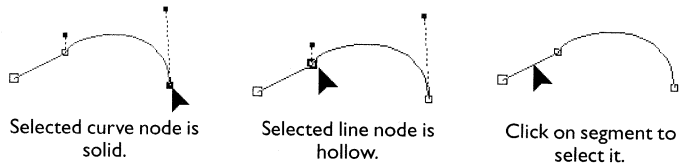
- Click the node or segment using the  tool.

The node you clicked on is highlighted. If you clicked on a segment, a round marker is placed at the point where you clicked. This marker is useful if you are adding nodes to a segment, since it shows you where the node will be added. Control points, which are described later, may also appear if the segment is a curve segment.

The selected node will be highlighted differently, depending on whether the associated segment is a curve segment or line segment, as shown below.

» **Tip:**

Using marquee-select while holding down the Shift key toggles the selection status of any nodes inside the marquee box.




Control points appear when selected.

► **To select multiple nodes or segments:**

- Hold down the Shift key and click the nodes you want to select. The nodes are highlighted, indicating they are selected.

- OR -

- Using the  tool, drag a marquee so that it encloses the nodes you want to select. When you release the mouse, the nodes are selected. You must start your drag on white space.

Once you've selected multiple nodes or segments, you can move or edit them as if they were a single node.

► **To deselect all nodes:**

- Click any white space.

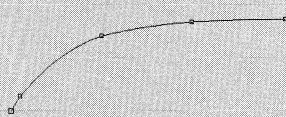
Although the nodes become deselected, the curve remains selected until you select another object.

► **To deselect individual nodes or segments:**

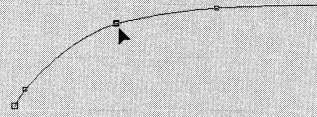
- Click the selected node or segment while holding down the Shift key.

Selecting multiple subpaths

When you select multiple nodes, the Status Line will also indicate whether the nodes lie on one or more “subpaths”. A subpath is a series of segments forming part or all of a curve object. Curve objects may contain several subpaths. Obvious breaks in the curve usually make the subpaths identifiable. However, if the end nodes for two subpaths overlap, it may appear as though they are a single subpath.

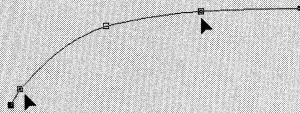


Curve with five nodes and no subpaths.

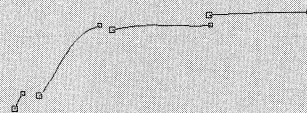


Curve is divided into two subpaths using the Break command. The overlapping end nodes above the ► icon indicate the junctions of the two subpaths.

The number of subpaths is only relevant when you are using the Break Apart or Join commands discussed later.



Curve further divided into four subpaths by using Break at each indicated node.



Subpaths of the curve may be spread apart by moving the end nodes.

Moving segments, nodes, and control points


To alter the shape of a curve, drag the segments or the nodes and control points that comprise it. Normally, you drag the segment to make coarse adjustments to the curve's shape. Finer adjustments are made by dragging the nodes and, finally, the control points.

When moving segments, nodes, and control points, keep the following in mind:

- The curve always passes through the nodes.
- The shape of the curve between nodes is determined by the control points for the two nodes.
- Each node has two control points associated with it, except for the nodes at each end of the curve which have one.
- The control points determine the angle at which the curve meets the node. We call this the “launch angle”.
- The further a control point is from a node, the more the curve sweeps away from the node—that is, the larger the curve.
- The closer a control point is to a node, the less the curve sweeps away from the node—that is, the tighter the curve.
- If the control point is positioned on top of the node, it has no impact on the curve's shape or direction.


Note: The Elastic Mode option in the Node Edit Roll-Up also affects the way a curve responds when you are moving its nodes. See “Moving nodes in Elastic Mode” later in this chapter for details.

► To move a curve segment:

- Click with the  tool on the segment. Hold the left mouse button down on the segment you want to move and start dragging.

When you move a segment, the control points associated with the nodes at either end of the segment move with it.

► To move a node:

- Click with the  tool on the segment. Hold the left mouse button down on the node you want to move and start dragging.

When you move a node, the control points move with it, so that the degree of curvature at the node remains constant (i.e., the angle at which the curve enters and leaves the node is constant).

► To nudge a node:

- Select the node you want to nudge and nudge it by pressing one of the cursor keys on your keyboard. The node is nudged in the direction indicated by the arrow on the key.

When you nudge a node, the control points move with it, so that the degree of curvature at the node remains constant (i.e., the

» **Tip:**

If you hold down the Ctrl key while moving a node or control point, the movement will be constrained either horizontally or vertically.

Make sure you release the mouse button before releasing the Ctrl key to ensure the final result is constrained.

» **Shortcut:**

Pressing Ctrl + F10 opens the Node Edit Roll-Up.

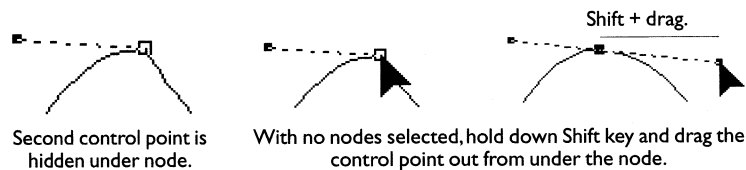
angle at which the curve enters and leaves the node is constant). See “Setting Preferences” in Appendix A for instructions on specifying the nudging distance.

► **To move multiple nodes and segments at the same time:**

- Select the nodes and segments using the Shift-click or marquee selection technique, and drag one of the highlighted nodes. Or, nudge the highlighted nodes using your keyboard’s cursor keys.

► **To move control points:**

1. Click the node whose control points you want to move. Up to four control points appear.
2. Drag the control point until the curve is the desired shape, or nudge it using your keyboard’s cursor keys.



Depending on the type of node, moving one control point may cause the associated control point on the other side of the node to move. The segment type also affects the range of the control point’s movement. See “Making a node smooth, cusped, or symmetrical” and “Changing segments to lines or curves” later in this chapter for details.

Note: A node can sometimes overlap a control point, making it difficult to select. If the control point is on top of the node, move it by clicking the control point and dragging. If the control point is under the node, deselect the node, Shift-click the control point, and drag. Since it’s difficult to tell whether the control point is on top of or under the node, you may need to try both methods.

Moving nodes in elastic mode

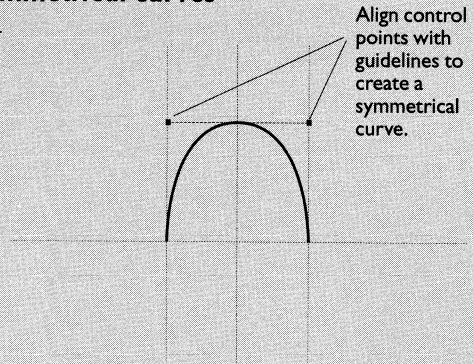
Nodes move in a different manner with the Elastic Mode option in the Node Edit Roll-up enabled. To see how Elastic Mode works, select two or more nodes and double-click one of them to open the Node Edit Roll-up. Click Elastic Mode, then start dragging one of the selected nodes. As you drag, notice the selected nodes move by varying degrees, depending on how far along the curve they are relative to the base node (the node you’re dragging). The control points move in proportion to the nodes so that the curve appears to behave like an elastic, expanding and contracting in response to the movement of the mouse.

Elastic mode also affects selected adjacent nodes when one or both are cusps. The adjacent cusp(s) move proportionally to match the node movement. If the node you move is a cusp, its control points also move proportionally.

Note: Elastic Mode also works for shaping envelopes. See “Shaping objects with Envelopes” in Chapter 13 for details.

How to create symmetrical curves

To create a symmetrically shaped curve, the control points for adjacent nodes must be aligned along an imaginary line between them. The grid and rulers can help you align control points, as shown here.

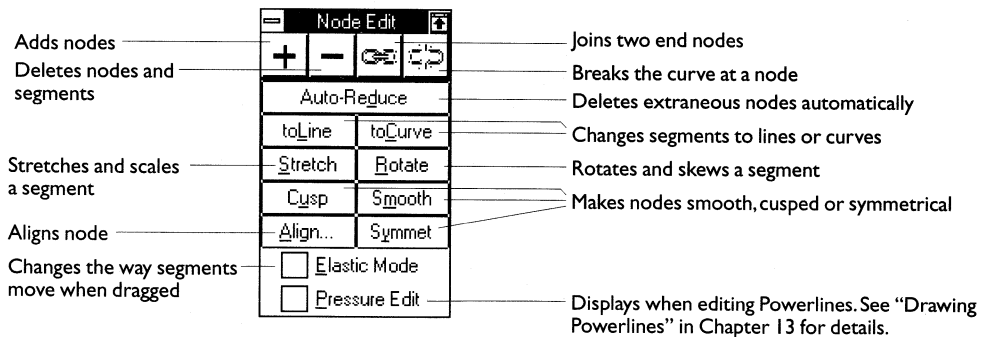


Editing nodes and segments

Aside from moving nodes and control points, all the editing features for curve objects are accessed through the Node Edit Roll-Up.

To open the roll-up, double-click a node or a segment.


As the illustration below shows, the commands in the roll-up allow you to edit the selected node(s) or segment(s) in a variety of ways. The rest of this chapter explains how these commands are used.



Adding nodes to a curve object

Until now, we have discussed changing the shape of an object by moving its nodes and control points. Sometimes, you cannot achieve the desired shape with the existing nodes. In this case, you must add more nodes.

► To add nodes to a curve object:

1. Use the  tool and double-click the node or point along the segment where you want to add a node.

To add several nodes at once, select the nodes adjacent to the segments to which you want nodes added.

- In the roll-up, click +. Or, click the + key on the number pad of your keyboard.

If you click on a node, the new node is added midway along the segment. If you click on a segment, the node is added where you clicked. If you select multiple nodes, a node appears in each of the selected segments.

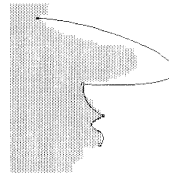
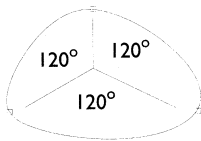
If you added a node using the + key, you can click the + key again to double the number of nodes added. Every subsequent click of the + key after you first add a node doubles the last number of nodes added. For example, the first click adds 1 node, the second adds 2, the third adds 4, and so on.

Deleting nodes and segments

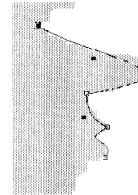
Because it's difficult to control the movement of the mouse, when you trace a curve you often don't follow it precisely. The extraneous mouse movements cause extra dips and bumps. CorelDRAW adds nodes to follow these dips and bumps, but you may want to delete the nodes associated with them. You can move the nodes in line with the desired path, but you may reduce the uniformity or continuity of the path and change the shape.

Three general rules for determining whether you need to add or delete nodes are:

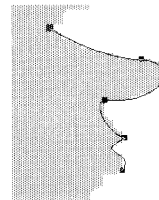
- For curves moving in *one direction*, you need a node about every 120°. The example below illustrates where a path can't be followed with just two nodes.
- For curves changing direction smoothly, you need a node for at least every two points of inflection. (A point of inflection is a point at which the direction of the curve changes.)
- For curves changing direction at a cusp (pointed corner), you need a node for every cusp.



With only two nodes it is not possible to fit the curve to this ski-jump nose shape.




Various positions for the control points refuse to yield satisfactory results.



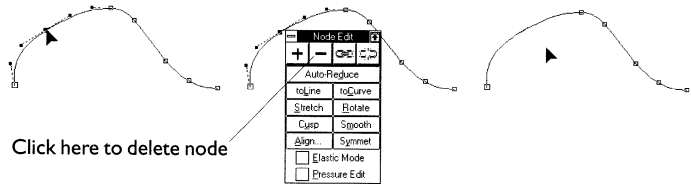
Adding a node between the two allows you to follow the curve.

There are two ways of eliminating unwanted nodes: you can select the nodes and delete them, or you can use the Auto-Reduce feature, which lets CorelDRAW decide which nodes are extraneous and should be deleted. Auto-Reduce is discussed in the next section.

► **To delete nodes and segments from a curve:**

1. Using the  tool, select the node(s) that you want to delete. (Double-click if you don't already have the Node Edit Roll-Up open.)

To delete several nodes and segments at once, Shift-click or marquee select the nodes.




2. In the Node Edit Roll-Up, click the minus sign. Or, use your keyboard's Del key or the minus sign on your numeric keypad.

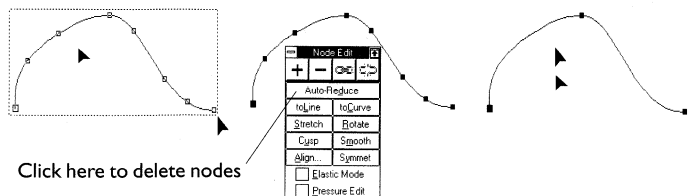
The selected node(s) and/or segments are deleted, and the curve is redrawn. Depending on the position of the node or segment you delete, the curve's shape could change noticeably.

Deleting nodes and segments using Auto-Reduce

Auto-Reduce deletes extraneous nodes from selected nodes and segments without significantly altering the curve's shape. You control the extent to which Auto-Reduce changes the curve's shape by specifying an Auto Reduce setting in the Curves section of the Preferences dialog box. (You access this dialog box by choosing Preferences from the Special menu.) The default value is 5; the maximum is 10. The higher the value, the more the curve's shape will change when you apply Auto-Reduce. Likewise, the lower the value, the less it will change when Auto-Reduce is applied. You may want to experiment to see the extent to which a curve's shape is changed at various Auto-Reduce settings.

► **To delete nodes and segments using Auto-Reduce:**

1. Using the  tool, select the nodes that you want to reduce by Shift-clicking on them. Or, marquee select the segment of the curve from which you want to reduce the number of nodes. You can also marquee select the entire curve, as shown in the example.



2. Click Auto-Reduce in the Node Edit Roll-Up.


The extraneous nodes in the selection are deleted and the curve is redrawn.

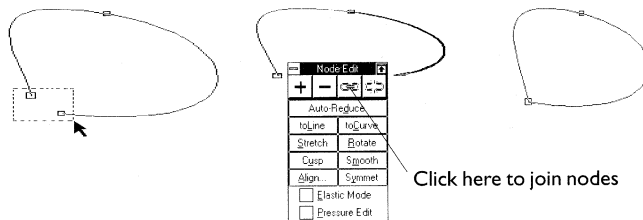
Joining nodes

You may want to join two end nodes to:

- Close a path
- Make a single continuous curve


► To close an open path:


1. Find the nodes at the ends of the path you want to close.
2. Using the  tool, select the two end nodes by dragging a marquee around them, or hold down the Shift key and click them. In addition to the end nodes, you can select any other nodes, or even the entire path.



Click here to join nodes

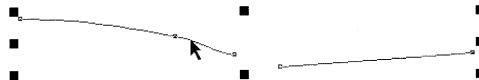
If you select two end nodes (and any number of other nodes), the two end nodes are joined. If you select three or more end nodes (and any number of other nodes), all subpaths which have both end nodes selected are closed. Selected nodes from different subpaths are not joined. If you select the entire path, all subpaths are closed.


3. Double-click a selected nodes to open the Node Edit Roll-Up.
4. Click the  in the roll-up.

The curve is redrawn as a closed path, which you can fill using the  tool.


► To make a single continuous curve from separate paths:

1. CorelDRAW can only join nodes that are part of the same object. To make them part of the same object, select them and choose Combine command from the Arrange menu. Combining objects doesn't change their appearance. When they're combined, the Status Line says "Curve", rather than "2 objects selected".



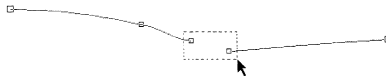
2. Switch to the  tool.

The curve remains selected, and the Status Line says "subpaths" to reflect the unconnected segments.

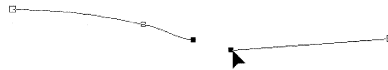
3. Use the  tool to select the nodes at the ends of the paths you want to join.




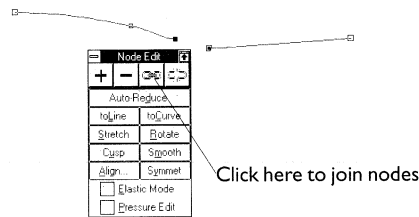
Use the marquee select method or the Shift-click method. You can include any number of nodes in your selection.



4. Double-click one of the selected nodes to open the Node Edit Roll-Up.



5. Click the  .
The curve is redrawn as a single open path.




Aligning nodes

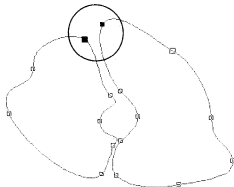
Suppose you have two curve objects that have to fit together like pieces of a puzzle—for example, the regions of a map. The easiest way to create a seamless fit is by aligning nodes and control points on the objects. To do this you must first combine the objects with the Combine command in the Arrange menu. After you align the nodes and/or control points, you can use the Break Apart command to separate the objects. You can also align only the nodes.

» Tip:

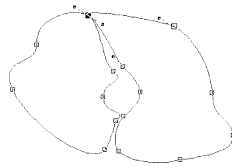
When you align edges, make sure that they each have the same number of nodes. If they don't, use the **PS** button in the Node Edit Roll-Up to add some.

► To align nodes:

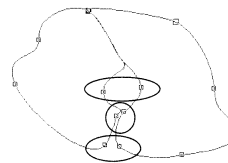
1. Click the curve object with the  tool.
2. Click the node you want to realign.
3. Hold down the Shift key and click the node you want to align with.



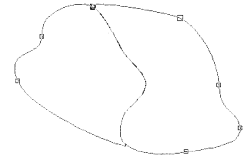
When curves overlap, you can...



add a new node, then...



realign the curves using the new node.



4. Double-click one of the selected nodes.
5. From the Node Edit Roll-Up, choose Align.
6. From the Node Align dialog box, deselect any options you do not want. For example, to align only horizontally, deselect Align

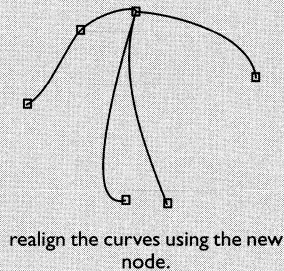
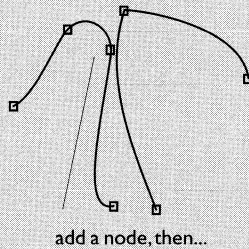
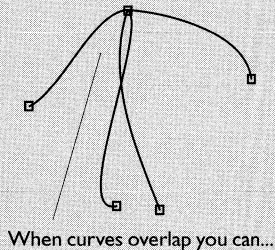
Vertical. All three options must be selected to align the shape of the curves and the nodes.

7. Choose OK.
8. Repeat steps 2 to 7 as often as required.


A tip for aligning control points

When you align control points on curved objects, the curves can sometimes overlap, causing unwanted gaps or lines to appear in the printed output. To solve this:

- If the objects have a fill, break them into separate objects with the Break Apart command to prevent the gap from showing.
- If the objects have an outline but no fill, add a node closer to the point where the curve changes direction, as shown here. Realign the curves using the new node.




Breaking a curve into separate subpaths


You may want to separate your curve into two or more subpaths. If you break a closed path, you will not be able to fill it with the  tool.

You cannot apply the Break command to an end node of an open path.

► To break a curve:

1. Using the  tool, double-click the node, or the point along the segment at which you want to break the curve.

To break a curve at several nodes at the same time, use the shift-click or marquee select method to select the nodes. Then, double-click one of the selected nodes.

2. From the Node Edit Roll-Up, click .

The curve is broken at the node, or at the point along the segment that you selected. Two unconnected nodes are superimposed at that point. You can move either of them.

Making a node smooth, cusped, or symmetrical

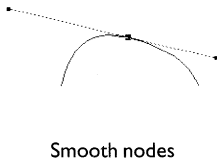
There are three types of nodes:

- Smooth nodes
- Symmetrical nodes
- Cusp nodes

When you first draw a curve, CorelDRAW determines where to place the nodes and whether they are smooth, symmetrical or cusped. You can change a node's type using the Node Edit Roll-up.

The Status Line tells you if the currently-selected node is smooth, cusped or symmetrical.

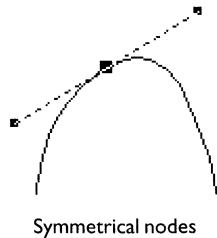
Smooth nodes: The two control points and the node always lie on a straight line on a smooth node. When you move one of the control points, the other control point moves. This means that the curve is continuous at a smooth node.



In some cases, the node is the meeting place for a straight line and a curve. If the node is made smooth, you can only move the control point on the curve side along an imaginary line which follows the extension of the straight line. This maintains the smoothness at the node.

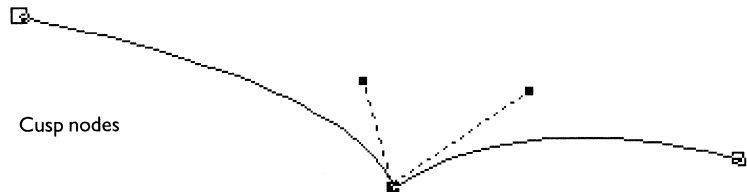
You cannot make a node which connects two straight lines smooth.

Symmetrical nodes: With symmetrical nodes, the two control points and the node always lie on a straight line, and the two control points are equidistant from the node. This means that the curvature is the same on both sides of a symmetrical node. As with smooth nodes, when you move one of the control points, the other control point moves. Symmetry causes the two control points to move as one.





You cannot make a node which connects to a line segment symmetrical. In other words, you can only make nodes which join two curves symmetrical.


Cusp nodes: A cusp node is one in which the two control points and the node do not have to stay in a straight line. You can move the control points independently to control either of the two segments of the curve that meet. You make a node cusped when you want a sharp change in direction at the node.



► **To change a node's type :**

1. Using the  tool, double-click the node you want to smooth.
To change several nodes at once, select them with the  tool, then double-click any of the selected nodes.
2. In the Node Edit Roll-Up, click Smooth, Cusped or Symmet.

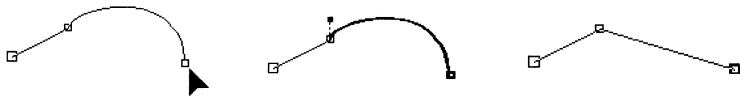
► **To add a cusp to a line or curve segment :**

1. Using the  tool, double-click the endpoint of the segment.
2. Click on the endpoint and drag to establish the direction and slope of the cusp, and move the cursor to where you want the new segment to end.
3. Release the mouse button.
4. From the point where you released the button, click again and drag to establish the height and slope of the trailing side of the new curve segment.

Changing segments to lines or curves



Between any two nodes in a curve or line object is a “segment”. There are two types of segments: *curves* and *lines*.

A curve segment has two control points associated with it, one for each of the nodes. A line segment is a straight line connected by two nodes. There are no control points associated with a straight line. Curve objects can contain any mix of curve and straight line segments. You can change curve segments to line segments and vice versa.



When you select a node, the type of segment that precedes it is identified by the shape of the node, as shown here. Solid nodes are associated with curve segments; hollow nodes with line segments. The Status Line also identifies the type of segment that precedes a selected node, and the node's type (smooth, cusped or symmetrical).

► **To change a segment to a line or curve:**

1. Using the  tool, double-click the segment or the node that follows it.
To change several segments at once, use Shift-click or marquee method to selected the node, then double-click one of the , selected nodes or segments.
2. From the Node Edit Roll-Up, click ToLine or ToCurve.
If you clicked ToLine, the two control points disappear, and the segment becomes a straight line.
If you clicked ToCurve, two control points appear on the line segment indicating that it is a curve.

If you changed a line segment to a curve segment, the segment does not appear to have changed. However, if you select any of the segments' nodes, two control points appear, indicating that it is a curve.

3. You can now reposition the control points or segment.



»Tip:

Holding down the Ctrl key as you drag stretches/scales in increments of 100%.

Holding down the Shift key stretches/scales from the center of the object out.

Holding both keys down applies both actions.

Stretching and scaling curves

Stretching and scaling are transformations you usually perform on an entire object. With curve objects, however, they can be performed on selected parts of the curve. Use the  tool to select the nodes (you must select at least two) along the part of the curve you want to stretch or scale. Double-click one of the selected nodes to open the Node Edit Roll-Up, and click the Stretch button. Eight sizing handles like those displayed when you select an object with the  tool appear. Drag the corner handles to scale the curve, or drag the handles between the corner handles to scale it.

Rotating and skewing curves

Just as you can stretch and scale parts of a curve, you can also rotate and skew them. You do this by selecting the nodes you want to rotate or skew, then click the Rotate button. Eight rotating/skewing handles appear. Drag the corner handles in a circular fashion to rotate the curve, or those between the corner handles to skew it.

Remember that when you rotate a curve, the nodes associated with the curve rotate. The control points rotate as well, but maintain their relative position. This keeps the angle at which the curve passes through the node constant.

Node Editing Keys

| Key | Function |
|---------------------|--|
| + | Adds a node to the selected point on the path. |
| - | Deletes the selected node(s). |
| Tab | Shifts current node selections one forward along the curve. |
| Shift+Tab | Shifts current node selections one back along the curve. |
| Home | Selects the first node in the selected curve object. |
| End | Selects the last node in the selected curve object. |
| Shift+Home/End | Toggles selection of first/last node on and off. |
| Ctrl+Home/End | Selects the first/last subpath in the selected curve object. |
| Shift+Ctrl+Home/End | Toggles selection of first/last subpath on and off. |
| Keypad arrow keys | Nudges the selected node in the direction of the arrow. See Appendix A for details on changing the Nudge distance. |

Arranging Objects

CorelDRAW provides many powerful features to help you organize your drawings. For example, using the Snap To commands, you can align objects to the grid, guidelines and other objects quickly and precisely. For measuring alignment, CorelDRAW provides rulers and crosshairs.

If you are planning a complex drawing, the Layers feature lets you organize your drawing on a series of invisible planes, each plane containing a portion of your drawing. To speed up editing and screen redrawing, you can make the layers you are not currently working on invisible. You can also make certain layers non-printable for faster printing, and lock layers so that you don't accidentally change the objects on them.

To change the stacking order of objects on a layer, you use the To Front, To Back, Back One, Forward One and Reverse Order commands.

With the Group command, you can bind objects so that you can select and manipulate them as a single unit. The Combine command groups objects to let you:

- Speed up screen redrawing for graphics that contain many lines and curves.
- Join two line or curve segments.
- Create clipping holes.

Reordering overlapping objects

Choosing Order in the Arrange menu displays a submenu with five commands that you use to rearrange the order of objects on a single layer.

When you add an object to a layer, CorelDRAW automatically places it on top of all other objects on that layer. The stacking order of stacking is evident when you display or print overlapping objects with contrasting outlines or fills. An object that's higher in the stacking order appears and prints on top of those lower in the order. If objects do not overlap, the stacking order isn't obvious and therefore neither is the effect of changing their order.

Grouping puts objects in the same position in the stacking order. Also, if you select more than one object and then choose one of the first four of these commands, the objects will move together while keeping the same order relative to each other.



To Front: Puts the selected object on top of all other objects. In the example shown here, the 1 is selected and moved to the front. Notice that the 3 remains on top of the 2.



To Back: Puts the selected object behind all other objects. In the example below, the 1 is selected and moved to the back. Notice that the 3 remains on top of the 2.



Forward One: Moves the selected object up one position. In the example shown here, the 1 is selected and moved in front of the 2.



Back One: Moves the selected object back one position. In the example shown here, the 3 is selected and moved behind the 2.




Reverse Order: Reverses the order of selected objects.

Grouping and ungrouping objects

The Group command lets you group objects so that they can be selected and manipulated as a single entity. This is extremely useful since most things you draw consist of several objects, but once they are drawn you want them to remain intact.


With the exception of the commands listed below, the commands and actions that can be applied to a single object can also be applied to a group:

- Combine and Break Apart
- Edit Text
- Fit Text to Curve, Straighten Text, and Align to Baseline

- Any operations using the  tool
- Extrude
- Powerlines

Groups may be combined with single objects and other groups. You can have as many as 10 levels of grouping.

► **To group objects:**

1. Using the  tool, select the objects you want to group.
2. Choose Group from the Arrange menu.

A single highlighting box enclosing all objects in the group appears. The Status Line indicates that you've selected a group.

Note: If you group objects across multiple layers, the group will exist on the layer occupied by the last object you selected before grouping them. If you subsequently break the group apart, all objects will exist on that layer as well.

Ungrouping objects

Ungroup removes the grouping applied to objects using the Group command. The objects' appearance does not change when you ungroup them. However, the Status Line indicates "x Objects Selected" rather than "1 Group Selected". This allows you to select and manipulate the objects individually.

If you have grouped groups, the Ungroup command ungroups them one level at a time.

Combining objects and breaking them apart

» **Shortcut:**
Pressing **Ctrl + L**
combines selected
objects.

You combine objects using the Combine command in the Arrange menu.


Combine is a special grouping command that changes the way CorelDRAW stores the selected lines and curves to allow you to produce more complex drawings. Combine combines selected lines and curves into a single curve object, even if they are not connected.

If you select rectangles, ellipses, or text objects, they are automatically converted to curves before being combined into a single curve object.

When you combine objects with different fills and outlines, CorelDRAW will outline and fill the combined object using the attributes of the last-selected object. If you marquee-select the objects, CorelDRAW will use the attributes of the bottom object. Since it's difficult to tell which is the bottom object, you may want to select the objects individually.


You may want to combine objects:

- To conserve memory for graphics which contain many lines and curves


- To use the  tool on many nodes simultaneously in different curve objects
- To join two line or curve segments
- To create clipping holes or masks
- To align nodes in different objects

Conserving memory for graphics which contain many lines and curves

Curves that share the same attributes, such as cross hatching lines, can be combined using Combine to save memory and improve redrawing speed. This is different from Group, which groups objects with different attributes, but which doesn't reduce the amount of memory used or the redraw speed.


When you draw using the  tool, CorelDRAW creates a separate object every time you draw a disconnected segment. If you are drawing a picture like the one shown below, you'll end up with a lot of objects. This can slow down the performance of the program, especially if memory resources are scarce. So if you have lots of objects, use Combine to collect lines and curves with the same attributes into a single object. An object has a limit of between 1000 and 2000 nodes/control points per object, depending on your printer. If a path is too complex to print to a PostScript printer, decreasing the PSComplexityThreshold setting in the CORELPRN.INI file will let it print. (Search for "cdrawconfig" in CorelDRAW's online Help for details.) However, decreasing the PSComplexityThreshold may result in flat and jagged curves. When you select combined objects, the screen is redrawn with a single highlighting box for the multi-line object.

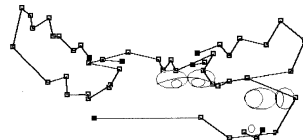
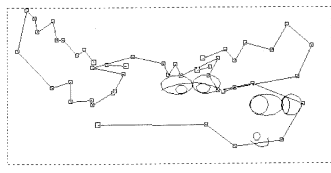
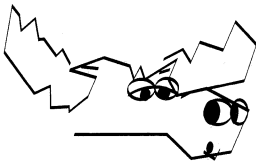
Using the tool on many nodes simultaneously in different curve objects

Sometimes after drawing or tracing a graphic with the  tool, you will want to change the type of all the nodes or segments. You can save time by first using Combine, especially if your graphic contains many different curve objects.


Here's an example:

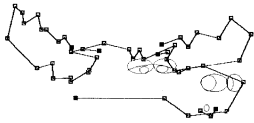
We want to smooth out a rather jagged moose by converting the straight lines into symmetrical curves.

The nodes to be made symmetrical are in six different objects. To smooth out all the nodes simultaneously, we select the six objects with the  tool, and combine them with the Combine command.

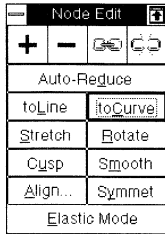


The result is a single object containing all the nodes we want to smooth.

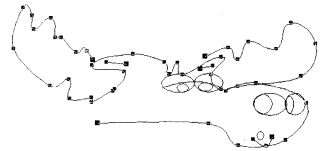
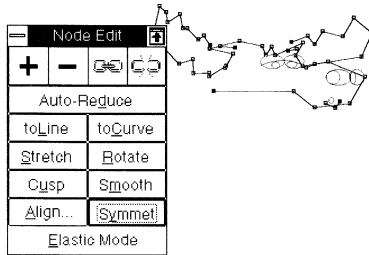
To make all the nodes symmetrical, we marquee select them with the  tool.



Next, we double-click one of the nodes to summon the Node Edit roll-up and select to Curve, since the nodes must be attached to curve segments to be made symmetrical. The shape of the segments does not change in appearance, although they are now curve segments.



We double-click on one of the nodes and choose Symmet from the roll-up to make all the selected nodes symmetrical.



The curves' shape changes dramatically, since all nodes are smooth. The result is a drawing that flows much more gracefully.




We now edit the various curves to give us the final picture. If we want some of the lines to have different attributes, we could use the Break Apart command (described below) to split the segments into separate objects.

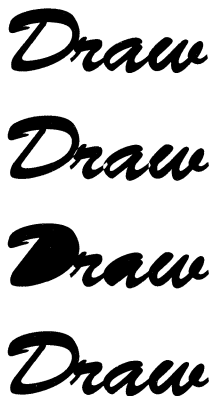
Breaking objects apart

To convert a single multipath curve object into a collection of single-path objects, use Break Apart in the Arrange menu. This command does the opposite of what Combine does.

Use this command to adjust the attributes of specific paths, for example, to give them different outlines or fills.

For example, you'd use Break Apart when you want to fill a single object that has overlapping lines, rather than creating transparent regions at the overlap.

The example here shows the word "Draw" in the Banff typeface. When it was added with the  tool, the overlapping regions of the letters were automatically filled. However, using Convert to Curves on the text allows you to modify the letter shapes to create a single curve object with overlapping areas. Notice the transparent spaces that appear where the letters overlap.



To solve this problem, use Break Apart on the curve object to break it into separate curves. The result is shown here. The overlapping areas are now filled. However, the centers of the "D" and "a", two overlapping areas that should be transparent, are also filled with black.

You can select the centers and fill them with white. Or, if you want the holes in the letters to be transparent, use Combine to combine the two curves which make up the letter shape into a single object, as shown.

Temporarily selecting multiple objects vs grouping objects

If you want only to apply several operations to multiple objects, you don't need to group them. Once you've created a specific entity with the objects and you don't want them to be accidentally altered or selected, you should group them. Objects in a group maintain their relative positioning.

Using rulers, grids, guidelines, and guide objects

» Tip

If you hold down the Shift key and click on a ruler, CorelDRAW moves it away from the edge of the Drawing Window. You can drag it if you hold the Shift key down. Double-clicking the ruler with the Shift key held down returns it to its usual location.

CorelDRAW features a set of precision drawing aids that are powerful and easy to use. These are a pair of adjustable rulers that serve as a visual reference for positioning objects, an adjustable grid for aligning objects, non-printing guidelines you can position anywhere on the page for alignment purposes, and a feature that lets you use objects as guides.

Later in this chapter you'll learn how CorelDRAW's snapping feature turns the grid and guidelines into magnets that pull objects into exact alignment.

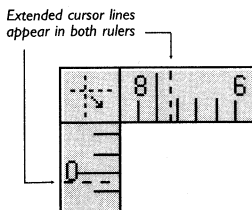
Using the rulers

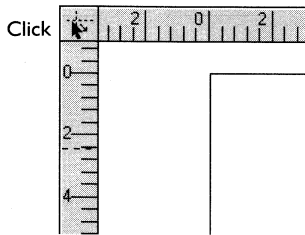
CorelDRAW provides rulers at the edges of the Drawing Window for determining the size and position of objects. When you choose Show Rulers from the Display menu, the rulers appear, as shown here. A dotted line in each ruler follows your current cursor position. As you scroll the Drawing Window using the scroll thumbs, the ruler numbers move to reflect your position on the page.

The unit of measure the rulers use are the current Grid Frequency units. Another grid parameter, the Grid Origin, determines the location of the zero points on the rulers. To hide the rulers, choose the Show Rulers command again.

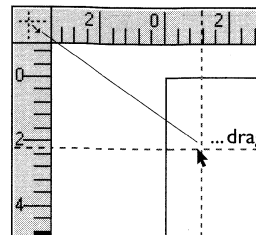
Using the ruler crosshairs

The zero points on the ruler are set at the same coordinates as the Grid Origin. Measuring accurately is much easier if you move the zero points on the ruler to the spot you're measuring from. To do this, use the ruler crosshairs, as shown on the next page. Changing the zero points resets the Grid Origin to that point. You'll also find the crosshairs handy for checking the alignment of objects.

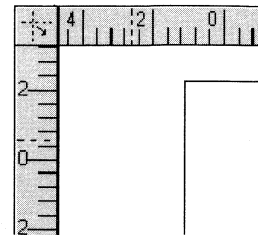




Click
To move the zero points on the rulers, or to pull the ruler crosshairs onto the screen, point to the spot where the rulers meet, press and hold the mouse button then ...



drag onto the screen. When you release the mouse button ...



... the zero points move to the new location.

To reset the ruler's zero points and Grid Origin back to the lower left corner of the page (the default location), double-click the gray box in the upper left corner of the Drawing Window where the horizontal and vertical rulers meet.

» **Tip:**

You can make the grid printable and change the color of the grid marks using the Layers Roll-Up. See "Using Color Override to change the color of guidelines and grid" later in this chapter.

» **Shortcut:**

Dragging the ruler crosshairs onto the screen and then releasing the mouse button resets the Grid Origin to that point.

» **Tip:**

You can also set up the grid from the Layers Roll-Up. Choose Layers Roll-up from the Layout menu and double-click the Grid layer. Click on Visible to display the grid, and on Setup to display the Grid Setup dialog box.

Using the grid

You can display the grid while you're drawing, so that objects are drawn exactly where you want them with respect to other objects in your drawing, and with respect to the printable page.

To display the grid, choose Grid Setup from the Layout menu. In the Grid Setup dialog box that appears, click Show Grid. Grid marks showing where the grid lines intersect appears in the Drawing Window. Although you can have up to 72 grid lines per inch, (or the equivalent in other units of measure), not all grid marks may appear on your screen. To avoid cluttering the screen, the frequency of the grid marks is determined by the current view. When you magnify objects with the \mathcal{Q} tool, the frequency of the grid marks increases.

You can also set the Grid Origin and Frequency using the Grid Setup dialog box.

Grid origin: Grid origin refers to the point on your drawing page where the grid coordinates are (0,0). The default grid origin is the lower left corner of the drawing page. To position it elsewhere in the Drawing Window, enter a value in the Horizontal and Vertical fields. The units used are those specified for Grid Frequency.

You'll probably find it most useful to put the ruler origin point in the center or keep it in the bottom left corner of your printable page. Once you've specified the location, the ruler origins are reset to that point.

The Grid origin position also affects the coordinate values entered in some dialog boxes, the coordinate read-out of the cursor's position, and the object position information that appears on the Status Line.

Grid Frequency: Controls the vertical and horizontal spacing of the grid lines. If you want your grid lines spaced more than one unit of measure apart, you must use the keyboard to enter fractional values in the value box. For example, to space the grid lines two inches apart, enter a value of 0.50.

The maximum number of grid lines is 72 lines per inch, 12 per pica, 1 per point, and approximately 2.80 per millimeter.

Note: When you change the Grid Frequency units, the ruler units and those displayed on the Status Line are changed. The values in the dialog box, however, are not converted. Each time you change to a different unit, you must specify the Grid Frequency you want to use with that unit.

The grid settings are saved with your drawing. This ensures that objects are correctly aligned when the file is opened later. If you change the grid settings, only the location of the grid lines changes. Objects retain their position, even if they don't line up with the new grid line positions.

Using guidelines

Another way to align objects is with the guidelines. These are non-printing lines that you can place anywhere in the Drawing Window. You can place as many guidelines as you want and CorelDRAW will save them with the drawing.

► To place guidelines in the Drawing Window:

1. If the rulers aren't displayed, choose Show Rulers from the Display menu.
2. Click either ruler. As you hold down the mouse button, drag onto the Drawing Window. Dragging from the top ruler pulls down a horizontal guideline; dragging from the side ruler pulls out a vertical guideline.
3. Move the guideline to the desired location, then release the mouse button. To reposition a guideline, drag it to a new location. To remove a guideline, drag it off the Drawing Window.
4. Repeat steps 2 and 3 for each additional guideline you require.

If your work calls for precision, use the Guidelines Setup command in the Layout menu to place the guidelines. The Guidelines Setup dialog box appears, which allows you to specify with numerical precision where you want the guidelines placed. When placing guidelines, you first select the type (vertical or horizontal). Then, you enter their position relative to the ruler origins. Next, click the Add button. A guideline appears at the specified position.

Once you have placed a guideline, you can move it by entering a new position and then clicking on the Move button. You can remove it by entering its position and then clicking on the Delete button. To cycle through all the horizontal or vertical guidelines, click the Next button.

Specifying a scale for your drawing

The Scale section of the Grid Setup dialog box allows you to specify the scale used in your drawing. You can specify a scale, for example, of ten kilometers per centimeter, 20 miles per inch, and so on. This feature is useful for creating drawings such as maps, landscape designs, etc. When you specify a Global unit, CorelDRAW

» **Shortcut:**

If you double-click on a guideline, the Guidelines dialog box appears with the guideline's position indicated in the Ruler Position box.

uses it for both rulers, the Status Line, dimension lines, Grid, Guidelines, and Move dialog box. Any units you've already specified for any of these are overridden by the Global unit.

The scale you specify for a drawing is saved with the drawing.

► **To specify a scale:**

1. Choose Grid Setup from the Layout menu. The Grid Setup dialog box appears.
2. Click the Set for Global Units checkbox. The Grid Frequency units boxes are grayed out.
3. Use the three number boxes to specify a scale. Enter the Global unit in the second box, and enter the corresponding unit to be used in your drawing in the third box. Enter a value in the first box to specify the number of global units per drawing unit.
4. Click OK.

The rulers and Status Line reflect the global unit specified.

When you disable the Global units setting, the units for Grid and Guidelines revert to what they were before you enabled the option.

Using the Snap To and Align commands






The Snap To commands in the Layout menu let you make the grid, guidelines, and stationary objects behave like magnets. With their magnetism enabled, objects are attracted to the guidelines for exact alignment.

CorelDRAW also provides a dialog box with options for aligning objects horizontally and vertically, to the center of the page, or to the nearest grid point.

Snapping objects to the grid

CorelDRAW's Snap to Grid option lets align objects vertically and horizontally to the nearest grid marker. Click the Snap to Grid check box to activate the Snap to Grid option. Snap to Grid is especially useful when you're measuring objects using the Dimension tools, since it snaps the dimension lines to the beginning and ends of objects. See "Drawing Dimension Lines" in Chapter 2 for more information. You can tell when Snap to Grid is on by the message in the Status Line, and by the checkmark beside the command in the Layout menu.

Snap To Grid forces your cursor to stay on the grid points, except when you are:

- Selecting an object with the  or  tools, or with the Copy Style From cursor.
- Drawing a curve in Freehand or Bezier mode.
- Rotating or skewing an object with the  tool.
- Modifying ellipses with the  tool.
- Zooming with the  cursor.

» Shortcut:

Pressing **Ctrl Y** turns
Snap to Grid on and off.

When you move an object with Snap to Grid enabled, the handles on the object's highlighting box are forced to the nearest grid point. You determine which of the eight handles snaps to the grid by controlling the direction in which you move the object. For example, if you want the lower right handle to lie on the grid, you drag that corner of the object's marquee box to the object on the grid. The marquee box appears once you start moving the object.

When text is moved vertically with Snap to Grid enabled, it snaps to the grid along its baseline. When moved horizontally, the snap is determined by the justification option assigned to the text. If you choose Right justification, for instance, the right edge of the text will align to a grid point. If the text is rotated, CorelDRAW uses the handles on its highlighting box to align it to the grid.

Snapping objects to guidelines

The position of objects already on the screen doesn't change when you enable Snap to Guidelines. When Snap to Grid and Snap to Guidelines are both enabled, Snap to Guidelines has priority. No matter how close a guideline is to a grid line, you can always have an object snap to the guideline. You can position the guidelines by eye, or enter the coordinates in the Guidelines Setup dialog box.

» Tip:

To display guidelines on top of objects, click "guidelines" in the Layers Roll-Up and drag to the top of the list.

Using objects as guides

You can use object snapping with objects created on the Guides layer if Snap to Guidelines is enabled, whenever Snap to Objects is not enabled. This is possible since any objects created on the Guides layer are guide objects, similar to guidelines.

When you snap to guide objects with Snap to Guidelines enabled and Snap to Objects disabled, the moving object will not be snapped by its own snap points, even if the location you used to select it was within the gravity range of one of those snap points. In other words, when Snap to Objects is disabled, the point at which you select the moving object is the point that snaps to the guide object's snap point. When Snap to Objects is enabled, and the point at which you select the moving object is within the gravity range of one of its own snap points, that snap point will snap to the guide object.

Snapping objects to other objects

You can snap objects to other objects. The Snap to Objects command is in the Layout menu.

All objects have "snap" points associated with them. The exact location of these snap points depends on the object (see the table below). When Snap to Objects is enabled, every snap point of every object has a gravity effect, just like the grid and guidelines. This gravity has a limited range which often seems to be the same fixed distance on the screen. For very precise alignments, zoom in as closely as possible, since a small fixed distance on the screen represents a relatively small distance when you are zoomed in.

You can align any part of a moving object to a snap point of a stationary object. When the point you selected on the moving object is

» **Tip:**

*You can add snap points to a stationary object's outline to determine exactly at which point your moving object will snap to it. (For information on adding nodes, refer to Chapter 9, *Shaping Objects*.) If your stationary object is a rectangle, ellipse, or text, convert it to curves using the *Convert to Curves* command in the *Arrange* menu before adding any nodes to it.*

within the gravity range of one of the stationary object's snap points, the moving object will automatically be aligned with the stationary object's snap point, so that the two points are overlain.

► **To snap an object to another object:**

1. Select the object that you want to snap (the moving object) to another object (the stationary object).

The point at which the moving object will snap to the stationary object is usually the same point at which you selected the moving object. If you're working in the Editable Preview, this point can be anywhere on the object. If you're working in Wireframe View, this point can be anywhere on the moving object's outline. In either mode, if the point at which you selected the moving object is within the gravity range of one of its own snap points, it will be snapped by that snap point, not by the selected point.

2. Drag toward the stationary object.

When you're within the gravity range of a snap point on the stationary object, the moving object will snap to it.

Using Snap to Object to resize objects

You can use the gravity effect of a snap point in one object to help you resize another object. Since snapping is related to the cursor's position, you can use objects above or below the object being resized to determine the new size of that object.

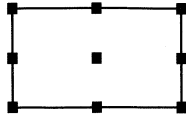
To resize an object using the snap effect:

- Choose Snap to Object from the Layout menu.
- Select the object you want to resize.
- Decide which handle you want to use to resize and drag it toward the stationary object.
- As you're dragging, move the cursor off to the side and towards the snap point of the stationary object you want to size to. When it's within the snap point's gravity range, the cursor will snap to it.
- Release the mouse button at this point to complete the resize operation.

When using Snap to Object in this way, the moving and stationary objects will not necessarily be in contact when the snap occurs.

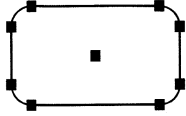
Snap Points on CoreIDRAW Objects

Simple rectangles



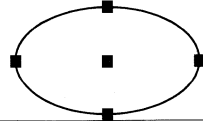
Simple rectangles with non-rounded corners have nine snap points—one at each corner, one at the midpoint of each side, and one at the center of the rectangle's bounding box.

Rectangles with rounded corners



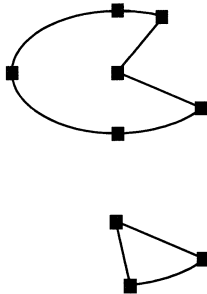
Rectangles with rounded corners also have nine snap points—one at each end of each corner's arc, and one at the center of the bounding box.

Closed ellipses



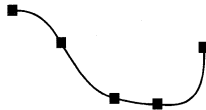
Closed ellipses have five snap points—one at each end of the major and minor axes, and one at the center of the bounding box.

Open ellipses
(elliptical arcs)



Open ellipses can have anywhere from three to seven snap points. There is one at each end of the major axis, one at each end of the minor axis, one at the center of the elliptical arc's bounding box, and one at each termination point of the arc. The snap points will only exist at the ends of the elliptical arc's major and minor axes if a part of the arc passes through the endpoints. If the arc has been edited, (for example, to a pie wedge), and no part of its outline touches a particular axis endpoint, no snap point exists there.

Open line paths



Open line paths have snap points at each endpoint and node.

Bitmaps



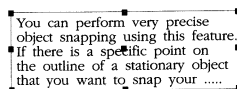
Snap points for bitmaps exist at each corner of the bitmap, and at the center of the bitmap's bounding box.

Artistic text



Artistic text has snap points at the four corners of the text's bounding box, at the midpoints of the four sides of the bounding box, and one at its center. It also has a snapping point at the two locations where the baseline of the first line of text intersects the bounding box.

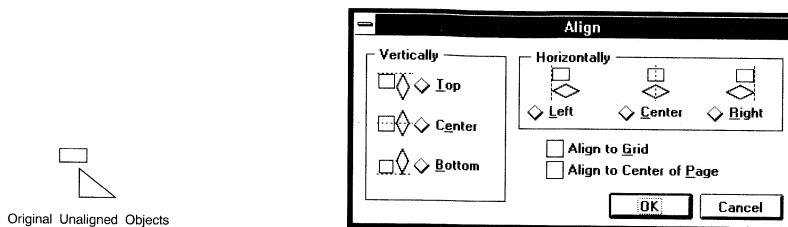
Paragraph text



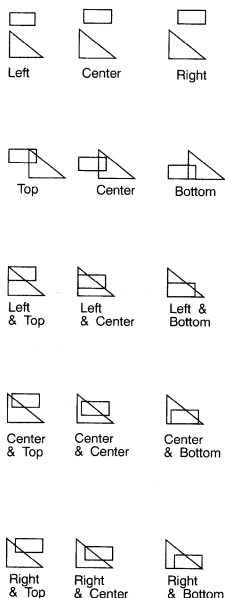
Paragraph text has snap points at the end and center of each side of the paragraph text frame, and one at the center of the bounding box.

Using the Align command

To align selected objects with each other, use the Align command in the Arrange menu. The following dialog box appears:



Original Unaligned Objects



You can align objects horizontally and vertically in the combinations shown here.

When you click OK, the selected objects will be repositioned with the selection handles of the highlighting boxes aligned in accordance with the vertical and horizontal alignment options you chose.

Regardless of the alignment you specify, the *last object selected* maintains its position; all others move to align with this object. If you marquee objects, the alignment will be based on the bottom object. Since it may be difficult to tell which is the bottom object, it may be easier to select the objects that you want to align individually.

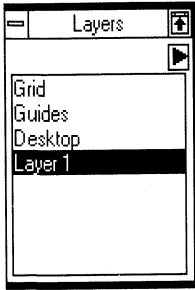
Clicking Align to Center of Page before choosing the horizontal and vertical alignment options lets you align the centers of objects to the grid and to the center of the page. If you choose Align to Center of Page and then specify horizontal and/or vertical alignment options, the objects will be aligned accordingly with respect to the center of the page. If you want to align an object(s) to the grid, select the object(s) and choose the Align command. You must select a vertical and/or horizontal alignment option first and then select Align to Grid. The object will be aligned with the nearest grid line(s), according to the option(s) you chose.

Using layers

CorelDRAW's layering feature allows you to have multiple layers, each with their own image content. This gives you more flexibility in constructing and editing your drawings, especially if they are complex.

You can have as many layers as you want in a drawing. (The number is limited only by the available memory resources.) If you're working with a multi-page document, you can designate a layer(s) as a Master layer(s), which causes all text, graphics, and page setup information on it to be repeated on every page of the document. Objects you add to your drawing are always placed on the active layer. You can make each layer visible or invisible using the Layers Roll-up. This allows you to hide all objects that are on certain layers. You can also lock layers to prevent them from being accidentally edited. You can specify which layers to print. This speeds up printing time considerably for complex files.

» **Shortcut:**
Pressing **Ctrl + F3**
opens the Layers
Roll-Up.



The Layers Roll-Up

» **Tip:**
You can access the
Guidelines and/or Grid
Setup dialog boxes by
double-clicking “Grid”
or “Guides” in the
Layers Roll-Up, then
clicking Setup.

Using the Layers Roll-Up

The Layers Roll-Up command in the Layout menu opens a roll-up for easy access to all the layers-related controls and options. Using the roll-up, you can:

- Add and delete layers.
- Copy and move objects among layers.
- Make any layers you are not working on invisible to speed up editing and screen redrawing.
- Make layers non-printable for faster printing.
- Lock layers to prevent accidental changes to objects.
- Show or hide the grid and guidelines and make them printable or non-printable.
- Change the order of layers.

The first time you open the roll-up, you’ll see a list of four layers: , Guides, Grid, Layer 1, and Desktop.

Guides: This layer is used to contain the guidelines you set up in your drawings. While the guidelines reside in their own layer, objects on other layers will snap to them. Having a separate guideline layer allows you to disable the guidelines without having to remove them one at a time. You can print the guides.

You can enable the Guides layer and draw objects on it. Objects drawn on this layer are guide objects, which can be used in special ways. For example, you can draw a group of evenly spaced concentric circles, with radial lines equidistant from the center to create a polar grid.

Grid: This layer is used to contain the grid you set in your drawing. While the grid points reside on their own layer, objects on other layers will still snap to them as before. Having a separate grid layer makes it easy for you to turn off the grid lines temporarily, and gives you the option of printing the grid.

You can’t make the grid active—it is always a locked layer on which you can’t draw objects.

Layer 1: This is the initial drawing layer assigned to all new files. Objects being drawn are automatically placed on this layer. You can rename this layer.

Desktop: This is a Master layer which you use with multi-page documents. (See “Setting up Master layers” later in this chapter and “Setting up a multi-page document” in Chapter 1 for more information.) Any object you move off the printable page is automatically placed on the Desktop layer when you go to a different page. Objects on this layer are displayed in the Drawing Window regardless of which page is active. You can retrieve objects from the Desktop layer by dragging them back onto a page. When you drag objects from the desktop layer back onto a page, they’re placed on the nearest layer which is unlocked and visible. Using this layer makes it easy to move objects between pages in a multi-page document without having to use the clipboard.

Changing the active drawing layer

Click a layer name in the roll-up. It becomes the active layer. Objects you create while it is active are stored on this layer. You can apply functions to the active layer such as editing, deleting, moving, and copying.

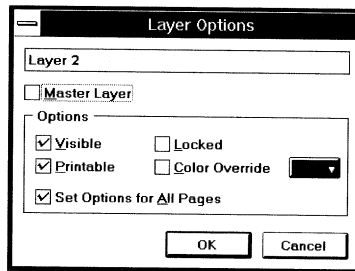
Making all layers active

The multi-layering option allows you to select and edit any object in your drawing, regardless of which layer it's on. To enable multi-layering, click the ► at the top of the Layers roll-up. Click MultiLayer. A checkmark will appear beside the word to indicate that multi-layering is enabled. If the option is not enabled, you'll be able to select and edit objects in the active layer.

Locking a layer overrides the multi-layer feature. Even if MultiLayer is enabled, you will not be able to access objects on locked layers.

Adding and renaming layers

Click the ► at the top of the Layers roll-up. Choose New. The Layer Options dialog box shown below appears.



To use this name as the name for your new layer, click OK. To assign a different name to your new layer, simply type a new name over it. It can be up to 32 characters. Click OK. The new layer name appears in the Layers window.

To rename a layer, double-click on the layer name in the Layers Roll-Up and then change its name in the Layer Options dialog box.

Deleting a layer

Click the layer name and then click the ► at the top of the Layers roll-up. Choose Delete from the drop-down menu. This deletes the layer and the objects it contains. When you delete a layer, the one below it in the list of layer names becomes the active layer.

Moving objects to another layer

Select the object you want to move. The Status Line will tell you which layer the object is on. Click the ► at the top of the roll-up and select Move To. A small "To" arrow appears. Use it to click the layer you want to move the object to. The object is moved to the selected layer.

Copying objects to another layer

Select the object you want to copy. The Status Line tells you which layer the object resides on. Click the ► at the top of the roll-up and select Copy To. A small “To” arrow appears. Use it to click the layer you want to copy the object to. The object will be copied to the selected layer. You can only copy one object at a time from one layer to another.

Making a layer visible or invisible

This option determines whether the selected layer will be visible in your drawing, and does not affect the printing of the objects on the layer. The default is Visible. Deselect it to make the layer invisible if you want to temporarily hide the objects it contains. This simplifies a complex drawing’s appearance on the screen, making it easier to edit. It also speeds up the screen refresh time.

Locking and unlocking layers

Locking layers is useful if you’ve done some complex object alignments and don’t want them altered. Objects on locked layers cannot be selected or edited.

Making a layer printable or non-printable

The Printable option determines whether the objects on the current layer will be printed. It’s enabled by default. Disabling it causes all objects on that layer not to print. Printing only certain layers speeds up printing time.

Identifying objects on a layer (Color Override)

When you select the Color Override option, CorelDRAW applies a specific color to all the objects’ outlines in the chosen layer. The objects will appear with only a wireframe outline of the color you choose, even when that layer is not the active one. The color override doesn’t affect the true outline or fill color of the objects; it only affects the way they appear on the screen. You may find this useful for identifying objects on specific layers. Even when you’re working in the Editable Preview, the objects will appear transparent on your screen, since they’ll appear with a colored wireframe outline only. Therefore, you’ll be able to see objects on other layers beneath them. This is especially useful when editing complex drawings.

To select a color, click the color swatch to the right of Color Override. A color palette appears. Click a color in the palette. You can choose an override color for a layer even if the Color Override option isn’t enabled. If you’re working in Wireframe View, CorelDRAW always uses the override color to display object’s outlines. If you’re working in Editable Preview, CorelDRAW won’t use it until you en-

Changing the grid and guidelines color

Instead of blue, you can display the guidelines and grid in any color. Double-click the Guidelines or Grid in the roll-up, choose the override color, then click OK.

able the Color Override option. After you enable it, the screen will be refreshed, and the objects on that layer will be displayed in the override color.

Reordering layers and the objects on them

The order in which the layers are listed in the Layers roll-up is the order in which they're stacked in the Drawing Window. The first layer on the list is the top layer, and the last layer on the list is the bottom one. To change their order in the drawing, you must change their order in the list. To do this, click the layer you want to move to another position. While holding down the mouse button, move the cursor over the layer you want your selected layer to lie on top of. When you release the mouse button, the selected layer will appear in the new position. The relative arrangement of objects in your drawing may change, according to the layers they are on. If you've moved a layer to a higher position in the stack, some of the objects it contains may now cover other objects on other layers that previously covered them.

Reordering objects on multiple layers

To change the stacking order of objects on multiple layers, you use the To Front, To Back, Forward One, Back One, and Reverse Order commands in the Order submenu in the Arrange menu. However, the order of the layers still determines the absolute arrangement of all objects in your drawing. If, for example, you have numerous objects on two layers, selecting the bottom object on the lower layer and clicking on To Front will bring that object to the front of the lower layer. However, objects on the upper layer will still overlay any objects on the lower layer. If you select multiple objects on different layers, these stacking commands under the Arrange menu will function in the same way, still only changing an object's order on its particular layer. If you want to make the bottom object of the lowest layer the top object of the top layer, you must first move that object to the top layer, and then choose Order, To Front from the Arrange menu.

Grouping and combining objects on different layers

You can group objects on different layers using the Group command in the Arrange menu. Objects in the group will move to the the active layer. The objects retain their stacking order with respect to one another. However, because they are all on the selected layer, their stacking order may appear to have changed with respect to other objects that are not part of the group, or that are on different layers.

You can also combine objects on different layers using the Combine command in the Arrange menu. The combined objects move to the layer that is active. If, however, you marquee-selected the objects to be combined, the combined object will move to the layer the most recently created object is on.

Setting up Master layers


If you're working with a multi-page document, you can designate one or more layers to be Master layers. All graphics, text, and page setup information on the Master layer appears on all pages of the document. For information on setting up Master layers, see "Setting up a Master layer" in Chapter 18.

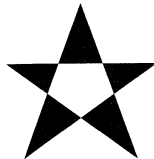
Welding objects

Applying the Weld command in the Arrange menu to overlapping objects joins their outline paths at points where they intersect. While it's not apparent in the Editable Preview if objects have no outlines, the welding process also removes sections of the path between those intersecting points.

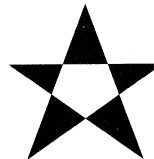
The fill and outline attributes of the object you selected last are applied to the resulting curve object. If you marquee-select the objects, CorelDRAW will use the outline and fill of the bottom object. Since it's difficult to determine which is the bottom object unless they overlap, you may want to select the objects individually.

There's no limit to the number of objects you can weld at one time. You can even weld objects on different layers, provided you have the Multilayer option enabled (see "Making all layers active" earlier in this chapter). Objects on different layers that are welded will form one object that resides on the layer of the object you selected last. If you marquee selected them, it will reside on the layer occupied by the object you created first.

You can also use the Weld tool on single objects whose paths cross over on themselves. Although welding these objects doesn't change their appearance, the objects are broken up into several subpaths. Deleting some of the interim subpaths using the  tool removes the holes from the object, as shown in the example below.



Welding this filled star gives it two subpaths.



Deleting this middle part of the star..



...leaves it as one filled path.

Working with Text

CorelDRAW's powerful text-handling capabilities let you add and manipulate text with ease. The **A** tool has a flyout menu with options for entering two types of text—Artistic and Paragraph—and a wide variety of symbols. You can enter text directly on the screen or through a dialog box. Symbols are added by dragging them from a roll-up onto your drawing page.

Text and symbols are given a default outline and fill. You can change the defaults at any time, using the techniques described in Chapters 6 and 7.

You can apply special effects and transformations to text and symbols just as you would to any other CorelDRAW object. Text remains editable no matter how distorted it becomes, provided it hasn't been converted to curves.

Formatting you can apply to text includes changing typeface, point size, and spacing. Each character can have its format change as it's entered.

Formatting options available for Paragraph text allow you to:

- Flow text into columns and between frames
- Add bullets to Paragraph text
- Set tabs and indents
- Hyphenate text automatically

For proofing your text, CorelDRAW provides a thesaurus and a spell checker with a dictionary that you can supplement with your own words.

Other text features described in this chapter allow you to:

- Fit Artistic text to a path
- Extract text from a drawing, edit it in a word processor, then merge it back into the drawing
- Pour paragraph text into a frame of any shape

Appendix B describes another text feature that lets you create your own Adobe Type 1 and TrueType compatible typefaces and symbols for use in other Windows applications.

Adding text to your drawing

CorelDRAW allows you to add text in strings called Artistic text or in blocks, called Paragraph text. You can enter text in one of four ways:

- Typing it into the Drawing Window
- Typing it into the Text editing dialog box
- Importing it from another application using the Import command in the File menu
- Pasting it from another application using the Windows Clipboard

Text can be edited on screen or in a dialog box. You can change any of the text attributes, such as point size, alignment, etc., using the Edit Text or Character commands in the Text menu. You can also edit the text using the Text Roll-Up. For Paragraph text, CorelDRAW offers formatting options like tabs, indents, columns and hyphenation, and the ability to add bullets. See “Editing and formatting text” later in this chapter for details.

About TrueType and Adobe Type 1 Fonts




CorelDRAW supports True Type (TTF) and Adobe Type 1 (PFB) fonts, as well as the WFN format. When you install CorelDRAW, you choose which of the True Type fonts to install. If you're working with the CD-ROM version of CorelDRAW, you have access to 750 fonts in both the TTF and PFB formats.

You can create your own typeface and symbol fonts using the CorelDRAW Export filters. These allow you to directly incorporate a graphic into a TTF or PFB font. Appendix B, “Creating and Modifying Typefaces” discusses this in detail.

Adding Artistic text

If you're creating special effects with the text (for instance, fitting it to a path, or blending and extruding it), you must enter it as Artistic text.

► To add Artistic text:


1. Click the  tool.
The cursor changes to a crossbar, .
2. Position the  cursor where you want the text to appear in your drawing and click. A vertical bar, called the “insertion point” or “text cursor” appears.
3. Type the text.

Once the text has been entered, you can edit and format it using techniques and commands described in “Editing and formatting text” later in this chapter.

Note: You can enter Artistic text in strings of up to 250 characters. Depending on the complexity of the font used, CorelDRAW may truncate any text that exceeds the limit. However, you can have as many text strings as you like in a file.

Adding Paragraph text




Paragraph text is designed for adding lengthy blocks of text to ads, brochures and other types of text-intensive applications. Compared with Artistic text, Paragraph text offers more formatting options. For example, you can flow Paragraph text into columns, create bullet lists and set tabs and indents.

To add Paragraph text, you must first create a frame to contain it. Once text is placed in the frame, you can move the entire block by dragging the outline of the frame or any of the text inside it with the  tool.


Dragging the Paragraph text frame's solid handles resizes the frame, but not the text inside it. As with other objects, double-clicking on the text or frame displays a special set of handles for rotating and skewing. The two hollow squares between the corner sizing handles are used to flow text between frames.

Note: You can have up to 850 paragraphs in a file. Each paragraph is limited to 4000 characters. (A paragraph is defined as a block of text ending with a paragraph return.)

► To add Paragraph text:

1. Click and hold the mouse button down on the  tool. Or, double-click the  tool.
2. When the flyout menu appears, click .
3. Click anywhere in the Drawing Window to create a page-sized frame. If you click on the drawing page, the frame appears centered on the page. If you click off the drawing page, the top left corner of the frame appears where you clicked.

» **Shortcut:**

Pressing F8 selects the  tool.


» **Note:**

To select Paragraph text in wireframe mode, click the frame.

» **Note:**

You cannot use the Print Merge command with Paragraph text.

» **Shortcut:**

Pressing Shift+F8 selects the  tool.

- OR -

Click where the top-left margin should be and drag to where the bottom right margin should be. When you release the mouse button, a frame appears.

4. Type text directly into the Paragraph text frame.

When text reaches the right edge of the frame, it wraps to the next line automatically. To insert a blank line (between paragraphs, for example), press Enter twice.

Once the text is on the page, you can edit and format it using the techniques and commands described in “Editing and formatting text” later in this chapter.

Entering special characters

You can access special characters not available on the keyboard by entering a four-digit code. A list of these characters is provided on the Character Reference Chart supplied with CorelDRAW.

To enter special characters:

- Hold down the Alt key.
- Type the character’s four-digit code using the numeric keypad.
- Release the Alt key.

Note: While the special characters display correctly in the Drawing Window, some of them may be substituted with different characters or a black square in the Text dialog box. This is because Windows controls the display of text in the Text dialog box, and the system font it uses does not include all the special characters available through CorelDRAW..

Flowing text between frames

You can have text flow from one frame to another linked frame on the same page and to frames on other pages in a multi-page document. Linked frames operate such that if you shrink one frame (or reduce the size of the text), the text automatically flows into the next frame. Similarly, if you enlarge a frame, text flows into it from the next frame.

CorelDRAW also flows imported Paragraph text into linked frames. See “Importing text” later in this chapter for details.

► **To flow text between frames on the same page:**

1. Click the hollow box along the top or bottom of the frame. As the illustration on the next page shows, clicking the upper box flows text from the beginning of the frame, the lower box, from the end.

In the distant future, our Sun will undergo a dramatic change. Hydrogen, burning in a thin shell far from the center, combined with high-temperature helium burning near the core, will cause the Sun's exterior to expand and cool, bloating it up into a red giant star. The Sun will begin to enlarge and change color, first becoming a deeper yellow, then orange, and finally a dull red.

As it continues to expand, it will swallow up first Mercury and then Venus. Temperatures on Earth will become substantially elevated. Our oceans will dry up, and vast areas of lush vegetation will become parched deserts. Finally the Earth, and perhaps even Mars, will be devoured by this expanding giant. Eventually our dying Sun will slowly begin to pulsate, alternately expanding and



2. Drag to create the next frame, or click anywhere to create a new page-sized frame. Or, click an existing frame. If you clicked the hollow box at the bottom of the frame in Step 1, the existing frame must not have a "+" in its top handle. If you clicked the hollow box at the top of the frame in Step 1, the existing frame must not have a "+" in its bottom handle. Otherwise, the link will be unsuccessful.

In the distant future, our Sun will undergo a dramatic change. Hydrogen, burning in a thin shell far from the center, combined with high-temperature helium burning near the core, will cause the Sun's exterior to expand and cool, bloating it up into a red giant star. The Sun will begin to enlarge and change color, first becoming a deeper yellow, then orange, and finally a dull red.

As it continues to expand, it will swallow up first Mercury and then Venus. Temperatures on Earth will become substantially elevated. Our oceans will dry up, and vast areas of lush vegetation will become parched deserts. Finally the Earth, and perhaps even Mars, will be devoured by this expanding giant. Eventually our dying Sun will slowly begin to pulsate, alternately expanding and

contracting and expelling its outer layers into space. These layers will continue to expand outwards in spherical shells, forming a planetary nebula. As the layers expand away from the center, they will reveal what is left of our Sun a small, hot, collapsed star known as a white dwarf.

This type of star is typically only the size of the Earth, but its material is white hot and very tightly packed, weighing hundreds of tons per cubic inch. Such a star continues to radiate heat and light for many years after its formation. In time however, it will cool, becoming a cold, burned-out cinder known as a black dwarf.

The text appears in the frame. You'll notice a plus sign in the hollow box, which tells you that the frame is linked to another frame .

- ▶ **To flow text between frames on separate pages:**
- Follow the above procedure, using the page forward and page back icons in the bottom left corner of the Drawing Window to go to the page on which you want the linked frame to appear.

Pasting text from the Windows Clipboard

You can use the Windows Clipboard to import text from another CorelDRAW file or another application. Text with more than 250 characters is automatically pasted as Paragraph text.


Once text is placed on the Clipboard, use one of the procedures in the following table to paste the text into CorelDRAW.

| To: | Do this: |
|-----------------------------------|--|
| Add a new string of Artistic text | Choose Paste from the Edit menu to paste the text in the center of the page. Or, choose the Text tool, click where you want the text to appear on the page, then choose Paste from the Edit menu. |
| Add a new block of Paragraph text | Choose the Text tool, drag to draw a frame, then choose Paste from the Edit menu. |
| Add to existing text | Choose the Text tool, click where you want the text inserted, then choose Paste from the Edit menu. Or, select the existing text, then choose Edit Text from the Text menu. Click where you want the text inserted. Choose Paste, then click OK. |

Importing text

You can use CorelDRAW's text importing feature to import Paragraph text.

If the text is in one of the text file formats CorelDRAW supports, such as WordPerfect, Microsoft Word, and Ami Pro, import it using the Import command in the File menu. This preserves tabs, indents and other formatting information.

With the Import dialog box open, select the file format from the List Files of Type box. Then, in the File Name box, type the name of the file you want to import and choose OK. The text appears in a frame on your page. For all text formats except for ASCII, the frame is sized according to the page dimensions and margins specified in the application from which you imported it. For ASCII text, the frame is sized according to the current CorelDRAW dimensions and margins. Frames on additional pages are created as needed. The frame is placed on top of any objects on the page. Use the  tool to reposition the objects or the frame.

You can also import text files using the Import button in the Paragraph Text dialog box (accessed by choosing Edit Text from the Text menu). The file must be unformatted ASCII text containing no more than 4000 characters per paragraph (there is no limit to the total number of characters of text you import, however). CorelDRAW will cut off text in any paragraph which exceeds the 4000-character limit. To access the Paragraph Text dialog box, you need to create a text frame first. Next, choose Edit Text from the Text menu, then click the Import button. In the File Name box, type the name and extension of the file you want to import. When you click OK, the text

» **Note:**

Tabs and indents in ASCII files which you import via the Edit Text dialog box are converted to spaces which reduce the number of characters that can be imported, and result in unwanted gaps in the text.

appears in the text entry window. You can edit and format it while it's in the dialog box, or choose OK and edit it on screen. For more information, see "Editing and formatting text" later in this chapter.

Adding symbols from the Symbols Library

The Symbols Library is a collection of over 5000 professionally drawn symbols covering such diverse topics as business, the environment, science and transportation. You can edit them like any other object in CorelDRAW. Because they're in vector format, scaling, rotating and stretching them won't affect their quality when printed.

To access the symbols in the library, they must be installed on your system. If they're not, you'll need to run the CorelDRAW installation program and copy the Symbols Library to your hard disk. (Search for "Setup Program" in CorelDRAW's online Help for details.)

To locate a symbol, browse through the Symbols section of the Libraries Catalog, or use the visual selector in the Symbols Roll-Up. If you use the catalog, note the category and index number next to a symbol. Entering this number in the Symbols Roll-Up retrieves the corresponding symbol.




» **Note:**

Symbols you add from the Symbols Library are curves, not text.

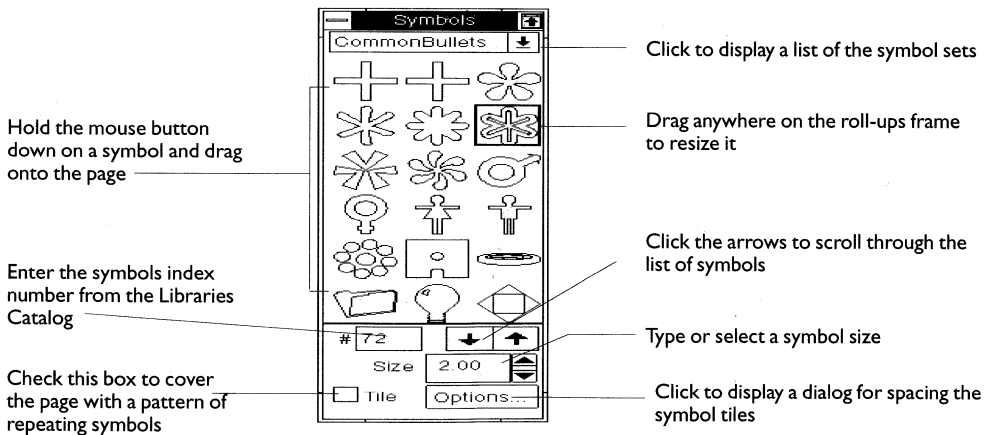
» **Shortcut:**

Pressing Ctrl + F11 opens the Symbols Roll-Up.

► **To add a symbol:**


1. Click and hold on the  tool, or double-click the  tool. Select  from the flyout menu.

The Symbols Roll-Up appears.



2. Choose the symbol set from the list at the top of the roll-up.

3. Select a size in the Size box. The unit of measure is the same one the vertical ruler uses.

Once a symbol is on the screen, you can use the  tool to scale it to any size you want.

4. Drag the selected symbol onto the page.

To see more symbols in the set, use the scroll arrows or enlarge the roll-up by dragging its frame.

You can also locate a symbol by entering its index number in the # box. A box appears around the symbol. Move the cursor over it and drag it onto the page.

The symbol is automatically selected and assigned the default non-text outline and fill attributes.

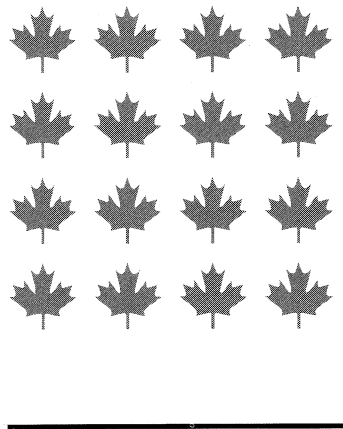
» Tip:

You can also choose the symbol you want by entering its index number in the Symbol # box. Index numbers are listed in the Libraries Catalog.

Tiling symbols

Choosing the Tile option in the Symbols Roll-Up lets you use a symbol to create a pattern. Clicking the Options button opens the Tile dialog box, in which you specify the spacing between the tiled symbols in the units used by the horizontal and vertical rulers. With Proportional sizing selected, you need to enter only one number.

If you don't want the symbols to overlap, select a symbol size that's smaller than the grid size or vice versa.



Creating Symbols

You can create symbols from CorelDRAW objects and add them to those available from the Symbols Roll-Up.


► To create a symbol:

1. Create or import the object you want to create a symbol with. It can be any size; CorelDRAW will resize it to match the other symbols in the roll-up.
2. Choose Create Symbol from the Special menu.
3. Type the name of the symbol category to which you want to add the symbol. Or, click a category name in the list.
4. Choose OK.

The symbol appears at the end of the list in the specified category in the Symbols Roll-Up.

Editing and formatting text




» Tip:
Pressing **Ctrl T**
opens the *Edit Text*
dialog box.

You can edit text directly on screen or in a dialog box. Using a dialog box may make it easier to edit Artistic text that's been rotated, skewed, or otherwise transformed. Text to which you've applied any special effects except for blending must be edited in a dialog box. You access the text editing dialog box by clicking on the text using the Text tool. The Artistic Text dialog box appears. To access the text editing dialog box for text to which no special effects have been applied, select the text with the  tool, then choose Edit Text from the Text menu.




Formatting options available in CorelDRAW include typeface, style, point size, alignment and spacing. Additional options are provided for Paragraph text. These allow you to divide text into columns, create bullet lists, set tabs, and more.

► **To edit and format text:**

1. Choose the tool appropriate for the type of changes you want to make.

| Use this tool... | To do this... |
|--|---|
|  tool | Edit text in a dialog box or format the entire text string or paragraph. |
|  tool | Edit text on screen or format selected characters, or apply a new style to selected text. |
|  tool | Kern text (see "Kerning Text" later in this chapter) or format selected characters. |

2. Select the text you want to change as follows:

| If you're using... | Do this... |
|--|--|
|  tool | Click the text. |
|  tool | Move the crossbar cursor over the text you want to select then click to position the insertion point. Edit the text or drag to select the text you want to format (see "Text editing techniques" below for information). |
|  tool | Click the text to display the character nodes, then click the node to the left of the character you want to change. To change several characters at once, use multiple-select or marquee-select to select their nodes. |

3. Choose the appropriate command from the Text menu for type of changes you want to make.

| Choose: | To: |
|----------------|---|
| Edit Text | Edit text in a dialog box (see "Text editing techniques" below) and change all available character attributes. |
| Character | Change typeface, size, style and placement (normal, superscript or subscript). |
| Frame | Format Paragraph text into columns. |
| Paragraph | Formatting options for Paragraph text and spacing for Artistic text. |
| Text Roll-Up | Display a roll-up for quick access to the attributes. See "Choosing formatting options for paragraph text" later in this chapter. |

4. Make the changes you want and click OK (or click Apply if you're using the Text Roll-Up).

For information on choosing character attributes and Paragraph formatting options, see "Choosing character attributes" and "Choosing formatting options for Paragraph text" later in this chapter.

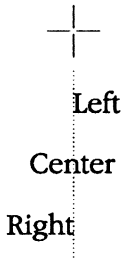
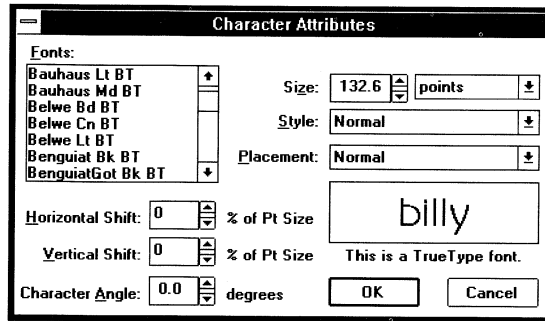
Text editing techniques


Following is a summary of text editing techniques available in CorelDRAW. Unless otherwise stated, these techniques apply whether you're editing on screen or in the Paragraph Text or Artistic Text dialog box.

| To: | Do this: |
|--------------------------|--|
| Move the insertion point | Point and click on the new location, or use one of the following combinations: <ul style="list-style-type: none">- Keypad arrow keys move in arrow's direction- Home moves to start of current line- Ctrl+Home moves to start of text- End moves to end of current line- Ctrl+End moves to end of text- PgUp/PgDn scrolls text in Text dialog box |
| Select any text | Drag across the text with the mouse, or hold down the Shift key and press the Left arrow, Right arrow, Home or End key. |
| Select word on screen | Double-click on word |
| Delete text | Press Backspace or Del key to delete one character at a time or select the characters and press the Delete key. |
| Add text | Move the insertion point where you want the text to start, then type. |
| Replace text | Select the text and type. |
| Begin new line/paragraph | Press Enter. |
| Copy to Clipboard | Select text and press Ctrl + C. |
| Cut to Clipboard | Select text and press Ctrl + X. |
| Paste | Press Ctrl + V. |
| Shift + End | Deletes to the end of the line. (This applies only to on-screen text editing.) |

Choosing character attributes

CorelDRAW provides several ways to change character attributes. The Text Roll-Up and the Edit Text command in the Text menu provide access to all typographical controls. The controls available through the Character command let you change the typeface, style, and size of selected text.



Alignment: You have a choice of Left, Center, Right, Justify, and None. CorelDRAW positions the text string with respect to the + cursor, as shown here. Choosing None keeps the current alignment, but allows you to change the size and position of individual characters using the  tool without CorelDRAW automatically repositioning the remainder of the text to maintain the alignment.

Justified alignment is available only for Paragraph text. If you choose it, make sure the text has no unnecessary spaces between words and characters at the ends of lines. A jagged right margin or obvious gaps in the line usually indicates that there are extra spaces. The last line of the paragraph text string is not fully justified.

Fonts and Style: CorelDRAW includes over 750 type styles suitable for a wide range of graphic applications. You have access to all these typefaces, regardless of the printer you are using, including high-end PostScript printers, HP Laserjet, color Paintjet, or dot-matrix printers. You can add more typefaces from libraries of other vendors, provided they're in a format that CorelDRAW can read (TTF or PFB). Or you can design your own with the CorelDRAW True Type or Adobe Type 1 Export Filter. See Appendix B for instructions.

The type styles available depend on your choice of typeface. Some, such as France, only have normal and bold versions. The Paragraph Text and Artistic Text dialog boxes and the Text Roll-Up have a display box that lets you see a sample of the typeface and style you've chosen.

If you have a PostScript printer, you can configure your system to automatically print with the Adobe typefaces resident in the printer. This includes any downloadable typefaces you purchased that correspond to the typefaces supplied with CorelDRAW. The default PostScript configuration assumes you have a PostScript printer with the standard 35 typefaces resident. This means that when you choose the Dutch801 typeface from the Typeface list, CorelDRAW prints using the Times Roman® typeface resident in the printer.

However, if you choose SwitzerlandBlack from the Typeface list, CorelDRAW uses its own typeface, since there is no corresponding resident printer typeface.

To change the default PostScript printing configuration to tell CorelDRAW to use Helvetica Black™, you must modify the CORELFNT.INI file. For details, search for “font list” in CorelDRAW’s online Help. Then download that font into your PostScript printer before trying to use it.

Size : You can choose any point size for your text, from 0.7 to 2160 point. You can enter fractional sizes, such as 9.5 pt. The point size you choose remains accurate only if you print your file with Scale set to 100% in the Print dialog box.

If you stretch or scale Artistic text so that the height of the characters changes, CorelDRAW calculates the resultant point size. However, if you stretch Artistic text from a small point size to a very large point size, for example from 3 to 300 points, you may get undesirable results. Paragraph text retains its original size, regardless of whether you change the bounding box dimensions. But if you make the margins too narrow, some or all of the text disappears.


The Status Line shows the point size of Artistic text only.

Spacing : You adjust spacing for Artistic and Paragraph text using the Spacing dialog box. To access it, choose Edit Text from the Text menu and click the Spacing button. Or, choose Paragraph from the Text menu or Roll-Up and click the Spacing icon. In the Spacing dialog box, you enter spacing values for characters, words, and lines. The unit for character and word spacing is a percentage of Space. You can also specify the spacing for before and after paragraphs of Paragraph text.

If you’re working with text imported from CorelDRAW 3 and you haven’t converted it to CorelDRAW 4 text, the unit for Line, Before Paragraph, and After Paragraph spacing is specified as percentage of Character Height. Using percentage of Character Height for Artistic text maintains the same relative spacing, even as you scale your text or change its point size.

If you’re working with CorelDRAW 4 text or CorelDRAW 3 text that you’ve converted to CorelDRAW 4 text, you can specify the spacing for Line, Before Paragraph, and After Paragraph in percentage of Character Height or in points. When you specify points, CorelDRAW subtracts the character’s height from the value specified for Line, Before Paragraph, and After Paragraph, and uses the remainder for the amount of space between lines and before and after paragraphs. For example, if you enter a Line spacing value of 18 points and the height of the characters in your font is 16 points, the spacing between lines will be two points. Similarly, if you enter a Before Paragraph spacing value of 20 points and the height of the characters in your font is 16 points, the spacing before paragraphs will be four points.

» **Tip:**

You can use the  tool to adjust spacing directly on the screen. For details, see “Adjusting text spacing interactively” later in this chapter.

On-screen text editing key combinations for Paragraph text

Following is a chart showing the key combinations you can use to edit Paragraph text on screen.



| Key Combination: | Function: |
|-------------------------|---|
| Ctrl+Left cursor key | move left one word |
| Ctrl+Right cursor key | move right one word |
| Ctrl+Up cursor key | move up one paragraph |
| Ctrl+Down cursor key | move down one paragraph |
| Shift+End | delete to end of line |
| Ctrl+Backspace | delete word under cursor, or to the left if cursor over white space |
| Ctrl + C | copy selected text to Clipboard |
| Ctrl + X | cut selected text to Clipboard |
| Ctrl + V | paste from Clipboard |
| Double-click | select word under cursor |
| Ctrl+click | select sentence under cursor |
| Shift+Left cursor key | select text to left |
| Shift +Right cursor key | select text to right |
| Shift+click | expand current selection to include character under cursor |

Choosing formatting options for Paragraph text

The Frame and Paragraph commands in the Text menu (and their counterparts in the Text Roll-Up) open dialog boxes for formatting Paragraph text.

Use the Frame command to divide a text frame into columns. Use the Paragraph command to alter spacing, alignment, tabs, and other formatting settings for individual paragraphs in a text frame.

Column Number and Gutter Width :

You can divide Paragraph text into as many as eight newspaper-style columns using the Frame command. Use the  tool to select the frame or select the  tool and click inside the frame. Then, choose Frame from the Text menu or Roll-Up. Enter the number of columns in the Number box. Enter the required spacing between them in the Gutter Width box.

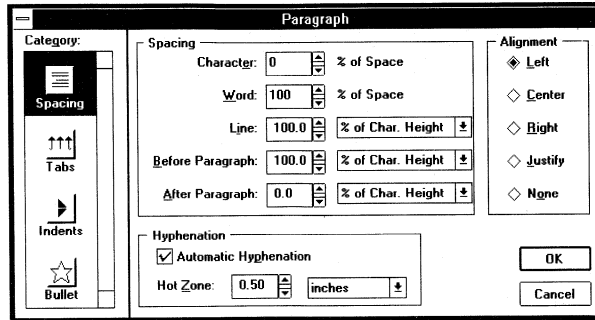
» Tip:

You can change the unit of measure for specifying Gutter Width, Hyphenation, and Tabs & Indents. Choose the unit you want to use from the list box next to the setting. CorelDRAW converts the value.

» Note:

If you import CorelDRAW 3 text into CorelDRAW 4, a dialog box will appear, asking whether you want to convert the text to CorelDRAW 4 text. For more information, search for "spacing: CorelDRAW 3" in the online Help.

Spacing: Controls in the Paragraph dialog box let you set the spacing for individual paragraphs in a text frame. Position the insertion point anywhere in the paragraph then choose Paragraph from the Text menu or Roll-Up. The first controls, Character, Word and Line, work like those described in "Choosing character attributes" earlier in this chapter. They can also be used to adjust the spacing of Artistic text.



The Before Paragraph and After Paragraph controls determine the spacing above and below the selected paragraph.

Hyphenation example, using the word:

"hy-phen-ate"

(shown above with allowable hyphenation breaks)

RIGHT
PARA TEXT
FRAME
BOUNDARY

HOT
ZONE

EG #1: To hyphenate or not to hyphenate

BECOMES:

To hyphenate or not to hyphenate

In this case, the word begins outside of the Hot Zone and there is an allowable break within the zone.

EG #2: To hyphenate or not to hyphenate

BECOMES:

To hyphenate or not to hyphenate

In this case, even though there is an allowable break within the Hot Zone, no hyphenation occurs because the word itself starts inside the zone.

Hyphenation: You can set CorelDRAW to hyphenate words in Paragraph text automatically. Hyphenating words produces less-ragged margins in non-justified text, and helps reduce unwanted gaps between words of justified text.

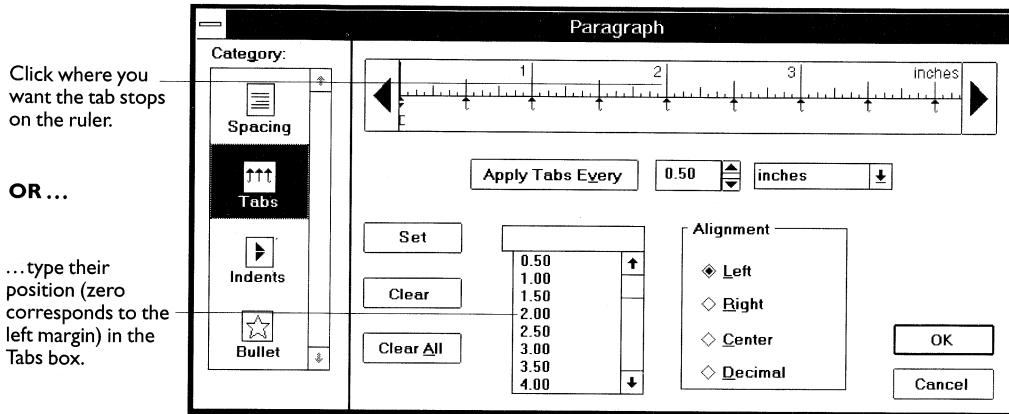
The Hot Zone setting specifies how far the end of a line must be from the right margin before CorelDRAW tries to hyphenate the first word in the next line. If a word cannot be hyphenated within the hot zone, it will be moved to the next line. A smaller hot zone results in more hyphens and less-ragged margins or gaps between words in justified text.

Alignment: CorelDRAW offers five alignment options for Paragraph text. Four of the options are the same as those described earlier in "Choosing characters attributes". The fifth, Justify, adjusts the inter-word spacing so that text aligns with the right and left margins of the frame.

Except for the Justify option, these alignments can also be applied to selected Artistic text.

Tabs: By default, each paragraph in a text frame has preset tab stops spaced at half-inch intervals. You can change this default setting and set custom tabs.

With the Paragraph text tool selected, click anywhere in the paragraph you want to set tabs and indents for. Then, choose the Paragraph command and click Tabs. The following dialog box appears:



» **Tip:**

You can determine the alignment of a tab stop from the appearance of its marker in the ruler. A marker that curls to the right, for example, denotes a right-aligned tab stop.

To change the preset tab stop interval, type a value in the box next to the Apply Tabs Every button and then click the button. Use the adjacent list box to change the unit of measure.

You can set custom tabs stops using the ruler at the top of the dialog box. Or, you can type their locations in the Tabs box for more precision.

To set tab stops with the ruler, choose an Alignment option, then click where you want the tab stop to be. A marker, which you can drag to reposition the tab stop, appears. The Tabs box shows the tab stop's position as well.

To set tab stops numerically, choose an Alignment option, type the position of the tab stop in the Tabs box (zero is the left margin of the text frame) then click the Set button.

To delete a tab stop, select it in the Tabs list or click its marker on the ruler, then click the Clear button. Clicking the Clear All button clears all tab stops.

To change the alignment of a tab stop, select the tab stop in the Tabs list or ruler and choose an alignment option.

» **Tip:**

To format a numbered list, set an indent at 1/4 inch from the left margin. Enter the same value for Rest of Lines. When you type your list, insert a tab after the number.

Indents: You can also set indents for selected paragraphs. Click the Indents button in the Paragraph dialog box to access the Indents controls. The four indent settings provide several ways to format text.

The First Line setting lets you indent the first line in the selected paragraph. You specify indents for subsequent lines using the Rest of Lines setting. You can enter the location of the indents in the numeric entry boxes or with the rulers as follows:

Drag: **To:**

▶ Indent the first line from the left margin.

▶ Indent the entire paragraph from the left margin.
Note: Hold down the Shift key and drag the lower indent marker to move it independently of the first line indent.

The Right Frame Margin setting indents the paragraph from the right margin of the text frame; the Left Frame Margin setting indents it from the left margin. If you have Bullets enabled, the Left Frame Margin setting is replaced by the Bullet Indent setting, which indents the bullet from the left margin. You must set alignment to None for indents to work.

» **Shortcut:**

Ctrl + F2 opens the Text Roll-Up.

Formatting text using the Text Roll-Up

You can also change the attributes of a selected text string directly from the Text Roll-Up. To open the roll-up, select Text Roll-Up from the Text menu. Once you've specified the text attributes in the roll-up, click Apply to apply them to the selected text.

The image shows a 'Text' roll-up dialog box with several sections and callouts:

- Alignment:** Five icons for text alignment: Left, Right, Centered, Justified, and None.
- Typefaces:** A list box showing 'Times New Roman' and a scroll arrow.
- Normal:** A dropdown menu for text style.
- Type Size:** A box containing '24.0' and a scroll arrow, next to a unit dropdown showing 'points'.
- Character Placement...** A button to open a dialog for character shifting and rotation.
- Frame... / Paragraph...** Two buttons for formatting individual paragraphs in a text frame.
- Apply:** A button at the bottom to apply the changes.

Callouts from the left side:

- Choose a type style. Choices from left to right: Bold, Italic, Superscript, and Subscript.
- Type a size or use the scroll arrows to choose one here.
- Displays options for formatting individual paragraphs in a Paragraph text frame.

Callouts from the right side:

- Sets the alignment. Choices from left to right: Left, Right, Centered, Justified (for Paragraph text), and None.
- Displays a list of the typefaces. Click the one you want to use. Hold the mouse button down on the typeface name to see a sample.
- Displays a list of units for specifying type size. Click the unit you want to use. CorelDRAW will convert the value in the type size box.
- Displays a dialog box for entering exact amounts for shifting and rotating characters.
- Displays a dialog box for formatting Paragraph text in columns.
- Applies your choices to the selected text.

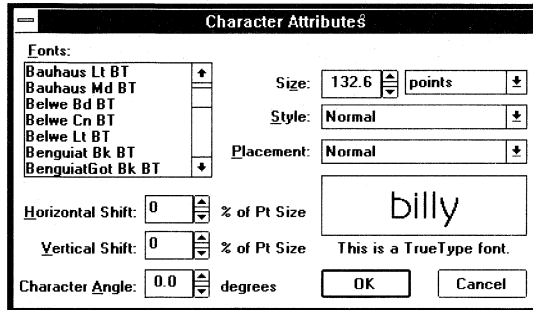
Formatting with Styles

Instead of reapplying the same set of formatting options for each paragraph, you can save the formatting in a style. Styles let you apply formatting to one or more paragraphs in a single step. If you decide to change the style, all paragraphs tagged with the style can be updated in one easy step.

For more information, see Chapter 14, "Using Styles."

Changing character, fill and outline attributes of individual characters

To change the attributes of one or more characters you've selected with the \curvearrowright tool or highlighted with the Text cursor, choose Character from the Text menu. The following dialog box appears:



This dialog box allows you to alter the typeface, type style, type size, and text placement. With one or more characters selected, it also gives you access to controls for adjusting horizontal and vertical shifts, and individual character angles.

Once you've set the desired attributes, click OK. The attributes are assigned to the selected text. For a more detailed discussion of these character attributes, see "Choosing character attributes" earlier in this chapter.

You can also use the \curvearrowright tool or text cursor to change the outline or fill attributes of individual characters in a string of Artistic or Paragraph text. Using the \curvearrowright tool, select the character(s) you want to change, then modify the outline or fill as you would with any other object. Refer to Chapter 7, "Outlining Objects" and Chapter 6, "Filling Objects" for details.

» **Shortcut:**

Double-clicking a character's node with the \curvearrowright tool opens the Character Attributes dialog box.

Using Nudge to adjust paragraph spacing

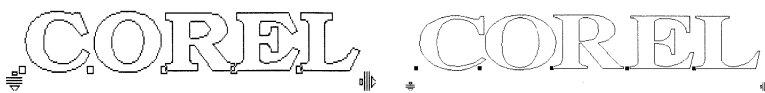
You can use the arrow keys to nudge an entire line of text in a block of Paragraph text if you use the \curvearrowright tool to select all characters in the line. If the paragraph has None selected as its alignment option, you can nudge the line up, down, left or right. Otherwise, you can only nudge the line up or down. Multiple adjacent characters can be marquee-selected and then nudged. If the characters are not adjacent, you must hold down the Shift key and select them individually.


Using the Straighten Text and Align to Baseline commands

To straighten text with characters that have been rotated or shifted horizontally or vertically, select the text and choose Straighten Text from the Text menu. Any vertical or horizontal shifts and angles you may have applied to the characters will be removed when you apply the Straighten Text command.

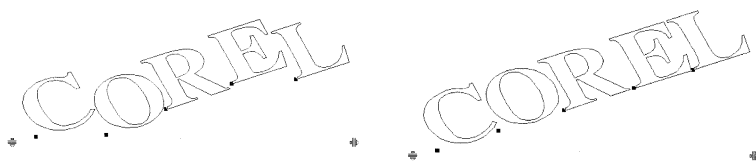
» **Shortcut:**
Pressing **Alt + F10**
aligns selected text to
the baseline.

To align all characters in a text string to its baseline, use the Align to Baseline command in the Text menu. It is available only when you select a text object. This command sets the Vertical Shift to zero for each character in the string. It does not alter any Horizontal Shift applied to characters. You may want to align text to the baseline after you have used the interactive kerning feature to ensure that all your characters are aligned on the baseline.




If your characters have been rotated with the  tool or after using the Fit Text To Path command, Align to Baseline will not affect the amount of rotation.

If the entire text object has been rotated, the characters will be aligned to the rotated baseline.




» Tips:


Use the  tool to zoom in on the character that you want to move to do interactive kerning and vertical placement with greater accuracy.

After kerning, choose *Align to Baseline* from the *Text* menu to eliminate any vertical shift you may have introduced.

Adjusting text spacing interactively

You can use the  tool to interactively adjust text spacing. This includes the character, word and line spacing for the entire text string or paragraph, and individual character positioning.

► To adjust text spacing on screen:

1. Select the  tool.
2. Click the Artistic text string or the frame around the Paragraph text.

Nodes appear next to each character, along with a pair of handles for adjusting spacing.



3. Refer to the chart below for instructions:

| To adjust spacing between: | Do this: |
|-----------------------------|---|
| Characters | Move the mouse pointer over  and drag to the right to increase the spacing or left to decrease it. |
| Words | Move the mouse pointer over  , hold down the Ctrl key, and drag to the right to increase the spacing or left to decrease it. |
| Lines | Move the mouse pointer over  and drag down to increase the spacing or up to decrease it. |
| Paragraphs (Paragraph text) | Move the mouse pointer over  , hold down the Ctrl key, and drag down to increase the spacing or up to decrease it. |

Corel DRAW

Corel DRAW

Corel DRAW

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CorelDRAW has interactive character, word and line spacing.

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Paragraph spacing can also be adjusted interactively.



CorelDRAW has interactive character, word and line spacing.

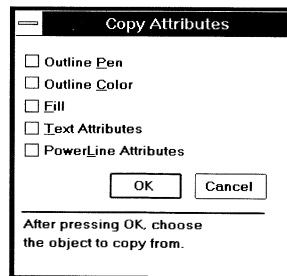
Paragraph spacing can also be adjusted interactively.


Copying text attributes

You can quickly copy the attributes of one text string to another using the Copy Attributes From command in the Edit menu.

► To copy text attributes from one text string to another:

1. Use the  tool to select the text string or text strings whose style you want to change.
2. Choose Copy Attributes From from the Edit menu. The dialog box shown here appears.
3. Click Text Attributes. This includes typeface, style, point size, spacing and alignment.
4. Choose OK.
5. You return to your drawing and the cursor changes to a .
6. Click the text string from which you want to copy the attributes. The cursor remains on screen until you select a text string.



The cursor returns to the , indicating that the attributes have been copied to the destination text string.

Changing the default text attributes

You can change the default font and spacing for new text you enter, and the alignment for the current CorelDRAW session only.

Changing the default text attributes

Text is automatically drawn in the default Artistic or Paragraph text style. When you open the Text Roll-Up or access the Text dialog box, these default settings are shown. You can change these defaults and the default character and paragraph attributes as follows:

► To change the default font and point size:

1. With no objects selected, choose Text Roll-Up from the Text menu.
2. Enter the point size in the Point Size box.
3. Choose the font from the fonts list.
4. Click Apply.
5. In the Text Attributes dialog box that appears, click Paragraph Text or Artistic Text, or both, depending on which type of text you want to change the defaults for.
6. Choose OK.

► **To change the default character attributes:**

1. With no objects selected, choose Character from the Text menu.
2. In the dialog box that appears, click Paragraph Text or Artistic Text, or both, depending on which type of text you want to change the defaults for.
3. Choose OK.
4. In the Character Attributes dialog box, specify the default character attributes.
5. Choose OK.

► **To change the default paragraph attributes:**

1. With no objects selected, choose Paragraph from the Text menu.
2. In the dialog box that appears, click Paragraph Text or Artistic Text, or both, depending on which type of text you want to change the defaults for.
3. Choose OK.
4. In the Paragraph Attributes dialog box, specify the default paragraph attributes.
5. Choose OK.

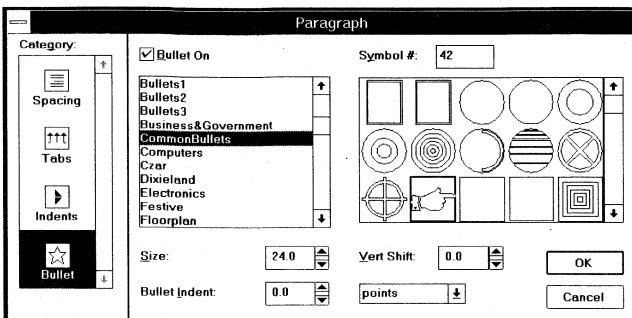
Adding bullets to Paragraph text

CorelDRAW's Symbols library contains thousands of symbols that you can use as bullets in Paragraph text. You can place bullets at the beginning of any paragraph, whether it is a word in a list, or a larger block of text.

When you add a bullet to a paragraph, it is indented by the amount specified for the Bullet Indent in the Paragraph dialog box. The text following the bullet is indented by the value specified for First Line Indent. See "Choosing formatting options for Paragraph text" earlier in this chapter for information on setting margins and indents.

► **To add bullets:**

1. Enter the Paragraph text to which you want to add bullets. Separate each block of text you want to begin with a bullet by pressing the Enter key.
2. Using the text cursor, highlight the lines to which you want to apply bullets.
3. Choose Paragraph from the Text menu or Roll-Up.
The Paragraph dialog box appears, as shown on the next page.
4. Click the Bullet icon in the list on the left.
5. Click Bullet On.
6. From the list box on the left, click a Symbol category.
7. Click a symbol from the list on the right.



Specify a size in the Size box. If you don't specify one, CorelDRAW automatically sizes the bullet in proportion to the text.

8. Enter a value in the Vert Shift box to shift the bullet up and down relative to the text, .
9. Choose any other settings, then choose OK. If you accessed the Bullets through the Text Roll-Up, click Apply.

The symbol appears with the default outline and fill attributes. You can change these defaults for bullets in the same way as you change them for other CorelDRAW objects.




Indenting bullets

When bullets are enabled, the Bullet Indent setting replaces the Left Frame Margin setting in the Indents mode of the Paragraph dialog box. To indent the bullet from the left margin, enter a value in the Bullet Indent box. The Bullet Indent value must be less than or equal to the First Line and Rest of Lines indents values. If you enter a Bullet Indent value that is greater, these values automatically change to match the Bullet Indent value.


To indent all lines following the bullet by the same distance, enter the same value for First Line and Rest of Lines indents.

Kerning text

Kerning moves adjacent characters closer together or farther apart. You can kern text interactively by dragging with the mouse. You can also enter values in a dialog box or use the arrow keys to nudge characters.

To select characters for kerning, begin by clicking on the text with the  tool. You'll notice little hollow squares or "nodes" appear next to each character. You'll click these to select the characters you want to kern. (The  and  handles at each end of the last line of an Artistic text string or at the bottom of a Paragraph text frame are used to adjust spacing. For details, see "Adjusting text spacing interactively" earlier in this chapter.

► **To kern text by dragging:**

1. Using the  tool, select the node to the left of the character you want to move.
2. Drag the character to its new position.


► **To kern text by nudging:**

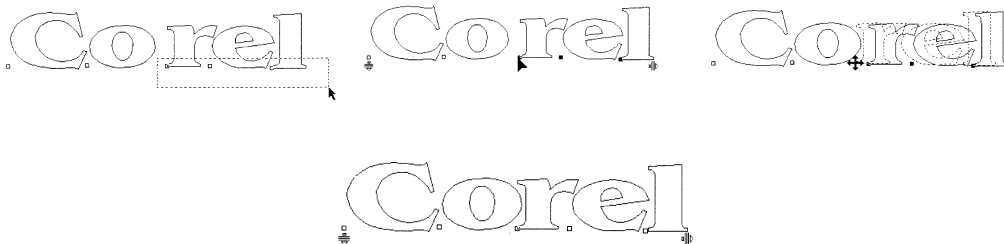
1. Click the node to the left of the character you want to move.
2. Press the left or right cursor key to move the character in the desired direction.

If you hold the cursor key down, the character moves in continuous steps. The Nudge setting in the Preferences dialog box controls how far selected characters move each time you press one of the cursor keys. For details, refer to “Customizing CorelDRAW” in Appendix A.




► **To kern text by entering values in a dialog box:**

1. Using the  tool, double-click the node to the left of the character you want to move.
The Character Attributes dialog box appears.
2. In the Horizontal Shift box, enter the amount by which you want the character moved. The value is specified as a percentage of the character's point size. Enter negative values to shift the character to the left, and positive values to shift it to the right.



Moving several characters at once

Usually when you kern text, you want the remainder of the text on the line to move with the character whose position you are adjusting. To do this, you use the  tool and marquee-select, or multiple-select, the characters. Begin dragging one of them. You can select and position any subset of characters this way.

Forcing characters to the baseline

Holding down the Ctrl key while dragging characters constrains their movement to the nearest baseline. If characters have been moved vertically off the baseline, they will be returned to the nearest baseline when they are moved while pressing the Ctrl key.

Constrain is in effect only when the Ctrl key is held down. Therefore, you should release the mouse button before releasing the Ctrl key to ensure the final result is constrained.


Using the Spell Checker

» Tip:

Since the Spell Checker command is always available, you can use it to check the spelling of any words, not just those in the current drawing. Choose Spell Checker from the Text menu, then type the word you want to check in the Word to Check box, then click Check Word.

The Spell Checker command lets you check your text for spelling errors. If an unrecognized word is found, you can correct it if it is misspelled, or add it to a personal dictionary.

► To check the spelling of text:

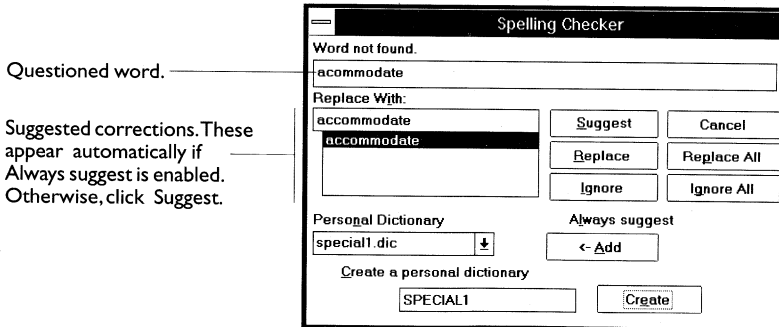
1. Select the text you want to spell check. You can select entire strings of Artistic or Paragraph text using the  tool. Or, you can select the individual word(s) you want to check using the text cursor.

2. Choose Spell Checker from the Text menu.

The Spelling Checker dialog box appears.

3. Click Check Text. The contents of the dialog box change to display the Replace and Ignore commands.

When a word that is not in the dictionary is found, CorelDRAW displays it in the box under Word not Found.



4. Do one of the following for each unrecognized word:
 - Correct the spelling if the word is misspelled. Refer to the next procedure for information.
 - Click the Ignore button to leave the current word unchanged.
 - Click the Ignore All button to skip the current word and any further occurrences of the word during the current spelling check.
 - Add the word to a personal dictionary. See “Creating a personal dictionary” later in this chapter.

5. When all words have been checked, a message box appears. Choose OK to return to your drawing.

► **To correct a misspelled word:**

1. Do one of the following:
 - Type the correct spelling in the Alternatives box.
 - Click the Suggest button and choose one of the alternative spellings displayed. If you want the alternative spellings to appear automatically, click the Always suggest box.
2. Click the Replace button to correct the current word, or Replace All to correct all occurrences of the word.
3. When all words have been checked, a message box appears. Choose OK to return to your drawing.

Note: Clicking Cancel will close the Spell Checker. Corrections made to the selected text string before pressing Cancel are retained. Use the Undo command in the Edit menu to undo the changes.


Creating a personal dictionary

You can create personal dictionaries for words that aren't in the main dictionary. You can include industry-specific terms, acronyms, proper names, and so on for CorelDRAW to check.

► **To create a personal dictionary:**

1. Choose Spell Checker from the Text menu.
2. Click the Create button.
3. Type a name for the dictionary, up to eight characters.
4. Press Enter.

► **To add a word to a personal dictionary:**

1. Select the text you want to check using the  tool, or by highlighting it with the Text cursor.
2. Choose Spell Checker from the Text menu.
3. When CorelDRAW displays a word you want to add to a personal dictionary, select the dictionary from the Personal Dictionaries list box.
4. Click the Add button.

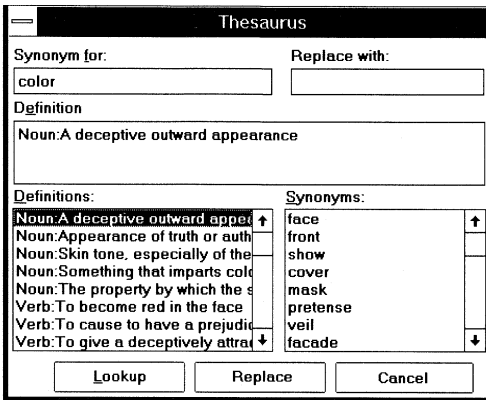
Using the thesaurus

You can use the Thesaurus command to find synonyms for selected words.

► To use the thesaurus:

1. Using the Text tool, select the word for which you want to find synonyms.
2. Choose Thesaurus from the Text menu.

The Thesaurus dialog box appears, with the selected word in the Synonym For box. If the word is contained in the dictionary, its definition appears in Definition box.



3. Do one or more of the following:
 - Choose other definitions to see their synonyms.
 - Choose a synonym to replace the selected word, then click the Replace button.
 - Click the Cancel button to close the Thesaurus dialog box without changing the selected word.

Note: If you don't select a word before choosing the Thesaurus, you can still use it to find synonyms. The box will come up empty. Type the word you want in the Synonym For box, then click Lookup.

Finding and replacing text

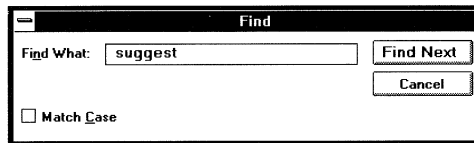
Using the Find and Replace commands in the Text menu, you can find words and phrases in a block of Paragraph text and change them.

If you choose the Match Case option, CorelDRAW observes the case of the letters in the Find and Replace dialog boxes. This lets you, for example, find all occurrences of the name “Mark” but ignore the word “mark”. If you replace text with Match Case disabled, the case of the replacement text will match that of the text being replaced. For example, if you replace “users” with “you” CorelDRAW will substitute “You” for “Users”, and “you” for “users”.

Searching begins where you place the text cursor and continues to the end of the text. When the end is reached, CorelDRAW asks you whether you want to continue searching from the beginning of the text. If you’re searching for text in linked frames, each frame is searched.

► To find text:

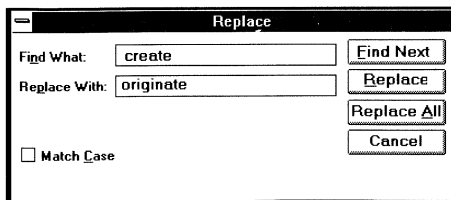
1. From the Text menu, choose Replace. The following dialog box appears:



2. In the Find What box, type the text you’re searching for.
You can type as many as 100 characters in the Find What box; the text scrolls horizontally as you type.
3. Choose Match Case to have CorelDRAW observe the case of the letters you type.
4. Choose Find Next to begin searching.
CorelDRAW highlights the first occurrence of the text in the Paragraph text frame. Choose Find Next to search for the next occurrence.
To edit the found text, choose Cancel.

► To replace text:

1. Choose Replace from the Text menu. The following dialog box appears:



» **Tip:**

You can use Replace to delete text by leaving the Replace With box empty. Make sure you use the spacebar to insert a space at the end of the text you typed in the Find What box. This will eliminate the space that would have been occupied by the deleted word.

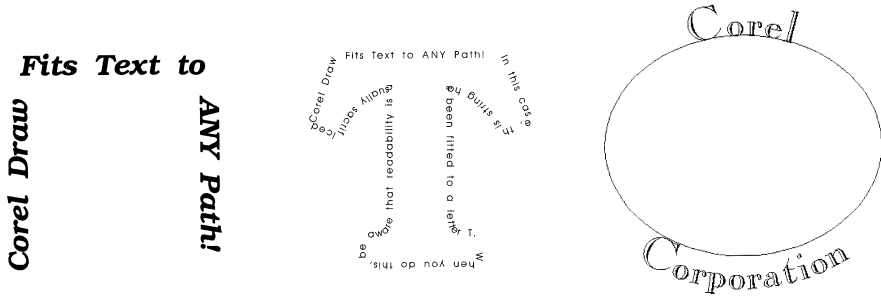
2. Type the text you want to find in the Find What box. Type the replacement text in the Replace With box.
You can type up to 100 characters. The text scrolls horizontally as you type.
3. Choose Match Case to have CorelDRAW observe the case of the letters you type.
4. Click the Replace button if you want to confirm the replacement of each occurrence of the text you are searching for. To change all occurrences without confirming the replacements, click the Replace All button.

Choose Undo from the Edit menu to undo the changes that Find and Replace has made. Choosing this command, however, will undo all editing you've done since you last entered the text editing mode.

Fitting text to a path


CorelDRAW allows you fit a string of text to any path—a straight or curved line, a rectangle, an ellipse, or another letter or text string. To fit text to a path, use the Fit Text to Path command in the Text menu. It becomes available only when you select both a text object and a non-text object at the same time.

A text string can be fitted to the “path” traced by the second object’s outline, as shown in the following examples:




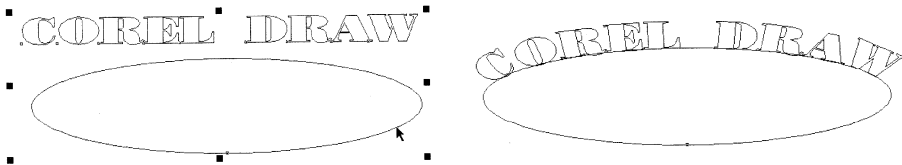
» Tip:

To fit text to another letter, you must first convert the target letter to a curve object, using the Convert to Curves command in the Arrange menu.




Once text is fitted to a path, use the  tool to adjust the positioning of any of the characters. The text and the object whose path it’s fitted to are dynamically linked. This means that if you edit the shape of the path, the text fitted to it is automatically refitted to the new shape of the path. Similarly, if you edit the text, it will be refitted to the existing path. You can place two or more text strings on the same path. All text strings fitted to a single path will be dynamically linked to that path. If you want to break this dynamic link, select the text and path group, then choose Separate from the Arrange menu.

► To fit text to a path:

1. Select the text object and the second object using the  tool and the Shift key.



» Tip:

To leave the path in your drawing but not have it print, you can use the  and  tools to change the Outline and Fill to  (i.e., None).

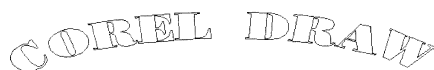
2. Choose Fit Text To Path from the Text menu.

The Fit Text To Path Roll-Up appears. It gives you options that control how the text is fitted to the path. (These options are described on the next page.)


3. Select the options and click Apply.

The text is redrawn along the path of the second object.


You can remove the path object with the Delete command when the text is positioned correctly.



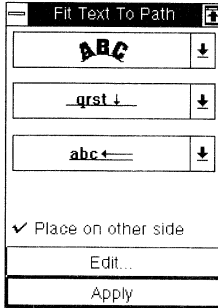
► **To edit text on a path:**

1. Click the  tool to get the text cursor, then click one of the text characters on the path.

-OR-

Select the text by holding down the Ctrl key and clicking on the text with the  tool, then choose Edit Text from the Text menu.

The Artistic Text dialog box appears, where you can edit the text.



Choosing options for text on a path

Options in the Fit Text to Path Roll-Up let you specify the orientation and alignment of the text to the path, and the distance between the text and the path.

Text orientation

Clicking in the first list box from the top displays options for specifying the orientation of the letters with respect to the path.

Rotate Letters : Rotates the letters to follow the contours of the path.

Vertical Skew : Vertically skews text on the curved portion of a path. The amount of skewing increases with the slope of the path.

Horizontal Skew : Horizontally skews text on the curved portion of a path. The more vertical the path, the flatter the text appears.

Upright Letters : Keeps characters vertically oriented, while the text string follows the contour of the path.



Rotate Letters



Vertical Skew



Horizontal Skew



Upright Letters

Vertical Alignment

Clicking the second list box displays options for specifying the vertical placement of the text with respect to the path.



Baseline : Aligns the baseline of the text with the path.



Top : Aligns the ascender line (the highest point) of the text with the path.



Bottom : Aligns the descender line (the lowest point) of the text with the path.



Center : Centers the text on the path.



Variable : Allows you to drag the text off the path. After choosing the option, click the text and drag away from the path. As you drag, a guide appears, indicating how far the text will be from the path when the mouse button is released.

Horizontal Alignment

Clicking the third list box displays options for specifying the horizontal placement of the text with respect to the path. These options are available only when fitting text to a curve object.

Start: Usually when fitting text to a path, the first character in the text string is placed at the start node of the path, and the fit proceeds in the direction the curve was originally drawn. This is the default option.

Center: Places the text midway between the endpoints of the path. For a closed path, the first and last characters will be the same distance from the start node of the path.

End: Aligns the last character in the text with the end node of an open path and proceeds the fit towards the start node. For a closed path, the last character in the text string aligns with the start node, and the fit proceeds in the direction opposite to the way in which the curve was drawn. Depending on the way you drew the path (clockwise vs. counterclockwise), the text may be fitted to the inside of a closed path.



Quadrant: Choose the quadrant you want the text placed on. This control is available when you fit text to rectangles and ellipses that haven't been converted to curves. When you apply the fit, the center point of the text string is aligned with the center point of the selected quadrant.

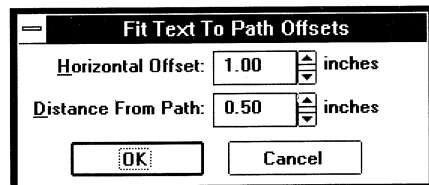
Place on other side: To place the text on the opposite side of the path while maintaining all the other specified variables, click Place on other side. The placement is calculated with the text mirrored horizontally and vertically.

If you specify a right or left horizontal alignment, Place on other side reverses the alignment. Specify the opposite alignment if you want to flip the text but keep it on the same side of the path it resided on originally.

Aligning text on a path with numeric precision

Clicking the Edit button in the Fit Text to Path Roll-Up opens a dialog box in which you enter numeric values for aligning text on a path.

When you fit text to a path, the first character in the text string is usually placed at the path's start point. To place the text to the right of the start point, enter a positive distance value. To place it to the left of the start point, enter a negative value.



When you specify a horizontal offset, it is applied to the text string after the horizontal alignment is applied. For example, choosing a

center alignment and a horizontal offset of 0.25 inches causes the text string to be moved 0.25 inches to the right along the path from a center alignment.

You can also adjust these parameters interactively. See “Adjusting the position of text on a path”.


Moving the center of rotation of text on a path

To retain the moved center of rotation of the text on a path, you must first group the text and path using Group under the Arrange menu. Once they’re grouped, you can no longer edit either of them individually, however, you can easily ungroup them again using Ungroup under the Arrange menu.

You can also move the path’s center of rotation by selecting it without selecting the text. This method produces the same effect as grouping them and then moving the center of rotation of the group. However, it may take longer than the grouping method, since the text must redraw. Likewise, you can move the text’s center of rotation by selecting it without selecting the path. This method rotates the text characters individually, and does not affect the path.

Interactively adjusting text on a path


You can position text on a path as follows:

1. Select the text object that has been fitted to the path. Since the text is already linked to the path, you must press the Ctrl key and then click the text object to select the text.
2. Click the text and drag the cursor outwards off the path. A sliding cursor appears, with one end resting on the path. This cursor lets you set the distance the text will be from the path. You can move the cursor above or below the path, placing it above or below the path. If you stop moving the cursor but keep holding down the mouse button, a replica of the path appears at the free end of the cursor. This replica represents the baseline of the text, and shows you where the text will be positioned relative to the path.
3. To move the text interactively along the path, select the text as described in Step 1 and switch to the Shape tool, . Select all the nodes in the text string and move along the path in either direction. The text follows, maintaining its distance above or below the path. You can adjust the text this way with any number of character nodes selected.

The text "COREL DRAW" is written in a stylized, outlined font along a curved path that arches upwards.The text "COREL DRAW" is written in a stylized, outlined font along a curved path that arches upwards, similar to the first image but with different spacing.

Adjusting character spacing for text on a path

You may want to adjust the spacing of the text string, since placing text on a curved path causes spaces to open on concave paths and close on convex paths, as shown with the spacing around the letters “O” and “W” in the example.

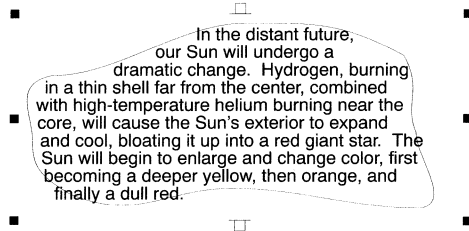
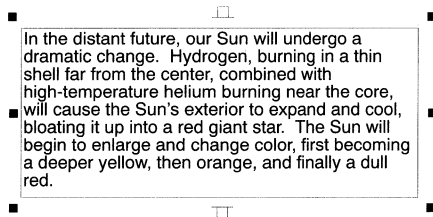
Use the  tool to reposition the characters manually. To correct for the new positions, you may have to change the character angles manually as well.


Detaching text from a path

You can break the link between the text and the path to which it is fitted using the Separate command in the Arrange menu. Once the link is broken, use the Straighten Text command in the Text menu to straighten the baseline of the text.

Changing the shape of the Paragraph text frame

You can change the shape of a Paragraph text frame so that the text inside it appears to wrap around other objects, as shown in the first example below. Or you can change the frame’s shape so that the text forms a particular shape, as shown in the second example below.



To change the shape of the Paragraph text frame, apply an envelope to the text frame, and then use the  tool to edit the envelope into the desired shape. Or, you can create an envelope from any shape and apply it to the Paragraph text frame. Once you’ve changed the frame’s shape, the text redraws to conform to the contours of the envelope.

For more information about the Envelope feature, see “Shaping objects with envelopes” in Chapter 13.

You can also change the Paragraph text’s frame by rotating or skewing it. When you rotate the frame, the text is rotated at the same angle. However, skewing the frame does not skew the individual characters inside the frame (it does, however, skew the columns).





Extracting and merging back text

The Extract command in the Special menu saves Artistic or Paragraph text in a text file that you can edit in a word processor. After you've made changes, the Merge Back command automatically inserts the revised text into the appropriate places in your drawing.

With the exception of text that's been blended, extruded, or fitted to a path, the merged text appears just as the original text did. It has the same attributes, (typeface, point size, spacing, etc.) and alignment (left, right, center etc.), and transformations. However, some of the individual character attributes (character angle, vertical shift, bold, etc.) are not maintained in the merged text. Only characters that precede those you edited in your word processor retain their individual attributes; those that follow will take on the attributes assigned to the entire text string.

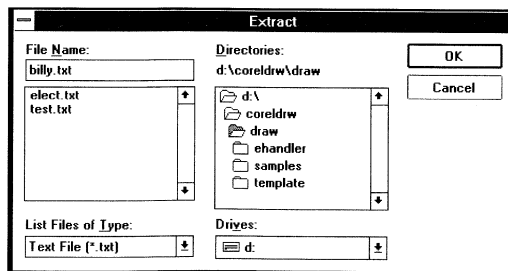
Use Extract and Merge Back only when you need to make major revisions to a file. For minor changes, use the Edit Text command.

The example shows how an Extract and Merge Back operation puts together a French version of an earlier CorelDRAW Quick Reference Card. Although the text in the example is Artistic text, the procedure that follows applies to Paragraph text also.

| | | |
|--|--|--|
|  COREL | |  |
| Object Type | Create Objects <small>SELECT one of tools on left</small> |  Edit Shape (Nodes) <small>Effect varies with object type</small> |
|  <small>Pencil</small> | CURVE Draw = Drag Mouse <small>(ERASE = Shift)</small> LINE Draw = Click Mouse <small>(15 STEPS = Ctrl)</small> | SELECT Node = Click <small>(Multiple = Shift or "Marquee")</small> MOVE Node = Drag <small>(Horiz/Vert = Ctrl)</small> MENU(Node Edit) = Double Click <small>(Join Nodes = Select Both First)</small> |

► **To extract text from a drawing :**

1. Open the CorelDRAW file from which you want to extract text. If you need to make other non-text changes, make them first and save the file. If changes (including grouping or ungrouping objects) are made *after* the text is extracted, you may have problems merging back the revised text.
2. Choose Extract from the Special menu. A dialog box appears prompting you to give the text to be extracted a filename.

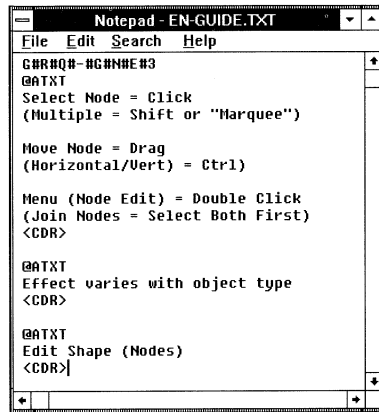


3. If you want to save the file under the same name and subdirectory as the CDR file, choose OK. If not, enter a different name or subdirectory and then click OK.
4. Close or minimize CorelDRAW.

► **To edit the extracted text:**

1. Load the text file into Windows Notepad or another ASCII text editor.

The first line you see points to the CDR file the text was extracted from. Beneath this is a token followed by the first text string or line of text. In Paragraph text, the token includes a numeric identifier for each line. After the text comes an “end-of-string” code, (<CDR>), and a blank line. If you change any information in the file except for the text, the Merge Back operation will fail.

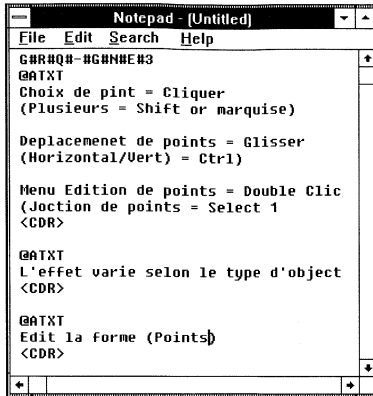


As you scan through the text file, notice the order of the text strings. If you recall the order you entered Artistic text in your CorelDRAW file, you'll notice that the one listed first was actually the last string entered in CorelDRAW. All strings are listed from the most-to-least recent. (Note this is **not** the case for Paragraph text). This is as it should be, and must not be altered.

2. Edit the text string by string. In the example, the French text to be substituted was prepared in advance by translators. The text was loaded into Notepad and the string numbers and end-of-string codes were inserted. The text strings were rearranged to match the order of those in the original extracted English file. If you use this approach, print a copy of the original extracted file and refer to it while you're editing.

The accented characters in this example (e.g., à, é, ç) are special characters entered using the Alt key and the number keys in the numeric keypad. Any character in CorelDRAW's character set that isn't found on your keyboard can be entered this way. See the Character Reference Chart supplied with CorelDRAW for specific instructions.

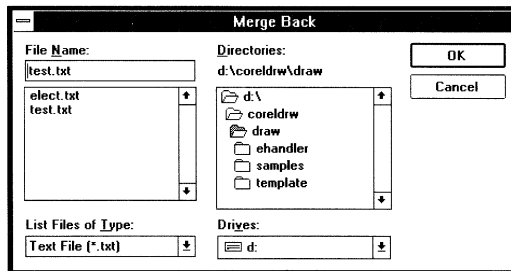
You can add as much text as you want during your editing. However, each string will be returned to the same position it originally occupied in your drawing. Depending on the amount of text you add, you may find that some strings overlap strings or objects in your drawing (see the following example). You can correct this situation after you merge the text back into your drawing.



3. When you've finished editing, save the file as an ASCII text file.



► **To merge the edited text:**

1. Open CorelDRAW.
2. Open the file you extracted the text from.
3. Choose Merge Back from the Special menu. The following dialog box appears:



4. Select the text file and click OK. Within a few seconds, the CDR file appears with the changes you made. If you save the revised file at this point, CorelDRAW overwrites the original. To keep the original, use the Save As command and save the revised file under a different name. You can then edit the new file to correct alignment or spacing problems introduced by merging text strings that were a different length than the original, as shown here.



| Type d'objet | Éditer la forme (Points) | |
|---|---|---|
|  Crayon | Sélectionnez l'un des outils à gauche Dessin de courbes = glisser la souris (suppression = Shift) Dessin de lignes = cliquer la souris (gradations de 15° = Ctrl) |  L'effet varie selon le type d'objet Choix de point = Cliquer (Plusieurs = Shift ou marquise) Déplacement de points = Glisser (Horizontal/vertical) = Ctrl) Menu Edition de points = Double Clic (Jonction de points = Sélectionner les deux au préalable) |



Converting Artistic text to curves

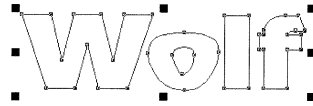
You may want to customize the shape of characters in a string of artistic text. To do this, you must first convert the string to curves. You can also break it apart so that the characters in the string are separate objects.

Once you convert a text string to curves, you can no longer apply text-related commands to it. The objects will print as curves, not as text using resident printer fonts.

» **Shortcut:**
Ctrl + Q converts
selected Artistic text to
curves.

► To convert text to curves:

1. Select the text string using the  tool. If the text has been fitted to a path, hold down the Ctrl key and then use the  tool to select it.
2. Choose Convert to Curves from the Arrange menu. The text string is now one curve object, and you can node edit any part of it.
3. You can also use Break Apart from the Arrange menu. The characters become individual curve objects that you can select and manipulate. Artistic text containing characters with individual fills or outlines are converted into a group of curve objects, one object for each fill or outline combination used.



Working with Colors

CorelDRAW comes with a number of color palettes. One of the palettes contains spot colors defined using the PANTONE Matching System—a color specification method used when exact colors are required. You can choose from over 700 spot colors and create many more by adjusting the tint. Another palette, the PANTONE process palette, contains process colors defined using the PANTONE Matching System.

Another of CorelDRAW's palettes, the TRUMATCH palette, lets you specify process colors using the TRUMATCH Swatching System. Using this palette along with its TRUMATCH color reference book, (not included with CorelDRAW) you can be reasonably certain how the colors will look when printed.

The other palettes supplied with the program contain colors defined using the process color method. This method of specifying color is based on the principle that virtually any color can be represented by overlaying cyan, magenta, yellow, and black. The default process color palette contains about 100 named colors. For creating your own process colors, CorelDRAW offers a choice of three color models: CMYK, RGB, and HSB.

When you create your own colors, you can assign names to them and add them to the palette. You can also delete colors and rearrange the order of colors in the palette. And when you're finished, you can save the palette under a new name and have CorelDRAW load it automatically when you start the program.


The ability to customize palettes is especially useful when you're working on a drawing that uses many colors. By limiting the palette to the colors you're using, you'll find it easier to apply them to other objects in the drawing. If you're working on different drawings that use the same colors, a custom palette will help you to apply them consistently.

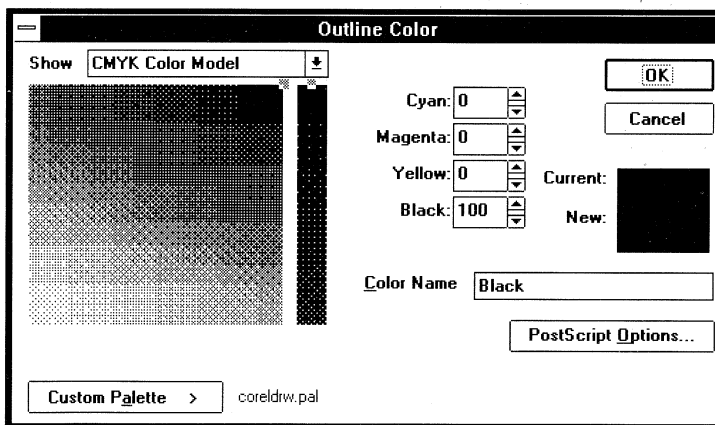
Advice for the novice

CorelDRAW has many powerful features for producing professional-quality, full-color artwork. Learning to use them requires at least a basic understanding of the color printing processes. Some guidance is provided here, but because it's a complex subject, you may want to consult one of the publications listed in Appendix E, which contains the titles of some of the most informative books and periodicals available on graphic design and print production. Your local commercial printer is another excellent source of information.

Creating colors

CorelDRAW allows you to create colors for outlining and filling objects. The dialog boxes and techniques you use for filling and outlining are identical. The descriptions that follow apply to both.

When you click  in the Outline Pen or Fill flyout menu with an object selected, the following dialog box appears.



If the dialog box doesn't look like the one shown here, click the arrow in the Show list box. You'll see a list of color models which, when selected, cause some of the controls on the left side and middle of the dialog box to change. The Outline Color/Uniform Fill dialog box controls are discussed in more detail later in this chapter.

Choosing a color specification method

There are two color specification methods:

- Process Color for creating custom colors or selecting them from the TRUMATCH Color Palette or PANTONE Process palette
- Spot Color using PANTONE® Spot Colors

Deciding which method to use depends on two factors: the number of colors in your drawing, and how you intend to have it printed.

Spot color is generally used when your drawing contains fewer than four colors. With Spot color, you are choosing discrete colors based on the PANTONE MATCHING SYSTEM. Since most commercial printers use this system, the colors you specify will usually match the printed results. If you're reproducing your work on a color PostScript printer, the Spot color method also gives you access to the PostScript halftone screen patterns.

If you want to use more than four or five colors, and plan to take your work to a commercial printer, you should use Process color. It lets you blend millions of colors directly on your screen using one of the three Process Color models CorelDRAW provides. If you are using a color printer to output your drawing, you can use the method you find most convenient. To ensure a high degree of accuracy between the printed result and the work you're doing on the computer, we provide TRUMATCH and PANTONE Process color palettes.

Spot color : Spot colors are defined using the PANTONE MATCHING SYSTEM, which has been licensed to Corel by Pantone, Inc. for use with CorelDRAW. Spot color is most commonly used to add accents or highlights to an otherwise black and white page, or when exact colors are required. If a commercial printer is reproducing your work, you should restrict the number of Spot colors to three or four.

You can specify a percentage tint (%Tint). This will give you a lighter shade of the color on your monitor or color printer. You can use an unlimited number of tints of the selected ink colors.

If you create color separations on a PostScript printer, all objects that are the same Spot color will print together on their own page, along with any objects which are tints of that color. The Tints are printed as halftone screens using the screen settings specified for the object.

Process color : Process color refers to the four inks used by commercial printers to print color publications such as magazines. Using percentages of cyan, magenta, yellow and black (CMYK), it's possible to specify over 16 million colors.

You would normally use Process color when you want to include more than four colors in your graphic and have it reproduced by a commercial printer.

If you assign your colors as Process and are using a PostScript printer, CorelDRAW can separate them into their cyan, magenta, yellow and black components. Provided you select the required options in the Print Options dialog box, the resulting four pages will

» **Tip:**

Selecting an object and pressing Shift+F12 displays the Outline Color dialog box controls that were last used to specify an object's outline color. Shift+F11 displays the controls last used to specify a Uniform Fill color.

contain the necessary registration marks and the names of the colors.

Initially, the Process palettes contain an assortment of predefined Process colors. You can add to the palette by creating your own. This process is described in the next section.

Creating custom process colors

CorelDRAW provides three different color models for creating Process colors: CMYK (cyan, magenta, yellow, black), RGB (red, green, blue) and HSB (hue, saturation, brightness). Use the model you are most comfortable with. If you use the RGB or HSB models, CorelDRAW will internally convert the colors to their CMYK equivalents. The conversion won't be exact, however, since the RGB and HSB models create color in a fundamentally different way than the CMYK model.

► To create a custom process color in the Outline Color or Uniform Fill dialog box:

1. Click the Show box to display a list of color models and palettes.
2. Click the model you want to use. (The next three sections describe the models and how to use their controls.)
3. Create the color by entering percentages in the numeric entry boxes or using the color-adjustment controls in the visual selector beside the Show box.
4. To apply the color to a selected object without adding it the palette, click OK. To add the color to the currently loaded palette, type a name in the Color Name box, then choose OK.

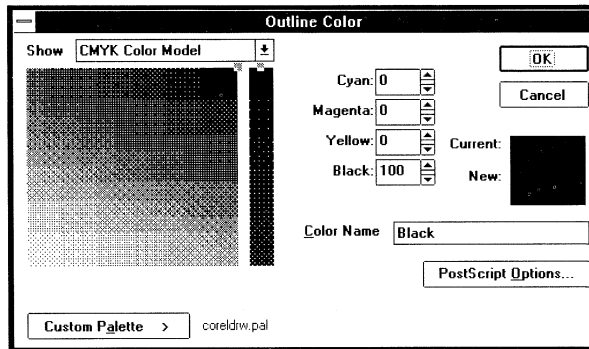
When you add a color to a palette, the color's name is added to the list that appears when you click the Show color names check box. If you switch models after creating a color, CorelDRAW converts the color for you.

Instead of adding the color to the currently loaded palette, you can save the modified palette under a new name by clicking on the Custom Palette button and choosing Save As. For more information, see "Customizing palettes" later in this chapter.

CMYK model : The CMYK model is based on the colors of the inks used in four-color printing. By combining percentages of cyan, magenta, yellow and black, it's possible to reproduce virtually any color.

The advantage of the CMYK model is that you can specify colors using CMYK color reference materials like the TRUMATCH or PANTONE Process system and be reasonably certain of what the colors will look like when printed.

When you choose CMYK, CorelDRAW displays two sets of color selection controls and a preview box showing you the selected object's current and new color.



The controls beside the Visual Selector allow you to specify colors by entering percentages of cyan, magenta, yellow and black. This is the method you would use if you were picking colors from a CMYK color reference chart.

Alternatively, you can enter a CMYK color from reference materials such as the TRUMATCH or PANTONE systems. You can enter a TRUMATCH color in three ways:

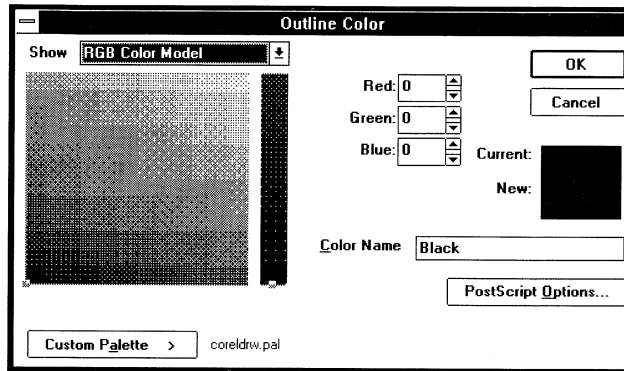
- 1) By typing the number of the color you have selected in a TRUMATCH or PROCESS Color chart (not supplied with CorelDRAW) in the Search String box ;
- 2) By choosing TRUMATCH from the Show box and then clicking on a screen representation of the color;
- 3) By choosing TRUMATCH from the Show list box and clicking the Show Color Names box and choosing the color by name.

If you're not using printed reference materials, the easiest way to choose a color is with the Visual Selector. It consists of two boxes which both have a color adjustment marker. Dragging the marker in the large box adjusts the amount of cyan and magenta; dragging the one in the narrow box adjusts the amount of yellow. The narrow box always shows the range of colors that you can select by adjusting just the amount of yellow in the mix. The preview box shows the combined effect of adjustments made with both markers.

When you choose colors using the Visual Selector, CorelDRAW automatically adjusts the amount of black through a process called "Gray Component Replacement" (GCR). Adding black provides con-

trast and minimizes the amount of ink the printing press uses to create colors. If you're specifying colors numerically, you must do the gray replacement yourself by entering appropriate percentages of black. If your drawing contains large areas of black, you'll want to override the GCR process and increase the percentages of cyan, magenta and yellow. Doing this makes the blacks look much darker. Ask your printer for advice on the exact percentages you should use.

RGB model : The RGB color model uses percentages of red, green and blue to create colors. Mixing 100 percent of these three colors produces white, 0 percent black, and equal percentages, gray.

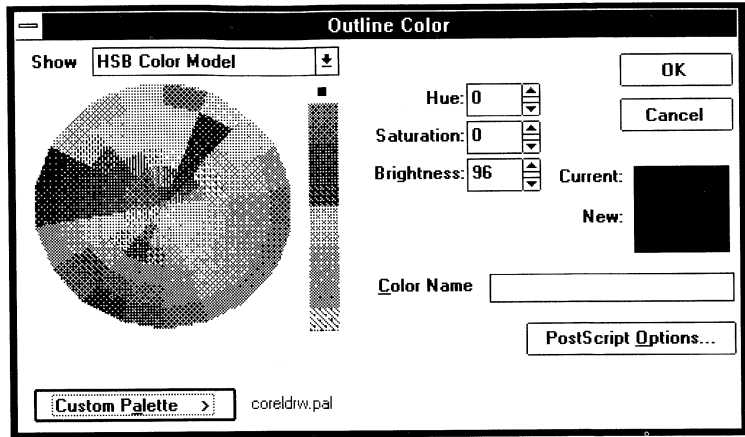


When you choose RGB, CorelDRAW displays two sets of color selection controls and a preview box showing you the selected object's current and new color. The easiest way to select a color is with the Visual Selector. It consists of two boxes with color adjustment markers. Dragging the marker in the large box adjusts the amount of red and green. Dragging the one in the narrow box adjusts the amount of blue. The narrow box always shows the range of colors that you can select by adjusting just the amount of blue in the mix. The preview box shows the combined effect of adjustments made with both markers.

The controls beside the visual selector allow you to specify colors by entering percentages of red, blue and green. If you're using RGB colors and plan to have CorelDRAW produce color separations, the colors you specify will be converted to their CMYK equivalents.

HSB model : The HSB model creates color by varying three parameters: hue, saturation, and brightness. Hue refers to the quality which makes colors different from each other. Blue, red, and green, for example, are all hues. Saturation refers to the purity or intensity of a color. You make the color lighter or darker by varying the intensity. Brightness refers to the percentage of black in a color, where 0 percent is black and 100 percent is white.

When you click HSB, CorelDRAW displays two sets of color selection controls and a preview box showing you the selected object's current and new color.



Using the visual selector, you can choose a color by dragging a marker around in the Color Wheel. The colors at the perimeter of the wheel are the purest in hue. As you move toward the center, the hue becomes lighter. To increase the brightness of the color, raise the marker in the bar next to the wheel.

The controls beside the Visual Selector show the numerical representation of the selected color in the wheel. You can enter values between 0 and 100 for saturation and brightness. Hue can have a value between 0 and 360 with 0 corresponding to red, 60 to yellow, 120 to green, 180 to cyan, 240 to blue, and 300 to magenta.

If you're using HSB colors and plan to have CoreDRAW produce color separations, the colors you specify will be converted to their CMYK equivalents. The conversion won't be exact, however, since the HSB and CMYK models create color in a fundamentally different way.

Converting spot colors to process colors

You can convert any Spot color into its Process color components. To do this, select the Spot color, then switch to the Process color method. Next, choose CMYK from the Show list to see the percentages of cyan, magenta, yellow, and black needed to simulate the Spot color. Then give the converted color a name and click OK.

Although the converted color will appear the same on screen, printed results would show a slight variation between them because the conversion is an approximation, not an exact match.

Checking your colors

If you are working in the Editable Preview, the colors you select will appear on a color monitor. However, the colors are only approximations. You should always use the PANTONE Color Reference Manual, available from your printer or directly from PANTONE, to choose your Spot colors. For Process colors, you should use the CorelDRAW Process Color Chart (found in the Quick Reference Guide) or more comprehensive ones available from your printer or graphics supply store.

Colors previewed on monochrome monitors will appear as shades of gray.

To test the color fidelity of your color printer, load and print the file Colorbar.CDR (included with your CorelDRAW samples). This is the disk file of the Process Color Chart card you'll find in the Quick Reference Guide.

The color elements on your printed output should approximately match those on the chart. They will probably not match exactly, since different printers and printer drivers handle colors in different ways. However, the Process Color chart in the Clipart Manual was printed on a commercial press and will give you a good idea of what to expect if you're having your work commercially printed. There may be a good deal of variation in color between what you see on screen, what a personal color printer produces, and the output of a commercial printing press. CorelDRAW also provides a color calibration tool for matching the colors on your monitor with those on your output device. See "Using the prepress tools" in Chapter 19 for more information.

Choosing and customizing palettes

CorelDRAW includes several process color palettes and one spot color palette. The difference between the process color palettes is the number and range of colors they contain.

The default palette that's loaded when you install CorelDRAW is the CORELDRW.PAL palette. Another palette, PURE100.PAL, is provided as a backup to the default one. They contain the same colors, so if you modify CORELDRW.PAL, you can always return to the default colors by loading PURE100.PAL.

► To open a color palette:

1. Click the Custom Palette button and choose Open. The Open Palette dialog box appears.
2. Specify whether you want to open a spot or process color palette by selecting the appropriate file type from the List Files of Type box.
3. In the File Name box, type the name of the palette you want to open, or click one in the list.

4. Choose OK.

Customizing palettes

You can customize palettes by adding and deleting colors from them, and changing the order of the colors. You can also create your own palette by starting with an empty one and adding colors. If you're creating a complex drawing with many colors, you may want to customize a palette so it contains only those colors you're using for the drawing. This makes it quicker to apply color to objects in the drawing.

To customize a palette, click the Show box and choose Custom Palette. When Custom Palette is selected, you can customize (i.e., add to, delete from, and rearrange colors in) the currently loaded palette.

To save a customized palette, click the Custom Palette button and choose Save As. Type a new name for the palette in the Save As dialog box, then choose OK.

► To rearrange colors in a palette:

1. Click the Show box and choose Custom Palette.
2. Click a color square in the palette and hold down the mouse button. The color square changes to a black dot. While holding down the mouse button, drag the color square to the desired location.
3. Release the mouse button.

The color square appears at the specified location, and the other colors in the palette are shifted over.

► To delete colors from a palette:

1. Choose a color and click the Custom Palette button.
2. Choose Delete Color.

The color is deleted from the palette.

► To create a new palette:

1. Click the Show box and choose Custom Palette.
2. Click the Custom Palette button and choose New. An empty palette appears. The first square in the palette is selected.
3. Click the Show button and choose a Model from the list. Choose or mix a color.
4. If you mixed a new color, type a name for it in the Color Name box.
5. Click the Custom Palette button and choose Add Color.
6. Click the Show box and choose Custom Palette. The color is added to the selected color square in the palette.

Repeat these steps for each color you want to place in the palette. You save the palette by clicking the Custom Palette button and choosing Save As, then typing a name in the Save As dialog box.

Adding tints of spot color to the palette

Instead of adjusting the %Tint value every time you want to use the same tint of a certain Spot color, you can add the adjusted color to the Spot color palette.

► To add a tint of spot color to the palette:

1. Click the color you want to adjust.
2. Type a tint value in %Tint box.
3. Click the Custom Palette button and choose Add Color. The adjusted color is added to the end of the palette.
4. To save the modified palette, click the Custom Palette button and choose Save. To save the modified palette under a new name, click the Custom Palette button and choose Save As.




Note: To add a tint of Spot color to the palette, you must have a Spot color palette loaded (e.g., the “coreldrw.ipl” palette or one you’ve created). The name of the currently loaded palette appears beside the Custom Palette button of the Uniform Fill or Outline Pen dialog box.

Changing the default palette

You can specify which color palette CorelDRAW displays in the Uniform Fill and Outline Color dialog boxes, and at the bottom of the CorelDRAW screen.

Note: The palette displayed in the Pen and Fill Roll-ups is determined by the default fill and outline color. For more information, see “Changing the default outline attributes” in Chapter 7 and “Changing the default fill attributes” in Chapter 6.

► To change the default color palette:

1. Click  in the  or  tool flyout menu.
2. Click the Custom Palette button in the Outline Pen or Uniform Fill dialog box.
3. Choose Open.
4. Specify a spot or process color palette by selecting the appropriate file type from the List Files of Type box.
5. In the File Name box, type or choose the palette you want to open.
6. Chose OK.
7. Click the Custom Palette button.
8. Choose Set as Default.
9. Choose OK.

Creating Special Effects


The Effects menu gives you access to some of CorelDRAW's most powerful features for manipulating objects. Using the Perspective feature, for example, you can create one- and two-point perspective views of an object by dragging handles on a special bounding box.

The Envelope feature lets you distort objects by dragging an object's envelope handles, in the same way an image drawn on a sheet of rubber distorts when you pull on its edges.

The Blend feature blends the shape and color of one object with that of another through a series of intermediate objects. You can use Blend to create airbrush effects and highlights or to create evenly-spaced copies between two identical objects. You can even blend objects along a path.

The Extrude feature projects surfaces from an object to give it a three-dimensional appearance. The object and surfaces form a dynamic group that responds collectively to the commands or operations you apply to it.

Contouring an object using the Contour command produces a series of concentric shapes that give an object the illusion of depth. Cartographers use a similar technique to depict changes in elevation on a topographical map.

The Powerlines feature mimics the style characteristic of more traditional drawing tools. Powerlines can make the  tool, for example, become a calligraphic pen or an artist's paint brush.

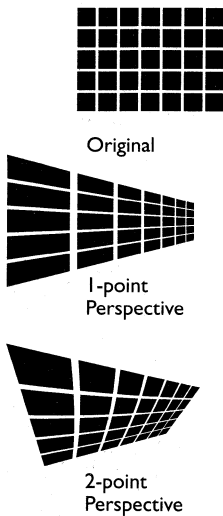
When these special effects are applied to text, you can edit the text without disturbing the effects. When you use Blend, Contour, and Extrude, you can manipulate the original objects—for example, change their outlines and fills—and have CorelDRAW automatically adjust the effect.

Except for the Perspective feature, all the special effects are applied through roll-ups.

Adding perspective to an object


You can create one- and two-point perspective views of an object using the Perspective feature.


A perspective view gives objects a sense of depth by moving some of the edges farther from the eye. Using the accompanying grid as an example, you can see that to simulate the effect of perspective on a two-dimensional page, we need to shorten one side. Depending on which side we shorten, we can make the grid look as if it's receding from view in any single direction—hence the term 'one-point perspective'. By shortening two sides, we create a 'two-point perspective' in which the grid appears to recede in two directions.

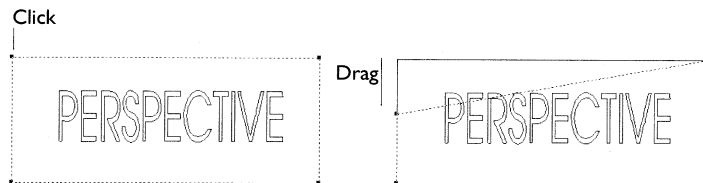



When you choose Add Perspective from the Effects menu, a bounding box with handles at each corner appears around the selected object.

► To add perspective to an object:

1. Using the  tool, select the object or group of objects whose perspective you want to change.
2. Choose Add Perspective from the Effects menu.

A dashed bounding box with four small handles appears around the selected object(s) and the cursor changes to .



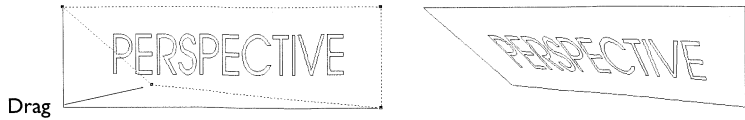
3. Place the cursor over one of the handles. The cursor changes to a .
4. For a one-point perspective, hold down the mouse and drag the handle vertically or horizontally.

For a two-point perspective, drag on a diagonal away from the object or toward the center of the object. Dragging toward the center “pushes” the object into the screen; dragging away from the center “pulls” the object out toward you.

» Tip:

Holding down the **Ctrl** key as you drag forces the handle to move horizontally or vertically.

If you hold down the **Ctrl** and **Shift** keys while dragging, the opposite handle will move the same distance but in the opposite direction.

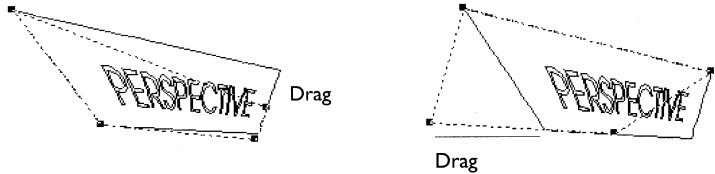


As you drag, two + symbols may appear on the screen. These are the vanishing points. You can move them to change the object's perspective.

5. When you release the mouse, the object is drawn in its new perspective.

Moving the vanishing points

Depending on the way you moved the handles, you'll see one or two vanishing points (represented by an +) on the screen. The one to the left or right of the object is the horizontal vanishing point; the one above or below is the vertical vanishing point.



» **Tip:**

The *Clear Transformations* command in the *Effects* menu returns the selected object to its original state by removing all bounding boxes and envelopes simultaneously.

Moving the vanishing points lets you change an object's perspective. If you drag one of them in a straight line toward the object, the edge of the object closest to the point becomes shorter. The opposite happens when you drag away from the object. Dragging a vanishing point in a direction parallel to the bounding box anchors the far side of the object, while the near side swings in the direction you drag.

If you move the vanishing points too close to the object, the object snaps back to its original perspective.

Copying an object's perspective

The Copy Effect From command in the Effects menu lets you copy the perspective of one object (the source) to another (the destination). The destination does not need to have a perspective bounding box to use the Copy Effect From command. When you choose Copy Effect From and choose Perspective from the flyout, the cursor changes to a special "From?" arrow. Move the tip of the arrow to the outline of the source object, and click. The destination object is re-drawn with the same perspective as the source object.

Copy Effect From has no effect if an envelope has been applied on top of the perspective bounding box. See "Clearing an object's perspective" below for information on what to do in this situation.

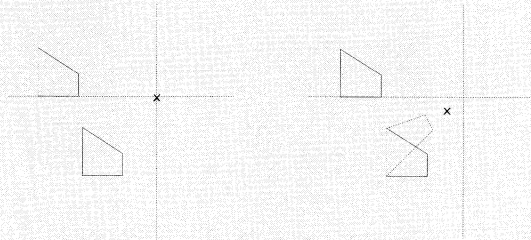
Clearing an object's perspective

To clear an object's perspective and restore it to its original state, choose Clear Perspective from the Effects menu. If you've applied more than one bounding box to the object, Clear Perspective undoes any changes you've made since applying the last box.

Clear Perspective has no effect if you've applied an envelope to the object. To clear the perspective, you must remove the envelope. When you do this though, you also change the object's shape. To get around this problem, make a duplicate of the object before you remove the envelope. This allows you to use the Copy Effect From command to copy the shape of the duplicate back to the original.

Aligning pairs of vanishing points


To accurately align the horizontal or vertical vanishing points of objects, use the guidelines to mark the location of the vanishing point you want to align to. Then, select the other object's vanishing point and move it to the point where the guidelines intersect.

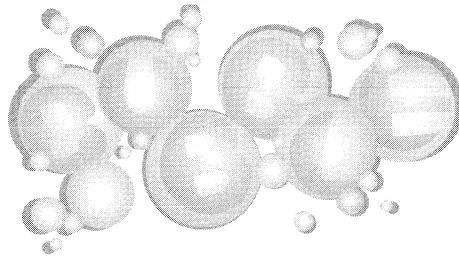


Move the location of the vanishing point you want to align to, then...

drag the other object's vanishing point to that spot.

Shaping objects with envelopes

One way to change the basic shape of an object is by using the  tool to manipulate its nodes and control points. Another way is to apply an envelope to them.



Graphics and text are combined using envelopes.


» **Tip:**

Holding down the Ctrl and/or Shift keys while dragging a handle in any of the first three editing modes lets you manipulate the envelope as follows:

Ctrl—moves the selected handle and the one opposite in the same direction.

Shift—moves the selected handle and the one opposite it away from each other.

Ctrl+Shift—moves all four corners or sides in opposite directions.






An envelope is similar to the highlighting box that appears when an object is selected with the  tool. It has handles that allow you to pull just part of the object in a particular direction. If you imagine the object on a piece of rubber, the way it distorts when you stretch the rubber is comparable to what happens to the object when you drag one of the handles.


There are four envelope editing modes that determine how the envelope and the object inside it can be re-shaped. The first three modes are typically used to change the shape of one side of the object. If you need to make more dramatic changes—for example, when fitting text inside an irregular shape—then you'll want to use the fourth mode.

Text that's reshaped with an envelope remains as text. This means you can edit it, change its text attributes (but not its character attributes) and even substitute it for other text using the Print Merge and the Extract and Merge Back commands.

The procedure below takes you through the basic steps involved in shaping objects with envelopes. You'll learn more about how the Envelope feature works in the sections that follow.

► **To apply an envelope to an object:**

1. Using the  tool, select the object or group of objects you want to reshape.
2. Choose Envelope Roll-Up from the Effects menu.
The Envelope Roll-Up appears.
3. Do one of the following:
 - Click Add New to add a basic, rectangular envelope, then choose the editing mode you want by clicking on its button — , , , or . See “Choosing an envelope mode” below for a description of each mode.
 - Click Add Preset to display a selection of preset envelope shapes. click the one you want.

The  tool becomes selected, and a dashed bounding box appears around the object.



» Note:

Once you've applied an envelope to an object that was previously converted to curves, you cannot select its nodes without first clearing the envelope, or converting the object to curves again.

4. Use the cursor to “grab” one of the nodes, then drag it in the desired direction. The action of the handles depends on the editing mode: With the first three modes,

- Side-center handles move left/right.
- Top- and bottom-center handles move up/down.
- Corner handles move up/down & left/right.

With the fourth mode, the handles move freely. As you'll see in the example later, the control points that appear when you click a handle allow you to fine tune the shape of the object.

5. Click Apply to fit the object to the shape of the envelope.

Note: If you do not click Apply after applying a new envelope to an object, the object is not redrawn to fit the shape of the new envelope. If you click another object before clicking on Apply, any changes you made to the envelope are lost.

Selecting options from the Envelope Roll-Up

The Envelope Roll-Up contains all the controls and options for applying and editing envelopes. Although you can edit envelopes with the roll-up closed, it must be open so that you can apply the changes to the object.

Below is a summary of the controls:

| | | |
|---|--|--|
| <p>Applies an envelope to the selected object</p> | <div style="background-color: #333; color: white; padding: 2px;">Envelope</div> <div style="padding: 2px;">Add New</div> <div style="padding: 2px;">Add Preset ▾</div> <div style="padding: 2px;">Create From...</div> <div style="padding: 2px;"> </div> <div style="padding: 2px;">Putty ▾</div> <div style="padding: 2px;"><input type="checkbox"/> Keep Lines</div> <div style="padding: 2px;">Reset Envelope</div> <div style="padding: 2px;">Apply</div> | <p>Displays a selection of predefined envelope shapes</p> <p>Click these buttons to select an envelope editing mode</p> <p>Displays a list of Mapping options that change the effect and envelope has on an object's shape</p> <p>Undoes any shaping done since envelope was applied</p> <p>Fits the object to the shape of the envelope</p> |
| <p>Displays a cursor for choosing an object that CorelDRAW will use to create an envelope</p> | | |
| <p>Enable to prevent straight lines in selected object from curving</p> | | |

Choosing an envelope editing mode

The , , and buttons in the Envelope Roll-Up let you choose one of four envelope editing modes:

- Straight Line
- Single Arc
- Two Curves
- Unconstrained

The differences between the first three modes are best illustrated by applying them to a piece of text or to a rectangular object and then using one of the corner handles to reshape it. With round or irregularly shaped objects, each of the modes has roughly the same effect. If you're not getting the results you want with one mode, click Reset Envelope in the roll-up and switch to a different mode. (See "Using the Reset Envelope feature" later in this chapter.)

The Unconstrained mode is the most versatile of the four: not only do the handles move about freely, but you can also mold objects virtually any way you want using this mode.

With the first three modes, you can only move one handle at a time. With the Unconstrained mode, you can select several handles and move them simultaneously. The technique is identical to selecting and moving multiple nodes (i.e., Shift-click or drag a marquee).



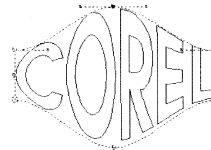
Single Line



Single Arc



Two Curves



Unconstrained

Choose a mode by clicking on its button. The button becomes highlighted. You can switch from one mode to another at any time when you're editing an object. Information about which editing mode was last used to edit an object's envelope is not stored with the object, so when you select an object whose envelope you've edited, the editing mode last used does not become selected in the Envelope Roll-Up.

Using the Node Edit Roll-Up when editing envelopes

When you're editing an object's envelope in Unconstrained mode, you can use the Node Edit Roll-Up to add and delete nodes, convert a curve segment to a line and vice versa, and make nodes cusped, smooth or symmetrical. You access the Node Edit Roll-Up by double-clicking on a node.

In Unconstrained editing mode, you can use the "+" and "-" keys on your numeric keypad to add and delete nodes when you're editing an object's envelope, even if the Node Edit Roll-Up is not open. You can also nudge nodes using the cursor keys on your keyboard when you're in Unconstrained editing mode.

Adding an envelope on top of an existing one

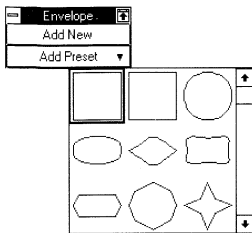
Choosing Add New from the Envelope Roll-Up lets you reshape an object by adding a new envelope using a combination of envelope editing modes. To add a new envelope, select an object, click Add New and click Apply. CorelDRAW puts a basic, rectangular envelope on top of the object's existing one, leaving the object's shape unchanged. You then choose an editing mode from the Envelope Roll-Up and edit the envelope's shape.

You switch between editing modes by clicking the editing mode buttons in the roll-up. Doing this doesn't add a new envelope; it just changes the envelope editing method.

Choosing preset envelopes

When you click the Add Preset button, a selection of pre-shaped envelopes appears. To apply one to a selected object, click it, then click Apply. Since the presets are all derived from the basic envelope, you can edit them as you would any envelope.

When you apply a preset envelope to an object, the envelope is stretched non-proportionally to fit the object's shape. However, when you apply a preset envelope to a Paragraph text frame, the envelope is stretched proportionally to fit the frame's bounding box.



Choosing a Mapping option

CorelDRAW calculates an object's shape by comparing the position of the envelope's handles with those on the object's original highlighting box. You can affect the outcome of these calculations, and hence the object's shape, with options in the Mapping options list box.

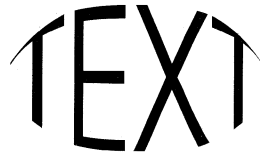
Original: With this mode, the corners of the bounding box are mapped to the envelope corners. Other envelope nodes map linearly along the edge of the bounding box. Bezier control arcs are used to determine mapping between two envelope nodes. The "Original" mode is so named because it's the mode used by envelopes in CorelDRAW 3.0. Select it to ensure that objects shaped in version 3.0 don't lose their shape when opened in version 4.0.

Putty: This is the default mode. It tends to produce less exaggerated distortions than the Original mode by basing the object's final shape on the location of the corner handles only. Interior nodes are stretched to fill the envelope. The Bezier control arcs and envelope nodes are ignored. Only the envelope's shape and corner nodes are used. You'll notice the difference between Putty and Original modes most when working with Unconstrained envelopes.

Vertical: Vertical mode fits objects to envelopes by stretching the object to fit the envelope bounding box, and then squeezes or stretches the object vertically to fit into the envelope. Its effect is most apparent with vertically-oriented objects like text. Compare the two text objects in the example below. Notice how the upright parts of the letters on the right resist the lateral pull of the envelope's side handles.

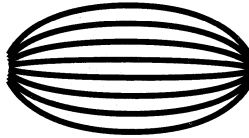


Original Mode

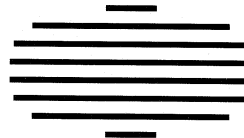


Vertical Mode

Horizontal: This mode works like the Vertical mode, but in the opposite dimension. That is, it squeezes or stretches objects horizontally. As the example below demonstrates, you would use Horizontal mode when you wanted to maintain the horizontal integrity of objects.



Original Mode



Horizontal Mode

Text: If you're using envelopes to shape Paragraph text, CorelDRAW enables a fifth mode—called Text mode—and makes the others unavailable.

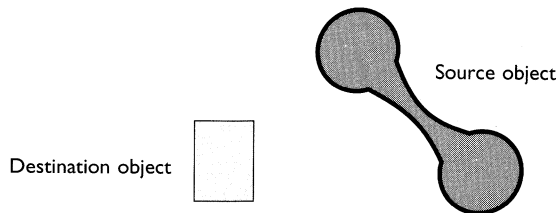
Note: When you select an object to which you've applied an envelope, the mapping option used to calculate its shape becomes selected in the Envelope Roll-Up.

Creating an envelope from an object

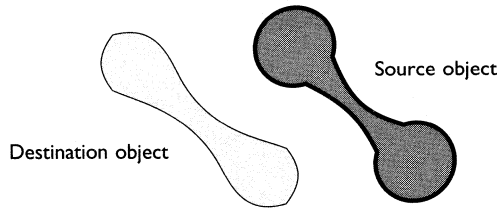
You can create an envelope that is the same shape as a selected object. That envelope can then be applied to another object.

► To create an envelope from an object:


1. Select the object to which you want to apply the envelope (the destination object).



2. Click the Create From button in the Envelope Roll-Up.
3. With the special pointer that appears, click the object from which you want to copy the shape (the source object). A dotted outline of the object's shape (envelope) appears centered on the destination object.



4. Click Apply.

The destination object is poured into the shape of its new envelope. You can edit the envelope's shape using the  tool, and then click Apply again to apply the edited envelope to the object.

Note: When you select an object whose shape you want applied to another object, CorelDRAW creates an envelope from the selected object by taking the four nodes closest to the four corners of the object's bounding box. CorelDRAW uses them for the four corner nodes of the envelope, provided these nodes can be reached by following the object's path. If not, the resulting envelope may not closely match the shape of the object from which it was created. Applying the shape of a figure eight, for example, may result in an envelope whose shape doesn't closely match the original figure eight shape. You may want to add extra nodes to the source object before applying its envelope to another object.

Creating envelopes from objects is especially useful for changing the shape of a Paragraph text frame. See "Shaping a Paragraph text frame with an envelope" later in this chapter for more information.

Clearing an object's envelope

Choosing Clear Envelope from the Effects menu restores the object to its original shape. If you've applied more than one envelope to the object, Clear Envelope undoes any reshaping you've done since applying the last envelope. To clear earlier envelopes, you must click on this command repeatedly until they are all gone. Envelopes are cleared in the reverse order in which they were created. In other words, the most recently created envelope is the first to be cleared.

Clear Envelope is not available if you've since applied the Perspective command to the object. To clear the envelope, you must clear the perspective. To avoid losing the object's perspective, duplicate it before you remove the perspective. This allows you to use the Copy Effect From command to copy the perspective of the duplicate back to the original.

Copying an envelope from one object to another

The Copy Effect From command in the Effects menu lets you copy the shape of one object (the source) to another (the destination). The destination object does not need to have an envelope. When you choose Copy Effect From and choose Envelope from the submenu, the cursor changes to a special "From?" arrow. Move the tip of the arrow next to the outline of the source object, (or anywhere

» Tip:

The Clear Transformations command in the Effects menu returns a selected object to its original shape by removing all envelopes simultaneously.

within the source object when working in editable preview mode) and click. The destination object is then redrawn with the same envelope applied as the source object.

Copy Effect From has no effect if you've applied the Perspective command to the source object. See "Clearing an object's envelope" above for information on what to do in this situation.

Using the Keep Lines feature

Normally, CorelDRAW converts straight lines to curves to get an object to fit its envelope as snugly as possible. As the example below shows, with Keep Lines enabled, straight lines stay straight. Notice, however, that the object no longer conforms as closely to shape of its envelope.



Keep Lines cleared




Keep Lines selected

Using the first three envelope styles to reshape artistic text

Envelopes don't always fit snugly around text that contains rounded letters (e.g., "O", "U"). When they don't, you could get unwanted bends when you try to create effects like the one show. These bends occur because of the way certain typefaces—Brooklyn for example—were designed. If it's not possible to use another typeface, use the Unconstrained editing mode to manually straighten the bend.

Using the Reset Envelope feature

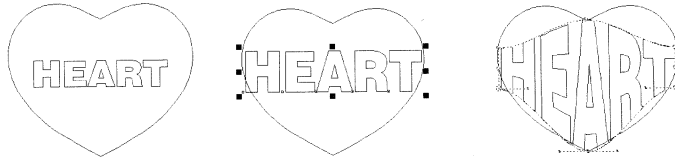
When you apply an envelope to an object using Add New, Add Preset, or Create From, or by dragging an envelope's nodes using the  tool, a dotted outline of the envelope appears centered on the object before it's applied to the object. You can remove this outline and restore the envelope to the previous shape by clicking Reset Envelope. CorelDRAW restores the envelope to the shape it held before you last clicked the Apply button.

Fitting Artistic text to a shape

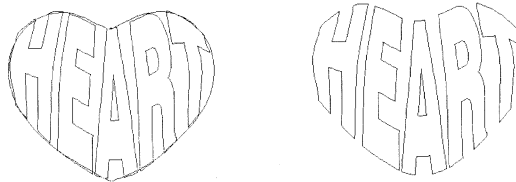
The Unconstrained envelope mode is ideal for fitting text to a shape.

► To fit text to a shape:

1. Move the text on top of the shape.
2. Scale the text so that at least two corners of its highlighting box lie on the outline of the shape.




3. Choose Edit Envelope and choose the Unconstrained editing mode.
4. Move the handles so that the text fits roughly within the shape.
5. Move the Control points to make fine adjustments to the shape of the text.
6. Click on Apply to flow the text within the envelope.
7. If desired, delete the shape.



You can also use the Create From command in the Envelope Roll-Up to add a new envelope to the artistic text. See “Creating an envelope from an object” earlier in this chapter for more information.

Editing enveloped text

To edit Artistic text to which you’ve applied an envelope, click the  tool and click the text. Or, use the text cursor to highlight the text, and then choose Edit Text from the Text menu. The Artistic Text editing dialog box appears, where you can edit the text.

Shaping a Paragraph text frame with an envelope

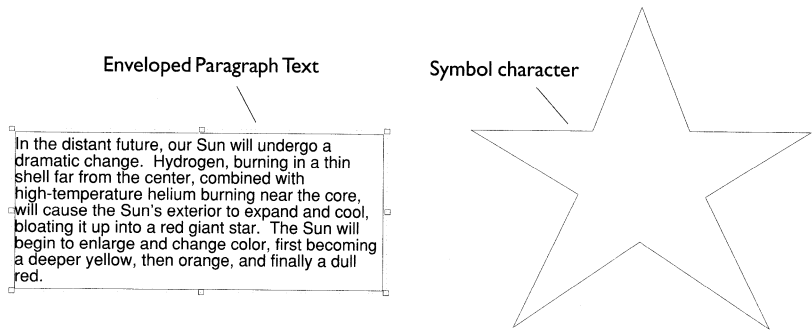
You can make a block of Paragraph text flow around an object or pour it into a particular shape by applying an envelope of a particular shape to its frame. Unlike other objects, when you apply a new envelope to a Paragraph text frame, it replaces the existing envelope. When you select the text, the “Text” Mapping option is selected in the roll-up automatically. (The other Mapping modes are unavailable.)

► **To apply an envelope to a Paragraph text frame:**

1. Select the Paragraph text frame to which you want to apply an envelope.
2. Choose Envelope Roll-Up from the Effects menu.
3. Click the Create From button in the roll-up.

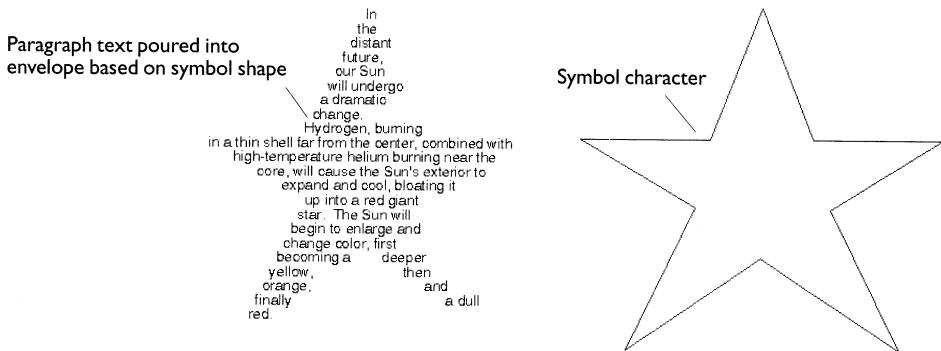
With the special “From” arrow that appears, click the object whose shape (envelope) you want to apply to the Paragraph text frame. The object can be one you’ve drawn or imported, or a symbol from the CorelDRAW Symbols Roll-Up. The object must be a closed shape.


A dotted outline of the envelope’s shape appears around the Paragraph text frame, as shown on the left in the example below.



4. Click Apply.

The envelope is applied to the Paragraph text frame, and the text is poured into the new shape, as shown in the example below.



You can change the shape of the envelope using the  tool, and then click Apply again to apply the edited envelope to the text frame.

You can also shape a Paragraph text frame using a standard envelope shape from the Preset list. See “Choosing preset envelopes” earlier in this chapter for more information.

Blending objects

The Blend feature blends one object into another through a series of intermediate shapes. It also allows you to blend two objects along a path.

In addition to word pictures, you'll find the Blend feature useful for creating highlights and airbrush effects. The example below demonstrates how blending defines the contours of an object, making it appear three-dimensional.



You can blend objects with different line weights, an open path with a closed one, a process color with another process color, and different tints of the same spot color.

When you blend two objects, they become a dynamically-related group. If you've created a blend and want to edit its start or end, it reforms instantly and incorporate your changes. This is true whether you rotate, scale, skew, envelope or change the colors of the start or end object.

Since all objects in a blend group are dynamically related, including the path, you can also node edit the path, and the blend reforms instantly to reflect the changes.

To break apart the components of a blend, use the Separate command in the Arrange menu.

The procedure below takes you through the basic steps involved in blending objects. You'll learn more about how the Blend feature works in the sections that follow.

► **To blend two objects:**

1. Select the objects you want to blend.
2. Choose Blend Roll-Up from the Effects menu.

Click to display Steps, Spacing and Rotation controls

Click to display controls for specifying how colors are blended

Click to display controls for choosing the start nodes in the objects being blended and for splitting and fusing blends

Enable the Loop check box to rotate intermediate objects around the halfway point of the start and end objects' center of rotation

Click to select the start (▶) and end (◀) objects in a blend and to select new ones

Click to choose Spacing if you're blending on a path, and want to specify the spacing between the intermediate shapes

Enter the number of intermediate shapes you want in the blend or the spacing between them in this box. Spacing is measured in the units the horizontal ruler uses

Enter the number of degrees you want intermediate shapes rotated. Positive values rotate clockwise from the start object, negative values counterclockwise

Click to display options for controlling blends on a path

Click to apply choices to selected objects

3. Enter the number of blend steps in the group.

» **Tip:**
Pressing **Ctrl+B** opens the Blend Roll-Up.

Blending objects with different fills

Fills blend according to the following rules:

| Object Fill: | Intermediate Shapes: |
|--|--|
| No fill in one object | No fill |
| Uniform fill with fountain | Blend from uniform fill to fountain |
| Uniform fill with pattern | Uniform fill |
| Radial fill and Linear fill | Radial fountain |
| Radial fill and Uniform fill | Radial fountain |
| Same fountain type in both objects | Fountain |
| Pattern in one object only | The other object's fill |
| Pattern in both objects | The top object's pattern |
| Spot color with Process color | Process color |
| Two different spot colors | Process color |
| Two objects have texture fills of the same style | Intermediate objects are blended texture fills |
| Texture fill in one object only | Intermediate objects are filled with other object's fill |
| Two objects have texture fills of different styles | Intermediate objects are filled with top object's fill |

The number of steps determines how many intermediate objects CorelDRAW creates. The greater the number of steps, the finer the gradation between the shapes or fill attributes.

4. Specify any other Blend options you want (see “Choosing Blend options” below), then click Apply.

The blended shapes begin appearing. The entire set of shapes is selected and becomes a single *Blend Group*.

Choosing Blend options

The Blend Roll-Up contains the controls and options for creating and editing blends. Below is a summary of what the controls are used for; more detailed descriptions follow.




Specifying the number of intermediate shapes or the spacing between them

One way to control the distance between objects in a blend is by specifying the number of intermediate blend steps between the objects in the blend. The more blend steps there are, the closer the objects will be spaced together. Likewise, the fewer the blend steps, the farther apart they will be.

Only when you blend objects along a path can you specify either the number of steps or the spacing between objects in inches or whatever unit the horizontal rulers are using. For example, if your objects are 10 inches apart and you specify a Spacing of 0.1 inches between steps, CorelDRAW creates a blend with 99 intermediate shapes.





Specifying how colors are blended

Clicking on the  button displays controls for specifying the range of colors CorelDRAW uses to fill the intermediate shapes in a blend.

The Rainbow option if left unchecked, creates a blend that uses colors along a direct line between the colors of the start and end objects. This direct line is shown along the color wheel, and its endpoints mark the fill colors of the start and end objects of the blend.

If you click Rainbow, CorelDRAW chooses the intermediate blend color fills from a path around the color wheel. The fill colors of the start and end objects coincides with the endpoints of the arc. This method of determining the intermediate blend colors gives a wider spectrum of colors to the blend effect, hence the option name Rainbow.

The  and  buttons (displayed when the Rainbow option is enabled), allow you to specify the direction of rotation the arc takes around the color wheel.

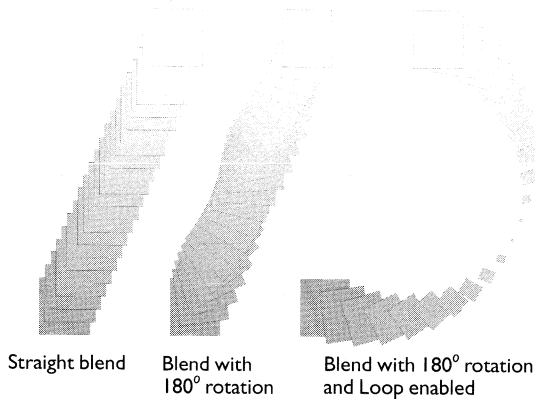
Note: While the color wheel shows the color transitions of the blend object fills, the color logic described above also applies to the blend object outline colors. If the objects have outline colors only and no fill, the color wheel shows the transition of outline colors.

Blending objects with unequal numbers of subpaths

When objects with unequal numbers of subpaths are blended, some or all of the intermediate objects may be drawn as open paths rather than closed ones. In such cases, the intermediate objects may not appear when printed. Or, they may print as outlined shapes, rather than filled ones.

Rotating the intermediate shapes

You can have CorelDRAW rotate the intermediate blend objects by entering a value in the Rotation box. Entering a positive value rotates the shapes clockwise from the start object, while a negative value rotates them counterclockwise from the start object. (If you're not sure which is the start object in a blend group, click **↳** and choose Show Start. The start object is highlighted.) Entering a rotation value of 180 degrees, for example, rotates the shapes in an arc.



When rotating blend groups, the effect varies depending on whether the Loop option is enabled. If it is, the intermediate objects rotate around a point which is halfway between the start and end objects' center of rotation. If it's not, they rotate around their own centers of rotation. When you move the center of rotation of a start or end object of a rotated blend group, you get some interesting effects. Changing the center of rotation of the blend group, however, has no effect.

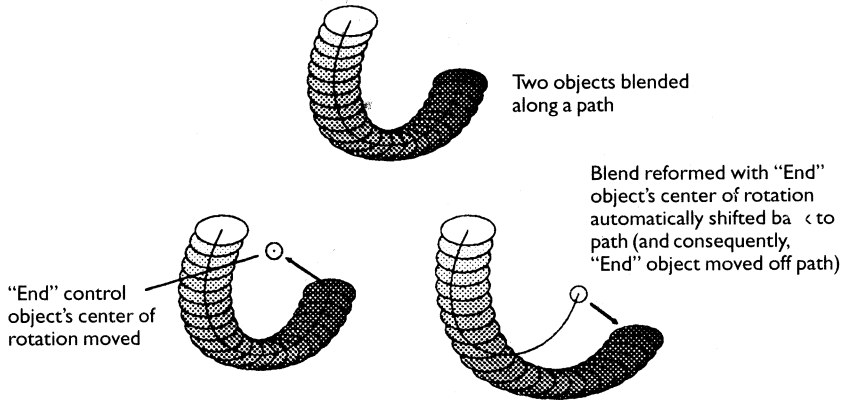
Moving the center of rotation of a blend group

Even though they're linked, blend objects are still individual objects. Therefore, changes such as moving the center of rotation of the blend group are not retained, since the center of rotation for multiply-selected objects always coincides with the center of the multiply-selected object's bounding box.

To retain the moved center of rotation of the blend group, you must first group it using Group in the Arrange menu. Once it's grouped, you can no longer edit any of the intermediate blend objects individually, however, you can easily ungroup them again using Ungroup command.


Blending objects along a path

Blending two objects along a path causes the start and end objects (referred to as “control” objects) to be moved to their nearest point on the path. Specifically, it is the center of rotation of each object which is placed on the path. (These usually coincide with the centers of the objects, unless you’ve moved them.) The blend then forms between the two objects, and follows the contour of the path.




If you move the center of rotation of a start or end object of a blend along a path, the blend is drawn differently, because the object is always moved so that its center of rotation coincides with a point on the path. Therefore, if you move one of the object’s centers of rotation substantially away from the outline of that object, the resulting blend may appear to drift away from the path quite noticeably.

Grouped objects may also be used as the start and end objects in a blend. For details, see “Creating compound blends” later in this chapter. A single path can be used for numerous blends.

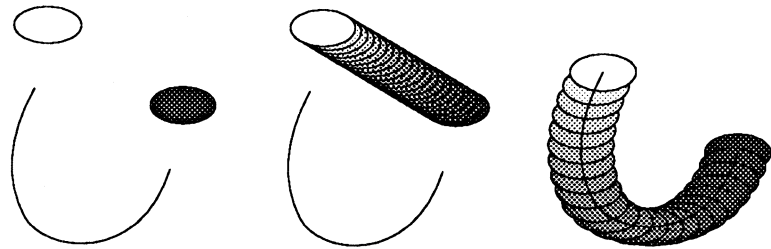
Once you’ve blended objects along a path, you can node edit the path using the  tool. The blend reforms instantly to reflect the changes.

► To blend objects along a path:

1. Blend the two objects.
2. Click the  button.
3. Choose New Path.
4. Click the path you want to blend along.
5. Do any of the following optional steps:
 - Choose Full Path if you want the blend to extend the full length of the path. Otherwise the blend attaches itself to the closest point on the path.
 - Choose Rotate All if you want to rotate the blend along a curved path. The slope of the path determines the amount of rotation applied. For example, if an object is on a portion of a path that is horizontal, no rotation is applied. If the path was vertical at that point, the object is rotated by 90 degrees.

- Choose Spacing from the list box at the top of the roll-up and type or choose the amount of spacing you want between the intermediate shapes.

6. Click Apply.



Two objects and a path



Two objects blended

Blend applied along a path



After blending objects along a path you can use the New Path command to blend along a new path; the Show Path command to highlight the path (this is handy for drawings where the path is not obvious); and the Detach from Path command to separate the blend from its path.


You can also select either the start or end objects and drag them along the path. You can even move an object *off* the path by moving its center of rotation away from the object itself. The center of rotation is always forced back to the path, thereby moving the object away from the path.

Setting the start and end objects in a blend group



The two arrow icons at the bottom of the Blend Roll-Up,  and , allow you to set the start and end objects in a blend. They also show you which objects are the start and end objects in an existing blend. If you've created a drawing containing many elements, it may be difficult to remember which object in a particular blend is the start object, and which one was the end object.

► To set the start object in a blend:







1. Click . Choose New Start from the drop-down menu. The cursor changes to a .
2. Click the object you want to set as the start object in the blend. It is highlighted, and becomes the start object.
3. Click Apply to reblend the objects. If you do not like the results, choose Undo from the Edit menu to return to the previous blend.

Setting the end object in a blend is done in the same way. Use the  icon and choose New End from the drop-down menu.

► To show the start object in a blend:


1. Click .
2. Click Show Start from the drop-down menu. The start object is highlighted. Showing the end object is done in the same way, using  and choosing Show End from the drop-down menu.

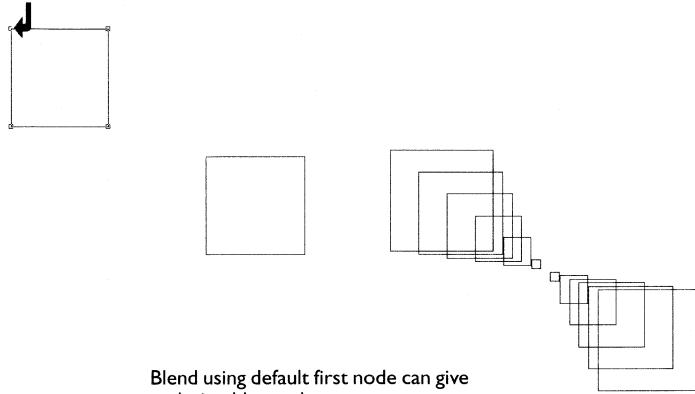
» Tip:

You can tell you've selected a blend group and whether it has a path associated with it by the appearance of the ,  and  buttons. With a blend group selected, the  and  arrows are all black. And if the blend has a path, the  is also all black.


Mapping matching nodes in a blend

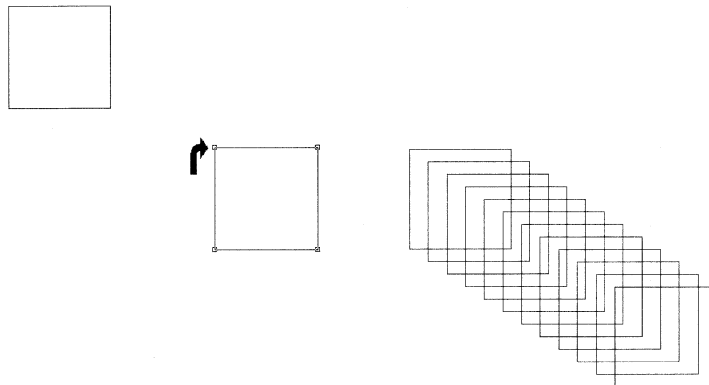
CorelDRAW searches for the first node in the starting and ending objects and begins creating the intermediate objects based on their locations. This may or may not give you the results you want, depending on your drawing.

The Map Nodes option (displayed by clicking the ) lets you specify which node you want CorelDRAW to treat as each object's first node. This gives you greater control over the appearance of the intermediate blend objects by directing the way in which the starting object is transformed into the ending object.



Blend using default first node can give undesirable results.

When you click Map Nodes, the pointer changes to a , and the nodes on one of the control objects appears. Click the node you want as this object's first node. The arrow flips over and the other control object's nodes appears. As before, click the node you want as this object's first node. Then, click Apply to re-blend the objects.




Use Map Nodes to change blend characteristics by selecting different nodes for the blend to map to.



Splitting a blend

Since the blend group is a dynamically linked object, altering the start, end, or any of the intermediate objects or the path (if applicable) causes the blend to reform and incorporate your changes. This is true whether you rotate, scale, skew, node edit, envelope or change the colors of the object.

The start and end objects of a blend group are called “control objects”, since their attributes control the intermediate objects that are linked to them. You can edit the control objects of a blend group, but not the intermediate objects. However, you can convert any intermediate object to a control object by selecting it with the special pointer displayed by clicking the Split button (you need to click the  to access the button). A highlighting box appears around the object signifying that it is now a control object. Your original blend group splits into two blend groups. The new control object becomes both the start object for one of the blend groups, and the end object for the other blend group. (This is true even if you don't edit the new control object.) When you edit the new control object and reblend, both blend groups reform to incorporate your changes.

If the blend was not applied along a path, an intermediate object can be moved elsewhere on the page, causing the blend to jog away from an otherwise straight line.

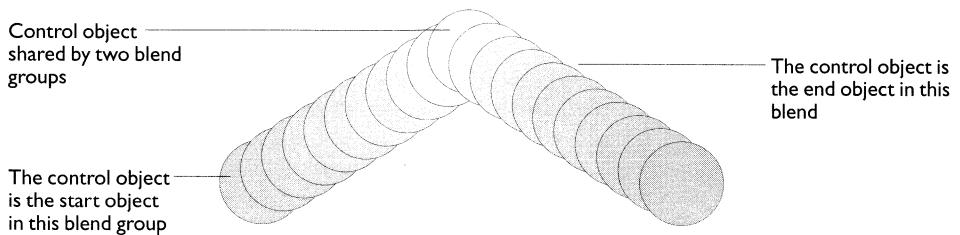
» Note:

You cannot split a blend by selecting an intermediate object that's immediately adjacent to a control object.

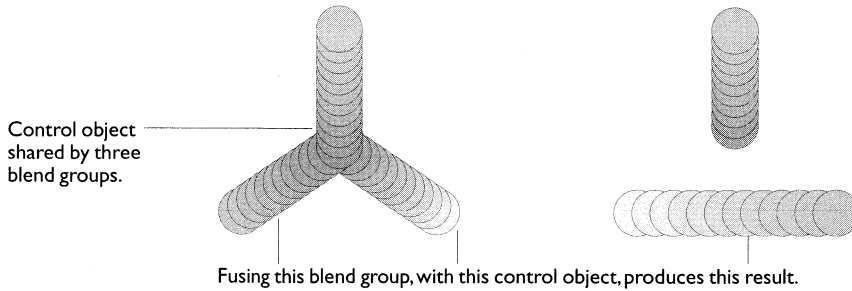
Fusing split blends

The Fuse Start and Fuse End commands allow you to recombine split blends. The terms Start and End refer to the control object the two blend groups share. In one group the control object is the bottom object; in the other, the top. This relationship is obvious when objects in the blend overlap, as they do in the example shown below.

To fuse a split blend like the one in the example below, hold down the Ctrl key and click one of the intermediate objects in either blend group. Then, choose the available Fuse button. If the two blends were not along a path, and they jogged away from an otherwise straight line, fusing them reforms them along a straight line.



In the next example, the common control object is on the start for three of the three blend groups. This means that the lower-left blend group could be fused with control objects in either of the other two blend groups.



In situations like this, CorelDRAW lets you choose which control object the blend group fuses with. To indicate your choice, hold down the Ctrl key and click the blend group you want to fuse. Next, click the Fuse button that becomes available. A special pointer appears. Click an intermediate object that's at least one object removed from the control object you want to fuse with.

Reversing, chaining, and clearing blends

Normally, CorelDRAW blends from the start object to the end object. To reverse the direction of the blend, select the blend group and choose Reverse Order from the Order submenu in the Arrange menu.

Once you've created a blend, you can select any object in the blend group and blend it with another object. You can repeat this process as often as you want to create a chain of blends.

Choosing Clear Blend from the Effects menu when you have a blend group selected removes the intermediate objects and leaves only the Start and End objects, and the path, if applicable.

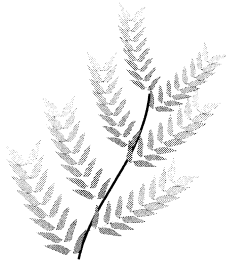
Creating compound blends

Grouped objects can be used as the Start and End objects in a blend. Two or more blend groups can share the same path. These two features allow you to construct objects like the fern shown at the left.

When two or more blends use the same path, a compound blend is formed. If you want to edit one of the blend groups, or the components that make up the groups, you use a certain selection sequence. Clicking on any component of a compound blend selects the entire blend. If you then hold down the Ctrl key and click again, the blend group containing the component is selected. To select a particular component, click it with the special pointer that appears when you choose the Split button in the Blend Roll-Up. You can then edit that component as desired. The path (control curve) used in a compound blend can be selected at any time as you would any object. Editing it causes all blend groups linked to it to reblend.

» Note:

The name of the Clear Effect command changes depending on the effects commands last used—for example, Clear Envelope or Clear Perspective.



An example of a compound blend.

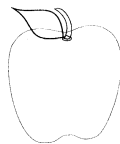
You cannot use blend groups as Start or End objects in a blend. However, the effect that this would create can be simulated using the Group command in the Arrange menu. In the example of the fern, the rows of leaves on a single stem were created as two blend groups, with the stem as the common control path. This forms a compound blend. That group was then duplicated three times and the main branch stem drawn. The next step involved modifying each of the four stem groups and placing them as desired on the main stem. Each stem group was turned into a simple group of objects using the Group command. Finally, the simple stem groups were blended along the main branch stem.

Using Blend to create highlights

Creating highlights (in black and white, or color) with the Blend feature is a four-step process.

Using Blend to create highlights:

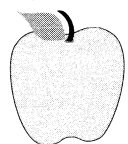
1. Draw the main shape and fill it with a color.
2. Draw the areas that you want to highlight and fill them with the same color as the main shape.



Step One



Step Two



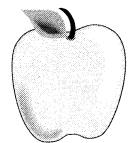
3. Draw the highlight shape within each area and fill it with a different color.



Step Three




Step Four



4. Blend the shapes created in steps 2 and 3.

Editing blended Artistic text

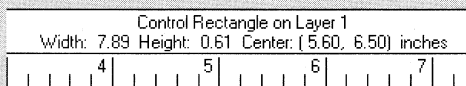
To edit blended Artistic text, click the  tool and click the text. Or, use the text cursor to select the text and choose Edit Text from the Text menu. The Artistic Text editing dialog box appears, in which you can edit the text.

Understanding the Status Line for dynamically-linked objects

When you select an object, the Status Line indicates what type of object it is—an ellipse, text, curve object etc. The Status Line also tells you when you've selected a group of objects and the number of objects in it. Similarly, when a dynamically-linked object is selected, the Status Line indicates the type of dynamically-linked object—text on a path, an extruded object, or a blend group.

Furthermore, when you select an individual component in a dynamically-linked object, the Status Line tells you that you've selected a "Control" object. For example, if you select the start or end rectangle in a blend group, the Status Line refers to it as a "Control Rectangle". We call them control objects because their attributes control the intermediate shapes that are dynamically linked to them. Changing the color of the start object in a blend group, for example, changes the color of the intermediate objects. Understanding the concept of con-

trol objects is necessary to understand the Status Line read-out of the number of objects you've selected. This is because control objects can count for two or more objects in a compound object. (A "compound object" consists of interrelated dynamically-linked objects such as extruded text fitted to a path.) Suppose, for example, you convert an intermediate blend group object to a control object by splitting the blend into two groups.



That object will become both the start object for one blend group and the end object for the other. If you then select the group of two blends, the Status Line counts five objects; the start object of the first blend; the single control object which is both the start object of the first blend and end object of the second; and the two blend groups.

Extruding an object

Extruding an object gives it the illusion of depth. To create this illusion, CorelDRAW projects points along the edges of the object and joins them to form surfaces. These surfaces form a dynamically-linked group with the defining object (the object to which an extrusion is applied). As such, they are automatically updated whenever you change the defining object. Extruded objects are dynamic three-dimensional forms—you can change their shape and alter their orientation in space in three distinct planes of rotation.



While it's ideal for creating three-dimensional effects with text and other closed shapes, using the extrude function on open paths can yield some interesting results as well. The ribbon, for example, was created by extruding a curved line, and then filling some of the surfaces with black. Another method involves using the Perspective command in the Effects menu to change the orientation of the object before you extrude it.



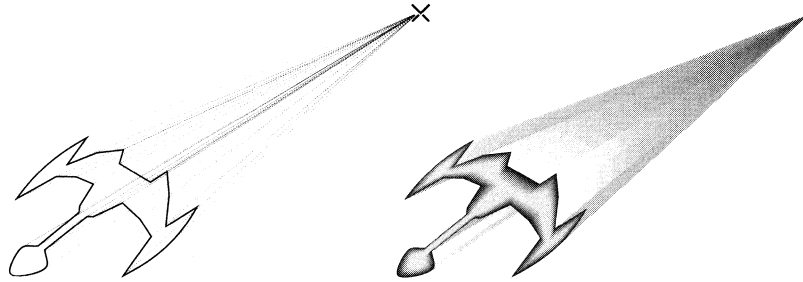
The extruded surfaces are assigned the same fill and outline attributes as the original object. When you extrude a closed shape with no fill, the result is a wireframe view in which all the line segments are visible. Extruding a filled shape, on the other hand, hides lines you would see in an unfilled shape.

The procedure below takes you through the basic steps involved in extruding objects. The sections that follow discuss more about how the Extrude feature works.

► To extrude an object:

1. Select the object you want to extrude.
2. Choose Extrude Roll-Up from the Effects menu.
CorelDRAW displays the Extrude Roll-up and automatically applies a wireframe extrusion to the selected object.
3. Choose the desired options. (See “Choosing Extrude options” below for detailed descriptions of the options.)

» **Tip:**
Pressing **Ctrl+E**
opens the **Extrude**
Roll-Up.



Note how the wireframe's appearance changes in response to your choices.

4. Click Apply to apply the options to the selected object.
If you want change the appearance of an extruded object, select the object, then open the Extrude Roll-up. Click Edit (the wireframe extrusion reappears), make the desired changes, then click Apply.

Choosing Extrude options

Controls and options for creating and editing extrusions are accessed through the Extrude Roll-Up. To open the roll-up, choose Extrude Roll-Up from the Effects menu. Below is a summary of what the controls are used for; more detailed descriptions follow.

Displays controls for specifying the depth and type of extrusion plus coordinates for the vanishing point

Displays controls for rotating the extrusion

Displays controls for applying a light source to enhance the 3-D effect

Displays controls for coloring the extruded surfaces

Applies choices to selected objects

Shows a representation of the extrusion types available in the list box below

Displays a list of the extrusion types


Enter a value to specify how far you want to extrude object. (Available for perspective extrusions only)

Displays controls for specifying location of vanishing point. (Available for perspective extrusions only)

Displays the selected extrusion's wireframe for interactive editing

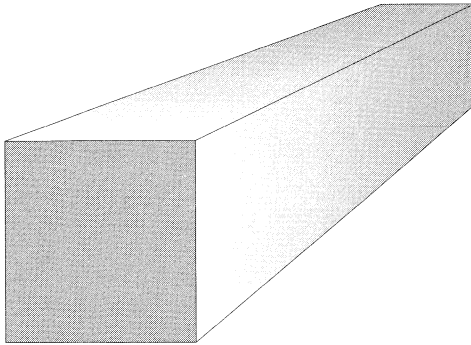


Specifying the type and depth of the extrusion

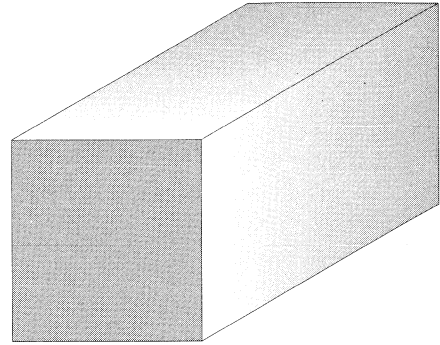
With the  button in the Extrude Roll-Up enabled, you can specify what kind of extrusion you want to create and how far you want to extend the extruded surfaces.

There are two types of extrusions: perspective and parallel. With perspective extrusions, the extruded surfaces approach or recede from a vanishing point. With parallel extrusions, the lines of the extruded surfaces are drawn parallel to one another. You choose the of extrusion type from the list box above the Depth control. The terms "Front" and "Back" refer to the extrusion surface's placement with respect to the object.

» **Note:**
The H and V units are the same as the ruler units. They are updated automatically.



Perspective extrusion




Parallel extrusion

The Depth control governs the extent of the extrusion. It applies to Perspective extrusions only. Setting it to 99 (the maximum value) results in an extrusion that extends away from the original object. As the scale value approaches 1 (the minimum value), the extruded surfaces approach the original object.

Specifying vanishing point coordinates

When a wireframe extrusion is applied to an object, the extrusion's vanishing point is always set to the center of the page. You can move the vanishing point by dragging the \times or by specifying numeric coordinates.

Controls for specifying coordinates are displayed by clicking the  in the roll-up. The H control sets the horizontal coordinate; the V control sets the vertical coordinate.

The Measured From options determine the reference point used to position the vanishing point. If you choose Page Origin, the reference point coincides with the 0,0 points on the rulers. CorelDRAW sets these points to the bottom left of the page. You can move them using the ruler crosshairs or the Grid Setup command in the Layout menu. Choosing Object Center locates the reference point in the middle of the object's highlighting box.

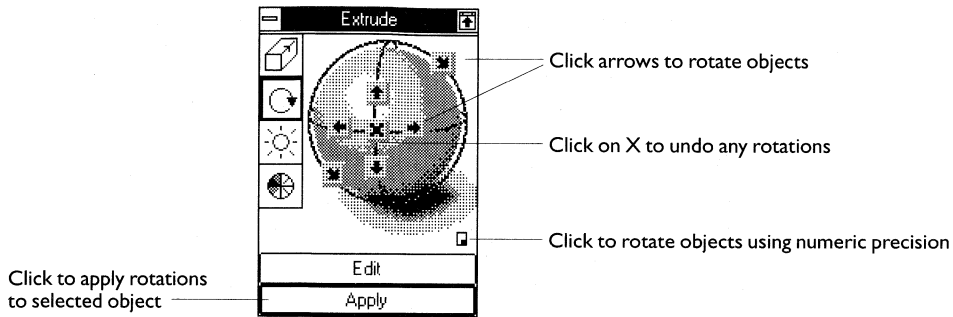




Rotating an extrusion

The second icon from the top is the 3-D Rotation icon. This icon displays the extrude rotator, shown overleaf. It allows you to alter the spatial orientation of your object.

Perspective extrusions: If you picture the object suspended in the air in front of you, clicking the arrows allow you to revolve the object in two directions

As you click, a wireframe representing the object rotates to reflect the current orientation. Each click moves the object five degrees. Clicking and holding on any arrow gives a spinning effect to the extruded object. When the desired orientation is achieved, click Apply to apply it to the object.



To rotate an extruded object with numeric precision, click the  button near the lower-right corner of the roll-up. A set of numeric entry boxes appears, where you can enter exact values for the horizontal, vertical, and clockwise rotation. Click the  button again to redisplay to the 3-D Rotation icon.



Clicking the “X” in the center of the sphere removes any rotation you’ve applied to the object.


Whenever rotations are applied to a perspective extrusion, the vanishing point is grayed out, and the vanishing point is always measured from the page origin.

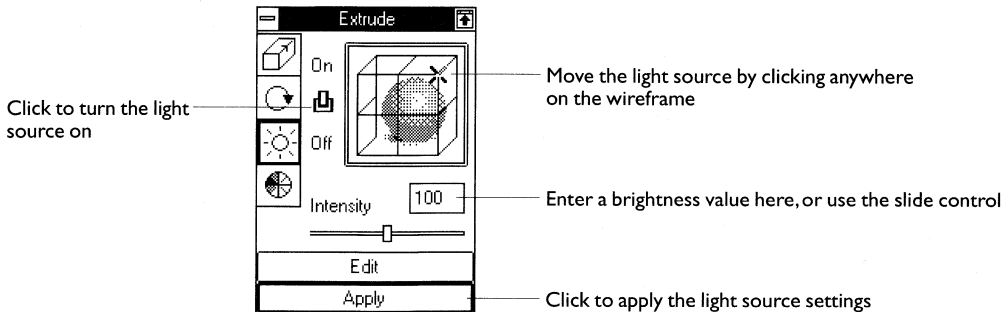
Parallel extrusions : For parallel extrusions, the rotator tool does not operate, since parallel extrusions cannot be rotated.



Applying a light source

To control the coloring and shading effects of your extruded object, use the  and  icons.

The Light Source Direction icon, , lets you adjust the direction of the light source with respect to the object. The On/Off switch turns the light source on or off. If you select Off, the sphere disappears and the Intensity control is grayed out. The color of the surfaces is not affected.




The sphere at the center of the wireframe cube represents your extruded object. The “X” on the wireframe represents the light source. Clicking the wireframe anywhere two or more lines meet causes the “X” to move to that intersection, which changes the direction of the light striking the object. The highlight on the sphere shows the change in direction.

You can change the Intensity of the light source using the field at the bottom right of the box. Values range from 0 to 200, with 100 as the default. As values decrease from 99 to 0, the color of the defining object goes towards black. Similarly, as values increase from 101 to 200, the color of the defining object goes towards white.

The light always strikes the defining object directly, and affects the extruded surfaces to a lesser degree. Therefore, if the defining object is partially hidden from view because it has been rotated, the change in light-source direction or intensity may not be readily apparent.



Coloring the extruded surfaces

The Extrusion Coloring icon at the bottom of the roll-up, , lets you control the coloring on all extruded surfaces. It provides three options:

- The Use Object Fill option applies the current fill of the original object to all the extruded surfaces.
- The Solid Fill option allows you to apply a different color to the extruded surfaces. Click the color swatch below Solid Fill to select the desired color. CorelDRAW applies the color you choose to all extruded surfaces.
- The Shade option allows you to create the effect of one color gradually becoming another color along the length of the extruded surfaces. The result is similar to a linear fountain. The two color swatches below the Shade option let you specify the beginning and end colors. The swatch on the left is used to select the color closest to the original object. The swatch on the right selects the color the surfaces fade away to. When you apply a Shade extrusion to a text object, specifying a new beginning color using the “From” button has no effect.

Regardless of the Extrusion Coloring option you choose, the appearance of your final extruded object is affected by the choices you make for the Light Source Direction and Intensity. If some of the extruded faces appear black and this is not the effect you want, adjust the Intensity upwards.

»Note:

The Clear Effects command changes depending on which of the effects commands you used last—for example, Clear Extrude or Clear Perspective.



Clearing an extrusion

To clear an extrusion, select the extruded object and choose Clear Effects from the Effects menu.

» **Tip:**

To reduce the display and print time for extruded objects, change the Flatness setting in the Preferences dialog box to Draft, apply the extrusion, print, and then change the setting back to Normal.

Node editing extruded objects

You can node edit extruded objects using the  tool. For example, you can use the  tool to kern extruded characters of artistic text. Any extruded object can be node edited, except in the following cases:

- The original object has an Envelope or Perspective
- The extrusion is a “Perspective” type and it has been rotated using the 3-D Extrusion Rotator.

In the first case, you must select the object and then choose either Clear Envelope or Clear Perspective from the Effects menu before you can node edit the object. In the second case, you must select Clear Extrude from the Effects menu.

Note: Although the object is obscured by the extrusion surfaces, with “Front” type extrusions, you can still select and node edit it.

Duplicating extruded objects

Here are a few things to keep in mind when duplicating extruded objects and extrude groups:

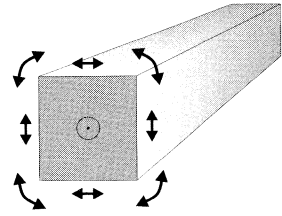
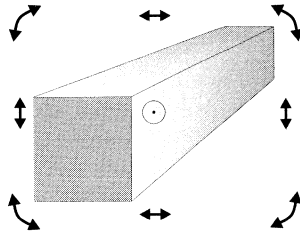
- When you duplicate the defining object of an extrude group, its attributes, including rotation, shading, and lighting, are assigned to the duplicate object.
- When you duplicate an extrude group, the duplicate group’s vanishing point will be at the same location *relative to the group* as that of the original extrude group.
- When you duplicate the defining object of an extrude group only, the duplicate’s vanishing point (which appears if you extrude the duplicate) will be at the point where the last vanishing point was set via the Extrude Roll-Up.

Moving the center of rotation of an extruded object

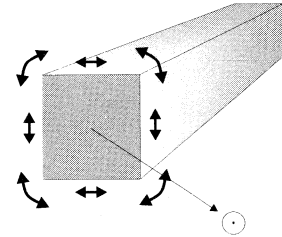
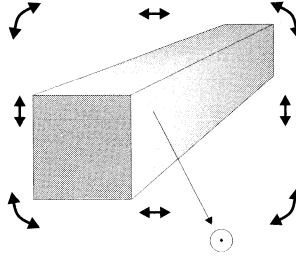
To move an extruded object’s center of rotation and have the center stay at its new location, you must apply the Group command in the Arrange menu to the extruded object.

Alternatively, you can select only the control object (not the entire extrude group) and move its center of rotation, as in the example shown on the next page. When you move the control object’s center of rotation, the new center’s position is retained. Then, whenever you rotate the control object, all of the extruded surfaces are rotated accordingly.

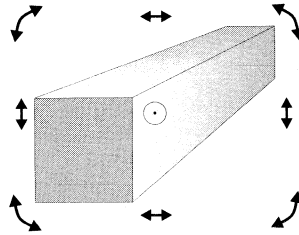
Double-clicking displays center of rotation.



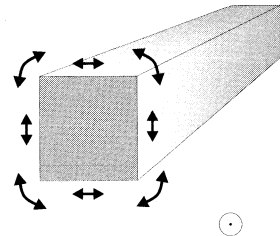
Clicking on the center of rotation and dragging it places it elsewhere on the page.



If you deselect the object and then double-click it, the center of rotation displays at the new location only for the control object (right), not the blend group (left), unless you applied the Group command before altering the center of rotation.



Extrude group selected



Extrude group control object selected

Editing extruded text

To edit extruded Artistic text, click **⌘** to get the text cursor, then click the text. Or, use the text cursor to select the text and choose Edit Text from the Text menu. The Artistic Text editing dialog box appears, where you can edit the text.


Contouring objects

Adding contours to a drawing is much like blending one object into another, and one color into another. Unlike a blend however, a contour is applied to a single object, be it text or graphic, and is not blended along a path. Contours can be applied to the inside, outside, or absolute center of an object, acting like concentric “steps” on a topographic map, giving the object a three dimensional appearance.

» Note:

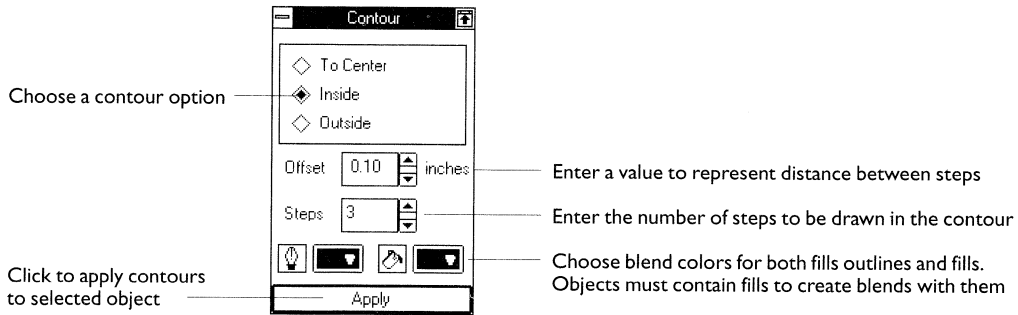
Contours cannot be applied to grouped objects, bitmap objects, or objects that have been placed with OLE (Object Linking and Embedding).

► To apply Contours to text or graphics:

1. Choose Contour Roll-Up from the Effects menu.
The Contour Roll-Up appears.
2. Using the  tool, select the artistic text or graphic that you want to apply a contour effect to.
3. From the Contour Roll-Up, choose the desired options and click Apply.
The objects begin reappearing on the screen, with the selected contour options implemented.

Choosing Contour options

Below is a summary of the controls in the Contour Roll-Up.



Stepping and spacing Contours

The Steps control allows you to set the number of contour “steps”, or intermediate objects, that are made in creating the contour effect. Up to 999 steps can be applied to one object. Use the scroll buttons to set the number of steps, or click in the Steps window to type in a value directly.

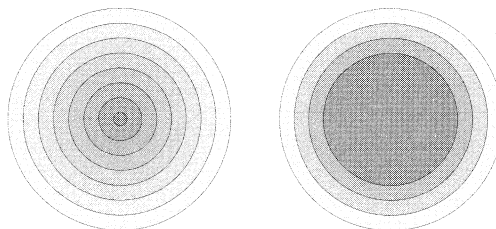
The Offset control allows you to set the distance between contour Steps. Click and hold the scroll buttons down until you have reached the desired value, or click inside the Offset window to type a value directly. The Offset value must be set between zero and 10 inches. It always overrides the Steps setting unless an Outside contour is applied.

Specifying Contour direction

Selecting and applying one of To Center, Inside, or Outside, affect the direction in which the contours are applied to the selected object. To Center and Inside are grayed out when an object contains an open subpath.

To Center: Click To Center to create a contour that steps to the absolute center of your object. The object is drawn repeatedly until it reaches the middle of the object. The Steps option window is grayed out when To Center is selected because CorelDRAW automatically determines the number of steps it takes at the selected Offset value for the object to be redrawn to the center. You must still set the Offset value to a specific measure. The example below shows the effect To Center has on an object.

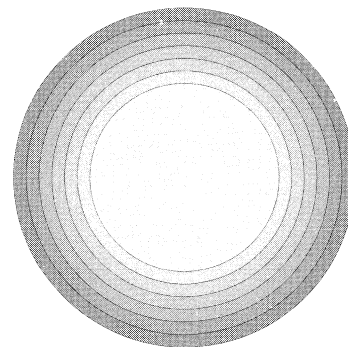
The To Center option ignores any Steps setting as it creates intermediate objects to the absolute center of an object automatically.



Applying the Inside option to an object will step to the values set for Offset and Steps.

Inside: The Inside option to an object draws contour steps on the inside of the object. Set the Offset and Steps values to the desired levels. If you have set the Steps value too high, CorelDRAW creates only the number of contours necessary to reach the middle of your object. For example, if you have selected five contour steps when the object requires only three to reach the object's inside, CorelDRAW draws only three contours. The illustration above shows the effect Inside has on an object.

Outside: The Outside option increases the object's size by creating Contours on the outside of the object. Set the Offset and Steps values to the desired levels. The illustration on the right shows how Outside increases an object's size.



» **Note:**
Contours cannot be filled with bitmap textures.

Making Contours look like Blends

You can make contours appear more like a blend and less like a set of patterned concentric steps by clicking **X** in the **☰** flyout menu. This turns any outline attributes off, which gives objects smooth contours. Small Offset values increase the appearance of smoothness.

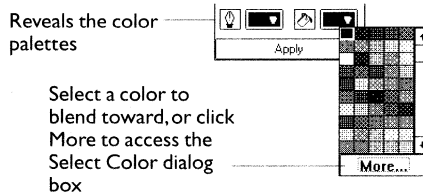
» Note:


Contours cannot be applied to a group of objects. Similarly, objects filled with contours cannot be blended along a path because they are considered grouped objects.

Selecting Contour fills and outlines

Click the color button under the fill or outline icon in the Contour Roll-Up to reveal a color palette. From either palette, select a color for the contour fill or outline to transform to. The more Steps you select, the finer the color transition will be.

If you click More in the color palette, a dialog box appears, providing more color options. For additional information, refer to Chapter 12, “Working with Colors.”



To change the original fill or outline of an object after you have applied a contour, select the object with the  tool and choose a new color from the palette. CorelDRAW rebuilds your contours automatically.

Note: Objects must contain a fill color for the contour effect to appear. If your original object has no fill, the contours you apply will be a series of concentric paths containing no fill, even if you have chosen a color for your contour. However, you don't have to assign a contour outline color to get a contour effect.


» Note:

Contours are dynamically-linked objects. More information on this subject is available in “Understanding the Status Line for dynamically-linked objects” earlier in this chapter.

Editing Contours


The line thickness, the color, and the size of individual contours and contour outlines can be edited.

► To separate and edit individual Contours in an object

1. Select a contoured object with the  tool.
2. Separate contoured objects by choosing Separate from the Arrange menu.

The group is no longer a dynamically-linked contour group.
3. Hold down the Ctrl key and click to select a contour step to edit. The Status Line indicates that you've selected a Child Curve.
4. Edit the contour by resizing, rotating, or adding a new fill or outline color.

Drawing PowerLines

To create lines with variable weights and give your illustrations a hand-drawn look, use CorelDRAW's PowerLine feature. PowerLines can make an ordinary line look tapered, etched, or fuzzy by mimicking the drawing styles of traditional artistic tools such as calligraphic pens, paintbrushes, and wood carving tools. PowerLines can be applied to your line before or after it has been created. The PowerLine Roll-Up contains controls that allow you to specify attributes such as Maximum Width, Nib Shape, and Ink Flow of your PowerLine. PowerLines have outline and fill properties of their own. Therefore, think of a PowerLine as a graphic object and not as a regular line drawn with the  tool.

Unlock your creative side

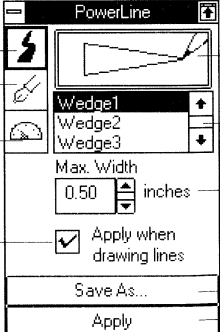
There are 24 different presets in the PowerLine Roll-Up. Experiment with their values and save them as new PowerLines if they produce effects you may need again.

The Pressure Preset relies on you for pressure input. Use the up and down arrow keys to increase and decrease the width of your line. If you're using a pressure-sensitive stylus and digitizer tablet, draw as you would with a pencil on paper, and let the Pressure Preset do the rest. The Pressure Preset translates the degree of pressure you use on the tablet into a smooth, realistic, hand-drawn stroke. To access the PowerLine Roll-Up, choose PowerLine Roll-Up from the Effects menu. The PowerLine Roll-Up appears.



Applying Presets from the PowerLine Roll-Up

The illustration below summarizes the controls displayed when the PowerLine button (at left) is enabled on the roll-up. Detailed descriptions of these controls follow.



Click to select a PowerLine Preset from the list box

Click to access Nib Shape, and Intensity controls

Click to access Speed, Spread, Ink Flow, and Scale with Image controls

Enable to automatically apply a PowerLine Preset to new lines you draw


The bitmap shown here reflects the selection made in the PowerLine Preset list box below

Select a PowerLine Preset from the list box

Enter the Maximum Width of the PowerLine

Click here to add your PowerLine settings to the Presets in the list box


Click to apply the PowerLine effect

In the PowerLine examples overleaf, the  tool was used with the "Apply when drawing lines" check box enabled. To apply a PowerLine Preset to an object, select the object and choose a Preset from the list box in the roll-up. Set Maximum Width to the desired value, and click Apply.





These PowerLine examples share a Max. Width of .40 inches and illustrate the difference in stroke weight between Presets WoodCut1 and WoodCut2.

»Note:

When you select the Pressure Preset from the list box, the toolbox icon changes to the  tool.

Setting Maximum Width : The Max Width box is directly below the PowerLine Preset list box. Enter a value between 0.01 and 16 inches in this box to change the maximum width of a PowerLine. The default value is 0.50 inches.

Apply PowerLines to every line drawn : Click the “Apply when drawing lines” check box enable PowerLines for every line created using the  or  line drawing tools. Try applying a PowerLine effect to something other than a simple line.

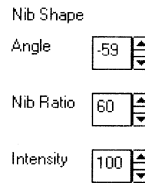
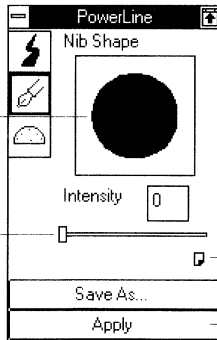


Adjusting the Nib Shape

An artist may change brushes, pens, or chisels to create different effects. The Nib Shape page of the PowerLine Roll-Up lets you do the same. This page contains settings that directly affect Nib Angle and Nib Ratio. Manipulating the look of the circle changes the nib, and therefore, the look of your PowerLine.

Click and drag here to change the Nib Angle and Nib Ratio settings

Click anywhere on the slide control to change the Nib Intensity level




Click on the page icon to reveal Angle, Nib Ratio, and Intensity controls, pictured above

Click to apply the Nib Shape effect

Below is a summary of the the nib shape controls.

Note : If you have specific settings in mind for Nib Angle and Nib Ratio, click the page icon in the lower right corner of the roll-up to set these controls to your specifications.

► To change the nib’s shape:

1. Place the cursor over the Nib. The cursor changes to a .
2. Click and drag on the Nib to change its shape and angle.

Making precise Nib shape adjustments : The lower you set the Nib Ratio, the more dramatic the effect is, since the line thins out at a much faster rate. If the Nib Intensity level is set at 100, (the maximum value allowed) the line will be at the Maximum Width when the PowerLine is at a 90-degree angle.

»Tip:

Don’t forget to click Apply to implement the settings you have made in the PowerLine Roll-Up.

The relationship between Nib and Speed

Either effect, when active, (i.e., with levels set greater than zero) will determine how sharp corners and line ends are drawn. The following table will explain the results of the active effects.

| Active Effect: | Results: |
|----------------|--|
| None | Sharp turns are pointed. Very sharp turns are triangular. |
| Speed | Sharp and very sharp turns are round. |
| Nib | Sharp turns and ends are trimmed according to the nib angle. |
| Nib and Speed | Nib is dominant. Corners are trimmed. |

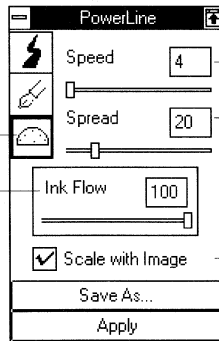
Setting Speed, Spread, and Ink Flow

Click the icon pictured at left in the PowerLine Roll-Up to access options controlling Speed, Spread, and Ink Flow. The setting for Ink Flow and the Scale with Image check box operate independently of the Speed and Spread controls. Speed and Spread are mutually dependent on information for creating desired effects.



Click to access options controlling Speed, Spread, and Ink Flow

Setting the amount of Ink Flow between zero and 100 will determine how much ink you have left in your pen. The lower you set the Ink Flow, the less coverage you will get per pen stroke



The higher you set the Speed, the more the PowerLine will "skid" around corners

Vary the Spread level anywhere between one and 100 to experiment with different textures

Enable the Scale with Image check box to maintain the PowerLine settings when resizing the object


Varying PowerLine speed : When you adjust the Speed setting, think of the skid marks a car makes when it rounds a corner too fast. The Speed control lets you regulate the amount of "skidding" the mouse (or stylus) produces in response to changes in direction, such as when you are drawing curves. The higher you set the Speed, the more dramatic your skid effect will be. The Speed setting takes into account the sharpness of the curve by increasing the width of the PowerLine at sharp curves, and decreasing it for more moderate curves.

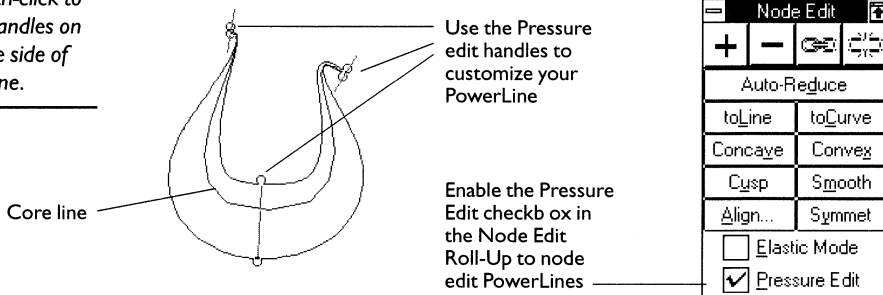
Using the Spread setting : When Speed is more than zero, Spread acts as a smoothness control. The higher the Spread is set, the smoother the line looks. The lower it is set, the lumpier the look. A low setting causes the line to draw like a ball-point pen. As you increase the Speed, the line resembles one created with a paintbrush. The Spread setting is grayed out when the Speed is set at zero.

» Tip:

PowerLines drawn with a pressure sensitive stylus and digitizer tablet will create more nodes than mouse-drawn PowerLines. Use Auto-Reduce in the Node Edit Roll-Up to eliminate unwanted nodes.

» Note:

You can use the  tool to marquee select two Pressure edit handles to uniformly resize the PowerLine. Or, use Ctrl-click to select all the handles on one side of the PowerLine, and Shift-Ctrl-click to select the handles on the opposite side of the PowerLine.



» Note:


Pressure Edit is used only for editing pressure points. To change the Nib, the Speed, or any other effect, you must use the PowerLine Roll-Up.

Setting the Ink Flow : The Ink Flow level indicates the amount of ink the PowerLine has in its pen. The value can be set between zero and 100, with zero representing a pen that is almost empty, and 100 a full pen. The higher the Ink Flow value, the greater the length of your pen stroke becomes a PowerLine. The lower your Ink Flow value, the shorter your PowerLine will be, as it “dries up” near the thinner sections of your PowerLine.

Using Scale with Image


Enable the Scale with Image checkbox to automatically adjust the Maximum Width setting when you resize a PowerLine. Scale with image works only if you grab one of the corner handles of the selection box.

Node editing PowerLines

Further modification of your PowerLine is possible using the Pressure Edit feature in the Node Edit Roll-Up. Using the  tool to edit a PowerLine is much like node editing any other object. When editing in Pressure Mode however, you’ll notice a few things unique to PowerLine editing.

The Pressure Edit checkbox appears at the bottom of the Node Edit Roll-Up, indicating that you have chosen a PowerLine. This checkbox must be enabled to edit pressure settings.

► To edit a PowerLine:

1. Select the  tool from the toolbox.
2. Double-click the core line (the line running through the middle of the PowerLine). The Node Edit Roll-Up appears.
3. Click the Pressure Edit checkbox in the Node Edit Roll-Up.
4. Click and drag the Pressure Edit handles to resize and reshape the PowerLine.

When you use Pressure Edit to modify PowerLines, the Pressure Edit handles allow you to override the Maximum Width setting if the Speed and Nib Intensity are set to zero. If they are set to more than zero, caps appears on the handles, indicating that they cannot be resized past the Max. Width setting. The fewer cusps you have, the smoother your line will be. However, smoother is not necessarily better; it depends on the look you are trying to achieve.

PowerLines and objects with multiple subpaths

Subpaths share pressure information. Therefore, when pressure editing on subpath, all of the subpaths of an object is highlighted and changed according to the edit of the single subpath. Also, when a subpath is broken into another subpath, pressure information is shared.

» Note:

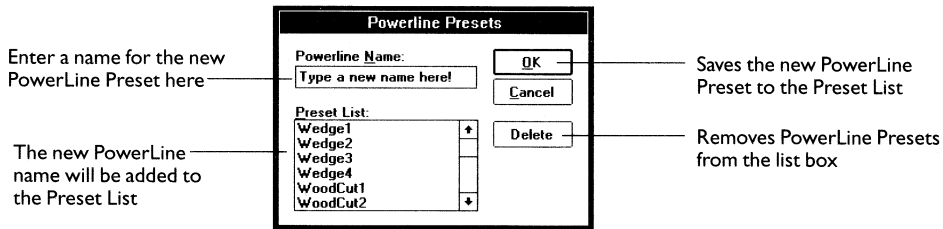
Select the None PowerLine Preset from the listbox and click on Apply to undo any PowerLines that you have applied to an object.

Non-pressure PowerLine attributes like Nib and Speed depend on the shape of each subpath, and therefore they are not affected by either pressure edits or line breaks.

If you add pressure points to Nib and Speed effects, you must remember that the greatest of these factors determines the width of a line at a given point. For example, the Nib effect overrides pressure data if the pressure at a given point is small, and the Nib angle produces a thickening effect at that point. Similarly, pressure points can be used to override Nib and Speed settings to touch up an object.

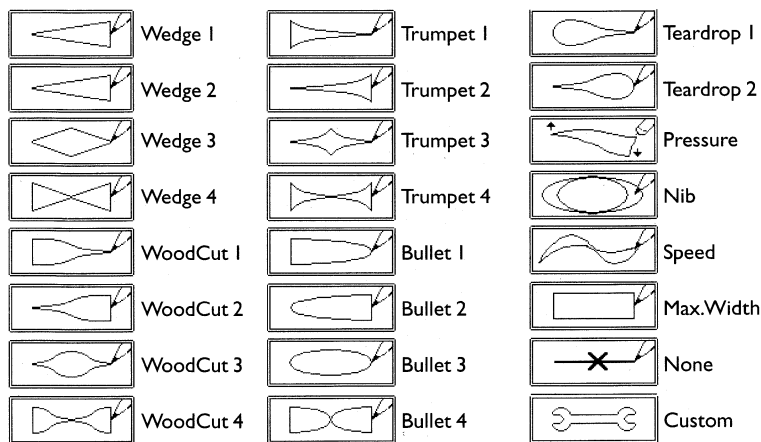
Saving Custom PowerLines

Click the Save As button at the bottom of the roll-up to access the PowerLine Presets dialog box. Here you can permanently add custom collections of PowerLine settings you've made for a particular PowerLine to the Presets list box by typing a name for your new PowerLine.



PowerLine symbol reference

Below are the 24 PowerLine styles found in the PowerLine Roll-Up. Each illustration represents the basic shape created when a style is selected:



A PowerLine example

Created almost exclusively with the PowerLine feature and a stylus (with no pressure input) and digitizer tablet, the following illustration, "Amanda", provides an example of the kind of effects PowerLines can help you create. Some straight lines provide outlines for Amanda's dress.

The PowerLine Preset used most in this illustration is WoodCut 3. An excellent all-purpose drawing tool, WoodCut 3 allows you to fuse PowerLines together when they are drawn without an outline. Precise pressure effects were added using the Pressure Edit feature in the Node Edit Roll-Up.

Hair: The base of Amanda's hair was created using WoodCut 3. The edges were done with the Wedge 1 preset, giving her hair texture and depth.

Neckline: Amanda's neckline was created using the Nib preset.

Skirt: WoodCut 3 was used to create the soft look of the pleats.

Buttons: WoodCut 3 was used to create this effect.

Grass: The grass was created using a custom preset derived from Wedge 1 and enhanced at the ends using the Convex command in the Node Edit Roll-Up. A Speed preset was used at the bottom of the illustration to create the field.



Using Styles

Formatting instructions, called *styles* or *tags*, reduce layout time and make it easier to create documents with a consistent look. Styles also make it easier to incorporate design changes.

With CorelDRAW's Styles feature you can define graphic styles that include fill and outline attributes and special effects. Text styles can include graphic style attributes plus an assortment of text attributes, like font, spacing, and alignment.

After defining a style, choose its name from the Styles Roll-Up and click Apply to assign it to the selected object. In addition to listing individual styles, the Styles Roll-Up allows you to save styles in groups called Templates. In this way, you can have different sets of styles for different types of projects.

CorelDRAW comes with the default template Coreldrw.CDT, which has one style each for both graphics and Artistic text, and four for Paragraph text. These styles can be edited, added to, and deleted.

Understanding basic style concepts

If you have worked with desktop publishing or word processing packages, you will be familiar with the use and concept of styles and style sheets, or templates. Styles and templates allow you to work more efficiently in CorelDRAW by assigning a set of customizable characteristics to both text and graphics.

CorelDRAW's Styles Roll-Up allows you to attach a name to a group of effects that have been applied to text or graphics. These names can then be contained in a larger entity, known as a *template*. A single template can be used in any number of illustrations. This allows you to maintain a consistent appearance from illustration to illustration.

Styles

There are three types of styles: Artistic text, Paragraph text, and Graphic, each represented by the following icons in the Styles Roll-Up:



Artistic text styles



Paragraph text styles



Graphic styles

Artistic and Paragraph text styles include attributes such as typeface, style and size, fills, and outlines. Fills, outlines, and special effects make up Graphic styles. See "Style formats" at the end of this chapter for more information on the style types.

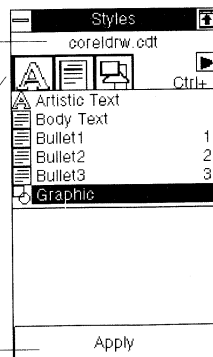
Templates

Templates are collections of styles that can be called up at any time and applied to any illustration. Creating, applying, and managing templates is done with the Styles Roll-Up shown below:

Selected template name appears here. This illustration shows that the default template has been selected.

Click all of the buttons to display all styles associated with the selected template.

Click here to apply your choices to the selected text or graphic.



Click this arrow to display commands used for creating and managing templates and styles.

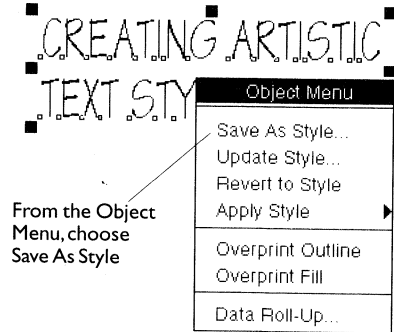
Depending on which buttons you have selected, this area displays available styles. To assign a style to a selected object, click the appropriate style name, and click Apply.

Creating and applying styles

To preserve the attributes of a text object or an illustration for use in other illustrations, save it as a style.

► To create a new Style:

1. Click the text or graphic object with the right mouse button. You may have to hold down the right mouse button, depending on how the mouse is programmed. The Object Menu appears.
2. Choose Save As Style.
3. Enter a style name in the Save Style As dialog box and select the attributes to be included in the style. For more detailed information on the use of this dialog box, access CorelDRAW's online Help.
4. Click OK.




The dialog box where styles are defined changes to reflect the type of style being created. You don't need to know the differences between style types to create a style from your object. CorelDRAW automatically determines which style is appropriate for that object. For example, when creating a style for a graphic object, the dialog box presents options appropriate for a graphic object.

► To apply a style to an object:

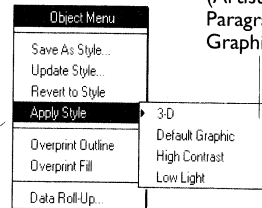
There are two methods for applying a style to an object. The first is accessed by the right mouse button and the Object Menu. The second uses the Styles Roll-Up.

1. Using the right mouse button, click the object you want to apply a style to. The Object Menu appears.
2. Choose Apply Style. A flyout menu containing the styles pertinent to your selection appears.
3. Choose a style name from the flyout.

OR

1. Choose the Styles Roll-Up from the Layout menu.
2. With the  tool, click the object you want to apply a style to.
3. Choose a style from the Styles menu and click Apply.

Choose Apply Style to access available styles from the flyout



» Tip:

To restore an object's original style, choose the Revert to Style command from the Object menu. This will undo any style attribute changes applied to the object since the style was applied. Any attributes not defined in the original style will remain unchanged.

Working with templates

With the Styles Roll-Up active on the screen, you will find a flyout menu off the right side of the Roll-Up (see illustration at right). From here, you can choose from the following options:



Load Template: Click this option to load a template. A dialog box appears containing the templates listed in the CorelDRAW template directory. The name of the selected template appears below the Roll-Up's title bar. If the template loaded contains styles with names identical to those already applied to existing objects, you will be asked if you want to change the existing objects by applying the new styles.

Save Template: From the Styles Roll-Up flyout menu, click Save Template to call the Save Template dialog box. Name your new template (maximum of eight characters), or rename an existing Template. Pick a destination directory and drive to save your template. All CorelDRAW templates are saved with the .CDT file extension.

Set Hotkeys: You can create up to 10 Hotkeys to customize the way you assign often-used paragraph styles. Choose Set Hotkeys from the flyout menu to access the dialog box pictured below.

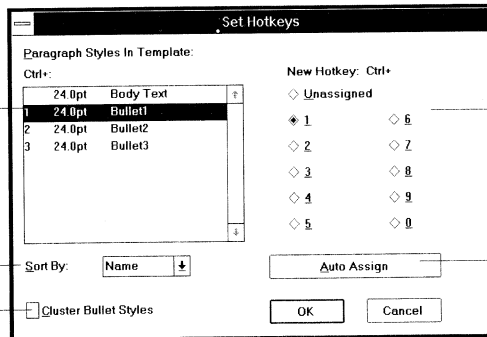
» Note:

Hotkey assignments are only available for Paragraph Text Styles. Remember, to apply a style using Hotkeys, you must press Ctrl while you select the assigned Hotkey number. For example, Ctrl-3.

List box displays Hotkey assignments. A Hotkey number appears down along the left side of the list box, beside the style it is assigned to.

Sort the Hotkey list by Name or Font Size

Enable to group styles containing bullets in the list box.



Assign keyboard numbers to specific styles by enabling a radio button

Click here to assign numbers to styles automatically

Delete Style: Click this option to delete a selected style from the current illustration. To remove the style from the template, delete it and then save the template using the Save Template command.

Find: Highlight a style in the Styles Roll-Up and choose Find from the flyout menu to search for objects that use a particular style. When an object with that style is located, selection handles appear around the object. Select Find Next to search for the next object with that style. Find searches the current page for the selected style. If no match is found, Find begins searching the rest of the pages if the document is a multi-page file.

The list box displays the default hotkey assignments. To change these assignments, or to add one of your own, highlight the paragraph style you want to assign a hotkey by clicking on it with the mouse. Then, select a number from those displayed on the right side of the dialog box. To quickly assign hotkeys to paragraph

styles, click Auto Assign. There are three ways of sorting hotkey assignments. Paragraph Styles can be sorted by Name, Font Size, or by grouping all styles that share bullet attributes.

Updating styles and undoing style changes

The Object Menu has three styles-related commands. The first of these commands, Save As Style, was described in “Creating and applying styles”. The second, Update Style, saves the additions you have made to a style that already exists. The third, Revert to Style, lets you wipe out modifications made to an object since the last style was applied; the text or graphic object returns to its pre-modification state.


Style formats

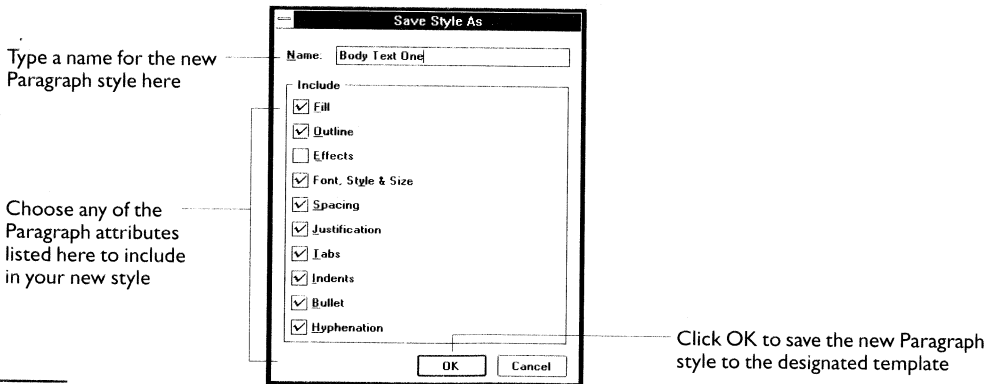
CorelDRAW automatically recognizes the type of style you want to save. The Save Style As dialog box is accessed when Save As Style is chosen from the Object Menu. Attributes appropriate to the graphic object are enabled. Perspectives, envelopes, and extrusions are included in new styles by enabling the Effects check box.

» Note:

Any Effect applied to Paragraph text cannot be saved as with your styles

Paragraph Text styles

Only one style can exist within a single paragraph. If you select an entire frame with the  tool, all paragraphs in that frame are converted to the new style. Within the Paragraph Text style, the dialog box allows you to set the options for the attributes listed in the dialog box below.



» Tip:

To save an attribute with your new style, remember to enable the appropriate check box

Dragging the cursor to highlight text allows you to select paragraphs within a frame for formatting. If you want to assign different styles to various parts of the text block, you must separate each paragraph by pressing Enter.

» Note:

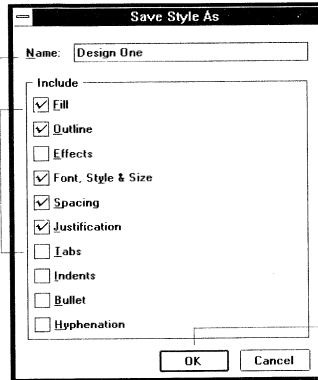
Tabs, Indents, bullets, hyphenation, and before/after Paragraph spacing cannot be set in Artistic text.

Artistic Text styles

When saving an Artistic Text as a style, you can save any Fill, Outline, Font (Style and Size), Spacing, and/or Justification setting associated with the artistic text. Attributes that do not apply to artistic text (Tabs, Indents, Bullet, and Hyphenation) appears grayed out.

Type a name for the new Artistic Text style here

Choose any of the Artistic Text attributes listed here to include in your new style



Click OK to save the new Artistic Text style to the designated template

» Note:

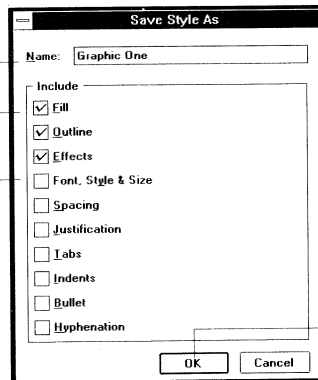
Attributes that cannot be saved with your new style are disabled and appear grayed out in the Save Style As dialog box

Graphic styles

When graphic styles are applied to text, they automatically override any text style currently applied. Graphic styles work in much the same way as text styles, and also have customizable attributes. These include: Fills, Outlines, and Effects.

Type a name for the new Graphic style here

Choose any of the Graphic attributes listed here in your new style



Click OK to save the new Graphic Text style to the designated template

Creating a Graphics Database

CorelDRAW's Object Data feature lets you create a database with information about your artwork. You can enter many types of data about individual objects or groups of objects—text, numbers, times, dates, and so on.

The database is set up on a datasheet, with categories of information organized in columns. If you're creating a technical drawing for example, you might put component names in one column, part numbers in another, cost in a third, and so on. For each component in the drawing, you enter the same categories of information.

Once the database is created, you can access information on specific objects by clicking on them with the right mouse button and choosing the Data Roll-Up command from the Object menu. Information on more than one object can be accessed by selecting the Object Data Manager.

CorelDRAW provides basic functions for formatting and manipulating information in the database. For example, you can add and delete columns, indent rows to show hierarchical relationships, and summarize data for selected objects. You can also print the database (or parts of it).

With the Clipboard, you can copy data to different locations within the database or between CorelDRAW databases. You can also use the Clipboard to copy data to and from other Windows database or spreadsheet programs.

Introducing Object Data

If you've used a database program, such as Microsoft Excel or Lotus 1-2-3, you will be familiar with many of the concepts behind CorelDRAW's Object Data feature. A database is a tool used for organizing, managing, and retrieving information. In CorelDRAW, you use a database to store and manipulate data, with a graphic twist. Imagine a floor plan designed in CorelDRAW, for example. Using the Object Data feature, you could create a database with information about the occupants the and contents of each office — such as names, titles, telephone numbers, and types of office equipment.

But that's just one example. There are countless ways of putting the power of Object Data to work. In the next few pages, you'll see how a fictitious manufacturing company uses Object Data to keep track of its inventory. As you follow along, remember that although the application may differ, the general process of creating the database is the same.

The section after the example provides a synopsis of the various Object Data commands and functions. We recommend you work your way through this example however, because it contains more detailed information than the synopsis.

Understanding a few terms

The graphic defines some fundamental terms associated with Object Data.

Object: A graphic or text created in CorelDRAW. Here, a golf club serves as an example of an object that can be associated with data such as a retail price.



Datasheet: A place where you can store, manipulate, calculate, and analyze data.

Format Definition: A format reflecting the style of the data entry. The data entry under the retail price Field would be defined as Numeric, with a monetary format like `##,###0.00` selected.

Field: A category designated for all, or selected objects. An example the retail price of the golf club.

| Object Data Manager | | | | | | | |
|-------------------------------------|-------------------|--------------|--------------------|--------------|---------------------|-----------------|--|
| File Edit Field Options Preferences | | | | | | | |
| TOTAL Club | | | | | | | |
| | Club Model | Club Model # | Manufacturing Cost | Retail Price | # of Units in Stock | Available Until | |
| 1 | SubPar Screammers | 13451 | \$422.00 | \$1,200.00 | 5000 | 12/30/99 | |
| TOTAL | | | | | | | |

Data: A value, be it textual or numerical, that can be assigned to an object in a particular field. For example, the data entered under the retail price. Its data can be represented by \$1200.00.

Cell: The basic unit of the datasheet in which you can store data, found at the intersection of each column and row.

The SubPar Canada story - an Object Data example

SubPar Canada, a fictitious golf club manufacturer, was having problems keeping track of inventory. With the introduction of new products, the time had come to produce a catalog. As luck would have it, the company's founder Duff Mulligan, had recently upgraded to CorelDRAW 4. It wasn't long before Duff realized that CorelDRAW and the Object Data feature were the solution to his problems.

Duff's first task was deciding what kind of information to put in the catalog. Obviously, the printed version had to include pictures of the products along with specifications and prices. The electronic version—that is, the catalog as it's viewed in CorelDRAW—had to contain inventory data such as model numbers and quantities. The catalog would contain the following information:

- Club model year
- Club model
- Club model number
- Manufacturing cost
- Suggested retail price
- Number of units in stock
- Available-until date

Using the Object Data feature to link the pictures with the information, Duff could turn his catalog into a graphics database. This way, when a customer called to order a set of clubs, an employee could access the database by clicking a picture of the clubs and determining whether that set was available.

Creating the graphics component of the catalog entailed scanning product photos using CorelPHOTO-PAINT. The scans were then imported into CorelDRAW and incorporated into the layout.

Once the layout was finished, the product data and graphics had to be linked and the database created. Following are the stages required to accomplish these tasks.



Duff Mulligan's catalog was created using a variety of CorelDRAW's features. Duff used his catalog layout as a base for his data, linking the two using the Object Data Roll-Up.

» **Shortcut:**

To quickly assign data to objects, use the following shortcuts:

With an object selected and the Object Data Roll-Up open, press Enter to type data directly into the Object Data edit field.

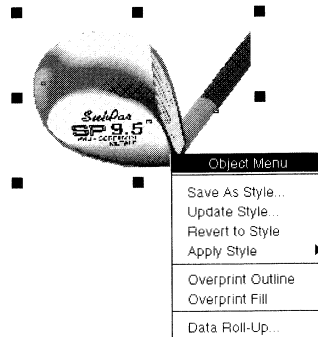
Within the Roll-Up, use the arrow keys to scroll through and select field for data assignment.

When assigning data to more than one object, use the Tab key to change the focus of the highlight box from one object to another.

Stage One: Accessing the Object Data Roll-Up

The Object Data Roll-Up acts as a bridge between the objects, the data, and the datasheet.

1. Using the right mouse button, click the object(s) you want to attach data to.
2. In the Object Menu that appears, choose Data Roll-Up. The Object Data Roll-Up appears on your screen.

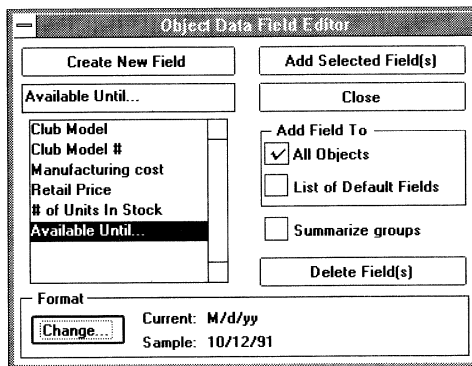


With the Roll-Up open, begin setting up the database. This involves using the Object Data Field Editor to add resident default Fields (or categories), or creating your own Fields, and selecting formats for the data.

Stage Two: Setting up the database

SubPar Canada attached the new Fields to the golf club graphics by first selecting the objects on the CorelDRAW page, and then assigning the new fields.

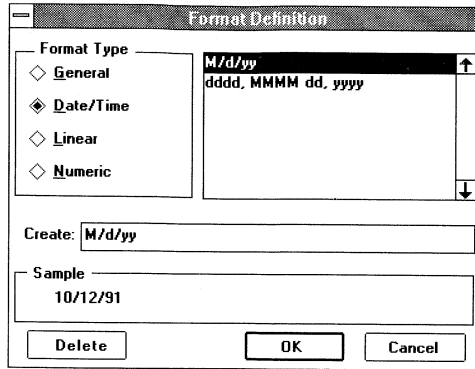
1. Click on ► on the right side of the Roll-Up to open the Object Data menu.
2. Click Field Editor. The Object Data Field Editor dialog box appears.



3. Click on Create New Field.
4. Type in a name for the new field. In our example, SubPar Canada entered fields such as model number, model name, manufacturing cost.
5. Once you have entered a name for a new field, click on Create New Field. This enters your chosen name and allows you to specify another new one.

If you find you have made a mistake in any of the names you have already entered, simply highlight that field name, make your correction, and click on the highlighted name again. To remove a field, highlight it and click on the Delete Field(s) button.

- Click on Change to adjust the data format of your new field. The Format Definition dialog box appears.



- Choose a Format Type appropriate for that field from the Format Definition dialog box.
SubPar Canada chose the M/d/yy Format Type from the Date/Time options to show the date after which a set of their golf clubs would no longer be available. You can type in your own formats in the Create field and have them appear in the list.
- When all the fields have been entered, click Add Selected Fields in the Field Editor dialog box. This assigns the created fields to selected objects, closes the Object Data Field Editor, and reverts to the Roll-Up.

The next step is entering the data into a datasheet called the Object Data Manager.

Stage Three: Assigning and editing data

Duff entered data in two ways: Through the Object Data Roll-Up when he wanted to assign data to a single object in the catalog drawing, and through the Object Data Manager when multiple data assignment was required.

- For Roll-Up data entry and editing, use the tool to select an object, and click on it with the secondary mouse button. Select Data Roll-Up from the menu.
- In the Object Data Roll-Up, use the tool to select a Field to enter data in.
- Type the new Value of the Field in the edit field at the top of the Roll-Up.
- Press Enter to assign your entry to the drawing object and its Field.

| Field | Value |
|---------------------|-------------------|
| Club Model | SubPar Screammers |
| Club Model # | 13451 |
| Manufacturing Cost | \$422.00 |
| Retail Price | \$1,200.00 |
| # of Units in Stock | 5000 |

- OR -

- For Object Data Manager data entry and editing, use the tool to select a group of objects to assign new or revised data to.

» Note:

If the All Objects check box is enabled, you do not have to click on Add Selected Field(s) to add your fields to the Object Data Manager. Instead, select Close.

» Tip:

Both the Object Data Roll-Up and the Object Data Manager can be sized to fit the dimensions the data demands. To do this, click and drag on a corner of the Object Data Roll-Up or Object Data Manager.

- Click the (datasheet) icon in the upper left corner of the Object Data Roll-Up to access the Object Data Manager. The datasheet will display all the objects selected along with their associated Fields and Values.

| Object Data Manager | | | | | | |
|-------------------------------------|-------------------|--------------|--------------------|--------------|---------------------|-----------------|
| File Edit Field Options Preferences | | | | | | |
| TOTAL Club | | | | | | |
| | Club Model | Club Model # | Manufacturing Cost | Retail Price | # of Units in Stock | Available Until |
| 1 | SubPar Screammers | 13451 | \$422.00 | \$1,200.00 | 5000 | 12/30/99 |
| TOTAL | | | | | | |

»Note:

Objects within groups, or objects selected using Select All appears in the Object Data Manager in an order based on display order. (i.e., creation order, plus any re-ordering done using To Front or To Back etc.)

»Tip:

Double Click on an item in the Object Data Roll-Up to automatically access the Object Data Field Editor. The item selected in the Roll-Up will be highlighted in the list box in the Object Data Field Editor.

- In the Object Data Manager, highlight a cell.
- Type in the appropriate data using the Edit Field.
- Press Enter to assign your entry to the cell, the Field, and the object.

Note: The left side of the datasheet in the Object Data Manager lists and numbers the objects in the order they were selected, while the top of the datasheet shows the created fields in the order they were created in the Object Data Field Editor. Use the arrow keys to move from cell to cell in the spreadsheet.

Stage Four: Changing field names and order

Duff needed to move the location of certain Fields so that they would appear in a logical order on the datasheet. He also had to change the name of some Fields.

- Click on ► on the right side of the Object Data and select Field Editor.
- In the Field list box, hold the mouse button down on a field name and drag it to a new location. The cursor changes to ↕ , indicating that you can rearrange the list. (The lists in the Format Definition dialog box can also be rearranged in this manner.)
- Release the mouse button to place the field name in its new location.
- To change the name of a field, highlight the field name in the Object Data Field Editor and type in the new name.



Stage Five: Showing hierarchical relationships

The Show Hierarchy command, under the Field Options menu in the Object Data Manager, clearly indicates the presence of two or more groups within a single datasheet by indenting the group objects and accompanying data by two spaces.

Mr. Mulligan categorized his SubPar lines by model year and represented those model years on the same datasheet. He used Show Hierarchy to make the years distinct, and plugged in subtotals for each year. Here's what Mr. Mulligan had to do to achieve this:

The SubPar Canada datasheet shows the effectiveness of the Show Hierarchy command to make distinctions between groups.

| Object Data Manager | | | | | | |
|-------------------------------------|-----------------------------|--------------|--------------------|--------------------|---------------------|-----------------|
| File Edit Field Options Preferences | | | | | | |
| 1. Club Model New Lines for 1993 | | | | | | |
| | Club Model | Club Model # | Manufacturing Cost | Retail Price | # of Units in Stock | Available Until |
| 1 | New Lines for 1993 | 0 | \$1,904.23 | \$7,540.00 | 13050 | 12/30/99 |
| 2 | SubPar ShotSavers | 34522 | \$398.00 | \$1,050.00 | 4000 | 12/30/99 |
| 3 | SubPar Danny Noonan Ltd. Ed | 12342 | \$10.23 | \$1,600.00 | 50 | 12/30/99 |
| 4 | SubPar WebbTechs | 34522 | \$670.00 | \$2,500.00 | 500 | 12/30/99 |
| 5 | SubPar GreenCaps | 45367 | \$376.00 | \$890.00 | 5500 | 12/30/99 |
| 6 | SubPar WhiteySpecials | 98574 | \$450.00 | \$1,500.00 | 3000 | 12/30/99 |
| 7 | 1992 Leftovers | 0 | \$2,228.00 | \$7,050.00 | 19000 | 12/30/99 |
| 8 | SubPar TurfMasters | 14326 | \$529.00 | \$2,200.00 | 1000 | 12/30/99 |
| 9 | SubPar ParBreakers | 12323 | \$427.00 | \$1,260.00 | 5000 | 12/30/99 |
| 10 | SubPar EagleEye | 14953 | \$460.00 | \$1,400.00 | 2000 | 12/30/99 |
| 11 | SubPar Screammers | 13451 | \$422.00 | \$1,200.00 | 5000 | 12/30/99 |
| 12 | SubPar BigSticks | 43112 | \$390.00 | \$990.00 | 6000 | 12/30/99 |
| TOTAL | | | \$4,132.23 | \$14,590.00 | 32050 | |

1. Use the Group command in the Arrange menu in CorelDRAW to create two separate groups in the current drawing. Mr. Mulligan used Group to create a group of the new club lines for 1993, and then again to create another group for the leftover 1992 sets.
2. Use the  tool to select both groups of objects.
3. Access the Object Data Roll-Up, and click the  icon to view the Object Data Manager.
4. Click a Field name and choose Show Hierarchy from the Field Options menu in the Object Data Manager.

Stage Six: Showing totals

The Show Totals command in the Field Options menu adds the numeric values of a Field. The total is displayed at the bottom of the datasheet in the Object Data Manager in the TOTALS line. SubPar chose to total fields such as manufacturing cost, retail price, and number of units in stock. This is how it is done:

1. Click on the Field button of the column that needs to be totaled.
2. Choose Show Totals from the Field Options menu in the Object Data Manager.

»Note:

Show Totals will also work with Linear formats.

SubPar Canada totaled designated columns, or Fields, using the Show Totals command in the Field Options menu.


| | Club Model | Club Model # | Manufacturing Cost | Retail Price | # of Units in Stock | Available Until |
|-------|---------------------------|--------------|--------------------|--------------------|---------------------|-----------------|
| 1 | New Lines for 1993 | 0 | \$0.00 | \$0.00 | 0 | 12/30/99 |
| 2 | SubPar ShotSavers | 34522 | \$398.00 | \$1,050.00 | 4000 | 12/30/99 |
| 3 | SubPar Danny Noonan Ltd | 12342 | \$10.23 | \$1,600.00 | 50 | 12/30/99 |
| 4 | SubPar WebbTechs | 34522 | \$670.00 | \$2,500.00 | 500 | 12/30/99 |
| 5 | SubPar GreenCaps | 45367 | \$376.00 | \$890.00 | 5500 | 12/30/99 |
| 6 | SubPar WhiteySpecials | 98574 | \$450.00 | \$1,500.00 | 3000 | 12/30/99 |
| 7 | 1992 Leftovers | 0 | \$0.00 | \$0.00 | 0 | 12/30/99 |
| 8 | SubPar TurfMasters | 14326 | \$529.00 | \$2,200.00 | 1000 | 12/30/99 |
| 9 | SubPar ParBreakers | 12323 | \$427.00 | \$1,260.00 | 5000 | 12/30/99 |
| 10 | SubPar EagleEye | 14953 | \$460.00 | \$1,400.00 | 2000 | 12/30/99 |
| 11 | SubPar Screammers | 13451 | \$422.00 | \$1,200.00 | 5000 | 12/30/99 |
| 12 | SubPar BigSticks | 43112 | \$390.00 | \$990.00 | 6000 | 12/30/99 |
| TOTAL | | | \$4,132.23 | \$14,590.00 | 32050 | |

» Note:

To display all the details of a group of objects, make sure that you have enabled Show Group Details in the Preferences menu of the Object Data Manager.

Stage Seven: Summarizing groups

The subtotals of individual groups may need to be combined. For example, SubPar Canada needed the subtotals for their new 1993 product line (or group one), and the leftover 1992 stock (group two). Here's how that was done:

1. Use the  tool to select the groups to be combined in the Object Data Manager.
2. Click on the field name of the column that needs to be summarized.
3. Summarize Groups from the Field Options menu in the Object Data Manager.

The Summarize Groups command is useful for breaking the costs down into well-defined groups as SubPar Canada has done here.

| | Club Model | Club Model # | Manufacturing Cost | Retail Price | # of Units in Stock | Available Until |
|-------|---------------------------|--------------|--------------------|--------------------|---------------------|-----------------|
| | New Lines for 1993 | 0 | \$7,904.23 | \$7,540.00 | 13050 | 12/30/99 |
| 2 | SubPar ShotSavers | 34522 | \$399.00 | \$1,050.00 | 4000 | 12/30/99 |
| 3 | SubPar Danny Noonan Ltd. | 12342 | \$10.23 | \$1,600.00 | 50 | 12/30/99 |
| 4 | SubPar WebbTechs | 34522 | \$670.00 | \$2,500.00 | 500 | 12/30/99 |
| 5 | SubPar GreenCaps | 45367 | \$376.00 | \$690.00 | 5500 | 12/30/99 |
| 6 | SubPar WhiteySpecials | 98574 | \$450.00 | \$1,500.00 | 3000 | 12/30/99 |
| | 1992 Leftovers | 0 | \$2,228.00 | \$7,050.00 | 19000 | 12/30/99 |
| 8 | SubPar TurfMasters | 14326 | \$529.00 | \$2,200.00 | 1000 | 12/30/99 |
| 9 | SubPar ParBreakers | 12323 | \$427.00 | \$1,260.00 | 5000 | 12/30/99 |
| 10 | SubPar EagleEye | 14953 | \$460.00 | \$1,400.00 | 2000 | 12/30/99 |
| 11 | SubPar Screammers | 13451 | \$422.00 | \$1,200.00 | 5000 | 12/30/99 |
| 12 | SubPar BigSticks | 43112 | \$390.00 | \$990.00 | 6000 | 12/30/99 |
| TOTAL | | | \$4,132.23 | \$14,590.00 | 32050 | |

Note: In order to calculate accurate totals using Summarize Groups, data must be assigned to single objects, rather than a group of objects. If you must assign data to a group of objects, be sure to assign the data to a single object within that group.

» Note:

To print only a range of highlighted cells from the Object Data Manager, enable the Selected Cells Only check box.

Step Eight: Printing the datasheet

You can print a datasheet from the Object Data Manager as follows:

1. Choose Print from the File menu in the Object Data Manager.
2. Choose the appropriate options from the Object Data Manager Print dialog box.
3. Click on OK.

Object Data Command Reference

» Tip:

The Object Data Roll-Up and the Object Data Manager can be resized by clicking and dragging anywhere on their respective frames.

This section provides a summary of the functions contained in the Object Data Roll-Up. This summary isn't intended to explain how the Roll-Up is used to create a database. Refer to the SubPar Canada example for understanding the database creation process.

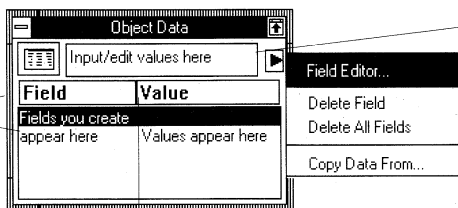
The Object Data Roll-Up

The Object Data Roll-Up acts as an interface between objects on the CorelDRAW page and the creation, editing, and viewing of data attached to these objects. When objects have been attached to data, the Roll-Up can be used edit the data of a single object. The Roll-Up contains the following parts:

Click the Data Manager icon to access the Object Data Manager.

The list box displays all created Fields and their associated Values.

Drag on the re-sizer bar to increase the area of display for Field or Value.



The edit field

The flyout menu allows you to access the Object Data Field Editor, clear selected fields from the Roll-Up, and Copy Data From one object to another, saving you from having to re-enter the data.

Note: The Object Data Roll-Up is empty when no objects are selected. To view the data associated with multiple objects, click the icon to access the Object Data Manager.

» Tip:

Use Add Selected Field(s) to add fields to a specific, highlighted object(s).

Enable the All Objects check box to globally add fields to created, and yet to be created objects.

Enable the List of Default Fields check box to add your new fields to the permanent list of fields. The next time you open CorelDRAW, and the Object Data Manager, your new field will automatically appear.

Copying data between objects

To quickly update data attached to one object from another, use the Copy Data From command. Copy Data From will not replace an object's data, but rather, will append the target object by adding both fields and data where necessary.

► To Copy data from one object to another:

1. Highlight the object you want to copy the data to.
2. Choose Copy Data From from the flyout menu in the Object Data Roll-Up. The cursor will change to arrow.
3. With the arrow, click on the source object from which you wish to copy data. Fields and the accompanying data is automatically transferred from the source object to the object you originally highlighted.

The Object Data Field Editor

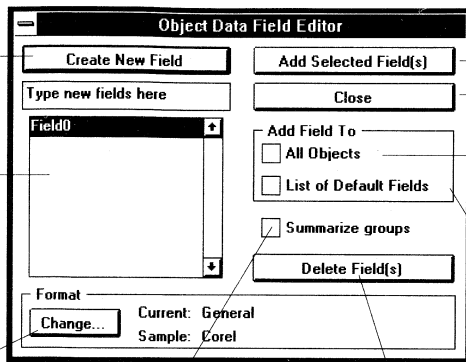
The Object Data Field Editor allows you to create, delete, and assign Fields (or categories) to objects before entering the associated data. The dialog box also allows you to change the format of the data by clicking on Change to access the Format Definition dialog box. The illustration that follows describes the features of the dialog box.

Click here to add a new field to the list box.

Fields that you have created appear in this list box. Every new field will be named Field0, Field 1, Field2, etc. by default. To change the name of a default field, type the new name in the box above the list box.

Click to change the format of a Field. This summons the Format Definition dialog box.

Click here to summarize the totals of a group of Fields. The results of enabling this feature appears in the Object Data Manager.



Click here to add highlighted fields to selected objects.

Click here to close the Object Data Field Editor.

Click here to add selected Fields to both current, and to be created objects in the active document.

Click here to add selected Fields to List of Default Fields. These defaults appears in the list box when new documents are created.

Click here to delete selected Fields from the list box.

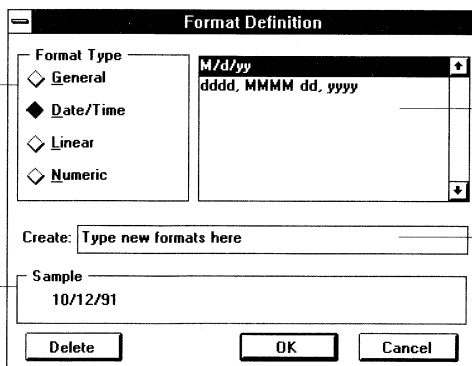
The Format Definition dialog box

The Format Definition dialog box is accessed when you click on Change in the Object Data Field Editor. Here, you can choose a format type to display your data in, or create your own. If, for example, one of your fields calls for a monetary value input, choose \$#,##0.00 from the list box. To create a new format, type the new format in the Create field. The format you create will be sorted by type, and will automatically be placed in the appropriate location. The dialog is illustrated below.

Detailed instructions on how to create new Format Definitions can be found in CorelDRAW's online Help.

Select a Format Type by clicking one of these buttons.

This area shows the form your data will take when viewed in either the Object Data Roll-Up or the Object Data Manager.



This list box contains Format Definition Options. The illustration shows the options available when Date/Time is selected.

To add a Format Definition of your own, type the new format in the Create field and click on OK.

The Object Data Manager

The Object Data Manager is the heart of the graphic database feature. While it can be used to view and edit data associated with a single object, its main purpose is to manage large amounts of data associated with multiple objects contained in various groups in a drawing.

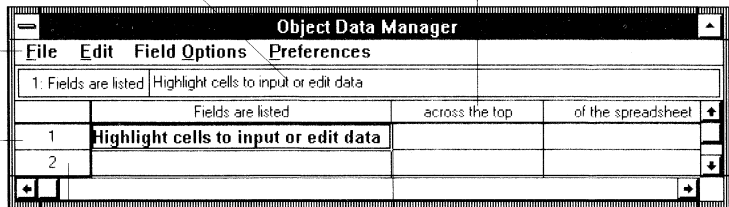
The following illustration highlights the features of the Object Data Manager.

Type in Values in the edit field. Values appear in their non-formatted version in this window.

Click any Field name to highlight an entire column. Highlighted columns can be formatted using the commands in the Field Options menu.

Menu bar

Click any Object number to highlight an entire row.



Objects are listed vertically down the left side of the datasheet. The last object created appears as object one.

Formatted data appears in the datasheet area of the Object Data Manager.

The Object Data Manager menu bar

The Object Data Manager menu bar contains powerful functions that allow you to put your data to work. The following summarize these commands.

| File | |
|----------------|--------|
| Page Setup... | |
| Print... | Ctrl+P |
| Print Setup... | |
| Exit | Ctrl+X |

The **File** menu in the Object Data Manager contains commands for Page Setup, Print, Print Setup, and Exit.

Page Setup: Choose to access the Page Setup dialog box. From here you can control the look of the printed datasheet by choosing from the following printing options.

- Enable the Print Grid Lines check box to print lines between the cells in the datasheet. Disabling this check box will print only the contents of the cells.
- Print Row and Column Headers by enabling its check box.
- Print File name and Page Numbers to print the drawing's filename at the top of the page and page numbers at the bottom.
- To center the datasheet on the printed page horizontally and vertically, enable the Center Output on Page dialog box.

Set Margins to specify the amount of space you want between the edge of the paper and the printed datasheet.

Print: Choose this command to send your datasheet to the printer for printing. The datasheet will be printed according to the options set in this and the Page Setup dialog box. You can set the following options in the Print dialog box.

» Note:

The Object Data Manager can handle up to ten group levels, where each group can contain as many other groups as your system can handle.

- Enable the Selected Cells Only check box to print only the cells you have highlighted in the datasheet.
- Enable the Fit To Page check box to shrink the datasheet (or its selected cells) so that it can be printed on the paper size you have chosen.
- Enable the Scale check box to specify the percentage or reduction or enlargement for the datasheet.
- Use the Copies field to enter the number of copies of the datasheet you want to print.
- Destination shows the currently active printer.
- Choose Print to File to create a file that can be printed from DOS. When you choose OK, a dialog box opens, prompting you to type a filename.
- Choose Printer Setup to display a dialog box for selecting a printer and various printer setup options.

Print Setup : Choose this command to access the Print Setup dialog box. The currently selected printer is shown beneath the Default Printer. To choose another printer, click Specific Printer and choose a new printer from the list.

Exit : Select this command to close the Object Data Manager and return to the Object Data Roll-Up.

| Edit | |
|--------|-----------------|
| Undo | Add Object Data |
| Redo | |
| Cut | Shift+Del |
| Copy | Ctrl+Ins |
| Paste | Shift+Ins |
| Delete | Del |

The **Edit menu** in the Object Data Manager menu bar contains commands for undoing, redoing, cutting, copying, pasting, and deleting datasheet operations.

Undo : Cancels the last operation. There are up to 99 levels of Undo available in CorelDRAW, a value that can be adjusted by accessing the Preferences dialog box .

Redo : The Redo command becomes available immediately after selecting Undo. Redo returns your graphic to the state it was in before you selected Undo. There are 99 levels of Redo, a value that can also be adjusted in the Preferences dialog box.

Cut : Removes the information contained in selected cell(s) and copies that information to the Windows Clipboard.

Copy : Copies selected information to the Windows Clipboard.

Paste : The Paste command becomes available when the Clipboard contains information that can be brought in to the data manager. Choose Paste to place information stored in the Windows clipboard at a new location.

Delete : Permanently removes information from selected cell(s).

| Field Options |
|------------------|
| Change Format... |
| Summarize Groups |
| Show Hierarchy |
| Show Totals |
| Field Editor... |

The **Field Options menu** contains commands for changing data format, summarizing data groups, show hierarchies, showing to-tals, and for accessing the Field Editor.

Change Format : Choose to access the Format Definition dialog box.

Summarize Groups : When more than one group of objects are displayed in a datasheet, choose this command to display individual group subtotals for Fields sharing multiple groups.

Show Hierarchy : This command will indent objects within groups by two spaces, creating visual distinctions between groups.

Show Totals: Sums the values in the selected column.

Field Editor : Select to access the Object Data Field Editor where you can add, delete, format, and rearrange fields.

Preferences

Bold Selected Objects

Italicize Read-only Cells

The **Preferences menu** contains commands for formatting the manner by which data is displayed in the datasheet. Here you can choose to show details of a group of fields and highlight certain levels and types of data. A check mark appears beside these commands when they are enabled.

Show Group Details : Choose Show Group Details to expand the focus of the datasheet to reveal the objects (and accompanying data) contained in a group.

Highlight Top-level Objects: Enable to apply a bold effect to the first level of a group in the datasheet.


Italicize Read-only Cells : Enable to italicize cells that cannot be edited. For example, the total of a numerical field cannot be directly edited, therefore it would appear in italics when this option is enabled.

Working with Bitmaps

Bitmaps are graphics composed of pixels arranged to represent an image. Paint programs, such as CorelPHOTO-PAINT, and image scanners generate this type of graphic.


Unlike vector graphics, bitmaps have a fixed resolution. This is not a problem as long as the bitmap is displayed or printed at the resolution at which it was created. Enlarging the bitmap, however, spreads the pixels apart, making the graphic look jagged. Reducing the bitmap also causes distortion, since pixels are eliminated to reduce the bitmap to its new size.

You can import bitmaps into CorelDRAW to include them in a drawing. Imported bitmaps can be moved, cropped, and, in the case of monochrome bitmaps, colored. You can also scale, rotate or skew a bitmap, though not always with good results.

CorelDRAW's autotracing program, CorelTRACE, lets you turn bitmaps into a vector graphic that you can edit, scale, print, and so on without distortion. For autotracing simple bitmaps, you can use the  tool.

CorelDRAW allows you to export graphics as bitmaps. This feature lets you use your drawings in applications that do not accept vector graphics.

Selecting a bitmap

To select a bitmap, click the  tool. Click anywhere on the bitmap. If you're working in wireframe view, click its frame. You can also select a bitmap with a marquee. to allow you to move, stretch, scale, rotate, and skew it.

Rotating and skewing a bitmap

CorelDRAW allows you to rotate and skew bitmaps as you would any other CorelDRAW object. (For instructions on how to rotate and skew objects, refer to Chapter 8, "Transforming Objects.") When you rotate or skew a bitmap when you're working in Wireframe view, it appears as a gray rectangle with a white triangle in the upper left corner. This triangle represents the upper left corner of the bitmap, and allows you to determine the bitmap's orientation once it's been rotated. When you rotate or skew a bitmap when you're working in the Editable Preview, its resolution is automatically reduced to 128 by 128 pixels, because at full resolution, rotated or skewed bitmaps take a long time to redraw. The reduced resolution applies only to the representation of the bitmap in the Drawing Window. The full-screen preview, print preview, and printed image of the bitmap are at the original resolution. And if you select the bitmap and then clear the rotation or skewing using the Clear Transformations command in the Effects menu, the bitmap's original resolution is restored.

You can print rotated and skewed bitmaps to PostScript and non-PostScript printers.

If the bitmap is part of an EPS file, the EPS file gets printed when you print to a PostScript printer. When you print to a non-PostScript printer, the bitmap is printed. The quality of the output is much higher for the printed EPS file than for the printed bitmap. If the bitmap is resized, rotated, or skewed, the transformations are applied to the associated EPS file.

You cannot paste a rotated bitmap from the Clipboard into other applications. You can, however, you can paste a rotated bitmap from the Clipboard into another CorelDRAW drawing.

Tracing a bitmap

Tracing a bitmap turns it into an object-based graphic that can be edited, scaled, printed etc., without distortion.

CorelDRAW provides a built-in AutoTrace feature and a separate, more powerful tracing program called CorelTRACE. AutoTrace, which is described here, works well on simple graphics and requires more work on your part. It was designed for tracing black and white images. If you use it to trace color images, the results will be unacceptable since it only traces images whose colors map to black. Images whose colors map to white will be interpreted as

white space, and will not be traced. For complex and full-color graphics, therefore, you'll want to take advantage of the greater speed and accuracy that CorelTRACE provides. Refer to the CorelTRACE online Help for more information.

Why trace a bitmap?

Although you can print bitmaps from CorelDRAW and from all leading page layout packages, there are several benefits to tracing a bitmap.

A bitmap representation of a graphic is at a fixed resolution. This means that if you enlarge it or print it on a high-resolution output device, the digitized appearance will become apparent. The obvious stairstep effect is frequently referred to as the "jaggies". However, once you trace a graphic with CorelDRAW, you create a drawing that is resolution-independent. The resolution of a CorelDRAW graphic is determined only by the resolution of the output device. This means that you can enlarge it as many times as you want and it will always print at the maximum resolution of the output device. This guarantees smooth lines and curves.

The second benefit of tracing a bitmap is that it allows you to edit the object much more easily, and gives you access to the powerful features of CorelDRAW. Bitmaps can only be edited by changing the dots from black to white and vice versa. However, once you trace a graphic with CorelDRAW, you create a drawing whose lines, curves, and other objects can be selected and manipulated. You can then use all the powerful features of CorelDRAW to edit the graphic, including changing the shape, fill, outline, position, and size of any component.

Since you can sketch much more quickly and accurately with a pen and paper than with a mouse or digitizing tablet, do your initial sketches the traditional way. Then, scan it and import it into CorelDRAW. You can now use the computer for what it's best at: experimenting with various alternatives (making changes on a computer is much faster and easier than on paper), and adding precision and uniformity to your drawing. You can color your drawing in seconds. You can experiment with different colors, line weights, and calligraphic pens. You can stretch, scale, rotate, skew, and duplicate part or all of your drawing. You can add and delete lines, circles, rectangles and text much faster and with greater precision and uniformity than with pen and paper.

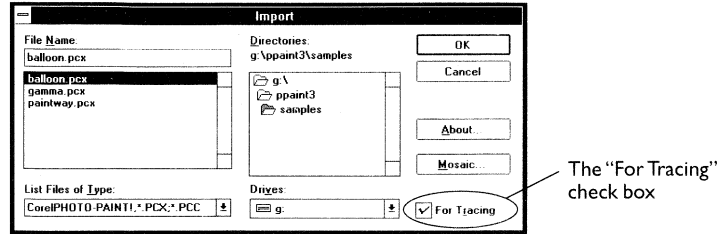
Tracing provides the link between the speed of sketching on paper, and power of computer graphics for producing a polished professional result. And if you're not very good at sketching, it gives you a way to quickly trace someone else's drawing as a starting point for your creations.




► To autotrace a bitmap:


1. Load the bitmap into CorelDRAW using the Import command in the File Menu.


Make sure you select the For Tracing option in the Import dialog box. It displays the bitmap at a higher resolution which helps

CorelDRAW to trace the bitmap more accurately. See “General points on importing bitmaps” in Chapter 17.



2. Once the bitmap appears in CorelDRAW, use the  tool to zoom in on the area that you want to trace. Normally, you will start with the outer edge of the object.
3. Select the bitmap object by clicking on the rectangular frame that surrounds it. The highlighting box and the word “Bitmap” shows in the Status Line, indicating that the bitmap is selected.
4. With the bitmap still selected, click the  tool. When you choose the  tool with a bitmap object selected, you automatically enter the AutoTrace mode. You will see the word “AutoTrace” appear in the Status Line, and your cursor will change to the AutoTrace cursor.
5. Place your cursor just to the left of the black area in the bitmap which you want to trace and click. CorelDRAW automatically finds the black area to the right of the cursor, and traces around it. This can take several seconds, especially if it must follow a long curving line.
6. When you’ve successfully traced the outer edge of the object, you then trace an inner edge. If your graphic contains a white inner area, this will be the other side of the line you just traced. Study the sequence shown for the cartoon face here to get the idea.
7. Continue to trace as many of the regions of the drawing as necessary to define major black and white areas. If, you click to begin tracing and nothing appears to happen, there may small groups of pixels in the image which do not appear at the current zoom factor. Move your cursor slightly and try again. If you continue to have problems, zoom in to see if there are any hidden pixel clusters.
8. The next stage is to color the regions. There are two ways to do this.

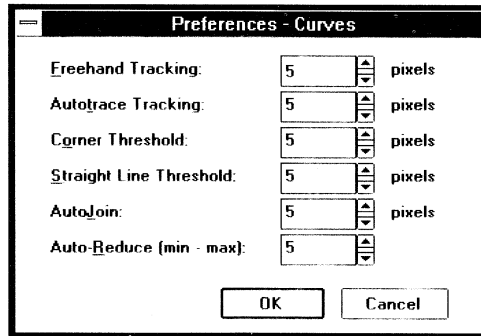
The first method is to select each of the closed paths and fill them with white, black, or a color, using the  tool. This method is easier to understand but less powerful than the second method. You may have to juggle the drawing order of some of the regions using the Order commands (To Front, To Back, Forward One, Back One and Reverse Order) located in the Arrange Menu.

The second method for coloring is useful if you want the interior regions of the drawing to be transparent holes rather than filled with white. Use the  tool to select all of the curves. Then use the Combine command from the Arrange menu to combine them into a single curved object. When you fill the resultant combined object, CorelDRAW will automatically fill in the closed paths, alternating between those filled with the selected color and those that are transparent holes. In this example, the interior white regions would be transparent.

9. When you have finished, you may want to delete the bitmap, and then select all the objects and group them using Group in the Arrange menu to prevent them from being dragged apart accidentally. Or, you may want to assign the bitmap to a layer that is non-printable and non-visible once you've traced it. (Refer to Chapter 8, "Arranging Objects", for more information on Layers.)

Controlling how accurately CorelDRAW traces bitmaps

Controlling how accurately CorelDRAW traces bitmaps is done using the Preferences command in the Special menu. When you click the Curves button in the Preferences dialog box, the following dialog box appears:



Autotrace Tracking: controls how closely autotrace “tracks” edges when it calculates the Bézier curves in the bitmap you’re tracing.

If the number you enter is low (1 to 3 pixels), the Bézier curve will hug every dip and bump in the bitmap you are tracing. This may result in a lot of nodes and a rougher looking curve.

If the number you enter is high (6 to 10 pixels), the Bézier curve will only loosely follow the bitmap you are tracing. This should result in fewer nodes and a smoother looking curve.

Corner Threshold: controls the threshold when CorelDRAW decides whether a corner is a smooth corner or a cusp. This threshold is applied to both autotrace and freehand drawing.

If the number you enter is low (1 to 3 pixels), CorelDRAW will be biased towards cusps, and crisp changes in direction will be accurately reflected.


If the number you enter is high (7 to 10 pixels), CorelDRAW will be biased towards smooth corners, giving smooth changes in direction which don't precisely follow the original, but giving your lines a more flowing, graceful look.

Straight Line Threshold: controls the threshold when CorelDRAW decides whether a segment should be made a straight line or curve type. This threshold is applied to both autotrace and freehand drawing.

If you enter a low number, (1 to 3 pixels), CorelDRAW will be biased towards drawing segments as curves, with only precisely straight segments made as straight line segments.


If you enter a high number, (7 to 10 pixels), CorelDRAW will be biased towards drawing segments as straight lines, with only the most curved segments drawn as curves.

Cropping a bitmap


Cropping refers to the process of making only a portion of the bitmap image visible in your graphic. To crop bitmaps, use the  tool.

If you will be using a small portion of a bitmap, use Corel PHOTO-PAINT to create a smaller file which contains only the desired portion. Smaller bitmaps can be loaded, displayed and manipulated more quickly, and take less disk space. You can then use the CorelDRAW cropping feature to precisely fit the bitmap to the allotted space in your graphic.

► To crop a bitmap:

1. Select the bitmap using the  tool. The Status Line indicates the amount of cropping which exists for each edge.

Cropping handles appear on the four sides of the bitmap's highlighting box.



2. Place your cursor over one of the handles. It changes to a .
3. Drag the handle towards the center of the bitmap to crop the bitmap along that edge.


Drag the handle away from the center of the bitmap to reveal any of the bitmap which has been hidden by a previous cropping operation.

4. When you release the mouse button, the image will be redrawn with the specified cropping.
5. Drag each of the handles until only the desired portion of the bitmap is visible.

Coloring a monochrome bitmap

You can apply color to the foreground and background of black and white bitmaps, but not to grayscale or color bitmaps.

To color a monochrome bitmap, select it with the  tool. Click the  icon in the Outline tool flyout menu. Select a foreground color using the Outline Color dialog box. (The black pixels in a black and white bitmap represent the foreground.) Choose OK to apply it to the bitmap.

Next, click the  icon in the Fill tool menu. Select a background color using the Uniform Fill dialog box. (The white pixels in a black and white bitmap represent the background.) Choose OK to apply it to the bitmap.




For more detailed instructions on how to use the Outline Color and Uniform Fill dialog boxes, refer to Chapter 7, “Outlining Objects”.

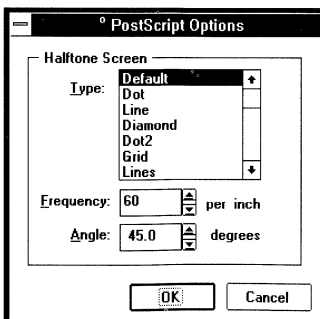
Note: If the monochrome bitmap that you colored has as EPS file attached and it’s printed to a PostScript printer, the color will not be printed.

Applying a halftone screen to a bitmap

If you’re printing to a PostScript printer, one way to create special effects with your bitmap is by changing the PostScript Halftone Screen pattern. You can apply a halftone screen pattern to the foreground and background of black and white bitmaps, and to the foreground of grayscale bitmaps.

► To apply a halftone screen to a bitmap:

1. Select the bitmap using the  tool.
2. Click the  icon in the  tool flyout menu.
3. Click the PostScript Options button. The PostScript Controls dialog box shown below appears.



4. Choose the settings you want, then choose OK. The settings will be applied to your bitmap, but will not appear until you print it. For a detailed discussion on choosing halftone screen settings, turn to Specifying Halftone Screen Frequencies in the “Outlining Objects” chapter.

Hiding bitmaps

If you are working the editable preview, you'll find the screen redraws more quickly with the bitmaps hidden. To hide a bitmap, choose Show Bitmaps from the Display menu. The check mark beside Show Bitmaps disappears, and the bitmap appears as an empty box on your screen. To show the bitmap again, select Show Bitmaps again.

Working with Other Applications

You can transfer text and graphics between different applications and CorelDRAW files using one of three methods:

- **Importing and Exporting**
CorelDRAW provides extensive import and export facilities for exchanging information between different file formats. You can transfer text and graphics to and from a variety of drawing, painting, word processing and desktop publishing programs—including some that don't run under Windows.
- **Object Linking and Embedding (OLE)**
OLE is a Windows feature that lets you create documents using information generated by different applications and maintain connections to those applications. With Linking, the connection ensures that documents are updated whenever changes to the information are made in the the originating application. With Embedding, the connection allows you to make changes to the information by launching the application that created it from within your current application.
- **Windows Clipboard**
The Clipboard is a temporary storage area used to transfer information between Windows applications. In CorelDRAW, the Clipboard is a convenient way to move objects from one file to another.

Object Linking and Embedding

Object Linking and Embedding (OLE) allows you to combine the capabilities of two or more applications in one document. While the Copy and Paste commands on the Edit menu allow you to copy information, such as a drawing, from one application to another, they do not allow you to edit the drawing after it is pasted into another application. Under Windows 3.1, you use any OLE-capable application to transfer and share information in a dynamic way. By embedding or linking objects, you create a document that contains information generated by different applications, and you edit the information by a direct call to those applications from inside the document.

Applications that support OLE fall into two categories: Servers and Clients.

Servers: These are applications whose objects can be embedded or linked into other documents.

Clients: These are applications that can accept embedded or linked objects.

Some applications, such as CorelDRAW, may act as both a server and a client. Others act only as one or the other.

To edit information that you have embedded or linked in a CorelDRAW file, you open another application from within CorelDRAW, make your changes, and continue working in CorelDRAW. For example, if you've embedded a bitmap image created in Windows Paintbrush into a CorelDRAW file, and you decide to change a part of it, you would open Paintbrush from within CorelDRAW. You then edit the bitmap image and save it in Paintbrush. The drawing closes and you return to your CorelDRAW file, where the edited bitmap appears.

Note: To use OLE, you must have SHARE installed. When you install CorelDRAW, the setup program asks you whether you want SHARE installed automatically. If you chose not to have it installed when you installed CorelDRAW, you'll need to install it before using OLE. Refer to your DOS User Guide for instructions on installing SHARE.

Some basic terms

To understand Object Linking and Embedding, you should be familiar with the following terms:

Object: Any piece of information created using a Windows OLE-capable application. For example, both a single cell of a spreadsheet and an entire drawing can be objects.

Source document: The document in which you created the object.

Destination document: The document into which you are placing the linked or embedded object.

Linking vs. embedding

The following discussion explains the difference between linking and embedding.

Embedding objects : When you embed an object, you insert information from a source document created in one application into a destination document, usually created in a different application. When you want to make changes to an embedded object, select the object from the destination document and choose an Edit command from within the destination application. The application used to create the object opens, and you can then edit it. You no longer need to switch between applications to view or change different kinds of information. These operations are now possible from within a single document. Of course, you must have enough memory to run all of the applications you are using.

When you embed an object, you are making a copy of the information in the source document and transferring it to the destination document. Once transferred, there is no longer any connection to the source document. Therefore, when you edit an embedded object, the source document is not affected.

Linking objects : When you link an object into your destination document (for example, your CorelDRAW file), you are not making a copy of the information. Instead, you are creating a link to the source document that contains the original information. Therefore, when you edit a linked object, you are editing the information in the source document. The destination document only contains a link to where the object exists in the source document. This is the fundamental difference between embedded and linked objects.

When you create a link between a source document and several destination documents, any changes you make to the source document automatically appear in all destination documents that are linked to it. This makes it easy to track information that appears in more than one place and that you want to be identical in each place.

When you create links, you also specify how frequently you want to update the information. Unless you specify otherwise, CorelDRAW updates the information automatically whenever the source file changes.

You can link objects from saved documents only. For example, if you open Paintbrush and create a drawing, you must save it as a document in Paintbrush before linking it to another document in another application.

Linking objects in CorelDRAW

Linking lets you create a CorelDRAW file that includes information from a file created in another application, and then link the two files. By copying an object from a source file (for example, a CorelDRAW drawing) and pasting into a destination file (for example, a Word for Windows document), CorelDRAW will update the destination file when the information changes in the source file. You can control when updates occur or have CorelDRAW update the information automatically whenever the source file changes.

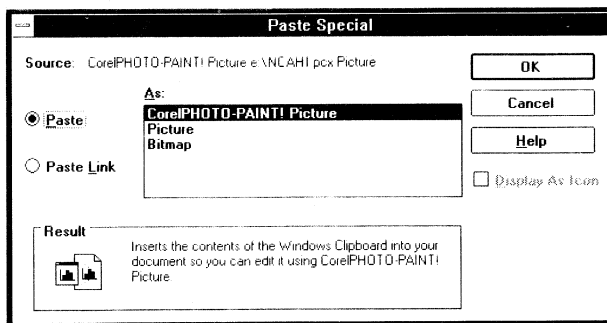
These next sections assume that CorelDRAW is the destination application, that is, the application creating the destination file.

Creating links

You can add information to your CorelDRAW file from another file, and then create a link between the two. Through this link, your CorelDRAW file (the destination file) is updated whenever you update the information in the source file. Before beginning this procedure, you must save the source file in the application you used to create it. You can create a link from the source application or from CorelDRAW.

► To create a link from the source application:

1. Start the application used to create the information you want to use in your CorelDRAW file.
2. Open the file containing the information you want to add to your CorelDRAW file.
3. Select the information you want to link.
4. From the Edit menu of the application containing the information, choose Copy. You can now minimize that application.
5. Open CorelDRAW and choose Paste Special from the Edit menu. The Paste Special dialog box shown here appears.



6. From the Data Type list, select the type of information you want to add to your CorelDRAW file.
7. Click Paste Link.

The linked object appears in your CorelDRAW file.

► **To create a link from CoreIDRAW:**

1. Choose Insert Object from the File menu. The Insert Object dialog box appears.
2. Click Create from File.
3. Click the Link check box.
4. Type the name, path and extension of the file you want to link. If you don't know the file's name or location, click Browse to open the Browse dialog box.
5. Choose Display as Icon if you want the file to appear as an icon. The icon associated with the selected application appears. You can choose another icon from the Change Icon dialog box by clicking Change Icon.
6. Choose OK.

The linked object appears in the center of your drawing.

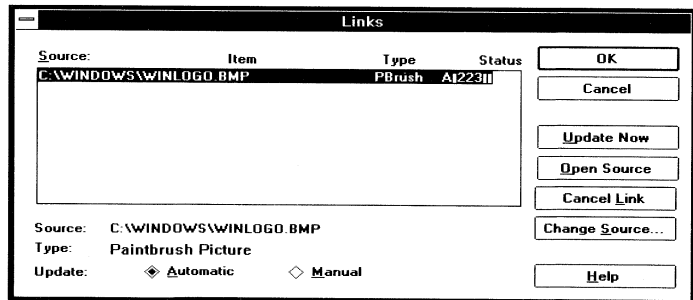
Updating links

You can update the links in your CoreIDRAW file automatically or manually. If you update links automatically, each destination file immediately shows the change whenever a change is made to the source file. If you update manually, you must decide when to update your file.

► **To specify manual or automatic link updating:**

1. In the CoreIDRAW destination file, select the linked information you want to update.
2. From the Edit menu, choose Links.

The Link Properties dialog box shown here appears.



3. Beside the Update item, choose the option you want.
4. Choose OK.

► **To update a manual link:**

1. In the CoreIDRAW destination file, select the linked information you want to update.

To select more than one link, hold down the Shift key as you select the linked information.

2. From the Edit menu, choose Links.

If you want to update another link in the list, select it in the Links box now. You can deselect a link by clicking on it.

3. Click Update Now.

Your CorelDRAW file reflects any changes made in the source file since the last update was made in the destination file for each selected link.

► **To update all links in a file:**

1. Select the entire CorelDRAW destination file by choosing Select All from the Edit menu.

2. From the Edit menu, choose Links.

3. Click Update Now.

All links in the file are updated.

Changing a link

If you've created a link in your CorelDRAW file, you can change the name and type of the source file to which you link the information. Doing this can radically alter the appearance of your CorelDRAW file if the new source file is substantially different from the previous one.

► **To change a link:**

1. Select the linked information in your CorelDRAW file.

2. From the Edit menu, choose Links.

3. Click Change Link.

The Change Link dialog box appears.

4. Do one or more of the following for the selected link:

- Type a new name for the source file in the File Name box.

- Select a new file type from the List Files of Type box.

5. Choose OK to implement the changes.

Canceling a link

When you cancel a link, CorelDRAW no longer updates the information in the destination file. The linked information remains in your file as it appeared when you last updated the link.

► **To cancel a link:**

1. Select the linked information in your CorelDRAW file.

2. Choose Links from the Edit menu.

3. Click Cancel Link.

Jumping from a destination file to its source file

If you need to change the contents or formatting of linked information in your CorelDRAW destination file, make the changes in the source file. You can jump from a destination file to its source file in two ways.

► The first way to jump to a source file is:

1. In the destination file, select the linked information you want to edit.
2. From the Edit menu, choose Links.
3. Choose Open Source. This opens the source application that generated the source file.
4. Make the desired changes in the source file.
5. From the File menu in the source application, choose Save. You can then close or minimize the source application.

► The second way to jump to the source file is:

1. In the CorelDRAW destination file, select the linked information you want to edit.
2. From the Edit menu, choose the Edit *<object-name>* command. This opens the application that generated the source file.
3. Make the desired changes in the source file.
4. From the File menu in the source application, choose Save. You can then close or minimize the source application.

With either method, CorelDRAW reflects the changes in the destination file according to the update options you selected. If you do not need to receive any more updates from the source file, you can cancel the link and then edit the previously-linked information as you would any other CorelDRAW object.

Editing linked information in a CorelDRAW source file - CorelDRAW as a source application

You can edit a source file created in CorelDRAW at any time. This affects all destination documents that have a link to this file.

CorelDRAW sends any changes you make in the source file to the destination files, depending on the update option you select in the destination (client) applications.

► To edit linked information in a CorelDRAW source file:

1. Open the CorelDRAW source file.
2. Make the desired changes to the linked information.
3. From the File menu, choose Save.

» Shortcut:

You can also open the source application by double-clicking on the object. Ordinarily, this would put you into rotation mode in CorelDRAW, but since you can't rotate an OLE object, this will not happen.

Embedding objects in CorelDRAW

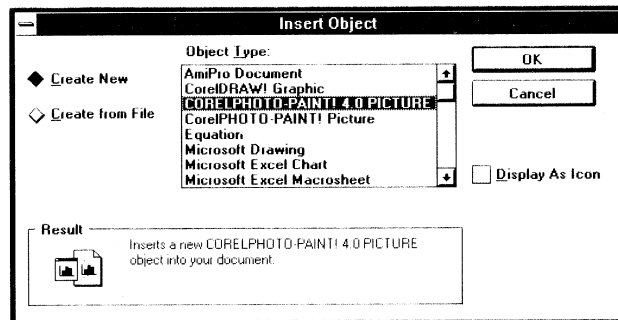
Embedding is used instead of linking when you do not need to share the identical information with other files, but still want the ability to edit and format the information from within your CorelDRAW file. When you need to share the information with another file, use object linking instead of embedding.

Inserting embedded objects into your CorelDRAW file

You usually insert embedded objects into your CorelDRAW file in one of two ways. Either the destination application (CorelDRAW) is running and you decide to embed an object from a source application, or a source application is opened first and the object you want to embed in your CorelDRAW destination file is copied up to the Clipboard. CorelDRAW is then opened. The following sections discuss both methods.

► To embed an object into your CorelDRAW file:

1. From CorelDRAW's File menu, choose Insert Object.
2. Choose Create New from the Insert Object dialog box.



3. In the Object Type box, choose the entry that describes the application used to create the object. The items shown in this list depend on which OLE applications are installed and registered on your system. If you have run a proper installation for a Windows OLE application using its Setup program, the application should appear in the Object Type box.
4. If you want the object to appear as an icon, click Display as Icon. The icon that is associated with the selected application appears. To choose another icon, click Change Icon and choose one from the dialog box.
5. Choose OK to open the source application.
6. When the source application appears on the screen, create or select the information you want to embed in your CorelDRAW file.
7. When you embed the information as an object in your file, it is handled in slightly different ways by different source applications. Generally, you must do one of the following:

- From the source application's File menu, choose Update, and/or Exit, or Exit And Return.
 - In some applications, a dialog box will appear asking you if you want to update. Choose Yes or OK.
8. Exit the source application.
 9. When you return to CorelDRAW, the embedded object appears in the center of your drawing.

► **To embed an object from an existing file into your CorelDRAW file:**

1. Choose Insert Object from the File menu.
2. Choose Create From.
3. Type the name of the file you want to embed. Type the path and extension. If you don't know the name of the file or its location, click Browse to open the Browse dialog box.
4. Choose Display as Icon if you want the file to appear as an icon. The icon associated with the application appears. To choose another icon, click Change Icon.
5. Choose OK.
The embedded object appears in the center of your drawing.

► **To paste an embedded object from the source application:**

1. Open the source application in which you want to create the object to embed in CorelDRAW.
2. Copy the object or information to the Windows clipboard using the Copy command. For most applications, this is under the Edit menu.
3. Open CorelDRAW.
4. To embed the object, choose Paste from the Edit menu.

Editing an embedded object

Using OLE, you edit an embedded object in the application that created it.

► **To edit an embedded object:**

1. Select the object you want to edit from your CorelDRAW file.
2. Choose Edit <object-name> from the Edit menu. The server application opens so you can edit the object.
3. Make the desired changes.
4. Different applications may handle this next step in slightly different ways. Generally, you must perform one of the following:
 - From the File menu of the source application, choose Update, and/or Exit, or Exit And Return.
 - In some applications, a dialog box appears, asking you if you want to update. Choose Yes or OK.

You are returned to CorelDRAW, with the embedded object edited as desired.

» **Shortcut:**

You can also open the source application by double-clicking the object. Ordinarily, this would put you into rotation mode in CorelDRAW, but since you can't rotate an OLE object, this will not happen.

Importing files from other applications

CorelDRAW can import many different file types generated by other applications. These include various vector-based formats from other drawing packages as well as bitmap files from paint-type programs. Text generated by word processors can also be imported. If the text is in one of the text file formats CorelDRAW supports (WordPerfect, Microsoft Word, and Ami Pro are some of the supported formats), import it using the Import command in the File menu. CorelDRAW will preserve tabs, indents and other formatting information with the imported file.

A software code that allows you to import a different file format is called a “filter”. The wide range of filters supplied with CorelDRAW provide extensive connectivity to many popular applications.

» Tip:

If you have a file in a format CorelDRAW does not support, try converting it with a third-party program such as Hijaak or ImagePrep. Or, open it in another Windows program and try transferring it through the Clipboard.


► To import graphics from other programs:

1. Choose Import from the File menu.
2. From the List Files of Type box, choose an import format.
The File Name box shows files in the current directory with the chosen format's extension. If the file you want is in another drive or directory, select the drive from the Drives list and the directory from the Directories list.
3. In the File Name box, type or select the file you want to import.
4. Choose OK.

Detailed technical information on the various import filters can be found in CorelDRAW's online Help. Use the Search function and enter the file type extension (e.g., “.cgm”). One of the sub-entries will be notes on importing that particular file type.

General points on importing bitmaps

If you're working in Editable Preview, an imported bitmap appears in your drawing in full color. In wireframe view, it appears rougher, and will be represented by a shade of gray. It appears in a rectangle that you can stretch, scale, move, rotate, and skew.

You can auto-trace bitmaps in CorelDRAW, however, CorelTRACE provides much more versatile and accurate tracing capabilities. If you use CorelDRAW to trace a bitmap, choose the For Tracing option in the Import dialog box. This indicates the bitmap is to be traced with the  tool. Bitmaps loaded with this option enabled do not print. In wireframe view, bitmaps imported with For Tracing enabled display at a higher resolution than those imported without the option enabled. If a selected bitmap was loaded with For Tracing enabled, the words “For Tracing” appear at the end of the Status Line.

Rotated or skewed bitmaps will print on both PostScript and non-PostScript printers.

Imported bitmaps are stored in your Temp directory with a .TMP extension. If you don't have a very large Temp directory, this may lead to problems. Also, any bitmap format that you import in com-

pressed format is saved in this Temp directory in uncompressed BMP format. So, if you import a 200 K compressed TIF file, for example, it may be converted to an uncompressed BMP file of up to 400K, depending on how well the bitmap was compressed. Thus, bitmaps can significantly increase the size of your CDR file.

For a detailed discussion on importing bitmaps, see CorelDRAW's online Help. Use the Search function to look for "bitmaps: notes on importing."

Importing CorelDRAW Clipart images

To add CorelDRAW Clipart images to your drawing, you must have installed the Clipart provided on the original diskettes. For more information about installing optional items such as clipart, search for "Setup Program" in CorelDRAW's online Help.

Exporting files for use in other applications

The Export command in the File menu allows you to save your graphic in a format you can use in other software programs. Software that allows you to export to a different file format is called a “filter”. The wide range of filters supplied with CorelDRAW provide extensive connectivity to many popular applications such as Ventura Publisher, PageMaker, WordPerfect, Microsoft Word, and a host of other desktop publishing, page layout and word processing packages. You can also export to applications running on MAC, UNIX and OS/2 platforms.

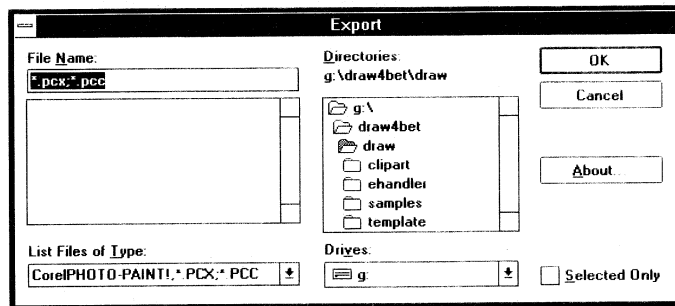
» Tip

Since you may need to make changes to it later, always save your file in CDR format before exporting.

► To export graphics for use in other programs:

1. Open the CorelDRAW file you want to export.
2. Choose Export from the File menu.

The Export dialog box shown below appears.

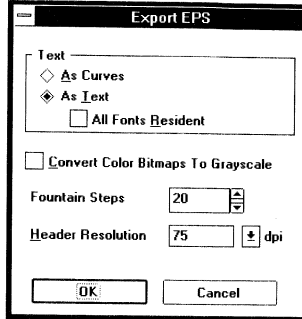


3. From the List Files of Type box, choose an export format.
 4. Do one of the following:
 - Accept the name displayed in the File Name box for the graphic you are exporting.
 - Type a new name in the File Name box.
 - Select from the File Name list.
- CorelDRAW automatically adds the extension that corresponds to the export format you selected.
- To save the file in a different drive or directory, select the drive from the Drives box and the directory from the Directories box.
5. Choose OK.
- Depending on the format selected, another dialog box may appear. Select the desired options from the dialog box, then choose OK.

Detailed technical information concerning the various export filters can be found in CorelDRAW's online Help. Use the Search function and enter the file type extension (e.g. ".cgm"). One of the sub-entries will be notes on exporting that particular file type.

General notes on exporting to the EPS format

The Encapsulated PostScript (EPS) format is widely used in many desktop publishing, page layout and word processing packages. This format supports virtually all of CorelDRAW's complex functionality. When you export in EPS format, the following dialog box appears:



Using the Export EPS dialog box, you can specify the following:

All Fonts Resident : When you select this option, CorelDRAW assumes that all fonts used in your graphic are resident in your printer. All text strings will be printed using the resident fonts, and not the CorelDRAW fonts.

You should use this feature if:

- You have purchased downloadable PostScript typefaces from Adobe or other vendors, and want to use them in place of the typefaces supplied with CorelDRAW. Make sure that you download all the necessary fonts. This option is intended for temporary use; if you want CorelDRAW to always assume that the downloadable typefaces are available, you should modify your CORELFNT.INI file. For instructions, search for "font list" in CorelDRAW's online Help.
- You are creating a PostScript file to be printed at a PostScript typesetting or laser printing service bureau, which has the Adobe versions of the fonts you have used. By choosing the All Fonts Resident option when creating an EPS file, you cause the file to use the Adobe versions of the typefaces. This option provides a convenient way to temporarily tell CorelDRAW not to use its own fonts.

Note that if you print an EPS file created using this option and the typeface is not resident in the printer, the text will be printed either in Courier, or not at all.

Convert Color Bitmaps to Grayscale : If you select this option, the color bitmaps you export will be converted to grayscale bitmaps. This option is included because EPS files containing color bitmaps will not print to black and white PostScript Level 1 printers.

Image Header : An image header is extremely useful when importing the graphic into a page layout package which supports the display of an EPS image header. PC PageMaker and Ventura Publisher both support the display of the header.

The image header allows you to see a screen representation of your graphic when you import the EPS file. This makes positioning, sizing and cropping the image in the page layout package much quicker and easier.

»Tip:

If you are having problems placing the EPS file in other applications, try exporting it with no header.

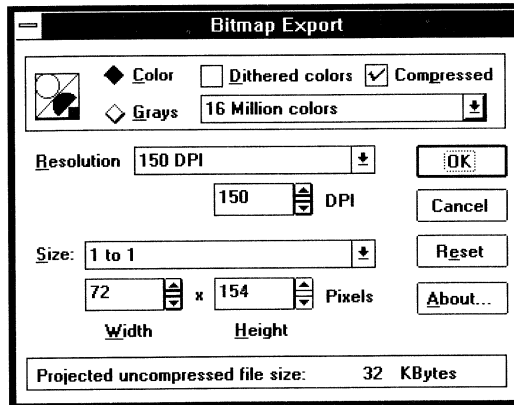
Usually, the image header is a bitmap of very low resolution, since you are using it for positioning purposes only. However, you can select a low, medium, or high resolution by clicking on the appropriate dpi value in the dialog box. The image header is stored in TIFF 5.0 format. If you're using the file in an application that requires a TIFF 4.2 header, consult the online Help for information on producing these.

General notes on exporting bitmap formats

Bitmap image files are intrinsically different from vector formats such as CorelDRAW CDR. While CorelDRAW uses mathematical expressions to store the objects in a drawing, bitmap images are composed of rows of differently colored pixels. The export of such images requires careful attention to ensure the end result is acceptable.

If you enlarge a bitmap in your page layout package, you may lose resolution and it may appear jagged. If you shrink a bitmap in your page layout package, the result will look good, but you will be wasting disk space storing information which isn't used.

When you select one of the bitmap file formats from the Export dialog box, the following dialog box appears:



You can specify whether the exported file should be in color or gray shades. The color options include: 16 (4-bit), 256 (8-bit), or 16 million (24-bit). For gray shades, you can specify black and white (1-bit), 16 shades (4-bit), or 256 shades (8-bit). All bitmap filters except CompuServe GIF support 16 million (24-bit) colors.

Bitmap exports are display-device independent. If you're working on a monochrome display, you can export bitmaps with colors, regardless of the monochrome display limitations.

The number of fountain stripes used in the bitmap export is the number you specified through the Preferences command on the Special menu. Turn to the "Setting display preferences" in Appendix A for more information.

Dithering of colors : You have the option of exporting your colors as dithered. CorelDRAW uses the Ordered Dithering method. Dithering may be enabled for 16 and 256 colors, and 16 shades of gray. It can enhance the bitmap's look by using two or more colors side by side to represent another color. This gives the appearance that the image contains a greater number of colors than is really available. CorelDRAW selects the best 16 or 256 colors (or grays) to use in the bitmap file. Note however that these 16 or 256 colors may not be enough to produce an acceptable bitmap of the original image, since CorelDRAW can use up to 16 million colors. If the proper colors are not used, obvious color changes (banding) will be seen in the bitmap. Deciding whether to dither an image exported to bitmap format depends on the how you intend to use it. The following are general guidelines:

- If you're using only 16 or 256 colors or 16 grays, dithering is strongly recommended.
- When the bitmap will be scaled by another application (such as a desktop publishing system), you should not use dithering. The result would be similar to photocopying a photocopy—image sharpness is lost.
- When the image will be used in another application and the bitmap won't be scaled or retouched, you should use dithering.

The optimal procedure for retouching bitmaps is to export the CorelDRAW drawing as 16.8 million colors and use a paint package such as CorelPHOTO-PAINT to alter the images.

File compression : You can compress some of the bitmap formats. Compression significantly reduces the size of the bitmap files. However, loading a compressed bitmap may take longer, since the application must decompress it. Some bitmap formats are always compressed. For these, the Compressed check box will be automatically selected and grayed. For information about the compression methods CorelDRAW uses, search for Bitmaps: Notes on Exporting in the online Help file.

Specifying size and resolution : You can size bitmap files to your requirements. Its original size is stretched proportionally to fit within the new size. If the increase in width and height is not proportional, CorelDRAW will resize the graphic to fit as closely as possible to the desired size. CorelDRAW always maintains the aspect ratio.

The choices of size you can specify in the *Size* field are: 1-to-1, 640 by 480, 800 by 600, 1024 by 768, and custom sizes from 32 to

4800 pixels wide and high. Choosing any of the sizes, except 1-to-1, fixes the resolution of the exported file.

If you choose 1-to-1, you may also specify the export resolution. Settings include 300, 200, 150 and 75 dpi, and two settings for Normal and Fine FAX resolutions. You can also set custom resolutions between 60 and 600 dpi. At the higher resolutions, the bitmap's visual quality improves, but the size of the exported file can become very large, depending on the content of your file. A 256-color bitmap at 300 dpi can take up as much as 8 megabytes of disk space. A larger file size also increases the printing time of documents.

With a large file size, you can easily exceed the capacity of your Windows TEMP drive, memory, or disk. Messages appear if one of these situations occurs. Once you've specified the size and resolution parameters, a size projection is calculated and displayed for the file you are about to create.

Using the 1-to-1 size ratio and a lower resolution is the best way to reduce a bitmap's file size. Or, you can scale down the image in CorelDRAW before exporting it.

Resetting the Bitmap Export dialog box : Pressing Reset at any time while in the Bitmap Export dialog box will cancel any changes you have made.

Exporting selected objects only

To export only part of your current graphic, click Selected Only. Only the currently-selected objects will be saved in the exported file.


To save part of the drawing you are working on as a separate CDR file, select the objects you want to save, choose Save As from the File menu, and click Selected Only.

Using the Windows Clipboard

One way to exchange graphics between CorelDRAW and other Windows-based programs is through the Windows Clipboard. When using the Clipboard, be aware that no two programs interpret information transferred to the Clipboard in exactly the same way. A graphic you put into it with one program may look considerably different when it's brought into another. For example, circles may come into CorelDRAW via the Clipboard as a series of connected line segments. For more about the limitations involved in using the Clipboard, search for "clipboard: limitations of" in CorelDRAW's on-line help.

The Clipboard also provides a convenient way to swap objects between different CorelDRAW files. When it's used for this purpose, objects pass through the Clipboard unchanged.


Copying and cutting objects to the Clipboard

Using the clipboard is very easy—select the object(s) you want to place on the Clipboard with the  tool, then choose either Copy or Cut from the Edit menu.



Copy places the object on the Clipboard and leaves the current drawing unchanged. Cut also places the object on the Clipboard, but removes it from the drawing.

The error messages, "Metafile too large to put on clipboard" and "CorelDRAW clipboard format too large to put in Clipboard", indicate that the object you're trying to copy or cut is too complex for the Clipboard to handle. When this happens, try breaking the object into smaller elements (such as a few characters of text) and copying each element separately. Alternatively, you can save the object as a new drawing and then use the Import command to bring it into your current drawing.

Pasting objects from the Clipboard

To paste an object from the Clipboard into your drawing, select the  tool and choose Paste from the Edit menu.

If an object was copied from another CorelDRAW file, it is pasted into the current drawing at the same size and location as the original. If the page size or orientation of the two files is different, the object may be pasted onto a part of the working area that isn't visible.

To see it, select the  tool and click . Objects from other programs usually come in centered in the working area.

Paste places a copy of the object that's currently in the Clipboard into your drawing. The original remains in the Clipboard until you copy or cut another object, or end the current Windows session.

Managing and Printing Files

With CorelDRAW's file management features, you don't need to remember what each of your files contain to find a particular graphic. You can quickly find the graphic you want using either CorelMOSAIC or the File Find feature.

CorelMOSAIC is a visual file manager that lets you scan through thumbnail views of your files and images in the Clipart libraries. When you locate the graphic you're looking for, double-click it to load it into CorelDRAW. The File Find command locates files using keywords you assigned to them when they were saved. You can also sort files by name or date and attach notes to them.

When you print files, CorelDRAW provides features that give you extensive control over the appearance of your final output. For example, you can print only selected objects, scale your artwork from a tenth to 10 times its size, print large artwork on multiple tiled pages, and print to a disk file which you can send to a service bureau for output.

You can take advantage of even more advanced printing options if you wish. Printing color separations, specifying halftone screen settings, adding crop marks, and calibrating your printer are just a few of the options available.

If you plan to print color separations, you should read this chapter to learn about the basic printing options and then refer to Chapter 19 for a discussion on using CorelDRAW's color separator.

Managing files

You can quickly find files using either CorelMOSAIC or the File Find command. Other features include:

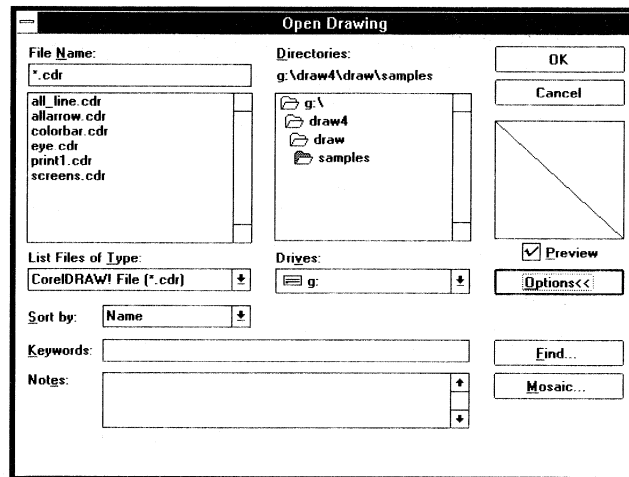
- Sorting files by name or date saved.
- Annotating your files with notes.
- Creating backup files at regular intervals and when you save a file.
- Saving your files in a format that version 3.0 of CorelDRAW can use.

Finding files using keywords

The File Find command locates files using keywords you assigned to your files when they were saved. For instructions on assigning keywords, see “Adding Keywords and Notes” later in this chapter.

► To find a file using keywords:

1. Click Options in the Open Drawing dialog box, then click Find.



2. Enter a keyword (or keywords separated by commas) in the Keywords field, then click Search. To scan all directories on the current drive, click the Search All Directories check box before clicking on Search.

CorelDRAW searches all files in the current directory and displays those that have the keyword(s) you entered in the File Name box.

You can also search for files by linking two keywords together with a “+” sign, such as “maps+rivers”. This causes only files containing both keywords to be displayed.

Finding files with CorelMOSAIC

CorelMOSAIC is a visual file manager that lets you scan through thumbnail views of your files and images in the Clipart libraries. When you locate the graphic you're looking for, double-click it to load it into CorelDRAW.

► To find files using CorelMOSAIC:

1. Choose Open from the File menu.
2. Choose Options.
3. Choose Mosaic.

CorelMOSAIC opens, showing thumbnail views of CorelDRAW files in the current directory. Only files created in CorelDRAW Version 2.0 and later with image headers (i.e., small bitmap representations of a file's contents) appear.

To search other drives and directories, choose Open Directory from CorelMOSAIC's File menu.

4. When you locate the file you want, double-click its thumbnail to open it.
5. To close Mosaic, press Alt+F4.

Consult CorelMOSAIC's online Help for more information about using this application.

Sorting files

CorelDRAW sorts files by name or date. By default, files are sorted by name alphabetically from A to Z. Sorting by date displays files from newest to oldest. To sort files, choose Open from the File menu. Choose Options from the Sort box, then choose the type of sorting you want.

Adding keywords and notes

The Keywords and Notes fields in the Save Drawing dialog box—displayed by selecting Save or Save As from the File menu—allow you to enter keywords and notes about your drawing. You may, for example, want to enter notes about the file's contents.

Adding keywords allows you to easily find the file later using the Find feature. Keywords must be separated by a comma. The keywords and notes are saved with the drawing and displayed when you highlight the drawing's name in the Open Drawing dialog box.

Making a copy of an open file

To make an additional copy of an open file, save it under a new name or in a new drive or directory. Choose Save As from the File menu. In the File Name box, type a new name for the drawing. To save the file in a different drive or directory, select a drive from the Drives box and a directory from the Directories box.

»Tip:

You can also enter and edit keywords and notes when you open the file using the Open command in the File menu. Select the file, click the Options button, then type the keywords and notes. Then, click OK.

To discard the copy with the old file name, use the Windows File Manager. For instructions, refer to your Microsoft Windows User's Guide.

Creating backup files

While you're working on a file, backup copies are made at regular intervals. They are also made whenever you save the file using Save or Save As. For more information about these auto-save features, see "CorelDRAW Software-Related Information" in the "Reference" section of CorelDRAW's online Help.

Saving files for earlier versions of CorelDRAW

To save a file for use with a 3.0 version of CorelDRAW, click the Version 3. check box in the Save Drawing dialog box.

Note: If your drawing contains text in a typeface not supplied in version 3.0, convert the text to curves using the Convert to Curves command in the Arrange menu before saving the file.

Managing multi-page documents

You create multi-page documents using the Insert Page and Delete Page commands in the Layout menu. (Refer to Chapter 1, "CorelDRAW Basics", for instructions on adding and deleting pages.) When you're working with multi-page documents, you can set up Master layers, and you can also have facing pages display on your screen.

Setting up a Master layer

A multi-page document can contain one or more Master layers. Master layers contain information that you want to appear on every page in the document, including text, graphics, margins and other page setup information. You may want to place a logo on a Master layer, for example. Using the Set Options for all Pages option, you can hide the Master layer information from selected pages.

You can add as many Master layers as you want to your document. You delete a Master layer as you would delete any other layer. For more information on adding and deleting layers, see "Using Layers" in Chapter 10.

To set up a Master layer, you first add a layer to your document, and then designate it as a Master layer using the Layer options dialog box. Once you've added a layer, you designate it as a Master layer by following these steps.

► **To set up a Master layer:**

1. Choose Layers Roll-Up from the Layout menu. Click the layer you want to designate as a Master layer.
2. Click the ► on the right side of the roll-up, then choose Edit from the pop-up menu. The Layer Options dialog box appears.
3. In the Layer Options dialog box, click Master Layer.
4. Choose OK. The selected layer is now a Master layer.

Once you've designated a layer to be a Master, the information it contains repeats on every page of the document. If the layer you designate as Master contains two facing pages, information on the left page is repeated on the left pages of the document, and information on the right page is repeated on the right pages.

► **To hide Master layer information on selected pages:**

1. Go to the page from which you want to remove the Master layer information.
2. In the Layer Options dialog box, double-click the Master layer whose contents you want to hide.
3. In the Layer Options dialog box, disable the Set Options for all Pages option by clicking it. Once disabled, the options you specify in the Layer Options dialog box apply only to the currently-displayed page(s).
4. Click the Visible check box to disable it, then choose OK.

Now, the Master layer information on the currently displayed page(s) is invisible.

Choosing a Page Layout Style

CorelDRAW offers page layout styles for several standard publications, such as books, brochures, and greeting cards. You choose a layout style from the Page Setup dialog box. To access it, choose Page Setup from the Layout menu.

Clicking on the Page Layout box displays the six page layout styles available: Full Page, Book, Booklet, Tent Card, Side-Fold Card, and Top-Fold Card. When you select one from the list, a description of the style appears on the right, and its dimensions appear below the list.

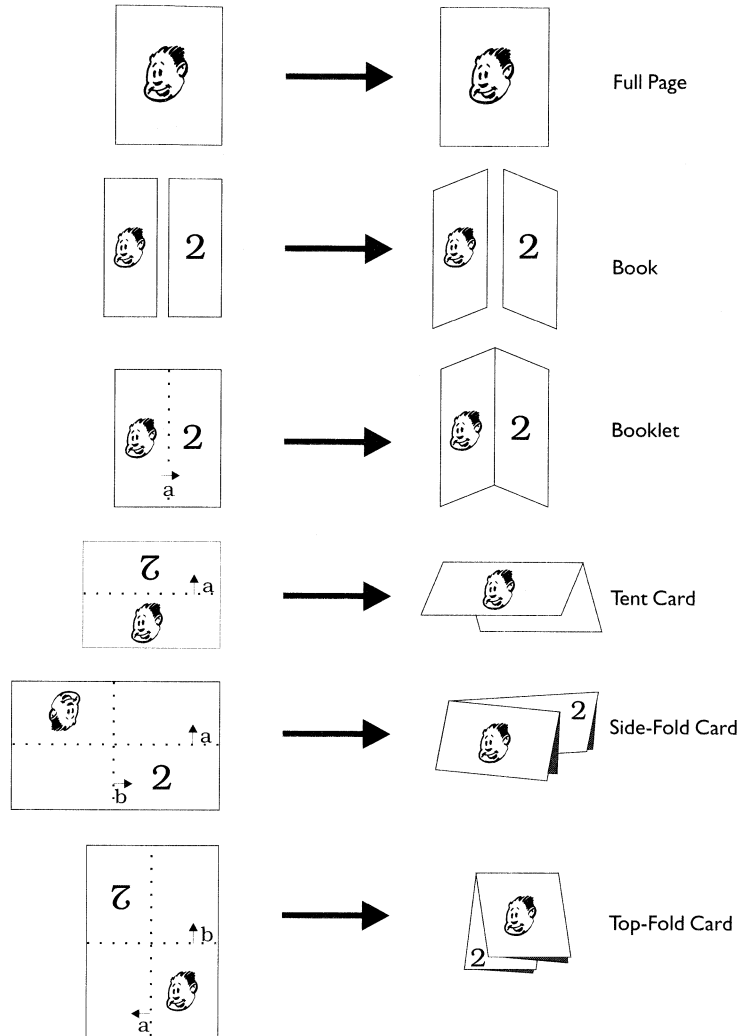
Regardless of the style you choose, you edit each page in upright orientation in the Drawing Window.

The Page Layout Styles are as follows:

Full Page: This is the default page layout style. It prints one full page per sheet.

Book: Prints two pages per sheet, which you would cut in the middle.

Booklet: Prints two pages per sheet, which you would fold in the middle.



Tent Card: Prints two pages per sheet, which you would fold on the top.

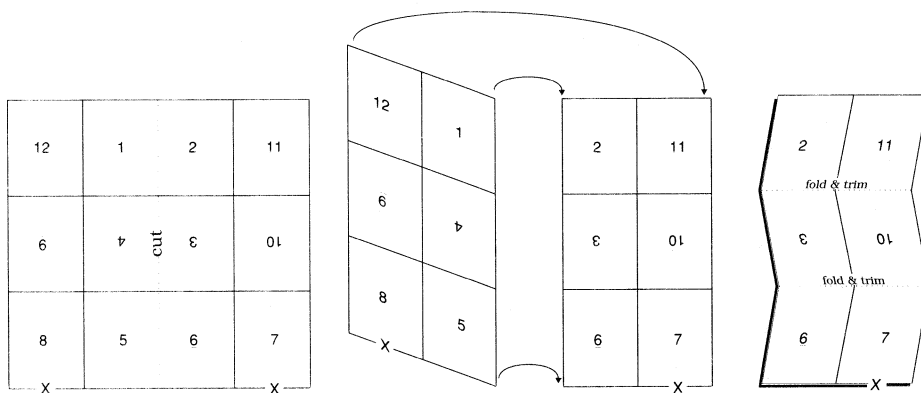
Side-Fold Card: Prints four pages per sheet, which you would fold first on the top, then on the left, as shown in the illustration.

Top-Fold Card: Prints four pages per sheet, which you would fold first on the left, then on the top, as shown in the illustration.

Once you've chosen a page layout style, you still need to insert the required number of pages for the particular style, provided you want text and graphics on each page. For example, Side-Fold Card prints four pages per sheet, however, when you start a new drawing and choose this style, you still need to insert the three remaining pages.

Printing selected Page Layout styles

Pages in all the page layout styles except for Full Page don't necessarily print in the same order in which they appear in the drawing window. If you were creating a 12-page booklet using the Booklet layout style, for example, and you had Facing Pages enabled, you would see pages 1 and 2, 3 and 4, etc. beside each other on the same sheet in the Drawing Window. However, pages 1 and 2 would not print on the same sheet. To achieve the proper page order once the book was printed and bound, CorelDRAW would print pages 1 and 12, 2 and 11, etc. on the same sheet, as shown in the example below. The calculations required to have the sheets print on the appropriate pages for the selected page layout style are done when the document prints. You don't need to adjust the page order yourself to achieve a certain page layout style.



To create a twelve-page book, use CorelDRAW's Book layout style. Printer output will look like the illustration at right. To prepare the book for duplication, cut along the dotted line as indicated. The two halves must then be printed back-to-back, with the X's aligned. (Note: the X's are for illustration purposes only.) The double-sided master is then folded and trimmed as indicated at far right.

Viewing facing pages

When you're working with a multi-page document, you can have two pages facing each other in the Drawing Window. To enable the Facing Pages option, choose Page Setup from the Layout menu, or double-click the page frame in the Drawing Window. In the Page Setup dialog box, choose Facing Pages. Then choose Left First or Right First, depending on whether you want to begin the document on the right or left page. When Facing Pages is enabled, two consecutive pages of your document appear in the Drawing Window beside each other.

With Facing Pages enabled, you can draw objects that begin on one page and continue on the next. The objects do not print in the page's gutter, so they are not partially hidden when you fold the pages. You can also blend one object with another object that resides on a facing page. This is handy for folded documents such as pamphlets and brochures.

Printing files

CorelDRAW users print their work on devices ranging from dot matrix printers to high-end devices such as Linotronics. These devices are generally divided into two classes: PostScript and Non-PostScript. Both classes can produce the full complement of CorelDRAW's special effects, except for PostScript textures and PostScript Halftone Screens, which can only be printed to PostScript printers. For more information, see "Printing complex drawings to a PostScript printer" later in this chapter.

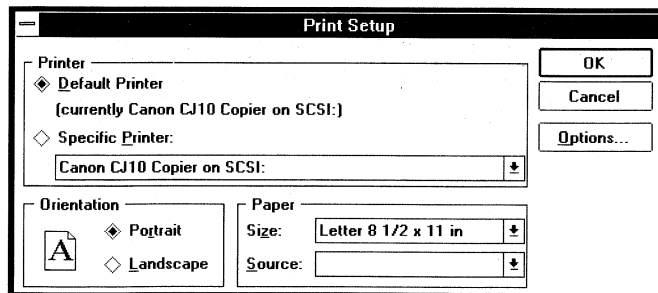
Except for a few special PostScript effects, your drawing prints exactly as it appears in CorelDRAW.

Preparing to print

Before you print, you'll need to choose the printer and printer options to use.

► To choose a printer and printer options:

1. Choose Print Setup from the File menu. The following dialog box appears:



» Tip:

You can also choose printers and printer options from the print Options dialog box.

The currently selected printer is shown beneath Default Printer. To choose another, click Printer. Click the arrow to view the available printers. Only installed printers appear. For information on installing printers, refer to your Microsoft Windows User's Guide.

2. Choose a printer by clicking on its name.
3. Choose the Orientation and Paper options.

CorelDRAW warns if mismatches occur between the printer's paper orientation and what you specify in the Page Setup dialog box. You'll have the option to adjust the printer or cancel the request. If you choose Yes, the printer's paper orientation is adjusted.

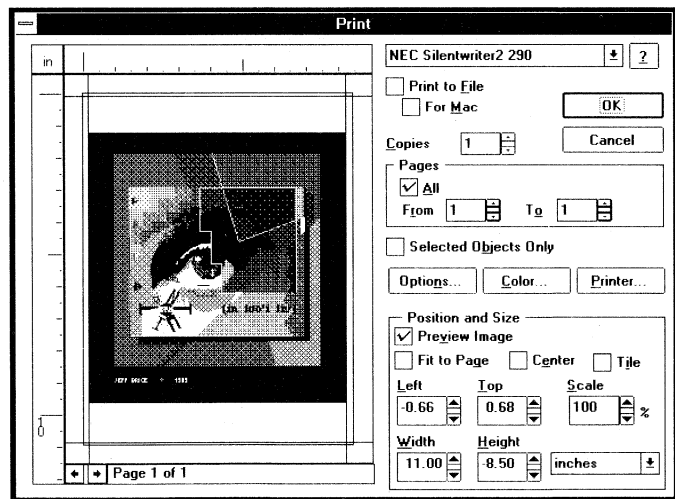
4. Choose OK.

Printing a file

► To print a file:

1. Choose Print from the File menu.

The following Print dialog box appears:



» **Shortcut:**
Pressing **Ctrl + P**
opens the **Print**
dialog box.

2. Choose the desired options (they're described on the following pages).
3. Choose OK.

Using the Print dialog box

Previewing your drawing before printing

The Print dialog box shows a preview of your graphic in the preview box. The graphic is surrounded by a bounding box which represents the imageable area of the printed page. The size and placement of the preview graphic are proportional to the size and

placement on the imageable area of the printed page. The page forward and page back icons at the bottom of the preview box allow you to move forward and back in a multi-page document.

The four corner handles around the graphic let you scale the graphic. You can use the rulers around the Preview box as a reference as you scale. You change the rulers' units by clicking on the Units box and choosing a new unit from the list. The values in the Width and Height boxes change as you scale the graphic.

You can also enter values in the Width or Height boxes. When you change the Height value, the Width value changes proportionately so that the aspect ratio is maintained. To keep the graphic centered on the page as you scale, click Center.

When you scale the image in the preview box, it affects only the printed copy; the graphic itself is not affected.

To change its placement on the page, click anywhere inside the graphic and drag. The values in the Left and Top boxes change as you drag. The value in the Left box represents the location of the top left corner of the graphic. The Top value represents the location of the top of the graphic. (If you have the Center option selected, you won't be able to change its placement on the page; you'll only be able to scale the graphic.)

You can also change the graphic's placement by entering values in the Left and Top boxes.

The Print dialog box contains the following options:

Printer selection box : The printer selection box at the top of the dialog box lets you specify the printer. Clicking the ? button beside it opens the Printer Information dialog box, which provides information about your active printer's capabilities.

Print to File : Select Print to File to print your image to a file. If you're creating color separations and you print to file, a four-color print file is produced. The Print to File dialog box prompts you for a file name. The default extension for files created with this option is PRN (you don't need to type the extension).

Print to File applies to all print formats. You can use it when you're creating PostScript files to send to a service bureau for imaging on a high-resolution PostScript phototypesetter or laser printer. It's also useful if you need to print the file at a remote location. When you print to file, the screen frequency used is the one specified in the Options dialog box.

Note : If you have a PostScript printer installed and you're printing to file, it's a good idea to match the dpi setting on your printer driver to the one the service bureau is going to use, provided your printer driver allows you to change it. If you can change it, use the Advanced Options dialog box. Choose Printer Setup from the File menu, click the Options button, then choose Advanced Options.

Make sure you don't choose FILE as the Port in the Windows Control Panel, Printers, Connect dialog box instead of the Print to File option. CorelDRAW only supports its own Print to File option.

For Mac : PostScript files created using the Print to File option contain two Control-D (^D) characters that prevent them from printing on any PostScript device controlled by Macintosh computers. If you're sending your files to a service bureau with Macintosh equipment, choosing this option removes the ^D characters from the files.

Copies : Enter the number of copies you want to print. The value you enter here overrides the one specified with the Printers option in the Windows Control Panel.

Pages : If you're printing a multi-page document, you can have all pages print by selecting All, or you can specify which pages to print using the From and To boxes.

Selected Objects Only : Prints only those objects in your drawing that are selected. Use this option to proof portions of a complex drawing which takes a long time to print.

Options : Clicking this button opens the Options dialog box.

Colors : Clicking this button opens the Color dialog box, which allows you to view a preview of your color-corrected image and access the prepress tools. This dialog box is discussed in Chapter 19.

Printer : Clicking on this button displays the Windows Printer Setup dialog box for the printer you have selected in the Printer Selection box.

Preview Image : Displays a preview of your graphic in the Print dialog box. If you don't enable this option, your the graphic's bounding box only displays in the Print dialog box. You may want to disable this option if your graphic is complex and takes a long time to draw.

Fit to Page : Scales your graphic so it fits on the paper size of the currently-active printer. This lets you proof large graphics that would otherwise exceed your printer's maximum page size. This option does not affect the graphic file, only how it's printed.

Center : Centers your graphic on the page when it's printed. This option only affects the printed output; it does not affect the graphic.

Tile : Prints any portion of your graphic which falls outside the normal page boundaries on additional pages. You need to use tiling if:

- Your drawing extends beyond the page boundaries for the currently-selected page size.
- You use the Scale Factor option in the Print dialog box to print your drawing at a size larger than fits on the selected page size.

The tiling origin is the upper left corner of the page for non-PostScript printers; for PostScript printers, it is the bottom left corner.

Scale Factor: Enter a value in the Scale Factor box to enlarge or reduce the size of your graphic when it's printed. Values less than 100% shrink the graphic; values greater than 100% enlarge it. This option is useful for proofing very small or very large graphics, even multi-page posters on a single page. You can use it to print a single-page graphic as a large poster, for example. The Scale Factor does not affect the graphic file, only how it's printed.

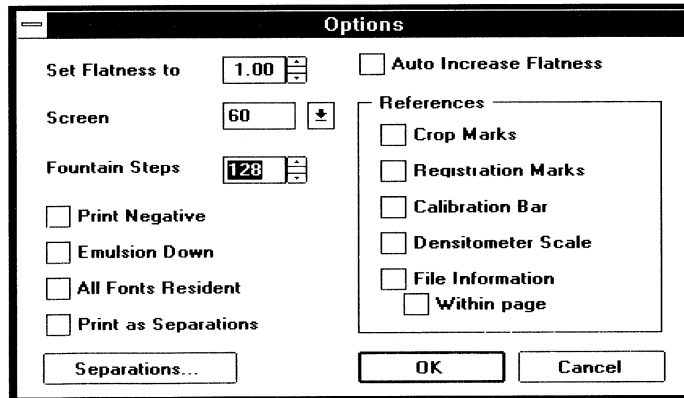
How to determine whether a drawing is too complex to print

Paths become more complex as the printer resolution increases, and the PostScript interpreter has a limit on the number of segments on a path. To determine whether the drawing is too complex, try printing it on a PostScript printer at 300 dpi with a Flatness setting of 0.20. This simulates printing at 1270 dpi. Since this increases the complexity of the paths, it's a good way to test whether the file will print to a higher resolution output device. If you're unsuccessful, the drawing likely won't output on the imagesetter either. To get it to print, increase the setting or break up the curves, as described earlier.

Using the Options dialog box

When you click the Options button in the Print dialog box, the Options dialog box appears.

It contains the following options:



Screen: When the Screen box is set to default, your graphic prints using the printer's default screen frequency. If you're printing composites and want to use a screen frequency other than the printer's default, click the Screen box and choose a frequency from the list. If you're printing color separations, the screen frequency values you enter in the Separations dialog box are the ones used instead.

Fountain Steps : Controls the number of stripes printers use to render a fountain fill. If you use a low value (i.e., less than 20) the object prints more quickly, but the transition between shades of gray or color is more abrupt. A high value (i.e., greater than 40) results in a smoother blend, but longer printing times. If you're printing to an imagesetter, the recommended setting is 128 at 1270 dpi, and 200 at 2540 dpi.

Depending on the your output device's resolution, the number of gray shades or colors available, and the range of color in the fountain fill, there will be an upper limit to the number of steps which make a visible difference. Values above this limit do not change the graphic's appearance, but change the print time. You'll probably have to conduct a few tests to determine the optimum number of stripes for your printer.

» **Tip:**

To reduce the display and print time for extruded objects, change the Flatness setting in the Preferences dialog box to Draft, apply the extrusion, change the setting back to Normal, and then print.

» **Tip:**

Increasing the Flatness setting also reduces printing time. You can take advantage of this to produce proofs of your work. If you set the Flatness too high, objects will become distorted.

If the icon beside the Steps box in the Fountain Fill dialog box is in unlocked (☐) and not in locked (☑) state, fountain fills prints using the number of fountain stripes specified in this Steps box. See "Using the Fountain Fill dialog box" in Chapter 6 for more information. If the icon is in its unlocked state, they print using the number specified in the Print Options dialog box.

Set Flatness To : Determines how many segments the printer uses to draw curves. By default, the flatness is set to 1. You can set it to any value up to 100. Increasing flatness reduces the number of segments printers use to draw curves. This helps overcome PostScript limitcheck errors, which can prevent drawings with complex curves from printing. You can set the Flatness level yourself or have CorelDRAW increase it automatically until the drawing prints using the Auto Increase Flatness option described below. For more information on printing complex drawings, see "Printing complex drawings to a PostScript printer" later in this chapter.

Changing the Flatness setting affects only the printed image; the screen image and the image saved on disk are not affected.

Auto Increase Flatness : When you choose the Auto Increase setting, CorelDRAW automatically increases the curve flatness value in increments of two. Attempts to print stop when the flatness value exceeds the value in the Set Flatness To box by ten. At that point, the printer skips the offending object and print the next object. With this option selected, the PostScript program is far less likely to crash on complex printing jobs.

Print Negative : Causes you graphic to be printed as a negative for use with a phototypesetter which is imaging directly on film.

Emulsion Down : Emulsion is the coating of light-sensitive material on a piece of film. Choosing Emulsion Down specifies an image with the emulsion side facing down. Normally, the image prints with emulsion up.

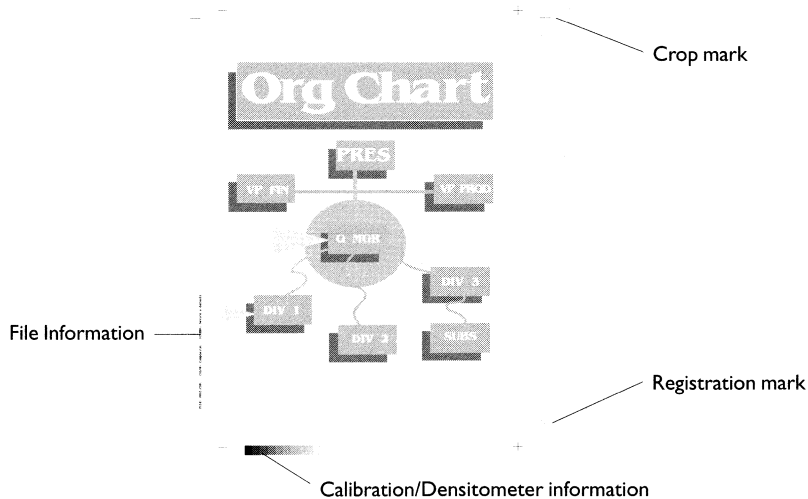
All Fonts Resident : Prints text in your drawing using the resident PostScript fonts rather than CorelDRAW's. You may want to use this option when you're sending files to a service bureau that has Adobe versions of the fonts used in your drawing. For more information, see "Printing text using your printer's fonts" later in this chapter.

Print as Separations : Prints each process color component and spot color in your drawing on a separate page. The Crop Marks, Densitometer Scale, Registration Marks, Emulsion Down, Print Negative, and File Information options become selected when you choose this option. For more information, see "About CorelDRAW's color separator" in Chapter 19.

Separations : This button is available only if you've clicked the Print as Separations option. When you click it, the Separations dialog box appears. The Separations options are described in the next section.

Crop Marks : Prints crop marks, which are printed lines showing the dimensions of the final printed page. These marks are used for final trimming. If you have the Information option selected, the color for the page and the screen angle and frequency prints between the left crop marks. Crop marks are positioned based on the page size selected in the Page Setup dialog box.

Your CorelDRAW working page must be smaller than the paper size you are printing on, or you must have your drawing scaled to a size smaller than the page you are printing on to have the crop marks print out on the page.



Registration Marks : Choosing this option causes registration marks to print on your graphic. Registration marks are small lines that are used in aligning negatives. This option is only available if you're creating separations.

Calibration Bar : When you select this option, a calibration bar of the six basic colors (RGB and CMY), and a strip of scales of gray are printed with your drawing. These allow you to calibrate your Print Preview so that the printed output matches the colors that you see in the Preview box of the Color dialog box. See the description of the Calibration tool in “Using the Prepress tools” in Chapter 19 for more information.

Densitometer Scale : Selecting this option causes a densitometer scale to print with your graphic. It shows the intensity of the ink printed for each of the CMYK colors by printing a grid showing the levels of color from 0 to 100 for the current color separation, along with the densitometer scales. They allow you to check the accuracy, quality, and consistency of the output. You can view the separation channels separately by having a densitometer printed on each of the four CMYK pages, or you can view them as progressive proofs by combining any two or more of the CMYK channels. This option is only available when you’re creating color separations.

File Information : Prints the file name and the current date and time outside the left margin of the printed page. If you’re printing separations, the color separation information is included. You won’t see the file information if the Page Size selected in the Page Setup dialog box matches or exceeds the size of the paper you’re printing on. You can solve this problem using the Within Page option described below, however your graphic size may be reduced to fit the information on the page. For larger page sizes, you can solve the problem by defining a custom Page Size that is narrower than the dimensions of the printer paper. The drawback to this approach is that you may have to resize the graphic so it fits within the new page size.

Within Page : Prints file information inside the left margin of your printed page. When this option is selected, your graphic size may be reduced to fit the information on the printed page.

Things to keep in mind when printing

Because of the many calculations involved, graphics can take considerable time to print. CorelDRAW allows you to create some graphics which are particularly complex, and thus time consuming to print. Expect longer print times for graphics which contain:

- A large number of curve objects (including text)
- Paragraph text
- Fountain Fills
- CorelDRAW PostScript Textures
- Bitmaps and Bitmap Texture Fills
- Clipping holes and masks
- Two-Color and Full-Color Pattern Fills
- Traced objects which have many curves and nodes

Also, your printer type will affect the print time. PostScript printers will normally make the necessary graphics calculations more quickly than LaserJet type printers, PaintJet, etc., because they have a microprocessor dedicated to the task. Non-PostScript printers require the calculations to be done by the microprocessor in your PC, which is not dedicated to the task, nor optimized for it.

Not all PostScript printers are equal in their printing speed. Older versions of PostScript are significantly slower. Some PostScript printers contain faster controller boards and more RAM, which can speed up printing time. State-of-the-art printers use RISC processors and PostScript2 firmware, which allows for even faster printer speed.

If you are printing to a PostScript printer, you should use the Windows PostScript printer driver, PSCRIPT.DRV. PostScript drivers provided by other manufacturers may not work with CorelDRAW.

You should also expect longer print times if you're printing to PostScript emulators

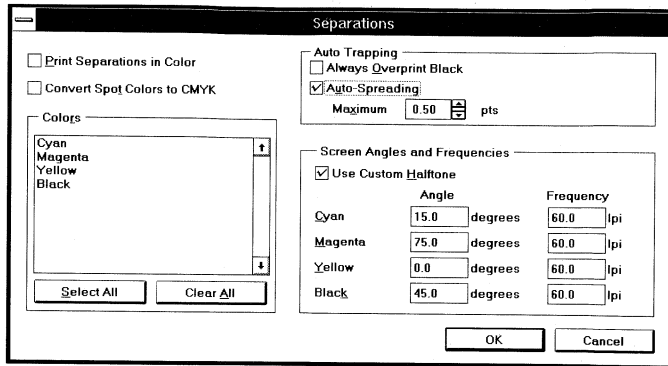
When printing to a LaserJet-type printer, you can save time by setting the print resolution to 75 dpi. This is done with the Print Setup button in the print Options dialog box. We suggest leaving the resolution at 75 dpi until you print the final artwork at 300 dpi. (Using 75 dpi may produce odd effects such as poor bitmap quality, however.) The difference in resolution can speed up printing by a factor of 10 in some cases.

Some LaserJet-type printers have only 500K of memory. Older models have even less. This amount limits the complexity or size of the image which can be printed on a single page. If the image is too large for the amount of memory in your printer and can't be printed on a single page, most LaserJet-type printers will split the graphic into bands printed on several pages. If you intend to print a lot of large graphics, you may want to expand your printer's memory. If you cannot expand it and you want the graphic printed on a single page, print at a lower resolution such as 150 dpi, as described above. However, decreasing the dpi may produce unexpected results.

When you are including a printable bitmap in your graphic, keep it as small as possible. The larger the bitmap file, the more disk space it will take, and the longer it will take to print. If you know that you are going to be shrinking the bitmap in CorelDRAW, scan it at a lower resolution, or crop it and modify it in CorelPHOTO-PAINT.

Using the Separations dialog box

When you click the Separations button in the Options dialog box, the Separations dialog box shown below appears.



It contains the following options:

Print Separations in Color: Selecting this option causes the separations to print in the given plate color rather than grayscale. This option is available if you're printing to a color printer or if you have a color print driver installed. It's also available if you're printing to file. You may want to use it for printing on transparencies to check the trapping.

Convert Spot to CMYK: Selecting this option causes CoreDRAW to convert the spot colors in your drawing to their CMYK equivalents. Although the converted color appears the same on screen, printed results may show significant variation between the two, depending on the gamut of the printer used. This variation occurs because the conversion is only an approximation, not an exact match.

Autotrapping: Selecting either of the Autotrapping options enables autotrapping. For a discussion on Autotrapping, see "About Autotrapping" in Chapter 19.

Use Custom Halftone: When you select this option, you can enter halftone screen angles and line frequencies for each of the CMYK colors. When you leave it deselected, your graphic prints using the printer's default angle and frequency. For more information, see "Specifying a screen frequency for your drawing" later in this chapter.

Colors: The Colors box lists all the colors used in your graphic. Select the ones for which you want to print separations. Clicking the Select All button selects them all; clicking the Clear All button deselects them all.

Printing text using your printer's fonts

When you select All Fonts Resident in the print Options dialog box, CorelDRAW assumes that all fonts used in your graphic are resident in your printer. Text strings are printed using the resident fonts, not the CorelDRAW fonts.

This option is only available if your currently-active printer is a PostScript one.

You would use this feature:

- If you have purchased downloadable PostScript typefaces from Adobe and you want to use them in place of the typefaces supplied with CorelDRAW. Make sure that you download all the necessary fonts before printing.

This option is intended for temporary use. If you want CorelDRAW to always assume that the downloadable typefaces are available, then you should modify your CORELFNT.INI file. CorelDRAW's online Help describes how to modify it. Search for "ini files" in the online Help.

- If you intend to have your files printed by a PostScript typesetting or laser printing service bureau that has the Adobe versions of the fonts you used, you should choose All Fonts Resident before printing to file. This ensures that resident fonts are used when printing.

If you print a graphic with this option selected and the typeface is not resident in the printer, the text is printed in Courier, or the page does not print, depending on the printer.


Note: Text prints using only the printer's font with this option enabled, provided the text isn't distorted, i.e., converted to curves, enveloped, fit to a path, etc. If it's distorted, it is printed as curves.

Printing complex drawings to a PostScript printer

Printing a drawing that contains complex curve objects sometimes produces a "limitcheck error" that causes the printer to stop printing. This error occurs when the number of segments in a curve exceeds a certain limit. Increasing the Set Flatness To setting in the print Options dialog box simplifies the curve by decreasing the number of segments the printer uses to produce it.

By default, the flatness is set to 1. You can set it to any value up to 100 by selecting Set Flatness To and entering a value. Try increasing the value in increments of 4 or 5 until the drawing prints.

When you enable Auto Increase, CorelDRAW automatically increases the curve flatness value in increments of two. Attempts to print stop when the flatness value exceeds the value in the Set Flatness To box by 10. At that point, the printer skips the offending object and print the next object. With this option selected, the PostScript program is far less likely to crash on complex printing jobs.

Note: Curves may become noticeably rough if the flatness is increased too much (either manually or with Auto Increase). Therefore, you might want to break the offending curves into shorter segments with the  tool instead of using the Flatness controls.

Other measures you can take to simplify a drawing:

- Lower the PSComplexityThreshold setting in your CORELPRN.INI file. (Search for “CORELPRN.INI” in CorelDRAW’s online Help for details.)
- Avoid converting large text strings to curves. If you must convert them, use the Break Apart command in the Arrange menu to break the resulting curves into smaller objects. Next, use the Combine command to combine the paths of letters such as “O” and “B” which have holes.
- Avoid combining such text with other objects (for example, to create clipping holes or masks).
- Remove extraneous objects and nodes. Each object adds considerably to the file size; each control point and node also adds to the file size. Using the Auto-Reduce feature is the best way to remove extraneous nodes from objects. See “Deleting nodes and segments using Auto-Reduce” in Chapter 9 for more information.

Specifying a screen frequency for your drawing

If you are printing to a PostScript printer, you can specify a halftone screen for your drawing. A halftone screen is a pattern used to generate the intermediate tints of color between 0 and 100%. The available halftone screen types are line, dot, circle, and a variety of others. Halftone screen patterns are applied to objects for commercial printing purposes or for creating special effects. You can apply halftone screen patterns to individual objects filled with Spot color or to an entire drawing at print time. Halftone screen patterns are not displayed on the screen; you must print your file to see their effects.

Halftone screen frequency refers to the number of lines or dots per inch on a halftone screen pattern. The frequency setting affects the sharpness of the printed image, and the number of gray levels. The higher the screen frequency setting, the more intense the colors, and the sharper the image. The lower the screen frequency, the lighter the colors, and the less sharp the image. For a discussion on the relationship between screen frequencies and the number of gray levels, see “Choosing halftone screens” in Chapter 6.

If you are printing to a PostScript printer, you can use the printer’s default frequency or override it by choosing Use Custom Halftone in the Separations dialog box, and entering a new value in the Frequency boxes. The option you choose depends on whether you’re printing composites or color separations.

Composites: Use the default screen frequency if you don't want CorelDRAW to send commands to the printer to set the screen frequency. The screen frequency is then determined by the PostScript printer you are using. Different printers have different default screen frequencies, depending on the printer's resolution. For example, the 300 dpi Apple LaserWriter has a default screen of 60 lines per inch, while PostScript typesetters capable of printing at 2540 dpi have higher default screen settings.

If you're unsure of the printer's default screen setting, or want to use a different one, choose or enter a value in the Frequency box.

Color Separations: Color separations print using the screen frequency you enter in the Frequency box.

Unless you've selected different settings for individual objects using the PostScript Options dialog box, the screen frequency specified here applies to the entire drawing.

If you specify non-default screen settings for an object with Spot color and then convert it to its CMYK equivalent, the settings will be ignored. Your separations will still print, but they won't include any special halftone screen effects.

If you are printing a tiled graphic, all color separations for each tiled page are printed contiguously.

Specifying a screen angle

You can specify the screen angle for each of the four process colors. Screen angles are used to offset the different films in process color separations. To specify the screen angle, enter values for each of the four process colors in the Angles box.

To avoid moire patterns, it's best not to change these angles unless your service bureau or commercial printer advises otherwise. As an added safeguard, CorelDRAW supplies a list of screen settings (called "RT screening values") optimized for certain output devices at set resolutions. They are stored in your CORELPRN.INI file and are used whenever you print four-color separations, unless you specify other screen settings in the Separations dialog box. See "Using the Separations dialog box" in Chapter 19 for information on screen angles and frequencies.

Spot color separations are printed using the screen angle specified for Black, unless you specify otherwise for a particular object using the PostScript Options button in the Outline Color or Uniform Fill dialog boxes.

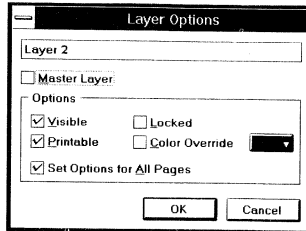
Printing selected layers

CorelDRAW allows you to print selected layers of your graphic. This is handy if you're working on an elaborate drawing and you want to print only certain layers while you're proofing it.

► To print selected layers:

1. Double-click the layer name in the Layers Roll-Up that you want to make printable.

The Layer Options dialog box appears.



2. Choose Printable. This option is enabled by default for all layers. Disable it if you don't want objects on the selected layer printed.
3. Choose OK.

Printing to a color printer

CorelDRAW supports a variety of color output devices. To test the color fidelity of your color printer, load and print the file, "color-bar.cdr" (included with your CorelDRAW samples). This is the disk file of the CMYK Color Chart card you'll find in the Quick Reference Guide. The color elements on your printed output should approximately match those on the chart. They will probably not match exactly, since different printers and printer drivers handle colors in different ways. However, the CMYK chart in the Quick Reference Guide was printed on a commercial press and will give you a good idea of what to expect if you're having your work printed professionally. You can see that there may be a good deal of variation in color between what you see on screen, what a personal color printer produces, and the output of a commercial printing press. Color matching systems such as Pantone and Trumatch can help take the guesswork out of these variations.

Printing without starting CorelDRAW

Under Windows 3.1, you can use the "drag and drop" feature to print CDR files without opening CorelDRAW.

► To print using the Windows drag and drop feature:

1. Load the Print Manager and minimize it.
2. Load the File Manager and locate your file.
3. Click and drag your CDR file on top of the Print Manager icon and release the mouse button.
4. The print Options dialog box appears.
5. Choose the desired options and choose OK.

Using Print Merge

The Print Merge command in the File menu replaces Artistic text objects in a drawing with text that you create in a word processor. It's designed to let you create form drawings in much the same way a word processor's merge feature is used to create personalized form letters. They can be certificates like the one shown here, or any other drawing you want to customize by changing one or more text elements. (You cannot use Print Merge with Paragraph text.)

When CorelDRAW performs the merge, it inserts your text into the appropriate places in the drawing and sends the revised version to the printer. The image content remains constant and only some part of the text varies from copy to copy.

Note: Aside from text that's been blended, extruded or fitted to a path, the merged text appears just as the original text did. It will have the same attributes, (typeface, point size, spacing, etc.) and alignment (left, right, center). And except for those mentioned above, any transformations applied to the original text will be applied to the merged text. However, individual character attributes (character angle, vertical shift, bold, etc.) may not be maintained in the merged text. Specifically, only characters that precede the ones you edited will retain their attributes; those that follow will take on the attributes assigned to the entire text string.

Preparing the merge file

The first step in the Print Merge process is preparing a merge file with the text you wish to insert into your drawing. You can use any word processor, as long as you save the file as an ASCII text file with the extension TXT.

When you're preparing the text, remember that CorelDRAW neither saves the merged files nor displays the filenames on the screen. Therefore, you should check the merge file and your drawing for mistakes before merging. Also, make sure there's enough space in the drawing to accommodate the text you plan to merge. You'll need to verify that the correct alignment options in the Text dialog box or roll-up were used. For example, for text to appear centered in the merged files, the text in the drawing would have to be centered using the Center justification option.

The merge file consists of text in the drawing you want replaced, followed by the text you want to replace it with. To avoid confusion, we'll refer to text in the drawing as primary text, and text in the merge file as secondary text. Also, we'll use the word "string" for a single letter, word or block of text.

To prepare the merge file, you must follow a set of rules:

- The first line must indicate how many text strings within the drawing you want replaced. You can replace as many strings as you wish, but each must be unique. You can't, for example, replace two occurrences of the word "Name" with John in one case, and Jane in the other.

- The primary text strings to be replaced begin on the second line and must be entered exactly as they appear in the drawing. This includes entering capital letters, line breaks and blank lines wherever they occur. To reduce the chance of making mistakes, consider using numbers in the drawing instead of text. Taking the certificate as an example, the numbers 1 to 4 could have been used in place of the text strings "Name", "Company", "Instructor", and "mm/dd/yy".
- You need to enter a backslash, (\) before and after each primary text string. These separate the strings, and cannot appear in the text itself. As the example shows, the strings can be entered back-to-back on the same line or on separate lines.
- After the list of primary text strings comes the secondary strings. You must separate these with backslashes. You can enter them on the same line or on separate lines.
- For every primary string, you must have a corresponding secondary string. You can't, for example, specify Name, Company, Instructor and mm/dd/yy as the primary strings, and then enter only John Smith and Acme Inc. as the secondary strings.
- You can enter multiple sets of secondary strings. Using the example of the certificate, you could type in as many Names, Companies, Instructors and dates as you wanted. As long as each set is complete, CorelDRAW will print a certificate for each person you specified.
- Any character in CorelDRAW's character set that isn't found on your keyboard can be entered using the Alt key and the number keys in the numeric keypad. (See the Character Reference Chart in the Quick Reference Guide for instructions.)
- You can add as much text as you want. Each string is inserted into your drawing in the same position as the text it's replacing. So depending on the number added, you may find that some strings overlap other strings or objects in your drawing.

Merging the text file with your drawing

Once you've prepared the merge file, you merge it with your drawing as follows:

1. Open the drawing you want to merge the text with.
2. Choose Print Merge from the File menu. A dialog box appears, prompting you to choose the merge file.
3. Choose the merge file and click Merge.
The Print Options dialog box appears.
4. Choose the desired options and choose OK.

Creating Color Separations

CorelDRAW creates spot color and four-color process separations on PostScript and non-PostScript printers. Separating a color image causes it to print out on several pages, one page for each of the colors used in the drawing. If you use a Process color model, you'll get up to four pages—one for each of the CMYK colors used. Spot colors print one page per color.

CorelDRAW's color separator uses special circuits to automate the separation process. These circuits apply prepress controls that prepare the images for different types of media. Using simple dialog box options, you can customize the prepress tools for particular graphic files. The prepress tools CorelDRAW offers include Gray Component Replacement, Undercolor Removal, Dot Gain, and Black Point Generation.

CorelDRAW also provides overprinting features that you can use to create trap. Less-experienced users can take advantage of the program's autotrapping feature.

CorelDRAW also provides color calibration controls that allow you to adjust your printer so that the colors it prints match more closely with those displayed in the Color dialog box Preview box.

A word of caution

If you're new to color separations, proceed with caution. CorelDRAW's color separation features are designed for users who are experienced. You may want to seek the advice of experienced professionals before delving into this area to avoid time-consuming and expensive mistakes.

Overprinting and trapping

Overprinting is used to create trap and a variety of other effects by mixing two spot colors directly on the printed page. You should use the overprinting features to create trap before you create color separations.

Overprinting colors

When objects containing fills and/or outlines overlap, the underlying objects are automatically knocked out so that the colors don't interfere with each other when printed. Using the Overprint feature, you can make a color purposely print on top of the one beneath it.

The effect of overprinting depends on the combination of colors used. Usually you achieve the best results when the color of the top object is substantially darker than the other.

The effect of overprinting depends on the combination of colors used. Usually, you achieve the best results when the color of the top object is substantially darker than the color it overprints.

The effects of overprinting two spot colors won't appear on your monitor; they can only be seen in the press proofs and final printed artwork.

»Note:

Depending on the mouse preferences you've chosen, you may have to hold down the right mouse button for a second to display the Object Menu. See Appendix A for details on mouse preferences.

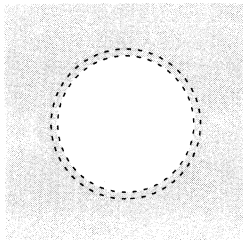
► To overprint two objects:

1. Click with the right mouse button on the object that's on top of the one you want to overprint.

The Object menu appears.

2. Click Overprint Fill.

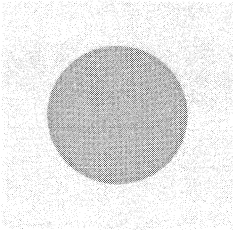
When you print, the top object will overprint the bottom one.



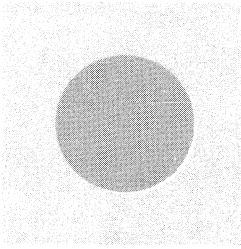
Giving an object an outline and designating it to overprint the area beneath it, is one way to create trap in CorelDRAW.

Creating trap

Overprinting is more commonly used to create trap, a technique traditionally used in offset printing to avoid white gaps that can appear between adjacent areas of color. These gaps occur when the color registration (i.e., the positioning of the colors in your artwork) becomes misaligned either during the creation of the printing plates, or on the printing press. Trapping avoids these gaps by overlapping a thin stroke of one color over the other. Trapping is only necessary when two colors that don't share the same tints overlap. If they share tints, the tints will fill in any gap.



Perfect registration.



Registration errors can cause gaps to appear at the boundaries of overlapping objects.

In the accompanying example, adding trap to the circle spreads it out slightly so that it no longer fits perfectly inside the knockout below it. There are two types of traps: spreads and chokes. A spread extends the foreground object into the background (it “spreads” the foreground); a choke extends the background into the foreground (it “chokes” the foreground). To create traps that minimize shape distortion, remember that when the two inks mix, the mixture will more closely resemble the darker color. Lighter objects should be extended into the darker objects. Therefore, use a spread for a lighter foreground, and use a choke for a lighter background.

The easiest way to create trap in CorelDRAW is to add an outline to an object and have it overprint the underlying object. You would do this when the objects meet along an irregular boundary, or when one object is completely surrounded by others.

For two objects that meet along a straight edge, you create trap by drawing the objects so that they overlap slightly, and then designating the object on top to overprint.

Using trap effectively requires some practice and a basic understanding of the many variables involved in color printing. Among these are the quality, color, and printing order of the inks being used; the characteristics of the paper and printing press; and the complexity of your artwork. To ensure satisfactory results, it’s important to seek your printer’s advice before creating trap.

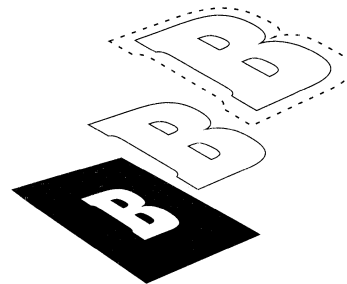
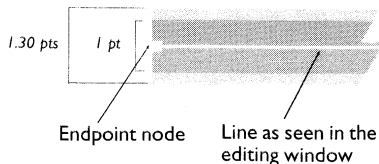
► **To create trap:**

1. Select the object that’s on top of the one you want to trap.
2. The next series of steps depends on the fill and outline characteristics of the object you’re trapping:
 - If the object has a fill but *no* outline, start with an outline 0.30 points thick. This creates a trap of 0.15 points, since the outline is centered on the path that defines the object’s shape. Depending on the characteristics of the printing press, additional trap may be required. However, too much trap can cause an obvious border to show along the edges where the objects meet. When the colors are similar, this border is even more noticeable, and in some cases, it cannot be avoided even with minimal trap.

» **Tip:**

You should try to avoid trapping text, since the overlapping line can distort the letter form. To avoid trapping, try overprinting, or adding a percentage of the underlying color to the text color to compensate.

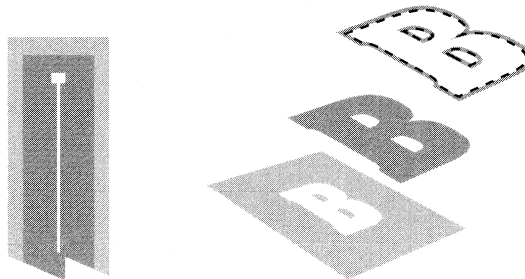
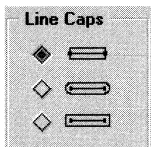
Outlines in CorelDRAW are centered on the path that defines the object’s shape, in this case, a 1 point thick line. So, to add 0.15 points of trap to a line, you need to increase the thickness of its outline by 0.30 points as shown here.



To trap the unfilled letter B, a duplicate of it is made and placed on top of the original. Next, the thickness of the duplicate’s outline is increased by 0.30 points. Finally, the outline of the duplicate is assigned to overprint.

Check with your commercial printer for the amount of trap you should use. Next, assign the object's color to the outline. Finally, click the object with the right mouse button and choose Overprint Outline from the Object menu. (Make sure the Overprint Fill option for the object's fill is *not* selected.)

Applying a Round or Square linecap to any open path (straight or curved), provides the necessary amount of trap. This technique also works for dashed lines.



To trap a dark object against a light background, a duplicate is made and assigned a fill of × (i.e., None) and an outline of the background's color.

» **Tip:**

To save time at print time, it's a good idea to create trap for objects when you first create them.

» **Note:**

The effects of trap will only show in the press proofs and the final printed artwork; they won't show on the screen.

- If the object has a fill *and* an outline with the proper thickness and color as described above, assign the outline to overprint.
- If the object is a stroked path (i.e., it has no fill), a different method must be used to create trap. First, place a duplicate of the object directly on top of the original. Then increase the thickness of the duplicate by a least 0.30 points and designate it to overprint. If the path is an open one, (a rule for example) the endpoints of the duplicate must extend beyond those of the original to create the proper amount of trap all around. To do this, use the Line Caps option to select a line ending cap that extends the line slightly beyond its endpoints.
- If the color of the topmost object is darker than the one underneath it, duplicate the topmost object as described above, but give it a fill of none and an outline of the same color as the object beneath it.
- If objects have a white outline, or no outline and a white fill, it's not necessary to use Overprint to create trap.
- Text objects filled with black should be designated to overprint by clicking on them with the right mouse button and choosing Overprint Fill from the Object menu.

About Autotrapping

CorelDRAW's autotrapping feature provides an easy solution to some trapping problems. If you're experienced with trapping, however, you may want to use the overprint feature to create trap with more accurate results. Autotrapping assigns only spreads, not chokes.

You enable autotrapping by choosing Auto Spreading and/or Always Overprint Black in the print Options dialog box. When Auto Spreading is enabled, trap is automatically created for all objects that meet three conditions: they have no outline, they are filled with a uniform fill, and they haven't already been designated to overprint with the Object menu.

Autotrapping creates trap by assigning an outline to the object that is the same color as its fill. In the Maximum Spread Width box, you enter a maximum trap value, up to 36 points. The default maximum trap value is 1/2 point. The amount of spread that autotrapping assigns to an object depends on the maximum trap value and the object's color. The lighter the color, the greater the percentage of the maximum trap value. The darker the color, the smaller the percentage of the maximum trap value.

When you enable Always Overprint Black, trap is added to any object that contains 95% black. If you have enabled Auto Spreading and Always Overprint Black, the Overprint Black is applied, even if the object does not meet the three conditions for autotrapping.

You can use Autotrapping on PostScript and non-PostScript printers.

About CorelDRAW's color separator

CorelDRAW's professional color separator makes it easy to produce high-quality color-separated image files. The color separator can produce CMYK separations as composite CMYK files that you can separate to file or send directly to any PostScript or non-PostScript printer or imagesetter.

» **Tip:**

For better color accuracy when creating four-color separations, build your colors using CMYK values, not Pantone solids. When creating two- or three-color separations, use Pantone colors for better color accuracy.

CorelDRAW's color separator uses .SMT circuits to automate the separation process. These circuits apply the necessary prepress controls to the data for different types of media. It includes prepress tools such as Gray Component Replacement, Undercolor Removal, and Dot Gain.

SMT circuits

The .SMT circuits are files that you can build that contain color separation controls for setting parameters that prepare the image data for separation. An .SMT circuit includes six parameters that you can modify using the Prepress Tools dialog box (described later in this chapter). The parameters are:

- Output Device Calibration
- Undercolor Removal (UCR)
- Black Point Generation
- Gray Component Replacement (GCR)
- Press and Paper Dot Gain
- Color Separation Quality

When you access the Color dialog box, CorelDRAW's default .SMT circuit is loaded. You can load a different circuit by clicking on the Load button and entering the circuit name in the Load Circuit dialog box. When you configure the circuit by modifying any of the settings in the Prepress Tools dialog box, CorelDRAW prompts you to save the modified circuit under a new name. You can configure and modify the default .SMT circuit as often as required, and save and re-use as many of them as you need to fit different image characteristics and prepress application requirements.

Note: It's best not to overwrite the "default.smt" when you're saving circuits. If you do overwrite it and then need to use it again, you'll have to reinstall it from the CorelDRAW disks.

Analyzing separations using the printed densitometer

CorelDRAW's color separator includes an option to print a densitometer scale that allows you to analyze the CMYK separations. You can analyze them separately by having a densitometer printed on each of the four CMYK pages. Or, you can view them as progressive proofs by combining any two or more of the CMYK channels. A grid is printed for each CMYK channel, showing the levels of color from 1 to 100.

To print a densitometer grid with your graphic, enable the Densitometer Scale option in the print Options dialog box.

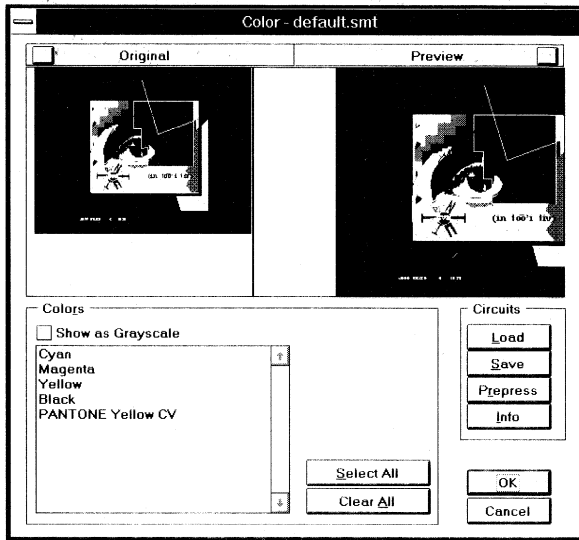
Preparing images for color separation

The first step in creating color separations is done with the Color dialog box. After specifying color settings there, you access the Prepress Tools dialog box, which contains color-correction tools that prepare images for color separation.

► To access the Color dialog box:

1. Choose Print from the File menu.
2. In the Print dialog box, click the Color button.

The Color dialog box shown here appears.



3. Choose the desired options (they're described below), and choose OK.

Using the Color dialog box

The Color dialog box contains your original image in the Original box, and the color-corrected image in the Preview box. The Colors box lists the colors used in your drawing. By default, all the colors are enabled and shown in the Preview box. To disable a color and remove it from the image in the Preview box, click the color. To enable all the colors, click the Select All button. To disable them all, click Clear All. Enabling and disabling certain colors is useful for checking your separations. Enabling and disabling the colors here affects the image in the Preview box only; it does not affect the printed output.

To zoom in on the original image, click the zoom box at the top of the Original window. Click the zoom box again to zoom back out. You zoom in on the color-corrected image in the same way, using the zoom box above the Preview window.

To preview the image in 256 grayscale, click Show as Grayscale. The Preview image changes to grayscale. This option is available only when only one of the colors is enabled in the Colors box.

The Color dialog box also contains the following options:

Load : To load a different circuit, click this button. The Load circuit dialog box appears, which allows you to load the predefined circuits that come with CorelDRAW, or those you've created and saved.

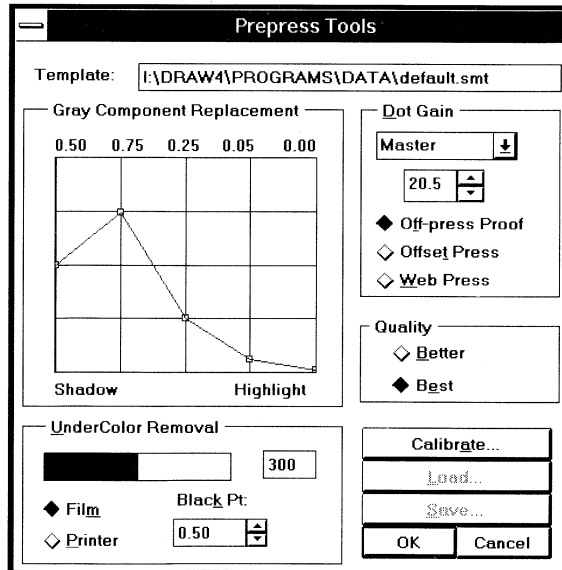
Save : Click this button to save changes you've made to the .SMT circuit via the Prepress Tools dialog box. (The Prepress Tools dialog box is described in the next section.)

Prepress : To access the Prepress Tools dialog box, click this button. These tools are described in the next section.

For information on the .SMT circuit that's currently loaded, click the Info button to access the circuit Info dialog box.

Using the Prepress Tools

The prepress tools included with CorelDRAW's color separator are those commonly available on high-end prepress scanning and film processing equipment. They are found in the Prepress Tools dialog box shown below:



You access this dialog box by clicking the Prepress button in the Color dialog box. When you specify settings in the Prepress Tools dialog box, you are modifying the parameters that make up the default .SMT circuit. The Save Circuit dialog box appears after you've specified the prepress settings and chosen OK. In this dialog box, enter the name for the new .SMT circuit you've created. (It's best to

save the modified circuit under a new name so you don't overwrite the default .SMT circuit.) Saving the modified circuit may take a few minutes. Expect it to take even longer if you've chosen the Best option in the Quality section of the Prepress Tools dialog box.

Once you've saved the modified circuit, you return to the Color dialog box, where your original and color-corrected images are displayed in the Original and Preview boxes. These boxes let you see the effects of the Prepress settings. If you don't like the results, you can return to the Prepress Tools dialog box and adjust the parameters.

Using the Prepress Tools dialog box

The Prepress Tools dialog box contains the following tools:

Gray Component Replacement (GCR): GCR is a technique for removing from the color separations some or all of the cyan, magenta and yellow that produces the gray component of an image. GCR uses an increased black content to create most of the image shape and detail, which reduces the amounts of cyan, magenta or yellow required in the shadow portions of an image.

When you use GCR, separations will print with cleaner corners, improved sharpness, better color fidelity, and increased contrast and detail. They will also print with better consistency during the print run. Using GCR in an .SMT circuit is not critical to producing a quality separation. However, GCR can make quality separations even better, especially for darker images or those that contain considerable amounts of problem colors such as purples, browns, deep reds, flesh tones, and grays. GCR is more a printing tool than a visual color editing tool—its effect may not be visible at the proofing stage and may be only slightly detectable at the press.

CorelDRAW's GCR tool allows you to set the GCR to different levels along the tonal range. You produce skeletal blacks by setting the GCR level to very low values near the highlights, and to higher values in the shadows. Because high levels of GCR reduce the total amount of ink, deep shadow and black areas may appear to be less glossy and have less depth. You can compensate for this by using less GCR in the shadow areas.

► To adjust the GCR:

1. Access the Prepress Tools dialog box.
The GCR graph is displayed, with five tonal range handles.
2. Click and drag a tonal range handle up or down the 0.00 - 1.00 scale to the desired value.

The value at the top of the selected range changes as you move the handle. You can move any of the five handles up or down to adjust the amount of GCR over any portion of the tonal range.

3. Choose OK.

Undercolor Removal (UCR): UCR refers to the reduction of the CMY colors in the dark or neutral shadow areas to reduce the total amount of ink coverage. In an ideal printing environment, a press would print any combination of ink densities, up to 100% of each of the four colors, or what is known as 400% TAC (Total Area Coverage). However, the maximum generally accepted TAC is 260 to 300%. TAC values higher than the maximum can cause problems with black ink transfer, ink drying, and ink trapping.

► **To set the UCR:**

1. In the Prepress Tools dialog box, select a UCR value by moving the slide bar with the mouse or by entering a value in the text box.
2. Choose either Film or Printer.
3. Choose OK.

Black Point: A black produced by a full 400% TAC is darker than one produced by the CMY printers. The black point specifies the blackness level relative to these two references in a range from 0 to 1.0. A black point of 0.0 yields a black as dark as a 3-color black (CMY). A black point of 1.0 yields a black as dark as a full 4-color black (i.e., darker).

You set the black point in the Prepress dialog box by entering a value in the Black Point text box.

The black point only specifies the apparent darkness of black. The actual CMYK percentages used to produce this appearance is determined by the GCR and UCR settings.

Dot Gain: Dot Gain (also known as “Press Gain”) defines a condition that results from plate making and the printing press. Halftone dots “gain” in size from the time you view them on film to the time they come off the press. If this condition is not compensated for, the printed image’s appearance will generally not match the intended appearance.

Dot Gain is measured as the increase in tonal density from film to print of a midtone dot which normally occurs in offset printing. This increase in tonal value (total dot gain) is caused by two factors: the physical change in dot size due to plate making and the transfer of ink to paper, and an apparent change due to optical properties of the paper (known as “optical dot gain”).

CorelDRAW’s Dot Gain control can build in a compensation factor for all four colors separately (CMYK), or for all four collectively (Master). The compensation technique reduces the size of a given pixel in the image to compensate for the fact that the same dot will increase in size on the printing press. For example, a pixel with a density value of 60% before printing might have a value of 70% when printed on paper. If you want to maintain the 60%, the value must be reduced so that the increase caused by dot gain will result in the desired 60% dot. So when you calculate a dot gain and then apply a percentage, you enter a positive number that represents the percentage of decrease that you wish to apply to the pixels in that

channel(s). Typical dot gain percentages for Web, Offset, and Off-press proofs are between 18 and 24%.

► **To set the Dot gain:**

1. Select the desired channel from the Dot Gain list box. You can set the dot gain percentage for all four channels separately, or select Master from the list box to set it for all four channels simultaneously.
2. Enter a percentage in the text box.
3. Select either Off-press Proof, Offset Press, or Web Press. The dot gain is optimized for the type of press you select.

Quality: You can specify a color separation quality of Better or Best. Better results in faster but not the best quality color separation. Choose Better if you are printing a proof copy of your graphic. Choosing Best results in slower color separation, but better quality. Choose Best when you're printing your final copy.

Calibrate: Using the Calibration tool, you can match the colors that appear in the Preview box in the Color dialog box with those that appear in a four-color print or proof printed on your target CMYK device (i.e., imagesetter, proof printer, or matchprint system). Matching them ensures that the colors you see in the Preview box of the Color dialog box will look as close as possible to the colors in your printed output. Setting the calibration values is an important step in creating an .SMT circuit.

Note: If your printer driver has a calibration feature, make sure you've calibrated your printer using the printer driver's calibration tools before using CorelDRAW's calibration tool. Likewise, if your monitor has a calibration tool, you should adjust your monitor before using CorelDRAW's calibration tool.

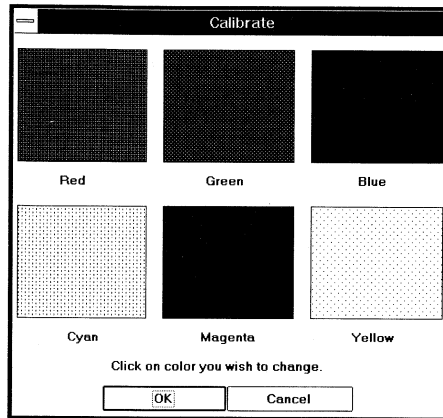
Using the Calibration tool, you match each of the six primary colors (CMY and RGB) on your monitor with the six colors printed by your target CMYK device. Doing this provides the color separator with information about the target device's color characteristics. This information is stored as an integral component of the .SMT circuit.

You'll probably need to create a different color calibration value for different CMYK device (i.e., imagesetter, proof printer, or matchprint system). However, once you create one for a device and make an .SMT circuit, you won't need to create it again unless conditions change. CorelDRAW comes with several .SMT circuits that include color calibration values for some of the most popular CMYK image-setter and proof print devices. They're stored in the CorelDRAW CUSTOM directory.

► **To calibrate color for a target CMYK device:**

1. Using your target device, print a sample of each of the six primary colors (CMY and RGB).
2. Access the Prepress Tools dialog box by clicking on the Prepress button in the Color Separations dialog box. (Select Print from the File menu and then click the Color button to access the Color Separations dialog box.)

3. In the Prepress Tools dialog box, click the Calibrate button. The Calibrate dialog box shown below appears, displaying a color chip for each of the six primary colors.



4. Click the color chip that you want to calibrate. The Color dialog box appears, with the selected color displayed in a preview box beside the Hue, Saturation and Luminance values. The preview box is divided into two sections: the left side shows the dithered color, the right side shows the pure color.
5. Alter the hue, saturation and luminance by changing the values in the Hue, Sat, and Lum boxes. Alter the amount of red, green and blue by changing the values in the Red, Green and Blue boxes. (You may want to record these values for future reference.)

As you alter the hue, saturation and luminance values, the red, green and blue values are updated to reflect the changes, and vice versa.

You can also use the Hue and Saturation color selector to alter the hue, saturation, and amounts of red, green and blue. You do this by dragging the ·· around in the color grid. As you drag, the selected color in the preview box and the values in the boxes below the grid change to reflect the new values.

Likewise, you can also change the luminance using the Luminance visual selector. (The Luminance visual selector is the rectangular box beside the color grid.) You do this by clicking on the slider beside the visual selector and dragging it up and down. Dragging to the bottom of the box gives a luminance value of zero; dragging to the top gives a value of 240, which is the maximum value allowed.

7. Alter the hue, saturation, and luminance values until the color matches the color on your printed output.
8. To add the color you just modified to the list of Custom Colors, click Add to Custom Colors.

The color appears in the Custom Colors list and is saved as a custom color. When you click a custom color, it appears in the preview box and the Hue, Sat, and Lum values are updated

appropriately. If you're calibrating more than one output device, you may want to save some colors as custom colors so that you don't need to enter the Hue, Sat, and Lum values each time you use it.

9. Choose OK. You return to the Color Calibration dialog box, where the new color is displayed.

Repeat these steps for each color that requires calibration.

Printing color separations

» **Tip:**

If your color separations are being output by a printing house, you may want to have them prepare the color separations for you, since they have a better knowledge of the press the job will run on.

Separating to disk

You can print an image to disk for a service bureau to output on a PostScript or non-PostScript output device, or for a remote printer not connected to your system to print. In the Print dialog box, select Print to File. The Print to File dialog box appears. Select a drive and directory. In the File Name box, enter a name. Choose OK. The image is saved and separated to file.

Note: Make sure you don't select FILE as the port in the Windows Control Panel, Printers, Connect dialog box. If you do, your file may not print, since CorelDRAW supports only its own Print to File option.

Separating to an output device

When you separate images directly to an output device, CorelDRAW's color separator accesses the professional print feature to control the process. The print feature works with the currently-installed Windows device driver to send the data and printer instructions to the imagesetter or printer. The values and parameters specified with the professional print feature override the values displayed in the Windows printer driver Advanced dialog box.

In the Print dialog box, make sure the Print to File option is deselected. When you choose OK, the image is separated and prints according to the print options you selected.

APPENDICES

***Appendix A:* Customizing CorelDRAW**

***Appendix B:* Creating and Modifying Typefaces**

***Appendix C:* PostScript Textures**

***Appendix D:* Summary of Precision Features**

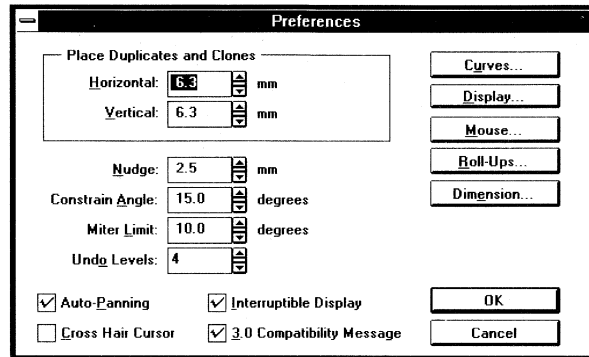
***Appendix E:* Suggested Reading List**

***Appendix F:* Using the Autographix Slide Service**

You can customize many of CorelDRAW's operations to suit your preferences and drawing requirements. You can change them at any time, so that the program is always tailored to meet your specifications. You customize CorelDRAW with the Preferences command on the Special menu, and by editing the CORELDRW.INI file.

Setting preferences

When you choose Preferences from the Special menu, the following dialog box appears:



Place Duplicates and Clones: When you use the Duplicate and Clone commands on the Edit menu to copy an object, the copy is placed at a certain offset with respect to the original object. To modify the offset spacing, use the Place Duplicates and Clones controls in the Preferences dialog box. Entering positive values shifts the copy up or to the right; entering negative values shifts the copy down or to the left.

You may want to set the offset to 0 so that the copy is placed directly on top of the original object. Press the "+" key on the numeric keypad once you've selected the object to place the copy on top of the original.

Nudge: The arrow keys on your keyboard allow you to move or "nudge" selected objects and curve nodes in the direction indicated by the arrow on the key. If you hold the cursor key down, the object or node will move in continuous steps. The value you enter in the Nudge field determines how far the object moves when the key is pressed. Note that if you specify a Nudge value between 0.001 and 0.009 inches, it will seem like the value is reset to 0.00 the next time you open the dialog box. In fact, only the display is reset; the value remains set at the value you specified within that range.

Constrain Angle: Holding down the Ctrl key while performing any of the following actions constrains the motion of the object to an angle specified by this option:

- Skewing or rotating objects
- Drawing straight lines in freehand mode
- Adjusting the Control points when drawing curves in Bézier mode

Miter Limit: This option controls the lower limit for creating miter joints at the corners. Below the specified angle, the joint will be beveled. This limit exists to avoid corner points that extend far beyond the actual corner at small angles.

Undo Levels: Determines the number of actions or operations that can be reversed using the Undo command in the Edit menu. The maximum number of Undo levels is limited only by your system's memory resources, the default being 4. The higher the setting, the more memory CorelDRAW requires to operate. If you're working with a large number of objects or with objects which use a lot of memory resources such as bitmaps, bitmap texture fills, paragraph text, etc., you should keep the number of Undo levels low to avoid running out of memory. Note that these parameters also specifies the number of Redo levels available.

Auto-panning: To activate the auto-panning feature, click Auto-panning. This causes the page to scroll automatically whenever you try to drag a selected object beyond the visible portion of the working surface. To disable this option, click the check box again.

Cross Hair Cursor: To turn the screen cursor into a set of crosshairs which extend the full width and length of the drawing window, click Cross Hair Cursor. The crosshairs revert to an arrow when you move off the Drawing Window so that you can select tools and menu items.

3.0 Compatibility Message: Version 3.0 and 4 of CorelDRAW calculate inter-line spacing for TrueType and Type 1 fonts in a different way. When this option is enabled, a dialog box will appear allowing you to convert the spacing in the following cases: when a CorelDRAW version 3.0 file is opened or imported into CorelDRAW version 4, or when a CorelDRAW version 4 file is imported into a CorelDRAW version 3.0 file.

The difference between the spacing is so subtle, you likely won't notice any change in the text's appearance if you choose Yes to convert the spacing. However, the conversion may fail if the text string or paragraph contains text in more than one typeface or size.

If you disable the 3.x Compatibility Message, CorelDRAW will automatically convert the text to CorelDRAW 4 spacing.

Interruptible Display: With Interruptible Display enabled, you can isolate a particular object or choose a menu command or tool without waiting for the screen to redraw completely. This is efficient when you're working on complex drawings.

» **Shortcut:**
Pressing Ctrl+W
redraws the
Drawing Window.

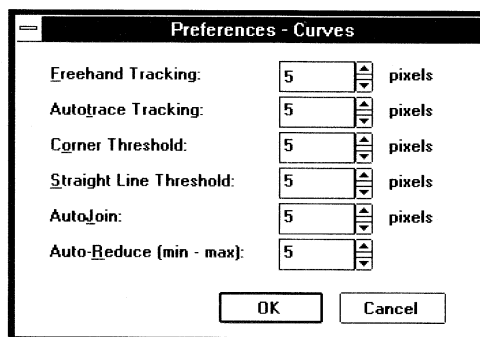
To interrupt the redraw once you've selected Interruptible Display, click with the mouse or press any key when the object you want to isolate appears. Redrawing resumes after you complete an action such as moving or changing views. If you don't complete another action within a few seconds, the redraw will automatically resume. You can also request an immediate redraw by clicking on a scroll bar thumb, or by choosing Refresh Window from the Display menu.

Note that you can still select objects even though they don't appear on the screen.

Since objects are redrawn from back to front, the usefulness of this feature is diminished if the object you want to isolate is in front of many objects. In wireframe view, you can cause a particular object to be redrawn first just by selecting it, as long as it isn't grouped with other objects.

Setting curve preferences

When you click Curves, the following dialog box appears:



The default setting for each of the curve preferences is five pixels. You can choose any value between one pixel and ten.

Freehand Tracking : Controls how closely CorelDRAW “tracks” your freehand drawing when it calculates the Bézier curves.

If the number you enter is low (1 to 3 pixels), the Bézier curve will hug every dip and bump in the freehand line you draw. This may result in a lot of nodes and a rougher-looking curve.

If the number you enter is high (6 to 10 pixels), the Bézier curve will only loosely follow the line you draw. This results in fewer nodes and a smoother-looking curve.

Autotrace Tracking: Controls how closely Autotrace “tracks” edges when it calculates the Bézier curves.

If the number you enter is low (1 to 3 pixels), the Bézier curve will hug every dip and bump in the bitmap you are tracing. This may result in a lot of nodes and a rougher-looking curve.

If the number you enter is high (6 to 10 pixels), the Bézier curve will only loosely follow the bitmap you are tracing. This results in fewer nodes and a smoother-looking curve.

Corner Threshold: Controls the threshold when CorelDRAW decides whether a corner is a smooth corner or a cusp. This threshold is applied to both freehand drawing and Autotrace.

If the number you enter is low (1 to 3 pixels), CorelDRAW will be biased towards cusps, and crisp changes in direction will be accurately reflected.

If the number you enter is high (7 to 10 pixels), CorelDRAW will be biased towards smooth corners, giving smooth changes in direction which don't precisely follow the original, but give your lines a more flowing, graceful look.

Straight Line Threshold: Controls the threshold when CorelDRAW decides whether a segment should be made a straight line or curve type. This threshold is applied to both freehand drawing and autotrace.

If the number you enter is low (1 to 3 pixels), CorelDRAW will be biased towards drawing segments as curves, with only precisely straight segments being drawn as straight line segments.

If the number you enter is high (7 to 10 pixels), CorelDRAW will be biased towards drawing segments as straight lines, with only the most curved segments being drawn as curves.

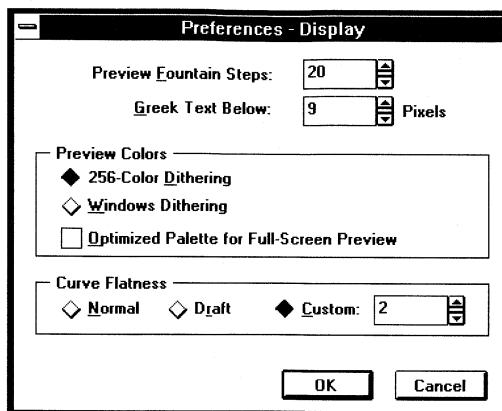
AutoJoin: Controls how close you have to be to an end node for the AutoJoin feature to work. If the number you enter is low (1-3 pixels) you will have to be more precise in positioning your cursor, but you are less likely to accidentally activate AutoJoin.

If the number you enter is high (7-10 pixels) you will not have to be as precise in positioning your cursor, but you may get unintended AutoJoins.

Auto-Reduce: This option controls the extent to which a curve's shape is changed when you use the Auto-Reduce option in the Node Edit pop-up menu. The default value is 5; the maximum is 10. The higher the value, the more the curve's shape will change when Auto-Reduce is applied. Likewise, the lower the value, the less the curve's shape will change. For more information on Auto-Reduce, see "To delete nodes and segments using Auto-Reduce" in Chapter 9.

Setting display preferences

To set display preferences, click Display. The following dialog box of options appears:



Preview Fountain Steps : Determines the number of stripes used to represent fountain fills in the Drawing Window. Selecting a lower value (i.e., less than 20) improves the redraw time, but results in a fountain with noticeable banding. If you're exporting the drawing as a SCODL file, the value you select here will have the same effect on the fountain's appearance.

The Fountain Steps option in the print Options dialog box controls the number of stripes printers use to print fountains. For details, refer to Chapter 18, "Managing and Printing Files."

You can override the Preview Fountain Steps setting and the Fountain Steps setting in the Print Options dialog box for individual objects using the Steps option in the Fountain Fill dialog box. See Chapter 6, "Filling Objects" for more information.

Greek Text Below : Allows you to simplify the appearance and speed up the redraw times of small Paragraph text on screen. This option affects only your display; it has no impact on printing. Any Paragraph text in your file that would normally display at less than the height you specify here will be displayed as small rectangles. The program will not bother to try and render such text. If your file contains a lot of small text, this feature can cut the redraw times substantially. If your text is "greeked" when you're looking at a full-page view, you can see the content of a text string by zooming in on it.

If your drawing contains a lot of Paragraph text (large or small) and you're working on another component of the file, you can speed up the screen redraw time by setting this variable to a large value (maximum 500). All your paragraph text will then be "greeked" and you won't have to wait for it to be redrawn. When you need to work on the text again, reset the greeking to a small value. (The value you specify is based on screen pixels, and is therefore resolution-dependent.)

Preview Colors : Control how CorelDRAW displays colors on your screen. They have no impact on the printed output. The 256-Color Dithering option is the default value. It is automatically selected if you're using a display driver that supports this. The Windows Dithering option is the only one available if your display supports just 16 colors, or if you have a "high" or "true" color display adapter.

Windows Dithering : The only option available if you don't have a paletted graphics adapter and an appropriate screen driver. Color is displayed using the screen driver's default dithering technique.

If you have an adapter/driver that can display 256 simultaneous colors, you may find your screen redraws faster with this option selected. However, only 15 of these colors will be used to create the dithered colors.

Optimized Palette for full-screen preview : If you select this option, CorelDRAW alters and optimizes the colors it uses when displaying your work in full-screen preview. Up to 256 pure colors with no dithering will be used to render the illustration, providing your hardware configuration supports this.

Curve Flatness : As the number of complex curves in your drawing increases, so does the time required to print and redraw them. To reduce the printing and redraw times, increase their Curve Flatness setting. This setting determines the number of line segments CorelDRAW uses to represent curves on the screen and on non-PostScript printers. The higher the setting, the fewer the number of segments used, and the faster the redraw time.

You have three choices: Normal, Draft and Custom. The setting for Normal is 1; the setting for Draft is 10. Normal displays the most accurate curve and has the longest redraw time. Draft has the fastest redraw time and displays the roughest curves. To specify a value between the Normal and Draft choose Custom and type or select the desired value.

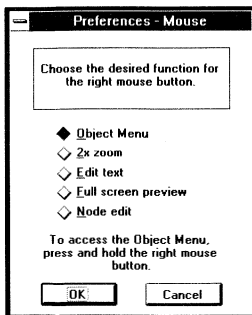
To control the number of segments a PostScript printer uses to draw curves, use the Flatness setting in the Print Options dialog box. Turn to Chapter 18, "Managing and Printing Files" for more information.



Assigning a function to the right mouse button



When you click Mouse in the Preferences dialog box, the Mouse Preferences dialog box appears. It lets you assign a function to the right mouse button.

Regardless of the function you select, you can always use the secondary button to leave a copy of an object moved by dragging with the mouse.


Object Menu : Displays the Object Menu with commands for working with Styles, overprinting, and attaching notes to objects. If Object Menu is not selected here, you must hold down the right mouse button on an object to display the Object Menu.



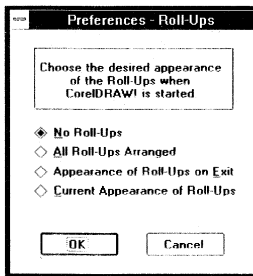
2x Zoom : Magnifies the area in the Drawing Window your cursor is pointing to by a factor of two each time you press the right mouse button. The zoomed-in area will be centered where you clicked the mouse. Double-clicking on the secondary button returns to the view you were at before the last zoom-in. Once you've reached the magnification limit your screen allows, you must double-click the secondary button, or use an option in the  tool menu to zoom out before zooming in again. See the  option in the "Viewing your work" chapter for more information.

Edit Text: Displays the Text Editing dialog box, provided a text string has been selected with either the  or  tool.

Full Screen Preview : Toggles between a full screen display of the Preview window and the normal display mode.

Node Edit : Activates the  tool.

Setting roll-up preferences



When you click Roll-Ups in the Preferences dialog box, the Roll-Ups Preferences dialog box appears. It lets you specify how you want roll-ups displayed the next time you start CorelDRAW.

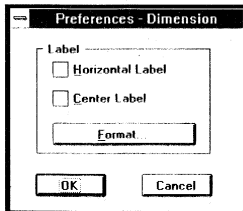
No Roll-Ups : Closes all open roll-ups when you end the current CorelDRAW session.

All Roll-Ups Arranged : Rolls up the windows and stacks them along the upper left and right corners of the Drawing Window.

Appearance of Roll-Ups on Exit : Displays the roll-ups as they appear when you end the current CorelDRAW session.

Current Appearance Of Roll-Ups : Displays the roll-ups as they appear at the time you select this option.

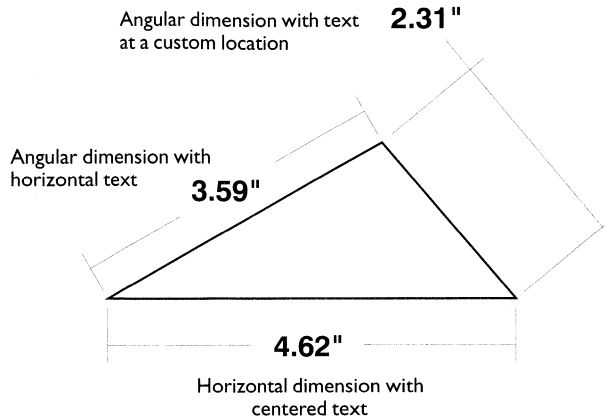
Setting dimension line preferences



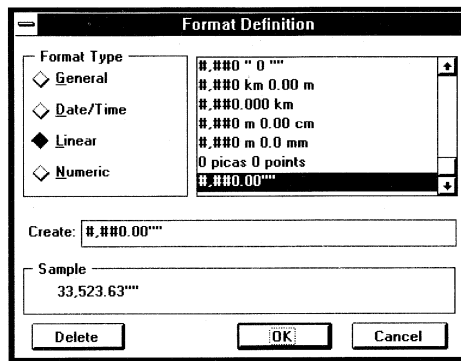
When you click Dimension in the Preferences dialog box, the Dimension Preferences dialog box appears. It lets you specify where the dimension text will be placed with respect to the dimension line.

Choosing Horizontal Label causes the dimension text to be placed such that its baseline is always horizontal, regardless of the angle of the dimension line. If you don't select this option, its baseline will be rotated to the same angle as the dimension line's angle.

Choosing Center Label causes the dimension text to be placed midway along the dimension line, provided you drag between the extension lines before your second click of the mouse. If you click outside of the extension lines, the text will be placed at the location of your second click, even with this option selected. If this option is deselected, the text is always be placed at the location of your second click. See "Drawing dimension lines" in Chapter 2 for more information.



Note that you can select the format the dimensioning numbers will take by clicking the Format button in the Preferences-Dimension dialog box. The following dialog box appears:



Select the form you want, or create a custom one in the Create text entry field. Click on OK to finalize your selection.

Customizing the CORELDRW.INI file

The CORELDRW.INI file contains additional settings which you can modify using an ASCII text editor like Windows Notepad. Here's a sample of what you can do with these settings:

- Double the size of the toolbox and color palette for easier selection on high-resolution monitors.
- Specify if and when an object being moved re-displays whenever you pause while moving.
- Specify how often backup files are created and in what directory they are stored.
- Change the default typeface and size for new text.

For more information about the contents of CORELDRW.INI file, search for "CORELDRW.INI" in the CorelDRAW online Help.

CorelDRAW allows you to create your own typefaces and symbol fonts using the CorelDRAW True Type or Adobe Type 1 Export Filter. These filters do not convert your image to a graphic file format. Instead, they allow you to directly incorporate your graphic into an Adobe Type 1 (PFB) or TrueType (TTF) font. This allows you to summon and use your graphic as a text character *within CorelDRAW*, or other Windows applications, either as part of an existing typeface, or as a member of a fully-customized typeface you have created.

You can permanently customize *any* character in *any* of the type styles supplied with CorelDRAW. Or you can create totally unique typefaces, such as your own symbol sets. Using a scanner, you could even create a typeface based on your individual handwriting. The possibilities are limited only by your imagination.

Designing characters

Sources: You can use several types of graphics to convert to type characters. Usually, you'd use either a scanned and traced image, or a graphic created directly in CorelDRAW. If you are scanning an image, you can convert the scanner's bitmap file (PCX or TIFF) to a vector image using CorelTRACE. Consult the CorelTRACE section of this manual for more information.

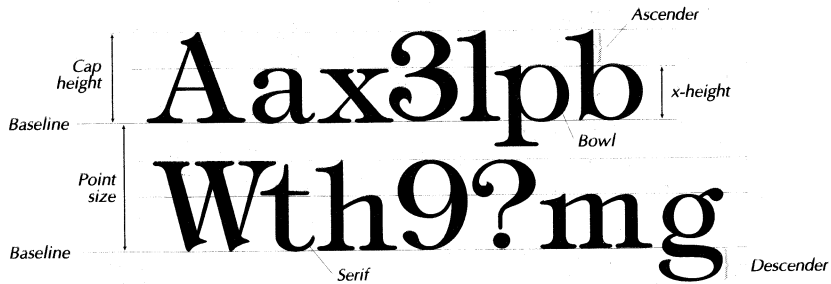
If you are scanning a graphic, a general rule is that the larger the graphic, the more accurate the final result will be. Of course, you also produce a large scanner file if you're starting with a large original, but this is not really important, since it may be deleted *after* it has been traced. A simple way to create a large, page-sized graphic for scanning from an undersized original is to enlarge the original with a photocopier until it is a reasonable size.

If you intend to trace the scanned image using CorelTRACE, keep the image size below 3000 by 3000 pixels, otherwise the files become too large for the program to handle.

Similarly, if you are creating an object in CorelDRAW for conversion to a typeface character, you should review it *before* making the conversion. The best way to judge a graphic's appearance is to print it at a decent size. Scale your graphic so that it nearly fills an 8.5" by 11" page, then print it. Make changes to the original graphic, based on the printout's appearance.

Points on typography: The subject of typography is complex and beyond the scope of this manual. If you want to create a completely new typeface, many good reference books are available on the subject. Whether you are creating or modifying a typeface, refer to the illustration overleaf for a few of the basic terms you should know.

From the diagram, it is apparent that all uppercase letters should have the same height. Similarly, lower-case characters should all have the same x-height. Ascenders and descenders should be more



or less uniform in the distance they extend from the x-height. If character heights and ratios are not uniform, the characters will look odd.

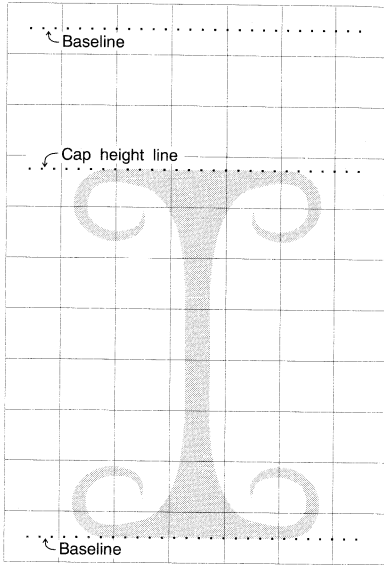
Sizing your object : The key to successful character creation is to work with a *large* object. The CorelDRAW TrueType or Adobe Type 1 export filters are sensitive to the size at which you create your type-face character. Therefore, defining an object's shape at a large size is the same as creating that typeface character at a large point size when running the conversion. When you use your new typeface character(s) at smaller sizes, the result will *generally* be very clean and accurate.

Create your object at a size suitable for exporting a 720-point character. At this size, most objects will fit neatly into an 8.5" by 11" page, making it easy for you to print and review the graphic. This is also one-third the size of CorelDRAW's upper limit of 2160.0 points for characters. If you ever use your new character at sizes approaching the maximum, the enlargement from 720 points will be a three-fold increase at the most. If the character's appearance is satisfactory at 720 points, such an enlargement should not noticeably affect the appearance. If part of your object lies outside the printing area of an 8.5" by 11" page, choose the Fit to Page option when printing. The computer will temporarily scale the graphic to fit the page.

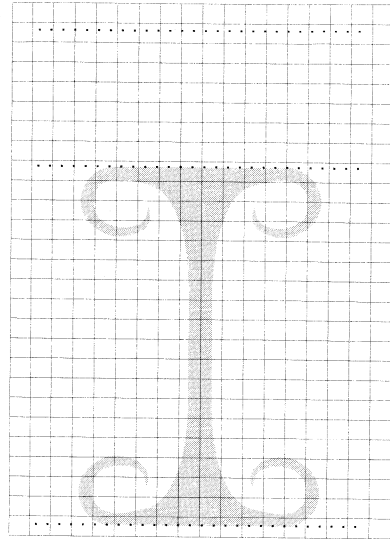
Printer limitations : To produce characters that will print as you would expect at more normal point sizes (e.g., 20 to 40 points), you must be aware of your printer's resolution. At 300 dots per inch, typical for a laser printer, a 36-point size character will be printed with a maximum vertical resolution of 150 dots, since there are 72 points in an inch. Similarly, a 12-point character, typical letter-size type, will be printed with a maximum vertical resolution of only 50 dots.

If the characters you create are elaborate and include many small, intricate curves, swirls, or segments, your printer may not be able to handle these adequately at small point sizes. Your options then are: using your characters only at larger point sizes, printing your work at higher resolution, or simplifying the characters. A Li-notronic printer can yield resolutions of 2540 dots per inch or greater. At 2540 dpi, a six-point character would be printed with a maximum vertical resolution of 212 dots. Such a printer is capable of rendering fine detail. Similarly, a dot matrix printer running at 120 dots per inch will try to render your six point character with only 10 dots vertically.

In the accompanying illustrations, a customized uppercase “I” has been overlain with grids of varying size. If you consider the “I” to be a six-point character, then each square in the grid can be thought of as a “dot” that can either be turned “on” or “off” (printed or not) by that particular printer. While this is not strictly the way printers work, the analogy is close enough to make the point.

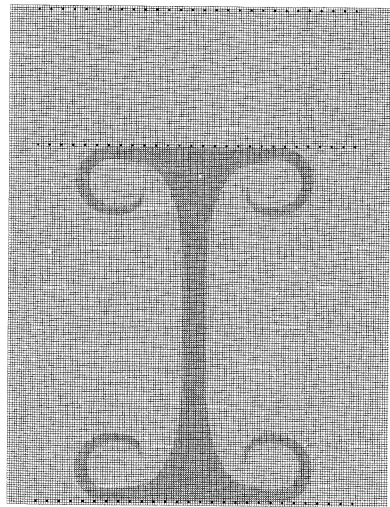
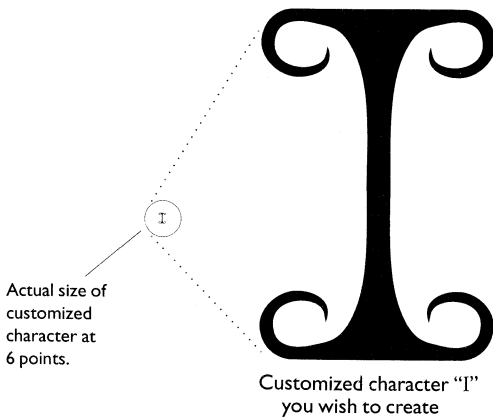


Dot matrix printer “grid” - 120 dpi



Laser printer “grid” - 300 dpi

Each square in a grid represents a “dot” the particular printer can use to try to render the character at a size of 6 points. In this analogy, squares would either be filled or not, depending on whether any part of the character lays inside of them.



Linotronic phototypesetter “grid” - 2540 dpi

You can see that the Linotronic typesetter would have no problem with this character at six points, or even smaller. However, the dot matrix printer would only be able to render a very poor approximation. Even the 300 dpi laser would give unacceptable results at this size. (At 12 points or greater, it would be satisfactory.)

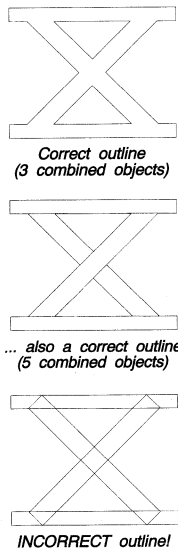
The more dots available, the sharper the printed result will be. In short, don't create a character that is too large or complex for your printer to handle.

Testing your object: You can test the suitability of an object you want to convert to a typeface by performing this test. Assume you're creating an uppercase character and size your object to a height of about 6" (its "cap height"). Save your file and print it. Use this printout for comparative purposes. Select the object and scale it down to 2% of its original size, then print it again. This approximates the printed appearance of the character at a 12-point size. Scaling it to 4% of its original size approximates 24-point type, and so on.

If the printed appearance at these smaller sizes is not suitable, simplify the character, use it only at larger point sizes, or use a higher resolution printer.

Limitations

There are a few conventions and restrictions to observe when using these filters to create a character for typefaces:



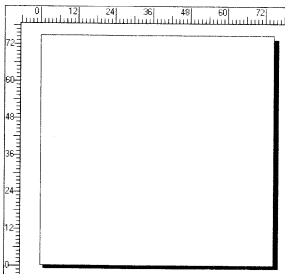
- A character that you create or modify must be a single or combined object. Multiple objects or groups cannot be successfully exported. If you attempt such an export, the procedure will be aborted without altering the typeface file. If your character consists of a number of visually separate lines or shapes, they must all be selected and *combined* (not grouped) into a single object, and they must be closed paths, before you export the character.
- You should not have any line intersections in your image. An object has to be either inside or outside another object before performing the combine or the results will probably not be acceptable. The illustration of the Roman numeral "X" shows two possible ways of properly creating such a character outline.
- A typeface font file does not contain any fill or outline color attributes, nor any information regarding line thickness. If such information is assigned to your character when you create it, it will be ignored during the typeface export operation.

Preparing your object-character

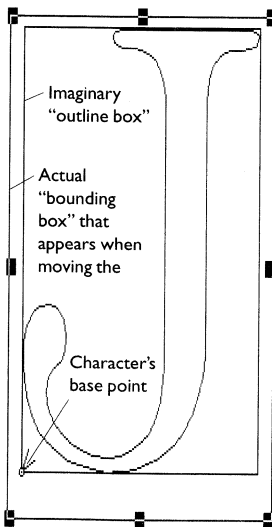
This section provides a step-by-step procedure for preparing your graphic object for conversion to a character in a TTF or AT1 typeface. The procedure may be used to change only a few characters within an existing typeface, or to build an entirely new one.

► To prepare your object-character for conversion:

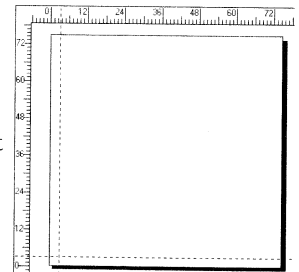
1. If the character you are creating will be added to an existing typeface, *make a copy of the existing typeface using DOS or the Windows File Manager and store it in a safe place on your hard drive*. Even better, make a copy of the existing typeface in the same directory as the original (usually WINDOWS\SYSTEM) and assign it a unique name. Use the renamed version of the typeface to export your character to. When you export to an *existing* typeface, the new character will overwrite the current definition and you may want an *unaltered* copy of this face for use in the future.
2. Create your characters at a large size. If you intend to export a number of characters, you should be consistent with their heights, otherwise they may appear odd. An easy way to ensure this is to define a certain page size and let that become the point size you're creating at. Choose Page Setup from the File menu. Click Custom for the size, then click the dimensional units until "points" is displayed. Set both the horizontal and vertical units to 750 (this gives you a page that's close to 10.5" by 10.5"). Ensure your rulers are enabled.

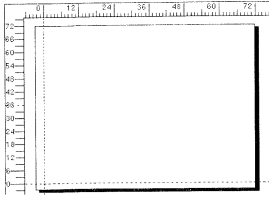


3. Set the character's base point or origin on the page. This is essential in establishing the character's (or typeface's) baseline. The base point is usually defined as the lower left corner of an imaginary rectangle that would *just* enclose the character. For the sake of this discussion, this rectangle will be referred to as the character's *outline box*. The outline box is not always the same as the character's *bounding box*, which is the dashed box that appears when moving an object or character. Notice that while the character lies entirely inside its outline box (by definition), no part of it actually has to lie on the base point. (Notice also that characters with descenders are treated differently—see Step 8.) All characters exported to a single typeface must have the same base point, the 0.0 point of the rulers. To set it, place your cursor in the top left-hand corner in the space where the rulers intersect.

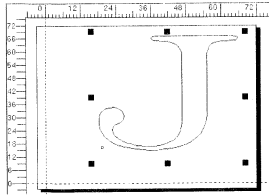


Hold down the left mouse button and drag the cursor to a point 30 points up from the bottom of the page and 30 points in from the left side. This resets the rulers so that the intersection point is their new origin, and that origin also becomes the character's base point. Alternatively, you can use the Grid Setup command under the Display menu to set the rulers very precisely.

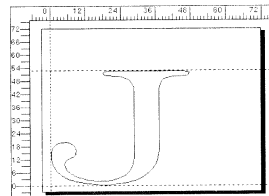




4. Set a vertical and a horizontal guideline to intersect at this point. This provides you with a visual reference and a way to precisely line up the character's outline with the base point. The horizontal line becomes the typeface's baseline. The vertical line is *generally* used to line up the leftmost character outline. This setup also leaves you with 720 points from that baseline to the top of the page. This is the point size you will be creating your characters at. You can use the Guidelines Setup command in the Display menu to set the guidelines very precisely.

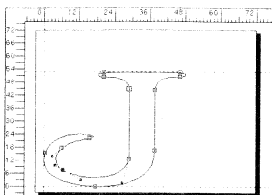



5. Consider the object you want to export as a character. It can be an existing character within one of the fonts supplied with CorelDRAW, or it can be a graphic you've scanned or created on screen. If it is a character from an existing typeface, such as the "J" in the example, then you should bring it in at the scale at which you intend to modify it. In other words, if you're going to export the characters at 720 points (as we suggest), then bring the original, unmodified character in at 720 points. This lets you maintain the proper vertical scale, unless you're creating special effects such as oversized characters or subscripts.

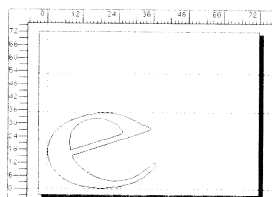


6. Select your object. Convert it to curves if it's a text character. Next, move it towards the 0,0 base point. With the Snap to Guidelines on, its bounding box will "stick" to the guidelines. Since the outline box enclosing the graphic may be smaller than the graphic's actual bounding box, you may want to deselect Snap to Guidelines. This gives you more control when placing the lowermost and leftmost object outlines with respect to the guidelines you've set.

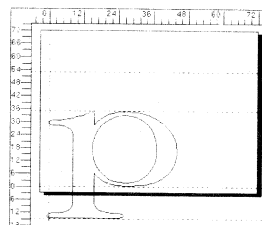
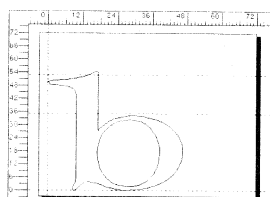
You may have noticed something a bit odd by now. While you have 720 points of vertical space between the horizontal guideline and the top of your page, the 720-point uppercase character does not go to the top of the page. Remember, a typeface's "point size" is defined as the distance from baseline to baseline between two lines of text. The height of the 720-point uppercase character you see on screen is its "cap height". The distance from the top of this character to the top of the working page is the difference between point size and cap height. It is also the interline spacing of the typeface. Bring down another horizontal guideline and place it at the top of this character. This will act as your cap height reference. Unless you're creating a special effect, all uppercase characters and lower-case case characters with ascenders should be sized to this guideline.



7. Modify the graphic as required. Remember, if it was originally a typeface character, make sure you convert it to curves. You can then use the  tool to customize its shape. Adhere to the limitations discussed earlier, especially those on intersecting lines, grouping, and combining.



8. If you've brought a lower-case character in from an existing typeface, you may want to bring down another horizontal guideline to mark the "x-height". Remember, the x-heights in a typeface should be fairly consistent, otherwise the modified characters with ascenders (e.g., "b") *generally* have the same total height as uppercase characters. If your character is lower-case with a descender, bring down another guideline to keep these consistent as well. Descenders will trail off the bottom of the working page. This is of no concern. With these characters, you do not place the lower left corner of the outline box at the base point. Instead, position the bowl or body of the character relative to the typeface's baseline and the vertical guideline, as in the example of the the letter "p".



When you are finished shaping the object, you may want to proof it by printing it. If you've followed the sizes suggested in the previous steps, you should have no problem printing on an 8.5" by 11" sheet. However, for certain wide characters (e.g., symbols, "W", "m"), part of the character may lie outside the page. To get around this, do not physically scale down your object to print it; choose Fit to Page in the Print dialog box. This temporarily scales the object to match the paper size of your printer. If the printed result is acceptable, you're ready to convert the object to a true typeface character.

Converting objects to type characters

Important: The “default character” for a font is used whenever you enter a character number for which no character has been defined in that font. Many fonts do not have characters defined for all of the available character numbers. The export filter automatically designates the first character exported to the font file as the default character. Once assigned, that character cannot be changed. You should therefore decide which character you want the default character to be (normally the “period”, #046) and then export that character first.

► To convert your graphic object to a typeface character:

1. Choose Export from the File menu.
2. From the List Files of Type box, choose either TrueType Font or Adobe Type 1 Font.
3. Do one of the following:
 - If you are creating a new typeface, type the name you want to assign to the typeface in the File Name box.
 - If you are adding a character to an existing typeface, change to the directory containing the typeface, then choose the typeface name from the list under the File Name box.
4. Choose OK.
5. Provide the required information in the Options dialog box and the Export Adobe Type 1 or TrueType dialog box. The parameters you need to specify for these are detailed below.
6. Choose OK.

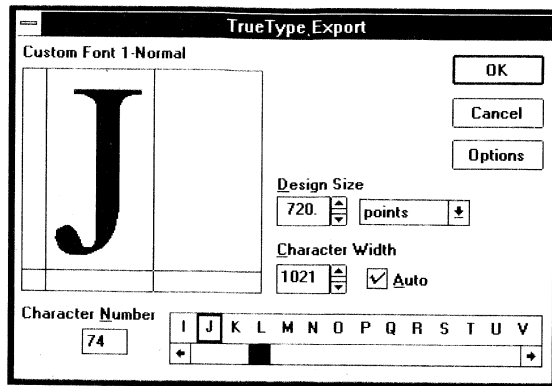
If you are updating an existing character definition, you will be prompted with a message asking if you want to overwrite this definition. If you click “Yes”, the character definition will be upgraded. Otherwise, the export will be aborted.

Using the TrueType/Adobe Type 1 Export dialog box

When you export to a new True Type Font (TTF) or Adobe Type 1 (PFB) font, the Options dialog box appears. Enter a name for your font here and click OK. You don’t have to worry about any of the options in this box for now, including the name, since you’ll get a chance to change them later. (For information on using the Options dialog box, see “Using the Options dialog box” later in this appendix.) When you click on OK in the Options dialog box, the TrueType Export dialog box appears. (Note: The same dialog box appears when you export to an Adobe Type 1 font.) If you’re exporting to an existing typeface, the Options dialog box is bypassed and you go directly to the TrueType/Type 1 dialog box detailed below.

The dialog box contains the following options, which are the same whether you’re creating TTF or PFB fonts:

Preview Window: The character is displayed in the preview window below the font name. The crosshair in the lower left corner rep-



resents the character's origin, and the vertical line to the right of the character represents its width. If you haven't enabled Auto Width (described below), you can select the character and drag to change its width.

Design Size : This is the point size at which you've created the character being exported, specified in inches or points. If you're creating a new typeface character or symbol face and followed the procedures detailed under "Preparing your object-character", then this should be set to 720 points. If you're modifying a character in an existing typeface, enter the point size value that you specified when bringing the character onto the screen. (For example, if you called in the character at 400 points, enter 400 points here.) This does not affect the other characters in the set. If you change this value, the Preview Window will be updated to reflect the change.

Character Width: This is the width of your character relative to the grid size specified when the font file was created. If you are modifying a character in an existing typeface and want to maintain the original proportions, don't change the value. Unless you're creating a special effect (e.g. oversized characters), do not deselect the Auto Width option and alter this character width variable before exporting the character. If you alter it, the character may seem disproportionate compared to other characters in that typeface. If you're creating a new typeface, either specify a Character Width, or let CorelDRAW calculate an appropriate width. If you don't like the width after examining the character in a CorelDRAW file, you can always re-export the character and adjust the width manually. At that time, deselect Auto Width, and increase or decrease the width as desired.

Auto : When enabled, this option calculates a width for the character being exported, based on its shape and design size. If you're knowledgeable in typography or have used this filter extensively enough to develop a feel for the character widths, then set the widths manually as described above. Otherwise, we suggest you choose this option when exporting a character. Its use also applies an additional 5% of the object's width to the right side of the character for inter-character spacing purposes. If you find this is too much or too little when using the character in CorelDRAW, you can always kern it manually.

Character Number : This variable is the number of the character that is currently being exported. The font export filters use the Windows 3.1 character set. Refer to your Windows 3.1 manual for the number of the character you want to export to. You can see the character in the Character List box. This display changes when using the scroll bar to choose the number. If a character does not exist in the file, it will appear gray instead of black. You can change the value by entering a new one or choosing one from the box.

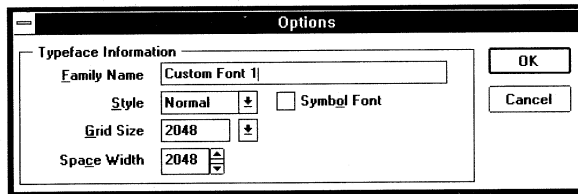
Options : Click this to open the Options dialog box, (described below.)

OK : click this to export the character. If you are changing an existing character definition, a message appears asking whether you want to overwrite this definition.

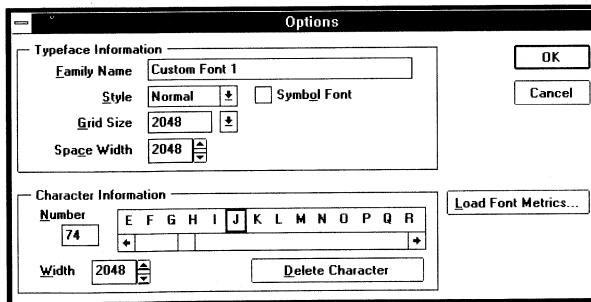
Cancel : click this to cancel the export without changing the font file.

Using the Options dialog box

When you initially select a TTF or PFB export or click Options in the TrueType Export/Adobe Type 1 Export dialog box, the Options dialog box shown below appears.



If you're exporting to a new True Type Font or Adobe Type 1 font, only the Typeface Information section of this dialog box appears. However, when you subsequently click the Options button in the TrueType Export dialog box, the expanded version of the Options dialog box shown below appears.



The Typeface Information field allows you to change the global typeface information, while the Character Information fields allow you to change information for individual characters.

The dialog box contains the following options:

Family Name: Displays the typeface name. If you're creating a new one, enter its name in this box.

Style: Displays the typeface style. You can change this field only if you're creating a new typeface and the Symbol Font box is not enabled. If the typeface already exists, one of four styles will be selected: Normal, Bold, Italic, or Bold-Italic. You must click the style that is appropriate for the character you want to export. Choose the style before specifying any other variables or names. Once selected and saved in the font, this field cannot be changed.

If you plan to export the character to more than one style, you'll have to repeat the export process for each one, after making the appropriate modifications to the object.

Symbol Font: If this box is enabled, the font is treated as a symbol font. You can change this field only if you're creating a new typeface. If you are creating a font that is based on the Windows 3.1 character set (ASCII 33-127 and ANSI 128-255) and you want that font to be available in the Typeface selection list, leave this option disabled. If you are creating a symbol file or non-standard character set that will be available on a character-by-character basis through the Symbols dialog box, enable this option.

Grid Size: This is a complex variable dealing with a number of factors within the typeface such as its granularity and certain scaling parameters. If you are exporting an object to an existing typeface, a set number appears in this field (e.g., 2048). If you're creating a new typeface and this is the first object you're placing into that face, you can enter any number. The default value is 2048. You might want to change it if you plan to use your typeface at very large point sizes. A larger grid size (e.g., 4096) will use more points to describe the character, yielding better results and more complex character descriptions. Once set, this number cannot be changed.

The industry standard for TrueType fonts is 2048. If you're creating an Adobe Type 1 font, you can't modify this value, since it's fixed at 1000.

Space Width: Specifies the width of the space character (# 32). You can experiment with different values to get the best result.

Number: Displays the currently selected character number. You can change the number by entering a new one or choosing a new one from the Character List box.

Width: Enter a new value in this box to change the selected character's width.

Delete Character: click this button to delete the selected character from the font file.

Load Font Metrics : Click here to open the Load Font Metrics dialog box, which allows you to apply the width and kerning data from an AFM file to the typeface you are modifying. Using this option should be the last step in modifying/creating your typeface. If you're going to use this option, export the final character in your modified typeface *without choosing this option*. Doing this ensures that the final character is exported to the typeface file before the width data is applied to the font. Then, re-export the final character, and this time, click Load Font Metrics. You must then choose an appropriate AFM file. This option can provide kerning and width information for each character in your typeface.

OK: If you've made any changes in this dialog box, a message will appear when you click OK asking whether you want to save the changes to the font file before returning to the Export dialog box.

Using your custom typefaces

If you followed the preceding steps, you now have a customized TrueType or Adobe Type Manager font file. To use it, close CorelDRAW and then add the font to Windows. Use the Control Panel for TrueType fonts or Adobe Type Manager for Type 1 fonts. If you exported a character to an existing typeface that you did not rename (this is not recommended, unless you made a copy of the original and stored it elsewhere), you should remove the typeface from the list of installed fonts and re-install it. If you subsequently create a text string in CorelDRAW and assign your modified typeface to it, your customized characters will appear on screen.


Special notes

Kerning : Kerning information is not encoded by this export filter unless you choose Load Font Metrics, as previously described. Since CorelDRAW allows you to do on-screen interactive kerning, it's really not required.

Hinting : The TrueType and Adobe Type 1 filters do not apply or support hinting. Therefore, the typefaces may appear rough at small sizes. You can apply hinting, however, using third-party software.

Indirect Characters : Indirect characters are composed of two or more direct characters. Primary examples of these are accented characters such as "é", which in theory can be assembled from the letter "e" and the accent character above it. However, this version of the font export filter does not support combining two or more direct characters to form an indirect character. To create characters such as "é", the full graphic must be exported exactly as you want it to appear.

This appendix includes a summary of the currently available CorelDRAW PS Textures for use with PostScript printers.

Refer to the  Tool section for a description of how to fill objects with these Textures.

For each Texture, a multitude of possibilities are available by changing the five parameters which appear in the dialog box. To give you an idea of the variety possible, we have included four different versions for each, noting the parameter settings.

Conventions

Unless otherwise stated units are per inch for frequency, thousands of an inch for thickness. 100% gray is black, 0% is white.

Transparency

Level of Transparency is indicated for each pattern. By setting the background gray to a negative number, the fill becomes transparent.

Random Patterns

Some of the patterns are generated randomly, based on the size of the object. Even the slightest change in object size can totally change the look of the pattern.

Once you have settled on an object size, you can change a random pattern by changing the “random seed” parameter.

Printing Considerations

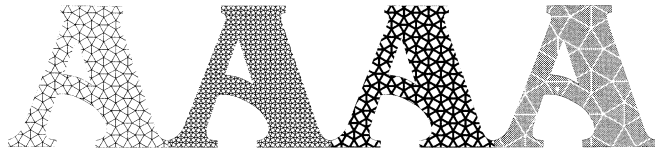
Some of these patterns are extremely complex, and will take a long time to print.

If you change the number or frequency parameters to add more objects or nodes, or increase the area to be filled, you can expect your print times to increase proportionally.

Sometimes a texture will not print, or will give unexpected results. Try just printing the filled object using the *Print Only Selected* option in the *Print* dialog box. If the Texture still doesn't print, try the default settings for that Texture. Unfortunately, because of the nature of PostScript, we cannot guarantee that all of the Textures shown will print on all PostScript devices.

Sometimes a Texture will print directly from CorelDRAW but will not print when imported into Ventura or Pagemaker. If this happens, try removing everything from the page except the EPS file. Sometimes the page is too complex to print when the EPS file is combined with the other elements on the page.

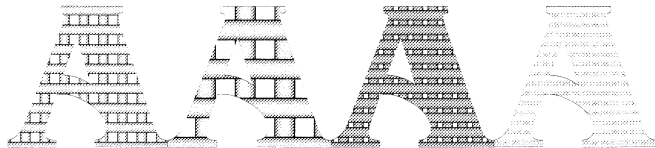
Archimedes



| | | | | |
|-----------------|-----|-----|-----|----|
| Frequency: | 8 | 20 | 8 | 3 |
| Line Width: | 5 | 5 | 20 | 10 |
| ForegroundGray: | 100 | 100 | 100 | 0 |
| BackgroundGray: | 0 | 0 | 0 | 60 |

*Transparent if BackgroundGray is negative number.

Bars



| | | | | |
|--------------|-----|-----|-----|----|
| Width: | 10 | 20 | 10 | 8 |
| Spacing(%): | 100 | 100 | 50 | 25 |
| MaximumGray: | 100 | 100 | 100 | 45 |
| MinimumGray: | 10 | 10 | 35 | 0 |

*Transparent.

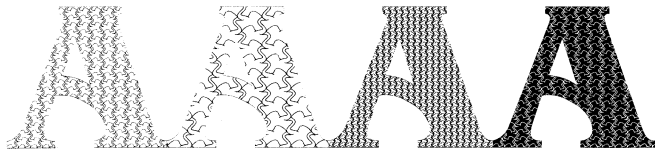
Basketweave



| | | | | |
|-----------------|-----|-----|-----|-----|
| Frequency: | 6 | 20 | 6 | 3 |
| Line Width: | 10 | 6 | 10 | 10 |
| ForegroundGray: | 100 | 100 | 100 | 30 |
| WeaveWidth(%): | 100 | 100 | 30 | 150 |

*Transparent.

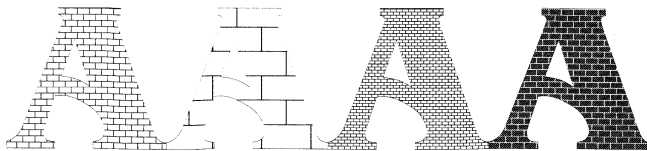
Birds



| | | | | |
|-----------------|-----|-----|-----|-----|
| Frequency: | 8 | 4 | 16 | 8 |
| Line Width: | 4 | 6 | 4 | 5 |
| ForegroundGray: | 100 | 100 | 100 | 0 |
| BackgroundGray: | 0 | 0 | 0 | 100 |

*Transparent if BackgroundGray is negative number.

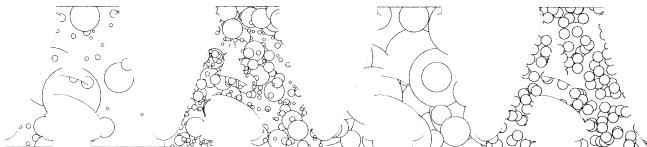
Bricks



| | | | | |
|-----------------|-----|-----|-----|----|
| Frequency: | 8 | 2 | 16 | 8 |
| Line Width: | 5 | 8 | 4 | 6 |
| ForegroundGray: | 100 | 100 | 100 | 0 |
| BackgroundGray: | 0 | 0 | 0 | 84 |

*Transparent if BackgroundGray is negative number.

Bubbles



| | | | | |
|------------------|-----|-----|-----|-----|
| Number(sq_inch): | 25 | 200 | 20 | 100 |
| MaxSize: | 300 | 100 | 300 | 50 |
| MinSize: | 10 | 10 | 100 | 50 |
| LineWidth: | 10 | 10 | 10 | 12 |
| RandomSeed: | 0 | 0 | 0 | 0 |

*Transparent space between white bubbles.

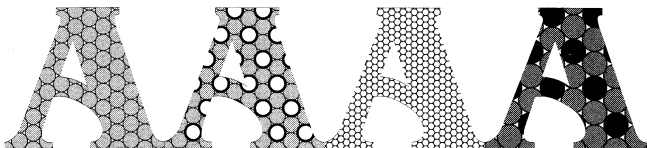
Carpet



| | | | | |
|------------------|-----|-----|-----|-----|
| Frequency(dpi): | 72 | 44 | 72 | 72 |
| Gray: | 100 | 100 | 100 | 100 |
| Gamma(box_size): | 50 | 50 | 25 | 50 |
| ModFactor: | 3 | 3 | 3 | 2 |
| Alpha: | 10 | 10 | 10 | 10 |

*Transparent.

CircleGrid



| | | | | |
|-------------|----|----|----|-----|
| Frequency: | 6 | 6 | 15 | 4 |
| LineWidth1: | 6 | 24 | 5 | 6 |
| LineWidth2: | 6 | 6 | 5 | 10 |
| Gray1: | 40 | 0 | 0 | 100 |
| Gray2: | 40 | 40 | 0 | 70 |

*Background is Transparent. Negative values for Gray1 or Gray2 are Transparent.

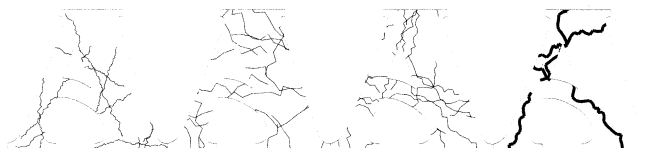
Construction



| | | | | |
|-----------------|-----|-----|-----|-----|
| Frequency: | 8 | 2 | 24 | 16 |
| Line Width: | 5 | 133 | 4 | 5 |
| ForegroundGray: | 100 | 100 | 100 | 0 |
| BackgroundGray: | 0 | 0 | 0 | 100 |

*Transparent if BackgroundGray is negative number.

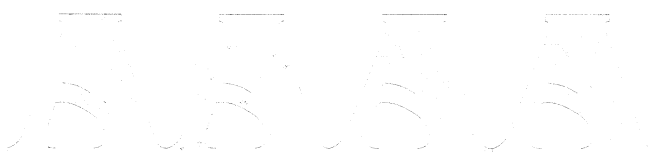
Cracks



| | | | | |
|-------------|-----|-----|-----|----|
| Number: | 20 | 20 | 30 | 5 |
| MaxLength: | 125 | 125 | 125 | 40 |
| MinLength: | 75 | 75 | 75 | 25 |
| StepLength: | 14 | 125 | 50 | 48 |
| LineWidth: | 5 | 5 | 5 | 30 |

*Transparent.

Crafters



| | | | | |
|-----------------|-----|-----|-----|-----|
| Number: | 15 | 20 | 20 | 10 |
| MaximumSize: | 300 | 100 | 500 | 500 |
| MinimumSize: | 75 | 40 | 10 | 499 |
| BackgroundGray: | 0 | 0 | 0 | 0 |
| RandomSeed: | 0 | 0 | 0 | 0 |

*Opaque.

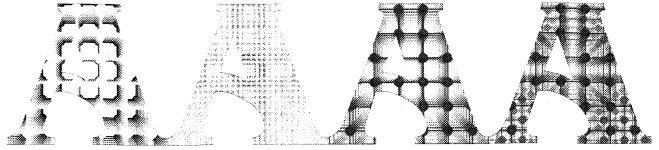
Crosshatching



| | | | | |
|--------------|----|----|----|-----|
| MaxDistance: | 75 | 25 | 50 | 150 |
| MinDistance: | 0 | 0 | 0 | 50 |
| LineWidth: | 5 | 4 | 6 | 13 |
| Angle: | 45 | 45 | 8 | 60 |
| RandomSeed: | 0 | 0 | 0 | 0 |

*Transparent. Distance measured perpendicular to the lines in .001".
Angle measured from vertical to each of the hatching lines.

CrystalLattice



| | | | | |
|-------------|-----|-----|-----|-----|
| Frequency: | 4 | 18 | 4 | 4 |
| BackGray: | 100 | 100 | 0 | 0 |
| FrontGray: | 0 | 0 | 100 | 100 |
| Scaling(%): | 75 | 75 | 60 | 15 |

*Transparent.

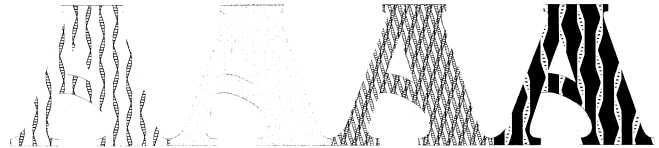
Denim



| | | | | |
|-----------------|-----|-----|----|-----|
| Frequency: | 72 | 72 | 72 | 8 |
| MaxGray: | 100 | 100 | 25 | 100 |
| MinGray: | 0 | 75 | 0 | 0 |
| HalftoneScreen: | 60 | 60 | 60 | 60 |
| RandomSeed: | 0 | 0 | 0 | 0 |

*Opaque.

DNA



| | | | | |
|-----------------|-----|-----|-----|-----|
| Frequency: | 4 | 15 | 5 | 3 |
| Line Width: | 1 | 1 | 1 | 2 |
| ForegroundGray: | 100 | 100 | 100 | 0 |
| BackgroundGray: | 0 | 0 | 0 | 100 |
| Spacing(%): | 100 | 100 | 33 | 100 |

*Transparent if BackgroundGray is negative number. Spacing(%) is relative to default. Strand of DNA are 40 wide, so 40% causes them to touch.

Fishscale



| | | | | |
|-----------------|-----|-----|-----|-----|
| Frequency: | 8 | 28 | 4 | 8 |
| LineWidth: | 5 | 4 | 10 | 7 |
| ForegroundGray: | 100 | 100 | 100 | 0 |
| BackgroundGray: | 0 | 0 | 0 | 100 |

*Transparent if BackgroundGray is negative number.

Grass



| | | | | |
|--------------|-----|-----|----|-----|
| Number: | 100 | 100 | 28 | 100 |
| MaximumSize: | 35 | 50 | 35 | 35 |
| MinimumSize: | 7 | 16 | 25 | 7 |
| Gray: | 0 | 0 | 50 | 100 |
| RandomSeed: | 0 | 0 | 0 | 0 |

*Transparent if Gray is negative number.

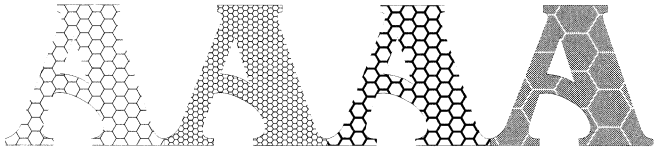
Hatching



| | | | | |
|--------------|----|----|----|-----|
| MaxDistance: | 75 | 25 | 50 | 150 |
| MinDistance: | 0 | 0 | 0 | 50 |
| LineWidth: | 5 | 4 | 6 | 13 |
| Angle: | 45 | 90 | 0 | 60 |
| RandomSeed: | 0 | 0 | 0 | 0 |

*Transparent. Distance measured perpendicular to the lines in .001".
Angle measured from vertical to the hatching line.

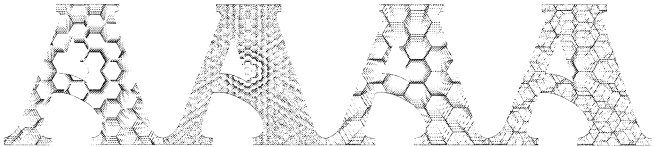
Hexagons



| | | | | |
|-----------------|-----|-----|-----|----|
| Frequency: | 8 | 20 | 8 | 3 |
| Line Width: | 5 | 5 | 20 | 10 |
| ForegroundGray: | 100 | 100 | 100 | 0 |
| BackgroundGray: | 0 | 0 | 0 | 60 |

*Transparent if BackgroundGray is negative number.

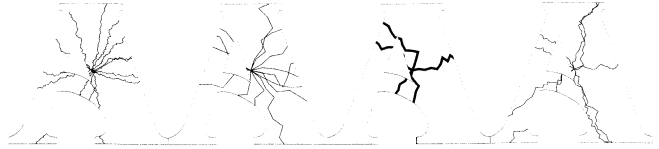
Honeycomb



| | | | | |
|-------------|-----|-----|-----|-----|
| Frequency: | 4 | 12 | 4 | 4 |
| BackGray: | 100 | 100 | 0 | 0 |
| FrontGray: | 0 | 0 | 100 | 100 |
| Scaling(%): | 75 | 75 | 60 | 15 |
| LineWidth: | 5 | 3 | 5 | 5 |

*Transparent.

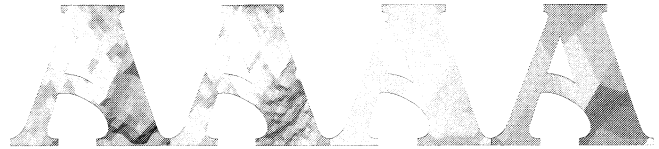
Impact



| | | | | |
|---------------|----|-----|----|----|
| LineWidth: | 5 | 5 | 24 | 5 |
| StepLength: | 15 | 125 | 65 | 35 |
| MaximumAngle: | 40 | 40 | 70 | 38 |
| MinimumAngle: | 10 | 10 | 60 | 34 |
| RandomSeed: | 0 | 0 | 0 | 0 |

*Transparent.

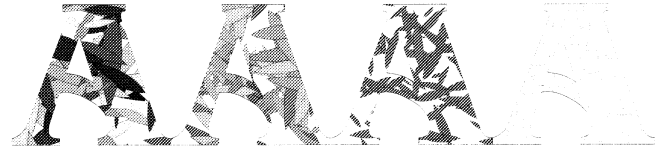
Landscape



| | | | | |
|--------------|-----|-----|-----|----|
| Depth: | 6 | 7 | 5 | 4 |
| MaximumGray: | 100 | 100 | 100 | 75 |
| MinimumGray: | 0 | 10 | 50 | 25 |
| RandomSeed: | 0 | 0 | 0 | 0 |

*Opaque. Increasing the depth by 1, increases the time to print by a factor of 4.

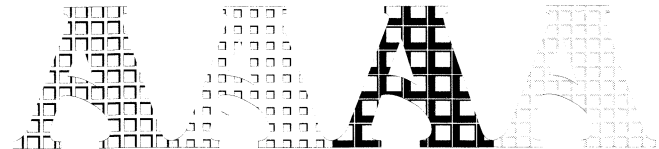
Leaves



| | | | | |
|------------------|-----|----|----|-----|
| Number(sq_inch): | 50 | 50 | 50 | 49 |
| MaximumGray: | 100 | 75 | 30 | 100 |
| MinimumGray: | 0 | 25 | 25 | 99 |
| MaximumSize: | 100 | 80 | 50 | 31 |
| MinimumSize: | 10 | 10 | 10 | 30 |

*Transparent.

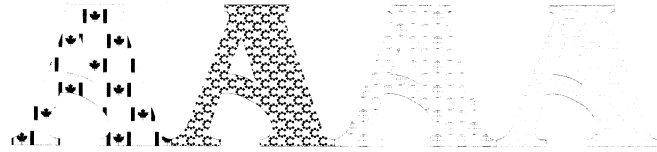
Mesh



| | | | | |
|-------------------|-----|-----|-----|----|
| Frequency: | 6 | 6 | 4 | 7 |
| SquareSize(%): | 80 | 50 | 95 | 80 |
| ShadowLowerLeft: | 3 | 3 | 30 | 0 |
| ShadowUpperRight: | 15 | 15 | 6 | 20 |
| ForegroundGray: | 100 | 100 | 100 | 40 |

*Transparent.

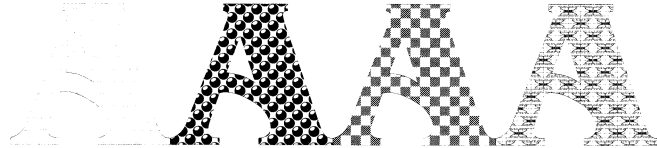
Motifs



| | | | | |
|-----------------|-----|-----|-----|-----|
| Motif: | 1 | 2 | 3 | 4 |
| Frequency: | 2 | 6 | 4 | 4 |
| Spacing(%): | 100 | 80 | 100 | 60 |
| ForegroundGray: | 100 | 100 | 100 | 100 |

*Transparent. We have defined 7 motifs. You can add your own, if you know how to program in PostScript.

More Motifs



| | | | | |
|-----------------|-----|-----|-----|-----|
| Motif: | 5 | 6 | 7 | 3 |
| Frequency: | 4 | 6 | 5 | 4 |
| Spacing(%): | 75 | 75 | 100 | 50 |
| ForegroundGray: | 100 | 100 | 75 | 100 |

*Transparent.

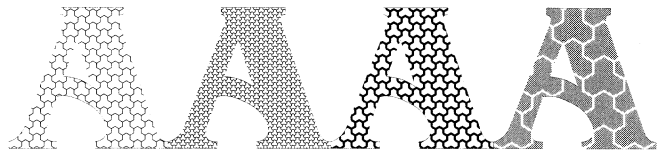
Octagons



| | | | | |
|-----------------|-----|-----|-----|----|
| Frequency: | 8 | 20 | 8 | 3 |
| Line Width: | 5 | 5 | 20 | 20 |
| ForegroundGray: | 100 | 100 | 100 | 0 |
| BackgroundGray: | 0 | 0 | 0 | 60 |

*Transparent if BackgroundGray is negative number.

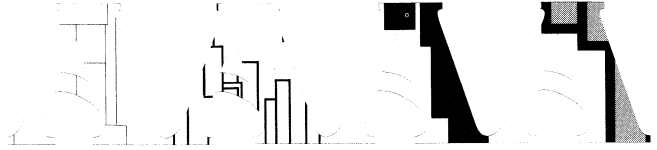
Patio



| | | | | |
|-----------------|-----|-----|-----|----|
| Frequency: | 8 | 20 | 8 | 3 |
| Line Width: | 5 | 5 | 20 | 20 |
| ForegroundGray: | 100 | 100 | 100 | 0 |
| BackgroundGray: | 0 | 0 | 0 | 60 |

*Transparent if BackgroundGray is negative number.

Rectangles



| | | | | |
|-------------|-----|----|-----|-----|
| Area: | 100 | 10 | 50 | 40 |
| Number: | 50 | 60 | 20 | 9 |
| LineWidth: | 5 | 20 | 5 | 100 |
| Gray: | 0 | 0 | 100 | 50 |
| RandomSeed: | 0 | 0 | 0 | 0 |

*Transparent space between opaque rectangles.

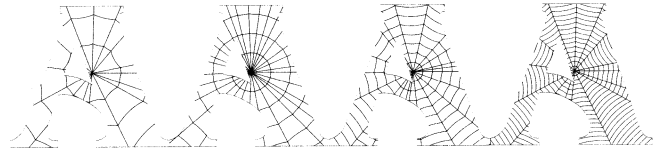
Reptiles



| | | | | |
|------------|----|---|-----|-----|
| Frequency: | 4 | 5 | 4 | 10 |
| Gray1: | 60 | 0 | 100 | 100 |
| Gray2: | 30 | 0 | 60 | 50 |
| Gray3: | 0 | 0 | 30 | 0 |
| LineWidth: | 8 | 8 | 6 | 2 |

*Gray1 and Gray2 are transparent if they're negative numbers. Gray3 is Opaque.

SpiderWeb



| | | | | |
|---------------|-----|-----|-----|----|
| LineWidth: | 5 | 5 | 5 | 4 |
| Separation: | 300 | 200 | 100 | 50 |
| MaximumAngle: | 40 | 18 | 32 | 40 |
| MinimumAngle: | 10 | 7 | 6 | 10 |
| RandomSeed: | 0 | 0 | 0 | 0 |

*Transparent.

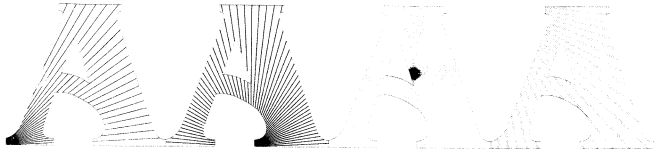
Spirals



| | | | | |
|-----------------|-----|-----|-----|-----|
| Size: | 150 | 150 | 50 | 100 |
| LineWidth: | 5 | 25 | 5 | 12 |
| ForegroundGray: | 100 | 70 | 100 | 100 |
| BackgroundGray: | 0 | 0 | 0 | 100 |

*Transparent if BackgroundGray is negative number.

Spokes

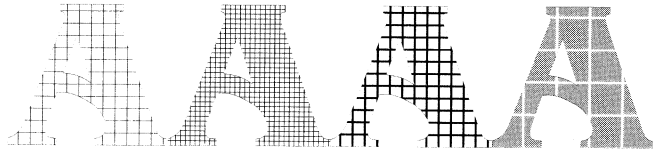


| | | | | |
|-----------------|-----|-----|-----|-----|
| Number: | 120 | 120 | 120 | 100 |
| Line Width: | 5 | 7 | 1 | 25 |
| Horizontal: | 0 | 50 | 50 | 0 |
| Vertical: | 0 | 0 | 50 | 100 |
| ForegroundGray: | 100 | 100 | 100 | 35 |

*Transparent. Number refers to number of spokes in complete 360° circle.

Horizontal and Vertical define center point as a percentage of object bounding box.

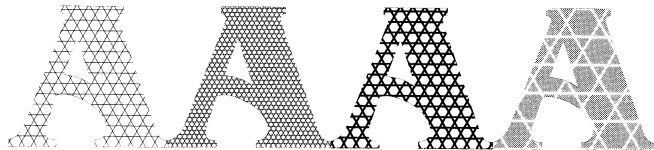
Squares



| | | | | |
|-----------------|-----|-----|-----|----|
| Frequency: | 8 | 20 | 8 | 3 |
| LineWidth: | 5 | 5 | 20 | 20 |
| ForegroundGray: | 100 | 100 | 100 | 0 |
| BackgroundGray: | 0 | 0 | 0 | 60 |

*Transparent if BackgroundGray is negative number.

Star of David



| | | | | |
|-----------------|-----|-----|-----|----|
| Frequency: | 8 | 20 | 8 | 3 |
| Line Width: | 5 | 5 | 20 | 20 |
| ForegroundGray: | 100 | 100 | 100 | 0 |
| BackgroundGray: | 0 | 0 | 0 | 60 |

*Transparent if BackgroundGray is negative number.

Stars



| | | | | |
|--------------|-----|-----|-----|-----|
| Number: | 100 | 40 | 100 | 30 |
| MaximumSize: | 300 | 300 | 200 | 150 |
| MinimumSize: | 3 | 100 | 100 | 150 |
| RandomSeed: | 0 | 0 | 0 | 0 |

*Opaque. Size is in units of .001". Number is per square inch.

StarShapes



| | | | | |
|------------|-----|-----|-----|----|
| Points: | 5 | 5 | 9 | 4 |
| Frequency: | 2 | 10 | 4 | 3 |
| Spacing: | 100 | 80 | 100 | 60 |
| Angle: | 36 | 36 | 60 | 36 |
| Gray: | 100 | 100 | 100 | 70 |

*Transparent. To create regular polygons with n Points use Angle = $180 - (360/n)$. Stars have Angle = $180 - (720/n)$. In general, to join each vertex to the one x over from it, use Angle = $180 - (360x/n)$

StoneWall



| | | | | |
|--------------|-----|----|-----|-----|
| Frequency: | 15 | 20 | 5 | 12 |
| MaximumGray: | 100 | 80 | 100 | 100 |
| MinimumGray: | 0 | 30 | 0 | 50 |
| LineWidth: | 5 | 0 | 20 | 5 |

Opaque.

Text



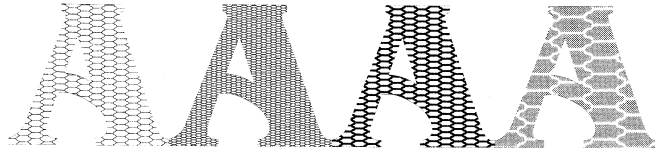
| | | | | |
|-----------------|----|----|----|----|
| Font: | 35 | 19 | 13 | 35 |
| Character: | 43 | 36 | 63 | 40 |
| Frequency: | 15 | 12 | 10 | 15 |
| Spacing: | 40 | 60 | 40 | 40 |
| BackgroundGray: | 0 | 0 | 0 | 35 |

*Transparent if BackgroundGray is negative number.

Character is ASCII character code (eg. 67=C). Font numbering as follows:

- 1=Times-Roman, 2=Times-Italic, 3=Times-Bold, 4=Times-BoldItalic,
- 5=Helvetica, 6=Helvetica-Oblique, 7=Helvetica-Bold,
- 8=Helvetica-BoldOblique, 9=Courier, 10=Courier-Oblique
- 11=Courier-Bold, 12=Courier-BoldOblique, 13=Symbol, 14=AvantGarde-Book,
- 15=AvantGarde-BookOblique, 16=AvantGarde-Demi,
- 17=AvantGarde-DemiOblique, 18=Bookman-Demi, 19=Bookman-DemiItalic,
- 20=Bookman-Light, 21=Bookman-LightItalic, 22=Helvetica-Narrow,
- 23=Helvetica-Narrow-Bold, 24=Helvetica-Narrow-BoldOblique, 25=Helvetica-Narrow-Oblique,
- 26=NewCenturySchlbk-Roman, 27=NewCenturySchlbk-Bold,
- 28=NewCenturySchlbk-Italic, 29=NewCenturySchlbk-BoldItalic,
- 30=Palatino-Roman, 31=Palatino-Bold, 32=Palatino-Italic, 33=Palatino-BoldItalic,
- 34=ZapfChancery-MediumItalic, 35=ZapfDingbats.
- 33=Palatino-BoldItalic, 34=ZapfChancery-MediumItalic,
- 35=ZapfDingbats.

Tiles



| | | | | |
|-----------------|-----|-----|-----|----|
| Frequency: | 8 | 20 | 8 | 3 |
| Line Width: | 5 | 5 | 20 | 20 |
| ForegroundGray: | 100 | 100 | 100 | 0 |
| BackgroundGray: | 0 | 0 | 0 | 60 |

*Transparent if BackgroundGray is negative number.

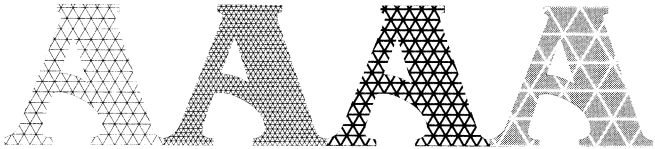
TreeRings



| | | | | |
|-----------------|-----|-----|----|----|
| MaxDistance: | 150 | 100 | 30 | 51 |
| MinDistance: | 0 | 40 | 0 | 50 |
| Line Width: | 5 | 35 | 5 | 5 |
| BackgroundGray: | 0 | 0 | 0 | 33 |
| RandomSeed: | 0 | 0 | 0 | 0 |

*Transparent if BackgroundGray is negative number. Distance is measured between adjacent rings.

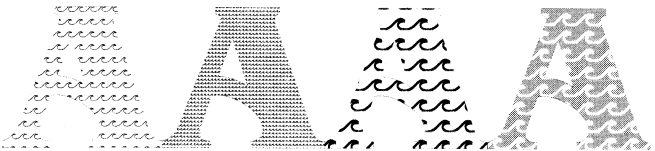
Triangle



| | | | | |
|-----------------|-----|-----|-----|----|
| Frequency: | 8 | 20 | 8 | 3 |
| Line Width: | 5 | 5 | 20 | 20 |
| ForegroundGray: | 100 | 100 | 100 | 0 |
| BackgroundGray: | 0 | 0 | 0 | 60 |

*Transparent if BackgroundGray is negative number.

Waves




| | | | | |
|-----------------|-----|-----|-----|----|
| Frequency: | 6 | 20 | 3 | 3 |
| Line Width: | 5 | 5 | 20 | 20 |
| ForegroundGray: | 100 | 100 | 100 | 0 |
| BackgroundGray: | 0 | 0 | 0 | 60 |
| Spacing: | 100 | 100 | 80 | 70 |

*Transparent if BackgroundGray is negative number.

CorelDRAW is loaded with features that allow you to create drawings with precision. For example, you can zoom in on a certain part of your drawing to fine tune it at a magnified view, use the rulers and guidelines to precisely align objects, and use the CTRL key to constrain the movement of the mouse for certain operations. This section reviews the program's main precision drawing features, and points to where they're detailed in this manual.

Zooming

You can zoom in on objects to fine tune them at a magnified view using the  tool. Once your view is magnified, you can perform any of CorelDRAW's operations to the magnified object(s). See Chapter 5, "Viewing Your Work" for more details.

Nudging

The cursor keys on your keyboard allow you to move or "nudge" selected objects in the direction indicated by the arrow on the key. If you hold a cursor key down, the object will move in continuous steps. The value you enter in the Nudge field of the Preferences dialog box determines how far the object moves when the key is pressed. If, for example, you enter a value as low as 0.1 millimeters, you can move any object in your drawing up, down, left, or right as little as 0.1 millimeter at a time. While you can also move objects using the mouse, it's difficult to match the degree of precision the nudging feature provides. For more information, see Appendix A, "Customizing CorelDRAW."

Using the rulers

When you choose Show Rulers from the Display menu, the rulers appear at the edges of the Drawing Window. A dotted line in each ruler follows your current cursor position. As you scroll the Drawing Window using the scroll bar thumbs, the rulers move to reflect your position on the page. The unit of measure the rulers use are the current Grid Frequency units. You can change them by choosing Grid Setup from the Layout menu and entering a value in the Grid Frequency field. You can also specify the grid origin by entering a value in the Grid Origin field. It determines the location of the zero points on the rulers.

You can measure with great accuracy by moving the zero points on the ruler to the location you're measuring from. To do this, you use the ruler crosshairs. The crosshairs are useful for checking object alignment.

If you click on the rulers while holding down the Shift key, you can drag them to any location on the page. For more information, see "Using rulers, grids, guidelines, and guide objects" in Chapter 10.

Using the grid

When you save your drawing, the grid settings are saved with it. This ensures that objects are correctly aligned when the file is opened later. If you change the grid settings, only the location of the grid lines change. Objects retain their position even if they don't line up with the new grid line positions.

When you have the grid lines showing, you can use CorelDRAW's snapping feature (described later in this section) to snap objects to the grid.

For a detailed discussion of the rulers and crosshairs, turn to Chapter 10, "Arranging Objects."

Using the Guidelines

Another way to align objects is by using the guidelines. These are non-printing lines that you can place anywhere in your working area. You can place an infinite number of guidelines in your Drawing Window. (You cannot, however, save a drawing which contains only guidelines.) When you choose Guidelines Setup from the Layout menu, the dialog box that appears lets you specify where you want the guidelines placed. When the guidelines are enabled, you can use CorelDRAW's snapping feature (described below) to snap objects to them. For a complete discussion on how to use the guidelines, turn to Chapter 10, "Arranging Objects."

Snapping

CorelDRAW's snapping feature is perhaps the most powerful precision drawing feature. You can "snap", or perfectly align, objects to the grid, the guidelines, and to other objects. Snapping to objects is useful if you want to draw at an exact location, move a specified distance, align horizontally or vertically, or space or size equally.

When Snap To Grid is enabled, it forces your cursor to stay on the grid points. Similarly, Snap to Guidelines forces your cursor to stay on the guidelines. When the Snap to Objects option is enabled, objects snap to the snap points of other objects. For a complete discussion of the snapping feature, see Chapter 10, "Arranging Objects."

Using layers

You can draw objects on the Guides layer and have objects on other layers "snap" to them for precise alignment. You might want to use this feature to create a polar grid consisting of a series of evenly-spaced concentric circles with lines radiating from the center.

To access the Guides layer, choose Layers Roll-Up from the Layout menu. For a complete discussion of the layers feature, turn to Chapter 10, "Arranging Objects."

Auto-dimensioning

The auto-dimensioning tool lets you measure objects, as well as draw objects of a specified dimension. Used in conjunction with the Snap to Objects feature, you can snap objects to the dimension line to ensure precise measurement. Refer to “Drawing dimension lines” in Chapter 2 for more information.

Cloning

Cloning ensures that all changes, including color, shading, and dimension, that are applied to a Master object are also applied to the clone. Refer to Chapter 4, “Moving, Copying, and Deleting Objects” for more information on cloning.

Using Styles

As with cloning, Styles allow you to apply attributes to objects consistently. After applying attributes to an object, you can create a Style for that set of attributes and apply the Style to other objects. See Chapter 14, “Using Styles” for more information.

Using the Constrain key (Ctrl)

The Ctrl key constrains many of CorelDRAW’s shaping, sizing, and moving operations. Here are some of the ways in which you can use the Ctrl key.

- Holding down the Ctrl key while drawing a straight line, constrains it to a perfectly straight horizontal or vertical line, or to an angle which is a multiple of 15°. You can change this angle through the Preferences command on the Special menu.
- When drawing curves in Bézier mode, holding down the Ctrl key as you position the control points, forces them to move in 15° increments. To change this angle, use the Preferences command in the Special menu.
- Holding down the Ctrl key while drawing a rectangle, forces it to be a square. Holding down the Ctrl and Shift keys while drawing draws a square from the center out.
- Holding down the Ctrl key while drawing an ellipse, forces it to be circular. Holding down the Ctrl and Shift keys while drawing draws a circle from the center out.
- Holding down the Ctrl key when drawing an arc or a pie wedge, constrains its angle to 15° increments. To change this angle, use the Preferences command in the Special menu.
- Holding down the Ctrl key while resizing the pattern tiles of a Two-color or Full-color pattern, constrains the tile size to its original aspect ratio.
- Holding down the Ctrl key while stretching or scaling an object, constrains the operation to increments of 100% of the object size. This gives you a quick way of creating a perfect reflection of an object.

- Holding down the Ctrl key while dragging one of the side handles across an object, constrains your action to a perfect reflection.
- Holding down the Ctrl key down while rotating or skewing an object, constrains the motion to 15° increments. You can change this angle with the Curves command in the Preferences dialog box.
- Holding down the Ctrl key while dragging characters of text constrains them to the nearest baseline, even when they are rotated. This ensures that there are no accidental vertical offsets in any of your lines of text.

Reference Books

Following is a list of books on graphic design and color reproduction. If your local library or bookstore doesn't have a particular publication, try contacting the publisher at the address given.

Color and Its Reproduction

Gary G. Field: Graphic Arts Technical Foundation
If you're looking for an authoritative book on color theory and reproduction this is it.
4615 Forbes Avenue,
Pittsburgh, Pennsylvania, 15213-3796 U.S.A.
Phone: 412-621-6941

Digital Color Prepress, Vols 1 & 2

AGFA Corporation
Prepress Education Resources
An excellent industry piece on color printing theory and techniques.
P.O. 7917
Mt. Prospect, Illinois 60056-7917
1-800-395-7007

Pocket Guide to Color Reproduction: Communication and Control

Miles Southworth: Graphic Arts Publishing Company,
2nd ed., 1987
This slim volume covers the basics of color separation. *Color Separation Techniques*, a text book by the same author, explores the subject in more detail.
3100 Bronson Hill Road
Livonia, New York, 14487 U.S.A.
Phone: 716-346-2776

Pocket Pal

Pocket Pal, 1989
Since it first appeared over fifty years ago, this paperback has become the definitive introduction to graphic arts and production techniques.
P.O. Box 100
Church Street Station
New York, New York, 10008-0100 U.S.A.
Phone: 212-431-5222

Principles of Color Proofing

Michael H. Bruno: GAMA (also know as Type World), 1986
Though it deals primarily with color prepress proofing methods, this book is also worth consulting for an overview of color theory and printing.
P.O. Box 170
Salem, New Hampshire, 03079 U.S.A.
Phone: 603-898-2822

The Print Production Handbook

David Bann: North Light, 1985
An indispensable reference guide that deals with all aspects of offset printing.
1507 Dana Avenue
Cincinnati, Ohio, 45207
Phone: 513-531-2222 in the U.S. / 416-293-1911 in Canada
(McGraw Hill Publishers)

Third Party books on CorelDRAW

Following list books dealing with CorelDRAW 3.0. Look for new third party books on CorelDRAW 4 in the near future. If your bookstore doesn't have a particular publication, try contacting the publisher at the address given.

CorelDRAW 3.0 Made Easy

Matthews & Ihrig
Osbourne-McGraw Hill Publishers
2600 10th Street
Berkeley, California, 94710, U.S.A.
Phone: 800-227-0900

CorelDRAW 3.0 Simple et Rapide

Annie Tonneau
Edition Logique
P.O. Box 10, Station D
Montreal, Quebec, Canada
H3K 3B9
Phone: 514-933-1299

CorelDRAW How-To Reference Guide

Bezaire, Youngman, and Christianson
Association of Corel Artists and Designers
2912 3rd Street, Suite 4
Santa Monica, California, 90405 U.S.A.
Phone: 310-452-5637

CorelDRAW Instant Reference

Gordon Padwick
Sybex Inc. 2021 Challenger Drive
Alameda, California 94501 U.S.A.
Phone: 510-523-8233

CoreIDRAW Quick & Easy

Robin Merrin
Sybex Inc. 2021 Challenger Drive
Alameda, California 94501 U.S.A.
Phone: 510-523-8233

CoreIDRAW Running Start

Len Gilbert
Sybex Inc. 2021 Challenger Drive
Alameda, California 94501 U.S.A.
Phone: 510-523-8233

Illustrating CoreIDRAW

Bill Harrell
Wordware Publishing
1506 Capital Avenue
Plano, Texas 75074 U.S.A.
Phone: 214-423-0090

Inside CoreIDRAW

Daniel Gray and Steve Shubitz
New Riders Publishing
1171 N. College Avenue, Suite 140
Carmel, Indiana 46032 U.S.A.

Introduction to CoreIDRAW 3.0

Bernice Taylor
Wm. C. Brown Publishing
2460 Kerper Blvd
Debuque, Iowa 52001 U.S.A.
Phone: 319-588-1451

Learn CoreIDRAW in a Day

Ed Paulsen
Wordware Publishing
1506 Capital Avenue
Plano, Texas 75074 U.S.A.
Phone: 214-423-0090

Looking Good With CoreIDRAW

Nemoy and Aiken
Ventana Press
P.O. Box 2468
Chapel Hill, North Carolina 27515 U.S.A.
Phone: 919-942-0220

Mastering CoreIDRAW 3

Dickman et al
Peachpit Press
2414 Sixth St.
Berkeley, California 94710 U.S.A.
Phone: 510-548-4393

Power of CorelDRAW

Jim Karney
MIS Press
115 West 18th Street
New York, New York 10011 U.S.A.
Phone: 212-886-9293

Teach Yourself CorelDRAW

Maxine Iritz
MIS Press
115 West 18th Street
New York, New York 10011 U.S.A.
Phone: 212-886-9293

Quick Reference Guide to CorelDRAW 3.0

Arnold Rosen
Wm. C. Brown Publishing
2460 Kerper Blvd
Debuque, Iowa 52001 U.S.A.
Phone: 319-588-1451

Periodicals

Following is a list of periodicals dealing with both Corel-specific and general topics on electronic publishing. If your bookstore or library doesn't have a particular publication, try contacting the publisher at the address given.

Corel Magazine

Ariel Communications
12710 Research Blvd.,
Suite 250
Austin, Texas, 78759 U.S.A.
Phone: 512-250-1700
Fax: 512-250-1016

Mastering CorelDRAW

Kazak Communications
16 Ottawa St.
Toronto, Ontario, M4T 2B6
Phone: 416-924-0759
Fax: 416-924-4875
CompuServe: 70730,2265

Corelation

Association of Corel Artists & Designers
Membership Office
1309 Riverside Dr.
Burbank, California, 91506 U.S.A.
Phone: 818-563-2223
Fax: 818-955-5867

CorelDRAW 4 comes with everything you need to transform your images into brilliant 35mm slides, transparencies, prints, or posters. Instead of sending your drawings to the printer, you create a color PostScript® print file that can be imaged at any Autographix center. When you have created the necessary PostScript print files, use the ToAGX- Windows communications utility to create a work order, which you can then send to Autographix either by modem or diskette.

The Autographix center converts the files into color slides, transparencies, prints, or posters and sends them back to you, ready for presentation. A complete list of Autographix Presentation Partners is enclosed for your convenience. If you have any questions about the Autographix Slide Service, call your local Presentation Partner or the Autographix Customer Support line at (800) 548-8558 x 6440 or (617) 221-6440.

Installing the Autographix Slide Service Option

The Autographix Slide Service option can be installed during a Full Install or Custom Install. If you have already installed CorelDRAW 4, run Setup and choose Custom Install. Choose Autographix Slide Service on the second Setup screen. The Autographix printer description (Autographix 4.1) and communication software (TOAGX-Windows) is copied to a subdirectory \AGRAPHIX of the installation path you specified. For example, C:\CORELDRW\AGRAPHIX.

Documentation

Information on how to use the Autographix Slide Service option, including page setup, printing, and ordering instructions, is in CorelDRAW's online Help. Search for "autographix" in the Search box of the main Help screen. For instructions on how to use the online Help, refer to "Using Help" in the introduction of the CorelDRAW section of this book.

Autographix Presentation Partner Directory

| | |
|---------------|---|
| California | Los Angeles - Autographix (310) 826-1666 Orange County - Slide Master (714) 541-5753 San Francisco - Chartmasters (415) 421-6591 |
| Connecticut | Norwalk - Visual Design Group (203) 838-3700 |
| Florida | Orlando - Media Design Group (407) 628-1755 or (800) 683-7543 |
| Illinois | Chicago (Downtown) - SOS Imaging (312) 649 9504 Chicago (O'Hare) - Autographix (708) 297-8660 |
| Maryland | Rockville - EPI Communications (301) 230-2474 |
| Massachusetts | Burlington - Autographix (617) 272-9000 or (800) 548-8558 |
| Michigan | Detroit - ICOM, Inc. (313) 356-8500 or (800) 274-2771 |
| New York | New York City - Visual International (212) 571-0320 |
| Ohio | Cleveland - EDCOM Productions (216) 261-3222 |
| Pennsylvania | Philadelphia - Visual International (212) 571-0320 |
| Tennessee | Memphis - Autographix (901) 367-0283 |
| Texas | Dallas/Fort Worth - American Images (817) 963-5600 or (800) 766-2324 Houston - Ashford AutoImaging (713) 462-3358 or (800) 962-4875 |
| Washington | Seattle - Pacific Color (206) 524-7200 |
| Canada | Montreal - The Creative Imaging Company (514) 875-8230 |
| Australia | Sydney - Computer Slide Centre (02) 261-4633 |

»Note:

*Call Autographix
Customer Support
for an updated
directory of
Presentation
Partners at (800)
548-8558 ext.
6440 or (617)
221-6440.*

SECTION

2



COREL **PHOTO-PAINT**

CHAPTER

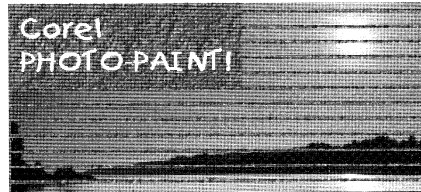
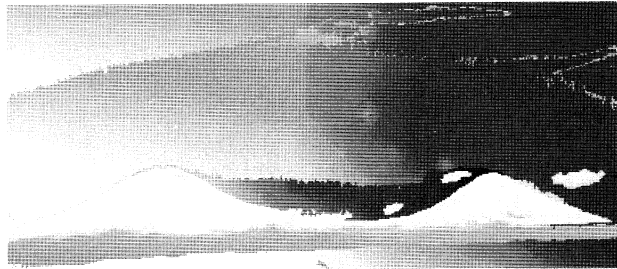
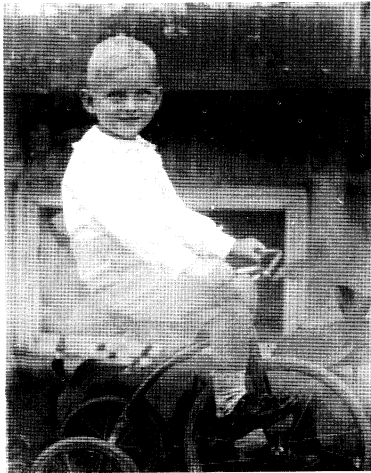
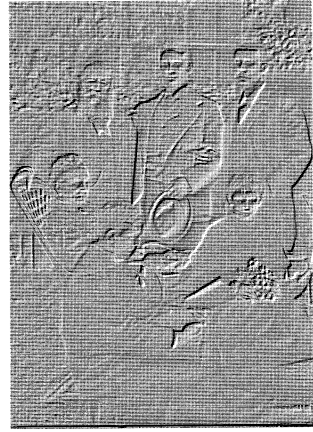
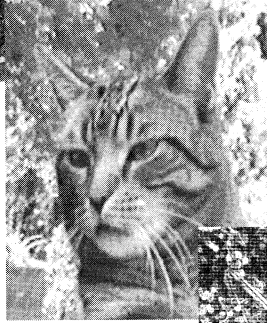
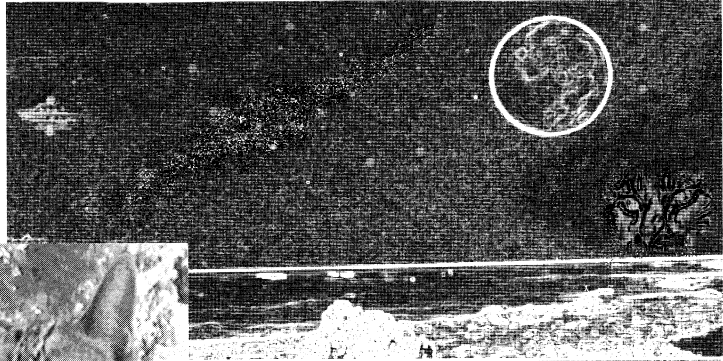
1

Introduction

CorelPHOTO-PAINT combines impressive painting tools with powerful photo-retouching capabilities, allowing you to produce paintings and photo-realistic images for all your presentations, brochures, and documents.

CorelPHOTO-PAINT has new prepress and calibration features that allow you to adjust your images before sending them out to service bureaus for reproduction. Image and special effects filters are available to add subtle enhancements or dramatic impact to new paintings or images acquired from external devices such as scanners and video boards. Tool, Fill, Canvas, and Color Selection Roll-Ups provide fast, accessible, and convenient control of tools, fills and colors. Object linking and embedding (OLE) is supported with CorelPHOTO-PAINT acting as a server.

During setup, a CorelPHOTO-PAINT icon was created in your Program Manager group (default name: Corel Graphics). To start the program, run Windows then double-click the CorelPHOTO-PAINT icon in your Corel Graphics group.



The CorelPHOTO-PAINT screen

The CorelPHOTO-PAINT screen consists of many components. You can open up to eight separate files at the same time and create up to twenty multiple copies with the Window Duplicate command. If your picture is larger than the area you can see, use the Hand tool or the scroll bars to view different areas. Zoom out to see the entire picture.

Use the Calibrate command in the Display menu to adjust gamma. This affects how an image appears on the monitor. Click Optimized Dithering in the Display menu to improve how colors are simulated on-screen. Images will look better at higher display resolutions.

Command menus

Click the tool bar control to customize tool layout

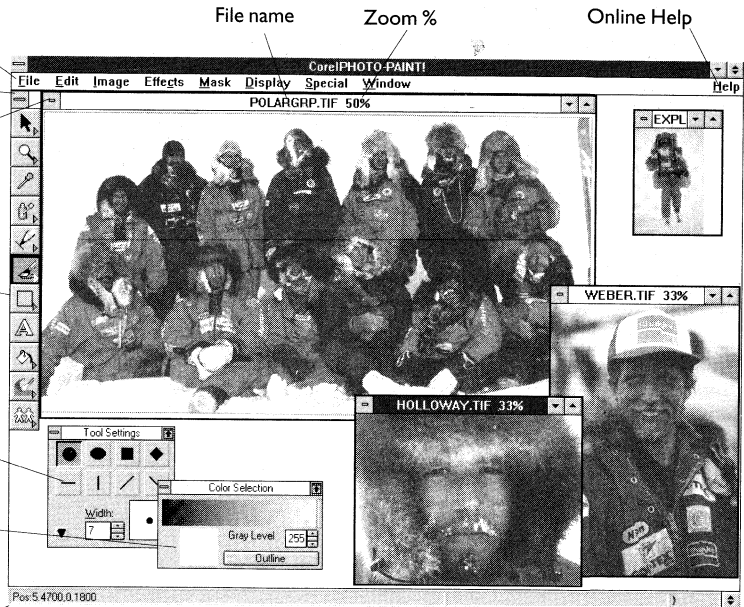
Click the Control menu button to enable window controls, and display picture information

Default tool box for selecting tools

Tool Settings Roll-Up for controlling all brush and tool parameters

Color Selection Roll-Up for choosing palettes and specifying color parameters

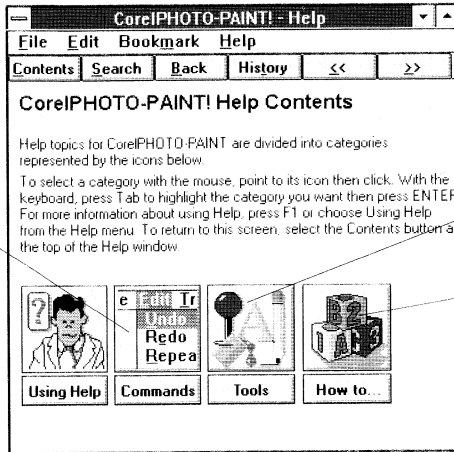
Help bar displays information about the pointer's position, a tool, or command



Using online Help

To use Help in CorelPHOTO-PAINT, click the Help menu and choose the topic of your choice, or press F1 for context sensitive help when a dialog box is open. Choose Contents from the menu to display the following Help screen. Click the right mouse button over any tool to display the Help topic for that tool.

Click Commands to display a list of all the menu commands



Click Tools to display information on tool function and use

Click How to... to display a list of topics with step-by-step instructions for different CorelPHOTO-PAINT procedures

Displaying tools

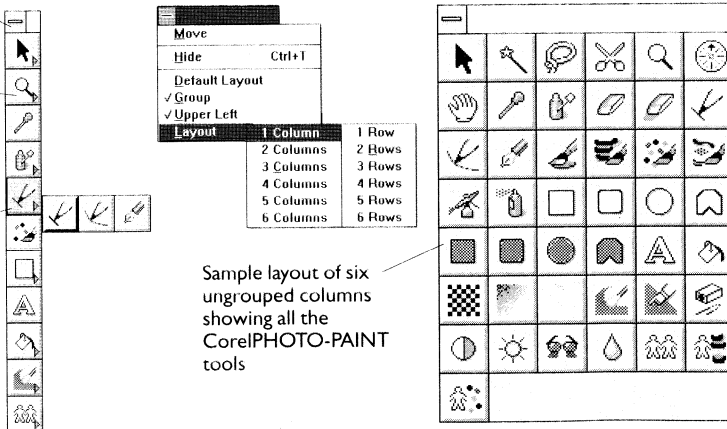
Use the toolbox Control menu to move or hide the toolbox. Customize the appearance of the toolbox with the Layout options. All the tools can be displayed in rows or columns, or grouped by function.

The Tool Settings Roll-Up in the Display menu controls tool shape, size, and effects. Click Toolbox in the Display menu to hide or show the toolbox.

Click the control bar to access the toolbox layout options

Default toolbox layout. Buttons with a small triangle in the corner have more tools associated with them

Click and hold the left mouse button on a tool about half a second to see a flyout of related tools



Sample layout of six ungrouped columns showing all the CorelPHOTO-PAINT tools

Using roll-ups

Roll-ups contain many of the controls found in dialog boxes: command buttons, text boxes, drop-down list boxes and so on. Unlike most dialog boxes, Roll-ups remain open after you apply the selected options. This lets you experiment with different options without having to reopen a dialog box each time. The CorelPHOTO-PAINT Roll-Ups are located in the Display menu.

Adjusting tool settings

Use the Tool Settings Roll-Up to control shape, width, and many brush and tool effects depending on the type of tool that is selected. Set the Edge to Soft to produce strokes with soft edges. Set the Edge to Medium or Hard for sharper edges. Tool settings are specific to the selected tool. This allows you to alternate between tools without having to change settings.

The screenshot shows the 'Tool Settings' roll-up window. It features a grid of tool icons at the top, a 'Width' control with a numeric input set to 11, and several sliders and dropdown menus for 'Edge', 'Density', 'Transparency', 'Fade Out', 'Spacing', 'H Variance', 'S Variance', 'L Variance', 'Width Var', and '# of Lines'. Callout lines connect descriptive text to specific controls in the window.

Click the arrow to hide or display lower sections of the Roll-Up

Click a button to select a tool shape

Select or enter a tool width

Edge adjusts the edges of the paint stroke. The effect of adding smoothness is most apparent when the brush shape is a square or line. Hard, Medium and Soft settings are available.

Transparency adjusts the opacity of your paint. This is similar to adjusting the amount of water mixed with water colors. The higher the number, the greater the transparency.

Density adjusts the overall softness of the paint stroke. The lower the number, the finer the brush strokes, with smaller, softer edges. The higher the number, the bolder the brush strokes.

Fade Out adjusts the rate at which the brush stroke disappears. This is similar to adjusting the pressure of your brush against the canvas as you paint. The higher the number, the greater the fade-out.

Spacing adjusts the distance between strokes. At 0, the spacing depends on the speed at which you drag the mouse. Use a setting of 1 for the smoothest stroke. The lower the number, the closer the brush strokes.

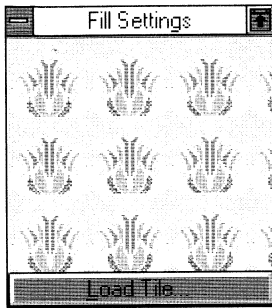
The variance options and the # of Lines box are only available when using the Impressionism brush, Impressionism clone, Pointillism brush, and Pointillism clone. Use these options to control the hue, saturation, and luminance variance. The width variance randomly varies the width of the dots or lines based on the tool width. The number of lines specifies the number of brush strokes or dots that will appear.

Manipulating fills, gradients, and textures

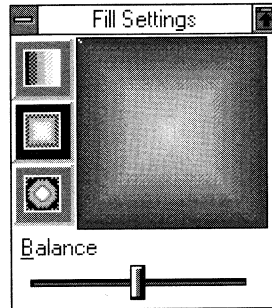
Use the Fill Settings Roll-Up in the Display menu to load a bitmap pattern for use with the Tile Fill tool, or a bitmap texture for use with the Texture Fill tool.

Any bitmap image can be used as a pattern fill. Countless texture variations are available in the Texture Fill dialog box. Consult the CorelDRAW manual for more information on bitmap textures.

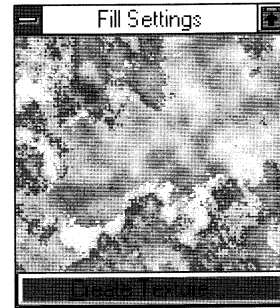
The Fill Settings Roll-Up allows you to choose a gradient fill type when you use the Gradient Fill tool. Specify the To and From colors for the gradient in the Color Selection Roll-Up. First click the Gradient Fill tool to enable these settings.



Tile pattern displayed in the Fill Settings Roll-Up

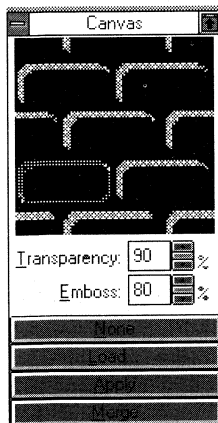


Gradient settings enabled



Texture fill displayed in the Fill Settings Roll-Up

Applying canvas patterns



Canvas pattern displayed in the Canvas Roll-Up

Use the Canvas Roll-Up in the Display menu to load a canvas pattern. Click Info in the Load a Tile dialog box to display information about the highlighted tile pattern.

Click Apply to use the canvas as a background to paint on. Once applied, the canvas shows through any future application of paint. The canvas pattern can be used to overlay your image. A high transparency value allows you to view more of the background image. An embossed relief effect can also be applied. Once Merge is selected, the canvas will be painted over by any future application of paint.

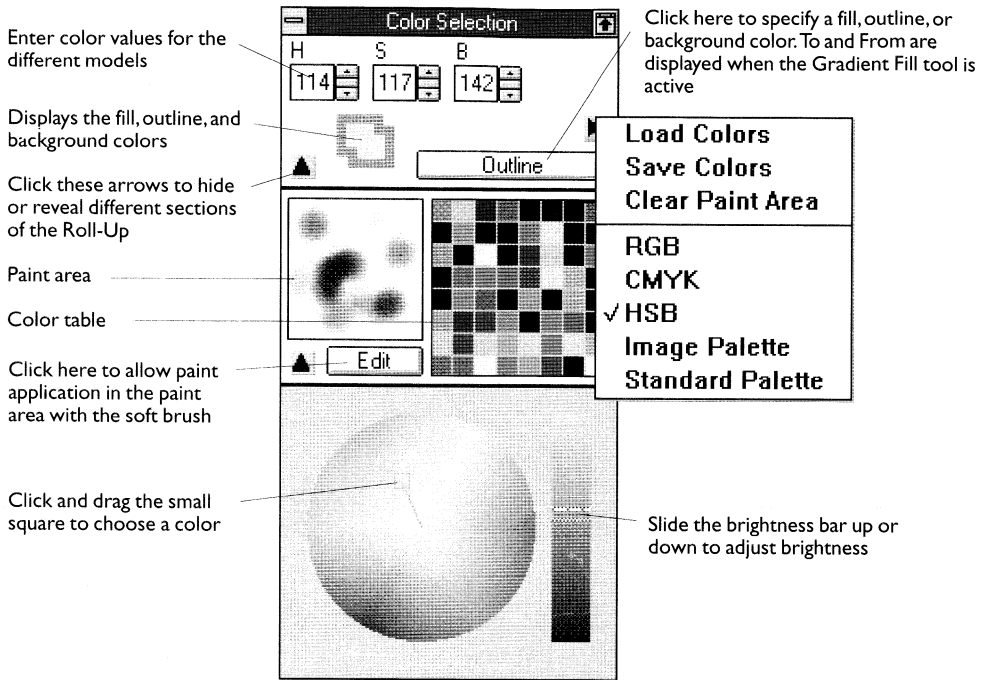
You can create custom canvases, but they must be between 16 and 128 pixels, in multiples of 16. They must form a square, and must be either 8- or 24-bit color.

An applied canvas will not be saved with the image until it has been merged.

Click None to remove the canvas from the roll-up, or to clear an applied canvas from a picture. Use Undo from the Edit menu to remove a merged canvas.

Using colors

Use the Color Selection Roll-Up to choose colors and specify To and From colors for gradient fills.



The Roll-Up allows you to load colors into the color table and paint area. With Edit displayed on the button, use the soft brush to mix a color in the paint area. Click the button to pick a color with the eyedropper in the paint area and drag it to the color table. Colors from the Image palette and the Standard palette can be added to the color table this way. You can then save the color table as a custom color table with a (.clr) extension.

The first time you load a new file into CorelPHOTO-PAINT, the colors for that image are displayed in the Image Palette at the bottom of the Roll-Up (if you click on Image Palette in the flyout). The palette will remain the same if you open more pictures. This allows you to retain these original colors and use them on other pictures. To change the image palette, make one of the other images active and click Image Palette in the flyout.

The Standard palette is made up of a default group of colors. This is also the dithering table for eight bit displays.

To choose a color from the RGB, CMYK, and HSB color models, click a location on the color circle or cube, or click and drag the small square(s). Slide the brightness bar up and down to adjust brightness. Individual color values can be entered in the boxes at the top of the Roll-Up.

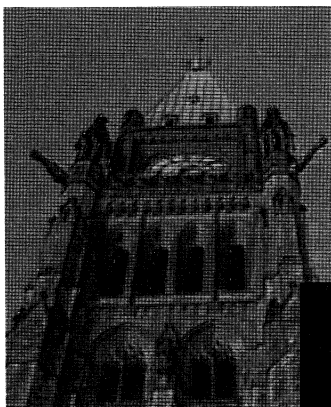
Adjusting color tolerance

Use the Color Tolerance command with the fill tools and the Magic Wand tool. The color tolerance values are used to specify a range of colors that are to be replaced by a single fill.

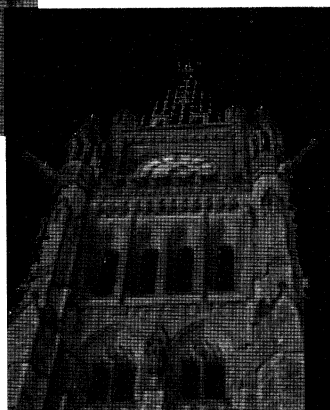
Choose Color Tolerance in the Special menu and choose or enter individual ranges for Red, Green, and Blue. Click the Identical Values box to set the same values for the three colors. The plus and minus values displayed in the dialog box indicate the range of color values from 0 to 255 that represent brighter and darker shades of each primary color. These values take effect the next time you use the fill tool or the magic wand.

In the example below, the higher tolerance value (100) means that more colors fall within the same range, (i.e. of 256 possible colors, 100 are considered to be the same color, and are filled by the selected fill color).

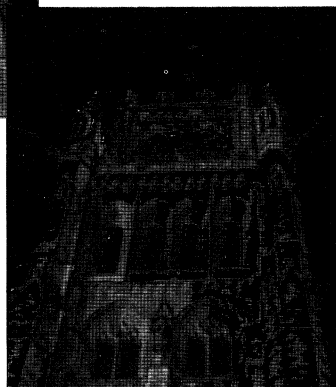
Original



A fill with color tolerance set to 60



A fill with color tolerance set to 100



Selection, Display, and Retouch Tools

Selection tools define an area of your picture. This selection area is both a cutout and a mask. You can move, copy, cut, paste, delete, rotate, distort, stretch, or flip a selected area. You can also paste the area into another file, or apply filters to it.

- Move, shrink, or stretch the cutout/mask by clicking and dragging on any corner handle.
- Click again within the selected area to rotate it. Click once more to display handles that allow you to distort the selection.
- Click and drag the selection with the left mouse button to cut the selection from the background image.
- Click and drag the selection with the right mouse button to move the selection without altering the background image.
- Click outside the cutout to paste it.

Display tools move different areas of the image into view, and change the zoom factor.

Retouch tools fine-tune selected areas of an image. If you want to retouch a large area or entire image, use filters from the Image and Effects menus. Use these tools with any format except black and white. Size, shape, edge, density, and other adjustments are specified in the Tool Settings Roll-Up.

Using selection and display tools



Rectangle Selection tool

Selecting a rectangular area

Use the Rectangle Selection tool to define a rectangular area within an image.

► **To define a selected area:**

1. Click the Rectangle Selection tool.
2. Click the left mouse button to anchor the rectangle and drag until the rectangle encloses the area you want to manipulate.
3. Release the mouse button. You can now drag the selected area to another location.



Magic Wand Selection tool

Selecting an area of similar color

Use the Magic Wand Selection tool to select an area within a picture made up of different shades of color with the same hue. Use the Color Tolerance command on the Special menu to adjust the range of colors you can select with the Magic Wand. Point to the area you want to define and click the left mouse button.



Lasso Selection tool

Selecting an irregular area

Use the Lasso Selection tool to define an irregular area within a picture. Click the Lasso tool and click the left mouse button. Drag the Lasso to enclose the area you want to manipulate and release the mouse button.



Polygon Selection tool

Selecting a polygonal area

Use the Polygon Selection tool to define a polygonal area within your picture.

► **To define a selected area with the Polygon tool:**

1. Click the Polygon tool.
2. Point near an edge of the area you want to select.
3. Click the left mouse button to mark the starting point of the cutout.
4. Point to where you want the first side of the polygon to end and click the left mouse button again. You can also drag the pointer to define the sides of the polygon.
5. Continue moving the pointer, clicking or dragging, until all but the last side of the polygon is defined.
6. Double-click to close the polygon.



Zoom tool

Zooming in and out

The Zoom tool increases or decreases the magnification of a picture, centered around the area you click on. Click the left mouse button to zoom in. Click the right mouse button to zoom out. The magnification of the picture is increased or decreased to the next increment.



Locator tool

Displaying a similar area in duplicate pictures

Use the Locator tool to display the same area in duplicated pictures of different magnification. Keep a small duplicate open for navigating, so you can see your way around another larger zoomed in view. Click the Locator tool, then click the area you want to see. CorelPHOTO-PAINT displays the area in other copies. The picture is centered around the area where you click.



Hand tool

Changing the position of a picture

Use the Hand tool to move or scroll a zoomed-in view in any direction. Click the Hand tool and click the left mouse button to drag the pointer.

Masking areas

Use the commands in the Mask menu to select the entire image, clear a mask, or crop a mask to create a new file. A mask, like a cut-out, is defined with any selection tool, and effects can be applied to it without altering the surrounding picture. Masking an area allows you to use many different tools and filters while the mask is active.

Retouching pictures



Local Undo tool

Undoing actions

Use the Local Undo tool to return specific portions of your picture to their original look. Local Undo cancels changes made since the last time you chose a command or tool. Click the Local Undo tool and drag the pointer over the parts of the picture you want to change.

Double-clicking the Local Undo tool has the same effect as choosing Undo from the Edit menu. Once you choose Undo, the Local Undo tool is no longer available.



Eyedropper tool

Picking up color from a picture

Use the Eyedropper to “pick up” a color from your picture. Click the Eyedropper tool and point to the color you want. To get the outline color, click the left mouse button. To get the fill color, click the right mouse button. To get the background color, hold down Ctrl and click the left or right mouse button. Press the Shift key with any tool except the selection tools to access the Eyedropper.



Eraser tool

Erasing areas of a picture

Use the Eraser tool to replace parts of your picture with the background color. Drag the Eraser over the area you want to erase. Double-click the Eraser to clear the image to the background color.



Color Replacer tool

Replacing color

Use the Color Replacer tool to replace the outline color with the fill color.

Choose the outline color (the color you want to replace) and the fill color (the color you want the Color Replacer to use) from the Color Selection Roll-Up or use the Eyedropper tool.

Click the left mouse button and drag over the area you want to change. As you drag, the outline color changes to the fill color.



Freehand Contrast tool

Adjusting contrast

Use the Contrast tool to brighten and darken selected areas as in the right side of the image below. The higher the number, the lighter the light areas become, and the darker the dark areas become. The lower the number, the more the colors are dulled or grayed.



Freehand Brighten tool

Controlling brightness

Use the Brighten tool to change the intensity of colors. Only the first pass with the brush changes the area. To further adjust the effect, select a different level, or click the tool again to save the changes, then brush again.





Freehand Tint tool

Tinting an image

Use the Tint tool to tint an area with the outline color. Press the left mouse button and drag the paintbrush over the area you want to tint. Only the first pass with the brush changes the area. To further adjust the effect, choose a different color, or click the tool again to save the changes, then brush again.

To add tints to a gray scale picture, convert it to color and use the Tint tool to highlight areas.



Freehand Blend tool

Blending areas

Use the Blend tool to smooth and soften areas. Blending is analogous to adding water to a watercolor painting.

The higher the number, the smoother the effect.

Blending on right side of petroglyph picture.

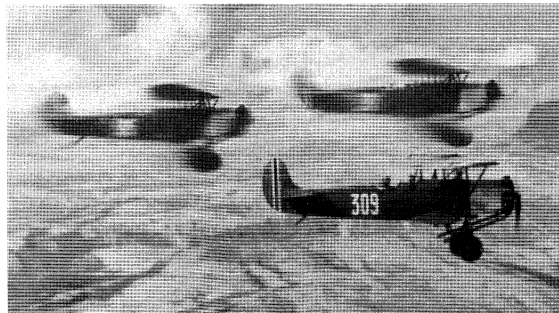


Freehand Smear tool

Smearing areas

Use the Smear tool to spread colors in your picture. The effect is similar to the smearing of colors in an oil painting.

Use the Tool Settings Roll-Up to adjust the edge, the transparency of the paint, and the rate at which the brush stroke disappears.





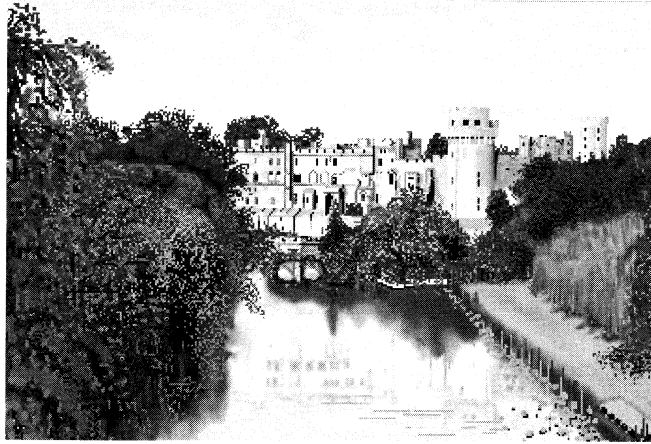
Freehand Smudge tool

Smudging areas

Use the Smudge tool to randomly mix dots in an area. Smudge works like an artist who mixes colors with chalk or pastels.

The Smudge tool can add a textured look to a picture.

Smudge tool used on vegetation

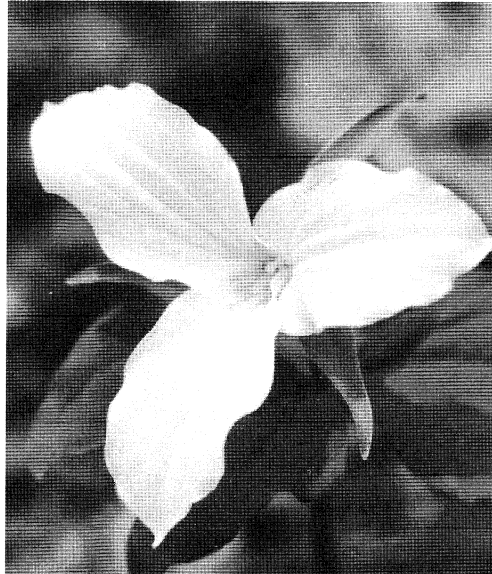


Freehand Sharpen tool

Sharpening areas

Use the Sharpen tool to sharpen areas of your picture. Keep in mind that you may lose detail when you sharpen an area, giving it a block-like appearance.

Sharpen the flower petals to separate them from the blurred background



Using Painting and Drawing Tools

The painting tools are used to create images and add effects to existing images. Use the Tool Settings Roll-Up to make adjustments to width, height, tool shape, and line thickness. Settings are also available for edge, density, transparency, fade-out, and spacing.

The drawing tools allow you to create various lines, curves, hollow or filled objects, and text. You can choose fonts and specify type size in the Text dialog box. The Pen tool allows you to draw smooth even shapes in the outline color, or it can be used for pixel-by-pixel editing.

Painting tools



Paint Brush



Impressionist Brush



Pointillist Brush



Artist Brush

Paint Brush

Use the Paint brush to create brush strokes made up of the outline color.

Impressionist Brush

Use the Impressionist brush to paint with multi-colored brush strokes. Many modifications to this stroke can be specified in the Tool Settings Roll-Up. Experiment to find the exact type of pattern for your brush.

Pointillist Brush

Use the Pointillist brush to create clusters of dots. Many brush effects are possible based on the specified tool settings. The dots will vary in color saturation and density. Very small dots can be used to build up an image, or larger dots can be applied for special effects.

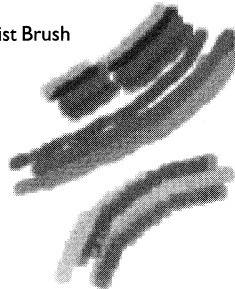
Artist Brush

Use the Artist brush to give your image the appearance of an oil painting. Various brush styles are available. Choose a brush style from the Tool Settings Roll-Up. Click a brush name to choose it. Click the brush name again to view additional brushes (if available) in that group.

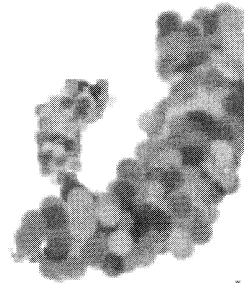
Paint Brush strokes



Impressionist Brush strokes



Pointillist Brush strokes



Artist Brush strokes





Flood Fill

Filling an area with color

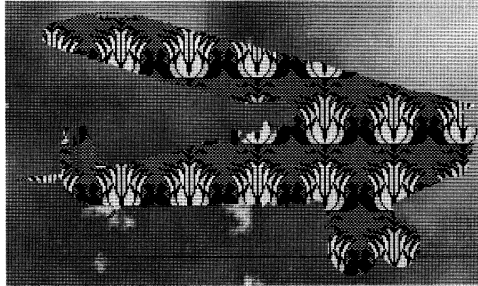
Use the Flood Fill tool to fill an area with color. Click the left mouse button to use the fill color, or the right mouse button to fill with the outline color.



Tile Fill

Filling an area with a tile pattern

The Tile Fill tool fills an area with a repeating pattern. Use the Fill Settings Roll-Up to load a tile pattern from disk. If you want the colors in your picture to show through an area of the tile, choose one of the tile's colors as your outline color, point to the area you want to fill, and click the left mouse button. The Tile Fill "pointer" marks where the color begins to fill.



Gradient Fill

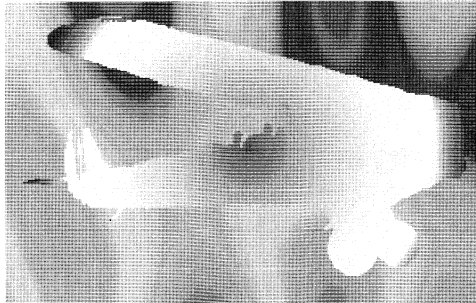
Filling an area with a color gradient

The Gradient Fill tool fills an area with a "color wash" that uses the To/From colors specified in the Color Selection Roll-Up. Use the Fill Settings Roll-Up to choose a horizontal, vertical, or radial gradient, and adjust balance.

» Note:

Color tolerance settings determine what range of colors will be replaced by a single color when using the fill tools.

Gradients are smoothest when colors have the same hue (e.g., dark red to light red). You will get the best color gradients if you are working with a 24-bit color picture. Point to the area you want to fill and click the left mouse button. The Gradient Fill pointer marks the location where the color begins to fill. In the example below, a gradient fills the plane, and a texture fills the background.

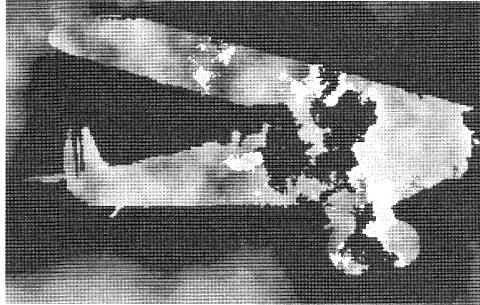




Texture Fill

Filling an area with a bitmap texture

Use the Texture Fill tool to fill an area with a bitmap texture. Countless variations are possible. Click the Texture tool, then choose a fill from the Fill Settings Roll-Up. Create variations by entering texture numbers, adjusting softness, density, and brightness. Consult the CorelDRAW manual for more information on textures.



Airbrush

Painting with the Airbrush

Use the Airbrush tool to spray an area with the an outline or fill color to create a mist effect. The Airbrush tool is useful for adding shading and depth to your picture and for correcting flaws.

Click the Airbrush tool, adjust the size and shape, then select the outline or fill color you want. Click and drag with the left mouse button to spray with the outline color. Click and drag with the right mouse button to spray with the fill color.



Spraycan

Painting with the Spraycan

Use the Spraycan tool to randomly spray an area with the outline or fill color to produce a “splattering” effect.

Click the Spraycan tool, adjust the width and shape, then choose the color. Click the left mouse button and drag over the areas you want to spray with the outline color. Click and drag with the right mouse button to spray with the fill color.



Clone tool

Cloning

Use the Clone tool to copy one area to another. The Clone tool allows you to choose an area and paint with it, giving you more precise control than copying and pasting. Clone between pictures or within the same picture.

► To use the Clone tool:

1. Click the Clone tool.
2. Adjust the brush characteristics in the Tool Settings Roll-Up.
3. Click the right mouse button on the area you want to paint with (source). Keep in mind that the point you click defines the center point for the cloning area. If you want to change the source for your clone, point to another area and click the right mouse button again.
4. Point to the spot where you want to begin cloning and drag the brush. The source picture appears as you drag. No cloning occurs after you reach the edges of your source picture. It is usually best to work from the center spot toward the outside edges.

Trees, swans, and water vegetation have been cloned within the original image which was then saved as a new file.



Original

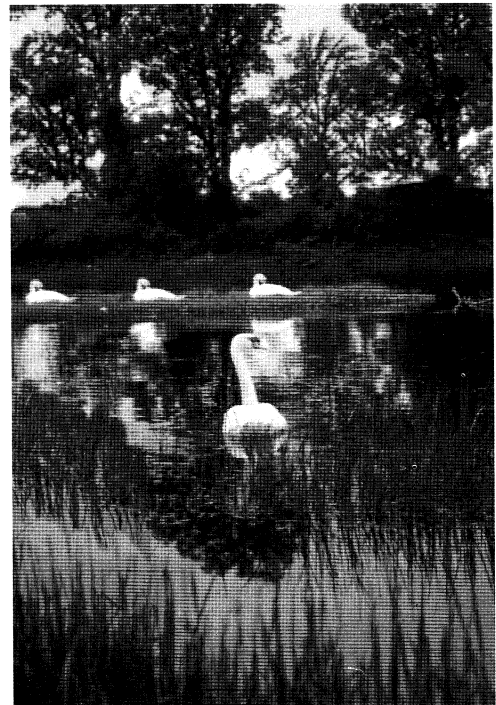


Image altered with the Clone tool

An image can be altered by cloning selected areas and painting over obstructing areas.



Original with obstructing objects such as the paper



Altered picture with cloned areas from the shirt and background used to replace the obstructing objects



Impressionist clone tool

Impressionist cloning

Use the Impressionist Clone tool to clone the colors of an area to copy the color range for the many brush strokes created by this type of brush.



Pointillist clone tool

Pointillist cloning

Use the Pointillist Clone tool to clone the colors of an area to copy the color range for the many dots created by this type of brush.

Drawing lines and curves



Line tool

► To draw straight lines:

1. Click the Line tool and choose the outline color.
2. Point to where you want to anchor the line. Click and drag the pointer to where the line is to end. To start over, erase the line by pressing Esc before releasing the mouse button.

► To draw joined lines:

1. Draw the first line as described above.
2. Point to the area where you want the adjoining line to end, and hold down the right mouse button. A line appears between the end of the first line and the point where you pressed the mouse button.
3. Drag until the pointer is exactly where you want the line to end and release the mouse button. Continue adding lines, each joined to the end of the previous line.

► To draw rays joined at a single starting point:

1. Draw the first line as described above. The starting point of the first line will be the starting point for each line.
2. Point to the area where you want the second line to end, hold down both Ctrl and the right mouse button. A line appears between the point where you clicked the mouse and the beginning of the first line.
3. Drag until the pointer is exactly where you want the line to end and release the mouse button. Continue adding lines, joined at a single point.



Curve tool

► To draw a curve:

1. Click the Curve tool and choose the outline color.
2. Point to where you want the curve to start.
3. Drag the pointer to where you want the curve to end and release the mouse button. A line appears between the two points. Two circle handles appear along the line. Square handles mark the ends.
4. Bend the curve until you have the shape you want by dragging the circle handles to shape the curve. Drag a square handle to reposition the ends of the curve. To start over, erase the curve by pressing Esc before releasing the mouse button.
5. Paste the curve by selecting a tool from the Toolbox or clicking outside the curve.

► **To draw joined curves:**

1. Draw the first curve as described above, but do not paste it.
2. Point to the area where you want the joined curve to end, and hold down the right mouse button. A line appears between the end of the first curve and the current position of your pointer.
3. Drag until the end of the second curve is where you want it and release the mouse button.
4. Bend the curve and continue adding curves, until the picture is complete.

► **To draw curved rays joined at one starting point:**

1. Draw the first curve as described above, but do not paste it. The starting point of the first curve will be the starting point for each curve.
2. Point to the area where you want the second curve to end, hold down both Ctrl, and the right mouse button. A line appears between the beginning of the first curve and the current position of your pointer.
3. Drag until the end of the second curve is where you want it and release the mouse button.
4. Bend the curve and continue adding curves, until the picture is complete.

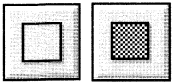
► **To draw with the Pen:**

1. Click the Pen tool and adjust the width and shape.
2. Use the Color Selection Roll-Up, the Eyedropper, or click on a color with the right mouse button to choose the outline color.
3. Draw smooth flowing strokes to create the image.
4. If you have drawn a shape that is not completely enclosed, zoom in on the “broken” area and fill in the missing pixels.

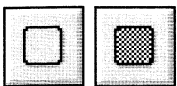


Pen tool

Drawing rectangles



Hollow Box
and Filled Box

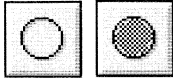


Hollow Rounded Box and
Filled Rounded Box

► **To draw a rectangle or rounded rectangle:**

1. Click the Hollow Box, Filled Box, Hollow Rounded Box, or Filled Rounded Box tool.
2. Use the Color Selection Roll-Up to select the outline color for the border and the fill color if the box is to be filled.
3. Specify the width of the border in the Tool Settings Roll-Up.
4. Press the left mouse button to anchor the box and drag until you have the size you want. To start over, erase the box by pressing Esc before releasing the mouse button. Release the mouse button and click outside the box to paste it.

Drawing ellipses



Ellipse and Filled Ellipse

► To draw an ellipse:

1. Click the Ellipse or Filled Ellipse tool.
2. Use the Color Selection Roll-Up to select the outline color for the border and the fill color if the ellipse is to be filled.
3. Specify the width of the border in the Tool Settings Roll-Up.
4. Point to where you want the center point, and drag outward until you have the size you want. To start over, erase the ellipse by pressing Esc before releasing the mouse button.
5. Release the mouse button and click outside the ellipse to paste it.

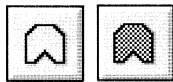
► To draw concentric ellipses or circles:

1. Use the above steps to draw an ellipse, but do not paste it.
2. Press the right mouse button and drag until the second ellipse is the size you want.
3. Release the mouse button to paste the ellipse. A new ellipse appears with the same center as the first shape.
4. Continue drawing as many concentric ellipses as you want.

» **Tip:**

Holding Ctrl while you drag constrains an ellipse or rectangle to a circle or a square.

Drawing polygons



Hollow Polygon and Filled Polygon

► To draw a polygon:

1. Click the Hollow Polygon or Filled Polygon tool.
2. Choose the outline color for the border and the fill color if the polygon is to be filled.
3. Specify the width of the border.
4. Point to where you want the polygon to begin and click the left mouse button to mark the starting point of the polygon.
5. Point to where you want the first side of the polygon to end and click the left mouse button again. You can also drag the pointer to define the sides of the polygon.
6. Continue moving the pointer, clicking or dragging, until all but the last side of the polygon is defined. To start over, erase the polygon by pressing Esc before completing the polygon.
7. Double-click to complete the polygon and paste it.

» **Tip:**

Holding Ctrl while you drag constrains the sides of the polygon vertically, horizontally, or at 45-degree angles.

Entering text



Text tool

The Text tool allows you to add text to your picture.

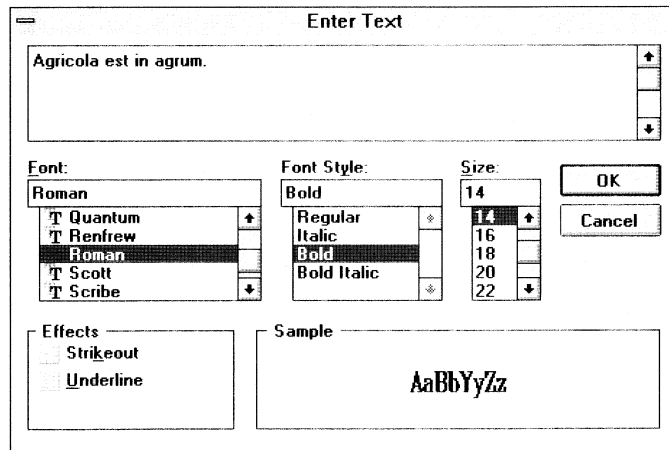
CorelPHOTO-PAINT supports all installed Windows fonts. The outline color defines the text color. Text is entered in the Enter Text dialog box. Various fonts can be chosen from the same dialog box. Finish editing the text before pasting it into the picture. Once pasted, the text becomes part of the image.

► **To enter text:**

1. Choose a fill color for the text.
2. Click the Text tool.
3. Type the text in the Text box. Text wraps automatically at the end of each line. Press Ctrl + Enter to create a line break. To paste text from the clipboard, press Shift + Ins.
4. Click OK when you have finished typing the text. The Text Frame appears on the screen, enclosing the text you just typed.
5. Drag the handles of the Text Frame until the margins are correct.

To move the Text Frame, move the pointer inside the frame. To edit your text, press the Spacebar and the Enter Text dialog box reappears. You can choose another font, change the characteristics of the font, or change the color of your text before you paste it.

6. Click outside the Text Frame or choose another tool to paste the text.



Using Filters

Filters enhance images and create special effects for part or all of an image. The filter commands are located in the Image menu and the Effects menu. Use the Preview option to see how your filter settings will affect your image before you apply them. Experiment with the various filters to achieve the results you want.

The Undo command in the Edit menu cancels the effect of a filter. The Local Undo tool removes changes in small areas, along contours, and in individual pixels.

The effects of some filters can be very subtle and hard to detect at low display resolution. As well, an image printed at low resolution will not look as impressive as the screen image. The original resolution of scanned images will influence the final product. Color images that have been scanned at high resolution provide more data for the filter to process, resulting in a better effect. These files can then be resampled to reduce file size.

Enhancement and correction filters

Equalizing

Use the Tone Equalize filter in the Image menu to redistribute shades of colors. Equalize makes the darkest colors black and the lightest colors white and stretches the colors in between. When you choose this filter, a dialog box displays a histogram representing the shades in the image. The height of each histogram bar shows the number of dots with that amount of shading. The bottom of the histogram shows the range of shades in your picture.

You can enhance a well-exposed picture where the histogram shows most of the shades falling around the midpoint. You can enhance a high contrast picture where the histogram shows most shades falling within two peaks, many dark and many light areas. You cannot improve an overexposed picture where the histogram shows most of the shades at or near full white.

Drag the arrows or enter numbers to adjust your Low, Mid, and High values. Shades to the left of the Low arrow will be black. Shades to the right of the High arrow will be white. The Mid arrow is used to redistribute the colors between the High and Low points.

Choose Restore if you want CorelPHOTO-PAINT to recalculate default values for the picture. The samples below show the original picture and the picture equalized three different ways.



Original



Default settings



Increased low values



Increased high values

Adjusting the color/gray map

Use the Tone Color/Gray Map filter in the Image menu to adjust for lighting inaccuracies.

Choose a channel to specify the color to be adjusted. All adjusts all the colors in the picture. Single is the only channel available for grayscale pictures. Choose a single color channel to create a special effect or make balance adjustments.

Choose a Preset option such as Darken Midtones if you want CorelPHOTO-PAINT to adjust your picture automatically. Choose a Style to make minor adjustments to the response curve.

You can use several different styles to get the response curve you want. Curve smooths distribution and fine-tunes other styles. Use Curve to enhance your picture by creating an "S" shape (i.e. S curve). Similar to "push and pull processing", an S-curve helps to bring out detail to adjust for exposure problems.

Freehand allows you to draw any shape you want in the sample box. This is useful for fine-tuning and adjusting a curve you created with another style.

Linear allows you to adjust the brightness and contrast of a channel. Drag the handles on either end of the line to make your adjustments.

Click Restore to return to the original response curve values. The pictures below show the effects of different preset response curve selections.



Original



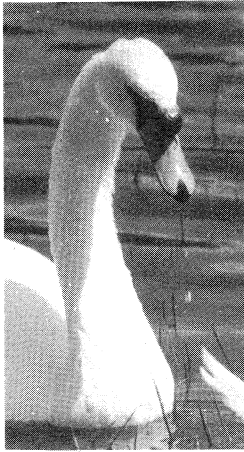
Enhance shadows



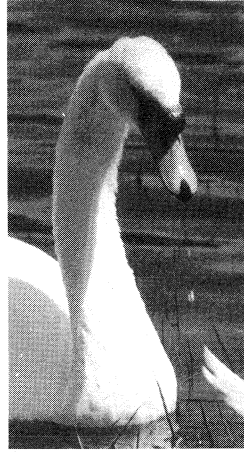
Darken midtones



Lighten midtones



Original



Gamma



Brightness and Contrast



Threshold

Filtering brightness and contrast

Use Brightness and Contrast to lighten or darken a picture (Brightness), or change the distinction between light and dark areas (Contrast). Use the Freehand Brighten tool or Freehand Contrast tool for small areas.

Use Intensity to increase or decrease the overall intensity level of an image or selection. Intensity is not applied equally to all parts of the image or selection, but is applied in greater measure to the brighter parts of the selected area.

Gamma

Use Gamma to enhance detail in an image by adjusting middle grayscale values (midtones) without affecting the shadow and highlight areas. Shadow areas are the darkest part of an image, usually black; highlight areas are the lightest, usually white.

Threshold

Use Threshold to change an image to solid colors with no gradual shading. Pixels that are lighter than a specified value called the threshold become white. Pixels darker than this threshold value become "solid". The higher the threshold value, the greater the effect.

Hue and saturation

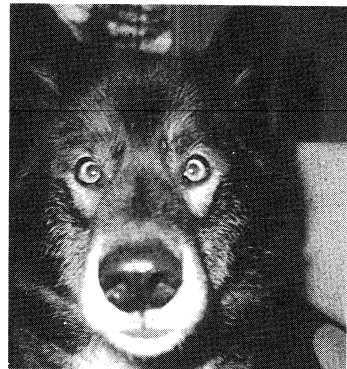
Adjust hue and saturation in an image or selection without affecting brightness. Hue refers to a particular color, such as red, green, or purple. Saturation refers to the amount of that color: for example, the degree of redness, greenness, or purpleness. Use this command to correct for color shifts, or to create special color effects. The Hue slide control adjusts the colors in a selection by changing the values of each pixel in the selected area. The saturation slide control adjusts the percentage of saturation for the colors in the selected area. The higher the value, the greater the saturation. Negative values often result in grayscale-type images.

Enhancing detail

This filter analyzes values of pixels in different directions to determine which direction to apply the greatest amount of sharpening. Click the slide control to specify the desired percentage. Choose Preview to see the effect, then click OK.



Blurred original



Enhanced image

Sharpening an image

Use the Filter Sharpen command to enhance edges and bring out detail. You can set Sharpen as high as 100 in a grayscale picture and still see shades of gray. The higher the number, the greater the sharpness. Choosing Wide aperture enlarges the area to sharpen,

Unsharp mask

Use this filter to accentuate edge detail as well as sharpening smooth areas in the picture. The filter blurs the contrast zones, then subtracts the blurred image from the original. Click the slide control to specify the desired percentage. Choose Preview to see the effect, then click OK. Unsharp mask effects are more apparent in high resolution color images.

Adaptive unsharp mask

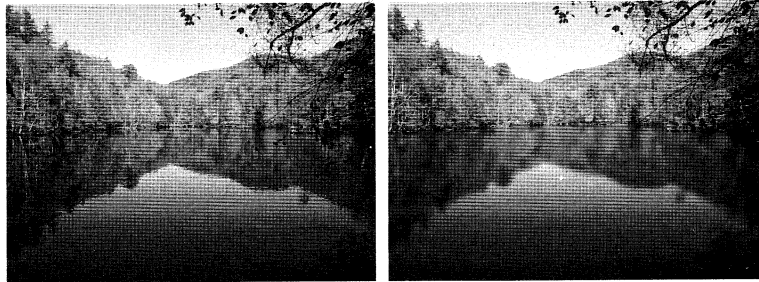
Use this filter to accentuate edge detail without affecting the rest of the picture or defined area. Click the slide control to specify the desired percentage. Choose Preview to see the effect, then click OK. The effect is more apparent in high resolution color images.

Smoothing

Use this filter to tone down differences in adjacent pixels. This results in only a slight loss of detail. Click the slide control to specify the desired percentage. Choose Preview to see the effect, then click OK.

Softening

Use this filter to tone down harshness without losing detail. Click the slide control to specify the desired percentage. Choose Preview to see the effect, then click OK.



Original

Softening applied to the lake area

Diffusing an image

Use the Diffuse filter to scatter colors. The higher the percentage, the greater the scattering effect. Choose Preview to see the effect, then click OK.

Blending

Use the Blend filter to smooth and soften colors, and to make more gradual transitions where light areas meet shadows. Use the Free-hand Blend tool for small areas.

A higher blending number increases the amount of blending and a wide aperture creates a smoother blend. Wide aperture enlarges the area the filter analyzes when it determines how to apply blending.

Special effects filters

Experiment with these filters to produce a variety of fascinating images. These filters are located in the Effects menu.



Original



Filtered with Edge Detect

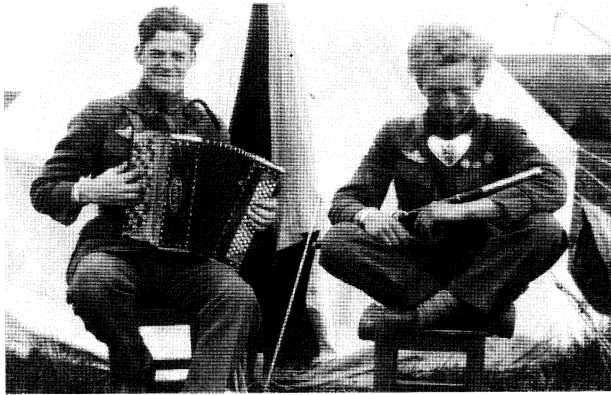
Using edge detect

Use Edge Detect to create an outline effect. Adjusting Sensitivity enhances edges. At a value of 1, strong edges will be outlined. At 10, every pixel will probably be outlined.

Choose the color you want for the non-outlined areas from the Color drop-down list. Choose an edge style for the color of the outline from the Edge drop-down list. If you are working with a grayscale picture, choose Light for white outlines or Dark for black outlines. If you are working with a color picture, choose Light for light-colored outlines or Dark for dark-colored outlines. Choose Auto if you want CorelPHOTO-PAINT to adjust the outline automatically.

Contour

Use Contour to outline the edges of a picture with lines. Adjust the contour threshold to define areas.



Original



Contour threshold of 110

Edge emphasis

Use Edge Emphasis to highlight edges among areas of different colors and shades.

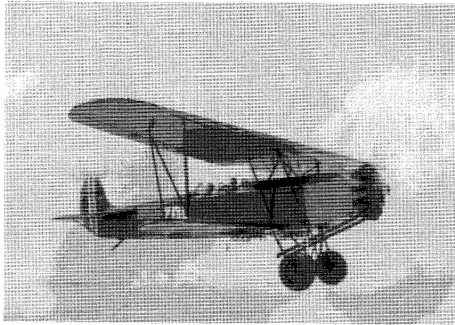
Outline

Outline your entire picture or a selected area. Everything except the traced edges of the selected area is outlined with a grayscale based on the intensity of the background color.



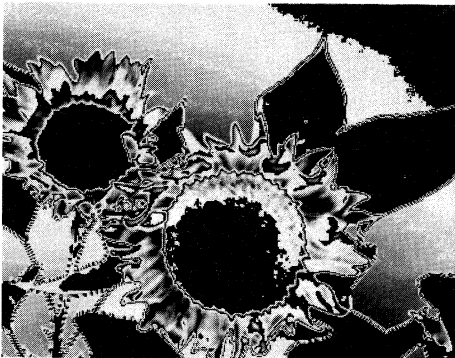
Blurring motion

Use Motion Blur to create the appearance of movement. The Direction arrows indicate the direction of motion. The higher the Speed number, the more blurring is applied.



Posterize

Use Posterize to remove gradations creating areas of solid colors or gray shades. The lower the value, the more pronounced the effect will be.



Psychedelic

Add a 1960s look to your image by randomly changing the color. Adjust the percentage of change and preview your selection.

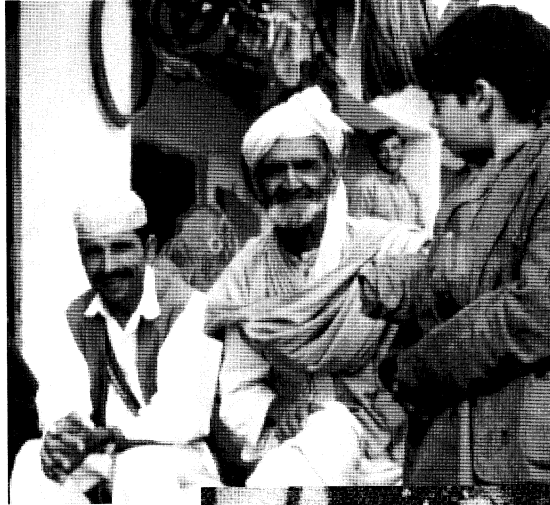


Solarize

Produce a selective reversal (negative) of the image. Set the threshold level to determine which pixels will be reversed. All pixels below the set value are reversed.

Adding noise

Use Add Noise to create a granular effect that adds texture to a flat or overly blended picture. Entering a higher number for Variance will create a more granular picture. A flat curve shows more pronounced changes than a bell curve. You can adjust an individual color channel or all colors. Single is the only channel available for grayscale pictures.



Original



Add noise effect

Add more noise

Choose Uniform for an overall grainy effect. Choose Gaussian for a heavier, larger grain size. Choose Spike for a thinner, lighter-colored grain. Click the slide control to vary the noise level percentage.

Remove noise

Use Remove Noise to soften edges and reduce the speckled effect created by the scanning process. Each pixel is compared to surrounding pixels and an average value is computed. Click the slide control to vary the maximum value permitted above the average value. Any pixel above this value will be modified.

Maximum

Lighten an image by adjusting pixel values to decrease the number of colors. The larger the percentage value, the lighter the image.

Median

Remove noise from scanned images that have a grainy appearance.

Minimum

Darken an image by adjusting pixel values to decrease the number of colors. The larger the percentage value, the darker the image.

Jaggy despeckle

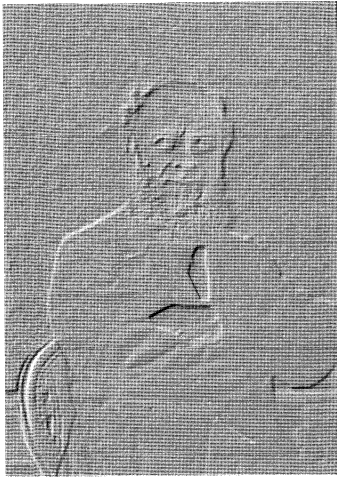
Use Jaggy despeckle to scatter colors in a picture. Choose height and width values to specify the amount of diffusion. Click Allow Color Shift to introduce new colors into the picture.



Original

Jaggy despeckle





Emboss



Invert



Pixelate

Embossing

Use **Emboss** to create a three-dimensional raised relief effect. Direction arrows point to the location of the light source and determine the angle of the highlights and shadows.

The **Emboss Color** you choose determines the overall color of your embossed image. For best results, choose a medium, grayish color.

Inverting

Use **Invert** to invert colors in a picture as on a photographic negative.

Pixelating

Use **Pixelate** to create a block-like effect with the pixels of your entire picture. The pixels appear larger and some detail is lost.

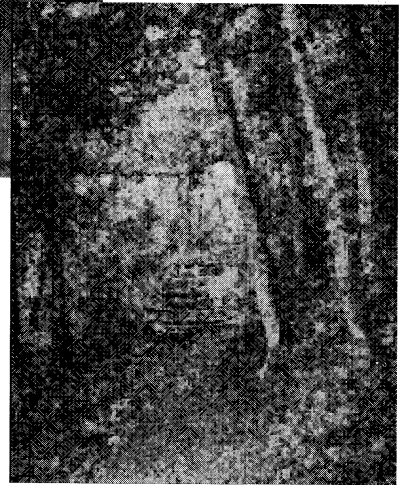
The width and height (in pixels) of the individual blocks can be specified. Choose **Identical Values** to quickly set the blocks to the same width and height (square blocks).



Original



Impressionist effect



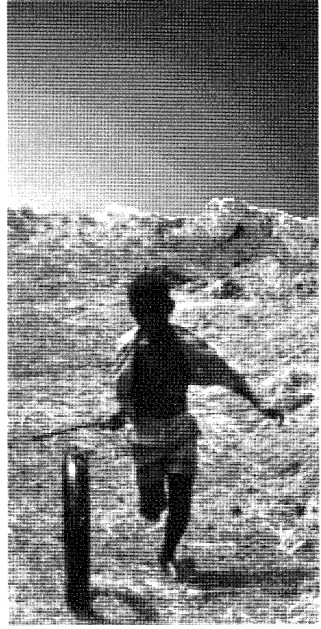
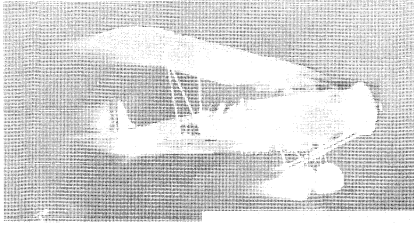
Pointillist effect

Pointillism

Use Pointillism to add a pointillist effect (dots) to a picture. Choose a dot size. Adjust size variation, dot spacing, and color variation settings by clicking and dragging the slider controls. Choose Preview to see the effect, then click OK.

Impressionism

Use the Impressionism filter to apply impressionistic brush strokes. Choose a shape and stroke direction. Custom stroke styles can be created in the box by clicking and dragging the squares. Choose stroke length, brush size, number of brushes, size variation, stroke spacing, and color variation. Experiment on a selected area until you achieve the effect you want.



CHAPTER

5

Manipulating Files and External Devices

CorelPHOTO-PAINT allows you to convert images into different formats and save them in a variety of bitmap file types. You can resample large scanned images to make them smaller and easier to work with.

The Acquire command allows you to control devices such as scanners or video capture boards from within CorelPHOTO-PAINT.

Printing commands provide extensive control over printing and prepress functions, and color correction for separated images.

Calibration commands are available for printers, scanners and monitors. This allows you to create a uniform environment for your equipment at all stages of image creation and processing. Custom response (.map) curves can be created and saved to disk.

Opening and saving files

The New command in the File menu displays the Create a New Picture dialog box. Enter values for width, height and units of measure. The type of image to create can be specified in the Mode list.

The Open command displays the Load a Picture from Disk dialog box. Choose the file you want and check the Preview box to view a bit map representation of the image. Click Info to display data about the chosen file.

The Save As command displays the Save a Picture to Disk dialog box. This allows you to save a file with a different name or change file formats.

Using the Clipboard

The Clipboard is a temporary storage area for transferring text and graphics between Windows applications. You can also use the Clipboard to move objects between CorelPHOTO-PAINT files.

To cut or copy an object to the Clipboard, select it, then choose Cut or Copy from the Edit menu. (Cut removes the object from the picture; Copy puts a copy of it onto the Clipboard.) Once it's on the Clipboard, use the Paste command to place a copy of the object into CorelPHOTO-PAINT as a New Selection, or as a New Image.

Use Paste From File to insert a picture from disk into your picture.

Resampling an image

Located in the Image menu, the Resample Image command allows you to create an image of a different size or resolution without changing the original.

Resampling by size and resampling by percentage are linked to one another. When you resample by one, the other is automatically adjusted. If you select the Maintain Aspect option, you only need to adjust the width. The height is automatically adjusted.

Height, width, and size (bytes) values for the resampled image appear in the Resample Image Information group box. Height, width, and size values for the original image appear in the Original Image Information group box.

You can adjust the processing quality of the resampled image.

Antialias offers higher processing quality by applying anti-aliasing to remove jaggies. Average creates a smooth picture by averaging duplicated pixels. Stretch creates a rougher image by stretching the duplicated pixels. Truncate creates a rough resampled image by eliminating overlapped pixels.

Use the Resolution box to change the resolution of the image. This information will be retained in the new file, and relates the image dimensions in pixels, to the image dimension in inches.

Converting image formats



Line Art.



Printer Halftone.



Screen Halftone.

Use the Convert To command to change a picture from one color format to another. CorelPHOTO-PAINT filters and retouch tools work best with color or grayscale pictures.

Colors in your picture that are not supported by your monitor are simulated on-screen. The more colors that are available for your picture, the more memory is required.

The Black and White Line Art option converts a picture to black and white with no halftone.

The Black and White Printer Halftone option converts a picture to black and white using a fatting halftone (also known as spiral or dot).

The Black and White Screen Halftone option converts a picture to black and white using a diffused halftone. This pattern gives good on-screen results. It does not use a pattern, but tends to follow the contours of the picture. It produces good results when your picture contains many levels of color, but produces poor results when your picture contains large areas with the same color.

The Grayscale (8-bit) option converts a picture to 256 grays. Grayscale is the best format to use if you are working with a gray tone picture. The filter and retouch tools will take less time and give you good results. If you split a color image with the YIQ option, the Y separation may produce a better grayscale image than a standard grayscale conversion.

The 256 Colors (8-bit) option converts a picture to 256 Colors. CorelPHOTO-PAINT creates an optimized palette for your picture.

If you convert a grayscale picture to 256 colors, some colors are added to your color set so you can add them to your picture. Because the human eye cannot distinguish between very dark grays, your picture appears the same as in grayscale. If you want to keep all grays and have many colors available, convert your picture to 24-bit color.

The True Color (24-bit) option converts a picture to 24 bits of color data per dot (8 bits red, 8 bits green, and 8 bits blue). 24-bit color pictures require three times more disk space when saved, than 256 color pictures.

Transforming pictures

Flip Horizontal or Vertical allow you to flip your entire picture or selected area on its vertical axis to become a mirror image of itself, or on its horizontal axis to turn it up side down.

Rotate allows you to quickly rotate your entire picture or an area by 90 degrees clockwise or counter clockwise. Rotate the picture or area by 180 degrees or use custom settings to rotate the image by one degree increments. Check the box to maintain original image size. Freeform rotation allows you to rotate the image any amount or direction by clicking and dragging the curved corner arrows.

Distort allows you to manipulate an image into different shapes by dragging corner handles on a selection marquee that surrounds the picture.

Displaying information about an image

The Info command in the Image menu displays information about the current image. Name, width, height, dimensions in dots per inch, type, and size, as well as format and sub-format are displayed. The information indicates if the image has been altered. The Control menu of each picture also contains the Info command.

Window commands

Use the Window menu commands to rearrange picture icons, restore minimized pictures, change your active picture, and quickly duplicate up to twenty picture windows. The Window menu list also displays names and information about displayed and minimized pictures. Choose a picture from the Window menu to make it active (a check mark precedes it). You can also change your active picture by clicking the title bar of the picture you want to work with.

Preferences

Use the Preferences command to specify startup information and units of measure.

Scanning

The scanning commands allow you to choose and operate your scanner without leaving CorelPHOTO-PAINT. Click Select Source from the Acquire Image command in the File menu to choose a standard image input driver such as the Corel Image Source.

The Calibrate option in the Acquire Image command allows you to create a custom calibration curve for your scanner. In the Scanner Calibration dialog box, you can specify the Type of scanner (color or gray) and the Source. Click and drag the control points on the displayed curve to alter all colors, or individual colors. You can save a new curve or load in other custom curves.

The Acquire command allows you to scan an image. The dialog box that is displayed will depend on the type of scanner in use. Some scanners will provide more options that are accessed by clicking the Settings button.

The scan control window lets you define scan areas with a marquee or you can enter values for the location, width, height, and resolution. Units, colors, halftones, and paper size can be entered in the appropriate boxes.

The Prescan option performs a preliminary scan of the entire original. You then select an area to be scanned. The image can be saved to disk in various formats.

Current scanner is displayed here.

Rulers provide accurate positioning coordinates.

Click the Prescan button, then select the area to scan by clicking and dragging the corner handles of the marquee.

Information on the size of the area to be scanned and the amount of memory available.

Image Size: 99,396 bytes
Free Memory: 16,946,624
Image Transfer: Memory

0%

Scan Prescan Cancel

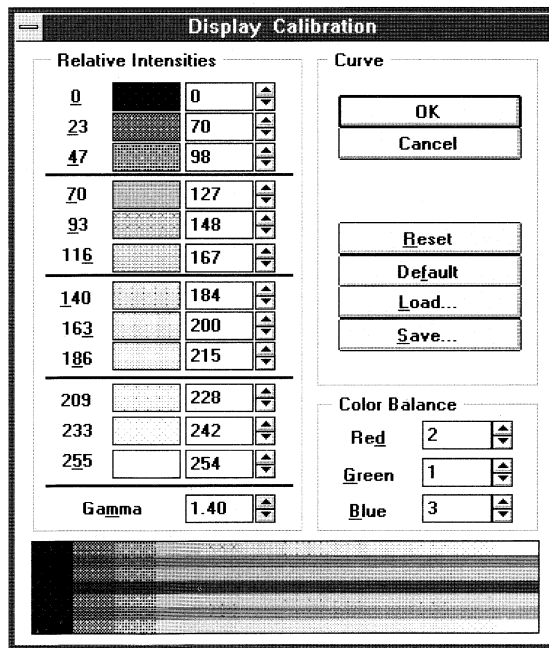
The prescan command scans the entire image and displays a low resolution grayscale version of it in the Scan Control Window. You can then select a particular area for scanning.

Calibrating your display monitor

Use the Calibrate command in the Display menu to calibrate your monitor so that pictures appear as similar on-screen as possible in comparison to your printed output.

Gamma refers to intensity characteristics of the monitor that relate to differences in the color intensity values in the original image compared to the colors shown on-screen. Monitors also vary in their overall color shift. Some are shifted more to blue or to red. By calibrating your monitor, the images you see on-screen will be as uniform and consistent as possible, depending on the lighting conditions in the working environment, and the type of equipment in use.

In the Display Calibrate dialog box, enter or choose a number for the Gamma value. Adjust the color balance to make the vertical strip as gray as possible. Gradations in color in the color bar at the bottom of the box should appear more uniform as you change the values in the relative intensity boxes. Adjust values in the color balance boxes to remove any tints from the vertical strip. To retain these settings you must save them with a new name in order to use them again after you leave the dialog box. Other calibration maps can be loaded or saved for use with different output devices.



Editing a tone map

Choose the Edit Tone Map command in the File menu to build and save an unlimited number of curves to adjust the tone range, balance, contrast, luminance, brightness, etc. of your images. The Tone Map dialog box has a grid for adjusting highlights, one quarter tones, half tones, three quarter tones, and shadows, and other points in between for either the RGB or CMYK components of the image. At the bottom of the dialog box is a slider control for adjusting gamma, or balance.

The horizontal axis of the curve represents input (original) values; the vertical axis represents output (new) values. The curve represents a formula that transforms the "original" values of the pixels into the desired "new" or output values.

By selecting the RGB option in the Tone Map box, you can edit the red, green, blue, and gray components at the same time; or, you can edit just one of the components at a time by selecting the desired component, such as green. When you select a particular component, the curve for that component appears in the grid. In this case, the resulting curve would be green. The curves for each component appear in their respective colors: blue for blue, magenta for magenta, etc.

After choosing the curve you want to edit, you can begin to manipulate the points. You can use the mouse to click and drag the points in the grid, or you can use the Edit tool to select values for each of the points represented on the curve.

Values for the RGB component range from 0 to 255, while density values for the CMYK components range from 0% to 100%.

In the RGB color model, 0 represents black, while 255 represents total blueness, redness, or greenness, depending on which component you are adjusting. If all three components have a value of 0, black is created. If all three components have a value of 255, white is created. Consequently, the lightest (white) part of an image usually has a value of 255, while the darkest (black) part of an image 0.

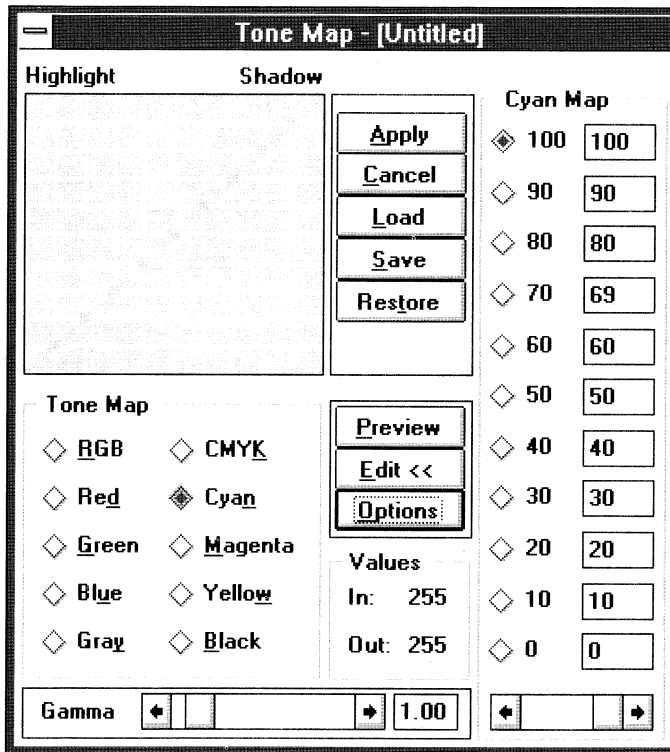
In the RGB tone map curve, the lightest part of an image is usually represented by the rightmost point; the darkest part by the leftmost point. The points in between represent other color values in the image. When you change the location of the point on the grid, you redefine the value of the point. Values between points are extrapolated to smooth gradations in tone. In the RGB color model, the higher the value, the redder, greener, or bluer a particular value becomes. You'll notice that gray is also adjusted in the RGB scheme. Gray is used to create more gradual changes from one shade to another.

The CMYK color model works in the opposite way. CMYK is measured in percentages; for example, 20% cyan, 20% magenta, 20% yellow. Theoretically, 100% of each combined makes black, not white, unlike in the RGB model. Black is needed to create a truer black and enhance contrast.

In the CMYK color model, the leftmost point on the grid represents the lightest part of the image, the rightmost point, the darkest. The points in between represent other percentages of CMYK values in the image. When you change the location of the point on the grid, you redefine the percentage of cyan, magenta, yellow, and / or black for that point. Percentage values between points are extrapolated to smooth gradations in tone.

The Tone Map also lets you adjust gamma. When you open an image, your monitor reads the file information for that image, and interprets the values it reads into colors.

After adjusting the settings for your curve at the tone map grid, you can define the type of curve you have created, and save the curve settings under a special name at the Save Tone Map dialog box. All curves are saved as (.map) files. After creating and saving a custom adjustment curve, you can load and apply it to an image.

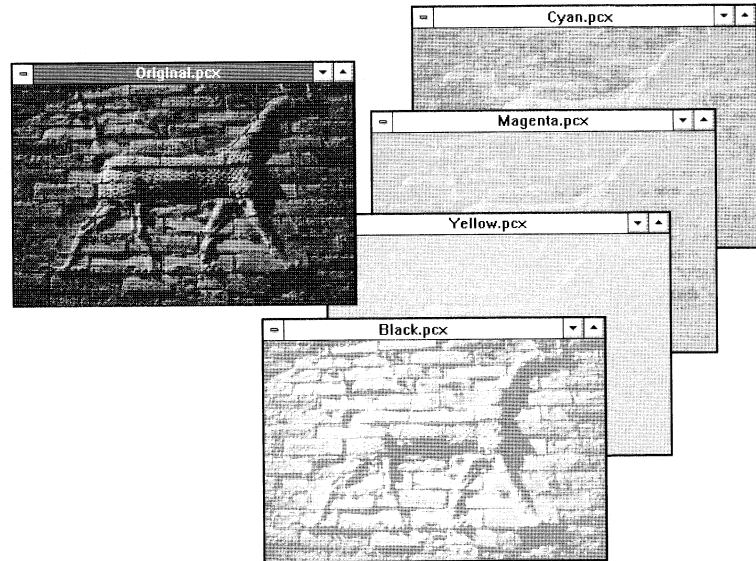


Splitting channels

Use the Split Channels To command in the Image menu to separate an image into channels corresponding to the different components of each color model (RGB, HSV, HLS, CMYK, and YIQ), and edit one or more of these channels without affecting the others. This allows you to make corrections to an image, or create a special effect. For example, you can view the cyan, magenta, yellow, and black channels for an image and adjust the brightness or contrast for one, two, three, or all four CMYK components that make up the image. Choosing the CMYK model also allows you to load a custom color correction circuit if you are creating separations for a particular printer.

YIQ creates separations similar to a video standard such as NTSC. The Y component of this process creates a grayscale image that retains more detail than a standard color to grayscale conversion.

As you split an image into channels, you automatically create a default PCX file for each channel. You can save them as PCX files, or in other file formats such as BMP, TGA, or TIFF.



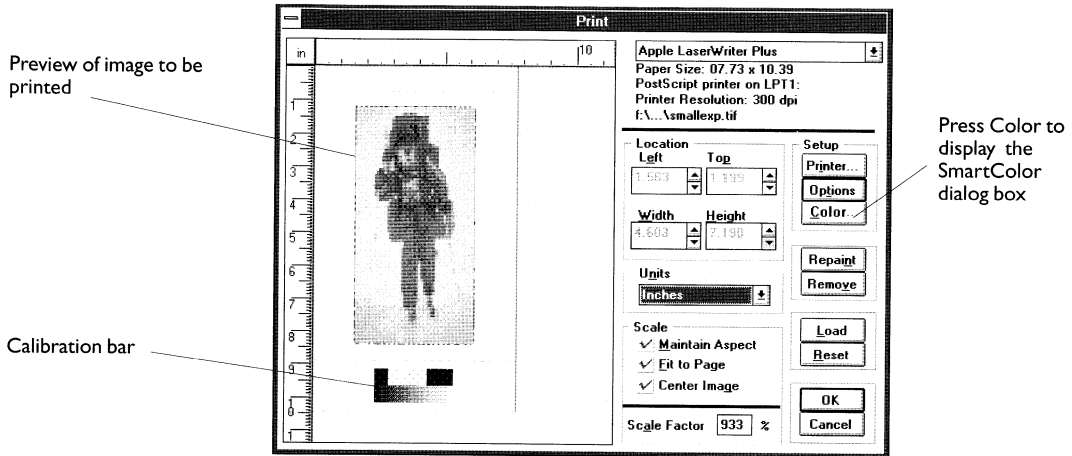
Combining channels

Use the Combine Channels command in the Image menu to recombine an image that has been split. The Combine dialog box displays each separate image in the Mode box. In most cases, an image would be split, one or more channels modified, then combined. To create special effects, you can select a different mode and reassign channels in the Channel, and Destination Image boxes. Click OK to create the new image.

Printing files

Use the Print commands in the File menu to print an image, select, set up, and calibrate your printer, as well as specify various printing options.

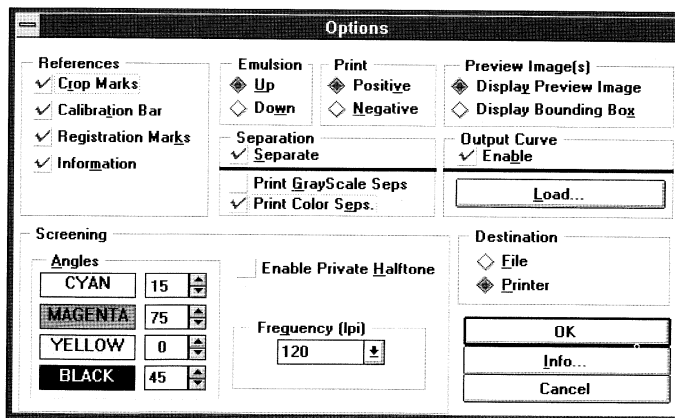
Choose Print to display the Print dialog box. Controls are available for determining how your picture will appear on the printed page. Enter location values or drag the preview image with the mouse. Check the desired scaling options, and specify desired units. Click Load to place multiple open images on a page if you are printing to a PostScript printer.



Print dialog box

Choosing options

Click Options to choose printing parameters for your output by checking the appropriate boxes.



Printing options dialog box

The Preview Image box allows you to display the image to be printed, or to have a bounding box displayed without an image.

Click Info to display information about the current printer driver.

The image can be printed to a disk file or to a printer. Click the appropriate button in the Destination box.

Click Enable, then Load, to open a different gradation curve for the printer.

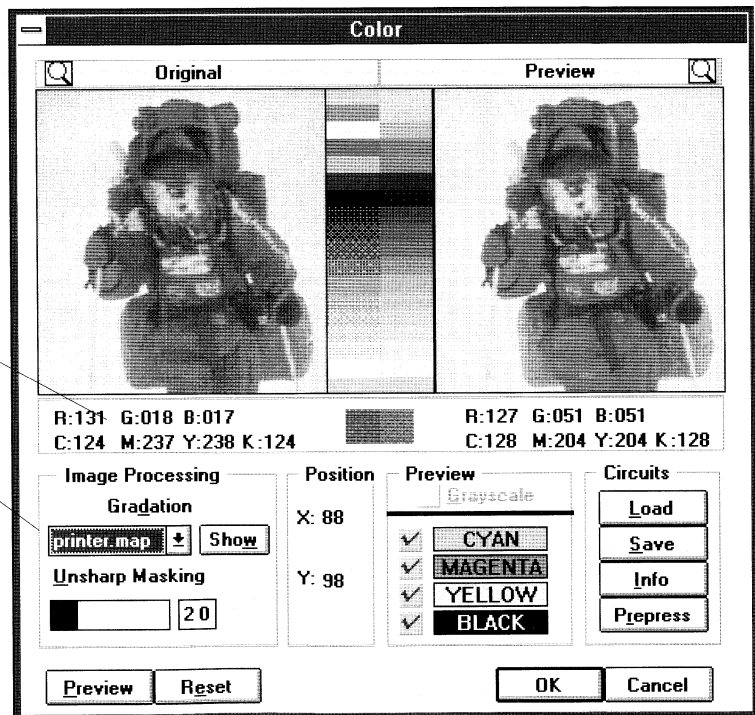
Printing separations

Click Separate in the Options dialog box to print color or grayscale separations. Click Color in the Print dialog box to display the Color dialog box.

The original image shows how the colors appear on the monitor. The preview image shows how the colors will appear on the destination printer if you are printing separations.

Click on a color in the Preview image area and the RGB and CMYK value for that color will be displayed for both images.

Gradation allows you to load a custom gradation curve to apply to the file to be printed. This curve is not linked to a specific printer. Unsharp masking will sharpen the image by a specified amount.

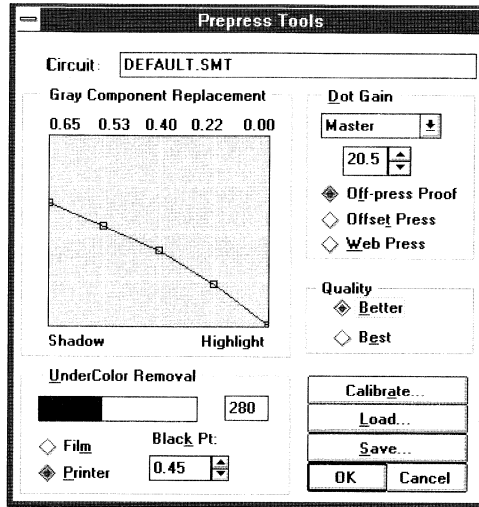


This dialog box allows you to compare how the image looks on screen and how it will look when printed on a selected printer. You can load custom circuits for different destination printers, and display circuit information. Click Prepress to access prepress tools for creating color correction circuits.

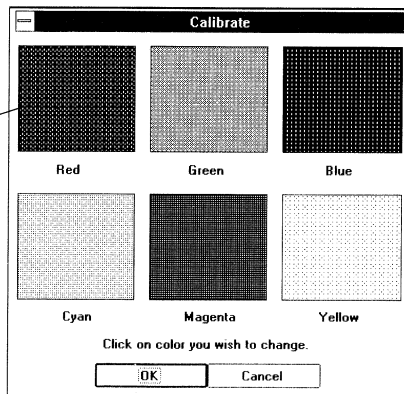
Using the prepress tools

Prepress usually involves the creation of negatives for black and white images, halftone negatives for non-color photographs, line art, and creating four color separations for printer's inks (called process colors). Color proofs are also made to check color images with the original. Color correction and retouching of separations also take place.

Use the Prepress command in the File menu to create custom circuits that can be applied to your separated images when printing them on different printers.



Click a color to access the color dialog box where you can select a color that is as close as possible to the color sample for the destination printer.



You can create your own circuits to try and match the color swatch of a specific printer. Click Calibrate in the Prepress Tools dialog box and adjust the displayed color blocks to match a color swatch from the destination printer. Click Better under Quality to create the new color correction circuit. Clicking Best can add a significant amount

of time to circuit creation. When you load this new circuit into the Color dialog box, you will see how your printed picture will look when printed on the destination printer (see the Color dialog box on the previous page).

Gray component replacement is a technique for removing from the color separations some or all of the cyan, magenta, and yellow that produces the gray component of an image. Undercolor removal uses black to reduce and replace process colors. The amount of ink is reduced during printing.

The Black Point value specifies the apparent darkness of black. A black point of 0.0 yields a black as dark as a 3-color black (CMY). A black point of 1.0 yields a black as dark as a full 4-color black.

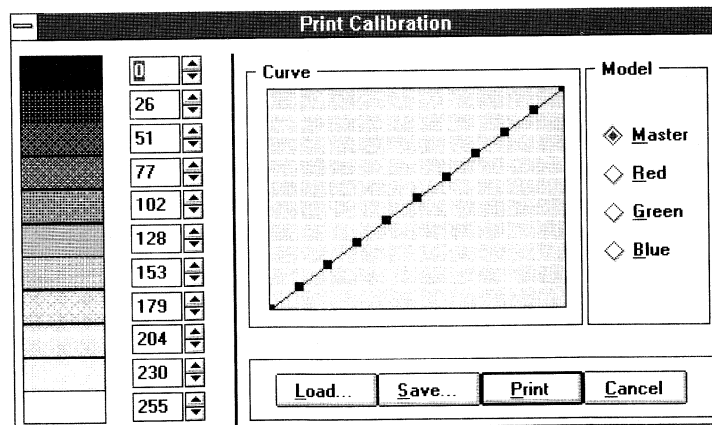
Dot gain is due to the nature of paper, inks, and presses. Halftone dots can increase in size from separation film to the printed page. Enter a value to specify the dot gain for the destination printer.

These variables have only been summarized here. For detailed information on what they control and the effects of altering them, consult Chapter 19 of the CorelDRAW section in this manual.

Calibrating a printer

The Calibrate command in the Print flyout menu allows you to maximize the linearity of your printer. Adjust the curve in the Print Calibration dialog box by clicking and dragging the points on the line. Adjust for all colors by clicking Master, or click each color for individual adjustment. You can create different gradation curves that will produce a specific type of output from your printer.

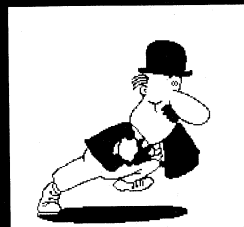
Typically, you would have a gradation curve for your printer, monitor, and scanner. These gradation curves are not to be confused with the color correction circuits created for color separations.



SECTION

3

CORELMOVE



Introduction

CorelMOVE is an animation program that provides you with easy-to-use tools to create complex and simple animations. You do not need to be knowledgeable about the animation process. The program simulates the traditional frame-by-frame process. CorelMOVE provides the necessary tools for creating the actors, props and sound effects, as well as the facilities for compositing or layering multiple animated images and sounds.

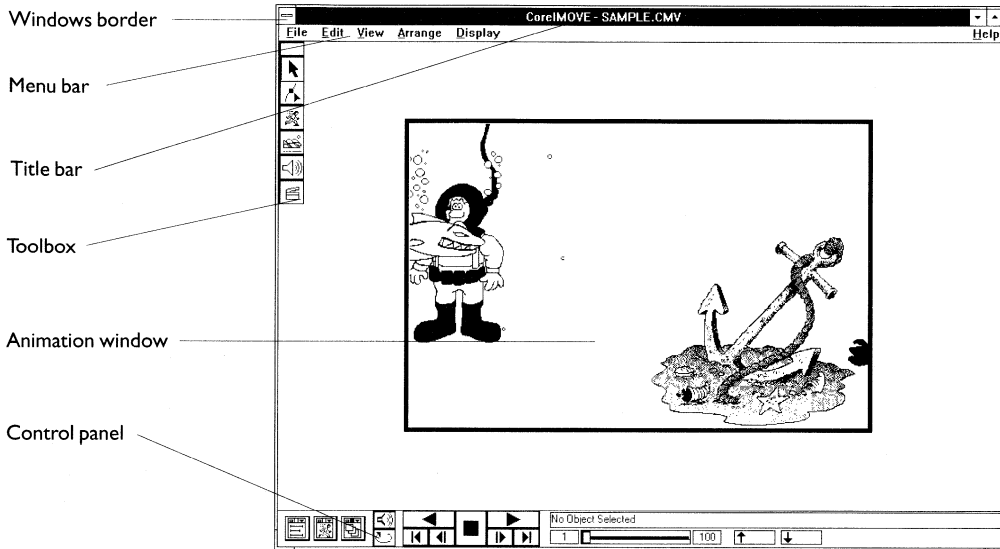
The simplest way to describe animation is to consider it as a series of drawings linked to create the illusion of movement. The traditional way involves drawing actors for every change of position on different pieces of paper. For example, if an actor is walking, each movement of the body is drawn on a different piece of paper. The combination of all the drawings simulates a walking actor. The CorelMOVE way of creating animation is to use tools such as the Paint Palette and to create an actor's movement over a series of cels. Cels take the place of paper. CorelMOVE combines the concepts of traditional animation with the power of modern technology.

CorelMOVE Basics

- ▶ **To start CorelMOVE:**
- Double click on the CorelMOVE icon. The CorelMOVE screen is displayed. Only the File menu is initially available. The rest of the menus are dimmed and are not accessible until you have either opened or created an animation.

Exploring the CorelMOVE screen

The CorelMOVE screen consists of the following key components:



Here's a brief description of each component:

Windows border: The windows border is used for scaling the CorelMOVE window. Scaling is especially useful when you have other Windows applications running.

Title bar: In addition to telling you the name of the file you are working on, the title bar is used to reposition the CorelMOVE window on the screen.







The arrow icons on the right side of the title bar allow you to expand the CorelMOVE window to full screen size or reduce it to an icon.

Menu bar: The menu bar contains the names of the six drop-down menus. Choosing a menu name displays a list of commands for accessing many of CorelMOVE's functions.

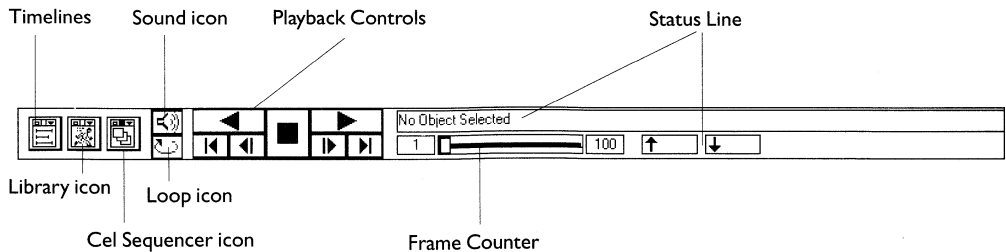
Animation window: When you create or edit an animation, the Animation window is displayed. This window is the area you use to build your animation. Consider the Animation window as a frame

in a movie. When you place an object on the Animation window, it is placed on the frame that you are currently displaying.

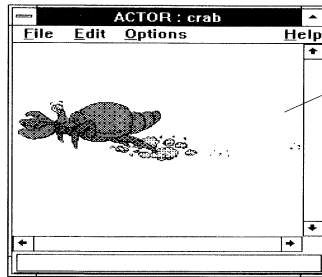
Toolbox : The toolbox gives you quick access to the most common operations in CorelMOVE. It contains the following tools:

| Tool | | Used for |
|------------|---|--------------------------------------|
| Pick tool |  | Selecting objects |
| Path tool |  | Selecting objects and creating paths |
| Actor tool |  | Creating new actors |
| Prop tool |  | Creating new props |
| Sound tool |  | Creating sounds |
| Cue tool |  | Creating cues |

Control Panel : The Control Panel is located at the bottom of your screen. You can access the roll-ups in CorelMOVE by clicking the Library icon, the Timelines icon and the Cel Sequencer icon. As well, it has controls similar to those of a videotape player, which let you play your animation while you are building it. The Sound icon and the Loop icon appear beside the playback controls. The Sound icon lets you turn the sound on and off, and the Loop icon lets you play the animation continually, with the animation replaying once it has reached the end. The status line and the start and end frame indicators give you information on your selected object. The status line displays object type, name and, if the object is an actor, number of cels. The start frame and end frame indicators show the number of the first and last frame of the selected object. The Frame Counter appears below the status line and shows the number of the current frame at the left and the total number of frames at the right. As the animation plays, the slide control moves through the frames. You can also use this to manually move to a specific frame.

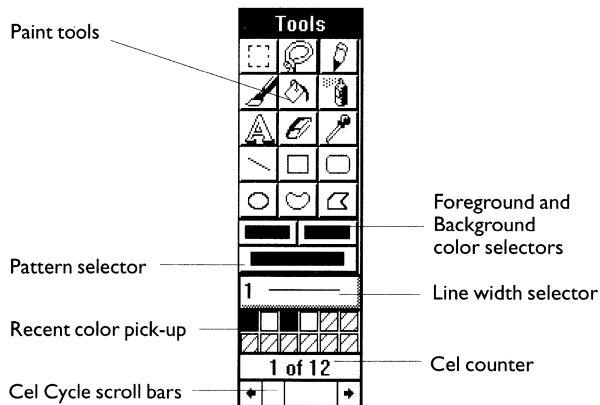


Paint window : The Paint window is displayed when you create an actor or prop, or edit one. When you are creating an actor or prop, the window is blank. When you are editing, the selected actor or prop is displayed in the window. The menu bar has three drop down menus which contain commands for CorelMOVE's Paint functions. You can use the Paint Palette to create actors or props.



An actor displayed in the Paint window

Paint palette : The Paint Palette is accessible only when you are creating or editing an actor or prop. The Paint Palette contains the Lasso, Marquee, Pencil, Eraser, Spray Can, Paint Brush, Line, Rectangle, Polygon, Ellipse, Pattern Selector, Foreground and Background Color Selector and Line Width Selector.



Paint tools

Foreground and Background color selectors

Pattern selector

Line width selector

Recent color pick-up

Cel counter

Cel Cycle scroll bars

Setting up a new animation

» Shortcut:
Use *Ctrl + N* to create an animation.

► **To create an animation:**

1. Choose New from the File menu. The Select Name for New File dialog box is displayed.
3. Enter the name of the new animation in the File Name field.
4. Select a drive and directory if the location of the new animation is to be different from that currently displayed.
5. Click OK.

Opening an animation

» **Shortcut:**

Use *Ctrl + O* to open an animation.

► **To open an animation:**

1. Choose Open from the File menu. The Open dialog box is displayed.
2. Select the animation from the list.

If the animation you want to open is in a different location, select the drive and directory in which the animation resides. You can open either CorelMOVE files (.CMV) or ProMotion files (.MWF) by changing the file type.

3. Click OK. The selected animation is opened.

Note: Double click on the animation filename to open. Also, any previously opened animation files appear in the list at the bottom of the File menu. Up to four can be displayed. Click on one of the names to open the file.

Saving an animation

» **Shortcut:**

Use *Ctrl + S* to save an animation.

► **To save an animation:**

- Choose Save from the File menu.

► **To save an animation under a new name or in a different location:**

1. Choose Save As from the File menu.
2. Do one of the following:
 - To save the animation in the current drive and directory, type a name up to eight characters in the File Name box. CorelMOVE automatically adds the .CMV extension.
 - If you want to save the animation in a different drive or directory, type the entire path name in the File Name box. Or, select the drive from the Drives box and the Directory from the Directories box.

Setting the size of the Animation window

» **Shortcut:**

Use *Ctrl + A* to open the Animation dialog box.

The size of the Animation window is an important part of the setup of your animation. The window size you select determines the size of the animation. If you select a size that is too large for the system you are using to play the animation, only part of the animation will be displayed. You should consider the audience and the location. If you intend to show the animation to a large audience, the animation must run on a larger screen.

► **To set the size of the Animation window:**

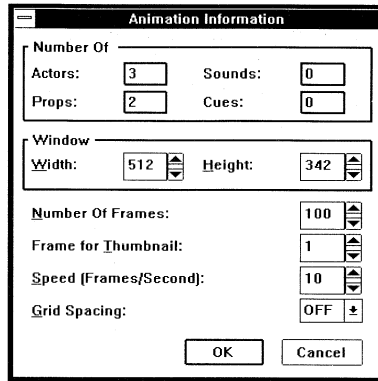
1. Choose Animation Info from the Display menu.
2. Enter the desired height and width of the window in the Window fields and click OK.

Specifying animation options

You can use Animation Information dialog box and the Playback Options dialog box to set your animation's options. These options may be accessed at any time.

Animation Information dialog box

You can use the Animation Information dialog box as a resource for your animation. It displays the number of actors, props, sounds, and cues as well as other settings. You can also set your animation's window size, the number of frames, the speed, and grid spacing. A full description of each of the items on the dialog box follows.



Number Of: This area lists the types and number of objects in the current animation. The object types are: actors, props, sounds, and cues.

Window: The width and height fields can be used to change the size of the animation window. Units used are pixels.

Number of Frames: This field indicates the number of frames in the animation. To change the number of frames, type in a new number or use the scroll arrows. The length of an animation can be from 1 to 9999 frames.

Frame for Thumbnail: The number entered in this field identifies the frame that is used as the thumbnail for the animation. Thumbnails are seen in Preview boxes such as the one on the Open dialog box. A thumbnail is a small bitmapped representation of the animation file created and saved with the original animation.

Speed (Frames/Second): The animation playback speed is measured in frames per second (fps). The available speeds range from 1 to 18 fps. The animation speed varies from one system to another, as it is dependent on the amount of available RAM, the processor, and the access time of the hard disk.

Grid Spacing: Use the Grid Spacing pop-up menu to set an invisible grid. When you add points on a path or move actors and props on the screen, they are placed to the nearest specified pixel. If you

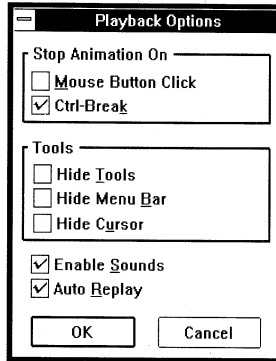
5 from the drop-down menu, for example, the points are placed to the nearest 5th pixel from the top left of the window. The grid is invisible, with a range of 5 to 200 pixels. If you want to turn off the grid, choose OFF from the drop-down menu.

» **Shortcut:**

Use **Ctrl + K** to open the Playback Options dialog box.

Playback options

The Playback Options dialog box controls the playback of your animation. You can select the key combination that stops the animation, hide the tools, turn the sound on, or request an automatic replay of the animation. Choose the Playback Options command under the Display menu.



» **Tip:**

You can always use the **Esc** key to stop the animation.

Stop animation on : You can select from the Mouse Button Click or **Ctrl + Break** to stop the animation. When the selected button is pressed during playback, the animation stops.

Tools : You can choose to hide the toolbox, menus, or cursor. Hide Tools hides all of the tools such as the Tool box and the Control Panel. Hide Menu Bar hides the menu bar while the animation is playing. Hide Cursor hides the cursor while the animation is playing. When you switch to another application, the cursor appears; when you switch back to the animation, it disappears again.

Enable sounds : This option enables and disables the sound during playback. You can also use the Sound icon on the Control Panel to turn the sound on and off.

Auto replay : Select Auto Replay to make the animation repeat or loop automatically. If selected, the animation runs repeatedly until you stop it. If not selected, the animation runs through once. You can also set Auto Replay via the Loop icon on the Control Panel.

Note : If you hide the palettes and the menu bar while the animation is set to Auto Replay, you can stop the animation by using the keys you designated in the Stop Animation On section of this dialog box.

Exiting CorelMOVE

To exit CorelMOVE, select Exit from the File menu. You are prompted to save the animation before quitting if you have not saved the current changes.

Creating Single-cel Actors and Props

This chapter explains how to create a single-cel actor or prop using CorelMOVE's Paint Editor. Actors can consist of either a single cel or multiple cels. You determine the number of cels when you are in the Paint window. See Chapter 3, "Creating Multiple-cel Actors."

A single-cel actor is similar to a prop in that it has only one form and one coloration; however, action may be assigned to the single-cel actor. For example, if you show a tennis ball moving across the screen during a portion of the animation, you can create a single-cel actor to illustrate the tennis ball. If the tennis ball lands or hits an object, you need to have a multiple-cel actor. You could also have two actors depicting the tennis ball—a single-cel actor for the movement across the screen and a multiple-cel actor for the actual impact. You can conserve memory by using two actors to portray this type of situation. Single-cel actors without movement assigned to them can be objects such as trees, paintings on a wall, etc. These actors are placed in front of the props (actors are always placed on the front layer in respect to props), but do not change shape or color may or may not be present during the entire animation.

Creating actors and props

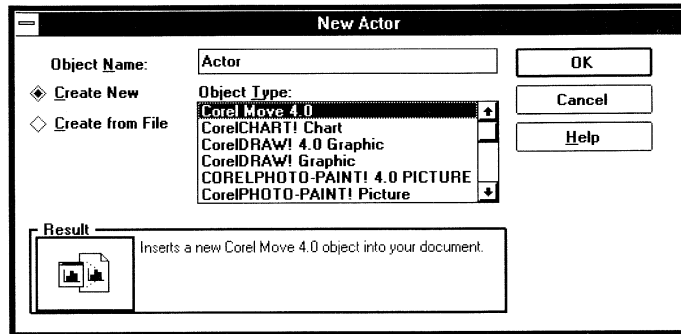
There are two ways to create a new actor or prop. You can create a new actor or prop from scratch or you can use a previously created file. In both cases, you can use different applications to create the actor or props.

When the actor or prop is created, it is automatically placed in the center of the Animation Window. To move the actor or prop to a different location, select the Pick tool from the toolbox, click on the object and move it.

► To create a new actor or prop:

1. Click the Actor or Prop icon on the toolbox or choose Prop or Actor from the Insert New Object flyout under the Edit menu.

The New Actor/Prop dialog box is displayed.



2. Enter a name for the new Actor or prop in the Object Name box. Each actor and prop should have individual names to identify them. This is because as you create or import them into your animation, they are added to the list of objects in the animation. This list is found in the Timelines Roll-Up. See Chapter 7, "Editing and Playing the Animation" for more information on the Timelines Roll-Up.
3. Click Create New.
4. Enter the name of the application to be used in the Object type box.
If the application is not CorelMOVE, the editing application opens. For example, CorelDRAW would open if it was selected. You would then create the object in the opened application. When it is saved, the application closes, CorelMOVE is opened and the actor or prop is placed in CorelMOVE.
The Result section of the dialog box displays the results of each selection you have made in the Object Type box.
5. Click OK.
6. Use the tools in the Paint Palette to draw the Actor or prop, or use the tools provided in the editing application.
7. Choose Save from the File menu to save the actor or prop or click the window's Close box when you have completed the

image. If you are in another application, exit and you are returned to CorelMOVE.

8. Click OK.

► **To create a new actor or prop from a file:**

1. Open the New Actor/Prop dialog box.
2. Enter a name in the Object Name box.
3. Click Create from File.
4. Enter the name of a file in the File box.

- OR -

Click the Browse button.

If you click the Browse button, the Browse dialog box opens. You can browse through the drives and directories on your system and select files from different applications. When you click OK, you are returned to the New Actor/Prop dialog box.

5. Click OK.
6. Use the tools in the Paint Palette to draw the actor or prop or use the tools provided in the editing application.
7. Choose Save from the File menu to save the actor or prop or click the window's close box when you have completed the image. If you are in another application, exit and you are returned to CorelMOVE.
8. Click Save.

Resizing the Paint Window

The size of the Paint Window can be changed using the Page Setup command under the File menu. The Set Size dialog box opens allowing you to enter the vertical and horizontal size in the appropriate boxes. Click OK.

Undoing mistakes in the Paint window

You can use two methods to undo mistakes. In most cases, the Undo command under the Edit menu of the Paint Window is used. However, you can also use the Revert Paint command under the Edit menu. Revert Paint is used in conjunction with Keep Paint. Keep Paint remembers the current appearance of the cel. You can then perform multiple changes and if you are not satisfied with the results, you can use Revert Paint to restore the cel to the appearance remembered by Keep Paint. Keep Paint does not save the actor or prop; it simply remembers the changes you have committed to the current cel at the time you use the command.

» **Shortcut:**

Use **Ctrl + Z** to undo mistakes.

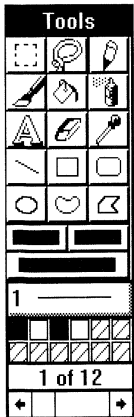
Undo: Undo reverts one change. It restores the cel to the state prior to the last action. For example, if you filled an object, it reverts the cel to the state before the fill was applied.

>> Shortcut:

Use **Ctrl + V** to revert paint.

Revert Paint: Revert Paint restores the current cel to the last committed state saved using Keep Paint. If you have not used Keep Paint, the cel is restored to the saved file state. It has no effect if you have performed a special effect on All Cels.

Using the Paint Palette



The Paint Palette is displayed when you create an actor or prop, or edit one. It provides the tools required to produce and edit actors and props. The top portion of the palette displays the Paint tools. When you select a tool, the shape of the pointer may change depending on the tool you have selected. For example, if you select the Pencil tool, the pointer changes to a pencil. Foreground and background colors, patterns, and line widths are selected from the Paint Palette as well. You can determine whether you are working on an actor or a prop by the presence of the cel cycle arrows and the name of the object in the title bar of the Paint window. If you are working on an actor, the cel cycle scroll bar at the bottom of the Paint Palette are visible and indicate which cel you are working on. The title bar displays **ACTOR: Actor Name**. Props consist of a single cel so the cel cycle arrows at the bottom of the palette do not appear and the title bar displays **PROP: Prop Name**.



Marquee Tool



Lasso Tool

Selection tools: Marquee and Lasso

Selection tools allow you to select part or all of the image. There are two selection tools in the Paint Palette: the Marquee tool and the Lasso tool. The commands under the Edit menu (Cut, Copy, Paste, and Clear) can be used in the Paint window once you have selected one or more objects. The Marquee tool selects rectangular sections within the image. The Lasso tool is used to select a specific part of an image when you need to select a part of the image that is non-rectangular or between other graphics. The line that trails the lasso's tip determines what you are lassoing. When you release the mouse, the lasso shrinks around the image and selects it. The lasso shimmers around the edges.

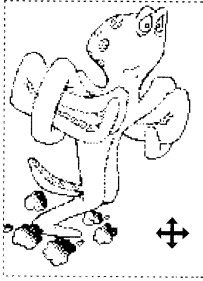
► To select an area:

1. Click on the Marquee or Lasso.
2. Drag diagonally across the area to select it with the Marquee tool, or draw around the area with the Lasso tool.
3. Release the mouse. The selected area is indicated by a marquee outline.



► **To select the entire visible part of the image or the entire image:**

- Double-click the Marquee tool to select the visible part of the image. To select the entire image, display the image in the Paint window before double-clicking on the Marquee tool. You can also choose Select All from the Edit menu.



► **To move a selection:**

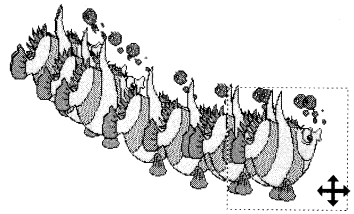
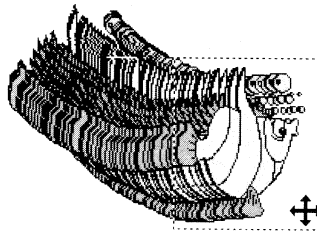
- Position the pointer inside the selection until the pointer changes to a 4-way arrow, then click and drag the selection.

► **To move a selection straight up or down or directly left or right:**

- Hold the Shift key down while you drag. Once you establish a direction, the selected object moves only in that direction. To change direction, release the mouse, press again and change direction.

► **To make multiple copies of a selection:**

- Press the Ctrl key while you drag. The number of copies created is dependent on the cursor speed: faster movement creates fewer copies.



Painting tools: Brush, Paint Bucket, Spray Can, and Color Pick-up

Paint tools are used to create actors or props.



Brush tool : Use the Brush tool to paint with the current pattern and brush shape. You can select the shape of the brush tool by selecting and double-clicking on the Brush tool in the Paint Palette.

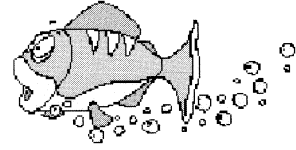
► **To edit the shape of the Paint Brush:**

- Double-click on the Brush tool. A flyout is displayed showing the different brush types. Click on one to select it.

Using different brush shapes and patterns creates different effects when painting. To paint straight lines in a vertical or horizontal direction, hold the Shift key down while you drag.



Paint Bucket tool : Use the Paint Bucket tool to fill solid areas of an image with the selected pattern and color. The hollow parts of outlined and shadowed text can be filled in the same manner.



If there is a gap or space in the outline of an area, paint spills out and fills the surrounding area of the image. Choose Undo from the Edit menu to correct this mistake. Use Zoom under the Options menu to check for gaps before using the Paint Bucket tool.



Spray Can tool : Use the Spray Can tool to spray color onto an area of the image. The spray can creates an affect like an airbrush or spray can of paint. The left mouse button sprays the selected foreground color; and the right mouse button sprays the selected background color. You can double-click on the spray can icon to display the AirBrush Settings dialog box which lets you change the area of the spraying color and the solidity of color.

► **To change the air brush settings:**

1. Double click on the Spray Can tool. The Air Brush Settings dialog box is displayed.
2. Enter a number in the Aperture field. The size of the spray is measured in pixels. For example, if you enter 100 in the Aperture box, the sprayed color is a circle with a radius of 100 pixels. The range is from 1 to 300 pixels.
3. Enter a number in the Pressure field. The Pressure is the density of color sprayed in the area designated by the Aperture box. For example, if you have set the Aperture at 100 pixels and the Pressure at 200, there should be approximately 200 colored pixels sprayed in a circle with a radius of 100 pixels. Higher values spray more color, lower values spray less. The range is from 1 to 750 pixels.
4. Click OK.



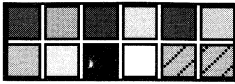
Color Pick-up tool : Use the Color Pick-up tool to select a color from part of the image. This tool is unavailable when working in black and white.

» **Tip:**

You can use the Tab key to toggle between the last tool used and the current tool.

Adding to the Recent Colors Palette

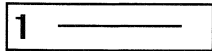
The 12 most recently used colors are displayed in the Recent Colors palette just below the Pattern Selector. If you select a color using the Color Pick-up tool, it is added to the palette behind the last selected color. Colors are added from left to right. When all 12 spaces are filled, the next selected color is shown in the first space and the last color is removed. All previous colors are pushed back one space.



Recent Color Pick-up

The Recent Color Pick-up displays the 12 most-recently-selected colors. You can reselect a color by clicking on one of the palette choices.

- ▶ **To change recent colors:**
 - Click on the color in the Recent Color Pick-up that you want to change and select a new color from either the Foreground or Background color palettes.
- ▶ **To select foreground and background colors using the Recent Color Pick-up:**
 - Select the foreground color with the left mouse button and the background color with the right mouse button.



Line Width selector

The available line widths are displayed in the Paint palette. Click on the Line Width pop-up, then select one of the nine widths. These correspond to a one-pixel wide dotted line (0) through lines ranging from one (1) to eight (8) pixels wide.

Drawing tools: Pencil, Line, Rectangle, Rounded Rectangle, Oval, Curve, and Polygon

There are two types of drawing tools on the Paint Palette. One set of tools draws lines and the other set draws shapes. The line tools include the Pencil and Line. There are five shape tools on the Paint Palette. These allow you to draw circles, squares, rectangles, ellipses, polygons and free-form shapes. The style of the border can be selected from the palette's pop-ups which determine the width, color and pattern of the border.

» Tip:

To draw horizontal or vertical lines, hold down the Shift key while using the Pencil or Line tool.



Pencil tool: Use the Pencil tool to draw free-form lines. This is the most useful tool for working in Zoom mode (magnified or detailed work).

You can use the selected foreground and background colors to draw. If you click on the left mouse button, the pencil draws in the foreground color. If you click on the right mouse button, the pencil draws in the background color.



Line tool: Use the Line tool to draw straight lines.

Rectangle and Rounded Rectangle tools: Use the Rectangle tool to draw rectangles and the Rounded Rectangle tool to draw rectangles with rounded corners. Hold down the Shift key to draw squares.






Ellipse tool: Use the Ellipse tool to draw ellipses. Hold down the Shift key to draw circles.

Curve tool: Use the Curve tool to draw free-form shapes.

Polygon tool: Use the Polygon tool to create polygons with irregular sides. This tool works differently than the other tools.

► **To draw an object using one of the drawing tools:**

1. Select the type of drawing tool.
2. Do one of the following:

| Tool | | Do this |
|-------------------|---|---|
| Rectangle |  | Position the crosshair pointer where you want the rectangle to start; then drag diagonally. |
| Rounded Rectangle |  | Position the cross-hair pointer where you want the rectangle to start, then drag diagonally. |
| Ellipse |  | Position the crosshair pointer where you to want start the ellipse, then drag diagonally. |
| Curve |  | Position the crosshair pointer where you want to start, then drag out your shape. A straight line connecting the start and endpoints of the shape will be added when you release the mouse. |
| Polygon |  | Position the mouse where you want to begin, then click and release. Move the mouse to the second point and click, then to the third point and click. Continue until you have as many points as required. Double-click to finish the polygon |

► **To change the thickness of the outline:**

- Select a line width from the Line Width pop-up.

► **To change the color of the outline:**

Do one of the following:

- Select a color from the Foreground Color pop-up.
- Select a color from the Recent Color pick-up.

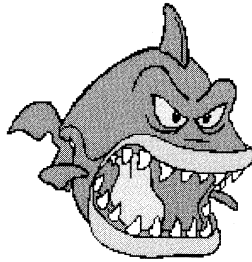
► **To draw filled objects:**

- Select a color from the Foreground palette, Background palette or the Recent Color pick up. Double-click on the shape you want. The image of the shape on the tool changes and is now black, indicating filled draw mode. Using these tools with the left mouse button fills them using the foreground color; with the right mouse button, the background color is used. To change back to unfilled drawings, double-click on the tool again.

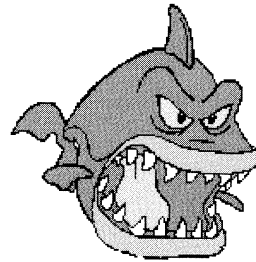


Text tool

The Text tool adds text to an actor or prop. Text can be used for labels, titles or as an actor or prop in itself. You can change the text attributes immediately after typing the text and before clicking anywhere on the screen by selecting the Font command from the Options menu. The Font dialog box is displayed. This dialog controls the font, font style, size, and effects. The settings that you select stay in effect until you change them again, or until you exit the Paint Editor. Once the text has been added, it becomes part of the image and you cannot change the attributes. Clicking anywhere else finalizes the text in the Paint window.



Angry Fi



Angry Fish

Font and font style : CorelMOVE accesses the CorelDRAW fonts. You can use any of these typefaces, as well as those you have added from libraries available from other vendors, as long as they are TrueType fonts. See Chapter 11 of CorelDRAW, "Working with Text" for more information on fonts and styles.

The type styles available depend on your choice of typeface. For example, some typefaces, such as France, only have normal and bold versions. The Font dialog box has a display box that lets you see a sample of the typeface and style you've chosen.

Font size : Font size is only limited by the size of your screen. If you enter a number larger than the screen size, you may not be able to see the text or the text may be cropped.

Effects : You can add strikeout and underline effects to your text. Strikeout draws a line through the center of the text and Underline draws at the baseline of the text.

Color : You can select a color for the text by selecting a color from the Paint Palette before typing the text. The Text tool uses the foreground color.

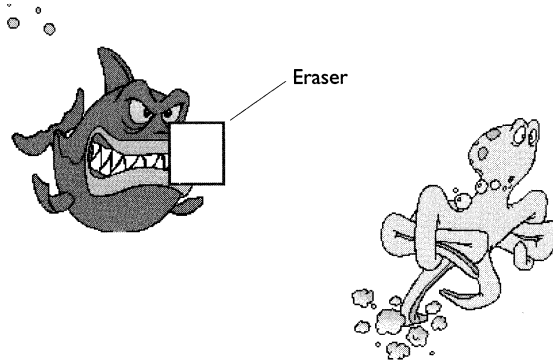
» **Shortcut:**

To display the Font dialog box, double-click on the Text tool.



Eraser tool

Use the Eraser tool to erase or remove the part of the image you drag the tool over. If you double-click on the Eraser tool, the entire image is erased.



Foreground and Background color selector

The Foreground and Background pop-up palettes display a choice of available colors for painting. Depending on the type of monitor you have, this palette can display 2-bit black and white, or up to 256 gray scales and up to 256 colors. The current color selections are displayed on the Foreground and Background Color buttons. The foreground color is the one on the left and the background color is the one on the right. The Pattern button located below displays the pattern selected using both the foreground and the background color.

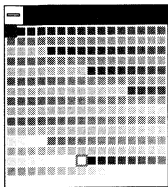
» Note:

You can also select the foreground and background color using the Color Pick-up tool. Use the left mouse button for the foreground color and the right mouse button for the background color.

► To select foreground or background colors using the pop-up palettes:

1. Click Foreground or Background.
2. Hold down the mouse until the cursor is over the color you want.
3. Release the mouse.

You can display the pop-up palette continually when you are in the Paint window. Click either Foreground or the Background and drag. The palette becomes a tear-off window. You can only have one tear-off palette for the foreground and background displayed at a time. The Control button on the Palette tear-off window opens a menu allowing you to move, close the window, or sort the palette.



► To sort your palette:

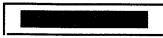
1. Click Control at the top left corner of the Palette tear-off.
2. Choose Sort Palette. The Sort Palette flyout opens.
3. Choose one of the following color models:
 - HSB – This model is based on the three characteristics of color: hue, saturation and brightness. Hue is the color, for example, purple, blue or red. Saturation is the clarity of the color. This is measured by the amount of gray in the

color. The color becomes duller as the amount of gray increases. Brightness determines how light or dark a color is by measuring how close it is to white or black.

- RGB – Red, Green and Blue are the three primary colors used to show color on monitors. All other colors are made up of a combination of red, green and blue.
- Gray Scale – This palette is sorted by the percentage of black in the color. Black is the first color in the palette, white is the last.

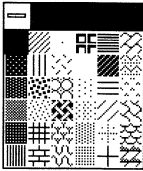
► **To select the foreground and background colors using the Palette tear-off:**

- With the cursor, click on the color you want to select. Use the left mouse button to choose the foreground color and the right mouse button to choose the background color. A blue box surrounds the selected foreground, a red box surrounds the background color.



Pattern Selector

The Pattern Fill pop-up palette displays a choice of available patterns you can use for paint and fill operations. The patterns are displayed in the most recently chosen foreground and background colors.



You can display the Pattern Selector continually when you are in the Paint window. Click the Pattern button and drag. The Pattern Selector becomes a tear-off window.

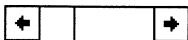
► **To select patterns:**

1. Click the Patterns button.
2. Hold down the mouse button until the cursor is over the pattern you want, then release it.

► **To use patterns:**

1. Choose a foreground color and a background color from the pop-up palettes.
2. Click the Pattern button. The Pattern palette opens.
3. Choose a pattern using the mouse. The selected pattern is surrounded by a black box on the palette, displayed on the Pattern button.
4. Use the Paint Bucket tool to fill any of the shapes with the selected pattern.

If you want to remove the pattern, open the pattern palette and select the solid fill at the top left corner.



Cel Cycle Scroll bars

The Cel Cycle Scroll bars are located at the bottom of the Paint Palette. They allow you to move through the cels of a multiple-cel actor. For more information on the Cel Cycle Scroll bars, see Chapter 3: "Creating Multiple-cel Actors."

Cel Counter

The cel count displays the current actor cel first and then the number of total cels in the actor. A single-cel actor displays as 1 of 1.

Creating special effects

You can apply special effects to your cels by using the special effects commands under the Options menu in the Paint window. These effects include: tinting, anti-aliasing (blending), rotating, and mirroring cels.

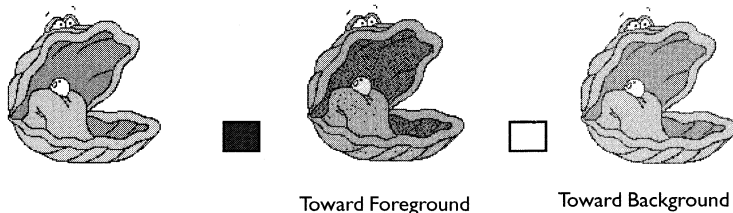
Making your selection

Special effects are added to your actors and props by selecting them with the Lasso or Marquee tool or by using the effects without a selection. If you do not make a selection in an actor, the special effect is applied to the entire actor in which case you cannot use the Undo or Revert commands to reverse the special effect. If you do not make a selection in a prop, you cannot undo or revert the Rotate or Scale effects. Only the selected part of the current cel is affected if you use the Lasso or Marquee tools, and the Undo command in the Edit Menu will revert the selected object to its previous state.

The Options menu changes to reflect whether a selection has been made. "All Cels" and "Prop" indicate that no selection has been made for either actors or props respectively. "Selection" indicates that part or all of either type of image has been selected. The Free option on the Rotate and Scale flyouts is available only if you select part of an image.

Tint

Tinting cels causes the existing cel color to blend with the selected color (either foreground or background).



► To Tint when working in color:

Do one of the following:

- Select Toward Foreground to add the foreground color to all pixels.
- Select Toward Background to add the background color to all pixels.

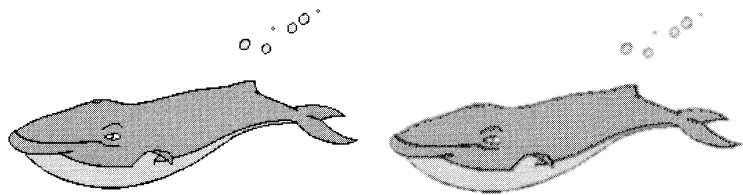
| | |
|---------------|--------------------|
| Tint all cels | Towards Foreground |
| | Towards Background |

| | |
|----------------|--------------------|
| Tint selection | Towards Foreground |
| | Towards Background |

Note: Tint All Cels (actor) or Tint Prop is displayed when you have not made a selection. If you have made a selection, the menu displays Tint Selection.

Anti-Alias

Anti-Alias All Cels removes the jagged or stair-step edges on outlines. Anti-aliasing smoothes the edges of the cel by creating intermediate pixels. These pixels are grayish if you have not selected a background color. If you have selected a background color, the object's color is blended with the background color to create intermediary colored cels. For example, if the actor is a flying bird, you might want to pour sky blue around it before choosing Anti-Alias.



Anti-aliasing is available only when you are working in color. It is especially useful when you are printing the finished animation to video or displaying it on a video screen.

Rotate

The Rotate command rotates right, left, freely or by degrees. The Free option is available only if you have selected part of the image. If Free is selected, handles appear, allowing you to manually rotate the selected area.

| | |
|-----------------|--------------|
| Rotate all cels | Left |
| | Right |
| | Free |
| | By Degree... |

| | |
|------------------|--------------|
| Rotate selection | Left |
| | Right |
| | Free |
| | By Degree... |

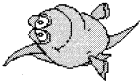
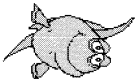
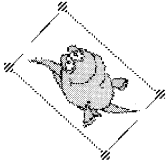
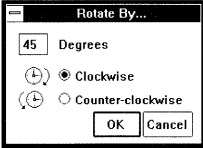
Note: Rotate All Cels (actors) or Rotate Prop is displayed when you have not made a selection. If you have made a selection, the menu displays Rotate Selection.

»Note:

If you rotate a selected area and a portion of the object moves off screen, you lose that part permanently.

► To rotate cels using the menu:

1. Select Rotate from the Options menu.
2. Do one of the following:

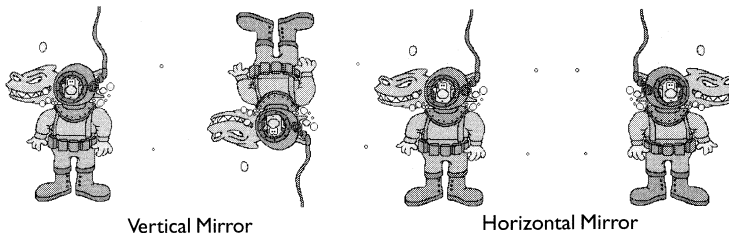
| Rotate Option | | Result |
|---------------|---|---|
| Left |  | Turns 90 degrees left. |
| Right |  | Turns 90 degrees right. |
| Free |  | Not available without selection. With a selection, handles are displayed at the corners of the selected area. Use the cursor to rotate the area around its center. |
| By Degree |  | Turns the object by the number of degrees specified in the Rotate by Degree dialog box. The number of degrees can be between 1 and 180 and the cels can be rotated clockwise or counterclockwise. |

Mirror

Mirror allows you to flip an object vertically or horizontally on the center line.

| | | | |
|------------------------|--|-------------------------|--|
| Mirror all cels | V ertical H orizontal | Mirror selection | V ertical H orizontal |
|------------------------|--|-------------------------|--|

Note: Mirror All Cels (actors) or Mirror Prop is displayed when you have not made a selection. If you have made a selection, the menu displays Mirror Selection.



Scale

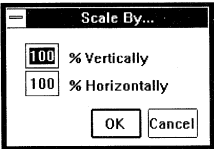
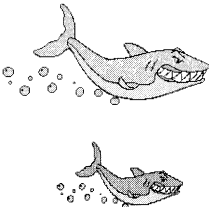
The Scale command scales freely or by percentage. The Free option is available only if you have selected part of the image. If Free is selected, handles appear allowing you to manually scale the selected area. If you select By Percent, the Scale By dialog box appears.



Note: Scale All Cels (actors) or Scale Prop is displayed on the Options menu when you have not made a selection. If you have made a selection, the menu displays Scale Selection.

► To scale using the menu:

1. Select Scale from the Options menu.
2. Do one of the following:

| Scale Option | Result |
|--------------|--|
| By Percent |  Scales by the values set in the Scale By dialog box. The cel can be scaled by changing the percentage vertically and/or horizontally. You can enter percentages from 0 to 200. |
| Free |  Only available when part of a cel has been selected. With a selection, handles are displayed at the corners of the selected area. Use the cursor to scale the area by resizing. This continues to work until you select another tool or choose another menu item. |

Using ink effects

Ink effects change the appearance of the actor or prop in the animation. There are two types: Opaque and Transparent. You can use these effects on a selected area of an actor or prop. Ink effects are found under the Options menu.

Opaque: The selected part of the actor or prop is opaque. Opaque means that you cannot see through the actor or prop. Any object beneath an opaque object is covered to the extent of the overlying object. The covered object is not visible.

Transparent: The selected part of the actor or prop is transparent. Transparent means that you can see through the actor or prop. If you place a transparent object over another object, the object underneath is visible through the overlying object.

Saving a new actor or prop

There are two ways to save a new actor or prop. You can use the Control button on the Paint window. This method is used when you have finished working on your actor or prop and want to close the Paint Window. You can also use the Apply Changes command under the File menu. This saves the file, but leaves the actor or prop open in the Paint Window.

You can use the Keep Paint option under the Edit menu to save changes you've made to an actor or prop in the Paint window. Use Revert to go back to the most-recently saved version of the picture.

► To save an actor or prop using the Control button:

1. Click the Control button on the Paint window. The Close Paint Window dialog box is displayed.
2. Click on Yes to save the actor or prop. You can also click Cancel to cancel the save operation and return to the Paint window or click No. If you click No, the Paint Window closes without saving the actor or prop.

Undoing special effects

Revert Paint restores the most-recent version of the actor or prop after the Keep Paint or Apply Changes commands were used. If you do not make a selection in an actor, you cannot use the Undo or Revert commands to reverse the special effect. If you do not make a selection in a prop, you cannot undo or revert the Rotate or Scale effects.

Using the Zoom command

» Shortcuts:

Use Alt + 1 to zoom x1

Use Alt + 2 to zoom x2

Use Alt + 3 to zoom x4

Use Alt + 4 to zoom x8

You can use the Zoom command to magnify an actor or prop so that you can work at a higher level of resolution. Zoom lets you magnify an object in increments of x1, x2, x4, and x8.

► To Zoom:

- Select Zoom command from the Options menu. The Zoom flyout appears. Select the magnification level. When you want to return to the default view, select the x1 factor.

Editing actors and props

» **Tip:**

You can also use the Actor or Prop Information dialog boxes to edit your objects. Click the Edit button.

After you have created your actors and props, you may want to edit them. All editing of props and actors created in Core!MOVE is done in the Paint window unless you decide to change the editor (see Chapter 9, "Working with Other Applications". If you have created actors or props in other applications, you can use the source application to edit.

► **To save an actor or prop using the Control button:**

1. Select the actor or prop with the Pick tool.
2. Choose Object from the Edit menu. The Paint window or the application selected as Editor opens.
3. Edit the actor or prop.

Creating Multiple-cel Actors

You create multiple-cel actors when you want the actor to move in the animation. There are two courses of movement in an animation: there is the actor's movement and there is the path the actor follows through the animation. The actor's movement is created in the Paint window through the development of progressive cels displaying the actor in each stage of its movement. For example, a running dog does not always have four legs on the ground. At one point in the dog's stride, all legs are in the air; at other times one leg is on the ground, then three legs are on the ground, and so on. To make the dog look as though it is running in an animation, the stages of the dog's stride are illustrated in progressive cels. Multiple-cel actors are created the same way as single-cel actors and props. Once you are in the Paint window, you can insert the number of cels required.

Inserting and removing cels

You can use the number of cels an actor has to determine the way in which the actor appears to move. The actor's cycle speed depends on the number of cels and the actor's size in each cel. The cycle speed is the flow or smoothness of movement and the speed at which the actor moves through the entire number of cels. A high number of cels causes the actor's speed to decrease, because the actor's position changes little in each cel and it takes longer to cycle through all of the cels. If you want to make an actor move more rapidly and more abruptly, lower the number of cels.

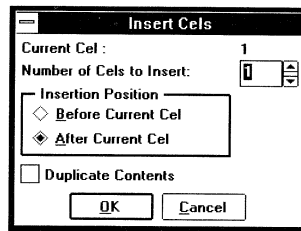
Inserting cels

You can insert one or more cels in an actor using the Insert Cels command under the Paint window's Edit menu. The best performance requires a maximum of 10 cels per actor; however if you have large amounts of memory available, this maximum can be increased proportional to the memory available.

► To insert cels in an actor:

1. Select Insert Cel from the Edit menu.

The Insert Cels dialog box is displayed.



2. Type in the number of cels to insert. The default is 1.
If you want the new cels to have the same image as the current cel, click the Duplicate Contents check box, then click OK.
3. Select the insert position for the new cels. Click Before Current to insert the cel(s) before the currently displayed cel; click After Current to insert the cel(s) after.
4. Click OK.

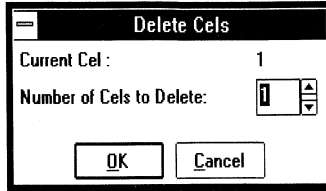
When cels are inserted into an actor, the Paint window appears blank unless you have chosen to duplicate the cel contents. The cel count changes to reflect the number of cels added to the Actor.

Removing cels

You can remove cels from an actor using the Remove Cels command under the Edit menu.

► To remove cels from an actor:

1. Select Remove Cels from the Edit menu. The Delete Cels dialog box opens.



2. Enter the number of cels to remove.
3. Click OK.

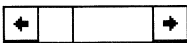
Applying special effects

» **Note:**

If you make changes to the actor without selecting an area within a specific cel, you cannot use the Undo or Revert commands to reverse the changes.

Special effects are applied to a multiple-cel actor in one of two ways: selecting a specific part of the actor, or all of it. A detailed explanation of the special effects is in Chapter 2 "Creating Special Effects." You can apply special effects to multiple-cel actors as you would to a single-cel actor, and affect only the current cel you are working on. To do this, you must use the selection tools and select the current cel. The other method applies the special effects to all the cels that comprise your actor. To make global changes, select the special effect you want to use without making a selection with the Marquee or Lasso tools. The special effect is applied to all of the actor's cels and then committed to the animation.

Moving through the cels of an actor



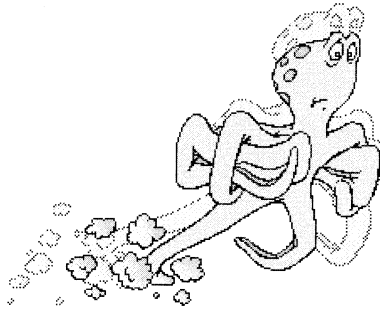
You can use the Cel Cycle scroll bar on the Paint Palette to move through the cels of an actor, or display the cel you want to edit or create. You can also get an idea of how the actor moves and what it will look like in the animation. The Cel Counter displays the cel currently shown and total number of cels for the actor. You can display the next cel by clicking once on the arrows. If you want to cycle through the cels more quickly, hold the mouse button down or move the scroll bar.

Using Onion Skin

Onion Skin shows the previous or next cel of the actor in the current cel. The Onion Skin cel always appears behind the current cel at 30% of the saturation of the original. Onion Skin is accessible only when the Actor has more than one cel.

Onion Skin allows you to trace and/or align the current cel to the previous or next cel. This is an easy way to ensure that all of the cels in an actor are in the same position and are similar in size and shape. This is important because you want the actor to move in a specific manner in the animation. If the alignment is off, or the actors in the cels are different in size, you can have jerky movements where none were intended, or the actor may appear to vibrate.

Onion Skin can assist you in creating a progressive series of cels for an actor. If you draw the first cel of the actor and insert new cels, you can use Onion Skin to see the first cel while you draw the second and so on. The Onion Skin of the previous cell can be used to trace portions of the actor. If you want to reproduce the entire image, you can use the Duplicate button on the Insert Cels dialog box. The image is duplicated exactly using this method. Tracing always produces variances in the object.



Onion Skin works in all levels of Zoom, but some operations might become slower when it is turned on. Choose Previous Cel, Next Cel, or None to disable the feature.

► **To use Onion Skin in creating cels:**

1. Select Onion Skin from the Options menu in the Paint window.
2. Select Previous Cel or Next Cel.

The image in the other cel appears behind the current cel at 30% of its actual saturation.

3. Using the other cel's image as a tracing or registration guide, keep adding cels and drawing new images with changes that indicate movement.
4. Repeat the process until you have created all the cels you want in the cel cycle.
5. Select None from the Onion Skin flyout to turn off the feature.

Duplicating cels

During the course of an actor's movement, you may have instances when the actor is in the same state. The actor might be placed in a different location in the cell, but be the same shape and or color. For example, if you have a bouncing ball, the ball might be the same shape in several of the cels. To reproduce the image exactly, use the Duplicate button on the Insert Cels dialog box.

Reversing cels

The Reverse Cels command allows you to reverse the direction of an actor's movement. The order of the cels is reversed and the actor appears to be moving backwards. To reverse the order of an actor's cels, select Reverse Cels under the Paint window's Edit menu. All of the actor's cels are reversed. The Reverse Cels command is accessible only when you are in the Paint Window.

Editing multiple-cel actors

Multiple-cel actors are edited in the same way as single-cel actors: select the actor with the Pick tool. Choose the Object command from the main Edit menu. The Paint window or the source application opens, and you can edit the actor.

Creating Sounds

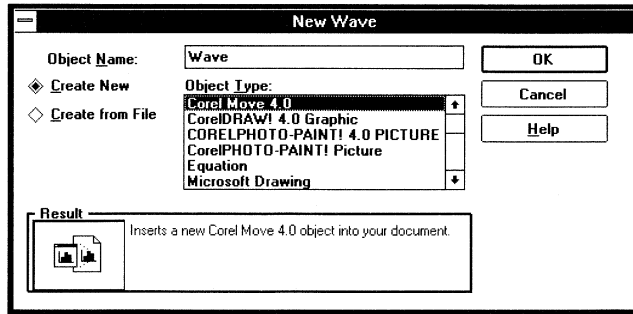
Sound has many functions in animation. Sound effects can emphasize, precipitate, or introduce movement, characters, or even themes. In traditional animation, the sound track is determined before any of the characters or props are created.

CorelMOVE lets you record sounds, provided you have a microphone and sound-capturing hardware, such as the SoundBlaster, Windows Sound System or similar board. For the discussions that follow, it is assumed that you have such hardware, and that it is properly installed and functional.

Recording a sound

► **To create a new sound effect:**

1. Choose Sound from the Insert New Object flyout on the Edit menu. The New Wave dialog box opens.

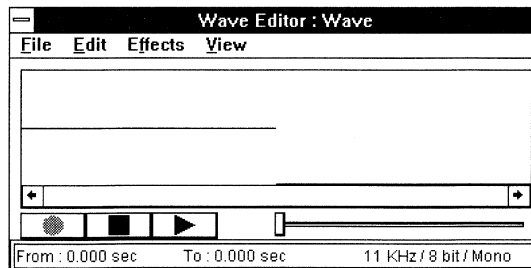


2. Enter a name for the new sound in the Object Name box.
Each sound should have an individual names to identify it. This is because as you create or import them into your animation, they are added to the list of objects in the animation. This list is found in the Timelines Roll-Up. See Chapter 7, "Editing and Playing the Animation" for more information on the Timelines Roll-Up.
3. Click Create New.
4. Enter the name of the application to be used in the Object type box.

If the application is not CorelMOVE, the editing application opens. For example, if you selected Sound, an application such as Wave Edit would open. You would then create the object in the opened application. When it is saved, the application closes, CorelMOVE is opened and the sound is placed in CorelMOVE.

The Result section of the dialog box displays the results of each selection you have made in the Object Type box.

5. Click OK. The Wave Editor opens.



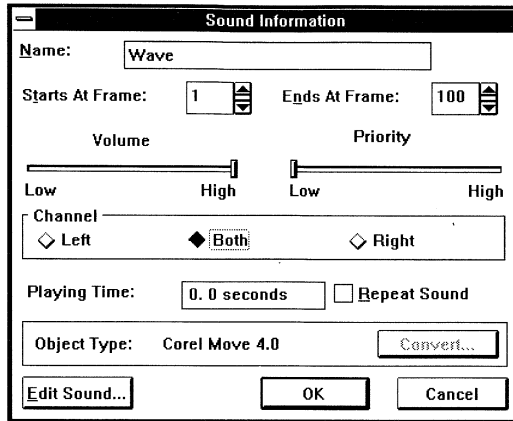
6. Click Record to start recording a new sound.
7. Click Stop to stop recording the sound.
You can zoom in on the sound wave using the Zoom bar.
8. Click Play to hear your new sound.

» **Shortcut:**

Use the Sound icon on the toolbox to open the Wave Editor.

Using the Sound Information dialog box

The Sound Information dialog box lets you adjust a sound once it has been added to your animation. To display the Sound Information dialog box, double-click on a sound name in the Timelines window.



Name

The name of the sound file is displayed. You can change the sound by entering a new filename in the Name field.

Starts At Frame

The start frame defaults to the frame number that the animation was on when the sound was added. The start frame can be changed at any time as long as it is not a number larger than the end frame number. When added to the animation, the sound starts to play on the start frame until it is finished, or the end frame is reached.

Ends At Frame

The end frame defaults to the last frame of the animation. A sound is of a fixed length, and may stop before its end frame is reached. If Repeat Sound is enabled when the animation plays, the sound repeats until its end frame in the animation is reached. If Repeat Sound is not enabled, the sound will play only once, and will then stop. If it stops before the end frame, nothing more of that sound will be heard until the animation is played again from the start.

Volume

The Volume slide control lets you set the volume for the selected sound.

Priority

The Priority slide control lets you set the sound priority by moving the slide from Low to High. The priority setting is used to determine

» Tip:

If you need more than two distinct sounds playing at the same time for one of your animations, you have to merge the two or more sound files into a single file. This requires the use of a more fully-featured sound editor, such as the Microsoft Quick Recorder. You will also have to be very careful about the timing of such a merger, since it will have to synchronize with the other elements in your animation.

which sounds are actually heard when the animation is played. If you have four sounds set to play on frame 10 and your system only supports two channels, then the two sounds with the highest priority are heard. It is best to create background noises (like insects chirping) with low priority. With this scenario, temporary sounds like a bird singing overrides the insect sound. If a sound is interrupted by a high priority sound, it continues to play after the interrupting sound is finished only if it is a repeating sound.

Channel

Channel lets you choose a channel for the sound. You can play it on left, both, or right. If you choose Both, you will hear it from both the left and right channels in a stereo sound setup.

Playing Time

The Playing Time indicates the sound's length in seconds. This is the length of one play of the sound, it does not include any repeats.

Repeat Sound

Enable the Repeat Sound check box if you want the sound to play over and over until its end frame is reached.

Object Type

This section of the dialog box displays the type of object.

Convert

The Convert button converts your objects to CorelMOVE objects. See Chapter 9, Working with Other Applications for more information.

Edit Sound

The Edit Sound button opens the Wave Editor Window if the sound was created in CorelMOVE. If the sound was created in another application, clicking the Edit Sound button opens the source application.

Editing Sounds

Sounds are displayed as waveforms in the Wave Editor. A waveform is a graphic representation of a sound. Time is displayed along the horizontal axis and volume along the vertical axis. The Wave Editor lets you edit sounds you have created or imported by editing the waveform using menus at the top of the window. You can cut, copy, paste, and delete portions of the sound, as well as apply various processing effects.

If you have selected stereo sound in the Change Wave Characteristics dialog box, the sound is played through two channels, left and right. The sound that goes through each of the channels is usu-

ally different (unless the sound was recorded as mono), therefore, the left and right waveforms are visually different. You can edit either channel.

► **To edit a sound effect waveform:**

1. Double-click on a sound in the Timelines Roll-Up. The Sound Information dialog box appears.
2. Click on Edit Sound. The Wave Editor window is displayed. If the sound was created in another application, the source application opens.
3. Select the channel you want to edit from the View menu.
4. Edit the sound using the tools provided.
5. Save the edited sound.

Most of the sound-editing operations affect the entire sound if there is no selection, unless you select part of the waveform; then only that area is affected by the editing operation.

► **To select a part of a waveform:**

1. Using the scroll bar, find the part of the waveform you want to edit.
2. Click on the display of the waveform and while holding the mouse down, drag along the waveform until you have selected the portion you want. The selected part turns black.

Using Undo, Cut, Copy, Paste, Delete, and Select All

» **Shortcuts:**

To cut, use *Shift + Del*.

To copy, use *Ctrl+ Ins*.

To paste, use *Shift + Ins*.

To delete, use *Del*.

Cut: To cut a section of a sound, highlight the area by holding the mouse down until an insertion line appears. Drag the mouse in either direction to select a section of the sound. Select Cut from the Edit menu to cut the selection to the Clipboard. The selected portion of the sound is removed and placed on the Clipboard. The remaining portion of the sound that follows the cut section is then moved backward in time to where the cut began. In this way, no "holes" are left when cutting a portion of a sound.

Copy: To copy a section of a sound, highlight the desired area by holding the mouse down until an insertion line appears. Drag the mouse in either direction to select a section of the sound. Select Copy from the Edit menu to copy the selection to the Clipboard.

Paste: To paste a section of a sound from the Clipboard, hold the mouse down at that point in the waveform where you want to paste the sound. An insertion line appears. Select Paste from the Edit menu to paste the portion of the sound from the Clipboard into the waveform. The portion of the sound that was to the right of the insertion line is pushed forward in time. It will now begin at the end of the section you've just Pasted in. The size of the sound increases by the amount you are pasting to the sound.

Delete: To remove a section of a sound, highlight the area by holding the mouse down until an insertion line appears. Drag the mouse in either direction to select a section of the sound. Select De-

lete from the Edit menu to remove the selection. The selected portion of the sound is removed. This command works exactly as the Cut command, except that the deleted section is not placed on the clipboard.

- ▶ **To select all of a waveform, do one of the following:**
- You can select the entire waveform by dragging the mouse from the start of the waveform to the end or using the Select All command under the Edit menu.
- Double-click anywhere on the waveform.

Applying effects to your sound wave

Change Characteristics: When you select this command, the Change Wave Characteristics dialog box is displayed. You can change the Channels (mono or stereo), the Sample Size (8 Bits or 16 Bits) and the Sample Rate (44.1 kHz, 22.05 kHz, or 11.025 kHz). Channels controls whether the sound is played in stereo or mono. The Sample Size of a recording controls the dynamic range of sounds recorded, and therefore, has an impacts on the file size. For example, the 16-Bit option records a greater dynamic sound range, and as a result, the quality of the recording is higher. However, the file size is much larger because of the number of bits used. Sample Rate controls the number of times per second that the recorder takes a sample of the sound when it is being recorded. The quality of the recorded sound depends as well on this Sampling Rate: 44.1 kHz is CD quality, 22.05 kHz is tape quality, and 11.025 is radio quality.

Silence: If selected, the sound wave is visually "flattened" and therefore, sound is removed.

Fade Up: If you select Fade Up, the Fade Selection Up dialog box appears. Enter a percentage in the Fade Up to % box. Fade Up makes the current selection (or entire sound) start at a volume level of zero and increase to a percentage of the level at the end of the selected portion before the command was applied.

Fade Down: The Fade Selection Down dialog box appears. Enter a percentage in the Fade Down To box. Fade Down makes the current selection (or entire sound) start at its current volume level and decrease to a percentage of the level at the end of the selected portion before the command was applied.

Amplify: When you select Amplify, the Amplify Selection dialog box appears. Enter a percentage in Amplitude % field.

The percentage entered in this field either decreases volume (amplification % set from 1% to 99%) making the sound quieter when it is played back, or increases the volume, (amplification set from 101% to 9999%) making the sound louder. An amplification % of 100% has no effect on the volume. Setting amplification to 0% silences the selected portion of the sound.

Reverse: The Reverse command reverses the entire waveform or the selected portion of it. When played back, the sound plays in reverse.

Echo: The Echo command echoes or repeats the entire waveform or the selected portion with a decay. For example, when you hear an echo, the sound repeats but gradually fades away with each repetition. When played back, the sound echoes. Select Echo a number of times to increase the echo effect.

Playing and saving the edited sound

You can play the sound while you are in the Wave Editor to hear the changes you have made.

» Shortcuts:

*Use Ctrl + P to play
Use Ctrl + S to stop*

▶ To play a sound:

- The Play command under the File menu plays the entire waveform or the selected portion of the waveform. You can also use the Play button on the Wave Editor window.

▶ To stop playing a sound:

- Choose the Stop under the File menu or use Stop on the Wave Editor window.

▶ To save an edited sound:

- Choose Apply Changes under the File menu.

Placing Actors, Props and Sounds in the Animation

Animations are composed of the actors, props, and sounds you create or import. See Chapter 8, "Importing Animation Objects." When you create or import an actor or prop, it is placed in the center of the Animation window with a marquee border. You must then move it to the proper position in the animation. It can be moved to any location in the Animation window. CorelMOVE provides you with the following tools to place the actors and props in your animation: Pick tool, Arrange commands, Edit Commands, the Information dialog boxes and the Library Roll-Up.

(Sounds are placed so that a new sound starts on the currently-displayed frame and then runs for its duration once. See Chapter 7, "Using the Timelines Roll-Up" for information on placing Sounds.)

Placing actors and props

You can use the Pick tool or the Information dialog boxes to move an actor or prop to the correct position in the animation.



Using the Pick tool

The Pick tool allows you to move and actors and props to any location on the Animation window.

► To move an object with the pick tool:

1. Select the Pick tool and click on the actor or prop you want to move. The object displays a marquee border and the cursor changes temporarily to the move cursor.
2. Drag to the desired location.
3. Release the mouse when the object is positioned correctly.

Using the Information dialog boxes

You can enter the position of the actor or prop in the corresponding Information dialog box. To display the Actor or Prop Information dialog box, double-click on a placed object, double click on an object in the Timeline Roll-Up, or select an object in the Animation window and choose Object Info from the Edit menu. Refer to Chapter 7, "Editing and Playing the Animation" for information on changing placed actors and props.

Arranging layers

Actors and props are placed in an Animation on their own layer, like playing cards in a stack. Actors are always placed in front of props. If you need to change the layer on which prop or actor is located, use the commands found on the Arrange menu. The Arrange commands do not work in the Paint window.

» Shortcuts:

To Front – Shift + PgUp

To Back – Shift + PgDn

Forward One – Ctrl + PgUp

Back One – Ctrl + PgDn

To Front

Select an actor or prop, then choose To Front to move the object's layer to the top of the stack.

To Back

Select an actor or prop object, then choose To Back to move the object's layer to the bottom of the stack.

Forward One

Select an actor or prop, then choose Forward One to move the object's layer one position higher on the stack. This command is useful for changing the position of an object that is difficult to select because of overlying objects. By moving the covering object to a lower level, you will be able to select the underlying object. You can also use this command to move an object to a desired position in

the stack of layers. Keep using the command until the object is at the level that you want. If the object is on the top layer, the command has no effect.

Backward One

Select an actor or prop, then choose Backward One to move the object's layer one position lower in the stack, relative to the other objects in the animation. Backward One can be used to move an object further back when it's covering a second object and you are unable to select the second object. You can also use this command to move an object to a desired position in the stack of layers. Use the command until the object is at the level you want. If the object is on the bottom layer, the command has no effect.

Managing objects

Managing the actors, props, and sounds you place in your animation includes using the editing commands under the Edit menu and the Library Roll-Up. The Editing commands (Cut, Copy, Paste, Delete, Duplicate, and Clone) affect only the Animation window. For example, when you delete an object using the Delete command, the object is removed from the window, but remains in the Library. You can always recover the object from the library and replace it in the animation. The Library Roll-Up lets you create libraries that contain actors, props and sounds. If you delete an object from the library, the object is removed only from the library.

Deleting objects

To delete an object, select it and then press the Del key. The object is removed from the Animation window, but not from the library.

Cutting, Copying, and Pasting Objects

You can cut, copy, and paste actors and props in your animation using the commands under the Edit menu in the Animation window.

» Shortcuts:

Use *Ctrl + X* to cut

Use *Ctrl + C* to copy

► To cut objects:

- Select the object you want to cut, choose Cut under the Edit menu. The objects are removed from the Animation window and the Timelines roll-up. Use Paste to place the objects back into the animation. You can use the Shift key to select multiple objects.

► To copy objects:

- Select the object you want to copy, choose Copy under the Edit Menu. Use Paste to place the object in the Animation window. You can use the Shift key to select multiple objects.

► **To Paste objects:**

- Select Paste to place objects that you have cut or copied into your animation. The objects are placed on the current frame of the animation and continue until the last frame.

» **Shortcut:**

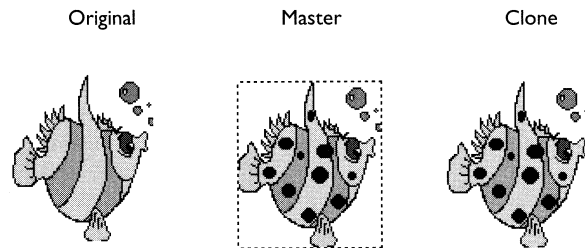
Use **Ctrl+D** to open the Duplicate dialog box.

Duplicating objects

You can create a copy of a selected object by selecting it and using the Duplicate command on the Edit menu. The Duplicate dialog box appears. Enter the name of the duplicate object in the To: field. The duplicate is placed on top of the original, offset slightly down and to the right. It is added to the list in the Timelines window.

Cloning objects

Cloning differs from duplicating in that most changes made to the original object (called the "master") are automatically applied to the clone as well. For example, if you change the number of cels in the original, the clone's cel number changes as well.



Note: Changes performed on any clone affect all of the clones and the original object. For example, if you changed the fill color on a clone, all of the other clones in that group and the original object would have the new fill color. When you delete a clone, only that instance of the clone is deleted.

To clone an object, select Clone from the Edit menu. The Clone dialog box appears. Enter the name of the clone in the To: field. The clone is placed on top of the original, offset slightly down and to the right.

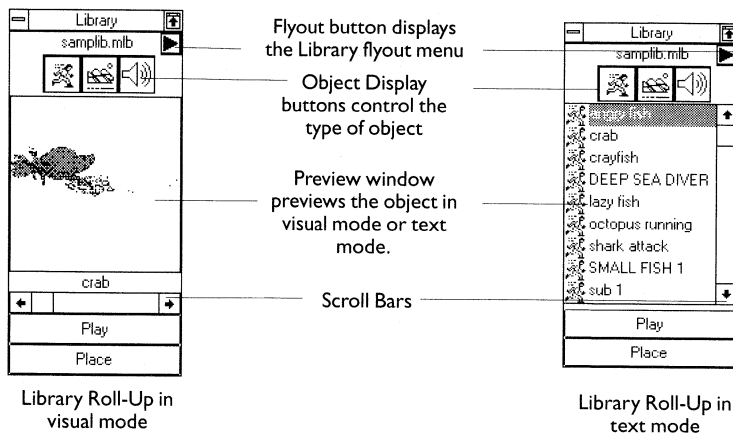
Select All

Use Select All to select all the objects in your animation.

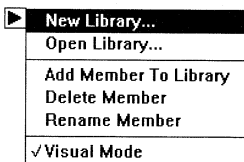
Using the Library Roll-Up

You can use the Library Roll-Up to create libraries for the actors, props, and sounds that you create or import. You can build a large resource of objects to be used in future animations. To use them, simply load the library which has the object you want to use. Use the scroll bars to scroll through the object names in the library. Click on the one you want and then select Place on the bottom of the roll-up. The object is placed in the current animation. If you are not sure which object you want to use, choose Visual Mode on the

Library Roll-Up flyout, and scroll through the objects using the scroll arrows. You will be able to see the actors, props and sound waves before you decide to place them in the animation. You can also see an actor cycle through its cels and hear the sounds in the library by clicking Play on the roll-up.



Creating a library : Click the flyout button at the top of the roll-up, then choose New Library. The New Library dialog box opens. Enter the name, drive, and directory for the new library. The library files have "mlb" extensions after their names. You do not need to enter the extension when specifying the name.



Selecting a Library file : Click the flyout button and select Open Library. The Load Library dialog box opens. Select the name of the library and click OK. The selected library is loaded into the roll-up.

Adding a member to the library : To add a member to the library, select an object and click on the menu arrow. Choose Add Member to Library. The object is inserted in alphabetical order in the library file.

Deleting a member : To delete a member, select an object and click on the menu arrow. Choose Delete Member. The object is deleted from the library.

Renaming a member : To rename a library member, select an object and click on the menu arrow. Choose Rename Member. The Rename Member dialog box opens. Enter the name in the New Name box. Click OK. The new name is applied only to the Library filename.

Using Visual Mode: Click the flyout button and choose Visual Mode. The objects in the library are displayed graphically. If Visual Mode is not enabled, the objects do not appear in the Display box, only a list of their names.

Scrolling through the library: To scroll through the library, click on the scroll arrows to the right of or under the Display box.

Using the Object Display Icons: The Object Display icons are used to determine the type of object shown in the Preview Window. When the button for a particular type of object is pressed, all objects of that type in the library are shown. For example, if you press the actor icon, all of the actors in the library are shown.

Using the Play button: Click Play to preview sounds or actors. This button toggles between Play and Stop Playing.

Using the Place button: Click Place to place the actor, prop or sound in the animation. If you are in Visual Mode, the currently displayed object is the one placed in the animation. If you are not in Visual Mode, select the object with the cursor and press place.

Adding Action

You have created and placed the actors in the animation. These actors now need to have a path to follow through the Animation window. Paths in CorelMOVE comprise a number of movable points. Each point on a path indicates a frame in which one cel of the actor is displayed. The combination of the cels being displayed over a series of frames and moving on a particular path gives the actors the illusion of movement. Props can also add to the overall movement of an animation. You can use transitions to adjust the way in which a prop appears in the animation and the way it exits.

Creating and editing paths

Creating a path

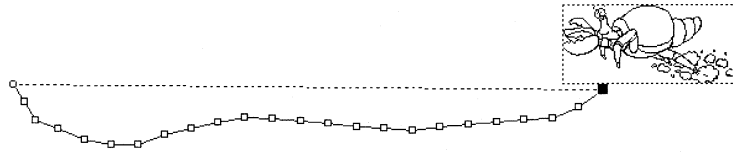
When an actor is placed in an animation, it is placed at a specific location on the screen and given a one-point path.

► To add points to an actor's path:

1. With an actor selected, select the Path tool on the toolbox. The Path Edit Roll-Up appears.
2. Make sure that the Allow Adding Nodes check box is enabled, then using the mouse, click a number of new points. The points of the path are displayed as black hollow rectangles if they are deselected. If selected, the rectangles are filled. The first point in a path is a slightly larger rectangle than the rest and the last point is displayed as a circle.

When the animation is played back, the actor animates or moves along the points on the path.

The actor's speed is dependent upon the distance between the path points. The closer together the points are, the slower the actor moves; the further apart the points are, the faster the actor moves.

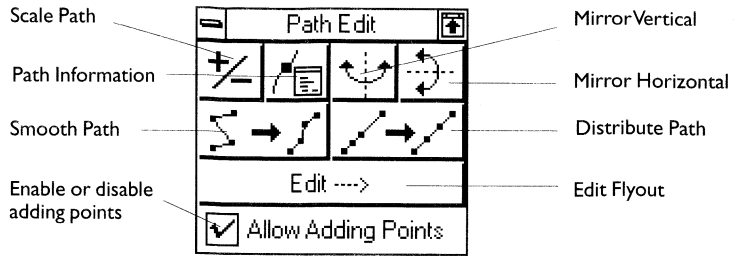


This example shows a 24-point path. The last point (circle) is the loop point. The actor animates from the first point, along the path, to the last point. When it reaches the last point, the actor loops (plays through its sequence again), until it reaches the actor end frame. If the end frame for this actor is the same frame that the last point is on, the actor does not loop, but disappears.

If there is no loop point and there are fewer points in the path than the number of frames the actor is employed for, the actor stays at the last point and cycles through its cels.

Editing paths

When you select the Path tool on the toolbox, the Path Edit Roll-Up is displayed. This roll-up provides you with powerful editing tools. You can edit the entire path or a range of points.



Selecting a range of points

To select a range of points, click on the first point. Hold the Shift key down and click on the last point of the range. The in-between points are selected as a range of points. Notice that the points change from white to black.

Mirroring points on a path

You can flip the entire path or a selected range of points either vertically or horizontally using Mirror Vertical or Mirror Horizontal on the Path Edit Roll-Up.

Smoothing, distributing, and scaling paths

As you add points to a path, the space between points and the number of the points, may not provide the movement that you want your actor to have. You can use the smoothing, distributing, and scaling options on the Path Edit Roll-Up to edit paths. If you do not select a range of points, these options are applied to the entire path.

Smooth : Makes the path less angular and more fluid and curved. If used repetitively, the entire path or the selected points become progressively flatter.

Distribute : Spreads the points evenly on the entire path or the selected range of points. For example, if the path has irregular groupings of points, you could use the distributing option to make the actor move regularly on the path.

Scale : Increases or decrease the number of points on the entire path or over the selected range of points. The Scale Path dialog box is displayed showing the current number of points in the path. Enter a number in the Desired box. The number of points on the path are increased or decreased according to the number entered.

Moving points on a path

There are two ways in which you can move the points on a path. You can select them with the mouse or you can enter coordinate information in the Path Point Information dialog box.

► To move points using the mouse:

- To move a point, select it and drag it to a new location on the screen. You can see the point's original location until you release the mouse. The path is then updated to reflect the new location of the point.

» Tip:

You can use Scale to add a number of points between two selected points which are close together. This creates a "pause" effect as the actor appears to stay in one location.

» Tip:

To avoid adding points to the path when selecting them with the mouse, disable Allow Adding Points.

» **Shortcut:**

Double-click on the desired point to display the Path Information dialog box.

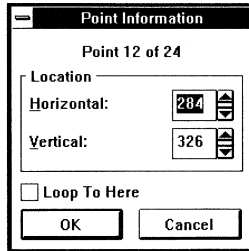
» **Note:**

The (0,0) point, where both horizontal and vertical coordinates are zero, occurs at the top left corner of the Animation Window. At the bottom right corner, the coordinates are equal to the Animation Window width and height values.

► **To move points using the Path Point Information dialog box:**

The Path Point Information dialog box displays the horizontal and vertical screen position of the point, as well as whether the path is looped to the displayed point.

1. With the desired point selected, click the Path Information button on the Path Edit Roll-Up.



The Path Point Information dialog box gives you the point's screen coordinates. You change the location by entering new coordinates.

2. Enter new horizontal or vertical screen positions if you want to move the point to a specific location.
3. Enable the Loop to Here box, if you want the point to be the loop point on a path.

Creating a loop point causes the actor to animate continuously around the path, jumping from the endpoint back to the loop point.

4. Click OK to register the changes.

Adding points to a path

Points can be added anywhere on the path. To add a point, select a point and then click somewhere in the Animation Window. Points are always added to the path after the selected point. The newly-added point becomes the selected point and you can continue to add new points.

Cutting, copying, and pasting points

The Edit button on the Path Edit Roll-Up lets you cut, copy, and paste points on a path. You can move entire sections of the path to different locations on the path using the Cut and Paste commands. This allows you to directly rearrange points on your path.

You can also use the Copy command to repeat sections of the path. This is useful if you want to repeat a specific movement on a path that the actor has to follow. For example, an actor might characteristically move on a path in a specific way, like a bumblebee or a hummingbird. These animals tend to dart and hover. By cutting and pasting, you can ensure a similarity in the type of movement.

- ▶ **To cut points on a path:**
 - Select the points you want to cut, click Edit and choose Cut Point(s) from the Edit flyout. Use the Shift key to select multiple consecutive points.

- ▶ **To copy points on a path:**
 - Select the points you want to copy, and click Edit. Choose Copy Point(s) on the Edit flyout. Use the Shift key to select multiple consecutive points.

- ▶ **To paste points:**
 - Select the location where you want to place the cut or copied points. Select Paste Point(s) from the Edit flyout. The copied or cut points are placed after the selected point.

Undoing Mistakes

The Undo command on the Edit flyout allows you to reverse any changes you have made to your path.

Clearing the Path

You can use the Clear Whole Path on the Edit flyout to remove the entire path. You don't have to select the points, simply click on Clear Path and all of the points are cleared. This is useful for quickly deleting all of the points.

Selecting all the points

You can select all the points in a path using the Select All Points on the Edit flyout. This command is useful if you want to move all of the points in a path.

Setting a path loop point

Loop points are useful when you want an actor to animate on the spot or to repeat a sequence over and over. Any point on the path can be designated as the loop point. If you designate a point in the middle of the path as the loop point, the actor animates along the path from the start to the end. From then on, it loops continuously from the loop point to the endpoint.

To set a loop point, double-click a point. The Path Point Information dialog box opens. Check Loop To, and then click OK. The path segment between the endpoint and the loop point is drawn in dashes.

Move frame with points check box

If you check the Move frame with points check box on the Edit flyout, the Frame Counter on the Control Panel changes to reflect the selected point. The Frame Counter displays the number of the frame that is active when the actor is on the selected point.

Registration

The registration point of an actor is the spot that the actor's path points are anchored to. If you move the registration point below the actor, then the path is positioned that distance below from the actor. The registration of an actor can be changed to provide a better flow to the animation. For example, you could have two actors using the same basic path and moving together through the animation. If the registration points of both actors are the same, one actor will be superimposed over the other. Changing the registration point of one of the actors will make them move along the path together, but in slightly different positions.

Registration is available only when creating or editing actors. When you select Registration from the Edit menu, the registration point of an actor is displayed in the Paint window, where you can then change it.

► To change the registration point:

1. Select Registration from the Edit menu. The cursor changes to the Registration cursor. The position of the current registration is displayed by a blinking registration mark.
2. Move the cursor to the desired new location and click. The registration mark moves to the new location.
3. Disable the registration mark by selecting Registration on the Edit menu. You can see if Registration is enabled on the menu. If there is a checkmark beside the command, it is enabled.
4. Save the changes to the actor by choosing Apply Changes under the File menu.

When you create or edit the actor's path, you will notice that the points on the path have been offset from the actor according to the changed registration point.

Adding prop transitions

» **Note:**

Steps do not correspond to the frames. For example, if there are six steps in a transition, it does not take six frames for the transition to occur. The animation stops during the transition.

Prop transitions are the way in which props enter and exit the animation. The manner in which a prop is displayed can enhance the animation. Props can be a varied assortment of objects; they are not necessarily simply a backdrop for the animation. Props may be objects such as furniture, words, trees, and islands. The only attribute they must have in common is that they do not have movement. In other words, they are not animated. They can, however, enter and exit the animation in a number of ways.

► To apply transitions to a prop:

1. Double-click on a prop or select a prop and choose Object Info from the Edit menu. The Prop Information dialog box is displayed. See Chapter 7, "Editing and Playing the Animation" for more detail on the Prop Information dialog box.
2. Click Edit in the Transitions section of the Prop Information dialog box. The Transitions dialog box opens.

3. Select the type of transition from the Entry and Exit Transitions list boxes.

If you have selected Scroll, Zoom or Zoom Rectangles, a button is displayed below the list box. Click the button to display the Edit Scroll, Edit Zoom or Edit Zoom Rectangles dialog boxes. Enter the required information. See "Using the Transitions dialog box" for information on these dialog boxes.

4. Click OK.

Types of transitions

Transitions are special effects that enhance the way in which a prop enters and exits an animation. For example, if you simply had the prop appear on a designated frame, the entrance would be abrupt. However, if you used a transition effect and made the entrance occur over a number of steps, the prop would appear to move into the animation according to the transition type selected. You can choose from the following types of transitions:

Scroll: The Prop moves gradually into the animation from the direction that you specify in the Edit Scroll dialog box. The scroll effect is similar to the movement you see on dialog boxes and windows when you use the scroll bar.

Zoom: A small version of the prop opens in the location you have specified in the Edit Scroll dialog box and gradually becomes larger over the course of the transition. Or, if you are using this effect for an exit transition, the prop becomes progressively smaller until it disappears at the end of the transition.

Zoom Rectangles: In an Entry Transition, the Prop opens in the location you specify in the Edit Zoom Rectangles dialog box. A small portion of the prop appears in the shape of a rectangle. As the transition moves through its steps, the rectangle's size becomes larger and shows more of the prop until the entire prop is displayed. In an Exit Transition, the prop is masked in consecutively smaller rectangles until it disappears.

Wipes: There are five types of wipes: TL to BR (top left to bottom right), TR to BL (top right to bottom left), BL to TR (bottom left to top right), BR to TL (bottom right to top left) and Circular. In a wipe effect, the prop enters or exits the animation in segments following a diagonal line from the direction of origin (top left, top right etc.) and is complete when it reaches its destination. In a circular wipe, a diagonal line radiated from the center of the prop rotates from that point. As it passes, that portion of the prop is displayed or removed. All wipe effects have the appearance of windshield washers.

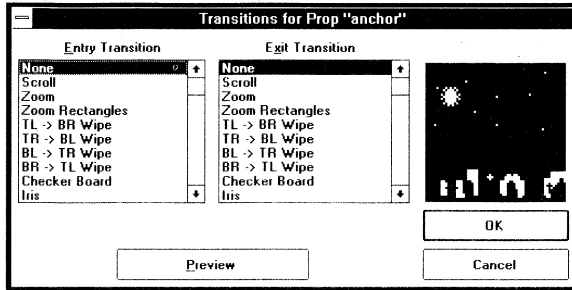
Checker Board: The Prop appears or disappears in a checker board pattern.

Iris: In an iris effect, a portion of the prop appears in a small circle at the center of its position on screen. It is revealed in expanding circles until the entire prop is displayed. When you use an iris effect for an exit transition, the prop disappears as a shrinking circle.

Pixelize : The Prop appears as oversized pixels which gradually shrink to become regular-sized pixels. As the transition from large to small occurs, the image of the prop becomes sharper. In an exit transition, the pixels become larger and the prop becomes more indistinct until it disappears.

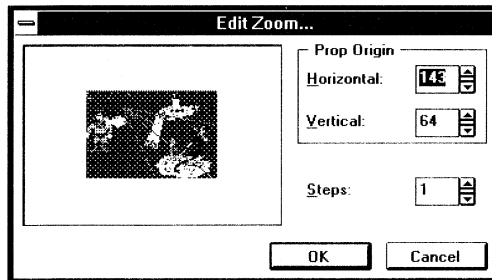
Using the Transitions dialog box

The Translation dialog box allows you to set the way your props enter and exit the animation.



Entry and Exit Transition : Entry Transition allows you to select the way the prop enters your animation. Exit Transition selects the way the prop exits the animation. Explanations of the all of the transition types are listed above.

Edit Scroll, Edit Zoom and Edit Zoom Rectangles buttons : If you have selected Scroll, Zoom or Zoom Rectangles, the Edit Scroll, Edit Zoom and Edit Zoom Rectangles buttons are displayed under the list boxes. When clicked, they open the corresponding dialog box. Each dialog box (Edit Scroll, Edit Zoom and Edit Zoom Rectangles) has the same information.



Enter the horizontal and vertical entry/exit position (in pixels) in the Prop Origin boxes. This is the location in the Animation window at which the entry/exit of the prop starts. For Zoom transitions, You can use the 4 gray lines that appear on the bounding box corners of the prop in the Prop Origin View area to select a Prop origin. Click and drag anywhere on the Prop Origin View area. The Edit Scroll dialog box's Prop Origin View area has a movable rectangle that you can move to set the Prop origin.

Enter the number of steps in the Step box. The number entered in this box indicates how many steps it will take for the prop to enter/exit the animation.

Steps: The Steps box determines the number of steps it takes to complete the transition effect. As well, the Steps box controls the speed of the transition. As you increase the number of steps, the transition becomes slower and more fluid.

Preview: When you click the Preview button, a sample of the Entry and Exit transitions selected is displayed in the Preview Window.

Editing and Playing the Animation

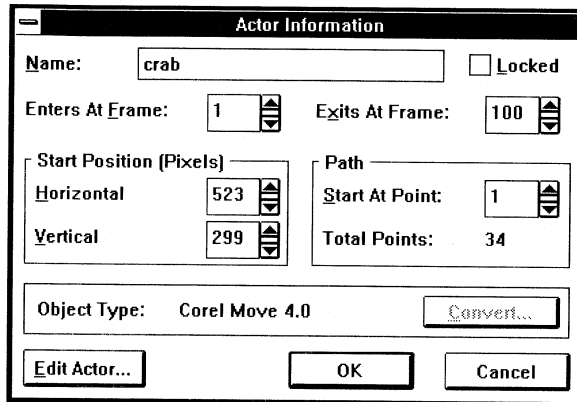
This chapter describes the options that bring the elements of the animation together. In the film and animation industry, this is called editing. Once you have created your actors, props and sounds and given your actors paths through the animation, you can use the Information dialog boxes to adjust the various components. Then, you can use the Cel Sequencer, Timelines and Cues to put the final touches on the animation. These options connect events such as an actor's appearance, disappearance and movement. They also allow you to emphasize important areas in the animation. The end result is a successful animation which gives the viewer the illusion of life and expresses the animator's message.

Adjusting actors and props

Actors and props can be adjusted in the animation using their corresponding information dialog boxes.

The Actor Information dialog box

The Actor Information dialog box lets you adjust an actor once it has been placed. To display the dialog box, double-click a placed actor using the Pick tool or select a placed actor, then choose Object Info... under the Edit menu. A description of the contents of the Actor Information dialog box follows.



» Tip:

Giving different names to multiple copies of the same actor makes it easy to distinguish between actors in the Timelines window.

Name: The Name field defaults to its library name. If you have duplicated or cloned an actor, the name in the Actor Information dialog box is the name you assigned it in the Duplicate or Clone Actor dialog box. To keep track of placed actors, give each one a unique name the first time it is used. This is a label name only and does not change the actor's original name in the library.

Locked: Click the Locked check box if you want to lock the actor in the indicated position on the screen. You will not be able to move the actor while this box is checked.

Enters At Frame: The Enters At Frame number indicates at which frame the actor enters the animation. It defaults to the frame that was current when the actor was placed. This number can be changed at any time as long as it is not larger than the last frame number of the animation.

Exits At Frame: The Exit At Frame indicates at which frame the actor leaves the animation. It defaults to the last frame of the animation. The exit frame number can be changed at any time, provided it is not larger than the last frame number of the animation.

Start Position (Pixels): When an actor is placed in an animation it is placed at a specific location in the Animation window. The Horizontal and Vertical fields show the position of the registration point of an actor. If you move the actor, these numbers change to reflect the new horizontal and vertical position. You can change the loca-

tion of the actor by typing different numbers into the Horizontal and Vertical fields. The top upper left corner of the Animation window has a vertical and horizontal position of zero (0). The values determine where the registration point is positioned on the Paint window.

Path : The Start At Point field displays the start point of an actor's path. All actors have a path of at least one point. If the actor has more than one point in its path, the first path point is by default, the start point. You can change the start point for the path to any number, as long as it does not exceed the number of points in the path. For example, if there are 23 points in a path, you can start at any point from 1 to 23. The Total Points field displays the number of points in the path. Use this number as a guideline for deciding the start point.

Object Type: You can change the actor's editor by clicking Convert. The actor is converted to a CorelMOVE object. When you click Edit, CorelMOVE's Paint Editor opens.

Edit Actor: Click Edit Actor to edit or modify the actor using the Paint tools or the source application. The Paint palette and the Paint window containing the currently-active cel of the actor appear. If you have selected another application as the editor for the actor, the selected application opens when you click Edit Actor. Refer to Chapter 9, "Working with Other Applications".

Prop Information dialog box

The Prop Information dialog box lets you adjust a prop once it has been placed. To display the dialog box, double-click a placed prop using the Pick tool or select a placed prop, then choose Object Info from the Edit menu.

The screenshot shows the Prop Information dialog box with the following details:

- Title:** Prop Information
- Name:** water (with a Locked checkbox)
- Enters At Frame:** 1
- Exits At Frame:** 100
- Position (Pixels):**
 - Horizontal: -21
 - Vertical: -16
- Transition:**
 - Entry: None
 - Exit: None
 - Button: Edit...
- Object Type:** Corel Move 4.0 (with a Convert... button)
- Buttons:** Edit Prop..., OK, Cancel

»Tip:

Giving different names to multiple copies of the same props makes it easy to distinguish between props in the Timelines window.

Name : The Prop Name defaults to its library name. If you have duplicated or cloned the prop, the name displayed is the name you assigned it in the Duplicate or Clone Prop dialog box. To keep track of placed props, give each one a unique name the first time it is used. The new name does not affect the library name. This is a label name only and it does not change the prop's original name in the library.

Locked : Enable the Locked check box if you want to lock the prop in the indicated position on the screen. You will not be able to move it with the Object Selection tool while this box is enabled.

Enters At Frame : The prop enters the animation on the frame number displayed in this field. If you want to change the frame, enter a different number. You can use the scroll arrows to do this. The Enter At Frame field defaults to the frame in which the prop was placed.

Exits At Frame : The prop exits the animation on the Exits At Frame number. This number can be changed at any time, provided it is not larger than the last frame number of the animation. The exit frame defaults to the last frame of the animation.

Position : When you place a prop in the Animation window, it is given a vertical and a horizontal position according to its location. The Horizontal and Vertical fields show the position of the prop measured in pixels. If you move the prop, these numbers change to reflect the new horizontal and vertical position. You can change the location of the prop by typing a number into the Horizontal and Vertical fields or by using the scroll arrows. The top left corner of the Animation window has a vertical and horizontal position of zero (0).

Transitions : You can use the Transition field to specify how a prop enters and exits an animation. For example, you can have a prop fade onto the screen instead of just suddenly appearing. For more information, see "Adding prop transitions" in Chapter 6.

Object Type: You can change the prop's editor by clicking Convert. The prop is converted to a CorelMOVE object. When you click Edit, CorelMOVE's Paint Editor opens.

Edit Prop : Click Edit Prop to edit using the paint tools or the source application. The Paint palette and the Paint window containing the prop appear. If you have selected another application as the editor for the prop, the selected application opens when you click Edit Prop. Refer to Chapter 9, "Working with Other Applications".

Using the Cel Sequencer Roll-Up

The Cel Sequencer Roll-Up controls the combining of an actor's cels with the frames of the animation. When you create an actor, you design a number of cels which create the illusion of movement. You then create a path that the actor follows through the frames of the animation. The cels of the actor are displayed sequentially at the points of the path. Each point represents a different frame in the animation. For example, if you have an actor with four cels, the first cel is displayed on the first point of the path, the second on the second, and so on. The Cel Sequencer Roll-Up lets you change the order of the cels and select which cel appears on any given frame. You can also change the size of the object in the cel. This is useful for creating special effects. For example, you can have an actor reduced in size at the start and gradually increase its size as it follows

the path. The actor appears to be moving into the animation from a distance and this creates the perception of depth. In default mode, the Cel Sequencer cycles the cels of an actor over a series of path points. For example, an actor with four cels automatically has its first cel assigned to the first path point, then the fifth path point, then the ninth path point and so on.

Frame: 1,2,3,4,5,6,7,8,9,10...

Cel to Show: 1,2,3,4,1,2,3,4,1,2...

This sequence gives a steady rhythm and repetition to the actor's movements. When an animation calls for irregular rhythms, you can repeat a cel over several path points, reverse the cel cycle or skip cels in the cycle. For example, when animating an actor with four cels you might have the actor remain motionless over several path points or move in reverse.

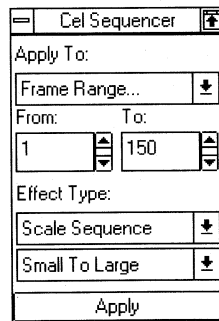
Frame: 1,2,3,4,5,6,7,8

Cel to Show: 1,1,3,2,1,2,2,4

► To display the Cel Sequencer Roll-Up:

With an actor selected, do one of the following:

- Choose Cel Sequencer under the Display menu. The Cel Sequencer Roll-Up opens.
- Click on the Cel Sequencer icon on the Control Panel at the bottom of the Animation window.



Features of the Cel Sequencer Roll-up

Apply To: The Apply to list box allows you to select which cels the Cel Sequence options are applied to. You can select All Frames, Current Frame, Frame Number and Frame Range. All Frames selects all of the frames in the animation; Current Frame selects the frame currently displayed; Frame Number opens a box which allows you to enter the number of the frame you want to change; and Frame Range allows you to enter a range of frames.

Effect Type: There are four types of effects: Unique Cel, Unique Scale, Cel Sequence and Scale Sequence. Unique Cel allows you to enter the cel you want shown in the displayed number box. Unique Scale allows you to enter a percentage in the displayed number box to scale the selected cel. Cel Sequence opens a drop-down list box

displaying options which determine the cels shown over the selected range of frames. Scale Sequence opens a drop-down list box displaying a list of scale options for the selected range.

Options : The drop-down list box below Effect Type is available only if you have selected either Scale Sequence or Cel Sequence. In both cases, a list of options is displayed. A full description of the options is discussed in "Setting Cel Scale" and "Setting the Cel Sequence":

Selecting frames

You use the options in the Apply To box to select frames. You can select either a range of frames or one particular frame. If you select a range of frames using either All frames or Frame Range, you can use the Options drop-down list; otherwise, enter a value in the box.

Setting Cel Size

You can set the size of a cel in a single frame or a selected range of cels. If you are changing the size of a cel in an individual frame, only the size control arrows in that frame are available. Full size is 100% and 1% is the smallest visible size. The sizing factor goes up and down in increments of 1%. When you are changing a range of cels, you can use the cel sizing sequence options from the drop-down list below the frames display.

► To set the size of cels:

1. Select the frame(s) from the Apply To box.
2. Choose a Scale effect from the Effect Type box.
3. Enter a percentage in the number box.

- OR -

Select an option from the Options drop-down list box. These options are only available if you have selected a range of cels.

The Scale options display the cel size at:

- Full Size – All cels are displayed at their full size.
- Small to Large – The size of the cel starts at 5% of full size and is increased until the size reaches 100%. The remaining cels are shown at 100%. The number of remaining cels is determined by the number of frames selected in the Animation Options.
- Large to Small – Cel size starts at 100% and reduces in size until the size reaches 5% of full size. The remaining cels are shown at 5% .
- Medium to Large – Cel size starts at 50% of full size and increases to 100%. The remaining cels are shown at 100%.
- Large to Medium – Cel size starts at 100% and decreases until it reaches 50%. The remaining cels are shown at 50%.
- Small to Medium – Cel size starts at 1% of full size and increases to 50%. The remaining cels are shown at 50%.

- Medium to Small - Cel size starts at 50% of full size and decreases to 5%. The remaining cels are shown at 5%.
- Random - The cels are shown at various sizes from 1% to 100% in no particular order.

Setting the Cel Sequence

You can change the cel sequence on any frame that the actor appears. You can set which cel is displayed on each frame individually, or, if you have selected a range of cels, you can select one of the cel sequence options. If you are setting the Cel to Show for an individual frame, only the Scale % or Cel Number options in the Effect menu are available.

► To set which cel shows on a frame:

1. Select the frame(s) from the Apply To box.
2. Choose a Sequence effect from the Effect Type box.
3. Enter a number in the number box.

- OR -

Select an option from the Options drop down list box or you can also use the number box for ranges of frames. The cel sequence display options are as follows:

- Normal Cycle - All of the cels are displayed in their original order starting with the first cel of the actor displayed on the first frame of the selected range.
- Reverse Cycle - The order of the cels is reversed so that the last cel of the actor is shown on the first frame of the selected range. The cel numbers decrease as the frame numbers increase. The sequence is repeated over the selected range of frames.
- Ping Pong - The original order of the cels is used, then the order is reversed. For example, if you have four cels, the order would be 1, 2, 3, 4, 3, 2, 1, 2, ... over the selected range of frames.
- Slow Forward - The cels are shown in the original forward order; however, the same cel is shown over two consecutive frames, e.g., 1, 1, 2, 2, 3, 3, ... in the selected range.
- Slow Reverse - The cels are shown in the reverse order with the same cel shown over two consecutive frames, e.g., 4, 4, 3, 3, 2, 2, ... in the selected range.
- Slow Ping Pong - The cels are shown first in original order, and then reverse order, with the same cel shown over two consecutive frames, e.g., 1, 1, 2, 2, 3, 3, 4, 4, 3, 3, ... in the selected range.
- Random - The order of the cels is generated randomly.

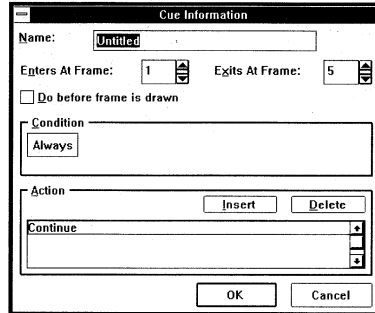
Adding Cues

Use add cues to control the playback of the animation. The cue mechanism establishes a condition that must be met, then sets an action to take place when this condition is met. To help you create cues, CorelMOVE provides you with a dialog box that lists the cue choices.

► **To add a cue to your animation:**

1. Click the Cue tool on the toolbox.

The Cue Information dialog box appears.



2. Enter a name for the cue in the Name field.
3. Enter frame numbers in the Enters At Frame and Exits At Frame fields to indicate the period in which the cue is active.
4. Click Do Before Frame is Drawn if you want the cue activated before the Enters At frame is drawn on the screen.
5. Select a condition.

» **Tip:**

To select existing cues, you must use the Timelines Roll-up.

| First list | Second list | Third list | Fourth list |
|--------------|----------------|-------------------------------|----------------------|
| Always | Time Delay | Specify a time (0 to 30 sec.) | |
| Wait For | Mouse Click On | Anything | Choose an Actor name |
| If Then Else | | Actor named | |
| | | Prop named | |
| | Key Down | Choose a key | |

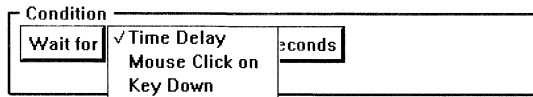
This sets the condition that causes the action. A description of the available conditions is provided in the next section.

6. From the Action drop-down list box, choose an action and select Insert. The command you choose results in a specific action whenever the specified condition occurs. The Actions are described "Using the Action field on the Cue Information dialog box" later in this chapter.
7. Click OK.

Using the Condition field in the Cue Information dialog box

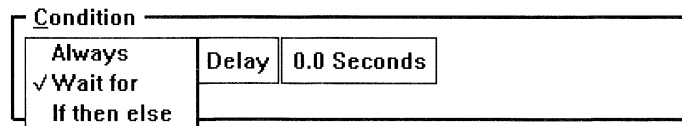
The Condition field provides you with a simple way to set conditions for cues in your animation. All the conditions are accessed by clicking on buttons which display the four drop down list boxes in the Condition field. The first button is the only one that is always visible. The last three become visible when you select the appropriate condition in the first drop down list box.

The first drop down list menu has three options:



- Always – No condition needs to be met and no further information is requested. The cue is always executed.
- Wait For – The animation stops until the cue is executed. When you choose this one, the second two buttons appear and you can specify the conditions in the second drop-down list. The options are Time Delay, Mouse Click On, Key Down and Sound Done. These choices allow you to set the type of event that the cue waits for before executing the action. They are explained in detail below.
- If Then Else – The cue executes only if the condition that you set is met. If the condition is not met, either another selected action occurs or if you haven't selected an action, nothing occurs. You can choose to set actions for both the "then" and the "else" conditions in the Action field. You can choose from the same conditions in the second drop-down list as Wait For.

The second drop-down list is displayed only when either Wait For or If Then Else is chosen from the first drop-down list. These options set the first part of the condition for the cue. They are:

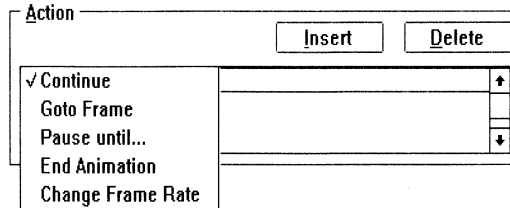


- Time Delay – The condition set is a specific time. The third button displays 0.0 seconds and when you click it, it displays a field in which you can enter a time value down to one-hundredths of a second, such as 6.16 seconds. The maximum value is 30.0 seconds.
- Mouse Click On– The condition is a mouse click. The third drop-down list provides the location of the mouse click. It can be an actor, a prop or a mouse click anywhere. If you select actor or a prop, a fourth drop-down list is displayed, listing the actors or props in the animation. Select the one you want to click on for your cue.

- Key Down – The cue condition is the pressing of a selected key. The third drop-down list allows you to enter the key that the animation viewer has to press. The Choose A Key dialog box is displayed. Type a character on the keyboard.

Using the Action field on the Cue Information dialog box

The Action follows the successful meeting of a cue's condition. You may choose from a variety of actions. Select the option from the drop-down list that appears when you click and hold on the currently-displayed action. Highlight the Action you want and then click Insert. If you want to remove an action, select it and click Delete. The drop-down menu list displays the following options:



- Continue – The animation continues to run.
- Goto Frame – This action causes the animation to jump to a specific frame number. You can use this to create loops in an animation. Click on the displayed frame number to change it.
- Pause Until – The animation pauses until the condition statement becomes true again. For example, you could create a cue that pauses the animation until you click on a prop. If the prop is not clicked, the animation remains paused.
- End Animation – The animation stops. If you are executing a stand-alone animation using the supplied animation player, then the application quits.
- Change Frame Rate – A field appears, enabling you to enter a new frame rate for the animation. This allows different parts of the animation to play at different speeds.

If the Action you've chosen is associated with a Wait For condition, then you can choose OK to finalize the cue. However, if the condition uses an If Then Else, make sure you have the Then radio button selected when you set your first Action. Next, click on the Else radio button and select an Action for the Else portion of your If Then Else condition. Click OK to finalize the cues.

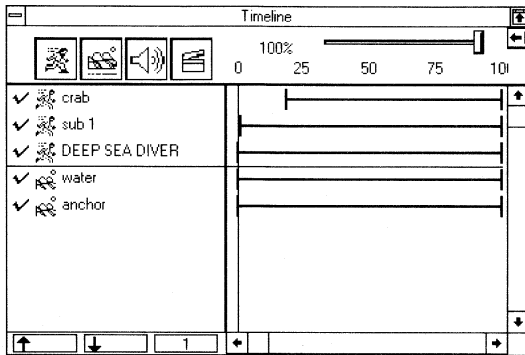
Using the Timelines Roll-Up

CorelMOVE's Timelines Roll-Up lets you see the elements that make up an animation and perform editing functions on them. When the roll-up is extended, you can see the timeline for each object showing the entry frame, the length of the object's play through the animation, and the frame at which it exits.

► To display the Timelines Roll-Up:

Do one of the following:

- Click the Timelines icon on the Control Panel.
- Choose Timelines from the Display menu.



Components of the Timelines Roll-Up

The Timelines Roll-Up consists of the following components:

Object Icons: The four icons along the top left represent the actors, props, sounds, and cues in your animation. When an icon is pressed, all the objects in that category appear in the Timelines window. If you click the icon to deselect it, the objects in that category are temporarily hidden from the list.

Zoom Slider: You can use the Zoom Slider to zoom in on the Timelines Roll-Up. The percentage indicated beside the slider shows how much of the animation is visible in the Timelines window. The lower you set this number, the less you'll see of the animation, but what you do see is shown in finer (more accurate detail).

Timelines: If you're working with a color monitor, you'll notice that each type of object has a different-colored timeline displayed beside it on the list. Actor's are displayed in red, props are green, Sounds are blue and Cues are pink.

Object List: Every object in the animation appears with a descriptive icon beside it. They are grouped on the Timelines Roll-up according to their type; for example, all of the actors appear in one section of the list. The object has a name and a "timeline" that represents the number of frames during which that object is employed in the animation. You can select an object in the Timelines Roll-Up by

»Note:

When you select an object in the Timelines window, it also becomes selected on the screen.

clicking on its name or any other of its components (e.g. icon, timeline, etc.). The selected object's timeline becomes highlighted. The object also becomes selected in the Animation window if visible. If the object is locked, the cursor changes to a lock over the timeline. If you want to lock or unlock an object, double-click on the object to display the Information dialog box.

Status line : The status line is located below the Object List. The selected object's start frame is shown in the ↑ In field, the end frame in the ↓ Out field, and current frame of the Animation window in the Now field.

Check boxes : The check box to the left of each object's descriptive icon allows you to enable and disable that object. If an object is enabled, the check box has a ✓ (checkmark). If the object is disabled, the check box is empty and the object is displayed in gray on the list. This makes working with complex animations easier by temporarily removing objects from the screen. When the box is checked, the object will appear in the animation. A checkmark in the check box.

Expand button : You can resize the Timelines window by clicking the right-pointing arrow at the upper right corner to expand the window and show the animation's timelines.

Start and end cursors : These cursors are visible when you are moving the end or start handle of a timeline. This is explained in detail below.

Move cursor : The cursor changes to the move cursor when you place it over the middle of a timeline. Press and hold the mouse, then slide the timeline. You can move the timeline to a new start frame number this way.

Arrange cursors : The arrange cursors allow you to change the object's layer position in the Timelines Roll-Up. When you click and drag the object name, the cursor changes to the ⚡ cursor. Drag the object to the new location in the list. It will be placed on top of the object over which you release the mouse button. You can only move objects within their own groups.

Frame Ruler : The Frame Ruler shows the frame numbers in intervals at the top of the timeline. If you use the Zoom Slider to zoom in on the timeline, the frame intervals change according to the percentage of the timeline shown.

Using object icons to change lists

The four icons in the top left area of the Timelines window let you temporarily hide objects from the list. Only objects that have their icons selected are displayed in the Object List window. If you deselect an object icon, those objects will not appear in the Object window. For example, if the actor and prop icons were selected, only props and actors would be displayed in the Object list. You can use this method to work on selected types of objects without having the others displayed.

Adjusting the start and end frame of an object

Each timeline has a start frame and end frame handle. The handles can be moved to change the start and end frames. You must have the Timelines window expanded to change the start and end frame.

► To adjust an object's start and end frame:

1. Move the cursor over the frame handle on the left (start) or right (end) side of the object's timeline.
If you are over the end (right) frame handle, the cursor changes to an arrow pointing right, called the end cursor. If you are over the start (left) handle, the arrow of the start cursor points left.
2. Drag the handle horizontally to a new frame number. The frame numbers are indicated on status line at the bottom of the Timelines window.
3. Release the handle when the frame number you want appears in the status line. The object's timeline is updated to reflect the changes you've just made to the start or end frame number.

Moving the whole timeline

An object's whole timeline can be moved left and right to a new position in the Timelines window.

► To move a whole timeline:

1. Move the cursor near the middle of the object's timeline. The cursor changes to a two-directional arrow.
2. Click and drag the timeline to a new position.
The object's start and end frame numbers on the status line at the bottom of the window change as you drag the line horizontally.
3. Release the line when you are satisfied with its new position. The object's timeline is updated to reflect the changes to the start frame and end frame numbers.

Deleting objects from the Timelines window

► To delete an object:

1. Click on the object's icon or name.
The object's timeline becomes highlighted. (To select more than one object for deletion, hold down the Ctrl key as you click their icons.)
2. Press the Del key to remove the object. The Timelines window is updated to reflect the change.

Viewing the animation

As you are working on your animation, you can move to selected frames in the animation using the commands under the View menu. The same commands are available in icon form on the Control Panel.

» **Shortcut:**

First Frame – Shift + F5
Last Frame – Shift + F6
Previous Frame – Shift + F7
Next Frame – Shift + F8
Play – F9
Stop – Esc

First Frame: Moves you to the first frame in the animation.

Last Frame: Moves you to the last frame in the animation.

Next Frame: Moves you to the next frame in the animation.

Previous Frame: Moves you to the frame before the current frame in the animation.

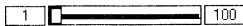
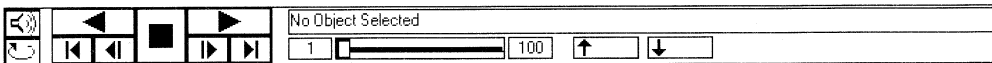
Frame Number: The Move to Frame dialog box is displayed. Enter the number of the frame you want to move to.

Play: Causes the animation to begin playing from the current frame number.

Stop: Causes the animation to stop playing.

Playing the animation

The Control Panel has controls similar to a videotape player. Use the Control Panel to play, stop, or rewind your animations. You can also check your animation one frame at a time, either forwards or backwards.



Frame Counter

The Frame Counter displays the current frame number. When an animation is playing, the Frame Counter increments one frame at a time until the end of the animation. If you press Stop, the Frame Counter stops. Use the Frame Counter slider to change the current frame number of the animation.



Sound on/off

Toggle the Sound button to turn the sound speaker on or off. The sound will be on when the button appears to be depressed.



Loop Animation

Click on this icon to cause the animation to continuously play from start to end (loop). The animation will loop when the button appears depressed.



Play Reverse

Click this button to play the animation in reverse.



Stop Animation

Click this button to stop the animation. The Esc key always stops the animation.



Play Forward

Click this button to play the animation in the forward direction.



Step Frame Reverse

Click this button to step the animation one frame in reverse. If you want to step through the frames continuously, hold down the mouse button.



Step Frame Forward

Click this button to step the animation one frame forward. If you want to step through the frames continuously, hold down the mouse button.



Rewind To Start

Click this button to reset the animation play position to frame one (the beginning).



Fast Forward to End

Click this button to reset the animation play position to the last frame (the end).

Note: When an object is selected, it will be identified in the status line above the Frame Counter slider. Its start and end frames will also be indicated by the up-and-down-pointing arrows respectively, to the right of the slider.

C H A P T E R

8

Importing Animation Objects

You can also build your animation by importing objects. Actors, props, and sounds can be imported from other applications.

Importing objects

► To import an object from another application:

1. Choose Import under the File menu. The Import flyout appears.
2. Choose the object type from the list. The Open dialog box opens.
3. Choose the file you want to import.

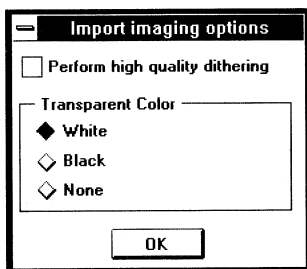
You can use the Preview window to see the object before you import it into your animation. These are called thumbnails. However, some file types do not have thumbnails or may have problems reading an image. In this case, the preview box is blank with a line through it.

If you are importing an object from a different application, select the file type.

4. Click OK. The Import Imaging Options dialog box opens.
5. Choose the type of imaging options you want.
6. Click OK.

Choosing the Import Imaging Options

The Import Imaging Options dialog box allows you to set the way the color of a file is imported into CorelMOVE.



Perform High Quality Dithering : When you import files into CorelMOVE, you can use the dithering option to convert 256 colors to a 16-color palette. Dithering uses two or more colors placed side by side to represent another color. For example, if you had 8 shades of purple from the original file, the dithered color might be composed of a red blue, and purple. This combination would be a close approximation of the original color.

White : All of the white in the imported file becomes transparent (clear).

Black : All instances of black become transparent.

None : There is no transparent color in the imported file.

Importing CorelDRAW files

You can use CorelDRAW files in your animations; however, they cannot be imported using the Import command. You must use the Insert New Object command on the Edit menu. This is because the

file format of a CorelDRAW file is different than that of a CorelMOVE file. The Insert New Object command uses the OLE capabilities of both CorelMOVE and CorelDRAW to insert .CDR files into animations. For more information on OLE, see Chapter 9, "Working with Other Applications" or Chapter 17 in the CorelDRAW portion of this manual.

► **To import a CorelDRAW file:**

1. Choose Insert New Object under the Edit menu.
2. Choose either Actor or Prop. The New Actor or New Prop dialog box opens.
3. Enter a name for the new object in the Object Name box.
4. Click Create New.
5. Choose CorelDRAW 4.0 Graphic from the drop-down list.
6. Click OK. CorelDRAW opens.
7. Choose Import under the File menu. The Import dialog box opens.
8. Choose a file and click OK. The file is opened on the CorelDRAW screen. If you want to edit the file, you can use the CorelDRAW tools available. For more information, see Chapter 9, "Working with other Applications."
9. Choose Exit and Return under the File menu. You are returned to CorelMOVE and the object is placed on the animation screen.

Editing Imported Objects

You can edit imported actors and props using the Paint Window. Sounds can be edited using the Wave Editor. All of the objects imported become CorelMOVE objects and cannot be edited in the source application. If you want to maintain the identity of the object, you should use the New Actor/Prop/Sound dialog boxes. See Chapter 9, Working With Other Applications for more information.

► **To edit an imported object:**

1. Select the imported object.
2. Choose Object Info under the Edit menu. The object information dialog box opens.
3. Click the Actor/Prop/Sound button.
4. Edit the object.
5. Click OK.

Working with Other Applications

CorelMOVE provides you with the ability to use information from other applications in your animations. This means that you can create actors and props in applications such as CorelDRAW, CorelPHOTO-PAINT or other non-Corel applications such as those from Microsoft. You can also create sound in other applications and use them in your animations. The only prerequisite is that the format be compatible with CorelMOVE.

There are three ways you can use information from other applications:

- You can import the object. Refer to Chapter 10, "Importing Animation Objects" for more information."
- You can use the Insert New Object command on the Edit menu and create the object in your choice of application or you can use an existing file. This OLE feature in CorelMOVE allows you to use objects created in other applications such as CorelDRAW which have different formats.
- You can use the Windows clipboard to cut and paste between Windows applications.

Creating actors and props using CoreIDRAW

CoreIDRAW has a special group of features you can use to create actors and props. These features are only available if you have accessed CoreIDRAW from within CorelMOVE.

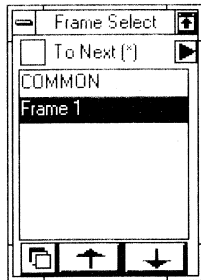
You can use CoreIDRAW tools to create and edit your objects. Some of the options are not available and these are grayed in the menus. For information on CoreIDRAW, see the CoreIDRAW portion of this manual.

► To create an actor or prop in CoreIDRAW:

1. Choose Insert New Object under the Edit menu in CorelMOVE.
2. Choose Actor or Prop from the flyout. The New Actor or New Prop dialog box opens.
3. Enter a name for the new object in the Object Name box.
4. Click Create New.
5. Choose CoreIDRAW 4.0 Graphic from the drop-down list.
6. Click OK. CoreIDRAW opens.
7. Create the actor or prop.
8. Choose Exit and Return under the File menu. CoreIDRAW closes and CorelMOVE opens. The object is placed in your animation.

Using the Frame Select Roll-Up

The Frame Select Roll-Up allows you to create actors that are comprised of a number of frames. Frames in CoreIDRAW are the equivalent of cels in CorelMOVE.



Expand arrow : If you click the arrow, the frame select flyout opens. The commands on the flyout allow you to control the frames.

To Next Check box : When this check box is enabled, it allows you to apply certain effects to an object and have the results of the application applied to the following frame.

List Box : The List box displays all of the frames for the object. The first frame listed in the box is call COMMON. If you select this frame and create an object in it, a clone of the newly created object is placed in all of the frames.

Preview button : The Preview button opens the Preview frame dialog box. You can preview the action of your actor. The arrow buttons at the bottom of the dialog box move the actor frame by frame forward or backward. The Preview button cycles through the all of the frames consecutively. This will give you a good idea of how your actor's movement will appear in the animation and allow you to make adjustments.

Arrow buttons : The arrow buttons cycle through the frames forward or backward.

Inserting frames

There are two ways you can insert frames. If you are starting an actor, you can insert frames using the New command on the Frame Select flyout. The frames are added at the end of your frame list. You can also use the Insert commands on the flyout. These command allow you to insert frames before or after a specified frame.

► To insert frames using the New command:

1. Click the Menu arrow at the top of the roll-up. The Frame Select flyout opens.
2. Choose the New command. The Append New Frames dialog box opens.
3. Enter the number of frames to append in the Number of frames box. You can enter a number from 1 to 30. The frames are added to the end of the list.

► To insert frames using the Insert commands:

1. Click the Menu arrow at the top of the roll-up. The Frame Select flyout opens.
2. Choose Insert before... or Insert after... The Insert New Frames dialog box opens.
3. Enter a number in the Number of frames box. You can enter a number between 1 and 30.
4. Click OK. If you chose Insert after..., the frames are added after the current frame. If you chose Insert before..., the frames are added before the current frame.

Deleting frames

You can delete frames using the Delete command on the Frame Select flyout menu. Click on the frame you want to delete in the Frame Select Roll-Up and choose Delete.

Moving objects between frames

You can move objects to a new frame using the Move command on the Frame Select flyout menu.

► To move objects:

1. Select the object in its current frame.
2. Choose Move on the Frame Select flyout. The cursor changes to an arrow with To? written on it.
3. Click a frame in the Frame Select list box. The object is moved to the selected frame which becomes the currently displayed frame.

Copying objects between frames

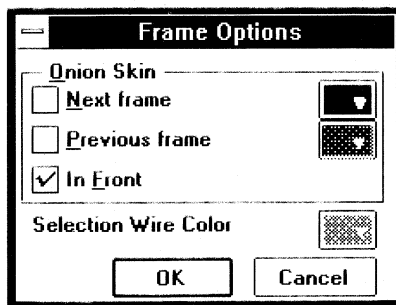
You can copy objects from one frame to another using the Copy command on the Frame Select flyout menu.

► To copy objects:

1. Select the object on its current frame.
2. Choose Copy on the Frame Select flyout. The cursor changes to an arrow with To? written on it.
3. Click a frame in the Frame Select list box. The object is copied to the selected frame. The selected frame becomes the currently displayed frame.

Frame Options dialog box

The Options command on the Frame Select flyout opens the Frame Options dialog box. This dialog box allows you to control how the objects you are creating are displayed on the page. As you work on each frame, you will want to see what you have drawn on the previous and next frame. This can help in the placement of the objects as well as the shape and color.



The options on the dialog box are:

Onion skin : An onion skin is the outline of the objects that are on the previous frame and the next frame.

Next frame : If Next Frame is enabled, an outline of the objects on the frame after the current one is displayed. The outline color is selected from the palette. The next frame in the Frame Select list box is displayed in the selected color as well.

Previous frame : When Previous Frame is enabled, an outline of the objects in the frame before the current one is visible. The outline is displayed in the color selected from the palette. The previous frame in the Frame Select list box is also displayed in the selected color.

In front : This option allows you to display your outlines either in front of objects on the current frame or behind. The In Front option is enabled if the check box is marked with a check mark.

Wire color : Wire color displays the selected object in the chosen color. For example, if you have an object selected on frame 4 and you are currently displaying frame 2, the outline of the object on frame 4 is displayed in the chosen color. If you do not have an object selected, the Wire Color is not displayed.

Palette buttons : When you click on the Palette buttons, the palette opens. You can select a color from the ones displayed or you can click on More. If you click on More, the Select Color dialog box opens. Refer to Chapter 6, "Selecting and Applying Fills" in the CorelDRAW portion of this manual for information on using this type of dialog box.

► **To set the frame options:**

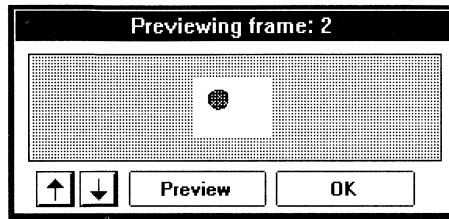
1. Choose the Options command on the Frame Select flyout menu. The Frame Options dialog box opens.
2. Click the Next Frame check box to enable Next Frame display. If the options are enabled, a check mark is displayed in the box.
3. Click the palette button, the palette is displayed.
4. Choose the Next Frame color by clicking the color with the mouse.
5. Repeat steps 2 to 4 to choose the Previous Frame color.
6. Click the In Front check box to display the Next Frame and Previous Frame onion skins in front of the objects in the current frame. If the box is not checked, the onion skins are displayed behind the objects on the current frame.
7. Repeat steps 2 to 4 to choose a color for the Wire Color.
8. Click OK.

Previewing the frames

You can use the Previewing Frames dialog box to cycle through the frames and get an idea of how the actor will move in your animation. You can also identify which areas need changes. For example, one frame may not match the movement of the others. You can use the Preview Frames dialog box to determine where the problems are.

► **To preview the frames:**

1. Choose Preview Frames from the Frame Select flyout. The Previewing Frames dialog box opens.



2. A preview of the entire set of frames is displayed when the dialog box opens. If you want to see the preview again, click on the Preview button. If you want to cycle through the frames one at a time, use the arrows to move forward or backward.
3. Click OK.

Using the To Next (*) check box

The To Next check box allows you to apply an action to an object on the current frame and paste the results of that action on the following frame. For example, if you had a circle on Frame 1 and you selected and moved the circle, the circle would be duplicated and moved to the new location on frame 2 leaving the circle on frame 1 in its original location.

Saving a copy as a CoreIDRAW file

You can save a copy of your actor or prop as a CoreIDRAW file using the Save Copy As command under the File menu.

► **To save a copy:**

1. Choose the Save Copy As command under the File menu. The Save Drawing dialog box opens.
2. Enter a name in the File Name box.
3. Choose the drive and directory.
4. Click OK.

Creating objects using other applications

You can create objects using PHOTO-PAINT, CHART and DRAW or you can use other applications such as Microsoft applications.

► **To create an object with another application:**

1. Choose Insert New Object from under the Edit menu. The Insert New Object flyout opens.
2. Choose the type of object you want to create (actor, prop, or sound). The New Actor, New Prop or New Wave dialog box opens.
3. Enter a name in the Object Name box.

4. Click Create New. The Object Type list box is displayed. All of the applications that you can use are listed in this box.
5. Choose the type of application from the Object Type list box. The Results box indicates the results of your selection. For example, if you chose CorelPHOTO-PAINT 4.0, "Inserts a new CorelPHOTO-PAINT 4.0 object into your document." would be displayed.
6. Click OK. The chosen application opens.
7. Create the object in the chosen application and exit. The application closes and CorelMOVE opens. The object is placed in your animation. If the object is a sound, it is placed so that it starts on the current frame.

Creating objects using existing files

You can also create animation objects with existing files created in other applications.

» **Tip:**

The Results box on the New Actor, New Prop and New Wave dialog box displays the results of your selections in the dialog box.

► **To create an object from an existing file:**

1. Choose the Insert New Object command from under the Edit menu. The Insert New Object flyout opens.
2. Choose the type of object you want to create. The New Actor, New Prop or New Wave dialog box opens.
3. Enter a name in the Object Name box.
4. Click Create from file. The File options are displayed.
5. Enter the name of the file you want to use in the File box.

- OR -

You can use the Browse button to look through the files you have on your system. When you click Browse, the Browse dialog box opens. Select the file and click OK.

6. The object(s) in the selected file is placed in your animation.

Editing objects created in other applications

You can edit your objects in the application that was used to create them.

» **Shortcut:**

Double-click the object in the Animation window or the Roll-Up to open the object's Information dialog box.

► **To edit objects:**

1. Select the object in the Animation window or use the Roll-Up.
2. Choose Object Info under the Edit menu. The object's Information dialog box opens.
3. Click the Edit object button. The application that created the object opens.
4. Edit the object and exit the application. CorelMOVE opens and the object is displayed in its edited form.

Changing the object type

CorelMOVE allows you to convert objects from their original file type to a CorelMOVE file type. When you change to the object to a CorelMOVE object, the editor becomes CorelMOVE.

► To change the editor of an object:

1. Select the object in the Animation window or use the Roll-up.
2. Choose Object Info under the Edit menu. The object's Information dialog box opens.
3. Click the Convert button. The object is converted to a CorelMOVE object.
4. Click OK.

Using the Windows clipboard

One way to exchange graphics between CorelMOVE and other Windows-based programs is through the Windows Clipboard. When using the Clipboard, be aware that no two programs interpret object transferred to the Clipboard in exactly the same way. A graphic you put into it with one program may look considerably different when it's brought into another. For example, circles may come into CorelMOVE via the clipboard as a series of connected line segments. The Clipboard also provides a convenient way to swap objects between different CorelMOVE files. When it's used for this purpose, objects pass through the Clipboard unchanged.

Copying and cutting objects to the Clipboard

Select the object(s) you want to place on the Clipboard with the Pick tool, then choose either Copy or Cut from the Edit menu.

Copy places the object on the Clipboard and leaves the current animation unchanged. Cut also places the object on the Clipboard, but removes it from the animation.

You can also copy an entire animation frame to the Clipboard. Select the frame using the Control Panel. Use Copy Frame on the Edit menu.

Pasting objects from the Clipboard

To paste an object from the Clipboard into your animation, select the Pick tool and choose Paste from the Edit menu.

Paste places a copy of the object that's currently in the Clipboard into your drawing. The original remains in the Clipboard until you copy or cut another object, or end the current Windows session.

C H A P T E R

10

Exporting an Animation

You can export your animation to the Video for Windows AVI movie format using the Export to Movie command under the File menu. This process is similar to creating a film. You can then use the CorelPLAYER or Video for Windows to play the animation.

Exporting to a movie

► **To export an animation to a movie:**

1. Select Export to Movie under the File menu. The Export to Movie dialog box opens.
2. Enter a name of the new movie in the File Name box.
3. Select the directory and drive if different from the one you are currently in.
4. Click OK.

Playing a movie

You can play a movie created in CorelMOVE with the CorelMOVE player.

► **To play a movie:**

1. Double click on the CorelPLAYER icon. CorelMOVE's player opens and displays the Open dialog box.
2. Select a movie to play.
3. Click OK.

In the early days of animation, a number of principles were discovered that enabled animators to make their productions both more realistic and exaggerated. Over time, methods and terms discussed below became commonly used by most animators to facilitate communication. These principles are also valid in computer animation. It is important to understand the principles of animation first. Then, when you experiment outside of them, you can create an interesting and unique animation.

Squash and stretch



Squash and stretch is the term animators use to describe the more fluid and exaggerated movements they achieve in their animations. To understand this principle, think of animated characters as more than just lines. They should move and behave like forms that have volume and mass. The idea of characters being composed of substances, not empty shapes of air, means that their movements can be effectively shown as loose flowing tissue on a more rigid internal "skeleton". This interpretation of your characters is one of the most important ground rules of animation.

Squash and stretch helps you to communicate to your audience the nature and composition of your actors. This adds depth and realism to otherwise rigid or awkward movements and increases the overall integrity of your animations.

Consider the difference between a bouncing tennis ball and a bouncing cannon ball. Successfully communicating this difference is excellent practice for developing animation skills. Use animation to tell as much as possible about the characteristics of your actors' whether they are hard, soft, hollow, or solid as they move across the screen. Animating such differences in the nature of the actors improves the communication to your audience.

Anticipation



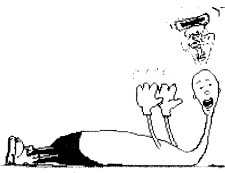
Anticipation helps your audience prepare for an actor's next movement and expect it before it occurs. The principle is based on close observations of movement in real life. People crouch slightly before they jump or inhale deeply to blow out birthday candles. These are examples of anticipatory actions. A pause before an action is a key point in any animation, as the audience is looking for information to maintain the plot and fluidity of the story line.

Anticipation can be used to set the stage for your next action and communicate more information about the nature of the actors. However, an actor's movements should not always follow long pauses or periods of anticipation. This would result in a choppy or broken flow of action. Anticipation should always be relevant to the action it precedes. An actor who begins to walk or a ball that begins to roll slowly across the screen does not require an anticipatory ac-

tion. Anticipation can also be used to set the audience up for "sight gags" by making them expect the obvious.

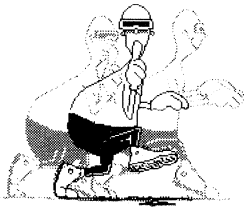
Secondary action

An actor's secondary action supports the initial or main action. It occurs simultaneously, but remains subordinate to the more important action. Use secondary action to add to the richness of the scene and enhance an actor's personality in a subtle and natural way.



Straight ahead and pose-to-pose action

Straight ahead action and pose-to-pose action are different approaches to creating action in an animation. An animator following the principle of straight ahead action knows the story point of a scene, but allows the actor's movements to evolve naturally from the first drawing. The scene evolves along with the creative process. An animator applying the concept of pose-to-pose action moves an actor through a series of previously determined poses between which the action flows. The key poses that occur within that series of movements are worked out before the process of animating begins.



The two approaches can have very different results. Straight ahead action allows the actor's "individuality" or "personality" to lead the animator through the scene, while pose-to-pose action leaves more of the control in the hands of the animator.

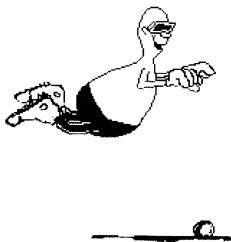
Follow through and overlapping action

Use follow through and overlapping action in combination to keep your actors moving from action to action and scene to scene in a smooth and connected flow of movement. Slightly exaggerating movement adds to the continuous and flowing feel of your animations. When your actors start to move, their appendages and other elements (clothing or hair) should take a moment to start moving. When your actors stop moving, any appendages should continue to move after their bodies have stopped. The importance of this flow becomes clear when we string an actor's actions together. These more subtle aspects of your animations help to link the motion and the actors.



Slow in and slow out

Slow in and slow out are terms that refer to a specific way of moving an actor from one pose to the next. You can accomplish this by carefully preparing an actor's important poses, then putting most of the in-between drawings close in timing to these poses. If you place more in between drawings at the end of a movement, the actor will appear to slow down.



Always remember that the more drawings (cels) used to produce a movement, the slower the movement will be. Conversely, the fewer drawings used to produce a movement, the faster it will be. The

slow in and slow out technique makes your actors' movements lively, but if used too much can give a mechanical feel to the action.

Arcs

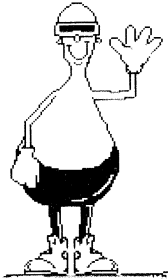
Making actions move along arcs or curved paths helps to give them a more natural, fluid feel. While an actor's head is moving from right to left, it should also move in an arc. Arcs usually do not apply to non-organic objects because arcs indicate the movement of a living being.



Animators are tempted to create straight in-between drawings that are halfway between two other drawings, but this tends to kill the spirit of the action and make it feel mechanical. Loosen up the movements you assign to the many parts of your actors and see how things really start to flow.

Staging

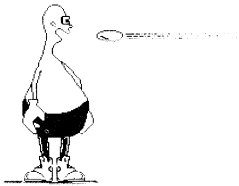
Staging is where and how you place your actors in relation to the props and other actors in the animation. The staging of a scene helps to set the mood and create an environment for the action to take place, much the same as in stagework or movie making. The surroundings should never upstage the action they are meant to enhance.



Staging can also refer more directly to actors. How are they to be placed in the scene in a close up or a long shot? The physical attributes of the actor must also be considered. Do their costumes reflect their character? Does their placement reflect their personality? Are they lost in the scene? Do they need to be emphasized? If you consider these questions during the creation process, you will enhance your animation's environment.

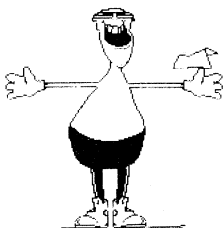
Timing

Timing is the speeds at which different actions take place. Consider what is taking place and if it is necessary to increase or decrease the speed at which actions occur. Timing determines how related actions string together. The speed at which an actor moves through the animation can make the actor the focal point. For example, if all actors, but one, are moving at a given speed and the exception is moving faster, the faster movement catches the eye of the audience. Therefore, you have to consider what the focal point of your animation is. An actor that is moving through a scene at twice the pace of other actors might be a focal point, but is that in keeping with the flow and cadence of the animation?



Exaggeration

Animators often over-emphasize their actors' attributes to assist in telling something about the story, the actor and the environment in which the animation is set. When done properly, exaggeration actually makes an animation more believable and convincing. Exaggerate your actors' form and behavior whenever you need to communicate "big" movements in the story.





Solid drawing

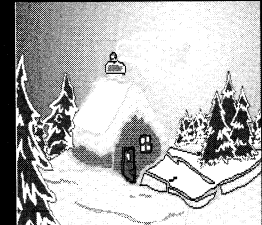
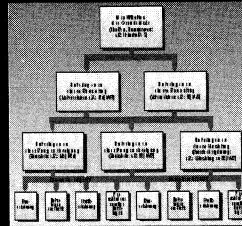
Solid drawing can be described as consistency, strength and "realism" in animation. Consistency greatly helps the audience to follow the action and story line of an animation. You can put your actors through any task or exaggerate their form and reactions as long as they remain recognizable to your audience. Your drawings should be definite and clear. Try to "see" what you are drawing through practice and careful observation of your subject matter.

Ideally, you should be able to draw your actors from every angle. If you can only draw your actors from two or three angles, your animations will take longer and be restricted in the way you can stage the action.

Appeal



Appeal is the overall image, character, and qualities that your actors give to your audience. An appealing actor is one that catches and holds the eyes and ears of the audience. Your success in creating appeal depends on your ability to recognize who the audience is and what they expect. Animators rely on appeal to communicate concepts, themes, and subject matter. Anything can appeal to an audience as long as they are not left in the dark or have to guess their way through confusing, unconnected scenes. Remember to be confident with your drawing and work out your animations so that they make sense and add to, not detract from, your story.



SECTION

4

COREL MOSAIC



OVERVIEW

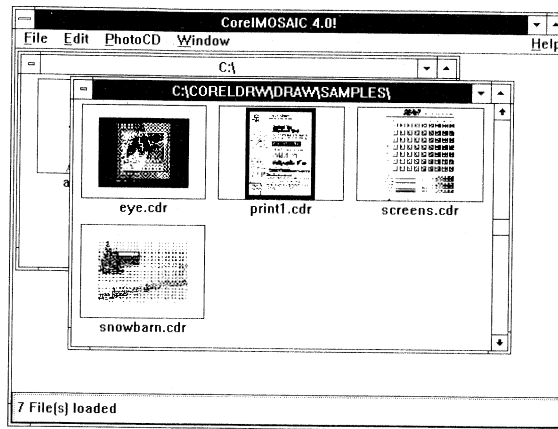
CorelMOSAIC

CorelMOSAIC is a powerful visual file manager that allows you to organize, manage and manipulate your files with ease. While the following pages introduce the functionality of CorelMOSAIC, the documentation for this application is primarily online and is accessible directly from within the program.

The CorelMOSAIC screen

The file display screen is the window that appears when CorelMOSAIC is started. It shows program icons or small, bitmapped representations of your files—known as thumbnails—and allows you to select files visually, rather than by filename only. CorelMOSAIC manages a variety of different file formats, including text, sound, and both vector- and bitmap-based image files. Using the File menu, you can select the directory you want to view and set your preferences for displaying the files. You may view the thumbnails for each file or view the file information in text mode. You may also open several directories simultaneously to take advantage of CorelMOSAIC's "drag and drop" feature.

CorelMOSAIC is more than a file viewer. It is a file manager. This means that in addition to viewing the files, you may manipulate them in a variety of ways.



File management

CorelMOSAIC allows you to manage your graphic files by storing them as a library or as a catalog. Libraries and catalogs are master files that act as visual filing cabinets, keeping your graphics neatly organized.

Library

When included in a library, your files are automatically compressed to save space on your hard drive. Those files already in a compressed format (e.g., Compressed GIF, Compressed TIFF) are stored without further compression. Opening a library in CorelMOSAIC displays the thumbnails of the files in the library, and also provides the option of expanding compressed files from the library.

Catalog

Catalogs allow you to group thumbnails in "picture album" fashion. When a thumbnail is added to a catalog, the location of the original file is automatically stored along with it, allowing you to link files without moving them. This is especially useful if you want to associate a graphic with more than one group of files. Like a "picture album", you may attach a description to your catalog, such as "Our trip to the Grand Canyon".

Keywords

The keywords—indexing terms—you attach to your files are stored within your libraries and catalogs when you create them. CorelMOSAIC allows you to quickly sort through your files searching for a specific keyword reference, even if you are dealing with large volumes of files.

File manipulation

In addition to organizing your files, CorelMOSAIC provides the ability to print, move, and edit your files without closing the application and opening a new program.

Batch operations

Within CorelMOSAIC, you can perform repetitive tasks on groups of files. You can run batch printing, importing, and converting operations. You can also edit text in groups of files using the extract and merge-back commands.

Drag and drop

CorelMOSAIC displays multiple windows, giving you access to several directories, catalogs, or libraries simultaneously. As in your Windows File Manager, you can drag files from one directory and drop them into another. This "drag and drop" functionality can quickly move, copy, or expand files.

Running other applications from CorelMOSAIC

You can use CorelMOSAIC to start the applications listed in the Windows Registration Database. The server application has been identified for the file formats registered and you may open a file from within CorelMOSAIC by double-clicking with the primary mouse button on the file thumbnail. This means you can edit your files without closing CorelMOSAIC.

Photo CD

CorelMOSAIC also views and converts files from a Photo CD disk. With this function, you can manipulate your favorite photos, and use them in your software applications.

Using CorelMOSAIC

CorelMOSAIC is a versatile application for maintaining your files and directories. Some of the more commonly used procedures are described below. For further information, refer to the CorelMOSAIC online Help.

Viewing a directory

► To view a directory:

1. Choose View Directory from the File menu.
2. In the dialog box that appears select the drive and directory you want to view.
3. Choose OK.

Creating a library or catalog

► To create a library or catalog:

1. Choose New Catalog/Library from the File menu.
2. Type the name you want to give to this new library or catalog in the File Name box.
3. Choose Library or Catalog from List Files of Type.
4. Choose OK.

» Tip:

Using the "drag and drop" feature, you can copy a file by dragging a selected thumbnail across the screen and dropping it into the window of the desired library or catalog.

Adding a file to a library or catalog

► To add a file:

1. View the directory containing the file you want to add.
2. Select the file.
3. Choose Insert Files from the Edit menu.
4. In the dialog box that appears, choose the library or catalog where the file is to be placed.
5. Choose OK.

Searching for a file

► To search for a file:

1. Open a library, catalog, or directory.
2. Choose Select by Keyword from the Edit menu.
3. Type in the keywords you would like to use in the search separated by either AND or OR.

The AND command causes CorelMOSAIC to select only those files that contain all the selected keywords. The OR command selects all files containing any of the chosen keywords.
4. Click Start Search. The files containing the chosen keywords are selected in the file display screen.

Expanding a file from a library

► To expand a file:

1. Open a library.
2. Select the file you want to expand.
3. Choose Expand Files from the Edit menu.
4. In the dialog box that appears, select the drive and directory where you want to expand the file.
5. Choose OK.

» Tip:

If you "drag and drop" the file into the directory for the expanded file, it is automatically expanded into that directory.

Printing files

► To print a file:

1. Open a library, catalog, or directory.
2. Select the thumbnails of the files you want to print.
3. Choose Print Files from the File menu.
CorelMOSAIC opens CorelDRAW and individually loads each file you selected.
4. Select the desired print options.
5. Choose OK.

Printing thumbnails

► To print thumbnails:

1. Open a library, catalog, or directory.
2. Select the thumbnails you want to print.
3. Choose Page Setup from the File menu.
4. Select the desired print options.
5. Choose OK.
6. Choose Print Thumbnails from the File menu. CorelMOSAIC prints the thumbnails of your files in "picture album" style.

Navigating CorelMOSAIC online Help

General information on using Help

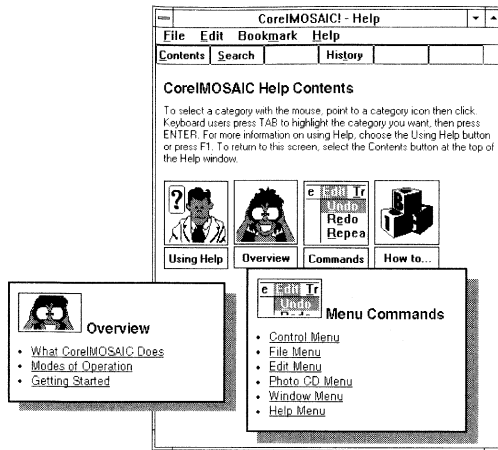
For detailed information on how to use the online Help provided with your CorelDRAW package consult the introductory section of this manual. To use Help while in CorelMOSAIC, access the Help menu and select the topic of your choice, or use the context sensitive Help by pressing F1.

How to use Help

If you are new to Corel's online Help, you can learn the basics of navigating the Help system within Help itself. This topic provides detailed information on how to get help when you need it.

Contents

If you select Contents from the menu, Help presents four categories of CorelMOSAIC information: Using Help, Overview, Commands, and How to. *Using Help* tells you how to get around your online Help files. *Overview* supplies several categories of general information on the use of CorelMOSAIC, such as how to get started and what the application can do. *Commands* details each drop-down menu and the specific function of each selection on the menu. *How to* gives step by step instructions on performing specific tasks or operations.



Search for Help on...

If the information you are seeking does not seem readily available from the Contents section, you can search for Help on a specific topic. To find the information you need, type a word directly into the topic box, or select a topic from the list provided. When the topic of your choice appears, select it, then click on the Show Topics button. Select a topic from the list and click on Go To. Help displays detailed information on the referenced topic.

SECTION

5

CORELTRACE



OVERVIEW

CorelTRACE

CorelTRACE is a fast, flexible program that allows you to convert bitmap images into compressed vector format. The program recognizes objects, tables, and lines within a color or monochrome bitmap. CorelTRACE can also extract text from a bitmap. Omnifont technology has been used to recognize many fonts (excluding artistic fonts), and maintain font position, size, and style.

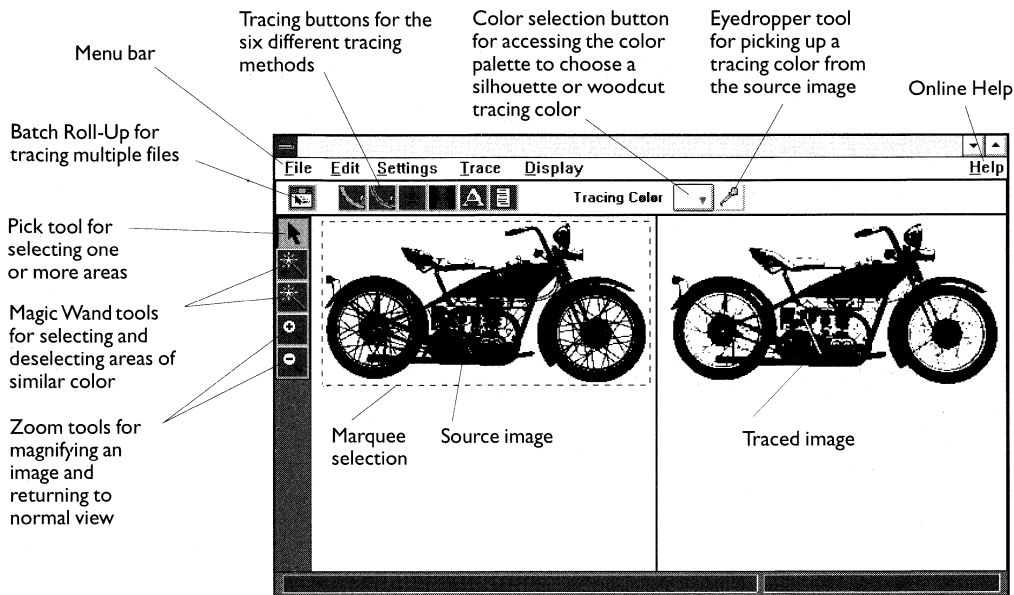
The major drawback with bitmaps, such as scanner files, is their fixed resolution, a limitation that can show up as jaggedness when you enlarge the image or print it on a high-resolution output device. Converting bitmaps to vector images gives your artwork smooth lines regardless of the resolution of your printer.

Use CorelTRACE to create original bitmap paintings. The Silhouette and Woodcut tracing methods allow you to use a bitmap image as a template for your own vector artwork. The Silhouette method defines the outline of an object. This is useful if you do not need the colors of an object, just the shape. Use the Woodcut method to create a two color, banded effect by graphically mapping the areas of high and low intensity within a bitmap. Use the Magic Wand, with different color tolerance values, to build up an image from areas of similar color shades.

CorelTRACE can read many bitmap file formats including BMP, TIFF, PCX, TGA, and Photo CD. It is also possible to access external input devices from within CorelTRACE with the Acquire command.

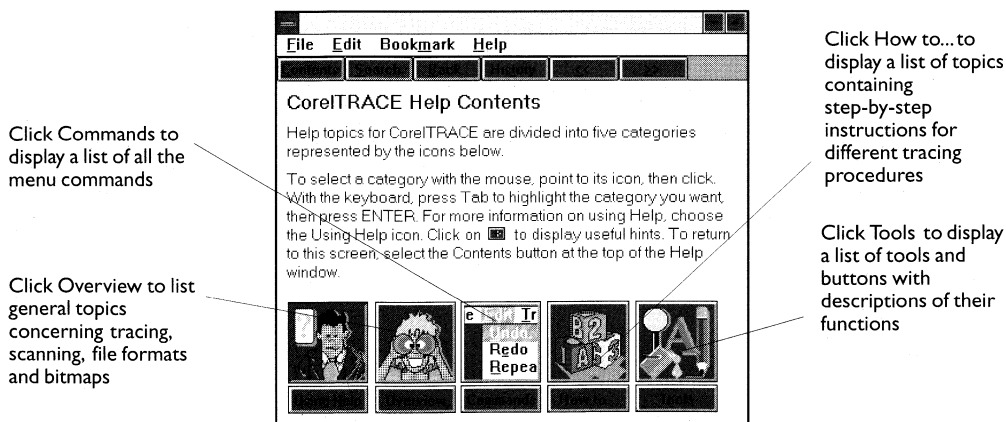
The CorelTRACE screen

The picture below shows a view of the CorelTRACE interface. In this example, a TIFF file has been loaded and traced with the Outline method. The split screen displays the source image on the left and the new traced image on the right. Some tracing methods may not be available (grayed out) depending on the type of image to be traced.



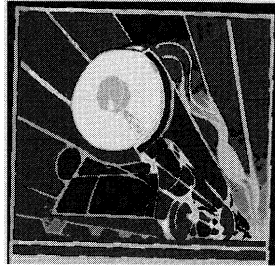
Using online Help

For information on how to use online Help, consult the introductory section of this manual. To use Help while in CorelTRACE, click the Help menu and choose Contents or press F1 from dialog boxes.

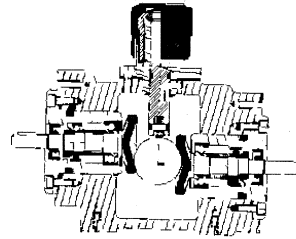


Tracing methods

The following examples show the results of different tracing methods.



The Outline method traces the edge of each element in the bitmapped image and fills the resulting outline in accordance with the type of image being traced.



The Centerline method treats thin lines as objects having a certain thickness but no fill. The line itself and not the outline is traced.



The Woodcut method specifies a woodcut special effect that creates a traced image with lines across it at a specified angle.



The Silhouette method traces the outline of a selected area and creates an object filled with a single silhouette color.



CorelTRACE allows you with bitmap images by **C**. The major drawback will be **fixed resolution, a limit to enlarge the image or print**. Converting them to vector **regardless of the resolution scale and even rotate them**.

The OCR method converts scanned text to vectors so that letters can be manipulated as normal text.



| | | |
|---------------------|--|-----|
| COREL | | Doc |
| Requested by: | | Da |
| Type of document: | | Da |
| User Guide | | Wc |
| Reference manual | | V |
| Help system | | E |
| Tutorial - hardcopy | | A |
| Tutorial - online | | E |
| README.TXT file | | |

The Form method traces text, then lines, and any remaining objects from a scanned form.

Using CorelTRACE

Tracing an image: the basics

CorelTRACE provides different tracing methods. Use the Outline tracing method to achieve good results for most images.



► **To trace an image:**

1. Choose Open from the File menu.
2. Choose a file by either clicking the filename and OK, or by double-clicking the filename. If you choose several images for tracing, the Batch Files Roll-Up will be displayed.
3. To list files in another directory, locate the directory in the Directories box, then double-click.
4. Choose Default Settings from the Settings menu.
5. Click the Outline trace button. The traced image appears in the tracing window beside the source image.

Tracing part of an image using the tool

In many instances, you may only want to trace a particular part of an image.

► **To trace part of an image:**

1. Click the  tool.
2. Define an area of the bitmap image by clicking and dragging the  tool. A selection marquee appears around the defined area. Hold the Shift key down to select several areas consecutively.
3. Click the relevant trace button to begin the tracing process. If you are tracing multiple images, tracing a partial selection is not available.

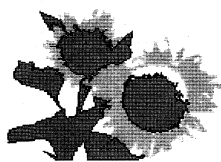


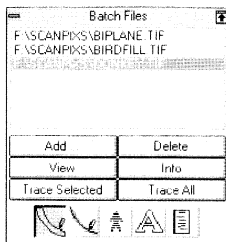
Image built up with the Magic Wand tool and the Silhouette tracing method

Tracing part of an image using the Magic Wand (+)

The Magic Wand can be used to select areas of similar color for tracing. Use this tool with the Silhouette tracing method to interactively build up a new image.

► **To trace an image with the Magic Wand:**

1. Click the Magic Wand (+) tool.
2. Click an area of the bitmap image. A marquee will appear around an area that is within the color tolerance range.
3. Click the Color button to choose a tracing color.
4. Click the Silhouette trace button. The selected area will appear on the tracing page as a solid, filled shape.
5. Repeat the above steps until you build up the image that you want. Change colors and color tolerances to create unusual effects. Save your final image to disk or copy it to the Clipboard and paste it into another program to save it in a different format.



Batch Files Roll-Up

Tracing multiple images

The Batch Files Roll-Up controls the tracing of multiple images. You must use the same batch output options, tracing options, and color scheme for all images. Individual images can be in different formats.

► To trace multiple images:

1. Choose files by dragging the mouse to highlight filenames, or hold down the Ctrl key and click the filenames, then click OK. The filenames are displayed in the Batch Files box.
2. Click Trace All to begin tracing. Prompts may appear before each image is traced warning that a file with the same name already exists in the destination directory. If you want CorelTRACE to trace all images without interruption, disable the prompt using the Batch Output dialog box.

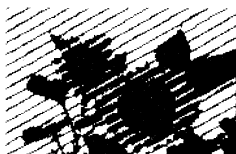


Image traced with a custom Woodcut method

Creating custom tracing methods

You can change the default options for various tracing methods and save your custom settings.

► To create a custom tracing method:

1. Choose Modify from the Settings menu.
2. Choose the type of settings to be modified such as image filtering, color matching, line attributes, centerline method, woodcut style, or OCR method.
3. Make changes to option parameters in the appropriate dialog boxes.
4. Save your settings by assigning them a name in the Save As box, then click OK.

Scanning from CorelTRACE

The Acquire Image commands allow you to choose and operate your scanner without leaving CorelTRACE. Use the Select Source command to choose a standard image input driver such as Corel Image Source.

► To scan an image:

1. Specify a source scanner with the Select Source command.
2. Choose the Acquire command. The dialog box that is displayed will depend on the type of scanner in use. Some scanners will provide more options that are accessed by clicking the Settings button.
3. Choose Prescan to perform a preliminary scan of the entire original. Click and drag the marquee to select an area for final scanning.
4. Click the Scan button.

Editing a bitmap image

You can open CorelPHOTO-PAINT from within CorelTRACE to edit the source image. This gives you access to the full range of painting and retouch tools provided by CorelPHOTO-PAINT.

► To edit a source image:

1. Open a file in CorelTRACE and choose Edit Image from the Edit menu.
2. Edit the image in CorelPHOTO-PAINT and click Update CorelTRACE.
3. Choose Exit & Return to CorelTRACE from the CorelPHOTO-PAINT File menu.

Importing traced files into CorelDRAW

Once traced and saved, you can import a CorelTRACE file into CorelDRAW.

► To import a traced file into CorelDRAW:

1. From CorelDRAW, choose Import from the File menu, then click CorelTRACE as the import type. Once the image has been imported, you may work with it in the same way as you would with any image created in CorelDRAW.
2. To work on individual elements, the image must first be ungrouped. All of the powerful features of CorelDRAW can then be used to alter the image.

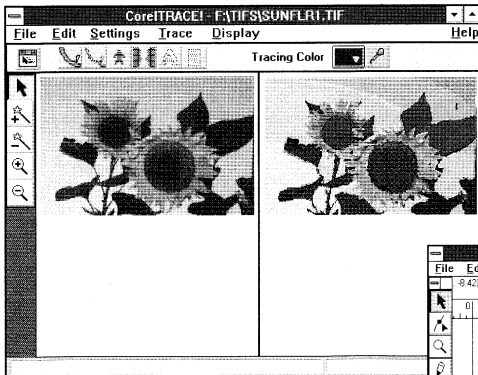
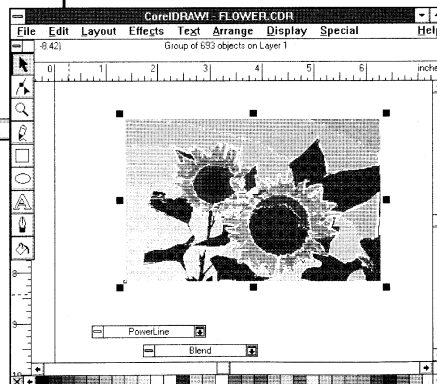


Image traced with the Outline method

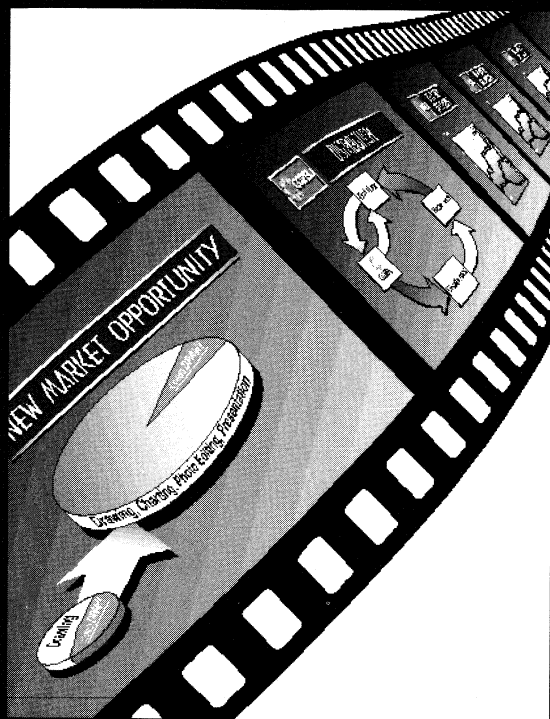
Image imported into CorelDRAW as an .EPS file and saved as a .CDR file



SECTION

6

CORELSHOW





OVERVIEW

CorelSHOW

CorelSHOW helps you assemble multi-page presentations using files from programs such as CorelDRAW, CorelCHART, CorelPHOTO-PAINT, plus animation files created in CorelMOVE, Autodesk Animator Pro or Quicktime for Windows.

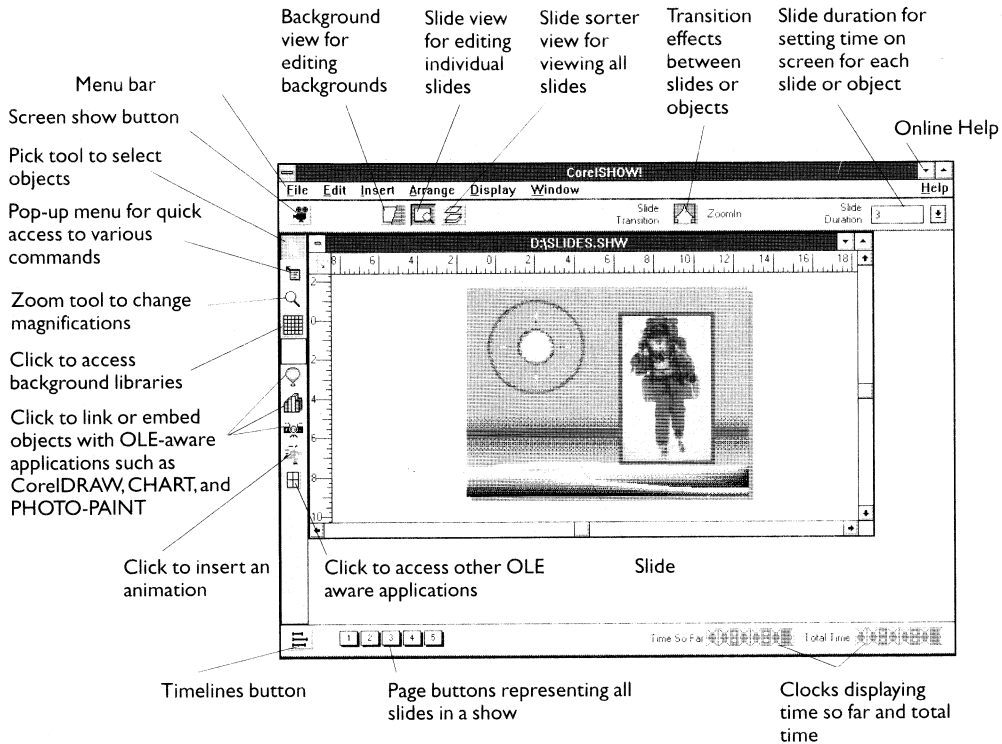
The presentation might be an automated screen show, a series of slides or overheads to be printed at a service bureau, or a publication.

With CorelSHOW, you can assemble a multi-panel brochure from separate CorelDRAW files. You can call on any OLE server application installed on your system and use them to create text, graphics, charts, etc. As well, you can design each panel in succession and move elements from one panel to another.

If you're organizing a screen show, you can determine how long each slide stays on the screen, and use special transition effects such as screen wipes, zooms, and dissolves when you move from one slide to another. You can set up and edit cues to make your screen show interactive. A portable screen-show player supplied with CorelSHOW lets you run screen shows on computers that do not have CorelSHOW installed.

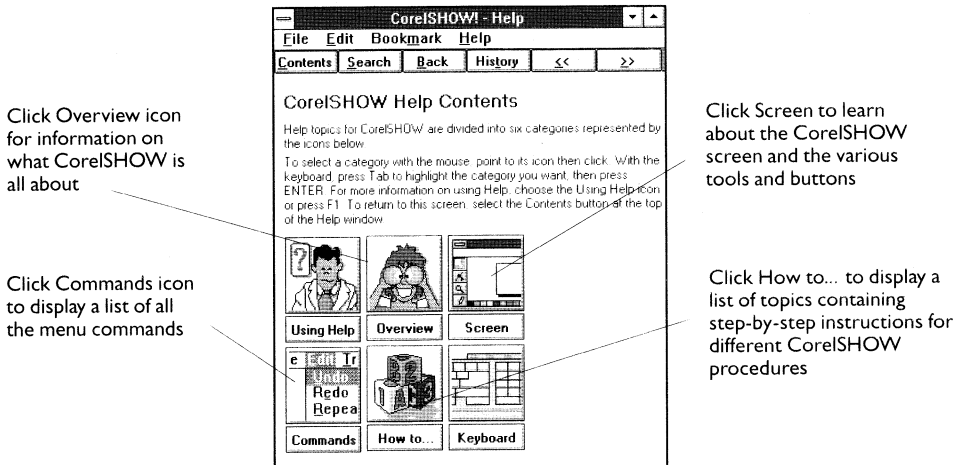
Detailed information and step-by-step procedures for using CorelSHOW are available in the CorelSHOW online Help.

The CoreISHOW screen



Using online Help

For information on how to use online Help, consult the introductory section of this manual. To use Help while in CoreISHOW, click the Help menu and choose Contents, or press F1 from dialog boxes, or press Shift + F1 to use the Help cursor.



Using CorelSHOW

Starting a new presentation

CorelSHOW provides two ways to start new presentations: from the dialog box displayed each time you start the program, and by choosing New from the File menu. Using the dialog box lets you specify the number of slides you want in your presentation, and the page and printer settings.

▶ To create a presentation from the opening dialog box:

1. Choose Start a New Presentation.
2. Type in the number of slides you want in your presentation. You can add and delete slides as needed.
3. Do any of the following:
 - Click Page Setup to specify a page size and orientation.
 - Click Print Setup to choose a printer and printer options.
 - Click OK to start your presentation using the displayed settings.

▶ To create a presentation with the New command:

Choose New from the File menu. Another presentation window appears on top of those already on the screen. When you save the presentation, its name replaces the word "Untitled" and the number following it on the title bar.

Opening an existing presentation

The Open command opens a presentation that was saved to disk. You can also open a presentation you recently closed by choosing its name (or the number beside it) from the File menu.

▶ To open a presentation:

1. Choose Open from the File menu.
2. In the File Name box, type the name of the presentation you want to open or choose it from the list. When you choose a file, the first slide in the presentation appears in the file previewer. If the presentation contains other slides, use the scroll bars to scroll the previewer. Clicking Options with a file selected lets you add notes and find files by typing keywords.
3. Click OK.

Choosing a background

CorelSHOW comes with a library of ready-made backgrounds you can apply to the slides in your presentation. You can also add your own backgrounds to the library.

► To choose a background:

1. Click the background library button to open the background library.
2. Use the scroll bars on the right side of the Library dialog box to browse through the previews in the library.
3. Click a background preview.
4. Click Done.

Adding an animation

Animation files included with CorelSHOW let you add eye-catching introductions and transitions to your screen shows.

► To add an animation to your screen show:

1. Choose the slide that will follow the animation.
2. Choose Animation from the Insert menu.
3. In the File Name box, type the name of the animation file you want to add, or choose it from the list. When you choose a file, the first frame in the animation appears in the file previewer. Use the scroll bars to scroll the animation frame by frame.
4. Choose Options to display options for controlling the animation.
5. Click OK.

Assigning transition effects and time on screen

Transition effects avoid abrupt shifts between the slides in your show. Enter or choose a number in the Slide Duration box to specify how long individual slides remain on the screen. Transitions and time on screen can also be applied to individual objects within a slide.

► To assign a transition effect to a slide:

1. In Slide View or Slide Sorter View, click the slide you want to introduce with a transition effect.
2. Click the Slide Transition button to choose an opening or closing transition from the Transition Effects dialog box.

Saving a presentation as a screen show

CorelSHOW lets you save a presentation so that it can only be run as a screen show. In addition to running on your computer, the screen show can also be run on another computer that uses the Screen Show program.

► To save a file as a screen show:

1. Choose Save As from the File menu.
2. Click the Screen Show Only check box.
3. Click Segment File for Portable Media to save the screen show on a floppy disk, then choose the appropriate disk size option.
4. Click OK.

If the screen show is too large to fit on a single disk, CorelSHOW prompts you to insert additional ones. Also, if your presentation contains links to other files, CorelSHOW prompts you to copy or ignore those files.

Object Linking and Embedding (OLE)—An overview

Linking

Linking allows you to create a file in CorelSHOW, include information from a file created in another application, and then link the two files. By copying an object from a source file (for example, a CorelDRAW file) and pasting into a destination file (for example, CorelSHOW), you can have the destination file updated whenever information changes in the source file.

You can control when updates occur or have CorelSHOW update the information automatically whenever the source file changes.

Embedding

Embedding allows you to create a file that includes information, such as graphics and charts, created in other applications. Only Windows applications that support object embedding can supply embedded information. Changes you subsequently make in the source file do not affect objects you've embedded in other files.

You must have enough memory to run all the applications you are using simultaneously.

Embedding is used instead of linking when you want to make changes to the embedded information within CorelSHOW. For example, you can embed a graph created in CorelCHART and edit it in CorelSHOW. As you're working on your CorelSHOW presentation, you may decide that you want to change the size of the text in the graph. To do this, simply double-click on the graph. CorelCHART opens the graph, ready for editing. When you finish editing and switch back to CorelSHOW, the chart is updated with the changes you made.

Running a screen show

CorelSHOW provides various options for controlling the way a screen show runs. For example, you can choose to run the show automatically or manually, or have it repeat continuously. Once started, you can stop a screen show by pressing the Esc key.

► To run a screen show:

1. Open the screen show you want to run. If you have several presentation files open, click the window of the show you'd like to play.
2. Choose whether you'd like to run the screen show automatically or manually. In manual mode, you must press a key or mouse button to advance to the next slide.
3. Click OK.
4. To start the screen show, click the Screen Show button or choose Run Screen Show from the File menu.

Creating a "portable" screen show

A portable screen show player (SHOWRUN.EXE) supplied with CorelSHOW allows you to run your screen show on computers that do not have CorelSHOW. Microsoft Windows version 3.0 or higher is required to run the screen show player.

► To create a portable screen show

1. Save your presentation as a screen show and copy it to a diskette.
2. Copy the file SHOWRUN.EXE from your CORELSHOW\SHOWRUN directory to the same diskette.
3. On the computer that will run the slide show, start SHOWRUN.EXE through the Windows File Manager or by choosing Run from the Program Manager File menu.
4. To start the screen show, click the Screen Show button or choose Run Screen Show from the File menu.

SECTION

7

COREL CHART



Introduction

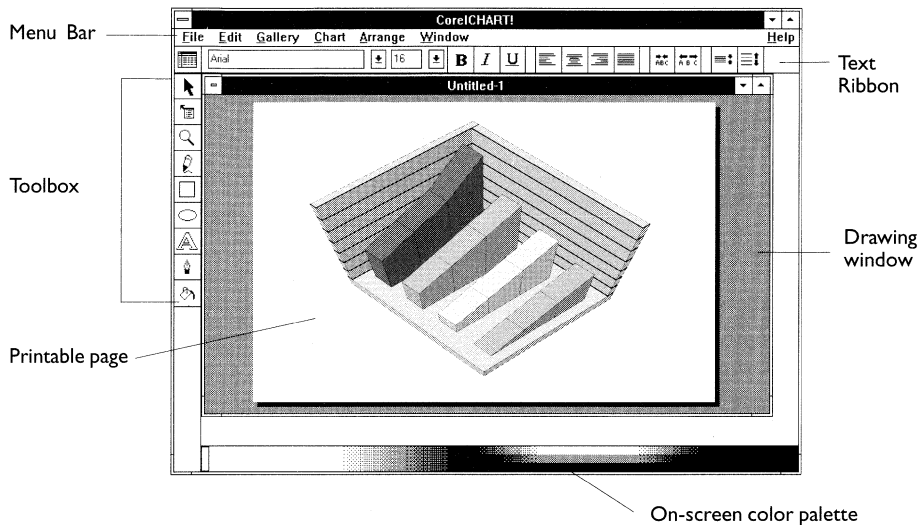
CorelCHART 4.0 is for building charts that can simply and powerfully express complex ideas.

CorelCHART offers the basic chart types—line, bar and pie—plus true three-dimensional and other specialized chart types. You can build charts using imported or pasted spreadsheet or ASCII data, or data you enter into its Data Manager. There are tools for creating annotations, text and graphics you can create and place on a separate layer on top of a chart. These are used to highlight a feature of the chart, for example, a data point. You can also import bitmap or vector graphics, or paste from the Windows clipboard, and place them on the annotation layer or inside chart objects. CorelCHART is an OLE server, so you can embed or link charts into other documents. It also supports Dynamic Data Exchange, which means you can build data links with existing spreadsheet files created in other DDE-compatible applications.

Starting CorelCHART

Go to your Windows Program Manager screen and double-click the CorelCHART icon. Once the program starts, choose Open from the File menu. The File list shows all the charts in the current subdirectory. You can preview a file by clicking its name and watching the preview on the right. To open a file, double-click its name, or click OK.

Exploring the CorelCHART screen



The printable page











You can work only within CorelCHART's printable page.

The menu bar



CorelCHART's pull-down menus are arranged, where possible, like those in CorelDRAW. When you first start CorelCHART, you'll see a shortened File menu, with options for creating a new chart or opening an existing one, and the Help menu on the right end of the menu bar. When the Data Manager is current, you'll see File, Edit, Format, Data, Options, Window and Help menus. When you're in Chart View, you'll see File, Edit, Gallery, Chart, Arrange, Options, Window and Help menus. The commands under the Chart menu change depending on the type of chart in the current window.

The Toolbox



On the Toolbox you'll find tools much like those in CorelDRAW. (In Data Manager, all the tools except the Chart View button are disabled.)







| Click This Tool... | Tool Name & Function |
|---|---|
|  | The Data Manager/Chart View button |
|  | The Pick tool for selecting, moving and transforming objects |
|  | The Context-Sensitive Pop-up Menu tool for accessing context-sensitive menus when you click any chart element |
|  | The Zoom tool for changing the size of the drawing window |
|  | The Pencil tool for drawing lines, curves, polygons and arrows |
|  | The Rectangle tool for drawing rectangles and squares |
|  | The Ellipse tool for drawing ellipses and circles |
|  | The text tool for adding or editing text |
|  | The Outline tool for setting outline attributes |
|  | The Fill tool for setting fill attributes |


»Tip:


There's another way to get to context-sensitive menus while editing your chart. Use the  tool to select an object, then click the right mouse button to get the same pop-up menu as you would using the  tool.

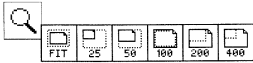
Below are more detailed descriptions of each of the tools.



The  button provides access to the Data Manager when you're in Chart View. When you're in the Data Manager, the button changes to , and becomes a gateway back to Chart View.

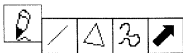
The  tool is used for selecting, moving or changing the size of objects in a chart. It operates much like the same tool in CorelDRAW, as do the , , , , and  tools.



The  tool lets you point to a chart element, then click and get direct access to a menu of commands from the Chart pull-down menu which are relevant to that element. Using the pop-up menus is a quicker way to edit your chart; you can see the commands relating to the chart element you've selected without having to go to the Chart pull-down menu and sort through the commands there.



The  tool changes the size of the drawing window. Choose the tool, and click the tile for the size you want. The screen is resized accordingly.










The  tool is for drawing annotation lines and polygons—it has a flyout menu. The first of the four tiles is for drawing straight lines; click the tile once, move to the page, and click and drag to draw the line. The  tile is for drawing polygons. Click the tile once, move to the page, and click to start using the tool. Drag (without holding down the mouse button to draw the first side of the polygon, click again to set the first corner of the polygon, then drag again to draw the second side, and so on. When you've completed the polygon by drawing the final side, return to the starting point, and click. (You'll

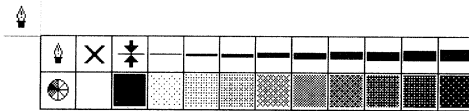









know you're over the starting point because the cursor changes to a cross with a circle over it.) Alternatively, draw the polygon the same way and double-click without returning to the starting point. This completes the polygon where you last double-clicked by drawing the closing line to the start point. The  tile is the freehand tool, which behaves much like the freehand-drawing mode in CorelDRAW's pencil tool. Click the tile, move to the page, then click and drag to draw a freehand curve. The  is for drawing arrows. Click the tile, then on your page click at the starting point of the line, and drag. Let go at the end point of the arrow; CorelCHART places the arrow at the line's end point.

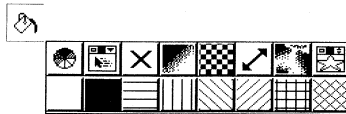
The  tool is for drawing rectangles and squares as annotation graphics you can add in Chart view to highlight a feature of your chart. Click the tool, go to where you'd like to start your rectangle, then click and drag. Release the mouse button when the rectangle is about the right size. Resize and reshape it using the  tool.





The  tool is for drawing ellipses and circles as annotations to your chart. Click on the button, go to where you'd like to start your ellipse, then click and drag. Release the mouse button when the ellipse is approximately the right size. Resize and reshape it using the  tool.

The  tool is a little different from CorelDRAW's Text tool. It's mainly for adding text for annotations. It's also used to alter titles, subtitles and footnotes in your chart. Click the  tool, move the cursor to the drawing window, and you'll get a  cursor. Click, and you'll get a  cursor. Then start typing. To edit text, click and drag the  across the text to select it, as you would in a word processor.





The  tool, and the  tool below it, work much like the same tools in CorelDRAW. Both have flyouts. Once you've selected an element with the  tool, use the tiles on the top line of the  flyout to set the thickness of the outline. The  tile on the top row is used to set a custom outline width. The  tile is for removing outlines, and each of the rest are for setting successively thicker outlines. The  tile opens the Outline Color dialog box, where you can choose preset spot colors or mix process colors using the CMYK, RGB or HSB models. The rest of the tiles are for white, black and for various shades of gray.



Click the  tool to open the Fill tool flyout. On the flyout, you can click  to open the Uniform Fill dialog box—virtually the same dialog box as you'll open from the  tool flyout. The  tile opens the Fill Roll-Up, which you can use to access fountain fills, two-color patterns, full-color patterns and bitmap textures. Roll-ups are dis-

» Tip:

The  and  tools use the same constrain features as their counterparts in CorelDRAW. There's a list of key combination in CorelCHART's online Help; search for "toolbox keys."

cussed in detail below. The **X** tile clears a fill, making the object transparent.

The tiles on the flyout correspond with buttons you'll find on the Fill Roll-Up to choose full-color patterns (↗) or edit fountain fills (▒), two-color patterns (⊞), or bitmap textures (■) respectively.

The last tile opens the Pictograph Roll-Up. You can use the Pictograph Roll-Up to open any graphics file on your system in any bitmap or vector file format CorelCHART supports, and apply it to a bar as a pictograph—that is, as a fill between every major grid line in the bars of bar charts and histograms. (For a list of file formats, see the List Files of Type box in the dialog box itself, or search for “File Import” in CorelCHART’s online Help.)

The tiles on the bottom row of the flyout fill objects with white, black, or a set of preset patterns.

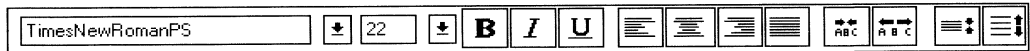
The Text Ribbon

These drop-down lists and buttons across the top of the CorelCHART window control the font, size and other attributes of text in your chart. (There are separate text-formatting controls in Data Manager.) The typeface list box offers access to all Windows scalable fonts, either TrueType or Type 1.

The point-size list box lets you size text and numbers. The bold, italic and underline buttons will accordingly modify the style of a selected piece of text. The next four buttons let you align multiple lines of text. From left to right, they are for left-aligned text, centered text, right-aligned text and text aligned left and right. The last four buttons are for tighter and looser letter spacing and tighter and looser line spacing on titles, subtitles, footnotes and annotation text.







» Note


Text on axes and data labels are controlled as a set; change the type attributes of one of the set, and the entire set changes.

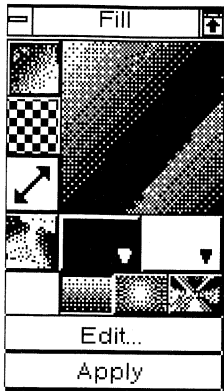


Roll-ups

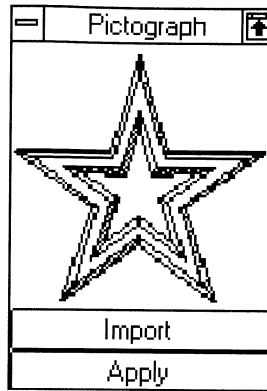
CorelCHART features roll-ups. Roll-ups are dialog boxes that remain on-screen as long as you want them there, so you can make adjustments to an object without having to open the same dialog box repeatedly.

There are three roll-ups in CorelCHART. The Fill Roll-Up is used for adding fountain fills, two-color patterns, full-color patterns and bitmap textures to chart elements and annotations. To open the Fill Roll-Up, click  under the  tool. To apply one of these fills, click the appropriate button on the left edge of the roll-up;  is for fountain fills,  is for two-color patterns,  is for full-color patterns and  is for bitmap textures.

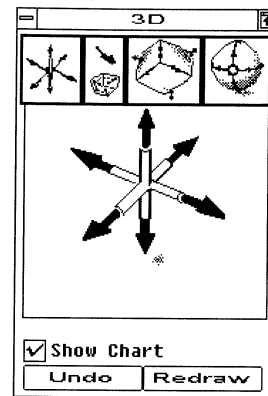
Clicking the last tile on the top row of the  tool’s flyout opens the Pictograph Roll-Up. It’s used to add pictographs to bar charts and histograms. Any drawing in .CDR or many other popular graphics formats can be used in a pictograph. For a description, see “Adding pictographs to a chart” in Chapter 4.



Fill Roll-Up with fountain fill selected



Pictograph Roll-Up with graphic selected



3D Roll-Up with 3D movement selected

The 3D Roll-Up is used to alter the size, scale, or perspective of a 3D chart, change the length of any of its axes or the thickness of any of its walls, or rotate it. To open this roll-up, choose 3D Roll-Up from the Chart menu with a 3D chart open in Chart view.

To use any tool in this roll-up, click the appropriate button on the top row. Then click on the red arrows. The longer you hold the mouse button down, the more of that particular effect you'll get. Once you release the mouse button, you'll see your results outlined, while the chart stays in its original position. If you're not happy with your results, click Undo. If you're ready to redraw the chart according to your modifications, click Redraw.

The on-screen color palette

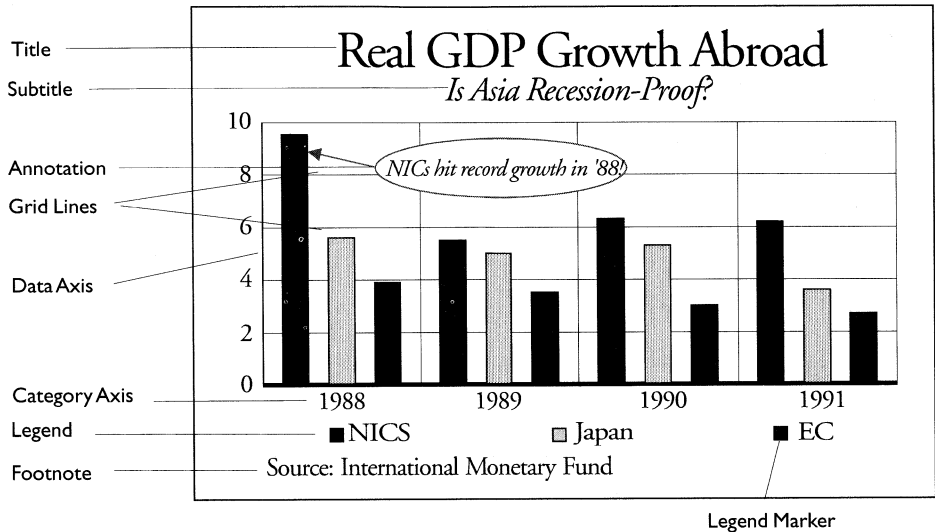
CorelCHART also has an on-screen color palette, which appears at the bottom of the application's window. The colors here supplement those in the Uniform Fill dialog box. With any Chart view chart item selected, click any color. Clicking the color with the left mouse button colors the object's fill. Clicking the color with the right mouse button colors the object's outline. Data Manager items cannot be colored with this palette.

A note about annotations

Annotations are text and graphic objects you can create and edit on a separate layer on top of a chart using the graphics tools on the toolbox. They're used to highlight a feature of the chart, for example, a data point. Annotations are the only chart objects not held in the Data Manager. Adding them is described in "Creating annotations" in Chapter 4, and in the lessons in Chapter 5.

Anatomy of a chart

Some users will be quite at home in the world of charting, while others will not be. The following labeled diagram will acquaint you with the terms we use in this book, in the online Help and in the program itself.



Exploring the Data Manager


Moving from the Data Manager to Chart view—and back

You'll likely have to move back and forth a few times from the Data Manager, where your chart's data is held, to the Chart view, where you see it as a completed chart.


»Tip:

With a chart window and a Data Manager window open for your chart, choose *Tile Horizontally* from the Window menu. With both views visible, you can see the effects of changes you make in the Data Manager by selecting the chart window.

► To move to the Data Manager from Chart view, do one of:

- Click  on the top of the Toolbox.
- Choose View Chart Data from the Edit menu.
- If a chart's Data Manager window is open, choose Window, and choose the filename's entry preceded by the word "Data" from the list at the bottom of the menu. (Note that the Data listing for a chart's Data Manager window only appears in the Window menu file list if it has already been opened during the current CorelCHART session.)

► To return to the Chart view, do one of:

- Click , found at the top left of the Toolbox.
- Choose View Chart from the Edit menu.
- Choose Window. At the bottom of the Window menu you'll find entries for the chart and its Data Manager window. Click on the filename *not* preceded by the word "Data".

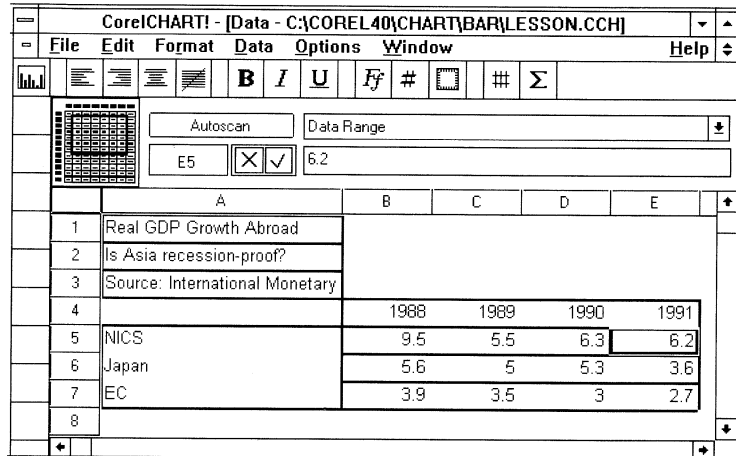
» Tip:

You can summon context-sensitive menus while editing in the Data Manager matrix by clicking the right mouse button.

CorelCHART lets you load more than one chart at a time. Each chart has a chart window and a Data Manager window which can be opened and closed independently of each other. (You may wish to open the Data Manager windows of two charts to cut and paste data from one to the other, or open two chart windows to share annotation graphics.)

The Data Manager is where you enter, paste or import the text and numbers that will comprise your chart. It looks and works like a spreadsheet. (For a discussion of importing procedures, see “Importing data” in Chapter 2. For a list of spreadsheet formats supported, search for “Importing Data” in CorelCHART’s online Help.)

Data Manager



The screenshot shows the Data Manager window for a CorelCHART file. The window title is "CorelCHART! - [Data - C:\COREL40\CHART\BAR\LESSON.CCH]". The menu bar includes File, Edit, Format, Data, Options, Window, and Help. The toolbar contains icons for chart types, text alignment, bold, italic, underline, font color, fill color, and other spreadsheet functions. Below the toolbar is an "Autoscan" button and a "Data Range" field with a dropdown arrow. The main area is a spreadsheet grid with columns A through E and rows 1 through 8. The data in the grid is as follows:

| | A | B | C | D | E |
|---|--------------------------------|------|------|------|------|
| 1 | Real GDP Growth Abroad | | | | |
| 2 | Is Asia recession-proof? | | | | |
| 3 | Source: International Monetary | | | | |
| 4 | | 1988 | 1989 | 1990 | 1991 |
| 5 | NICS | 9.5 | 5.5 | 6.3 | 6.2 |
| 6 | Japan | 5.6 | 5 | 5.3 | 3.6 |
| 7 | EC | 3.9 | 3.5 | 3 | 2.7 |
| 8 | | | | | |

You can also paste data that you’ve copied from another application to the Windows clipboard. By using the Paste Link command, you can set up a DDE link with the original data file. Your chart data will be updated whenever the source file is updated.

The Data Manager is where you assign “tags,” or labels, to cells of text and numbers to determine what element of the chart they’ll be—title, footnote, data range and so on. See “Tagging cells” in Chapter 2 for step-by-step instructions.

You can enter or import data into the Data Manager in any order you wish. (For easiest results, follow the diagram in the discussion “Data Manager basics” in Chapter 2). Note however that if you import a data file and the Data Manager already contains data, that existing data will be lost. If you’ve imported data which isn’t arranged as per that diagram, use the Cut, Copy, Clear, Paste, Insert and Delete commands in the Data Manager to arrange the cells containing the text and data you want in your chart. Alternatively, you can tag cells manually by selecting a cell and clicking the tag name on the tag list. If there’s data in the file you’ve imported that you won’t use in your chart, don’t assign it a tag, and Data Manager will ignore it. For more details and procedures, see “Data Manager basics” in Chapter 2.

Spreadsheet functions

The Data Manager allows you to set up mathematical relationships between cells such as addition, subtraction, multiplication, division and percentage. It also supports advanced mathematical, statistical, trigonometric and financial functions such as variance, standard deviation, cosine and tangent, and amortizations. For a complete list of functions, search for "Data Manager Formula Reference" in CorelCHART's online Help.

In the Data Manager you can also sort cells and search and replace strings of text, numbers or formulas. The sorting feature is for rearranging the rows or columns of the data range in ascending or descending order, where ascending order implies text, followed by numbers going from the lowest to the highest.

Opening an existing chart

► To open an existing chart:


1. Once you've launched CorelCHART by double-clicking its Program Manager icon, choose Open from the File menu.
2. In the Open Chart dialog box, scroll among the directories and drives to find the file you wish to open. Once you've found the file, click its name once and you'll see the chart, and any notes attached to it, shown in the preview box. Click OK to open it.

Building a new chart

Creating a new chart entails using an existing chart's template (i.e. chart type, colors used, placement of elements, etc.) as a basis for how the new chart will look. In other words, the existing chart's template information will be applied to the new data to create a new chart. While this may sound a bit complex, it's all done by selecting a chart type from the Gallery, as you'll see below. Note that you can choose to open the existing chart with its sample data, or without.

► To create a new chart:

1. Choose New from the File menu to open the New dialog box. You must use an existing chart as a template for your new chart.
2. If you wish to enter your text and numbers manually, enable the Use Sample Data button in the bottom-left corner. If you plan to import or paste new data, disable it.
3. Choose a chart type from the Gallery in the list box. The chart files provided with CorelCHART then appear as previews in the Chart Types box.
4. Choose one of the files by double-clicking its preview.

5. If you're using the chart's sample data, you see the chart in its chart-view window. Click  to switch to the chart's Data Manager window. If you didn't, you'll see the chart's empty Data Manager window.

If you plan to replace sample data with your own manually, see "Data Manager basics" in Chapter 2. If you plan to paste or import a spreadsheet or database file, which will clear all exiting text and numbers previously in the Data Manager, see "Importing data" or "Setting up DDE links with spreadsheets in other applications" in Chapter 2.

Working with other applications: OLE, DDE, importing, exporting

CorelCHART Version 4.0 is an OLE server application. This means you can link or embed charts in documents created in OLE client applications. (There are detailed descriptions of linking charts in other files in Chapter 4. For more information on OLE, see the discussion in Chapter 17 of the CorelDRAW section of this book, and your Microsoft Windows documentation.) Note that you can't link or embed data from the Data Manager into a document created in an OLE client application.


CorelCHART also supports Dynamic Data Exchange, or DDE. You can use DDE to set up links between spreadsheet files and charts created in CorelCHART. When you update numbers or other information in the spreadsheet, the same data in the CorelCHART file is updated automatically. For details, see Chapter 2, "Working with Your Chart's Data." Consult your spreadsheet application's documentation to make sure it supports DDE.

CorelCHART imports data from many popular database and spreadsheet formats, as well as graphics in many bitmap and vector formats. You can export data from the Data Manager in several popular formats. As well, you can export chart files in several different graphics formats. For lists of file formats supported for each of these functions, search for "File Importing" or "File Exporting" in CorelCHART's online help.

Using online Help

There's a Help command on the menu bar, providing access to the Help Contents. Alternatively, press Ctrl + F1 to search the Help file using keywords.

CorelCHART also has context-sensitive help, which you can summon in one of two ways. If you have a dialog box open, or if you've highlighted—but not chosen—a command on a pull-down menu, press F1. You'll get help about that dialog box or command.

The second method is useful when no dialog boxes are open and no menu items are chosen. In this case, press Shift + F1. The cursor changes to a . With this special cursor, you can get help on a discrete item by positioning it on the screen over the item and clicking.

Exiting CorelCHART

In Chart View or in the Data Manager, choose Exit from the File menu to end your CorelCHART session. If you've made any changes since you last saved your chart, a dialog box will appear which asks you if you wish to save those changes. Click Yes, and the file will be overwritten with your new changes. To discard the changes you've made, click No. To save this new version of the file under a different name, click Cancel, then, in Chart View, choose Save As from the File menu. If you haven't saved the chart yet, a dialog box will prompt you for a file name.

Working with Chart Data

This chapter explains how to get your chart's text and numbers into the Data Manager. You can import data from another chart file, a spreadsheet or a text file, paste it from the Clipboard, paste it from a spreadsheet file with DDE links, or enter it from scratch. You must then tag cells of text and numbers to determine which chart elements they'll become. We'll also discuss some more advanced Data Manager operations, such as sorting, searching and replacing, and using formulas.

With CorelCHART's sorting features, you can arrange a group of cells in a mathematical order, for example from the lowest value in the set to the highest. Searching and replacing makes it easier to update values or formulas in cells when you want to change a large spreadsheet. CorelCHART's formulas allow you to incorporate financial, statistical and trigonometric functions into your spreadsheet.

Data Manager basics

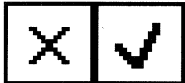
Moving around in the Data Manager

There are several ways to get from cell A1 to cell B2. When the Data Manager first opens, cell A1 is selected. When you return to it from Chart View, the last cell you selected is still selected.

- ▶ **To move from cell to cell, use any of these methods:**
 1. Press the arrow keys to move in any direction, one cell at a time.
 2. Move the mouse pointer into the Data Manager matrix; it turns to a fat + . Move it over any cell, and click.
 3. To move quickly to a distant cell, choose Go To from the Data menu. In the Go To Cell dialog box, enter the cell address with a letter for the column and the number for the row, like this: A1 or b3. Click OK.

Entering and editing text and numbers

- ▶ **To enter text into a cell that's empty or contains text or numbers you want to discard:**
 1. Move to the cell using one of the methods described above, and simply start typing. (This is true for entering text, numbers or formulas. For more on entering formulas, see "Using formulas in Data Manager" later in this chapter.)
 2. To cancel the editing and return the cell to its previous state, click X. When you've finished entering in a cell, click Enter, then use the arrow keys or the mouse to move to another cell.



Cancel Enter

Type controls Font format Numeric format Border format Grid Auto Recalc

Menu Bar

Chart view

Preview

Current cell address

Cancel, Enter

Row buttons

CorelCHART! - [Data - C:\COREL40\CHART\BAR\LESSON.CCH]

File Edit Format Data Options Window Help

Autoscan Data Range

E5 X ✓ 6.2

Tag list

Formula bar

Column buttons

| | A | B | C | D | E |
|---|--------------------------------|------|------|------|------|
| 1 | Real GDP Growth Abroad | | | | |
| 2 | Is Asia recession-proof? | | | | |
| 3 | Source: International Monetary | | | | |
| 4 | | 1988 | 1989 | 1990 | 1991 |
| 5 | NICS | 9.5 | 5.5 | 6.3 | 6.2 |
| 6 | Japan | 5.6 | 5 | 5.3 | 3.6 |
| 7 | EC | 3.9 | 3.5 | 3 | 2.7 |
| 8 | | | | | |

Data Manager matrix

► **To edit the contents of a cell:**

1. Move to the cell using one of the above methods.
2. Click in the formula bar, or press F2. You'll get a I in the formula bar, which you can move using the arrow keys.
3. Hold down the mouse button and drag the cursor to select multiple characters. Use the Backspace or Del keys to delete.
4. Type in new text and numbers. You can also place text on the clipboard from elsewhere in the matrix, from another chart file, or from another Windows application, and then paste it into the formula bar using the Edit, Copy and Edit, Paste commands.
5. When you've finished, click Enter, then use the arrow keys or the mouse to select another cell.

► **To enter text into a group of contiguous cells:**

1. Click the top-left cell of the group, then drag down and right to select the group of cells, then release the mouse button.
2. Type the first number, and it appears in the top-left cell.
3. Press Enter; you'll automatically be moved down one cell. Enter the second number, press Enter again, and so on.
4. When you've finished entering in the bottom cell of the first column of the cells you've selected, press Enter and you'll automatically move to the top row of the second column of cells. You'll then fill in the cells in the second column of the selected range. Note that once you've filled in all the selected cells, you must click elsewhere in the matrix to deselect the range. If you don't, and you keep entering numbers, you'll move back to the top-left cell, and start overwriting each successive cell.

Selecting and moving cells

► **To select a group of cells to move:**

1. Click the cell in the top-left corner of the group of cells you wish to move, then click and drag over the range of cells.
2. Choose Cut from the Edit menu to remove the data from the selected cells and place it on the Windows Clipboard.
3. Use the mouse or the arrow keys to move to the top-left corner of the range of cells where you'd like to paste the data. If the cell is not shown on the screen, use the scroll bars on the right and bottom of the screen to scroll across the matrix to that cell.
4. Choose Paste from the Edit menu. The clipboard data appears, starting in the selected cell and running to the right and downward.

Single-cell selection

| | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |

Range selection

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |

Importing data

CorelCHART handles a number of spreadsheet formats.

▶ **With the Data Manager window selected:**

1. Choose Import from the File menu.
2. In the Import Data dialog box, go to the List Files of Type box. Click the scroll arrow to see the list of file formats supported. Click to choose one.
3. Scroll through the directories and drives list boxes to find the desired file. Double-click your data file's name to import it. The data will appear in the Data Manager. Note that when you import a file, any text and numbers that were already in the Data Manager are cleared.

You must now label, or “tag” each cell of text or numbers you wish to use in the chart—you don't have to use everything from your imported file in the new chart. See the “Tagging cells” procedure below.

Tagging cells

Once you've entered your data into the Data Manager, you must label, or “tag,” cells you wish to use as chart elements—title, axis titles, data range and so on.

▶ **To tag cells manually:**

1. Select a cell by clicking it. To assign tags to multiple cells, select the cells by clicking on the top-left cell, holding and dragging to the bottom-right cell in the range.
2. With the cell(s) selected, go to the drop-down tag list, and click the scroll arrow. From the list, click the desired tag name to select it.
3. To see which chart element has been assigned to a particular cell, click on the cell. The tag type appears in the Tag List field.

▶ **To tag cells automatically:**

1. Using the procedures described in “Selecting and moving cells,” enter or paste your chart's text and numbers in the configuration shown in the diagram overleaf. (Your chart may not use some of the elements shown; ignore those items.)
2. Click Autoscan. Clicking Autoscan is the quickest way to tag most or all of the cells of text and numbers for your chart. Autoscan looks for your chart elements in particular places. It scans for a large block of cells comprised of numbers, and then makes assumptions about the cells adjacent to the block. You can also use Autoscan to scan just the cells, provided you have more than one selected.

How Autoscan Searches:

How to arrange your chart data for quick, automatic tagging

| | | | | | |
|-----------|---------|----------------|--------------|------------|----------------|
| Title | | | | | |
| Subtitle | | | Column Title | | |
| Footnote | | Column Headers | | | |
| | Row | Data Range | Data Range | Data Range | |
| Row Title | Headers | Data Range | Data Range | Data Range | Y (Z) Title #1 |
| | | Data Range | Data Range | Data Range | Y (Z) Title #2 |
| | | | | | |
| | | | | | |

Using formulas in Data Manager

CorelCHART supports many mathematical, statistical, trigonometric and financial functions. The procedure for using all these functions is similar.

► To enter formulas in Data Manager:

1. Click a cell into which you'll enter the formula, and in which the result will appear. This should be an empty cell.
2. Once you've selected the destination cell for your formula, choose Enter Formula from the Data menu.

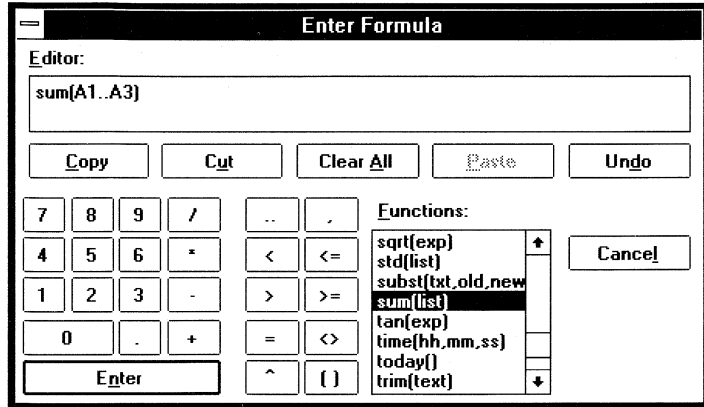
| | | | |
|----|---|---|--------------|
| A4 | X | ✓ | =sum(A1..A3) |
| | | | A |
| 1 | | | 6 |
| 2 | | | 5 |
| 3 | | | 8 |
| 4 | | | 19 |

The Sum formula shown in the formula bar generates in cell A4 the total of the values in cells A1 through A3.

In the diagram at left, for example, cell A4 contains the formula for the sum of the values in cells A1 through A3. If you change the values in any of those cells, the total in Cell A4 changes, if the Auto Recalc button is enabled. The two periods in the formula represent all the cells between A1 and A3. The value of cell A4 always appears in the spreadsheet; the formula appears in the formula bar only when cell A4 is selected.

3. In the Enter Formula dialog box, click the scroll arrow on the Functions list, and scroll through the list. Double-click the name of the formula you wish to use. The formula will then appear in the Editor field. Click anywhere in the formula with the I cursor, and add values or cell references using the numeric pad in the dialog box and your keyboard. Use the buttons between the number pad and the Functions list to insert mathematical symbols in your formula. For a complete explanation of the symbols and formulas, search for "Data Manager Formula Reference" in CorelCHART's online Help.

- Click Enter. The formula you've just created will appear in the formula bar above the matrix.



The Data Manager's formula editor: for explanations of the formulas and the syntax used with them search CorelCHART's online Help for "Data Manager Formula Reference"

Formatting in the Data Manager



Numeric and date formats

► To change the format of numbers in Data Manager:

- Click and drag over the cells you'd like to format to select them.
- Click the Numeric Format button on the Data Manager's top toolbox, or choose Numeric from the Format menu. In the Numeric Format dialog box, choose an existing format by clicking it and clicking OK. Alternatively, enter your own format in the entry field.
- Click Add to add it to the list, then click OK. For details on creating your own number format, search for the topic, "User-Defined Numeric Formats" in CorelCHART's online Help.

»Tip:

Click on a cell(s) with the right mouse button to bring up a pop-up menu of relevant features and commands for the selected cell(s).



Typographic features

You can change the font, typestyle, color and point size of any or all the cells in the matrix by selecting the cells to change and clicking the Font button on the Data Manager's top toolbox, or by choosing Font from the Format menu. You can use any Adobe Type 1 or True-Type font installed on your system, as you can in Chart View.



Cell borders

You can also emphasize selected cells in your data set by placing ruling lines along one side of, or borders around, some or all cells.

► To add and format cell borders:

1. Click and drag to select the cells you'd like to format.
2. Choose Format, Borders or click the Borders button.
3. In the Borders dialog box, click the check boxes to specify a border on any or all sides of the selected cells. To set a border around the set of selected cells, click Outline.
4. In the Background section of the dialog box, click Shaded, then click Brush. In the Cell Background dialog box, choose a foreground and background color from the list boxes. Choose a pattern from the Brushes section of the dialog box. Click OK when you're finished to return to the Borders dialog box.
5. Click the preview of the style of border you'd like (the border must be the same style on each side of the cell). If you have a color printer, click the Color list box and select a color for the border. Click OK.

» Tip:

Make titles, row and column headers or other key elements bold, larger or both to emphasize them—especially if you plan to print your chart's data from Data Manager.

Column width and row height

By default, all the columns in the Data Manager matrix are the same size. But it's unlikely every column of your data will be the same width. You can adjust the width and height of any cell or group of cells manually or automatically.

► To adjust cell width and height manually:

1. Move the cursor over the line separating column buttons on the top edge of the matrix so that it changes from a cross to a vertical bar with arrows on each side.
2. Click and drag left or right to move the column border. Alternatively, choose Column Width from the Format menu. In the Column Width dialog box, enter the desired value and unit of measurement in the text box. (To return to the cell's default width, click Default Value.)
3. If you plan to display your data set in larger type, choose Row Height from the Format menu. Enter a new value and unit of measurement in the text box. You can also use the manual method described in Steps 1 and 2 using the row buttons.

► To set an optimum column size automatically:

1. Click and drag to select the cell(s) you'd like to resize. (To select a whole column, click the column button on the top edge of the matrix. To select a whole row, click its row button.)
2. Choose Best Fit from the Format menu. With this command, the Data Manager looks for the widest and tallest text or data in the selected cell(s), and makes all selected rows tall enough and columns wide enough to accommodate it. If you later change the contents or typographic features of the selected cells so that the current best fit no longer fits, you must repeat these steps.

Sorting Cells

Sorting is used to rearrange the ordering of the contents of a set of cells in the Data Manager by the contents of a key row or column in the data range. For example, a teacher has a set of names and test scores. To create a histogram, she must sort the column of scores from lowest to highest, and the column of names accordingly.

► To sort cells:

1. Select the range of cells to sort.
2. Choose Sort from the Data menu. In the Sort dialog box, clicking the Ascending radio button means you'll sort from smallest to greatest. Click either the Rows or Columns radio button. If you've selected a column of data, click Rows. Click Adjust Formulas, and references you've made to the selected cells in any formula will be adjusted. Click Move Formats, and any text and border formatting you've done to the selected cells will move with them. Click OK.

Searching and Replacing in the Data Manager

The search function can save you time locating a cell value, text or formula, especially in a large data set.

Searching Only

► To find a text string, formula or value in your chart data:

1. Choose Find from the Data menu.
2. In the Find dialog box, enter the string to search for in the Find: text field. If you leave Ignore Case enabled, capitals are ignored. Disable Ignore Case if you wish to search for the text string only in a particular upper-and-lower-case form.
3. Click Whole Cell if you wish to search only for cells which contain the search string and nothing else. In the Look In section, click one or more of the Text, Values or Formulas radio buttons.
4. Click Look by Rows to make the search run from left to right, row after row, or click Look by Columns to make the search run from top to bottom, column after column. Where the search begins depends on which cell is selected before you start searching. For example, if you've selected cell A6, and search forward by rows, only rows 6,7 and beyond are searched.
5. Click Forward or Backward to search forward or backward. Then click Find.
6. To find the next instance of the string, choose Find Next from the Data menu.

Searching and Replacing

Searching and replacing can speed up the editing time on a large data set.

► To find and replace a text string, formula or value:

1. Choose Replace from the Data menu.
2. In the Replace dialog box, type the string to search for in the Find What field, and the string to replace it with in the Replace With field. (To empty the contents of cells containing the search string, leave the Replace With field empty.) To search only for cells which contain the search string and nothing else, click the Whole Cell check box beside the Find What field. To replace all of the contents of a found cell with the contents of the Replace With field, click the second Whole Cell check box.
3. In the Look In section, click Formulas or Text to search only among cell formulas or cell values, (which includes text). Click Look by Rows to make the search run from left to right, row after row, or click Look by Columns to make the search run from top to bottom, column after column. Disable Ignore Case to search for the text string only in a particular upper-and-lower-case form. Click Prompt on Replace if you wish to be prompted before replacing each instance of the string the search finds.
4. Click Find Next to run the replace one instance at a time, or click Replace All to replace all instances.

Using the Data Manager grid



When you first open the Data Manager, the cells appear in a grid. The grid in Data Manager exists mainly as a visual guide; its thickness, color or pattern can't be adjusted as can cell borders. (You can print with the grid enabled by choosing File, Page Setup and clicking Print Grid.) If you select some cells and place borders around them, you may want to disable the grid to avoid visual confusion while editing. To enable the grid, click the Grid button, or choose Display Grid from the Options menu. A check mark appears beside the command when grid lines are enabled.

Setting up DDE Links with other applications

If your data comes from a Windows spreadsheet program which supports DDE, you can set up DDE links. Once your chart file is linked with a saved spreadsheet file, data which is updated in the source file is updated in your chart. Each time you open the chart file, CorelCHART asks if you wish to update the link. But the link between the source file and the destination file (your chart) only goes one way. You can't change DDE-linked data in your chart and automatically update the source file. Check your spreadsheet program's documentation to make sure the program supports DDE.

► **To set up DDE links between a spreadsheet file and a chart:**

1. Leave CorelCHART running with the Data Manager open. Open the spreadsheet application. Open the file whose data you wish to use in your chart. This must be a spreadsheet file which has been saved.
2. In the spreadsheet application, select the range of cells you want to link to your chart.
3. Choose Copy from the Edit menu.
4. Click the CorelCHART window to make it active, and select the cell you want to be the top-left cell of the data set you're pasting.
5. Choose Paste Link from the Edit menu. Alternatively, choose Paste Special from the Edit menu and click Paste Link in the Paste Special dialog box. The linked data appears in the Data Manager matrix. The chart data is now linked with the source file in the spreadsheet program.

Exporting chart data

You can export any part of your chart's data in these formats: Table .TBL; Excel .XLS; Lotus .WKS; Comma-Separated Value CSV; Rich Text Format .RTF; and Text .TXT.

► **To export data:**

1. In Data Manager, choose Export from the File menu.
2. In the Export Data dialog box, click the scroll arrow on the List Files of Type list. Scroll through the list and choose a file type.
3. To choose the path name of the exported file, scroll through the drive and directory lists, and type a file name in the File Name field in the top-left corner. Click OK when you're finished.

Saving a chart file

» **Tip:**

To use a chart as a template for other charts, save it in the appropriate chart-type subdirectory under \Coreldrw\Chart.

► **To save a chart file:**

1. Choose Save As from the File menu.
2. In the Save As dialog box, type a new file name, and select the drive and directory to save it to. If you wish, type in a description in the field at the bottom of the dialog box. That description appears later in the Open dialog box, along with a thumbnail preview of the chart, for easier file identification.

Printing from the Data Manager



» **Tip:**

You can set the page margins in the Print Preview dialog box by manually moving the margin guides.

► **To print the Data Manager's contents:**

1. You may want to change the typeface or add borders for easier reading. If so, see "Formatting in Data Manager" above.
2. If you haven't checked page size and orientation, choose Page Setup from the File menu. In the Page Setup dialog box, set the page size, margins, and headers and footers. To print the shadows around cells, the Data Manager's grid, cell borders, labels or color fills and brushes, click the appropriate radio buttons. Click Font, and select a different font and size in the Font dialog box if you want (note that this selection only affects headers and footers). Then click OK.
3. Once you're happy with the formatting of your data, you can double-check by choosing Print Preview from the File menu.
4. In Print Preview, click Zoom to see your data more clearly, and click Zoom again to return to the full-page view. Click Margins to show or hide the margin guides, (they don't print). Click Page to open the Page Setup dialog box, where you can change margins and header and footer characteristics. (For a listing of header and footer formats, search for "Header and Footer Formats in Data Manager" in CorelCHART's online Help.) Click Go To to advance to another page in the data, or press Pg Dn and Pg Up to move one page at a time.
5. To change printers, click Setup to open the Windows Printer Setup dialog box.
6. Click Print to open the Print Data dialog box. Set the controls there to print all or part of your data. (You can print Data Manager data in several pages, but in Chart view you can only create, save and print one page per file.) When you click OK, the dialog box closes and the file is printed.
7. Click Close to return to the Data Manager.

Moving between Data Manager and Chart View

Click  in the top-left corner of the Data Manager window to move to Chart View. To go from Chart View back to the Data Manager, click .

Building Your Chart

This chapter discusses the first steps in setting up your chart in Chart View. It's in Chart View that you can change chart types, the size and orientation of your chart, what chart elements are shown and hidden, and the ordering of series and groups. By grouping bars together, setting the scale range carefully and other procedures, you can add drama to your chart, or give it a particular "spin."

It's wise to sort these issues out before worrying about what colors, fonts and other graphic effects you'll use. Adding the finishing touches, such as annotations, colors and fill patterns, is discussed in Chapter 4.

The particular problems associated with building certain chart types, such as spectrally-mapped charts and table charts are discussed.

Setting up your page

» **Tip:**

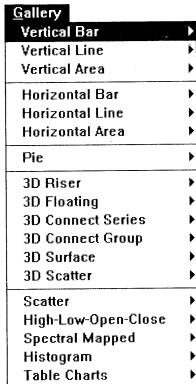
If you're using the chart you're building in another file—as part of a presentation or publication—click Custom in the Page Setup dialog box, and enter the size of the frame into which you'll place the chart. As you build the chart, you'll see how it looks at actual size.

Before spending time sizing and moving the elements of your chart, it's wise to decide how big your chart will be.

► **To set your chart's page size and orientation:**

1. In Chart View, choose Page Setup from the File menu.
2. Choose a standard page size by clicking the scroll arrow on the Paper Size list. You can also, click Custom, and, if you wish, change the unit of measurement in the list box, then enter values in the fields for the length and width of your chart. Alternatively, click Set From Printer, and CorelCHART will assume the page size and orientation currently set in your Windows printer setup.
3. Click OK.

Changing chart types



► **To change chart types:**

1. Open your chart in Chart View.
2. Choose Gallery. The Gallery pull-down menu lists all the chart types available in CorelCHART. All chart-type commands have flyout menus, which show variations of that chart type.
3. Click any command to display the flyout. Click and hold the mouse button as you scroll down the flyout.
You'll see a preview of that chart "subtype" in the space at the top of the flyout. Remember that the chart type you choose should be appropriate for your data set. For more discussion on this, see Chapter 6.
4. When you've found the chart type you'd like, click the chart subtype name. When you release the mouse button, your chart will change to that subtype.

Applying template information from another chart

Any chart can be used as a template for a new chart. You can apply the template information from any saved chart on your system to the current chart. The template information includes chart type, which chart elements are shown and hidden, placement of chart elements, typographic features of chart elements, as well as fills, colors, pictographs and outlines applied to chart elements.

► **To apply another chart template:**

1. In Chart View, open the chart you wish to apply the template to.
2. Choose Apply Template from the File menu.
3. In the Open Chart dialog box, scroll through the drives and directories to find the chart file you'd like to use as a template.

4. Click the name of the desired file so that it appears in the File Name field and click OK, or double-click on the filename.

Showing and hiding chart elements


► To show or hide chart elements:

1. In Chart View, choose Display Status from the Chart menu.
2. In the Display Status dialog box, there are check boxes for showing or hiding each chart element. You can enable or disable any or all of them at any time.

Swapping groups and series

By default, the headers you've tagged in Data Manager as Row Headers appear in your chart's legend as series headers, and the column headers appear as group headers on the category axis. You can swap the positions of those headers without moving cells of data around.


► To change your data's orientation:

1. If you're in Chart View, click  to go to the Data Manager.
2. Choose Data Orientation in the Data menu.
3. By default, Rows are Series will be enabled. Click Columns are Series, and click OK. Typically, a chart's data is set up with column headers across the top and row headers down the left.

Reversing the order within series and groups

Reversing the order of data points in a group or series is possible with most chart types. Take for example a bar chart with a data axis representing quantities of several related items, and a category axis representing years. Reversing the series changes the order of the related items. Reversing groups makes the years run backwards on the category axis.


► To reverse the order of your data points:

1. Click  to move to Chart View.
2. Choose Data Reversal from the Chart menu. A flyout will appear with toggle commands to Reverse Series and Reverse Groups.
3. Choose one or both. To choose both, you must open the flyout twice. When you subsequently click on the Data Reversal command, the type of reversal you chose will appear with a check mark beside the command.

Manipulating the scale range

When you first converted your data into a chart, CorelCHART searched for the largest and smallest value in your data set, and created a data axis scale range large enough to plot your data set.


► To change the scale range:

1. In Chart View, use the  tool to select any data axis number.
2. Choose Scale Range from the pop-up menu.
3. In the Scale Range dialog box, Automatic Scale may be enabled. If so, click Manual Scale.
4. Type the desired minimum and maximum scale range values in the text boxes below. You can also enable the check boxes to exclude from the chart the minimum or maximum value in the scale range.
5. You can choose to graph or not to graph data values that are greater than the top limit or less than the bottom limit of the scale. Graphing out-of-range values causes a value to be plotted to the top limit of the scale. Click Don't Graph Out-of-Range Values, and any such values will not be plotted.
6. Click OK to close the dialog box. This implements your changes and returns you to Chart View.

Changing the numeric format on axis scales

You can change the numeric format of data values or axis scales in Chart View as well as in the Data Manager. For example, you can place dollar signs in front of the data-axis scale, or to use a different date format on an axis showing time.

► To change the numeric format of an axis:

1. Using the  tool, select a number on the axis scale whose numeric format you wish to alter. On the pop-up menu, choose Number Format.
2. In the Numeric Format dialog box, scroll through the list box using the scroll arrows or scroll bar. You can click on any format and look at the example below the list box. After you've made your selection, click OK.

» **Tip:**

You can change the number format of chart data in Data Manager. For details, see "Formatting in Data Manager" in Chapter 2.

Showing, hiding, and changing grid lines

There are two kinds of grid lines in most of the chart types found in CorelCHART—category axis grid lines and data axis grid lines. (Pie charts and table charts don't have grid lines.)

The category axis is the X axis on a vertical histogram or vertical bar, line or area chart. In horizontal charts, it is the Y axis. Each category axis is divided into groups; the legend comprises different series. Assuming Series are row headers, this is the default.




The data axis is the Y axis in a vertical chart, the X axis in a horizontal chart. It is always a measure of quantity.

► **To show, alter or hide grid lines in two-dimensional charts:**

1. Choose Data Axis from the Chart menu.
2. On the Data Axis flyout menu, choose Grid Lines. In the Grid Lines dialog box you can enable or disable the major and minor grid lines, as well as inside, outside and spanning tick marks. To change the automatically calculated number of divisions in the major grid lines, click Manual and enter the number of divisions desired. For the minor divisions, enable the Show Minor Grid Lines box and enter the number of divisions desired.
3. Choose Category Axis from the Chart menu.
4. On the Category Axis flyout, toggle on or off Show Grid Lines to show or hide grid lines.

► **To show, alter or hide grid lines in 3-dimensional charts:**


1. Choose 3D Grid Lines from the Chart menu.
2. In the Grid Lines dialog box you can enable or disable grid lines on all three axes, and change the number of divisions on the Z, or vertical, axis.
3. Click OK when you're finished.

You can also alter the thickness of grid lines using the  tool. Change their color by clicking any color on the on-screen color palette with the right mouse button. Alternatively, use the Outline Color dialog box, opened by clicking  on the  tool's flyout.


Making combination charts

Sometimes a bar-line combination chart can be an effective way to portray a set of data, giving emphasis to one series, or showing a trend line together with a set of quantities.

► **To build a combination chart, first build a bar chart, then:**

1. Use the  tool, to select one of the bars in the series you'd like to show as a line.
2. From the pop-up menu, choose Display as Line. It's a toggle command; you can disable it later to convert the line back to a bar.

If you're working on a line chart, and you'd like to show one series as a bar, the steps are similar:

1. Using the  tool, select the line representing the series you'd like to show as a bar.
2. On the pop-up menu, choose Display as Bar.

Designing special chart types



» Tip:

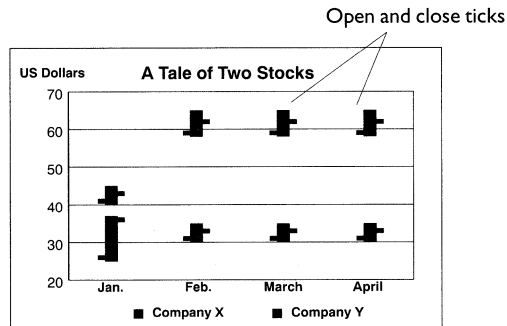
For easiest data setup with special chart types, we recommend starting a new chart using the template's sample data. (To do so, choose **New** from the **File** menu and click **Use Sample Data** in the **New** dialog box.) You can then replace each cell of sample data with your own, and retain the tags attached to those cells.

High-low-open-close charts

This chart type is best used when you're trying to express a range of quantities for the same item in the same time period. It's often used for stock-market prices. The procedures for setting up a high-low-open-close chart are the same as for any chart type, but for these considerations:

You can choose from three subtypes: high-low, high-low-open, and high-low-open-close. You must have the appropriate data for your choice. For a high-low-open-close chart, for example, you'll need high, low, open and close values for each group.

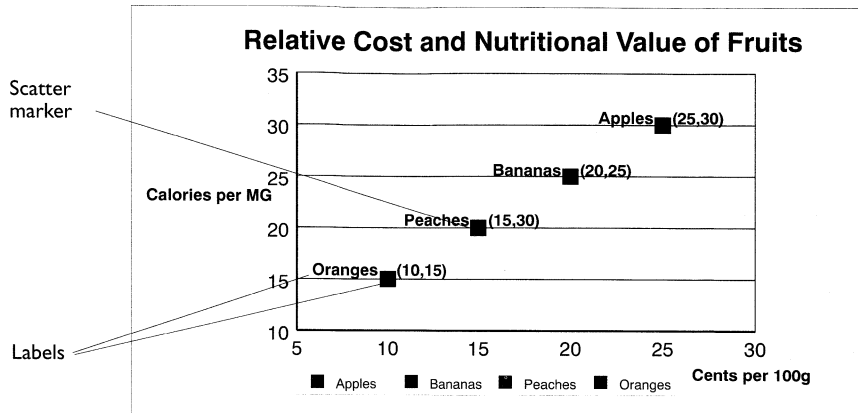
Once your data is set up and you've moved to Chart View, use the  tool to select any bar or the frame of the charting area. On the pop-up menu, choose **Display Status** to check in the dialog box that the open and close ticks are enabled. Using the  tool, click the bar again. On the pop-up menu, choose **Bar Thickness** and adjust the size of the bars using the options on the flyout. Choose **Open** and **Close Width** and adjust the size of the open and close ticks. Each flyout menu has a preview box on top; preview each option by scrolling down the flyout with the arrow keys and watching the preview. Note that open and close ticks are not available in the high-low charts and close ticks are not available in high-low-open charts.



Scatter and 3D scatter charts

Scatter charts show the correlation of two sets of numbers by plotting where the variables intersect. Scatter charts are useful when the coordinates on the horizontal scale—often time intervals—are irregular.

The procedures for setting up a scatter or 3D scatter chart are much the same as for any chart type, except you can choose scatter or 3D scatter charts, with or without labels. Should you want a chart with labels, the label text you enter in the Data Manager must be adjacent to the last column of values.

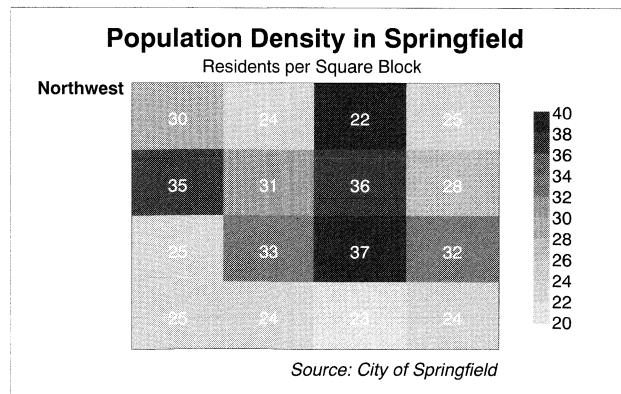


Spectrally-mapped charts

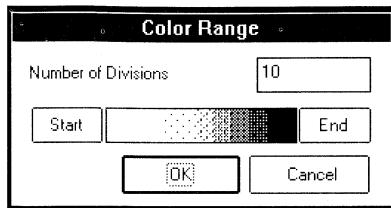
Spectral mapping is useful with data that carries some kind of spatial relationship, such as geographic data. For example, showing population density across a group of contiguous areas of a city would lend itself to a spectrally mapped chart.

The procedures for setting up a spectrally-mapped chart are much the same as for any chart type, but for these considerations:

- It's best to have a large group of data covering a broad range of data values for a spectrally-mapped chart.
- If your data doesn't have a broad range from highest to lowest data value, use colors that are close to one another, such as a beige and a dark brown. This will graphically reflect the narrow range of the data.
- To set the color spectrum, in Chart View use the tool to select any data cell (but not the data value, if data values are showing in the chart). From the pop-up menu, choose Spectrum. From the flyout, choose Spectrum.



In spectrally-mapped charts, use this dialog box to choose the range of colors in the chart's spectrum. To open it, choose Spectrum from the Chart menu with a spectrally-mapped chart open.



- In the Color Range dialog box, click in turn the Start and End buttons. Choose or mix a color for each from the Select Color dialog box. Click OK when you're done.
- To adjust the color again later, use the same method. As well, look at the legend, and see how many divisions the data range has been separated into. It's smart to go back to the Color Range dialog box and set the number of divisions in the text box as the same or a factor of the number of divisions in the legend.

Histograms

A histogram shows the frequency of the values in a set of data. For example, plotting the frequency of test scores as a histogram (usually) produces a bell curve. The interval axis shows the range of possible scores, say, from zero to 100%. The count axis shows the frequency—the number of students—at each score.

The procedures for setting up a histogram are much the same as for any chart type, but for these considerations:

- Histogram data need not be arranged in rows and columns in the Data Manager, like conventional chart data. If you're building a histogram of a group of test scores, for example, just set them up in contiguous cells, select the cells, and tag them as the data range. When you click on the Chart View button, CorelCHART calculates the frequency of the values, and plots them.
- To control the number of intervals displayed on the interval axis, choose Intervals from the Chart menu. By default the number of intervals is set automatically. You can click the manual radio button, and set a new number of intervals in the text box. Then click OK.

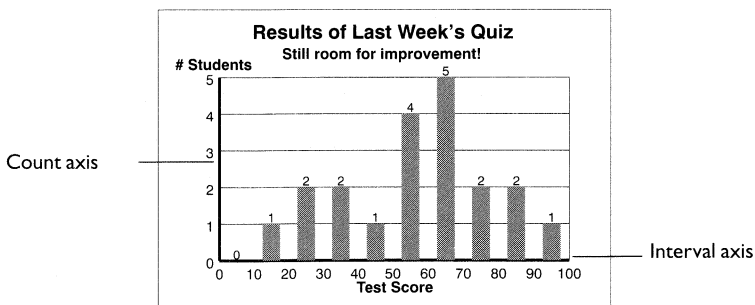




Table charts

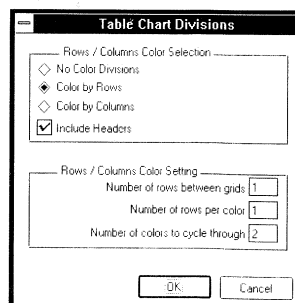
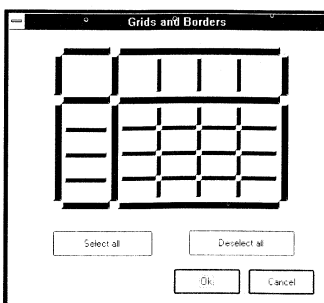
In scientific circles, it's common to show the data used in a scatter plot or other chart type in a table, so that each data point can be read accurately. Sometimes a data set won't fit into any other chart type. You can also use table charts for text only.

► To set up a table chart:



1. Once you've arranged and tagged your data in the Data Manager, click  to go to Chart View.
2. Choose Table Charts from the Gallery menu. The controls for setting up table charts are available under two commands on the Chart drop-down menu.
3. Choose Divisions from the Chart menu. In the Table Chart Divisions dialog box are controls for coloring (Color by Rows, Color by Columns). Choose whether you wish to have each row or column a separate color by entering 1 in the Number of rows per color field. To color a group of several rows the same, enter a number greater than 1 in the same field. Click Include Headers if you want row or column headers the same color as the data range. You can also choose the number of different colors the chart will use. Then click OK.
4. Choose Grids and Borders from the Chart menu. The Grids and Borders dialog box lets you show or hide various dividing lines in the table chart. To show or hide a line, click on it in the preview box. The darker lines are those that are shown. To show all the lines, enable the Select All button below the preview. To hide them all, click the Deselect All button. Then click OK.
5. If the table is too small or too large on the chart page, choose Autofit Table from the Chart menu. When this toggle is enabled, it stretches the table to fit the available space on the chart page.

► To change the color of any row or column of cells:

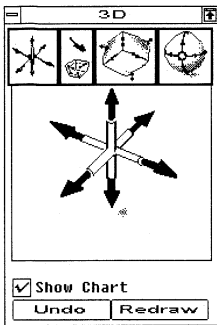
1. Using the  tool, select any cell in the matrix—make sure the outline of the cell, not the text or number within it, is highlighted. When you change the cell's color, you'll be changing the whole row or column the cell sits in, depending on whether you chose Color by Rows or Color by Columns in the Table Chart Divisions dialog box.



Use these dialog boxes to help you design a table chart

2. Once you have a cell selected, choose a new color from the on-screen color palette or from the Uniform Fill dialog box—click the  tool, then click .
- **To change the color of text or numbers in cells:**
1. To select all the text or numbers in a row or column, click right on top of the text or number. You should see just the text or number highlighted in a black frame, *not the outline of the cell*.
 2. Use the same procedures to summon the color tools as in Step 2 above.

Using the 3D Roll-Up




Click any of the red arrows on any of the tools

To open the 3D Roll-Up, choose 3D Roll-Up from the Chart menu when you're working on a 3D chart. You can alter the size, scale and perspective of a 3D chart, change the length of any of its axes or the thickness of any of its walls, or rotate it.

To activate any of the tools, click on its button on the top row of the roll-up. That tool appears in the main box. To use the tools to alter the chart, click the red arrows on the main tool window. The longer you hold the mouse button down, the more of that effect you'll get. Once you release the mouse button, you'll see your results outlined, while the chart stays in its original position. If you're not happy with your results, click Undo. If you're ready to redraw the chart to see your changes, click Redraw. Disable the Show Chart button to switch to a wire frame mode and see the results of your changes faster.

Changing the slice feelers in pie charts

In pie charts, you have the option of showing data values; the lines pointing from the data value to its slice are called feelers.

- **To alter the length of slice feelers in pie charts:**
1. Using the  tool, select any pie feeler in a pie chart. Note that changes you make to the length of the pie feeler you've selected appear on all pie feelers in that data series—all the slices with the same color.
 2. On the pop-up menu, choose Slice Feeler Size.
 3. In the Slice Feeler Size dialog box, click and drag the nodes to change the length of the two segments of the pie feeler, and/or its point of origin on the pie. Click OK when you're finished.

CHAPTER

4

Finishing Your Chart


This chapter discusses the final cosmetic tasks in chart-building. You can create many of the graphic effects in CorelCHART that you can create in CorelDRAW, and apply them to elements in your chart. This chapter discusses procedures for doing so.

It covers changing the font and size of any text element in your chart. There are procedures for creating text and graphic annotations to highlight some feature or data point in your chart. Using colors and CorelCHART's four kinds of fills —fountain fills, two-color patterns, full-color patterns and bitmap textures is discussed. There are also instructions on adding pictographs and other imported graphics, and printing and exporting charts.

Resizing the charting frame and other chart elements


You can change the size of those chart elements which have handles—titles, subtitles, footnotes, legends, annotations and the charting area.

► To resize chart elements:

1. With the  tool, select the chart element you want to resize by clicking on or around it until you see its handles.
2. Click any handle, and drag in the desired direction.
CorelCHART has constrain features available for resizing chart elements. There's a list of these at the end of this chapter.

Changing typographic features of chart elements

» Tip:


You can also highlight titles, subtitles, footnotes and annotation text using the  tool. Click that tool, then click and drag over the text. Then use the Text Ribbon controls. Double-click to select a whole word, or triple-click to select a whole line.

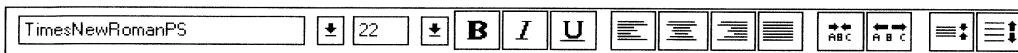
» Tip:

To change multiple sets of axis markers, axis titles and other text elements, hold down the Shift key, select one of each set of elements, and use the Text Ribbon.

The Text Ribbon has controls for changing the font, point size, alignment, character spacing and leading of text elements.

► To change text attributes:

1. Use the  tool to select the text to alter. Note that changing one piece of legend text, one axis marker or one displayed data value will change the entire set of that element.
2. When titles, subtitles, footnotes, annotations and axis titles are selected, you'll see eight handles around them. When other text items are selected, you'll see a solid frame around them.
3. On the Text Ribbon, click the scroll arrow on the Font list box to open a list of available Adobe Type 1 and TrueType fonts. Click the scroll arrow next to the Point Size list box to open a list of available sizes. Click the Bold button to make the selected text bold, the Italic button to make it italic, or the Underline button to underline it. Having none of these three buttons enabled yields the regular weight of the chosen typeface.
4. Click any one of the next four buttons for left-aligned, center-aligned, right-aligned or fully-aligned text. Click either of the next two buttons to tighten or loosen the letter spacing of the selected text. Click either of the last two buttons to tighten or loosen the line spacing of text which is several lines deep (this does *not* include axis text).



Creating annotations

There are three ways to add annotations to a chart. You can generate text and graphics using CorelCHART's graphics tools, you can import existing graphics using the Import command in the File menu, or you can paste graphic objects from the Windows Clipboard. We'll first discuss using CorelCHART's tools to create new text and graphic annotations.









» Tip:

CorelCHART has constrain features available when you're creating or resizing annotation graphic objects. They're listed at the end of this chapter.








» Note:


You may wish to use a graphic—bitmap or vector—on the annotation layer without placing it inside a frame. For instructions, see “Importing graphics”.

► To add text annotations:

1. Click the  tool, and move the cursor to the spot where you'd like the annotation text to start.
2. Click on the printable page; you'll see a  cursor. Type your text.
3. Resize the annotation text by using the  tool, clicking on any of the handles and dragging.
4. To change the font of the annotation, use the  tool to select the frame around the annotation text. Then use the text ribbon to make your adjustments.
5. To change the color of the text, select it and use the color palette or click the  tool and click  on the flyout to open the Uniform Fill dialog box. (Annotation text has no outline that can be colored separately.)
6. If you wish to change the font or size of some text in a string, click the  tool, and move the cursor over the annotation so that the cursor changes to an . Click and drag over the segment of text you wish to alter, and use the Text Ribbon tools.

► To add graphic annotations:

1. To draw lines, click the  tool, and click the desired tile on its flyout. To draw rectangles or ellipses, click the  or  tool. The cursor changes to a .
2. Move the cursor to the point where you want to start a line or place a corner. Click and drag until the graphic is the desired size, then release.
3. If needed, use the  tool to select, then move or resize the graphic using its handles.
4. To change the graphic's outline, select the object with the  tool and use the  tool, or the on-screen color palette using the right mouse button.

Closed objects, such as ellipses, rectangles and polygons, can also hold fills, which you can apply using the  tool. Applying colors and fills is described below.

Applying colors to chart elements



Colors or fills can be changed in all chart elements. You can use either the on-screen color palette or the Uniform Fill or Outline Color dialog boxes to color elements. (Note that coloring one bar, pie slice in a multiple-pie chart or other data marker in a series causes the color to be applied to all markers in the series.)

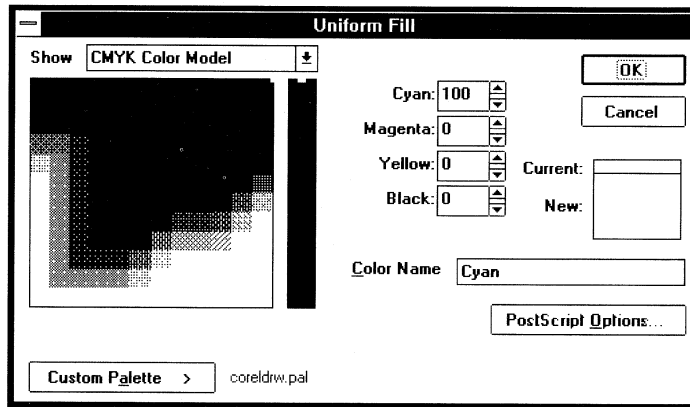
The on-screen palette offers only process colors, but the Color Selection dialog boxes offer both spot and process colors. If your chart contains more than four colors and is to be color-separated for full-color printing, it is more economical to use process colors. If you're using less than four colors, you may use either spot or process colors.

► **To color with the on-screen color palette:**

1. With an object selected, move to the color palette.
2. If you click a color tile with the left mouse button, the color is applied to the object's fill. Click the right mouse button, and the color is applied to the object's outline.

► **To color with the Uniform Fill dialog box:**

1. With an object selected, click the  tool, and select  from the flyout to open the Uniform Fill dialog box.



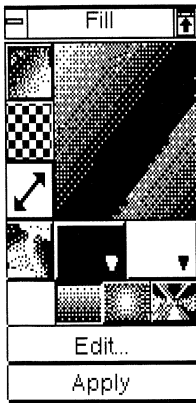
2. Click the scroll arrow next to the Show list box, and a list drops down of color models for mixing spot colors and palettes containing spot and process colors. (For a complete discussion of the various color models, see Chapter 12, “Working with Colors,” in the CorelDRAW section of this book.) Click the name of a model or palette to load it. Alternatively, click the Custom Palette button, choose Open, and use the Open Palette dialog box to find other custom palettes. The palette name next to the Custom Palette button is the current custom palette.

If you chose CMYK, RGB or HSB, mix your own color using the sliders for each of the four or three primary colors to the right of the preview box, or move the node inside the preview box. Once you've mixed a color, it will appear in the New section of the small preview box on the right side of the dialog box.

If you chose one of the palettes, click a tile from the palettes, or use the scroll arrows on the right side of the palette to see more colors. When you choose a color from the Custom, PANTONE or TRUMATCH palettes, the color's name appears in the Color Name text box, and the color itself appears in the New section of the small preview box on the right side of the dialog box. Click Show Color Names, and the palette changes to a list of color names with a swatch next to them.

3. When you've chosen a color, click OK to close the dialog box.




Applying fountains, patterns, or bitmap textures to chart elements

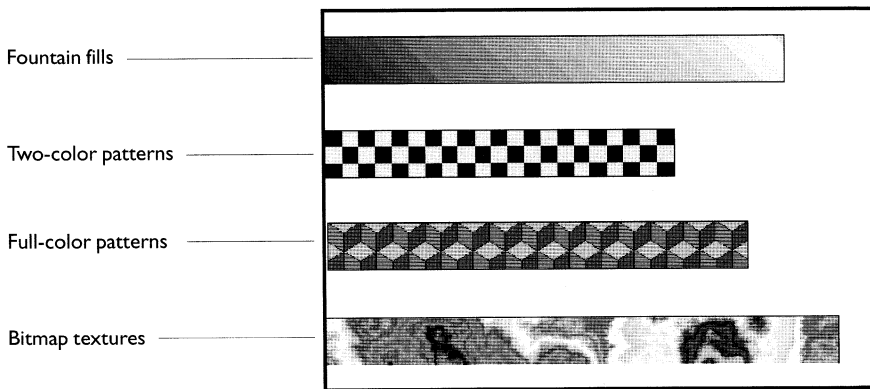


Fill Roll-Up

You can apply any such fill types to any chart element except text.


► To apply special fills:

1. Use the  tool to select a chart element.
2. Click the  tool, then click  to open the Fill Roll-Up. You now have four choices:
 - Fountain fills, which are spectrum-like blends of two colors. Linear, radial, and conical fountain fills are the available types. The From and To buttons used to assign the colors are found in the Fill Roll-Up just below the preview tile.
 - Two-color bitmap patterns.
 - Full-color vector patterns, which can be created in CorelDRAW and saved as .PAT files
 - Bitmap textures, designed to look like clouds, recycled paper, drapes, flames and so on.



Fountain fills


► To apply fountain fills to chart elements:

1. On the Fill Roll-Up, click .
2. Click Edit.
3. In the Fountain Fill dialog box, you must choose between three types: linear, radial and conical. If you're not familiar with these types, click the radio button for each type, and watch the preview.
4. Click From, which opens a color palette, and select the starting color of the fountain fill. Once you click a color tile in the palette, the palette closes, and the color is chosen. Click More at the bottom of the palette to open the Fountain Fill color dialog box. This lets you choose from a wider array of colors.

5. Click To, and choose a color the same way.
6. Click Options below the From and To buttons. In this dialog box, you can control the transition, or blend, from the start to the end color.
 - Click Direct, and the blend will run directly across the color wheel in a straight line from the start to the end color, as shown on the color wheel preview.
 - Click Rainbow, and the blend will run from the start color, around the color wheel to the end color. Click the clockwise or counter-clockwise buttons next to the color wheel to control the direction of the effect.
 - Click Custom, and the color wheel changes to a bar. This form of blend is like the direct blend, except you can control the rate of transition from the start to the end color. To do so, click the square nodes at either end of the bar. A triangle appears; drag it along the bar to control where that color ceases to be a solid color and starts blending with the other color. You can also alter the colors at the triangle; click the triangle, then choose a color from the palette. The color you chose becomes an intermediate color. Alternatively, enter numerical values in the Position text box above the bar. You can also change the start and end colors by clicking From and To, respectively, in this dialog box. Click OK when you're finished.
7. Adjust where the starting color begins in your fill. In linear fills, you do this by changing the fountain fill angle. In radial and conical fills, you alter the center offset. To do so, move the mouse cursor into the preview box in the top-right corner of the dialog box. The cursor changes to a \oplus . Click and drag the cursor around the preview box. As you do so, the linear angle or center offset moves, and the results appear in the preview box. If you've chosen a linear or conical fountain fill, you can also adjust the angle by entering numerical values in the Angle text box. If you've chosen a radial or conical fill, you can similarly enter values in the Horizontal and Vertical Center Offset text boxes.
8. To save this fountain fill for use in other objects or files, type a name for it in the Presets text box in the bottom-left corner of the dialog box, then click Save. To discard unwanted fountain fills, select the fill's title from the Presets list, then click Delete.
9. Click OK to close the dialog box and return to the roll-up. Click Apply to place the fill you've created inside the selected object.

Two-color patterns


► To apply two-color patterns to chart elements:

1. On the Fill Roll-Up, click  .
2. Click Edit to open the Two-Color Pattern dialog box.
3. You now have three choices:
 - Click Create to open the Two-Color-Pattern Editor and create your own pattern. You can choose different bitmap sizes and pen sizes by clicking the appropriate radio button. Then click pixels to fill them, forming a pattern. If you make a mistake, click the same pixel with the right mouse button to clear it.
 - Click Import to import a graphic. This opens the Import File dialog box and you can choose from any graphics file format CorelCHART supports.
 - Click anywhere in the Preview box in the top-left corner of the dialog box to choose from patterns provided with CorelCHART. Scroll down the flyout and see the available selection. Click on the one you want, then click OK to choose it.
4. In the bottom-left corner of the Two-Color Pattern dialog box, choose a default tile size, or use the scroll arrows to choose a custom size.
5. Click the Back button in the top-right corner of the dialog box to open a color palette, from which you can choose the background color of the pattern. Click More at the bottom of the flyout to open the Two-color Background dialog box, in which you can choose colors or change color models or palettes. Click OK when you're finished.
6. Use the same procedure for the pattern's foreground color by clicking Front.
7. Use the First Tile Offset controls to specify the placement of the first tile relative to the upper-left corner of the object's highlighting box.
8. Use the Row-Column Offset controls to shift alternating row or columns in the pattern by the percentage you specify.
9. Click OK when you're finished, then click Apply on the roll-up. The pattern fills the selected element.

Full-color patterns

You can use any graphic available through CorelDRAW as a fill for any closed object—an ellipse or rectangle, the charting area, any riser, or the chart’s background. (You also use vector graphics as pictographs in bar charts and histograms. For more on this function, see “Adding pictographs to a chart” later in this chapter.)

► **To apply full-color patterns to chart elements:**


1. On the Fill Roll-Up, click  .
2. Click Edit. The Full-Color Pattern dialog box opens.
3. You now have two choices:
 - Click Import to import a graphic. This opens the Import File dialog box. You can choose from any graphics file format CorelCHART supports.
 - Click anywhere in the Preview box to choose from patterns provided with CorelCHART. Scroll down the flyout to see the available patterns. Click on the one you want, then click OK to choose it.
4. In the bottom-left corner of the Full-Color Pattern dialog box, choose a default tile size, or use the scroll arrows to choose a custom size.
5. Use the First Tile Offset controls to specify the placement of the first tile relative to the upper-left corner of the object’s highlighting box.
6. Use the Row-Column Offset controls to shift alternating row or columns in the pattern by the percentage you specify.
7. Click OK when you’re finished, then click Apply on the Roll-Up. The pattern fills the selected element.

Bitmap textures

CorelCHART provides dozens of different bitmap textures. The textures resemble water colors, recycled paper, clouds, minerals, and so on. Using the texture fill random number generator and color selector, you can create millions of variations for each texture.

Each texture has different elements and attributes to adjust. Note that bitmap texture fills add considerably to the size of your chart file, and can take a long time to print. Consider this before using them to fill large objects or several objects.

► **To apply a bitmap texture fill to chart elements:**

1. On the Fill Roll-Up, click  . Click Edit.
2. In the Texture Fill dialog box, you can:
 - Change any parameter in the Style Name box at the bottom by clicking the scroll arrows next to their text boxes. Click the lock buttons when you’re satisfied with each parameter.
 - Click Preview to see another random generation of the current texture.

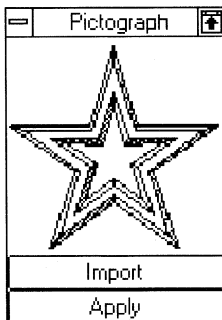
- Choose another texture from the Texture list box.
 - Choose another library from the Texture Library list box.
 - Click either of the color buttons in the dialog box to open the color palette and select another color. Click More on the palette to open the Select Color dialog box, in which you can mix colors using the CMYK, RGB and HSB models or load another color palette.
3. If you wish to save the pattern you've created to a library, click Save As. In the Save Texture As dialog box, enter a new name in the Texture Name text box. Choose a library, or enter the name of a new library you'd like to create in the Library Name text box.
 4. Click OK when you're finished, then click Apply on the Fill Roll-Up to apply the pattern to the selected object.

Alternatively, you can select another bitmap texture or texture library without opening the Texture Fill dialog box.

► **To select a bitmap texture fill directly from the Fill Roll-Up:**



1. Click anywhere in the preview box on the Fill Roll-Up, and all the textures available appear on a flyout menu.
2. Scroll through the list with the scroll bar at right, and select the preview of any pattern.
3. Click the desired tile to fill the object.

Adding pictographs to a chart

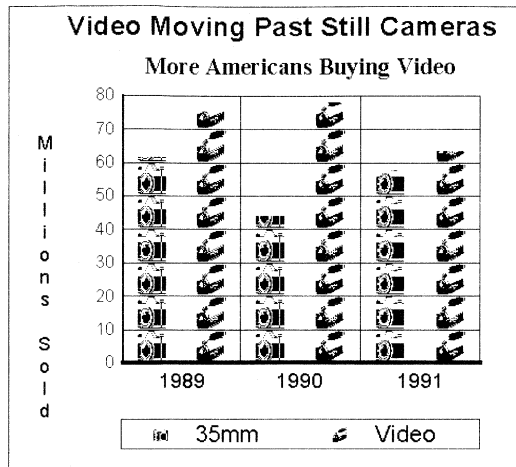


This feature is only available for bar charts and histograms. As with coloring or adding fills to bars, adding a pictograph to one bar in a series affects all the bars in the series.

► **To use pictographs in your bar chart:**

1. Choose Show as Pictograph from the Chart menu. (This command is a toggle.) All the bars in the chart are segmented according to the number of major grid lines in the scale range; the graphic is repeated in each segment.
2. Use the  tool to select a bar whose series you'd like to show as a pictograph. You can fill each series with a different pictograph.
3. If you haven't already done so, open the Pictograph Roll-Up by clicking the  tool and clicking the last tile on the flyout.
4. Click anywhere in the preview box on the Pictograph Roll-Up. All the graphics available appear on a flyout menu. Click any tile to apply that graphic as a pictograph in the selected bars.
5. Alternatively, click Import. In the Import File dialog box, choose from any graphics file format in the List Files of Type list box, then scroll through your drives and directories. When you've found your graphic, click OK.
6. Click Apply.
7. To change a pictograph back to a bar, choose Show as Pictograph from the Chart menu again to disable the command.


Any bitmap or vector graphic CorelCHART can import can be used as a pictograph. Click Import on the Pictograph Roll-Up for access to any compatible graphic on your system.



Importing graphics

You can use a graphic—bitmap or vector—on the annotation layer without placing it inside a frame. (For a list of graphics file formats supported, see the description in CorelCHART's online Help; search for "File Import.")

► To import graphics for use as annotations:

1. In Chart View, choose Import from the File menu. Select the file format you're looking for from the List Files of Type list box, and use the list boxes to browse through your directories and drives.
2. Double-click the name of the desired file or click OK to close the dialog box. The graphic appears on the chart's annotation layer.
3. Using the  tool, select the graphic. You can then move it or resize it using its handles.

Linking your chart to a destination file

Since CorelCHART is an OLE server application, you can link any chart to another file in any OLE client application. You can make the link automatic or manual. Automatic linking means that your chart in the destination file will be updated when it's changed at any time in CorelCHART. Manual linking means you must tell the client or destination application to update the file when it has been changed in CorelCHART. You set these controls in the Links dialog box in the client application. For more on Object Linking, see Chapter 17, "Working with other applications" in the CorelDRAW section of this book.

► To set up a link to a destination application:

1. Open the chart to be linked. In Chart view choose Copy Chart from the Edit menu. This places the chart, including its data, annotations and other graphic information on the Windows Clipboard.

2. Open the destination application, and the destination file.
3. Choose Paste Special from the Edit menu. In the Paste Special dialog box, choose CorelCHART 4.0 on the list of object types. Click Paste Link.

Once the object is linked in the destination file, you can return to CorelCHART at any time to edit the source file by double-clicking the object in the destination file. CorelCHART, with the source file open, will launch in its own window. When you've finished editing the chart, choose Exit from the File menu. A message box asks if you wish to save the chart; click Yes.

Exporting your chart

You can export chart files to several graphics file formats. A complete list of formats appears in the List Files of Type drop-down list in the Export Chart dialog box. Refer also to the list in CorelCHART's online Help; search for "File, Export."

► To export a chart to another file format:

1. Choose Export from the File menu. In the Export Chart dialog box, use the Directories and Drives list boxes to choose the location for the exported file.
2. Choose a file format from the List Files of Type list in the lower-left corner of the dialog box. Type in a file name in the File Name text box in the top-left corner. Click OK.

Printing your chart

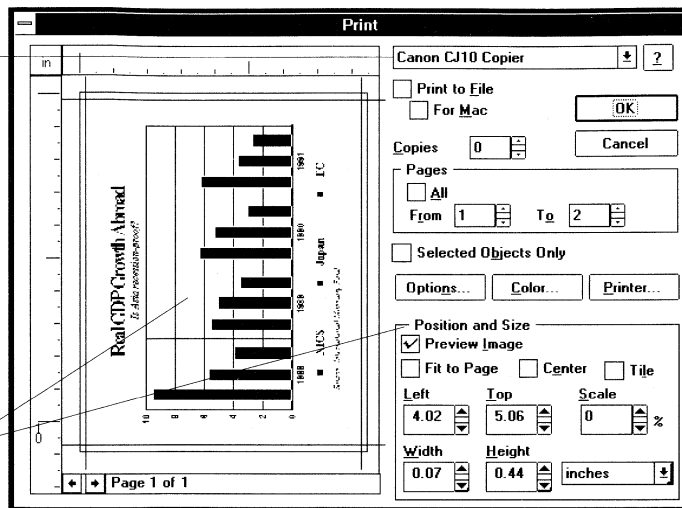
CorelCHART's printing facilities let you set up printers, preview your file before printing, and set controls for handling color printing and color separations. There's more on printing in "Printing files" in Chapter 18 of the CorelDRAW section of this manual.

► To set up and choose a printer:

1. If you haven't chosen a printer, choose Print Setup from the File menu. The current printer is shown beneath Default Printer. To choose another, click Specific Printer. Click the scroll arrow to view the list of available printers. The list shows only installed printers; for information on installing other printer drivers, see your Microsoft Windows documentation.
2. Choose a printer by clicking its name on the list.
3. Choose the Orientation and Paper options you want. When you print, CorelCHART will warn you if mismatches occur between the printer's paper orientation and what you specify in the Page Setup dialog box for your chart. You'll have the option to adjust the printer or cancel the print job. Click Yes in the message box, and the printer's paper orientation is adjusted. Then click OK.

Click ? at the end of the Printers list box for detailed information about the currently-selected printer

Move your objects interactively within the window, or use the controls in the Position and Size box




► To preview your chart before printing:

1. Choose Print from the File menu. The Print dialog box shows a preview of your chart in the Preview box at left. The size and placement of the chart are proportional to the size and placement of the chart on printable page. You can choose a page size in the Page Setup dialog box. (Choose Page Setup from the File menu to open that dialog box.)
2. Use the Position and Size controls to stretch and scale the chart, or use the handles around the chart—use the rulers to be more precise. (To keep the chart centered on the page as you stretch and scale it, click Center Image. You can also click Fit to Page to make it fit the paper size you've specified in the Page Setup dialog box. Alternatively, click Scale Factor, and enter a value in the text box to change the size of the chart that is printed (not the size of the chart in your file). The bounding box around the chart shows where crop marks will print, if you print them.)
3. To change your chart's placement on the page, click anywhere inside the graphic and drag. Click Tile if your chart extends beyond the page you've specified in the Page Setup dialog box. Information outside the page border will be printed on additional pages. You can also change the rulers' units by clicking the Units box and choosing a new unit from the list.

► To print your chart:

1. If you haven't already done so, choose Print from the File menu.
2. To print the chart to a PostScript file, click Print to File. If the printer or other device which will print your PostScript file is run by a Macintosh, click For Mac. (Once you've clicked OK to start printing to file, you'll be prompted for a file name.)
3. To print more than one copy of the chart, specify the number of copies in the Copies text box.

4. To print only objects which you've selected using the  tool, click Selected Only. This is a useful when your chart has one or more annotation objects, but you wish only to print a rough proof of the chart. The fewer complex graphic objects there are to print, the sooner you'll get your proof.
5. There are more print options available, especially for color printing and color separating. These are described in "Printing files" in Chapter 18 of the CorelDRAW section of this manual.
6. When you've set all the controls and options in the Options, Color and Printer dialog boxes, click OK to start printing.

Constrain features when creating and resizing annotation objects

| Use this key combination... | To... |
|-----------------------------|--|
| Shift while creating object | Draw perfect squares and circles with the center point of the object located at the point where you clicked to start creating it. |
| Ctrl while creating object | Make rectangles square and ellipses perfect circles. A corner of the object's bounding box is located at the point where you clicked to start creating them. |
| Ctrl + move | Move object constrained to horizontal or vertical directions. |
| Ctrl + stretch | Stretch the selected object in 100% increments. |
| Ctrl + scale | Scale the selected object in 100% increments. |
| Shift + stretch | Stretch the selected object either horizontally or vertically from its center. |
| Shift + scale | Stretch the selected object both horizontally and vertically from its center. |
| Ctrl + shift + stretch | Stretch the selected object either horizontally or vertically from its center in 100% increments. |
| Ctrl + shift + scale | Scale the selected object both horizontally and vertically from its center in 100% increments. |

CHAPTER

5

Four Quick Lessons

This chapter is made up of four short lessons using two different data sets. The first three lessons involve setting up a bar chart, changing the appearance of the data in the chart, and some chart-design issues. The fourth lesson involves creating a scatter chart and applying CorelCHART's statistical functions to it.

Each lesson is discrete—you can do any or all of them. But if you plan to try any of the first three, you'll learn more if you do all three of them in order. The first three lessons should take no more than three quarters of an hour for the least-experienced user. In any event, we strongly suggest you read the first CorelCHART chapter before attempting these lessons.

Lesson 1

Lesson objectives

You'll learn how to get your data ready for charting, and to combine it with a template to build a simple bar chart. Points covered include:

- Importing a ready-made data file
- Adding text in Data Manager
- Tagging cells in Data Manager

Starting the program

If you're not already in CorelCHART, double-click its Program Manager icon to start the program. Maximize the program's window.

Starting a new chart

► **To start a new chart:**

1. When you first start CorelCHART, the only drop-down menus available are File and Help. Choose New from the File menu.
2. In the New dialog box, choose Bar from the Gallery.
3. Make sure that the Use Sample Data check box below the Gallery is disabled.
4. On the right is a group of thumbnail-sized previews of the chart files available to be used as templates. In the Directories box, click the file `coreldrw\chart\bar\lesson.cch` to preview it.
5. Click OK to open the file.

The next thing you'll see is a blank Data Manager window. Click its Maximize button or double-click its title bar.

Importing data

► **To import the lesson's sample data file into the Data Manager:**

1. Choose Import from the File menu.
2. In the Import Data dialog box, go to the List Files of Type list box in the bottom left corner, and choose Excel (.XLS) as the file format to import.
3. In the `coreldrw\chart\samples` subdirectory, choose `lesson.xls`, then click OK. You should now see that file displayed in the Data Manager window.

Adding text in the data manager

The data you've just imported is incomplete, so you'll have to key in a few figures.

► To enter text:

1. To enter data into an empty cell, select a cell by clicking on it, then start typing.
2. Type in the data for that cell, and click the Enter box next to the formula bar. Then move to the next cell using the arrow keys, or click another cell.
3. In the 1991 column, enter these values for each region:

NICs 6.2 (into cell E5)

Japan 3.6 (into cell E6)

EC 2.7 (into cell E7)

»Tip:

To delete data in a cell, select the cell and choose *Clear* from the *Edit* menu.

| | A | B | C | D | E |
|---|-------------------------------------|------|------|------|------|
| 1 | Real GDP Growth Abroad | | | | |
| 2 | Is Asia recession-proof? | | | | |
| 3 | Source: International Monetary Fund | | | | |
| 4 | | 1988 | 1989 | 1990 | 1991 |
| 5 | NICS | 9.5 | 5.5 | 6.3 | 6.2 |
| 6 | Japan | 5.6 | 5 | 5.3 | 3.6 |
| 7 | EC | 3.9 | 3.5 | 3 | 2.7 |

4. Your table of data should then appear as above.

Tagging cells in Data Manager

You must now assign tags to different cells or groups of cells, so that CorelCHART knows what elements they'll be in the chart.

► To tag cells:


1. To tag a cell, first select it.
To select multiple cells for tagging or any purpose, click on the cell in the top-left corner of the group, hold the mouse button and drag to the cell in the bottom-right corner. Then release the mouse button.
2. Go to the tag list, click on the scroll arrow on the tag list, and select the appropriate tag.
3. Select cells A5 through A7, and tag them as row headers.
4. Tag cells B4 through E4 as column headers.
5. Tag cell A3 as the Footnote.
6. Tag cell A1 as the Title.
7. Tag cell A2 as the Subtitle.
8. Tag cells B5 through E7 as the data range.

Once you've tagged a cell, the tag name appears in the tag list each time you select that cell.

Moving to Chart view

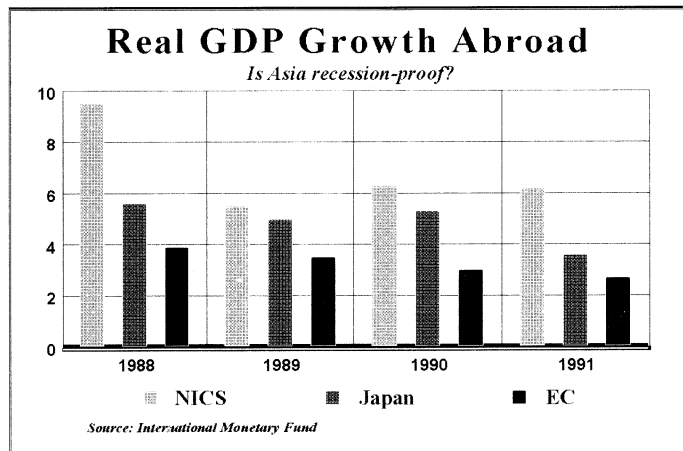
» Tip:

Now that you have both a Data Manager and Chart View window running, you can choose Window, Tile Horizontally. The two views will be displayed side by side.

1. Click  to go to Chart View.

You should see the data arranged in a bar chart, with each economic region represented by its own colored bar. A single group of differently colored bars represents a year. The horizontal (or X) axis should show the years 1988 through 1991. The legend, below the horizontal axis, should show the color for each region. The vertical (or Y) axis should show the GDP growth rate, from zero to ten.

2. To save your work, choose Save As from the File menu.
3. In the Save Chart dialog box, type a new file name, and select the drive and directory to save it to. If you wish, type in a long description in the frame at the bottom of the dialog box. (That long description then appears in the Open Chart dialog box, below the preview of the chart, for easier file identification.)



The chart before modification...

Lesson 2

Lesson Objectives

In this lesson, you'll learn how to put the essential elements in place. We'll look at how you can best show off your data so that it's dramatic, and tells an accurate story about economic growth in three key regions of the world. Points covered include:

- Changing the bar thickness and bar-bar spacing
- Reversing data groups and series
- Changing data orientation
- Manipulating the scale range and grid lines


If you haven't already done so, move to Chart View and look at the way the chart data from Lesson 1 is portrayed. Is it clear and legible? Does the chart show off the data dramatically?

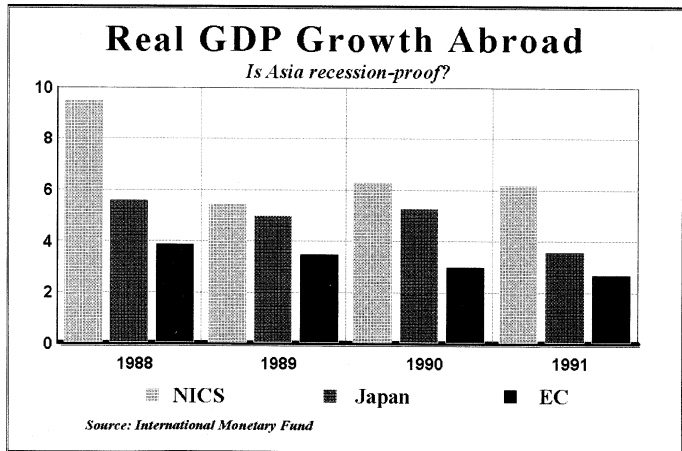
By changing the bar thickness and spacing, you can make a set of thin bars evenly scattered across the axis appear more legible and grouped together logically. By reversing the data series, the regions can be ordered from weakest performance to strongest. By changing the data orientation, you can put the emphasis on year-by-year performance in each region, rather than comparing the regions against one another in each successive year. By manipulating the data-axis scale range, you can emphasize the differences in economic performance more graphically.

Changing the bar thickness and bar-bar spacing


The bars look thin and spread out. By grouping them together, we can gain more space, and make them a little thicker.

► **To change the bar thickness and spacing:**

1. In Chart View, use the  tool to select any bar.
2. On the pop-up menu, choose Bar Thickness. Hold down the mouse button and scroll up and down the flyout. Watch the preview box atop the flyout. The preview can give a general impression of what you'll get, but bar thickness and bar-bar spacing also depend on how wide the charting area is, and how many bars there are in your chart.
3. Choose Major from the flyout by releasing the mouse button while Major is highlighted.




...The Lesson 1 chart with thicker bars and tighter spacing

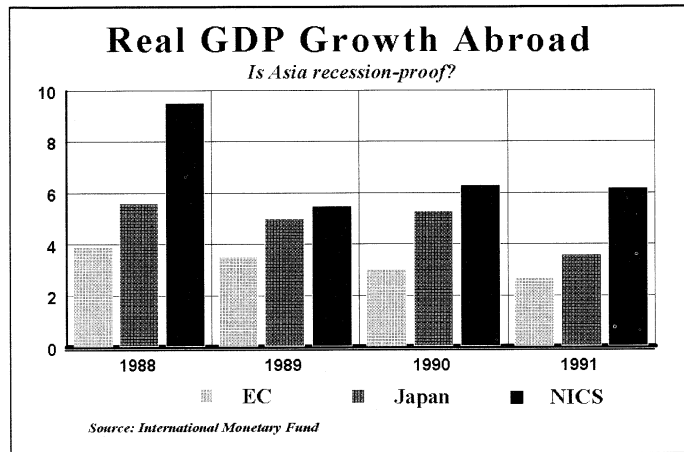
4. Select any bar with the  tool. Choose Bar-Bar Spacing from the pop-up menu.
5. On the flyout menu, choose Minor.
The bars for each year are grouped closer together, but they don't quite touch.

Reversing data groups and data series

You can reverse the ordering of the bars in each year—the series, and reverse the ordering of the years on the axis—the groups.

► To reverse the ordering of groups and series:

1. Using the  tool, select any bar.
2. On the context-sensitive pop-up menu, choose Data Reversal.
3. On the Data Reversal flyout, choose Reverse Series. The NICs region now appears last in each year's group.






...with data reversal

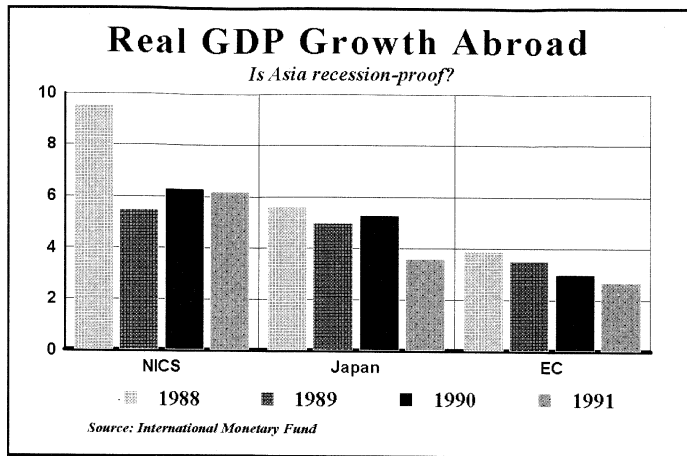
Changing the data orientation

As it stands, this chart compares the three economic regions in each of four years. It's easy to reconfigure this chart to make a different kind of comparison by clustering each region's four years' worth of data together. This puts more emphasis on how GDP growth in each region has changed over time, rather than comparing the regions in each year.

► To change data orientation:

1. Go to the Data Manager view by clicking .
2. Choose Data Orientation from the Data menu.
3. In the Data Orientation dialog box, click Columns are Series. Then click OK.
4. Click  to return to Chart View.
5. Using the  tool, select any bar.
6. On the context-sensitive pop-up menu, choose Data Reversal.
7. On the Data Reversal flyout, deselect Reverse Series.

Each region, rather than each year, is shown on the next page as a group. In all cases there's a general progression downward in each succeeding year. But you can still see how the regions compare one to another.



...with changed data orientation

8. To change the settings back, click to return to the Data Manager. Choose Data Orientation from the Data menu again and select Rows are Series.
9. Click to return to Chart View.
10. Using the tool, select any bar.
11. On the context-sensitive pop-up menu, choose Data Reversal.
12. On the Data Reversal flyout, select Reverse Series.
The chart should now be returned to its previous state,

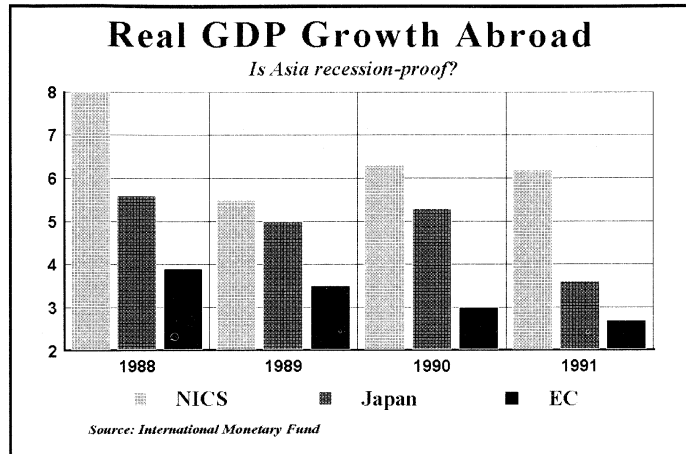
Manipulating the scale range and grid lines

By manipulating the scale range, we can make the differences in the values in the graph appear more dramatic.

► To change the scale range:

1. Click to return to Chart view.
2. Using the tool, select any vertical-axis number.
3. From the context-sensitive pop-up menu choose Scale Range.
In the Scale Range dialog box, you'll see that CorelCHART has automatically read the data and generated a range from 0 to 10, because the greatest value in the data range is 9.5.
4. Click Manual Scale.
5. In the From: box, type in 2, and in the To: box type in 8.
6. Click Graph Out-of-Range Values to ensure that the highest values will be plotted, even if they exceed the scale range you just set. Then click OK.

As you'll see on the next page, this gives your chart a dramatic and more accurate impression—the NICs have enjoyed significantly greater Gross Domestic Product growth than the other regions (9.5-per-cent growth is almost unheard of except in gold-rush towns.)



...with altered scale range.

7. Using the tool, select any vertical axis number. On the pop-up menu, choose Grid Lines.
8. In the Grid Lines dialog box, go to the left-hand area for Major Divisions. In the text box at the bottom, make sure the number of divisions is changed to 6, since your scale range now runs from 2 to 8. Make sure the Manual Scale check box is enabled.
9. Click OK.

Lesson 3

Lesson objectives

The first two lessons dealt with getting your chart data ready and making it more dramatic and illustrative. This lesson deals with cosmetic issues; the finishing touches that make a great chart. Points covered include:

- Enlarging the charting area
- Changing typographic features of chart elements
- Adding colors and fill patterns

Enlarging the charting area


The chart frame in the lesson sample could be larger; after all, it's the focal point of the chart. You can change its size, or the size of any chart elements which have handles—titles, subtitles, footnotes, legends, annotations and the chart frame.

- **To enlarge the charting area:**
1. With the tool, select the chart element you want to resize by clicking on or around it until you see handles.
 2. Click on any handle, and drag it in the desired direction until the chart is sized as you want.



(CorelCHART has constrain features available when you're creating or resizing annotation graphic objects. There's a list of these at the end of Chapter 4.)

Changing the typographic features of chart elements

► To change the typographic features:

1. Using the  tool, click anywhere on or near the title text. When you see a frame with handles, you've selected the title.
2. To change the title's typeface, go to the Text Ribbon and click the scroll arrow to the right of the font list. Scroll through the list and select another typeface, such as Helvetica-Black. While the text is selected you can use any of the functions in the Text ribbon to alter the text parameters.




► Another method:

1. Using the  tool, move the cursor over the title—you'll get a  cursor when you're over some part of the title. Click and drag across the title, and the whole title will be highlighted.
2. Go to the Text Ribbon and click the scroll arrow to the right of the font list. Scroll through the list and select another typeface. This method works only on titles, subtitles, footnotes and annotations. Note that changing the type attributes of one axis marker or legend label changes the entire set.

Adding colors and fill patterns

You can add color or fill patterns to any chart element: the charting area, bars, risers, pie slices, axis scales, legend markers, titles, scatter points, and so on. Note that coloring one bar, pie slice in a multiple-pie chart or other data marker in a series causes the color to be applied to all markers in the series. Changing the color of individual axis scale numbers or axis markers changes the color of all markers on the scale or axis.

► To change the color of the title text, then the color of one of the data series:

1. Use the  tool and click anywhere around the title text. Once you see handles surrounding the title, it's selected.
2. You now have two choices:
 - Choose a color from the on-screen color palette by clicking any tile in the palette with the title text selected
 - Click the  tool, and click  to open the Uniform Fill dialog box.
3. You must first decide if you'll use process colors or spot colors. Load one of the process color models by clicking the scroll arrow beside the Show box, and selecting from the list. Click anywhere in the preview box to select a color. If the color has a name assigned to it, the name will appear in the Color Name box. You can also choose another spot or process color palette by clicking the Custom Palette button, choosing open, and selecting

»Tip:

For all graphic objects, CorelCHART follows this CorelDRAW convention: Once you've selected the object to color, clicking with the left mouse button colors the object's fill, and clicking with the right mouse button colors the object's outline. This convention does not apply to text objects, which in CorelCHART have no outline.






another palette through the Open Palette dialog box. (For a complete discussion of the various color models, see Chapter 12, "Working with Colors," in the CorelDRAW section of this book.)

If you chose CMYK, RGB or HSB, you can mix your own color using the sliders beside the preview box, or by moving the node inside the preview box. Once you've mixed a color, it will appear in the New section of the small preview box on the right side of the dialog box.

If you chose a custom palette from the list, click a tile from the palette to choose a color. As with the mixed colors, once you've chosen a color, it will appear in the New section of the preview box.

4. When you've chosen a color, click OK to close the dialog box.

► **To color one of the series in the chart:**

1. Using the  tool, select one of the bars in the series.
2. On the on-screen color palette, click any tile with the left mouse button to color the bars' fills, or click any tile with the right mouse button to color their outlines.
3. Alternatively, click the  tool, and click  to open the Uniform Fill dialog box. Use one of the methods described above to mix a color or choose a preset color. Click OK when you're done.
4. To change the outline color or thickness of the bars, click the  tool. Click one of the preset thickness tiles on the top row of the flyout to change the outline thickness. Click  to open the Outline Color dialog box. Use one of the methods described above to mix a color or choose a preset color. Click OK when you're done.

Lesson 4

Lesson objectives


This last lesson stresses more CorelCHART's statistical functions than it does simple chart-building, although it does involve importing a spreadsheet file and making it into a scatter chart. Points covered in this lesson include:

- Building a scatter chart
- Showing and hiding data values
- Changing the size and design of data markers
- Deriving the mean
- Deriving the standard deviation
- Deriving a linear regression
- Changing the color and weight of the lines

Building a scatter chart

Baseball is probably the most statistics-mad of the major sports in the world. We've assembled a set of data based on the hitting and base-running performance of American League outfielders in 1992. We'll use this data to see if there are statistical correlations between different player characteristics—hits and at-bats, stolen bases and runs, stolen bases and age, and so on.


► To import the lesson data:

1. In Chart View, choose New from the File menu.
2. From the Gallery in the New dialog box, choose Scatter and then select the first tile in the preview box.
3. Deselect the Use Sample Data box and then click on OK.
4. Click  to open the Data Manager window.
5. Choose Import from the File menu. In the dialog box, go to the List Files of Type list box in the bottom left corner, and choose Excel (.XLS) as the file format to import. In the coreldrw\chart\samples subdirectory, choose lesson4.xls. The file opens in Data Manager. You must now tag some cells.
6. Click one at a time on cells A1, A2 and A3. As you do so, watch the preview box in the top-left corner, or the tag list, to see if the Data Manager has correctly scanned those cells as the title, subtitle and footnote respectively, when you imported the file.
7. Click and drag to select cells A5 through A73, the range of players' names. With those cells selected, click the scroll arrow on the tag list. Select Row Headers from the list.
8. Using the same technique, select the first two columns of numbers (excluding their headers), cells B5 through C73. Tag the selected cells as the Data Range.
9. Tag cell B4 (the At Bats header) as Axis Title #1, and cell C4 as Axis Title #2.
10. You've finished tagging. Choose Data Orientation from the Data menu, and make sure that Columns are Series is enabled. Click OK to close the dialog box.
11. Click the Chart View button in the top-left corner of the Data Manager window to see your results in Chart View.

Showing and hiding data values

By default, the data values are showing, which makes your chart look pretty messy. You can use the controls on the Text Ribbon to alter the typographic attributes of data values; select one and change it, and all the values are changed. You can also change their color the same way using the on-screen color palette or the other CorelCHART color facilities. But there are just too many in this chart, so let's hide them.




► To hide data values:

1. Using the  tool, select any data value. You'll get a pop-up menu with only two commands on it, Data-point Values, which

is a toggle, or Formatting Options. Data-point Values will be enabled.

2. Click it again to disable it. Only the data markers will now appear in your chart.


Changing the size and design of data markers

1. Using the  tool, select any data marker. On the pop-up menu, choose Marker Shape. On the flyout menu, choose Circle.
2. Click any data marker again. On the pop-up menu, choose Marker Size. On the flyout, choose Medium Small—you'll still be able to see the data points easily, but they won't overlap each other so much.
3. Using the  tool, select any data marker. Click the  tool, then click the white tile—the first tile on the bottom row of the flyout. The marker will now change to white.

Deriving the mean

In a scatter plot, you can derive the mean value for the Y axis only—in this case, the number of hits. (This doesn't mean much, considering the number of at-bats each player got ranged from 114 to 653.)


To do so:

1. Using the  tool, select any data marker.
2. On the pop-up menu, choose Data Analysis.
3. In the Data Analysis dialog box, click on the Mean check box, then click OK.

Deriving the standard deviation, and what it means

Standard deviation is a measure of how your data spreads itself around the mean. Standard deviation is based on the range of your data; in this case, the number of hits. (Kirby Puckett got 210 hits, while Darren Reid got only 20.) As with the mean, the standard deviation means relatively little here, because of the variation in the number of at-bats. (Puckett had 639, Reid 114.) Deriving the standard deviation requires following the same steps as deriving the mean.


► To derive the mean:

1. Using the  tool, select any data marker.
2. On the pop-up menu, choose Data Analysis.
3. In the Data Analysis dialog box, click the Standard Deviation check box, then click OK.

Deriving a linear regression



It's not fair to compare slugger Kirby Puckett with Darren Reid, a marginal player who didn't get much of a chance in 1992. It would be more meaningful to see if there's a statistical correlation between the number of chances our outfielders get at the plate, and how many hits they get.

► **To derive a linear regression:**




1. Using the  tool, select any data marker.
2. On the pop-up menu, choose Data Analysis.
3. In the Data Analysis dialog box, click the Linear Regression box
4. Click Show Correlation Coefficient.
5. Disable Mean and Standard Deviation.
6. Click OK.

You'll now see inside the chart frame the coefficient $r=0.977856$. This shows the strong statistical correlation between at-bats and hits; the more chances these major-league players get, the more hits they'll get - that's fairly obvious. From the chart, it also becomes evident who the best performers are. The data points above the plotted line represent players who hit more often when they get up to bat. The reverse is true for those whose data points lay below the line.

Changing the color and weight of lines

All of these statistical lines are—and must be—the same color as the data markers in the series from which they're derived. You can change the color of the data markers and their statistical lines using the on-screen color palette or by clicking the  tool and clicking  to open the Uniform Fill dialog box.

► **To adjust the thickness of statistical lines:**

1. Using the  tool, select the linear regression line you've created (it changes color and appears thicker when selected).
2. Click a color on the color palette. Alternatively, click the  tool and click  to open the Outline Color dialog box. When you've chosen a color, click OK to close the dialog box and apply the color. (For more information on the controls in the Uniform Fill dialog box, see "Applying Colors to Chart Elements" in Chapter 4.)

Choosing the Right Chart Type

There are few universal rules about which chart type best portrays any given set of data, and in many cases the same data set can be shown many different ways. Converting your data into different chart types isn't hard using CorelCHART. The hard part is determining which chart type emphasizes the point you're trying to make—or puts the right “spin” on the data. This chapter contains a few general rules about some of the chart types CorelCHART offers.

Vertical bar

Shows how values change over time. In contrast to line charts, vertical bar charts are best for a limited time series—just a few years, quarters, months, or whatever time period you're working with. Vertical bar charts are good for handling multiple series for comparison purposes.

Stacked vertical bar

Conveys the same information as an ordinary vertical bar, but also shows the contribution of parts to the whole—for example, which types of widgets comprised what proportion of total sales in a given period. The same information may also look good in a pie or multiple-pie chart.

Vertical line

Best for showing changes in a group of values over longer periods of time. If you're trying to plot three or four series of values on a line chart, and they intersect so often you lose track of which is which, consider a vertical bar or vertical area chart.

Vertical area

Shows continuous proportions and totals. Like line charts, vertical area charts don't handle multiple series well; the areas representing larger quantities tend to obscure those representing smaller quantities. If this is the problem with your vertical area chart, consider a stacked vertical bar chart.

Horizontal bar

Best for simple comparisons of different individual values at one time. If you want to express change in a value or values over time, switch to a vertical bar, line, area or 3D riser chart.

Pie charts

Often the best way to portray the contribution of parts to a whole.

Multiple pie charts

Encapsulates the idea of the contribution of parts to a whole, how the contribution of each part changes over time, and how the whole itself can grow or shrink over time, if you assign each pie to represent a time period.

Scatter charts

Shows the correlation of two sets of numbers by plotting where the variables intersect. Scatter charts are useful when the coordinates on the horizontal scale—often time intervals—are irregular.

High-low-open-close charts

Best used for data on prices in a given period, or when you're trying to express a range of quantities for the same item within the same time period. This is the chart type you'll see in the stock-market listings of your newspaper.

Spectrally-mapped charts

Best used with data that carries some kind of spatial relationship, such as geographic data. Showing population density across a group of contiguous, equal-sized areas of a city is an example of an application for a spectrally-mapped chart.

Histograms

Shows the frequency of the values in a set of data. For example, plotting the frequency of test scores using a histogram (usually) produces a bell curve.

Table charts

Though graphically less exciting, sometimes table charts are the only way to show data that can't fit into other chart types, particularly detailed evidence. Technical papers often contain a table chart to which shows the data for an accompanying graphical chart.

Chart design: A few tips and hints

The charting area is the focal point of the chart. The graphic, dramatic representation of numbers as bars, risers, lines, pies and the like is what makes a chart so powerful. So make your charting area as prominent as possible without squeezing other chart elements off the page. If you can still get your point across without footnotes, axis titles, or legends, do so to make the charting area bigger.

Less is more : Don't try to put too many series in a chart. Line charts are especially intolerant of overcrowding. More than three or four lines, especially if the lines follow much the same direction, is visually confusing. The only exception to this rule is you're creating a line chart of several series that people wouldn't expect to be similar.

Group bars to show relationships : Group your bars together tightly if you're trying to suggest that they belong together. If you're showing a group of bars over a series of years, for example, it makes sense to cluster the bars for each year, and leave a little extra space between years. If there's no need to do this with your chart data, space your bars a little wider, and make them a little wider so they're easier to see.

Add definition with black outlines : Give the bars in bar charts, the slices in pie charts, and the risers in 3D charts a little definition by using the ¶ tool to make their outlines black, or a dark, brilliant color. If you're making your chart into a slide, the people at the back of the room will appreciate being able to distinguish the elements.

Use grids in moderation : If you're using grid lines in your charting area, use only as many as are needed to get an approximate idea of the value of any given data point in the chart. Too many grid lines creates visual clutter. Balance horizontal and vertical grid lines so that the rectangles they create aren't too long and narrow or tall and narrow. Use soft colors, such as gray, for grid lines. Once you've defined the color and weight of the grid lines, make sure the chart frame (the frame around the charting area) is black or a dark, brilliant color, and heavier than the grid lines.

Choose colors carefully : When you're choosing colors, use your company's corporate colors where possible and appropriate. Failing that, you can use our ready-made templates, a color wheel, or a color-matching book. Also consider where your chart will appear. If it's going to be part of a screen show to be run in a trade show, or a slide to be shown in a large room, use strong, co-ordinating colors that attract attention and help the people at the back of the room distinguish the individual series. But if it's going in a publication, where it'll be examined at close range, keep the colors softer so you don't overwhelm the reader.

Limit use of typefaces : Use one typeface, or at most two, on each chart, and use the same size and weight for similar elements such as the axes and legend text. We recommend setting these in 12 to 18 points, and bold. If you use the bold and italic fonts in a typeface, as well as different sizes, you can generate enough typographic variety without going outside that type family.

Choose legible typefaces : Pick a typeface that looks clear in smaller sizes and in bold, especially if your chart is to be printed in a small size in a publication, or if it will be viewed by a large audience in a big room. Because CorelDRAW's TrueType fonts will run with any Windows applications, you can access them all in Chart. If your title is big enough, you can use just about any typeface for it, and it'll be legible. But for legend text, axes, footnotes and the like, take more care. Use faces that are neither too light nor too heavy: Bookman Bold, ITC Franklin Gothic Bold, Humanist 521 Bold or Bold Condensed, Swiss 721 Bold, Swiss 921 Inserat, and Dutch 801Bold. Avoid Bodoni, Broadway, Exotic 350, Futura Extrabold, ITC FranklinGothic Heavy, Zapf Humanist 601, and Swiss 721 Black.

Set type against an appropriate background : Be careful as well about the background behind your type. Some color combinations, such as pink or violet type and a medium or dark blue background, could make your audience feel a little dizzy. But if you're using a dark background color, your type must be bright enough to be readable—it shouldn't look like the background is trying to "swallow it up." If you're using light type on a dark background, use a bold weight, especially with smaller type sizes. Complex fill patterns in the background can also make type hard to read, especially smaller items like legend text and axis scales.

Use pattern fills with moderation : CorelCHART and CorelDRAW can create just about any kind of color combination or fill pattern you can imagine. But don't get carried away with color and patterns without thinking about your output device. Sophisticated fill patterns take up more disk space and take longer to print on color printers.

CoreIDRAW

A

| | |
|--|-----|
| 2x Zoom, Preferences - Mouse option..... | 325 |
| 3.0 Compatibility Message, Preferences option..... | 320 |
| 35mm slide, setting a new drawing..... | 17 |
| 4x zoom, editing arrowheads..... | 93 |
| about this book..... | 3 |
| accessing the Color dialog box..... | 309 |
| active drawing layer, changing..... | 139 |
| adding a cusp to a line or curve segment..... | 122 |
| adding and renaming layers..... | 139 |
| new pages to drawing, multi-page document.... | 18 |
| nodes to a curve object..... | 115 |
| adding page frame..... | 18 |
| adjusting | |
| first tile placement, selecting pattern from | |
| dialog box..... | 62 |
| the GCR..... | 311 |
| tile size and offset, choosing and editing | |
| patterns using the Fill Roll-Up..... | 66 |
| Align command..... | 137 |
| using..... | 133 |
| alignment | |
| aids, on-screen, CoreIDRAW screen..... | 10 |
| aids..... | 12 |
| arcs and wedges..... | 108 |
| control points (a tip)..... | 120 |
| edges..... | 119 |
| nodes..... | 119 |
| objects..... | 12 |
| All Roll-Ups Arranged, Preferences Roll-Up..... | |
| option..... | 325 |
| always on top, viewing help..... | 7 |
| analyzing separations using the printed | |
| densitometer..... | 308 |
| angle of screen in printing..... | 298 |
| angular dimension lines, drawing..... | 31 |
| animations, Core libraries catalog..... | 8 |
| Appearance of Roll-Ups on Exit, Preferences | |
| Roll-Up option..... | 325 |
| applications, working with other..... | 261 |
| applying | |
| a screen to an object, screen angle, halftone | |
| screens..... | 82 |
| styles..... | 235 |
| arc nodes, Status Line display..... | 108 |
| arcs | |
| aligning..... | 108 |
| shaping ellipses to create..... | 108 |
| Arrange menu, Layers Roll-Up..... | 49 |
| arranging | |
| objects..... | 125 |
| open Roll-Ups..... | 16 |

| | |
|---|----------|
| Arrow key..... | 4 |
| arrowhead editor..... | 92 |
| arrowheads and line ending shapes, creating..... | 93 |
| arrows | |
| scroll bar..... | 45 |
| using Outline Pen dialog box..... | 89 |
| Artistic text | |
| about..... | 234 |
| converting to curve objects..... | 109 |
| snap points..... | 136 |
| styles..... | 238 |
| artwork, commercial-quality..... | 2 |
| assigning keywords, saving a new drawing..... | 19 |
| attaching notes to objects, right mouse button..... | 20 |
| Auto, True Type option..... | 335 |
| auto-dimensioning..... | 353 |
| Auto-panning | |
| Preferences option..... | 320 |
| scrolling the drawing window..... | 45 |
| Auto-Reduce | |
| deleting nodes and segments..... | 117 |
| Preferences - Curves option..... | 322 |
| Autographix slide service..... | 359 |
| Autojoin..... | 27 |
| drawing..... | 28 |
| Preferences Curves option..... | 322 |
| Autotrace Tracking, Preferences Curves option ... | 321 |
| autotracing bitmaps..... | 255-257 |
| autotrapping..... | 295, 307 |

B

| | |
|--|---------|
| back/front (two-color patterns)..... | 63 |
| background frame, printable..... | 18 |
| backup files, creating..... | 282 |
| basic terms/concepts in shaping..... | 110 |
| behind fill, using Outline Pen dialog box..... | 89 |
| Bézier mode | |
| curves, drawing..... | 29 |
| drawing in..... | 28 |
| bitmap texture fills | |
| filling with bitmap textures..... | 68 |
| transforming objects..... | 70 |
| Bitmap Export dialog box..... | 276 |
| bitmaps | |
| applying halftone screen..... | 259 |
| autotracing..... | 255-257 |
| coloring a monochrome bitmap..... | 259 |
| compressing files..... | 275 |
| converting color to grayscale..... | 273 |
| corner threshold when tracing..... | 258 |
| cropping..... | 258 |
| dithering colors..... | 275 |
| export formats..... | 274 |
| hiding..... | 260 |
| importing..... | 270 |

rotating and skewing 254
 selecting 254
 showing and hiding bitmaps in wireframe 48
 size and resolution 275
 snap points 136
 straight line threshold when tracing 258
 tracing 254-257
 working with 253

black dot (blue on color monitors), general
 conventions 4

Black Point, Prepress Tools option 312

blend two objects 71

blending objects filled with texture fills 71

bookmarks, learning to use help 7

breaking
 a curve into separate subpaths 120
 objects apart 127, 129

brightness, texture parameters 69

browsing topics 6

bumpy curves, drawing lines and curves 26

button, primary, mouse conventions 4

C

calibrate
 color for a target CMYK device 313
 Prepress Tools option 313

calibration bar, printing 293

calligraphic outlines, creating 94

calligraphy 94

options 94

using Outline Pen dialog box 89

cancel button 13, 14

Cancel, True Type option 336

CD-ROM drive 2

cells, database 240

center offset, using the Fountain Fill dialog box 58

center in X, center in Y, editing arrowheads 93

changing
 a node's type 122
 active drawing layer 139
 angle of a linear fountain 59
 between drawing tools 24
 default fill attributes 84
 default outline attributes 98
 defaults from the Pen Roll-Up 98
 defaults from the Fill Roll-Up 84
 formats, in Object Data Manager 250
 grid and guidelines color 140
 segments to lines or curves 122
 texture parameters 69
 texture number, color, and parameters using
 the random selector 69

Character Number, True Type option 336

Character Width, True Type option 335

characters
 designing 327
 indirect 338

check mark, general conventions 4

checkboxes 13

child objects, selecting 36

choosing
 bitmap textures using the Fill Roll-Up 71
 blend type, creating custom fountains 59
 drawing mode 24
 drawing mode 26
 drawing mode, drawing lines and curves 26
 fill color 54
 general conventions 4
 halftone screens 80
 halftone screens 96
 outline pen attributes 89
 outline color from the Pen Roll-Up 96
 outline color 95
 patterns from the Fill Roll-Up 65

choosing and editing patterns using the
 Fill Roll-Up 65

circles
 drawing 25
 drawing, drawing ellipses and circles 25

circuits, SMT 308

clearing transformations 104

clipart images 00
 Corel libraries catalog 8
 importing 271
 ready-to-use, Corel libraries catalog 8

CLIPART directory, Corel Libraries Catalog 8

Clipboard
 about 261
 to copy objects 42

clipping holes or masks, creating 78

cloning objects
 copying objects 41
 with special effects 42

cloning 41, 353

closed ellipses, snap points 136

closing
 open path 118
 Roll-Up 15

CMYK
 process to define colors, choosing an outline
 color 95
 target device when calibrating color 313

color
 applying to monochrome bitmaps 259
 changing using random selector 69
 changing on the grid and guidelines 140
 color printers 299
 dialog box, accessing and using 309
 dithering 275
 filling objects with uniform colors 54

| | | | |
|--|---------------|--|-----|
| location markers, specifying the intermediate fountain colors..... | 60 | object fill..... | 83 |
| model, filling with uniform colors..... | 54 | object outline..... | 97 |
| overprinting..... | 304 | object outline using the Pen Roll-Up..... | 97 |
| Override (identifying objects on a layer)..... | 140 | objects..... | 41 |
| palette..... | 10 | objects to another layer..... | 140 |
| palette..... | 12 | objects fill using the Fill Roll-Up..... | 83 |
| palette button, dialog boxes..... | 13 | open files..... | 281 |
| printers..... | 299 | with Clipboard..... | 277 |
| separating in printing..... | 292, 295, 298 | Corel libraries catalog..... | 8 |
| separations, creating..... | 303 | CorelDRAW..... | |
| separator..... | 308 | basics..... | 9 |
| setting the paper color..... | 17 | Clipart images, importing..... | 271 |
| two-color patterns, choosing and editing | | icon..... | 10 |
| patterns using the Fill Roll-Up..... | 65 | window expansion, title bar..... | 10 |
| using Outline Pen dialog box..... | 89 | CORELDRW.INI file, customizing the..... | 326 |
| Combine command..... | 125, 127 | CorelMOSAIC, SHOW, and TRACE..... | |
| combining and grouping objects on different | | documentation, about..... | 3 |
| layers..... | 141 | CorelMOSAIC, finding files with..... | 281 |
| combining objects and breaking them apart..... | 127 | corner threshold..... | |
| command buttons..... | 13 | in tracing bitmaps..... | 258 |
| commands..... | | Preferences - Curves option..... | 322 |
| Align..... | 137 | corners, using Outline Pen dialog box..... | 89 |
| Combine..... | 125 | creating..... | |
| controlling the display of objects..... | 48 | (two-color patterns), using the Two- and | |
| Help..... | 6 | Full-color Pattern dialog boxes..... | 63 |
| Snap To and Align..... | 133 | a Graphics Database..... | 239 |
| Weld..... | 142 | a two-color pattern, Create Pattern command.. | 73 |
| complex drawings..... | | a process color, filling with uniform colors..... | 55 |
| printing..... | 290 | a pattern..... | 74 |
| printing to a PostScript printer..... | 296 | a two-color pattern from a full-color graphic..... | 76 |
| composites, in printing..... | 298 | and applying styles..... | 235 |
| compressing files..... | 275 | and modifying typefaces..... | 327 |
| conical, center offset, using the Fountain Fill dialog | | and editing patterns fills..... | 73 |
| box..... | 58 | arrowheads and line ending shapes..... | 93 |
| conserving memory for graphics..... | 127 | calligraphic outlines..... | 94 |
| Constrain (Ctrl) key..... | 353 | clipping holes or masks..... | 78 |
| Constrain Angle, Preferences option..... | 320 | color separations..... | 303 |
| constraining, angle of a line..... | 27 | custom fountains..... | 59 |
| contrast, texture parameters, other, changing | | fountains using the Fill Roll-Up..... | 58 |
| the texture parameters..... | 69 | letters striped with various colors, creating | |
| control points..... | | clipping holes or masks..... | 79 |
| moving..... | 113, 114 | pattern command..... | 73 |
| tip for aligning..... | 120 | slides..... | 17 |
| conventions..... | 4 | styles..... | 235 |
| conversion of object-character, preparation, | | symmetrical curves..... | 115 |
| typefaces..... | 331 | trap..... | 304 |
| converting..... | | two-color pattern fills using the two-color | |
| objects to type characters..... | 334 | pattern editor..... | 74 |
| color bitmaps to grayscale..... | 273 | crop marks in printing..... | 292 |
| ellipses to curve objects..... | 109 | cropping, bitmaps..... | 258 |
| rectangles to curve objects..... | 109 | Cross Hair Cursor, Preferences option..... | 320 |
| text to curve objects..... | 109 | crosshairs on the ruler..... | 130 |
| Copy, in Object Data Manager..... | 250 | Ctrl key..... | 4 |
| copying..... | | current color, filling with uniform colors..... | 54 |
| data between objects..... | 247 | Current Appearance Of Roll-Ups, Preferences | |
| | | Roll-Up option..... | 325 |

| | |
|---|---------|
| currently-selected object, using drawing tools | 24 |
| Cursor key | 4 |
| curves | |
| breaking into separate subpaths | 120 |
| bumpy, drawing lines and curves | 26 |
| changing direction at a cusp..... | 116 |
| changing direction smoothly, rules, drawing curves | 30 |
| changing segments | 122 |
| changing direction smoothly | 116 |
| drawing | 26 |
| drawing, freehand mode..... | 28 |
| drawing | 28 |
| drawing | 26 |
| drawing, rules..... | 30 |
| Flatness, Preferences - Display option | 324 |
| moving in one direction | 116 |
| object, adding nodes to..... | 115 |
| objects, converting rectangles, ellipses and text to..... | 109 |
| preferences, setting..... | 321 |
| rotating and skewing..... | 123 |
| segment, moving..... | 113 |
| segment, adding a cusp to | 122 |
| selecting parts of..... | 110 |
| shaping | 110 |
| smooth, flowing, drawing lines and curves..... | 26 |
| stretching and scaling..... | 123 |
| symmetrical, creating..... | 115 |
| cusp, adding to a line or curve segment..... | 122 |
| cusping a node | 121 |
| custom | |
| blend controls, specifying the intermediate fountain colors | 60 |
| fountain blends, creating custom fountains..... | 60 |
| fountain blends, creating custom fountains..... | 59 |
| half-tone in printing | 295 |
| typefaces, using..... | 338 |
| customizing | |
| CorelDRAW..... | 319 |
| the CORELDRW.INI file | 326 |
| work environment..... | 20 |
| Cut, in Object Data Manager..... | 250 |
| cutting, with Clipboard..... | 277 |
| <hr/> | |
| D | |
| data types, database..... | 240 |
| database | |
| cells..... | 240 |
| creating a graphics database | 239 |
| creation, sample | 241-247 |
| data types..... | 240 |
| fields | 240 |
| format definition | 240 |
| objects..... | 240 |
| sheets | 240 |
| database | 240 |
| default | |
| drawing mode, Drawing Window..... | 11 |
| outline, changing the attributes..... | 98 |
| Page Setup options | 18 |
| style to change, changing the default fill attributes..... | 84 |
| defaulting dimension text location, drawing dimension lines | 31 |
| definitions, displaying | 6 |
| Delete | |
| Character, Options option..... | 337 |
| in Object Data Manager | 250 |
| deleting | |
| a layer | 139 |
| nodes and segments using Auto-Reduce | 117 |
| nodes and segments | 116 |
| nodes and segments from a curve | 117 |
| objects | 42 |
| pages, multi-page document | 18 |
| styles | 236 |
| texture fills..... | 71 |
| densitometer | |
| printed | 308 |
| scale | 293 |
| density, texture parameters, other, changing the texture parameters | 69 |
| deselecting | |
| individual nodes or segments..... | 111 |
| multiple objects..... | 35 |
| nodes | 111 |
| objects | 35 |
| Design Size, True Type option | 335 |
| designing characters | 327 |
| Desktop, Layers Roll-Up option | 138 |
| destination file, jumping to a source file..... | 267 |
| destination document | 262 |
| diagonal lines, printing, Create Pattern command.. | 73 |
| dialog box | |
| Bitmap Export | 276 |
| Color | 309 |
| Format Definition dialog box | 247 |
| Fountain Fill | 60, 290 |
| Options | 336 |
| Options | 290 |
| Preferences - Display | 323 |
| Preferences | 319 |
| Preferences - Curves dialog box..... | 321 |
| Preferences - Mouse..... | 324 |
| Preferences - Roll-Up | 325 |
| Preferences - Dimension | 325 |
| Prepress Tools | 311 |
| Prepress Tools | 308 |
| Print | 287 |
| Separations..... | 295 |

| | | | |
|--|--------|--|------------|
| True Type/Adobe Type/Export | 334 | displaying definitions | 6 |
| dialog boxes | 13 | dithering, colors | 275 |
| cancel button | 14 | Dot Gain, Prepress Tools option | 312 |
| cancel button | 13 | dragging the corner handles, stretching, scaling, and mirroring objects | 103 |
| checkboxes | 13 | drawing | |
| color palette button | 13 | Bézier mode | 24, 26 |
| command buttons | 13 | choosing modes | 24, 26 |
| display boxes | 14 | curves | 26, 28 |
| display boxes | 13 | curves, Bézier mode | 29 |
| help | 5 | ellipses, circles | 24 |
| list boxes | 14 | freehand mode | 24, 26, 27 |
| numeric entries | 13 | multi-segment lines or polygons | 27 |
| ok button | 13, 14 | objects | 23 |
| PostScript options, filling with uniform colors .. | 54 | opening existing | 16 |
| PostScript textures | 67 | rectangles and squares | 25 |
| radio buttons | 13 | setting up a new | 17 |
| scroll arrows | 13 | straight lines — Freehand mode | 27 |
| selecting a pattern from | 62 | straight lines — Bézier mode | 28 |
| text entries | 14 | using AutoJoin | 27 |
| two-color pattern editor, selecting pattern from dialog box | 62 | drawing | |
| using the two- and full-color pattern dialog boxes | 63 | curves, Freehand mode | 28 |
| variable units | 14 | circle, drawing ellipses and circles | 25 |
| variable units | 13 | dimension lines | 31 |
| paper color | 17 | ellipses and circles | 25 |
| different layers, grouping and combining | | from center out, drawing ellipses and circles .. | 25 |
| objects on | 141 | in Bézier mode | 28 |
| dimension lines | | in Freehand mode | 27 |
| drawing | 24, 31 | layer, changing the active | 139 |
| using drawing tools | 24 | lines and curves | 26 |
| dimension text | 31, 32 | mode, choosing, drawing lines and curves | 26 |
| editing | 32 | modes, switching between, drawing lines and curves | 26 |
| orientation | 32 | multi-segment lines or polygons, Freehand mode | 27 |
| placement | 32 | straight lines, Bézier mode | 28 |
| dimension line preferences, setting | 325 | straight lines | 27 |
| direct blending color wheel, creating custom | | tools, using | 24 |
| fountains | 59 | with precision, drawing lines and curves | 26 |
| direct fountain blends, creating custom | | Drawing Window | 11 |
| fountains | 59, 60 | CorelDRAW screen | 10 |
| directory, CLIPART, Corel Libraries Catalog | 8 | interrupting the refresh | 48 |
| Disabling, general conventions | 4 | placing guidelines in | 132 |
| disk, separating to | 315 | refreshing | 48 |
| display boxes | 13, 14 | scrolling | 44 |
| Display menu | | showing and hiding bitmaps in | 48 |
| Edit Wireframe | 44 | view objects | 43 |
| Refresh Window | 48 | drawings, merging with text files | 301 |
| Show Rulers | 12 | drop-down list boxes, dialog boxes | 14 |
| Show Bitmaps | 48 | duplicating objects, copying objects | 41 |
| Show Status Line | 12 | | |
| Show Color palette | 12 | | |
| Preview Selected Only | 48 | | |
| Refresh Window | 48 | | |
| Show Preview | 48 | | |
| display preferences, setting | 323 | | |
| Display Window, Show Bitmaps | 48 | | |

E

| | |
|---|---------|
| edge pad, using the Fountain Fill dialog box..... | 57 |
| edges, aligning | 119 |
| Edit Menu, in Object Data Manager | 250 |
| Edit Text, Preferences Mouse option..... | 325 |
| editing | |
| arrowheads..... | 92 |
| dimension text..... | 32 |
| embedded objects | 269 |
| full-color patterns | 77 |
| linked information | 267 |
| nodes and segments..... | 115 |
| nodes, keys for..... | 124 |
| paths and nodes | 105 |
| the pattern with CorelDRAW's two-color limitation, pattern editor..... | 76 |
| elastic mode, moving nodes | 114 |
| Elastic Mode, Node Edit Roll-Up option | 113 |
| elevators, scroll bar | 45 |
| ellipses | |
| converting to curve objects | 109 |
| drawing, using drawing tools..... | 24-25 |
| shaping to create arcs and pie wedges | 108 |
| snap points..... | 136 |
| embedding | |
| about..... | 261-263 |
| clients | 262 |
| editing an embedded object..... | 269 |
| from a CorelDRAW file into CorelDraw | 269 |
| inserting objects | 268 |
| objects..... | 268-269 |
| objects..... | 263 |
| pasting a file from a source applications | 268 |
| servers..... | 262 |
| emulsion in printing..... | 291 |
| Enabling, general conventions | 4 |
| Encapsulated Postscript, exporting to..... | 273 |
| EPS format, exporting to..... | 273 |
| error generating texture, filling with bitmap textures | 68 |
| errors in registration | 305 |
| exiting | 21 |
| exiting, Object Data Manager | 250 |
| expanding, CorelDRAW window, title bar | 10 |
| exporting files for use in other applications | 272 |
| exporting | |
| about..... | 261 |
| bitmap formats..... | 274 |
| Bitmap Export dialog box | 276 |
| files | 272 |
| graphics | 272 |
| image headers..... | 274 |
| selected objects..... | 276 |
| to the EPS format..... | 273 |

F

| | |
|--|----------|
| F1, CorelMOSAIC, SHOW, and TRACE | 3 |
| facing pages, in multi-page documents | 283 |
| Family Name, Options option | 337 |
| features, precision | 351 |
| Field Options menu..... | 250 |
| Field Editor, in Object Data Manager | 251 |
| file menu, exiting CorelDRAW..... | 21 |
| file, INDEX40.CDR, Corel Libraries Catalog | 8 |
| files | |
| adding keywords and notes..... | 281 |
| compressing..... | 275 |
| copying open | 281 |
| creating backups..... | 282 |
| exporting..... | 261, 272 |
| finding | 280 |
| finding with CorelMOSAIC | 281 |
| importing | 261, 270 |
| INI, setting up work environment..... | 21 |
| managing and printing | 279 |
| merging text files with your drawings | 301 |
| merging..... | 300 |
| printing..... | 286, 288 |
| saving for use with earlier CorelDRAW versions..... | 282 |
| sorting | 281 |
| Fill flyout menu | 47 |
| Fill options, selecting and applying fills..... | 52 |
| Fill color, choosing | 54 |
| Fill Roll-Up | |
| choosing bitmap textures..... | 71 |
| copying an objects fill | 83 |
| creating fountains | 58 |
| filling objects with uniform colors | 54 |
| importing patterns | 77 |
| selecting and applying fills..... | 52 |
| filling | |
| objects | 51 |
| open and closed paths, making objects transparent | 53 |
| with black, white, and shades of gray | 54 |
| with bitmap textures | 68 |
| with fountains (gradient fills) | 56 |
| with PostScript textures..... | 67 |
| with two-color and full-color patterns | 62 |
| finding, style of an object..... | 236 |
| first tile offset, using the Two- and Full-Color Pattern dialog boxes | 65 |
| flatness, printing | 291 |
| flyout menu, fill | 51, 52 |
| fonts, printing..... | 292, 296 |
| format definition, database | 240 |
| Format Definition dialog box | 248 |
| formats | |
| bitmap | 274 |
| style | 237 |

| | |
|--|---------|
| installing | |
| Help | 4, 7 |
| starting CoreIDRAW | 10 |
| windows | 10 |
| insufficient memory, filling with bitmap textures... | 68 |
| Interruptible display, Special menu | 49 |
| Interruptible Display, Preferences option | 320 |
| interrupting the drawing window refresh | 48 |
| invisible and visible layers | 140 |
| <hr/> | |
| J | |
| joining nodes | 118 |
| jumping to other topics in Help | 6 |
| jumping from a destination file to a source file | 267 |
| <hr/> | |
| K | |
| kerning | 338 |
| keyboard conventions | 4 |
| keys | |
| Arrow | 4 |
| Ctrl, keyboard conventions | 4 |
| Cursor | 4 |
| Node Editing | 124 |
| pressing two or three, keyboard conventions | 4 |
| keywords, adding to files | 281 |
| <hr/> | |
| L | |
| Landscape, orientation | 17 |
| layer, changing the active drawing | 139 |
| Layer 1, Layers Roll-Up option | 138 |
| layers | 352 |
| printing selected | 299 |
| using | 137 |
| Layers Roll-Up | |
| Arrange menu | 49 |
| using | 138 |
| layout styles, printing | 285 |
| layout style for multi-page documents | 283 |
| leaving copy of the original object, moving objects | 38 |
| left mouse button, mouse conventions | 4 |
| libraries | |
| clipart, Core Libraries Catalog | 8 |
| Core Libraries Catalog | 8 |
| limitations on typefaces | 330 |
| line caps, using Outline Pen dialog box | 89 |
| line, adding a cusp to | 122 |
| linear, radial, and conical fountains, filling with | |
| fountains | 56 |
| lines | |
| changing segments | 122 |
| dimension | 24, 31 |
| shaping | 110 |
| lines and curves | |
| drawing | 26 |
| drawing, using drawing tools | 24 |
| linking | |
| about | 261-263 |
| cancelling a link | 266 |
| changing a link | 266 |
| clients | 262 |
| creating links from CoreIDRAW | 265 |
| creating links | 264-265 |
| editing linked information | 267 |
| jumping from a destination file to a source | |
| file | 267 |
| objects | 263 |
| servers | 262 |
| updating links | 265 |
| updating automatically | 265 |
| updating manually | 265 |
| updating all links in a file | 266 |
| list box, dialog boxes | 14 |
| Load, Color dialog box option | 310 |
| Load Font Metrics, Options option | 338 |
| loading (full-color patterns), using the Two- and | |
| Full-Color Pattern dialog boxes | 63 |
| loading, templates | 236 |
| locating a pantone spot color, filling with uniform | |
| colors | 55 |
| locking and unlocking layers | 140 |
| <hr/> | |
| M | |
| making | |
| a single continuous curve from separate | |
| paths | 118 |
| a layer visible or invisible | 140 |
| all layers active | 139 |
| objects transparent | 53 |
| managing and printing files | 279 |
| managing multi-page documents | 282 |
| marquee, selecting objects | 35 |
| marquee box, selecting objects | 33 |
| Master layer, setting up | 282 |
| Master layers, setting up | 142 |
| masters cut/copied to the clipboard | 41 |
| maximum pages, multi-page document | 18 |
| maximum page size, setting up a new drawing | 17 |
| memory, conserving | 127 |
| menu bar | 10 |
| merging, text files with your drawings | 330 |
| merging files | 300 |
| methods of selecting and applying | |
| fills | 52 |
| outlines | 86 |
| Microsoft Windows Version 3.1, getting started | 2 |
| mistakes, undoing | 20 |
| Miter Limit, Preferences option | 320 |
| models for creating colors, choosing an outline | |
| color | 95 |

| | |
|--|----------|
| modifying and creating typefaces..... | 327 |
| modifying and saving texture fills | 70 |
| monochrome bitmaps, coloring | 259 |
| mouse | |
| primary button | 4 |
| secondary button | 4 |
| to stretch or scale an object..... | 102 |
| mouse conventions | 4 |
| mouse, right button, assigning a function to | 324 |
| mousing, to rotate or skew an object..... | 100 |
| Move command..... | 39 |
| moving | |
| control points | 114 |
| curve segment | 113 |
| multiple nodes/segments at the same time | 114 |
| node, editing arrowheads..... | 92 |
| node..... | 113 |
| nodes in elastic mode | 114 |
| object to an exact location, move command | 40 |
| object a specified distance, move command..... | 39 |
| object to an exact location, move command | 40 |
| object's center of rotation..... | 101 |
| objects | 38 |
| objects using the Move command..... | 39 |
| objects in increments by nudging, move | |
| command | 40 |
| objects to another layer..... | 139 |
| objects using the mouse | 38 |
| Roll-Up | 16 |
| segments, nodes, and control points | 113 |
| multi-media productions..... | 2 |
| multi-page documents | |
| about | 13 |
| managing | 282 |
| Master layer | 282 |
| facing pages | 283 |
| layout style..... | 283 |
| printing layout styles | 283 |
| multi-segment lines or polygons | 27 |
| drawing, freehand mode | 27 |
| multilayer selection, selecting single objects | 34 |
| multiple | |
| layers, reorder objects on | 141 |
| moving at the same time | 114 |
| nodes/segments, moving at the same time | 114 |
| nodes, selecting..... | 111 |
| objects, deselecting..... | 35 |
| objects, selecting | 35 |
| objects vs. grouping objects | 130 |
| segments, selecting | 111 |
| selecting..... | 111 |
| subpaths, selecting | 112 |
| N | |
| new color, filling with uniform colors..... | 54 |
| next and superimposed objects, selecting..... | 36 |
| nib shape box, calligraphic outlines, creating | 94 |
| No Roll-Ups, Preferences - Roll-Up option..... | 325 |
| node | |
| cupping | 121 |
| making it symmetrical..... | 121 |
| moving | 113 |
| nudging | 113 |
| single, selecting | 111 |
| smoothing | 121 |
| node type, changing | 122 |
| Node Edit, Preferences - Mouse option | 325 |
| Node Editing keys..... | 124 |
| nodes of an arc, Status Line display | 108 |
| nodes | |
| adding to a curve object..... | 115 |
| aligning | 119 |
| all, deselecting | 111 |
| deleting | 116 |
| editing | 105, 115 |
| individual, deselecting | 111 |
| joining | 118 |
| moving | 113 |
| in elastic mode | 114 |
| notes, adding to files..... | 281 |
| Nudge, Preferences option | 319 |
| nudging | 351 |
| a node | 113 |
| number of gray levels at, screen frequencies, | |
| choosing halftone screens | 81 |
| Number, Options option | 337 |
| numeric entries | 13 |
| O | |
| object, applying styles | 235 |
| object embedding, see <i>embedding</i> | |
| object linking, see <i>linking</i> | |
| object data | |
| about..... | 240 |
| command reference..... | 247 |
| copying objects | 247 |
| Format Definition dialog box | 247 |
| formatting | 248 |
| Object Data Manager | 249 |
| Object Data Field Editor..... | 247 |
| Object Data Roll-Up | 247 |
| Object Data Field Editor | 247 |
| Object Data Manager | 249 |
| changing formats..... | 250 |
| Copy..... | 250 |
| Cut..... | 250 |
| Delete | 250 |
| Edit Menu..... | 250 |

| | | | |
|---|----------|--|---------------|
| exiting | 250 | OK button..... | 13, 14 |
| Field Editor..... | 251 | OK | |
| Field Options menu..... | 250 | Options option | 338 |
| File menu | 249 | True Type option | 336 |
| menu bar..... | 249 | OLE | |
| page setup | 249 | about | 261-263 |
| Paste | 250 | clients | 262 |
| Preferences menu | 251 | destination documents | 262 |
| printing | 249, 250 | embedding objects..... | 263 |
| Redo..... | 250 | linking objects | 263 |
| Show Totals | 251 | linking vs. embedding..... | 263 |
| Show Hierarchy | 251 | objects | 262 |
| Summarize Groups..... | 251 | servers | 262 |
| Undo | 250 | source documents | 262 |
| Object Data Roll-Up..... | 247 | on-screen | |
| Object Linking and Embedding, see <i>OLE</i> | | alignment aids, alignment aids | 12 |
| Object Menu, Preferences - Mouse option..... | 324 | alignment aids, CorelDRAW screen | 10 |
| object outline, removing | 87 | color palette, selecting and applying fills | 52 |
| object-character, typefaces | 331 | color palette, filling with uniform colors | 55 |
| objects | | color palette, methods of selecting and applying outlines | 86 |
| aligning | 12 | online help..... | 3, 4, 5, 6, 7 |
| arranging..... | 125 | open dialog boxes, Help..... | 6 |
| breaking apart | 129 | open ellipses, snap points | 136 |
| child, selecting..... | 36 | open line paths, snap points..... | 136 |
| child | 36 | open path, closing..... | 118 |
| cloning | 41 | opening an existing drawing..... | 16 |
| combining and breaking apart..... | 127 | Optimized Palette, Preferences - Display option.... | 324 |
| copying data between | 247 | Options dialog box | 290, 336 |
| database..... | 240 | Options, True Type option | 336 |
| deselecting all | 35 | orientation..... | 17, 32 |
| deselecting..... | 35 | other texture parameters, changing the texture parameters..... | 69 |
| drawing | 23 | outline pen attributes | |
| embedding, see <i>embedding</i> | | choosing | 89 |
| finding the style | 236 | selecting from the Pen Roll-up..... | 91 |
| grouping and ungrouping | 126 | Outline Pen and Outline Color dialog | |
| identifying on a layer (Color Override) | 140 | boxes, methods of selecting and applying outlines | 87 |
| linking, see <i>linking</i> | | outline color, choosing | 95 |
| marquee selecting..... | 35 | outlines | 305 |
| moving and copying to another layer | 140 | methods of selecting and applying..... | 86 |
| previewing | 48 | selecting and applying | 86 |
| reordering on multiple layers..... | 141 | outlining | |
| resizing..... | 135 | objects | 85 |
| selecting | 106 | Pen dialog box | 89 |
| selecting groups of objects..... | 36 | with black, white, and shades of gray | 88 |
| selecting and deselecting..... | 33, 35 | output device, separating to | 315 |
| shaping | 105 | overlapping objects, reordering..... | 126 |
| snapping to other objects | 134 | overprinting and trapping | 304 |
| viewing | 43 | | |
| welding..... | 142 | P | |
| object fill, copying..... | 83 | page setup | |
| object filling | 51 | creating slides | 17 |
| object outline, copying..... | 97 | in Object Data Manager | 249 |
| objects as guides, using..... | 134 | | |
| offset rows and columns, selecting pattern from dialog box | 62 | | |
| offsetting center of radial and conical fountains | 59 | | |

| | | | |
|--|--------------|--|----------|
| multi-page documents..... | 13 | pencil tool, drawing dimension lines | 31 |
| paper color | 17 | performance, Drawing Window | 11 |
| dialog box, setting a new drawing..... | 17 | periodicals | 358 |
| page size, maximum, setting a new drawing..... | 17 | pie wedges | |
| page frame, adding..... | 18 | aligning | 108 |
| page border, showing | 17 | shaping ellipses to create | 108 |
| page counter..... | 13 | Place Duplicates, Clones, Preferences option | 319 |
| CorelDRAW screen | 10 | placing guidelines in the Drawing Window | 132 |
| page layout styles, printing | 285 | points of inflection, rules, drawing curves | 30 |
| Page layout style | 283 | points on typography | 327 |
| Page Setup options | 18 | Portrait, orientation..... | 17 |
| pages, maximum, multi-page document..... | 18 | position toolbox..... | 11 |
| palette | 12, 180, 181 | PostScript | |
| palette of full-color | | filling algorithms..... | 67 |
| patterns, choosing and editing patterns using the | | options dialog box, filling with uniform colors .. | 54 |
| Fill Roll-Up..... | 65 | options, using the Fountain Fill dialog box..... | 58 |
| palette menu, filling with uniform colors..... | 54 | printer | 67 |
| panning | | printers, printing complex drawings | 296 |
| auto | 45 | Textures dialog box | 67 |
| horizontal/vertical scroll bars..... | 10 | textures | 339 |
| pantone spot color, locating, filling with uniform | | precision drawing, drawing lines and curves | 26 |
| colors..... | 55 | precision features | 351 |
| paper size | | preferences | |
| page border | 18 | curve | 321 |
| setting up a new drawing | 17 | dimension line, setting | 325 |
| paragraph text, about | 234 | roll-up, setting | 325 |
| Paragraph Text | | setting | 319 |
| styles | 237 | Preferences | |
| style | 237 | Curves dialog box..... | 321 |
| snap points | 136 | Dimension dialog box..... | 325 |
| parameters, changing using random selector..... | 69 | Display dialog box..... | 323 |
| parameters, setting..... | 308 | Mouse dialog box | 324 |
| Paste, in Object Data Manager | 250 | Roll-Up dialog box..... | 325 |
| pasting, with Clipboard | 277 | menu, in Object Data Manager | 251 |
| paths | | dialog box | 319 |
| editing..... | 105 | Preferences dialog box | |
| filling open and closed paths..... | 53 | autojoin | 27 |
| open, closing | 118 | curves..... | 24 |
| open line, snap points..... | 136 | Preferences, Special menu | 49 |
| separate, making a continuous curve from..... | 118 | preparing images for color separation | 309 |
| pattern fills | | preparing your object-character, typefaces | 331 |
| creating and editing..... | 73 | Prepress, Color dialog box option | 310 |
| fills, transforming bitmaps and objects | 104 | Prepress Tools dialog box..... | 308, 311 |
| Pattern command, creating | 73 | Prepress Tools, using..... | 310 |
| pattern editor, editing the pattern with | | Preview | |
| CorelDRAW's two-color limitation | 76 | Colors, Preferences, Display option..... | 324 |
| pattern that's not contained in the CorelDRAW | | Fountain Steps, Preferences - Display option .. | 323 |
| library | 62 | Selected Only, Display menu | 48 |
| pattern tiling, understanding | 72 | Window, True Type option..... | 334 |
| patterns, importing graphics for use | 76 | preview box, opening existing drawing | 16 |
| Pen dialog box, outlining | 89 | preview window | 48 |
| Pen Roll-Up, methods of selecting and applying | | previewing..... | 48 |
| outlines..... | 86 | attribute changes, using bitmap textures..... | 68 |
| Pen Roll-Up | | printing | 287 |
| changing defaults..... | 98 | primary mouse button, mouse conventions..... | 4 |
| copying an object's outline | 97 | PowerLines..... | 225-231 |

| | |
|---|--------------------|
| print | |
| merge | 300 |
| negative | 291 |
| options | 289 |
| to file | 288 |
| Print dialog box | 287 |
| printable page | |
| CoreDRAW screen | 10 |
| Drawing Window | 11 |
| printable background frame | 18 |
| printable or non-printable layers, making | 140 |
| printed densitometer, analyzing separations | 308 |
| printer | |
| limitations, typefaces | 328 |
| options | 286 |
| printing options | 286 |
| selection box | 288 |
| printing | |
| autotrapping | 295 |
| calibration bar | 293 |
| color separation | 292, 295, 298, 315 |
| color separations, filling with PostScript textures | 67 |
| complex drawings | 290, 296 |
| composites | 298 |
| considerations, PostScript textures | 339 |
| crop marks | 292 |
| custom halftone | 295 |
| densitometer scale | 293 |
| diagonal lines | 73 |
| emulsion | 291 |
| file information | 293 |
| files | 286 |
| flatness | 291 |
| fonts | 292, 296 |
| hints | 293 |
| page layout styles | 285 |
| previewing | 287 |
| print merge | 300 |
| print options | 289 |
| print negative | 291 |
| print to file | 288 |
| printer selection box | 288 |
| registration marks | 292 |
| rotated and skewed bitmaps | 104 |
| rounded shapes | 73 |
| screen angle | 298 |
| screen frequency | 291 |
| selected layers | 299 |
| specifying screen frequency | 297 |
| to a PostScript printer, choosing halftone screens | 96 |
| to a color printer | 299 |
| with Object Data Manager | 249, 250 |
| within page option | 293 |
| without starting CoreDRAW | 299 |
| process color, creating, filling with uniform colors | 55 |
| proofed on a typical laser printer, calligraphic outlines, creating | 94 |
| <hr/> | |
| Q | |
| Quality, Prepress Tools option | 313 |
| quick sketches, drawing lines and curves | 26 |
| <hr/> | |
| R | |
| radial, center offset, using the Fountain Fill dialog box | 58 |
| radio buttons | 13 |
| radius of a rounded corner, displayed on the Status Line | 107 |
| rainbow, fountain blends, creating custom fountains | 59, 60 |
| rainbow grain, texture parameters, other, changing texture parameters | 70 |
| random number generator, filling with bitmap textures | 68 |
| random patterns | 339 |
| reading list | 355 |
| rectangle, creating a rounded | 107 |
| rectangles and squares, drawing, using drawing tools | 24 |
| rectangles | |
| converting to curve objects | 109 |
| drawing | 25 |
| shaping | 107 |
| snap points | 136 |
| Redo, in Object Data Manager | 250 |
| reference line, editing arrowheads | 92 |
| reference books | 355 |
| reflect in X, editing arrowheads | 92 |
| reflect in Y, editing arrowheads | 92 |
| Refresh Window, Display menu | 48 |
| refreshing – Drawing Window | 48 |
| registration card | 2 |
| registration errors | 305 |
| registration marks in printing | 292 |
| removing an object's outline | 87 |
| renaming and adding layers | 139 |
| reordering | |
| layers and the objects in them | 141 |
| objects on multiple layers | 141 |
| overlapping objects | 126 |
| repeating and undoing the last operation | 104 |
| resize tiles, selecting pattern from dialog box | 62 |
| resizing objects using Snap to Object | 135 |
| resolution of the header, image headers | 19 |
| resolution, bitmaps | 275 |
| RGB, choosing an outline color | 95 |
| right mouse button | 20 |
| mouse conventions | 4 |
| assigning a function to | 324 |

| | |
|---|---------------|
| roll-ups | |
| Object Data roll-up | |
| preferences, setting | 325 |
| Roll-Up, Layers | 138 |
| rolling a window up and down, Roll-Ups | 15 |
| rotate and skew, using the status line..... | 101 |
| rotate or skew an object using the mouse..... | 100 |
| rotated and skewed bitmaps, printing..... | 104 |
| rotating and skewing | |
| command | 101 |
| curves | 123 |
| objects | 100 |
| rotating, bitmaps | 254 |
| round corners, calligraphic outlines, creating..... | 95 |
| rounded rectangle, creating..... | 107 |
| rounded shapes, printing, Create Pattern | |
| command | 73 |
| row/column offset, using the Two- and | |
| Full-Color Pattern dialog boxes | 65 |
| ruler, CorelDRAW screen..... | 10 |
| ruler crosshairs, using | 130 |
| rulers | 351 |
| displaying | 12, 122 |
| drawing curves..... | 30 |
| grids, guidelines, and guide objects..... | 130 |
| S | |
| Save, Color dialog box option..... | 310 |
| saving | |
| a new drawing | 19 |
| a custom fountain fill..... | 61 |
| files to use with earlier CorelDRAW versions...282 | |
| new file for first time, saving a new drawing..... | 19 |
| templates | 236 |
| scale, specifying..... | 133 |
| scaling | |
| an object | 103 |
| and stretching curves | 123 |
| windows border..... | 10 |
| with Image, using Outline Pen dialog box | 89 |
| screen layout | |
| about | 10 |
| color palette | 12 |
| horizontal/vertical scroll bars..... | 10 |
| menu bar | 10 |
| on-screen alignment aids..... | 12 |
| rulers..... | 12 |
| status line..... | 10 |
| terminology | 10 |
| title bar | 10 |
| toolbox..... | 10, 11 |
| using CorelDRAW dialog boxes | 13 |
| using online help | 3, 4, 5, 6, 7 |
| using roll-ups..... | 14 |
| windows border | 10 |
| screen | |
| angle, printing | 298 |
| angle, choosing halftone screens | 81 |
| frequencies, choosing halftone screens | 80 |
| frequency | |
| in printing | 290 |
| items, Help | 6 |
| specifying in printing | 297 |
| type, choosing halftone screens | 80 |
| scroll bar | |
| arrows | 45 |
| elevators | 45 |
| thumb | 45 |
| scroll arrows | 13 |
| scrolling | |
| drawing window..... | 44 |
| the drawing Window..... | 44 |
| segments | |
| changing to lines or curves | 122 |
| deleting | 116 |
| editing | 115 |
| individual, deselecting | 111 |
| moving | 113 |
| multiple, moving at the same time | 114 |
| selecting | 111 |
| multiple, selecting..... | 111 |
| selecting | |
| bezier drawing tool | 24 |
| bitmap..... | 254 |
| child objects | 36 |
| clicking on an already-selected object | 34 |
| custom fountain fill from the presets list..... | 61 |
| electing single objects..... | 34 |
| freehand drawing tool | 24 |
| groups of objects | 36 |
| groups of objects | 36 |
| marquee | 35 |
| multiple nodes or segments..... | 111 |
| multiple objects | 35 |
| multiple subpaths..... | 112 |
| new colors for textures, filling with bitmap | |
| textures..... | 68 |
| next and superimposed objects | 36 |
| next & superimposed objects..... | 36 |
| objects..... | 33, 106 |
| outline pen attributes from the Pen Roll-Up | 91 |
| parts of a curve | 110 |
| pattern from a dialog box | 62 |
| single node or segment..... | 111 |
| selecting and applying outlines | 86 |
| selecting (temporarily) multiple objects vs. | |
| grouping objects | 130 |
| separate subpaths, breaking a curve into | 120 |
| separate paths, making continuous curve from ... | 118 |
| separating | |
| to disk | 315 |

| | | | |
|--|-----|---|---------|
| to output device | 315 | Snap to Objects, drawing dimension lines..... | 31 |
| separations, color, creating..... | 303 | Snap To command, using..... | 133 |
| Separations dialog box | 295 | Snap to Object to resize objects | 135 |
| setting up | | snapping | 352 |
| Master layers | 142 | objects to other objects | 134 |
| multi-page document..... | 18 | objects to the grid | 133 |
| new drawing | 17 | objects to guidelines | 134 |
| work environment..... | 20 | softness, texture parameters, other, changing the | |
| setting preferences | 319 | texture parameters | 69 |
| setting parameters | 308 | sorting files..... | 281 |
| setting hotkeys, about | 236 | sound clips, Corel Libraries Catalog | 8 |
| settings | | source document | 262 |
| paper color | 17 | source file, jumping from a destination file to a | |
| setting up your page..... | 17 | source file..... | 267 |
| shaping | | sources for designing characters | 327 |
| basic terms and concepts..... | 110 | Space Width, Options option | 337 |
| ellipses to create arcs and pie wedges | 108 | specifying the intermediate fountain colors..... | 60 |
| lines and curves..... | 110 | specifying a scale | 133 |
| objects..... | 105 | spot color, outlining with black, white, and | |
| rectangles..... | 107 | shades of gray | 88 |
| shortcuts | | squares, drawing | 25 |
| Alt+F4 exits | 21 | starting CorelDRAW..... | 10 |
| Alt+F8 opens Rotate and Skew dialog box..... | 101 | Status Line | 10 |
| Alt+F9 opens Stretch and Mirror | | about | 11 |
| dialog box..... | 102 | displaying the radius of a rounded corner | 107 |
| Ctrl+N opens a new drawing..... | 17 | displaying the angle of the nodes of an arc..... | 108 |
| Ctrl+S saves a file..... | 19 | hiding | 12 |
| Ctrl+V pastes them from Clipboard..... | 42 | moving objects | 39 |
| Ctrl+C copies selected objects to Clipboard | 42 | selecting single objects | 34 |
| Ctrl+Z undoes the last operation | 104 | selecting objects | 34 |
| exiting | 21 | using with stretch and scale | 103 |
| F11 opens the Fountain Fill dialog box | 57 | status line with rotate and skew..... | 101 |
| for temporarily activating the Pick tool..... | 24 | with stretch and scale..... | 102 |
| moving to first/last page of document..... | 18 | storing attributes, right mouse button..... | 20 |
| redrawing the Drawing Window..... | 320 | storing notes, saving a new drawing | 19 |
| refreshing the drawing window..... | 48 | straight lines | |
| shift + F9 toggles between Wireframe View and | | drawing, Bézier mode | 28 |
| Editable Preview | 44 | drawing, freehand mode | 27 |
| Show Preview, Display menu | 48 | straight line threshold in tracing bitmaps | 258 |
| Show Bitmaps, Display Window..... | 48 | Straight Line Threshold, Preferences Curves | |
| Show Hierarchy, in Object Data Manager | 251 | option | 322 |
| Show Totals, in Object Data Manager..... | 251 | streamline, Roll-Ups | 15 |
| showing page border..... | 17 | stretch field, calligraphic outlines, creating..... | 94 |
| simple rectangles, snap points..... | 136 | stretch or scale an object using the mouse | 102 |
| single node, selecting..... | 111 | stretching/scaling handles, editing arrowheads..... | 92 |
| single, continuous curves | 118 | stretching scaling and mirroring objects | 102 |
| size, bitmaps | 275 | stretching and scaling curves | 123 |
| sizing your object, typefaces | 328 | striped effect, creating clipping holes or masks | 78 |
| sketches, quick, drawing lines and curves..... | 26 | style textures, modifying and saving texture fills | 70 |
| skewing, bitmaps | 254 | style, using Outline Pen dialog box | 89 |
| skewing and rotating curves | 123 | style formats..... | 237 |
| slide service, Autographix | 359 | Style, Options option..... | 337 |
| smooth, flowing curves, drawing lines and curves . | 26 | styles | 353 |
| smoothing a node..... | 121 | about | 233-234 |
| SMT circuits..... | 308 | applying..... | 235 |
| snap points | 136 | Artistic Text..... | 238 |

| | |
|---|---------|
| Uniform Color dialog box, filling with uniform colors | 55 |
| unlocking and locking layers | 140 |
| updating links | 265-266 |
| updating, styles..... | 237 |
| user textures, modifying and saving texture fills..... | 70 |
| users around the world, corel libraries catalog | 8 |

V

| | |
|--|--------|
| variable units | 13, 14 |
| vertical dimension lines, drawing..... | 31 |
| vertical scroll bars | 10 |
| viewing | |
| all objects in a drawing..... | 47 |
| all objects, Zoom tool..... | 47 |
| all objects on the drawing page, Zoom tool | 47 |
| facing pages..... | 47 |
| Help | 7 |
| Help, Always on Top..... | 7 |
| objects at actual size, Zoom tool | 47 |
| objects..... | 43 |
| our work..... | 43 |
| visible and invisible layers | 140 |

W

| | |
|---|----------|
| wedges | |
| aligning | 108 |
| shaping ellipses to create | 108 |
| Weld command..... | 142 |
| welding objects..... | 142 |
| width, using Outline Pen dialog box | 89 |
| Width, Options option | 337 |
| windows border..... | 10 |
| Windows | |
| new users | 9 |
| starting..... | 10 |
| Windows, Clipboard | 277 |
| about..... | 261, 277 |
| copying..... | 277 |
| cutting..... | 277 |
| pasting | 277 |
| Windows Dithering, Preferences, Display option .. | 324 |
| wireframe..... | 44 |
| working in editable preview or wireframe view | 44 |
| working with templates | 236 |
| working with bitmaps, about | 253 |
| working with other applications | 261 |

Z

| | |
|-----------------|-----|
| Zoom tool | 45 |
| zooming | 351 |
| in | 45 |
| out | 46 |

Corel PHOTO-PAINT

A

| | |
|---------------------------------------|-----|
| 24-Bit True Color image formats | 401 |
| 256 Color image formats | 401 |
| adjusting color | 387 |
| airbrush tool..... | 378 |
| artist | |
| brush..... | 376 |
| cloning..... | 378 |
| color effect..... | 396 |

B

| | |
|--------------------------------------|-----|
| background | |
| color..... | 367 |
| pattern..... | 366 |
| blend tool | 373 |
| blending colors | 390 |
| blurring colors | 393 |
| Brighten tool..... | 372 |
| Brightness and Contrast filter | 388 |
| brushes | |
| airbrush..... | 378 |
| artist..... | 376 |
| impressionist | 376 |
| paintbrush..... | 376 |
| pointillist | 376 |
| spraycan | 378 |

C

| | |
|-------------------------------|-----|
| calibrating monitors..... | 404 |
| Canvas Roll-Up..... | 366 |
| canvas pattern..... | 366 |
| capturing a screen | 404 |
| Ccapture facility | 404 |
| channels | |
| combining..... | 407 |
| splitting | 407 |
| circles, drawing..... | 383 |
| Clipboard | 400 |
| clone tool..... | 379 |
| cloning | |
| about | 379 |
| artist..... | 378 |
| impressionist | 380 |
| pointillist | 380 |
| Color Selection Roll-Up | 367 |
| color models | 399 |
| color replacer tool | 372 |
| Color/Gray Map filter..... | 387 |
| colors | |
| about | 367 |
| adjusting..... | 387 |

| | |
|--------------------------------|----------|
| airbrush tool..... | 378 |
| artist effect | 396 |
| background | 367 |
| blending | 373, 390 |
| blurring | 393 |
| brighten..... | 372, 388 |
| calibrating the monitor..... | 404 |
| cloning | 379 |
| color models | 399 |
| color/gray map filter | 387 |
| combining channels..... | 407 |
| contouring..... | 392 |
| contrasting | 388 |
| darken..... | 388 |
| diffusing | 390 |
| edge adjustments..... | 391, 392 |
| editing curves | 405 |
| editing images..... | 401 |
| embossing | 396 |
| enhancing details..... | 386 |
| equalizing..... | 386 |
| eyedropper tool | 371 |
| fills | 367 |
| gradient fill tool..... | 377 |
| gradients | 377 |
| granularity | 393 |
| Hue and Saturation filter..... | 389 |
| hues | 367, 387 |
| image formats | 398 |
| impressionist effect | 397 |
| intensity | 372 |
| inverting | 396 |
| lighten | 393 |
| negative effects | 395 |
| noise filters | 394 |
| outline | 389 |
| paint area | 362 |
| pixelating..... | 396 |
| pointillist effect | 397 |
| posterize | 393 |
| psychedelic | 393 |
| redistributing | 385 |
| replacing | 368, 372 |
| scattered color effect | 396 |
| sharpening | 389 |
| smearing | 373 |
| smoothing | 390 |
| smudging | 374 |
| softening..... | 390 |
| solarizing..... | 393 |
| special effects | 391 |
| splitting channels | 407 |
| spraycan tool | 378 |
| tinting | 373 |
| tolerance | 368 |
| combining channels | 407 |

Corel PHOTO-PAINT

| | |
|-----------------------------------|----------|
| Contour filter | 392 |
| contrast tool | 372 |
| contrasting colors | 386 |
| converting image formats | 401 |
| copying | 369, 398 |
| Corel PHOTO-PAINT, starting | 361 |
| curves | |
| creating | 403 |
| drawing | 381 |
| editing | 401 |
| map | 405 |
| printing | 403 |
| cutouts | 369 |
| cutting data | 369, 398 |

D

| | |
|----------------------------|-----|
| darken colors | 393 |
| deleting data | 369 |
| density tool | 364 |
| details, enhancing | 386 |
| diffusing color | 390 |
| drawing | |
| about | 375 |
| circles | 383 |
| curves | 381 |
| ellipses | 383 |
| lines | 381 |
| pen | 382 |
| polygons | 383 |
| rectangles | 382 |
| squares | 381 |
| duplicating, windows | 363 |

E

| | |
|---------------------------------|-----|
| Edge Detect filter | 391 |
| Edge Emphasis filter | 392 |
| edge detail, sharpening | 389 |
| edge tool | 364 |
| editing curves and images | 401 |
| effects, special | 389 |
| ellipses, drawing | 383 |
| Emboss filter | 396 |
| Enhance Detail filter | 387 |
| Equalize filter | 386 |
| equalizing colors | 386 |
| eraser tool | 372 |
| eyedropper tool | 371 |

F

| | |
|-----------------------------|----------|
| fade out | 364 |
| files, opening | 363, 400 |
| files, saving | 400 |
| Fill Settings Roll-Up | 366 |

fills

| | |
|--------------------------|----------|
| color | 367 |
| flood | 377 |
| gradient fill tool | 366, 377 |
| settings | 366 |
| texture | 366 |
| tile | 377 |

filters

| | |
|-------------------------------|----------|
| about | 385 |
| Adaptive Unsharp Mask | 390 |
| Add Noise | 394 |
| Artist | 396 |
| Blend | 390 |
| Brightness and Contrast | 388 |
| Color/Gray Map | 387 |
| Contour | 392 |
| Diffuse | 390 |
| Edge Detect | 391 |
| Edge Emphasis | 392 |
| Emboss | 396 |
| Enhance Detail | 389 |
| Equalize | 386 |
| Gamma | 388 |
| Hue and Saturation | 389 |
| Impressionist | 397 |
| Intensity | 386 |
| Invert | 396 |
| Jagged Despeckle | 395 |
| Maximum | 395 |
| Medium | 395 |
| Minimum | 395 |
| Motion Blur | 393 |
| Outline | 390 |
| Pixelate | 396 |
| Pointillist | 397 |
| Posterize | 393 |
| Psychedelic | 339 |
| Remove Noise | 395 |
| Restore | 384 |
| Sharpen | 389 |
| Smooth | 390 |
| Soften | 390 |
| Solarize | 393 |
| Special Effects | 391 |
| Threshold | 388 |
| Uniform | 394 |
| Unsharp Mask | 389 |
| flipping images | 369, 399 |
| flood fill | 377 |
| formats, image | 398 |
| freehand brush | 376 |

G

| | |
|--------------------------|----------|
| Gamma filter | 388 |
| gradient fill tool | 366, 377 |

| | |
|--------------------------------|-----|
| granularity | 393 |
| Gray scale image formats | 398 |

H

| | |
|-----------------------------------|----------|
| hand tool | 371 |
| Help, online | 364 |
| horizontally flipping images..... | 399 |
| Hue and Saturation filter | 387 |
| hues | 367, 387 |

I

| | |
|---|----------|
| image formats | |
| 24-Bit True Color | 401 |
| 256 Color | 401 |
| converting | 401 |
| Gray scale | 401 |
| Line art | 401 |
| printer halftone | 401 |
| screen halftone..... | 401 |
| images | |
| calibrating the monitor | 404 |
| combining channels | 407 |
| editing..... | 401 |
| flipping horizontally or vertically | 399 |
| information | 400 |
| positioning | 399 |
| resampling | 400 |
| rotating | 369, 399 |
| scanning | 403 |
| splitting channels..... | 407 |
| impressionist brush | 376 |
| impressionist cloning..... | 380 |
| impressionist color effect..... | 397 |
| Info command..... | 402 |
| Intensity filter | 388 |
| intensity in color | 372 |
| Invert filter..... | 396 |

J

| | |
|------------------------------|-----|
| Jaggy Despeckle filter | 395 |
|------------------------------|-----|

L

| | |
|----------------------------|-----|
| lasso selection tool..... | 370 |
| lighten colors | 393 |
| Line art image format..... | 401 |
| line tool | 381 |
| line variance | 364 |
| lines, drawing..... | 381 |
| locator tool | 371 |

M

| | |
|-----------------------------|----------|
| magic wand tool | 370 |
| map curves | 405 |
| masks, about | 371, 374 |
| monitors, calibrating | 404 |
| Motion Blur filter..... | 3931 |

N

| | |
|----------------------------|-----|
| negative-type photos | 395 |
| noise filters | 394 |

O

| | |
|---------------------|----------|
| online Help..... | 364 |
| opening files..... | 363, 400 |
| Outline filter..... | 389 |
| outline color..... | 389 |

P

| | |
|-------------------------------------|----------|
| painting tools | |
| about..... | 375 |
| airbrush | 378 |
| artist brush | 376 |
| brighten..... | 372 |
| cloning | 379 |
| flood fill | 377 |
| freehand brush | 376 |
| gradient fill | 377 |
| impressionist brush..... | 376 |
| pointillist brush | 376 |
| spraycan..... | 378 |
| texture fill | 378 |
| tile fill | 377 |
| pasting..... | 369, 398 |
| patterns | |
| background | 366 |
| canvas..... | 366 |
| tile | 366 |
| pen tool..... | 382 |
| PHOTO-PAINT, screen | 363 |
| PHOTO-PAINT, starting | 361 |
| Pixelate filter | 396 |
| Pointillist brush | 376 |
| Pointillist color effect | 397 |
| pointillist cloning | 380 |
| polygon selection tool | 370 |
| polygons, drawing | 383 |
| positioning images..... | 399 |
| Posterize filter | 393 |
| preferences, startup | 402 |
| prepress tools..... | 413 |
| preview printing | 403 |
| printer halftone image format | 398 |
| printing..... | 408 |

Corel PHOTO-PAINT

| | | | |
|-----------------------------------|----------|--|----------|
| Psychedelic filter | 393 | tile pattern..... | 366 |
| | | tint tool..... | 373 |
| R | | tolerance, color | 368 |
| rectangle selection tool | 370 | Tone Map facility..... | 405 |
| rectangles, drawing | 382 | Tool Settings Roll-Up | |
| replacing colors | 368 | about | 364 |
| resampling images | 400 | density..... | 364 |
| Restore filter..... | 384 | edge | 364 |
| Roll-Ups | | eraser..... | 372 |
| about..... | 365 | fade out..... | 364 |
| Canvas | 366 | line variance..... | 364 |
| Color Selection..... | 367 | shape | 364 |
| Fill Settings | 366 | spacing | 364 |
| Tool Settings..... | 365 | transparency..... | 364 |
| rotating images | 369, 399 | tool settings, about | 364 |
| | | tools, see also <i>selection tools</i> and <i>painting tools</i> | |
| S | | tools | |
| saturation, adjusting..... | 389 | airbrush..... | 378 |
| saving files | 400 | blend | 373 |
| scanning images | 403 | brighten | 372 |
| scattered color effect..... | 396 | cloning | 379 |
| screen capturing | 404 | color replacer | 372 |
| screen halftone image format..... | 401 | contrast | 372 |
| screen, PHOTO-PAINT | 363 | control menu..... | 364 |
| selecting areas | 369 | density..... | 364 |
| selection tools | | edge | 364 |
| about..... | 370 | eraser..... | 372 |
| hand..... | 371 | eyedropper | 371 |
| lasso..... | 370 | gradient fill..... | 366, 377 |
| locator | 371 | hand | 371 |
| magic wand | 370 | lasso | 370 |
| polygon..... | 370 | line | 381 |
| rectangle | 370 | locator..... | 371 |
| zoom | 371 | magic wand | 370 |
| Sharpen filter | 389 | painting | 375 |
| sharpen tool | 374 | pen | 382 |
| sharpening colors..... | 387 | prepress | 403 |
| smear tool | 373 | rectangle | 370 |
| smoothing color..... | 390 | selection..... | 370 |
| smudge tool | 374 | sharpen | 374 |
| softening color..... | 390 | smear | 373 |
| Solarize filter | 393 | smudge | 374 |
| Special Effects filter..... | 391 | spraycan | 378 |
| splitting channels..... | 407 | text | 384 |
| spraycan tool | 378 | tint..... | 373 |
| squares, drawing..... | 381 | toolbar | 364 |
| starting, PHOTO-PAINT | 361 | transparency..... | 364 |
| startup preferences | 402 | Undo..... | 371 |
| | | width | 364 |
| | | transparency..... | 364 |
| T | | | |
| text tool..... | 384 | U | |
| text, entering..... | 384 | Undo tool..... | 371 |
| Threshold filter..... | 388 | | |
| tile fill | 377 | | |

V

vertically flipping images 399

W

width tool 364

Windows

 duplicating 363

 menu 404

 screen capture 404

Z

zooming 371

CorelMOVE

A

Actor Information dialog box 470-471
 actors, see also *principles of animation*
 actors

- about 421
- characterization 501
- cloning 456
- creating 421-423, 499-502
- creating in CorelDRAW 490-494
- deleting 456
- duplicating 456
- editing 437, 470-471
- entering and exiting animations 470
- frame to start and end with 481
- importing 486-487
- Information dialog box 470-471
- layers 454-455
- libraries 456-458
- moving 454, 500
- multiple-cel 439-441, 443
- paths 460-463
- placing 454, 500
- position 470, 500
- saving 436
- selecting all 456
- single-cel 421
- speed 418, 500-501
- timing 501
- using Undo 423, 436, 463

animation, see also *principles of animation*
 animation

- about 413
- adding cues 476-477
- creating 416
- cloning 470-471
- entering and exiting actors 470
- entering and exiting props 472
- exporting 497-498
- Information dialog box 418
- layers 454-455
- movies 498
- opening 417
- playback controls 476-479
- playing 419, 482-483, 498
- replaying 419
- saving 417
- staging 501
- start and end frame 481
- stopping 419
- viewing 482
- window 414, 417

Animation Information dialog box 418

animation window 414, 417
 anti-aliasing 433
 Auto Replay 419

B

background color 430-431
 blending colors 432
 borders for windows 414
 brush tool 425

C

Cel Cycle, Arrows 431, 441
 Cel Cycle, Scroll bar 431, 441
 Cel Sequencer Roll-up 472-475
 cels

- Counter 432, 441
- Cycle Arrows 431, 441
- Cycle Scroll bar 431, 441
- duplicating 443
- inserting 440
- order of 472-475
- removing 441
- reversing 441
- Sequencer 472-475
- size of 474-475
- tracing 441-442

changing object type 496
 channel for sounds 448
 characterization of actors 499-502
 clearing paths 463
 Clipart images, importing 486
 Clipboard

- about 496
- copying objects 496
- cutting objects 496
- pasting objects 496

cloning objects 456
 colors

- background 430-431
- blending 432
- fill 428
- foreground 430-431
- outline 428
- Pick Up toll 427
- Selector 431
- tinting 432

conditions for playback 476-479
 Control panel 415
 controls for playback 476-479
 copying objects 455
 CorelDRAW, using to create actors and props 490-494
 CorelDRAW files, importing 486
 CorelMOVE

- about 413
- quitting 420

-
- screen 414
 - starting 414
 - creating, see also *principles of animation*
 - creating
 - actors 421-423, 499-502
 - animation 416, 499-502
 - multiple-cel actors 439-440, 443
 - objects using existing files 495
 - objects with other applications 494-495
 - paths 460
 - props 421-423, 499-502
 - sounds 445-448
 - Cue Information dialog box 476
 - cues
 - adding 476-477
 - deleting 478
 - frame to start and end with 478
 - curve tool 427-428
 - cutting objects 455
 - Cycle Scroll Arrows 431, 441
 - Cycle Scroll bar 431, 441
-
- D**
- deleting
 - cues 478
 - objects 455, 481
 - sounds 449
 - dialog boxes
 - Actors Information 418, 454
 - Animation Information 418
 - Cue Information 477
 - Import Imaging Options 486
 - Insert Cels 440
 - Insert Object 491
 - Open 417
 - Path Point Information 462
 - Playback Options 419
 - Prop Information 471-472
 - Record Wave 446
 - Scale Path 461
 - Select Name for New File 417
 - Sound Information 447-448
 - Transitions 466
 - Wave Editor 446
 - distributing, paths 461
 - drawing tools 427-428
 - duplicating
 - cels 443
 - objects 456
-
- E**
- editing
 - actors 437, 470-471
 - animations 470-471
 - imported objects 487
 - multiple-cel actors 443
 - objects created in other applications 495
 - paths 460-463
 - props 437, 470-471
 - sounds 448-450
 - text 429
 - Ellipse tool 427-428
 - Enable Sounds 419
 - Eraser tool 430
 - exit CorelMOVE 420
 - exporting
 - animations 497-498
 - to a film or movie 497-498
-
- F**
- files
 - exporting 497-498
 - importing 485-487
 - fills 428
 - films, making 498
 - foreground color 430-431
 - frames
 - copying objects between frames 492
 - counter 482
 - deleting 491
 - Frame Options dialog box 492-493
 - Frame Select Roll-Up 490-491
 - inserting 491
 - moving objects between frames 492
 - moving with points 463
 - number of 418
 - previewing frames 493-494
 - speed 418
 - start and end 481
 - TimeLines Roll-up 479-481
-
- G**
- graphics
 - exporting 497-498
 - importing 485-487
-
- I**
- Import Imaging Options dialog box 486
 - imported objects, editing 487
 - importing objects and files 486-487
 - Information dialog box 470-471
 - ink effects 435
 - inserting cels 440
-

L

| | |
|---------------------------|---------|
| Lasso tool..... | 424-425 |
| layers 454-455 | |
| libraries | 456-458 |
| Library Roll-up..... | 456-458 |
| line tool..... | 427 |
| line width selector | 427 |
| loops in paths..... | 463 |

M

| | |
|---|---------------|
| Menu bar | 414 |
| mirroring objects..... | 434 |
| mirroring points on a path..... | 461 |
| mistakes | |
| Revert Paint..... | 436 |
| Undo | 423, 436, 463 |
| moving | |
| frame with points..... | 463 |
| objects..... | 454 |
| points on a path..... | 461-462 |
| multiple-cel actors, see also <i>actors</i> | |
| multiple-cel actors | |
| creating..... | 437-440, 443 |
| editing..... | 443 |
| special effects | 441 |

O

| | |
|--|---------------|
| objects | |
| changing object type | 496 |
| cloning | 456 |
| copying..... | 455 |
| copying objects between frames..... | 492 |
| creating using existing files | 495 |
| creating with other applications | 494-495 |
| cutting..... | 455 |
| deleting | 455, 481 |
| duplicating | 456 |
| editing objects created in other applications .. | 495 |
| imported, editing | 487 |
| importing from other applications | 486 |
| libraries..... | 456-458 |
| mirror images | 434 |
| moving | 454 |
| moving objects between frames | 492 |
| pasting | 456 |
| rotating | 433-434 |
| scaling..... | 435 |
| selecting all..... | 456 |
| using Undo..... | 423, 436, 463 |
| zooming..... | 436, 465 |
| Onion Skin..... | 441-442 |
| order of cels..... | 472-475 |
| outline color | 428 |
| outline thickness..... | 428 |

P

| | |
|---|-------------------|
| paint | |
| window | 416, 423, 439 |
| palette..... | 416, 424 |
| tools..... | 425-427 |
| paint palette | 416, 424 |
| Paint window..... | 416, 439 |
| Paint Bucket tool | 425 |
| pasting objects..... | 456 |
| Path Edit Roll-up | 460-461 |
| Path Point Information dialog box | 462 |
| paths | |
| about | 459-460 |
| adding points | 462 |
| clearing..... | 463 |
| creating..... | 460 |
| distributing..... | 461 |
| editing..... | 460-463 |
| loops | 463 |
| mirroring points on | 461 |
| moving points..... | 461-462 |
| Path Edit Roll-up..... | 460-461 |
| Path Point Information dialog box | 462 |
| registering points | 464 |
| Scale Path dialog box..... | 461 |
| scaling | 461 |
| smoothing..... | 461 |
| Patterns Selector | 431 |
| Pencil tool..... | 427-428 |
| Pick tool..... | 415, 454 |
| placing | |
| actors and props | 454, 500 |
| sounds | 447 |
| playback controls..... | 476-479 |
| playback options | |
| Auto Replay..... | 419 |
| dialog box..... | 419 |
| Enable Sounds..... | 419 |
| Stop Animation | 419 |
| tools..... | 419 |
| playing | |
| animation | 419, 482-483, 498 |
| sounds..... | 451 |
| points | |
| adding to a path | 462 |
| mirroring on a path | 461 |
| moving frame with points..... | 463 |
| moving on a path..... | 461-462 |
| registering on a path..... | 464 |
| Polygon tool | 427-428 |
| principles of animation | |
| action..... | 499-501 |
| anticipation..... | 499 |
| arcs..... | 501 |
| characterization | 501 |
| drawing..... | 501 |

- exaggeration..... 501
 follow through action..... 500
 moving actors..... 500
 overlapping action..... 500
 placing actors..... 500
 pose-to-pose action..... 500
 secondary action..... 500
 slow in and slow out..... 500
 speed 501
 squash and stretch..... 499
 staging..... 501
 timing..... 501
 Prop Information dialog box..... 471-472
 props, see also *principles of animation*
 props
 about..... 421
 cloning..... 456
 creating..... 1421-423, 499-502
 creating in CoreDRAW..... 490-494
 deleting..... 456
 duplicating..... 456
 editing..... 437, 471-472
 entering and exiting an animation..... 472
 frame to start and end with..... 481
 importing..... 486-487
 Information dialog box..... 471-472
 layers..... 454-455
 libraries..... 456-458
 moving..... 454, 500
 paths..... 460-463
 placing..... 454, 500
 position..... 470, 500
 saving..... 436
 selecting all..... 456
 speed..... 418, 500-501
 timing..... 501
 Transition dialog box..... 466
 transition methods..... 464-467
 using Undo..... 423, 436, 463
-
- Q**
 quitting CoreMOVE..... 420
-
- R**
 Record Wave dialog box..... 446
 recording sounds..... 446
 Rectangle tool..... 427-428
 registration points on a path..... 464
 removing cels..... 441
 replaying animations..... 419
 resize paint window..... 423
 reversing cels..... 443
 Revert Paint..... 436
 rotating objects..... 433-434
-
- S**
 saving
 actors..... 436
 animations..... 417
 props..... 436
 sounds..... 451
 Scale Path dialog box..... 461
 scaling
 objects..... 435
 paths..... 461
 windows..... 414
 selection tools
 colors..... 430-431
 lasso..... 424-425
 marquee..... 424-425
 patterns..... 431
 single-cel actors, see *actors*
 sizing
 animation window..... 423
 cels..... 474
 smoothing paths..... 461
 Sound Information dialog box..... 447-448
 sounds
 about..... 445
 channel..... 448
 creating..... 445-448
 deleting..... 449
 editing..... 448-450
 ending..... 447
 frame to start and end with..... 447
 libraries..... 456-458
 placing..... 447
 playing..... 451
 playing time, setting..... 448
 priority..... 447
 recording..... 446
 repeating..... 448
 saving..... 451
 Sound Information dialog box 447-448
 special effects..... 450-451
 starting..... 447
 turning on and off..... 482, 450-451
 volume..... 447
 Wave Edit dialog box..... 446
 wave forms..... 448-449
 Sounds Enable..... 419
 special effects
 about..... 432, 441
 anti-aliasing..... 433
 flipping objects..... 434
 ink effects..... 435
 multiple-cel actors..... 441
 rotating..... 433-434
 scaling objects..... 435
 sounds..... 450-451
 tint blending..... 433

| | |
|--------------------------------|----------|
| Undo | 436 |
| speed | |
| actors and props | 418, 501 |
| setting | 418, 501 |
| Spray Can tool | 426 |
| squashing and stretching | 499 |
| staging | 501 |
| Stop Animation | 483 |

| | |
|-----------------------|-----|
| copying objects | 496 |
| cutting objects | 496 |
| pasting objects | 496 |

Z

| | |
|---------------|----------|
| zooming | 436, 465 |
|---------------|----------|

T

| | |
|------------------------------|----------|
| text | |
| editing | 429 |
| tools | 429 |
| TimeLines Roll-up | 479-481 |
| timing | 501 |
| tinting colors | 432 |
| Title bar | 414 |
| Toolbox | 415 |
| tools | |
| about | 425-429 |
| Color Pick-Up | 426 |
| drawing | 427-428 |
| eraser | 430 |
| lasso | 424-425 |
| paint palette | 416, 424 |
| painting | 425-427 |
| Pick | 415, 454 |
| playback | 419 |
| selection | 424-425 |
| text | 429 |
| tracing cels | 441-442 |
| transition methods | 464-467 |
| Transitions dialog box | 466 |

U

| | |
|------------|---------------|
| Undo | 423, 436, 463 |
|------------|---------------|

V

| | |
|-------------------------|-----|
| viewing animation | 482 |
| volume | 447 |

W

| | |
|----------------------------|---------------|
| Wave Edit dialog box | 446 |
| wave forms | 448-449 |
| windows | |
| animation | 414, 417 |
| border | 414 |
| paint | 416, 423, 439 |
| scaling | 414 |
| sizing | 423 |
| Windows Clipboard | |
| about | 496 |

CorelCHART

A

| | |
|------------------------|----------|
| 3-D charts | 550 |
| 3-D Roll-Up | 526, 554 |
| analyzing data | 538 |
| annotations | 526, 556 |
| Autoscan feature | 537 |

B

| | |
|---------------|---------|
| bitmaps | 562-563 |
|---------------|---------|

C

| | |
|---|----------|
| cell borders | 539 |
| cells | |
| borders | 539 |
| ordering | 547 |
| sorting | 540 |
| tagging automatically | 536 |
| tagging manually | 536 |
| Chart View, moving to Data Manager | 527, 543 |
| chart elements | |
| applying color | 557 |
| bitmaps | 559 |
| fountain fills | 559 |
| resizing | 556 |
| showing and hiding | 547 |
| vector graphics | 562 |
| chart files, saving | 543 |
| chart types | |
| about | 521, 546 |
| high-low-open-close | 550, 586 |
| histogram | 552, 586 |
| horizontal bar | 586 |
| multi-pie | 586 |
| pie | 586 |
| scatter | 550, 586 |
| spectral mapping | 551, 586 |
| stacked vertical bar | 585 |
| table | 553, 587 |
| vertical area | 586 |
| vertical bar | 585 |
| vertical line | 586 |
| charts, see also <i>chart elements</i> and <i>chart types</i> | |
| charts | |
| 3-D | 550 |
| changing the order of items | 547 |
| closing | 531 |
| color | 557 |
| combination | 549 |
| creating | 527 |
| designing | 585 |
| exporting | 565 |

| | |
|-------------------------------------|----------|
| grid lines | 548 |
| headings for columns and rows | 547 |
| importing files | 530, 542 |
| linking to a destination file | 564 |
| opening | 529 |
| page setup | 546 |
| pictographs, adding | 563 |
| pie slices | 554 |
| printing | 565 |
| resize elements | 556 |
| scale range | 548 |
| templates | 546 |
| closing CorelCHART | 531 |
| colors | |
| applying to chart elements | 557 |
| bitmaps | 559 |
| fountain fills | 559 |
| on-screen color palette | 526 |
| vector graphics | 562 |
| column width, formatting | 539 |
| columns headings | 547 |
| combination charts | 549 |
| constrain features, summary | 567 |
| CorelCHART | |
| about | 521 |
| closing | 531 |
| online Help | 531 |
| starting | 522 |
| creating a chart | 529 |

D

| | |
|-----------------------------------|----------|
| data | |
| entering and editing | 534 |
| formatting, see <i>formatting</i> | |
| importing | 536 |
| moving | 535 |
| selecting | 535 |
| data analysis | 537 |
| Data Manager | |
| about | 527, 534 |
| entering and editing data | 534 |
| formatting, see <i>formatting</i> | |
| grids | 541 |
| math functions | 537 |
| moving to Chart View | 527, 543 |
| printing | 543 |
| spreadsheet functions | 529 |
| dates, formatting | 538, 548 |
| DDE | 530, 542 |
| designing charts | 585 |
| Dynamic Data Exchange | 530, 542 |

E

| | |
|--------------------------|---------------|
| editing data | 534, 556 |
| entering data | 534 |
| exiting CorelCHART | 531 |
| exporting files | 530, 542, 565 |

F

| | |
|-------------------------------|--------------------|
| files | |
| closing | 530 |
| creating | 529 |
| exporting | 530, 536, 542, 564 |
| importing | 530, 536, 542, 563 |
| opening | 529 |
| saving | 543 |
| Fill Roll-Up | 525 |
| formatting | |
| borders | 539 |
| column width | 539 |
| numbers and dates | 538, 548 |
| row height | 539 |
| text | 539, 548 |
| formulas | 537 |
| fountain fills | 559 |
| functions, mathematical | 537 |

G

| | |
|-----------------------------|----------|
| graphics | |
| annotation | 526, 556 |
| importing | 564 |
| vector | 562 |
| grid lines | 548 |
| Grids in Data Manager | 541 |

H

| | |
|------------------------------------|----------|
| headings in columns and rows | 547 |
| Help, online | 531 |
| high-low-open-close charts | 550, 586 |
| hints | 587 |
| histograms | 552, 586 |
| horizontal bar charts | 586 |

I

| | |
|--------------------------|---------------|
| importing files | 530, 536, 542 |
| importing graphics | 564 |

L

| | |
|-------------------------------------|----------|
| lessons in using CHART | 569 |
| lines, grid | 548 |
| linking | |
| a chart to a destination file | 564 |
| to other applications | 530, 542 |

M

| | |
|------------------------------|-----|
| mathematical functions | 537 |
| menu bar | 522 |
| moving data | 535 |
| multi-pie charts | 586 |

N

| | |
|---------------------------|----------|
| numbers, formatting | 534, 548 |
|---------------------------|----------|

O

| | |
|-------------------------------------|---------------|
| Object Linking and Embedding | 530, 564, 565 |
| OLE | 530, 564 |
| on-screen color palette | 526 |
| online Help | 531 |
| opening a chart | 529 |
| order of cell items, changing | 547 |
| Outline Roll-Up | 526 |

P

| | |
|--------------------------------------|----------|
| page setup | 546 |
| pasting OLE objects | 564 |
| pictographs, adding to a chart | 563 |
| pie charts | 554, 586 |
| printable page | 522 |
| printing | 543, 565 |

R

| | |
|---------------------------------|---------|
| range of numbers in cells | 547 |
| replacing text | 540 |
| resizing chart elements | 556 |
| roll-ups | |
| 3-D Roll-Up | 525 554 |
| Fill Roll-Up | 525 |
| Outline Roll-Up | 526 |
| row height | 539 |
| rows, headings | 547 |

S

| | |
|------------------------------------|----------|
| sample cases for practice | 569 |
| saving chart files | 543 |
| scale range for numbers | 548 |
| scatter charts | 550, 586 |
| searching and replacing text | 540 |
| selecting data | 535 |
| sorting cells | 540 |
| spectral mapping charts | 581, 586 |
| spreadsheet functions | 529 |
| stacked vertical bar charts | 585 |
| starting CorelCHART | 522 |

T

| | |
|---|----------|
| table charts | 550, 573 |
| tagging cells automatically | 536 |
| tagging cells manually..... | 536 |
| templates..... | 546 |
| text ribbon..... | 525 |
| text | |
| annotation | 526, 556 |
| editing..... | 534, 551 |
| formatting..... | 538, 546 |
| searching and replacing..... | 540 |
| tips | 587, 588 |
| toolbox | 522 |
| types of charts, see <i>chart types</i> | |

V

| | |
|----------------------------|-----|
| vector graphics | 562 |
| vertical area charts | 585 |
| vertical bar charts | 585 |
| vertical line charts | 586 |

W

| | |
|---------------------|-----|
| width, columns..... | 539 |
| windows | 5 |



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