

BJC-4400

SERVICE REFERENCE MANUAL

REVISION 0

Q30-2830-220	120V(CCSI)
Q30-2830-221	120V(CAN)
Q30-2830-222	(UNIVERSAL)
Q30-2830-230,630	220V-240V(EUR)
Q30-2830-231,631	220V-240V(GER)
Q30-2830-232,632	220V-240V(FRN)
Q30-2830-280,680	220V-240V(UK)

Canon

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QY8-13P1-000

Application

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I. PREFACE

This manual is based on the following manuals, and only includes differences between **BJC-4300** and **BJC-4400**.

QY8-1352-000 BJC-4300 SERVICE MANUAL, Rev.0

II. CONTENTS

CHAPTER 1: MAJOR CHANGES

This chapter explains the main differences between BJC-4300 and BJC-4400.

CHAPTER 2: SERVICE MANUAL

This chapter explains the main differences between the SERVICE MANUAL of the BJC-4300 and BJC-4400.



· Page No. displayed are those of pages to be replaced for each item.

CHAPTER 1

MAJOR CHANGES

I. MAJOR CHANGES

BJC-4400 contains the following modifications compared to BJC-4300.

1.1 PRODUCT SPECIFICATIONS

1. Faster throughput speed(especially in HS mode)
2. T-shirt Transfer (TR-201) added as media type

1.2 PRINTER MECHANICAL SYSTEM

1. Countermeasures for quality improvements to the current model were incorporated
Shape changes : Carriage, paper delivery guide, platen and bottom case
Additional changes : Increased area and amount of grease application

1.3 PRINTER ELECTRICAL SYSTEM

1. To improve throughput speed, the carriage motor, the paper feed motor and the motor driver were modified.

CHAPTER 2

SERVICE MANUAL

1. PRODUCT OUTLINE

1.1 Product Outline

This full color bubble jet desktop printer not only realizes high image printing through the implementation of the PhotoRealism concept, but also higher speed printing compared to previous models.

This printer achieves high image printing by adopting "drop modulation technology" in the color BJ cartridge and the photo BJ cartridge.

The expanded printing environment has allowed the printer to have banner printing capabilities. The printer can also be used as a compact color scanner when the scanner cartridge is installed in the carriage. All the function settings are easily set by the personal computer. The operation is easily performed with the bidirectional Centronics interface (effective only for the device ID response)

This printer uses a built-in AC adapter. This is a small and light weight personal color printer with high performance capabilities.

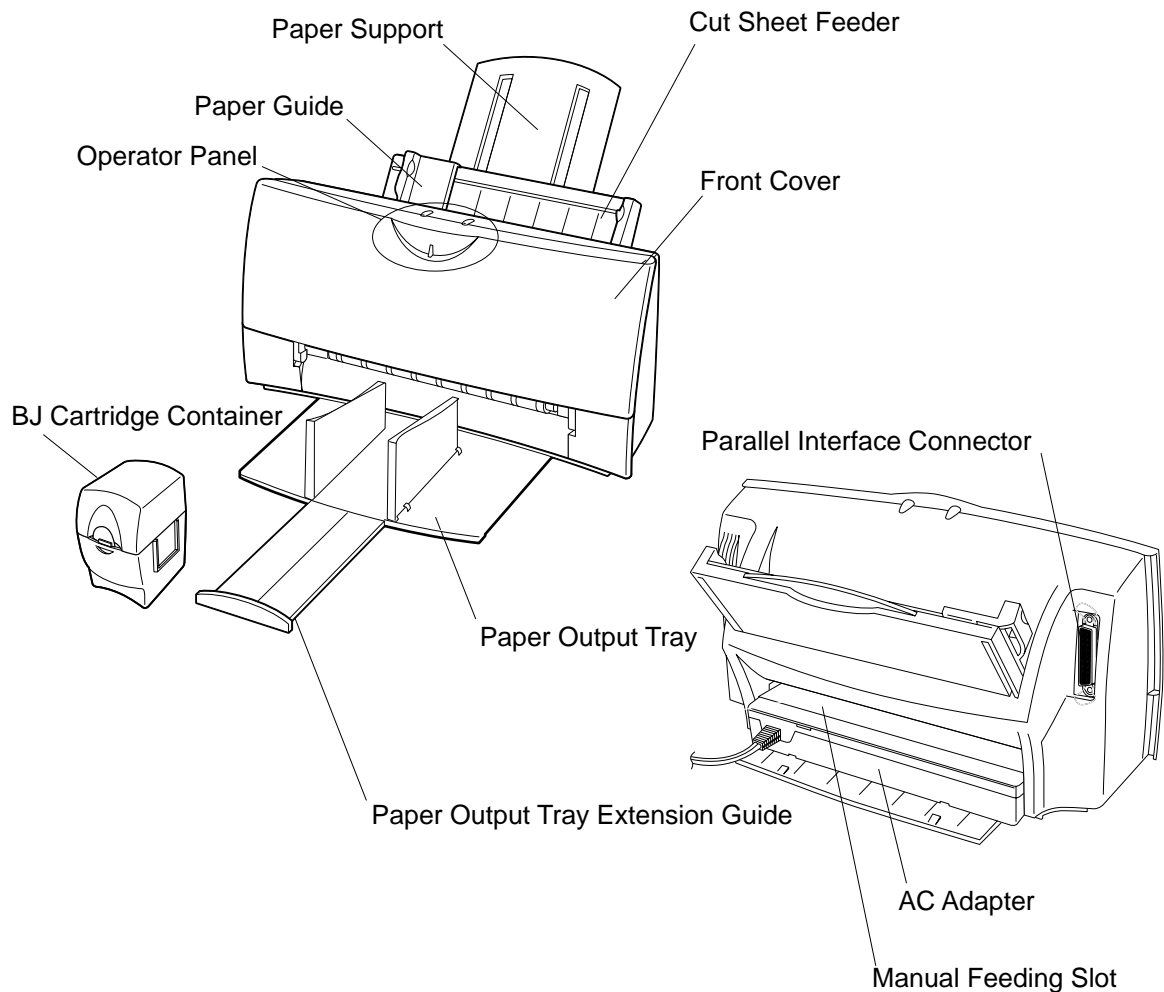


Figure 2-1 Printer Exterior

1.2 Features

1. Higher speed printing
 Black BJ Cartridge : 5.5 PPM (HS mode)
 Color BJ Cartridge : 2.2 PPM (HS mode)
2. Compact (desk-top size)
 Dimensions: 383 mm W x 231.6 mm D x 203 mm H
 Weight: Approx. 3.5 kg (7.7 lbs) (including color BJ cartridge)
3. Built-in AC adapter employs a high-current capable switching power supply.
4. Automatic power control (auto power on/off)
5. High quality printing of 720 x 360 dpi (in both monochrome and black when using the special printer driver)
6. Two standard built-in printer control modes
 LQ mode (EPSON LQ-2550 emulation)
 BJ mode (IBM Proprinter X24E emulation)
 [Canon extended mode is supported when using the canon printer driver.]
7. User replaceable BJ cartridge and adopting drop modulation technology color/ photo BJ cartridge .

Color BJ Cartridge (Multi drop)	Drop modulation technology has been adopted. It has separate ink cartridges (Bk) (Y, M, C) and the head with 136 nozzles in a vertical line; 64 nozzles (Bk) + 24 nozzles x 3 (Y, M, C).
Black BJ Cartridge	Contains the black ink and the head with 128 nozzles. Depending on each sales territory, it is not packed with the printer, but is available separately.
Photo BJ Cartridge (Multi drop)	Drop modulation technology has been adopted. It has integrated ink cartridges with the head with 136 nozzles in a vertical line; 64 nozzles (Bk) + 24 nozzles x 3 (Y, M, C).
Black ink cartridge	Black ink cartridge for the color BJ cartridge.
Color ink cartridge	Tri-color (Y, M, C) ink cartridge for the color BJ cartridge.

(*Previous color and photo BJ cartridges that do not use drop modulation technology may be used, however the printing quality will be the same as when drop modulation technology is not used.)
8. Device ID compatible to "Plug and Play"
 (Responds only to the device ID/status of nibble mode)
9. Banner printing capabilities.
10. Capable of the double paper feeding with the leverless cut sheet feeder and manual feed. (It is possible to feed paper manually even when the paper has been set on the cut sheet feeder.)
11. Photo quality printing using the Photo kit option and the photo printing special driver.
12. Cartridge container packed with the printer.
13. High quality photo image input using the option color image scanner cartridge.

2. SPECIFICATIONS

2.1 Printer Specifications

1. Type

Desk-top serial color bubble jet printer

2. Paper feeding method

Auto feeding and manual feeding

3. Cut Sheet Feeder capacity

Plain paper: Maximum 10 mm (approximately 100 pages of 64g/m² paper)

Envelopes: 10 envelopes (Commercial number 10 and DL)

Transparencies: 50 sheets

BPF: 10 sheets

Glossy film/ BJ cloth: One page with the manual feeding

Scanning document: Place between the scanning holder. One page with the ASF.

4. Manual feeding slot capacity

One sheet

5. Paper weight

Automatic feed / Manual feeding slot: 64 to 105 g/m² (17 lbs to 28 lbs)

6. Printing speed

Burst

	Color BJ Cartridge (Black printing)	Black BJ Cartridge (Black printing)
HQ mode	173 cps (10 cpi)	346 cps (10 cpi)
HS mode	271 cps (10 cpi)	542 cps (10 cpi)

7. Printing direction

Unidirectional

(Print direction is automatically changed according to optimum printing directional control.)

8. Printing width

Maximum 8"

9. Line feed speed

90 ms/line (128/360" line)

10. Built-in printing control modes

LQ mode: Epson LQ-2550 emulation

BJ mode: IBM Proprinter X24E emulation

(Canon extended mode is supported when the Canon driver is used.)

11. Line feed pitch (n: programmable)

LQ mode: 1/6", 1/8", n/60", n/72", n/180", n/216", and n/360"

BJ mode: 1/6", 1/8", n/180", and n/360"

11. Printing characters

Typefaces:	LQ&BJ mode	Roman, Gothic, Courier, Prestige, Script, Draft
Pitch:	LQ mode	10, 12, 15, 17, 20 cpi, and PS
	BJ mode	10, 12, 17 cpi, and PS
Character matrix:	HQ mode	36 (H) x 48 (V) dots
	HS mode	18 out of 36 (H) x 48 (V) dots
Character set:	LQ mode	Italic character set and Graphic character set and International character set
	BJ mode	IBM character set 1, 2 and all character set (code page 437, 850, 852 860, 863 and 865)

12. Number of columns printed

	Mode	Pitch	cpl *
LQ mode	10 cpi	10 cpi	80 cpl
	10 cpi doublewide	5 cpi	40 cpl
	10 cpi condensed	17 cpi	137 cpl
	10 cpi condensed-doublewide	8.5 cpi	68 cpl
	12 cpi	12 cpi	96 cpl
	12 cpi doublewide	6 cpi	48 cpl
	12 cpi condensed	20 cpi	160 cpl
	12 cpi condensed-doublewide	10 cpi	80 cpl
	15 cpi	15 cpi	120 cpl
	15 cpi doublewide	7.5 cpi	60 cpl
	Proportional spacing	PS	Varies
BJ mode	10 cpi	10 cpi	80 cpl
	10 cpi doublewide	5 cpi	40 cpl
	10 cpi condensed	17 cpi	137 cpl
	10 cpi condensed-doublewide	8.5 cpi	68 cpl
	12 cpi	12 cpi	96 cpl
	12 cpi doublewide	6 cpi	48 cpl
	Proportional spacing	PS	Varies

* cpl: characters per line

13. Bit image

Vertical: 8, 24 and 48 dots

Horizontal: 60, 120, 180, 240, 360 and 720* dpi

* In smoothing mode or when using the Canon driver.

14. Buffer

	Receive buffer	Download buffer
LQ mode	22 kB	32 kB
BJ mode	22 kB	0 kB

15. Interface

IEEE1284 compatible parallel interface

16. BJ cartridge**Color BJ cartridge (Multi Drop)**

Type: Color BJ cartridge with replaceable ink cartridges

Print head: 136 nozzles (vertically-lined) Bk (64 nozzles) + Y, M, C (24 nozzles x 3)

Ink colors: Black, cyan, magenta, yellow

Service life:

Approximately 160 pages (in the HQ mode with 1500 character pattern) with a black cartridge

Approximately 90 pages (in the HQ mode) with a color cartridge (7.5% duty per color pattern)

Weight: Approximately 85 g (3.0 oz) (including black and color ink tanks)

Black BJ cartridge

Type: Black BJ cartridge with integrated ink

Print head: 128 nozzles (vertically-lined)

Ink color: Black

Service life: Approximately 700 pages (in the HQ mode); cartridge

Weight: Approximately 85 g (3.0 oz)

Photo BJ cartridge (Multi Drop)

Type: Color BJ cartridge with integrated ink

Print head: 136 nozzles (vertically-lined) Bk (64 nozzles) + Y, M, C (24 nozzles x 3)

Ink colors: Black, cyan, magenta, yellow

Service life: Approximately 25 pages (in the Photo mode); cartridge

Weight: Approximately 74 g (2.8 oz)

17. Sensor functions

Paper out: Provided

Installation of cartridge: Provided

BJ cartridge/Scanner cartridge identification: Provided

Waste ink amount: Provided

Ink out: None

Paper width: None

18. Acoustic noise level

Approximately 45dB (A)/ HQ 48dB (A)/ HS

(Sound pressure level: According to ISO 9296)

19. Ambient conditions

	During operation	During storage
Temperature	5°C to 35°C (41°F to 95°F)	0°C to 35°C (32°F to 95°F)
Humidity	10% to 90%RH (no condensation)	5% to 95%RH (no condensation)

20. Power source

	Voltage/Frequency	Power consumption	Stand-by status
USA/Canada	AC 120V 60 Hz	Max. 30 W	Max. 4 W
UK/Australia	AC 240V 50 Hz		
Europe	AC 230V 50 Hz		

21. Dimensions

383 mm W × 231.6 mm D × 203 mm H

22. Weight

Approximately 3.5 kg (7.7 lbs) (including BJ cartridge)

2.3 Paper Specifications

2.3.1 Paper size

- Letter (8.5" × 11")
- Legal (8.5" × 14")
- A5 (148 mm × 210 mm)
- A4 (210 mm × 297 mm)
- Commercial number 10 envelope (9.5" × 4.1")
- European DL-size (220 mm × 110 mm)

2.3.2 Paper type (Recommended)

- Plain paper
- Bubble jet paper (Canon LC-301)
- Envelope (Commercial number 10 or European DL)
- Transparencies (Canon transparency film CF-102)
- BPF (Canon back print film BF-102)
- Glossy photo paper (Canon glossy paper GP-201)
- High gloss paper (Canon high gloss Film HG-101)
- Fabric (Fabric sheet FS-101)
- Banner (Banner paper)
- T-shirt transfer (Canon T-shirt Transfer TR-201)

2.3.3 Print paper

Media	Thickness Lever		Paper Feed		Flap Position
	Black	Color/Photo	Method	Limit	
Plain paper	Left	Center	Sheet feeder	10 mm	Flat
High resolution paper		Center	Sheet feeder	10 mm	Upright
Envelopes		Right	Sheet feeder	10	Flat
Transparencies		Center	Sheet feeder	50 sheets	Upright
Back print film		Center	Sheet feeder	10 sheets	Upright
Glossy photo paper		Center	Sheet feeder	1 sheet	Upright
Banner paper		Right	Sheet feeder	1 sheet	Upright
Fabric sheet		Right	Sheet feeder	1 sheet	Upright
High gloss film		Center	Manual feed slot	1 sheet*1	Upright
T-shirt transfer		Right	Sheet feeder	1 sheet	Flat

1.2 Printer Dimensions

The printer's dimensions are shown below. Allow enough space for the printer to be used with ease. For banner printing leave a space about the size of an A4-size paper in front of the printer. Also allow enough space at the back of the printer to set the banner paper.

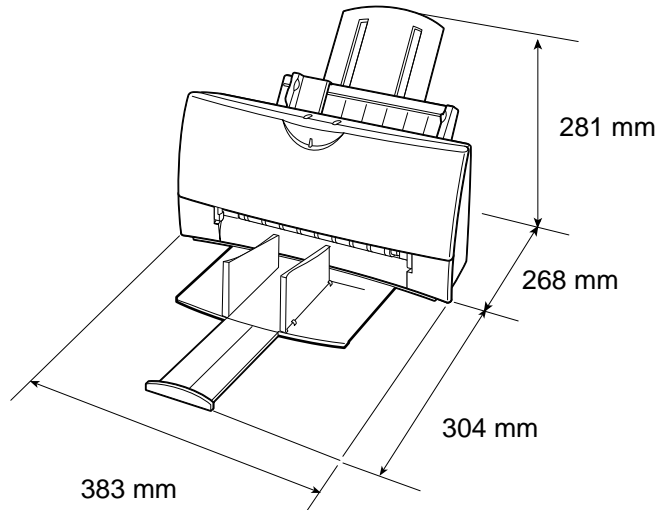


Figure 3-2 Printer Dimension



- Do not place the printer in excessive heat or humidity.
- Operate the printer under the following conditions:
 - Ambient temperature: 5°C to 35°C
 - Relative humidity: 10% to 90% (no condensation)
- Do not place the printer in direct sunlight.
- Do not place the printer near a device containing a magnet or that generates a magnetic field.
- Place the printer on a level and stable surface.
- Do not place the printer in areas subject to vibration.
- Keep the printer clean.
- When moving the printer, hold both ends.

1.5 Paper Settings

For optimum printing, the printer has various paper settings to suit various types of paper. Set the paper selection lever before loading the paper.

TABLE 3-1 QUICK REFERENCE FOR SETTING

Media	Thickness Lever		Paper Feed		Flap Position
	Black	Color/Photo	Method	Limit	
Plain paper	Left	Center	Sheet feeder	10 mm	Flat
High resolution paper		Center	Sheet feeder	10 mm	Upright
Envelopes		Right	Sheet feeder	10 envelopes	Flat
Transparencies		Center	Sheet feeder	50 sheets	Upright
Back print film		Center	Sheet feeder	10 sheets	Upright
Glossy photo paper		Center	Sheet feeder	1 sheet	Upright
Banner paper		Right	Sheet feeder	1 sheet	Upright
Fabric sheet		Right	Sheet feeder	1 sheet	Upright
High gloss film		Center	Manual feed slot	1 sheet* ¹	Upright
T-shirt Transfer		Right	Sheet feeder	1 sheet	Flat

*1 Slide one sheet all the way into the manual feeding slot.

1.6 Banner Print

When printing on banner paper, lower the paper support and set the paper delivery flap to the upright position. To avoid misfeeding, put a light crease between the first and second page and set the first page in the sheet feeder. Place the rest of the banner paper behind the printer. Do not use the manual feeding slot to avoid skewing.

Each top margin for banner printing is set at 0mm. However, to avoid printing on the platen, printing will start 3mm from the initial top margin. Set an extra sheet at the end in case the bottom edge is not printed on the last page.

Banner printing uses a large amount of ink. To avoid ink shortage, use of a new ink cartridge before banner printing is recommended.

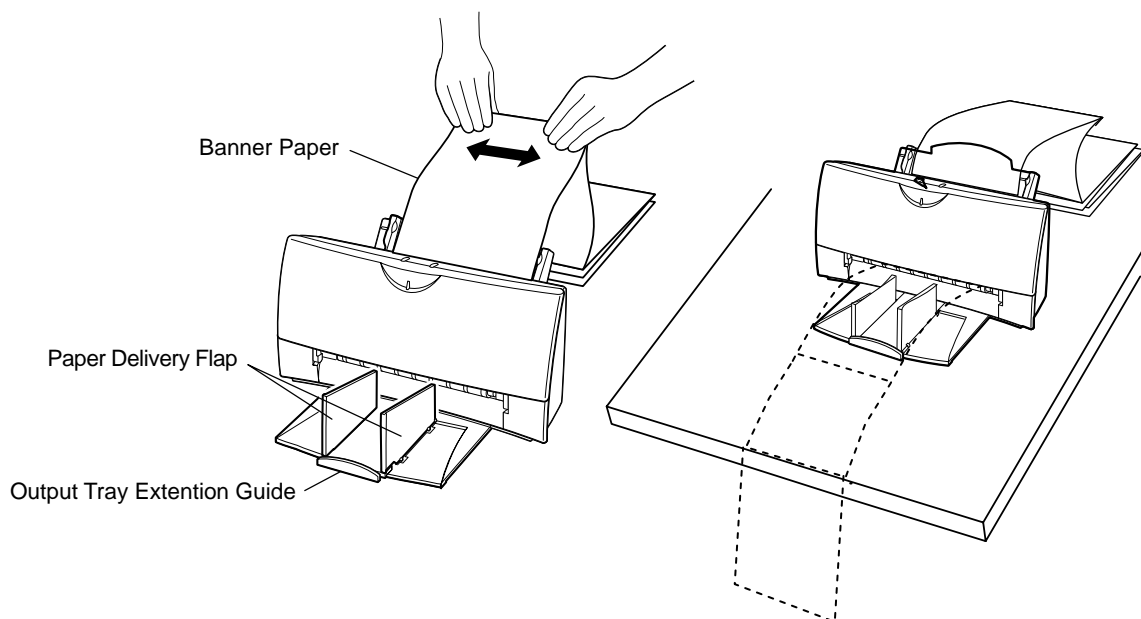


Figure 3-12 Banner Print

7 Name of the Parts and Their Functions

The different parts of the printer and their functions are shown below.

Paper Support

Supports the stack of paper loaded in the cut sheet feeder.

Cut Sheet Feeder

Holds a stack of approximately 100 cut sheets (64g/cm³) for automatic feeding.

Paper Guide

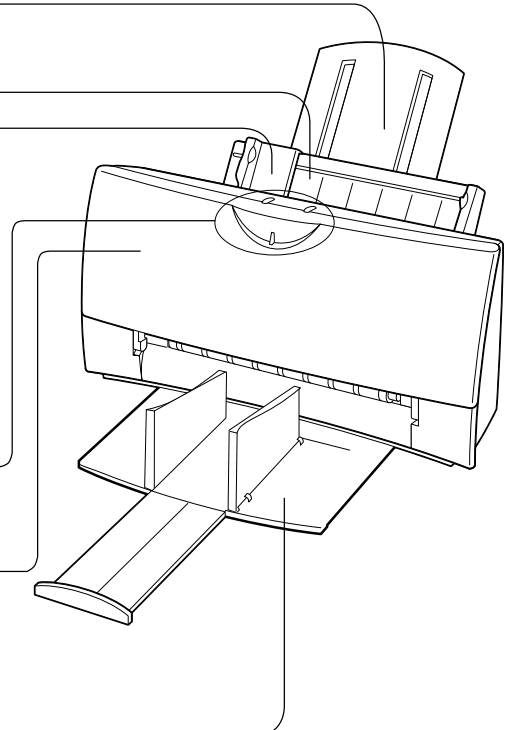
Aligns the cut sheets in the cut sheet feeder according to the paper size. A maximum paper width of 241 mm (9.64 in.) can be set. Autofeeds banner paper and scanning document.

Control Panel

See the next page.

Front Cover

Open to install or remove the cartridge, set the paper thickness lever, or remove the jams paper.



Paper Output Tray

Pulls out to receive the printed sheets.

Manual Feeding Slot

Use for feeding media manually.

AC Adapter

Installed on the rear of the printer, the AC adapter supplies power from the power outlet to the printer. Depending on the location of purchase, the power cable is permanently attached to the AC adapter where as in some areas the power cable is detachable.

Parallel Interface Connector

Connects the printer to the parallel port on the computer.

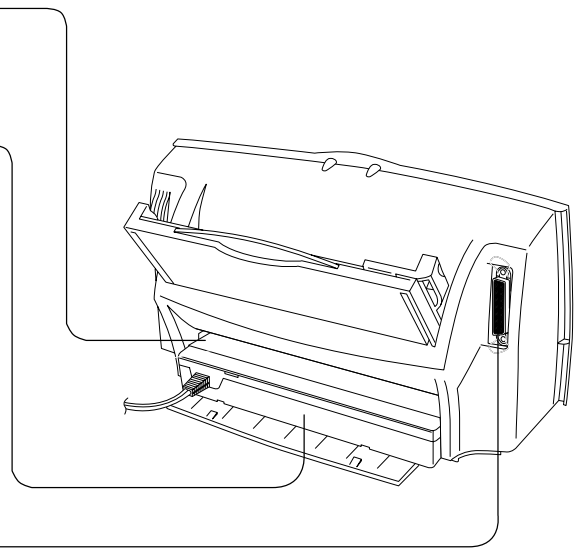


Figure 3-13 Name of the Parts and Their Functions

1. OVERVIEW

1.1 Printer Diagram

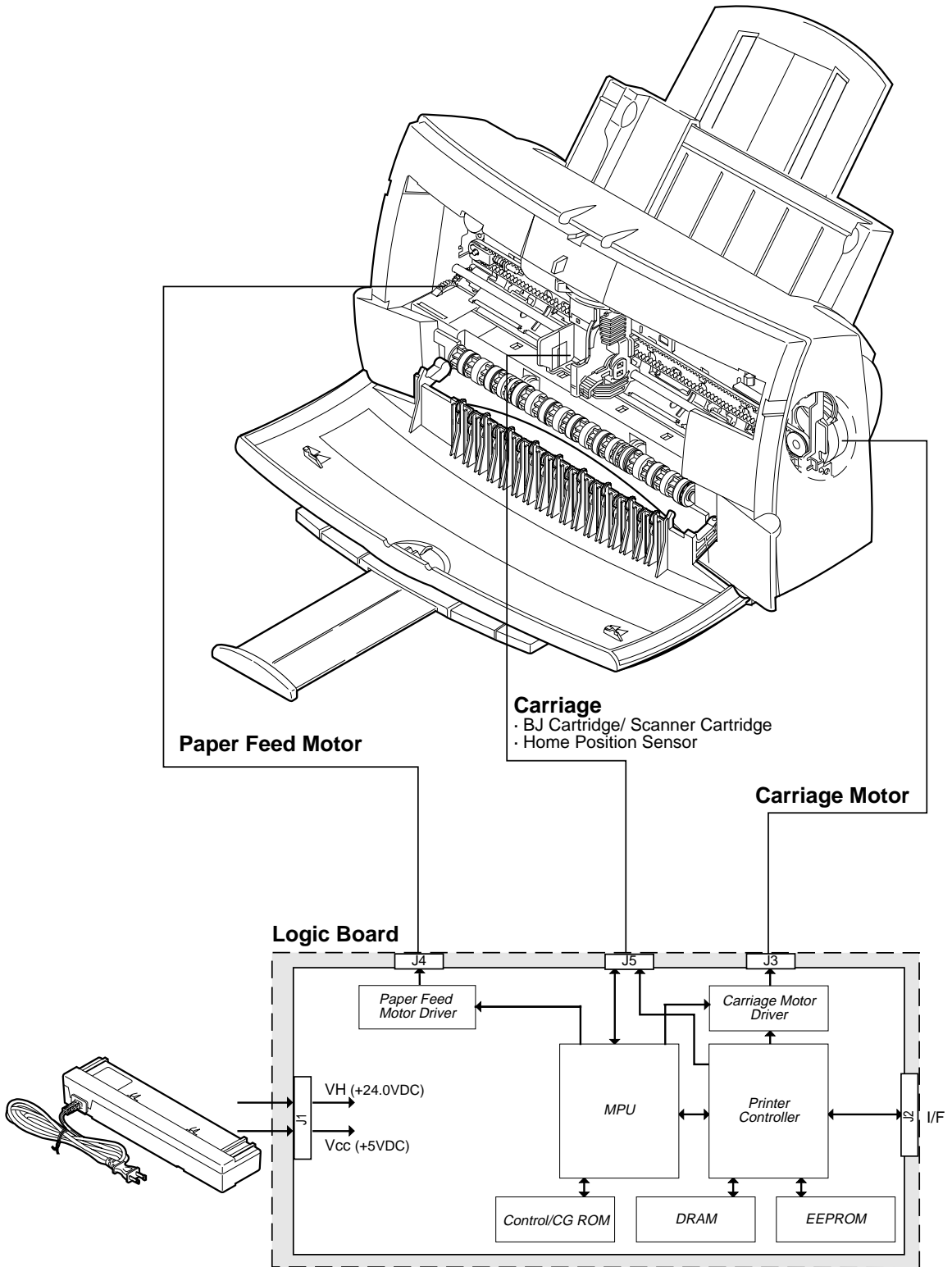


Figure 4-1 Printer Diagram

4. PRINTER ELECTRICAL SYSTEM

4.1 Overview

The electrical system functions are handled by the logic section or power supply.

The logic section converts the data from the interface into print signals or printer operation signals and drives the BJ cartridge and motors while monitoring the status of the sensors.

The power supply unit consists of a built in AC adapter which provides DC output to the logic board, motors and head etc. When DC input power from the AC adapter is being supplied, all of the hardware components are active except for the following which are inactive: All buttons except the *POWER* button, and the photo interrupter's sensor.

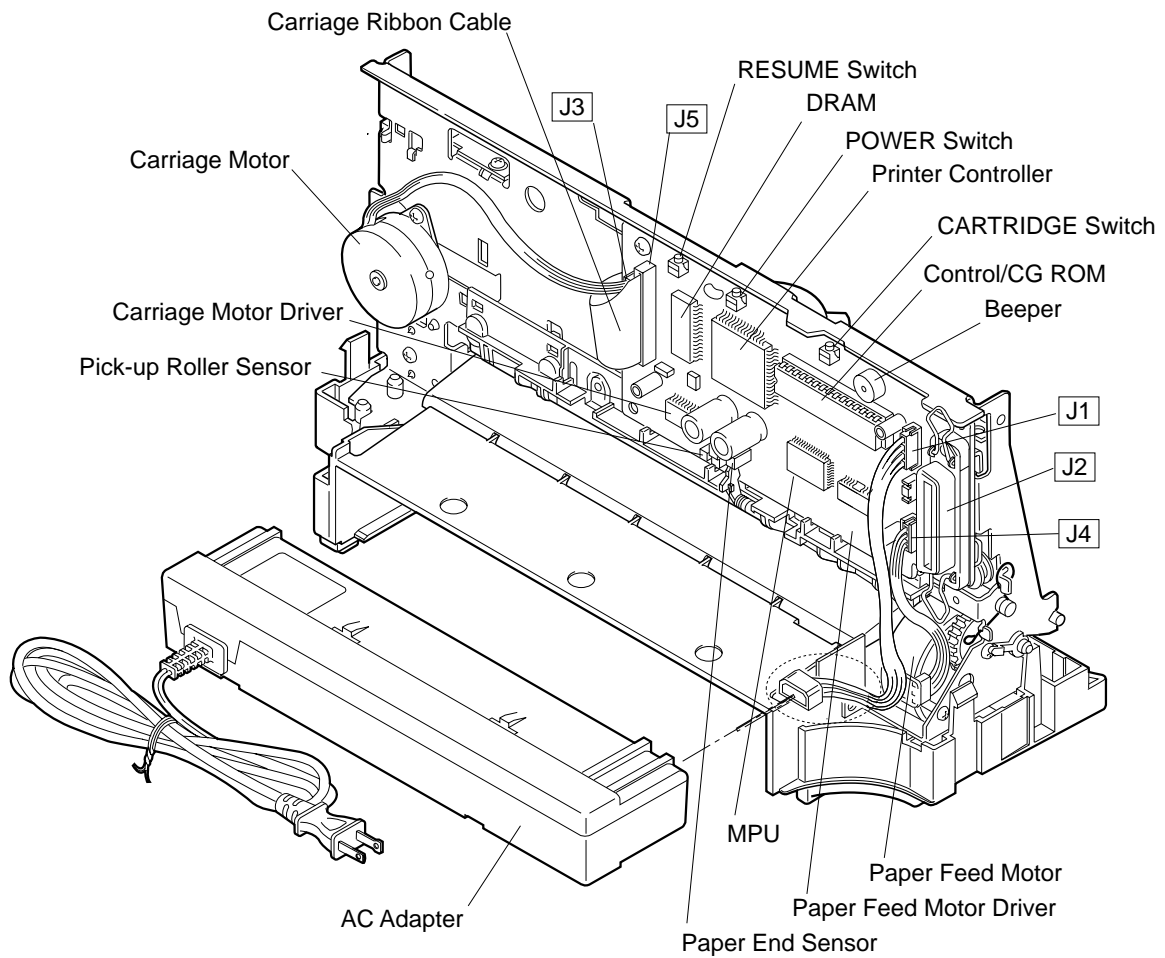


Figure 4-27 Printer Electrical System

4.2 Logic Section

4.2.1 Logic section block diagram

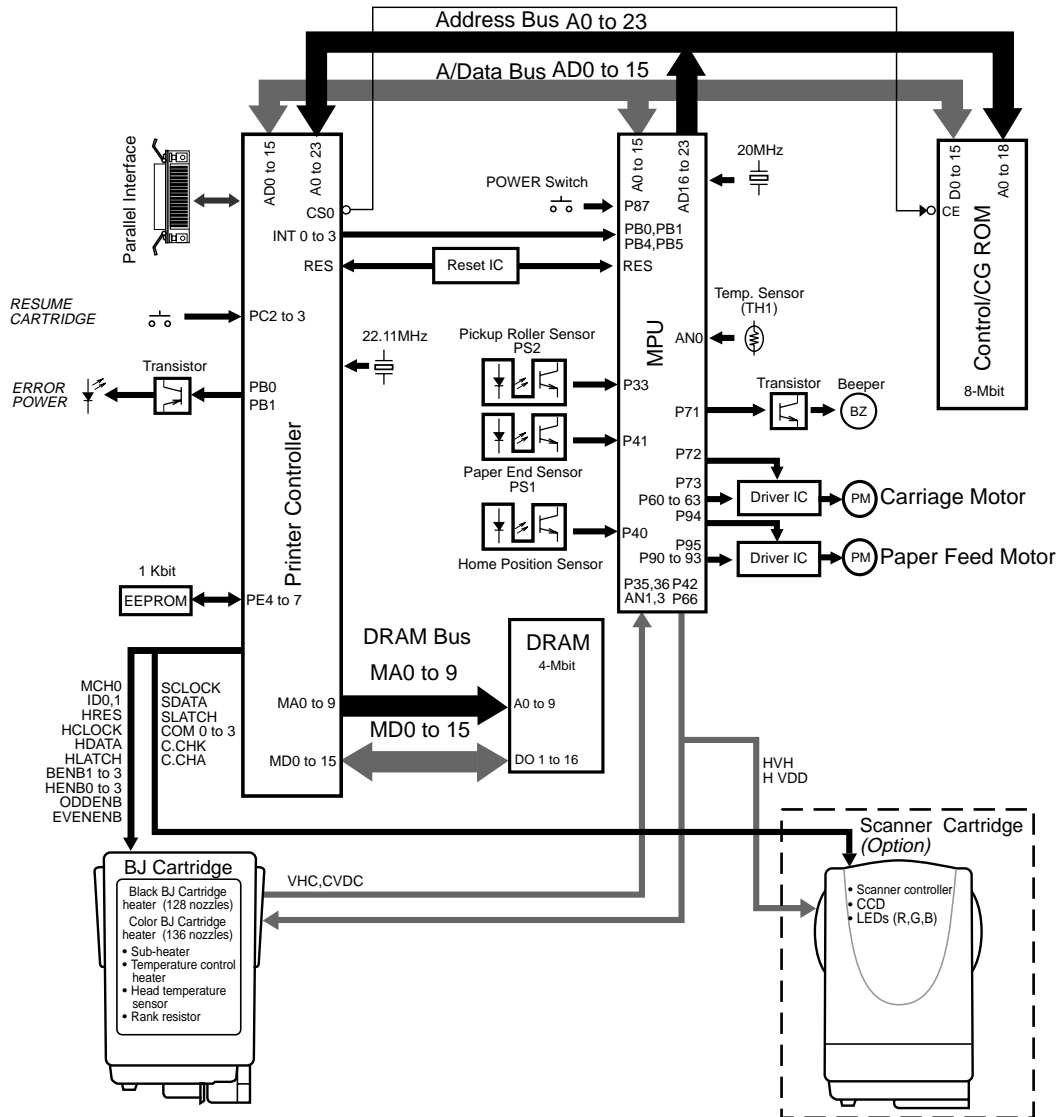


Figure 4-28 Logic Board Block Diagram

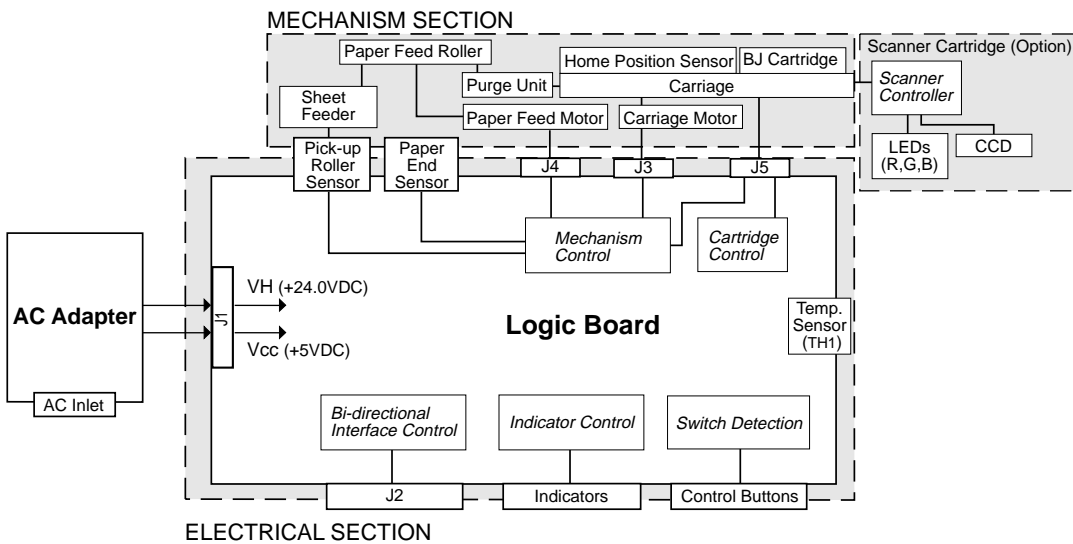


Figure 4-29 Printer Block Diagram

4.2.2 Logic section components

1) MPU (IC2)

The MPU contains a 16-bit CPU, 1K-bit RAM, 24-bit address bus port, 16-bit data bus port, stepping motor controller, interrupter controller, A-D converter, I/O ports, and other components.

Built-in CPU

The 16-bit CPU operates in synchronization with a 20 MHz external clock input.

Address bus

The 24-bit address bus port is connected to an 8 M-bit control/CG ROM and printer controller. The controller/CG ROM synchronizes with the read signals output by the MPU and the 20 MHz clock signal. The printer controller then selects the chip.

Data bus

Like the address bus, the 16-bit data bus port is connected to the 8 M-bit control/CG ROM and printer controller.

Stepping motor controller

The stepping motor controller outputs double 1-2 phase exciter drive signals to both the carriage motor driver and paper feed motor driver.

The stepping motor controller can switch the the 4-step peak current value of both motor driver.

Interrupt controller

For external interruption, the MPU has ports P80, 81, 84, 85, and 87 to receive the POWER button on/off switching, data reception, initial interrupt request, receive buffer-full warning, and other signals. The MPU executes interrupt processing for the respective signals.

A-D converter

The following analog signals are detected after they pass through the built-in A-D converter:

AN0: The printer's internal temperature is detected by the thermistor on the logic board.

AN1: The head temperature is detected by the head temperature sensor in the BJ cartridge.

AN3: The head rank is detected by the rank resistor in the BJ cartridge.

I/O port

The setting status determined by the head ID, paper end sensor, home position sensor, and pick-up roller sensor are input through the input ports. The buzzer, BJ cartridge detection, head-driving voltage control, and other signals are output from the output ports.

2) Printer controller (IC3)

The printer controller contains the interface controller, print head controller, buffer controller, DRAM controller, EEPROM controller, I/O ports, etc. It operates in synchronization with an external 22.11 MHz external clock input.

Interface controller

The interface controller receives from the computer, 8-bit parallel data which is synchronized with the data strobe pulse ($\overline{\text{STROBE}}$) through the $\text{BUSY}/\overline{\text{ACKNLG}}$ handshake. It also controls other interface signals.

The data received through the interface is stored in the DRAM's receive buffer and analyzed by the MPU.

When the printer initialization signal $\overline{\text{INIT}}$ is input through the interface to the printer controller, the printer controller outputs a BUSY signal. Also, after INT1 is output to the MPU and print data in the print buffer is printed, the printer is initialized.

DRAM controller

The DRAM controller is a DRAM-specific bus separated from the MPU bus. It controls the 4 M bit DRAM's 10-bit address/16-bit data bus and also executes read/write control, RAS/CAS control, and refresh control.

Buffer controller

The buffer controller automatically writes the received data to the receive buffer on the DRAM, manages the receive buffer's remaining capacity, automatically reads the print buffer, and clears the data after it is read.

Print head controller

The print head controller converts the print data read from the DRAM's print buffer from parallel to serial and sends it to the print head. At the same time, the printed dots are counted for the variable control of the Heat-enable (H ENB) signal pulse width.

The head-driving signals consist of the block enable signals ($\text{B ENB } 1, 2, 3$), odd/even enable signals (OddENB/EvenENB), and heat enable signals ($\text{H ENB } 0, 1, 2, 3$). The block enable signals and odd/even enable signals specify the block for time-shared drive. The heat enable signals control the eject heater's conduction time.

I/O port

The I/O ports sense the *RESUME* and *CARTRIDGE* buttons' input status. The output ports control the lighting of the *POWER* and *ERROR* indicators.

3) Control/CG ROM (IC4)

The 8 M-bit control/CG ROM contains the program and bitmap font data for printer control.

4) DRAM (IC7)

Controlled by the printer controller, the 4 M-bit DRAM is used as a receive buffer, download buffer, print buffer, and working area.

5) Reset IC (IC1)

This IC detects the power voltage when turning on the power or instantaneous power failure.

6) EEPROM (IC6)

Controlled by the printer controller, the 1 K-bit EEPROM (Electrically Erasable and Programmable ROM) stores various function settings, the total count of printed sheets, and the total waste ink amount.

7) Carriage motor driver (IC12) / Paper feed motor driver (IC13)

The carriage motor driver which is controlled by the MPU drives both the carriage motor and the paper feed motor which in turn are controlled by an double 1-2 phase exciter with a fixed current bipolar drive. Upon receiving the switching signal from the MPU, the peak current value can be set individually into 4 steps for phase A and B. By doing so, it ensures smooth operation of the motors.

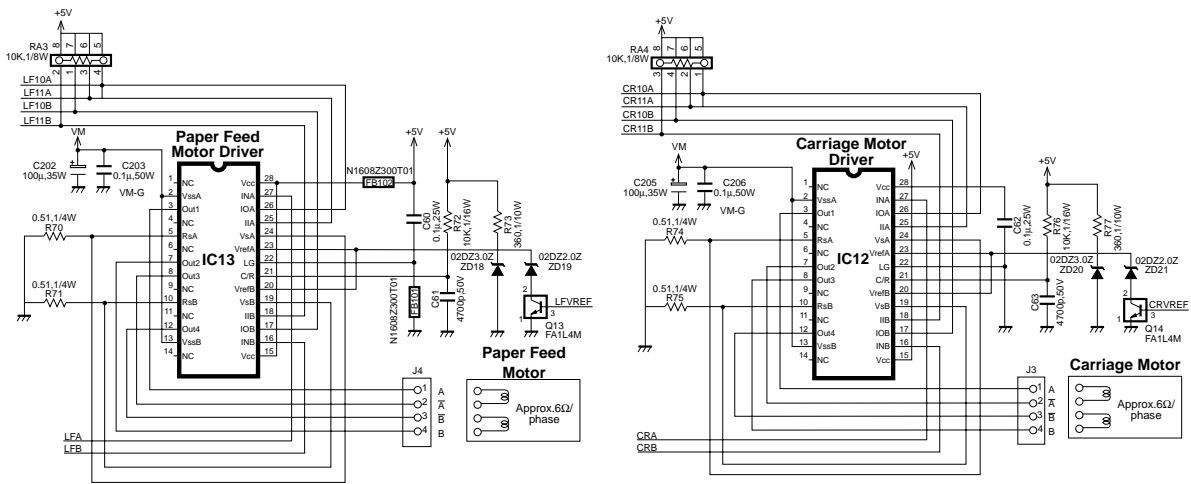


Figure 4-30 Motor-Driving Circuit

3. GREASE APPLICATION

Use the special tool to apply grease at the points shown below.

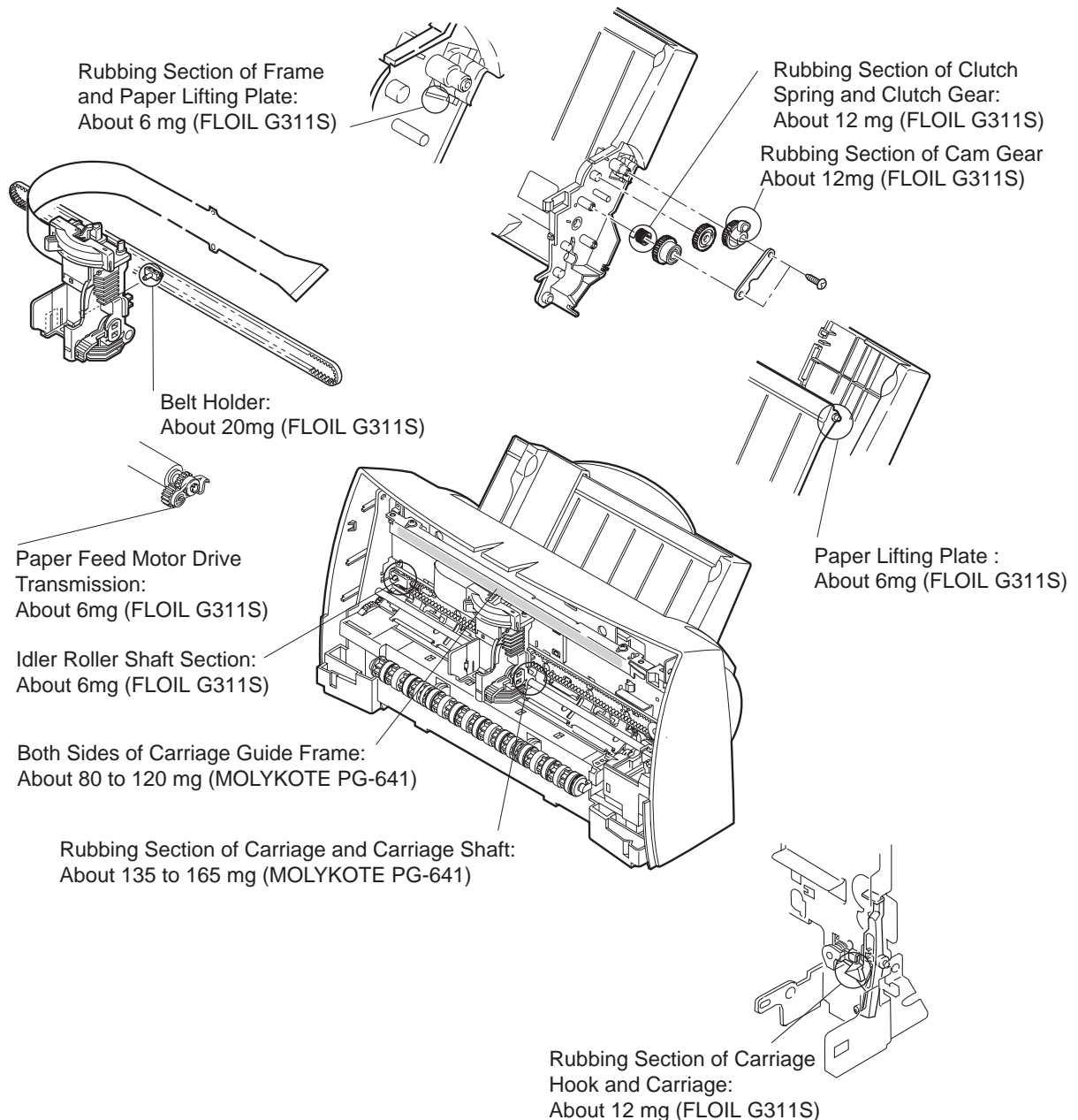


Figure 5-1 Grease Application Points

7. LOCATION & SIGNAL ASSIGNMENT

7.1 Logic Board

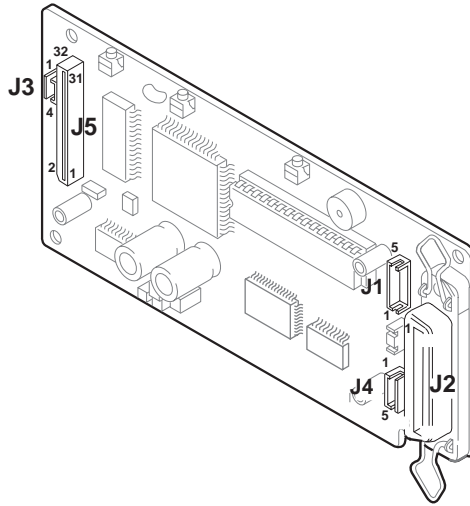


Figure 5-9 Logic Board

J5 (Ribbon cable connector)

Pin No.	Signal name	IN/OUT	Description
1	HVG	...	GND for head drive voltage VH
2	HVG	...	GND for head drive voltage VH
3	HT0	IN	Driver signal for temperature control heater
4	HT1	IN	Driver signal for temperature control heater
5	HVH	OUT	Head driver voltage
6	HVH	OUT	Head driver voltage
7	W-HT	OUT	Drive signal for temperature control heater
8	INKS1	...	Not used
9	TOP	IN	Detection signal for rank resistance
10	DIODEA	OUT	Head temperature sensor (diode) anode
11	ID0	IN	Cartridge detection and recognition signal
12	ID1	IN	Cartridge detection and recognition signal
13	INKS2	IN/OUT	Cartridge detection and recognition signal
14	HVss	...	Head's logic drive voltage HVdd GND
15	HENB0(Y)	OUT	Heat enable
16	Even ENB	OUT	Even nozzle heat enable
17	HENB1(M)	OUT	Heat enable
18	HENB3(B)	OUT	Heat enable
19	Odd ENB	OUT	Odd nozzle heat enable
20	BENB1	OUT	Block enable generation signal
21	BENB2	OUT	Decoder output signal
22	BENB3	OUT	Decoder output signal
23	HVdd	OUT	IC drive voltage (+5 V)
24	HCLK	OUT	Print data transfer signal
25	HLATCH	OUT	Timing signal for print data to latch
26	HRES	OUT	Latch reset signal
27	HENB2(C)	OUT	Heat enable
28	HDATA	OUT	Printing data
29	DIODEK	IN	Head temperature sensor (diode) cathode
30	HPO	IN	Home position sense High/ Low(sense)
31	HPG	...	Ground
32	HPA	OUT	Photo LED drive

J3 (Carriage motor connector)

Pin No.	Signal name	IN/OUT	Description
1	CRA	OUT	Carriage motor phase A
2	CRĀ	OUT	Carriage motor phase Ā
3	CRB	OUT	Carriage motor phase B
4	CRB̄	OUT	Carriage motor phase B̄

J4 (Paper feed motor connector)

Pin No.	Signal name	IN/OUT	Description
1	LFB̄	OUT	Paper feed motor phase B̄
2	LFĀ	OUT	Paper feed motor phase Ā
3	VM	...	Common
4	LFA	OUT	Paper feed motor phase A
5	LFB	OUT	Paper feed motor phase B

J1 (DC power connector)

Pin No.	Signal name	IN/OUT	Description
1	Vcc	IN	+24 VDC
3	GND	...	Ground
4	GND	...	Ground
5	VH	IN	+5 VDC

J2 (Interface connector)

Pin No.	Signal name	IN/OUT	Description
1	STROBE	IN	See Part 2 for details
2	DATA1	IN	
3	DATA2	IN	
4	DATA3	IN	
5	DATA4	IN	
6	DATA5	IN	
7	DATA6	IN	
8	DATA7	IN	
9	DATA8	IN	
10	ACKNLG	OUT	
11	BUSY	OUT	
12	P.E.	OUT	
13	SELECT	OUT	
14	AUTO FEED XT	IN	
15	N.C	...	
16	INIT	IN	
17	GND	...	
18	N.C	...	
19	STROBE-RET	...	
20	DATA1-RET	...	
21	DATA2-RET	...	
22	DATA3-RET	...	
23	DATA4-RET	...	
24	DATA5-RET	...	
25	DATA6-RET	...	
26	DATA7-RET	...	
27	DATA8-RET	...	
28	ACKNLG-RET	...	
29	BUSY-RET	...	
30	P.E.-RET	...	
31	INIT	IN	
32	ERROR	OUT	
33	GND	...	
34	N.C	...	
35	+5.0V	...	
36	SELEC IIN	IN	

8. CIRCUIT DIAGRAMS

8.1 Parts Layout 8.1.1 Logic board

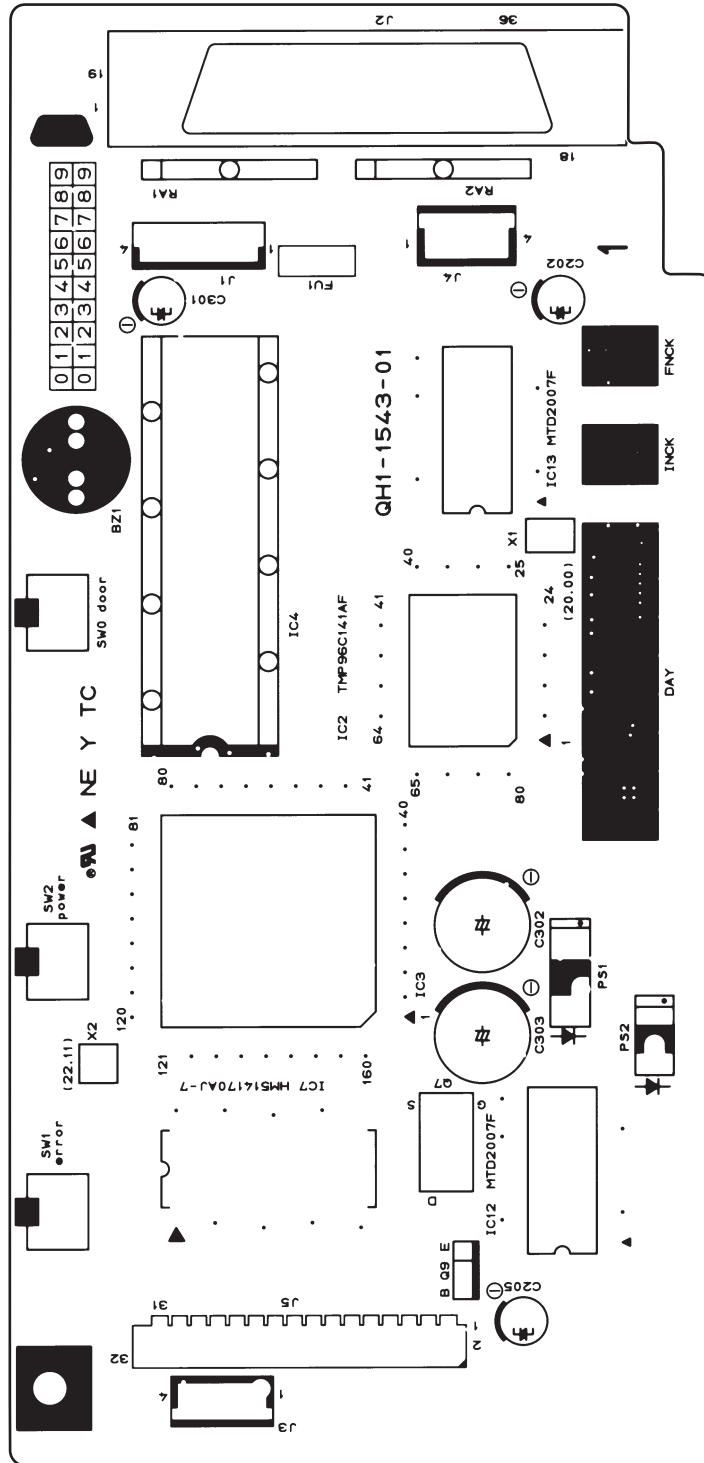


Figure 5-10 Logic Board (Top View)

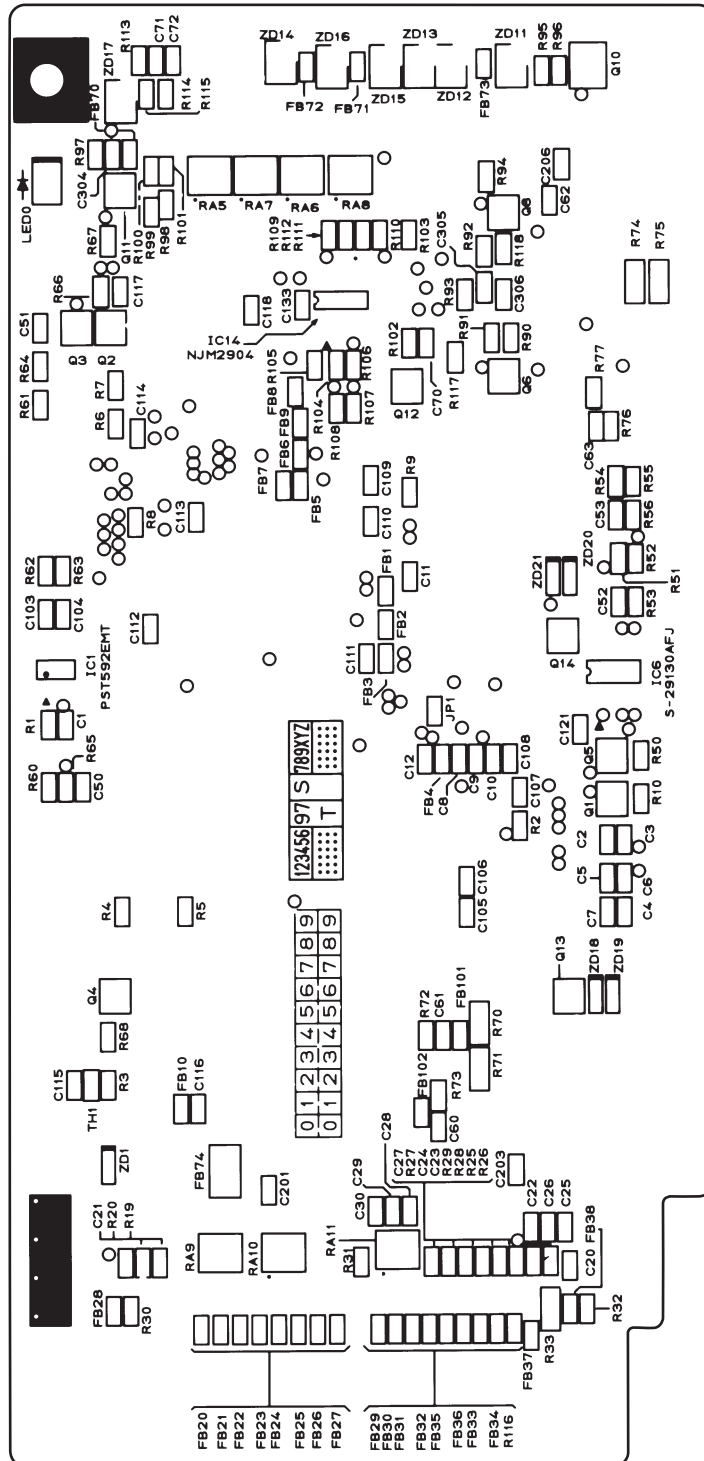


Figure 5-11 Logic Board (Bottom View)

8.2 Circuit Diagrams

