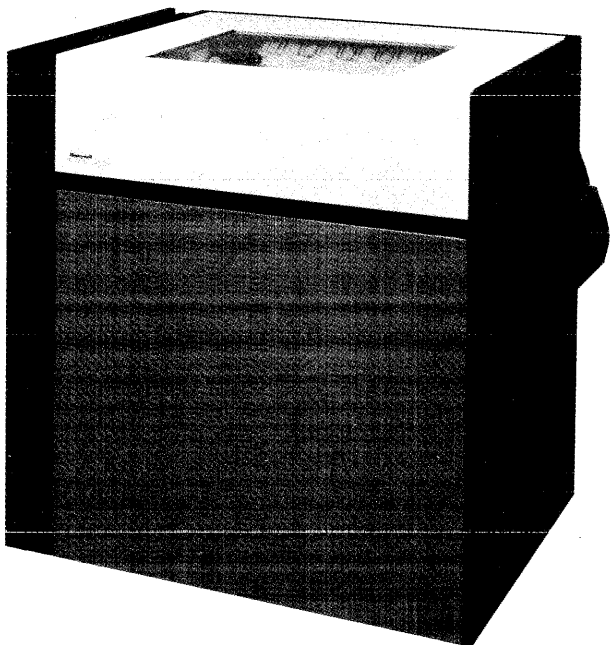# HONEYWELL

LARGE SYSTEMS
PRU0901/1201
PRINTER
OPERATION

HARDWARE

Large Systems
PRU0901/1201
Printer Operation

SUBJECT

General Description, Control and Indicator Information, and Operating and
Maintenance Procedures for the PRU0901/1201 Printers

The following notice is provided in accordance with the United States Federal
Communications Commission's (FCC) regulations.

Warning: This equipment generates, uses, and can radiate radio frequency
energy and if not installed and used in accordance with the instructions manual,
may cause interference to radio communications. As temporarily permitted by
regulation it has not been tested for compliance with limits for Class A
computing devices pursuant to Subpart J of Part 15 of FCC Rules, which are
designed to provide reasonable protection against such interference. Operation
of this equipment in a residential area is likely to cause interference in which
case the user at his own expense will be required to take whatever measures
may be required to correct the interference.

Honeywell

About This Manual

This manual contains hardware-oriented descriptions and instructions for operators of the PRU0901/1201 printers for DPS Extended and DPS 8 systems. Section 1 outlines the device capabilities. Section 2 describes the various controls and indicators with which an operator should become familiar before operating the unit. Section 3 explains the general operation of the printer. Section 4 describes the routine preventive maintenance and Section 5 the printer online/offline tests the operator can perform. Appendix A provides the error code descriptions. Appendix B gives ordering information for print belts, printer ribbons, and accessories.

Readers are invited to use the Technical Publications Remarks Form at the end of the manual to note any publication errors or to offer any suggestions for improvement.

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Section 1

Introduction

The PRU0901 and PRU1201 are high-speed belt printers that can be connected to DPS Extended and DPS 8 systems by using a peripheral device serial interface (PDSI). The PRU0901/1201 can produce clear printed characters at nominal speeds of 900 and 1200 lines per minute (lpm) respectively with a 64-character print belt. To provide for future system needs, the PRU0901 can be upgraded onsite (via PRK0901) to a PRU1201.

Features

Designed to help meet current and future needs of the data processing user, the PRU0901/1201 feature:

- Excellent print quality

- High throughput and reliability

- Operator efficiency

- Improved system availability

Excellent Print Quality

Smearless printing and precise alignment of printed characters are achieved through the use of a print belt that is well suited for jobs demanding high-quality appearance.

Each character on the print belt is mounted on a flexible "finger." During printing, the belt passes continuously at high speed in front of the print hammers. When a character is struck, the flexibility of the finger causes the character to be immobilized at the moment of impact. This elimination of drag helps produce smearless, ghost-free, printed copy.

Depending upon the paper stock being used, an original and up to five carbon copies can be produced.

High Throughput and Reliability

The rated print speeds of the PRU0901/1201 are 900 and 1200 lpm respectively for continuous single-spaced line operation with a 64-character set. The printers feature paper skip speed of 29 or 44 inches per second and software-controlled vertical line spacing of 6 or 8 lines per inch.

Longer ribbon life is possible as a result of reduced ribbon drag during the printing process. Also, the life of the printer itself can be extended by an Automatic Standby feature that deactivates the operating mechanism of the device when it is not being used.

Operator Efficiency

Operator efficiency is enhanced by the automatic paper stacker, which is included with the printer; the simplicity of paper loading and ribbon changing; and the quick and easy exchange of the lightweight, easily accessible belt cartridges. A special re-inking feature in the ribbon cartridge helps to reduce ribbon changes. Clear alphanumeric error displays are easily visible to the operator only when active. Improved acoustical design results in quiet and efficient operation. An optional static eliminator is available to improve paper stacking.

Improved System Availability

Software control of online error status reporting helps reduce:

- System time required for diagnosis

- Unit time required for offline repair

- Service calls

Print Belts

Two identical print belts are supplied with the printer. The customer should complete and return the belt warranty card that accompanies the printer.

Each print belt comes with a lightweight cartridge to facilitate removal, interchange, and storage. The system is programmed to recognize the belt being used from a code on the belt. (See Appendix B for a list of the available print belts.)

Ribbons

The printers use a 2-inch-wide, 50-meter-long nylon ribbon having a ribbon life of 4.5 to 6 million lines.

The ribbon system is composed of a ribbon cassette assembly, ribbon refill cartridge, and ribbon inker. The operator can maximize print ribbon life by performing Degree I maintenance (Section 4) and by monitoring the condition of the ribbon inker's felt wick to ensure the free flow of ink to the transfer roller. When ribbon replacement is necessary, both the ribbon refill cartridge and the ribbon inker must be replaced. For order information, refer to Appendix B in this manual; the *Honeywell Computer Supplies Catalog,* Order No. BY62; or contact your Honeywell Marketing Representative.

Specifications

Data Format:
Print positions per line — 136
Characters per inch — 10
Vertical Spacing — 6 or 8 lines per inch

Reproduction System: Hammer stroke against flexible belt "finger"

Programmed Operations: Print and space, space only, skip, and vertical line spacing

Paper Stock:
Width — 4.0 in. (10.2 cm) to 19.0 in. (48.3 cm)
Length — 3.0 in. (7.6 cm) to 11.0 in. (27.9 cm)
Weight (single-part form) — 15 lb to 45 lb card stock
Multiple copies — 1 original and up to 5 carbon copies

Printer Physical Characteristics:
Height — 39.4 in. (100.1 cm)
Width — 36.3 in. (92.0 cm)
Depth — 26.0 in. (66.0 cm)
Weight — 375 lb (170 kg)

Power Stacker Physical Characteristics::

Height — 31.5 in. (80.0 cm)
Width — 28.7 in. (72.9 cm)
Depth — 25.6 in. (65.0 cm)
Weight — 88.0 lb (39.6 kg)

Environmental Requirements:

Operating Temperature — 50°F to 100°F (10°C to 38°C)

Section 2

Controls and Indicators

This section describes the controls and indicators on the main control panel and the control panel on the power stacker, as well as the mechanical controls and adjustments on the printing mechanism.
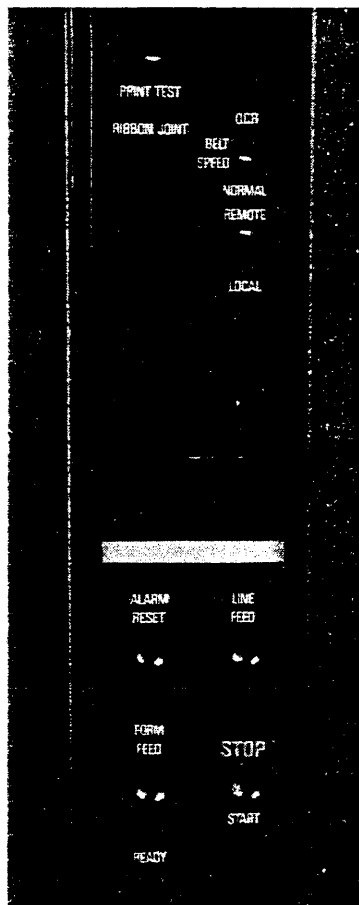
Main Control Panel

The controls and indicators on the main control panel (Figure 2-1) are described in Tables 2-1 and 2-2.

Table 2-1. Main Controls and Indicators (I)

Control/Indicator	Function
STOP/START	This push button control changes the printer state from READY (print orders are accepted from system) to STANDBY (stops printing) or vice versa. The NORMAL indicator must be lit to go into the READY state.
FORM FEED	This push button control advances the paper to the top of the next form. The printer must be in the STANDBY state.
READY	This indicator is lit when the printer is in the READY (operational) state.
ALARM RESET	This push button control must be pressed after a recoverable fault or error is corrected. (The printer must be in the STANDBY state.)
LINE FEED	This push button control advances the paper one line. The printer must be in the STANDBY state.
Status	This indicator displays a two-digit hexadecimal code. A display of 00 indicates that there is no problem; any other display alerts the operator to operator correctable conditions or printer problems. (See Appendix A for error codes.) During test execution the display provides information about printer condition (see Section 5).

Table 2-1 (Cont). Main Controls and Indicators (I)

Control/Indicator	Function
LOCAL/REMOTE	This switch places the printer in the REMOTE state for communication with the system, or the LOCAL state for running test programs that reside in the printer.
BELT SPEED	This switch must be in the OCR position for high-quality printing (900 lpm). In all other cases, it should be in the NORMAL position. This switch is not effective on the PRU0901 printer.
RIBBON JOINT	This indicator is lit when the ribbon weld is passing in front of the print station. Printing is temporarily inhibited while this indicator is lit. (This occurs at 6-minute intervals during continuous operation of the printer.)
PRINT TEST	The printer runs the internal test programs when this switch is in the TEST position and the printer is in the LOCAL state. An error code is displayed if a fault is found.
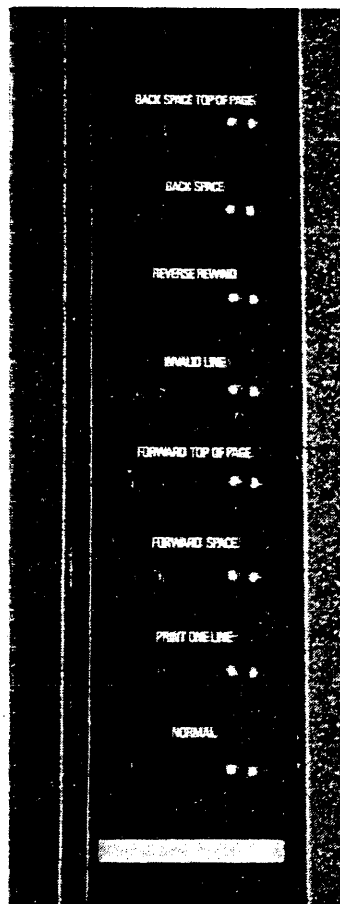
I (See Table 2-1.)   II (See Table 2-2.)

Figure 2-1. Main Control Panel

Table 2-2. Main Controls and Indicators (II)

Control/Indicator	Function
NORMAL	This push-button control releases the printer from the STANDBY state. Pressing NORMAL followed by START causes printing to resume.
	Note
	The NORMAL button must be used to resume printing after each of the following controls has been used. (Each of these controls places the printer in the STANDBY state.)
PRINT ONE LINE	This push-button control causes the next line of data to be printed.
FORWARD SPACE	This push-button control causes the printing of the message OPERATOR KILLED THIS REPORT. The software then proceeds to the next report.
FORWARD TOP OF PAGE	This push-button control causes the printing of the message FORWARD SPACE T.O.P. The printer advances to the next data block or top of page.
INVALID LINE	This push-button control causes the printing of the message INVALID LINE.
REVERSE REWIND	This push-button control causes the printing of the message OPERATOR RESTARTED THIS REPORT and the report in progress to be restarted.
BACKSPACE	This push-button control causes the printing of the BACK-SPACE message. Printing resumes with the last line printed.
BACKSPACE TOP OF PAGE	This push-button control causes the printing of the message BACKSPACE T.O.P. and the reprinting of the report in progress from the beginning of the current data block or the previous top of page.

Mechanical Controls and Adjustments

Several mechanical controls and adjustments are located in the printer mechanism for the control of printing and paper feeding and for operator maintenance. These controls and adjustments are shown in Figures 2-2, 2-3, and 2-4 and described in Table 2-3.

Table 2-3. Mechanical Controls and Adjustments

| Control/Adjustment	Function
BELT UNIT RELEASE HANDLES	These levers (see Figure 2-2) permit the operator to unlatch and open the belt unit. An unlatched condition (error code 06) is notified by a switch.
RIBBON CASSETTE LOCK	To remove the ribbon cassette, this lock (see Figure 2-2) must be set parallel to the opening in the cassette.
PRINT BELT RELEASE LEVER	This lever (see Figure 2-2) permits the operator to release the print belt for removal or to tighten the print belt during installation. The ribbon cassette must be removed to gain access to the lever.
END OF PAPER SENSOR BAR	When no paper is present between this bar (see Figure 2-2) and the paper entry guide, an end of paper condition (error code 05) is notified.
TRACTOR LOCKS	Loosening the tractor locks (see Figure 2-2) allows the operator to move the tractors horizontally in order to change the form width.
LINE ADJUSTMENT KNOB	This knob (see Figure 2-2) allows the operator to move the paper manually through the printer for line adjustment. The tractor clutch switch (see Figure 2-4) must be in the declutched position.
HORIZONTAL FINE ADJUSTMENT SCREW	This screw (see Figure 2-2) permits the operator to adjust the paper horizontally with the tractors locked. This device is provided as an option.
LINE INDICATOR	The line indicator (see Figure 2-3), used together with the line adjustment knob, permits the operator to position the first line to be printed.
COLUMN INDICATOR	The column indicator (see Figure 2-3) permits the operator to position the first column to be printed by moving both tractors horizontally or using the horizontal fine adjustment.
COPIES CONTROL POTENTIOMETER	This control (see Figure 2-4) regulates the force of the print hammers. The setting depends on the number of copies to be printed. The control must be set such that proper print quality is obtained with the lowest possible hammer force.
PHASE CONTROL SWITCH	This switch (see Figure 2-4) controls the instant of hammer firing. The switch must be set to give equal print density on both sides of the characters.
TRACTOR ENGAGE SWITCH	This switch (see Figure 2-4) permits the operator to disengage the tractor drive shaft in order to move the paper manually through the machine.
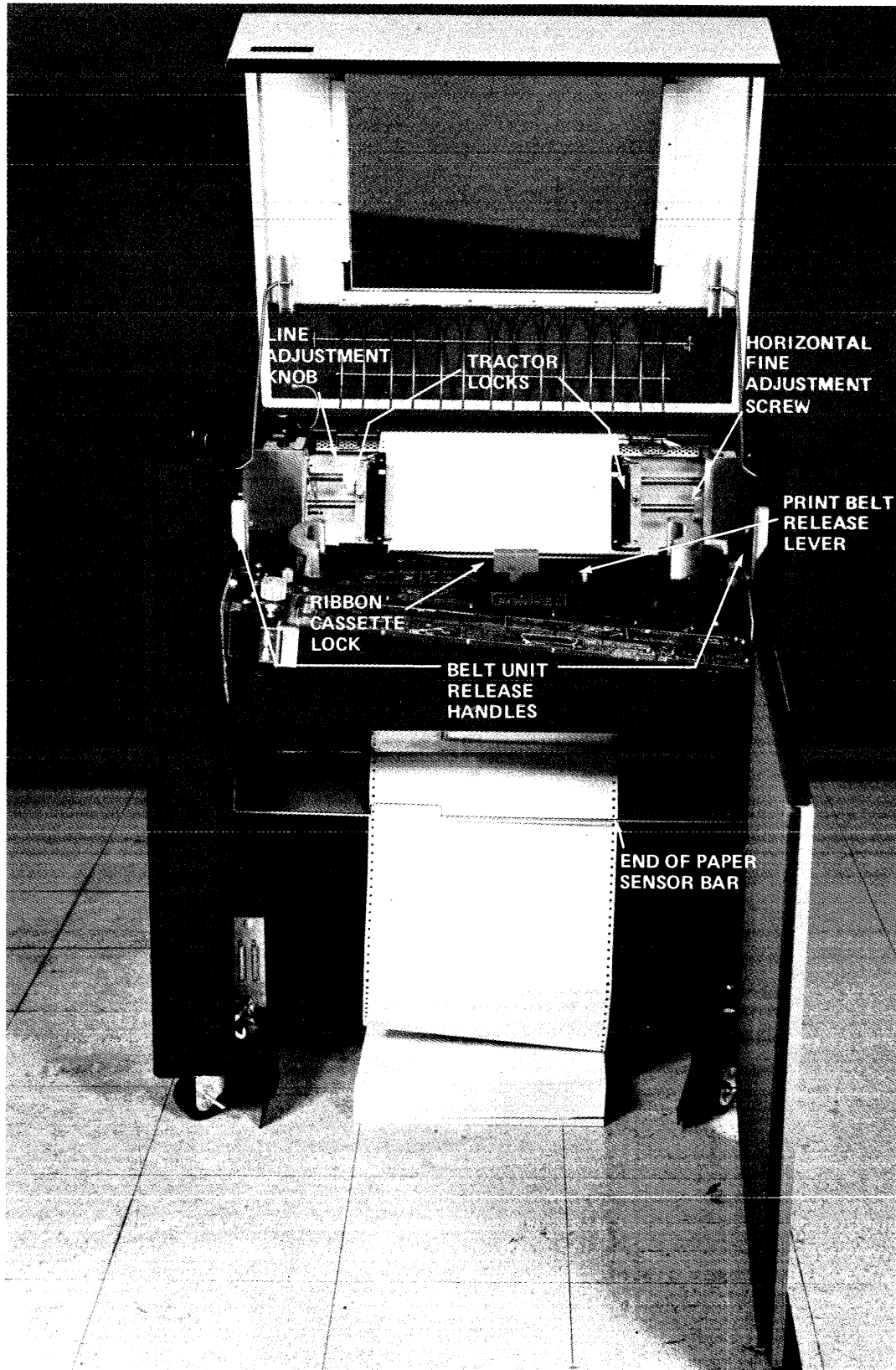
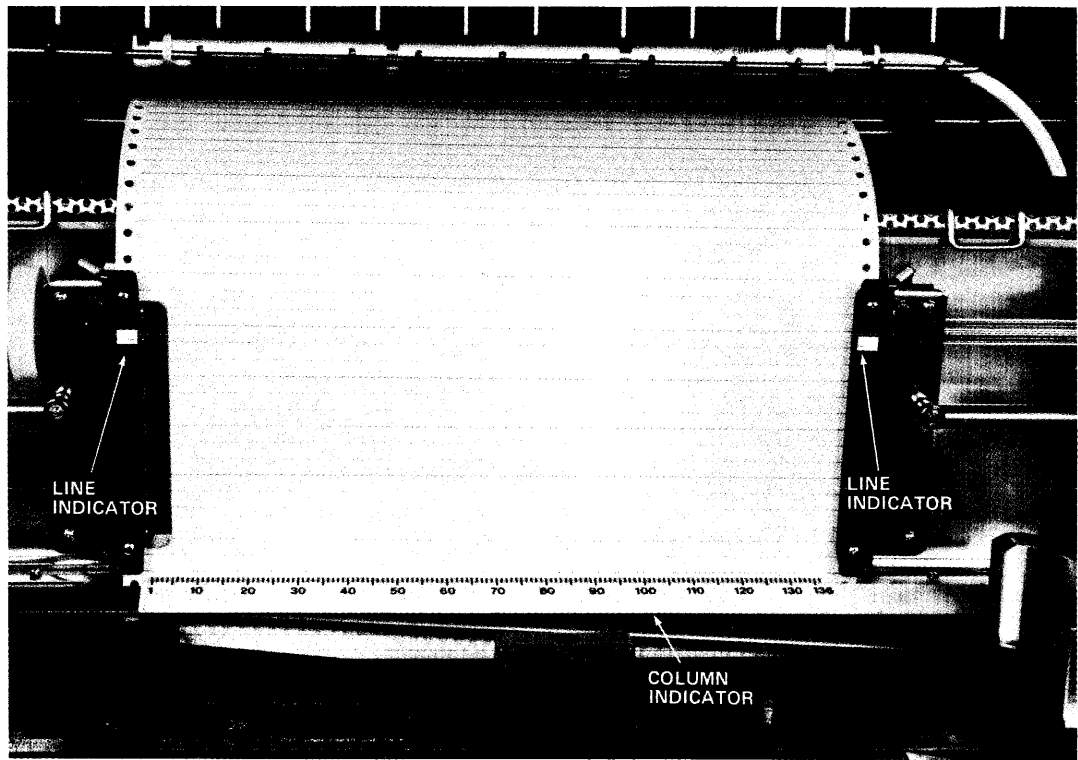Figure 2-2. *Mechanical Controls and Adjustments (Belt Unit Open)*

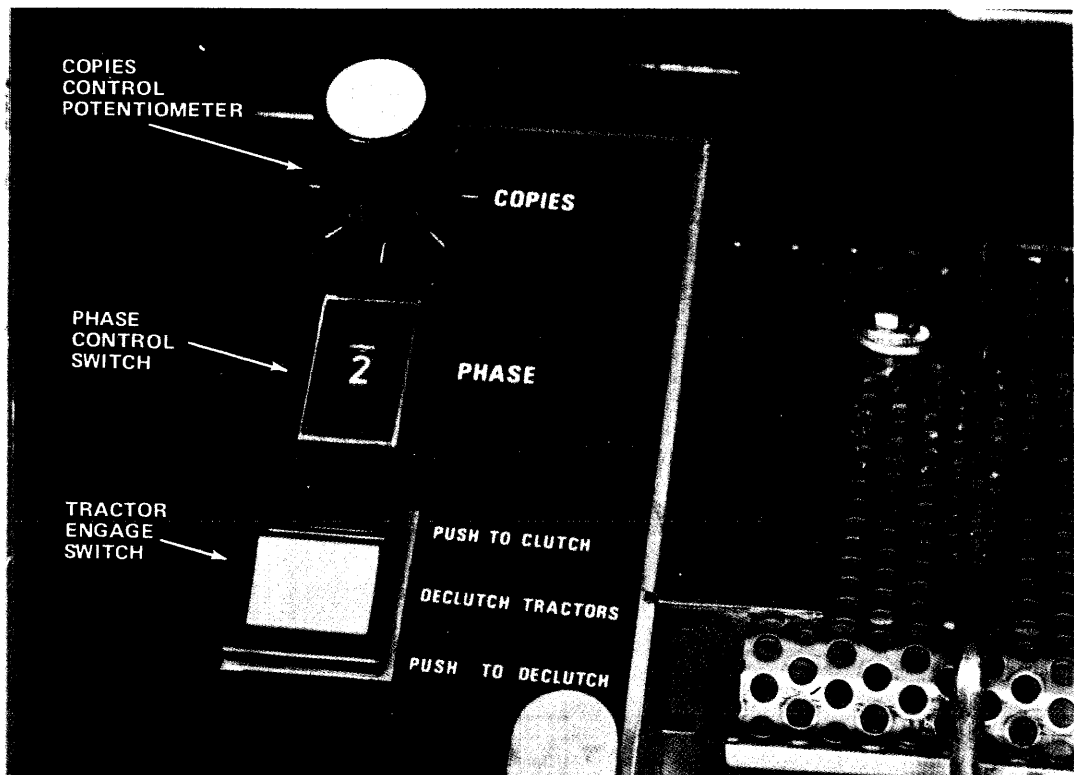**Figure 2-3. Line and Column Indicators**

Figure 2-4. Print Unit Control Panel

Power Stacker Controls

The control panel on the power stacker is shown in Figure 2-5. The controls are described in Table 2-4.

Table 2-4. Power Stacker Controls

| Control	Function
SKIP SPEED	This switch should be in the FAST position when operating in good climatic conditions and using good quality paper.
LOWER TABLE	This switch controls the operation of the paper table motor. In the MANUAL position, the paper table motor runs until the lower position is reached. In the AUTO position, the paper table motor operates to accommodate the printer output.
PAPER ADVANCE	This push button control starts the stacker paper feed motor. The motor runs for 6 seconds after the button is pressed. It is used for paper loading and removal.
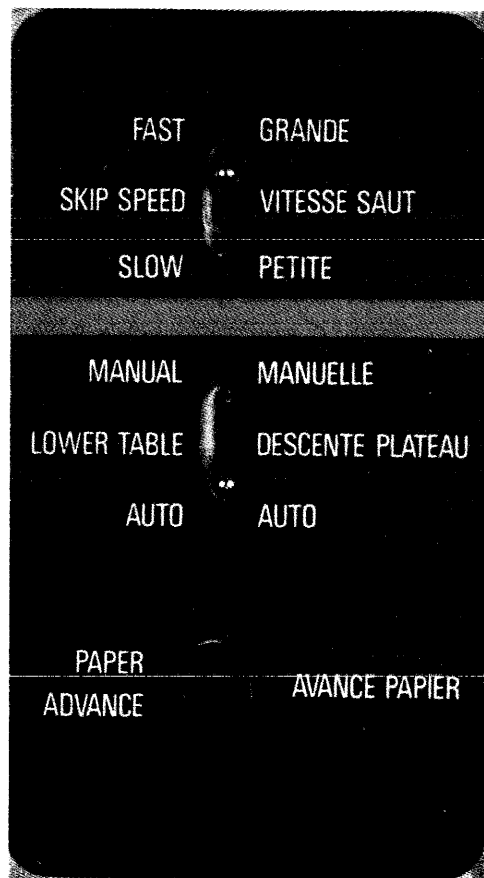
Figure 2-5. Power Stacker Control Panel

Circuit Breakers

The circuit breakers (Figure 2-6) are located at the lower left of the back of the printer. They permit the operator to connect the printer electronics to the main power supply. The circuit breakers should be switched on/off simultaneously.
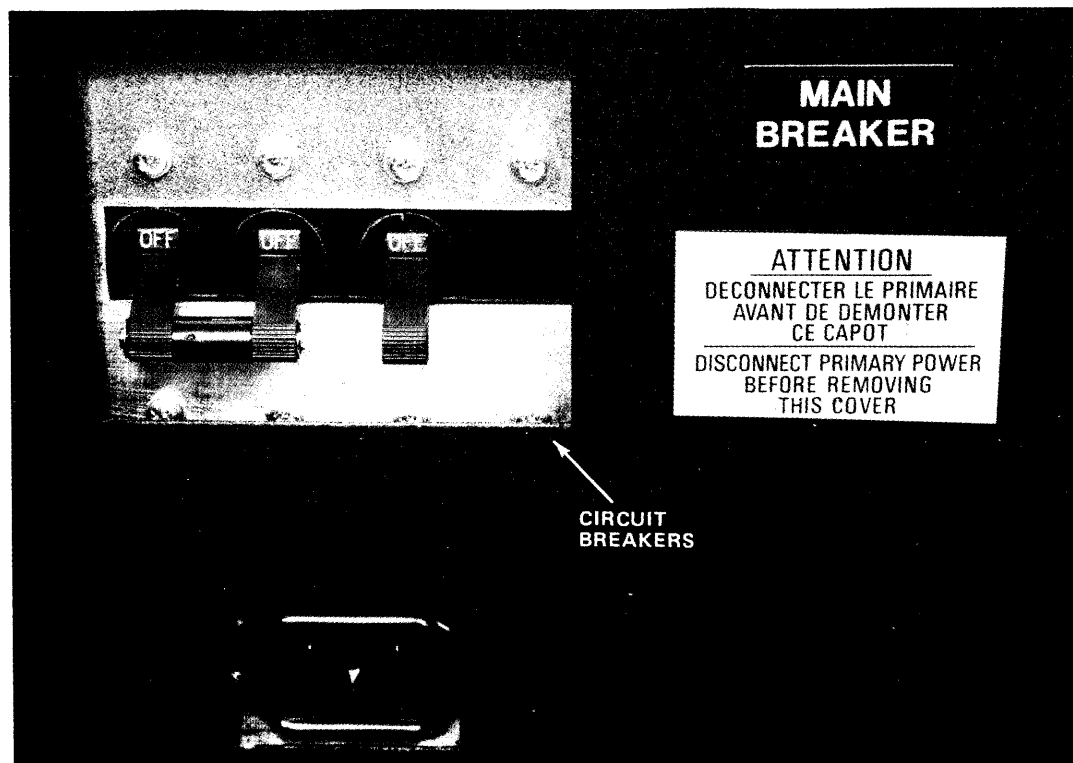

Figure 2-6. Circuit Breakers

Section 3
Operation

This section presents the basic operating procedures for the PRU0901/1201 printers under normal conditions. Figures 3-1 and 3-2 show the operating areas of the printer and power stacker.

Power-Up and Start Sequence

Before switching on the power, ensure that the print belt and ribbon are installed, that the printer is loaded with paper, that the belt unit is closed, and that the LOCAL/REMOTE switch is set to REMOTE for online printing.

1. Set both circuit breakers to the ON position.

2. Press the START/STOP button on the control panel. The READY indicator will light after device initialization.

Stop and Power-Down Sequence

1. Press the START/STOP button on the control panel to change the printer's state from READY to STANDBY.

2. Set the circuit breakers at the rear of the printer to the OFF position.
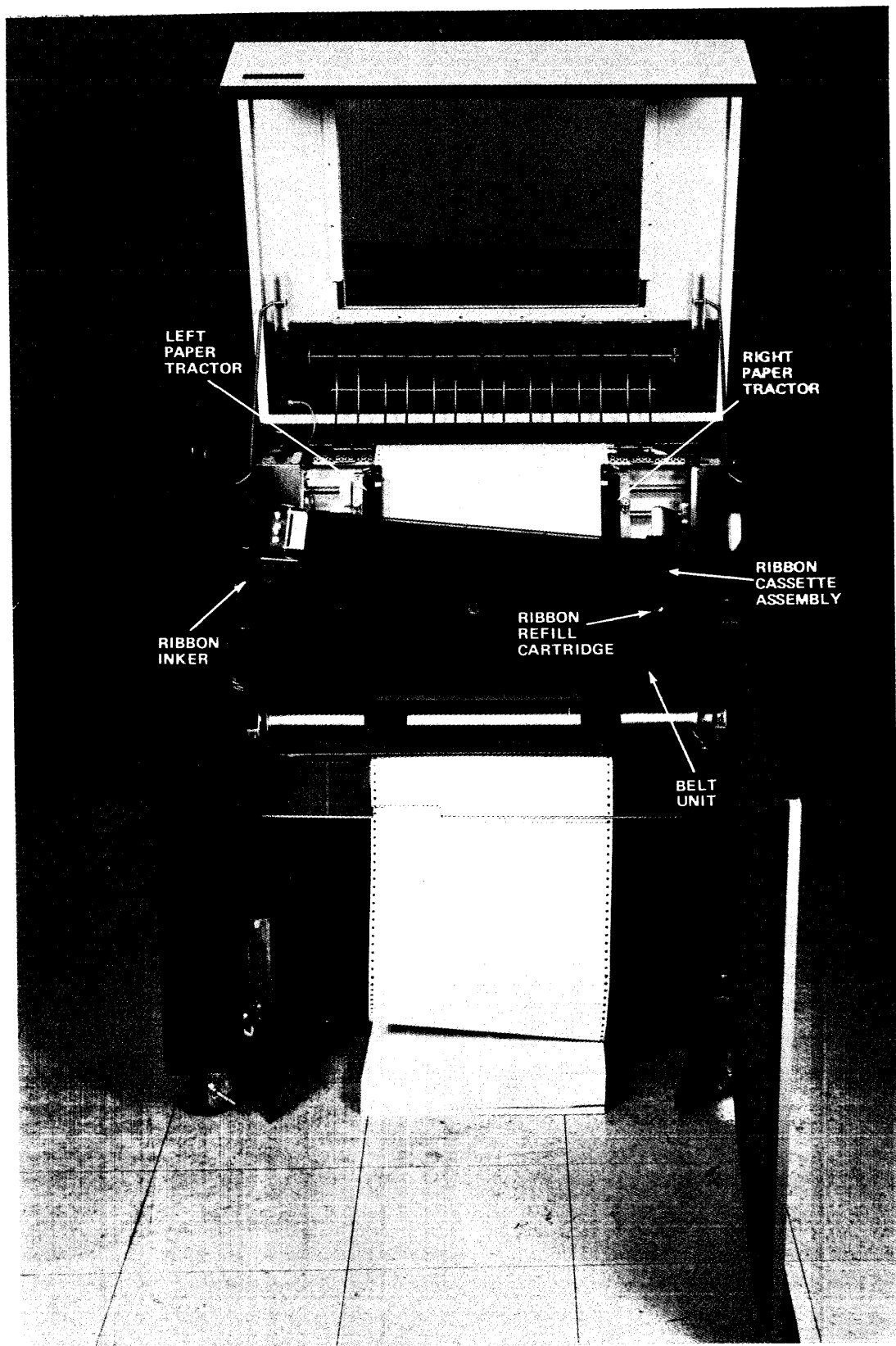
LEFT
PAPER
TRACTOR

RIGHT
PAPER
TRACTOR

RIBBON
CASSETTE
ASSEMBLY

RIBBON
REFILL
CARTRIDGE

RIBBON
INKER

BELT
UNIT

Figure 3-1. Printer Operating Areas
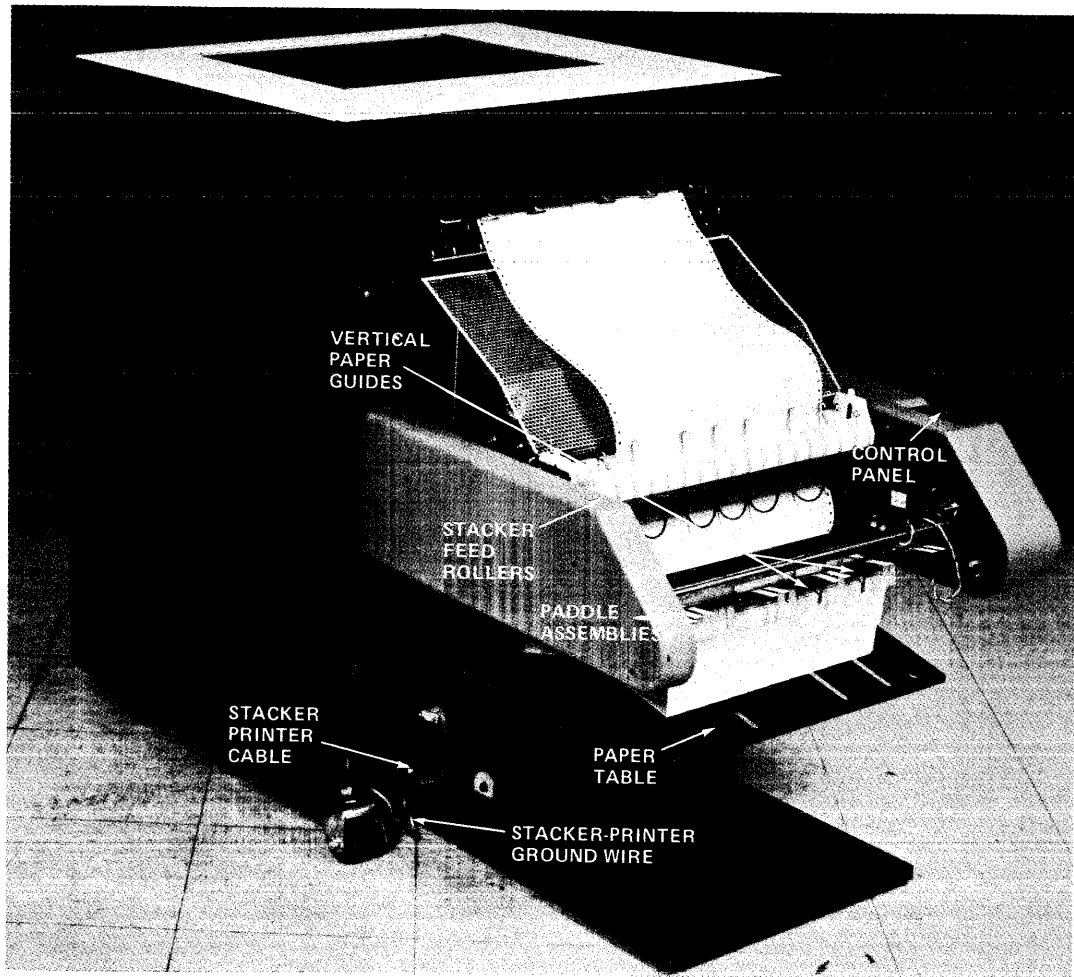
Figure 3-2. Power Stacker Operating Areas

Paper Loading

1. Raise the top cover and open the front door.

2. Open the belt unit by using both belt unit release handles as shown in Figure 3-3.

3. Unlock both paper tractors by turning the tractor locks counterclockwise and swing open both tractor covers.

4. Disengage the tractors by using the tractor engage switch.

5. Position the tractors to approximately the width of the paper by moving them along the drive and guide shaft.

Figure 3-3. Opening the Belt Unit

6. Slide the paper up through the paper path under the paper sensor bar, behind the anti-smudge shield, and over the tractor pins until the paper perforation is approximately aligned with the line indicator. (Refer to Figure 3-4.)
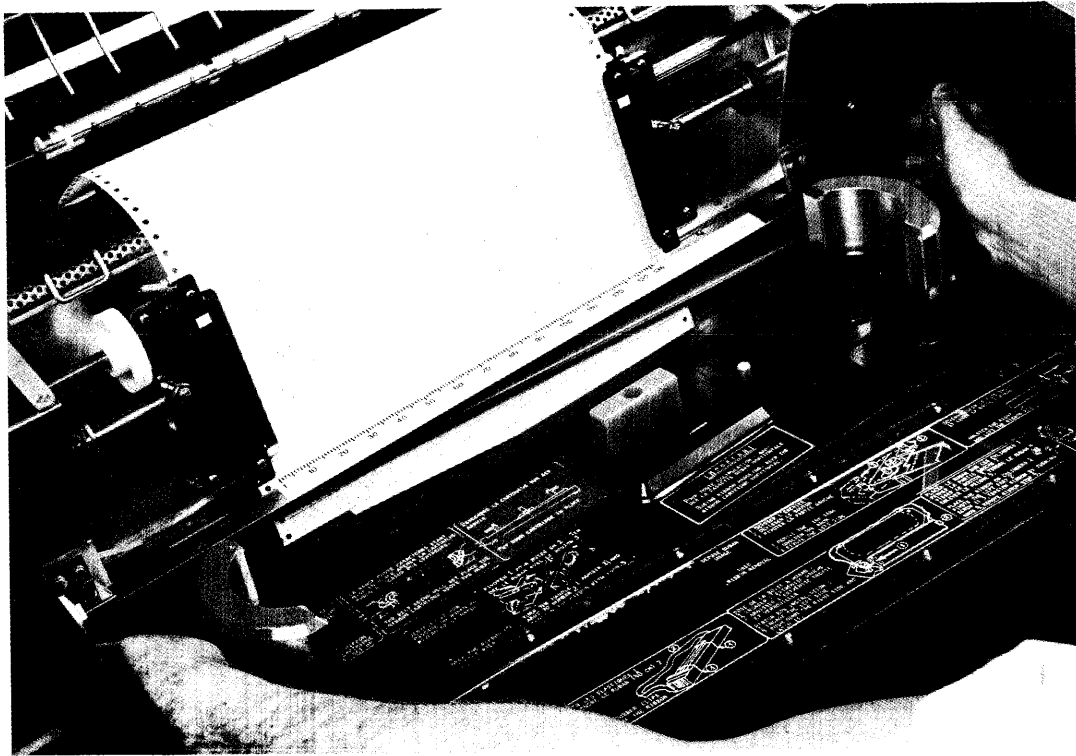
7. Align the paper feed holes with the left tractor pins and close the left tractor cover. Slide the right tractor until the paper feed holes are aligned with the right tractor pins and close the right tractor cover. (Refer to Figure 3-5.)

8. Position the paper horizontally by sliding both tractors along the shafts and lock the left tractor. The optional horizontal fine adjustment screw may be used for readjustment after paper tensioning.

9. Adjust the horizontal tension by sliding the right tractor and locking it. Do not apply too much tension to the paper.
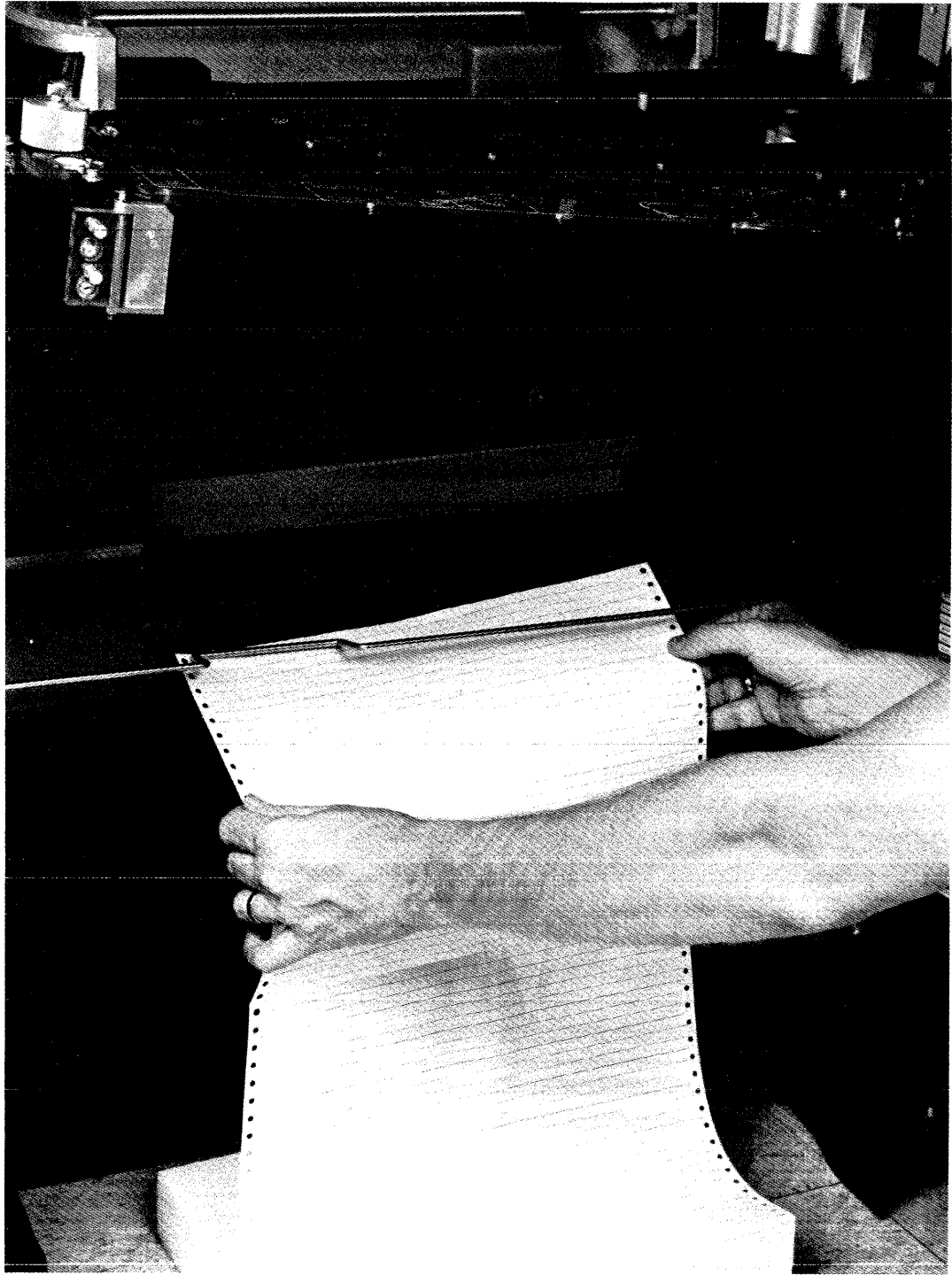
Figure 3-4. Paper Path
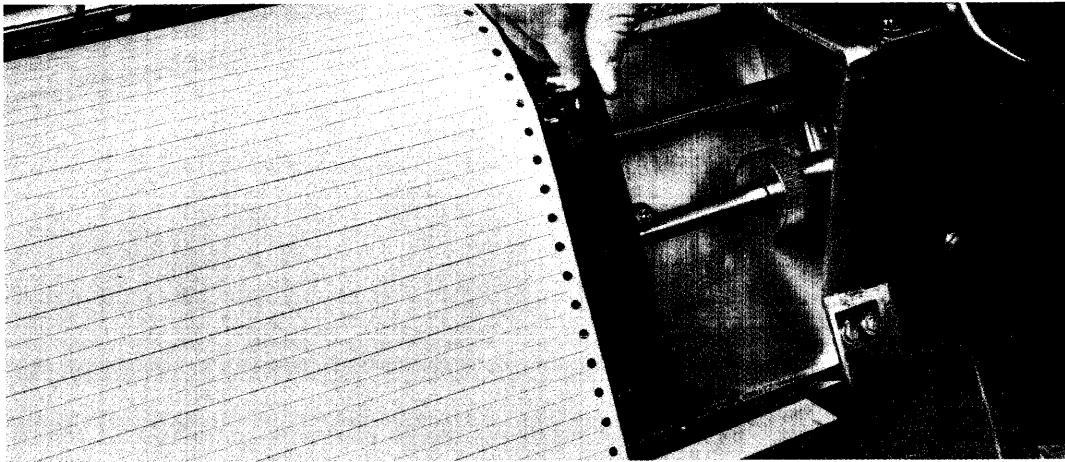
Figure 3-5. Tractor Adjustment

10. Align the paper perforation with the line indicator by using the line adjustment knob as shown in Figure 3-6.

11. Close the belt unit by lifting the unit at the belt unit cover.

12. Engage the tractors using the tractor engage switch.

13. Remove the sound baffle (if provided) at the rear of the printer.

14. Lift the power paper stacker table to its highest position.

15. Press the stacker PAPER ADVANCE button and then the printer FORM FEED button until the first form can be placed flat on the paper table. Take care of correct paper folding.

16. Adjust the paddle assemblies horizontally so that the distance between the vertical paper guides corresponds to the form length.

17. Reinstall the printer sound baffle.
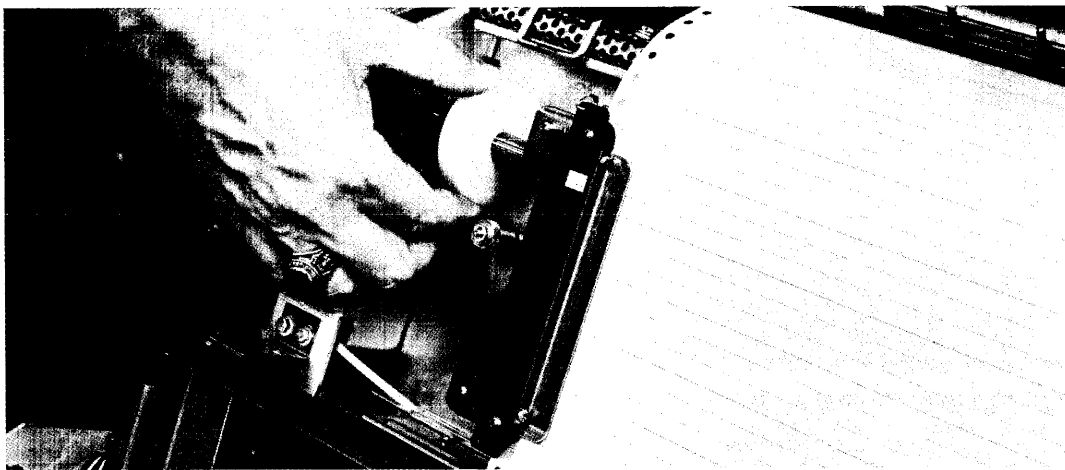
Figure 3-6. Paper Alignment

Ribbon Cassette Assembly Removal

It is assumed that the print belt is installed. Keep the cassette in the horizontal position.

1. Raise the top cover and open the front door.

2. Open the belt unit by using both belt unit release handles.

3. Unlock the ribbon cassette by rotating the cassette lock 90 degrees (Figure 3-7).

4. Grasp the ribbon cassette, move it upwards keeping it in a horizontal position, and remove it from the printer (Figure 3-8). Use the ribbon cassette supports for temporary storage of cassettes.

Figure 3-7. Unlocking the Ribbon Cassette

Figure 3-8. Removing the Ribbon Cassette

Ribbon Cassette Assembly Installation

1. Grasp the ribbon cassette assembly and position it on the belt unit such that the locating pins of the belt unit correspond to the locating holes of the cassette. Take care to position the cassette lock correctly.

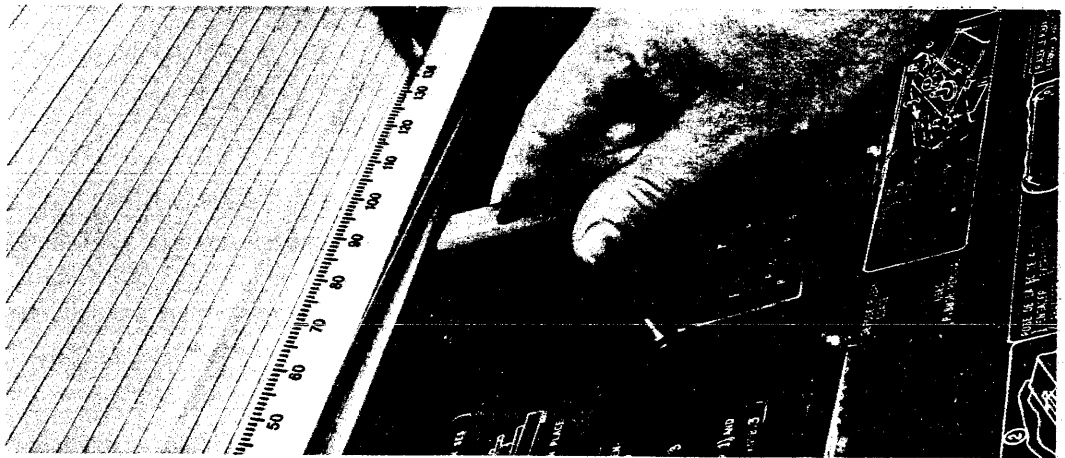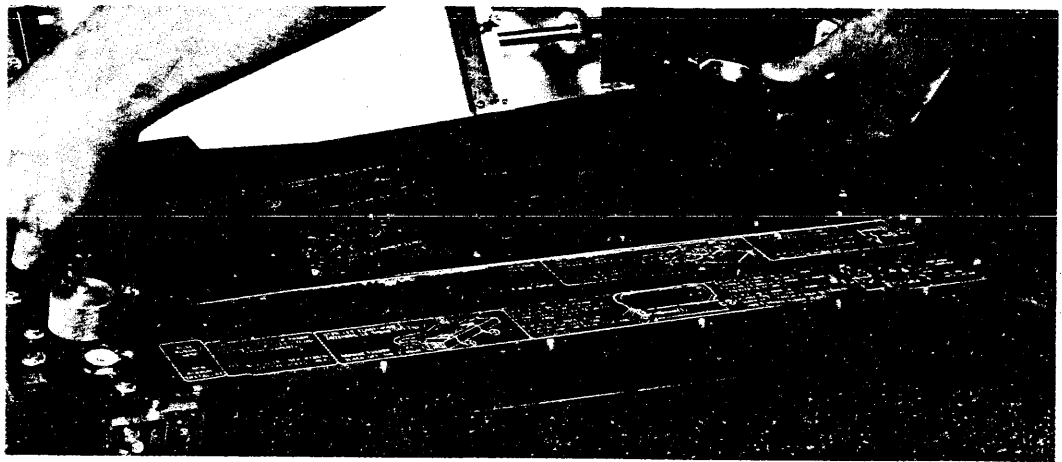2. Lock the cassette.

Ribbon Inker Removal

The ribbon inker should be changed each time the ribbon is changed. Puncture the ink pouch 24 hours before installation to allow the wick to become saturated with ink.

1. Open the belt unit.

2. Slide the inker until both tabs at the top of the inker and the tab at the bottom are free of the ribbon cassette.

3. Lift the inker and remove it from the cassette.

Ribbon Inker Installation

1. Remove the protective cap from the inker.

2. Position the inker at the top of the cassette, guiding the wick into the slot of the cassette.

3. Lower the inker until its tabs are fitted into the cassette.

4. Close the belt unit.

Ribbon Refill Cartridge Removal

1. Remove the ribbon inker (see Ribbon Inker Removal).

2. Insert the ribbon comb (see Figure 3-10). This keeps the ribbon inside the cartridge while the cartridge is removed.

3. Gently unlatch the ink roller assembly and pivot the assembly.

4. Unlatch the ribbon refill cartridge release tab at the right (Figure 3-9), lift the cartridge from the right and remove it from the printer.
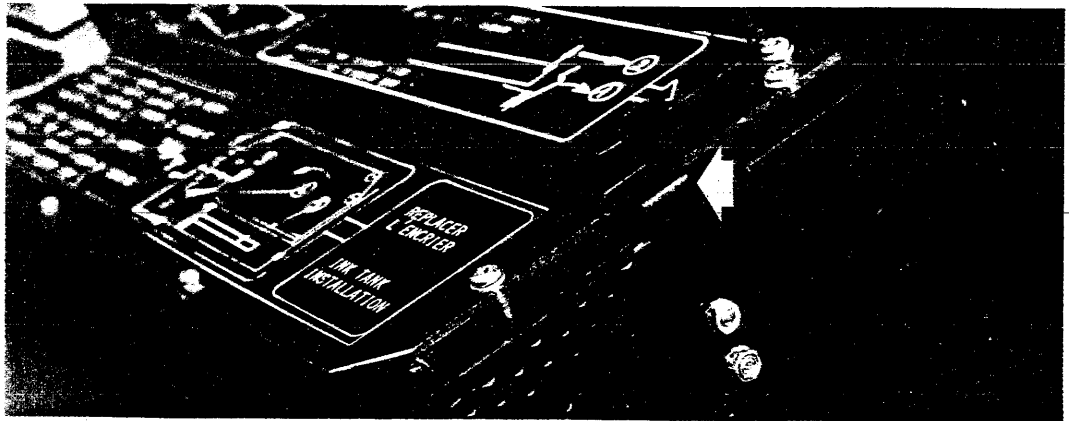
Figure 3-9. Ribbon Refill Cartridge Release Tab

Ribbon Refill Cartridge Installation

1. Perform Degree II preventive maintenance (see Section 4).

2. Remove the rubber bands that keep the ribbon comb in place and slacken the ribbon until a free length of 40 cm (16 in.) is obtained. Save the comb for use during cartridge removal.

3. Grasp the ribbon refill cartridge and fit the left end into the cartridge holder. Lower the right end and lock it (Figure 3-10).
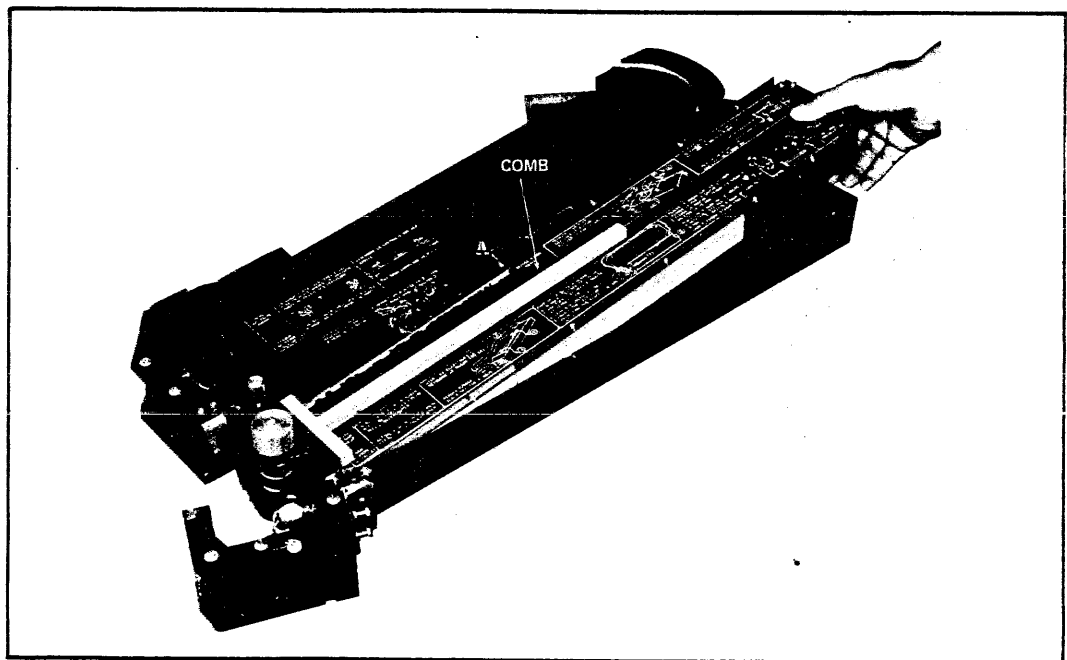
Figure 3-10. Installing the Ribbon Refill Cartridge

4. Position the ribbon around the rollers, close the ink roller assembly, and secure it. (See step 2 of Cassette Removal.)

5. Tighten the ribbon by rotating the ribbon drive roller counterclockwise.

6. Remove the ribbon comb and install the ribbon inker. (See Ribbon Inker Installation.)

Print Belt Removal

It is assumed that the belt unit is open and that the ribbon cassette assembly is removed.

1. Install the belt container over the print belt.

2. Release the print belt by rotating the print belt release lever clockwise (Figure 3-11).

3. Lift the container with the belt at the area indicated by an arrow until the belt is free from its pulley.

4. Lift the container at the left and remove the container from the printer.
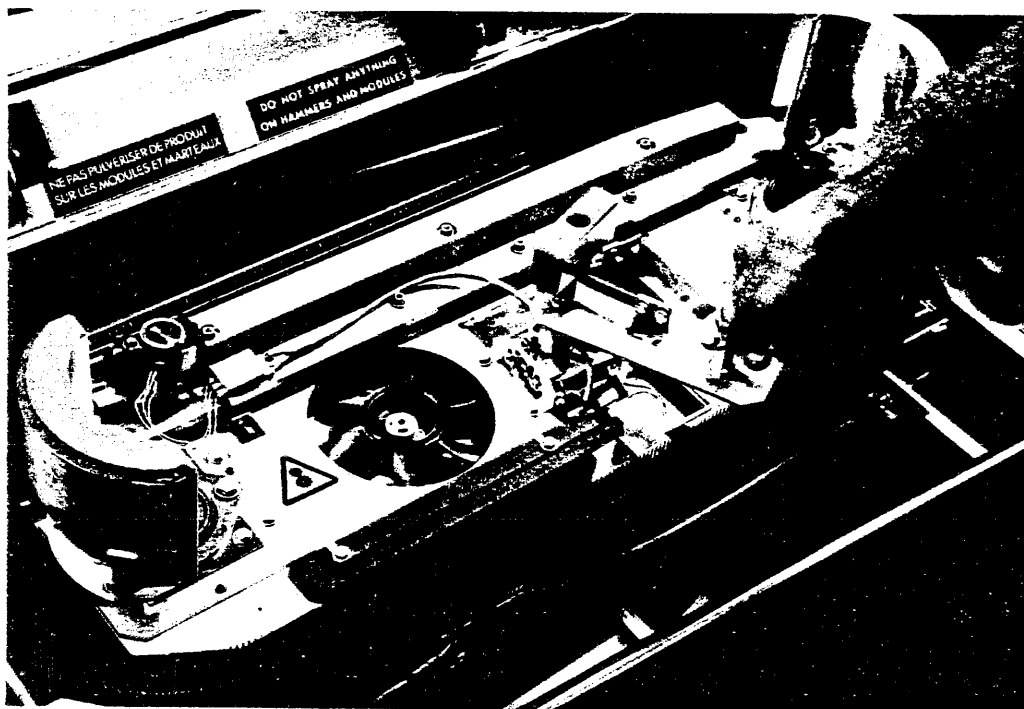
Figure 3-11. Releasing the Print Belt

Print Belt Installation

It is assumed that the ribbon cassette assembly is removed, the belt unit is open, and the belt pulley is in the released position.

1. Install the belt container assembly on the belt unit.

2. Position the print belt by pushing the belt container downwards, first at the left and then at the right.

3. Tighten the print belt by means of the lever (see Print Belt Removal, step 2) and remove the container.

Emergency Conditions

If an emergency condition (smoke or fire) occurs, set the circuit breakers to the OFF position immediately.

Section 4

Operator Maintenance

This section describes the regular maintenance procedures. The steps described below should be followed carefully in order to maintain a good print quality.

Tools and Materials Required

The following items are needed to carry out all the maintenance procedures:

1. Vacuum cleaner with straight plastic suction nozzle.

2. Disposable vacuum cleaner bag.

3. Soft brush (part number 76962022-001).

4. Hard brush (part number 76953382-001).

5. General Cleaner (part number 76962020-001).

6. Gloves (part number 76962021-001).

There is also a cleaning kit available (see Appendix B for ordering information) which comprises:
   1 soft brush
   1 hard brush
   100 General Cleaner packets
   10 pairs of gloves

Note

Solvents other than General Cleaner must not be used for machine and belt cleaning.

Maintenance Schedule

Degree I maintenance should be performed after every 16 power-on hours. It entails vacuuming the printer/stacker paper path area and checking print quality. Degree II maintenance should be performed:

- Every 240 power-on hours[1] OR

- Every 7 million lines OR

- At each ribbon replacement AND

- Before OCR print runs

Degree II maintenance consists of:

1. Print belt cleaning

2. General cleaning

3. Belt Home Pulse (BHP) and Line Strobe (LNS) sensors cleaning

4. Anvil and pulleys drive surfaces cleaning

5. Anti-smudge shield cleaning

6. Ribbon cassette cleaning

Degree I Maintenance

1. Remove all paper from the printer and power stacker and vacuum the entire paper path area.

2. Replace the paper and run the print test using the PRINT TEST button on the main control panel. Check the horizontal alignment (column pitch), the vertical alignment, and character clarity.

3. If necessary, adjust the copies control potentiometer or the phase control switch, or clean the print belt.

4. Check the ribbon visually for wear and damage.

5. If necessary, replace the ribbon and carry out the Degree II maintenance procedures.

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[1]Assumes 40% utilization of printer by customer.

Degree II Maintenance

Print Belt Cleaning

1. Switch the printer off at the circuit breakers.

2. Open the top cover and front door.

3. Open the belt unit and remove the ribbon cassette and anti-smudge shield.

4. Load paper between the paper tray and the tractors, taking care that the opening in the hammerbank guide plate is covered over the full length.

5. Using General Cleaner, clean the lower part of the belt fingers and the body of the belt over a distance of about 10 cm (4 in.) as in Figure 4-1.
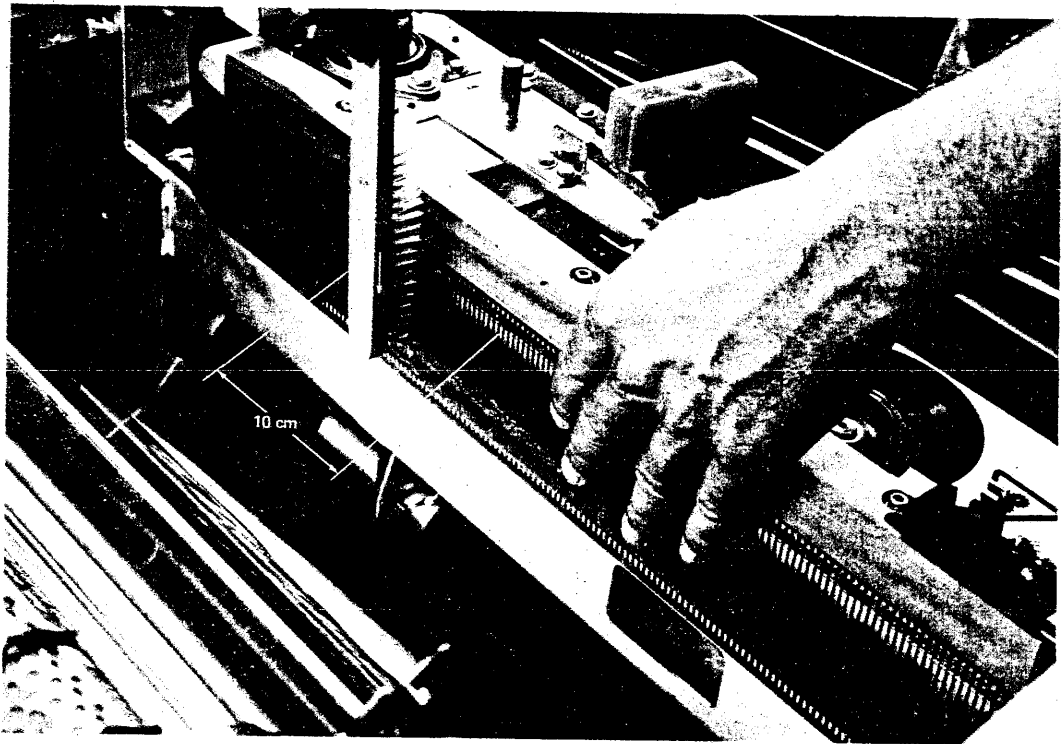

Figure 4-1. Belt Cleaning

6. Move the belt counterclockwise 10 cm and repeat the procedure until all the lower belt fingers area is clean.

7. Using the hard brush, clean the belt characters and finger interspaces by moving the brush vertically from top to bottom (see Figure 4-1) taking care not to damage the belt fingers.

8. Clean the characters over a distance of 10 cm, moving the belt counter-clockwise until the entire belt is clean.

9. Using General Cleaner, clean the entire belt again as described above.

10. Remove the belt with its container (see Printer Belt Removal, Section 3).

11. Using the hard brush, clean the surface of the character fingers and rubber strip which is visible inside the container.

12. Clean the entire surface of the belt with General Cleaner.

13. Clean the paper tray with the vacuum cleaner.

14. Replace the print belt (see Print Belt Installation, Section 3).

General Cleaning

Figure 4-2 shows the general cleaning areas.

Note

Be extremely careful when cleaning the hammerline and sensors, as they are fragile.

1. Remove paper from the printer.

2. Using the soft brush, remove dust from:
   - Paper movement sensor
   - Ribbon movement sensor
   - Ribbon weld detection sensor
   - LNS/BHP sensors

3. Using the vacuum cleaner, clean the following areas:
   - Tractors with tractor covers open
   - The cover behind the tractors
   - Hammerline
   - Hammerbank guide plate
   - Paper movement sensor
   - Ribbon movement sensor
   - Front surface of anvil and ribbon guide
   - Inside of belt pulleys
   - Inside of belt unit
   - LNS/BHP sensors

4. Using the vacuum cleaner, clean the paper tray and the horizontal parts of the area inside the printer front door.
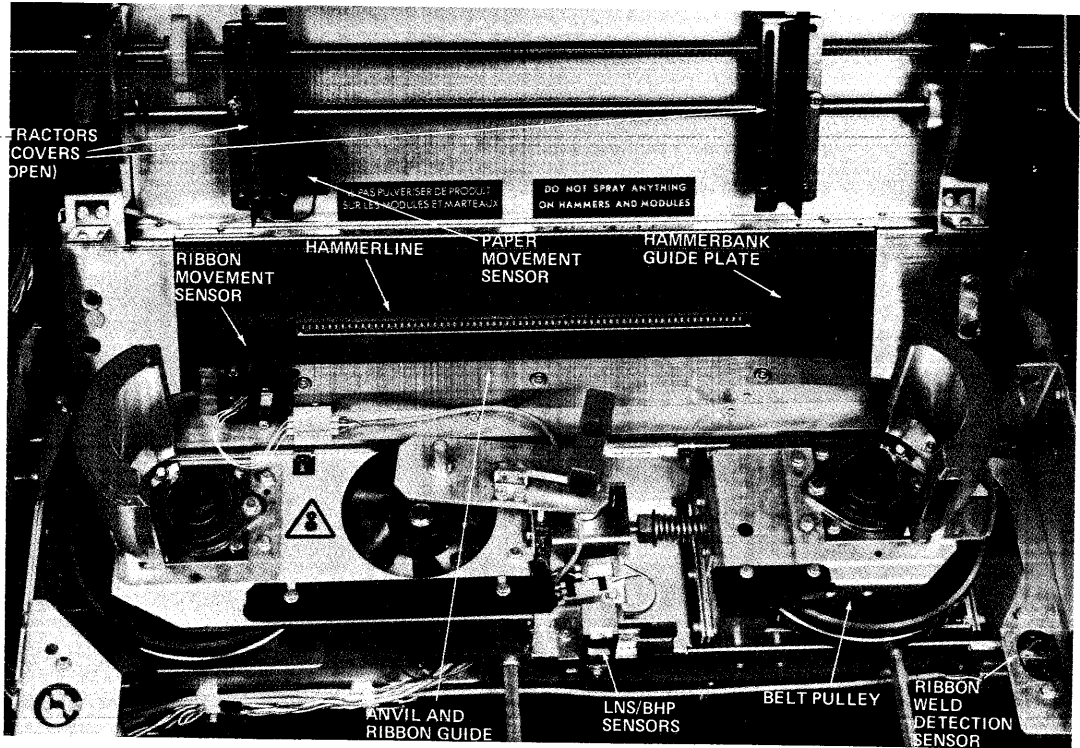
Figure 4-2. General Cleaning Areas

LNS/BHP Sensors Cleaning

Using General Cleaner, clean the ceramic face of the LNS and BHP sensors.

Anvil and Pulleys Driving Surfaces Cleaning

See Figure 4-3.

1. Using the soft brush and vacuum cleaner, remove dust from:
   - The anvil
   - The ribbon guide
   - The pulleys

2. Using General Cleaner, clean:
   - The anvil front surface
   - The ribbon guide front surface
   - The pulleys' driving surfaces and pulley grooves
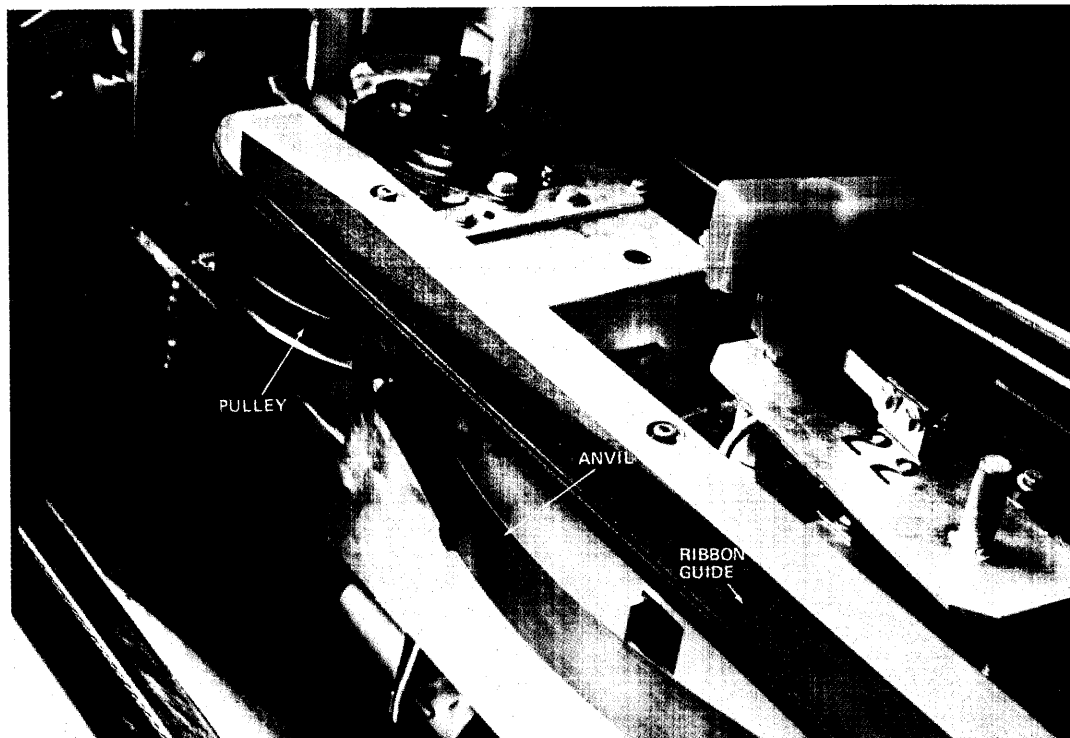
Figure 4-3. Anvil and Pulleys Driving Surfaces Cleaning

Anti-smudge Shield Checking and Cleaning

See Figure 4-4.

1. Check the anti-smudge shield for wear. The shield must be replaced when the dimples have worn smooth. (See Appendix B for ordering information.)

2. Using the vacuum cleaner, remove dust in the paper pressers area.

3. Using General Cleaner, remove ink marks and dirt from the Mylar mask, particularly around the slot.

Figure 4-4. Anti-smudge Shield Cleaning

Ribbon Cassette Cleaning

See Figure 4-5.

Note

Take care in cleaning the movable ink roller assembly as it is fragile.

1. Remove the ribbon refill cartridge. (See Ribbon Refill Cartridge Removal, Section 3.)

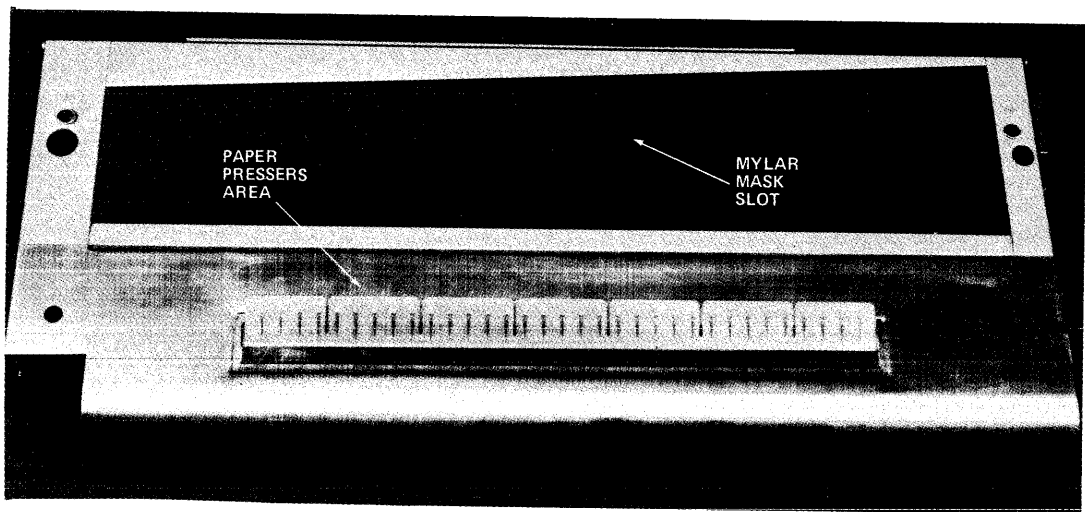2. Using the soft brush and vacuum cleaner, remove dust from:
   - The ribbon path
   - The ink roller
   - The ribbon drive rollers
   - The ribbon output rollers

3. Using General Cleaner, clean the following areas:
   - The ribbon drive rollers
   - The ribbon output rollers
   - The Mylar ribbon mask

4. Check rollers for free rotation and check that there are no ribbon threads caught around the roller shafts.

5. If necessary, install a new ribbon refill cartridge. (See Ribbon Refill Cartridge Installation, Section 3.)
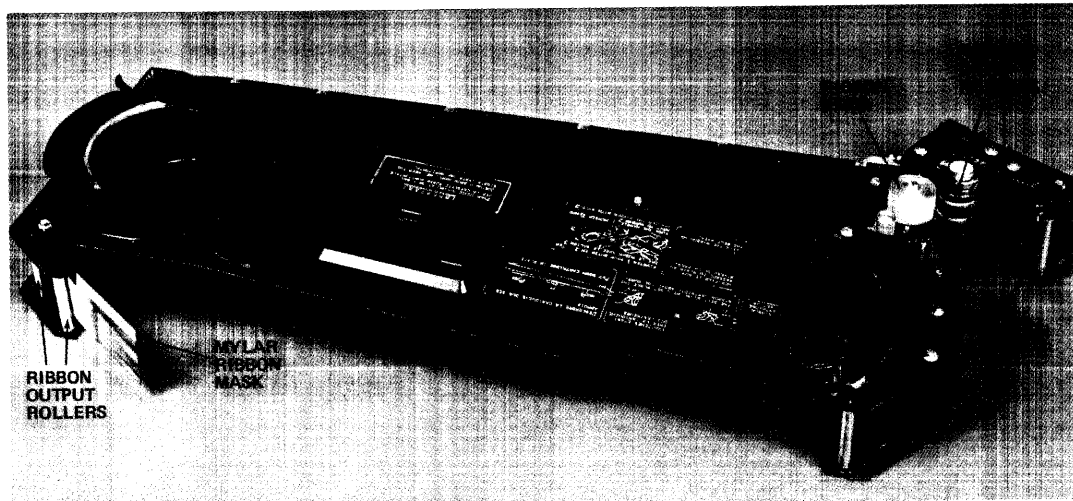
6. Check correct ribbon movement by turning knob.

Figure 4-5. Ribbon Cassette Cleaning

Section 5

Printer Tests

Online Tests

Refer to the *Total Online Test System (TOLTS) Reference Manual*, Order No. DD39, and the *Total Online Test System (TOLTS) Test Pages*, Order No. DD49.

Offline Tests

There are two offline tests available to the operator: the power-on test and the print test.

Power-On Test

When the printer is powered up (i.e., the circuit breakers are closed), two dots are lit on the control panel display after which the microprocessor interface (MPI) runs the MPI self-test. When the self-test is finished, 00 is displayed to indicate no error. Any other code displayed after power up indicates an error. Refer to Appendix A.

Print Test

In offline mode, set the PRINT TEST. The test consists of print and skip sequences using the 6 and 8 lines per inch skip modes and the 4 and 6 meters per second belt speeds if this option is installed. The test is interrupted by pressing the STOP push button on the control panel.

Appendix A
Error Codes

Table A-1 lists the error codes and associated incidents and interpretations. Table A-2 lists the corrective operator actions for each error code.

Table A-1. Error Codes

Error Code	Incident	Interpretation
00	—	No incident
01	SKI	Skip incident
03	TDI	Tractors disengaged
04	JAMI	Paper jam at tractors
05	PAPI	End of paper
06	YOOPI	Belt unit open
07	BROFI	Broken print belt finger
08	BONI	Belt start incident
09	RIBI	Ribbon motion incident
0A	RIBSI	Ribbon weld not detected
0B	STE	Power stacker incident
0C	ACAS	Ribbon cassette not present
0E	LNSI	Line strobe incident
14	LOPRI	Line buffer characters not all printed
19	ECHKI 1	Printing error, echo check-odd columns (IMP1)
1A	ECHKI 2	Printing error, echo check-even columns (IMP2)
1B	BLWF	Blower failure (overheating)
1C	SKF	Skip failure
1D	F40P	+40V supply failure

Error Code	Incident	Interpretation
1E	F40M	−40V supply failure
1F	BCF	Belt control failure
20	F9M	−9V supply failure
21	DIALI	Dialog incident between MPI and interface printed wiring assembly (PWA)
22[a]	SPTO	Printing or skip time out.
55[b]	—	MPI PWA faulty
91	PLB	Load overflow
92	VFU	Buffer load overflow
93	BIB	Belt image buffer overflow
94	—	Insufficient data loaded in belt image buffer
95	—	Invalid Vertical Format Unit (VFU) buffer load
96	—	Illegal VFU channel number
97	—	No stop on selected VFU channel
98	—	Invalid command sequence
99	—	Illegal command
A5[b]	—	DAI/PDSI PWA faulty
FF	—	Paper position asked
. .[b]	—	DAI/PDSI microprocessor faulty

[a]The printing or skip phase duration is greater than 20 seconds. This code appears only when running test and diagnostic programs.

[b]Displayed only during Power-on Test.

Table A-2. Corrective Operator Actions

Error Code	Operator Action
00	None
01[a]	—
03[a]	Engage paper tractors by means of TRACTOR ENGAGE SWITCH.
04[a]	Check paper and replace if necessary.
05[a]	Load machine with paper.
06[a]	Close belt unit.
07[a]	Check print belt for broken fingers. Replace belt if necessary. Clean belt if necessary. Refer to Print Belt Cleaning, Section 4.
08[a]	Using General Cleaner, clean ceramic face of LNS and BHP sensors, refer to LNS/BHP Sensors Cleaning, Section 4.
09[a]	Check if ribbon moves freely by rotating orange ribbon drive roller counterclockwise and check carefully if the ribbon part outside the cartridge is not twisted. If necessary, replace ribbon refill cartridge and perform Degree II preventive maintenance procedures.
0A[a]	Check if ribbon is well situated in fork of weld detection sensor and if sensor is not damaged. Clean sensor with soft brush and then with General Cleaner. Do not use other tools for cleaning. Refer to General Cleaning, Section 4.
	The error code may be displayed again after a time period of 8 to 12 minutes, if corrective action has not had effect. In this case, try two or three times (maximum) to restart.
0B[a]	Check power stacker for paper jams and check if paper receptacle has not reached lower limit.
0C[a]	Install ribbon cassette or, if installed, check for correct position.
0E[a]	Using General Cleaner, clean ceramic face of LNS and BHP sensors. Refer to LNS/BHP Sensors Cleaning, Section 4. Check if print belt does not show beginnings of rupture. If it does, replace belt.
14[a]	—
19[b]	—
1A[b]	—
1B[b]	—
1C[b]	—
1D[b]	—
1E[b]	—
1F[b]	—
20[b]	—
21[a]	—
22[a]	—
55[a]	—
91[a]	—
92[a]	—

Error Code	Operator Action
93[a]	—
94[a]	—
95[a]	—
96[a]	—
97[a]	—
98[a]	—
99[a]	—
A5[a]	—
FF[a]	—
. .[a]	—

[a]If this incident occurs, carry out corrective action(s) and do the following:

– Press ALARM RESET button

– Press STOP/START button.

If the incident is still present, refer to Section 4.

[b]If this incident occurs, do the following:

– Open main circuit breaker and then close both circuit breakers.

– Press ALARM RESET button.

– Press STOP/START button.

If the incident is still present, refer to Section 4.

Appendix B

Print Belts, Printer Ribbons, and Accessories

Print Belts [1]

The following standard belts are available at present:

Marketing Identifier	Description
M3500 [2]	Series 400/600/6000/Level 66 — 64 characters
M3501	IBM — 64 characters
M3513	ASCII (uppercase only) — 64 characters
M3524 [3]	OCR-A numeric — 64 characters
M3549 [3]	OCR-A alphanumeric — 64 characters
✓M3600	ASCII (uppercase/lowercase) — 96 characters
M3703	Series 200/2000 — 64 characters
M3213	ASII uppercase (modified) — 64 characters
M3300	ACII upercase/lowercase (modified) — 96 characters

Ribbons

Marketing Identifier	Description
M3561	Media Inking Kit — includes 1 cartridge, 10 ink bottles, 10 ribbon cartridges, and 1 pair of rubber gloves

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[1] The customer should complete and return the belt warranty card that accompanies the printer.

[2] Primary belt for Large Systems.

[3] The reading of OCR on an OCR document reader is not guaranteed at this time.

Accessories

Marketing Identifier	Description
M3562	Belt Cleaning Kit — includes 1 soft brush, 1 hard brush, 100 General Cleaner sachets, 10 pairs of gloves
M3563	Anti-Smudge Shield

LARGE SYSTEMS
PRU0901/1201
PRINTER OPERATION
ADDENDUM A

SUBJECT

Additions and Changes to the Manual

SPECIAL INSTRUCTIONS

This is the first addendum to CW99-00, dated August 1981. Insert the pages
into the manual according to the collating instructions on the back of this
cover. Change bars in the margins indicate new and changed information;
asterisks denote deletions.

   Note:

   Insert this cover behind the manual cover to indicate that the manual has
   been updated with this Addendum.

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COLLATING INSTRUCTIONS

To update this manual, remove old pages and insert new pages as follows:

Remove	Insert
1-3, 1-4	1-3, 1-4
2-1, 2-2	2-1, 2-2
3-7 through 3-10	3-7 through 3-10
4-1 through 4-4	4-1 through 4-4
A-1, blank	A-1 through A-4

HONEYWELL INFORMATION SYSTEMS
Technical Publications Remarks Form

TITLE

LARGE SYSTEMS
PRU0901/1201
PRINTER OPERATION
ADDENDUM A

ORDER NO. | CW99-00A

DATED | MAY 1982

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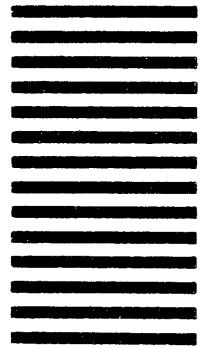NOTE: U. S. Postal Service will not deliver stapled forms

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