TECHNICAL MANUAL

OPERATOR'S UNIT, AND INTERMEDIATE DIRECT SUPPORT MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST

FOR

BAR CODE PRINTER GROUP CY-8539/G

HEADQUARTERS, DEPARTMENT OF THE ARMY

1 JULY 1988

Change
No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 15 January 1992

Operator's, Unit, and Direct Support Maintenance Manual Including Repair Parts and Special Tools List for Bar Code Printer Group CY-8539/G (NSN 7025-01-262-9555) (EIC: N/A)

TM 11-5895-1387-13&P, 1 July 1988, is changed as follows:

1. Title of manual is changed as shown above.

2. Remove old pages and insert new pages as indicated below. New or changed material is indicated by a vertical bar in the margin of the page. Added or revised illustrations are indicated by a bar adjacent to the identification number.

Remove pages	*Insert pages*
i and ii	i and ii
A-1/(A-2 blank)	A-1/(A-2 blank)
B-5 and B-6	B-5 and B-6
C-1 thru C-3/(C-4 blank)	C-1 thru C-3/(C-4 blank)
D-1 and D-2	D-1 and D-2
F-7 and F-8	F-7 and F-8

3. File this change sheet in front of the manual for reference purposes.

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

MILTON H. HAMILTON
Administrative Assistant to the
Secretary of the Army
00156

DISTRIBUTION:

To be distributed in accordance with DA Form 12-36-E, block 7964, Operator, Unit and Direct Support/General Support Maintenance requirements for TM 11-5895-1387-13&P.

5 SAFETY STEPS TO FOLLOW IF SOMEONE IS THE VICTIM OF ELECTRICAL SHOCK

1 **DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL**

2 **IF POSSIBLE, TURN OFF THE ELECTRICAL POWER**

3 **IF YOU CANNOT TURN OFF THE ELECTRICAL POWER, PULL, PUSH, OR LIFT THE PERSON TO SAFETY USING A DRY WOODEN POLE OR A DRY ROPE OR SOME OTHER INSULATING MATERIAL**

4 **SEND FOR HELP AS SOON AS POSSIBLE**

5 **AFTER THE INJURED PERSON IS FREE OF CONTACT WITH THE SOURCE OF ELECTRICAL SHOCK, MOVE THE PERSON A SHORT DISTANCE AWAY AND IMMEDIATELY START ARTIFICIAL RESUSCITATION**

SAFETY SUMMARY

The following are general safety precautions that are not related to any specific procedures and therefore do not appear elsewhere in this publication. These are recommended precautions that personnel must understand and apply during many phases of operation and maintenance.

KEEP AWAY FROM LIVE CIRCUITS

Operating personnel must at all times observe all safety regulations. Do not replace the fuses of the printer with the power supply turned on. Disconnect the power cord before replacing the fuses.

Be careful not to touch high-voltage connections or 110/240 volt ac input connections when installing or operating this equipment.

DO NOT PERFORM MAINTENANCE ALONE

Do not work on electronic equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment.

RESUSCITATION

Personnel working with electronic equipment should be familiar with resuscitation techniques and first aid. For artificial respiration, refer to FM 21-11.

TECHNICAL MANUAL
NO. 11-5895-1387-13&P

HEADQUARTERS
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Operator's, Unit, and Intermediate Direct Support Maintenance Manual Including Repair Parts and Special Tools List for Bar Code Printer Group CY-8539/G (NSN 7025-01-262-9555) (EIC: N/A)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes, or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-LM-LT, Fort Monmouth, New Jersey 07703-5007.

In either case, a reply will be furnished direct to you.

LIST OF ILLUSTRATIONS

CHAPTER 0
INTRODUCTION

0-1. SCOPE. This manual provides instructions for the operation and maintenance of the Logistics Applications of Automated Marking and Reading Symbols - Tactical (LOGMARS(T)). This manual deals specifically with Bar Code Printer Group CY-8539/G.

0-2. CONSOLIDATED INDEX OF ARMY PUBLICATIONS AND BLANK FORMS. Refer to the latest issue of DA Pam 25-30 to determine whether there are new additions, changes or additional publications pertaining to the equipment.

0-3. MAINTENANCE FORMS, RECORDS, AND REPORTS. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750, as contained in Maintenance Management Update.

0-4. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR). If your equipment needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about the design. Put it on an SF 368 (Product Quality Deficiency Report). Mail it to Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-PA-MA-D, Fort Monmouth, NJ 07703-5000. We'll send you a reply.

0-5. ADMINISTRATIVE STORAGE. Administrative storage of equipment issued to and used by Army activities will have preventive maintenance performed in accordance with the Preventive Maintenance Checks and Services (PMCS) charts before storing. When removing the equipment from administrative storage the PMCS should be performed to ensure operational readiness. Disassembly and repacking of equipment for shipment or limited storage are covered in paragraph 3-5.

0-6. DESTRUCTION OF ARMY ELECTRONICS MATERIEL. Destruction of Army electronics materiel to prevent enemy use will be in accordance with TM 750-244-2.

0-7. COMMON NAMES. Throughout the manual, equipment names have been shortened or abbreviated as follows:

Bar Code Printer Transit Case CY-8539/G	printer transit case
Bar Code Printer TT-831/G	printer
Bar Code Laminator	laminator
Interface Bar Code Printer Cable	interface printer cable
AC Power Adapter	adapter
Bar Code Reader	BCR
Communications Modem MD- 1245/G	modem
Interface Bar Code Reader Cable	RS232 connector cable

0-8. GLOSSARY OF TERMS. A list of abbreviations and terms can be found in the Glossary at the back of this manual.

CHAPTER 1
GENERAL INFORMATION

1-1. PURPOSE AND FUNCTION. LOGMARS(T) is an automated information collection system. Computer-generated bar code labels are affixed to boxes, tools, and equipment. These labels describe the items to which they are attached and are used for inventory purposes. Inventory information is collected by using a bar code reader and scanner. (Refer to TM 11-7021-210-13&P). A copy of information stored in the BCR can be obtained by connecting the BCR to the printer The printer can also be used to print bar code labels, which are then attached to items and protected with a clear laminate. The printer and its accessories are pictured in figures 1-1, 1-2, and Appendix F RPSTL of this manual.

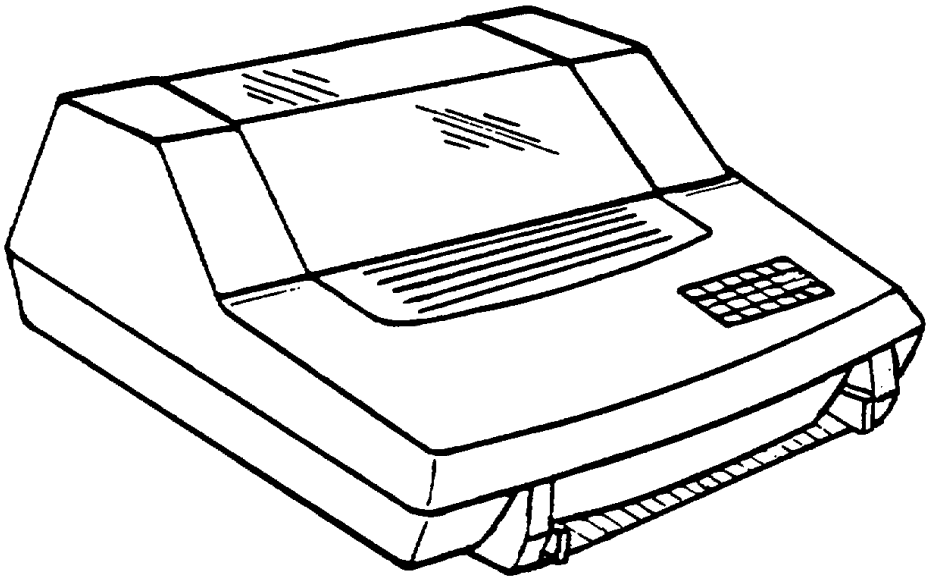

Figure 1-1. Bar Code Printer TT-831/G

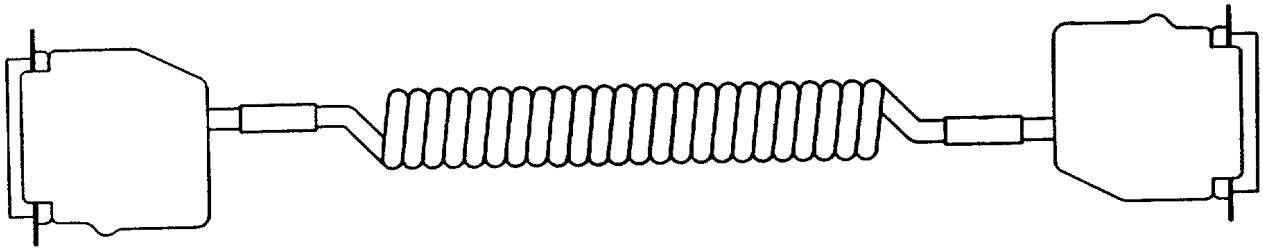

Figure 1-2. Interface Bar Code Printer Cable

1-2. LIST OF ITEMS. Each printer transit case will contain the following items as shown in Appendix F RSPTL of this manual.

1 Bar Code Printer TT-831/G
1 Bar Code Laminator (optional)
1 Interface Bar Code Printer Cable
1 AC Power Adapter
2 Ribbon Cartridges
2 0.8-amp Fuses
2 1.6-amp Fuses
1 Power Cord
1 TM 11-5895-1387-13&P
1 Packing List

1-3. WEIGHT AND DIMENSIONS.

a. *Entire Printer System*. Fully packaged in its transit case, the printer system weighs 39 pounds.

b. Printer. The printer measures 18.00 inches (45.72 cm) wide by 7.00 inches (17.8 cm) high by 14.50 inches (36.83 cm) deep. It weighs 16 pounds.

1-4. POWER REQUIREMENTS. Operating the printer requires 110-120 volts ac/60 Hz or 220-240 volts ac/50 Hz. An ac power adapter is required for use with a 220 volt ac power supply.

1-5. ENVIRONMENTAL REQUIREMENTS AND LIMITATIONS. The printer transit case and its contents should be protected from extreme temperatures, moisture, and abuse. Care should be taken during transporting, loading, and unloading to protect against shock and equipment damage.

1-6. STORAGE. The printer and its accessories should be stored in the printer transit case. The case was designed to protect the equipment from the environment and should not be thrown away.

1-7. TOOLS AND TEST EQUIPMENT. No special tools are required to operate the printer. A BCR, interface bar code reader cable (R5232 connector cable), diagnostic plug, and maintenance level diagnostic (MLD) custom

1-8. WARRANTY INFORMATION. The printer is warranted by SYSCON Corporation for 1 year from the date of acceptance by the Government at destination. Avoid tampering with any internal parts of the printer. Unauthorized opening of equipment could result in a loss of warranty.

1-9. SAFETY PRECAUTIONS. Care must be taken to avoid the possibility of electrical shock. The printer should always be in the OFF position when making connections, loading and positioning paper, changing the ribbon cartridge, or adjusting the head-to-platen gap.

1-10. STANDARD ARMY MANAGEMENT INFORMATION SYSTEMS (STAMIS). STAMIS refers to the application software developed for Army use. Some instructions for operating LOGMARS(T) equipment will vary, depending on the specific STAMIS loaded to your BCR. When operating instructions are software dependent, the operator will be referred to the STAMIS manual for specific instructions.

CHAPTER 2
OPERATING INSTRUCTIONS

2-1. UNPACKING AND INSPECTION.

a. Unpacking Carefully unpack the printer transit case. Be sure all of the following Items are included:

1 Bar Code Printer TT-831/G
1 Bar Code Laminator (optional)
1 Interface Bar Code Printer Cable
1 AC Power Adapter
2 Ribbon Cartridges (1 installed)
2 0.8-amp Fuses (1 installed)
2 1.6-amp Fuses(1 installed)
1 Power Cord
1 TM 11-5895-1387-13&P
1 Packing List

b. Inspection. Examine each item for obvious damage. Check cables for bent or broken pins and frayed coverings. Make sure the printer transit case and its contents have not been exposed to moisture or abrasive materials.

NOTE

The printer transit case is used to store the printer and its accessories when they are not in use. It is also used to transport the equipment and to return it for maintenance. Under no circumstances should the transit case be thrown away.

2-2. CONTROLS AND INDICATORS.

a. Back panel. Lift back panel access door. The only back panel control is the ON/OFF switch, which is used to apply power to the printer or turn the power off. See figure 2-1.

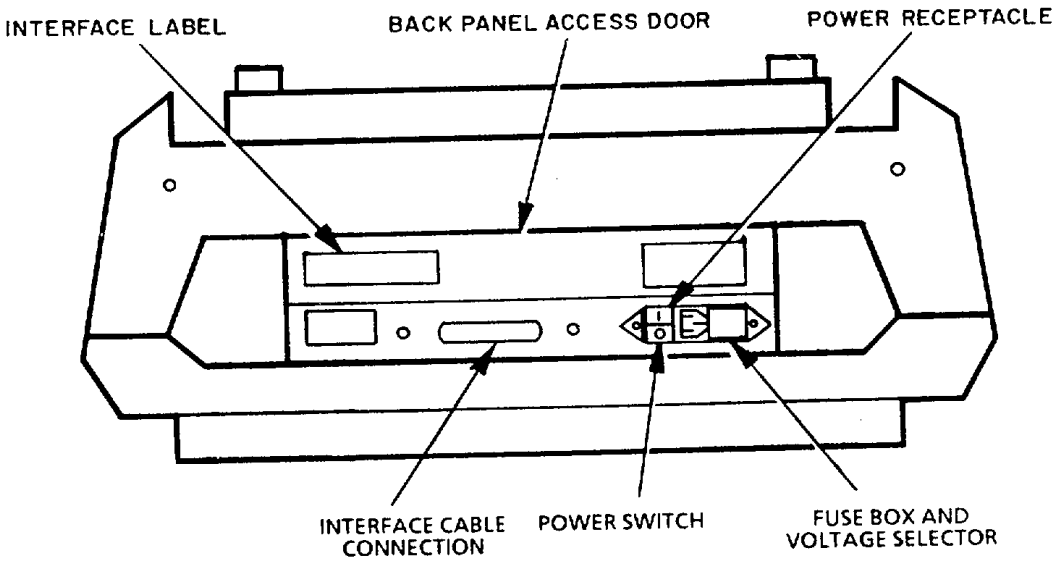

Figure 2-1. Back Panel Controls and Indicators

b. Front Panel. The front panel controls and Indicators are shown in figure 2-2 and described in table 2-1.

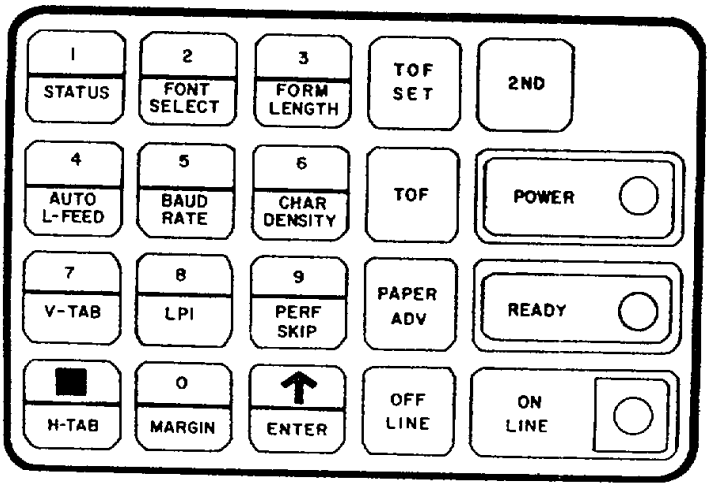

Figure 2-2. Front Panel Controls and Indicators

Table 2-1. Front Panel Controls and Indicators

Control/Indicator	Function/Description
POWER	When the printer is turned on the print head resets to the right, there is a short musical tone, and the POWER indicator light turns on.
READY	READY indicates whether he printer is prepared to print data or not. If the light is on, the printer has paper installed and is ready to print data. If the light is off, the printer does not have paper installed.
ON LINE ON LINE	indicates whether the printer is ready to receive data or not. If the light is on and the READY light is on, the printer is ready to receive data. When the light is off, the printer is off line. Pressing ON LINE will put the printer on line
OFF LINE	When OFF LINE is pressed, the ON LINE indicator goes off. The OFF LINE key shuts off any possible communication from the host computer. It can be used effectively as a "pause" key while the printer is printing. The printer must be off line when entering any of the keypad commands.
PAPER ADV (Paper Advance)	PAPER ADV is used to move the paper through the printer one line at a time If they key is held down, the paper will continuously advance until the key is released.
TOF SET (Top of Form Set)	TOF SET is used to tell the printer where the top of the form begins. When released, the current paper position is set as top of form. Once this is set, the printer can skip over each perforation (or top of form) to the next top of form. If this key is held down, the printer will advance paper one dot-sized increment at a time.
TOF (Top of Form)	TOF is used to move the paper from its present position to the top of the next form (or page). If this key and TOF SET are held down at the same time, the printer will reverse the paper slowly.
2ND	2ND gives each of the standard keys another function, similar to a typewriter shift key.
ENTER	ENTER is used to lock in printer mode settings. When entries are made on the keypad in the correct sequence, the printer responds with a series of variable pitch tones. If an entry is made incorrectly, a series of single pitch tones will be heard.

2-3. GENERAL OPERATING PRECAUTIONS.

a. Before You Operate. Always keep the cautions and warnings in mind. Inspect your equipment following paragraph 2-1 b.

b. While You Operate. Always keep the cautions and warnings in mind. Continually observe and listen to your equipment for any malfunctions or unusual noises.

c. After You Operate. Visually inspect your equipment for any defects.

d. If Your Equipment Falls To Operate. Report any deficiencies using proper forms. Refer to DA Pam 38-750.

2-4. OPERATION UNDER UNUSUAL CONDITIONS. While the printer was designed for tactical use, it is to be used only In a controlled environment. Care must be taken to avoid getting the printer wet. Avoid sand and abrasive particles because they can damage sensitive parts.

2-5. PREPARATION FOR USE. Before the printer can be used, several preliminary steps must be taken.

a. Select Proper Printer Voltage.

(1) Raise back panel access door.

(2) Ensure power switch is in OFF position.

(3) Locate fuse holder panel on rear of printer.

(4) With a screwdriver, gently pry fuse holder panel loose and remove.

(5) Gently remove voltage indicator card from rear of printer by pulling plastic indicator card out. See figure 2-3.

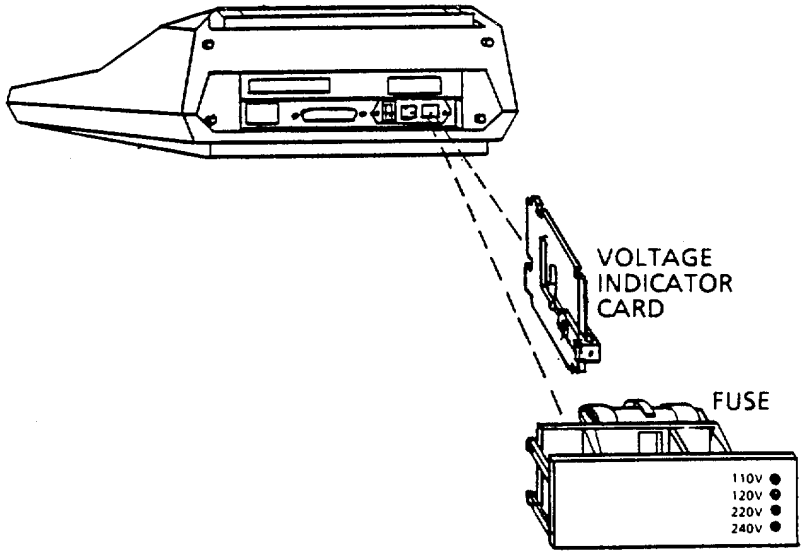

Figure 2-3. Indicator Card Pulled Out

(6) Hold card so that desired voltage can be read across bottom of card See figure 2-4 Voltage will be 120 V for-continental United States and 240 V for most overseas applications.

(7) Position indicator so It rests in notch at top of card.

(8) Insert card so that writing on the card faces the power cord receptacle. Push card until firmly seated. See figure 2-5.

(9) Insert fuse holder into receptacle and push until secure.

(10) Verify that Indicator is visible through hole adjacent to desired voltage.

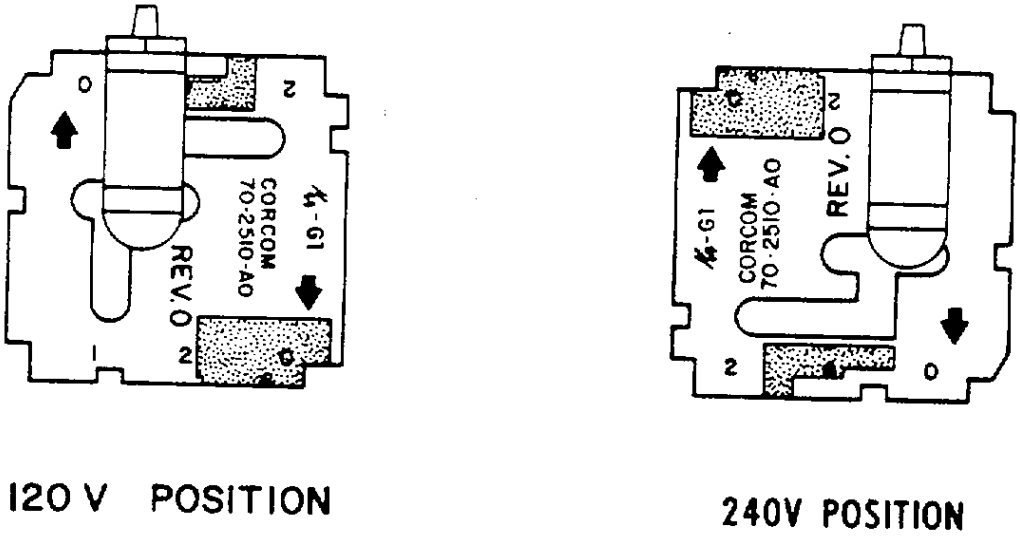

Figure 2-4. Desired Voltages

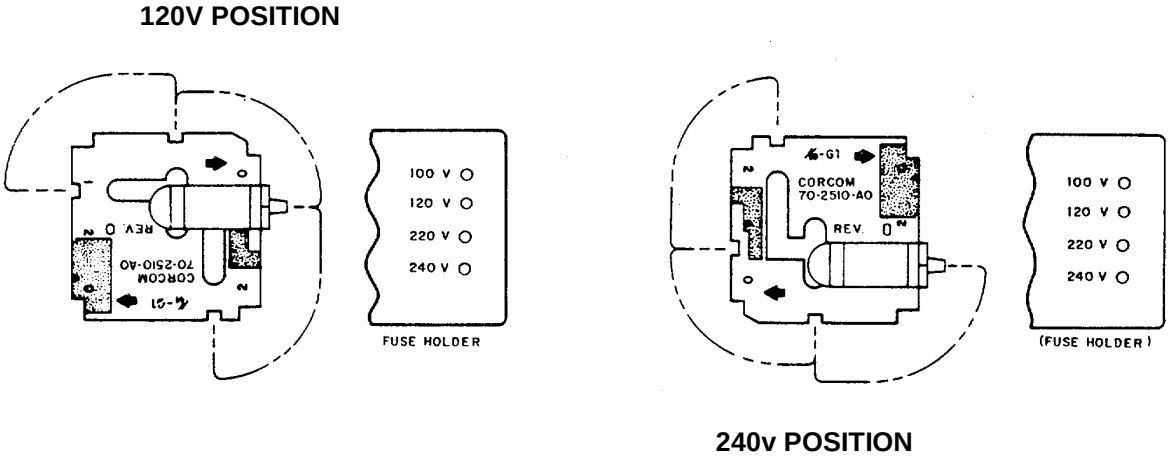

Figure 2-5. Printer Voltage Indicator Card

b. Supplying Power.

CAUTION
Be sure the printer is off before making any connections.

(1) Lift back panel access door.

(2) Connect power cord to printer power receptacle. Plug other end of power cord into 110-120 volt 60 Hz ac power source. For overseas applications, an optional 220-240 volt 50 hz ac adapter must be installed.

(3) Place power switch in ON position.

c. Loading Paper or Label Stock. To load paper or label stock, see figure 2-6.

CAUTION
Be sure printer is off before loading paper.

NOTE
The printer should be set at the factory to accept continuous form paper (tractor feed).

(1) Place power switch in OFF position.

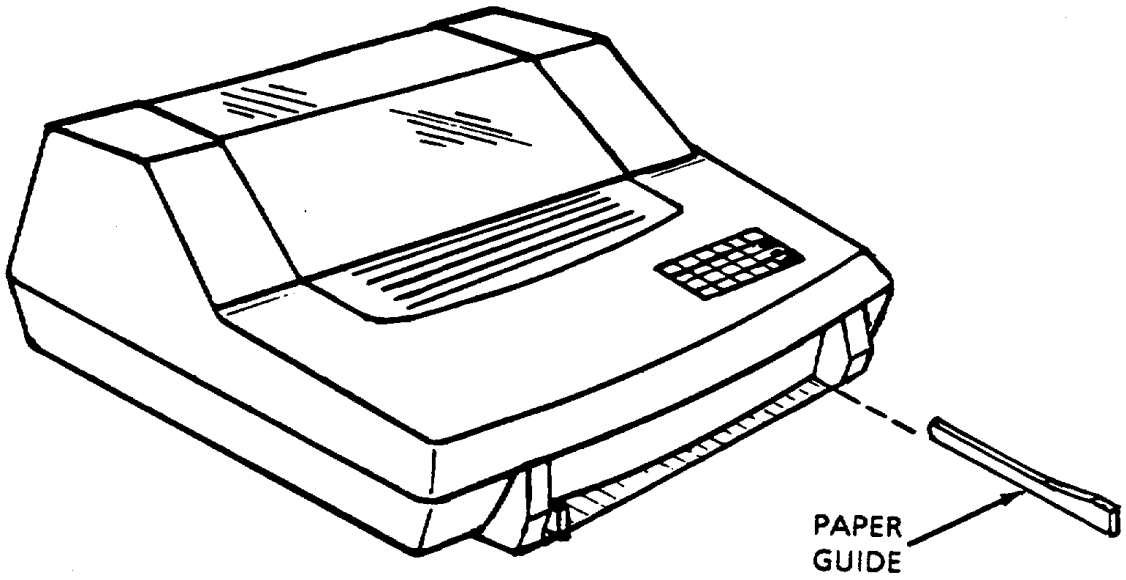

Figure 2-6. Loading Paper

(2) Remove translucent window from top of printer.

(3) Do not move left paper guide.

(4) Adjust right paper width guide to fit 2 1/2-inch to 9 1/2-inch paper or label stock.

(5) Position paper into tray at bottom front of p inter with left edge against paper guide.

(6) Slide paper in until it stops.

(7) Engage friction feed by pulling lever A to the left of printer See figure 2-7.

(8) Place power switch in ON position.

(9) Press PAPER ADV until paper extends slightly above tractor assembly. See figure 2-8

(10) If paper does not advance, turn printer off and repeat steps (5) through (9).

(11) Place power switch in OFF position.

(12) Disengage friction feed levers A and B by pulling lever B forward and sliding lever A behind lever B.

(13) Make sure right tractor is positioned to width of paper by releasing right locking lever and sliding right tractor to correct width. See figure 2-8.

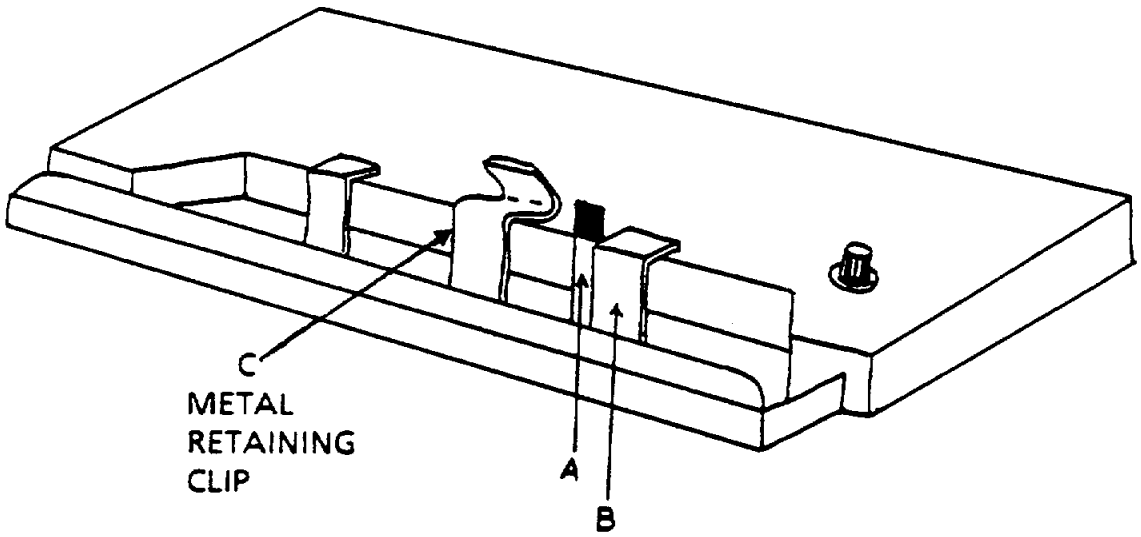

Figure 2-7. Friction Feed Levers

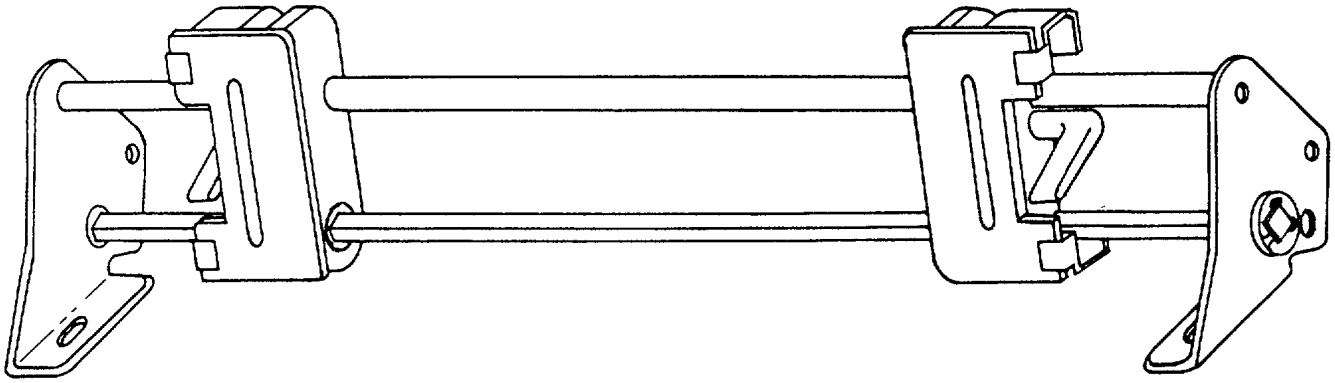

Figure 2-8. Tractor Feed Assembly

(14) Open doors on tractor assembly, and place holes on edge of paper over the tractor feed pins. Close tractor doors over tractor feed pins to hold paper in place.

(15) Make sure paper is slightly tight between tractors. Fasten right locking lever in place.

(16) Place power switch in ON position.

(17) Press PAPER ADV to advance paper until perforation of paper is slightly above ribbon.

(18) Press TOF SET to set the Top of Form.

(19) Replace translucent window on top of printer.

NOTE

Prior to operation, clear buffers Refer to paragraph 2-5 j.

d. Set Top Margin. Top margin allows the printer to pull the paper automatically up to a preset position. The positioning is measured in sixteenths of an inch and is the distance from the first line of print to the top of the page. It can be set from 0 to 176 sixteenths. Use the following softswitch keypad sequence to set top margin.

NOTE

The paper out indicator is active when Top Margin is being used. This will cause your printer to "beep" any time it has more to print yet is out of paper. This feature is very helpful if you are printing a long document on single sheets.

(1) Press OFF LINE.

(2) Press 2ND.

(3) Press 0.

(4) Enter desired top margin in sixteenths of an inch, (e.g., 2 inches would be entered as 32).

NOTE
If using a specific application, refer to STAMIS manual for this setting

(5) Press ENTER.

(6) Press ON LINE.

e. Form Length. Paper or form length can be set to any length from 0 to 99.5 inches, in 1/2-inch increments (e.g., 8 1/2 inches would be set as 8.5). Use the following softswitch keypad sequence.

(1) Press OFF LINE.

(2) Press 3/FORM LENGTH.

(3) Enter desired form length (N = 0 to 99.5).

(4) Press ENTER.

(5) Press ON LINE.

f. Set Left Margin. The left margin is used to adjust the leftmost print position and is set in fractions of 1/16 inch. To set the margin at 1 inch from the first printable position, set the margin at 16 To set the margin 2 inches from this position, the setting would be 32, etc. Use the following softswitch keypad sequence to set the left margin

NOTE
When using the left margin feature, the number of characters that can be printed on a single line will decrease by the amount of the margin.

(1) Press OFF LINE.

(2) Press 0/MARGIN.

(3) Press number of sixteenths inch for left margin, from 0 to 136 (e.g., 2 inches would be entered as 32).

(4) Press ENTER.

(5) Press ON LINE.

g. Baud Rate Selection. To set the baud rate via the softswitch keypad, use the following sequence.

(1) Press OFF LINE.

(2) Press 5/BAUD RATE.

(3) Enter desired baud rate based on specific application. See table 2-2.

(4) Press ENTER.

(5) Press ON LINE.

(6) To verify baud rate, print printer Status Report. Refer to paragraph 2-5 k.

Table 2-2. Printer Baud Rates

Baud Rate	Key In
50	50
75	75
110	110
135	135
150	150
300	3
600	6
1200	12
1800	18
2400	24
4800	48
7200	72
9600	96
19200	192

h. Head-to-Platen Gap Adjustment.

NOTE

Five head positions are available. The third lever position from the front is recommended for single-thickness paper.

(1) Place power switch in OFF position.

(2) Raise translucent window on top of printer.

(3) To widen space for multithickness paper, move lever back to fourth or fifth lever position.

(4) To narrow space for single-thickness paper, move the lever forward to first or second lever position. See figure 2-9.

(5) Lower translucent window on top of printer.

i. Set Print Quality Controls.

(1) Determine which quality is needed: draft or near-letter.

(2) Place power switch in ON position.

(3) To set for draft quality, press OFF LINE.

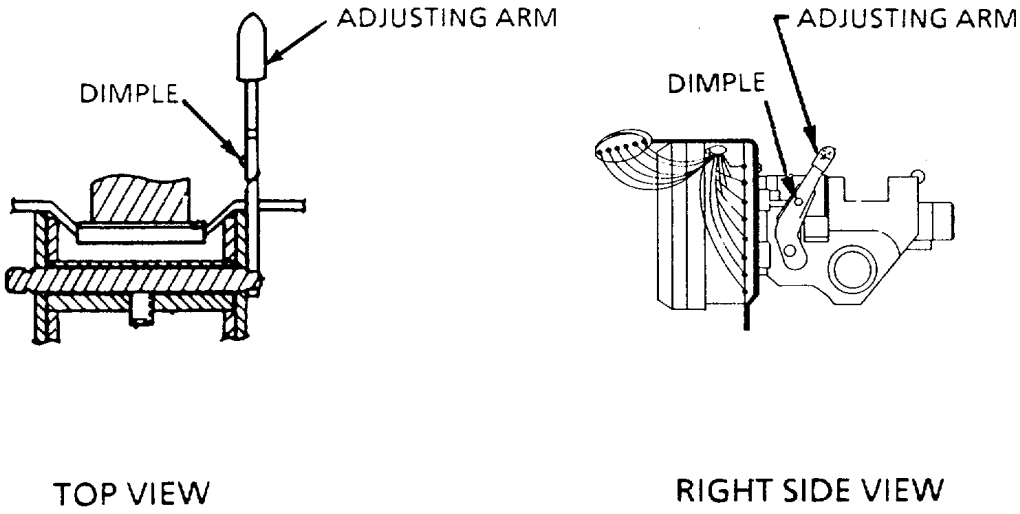

Figure 2-9. Head-To-Platen Gap Adjustment

(4) Press 6/CHAR DENSITY.

(5) Press 0 for draft quality print.

(6) Enter density. Characters per inch available are 10, 12, 14, 15, and 17.

(7) Press ENTER and verify acceptance tone.

(8) To verify print quality, print Status Report. Refer to paragraph 2-5 k.

(9) For near-letter quality print, press OFF LINE.

(10) Press 6/CHAR DENSITY.

(11) Press 5 for near-letter quality print.

(12) Enter density. Characters per inch available for near-letter quality print are 10 and 12.

(13) Press ENTER and verify acceptance tone.

(14) To verify print quality, print printer Status Report. Refer to paragraph 2-5 k.

j. Clearing Buffers.

(1) Press OFF LINE.

(2) Press 2ND.

(3) Press 5/BAUD RATE.

(4) Press 0/MARGIN.

(5) Press ENTER and verify acceptance tone.

(6) Press ON LINE.

k. Printer Status Report. The Status Report is a self-generated summary of the printer's current operating modes. It shows, within a few seconds, whether or not the printer is set to the desired operating modes. See figure 2-10. The X's at the bottom of the Printer Status Report indicate the position of the horizontal tabs To print a Status Report, proceed as follows.

NOTE

The printer's buffer must be empty to print a Status Report Refer to paragraph 2-5 j. You cannot interrupt the printing of text to print a Status Report.

(1) Press OFF LINE.

(2) Press 1/STATUS.

(3) Press ENTER and verify acceptance tone.

(4) Press ON LINE.

2-6. ADJUSTMENTS AND SETTINGS. Several adjustments and settings are provided below which make the printer easier to operate.

a. Lines Per Inch. To reset printer to 6 lines per inch or 8 lines per inch spacing, use the following softswitch keypad sequence.

(1) Press OFF LINE.

(2) Press 8/LPI.

(3) Press 6 or 8 (for 6 or 8 lines per inch).

(4) Press ENTER.

(5) Press ON LINE.

```
KEY:    STATUS:
     BARMATE 39/9 STATUS CHECK 3.2
     ROM CHECKSUM IS $11D7
     RAM SIZE IS 16K
1  - MPI MODE
2  - CHARACTER FONT IS USA ASCII
^2 - SLASH ZERO IS OFF
3  - FORM LENGTH IS 11
^3 - CHARACTER WRAP IS ON
4  - AUTO LINE FEED IS OFF
5  - INTERFACE IS SERIAL  9600 BAUD
     PARITY IS EVEN  PROTOCOL IS XON/XOFF
6  - CHARACTERS PER INCH IS 10 LETTER QUALITY
     GRAPHICS DENSITY IS 120 DPI
^6 - OCR-A PRINTING IS OFF
7  - VERTICAL TABS AT LINES
8  - LINES PER INCH IS 6
9  - PERFORATION SKIP IS 1
^. - CLEAR HORIZONTAL TABS
0  - LEFT MARGIN IS 8/16
^0 - TOP MARGIN IS 1

12345678901234567890123456789012345678901234567890123456789012345678901234567890
         X        X        X        X        X        X        X

CODE 39 BARCODE TEST PATTERN
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RATIONALIZED CODABAR TEST PATTERN
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Figure 2-10. Printer Status Report

b. Skip Over Perforation. The printer can automatically skip over the perforation. (This entails placing a 1/2-inch margin above and below the perforation.) For this feature to work properly, top of form and form length must be set properly. To turn skip over perforation on and off use the following softswitch keypad sequence.

NOTE

It is recommended that the skip over perforation feature be turned off when single sheets are being used.

(1) Press OFF LINE.

(2) Press 9/PERF SKIP.

(3) Press 1 to enable perforation skip, or press 0 to disable perforation skip.

(4) Press ENTER.

(5) Press ON LINE.

c. Auto Line Feed. This function allows you to turn the automatic line feed on or off. If your computer automatically generates a line feed at each carriage return, you will need to turn the auto line feed function off. Use the following keypad sequence to alter the auto line feed setting.

(1) Press OFF LINE.

(2) Press 4/AUTO L-FEED.

(3) Press 0 to turn the line feed off, or press 1 to turn line feed on.

(4) Press ENTER.

(5) Press ON LINE.

NOTE

Horizontal and vertical tabs are similar to the tabs used on a typewriter. Horizontal tabs are set at various column positions across the page. When the host computer's software sends a character, the print head automatically skips to the first tab position.

d. Set Vertical Tab. The vertical tab function allows you to preset tabs for forms. Vertical tabs are measured in lines from top of form. As an example, assume that vertical tabs are set at lines 11, 23, and 41 and the printer is at the top of form position. When the first vertical tab character is sent, the paper will advance until the print head is at line 11, etc. Vertical tabs are limited to eight. To set vertical tabs, use the following keypad sequence.

(1) Press OFF LINE.

(2) Press 7/V-TAB.

(3) Enter desired line position of tab from 1 to 248.

(4) Press ENTER.

NOTE

Repeat steps 2, 3, and 4 for multiple tab settings

(5) Press ON LINE.

e. Set Horizontal Tab. Horizontal tabs can be entered on lines 1 to 136. Use the following soft switch keypad sequence.

(1) Press OFF LINE.

(2) Press■/H-TAB.

(3) Enter line position of horizontal tab (N = 1 to 136).

(4) Press ENTER.

NOTE

Repeat steps 2, 3, and 4 for multiple tab settings.

(5) Press ON LINE.

f. Clear Vertical Tabs.

(1) Press OFF LINE.

(2) Press 7/V-TAB.

(3) Press ENTER.

(4) Press ON LINE.

g. Clear Horizontal Tabs.

(1) Press OFF LINE.

(2) Press 2ND.

(3) Press■/H-TAB.

(4) Press ENTER.

(5) Press ON LINE.

2-7. CONNECTION PROCEDURES. To receive and print inventory data, the printer can be hooked up to other LOGMARS(T) components in several different ways.

a. BCR to Printer.

CAUTION

Prior to connecting, check cables for bent or broken pins and frayed coverings. Be sure BCR and printer are off before making any connections.

(1) Press BCR OFF key.

(2) Place printer power switch in OFF position.

CAUTION

Do not force the RS232 connector cable into the BCR RS232 connector port or the interface printer cable connector. Connecting improperly can damage the connector pins.

Do not force the interface printer cable into the RS232- connector cable or printer. Connecting improperly can damage the connector pins.

(3) Remove rubber cap from BCR RS232 connector port. Connect the RS232 connector cable to the BCR RS232 connector port.

(4) Attach other end of RS232 connector cable to interface printer cable.

(5) Connect other end of interface printer cable to RS232 connector port on printer. See figure 2-11.

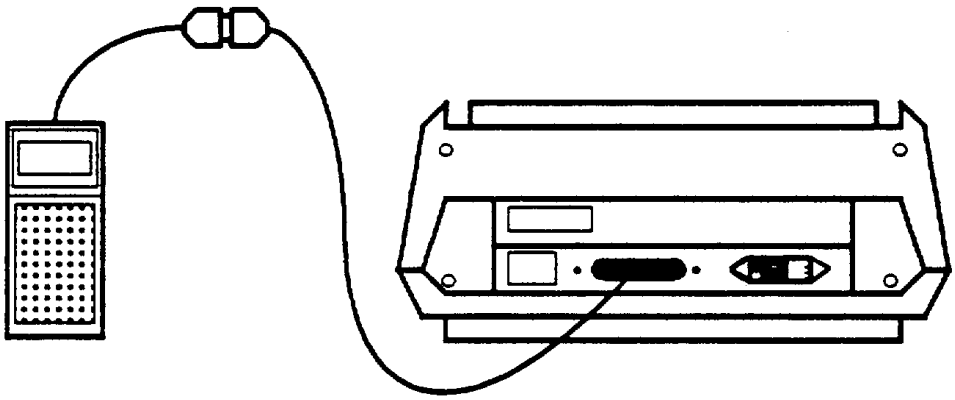

Figure 2-11. BCR to Printer

(6) Tighten connecting screws by hand until secure. Do not overtighten.

CAUTION

Do not forcibly pull the RS232 connector cable from the interface printer cable or the printer. Improper disconnection can damage the connector pins

(7) To disconnect RS232 connector cable from interface printer cable, carefully pull connectors apart.

(8) To disconnect RS232 connector cable from BCR, squeeze connector at BCR port and pull carefully.

(9) To disconnect the interface printer cable from the printer RS232 connector port, loosen the connecting screws by hand and carefully remove the connector from the port.

(10) Replace rubber cap over BCR RS232 connector port.

b. Printer to Host Computer.

CAUTION

Prior to connecting, check cables for bent or broken pins and frayed coverings.

Be sure printer is off before connecting it to host computer.

Do not force the interface printer cable into printer or host computer. Connecting improperly can damage the connector pins.

(1) Place printer power switch in OFF position.

(2) Connect one end of interface printer cable to RS232 connector port on the printer. Tighten connecting screws by hand until secure. Do not overtighten.

(3) The host computer operator will attach the other end of the interface printer cable to the port on the computer.

CAUTION

Do not forcibly pull the interface printer cable from printer or host computer. Improper disconnection can damage connector pins

(4) Host computer operator will disconnect interface printer cable from computer port by loosening connecting screws by hand and carefully pulling to disconnect.

(5) To disconnect interface printer cable from printer RS232 connector port, loosen connecting screws by hand and carefully pull to disconnect.

c. Printer to Modem.

CAUTION

Prior to connecting, check cables for bent or broken pins and frayed coverings Be sure printer and modem are off before making any connections Do not force the interface printer cable into the modem port or the printer port Connecting improperly can damage connector pins

(1) Place modem POWER ON/OFF switch in OFF position.

(2) Place printer power switch in OFF position.

(3) Connect one end of interface modem cable to RS232 connector port on printer. Tighten connecting screws by hand until secure Do not overtighten.

(4) Connect other end of interface modem cable to DTE port on modem. Tighten connecting screws by hand until secure. Do not overtighten.

(5) Disconnect telephone cable from wall jack. Connect telephone cable to TELSET port on rear panel of modem.

(6) Connect larger end of telephone signal cable (provided with modem) to TELCO port on rear of modem.

(7) Connect smaller end of signal cable to wall jack.

CAUTION

Do not forcibly pull the interface printer cable from the ports on the printer or modem. Improper disconnection can damage connector pins.

(8) To disconnect interface modem cable from printer RS232 connector port, loosen connecting screws by hand and carefully pull to disconnect.

(9) To disconnect interface modem cable from DTE receptacle on modem, loosen connecting screws by hand and carefully pull to disconnect

(10) To disconnect signal cable from TELCO port on modem, depress clip on connector and pull out.

(11) To disconnect signal cable wire from wall jack, depress clip on connector and pull out.

(12) To disconnect telephone cable from TELSET port on modem, depress clip and pull out.

(13) Reconnect telephone cable to wall jack.

2-8. OPERATING PROCEDURES. There are several ways to print inventory information stored in the BCR or host computer

a. Printing BCR Information.

NOTE

Specific printing instructions are STAMIS dependent. Refer to applicable user's manual

b. Printing Host Computer Information.

CAUTION

Prior to connecting, check cables for bent or broken pins and frayed coverings

Be sure host computer and printer are off before making any connections.

(1) Place printer power switch in OFF (O) position.

(2) To make host computer to printer connection, refer to paragraph 2-7 b.

(3) Switch printer on.

NOTE

Host computer operator will complete printer command sequence

(4) Host computer operator will complete the print command function.

(5) Switch printer off.

(6) Disconnect printer and host computer. Refer to paragraph 2-7 b.

c. Printing Host Computer Information via Modem.

CAUTION

Prior to connecting, check cables for bent or broken pins and frayed coverings.

Be sure modem is off before making any connections

(1) Set modem up in accordance with TM 11-7025-263-13&P.

(2) To make host to printer via modem connection, refer to paragraph 2-7 c.

(3) Switch modem on.

(4) Set mode selector switch on TALK.

(5) contact host computer operator to arrange data transfer, using standard Army protocol.

(6) Set mode selector switch on DATA for transfer of information.

(7) Switch printer on.

(8) Host operator will complete print command functions.

(9) Disconnect printer and modem. Refer to paragraph 2-7 c.

d. Printing Host Computer Information via Field Wire.

CAUTION

Prior to connecting, check cables for bent or broken pins and frayed coverings.

Be sure printer and modem are off before making any connections

(1) Set modem up in accordance with TM 11-7025-263-13&P.

(2) To make printer to modem configuration, refer to paragraph 2-7 c, (1-4).

(3) Contact host computer operator via field phone to arrange for data transfer.

(4) Disconnect field wire from field phone.

(5) Connect field wire to spring-loaded binding posts on modem as follows See figure 2-12.

(a) Press firmly on green TIP binding post until a small hole is revealed.

(b) Insert tip wire into small hole in binding post.

(c) Release post.

(d) Repeat steps (a) through (c) for red RING binding post and ring wire.

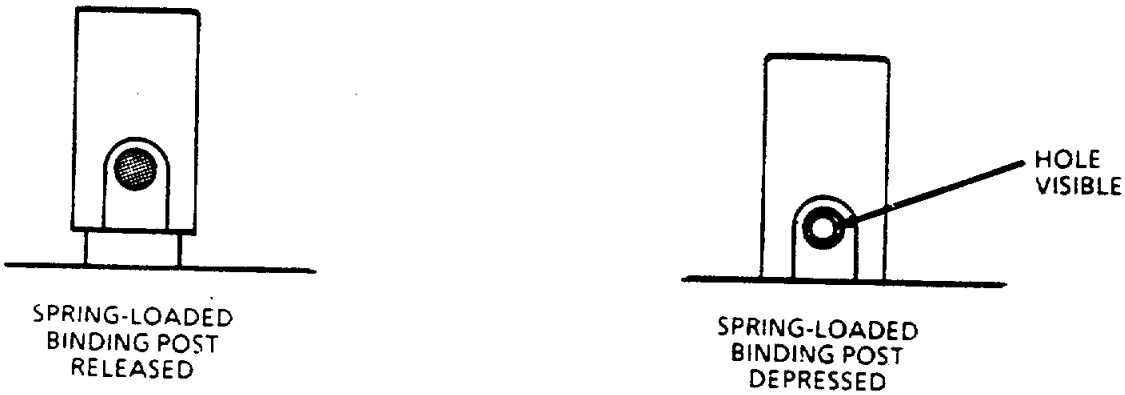

Figure 2-12. Field Wire Connection

(6) Set modem DIP switches. Refer to TM 11-7025-263-13&P.

(7) Switch printer power on.

(8) Switch modem power on.

(9) Set mode selector switch to DATA for transfer of information.

(10) The host operator will transfer the information.

(11) Upon completion of printing, switch printer and modem off.

(12) To detach field wire from spring-loaded binding posts on modem, press in on each post and carefully pull wire out of each binding post.

(13) To disconnect printer and modem cables, refer to paragraph 2-7 c (8-9).

(14) Reconnect field wire to field phone.

(15) Reset modem DIP switches. Refer to TM 11-7025-263-13&P.

e. Printing a Bar Code Label.

NOTE

Specific printing instructions are STAMIS dependent. Refer to applicable user's manual.

f. Applying and Laminating a Bar Code Label.

(1) Identify location for bar code label.

(2) Prepare surface (It should be clean and dry.)

(3) Remove label from backing.

(4) Press label on prepared location.

(5) Press roller of applicator firmly against surface to be laminated approximately 1 inch from edge of label, with applicator handle parallel to label.

(6) Pull applicator by the handle, maintaining positive roller contact with surface to be laminated, until laminating material covers label.

(7) Cut laminate with the applicator's cutting edge.

(8) Press laminate to remove bubbles.

CHAPTER 3
UNIT MAINTENANCE INSTRUCTIONS

3-1. PREVENTIVE MAINTENANCE CHECKS AND SER VICES (PMCS).

a. Inspection. Examine each item for obvious damage. Check cables for bent or broken pins and frayed coverings. Make sure the printer has not been exposed to moisture or abrasive materials.

b. Cleaning.

CAUTION

Be sure printer is off and disconnected from ac power source before cleaning. Do not soak cleaning cloth with liquid cleaner Do not drop or spill liquid on the printer. Do not use spray cleaners. Do not clean inside connector ports.

(1) Slightly moisten a clean, lint-free cloth with a general-purpose cleaner.

(2) Wipe printer exterior only.

(3) Dry exterior with a clean, dry lint-free cloth.

3-2. TESTING.

a. Examine each item for obvious damage. Check cables for bent or broken pins and frayed coverings. Make sure printer and cables have not been exposed to moisture.

b. Check power and cord connection. Refer to paragraph 2-5 b.

c. Check cable connections to ensure they are secure. Refer to paragraph 2-7.

d. Check voltage Refer to paragraph 2-5 a.

e. Check fuse. Refer to paragraph 3-4 b.

f. Perform Printer Self Test See figure 3-1.

(1) Place power switch in ON position.

(2) Hold down PAPER ADV and press TOF.

(3) Release keys to discontinue self-test when at least eight lines have been printed.

```
)*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrs
*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrst
+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstu
,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuv
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:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~!"#$%&
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=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~!"#$%&'()
```

Figure 3-1. Printer Self-Test

g. Run Printer Status Report. Refer to paragraph 2-5 k.

3-3. TROUBLESHOOTING. See figure 3-2 for troubleshooting information for the printer.

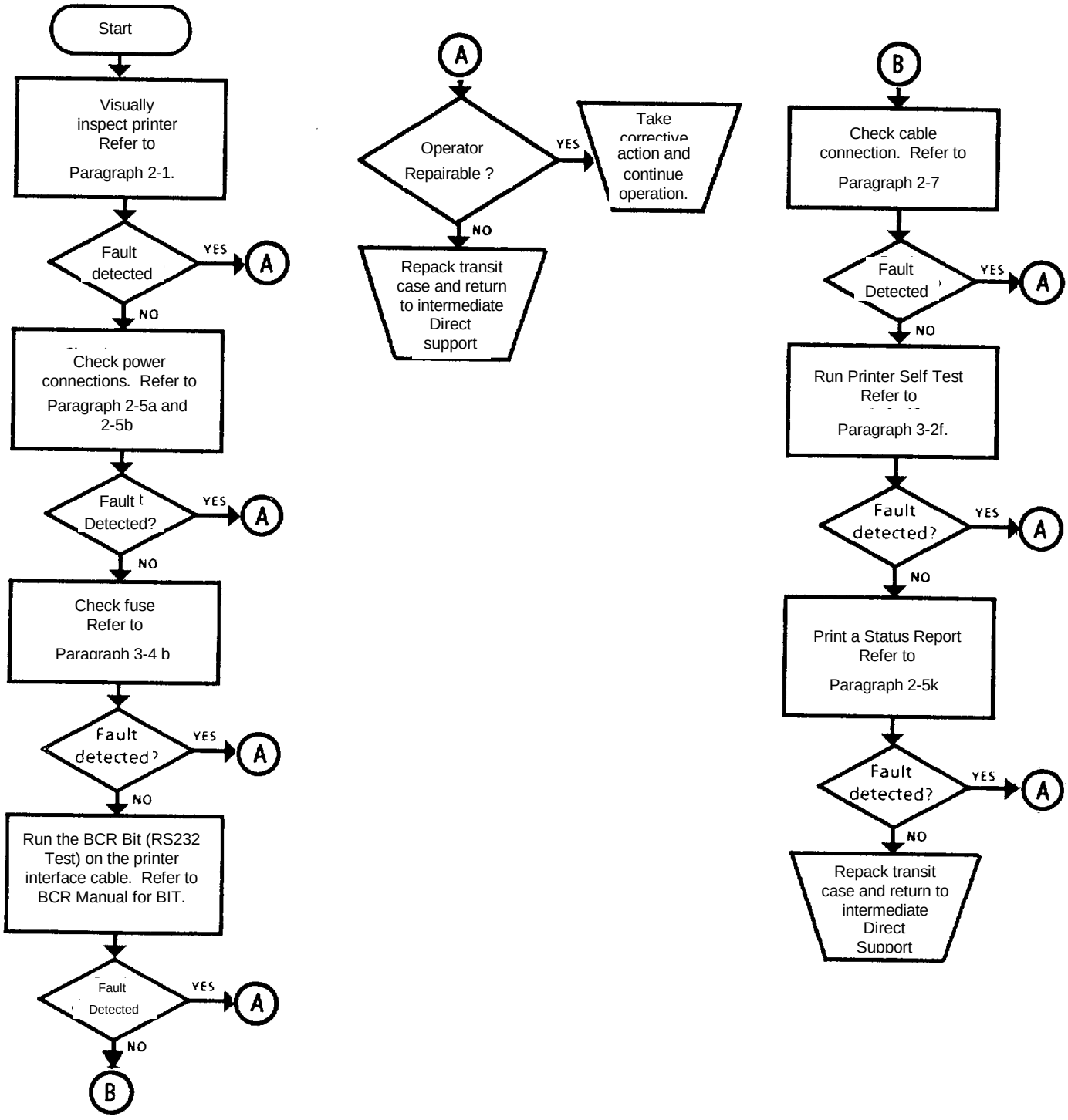


Figure 3-2. Printer Operator Troubleshooting Flow Chart

3-4. PARTS REPLACEMENT. The printer has two replaceable parts: the ribbon cartridge and a 1 6- or 0 8-amp use. To replace these parts, proceed as follows.

a. Ribbon Cartridge Installation.

NOTE

The ink ribbon is contained in a cartridge, which is held in place by a metal retaining clip in the center of the cartridge Make sure that the ribbon is held securely in place by this clip whenever the printer is in use.

(1) Place power switch in ON position.

(2) Remove translucent window from top of printer.

(3) Press PAPER ADV, advancing paper until perforation is slightly above ribbon.

CAUTION

Be sure printer is off before replacing ribbon cartridge.

(4) Place power switch in OFF position.

(5) Open tractor doors and pull paper off tractor pins, laying it toward printer front.

(6) Engage friction feed and tear paper just above ribbon. Refer to paragraph 2-5 c (7).

(7) Close tractor doors.

(8) Release locking lever on right side tractor and slide it adjacent to left tractor. See figure 2-8.

(9) Pull forward the metal retaining clip in the center of the printer See figure 2-7.

(10) Lift ribbon cartridge up and out of printer.

(11) Adjust ribbon tension on new cartridge by turning adjustment knob in direction of arrow Allow approximately 1/4 inch slack.

(12) Guide new ribbon cartridge under tractors from the rear of the tractor feed shaft.

(13) Seat ribbon cartridge into place with nylon ribbon between printhead and paper.

(14) Turn adjustment knob to engage drive gear.

(15) Pull ribbon retaining clip upward, and seat It over ribbon cartridge.

(16) Place power switch in ON position.

(17) Reload paper in accordance with steps 2-5 c (9) through (13).

(18) Replace translucent window on top of printer.

(19) Place power switch in ON position.

b. Fuse Replacement.

CAUTION
Be sure printer is off before changing fuse.

(1) Place power switch in OFF position.

(2) Disconnect power cable from rear of printer.

(3) Locate fuse panel on printer rear panel.

(4) Insert screwdriver into slot on left side of fuse panel Carefully pry panel loose and remove fuse holder.

(5) Remove fuse from holder.

(6) Replace fuse with one of equal rating (a 0.8- or a 1 6-amp fuse).

(7) Reinsert fuse holder and replace fuse panel.

(8) Reconnect power cable.

(9) Place printer power switch in ON position and verify by the tone that power has been applied.

3-5. PREPARATION FOR SHIPMENT. When shipping the printer, use the printer transit case. If the original case has been damaged, order one from the direct supply support activity. Prior to shipment, proceed as follows.

a. Remove paper.

b. Disconnect all cables from printer.

c. Pack all contents in printer transit case. Refer to Appendix F RPSTL.

CHAPTER 4
DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

4-1. PREVENTIVE MAINTENANCE.

a. Cleaning. Refer to the cleaning procedures in paragraph 3-1 b.

b. Lubricating.

CAUTION
Be sure printer is disconnected from ac power source before lubricating or before any maintenance is performed.

(1) Disconnect printer from power source.

(2) Remove translucent window from top of printer.

(3) Remove printer cover.

1 Stand printer on four rubber feet so printer is resting on its rear surface. Remove the two screws that are not securing rubber feet to the printer base (bottom front, outside corners).

2 Rest printer on its base and remove the two upper feet on the rear of the printer.

CAUTION
Printer top cover is attached to the main circuit board by a ribbon cable Use caution when removing cover to avoid damage to the equipment.

3 Standing in front of printer, remove top cover, bringing rear portion up first. Invert printer cover so that length of ribbon cable will permit cover to rest on table in front of printer.

(4) Remove ribbon cartridge. Refer to paragraph 3-4 a.

(5) Using a vacuum cleaner with a nonmetallic nozzle, carefully vacuum all accessible areas of printer interior.

(6) Remove all oil and dirt from printhead guide bars and catch tray below them.

(7) Place a maximum of 1 drop of SAE l0wt oil on felt pad at left side of bottom printhead guide bar. See figure 4-1.

(8) Spread 1 drop of SAE 1Owt oil across each guide bar See figure 4-1.

(9) Place a drop of SAE 1Owt oil on top of shaft that drives ribbon cartridge See figure 4-1.

(10) Place a drop of SAE lOwt oil on both ends of ribbon drive shaft See figure 4-1.

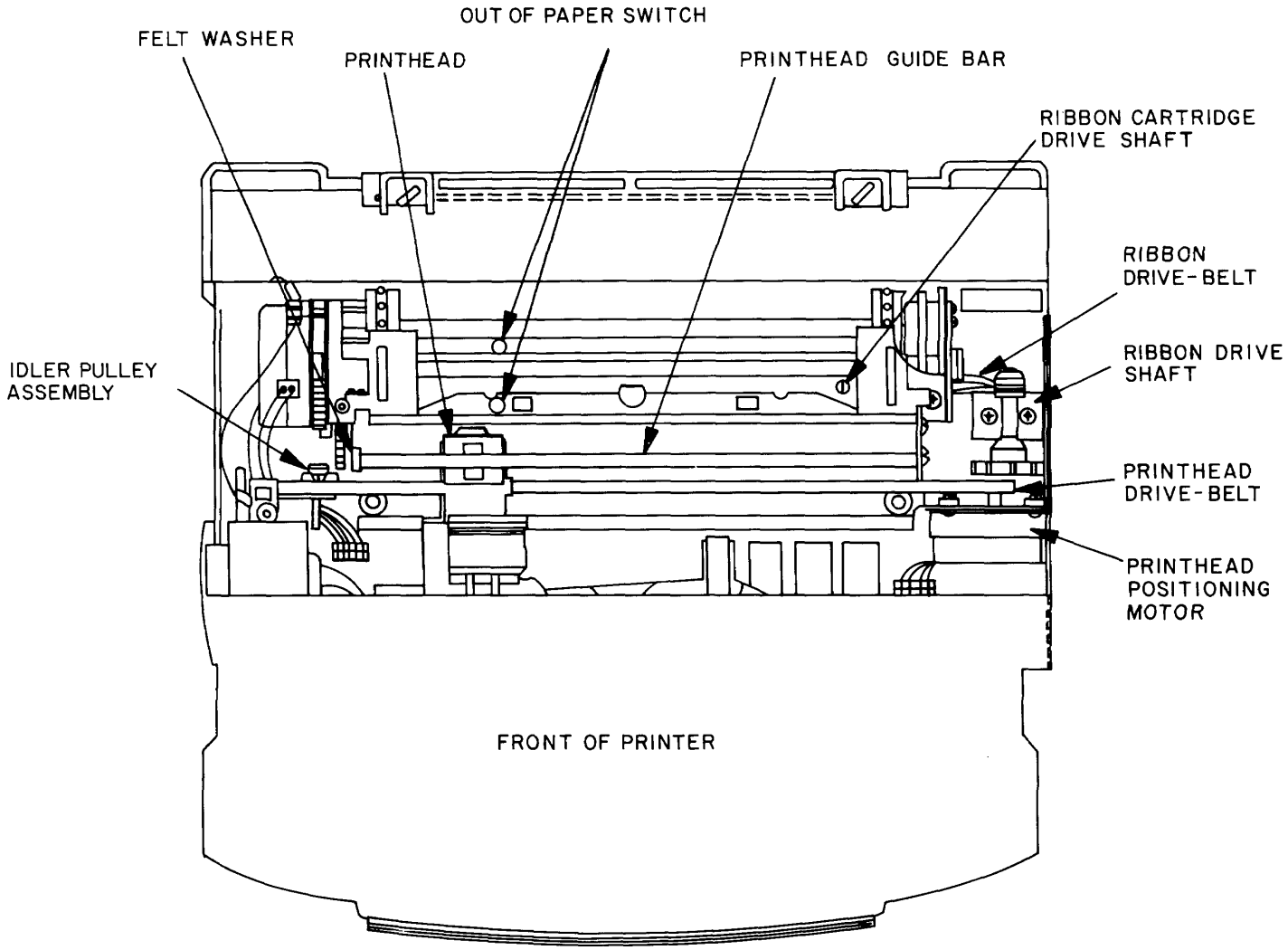


Figure 4-1. Printer Part Location

(11) Replace ribbon cartridge Refer to paragraph 3-4 a.

(12) Replace printer cover.

1 Standing in front of printer, invert printer cover and carefully fit it to base of printer.

2 Replace the two rubber feet on the rear of the printer.

3 Stand printer on four rubber feet so it is resting on its rear surface. Replace the two screws on the bottom front, outside corners.

(13) Replace translucent window on top of printer.

(14) Reconnect printer power supply.

c. Ribbon Drive Belt Adjustment.

CAUTION

Be sure printer Is disconnected from ac power source before adjusting ribbon drive belt or before any maintenance is performed.

(1) Disconnect printer from power ac source.

(2) Remove translucent window from top of printer.

(3) Remove printer cover. Refer to paragraph 4-1b.

(4) Loosen adjusting screw of printhead drive belt idler pulley assembly.

(5) Loosen four screws that secure the printhead positioning motor and idler pulley in place.

(6) Loosen the two screws that hold the ribbon drive shaft bracket to the motor bracket.

(7) Slide ribbon drive belt shaft bracket towards you until the proper tension is placed on drive belt. To check tension squeeze the belt, using light finger pressure. It should compress until both sides are touching. Tighten the two screws in the ribbon drive belt bracket. Make sure bracket does not rotate as mounting screws are tightened.

(8) Check play in drive shaft. It should not exceed 1/32 inch. If it does, reposition retaining rings.

(9) Position printhead drive motor such that motor gear meshes with ribbon drive gear with a small amount of backlash. Secure motor by tightening its mounting screws.

(10) Adjust idler pulley assembly for proper belt tension. Proper belt tension will allow approximately 1/4 inch of movement by the upper portion of the drive belt when light downward finger pressure is applied. Tighten idler pulley adjustment screw to maintain proper tension.

(11) Replace printer cover. Refer to paragraph 4-1b.

(12) Replace translucent window on top of printer.

d. Printhead Drive Belt Adjustment.

CAUTION

Be sure printer is disconnected from ac power source before adjusting printhead drive belt or before any maintenance is performed.

(1) Place printer power switch in OFF position.

(2) Disconnect printer from ac power source.

(3) Remove translucent window from top of printer.

(4) Remove printer cover Refer to paragraph 4-1b.

(5) Adjust Idler pulley assembly for proper belt tension Proper belt tension will allow approximately 1/4 inch of movement by the upper portion of the drive belt when light downward finger pressure is applied. Tighten idler pulley adjustment screw to maintain proper tension.

(6) Replace printer cover Refer to paragraph 4-1 b.

(7) Replace translucent window on top of printer.

(8) Insert paper through front.

(9) Plug into power source.

(10) Turn power on and run printer self-test (paragraph 4-2 b) and printer Status Report (paragraph 2-5 k).

(11) Re-adjust printhead drive belt tension if necessary.

(12) Remove paper.

e. Out of Paper Switch Adjustment.

(1) Place power switch in OFF position.

(2) Remove translucent window from top of printer.

(3) Remove ribbon cartridge. Refer to paragraph 3-4 a.

(4) Loosen two screws that secure out-of-paper switch. See figure 4-1.

(5) Slide out-of-paper switch to back position by sliding adjustment screws toward rear of printer.

(6) Engage friction paper feed Refer to paragraph 2-5 c (7).

(7) Place power switch in ON position.

(8) Slide paper into front paper feed slot.

(9) Push paper into contact with pressure rollers.

(10) Holding paper in contact with pressure rollers, adjust out-of-paper switch until READY Indicator comes on.

(11) Secure switch assembly in this position by tightening two No. 4 screws.

(12) Remove paper and observe that READY indicator goes off If the indicator does not go off, repeat steps (8) through (12).

(13) Reinsert paper in paper feed slot.

(14) Verify that READY indicator comes on at proper time.

(15) Replace ribbon cartridge Refer to paragraph 3-4a.

(16) Press PAPER ADV key until paper is in position with perforation showing slightly above ribbon.

(17) Press OFF LINE, then TOF SET to tell printer where each sheet begins.

(18) Press ON LINE.

(19) Replace translucent window on top of printer.

(20) Verify that mechanism will catch paper when it is inserted and place it at specified top margin.

4-2. CORRECTIVE MAINTENANCE. When an unserviceable printer has been turned in, proceed as follows:

a. Inspection. Inspect transit case to ensure that these contents are included:

1 Bar Code Printer TT-831/G
1 Bar Code Laminator (optional)
1 Interface Bar Code Printer Cable
1 AC Power Adapter
2 Ribbon Cartridges
2 0.8-amp Fuses
2 1.6-amp Fuses
1 Power Cord
1 Tm 11-5895-1387-13&P
1 Packing List

b. Testing.

(1) Checking DIP Switches. DIP switches inside the printer are preset at the factory To ensure that the switches are in the correct positions, proceed as follows:

WARNING
Make sure printer is unplugged before working with internal components.

(a) Disconnect printer from power source.

(b) Remove printer cover Refer to paragraph 4-1b(3).

(c) Locate DIP switches. See figure 4-2.

(d) Compare DIP switch settings to required settings shown in table 4-1.

CAUTION
To avoid equipment damage, use only the proper tool to set DIP switches Do not use pencil, pen, toothpick, screwdriver, etc.

(e) If a switch position is incorrect, use a plastic electronic alignment tool to move switch into correct position.

(f) Replace printer cover. Refer to paragraph 4-1b(12).

(g) Reconnect printer to power source.

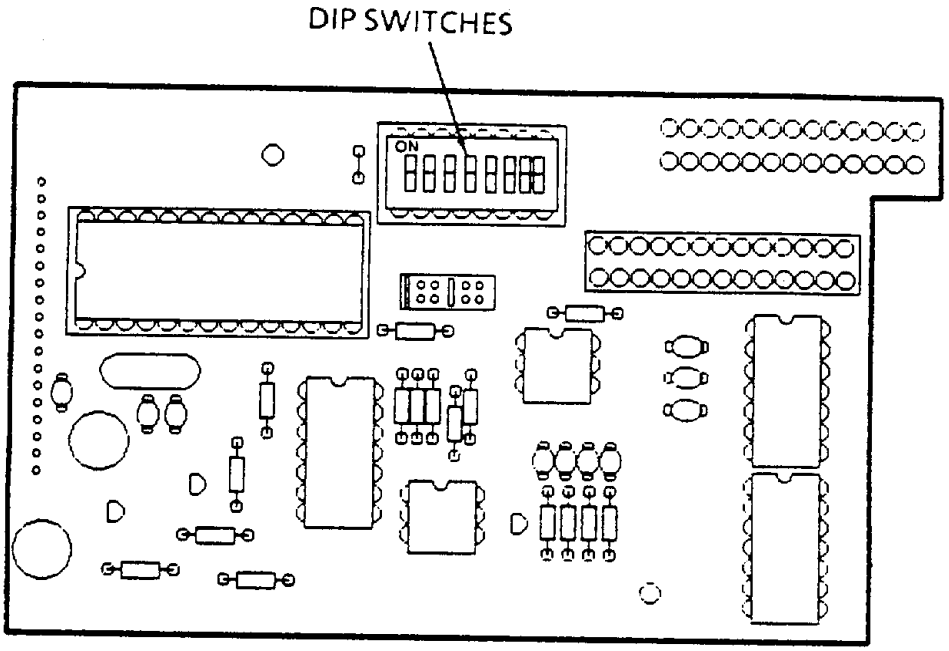


Figure 4-2. DIP Switch Locations

Table 4-1. Factory Switch Settings

SWITCH SETTING							
1	2	3	4	5	6	7	8
ON	OFF	ON	OFF	OFF	OFF	OFF	OFF

(2) Printer Self-Test.

(a) Place power switch in ON position.

(b) Hold down PAPER ADV and press TOF.

(c) Release keys to discontinue self-test when at least eight lines have been printed.

(3) Maintenance Level Diagnostic (MLD) To perform the MLD, proceed as follows See figure 4-3 for Maintainer Troubleshooting Flow Chart.

CAUTION

Ensure that BCR is off before inserting MLD CAM Make sure that BCR Is not connected to any other equipment.

(a) Install the MLD CAM. Refer to TM 11-7021-210-13&P.

(b) Press BCR ON.
Prompt: MODEM TEST

(c) Press down arrow key until prompt reads:
PRINTER TEST

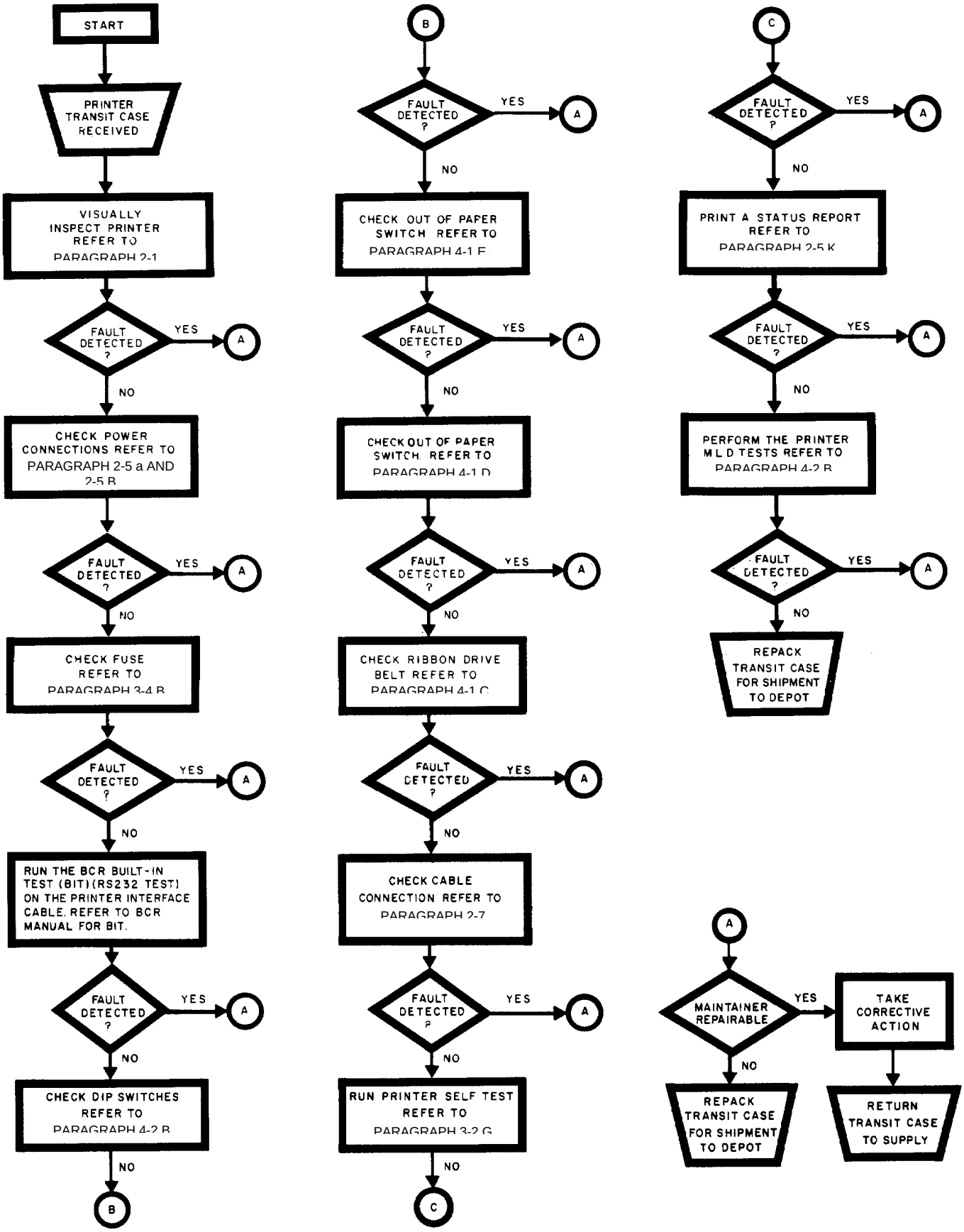


Figure 4-3. Printer Maintainer Troubleshooting Flow Chart.

(d) Press ENTER.
Prompt: PRINTER TEST
PRESS ENTER

(e) Press ENTER.
Prompt: PRINT CHARACTER
SET

(f) Press up and down arrow keys to access individual printer tests:
PRINT CHARACTER
PRINT CHARACTER
SET
PRINT 30F9 LABEL
PRINT CDBR LABEL

(g) Press ENTER when prompt reads:
PRINT CHARACTER SET

CAUTION
Turn BCR OFF before making any connections.

(h) Press BCR OFF. Connect RS232 connector cable to BCR and Interface printer cable Connect interface printer cable to printer. Press BCR ON.

(i) Verify that printer is set at 9600 baud by running a Status Report. If the printer is not set at 9600 baud, refer to paragraph 2-5 g.

(j) Press ENTER.
Prompt: ATTACH PRINTER
PRESS ENTER

(k) Press ENTER. Observe the entire character set being printed in a barber pole test pattern. Failure of the printer to print this pattern indicates a fault in the printer or its cable.

(l) After at least 8 lines have been printed, press CLEAR.
Prompt: PRINT CHARACTER
SET

(m) Press up and down arrow keys until prompt reads:
PRINT CHARACTER

(n) Press ENTER.
Prompt: ATTACH PRINTER

NOTE
Because the printer and the BCR are already attached, no new connections need to be made.

(o) Press ENTER.
Prompt: CHARACTER =

(p) Press any alphabetic or numeric key or group of keys on BCR keyboard.

(q) Press ENTER.

(r) Observe character being printed.

(s) Press CLEAR when test is completed.
Prompt: PRINT CHARACTER

(t) Press down arrow key until prompt reads:
PRINT 3 OF 9 LABEL

(u) Press ENTER.
Prompt: ATTACH PRINTER
PRESS ENTER

NOTE

Because the printer and the BCR are already attached, no new connections need to be made.

(v) Press ENTER. Observe proper bar code label being printed.

(w) After label is completely printed, the prompt: COMM READY will appear Press CLEAR to return to printer test menu.

(x) Press up or down arrow key to access Print CDBR Label.

(y) Press ENTER when prompt reads:
PRINT CDBR LABEL

(z) Prompt: ATTACH PRINTER
PRESS ENTER

NOTE

Because the printer and the BCR are already attached, no new connections need to be made.

(aa) Press ENTER. Observe printer printing specified bar code label.

(ab) When bar code label Is completely printed, the prompt: COMM READY will appear. Press CLEAR to return to printer test menu.

(ac) To exit printer tests, press CLEAR The display returns to the MLD Menu.

(ad) Turn BCR and printer off.

(ae) Disconnect BCR from printer. Refer to paragraph 2-7 a.

4-3. PREPARATION FOR SHIPMENT. Refer to paragraph 3-5. Do not requisition transit case from Intermediate Direct Support.

APPENDIX A
REFERENCES

A-1. INTRODUCTION

This appendix lists all forms, field manuals and technical manuals referenced in, or required for use with, this technical manual.

A-2. FORMS

No forms are required for use with the printer.

A-3. TECHNICAL MANUALS

Microprocessor Group CY-8537/G	TM 11-7021-210-13&P
Communications Modem Group CY-8538/G	TM 11-7025-263-13&P
Procedures for Destruction of Electronic Materiel to Prevent Enemy Use (Electronics Command)	TM 750-244-2

A-4. MISCELLANEOUS PUBLICATIONS

The Army Maintenance Management System	DA Pam 738-750
Consolidated Index of-Army Publications and Blank Forms	DA Pam 25-30

A-5. MANUALS

First Aid for Soldiers	FM 21-11

APPENDIX B
MAINTENANCE ALLOCATION CHART

SECTION I. INTRODUCTION

B-1. General

This appendix provides a summary of the maintenance operations for the Bar Code Printer Group CY-8539/G. It authorizes levels of maintenance for specific maintenance functions on repairable items and components, and the tools and equipment required to perform each function This appendix may be used as an aid in planning maintenance operations.

B-2. Maintenance Function

Maintenance functions will be limited to and defined as follows:

a. Inspect To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

b. Test. To verify serviceability and to detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. Operations required periodically to keep an item in proper operating condition; i.e., to clean (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.

d. Adjust. To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.

e. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test-measuring and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. Install. The act of emplacing, seating, or fixing into position an item, part, module (component or assembly) in a manner to allow the proper functioning of the equipment or system.

h. Replace. The act of substituting a serviceable like-type part, subassembly, or module (component or assembly) for an unserviceable counterpart.

i. Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, or replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

j. Overhaul. That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition, as prescribed by maintenance standards (i.e., DMWR) in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army Overhaul does not normally return an item to like new condition.

k. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours, miles, etc) considered in classifying Army equipment/components.

B-3. Column Entries

a. Column 1, Group Number. Column 1 lists group numbers, the purpose of which is to Identify components, assemblies, subassemblies, and modules with the next higher assembly.

b. Column 2, Component/Assembly. Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. Column 3, Maintenance Function. Column 3 lists the functions to be performed on the item listed in column 2. When items are listed without maintenance functions, it is solely for the purpose of having the group numbers in the MAC and RPSTL coincide.

d. Column 4, Maintenance Level. Column 4 specifies, by the listing of a "work time" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the functions listed In column 3. This figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance categories, appropriate "work time" figures will be shown for each level. The number of task-hours specified by the "work time" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions This time includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. Subcolumns of Column 4 are as follows:

UNIT
C - Operator/Crew
O - Organizational

INTERMEDIATE
F - Direct Support
H - General Support

DEPOT
D - Depot

e. Column 5, Tools and Equipment. Column 5 specifies, by code, those common tool sets (not individual tools) and special tools, test, and support equipment required to perform the designated function.

f. Column 6, Remarks. Column 6 contains an alphabetic code that leads to the remark in Section IV, Remarks, which is pertinent to the item opposite the particular code.

B-4. Tools and Test Equipment Requirements (Section III)

a. Tools or Test Equipment Reference Code. The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool or test equipment for the maintenance functions.

b. Maintenance Level. The codes in this column indicate the maintenance level allocated the tools or test equipment.

c. Nomenclature. This column lists the noun name and nomenclature of the tools and test equipment required to perform the maintenance functions.

d. National/NATO Stock Number. This column lists the National/NATO stock number of the specific tool or test equipment.

e. Tool Number. This column lists the manufacturer's part number of the tool followed by the Federal Supply Code for manufacturers (5-digit) in parentheses.

B-5. Remarks (Section IV)

a. Reference Code. This code refers to the appropriate item in Section II, Column 6.

b. Remarks. This column provides the required explanatory information necessary to clarify items appearing in Section II.

SECTION II. MAINTENANCE ALLOCATION CHART
FOR
LOGMARS(T) BAR CODE PRINTER GROUP (CY-8539/G)

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
00	BAR CODE PRINTER GROUP CY-8539/G	INSPECT		0.1					A, B
		TEST			0.5			1, 2, 3, 5	G
		SERVICE		0.1					K, L
		REPAIR		0.1					D, H
01	BARCODE PRINTER TT-831/G	INSPECT		0.1					A
		TEST		0.1					O
	TEST				0.5			1, 2, 4, 7	C
		SERVICE		0.1					M
		SERVICE				0.1			Q
		ADJUST		0.1				6	J
		ADJUST				0.5		8	P
		REPLACE				0.5			N
		REPAIR		0.1				7	E, I
		REPAIR						0.6	F

SECTION III. TOOL AND TEST EQUIPMENT REQUIREMENTS FOR LOGMARS(T) BAR CODE PRINTER GROUP (CY-8539/G)

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
1	F	BAR CODE READER GROUP		
2	F	INTERFACE BAR CODE READER CABLE (RS232) P/O BCR GROUP		
3	F	BAR CODE READER DIAGNOSTIC PLUG P/O BCR GROUP		
4	F	MAINTENANCE LEVEL DIAGNOSTIC (MLD) CAM		
5	F	GENDER CHANGER P/O BCR GROUP		
6	0	ELECTRONIC ALIGNMENT TOOL	5210-00-288-7781	
7	0	SCREWDRIVER		
8	F	TK-17 TOOL KIT		

SECTION IV. REMARKS FOR LOGMARS(T) BAR CODE PRINTER GROUP (CY-8539/G)

REFERENCE CODE	REMARKS
A	VISUALLY INSPECT FOR BROKEN, DAMAGED EQUIPMENT.
B	CHECK PRESSURE RELIEF VALVE ON TRANSIT CASE.
C	TEST PRINTER BY PERFORMING SELF-TEST AND MAINTENANCE LEVEL DIAGNOSTIC (MLD) TEST.
D	REPLACE DAMAGED BAR CODE PRINTER INTERFACE CABLE, POWER CORD, AC POWER ADAPTER, AND BAR CODE PRINTER. SEE NOTE 1.
E	REPLACE FUSE.
F	REPAIR PERFORMED AT CONTRACTOR DEPOT.
G	TEST BAR CODE PRINTER CABLE USING A BAR CODE READER, INTERFACE BAR CODE READER CABLE (RS232), BAR CODE READER DIAGNOSTIC PLUG, AND GENDER CHANGER.
H	REPLACE TRANSIT CASE SEE NOTE 1.
I	REPLACE CARTRIDGE RIBBON.
J	ADJUST HEAD-TO-PLATEN GAP.
K	SERVICE BY CLEANING EXTERIOR OF TRANSIT CASE.
L	SERVICE BY CLEANING NON-METAL PORTIONS OF CABLES.
M	SERVICE BY CLEANING EXTERIOR OF PRINTER, LUBRICATION OF PRINTHEAD GUIDE BAR.
N	REPLACEMENT INCLUDES SCREENING DEFECTIVE COMPONENTS SPECIAL HANDLING REQUIRED FOR CONTRACTOR-REPAIRABLE ITEMS.
O	TEST USING PRINTER SELF-TEST.
P	ADJUST RIBBON DRIVE BELT, PRINTHEAD DRIVE BELT, OUT OF PAPER SWITCH, AND PRINTER DIP SWITCHES.
Q	SERVICE BY LUBRICATING RIBBON DRIVE SHAFT AND RIBBON CARTRIDGE DRIVE SHAFT.

NOTE 1. REPLACED COMPONENT IS PACKED UP WITH ALL OTHER ITEMS IN THE BAR CODE PRINTER TRANSIT CASE AND RETURNED TO INTERMEDIATE DIRECT SUPPORT (IDS)

APPENDIX C
COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

SECTION I. INTRODUCTION

C-1. SCOPE

This appendix lists components of end item and basic issue items for the printer to help you inventory items required for safe and efficient operation.

C-2. GENERAL

The Components of End Item and Basic Issue Items Lists are divided into the following sections:

a. Section II. Components of End Item. This listing is for informational purposes only, and is not authority to requisition replacements. These items are part of the end item, but are removed and separately packaged for transportation or shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

b. Section III. Basic Issue Items. These are the minimum essential items required to place the printer in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, BII must be with the printer during operations and whenever it is transferred between property accounts. The illustrations will assist you with hard to identify items. This manual is your authority to request/requisition replacement BII, based on TOE/MTOE authorization of the end item.

C-3. EXPLANATION OF COLUMNS

The following provides an explanation of columns found in the tabular listings:

a. Column (1) - Illustration Number (Illus Number). This column indicates the number of the illustration in which the item is shown.

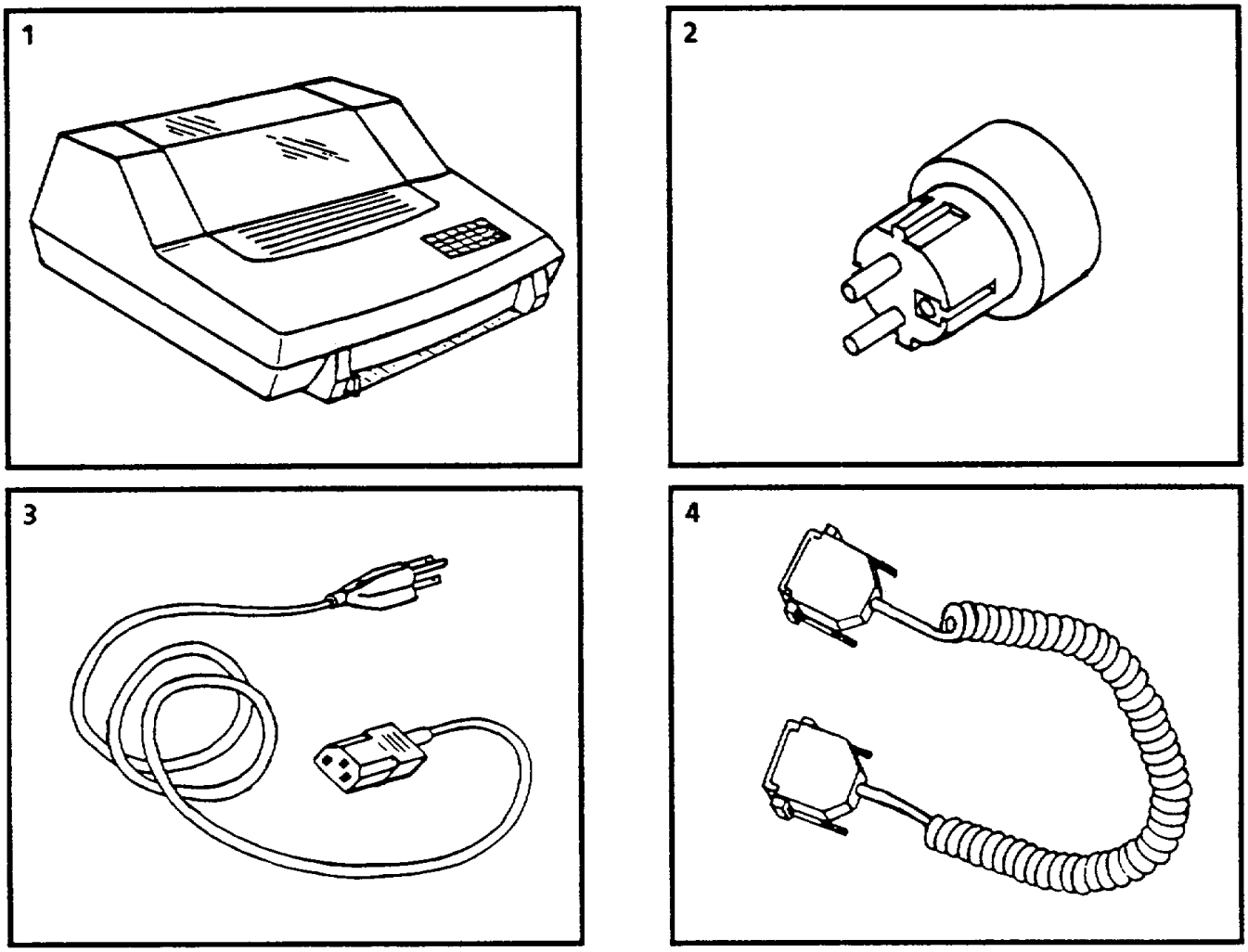
b. Column (2) - National Stock Number Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

c. Column (3) - Description. Indicates the Federal item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the FSCM (in parentheses) followed by the part number.

d. Column (4) - Unit of Measure (U/M). Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr).

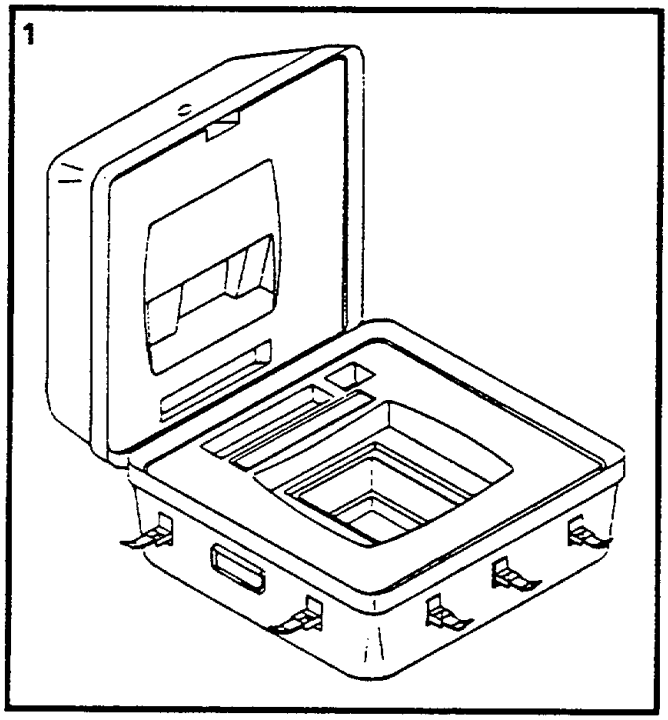
e. Column (5) - Quantity required (Qty rqr). Indicates the quantity of the item authorized to be used with/on the equipment.

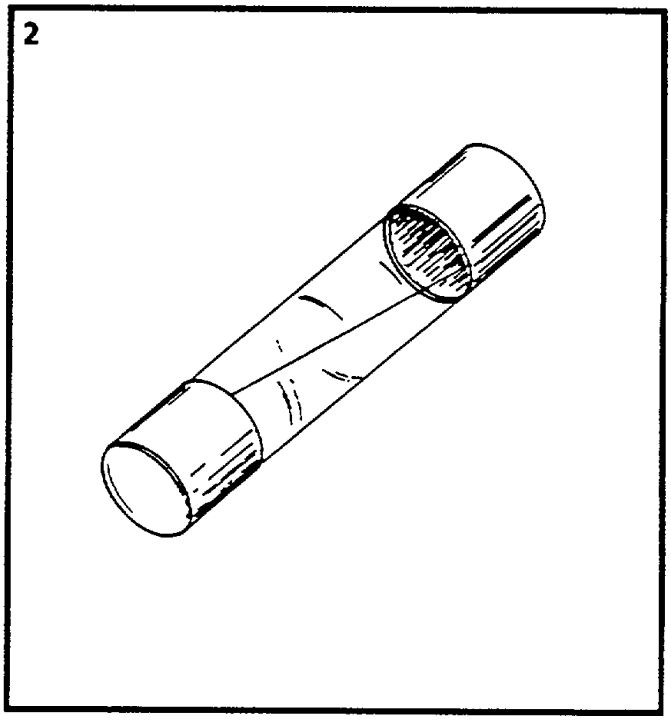
SECTION II. COMPONENTS OF END ITEM



(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	Usable On Code	(4) U/M	(5) Qty rqr
1	5815-01-264-1581	PRINTER, BAR CODE (800 58) TT-83 1/G	HR2	EA	1
2	6130-01-324-3111	ADAPTER, AC POWER (62484) 30110	HR2	EA	1
3	5995-01-321-3298	CABLE ASSY, POWER (80063) 310-0303-00	HR2	EA	1
4	5995-01-327-4541	CABLE ASSY, SP ELECT (INTERFACE PRINTER) (7J142) 21-02799-01	HR2	EA	1

SECTION III. BASIC ISSUE ITEMS





(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	Usable On Code	(4) U/M	(5) Qty rqr
1		CASE, TRANSIT PRINTER (19178) 46-37052	HR2	EA	1
2	5920-01-G58-7072	FUSE, (1) CARTRIDGE (75915) 1.6 A/250 V 312	HR2	EA	1
2	5920-00-553-5982	FUSE, (1) CARTRIDGE (71400) 0.8 A/250 V	HR2	EA	1

APPENDIX D
ADDITIONAL AUTHORIZATION LIST

SECTION I. INTRODUCTION

D-1. SCOPE

This appendix lists additional items you are authorized for the support of the printer.

D-2. GENERAL

This list identifies items that do not have to accompany the printer and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

D-3. EXPLANATION OF LISTING

National stock numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment The items are listed in alphabetical sequence by item name under the type document (i.e, CTA, MTOE, TDA, or JTA) which authorizes the item(s) to you.

SECTION II. ADDITIONAL AUTHORIZATION LIST

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION FSCM AND PART NUMBER	USABLE ON CODE	(3) U/M	(4) QTY AUTH
	MTOE AUTHORIZED ITEMS			
7025-01-263-1758	LAMINATOR, BAR CODE (80058) MX-10890/G	HR2	EA	1
	CTA AUTHORIZED ITEMS			

APPENDIX E
EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

SECTION I. INTRODUCTION

E-1. SCOPE

This appendix lists expendable supplies and material you will need to operate and maintain the printer. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

E-2. EXPLANATION OF COLUMNS

a. Column (1) - Item Number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., "Use cleaning compound, item 5, App. D").

b. Column (2) - Level. This column identifies the lowest level of maintenance that requires the listed item.

C- Operator/Crew
O - Organizational Maintenance
F - Direct Support Maintenance
H - General Support Maintenance

c. Column (3) - National Stock Number. This is the National stock number assigned to the item; use It to request or requisition the item.

d. Column (4) - Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Federal Supply Code for Manufacturers (FSCM) in parentheses followed by the part number.

e. Column (5) - Unit of Measure (UIM) Indicates the measure used in performing the actual maintenance function This measure is expressed by a two-character alphabetical abbreviation (e g , ea, in, pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

SECTION II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
1	C	5120-00-236-2140	Screwdriver	1
2	C		Ribbon Cartridge	2
3	C		Label Stock	
4	C		Label Stock	
5	C		Paper Stock	
6	C		Laminating Tape	

APPENDIX F
REPAIR PARTS AND SPECIAL TOOLS LIST

SECTION I. INTRODUCTION

F-1. SCOPE

This appendix lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of organizational and direct support maintenance of the printer It authorizes the requisitioning, issue, and disposition of spares, repair parts and special tools as indicated by the source, maintenance and recoverability (SMR) codes.

F-2. GENERAL

This Repair Parts and Special Tools List is divided into the following sections.

a. Section Il. Repair Parts List. A list of spares and repair parts authorized by this RPSTL for use In the performance of maintenance. The list also Includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending numeric sequence, with the parts in each group listed in ascending figure and Item number sequence. Bulk materials are listed in item name sequence. Repair parts kits are listed separately in their own functional group within Section II Repair parts for repairable special tools are also listed in this section Items listed are shown on the associated illustration(s)/figure(s).

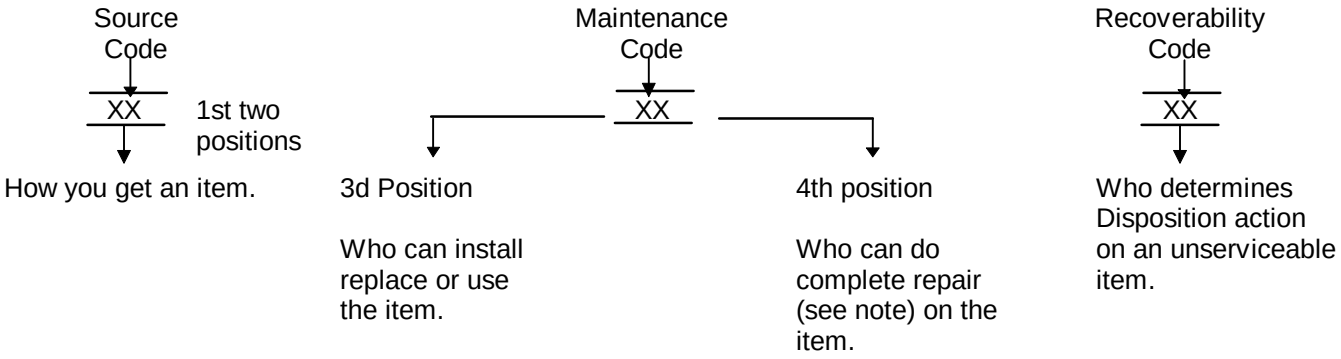
b. Section III. Special Tools List. Not applicable.

c. Section IV. National Stock Number and Part Number Index. A list, in National item identification number (NIIN) sequence, of all National stock numbered items appearing in the listing, followed by a list in alphameric sequence of all part numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance. The figure number and item number index lists figure and item numbers in numeric sequence and cross-references National stock number, Federal Supply Code for Manufacturer and part numbers.

F-3. EXPLANATION OF COLUMN S (SECTIONS II AND III)

a. Item No. (Column (1)). Indicates the number used to identify items called out in the illustration.

b. SMR Code (Column (2)). The source, maintenance, and recoverability (SMR) code is a five-position code containing supply/requisitioning information, maintenance category authorization criteria, and disposition instruction, as shown in the following breakout:



NOTE

Complete Repair: Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed Item.

(1) *Source Code*. The source code tells you how to get an item needed for maintenance, repair, or overhaul of an end Item/equipment Explanations of source codes follow:

Code	*Explanation*
PA PB PE PF PG	Stocked items; use the applicable NSN to request/requisition items with these source PC codes They are authorized to the category indicated by the code entered in the third PD position of the SMR code. **NOTE** **Items coded PC are subject to deterioration.**
KD KF KB	**Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance category indicated in the third position of the SMR code. The complete kit must be requisitioned and used.**

Code	Explanation
MO - Made at Org/AVUM category MF - Made at DS/AVIM category MH - Made at GS category ML - Made at Specialized Repair Activity (SRA) MD - Made at Depot	Items with these codes are not to be requested/requisitioned individually. They must be made from bulk material which is identified by the part number in the description and usable on code (UOC) column and listed in the Bulk Material group of the repair parts list. If the item is authorized to you by the third position code of the SMR code, but the source code indicates it is made at a higher category, order the item from the higher category of maintenance.
AO - Assembled by Org/AVUM category AF - Assembled by DS/AVIM category AH - Assembled by GS category AL - Assembled by SRA AD - Assembled by Depot	AO- Assembled by org/Items with these codes are not to be requested/AVUM category requisitioned individually. The parts that make up the AF- Assembled by DS/ assembled item must be requisitioned or fabricated AVIM category and assembled at the category of maintenance AH- Assembled by >indicated by the source code. If the third position code GS category of the SMR code authorizes you to replace the Item, AL- Assembled by SRA but the source code indicates the Item is assembled at a AD-Assembled by higher category, order the item from the higher Depot category of maintenance.

XA- Do not requisition an "XA" coded Item. Order its next higher assembly.

XB- If an "XB" item is not available from salvage, order it using the FSCM and part number given.

XC- Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.

XD - Item is not stocked. Order an "XD"-coded Item through normal supply channels using the FSCM and part number given, if no NSN is available.

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for Items with the above source codes, except for those source coded "XA" or those aircraft support items restricted by requirements of AR 750-1.

(2) *Maintenance Code*. Maintenance codes tell you the category of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

(a) The maintenance code entered in the third position tells you the lowest maintenance category authorized to remove, replace, and use an item. The maintenance code entered In the third position will indicate authorization to one of the following categories of maintenance.

Code	Application/explanation
C --	Crew or operator maintenance done within organizational or aviation maintenance.
O --	Organizational or aviation unit category can remove, replace, and use the item.
F --	Direct support or aviation Intermediate category can remove, replace, and use the item.
H --	General support category can remove, replace, and use the item.
L --	Specialized repair activity can remove, replace, and use the Item.
D --	Depot category can remove, replace, and use the item.

(b) The maintenance code entered in the fourth position tells whether or not the item is to be repaired and Identifies the lowest maintenance category with the capability to do complete repair (i.e., perform all authorized repair functions This position will contain one of the following maintenance codes:

NOTE

Some limited repair may be done on the item at a lower category of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.

Code	Application/Explanation
O --	Organizational or aviation unit Is the lowest category that can do complete repair of the item.
F --	Direct support or aviation intermediate is the lowest category that can do complete repair of the Item.
H --	General support is the lowest category that can do complete repair of the item.
L --	Specialized repair activity (designate the specialized repair activity) is the lowest category that can do complete repair of the item.
D --	Depot is the lowest category that can do complete repair of the Item.
Z --	Nonreparable. No repair is authorized.
B --	No repair is authorized (No parts or special tools are authorized for the maintenance of a "B" coded item) However, the item may be reconditioned by adjusting, lubricating, etc., at the user category.

(3) *Recoverability Code*. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items The recoverability code is entered in the fifth position of the SMR code as follows:

Recoverability codes	Application/Explanation

Z - Nonreparable item. When unserviceable, condemn and dispose of the item at the category of maintenance shown in the third position of SMR code.

O - Reparable item. When uneconomically reparable, condemn and dispose of the item at organizational or aviation unit category.

F - Reparable item. When uneconomically reparable, condemn and dispose of the item at the direct support or aviation intermediate category.

H - Reparable item. When uneconomically reparable, condemn and dispose of the item at the general support category.

D - Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item not authorized below depot category.

L - Reparable item. Condemnation and disposal not authorized below specialized repair activity (SRA).

A - Item requires special handling or condemnation procedures because of specific reasons (e.g., precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.

c. FSCM (Column (3)) The Federal Supply Code for Manufacturer (FSCM) is a 5-digit numeric code which is used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

d. Part Number (Column (4)). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different part number from the part ordered.

e. Description and Usable on Code (UOC) (Column (5)). This column includes the following information:

(1) The Federal item name and, when required, a minimum description to identify the item.

(2) The statement "END OF FIGURE " appears just below the last item description in Column (5) for a given figure in both section II and section III.

f. Qty (Column (6)). Indicates the quantity of the item used in the breakout shown on the Illustration figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column in lieu of a quantity indicates that the quantity is variable and the quantity may vary from application to application.

F-4. EXPLANATION OF COLUMNS (SECTION IV)

a. National Stock Number(NSN) Index.

(1) *Stock number column*. This column lists the NSN by National Item identification number(NIIN) sequence The NIIN consists of the last nine digits of the NSN. When using this column to locate an Item, ignore the first four digits of the NSN. When requisitioning items use the complete NSN (13 digits).

(2) *Fig. column*. This column lists the number of the figure where the item is identified/located The figures are in numerical sequence in sections II and III.

(3) *Item column*. The item number identifies the item associated with the figure listed in the adjacent Fig. column. This item is also identified by the NSN listed on the same line.

b. Part Number Index. Part numbers In this Index are listed by part number is ascending alphameric sequence.

(1) *FSCM column*. This column lists the Federal supply code for manufacturer (FSCM).

(2) *Part number column*. This column indicates the part number assigned to the item.

(3) *Stock number column*. This column lists the National stock number for the associated part number and manufacturer identified in the part number and FSCM columns to the left.

(4) *Fig. column* This column lists the number of the figure where the item is identified/located In sections II and III.

(5) *Item column*. The item number is that number assigned to the item as It appears In the figure referenced in the adjacent figure number column.

c. Figure and Item Number Index.

(1) *Fig. column*. This column lists the number of the figure where the item is identified/located in sections II and III.

(2) *Item column*. The item number is that number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

(3) *Stock number column*. This column lists the National stock number for the item.

(4) *FSCM column*. The Federal supply code for manufacturer (FSCM) is a 5-digit numeric code used to identify the manufacturer, distributer, or Government agency, etc., that supplies the item.

(5) *Part number column*. Indicates the primary number used by the manufacturer (individual, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

F-5. Special Information

National stock numbers (NSN's) that are missing from P source coded items have been applied for and will be added to this TM by future change/revision when they are entered in the Army Master Data File (AMDF). Until the NSN's are established and published, submit exception requisitions to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-MM, Fort Monmouth, NJ 07703-5000 for the part required to support your equipment.

F-6. HOW TO LOCATE REPAIR PARTS

a. When National stock number or part number is not known.

(1) *First*. Using the table of contents, determine the assembly group or subassembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and listings are divided Into the same groups.

(2) *Second*. Find the figure covering the assembly group or subassembly group to which the item belongs.

(3) *Third*. Identify the item on the figure and note the item number.

(4) *Fourth* Refer to the Repair Parts List for the figure to find the part number for the item number noted on the figure.

(5) *Fifth*. Refer to the Part Number Index to find the NSN, if assigned.

b. When National stock number or part number is known.

(1) *First.* Using the Index of National stock numbers and part number, find the pertinent National stock number or part number The NSN index is in National item identification number (NIIN) sequence (para 4a(1)). The part numbers in the part number index are listed in ascending alphameric sequence (para 4b). Both indexes cross-reference you to the illustration figure and item number of the item you are looking for.

(2) *Second.* After finding the figure and item number, verify that the Item is the one you're looking for, then locate the item number in the repair parts list for the figure.

F-7. ABBREVIATIONS.

Not applicable

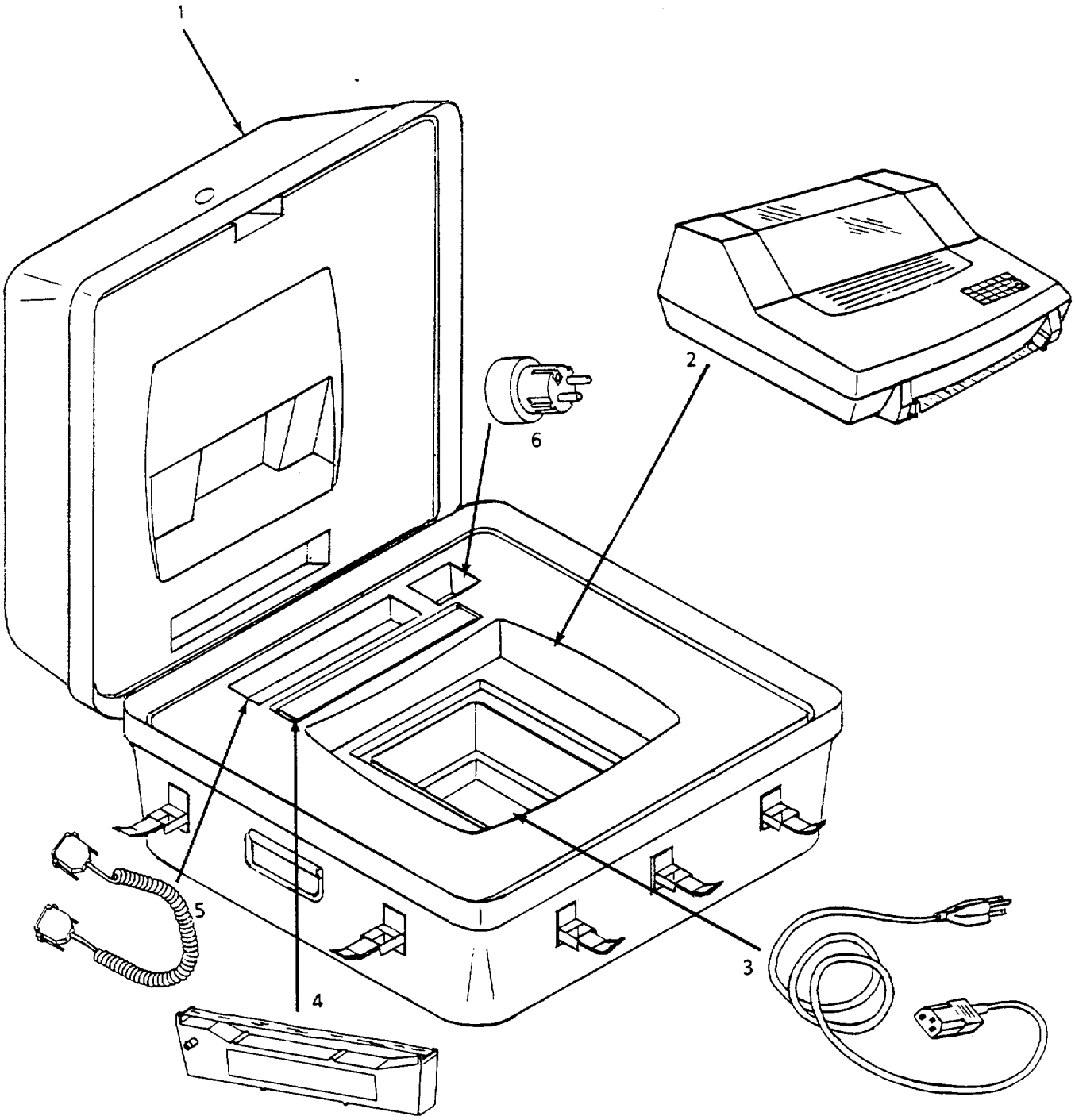


Figure 1. Printer Group CY-8539/G

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(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 00 PRINTER GROUP CY-8539/G	
				FIGURE F-1 PRINTER GROUP CY-8539/G	
1	XBFZZ	19178	46-37052	CASE, TRANSIT PRINT	1
2	PAFDD	80058	TT-831/G	PRINTER, BARCODE	1
3	PAFZZ	0BB03	310-0303-00	CABLE ASSY, POWER	1
4	PCOZZ	65521	AS-TD80N-01	RIBBON, CARTRIDGE	1
5	PAFZZ	7J142	21-02799-01	CABLE ASSY, SP, ELEC	1
6	PAFZZ	62484	30110	ADAPTER, AC POWER	1
				END OF FIGURE	

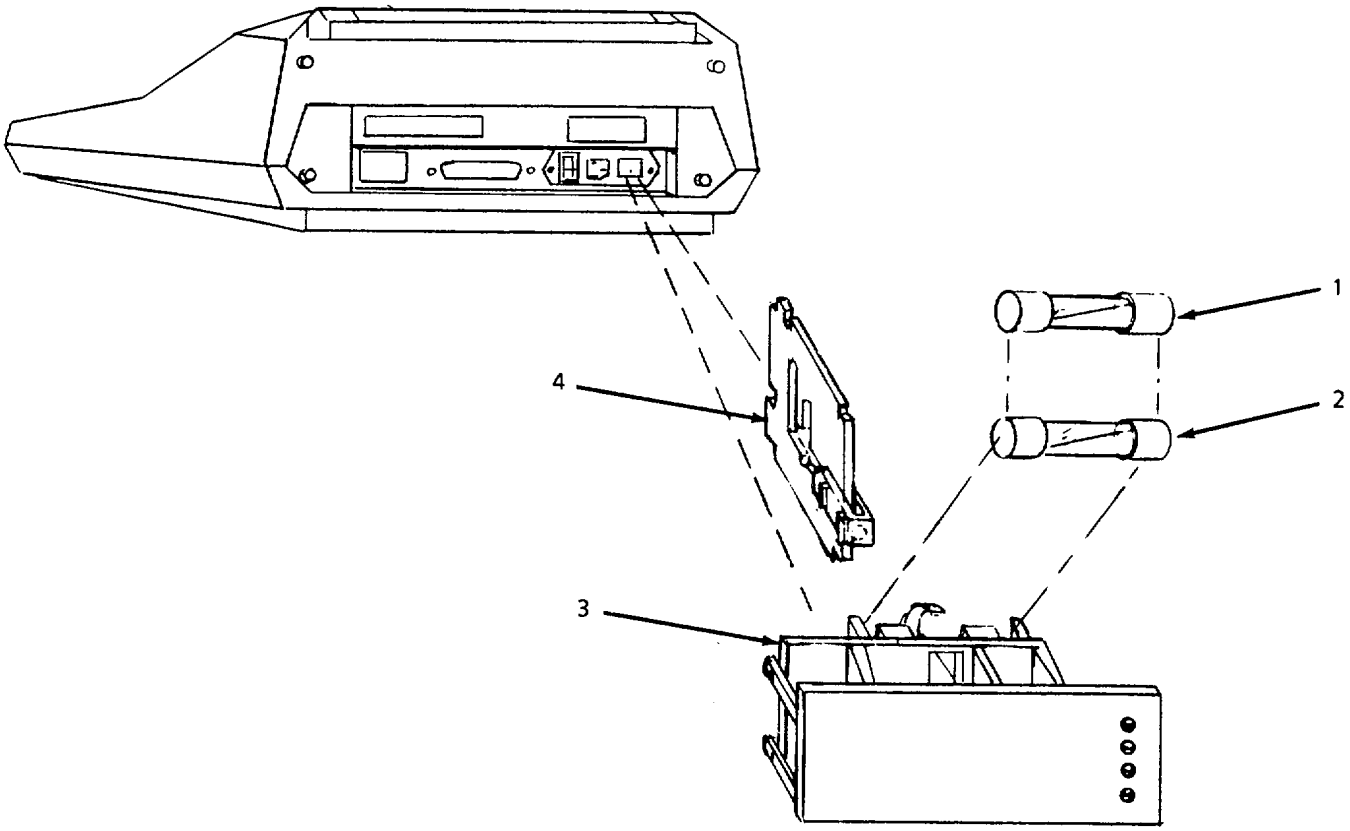

Figure 2. Bar Code Printer TT-831/G

(1) ITEM NO	(2) SMR CODE	(3) FSCM	(4) PART NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 01 BAR CODE PRINTER TT-831/G	
				FIGURE F-2 BAR CODE PRINTER TT-831/G	
1	PAOZZ	75915	1.6A/250V-312	FUSE(1), CARTRIDGE.....	1
2	PAOZZ	75915	0.8A/250V-312	FUSE(1), CARTRIDGE.....	1
3	PAOZZ	05245	72-2180-BA	FUSE HOLDER(1), BLK	1
4	PAOZZ	05245	70-2510-AC	VOLTAGE REGULATOR.....	1
				END OF FIGURE	

CROSS-REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5815-01-264-1581	F-1	2			
6110-01-287-7126	F-2	4			

NATIONAL STOCK NUMBER AND PART NUMBER INDEX
PART NUMBER INDEX

FSCM	PART NUMBER	STOCK NUMBER	FIG.	ITEM
65521	AS-TD80N-01		F-1	4
80058	TT-831/G	5815-01-264-1581	F-1	2
75915	0.8A/250V-312		F-2	2
75915	1.6A/250V-312		F-2	1
7J142	21-02799-01		F-1	5
62484	30110		F-1	6
0BB03	310-0303-00		F-1	3
19178	46-37052		F-1	1
05245	70-2510-AC	6110-01-287-7126	F-2	4
05245	72-2180-BA		F-2	3

CROSS-REFERENCE INDEXES

FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	FSCM	PART NUMBER
F-1	1		19178	46-37052
F-1	2	5815-01-264-1581	80058	TT-831/G
F-1	3		0BB03	310-0303-00
F-1	4		65521	AS-TD80N-01
F-1	5		7J142	21-02799-01
F-1	6		62484	30110
F-2	1		75915	1.6A/250V-312
F-2	2		75915	0.8A/250V-312
F-2	3		05245	72-2180-BA
F-2	4	6110-01-287-7126	05245	70-2510-AC

GLOSSARY

Bar Code	Computer-generated symbol for the description of an item
Bar Code Label	A label affixed to an Item which encodes its description
Baud	The number of bits per second that can be transmitted in a given computer system
BCR	Bar Code Reader
Buffer	Allows data to be stored in the printer
Codabar	Self-checking code represented by a stand-alone group of four bars with their three included spaces
Component	An individual piece of LOGMARS(T) equipment
Configuration	An arrangement of parts or pieces of equipment
Contact scanner	A bar code scanner, the tip of which must be in contact with a bar code label to read the code
CPI	Characters per inch
CPS	Characters per second
CTA	Common Table of Allowances
Diagnostic	A computer program capable of identifying an equipment fault or malfunction
Download	A communications procedure that takes information from storage in one device (usually the host computer) and transfers it to another device. In LOGMARS(T), downloading is a transfer of information from the host computer to the BCR.
DTE	Data Terminal Equipment
EIR	Equipment Improvement Recommendation
Field Wire	Wire used for communications by phone or modem between a base of operations and a field location or between one field location and another
Friction Feed	To feed paper through the printer mechanically using the tractor feed
Host	The computer being used in the transfer of information; the host computer
JTA	Joint Table of Allowances
Laminate	To cover with or bond to one or more thin layers of clear plastic
Laser Scanner	A noncontact bar code scanner

LOGMARS(T)	Logistics Applications of Automated Marking and Reading Symbols - Tactical
Modem	A unit that modulates and demodulates digital information, enabling transmission of the information across communication lines, which may be commercial telephone lines or field wire
MTOE	Modification Table of Organization and Equipment
Platen	One of two flat members of the printing unit of a printer. It positions the paper and holds it while the printing key strikes
PMCS	Preventive Maintenance Checks and Services
Prompt	A message on the BCR display which provides information or Instructions
STAMIS	Standard Army Management Information System
TDA	Table of Distribution Allowances
TELCO	Receptacle on the modem used to connect the modem to the wall jack using a telephone signal cable
TELSET	Receptacle on the rear panel of the modem for the cable supplied with the telephone set
Tractor Feed	Pulls continuous feed 8 1/2-inch by 11-inch paper through the printer
3 of 9	Identifies a specific bar code which is made up of nine elements: five bars and four spaces. Three elements are wide and six are narrow
TOF	Top of form
Transit case	Container for transporting or storing equipment
Upload	A communications procedure that takes information from storage in one device (usually the BCR) and transfers it to another device (usually the host computer). In LOGMARS(T), uploading is a transfer of information from the BCR to the host computer.

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THE METRIC SYSTEM AND EQUIVALENTS

'NEAR MEASURE

. Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

'VEIGHTS

Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 lb.
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches
1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet
1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches
1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

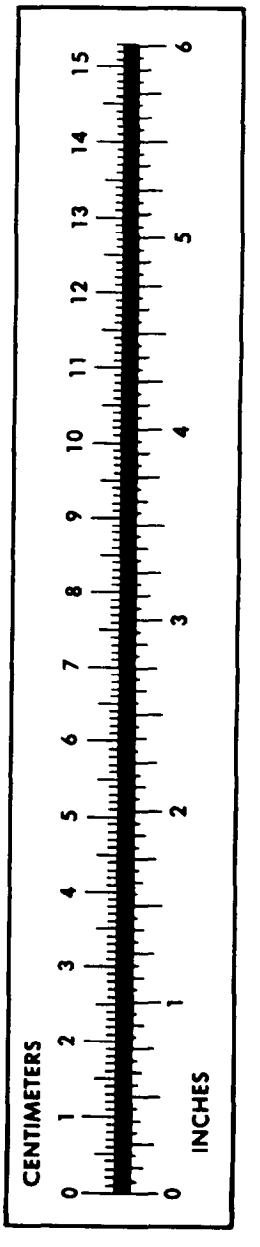
TEMPERATURE

5/9(°F - 32) = °C
212° Fahrenheit is evuivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5C° + 32 =°F

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
ıts	Liters	0.473
arts	Liters	0.946
allons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
ers	Gallons	0.264
ms	Ounces	0.035
ograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pounds-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
lometers per Liter	Miles per Gallon	2.354
meters per Hour	Miles per Hour	0.621



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