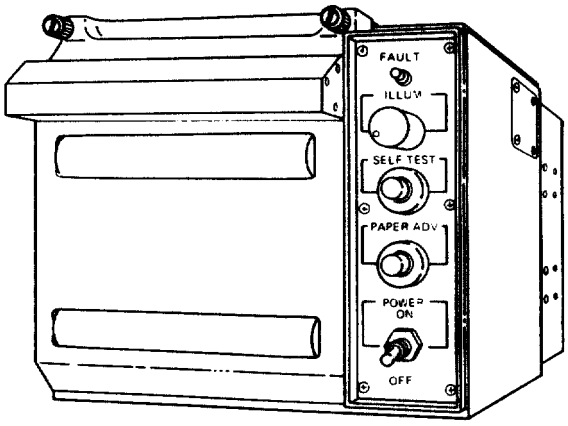
TM 11-7025-217-30

TECHNICAL MANUAL
DIRECT SUPPORT MAINTENANCE MANUAL



TELEPRINTER
ELECTROGRAPHIC TT-772(P)/G
(NSN 5815-01-127-5868)

HEADQUARTERS, DEPARTMENT OF THE ARMY

9 JULY 1985

+

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

1 DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL

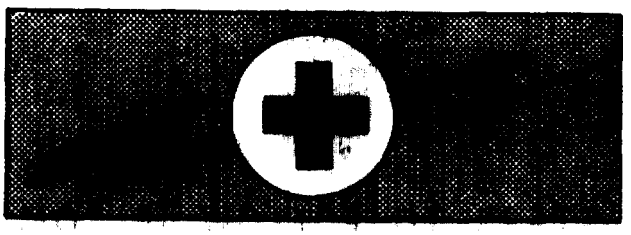
2 IF POSSIBLE , TURN OFF THE ELECTRICAL POWER

3 IF YOU CANNOT TURN OFF THE ELECTRICAL POWER, PULL, PUSH, OR LIFT THE PERSON TO SAFETY USING A WOODEN POLE OR A 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

WARNING



HIGH VOLTAGE

is used in the operation of this equipment

DEATH ON CONTACT

may result if personnel fail to observe safety precautions

Never work on electronic equipment unless there is another person nearby .40 is familiar with the operation and hazards of the equipment and who is compenent. in administering first aid. When the technician is aided by operators, he must warn them about dangerous areas.

Whenever possible, the power supply to the equipment must be shut, off before beginning work on the equipment. Take particular care to ground every capacitor likely to hold a dangerous potential. When working inside the equipment, after the power has been turned off, always ground every port before touching it.

Be careful not to contact high-voltage connections or 115 volt ac input connections when installing or operating this equipment.

Whenever the nature of the operation permits, keep one hand away from the equipment to reduce the hazard of current flowing through the body.

Warning: Do not be misled by the term “low voltage”. Potentials as low as 50 volts may cause death under adverse conditions.

For Artifical Respiration, refer to FM 21-11.

SAFETY PRECAUTION

A periodic review of safety precautions in TB 385-4, Safety Precautions for Maintenance of Electrical/ Electronic Equipment, is recommended. When the equipment is operated with covers removed, DO NOT TOUCH exposed connections or components. MAKE CERTAIN you are not grounded when making connections or adjusting components inside the test instrument.

WARNING

HAZARDOUS SOLVENTS

When using solvents, be sure that the area is well ventilated. Use gloves and eye protection. Respiratory protection prescribed by TB MED 223 shall be used if adequate ventilation is not provided. Flammable solvents shall be kept away from heat, sparks, and open flame. Flush the eyes and skin with water for 15 minutes if they should become contaminated.

COMPRESSED AIR

Compressed air shall not be used for cleaning purposes except where reduced to less than 29 pounds per square inch (psi) and then only with effective chip guarding and personnel protective equipment. Do not use compressed air to dry parts when trichlorotrifluoroethane has been used. Compressed air is dangerous and can cause serious bodily harm if protective means or methods are not observed to prevent chips or particles (of whatever size) from being blown into the eyes or unbroken skin of the operator Or other personnel.

TB 43-0127

MAINTENANCE AND REPAIR OF PRINTED CIRCUIT BOARDS

AND

PRINTED WIRING ASSEMBLIES

CAUTION

This equipment contains electrostatic sensitive devices.
Refer to TM 43-0127 for handling procedures.

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Contractor: Datametrics Corporation

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Technical Manual

No. 11-7025-217-30

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 9 July 1985

TECHNICAL MANUAL
DIRECT SUPPORT MAINTENANCE MANUAL
TELEPRINTER ELECTROGRAPHIC TT-772(P)/G
(NSN 5815-01-127-5888)

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-ME-MP, Fort Monmouth, New Jersey 07703-5007. In either case, a reply will be furnished direct to you.

CHAPTER 1

INTRODUCTION

Section 1. GENERAL INFORMATION

1-1. SCOPE

This manual is for your use in the performance of maintenance on the Teleprinter Electrographic TT-772(P)/G (printer). The printer, when interfaced with an input/output device, converts processor signals to a hard copy printout.

1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS

a. Reports of Maintenance and Unsatisfactory Equipment. 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.

b. Report of Packaging and Handling Deficiencies. Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 4140.55/NAVMATINST 4355.73A/AFR 400-54/MCO 4430.3F.

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33C/AFR 75-18/MCO P4610.19D/DLAR 4500.15.

d. Consolidated Index of Army Publications and Blank Forms. Refer to the latest issue of DA Porn 310-1 to determine whether there are new editions, changes or additional publications pertaining to the equipment.

1-3. DESTRUCTION OF ARMY ELECTRONICS MATERIEL

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

1-4. PREPARATION FOR STORAGE OR SHIPMENT

Refer to Chapter 2, Section V for storage and shipment instructions,

1-5. NOMENCLATURE CROSS-REFERENCE LIST

Common Name	Official Nomenclature
Printer	Teleprinter Electrographic TT-772(P)/G
Processor	Processor AN/UYK-19
Magnetic Tape Set	Magnetic Tape Set AN/UYH-1
Plasma Display	Plasma Display AN/UYQ-10(V)
Graphics Keyboard	Manual Entry Unit, 3801-7
DMM	Digital Multimeter AN/USM-451
Control Panel	Control Panel Assembly

1-5, NOMENCLATURE CROSS-REFERENCE LIST (Continued)

Common Name	Official Nomenclature
Logic Board	Logic Board Assembly
Motherboard	Print System Interconnect PWB
Power Supply	DC Power Supply
Printhead	Printhead Assembly
Chassis	Console Machining

1-6. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your printer needs improvement, let us know. Send us an El R. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications – Electronics Command and Fort Monmouth, ATTN: AMSEL-ME-MP, Fort Monmouth, New Jersey 07703-5007. we'll send you a reply.

Section II. EQUIPMENT DESCRIPTION AND DATA

1-7. EQUIPMENT CHARACTERISTICS

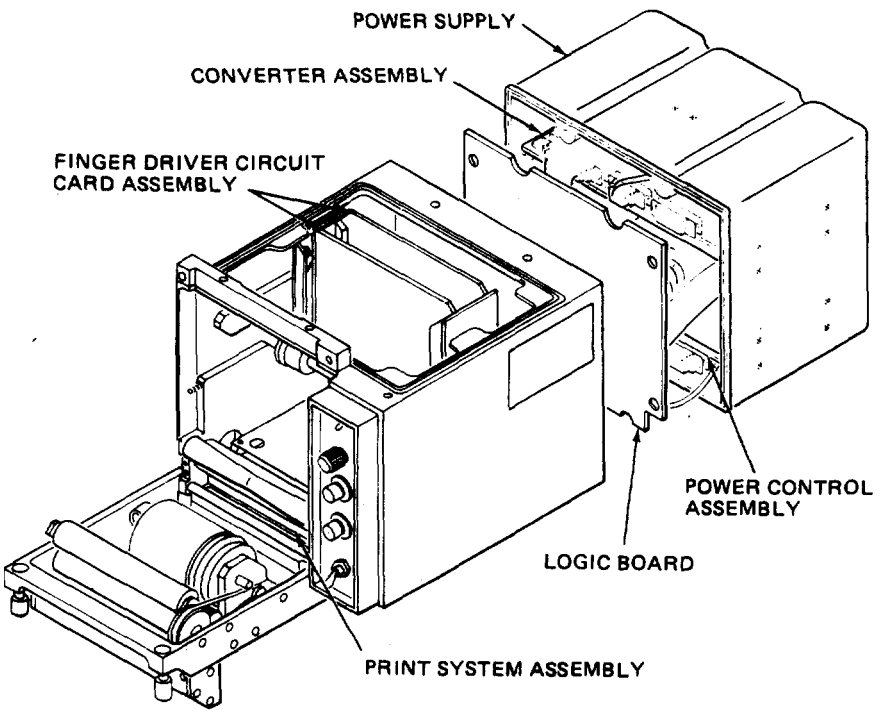
Refer to TM 11-7021-201-12, Chapter 1, for equipment characteristics,

1-8. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

a. Print Section. The print section finger driver circuit card and print system assemblies provide data paths and control logic necessary to print the data on paper.

b. Logic Board. The logic board consists of electronics which control printer functions.

c. Power Supply. The power supply provides all dc voltages needed for operation of the equipment. The POWER ON/OFF circuit breaker, located on the control panel, provides voltage overload protection.



1-9. EQUIPMENT DATA

Refer to TM 11-7021-12, Chapter 1 for equipment data.

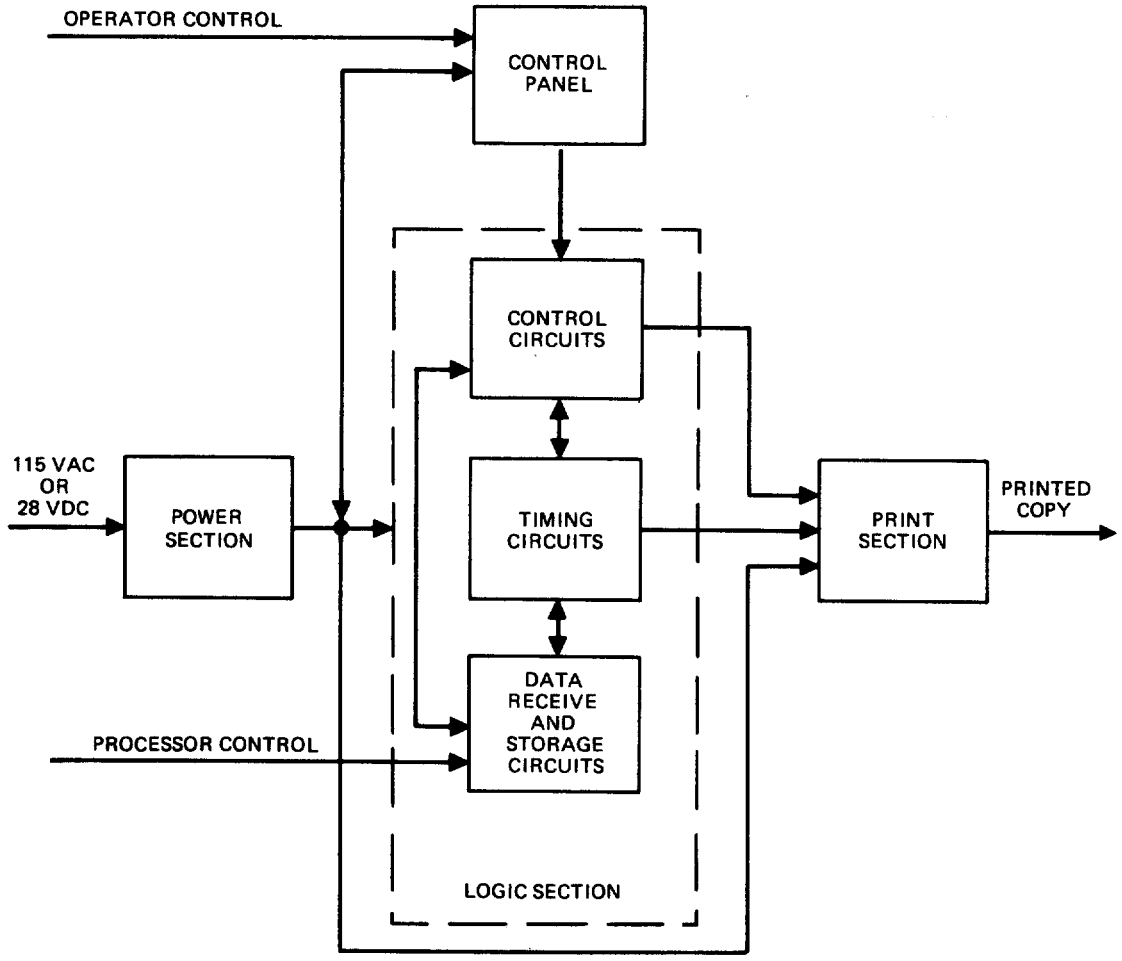
1-10. SAFETY, CARE, AND HANDLING

To ensure safety to personnel, follow Army safety procedures for the care, handling, and maintenance of electronic equipment. Before and while operating/maintaining the equipment, adhere to the WARNINGS and CAUTIONS indicated throughout this manual. Some of the WARNINGS are summarized on the WARNING page at the front of this manual. In addition, instructions on all WARNING and CAUTION decals attached to the equipment must be followed.

Section III. PRINCIPLES OF OPERATION

1-11. FUNCTIONAL DESCRIPTION OF EQUIPMENT

a. General. The printer accepts American Standard Code for Information Interchange (ASCII) coded data from the processor, converts the data to characters, and prints them on electrosensitive paper. The printer is divided into a power section, logic section, and print section as shown below. An interconnection diagram is provided at the back of this manual.



The printer sections perform data conversion and printing functions as described in the following paragraphs.

b. Power Section. The power section consists of an input power filter assembly, POWER ON/OFF circuit breaker, and an ac or dc power supply. The input power filter assembly attenuates conducted radio frequency interference that may appear on the external power source. The POWER ON/OFF circuit breaker protects the printer circuitry from overload and provides operator control of printer operation. The power supply converts the input power to the +5V, +20V, -65V, -70V, and +80V supplies required to operate the various printer circuits and components.

c. Logic Section. The logic section consists of control circuits, timing circuits, and data receive and storage circuits. The control circuits permit manual and machine control of printer operations, The timing circuits synchronize the printer functions, producing an ordered sequence of operations from receipt of input data to printed output. Manual control is available to the operator by means of switches, controls, and indicator located on the control panel at the front of the printer. The control panel contains POWER ON/OFF circuit breaker, PAPER ADV switch, ILLUM control, SELF TEST switch, and FAULT indicator light. PAPER ADV switch provides operator control of paper feed, and SELF TEST switch provides the means of initiating self-test operation of the printer. The ILLUM control provides the means of varying intensity of lamps used to illuminate the printed copy. The FAULT indicator lights when a fault condition occurs in the printer. Machine control also prevents printing when no paper is present, or when the door is open, or when there is a printhead short condition. The data receive and storage circuits enable the logic to receive a maximum of an additional 33 characters while an ongoing print operation is in process.

d. Print Section. The print section consists of the finger driver circuit card assemblies and print system assembly which contain circuitry that converts data from standard digital logic levels to print-head voltage levels that produce alphabetical characters, symbols, and numbers on electrosensitive paper. The print section also provides motor drive and timing voltages required to properly feed paper through the printhead mechanism.

CHAPTER 2

MAINTENANCE INSTRUCTIONS

Section 1. REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

2-1. TOOLS AND TEST EQUIPMENT

Tools and test equipment required for direct support maintenance of the equipment are listed in the Maintenance Allocation Chart (MAC) in TM 11-7021-201-12.

2-2. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

Special tools, TM DE, and support equipment are listed and illustrated in the repair parts and special tools list TM 11-7025217-30P covering direct support maintenance for this equipment

2-3. REPAIR PARTS

For authorized listed and illustrated repair pare, refer to TM 11-7021-217-30P.

Section II. SERVICE UPON RECEIPT

2-4. SERVICE UPON RECEIPT OF MATERIEL

a. Unpacking The printer is packed in its own shipping carton. Unpack the equipment as follows:

(1) Open shipping carton and remove equipment.

(2) Place equipment on a suitable clean and dry surface for inspection.

(3) Keep all shipping materials for use in repacking and reshipping.

b. Checking Unpacked Equipment.

(1) Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF 384, Report of Discrepancy.

(2) Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with the instructions of DA PAM 738-750.

(3) Check to see whether the equipment has been modified.

2-5. INSTALLATION INSTRUCTIONS

Refer to your applicable systems manual for installation instructions for the equipment.

Section III. TROUBLESHOOTING

2-6. TROUBLESHOOTING INFORMATION

This section contains troubleshooting information for locating and correcting malfunctions in the printer at the direct support level of maintenance. Included are checkout procedures, troubleshooting procedures, and procedures for running the diagnostic tests.

NOTE

The procedures contained in this section are in addition to the troubleshooting procedures found in Chapter 8 of TM 11-7021-201-12.

2-7. GENERAL INSTRUCTIONS

a. The first step in servicing a defective printer is to trace the fault to a major component. This is called SECTIONALIZATION, which is a series of checks and operational tests, These tests will help determine the exact nature of the fault. Operational tests can be made by following the preventive maintenance checks and services contained in TM 11-7021-201-12.

b. The second step is to trace the fault to a particular module or assembly. This is called LOCALIZATION.

c. The final step is to trace the fault to a defective part or assembly. This is called' ISOLATION,

d. Localization and isolation of a fault are determined by visual inspection, voltage and resistance measurements, and use of the troubleshooting flowcharts. Visual inspection will locate many faults without testing the circuits. All visual signs should be observed and an attempt made to localize the fault.

NOTE

In all tests, the possibility of intermittent troubles should be investigated. Jarring, or tapping the equipment, or jiggling a wire may expose this type of problem.

2-8. PRINTER TROUBLESHOOTING

The objective of direct support troubleshooting is the localization of a fault to a defective assembly or cable. Use the troubleshooting flowcharts and Preventive Maintenance Checks and Services (PMCS) in TM 11-7021-201-12 as an aid in localizing the fault.

2-9. USE OF TROUBLESHOOTING FLOWCHARTS

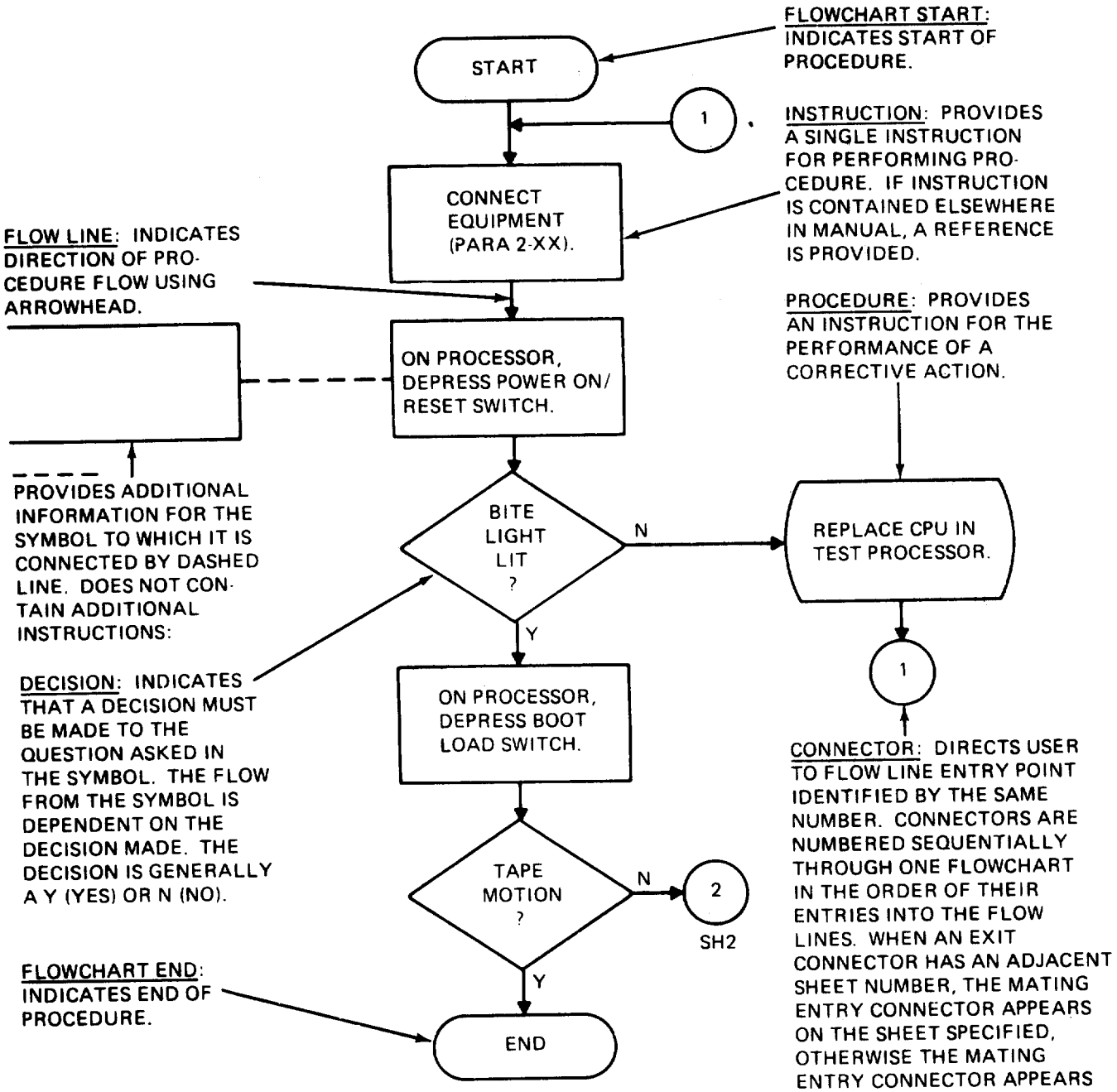
a. The troubleshooting flowcharts contained in this manual supplement the operational procedures and troubleshooting information contained in TM 11-7021-201-12.

b. The troubleshooting flowcharts are indexed by malfunction/symptom. At the beginning of each procedure, all probable causes for that symptom are listed.

c. Operational checks or organizational maintenance may have designated a problem or defect. Locate that malfunction in the symptom index.

d. How to use the flowchart (para 2-10) will familiarize users of this manual with the proper use of troubleshooting flowcharts.

2-10. HOW TO USE THE FLOWCHART



2-11. TROUBLESHOOTING PROCEDURES

a. The first step in troubleshooting the printer is to locate the symptom in the troubleshooting symptom index (para 2-12).

b. Next, go the flowchart for that symptom.

c. After performing the troubleshooting procedures and making any repairs, perform the diagnostic procedure to make sure that all repairs have been properly made.

d. The following general rules apply while performing the troubleshooting procedures:

1. Follow the troubleshooting flowcharts in the order indicated by the flow arrows.
2. Perform only one instruction at a time.
3. Start at the beginning of the troubleshooting flowchart. Do not start in the middle.
4. SHUT POWER OFF when making repairs, replacing components, and performing continuity checks.

2-12. SYMPTOM INDEX

Use this index to quickly find troubleshooting procedures.

TROUBLESHOOTING FLOWCHART (1)
FAULT LIGHT LIT, SELF TEST DOES NOT PRINT, PAPER ADVANCES (SHEET 1 OF 2)

START

LOAD PRINTER WITH PAPER. (REFER TO TM 11-7021-201-12)

CONNECT PRINTER TO POWER.

SET POWER ON/OFF CIRCUIT BREAKER TO ON.

DOOR CLOSED ? — Y

N

CLOSE DOOR.

FAULT LIGHT LIT ? — Y

N

END

OPEN DOOR.

REMOVE PAPER AND INSPECT PRINT HEAD GROUNDING FINGERS (1).

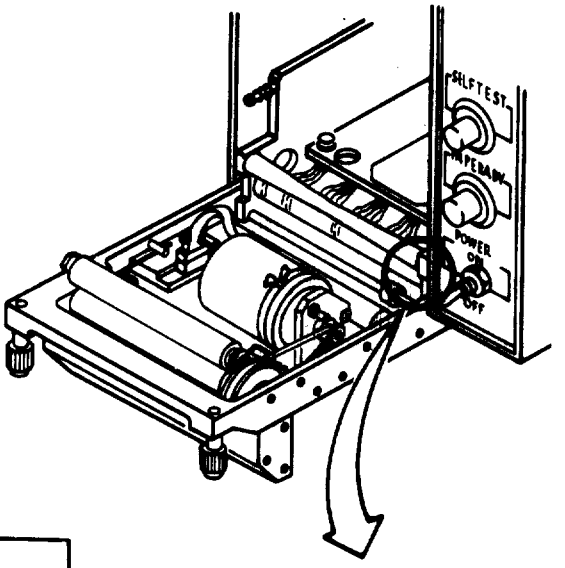
FINGERS STRAIGHT ? — N

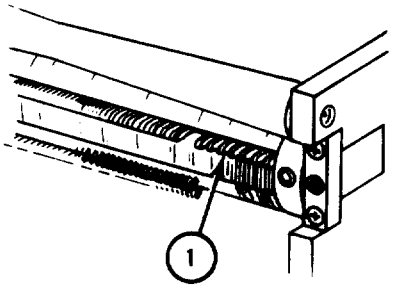
Y

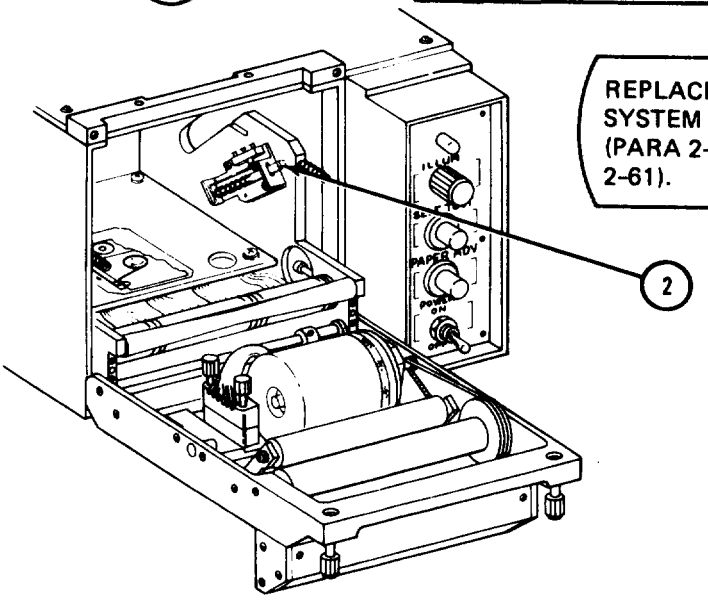
PULL OUT DOOR INTERLOCK SWITCH (2) TO OVERRIDE POSITION.

(1) SH2

REPLACE PRINT SYSTEM ASSEMBLY (PARA 2-60 AND 2-61).

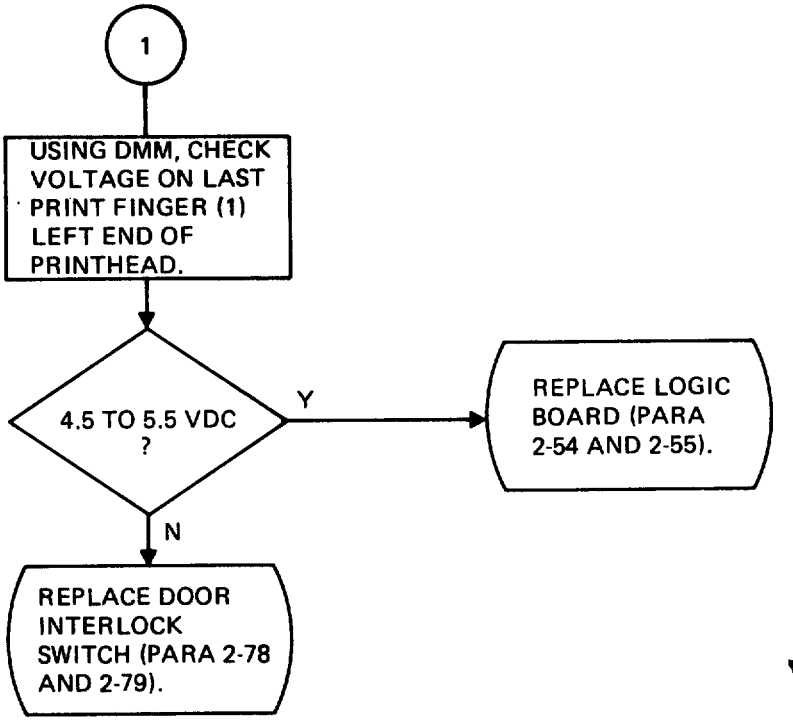


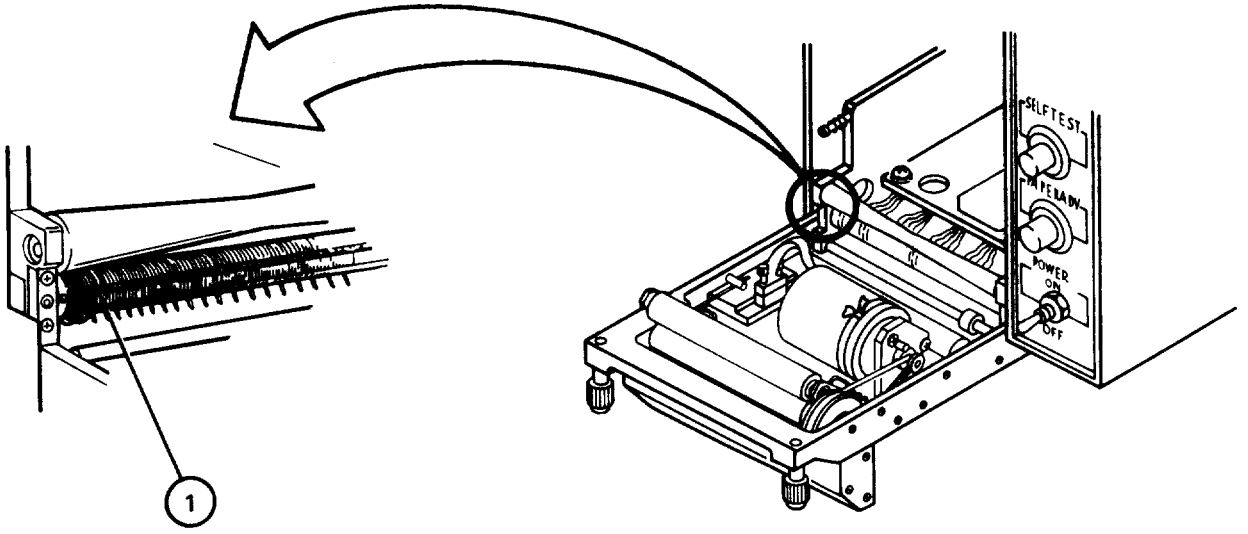




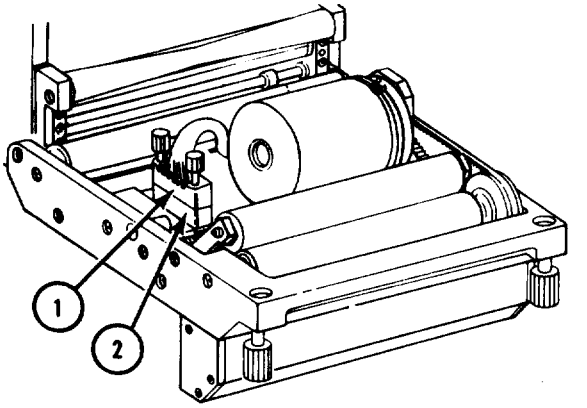
TROUBLESHOOTING FLOWCHART (1)

FAULT LIGHT LIT, SELF TEST DOES NOT PRINT, PAPER ADVANCES (SHEET 2 OF 2)





TROUBLESHOOTING FLOWCHART (2)
POWER ON/OFF CIRCUIT BREAKER WON'T RESET (SHEET 1 OF 6)



START

SET POWER ON/ OFF CIRCUIT BREAKER TO ON.

CIRCUIT BREAKER STAYS ON ?

N

Y

END

OPEN PRINTER DOOR.

DISCONNECT CONNECTOR P11(1) FROM CONNECTOR J11(2).

TURN EACH SCREW ON CONNECTOR P11 TWO TURNS AT A TIME UNTIL CONNECTOR P11 CAN BE REMOVED.

SET ON/OFF CIRCUIT BREAKER TO ON.

CIRCUIT BREAKER STAYS ON ?

Y

REPLACE STEPPER MOTOR AND DOOR HARNESS ASSEMBLY (PARA 2-52 AND 2-53).

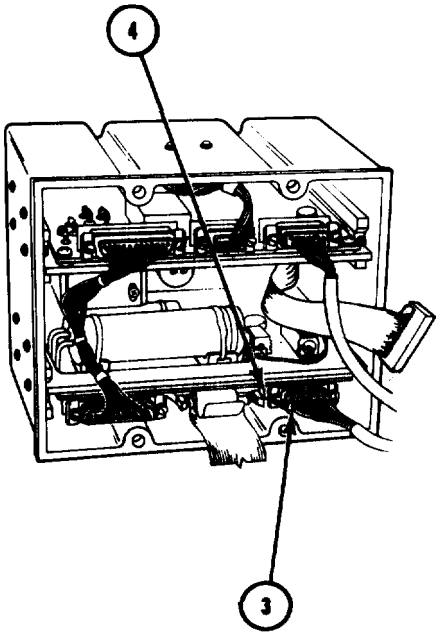
N

CONNECT CONNECTOR P11(1) TO CONNECTOR J11(2).

TURN EACH SCREW ON CONNECTOR P11 TWO TURNS AT A TIME UNTIL CONNECTOR P11 IS TIGHT.

SEPARATE CHASSIS (PARA 2-30).

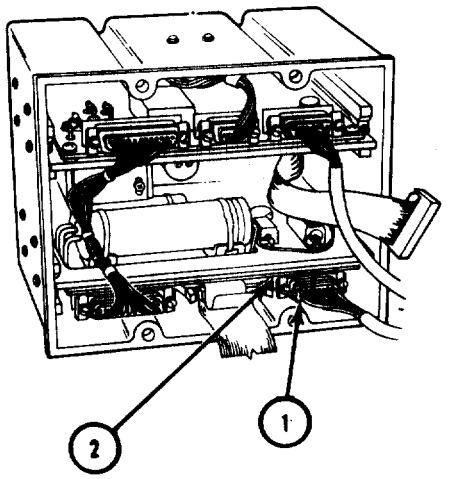
DISCONNECT CONNECTOR P5(3) FROM CONNECTOR J5(4).

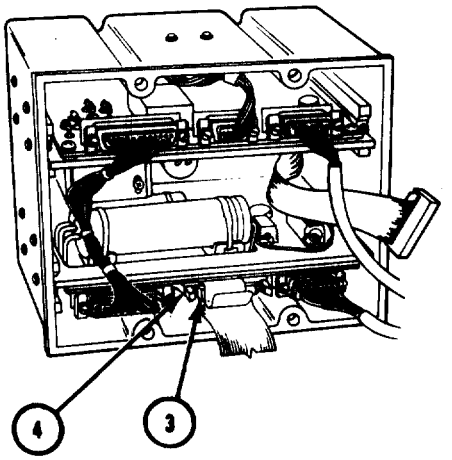


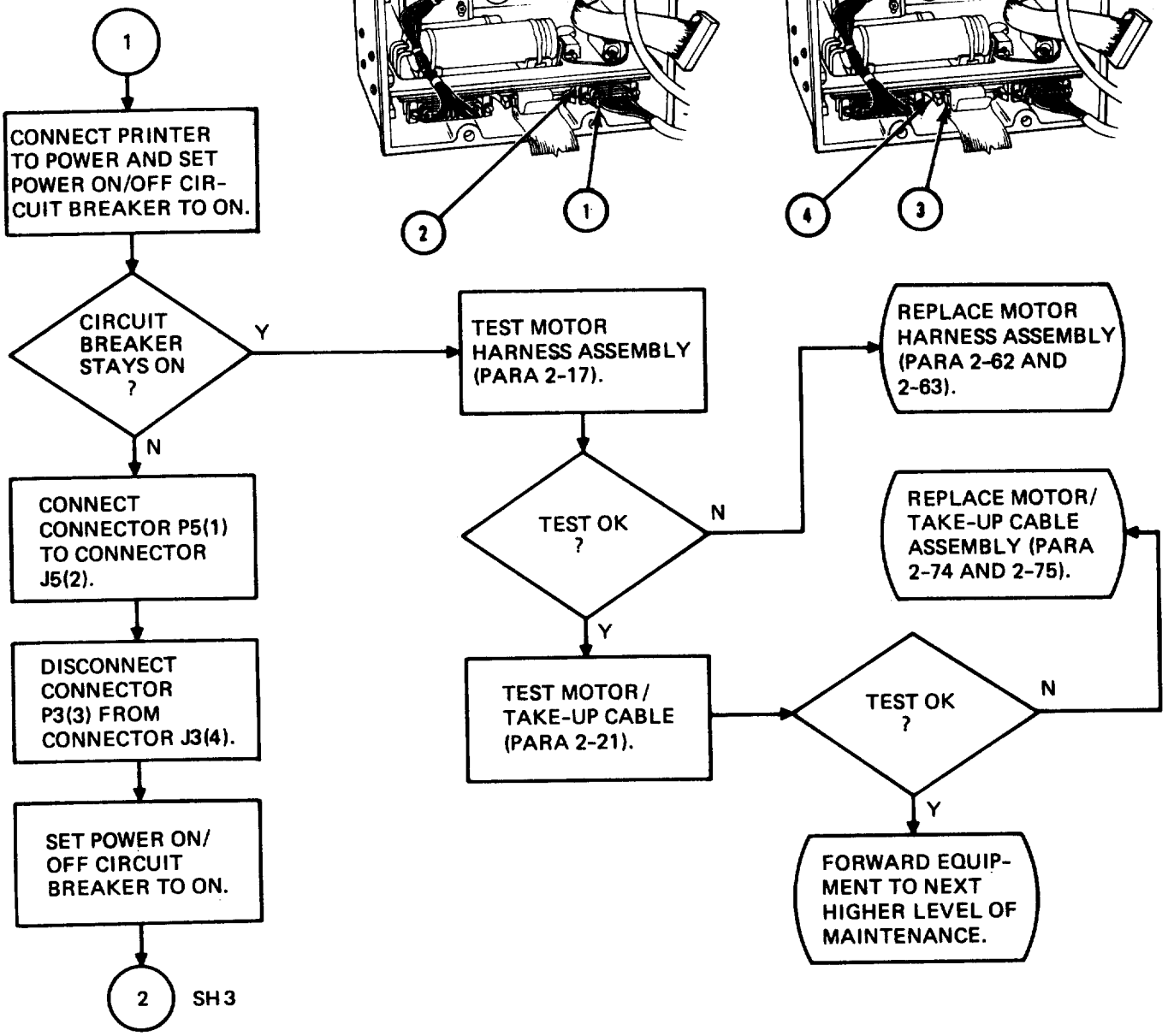
1 SH2

TROUBLESHOOTING FLOWCHART (12)

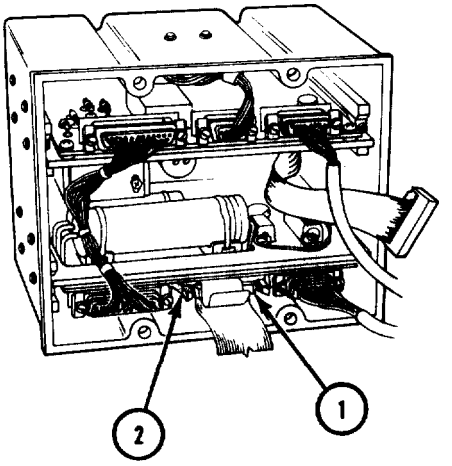
POWER ON/OFF CIRCUIT BREAKER WON'T RESET (SHEET 2 OF 6)

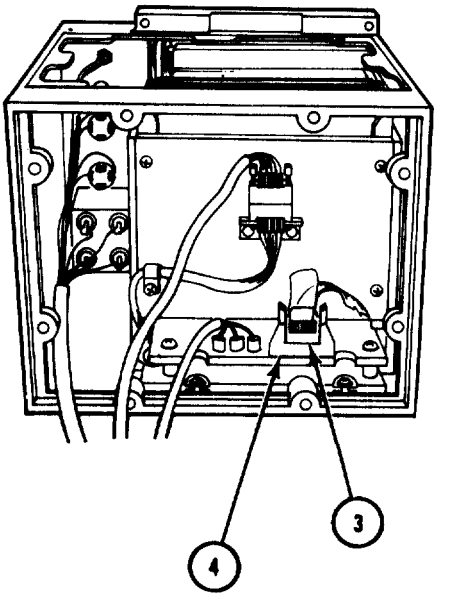






TROUBLESHOOTING FLOWCHART 2
POWER ON/OFF CIRCUIT BREAKER WON'T RESET (SHEET 3 OF 6)





2

CIRCUIT BREAKER STAYS ON ?

Y

REPLACE LOGIC BOARD (PARA 2-54 AND 2-55).

CONNECT CONNECTOR P3(1) TO CONNECTOR J3(2).

REMOVE LOGIC BOARD (PARA 2-54).

DISCONNECT CONNECTOR P17(3) FROM CONNECTOR J17(4).

SET POWER ON/OFF CIRCUIT BREAKER TO ON.

CIRCUIT BREAKER STAYS ON ?

Y

TEST MAIN INTERCONNECTION CABLE ASSEMBLY (PARA 2-16).

N

CONNECT CONNECTOR P17(3) TO CONNECTOR J17(4).

TEST OK ?

N

Y

REMOVE TOP COVER (PARA 2-26).

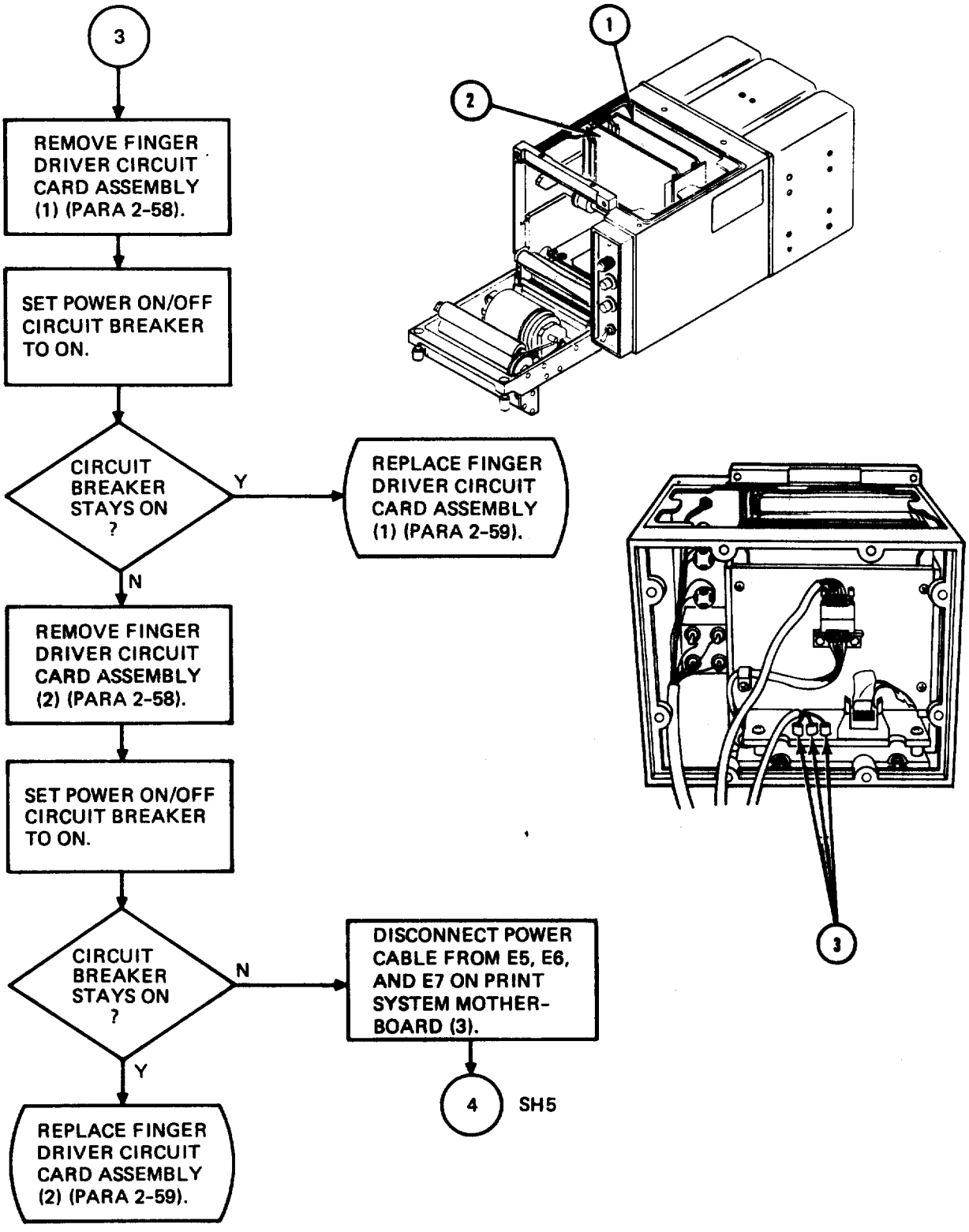
REPLACE MAIN INTERCONNECTION CABLE ASSEMBLY (PARA 2-56 AND 2-57).

3 SH4

DO NOT DISCONNECT CONNECTORS P15 AND P16.

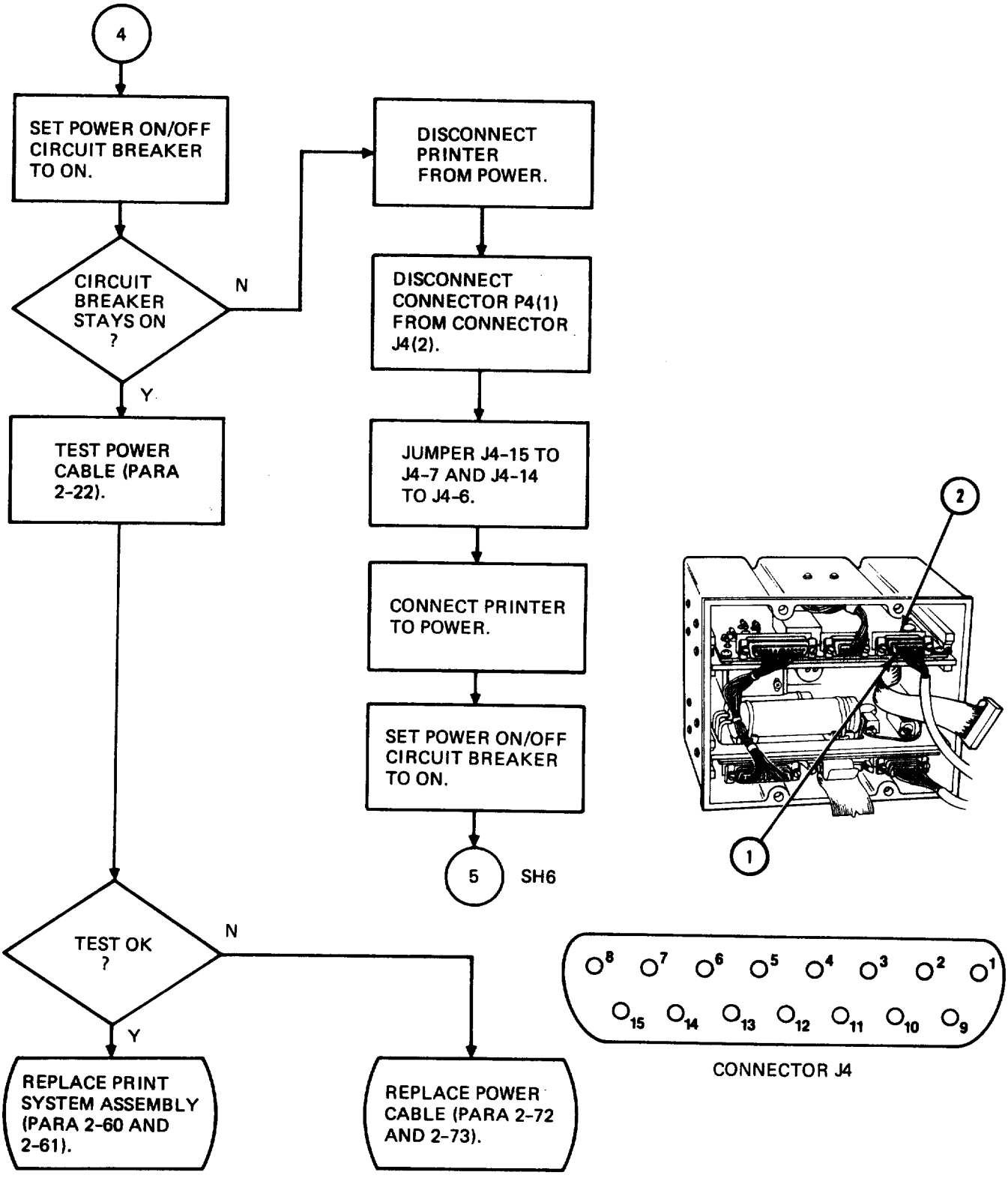
TROUBLESHOOTING FLOWCHART 02

POWER ON/OFF CIRCUIT BREAKER WON'T RESET (SHEET 4 OF 6)



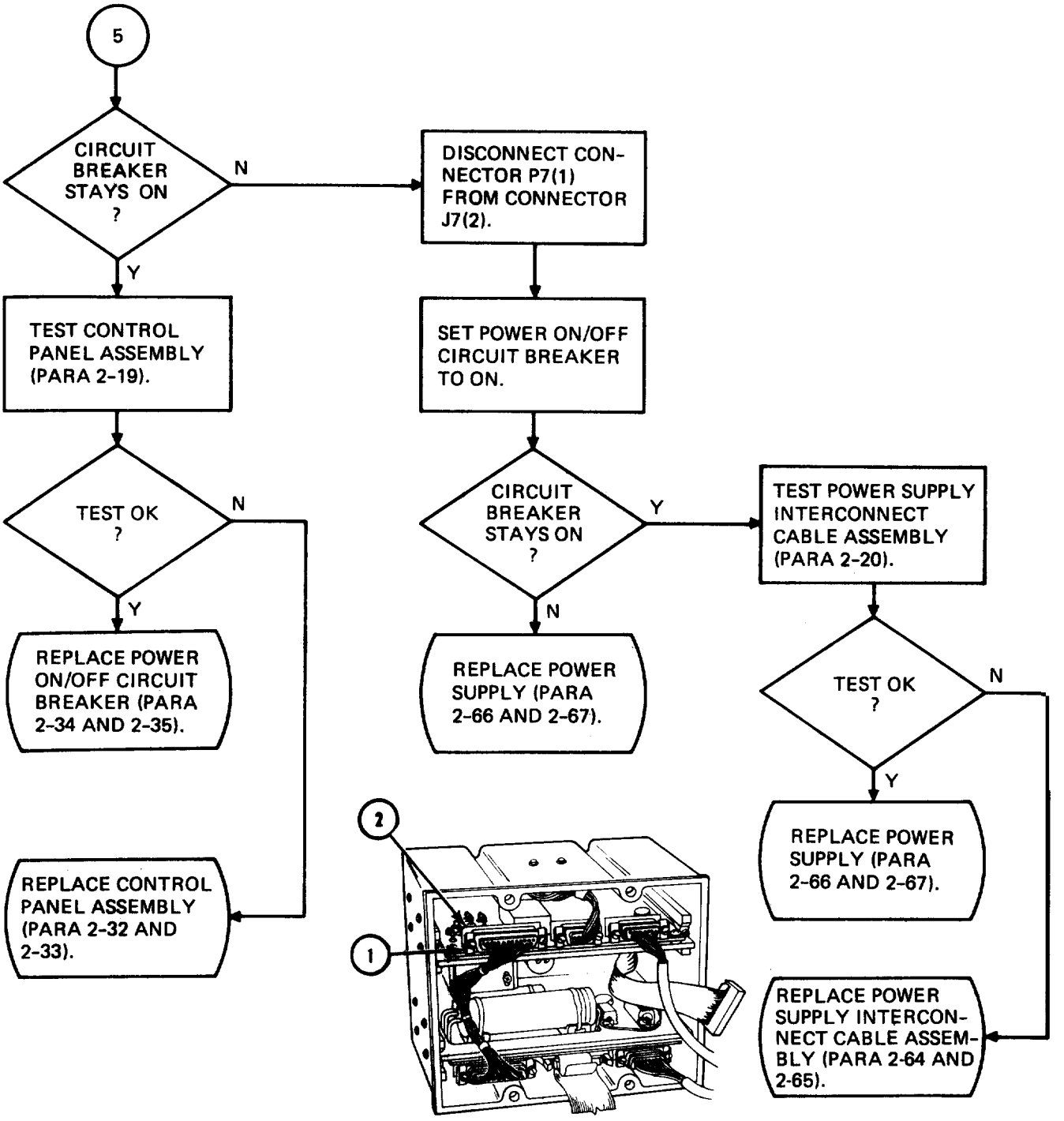
TROUBLESHOOTING FLOWCHART 20

POWER ON/OFF CIRCUIT BREAKER WON'T RESET (SHEET 5 OF 6)



TROUBLESHOOTING LOWCHART (12)

POWER ON/OFF CIRCUIT BREAKER WON'T RESET (SHEET 6 OF 6)



TROUBLESHOOTINGFLOWCHART (3)

PAPER ADV SWITCH DOES NOT WORK, PRINTS PROCESSOR OUTPUT

START

REMOVE CONTROL PANEL ASSEMBLY (PARA 2-32).

CONNECT PRINTER TO POWER.

SET POWER ON/OFF CIRCUIT BREAKER TO ON.

USING DMM, CHECK VOLTAGE BETWEEN (-) PIN 4(1) AND (+) PIN 3(2) ON PAPER ADV SWITCH (3).

4.5 TO 5.5 VDC ?

N

REPLACE LOGIC BOARD (PARA 2-54 AND 2-55).

Y

SEPARATE CHASSIS (PARA 2-30).

DISCONNECT CONNECTOR P15(1) FROM CONNECTOR J15(2).

CONNECT DMM TO PIN 4(1) AND PIN 3(2) ON PAPER ADV SWITCH (3). PRESS AND HOLD SWITCH.

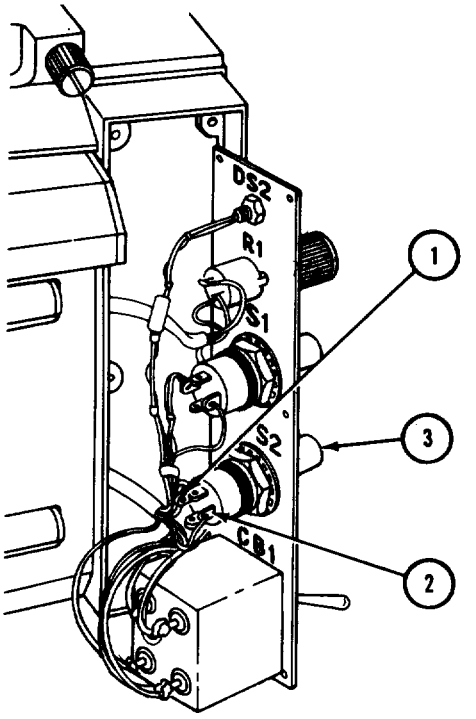
CONTINUITY ?

N

Y

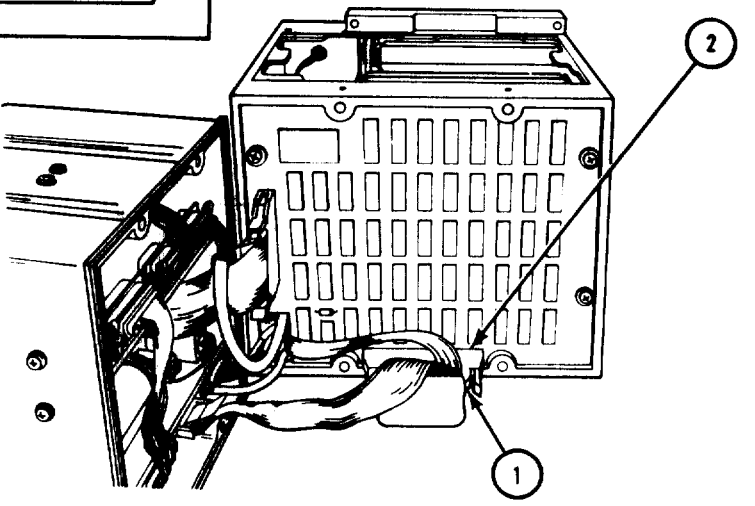
REPLACE LOGIC BOARD (PARA 2-54 AND 2-55).

REPLACE PAPER ADV SWITCH (PARA 2-36 AND 2-37).



WARNING

HIGH VOLTAGE IS PRESENT ON REAR OF CONTROL PANEL WHEN CONNECTED TO POWER.



TROUBLESHOOTING FLOWCHART (4)

SELF TEST SWITCH DOES NOT WORK, PRINTS PROCESSOR OUTPUT

START

REMOVE CONTROL PANEL (PARA 2-32).

CONNECT PRINTER TO POWER.

SET POWER ON/OFF CIRCUIT BREAKER TO ON.

USING DMM, CHECK VOLTAGE BETWEEN (-) PIN 4(1) AND (+)PIN 3(2) ON SELF TEST SWITCH (3).

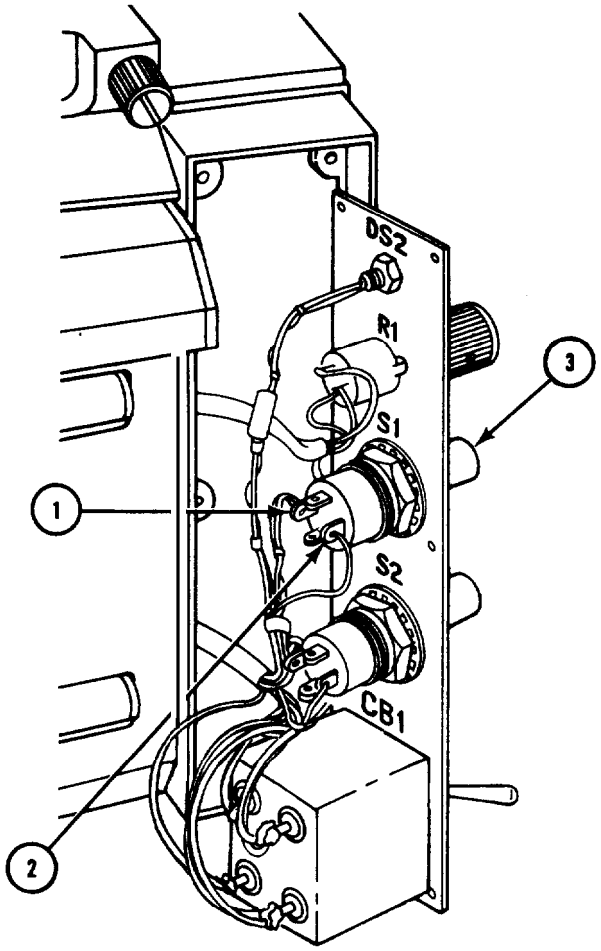
4.5 TO 5.5 VDC ?

N → REPLACE LOGIC BOARD (PARA 2-54 AND 2-55).

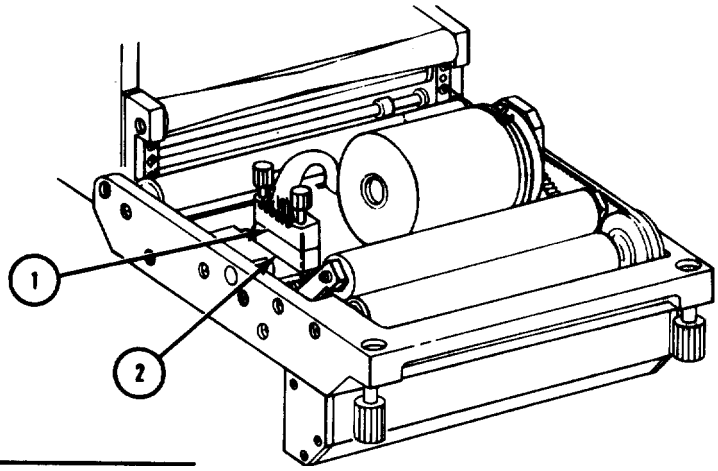
Y → REPLACE SELF TEST SWITCH (PARA 2-36 AND 2-37).

WARNING

HIGH VOLTAGE IS PRESENT ON REAR OF CONTROL PANEL WHEN CONNECTED TO POWER.



TROUBLESHOOTINGFLOWCHART 5
ILLUMINATION LIGHTS DO NOT LIGHT (SHEET 1 0F 5)



START

OPEN PRINTER DOOR.

DISCONNECT CONNECTOR P11(1) FROM CONNECTOR J11(2).

TURN EACH SCREW ON CONNECTOR P11 TWO TURNS AT A TIME UNTIL CONNECTOR P11 CAN BE REMOVED.

CONNECT PRINTER TO POWER.

SET POWER ON/OFF CIRCUIT BREAKER TO ON.

MEASURE VOLTAGE BETWEEN PIN 9(-) AND PIN 10 (+) ON CONNECTOR P11.

ROTATE ILLUM CONTROL FULLY CW AND CCW.

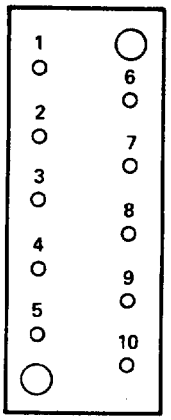
4.4 TO 5.0 VDC ?

Y

REPLACE ILLUMINATION CIRCUIT BOARD ASSEMBLY (PARA 2-42 AND 2-43).

N

1 SH2



CONNECTOR P11

TROUBLESHOOTING FLOWCHART (5)

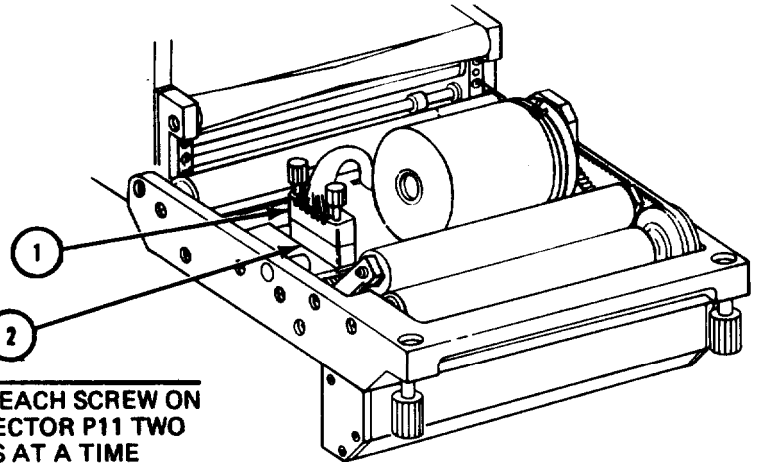
ILLUMINATION LIGHTS DO NOT LIGHT (SHEET 2 OF 5)

(1)

SET POWER ON/OFF CIRCUIT BREAKER TO OFF.

CONNECT CONNECTOR P11(1) TO CONNECTOR J11(2).

TURN EACH SCREW ON CONNECTOR P11 TWO TURNS AT A TIME UNTIL CONNECTOR P11 IS TIGHT.



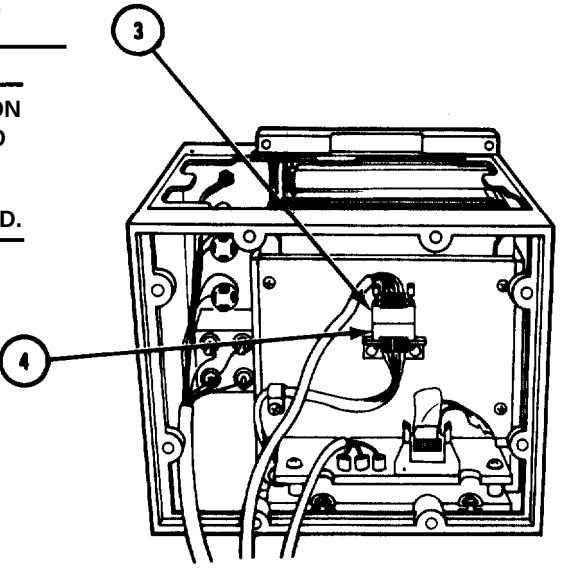
CLOSE PRINTER DOOR.

REMOVE LOGIC BOARD (PARA 2-54).

DO NOT REMOVE CONNECTORS P15 AND P16 FROM LOGIC BOARD.

DISCONNECT CONNECTOR P10(3) FROM CONNECTOR J10(4).

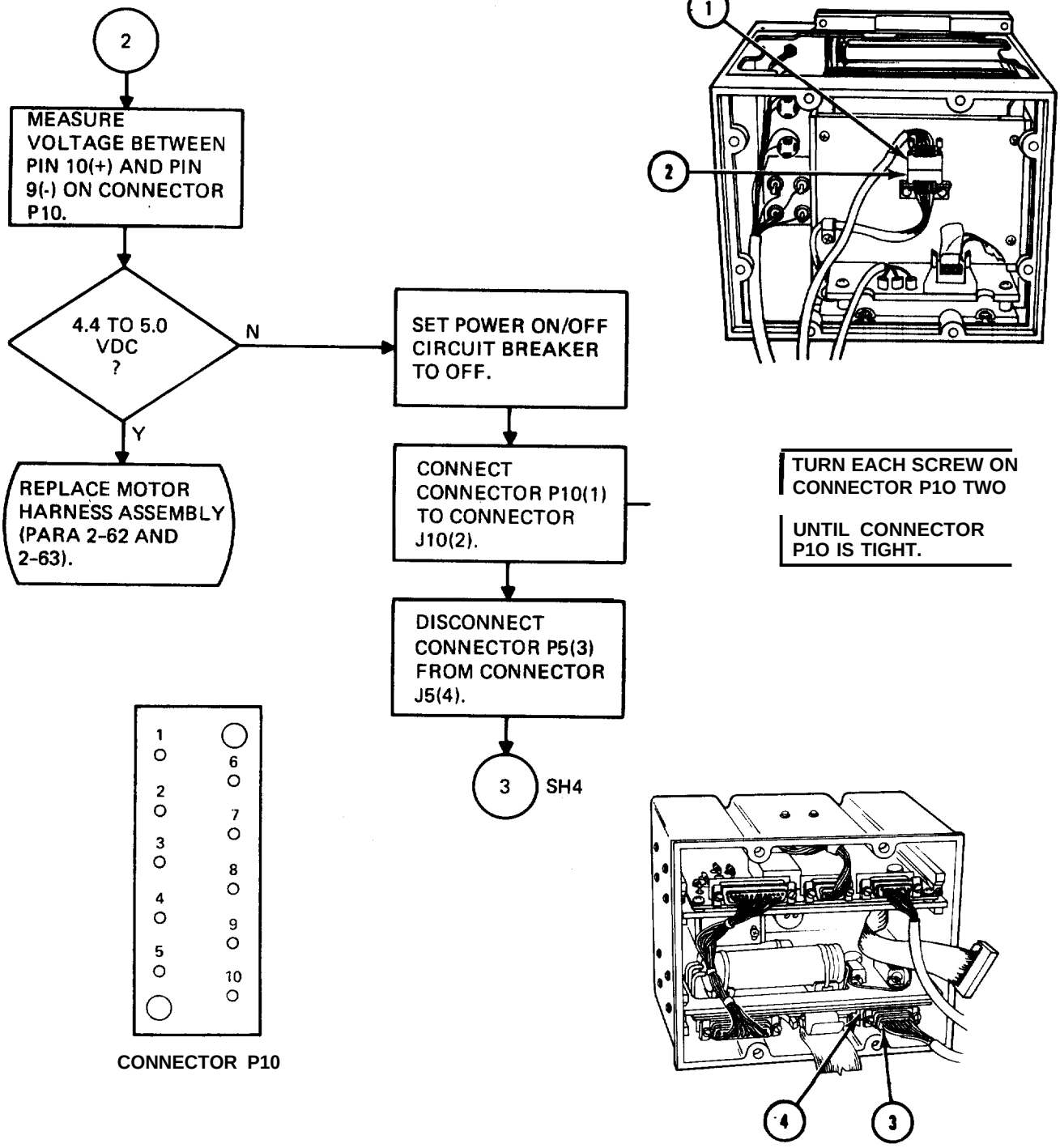
TURN EACH SCREW ON CONNECTOR P1O TWO TURNS AT A TIME UNTIL CONNECTOR P1O CAN BE REMOVED.



SET POWER ON/OFF CIRCUIT BREAKER TO ON.

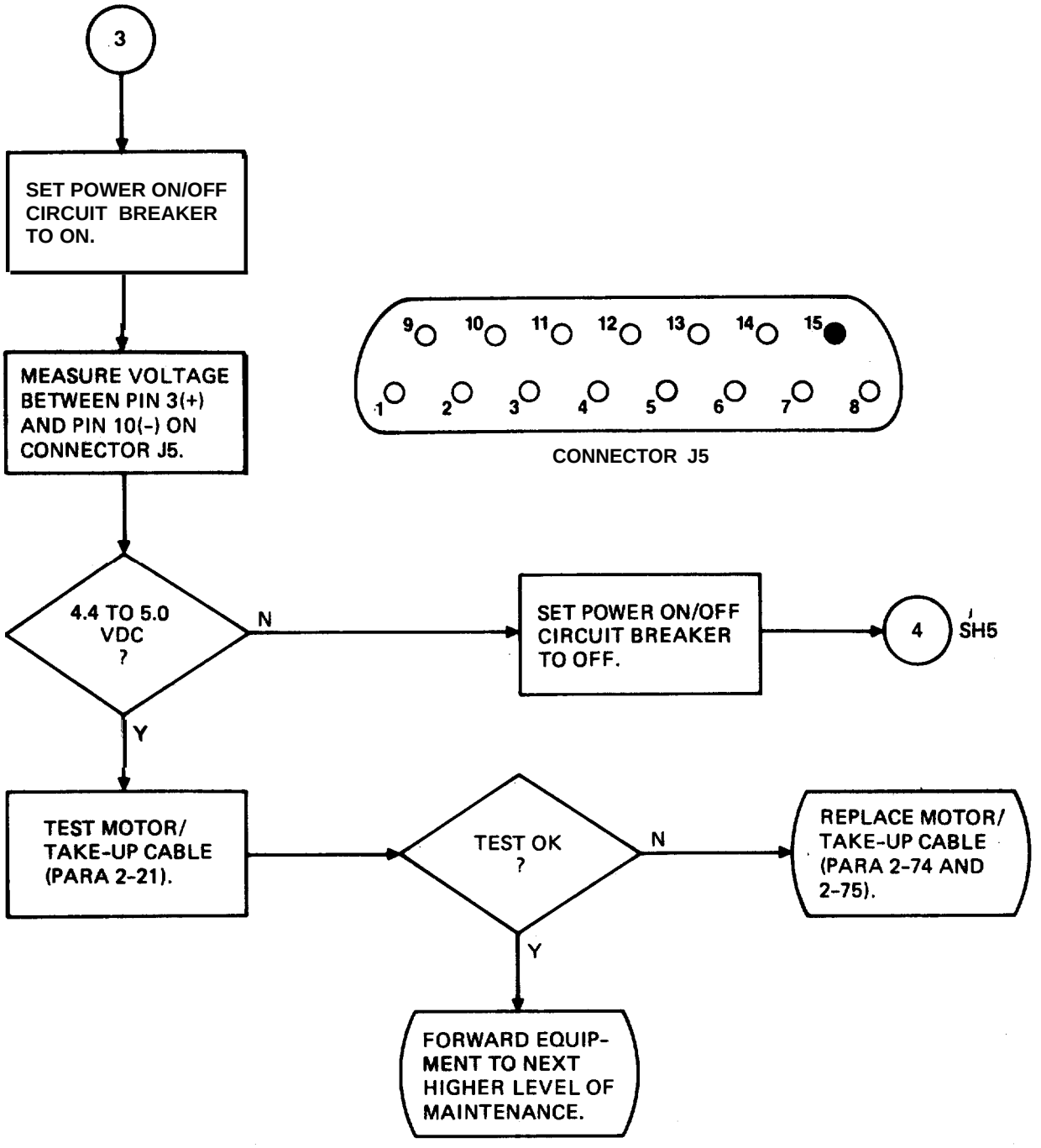
(2) SH3

TROUBLESHOOTING FLOWCHART 5
ILLUMINATION LIGHTS DO NOT LIGHT (SHEET 3 OF 5)

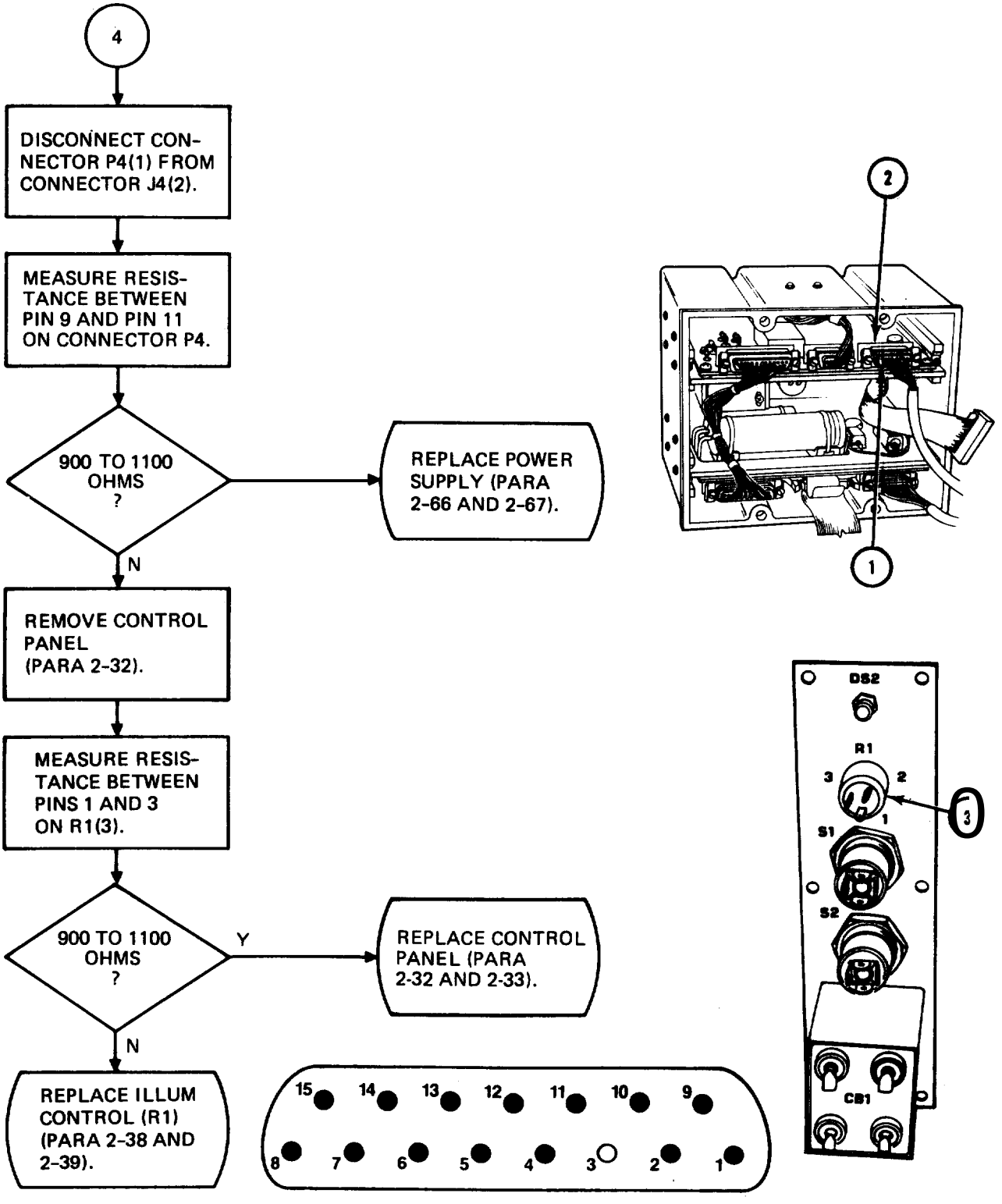


TROUBLESHOOTING FLOWCHART 5

ILLUMINATION LIGHTS DO NOT LIGHT (SHEET 4 OF 5)



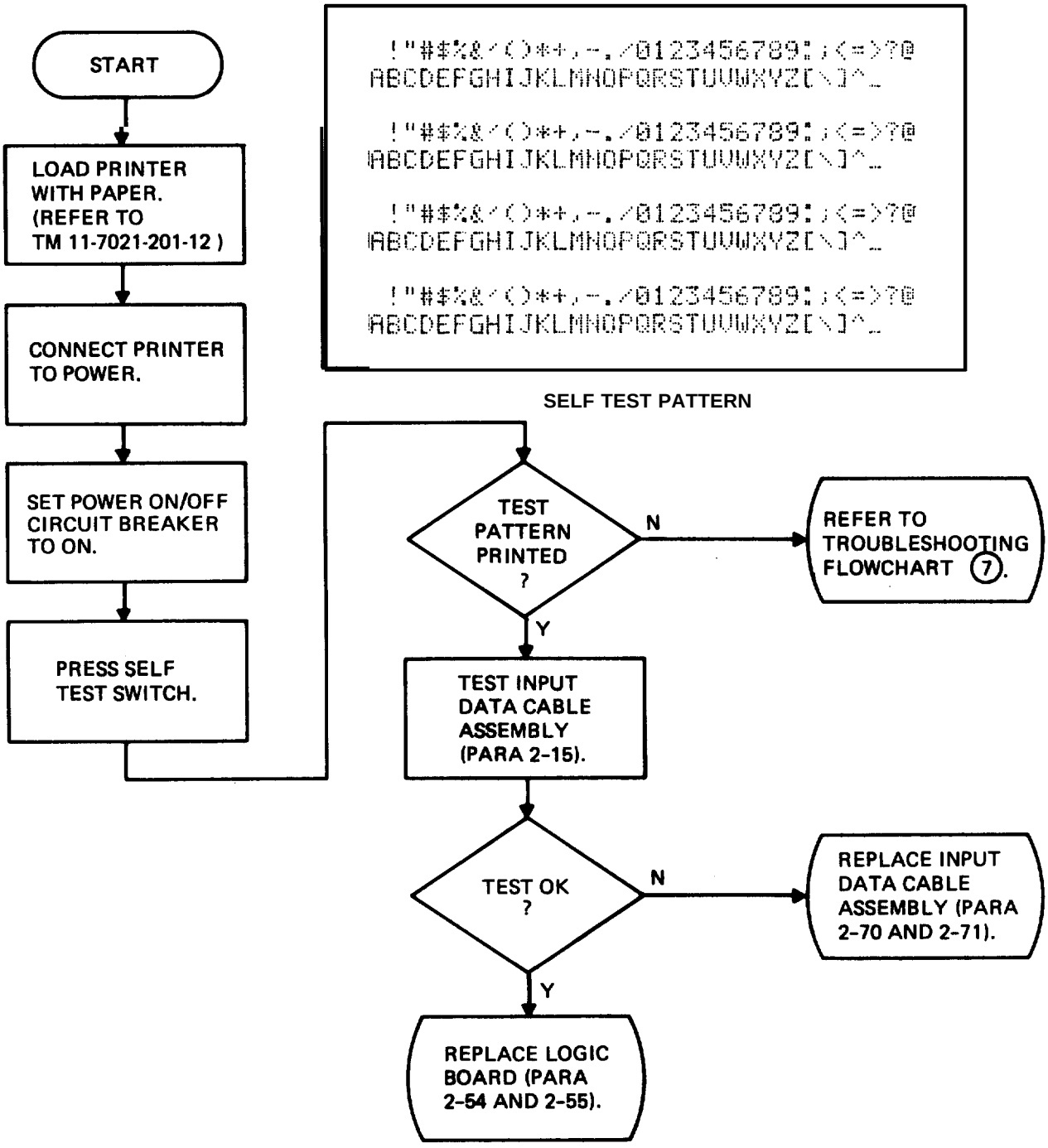
TROUBLESHOOTING FLOWCHART 5
ILLUMINATION LIGHTS DO NOT LIGHT (SHEET 5 OF 5)



CONNECTOR P4

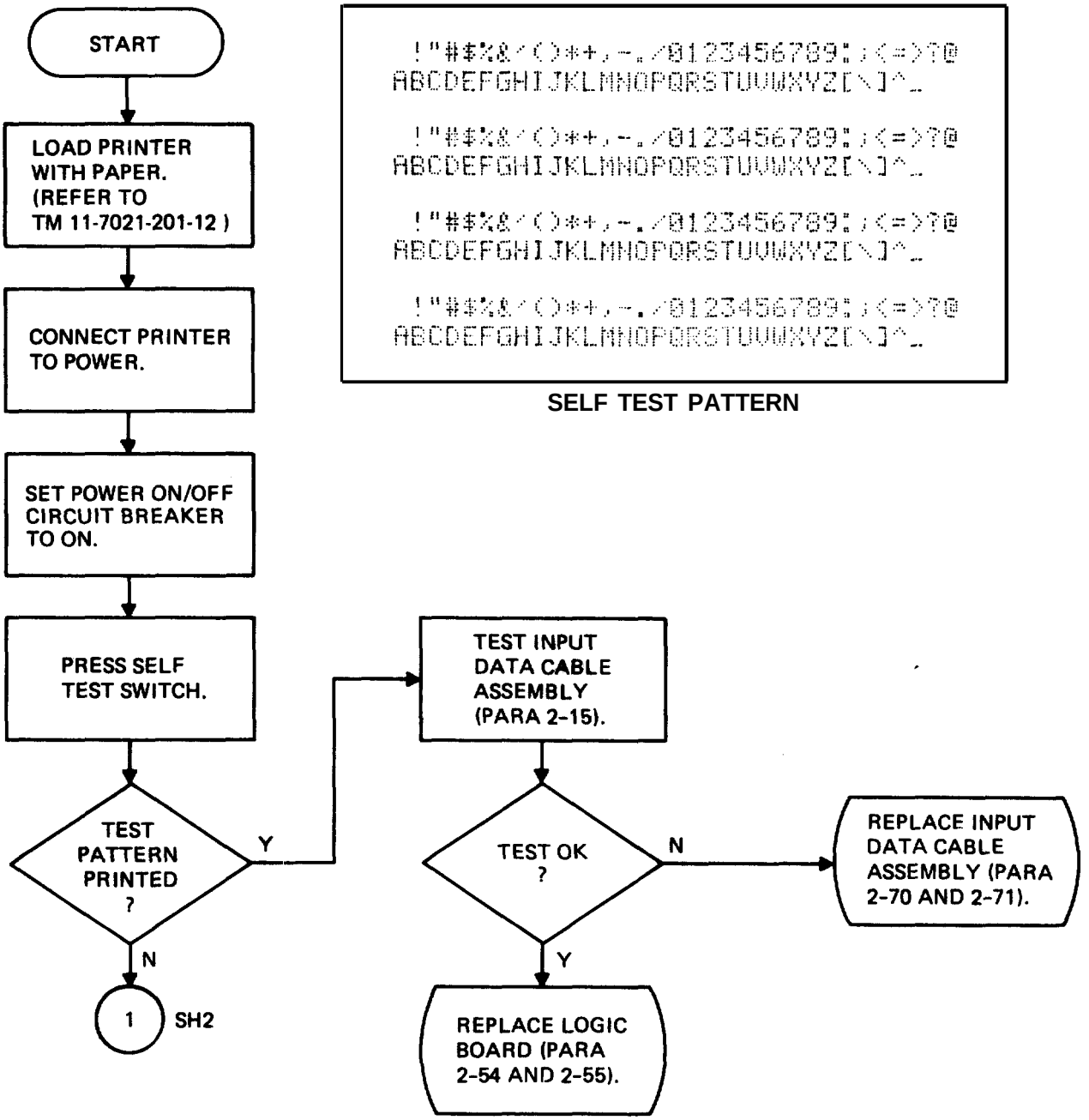
TROUBLESHOOTING FLOWCHART (6)

DOES NOT PRINT PROCESSOR OUTPUT



TROUBLESHOOTING FLOWCHART (7)

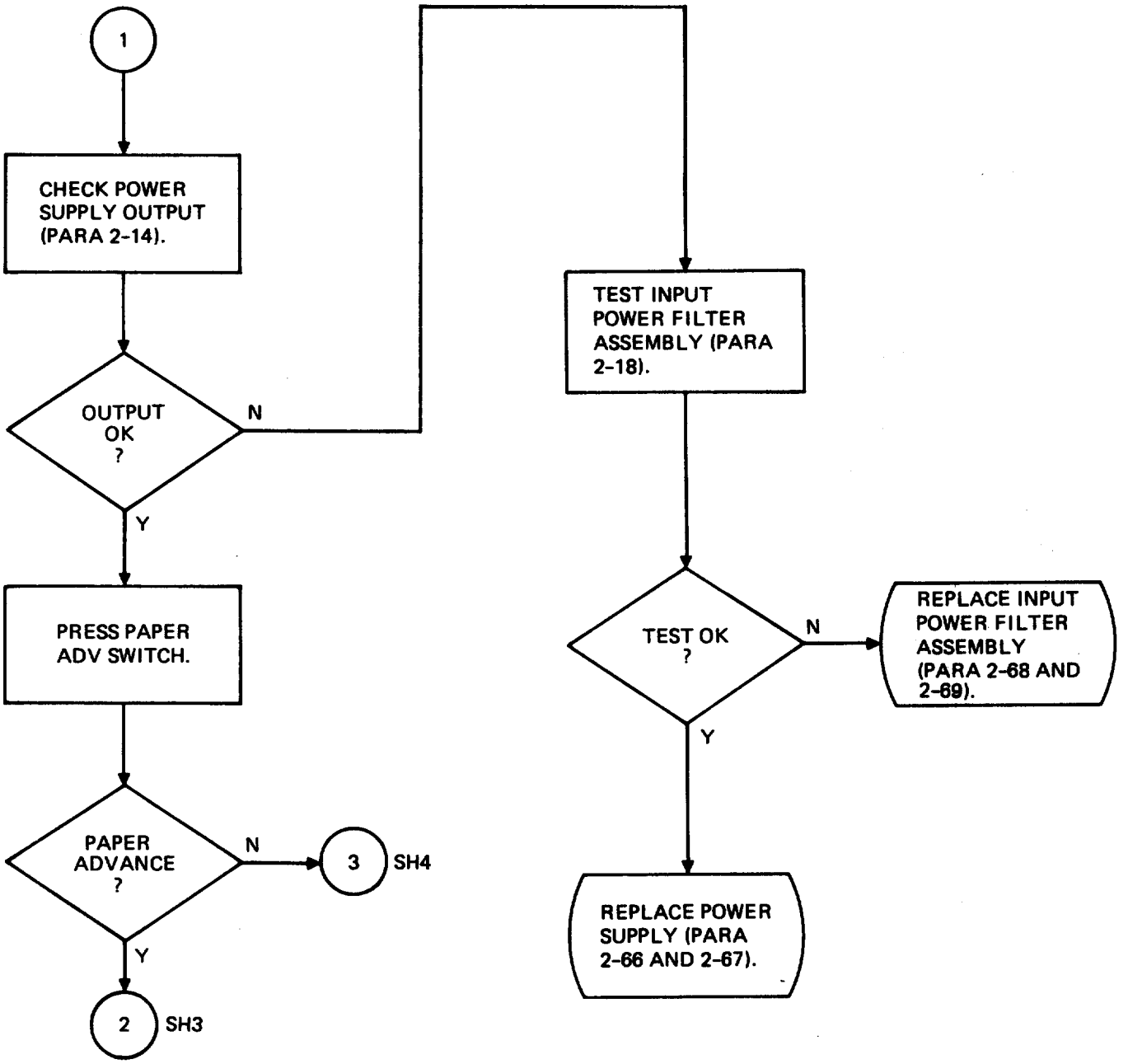
POWER ON, DOES NOT PRINT, PAPER DOES NOT ADVANCE (SHEET 10F 6)



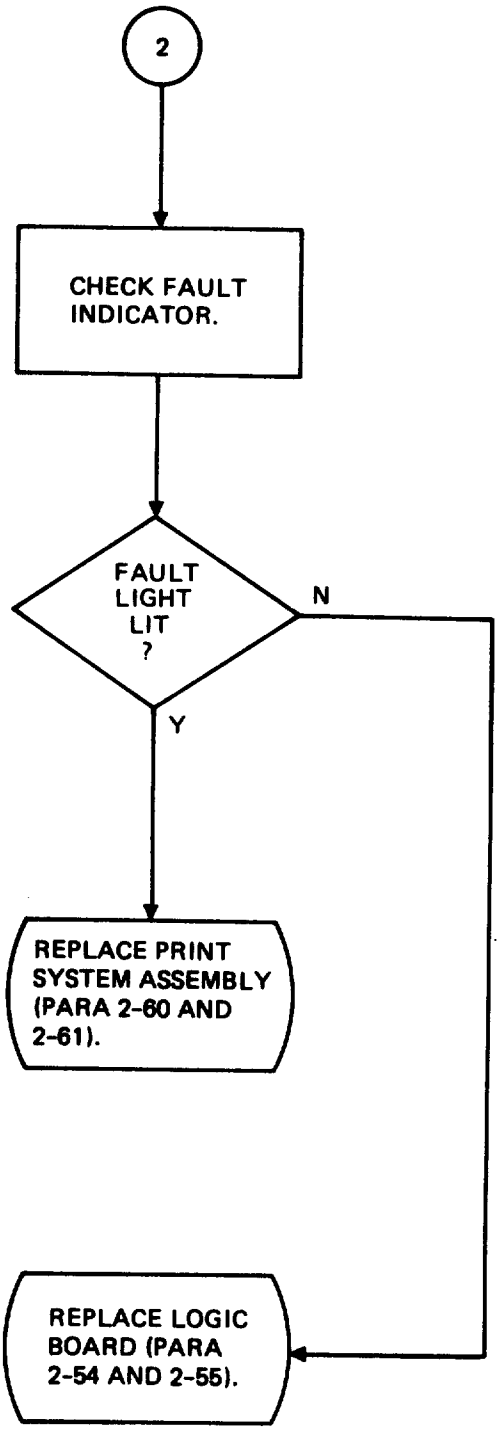
SELF TEST PATTERN

TROUBLESHOOTINGFLOWCHAR 17

POWER ON, DOES NOT PRINT PAPER DOES NOT ADVANCE {SHEET 2 OF 6)

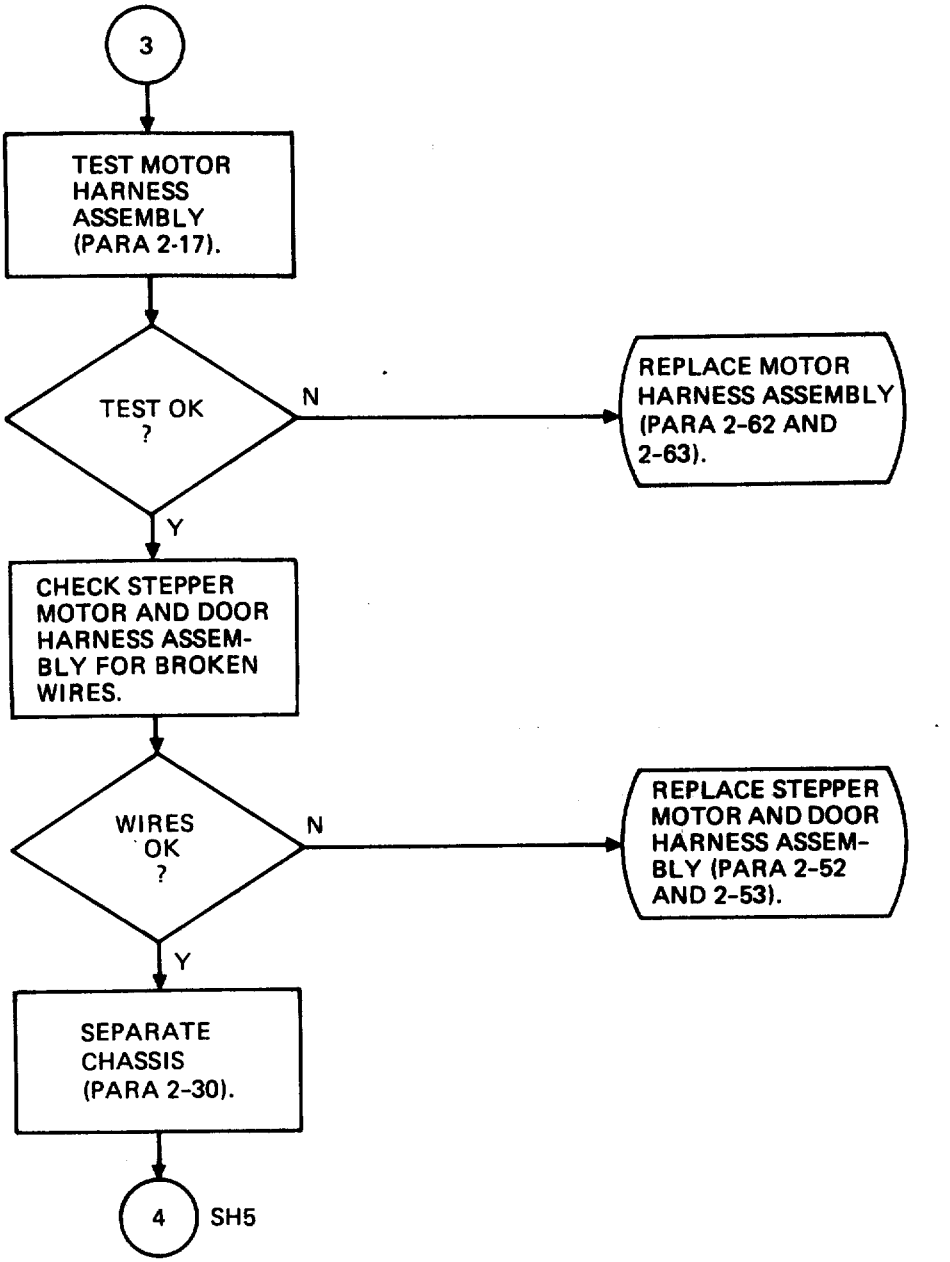


TROUBLESHOOTING FLOWCHART (7)
POWER ON, DOES NOT PRINT, PAPER DOES NOT ADVANCE (SHEET 3 OF 6)



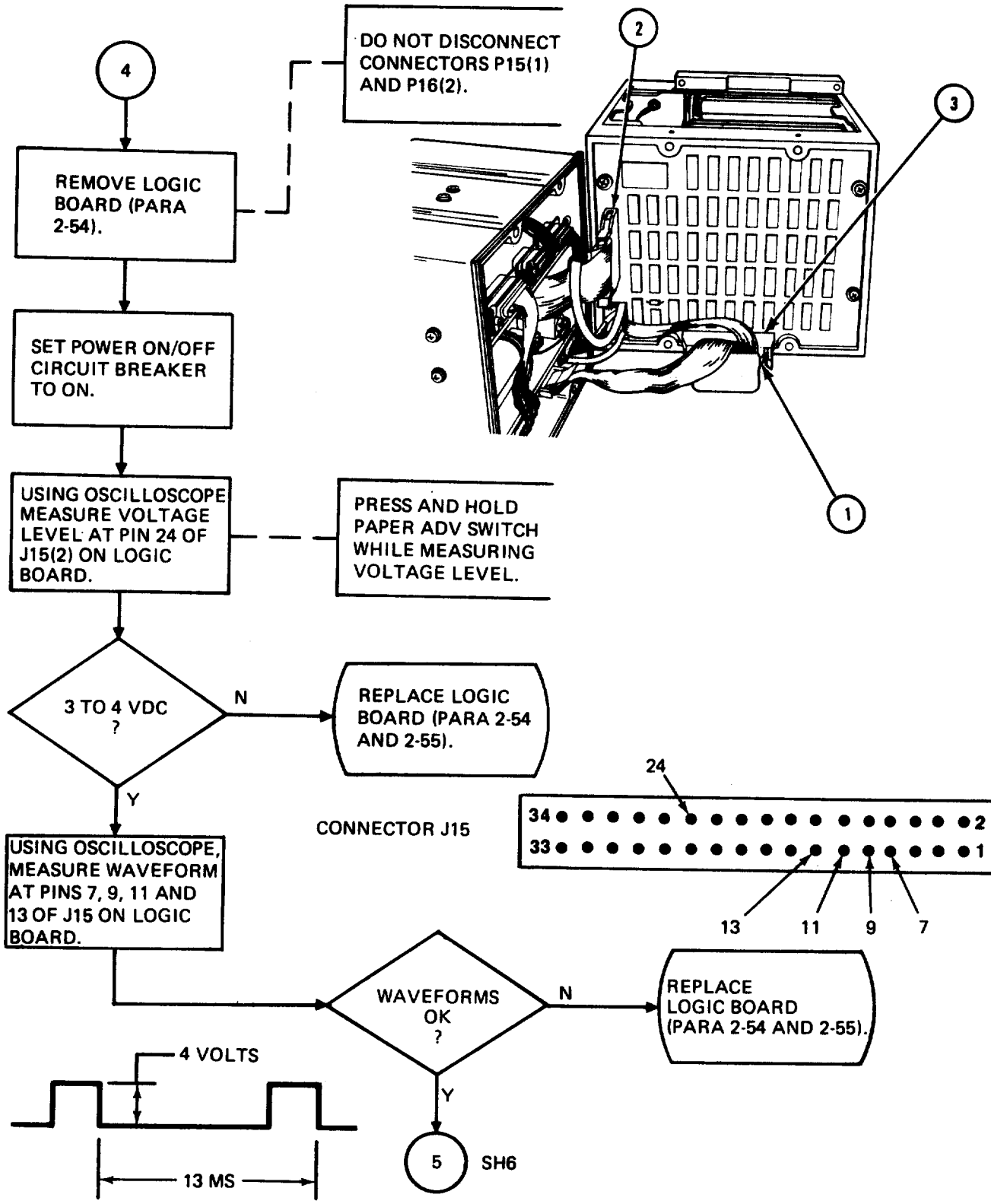
TROUBLESHOOTINGFLOWCHART 7

POWER ON, DOES NOT PRINT; PAPER DOES NOT ADVANCE (SHEET 4 OF 6)



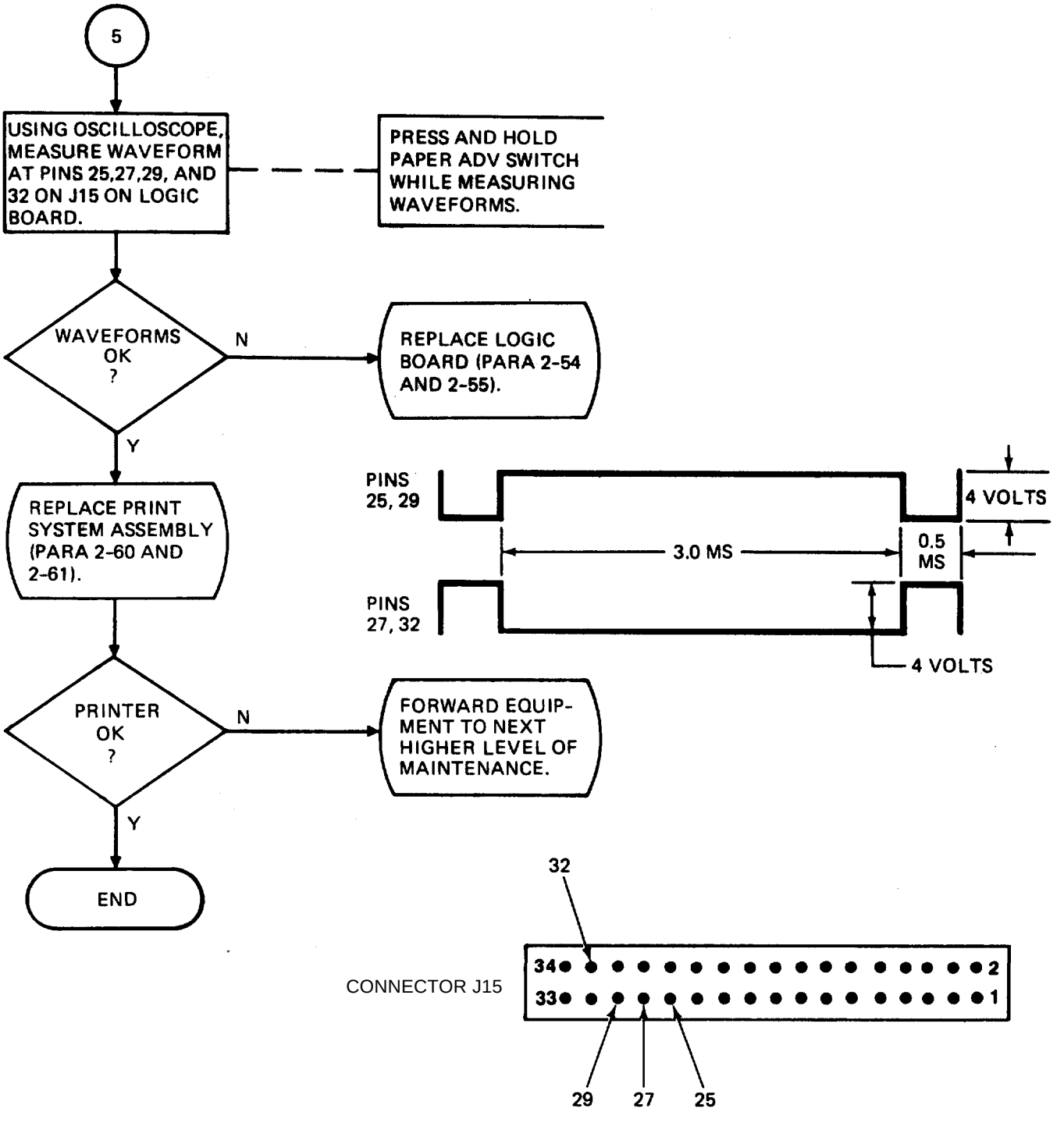
TROUBLESHOOTING FLOWCHART (7)

POWER ON, DOES NOT PRINT, PAPER DOES NOT ADVANCE (SHEET 5 OF 6)



TROUBLESHOOTING FLOWCHART (7)

POWER ON, DOES NOT PRINT, PAPER DOES NOT ADVANCE (SHEET 6 OF 6)



TROUBLESHOOTINGFLOWCHART (8)

MOTOR CHATTERS OR PAPER DOES NOT ADVANCE CORRECTLY (SHEET 1 0F 4)

START

OPEN PRINTER DOOR.

PULL OUT DOOR SWITCH (1) TO THE OVERRIDE POSITION.

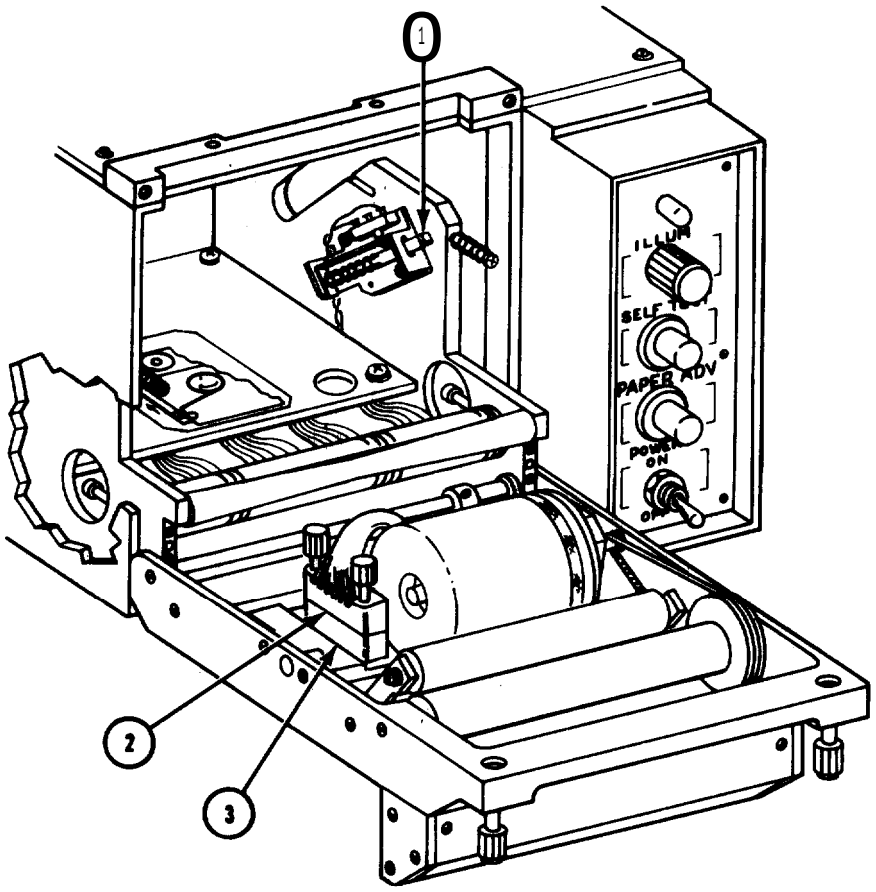
DISCONNECT CONNECTOR P11(2) FROM CONNECTOR J11(3).

CONNECT PRINTER TO POWER.

SET POWER ON/OFF CIRCUIT BREAKER TO ON.

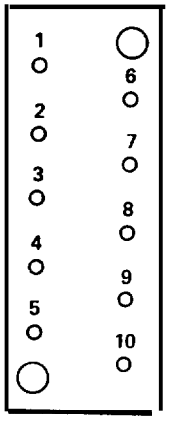
MEASURE VOLTAGE BETWEEN PIN 6(-) AND PINS 2,3,4 AND 5(+) ON P11.

(1) SH2



TURN EACH SCREW ON CONNECTOR P11 TWO TURNS AT A TIME UNTIL CONNECTOR P11 CAN BE REMOVED.

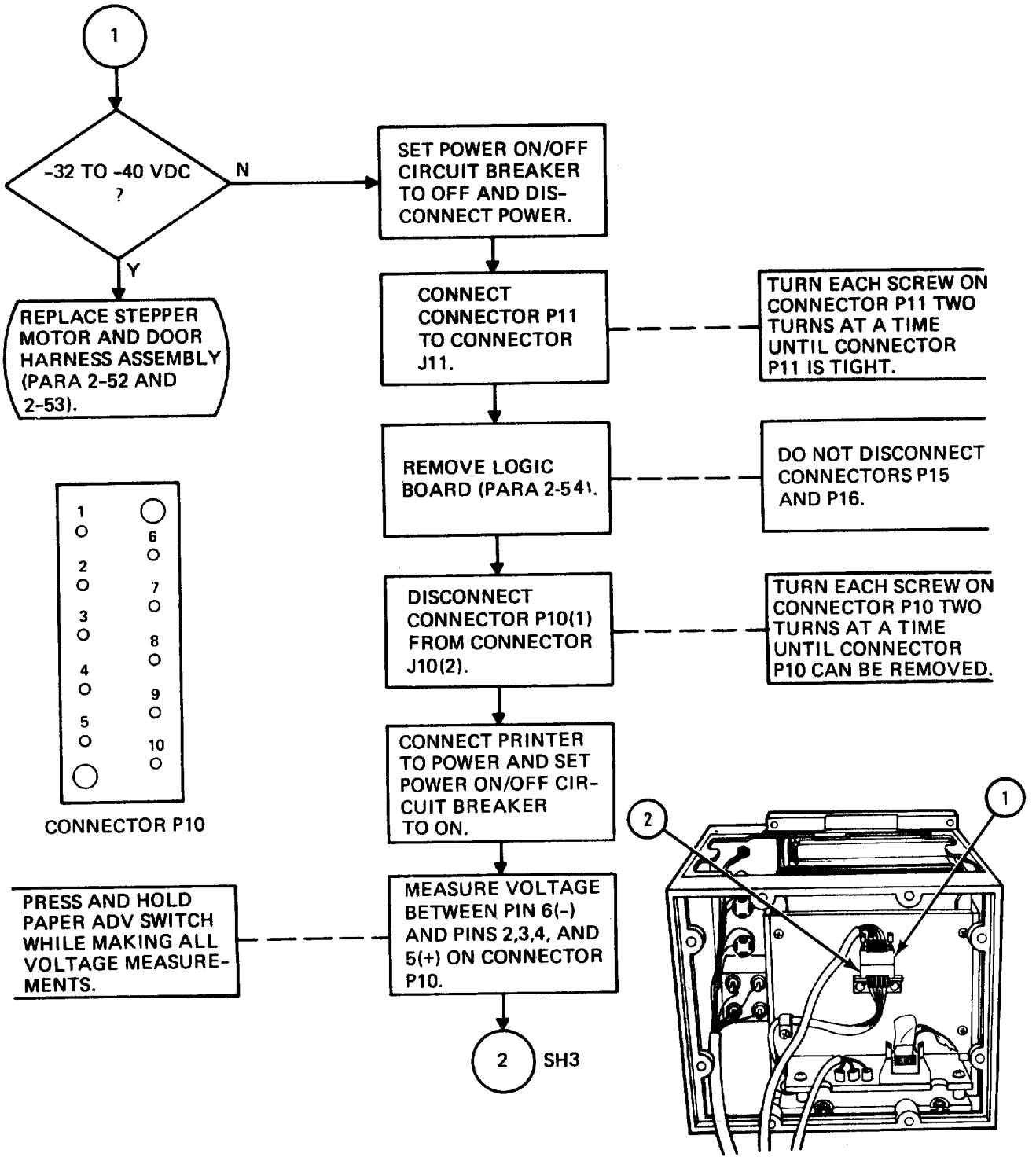
PRESS AND HOLD PAPER ADV SWITCH WHILE MAKING ALL VOLTAGE MEASUREMENTS.



CONNECTOR P11

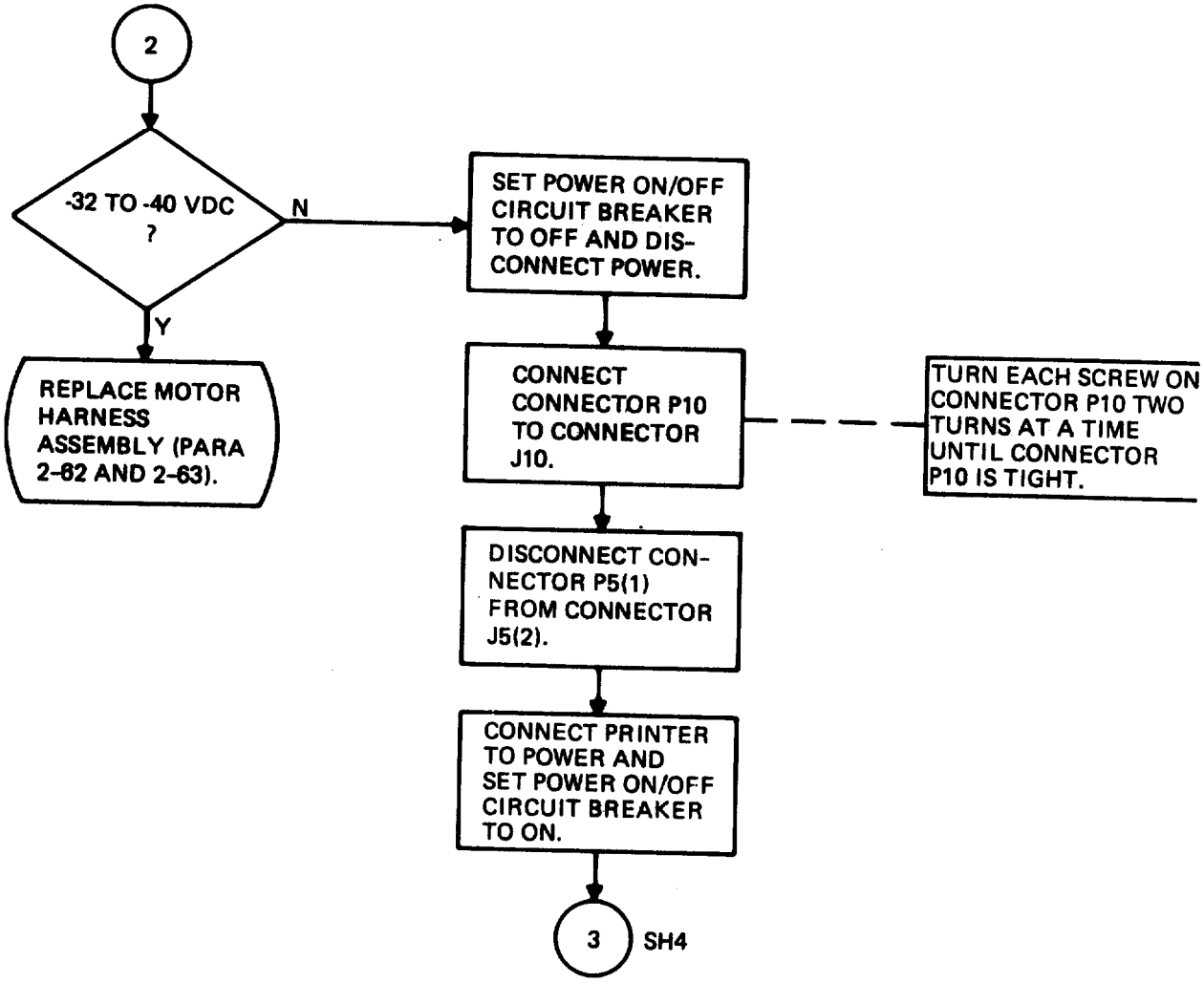
TROUBLESHOOTINGFLOWCHART 8

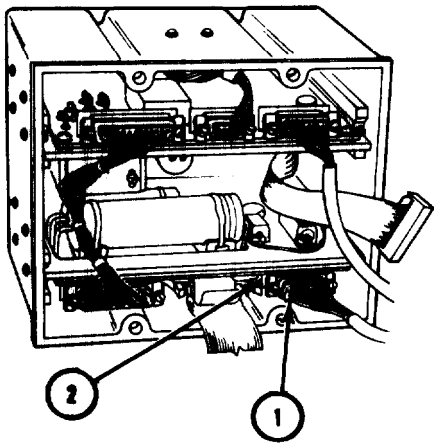
MOTOR CHATTERS OR PAPER DOES NOT ADVANCE CORRECTLY (SHEET 2 OF 4)



TROUBLESHOOTING FLOWCHART (8)

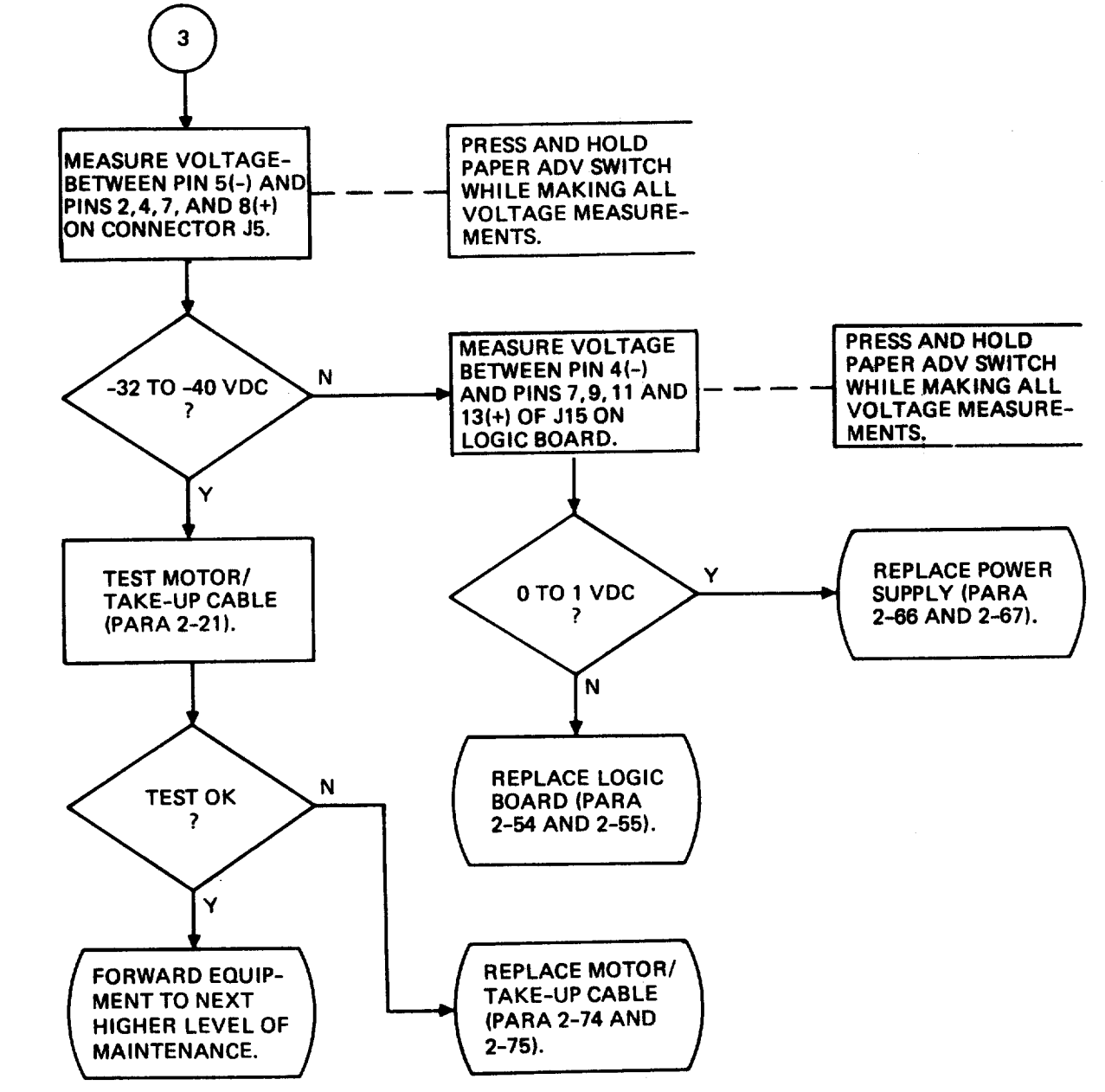
MOTOR CHATTERS OR PAPER DOES NOT ADVANCE CORRECTLY (SHEET 3 OF 4)

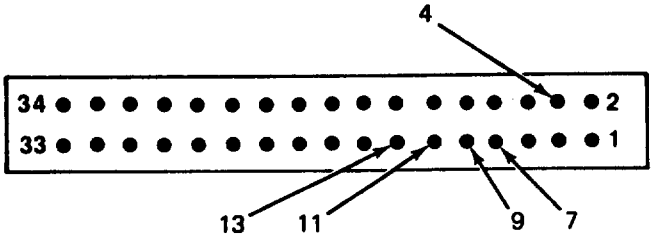




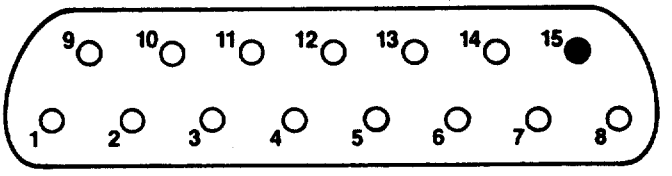
TROUBLESHOOTINGFLOWCHAR 18

MOTOR CHATTERS OR PAPER DOES NOT ADVANCE CORRECTLY (SHEET 4 OF 4)





CONNECTOR J15



CONNECTOR J5

TROUBLESHOOTING FLOWCHART 9
PAPER CONTINUOUSLY ADVANCES (SHEET 1 OF 3)

START

REMOVE CONTROL PANEL (PARA 2-32).

MEASURE CONTINUITY BETWEEN PIN 4(1) AND PIN 3(2) ON PAPER ADV SWITCH (3).

CONTINUITY ?

Y → 1 SH 2

N

SEPARATE CHASSIS (PARA 2-30).

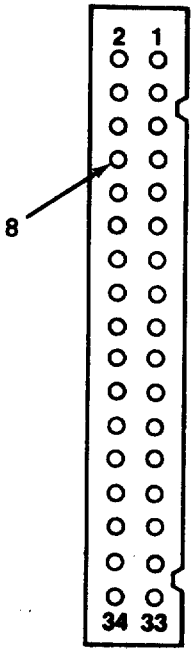
DISCONNECT CONNECTOR P15(1) FROM CONNECTOR J15(2).

MEASURE CONTINUITY BETWEEN PIN 1 AND PIN 8 ON CONNECTOR P15.

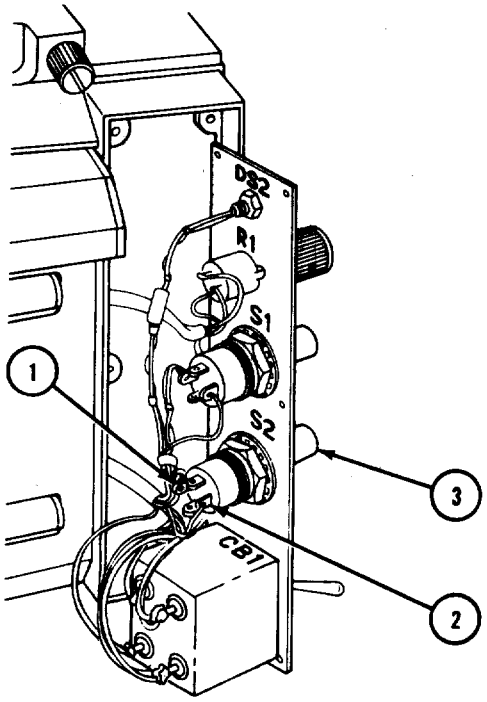
2 SH 2

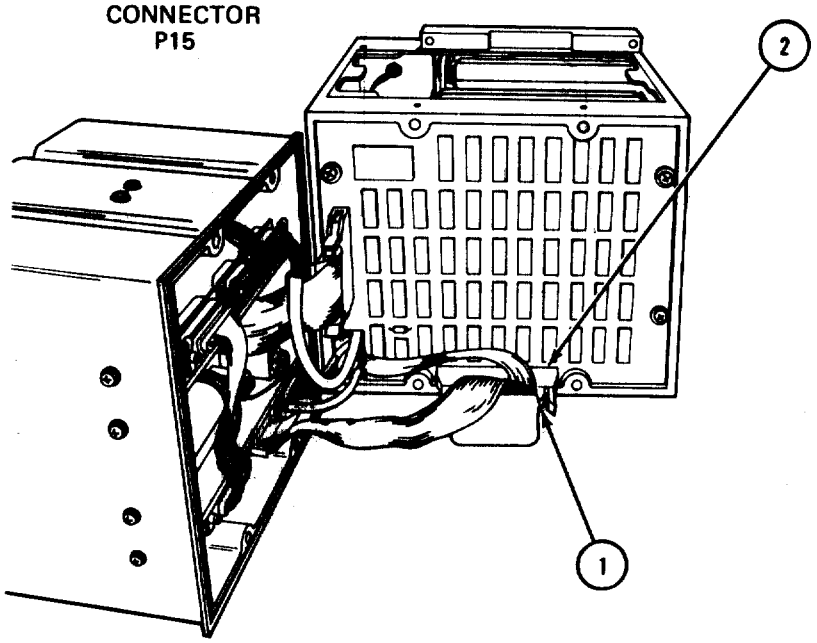
WARNING

HIGH VOLTAGE IS PRESENT ON REAR OF CONTROL PANEL WHEN CONNECTED TO POWER.

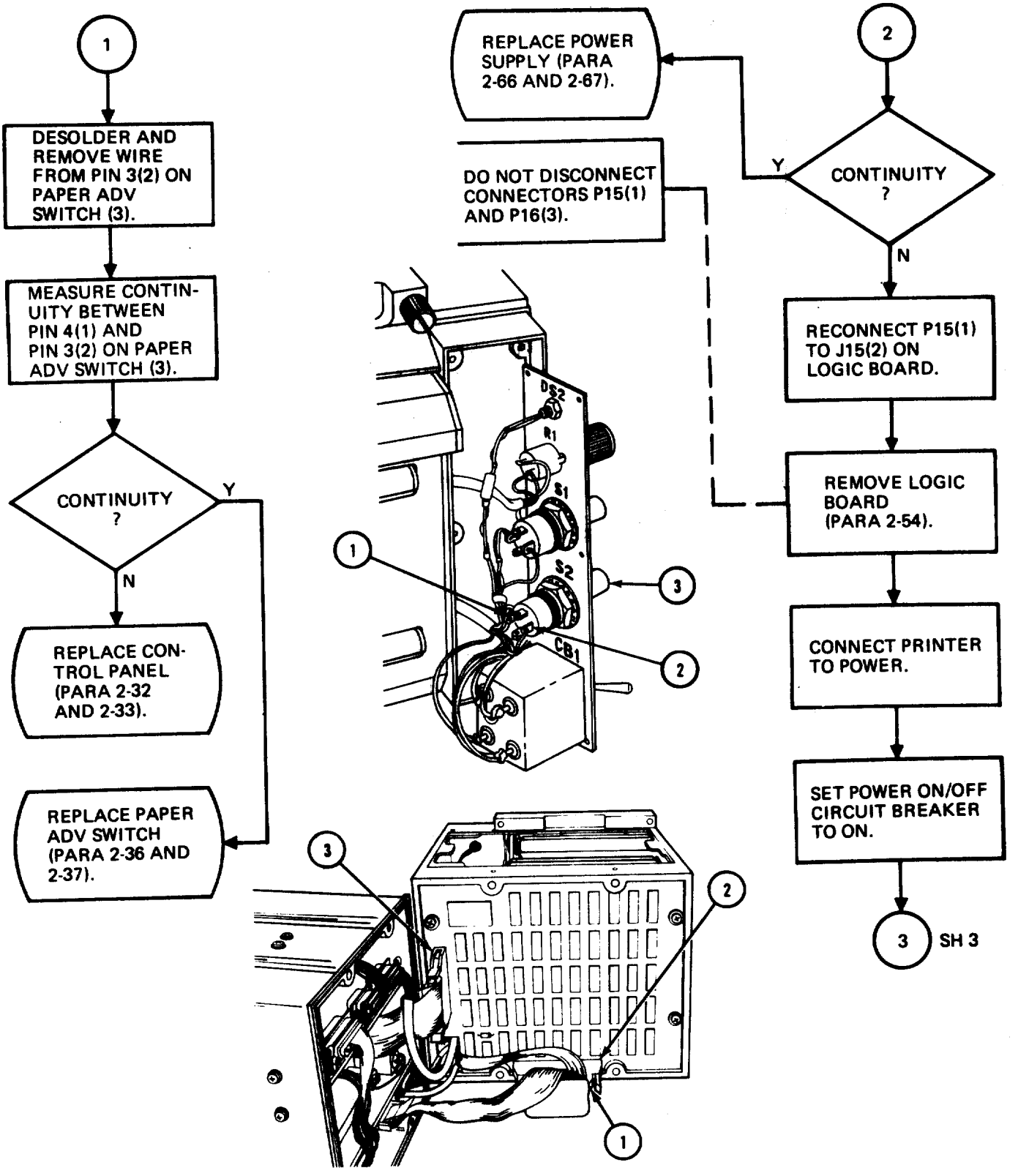


CONNECTOR P15

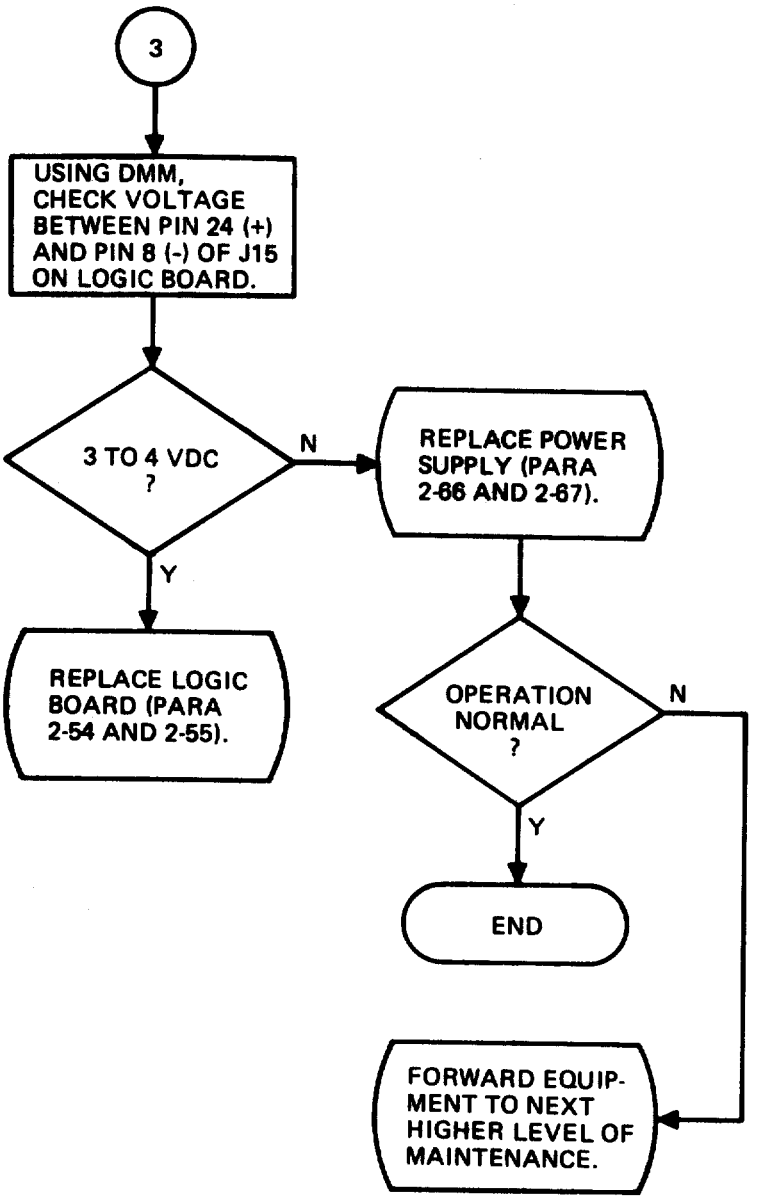


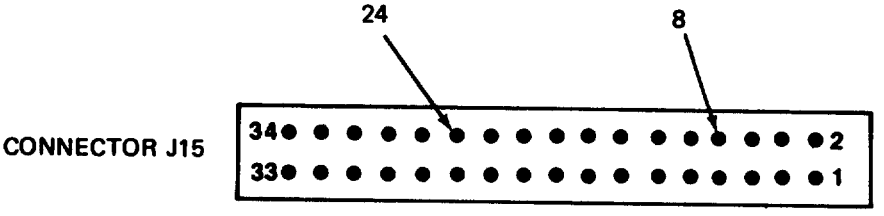


TROUBLESHOOTING FLOWCHART (9)
PAPER CONTINUOUSLY ADVANCES (SHEET 2 OF 3)



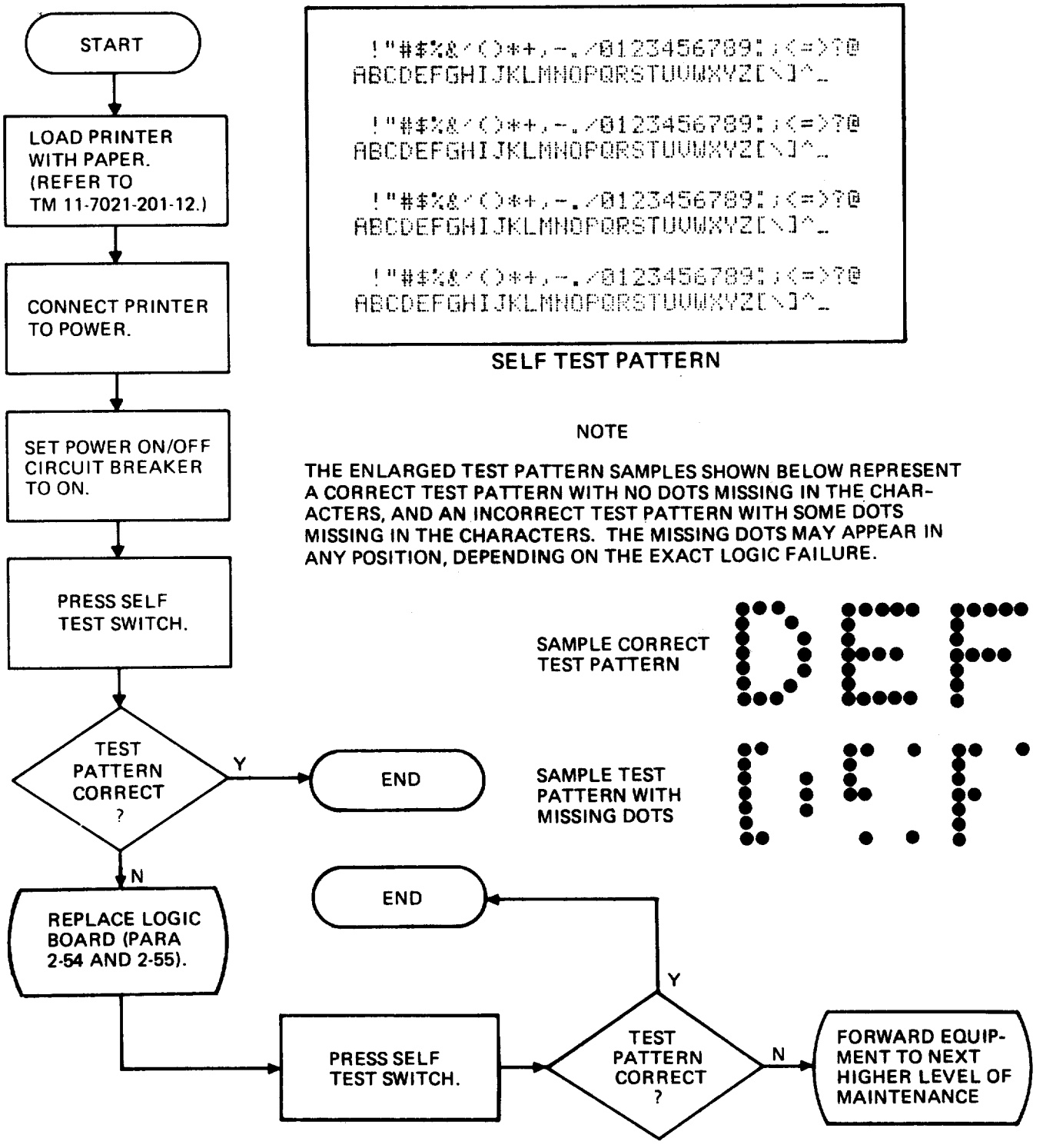
TROUBLESHOOTING FLOWCHART (9)
PAPER CONTINUOUSLY ADVANCES (SHEET 3 OF 3)





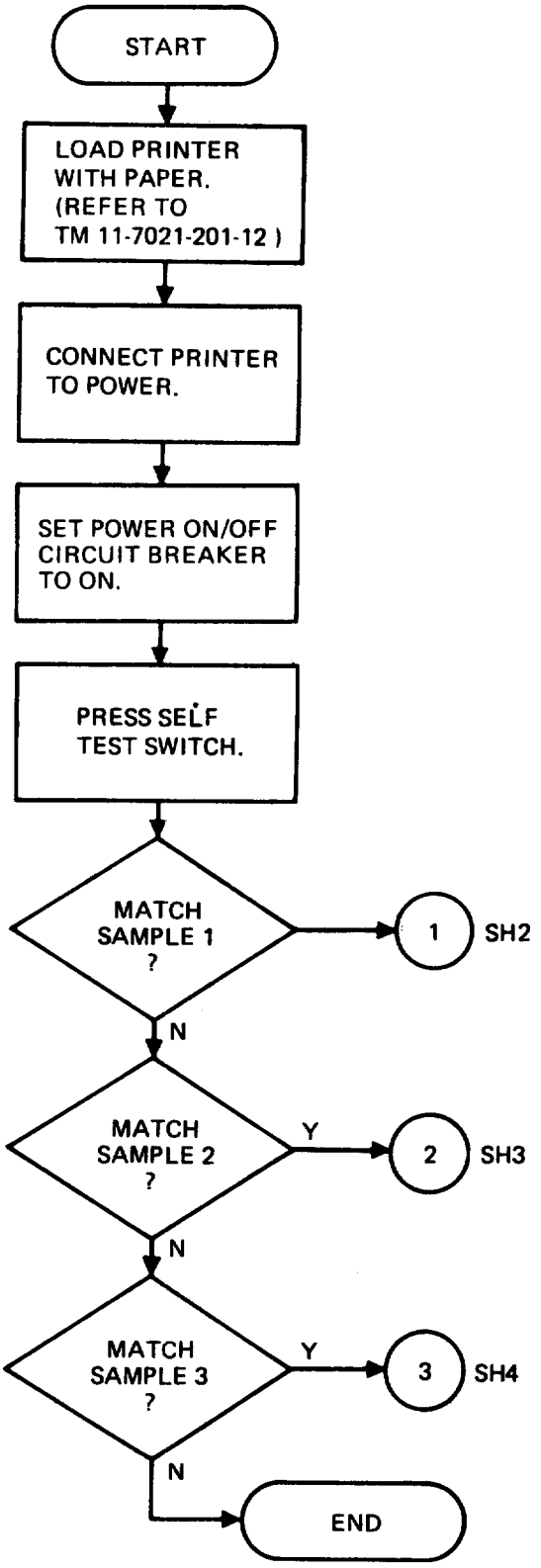
TROUBLESHOOTING FLOWCHART (10)

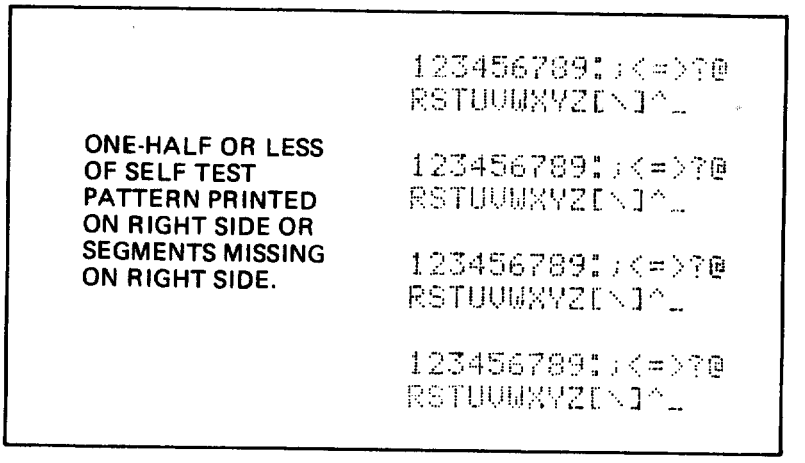
FULL WIDTH PRINTOUT, INCORRECT SELF TEST PATTERN



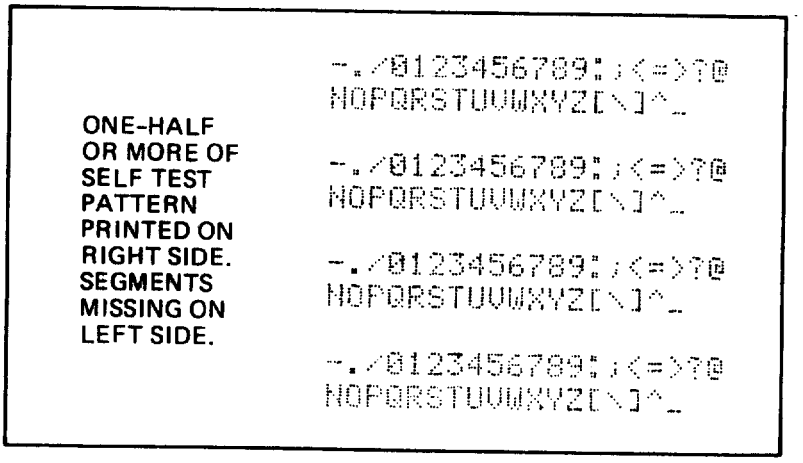
TROUBLESHOOTING FLOWCHART (11)

SEGMENTS MISSING OR NO SELF TEST PRINTOUT (SHEET 1 OF 5)

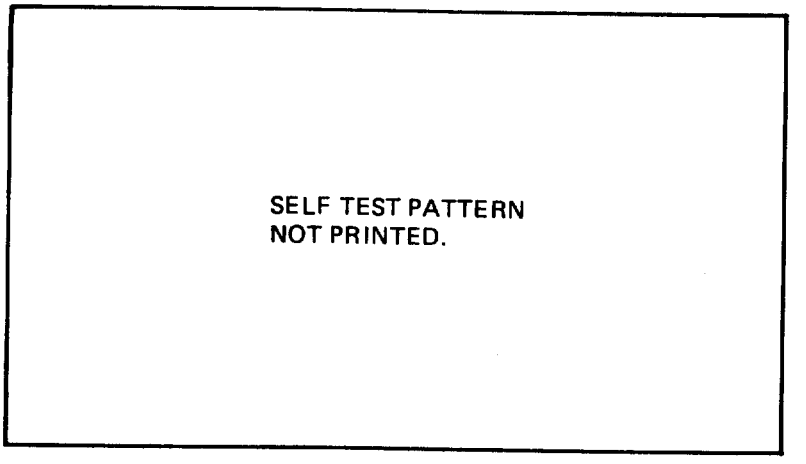




SAMPLE 1



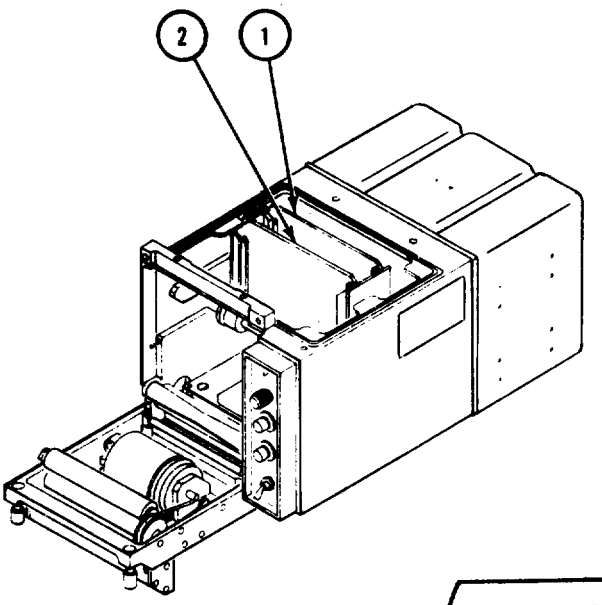
SAMPLE 2



SAMPLE 3

TROUBLESHOOTING FLOWCHART (11)

SEGMENTS MISSING OR NO SELF TEST PRINTOUT (SHEET 2 OF 5



1

REPLACE FINGER DRIVER CIRCUIT CARD ASSEMBLY (1) (PARA 2-58 AND 2-59).

PRESS SELF TEST SWITCH.

PRINTOUT OK ?

Y

END

N

REPLACE FINGER DRIVER CIRCUIT CARD ASSEMBLY (2) (PARA 2-58 AND 2-59).

PRESS SELF TEST SWITCH

PRINTOUT OK ?

Y

END

N

REPLACE PRINT SYSTEM ASSEMBLY (PARA 2-60 AND 2-61).

PRESS SELF TEST SWITCH.

PRINTOUT OK ?

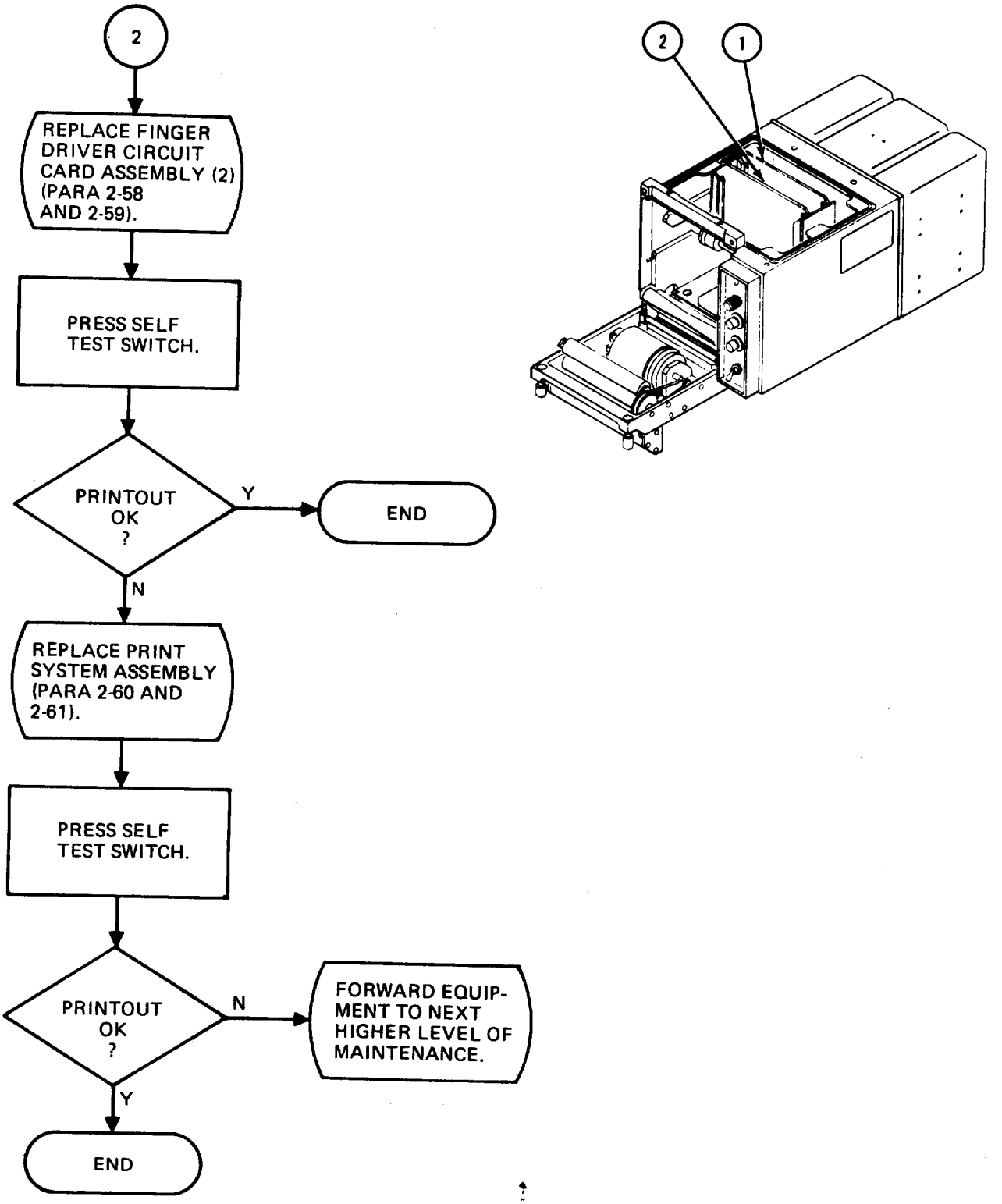
Y

N

FORWARD EQUIPMENT TO NEXT HIGHER LEVEL OF MAINTENANCE.

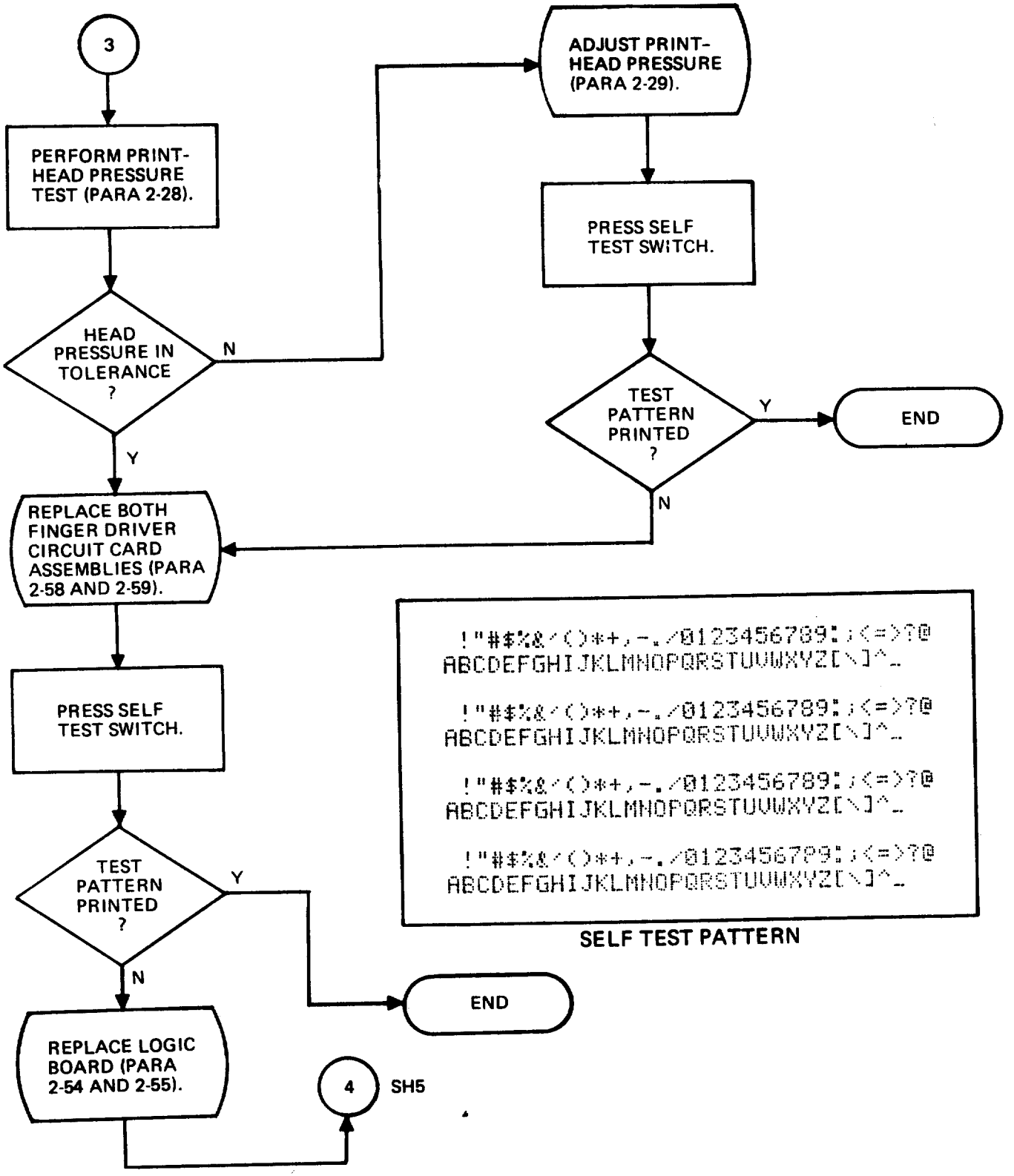
END

TROUBLESHOOTING FLOWCHART (11)
SEGMENTS MISSING OR NO SELF TEST PRIINTOUT (SHEET 3 OF 5)

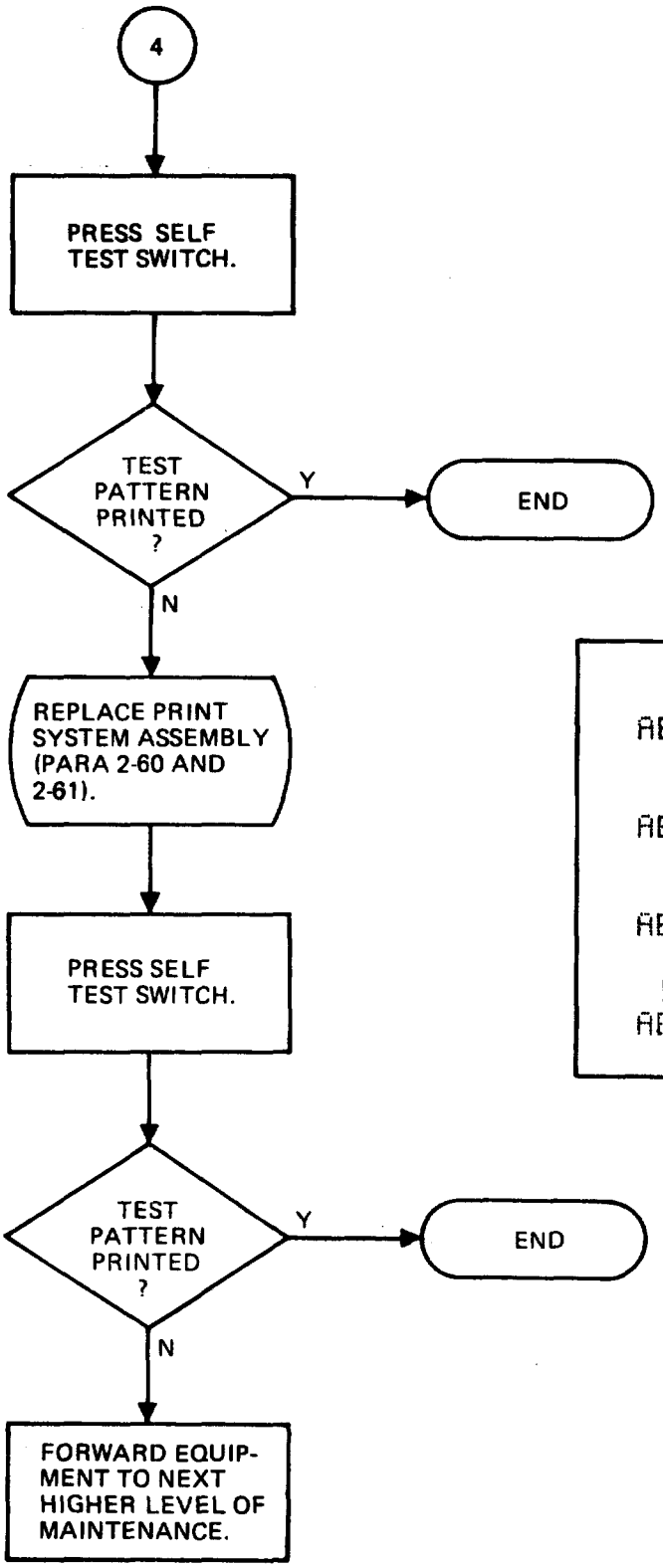


TROUBLESHOOTING FLOWCHART (11)

SEGMENTS MISSING OR NO SELF TEST PRINTOUT (SHEET 4 OF 5)



TROUBLESHOOTING FLOWCHART (11)
SEGMENTS MISSING OR NO SELF TEST PRINTOUT (SHEET 5 OF 5)

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 !"#$%&'()*+,-./0123456789:;<=>?@
ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_

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ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_
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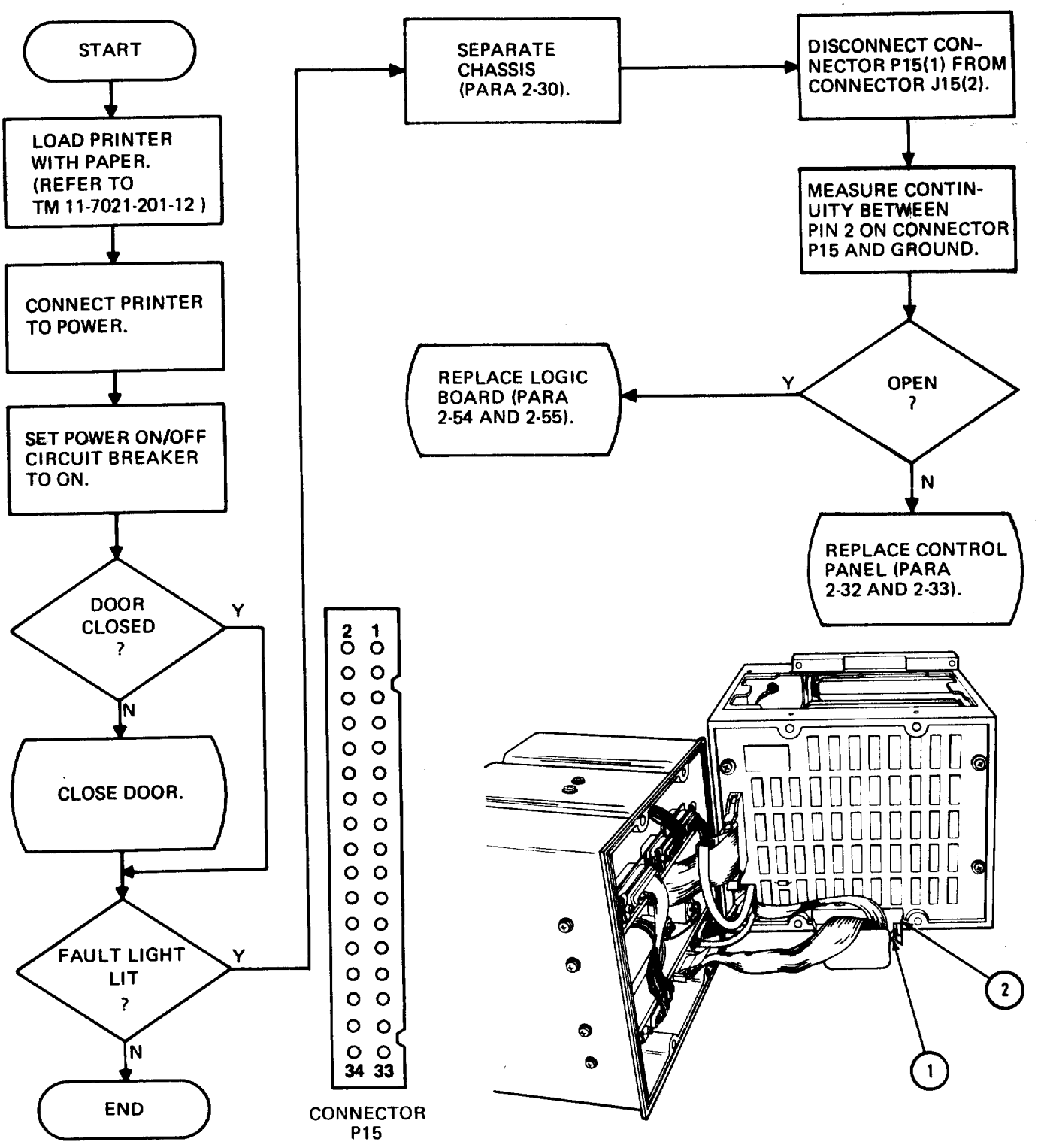
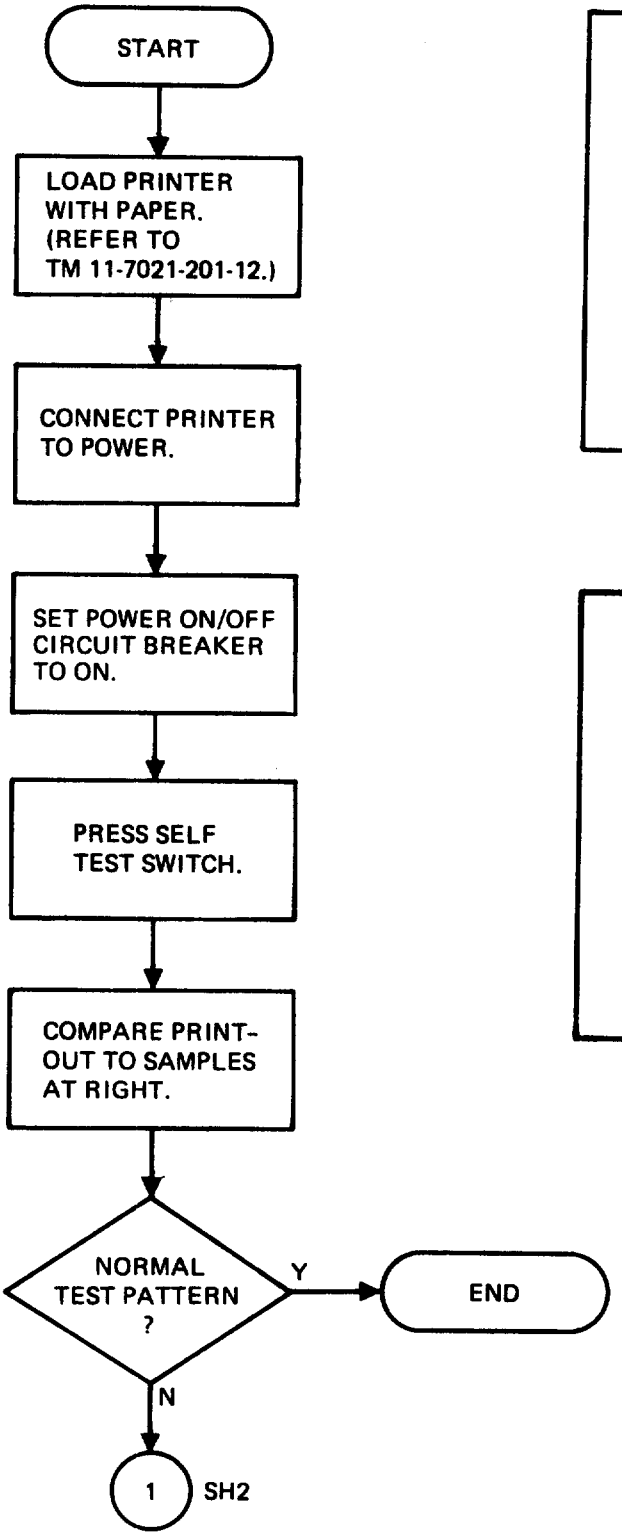
SELF TEST PATTERN

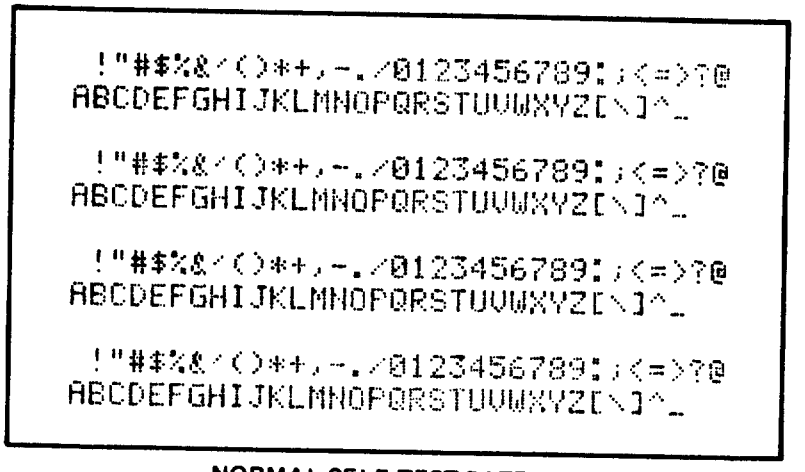
TROUBLESHOOTING FLOWCHART (12)
FAULT LIGHT ALWAYS LIT, PRINTER WORKS



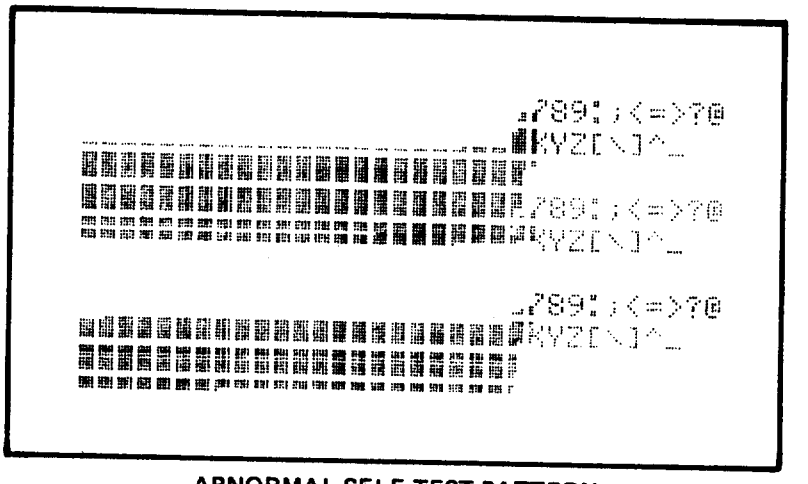
TROUBLESHOOTING FLOWCHART (13)

DOES NOT PRINT PROPER CHARACTER SET (SHEET 1 OF 4)





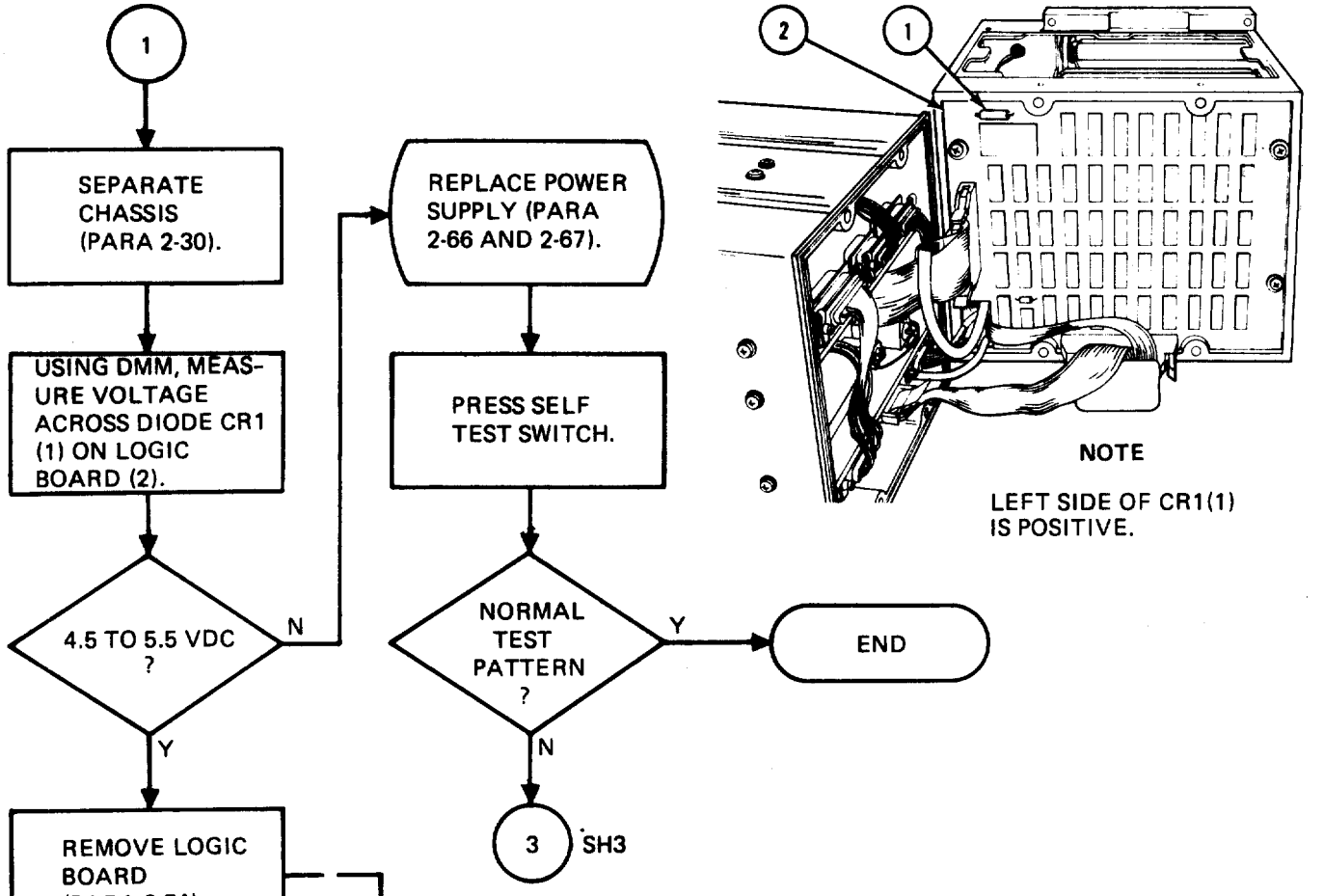
NORMAL SELF TEST PATTERN



ABNORMAL SELF TEST PATTERN

TROUBLESHOOTING FLOWCHART (13)

DOES NOT PRINT PROPER CHARACTER SET (SHEET 2 OF 4)

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 !"#$%&'()*+,-./0123456789:;<=>?@
ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_

 !"#$%&'()*+,-./0123456789:;<=>?@
ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_

 !"#$%&'()*+,-./0123456789:;<=>?@
ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_

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ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_
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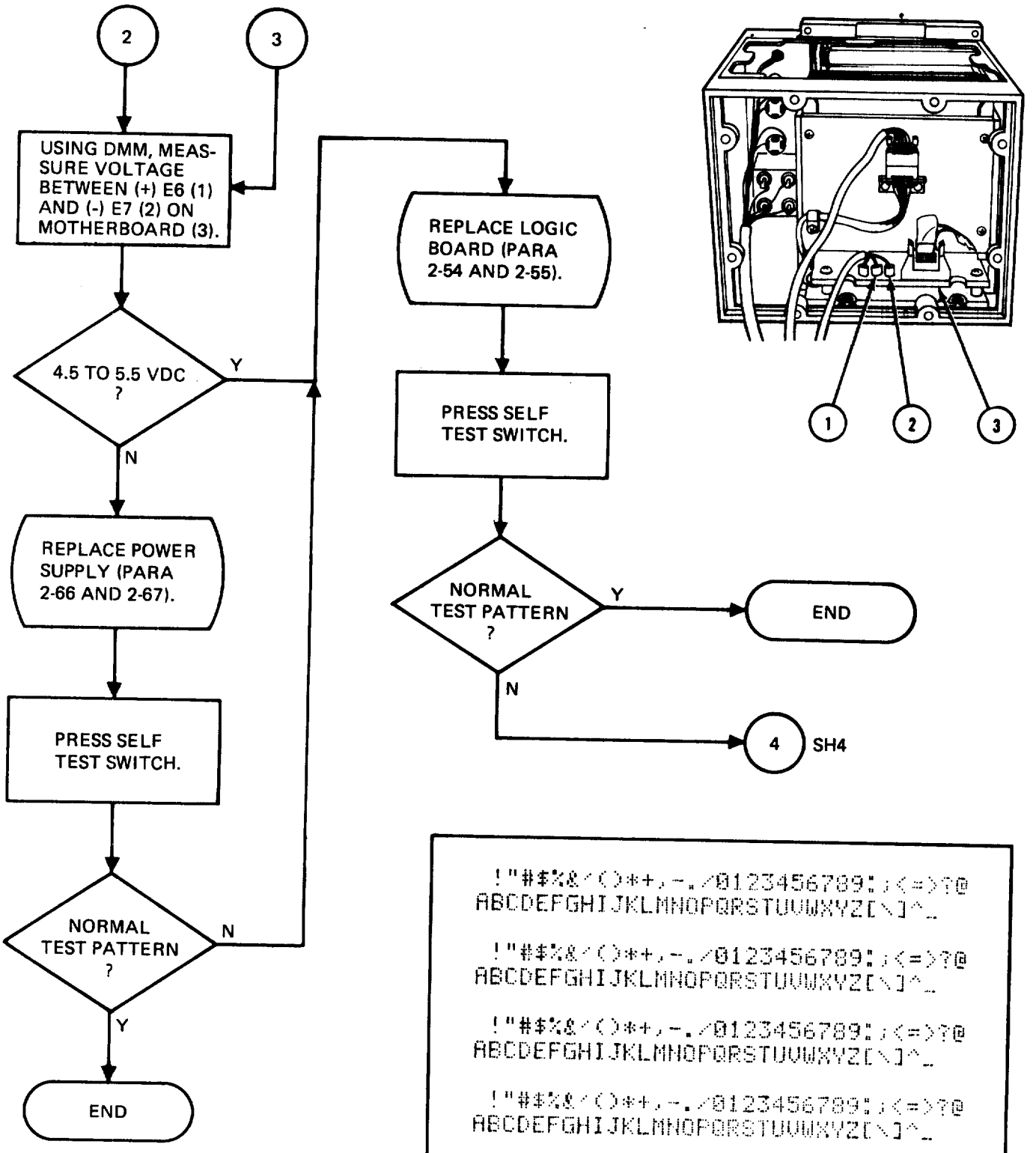
NORMAL SELF TEST PATTERN

TROUBLESHOOTING FLOWCHART (13)

DOES NOT PRINT PROPER CHARACTER SET (SHEET 3 OF 4)

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ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_

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ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_
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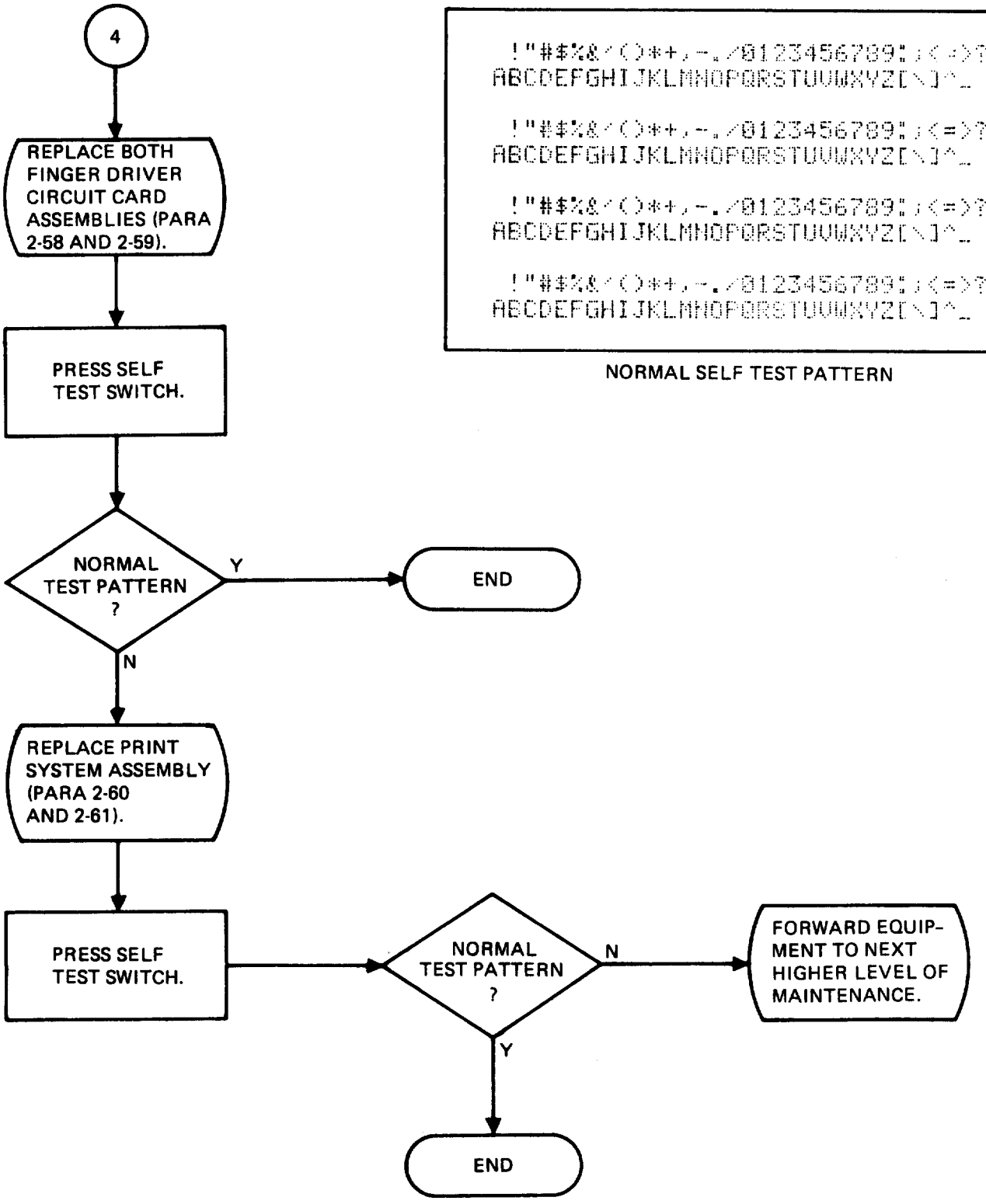
NORMAL SELF TEST PATTERN

TROUBLESHOOTING FLOWCHART (13)

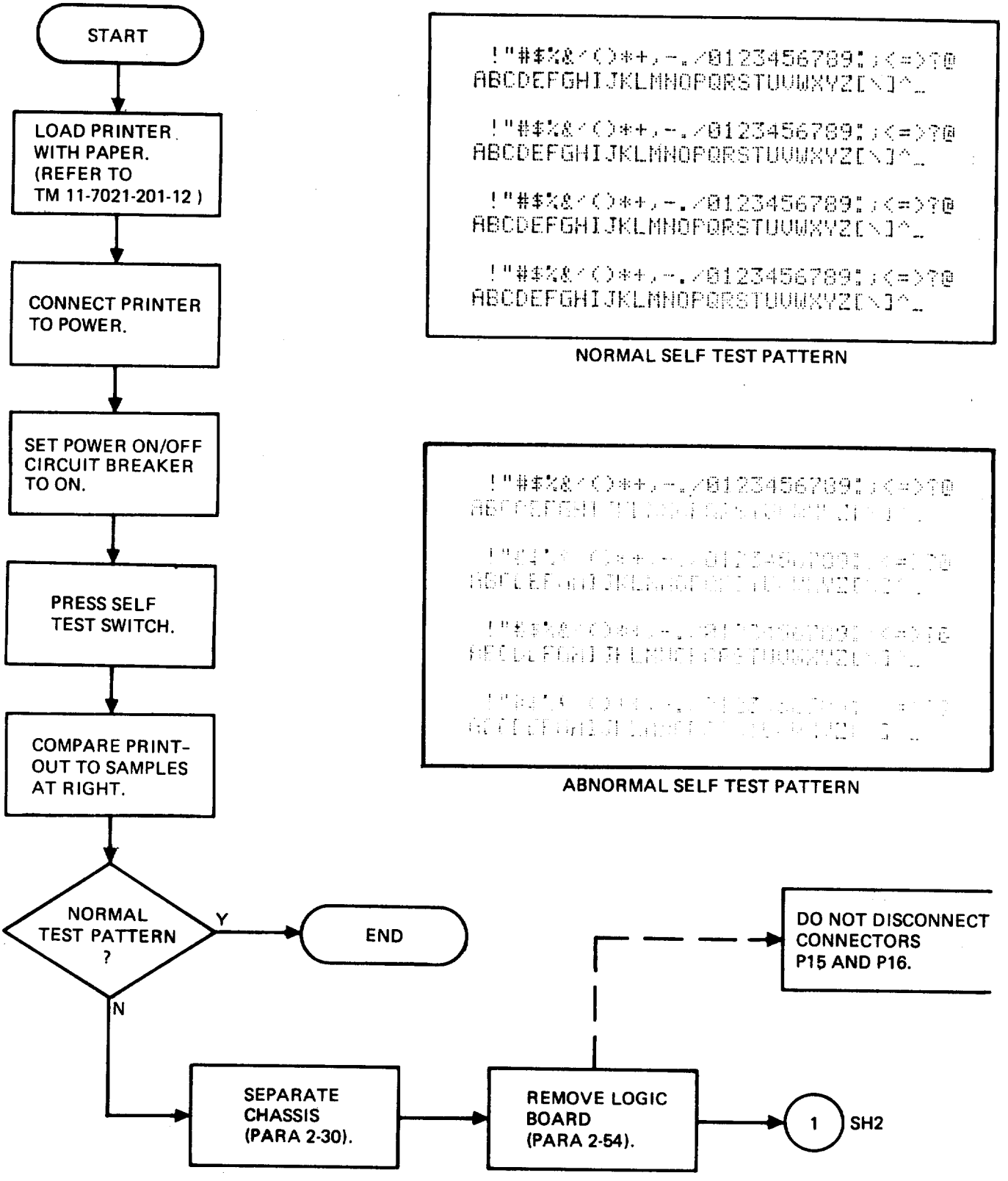
DOES NOT PRINT PROPER CHARACTER SET (SHEET 4 OF 4)



NORMAL SELF TEST PATTERN

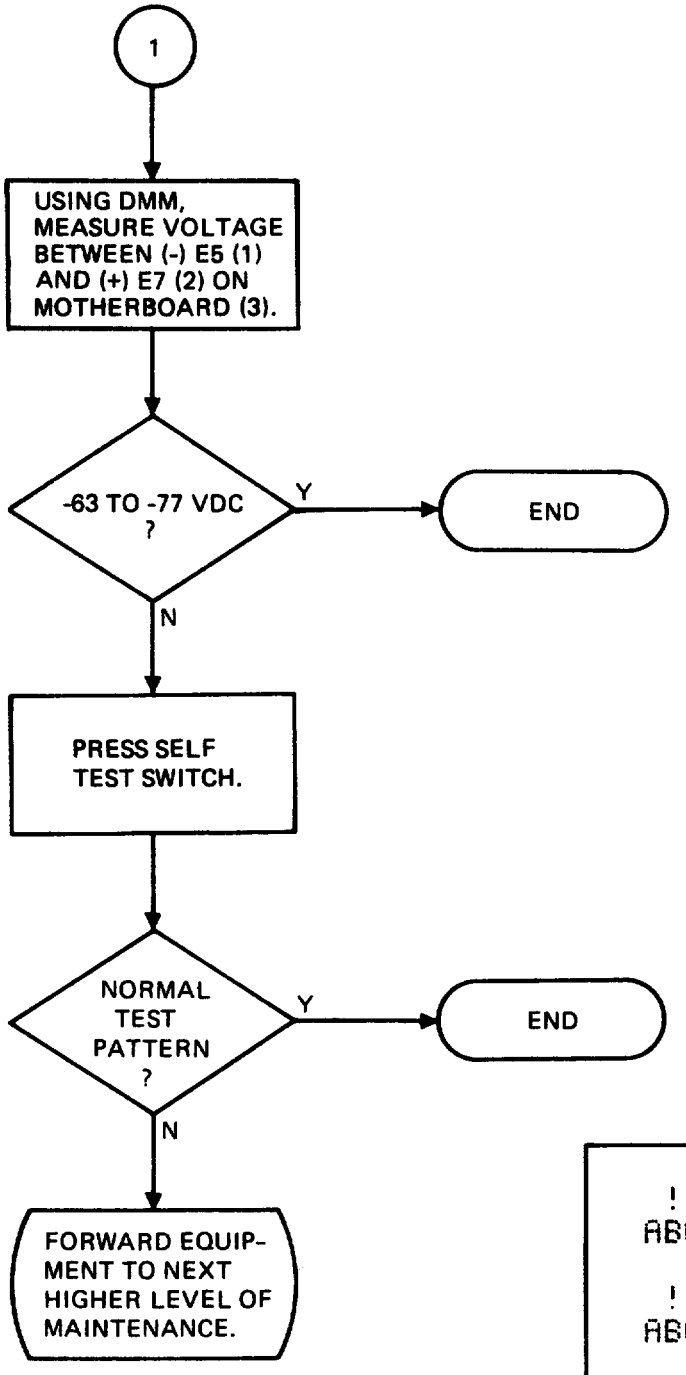
TROUBLESHOOTING FLOWCHART (14)

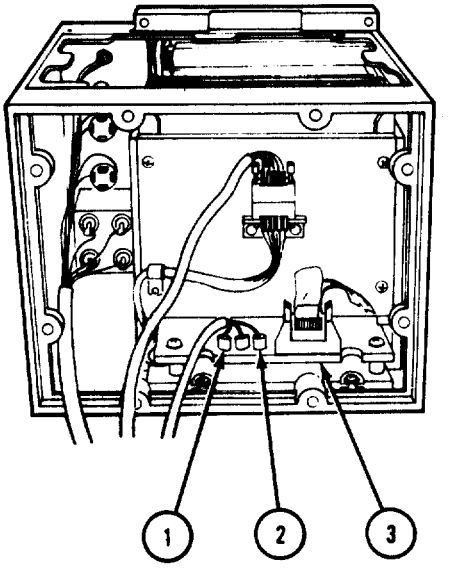
FIRST PRINT LINE LIGHT, FOLLOWING LINES FADE OUT (SHEET 1 OF 2)



TROUBLESHOOTING FLOWCHART (14)

FIRST PRINT LINE LIGHT, FOLLOWING LINES FADE OUT (SHEET 2 OF 2)





NORMAL SELF TEST PATTERN

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 !"#$%&'()*+,-./0123456789:;<=>?@
ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_

 !"#$%&'()*+,-./0123456789:;<=>?@
ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_

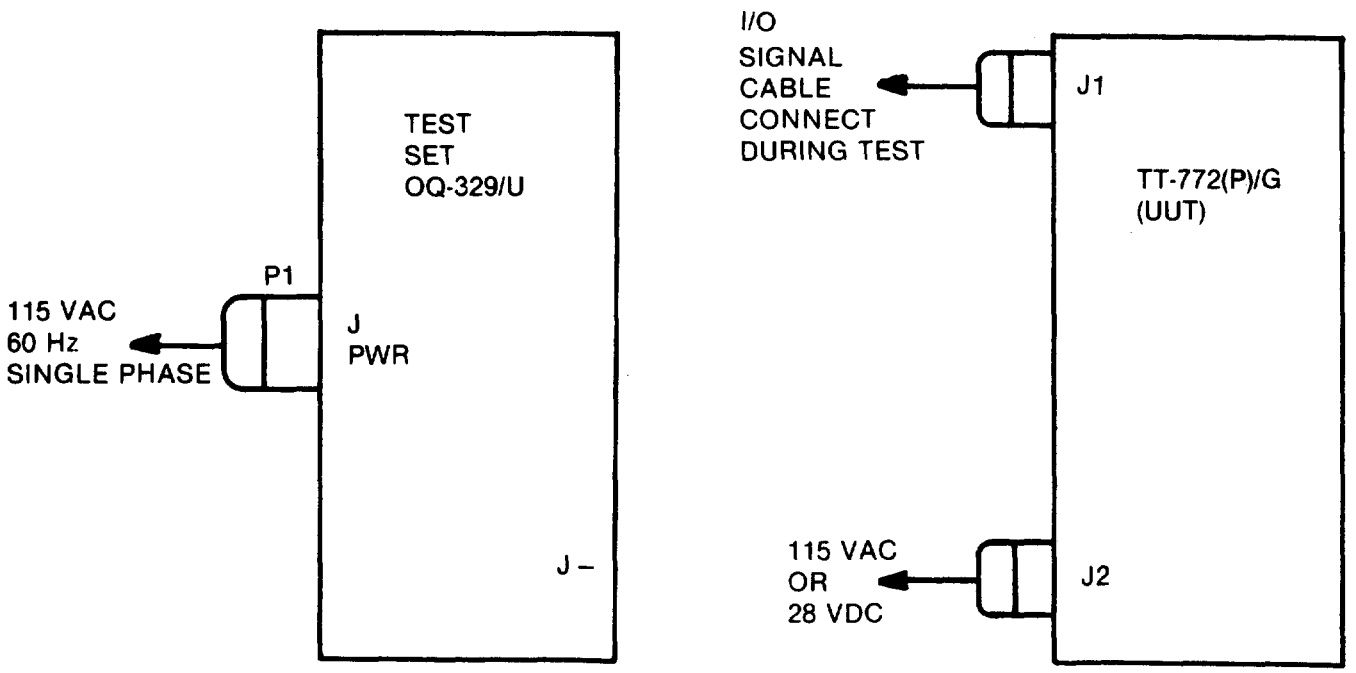
 !"#$%&'()*+,-./0123456789:;<=>?@
ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_
```

2-13 PRINTER DIAGNOSTIC

NOTE

The printer diagnostics should be run after completing any repairs to make sure the unit is operating properly.

1. Connect test set OQ-329/U to the power source as indicated in the OQ-329 manual.



NOTE

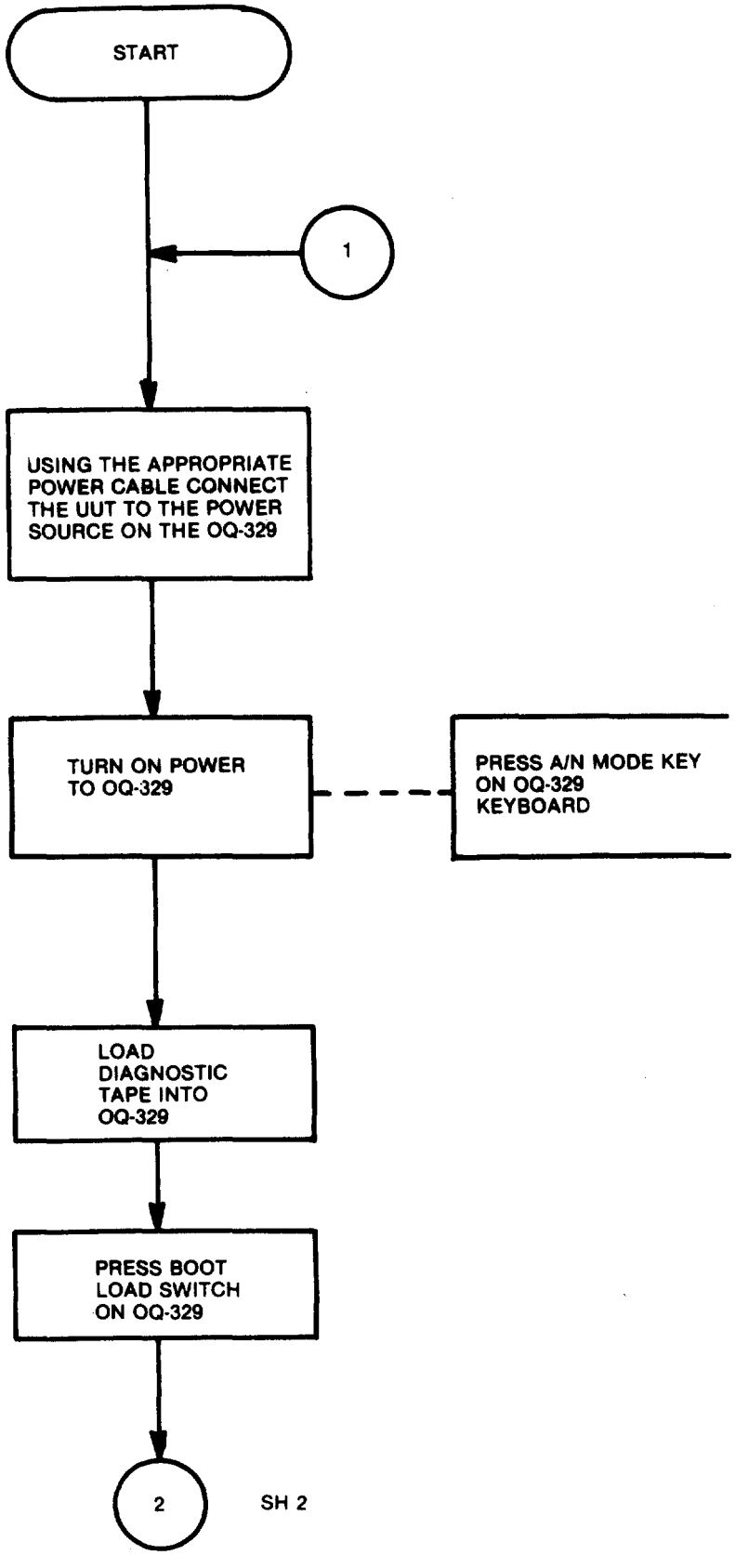
TT-772(P)/G may be an AC or DC powered unit.

2. Select the proper power cable for the UUT and connect it to the proper power source.

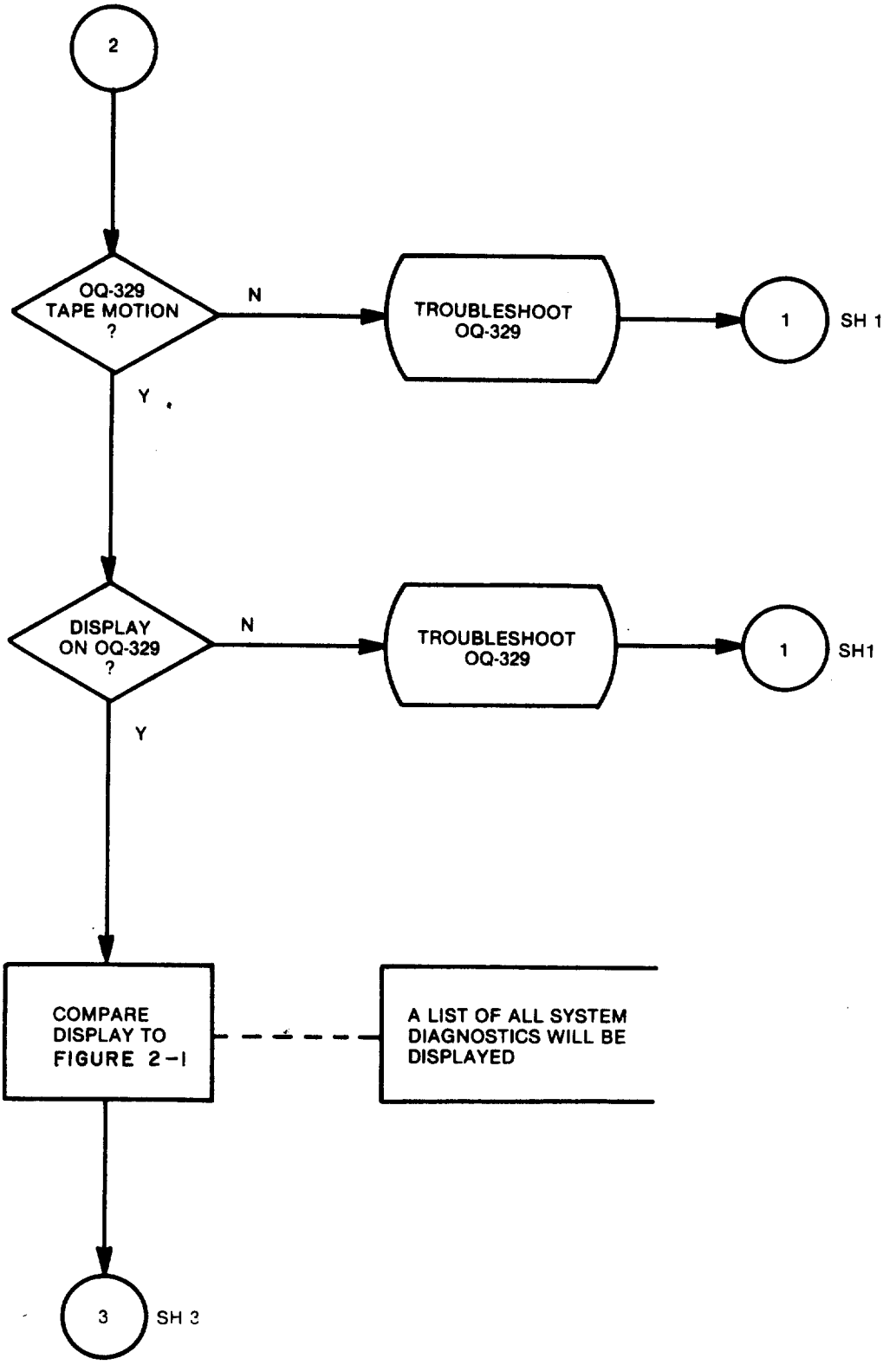
3. Select the I/0 cable as indicated in the OQ-329 manual. Connect when instructed by prompt in the diagnostic.

4. Run diagnostic.

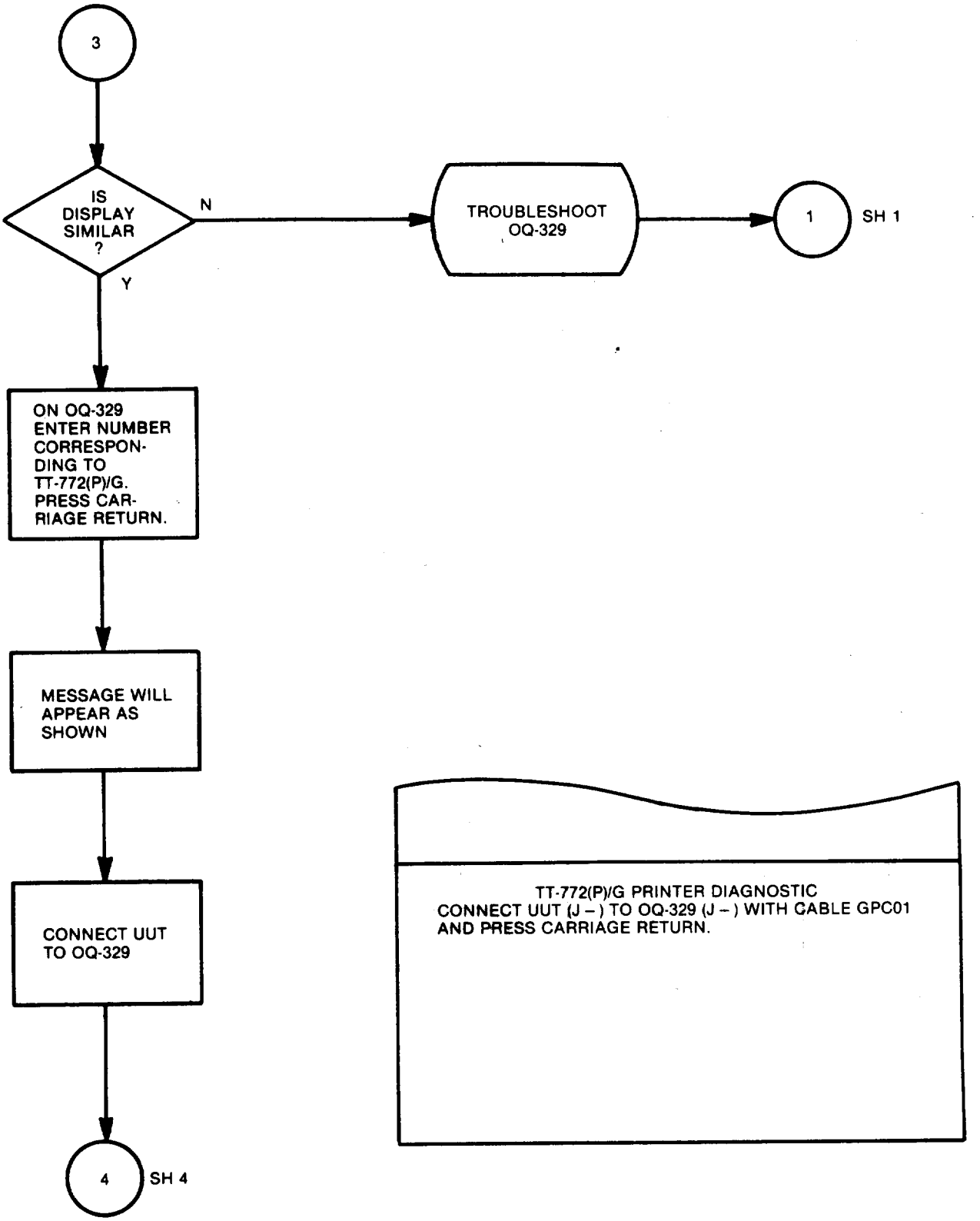
PRINTER DIAGNOSTIC FLOWCHART (SHEET 1 OF8)



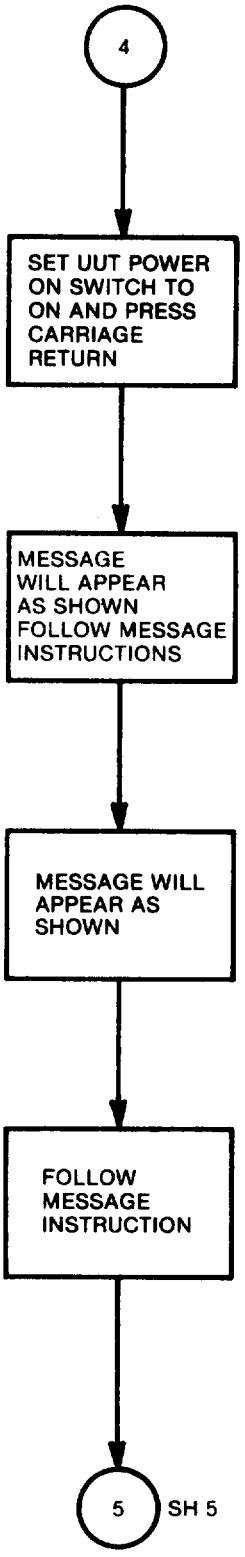
PRINTER DIAGNOSTIC FLOWCHART (SHEET 2 OF 8)

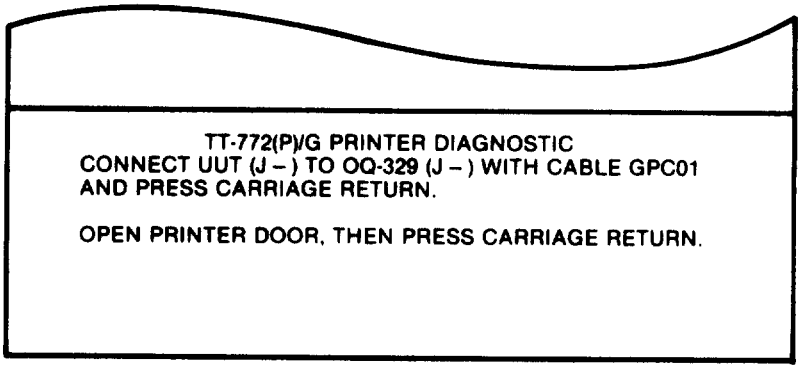


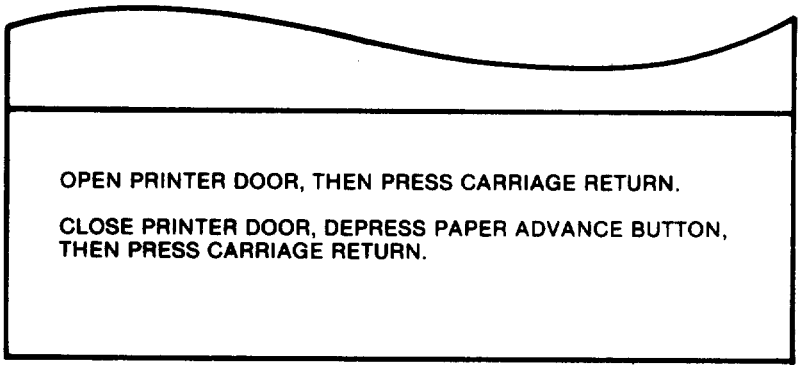
PRINTER DIAGNOSTIC FLOWCHART (SHEET 3 OF 8)



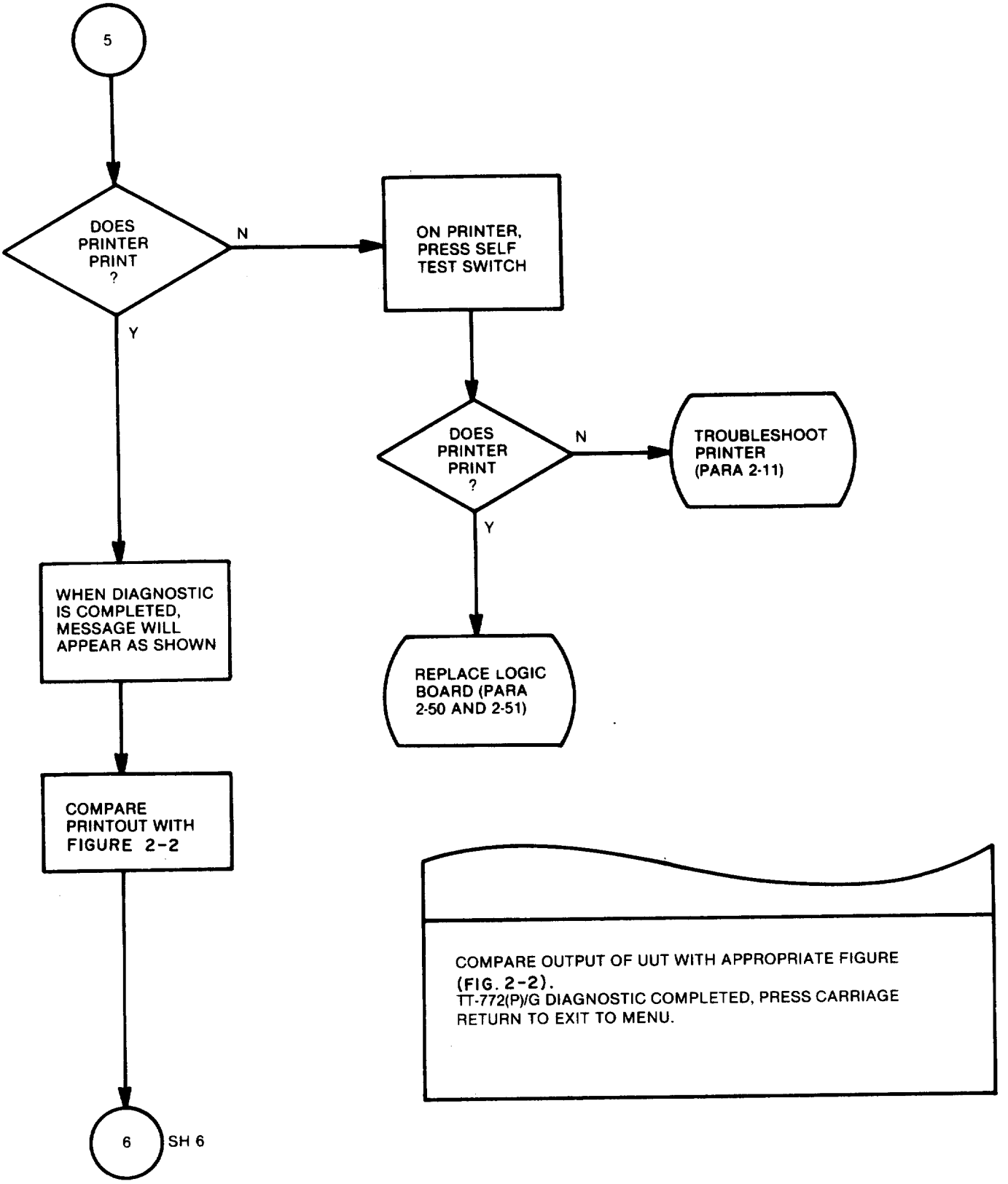
PRINTER DIAGNOSTIC FLOWCHART SHEET 4 OF 8)



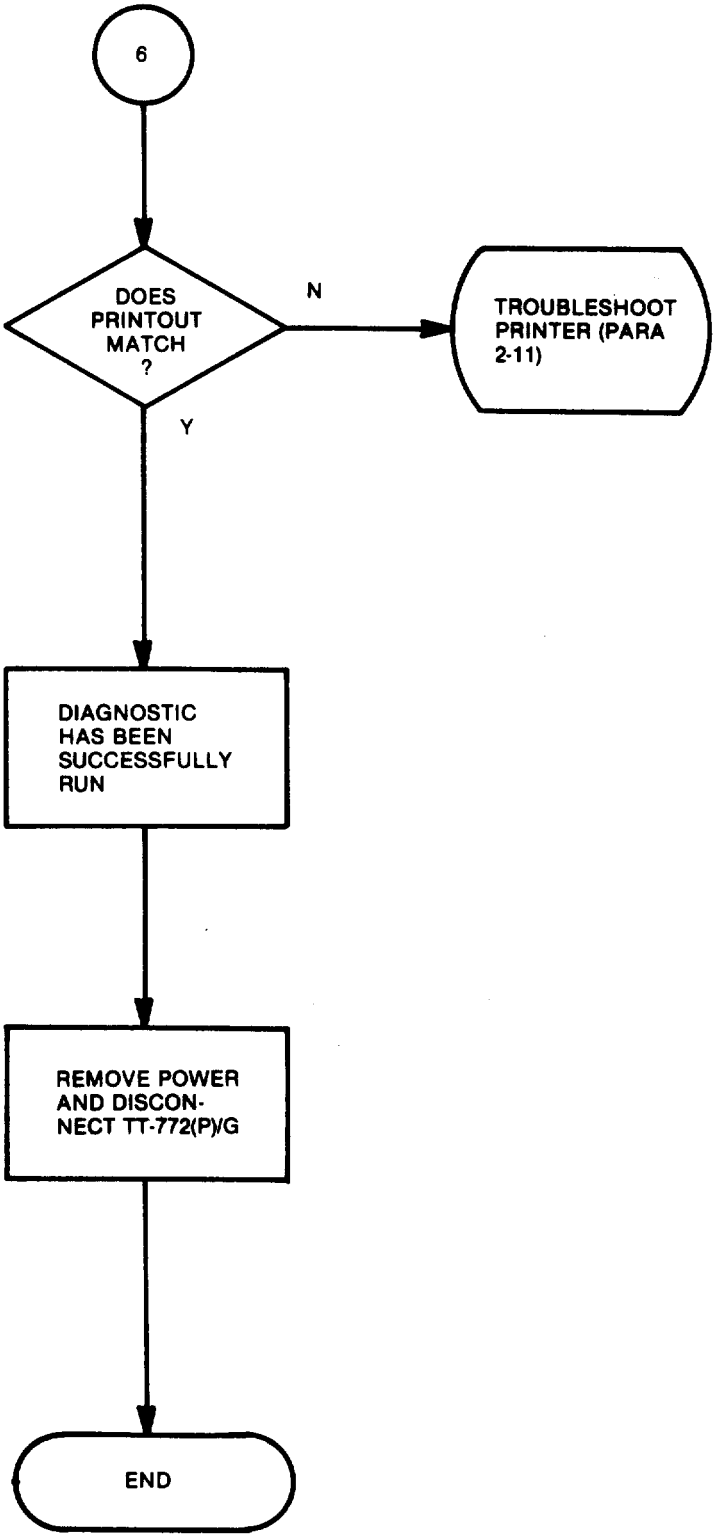




PRINTER DIAGNOSTIC FLOWCHART (SHEET 5 OF 8)



PRINTER DIAGNOSTIC FLOWCHART (SHEET 8 OF 8)



PRINTER DIAGNOSTIC FLOWCHART (SHEET 7 OF 8)

ADS SYSTEM (REVISION 1.0)

1. AN/MLQ-34 (TACJAM)
2. AN/MSQ-103A (TEAMPACK)
3. AN/TMQ-31 (MDS)
4. AN/TSC-99 RECEIVE SHELTER
5. AN/TSC-99 TRANSMIT SHELTER
6. AN/TSQ-84A SYSTEM
7. AN/TSQ-114A (TRAILBLAZER)
8. AN/TSQ-114B (TRAILBLAZER)
9. AN/ALQ-151 EH-1X (QUICKFIX)
10. AN/ALQ-151 EH-60A (QUICKFIX)
11. AN/ASN-132 (INS)
12. TT-772(P)/G
13. TT-773(P)/G
14. AN/UYH-1
15. AN/UYQ-10(V)
16. MU-768/G

NOTE

TEST SET OQ-329/U SUPPORTS MULTIPLE SYSTEMS. THIS IS A SAMPLE. SELECT THE SYSTEM BEING TESTED.

SELECT SYSTEM TO BE TESTED AND PRESS CARRIAGE RETURN,
(CR ONLY TERMINATES THE ADS).

FIGURE 2-I. SAMPLE MENU.

PRINTER DIAGNOSTIC FLOWCHART (SHEET 8 OF 8)

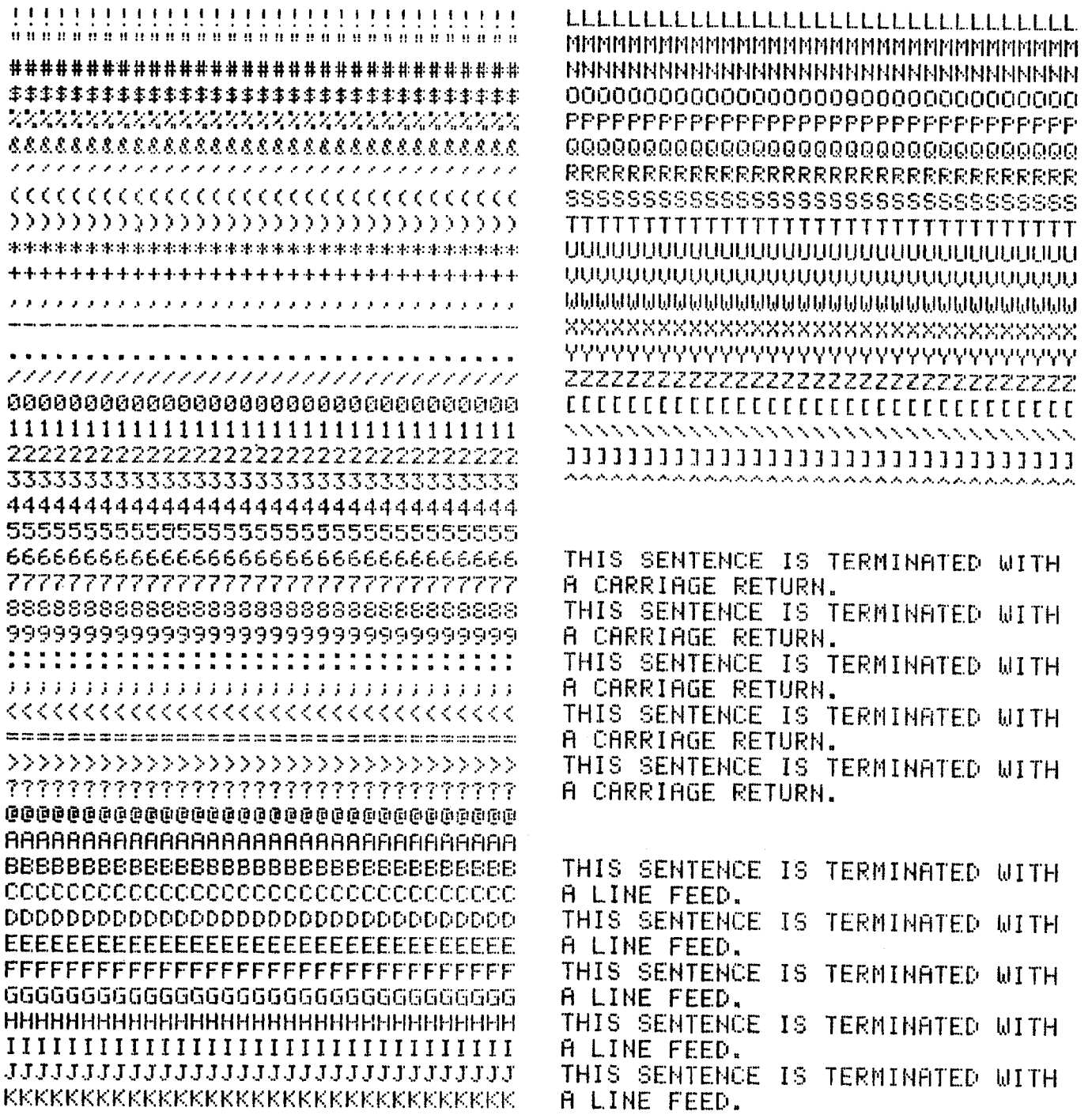
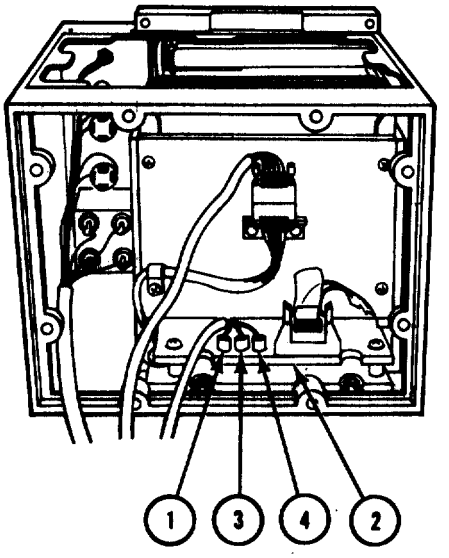


FIGURE 2-2. PRINTER DIAGNOSTIC.

2-14. TESTING POWER SUPPLY OUTPUT

1. Remove logic board (para 2-54), but do not disconnect connectors P15 and P16.
2. Connect negative (-) lead of DMM to stud terminal E5(1) on print system motherboard (2).
3. Connect printer to power.
4. Set POWER ON/OFF circuit breaker to ON.
5. Using DMM positive (+) lead, check power supply output voltages on stud terminals E6(3), E7(4), and connector P15(5). Check output voltage on rear lead of resistor R37(6) while pressing and holding PAPER ADV switch.



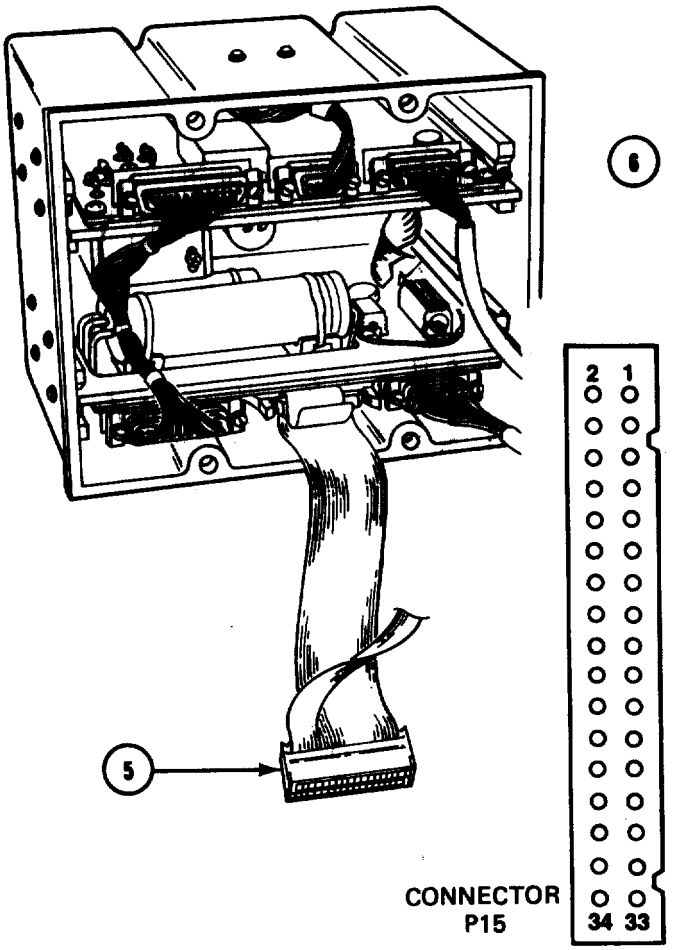


TABLE 2-1. POWER SUPPLY OUTPUT VOLTAGES

Connector-Pin or Stud Terminal	Voltage
P15-16	+5 ±10%
P15-18	+5 ±10%
P15-20	+5 ±10%
P15-21	+5 ±10%
P15-22	+5 ±10%
P15-23	+5 ±10%
E6	-65 ±10%
E7	-70 ±10%
R37-RearLead	+50 ±10%

6. Set POWER ON/OFF circuit breaker to OFF.
7. Disconnect printer from power.
8. Remove DMM negative lead (-) from stud terminal E5(1).
9. Install logic board (para 2-55).

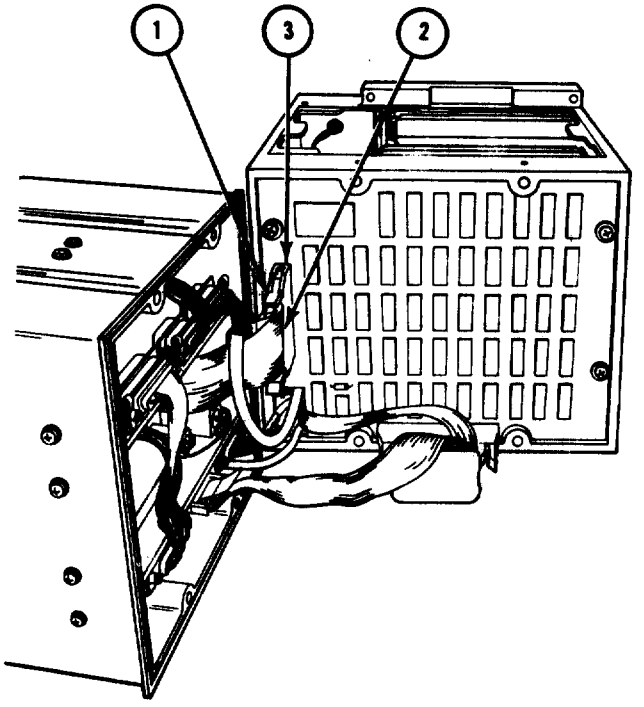
2-15. INPUT DATA CABLE ASSEMBLY CONTINUITY TEST

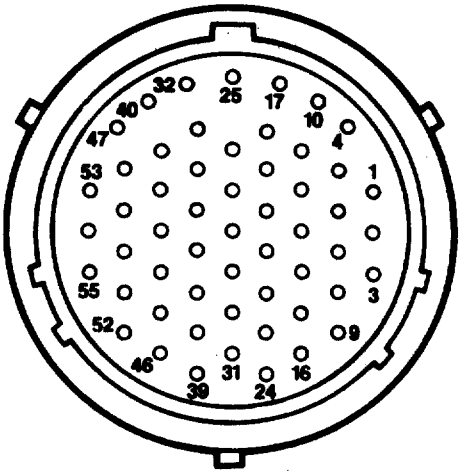
1. Separate chassis (para 2-30).
2. Check cable assembly for bare wires, physical damage, and shorts between pins.
3. Open clamp (1) and remove connector P16 (2) from connector J16 (3).

NOTE

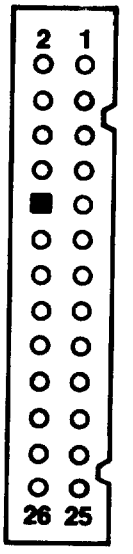
Use a spare connector pin as an aid when making continuity checks.

4. Check continuity of cable assembly (table 2-2).
5. If wiring problems exist, repair or replace assembly as required (para 2-70 and 2-71).
6. Aline and mate connector P16 (2) to connector J16 (3), Close clamp (1) to secure connectors.
7. Join chassis (para 2-31).





CONNECTOR J2



CONNECTOR P16

TABLE 2-2. INPUT DATA CABLE ASSEMBLY CONTINUITY TEST

From J2 pin no.	To	From J2 pin no.	To	From J2 pin no.	To
1	—	20	—	38	P16-21
2	P16-13	21	—	39	—
3	P16-7	22	P16-22	40	P16-17
4	P16-5	23	—	41	—
5	P16-15	24	P16-25	42	—
6	P16-11	25	—	43	—
7	—	26	P16-24	44	—
8	P16-1	27	—	45	—
9	—	28	P16-26	46	—
10	P16-3	29	—	47	P16-23
11	P16-4	30	P16-20	48	—
12	P16-9	31	—	49	P16-6
13	—	32	P16-18	50	—
14	—	33	—	51	P16-8
15	—	34	—	52	—
16	—	35	—	53	—
17	—	36	P16-2	54	P16-19
18	—	37	—	55	LUG
19	—				

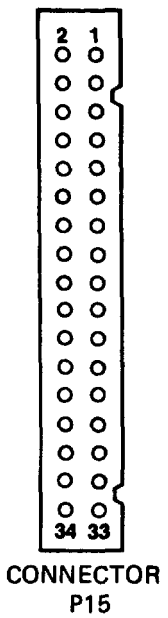
2-16. MAIN INTERCONNECTION CABLE ASSEMBLY CONTINUITY TEST

1. Remove main interconnection cable assembly (para 2-56).
2. Check cable assembly for bare wires, physical damage, and shorts between pins.

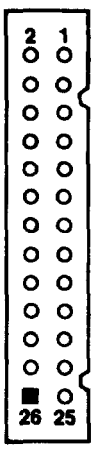
NOTE

Use a spare connector pin as an aid when making continuity checks.

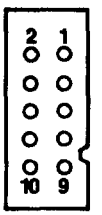
3. Measure continuity of cable assembly (table 2-3).
4. If wiring problems exist, repair or replace assembly as required.
5. Install main interconnection cable assembly (para 2-57).



CONNECTOR P15



CONNECTOR P3



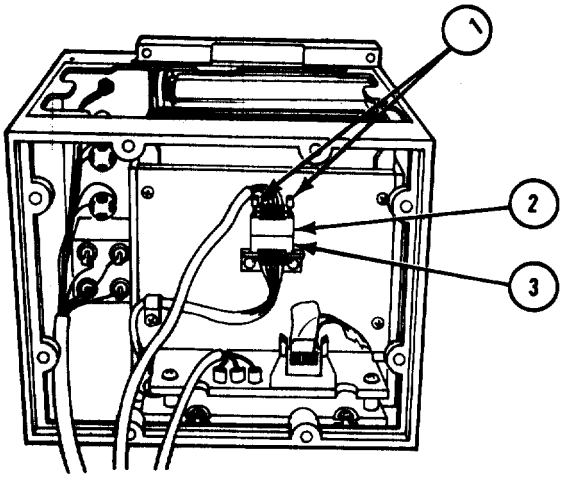
CONNECTOR P17

TABLE 2-3. MAIN INTERCONNECTION CABLE ASSEMBLY CONTINUITY TEST

FROM	TO	FROM	TO	FROM	TO	FROM	TO
P15-1	P3-1	P15-10	P3-10	P15-19	P3-19	P15-28	P17-4
P15-2	P3-2	P15-11	P3-11	P15-20	P3-20	P15-29	P17-5
P15-3	P3-3	P15-12	P3-12	P15-21	P3-21	P15-30	P17-6
P15-4	P3-4	P15-13	P3-13	P15-22	P3-22	P15-31	P17-7
P15-5	P3-5	P15-14	P3-14	P15-23	P3-23	P15-32	P17-8
P15-6	P3-6	P15-15	P3-15	P15-24	P3-24	P15-33	P17-9
P15-7	P3-7	P15-16	P3-16	P15-25	P17-1	P15-34	P17-10
P15-8	P3-8	P15-17	P3-17	P15-26	P17-2	P3-25	—
P15-9	P3-9	P15-18	P3-18	P15-27	P17-3	P3-26	PLUG

2-17. MOTOR HARNESS ASSEMBLY CONTINUITY TEST

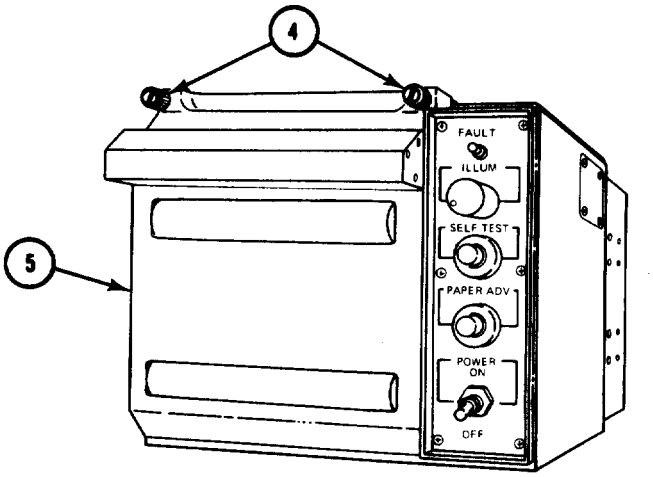
1. Separate chassis (para 2-30).
2. Remove top cover (para 2-26).
3. Remove logic board (para 2-54).
4. Loosen two screws (1), turning each screw two turns at a time, until connector P10(2) can be removed from connector J10(3).
5. Loose two captive thumbscrews (4) and open door (5).
6. Loosen two screws (6), turning each screw two turns at a time, until connector P11(7) can be removed from connector J11(8).

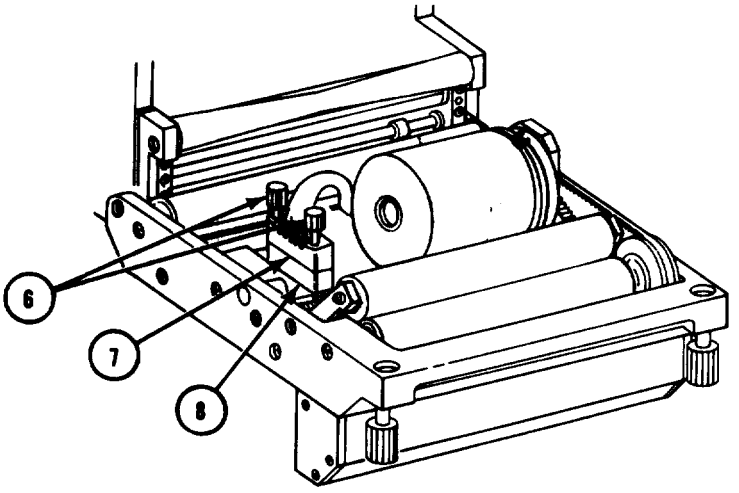


NOTE

Use a spare connector pin as an aid when making continuity checks.

7. Measure continuity of harness assembly (table 2-4).
8. If wiring problems exist, repair or replace assembly as required (para 2-62 and 2-63).
9. Aline connector P10(2) with connector J10(3) and tighten two screws (1), two turns at a time, until tight.
10. Install logic board (para 2-55).
11. A line connector P11(7) with connector **J11(8)** and tighten two screws (6), two turns at a time, until connector is tight,





12. Close door (5) and tighten two captive thumbscrews (4).

13. Install top cover (para 2-27).

14. Join chassis (para 2-31).

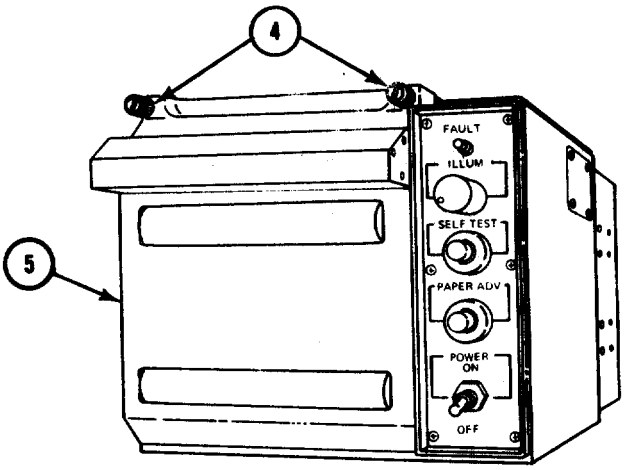
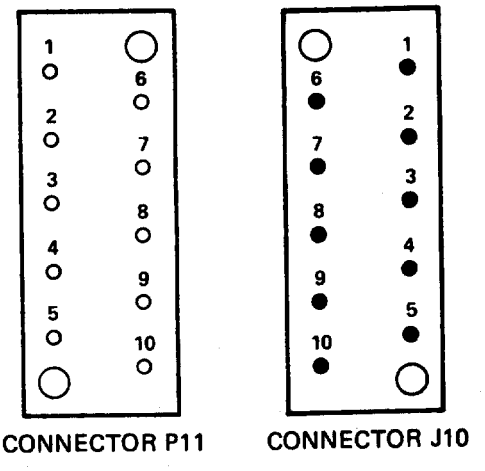


TABLE 2-4. MOTOR HARNESS ASSEMBLY CONTINUITY TEST

FROM	TO	FROM	TO
J10-1	—	J10-6	P11-6
J10-2	P11-2	J10-7	—
J10-3	P11-3	J10-8	—
J10-4	P11-4	J10-9	P11-9
J10-5	P11-5	J10-10	P11-10



2-18. INPUT POWER FILTER ASSEMBLY CONTINUITY TEST

1. Separate chassis (para 2-30).

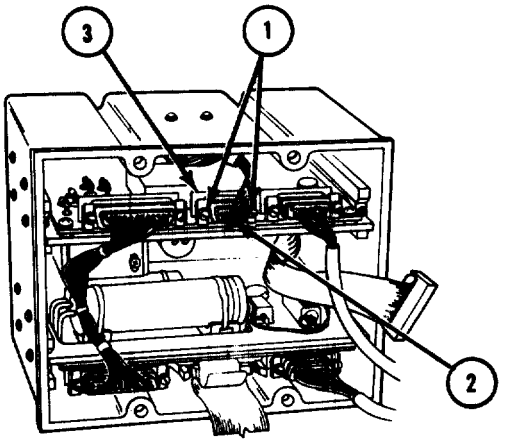
2. Loosen two screws (1), turning each screw two turns at a time, until connector P6(2) can be removed from connector J6(3).

3. Check input power filter assembly harness for bare wires, physical damage, and shorts between pins of connector J1.

NOTE

Use a spare connector pin as an aid when making continuity checks.

4. Check continuity (table 2-5).



5, If wiring problems exist, remove input power filter assembly (para 2-68) and repair or replace assembly (para 2-69) as required.

6. Aline connector P6(2) to connector J6(3) and tighten two screws (1), two turns at a time, until connector is tight.

7. Join chassis (para 2-31).

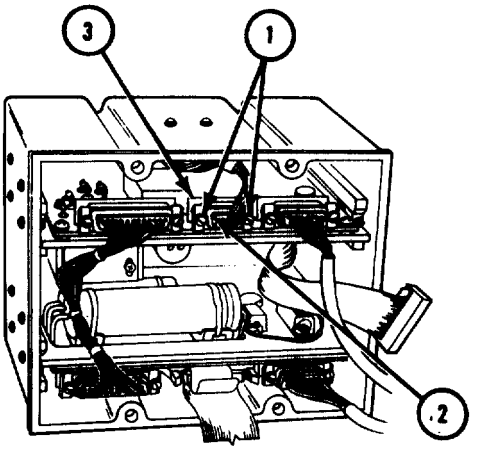
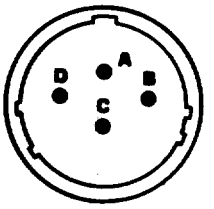


TABLE 2-5. INPUT POWER FILTER ASSEMBLY CONTINUITY TEST

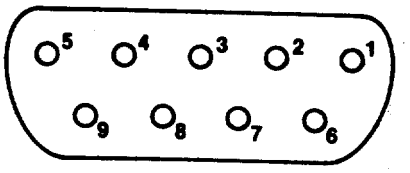
FROM J1 PIN NO.	TO P6 PIN NO.
A	6,7,8,9
B	1,2,3,4
C	CHASSIS

2-19. CONTROL PANEL CONTINUITY TEST

1. Remove top cover (para 2-26).
2. Separate chassis (para 2-30).
3. Remove control panel (para 2-32).
4. Check control panel harness for bare wires, physical damage, and shorts between pins.
5. Check continuity of control panel (table 2-6).
6. If wiring problems exist, repair or replace control panel,
7. Install control panel (para 2-33).



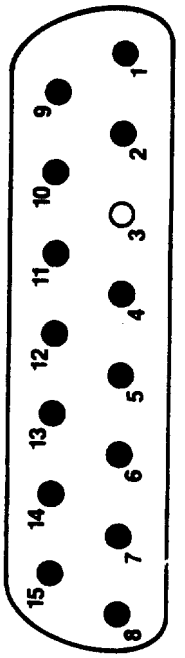
CONNECTOR J1



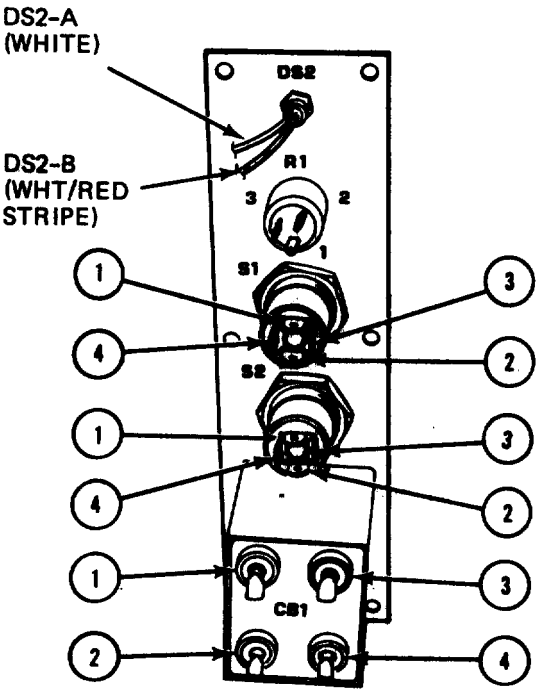
CONNECTOR P6

TABLE 2-6. CONTROL PANEL CONTINUITY TEST

FROM	TO
P4-1	DS2-A
P4-2	DS2-B
P4-3	Key
P4-4	CB1-2
P4-5	C81-1
P4-6	CB1-3
P4-7	CB1-3
P4-8	S1-3
P4-9	R 1-3
P4-10	R1-2
P4-11	R1-1
P4-12	S1-4
S1-4	S2-4
P4-13	S2-3
P4-14	CB1-4
P4-15	CB1-4



CONNECTOR P4



2-20 POWER SUPPLY INTERCONNECT CABLE ASSEMBLY CONTINUITY TEST

1. Remove power supply interconnect cable assembly (para 2-64).
2. Check cable assembly for bare wires, physical damage, and shorts between pins.

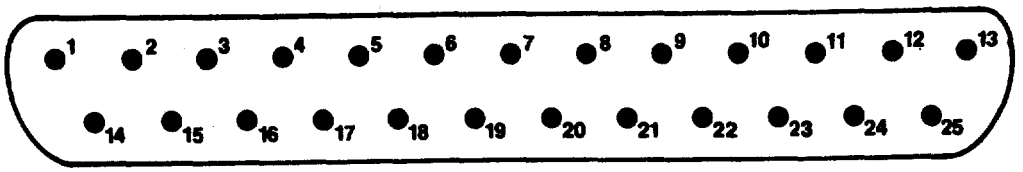
NOTE

Use a spare connector pin as an aid when making continuity checks.

3. Measure continuity of cable assembly (table 2-7).
4. If wiring problems exist, repair or replace assembly as required.
5. Install power supply interconnect cable assembly (para 2-65).

TABLE 2-7. POWER SUPPLY INTERCONNECT CABLE ASSEMBLY CONTINUITY TEST

FROM P7 PIN	TO P8 PIN	FROM P7 PIN	TO P8 PIN
1	—	14	14
2	—	15	15
3	—	16	16
4	6	17	8
5	5	18	9
6	4	19	7
7	2	20	20
8	3	21	21
9	1	22	—
10	11	23	—
11	12	24	—
12	10	25	—
13	13		



CONNECTOR P7

2-21. MOTOR/TAKE-UP CABLE ASSEMBLY CONTINUITY TEST

1. Remove motor/take-up cable assembly (para 2-74).
2. Check cable assembly for bare wires, physical damage, and shorts between pins.

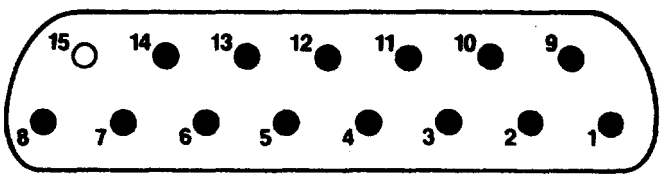
NOTE

Use a spare connector pin as an aid when making continuity checks.

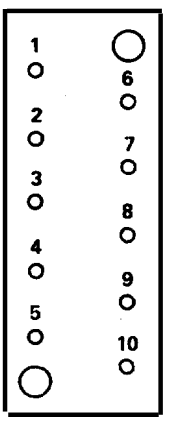
3. Measure continuity of cable assembly (table 2-8).
4. If wiring problems exist, repair or replace assembly as required,
5. Install motor/take-up cable assembly (para 2-75).

TABLE 2-8. MOTOR/TAKE-UP CABLE ASSEMBLY CONTINUITY TEST

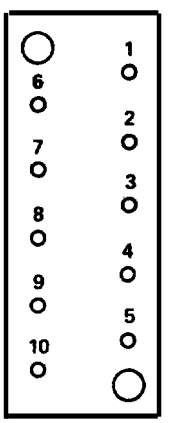
FROM	TO	FROM	TO
P5-1	J9-6	P5-8	P10-5
P5-2	P10-2	P5-9	Shield
P5-3	P10-10	P5-10	P10-9
P5-4	P10-3	P5-11	J9-5
P5-5	P10-6	P5-12	—
P5-6	J9-3	P5-13	J9-2
P5-7	P10-4	P5-14	—
		P5-15	—
		J9-4	Shield



CONNECTOR P5



CONNECTOR P10



CONNECTOR J9

2-22. POWER CABLE CONTINUITY TEST

1. Remove power cable (para 2-72).
2. Check cable for bare wires, physical damage, and shorts between terminals.
3. Check continuity of cable (table 2-9).
4. If wiring problems exist, repair or replace cable as required.
5. Install power cable (para 2-73).

TABLE 2-9. POWER CABLE CONTINUITY TEST

FROM	TO
E2	E5
E3	E6
E4	E7

Section IV. MAINTENANCE PROCEDURES

2-23. GENERAL

This section contains instructions for direct support maintenance of the printer. Procedures are included for cleaning, inspection, removing, repairing, printhead pressure testing, adjusting, and installing the equipment as authorized by the maintenance allocation chart, contained in TM 11-7021-201-12.

2-24. CLEANING

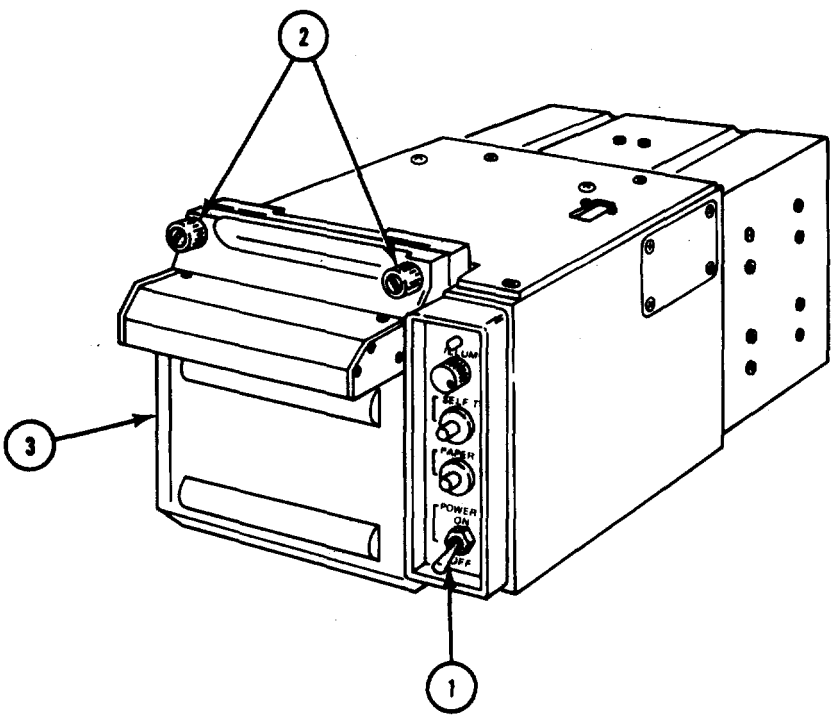
WARNING

Turn off power before working on equipment. Failure to do so can cause serious injury to personnel.

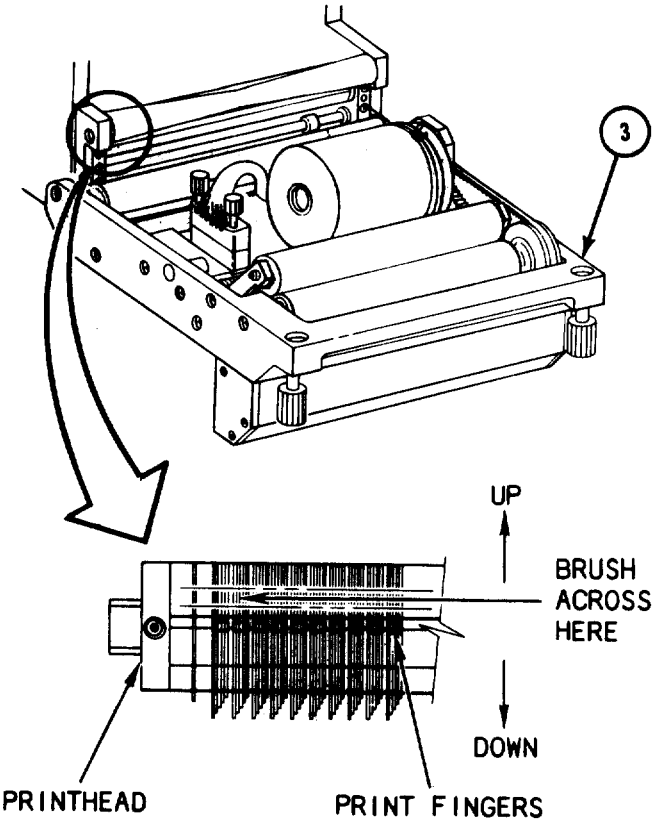
NOTE

Cleaning of printer is limited to cleaning print fingers as given in the following steps.

1. Set POWER ON/OFF circuit breaker (1) to OFF.
2. Disconnect printer from power source.
3. Loosen two captive thumbscrews (2) and open door (3).



4. Remove paper supply. (Refer to TM 11-7021 -201-12.)



CAUTION

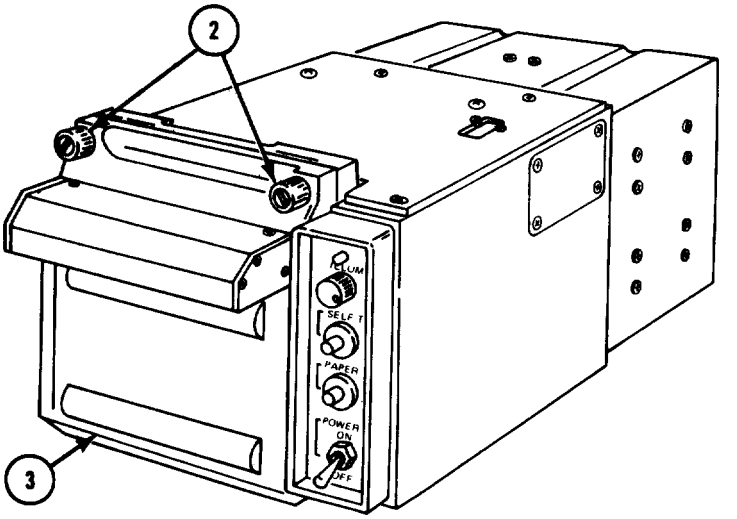
When cleaning printhead, do not brush upward between print fingers. Damage to printhead will result.

5. Using printhead cleaning brush, lightly brush across top of printhead above print fingers to remove loose paper residue.
6. Using printhead cleaning brush, lightly brush downward to remove residue between print fingers. Continue downward brushing until all print fingers on printhead have been brushed.
7. After cleaning, inspect printhead with magnifier to ensure all residue has been removed.
8. Repeat steps 6 and 7 until printhead is clean.
9. Use soft bristle brush to clean the loosened residue out of the door assembly (3).
10. Install paper supply. (Refer to TM 11-7021 -201-12.)
11. Close door (3) and tighten two captive thumbscrews (2).
12. Perform printer self test. (Refer to TM 11-7021 -201-12.)

2-25. INSPECTION

WARNING

Turn off power before working on equipment, Failure to do so can cause serious injury to personnel.



1, Set POWER ON/OFF circuit breaker (1) to OFF.
2. Disconnect printer from power source.
3. Loosen two captive thumbscrews (2) and open door (3).
4. Remove paper supply. (Refer to TM 11-7021 -201-12.)

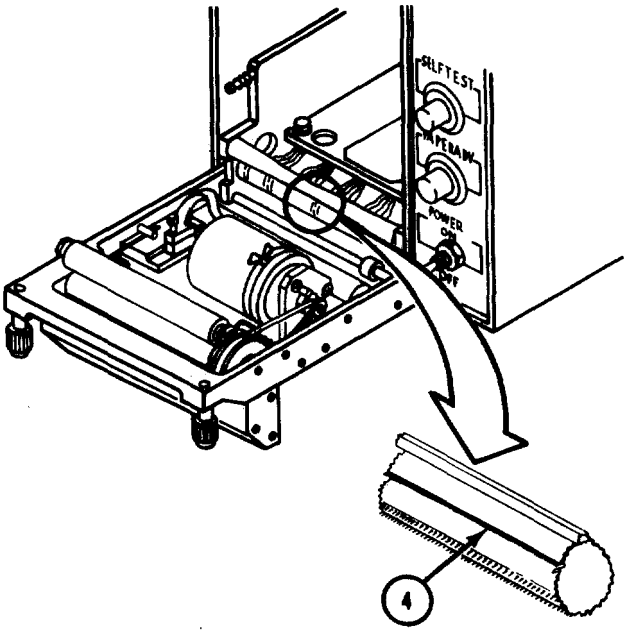
5. Remove topcover (para 2-26).

6. Inspect print fingers (4) with magnifier.

7. Clean print fingers (4) if necessary (para 2-24).

8. Repeat steps 6 and 7 until printhead is clean.

9. inspect all exposed areas for corrosion or damage that may cause printer to malfunction.



10. Separate chassis (para 2-30).

11. Inspect all interconnecting wiring and cable assemblies for cuts, breaks, damaged insulation, damaged connectors.

12. Inspect circuit card assemblies for damaged electronic components, loose or broken terminals, damaged or distorted circuit boards, and damaged etched' circuitry.

13. Perform any repair and/or replacement procedures given in subsequent paragraphs of this section to remedy any defects observed during the inspection procedure.

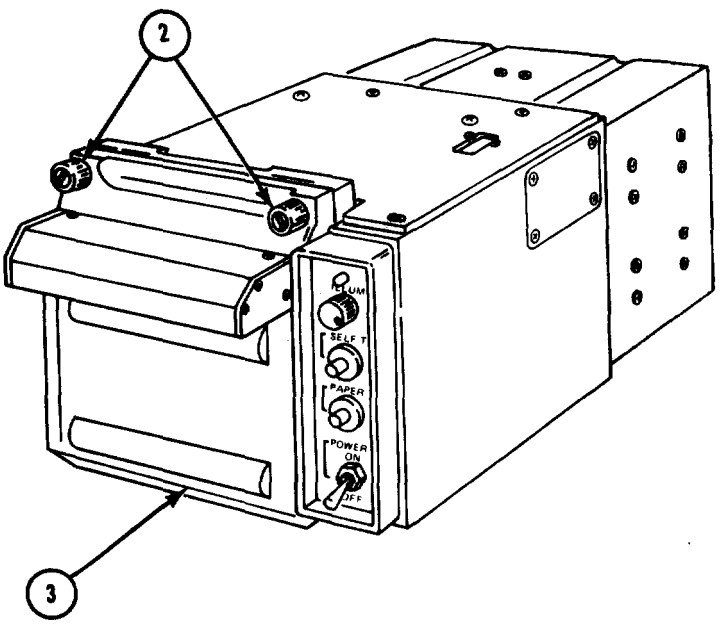
14. After completion of inspection procedures and any required repair and/or replacement, join chassis (para 2-31).

15. Install top cover (para 2-27).

16. Install paper supply. (Refer to TM 11-7021 -201-12.)

17. Close door (3) and tighten two captive thumbscrews (2).

18. Perform printer self test. (Refer to TM 11-7021 -201-12.)

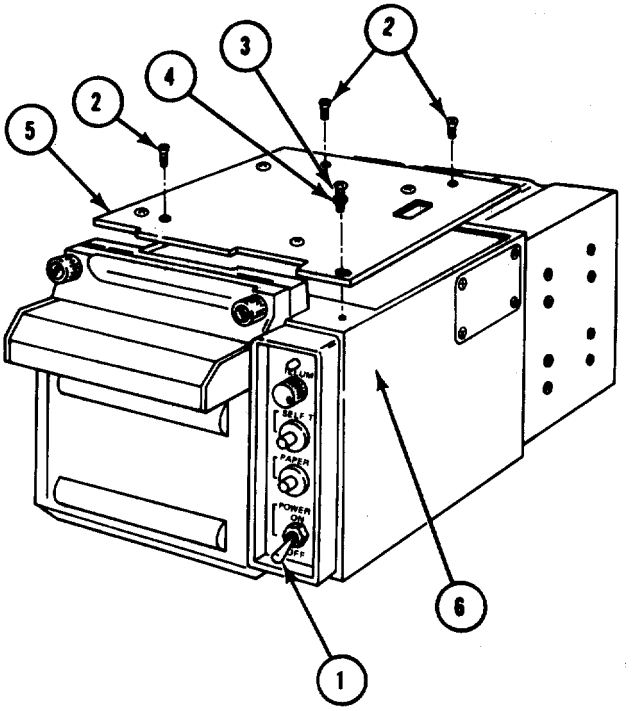


2-26. REMOVING TOP COVER

WARNING

Turn off power before working on equipment. Failure to do so can cause serious injury to personnel.

1. Set POWER ON/OFF circuit breaker (1) to OFF.
2. Disconnect printer from power source.
3. Remove three screws (2).
4. Remove one screw (3) and washer (4).
5. Remove cover (5).



2-27. INSTALLING TOP COVER

1. Aline holes in top cover (5) with mounting holes on chassis (6).
2. Install three screws (2) and one screw (3) and washer (4).

2-28. PRINTHEAD PRESSURE TEST

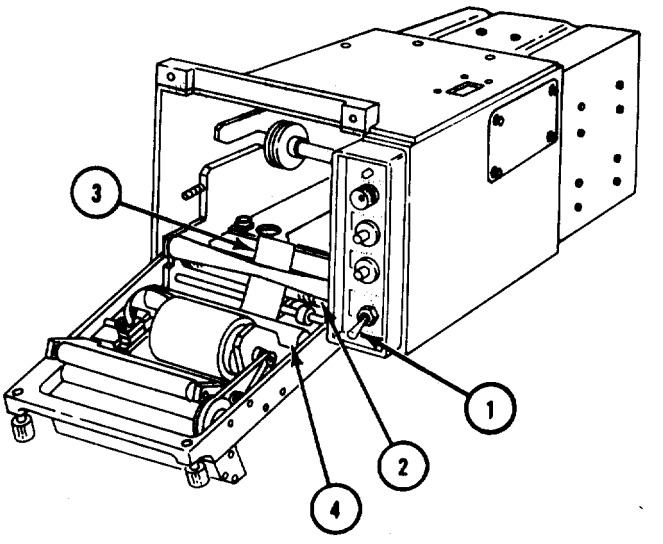
1. Set POWER ON/OFF circuit breaker (1) to OFF.
2. Disconnect printer from power source.
3. Remove paper and spool. (Refer to TM 11-7021 -201-12.)

CAUTION

Handle pressure test tool by its reinforcement tab. Body oil from fingertips can cause tool to slip, giving incorrect reading on dial pressure gage.

4, Clean, pressure test tool with isopropyl alcohol (item 1, Appx B) before use.

5. Working from right end of printhead (2), slide pressure, test tool (3) between roller (4) and printhead (2).



6. Close door (5) and tighten two captive thumbscrews (6).

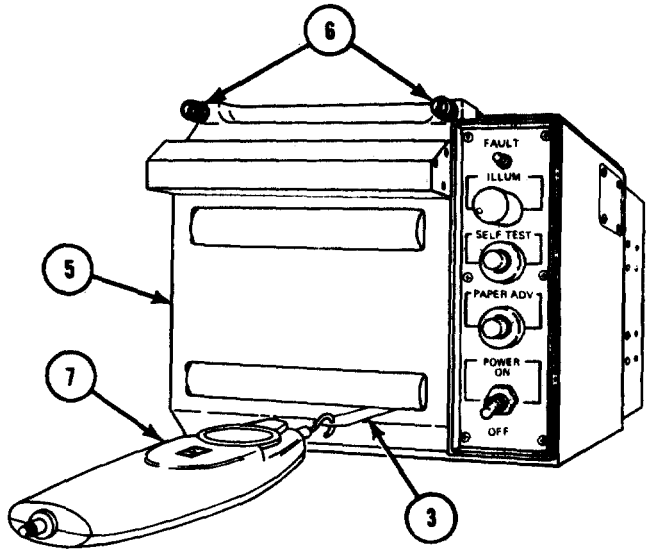
7, Attach hooked end of dial pressure gage (7) to reinforcement tab on pressure test tool (3) as shown.

8. Holding dial pressure gage (7) level, pull pressure test tool (3) straight out of door (5). Note readout on dial pressure gage.

9. Repeat steps 4 thru 8 until same reading is obtained on two consecutive measurements.

10. Repeat steps 4 thru 9 for left end of printhead (1).

11. If readings noted on dial pressure gage (7) for the left and right ends of printhead are between 3.7 ounces (105 grams) and 4.8 ounces (135 grams), and within 0.75 to 1.0 ounce (20 to 30 grams) of each other, no adjustment is necessary. If readings are not within limits given, adjust printhead pressure (para 2-29).



12 If readings are within limits, install paper and spool. (Refer to TM 11-7021 -201-12.)

2-29. PRINTHEAD PRESSURE ADJUSTMENT

1. Remove top cover (para 2-26).

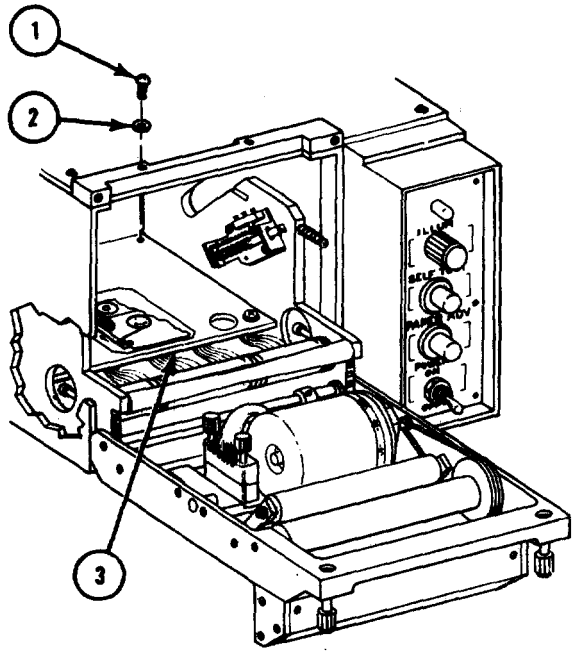
2. Remove four screws (l), four flatwashers (2), and protective cover (3).

NOTE

To adjust pressure, turn adjustment screws 1/2 turn at a time.

CAUTION

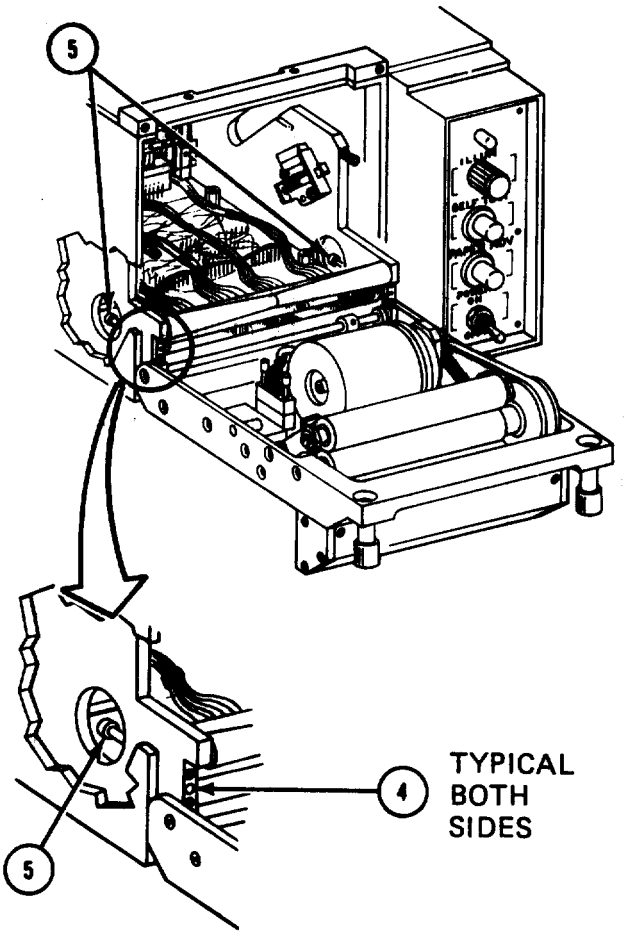
While adjusting screws, use care not to contact wire wrap pins on motherboard. Pins can be easily damaged or broken.



3. If pressure measured during test (para 2-28) is less than 3.7 ounces (105 grams), loosen two outside adjustment screws (4) and tighten two inside adjustment screws (5).

4. If pressure measured during test (para 2-28) is more than 4.8 ounces (135 grams), loosen two inside adjustment screws (5) and tighten two outside adjustment screws (4).

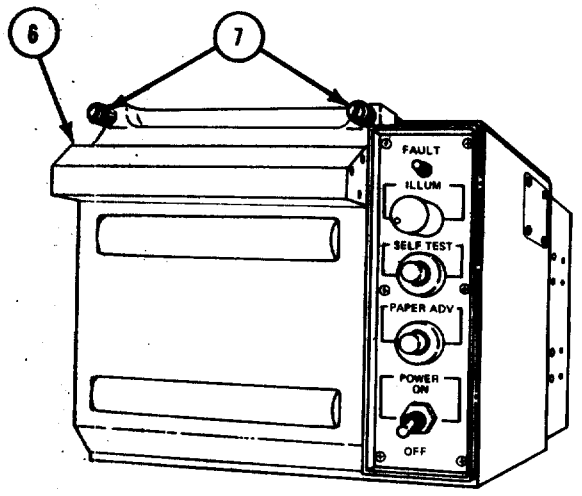
5. Perform printhead pressure test (para 2-28). Repeat step 3 or 4 as necessary until printhead pressure is within specified limits.

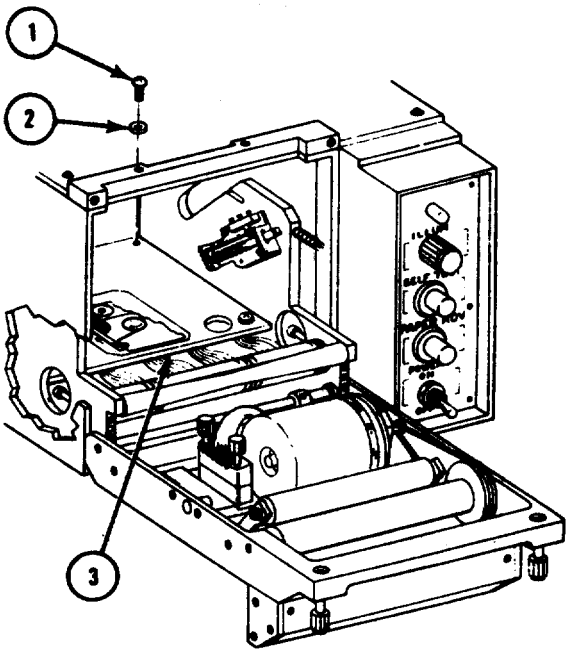


6. Install protective cover (3), four flat-washers (2), and four screws (1).

7. Close door (6) and tighten two captive thumbscrews (7).

8. Install top cover (para 2-27).





2-30. SEPARATING CHASSIS

WARNING

Turn off power before working on equipment. Failure to do so can cause serious injury to personnel.

NOTE

Ensure printer door is closed, and captive thumbscrews are tight.

1. **Set POWER ON/OF F circuit breaker to OFF.**
2. **Disconnect printer from power source.**
3. **Disconnect input power cable from connector J 1 (1) and 1/0 cable from connector J2(2).**
4. **Position printer on its side.**
5. **Remove two bottom screws (3) and two flatwashers (4).**
6. **Position printer upright and remove two top screws (5) and two flatwashers (6).**

CAUTION

Use care when separating chassis to avoid damaging harness and cable assemblies.

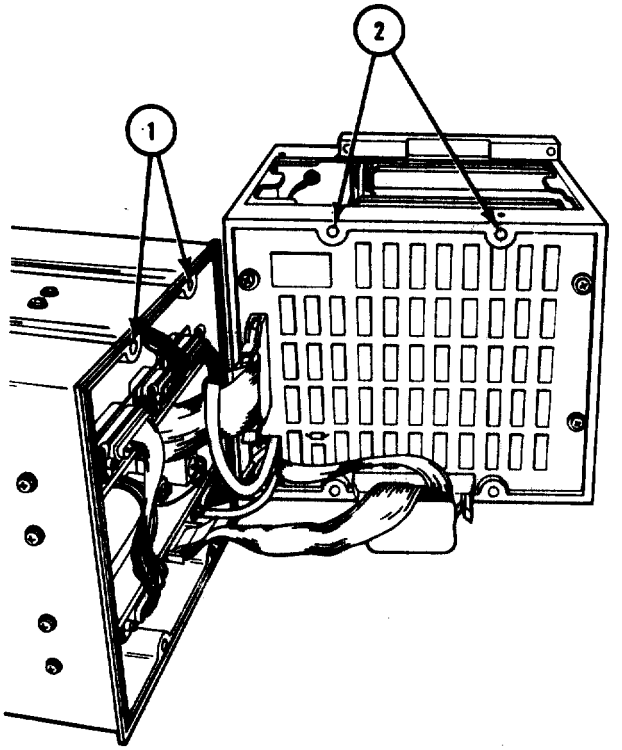
7. **Carefully separate power supply chassis (7) from printer chassis (8).**

2-31. JOINING CHASSIS

CAUTION

Exercise care when joining chassis to avoid damaging harness and cable assembly.

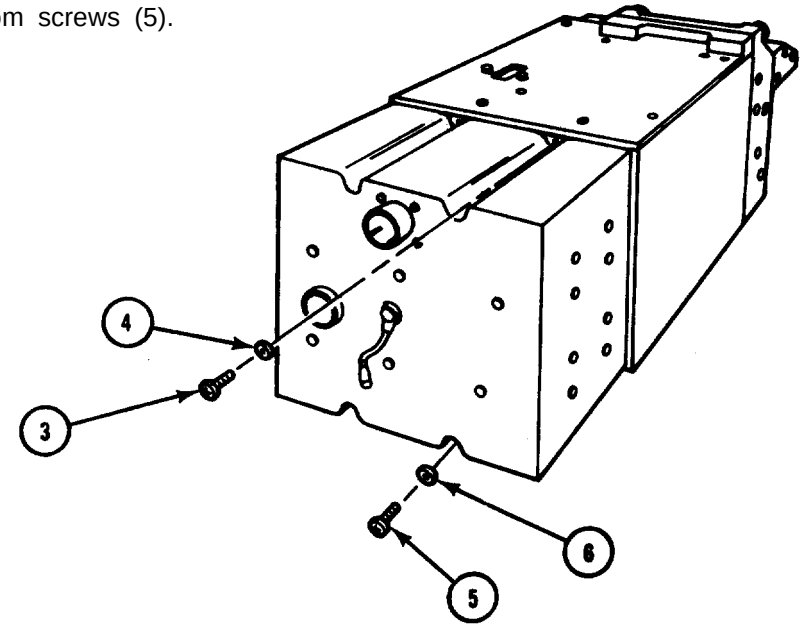
1. Aline holes in power supply chassis (1) with holes in printer chassis (2).



2. Install two top screws (3) and two flatwashers (4). Do not tighten.

3. Position printer on its side and install two bottom screws (5) and two flatwashers (6)

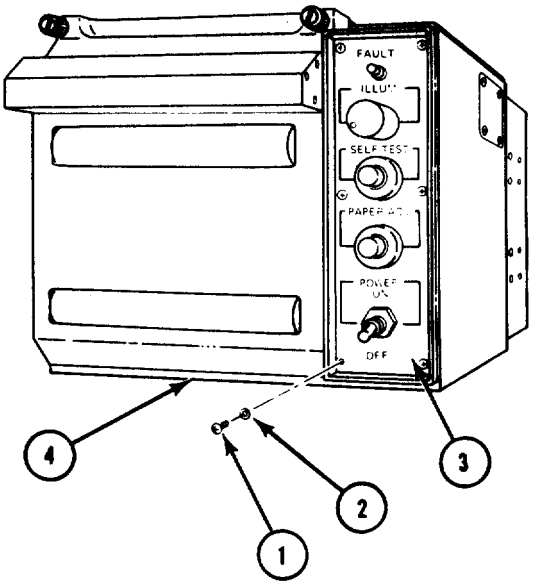
4. Tighten two top screws (3) and two bottom screws (5).



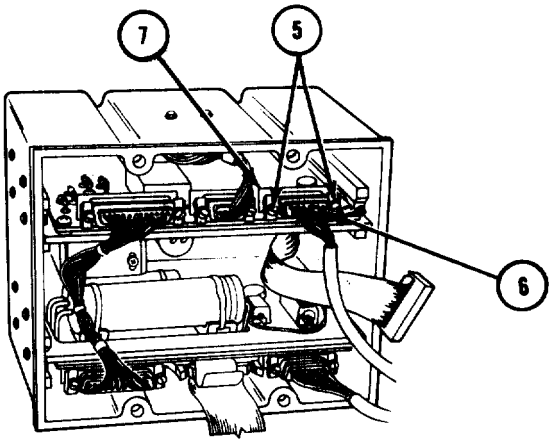
2-32. REMOVING CONTROL PANEL

NOTE

Perform steps 1 thru 3 to gain access to control panel.



1. Remove top cover (para 2-26).
2. Remove six screws (1) and six flatwashers (2).
3. Carefully slide control panel (3) out of chassis (4).



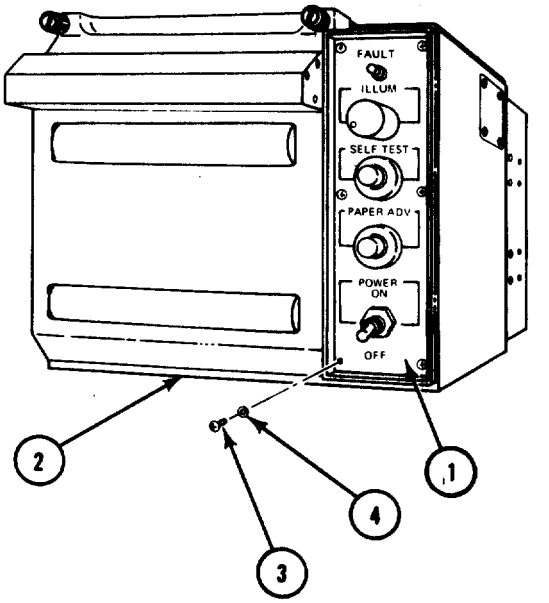
NOTE

Perform steps 4 thru 7 to complete removal of control panel.

4. Separate chassis (para 2-30).
5. Remove logic board (para 2-54). (Do not disconnect Connectors P15 and P16.)
6. Loosen two captive screws (5), turning each screw two turns at a time, until harness connector P4 (6) can be removed from connector J4 (7).
7. Carefully remove control panel (3).

2-33. INSTALLING CONTROL PANEL

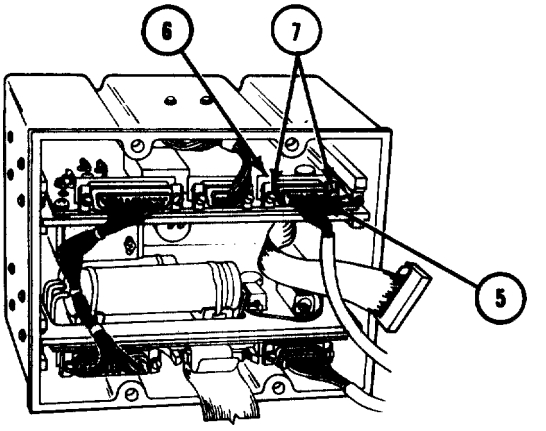
1. Carefully slide control panel (1) into chassis (2) and aline mounting holes.
2. Install six screws (3) and six flatwashers (4).
3. Install top cover (para 2-27).



NOTE

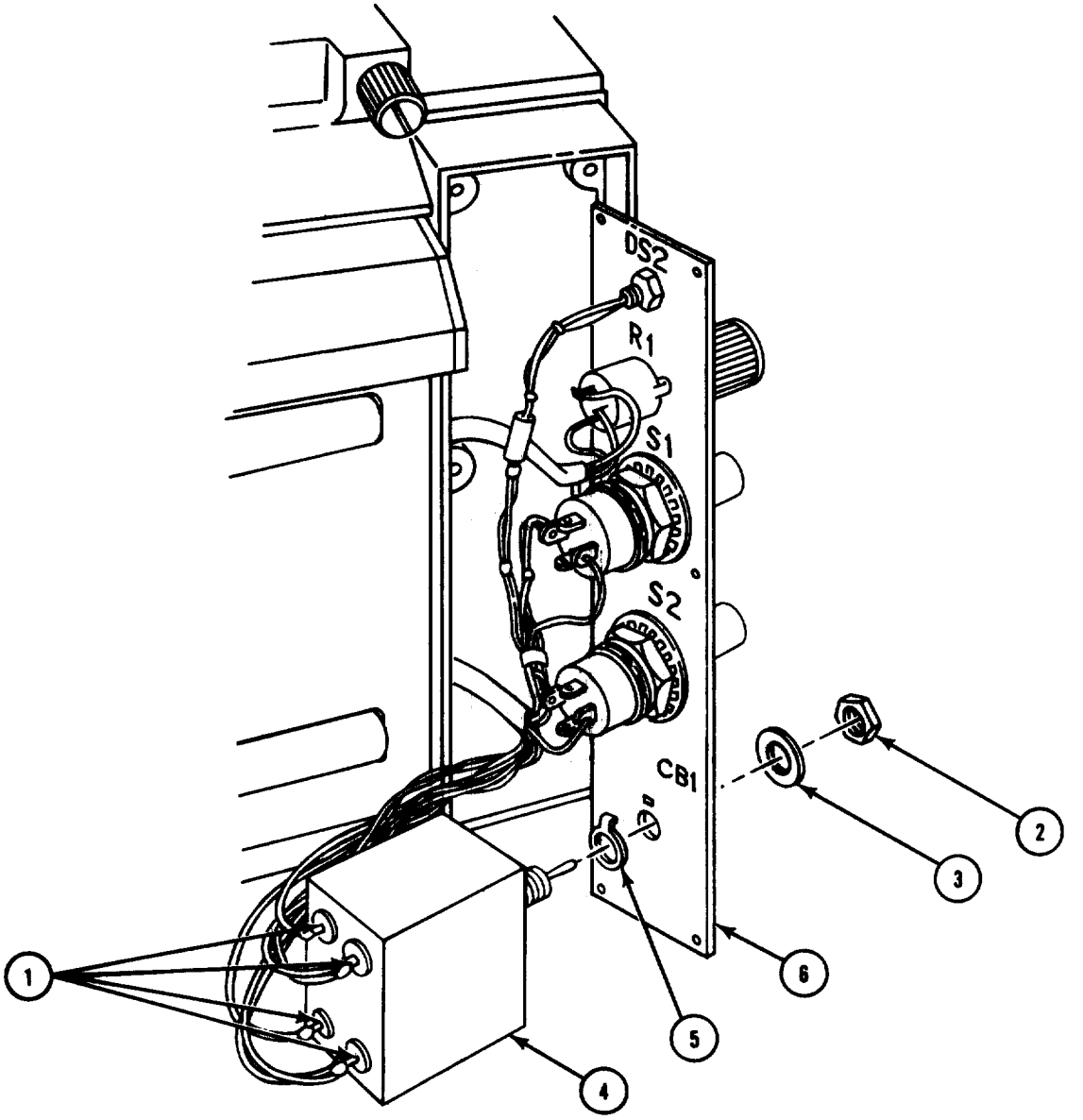
Perform steps 4 thru 6 if control panel was previously removed.

4. Aline harness connector P4 (5) with connector J4 (6) and tighten two screws (7), turning each screw two turns at a time,
5. Install logic board (para 2-55).
6. Join chassis (para 2-31).



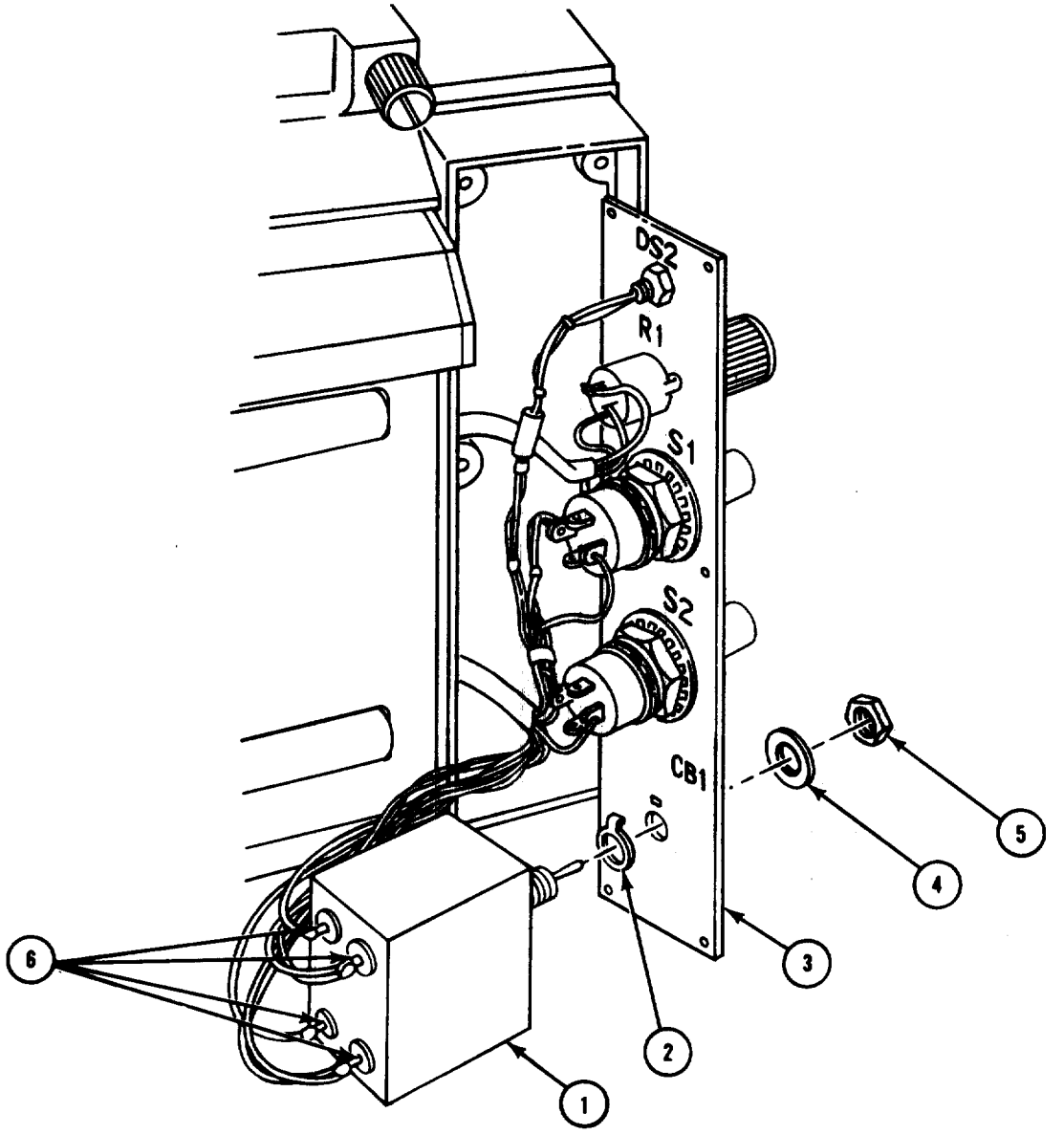
2-34. REMOVING POWER ON/OFF CIRCUIT BREAKER

1. Remove control panel (para 2-32).
2. Tag, unsolder, and remove six wires (1).
3. Remove nut (2), and flatwasher (3).
4. Remove POWER ON/OFF circuit breaker (4) and keyed washer (5) from control panel (6).



2-35. INSTALLING POWER ON/OFF CIRCUIT BREAKER

1. Aline POWER ON/OFF circuit breaker (1) and keyed washer (2) with mounting hole and slot on control panel (3).
2. Apply retaining compound (item 6, Appx B) to threads of POWER ON/OFF circuit breaker (1).
3. Install flatwasher (4) and nut (5).
4. Solder six wires (6) in place as tagged and remove tags.
5. Install control panel (para 2-33).



2-36. REMOVING SELF TEST AND PAPER ADV SWITCHES

NOTE

Procedure given in the following steps is for SELF TEST switch and is typical for PAPER ADV switch.

Remove control panel (para 2-32).

NOTE

SELF TEST switch has three wires, and PAPER ADV switch has two wires.

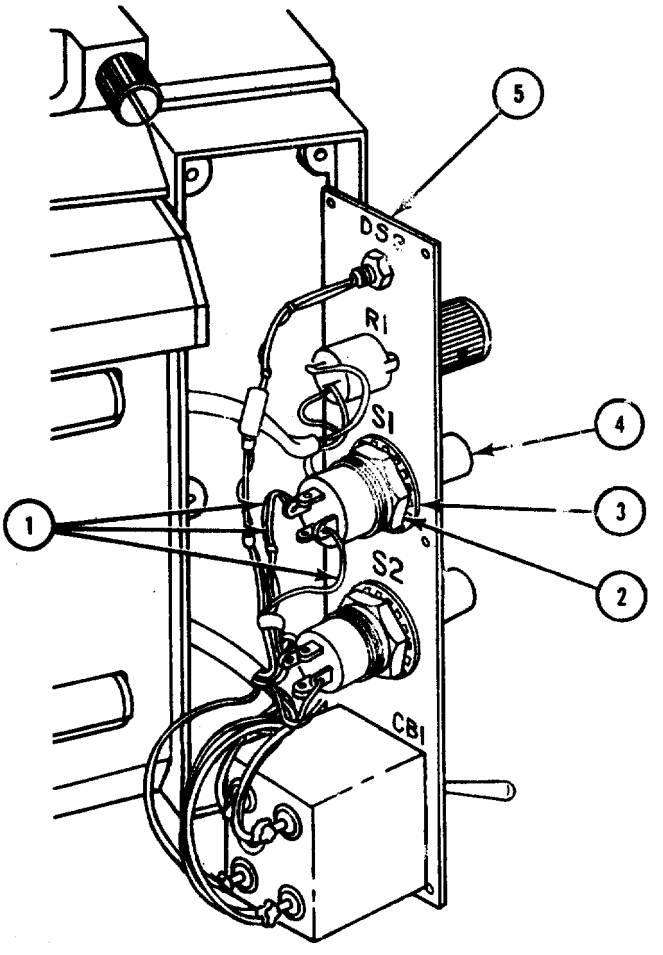
2. Tag, unsolder, and remove wires (1).
3. Remove nut (2) and star washer (3).
4. Remove SELF TEST switch (4) from control panel (5).

2-37. INSTALLING SELF TEST AND PAPER ADV SWITCHES

NOTE

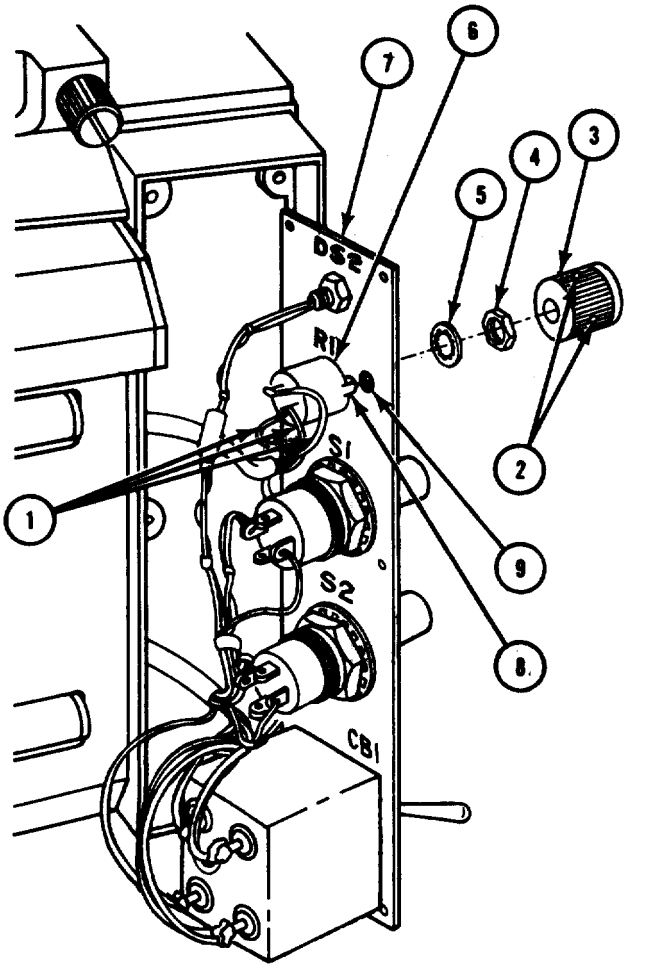
Procedure given in the following steps is for SELF TEST switch and is typical for PAPER ADV switch.

1. Put SELF TEST switch (4) in place on control panel (5).
2. Install star washer (3) and nut (2).
3. Solder wires (1) in place as tagged. Remove tags.
4. Install control panel (para 2-33).



2-38. REMOVING ILLUM (ILLUMINATION) CONTROL

1. Remove control panel (para 2-32).
2. Tag, unsolder, and remove three wires (1).
3. Loosen two setscrews (2) on ILLUM control knob (3). Remove knob.
4. Remove nut (4) and star washer (5).
5. Remove I LLUM control (6) from control panel (7),



2-39. INSTALLING ILLUM (ILLUMINATION) CONTROL

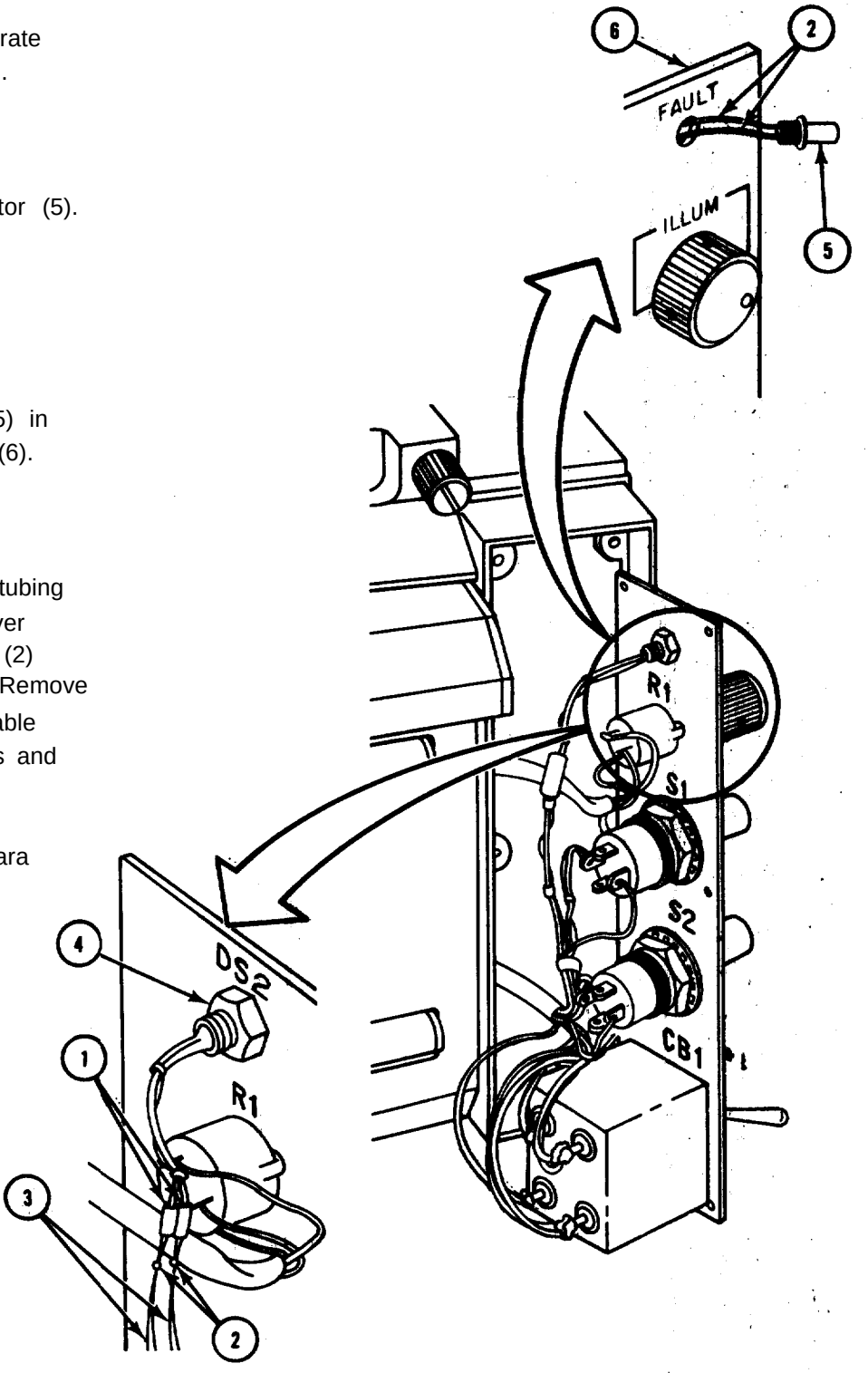
1. Put ILLUM control (6) in place by alining two tabs (8) with alinement holes (9).
2. Install star washer (5) and nut (4).
3. Turn shaft on ILLUM control (6) clockwise all the way.
4. With white dot on ILLUM control knob (3) facing toward the bottom, put in place on ILLUM control (6).
5. Tighten two setscrews (2) on ILLUM control knob (3).
6. Solder three wires (1) in place as tagged. Remove tags.
7. Install control panel (para 2-33).

2-40. REMOVING FAULT INDICATOR

1. Remove control panel (para 2-32).
2. Remove heat shrinkable tubing (1) from two wires (2) to gain access to soldered connections.
3. Tag, unsolder, and separate wires (2) from wires (3).
4. Remove nut (4).
5. Remove FAULT indicator (5).

2-41. INSTALLING FAULT INDICATOR

1. Put FAULT indicator (5) in place on control panel (6).
2. lnstaJl nut (4).
3. Install heat shrinkable tubing (1) (item 8, Appx B) over wires (2). Solder wires (2) to wires (3) as tagged. Remove tags. Slide heat shrinkable tubing over solder joints and apply heat.
4. Install control panel (para 2-33).

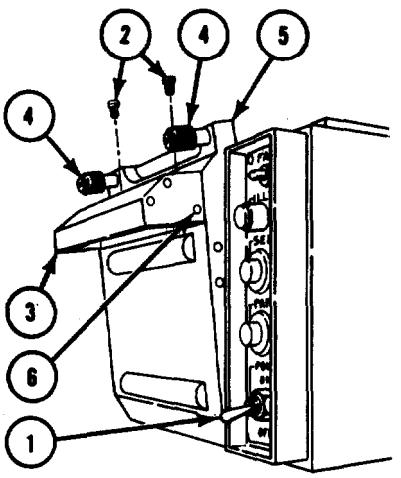


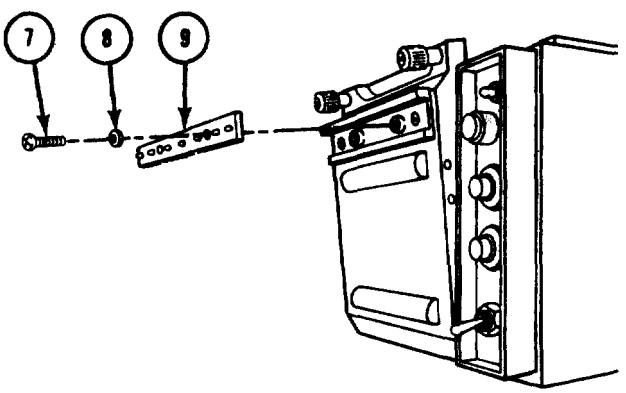
2-42. REMOVING ILLUMINATION CIRCUIT BOARD ASSEMBLY

WARNING

Turn off power before working on equipment. Failure to do so can cause serious injury to personnel.

1. Set POWER ON/OFF circuit breaker (1) to OFF.
2. Disconnect printer from power source.
3. Remove two screws (2) from top of illumination reflector (3).
4. Loosen two captive thumbscrews (4) and open door (5) partway.
5. Remove one screw (6) from each side of illumination reflector (3).
6. Remove illumination reflector (3).



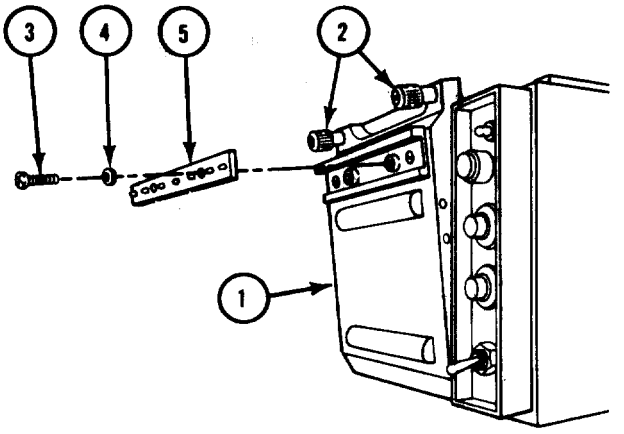


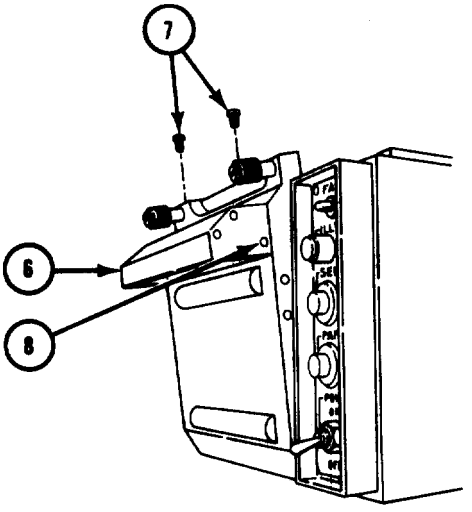
7. Remove two screws (7) and two flatwashers (8).
8. Remove illumination circuit board assembly (9).

2-43. INSTALLING ILLUMINATION CIRCUIT BOARD ASSEMBLY

1. Close door (1) and tighten two captive thumbscrews (2).

2. Install two screws (3), two flatwashers (4), and illumination circuit board assembly (5) on door (1).





3. Put illumination reflector (6) in place as shown.

4. Install two screws (7) hand tight.

5. Open door (1) partway, install two screws (8), and tighten two screws (7).

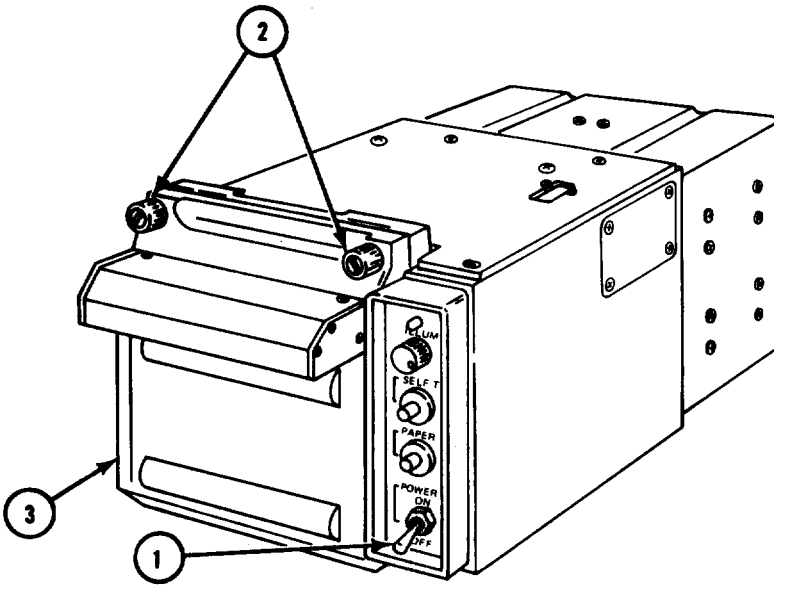
6. Close door (1) and tighten two captive thumbscrews (2).

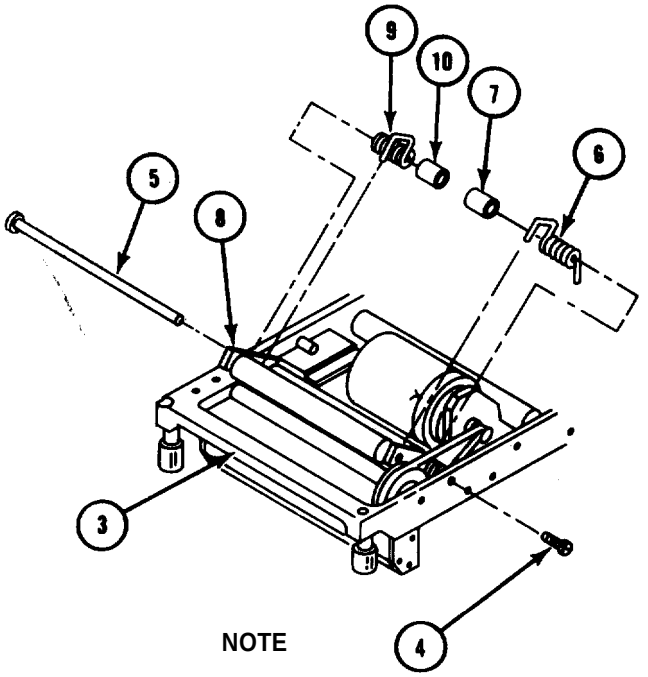
2-44. REMOVING SPRING LOADED ROLLER ASSEMBLY

WARNING

Turn off power before working on equipment. Failure to do so can cause serious injury to personnel.

1. Set POWER ON/OFF circuit breaker (1) to OF F.
2. Disconnect printer from power source.
3. Loosen two captive thumbscrews (2) and open door (3). Remove paper and spool. (Refer to TM 11-7021-201-12.)
4. Remove screw (4).





NOTE

If washers are used, note position and reinstall during reassembly.

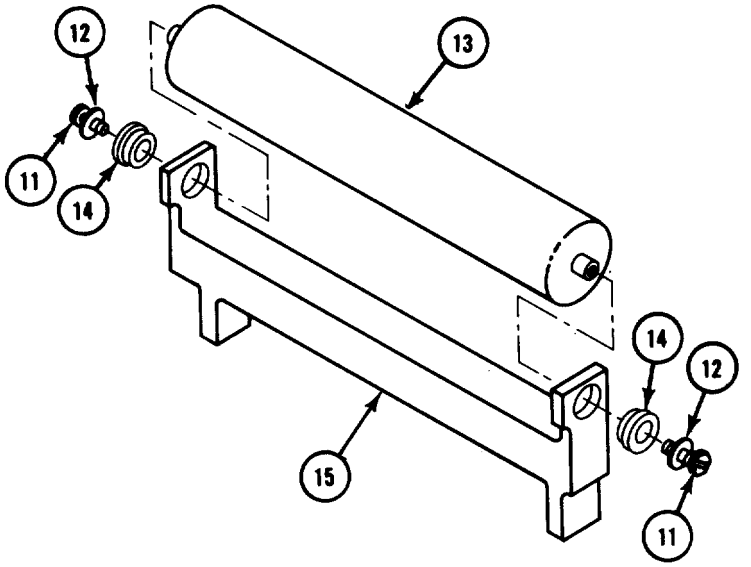
C A U T I O N

Roller is spring loaded. Use care when removing it from door. Use care not to damage threads when driving shaft out of door frame.

5. Using a 1/16-inch drift pin, drive shaft (5) through mounting hole of door (3) until shaft clears inside of door.
6. Working from left side of door (3), pull shaft (5) through door and remove right tension spring (6), bushing (7), roller frame assembly (8), left tension spring (9), and bushing (10).

7. Remove two screws (11) and two flatwashers (12).

8. Holding roller (13), push bearings (14) out of roller frame (15) and remove roller (13).



2-45. INSTALLING SPRING LOADED ROLLER ASSEMBLY

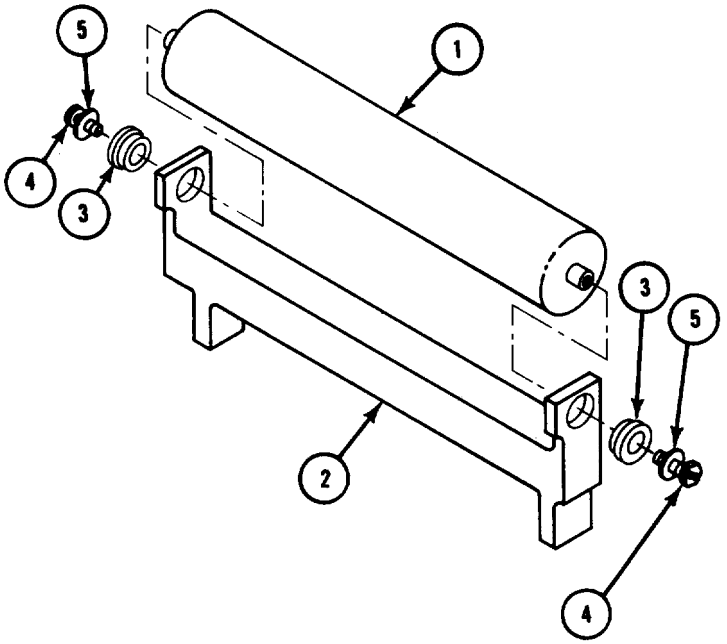
1. Aline roller (1) inside roller frame (2).

2. A line bearings (3) at each end of roller (1) and press bearings into roller frame (2).

NOTE

Do not overtighten screws. Roller must be able to spin freely.

3. Install two screws (4) and two flatwashers (5).

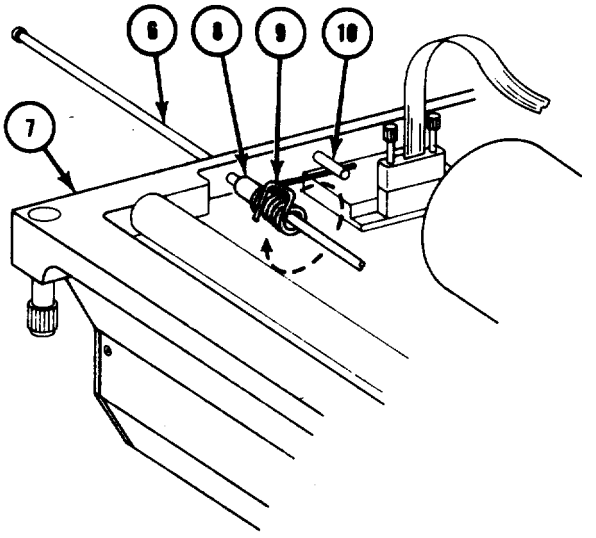


NOTE

If shaft is replaced, install screw at one end of replacement shaft before using.

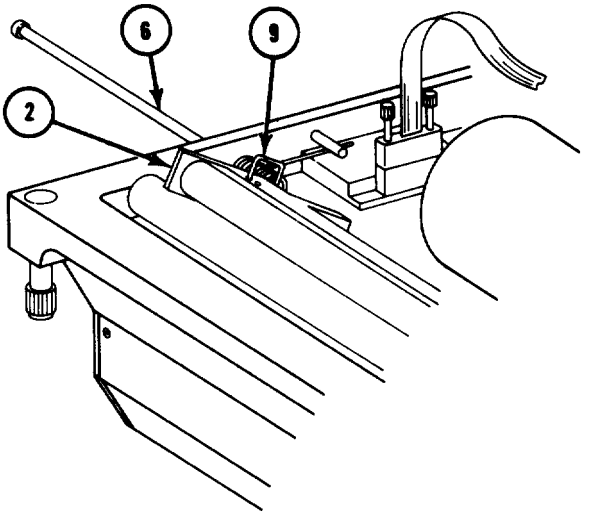
4. Slide shaft (6) through mounting hole on door (7).

5. Slide bushing (8) and left tension spring (9) on shaft (6), inserting straight end of left tension spring under hold-down (10) as shown. Rotate hooked end of left tension spring (9) 1/4-turn in the direction shown.



6. Hold back hooked end of left tension spring (9) and slide roller frame assembly (2) onto shaft (6).

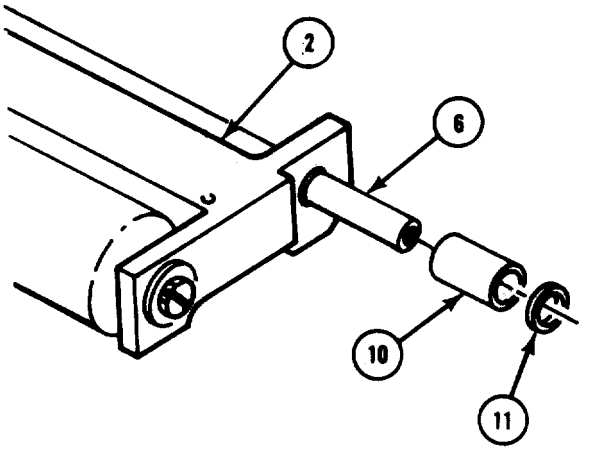
7. Insert hooked end of left tension spring (9) into mounting hole on roller frame assembly (2).

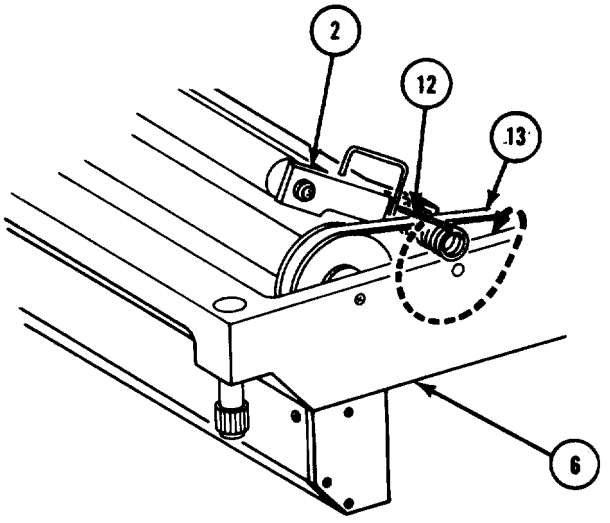


NOTE

Item 11 is not used in all printers.

8. Continue sliding shaft (6) through roller frame (2) and slide bushings (10) and (11) onto shaft.





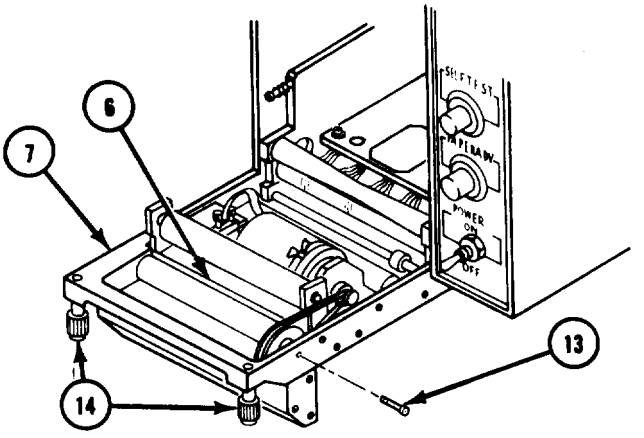
9. Slide right tension spring (12) under drive belt (13) and over bushings (9) and (11) as shown.

10. Insert hooked end of right tension spring (12) in mounting hole on roller frame assembly (2).

11. Rotate straight end of right tension spring (12), as shown, until spring can be installed against inside frame of door (7).

12. Aline shaft (6) with mounting hole on door (7) and install screw (13).

13. Close door (7) and tighten two captive thumbscrews (14).



2-46. REMOVING DRIVE ROLLER ASSEMBLY

WARNING

Turn off power before working on equipment. Failure to do so can cause serious injury to personnel.

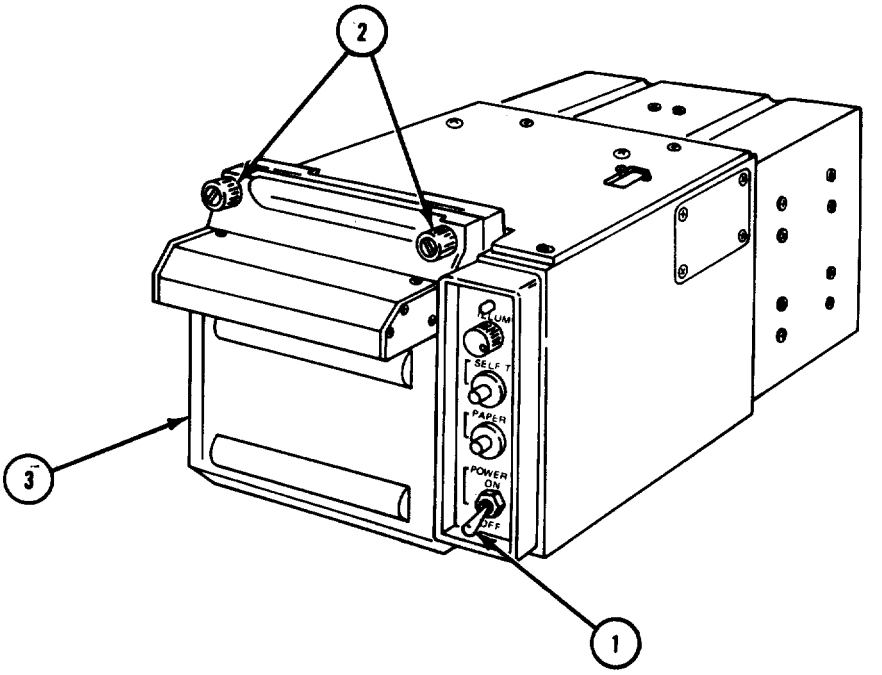
1, Set POWER ON/OFF circuit breaker (1) to OFF.

2. Disconnect printer from power source.

3. Loosen two captive thumbscrews (2) and open door (3).

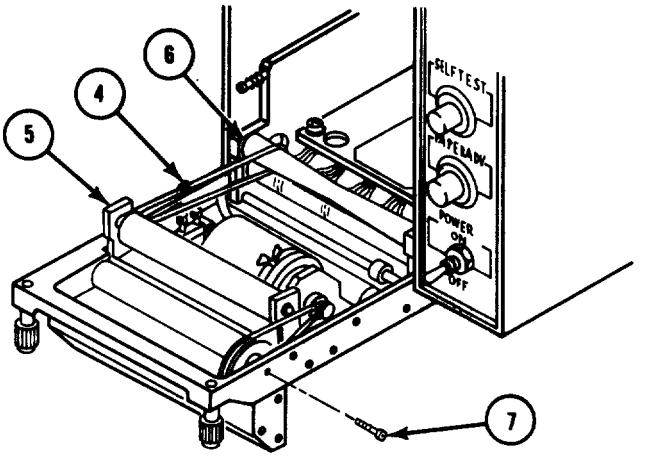
NOTE

Go to step 5, if spring loaded roller has already been removed.



4. Using lacing tape (item 7, Appx B) (4), tie spring loaded roller assembly (5) to tracking bar (6) as shown.

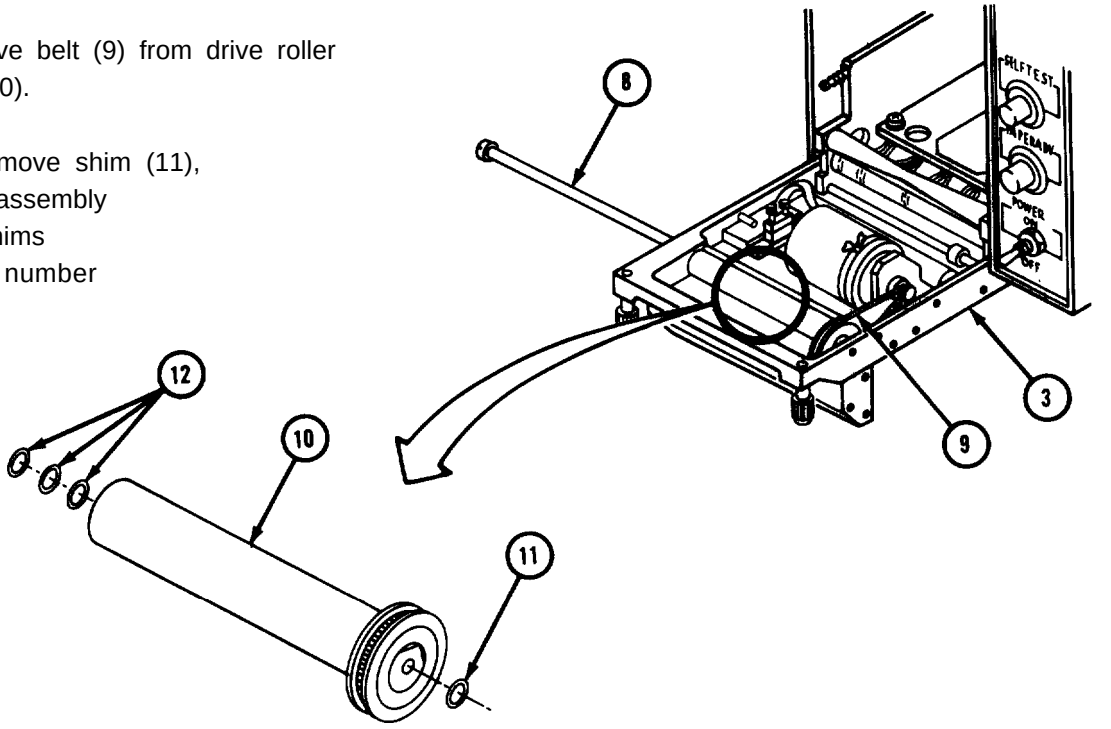
5. Remove screw (7).



6. Using a 1/16-inch drift pin, drive shaft (8) through mounting hole of door (3).

7. Remove drive belt (9) from drive roller assembly (10).

8. Carefully remove shim (11), drive roller assembly (10), and shims (12). Note number of shims.

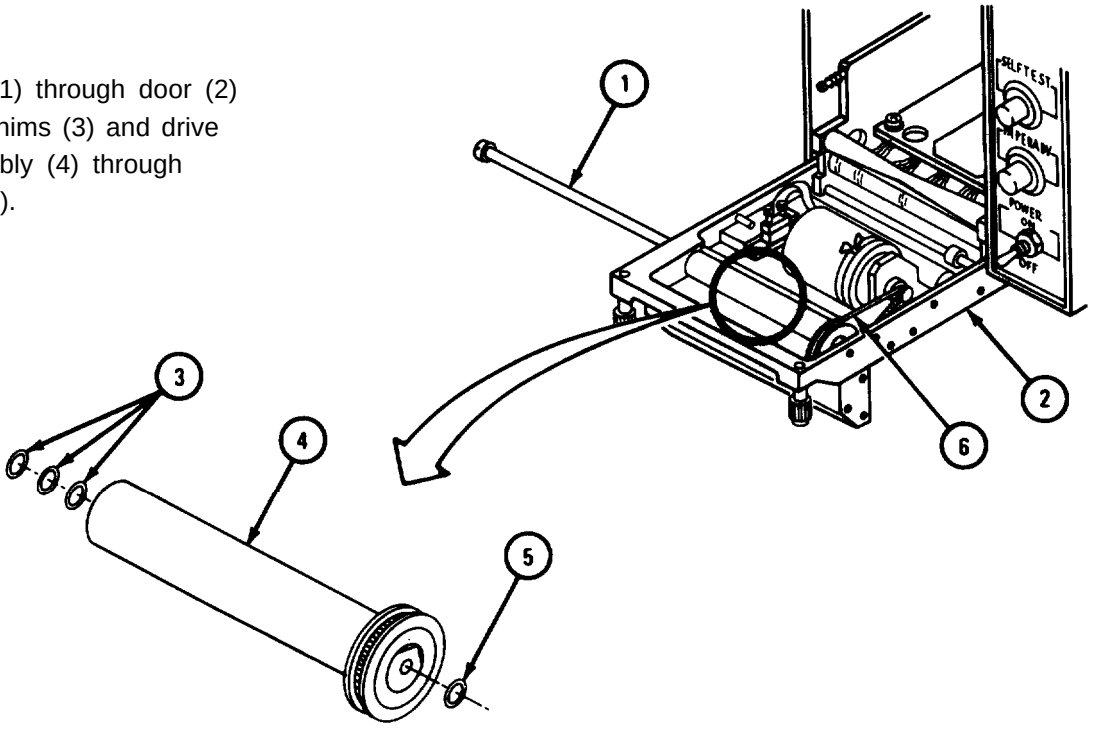


2-47 INSTALLING DRIVE ROLLER ASSEMBLY

1. Aline shaft (1) with mounting hole on door (2).

2. Slide shaft (1) through door (2) and install shims (3) and drive roller assembly (4) through drive belt (6).

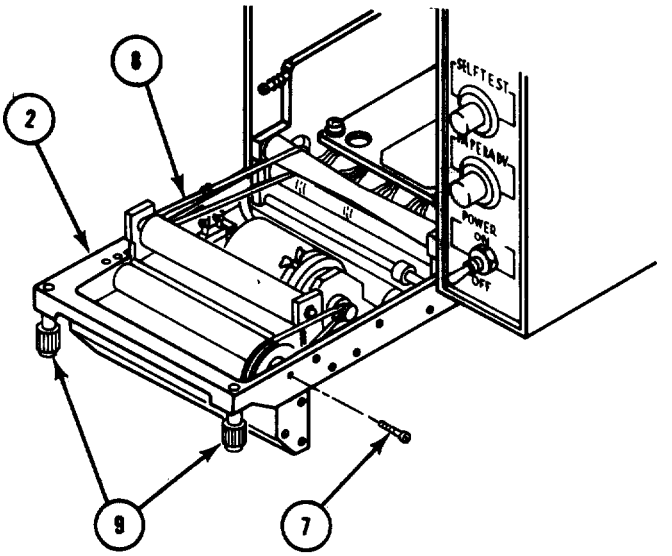
3. Install shim (5) on shaft (1).



4. Install screw (7),

NOTE

If spring loaded roller assembly was removed, go to step 6.



5. Cut and discard lacing tape (8).

6. Close door (2) and tighten two captive thumbscrews (9).

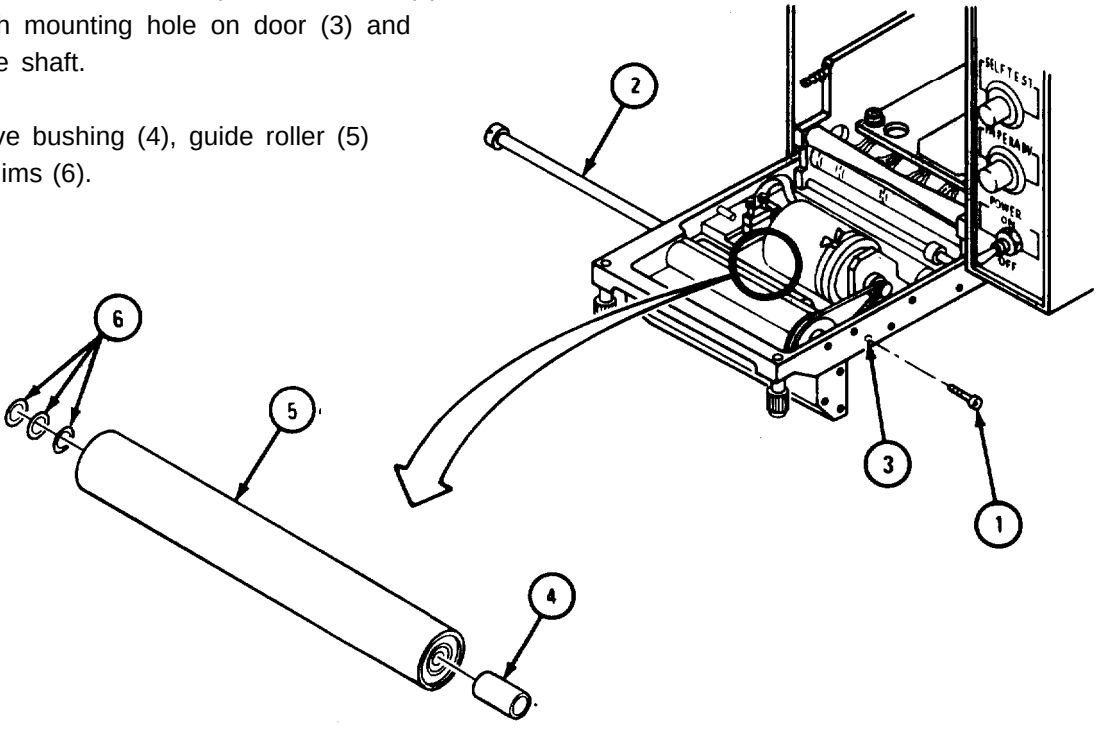
2-48. REMOVING GUIDE ROLLER ASSEMBLY

1. Remove spring loaded roller assembly (para 2-44).

2. Remove screw (1).

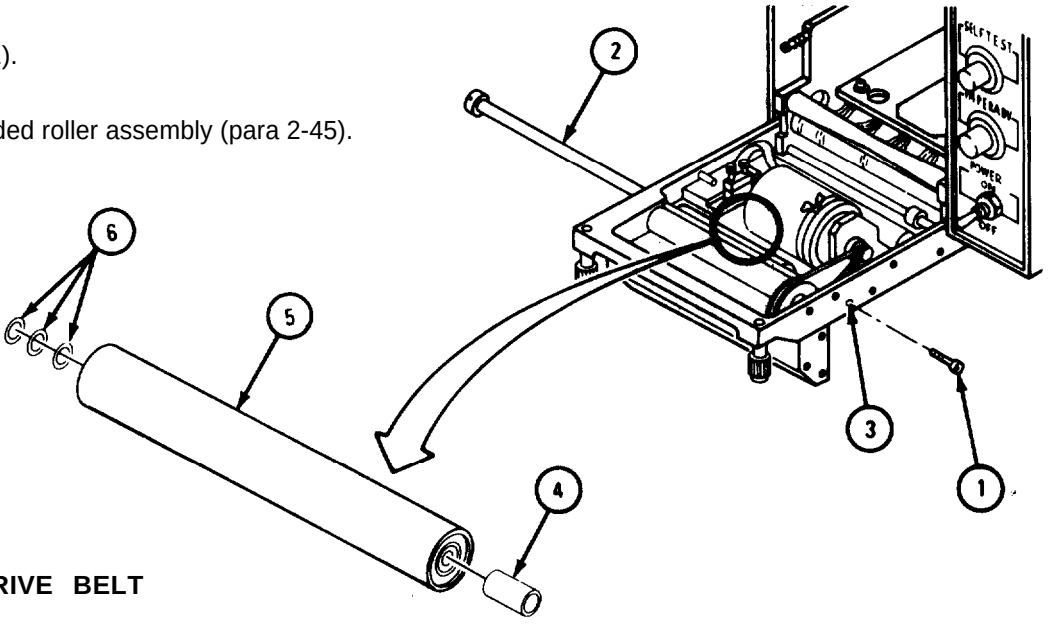
3. Using a 1/16-inch drift pin, drift shaft (2) through mounting hole on door (3) and remove shaft.

4. Remove bushing (4), guide roller (5) and shims (6).



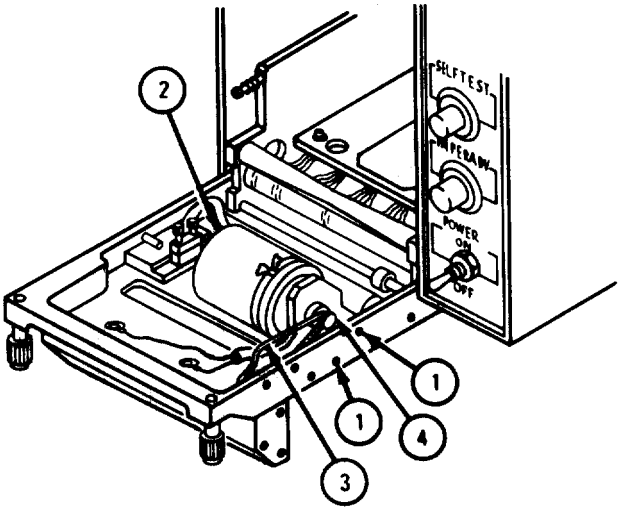
2-49. INSTALLING GUIDE ROLLER ASSEMBLY

1. Aline shaft (2) with mounting hole on door (3).
2. Slide shaft (2) through door (3) and install shims (6), guide roller (5), and bushing (4).
3. Install screw (1).
4. Install spring loaded roller assembly (para 2-45).



2-50. REMOVING DRIVE BELT

1. Remove spring loaded roller assembly (para 2-44).
2. Remove drive roller assembly (para 2-46).
3. Loosen two screws (1) two turns.
4. Slide motor assembly (2) back and remove drive belt (3) from motor drive spur (4).



2-51. INSTALLING DRIVE BELT

1. Put drive belt (3) over motor drive spur (4).

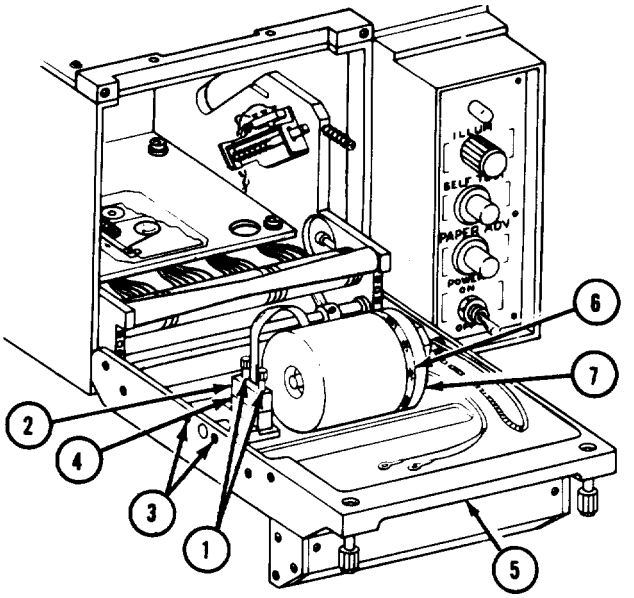
CAUTION

Use care not to pinch wires that are routed under motor assembly.

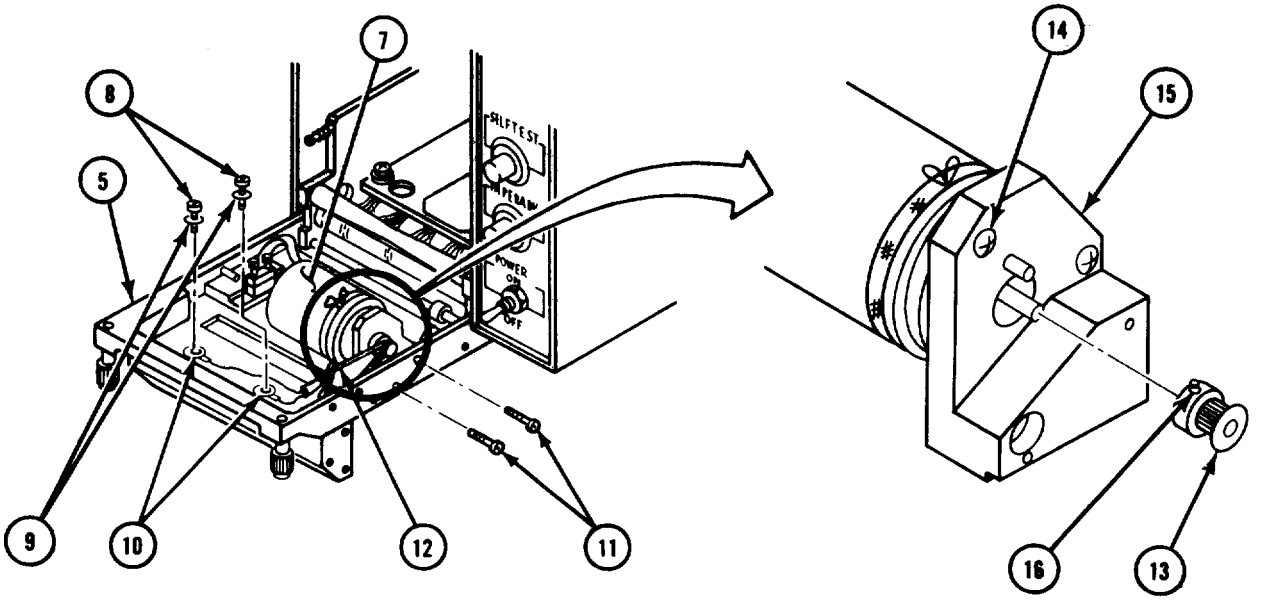
2. Move motor (2) to put tension on drive belt, then tighten two screws (1)
3. Install drive roller assembly (para 2-47).
4. Install spring loaded roller assembly (para 2-45).

2-52. REMOVING STEPPER MOTOR AND DOOR HARNESS ASSEMBLY

1. Remove spring loaded roller assembly (para 244).
2. Remove drive roller assembly (para 2-46).
3. Remove guide roller assembly (para 2-48).
4. Loosen two captive screws (1), turning each screw two turns at a time, until harness connector P11 (2) can be removed from connector J11 (4).
5. Remove two screws (3) and remove connector J11 (4) from door (5).
6. Cut and discard harness tie (6) from motor assembly (7).

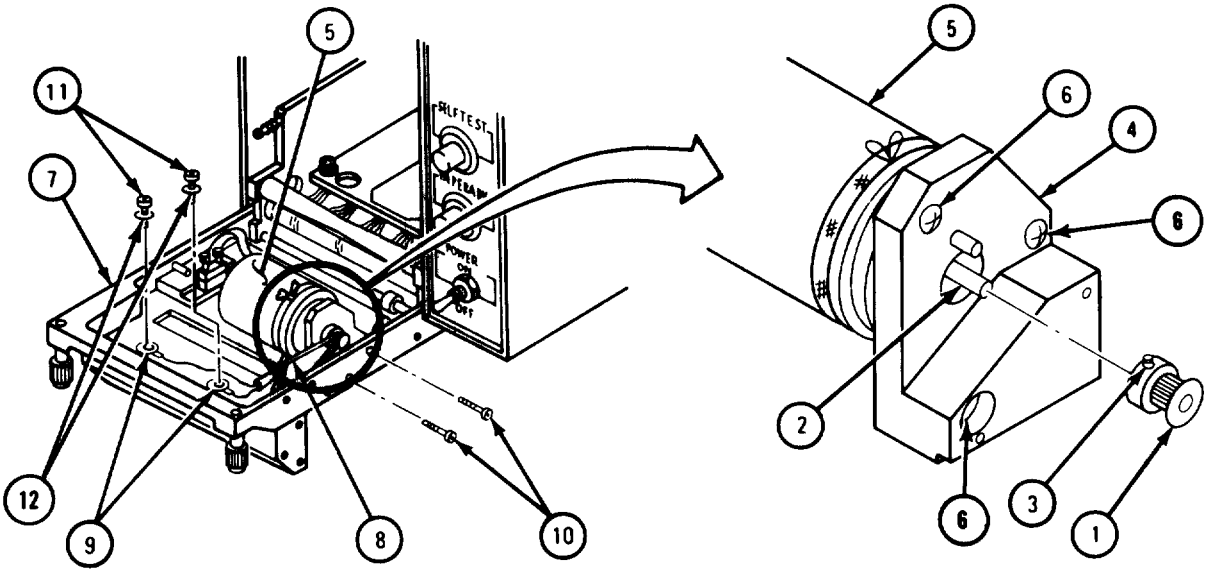


7. Remove two screws (8) and two flatwashers (9) from wire lugs (10). Tag wires.
8. Remove two screws (11).
9. Slide motor assembly (7) back and disconnect drive belt (12) from drive spur (13).
10. Remove stepper motor and door harness assembly (7) from door (5).
11. Remove two screws (14) and motor mount (15).
12. Loosen setscrew (16) and remove drive spur (13).

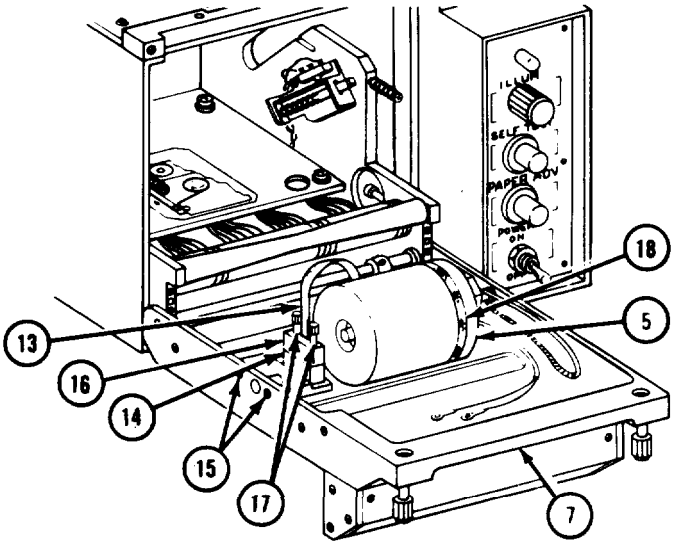


2-53. INSTALLING STEPPER MOTOR AND DOOR HARNESS ASSEMBLY

1. Install drive spur (1) on shaft (2) and tighten setscrew (3).
2. Aline motor mount (4) with motor (5) and install three screws (6).
3. Aline motor (5) with mounting holes on door (7).
4. Put drive belt (8) over drive spur (1).
5. Route wires (9) under motor mount (4).
6. Install two screws (10), using care not to pinch wires (9).
7. install wires (9), as tagged, using two screws(11) and two flatwashers (12). Remove tags.

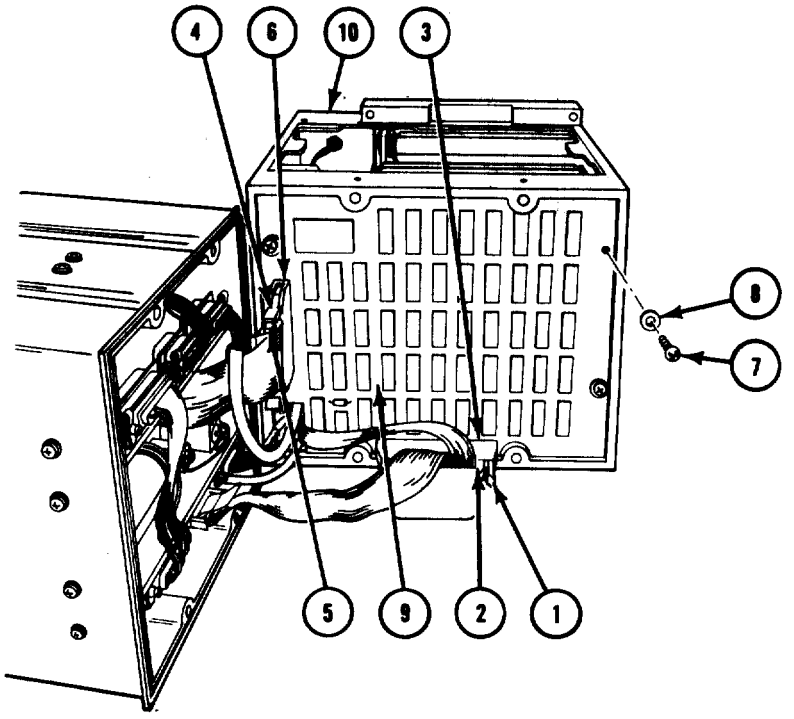


8. Route harness (13), as shown, and aline connector J11 (14) with mounting holes on door (7).
9. Install two screws (15).
10. A line harness connector P11 (16) with connector J11 (14) and tighten two screws (17), turning each screw two turns at a time, until tight.
11. Install harness tie (18) around motor (5).
12. Install guide roller assembly (para 2-49).
13. Install drive roller assembly (para 2-47).
14. Install spring loaded roller assembly (para 2-45)



2-54. REMOVING LOGIC BOARD

1. Remove top cover (para 2-26).
2. Separate chassis (para 2-30).
3. Open two retaining arms (1) and remove connector P15(2) from connector J15(3).
4. Open two retaining arms (4) and remove connector P16(5) from connector J16(6).
5. Remove four screws (7) and four flatwashers (8) until logic board (9) separates from chassis (10).
6. Working through top of chassis (10), push out and remove logic board (9).



2-55. INSTALLING LOGIC BOARD

1. Aline logic board (1) with front chassis (2) so that cables (3) go through cutout in logic board as shown.

NOTE

Make sure plastic retaining washers are in place on rear of screws when installing logic board.

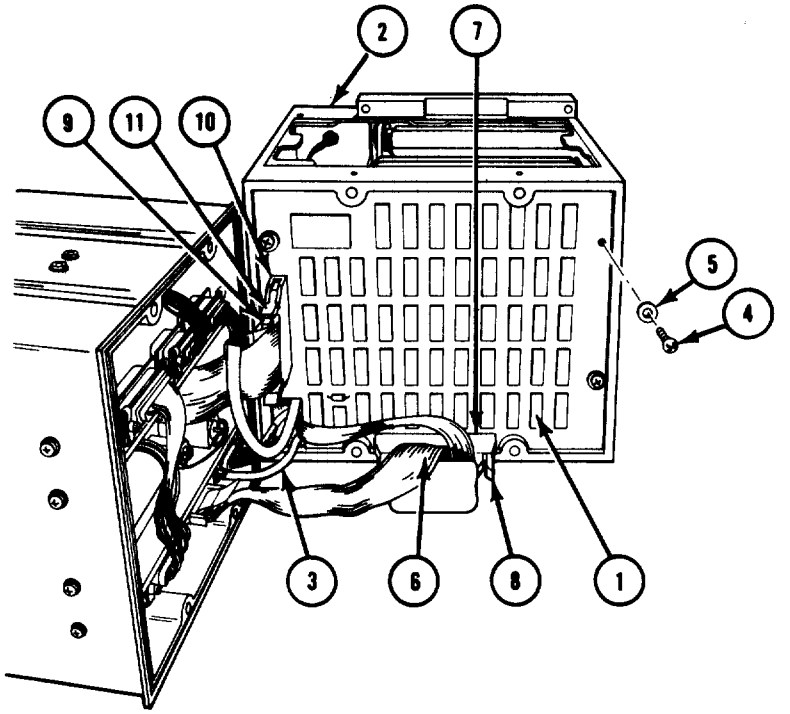
2. Install four screws (4) and flatwashers (5).

3. Aline and mate connector P15(6) to connector J15(7). Close two retaining arms (8) to secure connectors.

4. Aline and mate connector P16(9) to connector J16(10). Close two retaining arms (11) to secure connectors.

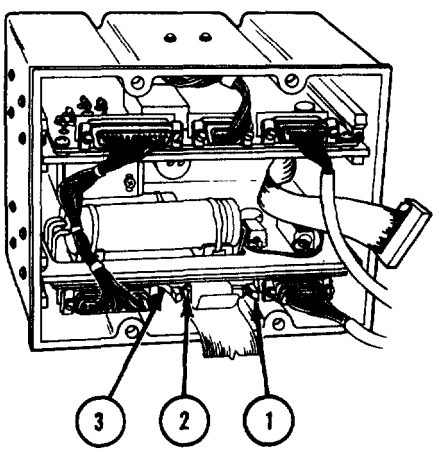
5. Install top cover (para 2-27).

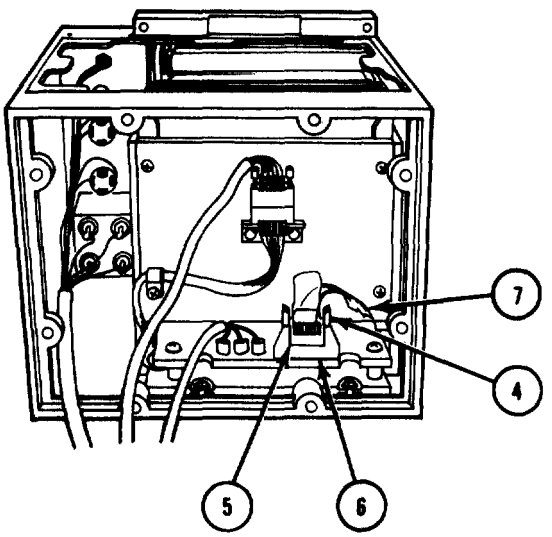
6. Join chassis (para 2-31).



2-56. REMOVING MAIN INTERCONNECTION CABLE ASSEMBLY

1. Remove top cover (para 2-26).
2. Separate chassis (para 2-30).
3. Remove logic board (para 2-54).
4. Open two retaining arms (1) and remove connector P3(2) from connector J3(3).
5. Open two retaining arms (4) and remove connector p17(5) from connector J17(6).
6. Remove main interconnection cable assembly (7) from printer.





2-57. INSTALLING MAIN INTERCONNECTION CABLE ASSEMBLY

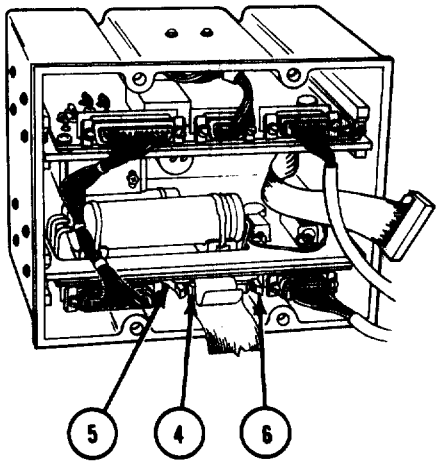
1. Aline and mate connector P17(1) to connector J17(2). Close two retaining arms (3) to secure connectors.

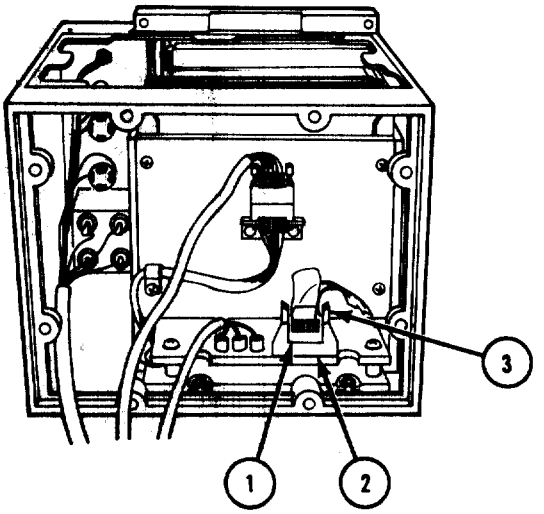
2. Install logic board (para 2-55).

3. Aline and mate connector P3(4) to connector J3(5). Close two retaining arms (6) to secure connectors.

4. Join chassis (para 2-31).

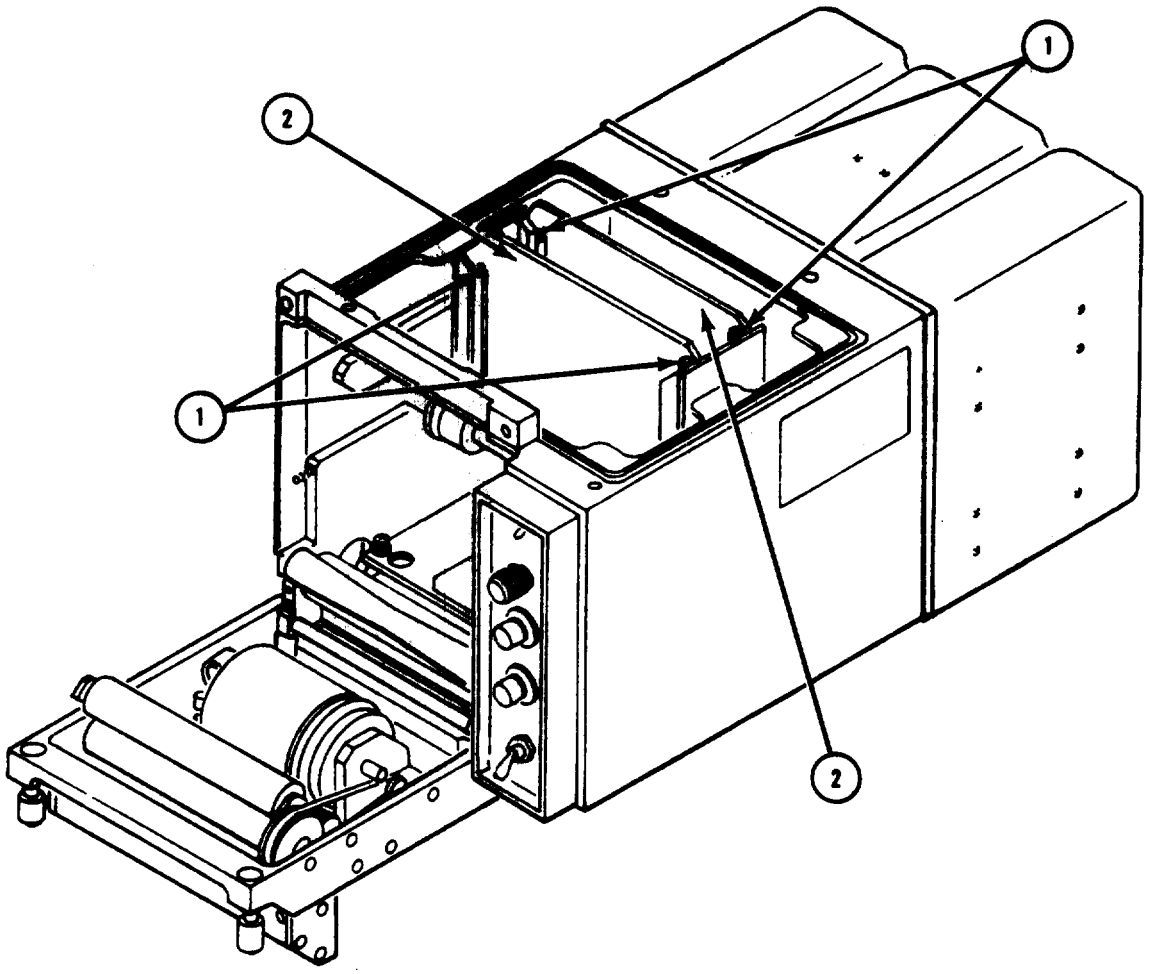
5. Install top cover (para 2-27).





2-58. REMOVING FINGER DRIVER CIRCUIT CARD ASSEMBLY

1. Remove top cover (para 2-26).
2. Loosen wedgelock sockethead screws (1) on each side of either finger driver circuit card assembly.
3. Lift finger driver circuit card assembly (2) straight up and clear of printer.

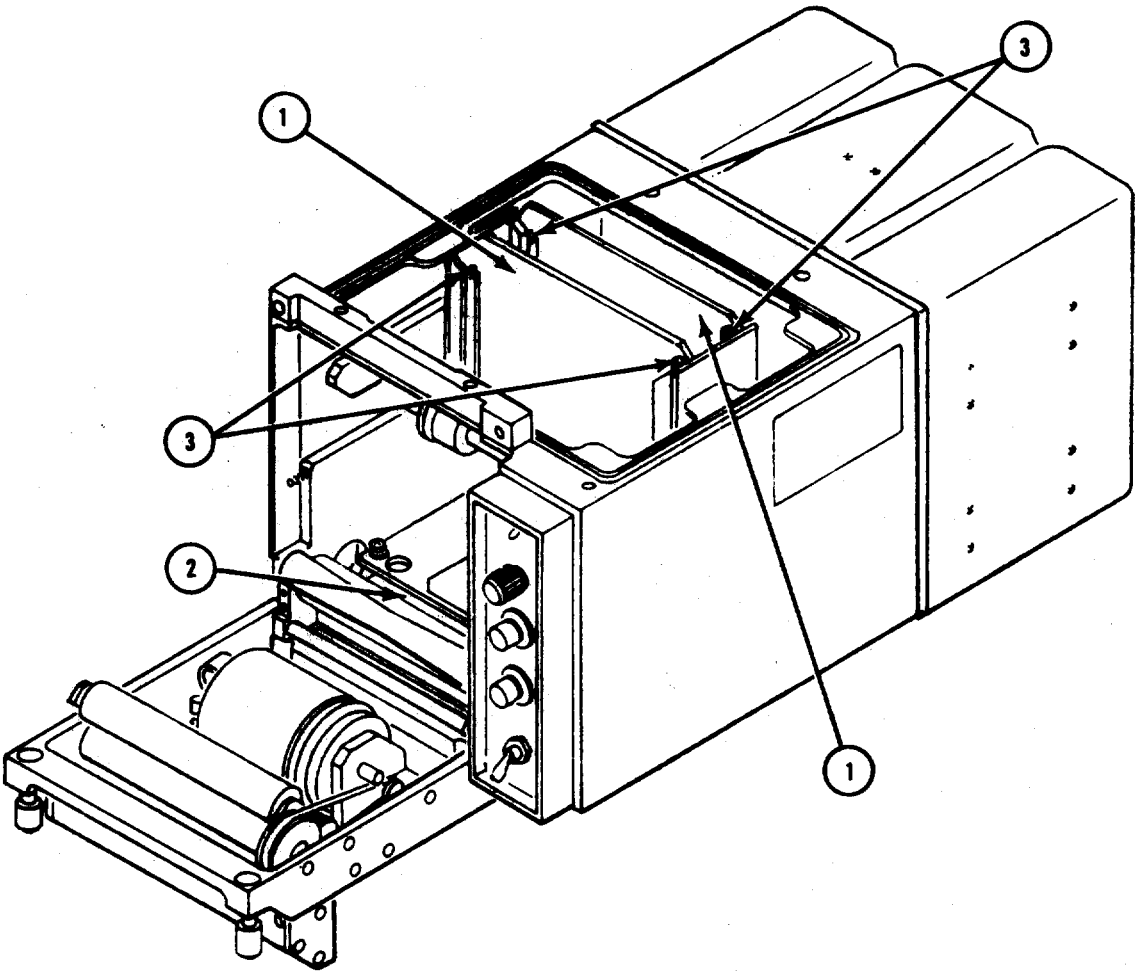


2-59. INSTALLING FINGER DRIVER CIRCUIT CARD ASSEMBLY

C A U T I O N

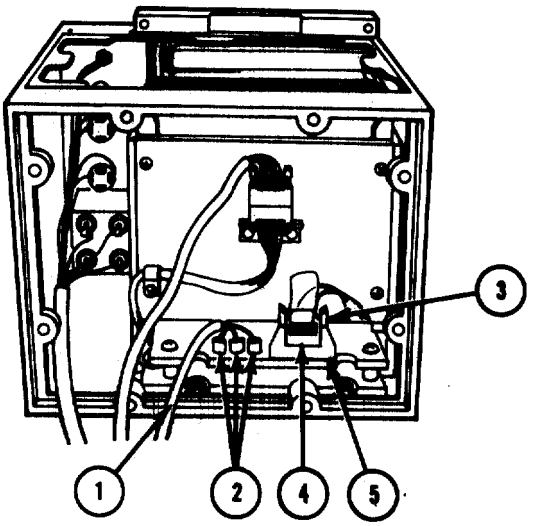
Avoid pinching wiring on motherboard.

1. Slide finger driver circuit card a~mbly (1) into receptacle on print system motherboard (2).
2. Tighten Wedgalock sockethead screws (3) on both sides of each finger driver circuit card assemblY"
3. Install top cover (para 2-27).



2-60. REMOVING PRINT SYSTEM ASSEMBLY

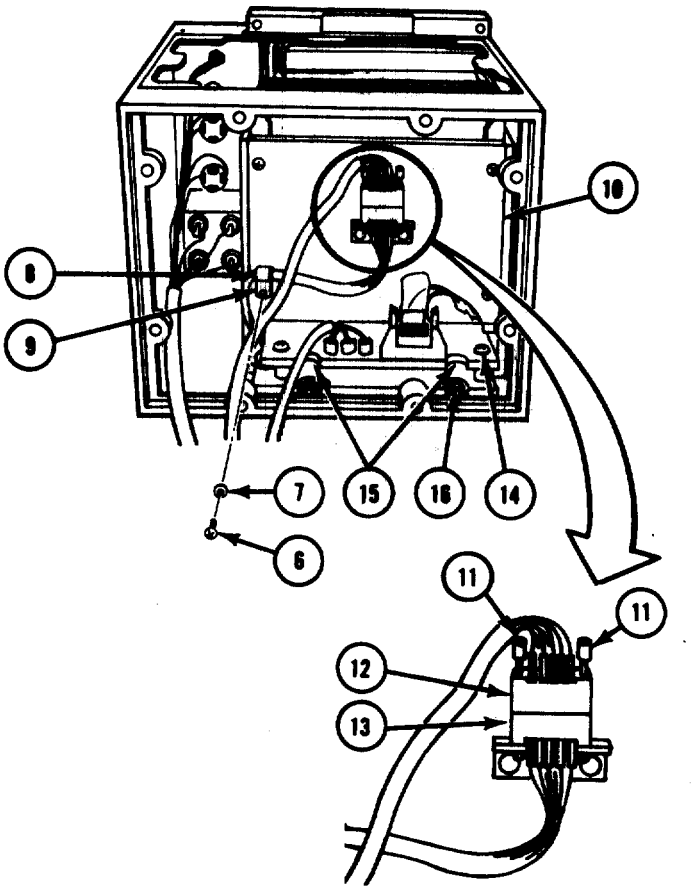
1. Separate chassis (para 2-30).
2. Remove top cover (para 2-26).
3. Remove logic board (para 2-54).
4. Tag three power cable (1) leads, than disconnect from three stud terminals E5, E6, and E7 (2).
5. Open two retaining arms (3), and remove connector P17(4) from connector J17(5).



CAUTION

Note the way motor harness assembly is routed under print system assembly motherboard to right of standoffs.

6. Remove four screws (6), four flat-washers (7), loop clamp (8), loop washer (9), and back plate (10).
7. Loosen two screws (11), turning each screw two turns at a time, until connector P10(12) can be removed from connector J10(13).
8. Remove two screws, flatwashers, and lockwashers (14) at rear of print system motherboard (15).
9. Loosen two screws (16) through cutouts at rear of print system motherboard (15).
10. Unload paper supply. (Refer to TM 11-7021-201-12.)



11. Remove finger driver circuit card assemblies (para 2-58).

12. Loosen completely two screws (17) through access holes in protective cover (18).

13. Grasp door (19) and carefully slide printer mechanics subassembly (20) out of chassis (21).

14. Remove four screws (22), four flat-washers (23), and protective cover (18).

15. Remove four threaded standoffs (24).

16. Remove two screws (25), two flat-washers (26), and interlock switch (27) from right side plate (28).

17. Remove two screws (29), tracking bar (30), and rod (31) from printer mechanics subassembly (20); using a 1/16-inch drift pin, drive rod (31) out of tracking bar (30).

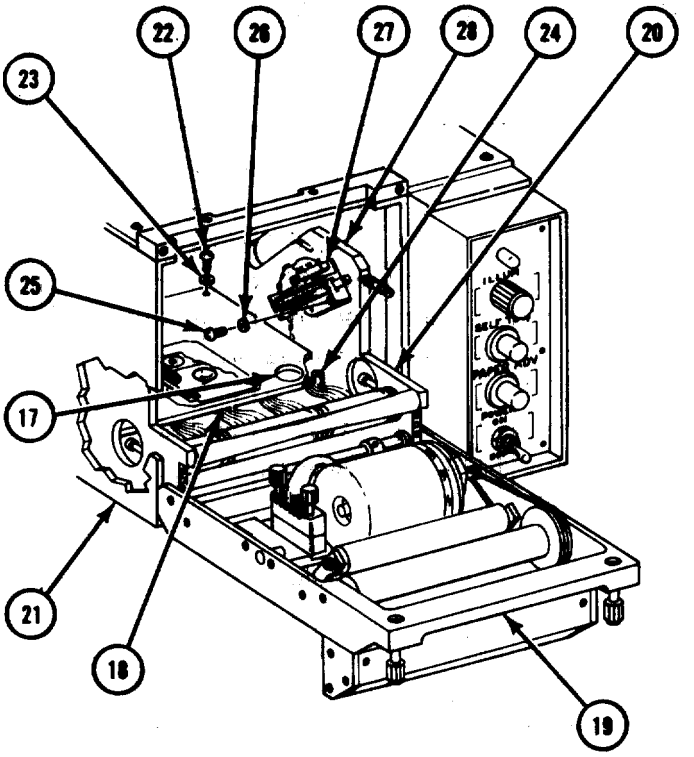
18. Remove four screws (32), four flat-washers (33), and protective plastic (34).

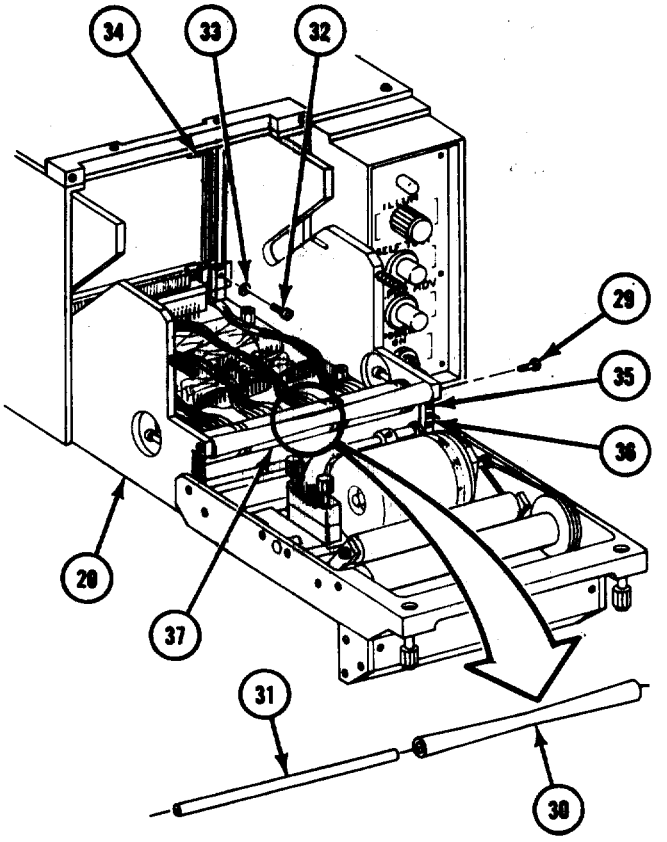
19. Remove two screws (35) and print-head stop (36) from both sides of printer mechanics subassembly (20).

CAUTION

Exercise care in removing print system assembly from the printer. This assembly can be easily damaged by careless mishandling or use of undue force.

20. Carefully remove print system assembly (37) from printer mechanics sub-assembly (20).





2-61. INSTALLING PRINT SYSTEM ASSEMBLY

C A U T I O N

Exercise care in installing print system assembly. This assembly can be easily damaged by the use of undue force during installation or by careless handling. Exercise care in dressing wires so they will not be pinched or jammed by the door or other components of the printer mechanics subassembly. Ensure motor harness assembly is routed to right of standoffs.

1. Carefully install print system assembly (1) into printer machanics subassembly (2).

2. Aline four mounting holes in print system motherboard (3) with standoffs on bottom plate of printer mechanics subassembly (2). Apply retaining compound (item 6, Appx B) to threads of the four standoffs (4) and install.

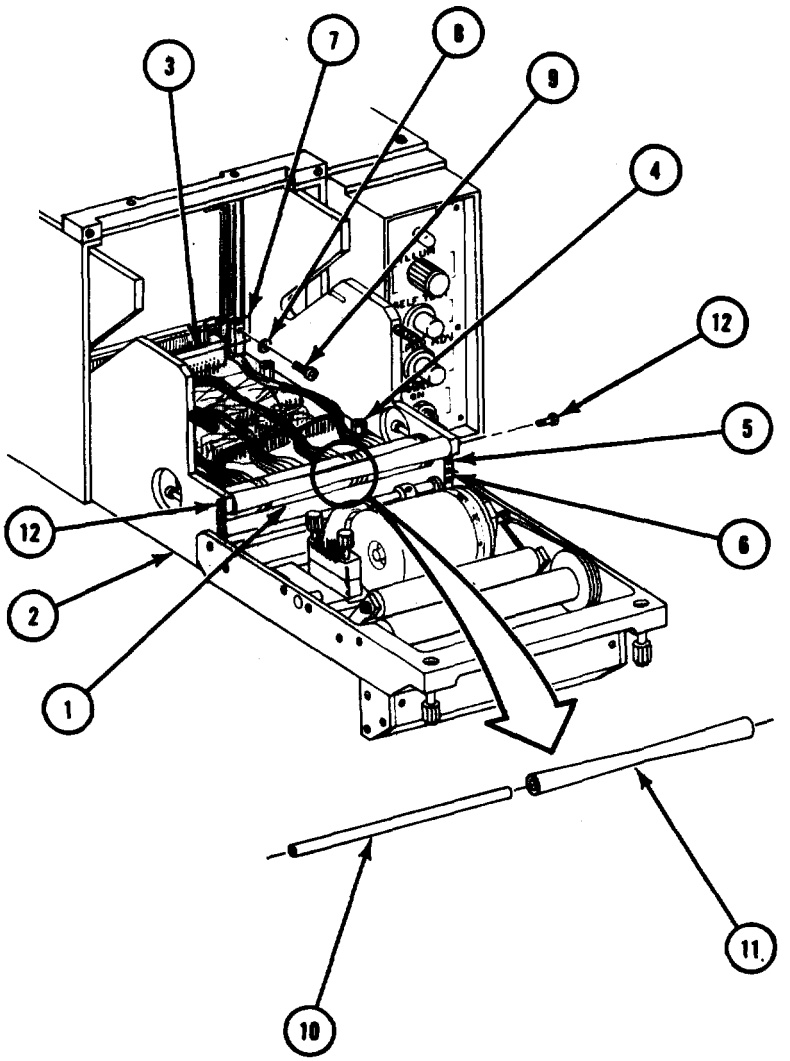
3. Install two screws (5) and printhead stop (6) on each side of printer mechanics subassembly (2).

4. Install protective plastic (7), four flatwashers (8), and four screws (9).

NOTE

Apply retaining compound (item 6, Appx B) to threads of screws in step 5.

5. Aline and insert rod (10) into tracking bar (11). Install tracking bar (11) and two screws (12) into printer mechanics subassembly (2).



NOTE

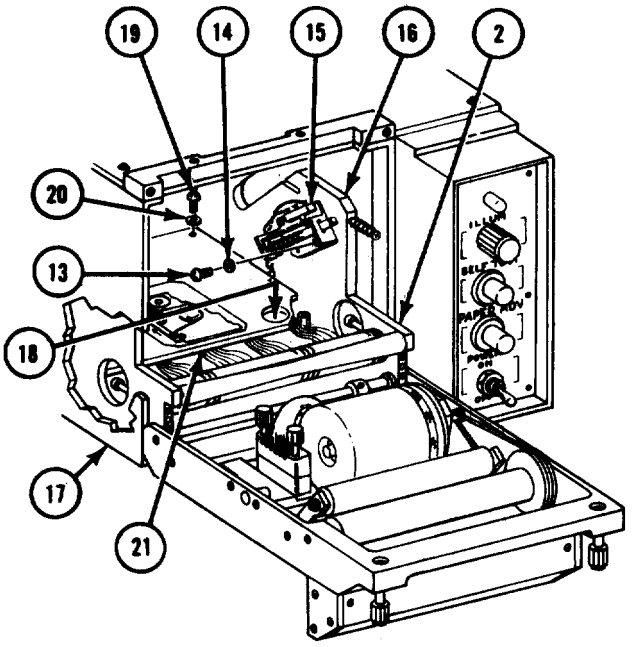
Apply retaining compound (item 6, Appx B) to threads of Screws in steps 6, 9, 10, and 13.

6. Install two screws (13), flatwashers (14) and interlock switch (15) on right side plate (16).

7. Carefully slide printer mechanics subassembly (2) into chassis (17).

8. Tighten two screws (18) to secure bottom plate of printer mechanics subassembly (2) to chassis (17).

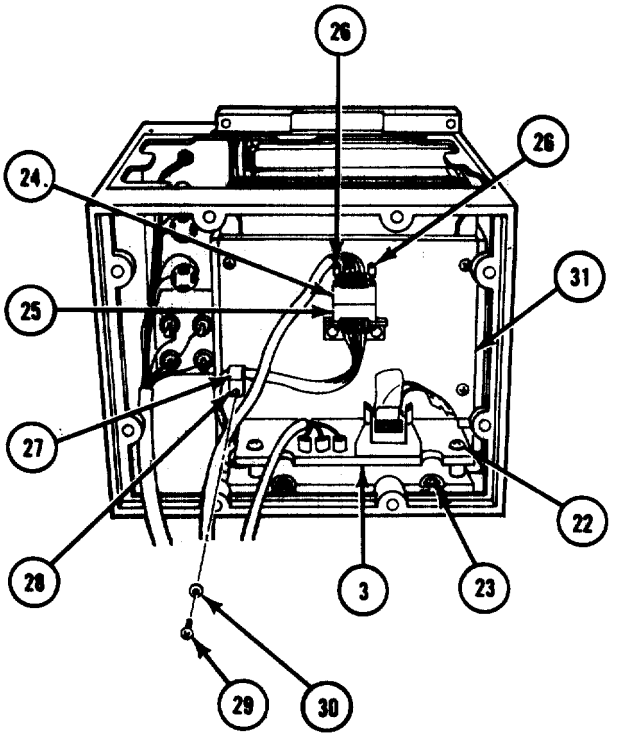
9. Install four screws (19), flatwashers (20), and protective cover (21).



10. Install two screws, flatwashers, and lockwashers (22) on rear of motherboard (3).

11. Tighten two screws (23) through cutouts at rear of print system motherboard (3).

12. Aline connector P10(24) with connector J10(25) and tighten two screws (26), two turns at a time, until tight.



13. Install loop clamp (27), loop washer (28), four flatwashers (29), four screws (30), and back plate (31).

14. Aline and mate connector P17(32) with connector J17(33). Close two retaining arms to secure connectors.

15. Connect three power cable (35) leads to three stud terminals E5, E6, and E7 (36) as tagged. Remove tags.

16. Install finger drive circuit card assemblies (para 2-59).

17. Install logic board (para 2-55).

18. Perform printhead pressure test (para 2-28).

19. Load paper supply. (Refer to TM 11-7021-201-12.)

2-62. REMOVING MOTOR HARNESS ASSEMBLY

1. Separate chassis (para 2-30).

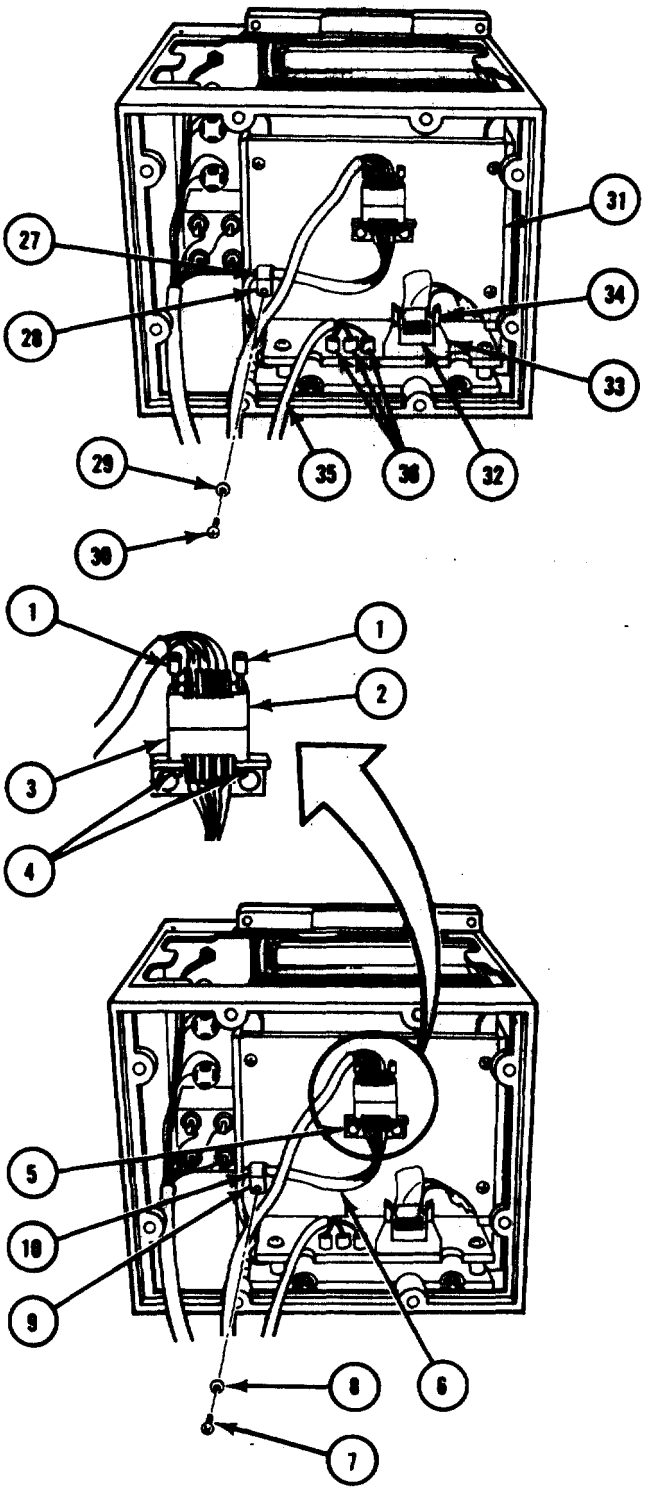
2. Remove logic board (para 2-54).

3. Loosen two screws (1), turning each screw two turns at a time, until connector P10(2) can be removed from connector J10(3).

4. Remove two nuts (4) and connector J10(3) from mounting bracket (5).

5. Tag and cut wires of harness (6) from connector J10(3).

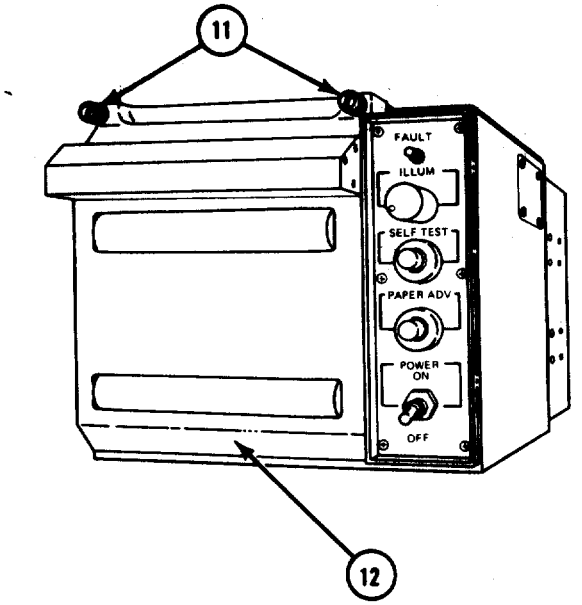
6. Remove screw (7), flatwasher (8), loop washer (9), and loop clamp (10).

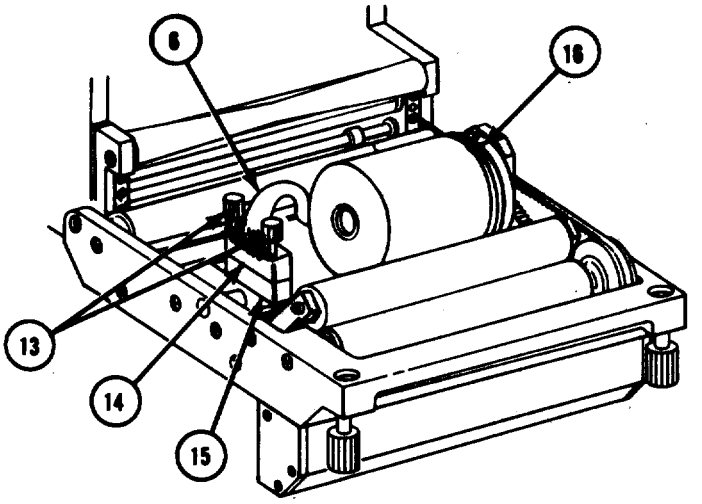


7. Loosen two captive thumbscrews(11) and open door (12).

8. Loosen no screws (13), turning each screw two turns at a time, until connector P11(14) can be removed from connector J11 (15).

9. Remove harness tie (16). Note position of tie so that it goes back in the right place.

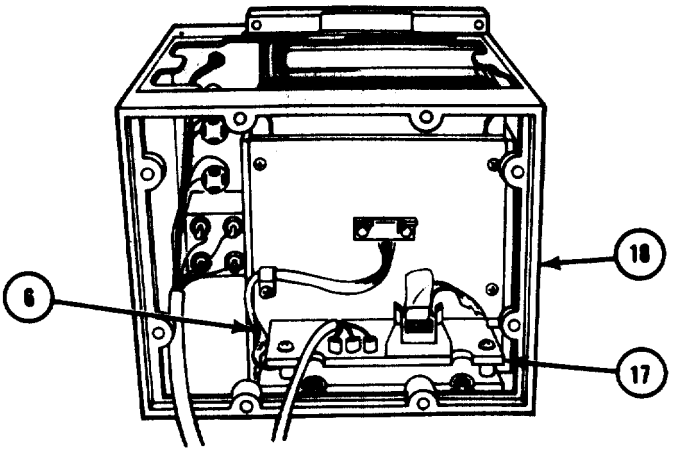




NOTE

Note the way harness is routed in door and under motherboard before it is removed.

10. Carefully pull harness (6) from under print system motherboard (17) and out of chassis (18).



2-63. INSTALLING MOTOR HARNESS ASSEMBLY

1. Route harness (1) in door (2) and under print system motherboard (3) to the J10 mounting bracket (4) as noted during removal.

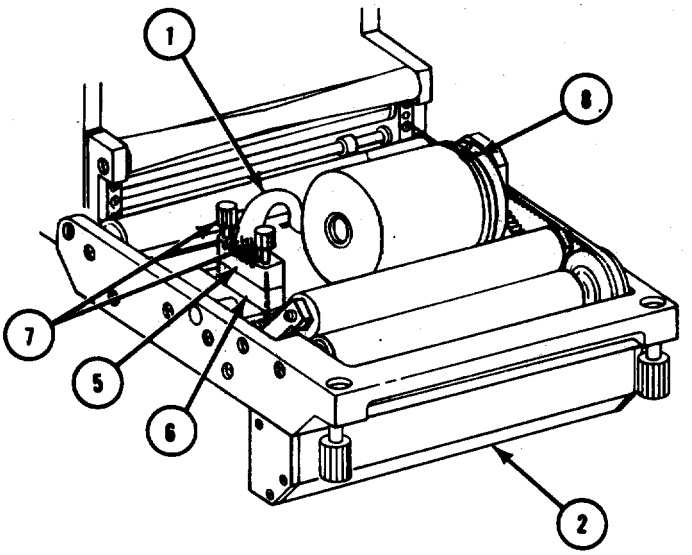
2. Aline connector P11(5) with connector J 11 (6) and tighten two screws (7), two turns as a time, until connector is tight.

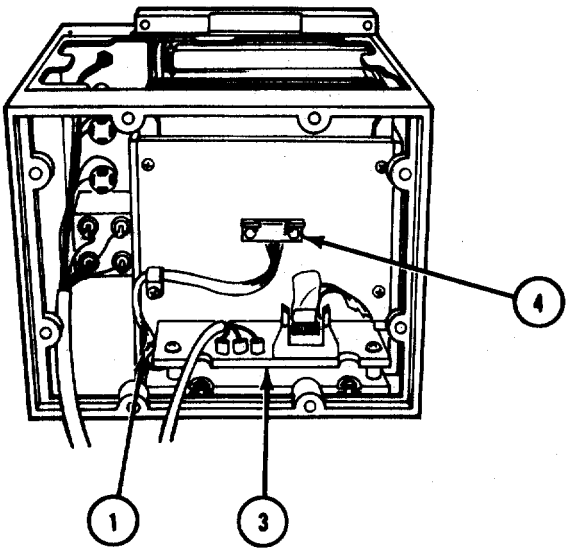
3. Install harness tie (8) in position noted during removal.

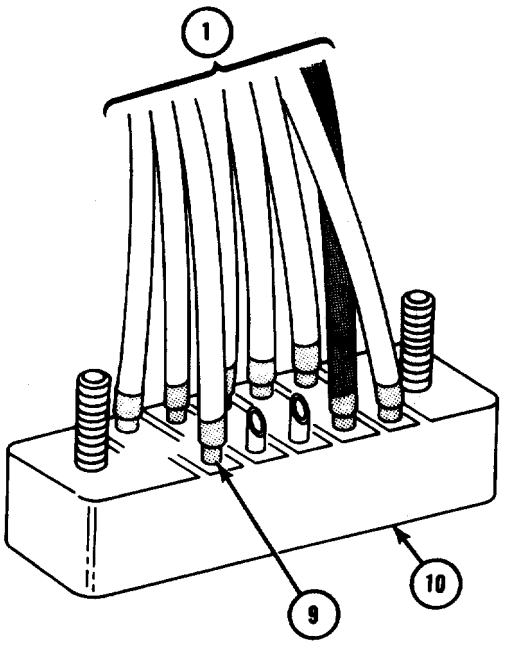
4. Strip and tin ends of harness (1) wires.

5. Slide heat shrinkable tubing (item 8, Appx B) (9), over ends of wires on harness (1).

6. Solder wires of harness (1) to pins on connector J10(10) as tagged. Slide heat shrinkable tubing over solder joints and apply heat. Remove tags.







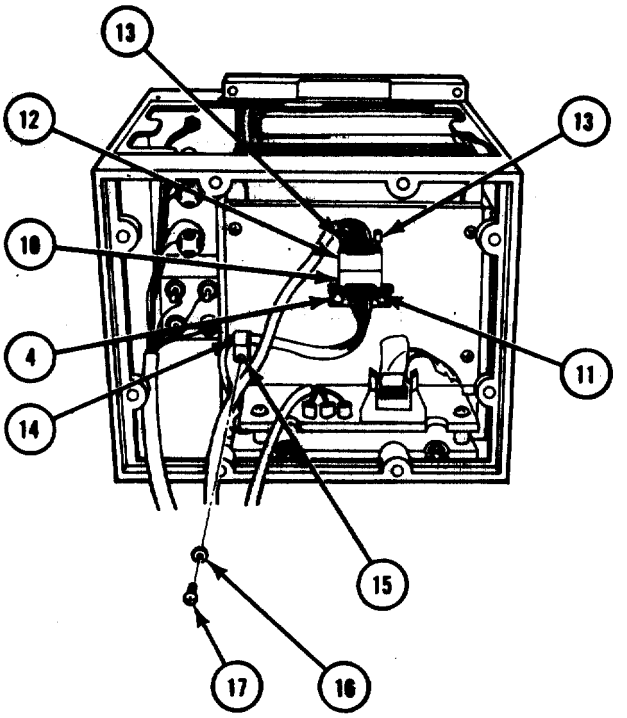
7. Install connector J10(10) and two nuts (11) on mounting bracket (4).

8. Aline connector P10(12) with connector J10(10) and tighten two screws (13), two turns at a time, until tight.

NOTE

Remove any excess slack in harness in door and under motherboard.

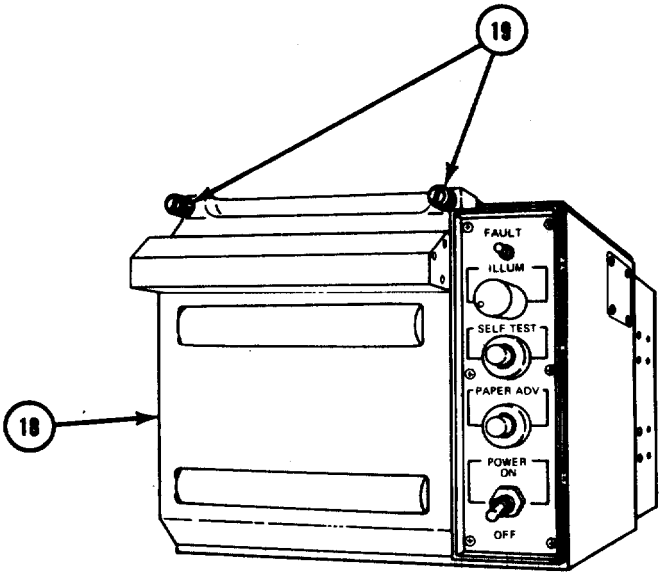
9. Install loop clamp (14), loop washer (15), flatwasher (16), and screw (17).



10. Install logic board (para 2-55).

11. Join chassis (para 2-31).

12. Close door (18) and tighten two captive thumbscrews (19).

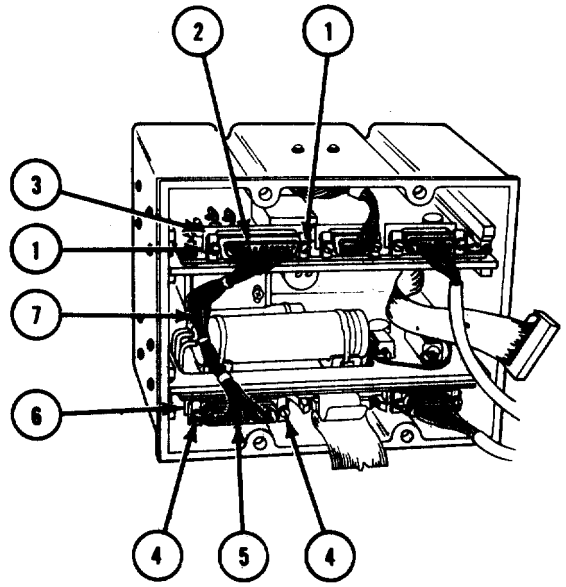


2-64. REMOVING POWER SUPPLY INTERCONNECT CABLE ASSEMBLY

WARNING

Turn off power before working on equipment. Failure to do so can cause serious injury to personnel.

1. Set POWER ON/OFF circuit breaker to OFF.
2. Disconnect printer from power source.
3. Separate chassis (para 2-30).
4. Loosen two screws (1), turning each screw two turns at a time until connector P7(2) can be removed from connector J7(3).
5. Loosen two screws (4), turning each screw two turns at a time until connector P8(5) can be removed from connector J8(6).
6. Remove cable assembly (7) from power supply.



2-65. INSTALLING POWER SUPPLY INTERCONNECT CABLE ASSEMBLY

1. Aline connector P8(5) with connector J8(6) and tighten two screws (4), two turns at a time until the connector is tight.
2. Aline connector P7(2) with connector J7(3) and tighten two screws (1), two turns at a time until the connector is tight.
3. Join chassis (para 2-31).

2-66. REMOVING POWER SUPPLY

WARNING

Turn off power before working on equipment. Failure to do so can cause serious injury to personnel.

1. Set POWER ON/OFF circuit breaker to OFF.
2. Disconnect printer from power source.
3. separate chassis (para 2-30).

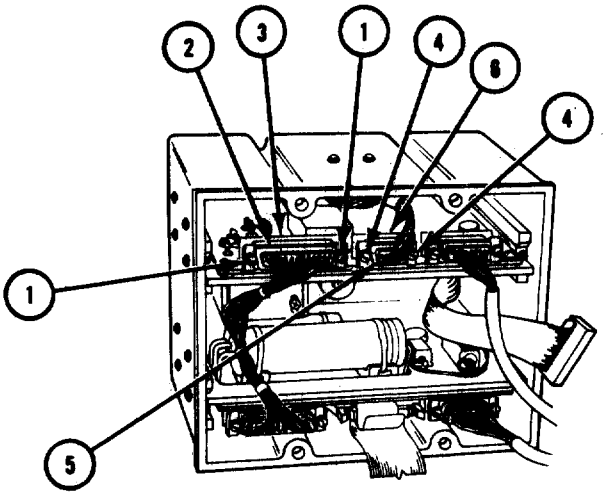
NOTE

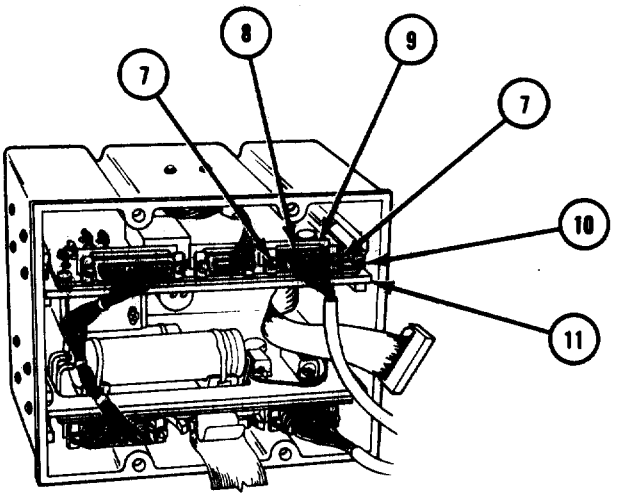
Perform steps 4 thru 9 to remove only converter assembly.

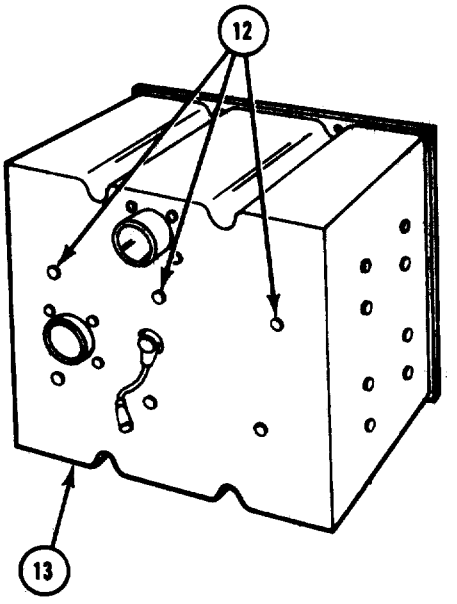
4. Loosen two screws (1), turning each screw two turns at a time, until connector P7(2) can be removed from connector J7(3).
5. Loosen two screws (4), turning each screw two turns at a time, until harness connector P6(5) can be removed from connector J6(6).
6. Loosen two screws (7), turning each screw two turns at a time, until connector P4(8) can be removed from connector J4(9).
7. Loosen wedgelock screw (10) on each side of converter assembly (11).
8. Remove three screws, lockwashers, and flatwashers (12) from Power supply chassis (13).
9. Carefully pull converter assembly (11) from power supply chassis (13).

NOTE

Perform steps 10 thru 16 to remove only power control assembly.

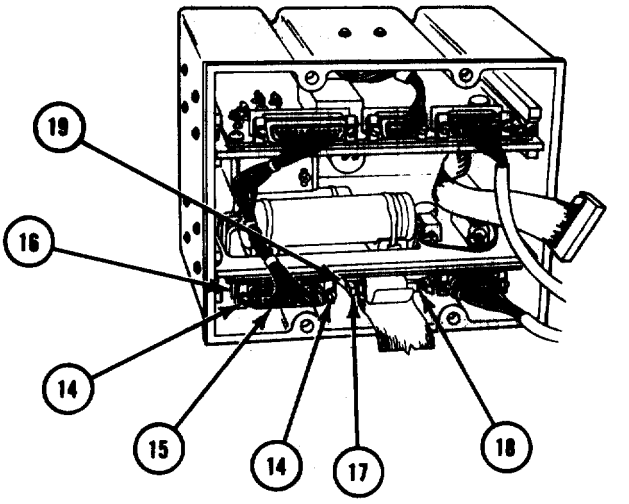






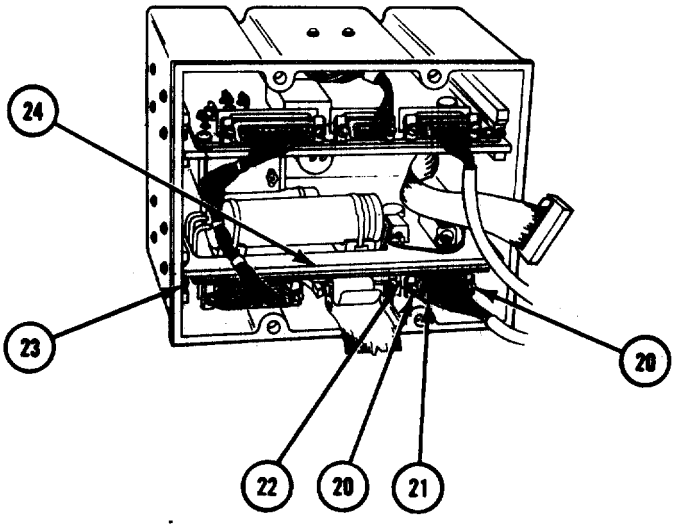
10. Loosen two screws (14), turning each screw two turns at a time, until connector P8(15) can be removed from connector J8(16).

11. Open two retaining arms (17) and remove connector P3(18) from connector J3(19).



12. Loosen two screws (20), turning each screw two turns at a time, until connector P5(21) can be removed from connector J5(22).

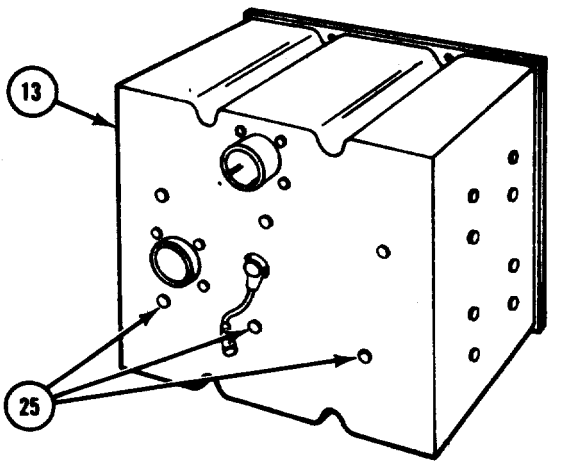
13. Loosen wedgelock screw (23) on each side of power control assembly (24).



14. Remove three screws, lockwashers, and flatwashers (25) from power supply chassis (13).

15. Carefully pull power control assembly (24) from power supply chassis (13).

16. Remove power cable from power control assembly (para 2-72).

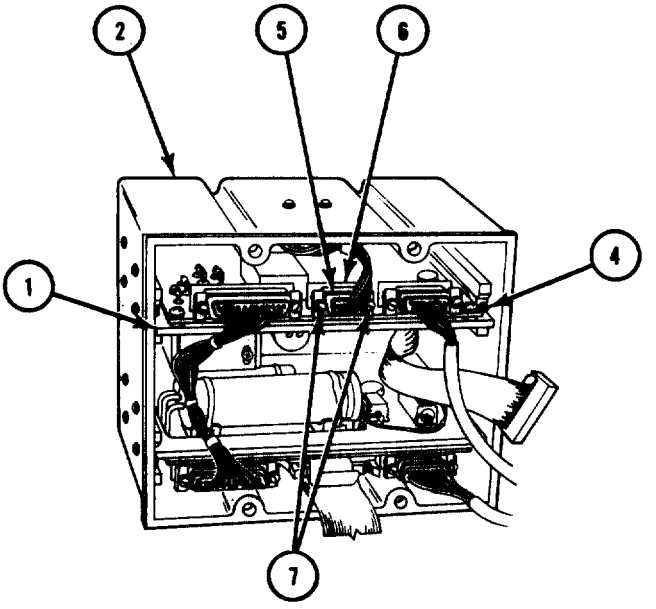


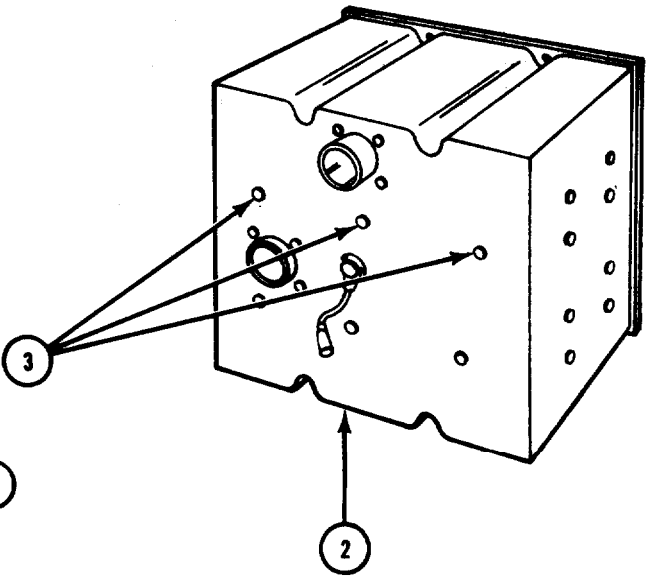
2-67. INSTALLING POWER SUPPLY

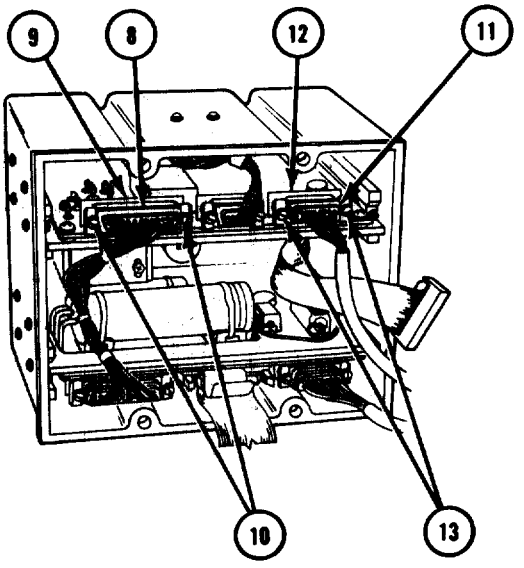
NOTE

Perform steps 1 thru 6 if only converter assembly was previously removed.

1. Slide converter assembly (1) into power supply housing (2).
2. Install three screws, lockwashers; and flatwashers (3) into power supply housing (2) to secure converter assembly (1).
3. Tighten wedgelock screw (4) on each side of converter assembly (1).
4. Aline connector P6(5) to connector J6(6) and tighten two screws (7), two turns at a time, until connector is tight.
5. A line connector P7(8) with connector J7(9) and tighten two screws (10), two turns at a time, until connector is tight.
6. Aline connector P4 (11) with connector J4(12) and tighten two screws (13), two turns at a time, until connector is tight.







NOTE

Perform steps 7 thru 13 if only power control assembly was previously removed.

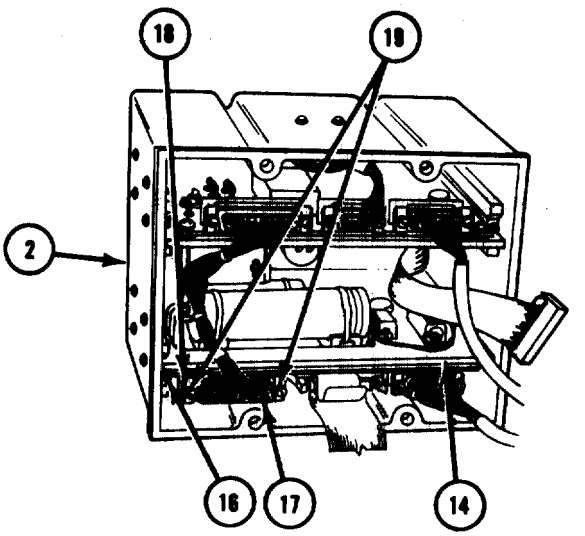
7. Install power cable on power control assembly (para 2-73).

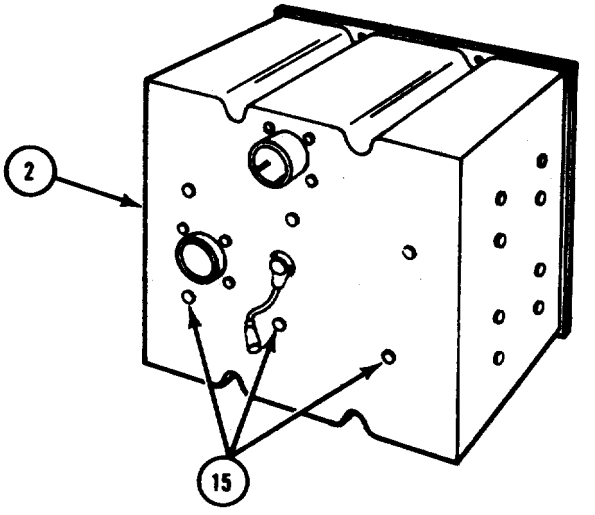
8. Slide power control assembly (14) into power supply housing (2).

9. Install three screws, lockwashers, and flatwashers (15) into power supply housing (2) to secure power control assembly (14).

10. Tighten wedgelock screw (16) on each side of power control assembly (14).

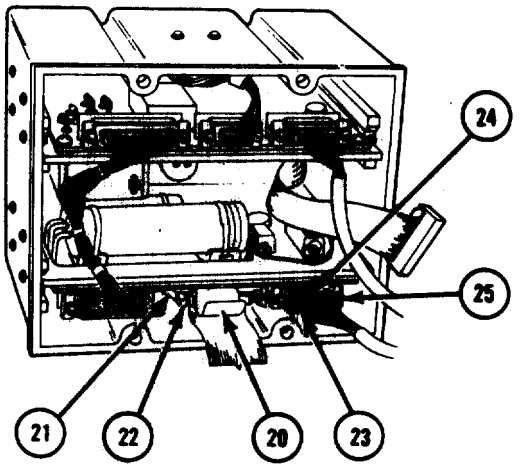
11. Aline connector P8(17) with connector J8(18) and tighten two screws (19), two turns at a time, until connector is tight.





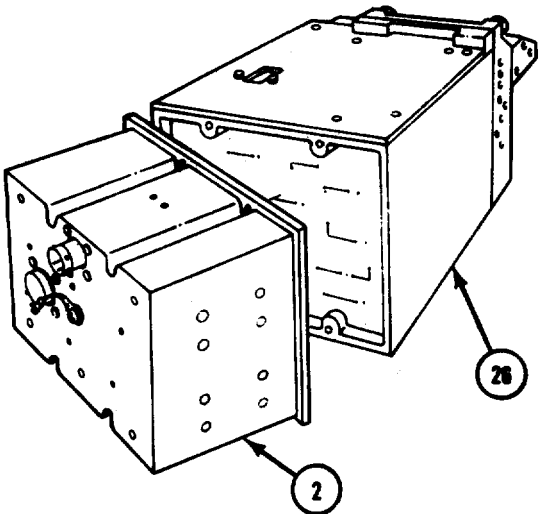
12. Aline and mate connector P3(20) to connector J3(21). Close two retaining arms (22) to secure connectors.

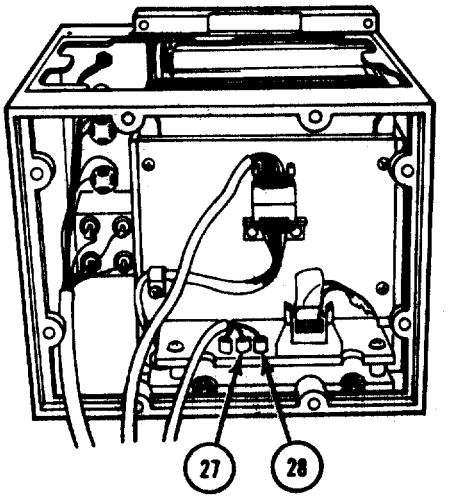
13. Aline connector P5(23) with connector J5(24) and tighten two screws (25), two turns at a time, until connector is tight.



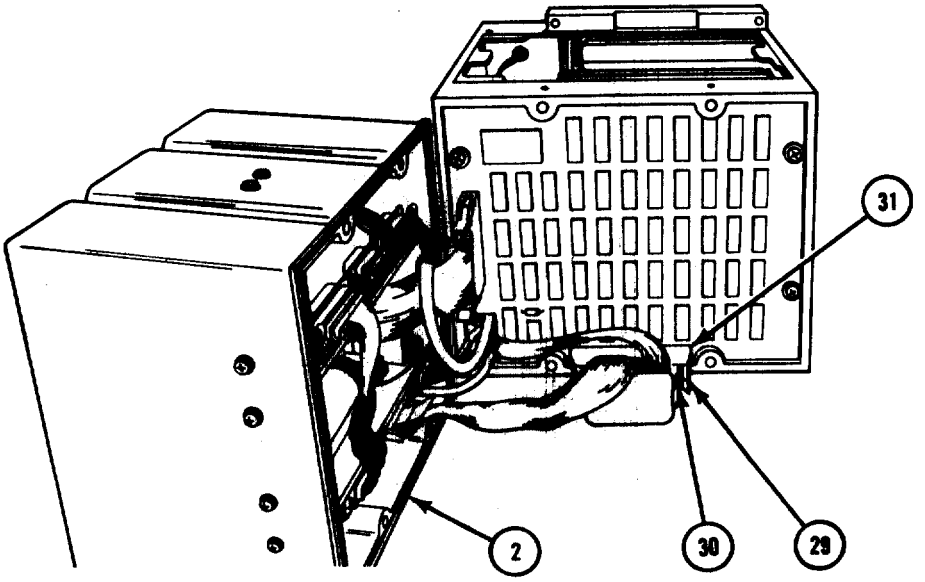
Perform checks in steps 14 thru 19 before joining chassis or connecting printer to power source.

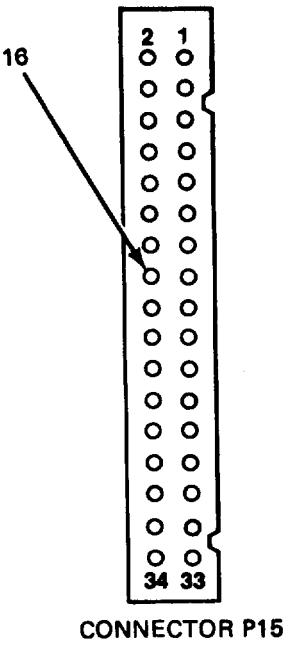
14. Check for continuity between power supply chassis (2) and printer chassis (26).
15. Check for 1000 ohms minimum between stud terminal E6(27) and power supply chassis (2).
16. Check for 1000 ohms minimum between stud terminal E7(28) and power supply chassis (2).





17. Open two retaining arms(29) and remove connector p15(30) from connector J15(31)
18. Check for 10 ohms minimum between pin 16 of connector P15 and power supply chassis (2).
19. Aline and mate connector P15(30) to connector J15(31). Close two retaining arms (29) to secure connectors.
20. Join chassis (para 2-31).





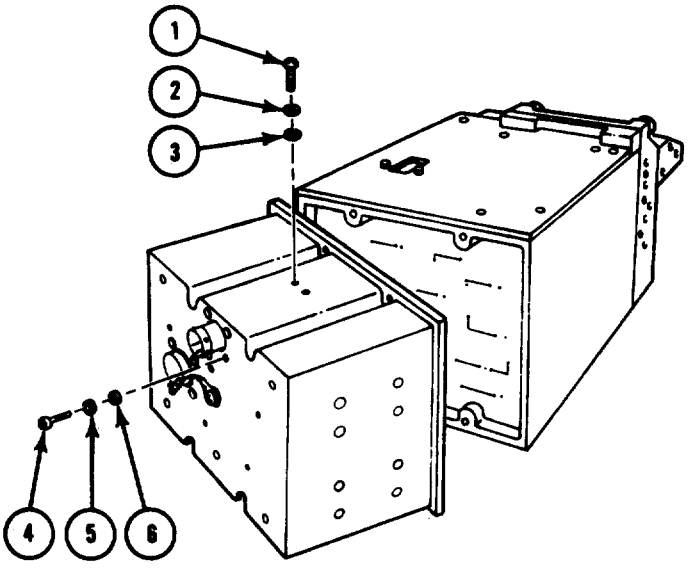
CONNECTOR P15

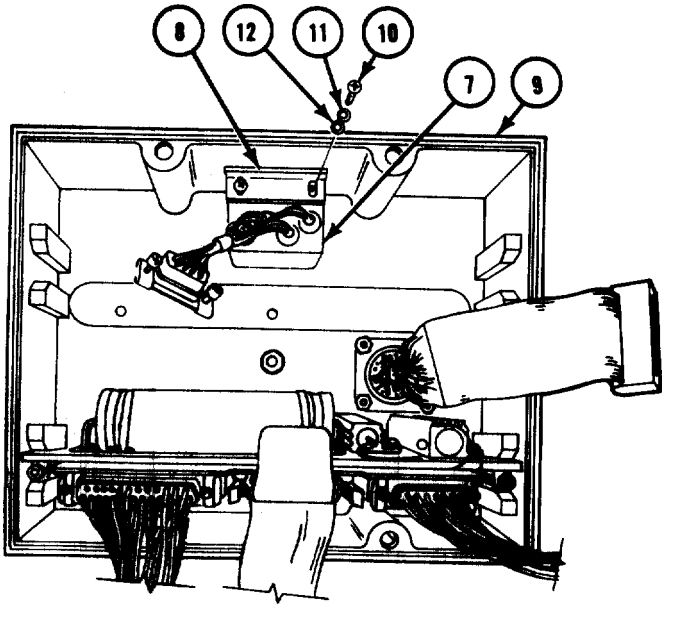
2-68. REMOVING INPUT POWER FILTER ASSEMBLY

WARNING

Turn off power before working on equipment. Failure to do so can cause serious injury to personnel.

1. Set POWER ON/OFF circuit breaker to OFF.
2. Disconnect printer from power source.
3. Separate chassis (para 2-30).
4. Remove power supply converter assembly (para 2-67).
5. Remove two screws (1), two lockwashers (2), and two flatwashers (3).
6. Remove four screws (4), four lockwashers (5), and four flatwashers (6).
7. Carefully remove input power filter assembly (7) and mounting bracket (8) from power supply chassis (9).
8. Remove two screws (10), two lockwashers (11), two flatwashers (12), and mounting bracket (8) from input power filter assembly (7).

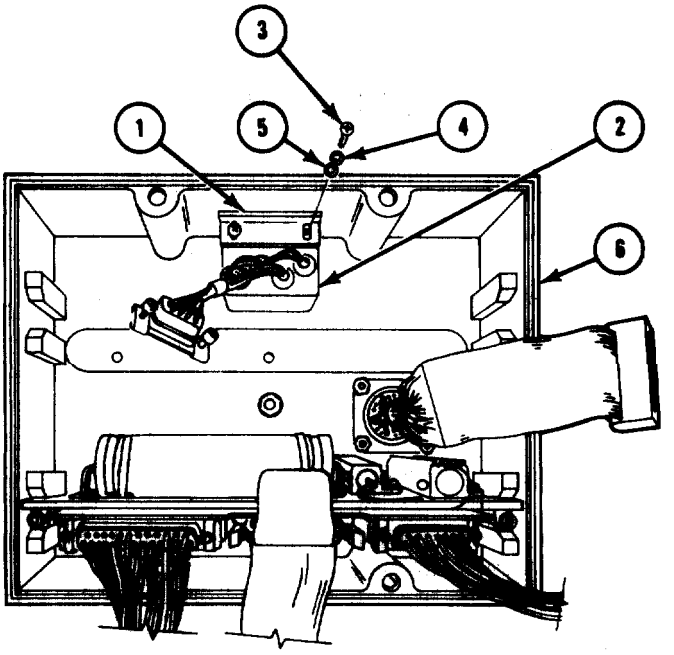




2-69. INSTALLING INPUT POWER FILTER ASSEMBLY

1. Secure mounting bracket (1) to input power filter assembly (2) with two screws (3), lockwashers (4), and flatwashers (5).

2. Position input power filter assembly (2) into power supply housing (6) and aline mounting holes.

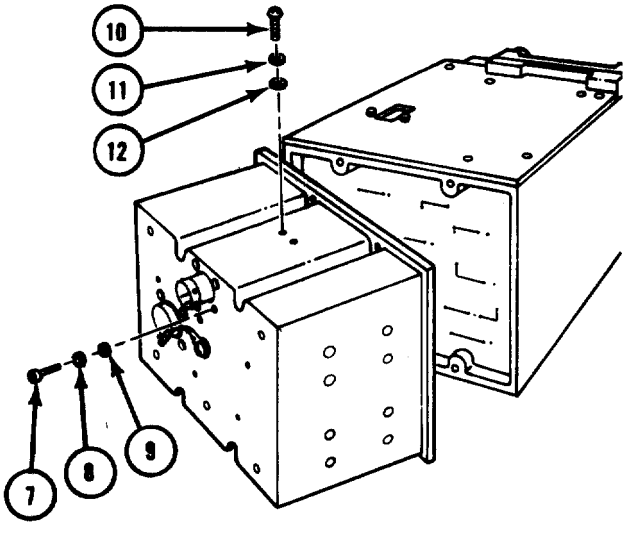


3. Install four screws (7), lockwashers (8), and flatwashers (9).

4. install two screws (10), lockwashers (1 1), and flatwashers (12).

5. Install power supply converter assembly (para 2-67).

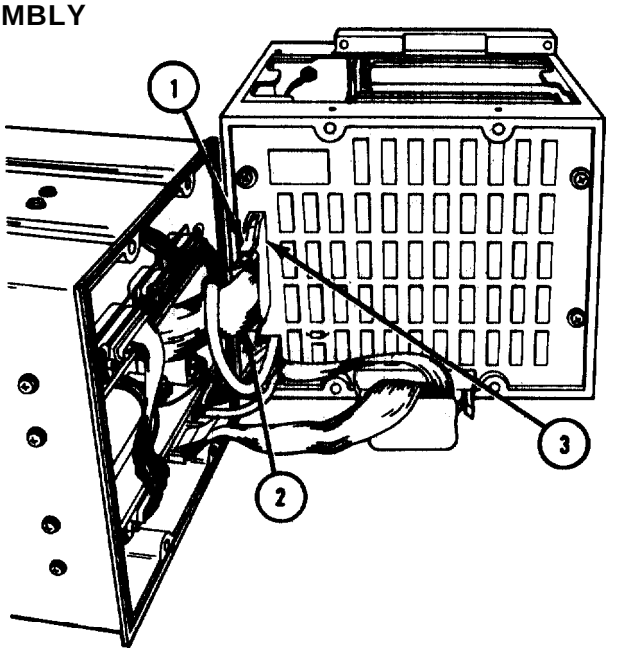
6. Join chassis (para 2-31).



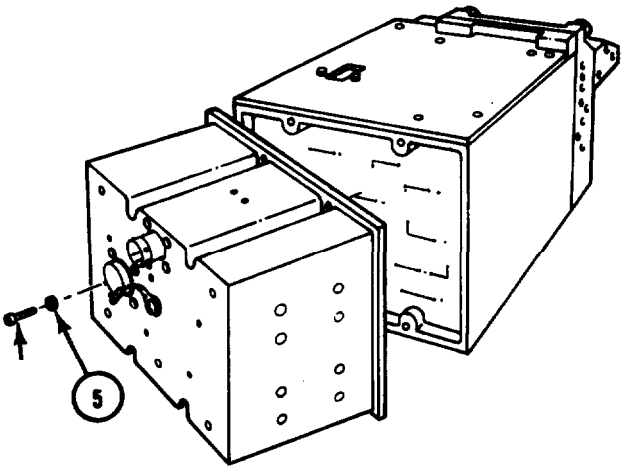
2-70. REMOVING INPUT DATA CABLE ASSEMBLY

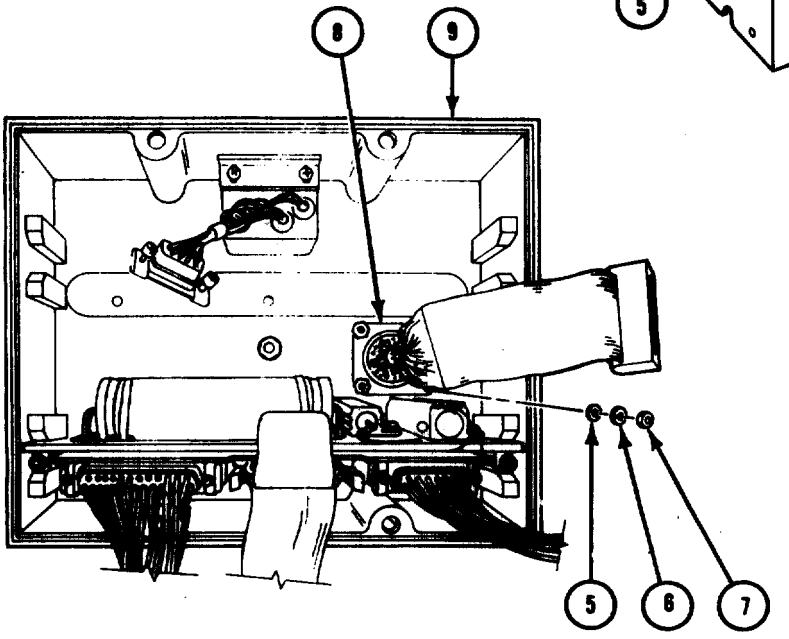
WARNING

Turn off power before working on equipment. Failure to do so can cause serious injury to personnel.



1. **Set POWER ON/OFF circuit breaker to OFF.**
2. **Disconnect printer from power source.**
3. **Separate chassis (para 2-30).**
4. **Open clamp (1) and remove connector P16(2) from connector J16(3).**
5. **Remove power converter assembly (para 2-66).**
6. **Remove four screws (4), eight flat-washers (5), four lockwashers (6), and four nuts (7).**
7. **Carefully remove input data cable assembly (8) from power supply housing (9).**



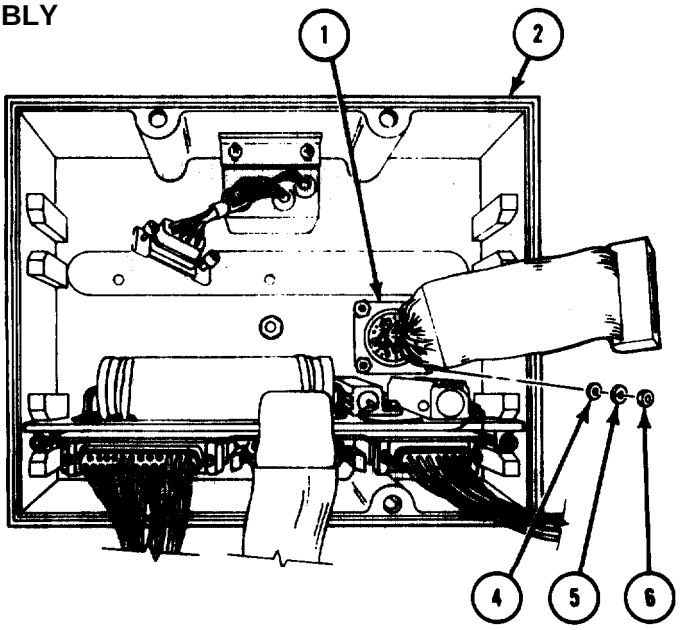


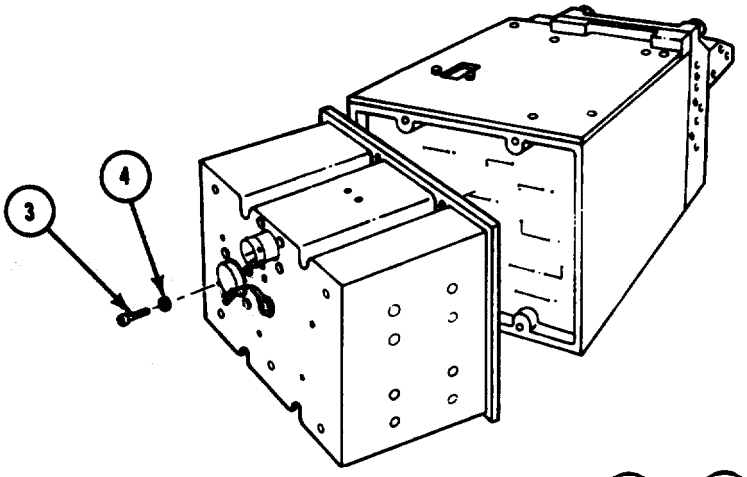
2-71. INSTALLING INPUT DATA CABLE ASSEMBLY

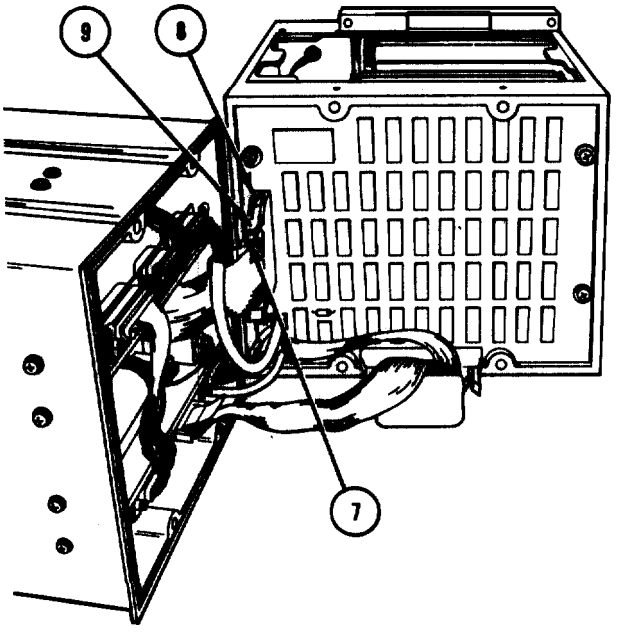
1. Install input data cable assembly (1) into power supply chassis (2) and aline mounting holes.

2. Install four screws (3), eight flat-washers (4), four lockwashers (5), and four nuts (6).

3. Install power converter assembly (para 2-67).







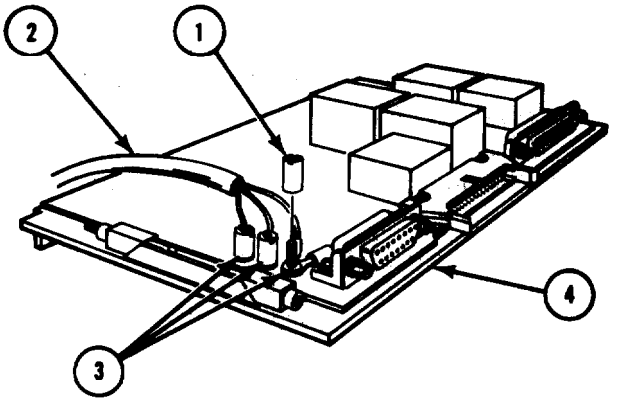
4. Aline and mate connector p16(7) to connector J16(8). Close two retaining arms (9) to secure connectors.

5. Join chassis (para 2-31).

2-72. REMOVING POWER CABLE

WARNING

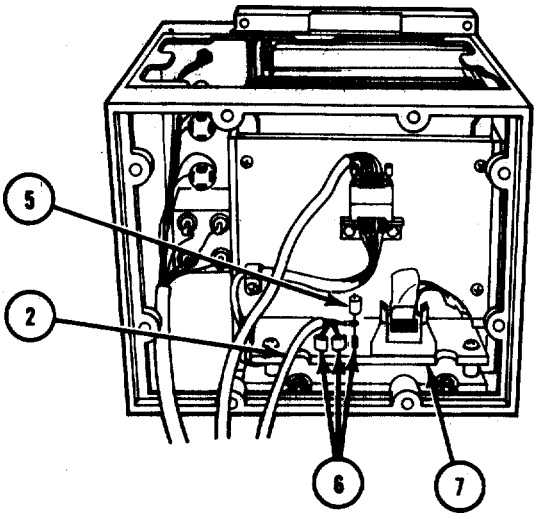
Turn off power before working on equipment. Failure to do so can cause serious injury to personnel.



1. **Set POWER ON/OFF circuit breaker to OFF.**
2. **Disconnect printer from power source,**
3. **Remove logic board (para 2-54).**
4. **Remove power control assembly (para 2-66).**

NOTE

In steps 5 and 6, make note of color-coding on power cable leads before removing.



5. **Remove three nuts (1) and power cable (2) leads from stud terminals E2, E3, and E4 (3) on power control assembly (4).**
6. **Remove three nuts (5) and power cable (2) leads from stud terminals E5, E6, and E7 (6) from print system motherboard (7).**

2-73. INSTALLING POWER CABLE

1. **Connect power cable (2) leads E5, E6, and E7 to corresponding stud terminals (6) on print system motherboard (7). Apply retaining compound (item 7, App B) to stud terminals and install three nuts (5).**
2. **Connect power cable (2) leads E2, E3, and E4 to corresponding stud terminals (3) on power control assembly (4). Apply retaining compound (item 7, App B) to stud terminals and install three nuts (1).**
3. **Install power control assembly (para 2-67).**
4. **Install logic board (para 2-55).**

2-74. REMOVING MOTOR/TAKE-UP CABLE ASSEMBLY

WARNING

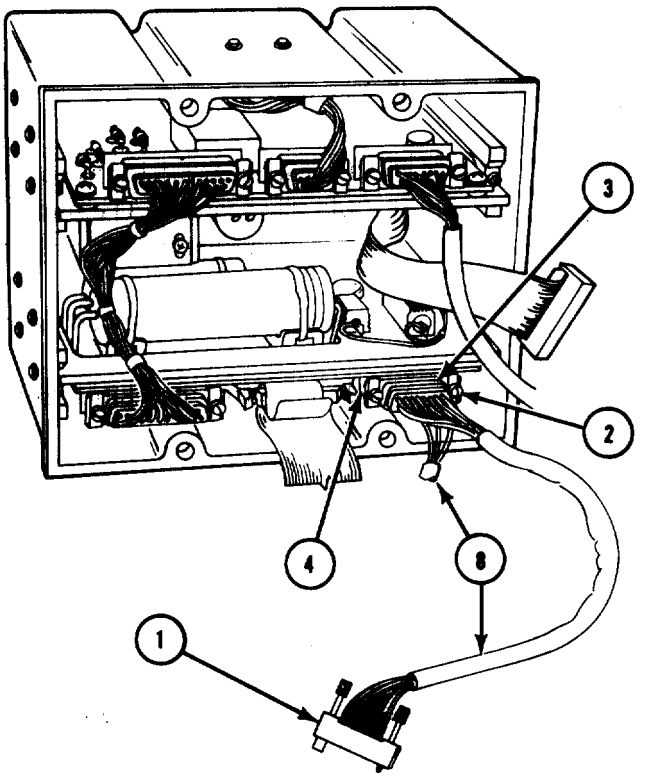
Turn off power before working on equipment. Failure to do so can cause serious injury to personnel.

1. **Set POWER ON/OFF circuit breaker to OFF.**
2. **Disconnect printer from power source.**
3. **Remove logic board (para 2-64).**

NOTE

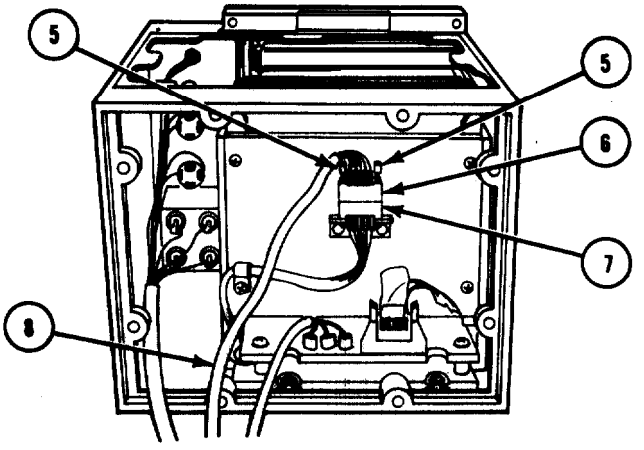
Connector P9(1) is not used. Note its routing and location.

4. **Loosen two screws (2), turning each screw two turns at a time, until connector p5(3) can be removed from connector J5(4).**
5. **Loosen two screws (5), turning each screw two turns at a time, until connector P1O(6) can be removed from connector J1O(7).**
6. **Remove cable assembly (8) from printer.**



2-75. INSTALLING MOTOR/TAKE-UP CABLE ASSEMBLY

1. **Aline connector P1O(6) with connector J1O(7) and tighten two screws (5), two turns at a time, until connector is tight.**
2. **Aline connector P5(3) with connector J5(4) and tighten two screws (2), two turns at a time, until connector is tight.**



NOTE

Connector P9(1) is not used. Route and locate as noted in removal.

3. **Install logic board (para 2-55).**

2-76. I/0 CONNECTOR REPAIR

a. **Removing I/0 Connector.**

1. Remove input data cable assembly (para 2-70).

b. **Repairing I/0 Connector.**

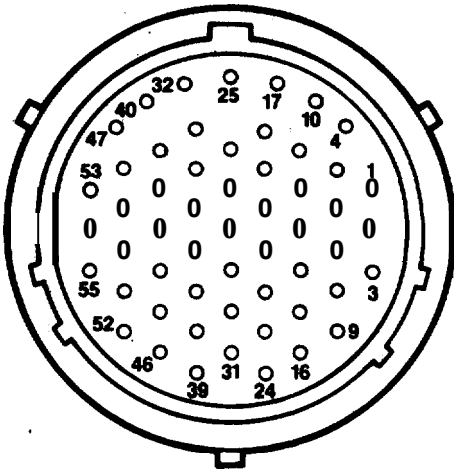
NOTE

Procedure given in the following steps is for replacement of pin insert(s) on I/0 connector and is typical for replacement of socket insert(s) or pin insert(s) on the following:

- Power cable connector

If more than one pin or socket insert is to be replaced, tag each wire.

1. Locate socket insert(s) to be replaced.



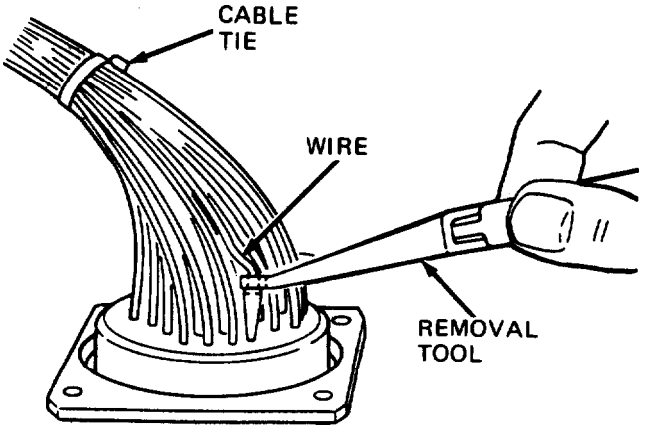
CONNECTOR FRONT VIEW

CAUTION

When removing cable tie, be careful not to cut wires.

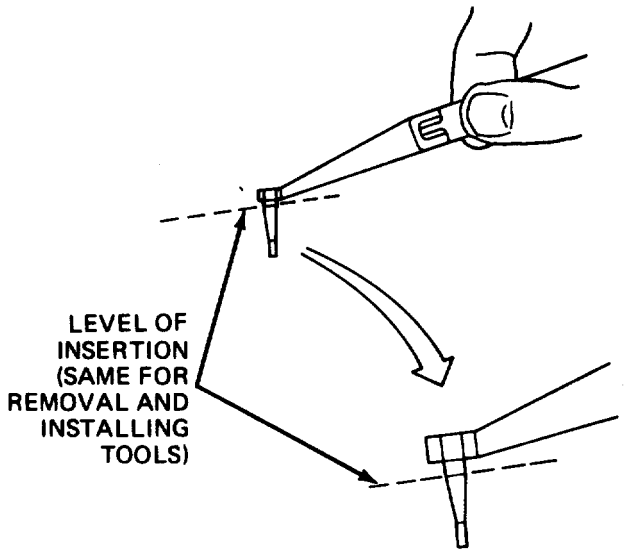
2. Cut cable tie to gain access to wires.

3. Aline wire of pin insert to be removed with slotted part of REMOVAL TOOL, as shown.



CAUTION

If REMOVAL TOOL does not enter connector to depth shown, only wire may be seized. If this happens, wire could be extracted without pin insert.



NOTE

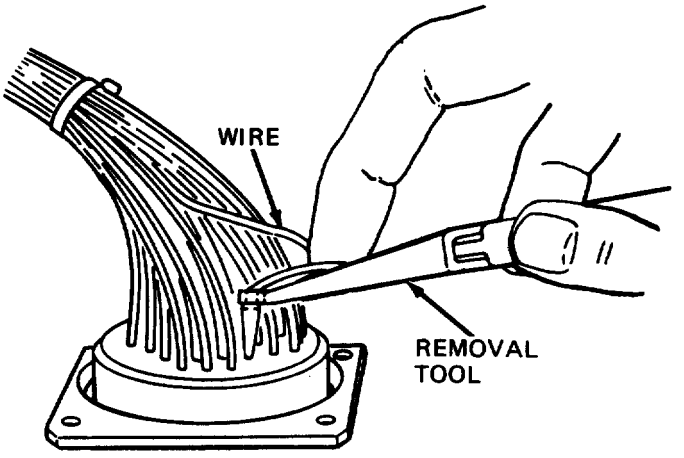
REMOVAL TOOL will seat midway between the two bevels when removing a socket insert from a connector.

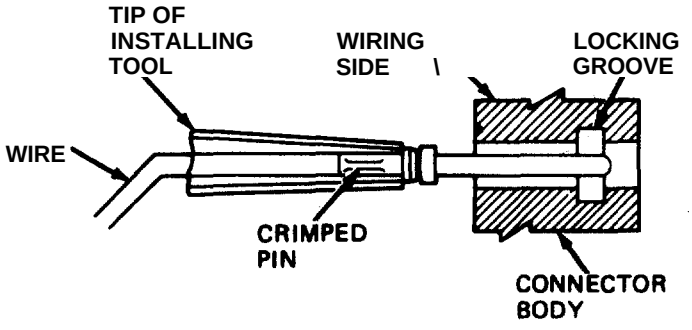
4. **Insert REMOVAL TOOL into pin insert hole to level of insertion shown.**

NOTE

When removing pin insert, hold wire against REMOVAL TOOL, as shown.

5. **Press front part of REMOVAL TOOL together to grasp pin insert, Hold wire against tool, as shown, and lift out tool with pin insert.**





6. Cut off damaged pin insert as close to crimped end as possible.

7. Strip 3/32 to 1/8 inch of insulation from end of wire.

8. Put replacement pin insert on stripped end of wire.

9. Crimp pin insert.

10. Place wire with attached pin insert in tip of INSTALLING TOOL, as shown.

NOTE

The INSTALLING TOOL is inset into connector the same depth as the REMOVAL TOOL.

11, Install pin insert into connector.

12. Give wire a slight pull to make sure pin insert is locked in place.

13. Replace cable tie.

c. Installing 1/0 Connector.

1. Install input data cable assembly (para 2-71).

2-77. POWER CABLE REPAIR

NOTE

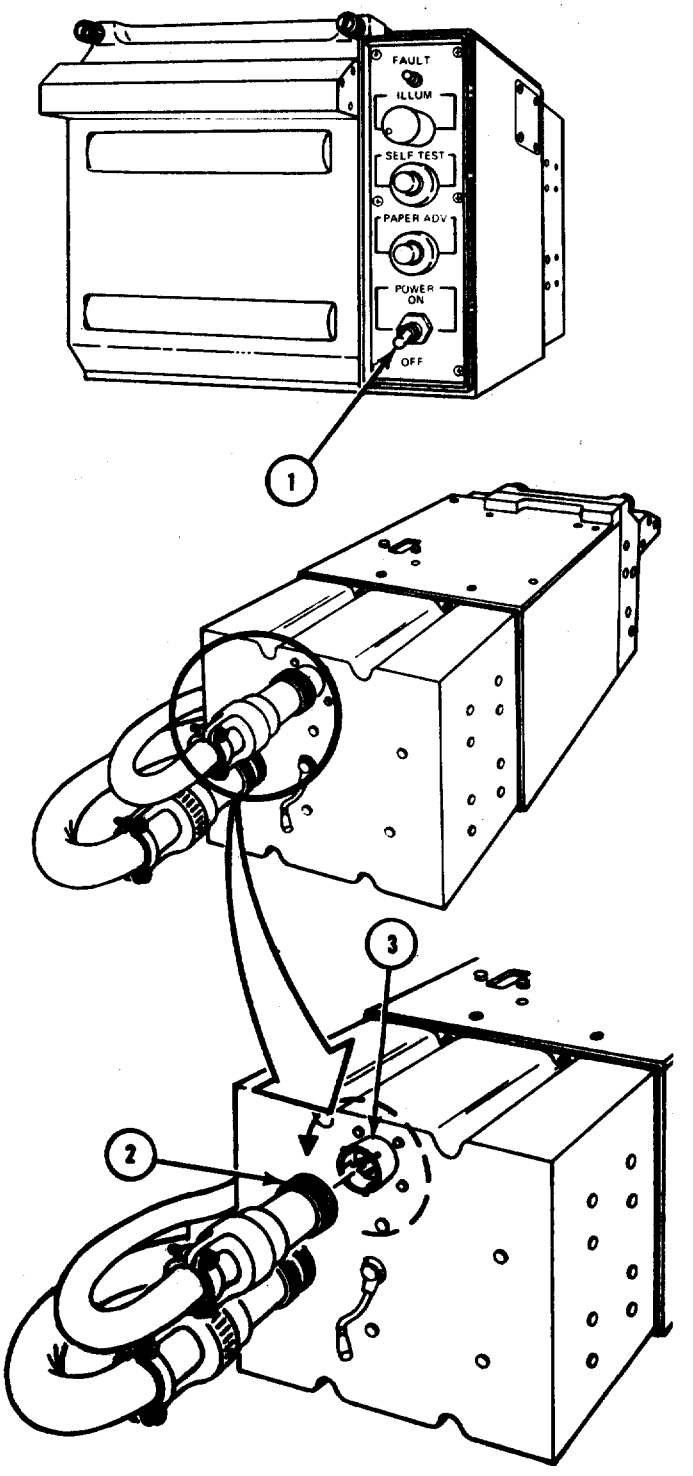
Repair consists of removing and installing socket inserts on power cable connector. Molded rubber end of power cable is not repairable.

a. Removing Power Cable.

WARNING

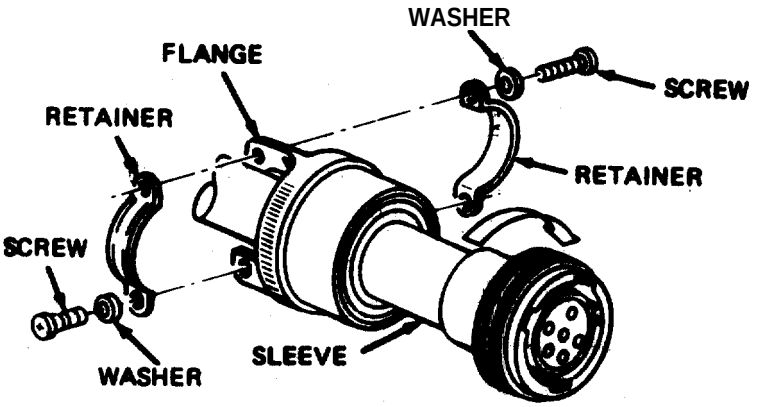
Turn off power before working on equipment. Failure to do so can cause serious injury to personnel.

1. Set POWER ON/OFF circuit breaker (1) to OFF.
2. Disconnect printer from power source.
3. Turn knurled ring (2) to the left and remove power cable from connector (3).



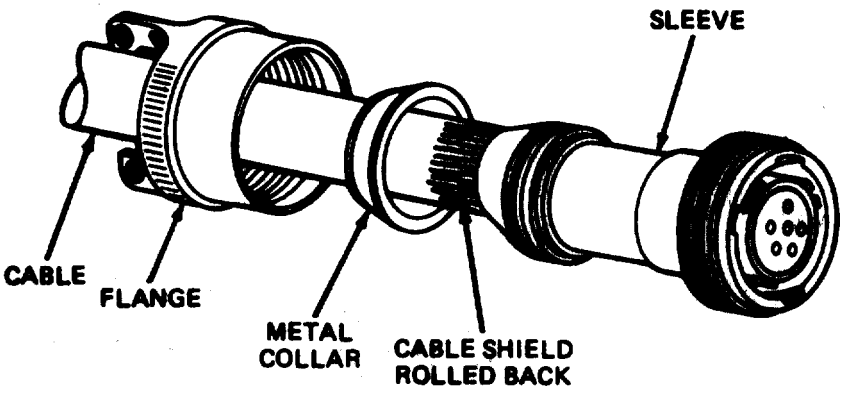
b. Repairing Power Cable Connector.

1. Remove two screws, two washers, and two retainers from flange, noting that screws enter from opposite sides of flange.



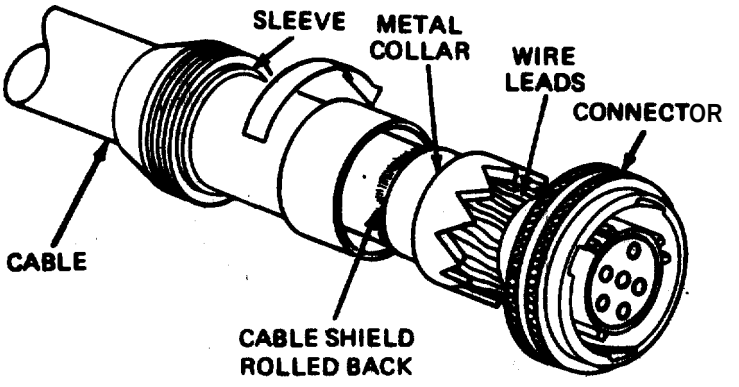
2. While clamping sleeve, turn flange in direction of arrow and unscrew.

3. Slide flange with its metal collar back on cable. This exposes cable shield over narrowing end of sleeve.

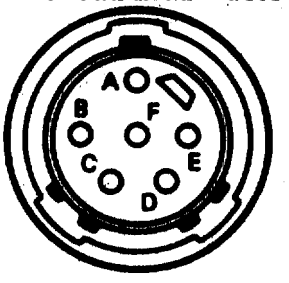


4. Roll back cable shield from narrow end of sleeve and flatten on cable.

5. Clamp inside of connector and turn sleeve in direction of arrow to separate it from connector.



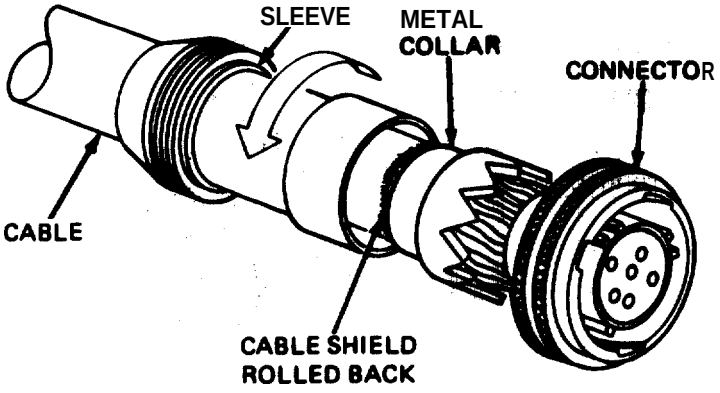
6. Slide motel Collar back on cable. This exposes wire lead to connector.



CABLE CONNECTOR FRONT VIEW

7. Locate socket insert(s) to be replaced.

8. Replace damaged socket insert(s) (para 2-76).



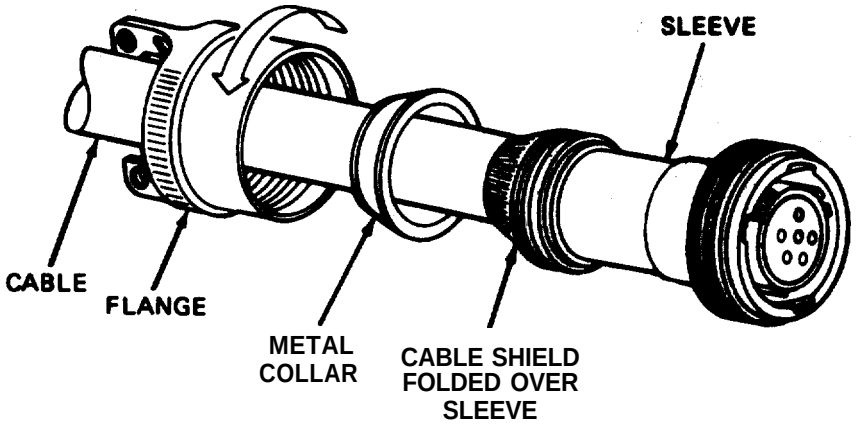
9. Slide metal collar forward against back of connector.

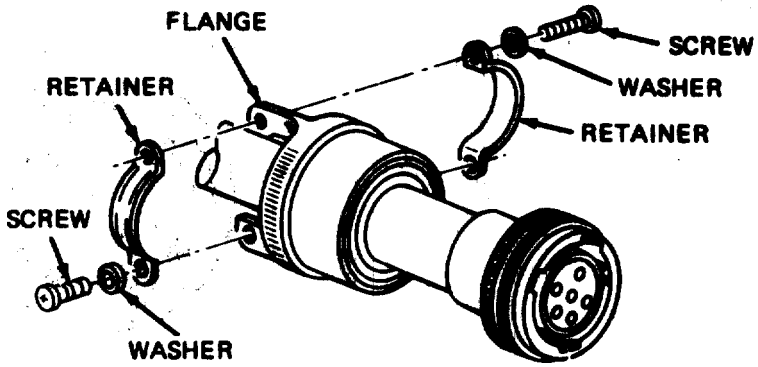
10. Clamp inside connector and screw sleeve onto connector, turning itin direction of arrow.

11. Remove any cable shield from under sleeve and fold it over end of sleeve.

12. Slide flange with its metal collar over sleeve.

13. Clamp sleeve and screw flange onto sleeve by turning it in direction of arrow.





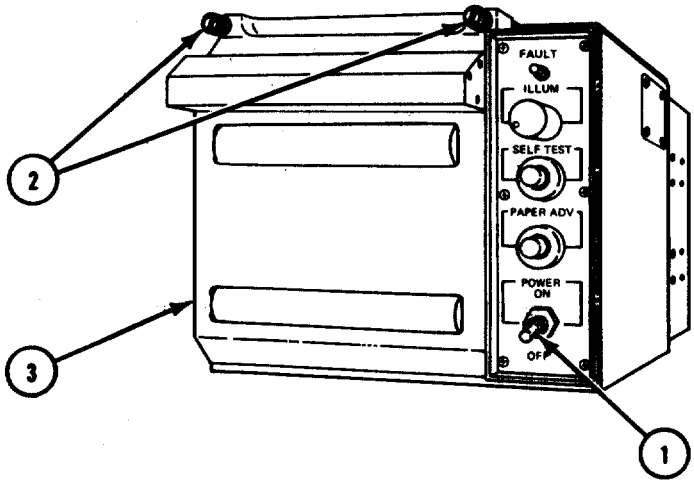
14. Using two screws and washers, install two retainers on flange, noting that only one of the holes on each retainer is lipped and threaded to fasten a screw.

2-78. REMOVING DOOR INTERLOCK SWITCH

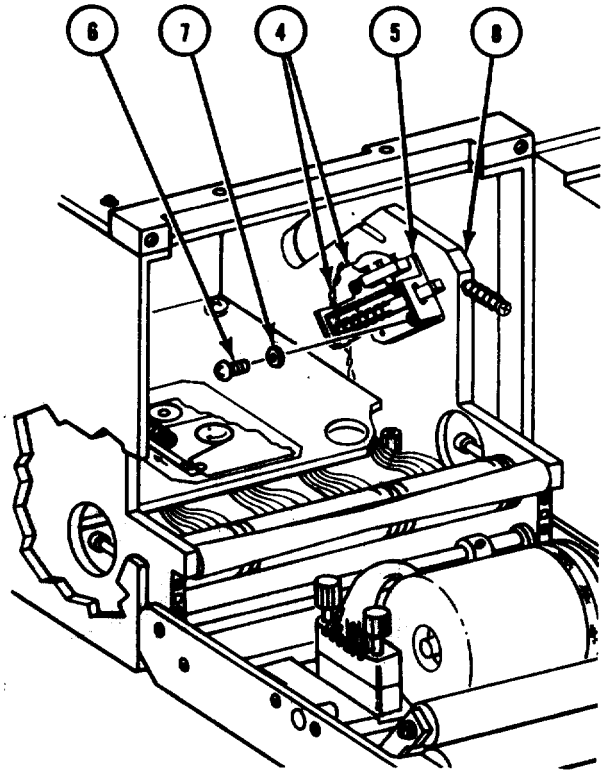
WARNING

Turn off power before working equipment. Failure to do so can cause serious injury to personnel .

1. Set POWER ON/OFF circuit breaker (1) to OFF.
2. Disconnect printer from power source.
3. Loosen two captive thumbscrews (2) and open door (3).



4. Tag and unsolder two wires (4) from terminals of door interlock switch (5).
5. Remove two screws (6), two flatwashers (7), and interlock switch (5) from right side plate (8).

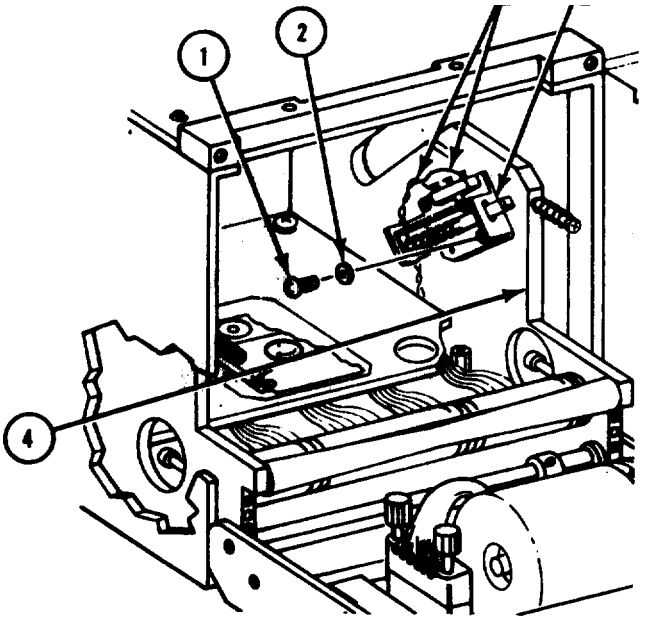


2-79. INSTALLING DOOR INTERLOCK SWITCH

NOTE

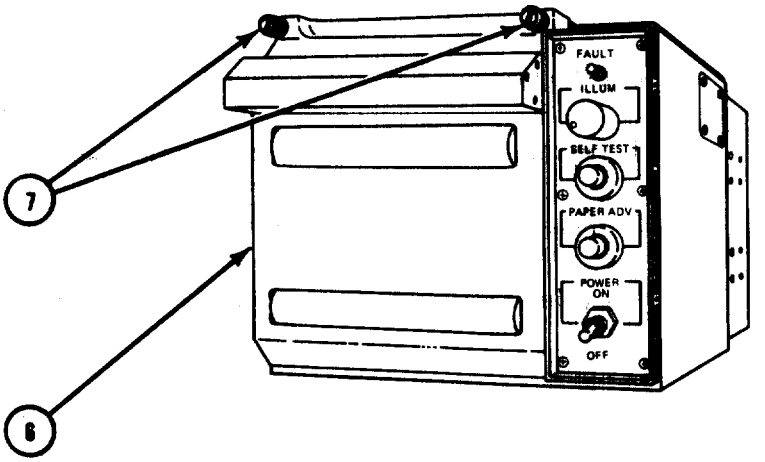
Apply retaining compound (item 6, Appx B) to threads of screws in step 1.

1. Install two screws (1), flatwashers (2) and door interlock switch (3) on right side plate (4).



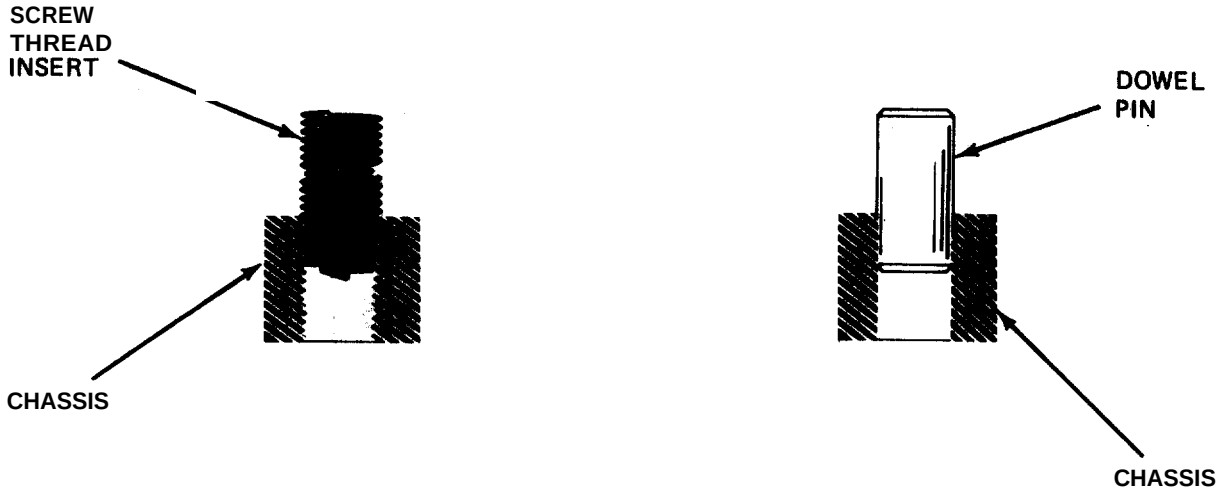
2, Solder two wires (5) to terminals of door interlock switch (3) as tagged. Remove tags.

3. Close door (6) and tighten two captive thumbscrews (7).



2-80. REPAIRING CHASSIS

a. The only repairs that can be made to the printer chassis are replacing the dowel pins and screw thread inserts. Replace these parts when defective or missing using standard operating procedures. Refer to TM 11-7025-21 7-30P for a parts listing.



Section V. PREPARATION FOR STORAGE OR SHIPMENT

2-81. STORAGE OR SHIPMENT PROCEDURES

a. Prior to packing printer, the following procedures must be performed:

1. Remove paper from spool and printer door. Refer to TM 11-7021-210-12, Chapter 2.

2. Perform routine PMCS. Refer to TM 11-7021-201-12, Chapter 2.

b. The printer is repacked for storage or shipment in its original packaging materials.

APPENDIX A

REFERENCES

A-1. SCOPE

This appendix lists all forms and technical manuals referenced in this manual.

A-2. FORMS

Discrepancy in Shipment Report (DISREP). . . . . SF 361
Quality Deficiency Report. . . . . SF 368
Recommended Changes to Equipment Technical publications. . . . . DA Form 2028
Recommended Changes to Publications and Blank Form. . . . . DA Form 2028-2
Report of Discrepancy (ROD) SF-364

A-3. TECHNICAL BULLETINS

Field Instructions for Painting and Preserving Electronics Command Equipment Including Camouflage Pattern Painting of Electrical Equipment Shelters. . . . . .TB 43-0118
Maintenance and Repair of Printed Circuit Boards and Printed Wiring Assemblies. . . . . TB 43-0127

A-4. TECHNICAL MANUALS

Operator's and Organizational Maintenance Manual Processor; AN/UYK-19A (NSN 7035-01-134-7148) processor; AN/UYK-19AX (NSN) Plasma Display Set; AN/UYQ-10(V)1 (NSN) plasma Display Set; AN/UYQ-10(V)2 (NSN) Magnetic Tape Set; AN/UYH-1 (NSN 7025-01-134-3338) Teleprinter Electrographic TT-773(P)/G (NSN 5815-01-127-5867); Teleprinter Electrographic TT-772(P)/G (NSN 5815-01-127-5868). . . . . TM 11-7021-201-12

Organizational Maintenance Repair Parts and Special Tools List for Teleprinter Electrographic TT-772(P)/G (NSN 5815-01-127-5868). . . . . TM 11-7025-217-20P

Direct Support and Depot Maintenance Repair Parts and Special Tools List for Teleprinter Electrographic TT-772(p)/G (NSN 5815-01-127-5868). . . . . TM 11-7025-217-30P

Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command) . . . . . TM 750-244-2

A-5. MISCELLANEOUS PUBLICATIONS

Maintenance Management Update . . . . . DA PAM 738-750
Consolidated Index of publications and Blank Forms . . . . . DA PAM 310-1

APPENDIX B

EXPENDABLE SUPPLIES AND MATERIALS LIST

Section 1. INTRODUCTION

B-1. SCOPE

This appendix lists expendable supplies and materials 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).

B-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 B").

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

F - Direct Support

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 Manufacturer (FSCM) in parenthesis followed by the part number.

e. Column (5) - Unit of Measure (U/M). 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.

B-3. SPECIAL INFORMATION

National stock numbers (NSN) that are missing from section II have been applied for and will be added to this technical manual by future change/revision when they are entered in the Army Master Data File (AMDF). Until the NSN are established and published, submit exception requisitions to Commander, US Army Communications-Electronics Command, ATTN: DRSEL-MM, Fort Monmouth, New Jersey 07703 for the part required to support your equipment.

SECTION II. EXPENDABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION PART NO. AND FSCM	(5) UNIT OF MEAS
1	F	6810-00-753-4993	ALCOHOL, ISOPROPYL (81349) MIL-A-10428, Grade A	OZ
2	F	7920-00-356-4694	BRUSH, BRISTLE (81348)	EA
3	F	8305-00-267-3015	CLOTH, CHEESECLOTH, COTTON, LINT-LESS (81348) CCC-C-440, Type II, Class 2	YD
4	F		DETERGENT, MILD, LIQUID	OZ
5	F	7530-01-103-8267	PAPER, ELECTROSENSITIVE	PK
6	F		RETAINING COMPOUND MIL-S-22473, Grade C	OZ
7	F		TAPE, LACING, BLACK MIL-T-43435, Type I, Finish B, Size 3	FT
8	F		TUBING, HEAT SHRINKABLE	

GLOSSARY

Address	16-bit location in core memory where data is stored.
Alphanumeric	A sat of characters containing both letters and numbers, and other symbols.
ASCII	A standard code (American standard Code for Information Interchange) used for the coding of data.
Bidirectional	A cable or line that carries signals in both directions.
BITE	Built-in Test - A means of an equipment checking itself by internal test circuits.
Diagnostic	A routine designed to locate a malfunction to a board or group of boards.
Electrosensitive paper	Paper made up of a black back layer and white front layer. Character generation is accomplished when the print fingers bum off the white layer thus exposing the black layer.
Enable	To place a piece of equipment or a component in operational status.
Interface	Connecting and making two pieces of equipment compatible.
Non-impact printing	Printing done without the use of a mechanical printing device.
Print fingers	The devices in the printer which, when supplied with a small electrical charge, generate the desired characters.
UUT.	Unit Under Test

INDEX

INDEX – Continued

INDEX - Continued

Subject Page

I - Continued

L

M

N

INDEX – Continued

INDEX – Continued

INDEX - Continued

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)
Commander
Stateside Army Depot
ATTN: AMSTA-US
Stateside, N.J. 07703

DATE SENT
10 July 1975

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 11-5840-340-12	23 Jan 74	Radar Set AN/PRC-76

BE EXACT. . .PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO
2-25	2-28		
3-10	3-3		3-1
5-6	5-8		
		F03	

IN THIS SPACE TELL WHAT IS WRONG
AND WHAT SHOULD BE DONE ABOUT IT:

Recommend that the installation antenna alignment procedure be changed throughout to specify a 2° IFF antenna lag rather than 1°.

REASON: Experience has shown that with only a 1° lag, the antenna servo system is too sensitive to wind gusting in excess of 25 knots, and has a tendency to rapidly accelerate and decelerate as it hunts, causing strain to the drive train. Hunting is minimized by adjusting the lag to 2° without degradation of operation.

Item 5, Function column. Change "2 db" to "3db."

REASON: The adjustment procedure for the TRANS POWER FAULT indicator calls for a 3 db (500 watts) adjustment to light the TRANS POWER FAULT indicator.

Add new step f.1 to read, "Replace cover plate removed in step e.1, above."

REASON: To replace the cover plate.

Zone C 3. On J1-2, change "+24 VDC to "+5 VDC."

REASON: This is the output line of the 5 VDC power supply. +24 VDC is the input voltage.

SAMPLE

PRINTED NAME. GRADE OR TITLE AND TELEPHONE NUMBER
SSG I. M. DeSpiritof 999-1776

SIGN HERE
SSG I. M. DeSpiritof

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS

TEAR ALONG PERFORATED LINE

REVERSE OF DA FORM 2028-2

TEAR ALONG PERFORATED LINE

FILL IN YOUR UNIT'S ADDRESS

FOLD BACK

DEPARTMENT OF THE ARMY

POSTAGE AND FEES PAID
DEPARTMENT OF THE ARMY
DOD 314

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300

SAMPLE

Commander
US Army Communications-Electronics Command
and Fort Monmouth
ATTN: AMSEL-ME-MP
Fort Monmouth, New Jersey 07703-5007

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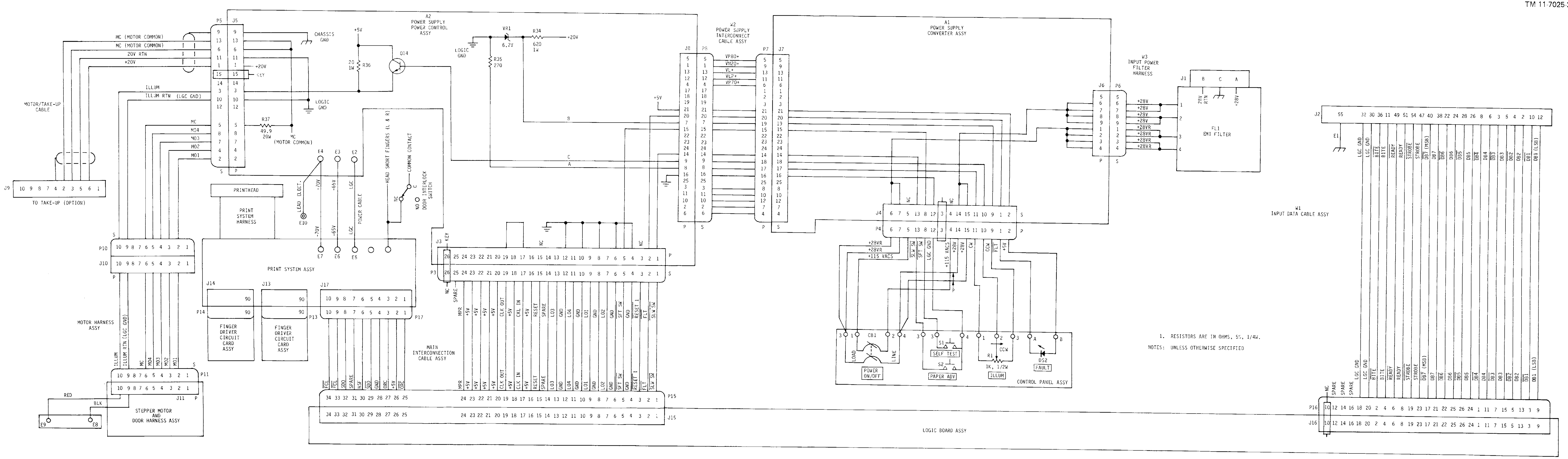

Figure FO-1. Printer Interconnection Diagram