TM 11-7021-201-30

TECHNICAL MANUAL

DIRECT SUPPORT MAINTENANCE MANUAL

PRINCIPLES OF OPERATION

MAINTENANCE INSTRUCTIONS

TROUBLE-SHOOTING

SUBJECT INDEX
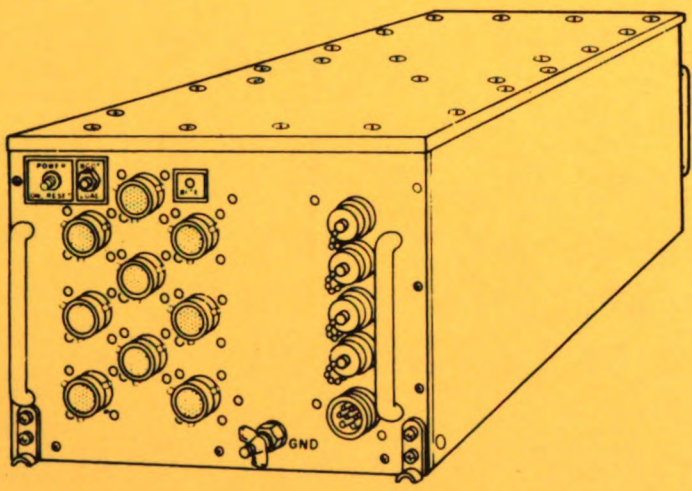
PROCESSOR AN/UYK-19A
(NSN 7035-01-134-7148)

PROCESSOR AN/UYK-19AX
(NSN 7035-01-139-4434)

HEADQUARTERS, DEPARTMENT OF THE ARMY
29 JUNE 1984

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 who is familiar with the operation and hazards of the equipment and who is competent 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 part before touching it.

Be careful not 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.

WARNING
FLAMMABLE LIQUIDS

are used in cleaning the equipment

For Artificial Respiration, refer to FM 21-11.

B

DIRECT SUPPORT MAINTENANCE MANUAL

PROCESSOR AN/UYK-19A
(NSN 7035-01-134-7148)

PROCESSOR AN/UYK-19AX
(NSN 7035-01-139-4434)

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

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CHAPTER 1

INTRODUCTION

Section I. GENERAL INFORMATION

1-1. SCOPE

This manual is for your use in the performance of maintenance on the AN/UYK-19A and AN/UYK-19AX Processor and I/O Interface. The processor, when interfaced with an input/output device, can accept input data, process the data, and output the processed data to the device. The processor capability is expanded to additional input/output devices when the I/O interface is used.

1-2. CONSOLIDATED INDEX OF ARMY PUBLICATIONS AND BLANK FORMS

Refer to the latest issue of DA PAM 310-1 to determine whether there are new editions, changes or additional obligations pertaining to the equipment.

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 is 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 4355.73/AFR 400-54/MCO 4430.3E.

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.

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 or shipment instructions.

1-5. NOMENCLATURE CROSS-REFERENCE LIST

Common Name	Official Nomenclature
Processor	Processor AN/UYK-19A Processor AN/UYK-19AX
I/O Chassis	Chassis, Electrical MX-10374/UYK Chassis, Electrical MX-10375/UYK

1-6. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your AN/UYK-19 needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Tell us why a procedure is hard to perform. Put it on an SF 368 (Quality Deficiency Report). Mail it to Command, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703. 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. <u>Processor</u>.
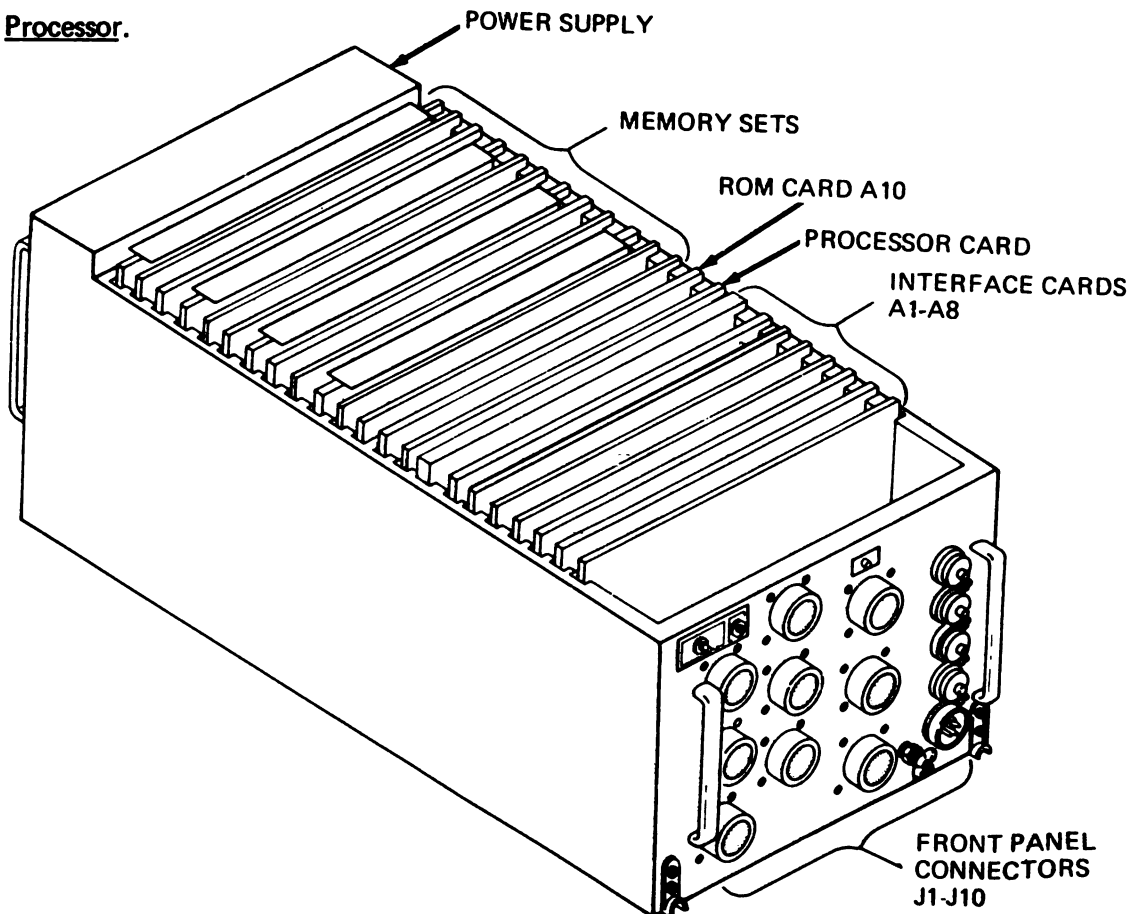
(1) The circuit cards are contained in slots A1 through A22 from front to back. The cards are divided into the following functional groups:

(a) There are four memory sets in the processor. Each memory set contains three cards: an inhibit card, an address card, and a card containing 16k of core memory.

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(b) Processor card 5605 is the central processing unit (CPU). The CPU transfers and manipulates all data. The ROM (Read-Only Memory) card A10, contains the boot load program for the processor.

(c) Interface cards allow the input/output devices to interface with the processor. Refer to table 1-1 for a complete listing of cards that can be used with the AN/UYK-19.

TABLE 1-1. INTERFACE CARDS

Card Type	Description
1642	Control Panel Interface
2011	Core Memory
2023	Read Only Memory
3320	Paper Tape Reader Interface
3330	Line Printer Interface
3364	Magnetic Tape Controller
3382	Floppy Disk Interface
3505	Programmable Interval Timer
3540	Parallel I/O Buffer (16-Bit)
3543	Differential I/O Buffer (8-Bit)
3545	Serial Differential I/O Interface
3549	System Interrupts
3561B	I/O Bus Expander
3563	I/O Bus Repeater
3564	Data Channel Controller
3566	Priority Load Module
3765	Asynchronous Interface
3766	Asynchronous Multiplexer
3769	Asynchronous Line Multiplexer
5605	Central Processing Unit
5623	I/O Tester Module
S592	Contact Closure Board
S593	RCU MUX
S711	TT580
S710	BDHI

(d) Priority load cards are installed in any processor slot (A1 through A8) which does not contain an interface card. They are used to maintain continuity and give a typical card load to the power supply.

(2)   The power supply applies operating voltage to the processor. The processor can operate from single-phase, ac power at a frequency of 47 to 440 Hz and a voltage of 115 vac (AN/UYK-19A), or on a voltage of 28 vdc (AN/UYK-19AX).

(3)   Front panel connectors are receptacles for input and output data cables. Each connector is connected to a specific processor slot. Refer to table 1-2 for processor front panel connectors and processor slots.

b.   I/O Chassis.

POWER SUPPLY

INTERFACE
CARDS
A1 - A8,
A10 - A16

FRONT PANEL
CONNECTORS
J1 - J16
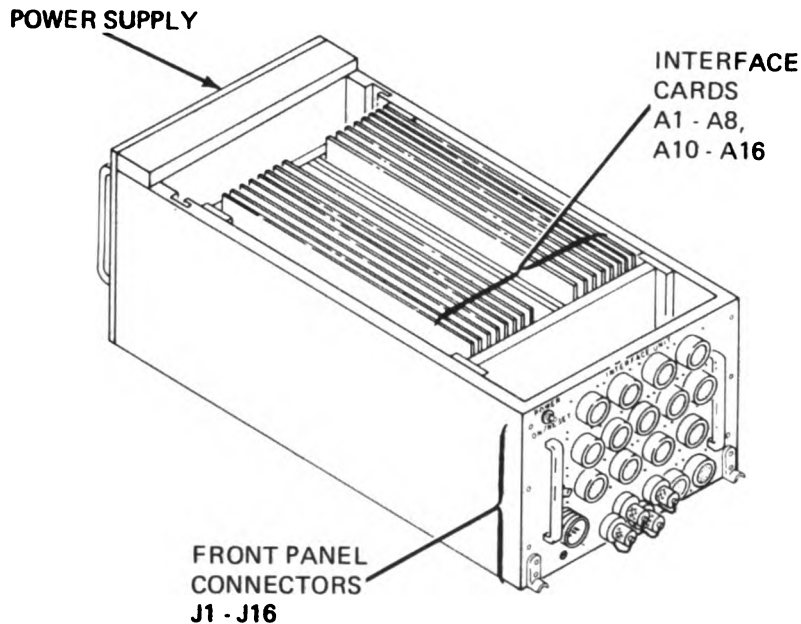
(1)   The circuit cards are contained in slots A1 through A8 and A10 through A15 from front to back. Circuit card A16 is dedicated to an I/O bus repeater.

(a)   Interface cards allow the input/output devices and options to interface with the I/O chassis. Refer to table 1-1 for a complete listing of cards that can be used with the AN/UYK-19.

(b)   Priority load cards are installed in any I/O chassis slot (A1 through A8, A10 through A15) which does not contain an interface card. They are used to maintain continuity and give a typical card load to the power supply.

(2)   The power supply applies operating voltage to the I/O chassis. The I/O chassis can operate from single-phase, ac power at a frequency of 115 vac, or on a voltage of 28 vdc.

(3)   Front panel connectors are receptacles for input and output data cables. Each connector is connected to a specific I/O chassis slot. Refer to table 1-3 for I/O chassis front panel connectors and I/O chassis slots.

TABLE 1-2. PROCESSOR FRONT PANEL CONNECTORS AND
PROCESSOR SLOTS

Front Panel Connector	Processor Slot
J1	A8
J2	A3
J3	A4
J4	A5
J5	A6
J6	A1
J7	A2
J8	A7

TABLE 1-3. I/O CHASSIS FRONT PANEL CONNECTORS
AND I/O CHASSIS SLOTS

Front Panel Connector	I/O Chassis Slot
J1	A3
J2	A5
J3	A10
J4	A14
J6	A4
J7	A7
J8	A11
J9	A15
J10	A2
J11	A6
J12	A8
J13	A13
J15	A12
J16	A16

1-9. EQUIPMENT DATA

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

1-10. SAFETY, CARE, AND HANDLING

  a. The processor and I/O chassis are heavy pieces of equipment. When these units are to be moved you will need the help of a second technician.

  b. Both the processor and I/O chassis are equipped with handles. Use these handles when moving the units.

PROCESSOR   HANDLE   I/O CHASSIS

HANDLES   HANDLES   HANDLE
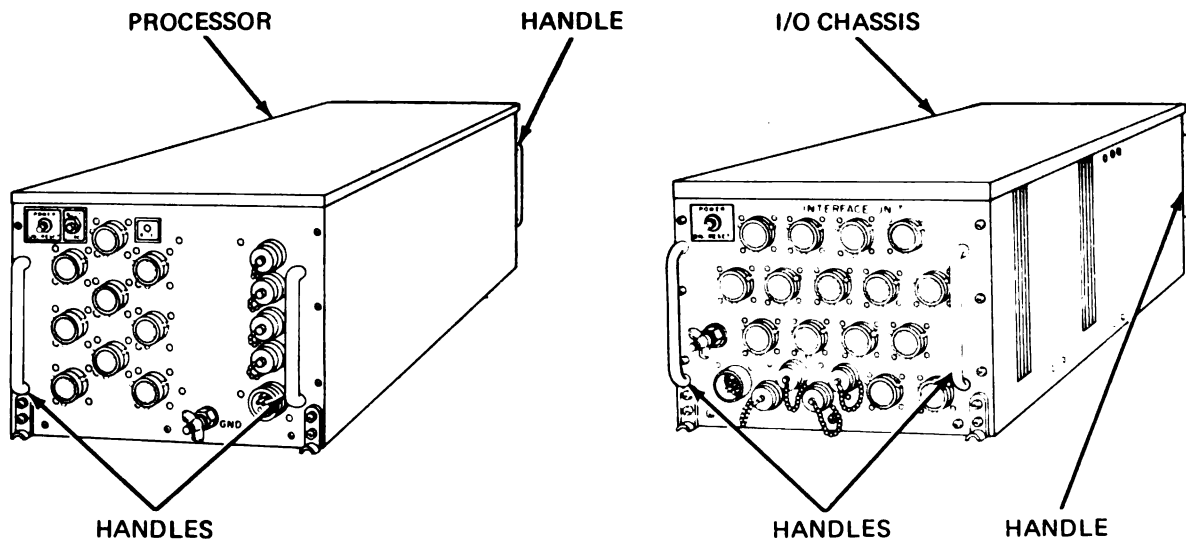
Section III. PRINCIPLES OF OPERATION

1-11. FUNCTIONAL DESCRIPTION OF EQUIPMENT

  a. <u>General</u>. The UYK-19 functions to control, process, and interface data received from input/output devices. It may operate with a processor or with an I/O chassis. Each is described in greater detail in the following paragraphs. The processor is shown alone in block form and then with the I/O chassis.

  b. <u>Processor</u>. The processor can be divided into a power section, main memory section, central processing unit (CPU), and input/output section.

```
              ┌──────────────────────────────────────────────────────┐                    SIGNAL CABLE TO
              │  ┌─────────┐   ┌─────────┐   ┌─────┐   ┌───────────┐  │                    INPUT/OUTPUT
              │  │         │   │         │   │     │   │  INPUT/    │  │                    DEVICE
  115 VAC ────┼─▶│  POWER  │──▶│  MAIN   │◀─▶│ CPU │◀─▶│  OUTPUT    │◀─┼──────────────────────────▶
              │  │ SECTION │   │ MEMORY  │   │     │   │ INTERFACE  │  │
              │  └─────────┘   └─────────┘   └─────┘   └───────────┘  │
              │  PROCESSOR                                            │
              └──────────────────────────────────────────────────────┘
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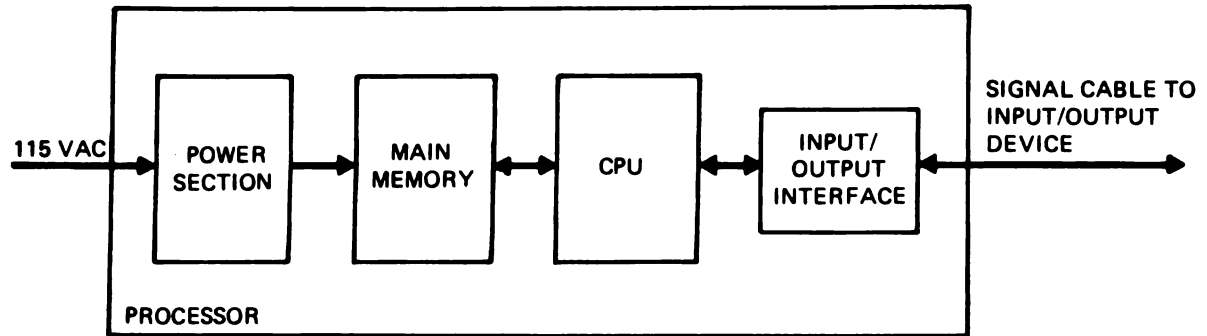
NOTE:

　　　FOR DC OPERATION, AC EMI FILTER AND POWER SUPPLY
　　　5616 IN PROCESSOR ARE REPLACED BY DC EMI FILTER
　　　AND POWER SUPPLY 5686.

(1)   Power Section. The power section supplies the necessary power to run the processor. It operates from either 115 vac, 47 to 440 Hz using an ac EMI filter and power supply, or 20 to 36 vdc using a dc EMI filter and power supply. Fuses F3 and F4 give overload protection when processor is set up for ac. Fuses F1 and F2 are used for dc overload protection.

(2)   Main Memory. The main memory is a nonvolatile, random-access, coincident-current memory, packaged in 16K X 16K-bit modules. Four modules of 16K each make up the total memory of 64K. Each module includes complete read/write electronics.

(3)   Central Processing Unit. The central processing unit provides the arithmetic and logical functions to control, process, and transfer the data in main memory, in accordance with the stored program.

(4)   Input/Output Section.

(a)   The input/output section is made up of processor slots A1 through A7. Interface modules can be installed in these slots to allow the processor to interface with other equipment.

(b)   Interface between the processor and I/O chassis is accomplished by installing an I/O bus expander interface module in processor slot A1, and I/O bus repeater interface module in I/O interface slot A16. Signals between the processor and I/O chassis are transferred by a 55-pin signal cable.

(c)   Priority load modules are installed in all vacant processor slots to maintain data contin-uity and give the power supply a typical module load.

c.   I/O Chassis.
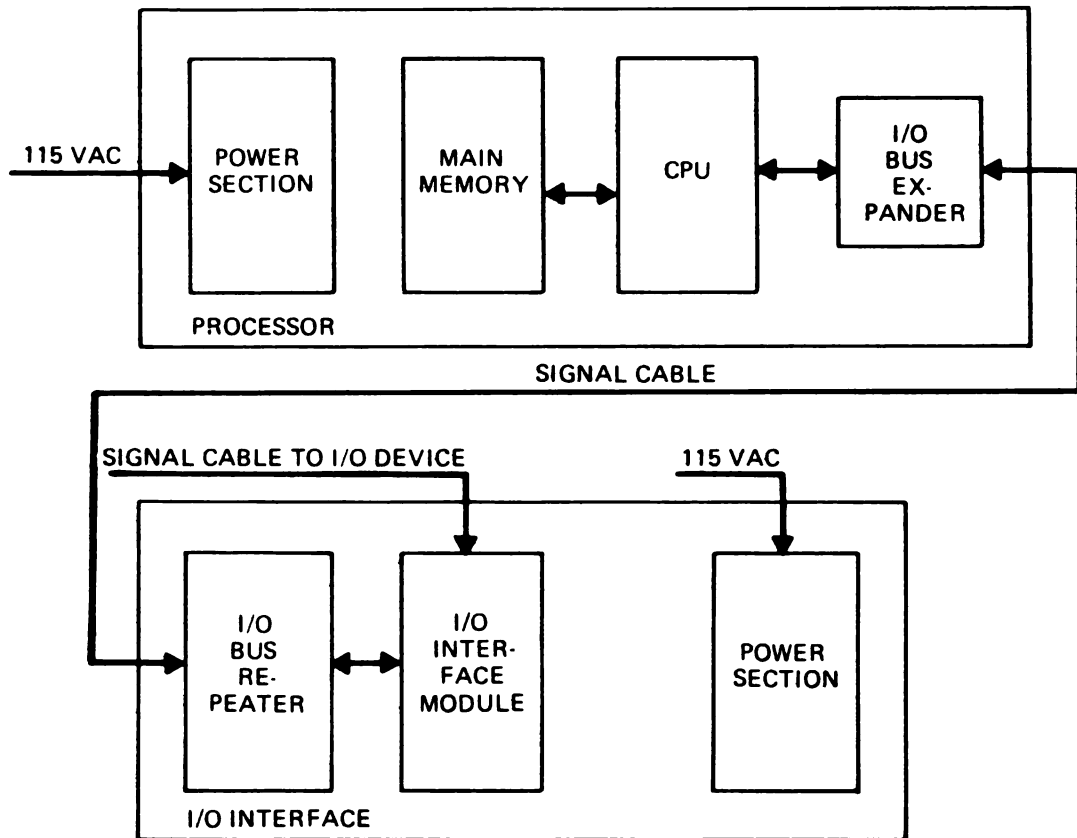
NOTE:
FOR DC OPERATION AC EMI FILTER AND POWER SUPPLY 5616
IN PROCESSOR AND I/O CHASSIS ARE REPLACED BY DC
EMI FILTER AND POWER SUPPLY 5686.

(1)   The I/O chassis, when interfaced with the processor, allows the processor an expanded input/output section. Interface with input/output devices is accomplished by installing the specific interface module in the I/O chassis. Signals are transferred by a 55-pin signal cable.

(2)   The power section which supplies the power necessary to run the I/O chassis is similar to the one in the processor.

CHAPTER 2

MAINTENANCE INSTRUCTIONS

Section I. 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, TMDE, and support equipment are listed and illustrated in the repair parts and special tools
list TM 11-7021-201-30P covering direct support maintenance for this equipment.

2-3. REPAIR PARTS

Repair parts are listed and illustrated in the repair parts and special tools list TM 11-7021-201-30P, covering
direct support maintenance for this equipment.

Section II. SERVICE UPON RECEIPT

2-4. SERVICE UPON RECEIPT OF MATERIEL

a. Underlined Unpacking.

WARNING

The processor and I/O chassis are heavy pieces of equipment.
Always use two technicians when moving or lifting either of
these units to prevent injury to personnel.

The processor, I/O chassis and interface modules are each packed in separate cartons. 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 shipping.

b. Checking Unpacked Equipment.

(1) Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF 364, Report of Discrepancy (ROD).

(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. ASSEMBLY OF EQUIPMENT

Installation of circuit modules for particular system configurations is given in Appendix C of this manual.

2-6. INSTALLATION INSTRUCTIONS

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

Section III. TROUBLESHOOTING

2-7. SCOPE OF TROUBLESHOOTING

This section contains troubleshooting information for locating and correcting malfunctions in the processor and I/O chassis (AC and DC versions) at the direct support level of maintenance. Included are checkout procedures, troubleshooting procedures, and procedures for running diagnostic tests.

NOTE

The procedures contained in this section are in addition to the troubleshooting procedures found in Chapter 4 of the Operator's and Organizational Maintenance Manual TM 11-7021-201-12.

2-8. GENERAL INSTRUCTIONS

a. The first step in servicing a defective processor or I/O chassis, 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 ot 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.

2-9. PROCESSOR AND I/O CHASSIS TROUBLESHOOTING

The objective of direct support troubleshooting is the localization of a fault to a defective assembly or chassis mounted part. Use the troubleshooting flowcharts and the PMCS in the Operator's and Organizational Maintenance Manual TM 11-7021-201-12 as an aid in localizing the fault.

2-10. 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. Using the flowchart (para 2-11) will familiarize users of this manual with the proper use of the troubleshooting flowcharts.

2-11. HOW TO USE THE FLOWCHART

FLOWCHART START: INDICATES START OF PROCEDURE.

START

INSTRUCTION: PROVIDES A SINGLE INSTRUCTION FOR PERFORMING PRO-CEDURE. IF INSTRUCTION IS CONTAINED ELSEWHERE IN MANUAL, A REFERENCE IS PROVIDED.

1

CONNECT EQUIPMENT (PARA 2-XX).

FLOW LINE: INDICATES DIRECTION OF PRO-CEDURE FLOW USING ARROWHEAD.

PROCEDURE: PROVIDES AN INSTRUCTION FOR THE PERFORMANCE OF A CORRECTIVE ACTION.

ON PROCESSOR, DEPRESS POWER ON/ RESET SWITCH.

PROVIDES ADDITIONAL INFORMATION FOR THE SYMBOL TO WHICH IT IS CONNECTED BY DASHED LINE. DOES NOT CON-TAIN ADDITIONAL INSTRUCTIONS:

BITE LIGHT LIT ?

N

REPLACE CPU IN TEST PROCESSOR.

DECISION: INDICATES THAT A DECISION MUST BE MADE TO THE QUESTION ASKED IN THE SYMBOL. THE FLOW FROM THE SYMBOL IS DEPENDENT ON THE DECISION MADE. THE DECISION IS GENERALLY A Y (YES) OR N (NO).

Y

1

ON PROCESSOR, DEPRESS BOOT LOAD SWITCH.

CONNECTOR: DIRECTS USER TO FLOW LINE ENTRY POINT IDENTIFIED BY THE SAME NUMBER. CONNECTORS ARE NUMBERED SEQUENTIALLY THROUGH ONE FLOWCHART IN THE ORDER OF THEIR ENTRIES INTO THE FLOW LINES. WHEN AN EXIT CONNECTOR HAS AN ADJACENT SHEET NUMBER, THE MATING ENTRY CONNECTOR APPEARS ON THE SHEET SPECIFIED, OTHERWISE THE MATING ENTRY CONNECTOR APPEARS ON THE SAME SHEET. ALL EXIT CONNECTORS ARE IDENTIFIED WITH THE SAME NUMBER AS THEIR CORRE-SPONDING ENTRY CONNECTOR

TAPE MOTION ?

N

2

SH2

FLOWCHART END: INDICATES END OF PROCEDURE.

Y

END

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2-12. TROUBLESHOOTING PROCEDURES

a.   The first step in troubleshooting the processor or I/O chassis is to locate the symptom in the troubleshooting symptom index (para 2-13).

b.   Next, go to the flowchart/paragraph 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.   When making repairs, replacing components, or performing continuity checks always shut off power to the equipment.

2-13. SYMPTOM INDEX

Use this index to quickly find troubleshooting procedures.

Troubleshooting Symptom	Flowchart/ Paragraph Number	Page
A. PROCESSOR		
POWER ON/RESET switch does not light	(1)	2-6
BITE light does not light	(2)	2-15
BOOT LOAD switch does not work	(3)	2-17
Keeps blowing fuses	(4)	2-19
Will not accept data	2-14	2-36
Will not output data	2-14	2-36
B. I/O CHASSIS		
POWER ON/RESET switch does not light	(5)	2-23
Keeps blowing fuses	(6)	2-32

TROUBLESHOOTING FLOWCHART ①
PROCESSOR POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 1 OF 9)

START

REMOVE BOTTOM
COVER (PARA 2-25).

CONNECT
PROCESSOR
TO POWER.

CHECK VOLTAGE
BETWEEN XA3
J2-7 (1) AND
XA3J2-3 (–) (2).

XA3J2-7 IS
POSITIVE

+5 VDC
?

N

CHECK POWER
SUPPLY OUTPUT
(PARA 2-15).

Y

REMOVE FRONT
PANEL (PARA 2-27).

POWER
SUPPLY OUTPUT
OK
?

N

① SH2

CHECK POWER
ON/RESET SWITCH
(PARA 2-17).

Y

FORWARD
EQUIPMENT TO
NEXT HIGHER
LEVEL OF
MAINTENANCE.

⑦ SH8
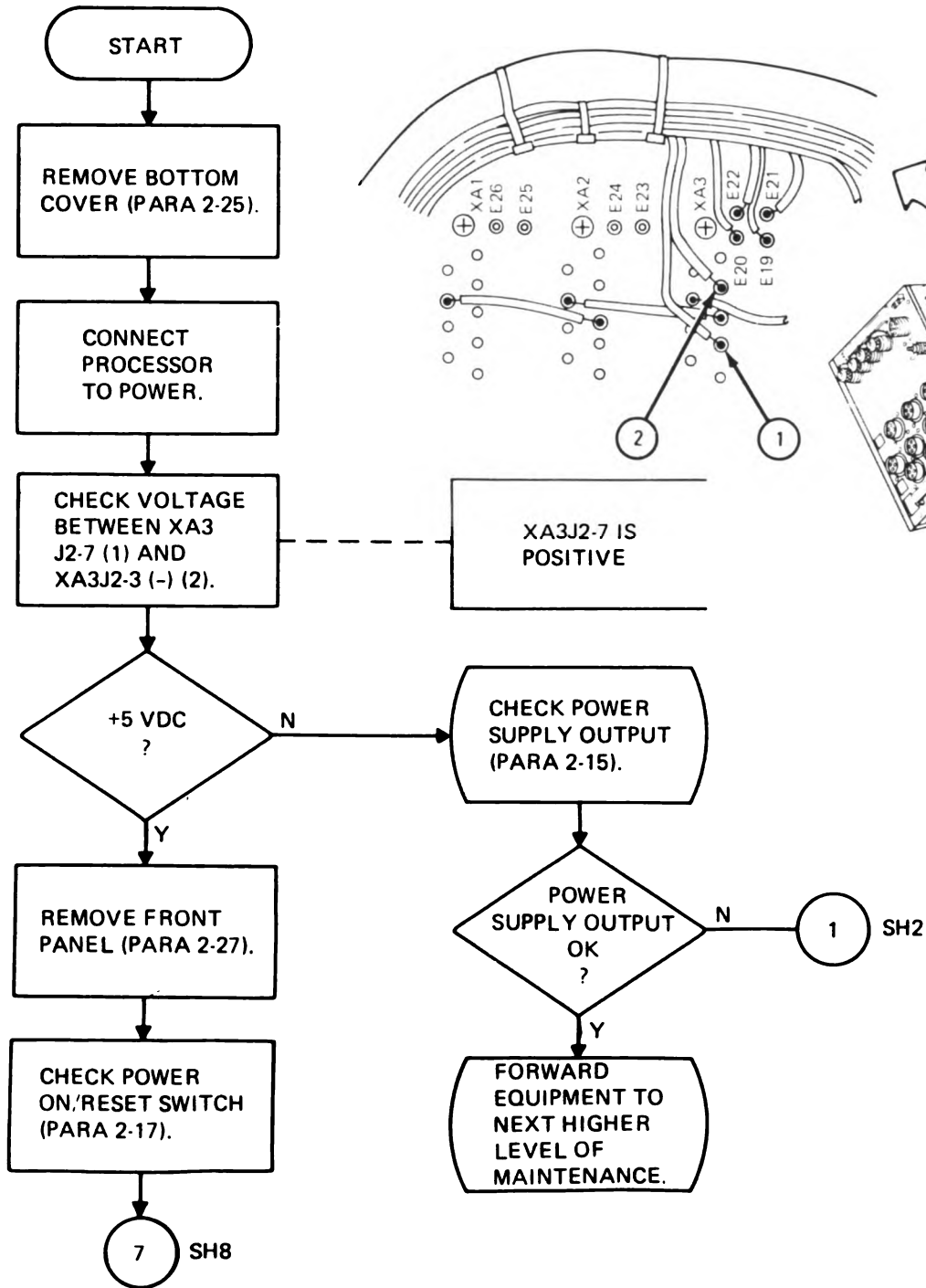
TROUBLESHOOTING FLOWCHART ①
PROCESSOR POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 2 OF 9)

TROUBLESHOOTING FLOWCHART ①
PROCESSOR POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 3 OF 9)

TROUBLESHOOTING FLOWCHART ①
PROCESSOR POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 4 OF 9)

③

CHECK CONTINUITY
FROM J10(1) PIN A
AND P1(2) PIN A1.

CONTINUITY ? — N → REPAIR BROKEN WIRE OR CONNECTOR.

Y

CHECK CONTINUITY
FROM J10(1) PIN D
AND P1(2) PIN A2.

CONTINUITY ? — N → REPAIR BROKEN WIRE OR CONNECTOR.

Y

FORWARD
EQUIPMENT
TO NEXT HIGHER
LEVEL OF
MAINTENANCE.

TROUBLESHOOTING FLOWCHART (1)
PROCESSOR POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 5 OF 9)

TROUBLESHOOTING FLOWCHART ①
PROCESSOR POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 6 OF 9)

REMOVE FRONT
PANEL (PARA 2-27).

REMOVE P2(1)
FROM J13(2).

MEASURE VOLTAGE
BETWEEN PIN 4(3)
AND PIN 5(4) ON
J13(2).

115 VAC
?

N

REMOVE P1(5)
FROM J14(6).

Y

FORWARD
EQUIPMENT
TO NEXT HIGHER
LEVEL OF
MAINTENANCE.

MEASURE VOLTAGE
BETWEEN PIN 4(7)
AND PIN 5(8) ON P1(5).

115 VAC
?

Y

REPLACE EMI
FILTER (PARA 2-37
AND 2-38).

N

6 SH7

TROUBLESHOOTING FLOWCHART 1
PROCESSOR POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 7 OF 9)


```
        (6)
         |
         v
  ┌──────────────────┐
  │ CHECK CONTINUITY │
  │ FROM J10(1) PIN E │
  │ AND P1(2) PIN 4.  │
  └──────────────────┘
         |
         v
       /      \
      / CONTINUITY \  N
      \     ?     / ────────►  REPAIR BROKEN
       \        /               WIRE OR
         \    /                 CONNECTOR.
           |Y
           v
  ┌──────────────────┐
  │ CHECK CONTINUITY │
  │ FROM J10(1) PIN B │
  │ AND P1(2) PIN 5.  │
  └──────────────────┘
           |
           v
       /      \
      / CONTINUITY \  N
      \     ?     / ────────►  REPAIR BROKEN
       \        /               WIRE OR
         \    /                 CONNECTOR.
           |Y
           v
    FORWARD
    EQUIPMENT TO
    NEXT HIGHER
    LEVEL OF
    MAINTENANCE.
```

TROUBLESHOOTING FLOWCHART ①
PROCESSOR POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 8 OF 9)

7

SWITCH OK ? → N → REPLACE POWER ON/RESET SWITCH (PARA 2-29 AND 2-30).

↓ Y

CHECK CONTINUITY FROM XA3J2-7(1) TO SWITCH CONNECTION (2).

↓

CONTINUITY ? → N → REPAIR BROKEN CONNECTION.

↓ Y

CHECK CONTINUITY FROM XA3J2-3 (3) TO SWITCH CONNECTION (4).

↓

CONTINUITY ? → N → REPAIR BROKEN CONNECTION.

↓ Y

INSTALL BOTTOM COVER (PARA 2-26).

↓

8 SH9

TROUBLESHOOTING FLOWCHART ①
PROCESSOR POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 9 OF 9)

⑧

INSTALL FRONT
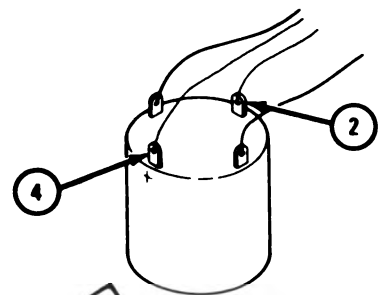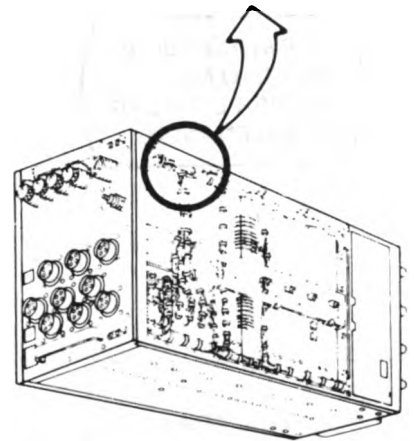PANEL (PARA 2-28).

FORWARD EQUIP-
MENT TO NEXT
HIGHER LEVEL OF
MAINTENANCE.

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TROUBLESHOOTING FLOWCHART ②
BITE LIGHT DOES NOT LIGHT (SHEET 1 OF 2)

START

↓

REMOVE
BOTTOM COVER
(PARA 2-25).

↓

CONNECT
PROCESSOR
TO POWER.

↓

MEASURE VOLTAGE
ACROSS E21 (–) (1)
AND E22 (+) (2).

↓

+5 VDC
?

— N → REPLACE CPU
BOARD A9 (PARA
2-39 AND 2-40).

- - - → DO NOT INSTALL
TOP COVER.

Y ↓

REPLACE BITE
LIGHT (PARA
2-33 AND 2-34).

↓

BITE
LIGHT
LIT
?

— N → ① SH2

Y ↓

INSTALL BOTTOM
COVER (PARA 2-26)
AND TOP COVER
(PARA 2-24).

↓

END

TROUBLESHOOTING FLOWCHART ②
BITE LIGHT DOES NOT LIGHT (SHEET 2 OF 2)

①

REPLACE MEMORY SETS, ONE AT A TIME (PARA 2-39 AND 2-40).

NOTE

AFTER REPLACING A MEMORY SET, CONNECT PROCESSOR TO POWER AND CHECK BITE LIGHT.

BITE LIGHT LIT ? — N → FORWARD EQUIPMENT TO NEXT HIGHER LEVEL OF MAINTENANCE.

Y

INSTALL BOTTOM COVER (PARA 2-26).

END

NOTE

IF MORE THAN ONE MEMORY SET WAS REPLACED BEFORE THE BITE LIGHT LIT, GO BACK AND REPLACE THE NEW MEMORY SETS WITH THE MEMORY SETS REMOVED.

TROUBLESHOOTING FLOWCHART ③
BOOT LOAD SWITCH DOES NOT WORK (SHEET 1 OF 2)

START

REMOVE BOTTOM COVER (PARA 2-25).

REMOVE CPU BOARD A9 (PARA 2-39).

CHECK FOR OPEN BETWEEN E19(1) AND E20(2).

OPEN ?

N → REPLACE BOOT LOAD SWITCH (PARA 2-31 AND 2-32).

Y

PRESS AND HOLD BOOT LOAD SWITCH. CHECK FOR CONTINUITY BETWEEN E19(1) AND E20(2)

INSTALL BOTTOM COVER (PARA 2-26).

CONTINUITY ?

N

Y

1 SH2

TROUBLESHOOTING FLOWCHART ③
BOOT LOAD SWITCH DOES NOT WORK (SHEET 2 OF 2)

```
        ( 1 )
          |
          v
   +----------------+
   | PUT IN NEW CPU |
   | BOARD A9       |
   | (PARA 2-40).   |
   +----------------+
          |
          v
   +----------------+
   | INSTALL BOTTOM |
   | COVER (PARA 2-26). |
   +----------------+
          |
          v
   +----------------+
   | RUN PROCESSOR  |
   | DIAGNOSTIC.    |
   +----------------+
```

TROUBLESHOOTING FLOWCHART (4)
PROCESSOR KEEPS BLOWING FUSES (SHEET 1 OF 4)

```
                    ┌──────────────┐
                    │    START     │
                    └──────┬───────┘
                           │
                    ┌──────▼───────┐         ┌─────────────────────┐
                    │ CHECK IF BLOWN│        │ F1 AND F2 (30 AMP)   │
                    │ FUSE IS PROPER│- - - - │ ARE FOR 28 VDC       │
                    │ SIZE.        │         │ INPUT. F3 AND F4     │
                    └──────┬───────┘         │ (5AMP) ARE FOR       │
                           │                 │ 115 VAC INPUT.       │
                           │                 └─────────────────────┘
                      ◇────▼────◇                ┌──────────────┐
                     ╱    IS     ╲   N           │ PUT IN PROPER│
                    ◇  FUSE PROPER ◇────────────▶│ SIZE FUSE.   │
                     ╲     ?      ╱              └──────┬───────┘
                      ◇────┬────◇                       │
                           │ Y                   ┌──────▼───────┐
                           │                     │ CONNECT      │
                           │                     │ PROCESSOR    │
                           │                     │ TO POWER.    │
                           │                     └──────┬───────┘
                    ┌──────▼───────┐                    │
                    │ REMOVE POWER │      Y         ◇───▼───◇
                    │ SUPPLY       │◀──────────────╱ DOES    ╲
                    │ (PARA 2-41). │               ◇ FUSE BLOW◇
                    └──────┬───────┘                ╲   ?    ╱
                           │                         ◇──┬──◇
                    ┌──────▼───────┐                    │ N
                    │ CONNECT      │              ┌──────▼───────┐
                    │ PROCESSOR    │              │    END       │
                    │ TO POWER.    │              └──────────────┘
                    └──────┬───────┘
                           │
                    ┌──────▼───────┐
                    │ DISCONNECT   │
                    │ POWER AND    │
                    │ CHECK FUSES. │
                    └──────┬───────┘
                           │
                        ( 1 ) SH2
```
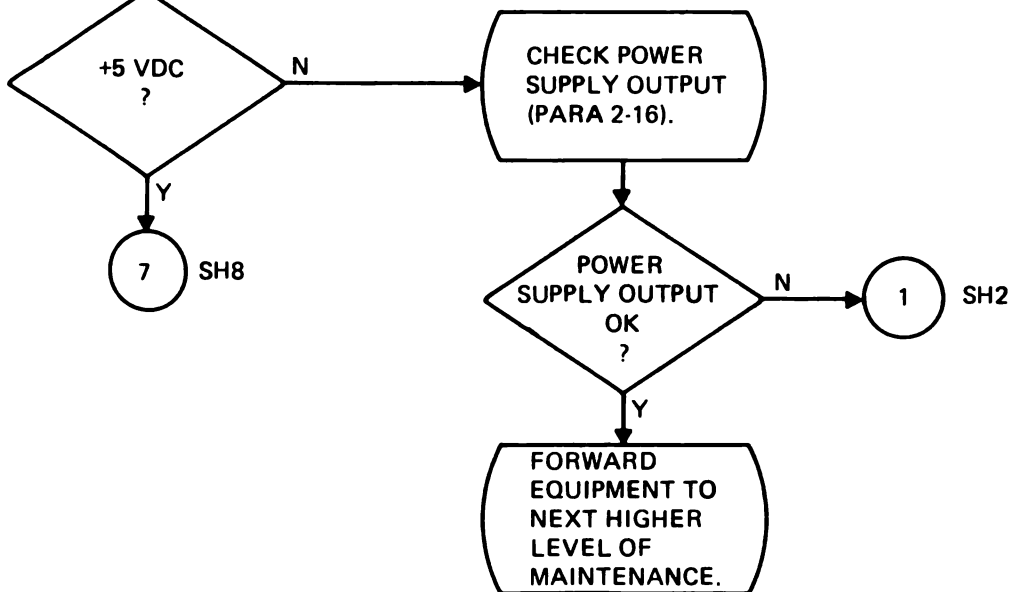
TROUBLESHOOTING FLOWCHART ④
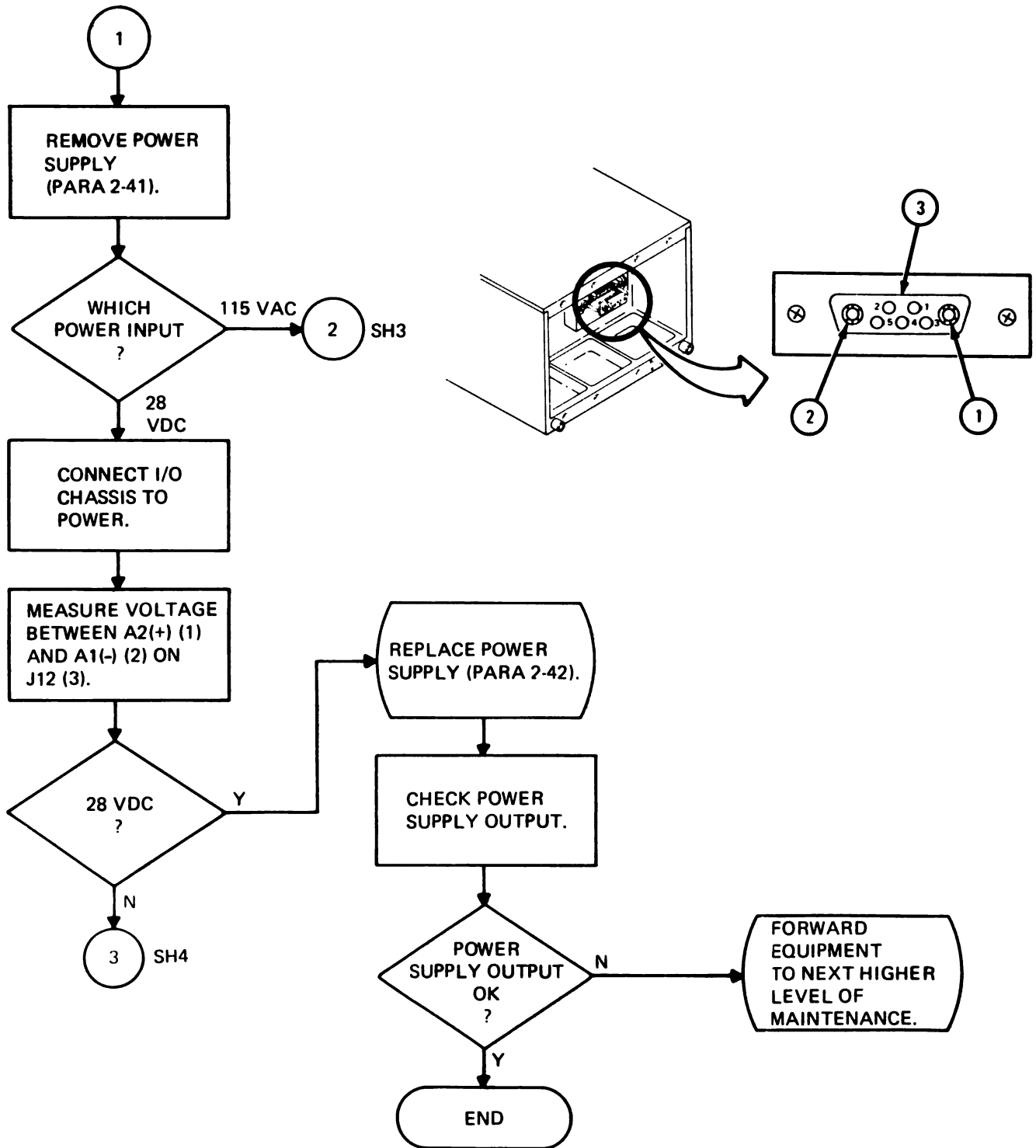## PROCESSOR KEEPS BLOWING FUSES (SHEET 2 OF 4)

```
        ( 1 )
          │
          ▼
     ◇ FUSES ──N──▶ ┌─────────────────┐
       OK ?         │ REMOVE FRONT    │
          │         │ PANEL (PARA 2-27).│
          Y         └─────────────────┘
          ▼                  │
  ┌──────────────┐           ▼
  │ REPLACE      │         ( 2 )  SH2
  │ DEFECTIVE    │
  │ POWER SUPPLY │
  │ (PARA 2-42). │
  └──────────────┘
          │
          ▼
  ┌──────────────┐
  │ CONNECT      │
  │ PROCESSOR    │
  │ TO POWER.    │
  └──────────────┘
          │
          ▼
  ┌──────────────┐
  │ DISCONNECT   │
  │ POWER AND    │
  │ CHECK FUSES. │
  └──────────────┘
          │
          ▼
    ◇ FUSES OK ──N──▶ ┌──────────────────┐
        ?             │ FORWARD          │
          │           │ EQUIPMENT TO     │
          Y           │ NEXT HIGHER      │
          ▼           │ LEVEL OF         │
     ( END )          │ MAINTENANCE.     │
                      └──────────────────┘
```

TROUBLESHOOTING FLOWCHART ④
PROCESSOR KEEPS BLOWING FUSES (SHEET 3 OF 4)

(2)

REMOVE P1 (1)
FROM J14 (2)
ON EMI FILTER (3)

CONNECT
PROCESSOR
TO POWER.

DISCONNECT
POWER AND
CHECK FUSES.

FUSES
OK
?

N → INSPECT
CONNECTORS P1 (1),
J1 (4), AND HARNESS
(5) FOR BREAKS
OR SHORTS.

Y

REPLACE EMI
FILTER (PARA
2-37 AND 2-38).

BREAKS
OR
SHORTS
?

N → REPLACE
FUSEHOLDER
(PARA 2-35 AND
2-36).

CONNECT
PROCESSOR
TO POWER.

Y

REPAIR MINOR
WIRING DAMAGE.

FOR MAJOR WIRING
DAMAGE, FORWARD
EQUIPMENT TO NEXT
HIGHER LEVEL OF
MAINTENANCE.

(3) SH4.

(4) SH4

SH4 (4)

TROUBLESHOOTING FLOWCHART ④
PROCESSOR KEEPS BLOWING FUSES (SHEET 4 OF 4)

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TROUBLESHOOTING FLOWCHART ⑤
I/O CHASSIS POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 1 OF 9)

START

REMOVE BOTTOM COVER (PARA 2-25).

CONNECT I/O CHASSIS TO POWER.

MEASURE VOLTAGE BETWEEN A10J2-3 (–) (1) AND A10J2-7 (+) (2).

+5 VDC ?

N → CHECK POWER SUPPLY OUTPUT (PARA 2-16).

Y → ⑦ SH8

POWER SUPPLY OUTPUT OK ?

N → ① SH2

Y → FORWARD EQUIPMENT TO NEXT HIGHER LEVEL OF MAINTENANCE.

TROUBLESHOOTING FLOWCHART ⑤
I/O CHASSIS POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 2 OF 9)

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TROUBLESHOOTING FLOWCHART (5)
I/O CHASSIS POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 3 OF 9)

TROUBLESHOOTING FLOWCHART ⑤
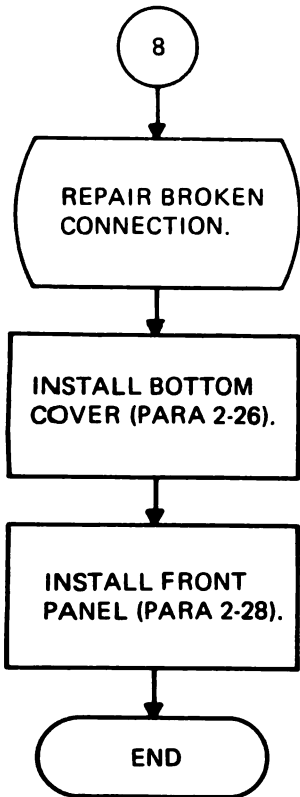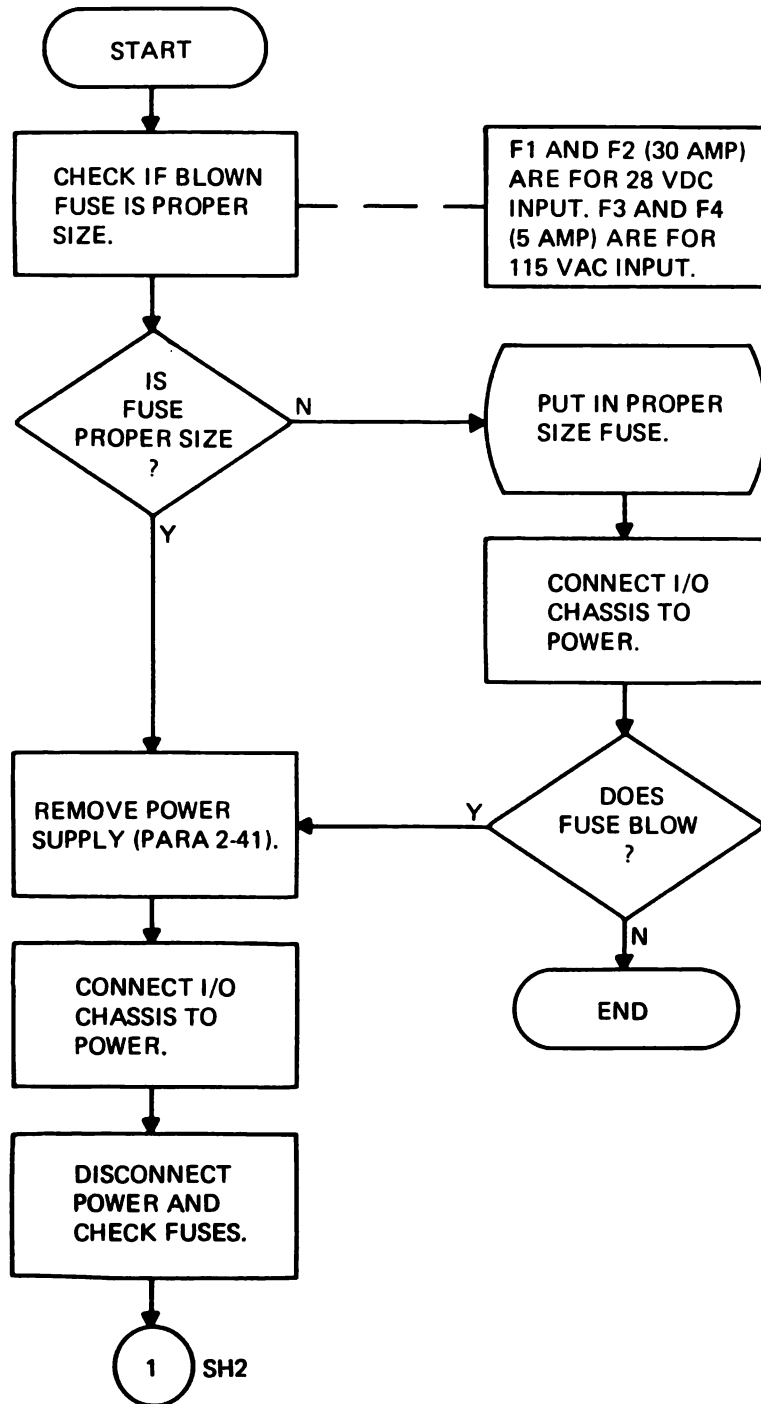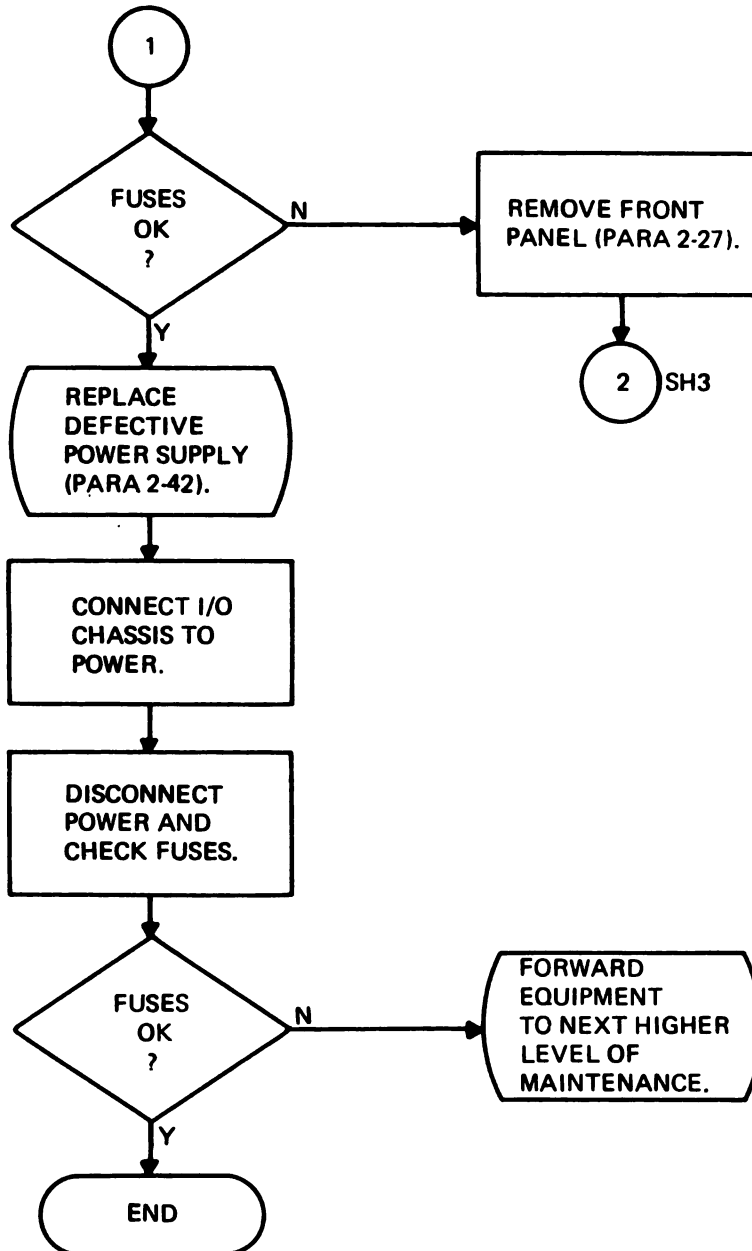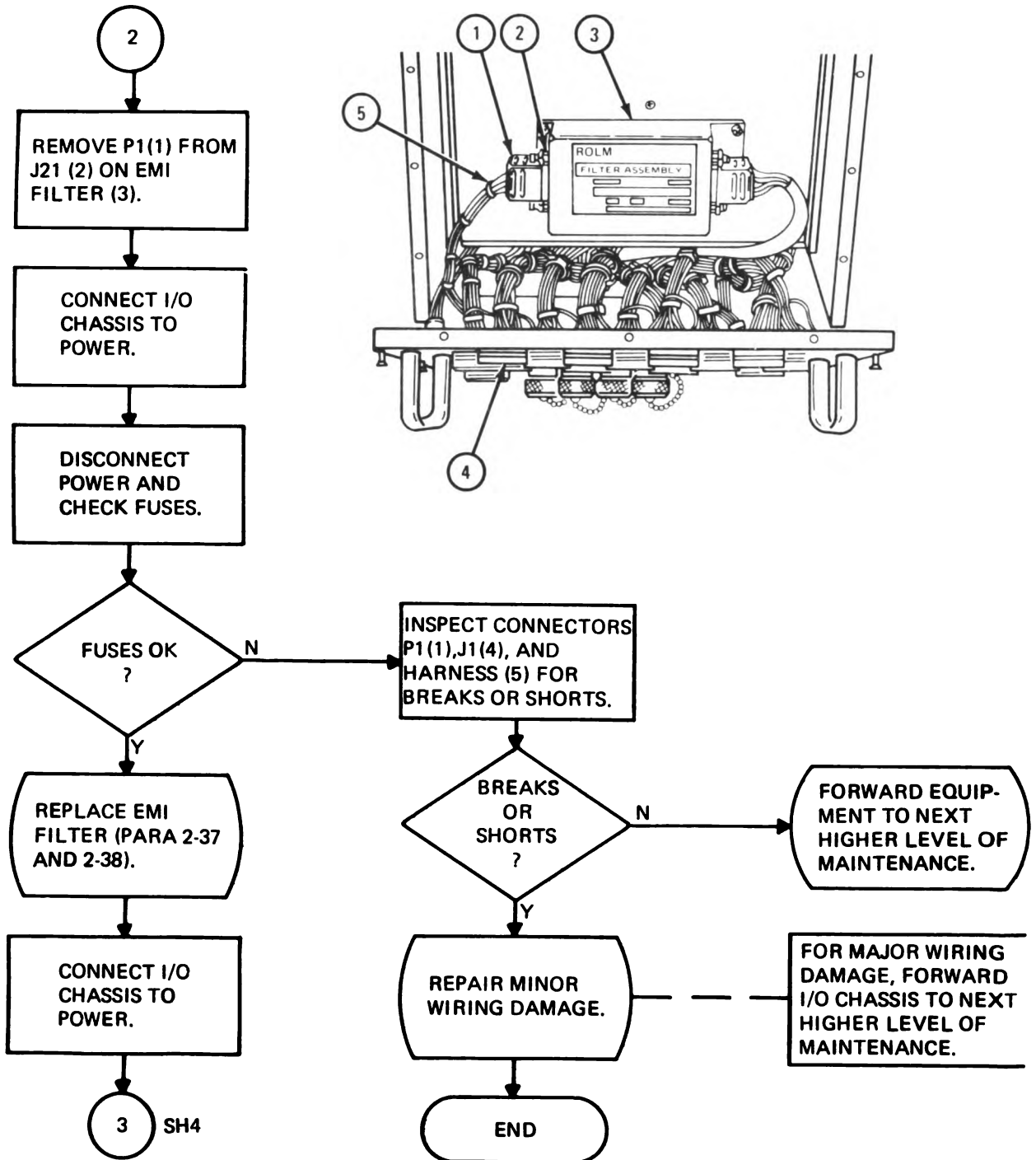## I/O CHASSIS POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 4 OF 9)

③

REMOVE FRONT PANEL (PARA 2-27).

REMOVE P2(1) FROM J19(2).

CONNECT I/O CHASSIS TO POWER.

MEASURE VOLTAGE BETWEEN A2(+) (3) AND A1(-) (4) ON J19(2).

28 VDC ? — N

Y

FORWARD EQUIPMENT TO NEXT HIGHER LEVEL OF MAINTENANCE.

DISCONNECT POWER AND REMOVE P1(5) FROM J21(6).

CONNECT I/O CHASSIS TO POWER.

MEASURE VOLTAGE BETWEEN A2(+) (7) AND A1(-) (8) ON P1(5).

28 VDC ? — N — ⑤ SH6

Y

REPLACE EMI FILTER (PARA 2-37 AND 2-38).

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TROUBLESHOOTING FLOWCHART (5)
I/O CHASSIS POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 5 OF 9)

TROUBLESHOOTING FLOWCHART ⑤
I/O CHASSIS POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 6 OF 9)

⑤

DISCONNECT POWER.

CHECK CONTINUITY FROM J14 (1) PIN A AND P1 (2) PIN A1.

CONTINUITY ? — N → REPAIR BROKEN WIRE OR CONNECTOR.

Y

CHECK CONTINUITY FROM J14 (1) PIN D AND P1 (2) PIN A2.

CONTINUITY ? — N → REPAIR BROKEN WIRE OR CONNECTOR.

Y

FORWARD EQUIPMENT TO NEXT HIGHER LEVEL OF MAINTENANCE.

TROUBLESHOOTING FLOWCHART ⑤
I/O CHASSIS POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 7 OF 9)

⑥

↓

DISCONNECT POWER.

↓

CHECK CONTINUITY FROM J14(1) PIN E AND P1(2) PIN 4.

↓

CONTINUITY ? ──N──> REPAIR BROKEN WIRE OR CONNECTOR.

│Y

CHECK CONTINUITY FROM J14(1) PIN B AND P1(2) PIN 5.

↓

CONTINUITY ? ──N──> REPAIR BROKEN WIRE OR CONNECTOR.

│Y

FORWARD EQUIPMENT TO NEXT HIGHER LEVEL OF MAINTENANCE.

TROUBLESHOOTING FLOWCHART (5)
I/O CHASSIS POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 8 OF 9)

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TROUBLESHOOTING FLOWCHART ⑤
I/O CHASSIS POWER ON/RESET SWITCH DOES NOT LIGHT (SHEET 9 OF 9)

⑧

REPAIR BROKEN
CONNECTION.

INSTALL BOTTOM
COVER (PARA 2-26).

INSTALL FRONT
PANEL (PARA 2-28).

END

TROUBLESHOOTING FLOWCHART ⑥
I/O CHASSIS KEEPS BLOWING FUSES (SHEET 1 OF 4)

```
            ┌──────────────┐
            │    START     │
            └──────┬───────┘
                   │
            ┌──────┴───────┐         ┌─────────────────────┐
            │ CHECK IF BLOWN│ ─ ─ ─ ─│ F1 AND F2 (30 AMP)  │
            │ FUSE IS PROPER│        │ ARE FOR 28 VDC      │
            │ SIZE.         │        │ INPUT. F3 AND F4    │
            └──────┬───────┘        │ (5 AMP) ARE FOR     │
                   │                 │ 115 VAC INPUT.      │
                   │                 └─────────────────────┘
                  ╱ ╲                    ┌─────────────────┐
                 ╱ IS╲     N             │ PUT IN PROPER   │
                ╱ FUSE ╲───────────────▶ │ SIZE FUSE.      │
                ╲PROPER╱                 └────────┬────────┘
                 ╲SIZE╱                           │
                  ╲?╱                     ┌────────┴────────┐
                   │Y                     │ CONNECT I/O     │
                   │                      │ CHASSIS TO      │
                   │                      │ POWER.          │
                   │                      └────────┬────────┘
                   │                              ╱ ╲
                   │                             ╱   ╲
            ┌──────┴───────┐     Y              ╱DOES ╲
            │ REMOVE POWER │◀───────────────── ╱ FUSE  ╲
            │ SUPPLY       │                   ╲ BLOW  ╱
            │ (PARA 2-41). │                    ╲  ?  ╱
            └──────┬───────┘                     ╲ ╱
                   │                              │N
            ┌──────┴───────┐              ┌───────┴──────┐
            │ CONNECT I/O  │              │     END      │
            │ CHASSIS TO   │              └──────────────┘
            │ POWER.       │
            └──────┬───────┘
            ┌──────┴───────┐
            │ DISCONNECT   │
            │ POWER AND    │
            │ CHECK FUSES. │
            └──────┬───────┘
                   │
                 ╭─┴─╮
                 │ 1 │ SH2
                 ╰───╯
```

TROUBLESHOOTING FLOWCHART ⑥
I/O CHASSIS KEEPS BLOWING FUSES (SHEET 2 OF 4)

```
                    ( 1 )
                      │
                      ▼
                  ╱───────╲                  ┌──────────────────┐
                 ╱  FUSES   ╲      N          │ REMOVE FRONT     │
                ╱   OK       ╲─────────────▶  │ PANEL (PARA 2-27).│
                ╲   ?        ╱                └──────────────────┘
                 ╲         ╱                          │
                  ╲───────╱                           ▼
                      │ Y                           ( 2 ) SH3
                      ▼
            ┌──────────────────┐
            │ REPLACE          │
            │ DEFECTIVE        │
            │ POWER SUPPLY     │
            │ (PARA 2-42).     │
            └──────────────────┘
                      │
                      ▼
            ┌──────────────────┐
            │ CONNECT I/O      │
            │ CHASSIS TO       │
            │ POWER.           │
            └──────────────────┘
                      │
                      ▼
            ┌──────────────────┐
            │ DISCONNECT       │
            │ POWER AND        │
            │ CHECK FUSES.     │
            └──────────────────┘
                      │
                      ▼
                  ╱───────╲                  ┌──────────────────┐
                 ╱  FUSES   ╲      N          │ FORWARD          │
                ╱   OK       ╲─────────────▶  │ EQUIPMENT        │
                ╲   ?        ╱                │ TO NEXT HIGHER   │
                 ╲         ╱                  │ LEVEL OF         │
                  ╲───────╱                   │ MAINTENANCE.     │
                      │ Y                     └──────────────────┘
                      ▼
                (   END   )
```

TROUBLESHOOTING FLOWCHART ⑥
I/O CHASSIS KEEPS BLOWING FUSES (SHEET 3 OF 4)

2

REMOVE P1(1) FROM
J21 (2) ON EMI
FILTER (3).

CONNECT I/O
CHASSIS TO
POWER.

DISCONNECT
POWER AND
CHECK FUSES.

FUSES OK
?

N → INSPECT CONNECTORS
P1(1),J1(4), AND
HARNESS (5) FOR
BREAKS OR SHORTS.

Y

REPLACE EMI
FILTER (PARA 2-37
AND 2-38).

CONNECT I/O
CHASSIS TO
POWER.

3 SH4

BREAKS
OR
SHORTS
?

N → FORWARD EQUIP-
MENT TO NEXT
HIGHER LEVEL OF
MAINTENANCE.

Y

REPAIR MINOR
WIRING DAMAGE. — — — FOR MAJOR WIRING
DAMAGE, FORWARD
I/O CHASSIS TO NEXT
HIGHER LEVEL OF
MAINTENANCE.

END

TROUBLESHOOTING FLOWCHART ⑥
I/O CHASSIS KEEPS BLOWING FUSES (SHEET 4 OF 4)

```
                    ( 2 )
                      │
                      ▼
         ┌─────────────────────┐
         │ DISCONNECT          │
         │ POWER AND           │
         │ CHECK FUSES.        │
         └─────────────────────┘
                      │
                      ▼
                  ╱───────╲                    ┌──────────────────────┐
                 ╱         ╲      N             │ FORWARD              │
                ╱ FUSES OK  ╲ ──────────────▶  │ EQUIPMENT TO         │
                ╲    ?      ╱                   │ NEXT HIGHER          │
                 ╲         ╱                    │ LEVEL OF             │
                  ╲───────╱                     │ MAINTENANCE.         │
                      │ Y                       └──────────────────────┘
                      ▼
         ┌─────────────────────┐
         │ INSTALL POWER       │
         │ SUPPLY (PARA        │
         │ 2-42) AND FRONT     │
         │ PANEL (PARA 2-28).  │
         └─────────────────────┘
                      │
                      ▼
         ┌─────────────────────┐
         │ CONNECT I/O         │
         │ CHASSIS TO          │
         │ POWER.              │
         └─────────────────────┘
                      │
                      ▼
         ┌─────────────────────┐
         │ DISCONNECT          │
         │ POWER AND           │
         │ CHECK FUSES.        │
         └─────────────────────┘
                      │
                      ▼
                  ╱───────╲                    ┌──────────────────────┐
                 ╱         ╲      N             │ FORWARD              │
                ╱  FUSES    ╲ ──────────────▶  │ EQUIPMENT TO         │
                ╲   OK      ╱                   │ NEXT HIGHER          │
                 ╲   ?     ╱                    │ LEVEL OF             │
                  ╲───────╱                     │ MAINTENANCE.         │
                      │ Y                       └──────────────────────┘
                      ▼
                ( END )
```

2-14. DIAGNOSTIC PROCEDURES

NOTE

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

When testing any system that requires changing configurations for testing, you must restore the UUT to the original configuration before replacing the top cover.

1. Connect processor. (Refer to the appendix C for your processor, at the rear of this manual.)

2. The processor under test will be referred to as UUT and Test Set OQ-329/U will be called OQ-329.

3. Jacks that are followed by a J — will be called out in the diagnostics.

4. When any board or boards are replaced during a test you must start the diagnostic test over unless otherwise directed.

5. Run diagnostic.

6. When testing an I/O chassis sent in without its own processor, configure the shop processor to the correct system configuration (appendix C). Connect the I/O chassis under test to the shop processor. Run diagnostic.

PROCESSOR DIAGNOSTIC FLOWCHART (SHEET 1 OF 15)
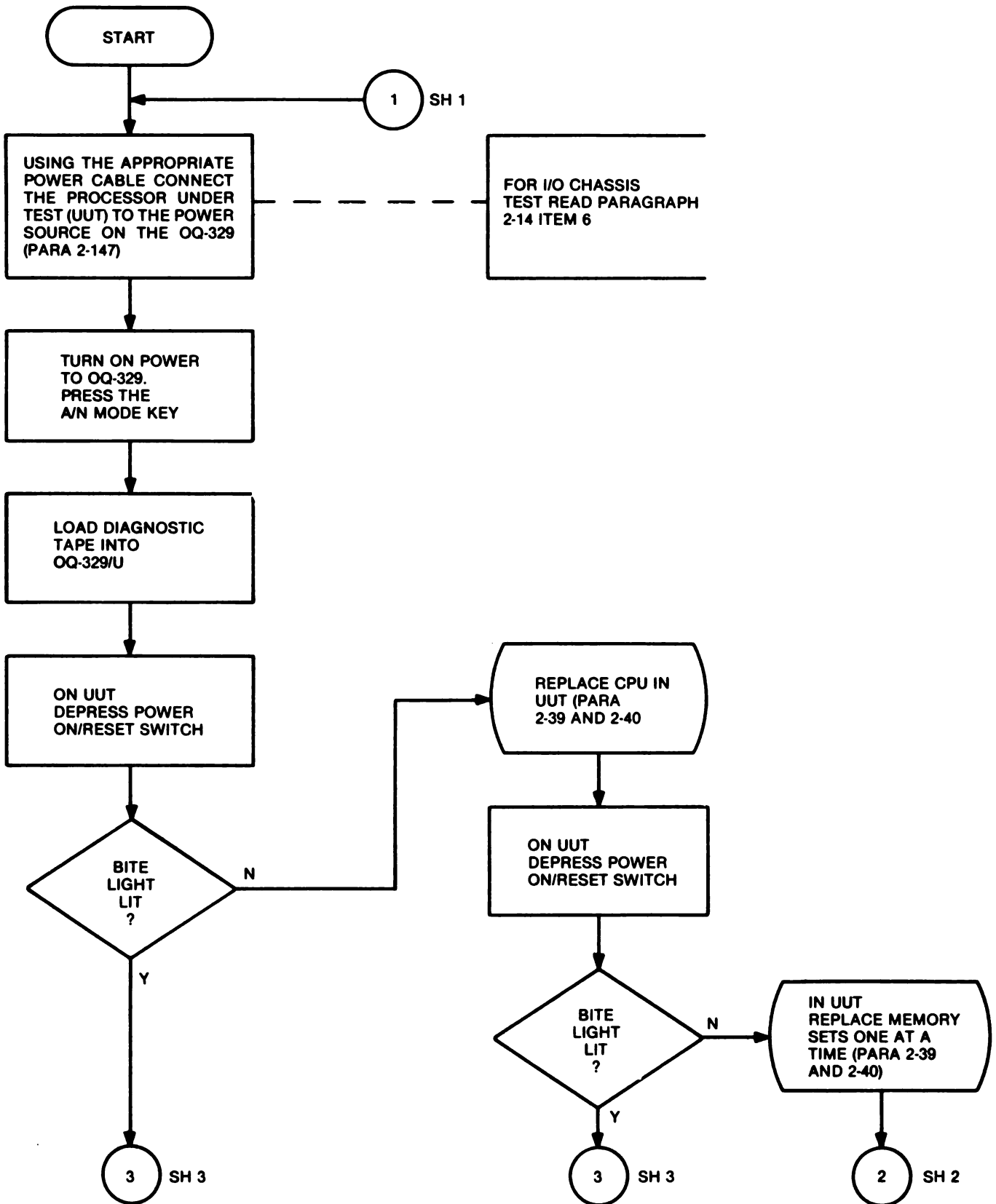
PROCESSOR DIAGNOSTIC FLOWCHART (SHEET 2 OF 15)

PROCESSOR DIAGNOSTIC FLOWCHART (SHEET 3 OF 15)

```
                    ( 3 )
                      |
                      v
        +-----------------------+
        | PRESS BOOT            |
        | LOAD SWITCH           |
        | ON OQ-329             |
        +-----------------------+
                      |
                      v
              /OQ-329\      N      +------------------+        ( 1 )  SH 1
             < TAPE MOTION >-----> | TROUBLESHOOT     | -----> 
              \   ?   /            | OQ-329           |
                  |                +------------------+
                  |Y                            +---------------------------+
                  +- - - - - - - - - - - - - - -| IT TAKES 39-45 SECONDS   |
                  |                             | FOR THE TAPE TO LOAD     |
                  v                             | AND THE DISPLAY TO       |
             / DISPLAY \     N      +------------------+   | APPEAR       |
            < ON OQ-329 >---------> | TROUBLESHOOT     |-> ( 1 ) SH 1
             \ SCREEN  /            | OQ-329           |
              \  ?   /              +------------------+
                  |Y
                  v
        +-----------------------+          +---------------------+
        | COMPARE               |- - - - - | A LIST OF ALL       |
        | DISPLAY TO            |          | SYSTEM              |
        | FIGURE 1              |          | DIAGNOSTICS         |
        +-----------------------+          | WILL BE SHOWN       |
                  |                        +---------------------+
                  v
              /  IS   \      N      +------------------+        ( 1 )  SH 1
             < DISPLAY >---------> | TROUBLESHOOT     | ----->
              \SIMILAR/            | OQ-329           |
               \  ?  /             +------------------+
                  |Y
                  v
                ( 4 ) SH 4
```
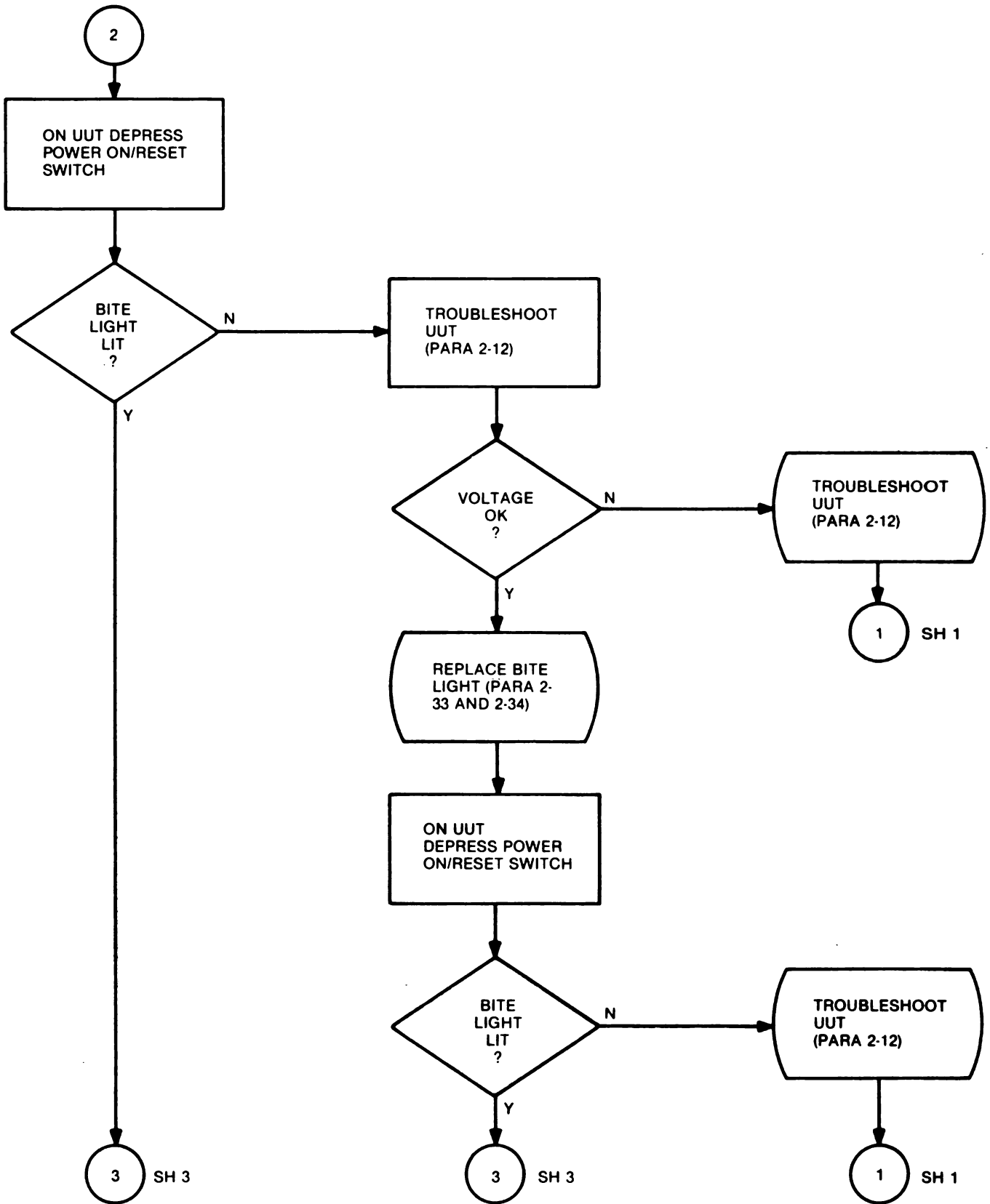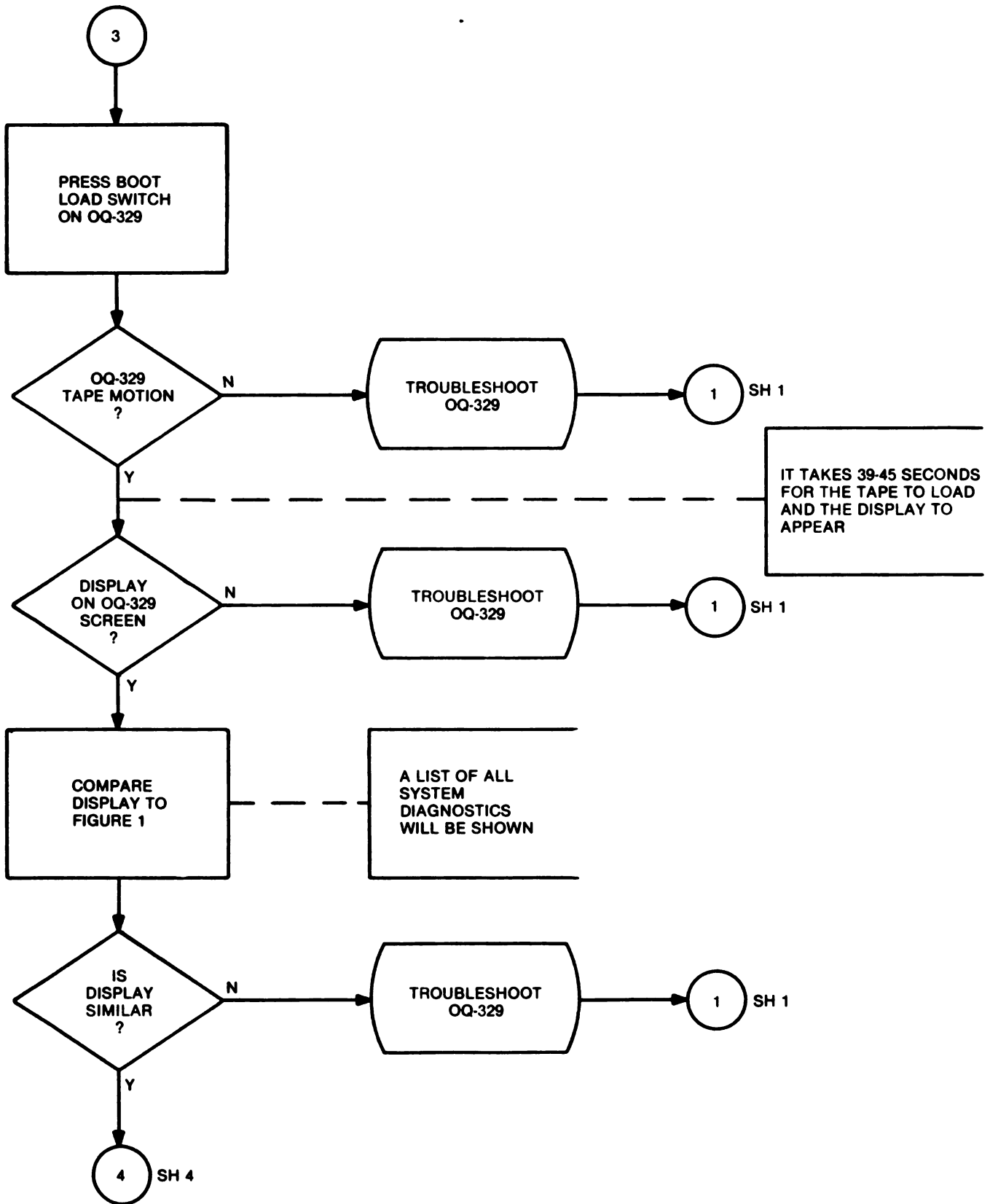
PROCESSOR DIAGNOSTIC FLOWCHART (SHEET 4 OF 15)

PROCESSOR DIAGNOSTIC FLOWCHART (SHEET 5 OF 15)

5

ON UUT, PRESS BOOT LOAD. PRESS CARRIAGE RETURN

PARTIAL FIGURE 4

CONNECT UUT (J –) TO OQ-329/U (J –) WITH I/O CABLE AND PRESS CARRIAGE RETURN.

ON UUT PRESS BOOT LOAD AND PRESS CARRIAGE RETURN.

IF UUT FAILS TO RESPOND, REPLACE BOARDS ONE AT A TIME AND RERUN THE TEST AFTER EACH STEP
- 3561B
- ALL 3566's
- ALL I/O BOARDS
- IF UUT STILL FAILS, SEND CHASSIS WITH ORIGINAL BOARDS TO NEXT HIGHER LEVEL OF MAINTENANCE

THE DIAGNOSTICS ARE NOW BEING LOADED. THE PROCESSOR DIAGNOSTICS ARE RUN FIRST. THE UPPER RIGHT PORTION OF THE OQ-329/U DISPLAY WILL SHOW THE STATE OF THE DIAGNOSTICS. WHEN A DIAGNOSTIC IS BEING LOADED, A MESSAGE WILL APPEAR AS SHOWN IN FIGURE 1. WHEN A DIAGNOSTIC IS BEING RUN, A MESSAGE WILL APPEAR AS SHOWN IN FIGURE 6. DURING THE OPERATION OF THE DIAGNOSTICS, PRESSING THE STOP ON ERROR KEY ON THE OQ-329/U KEYBOARD WILL TOGGLE THE STOP ON ERROR FUNCTION. IF THE STOP ON ERROR FUNCTION IS ACTIVE, AN ASTERISK WILL APPEAR ON THE OQ-329/U DISPLAY IN THE STOP ON ERROR BLOCK. IF THE DIAGNOSTIC DETECTS AN ERROR AND THE STOP ON ERROR FUNCTION IS ACTIVE, THE OPERATOR WILL BE GIVEN THREE CHOICES: 1.) CONTINUE WITH THE NEXT DIAGNOSTIC, 2.) REPEAT THE DIAGNOSTIC THAT FAILED, OR 3.) EXIT THE DIAGNOSTIC SYSTEM. THE ABOVE THREE FUNCTIONS ARE SELECTED THROUGH THE CORRESPONDING FUNCTION KEYS ON THE OQ-329/U KEYBOARD. IF THE STOP ON ERROR FUNCTION IS NOT ACTIVE, THE SYSTEM WILL CONTINUE WITH THE NEXT DIAGNOSTIC AUTOMATICALLY. AT ANY TIME DURING THE DIAGNOSTICS THE ABORT FUNCTION KEY CAN BE PRESSED AND THE DIAGNOSTIC RUNNING WILL BE ABORTED. WHEN EACH INDIVIDUAL DIAGNOSTIC IS COMPLETED, THE STATUS (PASS/FAIL) IS DISPLAYED NEXT TO THE CHASSIS, ON THE OQ-329/U SCREEN, AS SHOWN IN FIGURE 7. AFTER THE PROCESSOR DIAGNOSTICS ARE COMPLETED, THE I/O CHASSIS DIAGNOSTICS BEGIN, IF THE SYSTEM BEING TESTED HAS ONE. MESSAGES AND STATUS WILL APPEAR SIMILAR TO THE ONES DISPLAYED FOR THE PROCESSOR. WHEN ALL DIAGNOSTICS ARE COMPLETED, THE OQ-329/U DISPLAY WILL OUTPUT THE MESSAGE AS IN FIGURE 8. IF AT ANY TIME DURING THE DIAGNOSTICS THE OPERATOR IS REQUIRED TO ATTACH A CABLE OR LOOPBACK DEVICE, A MESSAGE WILL BE DISPLAYED ON THE OQ-329/U SCREEN AS IN FIGURE 9.

6 SH 6

PROCESSOR DIAGNOSTIC FLOWCHART (SHEET 6 OF 15)

6

IF ALL BOARDS ON A LOWER NUMBERED SLOT THAN
A 3566 FAIL. REPLACE AND RETEST LOWER 3566'S
IN SEQUENCE.

IF ALL BOARDS IN AN I/O CHASSIS FAIL
  A. REPLACE THE 3561B IN THE PROCESSOR SLOT
    CONNECTED TO THE I/O CHASSIS.
  B. REPLACE 3563 IN I/O CHASSIS.

ANY
BOARDS
FAIL
?
— Y →

FIRST
FAILURE FOR
THAT
SLOT
?
— Y →

REPLACE
FAILED BOARDS
→ **1**   SH 1

N ↓

N ↓

DIAGNOSTICS
HAVE BEEN
SUCCESSFULLY
COMPLETED

FORWARD UUT
TO HIGHER
LEVEL OF
MAINTENANCE

DISCONNECT
UUT
— — —
REMOVE ALL LOOP BACK
PLUGS AND CABLES

END

PROCESSOR DIAGNOSTIC FLOWCHART (SHEET 7 OF 15)

	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 1

PROCESSOR DIAGNOSTIC FLOWCHART (SHEET 8 OF 15)

AN/TSQ-114A (TRAILBLAZER)					
STATUS	SLOT	CONNECTOR	STATUS	SLOT	CONNECTOR
2011	A20-22		3566	A1	J5
2011	A17-19		3765	A2	J10
2011	A14-16		S711	A3	J1
2011	A11-13		S710	A4	J6
EMPTY	A10		3549	A5	J2
5605	A9		3540	A6	J11
1642	A8	J1	S667	A7	J7
3543	A7	J8	S667	A8	J12
3543	A6	J5	- - -		
3545	A5	J4	S593	A10	J3
3545	A4	J3	S593	A11	J8
3549	A3	J2	3566	A12	J15
3561B	A2	J7	3566	A13	J13
3561B	A1	J6	3566	A14	J4
			3566	A15	J9
			3563	A16	J16

ABORT	STOP-ON-ERROR	REPEAT	CONTINUE	EXIT TEST

IS THIS THE CORRECT CONFIGURATION? (Y/N):

FIGURE 2

PROCESSOR DIAGNOSTIC FLOWCHART (SHEET 9 OF 15)

AN/TSQ-114A (TRAILBLAZER)					
STATUS	**SLOT**	**CONNECTOR**	**STATUS**	**SLOT**	**CONNECTOR**
2011	A20-22		3566	A1	J5
2011	A17-19		3765	A2	J10
2011	A14-16		S711	A3	J1
2011	A11-13		S710	A4	J6
EMPTY	A10		3549	A5	J2
5605	A9		3540	A6	J11
1642	A8	J1	S667	A7	J7
3543	A7	J8	S667	A8	J12
3543	A6	J5	- - -		
3545	A5	J4	S593	A10	J3
3545	A4	J3	S593	A11	J8
3549	A3	J2	3566	A12	J15
3561B	A2	J7	3566	A13	J13
3561B	A1	J6	3566	A14	J4
			3566	A15	J9
			3563	A16	J16

ABORT	STOP-ON-ERROR	REPEAT	CONTINUE	EXIT TEST

IS THIS THE CORRECT CONFIGURATION? (Y/N): Y

CONNECT UUT (J-) TO OQ-329/U (J-) WITH I/O CABLE
AND PRESS CARRIAGE RETURN.

FIGURE 3

PROCESSOR DIAGNOSTIC FLOWCHART (SHEET 12 OF 15)

AN/TSQ-114A (TRAILBLAZER)			RUNNING MEMO2 (REVISION 1 J)		
STATUS	SLOT	CONNECTOR	STATUS	SLOT	CONNECTOR
2011	A20-22		3566	A1	J5
2011	A17-19		3765	A2	J10
2011	A14-16		S711	A3	J1
2011	A11-13		S710	A4	J6
EMPTY	A10		3549	A5	J2
5605	A9		3540	.6	J11
1642	A8	J1	S667	A7	J7
3543	A7	J8	S667	A8	J12
3543	A6	J5	- - -		
3545	A5	J4	S593	A10	J3
3545	A4	J3	S593	A11	J8
3549	A3	J2	3566	A12	J15
3561B	A2	J7	3566	A13	J13
3561B	A1	J6	3566	A14	J4
			3566	A15	J9
			3563	A16	J16

ABORT	STOP-ON-ERROR	REPEAT	CONTINUE	EXIT TEST

CONNECT UUT (J-) TO OQ-329/U (J-) WITH I/O CABLE
AND PRESS CARRIAGE RETURN.

ON UUT PRESS BOOT LOAD AND PRESS CARRIAGE RETURN.

FIGURE 6

PROCESSOR DIAGNOSTIC FLOWCHART (SHEET 13 OF 15)

AN/TSQ-114A (TRAILBLAZER)			SEARCHING AN/UYH-1 FOR DIAGNOSTIC		
STATUS	SLOT	CONNECTOR	STATUS	SLOT	CONNECTOR
PASS	2011	A20-22		3566	A1	J5
PASS	2011	A17-19		3765	A2	J10
PASS	2011	A14-16		S711	A3	J1
PASS	2011	A11-13		S710	A4	J6
	EMPTY	A10		3549	A5	J2
PASS	5605	A9		3540	A6	J11
	1642	A8	J1	S667	A7	J7
	3543	A7	J8	S667	A8	J12
	3543	A6	J5	- - -		
	3545	A5	J4	S593	A10	J3
	3545	A4	J3	S593	A11	J8
	3549	A3	J2	3566	A12	J15
	3561B	A2	J7	3566	A13	J13
	3561B	A1	J6	3566	A14	J4
				3566	A15	J9
				3563	A16	J16

ABORT	STOP-ON-ERROR	REPEAT	CONTINUE	EXIT TEST

CONNECT UUT (J-) TO OQ-329/U (J-) WITH I/O CABLE
AND PRESS CARRIAGE RETURN.

ON UUT PRESS BOOT LOAD AND PRESS CARRIAGE RETURN.

FIGURE 7

PROCESSOR DIAGNOSTIC FLOWCHART (SHEET 14 OF 15)

AN/TSQ-114A (TRAILBLAZER)			DIAGNOSTIC SEQUENCE COMPLETE		
STATUS	SLOT	CONNECTOR	STATUS	SLOT	CONNECTOR
PASS — 2011 —	A20-22			3566 —	A1	J5
PASS — 2011 —	A17-19		FAIL — 3765 —	A2	J10
PASS — 2011 —	A14-16		PASS — S711 —	A3	J1
PASS — 2011 —	A11-13		PASS — S710 —	A4	J6
— EMPTY —	A10		PASS — 3549 —	A5	J2
PASS — 5605 —	A9		PASS — 3540 —	A6	J11
PASS — 1642 —	A8	J1	PASS — S667 —	A7	J7
PASS — 3543 —	A7	J8	PASS — S667 —	A8	J12
FAIL — 3543 —	A6	J5	— - - - —		
PASS — 3545 —	A5	J4	PASS — S593 —	A10	J3
PASS — 3545 —	A4	J3	FAIL — S593 —	A11	J8
PASS — 3549 —	A3	J2	— 3566 —	A12	J15
— 3561B —	A2	J7	— 3566 —	A13	J13
— 3561B —	A1	J6	— 3566 —	A14	J4
			— 3566 —	A15	J9
			— 3563 —	A16	J16

ABORT	STOP-ON-ERROR	REPEAT	CONTINUE	EXIT TEST

CONNECT UUT (J-) TO OQ-329/U (J-) WITH I/O CABLE
AND PRESS CARRIAGE RETURN.

ON UUT PRESS BOOT LOAD AND PRESS CARRIAGE RETURN.

FIGURE 8

PROCESSOR DIAGNOSTIC FLOWCHART (SHEET 15 OF 15)

AN/TSQ-114A (TRAILBLAZER)			RUNNING 1642 (REVISION 1.0)		
STATUS	SLOT	CONNECTOR	STATUS	SLOT	CONNECTOR
PASS — 2011 —	A20-22		— 3566 —	A1	J5
PASS — 2011 —	A17-19		— 3765 —	A2	J10
PASS — 2011 —	A14-16		— S711 —	A3	J1
PASS — 2011 —	A11-13		— S710 —	A4	J6
— EMPTY —	A10		— 3549 —	A5	J2
PASS — 5605 —	A9		— 3540 —	A6	J11
— 1642 —	A8	J1	— S667 —	A7	J7
— 3543 —	A7	J8	— S667 —	A8	J12
— 3543 —	A6	J5	- - -		
— 3545 —	A5	J4	— S593 —	A10	J3
— 3545 —	A4	J3	— S593 —	A11	J8
— 3549 —	A3	J2	— 3566 —	A12	J15
— 3561B —	A2	J7	— 3566 —	A13	J13
— 3561B —	A1	J6	— 3566 —	A14	J4
			— 3566 —	A15	J9
			— 3563 —	A16	J16

ABORT	STOP-ON-ERROR	REPEAT	CONTINUE	EXIT TEST

1642 CONTROL PANEL INTERFACE DIAGNOSTIC.

CONNECT LB1642 TO CONNECTOR (J1) OF UUT, PRESS CARRIAGE RETURN.

FIGURE 9

2-15. TESTING PROCESSOR POWER SUPPLY OUTPUT VOLTAGES

NOTE

Power supply output voltages are measured on the processor motherboard.

1. Remove bottom cover (para 2-25).

CAUTION

Do not cut wires when cutting
cable ties. Cut wires can cause equip-
ment damage when power is applied.

NOTE

Cable tie (1) is the tie that holds the
cable (2) to board (3).

2. Cut cable tie (1).

CAUTION

Do not force cable (2) away from
board (3). Forcing cables will break
wires at board solder points.

3. Gently move cable (2) away
from board (3).
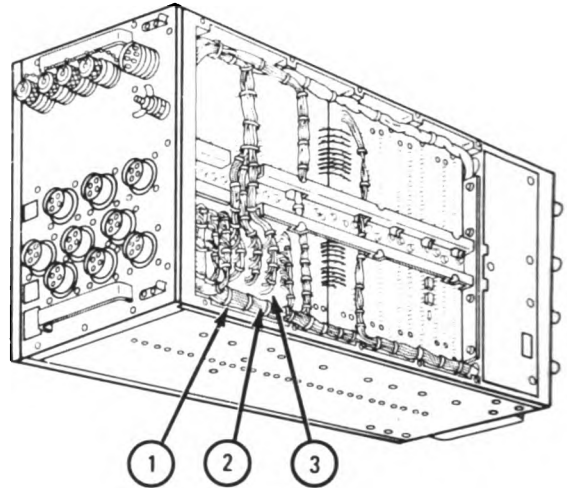
WARNING

High voltages are present when power is applied to processor.
Failure to use caution can cause serious injury to personnel.

4. Apply power to
processor. (Refer to
TM 11-7021-201-12.)

CAUTION

Care must be taken
when using test
probe. Failure to do
so can cause shorts
in equipment.

5. Connect the com-
mon (-) lead of a dmm
to a board ground (4).
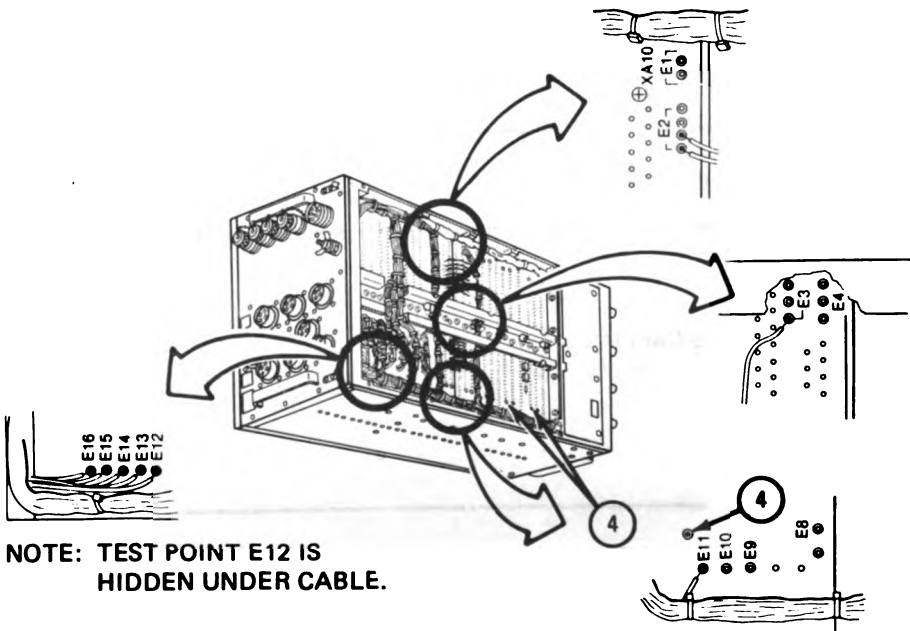
NOTE: TEST POINT E12 IS
HIDDEN UNDER CABLE.

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TABLE 2-1. POWER SUPPLY OUTPUT VOLTAGES

Board Test Point	Voltage
E2	+12 vdc
E3	-5 vdc
E11	-12 vdc
E12	+5 vdc

6. Using the dmm positive lead, measure power supply output voltages as shown in table 2-1.

7. Remove power from processor. (Refer to TM 11-7021-201-12.)

8. Push cable (1) back against board (2).

9. Install new cable tie (3).

10. Install bottom cover (para 2-26).
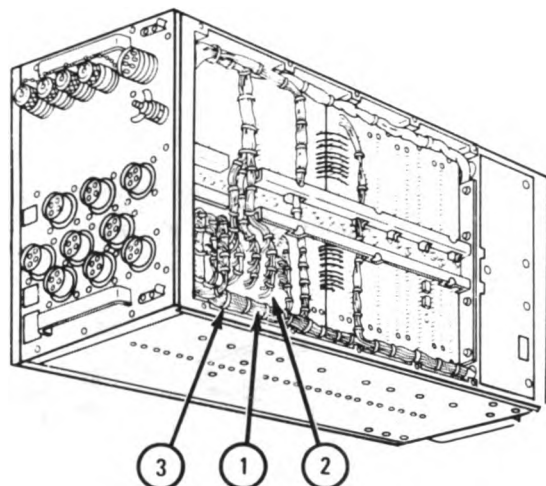
2-16. TESTING I/O CHASSIS POWER SUPPLY OUTPUT VOLTAGES

NOTE

Power supply output voltages are measured on the I/O chassis motherboard.

1. Remove bottom cover (para 2-25).

WARNING

High voltages are present when power is applied to processor. Failure to use caution can cause serious injury to personnel.

2. Apply power to I/O chassis. (Refer to TM 11-7021-201-12.)

CAUTION

Care must be taken when using test probes. Failure to do so
can cause shorts in equipment.
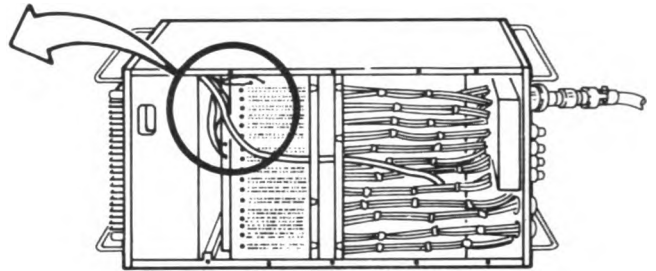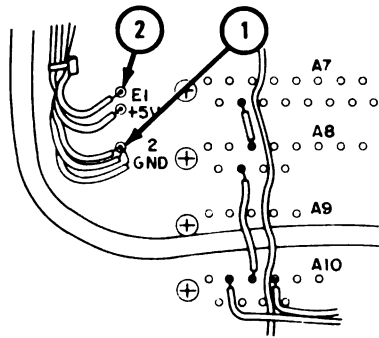
3. Using a dmm, hold common (-) lead on 2 GND (1) and positive (+) lead on E1 +5V (2).
   Reading should be +5 vdc.
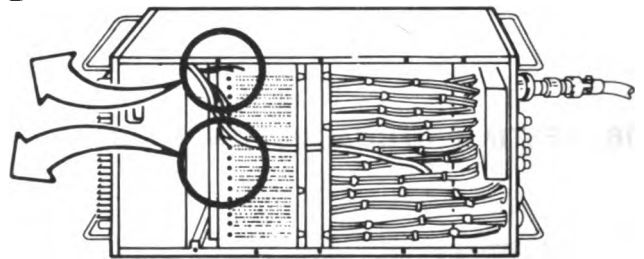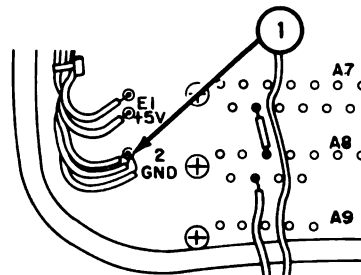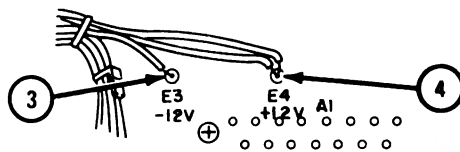
4. Using a dmm, hold positive (+) lead on 2 GND (1) and common (-) lead on E3 -12V (3).
   Reading should be +12 vdc.

5. Using a dmm, hold common (-) lead on 2 GND (1) and positive (+) lead on E4 +12V (4).
   Reading should be +12 vdc.

6. Remove power from I/O chassis.

7. Install bottom cover (para 2-26).

2-17. TESTING POWER ON/RESET SWITCH

1. Remove front panel (para 2-27).

2. Remove power supply (para 2-41).

NOTE

If one or both of the test probes are touching the POWER ON/
RESET switch case while the continuity checks are being done,
false readings may be obtained.

The procedure is typical for both the processor and I/O chassis.
The processor is shown.
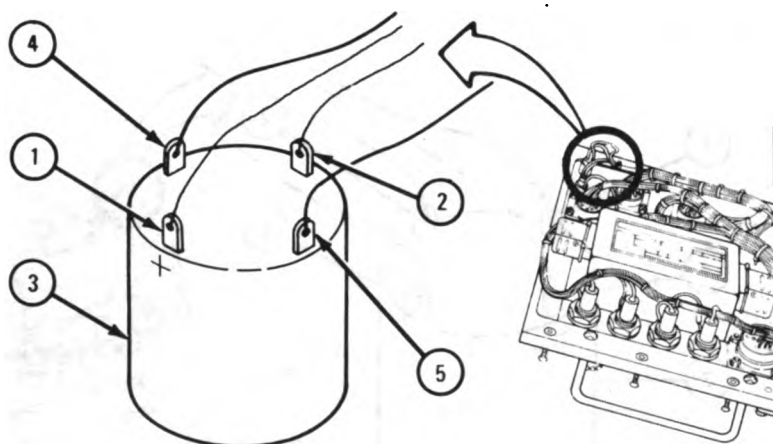
3. Using a dmm, check the continuity between contacts (1) and (2) on the POWER ON/RESET switch (3). (Refer to table 2-2.)

4. Using a dmm, check the continuity between contacts (4) and (5) on the POWER ON/RESET switch (3). (Refer to table 2-2.)

TABLE 2-2. POWER ON/RESET SWITCH CONTINUITY

| Measurement Between Pins	Continuity	
	Switch Not Depressed	Switch Depressed
1(+) and 2(-)	Continuity	Continuity
4(+) and 5(-)	No Continuity	Continuity

5. Install power supply (para 2-42).

WARNING

High voltages are present when power is applied to processor.
Failure to use caution can cause serious injury to personnel.

6. Apply power to processor. (Refer to TM 11-7021-201-12.)

CAUTION

When power is applied to processor, touching a test probe to
contacts (1) or (4) and case of POWER ON/RESET switch (3)
may blow a fuse.
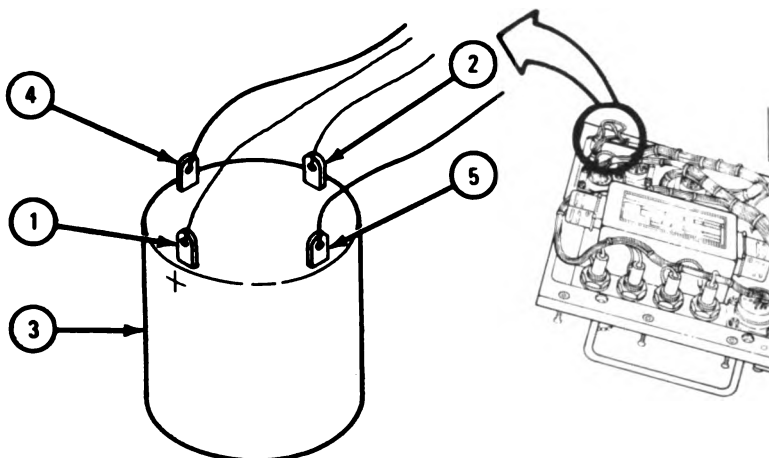
7. Using a dmm, measure the voltage between contacts (1)(+) and (2)(-) on POWER ON/RESET switch (3). (Refer to table 2-3.)

8. Using a dmm, measure the voltage between contacts (4)(+) and (5)(-) on POWER ON/RESET switch (3). (Refer to table 2-3.)

TABLE 2-3. POWER ON/RESET SWITCH VOLTAGES

Measurement Between Pins	Voltage	
	Switch Not Depressed	Switch Depressed
1(+) and 2(-) 4(+) and 5(-)	+5 vdc +24 vdc	0 vdc 0 vdc

9. Remove power from processor. (Refer to TM 11-7021-201-12.)

10. Install front panel (para 2-28).

2-18. I/O CABLE CONTINUITY TEST

NOTE

All I/O cables are wired the same.

1. Measure continuity between P1 and P2. (Refer to table 2-4.)

NOTE

Use a spare connector pin as an aid when performing cable continuity test.
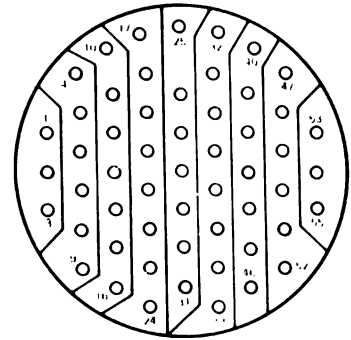
2. Repair any minor wiring problems (para 2-44).

3. If major wiring problems exist, refer cable to next higher level of maintenance.

TABLE 2-4. I/O CABLE CONTINUITY TEST

From Connector P1 Pin No.	To Connector P2 Pin No.	From Connector P1 Pin No.	To Connector P2 Pin No.	From Connector P1 Pin No.	To Connector P2 Pin No.
1	1	20	20	38	38
2	2	21	21	39	39
3	3	22	22	40	40
4	4	23	23	41	41
5	5	24	24	42	42
6	6	25	25	43	43
7	7	26	26	44	44
8	8	27	27	45	45
9	9	28	28	46	46
10	10	29	29	47	47
11	11	30	30	48	48
12	12	31	31	49	49
13	13	32	32	50	50
14	14	33	33	51	51
15	15	34	34	52	52
16	16	35	35	53	53
17	17	36	36	54	54
18	18	37	37	55	55
19	19				

2-19. POWER CABLE CONTINUITY TEST

NOTE

Processor and I/O chassis power cables are the same.

a. Check continuity of the processor or I/O chassis ac power cable as shown:

GOLD   SILVER

C   F

B   G   E

A   D

GROUND

AC
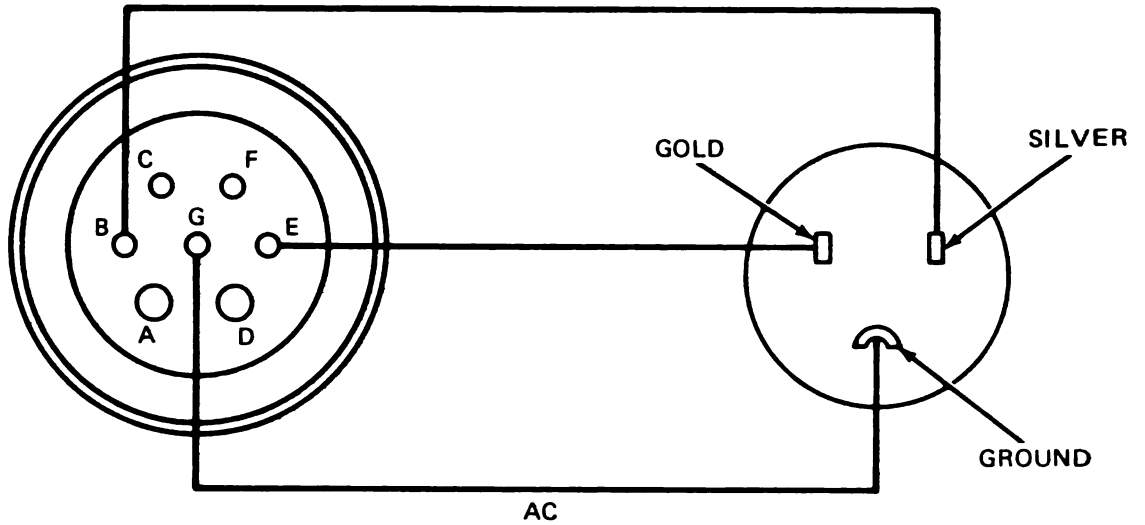
b. Check continuity of processor or I/O chassis dc power cable as shown:

C   F

B   G   E

A   D

GREEN

BLACK

WHITE

DC

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Section IV. MAINTENANCE PROCEDURES

WARNING

The processor and I/O chassis are heavy pieces of equipment, always
use two technicians to move equipment. Failure to do so can cause
injury to personnel.

2-20. GENERAL

This section contains instructions for direct support maintenance of the AN/UYK-19. Procedures
are included for removal, cleaning, inspection, repair, and installation of the equipment, as authorized
by the maintenance allocation chart.

2-21. CLEANING

All parts must be cleaned before inspection and after repair. A vacuum cleaner may be used to remove
dirt and dust from inaccessible areas, such as between circuit cards and behind power supply.

2-22. INSPECTION

Inspect equipment as per instructions given in table 2-5.

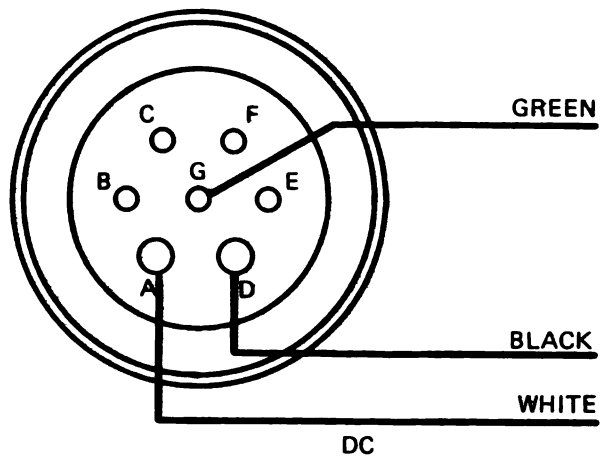### TABLE 2-5. INSPECTION PROCEDURES

Item	Inspect For	Remedy
Front panel	Loose, broken, or damaged switch(es), indica-tor(s) or fuseholder(s).	Tighten loose switch(es), indicator(s), or fuseholder(s). Replace broken or damaged switch(es), indicator(s), or fuseholder(s).
Connectors	Crossed or damaged threads, cracked or broken shell, cracked or broken insert, loose or missing mounting hardware.	Repair or replace damaged connector(s). Tighten loose hardware and replace missing hardware.
Printed circuit cards	Improperly seated circuit card(s).	Secure loose circuit card(s).

TABLE 2-5. INSPECTION PROCEDURES — Continued

Item	Inspect For	Remedy
Wiring	Frayed or broken insulation. Broken, corroded, or poor connections.	Repair or replace wiring, as necessary.
Hardware	Loose or missing hardware, or stripped threads.	Tighten loose screws and nuts. Replace missing or damaged hardware.
Chassis and motherboard	Damage to chassis such as dents, cracks, or distortion.	Replace unit. Forward damaged unit to next higher level of maintenance.
	Broken leads or signs of overheating on motherboard components.	Replace unit. Forward damaged unit to next higher level of maintenance.
	Frayed or worn insulation, breaks, chafing, excessive brittleness (caused by overheating or short-circuiting) on motherboard harness.	Replace unit. Forward damaged unit to next higher level of maintenance.
	Loose or poor connections on motherboard pins.	Repair connections.

2-23. REMOVING TOP COVER

NOTE

Procedure given in the following steps is for the processor and is typical, except as noted, for the I/O chassis.

There are **16 screws (1)** for processor top cover and **17 screws** for I/O chassis top cover.

1. Loosen **16 captive screws (1)** until they pop up.

2. Remove top cover **(2)**.
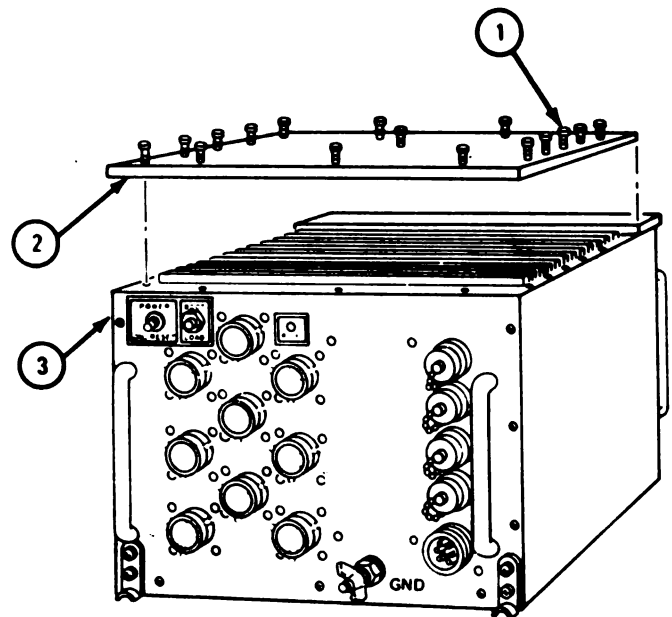
2-24. INSTALLING TOP COVER

NOTE

Procedure given in the following steps is for the processor and is typical, except as noted, for the I/O chassis.

There are **16 screws (1)** for processor top cover and **17 screws (1)** for I/O chassis top cover.

1. Position top cover (2) on processor (3) and start **16 captive screws (1)** by hand.

2. Tighten **16 captive screws (1)**.

2-25. REMOVING BOTTOM COVER

NOTE

Procedure given in the following steps is for the processor and is typical, except as noted, for the I/O chassis.

There are 24 captive screws (2) for processor bottom cover and 25 captive screws for I/O chassis bottom cover.

1. Turn processor (1) on its side, as shown.

2. Loosen 24 captive screws (2).

3. Remove bottom cover (3).

2-26. INSTALLING BOTTOM COVER

NOTE

Procedure given in the following steps is for the processor and is typical, except as noted, for the I/O chassis.

There are 24 captive screws (3) for processor bottom cover and 25 captive screws for I/O chassis bottom cover.

1. Position bottom cover (1) on processor (2) and start 24 captive screws (3) by hand.
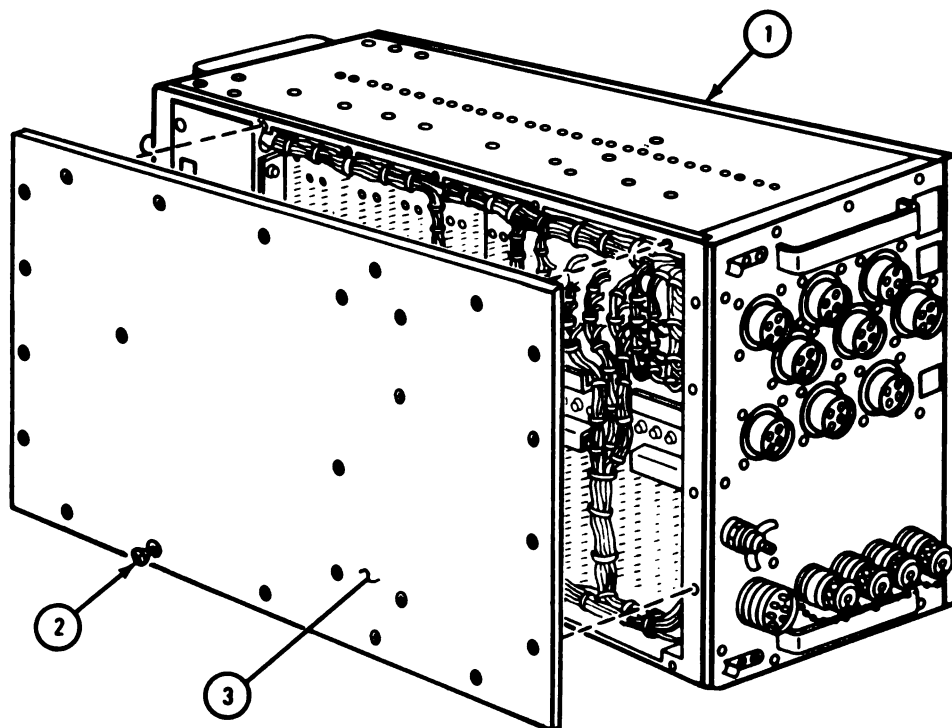
2. Tighten 24 captive screws (3).

3. Turn processor (2) right side up.

2-27. REMOVING FRONT PANEL

NOTE

Procedure given in the following steps is for the processor and is typical for the I/O chassis.

1. Remove bottom cover (para 2-25).

2. Turn processor (1) right side up.

3. Remove two screws (2), one on each side of processor (1).

4. Loosen three captive screws (3), at front of top cover (4).

5. Lay processor (1) on its side.

6. Loosen six captive screws (5) all the way, three on each side of front panel (6).
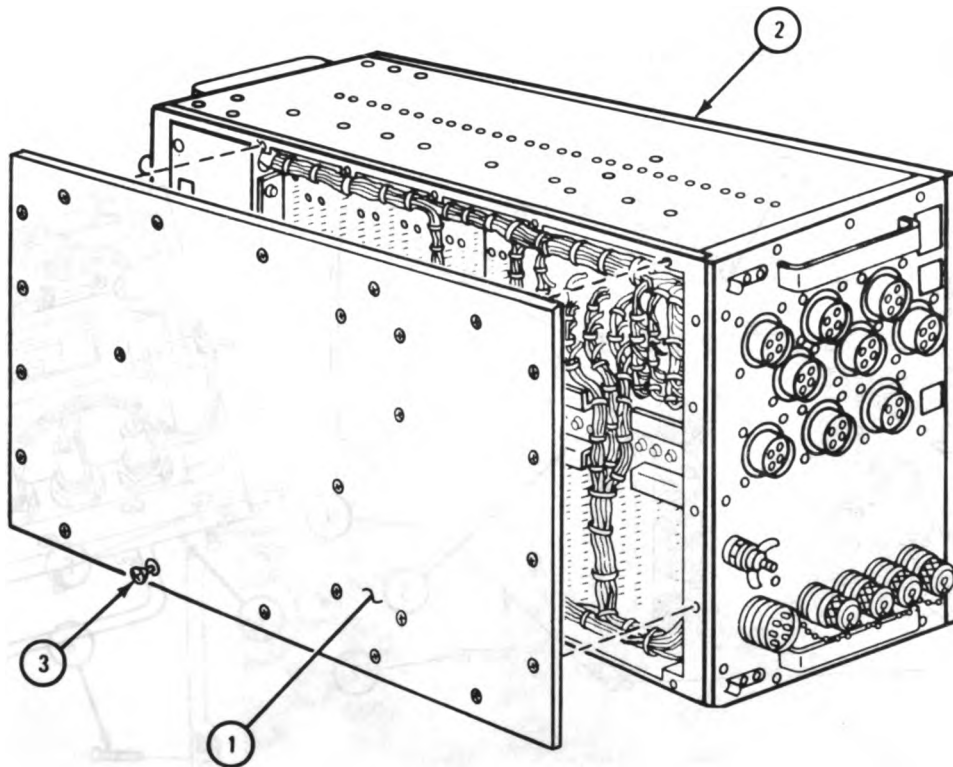
7. Pull down front panel (6), as shown.

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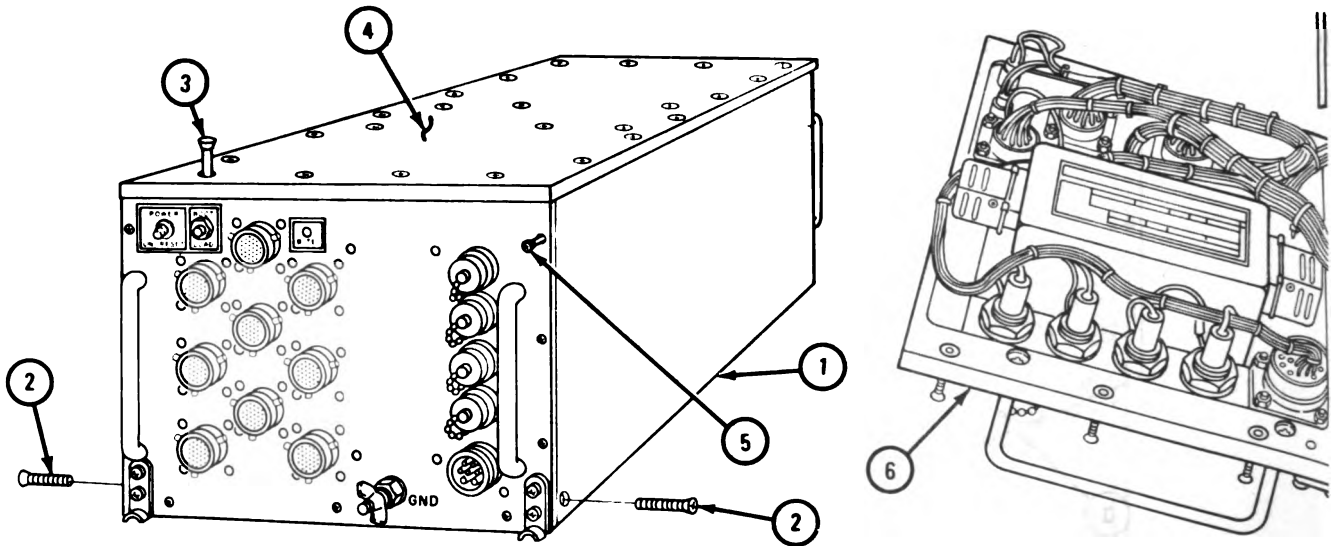
2-28. INSTALLING FRONT PANEL

NOTE

Procedure given in the following steps is for the processor and is typical for the I/O chassis.

1. Lay processor (1) on its side.

2. Push front panel (2) in place on processor (1), as shown.

3. Aline and hand tighten six captive screws (3), three on each side of front panel (1).

4. Aline and hand tighten three captive screws (4), at front of top cover (5).

5. Install two screws (6), one on each side of processor (1).

6. Tighten six captive screws (3) and three captive screws (4).

7. Install bottom cover (para 2-26).
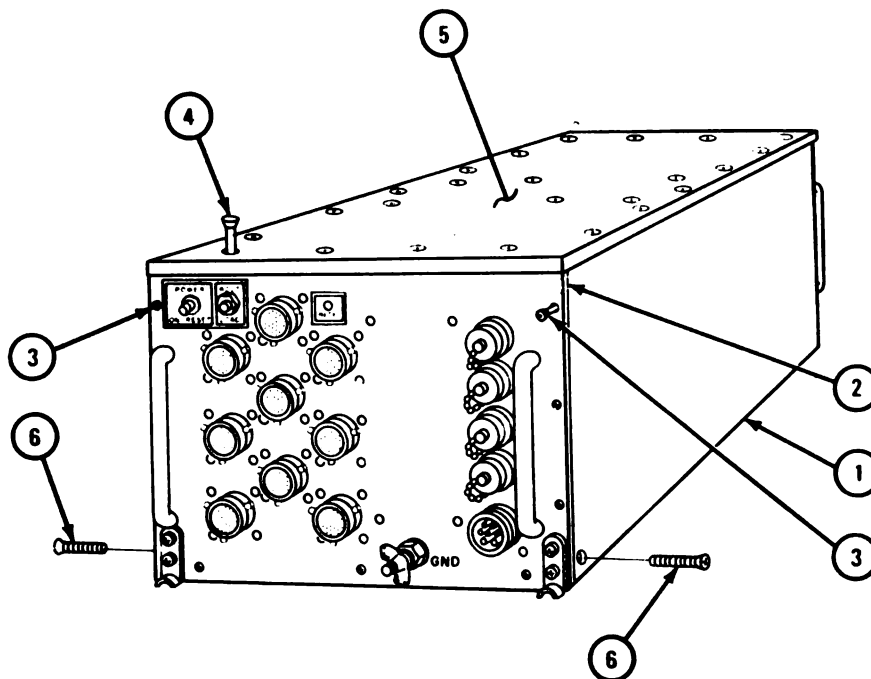
2-29. REMOVING POWER ON/RESET SWITCH

NOTE

Procedure given in the following steps is for the processor and is typical for the I/O chassis.

1. Remove front panel (para 2-27).

2. Cut and remove heat shrinkable tubing (1) from four wires (2).

3. Unsolder and remove four wires (2), from POWER ON/RESET switch (3). Tag wire on plus (+) terminal.

4. Hold POWER ON/RESET switch (3) and remove nut (4).

5. Remove POWER ON/RESET switch (3) from front panel (5). Remove star washer (6) from switch.

BROWN
LARGE GAGE
(SWITCH)

PURPLE
SMALL GAGE
(DIODE)

BLACK
SMALL GAGE
(DIODE)

RED
LARGE GAGE
(SWITCH)
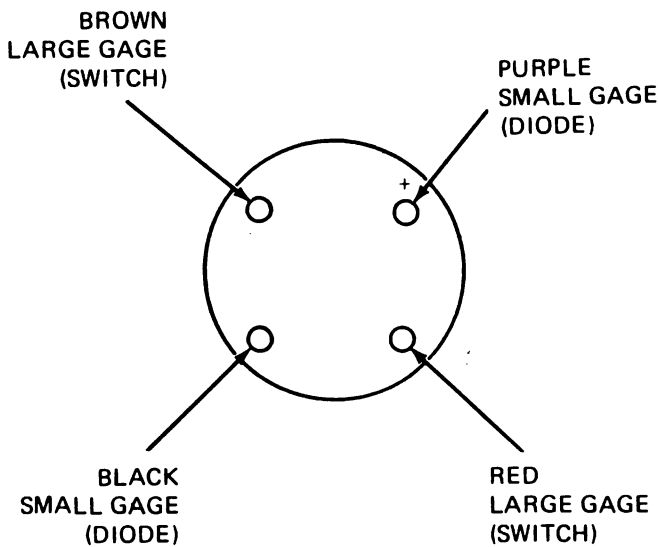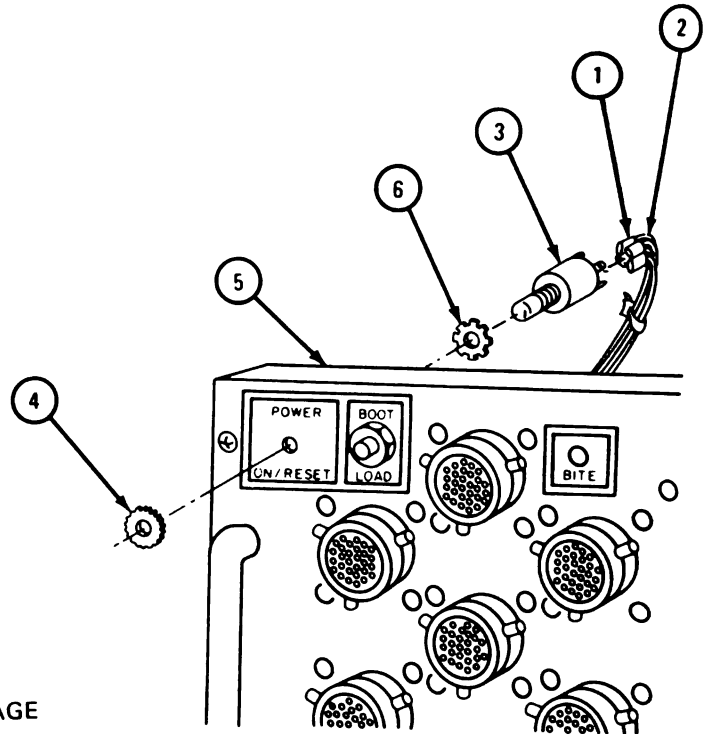
2-30. INSTALLING POWER ON/RESET SWITCH

NOTE

Procedure given in the following steps is for the processor and is typical for the I/O chassis.

1. Put star washer (1) on POWER ON/RESET switch (2).

2. Position POWER ON/RESET switch (2) in front panel (3) and install nut (4).

3. Put heat shrinkable tubing (5) (item 5, App B) onto four wires (6).

4. Solder four wires (6) onto lugs (7) on POWER ON/RESET switch (2). Tagged wire goes on plug (+) terminal. Remove tag.

5. Slide heat shrinkable tubing (5) over lugs (7).

6. Using soldering iron, apply heat to heat shrinkable tubing (5) until it is tight on lugs (7).

7. Install front panel (para 2-28).

BROWN
LARGE GAGE
(SWITCH)

PURPLE
SMALL GAGE
(DIODE)

BLACK
SMALL GAGE
(DIODE)

RED
LARGE GAGE.
(SWITCH)
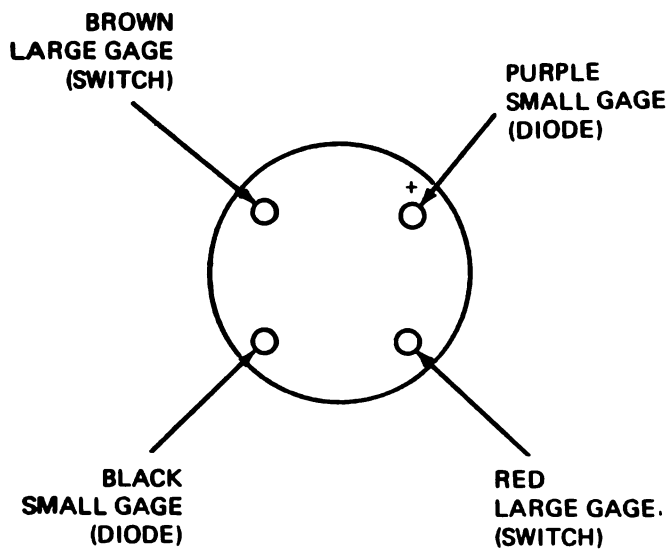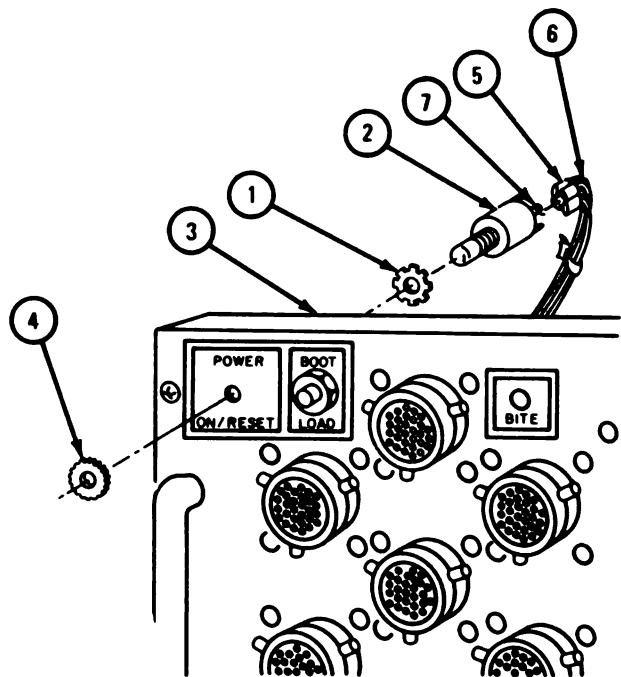
2-31. REMOVING BOOT LOAD SWITCH

1. Remove front panel
   (para 2-27).

2. Cut and remove heat shrinkable
   tubing (1) from two wires (2).

3. Unsolder and remove two
   wires (2).

4. Remove nut (3) and take BOOT
   LOAD switch (4) out of front
   panel (5).
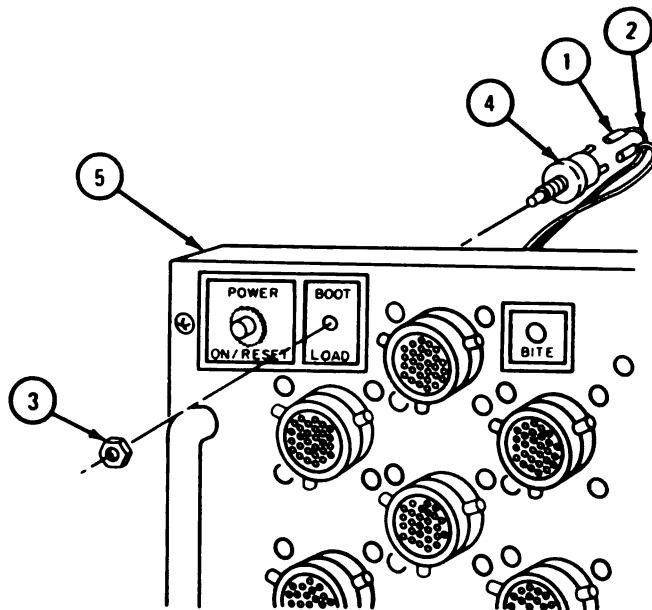
2-32. INSTALLING BOOT LOAD SWITCH

1. Position BOOT LOAD switch (1)
   in front panel (2). Install nut (3).

2. Put heat shrinkable tubing (4)
   (item 5, App B) onto two wires (5).

3. Solder two wires (5) onto lugs (6)
   on BOOT LOAD switch (1).

4. Slide heat shrinkable tubing (4)
   over lugs (6).

5. Using soldering iron, apply heat
   to heat shrinkable tubing (4)
   until it is tight on lugs (6).

6. Install front panel (para 2-28).
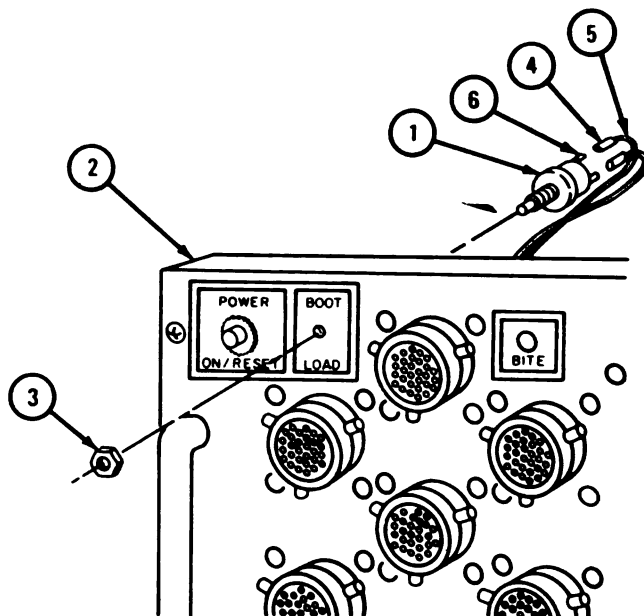
2-33. REMOVING BITE LIGHT

1. Remove front panel (para 2-27).

2. Cut two wires (1) for BITE light (2) close to BITE light.

3. Tag the anode and cathode leads in the processor. Red is anode and black is cathode.

4. Push BITE light (2) out of front panel (3).
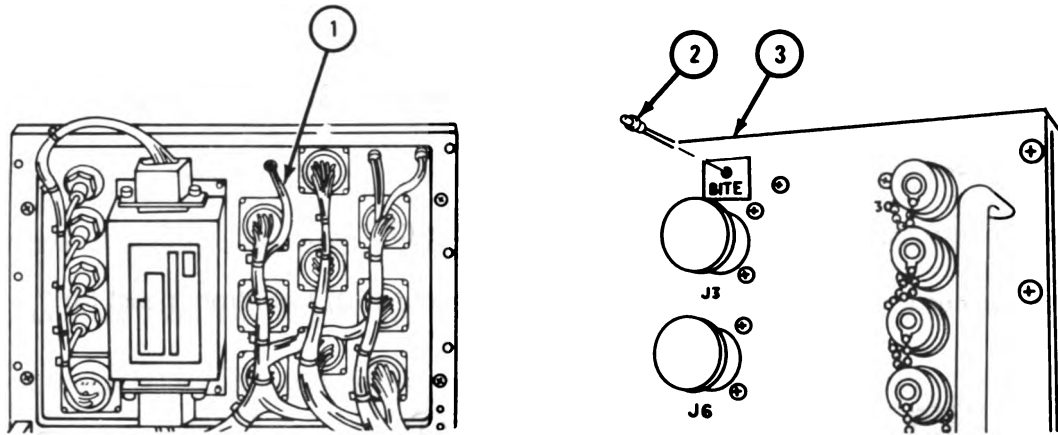
2-34. INSTALLING BITE LIGHT

1. Strip two wire leads (1) on replacement BITE light (2) and the two wires (3) going to the BITE light.

2. Install BITE light (2) in front panel (4).

3. Slide heat shrinkable tubing (5) (item 5, App B) onto two wires (3).

4. Solder two wire leads (1) to two wires (3). Slide heat shrinkable tubing (5) over soldering joints of wires. Ensure that anode to anode and cathode to cathode connection is made. Red is anode and black is cathode. Remove tags.

5. Using soldering iron, apply heat to heat shrinkable tubing (5) until it is tight on soldered joints of two wires (3) and wire leads (1).

6. Install front panel (para 2-28).
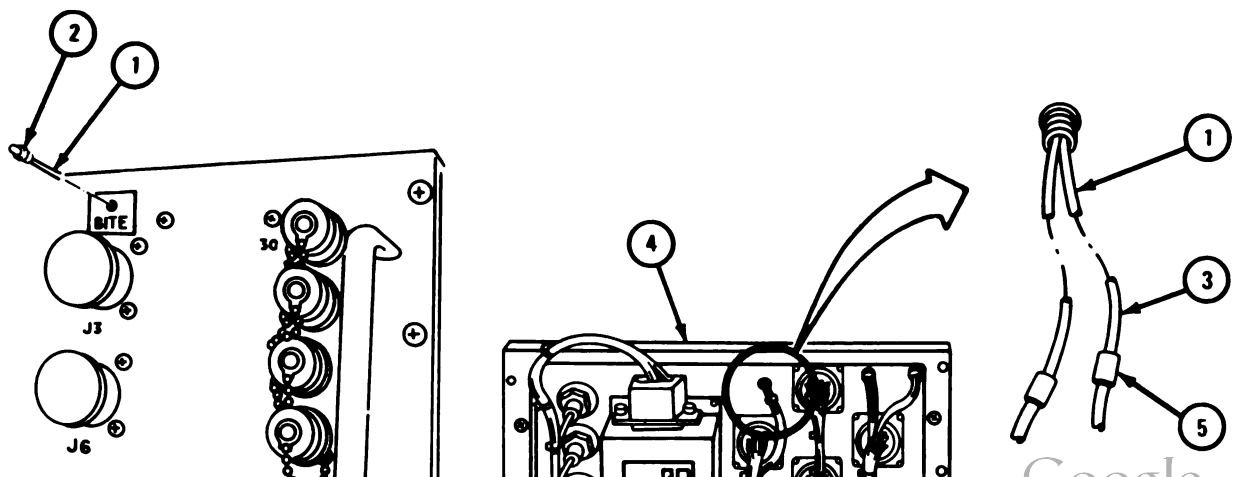
2-35. REMOVING FUSEHOLDERS ON PROCESSOR AND I/O CHASSIS

a. <u>Processor</u>.

NOTE

Procedure given in the following steps is typical for all fuseholders.

1. Remove front panel (para 2-27).

2. Cut and remove heat shrinkable tubing (1) from two wires (2).

3. Remove cable ties, as required.

4. Tag, unsolder, and remove wires (2) from fuseholder (3).

5. Remove nut (4) and star washer (5). Remove fuseholder (3) from front panel (6).
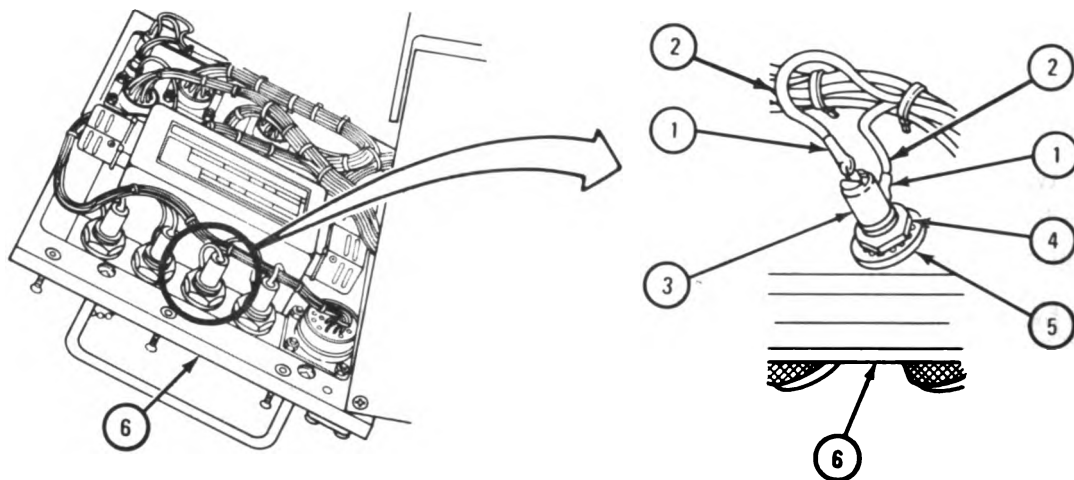
b. **I/O Chassis.**

NOTE

Procedure given in the following steps is typical for all fuseholders.

1. Remove front panel (para 2-27).

2. Remove three screws with lockwashers and flat washers (1).

3. Remove cover (2) from front panel (3).

4. Cut and remove heat shrinkable tubing (4) from wires (5).

5. Remove cable ties, as required.

6. Tag, unsolder, and remove wires (5) from fuseholder (6).

7. Remove nut (7) and star washer (8). Remove fuseholder (6) from front panel (3).
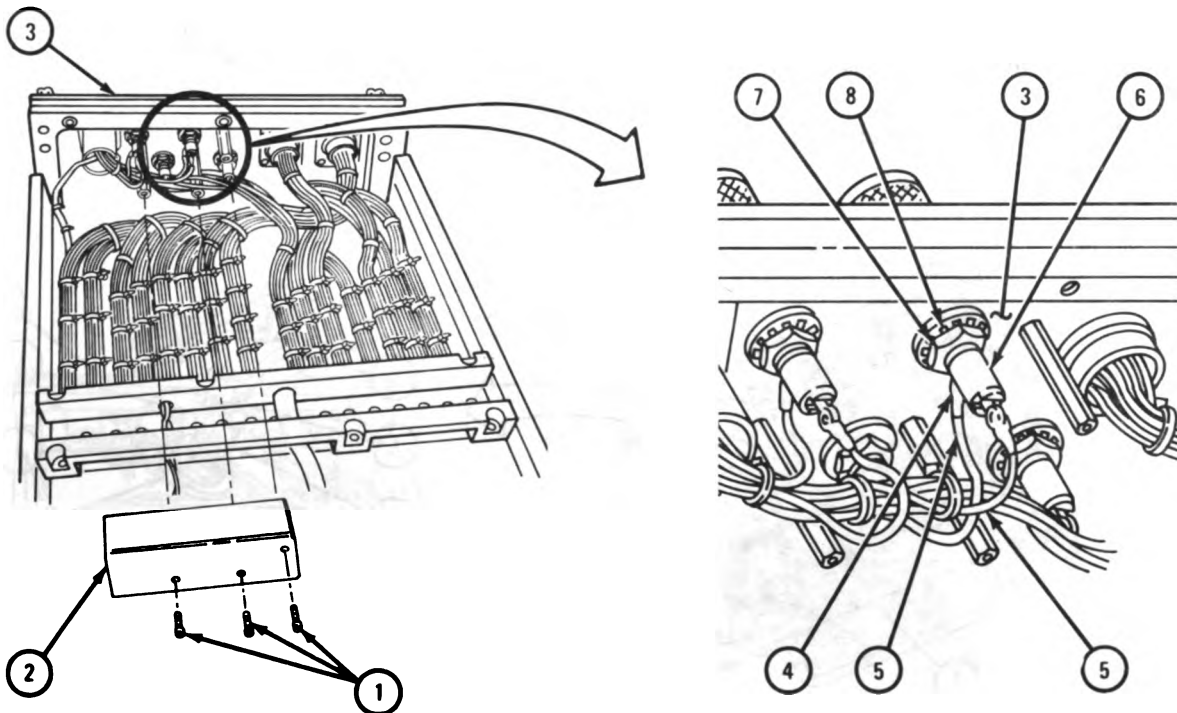
2-36. INSTALLING FUSEHOLDERS ON PROCESSOR AND I/O CHASSIS

a. Processor.

NOTE

Procedure given in the following steps is typical for all fuseholders.

1. Aline flat on fuseholder (1) with flat in hole on front panel (2) and install fuseholder in front panel.

2. Install star washer (3) and nut (4).

3. Slide heat shrinkable tubing (5), (item 5, App B) on wires (6).

4. Solder wires (6) onto lugs on fuseholder (1), as tagged. Remove tags.

5. Slide heat shrinkable tubing (5), over lugs on fuseholder (1). Using soldering iron, apply heat to heat shrinkable tubing until it is tight on lugs.

6. Install cable ties, as required.

7. Install front panel (para 2-28).
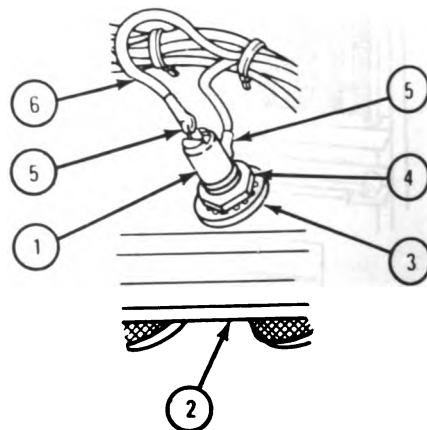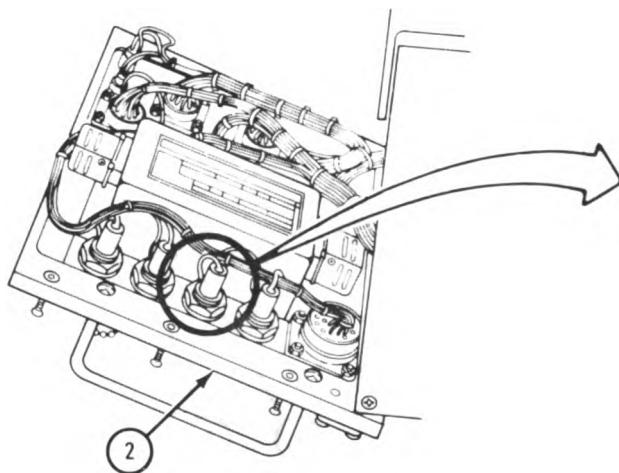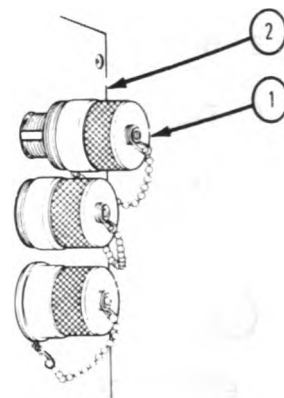
b. I/O Chassis.

NOTE

Procedure given in the following steps is typical for all fuseholders.

1. Aline flat on fuseholder (1) with flat in hole on front panel (2) and install fuseholder in front panel.

2. Install star washer (3) and nut (4).

3. Slide heat shrinkable tubing (5), (item 5, App B) on wires (6).

4. Solder wires (6) onto lugs on fuseholder (1), as tagged. Remove tags.

5. Slide heat shrinkable tubing (5), over lugs on fuseholder (1). Using soldering iron, apply heat to heat shrinkable tubing until it is tight on lugs.

6. Install cable ties, as required.
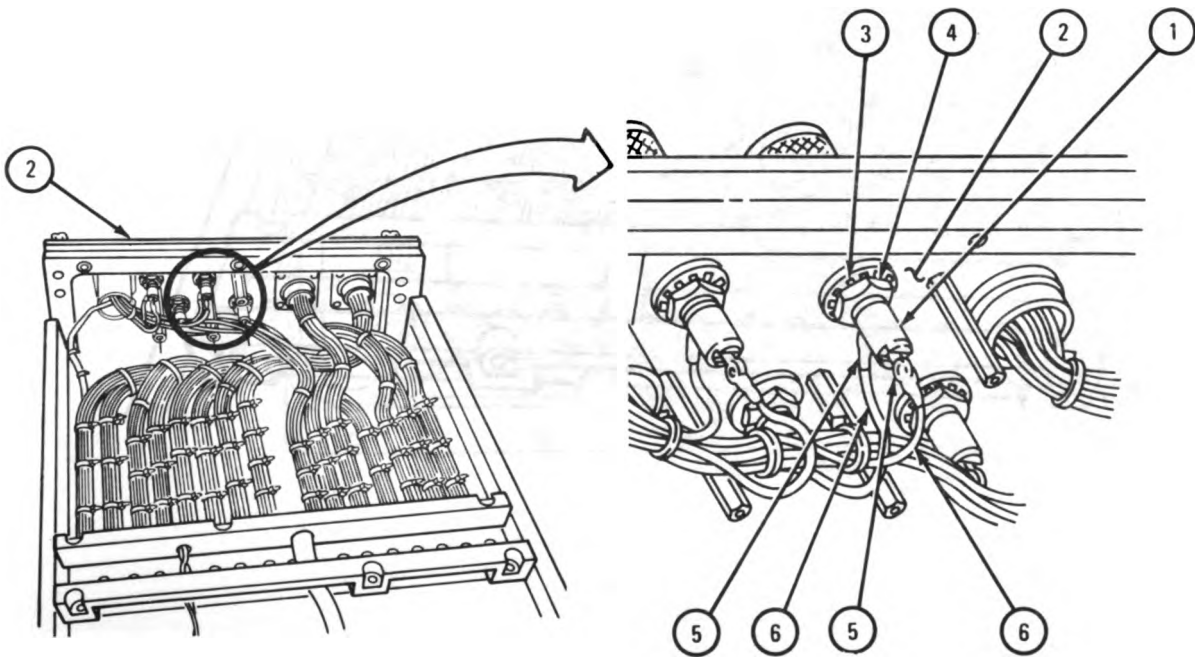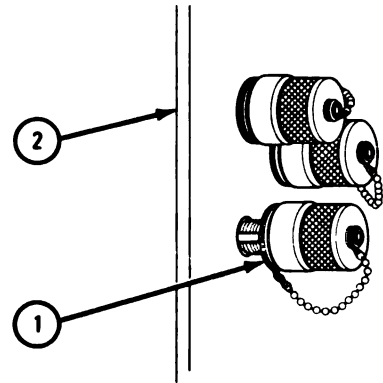
CAUTION

Use care when installing cover so that wires are not damaged.

7. Position cover (7) on front panel (2) and secure with three screws, lockwashers and flat washers (8).

8. Install front panel (para 2-28).
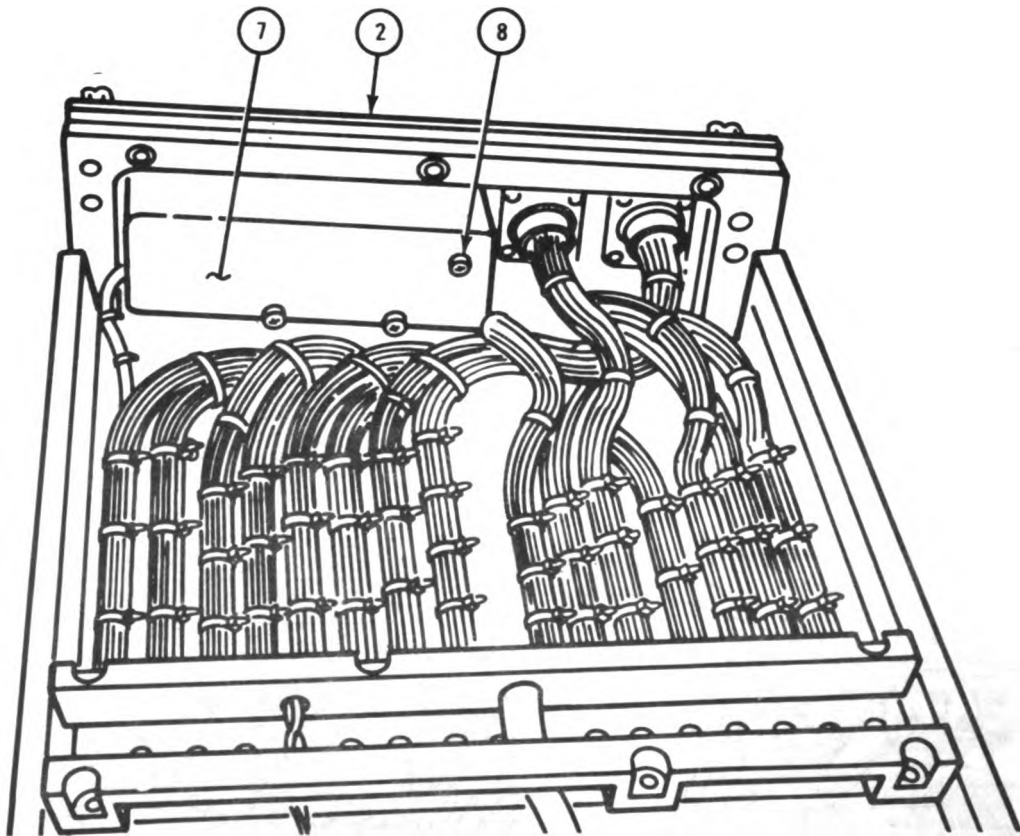
2-37. REMOVING EMI FILTER ON PROCESSOR AND I/O CHASSIS

a. Processor.

1. Remove front panel (para 2-27).

2. Loosen two screws (1) and remove connector (2).

3. Loosen two screws (3) and remove connector (4).

4. Remove four nuts, lockwashers, flat washers, and screws (5).

5. Remove EMI filter (6) from front panel (7).
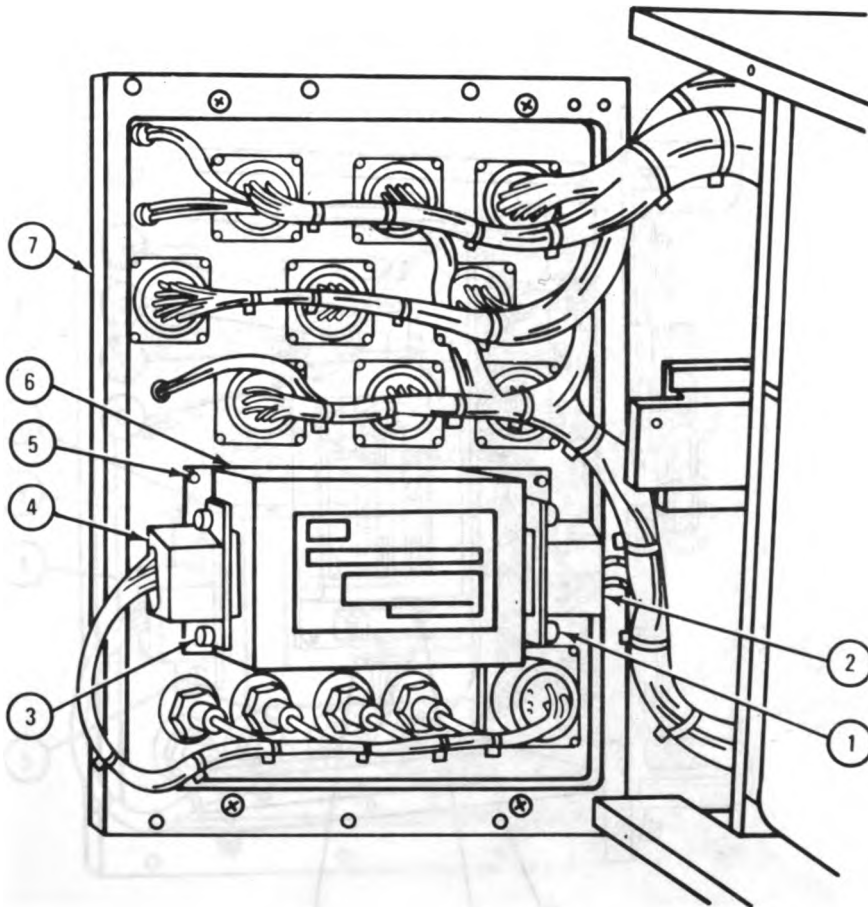
b. **I/O Chassis.**

1. Remove front panel (para 2-27).

2. Turn I/O chassis (1) on its side.

3. Remove four screws, lockwashers, and flat washers (2).

4. Separate EMI filter (3) from I/O chassis (1).

5. Loosen two screws (4) and remove connector (5).

6. Loosen two screws (6) and remove connector (7).

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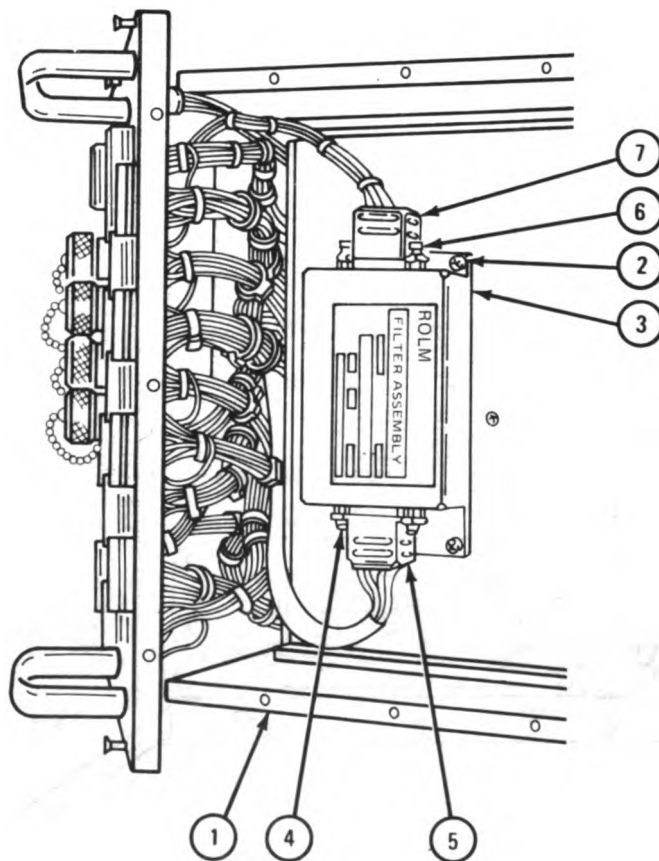
2-38. INSTALLING EMI FILTER ON PROCESSOR AND I/O CHASSIS

a. <u>Processor</u>.

1. Position EMI filter (1) on front panel (2).

2. Install four screws, flat washers, lockwashers, and nuts (3).

3. Install connector (4) and tighten two screws (5).

4. Install connector (6) and tighten two screws (7).

5. Install front panel (para 2-28).
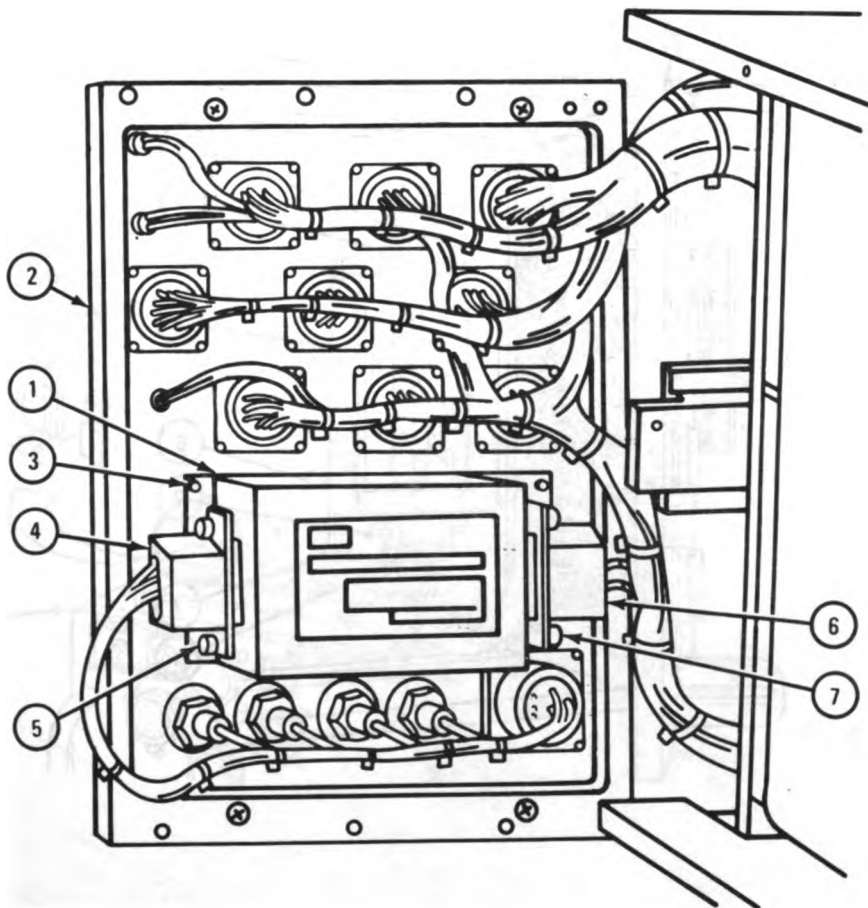
b. **I/O Chassis.**

1. Install connector (1) and tighten two screws (2).

2. Install connector (3) and tighten two screws (4).

3. Position EMI filter (5) on I/O chassis (6).

4. Install four screws, lockwashers, and flat washers (7).

5. Install front panel (para 2-28).

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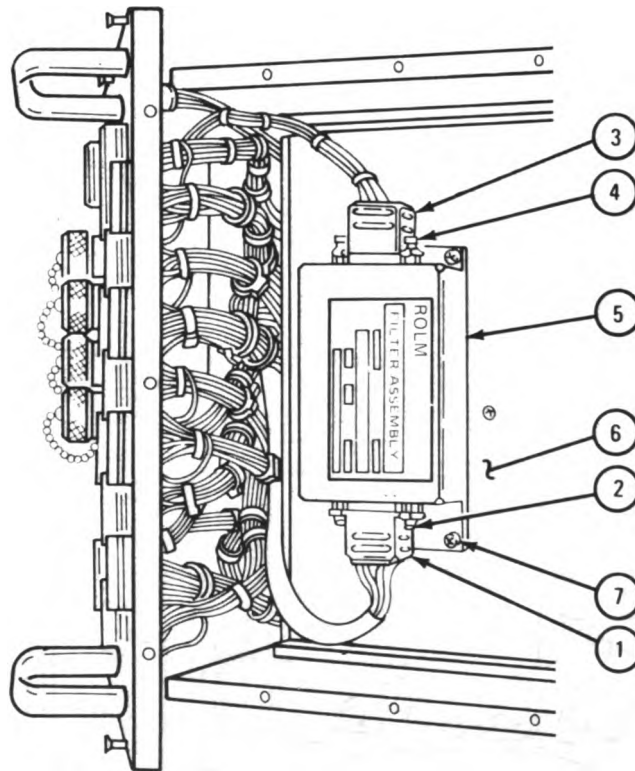
2-39. REMOVING CIRCUIT CARDS FROM PROCESSOR AND I/O CHASSIS

NOTE

Procedure given in the following steps is for processor circuit card
A7 and is typical for all processor and I/O chassis circuit cards.

1. Remove top cover (para 2-23).

2. Loosen two wedge screws (1), one on each side of processor (2) to release circuit card (3).

NOTE

Pins on extractor tool should be inserted from metal side of
circuit card holes.

3. Aline two pins (4) on extractor tool (5) with holes (6) in circuit card (3). Squeeze extractor
tool handle to disconnect card and remove it by pulling straight up.
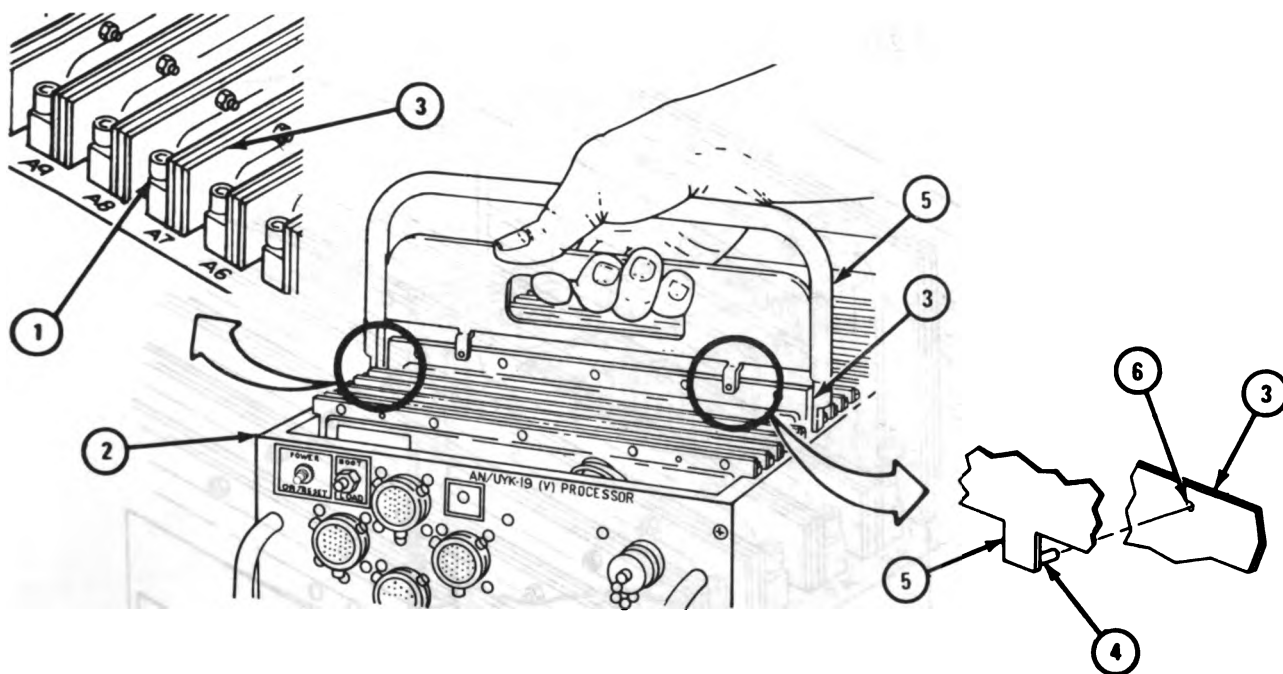
2-40. INSTALLING CIRCUIT CARDS ON PROCESSOR AND I/O CHASSIS

CAUTION

Use care when installing circuit cards. Circuit cards can be damaged if forced into place.

NOTE

Procedure given in the following steps is for processor circuit card A7 and is typical for all processor and I/O chassis circuit cards.

It may be necessary to loosen or tighten wedge screws in order to install circuit card in slots.

1. Aline circuit card (1) with slots (2) in processor (3) and carefully press circuit card straight down into place. Make sure card is properly seated.

2. Tighten two wedge screws (4), one on each side of processor (3), securing circuit card (1).

3. Install top cover (para 2-24).
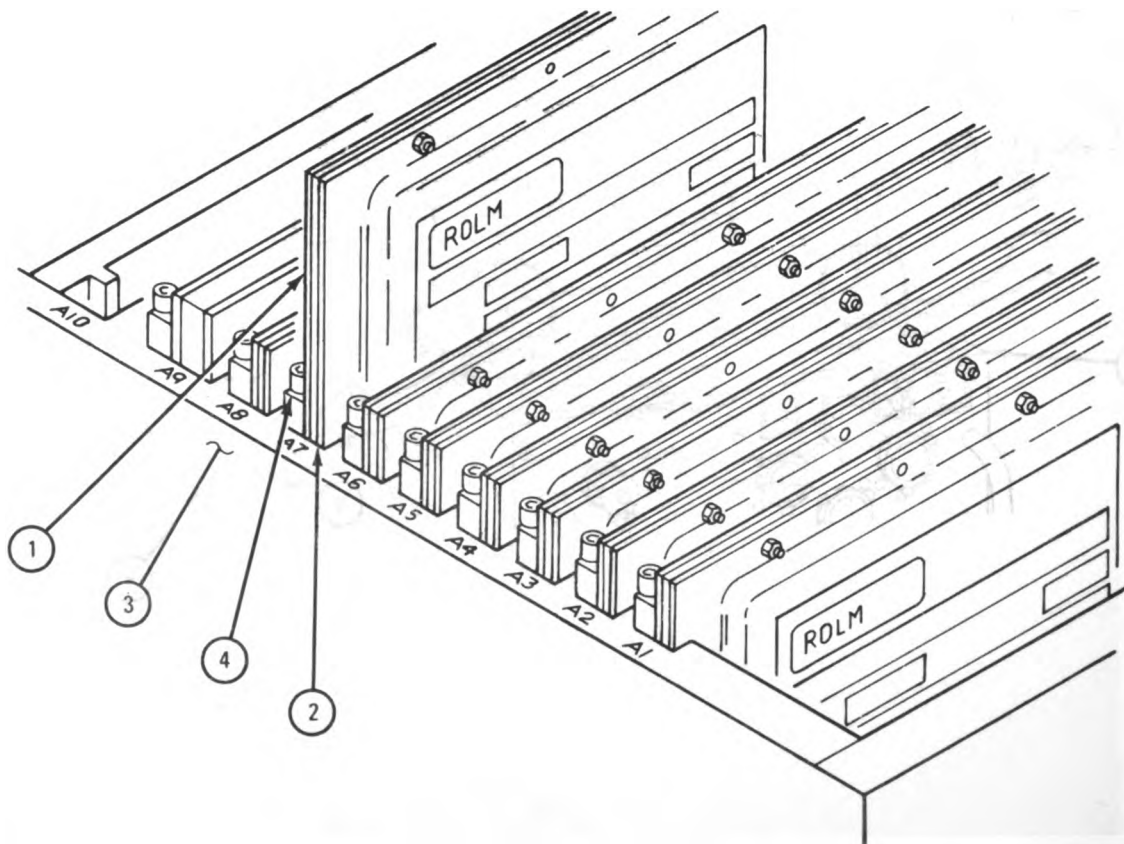
2-41. REMOVING POWER SUPPLY FROM PROCESSOR OR I/O CHASSIS

1. Remove power.

NOTE

Procedure given in the following steps is for the processor and is typical for the I/O chassis.

2. Loosen eight captive screws (1) until they pop up.

CAUTION

Do not rock power supply back and forth when removing it. Power supply must be pulled straight out of processor or connector pins will be damaged.

3. Pull power supply (2) straight out of processor (3).
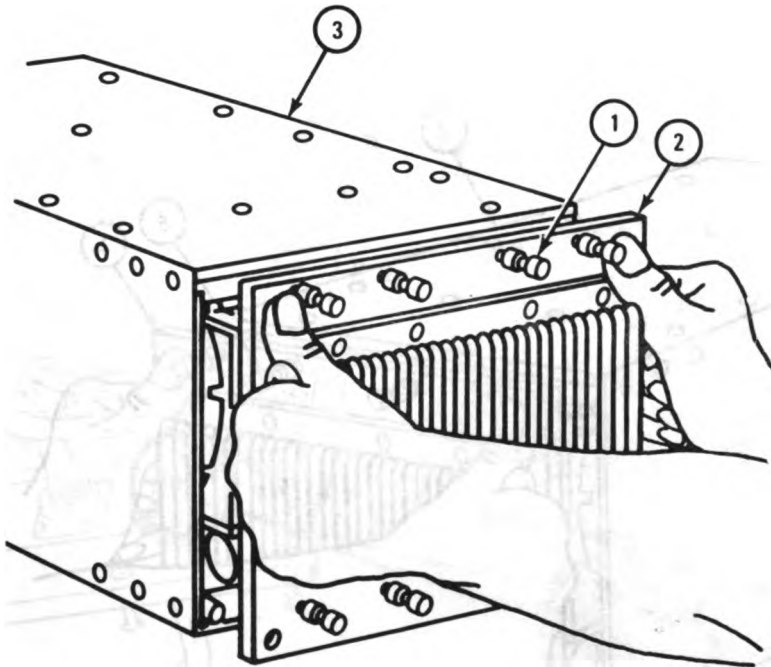
2-42. INSTALLING POWER SUPPLY IN PROCESSOR OR I/O CHASSIS

CAUTION

Do not rock power supply back and forth when installing it. Power supply must be put straight into processor or connector pins will be damaged.

NOTE

If power supply handles require tightening, remove 14 small screws on power supply mounting bracket, tighten handles, then replace bracket.

Procedure given in the following steps is for the processor and is typical for the I/O chassis.

1. Put power supply (1) straight into processor (2), alining two dowel pins (3) with dowel pin holes (4).

2. Tighten eight captive screws (5).

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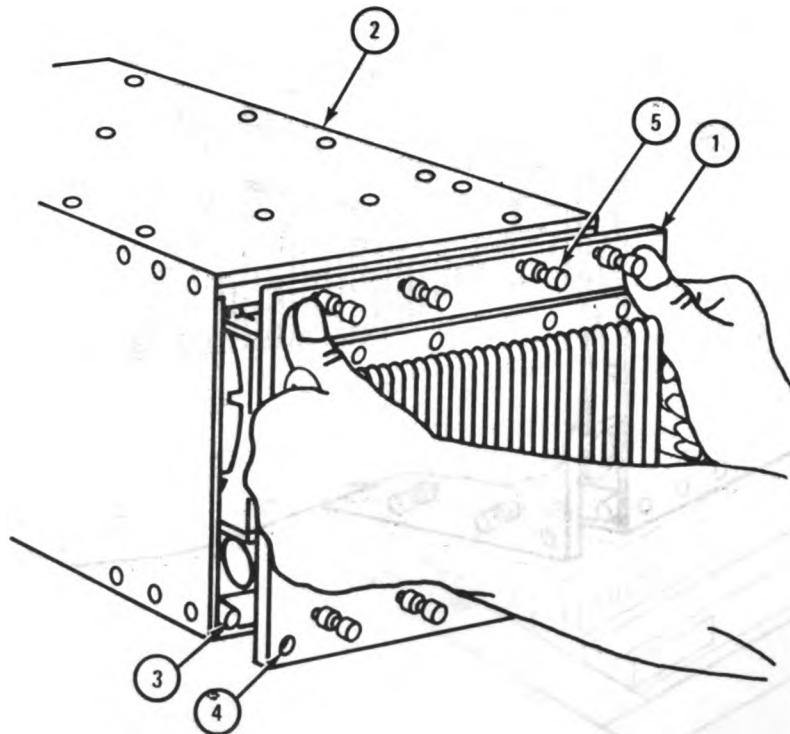
2-43. I/O CONNECTOR REPAIR

NOTE

Procedures given in the following steps are for processor I/O connector J2 and are typical for all I/O connectors on processor and I/O chassis.

a. Removing I/O Connector.

1. Remove front panel (para 2-27).

NOTE

If more than one I/O connector is being removed, tag each connector harness with its "J" number, as marked on front panel. All I/O connectors have one ground wire, except J1 on processor which has two.
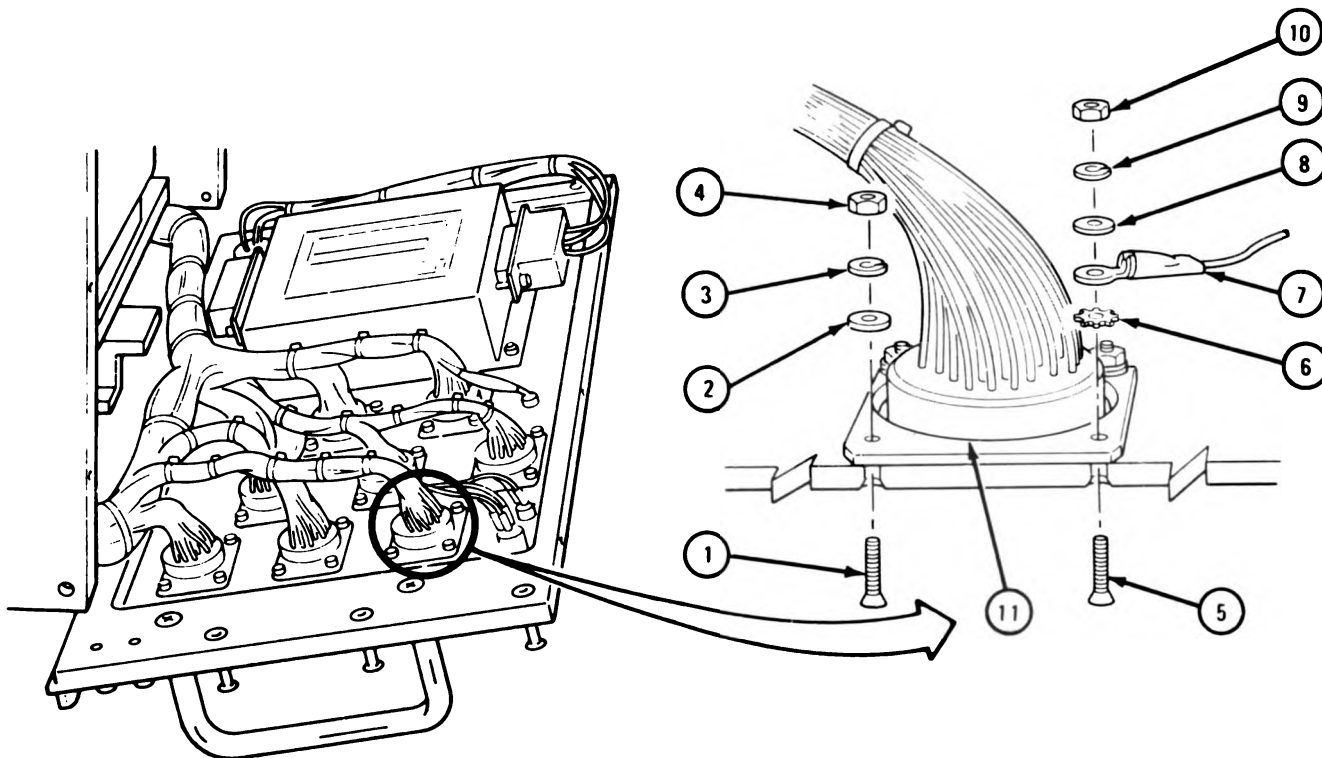
2. Remove three screws (1), flat washers (2), lockwashers (3), and nuts (4).

3. Remove one screw (5), star washer (6), ground wire (7), flat washer (8), lockwasher (9), and nut (10).

4. Remove I/O connector (11).

b. <u>Repair</u>.

NOTE

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

- Power connector
- I/O cable connector
- Power cable connector

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

1. Locate socket insert to be replaced.
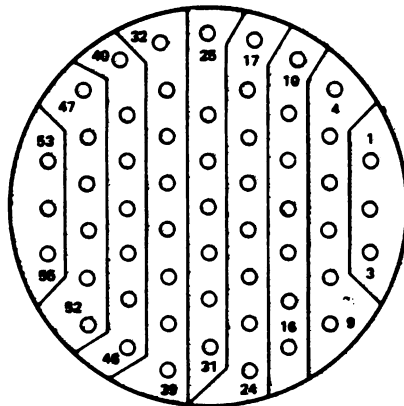
I/O CONNECTOR
FRONT VIEW

CAUTION

When removing cable ties, use care not to cut wires.

CABLE
TIE
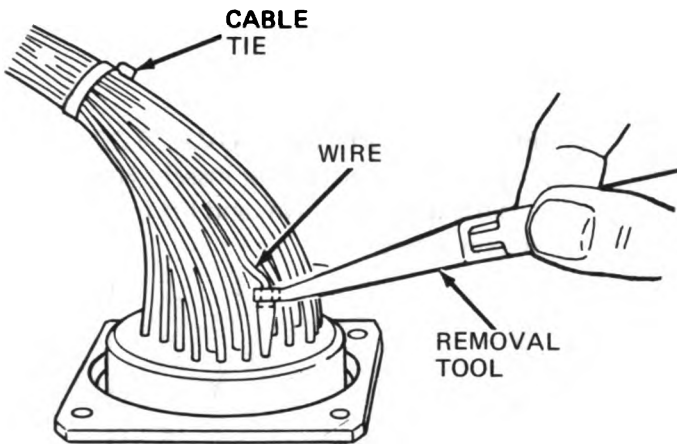
WIRE

REMOVAL
TOOL

2. Cut cable ties as needed to gain access to wires.

3. Aline wire of socket 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 socket insert.

LEVEL OF
INSERTION
(SAME FOR
REMOVAL AND
INSTALLING
TOOLS)
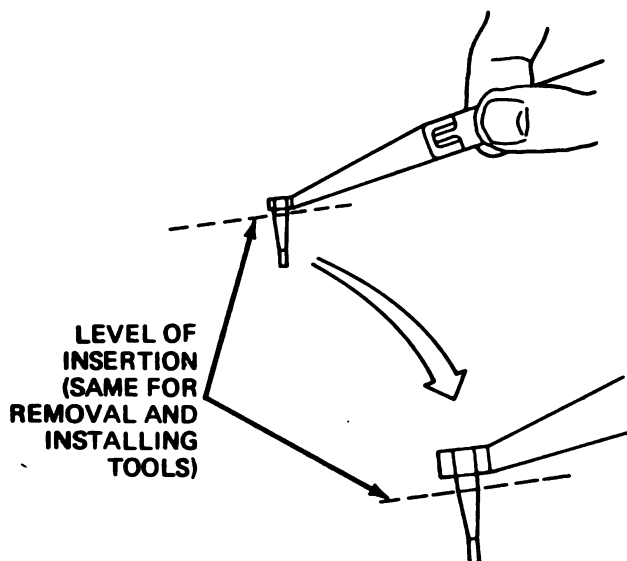
NOTE

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

4. Insert REMOVAL TOOL into socket hole to level of insertion shown.

NOTE

When removing socket insert, hold wire against REMOVAL TOOL, as shown.
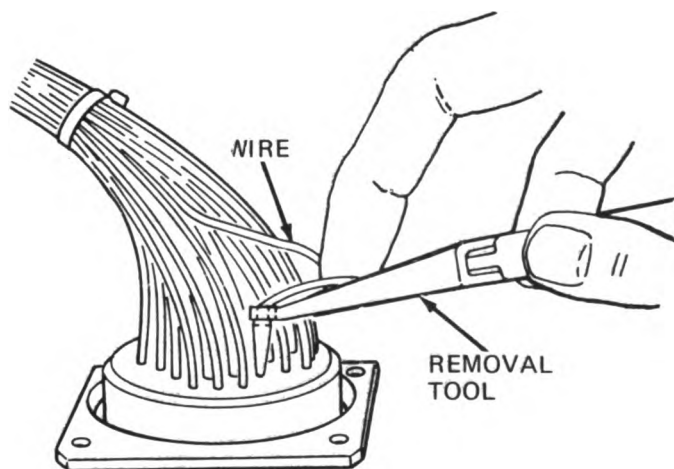
5. Press front part of REMOVAL TOOL together to grasp socket insert. Hold wire against tool, as shown, and lift out tool with socket insert.

6. Cut off damaged socket 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 socket insert on stripped end of wire.

9. Crimp socket insert.
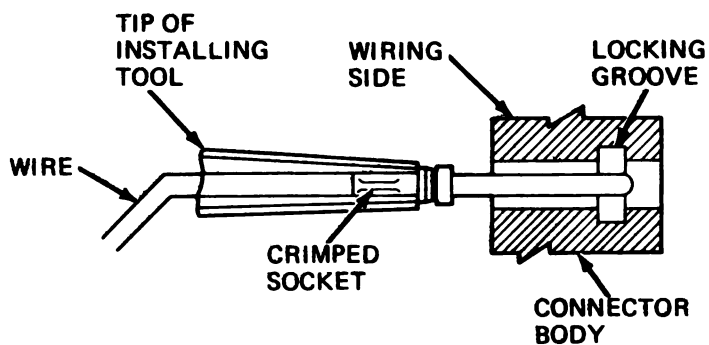
10. Place wire with attached socket insert in tip of INSTALLING TOOL, as shown.

NOTE

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

11. Install socket insert into connector.

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

c. Installing I/O Connector.

NOTE

All I/O connectors have one ground wire except J1, on processor,
which has two.
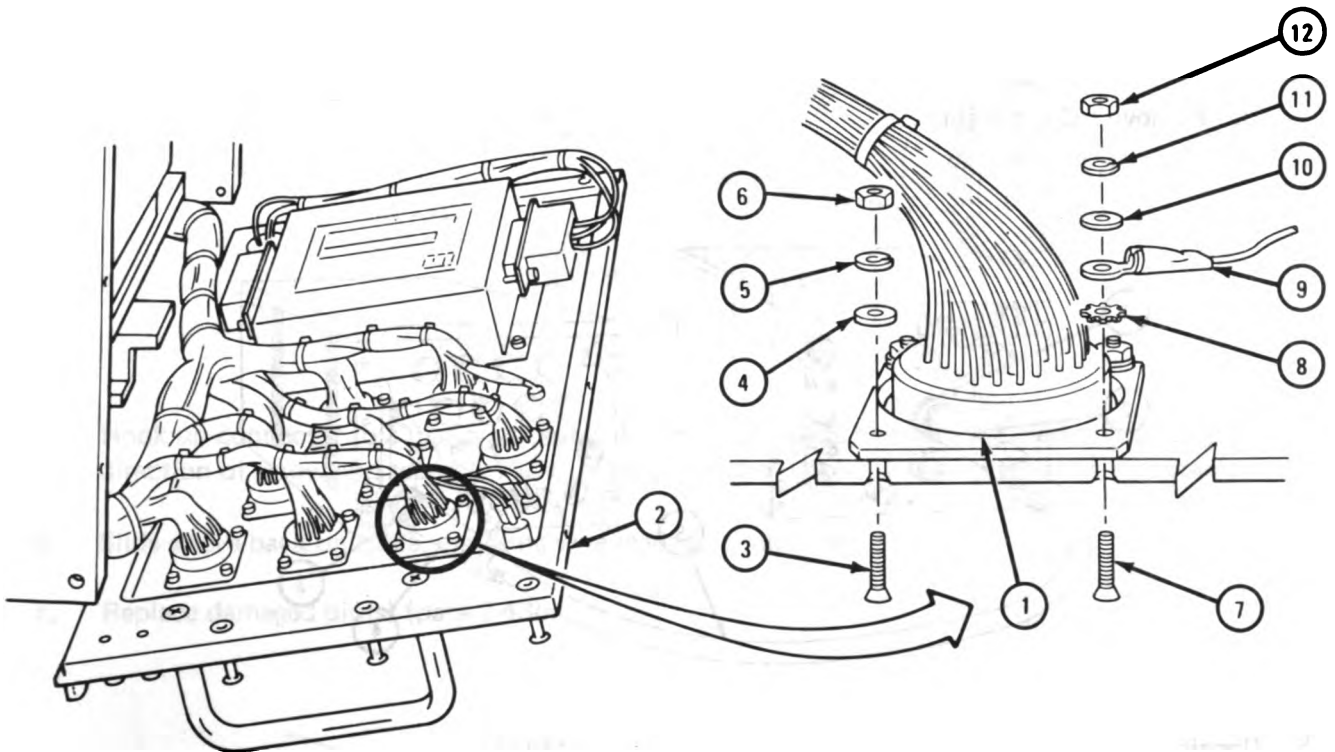
1. Aline I/O connector (1) with mounting holes on front panel (2).

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

3. Install one screw (7), star washer (8), ground wire (9), flat washer (10), lockwasher (11),
   and nut (12).

4. Replace cable ties that were removed.

5. Install front panel (para 2-28).

2-44. REPAIRING I/O CABLE

NOTE

Procedures given in the following steps are for I/O cable connect-
ing processor to I/O chassis and are typical for all I/O cables.

a. Removing I/O Cable.

1. Turn knurled ring (1) to the left and remove I/O connector (2) from processor.

2. Turn knurled ring (3) to the left and remove I/O connector (4) from I/O chassis.

3. Remove I/O cable (5).
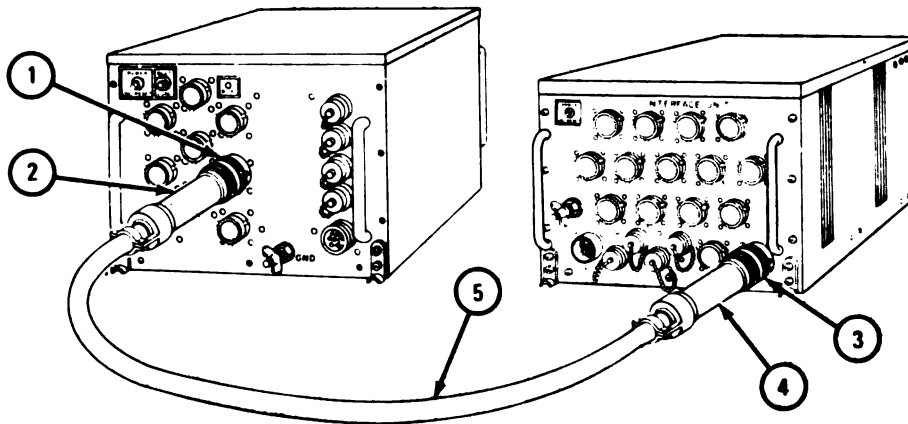
b. Repair.

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

2. While holding sleeve, turn flange in direction of arrow and unscrew.
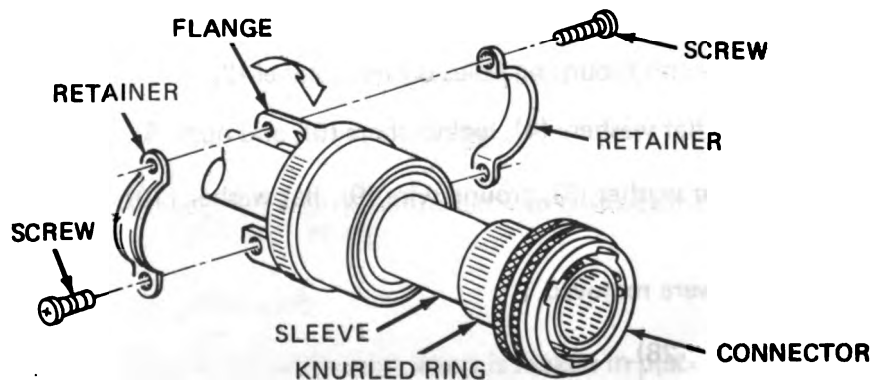
3. Slide flange with its metal collar, rubber collar, and grounding ring back on cable. This exposes cable shield folded over narrowing end of sleeve.

4. Roll back cable shield from narrow end of sleeve and flatten on cable.
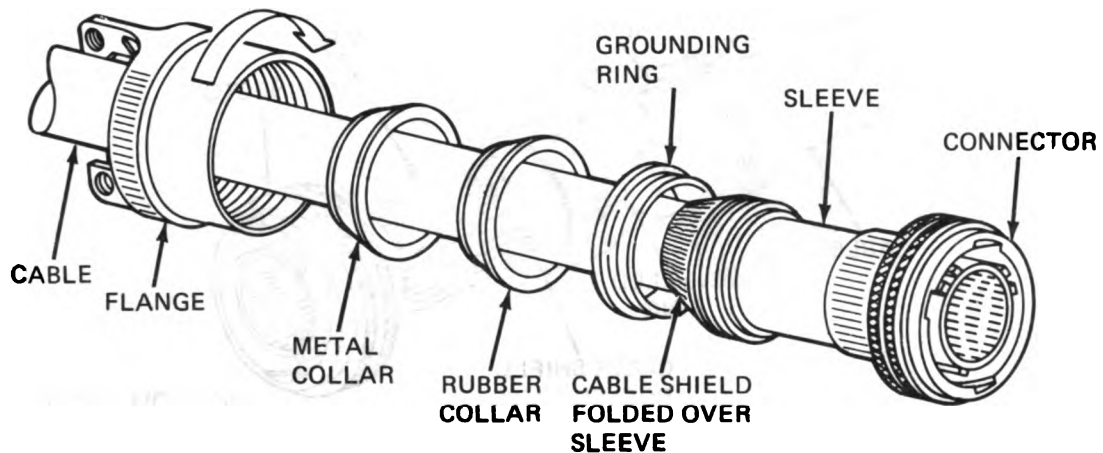
5. Hook up connector to a mating receptacle. Hold receptacle and turn knurled ring on sleeve in direction of arrow and separate sleeve from connector. Unhook connector from receptacle.

6. Slide sleeve back on cable, exposing wire leads to connector.

7. Replace damaged pin(s) (para 2-43b.).
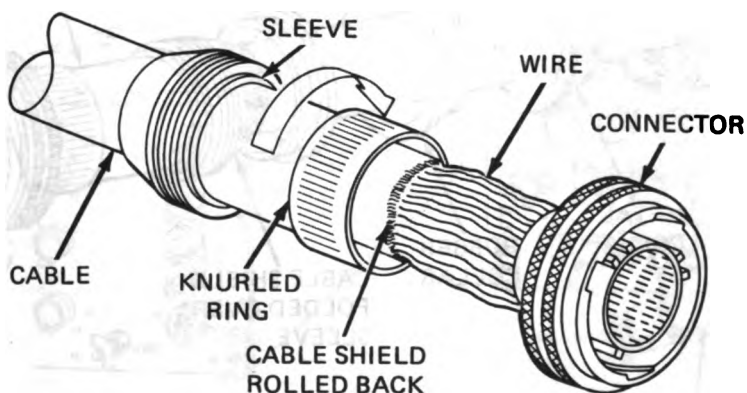
8. Slide sleeve forward on cable to connector.

9. Hook up connector to a mating receptacle. Hold receptacle and screw knurled ring onto connector, turning it in direction of arrow. Unhook connector from receptacle.
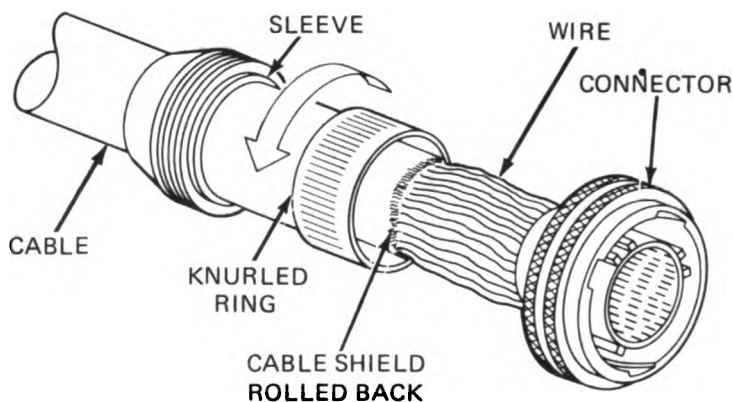
10. Remove any cable shield from under sleeve and fold it over end of sleeve.

11. Slide flange with its metal collar, rubber collar, and grounding ring over sleeve.

12. Hold sleeve and screw flange onto sleeve by turning it in direction of arrow.

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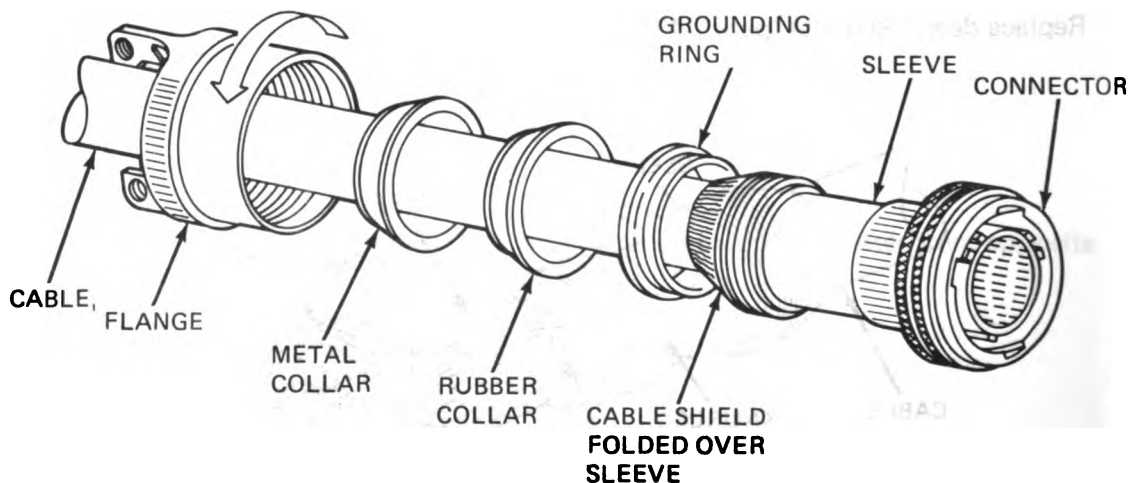
13. Using two screws, install two retainers on flange, noting that only one of the holes on each retainer is lipped and threaded to fasten a screw.
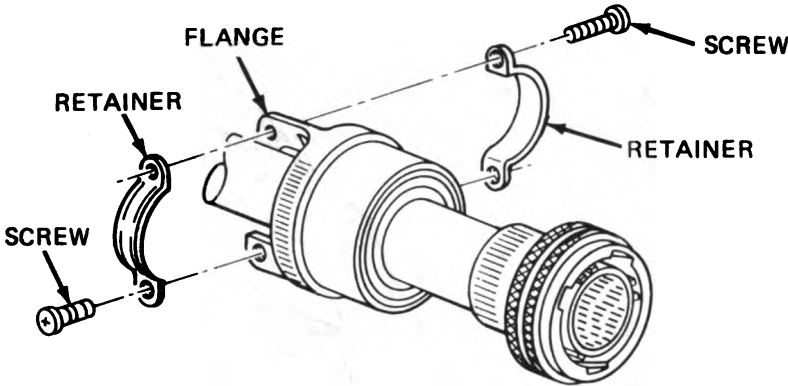
c. **Installing I/O Cable.**

1. Aline tabs (1) on I/O connector (2) with slots on connector (3).

2. Turn knurled ring (4) to the right until it clicks into place.

3. Aline tabs (5) on I/O connector (6) with slots on connector (7).

4. Turn knurled ring (8) to the right until it clicks into place.
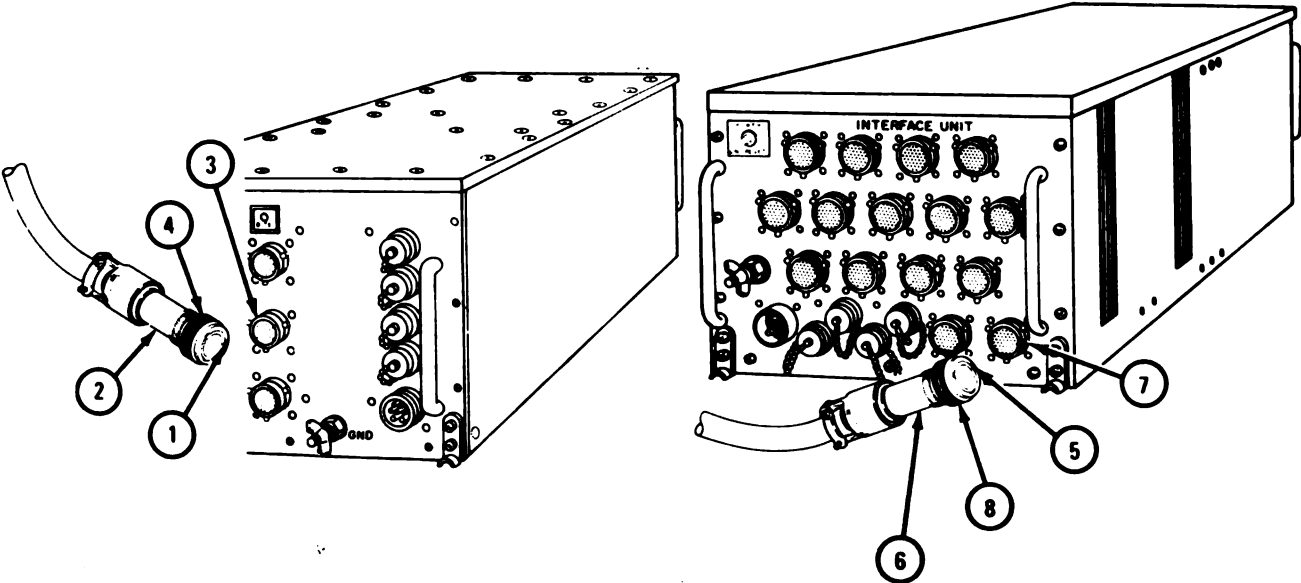
2-45. POWER CONNECTOR REPAIR ON PROCESSOR

a. Removing Power Connector.

    1. Remove front panel (para 2-27).

    2. Remove nut, washer, and ground wire (1).

    3. Remove four nuts, lockwashers, flat washers, and screws (2) from power connector (3).

    4. Remove power connector (3) from front panel (4).
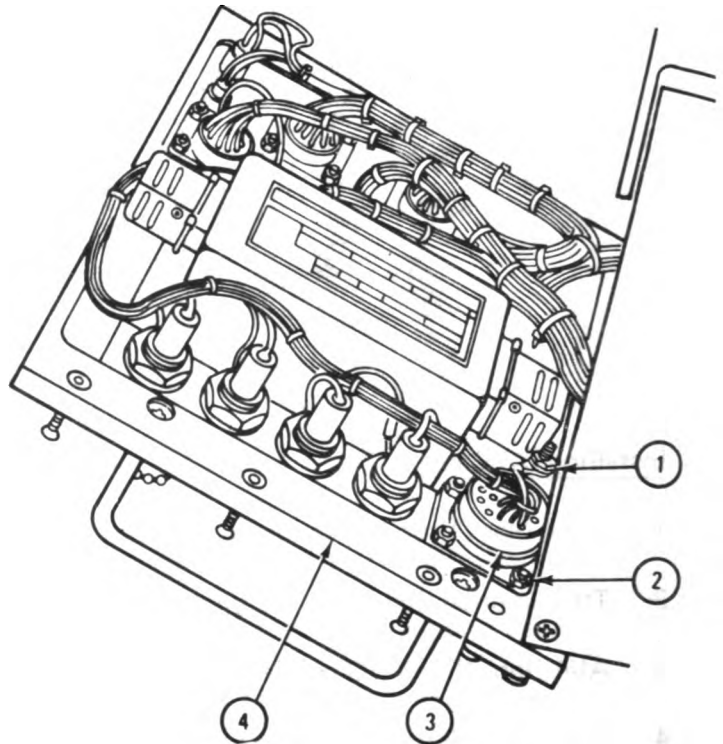
b. Repair.

NOTE

Power connector repair consists of removing and installing pin insert(s).

    1. Locate pin insert(s) to be repaired.

    2. Repair pin insert(s) (para 2-43).
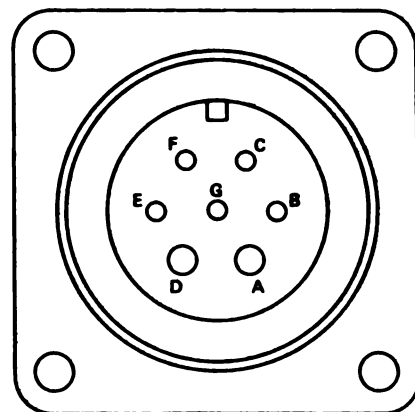
FRONT VIEW

c. Installing Power Connector.

1. Aline power connector (1) with mounting holes on front panel (2).

2. Install four screws, flat washers, lockwashers, and nuts (3).

3. Install ground wire, washer, and nut (4).

4. Replace cable ties that were removed.

5. Install front panel (para 2-28).
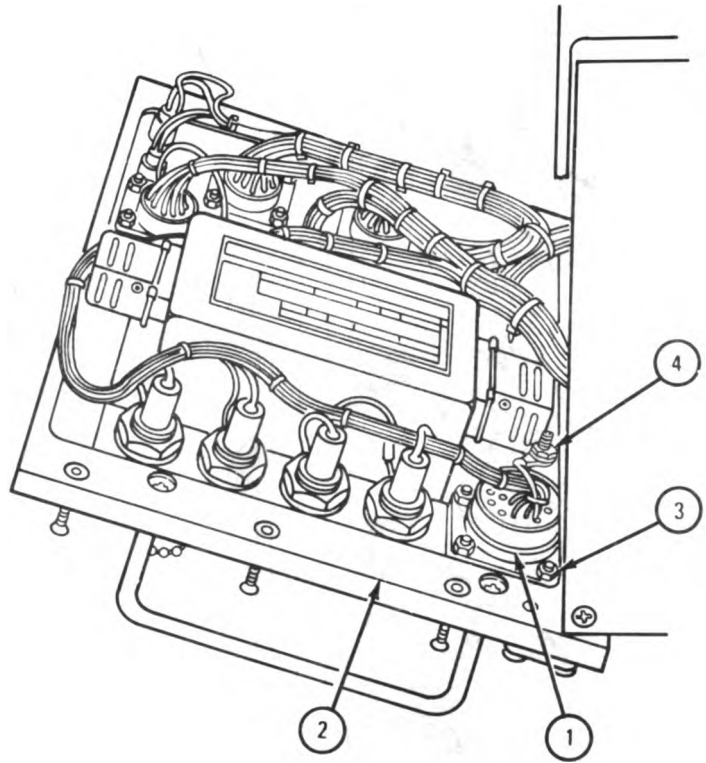
2-46. POWER CONNECTOR REPAIR ON I/O CHASSIS

a. Removing Power Connector.

1. Remove front panel (para 2-27).

2. Turn I/O chassis on its side.

3. Remove three screws, lockwashers, and flat washers (1).

4. Remove cover (2) from front panel (3).
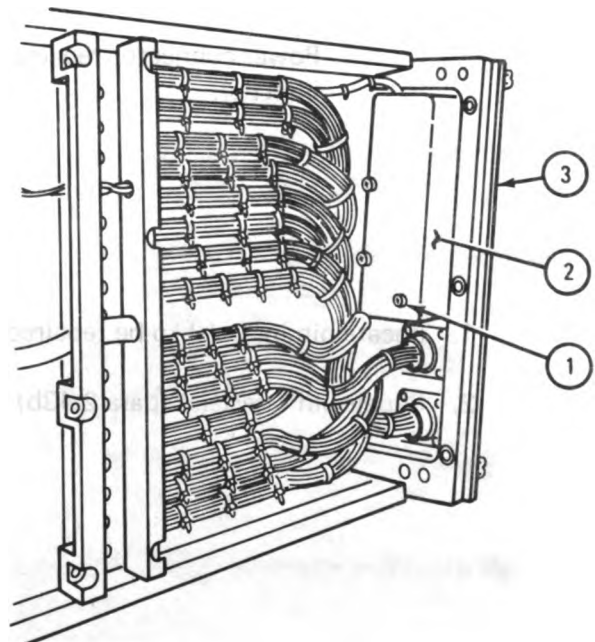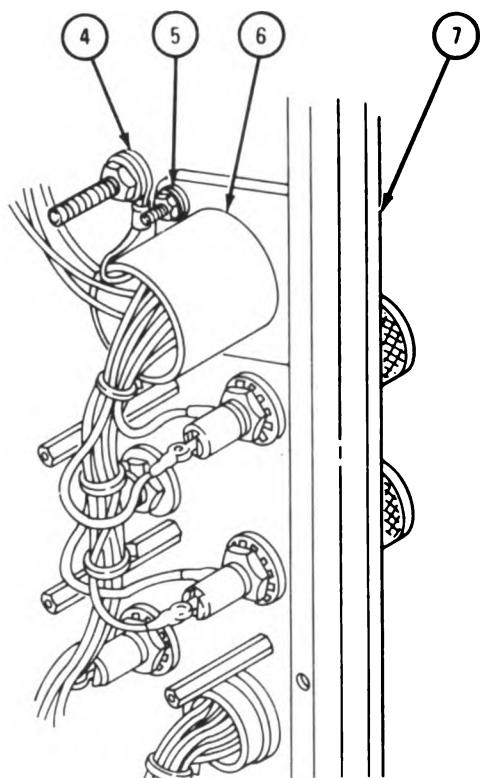
5. Remove nut, washer, and ground wire (4).

6. Remove four nuts, lockwashers, flat washers, and screws (5).

7. Remove power connector (6) from front panel (7). .

b. Repair.

NOTE

Power connector repair consists of removing and installing pin insert(s).

1. Locate pin insert(s) to be repaired.

2. Repair pin inserts(s) (para 2-43b).
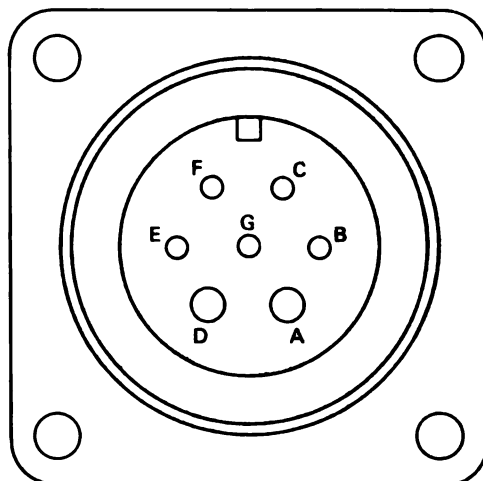
c. Installing Power Connector.
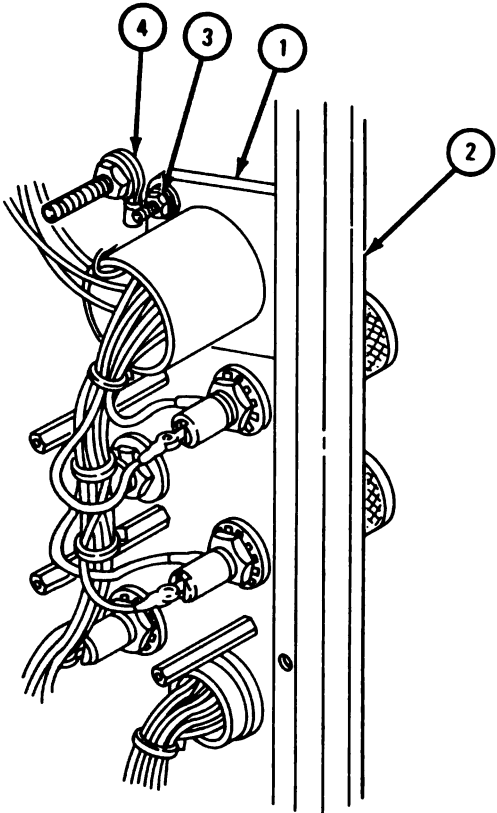
1. Aline power connector (1) with mounting holes on front panel (2).

2. Install four screws, flat washers, lockwashers, and nuts (3).

3. Install ground wire, washer, and nut (4).
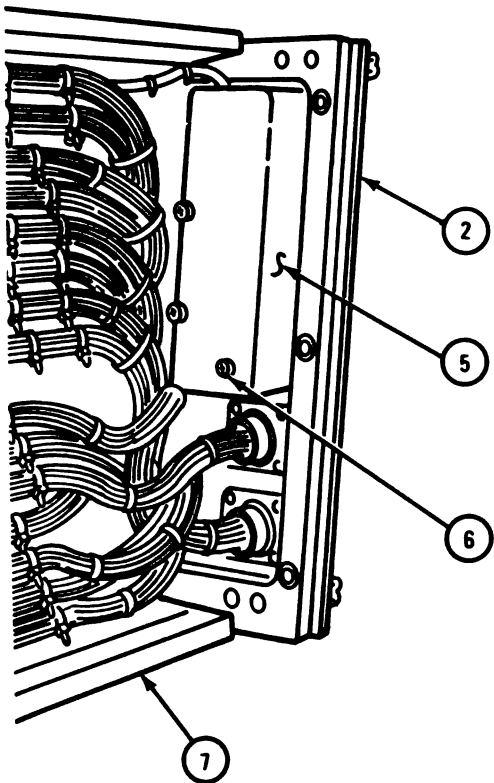
4. Aline cover (5) with mounting holes on front panel (2).

5. Install three screws, lockwashers, and flat washers (6).

6. Turn I/O chassis (7) right side up.

7. Replace cable ties that were removed.

8. Install front panel (para 2-28).

2-47. POWER CABLE REPAIR

a. Removing Power Cable.

NOTE

Procedure given in the following steps is for processor power cable and is typical for the I/O chassis power cable.

1. Remove plug (1) from power source.

2. Turn knurled nut (2) to the left and remove power cable (3).

Digitized by Google
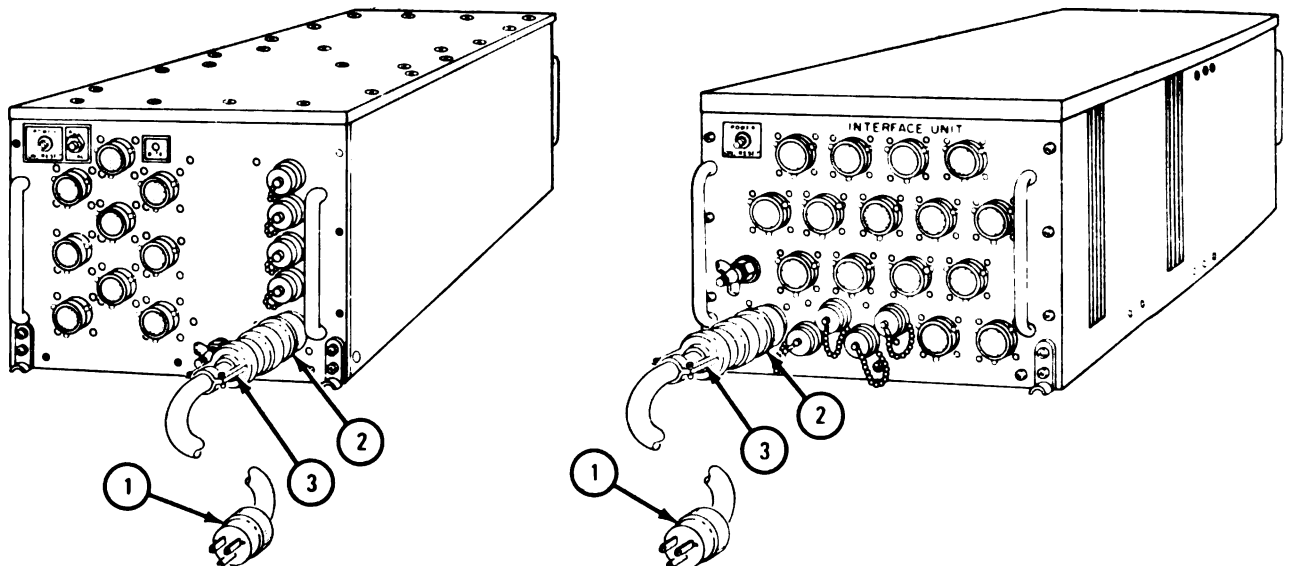
b. Repairing Power Cable Connector.

NOTE

Hooking up power cable connector to a mating connector will
facilitate repair.

1. Remove two screws, two retainers, and one ground wire from flange.

2. Unscrew flange in direction of arrow.

RETAINER

SCREW

SCREW

RETAINER

GROUND WIRE
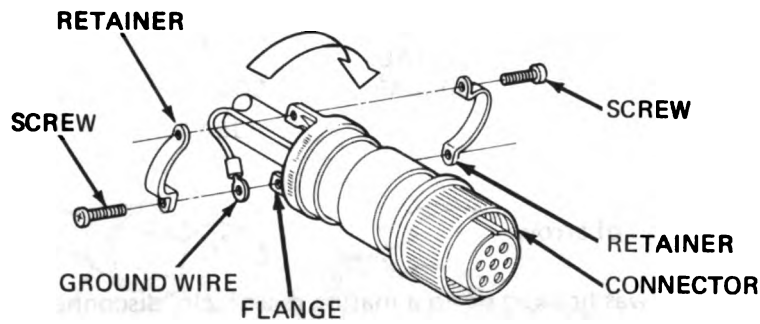
FLANGE

CONNECTOR

3. Slide flange and two metal collars back on cable.

CABLE

RUBBER
COLLAR

WIRE
LEADS

CONNECTOR

FLANGE

METAL
COLLAR   GROUND
WIRE

SLEEVE
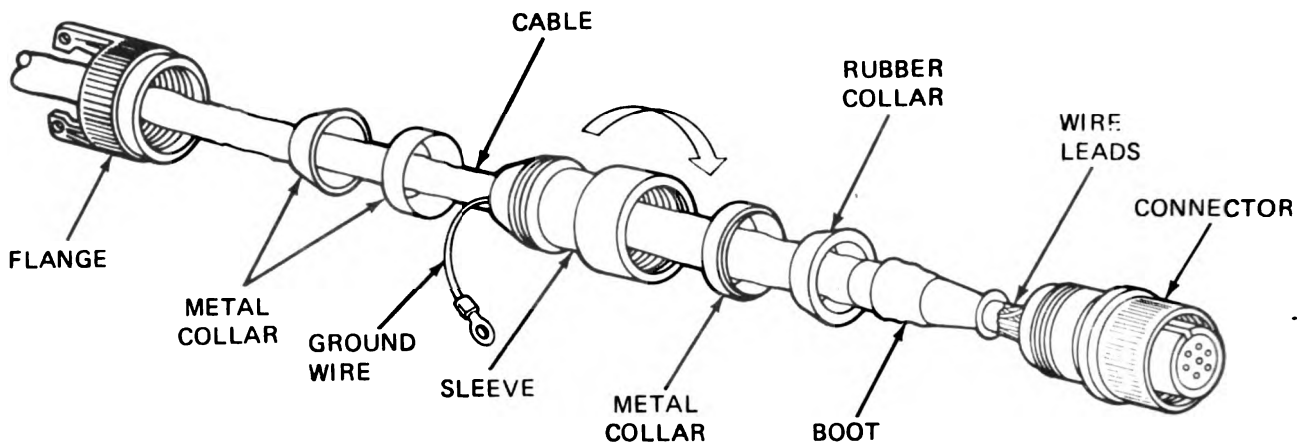
METAL
COLLAR

BOOT

4. Unscrew sleeve in direction of arrow.

5. If power cable connector was hooked up to a mating receptacle, disconnect power cable.

6. Slide sleeve, metal collar, and rubber collar back on cable.

7. Slide boot back on cable exposing wire leads to connector.

8. Replace damaged socket insert(s) (para 2-43b).

9. Slide boot forward on cable covering exposed wire leads.

10. Slide rubber collar up to connector.

11. Slide metal collar forward, on cable, up to rubber collar.

12. Slide sleeve forward on cable over collars. Screw on sleeve, turning it in direction of arrow.

13. Slide two metal collars and flange forward on cable.

14. Screw on flange, turning it in direction of arrow.
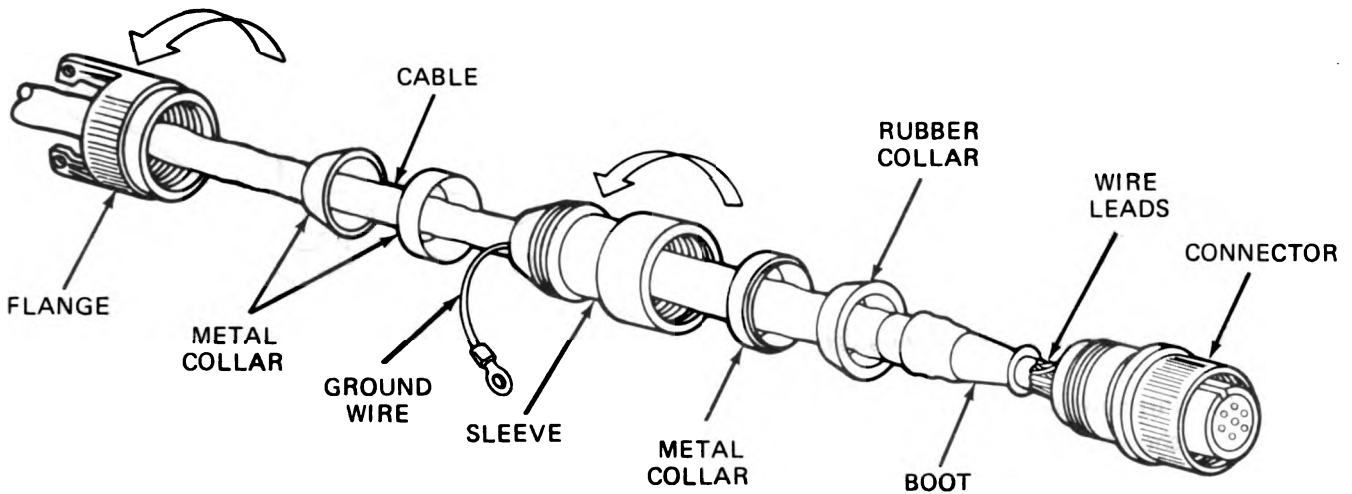
15. Install screws, retainers, and ground wire on flange.
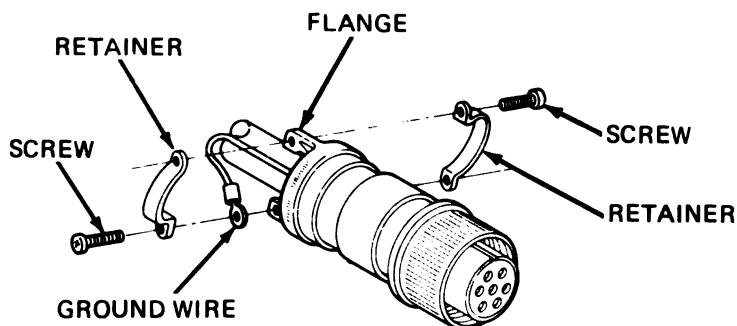
c.   Repairing Power Plug on Processor or I/O Chassis.

NOTE

Repair consists of removing damaged plug and installing a new one.

Procedure given in the following steps is for the processor and is typical for the I/O chassis.

1.   Remove three screws (1).

2.   Separate plug (2), as shown.

3.   Tag three wires (3).

4.   Loosen three screws (4) and remove three wires (3).

5.   Remove and discard plug (2).

6.   Put new plug (2) over cable (5), as shown.

7.   Insert wires (3) in plug (2), as tagged, and tighten three screws (4). Remove tags.

8.   Aline tab (6) on lower section of plug (2) with slot (7) on upper section of plug.

9.   Join sections of plug (2), aline and install three screws (1).
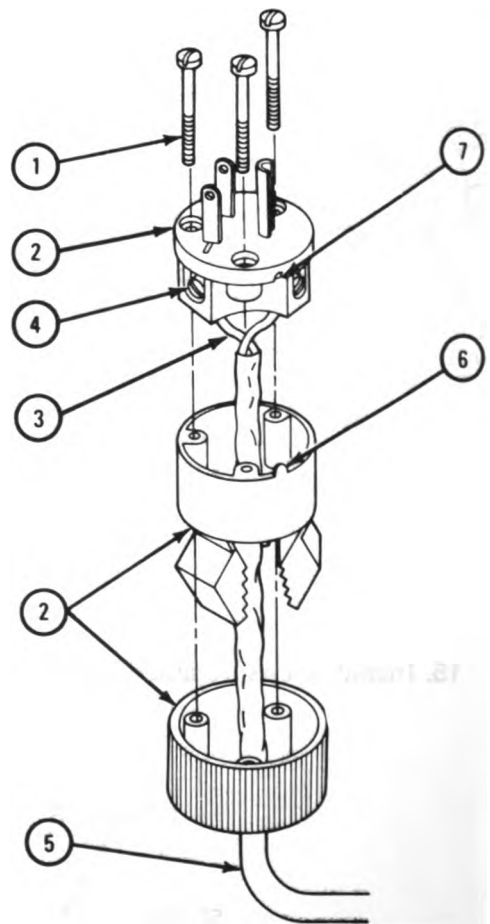
d. Installing Power Cable.
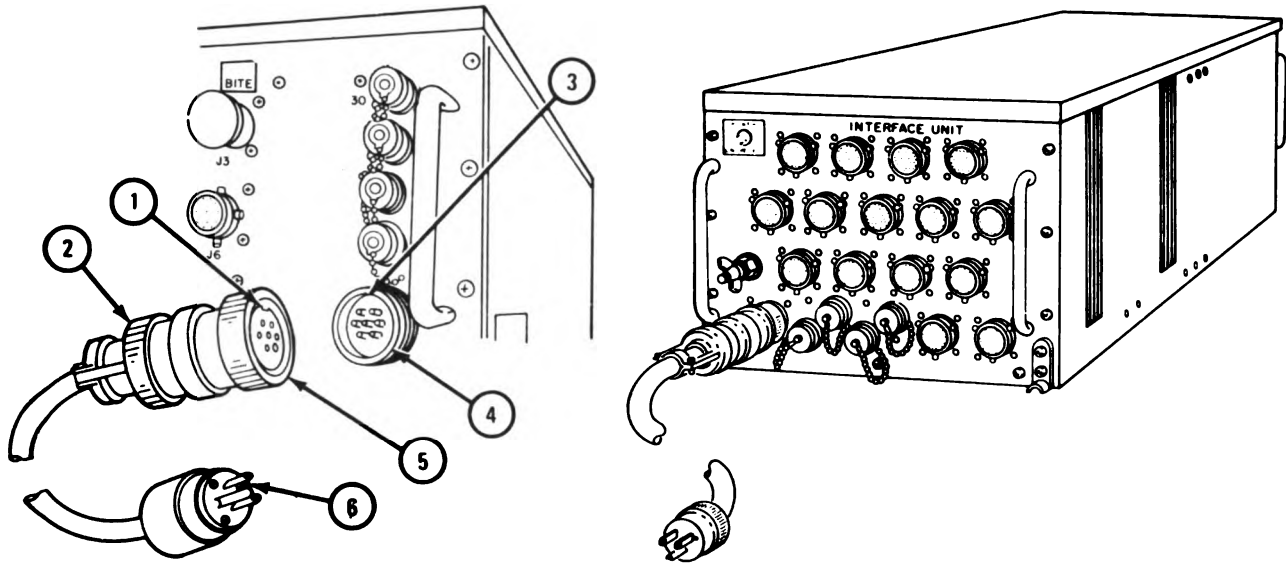
NOTE

Procedure given in the following steps is for the processor power
connector and is typical for the I/O chassis power connector.

1. Aline slot (1) on cable connector (2) with key (3) on connector (4).

2. Turn knurled nut (5) to the right.

3. Connect plug (6) to power source.

Section V. PREPARATION FOR STORAGE OR SHIPMENT

2-48. STORAGE OR SHIPMENT PROCEDURES

a. Prior to packing the processor and I/O chassis for storage or shipment, perform routine PMCS.
(Refer to TM 11-7021-201-12, Chapter 2.)

b. The processor and I/O chassis are repacked for storage or shipment in their 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 Forms . . . . 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 Shelter . . . . TB 43-0118

A-4. TECHNICAL MANUALS

Direct Support Maintenance Repair Parts and Special Tools List, Processor
AN/UYK-19A (NSN 7035-01-134-7148), Processor AN/UYK-19AX (NSN
7035-01-139-4434) and I/O Interface . . . . TM 11-7021-201-30P

Operator's and Organizational Maintenance Manual, Processor AN/UYK-19A (NSN
7035-01-134-7148), Processor AN/UYK-19AX (NSN 7035-01-139-4434), Plasma
Display Set AN/UYQ-10(V)1 (NSN 7035-00-533-4464), Plasma Display Set
AN/UYQ-10(V)2 (NSN 7035-01-158-7673), Magnetic Tape Set AN/UYH-1 (NSN
7025-01-134-3338), Teleprinter, Electrographic TT-772(P)/G (NSN
5815-01-127-5868), Teleprinter, Electrographic TT-773(P)/G (NSN
5815-01-127-5867) . . . . TM 11-7021-201-12

Organizational Maintenance Repair Parts and Special Tools List for
Processor AN/UYK-19A (NSN 7035-01-134-7148), Processor AN/UYK-19AX
(NSN 7035-01-139-4434), and I/O Interface . . . . TM 11-7021-201-20P

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

The Army Maintenance Management System (TAMMS) . . . . DA PAM 738-750

A-5. MISCELLANEOUS PUBLICATIONS

Consolidated Index of Army Publications and Blank Forms . . . . DA PAM 310-1

APPENDIX B

EXPENDABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

B-1. SCOPE

This appendix lists expendable supplies and materials you will need to operate and maintain the AN/UYK-19. 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 and Ft. Monmouth, 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 (81348) 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		TUBING, HEAT SHRINKABLE	PC

APPENDIX C

SYSTEM CONFIGURATION DATA

C-1. GENERAL

Appendixes C1 through C8 provide data on configuring the AN/UYK-19(V) processor and I/O chassis for use in various system applications. Included in each appendix is a list of circuit cards used for each configuration, illustrations showing the location of each card, and procedures for installing the cards. Also included in each appendix is information on the alternate device code for certain circuit cards.

C-2. HOW TO USE THIS APPENDIX

The following paragraphs will tell you how to use the appendix to configure your processor and I/O chassis for use in a particular system, and how to change the device code of a circuit card.

    a. <u>Configuring the Processor and I/O Chassis.</u>

        (1) Determine what system the processor and I/O chassis are going to be used in.

        (2) Go to the appendix applicable to that system.

        (3) To determine what circuit cards are needed for the system, refer to the table in the appendix that lists the circuit cards.

        (4) Install the circuit cards into the processor and I/O chassis according to the procedures in the appendix. Refer to the figure for the proper location of each card.

        (5)   After consigning a chassis you must run the diagnostic test to make sure the system is operating properly.

    b. <u>Changing Circuit Card Device Codes.</u>

<div align="center">

NOTE

All circuit cards are shipped with jumpers for the standard device
code already installed.

</div>

        (1) Determine what system the card is going to be used in, and go to the appendix for that system.

        (2) Use the illustration and table for the card, and remove or add jumpers, according to the table, to change the device code to what your requirements are.

C-3. LIST OF SYSTEMS

The following is a list of systems that are contained in this appendix:

System	Appendix
AN/MLQ-34 (TACJAM)	C1
AN/MSQ-103A (TEAMPACK)	C2
AN/TMQ-31 (FAMAS)	C3
AN/TSC-99	C4
AN/TSQ-84A	C5
AN/TSQ-114A (TRAILBLAZER)	C6
EH-1X (QUICKFIX)	C7
EH-60A (QUICKFIX)	C8

APPENDIX C1

AN/MLQ-34

TACJAM

C1-1. GENERAL

This appendix contains data on how to configure the AN/UYK-19 processor for use in the AN/MLQ-34 (TACJAM) system. Also included is information on changing the device code on a circuit card.

C1-2. SYSTEM CONFIGURATION DATA

a. List of Circuit Cards. Table C1-1 provides a list of circuit cards that will be contained in the processor for the AN/MLQ-34 configuration. The table lists the cards by slot, type number, description, and I/O connector on the processor front panel.

TABLE C1-1. PROCESSOR CIRCUIT CARDS

Slot	Card Type	Description	I/O Connector
—	3881(AC)	EMI Filter	—
A1	3561B	I/O Bus Expander	J6
A2	3561B	I/O Bus Expander	J7
A3	3566	Priority Load Module	—
A4	3566	Priority Load Module	—
A5	3543	Differential I/O Buffer (8-Bit)	J4
A6	3566	Priority Load Module	—
A7	3549	System Interrupts	J8
A8	1642	Control Panel Interface	J1
A9	5605	Central Processing Unit	—
A10	—	EPROM (32K)	—
A11-A13	2011	Core Memory Set	—
A14-A16	2011	Core Memory Set	—
A17-A19	Blank	Blank	—
A20-A22	Blank	Blank	—
—	5616(AC)	AC Power Supply	—

b. <u>Configuring Processor</u>. To configure the processor for the AN/MLQ-34 (TACJAM) system, as shown in figure C1-1, proceed as follows:

1. Remove top cover (para 2-23).

2. Refer to table C1-1 and figure C1-1 and remove any circuit card that is not in configuration (para 2-39).

3. Install correct circuit cards in slots in processor (para 2-40).

4. If necessary, remove EMI filter (para 2-37) and power supply (para 2-41) and install correct EMI filter (para 2-38) and power supply (para 2-42).

5. Install top cover (para 2-24).

6. Run the diagnostic for this configuration to see if the equipment works (para 2-14).

C1-3. ALTERNATE DEVICE CODES

There are no alternate device codes used for the AN/MLQ-34 (TACJAM) system.

	POWER SUPPLY 5616(AC)
A20-A22	BLANK
A17-A19	BLANK
A14-A16	2011
A11-A13	2011
A10	EPROM (32K)
A9	5605
A8	1642
A7	3549
A6	3566
A5	3543
A4	3566
A3	3566
A2	3561B
A1	3561B

EMI FILTER 3881(AC)
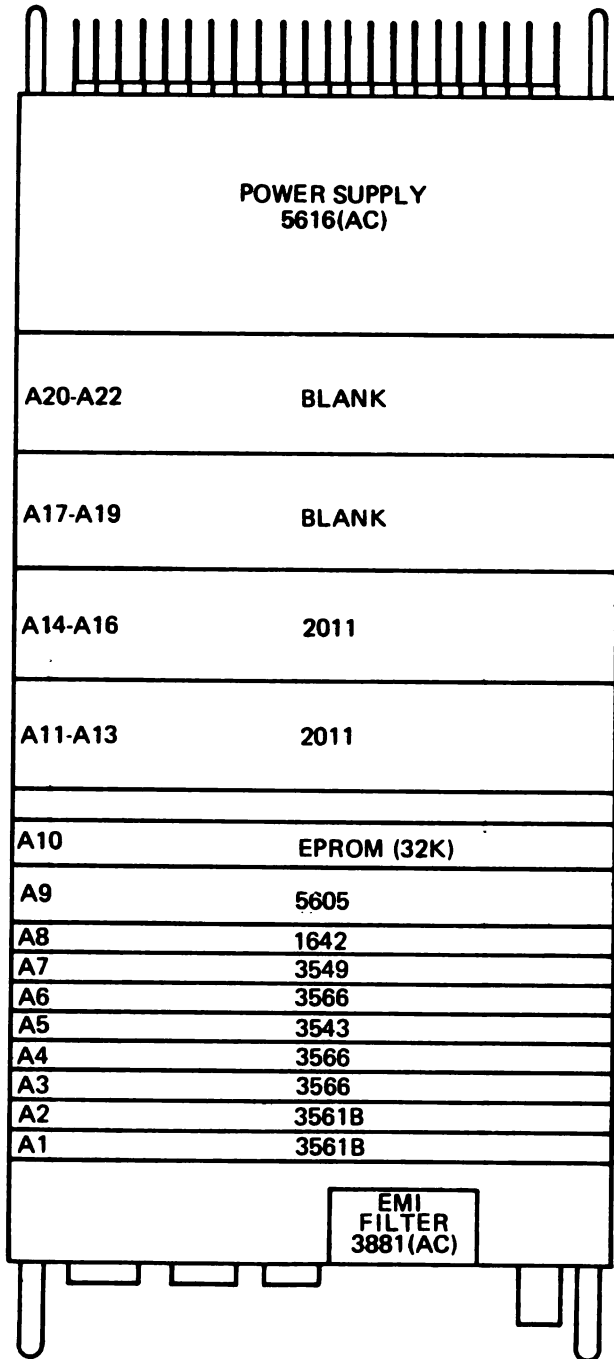
Figure C1-1. AN/UYK-19 Processor Configuration for AN/MLQ-34 (TACJAM) System

C1-4. DIAGNOSTIC SETUP PROCEDURE

NOTE

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

1. Correct the TEST SET OQ-329/U to the power source as indicated in the OQ-329 manual.

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

3. Select the I/O signal cable as indicated in the OQ-329 manual. Connect when directed by prompt in diagnostic.

4. Run diagnostic.

Figure C1-2. Diagnostic Test Setup Diagram for AN/MLQ-34 (TACJAM) System

APPENDIX C2

AN/MSQ-103A

TEAMPACK

C2-1. GENERAL

This appendix contains data on how to configure the AN/UYK-19 processor for use in the AN/MSQ-103A (TEAMPACK) system. Also included is information on changing the device code on a circuit card.

C2-2. SYSTEM CONFIGURATION DATA

a. List of Circuit Cards. Table C2-1 provides a list of circuit cards that will be contained in the processor for the AN/MSQ-103A configuration. The table lists the cards by slot, type number, description, and I/O connector on the processor front panel.

TABLE C2-1. PROCESSOR CIRCUIT CARDS

Slot	Card Type	Description	I/O Connector
—	3882(DC)	EMI Filter	—
A1	3561B	I/O Bus Expander	J6
A2	3566	Priority Load Module	—
A3	3566	Priority Load Module	—
A4	3566	Priority Load Module	—
A5	3566	Priority Load Module	—
A6	3566	Priority Load Module	—
A7	3320	Paper Tape Reader Interface	J8
A8	1642	Control Panel Interface	J1
A9	5605	Central Processing Unit	—
A10	2023	Read Only Memory (ROM)	—
A11-A13	2011	Core Memory Set	—
A14-A16	Blank	Blank	—
A17-A19	Blank	Blank	—
A20-A22	Blank	Blank	—
—	5686(DC)	DC Power Supply	—

b. <u>Configuring Processor.</u> To configure the processor for the AN MSQ-103A (TEAMPACK) system, as shown in figure C2-1, proceed as follows:

1. Remove top cover (para 2-23).

2. Refer to table C2-1 and figure C2-1 and remove any circuit card that is not in configuration (para 2-39).

3. Install correct circuit cards in slots in processor (para 2-40).

4. If necessary, remove EMI filter (para 2-37) and power supply (para 2-41) and install correct EMI filter (para 2-38) and power supply (para 2-42).

5. Install top cover (para 2-24).

6. Run the Diagnostic for this configuration to see if the equipment works (para 2-14).

C2-3. ALTERNATE DEVICE CODES

There are no alternate device codes used for the AN/MSQ-103A (TEAMPACK) system. Figure C2-2 provides an illustration of the modified I/O Bus Expander Type 3561B used in the AN/MSQ-103A (TEAMPACK) system.

POWER SUPPLY 5686(DC)	
A20-A22	BLANK
A17-A19	BLANK
A14-A16	BLANK
A11-A13	2011
A10	2023
A9	5605
A8	1642
A7	3320
A6	3566
A5	3566
A4	3566
A3	3566
A2	3566
A1	3561B
EMI FILTER 3882(DC)	
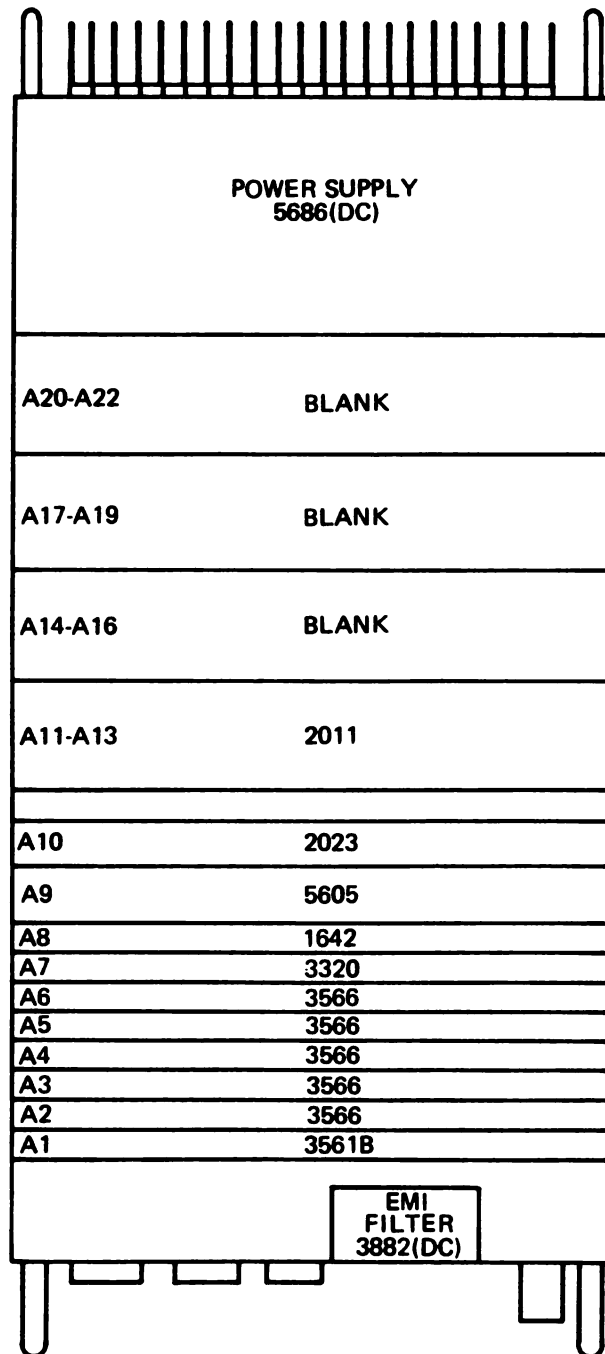
Figure C2-1. AN/UYK-19 Processor Configuration for AN/MSQ-103A (TEAMPACK) System

REAR SIDE VIEW

● I/O BUS   ● EXPANDER ●   ● ASSY 106680   ●   ●   ●

E2 ●   ╱ E1
E3 ●   ● E4

E10
●
E12   E11
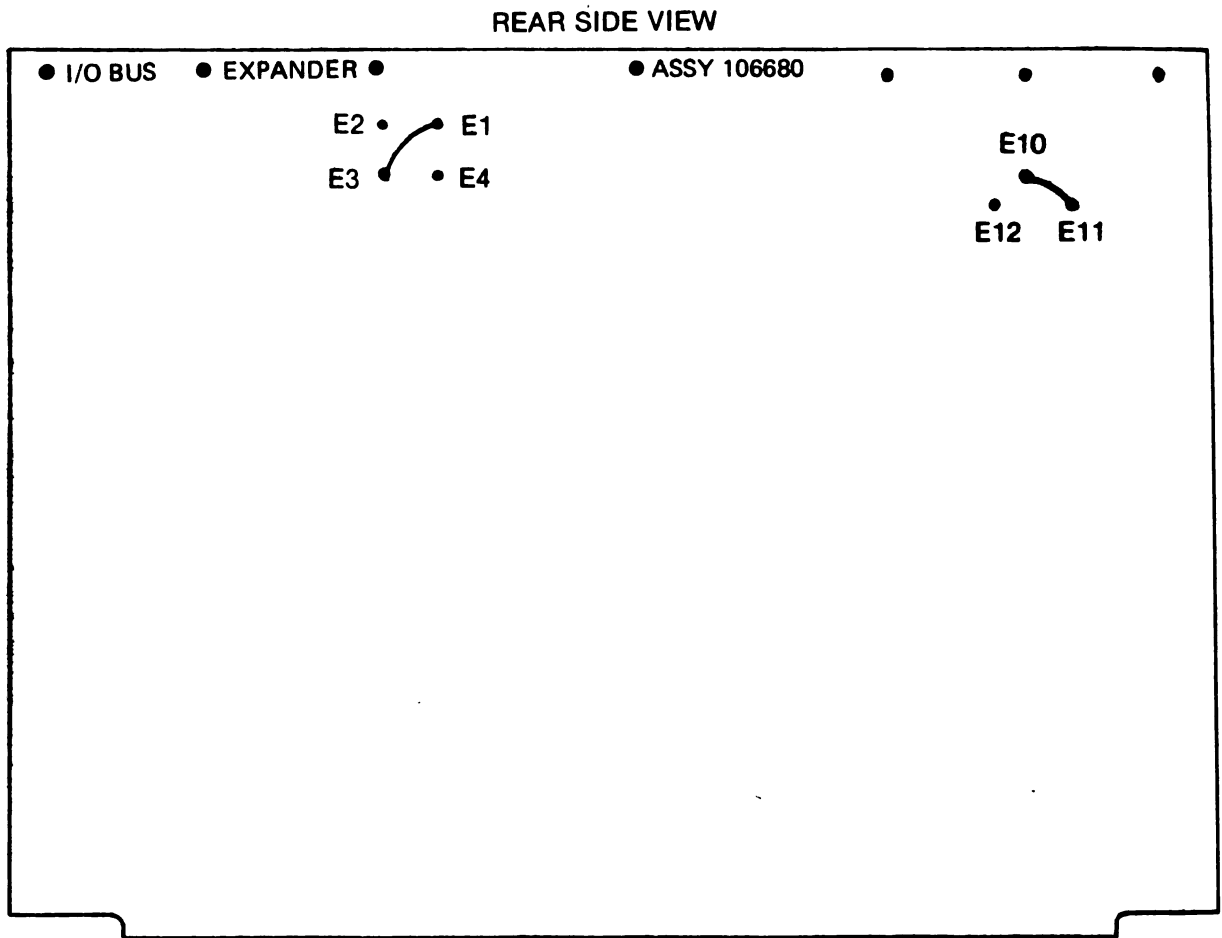
STANDARD 3561B SHOWN

MODEL	JUMPER BETWEEN			
	E1-E4	E3-E4	E10-E11	E 11-E12
3561B	X		X	
3561B*		X		X

*TEAM PACK MODIFICATION

Figure C2-2. Modified Type 3561B I/O Bus Expander, Jumper Data

C2-4. DIAGNOSTIC SETUP PROCEDURE

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

2. Install core memory set type 2011 in slots A14 - A16 (para 2-40).

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

4. Select the I/O signal cable as indicated in the OQ-329 manual. Connect when directed by prompt in diagnostic.

5. Run diagnostic.

6. After completing the diagnostic, remove core memory set type 2011 from slots A14 - A16.
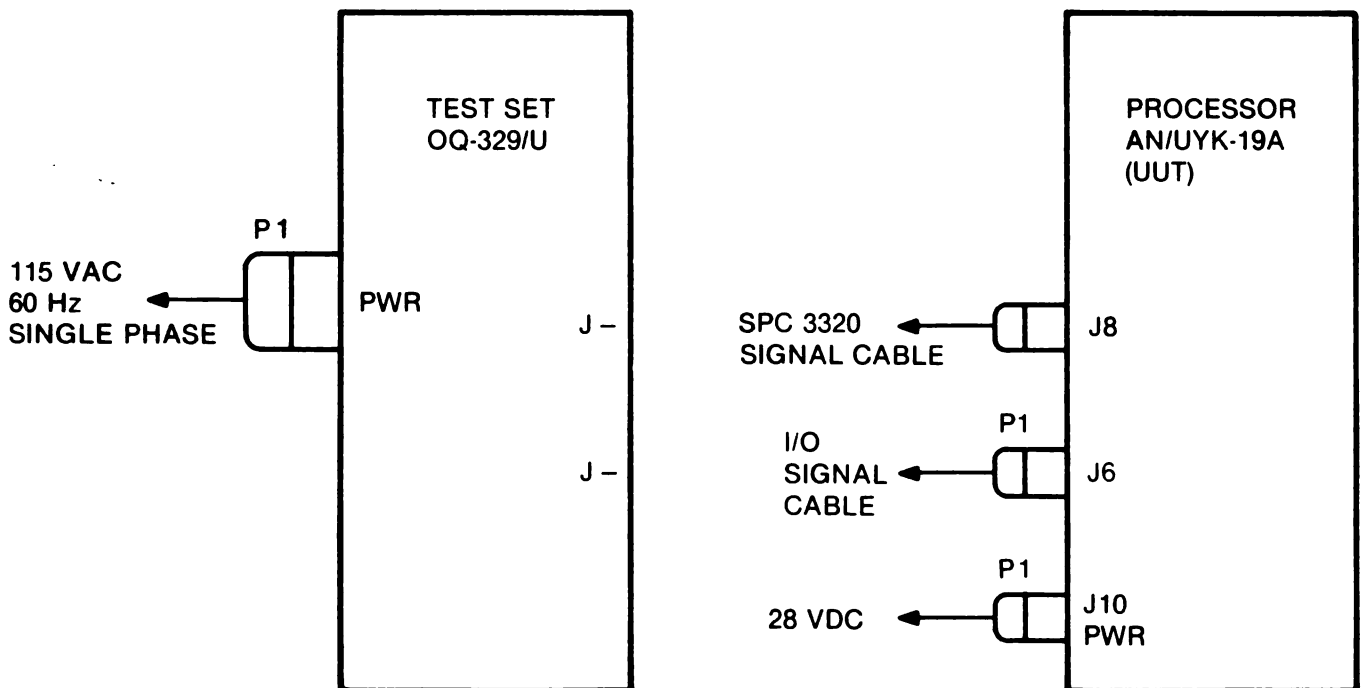
Figure C2-3. Diagnostic Test Setup Diagram for AN/MSQ-103A
(TEAMPACK) System

APPENDIX C3

AN/TMQ-31

FAMAS

C3-1. GENERAL
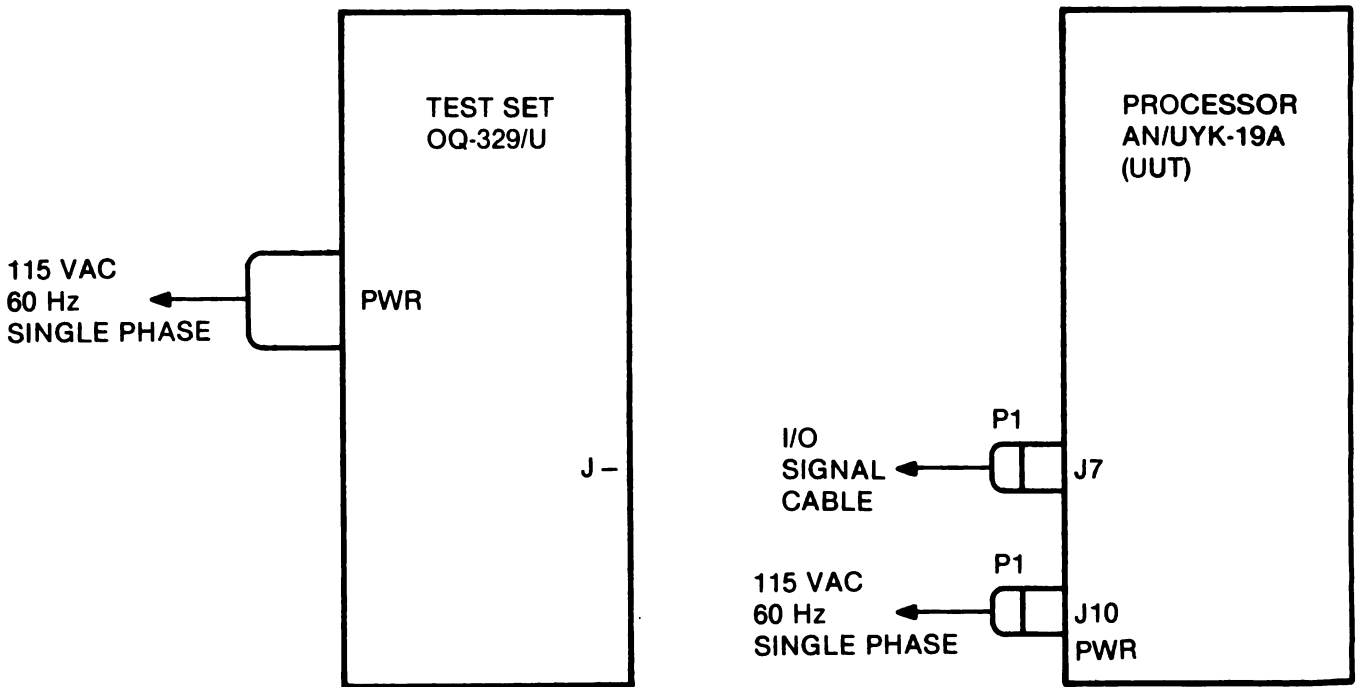
This appendix contains data on how to configure the AN/UYK-19 processor for use in the AN/TMQ-31 (FAMAS) system. Also included is information on changing the device code on a circuit card.

C3-2. SYSTEM CONFIGURATION DATA

a. List of Circuit Cards. Tables C3-1 and C3-2 provide a list of circuit cards that will be contained in the processor and I/O chassis, respectively, for the AN/TMQ-31 configuration. The tables list the cards by slot, type number; description, and I/O connector on the processor and I/O chassis front panel.

TABLE C3-1. PROCESSOR CIRCUIT CARDS

Slot	Card Type	Description	Device Code	I/O Connector
—	3882(DC)	EMI Filter		—
A1	3561B	I/O Bus Expander		J6
A2	3561B	I/O Bus Expander		J7
A3	3364	Magnetic Tape Controller		J2
A4	3566	Priority Load Module		—
A5	3566	Priority Load Module		—
A6	3330	Line Printer Interface		J5
A7	3543	Differential I/O Buffer (8-Bit)	6	J8
A8	1642	Control Panel Interface		J1
A9	5605	Central Processing Unit		—
A10	Blank	Blank		—
A11-A13	2011	Core Memory Set		—
A14-A16	2011	Core Memory Set		—
A17-A19	2011	Core Memory Set		—
A20-A22	2011	Core Memory Set		—
—	5686(DC)	DC Power Supply		—

TABLE C3-2. I/O CHASSIS CIRCUIT CARDS

Slot	Card Type	Description	Device Code	I/O Connector
—	3882(DC)	EMI Filter		—
A1	3566	Priority Load Module		—
A2	3540	Parallel I/O Buffer (16-Bit)		J10
A3	3540	Parallel I/O Buffer (16-Bit)	56	J1
A4	3540	Parallel I/O Buffer (16-Bit)	46	J6
A5	3540	Parallel I/O Buffer (16-Bit)	44	J2
A6	3769	Asynchronous Line Multiplexer	34	J11
A7	3765	Asynchronous Interface	50	J7
A8	3320	Paper Tape Reader Interface	52, 54	J12
A10	3505	Programmable Interval Timer	43	J3
A11	3549	System Interrupts	41	J8
A12	3566	Priority Load Module		—
A13	3566	Priority Load Module		—
A14	3566	Priority Load Module		J4
A15	3566	Priority Load Module		J9
A16	3563	I/O Bus Repeater		J16
—	5686(DC)	DC Power Supply		—

b. <u>Configuring Processor.</u> To configure the processor for the AN/TMQ-31 (FAMAS) system, as shown in figure C3-1, proceed as follows:

1. Remove top cover (para 2-23).

2. Refer to table C3-1 and figure C3-1 and remove any circuit card that is not in configuration (para 2-39).

3. Install correct circuit cards in slots in processor (para 2-40).

POWER SUPPLY **5686(DC)**	
A20-A22	2011
A17-A19	2011
A14-A16	2011
A11-A13	2011
A10	BLANK
A9	5605
A8	1642
A7	3543
A6	3330
A5	3566
A4	3566
A3	3364
A2	3561B
A1	3561B
	EMI FILTER 3882(DC)
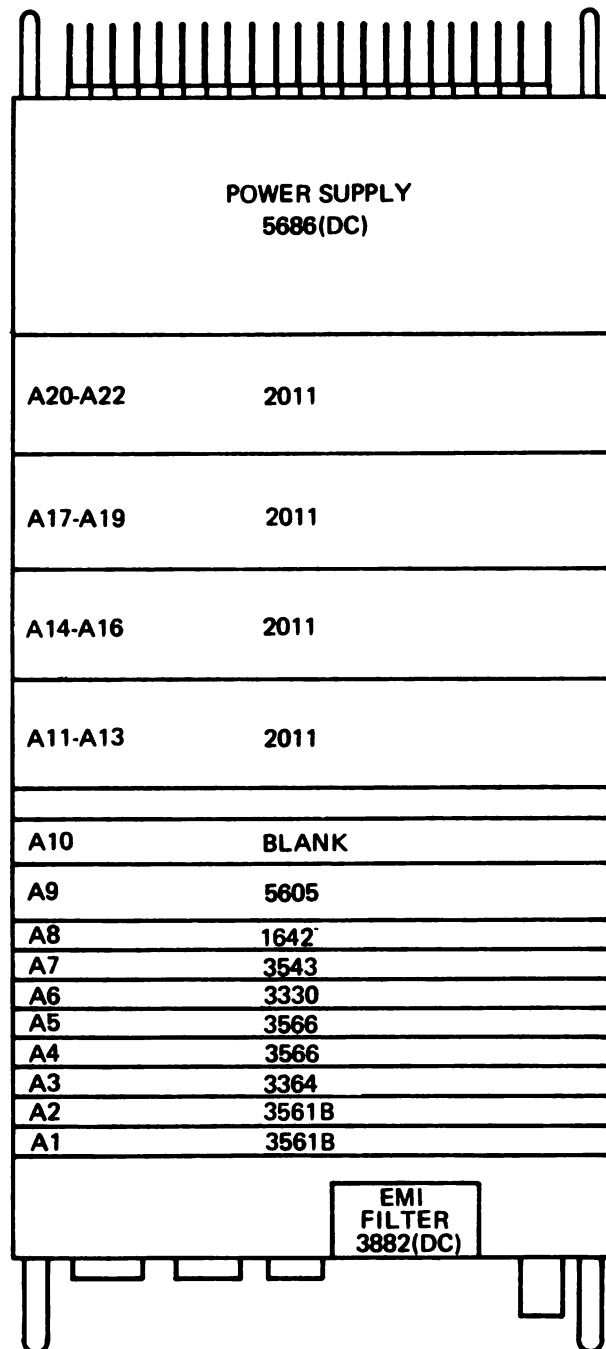
Figure C3-1. AN/UYK-19 Processor Configuration for AN/TMQ-31 (FAMAS) System

4. If necessary, remove EMI filter (para 2-37) and power supply (para 2-41) and install correct EMI filter (para 2-38) and power supply (para 2-42).

5. Install top cover (para 2-24).

6. Run the diagnostic for this configuration to see if the equipment works (para 2-14).

  c. <u>Configuring I/O Chassis</u>. To configure the I/O chassis for the AN/TMQ-31 (FAMAS) system, as shown in figure C3-2, proceed as follows:

1. Remove top cover (para 2-23).

2. Refer to table C3-2 and figure C3-2 and remove any circuit card that is not in configuration (para 2-39).

3. Install correct circuit cards in slots in I/O chassis (para 2-40).

4. If necessary, remove EMI filter (para 2-37) and power supply (para 2-41) and install correct EMI filter (para 2-38) and power supply (para 2-42).

5. Install top cover (para 2-24).

6. Run the diagnostic for this configuration to see if the equipment works (para 2-14).

C3-3. ALTERNATE DEVICE CODES

Figures C3-3 through C3-7 provide data on the alternate device codes for the following circuit cards contained in the AN/TMQ-31 (FAMAS) system:

Card Type	Figure No.
3320	C3-3
3540	C3-4
3543	C3-5
3549	C3-6
3765	C3-7
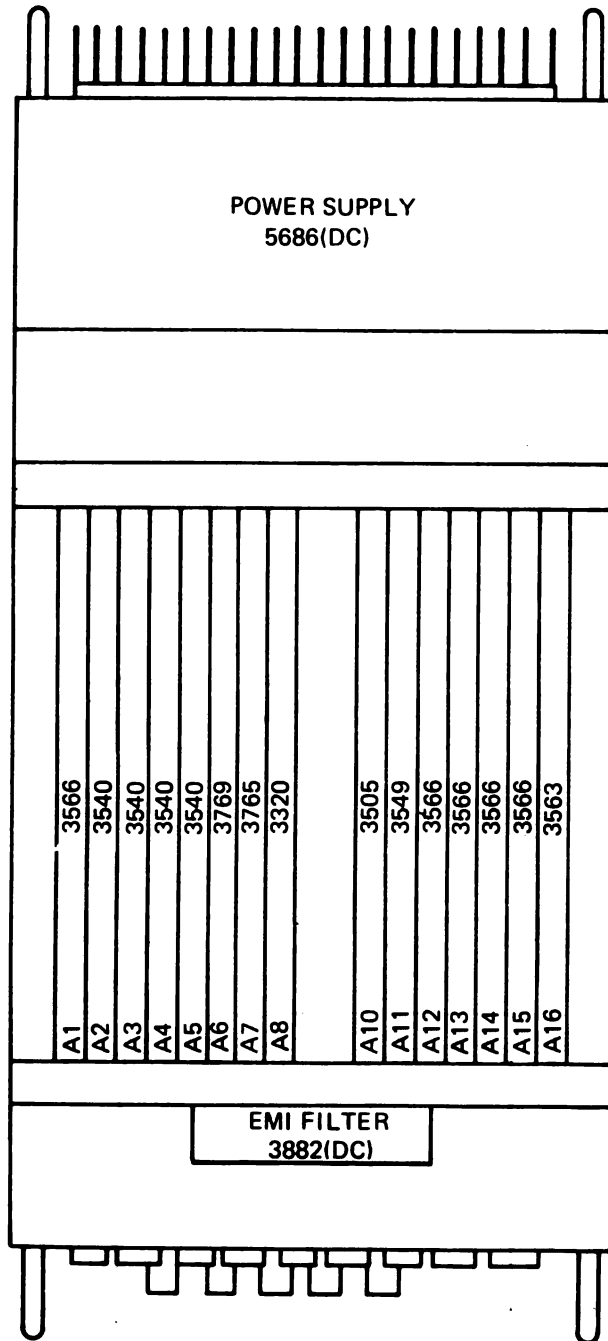
Figure C3-2. I/O Chassis Configuration for AN/TMQ-31 (FAMAS) System

REAR SIDE VIEW

REThe diagram shows a rear side view with labels:

- READER INTERFACE
- ASSY—100044—

Pins E9 E7 E5 E3 E1 (top row) and E10 E8 E6 E4 E2 (bottom row)
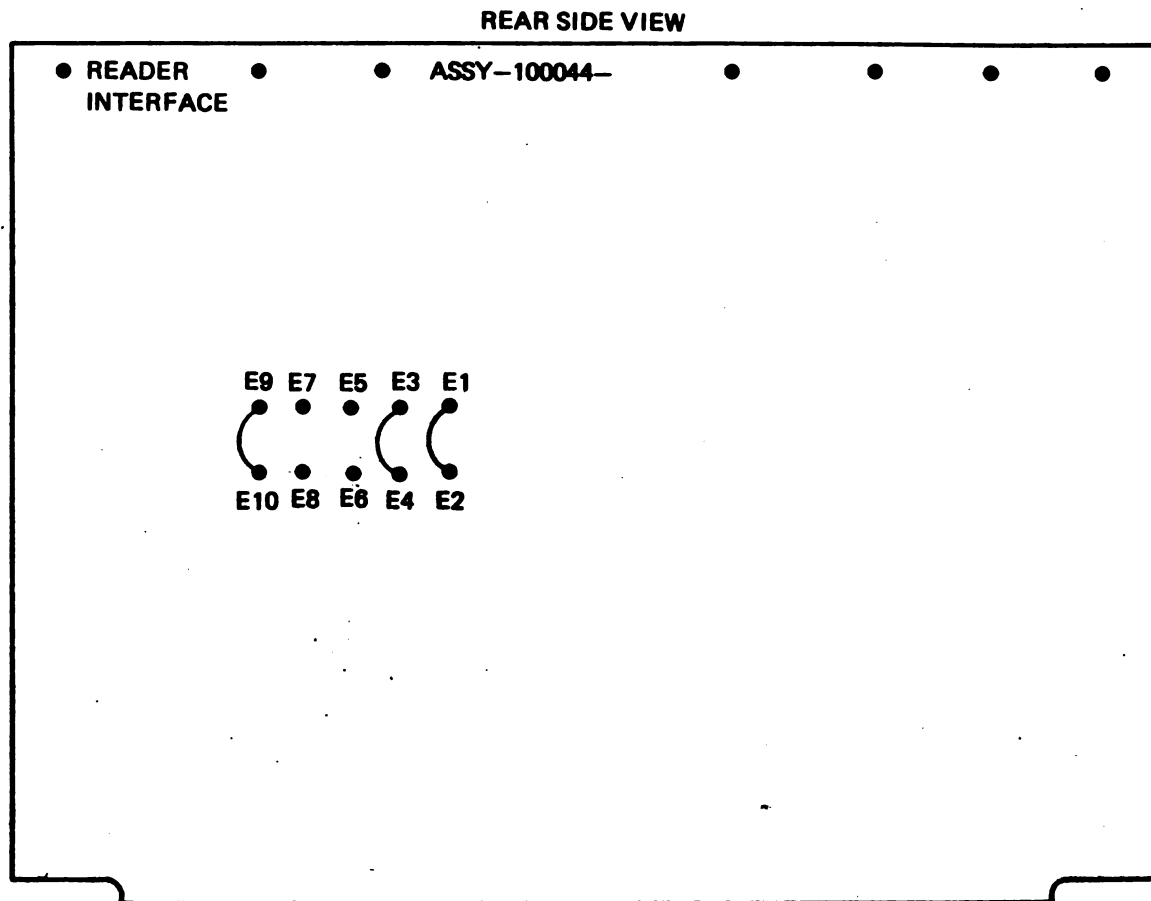
DEVICE CODE 12 SHOWN

DEVICE CODE	JUMPER BETWEEN			
	E1-E2	E3-E4	E5-E6	E9-E10
12*	X	X		X
52		X		X
54			X	X

* STANDARD DEVICE CODE

Figure C3-3. Type 3320 Paper Tape Interface, Device Code Jumper Data

REAR SIDE VIEW

DEVICE CODE 56 SHOWN
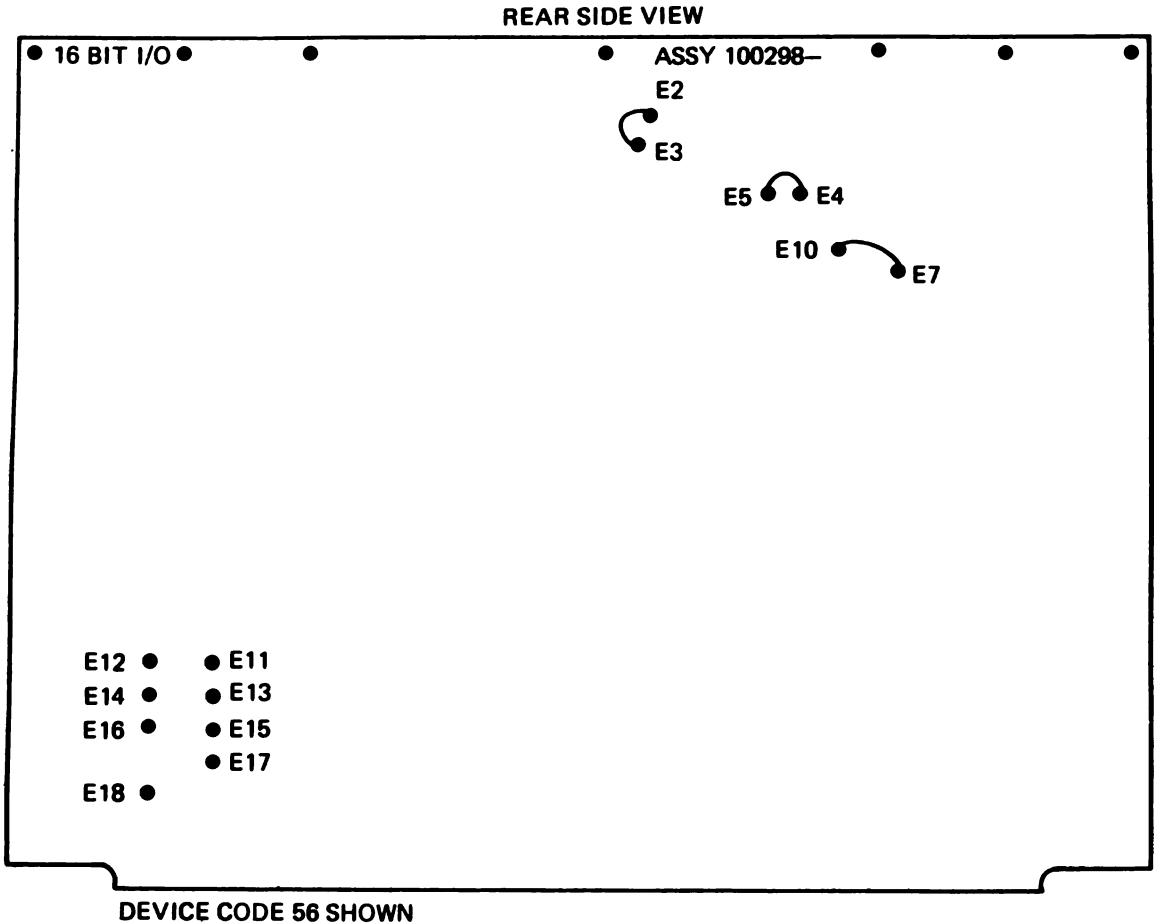
DEVICE CODE	JUMPER BETWEEN					
	E2-E3	E4-E5	E7-E10	E11-E12	E15-E16	E17-E18
44	X	X	X	X		X
46	X	X	X			X
56*	X	X	X			

* STANDARD DEVICE CODE

Figure C3-4. Type 3540 Parallel I/O Buffer (16-Bit), Device Code Jumper Data

REAR SIDE VIEW

● DIFF ● I/O ● INTERFACE 8 BIT ● ASSY 100928— ● ● ●

E12 ⌒ E11
E14 ⌒ E13
E16 ● ● E15
E18 ⌒ E17
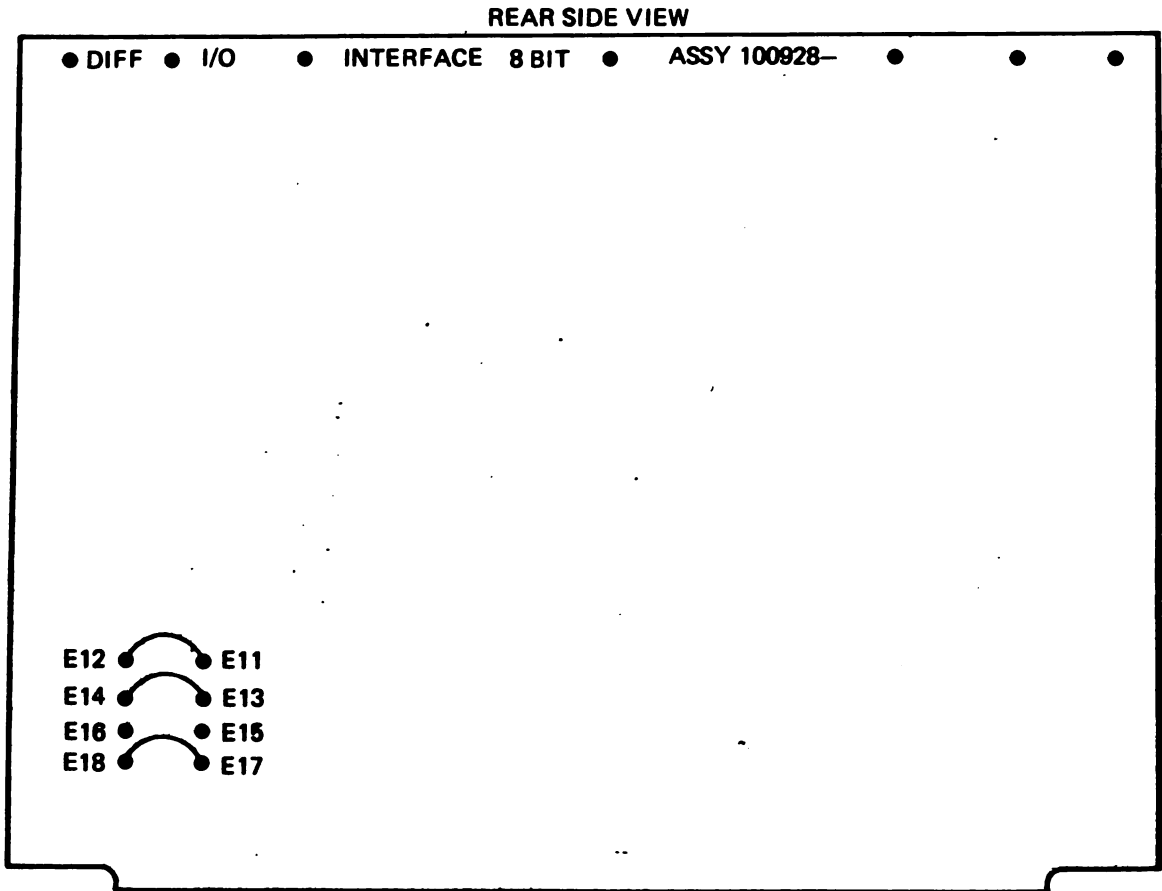
DEVICE CODE 40 SHOWN

DEVICE CODE	JUMPER BETWEEN			
	E11-E12	E13-E14	E15-E16	E17-E18
6			X	X
40*	X	X		X

* STANDARD DEVICE CODE

Figure C3-5. Type 3543 Differential I/O Buffer (8-Bit), Device Code Jumper Data

REAR SIDE VIEW

● SYSTEM ● INTERRUPT ● ● ASSY 100379— ● ● ●

E1 E3
E4 E2

E11 E9 E7 E5
E12 E10 E8 E6

DEVICE CODE 41 SHOWN
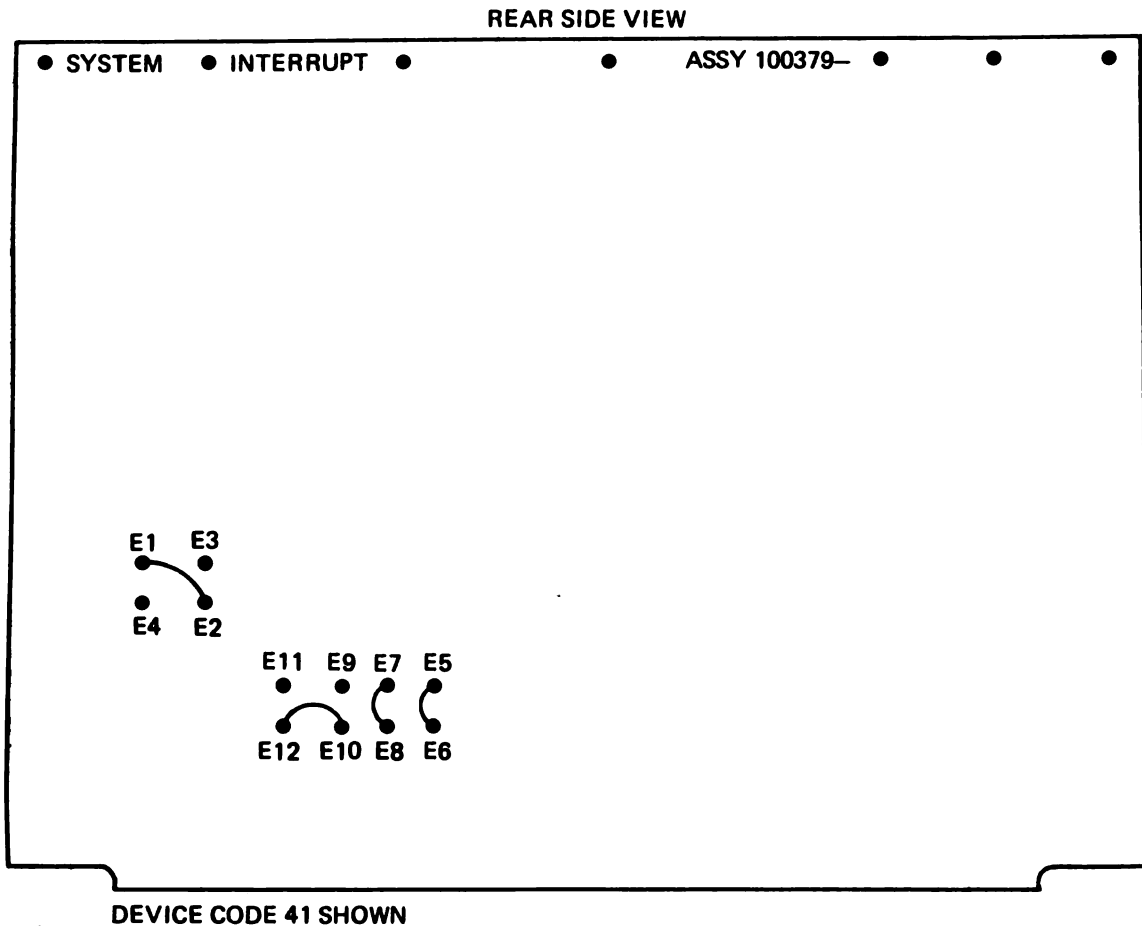
DEVICE CODE	JUMPER BETWEEN				
	E1-E2	E5-E6	E6-E8	E7-E8	E10-E12
40			X		X
41*	X	X		X	X

* STANDARD DEVICE CODE

Figure C3-6. Type 3549 System Interrupts, Device Code Jumper Data

REAR SIDE VIEW

● · ● ASYNC · ● INTERFACE · ● ASSY 100758— · ● · ● · ●

E73 ⌒ E72

● E85 · E84 ● · ● E83

● E86

E93 ● · ● E89
E94 ●⌣● E90
E95 ● · ● E91
E96 ●⌣● E92

DEVICE CODE 34 SHOWN
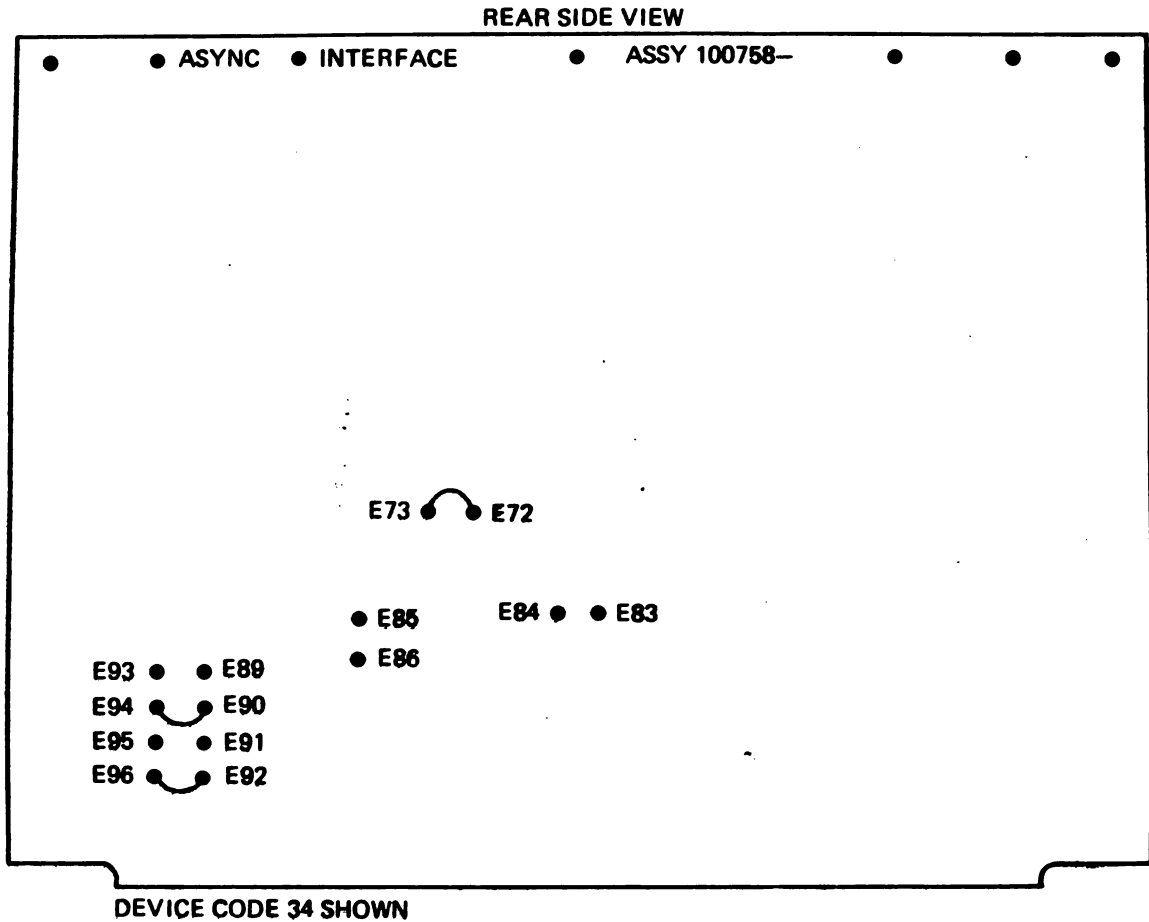
DEVICE CODE	JUMPER BETWEEN						
	E72-E73	E72-E84	E73-E83	E89-E93	E90-E94	E91-E95	E92-E96
34*	X				X		X
50		X	X	X	X	X	

* STANDARD DEVICE CODE

Figure C3-7. Type 3765 Asynchronous Interface, Device Code Jumper Data

C3-4. DIAGNOSTIC SETUP PROCEDURE

NOTE

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

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

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

3. Select the proper power cable for the I/O chassis and connect it to the proper power source.

4. Connect an I/O signal cable from the I/O chassis to the processor under test.

5. Select the I/O cable as indicated in the OQ-329 manual. Connect when directed by prompt in the diagnostic.
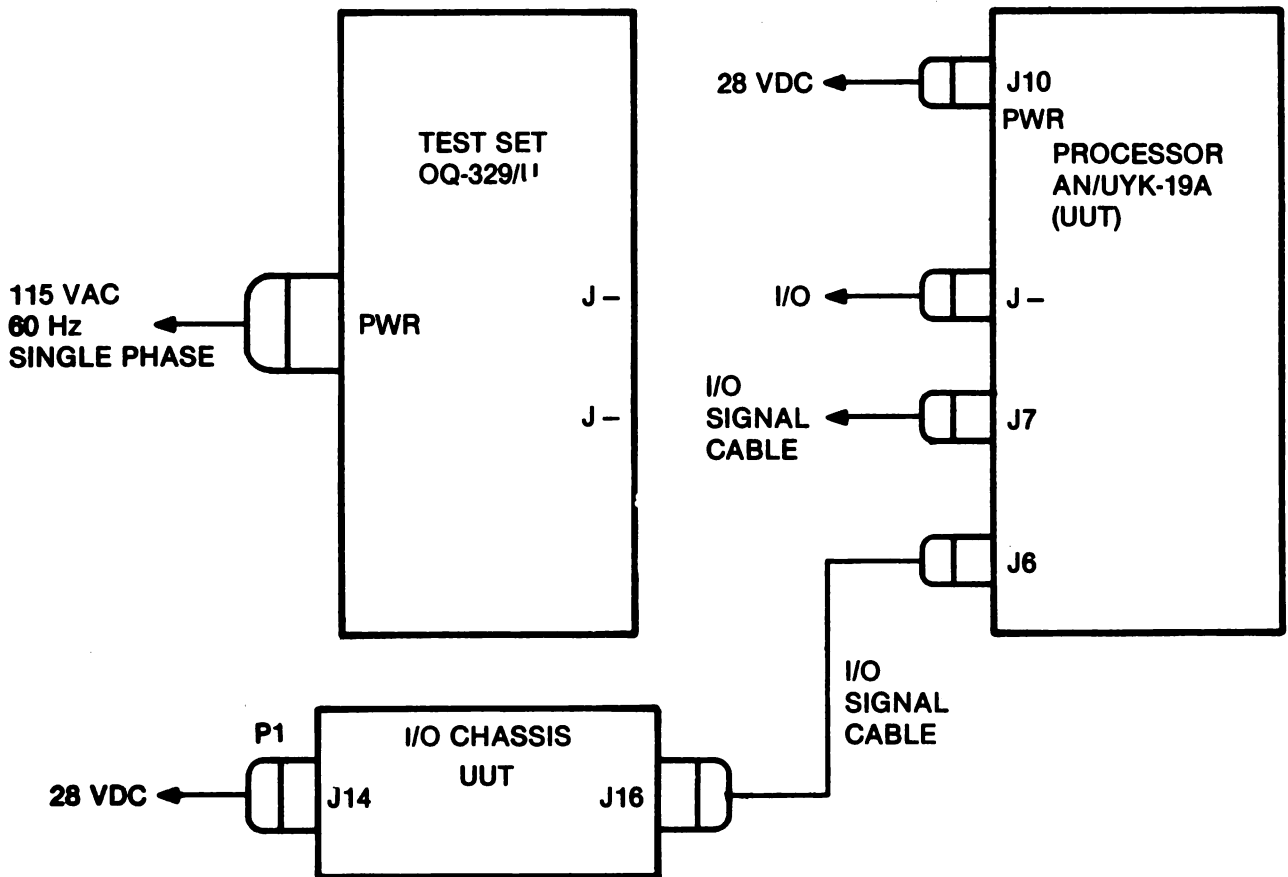
6. Run diagnostics.

Figure C3-8. Diagnostic Test Setup Diagram for AN/TMQ-31 (MDS) System

4. Install top cover (para 2 24).

5. Connect tape memory unit to connector J7 on processor under test with an I O signal cable.

6. Connect plasma display to connector J8 on processor under test with an I/O signal cable.

7. Connect graphics keyboard to plasma display with keyboard cable.

8. Connect an I/O signal cable between connector J16 on I/O chassis under test and connector **J6** on processor under test.

9. Connect tape memory unit to a source of 115 vac, 400 Hz, single-phase power.

10. Connect processor and I/O chassis under test to a source of 28 vdc power.

11. Connect plasma display to a source of 115 vac, 47-400 Hz, single-phase power.

12. After completing the diagnostic, remove priority load module from slot **A3** and install **magnetic** tape controller.

APPENDIX C4

AN/TSC-99

C4-1. GENERAL

This appendix contains data on how to configure the AN/UYK-19 processor for use in the AN/TSC-99 system. Also included is information on changing the device code on a circuit card.

C4-2. SYSTEM CONFIGURATION DATA

a. <u>List of Circuit Cards.</u> Tables C4-1 and C4-2 provide a list of circuit cards that will be contained in the processor for the AN/TSC-99 configuration. The tables list the cards by slot, type number, description, and I/O connector on the processor front panel.

TABLE C4-1. RECEIVING SHELTER PROCESSOR CIRCUIT CARDS

Slot	Card Type	Description	Device Code	I/O Connector
—	3881(AC)	EMI Filter		—
A1	3566	Priority Load Module		J6
A2	3561B	I/O Bus Expander		J7
A3	3566	Priority Load Module		J2
A4	3566	Priority Load Module		J3
A5	3566	Priority Load Module		J4
A6	3364	Magnetic Tape Controller		J5
A7	3566	Priority Load Module ·		J8
A8	1642	Control Panel Interface		J1
A9	5605	Central Processing Unit		—
A10	—	—	—	—
A11-A13	2011	Core Memory Set		—
A14-A16	2011	Core Memory Set		—

TABLE C4-1. RECEIVING SHELTER PROCESSOR CIRCUIT CARDS — Continued

Slot	Card Type	Description	Device Code	I/O Connector
A17-A19	2011	Core Memory Set		—
A20-A22	2011	Core Memory Set		—
—	5616 (AC)	AC Power Supply		—

TABLE C4-2. TRANSMITTING SHELTER PROCESSOR CIRCUIT CARDS

Slot	Card Type	Description	Device Code	I/O Connector
—	3881	EMI Filter		—
A1	3566	Priority Load Module		J6
A2	3561B	I/O Bus Expander		J7
A3	3769	Asynchronous Line Multiplexer	34	J2
A4	3769	Asynchronous Line Multiplexer	30	J3
A5	3566	Priority Load Module		J4
A6	3364	Magnetic Tape Controller		J5
A7	3566	Priority Load Module		J8
A8	1642	Control Panel Interface		J1
A9	5605	Central Processing Unit		—
A10	—	—		—
A11-A13	2011	Core Memory Set		—
A14-A16	2011	Core Memory Set		—
A17-A19	2011	Core Memory Set		—
A20-A22	2011	Core Memory Set		—
—	5616(AC)	AC Power Supply		—

POWER SUPPLY
5616(AC)

A20-A22	2011
A17-A19	2011
A14-A16	2011
A11-A13	2011
A10	BLANK
A9	5605
A8	1642
A7	3566
A6	3364
A5	3506
A4	3566
A3	3566
A2	3561B
A1	3566

EMI
FILTER
3881(AC)

Figure C4-1. AN/UYK-19 Processor Configuration for Receiving
Shelter of AN/TSC-99 System

POWER SUPPLY 5616(AC)	
A20-A22	2011
A17-A19	2011
A14-A16	2011
A11-A13	2011
A10	BLANK
A9	5605
A8	1642
A7	3566
A6	3364
A5	3566
A4	3769
A3	3769
A2	3561B
A1	3566
	EMI FILTER 3881(AC)
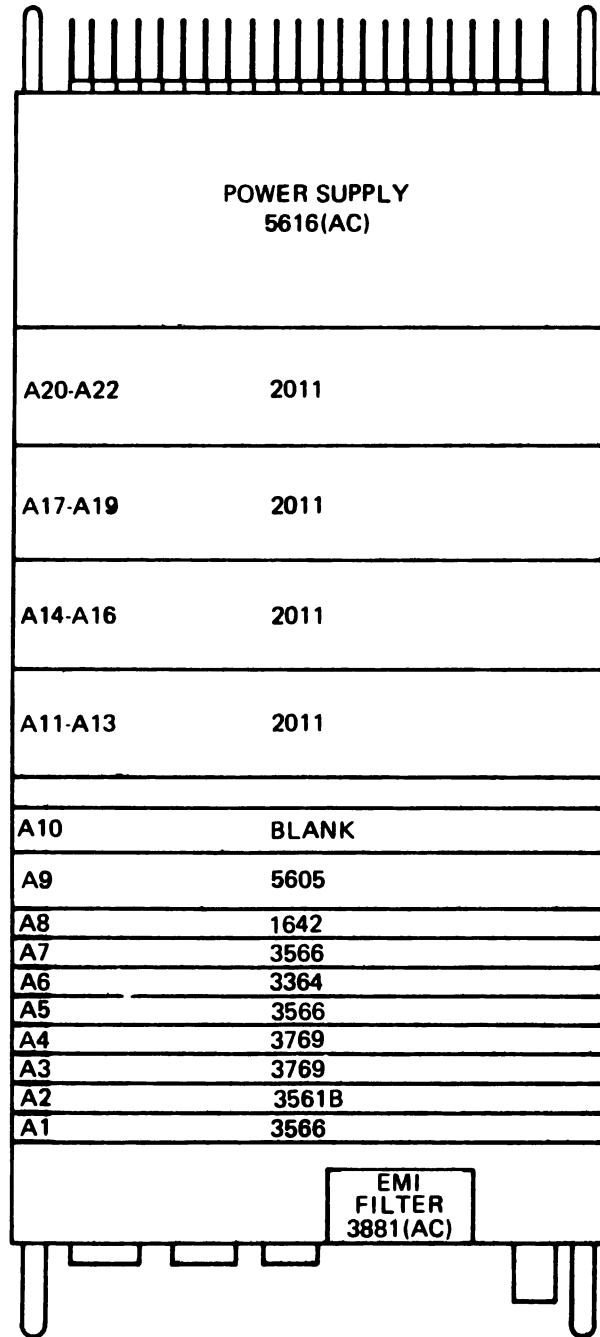
Figure C4-2. AN/UYK-19 Processor Configuration for Transmitting
Shelter of AN/TSC-99 System

b. <u>Configuring Processor.</u> To configure the processor for the receiving and transmitting shelters of AN/TSC-99 system as shown in figures C4-1 and C4-2, proceed as follows:

1. Remove top cover (para 2-23).

2. Refer to table C4-1 and figure C4-1 for receiving shelter, table C4-2 and figure C4-2 for transmitting shelter, and remove any circuit card that is not in configuration (para 2-39).

3. Install correct circuit cards in slots in processor (para 2-40).

4. If necessary, remove EMI filter (para 2-37) and power supply (para 2-41) and install correct EMI filter (para 2-38) and power supply (para 2-42).

5. Install top cover (para 2-24).

6. Run the diagnostic for these configurations to see if the equipment works (para 2-14).

C4-3. ALTERNATE DEVICE CODES

Figure C4-3 provides data on the alternate device code for asynchronous line multiplexer card type 3769.

DEVICE CODE 34 SHOWN

DEVICE CODE	JUMPER BETWEEN				
	E29-E40	E25-E36	E23-E34	E26-E37	E30-E41
22	X	X	X		X
*34	X			X	X
30	X		X	X	X

*STANDARD DEVICE CODE

Figure C4-3. Type 3769 Asynchronous Line Multiplexer, Device Code Jumper Data

C4-4. DIAGNOSTIC SETUP PROCEDURE

a.   Receiving Shelter.

NOTE

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

1.   Correct the TEST SET OQ-329/U to the power source as indicated in the OQ-329 manual.

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

3.   Select the I/O signal cable as indicated in the OQ-329 manual. Connect when directed by prompt
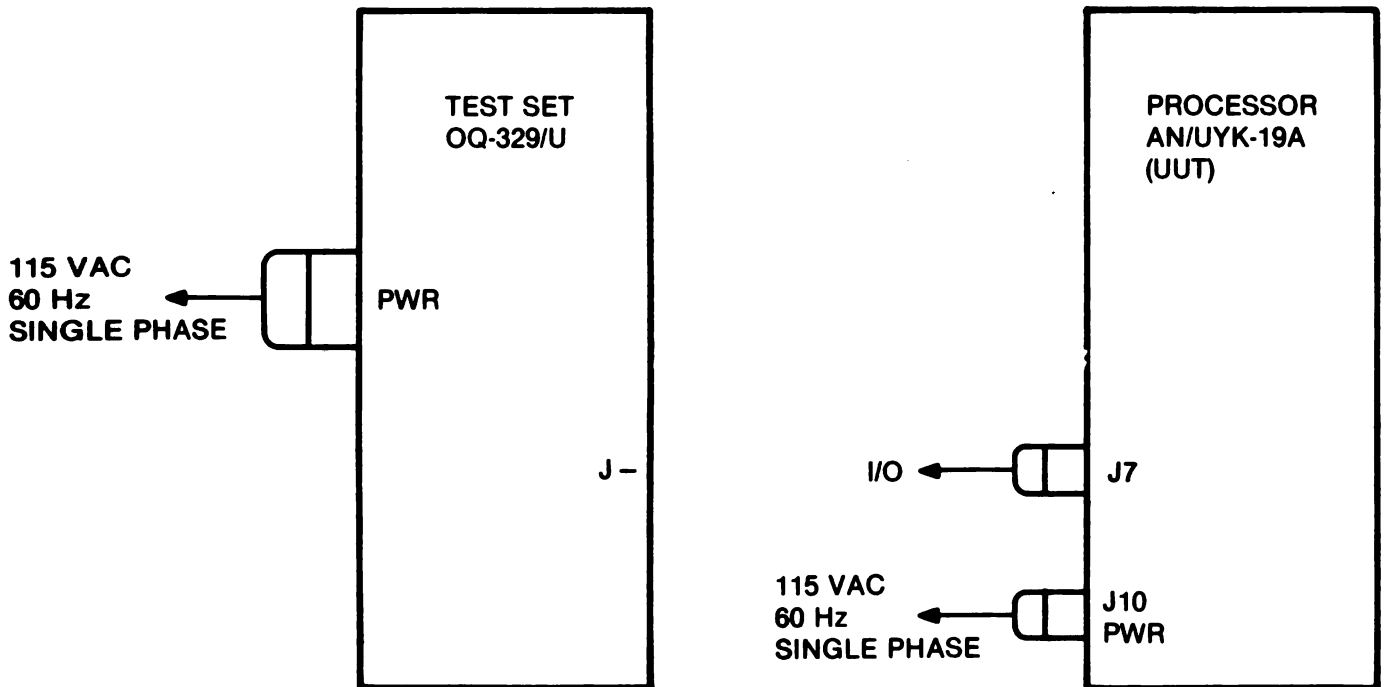   in diagnostic.

4.   Run diagnostic.

Figure C4-4.   Diagnostic Test Setup Diagram for Receiving Shelter of AN/TSC-99 System

10. Connect tape memory unit to a source of 115 vac, 400 Hz, single-phase power.

11. Connect processor under test and plasma display to a source of 115 vac, 47-400 Hz, single-phase power.

12. After completing the diagnostic, remove differential I/O buffer (8-bit) from slot A3 and install priority load module.

13. Remove priority load module from slot A6 and install magnetic tape controller.

b. Transmitting Shelter.

NOTE

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

1. Correct the TEST SET OQ-329/U to the power source as indicated in the OQ-329 manual.

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

3. Select the I/O signal cable as indicated in the OQ-329 manual. Connect when directed by prompt in diagnostic.
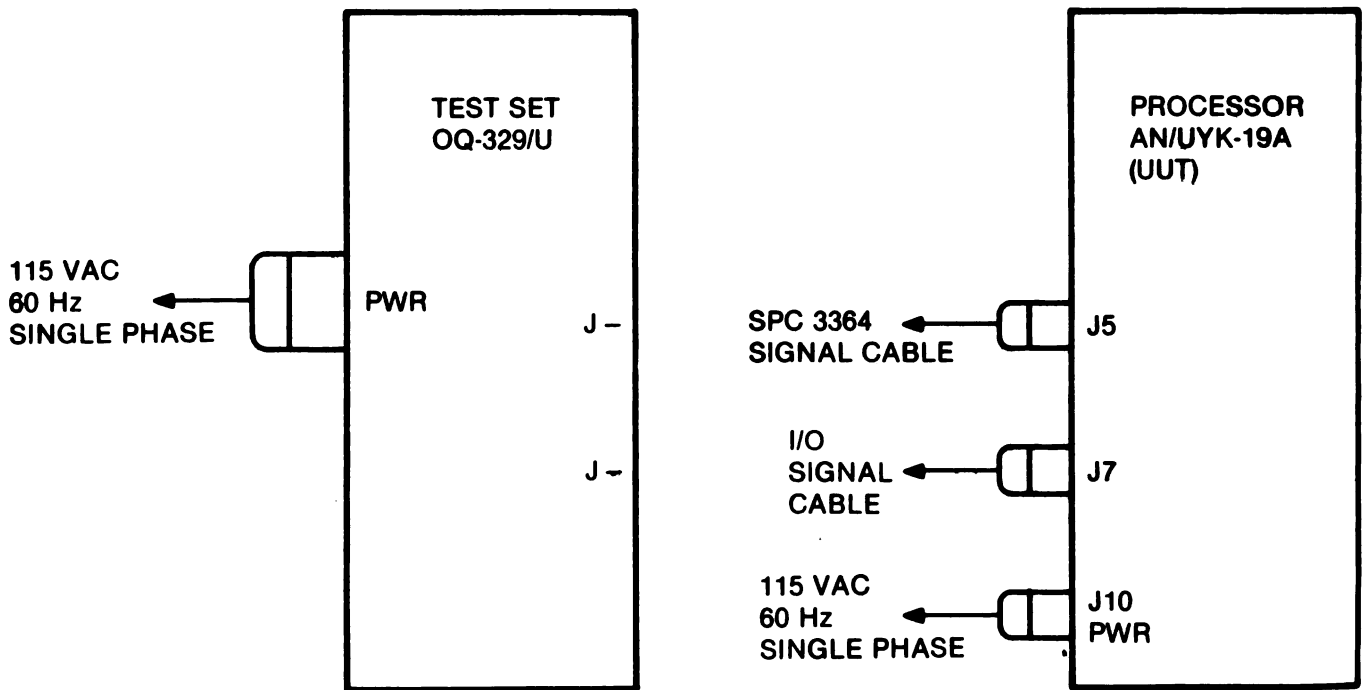
4. Run diagnostic.

Figure C4-5.   Diagnostic Test Setup Diagram for Transmitting Shelter AN/TSC-99 System

4. Remove magnetic tape controller card type 3364 from slot A6 (para 2-39).

5. Install priority load module in slot A6 (para 2-40).

6. Install top cover (para 2-24).

7. Connect tape memory unit to connector J7 on processor under test with an I/O signal cable.

8. Connect plasma display to connector J2 on processor under test with an I/O signal cable.

9. Connect graphics keyboard to plasma display with keyboard cable.

10. Connect tape memory unit to a source of 115 vac, 400 Hz, single-phase power.

11. Connect processor under test and plasma display to a source of 115 vac, 47-400 Hz, single-phase power.

12. After completing the diagnostic, remove differential I/O buffer (8-bit) from slot A3 and install priority load module.

13. Remove priority load module from slot A6 and install magnetic tape controller.

APPENDIX C5

AN/TSQ-84A

C5-1. GENERAL

This appendix contains data on how to configure the AN/UYK-19 processor for use in the AN/TSQ-84A system. Also included is information on changing the device code on a circuit card.

C5-2. SYSTEM CONFIGURATION DATA

a. <u>List of Circuit Cards</u>. Table C5-1 provides a list of circuit cards that will be contained in the processor for the AN/TSQ-84A configuration. The table lists the cards by slot, type number, description, and I/O connector on the processor front panel.

TABLE C5-1. PROCESSOR CIRCUIT CARDS

Slot	Card Type	Description	Device Code	I/O Connector
—	3881(AC)	EMI Filter		—
A1	3566	Priority Load Module		—
A2	3566	Priority Load Module		—
A3	3566	Priority Load Module		—
A4	3566	Priority Load Module		—
A5	3766	Asynchronous Multiplexer	32	J4
A6	3766	Asynchronous Multiplexer	36	J5
A7	3540	Parallel I/O Buffer (16-Bit)		J8
A8	1642	Control Panel Interface		J1
A9	5605	Central Processing Unit		—
A10	Blank	Blank		—
A11-A13	2011	Core Memory Set		—
A14-A16	2011	Core Memory Set		—
A17-A19	Blank	Blank		—
A20-A22	Blank	Blank		—
—	5616(AC)	AC Power Supply		—

b. <u>Configuring Processor</u>. To configure the processor for the AN/TSQ-84A system, as shown in figure C5-1, proceed as follows:

1. Remove top cover (para 2-23).

2. Refer to table C5-1 and figure C5-1 and remove any circuit card that is not in configuration (para 2-39).

3. Install correct circuit cards in slots in processor (para 2-40).

4. If necessary, remove EMI filter (para 2-37) and power supply (para 2-41) and install correct EMI filter (para 2-38) and power supply (para 2-42).

5. Install top cover (para 2-24).

6. Run the diagnostic for this configuration to see if the equipment works (para 2-14).

C5-3. ALTERNATE DEVICE CODES

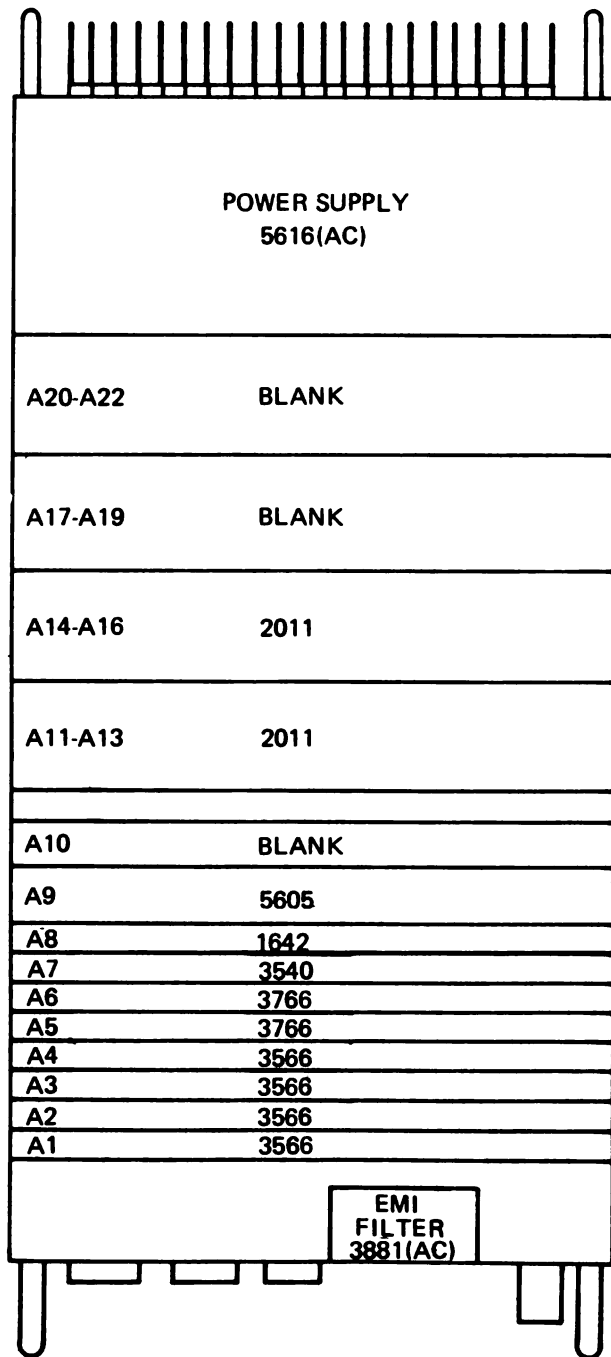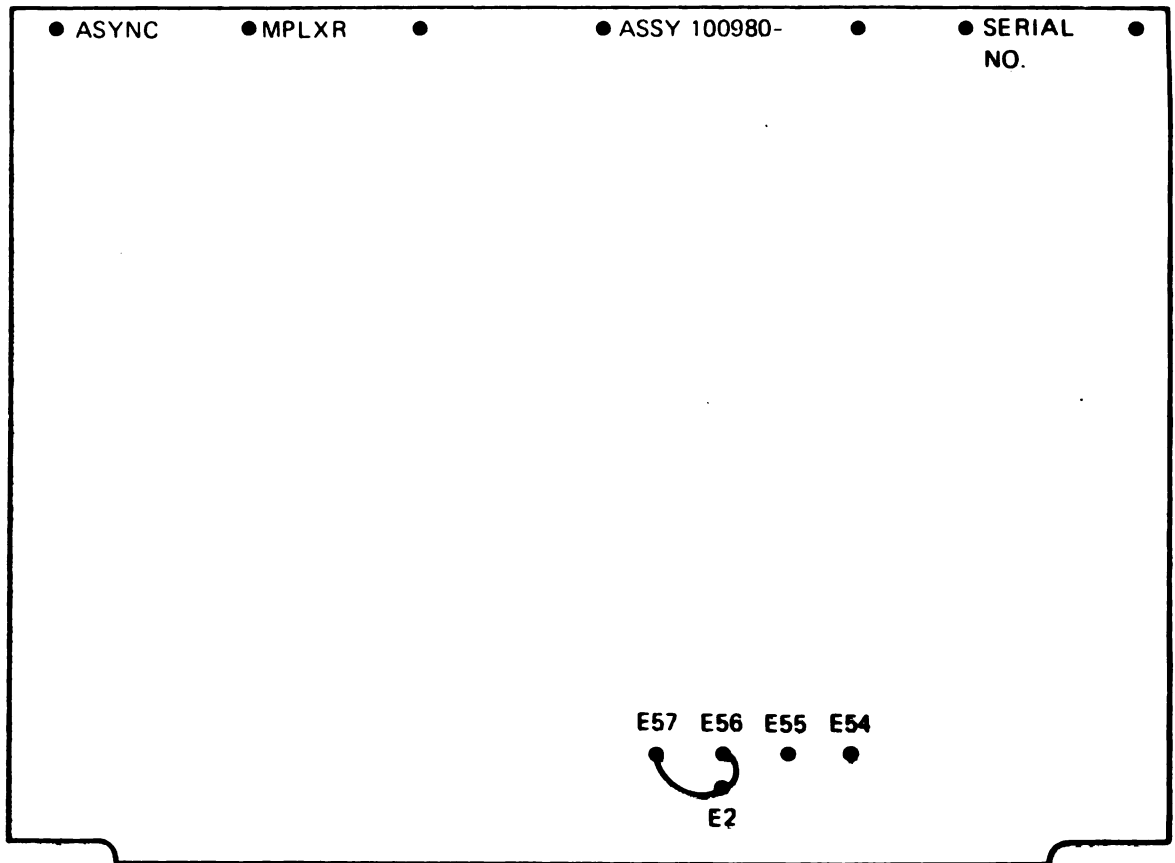Figure C5-2 provides data on the alternate device code for asynchronous multiplexer card type 3766.

Figure C5-1. AN/UYK-19 Processor Configuration for AN/TSQ-84A System

● ASYNC   ● MPLXR   ●   ● ASSY 100980-   ●   ● SERIAL
                                                                      NO.

E57   E56   E55   E54

E2

DEVICE CODE 30 SHOWN

DEVICE CODE	JUMPER BETWEEN E2 AND			
	E54	E55	E56	E57
30°			X	X
32			X	
36				

°STANDARD DEVICE CODE

Figure C5-2. Type 3766 Asynchronous Multiplexer, Device Code Jumper Data

C5-4. DIAGNOSTIC SETUP PROCEDURE

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

2. Remove priority load module from slot A1 (para 2-39).

3. Install I/O bus expander type 3561B card in slot A1 (para 2-40).

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

5. Select the I/O signal cable as indicated in the OQ-329 manual. Connect when directed by prompt in diagnostic.

6. Run diagnostic.
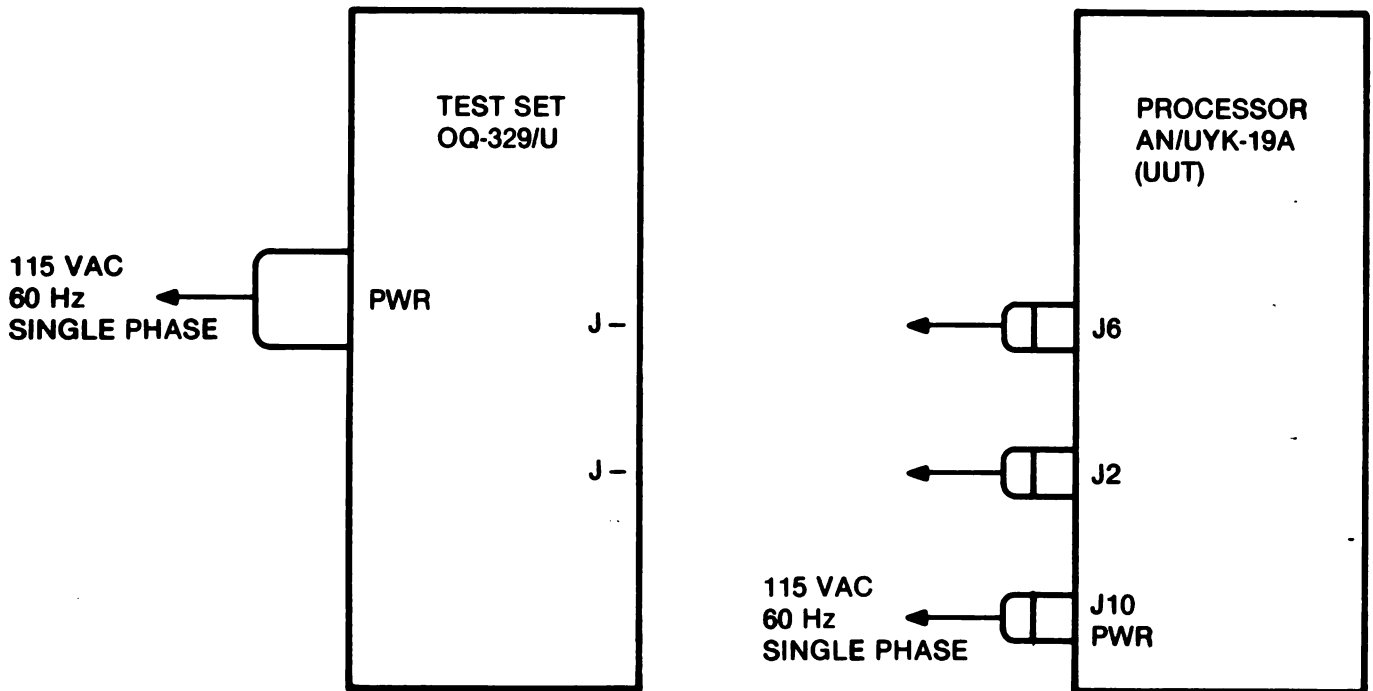
7. After completing the diagnostic, remove I/O bus expander type 3561B from slot A1 and install priority load module.

Figure C5-3.   Diagnostic Test Setup Diagram for AN/YSQ-84A System

APPENDIX C6

AN/TSQ-114A

TRAILBLAZER

C6-1. GENERAL

This appendix contains data on how to configure the AN/UYK-19 processor for use in the AN/TSQ-114A (TRAILBLAZER) system. Also included is information on changing the device code on a circuit card.

C6-2. SYSTEM CONFIGURATION DATA

a. List of Circuit Cards. Tables C6-1 and C6-2 provide a list of circuit cards that will be contained in the processor and I/O chassis, respectively, for the AN/TSQ-114A configuration. The tables list the cards by slot, type number, description, and I/O connector on the processor and I/O chassis front panels.

TABLE C6-1. PROCESSOR CIRCUIT CARDS

Slot	Card Type	Description	Device Code	I/O Connector
—	3881(AC)	EMI Filter		—
A1	3561B	I/O Bus Expander		J6
A2	3561B	I/O Bus Expander		J7
A3	3549	System Interrupts	42	J2
A4	3545	Serial Differential I/O Interface	46	J3
A5	3545	Serial Differential I/O Interface	54	J4
A6	3543	Differential I/O Buffer (8-Bit)	6	J5
A7	3543	Differential I/O Buffer (8-Bit)	2	J8
A8	1642	Control Panel Interface		J1
A9	5605	Central Processing Unit		—
A10	Blank	Blank		—
A11-A13	2011	Core Memory Set		—
A14-A16	2011	Core Memory Set		—
A17-A19	2011	Core Memory Set		—
A20-A22	2011	Core Memory Set		—
—	5616(AC)	AC Power Supply		—

TABLE C8-2. I/O CHASSIS CIRCUIT CARDS

Slot	Card Type	Description	Device Code	I/O Connector
—	3881(AC)	EMI Filter		—
A1	3566	Priority Load Module		—
A2	3765*	Asynchronous Interface	74	J10
A3	S711	TT580	50	J1
A4	S710	BDHI	70	J6
A5	3549	System Interrupts	41	J2
A6	3540	Parallel I/O Buffer (16-Bit)		J11
A7	S667	Current Driver Board		J7
A8	S667	Current Driver Board		J12
A10	S593	RCU Mux	72	J3
A11	S593	RCU Mux	71	J8
A12	3566	Priority Load Module		—
A13	3566	Priority Load Module		—
A14	3566	Priority Load Module		—
A15	3566	Priority Load Module		—
A16	3563	I/O Bus Repeater		J16
—	5616(AC)	AC Power Supply		—

*Modified

b. <u>Configuring Processor</u>. To configure the processor for the EH-60A (QUICKFIX) system, as shown in figure C8-1, proceed as follows:

1. Remove top cover (para 2-23).

2. Refer to table C8-1 and figure C8-1 and remove any circuit card that is not in configuration (para 2-39).

3. Install correct circuit cards in slots in processor (para 2-40).

4. If necessary, remove EMI filter (para 2-37) and power supply (para 2-41) and install correct EMI filter (para 2-38) and power supply (para 2-42).

5. Install top cover (para 2-24).

6. Run the diagnostic for this configuration to see if the equipment works (para 2-14).

c. <u>Configuring I/O Chassis</u>. To configure the I/O chassis for the EH-60A (QUICKFIX) system, as shown in figure C8-2, proceed as follows:

1. Remove top cover (para 2-23).

2. Refer to table C8-2 and figure C8-2 and remove any circuit card that is not in configuration (para 2-39).

3. Install correct circuit cards in slots in I/O chassis (para 2-40).

4. If necessary, remove EMI filter (para 2-37) and power supply (para 2-41) and install correct EMI filter (para 2-38) and power supply (para 2-42).

5. Install top cover (para 2-24).

6. Run the diagnostic for this configuration to see if the equipment works (para 2-14).

C8-3. ALTERNATE DEVICE CODES

Figures C8-3 through C8-10 provide data on the alternate device codes for the following circuit cards contained in the EH-60A (QUICKFIX) system:

Card Type	Figure No.
3540	C8-3
3543	C8-4
3545	C8-5
3549	C8-6
3765	C8-7

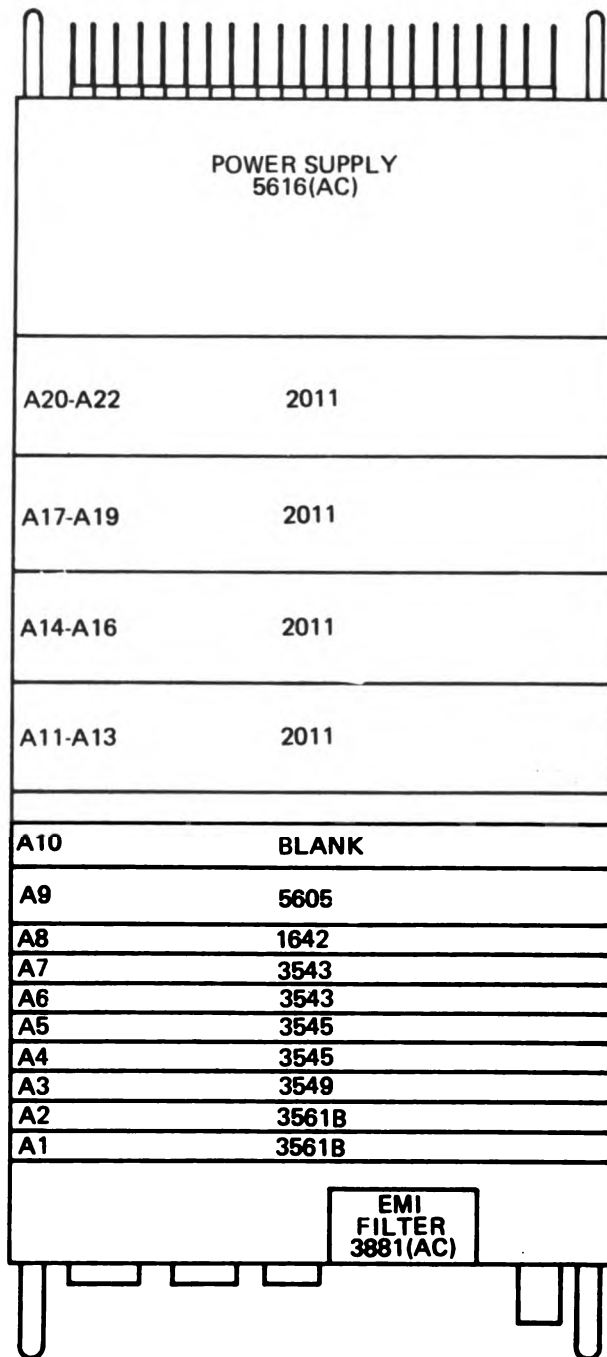|	
POWER SUPPLY 5616(AC)	
A20-A22	2011
A17-A19	2011
A14-A16	2011
A11-A13	2011
A10	BLANK
A9	5605
A8	1642
A7	3543
A6	3543
A5	3545
A4	3545
A3	3549
A2	3561B
A1	3561B

EMI FILTER 3881(AC)

Figure C7-1. AN/UYK-19 Processor Configuration for EH-1X (QUICKFIX) System
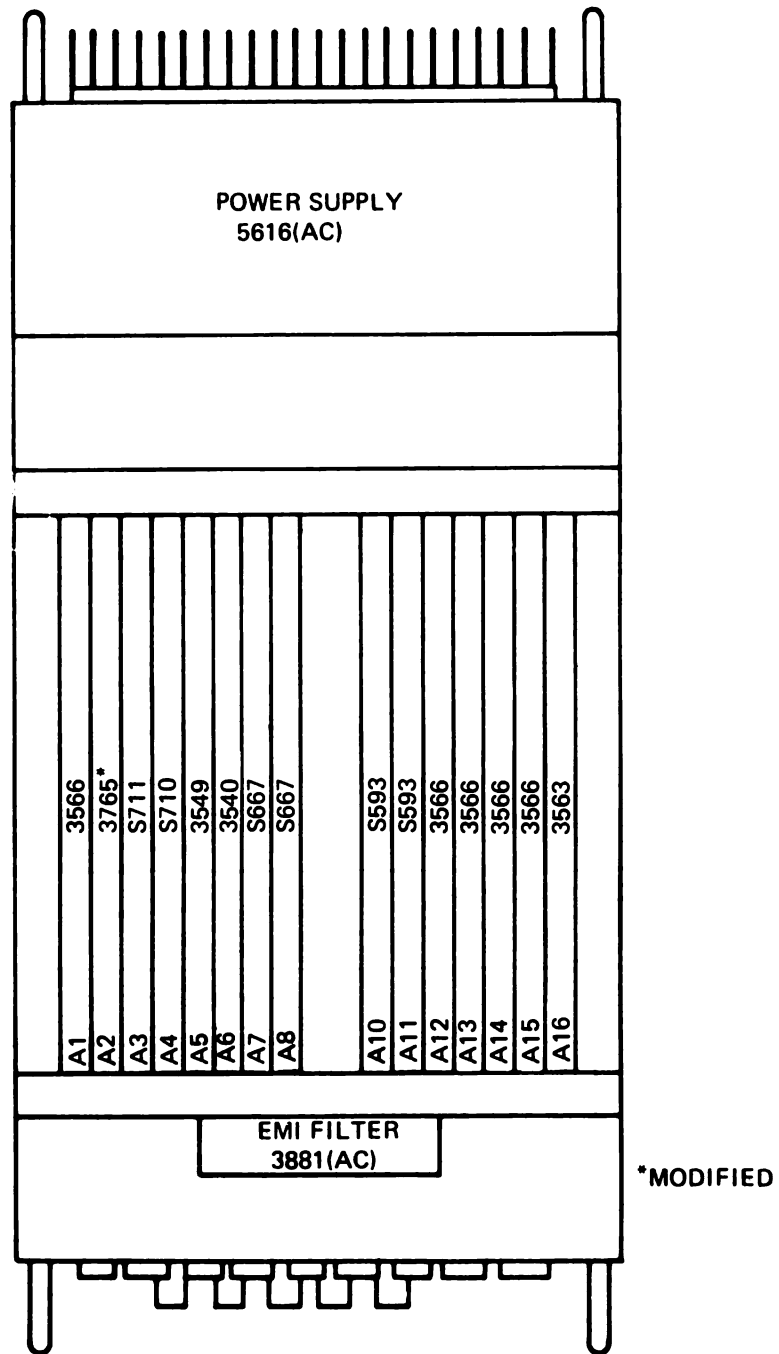
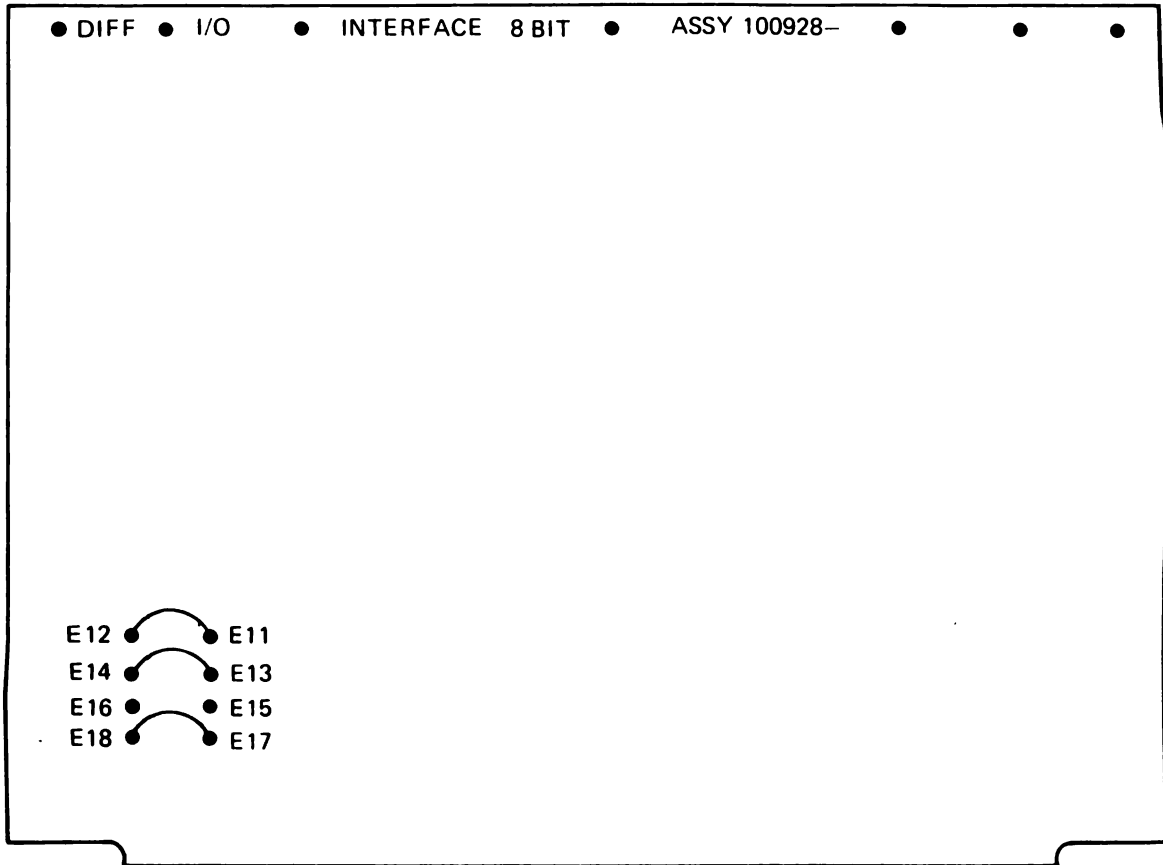Figure C7-2. I/O Chassis Configuration for EH-1X (QUICKFIX) System
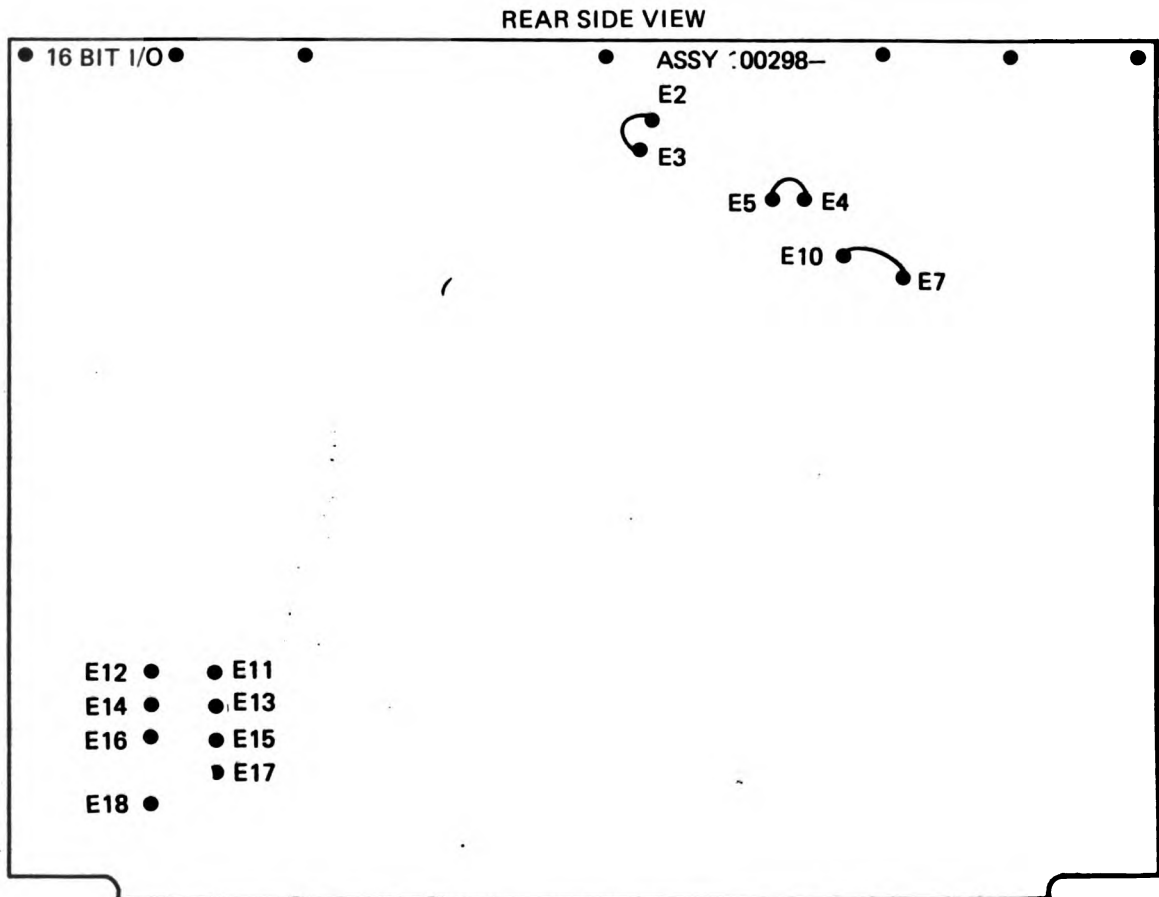
REAR SIDE VIEW

DEVICE CODE 56 SHOWN

DEVICE CODE	JUMPER BETWEEN					
	E2-E3	E4-E5	E7-E10	E11-E12	E15-E16	E17-E18
4	X	X	X	X	X	X
56*	X	X	X			

* STANDARD DEVICE CODE

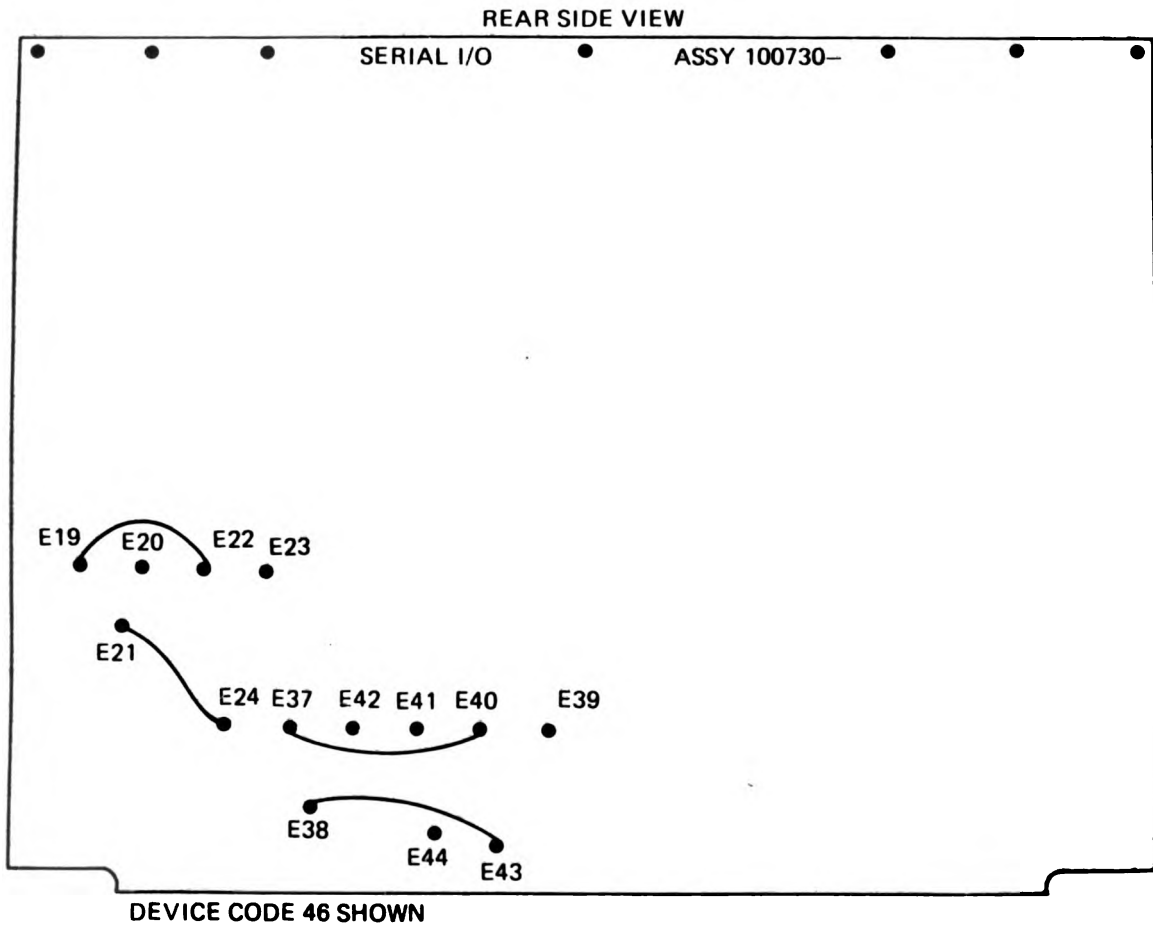Figure C7-3. Type 3540 Parallel I/O Buffer (16-Bit), Device Code Jumper Data

REAR SIDE VIEW

● DIFF ● I/O ● INTERFACE 8 BIT ● ASSY 100928— ● ● ●

E12 ● ⌒ ● E11
E14 ● ⌒ ● E13
E16 ● ● E15
E18 ● ⌒ ● E17

DEVICE CODE 40 SHOWN

DEVICE CODE	JUMPER BETWEEN			
	E11-E12	E13-E14	E15-E16	E17-E18
2		X	X	X
6			X	X
40*	X	X		X

* STANDARD DEVICE CODE

Figure C7-4. Type 3543 Differential I/O Buffer (8-Bit), Device Code Jumper Data

REAR SIDE VIEW

SERIAL I/O   ASSY 100730—

E19   E20   E22 E23

E21

E24 E37   E42 E41 E40   E39

E38
E44   E43

DEVICE CODE 46 SHOWN

DEVICE CODE	JUMPER BETWEEN						
	E19-E22	E20-E23	E21-E24	E37-E39	E37-E40	E38-E43	E38-E44
46*	X		X		X	X	
54	X	X		X			X

* STANDARD DEVICE CODE

Figure C7-5. Type 3545 Serial Differential I/O Interface, Device Code Jumper Data

REAR SIDE VIEW

● SYSTEM   ● INTERRUPT ●   ●   ASSY 100379— ●   ●   ●

E1   E3

E4   E2

E11 E9 E7 E5

E12 E10 E8 E6

DEVICE CODE 41 SHOWN
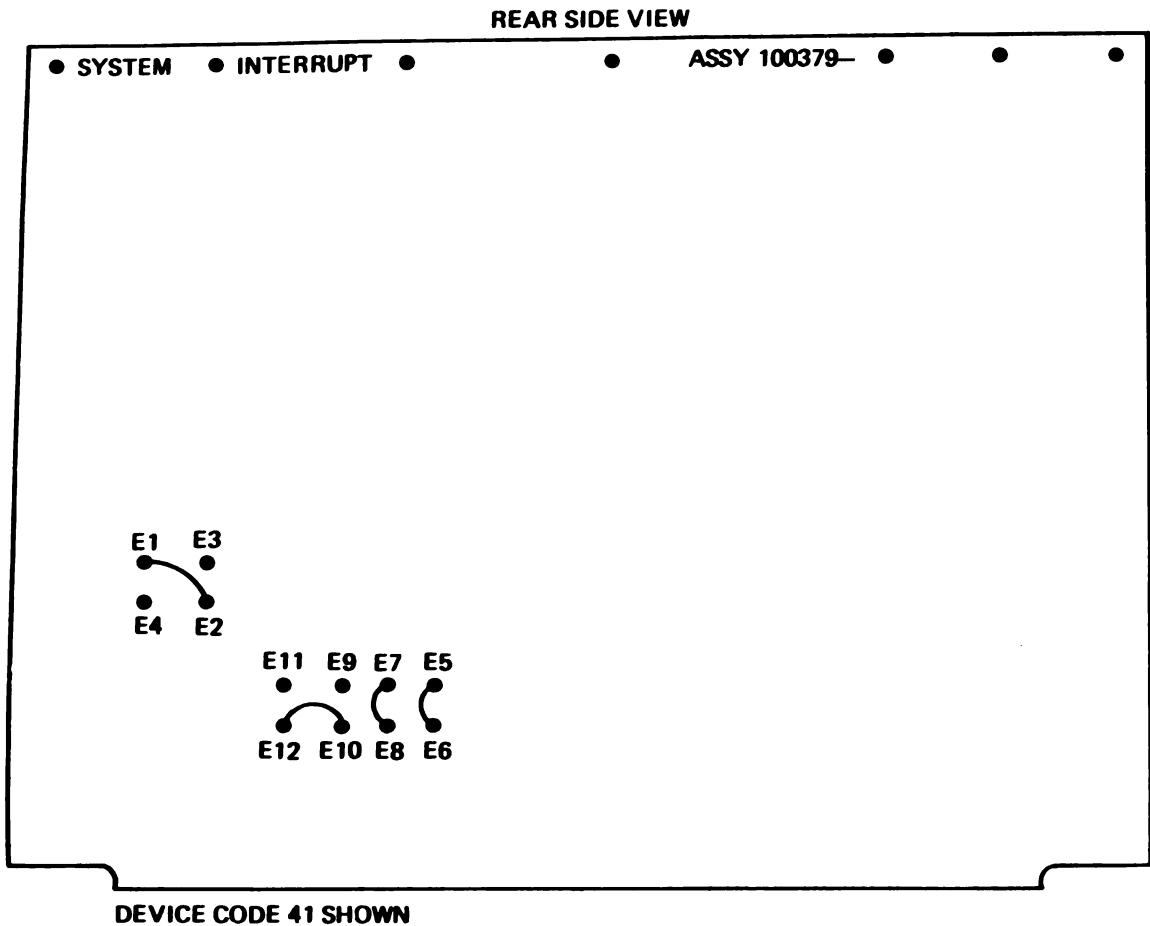
DEVICE CODE	JUMPER BETWEEN							
	E1-E2	E3-E4	E5-E6	E6-E8	E7-E8	E9-E10	E10-E12	E11-E12
41*	X		X		X		X	
52		X		X		X		X

* **STANDARD DEVICE CODE**

Figure C7-6. Type 3549 System Interrupts, Device Code Jumper Data

REAR SIDE VIEW

DEVICE CODE 34 SHOWN
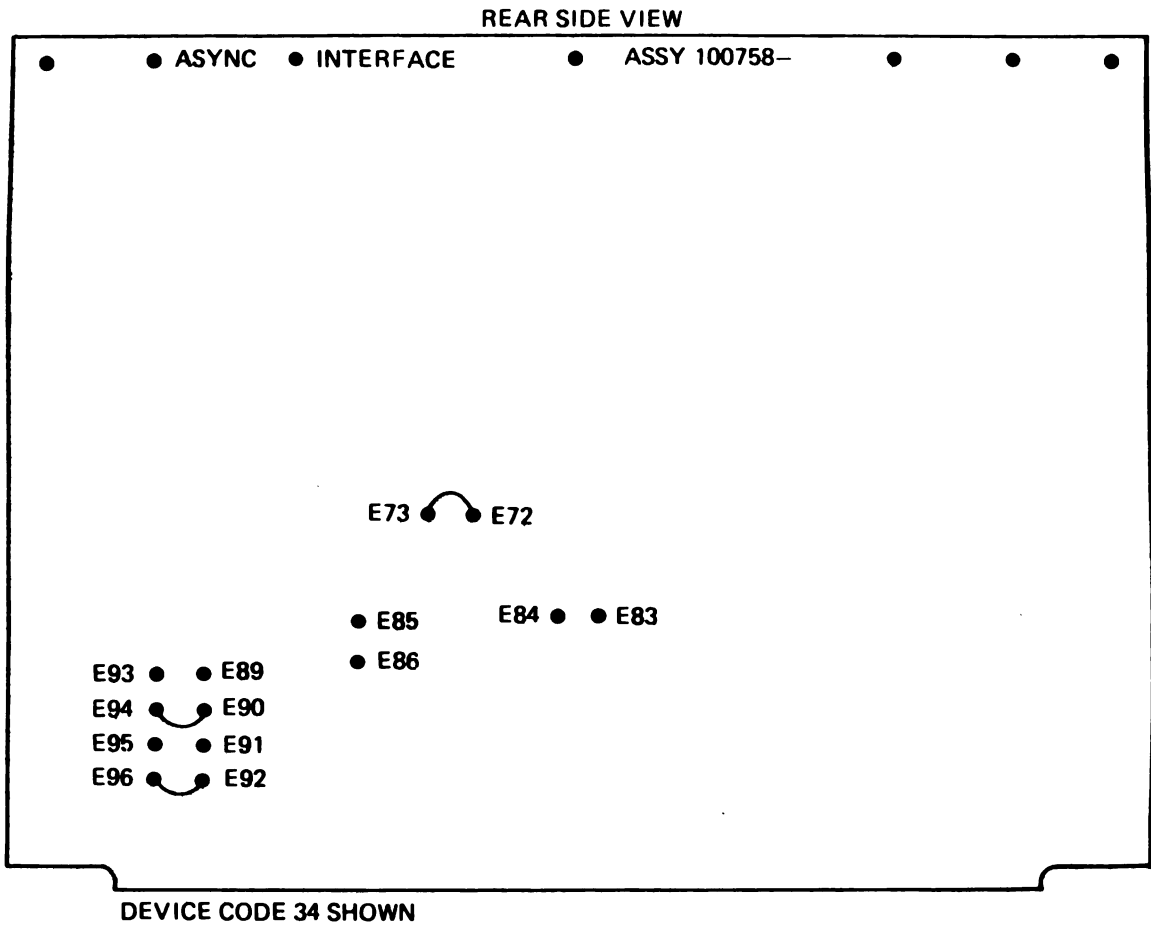
DEVICE CODE	JUMPER BETWEEN				
	E73-E73	E72-E84	E73-E83	E90-E94	E92-E96
34*	X			X	X
74		X	X	X	

* STANDARD DEVICE CODE

Figure C7-7. Type 3765 Asynchronous Interface, Device Code Jumper Data
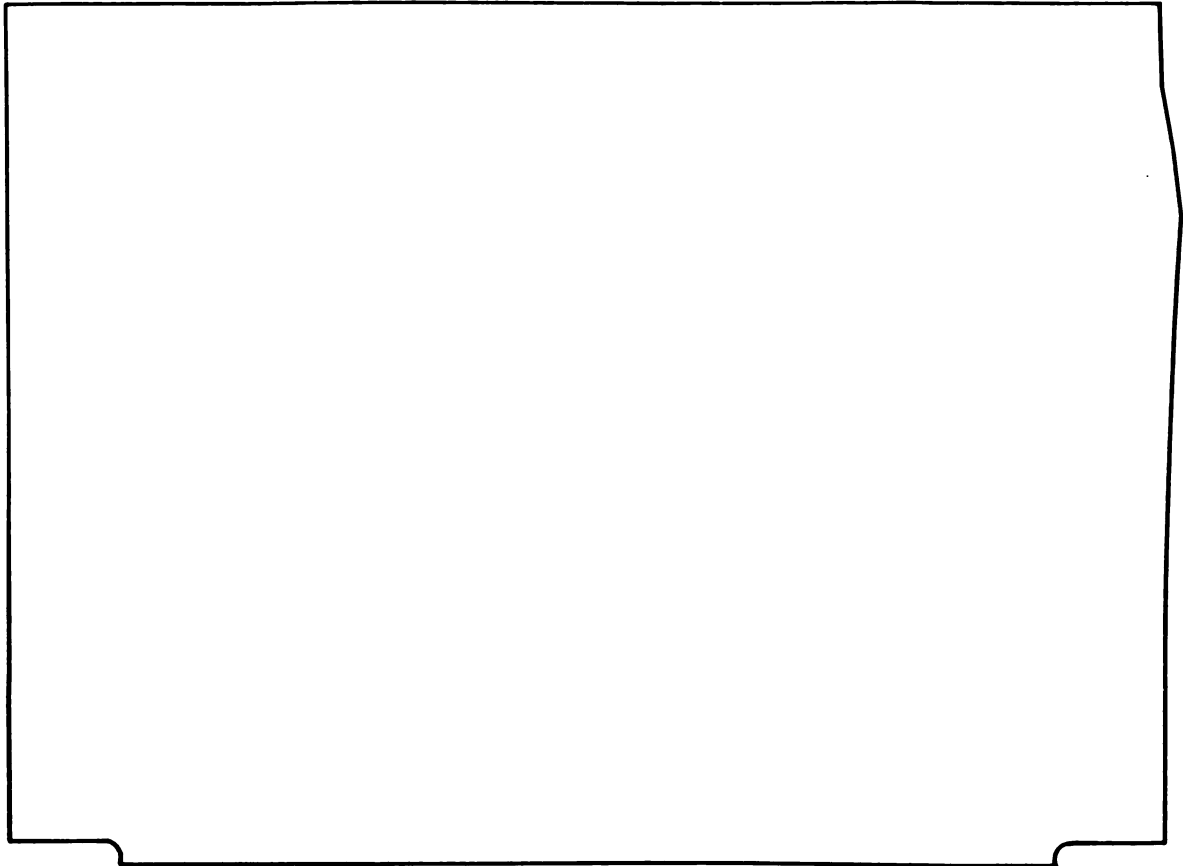
DEVICE CODE	JUMPER BETWEEN			

Figure C7-8. S593 RCU Mux, Device Code Jumper Data
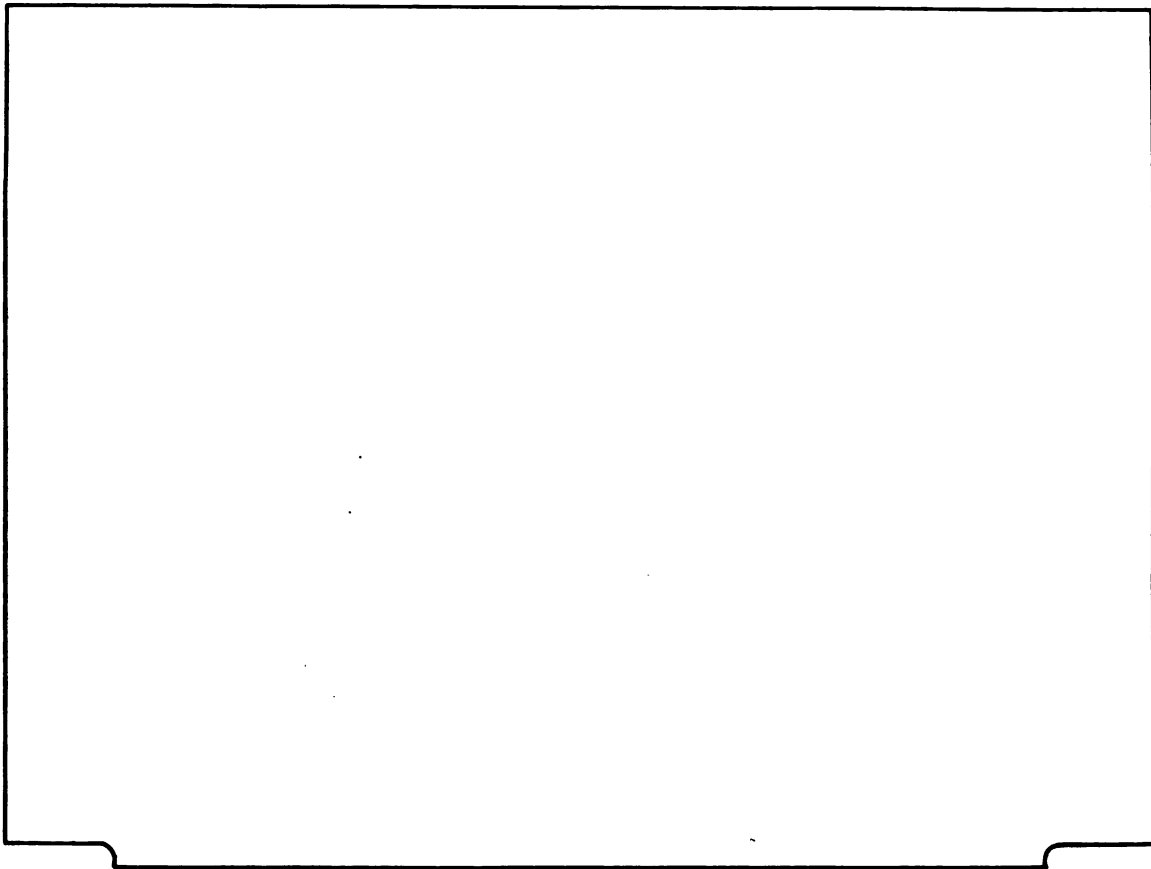
DEVICE CODE	JUMPER BETWEEN			

Figure C8-9. S710 BDHI, Device Code Jumper Data
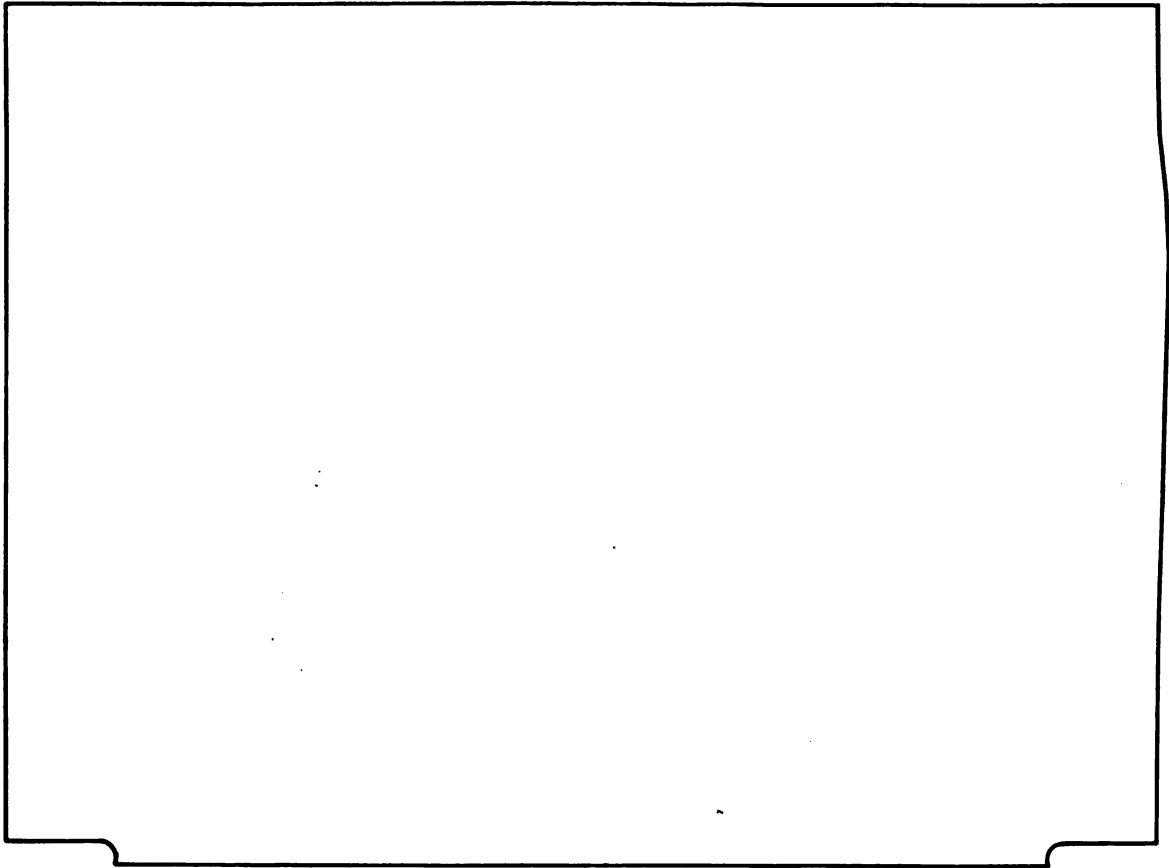
DEVICE CODE	JUMPER BETWEEN			

Figure C8-10. S711 TT580, Device Code Jumper Data

C8-4. DIAGNOSTIC SETUP PROCEDURE

NOTE

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

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

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

3. Select the proper power cable for the I/O chassis and connect it to the proper power source.

4. Connect an I/O signal cable from the I/O chassis to the processor under test.

5. Select the I/O cable as indicated in the OQ-329 manual. Connect when directed by prompt in the diagnostic.
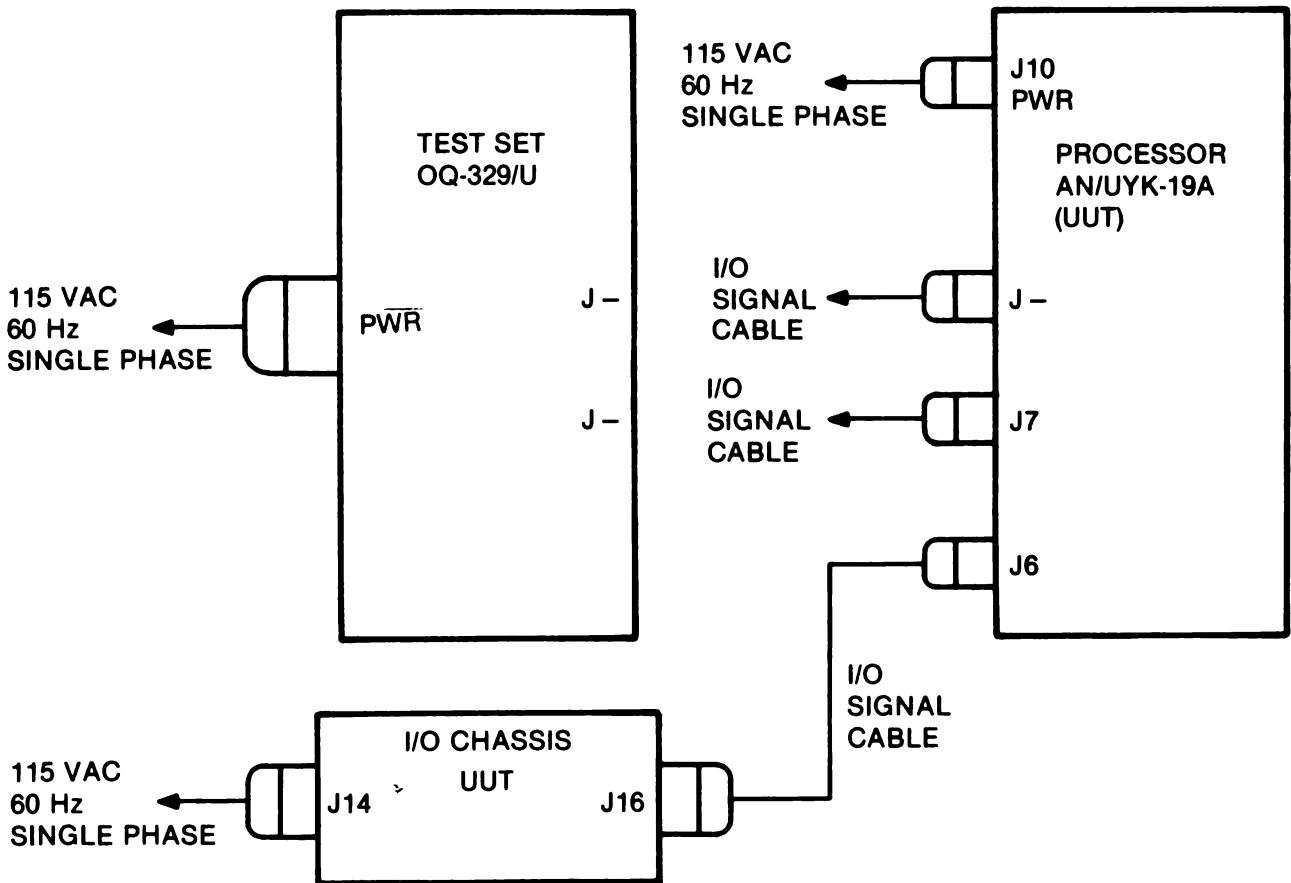
6. Run diagnostics.

Figure C8-11. Diagnostic Test Setup Diagram for EH-60A (QUICKFIX) System

4. Connect an !/O signal cable between connector J16 on I/O under test and connector J6 on processor under test.

5. Connect tape memory unit to a source of 115 vac, 400 Hz, single-phase power.

6. Connect processor under test, I/O chassis under test, and plasma display to a source of 115 vac, 47-400 Hz, single-phase power.

APPENDIX D

TEST PROCESSOR CONFIGURATION DATA

D-1. GENERAL

This appendix provides data on configuring the AN/UYK-19 processor for use in a test configuration.

D-2. PROCESSOR CONFIGURATION

a. <u>List of Circuit Cards.</u> Table D-1 provides a list of circuit cards that will be contained in the processor for the testing configuration. The table lists the cards by slot, type number, description, device code, and I/O connector on the processor front panel.

TABLE D-1. PROCESSOR CIRCUIT CARDS

Slot	Card Type	Description	Device Code	I/O Connector
—	3881(AC)	EMI Filter		—
A1	3561B	I/O Bus Expander		J6
A2	3566	Priority Load Module		—
A3	3566	Priority Load Module		—
A4	3566	Priority Load Module		—
A5	3330	Line Printer Interface		J4
A6	3543	Differential I/O Buffer (8-Bit)	40	J5
A7	3543	Differential I/O Buffer (8-Bit)	42	J8
A8	1642	Control Panel Interface		J1
A9	5605	Central Processing Unit		—
A10	Blank	Blank		—
A11-A13	2011	Core Memory Set		—
A14-A16	2011	Core Memory Set		—
A17-A19	2011	Core Memory Set		—
A20-A22	2011	Core Memory Set		—
—	5616(AC)	AC Power Supply		—

b. <u>Configuring Processor</u>. To configure the processor for use as a test processor (figure D-1), proceed as follows:

1. Remove top cover (para 2-23).

2. Refer to table D-1 and figure D-1 and remove any circuit card that is not in configuration (para 2-39).

3. Install correct circuit card in slots in processor (para 2-40).

4. If necessary, remove EMI filter (para 2-37) and power supply (para 2-41) and install correct EMI filter (para 2-38) and power supply (para 2-42).

5. Install top cover (para 2-24).

D-3. ALTERNATE DEVICE CODES

Figure D-2 provides data on the alternate device code required for the type 3543 differential I/O buffer (8-bit) for use in the test processor.

POWER SUPPLY 5616(AC)	
A20-A22	2011
A17-A19	2011
A14-A16	2011
A11-A13	2011
A10	BLANK
A9	5605
A8	1642
A7	3543
A6	3543
A5	3330
A4	3566
A3	3566
A2	3566
A1	3561B

EMI
FILTER
3881(AC)
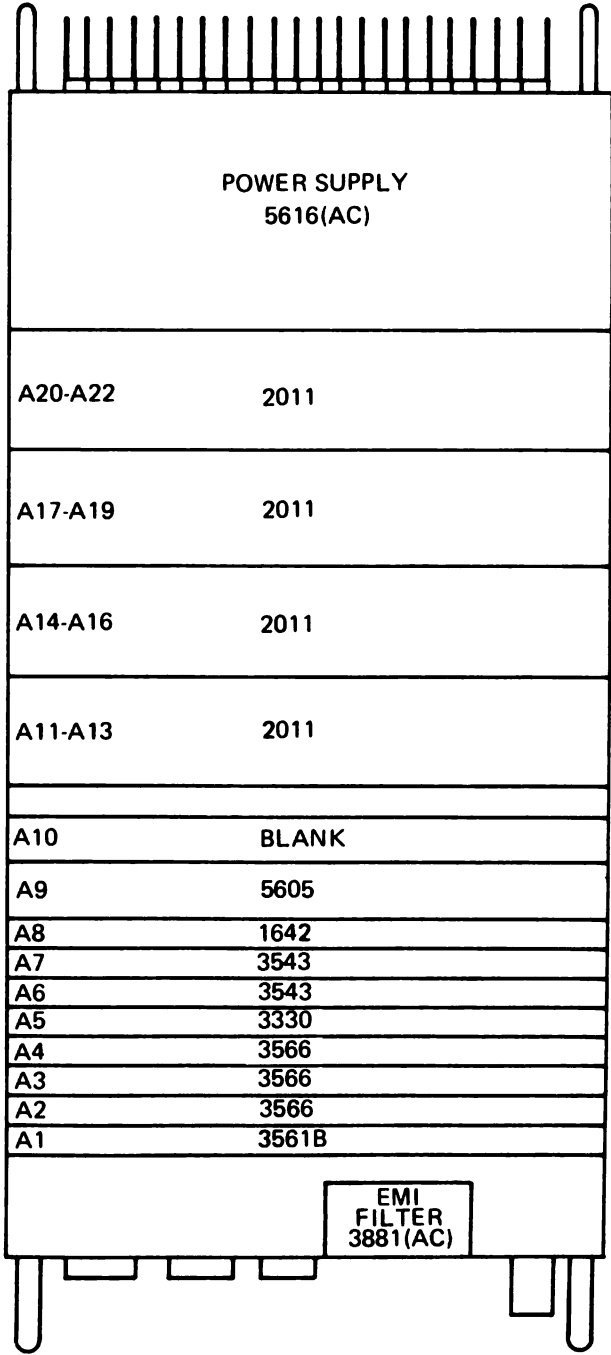
Figure D-1. AN/UYK-19 Processor Configuration for Testing

REAR SIDE VIEW

● DIFF ● I/O ● INTERFACE 8 BIT ● ASSY 100928— ● ● ●

E12 ●⌒● E11
E14 ●⌒● E13
E16 ● ● E15
E18 ●⌒● E17

DEVICE CODE 40 SHOWN
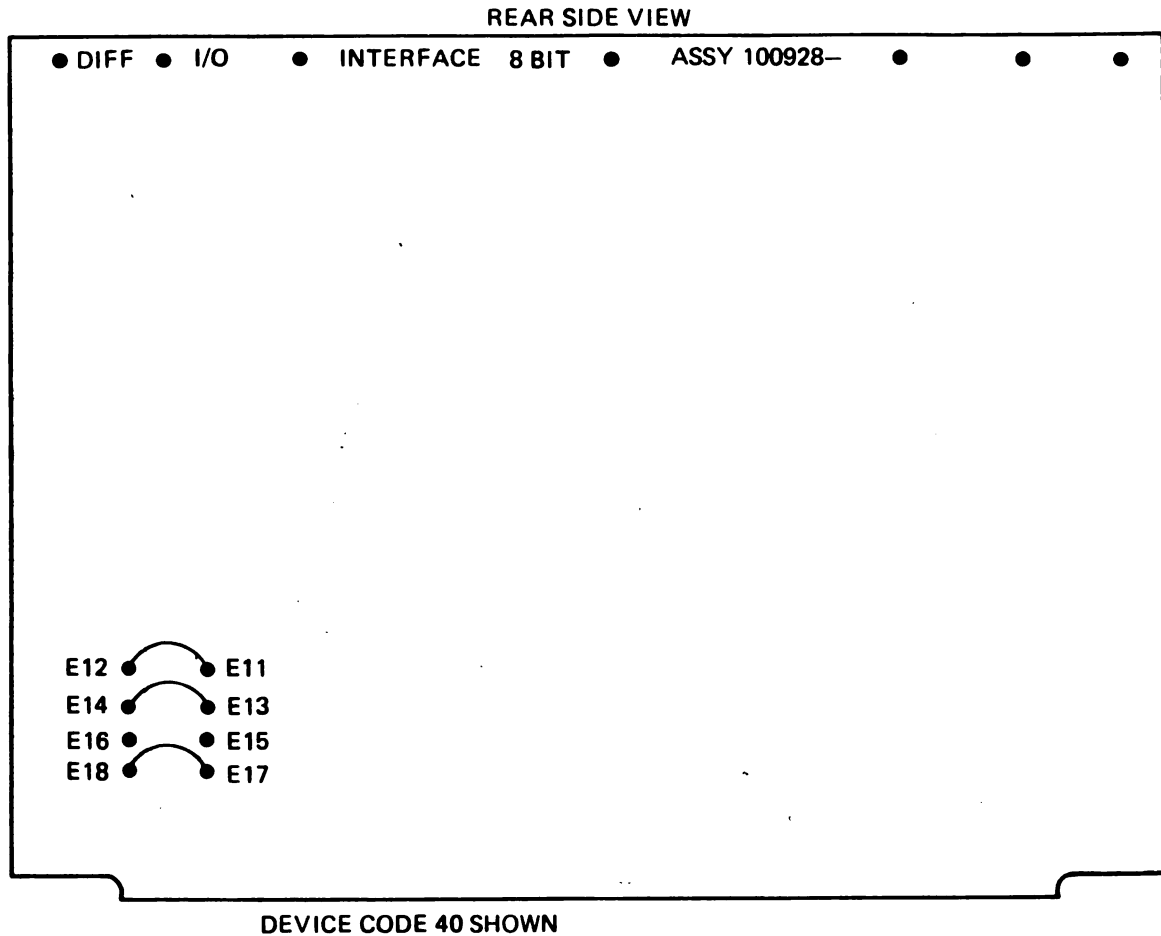
DEVICE CODE	JUMPER BETWEEN		
	E11-E12	E13-E14	E17-E18
40*	X	X	X
42		X	X

* STANDARD DEVICE CODE

Figure D-2. Type 3543 Differential I/O Buffer (8-Bit), Device Code Jumper Data

GLOSSARY

Address	16-bit location in core memory when data is stored.
Alphanumeric	A set 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.
Bootstrapping	A feature of the tape memory unit which allows a program stored in the tape transport unit to be loaded into the processor by turning on power, and depressing BOOT LOAD switch.
Byte	A single group of bits processed together that can consist of a variable number of bits. A sequence of adjacent binary digits usually shorter than a word, operated on as a unit.
Core memory	Section of processor where data and instructions are stored during processing.
CPU	Central Processing Unit - Controls all manipulation of data by processor.
Diagnostic	A routine designed to locate a malfunction to a board or group of boards.
Direct memory access	Memory which allows the interface electronics to transfer data to or from memory without requiring program action.
Enable	To place a piece of equipment or a component in operational status.
Interface	Connecting and making two pieces of equipment compatible.

GLOSSARY - Continued

Microprogram . . . .   A set of basic subcommands built into the CPU and executed automatically.

Operational program . . . .   Set of stored instructions which allow for in putted data to be manipulated in a desired way.

Program . . . .   A sequence of instructions that tell the processor how to receive, store, process, and provide in- formation.

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INDEX — Continued

INDEX - Continued

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PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO	
2-25	2-28			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.
3-10	3-3		3-1	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.
5-6	5-8			Add new step f.1 to read, "Replace cover plate removed in step e.1, above." REASON: To replace the cover plate.
		FO3		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.

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