TECHNICAL MANUAL

OPERATOR
AVIATION UNIT AND INTERMEDIATE
MAINTENANCE INSTRUCTIONS
WITH REPAIR PARTS AND
SPECIAL TOOL LISTS (RPSTL)
(INCLUDING DEPOT MAINTENANCE REPAIR PARTS AND SPECIAL TOOL LIST)
FOR

TEST SET, FIRE AND FLIGHT AIR DATA SUBSYSTEM: XM142
PN 95-112-02
NSN 4931-01-074-3322

PREPARED BY
MARCONI AVIONICS INC.

DAAJ01-78-C-0400

HEADQUARTERS, DEPARTMENT OF THE ARMY

MAY 81

WARNING

Personnel performing instructions involving operations, procedures, and practices which are included or implied in this technical manual shall observe the following instructions. Disregard of these warnings and precautionary information can cause serious injury or DEATH.

HIGH VOLTAGE

Personnel performing maintenance, adjustments, and/or troubleshooting of the test set shall be aware that the test set uses LETHAL voltages which can cause injury or DEATH. Good practices, considering local conditions, shall be observed.

Care shall be executed, when using metal tools, that circuits are not shorted. Some circuits have high current capability which, when shorted, will flash and may cause burns and/or eye injury.

Remove all jewelry and exposed metal objects from body and clothing before performing maintenance, adjustments, and/or troubleshooting to prevent personal injury.

The contacts of the 115 Vac and 28 Vdc circuit breakers within the test set are exposed when the test set front panel is in the service position. Exercise care to prevent any tools or parts of the body from coming into contact with these circuit breakers.

Learn the areas containing high voltage in the test set. Before working inside the equipment, turn power off, unless power is required to perform the procedures.

CHANGE
NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington D.C., 28 August 1990

OPERATOR AVIATION UNIT AND INTERMEDIATE
MAINTENANCE INSTRUCTIONS WITH REPAIR PARTS AND SPECIAL
TOOLS LIST (INCLUDING DEPOT MAINTENANCE REPAIR
PARTS AND SPECIAL TOOLS)

TEST SET, FIRE AND FLIGHT AIR DATA SUBSYSTEM: XM142

PART NUMBER 95-112-02

NSN 4931-01-074-3322

1. TM 9-4931-378-13&P, May 1981 is changed to incorporate Air Data Subsystems Electronic Circuit Boards, Failure Isolation Shop Set (FISS).

2. Remove old pages and insert new pages indicated below.

3. New or changed material is indicated by vertical bar in the margin of the page.

4. Upon receipt of this change, all references to MOS 68M will be changed to 68J, due to MOS consolidation. Title for 68J is as follows: Aircraft Armament/Missile Systems Repairer.

Remove pages	Insert pages
5-1 and 5-2	5-1 and 5-2
5-23 and 5-24	5-23 and 5-24
D-3 and D-4	D-3 and D-4
D-5 and D-6	D-5 and D-6
Glossary 1 and Glossary 2	Glossary 1 and Glossary 2
Index 1 and Index 2	Index 1 and Index 2

5. File this change sheet in back of the publication for reference purposes.

By Order of the Secretary of the Army:

CARL E. VUONO
General, United States Army
Chief of Staff

Official

THOMAS F. SIKOIRA
Brigadier General, United States Army
The Adjutant General

DISTRIBUTION: To be distributed in accordance with DA Form 12-31E, (Blocks 965, 966. 967), Operator, AVUM, AVIM, Maintenance requirements for TM 9-4931-378-13&P.

TECHNICAL MANUAL
9-4931-378-13&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON D. C., 8 May 1981

Operator
Aviation Unit and Intermediate
Maintenance Instructions
with Repair Parts and
Special Tool Lists (RPSTL)
(Including Depot Maintenance Repair Parts
and Special Tool List)

For

TEST SET, FIRE AND FLIGHT AIR DATA SUBSYSTEM: XM142
Current as of 8 May 1981

REPORTING OF ERRORS

You can help improve this manual by calling attention to errors and by recommending improvements and stating your reasons for the recommendations. Your letter or DA Form 2028, Recommended Changes to Publications, should be mailed directly to Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAS, Rock Island IL 61299. A reply will be furnished directly to You.

LIST OF ILLUSTRATIONS

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LIST OF TABLES

CHAPTER 1
INTRODUCTION

Section I. GENERAL

1-1. Scope. This manual is for your use in operating and performing aviation unit maintenance (AVUM) and aviation intermediate maintenance (AVIM) of the Test Set, Fire and Flight Air Data Subsystem XM142.

1-2. Maintenance Forms and Records. Maintenance forms and records which you are required to use are listed and explained in TM 38-750.

1-3. Administrative Storage. Administrative storage procedures are contained in TM 740-90-1.

1-4. Destruction of Army Materiel to Prevent Enemy Use. Instructions for destruction of Army materiel to prevent enemy use will be as prescribed in TM 750-244-1-5.

1-5. Calibration. No calibration is required. Adjustment and alignment of the Test Set is covered in Chapter 6.

1-6. Quality Assurance/Quality Control (QA/QC). Information not available.

1-7. Reporting Equipment Improvement Recommendations (EIR). EIR's will be prepared on SF Form 368, Reporting Quality Deficiencies. Instructions for preparing EIR's are provided in TM 38-750, the Army Maintenance Management System. EIR's should be mailed directly to Commander, US. Army Armament Materiel Readiness Command ATTN: DRSAR-MAO, Rock Island, IL. 61229. A reply will be furnished directly to you.

Section II. DESCRIPTION AND TABULATED DATA

1-8. Purpose. The Test Set, Fire and Flight Air Data Subsystem: XM142, figure 1-1, supports AVIM tests of individual line replaceable units (LRU) of the Fire, and Flight Air Data Subsystem, Helicopter Armament XM 143 (Air Data Subsystem). The test set provides electrical simulation of all LRU input and output signals. All LRU input and output signals are monitored. When used with specified auxiliary equipment (refer to TM 9-1270-219-13&P), the test set can detect malfunctions and isolate the faults to a shop replaceable unit (SRU).

1-9. Description. The test set, figure 1-1, consists of the test set, Fixture, Checking and Kit, Pneumatic. The Fixture, Checking (checking fixture) and the Pneumatic Kit are stored inside the removable test set cover. Two power cables, one adapter, and three LRU interconnect cables (all part of the test set) and five four-foot lengths of tubing are also stored inside the cover. The front panel controls and indicators divide into two basic categories; those which control the electrical signals going out to the unit under test (UUT), and those which select or display the signals coming from the UUT, Figure 1-2 shows the test set with all loose equipment removed from the cover.

1-10. Differences Between Models. There are no differences between models.

1-11. Tabulated Data. Table 1-1 lists pertinent descriptive data.

Table 1-1. Tabulated Data

Dimensions:	Test Set, Fire and Flight Air Data Subsystem: XM142:	Length 19.0 in. Height 26.0 in. Width 22.0 in.
	Fixture, Checking:	Length 8.0 in. Height 9.0 in. Width 4.0 in.
Weight:	Test Set, Fire and Flight Air Data Subsystem: XM142:	100 lbs.

Input Power:

115 Vac, 50, 60 or 400 HZ, single phase, 100 volt-amperes maximum

28 Vdc, 100 watts maximum

Test Set, Fire and Flight Air Data Subsystem: XM142

Assemblies:

Test Set, Air Data Subystem, Unit 1

Kit, Pneumatic

Consisting of:

Case Assembly

Tubing, five 4-ft lengths.

Fixture, Checking

Table 1-1. Tabulated Data - Continued

Test Set, Air Data Subsystem Subassemblies:
Panel/Chassis Assy, Wired 1A5
Card Rack Assembly 1A5A1
Circuit Card Assembly, Display Driver 1A1
Circuit Card Assembly, Clock and Comparator 1A2
Circuit Card Assembly, Buffer and Oscillator 1A3
Circuit Card Assembly, Extender Board 1A4
Test Set, Air Data Subsystem Loose Equipment:
Cable Assembly, AC Power W1
Cable Assembly, DC Power W2
Cable Assembly, LAI W3
Cable Assembly, EPU W4
Cable Assembly, AADS W5
Adapter Assembly W6

1-12. Special Tools and Equipment. Test cable (figure 1-3) is required for testing in Chapters 5 and 6.

1-13. Spares and Repair Parts. Spares and repair parts are listed and illustrated in Appendix E of this manual.

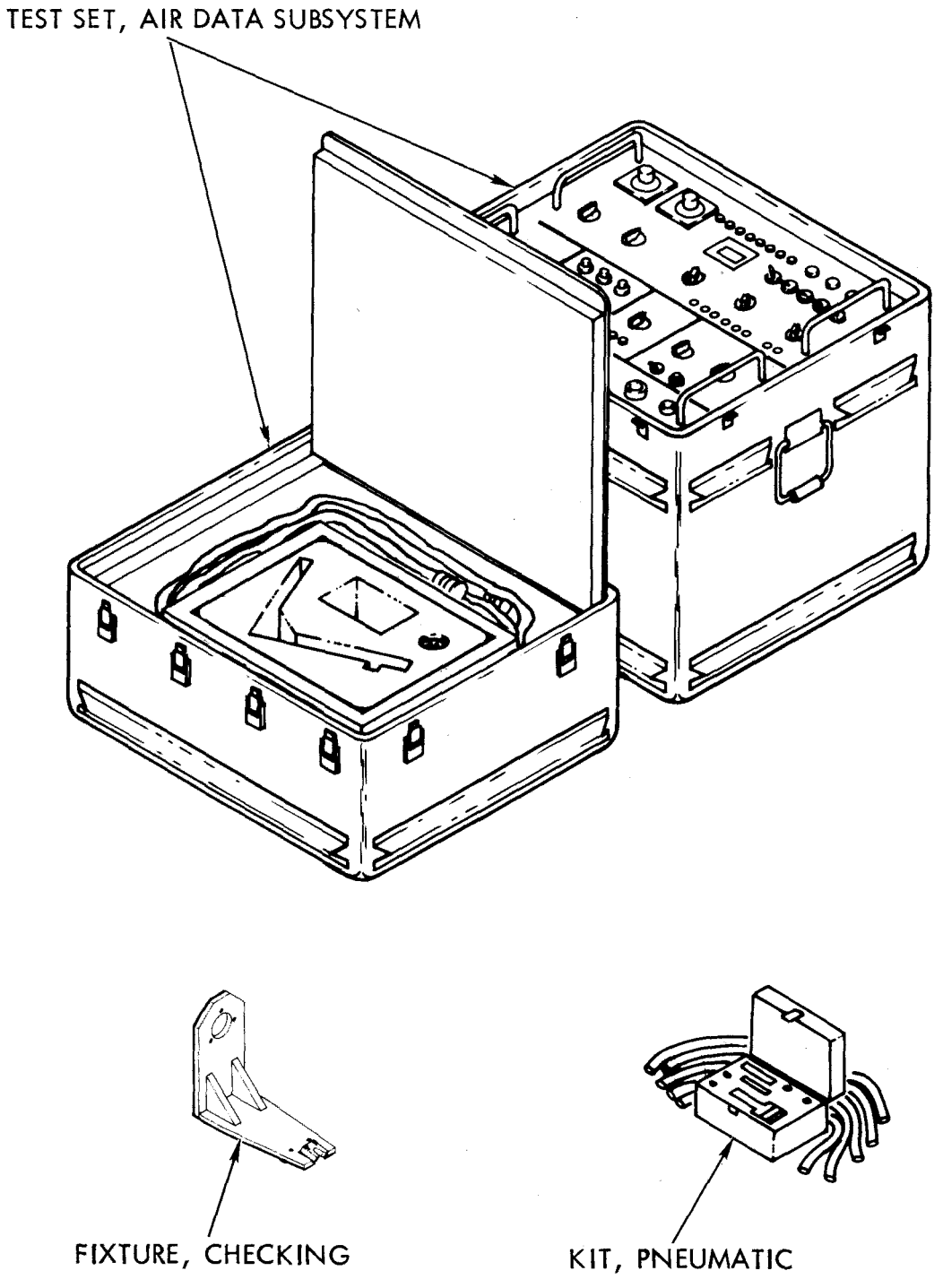
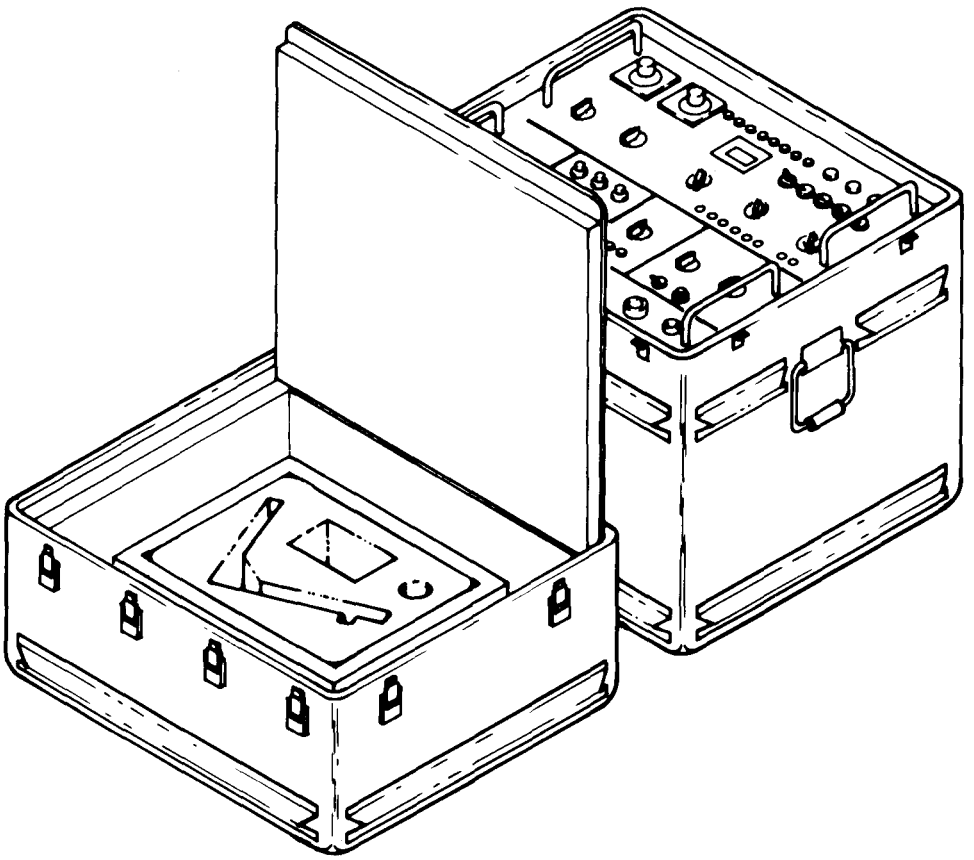
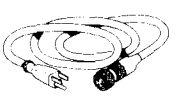
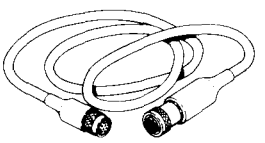


Figure 1-1. Test Set, Fire and Flight Air Data Subsystem: XM142





W1



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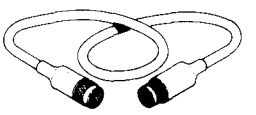

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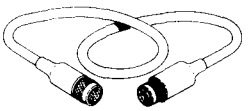
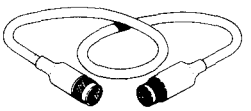


W4



W5

W6

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Figure 1-2. Test Set, Air Data Subsystem

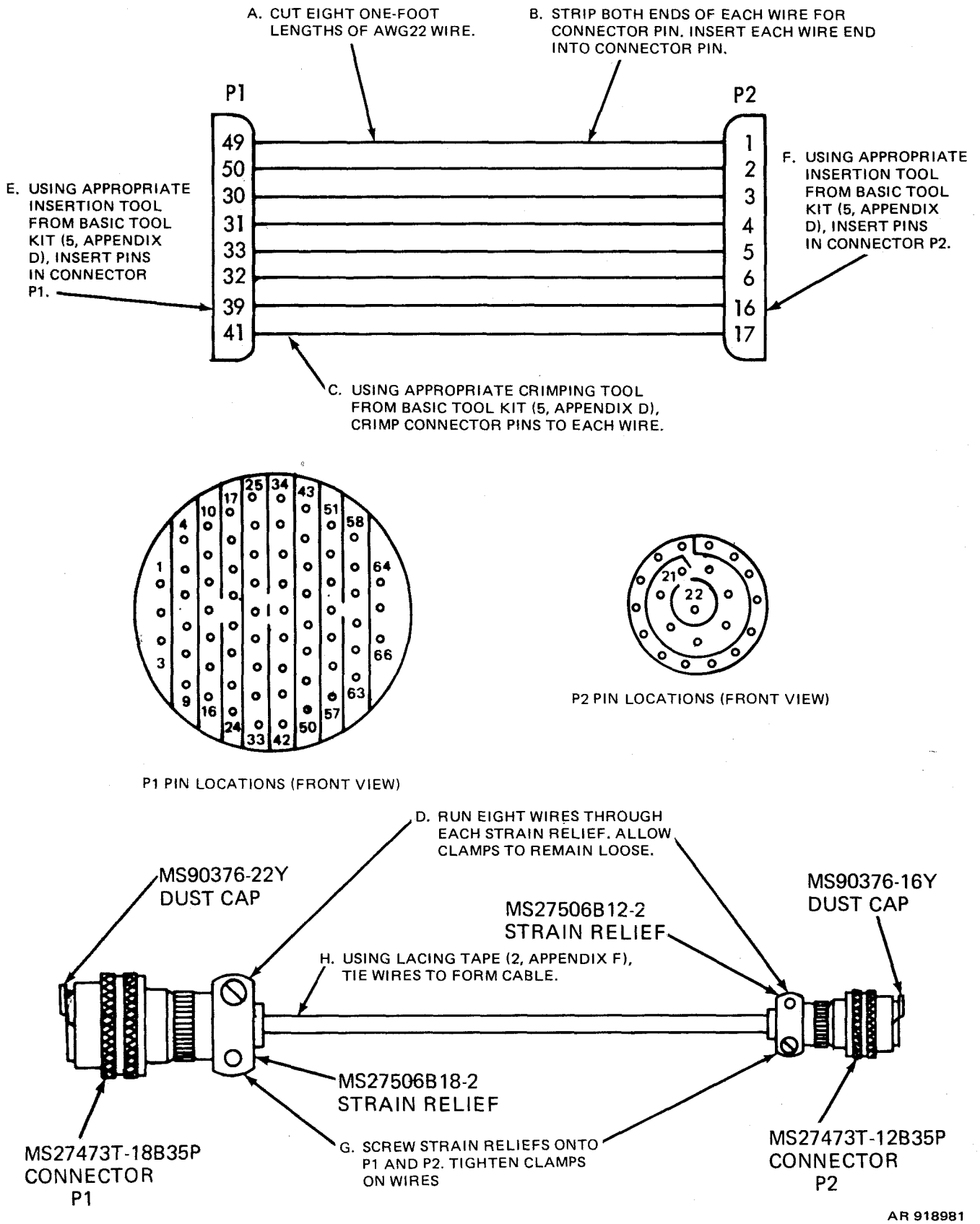

Figure 1-3. Test Cable Fabrication

CHAPTER 2
OPERATING INSTRUCTIONS

Section I. GENERAL

2-1. Unpacking. The test set is contained in the metal case, All interconnecting test cables and fixtures are stored in a compartment in the case cover. Upon original receipt, only the removal of the case from the packing container is required to prepare the equipment for use. The following equipment is included in the test set:

Test Set, Air Data Subsystem
Fixture, Checking
Kit, Pneumatic
Tubing (5 four-foot lengths)
AC Power Cable Assembly W1
DC Power Cable Assembly W2
LAI Cable Assembly W3
EPU Cable Assembly W4
AADS Cable Assembly W5
Adapter Assembly W6

2-2. Initial Inspection. After unpacking, the following inspection procedure shall be performed:

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6.
b. Check the equipment against the component listing in the manual and the packing slip to see if the shipment is complete. Report all discrepancies in accordance with the instructions of TM 38-750. The equipment should be placed in service even though a minor assembly or part that does not affect proper functioning is missing.
c. Check to see whether the equipment has been modified. (Equipment which has been modified will have the MWO number on the front panel near the nomenclature plate.) Check also to see whether all currently applicable MWO have been applied. (Current MWO applicable to the equipment are listed in DA PAM 310-7.)

2-3. Damage From Improper Settings. The test set is protected from overload and short circuit conditions by internal protective devices. No damage can be caused through normal use of front panel controls. However, normal precautions must be exercised to avoid injury to personnel. Shut off bench power (115 Vac and 28 Vdc) before connecting or disconnecting the power cables W1 and W2. When connecting or disconnecting cables W3 through W5, be sure that circuit breakers CBI and CB2 are OFF.

2-4. Operator's Controls. The test set controls, indicators and connectors are shown in figure 2-1 and explained in table 2-1. Refer to the Glossary for complete nomenclature description.

Table 2-1. Controls, Indicators and Connectors

Fig. 2-1 Index No.	Control, Indicator or Connector	Function
	EPU TEST SECTION	
1	α resolver B1	Generates sin α and cos α analog signals to simulate AADS outputs for testing the EPU.
2	α-β resolver B2	Generates sin $(\alpha$-$\beta)$ and cos $(\alpha$-$\beta)$ analog signals to simulate AADS outputs for testing the EPU.
3	DATA WORD binary display Indicators DS1 through DS8	Displays 8-bit binary word. Bit 0 is LSB and Bit 7 is MSB.
4	DATA MODE three position toggle switch S1	Sw Pos — Specific Functions CONT — Selects continous data from EPU HOLD — Selects hold mode of data from EPU RPT — Selects repeat of data from EPU

Table 2-1. Controls, Indicators and Connectors - Continued

Fig. 2-1 Index No.	Control, Indicator or Connector	Function
5	CPU TEST two position toggle switch S2	Enables CPU self test.
6	PARITY FLR indicator DS9	Displays parity of all 64 bits of data.
7	LAI FLR two-position toggle switch S3	Simulates $\overline{\text{LAI Fail}}$ discrete signal of EPU.
8	ADS FLR indicator DS10	Simulates $\overline{\text{LAI Fail}}$ flag. Illuminates when $\overline{\text{LAI Fail}}$ signal is received from EPU.
9	RDR ALT RELBL two-position toggle switch S4	Simulates Radar Altimeter Reliability signal to EPU.
10	ADS NO GO indicator DS11	Illuminates when $\overline{\text{ADS NO GO}}$ signal is received from EPU.
11	SELF TEST two-position toggle switch S5	Enables power to indicators DS1 through DS12 for lamp check. DS12 is programmed to display 888.
12	OUTPUT SEL 2 14-position rotary switch S10	

Sw Pos	Specific Function
LAI + 15V	Selects the LAI + 15 Vdc output of the EPU for monitoring.
LAI - 15V	Selects the LAI – 15 Vdc output of the EPU for monitoring.
VU	Selects the fore-aft TAS signal output of the EPU for monitoring.
V_V	Selects the lateral TAS signal outputs of the EPU for monitoring.
V_W	Selects the vertical TAS signal output of the EPU for monitoring.
V_{IU}	Selects the fore-aft IAS signal output of the EPU for monitoring.
V_{IV}	Selects the lateral IAS signal output of the EPU for monitoring.
P_S	Selects the static pressure output of the EPU for monitoring.
P_T-P_S	Selects the differential pressure output (total pressure less static pressure) for EPU monitoring.
5V	Selects the EPU +5 Vdc output of the EPU for monitoring.
INJV	Selects the EPU injection voltage output of the EPU for monitoring.
+15V	Selects the EPU +15 Vdc output of the EPU for monitoring.

Table 2-1. Controls, Indicators and Connectors – Continued

Fig. 2-1 Index No.	Control, Indicator or Connector	Function
		Sw Pos — Specific Function -15V — Selects the EPU -15 Vdc output of the EPU for monitoring.
13,14	OUTPUT SELECT 2 TP7 Red TP8 Black	Provide external test points for monitoring outputs of the EPU selected by the OUTPUT SEL 2 switch. Red TP is positive and Black TP is negative.
15,16	TRIG TP 5 Red TP 6 Black	Provide external test points for trigger outputs from CPU to monitor analog signals. Red TP is positive and Black TP is negative.
17,18	$\overline{\text{SIG}}$ TP 3 Red TP 4 Black	Provide external test points for $\overline{\text{SIG}}$ outputs selected by OUTPUT SEL 1 switch. Red TP is positive and Black TP is negative,
	SIG	Provide external test points for signal outputs selected by OUTPUT SEL 1 switch. Red TP is positive and Black TP is negative.
	OUTPUT SEL 1 Eight-position rotary switch S9	Sw Pos — Specific Function
		DTR — Selects data transmit request input to EPU for monitoring.
		DR — Selects EPU data ready signal for monitoring.
		DATA — Selects EPU data output for monitoring.
		CLK — Selects EPU data clock for monitoring.
		ANLG IN — Selects analog in EPU signal for monitoring.
		AN LG OUT — Selects EPU analog out for monitoring.
		REF OSC — Selects EPU reference oscillator output for monitoring.
		ATS — Selects air temperature sensor input to EPU for monitoring..
	DATA WD SEL 8-position rotary switch S8	Selects the data words and status words from the EPU to be monitored on the binary and decimal DATA WORD displays.

Table 2-1. Controls, Indicators and Connectors - Continued

Fig. 2-1 Index No.	Control, Indicator or Connector	Function
		Sw Pos — Specific Function
		V_U — Selects fore-aft TAS signal to be monitored.
		V_V — Selects lateral TAS signal to be monitored.
		V_W — Selects vertical TAS signal to be monitored.
		P_{ABS} — Selects absolute pressure signal to be monitored.
		T_{AIR} — Selects air temperature signal to be monitored.
		V_{DW} — Selects downwash velocity signal to be monitored.
		STAT 1 — Selects status word 1 to be monitored.
		STAT 2 — Selects status word 2 to be monitored.
23	DATA WORD Decimal display DS12	Display 3-digit decimal word.
24	RDR ALT FT Seven-position rotary switch S7.	Selects simulated radar altitude signal to be transmitted to the EPU under test. Signals are selected in increments of 5 ft from 0 to 30.
25	AIR TEMP C° Ten position rotary switch S6	Selects simulated centigrade air temperature signal to be transmitted to the EPU under test. Signals available are -54°, -40°, -30°, -15°, 0°, 15°, 30°, 45°, 60° and 71°.
26	EPU 28V pushbutton switch S13	Opens the EPU 28 Vdc circuit so that current may be measured at AMPS test points TP13 and TP14.
27	LAI +15V pushbutton switch S14	Opens the LAI +15 Vdc circuit so that current may be measured at AMPS test points TP13 and TP14.
28	LAI –15V pushbutton switch S15	Opens LAI -15 Vdc circuit so that current may be measured at AMPS test points TP13 and TP14.
29	AMPS TP14 Gray	Negative test point to measure current of LRU input power selected by S12.
30	AADS TEST 7-position rotary switch S16	Selects signals to be monitored at TP15 and TP16 as listed below.

Table 2-1. Controls, Indicators and Connectors – Continued

Fig. 2-1 Index No.	Control, Indicator or Connector	Function
		Sw Pos — Specific Function REF OSC — Selects internal reference oscillator output. SIN α — Selects sin α output of the AADS. Cos α — Selects cos α output of the AADS. SIN ((w(l) — Selects sin (α-β) output of the AADS. Cos (a-o) — Selects cos (α-β) output of the AADS. TEMP — Selects temperature probe output of the AADS. HTR CCHK — Selects probe heater continuity.
31	LAI TEST V|UKN 8-position rotary switch S17	Selects forward and aft indicated air speed signals, generated in the test set, for transmission to the LAI. Sw Pos — Specific Function OUT AFT — Selects the out aft signal. - 5 0 — Selects the 50 knots aft signal. - 2 0 — Selects the 20 knots aft signal. 0 — Selects the zero fore-aft speed signal. 20 — Selects the 20 knots forward speed. signal. 45 — Selects the 45 knots forward speed signal. 51 — Selects the 51 knots forward speed signal. OUT FWD — Selects the out forward speed signal.
32	LAI TEST V|VKN 7-position rotary switch S18	Selects left and right indicated air speed signals generated in the test set, for transmission to the LAI. Sw Pos — Specific Function OUT LEFT — Selects the out left signal. - 5 0 — Selects the 50 knots left signal. - 2 0 — Selects the 20 knots left signal. 0 — Selects the zero speed left or right signal. 20 — Selects the 20 knots right signal. 50 — Selects the 50 knots right signal. OUT RIGHT — Selects the out right speed signal.
33	ADS FLR two-position toggle switch S20	When pushed up, sends a fail signal to the LAI.

Table 2-1. Controls, Indicators and Connectors – Continued

Fig. 2-1 Index No.	Control, Indicator or Connector	Function
34	AADS connector J5	Cable W5 connects to this point to connect the test set to the AADS under test.
35	LAI FLR indicator DS13	Illuminates when the LAI under test sends a fail signal to test set.
36	EPU connector J4	Cable W4 connects to this point to connect the test set to the EPU under test.
37	PANEL LIGHTS two-position toggle switch S19	When pushed up, provides power to test panel light of the LAI.
38	LAI connector J3	Cable W3 connects to this point to connect the test set to the LA I under test.
39,40	AADS TEST TP15 Red TP16 Black	Provide external test points for monitoring outputs of the AADS under test as selected by AADS TEST switch S16. Red TP is high and Black TP is return.
41	28 VDC connector J2	Cable W2 connects the test set to a 28 Vdc power source at this point.
42	AMPS TP13 Red	Positive test point to measure current of LRU input power selected by S12.
43	VOLTS TP12 Black	Negative test point to measure voltage of LRU input power selected by S12.
44	115 VAC connector J1	Cable WI connects the test set to a 115 Vat, 400 Hz power source at this point.
45	2B VDC indicator DS15	Illuminates when CB2 is ON and 28 Vdc power is available.
46	28 VDC ON/OFF circuit breaker CB2.	Controls 28 Vdc power and provides overload protection.
47	115 VAC ON/OFF circuit breaker CB1	Controls 115 Vac 400 Hz power and provides overload protection.
48	115 VAC indicator DS14	Illuminates when CBI is ON and 115 Vac power is available.
49	VOLTS TP11 Red	Positive test point to measure voltage of LRU input power selected by S12.
50,51	TS MON TP10 Black TP9 White	Provide test points for monitoring signals selected by S11. White TP is high and Black TP is return.

Table 2-1. Controls, Indicators and Connectors – Continued

Fig. 2-1 Index No.	Control, Indicator or Connector	Function
52	TS MON 14-position rotary switch S 11	Selects test set internal signals to be monitored on TP9 and TP 10 to check operation of the test set. Sw Pos — Specific Function 115VAC — Selects 115 Vac line input. 28 VDC — Selects 28 Vdc line input. +10V — Selects +10 Vdc -10V — Selects -10 Vdc 5V — Selects +5 Vdc SIN α — Selects SIN α Cos α — Selects COS α SIN $(\alpha-\beta)$ — Selects SIN $(\alpha-\beta)$ Cos $(\alpha-\beta)$ — Selects COS $(\alpha-\beta)$ V_{IU} — Selects V_{IU} V_{IV} — Selects V_{IV} RDR ALT — Selects radar altitude REF OSC — Selects reference oscillator
53	POWER TEST three-position rotary switch S12	Sw Pos — Specific Function EPU 28V — Selects +28 Vdc input power to the EPU to be monitored. LAI + 15V — Selects +15 Vdc input to the LAI to be monitored. LAI - 15V — Selects -15 Vdc input to the LAI to be monitored.

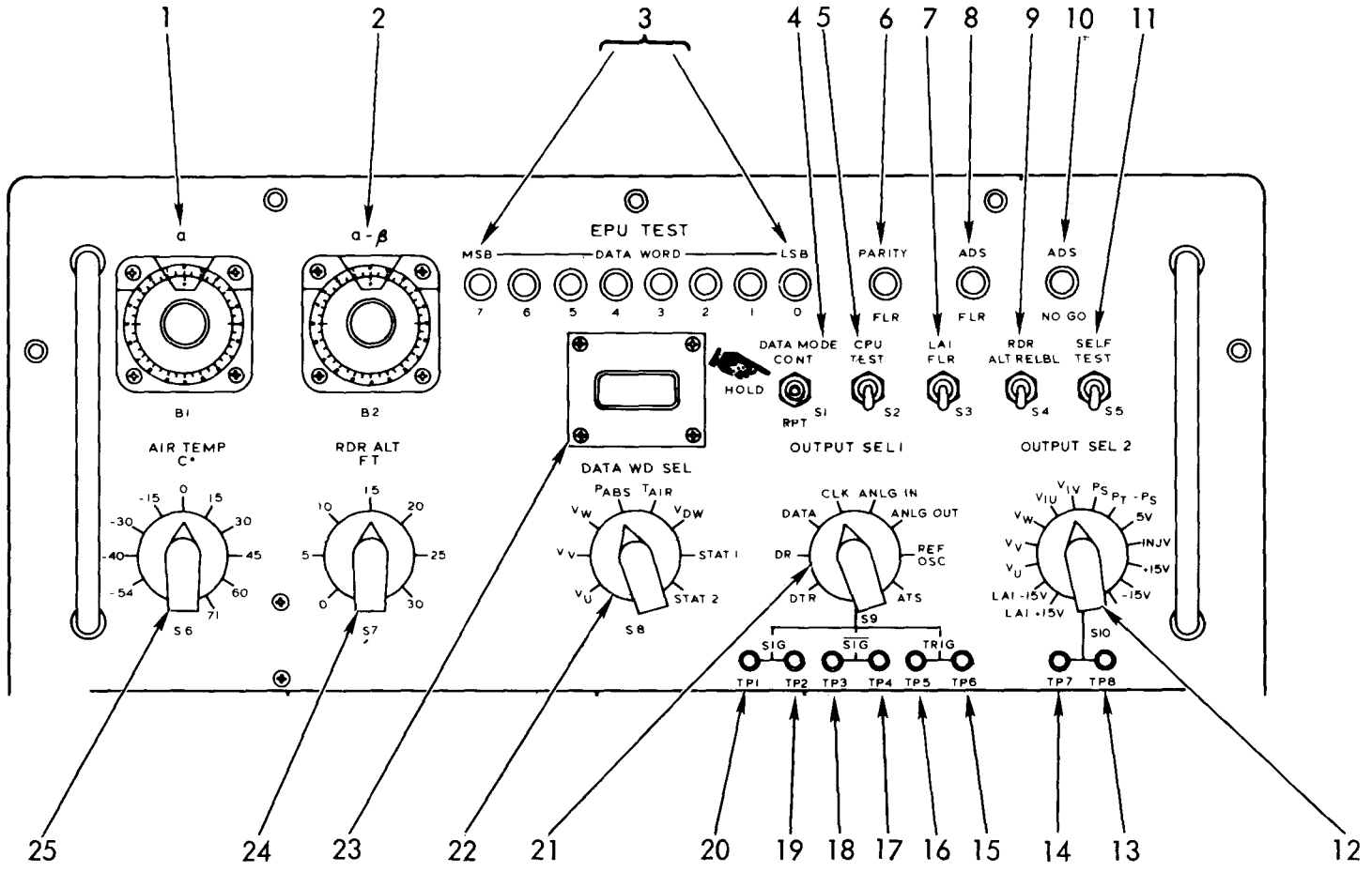

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Figure 2-1. Controls, Indicators and Connectors (Sheet 1 of 2)

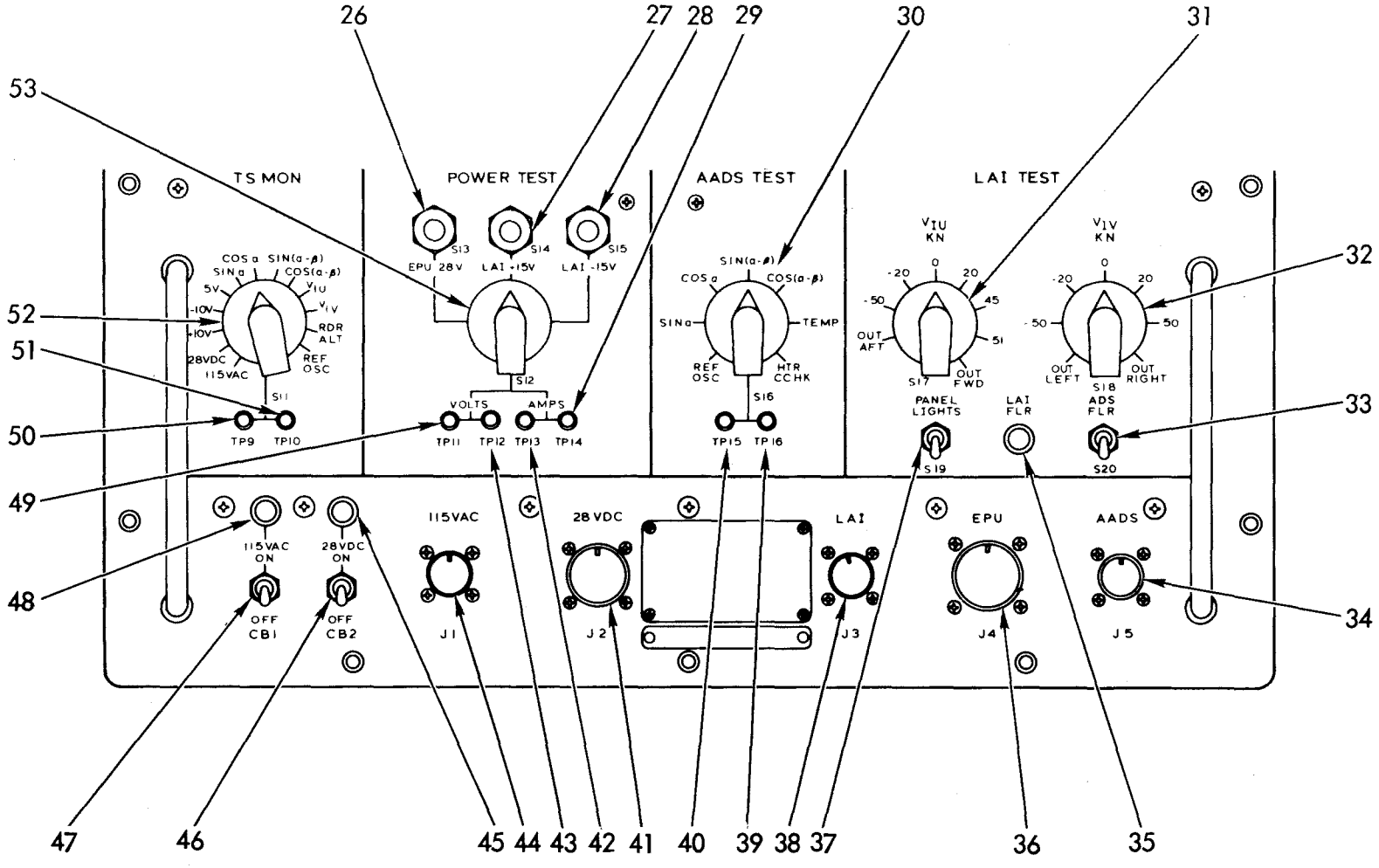

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Figure 2-1. Controls, Indicators and Connectors (Sheet 2 of 2)

Section II. OPERATION UNDER USUAL CONDITIONS

2-5. Preliminary Starting Procedure. Perform Before Operation (B) Preventive Maintenance Checks and Services (See table 2-2), then proceed as follows:

a. Set DATA MODE CONTROL switch S1 (4, figure 2-1) to CONT.

b. Set the following switches to the off (down) position:

CPU TEST S2 (5)	SELF TEST S5 (11)
LAI FLR S3 (7)	PANEL LIGHTS
RDR ALT RELBL S4 (9)	519 (37)
	ADS FLR S20 (33)

c. Set circuit breakers CBI (47) and CB2 (46) to OFF.

d. Position of rotary switches and resolvers is irrelevant.

2.6 Initial Adjustments. No initial adjustments of the test set are needed before operation unless otherwise indicated by apparent physical damage. In such an event, refer to Chapter 5.

2-7. Operating Procedure. To place the test set in operation perform the following steps:

a. Set up test set as illustrated in figure 2-2.

b. Set the 115 VAC circuit breaker CB1 (47, figure 2-1) ON and check that 115 VAC indicator lamp (48) illuminates.

c. Set the 28 VDC circuit breaker CB2 (46) ON and check that 28 VDC indicator lamp (45) illuminates.

d. Set the SELF TEST switch S5 (11) up and check that all indicator lamps on the front panel of the test set illuminate. DATA WORD display (23) shall display 888.

e. Return S5 (11) to the off (down) position.

f. Connect positive DVM lead to TP9 (50) and negative DVM lead to TP10 (51).

9. Set TS MON switch S11 (52) to each of the following positions and read the specified voltages:

S11 Position	DVM Reading (Volts)
115VAC	108 to 122 Vac
28 VDC	24 to 32 Vdc
+10V	9.985 to 10.005 Vdc
-10V	-9.985 to -10.005 Vdc
5V	4.90 to 5.10 Vdc
REF OSC	6.87 to 7.27 Vac Rms

h. Connect positive DVM lead to TP11 (49) and negative DVM lead to TP12 (43).

i. Set POWER TEST switch S12 (53) to each of the following positions and read the specified voltagas:

S12 Position	DVM Reading (Volts)
EPU 28V	24 to 32 Vdc
LAI +15V	14.80 to 15.20 Vdc
LAI -15V	-14.80 to -15.20 Vdc

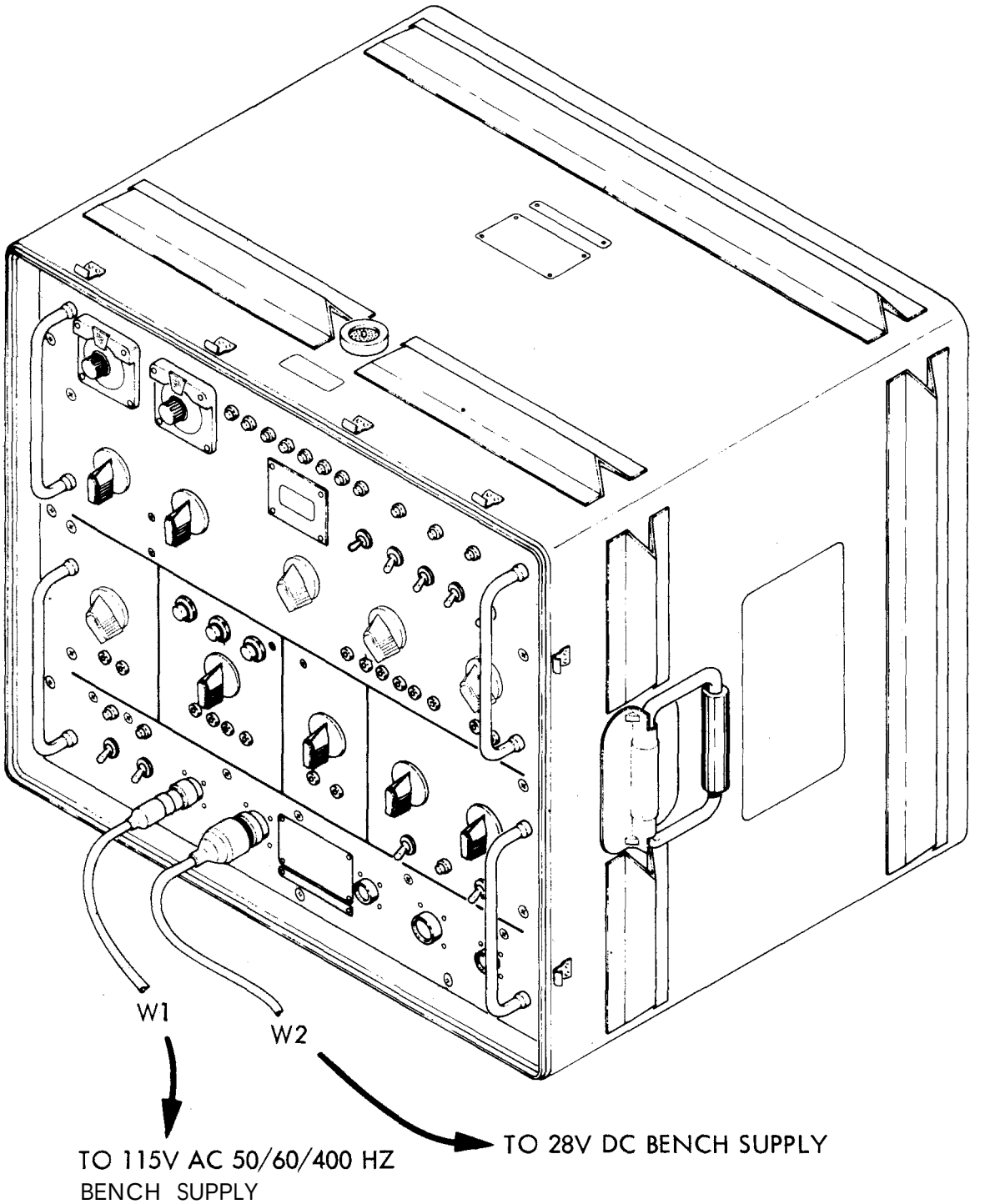
j. Disconnect DVM.

k. The test set is now ready for operation.

1. Procedures for operating the test set are contained in TM 9-1270-219-13.

2-8. Procedure for Placing Equipment in Standby Condition. To place test set in standby condition, set circuit breakers CBI (47, figure 2-1) and CB2 (46) to OFF.

2-9. Procedure For Shutdown. To shut down test set, set both circuit breakers CB1 (47, figure 2-1) and CB2 (46) to OFF. Next, disconnect power cable assemblies W1 and W2 from bench power and then from the test set.



NOTE:
USE ADAPTER ASSY W6 TO CONNECT CABLE W1 TO 400 HZ BENCH POWER RECEPTACLE TYPE MS3102A-20-4S .

AR 918984

Figure 2-2. Operating Setup

Section III. OPERATION UNDER UNUSUAL CONDITIONS

Not applicable

Section IV. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

2-10. General. Table 2-2 contains data on preventive maintenance checks and services (PMCS).

a. *Before you operate.* perform your "before" (B) PMCS.

b. *Whi/e you operate.* Perform your "during" (D) PMCS.

c. After *you operate.* Be sure to perform your "after" (A) PMCS.

d. *If your equipment fails to operate.* Refer to checkout procedures and troubleshooting in Chapter *5,* Section V. If these procedures do not correct the malfunction, inform the next higher level of maintenance. Report any deficiencies using the proper forms (see TM 38-750).

e. The item No. column of table 2-2 shall be used as a source of item numbers for the "TM Number" column of DV Form 2404, Equipment Inspection and Maintenance Worksheet, in recording results of PMCS.

Section V. PREPARATION FOR MOVEMENT

2-11. Packing Instructions (See figures 1-1 and 1-2). Pack loose equipment and close test set as follows:

a. Push lock buttons in cover partition and lift up at front of partition.

b. Stow cable assemblies W1 through W5 in cover. Insert adapter W6 in appropriate cavity in the form block.

c. Stow pneumatic tubing in cover.

d. Place all parts of pneumatic kit into case, then stow in cavity in foam.

e. Place Checking Fixture in the proper cavity in the foam.

f. Close partition and push lock buttons.

9. Mate cover hinge with test set enclosure hinge pins, then close and secure with 8 latches.

Table 2-2. Preventive Maintenance Checks and Services

B - Before Operation
D - During Operation
A - After Operation
W - Weekly
M - Monthly
Y - Yearly

Item No.	Interval B	D	A	W	M	Y	Item To Be Inspected	Procedures	Equipment will be reported not ready/ available if:
							Test Set		
1	●		●				Cover	Missing or damaged cover.	Missing or damaged cover.
2	●						Front panel	Missing or loose knobs.	Knob missing.
3	●							Operate all switches and check smoothness of operation and positive detent positions.	Defective switch.
4	●							Check that all indicators and displays light during self-test.	Defective lamp or lamp circuit.
5	●							Visually check all connectors and test points for excess wear and damaged pins/sockets.	Defective connector or test point.

Table 2-2. Preventive Maintenance Checks and Services – Continued

B - Before Operation
D - During Operation
A - After Operation
W - Weekly
M - Monthly
Y - Yearly

Item No.	Interval B	D	A	W	M	Y	item To Be I nspected	Procedures	Equipment will be reported not ready/ available if:
6	●	●	●					Rotate both B1 and B2 to check for smoothness of operation with no sticking or binding.	Defective resolver or dual-speed drive.
7						●	Panel/chassis	Adjust and align resolvers in accordance with Chapter 6.	Defective resolver or dual-speed drive.
8						●		Adjust and align buffer oscillator CCA 1A3 in accordance with Chapter 6.	Defective CCA 1A3.
9						●		Adjust power supply PS1 in accordance with Chapter 6.	Defective power supply PS1.
10						●	Panel/chassis	Adjust power supply PS2 in accordance with Chapter 6.	Defective power supply PS2.
11	●		●				Cable assemblies	Check all cable assemblies for frayed insulation, broken contacts or evidence of other damage.	Defective cable assemblies.
12	●		●				Fixture, Checking	Inspect for any signs of damage or missing parts.	Fixture damages or missing parts.
13	●		●				Pneumatic, Kit	Inspect for any signs of damage, missing parts or contamination.	Damaged, missing parts or evidence of contamination.

CHAPTER 3

AVIATION UNIT MAINTENANCE/CREW MAINTENANCE INSTRUCTIONS

There are no authorized Operator/Crew Maintenance Instruction requirements.

CHAPTER 4

AVIATION UNIT MAINTENANCE INSTRUCTIONS

There are no authorized Aviation Unit Maintenance Instructions requirements.

CHAPTER 5
AVIATION INTERMEDIATE MAINTENANCE SUPPORT INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF MATERIEL

5-1. inspecting, Servicing, Installing, and Setting-Up Instructions.

a. Inspect front panel for dust, dirt, lint, grease, oil, or other foreign matter, worn spots or deep scratches on surfaces, marred protective finish exposing bare metal, loose screws, missing, illegible or obliterated marking, decals, and reference designators.

b. Inspect connectors for broken, loose, bent corroded or missing pins, cracked insulation.

c. Inspect external wiring and cable assemblies for cut, burned, or abraded insulation exposing bare conductor, abrupt V bands which weaken conductor; points of abrasion not insulated.

d. Inspect checking fixture for bends, twists, dents, grease, oil, missing parts, deep scratches on surfaces, loose or missing screws, missing dowel pins, and illegible or obliterated markings.

e. Inspect pneumatic kit parts for bends, twists, dents, grease, oil, missing parts, deep scratches on surfaces or obliterated markings.

Section Il. PREEMBARKATION INSPECTION OF MATERIEL IN UNITS ALERTED FOR OVERSEAS MOVEMENT

5-2. General. This inspection is conducted on materiel in alerted units scheduled for overseas duty to ensure that such materiel will rtot become unserviceable in a relatively short time. The inspection prescribes a higher percentage of remaining usable lifs in serviceable materiel to meet a specific need beyond minimum serviceability.

5-3. Inspection Points.

a. Screw heads must be in serviceable condition, and threads must not be stripped. Internal threads must not be stripped.

b. Cable assemblies must not have loose or damaged connections, cut or worn insulation, broken wires, kinks, or sharp bends.

c. Materiel must be free of burrs, particularly those on functional surfaces.

d. Parts must not be cracked, bent, distorted, or damaged, and must be free of detrimental wear.

e. Rivets must be tight.

f. Painted surfaces must be free of bare spots.

9. Operating controls must function smoothly.

h. Identification plates must be present and secure.

i. Inspect electrical components for improper functioning, physical damage and missing parts.

Section III, TOOLS AND EQUIPMENT

5-4. General. Repair parts, special tools, special test equipment, and accessories issued with or prescribed for use by the operator or technician are listed in Appendix E, Repair Parts and Special Tools List.

Section IV. REPAINTING AND REFINISHING INSTRUCTIONS

5-5. Reference Documents. Refer to TM 9-213, Painting instructions for Field Use. for general Procedures Specific painting details are provided below.

5-6. Enclosure. To repaint or retouch the test set enclo sure:

a. Apply zinc chromate prime coat ([tern 11, Appendix F).

b. Paint or retouch with two coats of gray enamel (Item 12, Appendix F).

5-7. Front Panel. To repaint or retouch the test set front panel:

a. Apply one coat of primer (Item 11, Appendix F).

b. Paint or retouch with two coats of gray enamel Item 12, Appendix F).

Section V. TROUBLESHOOTING

5-8. Introductory Information.

a. This section contains procedures for locating and correcting operating troubles which may develop in the test set. The procedures are presented in a logical order. Tables 5-1 through 5-3 are test set cable wire lists Performing the checkout as presented Will assure you that the test set is operational Each malfunction of a shop replaceable unit (SRU) or component is related to actions listed in table 5-4 which will help you correct the problem. Table 5-4 lists malfunctions in checkout order. You should perform the checkout in the order of presentation. When you have performed a corrective action, repeat the checkout procedure which Indicated the trouble before you continue with the checkout.

b. The failure isolation shop set (FISS) electronic circuit board: Air Data Subsystem provides slave boards for use during troubleshooting to aid in the identification of faulty circuit board assembles within the line replaceable unit (LRU), once the faulty circuit board has been identified, the slave board is returned to the shop set for future use and a replacement board is requisitioned for the LRU.

c. This manual lists the most likely malfunctions. If a malfunction is not listed (except for obvious malfunctions and causes), or is not corrected by listed corrective actions, notify the next higher level of maintenance. Disassembly and reassembly procedures are in Chapter 6.

d. To assist you in troubleshooting, figure FO-1 shows the test set schematic.

5-9. Cabie Checkout. Before connecting power to the test set, a point-to-point continuity check of cables W1 through W5 and the power cable adapter shall be performed.

a. *AC Power Cable W1 Checkout.* Using the DVM set to read resistance in conjunction with figure 5-1, check for continuity (less than one Ohm) between interconnected connector pins. Unless otherwise noted, the resistance to all other pins or to the connector shells should be in the megohm range. Flexing the cabie while making resistance checks will aid in isolating intermittent connections.

b. *DC Power Cable W2 Checkout.* Using the DVM in conjunction with figure 5-2, check for continuity between interconnected connector pins. Unless otherwise noted, the resistance to all other pins or to the connector shells should be in the megohm range. Flexing the cable while making resistance checks will aid in isolating intermittent connections.

c. *Power Cable Adapter W6 Checkout.* Using the DVM in conjunction with figure 5-3, check for continuity between interconnected connector pins. Unless otherwise noted, the resistance to all other pins or to the adapter shell should be in the megohm range.

d. *LAI Cable W3 Checkout.* Using the DVM in conjunction with table 5-1, check for continuity between interconnected connector pins. Connector pin patterns are shown in figure 5-4. Unless otherwise noted, the resistance to all other pins and to the connector shells should be in the megohm

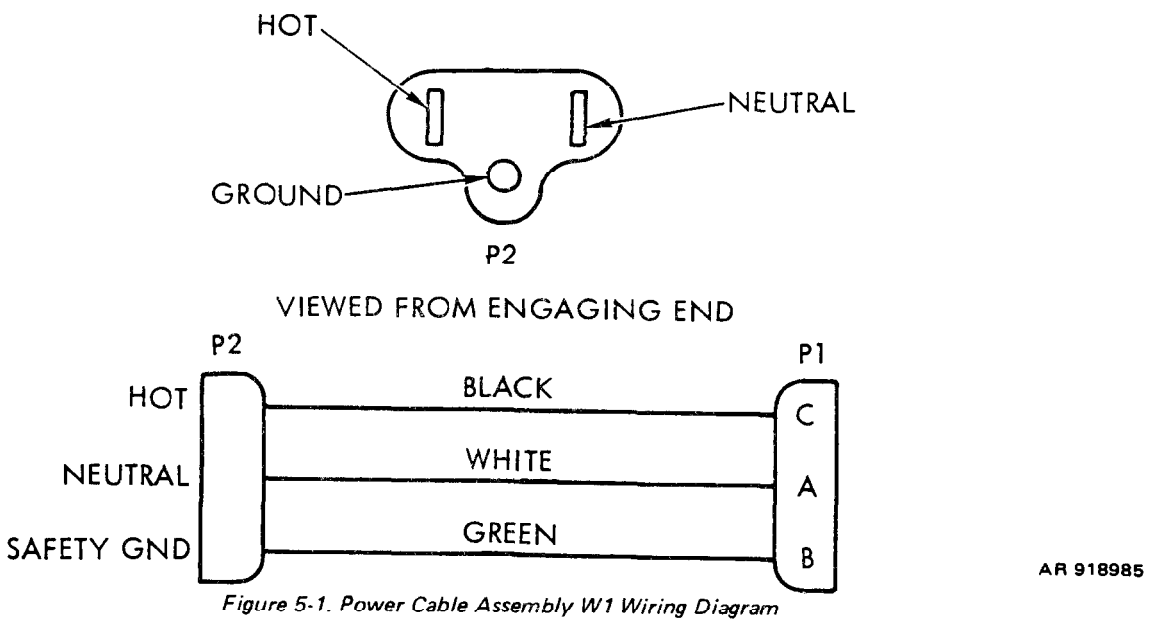


Figure 5-1. Power Cable Assembly W1 Wiring Diagram

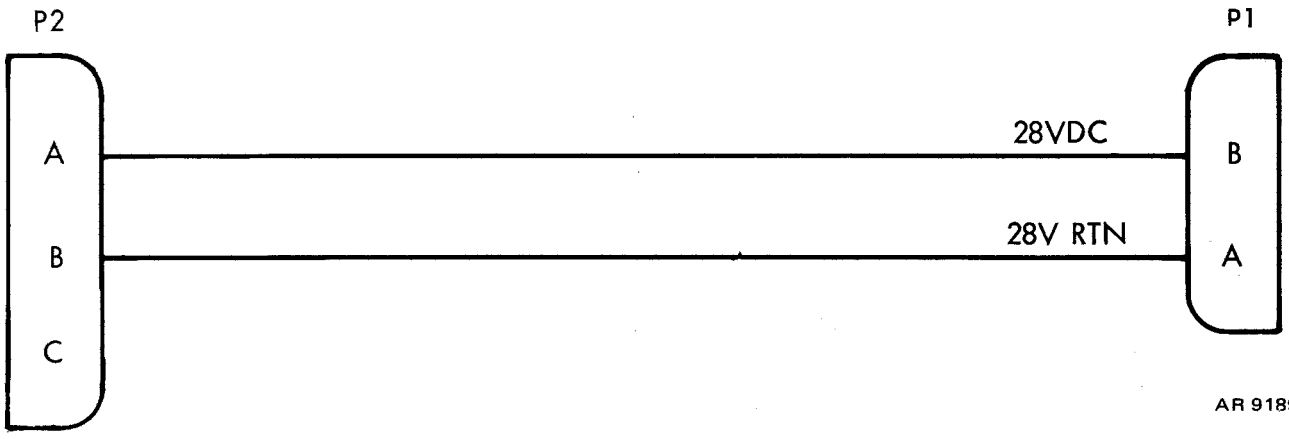


Figure 5-2. Power Cable Assembly W2 Wiring Diagram

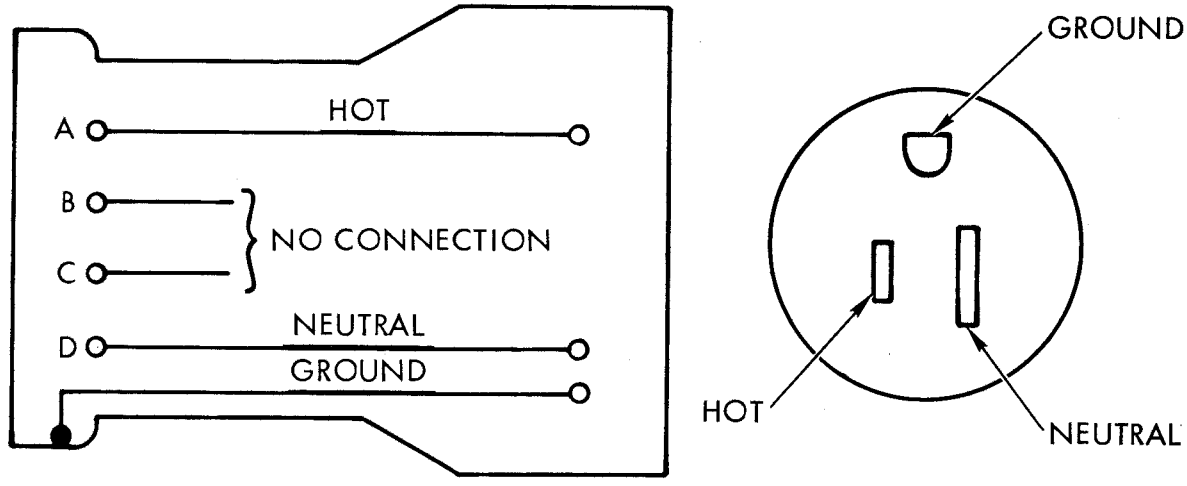


Figure 5-3. Power Cable Adapter W6 Wiring Diagram

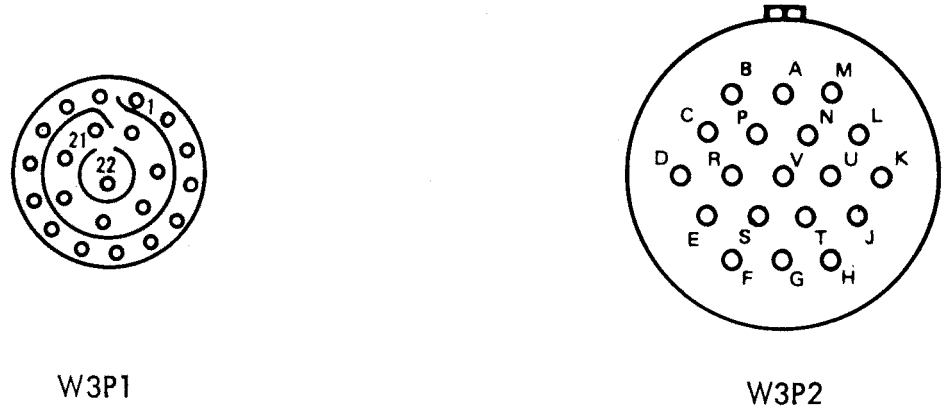


Figure 5-4. LAI Cabie W3 connector pin patterns

Table 5-1. LAI Cable W3 Wire List

WIRE NO.	FROM	TO	COLOR	WIRE AWG
1	P1-1	P2-A	WHT	22
2	P1-2	P2-B	WHT	22
3	P1-3	P2-C	WHT	22
4	P1-4	P2-D	WHT	22
5	P1-5	P2-E	WHT	22
6	P1-6	SHIELD TERMINATIONS	BLK	24
7	P1-7	P2-F	WHT	22
8	P1-8	P2-G	BLU	22
9	P1-9	P2-H	WHT	22
10	P1-10	P2-J	BLU	22
	P1-11	NC		
12	P1-12	P2-K	WHT	22
13	P1-13	P1-L	WHT	22
14	P1-14	P2-M	BLU	22
15	P1-15	P2-P	WHT	22
	P1-16	NC		
16	P1-17	P2-R	WHT	22
17	P1-18	P2-S	WHT	22
18	P1-19	P2-T	WHT	22
19	P1-20	P2-U	WHT	22
20	P1-21	P2-N	WHT	22
21	P1-22	P2-V	WHT	22

WIRE NO.	FROM	TO	COLOR	WIRE AWG
1	P2-A	P1-1	WHT	22
2	P2-B	P1-2	WHT	22
3	P2-C	P1-3	WHT	22
4	P2-D	P1-4	WHT	22
5	P2-E	P1-5	WHT	22
7	P2-F	P1-7	WHT	22
8	P2-G	P1-8	BLU	22
9	P2-H	P1-9	WHT	22
10	P2-J	P1-10	BLU	22
12	P2-K	P1-12	WHT	22
13	P2-L	P1-13	WHT	22
14	P2-M	P1-14	BLU	22
20	P2-N	P1-21	WHT	22
15	P2-P	P1-15	WHT	22
16	P2-R	P1-17	WHT	22
17	P2-S	P1-18	WHT	22
18	P2-T	P1-19	WHT	22
19	P2-U	P1-20	WHT	22
21	P2-V	P1-22	WHT	22

Table 5-2. EPU Cable W4 Wire List

WIRE NO.	FROM	TO	COLOR	WIRE AWG	WIRE NO.	F ROM	TO	COLOR	WIRE AWG
1	P1-1	P2-1	WHT	22	25	P1-25	P2-25	WHT	22
2	P1-2	P2-2	WHT	22	26	P1-26	P2-26	WHT	22
3	P1-3	P2-3	B LU	22	27	P1-27	P2-27	WHT	22
4	P1-4	P2-4	WHT	22	28	P1-28	P2-28	WHT	22
5	P1-5	P2-5	BLU	22	29	P1-29	P2-29	WHT	22
6	P1-6	P2-6	WHT	22	30	P1-30	P2-30	WHT	22
7	P1-7	P2-7	WHT	22	31	P1-31	P2-31	B LU	22
8	P1-8	P2-8	WHT	22	32	P1-32	P2-32	WHT	22
9	P1-9	P2-9	BLU	22	33	P1-33	P2-33	BLU	22
10	P1-10	P2-10	BLU	22	34	P1-34	P2-34	WHT	22
11	P1-11	P2-11	WHT	22	35	P1-35	P2-35	WHT	22
12	P1-12	P2-12	W HT	22	36	P1-36	P2-36	WHT	22
13	P1-13	P2-13	BLU	22	37	P1-37	P2-37	BLU	22
14	P1-14	P2-14	WHT	22	38	P 1-38	P2-38	BLU	22
15	P1-15	P2-15	WHT	22	39	P1-39	P2-39	ORN	22
16	P1-16	P2-16	WHT	22	40	P1 -40	P2-40	WHT	22
17	P1-17	P2-17	WHT	22	41	P1-41	P2-41	ORN	22
18	P1-18	P2-18	WHT	22	42	P1-42	P2-42	WHT	22
19	P1-19	P2-19	WHT	22	43	P1-43	P2-43	WHT	22
20	P1-20	P2-20	WHT	22	44	P1-44	P2-44	WHT	22
21	P1-21	P2-21	B LU	22	45	P1-45	P2-45	WHT	22
22	P1-22	P2-22	WHT	22	46	P1-46	P2-46	WHT	22
23	P1-23	P2-23	BLU	22	47	P1-47	P2-47	WHT	22
24	P1-24	P2-24	WHT	22	48	P1-48	P2-48	BLU	22

Table 5-2. EPU Cable W4 Wire List – Continued

WIRE NO.	FROM	TO	COLOR	WIRE AWG
49	P1-49	P2-49	WHT	22
50	P1-50	P2-50	B LU	22
51	P1-51	P2-51	WHT	22
52	P1-52	P2-52	WHT	22
53	P1-53	P2-53	BLU	22
54	P1-54	P2-54	WHT	22
55	P1-55	P2-55	WHT	22
56	P1-56	P2-56	WHT	22
57	P1-57	P2-57	WHT	22
58	P1-58	P2-58	WHT	22
59	P1-59	P2-59	WHT	22
60	P1-60	P2-60	WHT	22
61	P1-61	P2-61	WHT	22
62	P1-62	P2-62	BLU	22
63	P1-63	P2-63	WHT	22
64	P1-64	P2-64	WHT	22
65	P1-65	P2-65	BLU	22
66	P1-66	SHIELD TERMINATIONS	BLK	24
1	P2-1	P1-1	WHT	22
2	P2-2	P1-2	WHT	22
3	P2-3	P1-3	BLU	22
4	P2-4	P1-4	WHT	22
5	P2-5	P1-5	BLU	22
6	P2-6	P1-6	WHT	22
7	P2-7	P1-7	WHT	22
8	P2-8	P1-8	WHT	22
9	P2-9	P1-9	BLU	22
10	P2-10	P1-10	BLU	22
11	P2-11	P1-11	WHT	22
12	P2-12	P1-12	WHT	22
13	P2-13	P1-13	B LU	22
14	P2-14	P1-14	WHT	22
15	P2-15	P1-15	WHT	22
16	P2-16	P1-16	WHT	22
17	P2-17	P1-17	WHT	22
18	P2-18	P1-18	WHT	22
19	P2-19	P1-19	WHT	22
20	P2-20	P1-20	WHT	22
21	P2-21	P1-21	BLU	22
22	P2-22	P1-22	WHT	22
23	P2-23	P1-23	BLU	22
24	P 2-24	P1-24	WHT	22
25	P2-25	P1-25	WHT	22
26	P2-26	P1-26	WHT	22
27	P2-27	P1-27	WHT	22
28	P2-28	P1-28	WHT	22
29	P2-29	P1-29	WHT	22
30	P2-30	P1-30	WHT	22
31	P2-31	P1-31	BLU	22
32	P2-32	P1-32	WHT	22

Table 5-2. EPU Cable W4 Wire List – Continued

WIRE NO.	FROM	TO	COLOR	WIRE AWG
33	P2-33	P1-33	BLU	22
34	P2-34	P1-34	WHT	22
35	P2-35	P1-35	WHT	22
36	P2-36	P1-36	WHT	22
37	P2-37	P1-37	BLU	22
38	P2-38	P1-38	BLU	22
39	P2-39	P1-39	ORN	22
40	P2-40	P1-40	WHT	22
41	P2-41	P1-41	ORN	22
42	P2-42	P1-42	WHT	22
43	P2-43	P1-43	WHT	22
44	P2-44	P1-44	WHT	22
45	P2-45	P1-45	WHT	22
46	P2-46	P1-46	WHT	22
47	P2-47	P1-47	WHT	22
48	P2-48	P1-48	BLU	22
49	P2-49	P1-49	WHT	22
50	P2-50	P1-50	BLU	22
51	P2-51	P1-51	WHT	22
52	P2-52	P1-52	WHT	22
53	P2-53	P1-53	BLU	22
54	P2-54	P1-54	WHT	22
55	P2-55	P1-55	WHT	22
56	P2-56	P1-56	WHT	22
57	P2-57	P1-57	WHT	22
58	P2-58	P1-58	WHT	22
59	P2-59	P1-59	WHT	22
60	P2-60	P1-60	WHT	22
61	P2-61	P1-61	WHT	22
62	P2-62	P1-62	BLU	22
63	P2-63	P1-63	WHT	22
64	P2-64	P1-64	WHT	22
65	P2-65	P1-65	BLU	22
	P2-66	NC		

range. Flexing the cable while making the resistance checks will aid in isolating intermittent connections.

e. *EPU Cable W4 Checkout.* Using the DVM in conjunction with table 5-2 check for continuity between interconnected connector pins. The connector pin pattern is shown in figure 5-5. Both connectors W4 P1 and W4 P2 have the same pin pattern, Unless otherwise noted, the resistance to all other pins and to the connector shells should be in the megohm range. Flexing the cable while making the resistance checks will aid in isolating intermittent connections.

f. *AADS Cable W5 Checkout.* Using the DVM in conjunction with table 5-3, check for continuity between interconnected connector pins. The pin pattern for both connectors is shown in figure 5-5A. Unless otherwise noted, the resistance to all other pins and to the connector shells should be in the megohm range. Flexing the cable while making the resistance checks will aid in isolating intermittent connections.

Table 5-3. AADS Cable W5 Wire List

WIRE NO.	FROM	TO	COLOR	WIRE AWG
1	P1-1	P2-1	WHT	22
2	P1-2	P2-2	BLU	22
3	P1-3	P2-3	WHT	22
4	P1-4	P2-4	B LU	22
5	P1-5	P2-5	WHT	22
6	P1-6	P2-6	BLU	22
7	P1-7	SHIELD TERMINATION:	BLK	24
8	P1-8	P2-8	WHT	22
9	P1-9	P2-9	WHT	22
10	P2-10	P2-10	WHT	22
11	P1-11	P2-11	WHT	22
12	P1-12	P2-12	WHT	22
13	P1-13	P2-13	WHT	22
14	P1-14	P2-14	WHT	22
15	P1-15	P2-15	WHT	22
16	P1-16	P2-16	ORN	22
17	P1-17	P2-17	ORN	22
18	P1-18	P2-18	BLK	24
19	P1-19	P2-19	WHT	22
20	P1-20	P2-20	WHT	22
21	P1-21	P2-21	BLK	24
22	P1-22	P2-22	BLU	22

WIRE NO.	FROM	TO	COLOR	WIRE AWG
1	P2-1	P1-1	WHT	22
2	P2-2	P1-2	BLU	22
3	P2-3	P1-3	WHT	22
4	P2-4	P1-4	BLU	22
5	P2-5	P1-5	WHT	22
6	P2-6	P1-6	BLU	22
	P2-7	NC		
8	P2-8	P1-8	WHT	22
9	P2-9	P1-9	WHT	22
10	P2-10	P1-10	WHT	22
11	P2-11	P1-11	WHT	22
12	P2-12	P1-12	WHT	22
13	P2-13	P1-13	WHT	22
14	P2-14	P1-14	WHT	22
15	P2-15	P1-15	WHT	22
16	P2-16	P1-16	ORN	22
17	P2-17	P1-17	ORN	22
18	P2-18	P1-18	BLK	24
19	P2-19	P1-19	WHT	22
20	P2-20	P1-20	WHT	22
21	P2-21	P1-21	BLK	22
22	P2-22	P1-22	BLU	22

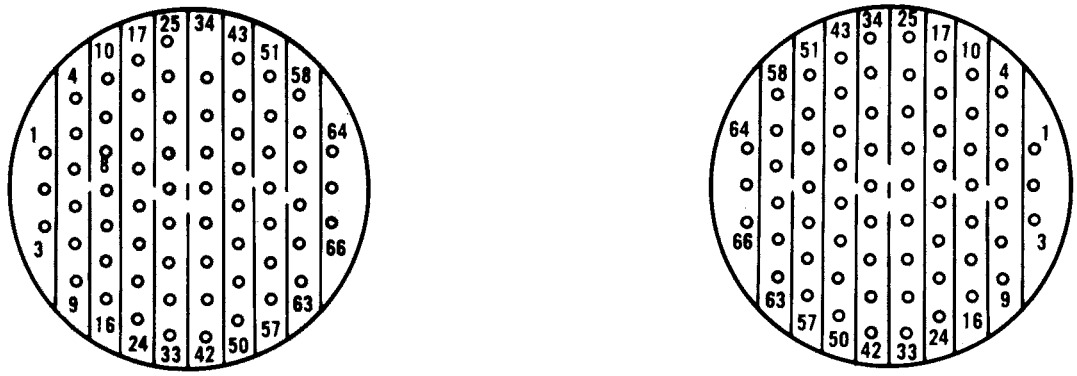


Figure 5-5. Cable W4 Pin Patterns

Figure 5-5A. Cable W5 Pin Patterns

5-10. Test Set Checkout. The test set checkout is divided into two categories: passive (power-off) and active (power-on), Prior to performing any checkout procedure, remove the panel/chassis from the enclosure and remove circuit card assemblies IA I through 1A4 from the card holder on the panel chassis. Removal procedures are in Chapter 6 of this manual.

5-11. Passive Checkout. The following procedures are performed with no power applied to the panel/chassis. The digital multimeter (DVM) is the only test instrument required for this portion of the checkout. Only continuity and resistance checks are performed,

NOTE

References to table 5-4 throughout the following procedures lead to trouble-shooting steps and corrective actions.

a. *CPU TEST Switch S2 Wiring Check.* Check switch S2 and associated wiring by performing the following procedure:
   (1) Connect DVM between TP4 (17, figure 2-1) and pin 59 of J4 (36).
   (2) Set CPU TEST switch S2 (5) to CPU TEST.
   (3) Read continuity (less than one Ohm) on DVM. (See table 5-4,1.)
   (4) Set CPU TEST switch S2 (5) to the off (down) position.
   (5) Read open circuit (more than one megohm) on DVM. (See table 5-4,2.)

b. *LAI FLR Switch S3 Wiring Check.* Check switch S3 and associated wiring by performing the following procedure:
   (1) Connect DVM between TP4 (17) and pin 60 of J4 (36).
   (2) Set LAI FLR switch S3 (7) to LAI FLR.
   (3) Read continuity on DVM. (See table 5-4, 3.)
   (4) Set LAI FLR switch S3 (7) to the off (down) position.
   (5) Read open circuit on DVM. (See table 5-4,4.)

c. *A0S FLR Switch S20 Wirinq Check.* Check switch S20 and associated wiring by performing the following procedure:
   (1) Connect DVM between TP4 (17) and pin 130 of J3 (38).
   (2) Set ADS FLR switch S20 (33) to ADS FLR.
   (3) Read continuity on DVM. (See table 5-4, 5.)
   (4) Set ADS FLR switch S20 (33) to the off (down) position.
   (5) Read open circuit on DVM. (See table 5-4,6.)

d. *OUTPUT SEL 2 Switch S10 Wiring Check.* Check switch S10 and associated wiring by performing the following procedure:
   (1) Connect DVM positive lead to TP7 (14).
   (2) Set OUTPUT SEL 2 switch S10 (12) to each of the following positions and read continuity to the designated pin of connector J4 (36). (Pin pattern for J4 is shown in figure 5-6.) (See table 5-4,7.)

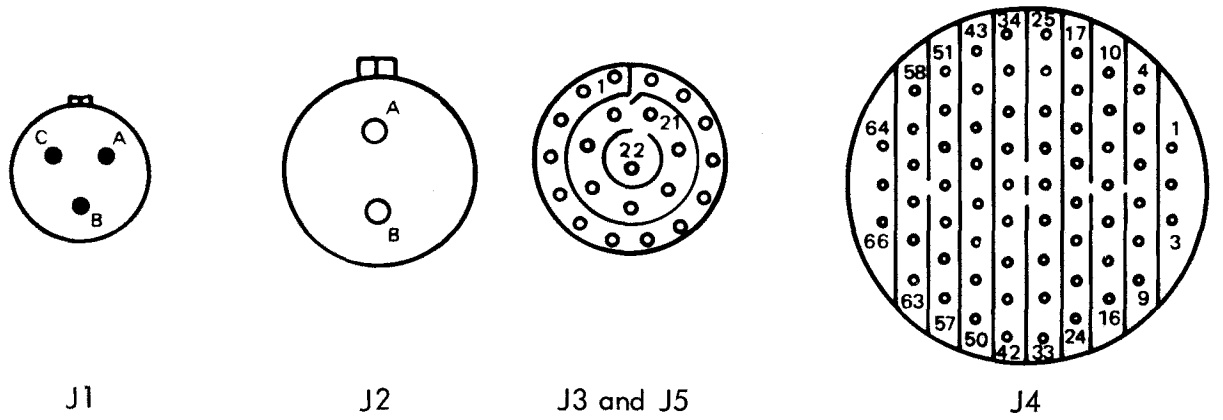


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Figure 5-6. Front Panel Connector Pin Patterns

S10 Position	J4 Pin	S10 Position	J4 Pin
LAI +15V	28	Ps	20
LAI -15V	37	$P_T - P_S$	22
V_U	12	5V	18
V_V	2	INJV	52
V_W	14	+15V	29
V_{IU}	8	-15V	38
V_{IV}	16	-15V	38

(3) Connect DVM between TP7 (14, figure 2-1) and TP8 (13).
(4) Set OUTPUT SEL 2 switch S10 (12) to LAI +15V.
(5) Read 48.6 to 53.6 ohms on DVM. (See table 5-4, 8 or 9.)
(6) Set OUTPUT SEL 2 switch S10 (12) to LAI -15V.
(7) Read 48.6 to 53.6 ohms on DVM. (See table 5-4, 10 or 11.)
(8) Connect DVM positive lead to TP8 (13).
(9) Set OUTPUT SEL 2 switch S10 (12) to each of the following positions and read continuity to the designated pin of connector J4 (36). (Pin pattern for J4 is shown in figure 5-6.) (See table 5-4, 7.)

S10 Position	J4 Pin	S10 Position	J4 Pin
LAI +15V	27	Ps	19
LAI -15V	27	$P_T - P_S$	19
V_U	13	5V	27
V_V	3	INJV	27
V_W	21	+15V	27
V_{IU}	9	-15V	27
V_{IV}	23		

e. AIR TEMP C° Switch S6 Wiring Check. Check switch *S6* and associated wiring by performing the following procedures:

Note

The DVM specified in Appendix D, Section III shall be used with 4-wire measuring techniques to avoid unwarranted equipment rejection.

(1) Install CCA 1A3.
(2) Connect DVM positive lead to TP1 (20).
(3) Connect DVM negative lead to TP3 (18).
(4) Set OUTPUT SEL 1 switch S9 (21) to ATS.

(5) Set AIR TEMP C° switch S6 (25) to each of the following positions and read the specified resistance for each position. Use 4-wire measuring techniques. (See table 5-4, 12 or 13.)

S6 Position	DVM Reading (ohms)
–54	373.40 to 375.00
–40	400.25 to 401.85
-30	419.32 to 420.92
-15	447.82 to 449.42
0	476.22 to 477.82
15	504.52 to 506.12
30	532.62 to 534.22
45	560.62 to 562.22
60	588.52 to 590.12
71	608.92 to 610.52

f. *OUTPUT SEL 1 Switch S9 Wiring Check.* Check switch S9 and associated wiring by performing the following procedures:
(1) Connect DVM negative lead to TP1 (20).
(2) Set OUTPUT SEL 1 switch S9 (21) to each of the following positions and read continuity to the designated pin of connector *J4* (36). Figure 5-6 shows the pin pattern of J4. (See table 5-4, 14.)

S9 Position	J4 Pin	S9 Position	J4 Pin
DTR	47	ANLG IN	6
DR	56	ANLG OUT	7
DATA	46	REF OSC	49
CLK	61	ATS	4

(3) Move DVM negative lead from TPI (20, figure 2-1j to TP3 (18).
(4) Set OUTPUT SEL 1 switch S9 (21) to each of the following positions and read continuity to the designated pin of connector J4 (36). Figure 5-6 shows the pin pattern of J4. (See table 5-4, 14.)

S9 Position	J4 Pin	S9 Position	J4 Pin
ATS	10	DR	62
CLK	65	DTR	48
DATA	53		

(5) Move DVM negative lead from TP3 (18, figure 2-1) to TP5 (16).
(6) Set OUTPUT SEL 1 switch S9 (21) to each of the following positions and read continuity to the designated pin of connector J4 (36). Figure 5-6 shows the pin pattern of J4. (See table 5-4, 14.)

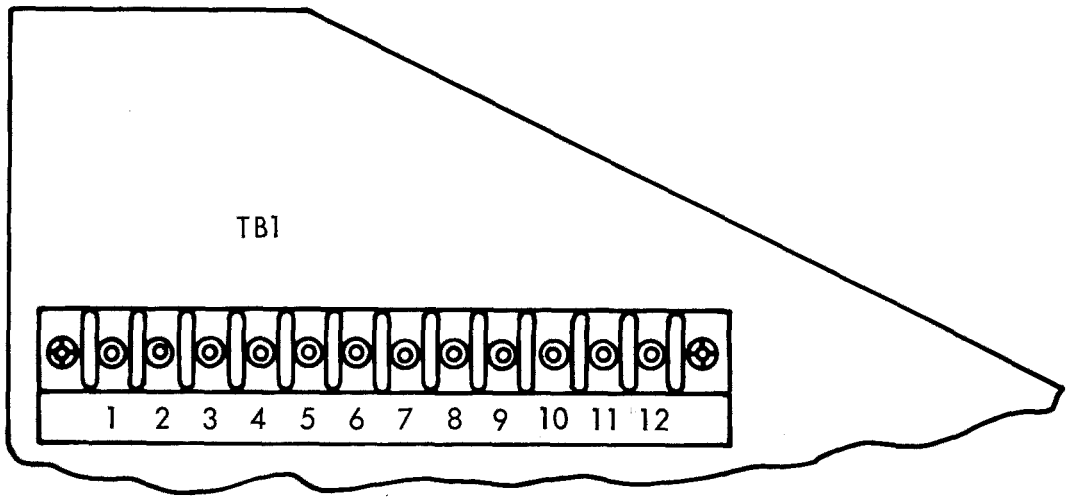

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Figure 5-7. Terminal Board TB1 Terminal Layout

S9 Position	J4 Pin	S9 Position	J4 Pin
DTR	47	CLK	47
DR	47	ANLG IN	45
DATA	47	AN LG OUT	45

(7) Move DVM negative lead from TP5 (16, figure 2-1) to TP2 (19).

(8) Read continuity to TP4 (17) with OUTPUT SEL 1 switch S9 (21) set in each of the following positions: DTR, DR, DATA, CLK, ANLG IN, ANLG OUT and ATS.

{9) Move DVM negative lead from TP2 (19, figure 2-1) to TPI (20).

(10) Set OUTPUT SEL 1 switch S9 (21) to REF OSC.

(11) Read continuity at terminal board TB1 (77, figure 6-4), terminal 5 (figure 5-7). (See table 5-4, 14.)

(12) Move DVM negative lead from TPI (20, figure 2-1) to TP2 (19),

(13) Read continuity at terminal board TB1 (77, figure 6-4), terminal 6 (figure 5-7). (See table 5-4, 14.)

(14) Move DVM negative lead from TP2 (19, figure 2-1) to TPI (20).

(15) Set OUTPUT SEL 1 switch S9 (21) to each of the following positions and read continuity to the designated card connector pins (figure 5-8). (See table 5-4, 14.)

S9 Position	XA2 Pin	S9 Position	XA2 Pin
CLK	93	DR	77
DATA	83	DTR	88

(16) Move DVM negative lead from TPI (20, figure 2-1) to TP3 (18).

(17) Set OUTPUT SEL 1 switch S9 (21) to each of the following positions and read continuity to the designated card connector pins (figure 5-8). (See table 5-4, 13.)

S9 Position	XA2 Pin	S9 Position	Pin
DTR	86	CLK	XA2-92
DR	78	ATS	XA3-65
DATA	82		

9. *TS MON Switch S11 Wiring Check.* Check switch S11 and associated wiring by performing the following procedure:

(1) Connect DVM negative lead to TP9 (50, figure 2-1).

(2) Set TS MON switch S11 (52) to each of the following positions and read continuity to the designated card connector pins (figure 5-8). (See table 5-4, 15.)

S11 Position	XA3 Pin	S11 Position	XA3 Pin
+10V	15	V_{IV}	18
-10V	40	RDR ALT	16
V_{IU}	17	REFOSC	22

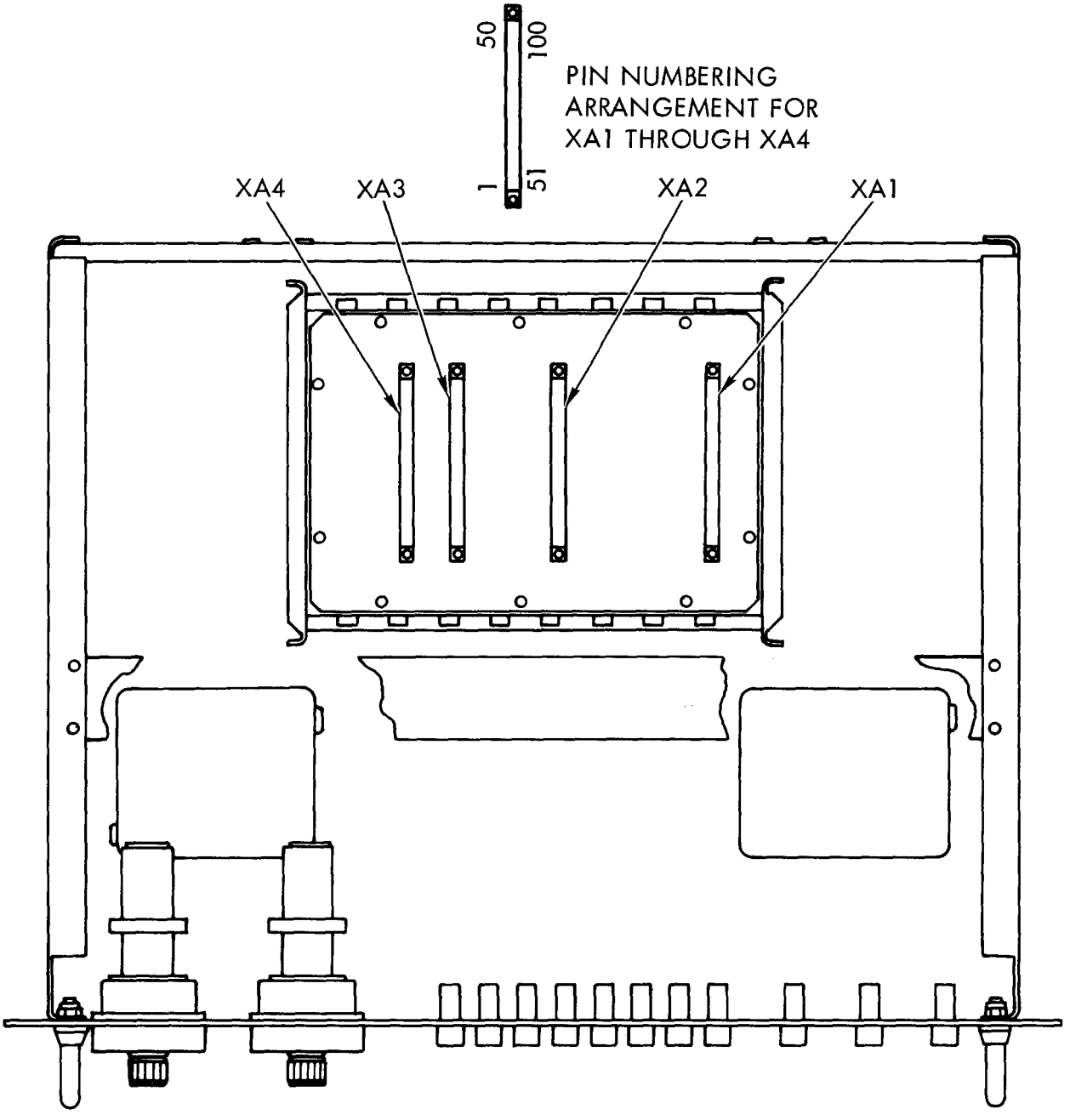


Figure 5-8. Chassis Top View

(3) Set TS MON switch S11 (52, figure 2-1) to each of the following positions and read continuity to the designated TB1 terminals (figure 5-7). (See table 5-4, 15.)

S11 Position	TB1 Terminal	S11 Position	TB1 Terminal
SIN α	2	SIN (α-β)	8
Cos α	1	Cos (α-β)	7

(4) Move DVM negative lead to TP10 (51, figure 2-1).

(5) Set TS MON switch S11 (52) to each of the following positions and read continuity to the designated TBI (figure 5-7) terminals, TP4 (17, figure 2-1), and connector J4 (36) pins. Pin pattern of J4 is shown in figure 5-6. (See table 5-4, 15.)

S11 Position	Terminal	S11 Position	Terminal
Cos (α-β)	TB1-9	V_{IU}	TP4
SIN (α-β)	TB1-9	V_{IV}	TP4
COS α	TB1-3	RDR ALT	TP4
SIN α	TB1-3	REF OSC	TP4
28 VDC	TP4	COS(α-β)	J4-41
+10V	TP4	SIN (α-β)	J4-41
-10V	TP4	Cos α	J4-39
5V	TP4	SIN α	J4-39

(6) *Move* DVM negative lead from TP10 (51, figure 2-1) to TP9 (50).

(7) Set TS MON switch S11 (52) to each of the following positions and read continuity to the designated J4 (36) pins. Pin pattern of J4 is shown in figure 5-6. (See table 5-4, 15.)

S11 Position	J4 Pin	S11 Position	J4 Pin
SIN α	30	SIN ((Y-I3)	32
Cos α	31	Cos (a-p)	33

(8) Turn panel/chassis front panel up with bottom toward test personnel. (See figure 5-9.)

(9) Ensure DVM negative lead connected to TP9 (50, figure 2-1).

(Io) Set TS MON switch S11 (52) to each of the following positions and read continuity to the designated terminals on the bottom of the chassis (figure 5-9).

S11 Position	Terminal	S11 Position	Terminal
115 VAC	CB1-1 (14)	28 VDC	E5 (32)
28 VDC	W9 (30)	5V	W6 (27)

(11) Move DVM negative lead from TP9 (50, figure 2-1) to TP10 (51).

(12) Set TS MON switch S11 (52) to 115 VAC and read continuity to CB1-3 (14, figure 5-9). (See table 5-4, 15.)

(13) Return panel/chassis to upright position.

h. *AADS TEST Switch S 16 Wiring Check.* Check switch S16 and associated wiring by performing the following procedures:

(1) Connect DVM negative lead to TP16 (39, figure 2-1).

(2) Set AADS TEST switch ST6 (30) to each of the following positions and read continuity to the designated J5 (34) pins. Pin pattern of J5 is shown in figure 5-6. (See table 5-4, 16.)

S16 Position	J5 Pin	S16 Position	J5 Pin
REF OSC	16	Cos (α-β)	17
SIN α	16	TEMP	15
Cos α	16	HTR CCHK	9
SIN (α-β)	17		

(3) Move DVM negative lead from TPI 6 (39, figure 2-1) to TP15 (40) and read continuity to J5 (34) pin 12. *(See* table 54, 16.)

(4) Set AADS TEST switch S16 (30) to TEMP and read continuity to J5 (35) Pin *22. (See* table 5-4, 16.)

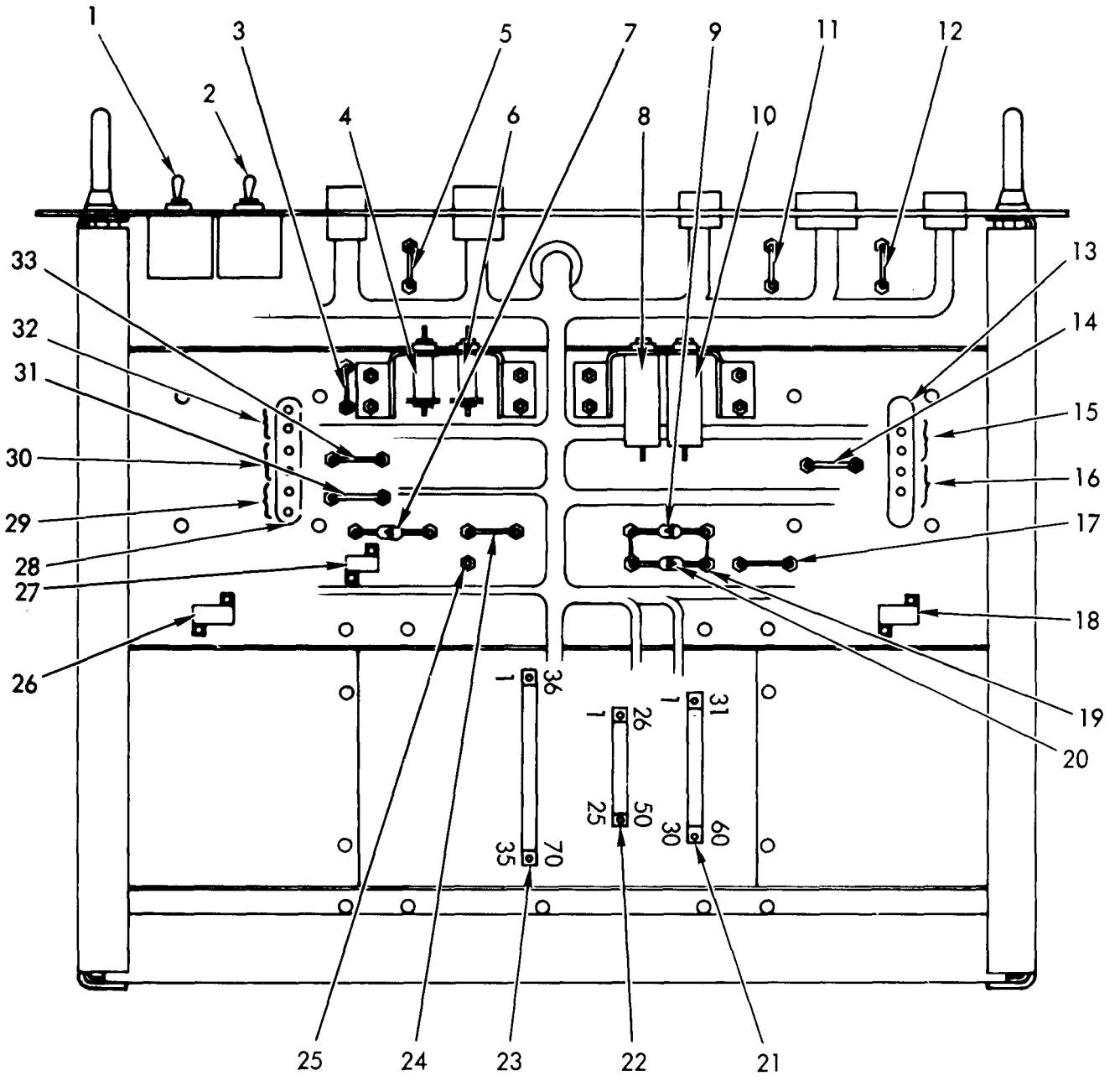
(5) Set AADS TEST switch S 16 (30) to each of the following positions and read continuity to the designated XA3 (figure 5-8) pin. (See table 5-4, 16.)

S16 Position	XA3 Pin	S16 Position	XA3 Pin
REF OCS	58	SIN (α-β)	60
SIN α	60	Cos (α-β)	*60*
Cos α	*60*		

(6) Move DVM negative lead from TP15 (40, figure 2-1) to connector XA3 (figure 5-8), pin 59.

(7) Set AADS TEST switch S16 (30, figure 2-1) to each of the following positions and read continuity to TP4 (17) or the designated pin of J5 (34). Pin pattern of J5 is shown in figure 5-6. (See table 5-4, 16.)

S16 Position	Terminal	S16 Position	Terminal
REF OSC	J5-17	Cos (α-β)	J5-5
SIN α	J5-3	TEMP	TP4
Cos α	J5-4	HTR CCHK	TP4
SIN (α-β)	J5-6		



1. CIRCUIT BREAKER CB1
2. CIRCUIT BREAKER CB2
3. GROUND BUS W4
4. FILTER FLI
5. GROUND BUS W1
6. FILTER FL2
7. DIODE CR1
8. CAPACITOR C1
9. DIODE VR1
10. CAPACITOR C2
11. GROUND BUS W2
12. GROUND BUS W3
13. POWER SUPPLY PS1
14. 5V BUS W6
15. 115VAC INPUT
16. 5V OUTPUT
17. 28V BUS W9
18. RESISTOR R3
19. STANDOFF E6
20. DIODE CR2
21. CONNECTOR P3
22. CONNECTOR P2
23. CONNECTOR P1
24. GROUND BUSW8
25. STANDOFF WT1
26. RESISTOR R2
27. RESISTOR R1
28. POWER SUPPLY PS2
29. 15V OUTPUT
30. -15V OUTPUT
31. -15V BUS W7
32. 115VAC INPUT
33. 15V BUS W5

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Figure 5-9. Panel/Chassis Bottom View

i. DATA MODE Switch Si Wiring Check. Check switch SI and associated wiring by performing the following procedure:

(1) Ensure DV negative lead connected to TP4 (17, figure 2-1).

(2) Connect DVM positive lead to XA2-47 (figure 5-8).

(3) Set DATA MODE Switch S1 (4, figure 2-1) to CONT.

(4) Read continuity on DVM (See table 5-4, 17.)

(5) Set DATA MODE Switch S1 (4) to HOLD.

(6) Read open circuit on DVM (See table 5-4, 18.)

(7) Connect DV M positive lead to XA2-48 (figure 5-8.)

(8) Set DATA MODE Switch S1 (4, figure 2-1) to RPT.

(9) Read continuity on DVM (See table 5-4, 17.)

(10) Set DATA MOD E Switch S1 (4) to HOLD.

(11) Read open circuit on DVM (See table 5-4, 18.)

j. *DATA WD SEL Switch S8 Wiring Check. Check* switch *S8* and associated wiring by performing the following procedure:

(1] Ensure DVM negative lead connected to TP4 (17).

(2) Set DATA WD SEL Switch S8 (22) to each of the following positions and read continuity to the designated Connector XA2 (figure 5-8) pin. (See table 5-4, 19.)

S8 Position	XA2 Pin	S8 Position	XA2 Pin
V_U	55	TAIR	3
V_V	6	VDW	54
V_W	5	STAT 1	53
PABS	4	STAT 2	56

k. Chassis Wiring Check. Check the remaining chassis wiring by performing the following procedure:

(1) Connect DVM negative lead to TP4 (17, figure 2-1.)

(2) Read continuity to the following points. Pin patterns of J3, J4 and J5 are shown in figure 5-6. (See table 5-4, 20.)

TP2 (19)	J3-3	J4-34	J4-55
TP6 (15)	J3-6	J4-35	J4-66
TP12 (43)	J3-8	J4-36	J5-2 (34)
J1-B (44)	J3-10	J4-43	J5-7
J3-1 (38)	J4-5 (36)		

(3) Connect jumper between J4-27 (36) and J4 36.

(4) Set OUTPUT SEL 2 Switch S10 (12) to 5V.

(5) Read continuity between TP4 (17) and TP8 (13).

(6) Using DVM, read continuity between the following pairs of pins. Pin patterns of J3, J4 and J5 are shown in figure 5-6. (See table 5-4, 21.)

(6A) Remove jumper connected in step (3).

From (figure 5-8)	To (figure 2-1)
XA3-90	J4-1 (36)
XA3-23	J5-1 (34)
XA1-48	J3-12 (38)
XA1-97	J4-51 (36)
XA1-38	J4-64 (36)
XA1-88	J4-64 (36)

(7) Using DVM, read between 9.8 kilohms and 10.2 kilohms between the following pairs of connector J4 (36) pins: (See table 5-4, 21).

From	To	From	To
13	12	9	8
3	2	23	16
21	14		

(8) Turn panel/chassis front panel up with bottom toward test personnel.

(9) Read continuity from TP4 (17) to W1 (18, figure 5-9).

(Io) Return chassis/panel to the upright position.

(11) Reinstall CCA's 1A1 through 1A3 in accordance with Chapter 6.

5-12. Active Checkout. The following procedures functionally check the portions of the test set which can be operated without the airborne equipment. These procedures will require an oscilloscope in addition to the DVM.

a. *General Operational Checkout.* Check the general operation of the test set by performing the following procedure:

WARNING

HIGH VOLTAGE

is used in the operation of this equipment.

DEATH ON CONTACT

may result if personnel fail to observe safety precautions. Learn the areas containing high voltage in the test set. Before working inside the equipment, turn power off unless power is required to perform the procedures.

(1) Ensure that facility power is applied to both power cables.
(2) Set circuit breaker CB1 (47) to ON. (See table 5-4, 22.)
(3) Observe 115 VAC lamp (48) illuminated. (See table 5-4, 23.)
(4) Ensure DATA MODE switch S1 (4) is in CONT.
(5) Observe 000 on DATA WORD display (23). (See table 5-4,24 and 25.)
(6) Set circuit breaker CB2 (46) to ON. (See table 5-4, 26.)
(7) Observe 28 VDC lamp (45) illuminated. (See table 5-4, 27.)
(8) Observe ADS NO GO lamp (10) illuminated. (See table 5-4, 28.)
(9) Set SELF TEST switch S5 (11) to SELF TEST.
(lo) Observe all lamps on front panel illuminated. (See table 5-4, 29 through 32.)
(11) Observe DATA WORD display DS12 (23) reads 888 with all segments present (figure 5-10.) (See table 5-4, 52 and 25).
(12) Set SELF TEST switch S5 (11) to the off (down) position.
(13) Set TS MON switch S11 (52) to 115 VAC.
(14) Connect DVM positive lead to TP9 (50).
(15) Connect DVM negative lead to TP10 (51).
(16) Read 108 Vac to 122 Vac on DVM. (See table 5-4, 33.)
(17) Set TS MON switch S11 (52) to 28 VDC.
(18) Read 24 Vdc to 32 Vdc on DVM. (See table 5-4, 34.)
(19) Set TS MON switch S11 (52) to +10V.
(20) Read 9.995 Vdc to 10.006 Vdc on DVM. (See table 5-4, 35 and 37.)
(21) Set TS MON switch S11 (52) to-10V.
(22) Read -9.995 Vdc to -10.005 Vdc on DVM. (See table 5-4, 36 and 38.)
(23) Set TS MON switch S11 (52) to 5V.

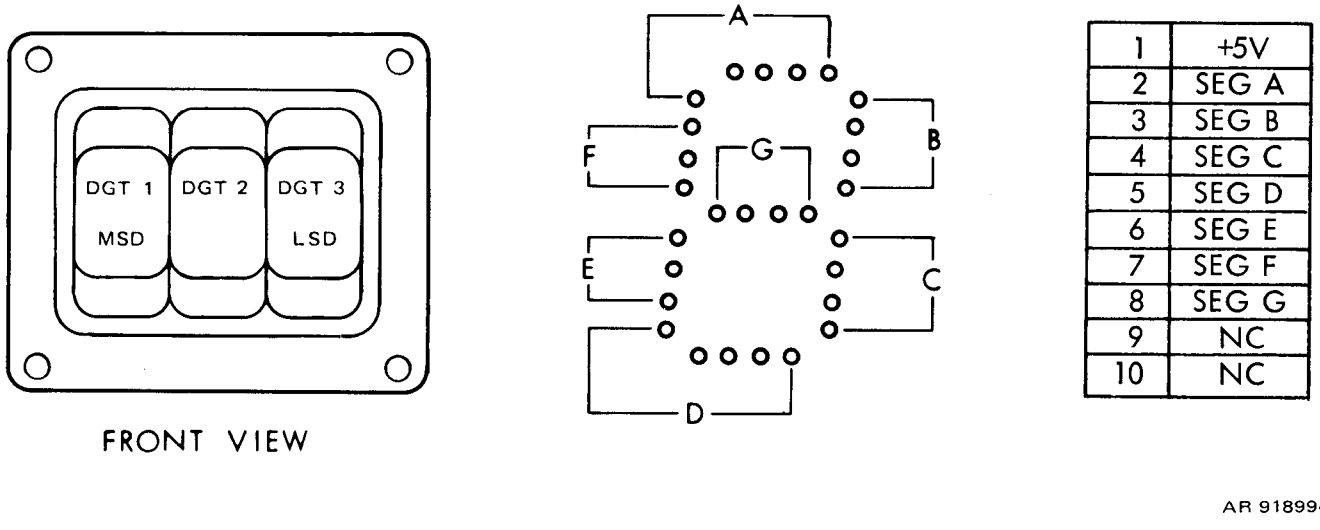


Figure 5-10. 3-Digit Readout Segments

(24) Read 4.90 Vdc to 5.10 Vdc on DVM. (See table 5-4, 39.)
(25) Disconnect DVM from TP9 (50) and TP10 (51).
(26) Set POWER TEST switch S12 (53) to LAI 15V.
(27) Connect DVM positive lead to TP11 (49).
(28) Connect DVM negative lead to TP12 (43).
{29) Read 14.80 Vdc to 15.20 Vdc on DVM. (See table 5-4,40 and 41.)
(30) Set POWER TEST switch S12 (53) to LAI -15V.
(31) Read -14.80 Vdc to -15.20 Vdc on DVM. (See table 5-4,42 and 43.)

b. *EPU 28V Switch S73 Functional Check.* Check EPU 28V switch S13 and associated circuits as follows:
(2) Ensure DVM negative lead connected to TP12 (43).
(3) Set POWER TEST switch S12 (53) to EPU 28V.
(4) Read 24 Vdc to 32 Vdc on DVM. (See table 5-4, 44.)
(5) Connect positive DVM lead to TP14 (29).
(6) Read 24 Vdc to 32 Vdc on DVM. (See table 5-4, 45.)
(7) Press EPU 28V switch S13 (26) and read O Vdc on DVM. (See table 5-4, 46.)
{8) Release EPU 28V switch S13 (26).

c. *LAI +15V Switch S14 Functional Check. Check* LAI +15V switch S14 and associated circuits as follows:
(1) Set POWER TEST switch S12 (53) to LAI +15V.
(2) Read 14.80 Vdc to 15.20 Vdc on DVM. (See table 5-5, 47.)
(3) Press LAI +15V switch S14 (27) and read OV on DVM. (See table 5-4, 48.)
(4) Release LAI +15V switch S14 (27).

d. *LAI -15V Switch S15 Functional Check.* Check LAI -15V switch S14 and associated circuits as follows:
(1) Set POWER TEST switch S12 (53) to LAI -15V.
(2) Read -14.80 Vdc to -15.20 Vdc on DVM. (See table 5-4, 49.)
(3) Press LAI -15V switch S15 (28) and read OV on DVM. (See table 5-4, 50.)
(4) Release LAI -15V switch S15 (28).

e. Chassis Power Distribution Function Check. Check chassis power distribution as follows:
(1) Ensure DVM negative lead connected to TP12 (43).
(2) Using DVM positive lead, read the specified voltage at each of the following connector pins: (See table 5-4, 51.)

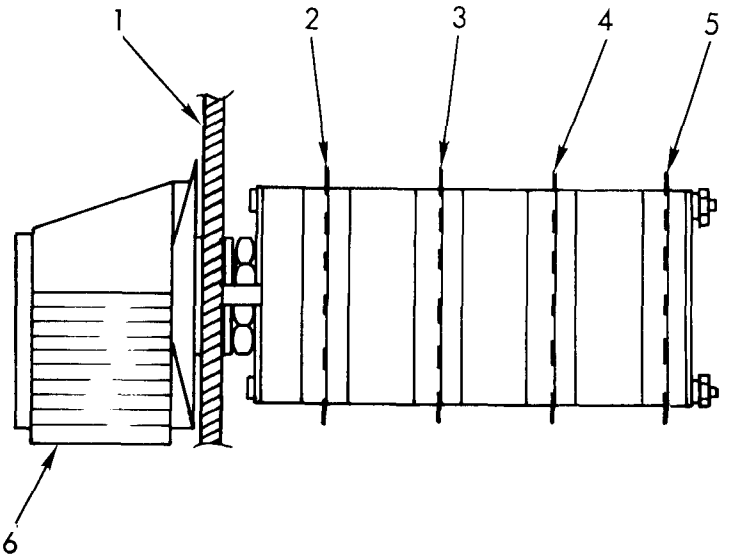
Pin	Vdc
J3-2 (38)	-14.80 to -15.20
J3-14	14.80 to 15.20
J4-I7 (36)	24 to 32
J4-25	24 to 32
J4-26	24 to 32

(3) Position panel/chassis with back of front panel toward test personnel.
(4) Using DVM positive lead, read the specified voltage at each of the following pins. (See figures 5-11 and 5-12) (See table 5-4, 52.)

Pin	Vdc
S4-1	4.50 to 5.50
S19-3	4.50 to 5.50
S11A-5	4.50 to 5.50
DS12P1-1	4.50 to 5.50
DS12P2-1	4.50 to 5.50
DS12P3-1	4.50 to 5.50

(5) Set circuit breakers CB1 (47) and CB2 (46) OFF.
(6) Remove CCA's 1A1, 1A2 and 1A3 in accordance with Chapter 6.
(7) Set circuit breakers CB1 (47) and CB2 (46) ON.
(8) Using DVM positive lead, read the specified voltage at each of the following pins. (See figure 5-8). (See table 5-4, 52.)

Pin	Vdc
XA3-44	14.80 to 15.20
XA3-43	14.80 to 15.20
XA3-96	-14.80 to -15.20
XA3-97	-14.80 to -15.20
XA3-21	4.50 to 5.50
XA3-71	4.50 to 5.50
XA2-25	4.50 to 5.50
XA2-26	4.50 to 5.50
XA2-75	4.50 to 5.50
XA2-76	4.50 to 5.50
XA1-25	4.50 to 5.50
XA1-26	4.50 to 5.50



1. FRONT PANEL
2. DECK A
3. DECK B
4. DECK C
5. DECK D
6. KNOB

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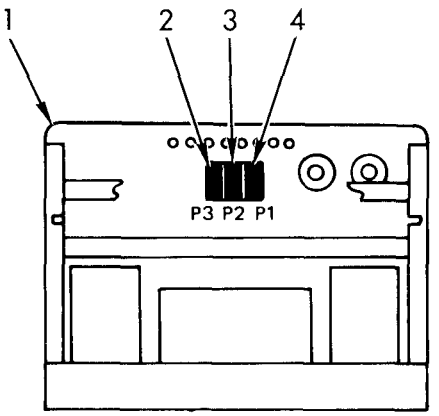
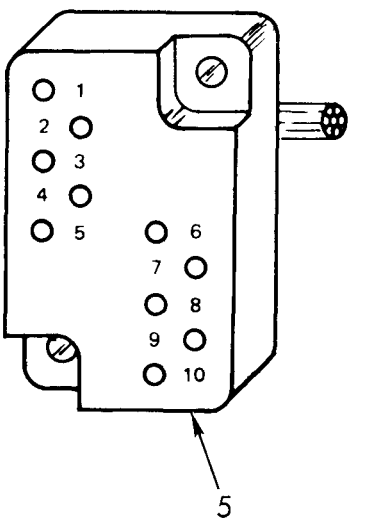
Figure 5-11. Switch Wafer Identification





1. TEST SET REAR VIEW
2. CONNECTOR DS12P3
3. CONNECTOR DS12P2
4. CONNECTOR DS12P1
5. TYPICAL CONNECTOR SHOWING PIN LAYOUT

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Figure 5-12. Front Panel Rear View - DS 12 Locator and Connector Pin Location

Pin	Vdc
XA1-75	4.50 to 5.50
XA1-76	4.50 to 5.50

(9) Set circuit breakers CB1 (47) and CB2 (46) OFF.
(10) Reinstall CCA's 1A1, 1A2 and 1A3 in accordance with Chapter 6.
(11) Set circuit breakers CB1 (47) and CB2 (46) ON.

f. *RDR ALT RELBL Switch S4 Functional Check.* Check RDR ALT RELBL switch S4 and associated circuits as follows:

(1) Set RDR ALT REBL switch S4 (9, figure 2-1) to the off (down) position.
(2) Connect DVM positive lead to pin 54 of J4 (36).
(3) Connect DVM negative lead to TP4 (17).
(4) Read 4.90 Vdc to 5.10 Vdc on DVM. (See table 5-5, 53.)
(5) Set RDR ALT RELBL switch S4 (9) to RDR ALT RELBL.
(6) Read 0.0 Vdc to 0.5 Vdc on DVM. (See table 5-5, 54.)

g. *PANEL LIGHTS Switch S19 Functional Check.* Check PANEL LIGHTS switch S19 and associated circuits as follows:

(1) Connect DVM positive lead to pin 4 of J3 (38).
(2) Connect DVM negative lead to TP4 (17).
(3) Set PANEL LIGHTS switch S19 (37) to PANEL LIGHTS.
(4) Read 4.50 Vdc to 5.50 Vdc on DVM. (See table 5-4, 55.)
(5) Set PANEL LIGHTS switch S19 (37) to the off (down) position.
(6) Read 0.0 Vdc to 0.5 Vdc on DVM. (See table 5-4, 56.)

h. *V_{IU} KN Switch S17 Functional Check.* Check V_{IU} KN switch S17 and associated circuits as follows:

NOTE

This check verifies the operation of switch S17 and associated circuits on circuit card assembly 1A3.

(1) Connect DVM positive lead to TP9 (50).
(2) Connect DVM negative lead to TP10 (51).
(3) Set TS MON switch S11 (52) to V_{IU}.
(4) Set V_{IU} KN switch S17 (31) to each of the following positions and read the specified voltage on the DVM. (See table 5-4, 57 and 58.)

S17 Position	Vdc
OUT AFT	-5.900 to -6.100
-50	-4.950 to -5.050
-20	-1.950 to -2.050
o	-0.050 to 0.050
20	1.950 to 2.050
45	4.450 to 4.550
51	5.050 to 5.150
OUT FWD	5.900 to 6.100

i. *VI V KN Switch S18 Functional Check. Check* V_{IV} KN switch S18 and associated circuits as follows:

NOTE

This check verifies the operation of switch S18 and associated circuits on circuit card assembly 1A3.

(1) Set TS MON switch S11 (52) to V_{IV}.
(2) Set V_{iv} KN switch S18 (32) to each of the following positions and read the specified voltage on the DVM. (See table 5-4,59 and 60.)

S18 Position	Vdc
OUT LEFT	-5.900 to -6.100
-50	-4.950 to -5.050
-20	-1 .950 to *-2.050*
o	-0.050 to 0.050
20	1.950 to *2.050*
50	4.950 to 5.050
OUT RIGHT	5.900 to 6.100

j. *RDR ALT FT Switch S7 Functional Check.* Check RDR ALT FT switch S7 and associated circuits as follows:

NOTE

This check verifies the operation of switch S7 and associated circuits on circuit card assembly 1A3.

(1) Set TS MON switch S11 (52) to RDR ALT.
(2) Set RDR ALT FT switch S7 (24) to each of the following positions and read the specified voltage on the DVM. (See table 5-4,61 and 62.)

S7 Position	Vdc
0	-0.014 to 0.014
5	-0.021 to -0.049
10	-0.056 to -0.084
15	-0.091 to -0.119
20	-0.126 to -0.154
25	-0.161 to -0.189
30	-0.196 to -0.224

k. *Circuit Card Assembly 1A2 Functional Check.* Check circuit card assembly 1A2 as follows:

(1) Set circuit breakers CB1 (47) and CB2 (46) to OFF.
(2) Set OUTPUT SEL 1 switch S9 (21) to DTR.
(3) Set DATA MODE switch S1 (4) to CONT.
(4) Set DATA WD SEL switch S8 (22) to V_U.
(5) Connect a jumper wire between pins 47 and 56 of connector J4 (36).
(6) Connect a jumper wire between pins 48 and 62 of connector J4 (36).
(7) Connect oscilloscope positive lead to TP1 (20).
(8) Connect oscilloscope negative lead to TP4 (17).
(9) Connect oscilloscope external trigger input to TP5 (16).
(10) Set circuit breakers CB1 (47) and CB2 (46) to ON.
(11) Observe waveform 1, figure 5-13. (See table 5-4, 63.)
(12) Set OUTPUT SEL 1 switch S9 (21, figure 2-1) to CLK.
(13) Set DATA WD SEL switch S8 (22) to STAT 2.
(14) Observe waveform 2, figure 5-13. (See table 5-4, 64.)
(15) Confirm PARITY FLR lamp (6), figure 2-1 is illuminated. (See table 5-4, 65).
(16) Set circuit breakers CB1 (47) and CB2 (46) OFF.
(17) Disconnect oscilloscope leads and jumper wires from panel/chassis.
(18) Set circuit breakers CB1 (47) and CB2 (46) ON.
(19) Set DATA WD SEL switch SB (22) to VDW.
(20) Confirm PARITY FLR lamp (6) is illuminated. (See table 5-4, 66.)
(21) Set circuit breakers CB1 (47) and CB2 (46) to OFF.
(22) Set DATA WD SEL switch S8 (22) to V_U.
(23) Connect jumper wire between pin 4 of J3 (38) and pin 46 of J4 (46).
(24) Connect jumper wire between pin 1 of J3 (38) and pin 53 of J4 (46).
(25) Set circuit breakers CB1 (47) and C82 (46) to ON.
(26) Confirm DATA WORD display (23) shows 255. (See table 5-4, 67.)
(27) Confirm DATA WORD lamps 7 through 0 (3) are illuminated. (See table 5-4, 68.)
(28) Set DATA MODE switch S1 (4) to HOLD.
(29) Confirm DATA WORD display (23) shows 255. (See table 5-4, 67.)
(30) Confirm DATA WORD lamps 7 through 0 (3) are illuminated. (See table 5-4, 67.)
(31) Set DATA MODE switch S1 (4) to RPT and hold.
(32) Confirm DATA WORD display (23) shows 255. (See table 5-4, 67.)
(33) Confirm DATA WORD lamps 7 through 0 (3) are illuminated. (See table 5-4, 67.)
(34) Set DATA MODE switch S1 (4) to CONT.
(35) Monitor DATA WORD lamps 7 through 0 (3), DATA WORD display (23), and PARITY FLR lamp (6) while setting DATA WD SEL switch S8 (22) through $V_U, V_V, V_W, P_{ABS}, T_{AIR}, V_{DW}$, STAT 1 and STAT 2.
(36) DATA WORD display (23) indicates 255. (See table 5-4, 67.)
(37) DATA WORD lamps 7 through 0 (3) are illuminated. (See table 5-4, 67.)
(38) PARITY FLR lamp (5) illuminates only when DATA WD SEL switch S8 (22) is in STAT 2. (See table 5-4, 67.)
(39) Set circuit breakers CB1 (48) and CB2 (46) to OFF.
(40) Remove all jumper wires from panel/chassis.

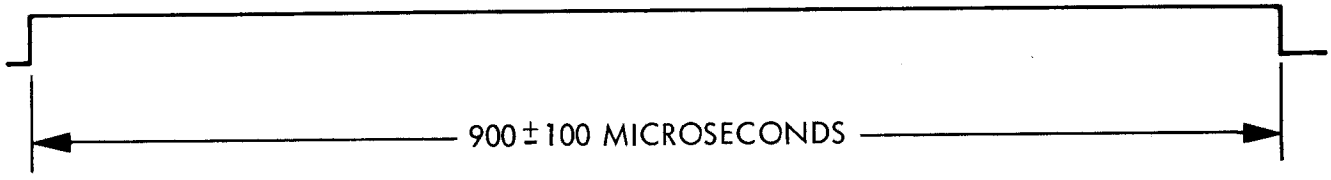
1. *Reference Oscillator Functional Check.*

(1) Set TS MON switch S11 (52) to REF Osc.
(2) Connect DVM and oscilloscope positive leads to TP9 (50).
(3) Connect DVM and oscilloscope negative leads to TP10 (51).

NOTE

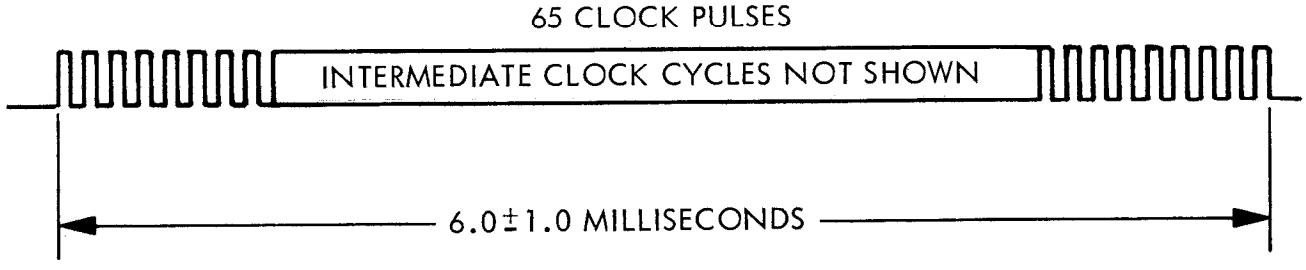
The peak-to-peak voltage displayed on the oscilloscope vertical scale is measured as RMS on the DVM.

(1)



DATA TRANSMIT REQUEST

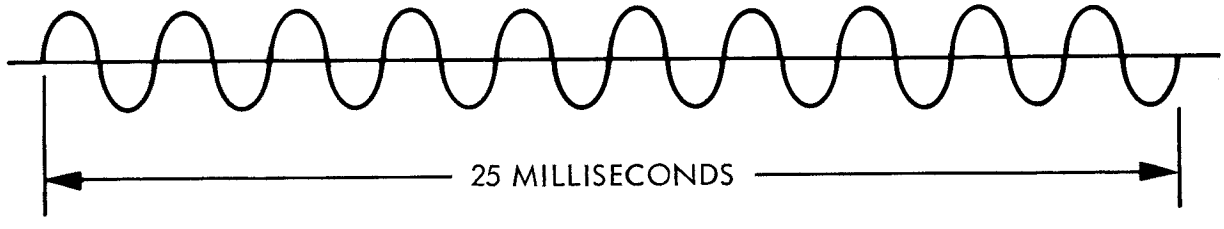
(2)



DATA CLOCK

LOGIC 1 = 2.4V DC MINIMUM
LOGIC 0 = 0.7V DC MAXIMUM

(3)



380HZ TO 420HZ

NOTE: THESE FIGURES SHOW IDEAL WAVEFORMS. ACTUAL WAVEFORMS MAY HAVE SOME NOISE ON THEM.

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Figure 5-13. Waveforms

(4) Set circuit breakers CB1 (47) and CB2 (46) to ON.
(5) Read 6.87 Vac to 7.27 Vac on DVM. Record reading. (See table 5-4, 68 and 69).
(6) Observe 380 Hz to 420 Hz (waveform 3, figure 5-13) on oscilloscope. (See table 5-4, 69.)
(7) Disconnect oscilloscope from panel/chassis.

m. *Resolvers and Peak Detection Circuit Checks.*

NOTE

The reading recorded in paragraph 1, step (5) is required to perform this test.

(1) Connect DVM positive lead to TP9 (50).
(2) Connect DVM negative lead to TP10 (51).
(3) Set circuit breakers CB1 (47) and CB2 (46) to OFF.
(4) Connect test cable (figure 1-3) between connectors J4 (36, figure 2-1) and J5 (34).
(5) Set circuit breakers CB1 (47) and CB2 (46) to ON.

CAUTION

Excessive rate of resolver drive rotation will result in damage to the drive assembly.

NOTE

The DVM must be set to the one-volt ac scale to provide sufficient sensitivity.

(6) Set TS MON switch S11 (52) to SIN α.
(7) Set α resolver B1 (1) to 0.0°.
(8) Check DVM for indication less than 0.010 Vat. (See table 5-4, 70.)
(9) Set α resolver BI (1) to 180.0°.
(10) Check DVM for indication less than 0.010 Vat. (See table 5-4, 70.)
(11) Set TS MON switch S11 (52) to COS α
(12) Set α resolver B1 (1) to 270.0°.
(13) Check DVM for indication less than 0.010 Vac. (See table 5-4, 70.)
(14) Set α resolver B1 (1) to 90.0°.
(15) Check DVM for indication less than 0.010 Vac.
(16) Set TS MON switch S11 (52) to SIN ($\alpha-\beta$).
(17) Set α-β resolver B2 (2) to 0.0°.
(18) Check DVM for indication less than 0.010 Vac (See table 5-4, 70.)
(19) Set α-β resolver B2 (2) to 180.0°.
(20) Check DVM for indication less than 0.010 Vac. (See table 5-4, 70.)
(21) Set TS MON switch S11 (52) to COS α-β.
(22) Set α-β resolver B2 (2) to 270.0°.
(23) Check DVM for indication less than 0.010 Vac (See table 5-4, 70.)
(24) Set α-β resolver B2 (2) to 90.0°.
(25) Check DVM for indication less than 0.010 Vac. (See table 5-4, 70.)

NOTE

For the following tests, the DVM must be set to the 10 Vdc range.

(26) Move DVM positive lead from TP9 (50) to TP15 (40).
(27) Move DVM negative lead from TP10 (51) to TP16 (39).
(28) Set AADS TEST switch S16 (30) to REF OSC.
(29) Record DVM reading (9 to 11 Vdc nominal). (See table 5-4, 71 and 72.)
(30) Set AADS TEST switch S16 (30) to SIN α.
(31) Set α resolver B1 (1) to 90.0°.
(32) Carefully adjust α resolver B1 (1) for maximum positive dc voltage. Record voltage. (See table 5-4, 73 and 76.)
(33) Dual-speed dial shall indicate between 89.9° and 90.1°. (See table 5-4, 75.)
(34) Voltage recorded in step (32) shall be within 0.136 Vdc of the voltage recorded in step (29) multiplied by 0.440. (See table 5-4, 74.)
(35) Set AADS TEST switch S16 (30) to COS α.
(36) Set α resolver B1 (1) to 0.0°.
(37) Carefully adjust α resolver B1 (1) for maximum positive dc voltage. Record voltage.
(38) Dual-speed dial shall indicate between 359.9 and 0.1°. (See table 5-4, 75.)

(39) Voltage recorded in step (37) shall be within 0.136 Vdc of the voltage recorded in step {29) multiplied by 0.440. (See table 5-4, 74.)

(40) Set AADS TEST switch S16 (30) to SIN $(\alpha-\beta)$.

(41) Set $\alpha-\beta$ resolver B2 (2) to 90.0°.

(42) Carefully adjust $\alpha-\beta$ resolver B2 (2) for maximum positive dc voltage. Record voltage. (See table 5-4, 73 and 76.)

(43) Dual-speed drive shall indicate between 89.9° and 90.1°. (See table 5-4, 75.)

(44) Voltage recorded in step (42) shall be within 0.136 Vdc of the voltage recorded in step (29) multiplied by 0.440. (See table 5-4, 74.)

(45) Set AADS TEST switch S16 (30) to COS $(\alpha-\beta)$.

(46) Set $\alpha-\beta$ resolver B2 (2) to 0.0°.

(47) Carefully adjust $\alpha-\beta$ resolver B2 (2) for maximum positive dc voltage. Record voltage.

(48) Dual-speed drive shall indicate between 359.9° and 0.0°. (See table 5-4, 75.)

(49) Voltage recorded in step (47) shall be within 0.136 Vdc of the voltage recorded in step (29) multiplied by 0.440. (See table 5-4, 74.)

(50) Set circuit breakers CB1 (47) and CB2 (46) to OFF.

(51) Disconnect power cables W1 and W2 from facility power.

(52) Disconnect power cables from test set.

(53) Remove test cable.

5.13. Troubleshooting. Table 5-4 lists corrective actions in checkout procedure order. A malfunction is identified, a corrective action is stated and direction is given for disposition.

Table 5-4. *Troubleshooting*

Malfunction Test or Inspection Corrective Action

NOTE

This table lists malfunctions in the order they are met in the checkout procedure. Refer to Chapter 6 Section II for component removal and Section V for installation. If any malfunction continues after all listed corrective actions have been taken, send the test set to higher maintenance for repair.

Failure isolation shop set will help identify failed circuit card assemblies.

1. OPEN CIRCUIT BETWEEN TP4 AND J4-59 WITH S2 SET TO CPU TEST.
   Step 1. Check witch S2.
   Replace switch S2.
   Step 2. Perform continuity check of wiring to S2. (See paragraph 5-14 and figure F0-1.)
   Repair wiring as necessary

2. SHORT CIRCUIT BETWEEN TP4 AND J4-59 WITH S2 SET TO OFF (DOWN) POSITION.
   Step 1. Check witch S2.
   Replace switch S2.

3. OPEN CIRCUIT BETWEEN TP4 AND J4-60 WITH S3 SET TO LAI FLR,
   Step 1. Check switch S3.
   Replace switch S3.
   Step 2. Perform continuity check of wiring to S3, (See paragraph 5-14 and figure FO-1.)
   Repair wiring as necessary.

Table 5-4. Troubleshooting - Contined

Malfunction Test or Inspection Corrective Action
4. SHORT CIRCUIT BETWEEN TP4 AND J4-60 WITH S3 SET TO OFF (DOWN) POSITION. Step 2. Check switch S3. Replace switch S3.
5. OPEN CIRCUIT BETWEEN TP4 AND J3-13 WITH S20 SET TO ADS FLR. Step 1. Check switch S20. Replace switch S20. Step 2. Perform continuity check of wiring to S20. (See paragraph 5-14 and figure FO-1.) Repair wiring as necessary.
6. SHORT CIRCUIT BETWEEN TP4 AND J3-13 WITH S20 SET TO OFF (DOWN) POSITION. Step 1. Check switch S20. Replace switch S20.
7. NO CONTINUITY BETWEEN TP7 OR TP8 AND ANY OF THE CONNECTOR PINS DESIGNATED IN S10 WIRING CHECK. Step 1. Perform continuity check of appropriate wiring. (See paragraph 5-14 and figure FO-1.) Repair wiring as necessary. Step 2. Check switch S10. Replace switch S10.
8. NO CONTINUITY BETWEEN TP7 AND TP8 WITH S10 SET TO LAI +15V. Step 1. Perform continuity check of appropriate wiring. (See paragraph 5-14 and figure FO-1.) Repair wiring as necessary. Step 2. Check resistor R2. Replace resisitor R2.
9. RESISTANCE BETWEEN TP7 AND TP8 OUT OF TOLERANCE WITH S10 SET TO LAI +15. Step 1. Check resistor R2. Replace resistor R2.
10. NO CONTINUITY BETWEEN TP7 AND TP8 WITH S10 SET TO LAI -15V. Step 1. Perform continuity check of appropriate wiring. (See paragraph 5-14 and figure F0-1.) Repair wiring as necessary. Step 2. Check resistor R3. Replace resistor R3.
11. RESISTANCE BETWEEN TP7 AND TP8 OUT OF TOLERANCE WITH S10 SET TO LAI -15V. Step 1. Check resistor R3. Replace resistor R3.
12. NO CONTINUITY BETWEEN TP1 AND TP3 AT ANY POSITION OF S6 WITH S9 SET TO ATS. Step 1. Perform continuity check of wiring to S6. (See paragraph 5-14 and figure FO-1.) Repair wiring as necessary. Step 2. Check switch S6. Replace switch S6. Step 3. Replace CCA 1A3.

Table 5-4. Troubleshooting - Continued

Malfunction Test or Inspection Corrective Action

13. RESISTANCE OUT OF TOLERANCE AT ANY POSITION OF S6 DURING S6 WIRING CHECK.
Step 1. Exercise switch S6 repeatedly.
Step 2. Confirm resistance out of tolerance.
Step 3. Check chassis wiring for high-resistance connections.
Repair as necessary.
Step 4. Replace CCA 1A3.

14. NO CONTINUITY BETWEEN TP1, TP2, TP3, OR TP5 AND ANY OF THE CONNECTOR PINS DESIGNATED IN THE SWITCH S9 WIRING CHECK.
Step 1, Perform continuity check of appropriate wiring. (See paragraph 5-14 and figure F0-1.)
Repair wiring as necessary.
Step 2. Check switch S9.
Replace switch S9.

15. NO CONTINUITY BETWEEN TP9 OR TPIOAND ANY OF THE CONNECTOR PINS DESIGNATED IN SWITCH S11 WIRING CHECK.
Step 1. Perform continuity check of appropriate wiring. (See paragraph 5-14 and figure F0-1.)
Repair wiring as necessary.
Step 2. Check switch S11.
Replace switch S11.

16. NO CONTINUITY BETWEEN ANY OF THE POINTS DESIGNATED IN S16 WIRING CHECK.
Step 1. Perform continuity check of appropriate wiring. (See paragraph 5-14 and figure F0-1.)
Repair wiring as necessary.
Step 2. Check switch S16.
Replace switch S16.

17. OPEN CIRCUIT BETWEEN TP4 AND XA2-47 WITH S1 SET TO CONT OR BETWEEN TP4 AND XA2-48 WITH S1 SET TO RPT.
Step 1. Perform continuity check of wiring to S1. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 2. Check switch S1.
Replace switch S1.

18, SHORT CIRCUIT BETWEEN TP4 AND EITHER XA2-47 OR XA2-48 WITH S1 IN HOLD.
Step 1. Check switch S1.
Replace switch S1.

19. OPEN CIRCUIT BETWEEN TP4 AND ANY DESIGNATED PINS IN S8 WIRING CHECK.
Step 1. Perform continuity check of appropriate wiring. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 2. Check switch S8.
Replace switch S8.

20. NO CONTINUITY BETWEEN TP4 AND ONE OR MORE POINTS DESIGNATED IN CHASSIS WIRING CHECK.
Step 1. Perform continuity check of appropriate wiring. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.

21. NO CONTINUITY OR OUT OF TOLERANCE RESISTANCE BETWEEN ONE OR MORE CHECK POINTS, DESIGNATED IN CHASSIS WIRING CHECK.
    Step 1. Perform continuity check of appropriate wiring. (See paragraph 5-14 and figure FO-1.)
    Repair wiring as necessary.

Table 5-4. Troubleshootting – Continued

Malfunction Test or Inspection Corrective Action

22. CIRCUIT BREAKERCBI FAILS TO LATCH IN ON.
    Step 1. Check bench 115 Vac power.
    Correct as necessary.
    Step 2. Perform continuity/short circuit checks on ac input power lines. (See paragraph 5-14 and figure FO-1.)
    Repair wiring as necessary.
    Step 3. Check circuit breaker CB1.
    Replace circuit breaker CB1.

23. 115 VAC LAMP FAILS TO ILLUMINATE WHEN CB1 IS ON.
    Step 1. Check 115 VAC lamp.
    Replace 115 VAC lamp.
    Step 2. With S11 set to 115 VAC, confirm 115 Vac present at TP9 and TP10. If present, proceed to step 7.
    If absent, proceed to step 3.
    Step 3. Check circuit breaker CB1.
    Replace circuit breaker CB1.
    Step 4. Check filter FL1.
    If filter is defective, send test set to higher maintenance for repair.
    Step 5. Check filter FL2.
    If filter is defective, send test set to higher maintenance for repair.
    Step 6. Check diode CRI.
    Replace diode CR1.
    Step 7. Check resistor R1.
    Replace resistor R1.
    Step 8. Perform continuity check on ac input power lines. (See paragraph 5-14 and figure FO-1.)
    Repair wiring as necessary.

24. NO DISPLAY ON DATA WORD READOUT (DS12) WHEN 115 VAC IS ON.
    Step 1. With S11 set to 5V, confirm that +5 Vdc is present between TP9 and TP10. If present, proceed to step 4; if not, proceed to step 2.
    Step 2. Confirm that 115 Vac is present at power supply PS1 input terminals. (See figures 5-9 and FO-1.)
    Repair wiring as necessary.
    Step 3. Confirm that +5 Vdc is present at PS1 output terminals. (See figures 5-9 and FO-1.)
    Replace power supply PS1.
    Step 4. Remove CCA 1A1. Confirm +5 Vdc present at motherboard connector XA1, pins 25, 26, 75, 76. (See figure 5-8.)
    If present, install replacement CCA 1A1; if not, reinstall CCA 1A1 and proceed to step 5.
    Step 5. Remove CCA 1A2. Confirm +5 Vdc present at motherboard connector XA2, pins 25, 26, 75, 76. (See figure 5-8.) Reinstall CCA 1A2.
    Step 6. Disconnect connectors P2 and P3 (figure 5-9) and confirm +5 Vdc present at connectors P2 and P3 between all +5 Vdc and 0 Vdc pins. (See paragraph 5-14 and figure FO-1.) Reconnect connectors P2 and P3 after signal tracing.
    If voltage is present, send test set to higher maintenance for repair; if not, repair wiring as necessary.
    Step 7. Confirm +5 Vdc present at DS12 connectors P1, P2, and P3. (See paragraph 5-14 and figure FO-1.)
    Repair wiring as necessary.
    Step 8. Replace DATA WD readout DS12.

Table 5-4. Troubleshooting – Continued

Malfunction Test or Inspection Corrective Action

25. ONE OR MORE SEGMENTS MISSING FROM ANY DATA WD READOUT DIGIT.

Step 1. Perform voltage check in accordance with paragraph 5-12.e. (4).

Step 2. Disconnect connector P3 from underside of motherboard, set circuit breakers CB1 and CB2 OFF, and perform continuity check of relevant circuits between connector PS and DS12P1, DS12P2, and/or DS12P3. (See paragraph 5-14 and figure FO-1.) Reconnect connectors after continuity checks.
Repair wiring as necessary.

Step 3, Replace CCA 1A1.

Step 4. Replace DATA WD readout DS12.

26. CIRCUIT BREAKER CB2 FAILS TO LATCH IN THE ON POSITION.

Step 1. Check bench 28 Vdc supply.
Correct as necessary.

Step 2. Perform continuity/short circuit checks on dc input power lines. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.

Step 3. Check circuit breaker CB2.
Replace circuit breaker CB2.

27.28 VDC LAMP FAILS TO ILLUMINATE WHEN CB2 IS ON.

Step 1. Check 28 Vdc lamp.
Replace 28 Vdc lamp.

Step 2. Check circuit breaker CB2.
Replace circuit breaker CB2.

Step 3. Check capacitor C1.
If capacitor is defective, send test set to higher maintenance for repair.

Step 4. Check capacitor C2.
If capacitor is defective, send test set to higher maintenance for repair.

Step 5. Perform continuity check on dc input power lines. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.

28. ADS NO GO LAMP FAILS TO ILLUMINATE WITH CB2 ON.

Step 1. With S5 in SELF TEST, confirm all other lamps on front panel illuminate.
If lamps illuminate, proceed to step 2; if not, proceed to table 5-4,32.

Step 2. Check ADS NO GO lamp.
Replace ADS NO GO lamp.

Step 3. Perform continuity check of wiring between XDS11 and P3 (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.

Step 4. Replace CCA 1A1.

29. LAMPS DS1 THROUGH DS11 AND DS13 NOT ILLUMINATED WITH S5 IN SELF TEST.

Step 1. With S11 in 28 Vdc, confirm 28 Vdc present at TP9 and TP10.
If present, proceed to step 3; if not, proceed to step 2.

Step 2. Check diode CR2.
Replace diode CR2.

Step 3. Perform continuity check of dc input power lines to XDS11 and XDS13. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.

Step 4. Check lamps DSI through DS11 and DS13.
Replace lamps.

Table 5-4. Troubleshooting - Continued

Malfunction
Test or Inspection
Corrective Action

Step 5. Check switch S5.
Replace switch S5.
Step 6. Perform continuity checks of wiring around S5. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 7. Replace CCA 1A1.
Step 8. Replace CCA 1A2.

30. LAMPS DS1 THROUGH DS11 ILLUMINATED, DS13 NOT ILLUMINATED WITH S5 IN SELF TEST.
Step 1. Check lamp DS13.
Replace lamp DS13.
Step 2. Perform continuity check of dc input power lines to XDS13. (See paragraph 5-14 and figure, F0-1.)
Repair wiring as necessary.
Step 3. Perform continuity check of wiring between XDS13 and P3. (See paragraph 5-14 and figure F0-1.)
Repair wiring as necessary.
Step 4. Replace CCA 1A1.

31. LAMP DS13 ILLUMINATED, LAMPS DSI THROUGH DS11 NOT ILLUMINATED WITH S5 IN SELF TEST.
Step 1. Perform continuity check of dc input power lines to XDSI 1. (See paragraph 5-14 and figure F0-1.)
Repair wiring as necessary.
Step 2. Check lamps DS1 through DS11.
Replace lamps.
Step 3. Replace CCA 1A1.

32. LAMP DS13 ILLUMINATED, ONE OR MORE LAMPS DS1 THROUGH DS11 NOT ILLUMINATED WITH S5 IN SELF TEST.
Step 1. Check lamps that fail to illuminate.
Replace lamps.
Step 2. Perform continuity check between lamp sockets and P3. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 3. Replace CCA 1A1.

33. VOLTAGE BETWEEN TP9 AND TP10 NOT 108 VAC TO 122 VAC WITH S11 IN 115 VAC.
Step 1. Check 115 Vac bench power.
Correct as necessary.

34. VOLTAGE BETWEEN TP9 AND TP10 NOT 24 VDC TO 32 VDC WITH S11 IN 28 VDC.
Step 1. Check 28 Vdc bench power.
Correct as necessary.

35. NO VOLTAGE BETWEEN TP9 AND TP10 WITH S11 IN +10V.
Step 1. Set S11 to V_{IU}. SET S17 TO OUT FWD. Confirm +6 Vdc present between TP9 and TP10.
If present, replace CCA 1 A3; if not, proceed to step 2.

Table 5-4. Troubleshooting - Continued

Malfunction
Test or Inspection
Corrective Action

Step 2. Set S17 to OUT AFT. Confirm -6 Vdc present between TP9 and TP10.
If present, replace CCA 1A3; if not, proceed to step 3.
Step 3. Set S12 to LAI +15V. Confirm +15 Vdc between TP12 (-) and TP11 (+). Set S12 to LAI -15V. Confirm -15 Vdc present.
If both voltages are present proceed to step 7. If +15 Vdc is present but not –15 Vdc, proceed to step 6. If -15 Vdc is present but not +15 Vdc, proceed to step 5. If neither voltage is present, proceed to step 4.
Step 4. Confirm 115 Vac present at PS2 input terminals. (See figure 5-9 and figure FO-1.)
Repair wiring as necessary.
Step 5. Confirm +15 Vdc present at PS2 +15V output terminals. (See figure 5-9 and figure FO-1.)
Replace power supply PS2.
Step 6. Confirm -15 Vdc present at PS2 -15V output terminals. (See figure 5-9 and figure FO-1.)
Replace power supply PS2.
Step 7. Confirm +15 Vdc and -15 Vdc present at all applicable P1 pins. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 8. Replace CCA 1A3.

36. NO VOLTAGE PRESENT BETWEEN TP9 and TPIO WITH S11 IN -10V.
Step 1. Set S11 to V_{IU}. Set S17 to OUT AFT. Confirm -6 Vdc present.
Step 2. Replace CCA 1A3.

37. VOLTAGE BETWEEN TP9 AND TP10 NOT +9.995 VDC TO +10.005 VDC WITH S11 IN +10V.
Step 1. Confirm voltage out of tolerance.
Step 2. Replace CCA 1A3.

38. VOLTAGE BETWEEN TP9 AND TP10 NOT -9.995 VDC TO -10.005 VDC with S11 IN -10V.
Step 1. Confirm voltage out of tolerance.
Step 2. Replace CCA 1A3.

39. VOLTAGE BETWEEN TP9 AND TP10 NOT 4.90 VDC TO 5.10 VDC WITH S11 IN 5V.
Step 1. Adjust PS1 in accordance with Chapter 6.
Replace power supply PS1,

40. NO VOLTAGE BETWEEN TP11 AND TP12 WITH S12 SET TO LAI +15V.
Step 1. Perform continuity check of wiring to S12. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 2. Check switch S12.
Replace switch S12.

41. VOLTAGE BETWEEN TP11 AND TP12 NOT +14.80 VDC TO +15.20 VDC WITH S12 IN LAI -15V.
Step 1. Adjust PS2 + 15 Vdc in accordance with Chapter 6.
Step 2. Replace power supply PS2.

42. *NO* VOLTAGE BETWEEN TP11 AND TP12 WITH S12 SET TO LAI -15V.
Step 1. Perform continuity check of wiring to S12.
Repair wiring as necessary.

Table 5-4. Troubleshooting - Continued

Malfunction
Test or Inspection
Corrective Action

Step *2.* Check switch S12.
Replace switch S12.

43. VOLTAGE BETWEEN TP11 AND TP12 NOT -14.80 VDC TO -15.20 VDC WITH S12 IN LAI -15V.
Step 1. Adjust PS2 -15 Vdc in accordance with Chapter 6.
Step 2. Replace power supply PS2.

44. NO VOLTAGE BETWEEN TP13 AND TP12 WITH S12 IN EPU 28V.
Step 1. Perform continuity check of wiring to S12. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 2. Check switch S12.
Replace switch S12.

45. NO VOLTAGE BETWEEN TP14 AND TP12 WITH S12 IN EPU 28V.
Step 1. Perform continuity check of wiring to S12 and S13. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 2. Check switch S12.
Replace switch S12.
Step 3. Check switch S13.
Replace switch S13.

46. VOLTAGE BETWEEN TP14 AND TP12 NOT O VDC WITH S12 SET T0 EPU 28V AND S13 PRESSED.
Step 1. Check switch S13.
Replace switch S13.

47. NO VOLTAGE BETWEEN TP14 AND TP12 WITH S12 IN LAI +15V.
Step 1. Perform continuity check of wiring to S12 and S14. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 2. Check switch S12.
Replace switch S12.
Step 3. Check switch S14.
Replace switch S14.

48. VOLTAGE BETWEEN TP14 AND TP12 NOT 0 VDC WITH S12 IN LAI +15V AND S14 PRESSED.
Step 1. Check switch S14.
Replace switch S14.

49. NO VOLTAGE BETWEEN TP14 AND TP12 WITH S12 IN LAI -15V.
Step 1. Perform continuity check of wiring to S12 and S15. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 2. Check switch S12.
Replace switch S12.
Step 3. Check switch S15.
Replace switch S15.

50. VOLTAGE BETWEEN TP14 AND TP15 NOT 0 VDC WITH S12 IN LAI -15V AND S15 PRESSED.
Step 1. Check switch S15.
Replace switch S15.

Table 5-4. Troubleshooting - Continued

Malfunction
Test or Inspection
Corrective Action

51. NO VOLTAGE BETWEEN TP12 AND ANY OF J3-2, J3-14, J4-17, J4-25 or J4-26.
Step 1. Perform continuity check of appropriate wiring. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.

52. VOLTAGES AT S4, S19, S11, DS12, P1, P2 AND P3 OUT OF TOLERANCE
Step 1. Perform continuity check of appropriate wiring. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.

53, NO VOLTAGE BETWEEN TP4 AND J4-54 WITH S4 IN THE OFF (DOWN) POSITION.
Step 1. Perform continuity check of wiring to S4. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 2. Check switch S4.
Replace switch S4.

54. VOLTAGE BETWEEN TP4 AND J4-54 OUT OF TOLERANCE WITH S4 IN RDR ALT RELBL.
Step 1. Check switch S4.
Replace switch S4.

55. NO VOLTAGE BETWEEN TP4 AND J3-4 WITH S19 IN PANEL LIGHTS.
Step 1. Perform continuity check of wiring to S19. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 2. Check switch S19.
Replace switch S19.

56. VOLTAGE BETWEEN TP4 AND J3-4 OUT OF TOLERANCE WITH S19 IN OFF (DOWN) POSITION.
Step 1. Check switch S19.
Replace switch S19.

57. NO VOLTAGE BETWEEN TP9 AND TPIO WITH S11 IN V_{IU} AND S17 IN EVERY POSITION.
Step 1. Perform continuity check of UB V_{IU} SIG circuit between P1 and S17. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 2. Perform continuity check of V_{IU} SIG circuit between P1 and J3. (See paragraph 5-14 and figure F0-1.) FO-1.)
Repair wiring as necessary.
Step 3. Check switch S17.
Replace switch S17.
Step 4. Replace CCA 1A3.

58. NO VOLTAGE BETWEEN TP9 AND TP10 AT ONE OR MORE POSITIONS OF S17 WITH S11 IN V_{IU} KN.
Step 1. Perform continuity check of relevant circuits between P1 and S17. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 2. Replace CCA 1A3.

Table 5-4. Troubleshooting - Continued

Malfunction
Test or Inspection
Corrective Action

59. NO VOLTAGE BETWEEN TP9 AND TP10 WITH S11 IN V_{IV} AND S18 IN EVERY POSITION.
Step 1. Perform continuity check of UB V_{IV} SIG circuit between P1 and S18. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 2. Perform continuity check of V_{IV} SIG circuit between P1 and J3. (See paragraph 5-14 and figure FO-1.) FO-1.)
Repair wiring as necessary.
Step 3. Check switch S18.
Replace switch S18.
Step 4. Replace CCA 1A3.

60. NO VOLTAGE BETWEEN TP9 AND TP10 ATONE OR MORE POSITIONS OF S18 WITH S11 IN V_{IV} KN.
Step 1. Perform continuity check of relevant circuits between P1 and S18. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 2. Replace CCA 1A3.

61. NO VOLTAGE BETWEEN TP9 AND TP10 WITH S11 IN RDR ALT AND S7 IN EVERY POSITION.
Step 1. Perform continuity check of UB RDR SIG circuit between P1 and S7. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 2. Check switch S7.
Replace switch S7.
Step 3. Replace CCA 1A3.

62. NO VOLTAGE BETWEEN TP9 AND TP10 AT ONE OR MORE POSITIONS OF S7 AND S11 IN RDR ALT.
Step 1. Perform continuity check of relevant circuits between P1 and S7. (See paragraph 5-14 and figure FO-1.)
Repair wiring as necessary.
Step 2. Replace CCA 1A3.

63. WAVEFORM NO. 1, FIGURE 5-13, NOT PRESENT AT TP1 AND TP4.
Step 1. Replace CCA 1A2.

64. WAVEFORM NO. 2, FIGURE 5-13, NOT PRESENT AT TP1 AND TP4.
Step 1. Confirm waveform missing or wrong.
Step 2. Replace CCA 1A2.

65. PARITY FLR LAMP NOT ILLUMINATED DURING CCA 1A2 FUNCTIONAL CHECK WITH S8 IN STAT 2.
Step 1. Confirm lamp not illuminated.
Step 2. Replace CCA 1A2.

Table 5-4. Troubleshooting - Continued

Malfunction
Test or Inspection
Corrective Action

66. PARITY FLR LAMP NOT ILLUMINATED DURING CCA 1A2 FUNCTiONAL CHECK WITH S8 IN VDW,
Step 1. Replace CCA 1A2.

67. DATA WORD DISPLAY (DS12) DOES NOT INDICATE 255 AND DATA WORD LAMPS 7 THROUGH 0 NOT ILLUMINATED DURING CCA 1A2 FUNCTIONAL CHECK WITH S8 IN V_U, V_V, V_W, PABS, TAIR, V_{DW}, STAT 1 OR STAT 2.
Step 1. Replace CCA 1A2.

68. NO REFERENCE OSCILLATOR VOLTAGE OR FREQUENCY AT TP9 AND TP10 WITH S11 IN REF OSC.
Step 1. Replace CCA 1A3.

69. REFERENCE OSCILLATOR VOLTAGE OR FREQUENCY OUT OF TOLERANCE DURING REFERENCE OSCILLATOR CHECK.
Step 1. Adjust reference oscillator circuit in accordance with Chapter 6.
Step 2. Replace CCA 1A3.

70. RESOLVER B1 OR B2 VOLTAGE OVER 0.005 VAC DURING QUADRATURE CHECKS.
Step 1. Check dual-speed drive for backlash.
Replace dual -speed drive.
Step 2. Align resolver in accordance with Chapter 6.
Step 3. Replace resolver.
Step 4. Replace CCA 1A3.

71. NO OSCILLATOR PEAK VOLTAGE AT TP15 AND TP16 WITH S11 IN REF OSC.
Step 1. Replace CCA 1A3.

72. OSCILLATOR PEAK VOLTAGE AT TP15 AND TP16 NOT BETWEEN 9 VDC AND 11 VDC WITH S11 IN REF OSC.
Step 1. Adjust oscillator peak detection circuits in accordance with Chapter 6.
Step 2. Replace CCA 1A3.

73. NO RESOLVER PEAK VOLTAGE AT TP15 AND TP16 WITH S11 IN SIN α OR COS α.
Step 1. Replace CCA 1A3.

74. RESOLVER PEAK VOLTAGE AT TP15 AND TP16 OUT OF TOLERANCE WITH S11 IN REF OSC.
Step 1. Adjust resolver peak detection circuits in accordance with Chapter 6.
Step 2. Replace CCA 1A3.

75. RESOLVER B1 OR B2 DIAL NOT WITHIN TOLERANCE AT ANY POINT IN PEAK DETECTION CIRCUIT CHECKS.
Step 1. Check dual-speed drive.
Replace dual-speed drive.
Step 2. Align resolver in accordance with Chapter 6.
Step 3. Replace resolver.
Step 4. Replace CCA 1A3.

Table 5-4. Troubleshooting - Continued

Malfunction Test or Inspection Corrective Action
76. RESOLVER B1 OR B2 OUTPUT VOLTAGE NEGATIVE, Step 1. Rotate resolver at least 360° while observing output voltage. Step 2. If voltage switches from negative to positive and back to negative, align resolver in accordance with Chapter 6 . Step 3. If voltage remains negative, check appropriate wiring (Figure FO-1, sheets 3, 4 and 5) and repair,

5-14. Wire Lists. Table 5-5 lists wiring data for the panel/chassis assembly. The abbreviation NC is used for no connection. The colors and gauges listed for wires are abbreviated in accordance with MIL-STD-12C. All other terms are spelled out. To assist in correlating the wire list to the wiring schematic (figures FO-1) a reference zone is indicated in parentheses in the FROM column of table 5-5. For securing proper wire stock when wire repair is required, refer to Appendix E, Bulk Items List.

Table 5-5. Panel/Chassis Wire List

WIRE NO.	FROM	TO	COLOR	WIRE AWG
	61-R1 (R-3)	TB1-U5	RED/ WHT	
	B1-R3 (R-3)	TB1-U6	BLK/ WHT	
	B1-S1 (S-2)	TB1-U2	RED	
	B1-S2 (S-3)	TB1-U1	YEL	
	B1-S3 (S-3)	TB1-U3	BLK	
	61-S4 (R-3)	TB1-U3	BLU	
	B2-R1 (R-5)	TB1-U5	REDI/ WHT	
	B2-R3 (R-5)	TB1-U6	BLK/ WHT	
	B2-S1 (S-4)	TB1-U8	RED	
	B2-S2 (S-5)	TB1-U7	YEL	
	B2-S3 (S-5)	TB1-U9	BLK	
	B2-S4 (R-5)	TB1-U9	BLU	22
7	CB1-1 (B-1)	FL1-1	BLU	22
8	CB1-2 (A-1)	J1-C	BLU	22
9	CB1-3 (B-1)	FL2-1	WHT	22
10	CB1-4 (A-1)	J1-A	WHT	22
1	CB2-1 (A-3)	C1-1	WHT	18
13	CB2-2 (A-3)	J2-B	WHT	18
4	CB2-3 (A-4)	C2-1	WHT	18
14	CB2-4 (A-4)	J2-A	WHT	18
1	C1-1 (A-3)	CB2-1	WHT	18

Table 5-5. Panel/Chassis Wire List - Continued

WIRE No.	FROM	TO	COLOR	WIRE AWG
2	C1-2 (B-3)	E5	WHT	18
3	C1-2 (B-3)	XDS15-A	WHT	24
4	C2-1 (A-4)	CB2-3	WI-IT	18
5	C2-2 (B-4)	E4	WHT	18
6	C2-2 (B-4)	XDS15-B	WHT	24
15	DS12P1-1 (D-3)	W6	WHT	24
16	DS12P1-2 (P-3)	P3-34	WHT	24
17	DS12P1-3 (P-3)	P3-32	WHT	24
18	DS12P1-4 (P-3)	P3-19	WHT	24
19	DS12P1-5 (P-3)	P3-8	WHT	24
20	DS12P1-6 (P-3)	P3-6	WHT	24
21	DS12P1-7 (P-3)	P3-33	WHT	24
22	DS12P1-8 (P-3)	P3-7	WHT	24
	DS12P1-9	NC		
23	DS12P2-1 (P-3)	W6	WHT	24
24	DS12P2-2 (P-3)	P3- 10	WHT	24
25	DS12P2-3 (P-3)	P3-37	WHT	24
26	DS12P2-4 (P-3)	P3-38	WHT	24
27	DS12P2-5 (P-4)	P3-16	WHT	24
28	DS12P2-6 (P-4)	P3-35	WHT	24
29	DS12P2-7 (P-4)	P3-9	WHT	24
30	DS12P2-8 (P-4)	P3-36	WHT	24
	DS12P2-9	NC		
31	DS12P3-1 (P-4)	W6	WHT	24
32	DS12P3-2 (P-4)	P3-14	WHT	24
33	DS12P3-3 (P-4)	P3-13	WHT	24
34	DS12P3-4 (P-4)	P3-11	WHT	24
35	DS12P3-5 (P-4)	P3-12	WHT	2 4
36	DS12P3-6 (P-4)	P3-39	WHT	24
37	DS12P3-7 (P-4)	P3-40	WHT	24
38	DS12P3-8 (P-4)	P3-41	WHT	24
	DS12P3-9	NC		
39	E1 (D-1)	R1-1	WHT	22
40	E2 (D-1)	PS1-1	BLU	22
LINK	E3 (B-4)			18
5	E4 (B-4)	C2-2	WHT	18
4 1	E4 (B-4)	W8	WHT	18
2	E5 (B-3)	C1-2	WHT	18
42	E5 (B-3)	S13-1	WHT	18
LINK	E6 (B-3)			18
43	E6 (B-3)	W9	WHT	18
7	FL1-1 (B-1)	CB1-1	BLU	22
45	FL1-2 (B-1)	PS2-1	BLU	22
46	FL1-2 (B-1)	S11A-1	BLU	22
9	FL2-1 (B-1)	CB1-3	WHT	22
49	FL2-2 (B-1)	PS2-2	WHT	22
50	FL2-2 (B-1)	S11B-1	WHT	22
10	J1-A (A-1)	CB1-4	WHT	22
51	J1-B (A-1)	W1	WHT	22
8	J1-C (A-1)	CB1-2	BLU	22

Table 5-5. Panel/Chassis Wire List - Continued

WIRE NO.	FROM	TO	COLOR	WIRE AWG
14	J2-A (A-4)	CB2-4	WHT	18
13	J2-B (A-3)	CB2-2	WHT	18
52	J3-1 (J-5)	W2	WHT	22
53	J3-2 (E-4)	S15-2	WHT	22
54	J3-3 (J-4)	W2	WHT	22
55	J3-4 (J-4)	S19-2	WHT	22
	J3-5	NC		
56	J3-6 (J-5)	W2	WHT	22
57	J3-7 (J-5)	P1-64	WHT	22
58	J3-8 (J-5)	W2	WHT	22
59	J3-9 (J-5)	P1-63	WHT	22
60	J3-10 (J-5)	W2	WHT	22
	J3-11	NC		
62	J3-12 (K-1)	P3-27	WHT	22
63	J3-13 (J-4)	S20-2	WHT	22
64	J3-14 (E-4)	S14-2	BLU	22
	J3-15	NC		
	J3-16	NC		
	J3-17	NC		
	J3-18	NC		
	J3-19	NC		
	J3-20	NC		
	J3-21	NC		
	J3-22	NC		
65	J4-1 (Y-2)	P1-31	WHT	22
66	J4-2 (U-2)	S10A-4	WHT	22
67	J4-3 (Y-2)	W3	WHT	22
68	J4-4 (T-2)	S9A-8	WHT	22
69	J4-5 (Y-2)	W3	WHT	22
70	J4-6 (U-4)	S9A-5	WHT	22
71	J4-7 (U-4)	S9A-6	WHT	22
72	J4-8 (U-2)	S10A-6	WHT	22
73	J4-9 (Y-2)	S10B-6	WHT	22
74	J4-10 (T-2)	S9B-8	BLU	22
	J4-11	NC		
75	J4-12 (U-2)	S10A-3	WHT	22
76	J4-13 (Y-2)	S10B-3	WHT	22
77	J4-14 (U-2)	S10A-5	WHT	22
	J4-15	NC		
78	J4-16 (U-2)	S10A-7	WHT	22
79	J4-17 (E-5)	S13-2	WHT	22
80	J4-18 (U-2)	S10A-10	WHT	22
81	J4-19 (Y-2)	S10B-8	WHT	22
82	J4-20 (U-2)	S10A-8	WHT	22
83	J4-21 (Y-2)	S10B-5	WHT	22
84	J4-22 (U-2)	S10A-9	WHT	22
85	J4-23 (Y-2)	S10B-7	WHT	22
	J4-24	NC		
86	J4-25 (E-5)	S13-2	WHT	22
87	J4-26 (E-5)	S12B-1	WHT	22

Table 5-5. Panel/Chassis Wire List - Continued

WIRE NO.	FROM	TO	COLOR	WIRE AWG
88	J4-27 (Y-2)	R2-2	WHT	22
89	J4-28 (U-1)	S10A-1	WHT	22
90	J4-29 (U-2)	S10A-12	WHT	22
91	J4-30 (T-2)	S11A-6	WHT	22
92	J4-31 (T-2)	S11A-7	BLU	22
93	J4-32 (T-5)	S11A-8	WHT	22
94	J4-33 (T-5)	S11A-9	BLU	22
95	J4-34 (Y-4)	W2	WHT	22
96	J4-35 (Y-4)	W2	WHT	22
97	J4-36 (Y-4)	W3	WHT	22
98	J4-37 (U-1)	S10A-2	BLU	22
99	J4-38 (U-2)	S10A-13	BLU	22
100	J4-39 (T-2)	S116-6	ORN	22
	J4-40	NC		
101	J4-41 (T-5)	S116-8	ORN	22
	J4-42	NC		
102	J4-43 (Y-4)	W2	WHT	22
	J4-44	NC		
103	J4-45 (U-5)	S9C-5	WHT	22
104	J4-46 (U-31)	S9A-3	WHT	22
105	J4-47 (U-3)	S9A-1	WHT	22
106	J4-48 (U-3)	S9B-1	BLU	22
107	J4-49 (U-4)	S9A-7	WHT	22
108	J4-50 (U-4)	S9D-7	BLU	22
109	J4-54 (Y-4)	P3-25	WHT	22
110	J4-52 (U-2)	S10A-11	WHT	22
111	J4-53 (U-4)	S9B-3	BLU	22
112	J4-54 (U-4)	S4-2	WHT	22
113	J4-55 (U-4)	W2	WHT	22
114	J4-56 (U-4)	S9A-2	WHT	22
	J4-57	NC		
	J4-58	NC		
115	J4-59 (Y-3)	S2-2	WHT	22
116	J4-60 (Y-3)	S3-2	WHT	22
117	J4-61 (U-4)	S9A-4	WHT	22
118	J4-62 (U-4)	S9B-2	B LU	22
	J4-63	NC		
119	J4-64 (Y-5)	P3-55	WHT	22
120	J4-65 (U-4)	S9B-4	BLU	22
121	J4-66 (Y-4)	W2	WHT	22
124	J5-1 (J-4)	P1-46	WHT	22
125	J5-2 (J-4)	W8	BLU	22
126	J5-3 (F-1)	S16A-2	WHT	22
127	J5-4 (F-1)	S16A-3	BLU	22
128	J5-5 (F-2)	S16A-5	WHT	22
129	J5-6 (F-1)	S16A-4	BLU	22
130	J5-7 (F-3)	W3	WHT	22
	J5-8	NC		
132	J5-9 (F-3)	S16C-7	WHT	22
	J5-10	NC		

Table 5-5. Panel/Chassis Wire List - Continued

WIRE NO.	FROM	TO	COLOR	WIRE AWG
	J5-11	NC		
133	J5-12 (F-3)	S16B-7	WHT	22
	J5-13	NC		
	J5-14	NC		
136	J5-15 (F-3)	S16C-6	WHT	22
137	J5-16 (F-1)	S16C-2	ORN	22
138	J5-17 (F-2)	S16C-5	ORN	22
	J5-18	NC		
	J5-19	NC		
	J5-20	NC		
	J5-21	NC		
143	J5-22 (F-3)	S16B-6	BLU	22
40	PS1-1 (C-2)	E2	BLU	22
244	PS1-1 (C-2)	PS2-1	BLU	22
245	PS1-2 (C-2)	PS2-2	WHT	22
246	PS1-2 (C-2)	WT1	WHT	22
247	PS1-3 (C-2)	W6	WHT	18
	Ps 1-4	NC		
	PS1-5	NC		
	PS1-6	NC		
248	PS1-7 (C-2)	W8	WHT	22
45	PS2-1 (C-2)	FL1-2	BLU	22
244	PS2-1 (C-2)	PS1-1	BLU	22
49	PS2-2 (C-2)	FL2-2	WHT	22
245	PS2-2 (C-2)	PS1-1	WHT	22
250	PS2-3 (C-2)	W7	WHT	18
251	PS2-4 (C-2)	PS2-10	WHT	18
	PS2-5	NC		
	PS2-6	NC		
	PS2-7	NC		
	PS2-8	NC		
252	PS2-9 (C-2)	W5	WHT	18
251	PS2-10 (C-2)	PS2-4	WHT	18
253	PS2-10 (C-2)	W4	WHT	18
146	P1-1 (R-2)	S6-8	WHT	24
147	P1-2 (R-2)	S6-9	WHT	24
148	P1-3 (R-2)	S6-10	WHT	24
149	P1-4 (F-4)	S16B-1	WHT	24
150	P1-5 (J-3)	S16A-C1	WHT	24
151	P1-6 (F-5)	S16B-5	WHT	24
152	P1-7 (R-1)	S6-4	WHT	24
153	P1-8 (R-2)	S6-7	WHT	24
154	P1-9 (R-11)	S6-3	WHT	24
	P1-10	NC		
155	P1-11 (R-1)	S9B-8	WHT	24
156	P1-12 (R-1)	S6-1	WHT	24
157	P1-13 (R-1)	S6-3	WHT	24
158	P1-14 (P-5)	S7-2	WHT	24
159	P1-15 (E-3)	W6	WHT	22
160	P1-16 (J-3)	S18-3	WHT	24

Table 5-5. Panel/Chassis Wire List - Continued

WIRE NO.	FROM	TO	COLOR	WIRE AWG
161	P1-17 (J-2)	S18-2	WHT	24
162	P1-18 (P-5)	S7-1	WHT	24
	P1-19	NC		
	P1-20	NC		
163	P1-21 (P-5)	S7-5	WHT	24
164	P1-22 (P-5)	S7-6	WHT	24
165	P1-23 (P-5)	S7-7	WHT	24
	P1-24	NC		
166	P1-25 (J-3)	S18-7	WHT	24
167	P1-26 (J-3)	S18-6	WHT	24
168	P1-27 (J-2)	S17-8	WHT	24
169	P1 -28 (J-2)	S17-6	WHT	24
170	P1-29 (J-2)	S18-C1	WHT	24
171	P1-30 (P-2)	S7-C1	WHT	24
65	P1-31 (W-4)	J4-1	WHT	22
173	P1-32 (E-3)	W7	WHT	22
174	P1-33 (E-3)	W7	WHT	22
175	P1-34 (E-3)	W5	BLU	22
176	P1-35 (E-3)	W5	BLU	22
177	P1-36 (E-3)	W8	WHT	22
	P1-37	NC		
178	P1-38 (R-1)	S6-6	WHT	24
179	P1-39 (R-1)	S6-5	WHT	24
180	P1-40 (K-5)	S11A-3	WHT	24
181	P1-41 (K-4)	S11A-12	WHT	24
182	P1-42 (K-4)	S11A-10	WHT	24
183	P1-43 (K-4)	S11A-11	WHT	24
184	P1-44 (P-5)	S7-3	WHT	24
185	P1-45 (P-5)	S7-4	WHT	24
124	P1-46 (F-4)	J5-1	WHT	22
	P1-47	NC		
	P1-48	NC		
	P1-49	NC		
186	P1-50 (E-3)	W6	WHT	22
	P1-51	NC		
	P1-52	NC		
	P1-53	NC		
	P1-54	NC		
187	P1-55 (K-4)	S11A-13	WHT	24
188	P1-56 (J-3)	S1B-4	WHT	24
189	P1-57 (J-1)	S17-4	WHT	24
190	P1-58 (J-2)	S18-1	WHT	24
191	P1-59 (J-1)	S17-3	WHT	24
192	P1-60 (J-1)	S17-2	WHT	24
193	P1-61 (J-1)	S17-1	WHT	24
194	P1-62 (J-1)	S17-C1	WHT	24
59	P1-63 (F-5)	J3-9	WHT	22
57	P1-64 (F-5)	J3-7	WHT	22
195	P1-65 (J-3)	S18-5	WHT	24
196	P1-66 (J-2)	S17-7	WHT	24

Table 5-5. Panel/Chassis Wire List - Continued

WIRE NO.	FROM	TO	COLOR	WIRE AWG
197	P1-67 (J-1)	S17-5	WHT	24
198	P1-68 (K-5)	S11A-4	WHT	24
	P1-69	NC		
199	P1-70 (E-3)	W8	WHT	24
200	P2-1 (E-4)	8	WHT	24
201	P2-2 (0-2)	S8-4	WHT	24
202	P2-3 (0-2)	S8-5	WHT	24
203	P2-4 (0-2)	S8-7	WHT	24
204	P2-5 (0-2)	S8-6	WHT	24
205	P2-6 (0-2)	S8-1	WHT	24
206	P2-7 (0-2)	S8-8	WHT	24
	P2-8	NC		
207	P2-9 (W-3)	9A-2	WHT	22
208	P2-10 (W-3)	S9B-2	BLU	22
	P2-11	NC		
209	P2-12 (E-4)	W6	WHT	22
210	P2-13 (E-4)	W6	WHT	22
	P2-14	NC		
211	P2-15 (W-3)	S96-3	BLU	22
212	P2-16 (W-3)	S9A-3	WHT	22
	P2-17	NC		
	P2-18	NC		
213	P2-19 (W-3)	S9B-1	BLU	22
214	P2-20 (W-3)	S9A-1	WHT	22
	P2-21	NC		
215	P2-22 (W-3)	S9B-4	BLU	22
216	P2-23 (W-3)	S9A-4	WHT	22
217	P2-24 (0-3)	S5-2	WHT	24
218	P2-25 (E-4)	W8	WHT	22
219	P2-26 (0-2)	S8-3	WHT	24
220	P2-27 (0-2)	S8-2	WHT	22
	P2-28	NC		
	P2-29	NC		
	P2-30	NC		
	P2-31	NC		
	P2-32	NC		
	P2-33	NC		
	P2-34	NC		
	P2-35	NC		
	P2-36	NC		
221	P2-37 (E-4)	W6	WHT	22
222	P2-38 (E-4)	W6	WHT	22
	P2-39	NC		
	P2-40	NC		
	P2-41	NC		
	P2-42	NC		
	P2-43	NC		
	P2-44	NC		
	P2-45	NC		
	P2-46	NC		

Table 5-5. Panel/Chassis Wire List - Continued

WIRE NO.	FROM	TO	COLOR	WIRE AWG
	P2-47	NC		
223	P2-48 (0-3)	S1-3	WHT	24
224	P2-49 (0-3)	S1-1	WHT	24
	P2-50	NC		
225	P3-1 (E-2)	W8	WHT	22
	P3-2	NC		
	P3-3	NC		
	P3-4	NC		
	P3-5	NC		
20	P3-6 (P-3)	DS12P1-6	WHT	24
22	P3-7 (P-3)	DS12P1-8	WHT	24
19	P3-8 (P-3)	DS12P1-5	WHT	24
29	P3-9 (P-4)	DS12P2-7	WHT	24
24	P3-10 (P-3)	DS12P2-2	WHT	24
34	P3-11 (P-4)	DS12P3-4	WHT	24
35	P3-12 (P-4)	DS12P3-5	WHT	24
33	P3-13 (P-4)	DS12P3-3	WHT	24
32	P3-14 (P-4)	DS12P3-2	WHT	24
	P3-15	NC		
27	P3-16 (P-4)	DS12P2-5	WHT	24
227	P3-17 (E-2)	W6	WHT	22
228	P3-18 (E-2)	W6	WHT	22
18	P3-19 (P-3)	DS12P1-4	WHT	24
229	P3-20 (P-2)	XDS3-B	WHT	24
	P3-21	NC		
	P3-22	NC		
	P3-23	NC		
	P3-24	NC		
109	P3-25 (W-4)	J4-51	WHT	22
	P3-26	NC		
62	P3-27 (0-5)	J3-12	WHT	22
230	P3-28 (P-2)	XDS13-B	WHT	24
231	P3-29 (P-2)	XDS11-B	WHT	24
232	P3-30 (E-2)	W8	WHT	22
	P3-31	NC		
17	P3-32 (P-3)	DS12P1-3	WHT	24
21	P3-33 (P-3)	DS12P1-7	WHT	24
16	P3-34 (P-3)	DS12P1-2	WHT	24
28	P3-35 (P-4)	DS12P2-6	WHT	24
30	P3-36 (P-4)	DS12P2-8	WHT	24
25	P3-37 (P-3)	DS12P2-3	WHT	24
26	P3-38 (P-3)	DS12P2-4	WHT	24
36	P3-39 (P-4)	DS12P3-6	WHT	24
37	P3-40 (P-4)	DS12P3-7	WHT	24
38	P3-41 (P-4)	DS12P3-9	WHT	24
	P3-42	NC		
378	P3-43 (E-3)	W7	WHT	22
233	P3-44 (P-2)	XDS7-B	WHT	24
234	P3-45 (P-2)	XDS8-B	WHT	24
235	P3-46 (P-2)	XDS5-B	WHT	24

Table 5-5. Panel/Chassis *Wire List* - Continued

WIRE NO.	FROM	TO	COLOR	WIRE AWG
236	P3-47 (E-2)	W6	WHT	24
237	P3-48 (E-2)	W6	WHT	24
228	P3-49 (P-2)	XDS6-B	WHT	24
239	P3-50 (P-2)	XDS1-B	WHT	24
240	P3-51 (P-2)	XDS2-B	WHT	24
	P3-52	NC		
241	P3-53 (P-2)	XDS4-B	WHT	24
	P3-54	NC		
119	P3-55 (W-5)	J4-64	WHT	22
242	P3-56 (P-2)	XDS10-B	WHT	24
	P3-57	NC		
	P3-58	NC		
243	P3-59 (P-2)	XDS9-B	WHT	24
	P3-60	NC		
39	R1-1 (D-1)	E1	WHT	22
254	R1-2 (D-1)	XDS14-A	BLU	22
255	R2-1 (V-1)	S10A-1	WHT	22
88	R2-2 (U-1)	R3-2	WHT	22
256	R2-2 (U-1)	W8	WHT	24
350	R3-1 (V-1)	S10A-2	WHT	22
88	R3-2 (U-1)	R2-2	WHT	22
258	R3-2 (U-1)	W8	WHT	24
12	Shield, 8 & 10	W1	BLK	24
11	Shield, 7 & 9	W1	BLK	24
44	Shield, 40 & 246	W8	BLK	24
47	Shield, 45 &49	W4	BLK	24
48	Shield, 46 & 50	W4	BLK	24
122	Shield, 91, 92, 100	W2	BLK	24
123	Shield, 93, 94, 101	W2	BLK	24
144	Shield 126, 127, 137	W3	BLK	24
145	Shield 128, 129, 130	W3	BLK	24
249	Shield 244 & 245	W4	BLK	24
339	Shield 254 & 338	W8	BLK	24
298	Shield 280, 281, 290	S11B-11	BLK	24
299	Shield 282, 283, 292	S11B-12	BLK	24
224	S1-1 (N-3)	P2-49	WHT	24
259	S1-2 (N-3)	S2-1	WHT	24
260	S1-2 (N-3)	S8-C1	WHT	24
223	S1-3 (N-3)	P2- 18	WHT	24
259	S2-1 (X-3)	S1-2	WHT	24
	S2-1 (X-3)	NC		
115	S2-2 (X-3)	J4-59	WHT	22
261	S2-3 (X-3)	S3-3	WHT	24

Table 5-5. Panel/Chassis Wire List - Continued

WIRE No.	FROM	TO	COLOR	WIRE AWG
	S3-1 (X-3)	NC		
116	S3-2 (X-3)	J4-60	WHT	22
261	S3-3 (X-3)	S2-1	WHT	24
262	S3-3 (X-3)	54-3	WHT	24
263	S4-1 (X-4)	W6	WHT	24
112	S4-2 (X-4)	J4-54	WHT	24
262	S4-3 (X-4)	S3-3	WHT	24
264	S4-3 (X-4)	W1	WHT	24
	S5-1	NC		
217	S5-2 (N-4)	P2-24	WHT	24
264	S5-3 (N-4)	S4-3	WHT	24
265	S6-C1 (S-1)	S9A-8	WHT	24
156	S6-1 (S-1)	P1-12	WHT	24
154	S6-2 (S-1)	P1-9	WHT	24
157	S6-3 (S-1)	P1-13	WHT	24
152	S6-4 (S-1)	P1-7	WHT	24
179	S6-5 (S-2)	P1-39	WHT	24
178	S6-6 (S-2)	P1-38	WHT	24
153	S6-7 (S-2)	P1-8	WHT	24
146	S6-8 (S-2)	P1-1	WHT	24
147	S6-9 (S-2)	P1-2	WHT	24
148	S6-10 (S-2)	P1-3	WHT	24
171	S7-C1 (P-5)	P1-30	WHT	24
162	57-1 (P-5)	P1-18	WHT	24
158	S7-2 (P-5)	P1-14	WHT	24
184	S7-3 (P-5)	P1-44	WHT	24
185	S7-4 (P-5)	P1-45	WHT	24
163	S7-5 (P-5)	P1-21	WHT	24
164	S7-6 (P-5)	P1-22	WHT	24
165	S7-7 (P-5)	P1-23	WHT	24
260	S8-C1 (N-2)	S1-2	WHT	24
266	S8-C1 (N-2)	W1	WHT	24
205	S8-1 (N-2)	P2-6	WHT	24
220	S8-2 (N-2)	P2-27	WHT	24
219	S8-3 (N-2)	P2-26	WHT	24
201	S8-4 (N-2)	P2-2	WHT	24
202	S8-5 (N-2)	P2-3	WHT	24
204	S8-6 (N-2)	P2-5	WHT	24
203	S8-7 (N-2)	P2-4	WHT	24
206	S8-8 (N-2)	P2-7	WHT	24
267	S9A-C1 (V-3)	TP1	WHT	24
105	S9A-1 (V-3)	J4-47	WHT	22
214	S9A-1 (V-3)	P2-20	WHT	22
268	S9A-1 (V-3)	S9C-1	WHT	24
114	S9A-2 (V-3)	J4-56	WHT	22
207	S9A-2 (V-3)	P2-9	WHT	22
104	S9A-3 (V-3)	J4-46	WHT	22
212	S9A-3 (V-3)	P2-16	WHT	22
117	S9A-4 (V-3)	J4-61	WHT	22
216	S9A-4 (V-3)	P2-23	WHT	22

Table 5-5. Panel/Chassis Wire List - Continued

WIRE NO.	FROM	TO	COLOR	WIRE AWG	WIRE NO.	FROM	TO	COLOR	WIRE AWG
70	S9A-5 (V-4)	J4-6	WHT	22	LINK	S9C-3 (V-5)	S9C-2		24
71	S9A-6 (V-4)	J4-7	WHT	22	LINK	S9C-3 (V-5)	S9C-4		24
107	S9A-7 (V-4)	J4-49	WHT	22	LINK	S9C-4 (V-5)	S9C-3		24
269	S9A-7 (V-4)	TB1-L5	WHT	22	103	S9C-5 (V-5)	J4-45	WHT	22
68	S9A-8 (V-4)	J4-4	WI-IT	22	LINK	S9C-5 (V-5)	S9C-6		24
265	S9A-8 (V-4)	S6-C1	WHT	24	LINK	S9C-6 (V-5)	S9C-5		24
270	S9B-C1 (V-4)	TP3	WHT	24		S9C-7	NC		
106	S9B-1 (V-4)	J4-48	BLU	22		S9C-8	NC		
213	S9B-1 (V-4)	P2-19	BLU	22	35	S9D-C1 (W-4)	TP2		24
118	S9B-2 (V-4)	J4-62	BLU	22	LINK	S9D-1 (W-4)	S9D-2		24
208	S9B-2 (V-4)	P2-10	BLU	22	LINK	S9D-2 (W-4)	S9D-1		24
111	S9B-3 (V-4)	J4-53	BLU	22	LINK	S9D-2 (W-4)	S9D-3		24
211	S9B-3 (V-4)	P2-15	BLU	22	LINK	S9D-3 (W-4)	S9D-2		24
120	S9B-4 (V-4)	J4-65	BLU	22	LINK	S9D-3 (W-4)	S9D-4		24
215	S9B-4 (V-4)	P2-22	BLU	22	LINK	S9D-4 (W-4)	S9D-3		24
	S9B-5	NC			LINK	S9D-4 (W-4)	S9D-5		24
	S9B-6	NC			LINK	S9D-5 (W-4)	S9D-4		24
	S9B-7	NC			LINK	S9D-5 (W-4)	S9D-6		24
74	S9B-8 (V-4)	J4-10	BLU	22	LINK	S9D-6 (W-4)	S9D-5		24
155	S9B-8 (V-4)	P1-11	WHT	24	357	S9D-6 (W-4)	S9D-8	WHT	24
271	S9C-C1 (V-5)	TP5	WHT	24	108	S9D-7 (W-4)	J4-50	BLU	22
268	S9C-1 (V-5)	S9A-1	WHT	24	358	S9D-7 (W-4)	TB1-L6	BLU	22
LINK	S9C-1 (V-5)	S9C-2		24	357	S9D-8 (W-4)	S9D-6	WHT	24
LINK	S9C-2 (V-5)	S9C-1		24	359	S9D-8 (W-4)	TP4	WHT	24
LINK	S9C-2 (V-5)	S9C-3		24	276	S10A-C1 (V-1)	TP7	WHT	24

Table 5-5. Panel/Chassis Wire List - Continued

WIRE No.	FROM	TO	COLOR	WIRE AWG
89	S10A-1 (V-1)	J4-28	WHT	22
255	S10A-1 (V-1)	R2-1	WHT	22
98	S10A-2 (V-1)	J4-37	BLU	22
257	S10A-2 (V-1)	R3-1	BLU	22
75	S10A-3 (V-2)	J4-12	WHT	22
360	S10A-3 (V-2)	TB2-L1	WHT	24
66	S10A-4 (V-2)	J4-2	WHT	22
361	S10A-4 (V-2)	TB2-L2	WHT	24
77	S10A-5 (V-2)	J4-14	WHT	22
362	S10A-5 (V-2)	TB2-L5	WHT	24
72	S10A-6 (V-2)	J4-8	WHT	22
363	S10A-6 (V-2)	TB2-L6	WHT	24
78	S10A-7 (V-2)	J4-16	WHT	22
364	S10A-7 (V-2)	TB2-L11	WHT	24
82	S10A-8 (V-2)	J4-20	WHT	22
84	S10A-9 (V-2)	J4-22	WHT	22
80	S10A-10 (V-2)	J4-18	WHT	22
110	S10A-11 (V-2)	J4-52	WHT	22
90	S10A-12 (V-2)	J4-29	WHT	22
99	S10A-13 (V-2)	J4-38	BLU	22
	S10A-14	NC		
365	S10B-C1 (X-1)	TP8	WHT	24
LINK	S106-1 (X-1)	S10B-2		24
LINK	S10B-2 (X-1)	S10B-1		24
367	S10B-2 (X-1)	S10B-10	WHT	24
76	S10B-3 (X-1)	J4-13	WHT	22
368	S10B-3 (X-1)	TB2-L3	WHT	24
67	S10B-4 (X-2)	J4-3	WHT	22
369	S10B-4 (X-2)	TB2-L4	WHT	24
83	S10B-5 (X-2)	J4-21	WHT	22
370	S10B-5 (X-2)	TB2-L7	WHT	24
73	S10B-6 (X-2)	J4-9	WHT	22
371	S106-6 (X-2)	TB2-L8	WHT	24
85	S10B-7 (X-2)	J4-23	WHT	22
372	S106-7 (X-2)	TB2-L9	WHT	24
81	S10B-8 (X-2)	J4-19	WHT	22
LINK	S10B-8 (X-2)	S10B-9		24
LINK	S10B-9 (X-2)	S10B-8		24
367	S10B-10 (X-2)	S10B-10	WHT	24
LINK	S10B-10 (X-2)	S10B-11		24
LINK	S106-11 (X-2)	S10B-10		24
LINK	S10B-11 (X-2)	S10B-12		24
LINK	S10B-12 (X-2)	S10B-11		24
LINK	S10B-12 (X-2)	S10B-13		24
LINK	S10B-13 (X-2)	S10B-12		24
350	S10B-13 (X-2)	R3-2	WHT	24
	S10B-14	NC		
277	S11A-C1 (M-2)	TP9	WHT	24
46	S11A-1 (M-2)	FL1-2	BLU	22
278	S11A-2 (M-2)	W9	WHT	22

Table 5-5. Panel/Chassis Wire List - Continued

WIRE NO.	FROM	TO	COLOR	WIRE AWG
180	S11A-3 (M-2)	P1-40	WHT	24
198	S11A-4 (M-3)	P1-68	WHT	24
279	S11A-5 (M-3)	W6	WHT	24
91	S11A-6 (M-3)	J4-30	WHT	22
280	S11A-6 (M-3)	TB1-L2	WHT	22
92	S11A-7 (M-3)	J4-31	BLU	22
281	S11A-7 (M-3)	TB1-L1	BLU	22
93	S11A-8 (M-3)	J4-31	WHT	22
282	S11A-8 (M-3)	TB1-L8	WHT	22
94	S11A-9 (M-3)	J4-33	BLU	22
283	S11A-9 (M-3)	TB1-L7	BLU	22
182	S11A-10 (M-3)	P1-42	WHT	24
183	S11A-11 (M-3)	P 1-43	WHT	24
181	S11A-12 (M-4)	P1-41	WHT	24
187	S11A-13 (M-4)	P1-55	WHT	24
	S11A-14	NC		
284	S11B-C1 (M-2)	TP10	WHT	24
50	S11B-1 (M-2)	FL2-2	WHT	22
LINK	S11B-2 (M-2)	S11B-3		24
286	S11B-2 (M-2)	TP12	WHT	22
LINK	S11B-3 (M-2)	S116-2		24
LINK	S11B-3 (M-2)	S116-4		24
LINK	S11B-4 (M-3)	S116-3		24
LINK	S11B-4 (M-3)	S116-5		24
LINK	S11B-5 (M-3)	S116-4		24
289	S11B-5 (M-3)	S11B-10	WHT	24
100	S11B-6 (M-3)	J4-39	ORN	22
LINK	S11B-6 (M-3)	S116-7		24
290	S11B-6 (M-3)	TB1-L3	ORN	22
LINK	S11B-7 (M-3)	S11B-6		24
101	S11B-8 (M-3)	J4-41	ORN	22
LINK	S11B-8 (M-3)	S11B-9		24
292	S11B-8 (M-3)	TB1-L9	ORN	22
LINK	S11B-9 (M-3)	S11B-8		24
289	S11B-10 (M-3)	S11B-5	WHT	24
LINK	S11B-10 (M-3)	S11B-11		24
LINK	S11B-11 (M-3)	S11B-10		24
LINK	S11B-11 (M-3)	S11B-12		24
LINK	S11B-12 (M-4)	S11B-11		24
LINK	S11B-12 (M-4)	S11B-13		24
LINK	S11B-13 (M-4)	S11B-12		24
297	S11B-13 (M-4)	W-1	WHT	24
	S11B-14	NC		
300	S12A-C1 (D-5)	TP11	WHT	18
301	S12A-1 (D-5)	S13-1	WHT	18
302	S12A-2 (D-5)	S14-1	BLU	22
303	S12A-3 (D-5)	S15-1	WHT	22
304	S12B-C1 (D-5)	TP14	WHT	18
87	S12B-1 (D-5)	J4-26	WHT	22
305	S12B-1 (D-5)	S13-2	WHT	18

Table 5-5. Panel/Chassis Wire List - Continued

WIRE NO.	FROM	TO	COLOR	WIRE AWG
306	S12B-2 (D-5)	S14-2	BLU	22
307	S126-3 (D-5)	S15-2	WHT	22
301	S13-1 (B-5)	S12A-1	WHT	18
42	S13-1 (B-5)	E5	WHT	18
79	S13-2 (B-5)	J4-17	WHT	22
86	S13-2 (B-5)	J4-25	WHT	22
305	S13-2 (B-5)	S12B-1	WHT	18
	S13-3	NC		
	S13-4	NC		
302	S14-1 (C-4)	S12A-2	BLU	22
308	S14-1 (C-4)	W5	BLU	22
64	S14-2 (C-4)	J3-14	BLU	22
306	S14-2 (C-4)	S12B-2	BLU	22
	S14-3	NC		
	S14-4	NC		
303	S15-1 (C-4)	S12A-3	WHT	22
309	S15-1 (C-4)	W7	WHT	22
53	S15-2 (D-4)	J3-2	WHT	22
307	S15-2 (D-4)	S12B-3	WHT	22
	S15-3	NC		
	S15-4	NC		
150	S16A-C1 (H-1)	P1-5	WHT	24
310	S16A-1 (H-1)	S16A-6	WHT	24
126	S16A-2 (H-1)	J5-3	WHT	22
127	S16A-3 (H-1)	J5-4	BLU	22
129	S16A-4 (H-1)	J5-6	BLU	22
128	S16A-5 (H-1)	J5-5	WHT	22
310	S16A-6 (H-2)	S16A-1	WHT	24
LINK	S16A-6 (H-2)	S16A-7		24
LINK	S16A-7 (H-2)	S16A-6		24
312	S16A-7 (H-2)	S16C-1	WHT	24
313	S16B-C1 (H-2)	TP15	WHT	24
149	S16B-1 (H-2)	P1-4	WHT	24
LINK	S168-2 (H-2)	S16B-3		24
LINK	S16B-3 (H-2)	S16B-2		24
LINK	S16B-3 (H-2)	S16B-4		24
LINK	S16B-4 (H-2)	S16B-3		24
LINK	S16B-4 (H-2)	S16B-5		24
LINK	S16B-5 (H-2)	S16B-4		24
151	S16B-5 (H-2)	P1-6	WHT	24
143	S16B-6 (H-3)	J5-22	B LU	22
133	S16B-7 (H-3)	J5-12	WHT	22
317	S16C-C1 (H-3)	TP-16	WHT	24
312	S16C-1 (H-3)	S16A-7	WHT	24
LINK	S16C-1 (H-3)	S16C-2		24
318	S16C-1 (H-3)	W1	WHT	24
137	S16C-2 (H-3)	J5-16	ORN	22
LINK	S16C-2 (H-3)	S16C-1		24
LINK	S16C-2 (H-3)	S16C-3		24
LINK	S16C-3 (H-3)	S16C-2		24

Table 5-5. Panel/Chassis Wire List-Continued

WIRE NO.	FROM	TO	COLOR	WIRE AWG
LINK	S16C-3 (H-3)	S16C-4		24
LINK	S16C-4 (H-3)	S16C-3		24
LINK	S16C-4 (H-3)	S16C-5		24
LINK	S16C-5 (H-4)	S16C-4		24
138	S16C-5 (H-4)	J5-17	ORN	22
136	S16C-6 (H-4)	J5-15	WHT	22
132	S16C-7 (H-4)	J5-9	WHT	22
194	S17-C1 (I-1)	P1-62	WHT	24
193	S17-1 (I-1)	P1-61	WHT	24
192	S17-2 (I-1)	P1-60	WHT	24
191	S17-3 (I-1)	P1-59	WHT	24
189	S17-4 (I-1)	P1-57	WHT	24
197	S17-5 (I-1)	P1-67	WHT	24
169	S17-6 (I-2)	P1-28	WHT	24
196	S17-7 (I-2)	P1-66	WHT	24
168	S17-8 (I-2)	P1-27	WHT	24
170	S18-C1 (I-2)	P1-29	WHT	24
190	S18-1 (I-2)	P1-58	WHT	24
161	S18-2 (I-2)	P1-17	WHT	24
160	S18-3 (I-2)	P1-16	WHT	24
188	S18-4 (I-3)	P1-56	WHT	24
195	S18-5 (I-3)	P1-65	WHT	24
167	S18-6 (I-3)	P1-26	WHT	24
166	S18-7 (I-3)	P1-25	WHT	24
	S19-1 (I-4)	NC		
55	S19-2 (I-4)	J3-4	WHT	22
323	S19-3 (I-4)	W6	WHT	24
	S20-1	NC		
325	S20-3 (I-4)	W1	WHT	24
281	TB1-L1 (S-3)	S11A-7	BLU	22
280	TB1-L2 (S-3)	511A-6	WHT	22
290	TB1-L3 (S-3)	S11B-6	ORN	22
	TB1-L4	NC		
269	TB1-L5 (S-4)	S9A-7	WHT	22
358	TB1-L6 (S-4)	S9D-7	BLU	22
283	TB1-L7 (S-5)	S11A-9	BLU	22
282	TB1-L8 (S-5)	511A-8	WHT	22
292	TB1-L9 (S-5)	S11B-8	ORN	22
	TB1-L10	NC		
	TB1-L11	NC		
	TB1-L12	NC		
360	T82-L1 (X-1)	S10A-3	WHT	24
361	TB2-L2 (X-1)	S10A-4	WHT	24
368	TB2-L3 (X-1)	S10B-3	WHT	24
369	TB2-L4 (X-1)	S10B-4	WHT	24
362	TB2-L5 (X-1)	S10A-5	WHT	24
363	TB2-L6 (X-1)	S10A-6	WHT	24
370	TB2-L7 (X-1)	S10B-5	WHT	24
371	T82-L8 (X-1)	S10B-6	WHT	24
372	TB2-L9 (Y-1)	S10B-7	WHT	24

Table 5-5. Panel/Chassis Wire List– Continued

WIRE NO.	FROM	TO	COLOR	WIRE AWG
	TB2-L10	NC		
364	TB2-L11 (Y-1)	S10A-7	WHT	24
	TB2-L12	NC		
267	TP1 (W-3)	S9A-C1	WHT	24
351	TP2 (W-4)	S9D-C1	WHT	24
270	TP3 (W-4)	S9B-C1	WHT	24
359	TP4 (W-4)	S9D-8	WHT	24
328	TP4 (W-4)	TP6	WHT	24
277	TP5 (W-5)	S9C-C1	WHT	24
328	TP6 (W-5)	TP4	WHT	24
377	TP6 (W-5)	W2	WHT	24
276	TP7 (W-1)	S10A-C1	WHT	24
365	TP8 (W-1)	S10B-C1	WHT	24
277	TP9 (N-2)	S11A-C1	WHT	24
284	TP10 (N-2)	S11B-C1	WHT	24
300	TP11 (E-5)	S12A-C1	WHT	1B
331	TP11 (E-5)	TP13	WHT	18
286	TP12 (E-5)	S11B-2	WHT	22
331	TP13 (E-5)	TP11	WHT	18
304	TP14 (E-5)	S128-C1	WHT	18
313	TP15 (H-2)	S16B-C1	WHT	24
317	TP16 (H-3)	S16C-C1	W HT	24
11	W1	Shield 7 & 9	BLK	24
12	WI	Shield 8 & 1 0	BLK	24
51	W1	J1-B	WHT	22
266	W1	S8-C1	WHT	24
297	W1	S11B-13	WHT	24
318	W1	S16C-1	WHT	24
325	W1	S20-3	WHT	24
144	W3	Shield 126, 127, 137	BLK	24
145	W3	Shield 128, 129, 13E	BLK	24
332	W1	W2	WHT	22
332	W2	W1	WHT	22
52	W2	J3-1	WHT	22
54	W2	J3-3	WHT	22
56	W2	J3-6	WHT	22
58	W2	J3-8	WHT	22
60	W3	J3-10	WHT	22
95	W2	J4-34	WHT	22
96	W2	J4-35	WHT	22
97	W2	J4-36	WHT	22
102	W2	J4-13	WHT	22
377	W2	TP6	WHT	24
113	W2	J4-55	WHT	22
121	W2	J4-66	WHT	22
122	W2	Shield 91, 92, 100	BLK	24
123	W2	Shield 93, 94, 101	BLK	24

Table 5-5. Panel/Chassis Wire List - Continued

WIRE NO.	FROM	TO	COLOR	WIRE AWG
333	W2	W3	WHT	22
333	W3	W2	WHT	22
69	W3	J4-5	WHT	22
130	W3	J5-7	WHT	22
334	W3	W4	WHT	22
12	W4	PS2-10	WHT	24
334	W4	W3	WHT	22
48	W4	Shield 45 & 49	BLK	24
48	W4	Shield 46 & 50	BLK	24
335	W4	W8	WHT	22
175	W5	P1-34	BLU	22
176	W5	P1-35	BLU	22
252	W5	S2-9	WHT	18
308	W5	S14-1	BLU	22
15	W6	DS12P-1	WHT	24
23	W6	DS12P2-1	WHT	24
31	W6	DS12P3-1	WHT	24
159	W6	P1-15	WHT	22
186	W6	P1-50	WHT	22
209	W6	P2-12	WHT	22
210	W6	P2-13	WHT	22
221	W6	P2-37	WHT	22
222	W6	P2-38	WHT	22
227	W6	P3-17	WHT	22
228	W6	P3-18	WHT	22
236	W6	P3-46	WHT	22
237	W6	P3-48	WHT	22
247	W6	PS1-3	WHT	18
273	W6	S4-1	WHT	24
279	W6	S11A-5	WHT	24
323	W6	S19-3	WHT	24
324	W6	S20-1	WHT	24
250	W7	PS2-3	WHT	18
173	W7	P1-32	WHT	22
174	W7	P1-33	WHT	22
109	W7	S15-1	WHT	22
378	W7	P3-43	WHT	22
335	W8	W4	wH"r	22
41	W8	E4	WHT	18
44	W8	Shield 40 & 246	BLK	24
177	W8	P1-36	WHT	22
199	W8	P1-70	WHT	22
200	W8	P2-1	WHT	22
218	W8	P2-25	WHT	22
225	W8	P3-1	WHT	22
232	W8	P3-30	WHT	22
248	W8	PS1-7	WHT	22
249	W4	Shield 224 & 225	BLK	24
125	W8	J5-2	BLU	22

Table 5-5. Panel/Chassis Wire List - Continued

WIRE NO.	FROM	TO	COLOR	WIRE AWG
339	W8	Shield 254 & 338	BLK	24
43	W9	E6	WHT	18
278	W9	S11A-2	WHT	22
336	W9	XDS11-A	WHT	22
337	W9	XDS12-A	WHT	22
245	W 1	PS1-2	WHT	22
338	WT1	XDS14-B	WHT	22
340	XDS1-A (Q-3)	XDS2-A	WHT	24
239	XDS1-B (Q-3)	P3-50	WHT	24
340	XDS2-A (Q-2)	XDS1-A	WHT	24
341	XDS2-A (Q-2)	XDS3-A	WHT	24
240	XDS2-B (Q-2)	P3-51	WHT	24
341	XDS3-A (Q-2)	XDS2-A	WHT	24
342	XDS3-A (Q-2)	XDS4-A	WHT	24
229	XDS3-B (Q-2)	P3-20	WHT	24
342	XDS4-A (Q-2)	XDS3-A	WHT	24
343	XDS4-A (Q-2)	XDS5-A	WHT	24
241	XDS4-B (Q-2)	P3-53	WHT	24
343	XDS5-A (Q-2)	XDSL-A	WHT	24
344	XDS5-A (Q-2)	XDS6-A	WHT	24
235	XDS5-B (Q-2)	P346	WHT	24
344	XDS6-A (Q-1)	XDS5-A	WHT	24
345	XDS6-A (Q-1)	XDS7-A	WHT	24
238	XDS6-B (Q-1)	P349	WHT	24
345	XDS7-A (Q-1)	XDS6-A	WHT	24
346	XDS7-A (Q-1)	XDS8-A	WHT	24
233	XDS7-B (Q-1)	P344	WHT	24
346	XDS8-A (Q-1)	XDS7-A	WHT	24
347	XDS8-A (Q-1)	XDS9-A	WHT	24
234	XDS8-B (Q-1)	P3-45	WHT	24
347	XDS9-A (Q-3)	XDS8-A	WHT	24
348	XDS9-A (Q-3)	XDS10-A	WHT	24
243	XDS9-B (Q-3)	P3-59	WHT	24
348	XDS10-A (Q-3)	XDS9-A	WHT	24
349	XDS10-A (Q-3)	XDS11-A	WHT	24
242	XDS10-B (Q-3)	P3-56	WHT	24
349	XDS11-A (Q-3)	XDS10-A	WHT	24
336	XDS11-A (Q-3)	W9	WHT	22
231	XDS11-B (Q-3)	P3-29	WHT	24
337	XDS13-A (Q-3)	W9	WHT	22
230	XDS13-B (Q-3)	P3-28	WHT	24
254	XDS14-A (E-1)	R1-2	B LU	22
338	XDS14-B (E-1)	WT1	WHT	22
3	XDS15-A (B-3)	C1-2	WHT	24
6	XDS15-B (B-3)	C2-2	WHT	24

CHAPTER 6
REPAIR INSTRUCTIONS

Section I. GENERAL INSTRUCTIONS

6-1. General Description. The test set is functionally divided into five sections; power, AADS test, LAI test, EPU test, and TS monitor. Figure 6-1 is a block diagram of the test set and figure FO-1 is the schematic diagram of the front panel/chassis wired assembly.

a. *Power Section.* The power section requires 115 Vat, 50, 60 or 400 Hz and +28 Vdc input power. The 115 Vac is used by power supplies PS1 and PS2 to provide +5 Vdc and ±15 Vdc respectively. Power supply PS1 provides operating power to the test set circuits, test set decimal display and panel lighting power to the LAI under test; PS2 provides operating power to the test set circuits, LAI and AADS LRU's under test. The +28 Vdc source provides operating power to the test set indicator lamps and to the EPU under test. Switches and test points are provided to monitor voltage and current supplied to the LRU's under test.

b. *AADS Test Section.* The AADS test section routes test set generated ±15 Vdc and simulated AADS Reference signal to the AADS under test. The AADS Test Switch (S16) and the associated test points provide for monitoring the four resolver outputs, the air temperature sensor output, and the continuity/resistance of the anti-icing heater,

c. *LAI Test Section.* The LAI test section routes ±15 Vdc operating power to the LAI under test, simulates fore-aft IAS, lateral IAS, and ADS FAIL signals. The PNL LIGHTS switch (S19) provides +5 Vdc to test the panel lights of the LAI under test.

d. *EPU Test Section,* The EPU test section routes +28 Vdc and the following simulated signals to the EPU under test:

Four resolver AADS angle signals
Air Temperature
Radar Altitude
Radar Altimeter Reliability
LAI FAIL discrete
CPU TEST discrete
Data Transmit Request
Data Clock

The EPU test section monitors the following test points or outputs of the EPU under test to isolate EPU faults:

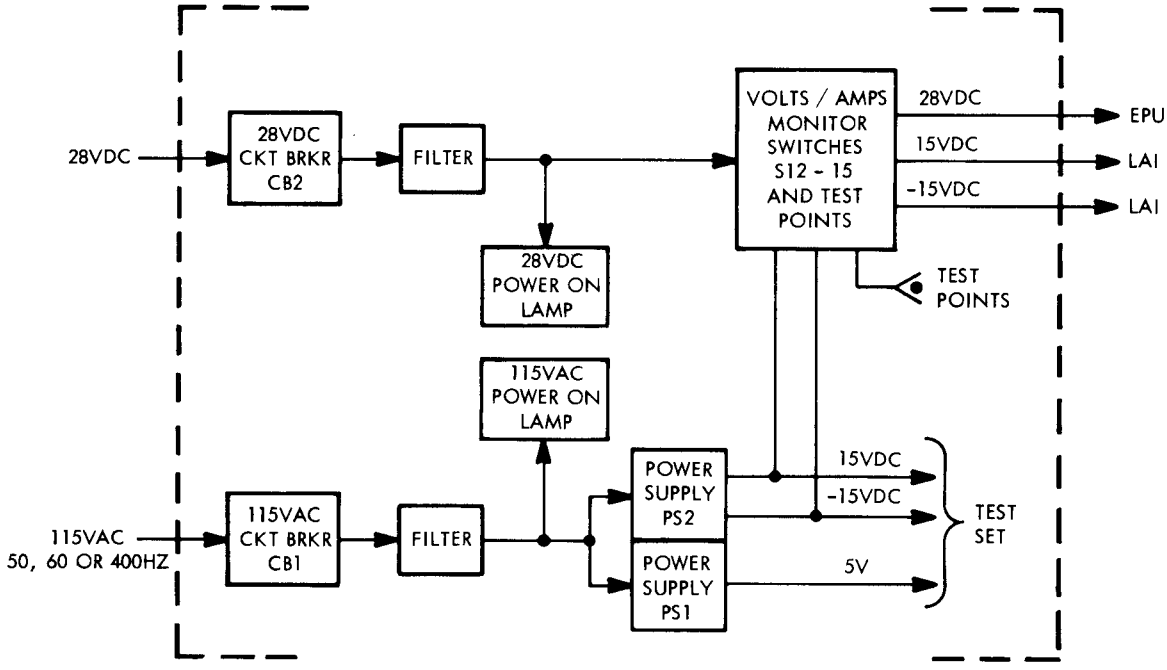
EPU +5 Vdc
EPU -5 Vdc
EPU +12 Vdc
AADS +15 Vdc
AADS -15 Vdc
Static Pressure Signal
Differential Pressure Signal
AADS Reference Signal
Fore-Aft TAS Signal
Lateral TAS Signal
Fore-Aft IAS Signal
Lateral IAS Signal
LAI +15 Vdc
LAI -15 Vdc
ADS FAIL Discrete Signal
ADS NO GO Discrete Signal
Serial Data
Data Ready

e. *TS Monitor Section.* The TS monitor section provides test set monitor functions of the 115 Vac and +28 Vdc input power, the +5 Vdc, +10 Vdc, -10 Vdc voltages and the following test set outputs may be test point monitored:

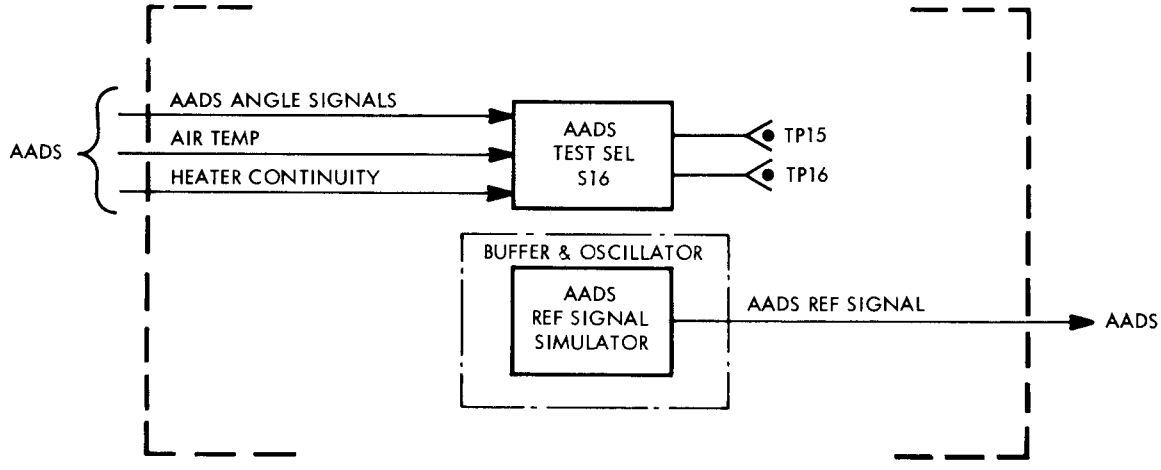
SIN α
Cos α
SIN $(\alpha-\beta)$
Cos $(\alpha-\beta)$
V_{IU}
V_{IV}
Radar Altitude
Reference Oscillator

f. *Display Driver Circuit Card Assembly 1A1.* The serial data applied to this circuit card assembly (CCA) is converted into an eight-bit parallel data word. This data word is applied to eight lamp drivers and three binary-to-seven segment decoder/drivers. The lamp drivers supply binary data bits B0 through B7 to drive front panel indicators DS8 through DS1 respectively. Meanwhile, the binary-to-seven decoders convert the eight-bit data word to three sets of signals. These signals drive three digit display DS12 on the test set front panel. Setting SELF TEST switch S5 on the front panel to SELF TEST enables the self test input to CCA 1A1. The data registers are loaded with logic 1's, turning on twelve lamp drivers and all of the seven segment decoder drivers.

g. *Clock and Comparator CCA 1A2.* Clock circuits on this CCA generate the data clock and data transmit request waveforms illustrated in figure 5-13. DATA WD SEL switch S8 on the front panel selects inputs for the comparator on this CGA. The comparator generates the proper number of clock pulses to load the selected word from the serial data into CCA 1A1. The clock pulses shut off when the selected word is loaded into CGA 1A1. Also, CCA 1A2 has



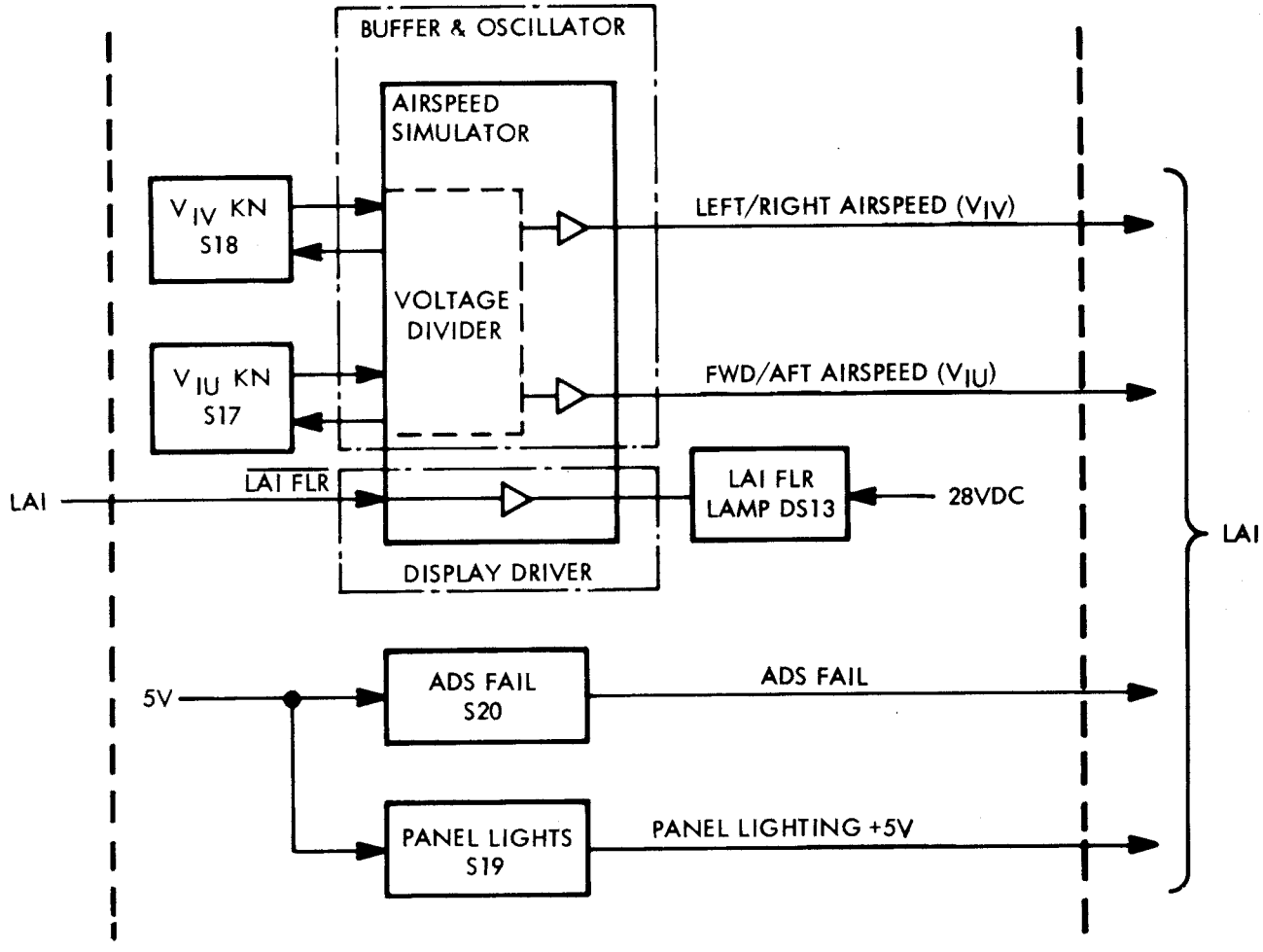
POWER SECTION



AADS TEST SECTION

AR 918998

Figure 6-1. Functional Block Diagram (Sheet 1 of 3)



LAI TEST SECTION

AR 918999

Figure 6-1. Functional Block Diagram (Sheet 2 of 3)

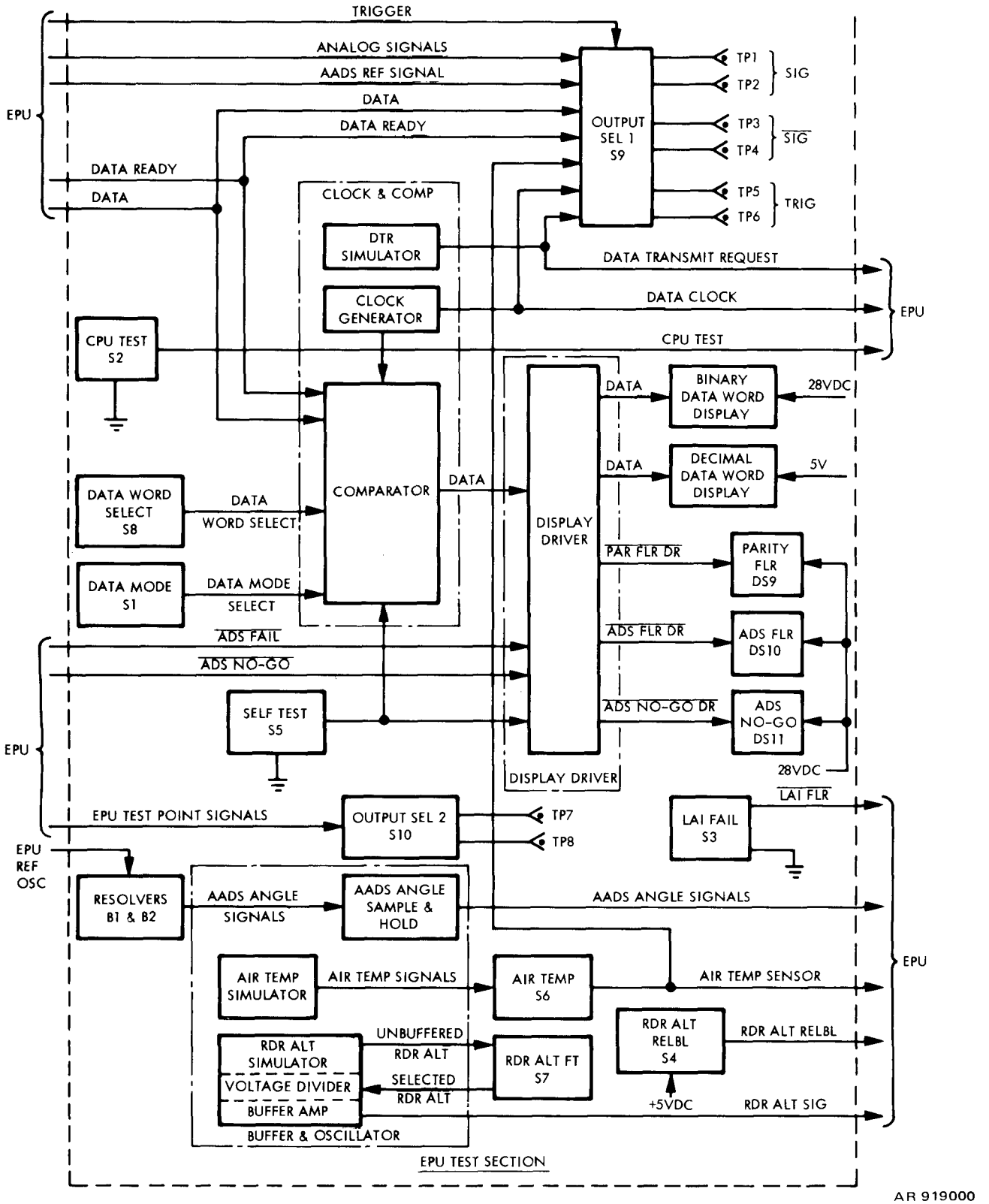


Figure 6-1. Functional Block Diagram (Sheet 3 of 3)

two differential input receivers which condition data ready and data inputs. Setting SELF TEST switch S5 on the front panel to SELF TEST inhibits the data clock and data transmit request outputs of CCA 1A2.

h. *Buffer and Oscillator CCA 1A3.* The inputs to CCA 1A3 consist of 5 Vdc, 15 Vdc, -15 Vdc and the resolver signal. The ac resolver signal is converted to a dc peak level called the resolver peak signal. An adjustable oscillator circuit generates the AADS reference signal (380 to 420 Hz). The AADS reference signal is also converted to a de peak level called the reference oscillator peak signal, A single regulator and two buffer amplifiers produce the precision +10 Vdc and -10 Vdc which can be monitored externally. The precision voltages are applied to divider networks selected by front panel switches S7, S17 and S18. The precision voltages selected by the front panel switches are buffered on CCA 1A3. A precision resistance network, selected by front panel switch S6, provides simulated temperature inputs to the EPU.

Section II. DISASSEMBLY/REMOVAL

6-2. Test Set Disassembly (Figure 6-2). To disassemble the test set, perform the following steps.

a. Open 8 cover latches (7).
b. Open cover (1) fully.
c. Slide cover (1) sideways until hinge (2) and hinge pins (3} disengage,
d. Separate cover (1) from test set container (6).
e. Open storage compartment in cover (1) by releasing three button latches (8).
f. Remove cables, pneumatic tubing, pneumatic kit and checking fixture from storage compartment in test set cover (1).
9. Remove twelve screws (5) that secure panel/chassis assembly (4) in enclosure (6).
h. Lift panel/chassis assembly (4) out of enclosure (6) and place in upright position.
i. Remove each circuit card assembly 1A1 through 1A4 (1, figure 6-3) as follows:
   (1) Loosen the screws (2) in both wedge clamps on the appropriate circuit card assembly until clamps are loose.
   (2) Carefully extract the circuit card assembly (1) from the card rack assembly (3).

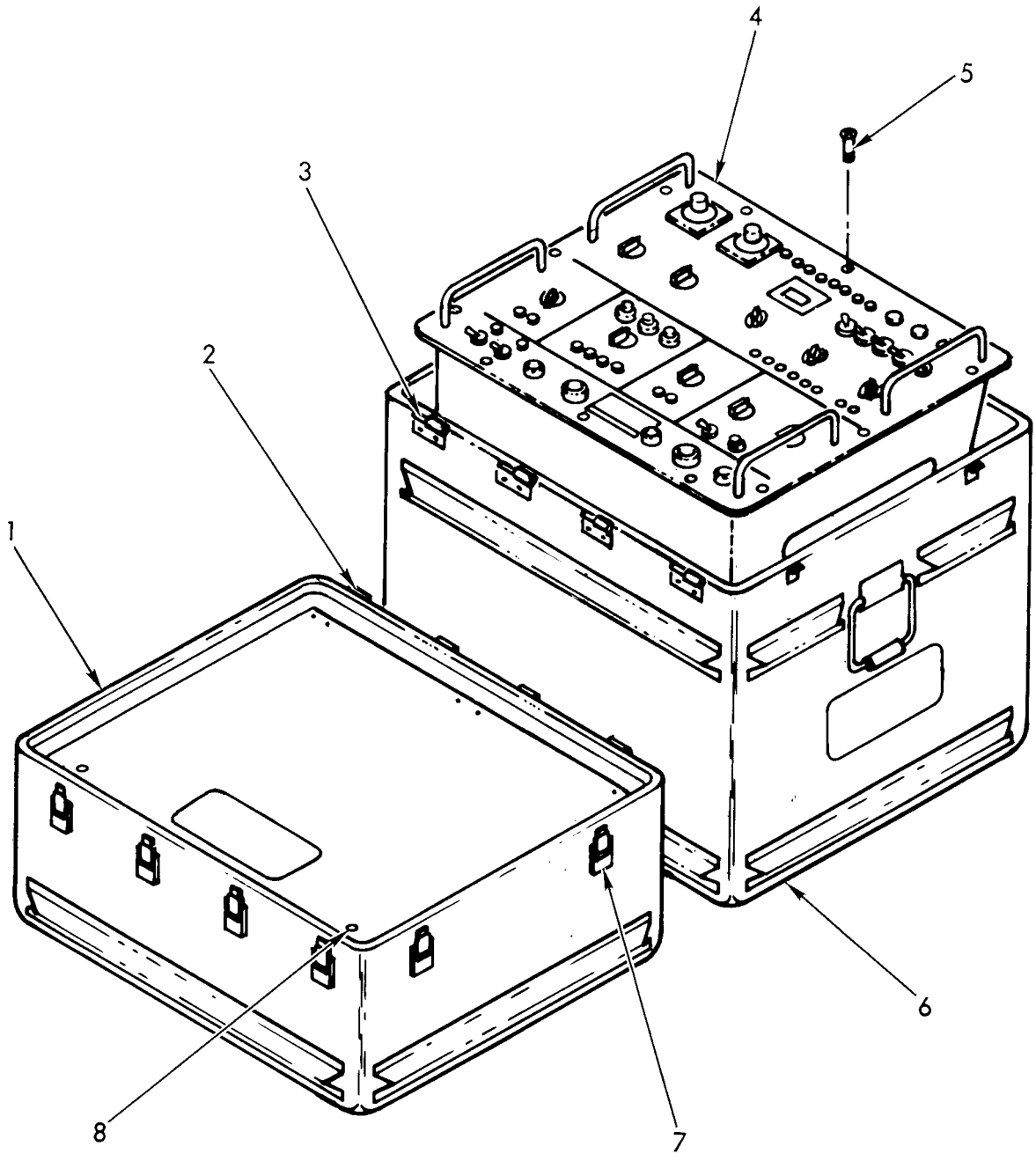
6-3. Panel/Chassis Assembly-Wired, Disassembly. To disassemble the panel/chassis perform the procedures outlined in paragraphs a and b.

a. *Removal of Front Panel Mounted Components.* Remove front panel mounted components by performing the following procedures:
   (1) *Removal of Dual-Speed Drive and Resober.* Remove dual-speed drive and resolver (1, figure 6-4) as follows:
      (a) Loosen two rear set screws (31).

CAUTION

The resolver wires are fragile. Care must be taken to avoid damage to the wires when handling the resolver.

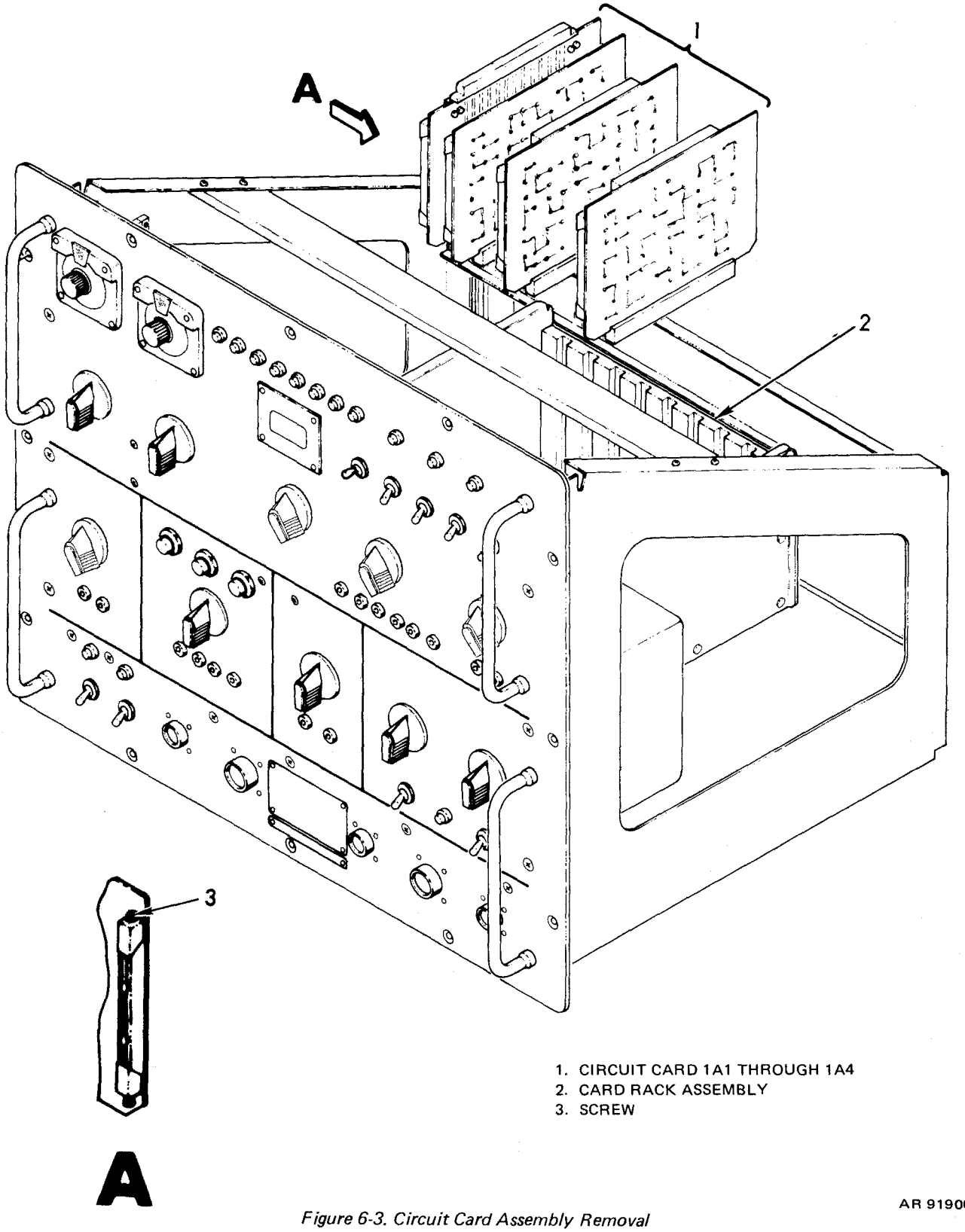
      (b) Unsolder each resolver wire from terminal block TB1 (77) and label for later identification.
      (c) Support resolver (30), loosen three screws (28) and turn mounting clamps (26) until resolver (30) is free.
      (d) Remove both lower mounting screws (32).
      (e) Support dual-speed drive (24) and remove both upper mounting screws.
      (f) Move dual-speed drive (24) and mounting ring (29) away from front panel (22).
   (2) *Removal of Indicator Lamp.* Remove indicator lamp (2) as follows:
      (a) Remove lamp retainer (33).
      (b) Extract lamp cartridge (34) from lampholder (35).
      (c) Unsolder each wire from lamp holder (35) and label for later identification.
      (d) Remove retaining nut (37) and washer (36).
      (e) Move lampholder (35) free of front panel (22).



1. COVER
2. HINGE
3. HINGE PIN
4. PANEL/CHASSIS
5. SCREW
6. ENCLOSURE
7. LATCH
8. BUTTON LATCH

AR 919001

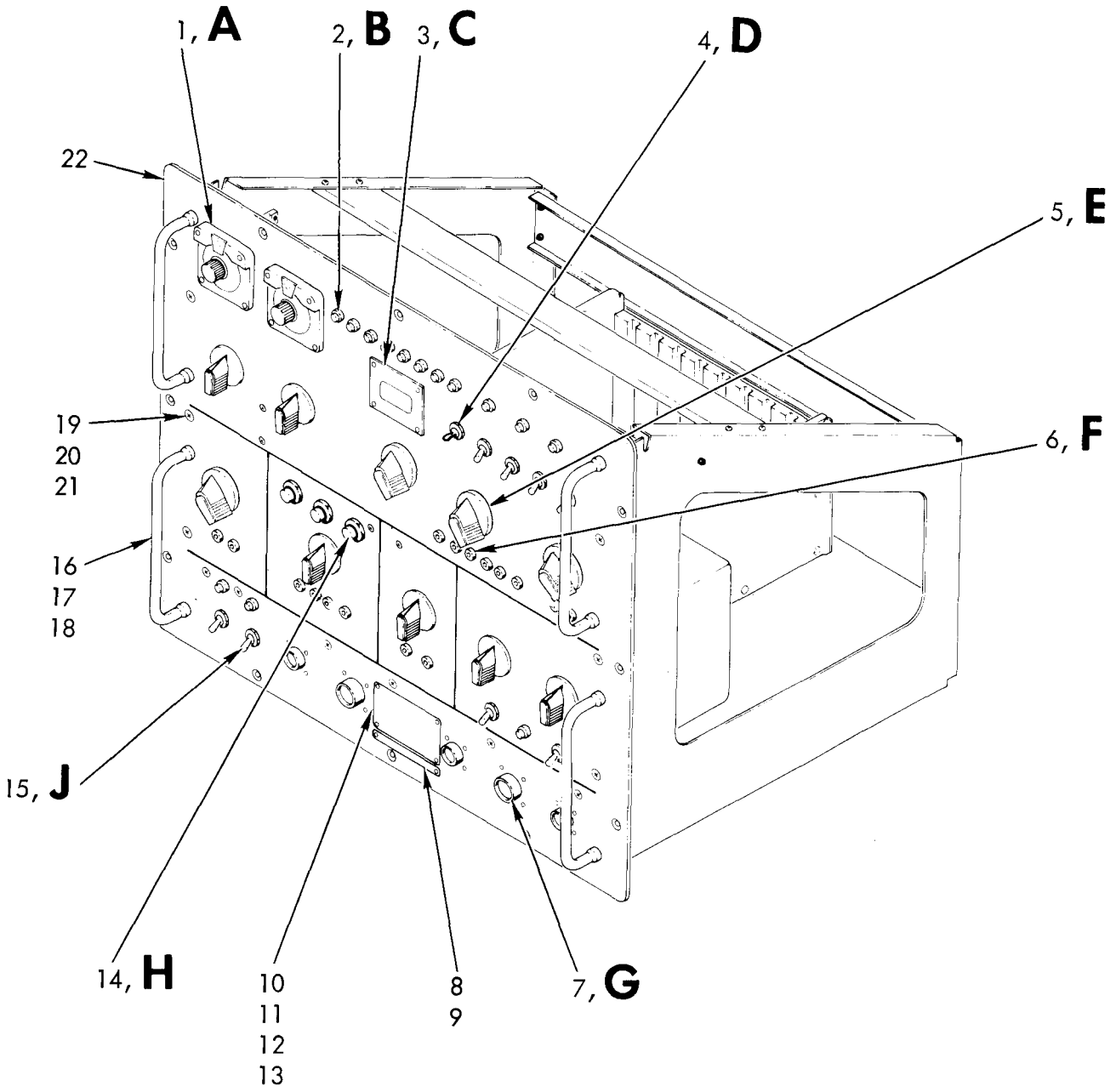
Figure 6-2. Test Set Disassembly



1. CIRCUIT CARD 1A1 THROUGH 1A4
2. CARD RACK ASSEMBLY
3. SCREW

AR 919002

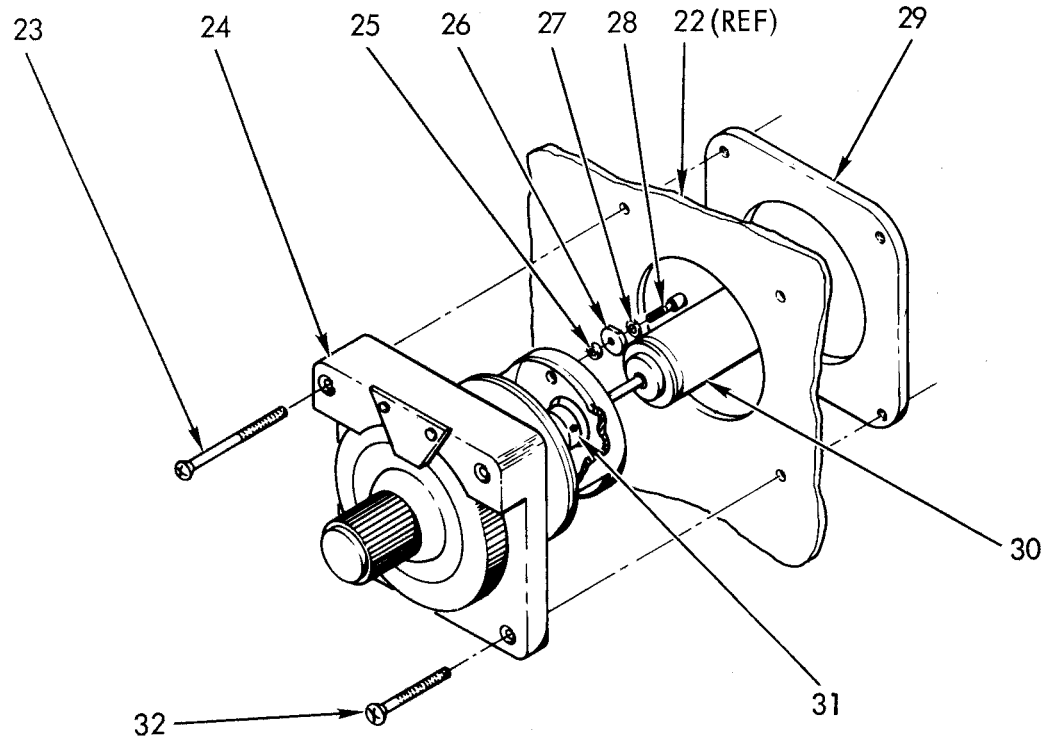
Figure 6-3. Circuit Card Assembly Removal



1. RESOLVER AND DRIVE
2. INDICATOR-LAMP
3. THREE-DIGIT READOUT
4. TOGGLE SWITCH
5. ROTARY SWITCH
6. CONNECTOR JACK
7. CONNECTOR
8. SERIAL NUMBER PLATE
9. RIVET
10. IDENTIFICATION PLATE
11. SCREW
12. WASHER
13. NUT
14. PUSHBUTTON SWITCH
15. CIRCUIT BREAKER
16. BOW HANDLE
17. FERRULE
18. SCREW, LOCKWASHER
19. SCREW
20. WASHER
21. NUT
22. FRONT PANEL

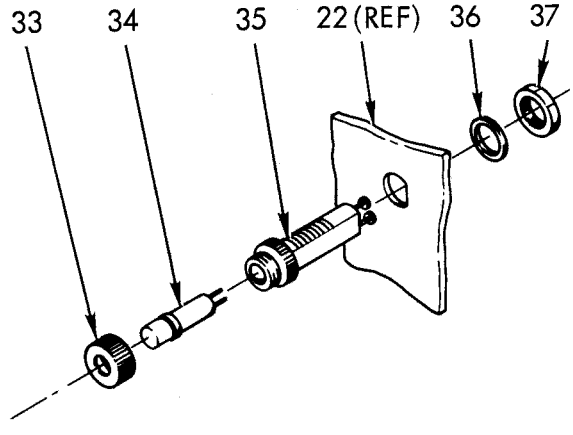
AR 919003

Figure 6-4. Panel/Chassis Assembly – Wired (Sheet 1 of 6)



23. UPPER MOUNTING SCREW
24. DUAL-SPEED DRIVE
25. WASHER
26. MOUNTING CLAMP
27. WASHER
28. SCREW
29. MOUNTING RING
30. RESOLVER
31. REAR SET SCREW
32. LOWER MOUNTING SCREW

A

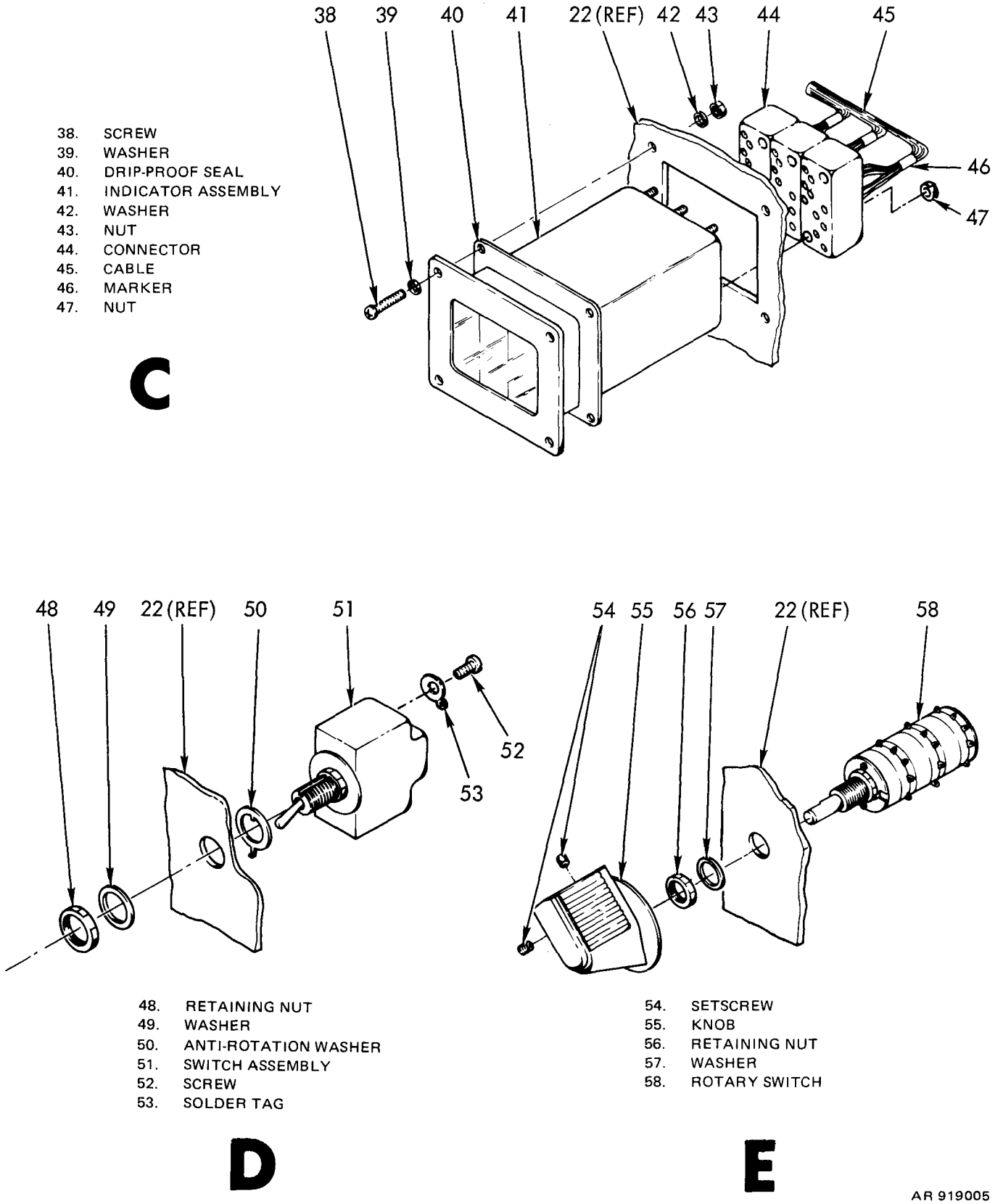


33. LAMP RETAINER
34. LAMP CARTRIDGE
35. LAMP HOLDER
36. WASHER
37. RETAINING NUT

B

AR 919004

Figure 6-4. Panel/Chassis Assembly - Wired (Sheet 2 of 6)

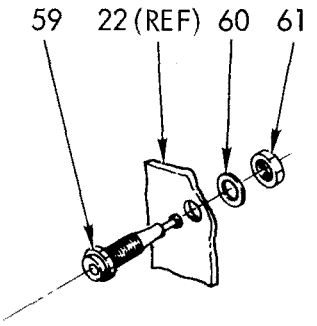


38. SCREW
39. WASHER
40. DRIP-PROOF SEAL
41. INDICATOR ASSEMBLY
42. WASHER
43. NUT
44. CONNECTOR
45. CABLE
46. MARKER
47. NUT

48. RETAINING NUT
49. WASHER
50. ANTI-ROTATION WASHER
51. SWITCH ASSEMBLY
52. SCREW
53. SOLDER TAG

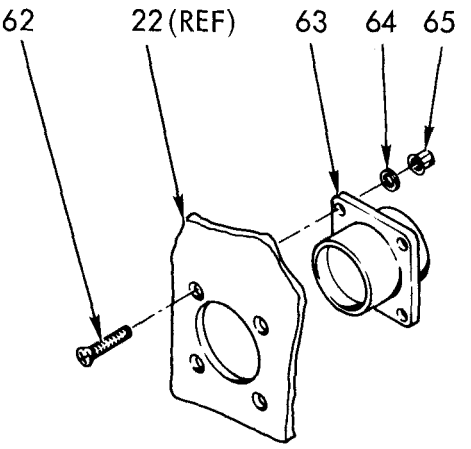
54. SETSCREW
55. KNOB
56. RETAINING NUT
57. WASHER
58. ROTARY SWITCH

Figure 6-4. Panel/Chassis Assembly - Wired (Sheet 3 of 6)



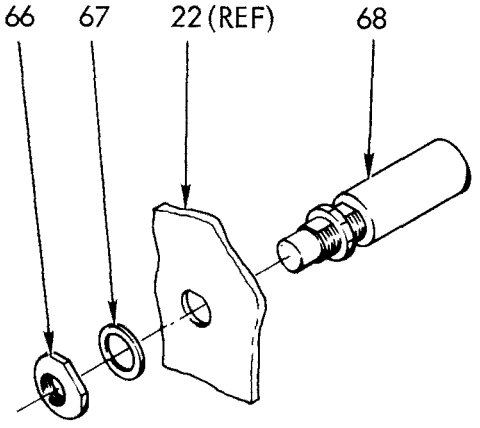
59. CONNECTOR JACK
60. WASHER
61. RETAINING NUT

F



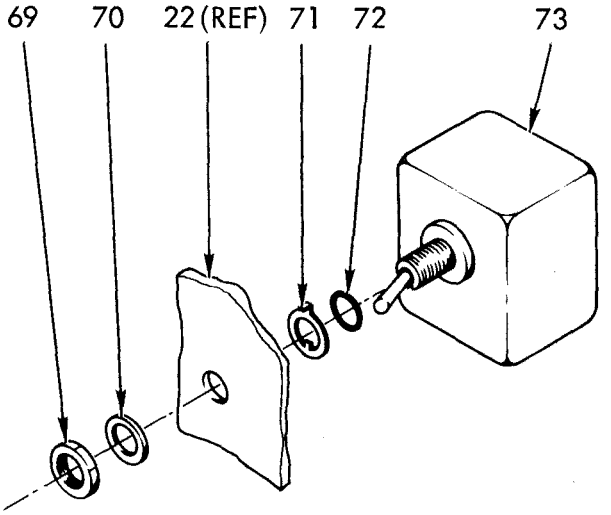
62. SCREW
63. CONNECTOR
64. WASHER
65. NUT

G



66. RETAINING NUT
67. WASHER
68. PUSHBUTTON SWITCH

H

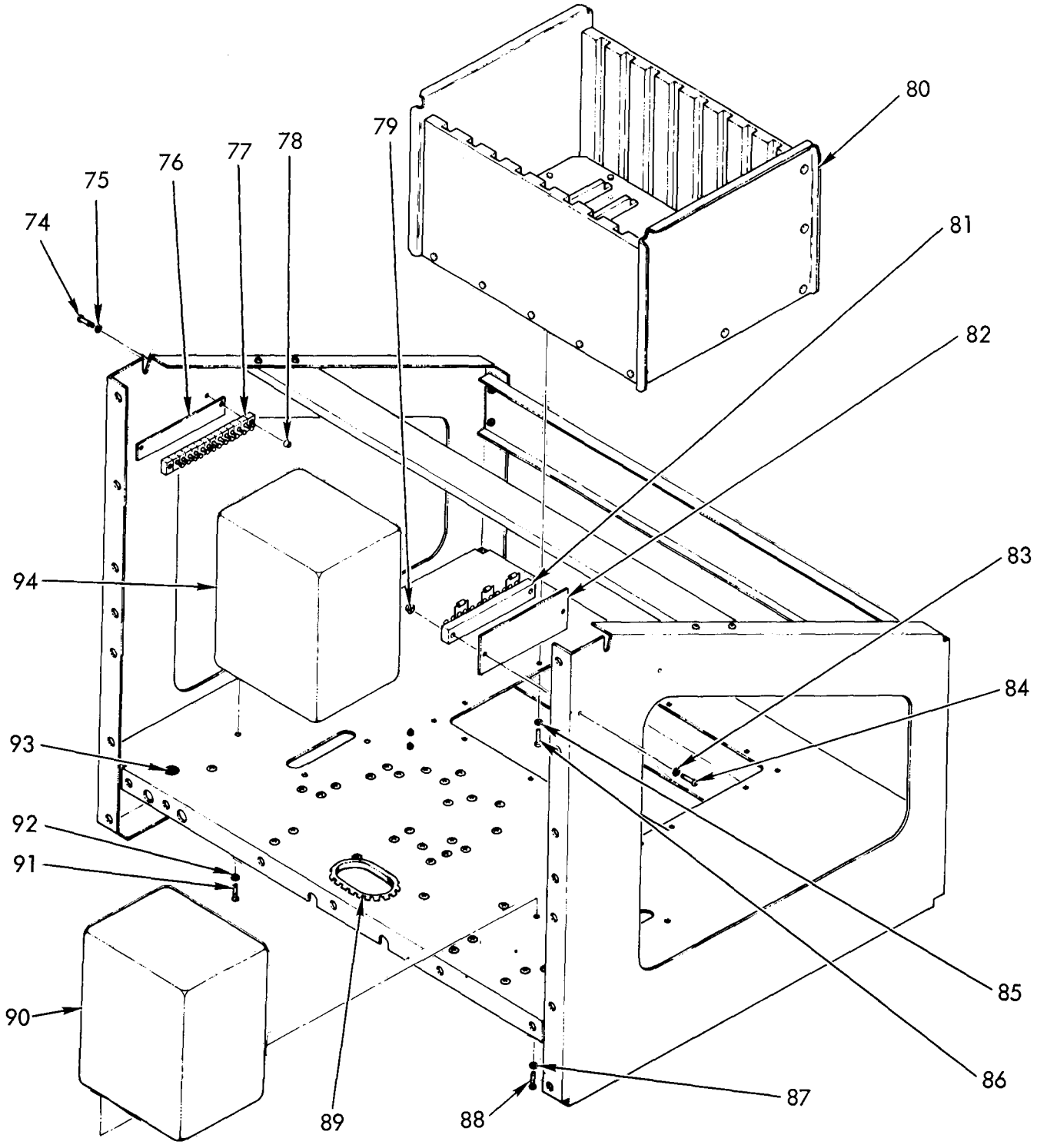


69. RETAINING NUT
70. WASHER
71. ANTI-ROTATION WASHER
72. O-RING
73. CIRCUIT BREAKER

J

AR 919006

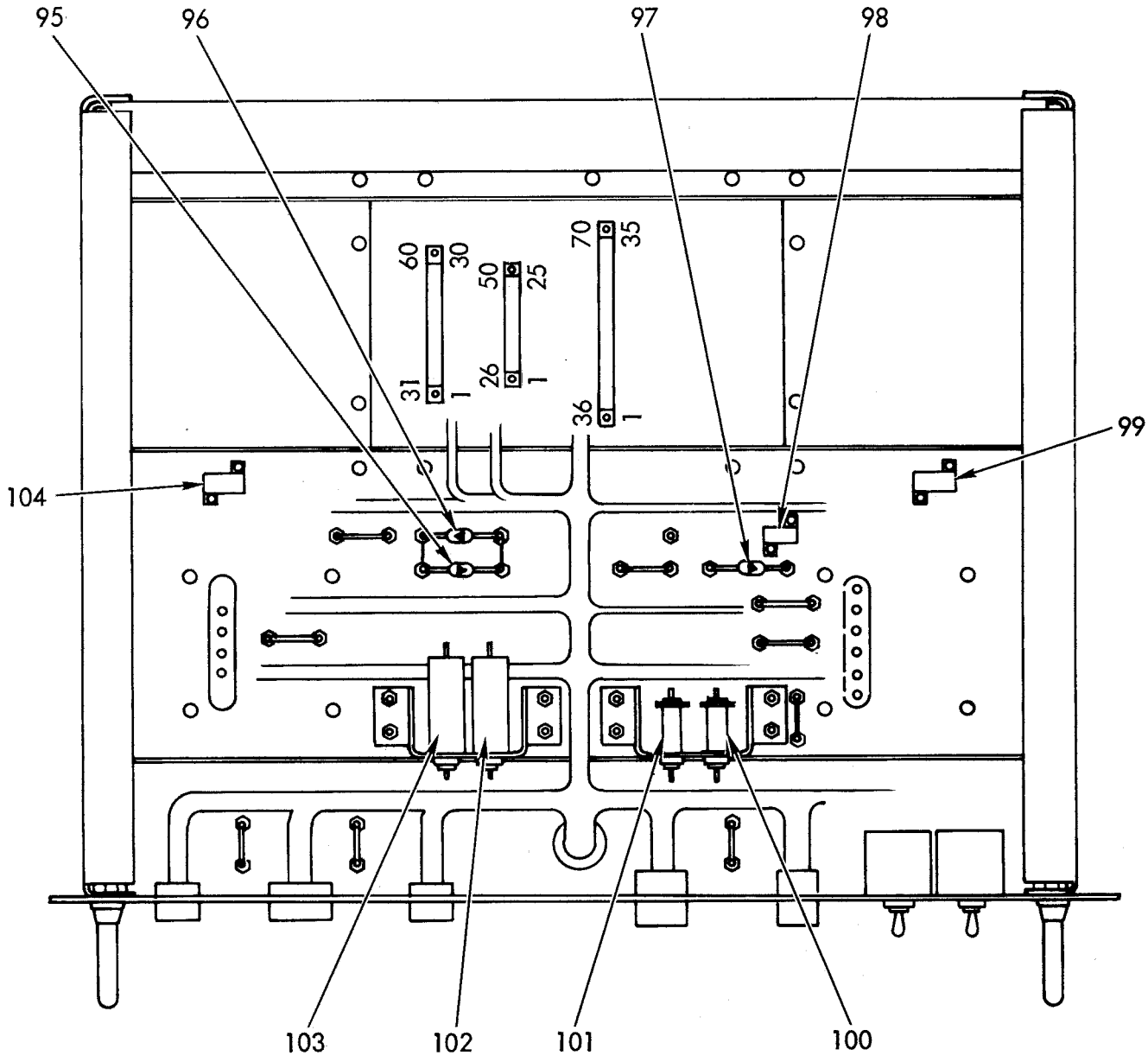
Figure 6-4. Panel/Chassis Assembly - Wired (Sheet 4 of 6)



74.	SCREW	81.	TERMINAL BLOCK TB2	88.	SCREW
75.	WASHER	82.	MARKER STRIP	89.	GROMMET
76.	MARKER STRIP	83.	WASHER	90.	POWER SUPPLY PS1
77.	TERMINAL BLOCK TB1	84.	SCREW	91.	SCREW
78.	NUT	85.	WASHER	92.	WASHER
79.	NUT	86.	SCREW	93.	GROMMET
80.	CARD RACK ASSEMBLY	87.	WASHER	94.	POWER SUPPLY PS2

AR 919007

Figure 6-4. Panel/Chassis Assembly - Wired (Sheet 5 of 6)



95.	DIODE CR2	100.	FILTER FL1
96.	DIODE VR1	101.	FILTER FL2
97.	DIODE CR1	102.	CAPACITOR C1
98.	RESISTOR R1	103.	CAPACITOR C2
99.	RESISTOR R2	104.	RESISTOR R3

AR 919008

Figure 6-4. Panel/Chassis Assembly - Wired (Sheet 6 of 6)

(3) *Removal of Three-Digit Readout.* Remove three-digit readout (3) as follows:
(a) Remove six nuts (47).
(b) Pull three connectors (44) on wire run (45) free from rear of indicator assembly (41).
(c) Remove four screws (38), four washers (39), four washers (42) and four nuts (43).
(d) Move indicator assembly (41) and drip-proof seal (40) out of front panel (22).

(4) *Removal of Toggle Switch.* Remove toggle switch (4) as follows:
(a) Disconnect each wire from back of switch assembly (51) and label for later identification.
(b) Remove retaining nut (48) and washer (49).
(c) Pull switch assembly (51) and anti-rotation washer (50) away from back of front panel (22).

(5) *Removal of Rotary Switch.* Remove rotary switch (5) as follows:
(a) Unsolder each wire from rotary switch (58) and label for later identification.
(b) Loosen set screws (54) and slide knob (55) off of rotary switch (58) shaft.
(c) Remove retaining nut (56) and washer (57).
(d) Pull rotary switch (58) away from back of front panel (22).

(6) *Removal of Connector Jack.* Remove connector jack (6) as follows:
(a) Unsolder wire from back of con. nector jack (59) and label for later identification.
(b) Remove retaining nut (61) and washer (60).
(c) Pull connector jack (59) out of front panel (22).

(7) *Removal of connectors J1 and J2.* Remove connector J1 or J2 (7) as follows:
(a) Unsolder each wire from back of connector (63) and label for later identification.
(b) Remove four each screws (62), washers (64) and nuts (65).
(c) Pull connector (63) away from back of front panel (22).

(8) *Removal of connectors J3 through J5.* Remove connector J3, J4, or J5 (7) as follows:
(a) Remove four each screws (62), washers (64) and nuts (65).
(b) Remove connector (63) from back of front panel (22) without straining cable.
(c) Remove each connector pin or socket with appropriate extraction tool.

(9) *Removal of Serial Number Plate.* To remove serial number plate (8), drill out two solid rivets (9) and separate serial number plate (8) from front panel (22).

(lo) *Removal of Identification Plate. To* remove identification plate (10), remove four each screws (11), washers (12) and nuts (13) and separate plate from front panel (22).

(11) *Removal of Pushbutton Switch.* Remove pushbutton switch (14) as follows:
(a) Disconnect wires from rear of pushbutton switch (68) and label for later identification.
(b) Remove retaining nut (66) and washer (67).
(c) Move pushbutton switch (68) away from rear of front panel (22).

(12) *Removal of Circuit Breaker.* Remove circuit breaker (15) as follows:
(a) Unsolder wires from rear of circuit breaker (73) and label for later identification.
(b) Remove retaining nut (69) and washer (70).
(c) Move circuit breaker (73), o-ring (72) and anti-rotation washer (71) away from back of front panel (22).

(13) *Removal of Bow Handles.* Remove bow handle (16) on rear of chassis side member.
(a) Remove two screws (18) from each bow handle (16) on rear of chassis side member.
(b) Separate bow handles (16) and ferrules (17) from front of test set.

(14) *Removal of Front Panel.* Remove front panel (22) as follows:
(a) Remove 12 screws (19), washers (20) and nuts (21).
(b) Separate front panel (22) from chassis.

b. *Removal of Chassis Mounted Components.* Remove chassis mounted components by performing the following procedures:

(1) *Removal of Terminal Block TB1.* Remove terminal block TB1 as follows:

(a) Disconnect each wire from terminal block TB1 (77) and label for later identification.

(b) Remove two screws (74), washers (75) and nuts (78).

(c) Separate terminal block TB1 (77) from chassis framework.

(2) *Removal of Card Rack Assembly.* Remove card rack assembly (80) as follows:

(a) Remove 14 screws (86) and washers (85).

(b) Lift card rack assembly (80) free of chassis framework.

(3) *Removal of Terminal Block TB2.* Remove terminal block TB2 (81) as follows:

(a) Disconnect each wire from terminal block TB2 (81) and label for later identification.

(b) Remove two screws (84), washers (83) and nuts (79).

(c) Separate terminal block TB2 (81) from framework.

(4) *Removal of Grommets.* Remove grommets *(89* and 93) by carefully prying out of holes with a screwdriver.

(5) *Removal of Power Supply PS1.* Remove power supply PSI (90) as follows:

(a) Disconnect each wire from power supply PSI (90) and label for later identification.

(b) Remove four screws (88) and washers (87).

(c) Lift power supply PSI (90) free of chassis.

(6) *Removal of Power Supply PS2.* Remove power supply PS2 (94) as follows:

(a) Disconnect each wire from power supply PS2 (94) and label for later identification.

(b) Remove four screws (91) and washers (92).

(c) Lift power supply PS2 (84) free of chassis.

(7) *Removal of Diodes CR1, CR2 or VR1* Remove diode CR1 (97), CR2 (95) or VRI (96) as follows:

(a) Invert chassis to expose underside.

(b) Record polarity of diode.

(c) Unsolder diode from standoffs.

(d) If standoff requires removal, unsolder each wire from standoff and label for later identification.

(e) Remove appropriate screws and washers to free standoff from chassis.

(8) *Removal of Resistor R1.* Remove resistor RI (98) as follows:

(a) Unsolder each wire from resistor R1 (98) and label for later identification.

(b) Remove two screws, washers and nuts.

(c) Lift resistor from inverted chassis.

(9) *Removal of Resistors R2 and R3.* Remove resistor R2 (99) or R3 (104) as follows:

(a) Unsolder each wire from resistor R2 (99) or R3 (104) and label for later identification.

(b) Remove two screws, washers and nuts.

(c) Lift resistor from inverted chassis.

Section III. CLEANING

6-4. GENERAL

a. Isopropyl alcohol (item 13, Appendix F) is required for cleaning the test set.

b. Electro-mechanical components shall be cleaned with clean, dry, lint-free cloth.

c. If flux residue is found on any solder connection, it shall be removed using isopropyl alcohol.

d. Exposed areas shall be cleaned with clean lint-free cloth moistened with isopropyl alcohol.

e. Places inaccessible to a cloth shall be cleaned with a camel hair brush dipped in isopropyl alcohol.

f. Cleaned areas should be dried with low pressure air.

Section IV. INSPECTION

6-5. GENERAL

a. Inspect the internal connectors for broken, loose, bent, corroded, or missing pins; cracked insulation.
b. Inspect hardware for missing screws, nuts, bolts, rivets and lockwashers; screws, nuts, or bolts with stripped threads,
c. Inspect for missing, incorrect, illegible, or obliterated markings, decals, or reference designators.
d. Inspect solder connections for no solder, cold or crystallized joints.
e. Inspect wiring for cut, burned, or abraded insulation exposing bare connector; abrupt V bends which weaken conductor; points or abrasion not insulated; pinched or damaged wires; broken or loose lacing; loose clamps.
f. Inspect printed circuit cards for broken, cracked, or burned parts, broken circuitry, chipped contacts, copper showing on contacts or circuitry; cracks, holes or burns in cards, defective solder joints; cracks, bubbles or holes, lifted pads, broken or missing eyelets, loose or dangling wires, bent or shorted wire wrap pins,

Section V. ASSEMBLY/INSTALLATION

6-6. CHASSIS/PANEL ASSEMBLY-WIRED, ASSEMBLY (figure 6-4)

NOTE

Prefix all reference designators with 1A5.

a. *Chassis Mounted Components Installation.*
(1) Installation of Resistor R2 or R3. Install resistor R2 (99) or R3 (104) as follows:
(a) Attach resistor R2 (99) or R3 (104) to chassis using two screws, washers and nuts.
(b) Using solder (1, Appendix F), solder wires to resistors in accordance with labels applied during disassembly.
(2) *Installation of Resistor R1. Install resis-*tor RI (98) as follows:
(a) Attach resistor R1 (98) to chassis using two screws, washers and nuts.
(b) Using solder (1, Appendix F), solder wires to resistor in accordance with labels applied during disassembly.
(3) *Installation of Diodes CR1, CR2 or VR1.* Install diode CR1 (97), CR2 (95) or VR1 (96) as follows:
(a) Using solder (1, Appendix F), solder wires to standoffs in accordance with labels applied during disassembly.
(b) Position diode to standoffs in accordance with polarity recorded during disassembly and solder in place, using solder (1, Appendix F).
(4) *Installation of Power Supply PS2. Install* power supply PS2 (94) as follows:
(a) Position power supply PS2 (94) on chassis and secure with four screws (91) and washers (92).
(b) Connect wires to power supply PS2 (94) in accordance with labels applied during disassembly.
(c) Adjust in accordance with paragraph 6-8.
(5) *Installation of Power Supply PS1. Install* power supply PSI (90) as follows:
(a) Position Power Supply PS1 (90) on chassis and secure with four screws (88) and washers (87).
(b) Connect wires to Power Supply PS1 (90) in accordance with labels applied during disassembly.
(c) Adjust in accordance with paragraph 6-8.
(6) *Installation of Terminal Block TB2. In-*stall terminal block TB2 (81) as follows:
(a) Position terminal block TB2 (81) on chassis framework.
(b) Secure terminal block to chassis with two screws (84), washers (83) and nuts (79).
(c) Connect wires to terminal block in accordance with labels applied during disassembly.
(7) *Installation of Grommets.* Press grommets (89 and 93) into appropriate chassis holes.

(8) *installation of Card Rack Assembly. In*stall card rack assembly (80) as follows:

(a) position card rack assembly (80) on chassis.

(b) Secure card rack assembly (80) to chassis with 14 screws (86) and washers (85).

(9) *Installation of Terminal Block TB1. In*stall terminal block TB1 (77) as follows:

(a) Position terminal block TB1 (77) on chassis framework.

(b) Secure terminal block TB1 (77) to chassis with two screws (74), washers (75) and nuts (78).

(c) Connect wires to terminal board in accordance with labels applied during disassembly.

b. *Installation of Front Panel Mounted Components.*

(1) Installation of Front Panel. Install front panel (22) as follows:

(a) Position front panel (22) on chassis.

(b) Secure with 12 screws (19), washers (20) and nuts (21).

(2) *Installation of Bow Handles. Install* bow handles (16) as follows:

(a) Position bow handle (16) and ferrules (17) on front panel (22),

(b) Secure bow handle (16) and ferrules (17) to front panel (22) with two screws and two lockwashers (18).

(3) *Installation of Circuit Breaker. Install* circuit breaker (15) as follows:

(a) Install o-ring (72) and anti-rotation washer (71) on circuit breaker (73).

(b) Install circuit breaker (73) in appropriate hole from rear of front panel (22) with tang on anti-rotation washer (71) in small hole in rear of front panel (22).

(c) Secure circuit breaker (73) to front panel (22) with washer (70) and retaining nut (69).

(d) Using solder (1, Appendix F), solder wires to circuit breaker (73) in accordance with labels applied during disassembly.

(4) *Installation of Pushbutton Switch. Install* pushbutton switch (14) as follows:

(a) Insert pushbutton switch (68) into appropriate hole in front panel (22).

(b) Secure pushbutton switch (68) with washer (67) and retaining nut (66).

(c) Connect wires to pushbutton switch (68) in accordance with labels applied during disassembly.

(5) *Installation of Identification Plate.* Position the identification plate (10) on the front panel (22) and secure with four screws (11), washers (12) and nuts (13).

(6) *Installation of Serial Number Plate. Posi*tion the serial number plate (8) on the front panel and secure with two rivets (9). (See item 26, figure E-7.)

(7) *Installation of Connectors J3 through J5.* Install connector J3 through J5 (7) as follows:

(a) Using appropriate insertion tool from basic tool kit (5, Appendix D), install each pin or socket in accordance with wire list table 5-5.

(b) Insert connector (63) in appropriate hole from rear of front panel (22).

(c) Secure connector (63) in place with four screws (62), washers (64) and nuts (65).

*(8) Installation of Connectors J1 and J2. In*stall connector J1 or J2 (7) as follows:

(a) Insert connector (63) in appropriate hole from rear of front panel (22) and secure with four screws (62), washers (64) and nuts (65).

(b) Using solder (1, Appendix F), solder wires to connector (63) in accordance with labels applied during disassembly.

(9) *installation of Connector Jack, Install* connector jack (6) as follows:

(a) Insert connector jack (59) in appropriate hole in front panel (22).

(b) Secure connector jack (59) to front panel (22) with retaining nut (61) and washer (60).

(c) Using solder (1, Appendix F), solder wire to connector jack in accordance with label applied during disassembly.

(10) installation of Rotary Switch. Install rotary switch (5) as follows:

(a) Insert rotary switch (58) in appropriate hole from rear of front panel (22).

(b) Secure with retaining nut (56) and washer (57).

(c) Install knob (55) on rotary switch (58) shaft and secure with two set screws (54).

(d) Using solder (1, Appendix F), solder wires to rotary switch in accordance with labels applied during disassembly.

(11) *Installation of Toggle Switch.* Install toggle switch (4) as follows:

(a) Install anti-rotation washer (50) on switch assembly (51).

(b) Install switch assembly (51) from rear of front panel (22) with tang on anti-rotation washer (50) in small hole in back of front panel (22).

(c) Secure switch assembly (51) to front panel (22) with washer (49) and retaining nut (48).

(d) Connect wires to switch assembly (51) in accordance with labels applied during disassembly.

(12) *Installation of Three-Digit Readout. Install* readout (3) as follows:

(a) Insert indicator assembly (41) and drip-proof seal (40) in front panel (22).

(b) Secure to front panel (22) with four screws (38), washers (39), washers (42) and nuts (43).

(c) Connect three connectors (44) on wire run (45) to rear of indicator assembly and secure with six nuts (50).

(13) *Installation of Indicator Lamp.* Install indicator lamp (2) as follows:

(a) Insert lampholder (35) into appropriate hole in front panel (22).

(b) Secure with washer (36) and retaining nut (37).

(c) Using solder (1, Appendix F), solder wires to lampholder (35) in accordance with labels applied during disassembly.

(d) Install lamp cartridge (34) in lampholder (35) and secure with lamp retainer (33).

(14) *Installation of Dual-Speed Drive and Resolver. Install* dual-speed drive and resolver (1) as follows:

(a) Insert dual-speed drive (24) in appropriate hole in front panel (22).

(b) Position mounting ring (29) over rear of dual-speed drive (24) and install two upper mounting screws (23).

(c) Install two lower mounting screws (32).

(d) Slip resolver (30) into position and tighten rear setscrews (31) on shaft coupler.

(e) Install three screws (28), washers (27), clamps (26) and washers (25).

(f) Connect resolver wires to terminal block TB1 in accordance with labels applied during disassembly.

(9) Adjust resolver in accordance with paragraph 6-8.

6-7. Test Set Assembly. Assemble the test set as follows:

a. Insert circuit card assemblies 1A1 through 1A4 (1, figure 6-3) in card rack assembly (3).

b. Tighten the screws (2) in the wedge clamps on each circuit card assembly (1) to secure in card rack assembly (3).

c. Set enclosure (6, figure 6-2) as shown in figure 6-2.

d. Lower panel/chassis assembly-wired (4) into enclosure (6), ensuring locator pins in bottom of enclosure (6) engage holes in rear of chassis (4).

e. Secure panel/chassis (4) in enclosure with 12 screws (5).

f. Stow cables, pneumatic tubing, pneumatic kit and checking fixture in storage compartment in cover (1).

9. Close storage compartment and secure with button latches (8).

h. Align hinges (2) and hinge pins (3) and move cover (1) sideways to engage hinges.

i. Close cover (1) and secure with 8 cover latches (7).

Section VI. ADJUSTMENT AND ALIGNMENT

6-8. Preliminary Operations.

a. For adjustment procedures, the test set shall be set up as outlined in paragraph 2-7 and shown in figure 2-2.

WARNING

HIGH VOLTAGE

is used in the operation of this equipment.

DEATH ON CONTACT

may result if personnel fail to observe safety precautions. Learn the areas containing high voltage in the equipment before working inside.

(1) Apply power to the Test Set by setting circuit breakers CB1 and CB2 ON. Insure that 115 Vac and 28 Vdc lamps light.

(2) Allow the Test Set to warm up for 15 minutes, before any adjustments and alignments are made.

6-9. Special Environmental Conditions

a. All adjustments and alignments are to be performed in an environment, which is controlled to the extent necessary to assure measurements of required accuracy, giving due consideration to temperature, humidity, vibration, cleanliness and other controllable factors affecting precision measurement.

6-10. Control Settings. The Test Set front panel controls and indicators are illustrated in figure 6-5. Adjustment instructions shall call out controls and indicators by the figure 6-5 reference numbers.

6-11. Adjustment Procedures.

a. Adjust the DC power supplies as follows:

(1) Set TS MON switch S11 (16, figure 6-5) to 5V.

(2) Connect the DVM negative lead to TP10 (14).

(3) Connect DVM positive lead to TP9 (15).

(4) DVM shall indicate between 4.90 Vdc and 5.10 Vdc.

(5) If requirements of step (4) are met, proceed to step (7). If not, proceed to step (6).

(6) Adjust +5 Vdc adjustment potentiometer (figure 6-6) on power supply PS1 until DVM indicates between 4.90 Vdc and 5.10 Vdc.

(7) Connect DVM positive lead to TP11 (11, figure 6-5).

(8) Connect DVM negative lead to TP12 (9).

(9) Set POWER TEST switch S12 (17) to LAI +15V.

(10) DVM shall indicate between 14.80 Vdc and 15.20 Vdc.

(11) If requirements of step (10) are met, proceed to step (13). If not, proceed to step (12).

(12) Adjust the +15 Vdc adjustment potentiometer (figure 6-6) on power supply PS2 until DVM indicates between 14.80 Vdc and 15.20 Vdc.

(13) Set POWER TEST switch S12 (17, figure 6-5) to LAI -15V.

(14) DVM shall indicate between - 14.80 Vdc and - 15.20 Vdc.

(15) If requirements of step (14) are met proceed to step (17). If not, proceed to step (16).

(16) Adjust the -15 Vdc adjustment potentiometer (figure 6-6) on power supply PS2 until DVM indicates between -14.80 Vdc and -1 5.20 Vdc.

(17) DC power supply adjustments complete.

b. Adjust the oscillator amplitude and frequency circuits as follows:

(1) Set TS MON/Switch S11 (16, figure 6-5) to REF OSC.

(2) Connect DVM positive lead to TP9 (15).

(3) Connect DVM negative lead to TP10 (14).

(4) Connect oscilloscope positive lead to TP9 (15).

(5) Connect oscilloscope negative lead to TP10 (14).

(6) Set DVM for RMS Vac and read between 6.87 Vac and 7.27 Vac RMS.

(7) Check for indication on oscilloscope of between 380 and 420 Hz.

(8) If the requirements of steps (6) and (7) are met, proceed to step (12). If not, then proceed to step (9).

(9) Adjust potentiometer R7 on the Buffer and Oscillator CCA 1A3 (figure 6-7 and figure E-5, Appendix E) until the DVM indicates between 6.87 and 7.27 Vac RMS.

(10) Adjust potentiometer R8 on the Buffer and Oscillator CCA 1A3 (figure 6-7 and figure E-5, Appendix E) until the oscilloscope indicates a frequency is between 380 and 420 Hz. (See figure 5-13, waveform 3.)

NOTE

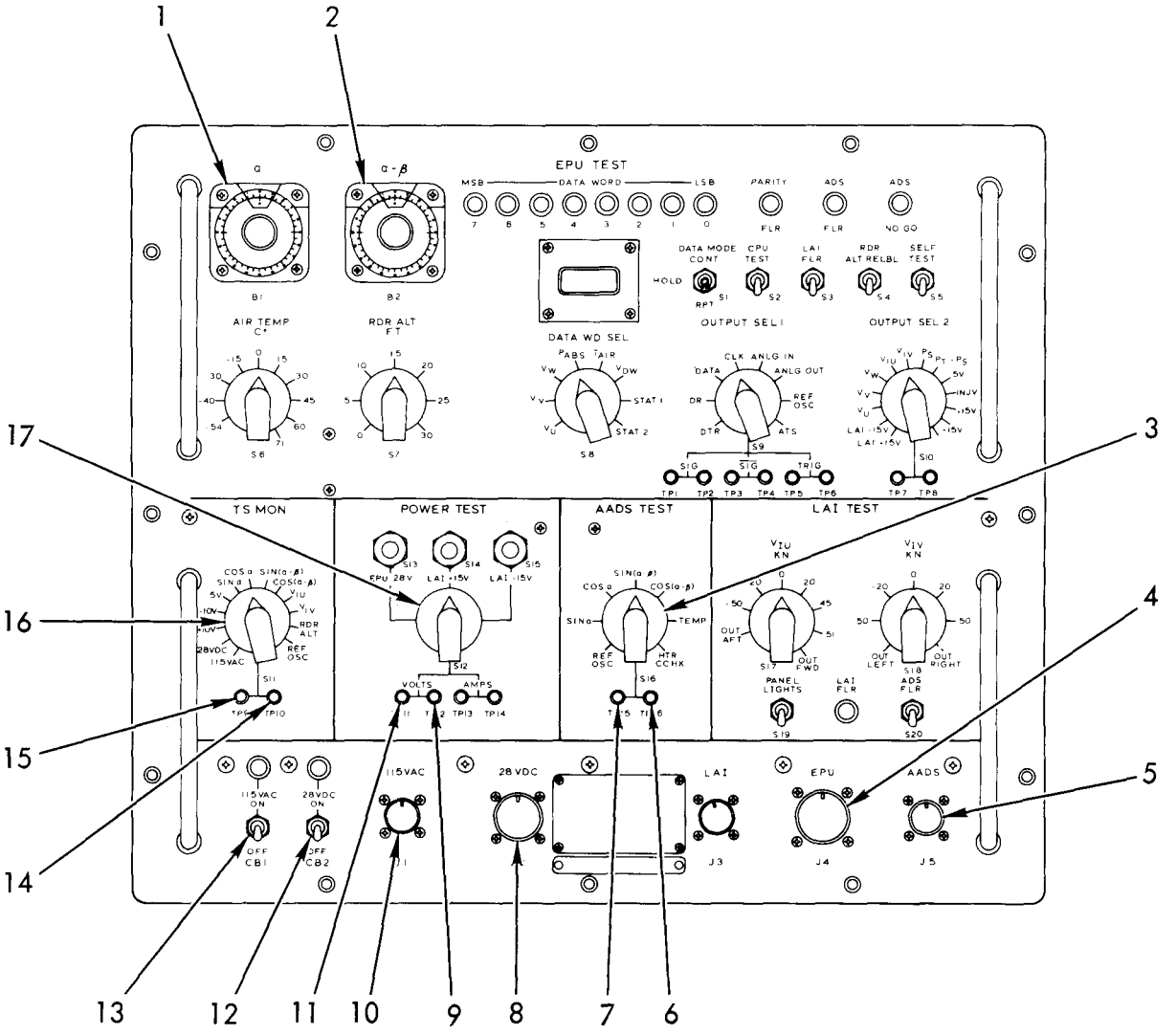
The voltage and frequency adjustments on the Buffer and Oscillator CCA interact. After adjusting either value, recheck the other.

(11) Repeat steps (9) and (10) until satisfactory results are obtained.

(12) Oscillator adjustments complete.

c. Perform the peak detection circuit and resolver alignment as follows:

(1) Ensure circuit breakers CB1 (13, figure 6-5) and CB2 (12) set to OFF.



1. RESOLVER B1
2. RESOLVER B2
3. AADS TEST SWITCH S16
4. EPU CONNECTOR J4
5. AADS CONNECTOR J5
6. TEST POINT TP 16
7. TEST POINT TP15
8. 28 VDC CONNECTOR J2
9. TEST POINT TP12
10. 115 VAC CONNECTOR J1
11. TEST POINT TP11
12. CIRCUIT BREAKER CB2
13. CIRCUIT BREAKER CB1
14. TEST POINT TP10
15. TEST POINT TP9
16. TS MON SWITCH S11
17. POWER TEST SWITCH S12

AR 919009

Figure 6-5. Test Points and Controls for Adjustments

(2) Connect test cable (figure 1-3) between connectors J4 (4) and J5 (5).
(3) Set circuit breakers CB1 (13) and CB2 (12) ON.

WARNING

HIGH VOLTAGE

is used in the operation of this equipment.

DEATH ON CONTACT

may result if personnel fail to observe safety precautions. Learn the areas containing high voltage in the equipment before working inside.

(4) Allow two minutes for the peak detection circuit to restabilize.
(5) Connect DVMpositive lead to TP9 (15).
(6) Connect DVM negative lead to TP10 (14).
(7) Set TS MON switch S11 (16) to SIN α position.
(8) Set α resolver B1 (1) to 0.0°.

NOTE

DVM shall be set to the one-volt RMS range.

(9) Check for DVM indication of less than 0.010 Vac.
(10) If the requirements of step (9) are met, proceed to step (15). If not, proceed to step (1 1).
(11) Loosen the three screws (28, figure 6-4) which hold the resolver (31) to the dual speed drive (24).
(12) Turn resolver (31) until DVM indication is less than 0.010 Vac.
(13) Tighten the three screws (28) to secure resolver (31).
(14) Repeat steps (11) through (13) until the requirement of step (9) is met.
(15) Set α resolver B1 (1, figure 6-5) to 180.0°.
(16) Check for DVM indication of less than 0.010 Vac.
(17) Set TS MON switch S11 (16) to COS α.
(18) Set α resolver B1 (1) to 270.0°.
(19) Check for DVM indication of less than 0.010 Vac.
(20) Set α resolver B1 (1) to 90.0°.
(21) Check for DVM indication of less than 0.010 Vac.
(22) Set TS MON switch S11 (16) to SIN (α - β).
(23) Set α - β resolver B2 (2) to 0.0°.
(24) Check for DVM indication of less than 0.010 Vac.
(25) If the requirement of step (24) is met, proceed to step (30), if not, proceed to step (26).
(26) Loosen the 3 screws (28, figure 6-4) which hold resolver (31) to dual speed drive (24).
(27) Turn resolver (31) until DVM indication is less than 0.010 Vac.
(28) Tighten the three screws (28) to secure resolver (31).
(29) Repeat steps (26) through (28) until requirement of step (24) is met.
(30) Set α - β resolver B2 (2, figure 6-5) to 180.0°.
(31) Check for DVM indication of less than 0.010 Vac.
(32) Set TS MON switch S11 (16) to COS (α– β).
(33) Set α - β resolver B2 (2) to 90.0°.
(34) Check for DVM indication of less than 0,010 Vac.
(35) Set α - β resolver B2 (2) to 270.0°.
(36) Check for DVM indication of less than 0.010 Vac.
(37) Connect DVM positive lead to TP15 (7).
(38) Connect DVM negative lead to TP16 (6).

NOTE

DVM shall be set to the 10 Vdc range.

(39) Set AADS TEST switch S16 (3) to REF OSC.

NOTE

Potentiometer R6 must be carefully adjusted to an absolute maximum voltage in step (40). The following checks depend upon precise adjustment of potentiometer R6.

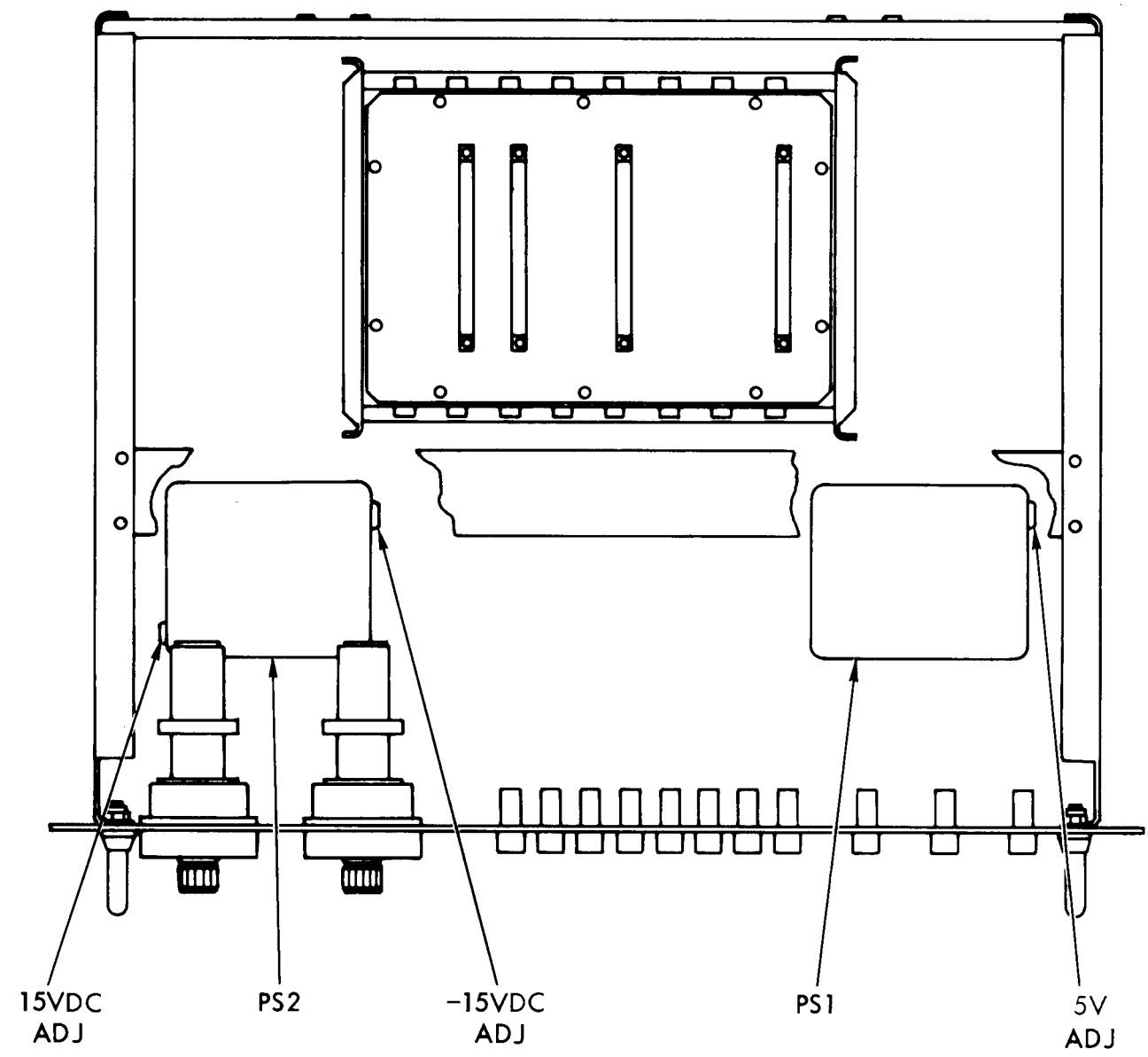


Figure 6-6. Power Supplies Location

(40) Adjust potentiometer R6 on CCA 1A3 (figure 6-7 and figure E-5, Appendix E) for a maximum positive voltage indication on the DVM. Record reading.

(41) Set ADS TEST switch S16 (3, figure 6-5) to SIN α,

(42) Set α resolver B1 (1) to 90.0°.

NOTE

Potentiometer R5 must be carefully adjusted to an absolute maximum voltage in step (43). The following R5 tests depend upon precise adjustment of potentiometer R5.

NOTE

Phasing check. A negative do voltage indication on DVM in step (43) or (50) shows that the resolver is aligned 180° out of phase. Loosen three screws (28, figure 6-4) and turn resolver housing through 180°. Confirm that DVM indication has changed to positive dc Tighten three screws (28, figure 6-4) and realign resolver in accordance with paragraph 6-11c.

(43) Adjust potentiometer R7 on CCA 1A3 (figure 6-7 and figure E-5, Appendix E) for a maximum positive de voltage indication on the DVM. Record reading.

(44) The positive do voltage reading obtained in step (43) shall be within 0.136 Vdc of the voltage recorded in step (40) multiplied by 0.440.

(45) Set AADS TEST switch S16 (3, figure 6-5) to COS α.

(46) Set α resolver B1 (1) to 0.0°.

(47) The positive do voltage indication on the DVM shall be within 0.136 Vdc of the voltage recorded in step (40) multiplied by 0.440.

(48) Set AADS TEST switch S16 (3) to SIN ($\alpha - \beta$).

(49) Set $\alpha - \beta$ resolver 62 (2) to 90.0°.

(50) The positive do voltage indication on the DVM shall be within 0.136 Vdc of the voltage recorded in step (40) multiplied by 0.440.

(51) Set AADS TEST switch S16 (3) to COS $(\alpha - \beta)$.

(52) Set $\alpha - \beta$ resolver B2 (2) to 0.0°.

(53) The positive do voltage indication on the DVM shall be within 0.136 Vdc of the voltage recorded in step (40) multiplied by 0.440.

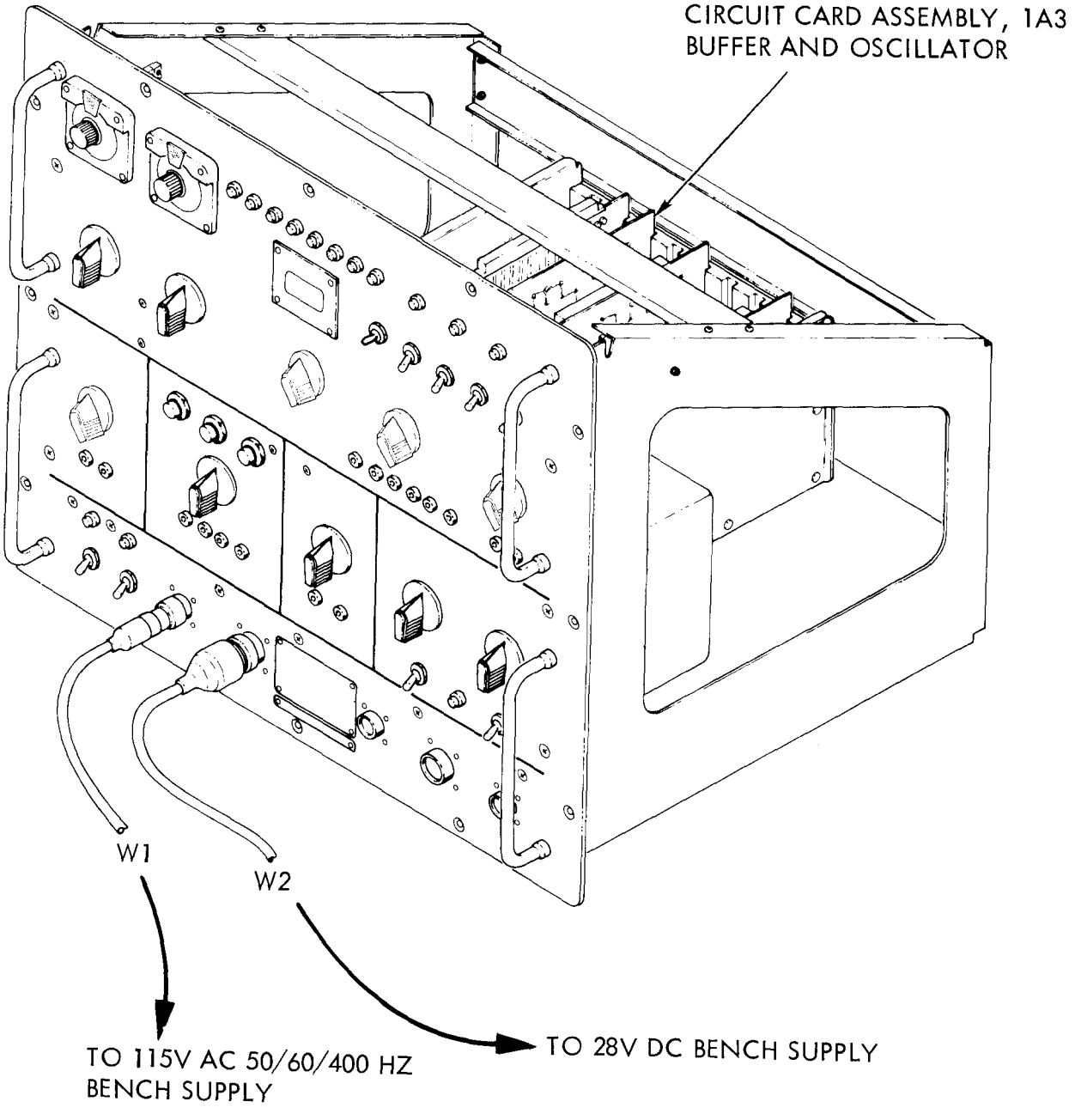
(54) Set circuit breakers CB1 (1) and CB2 (2) OFF.

(55) Disconnect power cables from power source (see figure 2-2).

(56) Disconnect power cables from test set.

(57) Remove test cable from connectors J4 (figure 6-5) and J5.

(58) Disconnect DVM from test set.



NOTE:
USE ADAPTER ASSY W6 TO CONNECT CABLE W1 TO 400 HZ BENCH POWER RECEPTACLE TYPE MS3102A-20-4S.

AR 918224

Figure 6-7. Panel/Chassis Wired Assembly

CHAPTER 7
MAINTENANCE OF AUXILIARY EQUIPMENT

There are no known requirements for auxiliary equipment.

CHAPTER 8
FINAL INSPECTION

8-1. General. References to tests and procedures for final inspection of the test set after repairs have been completed are provided in this chapter. If no deficiencies are found, the test set is ready to be returned to the user or to stock.

8-2. Test Station.

a. Visually inspect the test set in accordance with procedures of paragraph 5-1.

b. Perform the checkout procedures of paragraph 5-9.

8-3. Other Components. In accordance with the procedures of paragraph 5-1, inspect the checking fixture, the pneumatic kit and adapters, and the CCA extender.

APPENDIX A
REFERENCES

A-1. Technical Manuals

TM 9-1090-206-12	Aviation Unit Maintenance Manual for Armament Subsystem, Helicopter: 20-mm Automatic Gun: XM97E1.
TM 9-1090-206-30	Aviation Intermediate Maintenance Manual for Armament Subsystem, Helicopter: 20-mm Automatic Gun: XM97EI.
TM 9-1090-207-13&P	Aviation Unit and Intermediate Maintenance Manual with Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools) for Stores Management.
TM 9-1270-212-14&P	Operator, Organizational, Direct and General Support Maintenance Manual for M 128 and M 136 Helmet Sight Subsystem (HSS) (Including Depot Maintenance Repair Parts and Special Tools List).
TM 9-1270-218-13&P	Aviation Unit and Aviation Intermediate Maintenance Manual for Fire Control Computer Subsystem XM22.
TM 9-1270-219-13&P	Operator. Aviation Unit and Intermed iate Maintenance Instructions with Repair Parts and Special Tools Lists (RPSTL) (Including Depot Maintenance Repair Parts and Special Tools List) for Fire and Flight Air Data Subsystem. Helicopter Armament: XM 143.
TM 9-1270-220-13&P	Aviation Unit and Aviation Intermediate Maintenance Manual for Head-Up Display Subsystem XM76.
TM 9-4933-211-14	Operator, Organizational, Direct Support, and General Support Maintenance Manual for portable Hydraulic/Electric Power supply.
TM 9-4933-211-34P	Direct Support and General Support Maintenance Repair Parts and Special Tools Lists (Including Depot Maintenance Repair Parts and Special Tools) for Portable Hydraulic/Electric Power supply.
TM 11-5841-281-12	Operator's and Organizational Maintenance Manual, Doppler Navigation Set, AN/ASN-128.
TM 11-5841-281-20&P	Organizational Maintenance Manual (Including Repair parts and Special Tools List): Doppler Navigation Set AN/ASN-128.
TM 11-5841-284-23&P	Operator's, Organizational, and Direct Support Maintenance Manual (Including Repair Parts and Special Tools List): Altimeter Set. Electronic. AN/APN-209 (V), and AN/APN-209 (V) 2.
TM 55-1520-236-CL	Operator and Crewmembers Checklist - AH-1S Helicopter.
TM 55-1520-236-10	Operators Manual - Army AH-IS Helicopter.
TM 55-1520-236-23	Aviation Unit and Intermediate Maintenance Instructions, Army Model AH-1S Helicopter.
TM 55-1520-239-CL	Operator and Crewmembers Checklist - AH-1S (MC) Helicopter.
TM 55-1520-239-10	Operators Instructions - AH-IS (MC) Helicopter.
TM 55-1520-239-23	Aviation Unit and Intermediate Maintenance Instructions, AH-IS (MC) Helicopter.

A-2. Repair Parts and Special Tools Lists

TM 9-1090-206-20P	Aviation Unit Maintenance Repair Parts and Special Tools List for Armament Subsystem, Helicopter; 20-mm Automatic Gun: XM97E1
TM 9-1090-206-30P	Aviation Intermediate Maintenance Repair Parts and Special Tools List for Armament Subsystem, Helicopter; 20-mm Automatic Gun: XM97E1.
TM 55-1520-236-23P	Aviation Unit and Intermediate Maintenance Repair Parts and Special Tools List - Army Model AH-l S Helicopter.
TM 55-1520-239-23P	Aviation Unit and Intermediate Maintenance Repair Parts and Special Tools List - Army Model AH-1S (MC) Helicopter.

A-3. General Type Publications

FM 5-20	Camouflage, Basic Principles, and Field Camouflage.
FM 5-25	Explosives and Demolitions.
FM 21-40	Chemical, Biological and Nuclear Defense,
TM 3-220	Chemical, Biological and Radiological (CBR) Decontamination.
TM 9-207	Operation and Maintenance of Army Materiel in Extreme Cold Weather.
TM 9-1300-206	Care, Handling, Preservation and Destruction of Ammunition,
TM 9-1900	Ammunition, General.
TM 38-750	The Army Maintenance Management System (TAM MS).
TM 740-90-1	Administrative Storage of Equipment.
TM 743-200-1	Storage and Materiel Handling.
TM 750-244-1-5	Procedures for Destruction of Aircraft and Associated Equipment to Prevent Enemy Use.
TM 750-244-2	Procedures for Destruction of Army Materiel to Prevent Enemy Use.

APPENDIX B
COMPONENTS OF END ITEM LIST

Not applicable to this TM.

APPENDIX C
ADDITIONAL AUTHORIZATION LIST

Not applicable to this TM.

APPENDIX D
MAINTENANCE ALLOCATION CHART.

Section I. INTRODUCTION

D-1. General

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance levels.

b. The Maintenance Allocation Chart (MAC) in section II designates overall responsibility for the performance of maintenance functions of the identified end item or component. The implementation of the maintenance functions upon the end item or component will be consistent with the assigned maintenance functions.

c. Section III lists the special tools and test equipment required for each maintenance function as referenced from section II.

d. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

D-2. Maintenance Functions

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

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

c. *Service.* Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminate), to preserve, to paint, or to replenish lubricants.

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

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

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

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

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

i. *Repair.* The application of maintenance services or other maintenance actions to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

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

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

D-3. Explanation of Columns in the MAC, Section II.

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

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

c. *Column 3, Maintenance Functions.* Column 3 lists the functions to be performed on the item listed in column *2.* (For detailed explanation of these functions, see para. D-2).

d. *Column 4, Maintenance Level.* Column 4 Specifies, by the listing of a "work-time" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform the maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance levels, appropriate "work time" figures will be shown for each level. The number of manhours specified by the "work time" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, troubleshooting time, and quality assurance/quality

control time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance levels are as follows:

C . . . . . Operator or crew.
O . . . . . Aviation Unitmaintenance.
F . . . . . Aviation intermediate support maintenance.
D . . . . Depotmaintenance.

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

f. *Column 6, Remarks.* This column shall, when applicable, contain a letter code, in alphabetic order, which shall be keyed to the remarks contained in Section IV.

D-4. Explanation of Columns in Tool and Test Equipment Requirements. Section III.

a. *Column 1, Reference Code.* The tool and TMDE reference code correlates with a code used in the MAC. Section II, Column 5.

b. *Column 2, Maintenance Level.* The lowest level of maintenance authorized to use the tool or test equipment.

c. *Column 3, Nomenclature.* Name or identification of the tool or test equipment.

d. *Column 4, National Stock Number.* The National stock number of the tool.

e. *Column 5, Tool Part Number.* The manufacturer's part number.

D-5. Explanation of Columns in Remarks Section IV.

a. *Reference Code.* The code recorded in column 6, section II.

b. *Remarks.* This column lists information pertinent to the maintenance function being performed as indicated in the MAC, section II.

Section II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL AVUM	AVIM	DEPOT	(5) TOOLS AND EQUIPMENT	(6) REMARKS
00	Test Set, Fire and Flight Air Data Subsystem: XM142	Inspect		.3			
		Test		3.0		2,3,4,7	A
		Service		.1			
		Alignment		.3			
		Adjustment		2.0			
		Replace		.1			
		Repair			.*.	1	
01	Test Set, Air Data Subsystem	Inspect		.2			
		Test		3.0		2,3,4,7	A
		Service		.1			
		Alignment		.1		2	
		Adjustment		2.0		2,3,4,5	
		Replace		.1		5	
		Repair				4,5	
0101	Comparator and Clock Circuit Card Assembly	Inspect		.1			
		Test		.5		2,3,4	
		Service		.1			
		Replace		.1		5	
		Repair			.*.	1	
0102	Display Driver Circuit Card Assembly	Inspect		.1			
		Test		.5		2,3,4	
		Service		.1			
		Replace		.1		5	
		Repair			.*.	1	
0103	Buffer and Oscillator Circuit Card Assembly	Inspect		.1			
		Test		.5		2,3,4	
		Adjustment		.2		2,5	
		Service		.1			
		Replace		.1		5	
		Repair			.*.	1	
0104	Extender Board, Circuit Card Assembly	Inspect		.1			
		Test		.3		2,3	
		Service		.1			
		Replace		.1		5	
		Repair			.*.	1	
0105	Panel/Chassis Assembly – Wired	Inspect		.3		2,4	
		Test		1.5			
		Alignment		.3		2	
		Adjustment		1.8		2,4	
		Service		.1			
		Repair		1.5		5,6	

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL			(5) TOOLS AND EQUIPMENT	(6) REMARKS
			AVUM	AVIM	DEPOT		
010501	Card Rack Assembly	Inspect		1.0			
		Test		.3		2,4	
		Service		.1		6	
		Replace			.*.	1	
01050101	Motherboard Circuit Card Assembly	Inspect		.2			
		Test		1.0		2	
		Service		.1		5	
		Replace			.*.	1	
01050102	Base Assembly, Card Rack	Inspect		.2			
		Service		.1		5	
		Replace			.*.	1	
01050103	Panel Assembly, Side	Inspect		.1			
		Service		.1		5	
		Replace			.*.	1	
01050104	Panel Assembly, Side	Inspect		.1			
		Service		.1		5	
		Replace			.*.	1	
0106	Cable Assembly AC Power W1	Inspect		.2			
		Test		.4		2	
		Service		.1			
		Replace		.1			
		Repair			.*.	1	
0107	Cable Assembly DC Power W2	Inspect		.2			
		Test		.4		2	
		Service		.1			
		Replace		.1			
		Repair			.*.	1	
0108	Cable Assembly LAI W3 W3	Inspect		.2			
		Test		.4		2	
		Service		.1			
		Replace		.1			
		Repair			.*.	1	
0109	Cable Assembly EPU W4	Inspect		.2			
		Test		.4		2	
		Service		.1			
		Replace		.1			
		Repair			.*.	1	

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL			(5) TOOLS AND EQUIPMENT	(6) REMARKS
			AVUM	AVIM	DEPOT		
0110	Cable Assembly AADS W5	Inspect		.2			
		Test		.4		2	
		Service		.1			
		Replace		.1			
		Repair			.*.	1	
0111	Adapter Assembly, AC Power Cable W6	Inspect		.1			
		Test		.1		2	
		Replace		.1			
0112	Case, Test Set	Inspect		.2			
		Service		.2			
		Repair			.*.	1	
		Replace			.*.	1	
02	Fixture, Checking	Inspect		.2			
		Test			*	1	
		Service		.1			
		Replace			.*.	1	
03	Kit, Pneumatic	Inspect		.3			
		Test			.*.	1	
		Service		.2			
		Replace			.*.	1	
		Repair			.*.	1	

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

(1) RFFERENCE CODE	(2) MAINTENANCE LEVEL	(3) NOMENCLATURE	(4) NATIONAL STOCK NUMBER	(5) TOOL PART NUMBER
1	D	Depot Test Equipment		
2	F	Digital Multimeter	6625-00-262-4072	8300 A
3	F	Oscilloscope	6625-00-106-9622	7603N11S
		Hydraulic/Electric Power Supply	4933-00-910-1567	
4	F	Distribution Panel Power	4933-00-916-9582	B538C60REVA
		Supply 28 VDC	6130-00.542.6385	PP 1104
5	F	Tool Set, Aircraft Armament Repairman (Basic)	4923-00-987-0816	SC4933-95 -CL-A13
6	F	Tool Set, Aircraft Armament Repairman (Supplemental)	4933-00-994.9242	SC 4933-95-CL-A14
7	F	Shop Set, Failure Isolation, Electronic Circuit Boards: Air Data Subsystem	4931-01-229-0616	11838719

Section IV. REMARKS

Reference Code	Remarks
A	Refer to TM 9–4933-270-30 for description and use of failure isolation shop set (FISS).

APPENDIX E
REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

E-1. Scope. This appendix lists repair parts and special tools required for the operation and performance of aviation unit maintenance, Aviation intermediate maintenance and Depot maintenance. It authorizes the requisitioning and issue of spares and repair parts as indicated by the source and maintenance codes,

E-2. General. This repair parts and special tools list is divided into the following sections:

a. *Section II. Repair Parts List.* A list of repair parts authorized for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending numerical sequence with the parts in each group listed in figure and item number sequence. Bulk materials are listed in NSN sequence.

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

c. *Section IV. National Stock Number (NSN) and Part Number Index.* A list in National item identification number (NIIN) sequence, of all National stock numbers (NSN) appearing in the listings, followed by a list in alphanumeric sequence (e.g., MS will precede M1) of all part numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance.

E-3. Explanation of Columns. The following provides an explanation of columns found in the tabular listings:

a. *Illustration.* This column is divided as follows:

(1) *Figure number.* Indicates the figure number of the illustration in which the item is shown.

(2) *Item number.* The number used to iden. tify each item called out in the illustration.

b. *Source, Maintenance, and Recoverability Codes (SMR).*

(1) *Source Code.* Source codes are assigned to support items to indicate the manner of acquiring support items for maintenance, repair or overhaul of end items. Source codes are entered in the first and second positions of the Uniform SMR Code format as follows:

Code	Definition
PA	Item procured and stocked for anticipated or known usage.
PB	Item procured and stocked for insurance purposes because essentiality dictates that a minimum quantity be available in the supply systems.
PC	Item procured and stocked which otherwise would be coded PA except that it is deteriorative in nature.
PD	Support item, excluding support equipment, procured for initial issue or outfitting and stocked only for subsequent or additional initial issues or outfitting. Not subject to automatic replenishment.
PE	Support equipment procured and stocked for initial issue or outfitting to specified maintenance repair activities.
PF	Support equipment which will not be stocked but which will be centrally procured on demand.
PG	Item procured and stocked to provide for sustained support for the life of the equipment. It is applied to an item peculiar to the equipment which, because of probable discontinuance or shutdown of production facilities, would prove uneconomical to reproduce at a later time.
KD	An item of a depot overhaul/repair kit and not purchased separately. Depot kit is defined as a kit that provides items required at the time of overhaul or repair.
KF	An item of a maintenance kit and not purchased separately. Maintenance kit is defined as a kit that provides an item that can be replaced at aviation unit or intermediate levels of maintenance.
KB	Item included in both a depot overhaul/repair kit and a maintenance kit.
MO	Item to be manufactured or fabricated at aviation unit level:
MF	Item to be manufactured or fabricated at aviation intermediate maintenance level.
MD	Item to be manufactured or fabricated at depot maintenance level.
AO	Item to be assembled at aviation unit level.
AF	Item to be assembled at aviation intermediate maintenance level.
AD	Item to assembled at depot maintenance level.
XA	Item is not procured or stocked because the requirements for the item will result in the replacement of the next higher assembly.

XB Item is not procured *or* stocked. If not available through salvage, requisition.

XD A support item that is not stocked. When required, item will be procured through normal supply channels.

NOTE

Cannibalization or salvage may be used as a source of supply for any item source coded above except those coded XA and aircraft support items as restricted by AR 700-42.

(2) *Maintenance code.* Maintenance codes are assigned to indicate the levels of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the Uniform SMR Code format as follows:

(a) The maintenance code entered in the third position will indicate the lowest maintenance level authorized to remove, replace, and use the support item. The maintenance code entered in the third position will indicate one of the following levels of maintenance.

Code	Application/Explanation
O	Support items is removed, replaced, used at aviation unit support level.
F	Support item is removed, replaced, used at the aviation intermediate support level.
D	Support item is removed, replaced, used at depot, mobile depot, specialized repair activity only.

(b) The maintenance code entered in the fourth position indicates whether the item is to be repaired and identifies the lowest maintenance level with the capability to perform complete repair (i.e., all authorized maintenance functions). This position will contain one of the following maintenance codes:

Code	Application/Explanation
O	The lowest maintenance level capable of complete repair of the support item is the aviation unit support level.
F	The lowest maintenance level capable of complete rePair of the support item is the aviation intermediate support level.
D	The lowest maintenance level capable of complete repair of the support item is the depot level, performed by depot, mobile depot, or specialized repair activity.
Z	Nonreparable. No repair is authorized.

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

Code	Definition
Z	Nonreparable item. When unserviceable, condemn and dispose at the level indicated in position 3.
O	Reparable item. When uneconomically reparable, condemn and dispose at aviation unit level.
F	Reparable item. When uneconomically reparable, condemn and dispose at aviation intermediate level.
D	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal not authorized below depot level.
A	Item requires special handling or condemnation procedures because of specific reasons (i.e., precious metal content, high dollar value, critical or hazardous material). Refer to appropriate manual/ directives for specific instructions.

c. *National Stock Number. Indicates* the National stock number assigned to the item and will be used for requisitioning purposes.

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

NOTE

When a stock numbered item is requisitioned, the repair part received may have a different part number than the part being replaced.

e. *Federal Supply Code for Manufacturer (FSCM).* The FSCM is a 5-digit numeric code listed in SB 708-42 which is used to identify the manufacturer, distributor, or Government agency, etc.

f. *Description.* Indicates the Federal item name and, if required, a minimum description to identify the item.

9. *Unit of Measure (U/M).* Indicates the standard of the basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr, etc.). When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

h. *Quantity incorporated in Unit.* Indicated the quantity of the item used in the breakdown shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly.

E-4. Special Information. Not applicable.

E-5. How to Locate Repair Parts.

a. *When National Stock Number or Part Number is Unknown.*

(1) *First.* Using the table of contents, determine the group within which the repair part belongs. This is necessary since i Illustrations are prepared for functional groups and listings are divided into the same groups.

(2) *Second.* Find the illustration covering the functional group to which the repair part belongs.

(3) *Third.* Identify the repair part on the illustration and note the illustration figure and item number of the repair part.

(4) *Fourth.* Using the repair parts list, find the assembly or subassembly to which the repair part belongs and locate the illustration figure and item number noted on the illustration.

b. *When National Stock Number or Part Number is Known.*

(1) *First.* Using the index of National stock numbers and part numbers, find the pertinent National stock number or part number. This index is in ascending NIIN sequence, followed by a list of part numbers in ascending alphanumeric sequence (e.g., MS will precede M1) cross-referenced to the illustration figure number and item num her.

(2) Second. After finding the figure and item number, locate the figure and item number in the repair parts list.

E-6. Abbreviations. Not applicable.

Section II. REPAIR PARTS LIST

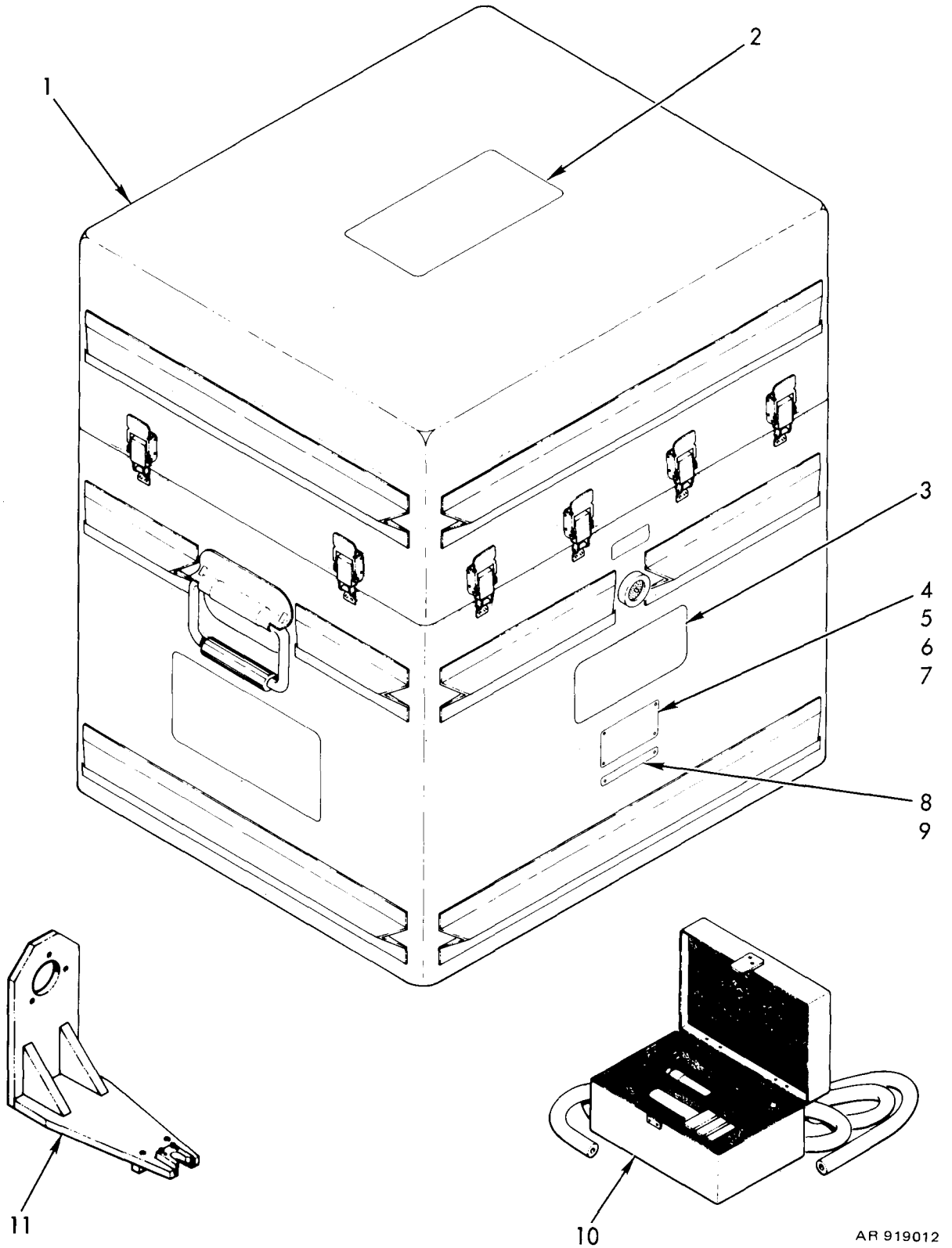


Figure E-1. Test Set, Fire and Flight Air Data Subsystem: XM142, 95-112-02

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 00 TEST SET,FIRE AND FLIGHT AIR			
						DATA SUBSYSTEM: XM142			
						95-112-02			
E-1	1	PBFFD	4933-01-073-5575	95-109-02	K0656	TEST SET, AIR DATA SUBSYSTEM		EA	1
E-1	2	MDDZZ		901848	K0656	MARKER, INDENT		EA	4
E-1	3	PADZZ		901846	K0656	PLATE, CONTENTS		EA	1
E-1	4	PADZZ		901847	K0656	PLATE,IDENT		EA	1
E-1	5	PADZZ	5305-00-054-5649	MS51957-15	96906	SCREW,MACHINE		EA	4
E-1	6	PADZZ	5310-00-595-6211	MS15795-803	96906	WASHER, FLAT		EA	4
E-1	7	PADZZ	5310-00-811-6419	MS21042-04	96906	NUT, SELF-LOCKING		EA	4
E-1	8	MDDZZ		901360	K0656	PLATE, SERIAL NO		EA	1
E-1	9	PADZZ		NAS1919B04-02	80205	RIVIT		LB	2
E-1	10	PBDDD		99-245-01	K0656	KIT, PNEUMATIC		EA	1
E-1	11	PBDDD	4933-01-073-5576	99-265-02	K0656	FIXTURE, CHECKING		EA	1

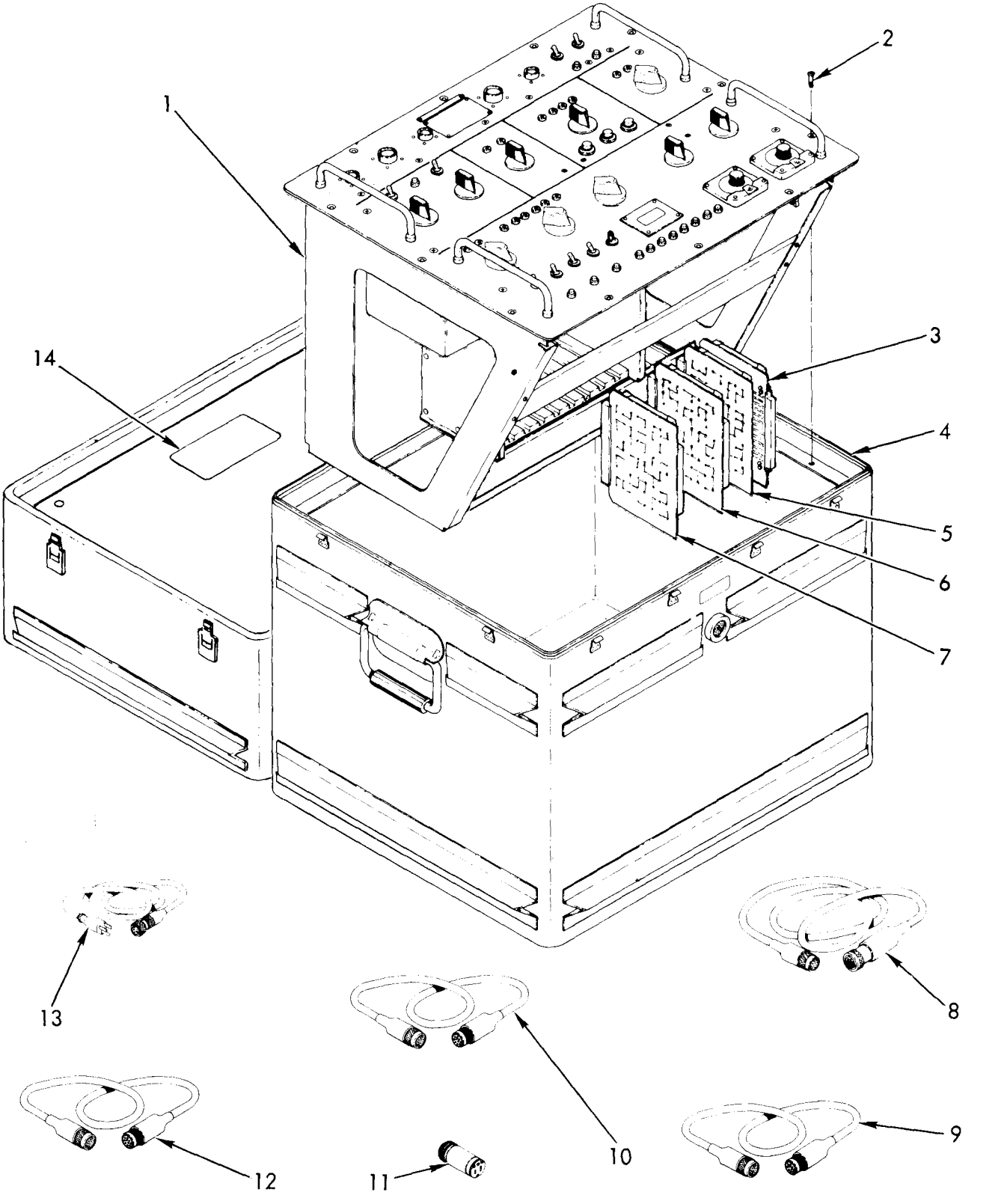
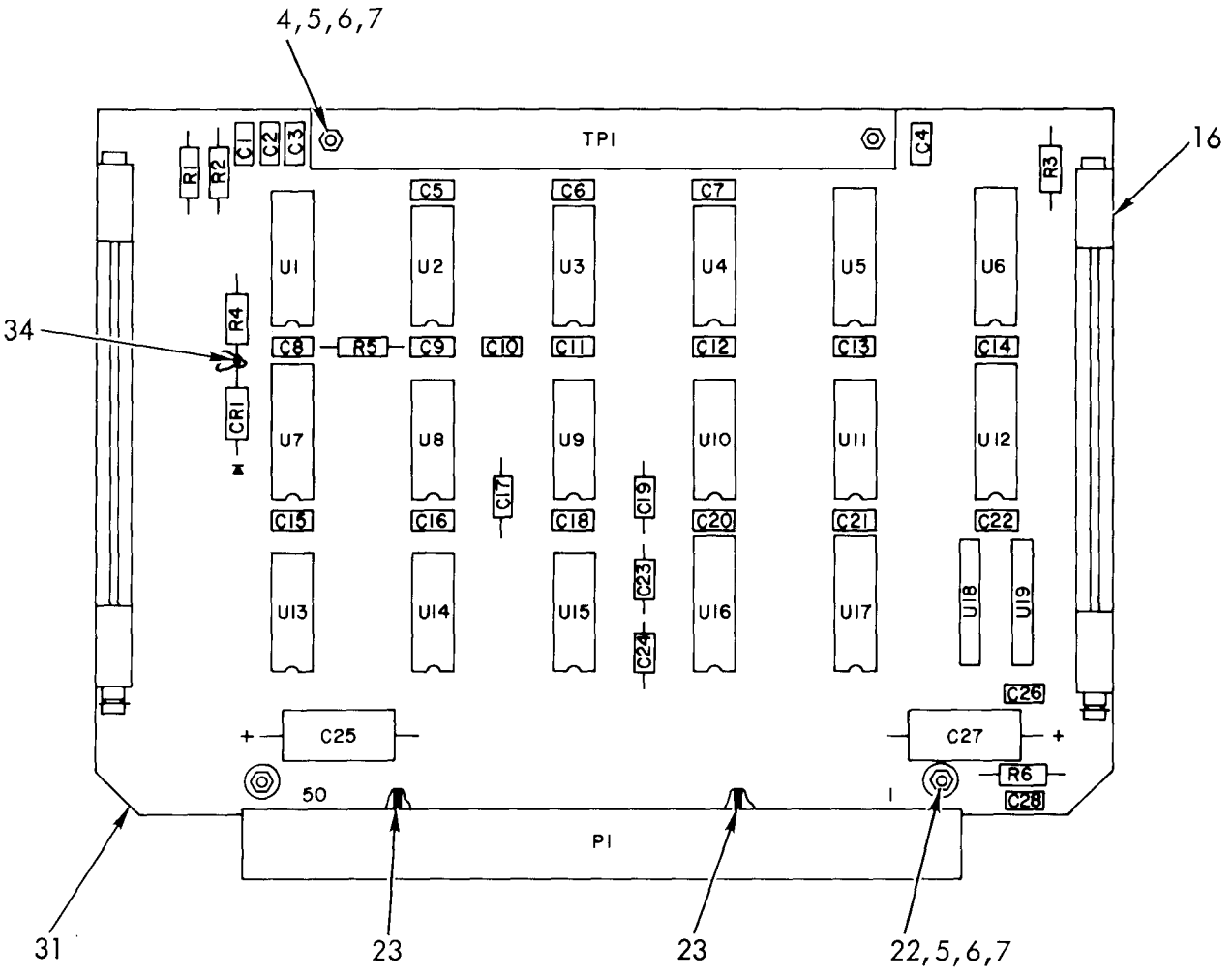


Figure E-2. Test Set, Air Data Subsystem, 95-109-02

AR 919013

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 01 TEST SET, AIR DATA SUBSYSTEM		
						95-109-02		
E-2	1	XAFFD		012-301020-01	K0656	PANEL-CHASSIS ASSY	EA	1
E-2	2	PADZZ		MS24693-S274	96906	SCREW, MACHINE	EA	12
E-2	3	PAFDD	4933-01-073-7554	012-301025-02	K0656	CIRCUIT CARD ASSEMBLY (1A4)	EA	1
E-2	4	PBDDD	4933-01-081-8158	901727	K0656	CASE, TEST SET	EA	1
E-2	5	PAFDD	4933-01-074-6094	012-301024-02	K0656	CIRCUIT CARD ASSEMBLY (1A3)	EA	1
E-2	6	PAFDD	4933-01-073-7556	012-301022-02	K0656	CIRCUIT CARD ASSEMBLY (1A2)	EA	1
E-2	7	PAFDD	4933-01-073-7553	012-301023-02	K0656	CIRCUIT CARD ASSEMBLY (1A1)	EA	1
E-2	8	PAFDD	4933-01-084-9684	012-301028-02	K0656	CABLE ASSEMBLY, DC POWER (W2)	EA	1
E-2	9	PAFDD	4933-01-076-7066	012-301030-01	K0656	CABLE ASSEMBLY, LAI (W3)	EA	1
E-2	10	PAFDD	4933-01-073-7429	012-301031-01	K0656	CABLE ASSEMBLY, AADS (W5)	EA	1
E-2	11	PAFDD	4933-01-073-7279	012-301032-01	K0656	ADAPTER ASSEMBLY, AC POWER (W6)	EA	1
E-2	12	PAFDD	4933-01-073-7430	012-301029-01	K0656	CABLE ASSEMBLY, EPU (W4)	EA	1
E-2	13	PAFDD	4933-01-073-7427	012-301027-01	K0656	CABLE ASSEMBLY, AC POWER (W1)	EA	1
E-2	14	PADZZ		901749	K0656	PLATE, CONTENTS	EA	1

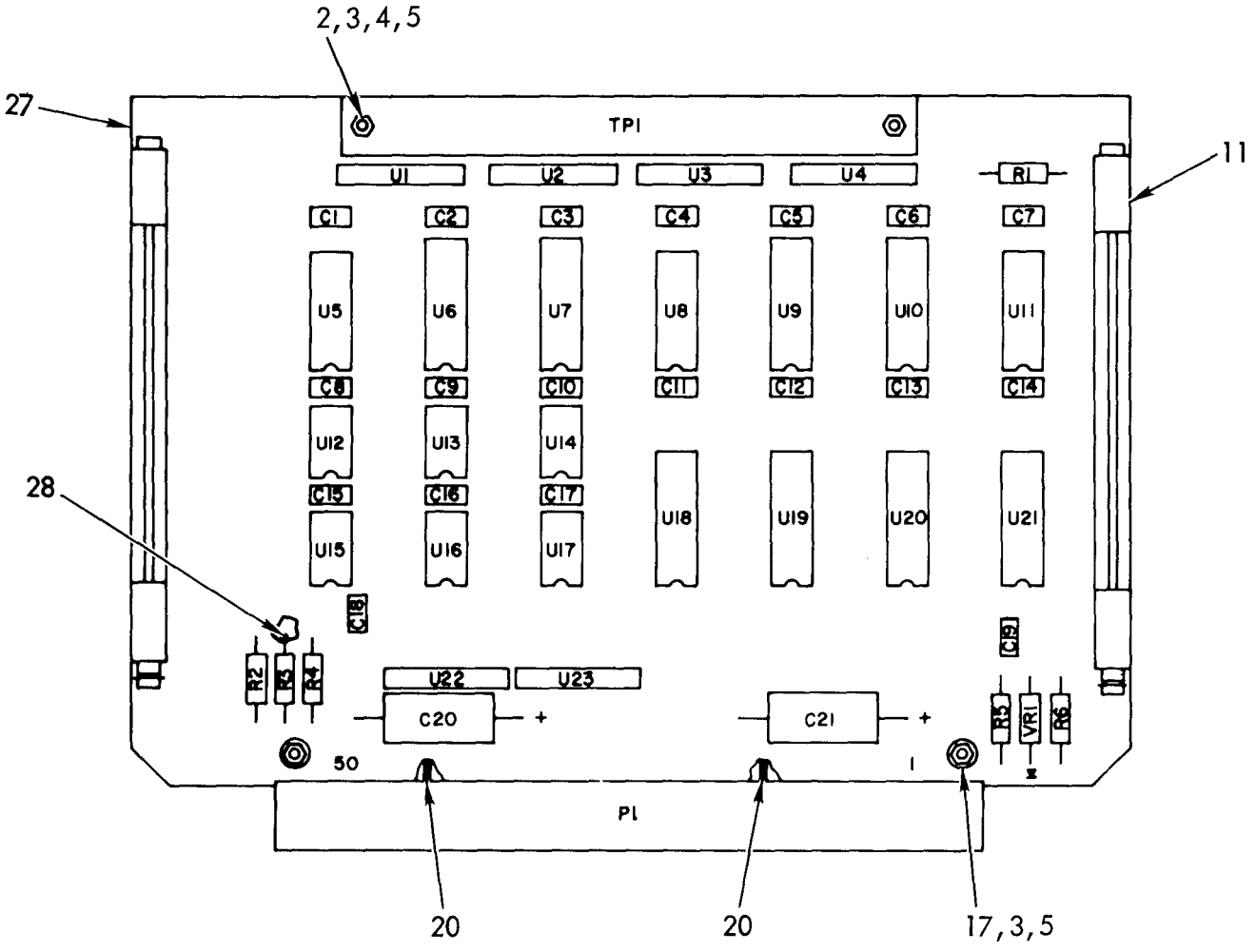


REF DES	ITEM NO.	REF DES	ITEM NO.	REF DES	ITEM NO.
C1	2	C20	3	U2	10
C2	3	C21	3	U3	12
C3	2	C22	3	U4	13
C4	3	C23	26	U5	14
C5	3	C24	26	U6	14
C6	3	C25	30	U7	8
C7	3	C26	3	U8	17
C8	3	C27	20	U9	17
C9	3	C28	21	U10	12
C10	11	CR1	32	U11	17
C11	3	P1	24	U12	18
C12	3	R1	1	U13	10
C13	3	R2	1	U14	29
C14	3	R3	15	U15	28
C15	3	R4	33	U16	25
C16	3	R5	1	U17	8
C17	27	R6	1	U18	19
C18	3	TP1	9	U19	19
C19	27	U1	8		

AR919014

Figure E-3. Circuit Card Assembly - Clock and Comparator, 012-301022-02

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0101 CIRCUIT CARD ASSEMBLY-CLOCK		
						AND COMPARATOR 012-301022-02		
E-3	1	PADZZ	5905-00-240-7958	RLR07C2202GR	81349	RESISTOR, FIXED	EA	4
E-3	2	PADZZ		M39014-01-1446	81349	CAPACITOR, FIXED	EA	2
E-3	3	PADZZ		M39014-01-1468	81349	CAPACITOR, CERAMIC	EA	18
E-3	4	PADZZ	5305-00-054-5642	MS51957-8	96906	SCREW, MACHINE	EA	2
E-3	5	PADZZ	5310-00-595-6761	MS15795-802	96906	WASHER,FLAT	EA	4
E-3	6	PADZZ	5310-00-716-5612	MS51859-2	96906	WASHER, FLAT	EA	4
E-3	7	PADZZ	5310-00-058-1823	MS21042-02	96906	NUT,SELF-LOCKING	EA	4
E-3	8	PADZZ	5962-00-348-2717	M38510/01203BEB	81349	MICROCIRCUIT	EA	3
E-3	9	PADZZ	5935-01-079-3234	901368	K0656	CONNECTOR (TP1)	EA	1
E-3	10	PADZZ	5962-01-058-1539	M38510-30102BCB	81349	MICROCIRCUIT	EA	2
E-3	11	PADZZ	5910-00-113-5465	M39014/02-1360	81349	CAPACITOR,FIXED	EA	1
E-3	12	PADZZ		M38510/30101BCA	81349	MICROCIRCUIT	EA	2
E-3	13	PADZZ	5962-01-027-6863	M38510/30003BCB	81349	MICROCIRCUIT	EA	1
E-3	14	PADZZ	5940-01-078-9685	9414-00085	K0656	MICROCIRCUIT	EA	2
E-3	15	PADZZ	5905-01-047-1529	RLR07C1001GR	81349	RESISTOR,FIXED	EA	1
E-3	16	PADZZ		901854	K0656	RETAINER, CARD	EA	2
E-3	17	PADZZ		M38510-30001BCX	81349	MICROCIRCUIT	EA	3
E-3	18	PADZZ		901365	33827	MICROCIRCUIT	EA	1
E-3	19	PADZZ	5905-01-076-5665	M8340105M2201GC	81349	RESISTOR NETWORK	EA	2
E-3	20	PADZZ		M39003-01-2307	81349	CAPACITOR	EA	1
E-3	21	PADZZ		M39014-01-1449	81349	CAPACITOR	EA	1
E-3	22	PADZZ	5305-00-054-5638	MS51957-4	96906	SCREW, MACHINE	EA	2
E-3	23	PADZZ	5935-01-029-0959	M55302-31-03	81349	KEY, POLARIZING	EA	2
E-3	24	PADZZ	5935-01-012-1288	M55302-23-10	81349	CONNECTOR,REC	EA	1
E-3	25	PADZZ	5962-01-059-2592	M38510/31101BEB	81349	MICROCIRCUIT	EA	1
E-3	26	PADZZ	5910-00-113-5488	M39014/05-2255	81349	CAPACITOR,FIXED	EA	2
E-3	27	PADZZ	5910-01-036-4682	M39014-05-2619	81349	CAPACITOR,FIXED	EA	2
E-3	28	PADZZ		901559	K0656	MICROCIRCUIT	EA	1
E-3	29	PADZZ		9406-00001	K0656	INTEGRATED CIRCUIT	EA	1
E-3	30	PADZZ	5910-00-868-5845	M39003-01-2274	81349	CAPACITOR,FIXED	EA	1
E-3	31	XADZZ		901738	K0656	PRINTED WIRING BD	EA	1
E-3	32	PADZZ	5961-00-494-4915	JANTX1N4148	81349	DIODE	EA	1
E-3	33	PADZZ	5905-00-404-8837	RLR07C1302GR	81349	RESISTOR, FIXED	EA	1
E-3	34	PADZZ		901596	K0656	POST, SOLDER	EA	2

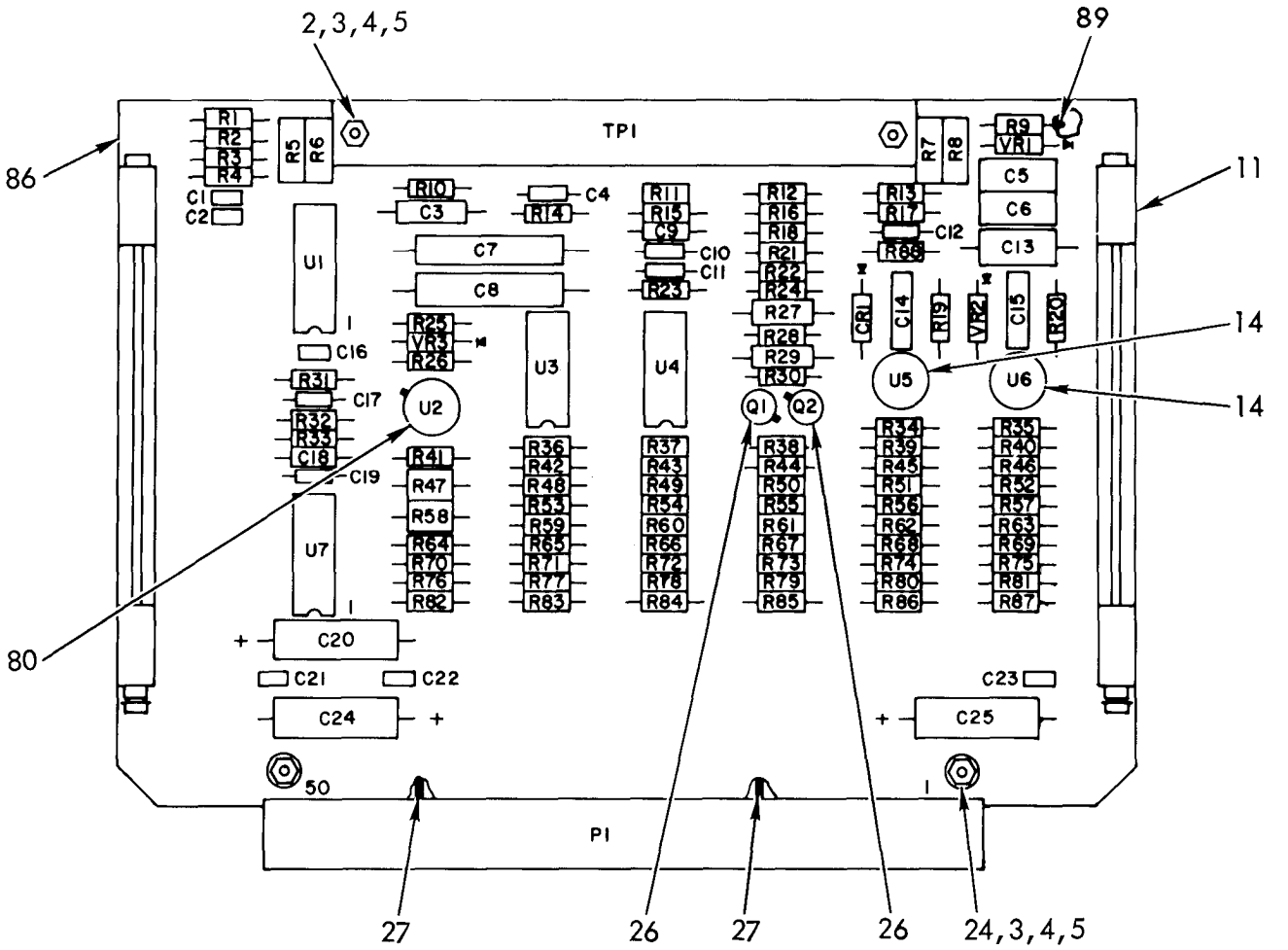


REF DES	ITEM NO.	REF DES	ITEM NO.	REF DES	ITEM NO.
C1	1	C19	1	U8	8
C2	1	C20	18	U9	9
C3	1	C21	18	U10	9
C4	1	P1	19	U11	12
C5	1	R1	10	U12	24
C6	1	R2	10	U13	23
C7	1	R3	22	U14	23
C8	1	R4	22	U15	24
C9	1	R5	16	U16	23
C10	1	R6	14	U17	23
C11	1	TP1	7	U18	9
C12	1	U1	6	U19	13
C13	1	U2	6	U20	13
C14	1	U3	6	U21	13
C15	1	U4	6	U22	21
C16	1	U5	26	U23	21
C17	1	U6	25	VR1	15
C18	1	U7	25		

AR 919015

Figure E-4. Circuit Card Assembly - Display Driver, 012-301023-02

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0102 CIRCUIT CARD ASSEMBLY-DISPLAY		
						DRIVER 012-301023-02		
E-4	1	PADZZ		M39014-01-1468	81349	CAPACITOR, CERAMIC	EA	19
E-4	2	PADZZ	5305-00-054-5642	MS51957-8	96906	SCREW,MACHINE	EA	2
E-4	3	PADZZ	5310-00-595-6761	MS15795-802	96906	WASHER,FLAT	EA	4
E-4	4	PADZZ	5310-00-716-5612	MS51859-2	96906	WASHER,FLAT	EA	4
E-4	5	PADZZ	5310-00-058-1823	MS21042-02	96906	NUT, SELF-LOCKING	EA	4
E-4	6	PADZZ		M8340105M1001QQ	81349	RESISTOR NETWORK	EA	4
E-4	7	PADZZ	5935-01-079-3234	901368	K0656	CONNECTOR	EA	1
E-4	8	PADZZ		9423-00087	K0656	MICROCIRCUIT	EA	1
E-4	9	PADZZ		901363	K0656	MICROCIRCUIT	EA	3
E-4	10	PADZZ	5905-01-047-1529	RLR07C1001GR	81349	RESISTOR, FIXED	EA	2
E-4	11	PADZZ		901854	K0656	RETAINER, CARD	EA	2
E-4	12	PADZZ	5962-01-058-1539	M38510/30102BCB	81349	MICROCIRCUIT	EA	1
E-4	13	PADZZ		M38510/30704BEA	81349	MICROCIRCUIT	EA	3
E-4	14	PADZZ	5905-00-240-2749	RLR07C6801GR	81349	RESISTOR, FIXED, FILM	EA	1
E-4	15	PADZZ		JANTX1N750A	81349	DIODE, ZENER	EA	1
E-4	16	PADZZ	5905-00-419-3949	RLR07C8201GR	81349	RESISTOR,FIXED,FILM	EA	1
E-4	17	PADZZ	5305-00-054-5638	MS51957-4	96906	SCREW,MACHINE	EA	2
E-4	18	PADZZ	5910-00-144-4383	M39003-01-3026	81349	CAPACITOR,FIXED	EA	2
E-4	19	PADZZ	5935-01-012-1288	M55302-23-10	81349	CONNECTOR, REC	EA	1
E-4	20	PADZZ	5935-01-029-0959	M55302-31-03	81349	KEY, POLARIZING	EA	2
E-4	21	PADZZ		M8340105M5101GC	81349	RESISTOR NETWORK	EA	2
E-4	22	PADZZ	5905-01-047-1530	RLR07C2201GR	81349	RESISTOR, FIXED	EA	2
E-4	23	PADZZ		901362	K0656	MICROCIRCUIT	EA	4
E-4	24	PADZZ		901361	K0656	MICROCIRCUIT	EA	2
E-4	25	PADZZ		901585	K0656	MICROCIRCUIT	EA	2
E-4	26	PADZZ	5962-01-031-7030	M38510/30001BCA	81349	MICROCIRCUIT	EA	1
E-4	27	XADZZ		901742	K0656	PRINTED WIRING BD	EA	1
E-4	28	PADZZ		901596	K0656	POST, SOLDER	EA	1



REF DES	ITEM NO.	REF DES	ITEM NO.	REF DES	ITEM NO.	REF DES	ITEM NO.	REF DES	ITEM NO.	REF DES	ITEM NO.
c l	36	C23	22	R16	41	R38	60	R60	71	R82	66
C2	36	C24	23	R17	47	R39	5 8	R61	64	R 83	64
C3	85	C25	23	R18	42	R40	16	R62	88	R 84	73
C4	48	CR1	51	R19	12	R41	78	R63	16	R85	68
C5	9	P1	25	R20	12	R42	64	R64	76	R86	59
C6	9	Q1	55	R21	43	R43	70	R65	60	R87	56
C7	83	Q2	54	R22	43	R44	61	R 66	72	R88	49
C8	83	R1	37	R 23	15	R45	21	R67	65	TP 1	1
C9	30	R2	37	R 24	44	R46	17	R68	56	U1	35
C10	33	R3	15	R25	44	R47	77	R 69	58	U2	79
C11	33	R4	12	R 26	81	R48	71	R70	66	U3	45
C12	48	R5	38	R27	50	R49	70	R71	71	U4	45
C13	10	R6	6	R28	44	R 50	62	R72	66	U5	13
C14	52	R7	6	R 29	50	R51	87	R73	66	U6	13
C15	52	R8	6	R30	53	R52	18	R 74	57	U7	28
C16	22	R9	7	R31	34	R 53	61	R75	21	VR1	8
C17	33	R10	32	R32	32	R 54	60	R76	75	VR2	8
C18	30	R11	12	R33	31	R55	63	R77	32	VR3	82
C19	29	R12	40	R34	15	R 56	16	R78	74		
C20	23	R13	46	R35	15	R57	19	R79	67		
C21	22	R14	84	R36	71	R58	77	R80	17		
C22	22	R15	39	R37	69	R 59	60	R81	20		

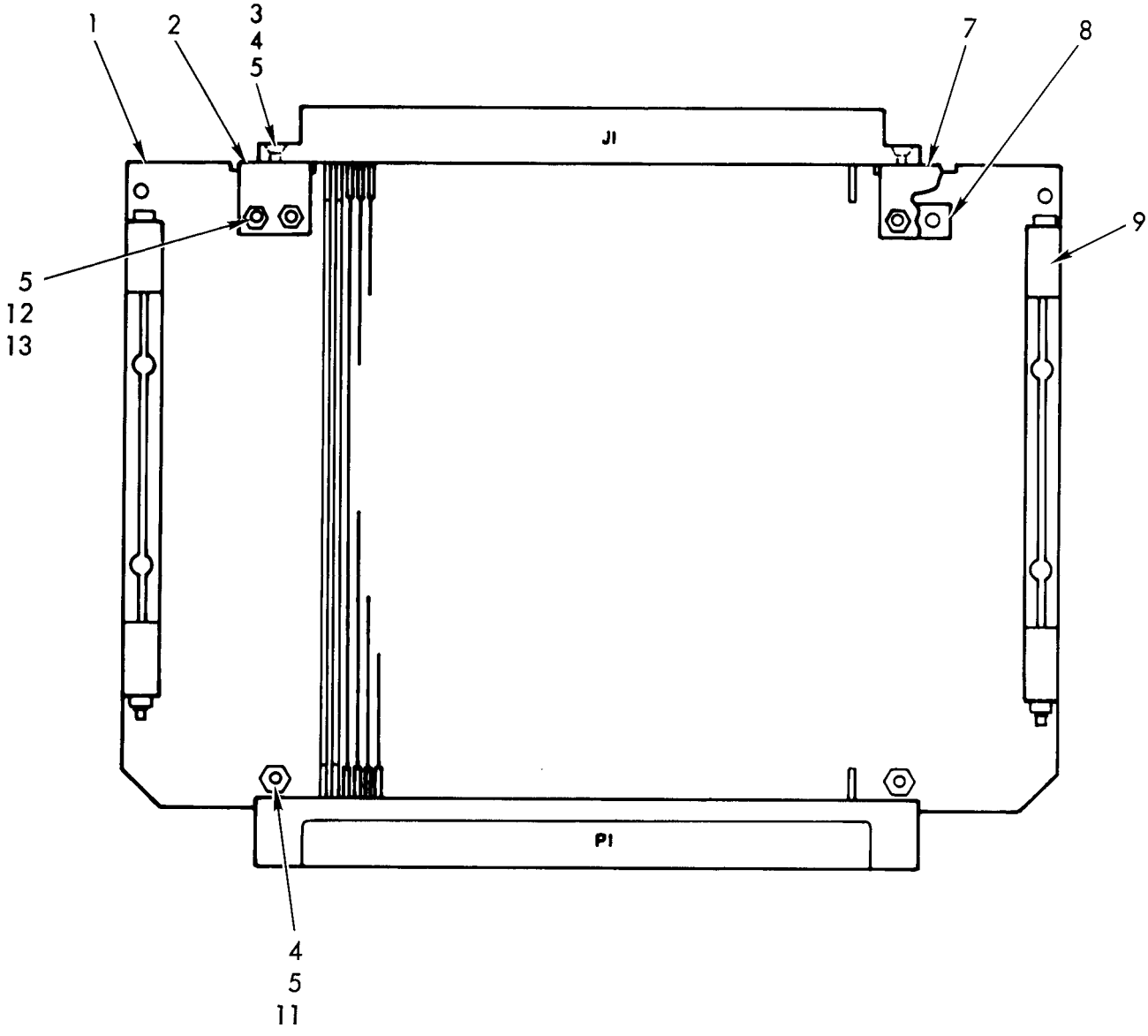
AR919016

Figure E-5. Circuit Card Assembly - Buffer and oscillator, 012-301024-02

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0103 CIRCUIT CARD ASEMBLY-BUFFER			
						AND OSCILLATOR 012-301024-02			
E-5	1	PADZZ	5935-01-079-3234	901368	K0656	CONNECTOR		EA	1
E-5	2	PADZZ	5305-00-054-5642	MS51957-8	96906	SCREW,MACHINE		EA	2
E-5	3	PADZZ	5310-00-595-6761	MS15795-802	96906	WASHER,FLAT		EA	4
E-5	4	PADZZ	5310-00-716-5612	MS51859-2	96906	WASHER,FLAT		EA	4
E-5	5	PADZZ	5310-00-058-1823	MS21042-02	96906	NUT,SELF-LOCKING		EA	4
E-5	6	PADZZ		RJR24FX503P	81349	RESISTOR,VARIABLE		EA	3
E-5	7	PADZZ	5905-00-240-2748	RLR07C5602GS	81349	RESISTOR, FIXED		EA	1
E-5	8	PADZZ	5961-00-938-4977	JANTX1N758A	81349	SEMICONDUCTOR		EA	2
E-5	9	PADZZ		CFR04RSA223KM	81349	CAPACITOR,FIXED		EA	2
E-5	10	PADZZ	5910-01-084-3510	M39014-05-2725	81349	CAPACITOR, FIXED		EA	1
E-5	11	PADZZ		901854	K0656	RETAINER, CARD		EA	2
E-5	12	PADZZ	5905-01-047-1530	RLR07C2201GR	81349	RESISTOR,FIXED		EA	4
E-5	13	PADZZ	5962-01-075-3184	9407-00016	K0656	MICROCIRCUIT		EA	2
E-5	14	PADZZ	5999-01-068-2616	M38527/2-08N	81349	MOUNTING PAD		EA	2
E-5	15	PADZZ	5905-00-223-2741	RNC55H1002FS	81349	RESISTOR,FIXED		EA	4
E-5	16	PADZZ		RNC55H17R8BS	81349	RESISTOR, FIXED		EA	3
E-5	17	PADZZ	5905-00-302-4161	RNC55H1331FS	81349	RESISTOR, FIXED, FILM		EA	2
E-5	18	PADZZ		RNC55H28R7BS	81349	RESISTOR,FIXED		EA	1
E-5	19	PADZZ		RNC55H10R2BS	81349	RESISTOR, FIXED		EA	1
E-5	20	PADZZ		RNC55H21R0BS	81349	RESISTOR, FIXED		EA	1
E-5	21	PADZZ		RNC55H17R4BS	81349	RESISTOR, FIXED		EA	2
E-5	22	PADZZ		M39014-01-1468	81349	CAPACITOR, CERAMIC		EA	4
E-5	23	PADZZ	5910-00-144-4383	M39003-01-3026	81349	CAPACITOR, FIXED		EA	3
E-5	24	PADZZ	5305-00-054-5638	MS51957-4	96906	SCREW, MACHINE		EA	2
E-5	25	PADZZ	5935-01-012-1288	M55302-23-10	81349	CONNECTOR		EA	1
E-5	26	PADZZ	5999-01-067-7303	M38527/1-02N	81349	MOUNTING PAD		EA	2
E-5	27	PADZZ	5935-01-029-0959	M55302-31-03	81349	KEY, POLARIZING		EA	2
E-5	28	PADZZ		M38510/10305BEA	81349	INTEGRATED CIRCUIT		EA	1
E-5	29	PADZZ	5910-00-098-9281	M39014/05-2237	81349	CAPACITOR, FIXED		EA	1
E-5	30	PADZZ	5910-00-185-4822	M39014-05-2667	81349	CAPACITOR, FIXED		EA	2
E-5	31	PADZZ	5905-00-491-2638	RLR07C2701GR	81349	RESISTOR,FIXED		EA	1
E-5	32	PADZZ	5905-00-401-7436	RNC55H1003FS	81349	RESISTOR,FIXED		EA	3

(1) ILLUSTRATION FIG NO	(A) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0103 CIRCUIT CARD ASSEMBLY-BUFFER			
						AND OSCILLATOR 012-301024-02			
						CONTINUED			
E-5	33	PADZZ	5910-00-010-9166	M39014/05-2207	81349	CAPACITOR, FIXED		EA	3
E-5	34	PADZZ	5905-00-007-3808	RLR07C2203GR	81349	RESISTOR, FIXED, FILM		EA	1
E-5	35	PADZZ		M38510-01203BEX	81349	MICROCIRCUIT		EA	1
E-5	36	PADZZ	5910-00-010-8715	M39014/01-1449	81349	CAPACITOR, FIXED		EA	2
E-5	37	PADZZ	5905-00-438-0506	RLR07C5101GR	81349	RESISTOR, FIXED		EA	2
E-5	38	PADZZ		RJR24FX203P	81349	RESISTOR, VARIABLE		EA	1
E-5	39	PADZZ	5905-00-462-5635	RNC55H4022FS	81349	RESISTOR, FIXED, FILM		EA	1
E-5	40	PADZZ	5905-00-249-1286	RLR07C6802GR	81349	RESISTOR, FIXED		EA	1
E-5	41	PADZZ	5905-00-240-7983	RLR07C8202GR	81349	RESISTOR, FIXED, FILM		EA	1
E-5	42	PADZZ	5905-01-019-1189	RNC55H6813FS	81349	RESISTOR, FIXED		EA	1
E-5	43	PADZZ	5905-00-458-9267	RLR07C2200GR	81349	RESISTOR, FIXED		EA	2
E-5	44	PADZZ	5905-01-047-1531	RLR07C1002GR	81349	RESISTOR, FIXED, FILM		EA	3
E-5	45	PADZZ	5962-01-079-8489	901366	K0656	MICROCIRCUIT		EA	2
E-5	46	PADZZ	5905-00-240-2745	RLR07C2702GR	81349	RESISTOR, FIXED		EA	1
E-5	47	PADZZ	5905-00-243-1912	RNC55H1822FS	81349	RESISTOR, FIXED		EA	1
E-5	48	PADZZ	5910-00-113-5488	M39014/05-2255	81349	CAPACITOR, FIXED		EA	2
E-5	49	PADZZ	5905-00-256-5050	RNC55H1103FS	81349	RESISTOR, FIXED		EA	1
E-5	50	PADZZ	5905-00-401-8676	RLR20C39R0GR	81349	RESISTOR, FIXED		EA	2
E-5	51	PADZZ	5961-00-494-4915	JANTX1N4148	81349	SEMICONDUCTOR		EA	1
E-5	52	PADZZ		CRF04RSA103KM	81349	CAP, FIXED, DIEL		EA	2
E-5	53	PADZZ	5905-00-153-0135	RNC55H1212FS	81349	RESISTOR, FIXED, FILM		EA	1
E-5	54	PADZZ	5961-00-858-3826	JANTX2N2222A	81349	TRANSISTOR		EA	1
E-5	55	PADZZ	5961-00-022-5666	JANTX2N2907A	81349	TRANSISTOR		EA	1
E-5	56	PADZZ		RNC55H7150FS	81349	RESISTOR, FIXED		EA	2
E-5	57	PADZZ		RNC55H19R6BS	81349	RESISTOR, FIXED		EA	1
E-5	58	PADZZ		RNC55H10R5BS	81349	RESISTOR, FIXED		EA	2
E-5	59	PADZZ		RNC55H27R4BS	81349	RESISTOR, FIXED		EA	1
E-5	60	PADZZ	5905-00-139-2355	RNC55H1002BS	81349	RESISTOR, FIXED		EA	4
E-5	61	PADZZ	5905-00-238-0895	RNC55H1401FS	81349	RESISTOR, FIXED, FILM		EA	2
E-5	62	PADZZ	5905-00-570-5040	RNC55H4023FS	81349	RESISTOR, FIXED		EA	1
E-5	63	PADZZ	5905-00-758-4775	RNC55H1333FS	81349	RESISTOR, FIXED		EA	1

(1) ILLUSTRATION FIG NO	(A) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0103 CIRCUIT CARD ASSEMBLY-BUFFER			
						AND OSCILLATOR 012-301024-02			
						CONTINUED			
E-5	64	PADZZ	5905-00-139-2364	RNC55H2002BS	81349	RESISTOR, FIXED		EA	3
E-5	65	PADZZ	5905-00-431-5151	RNC55H2003FS	81349	RESISTOR, FIXED		EA	1
E-5	66	PADZZ	5905-00-146-8157	RNC55H4992BS	81349	RESISTOR, FIXED		EA	4
E-5	67	PADZZ		RNC55H73R2BS	81349	RESISTOR, FIXED		EA	1
E-5	68	PADZZ		RNC55H3010BS	81349	RESISTOR, FIXED		EA	1
E-5	69	PADZZ	5905-00-498-5684	RLR07C8200GR	81349	RESISTOR, FIXED		EA	1
E-5	70	PADZZ	5905-00-419-2823	RLR07C7501GR	81349	RESISTOR, FIXED		EA	2
E-5	71	PADZZ	5905-01-033-3499	RNC55H1652BS	81349	RESISTOR, FIXED		EA	4
E-5	72	PADZZ	5905-00-483-4038	RNC55H6652FS	81349	RESISTOR, FIXED		EA	1
E-5	73	PADZZ	5905-01-047-1529	RLR07C1001GR	81349	RESISTOR, FIXED		EA	1
E-5	74	PADZZ	5905-00-243-2094	RNC55H8062FS	81349	RESISTOR, FIXED		EA	1
E-5	75	PADZZ	5905-00-159-7456	RNC55H1962BS	81349	RESISTOR, FIXED, FILM		EA	1
E-5	76	PADZZ	5905-00-405-3022	RNC55H2212FS	81349	RESISTOR, FIXED		EA	1
E-5	77	PADZZ	5905-01-075-4954	901374	K0656	RESISTOR, FIXED		EA	2
E-5	78	PADZZ	5905-00-482-7813	RLR07C2401GR	81349	RESISTOR, FIXED		EA	1
E-5	79	PADZZ	5962-01-083-8750	901367	K0656	MICROCIRCUIT, LINEAR		EA	1
E-5	80	PADZZ		M38527/3-01N	81349	MOUNTING PAD		EA	1
E-5	81	PADZZ	5905-00-138-7399	RNC55H5111FS	81349	RESISTOR, FIXED		EA	1
E-5	82	PADZZ		JANTX1N750A	81349	DIODE, ZENR		EA	1
E-5	83	PADZZ		M39003-04-0290	81349	CAPACITOR		EA	2
E-5	84	PADZZ	5905-00-758-4782	RNC55H3742FS	81349	RESISTOR, FIXED, FILM		EA	1
E-5	85	PADZZ	5910-00-238-6404	M39014-05-2703	81349	CAPACITOR, FIXED		EA	1
E-5	86	XADZZ		901743	K0656	PRINTED WIRING BD		EA	1
E-5	87	PADZZ		RNC55H11R0BS	81349	RESISTOR, FIXED		EA	1
E-5	88	PADZZ		RNC55H10R7BS	81349	RESISTOR, FIXED		EA	1
E-5	89	PADZZ		901596	K0656	POST, SOLDER		EA	2



LEGEND

REF DES	ITEM NO.
J1	6
P1	10

AR919017

Figure E-6. Circuit Card Assembly - Extender Board, 012-301025-02

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0104 CIRCUIT CARD ASSEMBLY-EXTENDER BOARD 012-301025-02		
E-6	1	XADZZ		901745	K0656	EXTENDER BOARD, PCB	EA	1
E-6	2	XADZZ		901416	K0656	BRACKET, CONNECTOR, LH	EA	1
E-6	3	PADZZ	5305-00-054-5637	MS51957-3	96906	SCREW, MACHINE	EA	2
E-6	4	PADZZ	5310-00-595-6761	MS15795-802	96906	WASHER, FLAT	EA	6
E-6	5	PADZZ	5310-00-058-1823	MS21042-02	96906	NUT,SELF-LOCKING	EA	8
E-6	6	PADZZ		M55302-24-40	81349	CONNECTOR	EA	1
E-6	7	XADZZ		901418	K0656	BRACKET, CONNECTOR, LH	EA	1
E-6	8	XADZZ		901417	K0656	SPACER, CONN BRACKET	EA	2
E-6	9	PADZZ		901854	K0656	RETAINER, CARD	EA	2
E-6	10	PADZZ	5935-01-012-1288	M55302-23-10	81349	CONNECTOR	EA	1
E-6	11	PADZZ	5305-00-054-5639	MS51957-5	96906	SCREW, MACHINE	EA	4
E-6	12	PADZZ	5305-00-054-5638	MS51957-4	96906	SCREW, MACHINE	EA	2
E-6	13	PADZZ	5310-00-043-4708	NAS620C2	80205	WASHER, FLAT	EA	2

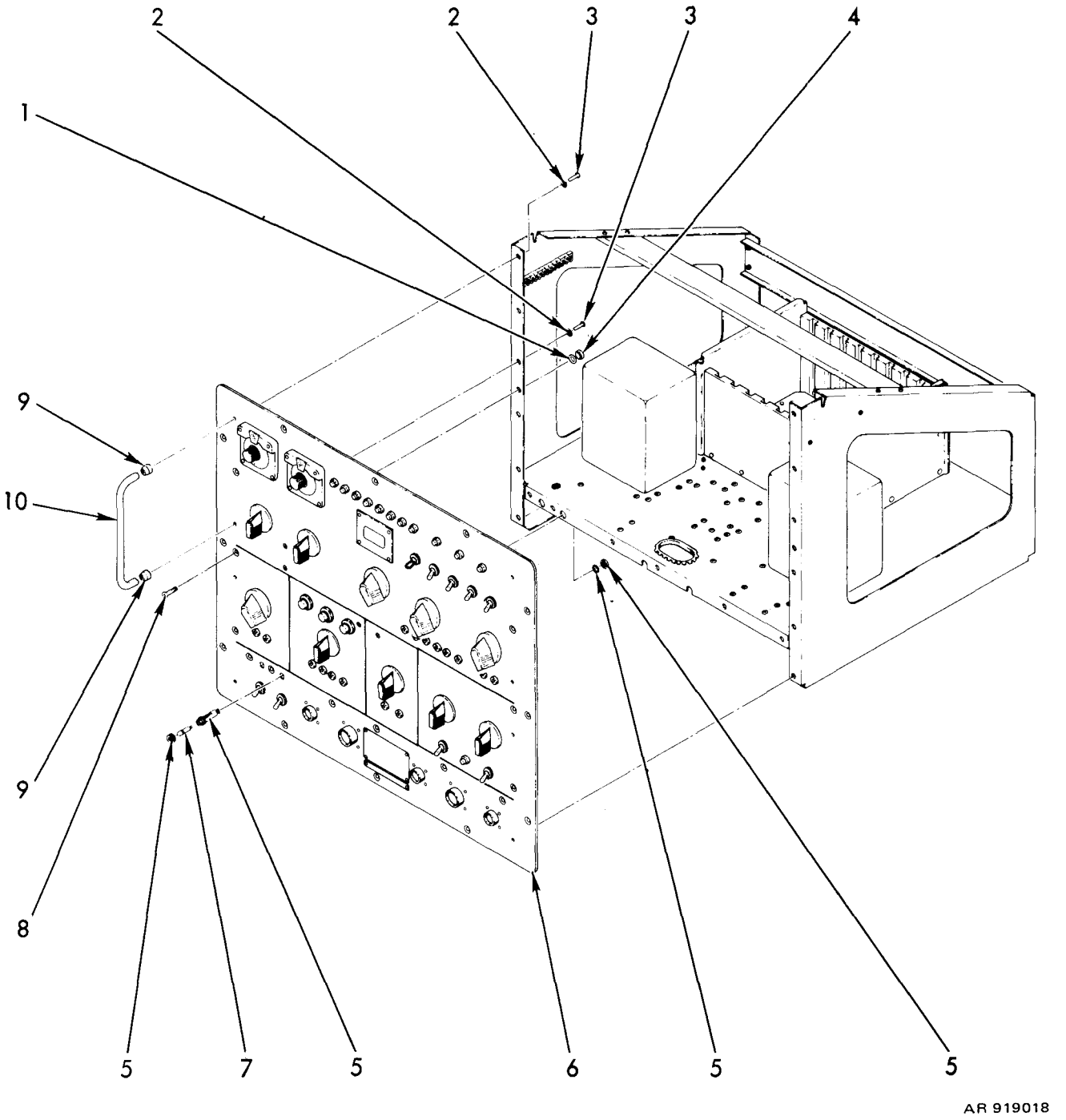


Figure E-7. Panel/Chassis Assembly - Wired, 012-301020-01 (Sheet 1 of 8)

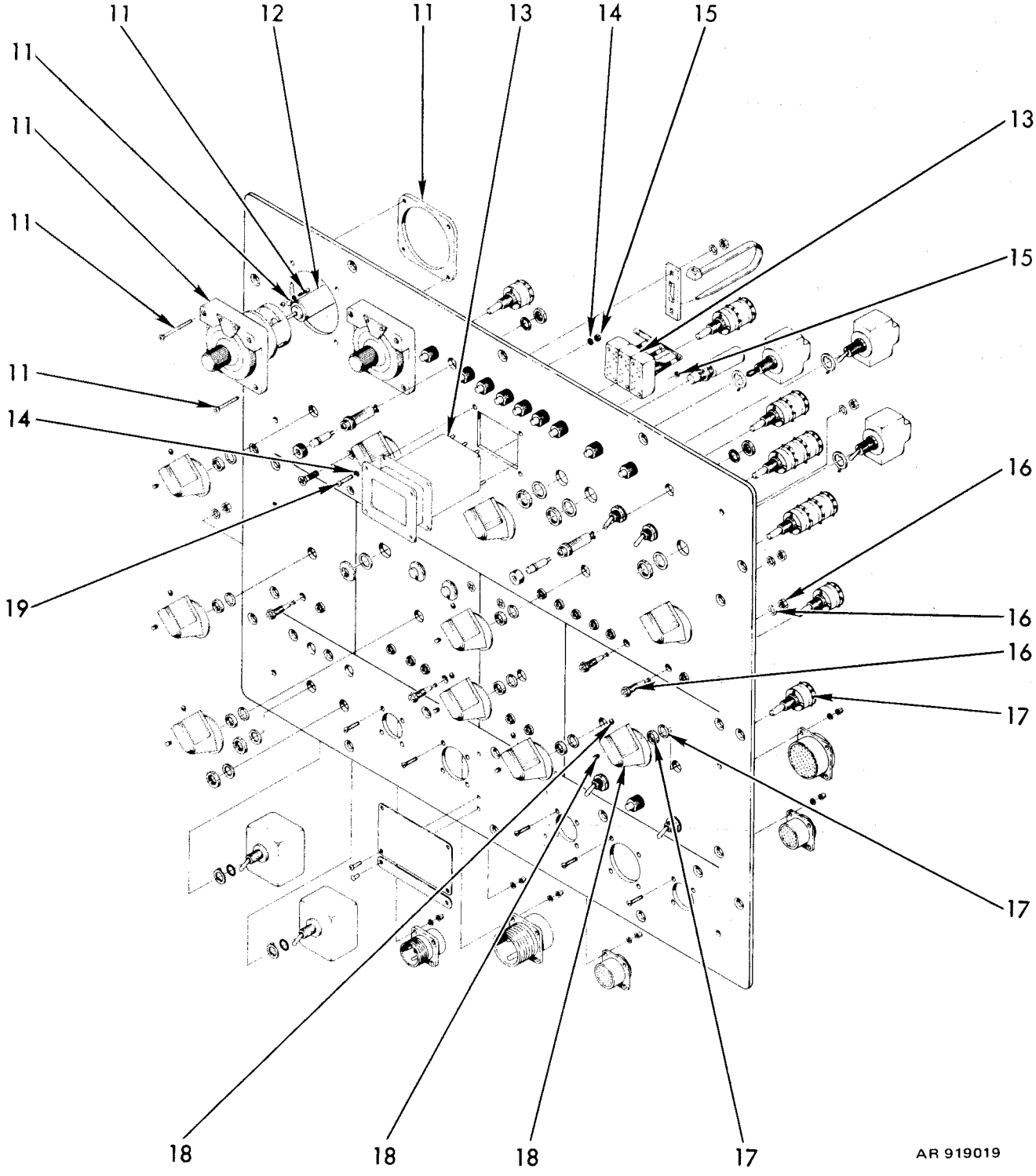


Figure E-7. Panel/Chassis Assembly - Wired, 012-301020-01 (Sheet 2 of 8)

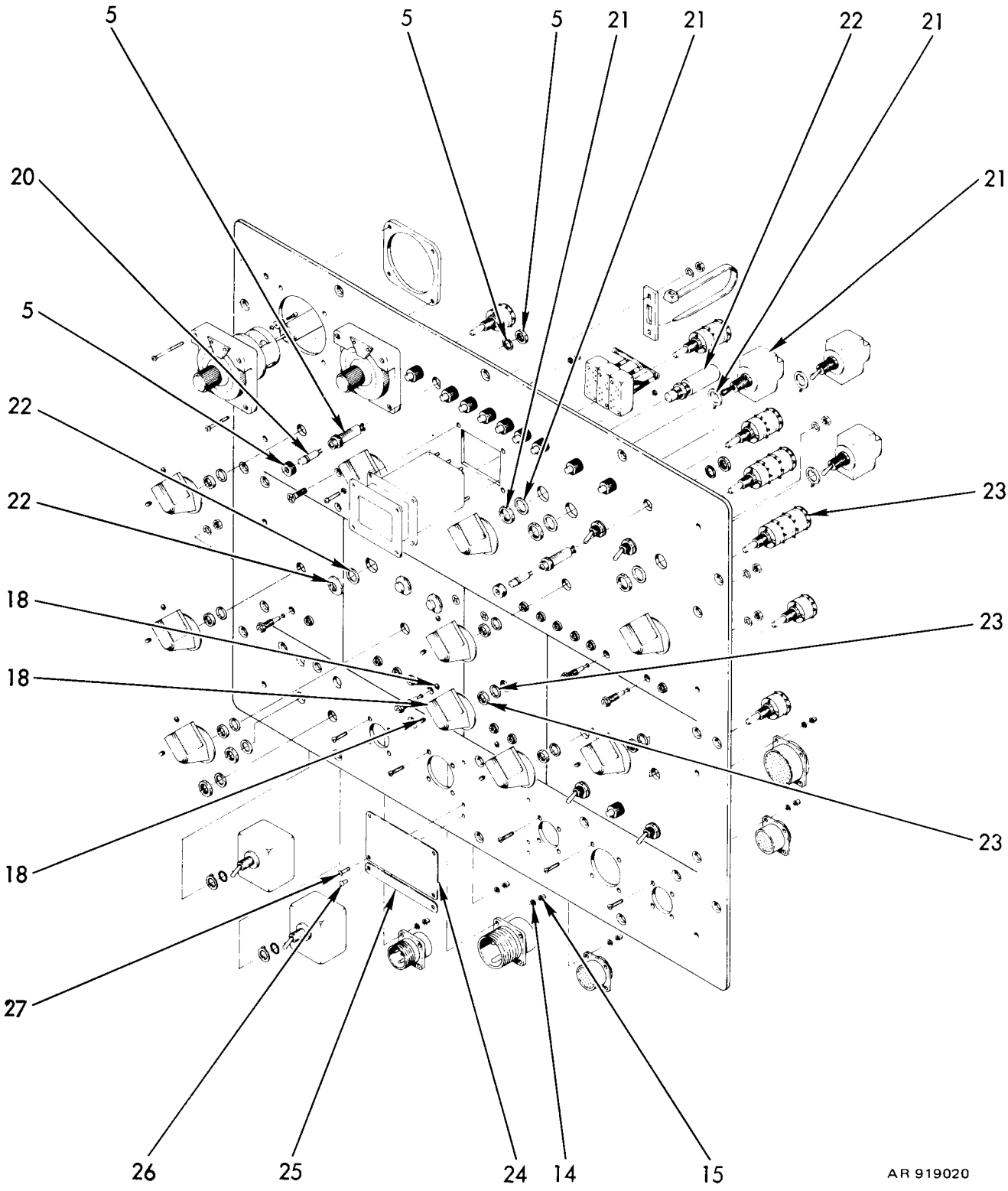


Figure E-7. Panel/Chassis Assembly - Wired, 012-301020-01 (Sheet 3 of 8)

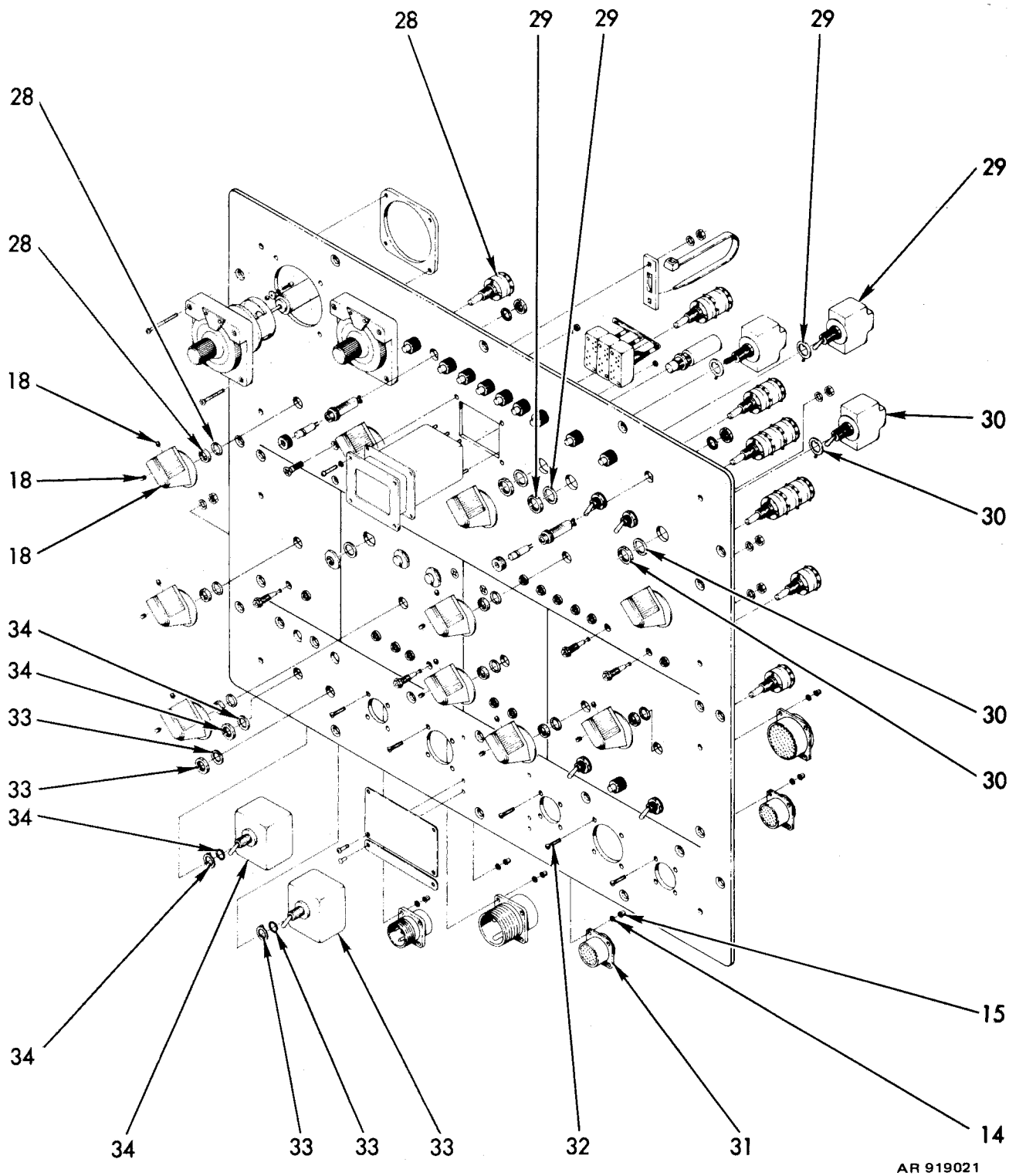


Figure E-7. Panel/Chassis Assembly - Wired, 012-301020-01 (Sheet 4 of 8)

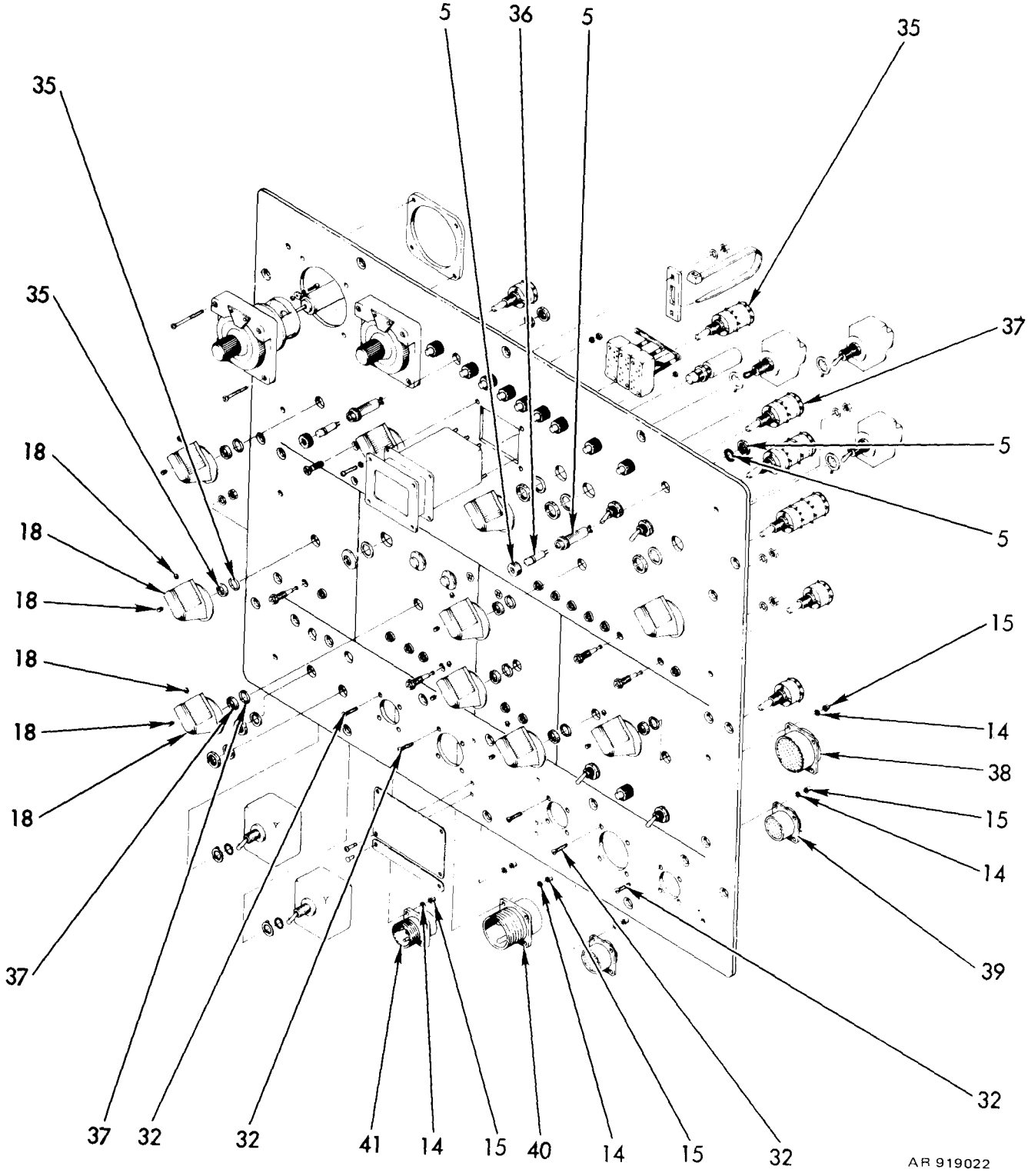


Figure E-7. Panel/Chassis Assembly - Wired, 012-301020-01 (Sheet 5 of 8)

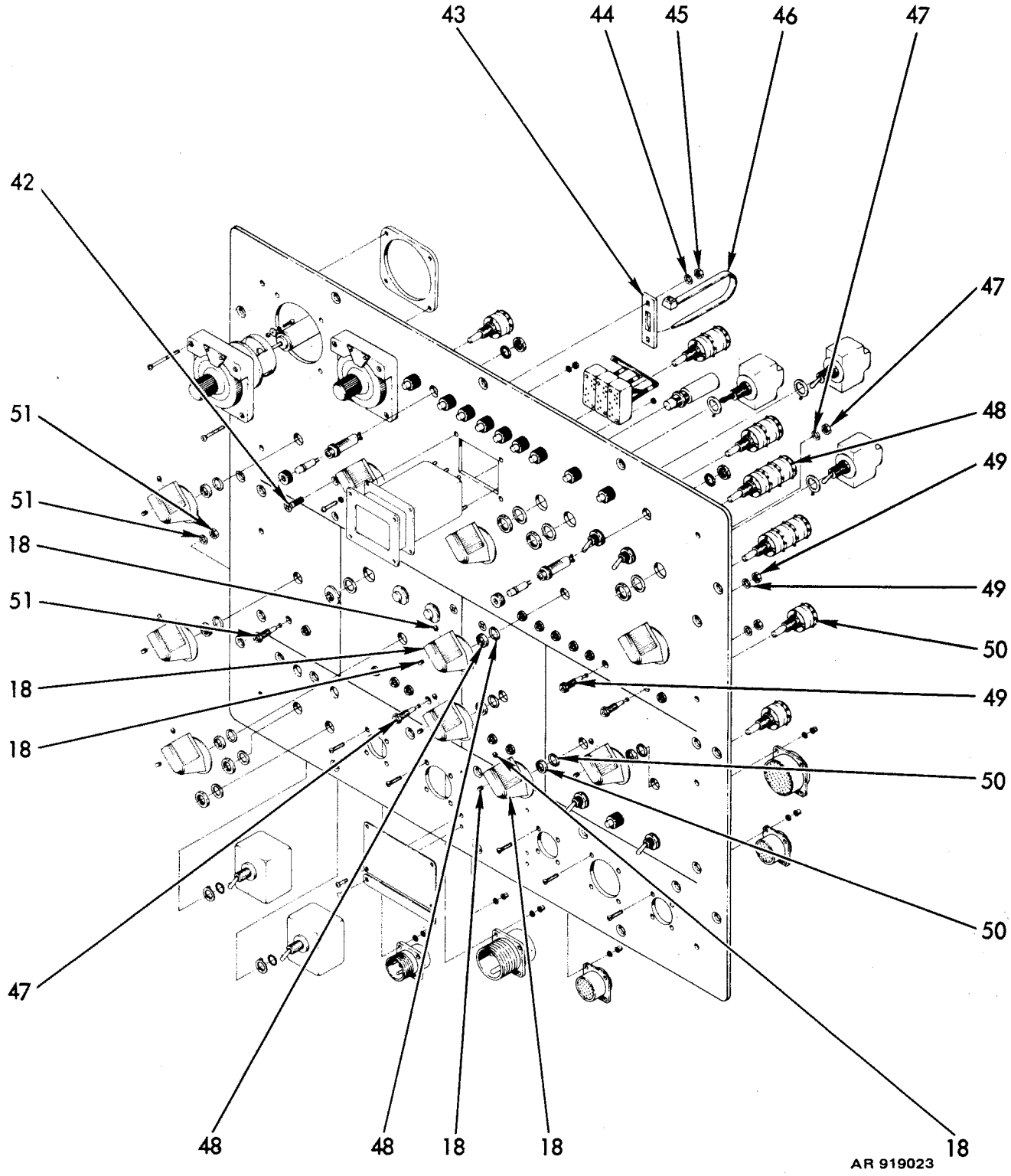


Figure E-7. Pane{/Chassis Assembly - Wired, 012-301020-01 (Sheet 6 of 8)

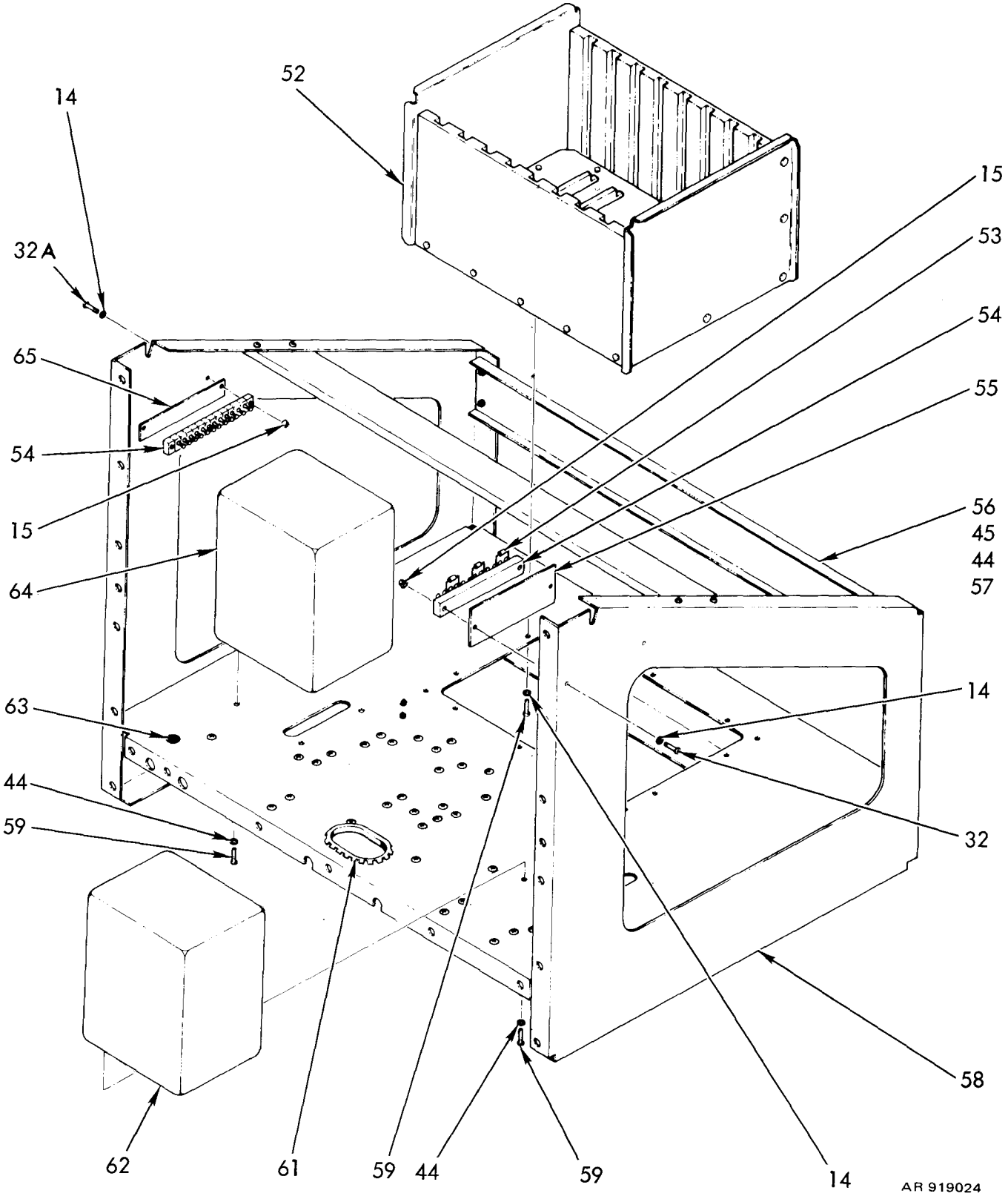


Figure E-7. Panel/Chassis Assembly - Wired, 012-301020-01 (Sheet 7 of 8)

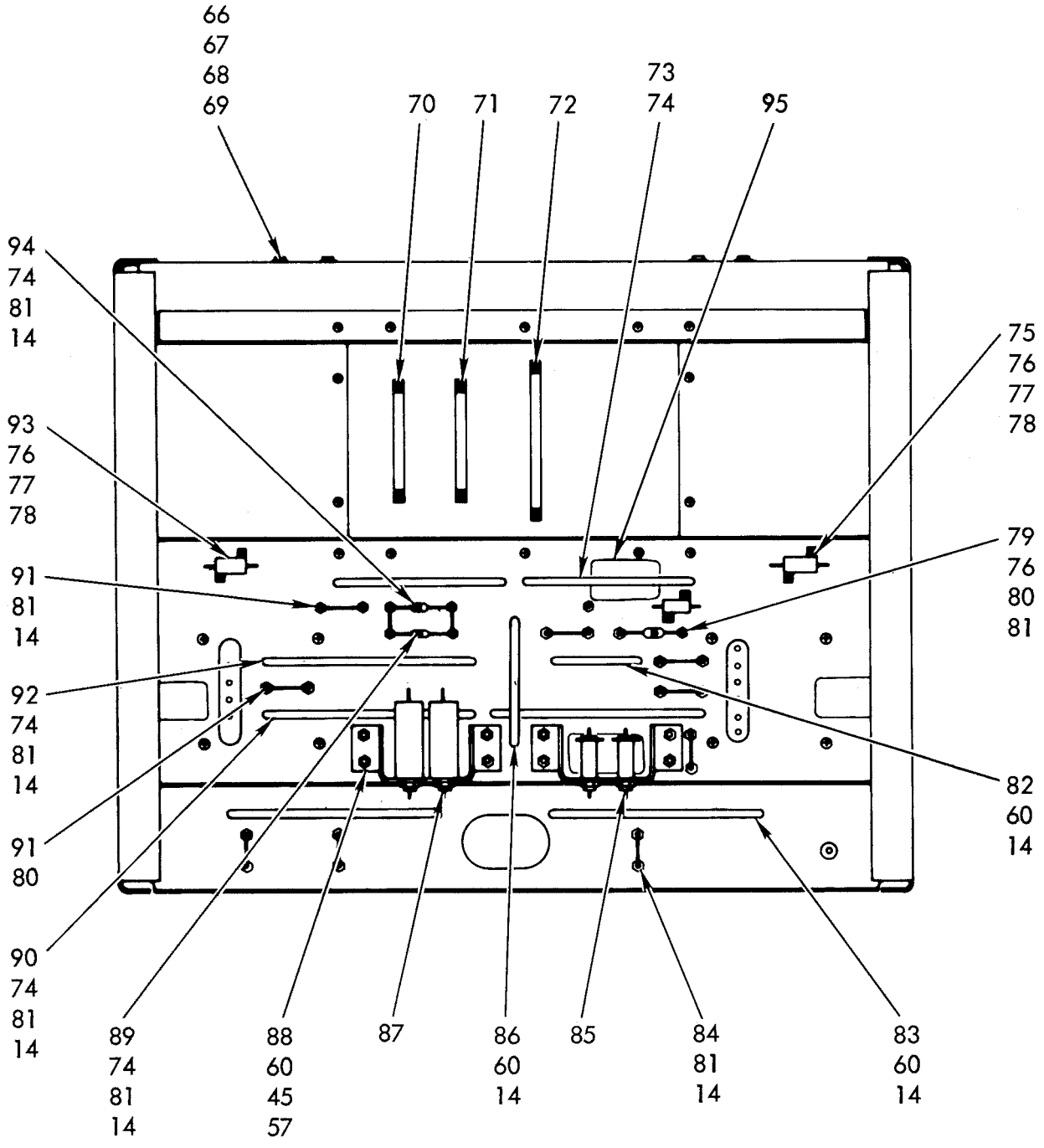


Figure E-7. Panel/Chassis Assembly - Wired, 012-301020-01 (Sheet 8 of 8)

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0105 PANEL/CHASSIS ASSEMBLY-WIRED			
						012-301020-01			
E-7	1	PAFZZ	5310-00-619-1148	MS15795-808	96906	WASHER, FLAT		EA	20
E-7	2	PAFZZ	5310-00-933-8120	MS35338-138	96906	WASHER, LOCK		EA	8
E-7	3	PAFZZ	5305-00-059-3660	MS51958-64	96906	SCREW, MACHINE		EA	8
E-7	4	PAFZZ	5310-00-807-1467	MS21042-3	96906	NUT, SELF-LOCKING		EA	12
E-7	5	PAFZZ	6210-00-421-1832	LH90-1	81349	LIGHT, INDICATOR		EA	14
E-7	6	XAFDD		901400	K0656	PANEL, FRONT		EA	1
E-7	7	PAFZZ	6240-00-910-3297	MS18235-3GT	96906	LAMP, CARTRIDGE		EA	2
E-7	8	PAFZZ	5305-00-959-4158	MS24693-C273	96906	SCREW, MACHINE		EA	12
E-7	9	PAFZZ	3120-01-083-4161	901388	K0656	BUSHING, SLEEVE		EA	8
E-7	10	PAFZZ	5340-01-074-0533	901383-07	K0656	HANDLE, BOW		EA	4
E-7	11	PAFZZ	4933-01-076-6519	901356	K0656	DRIVE, DUAL SPEED		EA	2
E-7	12	PAFZZ	5990-01-082-3385	8311-7301-002	K0656	RESOLVER		EA	2
E-7	13	PAFZZ		M28803/1-FA	81349	READOUT		EA	1
E-7	14	PAFZZ	5310-00-595-6211	MS15795-803	96906	WASHER, FLAT		EA	70
E-7	15	PAFZZ	5310-00-811-6419	MS21042-04	96906	NUT, SELF-LOCKING		EA	34
E-7	16	PAFZZ	5935-00-133-0395	M39024-10-12	81349	JACK, TIP		EA	7
E-7	17	PAFZZ		M3786/4-5870	81349	SWITCH, ROTARY		EA	2
E-7	18	PAFZZ	5355-00-839-9448	MS91528-1B4B	96906	KNOB		EA	10
E-7	19	PAFZZ	5305-00-054-5652	MS51957-18	96906	SCREW, MACHINE		EA	4
E-7	20	PAFZZ	6240-00-443-2725	MS18235-3WT	96906	LAMP, CARTRIDGE		EA	8
E-7	21	PAFZZ	5930-00-683-1625	MS24523-31	96906	SWITCH, TOGGLE		EA	1
E-7	22	PAFZZ	5930-01-015-0025	M8805-99-015	81349	SWITCH, PUSH		EA	3
E-7	23	PAFZZ	5930-01-029-8215	M3786-4-5886	81349	SWITCH, ROTARY		EA	1
E-7	24	MDDZZ		901359	K0656	PLATE, IDENT		EA	1
E-7	25	MDDZZ		901360	K0656	PLATE, SERIAL NO		EA	1
E-7	26	PAFZZ		NAS1919B04-02	96906	RIVET, SOLID		EA	2
E-7	27	PAFZZ	5305-00-054-5649	MS51957-15	96906	SCREW, MACHINE		EA	14
E-7	28	PAFZZ		M3786/4-5177	81349	SWITCH, ROTARY		EA	1
E-7	29	PAFZZ	5930-00-683-1629	MS24523-23	96906	SWITCH, TOGGLE		EA	3
E-7	30	PAFZZ	5930-00-683-1628	MS24523-22	96906	SWITCH, TOGGLE		EA	3
E-7	31	PAFZZ	5935-01-042-5123	MS27508E12B35SA	96906	CONNECTOR		EA	1
E-7	32	PAFZZ	5305-00-068-6605	MS24693-C6	96906	SCREW, MACHINE		EA	20

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0105 PANEL/CHASSIS ASSEMBLY-WIRED			
						012-301020-01			
						CONTINUED			
E-7	32A	PAFZZ	5305-00-054-5651	MS51957-17	96906	SCREW, MACHINE		EA	4
E-7	33	PAFZZ	5925-01-041-2585	M39019/03-219	81349	CIRCUIT BREAKER		EA	1
E-7	34	PAFZZ		M39019-3-210	81349	CIRCUIT BREAKER		EA	1
E-7	35	PAFZZ	5930-01-072-3941	M3786-36-0899	81349	SWITCH, ROTARY		EA	2
E-7	36	PAFZZ	6240-00-910-3282	MS18235-3RT	96906	LAMP, CARTRIDGE		EA	4
E-7	37	PAFZZ	5930-01-075-7248	M3786-4-6150	81349	SWITCH, ROTARY		EA	1
E-7	38	PAFZZ	5935-00-515-2284	MS2750BE18B35S	96906	CONNECTOR		EA	1
E-7	39	PAFZZ	5935-00-328-0402	MS2750BE12B35S	96906	CONNECTOR		EA	1
E-7	40	PAFZZ		MS3102A16-11P	96906	CONNECTOR		EA	1
E-7	41	PAFZZ	5935-00-726-0708	MS3102R10SL3P	96906	CONNECTOR		EA	1
E-7	42	PAFZZ		MS24693-C28	96906	SCREW, FLAT HEAD		EA	4
E-7	43	PAFZZ		MS3339-1-9	96906	PLATE, MOUNTING		EA	2
E-7	44	PAFZZ	5310-00-722-5998	MS15795-805	96906	WASHER, FLAT		EA	28
E-7	45	PAFZZ	5310-00-807-1465	MS21042-06	96906	NUT, SELF-LOCKING		EA	20
E-7	46	PAFZZ	5975-00-074-2072	MS3367-1-9	96906	STRAP, TIEDOWN		EA	2
E-7	47	PAFZZ	5935-00-492-1989	M39024-10-19	81349	JACK, TIP		EA	1
E-7	48	PAFZZ		M3786-4-5382	81349	SWITCH, ROTARY		EA	1
E-7	49	PAFZZ	5935-00-109-0150	M39024-10-13	81349	JACK, TIP		EA	7
E-7	50	PAFZZ		M3786/4-5343	81349	SWITCH, ROTARY		EA	2
E-7	51	PAFZZ		M39024-10-11	81349	CONNECTOR, JACK, WHITE		EA	1
E-7	52	ADDDD		012-301026-01	K0656	CARD RACK ASSY		EA	1
E-7	53	PAFZZ		RLR07C1002GR	81349	RESISTOR, FIXED FILM		EA	5
E-7	54	PADZZ		901375	K0656	TERMINAL BOARD		EA	2
E-7	55	PADZZ		901857	K0656	MARKER, STRIP		EA	1
E-7	56	PADZZ	4933-01-075-6657	901414	K0656	BRACE, CHASSIS		EA	2
E-7	57	PADZZ	5305-00-054-6654	MS51957-30	96906	SCREW, MACHINE		EA	16
E-7	58	XADDD		901401	K0656	CHASSIS		EA	1
E-7	59	PAFZZ	5305-00-054-6653	MS51957-29	96906	SCREW, MACHINE		EA	8
E-7	60	PAFZZ	5305-00-054-5650	MS51957-16	96906	SCREW, MACHINE		EA	9
E-7	61	PAFZZ	5325-00-074-3301	MS21266-2N	96906	GROMMET		EA	1
E-7	62	PAFZZ		901828	K0656	POWER SUPPLY		EA	1

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0105 PANEL/ CHASSIS ASSEMBLY-WIRED			
						012-301020-01			
						CONTINUED			
E-7	63	PAFZZ	5325-00-286-6047	MS35489-1	96906	GROMMET		EA	1
E-7	64	PAFZZ	4933-01-074-6109	901829	K0656	POWER SUPPLY		EA	1
E-7	65	PADZZ		901844	K0656	MARKER, STRIP		EA	1
E-7	66	PADZZ	4933-01-075-1968	901403	K0656	BLOCK, LOCATING		EA	2
E-7	67	PADZZ	5305-00-054-6675	MS51957-50	96906	SCREW, MACHINE		EA	8
E-7	68	PADZZ	5310-00-880-5978	MS15795-807	96906	WASHER, FLAT		EA	16
E-7	69	PADZZ	5310-00-807-1466	MS21042-08	96906	NUT, SELF-LOCKING		EA	8
E-7	70	PAFZZ		M55302-66-50L	81349	CONNECTOR		EA	1
E-7	71	PAFZZ	5935-01-059-0300	M55302-66-60L	81349	CONNECTOR		EA	1
E-7	72	PAFZZ	5935-01-068-9400	M55302-66-70L	81349	CONNECTOR, PLUG		EA	1
E-7	73	PADZZ	5340-01-074-0534	901383-03	K0656	HANDLE, BOW		EA	2
E-7	74	PADZZ	5305-00-066-7325	MS24693-C5	96906	SCREW, MACHINE		EA	8
E-7	75	PAFZZ		RER60F1001R	81349	RESISTOR, FIXED		EA	1
E-7	76	PAFZZ	5310-00-058-1823	MS21042-02	96906	NUT,SELF-LOCKING		EA	6
E-7	77	PAFZZ	5310-00-595-6761	MS15795-802	96906	WASHER, FLAT		EA	6
E-7	78	PAFZZ	5305-00-054-5639	MS51957-5	96906	SCREW, MACHINE		EA	6
E-7	79	PAFZZ	5961-00-403-3298	JANTX1N5552	81349	SEMICONDUCTOR		EA	1
E-7	80	PADZZ	5305-00-993-9189	MS24693-C2	96906	SCREW, MACHINE		EA	8
E-7	81	PADZZ	5305-00-054-5648	MS51957-14	96906	SCREW, MACHINE		EA	25
E-7	82	PADZZ	5340-01-073-7540	901383-02	K0656	HANDLE, BOW		EA	1
E-7	83	PADZZ	5340-01-074-0532	901383-06	K0656	HANDLE, BOW		EA	2
E-7	84	PADZZ	5340-01-073-7573	901384	K0656	POST		EA	10
E-7	85	PAFZZ		M15733/27-0023	81349	FILTER, RADIO		EA	2
E-7	86	PADZZ	5340-01-073-7538	901383-05	K0656	HANDLE, BOW		EA	1
E-7	87	PADZZ	5910-00-771-6995	CZ24BKB105	81349	CAPACITOR, FIXED		EA	2
E-7	88	PADZZ	4933-01-075-1969	901415	K0656	BRACKET, FILTER		EA	2
E-7	89	PAFZZ	5961-00-172-4970	JANTX1N5555	81349	SEMICONDUCTOR		EA	1
E-7	90	PADZZ	5340-01-073-7541	901383-01	K0656	HANDLE, BOW		EA	2
E-7	91	PADZZ		SE209D01	81349	TERMINAL, STUD		EA	15
E-7	92	PADZZ	5340-01-073-7539	901383-04	K0656	HANDLE, BOW		EA	1
E-7	93	PAFZZ	5905-00-170-0234	RER65F51R1R	81349	RESISTOR, FIXED		EA	2
E-7	94	PAFZZ	5961-00-898-2101	JANTX1N645	81349	SEMICONDUCTOR		EA	1
E-7	95	PAFZZ		901893	K0656	LABEL, ASSEMBLY		EA	6

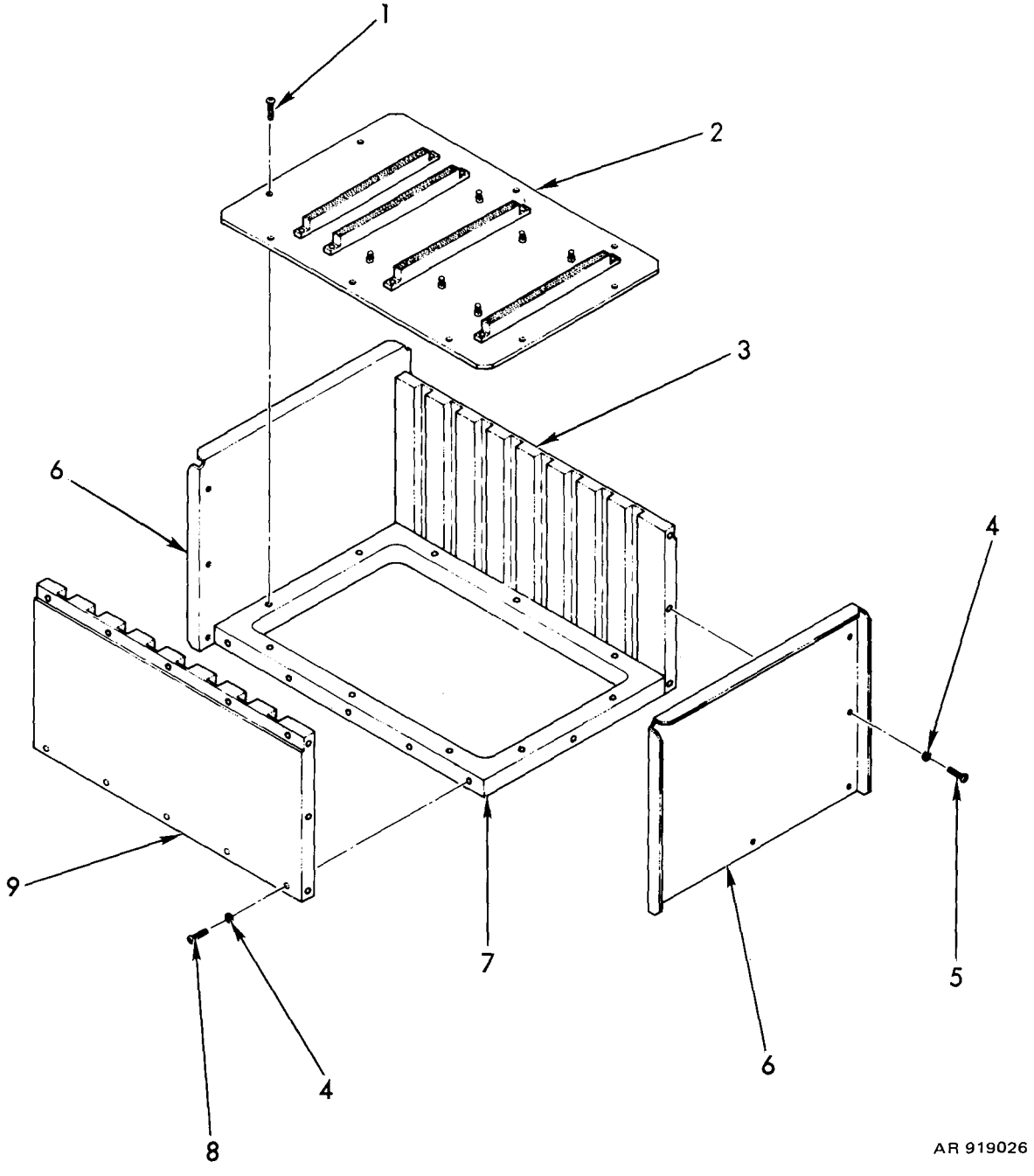


Figure E-8. Card Rack Assembly, 012-307026-01

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 010501 CARD RACK ASSEMBLY			
						012-301026-01			
E-8	1	PADZZ	5305-00-880-8192	NAS1301C4-5	80205	SCREW, ASSEMBLED		EA	10
E-8	2	PADDD	4933-01-073-7555	012-301021-02	K0656	CIRCUIT CARD ASSEMBLY-MOTHERBOARD		EA	1
E-8	3	PADDD		012-301034-01	K0656	PANEL ASSY, SIDE		EA	1
E-8	4	PADZZ	5310-00-595-6211	MS15795-803	96906	WASHER, FLAT		EA	24
E-8	5	PADZZ	5305-00-054-5648	MS51957-14	96906	SCREW, MACHINE		EA	14
E-8	6	PADZZ	4933-01-075-6655	901413	K0656	END PLATE, CARD		EA	2
E-8	7	PADDD		012-301033-01	K0656	BASE ASSY		EA	1
E-8	8	PADZZ	5305-00-054-5652	MS51957-18	96906	SCREW, MACHINE		EA	10
E-8	9	PADDD		012-301035-01	K0656	PANEL ASSY, SIDE		EA	1

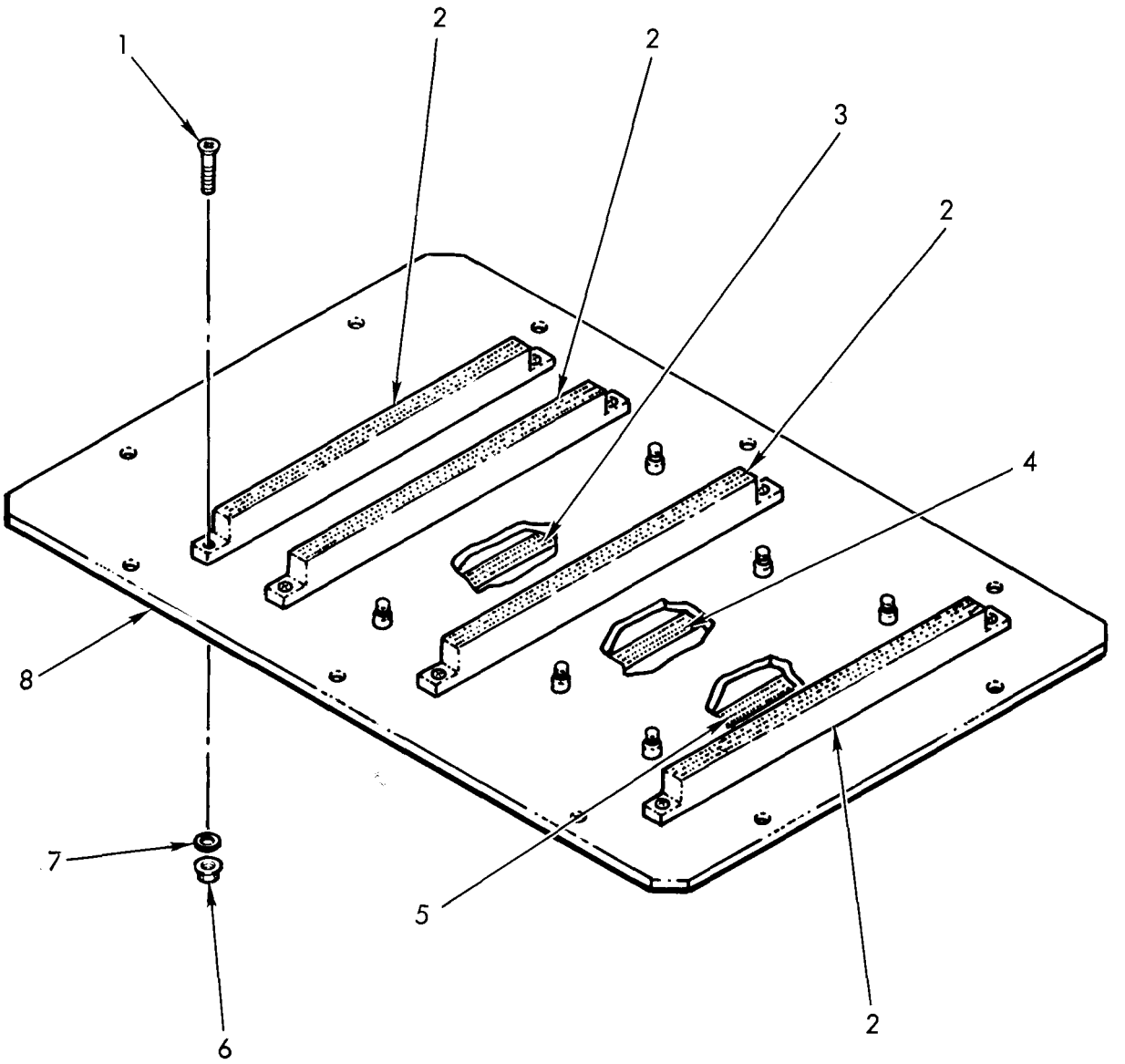


Figure E-9. Circuit Card Assembly - Motherboard, 012-301021-02

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 01050101 CIRCUIT CARD ASSEMBLY-		
						MOTHERBOARD 012-301021-02		
E-9	1	PADZZ	5305-00-054-5638	MS51957-4	96906	SCREW, MACHINE	EA	8
E-9	2	PADZZ		M55302/24-37	81349	CONNECTOR	EA	4
E-9	3	PADZZ		M55302/63-B70F	81349	CONNECTOR	EA	1
E-9	4	PADZZ		M55302-63-B50F	81349	CONNECTOR	EA	1
E-9	5	PADZZ		M55302/63-B60F	81349	CONNECTOR	EA	1
E-9	6	PADZZ	5310-00-058-1823	MS21042-02	96906	NUT, SELF-LOCKING	EA	8
E-9	7	PADZZ	5310-00-595-6761	MS15795-802	96906	WASHER, FLAT	EA	8
E-9	8	XADZZ		901744	K0656	PRINTED WIRING BD	EA	1

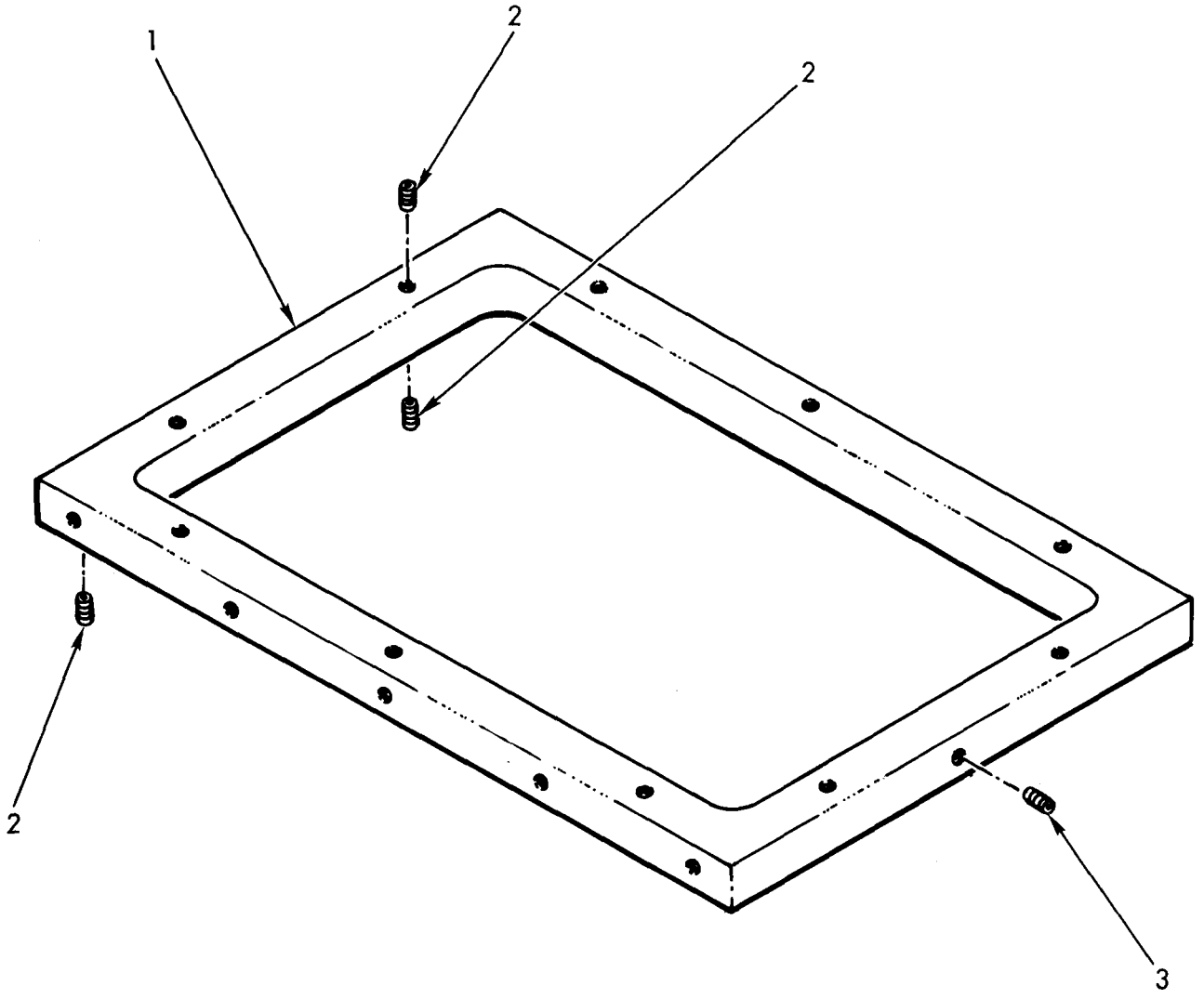


Figure E-10. Base Assembly - Card Rack, 012-301033-01

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 01050102 BASE ASSEMBLY-CARD RACK		
						012-301033-01		
E-10	1	PADZZ	4933-01-078-8735	901409	K0656	BASE, ELECTRICAL	EA	1
E-10	2	PADZZ	5340-00-842-5920	MS122116	96906	INSERT, SCREW	EA	24
E-10	3	PADZZ	5340-00-631-7894	MS21209C0415	96906	INSERT, SCREW	EA	12

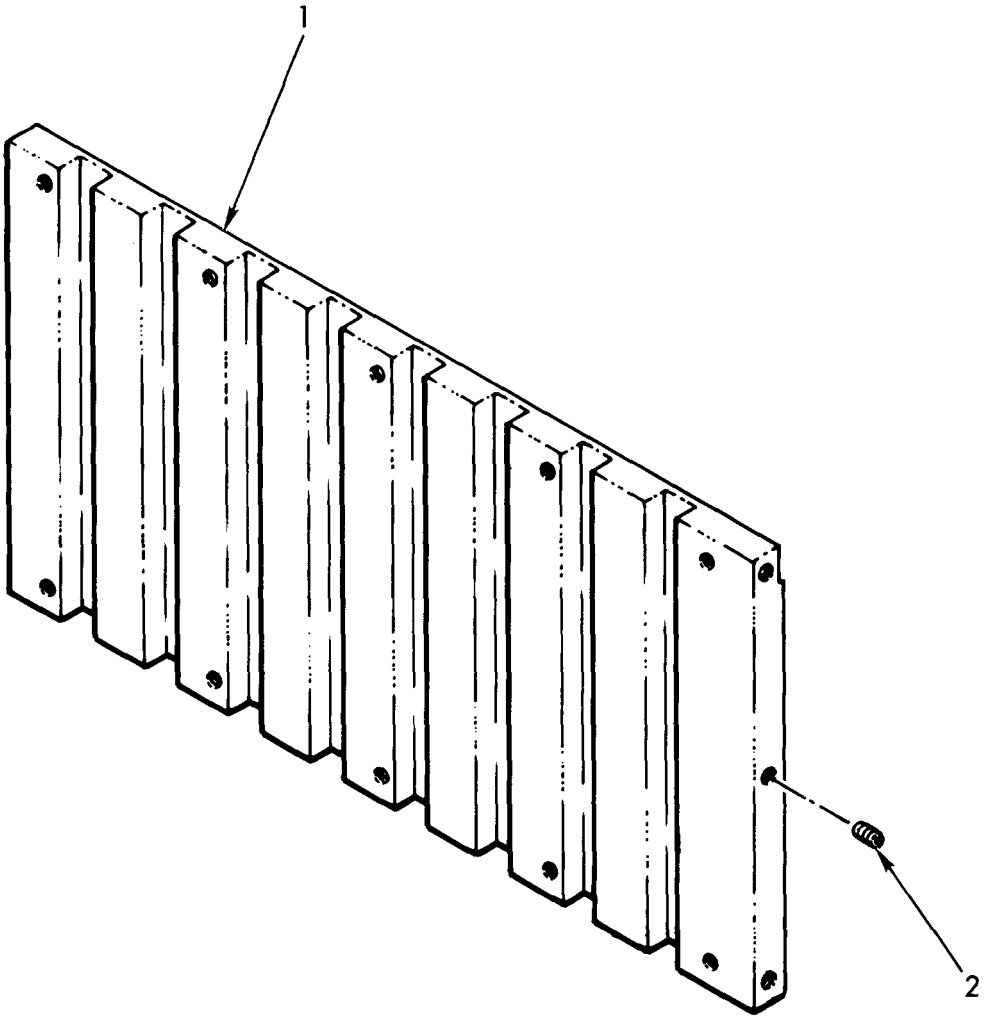


Figure E-11. Panel Assembly, Side - Card Rack, 012-301034-01

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 01050103 PANEL ASSEMBLY, SIDE-CARD			
						RACK 012-301034-01			
E-11	1	PADZZ	4933-01-075-1966	901410	K0656	RACK, CIRCUIT CARD		EA	1
E-11	2	PADZZ	5340-00-631-7894	MS21209C0415	96906	INSERT, SCREW		EA	11

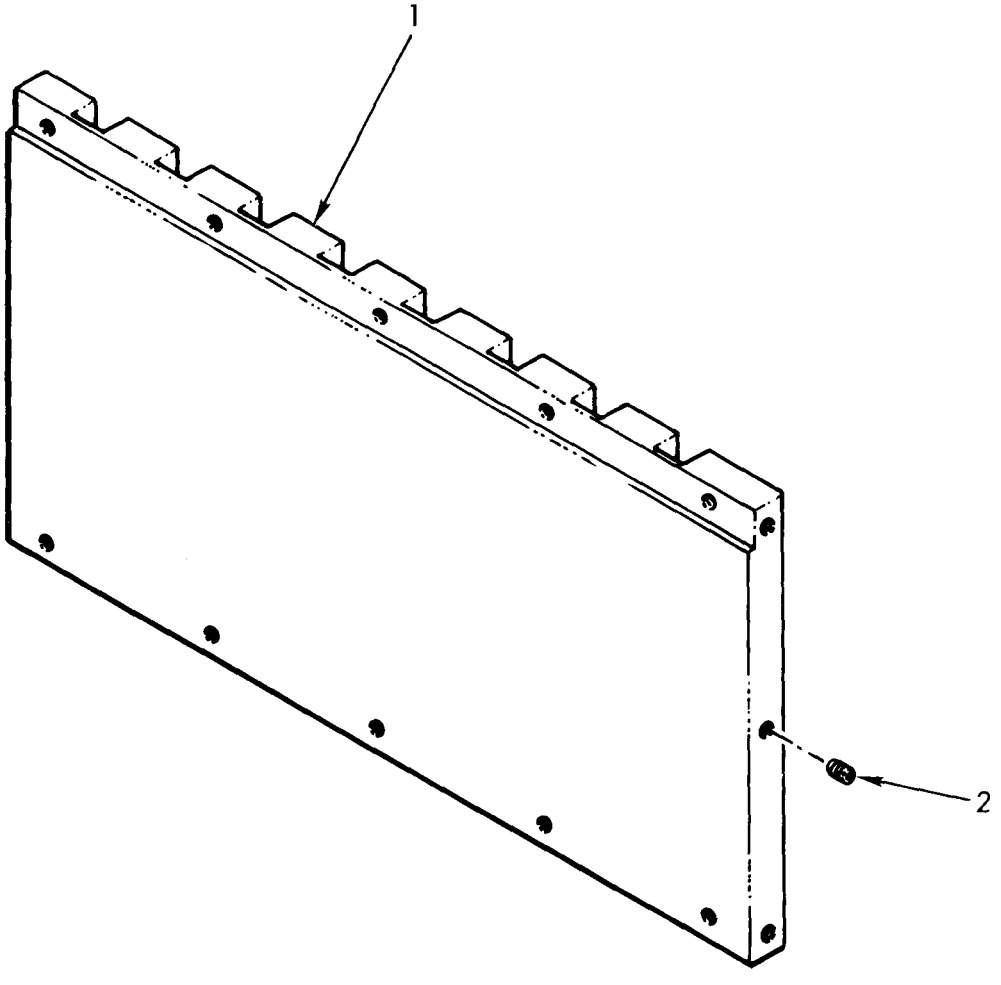


Figure E-12. Panel Assembly, Side - Card Rack, 012-301035-01

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)		(7)	(8)
(A) FIG NO	(B) ITEM NO	SMR CODE	FEDERAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION	USABLE ON CODE	U/M	QTY INC IN UNIT
						GROUP 01050104 PANEL ASSEMBLY, SIDE-CARD			
						RACK 012-301035-01			
E-12	1	PADZZ	4933-01-073-7500	901411	K0656	RACK, CIRCUIT CARD		EA	1
E-12	2	PADZZ	5340-00-631-7894	MS21209C0415	96906	INSERT, SCREW		EA	11

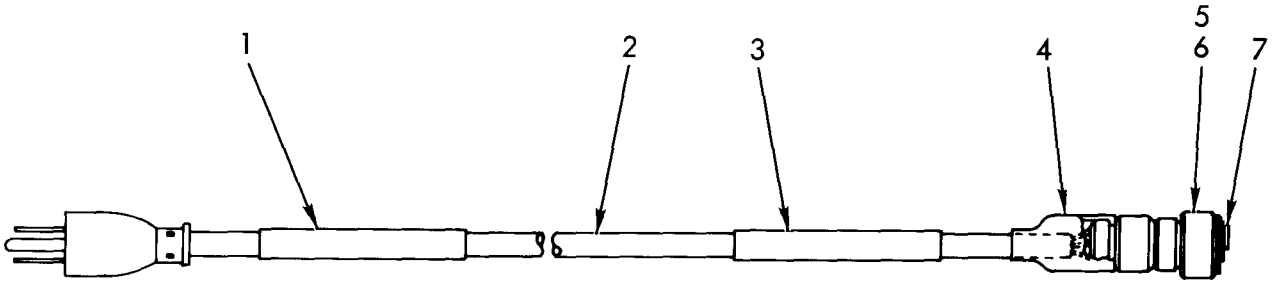


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Figure E-13. Cable Assembly - AC Power (W1), 012-301027-01

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0106 CABLE ASSEMBLY-AC POWER (W1)			
						012-301027-01			
E-13	1	PADZZ	4933-01-075-1933	901402-15	K0656	BAND, MARKER		EA	1
E-13	2	PADZZ	4933-01-073-7428	901397	K0656	CABLE ASSEMBLY		EA	1
E-13	3	PADZZ	4933-01-075-1932	901402-14	K0656	BAND, MARKER		EA	1
E-13	4	PADZZ		MS3109-11AU	96906	BOOT, BUST		EA	1
E-13	5	PADZZ	5935-00-539-2650	MS3106A10SL3S	96906	CONNECTOR, PLUG		EA	1
E-13	6	PADZZ	4933-01-073-7502	901396	K0656	ADAPTER		EA	1
E-13	7	PADZZ	5340-00-449-4491	MS90376-10Y	96906	CAP, PROTECTIVE		EA	1

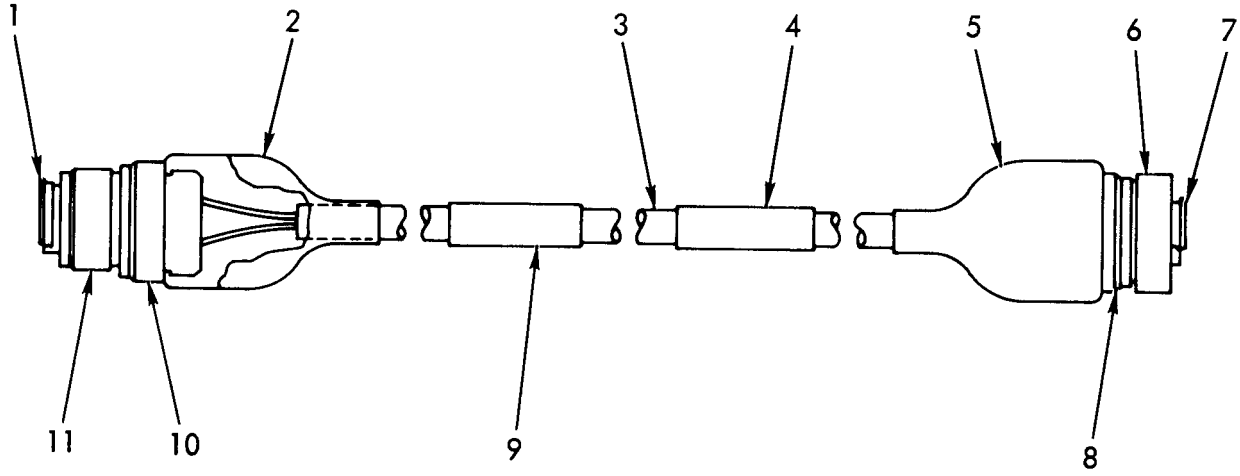

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Figure E-14. Cable Assembly - DC Power (W2), 012-301028-02

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0107 CABLE ASSEMBLY-DC POWER (W2)		
						012-301028-02		
E-14	1	PADZZ	5935-00-496-5832	MS90376-16Y	96906	COVER, ELECTRICAL	EA	1
E-14	2	PADZZ	5970-01-022-1460	MS3109-14AU	96906	INSULATION	EA	1
E-14	3	PADZZ		C002MGF2-14-0450	81349	CABLE	FT	8
E-14	4	PADZZ	4933-01-075-1935	901402-17	K0656	BAND, MARKER	EA	1
E-14	5	PADZZ		MS3109-13AU	96906	BOOT, DUST	EA	1
E-14	6	PADZZ	5935-00-189-2535	MS3476L12-3P	96906	CONNECTOR, PLUG	EA	1
E-14	7	PADZZ		MS90376-12Y	96906	CAP, DUST	EA	1
E-14	8	PADZZ		MS3158-12C	96906	CONNECTOR, BACKSHELL	EA	1
E-14	9	PADZZ	4933-01-075-1934	901402-16	K0656	BAND, MARKER	EA	1
E-14	10	PADZZ	4933-01-076-8325	901354	K0656	ADAPTER	EA	1
E-14	11	PADZZ	5935-00-686-0038	MS3106A16-11SC	96906	CONNECTOR, PLUG	EA	1

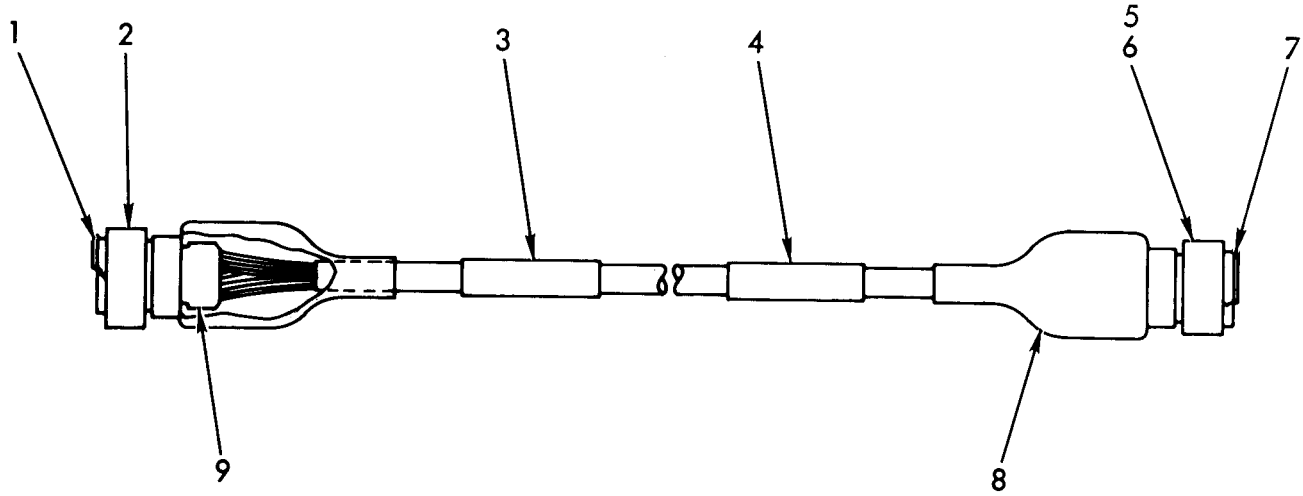

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Figure E-15. Cable Assembly - LAI (W3), 012-301030-01

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0108 CABLE ASSEMBLY-LAI (W3)		
						012-301030-01		
E-15	1	PADZZ	5935-00-496-5832	MS90376-16Y	96906	COVER, ELECTRICAL	EA	1
E-15	2	PADZZ		MS27473T12B35PA	96906	CONNECTOR, PLUG	EA	1
E-15	3	PADZZ	4933-01-075-1936	901402-18	K0656	BAND, MARKER	EA	1
E-15	4	PADZZ	4933-01-075-1937	901402-19	K0656	BAND, MARKER	EA	1
E-15	5	PADZZ		MS3476L14-19S	96906	CONNECTOR, PLUG	EA	1
E-15	6	PADZZ		MS3158-14C	96906	ADAPTER	EA	1
E-15	7	PADZZ	5340-00-213-8881	MS90376-12R	96906	CAP, PROTECTIVE	EA	1
E-15	8	PADZZ		MS3109-13AU	96906	BOOT, DUST	EA	2
E-15	9	PADZZ		M38999-2-12B	81349	BACKSHELL	EA	1

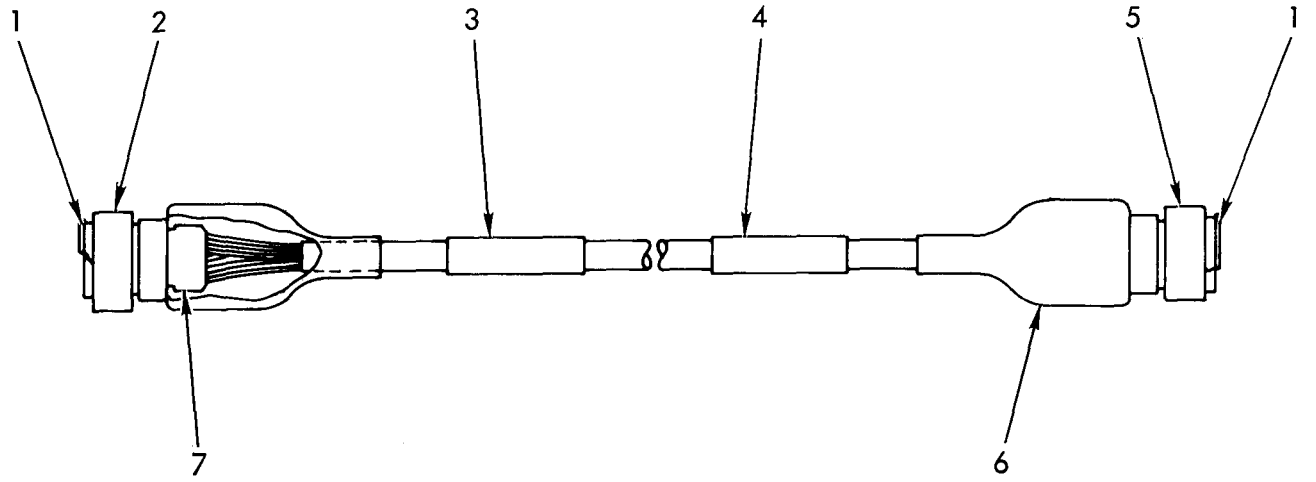

Figure E-16. Cable Assembly - EPU (W4), 072-301029-01

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0109 CABLE ASSEMBLY-EPU (W4)		
						012-301029-01		
E-16	1	PADZZ		MS90376-22Y	96906	CAP, PROTECTIVE	EA	2
E-16	2	PADZZ	5935-00-333-1601	MS27473T18B35P	96906	CONNECTOR, PLUG	EA	1
E-16	3	PADZZ	4933-01-081-4585	901402-20	K0656	BAND, MARKER	EA	1
E-16	4	PADZZ	4933-01-083-0719	901402-21	K0656	BAND, MARKER	EA	1
E-16	5	PADZZ	5935-00-426-5252	MS27473T18B35S	96906	CONNECTOR, PLUG	EA	1
E-16	6	PADZZ	5970-01-022-1460	MS3109-14AU	96906	INSULATION	EA	2
E-16	7	PADZZ		M38999-2-18B	81349	BACKSHELL	EA	2

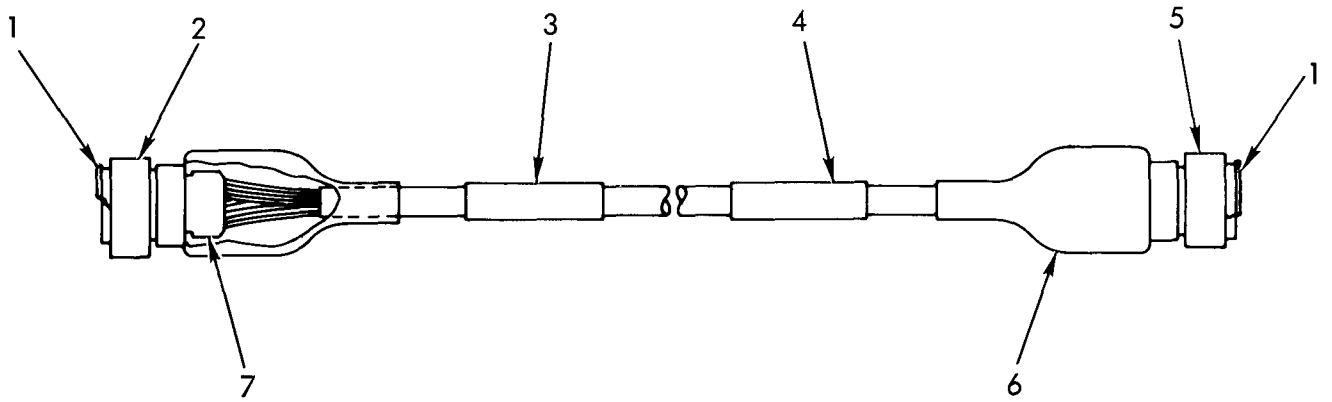

Figure E-17. Cable Assembly - AADS (W5), 012-301031-01

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0110 CABLE ASSEMBLY-AADS (W5)			
						012-301031-01			
E-17	1	PADZZ	5935-00-496-5832	MS90376-16Y	96906	COVER,ELECTRICAL		EA	2
E-17	2	PADZZ	5935-00-444-1246	MS27473T12B35P	96906	CONNECTOR,PLUG		EA	1
E-17	3	PADZZ	4933-01-073-7355	901402-22	K0656	BAND,MARKER		EA	1
E-17	4	PADZZ	4933-01-073-7356	901402-23	K0656	BAND,MARKER		EA	1
E-17	5	PADZZ	5935-00-368-0449	MS27473T12B35S	96906	CONNECTOR,PLUG		EA	1
E-17	6	PADZZ		MS3109-13AU	96906	BOOT,DUST		EA	2
E-17	7	PADZZ		M38999-2-12B	81349	BACKSHELL		EA	2

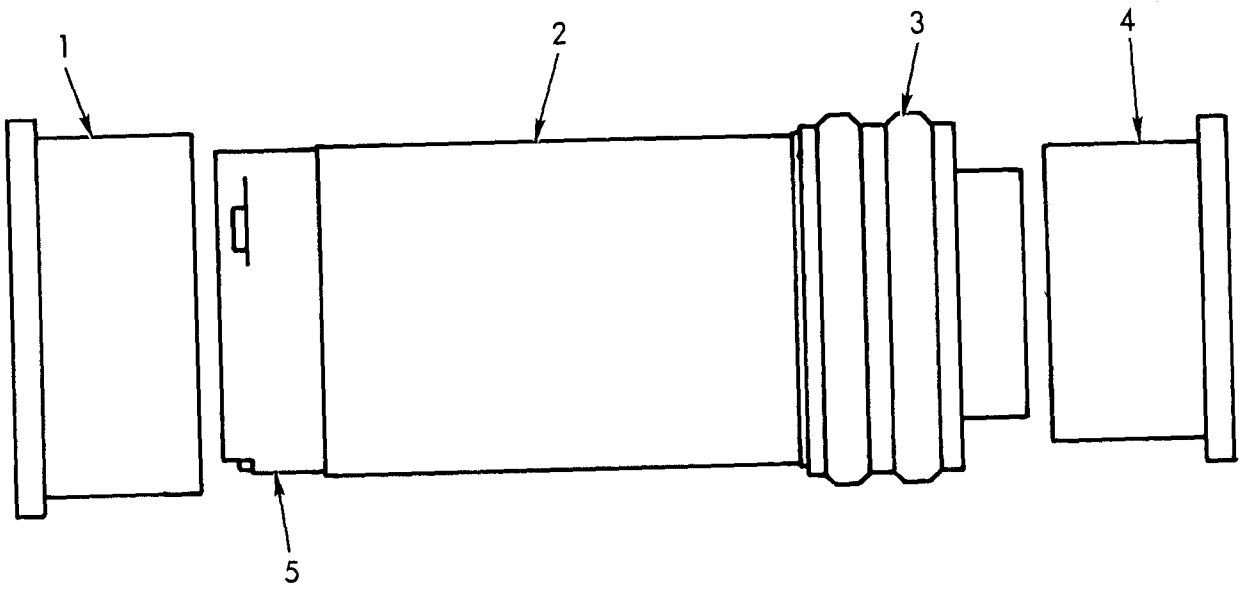

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Figure E-18. Adapter Assembly - AC Po wer Cable (W6), 012-301032-01

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0111 ADAPTER ASSEMBLY-AC POWER			
						CABLE (W6) 012-301032-01			
E-18	1	XAFZZ		MS90376-24Y	96906	CAP,PROTECTIVE		EA	1
E-18	2	XAFZZ		901849	K0656	MARKER,IDENT		EA	1
E-18	3	XAFZZ		901393	K0656	PLUG,CABLE ADAPTER		EA	1
E-18	4	XAFZZ		MS90376-20Y	96906	CAP,PROTECTIVE		EA	1
E-18	5	XAFZZ		901392	K0656	CONNECTOR		EA	1

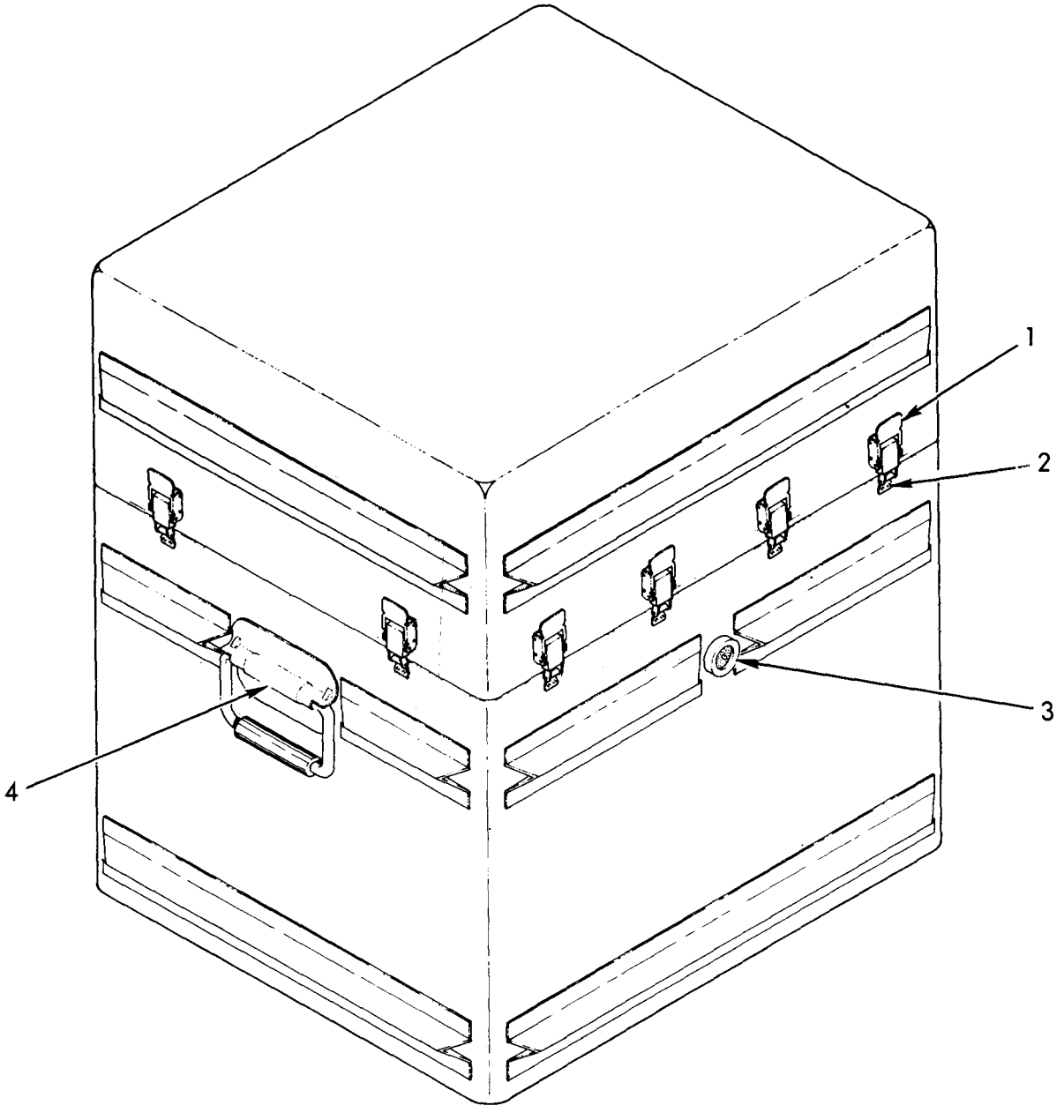

Figure E-19. Case, Test Set, 901727

SECTION II

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0112 CASE,TEST SET			
						901727			
E-19	1	XBDZZ		ZSP 2-204	19178	LATCH		EA	8
E-19	2	XBDZZ	5320-00-117-6840	MS20470AD5-7	96906	RIVET,SOLID		EA	32
E-19	3	XBDZZ		ZSP 6-037-4	19178	VALVE,AUTO RELIEF		EA	1
E-19	4	XBDZZ		ZSP 3-003	19178	HANDLE		EA	2

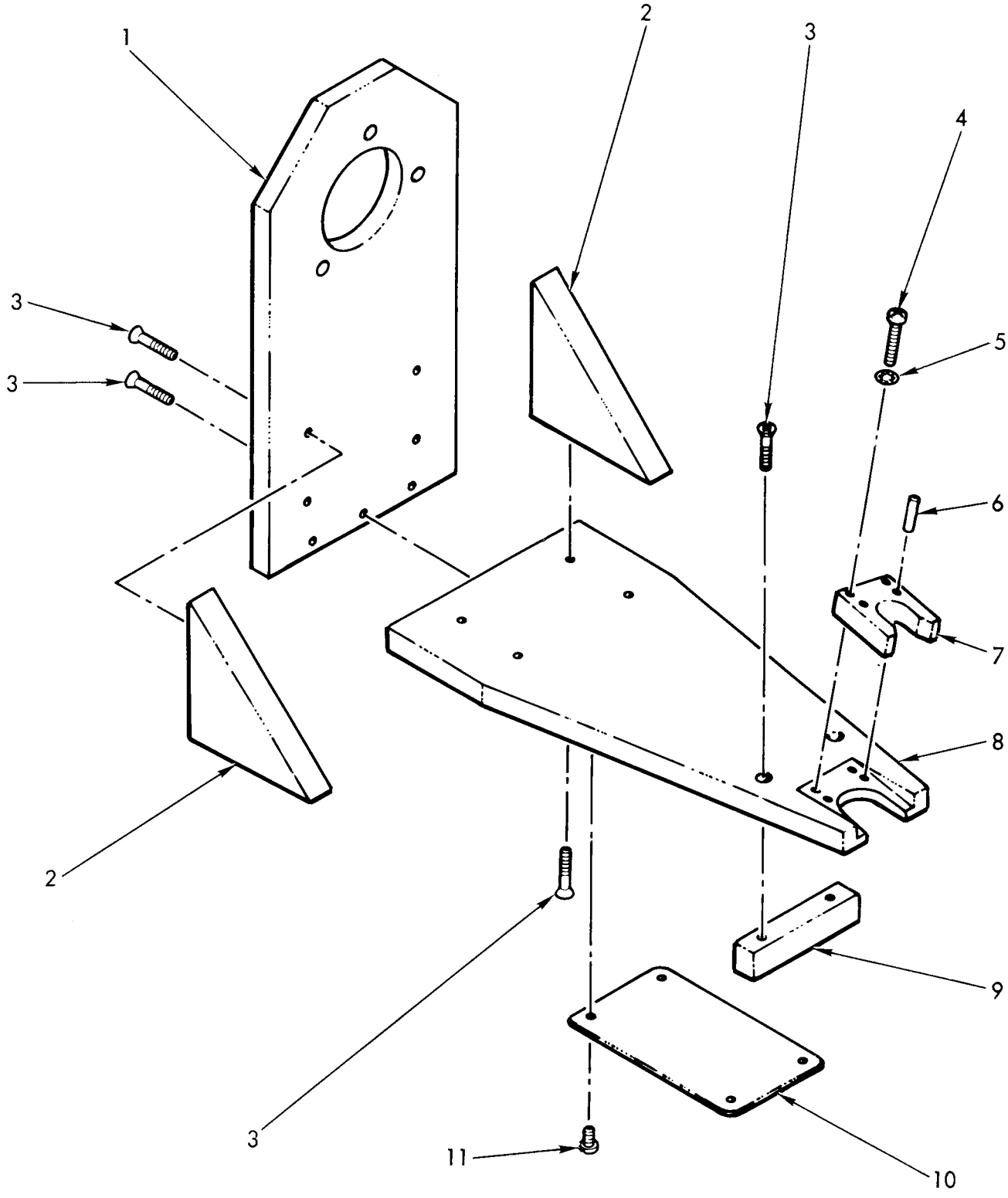

Figure E-20. Fixture, Checking 99-265-02

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 02 FIXTURE,CHECKING		
						99-265-02		
E-20	1	MDDZZ		60147-002	K0656	BASE,DRILLING MAKE FROM (NSN: 9535-00-167-2185)	EA	1
E-20	2	MDDZZ		60133-003	K0656	SUPPORT,ANGLE MAKE FROM (NSN: 9535-167-2185)	EA	2
E-20	3	PADZZ		MS24693-7	96906	SCREW,MACHINE	EA	13
E-20	4	PADZZ	5305-00-054-5651	MS51957-17	96906	SCREW,MACHINE	EA	2
E-20	5	PADZZ	5310-00-486-5342	3326-5001-001	K0656	WASHER,SPRING	EA	2
E-20	6	PADZZ		3420-3640-002	K0656	PIN	EA	2
E-20	7	MDDZZ		60133-004	K0656	CLAP MAKE FROM (NYLATRON QS)	EA	1
E-20	8	MDDZZ		60147-001	K0656	BACK PLATE MAKE FROM (NSN: 9535-00-167-2185)	EA	1
E-20	9	MDDZZ		60147-003	K0656	SUPPORT,BLOCK MAKE FROM (NSN: 9535-00-167-2185)	EA	1
E-20	10	MDDZZ		60147-004	K0656	LABEL,IDENT MAKE FROM (NSN: 9535-00-293-5289)	EA	1
E-20	11	PADZZ	5305-00-054-5637	MS51957-3	96906	SCREW,MACHINE	EA	4

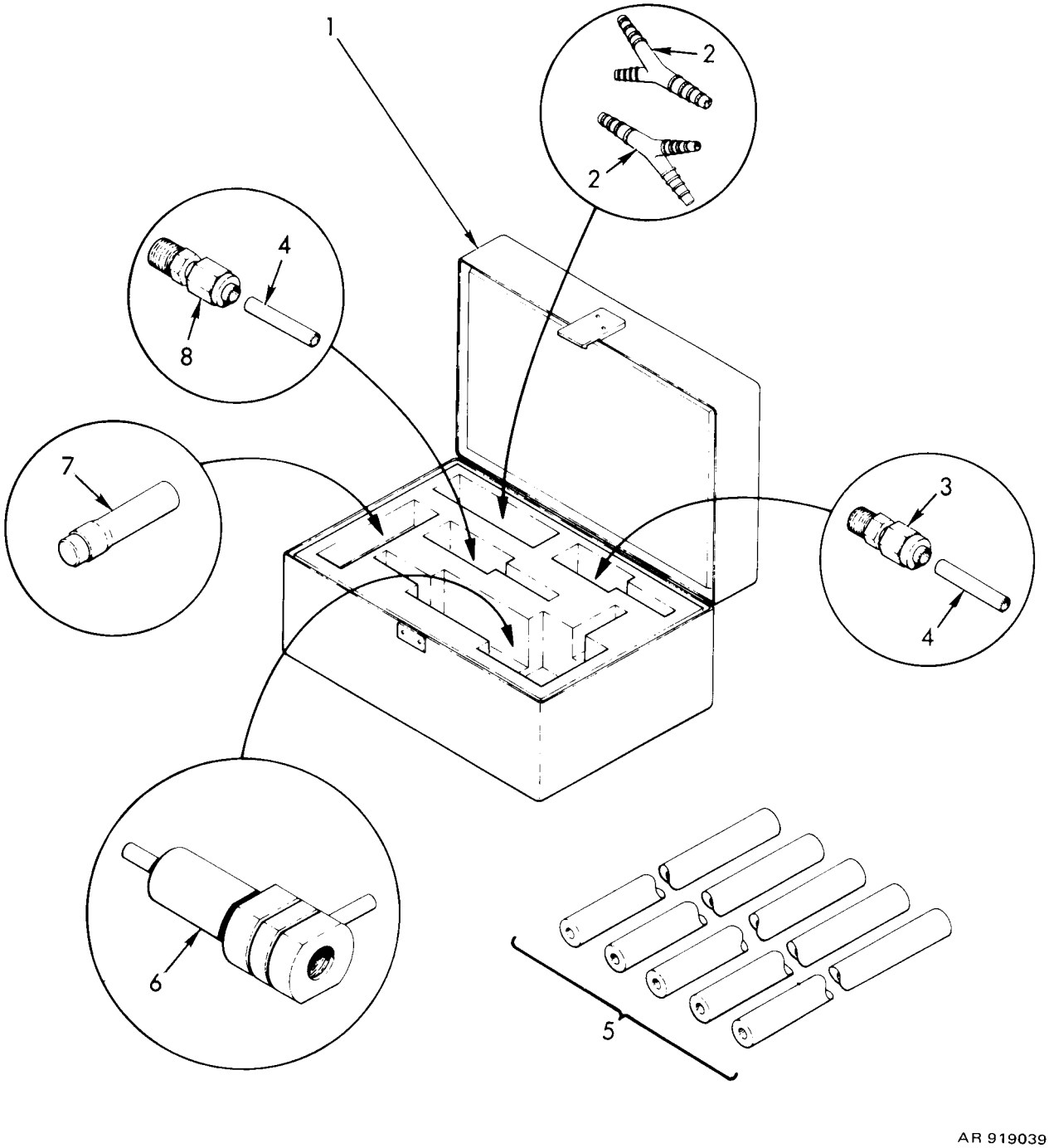

Figure E-21. Kit, Pneumatic,99-245-01.

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 03 KIT,PNEUMATIC			
						99-245-01			
E-21	1	PAFZZ		901488	K0656	CASE ASSEMBLY		EA	1
E-21	2	PAFZZ		901661	K0656	CONNECTOR, Y PIECE		EA	2
E-21	3	PAFZZ		901659	K0656	ADAPTER		EA	1
E-21	4	PAFZZ		901654	K0656	ADAPTER,TUBE		EA	2
E-21	5	PAFZZ		901489	K0656	TUBING,SILICONE		EA	5
E-21	6	PAFZZ		901651	K0656	ADAPTER,PITOT HEAD ASSEMBLY		EA	1
E-21	7	PAFZZ		901686	K0656	BLANK ASSEMBLY		EA	1
E-21	8	PAFZZ		901662	K0656	ADAPTER		EA	1

(1) ILLUSTRATION (A) FIG NO	(B) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 9999 BULK ITEMS			
BULK		PADZZ		MIL-W-16878-6	81349	WIRE,1C,WHT,ET32		FT	
BULK		PADZZ		901399-01	K0656	BAND,MARKER		EA	
BULK		PADZZ		M27500-22ML2T0B	81349	CABLE,SPECIAL		FT	
BULK		PAFZZ	5325-00-074-3301	MS21266-2N	96906	GROMMET		EA	
BULK		PAFZZ		MS-90376-22Y	96909	DUST CAP		EA	
BULK		PAFZZ		MS27506B12-2	96906	STRAIN RELIEF		EA	
BULK		PAFZZ		MS27506B18-2	96906	STRAIN RELIEF		EA	
BULK		PAFZZ	5935-00-333-1601	MS27473T18B35P	96906	CONNECTOR,PLUG,ELEC		EA	
BULK		PAFZZ	5935-00-444-1246	MS27473T12B35P	96906	CONNECTOR,PLUG,ELEC		EA	
BULK		PAFZZ	5935-00-496-5832	MS90376-16Y	96906	COVER,ELECTRICAL		EA	
BULK		PAFZZ	5940-00-050-2308	MS35431-3	96906	TERMINAL,LUG		EA	
BULK		PAFZZ	5940-00-872-0888	NAS1745-3	80205	SPLICE,CONDUCTOR		EA	
BULK		PADZZ	5970-01-073-7450	901358-01	K0656	INSULATION		FT	
BULK		PADZZ	5970-01-075-1942	901358-02	K0656	INSULATION		FT	
BULK		PADZZ	6145-00-144-0231	M81044-12-22-9	81349	WIRE,ELECTRICAL		FT	
BULK		PADZZ	6145-00-240-1708	M27500-22ML3T0B	81349	CABLE,SPECIAL		EA	
BULK		PAFZZ	6145-00-422-2644	MB1044/12-24-9	814349	WIRE,ELECTRICAL		FT	
BULK		PAFZZ	6145-00-435-8613	MB1044-12-18-9	81349	WIRE,ELECTRICAL		FT	
BULK		PADZZ	6145-00-471-3970	MB1044-12-24-0	81349	WIRE,ELECTRICAL		FT	
BULK		PAFZZ	6145-00-818-3606	GG-W-343	81349	WIRE,ELECTRICAL		LB	
BULK		PAFZZ	6145-01-064-6872	M27500-22ML2U0B	81349	CABLE,SPECIAL		FT	
BULK		PADZZ	9535-00-167-2185	GG-A250/4-T4	81348	ALUMINUM ALLOY		SH	
BULK		PADZZ		NYLATRON GS	83616	NYLATRON STOCK		SH	
BULK		PADZZ	9535-00-293-5289	GG-A-250/B	81348	SLUMINUM ALLOY		SH	
BULK		PADZZ		901399-01	K0656	BAND,MARKER		EA	
BULK		PAFZZ		901391-01	K0656	TUBING HEAT SHRINK		FT	
BULK		PAFZZ		901391-02	K0656	TUBING,HEAT SHRINK		FT	
BULK		PAFZZ		901391-03	K0656	TUBING,HEAT SHRINK		FT	

(1) ILLUSTRATION FIG NO	(2) ITEM NO	(3) SMR CODE	(4) NATIONAL STOCK NUMBER	(5) PART NUMBER	(6) FSCM	DESCRIPTION USABLE ON CODE	(7) INC U/M	(8) QTY IN UNIT
		MFFZZ		012-301037-01		CABLE ASSEMBLY-TEST (SEE FIGURE 1-3)		

STOCK NUMBER	FIGURE NO	ITEM NO
5905-00-007-3808	E-5	34
5910-00-010-8715	E-5	36
5910-00-010-9166	E-5	33
5961-00-022-5666	E-5	55
5310-00-043-4708	E-6	13
5940-00-050-2308	BULK	
5940-00-052-4578	E-7	91
5305-00-054-5637	E-20	11
5305-00-054-5637	E-6	3
5305-00-054-5638	E-3	22
5305-00-054-5638	E-4	17
5305-00-054-5638	E-5	24
5305-00-054-5638	E-6	12
5305-00-054-5638	E-9	1
5305-00-054-5639	E-6	11
5305-00-054-5639	E-7	78
5305-00-054-5642	E-3	4
5305-00-054-5642	E-4	2
5305-00-054-5642	E-5	2
5305-00-054-5648	E-7	81
5305-00-054-5648	E-8	5
5305-00-054-5649	E-1	5
5305-00-054-5649	E-7	27
5305-00-054-5650	E-7	60
5305-00-054-5651	E-20	4
5305-00-054-5651	E-7	32A
5305-00-054-5652	E-7	19
5305-00-054-5652	E-8	8
5305-00-054-6653	E-7	59
5305-00-054-6654	E-7	57
5305-00-054-6675	E-7	67
5310-00-058-1823	E-3	7
5310-00-058-1823	E-4	5
5310-00-058-1823	E-5	5
5310-00-058-1823	E-6	5
5310-00-058-1823	E-7	76
5310-00-058-1823	E-9	6
5305-00-059-3660	E-7	3
5305-00-066-7325	E-7	74
5305-00-068-6605	E-7	32
5975-00-074-2072	E-7	46
5325-00-074-3301	BULK	
5325-00-074-3301	E-7	61
5910-00-098-9281	E-5	29
5935-00-109-0150	E-7	49
5910-00-113-5465	E-3	11
5910-00-113-5488	E-3	26
5910-00-113-5488	E-5	48
5320-00-117-6817	E-7	26
5320-00-117-6840	E-19	2
5935-00-133-0395	E-7	16
5905-00-138-7399	E-5	81
5905-00-139-2355	E-5	60
5905-00-139-2364	E-5	64
6145-00-144-0231	BULK	
6145-00-144-0231	BULK	
5910-00-144-4383	E-4	18
5910-00-144-4383	E-5	23
5905-00-146-8157	E-5	66
5905-00-153-0135	E-5	53
5905-00-159-7456	E-5	75
9535-00-167-2185	BULK	
5905-00-170-0234	E-7	93
5961-00-172-4970	E-7	89
5910-00-185-4822	E-5	30
5935-00-189-2535	E-14	6
5340-00-213-8881	E-15	7
5905-00-223-2741	E-5	15
5905-00-238-0895	E-5	61
5910-00-238-6404	E-5	85
6145-00-240-1708	BULK	
5905-00-240-2745	E-5	46
5905-00-240-2748	E-5	7
5905-00-240-2749	E-4	14
5905-00-240-7958	E-3	1
5905-00-240-7983	E-5	41
5905-00-243-1912	E-5	47
5905-00-243-2094	E-5	74
5905-00-249-1286	E-5	40
5905-00-256-5050	E-5	49
5325-00-286-6047	E-7	63
9535-00-293-5289	BULK	
5905-00-302-4161	E-5	17
5935-00-328-0402	E-7	39
5935-00-333-1601	BULK	
5935-00-333-1601	E-16	2
5962-00-348-2717	E-3	8
5935-00-368-0449	E-17	5
5905-00-401-7436	E-5	32
5905-00-401-8676	E-5	50
5961-00-403-3298	E-7	79
5905-00-404-8837	E-3	33
5905-00-405-3022	E-5	76
5905-00-419-2823	E-5	70
5905-00-419-3949	E-4	16
6210-00-421-1832	E-7	5
6145-00-422-2644	BULK	
5935-00-426-5252	E-16	5
5905-00-431-5151	E-5	65
6145-00-435-8613	BULK	
5905-00-438-0506	E-5	37
6240-00-443-2725	E-7	20
5935-00-444-1246	BULK	
5935-00-444-1246	E-17	2
5340-00-449-4491	E-13	7
5905-00-458-9267	E-5	43
5905-00-462-5635	E-5	39
6145-00-471-3970	BULK	
5905-00-482-7813	E-5	78
5905-00-483-4038	E-5	72
5310-00-486-5342	E-20	5
5905-00-491-2638	E-5	31
5935-00-492-1989	E-7	47
5961-00-494-4915	E-5	51
5935-00-496-5832	BULK	
5935-00-496-5832	E-14	1
5935-00-496-5832	E-15	1
5935-00-496-5832	E-17	1
5905-00-498-5684	E-5	69
5935-00-515-2284	E-7	38
5935-00-539-2650	E-13	5
5905-00-570-5040	E-5	62
5310-00-595-6211	E-1	6
5310-00-595-6211	E-7	14
5310-00-595-6211	E-8	4
5310-00-595-6761	E-3	5
5310-00-595-6761	E-4	3
5310-00-595-6761	E-5	3
5310-00-595-6761	E-6	4
5310-00-595-6761	E-7	77
5310-00-595-6761	E-9	7
5310-00-619-1148	E-7	1
5340-00-631-7894	E-10	3
5340-00-631-7894	E-11	2
5340-00-631-7894	E-12	2
5930-00-683-1625	E-7	21
5930-00-683-1628	E-7	30
5930-00-683-1629	E-7	29
5935-00-686-0038	E-14	11
5310-00-716-5612	E-3	6
5310-00-716-5612	E-4	4
5310-00-716-5612	E-5	4
5310-00-722-5998	E-7	44
5935-00-726-0708	E-7	41
5905-00-758-4775	E-5	63
	E-5	84
5910-00-771-6995	E-7	87
5310-00-807-1465	E-7	45
5310-00-807-1466	E-7	69
5310-00-807-1467	E-7	4
5310-00-811-6419	E-1	7
5310-00-811-6419	E-7	15
6145-00-818-3606	BULK	
5355-00-839-9448	E-7	18
5340-00-842-5920	E-10	2
5961-00-858-3826	E-5	54
5910-00-868-5845	E-3	30
5940-00-872-0888	BULK	

STOCK NUMBER	FIGURE NO	ITEM NO	STOCK NUMBER	FIGURE NO	ITEM NO
5310-00-880-5978	E-7	68	4933-01-073-7430	E-2	12
5305-00-880-8192	E-8	1	5970-01-073-7450	BULK	
5961-00-898-2101	E-7	94	4933-01-073-7500	E-12	1
6240-00-910-3282	E-7	36	4933-01-073-7502	E-13	6
6240-00-910-3297	E-7	7	5340-01-073-7538	E-7	86
5310-00-933-8120	E-7	2	5340-01-073-7539	E-7	92
5961-00-938-4977	E-5	8	5340-01-073-7540	E-7	82
5305-00-959-4158	E-7	8	5340-01-073-7541	E-7	90
5305-00-993-9189	E-7	80	4933-01-073-7553	E-2	7
5935-01-012-1288	E-3	24	4933-01-073-7554	E-2	3
5935-01-012-1288	E-4	19	4933-01-073-7555	E-8	2
5935-01-012-1288	E-5	25	4933-01-073-7556	E-2	6
5935-01-012-1288	E-6	10	5340-01-073-7573	E-7	84
5930-01-015-0025	E-7	22	5340-01-074-0532	E-7	83
5905-01-019-1189	E-5	42	5340-01-074-0533	E-7	10
5970-01-022-1460	E-14	2	5340-01-074-0534	E-7	73
5970-01-022-1460	E-16	6	4933-01-074-6094	E-2	5
5962-01-027-6863	E-3	13	4933-01-074-6109	E-7	64
5935-01-029-0959	E-3	23	4933-01-075-1932	E-13	3
5935-01-029-0959	E-4	20	4933-01-075-1933	E-13	1
5935-01-029-0959	E-5	27	4933-01-075-1934	E-14	9
5930-01-029-8215	E-7	23	4933-01-075-1935	E-14	4
5962-01-031-7030	E-4	26	4933-01-075-1936	E-15	3
5905-01-033-3499	E-5	71	4933-01-075-1937	E-15	4
5910-01-036-4682	E-3	27	5970-01-075-1942	BULK	
5925-01-041-2585	E-7	33	4933-01-075-1966	E-11	1
5935-01-042-5123	E-7	31	4933-01-075-1968	E-7	66
5905-01-047-1529	E-3	15	4933-01-075-1969	E-7	88
5905-01-047-1529	E-4	10	5962-01-075-3184	E-5	13
5905-01-047-1529	E-5	73	5905-01-075-4954	E-5	77
5905-01-047-1530	E-4	22	4933-01-075-6655	E-8	6
5905-01-047-1530	E-5	12	4933-01-075-6657	E-7	56
5905-01-047-1531	E-5	44	5930-01-075-7248	E-7	37
5962-01-058-1539	E-3	10	5905-01-076-5665	E-3	19
5962-01-058-1539	E-4	12	4933-01-076-6519	E-7	11
5935-01-059-0300	E-7	71	4933-01-076-7066	E-2	9
5962-01-059-2592	E-3	25	4933-01-076-8325	E-14	10
6145-01-064-6872	BULK		4933-01-078-8735	E-10	1
			5940-01-078-9685	E-3	14
5999-01-067-7303	E-5	26	5935-01-079-3234	E-3	9
5999-01-068-2616	E-5	14	5935-01-079-3234	E-4	7
5935-01-068-9400	E-7	72	5935-01-079-3234	E-5	1
5930-01-072-3941	E-7	35	5962-01-079-8489	E-5	45
4933-01-073-5575	E-1	1	4933-01-081-4585	E-16	3
4933-01-073-5576	E-1	11	4933-01-081-8158	E-2	4
4933-01-073-7279	E-2	11	5990-01-082-3385	E-7	12
4933-01-073-7355	E-17	3	4933-01-083-0719	E-16	4
4933-01-073-7356	E-17	4	3120-01-083-4161	E-7	9
4933-01-073-7427	E-2	13	5962-01-083-8750	E-5	79
4933-01-073-7428	E-13	2	5910-01-084-3510	E-5	10
4933-01-073-7429	E-2	10	4933-01-084-9684	E-2	8

PART NUMBER	FSCM	FIG NO	ITEM NO	PART NUMBER	FSCM	FIG NO	ITEM NO
CFR04RSA103KM	81349	E-5	52	MS15795-802	96906	E-6	4
CFR04RSA223KM	81349	E-5	9	MS15795-802	96906	E-7	77
CZ24BKB105	81349	E-7	87	MS15795-802	96906	E-9	7
C002MGF2-14-0450	81349	E-14	3	MS15795-803	96906	E-1	6
JANTX1N414B	81349	E-3	32	MS15795-803	96906	E-7	14
JANTX1N4148	81349	E-5	51	MS15795-803	96906	E-8	4
JANTX1N5552	81349	E-7	79	MS15795-805	96906	E-7	44
JANTX1N5555	81349	E-7	89	MS15795-807	96906	E-7	68
JANTX1N645	81349	E-7	94	MS15795-808	96906	E-7	1
JANTX1N750A	81349	E-4	15	MS18235-3GT	96906	E-7	7
JANTX1N750A	81349	E-5	82	MS18235-3RT	96906	E-7	36
JANTX1N758A	81349	E-5	8	MS18235-3WT	96906	E-7	20
JANTX2N2222A	81349	E-5		MS20470AD3-6	96906	E-7	26
JANTX2N2907A	81349	E-5	55	MS20470AD5-7	96906	E-19	2
LH90-1	81349	E-7	5	MS21042-02	96906	E-3	7
MIL-W-16878-6	81349	BULK		MS21042-02	96906	E-4	5
MS-90376-22Y	96906	BULK		MS21042-02	96906	E-5	5
MS122116	96906	E-10	2	MS21042-02	96906	E-6	5
MS15795-802	96906	E-3	5	MS21042-02	96906	E-7	76
MS15795-802	96906	E-4	3	MS21042-02	96906	E-9	6
MS15795-802	96906	E-5	3				

PART NUMBER	FSCM	FIG NO	ITEM NO
MS21042-04	96906	E-1	7
MS21042-04	96906	E-7	15
MS21042-06	96906	E-7	45
MS21042-08	96906	E-7	69
MS21042-3	96906	E-7	4
MS21209C0415	96906	E-10	3
MS21209C0415	96906	E-11	2
MS21209C0415	96906	E-12	2
MS21266-2N	96906	E-7	61
MS21266-2N	96906	BULK	
MS24523-22	96906	E-7	30
MS24523-23	96906	E-7	29
MS24523-31	96906	E-7	21
MS24693-C2	96906	E-7	80
MS24693-C273	96906	E-7	8
MS24693-C28	96906	E-7	42
MS24693-C5	96906	E-7	74
MS24693-C6	96906	E-7	32
MS24693-S274	96906	E-2	2
MS24693-7	96906	E-20	3
MS27473T12B35P	96906	E-17	2
MS27473T12B35P	96906	BULK	
MS27473T12B35PA	96906	E-15	2
MS27473T12B35S	96906	E-17	5
MS27473T18B35P	96906	E-16	2
MS27473T18B35P	96906	BULK	
MS27473T18B35S	96906	E-16	5
MS27506B12-2	96906	BULK	
MS27506B18-2	96906	BULK	
MS2750BE12B35S	96906	E-7	39
MS2750BE12B35SA	96906	E-7	31
MS2750BE18B35S	96906	E-7	38
MS3102A16-11P	96906	E-7	40
MS3102R10SL3P	96906	E-7	41
MS3106A10SL3S	96906	E-13	5
MS3106A16-11SC	96906	E-14	11
MS3109-11AU	96906	E-13	4
MS3109-13AU	96906	E-14	5
MS3109-13AU	96906	E-15	8
MS3109-13AU	96906	E-17	6
MS3109-14AU	96906	E-14	2
MS3109-14AU	96906	E-16	6
MS3158-12C	96906	E-14	8
MS3158-14C	96906	E-15	6
MS3339-1-9	96906	E-7	43
MS3367-1-9	96906	E-7	46
MS3476L12-3P	96906	E-14	6
MS3476L14-19S	96906	E-15	5
MS35338-138	96906	E-7	2
MS35431-3	96906	BULK	
MS35489-1	96906	E-7	63
MS51859-2	96906	E-3	6
MS51859-2	96906	E-4	4
MS51859-2	96906	E-5	4
MS51957-14	96906	E-7	81
MS51957-14	96906	E-8	5
MS51957-15	96906	E-1	5
MS51957-15	96906	E-7	27
MS51957-16	96906	E-7	60
MS51957-17	96906	E-20	4
MS51957-17	96906	E-7	32A
MS51957-18	96906	E-7	19
MS51957-18	96906	E-8	8
MS51957-29	96906	E-7	59
MS51957-3	96906	E-20	11
MS51957-3	96906	E-6	3
MS51957-30	96906	E-7	57
MS51957-4	96906	E-3	22
MS51957-4	96906	E-4	17
MS51957-4	96906	E-5	24
MS51957-4	96906	E-6	12
MS51957-4	96906	E-9	1
MS51957-5	96906	E-6	11
MS51957-5	96906	E-7	78
MS51957-50	96906	E-7	67
MS51957-8	96906	E-3	4
MS51957-8	96906	E-4	2
MS51957-8	96906	E-5	2
MS51958-64	96906	E-7	3
MS90376-10Y	96906	E-13	7
MS90376-12R	96906	E-15	7
MS90376-12Y	96906	E-14	7
MS90376-16Y	96906	E-14	1
MS90376-16Y	96906	E-15	1
MS90376-16Y	96906	E-17	1
MS90376-16Y	96906	BULK	
MS90376-20Y	96906	E-18	4
MS90376-22Y	96906	E-16	1
MS90376-24Y	96906	E-18	1
MS91528-1B4B	96906	E-7	18
M15733/27-0023	81349	E-7	85
M27500-22ML2T08	81349	BULK	
M27500-22ML2U08	81349	BULK	
M27500-22ML3T08	81349	BULK	
M28803/1-FA	81349	E-7	13
M3786-36-0899	81349	E-7	35
M3786-4-5382	81349	E-7	48
M3786-4-5886	81349	E-7	23
M3786-4-6150	81349	E-7	37
M3786/4-5177	81349	E-7	28
M3786/4-5343	81349	E-7	50
M3786/4-5870	81349	E-7	17
M38510-01203BEX	81349	E-5	35
M38510-30001BCX	81349	E-3	17
M38510-30102BCB	81349	E-3	10
M38510/01203BEB	81349	E-3	8
M38510/10305BEA	81349	E-5	28
M38510/30001BCA	81349	E-4	26
M38510/30003BCB	81349	E-3	13
M38510/30101BCA	81349	E-3	12
M38510/30102BCB	81349	E-4	12
M38510/30704BEA	81349	E-4	13
M38510/31101BEB	81349	E-3	25
M38527/1-02N	81349	E-5	26
M38527/2-08N	81349	E-5	14
M38527/3-01N	81349	E-5	80
M38999-2-12B	81349	E-15	9
M38999-2-12B	81349	E-17	7
M38999-2-18B	81349	E-16	7
M39003-01-2274	81349	E-3	30
M39003-01-2307	81349	E-3	20
M39003-01-3026	81349	E-4	18
M39003-01-3026	81349	E-5	23
M39003-04-0290	81349	E-5	83
M39014-01-1446	81349	E-3	2
M39014-01-1449	81349	E-3	21
M39014-01-1468	81349	E-3	3
M39014-01-1468	81349	E-4	1
M39014-01-1468	81349	E-5	22
M39014-05-2619	81349	E-3	27
M39014-05-2667	81349	E-5	30
M39014-05-2703	81349	E-5	85
M39014-05-2725	81349	E-5	10
M39014/01-1449	81349	E-5	36
M39014/02-1360	81349	E-3	11
M39014/05-2207	81349	E-5	33
M39014/05-2237	81349	E-5	29
M39014/05-2255	81349	E-3	26
M39014/05-2255	81349	E-5	48
M39019-3-210	81349	E-7	34
M39019/03-219	81349	E-7	33
M39024-10-11	81349	E-7	51
M39024-10-12	81349	E-7	16
M39024-10-13	81349	E-7	49
M39024-10-19	81349	E-7	47
M55302-23-10	81349	E-3	24
M55302-23-10	81349	E-4	19
M55302-23-10	81349	E-5	25
M55302-23-10	81349	E-6	10
M55302-24-40	81349	E-6	6
M55302-31-03	81349	E-3	23
M55302-31-03	81349	E-4	20
M55302-31-03	81349	E-5	27
M55302-63-B50F	81349	E-9	4
M55302-66-50L	81349	E-7	70
M55302-66-60L	81349	E-7	71
M55302-66-70L	81349	E-7	72
M55302/24-37	81349	E-9	2
M55302/63-B60F	81349	E-9	5
M55302/63-B70F	81349	E-9	3

PART NUMBER	FSCM	FIG NO	ITEM NO
MB1044-12-18-9	81349	BULK	
M81044-12-22-9	81349	BULK	
M81044-12-24-0	81349	BULK	
M81044/12-24-9	81349	BULK	
M8340105M1001GG	81349	E-4	6
M8340105M2201GC	81349	E-3	19
M8340105M5101GC	81349	E-4	21
M8805-99-015	81349	E-7	22
NAS1301C4-5	80205	E-8	1
NAS1745-3	80205	BULK	
NAS1919B04-02	80205	E-1	9
NAS1919B04-02	80205	E-7	26
NAS620C2	80205	E-6	13
NYLATRON GS	83616	BULK	
GG-A-250/4-T4	81349	BULK	
GG-A-250/B	81348	BULK	
GG-W-343	81349	BULK	
RER60F1001R	81349	E-7	75
RER65F51R1R	81349	E-7	93
RJR24FX203P	81349	E-5	38
RJR24FX503P	81349	E-5	6
RLR0/C1002GR	81349	E-7	53
RLR0/C1001GR	81349	E-3	15
RLR0/C1001GR	81349	E-4	10
RLR0/C1001GR	81349	E-5	73
RLR0/C1002GR	81349	E-5	44
RLR0/C1302GR	81349	E-3	33
RLR0/C2200GR	81349	E-5	43
RLR07C2201GR	81349	E-4	22
RLR07C2201GR	81349	E-5	12
RLR07C2202GR	81349	E-3	1
RLR07C2203GR	81349	E-5	34
RLR07C2401GR	81349	E-5	78
RLR0/C2701GR	81349	E-5	31
RLR0/C2702GR	81349	E-5	46
RLR0/C5101GR	81349	E-5	37
RLR0/C5602GS	81349	E-5	7
RLR0/C6801GR	81349	E-4	14
RLR0/C6802GR	81349	E-5	40
RLR0/C7501GR	81349	E-5	70
RLR0/C8200GR	81349	E-5	69
RLR07C8201GR	81349	E-4	16
RLR07C8202GR	81349	E-5	41
RLR20C39R0GR	81349	E-5	50
RNC55H10R2BS	81349	E-5	19
RNC55H10R5BS	81349	E-5	58
RNC55H10R7BS	81349	E-5	88
RNC55H1002BS	81349	E-5	60
RNC55H1002FS	81349	E-5	15
RNC55H1003FS	81349	E-5	32
RNC55H11R0BS	81349	E-5	87
RNC55H1103FS	81349	E-5	49
RNC55H1212FS	81349	E-5	53
RNC55H1331FS	81349	E-5	17
RNC55H1333FS	81349	E-5	63
RNC55H1401FS	81349	E-5	61
RNC55H1652BS	81349	E-5	71
RNC55H17R4BS	81349	E-5	21
RNC55H17R8BS	81349	E-5	16
RNC55H1822FS	81349	E-5	47
RNC55H19R6BS	81349	E-5	57
RNC55H1962BS	81349	E-5	75
RNC55H2002BS	81349	E-5	64
RNC55H2003FS	81349	E-5	65
RNC55H21R0BS	81349	E-5	20
RNC55H2212FS	81349	E-5	76
RNC55H27R4BS	81349	E-5	59
RNC55H28R7BS	81349	E-5	18
RNC55H3010BS	81349	E-5	68
RNC55H3742FS	81349	E-5	84
RNC55H4022FS	81349	E-5	39
RNC55H4023FS	81319	E-5	62
RNC55H4992BS	81349	E-5	66
RNC55H5111FS	81349	E-5	81
RNC55H6652FS	81349	E-5	72
RNC55H6813FS	81349	E-5	42
RNC55H7150FS	81349	E-5	56
RNC55H73R2BS	81349	E-5	67
RNC55HB062FS	81349	E-5	74
SE209D01	81349	E-7	91
ZSP 2-204	19178	E-19	1
ZSP 3-003	19178	E-19	4
ZSP 6-037-4	19178	E-19	3
012-301020-01	K0656	E-2	1
012-301021-02	K0656	E-8	2
012-301022-02	K0656	E-2	6
012-301023-02	K0656	E-2	7
012-301024-02	K0656	E-2	5
012-301025-02	K0656	E-2	3
012-301026-01	K0656	E-7	52
012-301027-01	K0656	E-2	13
012-301028-02	K0656	E-2	8
012-301029-01	K0656	E-2	12
012-301030-01	K0656	E-2	9
012-301031-01	K0656	E-2	10
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012-301033-01	K0656	E-8	7
012-301034-01	K0656	E-8	3
012-301035-01	K0656	E-8	9
3326-5001-001	K0656	E-20	5
3420-3640-002	K0656	E-20	6
60133-003	K0656	E-20	2
60133-004	K0656	E-20	7
60147-001	K0656	E-20	8
60147-002	K0656	E-20	1
60147-003	K0656	E-20	9
60147-004	K0656	E-20	10
8311-7301-002	K0656	E-7	12
901354	K0656	E-14	10
901356	K0656	E-7	11
901358-01	K0656	BULK	
901358-02	K0656	BULK	
901359	K0656	E-7	24
901360	K0656	E-1	8
901360	K0656	E-7	25
901361	K0656	E-4	24
901362	K0656	E-4	23
901363	K0656	E-4	9
901365	33827	E-3	18
901366	K0656	E-5	45
901367	K0656	E-5	79
901368	K0656	E-3	9
901368	K0656	E-4	7
901368	K0656	E-5	1
901374	K0656	E-5	77
901375	K0656	E-7	54
901383-01	K0656	E-7	90
901383-02	K0656	E-7	82
901383-03	K0656	E-7	73
901383-04	K0656	E-7	92
901383-05	K0656	E-7	86
901383-06	K0656	E-7	83
901383-07	K0656	E-7	10
901384	K0656	E-7	84
901388	K0656	E-7	9
901391-01	K0656	BULK	
901391-02	K0656	BULK	
901391-03	K0656	BULK	
901391-04	K0656	BULK	
901392	K0656	E-18	5
901393	K0656	E-18	3
901396	K0656	E-13	6
901397	K0656	E-13	2
901399-01	K0656	BULK	
901400	K0656	E-7	6
901401	K0656	E-7	58
901402-14	K0656	E-13	3
901402-15	K0656	E-13	1
901402-16	K0656	E-14	9
901402-17	K0656	E-14	4
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901402-20	K0656	E-16	3
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901402-23	K0656	E17	4
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901409	K0656	E-10	1
901410	K0656	E-11	1
901411	K0656	E-12	1
901413	K0656	E-8	6
901414	K0656	E-7	56

PART NUMBER	FSCM	FIG NO	ITEM NO
901415	K0656	E-7	88
901416	K0656	E-6	2
901417	K0656	E-6	8
901418	K0656	E-6	7
901488	K0656	E-21	1
901489	K0656	E-21	5
901559	K0656	E-3	28
901585	K0656	E-4	25
901596	K0656	E-3	34
901596	K0656	E-4	28
901596	K0656	E-5	89
901651	K0656	E-21	6
901654	K0656	E-21	4
901659	K0656	E-21	3
901661	K0656	E-21	2
901662	K0656	E-21	8
901686	K0656	E-21	7
901727	K0656	E-2	4
901738	K0656	E-3	31
901742	K0656	E-4	27
901743	K0656	E-5	86
901744	K0656	E-9	8
901745	K0656	E-6	1
901749	K0656	E-2	14
901828	K0656	E-7	62
901829	K0656	E-7	64
901844	K0656	E-7	65
901846	K0656	E-1	3
901847	K0656	E-1	4
901848	K0656	E-1	2
901849	K0656	E-18	2
901854	K0656	E-3	16
901854	K0656	E-4	11
901854	K0656	E-5	11
901854	K0656	E-6	9
901857	K0656	E-7	55
901893	K0656	E-7	95
9406-00001	K0656	E-3	29
9407-00016	K0656	E-5	13
9414-00085	K0656	E-3	14
9423-00087	K0656	E-4	8
95-109-02	K0656	E-1	1
99-245-01	K0656	E-1	10
99-265-02	K0656	E-1	11

APPENDIX F
EXPANDABLE SUPPLIES AND MATERIAL LIST

Section I. NTRODUCTION

F-1. Scope. This appendix lists expendable supplies and materials you will need to operate and maintain the TEST SET, FIRE AND FLIGHT AIR DATA SUBSYSTEM: XM 142, These items are authorized to you by CTA50-970, expendable items,

F-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 (i.e., "Use EPOXY Coating, item 1, App F.")

b. *Column 2,. Level,* This column identifies the lowest level of maintenance that requires the listed item.

F - Aviation Intermediate maintenance
D - Depot Level maintenance

c. *Column 3, National Stock Number.* This is the National stock number assigned to the item; use it to request or requisition the item.

d. *Column 4, Description.* indicates the Federai item name and if required, a description to identify the item. The last line for each item indicates the part number followed by the Federal Supply Code for Manufacturer (FSCM) in parenthesis, if applicable.

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 wiil satisfy your requirements.

SECTION II. EXPENDABLE SUPPLIES AND MATERIALS

(1) NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	DESCRIPTION	U/M
1	F,D	3439-00-163-4348	SOLDER,RESIN CORE	LB
2	F	4020-00-974-1875	TAPE,LACING,TYPE 11, FINISH B SIZE 5	YD
3	D	5970-00-181-0190	COMPOUND,INSULATING TYPE UR	CN
4	D	7510-00-122-0234	INK,MARKING,EPOXY BASE,BLACK	BT
5	F	8030-00-823-7919	SEALING COMPOUND,GRACE C	CN
6	F	8030-00-881-2618	SEALING COMPOUND,CLASS I,TYPE II MIL-S-8516 (81349)	KT
7	D		ADHESIVE 901355 (K06560	CN
8	D		ADHESIVE 901371 (K0656)	CN
9	F	8010-00-292-1127	PRIMER,ZINC CHROMATE	GL
10	F	8010-00-285-4860	PAINT,SEMIGLOS,GREY,26307	GL
11	F	6810-00-753-4993	ALCOHOL	CN
12	F	8020-00-597-4767	BRUSH,SOFT BRISTLE	EA
13	F	8305-00-286-5461	CLOTH,LINT FREE	YD

GLOSSARY

AADS	Airspeed and Direction Sensor
ADS	Air Data System
A_{IN}	Analog Input
ANLG	Analog
A_{OUT}	Analog Output
ATS	Air Temperature Sensor
CCA	Circuit Card Assembly
CLK	Data Clock
CONT	Continuous
CPU	Central Processor Unit
DATA XMT REQ	Data Transmit Recquest
	Digit
	Data Ready
DTR	Data Transmit Request
EPU	Electronic Processor Unit
FISS	Failure Isolation Shop Set
FLR	Failure
HTR	Heater
HTR CCHK	Heater Continuity Check
I AS	Indicated Air Speed
INJV	Injection Voltage
I/P	Input
	Knots
	Low Airspeed Indicator
	Line Replaceable Unit
	Least Significant Bit
MSB	Most Significant Bit
NC	No Connection
O/P	Output
PAR	Parity
P_{ABS}	Absolute Pressure
PRCN	Precision
P_S	Static Pressure
P_T	Total Pressure
RDR ALT	Radar Altimeter or Radar Altitude
REF	Reference
RELBL	Reliability
RPT	
RSVR PK	Resolver Peak
SCRN	Screens (Shields)
SEG	Segment
SEL	Select
SIG	Signal
SRU	Shop Replaceable Unit
STAT	Status
T_{AIR}	Air Temperature
TAS	True Air Speed
TRIG	Trigger
UBRDR	Unbuffered Radar
UBVIU	Unbuffered Fore-Aft IAS
UUT	Unit Under Test

V_{DW}	Downwash Velocity
V_{IU}	Fore-Aft IAS
V_{IV}	Lateral IAS
V_T	Total Velocity
V_U	Fore-Aft TAS
V_V	Lateral TAS
V_W	Vertical TAS
WD	Word
Δ_P	Differential Pressure

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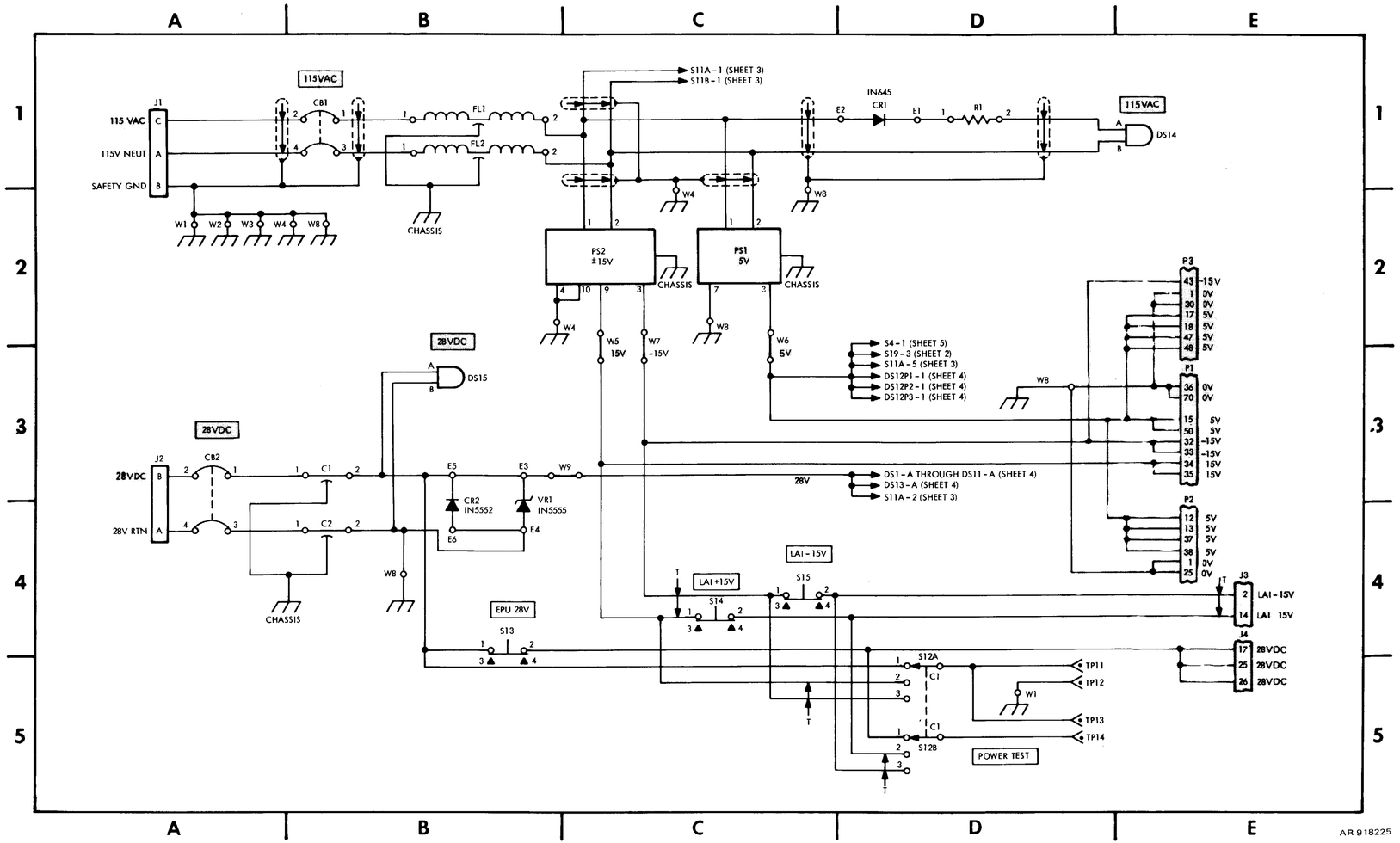
INDEX - Continued

I - Continued

INDEX - Continued

INDEX – Continued

R – Continued



AR 918225

Figure FO-1. Wiring Schematic (Sheet 1 of 5)

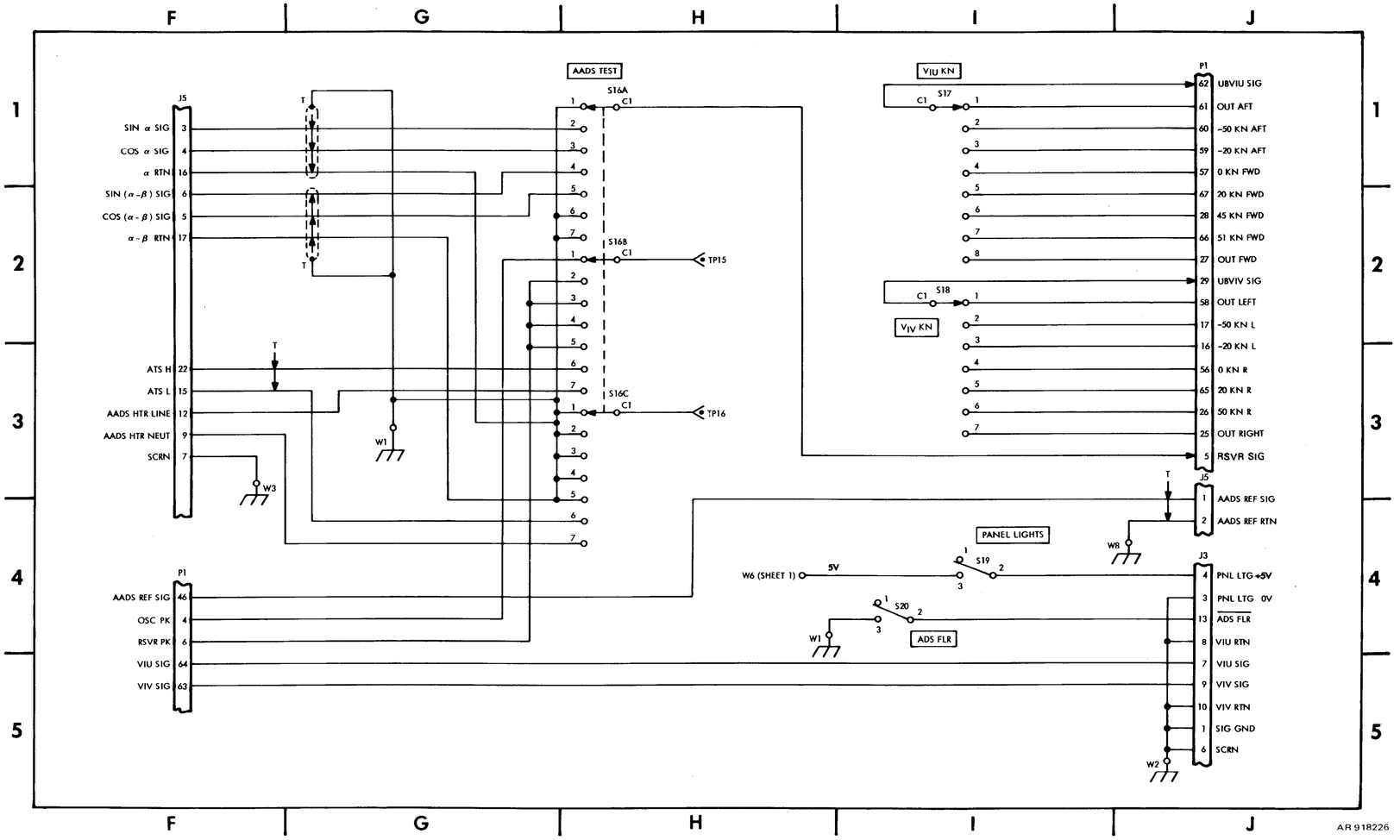


Figure FO-1. Wiring Schematic (Sheet 2 of 5)

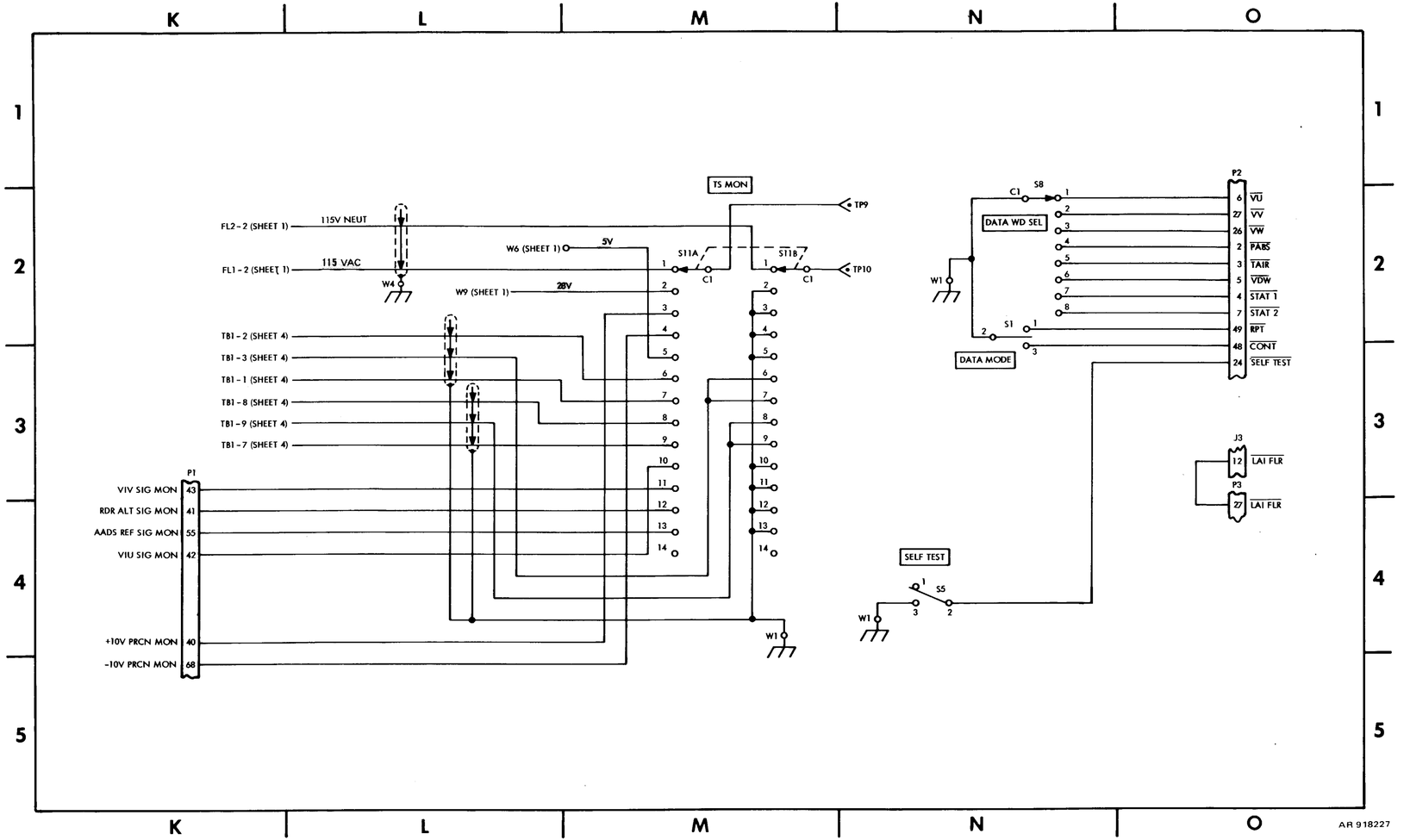


Figure FO-1. Wiring Schematic (Sheet 3 of 5)

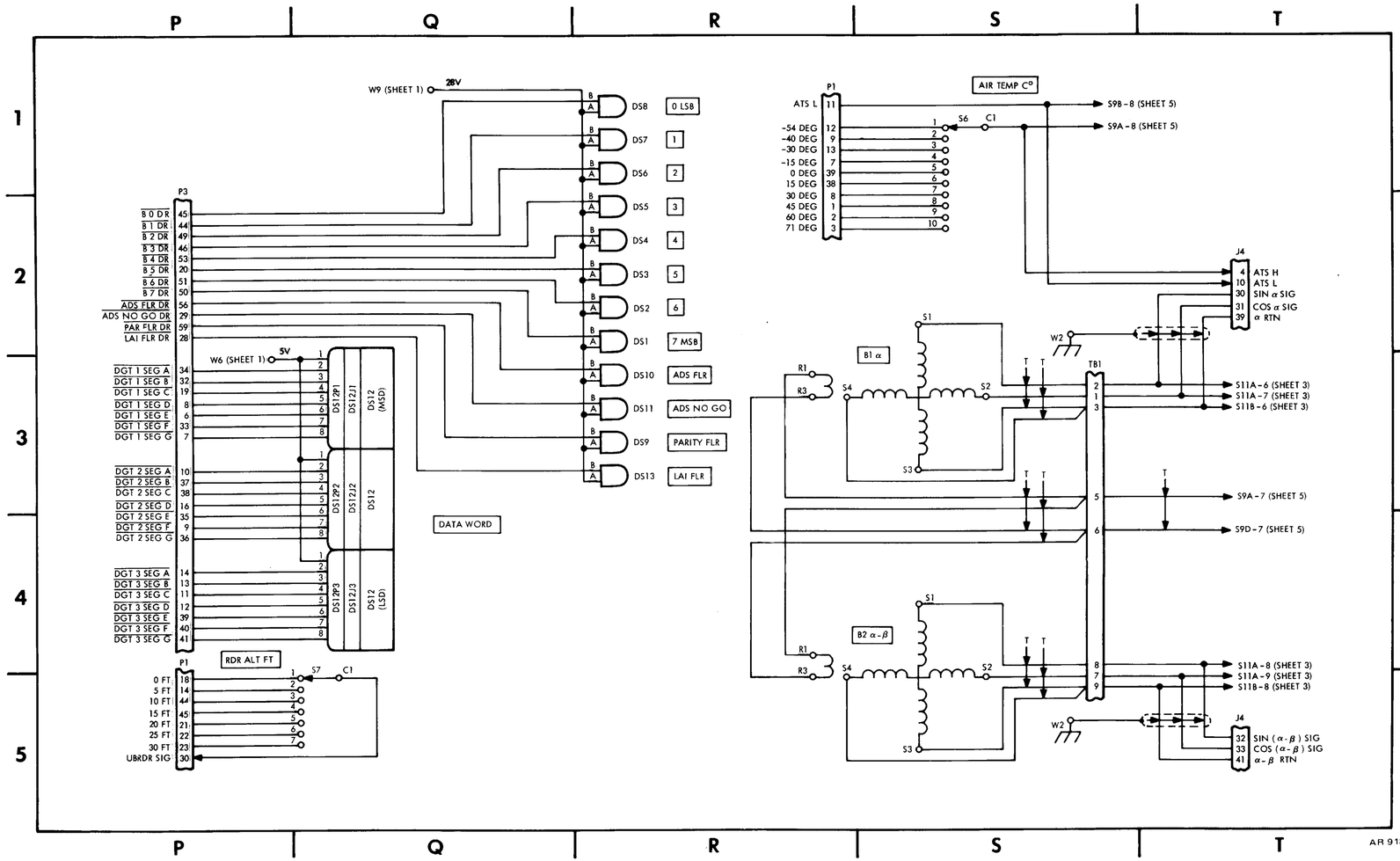


Figure FO-1. Wiring Schematic (Sheet 4 of 5)

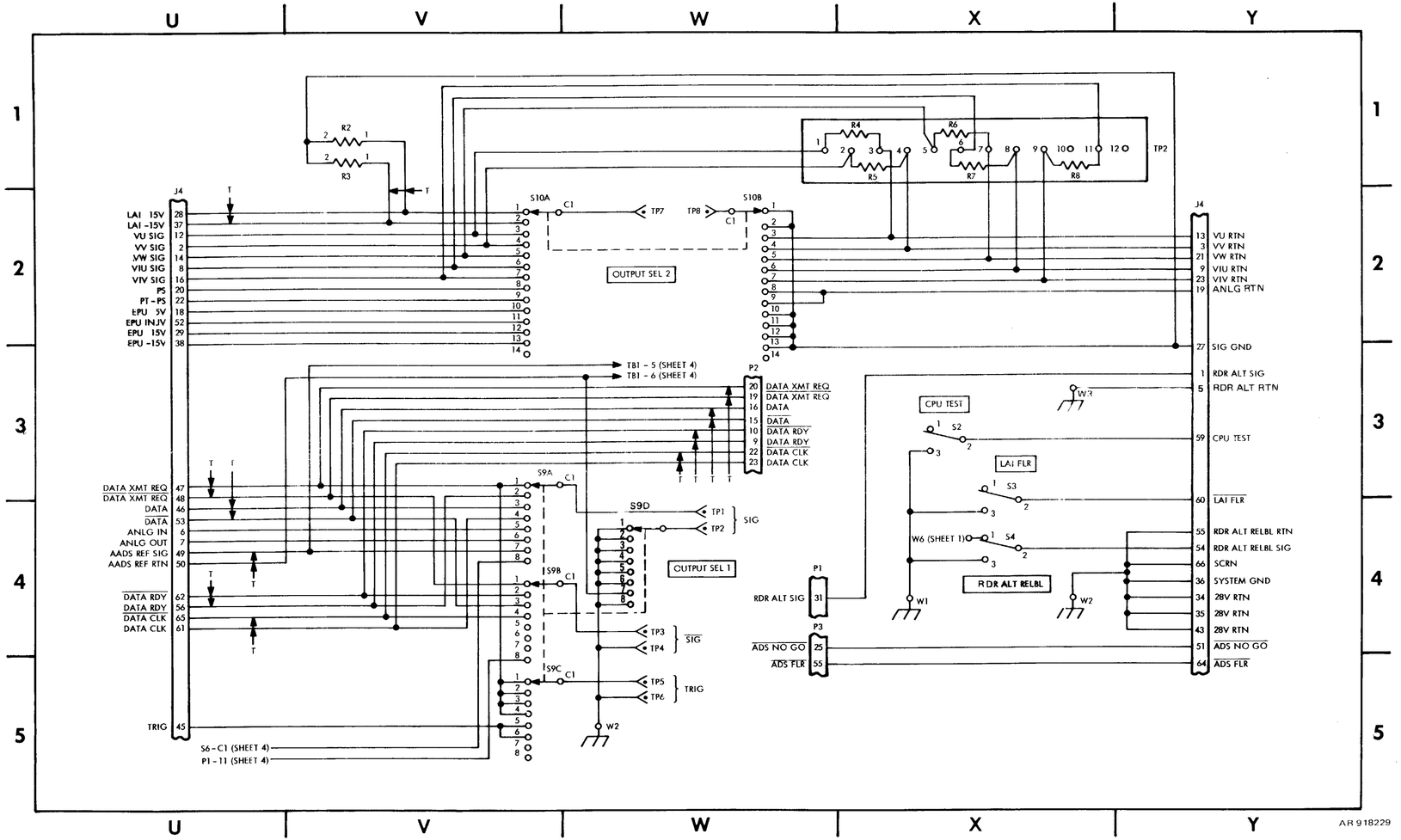


Figure FO-1. Wiring Schematic (Sheet 5 of 5)

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General, United States Army
Chief of Staff

Official:

J. C. PENNINGTON
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RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

SOMETHING WRONG WITH THIS PUBLICATION?

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PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 9-4931-378-13&P	8 May 1981	Test Set, Fire and Flight Air Data Subsystem: XM142 PN95-112-02, NSN 4931-01-074-3322

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TEAR ALONG PERFORATED LINE

THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

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

WEIGHTS

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

LIQUID MEASURE

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

SQUARE MEASURE

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

CUBIC MEASURE

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

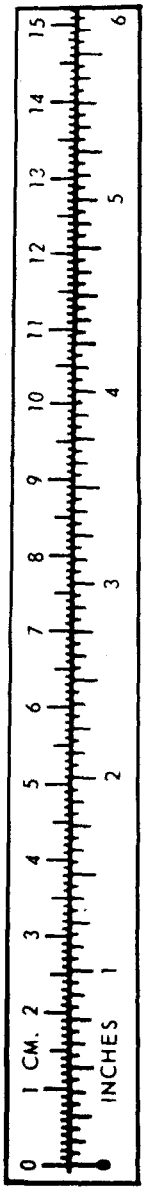
TEMPERATURE

$5/9\ (^0F - 32) = {}^0C$
212^0 Fahrenheit is equivalent to 100^0 Celsius
90^0 Fahrenheit is equivalent to 32.2^0 Celsius
32^0 Fahrenheit is equivalent to 0^0 Celsius
$9/5\ C^0 + 32 = F^0$

APPROXIMATE CONVERSION FACTORS

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

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



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