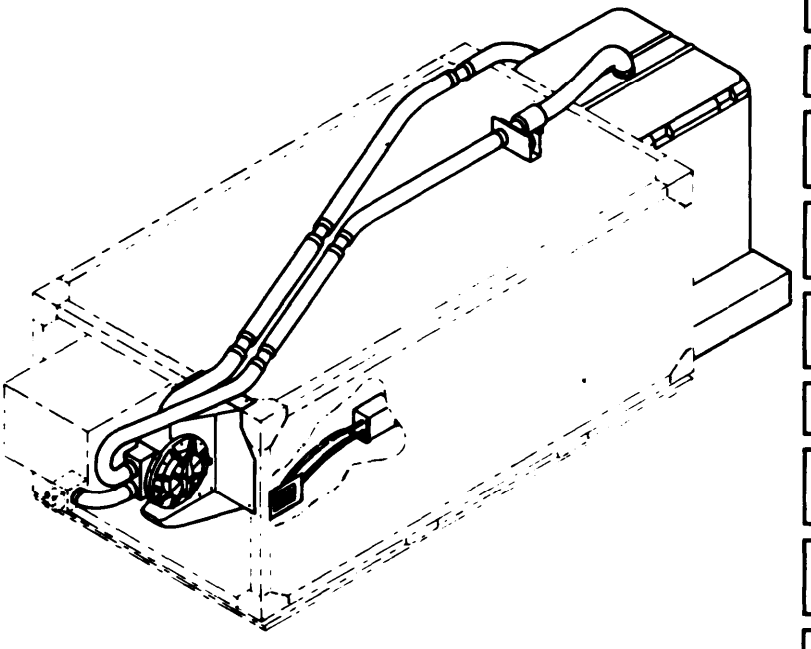
TECHNICAL MANUAL

ORGANIZATIONAL MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)



COLLECTIVE PROTECTION EQUIPMENT, AIR DEFENSE COMMAND AND CONTROL SYSTEM, AN/TSQ-73

CONSISTING OF

ENTRANCE, PROTECTIVE, PRESSURIZED, COLLAPSIBLE, M12 (NSN 4240-01-048-2923);

FILTER UNIT, GAS-PARTICULATE, 200 CFM, 208 V, 400 Hz, M56 (NSN 4240-00-237-0227);

AND

INSTALLATION KIT, CBR, PROTECTIVE EQUIPMENT, AN/TSQ-73, M263 (NSN 4240-01-063-7679)

HEADQUARTERS, DEPARTMENT Of THE ARMY

22 JANUARY 1981

This copy is a reprint which includes current pages from Change 1.

CHANGE
NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 21 December 1989

ORGANIZATIONAL MAINTENANCE MANUAL FOR COLLECTIVE PROTECTION EQUIPMENT AIR DEFENSE COMMAND AND CONTROL SYSTEM, AN/TSQ-73

1. The purpose of this change is to update guidance for disposal, handling, and storage of filters.

2. New or changed material is indicated by a vertical bar in the margin of the page. RPSTL listing changes are indicated by an asterisk to the left of the item number column adjacent to the line item.

3. Remove old pages and insert new pages as follows:

Remove Pages	Insert Pages
None	a/(b blank)
2-1 and 2-2	2-1 and 2-2
C-11 and C-12	C-11 and C-12

4. File this change sheet in front 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:

WILLIAM J. MEEHAN II
Brigadier General, United States Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-28 (block 55), maintenance requirements for TM 3-4240-286-20&P.

WARNING

Before removing or installing any cable, be sure that POWER switch on compartment control module is in the OFF position and that the collective protection equipment power source is shut down.

Torque outer cover bolts 180 to 200 inch pounds to seal.

Do not remove covers to service components after toxic exposure without observing proper handling procedures.

Tighten inner cover retaining bar until sleeve is flush with top surface to seal.

If filter unit is operating, 208V is present at the PDU indicator lamp socket.

WARNING

HEALTH/ENVIRONMENTAL HAZARD

Filters use ASC Whetlerite Carbon which contains Chromium VI. Chromium VI is a known carcinogen if inhaled or swallowed. Damaged or unusable filters are classified as hazardous waste:

DO NOT throw away damaged or unusable filters as ordinary trash.

DO turn in damaged or unusable filters to your hazardous waste management office or Defense Reutilization and Marketing Office (DRMO).

Filters are completely safe to handle and use if they are not damaged in such a way that carbon leaks from them. In unlikely event that carbon should leak, use protection such as a dust respirator to cover nose and mouth and put carbon in container such as self-sealing plastic bag; turn in to hazardous waste management office or DRMO.

Disposal of hazardous waste is restricted by the Resource Conservation and Recovery Act as amended (42 U.S.C.A sec 6901 et seq). Violation of these laws is subject to severe criminal penalties.

TECHNICAL MANUAL
NO. 3-4240-286-20&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 22 *January 1981*

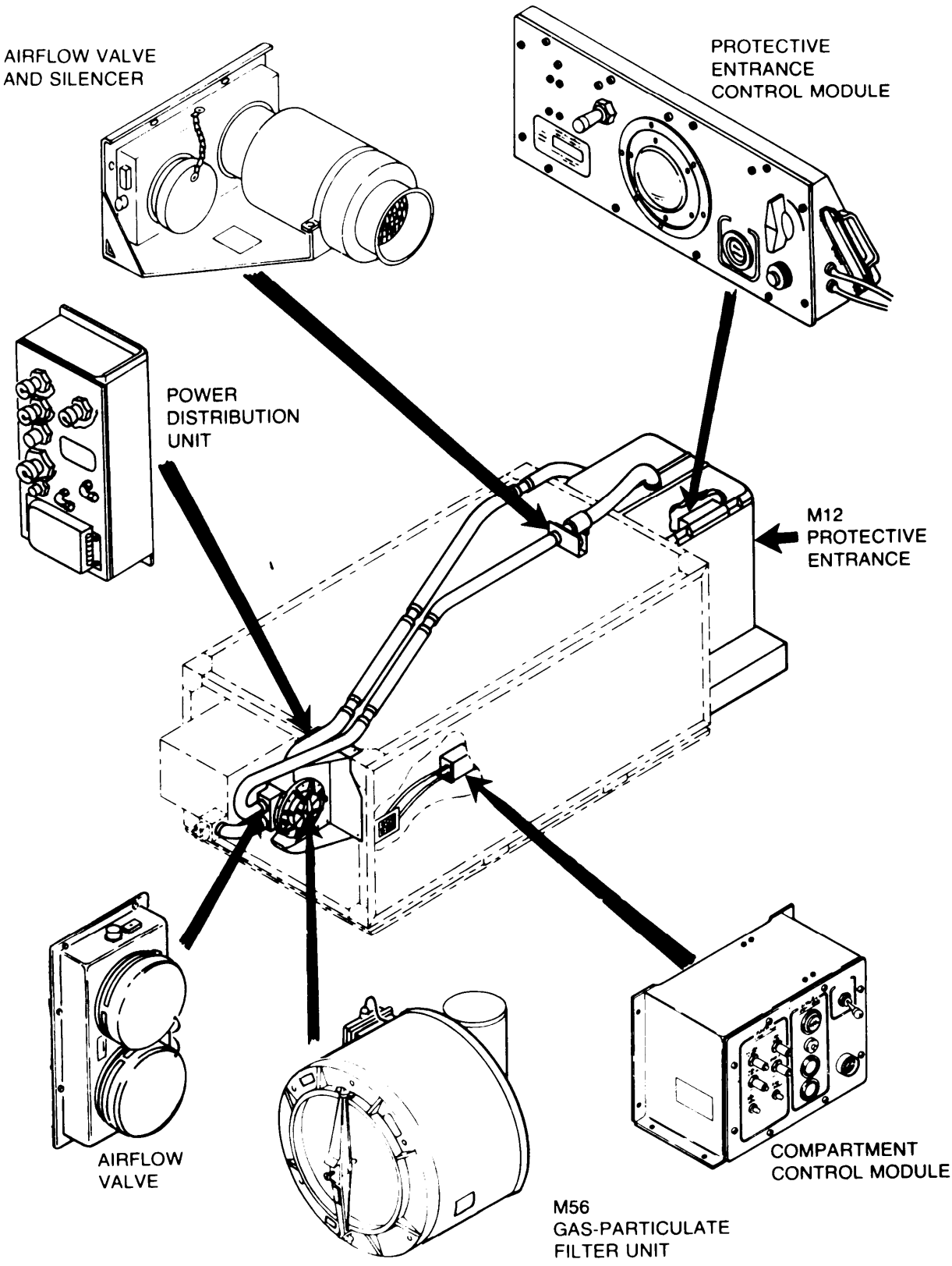
Organizational Maintenance Manual
(Including Repair Parts and Special Tools List)

COLLECTIVE PROTECTION EQUIPMENT, AIR DEFENSE COMMAND AND CONTROL SYSTEM, AN/TSQ-73 CONSISTING OF ENTRANCE, PROTECTIVE, PRESSURIZED, COLLAPSIBLE, M12 (NSN 4240-01-048-2923); FILTER UNIT, GAS-PARTICULATE, 200 CFM, 208 V, 400 Hz, M56 (NSN 4240-00-237-0227); AND INSTALLATION KIT, CBR, PROTECTIVE EQUIPMENT, AN/TSQ-73, M263 (NSN 4240-01-063-7679)

Current as of 25 April 1980

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAS-C, Aberdeen Proving Ground, MD 21010. A reply will be furnished to you.


AIRFLOW VALVE
AND SILENCER
PROTECTIVE
ENTRANCE
CONTROL MODULE
POWER
DISTRIBUTION
UNIT
M12
PROTECTIVE
ENTRANCE
AIRFLOW
VALVE
M56
GAS-PARTICULATE
FILTER UNIT
COMPARTMENT
CONTROL MODULE

CHAPTER 1
INTRODUCTION

CHAPTER OVERVIEW

This chapter contains general information and equipment data for your collective protection equipment for AN/TSQ-73.

Section I. GENERAL INFORMATION

1-1. SCOPE.

a. *Type of Manual:* Organizational Maintenance, including the Repair Parts and Special Tools List.

b. *Model Numbers and Equipment Names:* The Collective Protection Equipment, Air Defense Command and Control System, AN/TSQ-73 consists of
M12 Protective Entrance
M56 Gas-Particulate Filter Unit
M263 Installation Kit

c. *Purpose of Equipment:* Provides filtered air under positive pressure to the M12 Protective Entrance and to the AN/TSQ-73 shelter.

1-2. MAINTENANCE FORMS AND RECORDS. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750, The Army Maintenance Management System.

1-3. DESTRUCTION OF MATERIEL TO PREVENT ENEMY USE. Refer to TM 43-0002-31, Destruction of Chemical Weapons and Defense Equipment to Prevent Enemy Use.

1-4. PREPARATION FOR STORAGE OR SHIPMENT. Refer to TM 9-1430-651-12.

1-5. NOMENCLATURE CROSS-REFERENCE LIST. This listing includes nomenclature cross-references used in this manual.

Common Name	*Official Nomenclature*
M12 Protective Entrance	Entrance, Protective, Pressurized, Collapsible, M12
M56 Gas-Particulate Filter Unit	Filter Unit, Gas-Particulate, 200 CFM, 208 V, 400 Hz, M56
M263 Installation Kit	Installation Kit, M263
Cable C5-19-6170-40	Cable Assembly, Special Purpose Electrical, C5-19-6170-40
Cable C5-19-6162-10	Cable Assembly, Special Purpose Electrical, C5-19-6162-10
Cable C5-19-6170-10	Cable Assembly, Special Purpose Electrical C5-19-6170-10
Cable C5-19-6160-40	Cable Assembly. Special Purpose Electrical, C5-19-6160-40
Cable C5-19-6160-50	Cable Assembly, Special Purpose Electrical, C5-19-6160-50
Cable C5-19-6684	Cable Assembly, Special Purpose Electrical, C5-19-6684

1-6. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR). If your collective protection equipment needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Tell us why a procedure is hard to perform. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAP-A, Aberdeen Proving Ground, MD 21010. We'll send you a reply.

Section II. EQUIPMENT DESCRIPTION AND DATA

1-7. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES.

Characteristics

- The CPE is designed to operate in a chemical/biological agent contaminated zone.
- The filter unit provides filtered air under positive pressure to the M 12 Protective Entrance and to the AN/TSQ-73 shelter.
- Positive pressure prevents dangerous amounts of chemical and biological (CB) agents from entering the protected area.
- The M12 Protective Entrance, while under positive pressure, allows personnel to enter or leave without loss of positive pressure protection in the AN/TSQ-73 shelter.

Capabilities and Features

- Control modules are provided for both the M12 Protective Entrance and the AN/TSQ-73 shelter.
- Major components of the collective protection equipment (CPE) may be attached or detached from the AN/TSQ-73 shelter without affecting the operation of the shelter.
- Modular design of CPE permits:
  a. Easy access to the major components for servicing and maintenance.
  b. Quick replacement of malfunctioning components.

1-8. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.

(A) PROTECTIVE ENTRANCE. Consists of:

- Shell assembly, which is in two halves, forms the roof and floor.
- Door assembly, when fully extended, provides for entering and leaving the protective entrance. The door frame supports the front of the protective entrance.
- Two support assemblies, when fully extended, form rigid poles between the roof and the floor of the shell assembly. The support assemblies are located at the rear of the protective entrance.
- An impermeable fabric assembly is attached to the two halves of the shell assembly. When the fabric is fully extended, it forms the walls of the protective entrance.

(B) PROTECTIVE ENTRANCE CONTROL MODULE. Mounted in the roof of the shell assembly, provides white/or black-out red light, purge timing and low pressure warning for the protective entrance.

(C) GAS-PARTICULATE FILTER UNIT. The filter unit housing contains the main fan, the gas filter, and the particulate filter. Inner and outer access covers permit changing the filters.

- The airflow valve, attached to the outside of the filter unit housing, controls the airflow between the filter unit, the shelter, and the protective entrance.

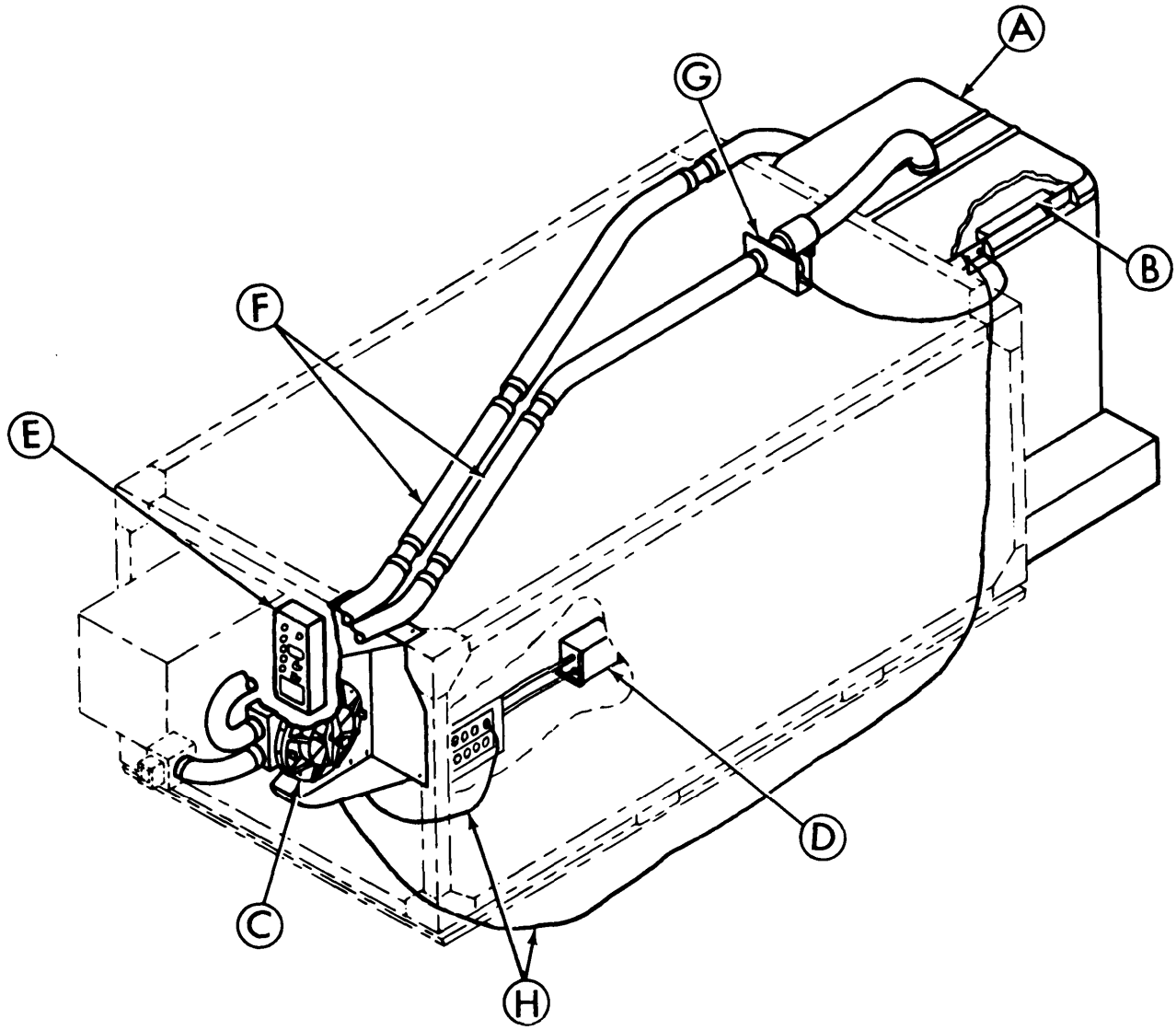
(D) COMPARTMENT CONTROL MODULE. Mounts inside the shelter and contains controls and indicators to operate the collective protection equipment.

(E) POWER DISTRIBUTION UNIT. Mounts on the outside of the shelter below the filter unit. It serves as the electrical power distribution center for the collective protection equipment.

(F) AIRDUCT HOSE. Large diameter (6”) impermeable fabric hose, in 6 foot sections, connects filter unit, shelter, and protective entrance for filtered and return air circulation.

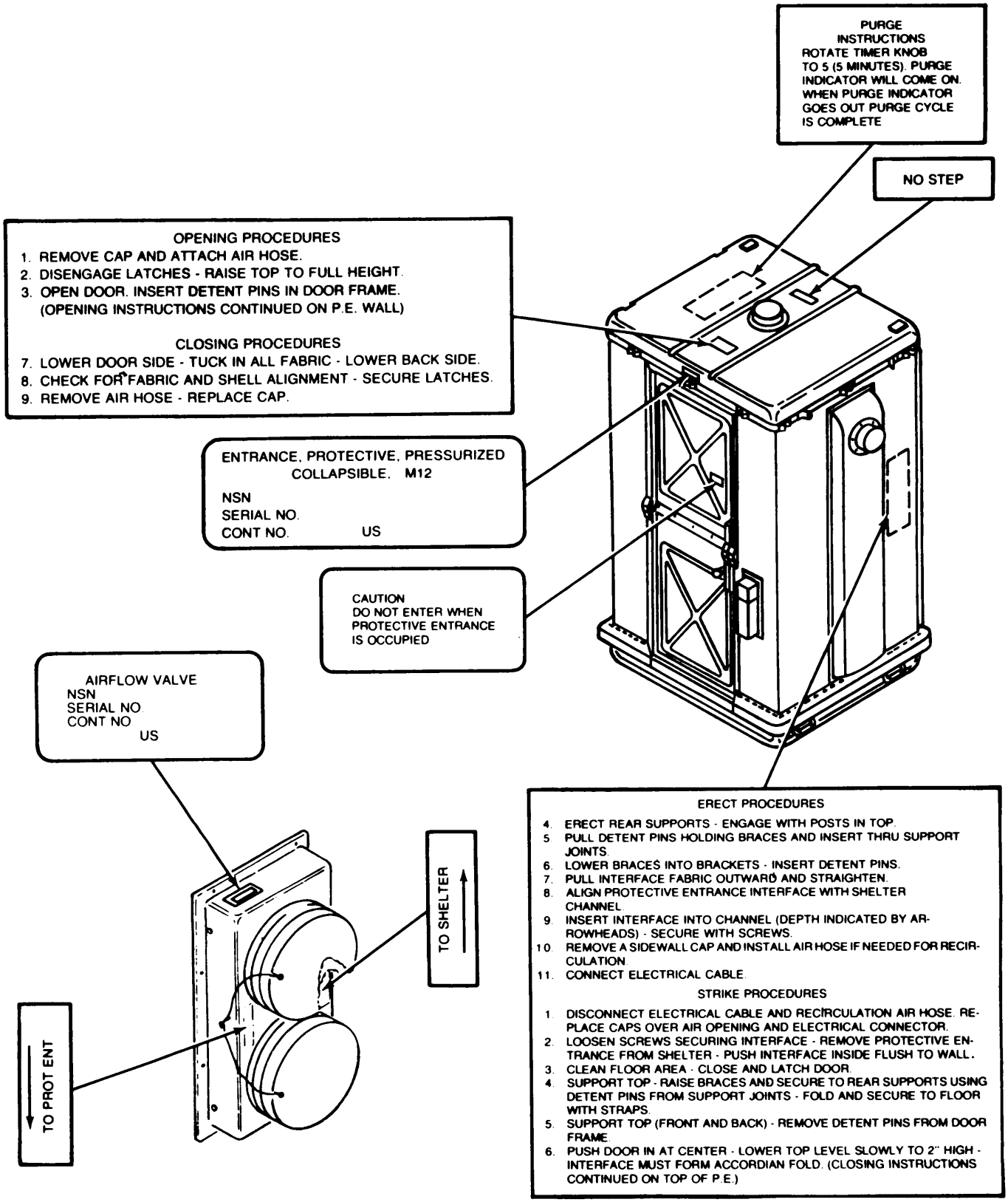
(G) AIRFLOW VALVE AND SILENCER. Adjusts and silences the flow of filtered air to the protective entrance. The valve is controlled by the protective entrance control module.

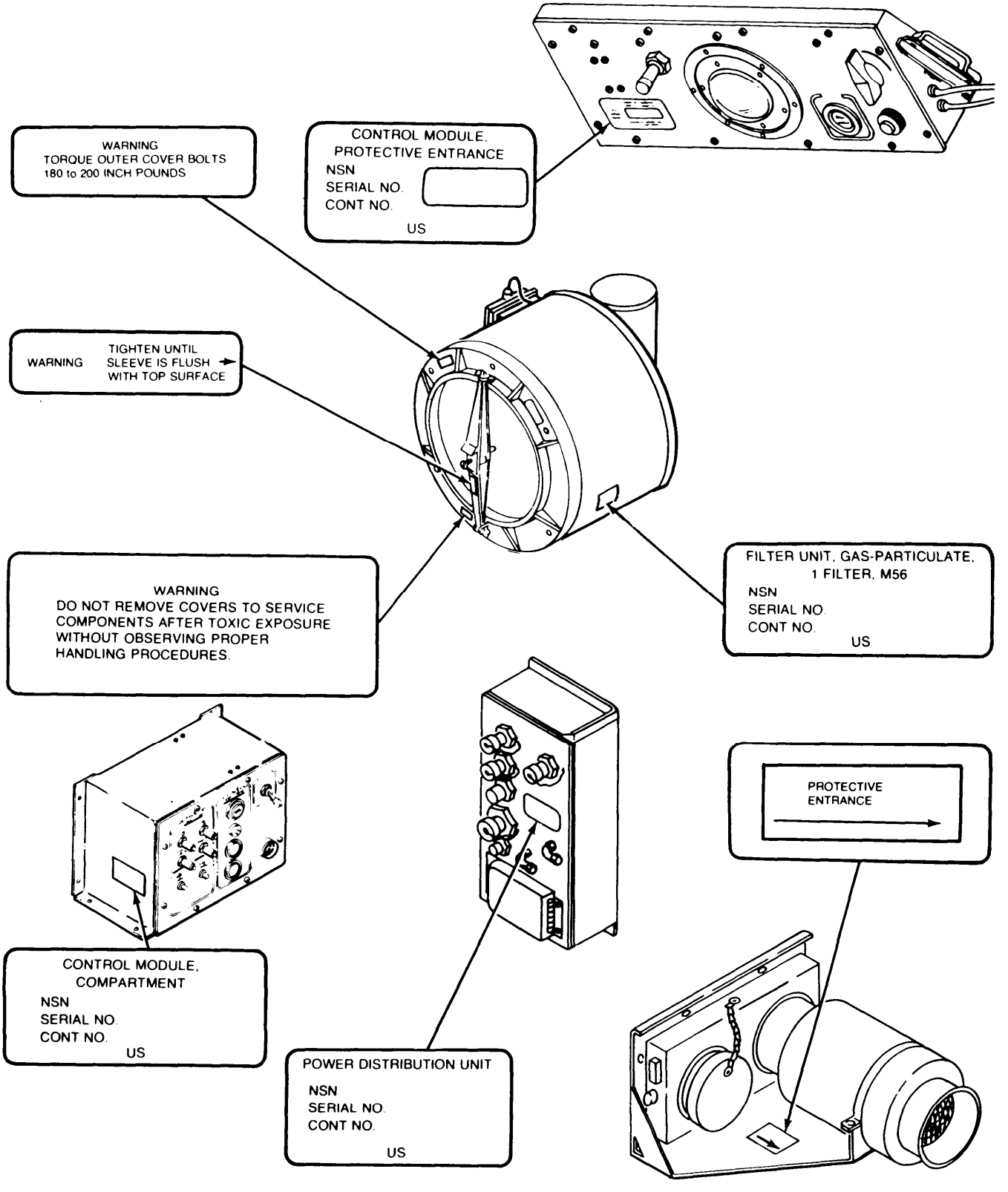
(H) SPECIAL PURPOSE ELECTRICAL CABLES. Six cables route electrical power and electrical operating signals between the filter unit, power distribution unit, compartment control module, protective entrance, and valve and silencer assembly. (Not all cables are shown.)



MAJOR COMPONENTS

1-9. IDENTIFICATION, INSTRUCTION, AND WARNING PLATES.




WARNING
TORQUE OUTER COVER BOLTS
180 to 200 INCH POUNDS
CONTROL MODULE,
PROTECTIVE ENTRANCE
NSN
SERIAL NO.
CONT NO.
US
WARNING
TIGHTEN UNTIL
SLEEVE IS FLUSH
WITH TOP SURFACE
WARNING
DO NOT REMOVE COVERS TO SERVICE
COMPONENTS AFTER TOXIC EXPOSURE
WITHOUT OBSERVING PROPER
HANDLING PROCEDURES.
FILTER UNIT, GAS-PARTICULATE,
1 FILTER, M56
NSN
SERIAL NO.
CONT NO.
US
CONTROL MODULE,
COMPARTMENT
NSN
SERIAL NO.
CONT NO.
US
POWER DISTRIBUTION UNIT
NSN
SERIAL NO.
CONT NO.
US
PROTECTIVE
ENTRANCE

1-10. EQUIPMENT DATA.

DIMENSIONS AND WEIGHTS OF COLLECTIVE PROTECTION EQUIPMENT COMPONENTS

Component	Length		Width		Height		Weight	
	Inch	CM	Inch	CM	Inch	CM	LB	Kg
M12 Protective Entrance								
Packaged dimensions	49.3	125.22	43.3	109.98	12.5	31.75	145	65.83
Erected dimensions	49.3	125.22	43.3	109.98	85.4	216.91	145	65.83
Protective Entrance Control Module	16	40.64	6.75	17.14	5	12.70	7.5	3.40
M56 Gas-Particulate Filter Unit	31	78.74	36	91.24	32	81.28	123	55.84
PE Airflow Valve and Silencer	15	38.10	8	20.32	4	10.16	13	5.90
Power Distribution Unit	18.5	46.99	8.25	20.95	4.25	10.79	16	7.26
Compartment Control Module	7.7	19.55	11.75	29.84	6.5	16.51	9	4.09
	Outer Dia		Inner Dia					
Particulate Filter	16.6	42.16	12	30.48	10	25.40	7.8	3.54
	Outer Dia		Inner Dia					
Gas Filter	21.4	54.35	16.7	42.41	10	25.40	37.8	17.16

OPERATING POWER REQUIREMENTS AND CHARACTERISTICS OF COLLECTIVE PROTECTION EQUIPMENT COMPONENTS

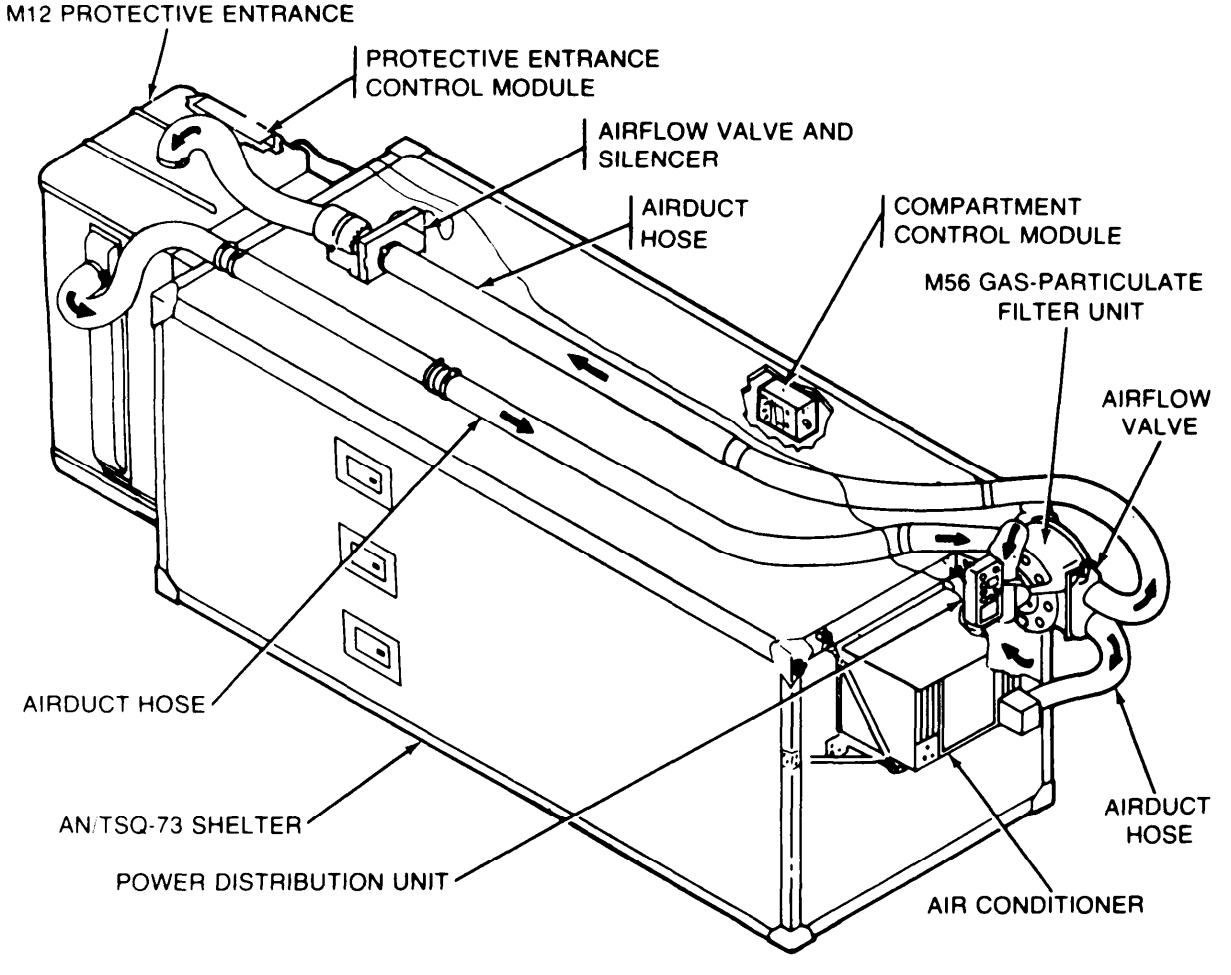
Component	Power Requirements	Input Voltage	Maximum Capacity	Airflow (cfm)
Protective Entrance Control Module	2 amp at 28 V dc	28 V dc		
M56 Gas-Particulate Filter Unit	800 Watts	208 V, 400 Hz, 3-phase		200 maximum
Airflow Valve	1 amp max at 28 V dc			40 minimum at 20.0 in. wg
Power Distribution Unit		208 V, 400 Hz, 3-phase	3.5 kW	
Compartment Control Module	1 amp max at 28 V dc	28 V dc		
Particulate Filter				200
Gas Filter				200

Section III. PRINCIPLES OF OPERATION

1-11. AIR FILTERING AND PRESSURIZATION SYSTEM.

a. The M56 gas-particulate filter unit removes toxic gases and dust from the air supplied to the M12 protective entrance and shelter. outside and return air are drawn through the air inlet of the filter unit by the main fan. From the main fan, the air is pushed through the particulate and gas filters to the airflow valve. The filtered air passes through the airflow valve and is carried by airduct hoses to the protective entrance through the airflow valve and silencer and to the shelter through the air conditioner. Pressure sensing components in the compartment control module automatically adjust the airflow valve to maintain a positive pressure in the shelter.

b. The M12 protective entrance provides a pressurized transition area between the shelter and the outside contaminated zone. Personnel entering from the outside must wait five minutes within the protective entrance before entering the shelter. Contamination is purged by the flow of the faltered air. The protective entrance control module automatically adjusts the airflow valve and silencer assembly to maintain the proper air pressure inside the protective entrance.



CHAPTER 2
MAINTENANCE INSTRUCTIONS

CHAPTER OVERVIEW

This chapter contains information on the following sections:

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

2-1. COMMON TOOLS AND EQUIPMENT. For authorized common tools and equipment refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

2-2. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT. Special tools, TMDE, and support equipment are listed in Appendix C, Section III of this manual.

2-3. REPAIR PARTS. Repair parts are listed and illustrated in Appendix C of this manual.

Section II. SERVICE UPON RECEIPT

2-4. SERVICE UPON RECEIPT. Refer to TM 9-1430-651-12.

Section III. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

2-5. PMCS PROCEDURES.

a. *General* The PMCS procedures are contained in table below. They are arranged in logical sequence requiring a minimum amount of time and motion on the part of the persons performing them and are arranged so that there will be a minimum interference between persons performing checks simultaneously on the same end item.

b. *Item Number Column.* Checks and services are numbered in chronological order regardless of interval. This column shall be used as a source of item numbers for the "TM Number" column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording results of PMCS.

c. *Item To Be Inspected Column.* The items listed in this column are divided into groups indicating the portion of the equipment of which they are a part, for example, "Filter Unit," "Protective Entrance." Under these groupings, the items to be inspected are identified by as few words, usually the common name, as will clearly identify the item, for example, "main fan assembly," "airflow valve."

d. *Procedures Column.* This column contains a brief description of the procedure by which the check is to be performed. It contains all the information required to accomplish the checks and services, including appropriate tolerances, adjustment limits, and instrument and gage readings.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) SEMIANNUAL SCHEDULE

NOTE

Perform these checks and services in the order listed before you perfomn functional testing.

Item No.	Item To Be Inspected	Procedures
1	Filter Housing Outside Surfaces	Inspect outside surfaces for cleanliness. Wipe or wash off dirt. Inspect identification and instruction plates. You must be able to read them. Replace plates if necessary (p 2-77 and 78) Inspect outside surfaces for rust, chipped paint, or bare metal on painted surfaces. Repaint or touchup as necesary (p 2-78). Make sure that all parts are secure and that there is no loose or missing hardware. Tighten loose hardware. Replace missing hardware.
2	Special Purpose Electrical Cable Assemblies	Inspect cable assemblies for bare wires, broken insulation, broken or damaged connectors. Replace damaged cable assemblies (p 2-92 through 2-106).
3	Main Fan Assembly Cable	Inspect cable assembly for bare wires, broken insulation, broken or damaged connector. Replace damaged main assembly (p 2-79).
4	Airflow Valve	Inspect valve for damaged and loose mounting hardware. Replace missing mounting hardware. Replace damaged airflow valve (p 2-82).
5	Power Distribution unit	Inspect unit for loose or missing mounting hardware. Tighten loose hardware. Replace missing hardware. Inspect for damage or missing electrical covers. Replace power distribution unit if the covers are damaged or missing (p 2-85).
6	Gas-Particulate Filter	**WARNING** DO NOT throw away damaged or unusable filters as ordinary trash. DO turn in damaged or unusable filters to your hazardous waste management office or Defense Reutilization and Marketing Office (DRMO). Remove inner cover (p 2-72) and access cover (p 2-73). Remove filters, if installed, and check for physical or water damage. Reinstall filters or install new filters.

Item No.	Item To be Inspected	Procedure
7	Inner Cover	If cover is damaged and considered unsafe for use, replace damaged cover (p 2-72).
		Check sleeve to see that it is flush with the bar (p 2-72).
8	Access Cover	Inspect access cover for damage, missing mounting hardware, or bent parts. Replace cover if it is unsafe for use (p 2-73).
		Check torque of securing screws. Torque should be between 180 and 200 inch pounds (p 2-72).
9	Airduct Hoses	Inspect airduct hoses for damaged or missing clamps. Replace airduct hoses if necessary (p 2-108).
10	M12 Protective Entrance	Inspect identification and instruction plates. They must be present. You must be able to read them. Replace plates if necessary (p 2-57).
		Inspect outside surface for chipped paint or bare metal on painted surfaces. Repaint or touch up as necessary (p 2-62).
		Make sure that all parts are secure, and that there is no loose or missing hardware. Tighten loose hardware.
11	Valve and Silencer	Inspect identification and instruction plates. They must be present. You must be able to read them. Replace instruction plate (p 2-91) if necessary.
		Inspect valve and silencer for damage and loose mounting hardware. Check clamps on airduct hose and silencer. Replace missing hardware. Replace damaged valve and silencer (p 2-89).
12	Collective Protection Equipment	Perform functional testing (p 2-3).

Section IV. FUNCTIONAL TESTING

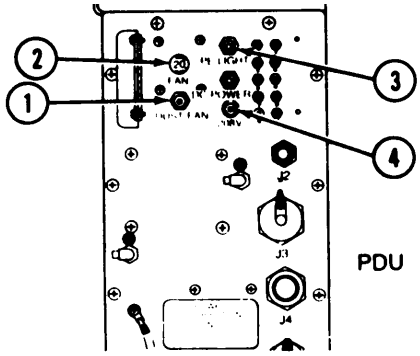
2-6. GENERAL. This section contains instructions for functional testing the collective protection equipment for shelter. These tests must be performed following installation of the equipment, and semi-annually thereafter.

a. *Preventive Maintenanace Checks and Services (PMCS).* Perform PMCS on page 2-1 before performing functional testing.

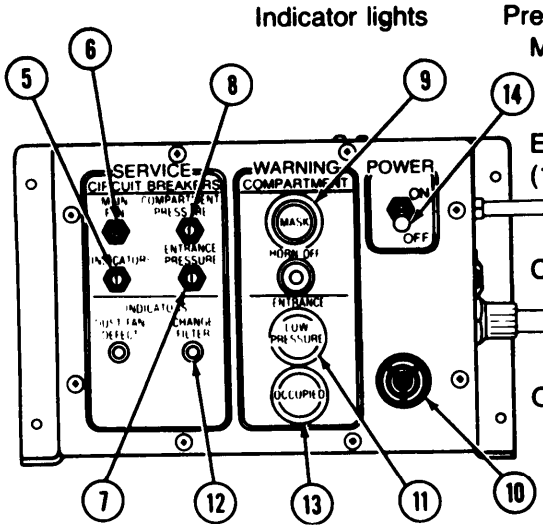
b. *Troubleshooting Procedures.* Refer to troubleshooting on page 2-11 for malfunctions and corrections.

2-7. FUNCTIONAL TEST.

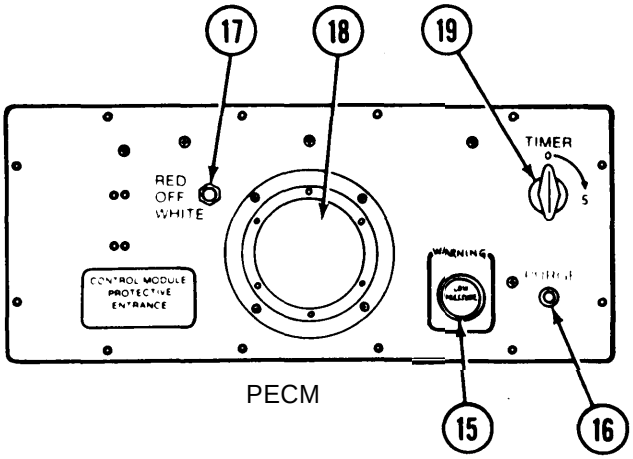
LOCATION	ITEM	ACTION	INDICATION/REMARKS
Power Circuit	Cables	Check that all connections are tight.	Connector J6 on PDU is not used.
	Power source	Check that power is supplied to PDU.	
Power Distribution Unit	Circuit breakers	Check that circuit breakers (1, 2, 3 and 4) are set. Press to set.	PDU is actually installed upside down but is shown rightside up for clarity.



Compartment Control Module		**Set POWER switch (14) to OFF.**	
	Circuit breakers	**Check that circuit breakers (5, 6, 7, 7, and 8) are set. Press to set.**	
	Indicator lights	**Press to test lamps:**	
		MASK (9)	Light will flash and warning horn (10) will sound. Replace lamp if necessary (p 2-88).
		ENTRANCE LOW PRESSURE (11)	Light will light when pressed. Replace lamp if necessary (p 2-88).
		CHANGE FILTER (12)	Light will light when pressed. Replace lamp if necessary (p 2-88).
		OCCUPIED (13)	Light will light when pressed. Replace lamp if necessary (p 2-88).



LOCATION	ITEM	ACTION	INDICATION/REMARKS
Protective Entrance Control Module	Indicator lights	Press to test lamps: LOW PRESSURE (15)	Light will light when pressed. Replace lamp if necessary (p 2-66).
		PURGE (16)	Light will light when pressed. Replace lamp if necessary (p 2-65).
	Dome light	Set dome light switch (17) to white	Dome light (18) will show white light. Replace lamp if necessary (p 2-67).
		Set switch (17) to RED.	Dome light (18) will show red light. Replace lamp if necessary (p 2-67).
		Set switch (17) to OFF.	Dome light (18) will go off.
	Timer	Rotate TIMER (19) fully clockwise.	PURGE light (16) will light.
			OCCUPIED light in compartment control module will light.
		Allow TIMER (19) to return to "O" (approximately five minutes).	PURGE and OCCUPIED lights will go off.



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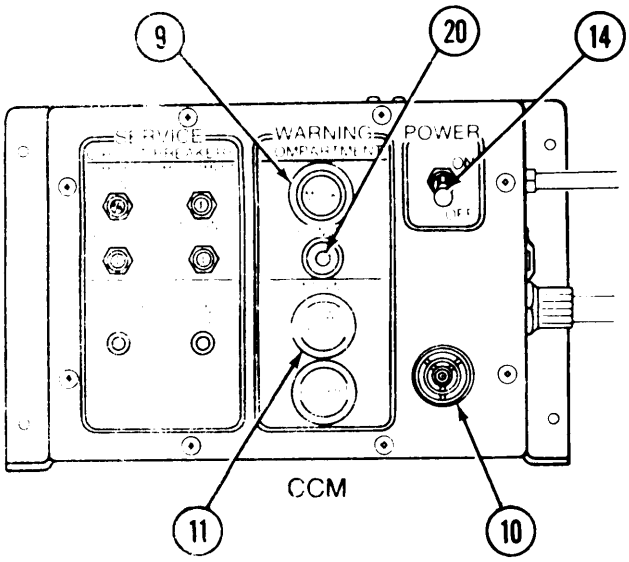
2-7. FUNCTIONAL TEST (CONT).

LOCATION	ITEM	ACTION	INDICATION/REMARKS
		Close shelter door and protective entrance door.	
Compartment Control Module	Pressure circuit	Set POWER switch (14) to ON.	Main fan must start and run.
			MASK indicator light (9) will flash.
			Warning horn (10) will sound until shelter is pressurized (approximately 30 seconds).
		Allow horn to silence automatically. This will indicate proper system operation.	MASK light (9) will go off and warning horn (10) will silence when proper shelter pressure is reached.
			ENTRANCE LOW PRESSURE light (11) will light when filter unit is started and then go off when proper protective entrance pressure is reached.
			When loss of power to the collective protection equipment occurs with the compartment control module POWER switch in the ON position, the MASK light (9) will flash and warning horn (10) will sound.
		Open shelter door.	MASK light (9) will flash.
			Warning horn (10) will sound.
		Press HORN OFF button (20).	Button will stay in pressed position. Warning horn will stop sounding. MASK light (9) will light and stay on.



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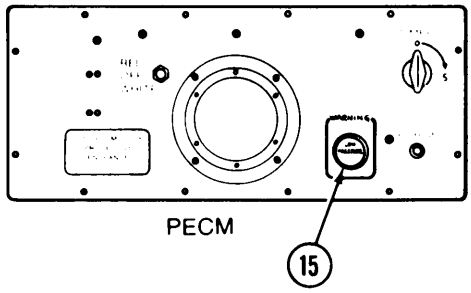
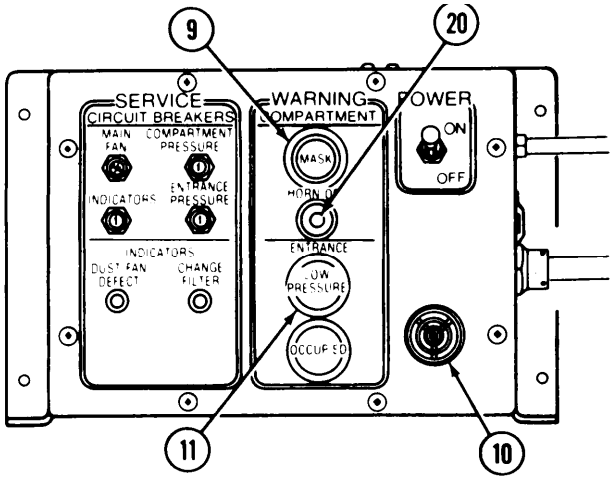
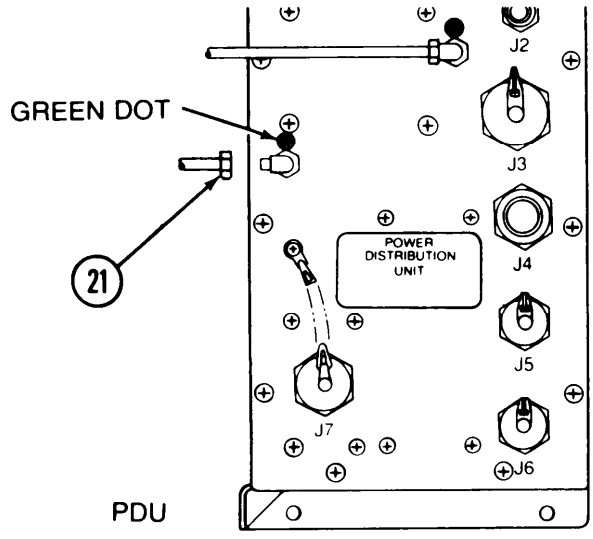
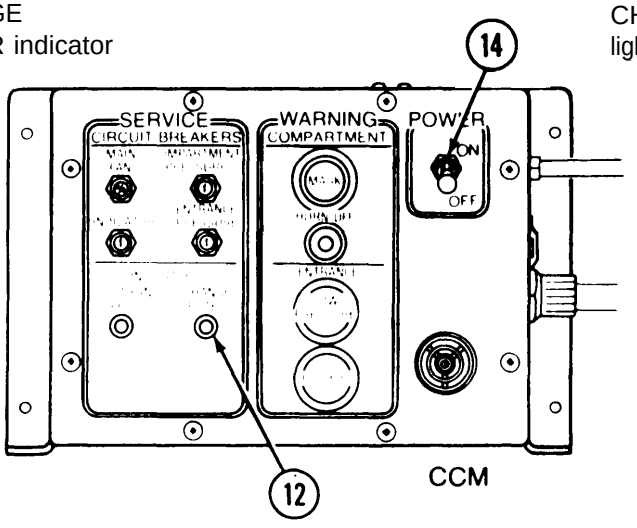
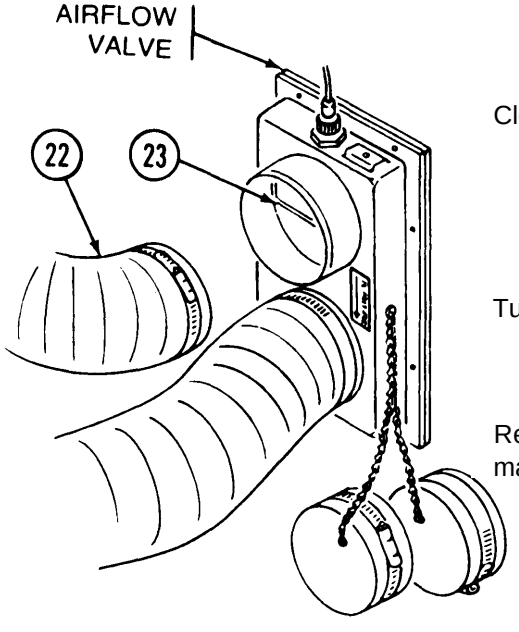
LOCATION	ITEM	ACTION	INDICATION/REMARKS
		Open protective entrance door.	
Compartment Control Module Protective Entrance Control Module	Pressure circuit		ENTRANCE LOW PRESSURE light (11) will light. LOW PRESSURE light (15) will light.
		Close protective entrance and shelter doors.	Within 30 seconds: ENTRANCE LOW PRESSURE light (11) will go off. Also, the LOW PRESSURE light (15) on the protective entrance control module will go off. MASK light (9) will go off. HORN OFF button (20) will reset.
Power Distribution Unit	CHANGE FILTER indicator light	Disconnect tubing (21) (green dot).	Filter unit must be operating.



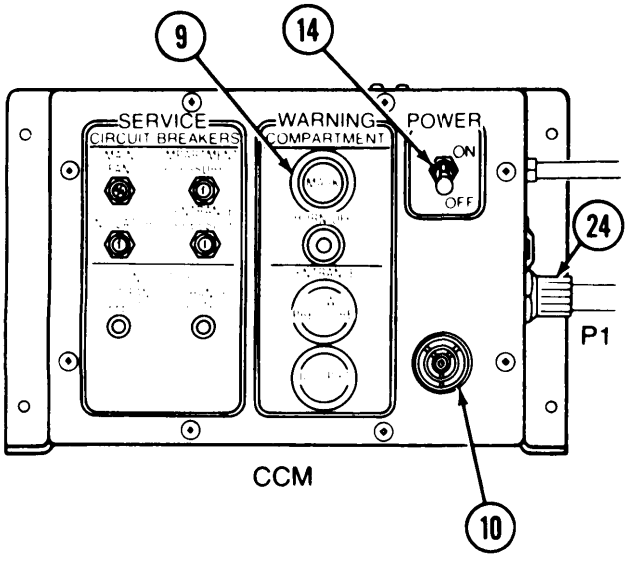


2-7. FUNCTIONAL TEST (CONT).

LOCATION	ITEM	ACTION	INDICATION/REMARKS
Compartment Control Module	CHANGE FILTER indicator light		CHANGE FILTER light (12) will light.
Power Distribution Unit		Reconnect tubing (21) (green dot) removed above. Tighten finger tight.	
Fan and Airflow Valve Housing Unit	Airflow valve	Close shelter and protective entrance doors. Disconnect airduct hose (22) from outlet port marked TO PROT ENT.	Filter unit must be operating.
		Open shelter and protective entrance doors.	The sliding plate (23) in the airflow valve must move to completely close off the outlet marked TO PROT ENT.
		Close shelter door.	The sliding plate (23) in the airflow valve will move toward the port marked TO SHELTER. This partly opens the port marked TO PROT ENT.
		Turn off filter unit: Set compartment control POWER switch (14) to OFF.	Observe that sliding plate (23) covers the port marked TO SHELTER.
		Replace airduct hose (22) on port marked TO PROT ENT.	



LOCATION	ITEM	ACTION	INDICATION/REMARKS
Compartment Control Module	Loss of power warning system	Disconnect plug P1 (24).	
		Set POWER switch (14) to ON.	MASK light (9) will flash. Warning horn (10) will sound.
		Set POWER switch (14) to OFF. Reconnect plug P1 (24).	



		Set POWER switch (14) to ON.	Filter unit must be operating and the shelter and protective entrance must be pressurized.

2-7. FUNCTIONAL TEST (CONT).

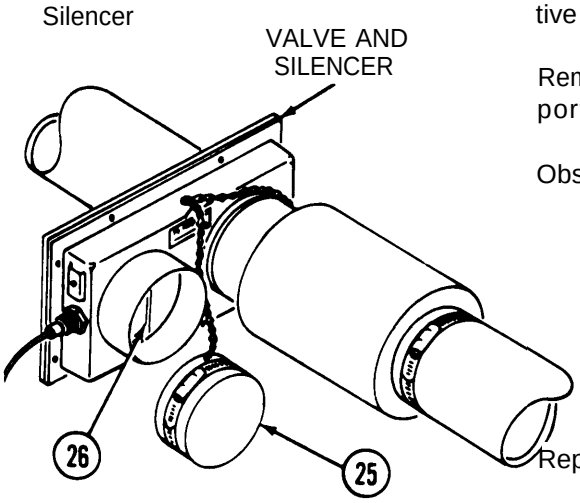
LOCATION	ITEM	ACTION	INDICATION/REMARKS

NOTE

Two technicians are needed for this checkout procedure: one on the outside of the protective entrance and the other on top of the shelter at the airflow valve and silencer.

Airflow Valve and Silencer — Airflow valve

Make sure that shelter and protective entrance doors are closed.



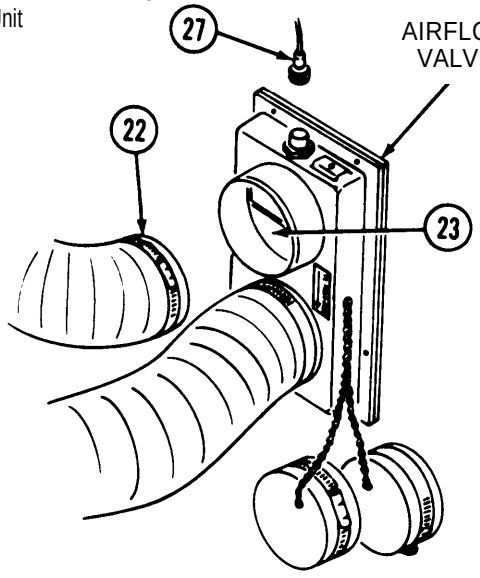
Remove outlet cap (25) from outlet port.

Observe the sliding plate. — The sliding plate (26) will move in a direction to allow more airflow into the protective entrance.

Replace outlet cap (25) on outlet port

Fan and Airflow Valve Housing Unit — Airflow valve

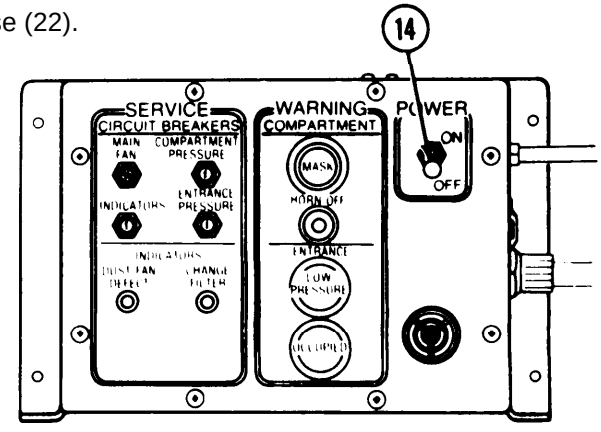
Disconnect cable P15 (27).



Hold airduct hose (22) going to the protective entrance and loosen hose clamp. Remove airduct hose.

Reconnect cable P15 (27). — Sliding plate (23) will move to reduce airflow into the protective entrance.

Replace airduct hose (22).



CCM

Compartment Control Module — POWER Switch

Set POWER switch (14) to OFF.

Section V. TROUBLESHOOTING

2-8. GENERAL.

a. This section contains troubleshooting information for locating and correcting most of the operating troubles which may develop in your protective equipment. Each malfunction for an individual component, unit, or system is followed by a list of tests or inspections which will help you to determine corlective actions to take. You should perform the test/inspections and corrective actions in the order listed.

b. This manual cannot list all possible malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed (except when malfunction and cause are obvious) or is not corrected by listed corrective actions, notify your supervisor.

NOTE

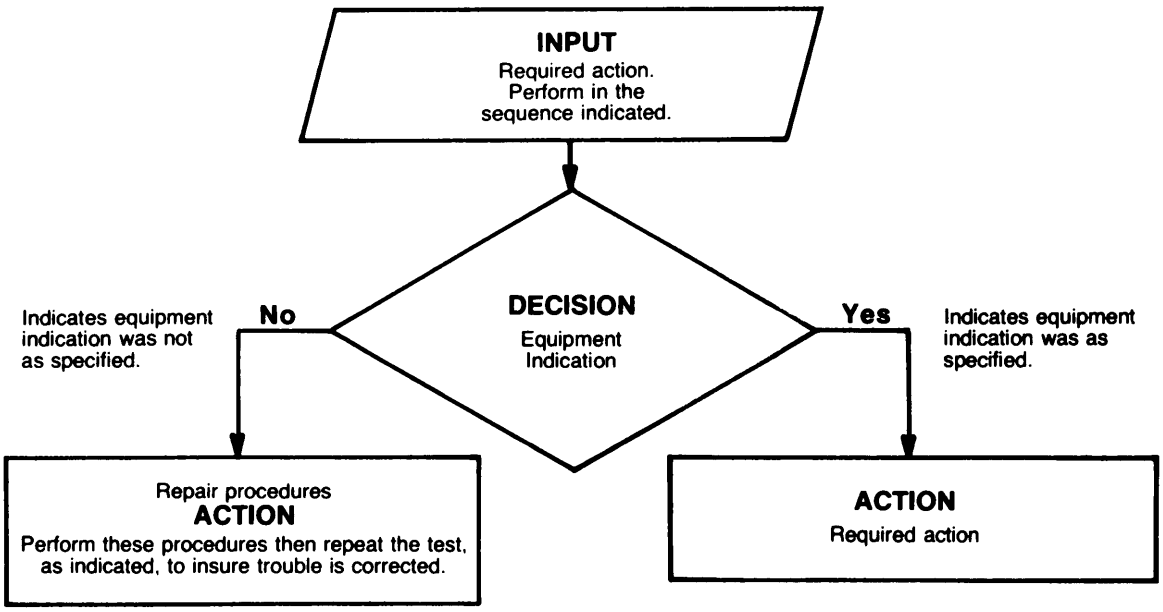
When measuring voltage at the Power Distribution Unit (PDU), TP #10 is ground. PDU is actually installed upside down, but is shown rightside up for clarity.

2-9. TROUBLESHOOTING PROCEDURES.

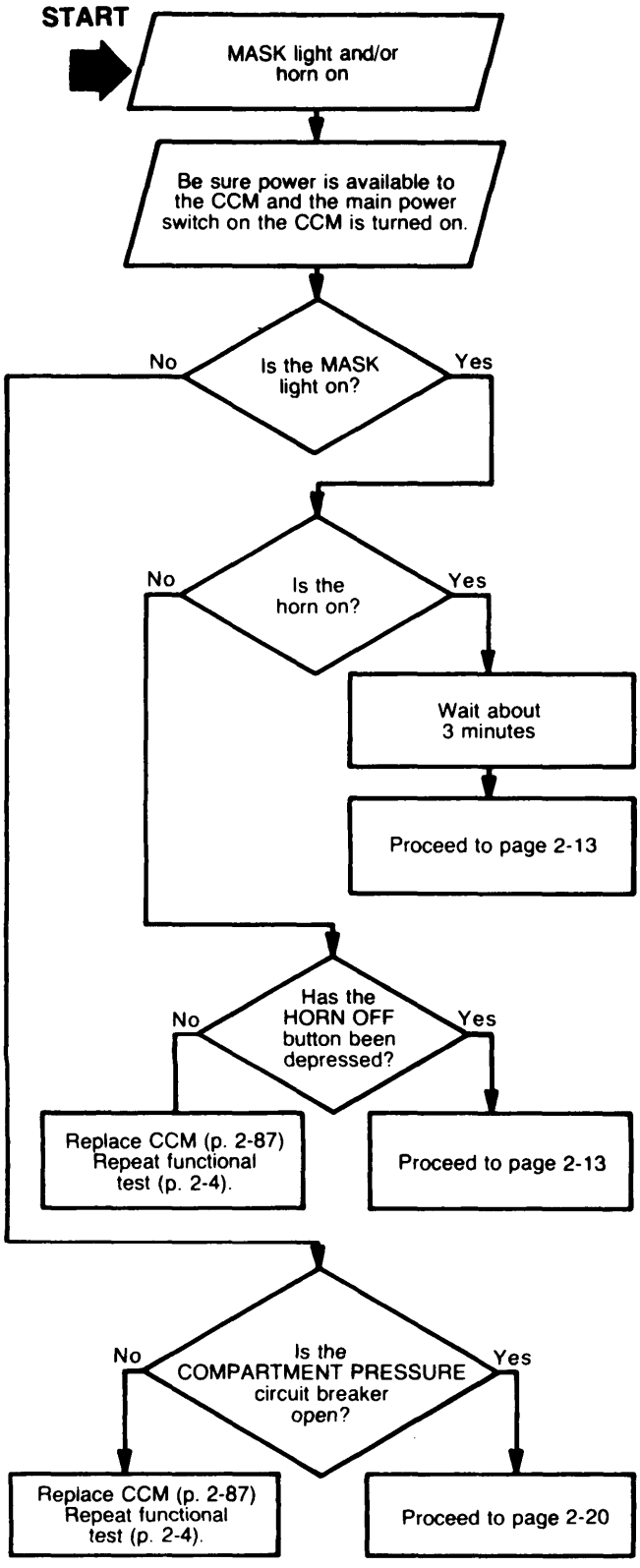
a. Perform functional test first. Then use the symptom index for quick access to the troubleshooting procedures.

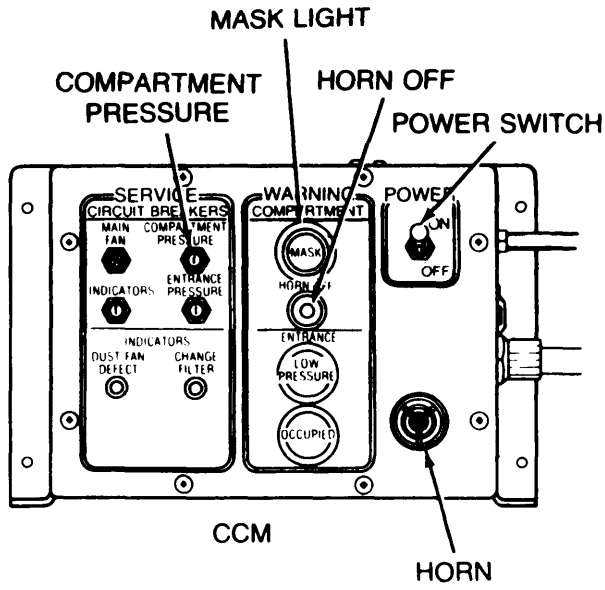
SYMPTOM INDEX

b. The following describes the use of the troubleshooting charts:



1. MASK LIGHT FLASHING AND/OR WARNING HORN SOUNDING

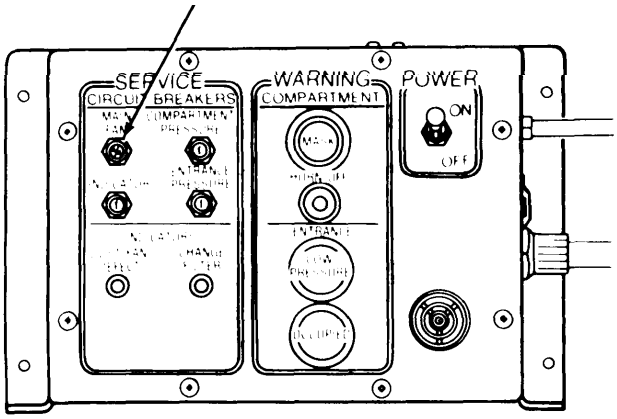




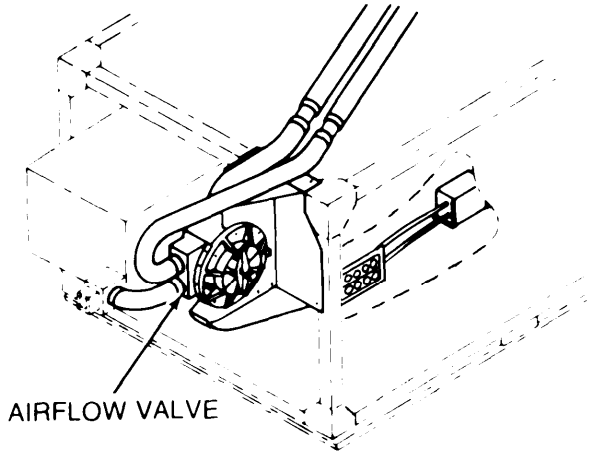
LEGEND

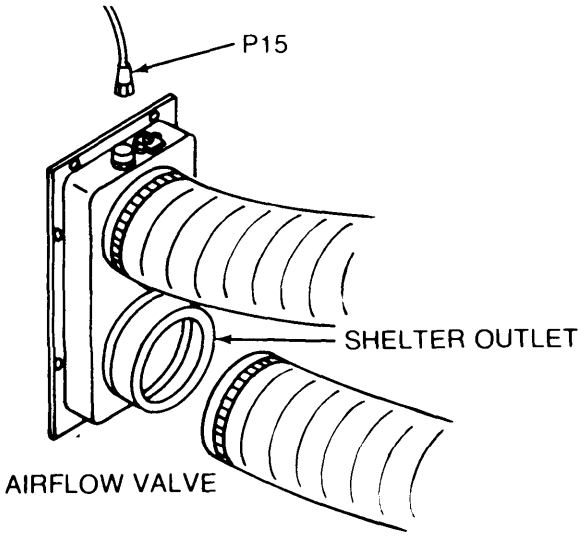
CCM = Compartment Control Module

MAIN FAN CIRCUIT BREAKER



CCM





From page 2-13

Is the MAIN FAN circuit breaker depressed on CCM?

No → Proceed to page 2-16

Yes → Is the main fan running?

No → Proceed to page 2-18

Yes → With the power on, disconnect P15 on FU airflow vlave. Then disconnect air duct hose at shelter outlet of the airflow valve.

Is the airflow valve fully open?

No → Proceed to page 2-14

Yes → Reconnect P15 and airduct hose

Is the pressure hose to the CCM properly installed and not damaged?

No → Check out change filter indicating system. Refer to page 2-45

Yes → Fix leaks

Check:

a. Shelter baffle/ damper settings (TM 9-1430-652-10-3)
b. Airduct hoses
c. Protective entrance

LEGEND

CCM = Compartment Control Module
FU = Filter Unit

1. MASK LIGHT FLASHING AND/OR WARNING HORN (CONT)

Page 2-13

Connect P15 on the FU airflow valve

Does the airflow valve fully open?

No

Loosen test point cover on top of airflow valve and rotate it 90°

Yes

Replace CCM (p. 2-87) Repeat functional test (p. 2-4).

Is there approximately 28 V dc at TP# 12(+) with respect to TP# 11(−) on the airflow valve?

No

Turn off power

Yes

Replace airflow valve (p. 2-82). Repeat functional test (p. 2-4).

Disconnect P15 and P2 from PDU to FU airflow valve

Check continuity

From	To
P15A	P2A
P15B	P2B

Is there continuity?

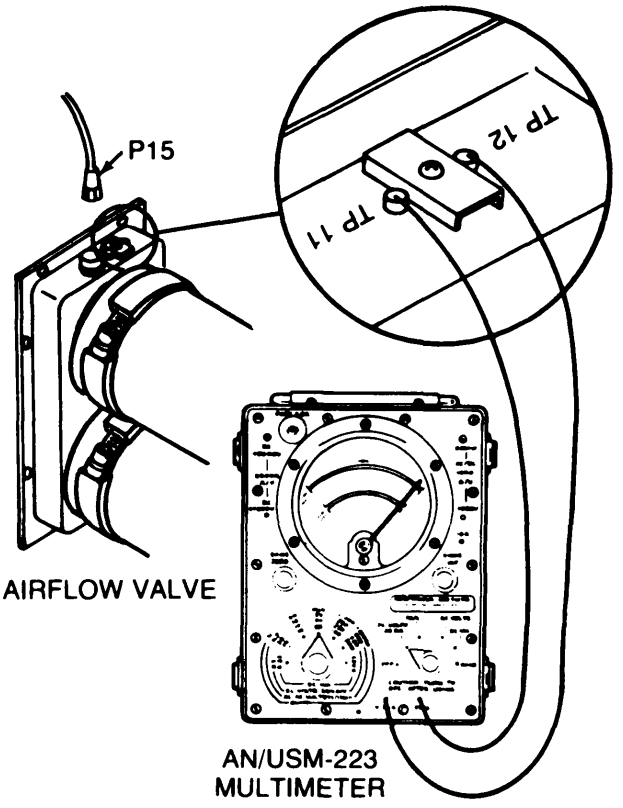
No

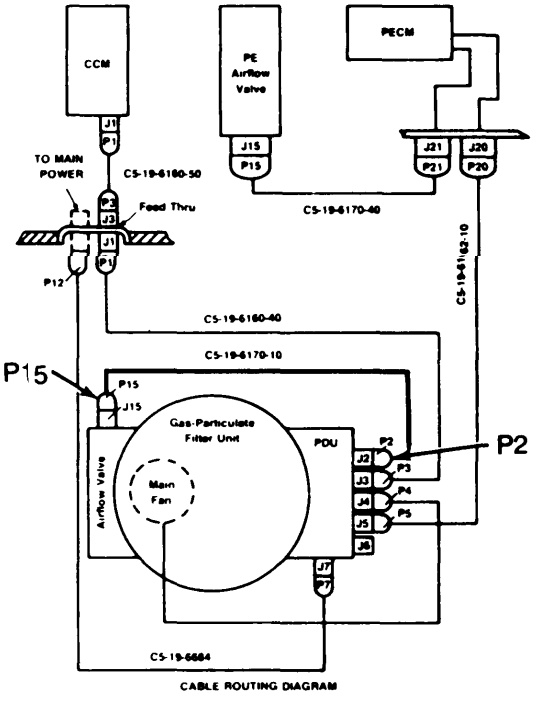
Replace cable C5-19-6170-10 (p.2-100). Repeat functional test (p. 2-4).

Yes

Reconnect P15

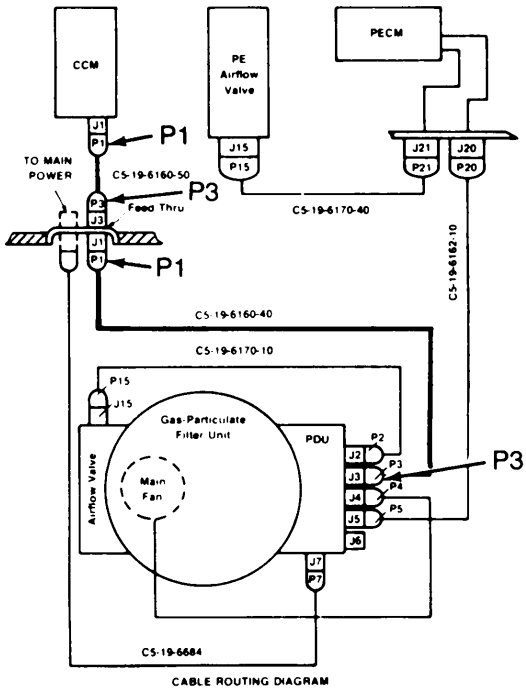
Proceed to page 2-15





LEGEND

CCM = Compartment Control Module
PDU = Power Distribution Unit
TP = Test Point
FU = Filter Unit
Feed Thru = MCPE/DISPLAY DEMARK



PAGE 2-14

Disconnect P3 at the PDU

Check continuity

From	To
J2A	J3P
J2B	J3N

Is there continuity?

No → Replace PDU (refer to TM 9-1430-651-12) Repeat functional test (p. 2-4).

Yes → Reconnect P2

Disconnect P1 at the feed thru

Check continuity

From	To
P3P	P1P
P3N	P1N

Is there continuity?

No → Replace cable C5-19-6160-40 (p. 2-104). Repeat functional test (p. 2-4).

Yes → Reconnect cable C5-19-6160-40

Disconnect P1 at the CCM and P3 at the feed thru

Check continuity

From	To
P3P	P1P
P3N	P1N

Is there continuity?

No → Replace cable C5-19-6160-50 (p. 2-102). Repeat functional test (p. 2-4).

Yes → Reconnect P3 at feed thru

Replace CCM (p. 2-87) Repeat functional test (p. 2-4).

LEGEND

CCM = Compartment Control Module
PDU = Power Distribution Unit
Feed Thru = MCPE/DISPLAY DEMARK

1. MASK LIGHT FLASHING AND/OR WARNING HORN SOUDING /(CONT/)

Page 2-13

Depress the MAIN FAN circuit breaker and wait about 3 minutes

Does the MAIN FAN circuit breaker remain set?

No → Turn off power. Disconnect P4. Turn on power. Reset MAIN FAN circuit breaker on CCM

Yes → Proceed to page 2-18

Does the MAIN FAN circuit breaker on CCM remain set?

No → Open circuit breaker access cover on the PDU

Yes → Proceed to page 2-19

Is the FAN circuit breaker open?

No → Proceed to page 2-17

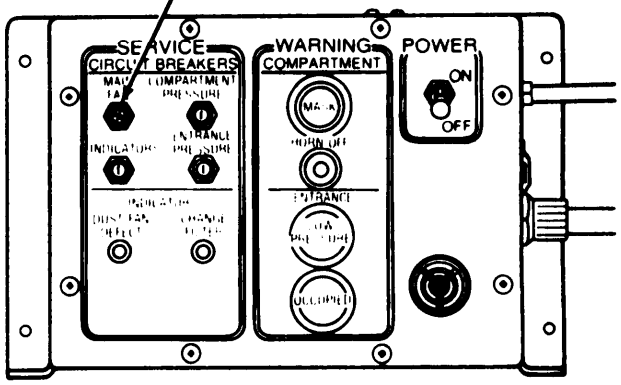
Yes → Reset FAN circuit breaker on PDU

Does the FAN circuit breaker on the PDU remain set?

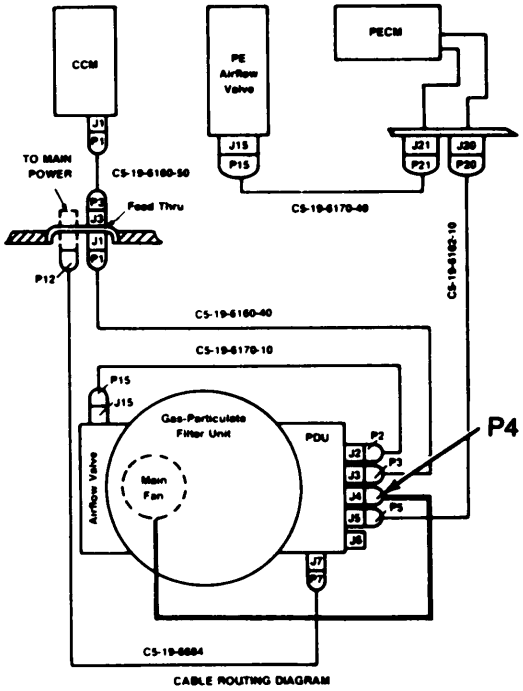
No → Replace PDU (refer to TM 9-1430-651-12) Repeat functional test (p. 2-4).

Yes → Proceed to page 2-19

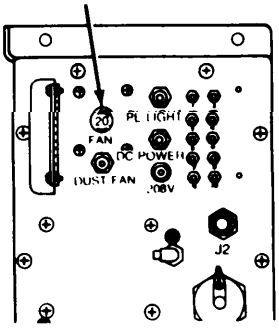
MAIN FAN CIRCUIT BREAKER



CCM



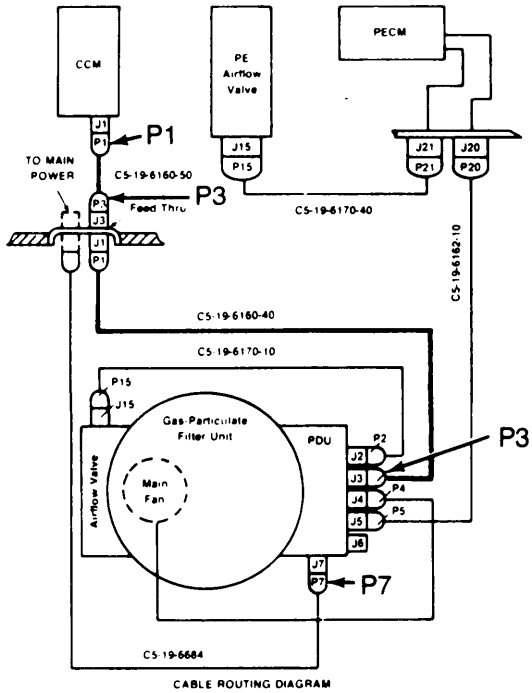
MAIN FAN CIRCUIT BREAKER

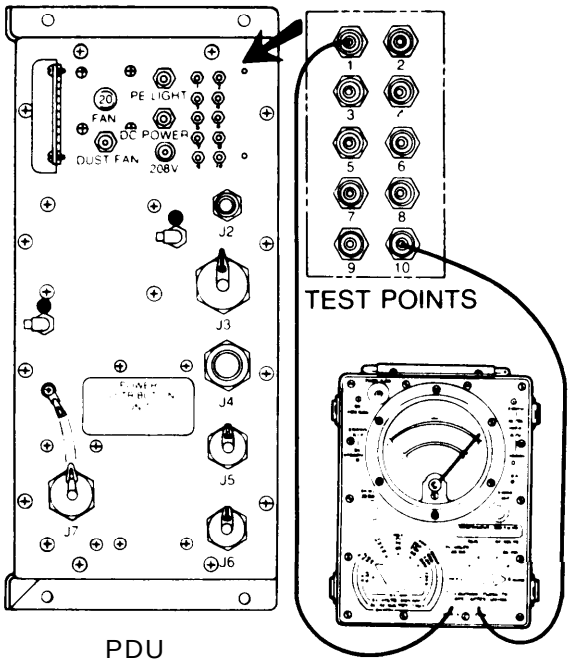


PDU

LEGEND

CCM = Compartment Control Module
PDU = Power Distribution Unit
Feed Thru = MCPE/DISPLAY DEMARK

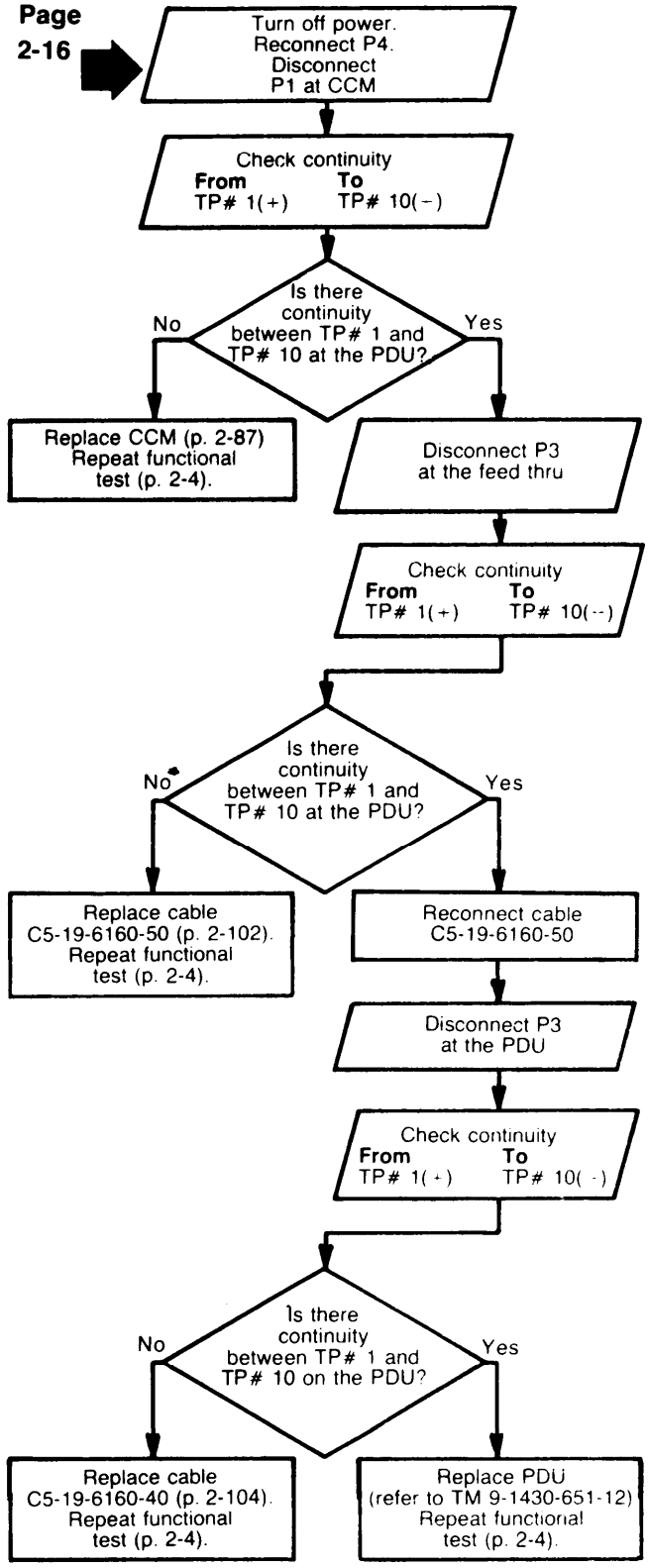




LEGEND

CCM = Compartment Control Module
PDU = Power Distribution Unit
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK

Page 2-16



1. MASK LIGHT FLASHING AND/OR WARNING HORN SOUNDING (CONT).

Page 2-13 or Page 2-16

Is the 208 V power indicator behind the access cover on the PDU illuminated?

No

Yes

Replace main fan (p. 2-79). Repeat functional test (p. 2-4).

Is there approximately 28 V dc between TP# 1(+) and TP# 10(−) on the PDU?

No

Yes

Disconnect P3 at the feed thru and P1 on the CCM

Replace PDU (refer to TM 9-1430-651-12) Repeat functional test (p. 2-4).

Check continuity

From	To
P1-D	P3-D

Is there continuity?

No

Yes

Replace cable C5-19-6160-50 (p. 2-102). Repeat functional test (p. 2-4).

Reconnect cable C5-19-6160-50

Disconnect P3 at the PDU and P1 on the feed thru

Check continuity

From	To
P1-D	P3-D

Is there continuity?

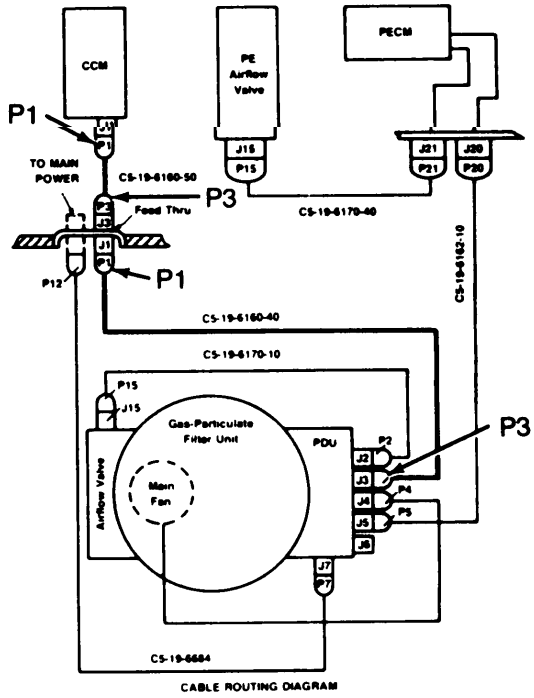
No

Yes

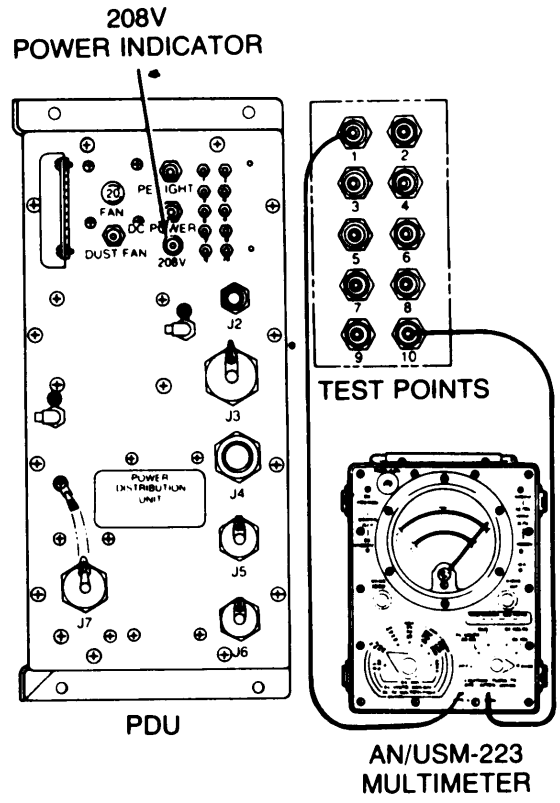
Replace cable C5-19-6160-40 (p. 2-104). Repeat functional test (p. 2-4).

Reconnect cable C5-19-6160-40

Replace CCM (p. 2-87) Repeat functional test (p. 2-4).



CABLE ROUTING DIAGRAM

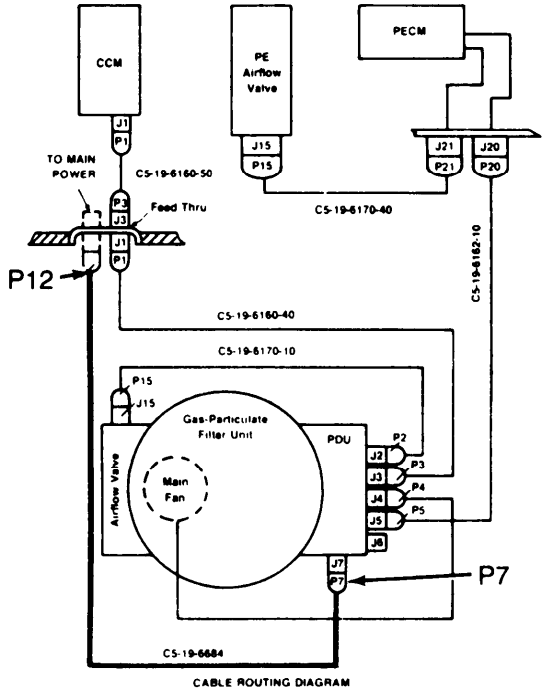


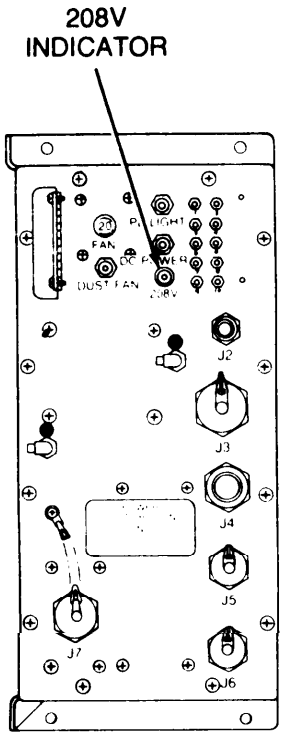
PDU

AN/USM-223 MULTIMETER

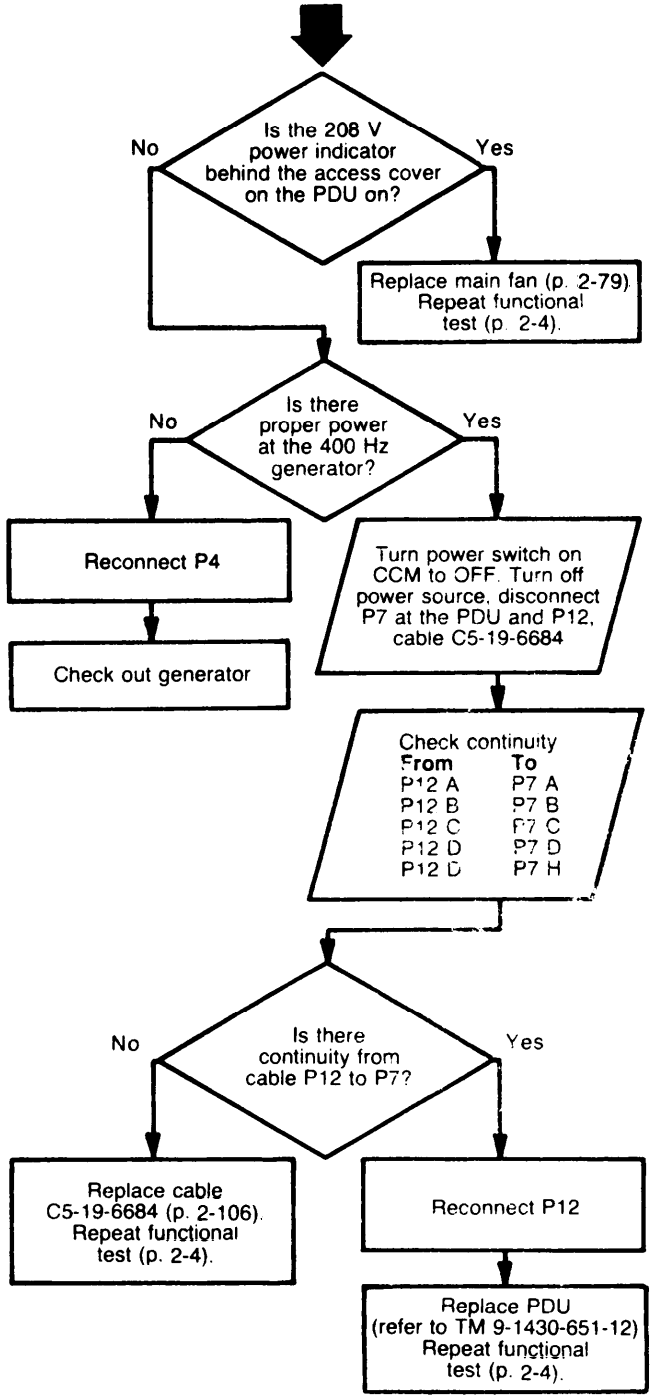
LEGEND

CCM = Compartment Control Module
PDU = Power Distribution Unit
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK





Page 2-16



LEGEND

CCM = Compartment Control Module
PDU = Power Distribution Unit
Feed Thru = MCPE/DISPLAY DEMARK

1. MASK LIGHT FLASHING AND/OR WARNING HORN SOUNDING (CONT).

Page 2-12

Turn off power.
Disconnect P15

Check continuity

From	To
P15A	P15C
P15B	P15C
P15A	P15B

Is there continuity?

No → Replace airflow valve (p. 2-82). Repeat functional test (p. 2-4).

Yes → Disconnect P1 at the CCM

Check continuity

From	To
P15A	P15C
P15B	P15C
P15A	P15B

Is there continuity?

No → Replace CCM (p. 2-87) Repeat functional test (p. 2-4).

Yes → Disconnect P3 at the feed thru

Check continuity

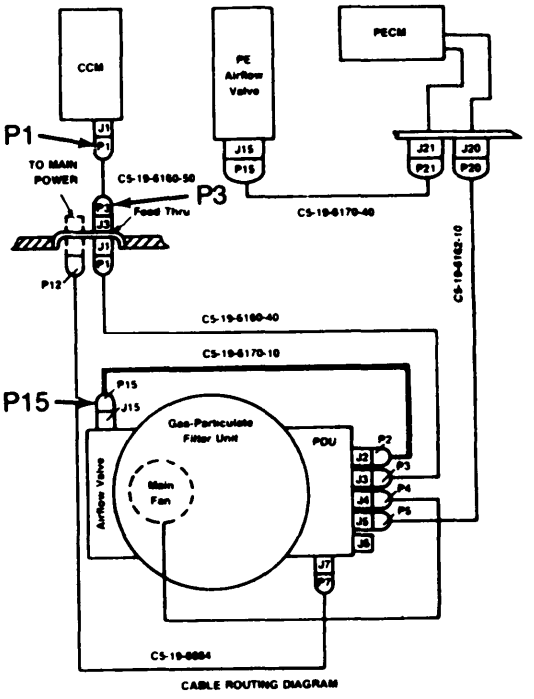
From	To
P15A	P15C
P15B	P15C
P15A	P15B

Is there continuity?

No → Replace cable C5-19-6160-50 (p. 2-102). Repeat functional test (p. 2-4).

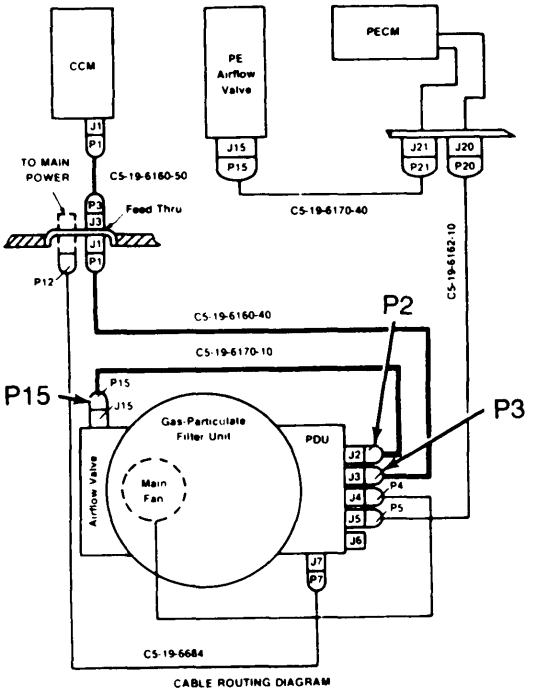
Yes → Reconnect cable C5-19-6160-50

Proceed to page 2-21



LEGEND

CCM = Compartment Control Module
Feed Thru = MCPE/DISPLAY DEMARK



Page 2-20

Disconnect P3 at the PDU

Check continuity

From	To
P15A	P15C
P15B	P15C
P15A	P15B

Is there continuity?

No

Replace cable C5-19-6160-50 (p. 2-102). Repeat functional test (p. 2-4).

Yes

Reconnect P3 at PDU

Disconnect P2

Check continuity

From	To
P15A	P15C
P15B	P15C
P15A	P15B

Is there continuity?

No

Reconnect cable C5-19-6170-10

Replace PDU (refer to TM 9-1430-651-12) Repeat functional test (p. 2-4).

Yes

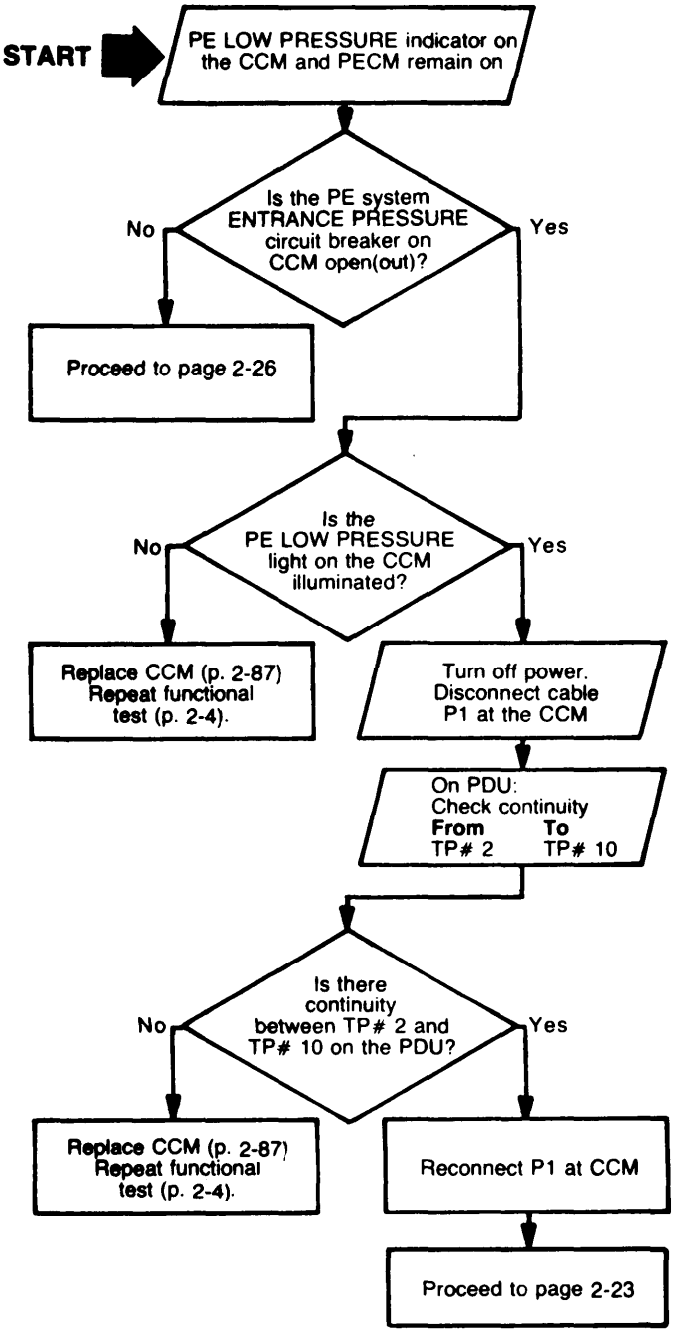
Replace cable C5-19-6170-10 (p.2-100). Repeat functional test (p. 2-4).

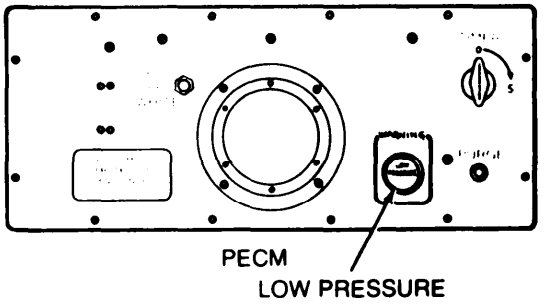
LEGEND

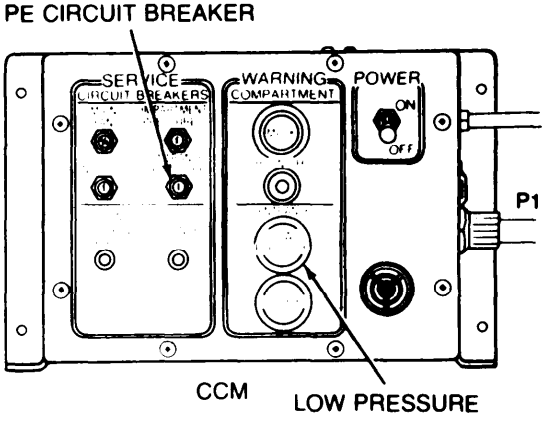
PDU = Power Distribution Unit

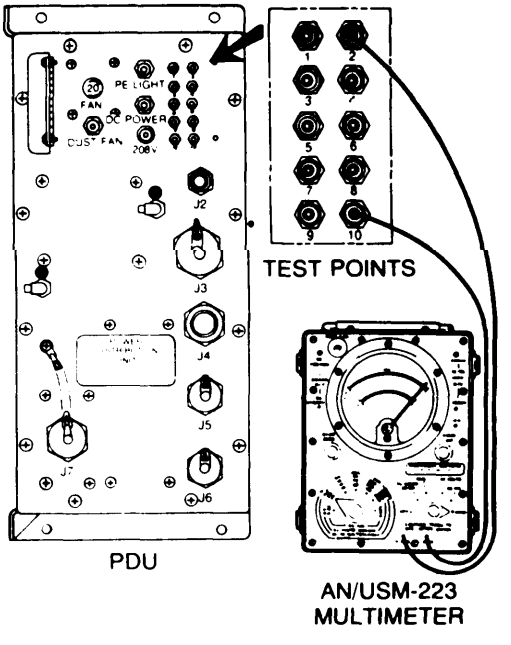
Feed Thru = MCPE/DISPLAY DEMARK

2. PROTECTIVE ENTRANCE LOW PRESSURE LIGHTS ON.



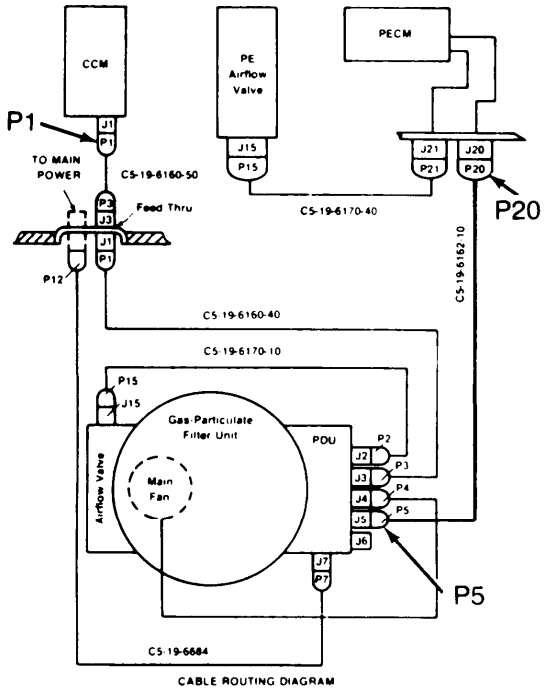


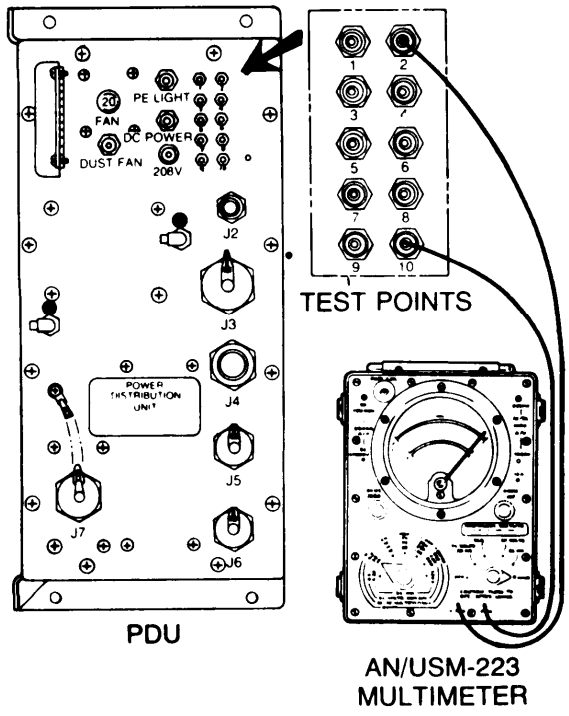


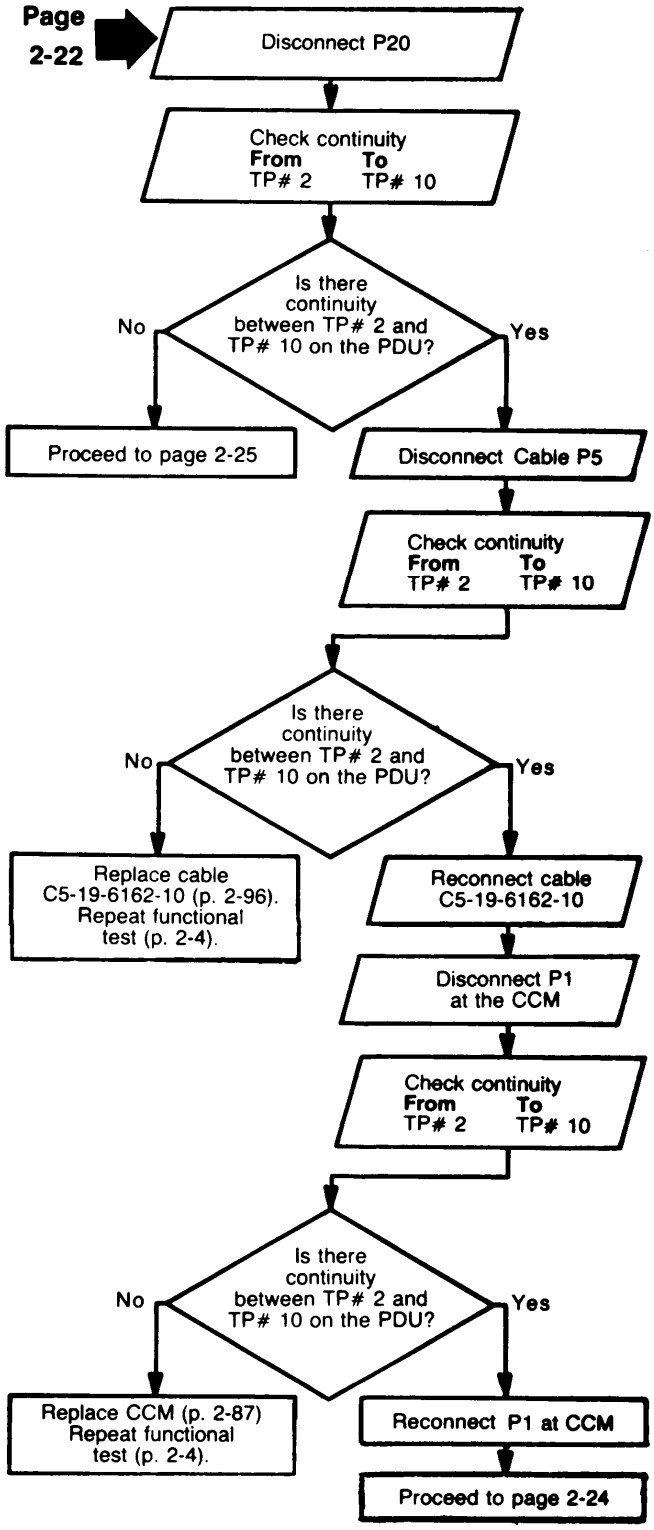


LEGEND

CCM = Compartment Control Module
PDU = Power Distribution Unit
PE = Protective Entrance
PECM = Protective Entrance Control Module
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK







LEGEND

CCM = Compartment Control Module
PDU = Power Distribution Unit
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK

2. PROTECTIVE ENTRANCE LOW PRESSURE LIGHTS ON (CONT).

Page 2-23

Remove P1 at the feed thru

Check continuity
From TP# 2 To TP# 10

Is there continuity between TP# 2 and TP# 10 on the PDU?

No

Replace cable C5-19-6160-50 (p. 2-102). Repeat functional test (p. 2-4).

Yes

Disconnect cable P3 at the PDU

Check continuity
From TP# 2 To TP# 10

Is there continuity between TP# 2 and TP# 10 on the PDU?

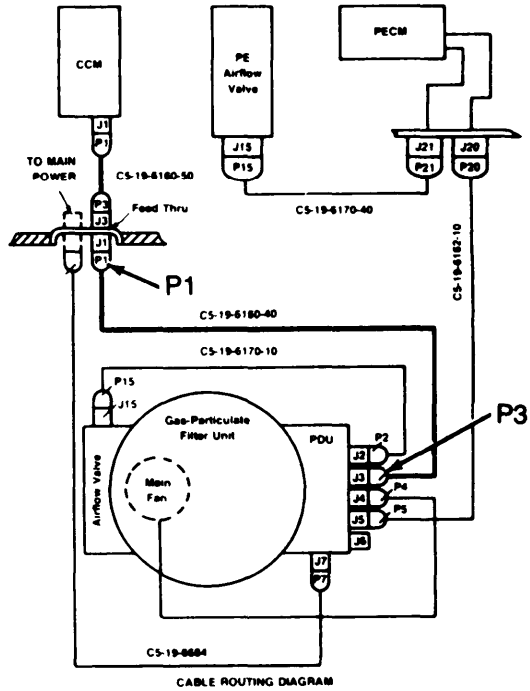
No

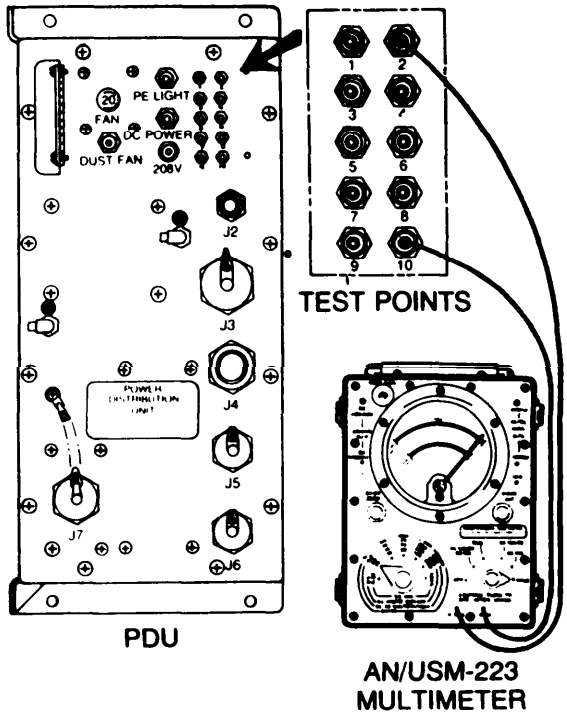
Replace cable C5-19-6160-40 (p. 2-104). Repeat functional test (p. 2-4).

Yes

Reconnect cable C5-19-6160-40

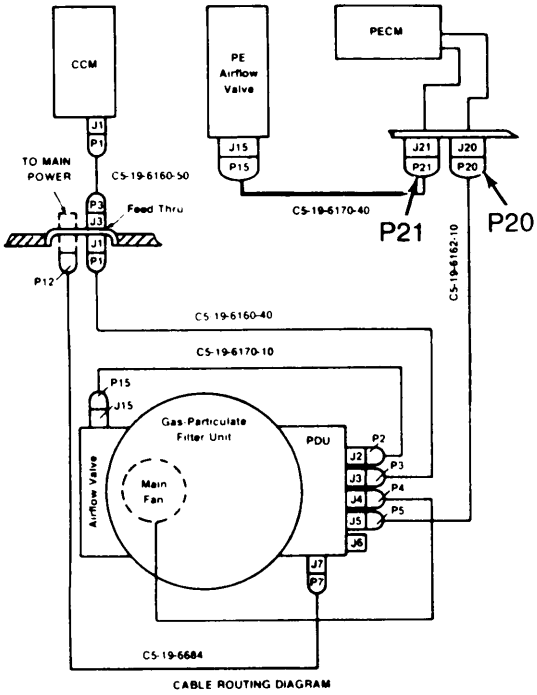
Replace PDU (refer to TM 9-1430-651-12) Repeat functional test (p. 2-4).

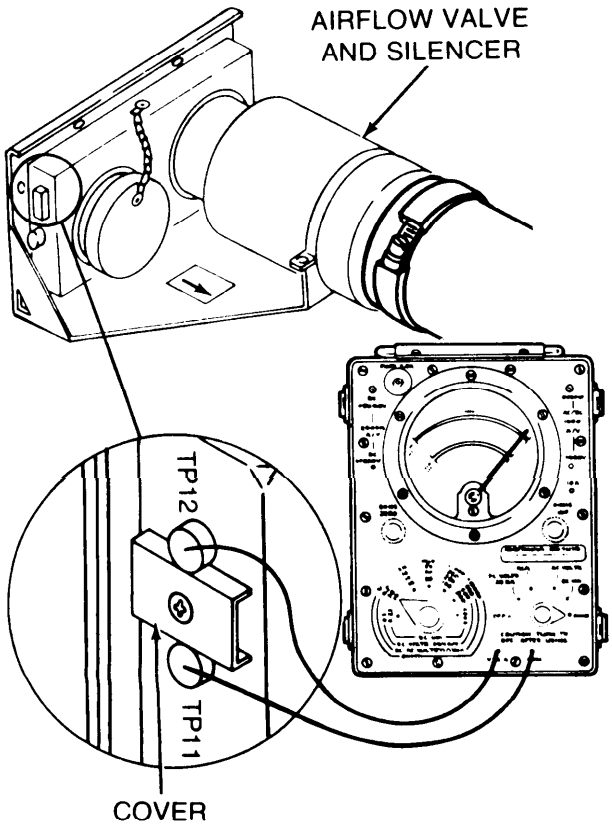




LEGEND

CCM = Compartment Control Module
PDU = Power Distribution Unit
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK





Page 2-23

Connect P20

Loosen test point cover on airflow valve and silencer and rotate it 90°

Check continuity

From	To
TP# 11	GRD
TP# 12	GRD
TP# 11	TP# 12

Is there continuity?

No → Replace PECM (p. 2-63). Repeat functional test (p. 2-4).

Yes → Disconnect P21 at PE

Check continuity

From	To
TP# 11	GRD
TP# 12	GRD
TP# 11	TP# 12

Is there continuity?

No → Replace test point cover → Replace cable C5-19-6170-40 (p. 2-92). Repeat functional test (p. 2-4).

Yes → Reconnect P21 → Replace PE airflow valve (p. 2-89). Repeat functional test (p. 2-4).

LEGEND

GRD = Ground
PE = Protective Entrance
PECM = Protective Entrance Control Module
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK

2. PROTECTIVE ENTRANCE LOW PRESSURE LIGHTS ON (CONT).

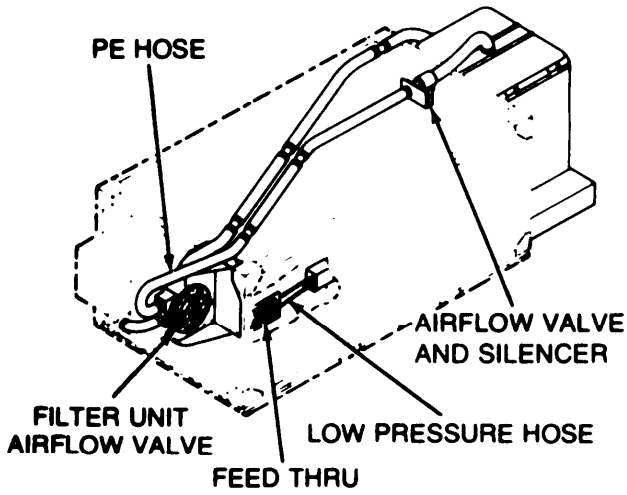
Page 2-22

With the power on and both entrance doors closed, disconnect P15 at PE airflow valve and remove airduct to PE airflow valve and silencer

Is the airflow valve fully open?

No → Proceed to page 2-29

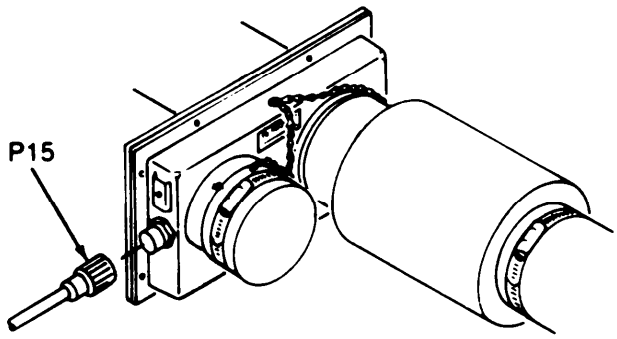
Yes → Remove the hose from the port marked TO PROT ENT on the filter unit airflow valve



Is this port on filter unit airflow valve fully open?

No → Remove low pressure hose connected to CCM at the feed thru. Gently draw air from the hose

Yes → Check PE attachment to shelter and hose for leaks.



Are there any leaks?

No → Is CHANGE FILTER light on?

Yes → Repair leaks

Is CHANGE FILTER light on?

No → Checkout change filter indication system. Refer to troubleshooting procedure 6. CHANGE FILTER light does not illuminate, page 2-46.

Yes → Replace particulate filter (p. 2-69). Repeat functional test (p. 2-4).

Does filter unit airflow valve port (TO PROT ENT) open?

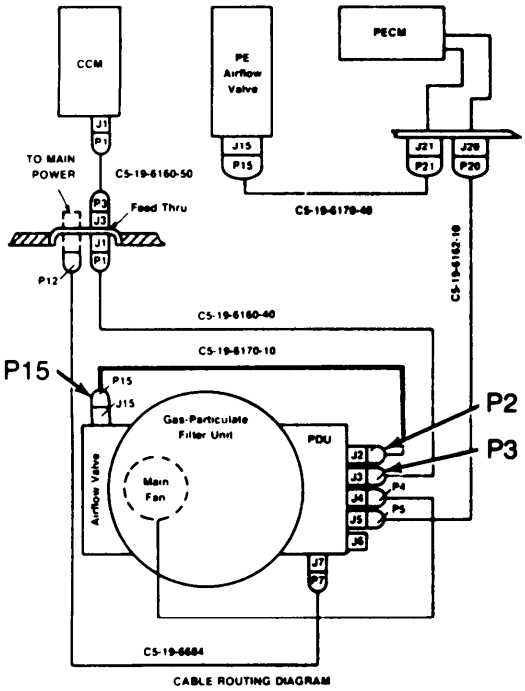
No → Reconnect all cables and hoses → Proceed to page 2-27

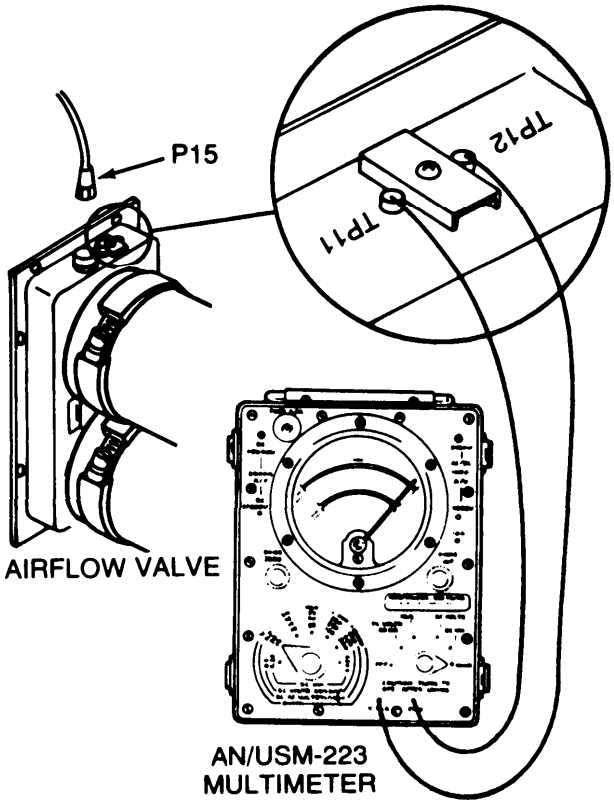
Yes → Reconnect all cables and hoses → Check PE attachment to shelter and hose for leaks. → If there are no leaks, replace PECM (p. 2-63) and repeat functional test (p. 2-4)

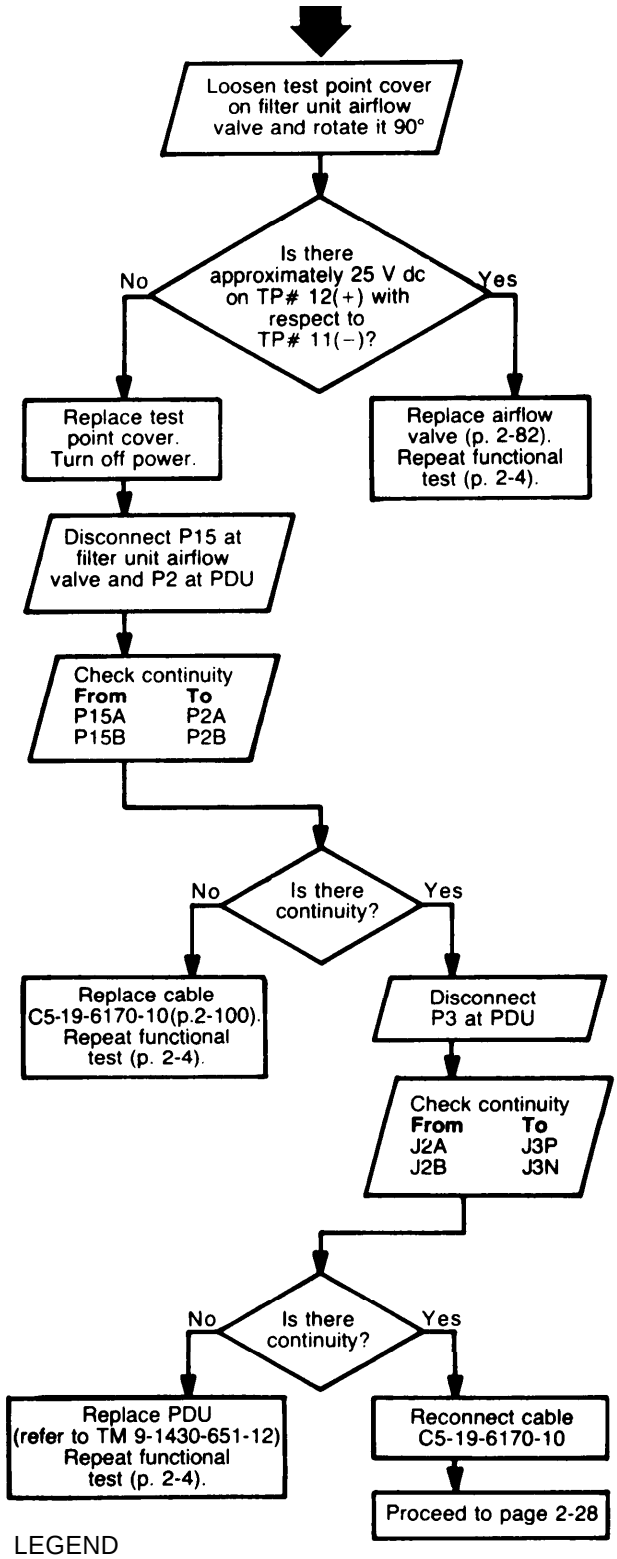
LEGEND

CCM = Compartment Control Module
PE = Protective Entrance
Feed Thru = MCPE/DISPLAY DEMARK

Page 2-26







LEGEND

PDU = Power Distribution Unit
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK

2. PROTECTIVE ENTRANCE LOW PRESSURE LIGHTS ON (CONT).

Page 2-27

Disconnect P1 at feed thru

Check continuity

From	To
P3P	P1P
P3N	P1N

Is there continuity?

No → Replace cable C5-19-6160-40 (p. 2-104). Repeat functional test (p. 2-4).

Yes → Reconnect cable C5-19-6160-40

Disconnect P3 at feed thru and P1 at the CCM

Check continuity

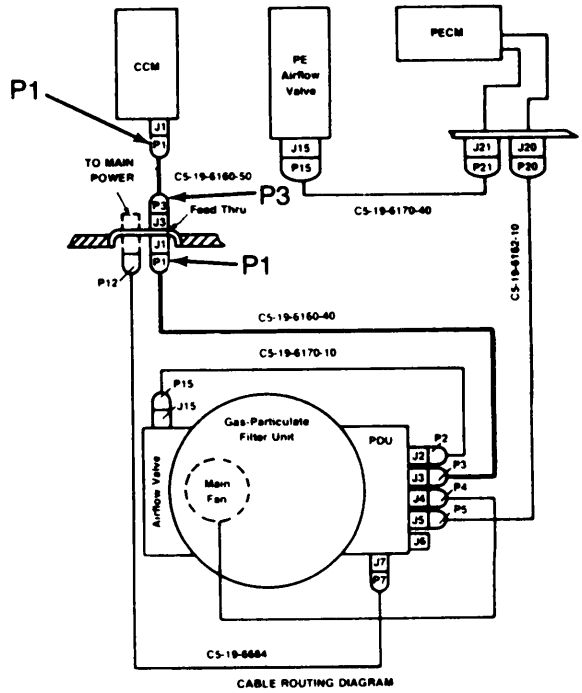
From	To
P3P	P1P
P3N	P1N

Is there continuity?

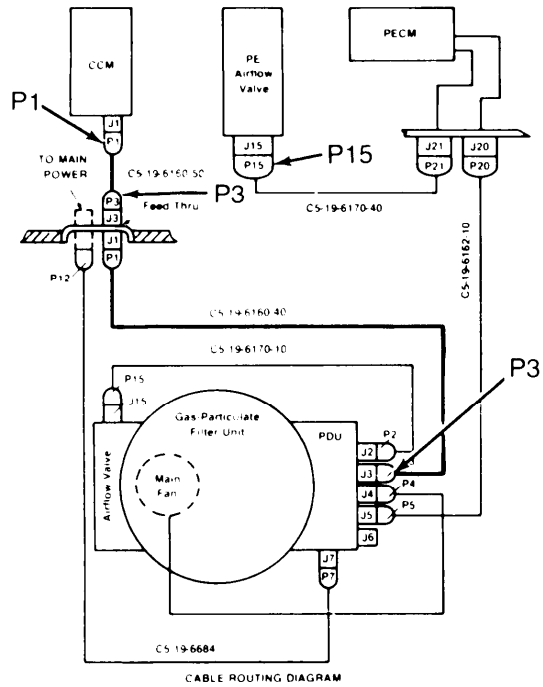
No → Replace cable C5-19-6160-50 (p. 2-102). Repeat functional test (p. 2-4).

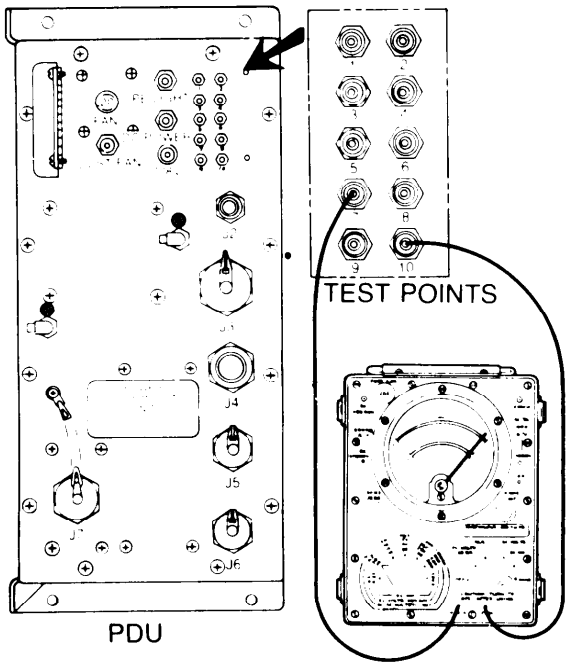
Yes → Reconnect cable C5-19-6160-50

Replace CCM (p. 2-87) Repeat functional test (p. 2-4).



LEGEND
CCM = Compartment Control Module
Feed Thru = MCPE/DISPLAY DEMARK





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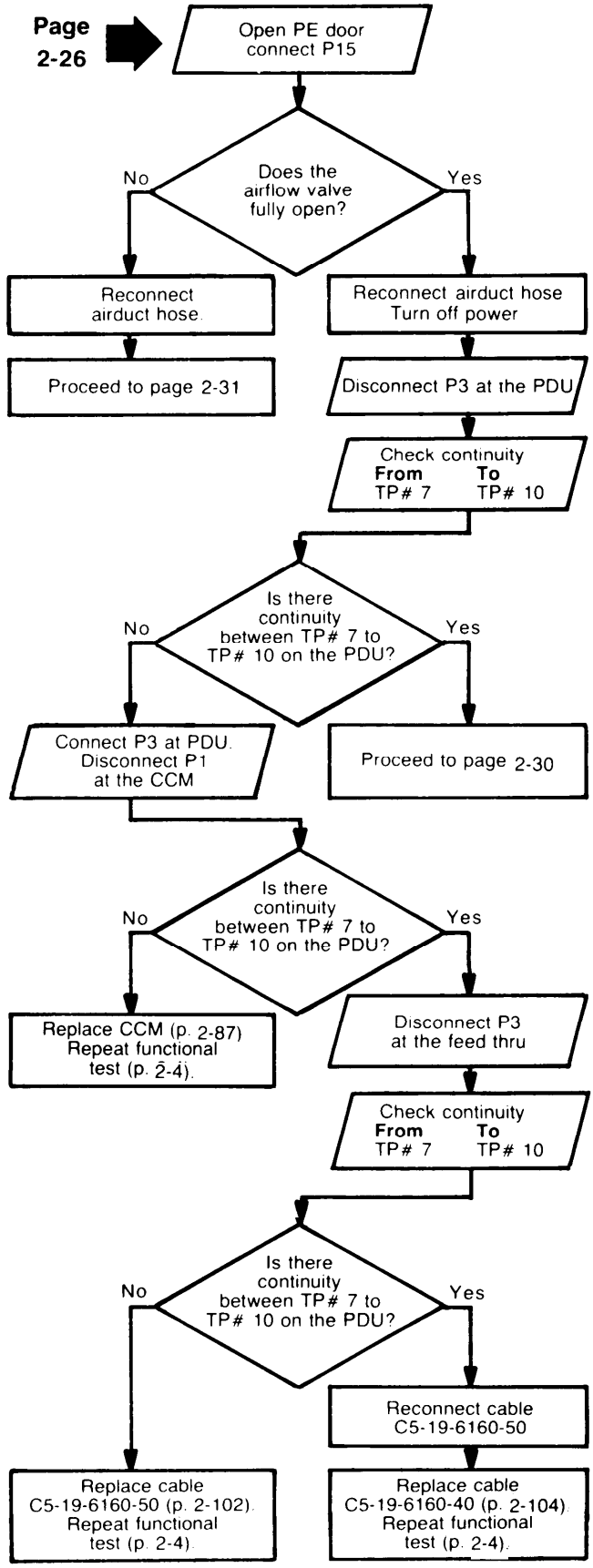
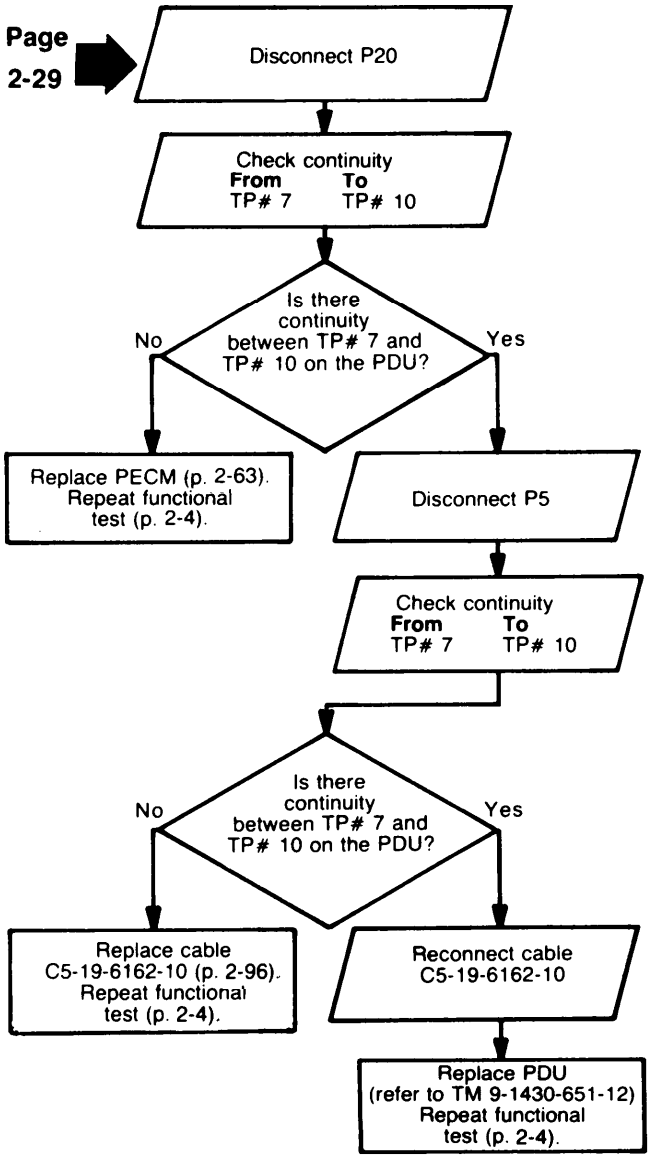
MULTIMETER

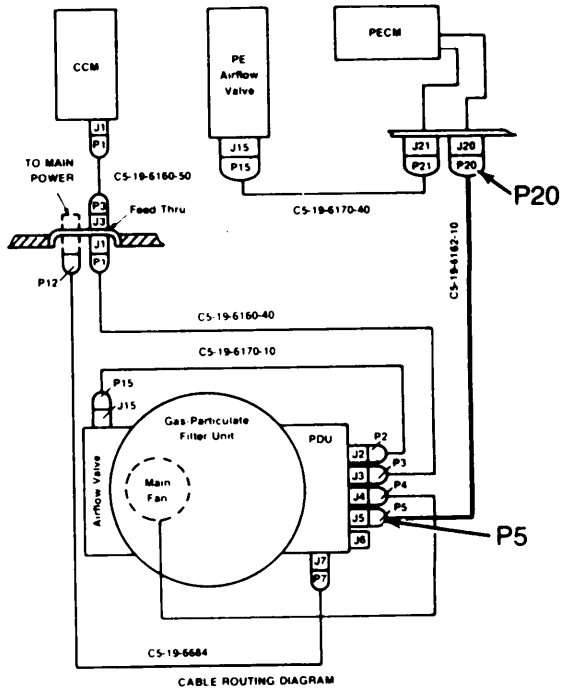
LEGEND

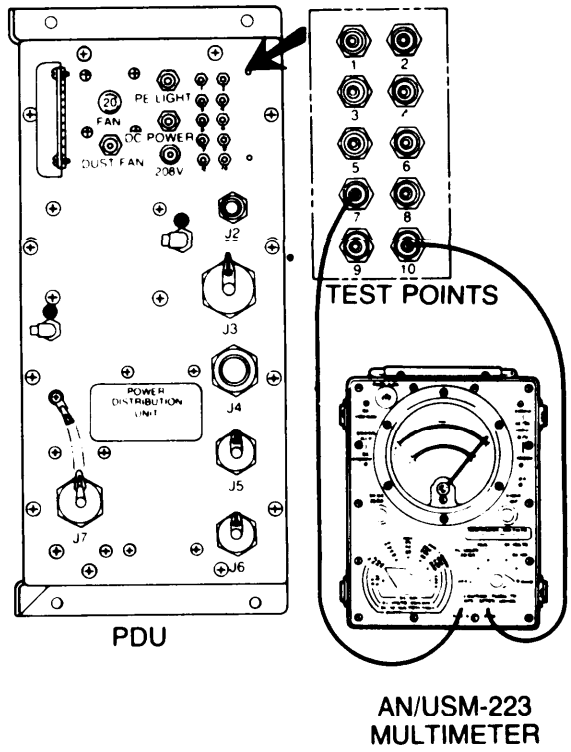
CCM = Compartment Control Module
PDU = Power Distribution Unit
PE = Protective Entrance
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK



2. PROTECTIVE ENTRANCE LOW PRESSURE LIGHTS ON (CONT).

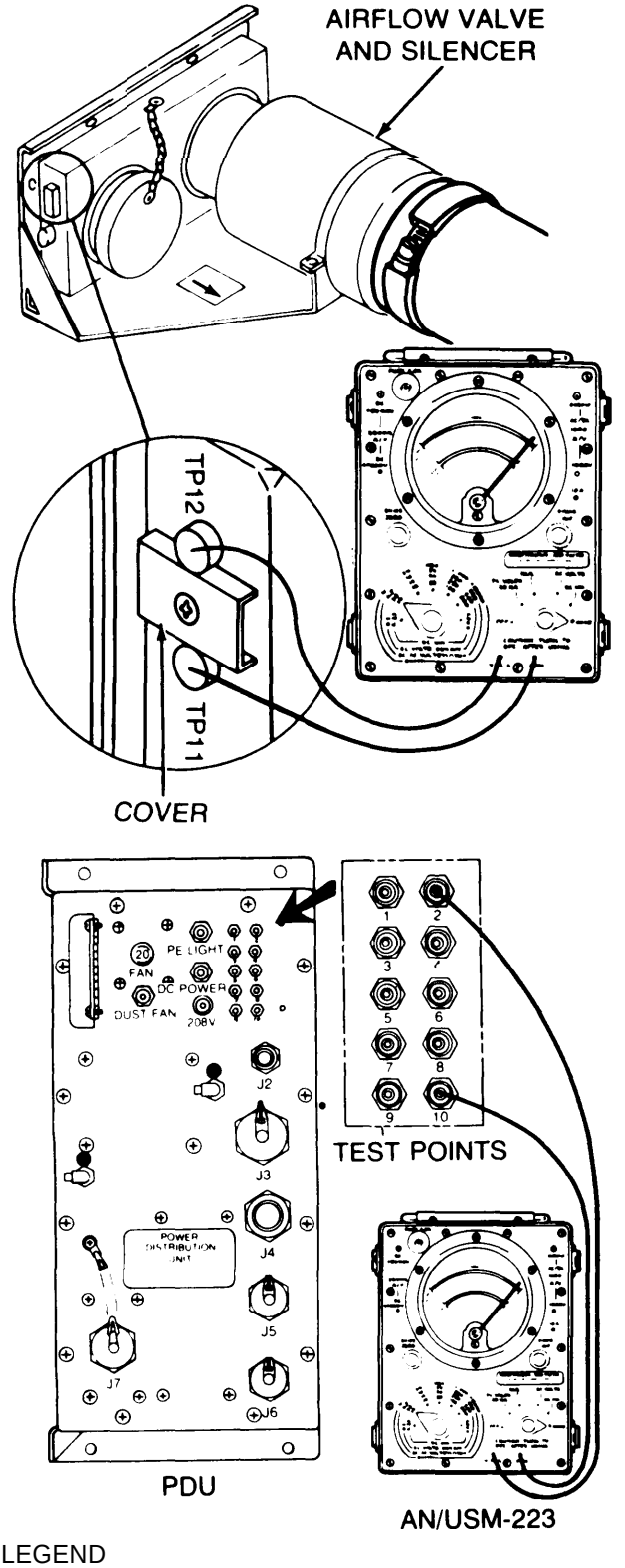




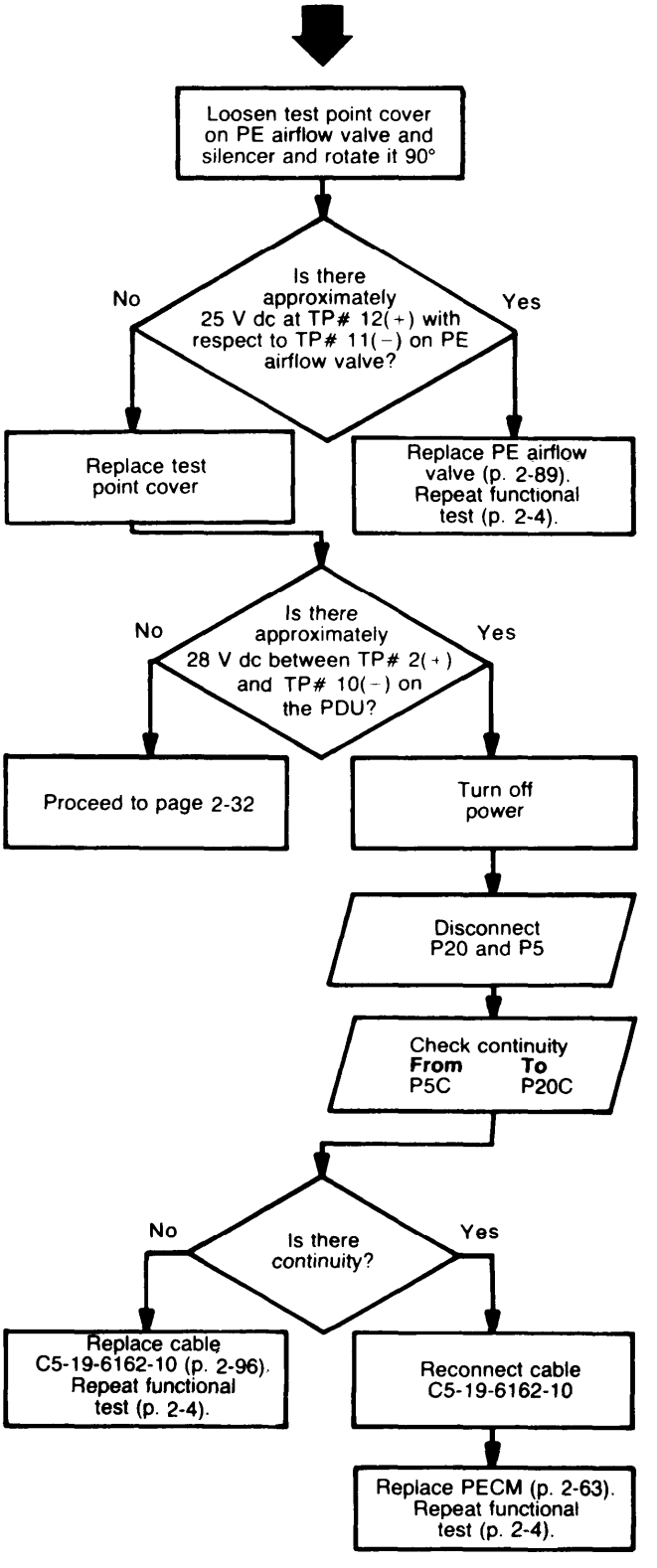


LEGEND

PDU = Power Distribution Unit
PECM = Protective Entrance Control Module
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK



Page 2-29



LEGEND

PDU = Power Distribution Unit
PE = Protective Entrance
PECM = Protective Entrance Control Module
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK

2. PROTECTIVE ENTRANCE LOW PRESSURE LIGHTS ON (CONT).

Page 2-31

Turn off power.
Disconnect P3 at PDU
and P1 at feed thru

Check continuity
From **To**
P3C P1C

Is there continuity?

No

Replace cable C5-19-6160-40 (p. 2-104). Repeat functional test (p. 2-4).

Yes

Reconnect cable C5-19-6160-40

Disconnect P3 at feed thru and P1 at the CCM

Check continuity
From **To**
P3C P1C

Is there continuity?

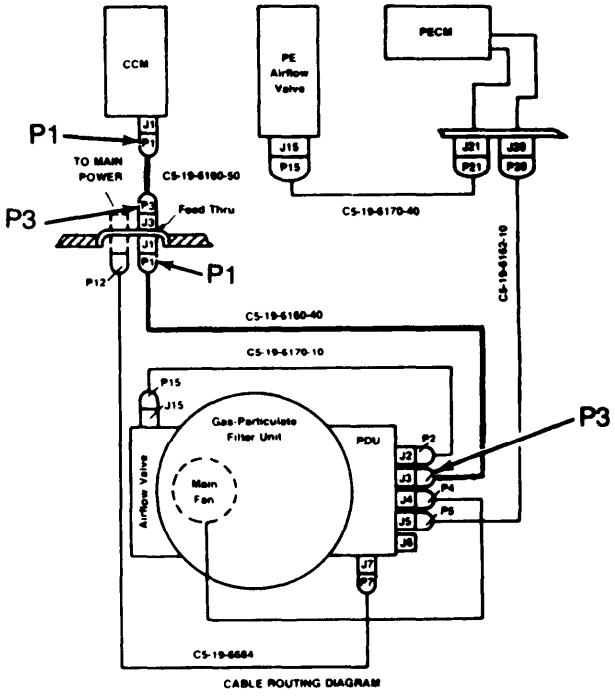
No

Replace cable C5-19-6160-50 (p. 2-102). Repeat functional test (p. 2-4).

Yes

Reconnect cable C5-19-6160-50

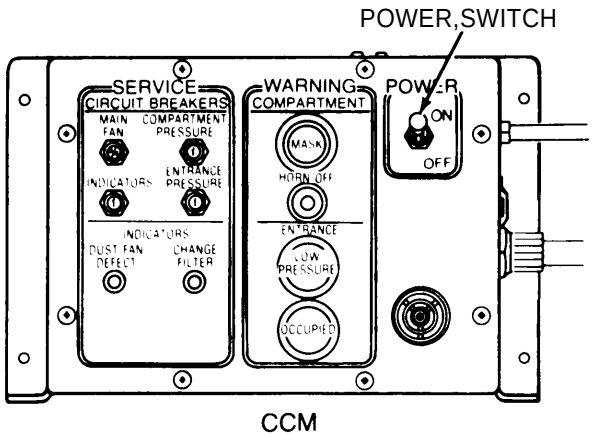
Replace CCM (p. 2-87) Repeat functional test (p. 2-4).



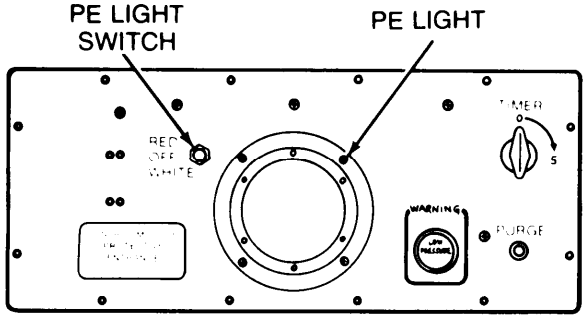
LEGEND

CCM = Compartment Control Module
PDU = Power Distribution Unit
Feed Thru = MCPE/DISPLAY DEMARK

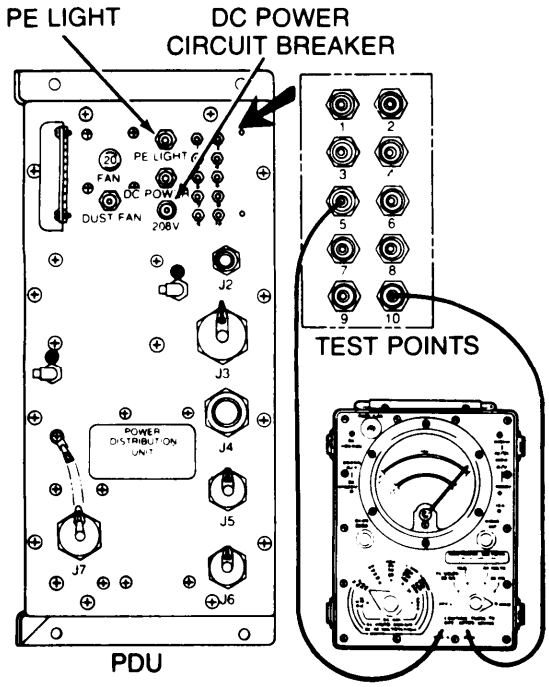
3. NO POWER INDICATION (ALL INDICATOR LIGHTS DO NOT ILLUMINATE WHEN PRESSED TO TEST.)



CCM



PECM



PDU

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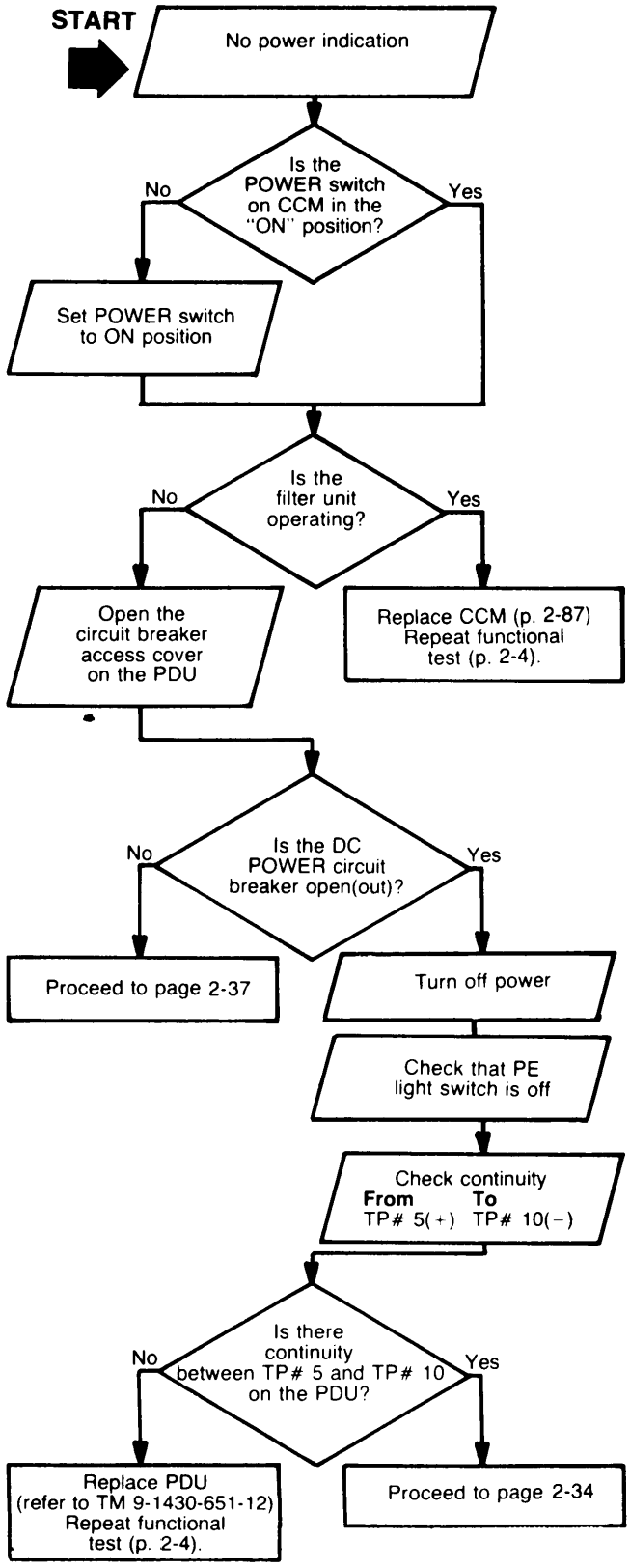


LEGEND

CCM = Compartment Control Module
PDU = Power Distribution Unit
PE = Protective Entrance
PECM = Protective Entrance Control Module
TP = Test Point

3. NO POWER INDICATION (ALL INDICATOR LIGHTS DO NOT ILLUMINATE WHEN PRESSED TO TEST) (CONT).

Page 2-33

Disconnect P1 at the CCM

Check continuity
From TP# 5(+) To TP# 10(−)

Is there continuity between TP# 5 and TP# 10 on the PDU?

No → Replace CCM (p. 2-87) Repeat functional test (p. 2-4).

Yes → Reconnect P1 at CCM

Disconnect P1 at the feed thru

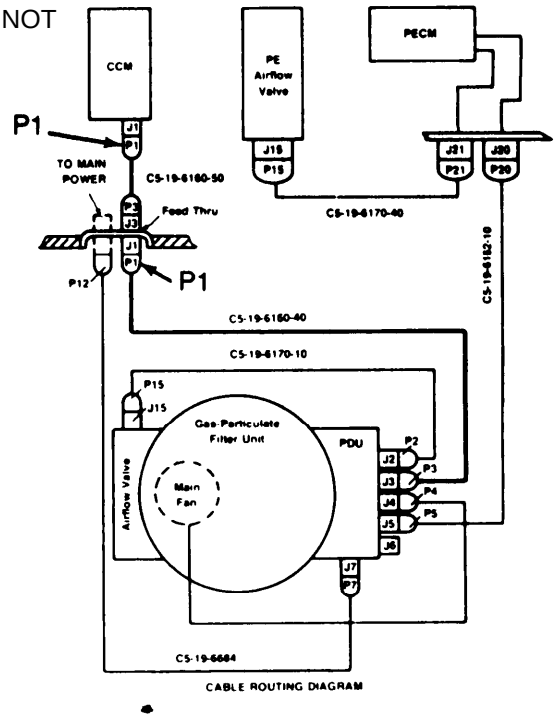
Check continuity
From PDU TP# 5(+) To TP# 10(−)

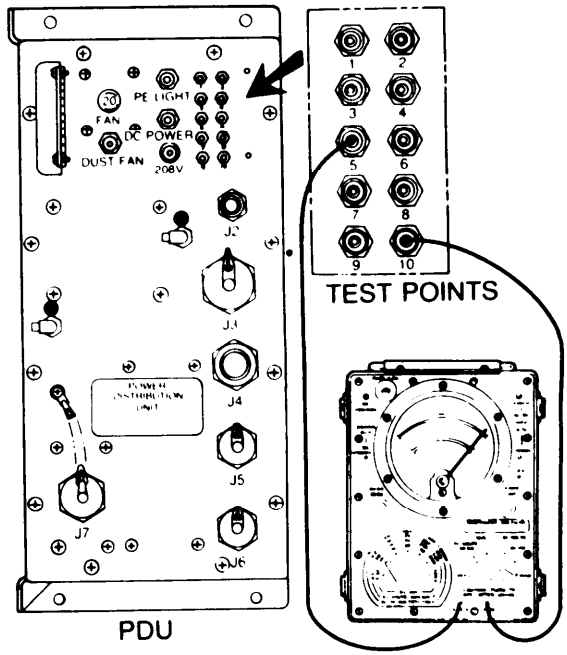
Is there continuity between TP# 5 and TP# 10 on the PDU?

No → Replace cable C5-19-6160-50 (p. 2-102). Repeat functional test (p. 2-4).

Yes → Reconnect P1 at feed thru

Proceed to page 2-35

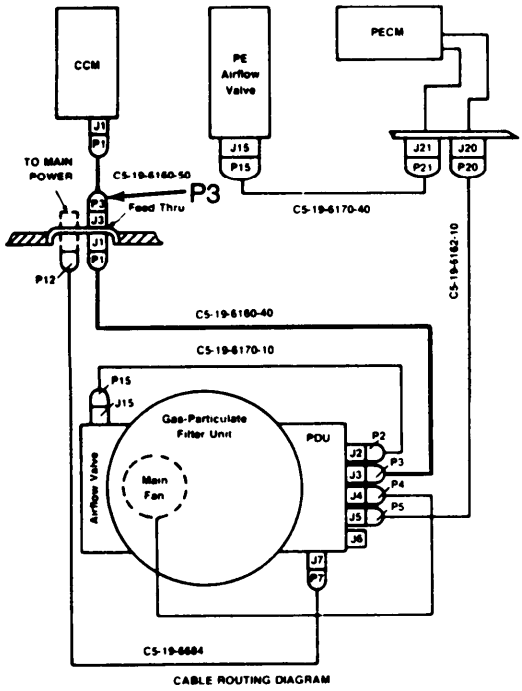




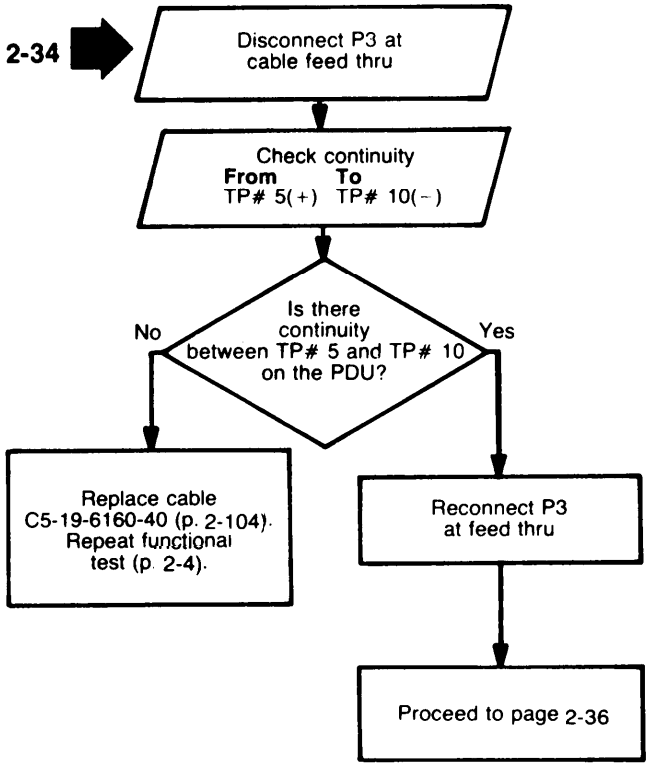
AN/USM-223 MULTIMETER

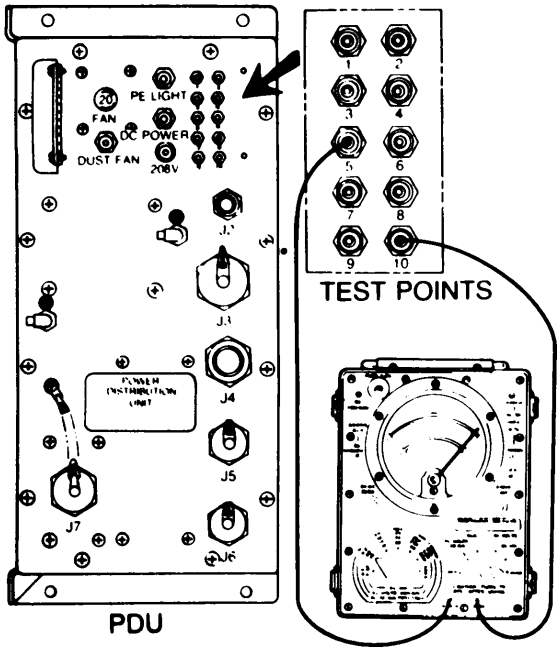
LEGEND

CCM = Compartment Control Module
PDU = Power Distribution Unit
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK



Page 2-34





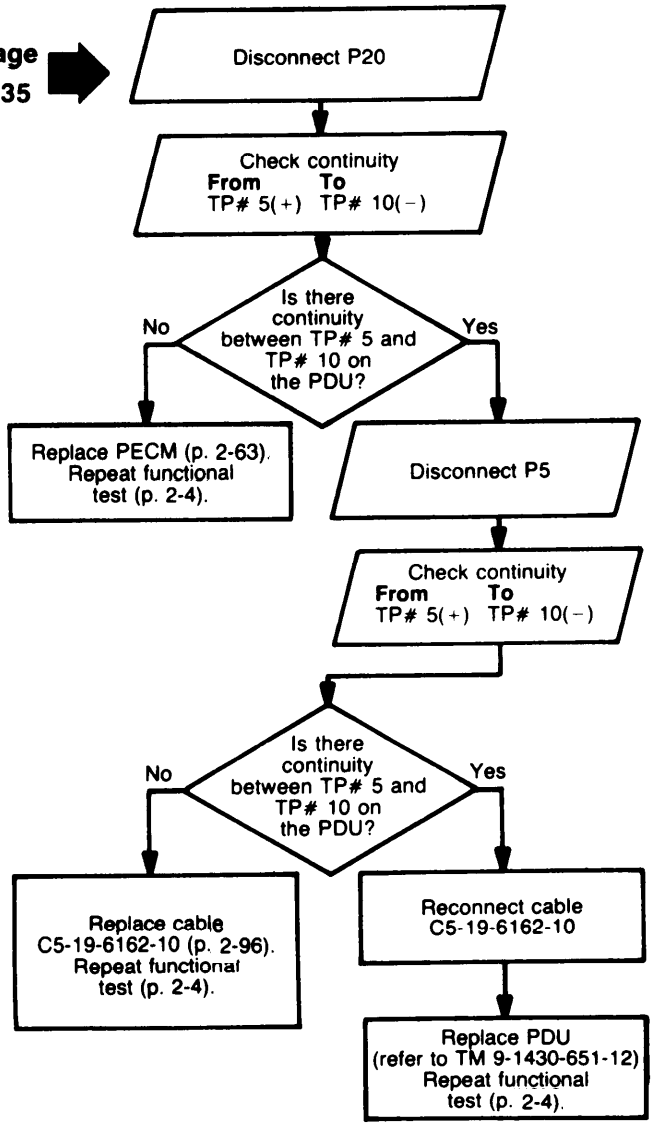
AN/USM-223
MULTIMETER

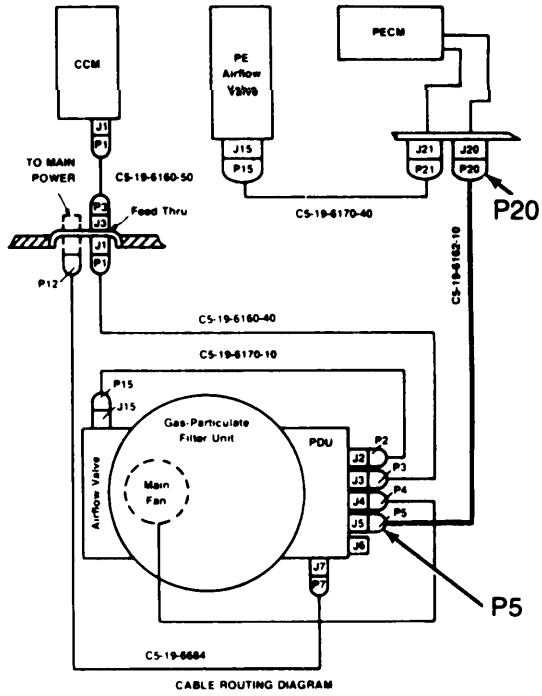
LEGEND

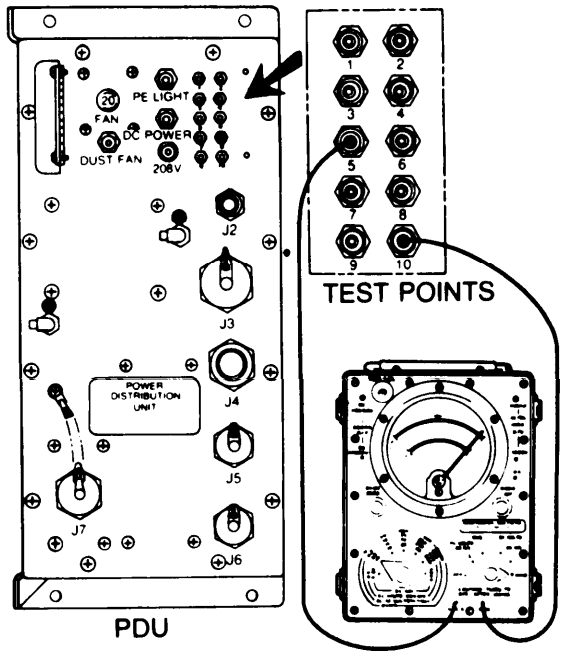
PDU = Power Distribution Unit
PECM = Protective Entrance Control Module
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK

3. NO POWER INDICATION (ALL INDICATOR LIGHTS DO NOT ILLUMINATE WHEN PRESSED TO TEST) (CONT).

Page 2-35



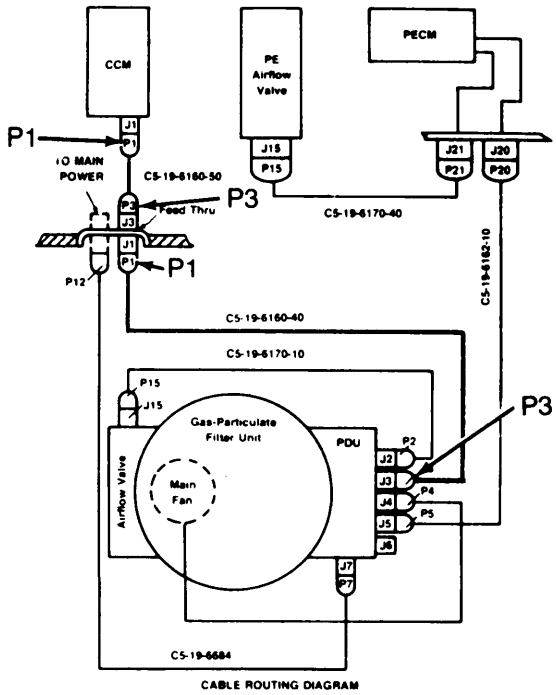




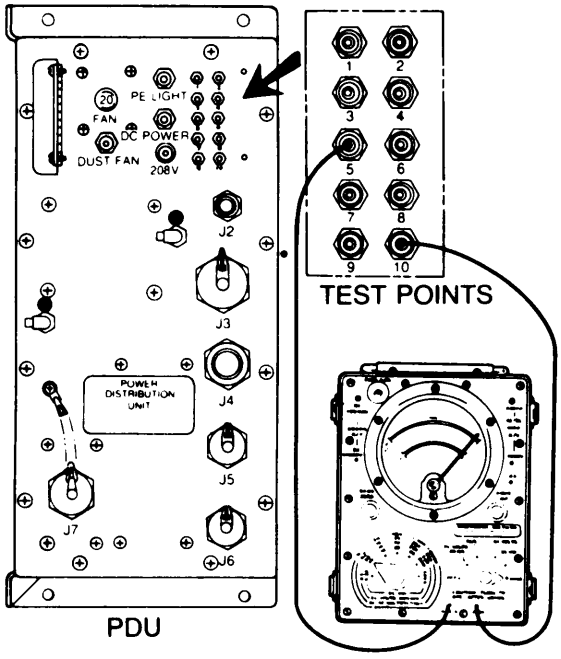
AN/USM-223
MULTIMETER

LEGEND

PDU = Power Distribution Unit
PECM = Protective Entrance Control Module
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK



CABLE ROUTING DIAGRAM



PDU

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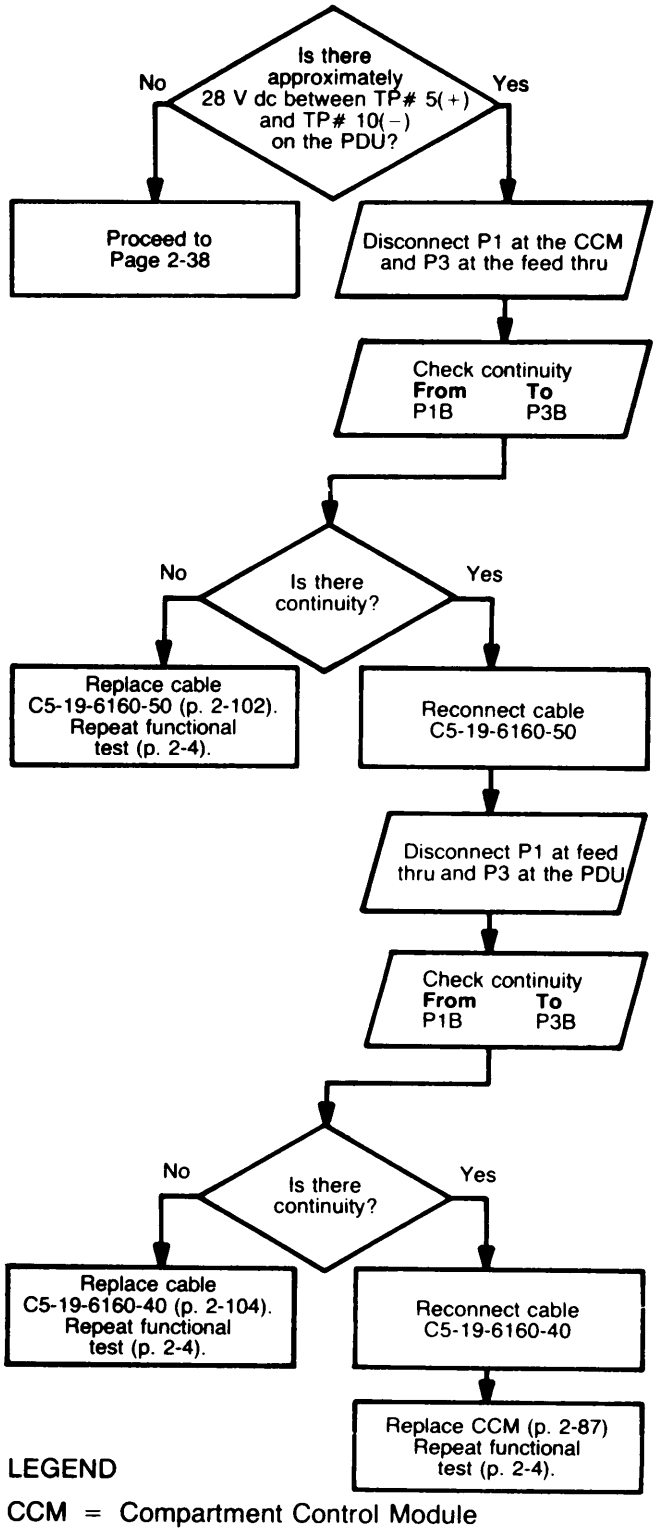
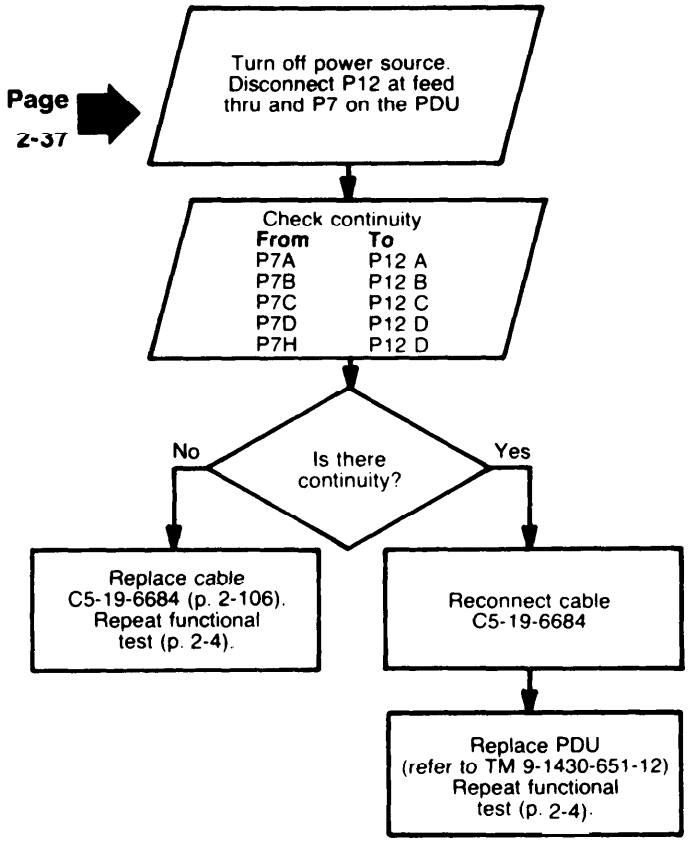
Page 2-33

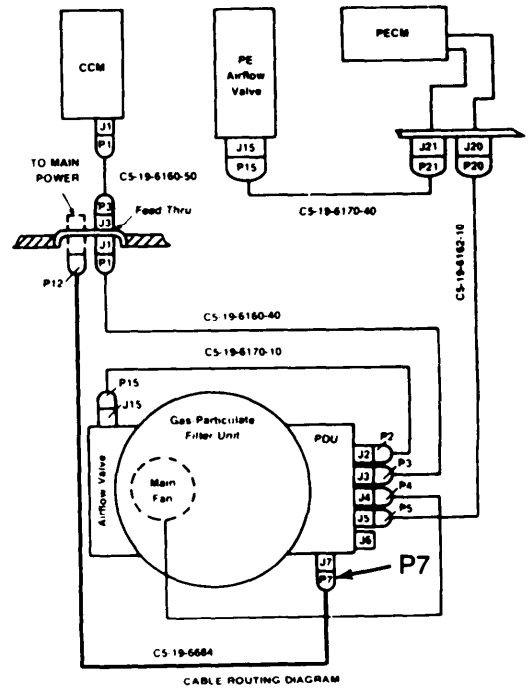


LEGEND

CCM = Compartment Control Module
PDU = Power Distribution Unit
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK

3. NO POWER INDICATION (ALL INDICATOR LIGHTS DO NOT ILLUMINATE WHEN PRESSED TO TEST) (CONT).

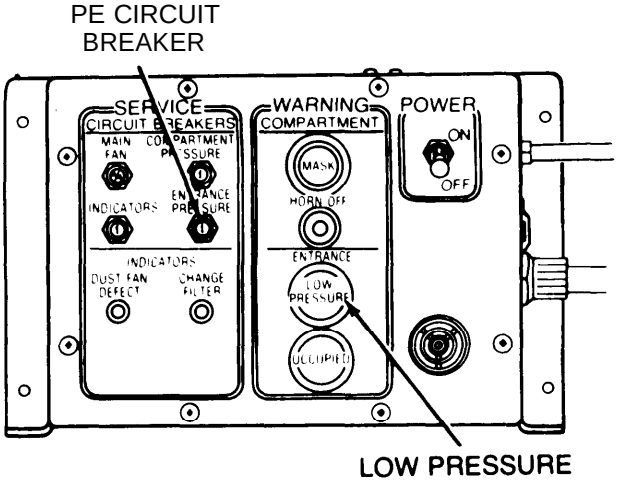




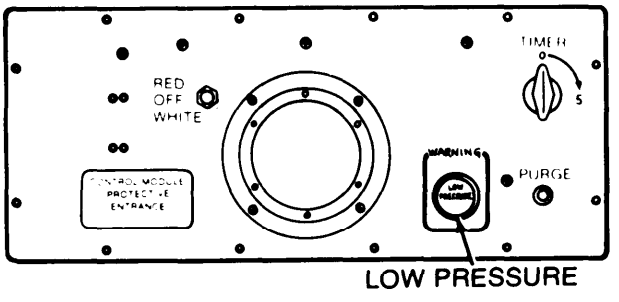
LEGEND

PDU = Power Distribution Unit
Feed Thru = MCPE/DISPLAY DEMARK

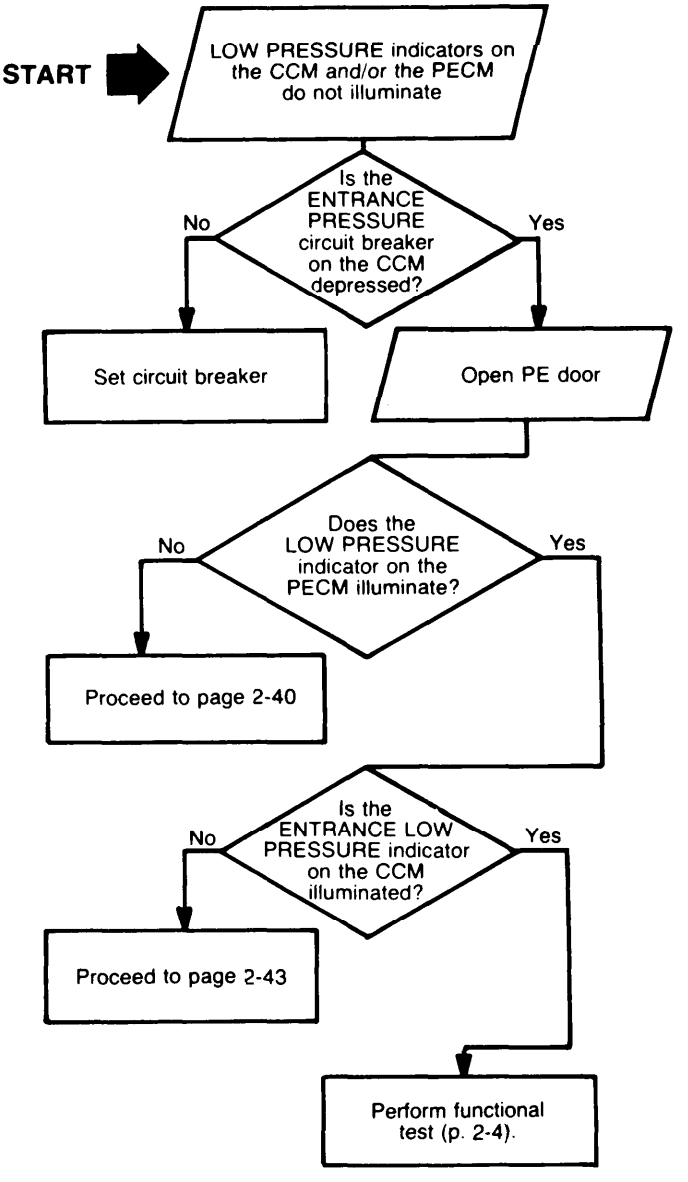
4. PROTECTIVE ENTRANCE LOW PRESSURE LIGHTS WILL NOT COME ON.



CCM



PECM

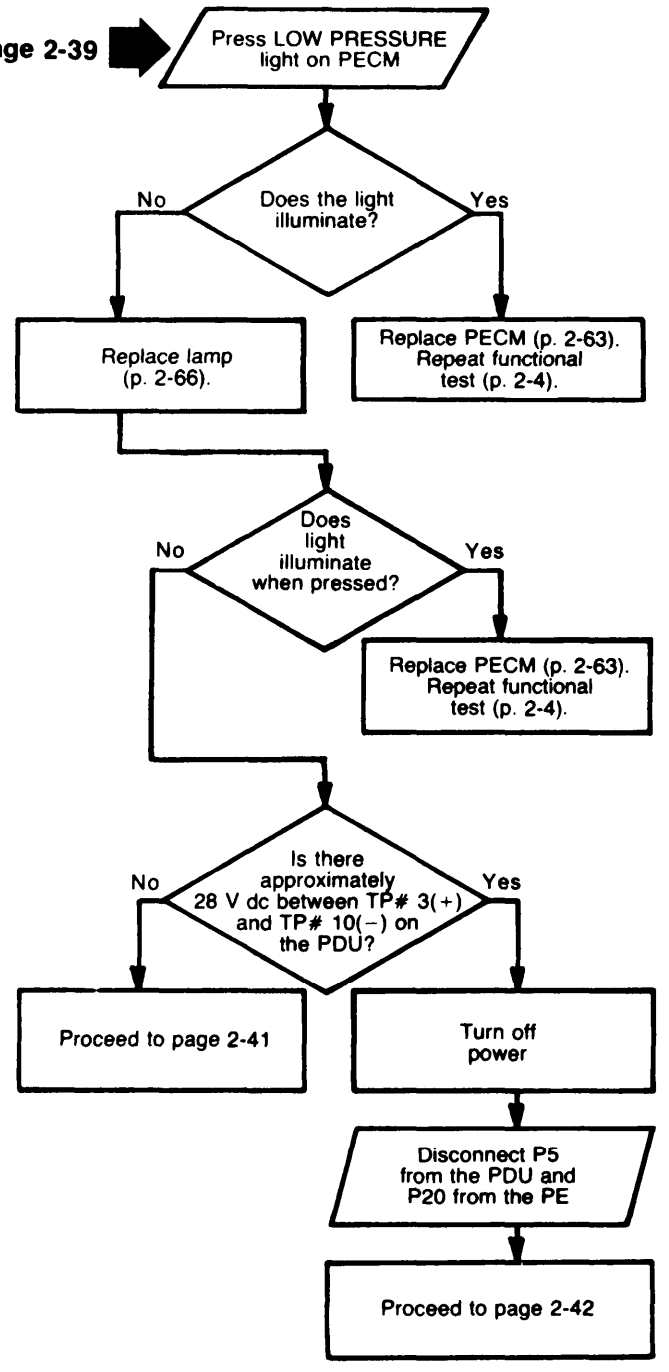


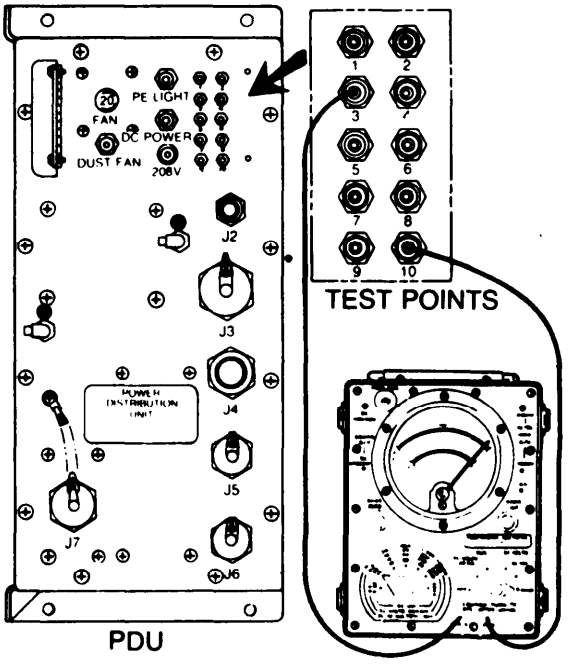
LEGEND

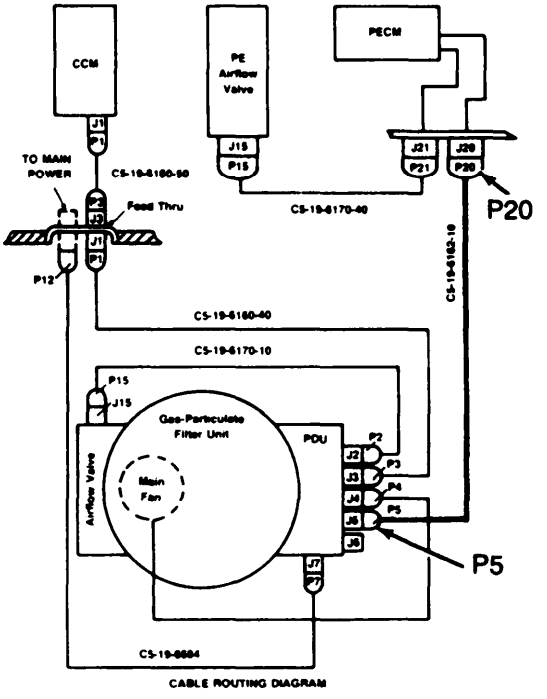
CCM = Compartment Control Module
PE = Protective Entrance
PECM = Protective Entrance Control Module

4. PROTECTIVE ENTRANCE LOW PRESSURE LIGHTS WILL NOT COME ON (CONT).

Page 2-39

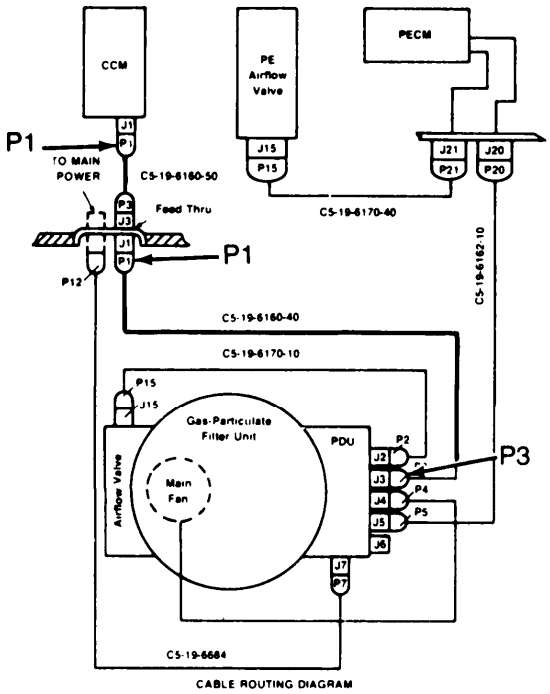






LEGEND

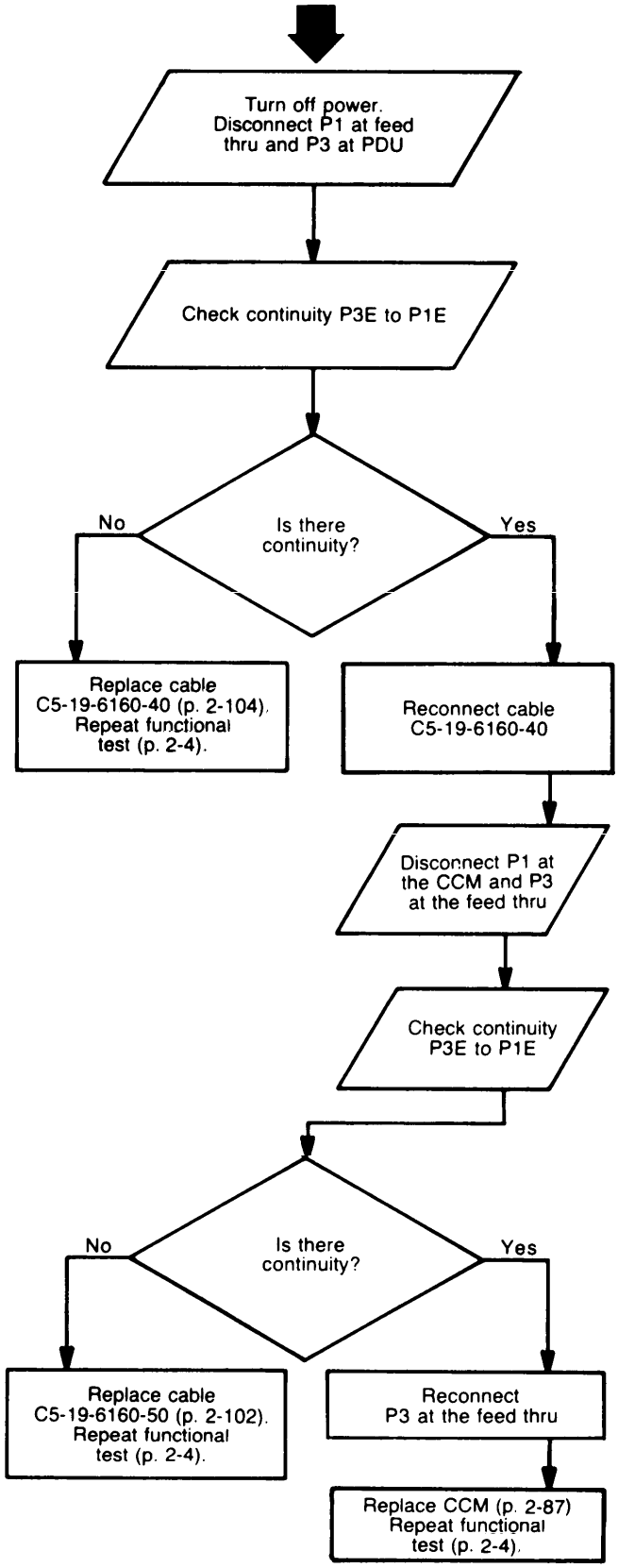
PDU = Power Distribution Unit
PE = Protective Entrance
PECM = Protective Entrance Control Module
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK



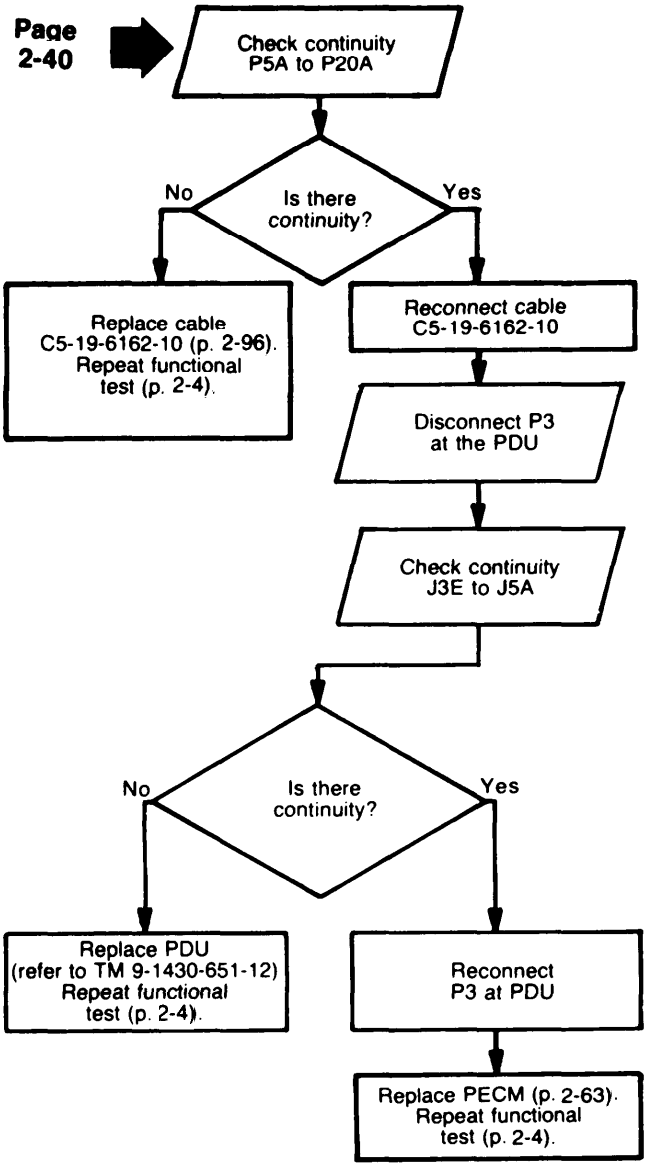
LEGEND

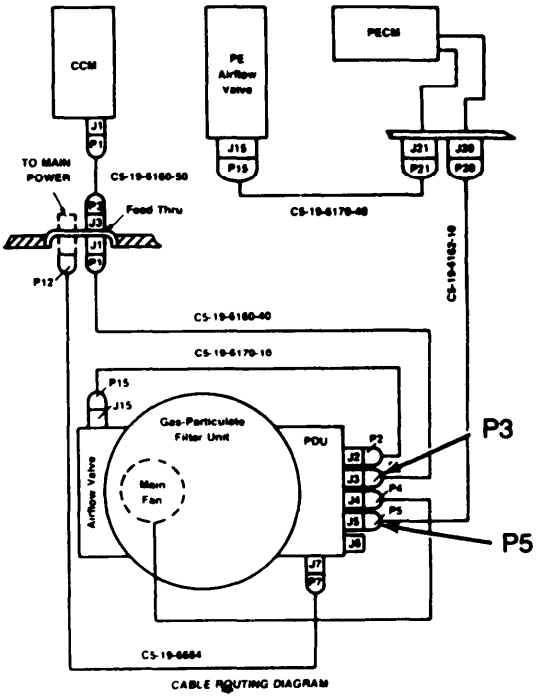
CCM = Compartment Control Module
PDU = Power Distribution Unit
Feed Thru = MCPE/DISPLAY DEMARK

Page 2-40



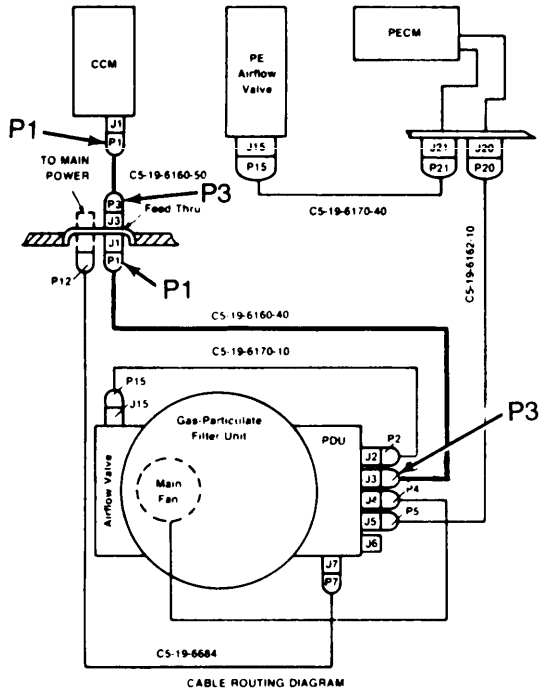
4. PROTECTIVE ENTRANCE LOW PRESSURE LIGHTS WILL NOT COME ON (CONT).

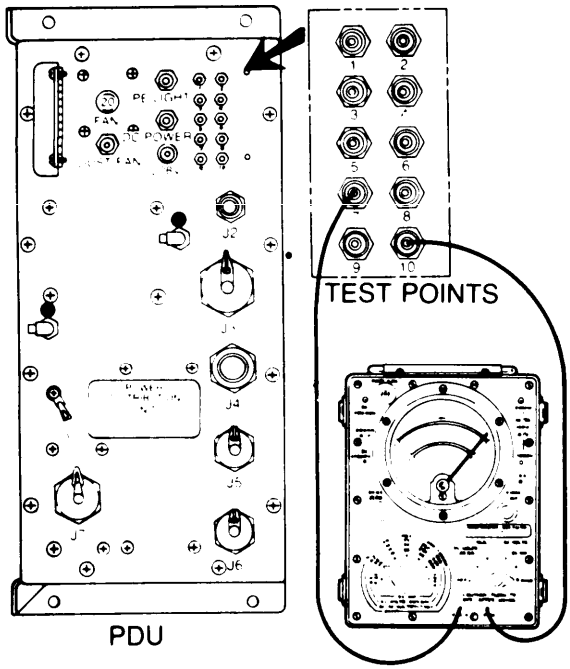




LEGEND

PDU = Power Distribution Unit
PECM = Protective Entrance Control Module
Feed Thru = MCPE/DISPLAY DEMARK





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LEGEND

CCM = Compartment Control Module
PDU = Power Distribution Unit
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK

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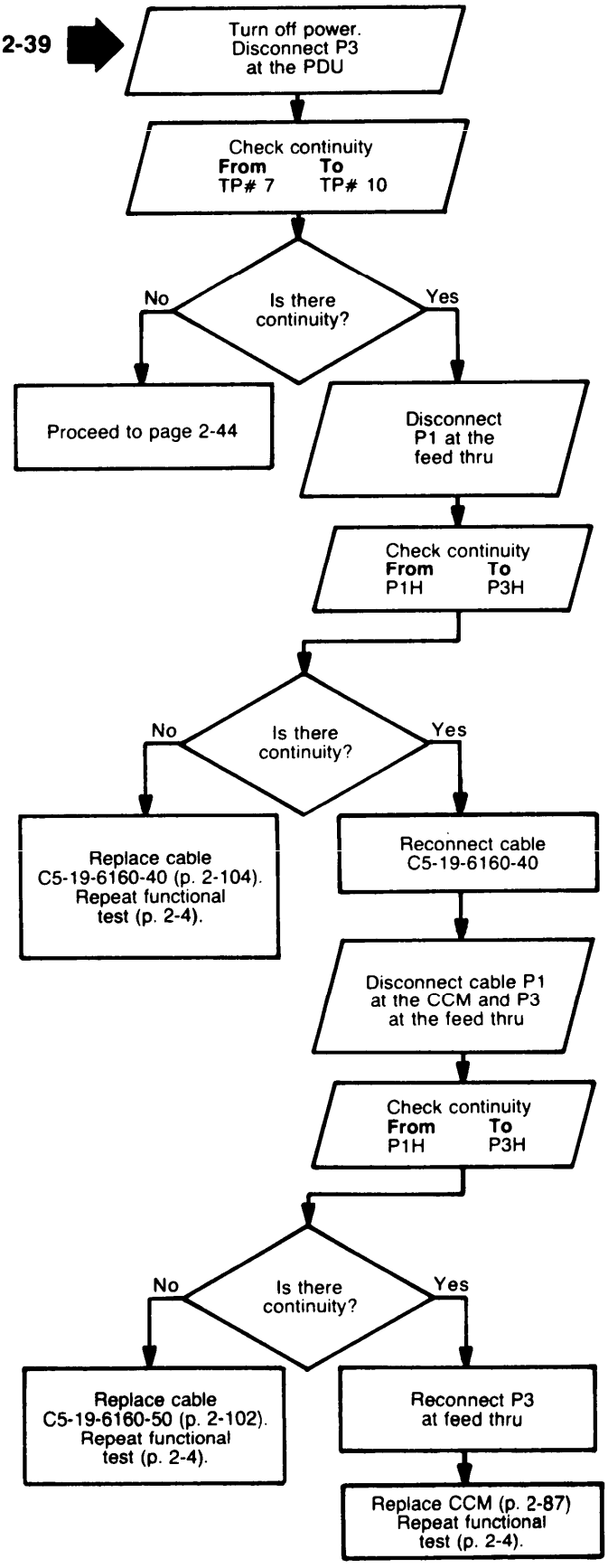

4. PROTECTIVE ENTRANCE LOW PRESSURE LIGHTS WILL NOT COME ON (CONT).

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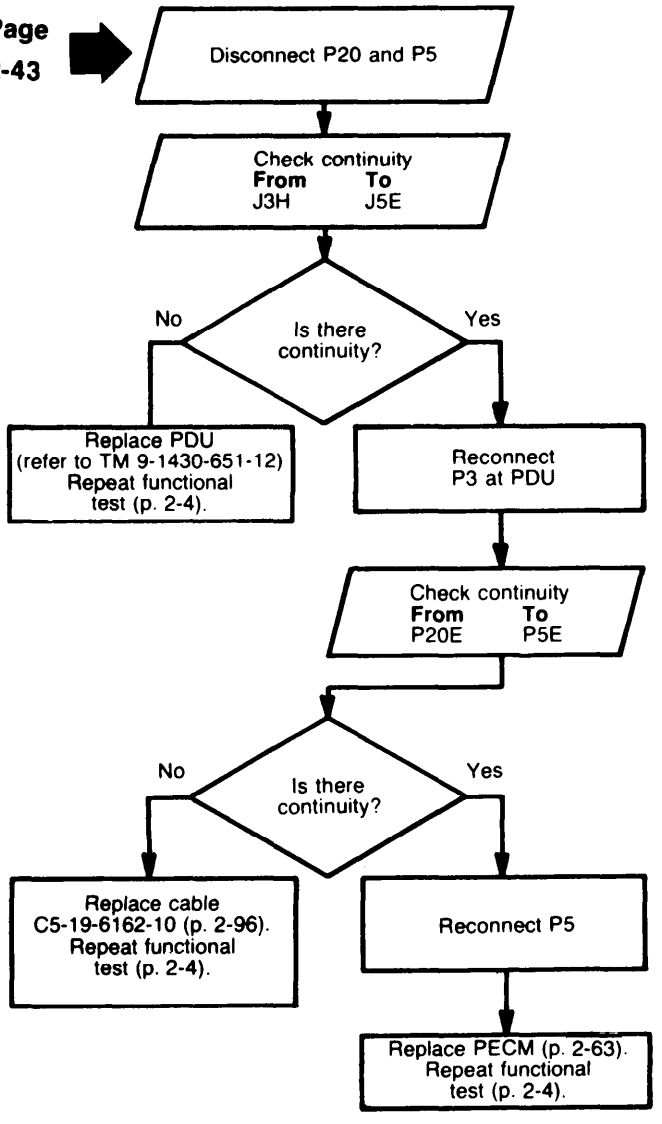
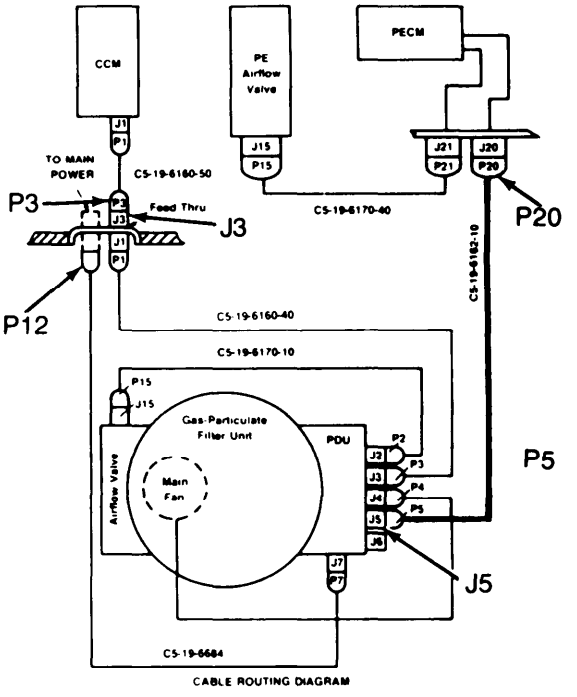
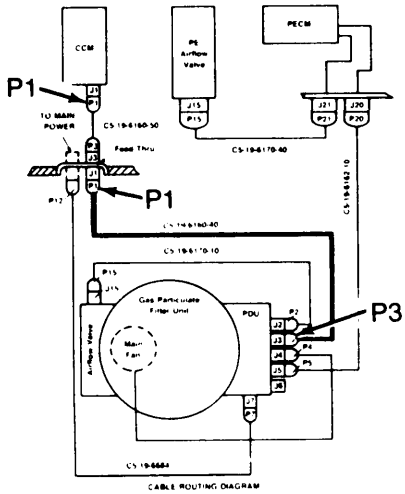
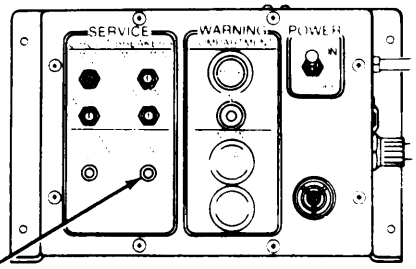


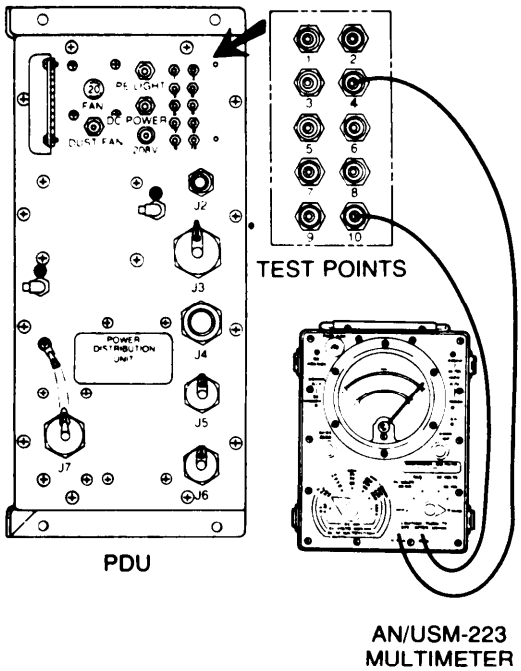


LEGEND

PDU = Power Distribution Unit
PECM = Protective Entrance Control Module
Feed Thru = MCPE/DISPLAY DEMARK

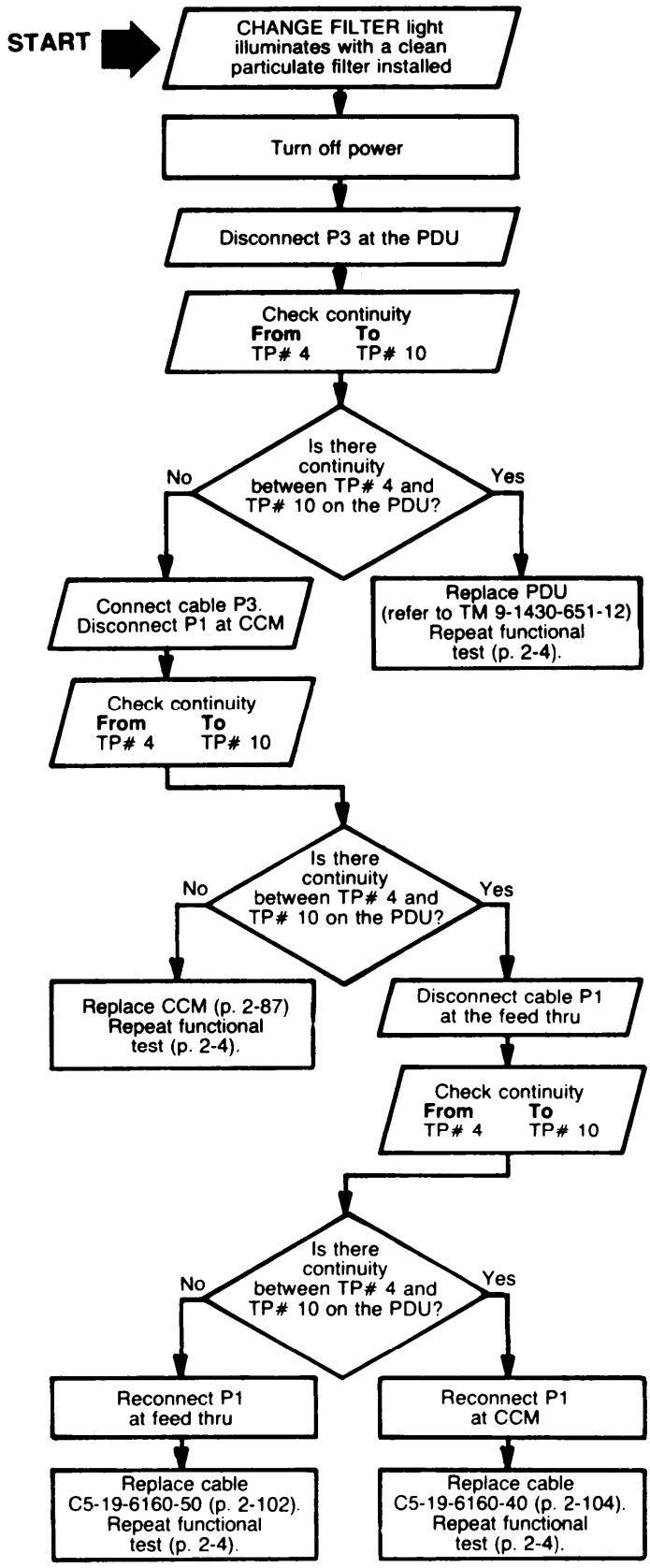




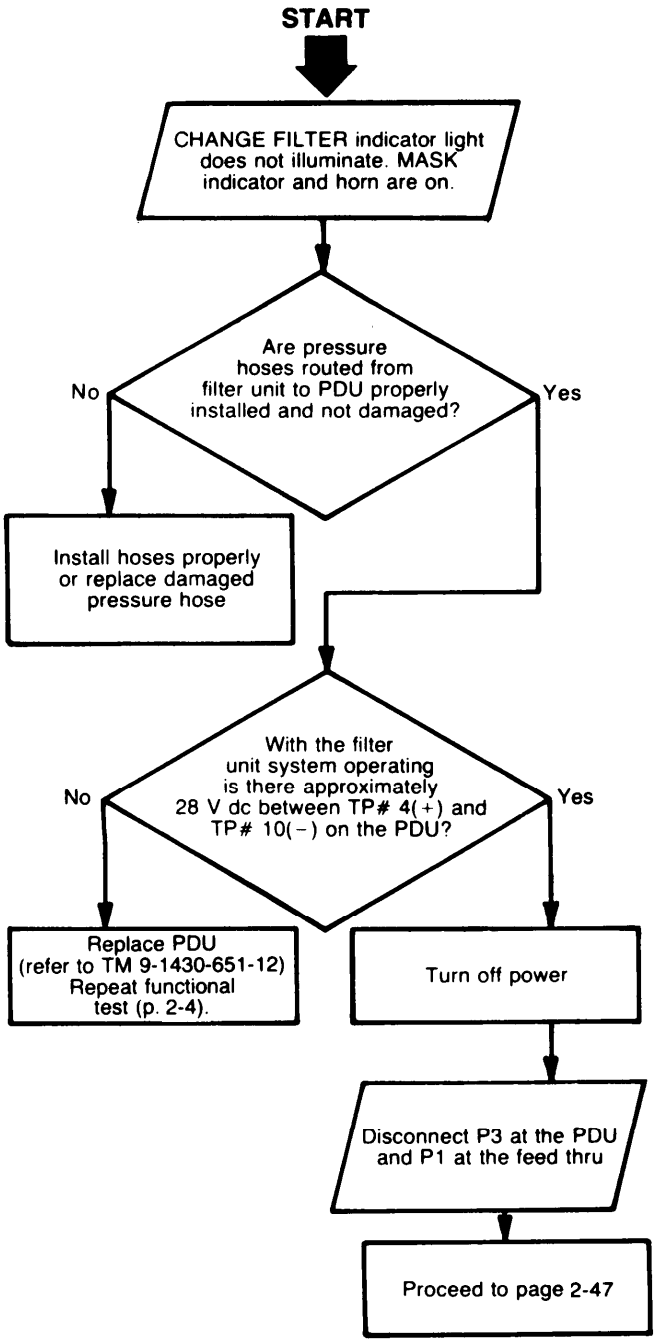


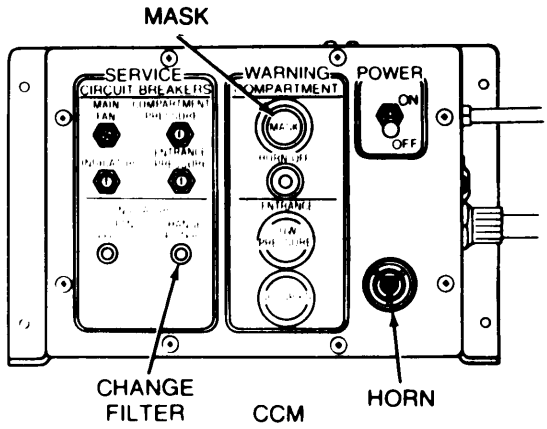
CCM = Compartment Control Module
PDU = Power Distribution Unit
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK

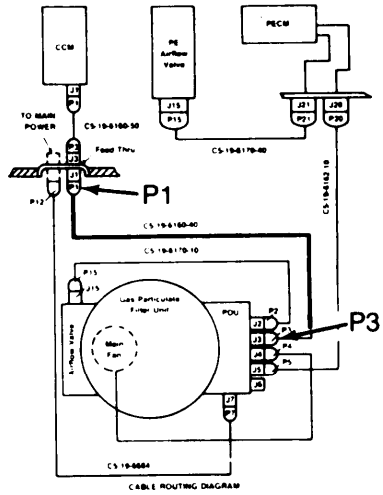
5. CHANGE FILTER LIGHTS WITH CLEAN FILTER.

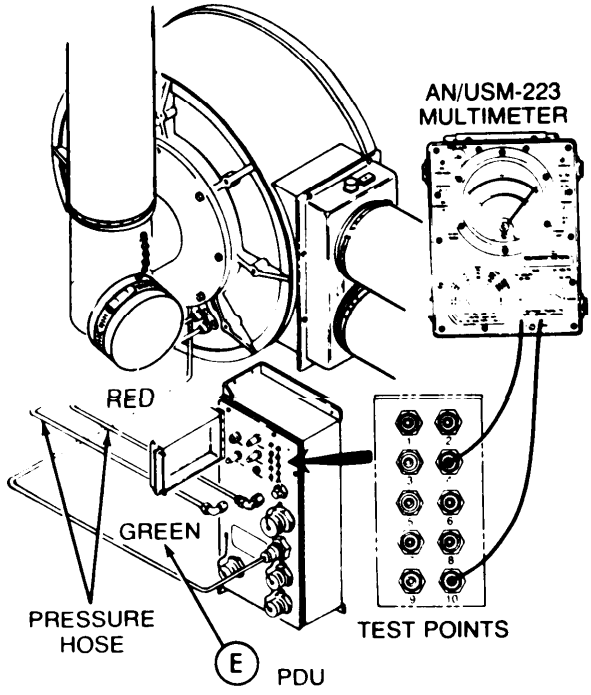


6. CHANGE FILTER LIGHT DOES NOT LIGHT.



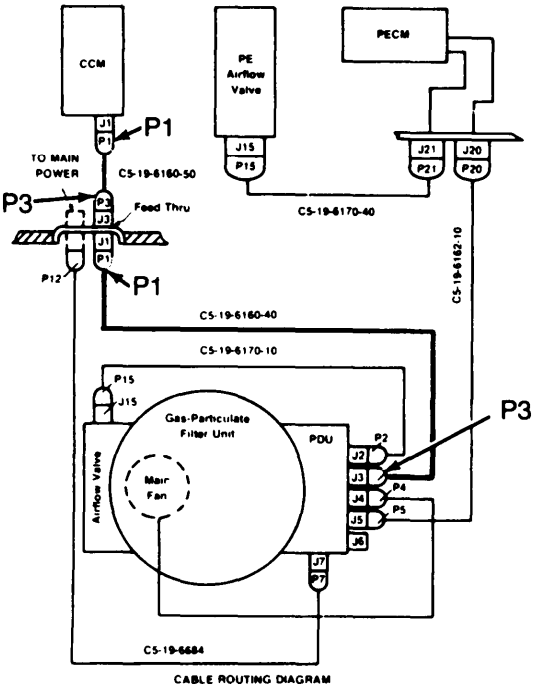






LEGEND

PDU = Power Distribution Unit
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK



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Check continuity
From P1F **To** P3F

Is there continuity?

No → Replace cable C5-19-6160-40 (p. 2-104). Repeat functional test (p. 2-4).

Yes → Reconnect cable C5-19-6160-40

Disconnect P3 at the feed thru and P1 at the CCM

Check continuity
From P1F **To** P3F

Is there continuity?

No → Replace cable C5-19-6160-50 (p. 2-102). Repeat functional test (p. 2-4).

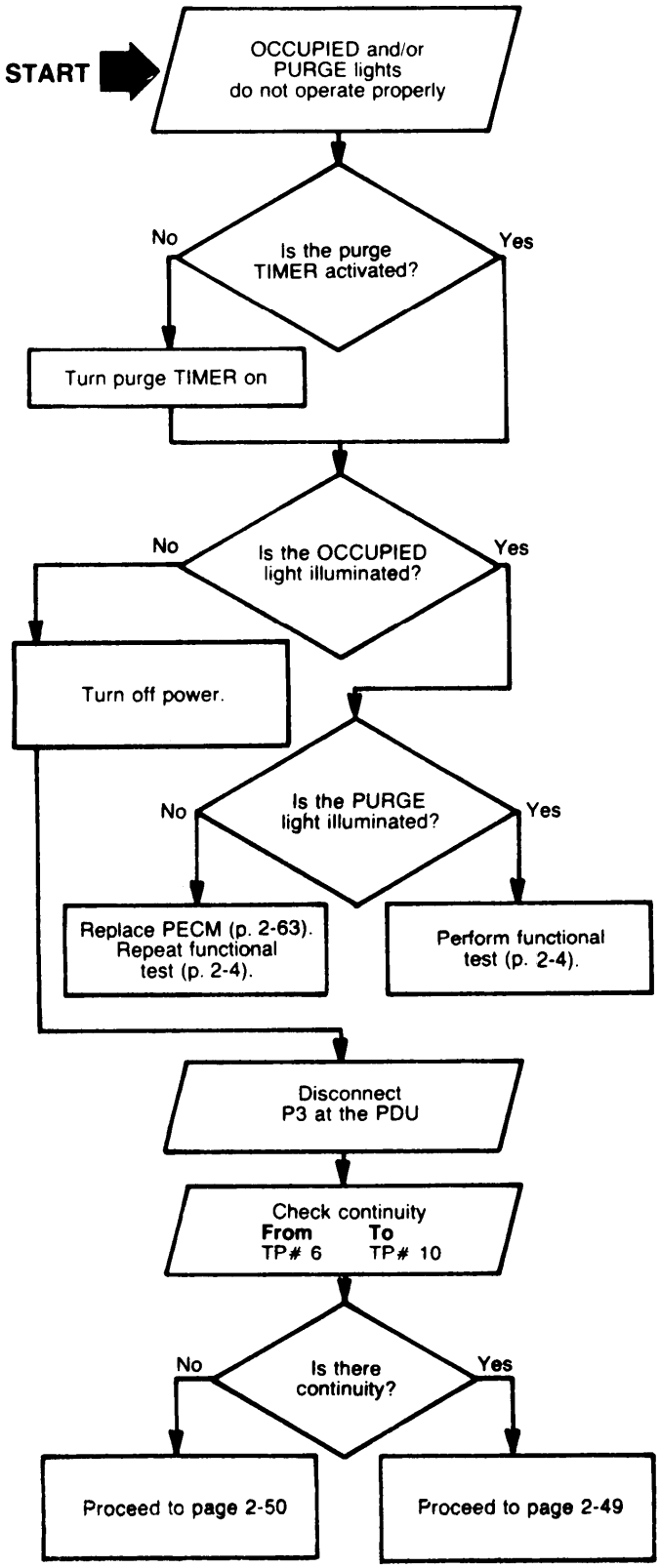
Yes → Reconnect cable C5-19-6160-50

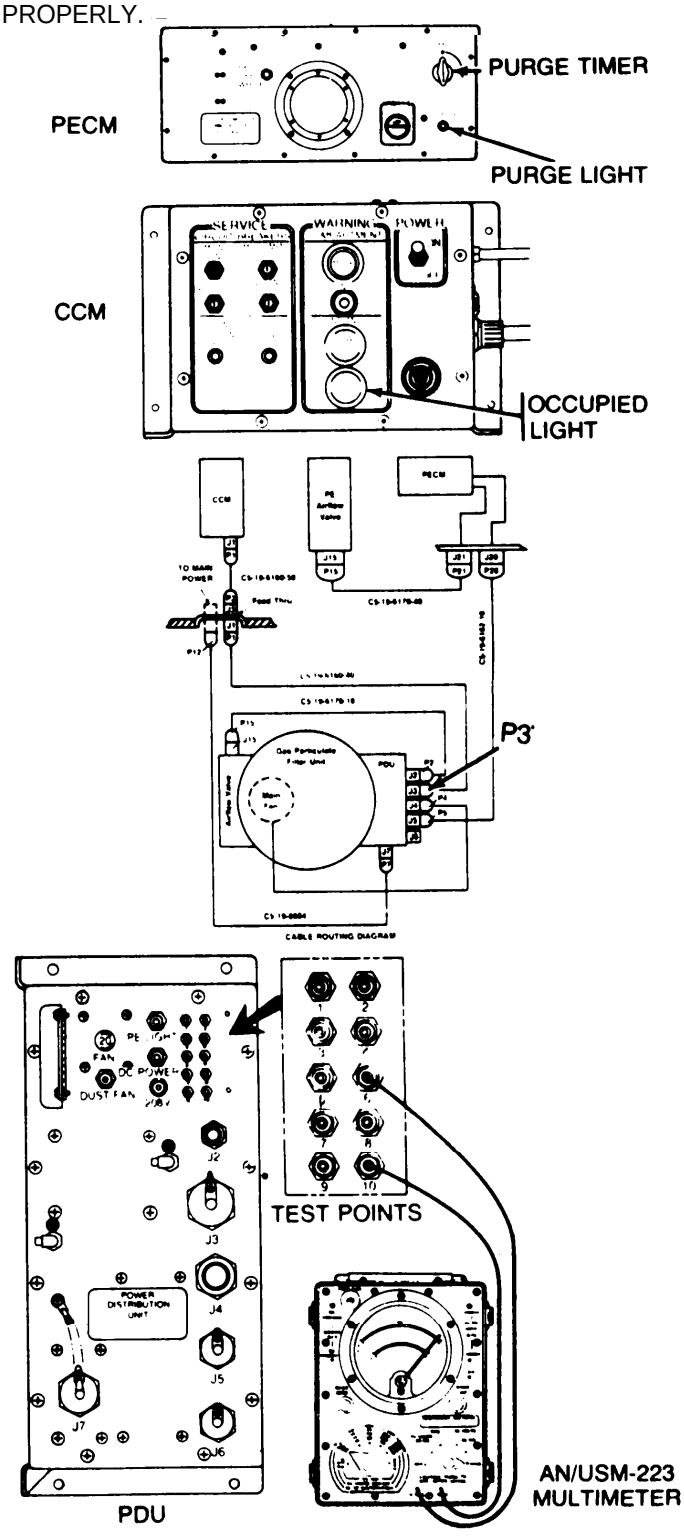
Replace CCM (p. 2-87) Repeat functional test (p. 2-4).

LEGEND

CCM = Compartment Control Module
Feed Thru = MCPE/DISPLAY DEMARK

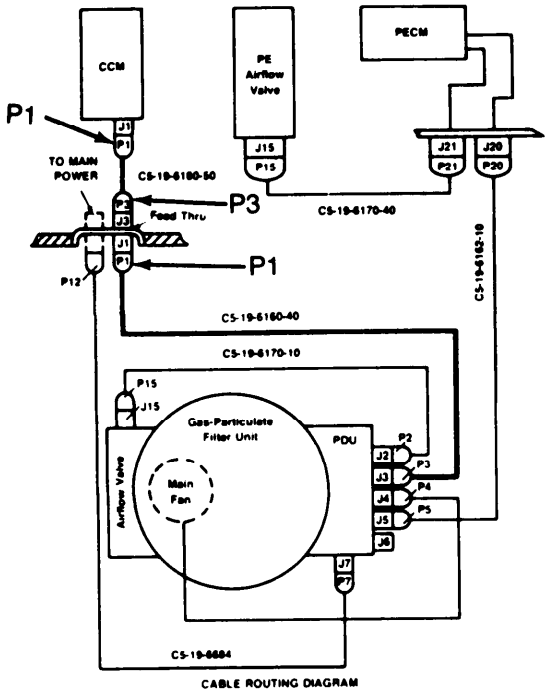
7. OCCUPIED AND PURGE LIGHTS DO NOT OPERATE PROPERLY.





LEGEND

PDU = Power Distribution Unit
PECM = Protective Entrance Control Module
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK



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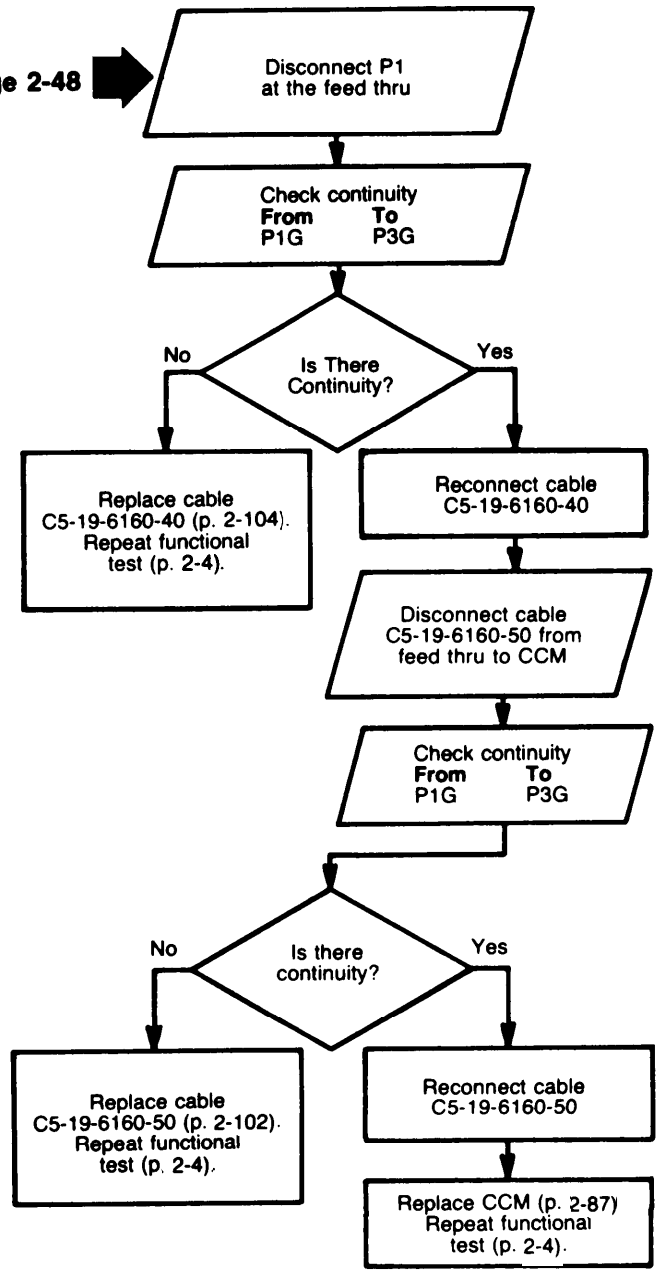
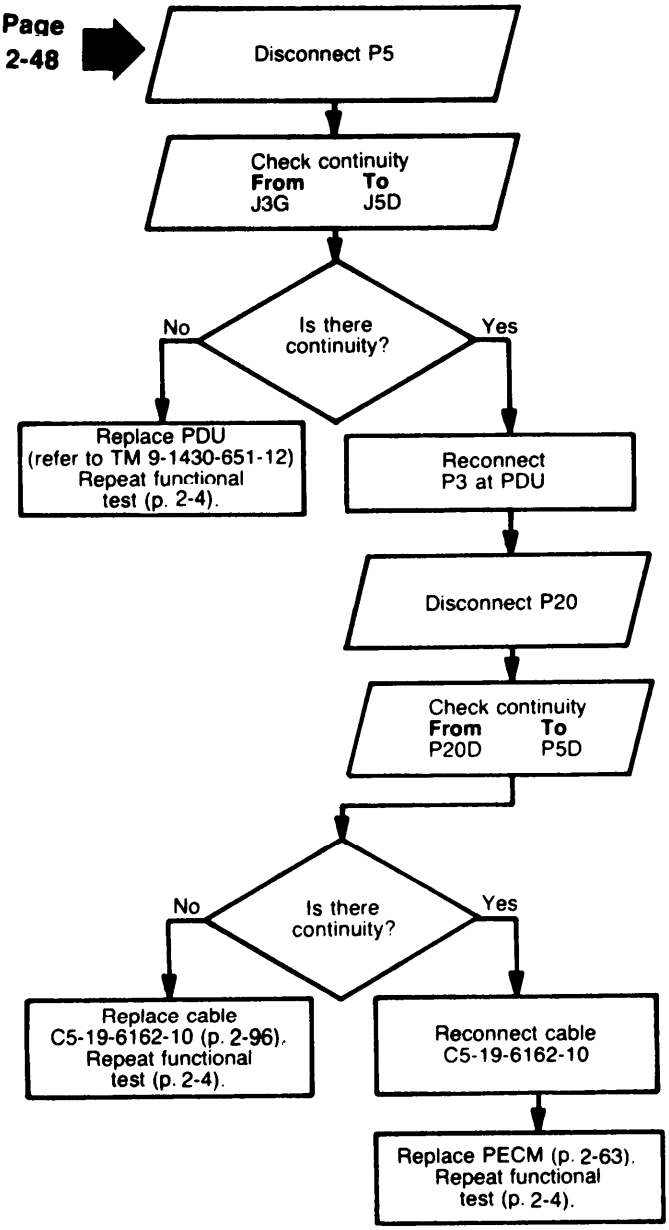


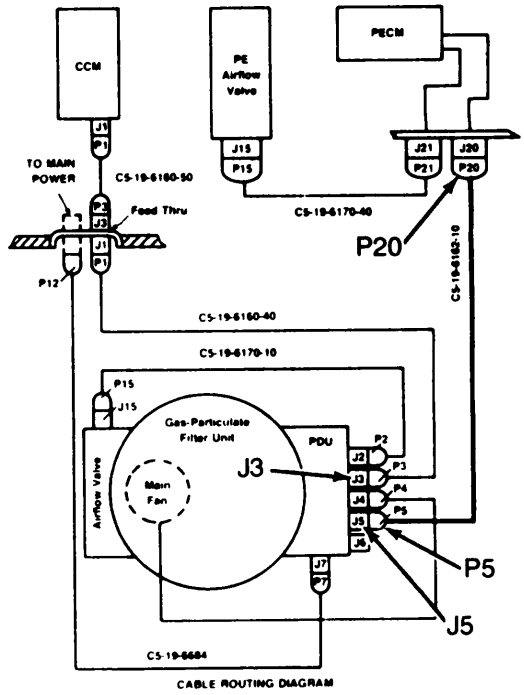
LEGEND

CCM = Compartment Control Module
Feed Thru = MCPE/DISPLAY DEMARK

7. OCCUPIED AND PURGE LIGHTS DO NOT OPERATE PROPERLY (CONT).

Page 2-48

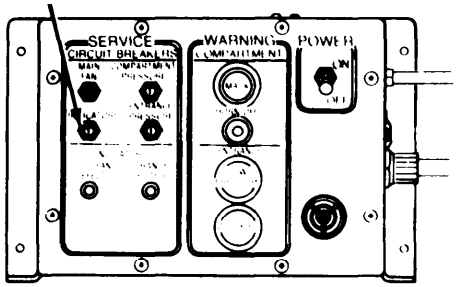




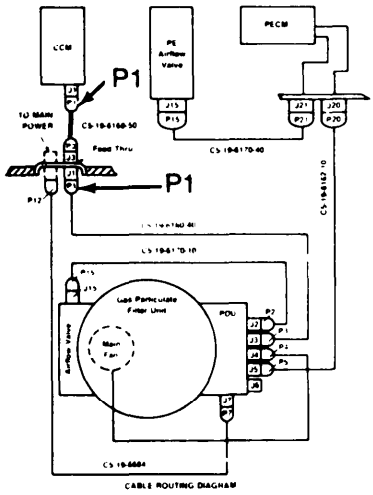
LEGEND

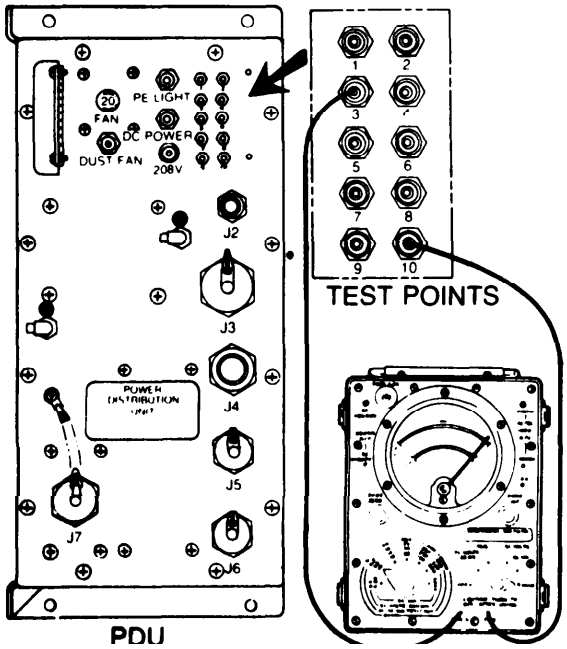
PDU = Power Distribution Unit
PECM = Protective Entrance Control Module
Feed Thru = MCPE/DISPLAY DEMARK

INDICATORS CIRCUIT BREAKER



CCM





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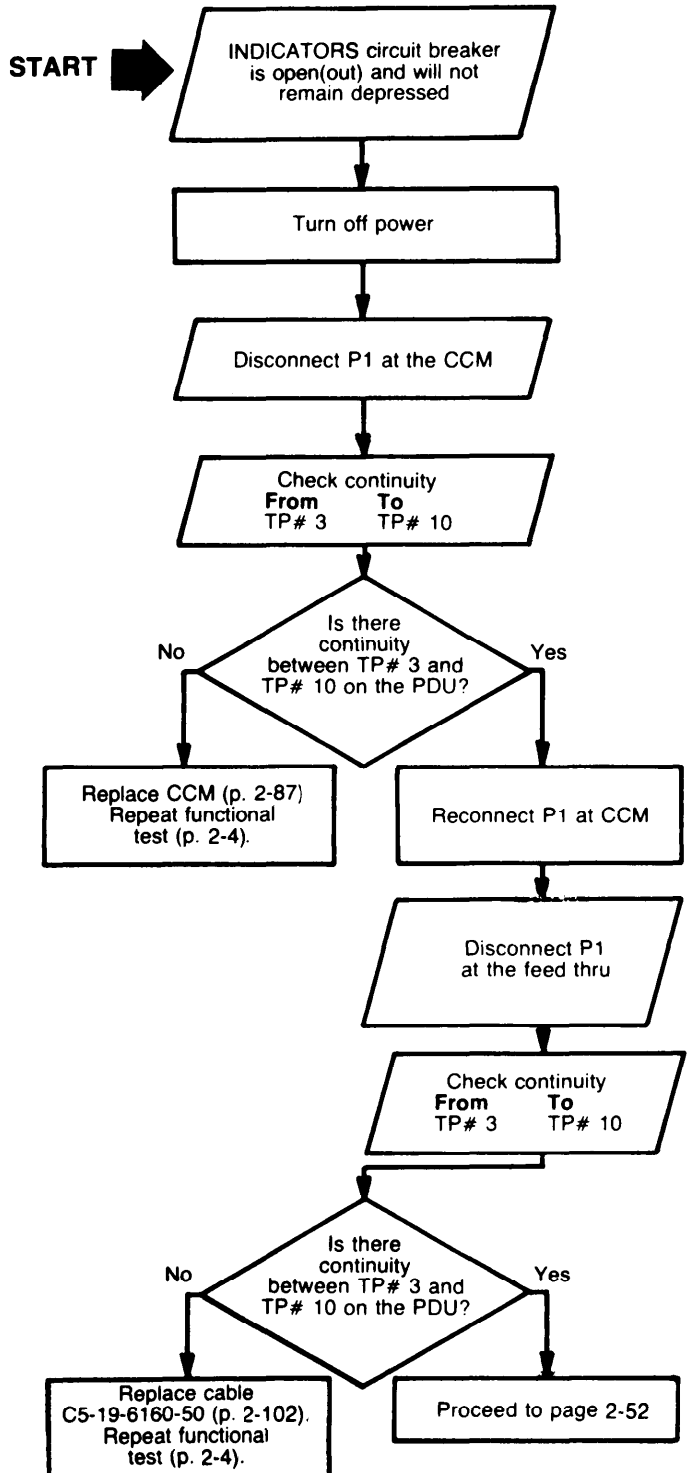
8. INDICATORS CIRCUIT BREAKER TRIPS.



LEGEND CCM = Compartment Control Module
PDU = Power Distribution Unit
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK

8. INDICATORS CIRCUIT BREAKER TRIPS (CONT).

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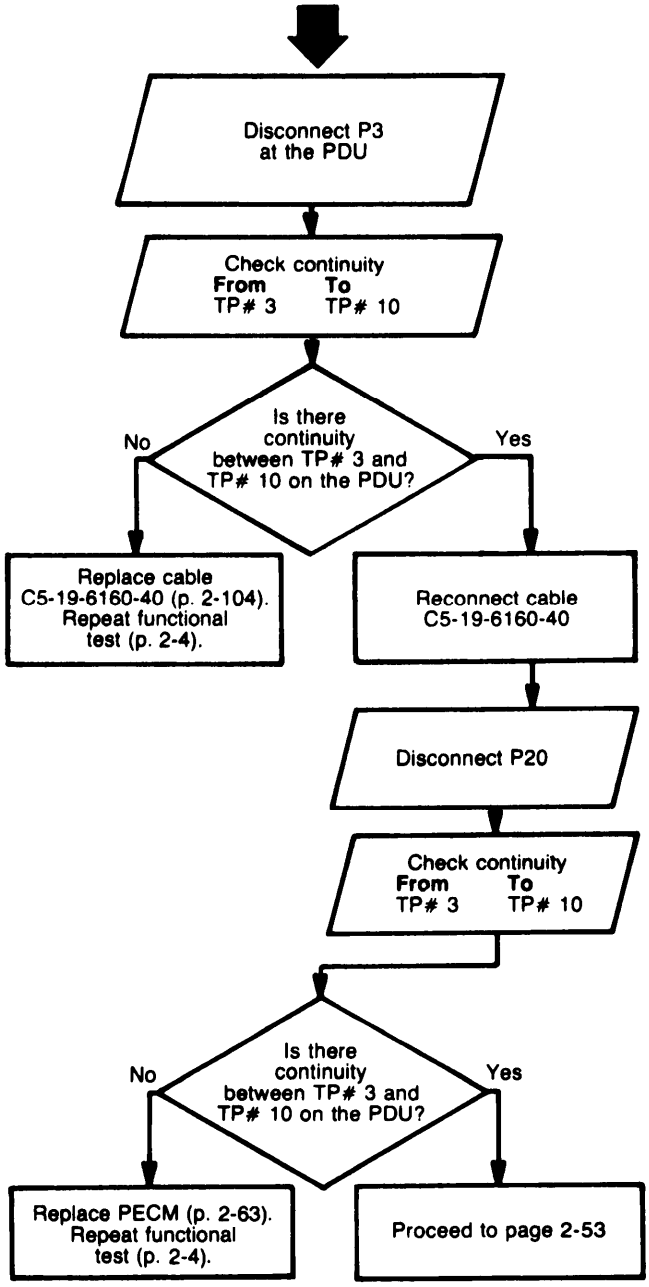
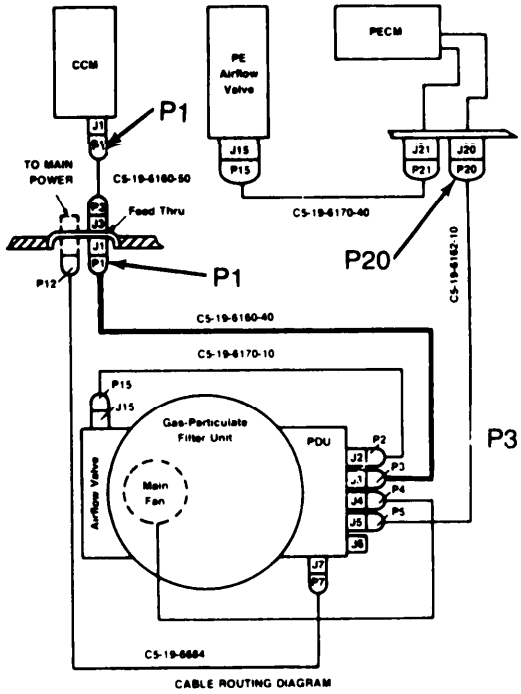
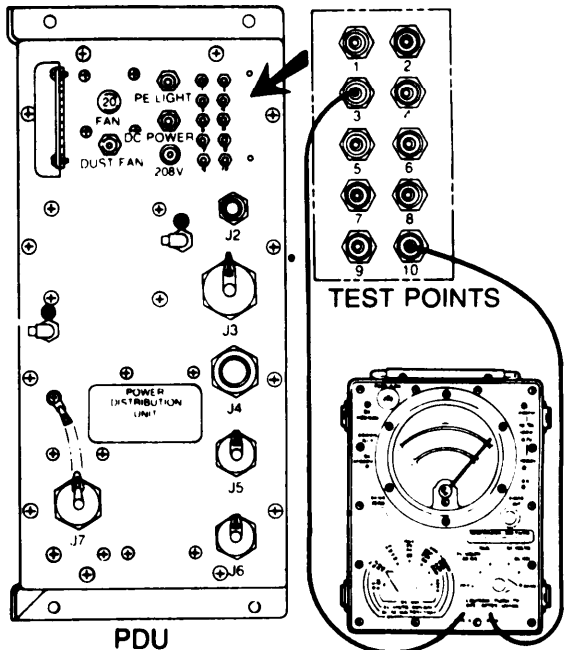
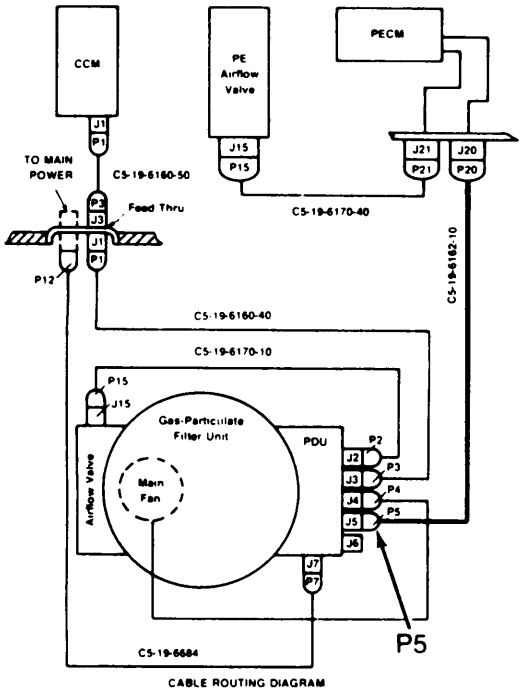




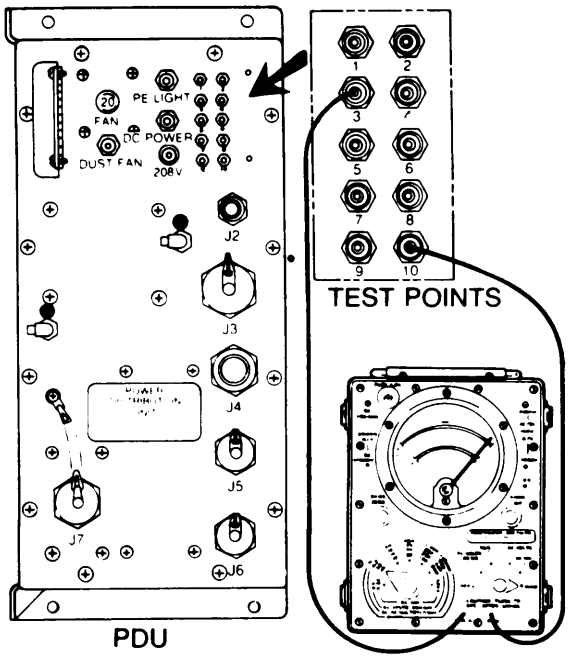


LEGEND

PDU = Power Distribution Unit
PECM = Protective Entrance Control Module
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK



CABLE ROUTING DIAGRAM



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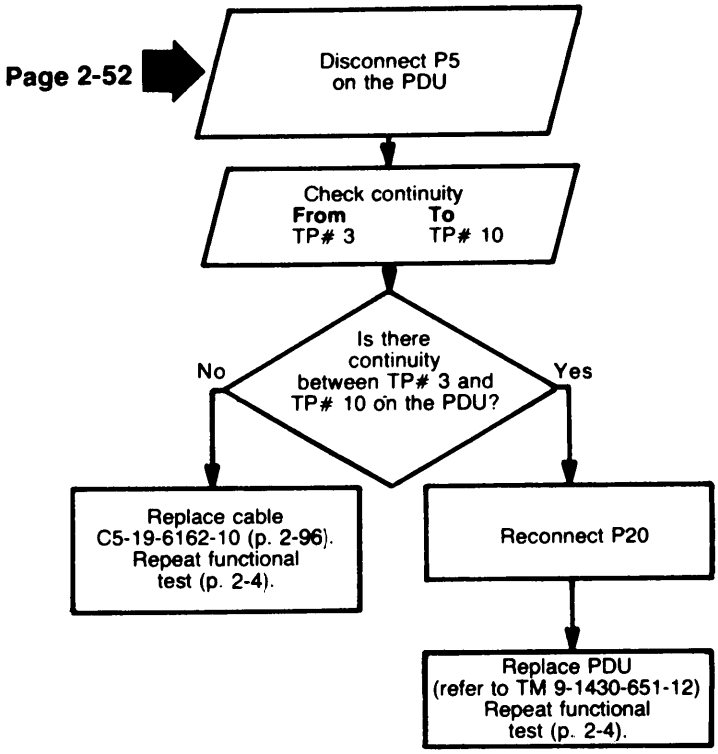
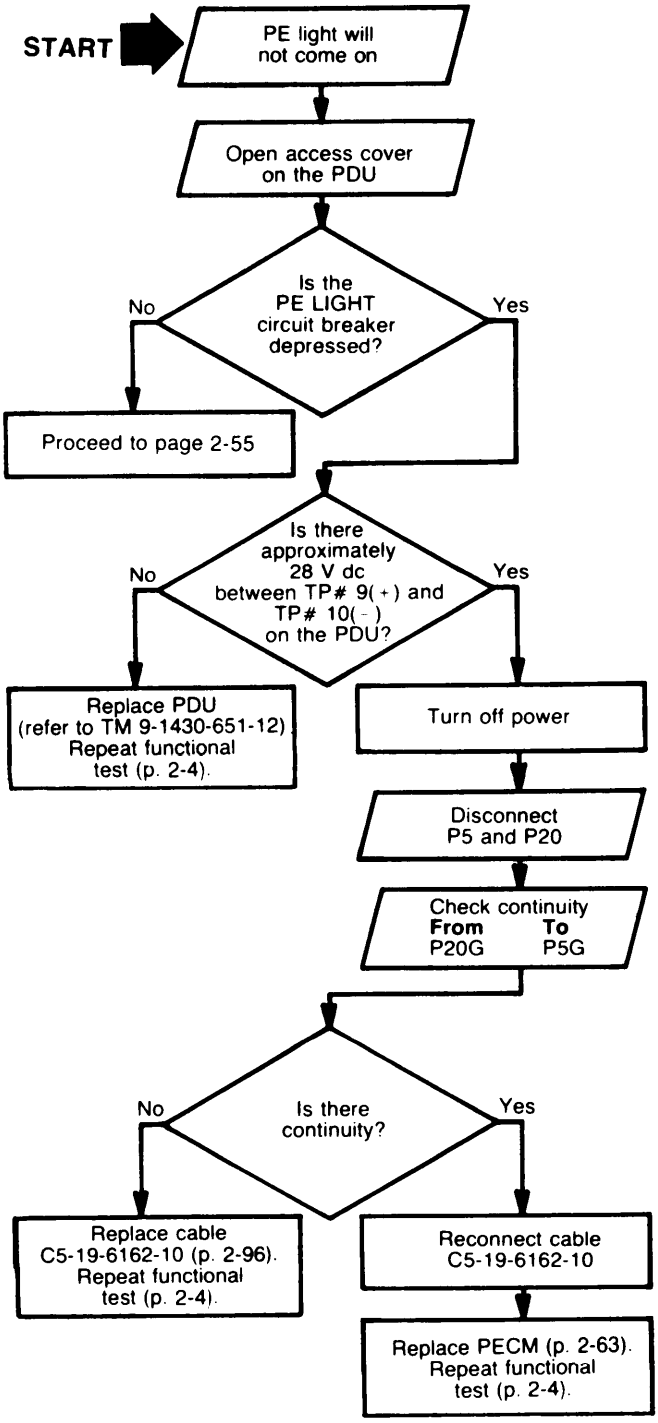
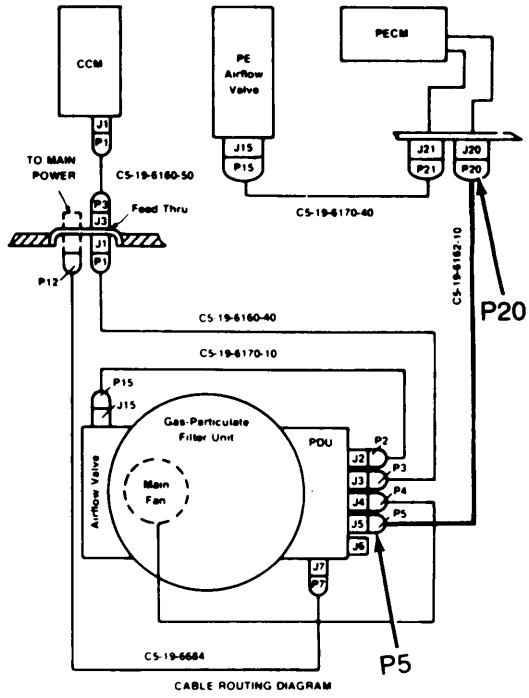


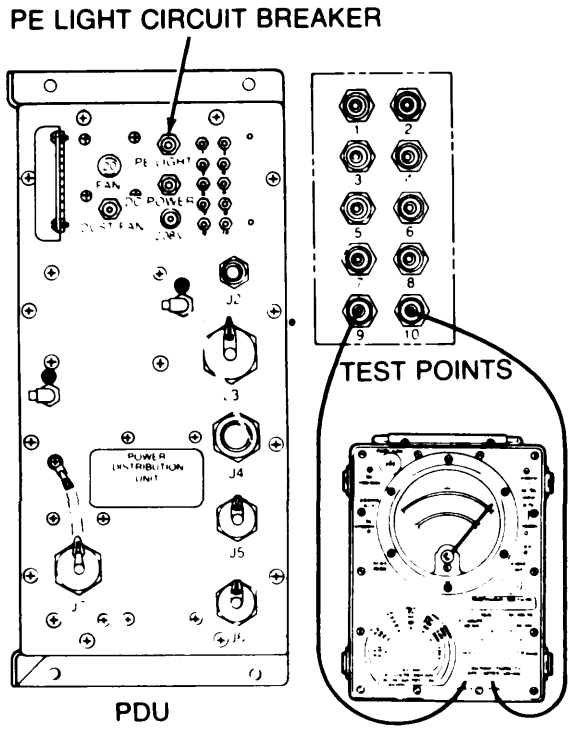
LEGEND

PDU = Power Distribution Unit
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK

9. PROTECTIVE ENTRANCE DOME LIGHT DOES NOT COME ON.

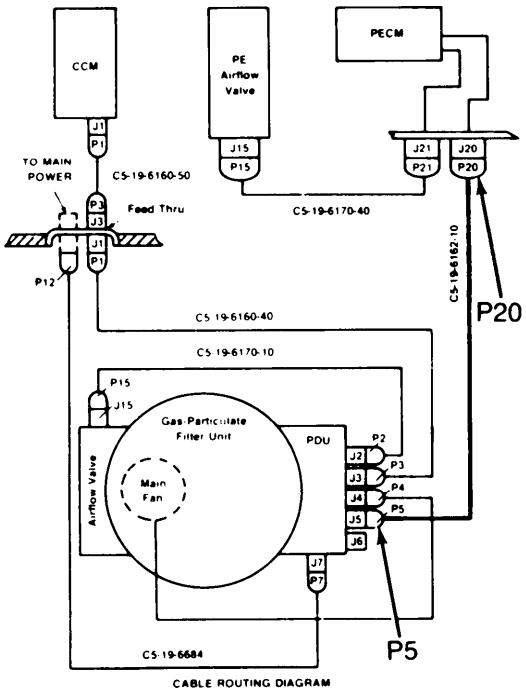




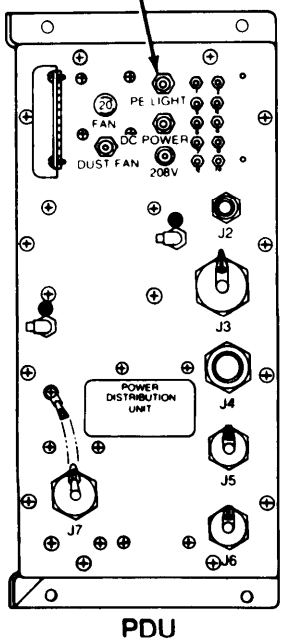


LEGEND

PDU = Power Distribution Unit
PE = Protective Entrance
PECM = Protective Entrance Control Module
TP = Test Point
Feed Thru = MCPE/DISPLAY DEMARK



PE LIGHT CIRCUIT BREAKER



PDU

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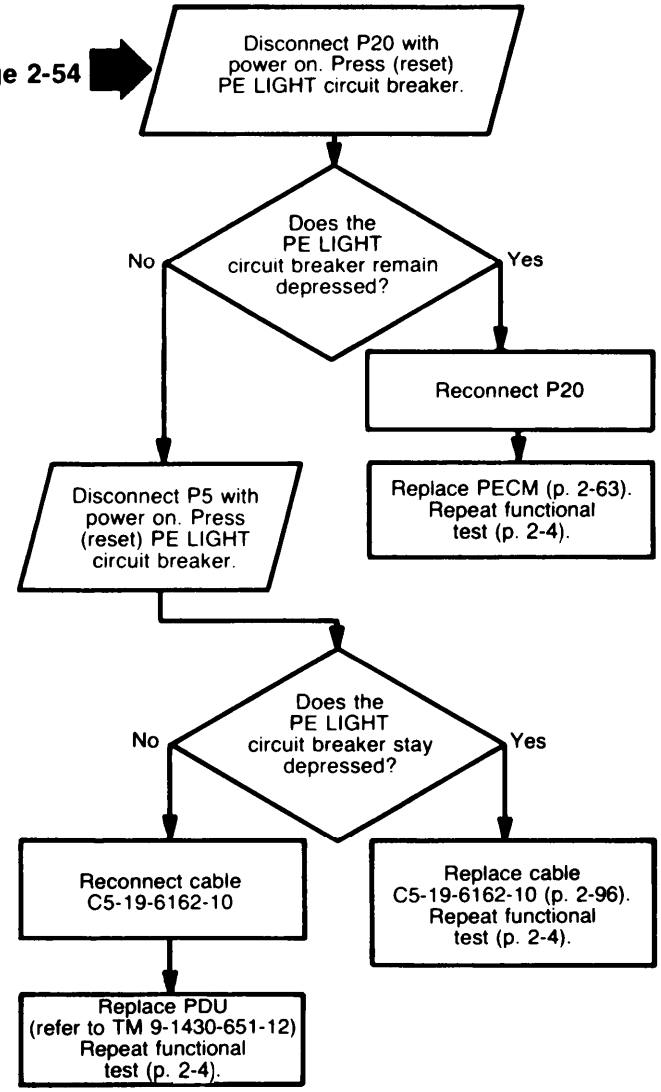


LEGEND

PDU = Power Distribution Unit
PE = Protective Entrance
PECM = Protective Entrance Control Module
Feed Thru = MCPE/DISPLAY DEMARK

Section VI. MAINTENANCE PROCEDURES FOR M12 PROTECTIVE ENTRANCE

2-10. GENERAL. These instructions are for use by organizational maintenance personnel. They apply to:
M12 Protective entrance
Protective entrance control module

2-11. M12 PROTECTIVE ENTRANCE - MAINTENANCE INSTRUCTIONS.

This task covers:

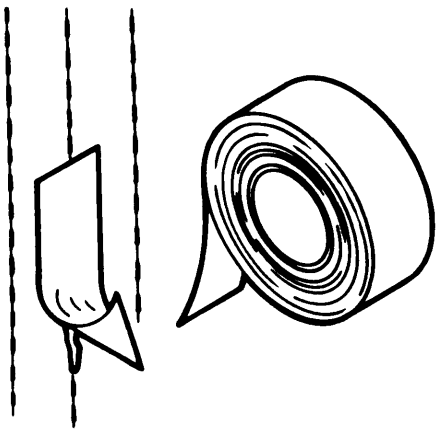
a. Replacement
b. Repair
c. Removal
d. Installation
e. Disassembly
f. Reassembly
g. Painting

INITIAL SETUP

Tools
General Mechanics Tool Kit
SC 5180-90-CL-N26

References
TM 9-1430-651-12

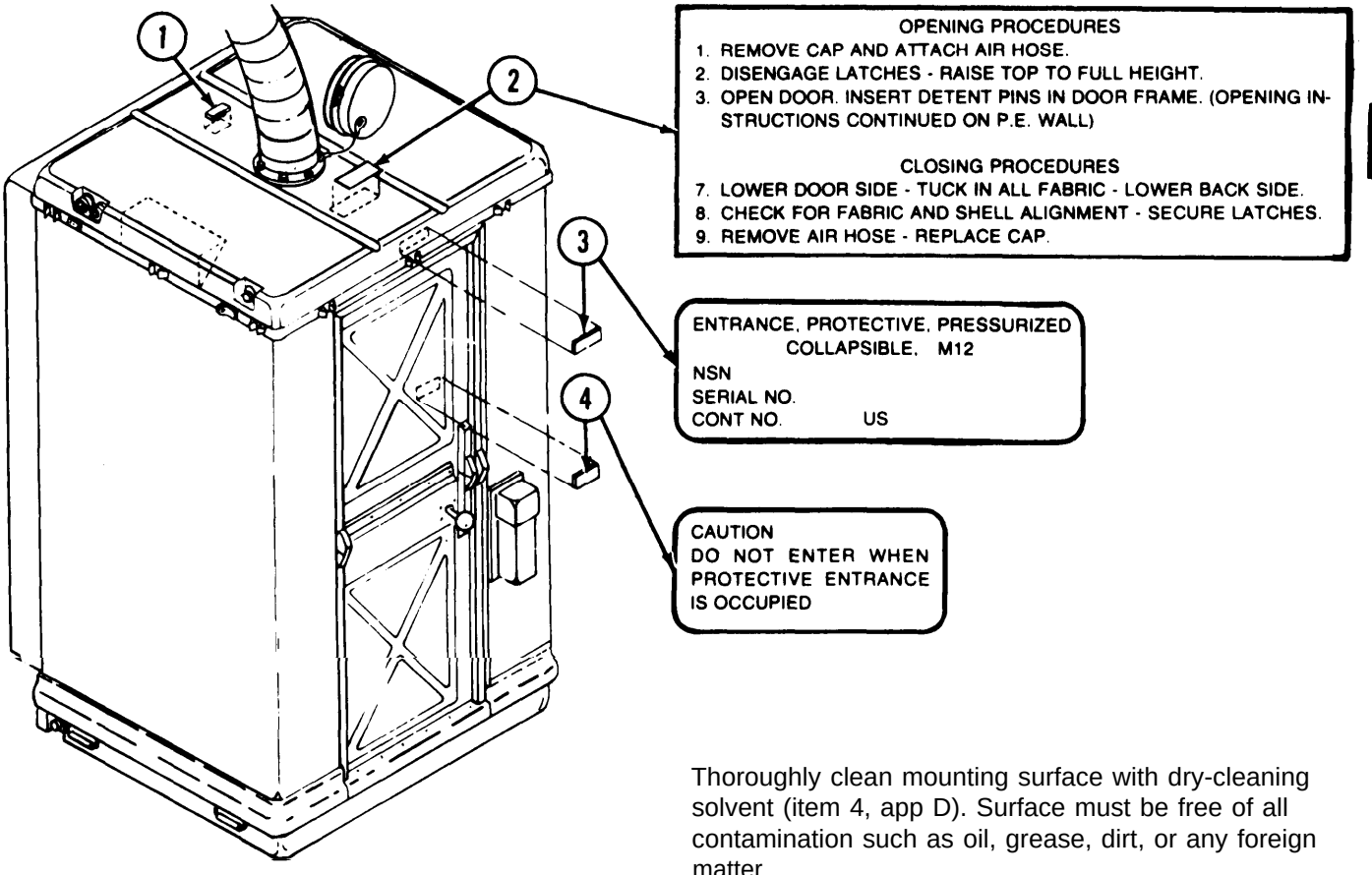
LOCATION	ITEM	ACTION
REPLACEMENT		
AN/TSQ-73	M12 Protective entrance	Refer to TM 9-1430-651-12 for protective entrance replacement instructions.
REPAIR		
M12 Protective Entrance (PE)	Impermeable wall fabric	Repair tears or slits: Clean damaged area using rags (item 6, app D) and dry-cleaning solvent (item 4, app D). Cut a piece of tape (item 7, app D) about four inches longer than the tear or slit. Position tape over the tear or slit and press firmly in place. Apply tape to the inside of the protective entrance impermeable fabric wall. If necessary for added strength, crossed strips of tape may be used.



LOCATION	ITEM	ACTION

REMOVAL

M12 Protective Entrance	Instruction plates (1, 2, and 4) and identification plate (3)	Lift edge of plate with a sharp tool. Pull plate completely off the mounting surface.



INSTALLATION

Thoroughly clean mounting surface with dry-cleaning solvent (item 4, app D). Surface must be free of all contamination such as oil, grease, dirt, or any foreign matter.

Activate the back of the plate with dry-cleaning solvent (item 4, app D).

Mount the plate and apply pressure to the plate surface.

Spray or brush plate with aliphatic polyurethane coating (item 2, app D).

NOTE

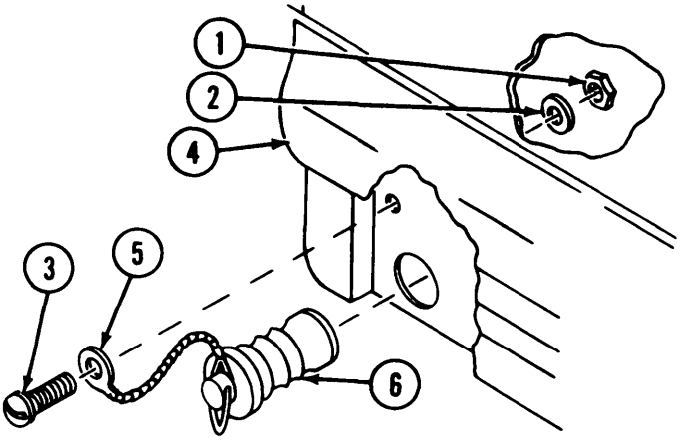
Identification and instruction plates are made of aluminum foil with a solvent-activated backing.

2-11. M12 PROTECTIVE ENTRANCE - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION

REMOVAL

M12 Protective Entrance	Plug drain	Remove cap plain nut (1) and washer (2). Remove screw (3) from protective entrance (4) and chain loop (5). Unscrew plug drain (6) and remove.



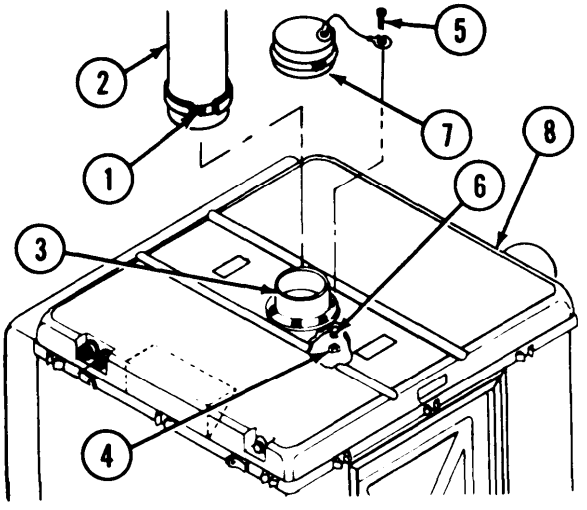
INSTALLATION

		Install screw (3) through chain loop (5) and hole in protective entrance (4). Install washer (2) and cap plain nut (1). Tighten securely. Install plug drain (6). Tighten finger tight.

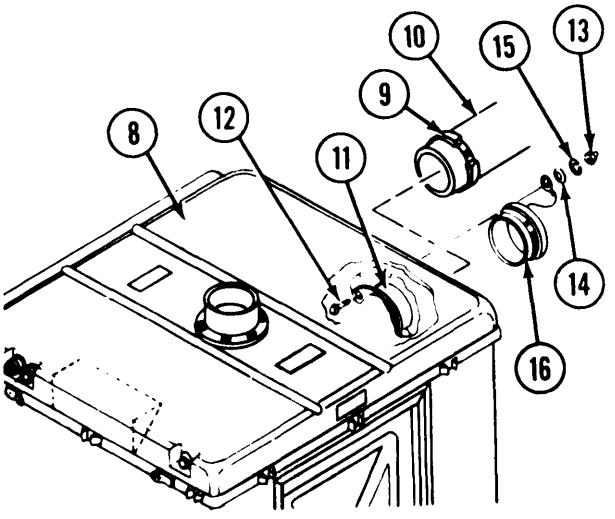
LOCATION	ITEM	ACTION

REMOVAL

M12 Protective Entrance Airduct Inlet	Dust and moisture seal protective cap	Loosen hose clamp (1). Remove airduct hose (2) from inlet (3). Reach through inlet and hold nut (4) with a wrench. Remove screw (5) from nut (4), washer (6), and cable loop on cap (7) from inlet (3). Remove cap (7) from protective entrance (8).

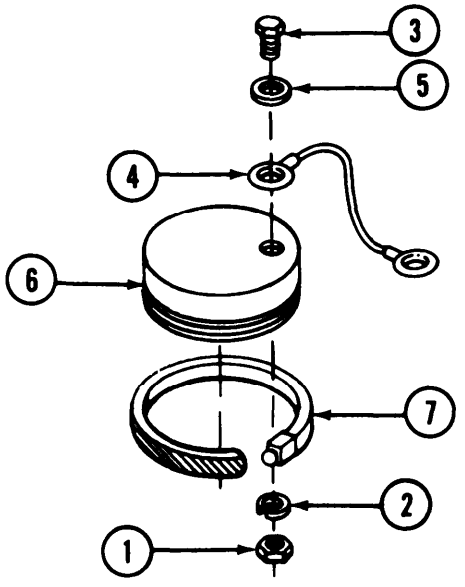


M 12 Protective Entrance Airduct Outlet	Dust and moisture seal protective cap	Loosen hose clamp (9). Remove airduct hose (10) from outlet (11). Reach through outlet and hold screw (12) with a wrench. Unscrew nut (13). Remove washers (14 and 15) and screw (12). Remove cap (16) from protective entrance (8).



2-11. M12 PROTECTIVE ENTRANCE - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION
DISASSEMBLY		
	Dust and moisture seal protective cap	Unscrew nut (1). Remove washer (2), screw (3), support cable (4), and washer (5) from rubber cap (6). Unscrew adjustment screw on hose clamp (7) and remove from rubber cap (6).

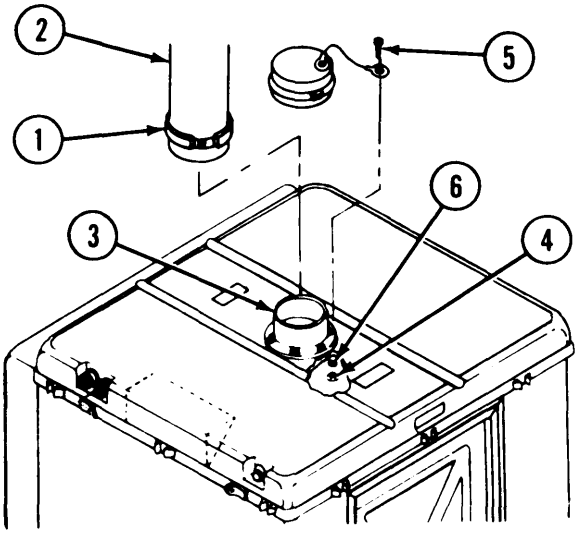


REPAIR		
	Support cable	Fabricate support cable (fig E-1, app E).
REASSEMBLY		
	Dust and moisture seal protective cap	Install hose clamp (7) in groove in rubber cap (6). Turn adjustment screw just enough to keep clamp in place. Secure support cable (4) to rubber cap (6) with screw (3), washer (5), washer (2), and nut (1).

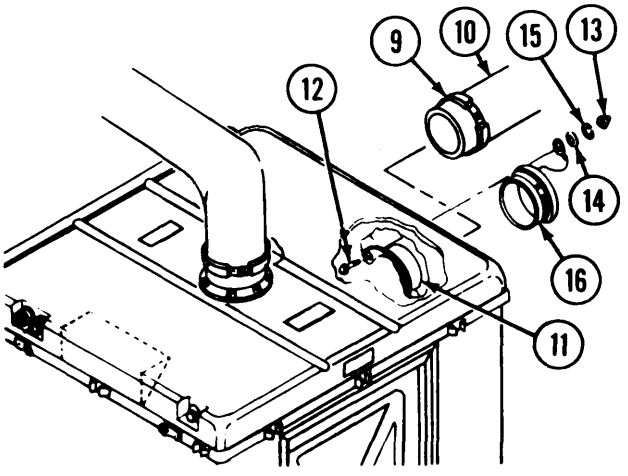
LOCATION	ITEM	ACTION

INSTALLATION

M12 Protective Entrance Airduct Inlet	Dust and moisture seal protective cap	Place screw (5) through support cable loop and screw hole at base of airduct inlet (3). Reach through airduct inlet and install washer (6) and nut (4). Tighten securely. Place airduct hose (2) on airduct inlet (3). Tighten hose clamp (1) securely.

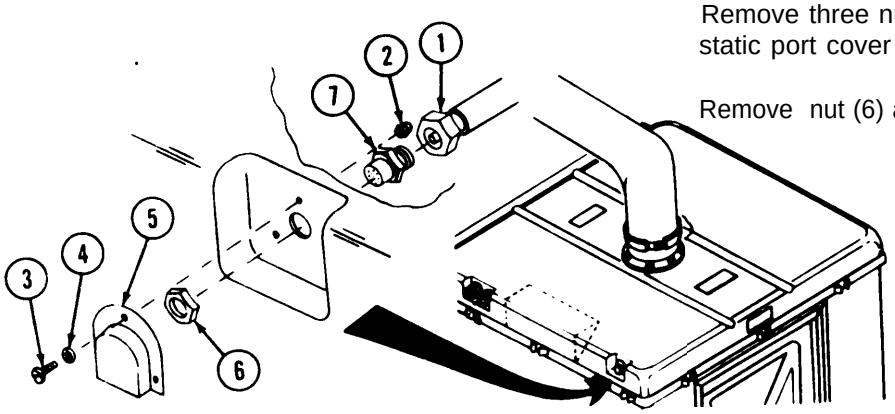


M12 Protective Entrance Airduct Outlet	Dust and moisture seal protective cap	Reach through airduct outlet and install screw (12). Place support cable loop, washers (14 and 15), and nut (13) on screw (12). Tighten nut securely. Place airduct hose (10) on airduct outlet (11). Tighten hose clamp (9) securely.



2-11. M12 PROTECTIVE ENTRANCE - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION
REMOVE		
M12 Protective Entrance (PE)	Static port adapter	Disconnect hose adapter (1). Remove three nuts (2), screws (3), washers (4), and static port cover (5). Remove nut (6) and static port adapter (7)



INSTALLATION		
		Install static port adapter (7) and nut (6). Tighten securely. Install static port cover (5) using screws (3), washers (4), and nuts (2). Connect hose adapter (1) to static port adapter (7). Tighten securely.
PAINTING		
M12 Protective Entrance	Painted surfaces	Touch-up painting of metal surfaces is authorized: Surfaces to be painted should be cleaned using rags (item 6, app D) and dry-cleaning solvent (item 4, app D). Paint surfaces with one coat of primer (item 5, app D). Paint surfaces of equipment mounted outside of the protective entrance with aliphatic polyurethane coating (item 2, app D). **NOTE** Refer to TM 43-0139 for painting instructions for field use.

2-12. PROTECTIVE ENTRANCE CONTROL MODULE - MAINTENANCE INSTRUCTIONS.

This task covers:

a. Removal
b. Repair
c. Installation
d. Disassembly
e. Reassembly

INITIAL SETUP

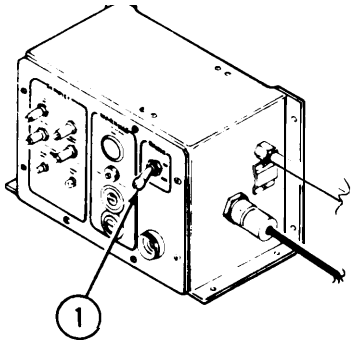
Tools
General Mechanics Tool Kit
SC 5180-90-CL-N26

LOCATION	ITEM	ACTION

REMOVAL

M12 Protective Entrance

Protective entrance control module

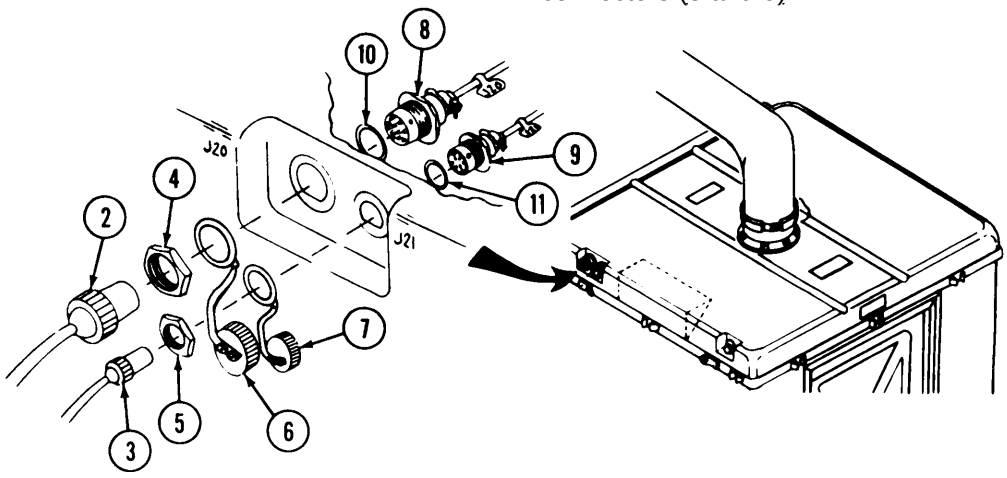


Set POWER switch (1) on compartment control module to OFF.

Shut down collective protection equipment power source.

Disconnect electrical cable plugs P20 (2) and P21 (3) from outside of protective entrance and remove nuts (4 and 5).

Remove electrical connector covers (6 and 7) with chains and loops. Withdraw electrical cable connectors (8 and 9). Remove and retain "O" rings (10 and 11) on connectors (8 and 9).



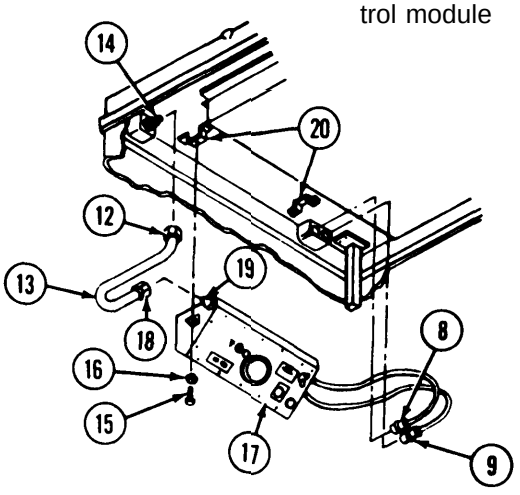
2-12. PROTECTIVE ENTRANCE CONTROL MODULE - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION

REMOVAL (CONT)

M12 Protective Entrance

Protective entrance control module



Disconnect fitting (12) on hose(13) from coupling (14).

Remove screws (15) and washers (16).

Remove protective entrance control module (17) from inside the protective entrance.

CAUTION

Hold coupling on protective entrance control module with a wrench to prevent it from turning.

Disconnect fitting (18) on hose (13) from coupling (19) on protective entrance control module.

REPAIR

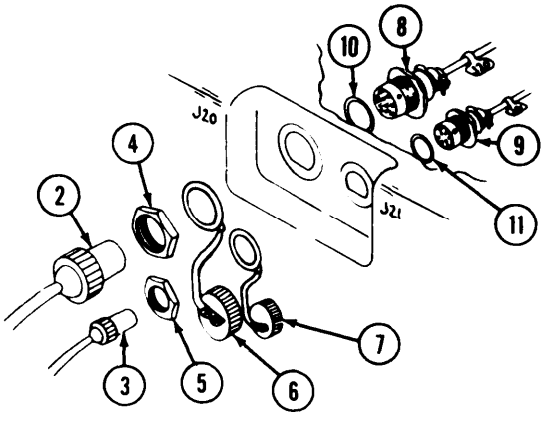
Hose

Fabricate replacement hose (13) (fig E-4A, app E). Cut fittings (12 and 18) from hose and insert fittings in new hose.

INSTALLATION

M12 Protective Entrance

Protective entrance control module



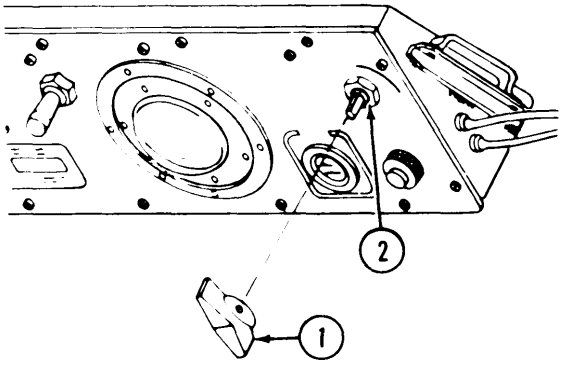
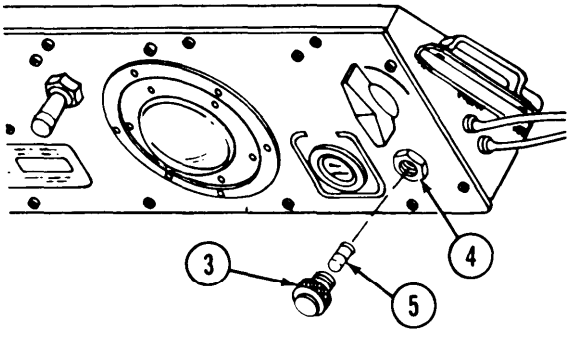
Install hose on protective entrance control module. Hold coupling (19) with a wrench and tighten fitting (18).

Position protective entrance control module (17) against brackets (20) in protective entrance.

Install screws (15) through washers (16) and into brackets (20). Tighten securely.

Install fitting (12) on coupling (14) and tighten.

Install electrical cable connectors J21 (9) and J20 (8) with "O" rings (10 and 11) in protective entrance from the inside.

LOCATION	ITEM	ACTION
		From the outside, install loop of connector cover (7) and nut (5) on cable connector J21 (9). Tighten nuts securely. From the outside, install loop of connector cover (6) and nut (4) on cable connector J20 (8). Tighten nut securely. Reconnect electrical cable plugs P20 (2) and P21 (3).
REMOVAL		
Protective Entrance Control Module	Knob	Pull knob (1) from timer shaft (2).
		
INSTALLATION		
		Aline knob pointer with 0 on panel. Push knob (1) on timer shaft (2).
REMOVE		
Protective Entrance Control Module	PURGE indicator lamp	Unscrew indicator light (3) from indicator light base (4). Pull out lamp (5) from indicator light (3).
		
INSTALLATION		
		Insert indicator lamp (5) in indicator light (3). Install indicator light (3) in light base (4).

2-12. PROTECTIVE ENTRANCE CONTROL MODULE - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION

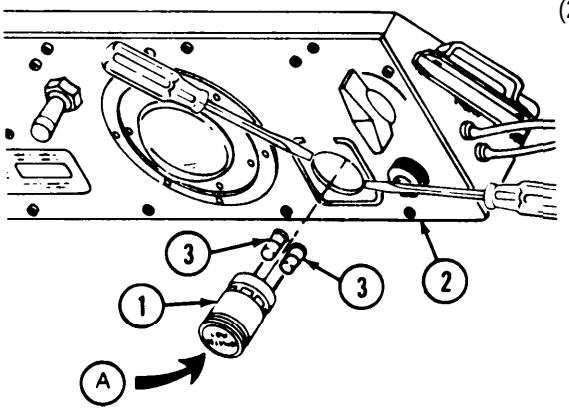
REMOVAL

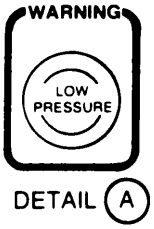
Protective Entrance Control Module

LOW PRESSURE lamp

Using two screwdrivers, gently pry lens (1) from panel (2).

Remove lamps (3) from lens (1).





DETAIL A

INSTALLATION

Insert lamps (3) in lens(1). Insert lens(1) into panel (2) as shown in detail A. Press lens into panel until it snaps into place.

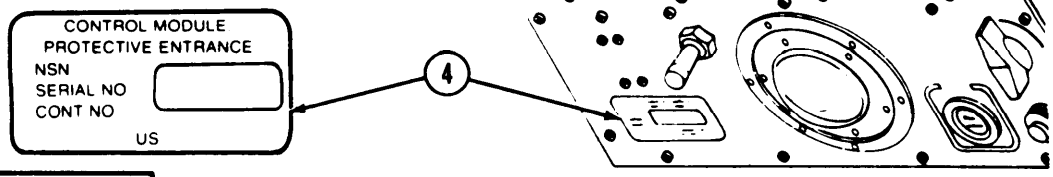
REMOVAL

Protective Entrance Control Module

Identification plate

Lift edge of plate (4) with a sharp tool.

Pull plate completely off the mounting surface.



INSTALLATION

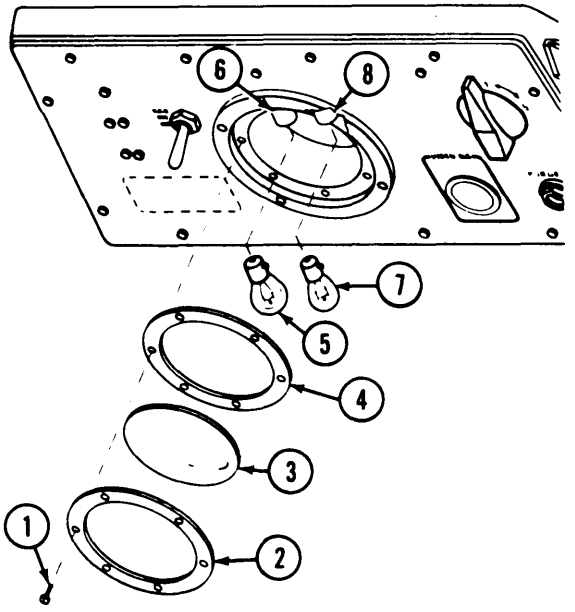
Thoroughly clean mounting surface with dry-cleaning solvent (item 4, app D). Mounting surface must be free of all contamination such as oil, grease, dirt, or any foreign matter.

Activate the back of the plate with dry-cleaning solvent.

Mount the plate and apply pressure to the plate surface.

Spray or brush plate with aliphatic polyurethane coating (item 2, app D).

LOCATION	ITEM	ACTION
DISASSEMBLY		
Protective Entrance Control Module	Dome light	Remove screws (1), retainer (2), light lens (3), and dome light gasket (4). Remove red lamp (5) by pressing in on the bulb and rotating it counterclockwise. Pull red lamp from socket (6). Remove clear lamp (7) by pressing in on the bulb and rotating it counterclockwise. Pull clear lamp from socket (8).
REPAIR		
	Lamps, screws, lens, and dome light gasket	Replace if unserviceable.
REASSEMBLY		
Protective Entrance Control Module	Dome light	Insert red lamp (5) in socket (6). Aline studs in lamp base with slot in socket. Press in and turn red lamp clockwise until it locks in place. Insert clear lamp (7) in socket (8). Aline studs in lamp base with slot in socket. Press in and turn clear lamp clockwise until it locks in place. Place gasket (4) on dome light lens (3). Place retainer (2) on gasket and aline screw holes. Position assembly in place and install screws (1). Tighten securely.



Section VII. MAINTENANCE PROCEDURES FOR M56 GAS-PARTICULATE FILTER UNIT

2-13. GENERAL. These instructions are for use by organizational maintenance personnel. They apply to:

M56 Gas-particulate filter unit
Main fan
Airflow valve
Power distribution unit
Compartment control module

2-14. M56 GAS-PARTICULATE FILTER UNIT - MAINTENANCE INSTRUCTIONS.

This task covers:

a. Replacement
b. Removal
c. Installation
d. Disassembly
e. Reassembly
f. Repair
g. Painting

INITIAL SETUP

Tools
General Mechanics Tool Kit
SC 5180-90-CL-N26
Torque wrench 0-500 inch-pounds

References
TM 9-1430-651-12

General Safety Instructions
The unit commander or senior officer in charge of maintenance personnel assigned to remove and dispose of the contaminated gas and particulate filters must prescribe the necessary protective clothing (TM 10-277) to be worn during this operation. He must also prescribe the necessary safety measures to be followed including the decontamination operation (TM 3-220) that must be performed before the new filters are installed.

LOCATION	ITEM	ACTION
REPLACEMENT		
AN/TSQ-73	M56 Gas-Particulate Filter unit	Refer to TM 9-1430-651-12 for M56 gas-particulate filter unit removal and installation instructions.

LOCATION	ITEM	ACTION

REMOVE

NOTE

The unit commander or senior officer in charge of maintenance personnel assigned to remove and dispose of the contaminated gas and particulate filters must prescribe the necessary protective clothing (TM 10-277) to be worn during this operation. He must also prescribe the necessary safety measures to be followed including the decontamination operation (TM 3-220) that must be performed before the new filters are installed.

M56 Gas-Particulate Filter Unit — Particulate filter

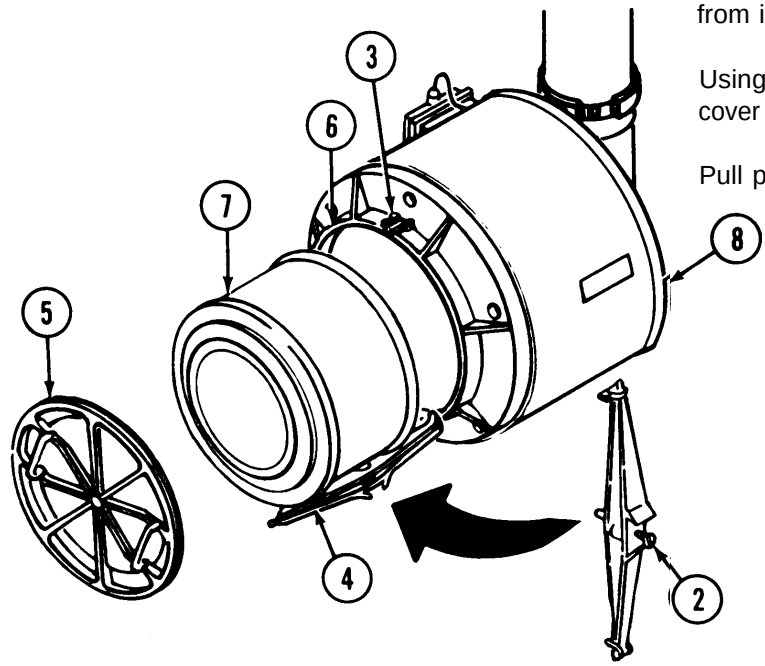
Set POWER switch (1) on the compartment control module to OFF.

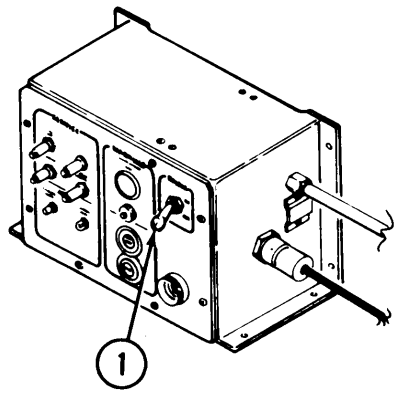
Loosen screw (2).

Pull catch (3) outward and swing retaining bar (4) away from inner cover (5).

Using handles, pull inner cover (5) from access cover (6).

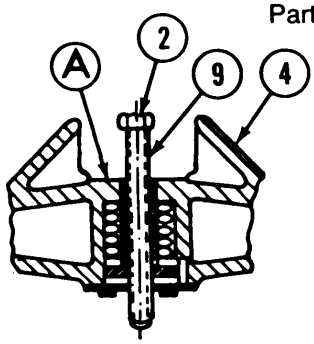
Pull particulate filter (7) from filter housing (8).





INSTALLATION

Particulate filter



Place particulate filter (7) in filter housing (8), either end first.

Grasp inner cover by the handles and place it in the access cover (6).

Swing retaining bar (4) up across inner cover and engage end of bar with catch (3).

Tighten screw (2) until sleeve (9) is flush with top surface (A) of retaining bar (4).

2-14. M56 GAS-PARTICULATE FILTER UNIT - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION

REMOVAL

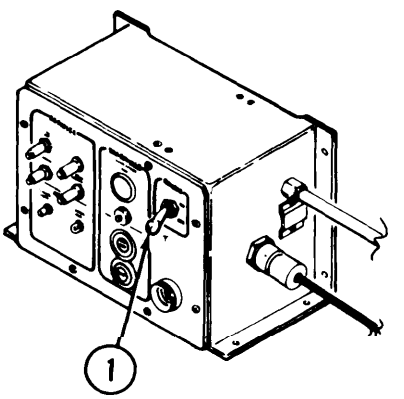
NOTE

The unit commander or senior officer in charge of maintenance personnel assigned to remove and dispose of the contaminated gas and particulate filters must prescribe the necessary protective clothing (TM 10-277) to be worn during this operation. He must also prescribe the necessary safety measures to be followed including the decontamination operation (TM 3-220) that must be performed before the new filters are installed.

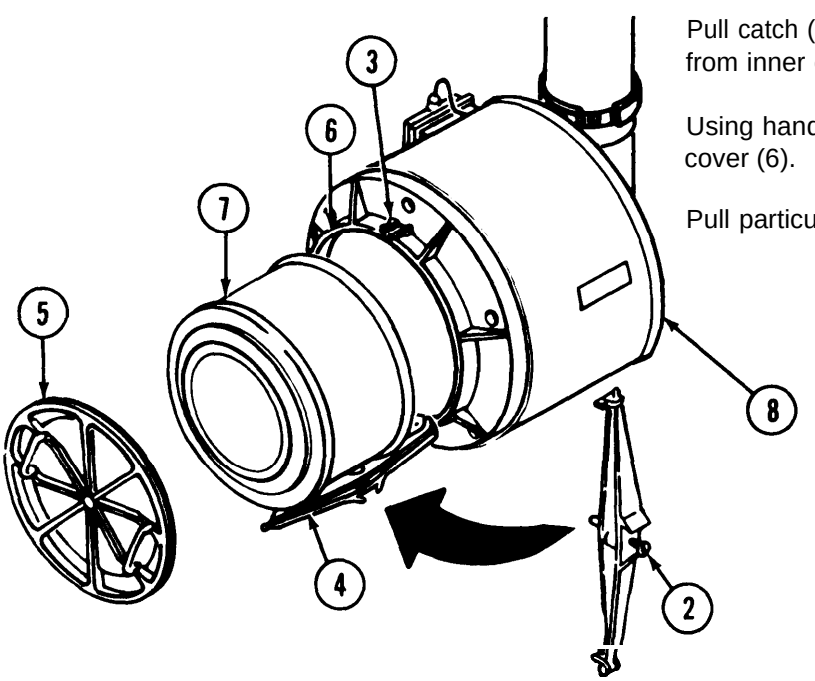
M56 Gas-Particulate Filter Unit

Particulate and gas filters

Set POWER switch (1) on the compartment control module to OFF.



Loosen screw (2).



Pull catch (3) outward and swing retaining bar (4) away from inner cover (5).

Using handles, pull inner cover (5) from access cover (6).

Pull particulate filter (7) from filter housing (8).

LOCATION	ITEM	ACTION

REMOVAL (CONT)

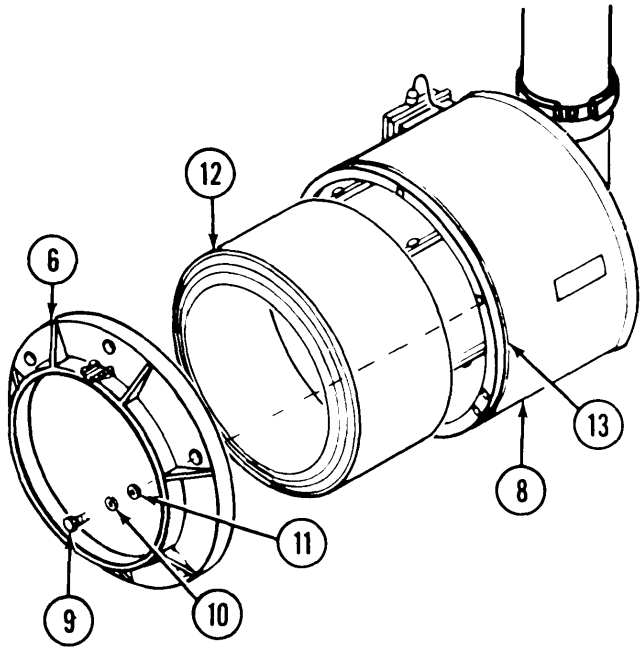
M56 Gas-Particulate Filter Unit

Particulate and gas filters

Remove screws (9), aluminum washer (10), and washer (11).

Pull access cover (6) from filter housing (8).

Pull gas filter (12) from filter housing (8).

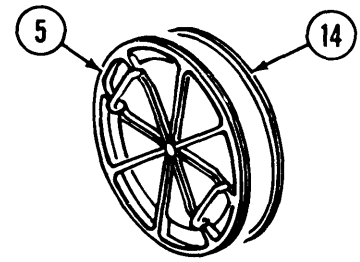


Filter Housing Inner Cover

Gaskets

Replace access cover gasket (13) on filter housing, or gasket (14) on inner cover (5) if unserviceable.

a. Remove gasket from groove.
b. Clean groove using solvent (item 4, app D).
c. Apply cement (item 1, app D) to groove.
d. Install gasket.



2-14. M56 GAS-PARTICULATE FILTER UNIT - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION

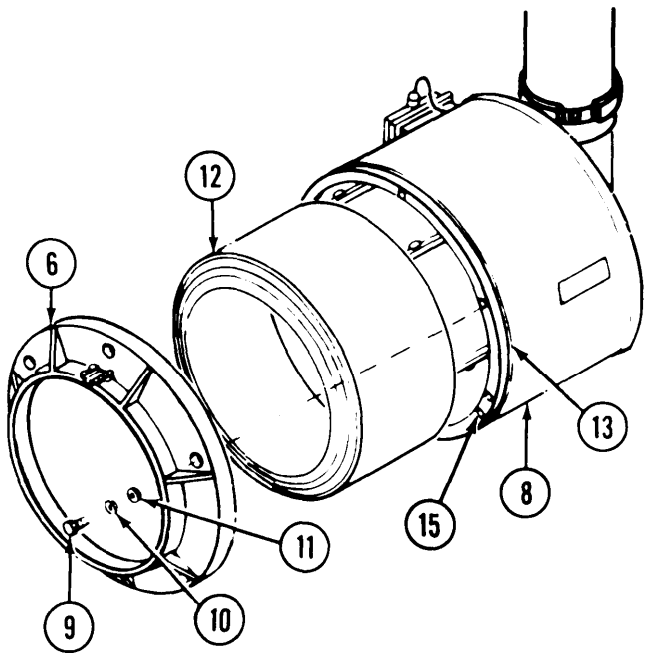
INSTALLATION

M56 Gas-Particulate Filter Unit

Gas filter

Place gas filter (12) in filter housing (8), either end first.

Position access cover (6) on filter housing, aline guide pin with guide hole (15). Push access cover (6) into place.



NOTE

To prevent binding of outer access cover against filter housing rim, screws must be tightened alternately, in a criss-cross pattern.

Install washers (11), aluminum washers (10), and screws (9) finger tight.

CAUTION

Be sure to observe torque values for the torque wrench being used.

Preliminary torque. In a criss-cross pattern, torque screws to 8-10 foot-pounds (100-125 inch-pounds).

Final torque. In a criss-cross pattern, torque screws to 15-16 foot-pounds (180-200 inch pounds).

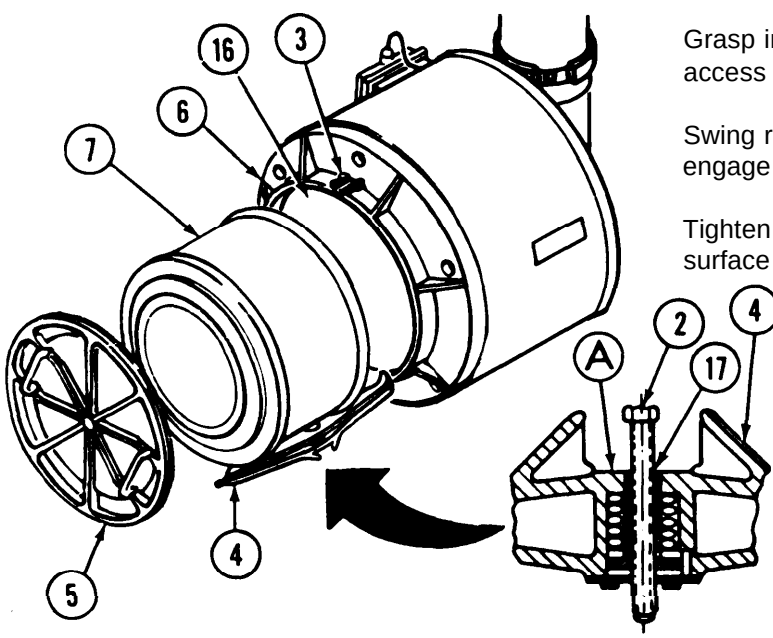
Particulate filter

Place particulate filter (7) in gas filter (16), either end first.

Grasp inner cover by the handles and place it in the access cover (6).

Swing retaining bar (4) up across inner cover and engage end of bar with catch (3).

Tighten screw (2) until sleeve (17) is flush with top surface (A) of retaining bar (4).



LOCATION	ITEM	ACTION

REMOVAL

M56 Gas-Particulate Filter Unit

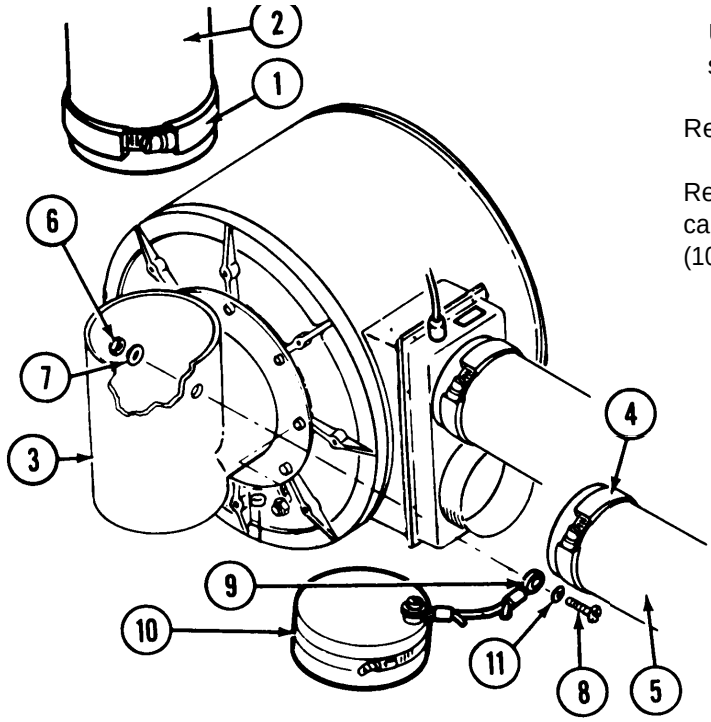
Dust and moisture seal protective cap

Unscrew hose clamp adjusting screw (1) and remove airduct hose (2) from inlet tee (3).

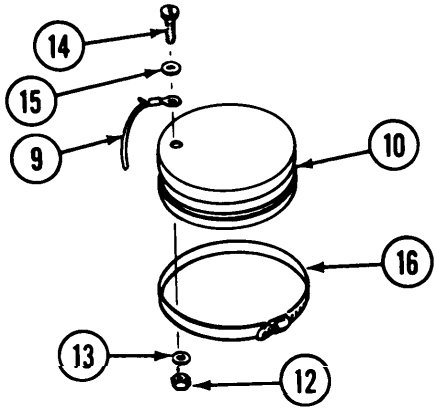
Unscrew hose clamp adjusting screw (4) and remove shelter airduct hose (5).

Remove nut (6) and washer (7) from screw (8).

Remove screw (8) from inlet tee (3), loop of support cable (9) with dust and moisture seal protective cap (10), and washer (11).



DISASSEMBLY



Remove nut (12) and washer (13) from screw (14).

Remove screw (14) from rubber cap (10), loop of support cable (9), and washer (15).

Remove hose clamp (16) from rubber cap (10).

REPAIR

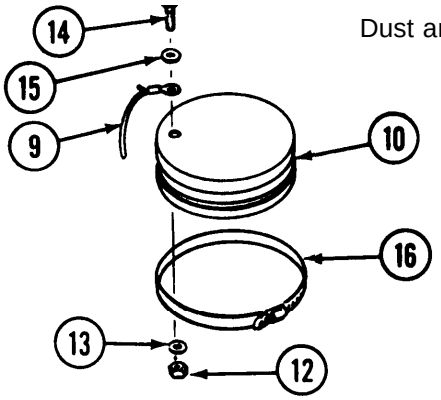
Support cable

Fabricate support cable (fig E-1, app E).

2-14. M56 GAS-PARTICULATE FILTER UNIT - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION

REASSEMBLY



Dust and moisture seal

Insert screw (14) in washer (15), loop of support cable (9) and hole in rubber cap (10).

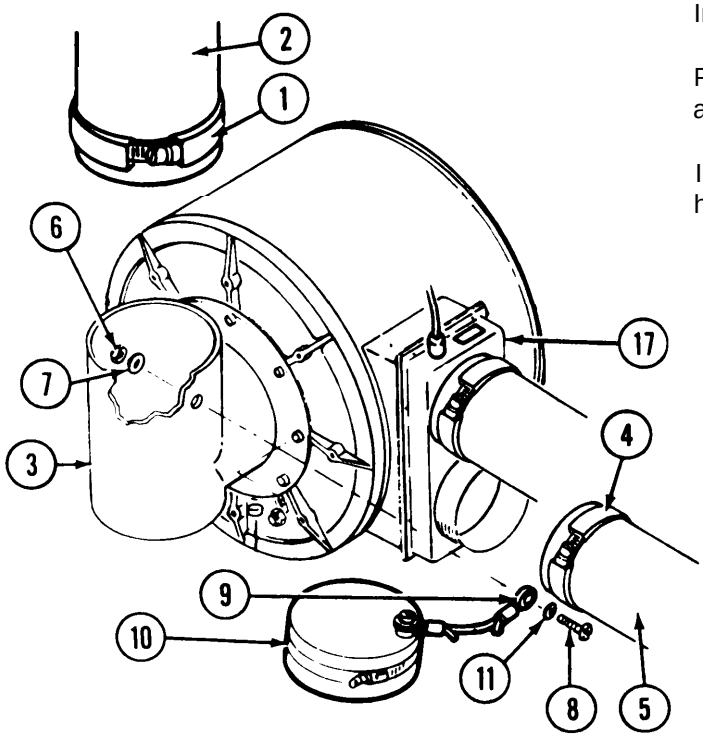
Install washer (13) and nut (12). Tighten securely.

Install hose clamp (16) in groove in rubber cap (10).

INSTALLATION

M56 Gas-Particulate Filter Unit

Dust and moisture seal protective cap



Insert screw (8) in washer (11), loop of support cable(9), and hole in inlet tee (3).

Install washer (7) and nut (6). Tighten securely.

Place airduct hose (2) on inlet tee. Tighten hose clamp adjusting screw (1).

Install airduct hose (5) on airflow valve (17). Tighten hose clamp adjusting screw (4).

LOCATION	ITEM	ACTION

REMOVAL

M56 Gas-Particulate Filter Unit/Power Distribution Unit

Tubing (nonmetallic)

Unscrew tube (green) coupling nut (1) from connector (2).

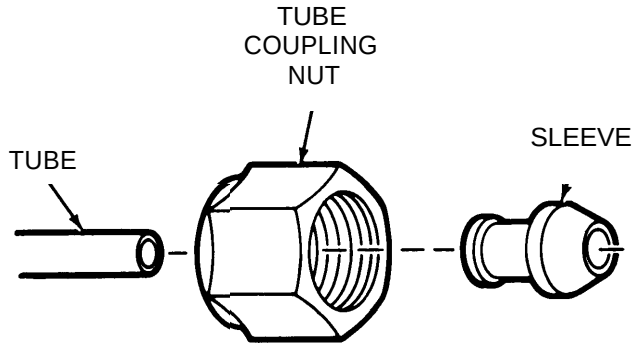
Unscrew tube (green) coupling nut (3) from connector (4).

Pull tube coupling nuts with sleeves (1 and 3) off tube (5). See detail A.

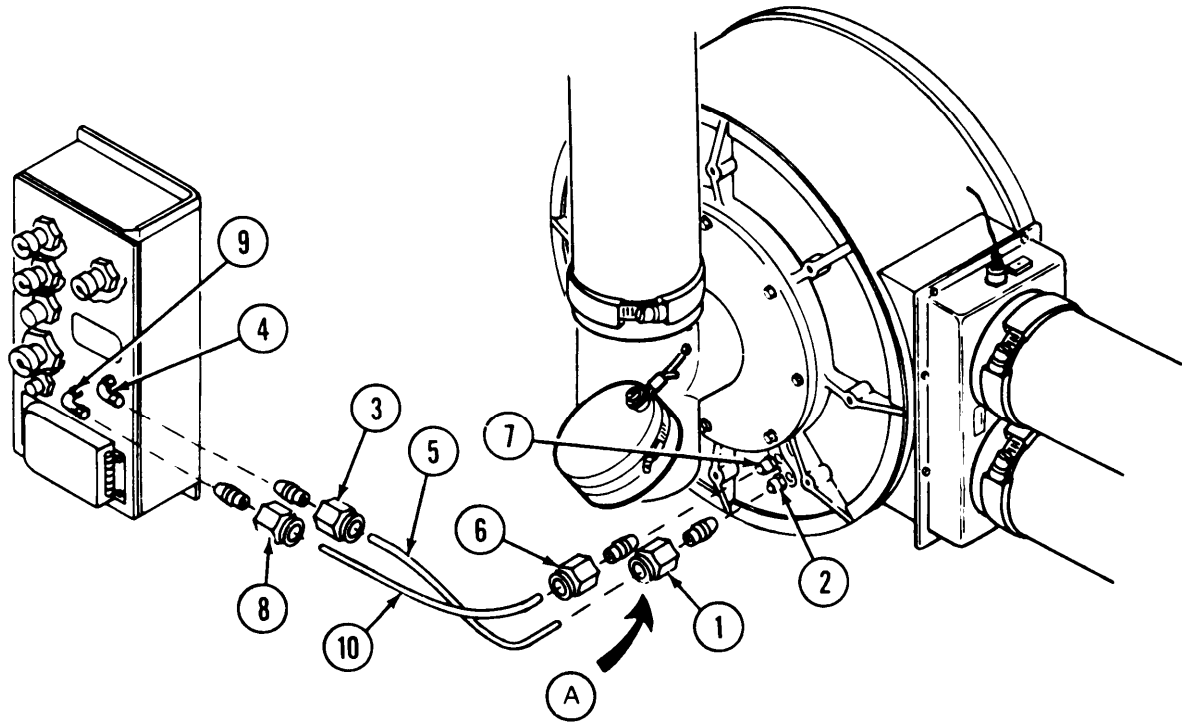
Unscrew tube (red) coupling nut (6) from connector (7).

Unscrew tube (red) coupling nut (8) from connector (9).

Pull tube coupling nuts with sleeves (6 and 8) off tube (10).



DETAIL A



REPAIR

Tubing (nonmetallic)

Fabricate tubing (fig E-2, app E).

2-14. M56 GAS-PARTICULATE FILTER UNIT - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION

INSTALLATION

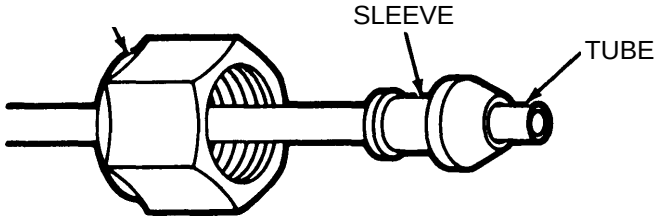
M56 Gas-Particulate Filter Unit/Power Distribution Unit

Red tubing (nonmetallic)

Push tube coupling nuts (6 and 8) with sleeves on red tube (10). See detail A.

Push one end of tube (10) into connector (7) and one end into connector (9). RED dot on power distribution unit indicates connector (9).

TUBE COUPLING NUT



DETAIL A

Push tube coupling nut (6) with sleeve onto connector (7) and handtighten.

Push tube coupling nut (8) with sleeve onto connector (9) and handtighten.

Push tube coupling nut (3) with sleeve onto connector (4) and handtighten.

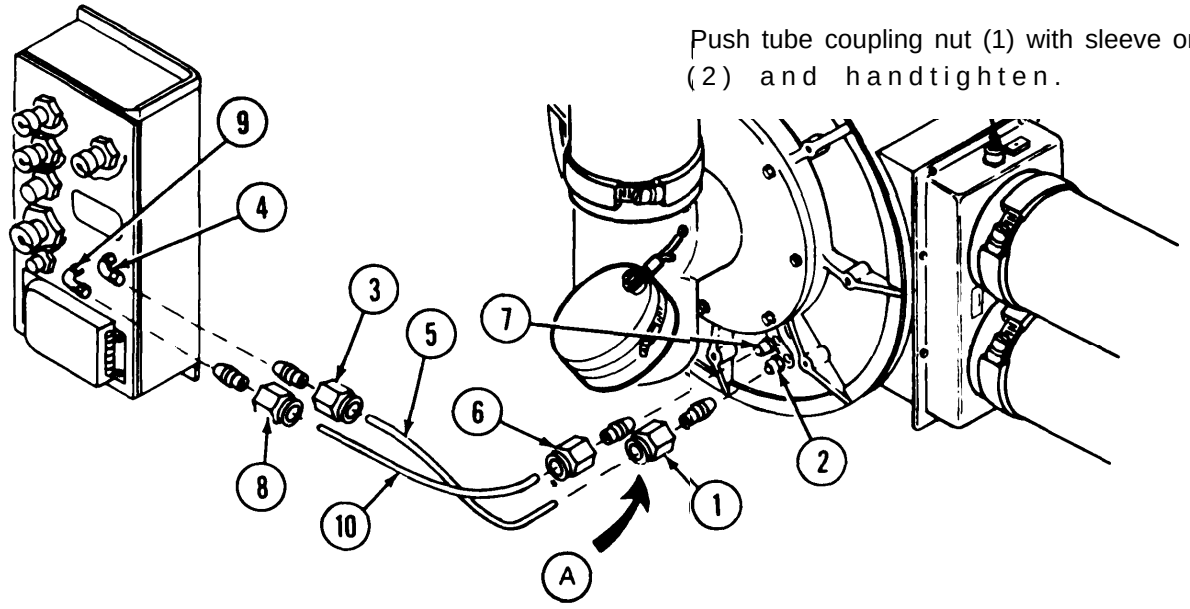
Green tubing (nonmetallic)

Push tube coupling nuts (1 and 3) with sleeves on green tube (5). See detail A.

Push one end of tube (5) into connector(2) and one end into connector (4). GREEN dot on power distribution unit indicates connector (4).

Push tube coupling nut (1) with sleeve onto connector (2) and handtighten.

Push tube coupling nut (1) with sleeve onto connector (2) and handtighten.



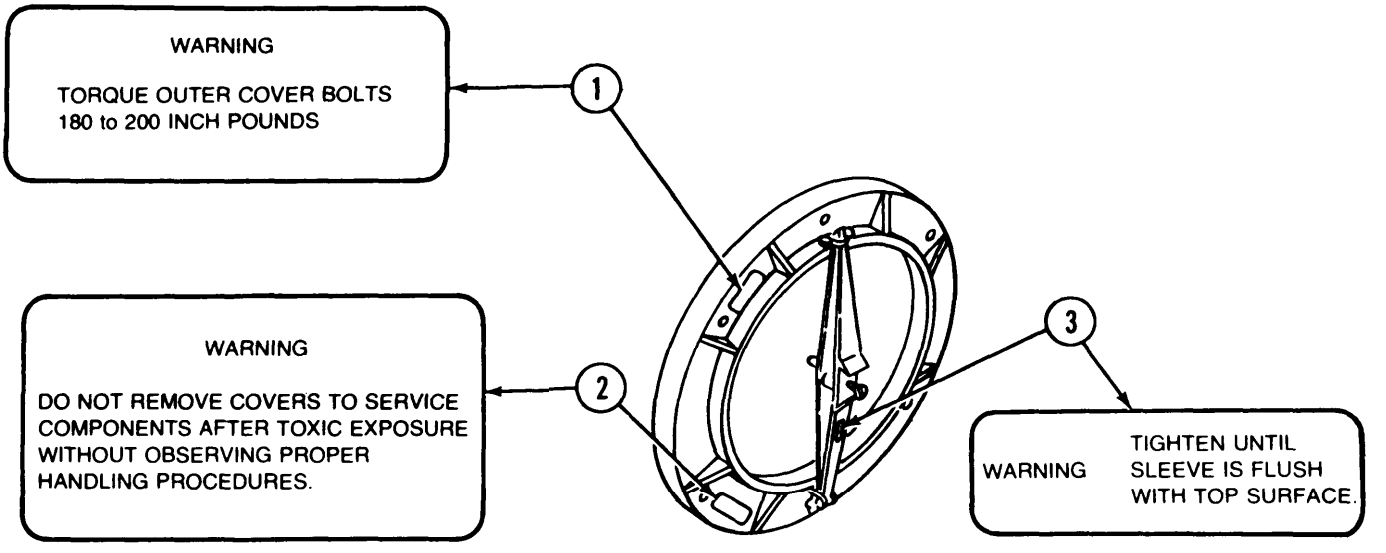
LOCATION	ITEM	ACTION

REMOVAL

Access Cover — Instruction plates

Lift edge of plate (1, 2, or 3) with a sharp tool.

Pull plate completely off the mounting surface.



INSTALLATION

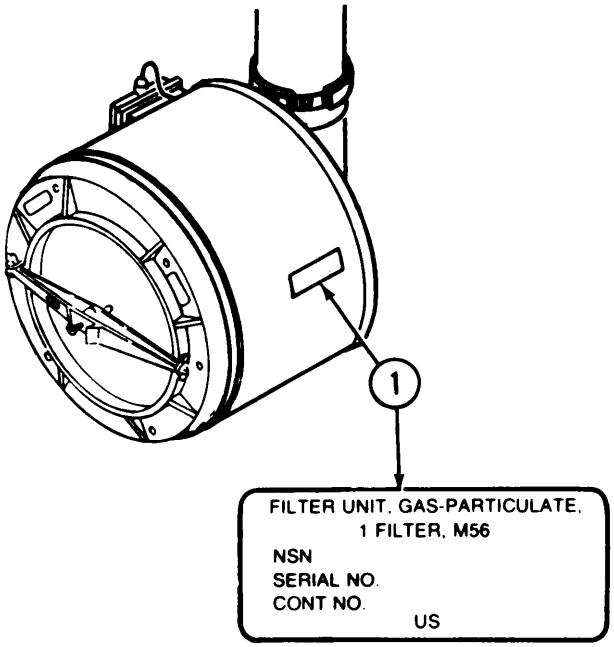
Thoroughly clean mounting surface with dry-cleaning solvent (item 4, app D). Mounting surface must be free of all contamination such as oil, grease, dirt or any foreign matter.

Activate the back of the mounting plate with dry-cleaning solvent (item 4, app D).

Mount the plate (1, 2, or 3) and apply pressure to the plate surface.

Spray or brush plate with aliphatic polyurethane coating (item 2, app D).

2-14. M56 GAS-PARTICULATE FILTER UNIT - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION
REMOVAL		
M56 Gas-Particulate Filter Unit	Identification plate	Lift edge of plate with a sharp tool. Pull plate completely off the mounting surface.
INSTALLATION		
		Thoroughly clean mounting surface with dry-cleaning solvent (item 4, app D). Mounting surface must be free of all contamination such as oil, grease, dirt or any foreign matter. Activate the back of the mounting plate with dry-cleaning solvent (item 4, app D). Mount the plate (1) and apply pressure to the plate surface. Spray or brush plate with aliphatic polyurethane coating (item 2, app D).
PAINTING		
	Filter housing compartment control module and power distribution unit	Touch-up painting is authorized. Thoroughly clean the surfaces to be repainted. Use rags (item 6, app D) and dry-cleaning solvent (item 4, app D). Paint surfaces with one coat of primer (item 5, app D). Paint primed surfaces with aliphatic polyurethane coating (item 2, app D). **NOTE** Refer to TM 43-0139 for painting instructions for field use.

2-15. MAIN FAN - MAINTENANCE INSTRUCTIONS.

This task covers:
a. Removal
b. Installation

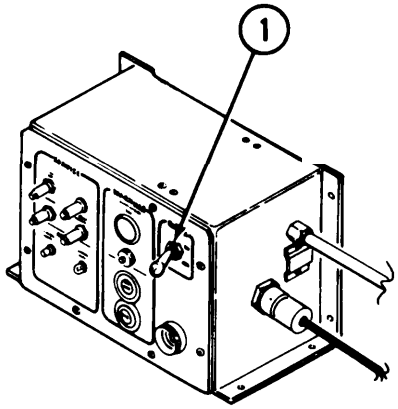
INITIAL SETUP

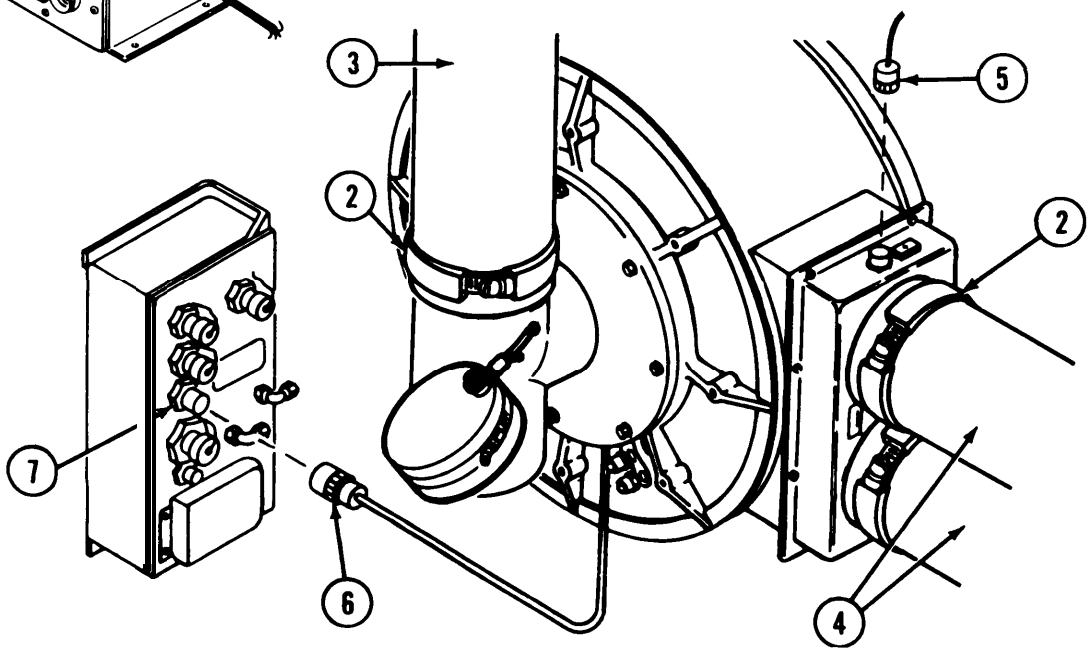
Tools
General Mechanics Tool Kit
SC 5180-90-CL-N26

LOCATION	ITEM	ACTION

REMOVAL

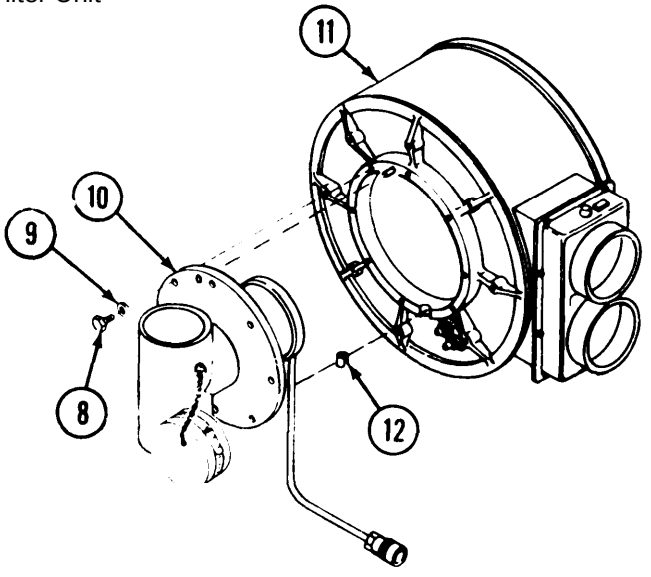
M56 Gas-Particulate Filter Unit	Main fan/inlet tee	Set POWER switch (1) on compartment control module to OFF. Loosen hose clamp adjusting screws (2) and remove inlet tee airduct hose (3) and airflow valve airduct hoses (4). Disconnect electrical cable plug P15 (5) from airflow valve. Disconnect electrical cable P4 (6) from power distribution panel connector J4 (7).



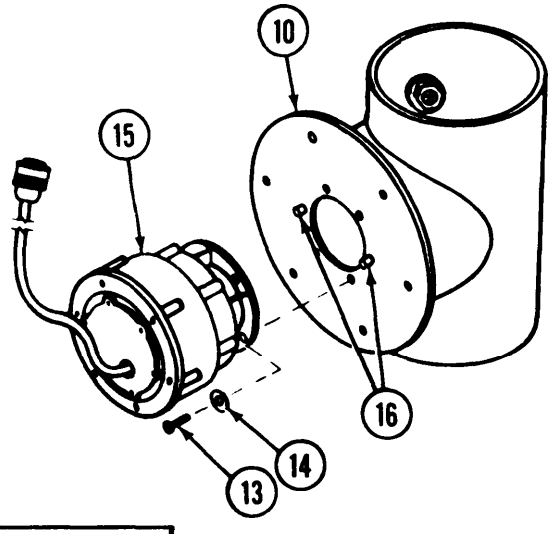


2-15. MAIN FAN - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION
REMOVAL (CONT)		
M56 Gas Particulate Filter Unit	Main fan/ inlet tee	Remove screws (8) and washers (9). Pull inlet tee (10) with main fan attached from filter housing (11). Remove cable from grommet (12). Remove main fan electrical cable grommet (12) from filter housing. Retain.



Inlet Tee	Main fan	Remove screws (13) and washers (14). Separate main fan (15) from inlet tee (10).



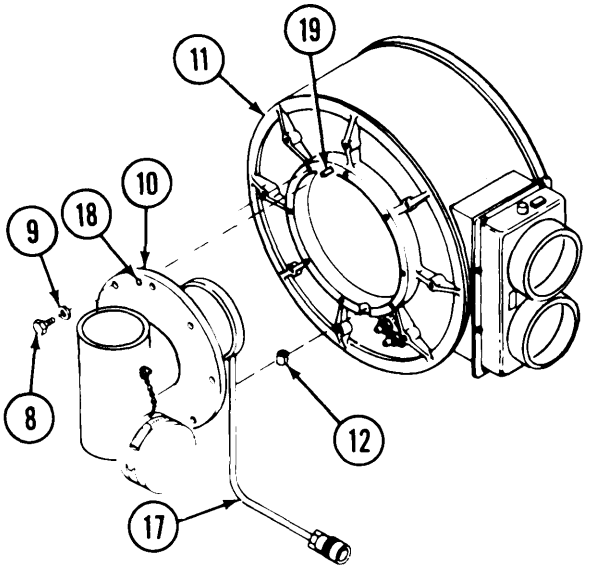
INSTALLATION		
Inlet Tee	Main fan	Position main fan (15) up to inlet tee (10). Aline guide pins (16) on inlet tee with guide pin holes in main fan. Push main fan against inlet tee. Install washers (14) and screws (13). Tighten securely.

LOCATION	ITEM	ACTION

INSTALLATION (CONT)

M56 Gas-Particulate Filter Unit

Main fan/inlet tee



Install grommet (12) on cable (17) about 10 inches from motor.

Position inlet tee (10) up to filter housing (11).

Install grommet (12) in slot in face of filter housing(11) with slit away from housing.

Aline guide pin hole(18) with guide pin (19). Push inlet tee against filter housing,

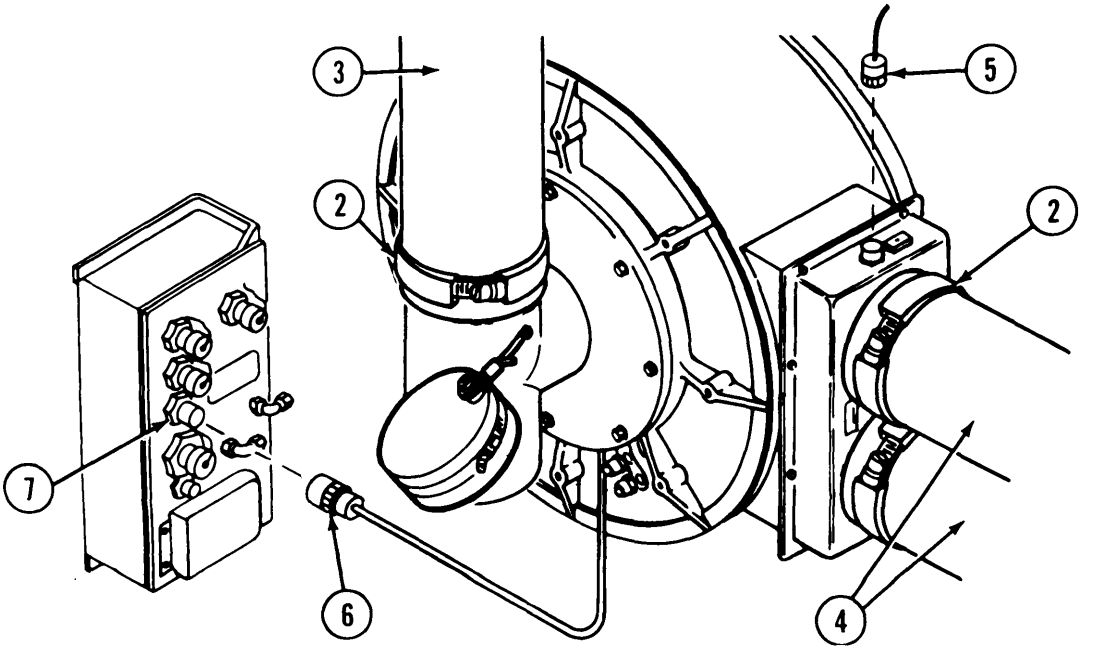
Install washers (9) and screws (8). Tighten securely.

Connect electrical cable plug P4 (6) to power distribution panel connector J4 (7).

Connect electrical cable plug P15 (5) to airflow valve.

Install airduct hoses (3 and 4).

Tighten hose clamp adjusting screws (2).



2-16 AIRFLOW VALVE - MAINTENANCE INSTRUCTIONS.

This task covers:
a. Removal
b. Disassembly
c. Repair
d. Reassembly
e. Installation

INITIAL SETUP

Tools
General Mechanics Tool Kit
SC 5180-90-CL-N26

References
TM 9-1430-651-12

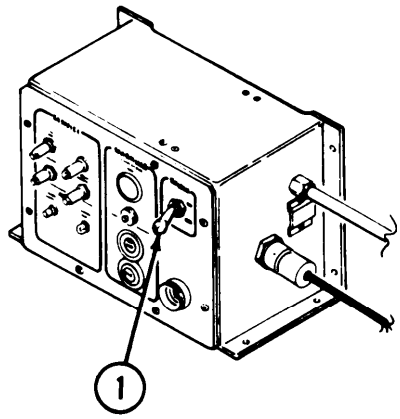
LOCATION	ITEM	ACTION

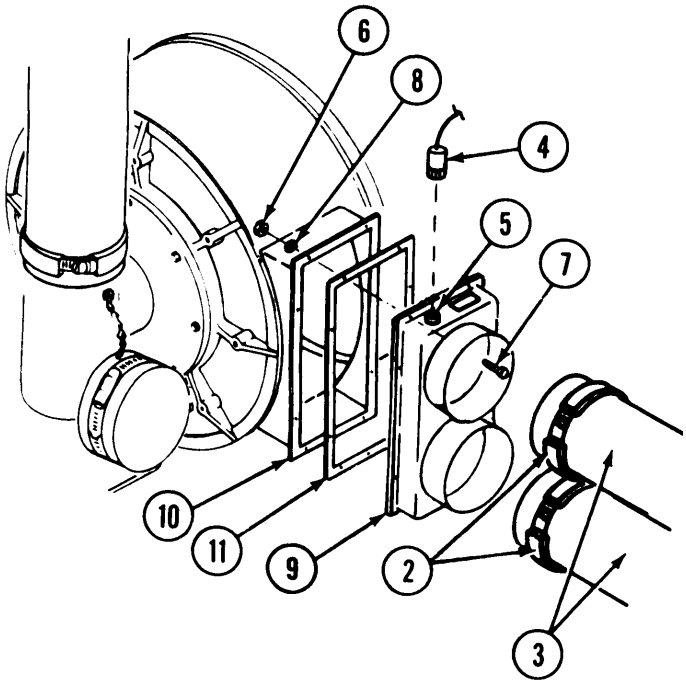
REMOVAL

M56 Gas-Particulate Filter Unit

Airflow valve

Set POWER switch (1) on compartment control module to OFF.





Loosen hose clamp adjusting screws (2) and remove airduct hoses (3).

Disconnect electrical plug P15 (4) from airflow valve connector J15 (5).

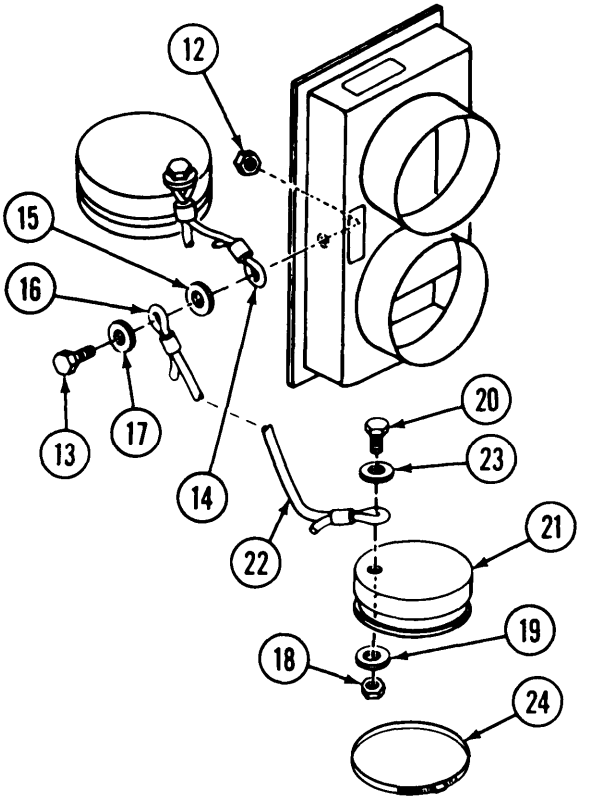
Remove nuts (6), screws (7), and washers (8).

Separate airflow valve (9) from filter unit (10).

Gasket

Replace airflow valve gasket (11) if unserviceable.
Remove gasket from flange on airflow valve.
Clean flange using dry-cleaning solvent (item 4, app D).
Apply cement (item 1, app D) to flange.
Install gasket.

LOCATION	ITEM	ACTION
DISASSEMBLY		
Airflow Valve	Dust and moisture seal protective cap	Remove nut (12) from screw (13). Remove screw (13) from airflow valve, support cable (14), washer (15), support cable (16), and washer (17).
		Remove nut (18) and washer (19) from screw (20).
		Remove screw (20) from rubber cap (2), support cable (22), and washer (23).
		Remove hose clamp (24) from rubber cap (21).



REPAIR		
	Support cable	Fabricate support cable (fig E-1, app E).
REASSEMBLY		
Airflow Valve	Dust and moisture seal protective cap	Install screw (20) in washer (23), loop of support cable (22), hole in rubber cap (21), washer (19), and nut (18). Tighten nut securely.
		Install hose clamp (24) in groove in rubber cap (21). Do not tighten adjusting screw.
		Install screw (13) in washer (1 7), loop of support cable (16), washer (15), support cable (14), hole in airflow valve, and nut (12). Tighten nut securely.

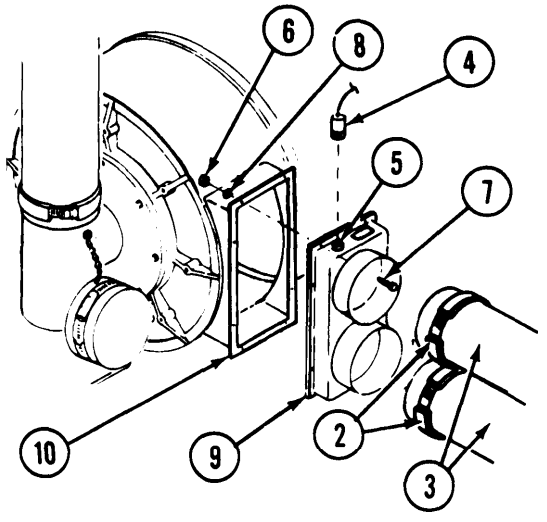
2-16. AIRFLOW VALVE - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION

INSTALLATION

M56 Gas-Particulate Filter Unit

Airflow valve



Place airflow valve (9) against filter housing (10). Aline screw holes.

Install washers (8), screws (7), and nuts (6). Tighten securely.

Connect electrical plug P15 (4) to airflow valve connector J15 (5).

Install airduct hoses (3) on airflow valve. Tighten hose clamp adjusting screws (2).

REMOVAL

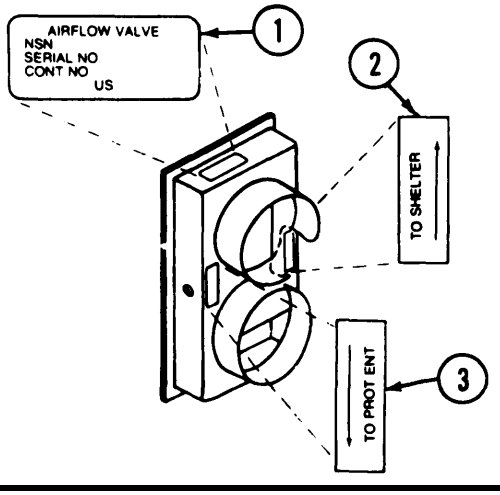
Airflow Valve

Identification plate and instruction plates

Lift edge of plate (1, 2, or 3) with a sharp tool.

Pull plate completely off the mounting surface.

INSTALLATION



Thoroughly clean mounting surface with dry-cleaning solvent (item 4, app D). Mounting surface must be free of all contamination such as oil, grease, dirt or any foreign matter.

Activate the back of the plate (1, 2, or 3) with dry-cleaning solvent (item 4, app D).

Mount the plate and apply pressure to the plate surface.

Spray or brush plate with aliphatic polyurethane coating (item 2, app D).

2-17. POWER DISTRIBUTION UNIT - MAINTENANCE INSTRUCTIONS.

This task covers:
a. Replacement b. Removal c. Installation

INITIAL SETUP

Tools
General Mechanics Tool Kit
SC 5180-90-CL-N26

References
TM 9-1430-651-12

General Safety Instructions
If filter is operating, 208 V is present at the indicator lamp socket.

LOCATION	ITEM	ACTION

REPLACEMENT

AN/TSQ-73	Power distribution unit	Refer to TM 9-1430-651-12 for power distribution unit removal and installation instructions.

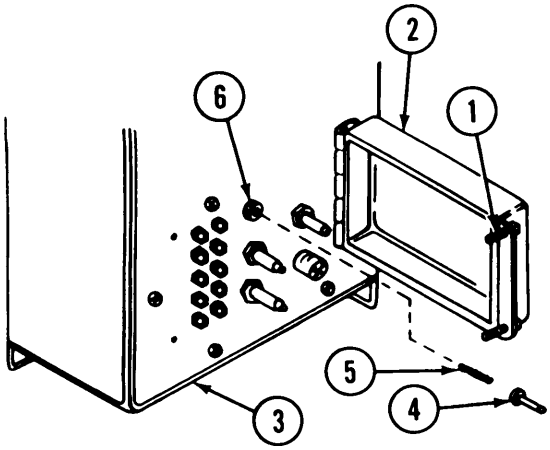
REMOVAL

Power Distribution Panel	208 V lamp	Loosen screws (1).
		Open access cover (2) on power distribution unit (3).
		Unscrew lens (4).

WARNING

If filter unit is operating, 208 V is present at the indicator lamp socket.

Remove 208 V lamp (5) from indicator lamp socket (6).



INSTALLATION

Insert 208 V lamp (5) in lens (4).

Screw lens (4) into indicator lamp socket (6).

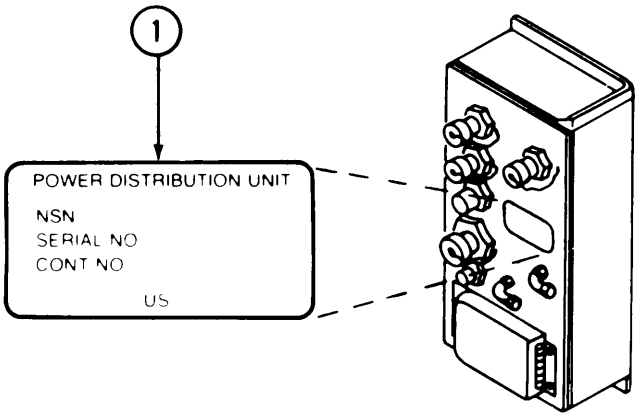
Close access cover (2) against panel (3) and secure with screws (1).

2-17. POWER DISTRIBUTION UNIT - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION

REMOVAL

Power Distribution Unit	Identification plate	Lift edge of plate (1) with a sharp tool. Pull plate completely off the mounting surface.



INSTALLATION

Thoroughly clean mounting surface with dry-cleaning solvent (item 4, app D). Mounting surface must be free of all contamination such as oil, grease, dirt or any foreign matter.

Activate the back of the plate with dry-cleaning solvent (item 4, app D).

Mount plate (1) and apply pressure to the plate surface.

Spray or brush plate with aliphatic polyurethane coating (item 2, app D).

2-18. COMPARTMENT CONTROL MODULE - MAINTENANCE INSTRUCTIONS.

This task covers:
a. Removal
b. Installation

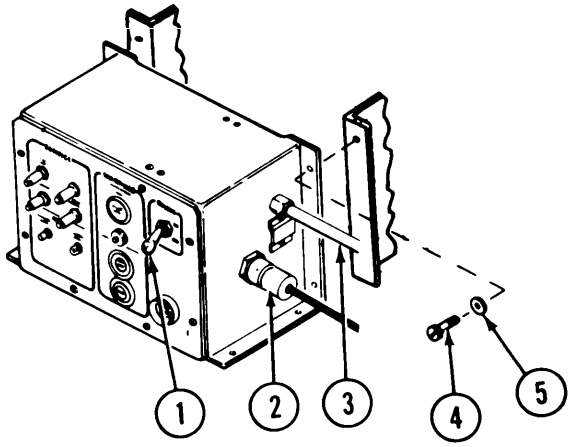
INITIAL SETUP

Tools
General Mechanics Tool Kit
SC 5180-90-CL-N26

LOCATION	ITEM	ACTION

REMOVAL

AN/TSQ-73	Compartment control module	Set POWER switch (1) on compartment control module to OFF.
		Disconnect electrical cable plug P1 (2) from compartment control module.
		Pull off pressure hose (3).
		Remove screws (4), washers (5), and compartment control module from mounting brackets.



INSTALLATION

Place compartment control module against mounting brackets and aline with screw holes.

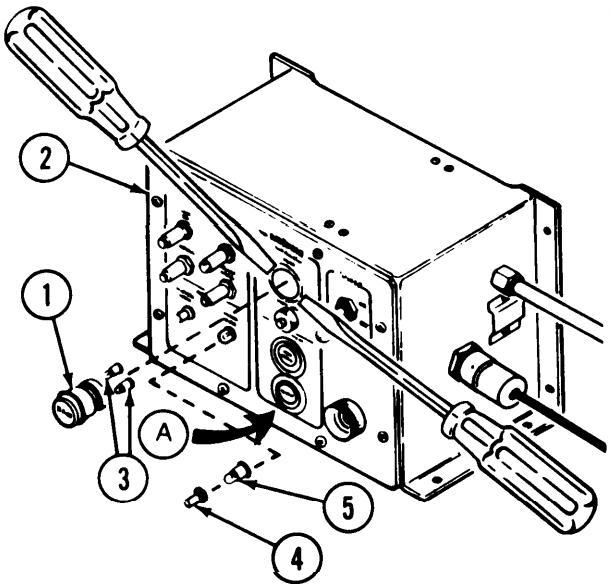
Install washers (4) and screws (5). Tighten securely.

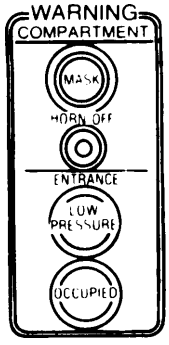
Install pressure hose (3).

Connect electrical cable plug P1 (2) to connector J1 on compartment control module.

2-18. COMPARTMENT CONTROL MODULE - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION
REMOVAL		
Compartment Control Module	MASK lamp	Using two screwdrivers, gently pry lens (1) module from control panel (2).
		NOTE Check the location of the lamps in the lens socket for proper installation.
		Pull lamps (3) from lens (1).
	LOW PRESSURE lamp	Same as MASK lamp.
	OCCUPIED lamp	Same as MASK lamp.
	CHANGE FILTER lamp	Unscrew lens (4). Remove lamp (5).
INSTALLATION		
	MASK lamp	Insert lamps (3) into lens (1). Use the same lamp sockets that lamps were removed from.
		Insert lens (1) into control panel (2), as shown in detail A. Press lens into panel until it snaps into place.
	LOW PRESSURE lamp	Same as MASK lamp.
	OCCUPIED lamp	Same as MASK lamp.
	CHANGE FILTER lamp	Insert lamp (5) into lens (4).
		Screw lens (4) into control panel (2).





DETAIL A

Section VIII. MAINTENANCE PROCEDURES FOR M263 INSTALLATION KIT

2-19. GENERAL. These instructions are for use by organizational maintenance personnel. They apply to:
Airflow valve and silencer
Cables
Airduct hoses

2-20. AIRFLOW VALVE AND SILENCER - MAINTENANCE INSTRUCTIONS.

This task covers:

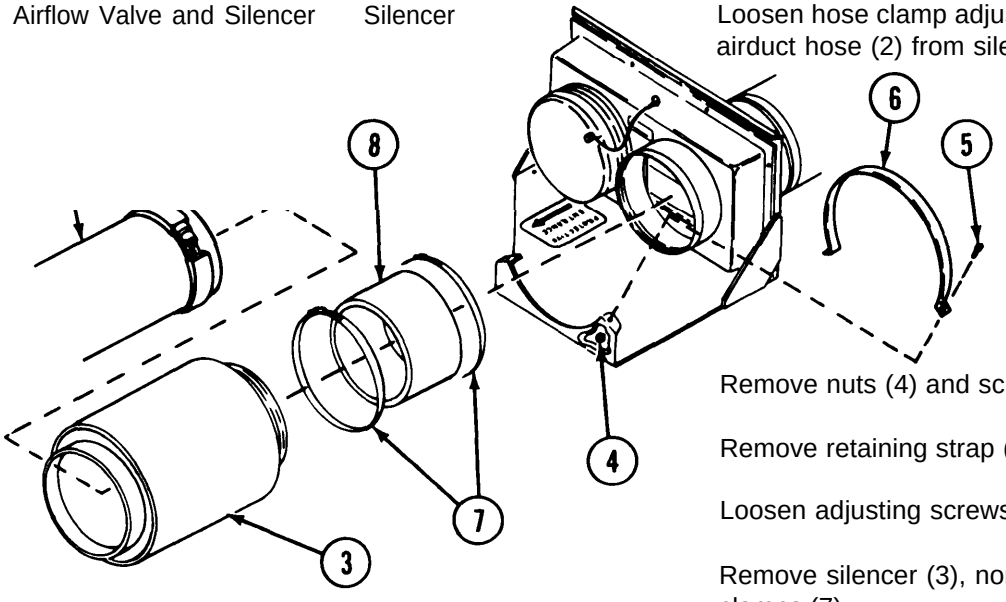
a. Replacement
b. Removal
c. Repair
d. Installation

INITIAL SETUP

Tools
General Mechanics Tool Kit
SC 5180-90-CL-N26

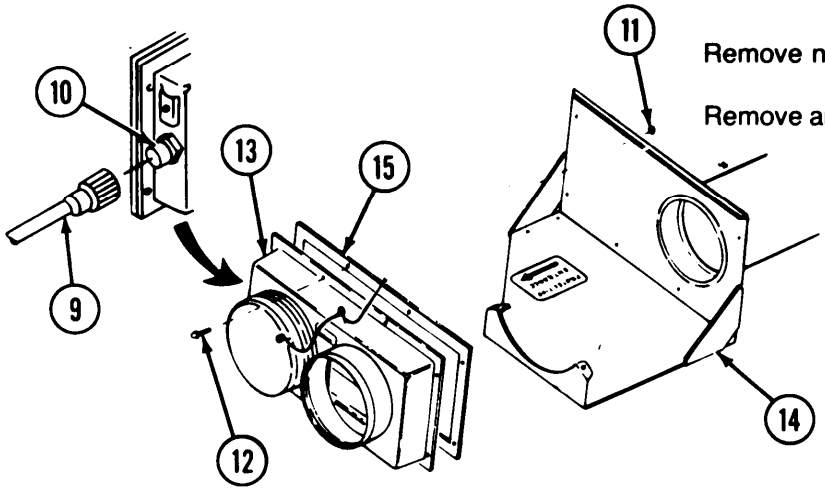
References
TM 9-1430-651-12

LOCATION	ITEM	ACTION
REPLACEMENT		
AN/TSQ-73	Airflow valve and silencer	Refer to TM 9-1430-651-12 for airflow valve and silencer removal and installation instructions.
REMOVAL		
Airflow Valve and Silencer	Silencer	Loosen hose clamp adjusting screw (1) and remove airduct hose (2) from silencer (3).
		Remove nuts (4) and screws (5).
		Remove retaining strap (6).
		Loosen adjusting screws on hose clamps (7).
		Remove silencer (3), nonmetallic hose (8), and hose clamps (7).



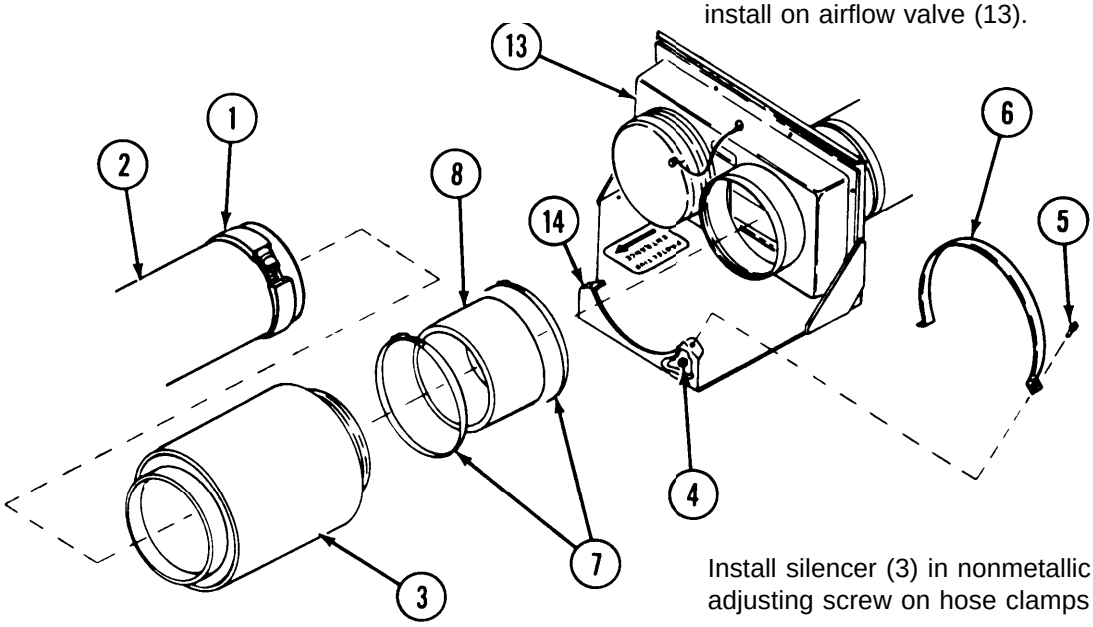
2-20. AIRFLOW VALVE AND SILENCER - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION
REMOVAL (CONT)		
Airflow Valve and Silencer	Airflow valve	**Disconnect electrical cable plug P15 (9) from airflow valve connector J15 (10).**
		Remove nuts (11) and screw (12).
		Remove airflow valve (13) from mounting bracket (14).

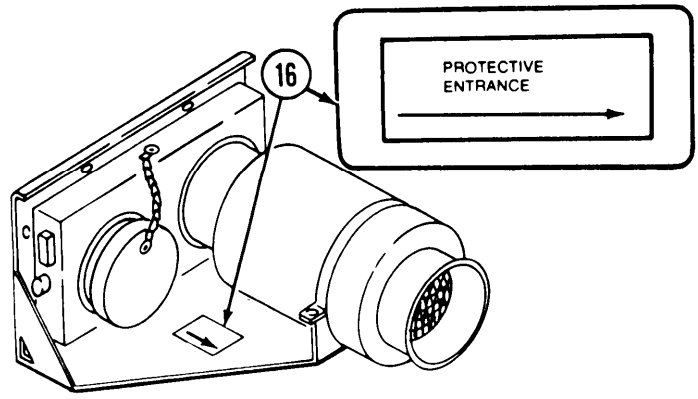


REPAIR		
	Nonmetallic hose	Fabricate replacement nonmetallic hose (fig E-3, app E).
	Gasket	Replace airflow valve gasket (15) if unserviceable. Remove gasket from flange. Clean flange using dry-cleaning solvent (item 4, app D). Apply cement (item 1, app D) to flange. Install gasket.
INSTALLATION		
Airflow Valve and Silencer	Airflow valve	Position airflow valve (13) against bracket (14) and aline screw holes.
		Install screws (12) and nuts (11). Tighten securely.
		Connect electrical cable plug P15 (9) to airflow valve connector J15 (10).

LOCATION	ITEM	ACTION
INSTALLATION (CONT)		
Airflow Valve and Silencer	Silencer	Place hose clamps (7) on nonmetallic hose (8) and install on airflow valve (13).



		Install silencer (3) in nonmetallic hose (8) and tighten adjusting screw on hose clamps (7).
		Place retaining strap (6) over silencer (3), and aline screw holes in strap and mounting bracket (14).
		Install screws (5) and nuts (4). Tighten securely.
REMOVAL		
		Install airduct hose (2) on silencer (3) and tighten hose clamp adjusting screw (1).
Airflow Valve and Silencer	Instruction plate	Lift edge of plate (16) with a sharp tool.
		Pull plate completely off the mounting surface.
INSTALLATION		



		Thoroughly clean mounting surface with dry-cleaning solvent (item 4, app D). Mounting surface must be free of all contamination such as oil, grease, dirt or any foreign matter.
		Activate the back of the plate with dry-cleaning solvent (item 4, app D).
		Mount the plate and apply pressure to the plate surface.
		Spray or brush plate with aliphatic polyurethane coating (item 2, app D).

2-21. CABLE C5-19-6170-40 - MAINTENANCE INSTRUCTIONS.

This task covers:

a. Removal
b. Test
c. Replace
d. Installation

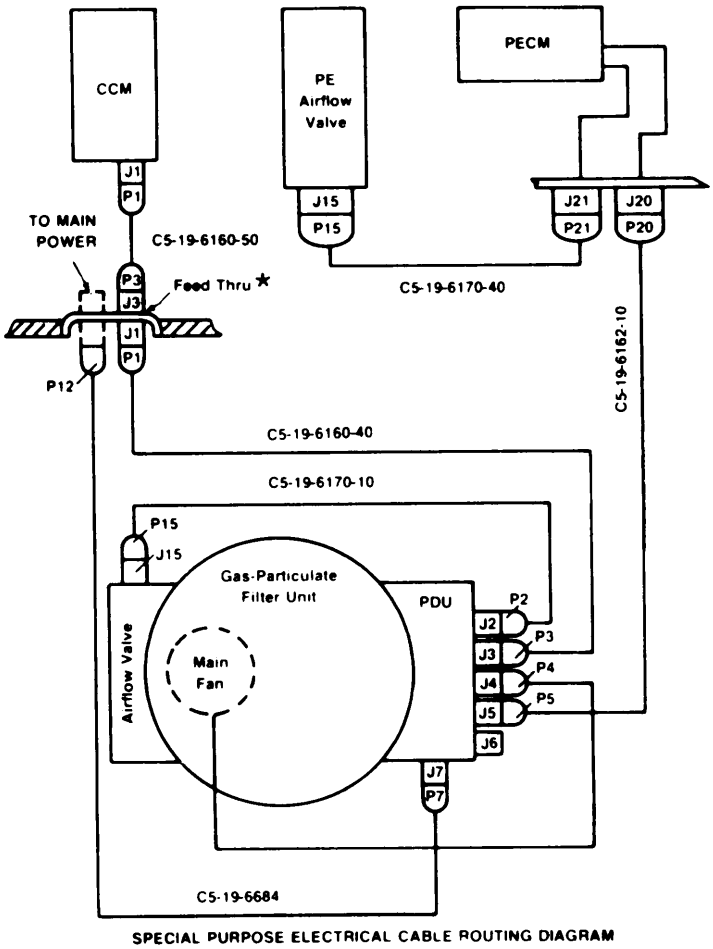
INITIAL SETUP

Test Equipment
Multimeter AN/USM223

LOCATION	ITEM	ACTION

NOTE

Use the cable routing diagram below to locate each of the six cables.



SPECIAL PURPOSE ELECTRICAL CABLE ROUTING DIAGRAM

*MCPE/DISPLAY DEMARK

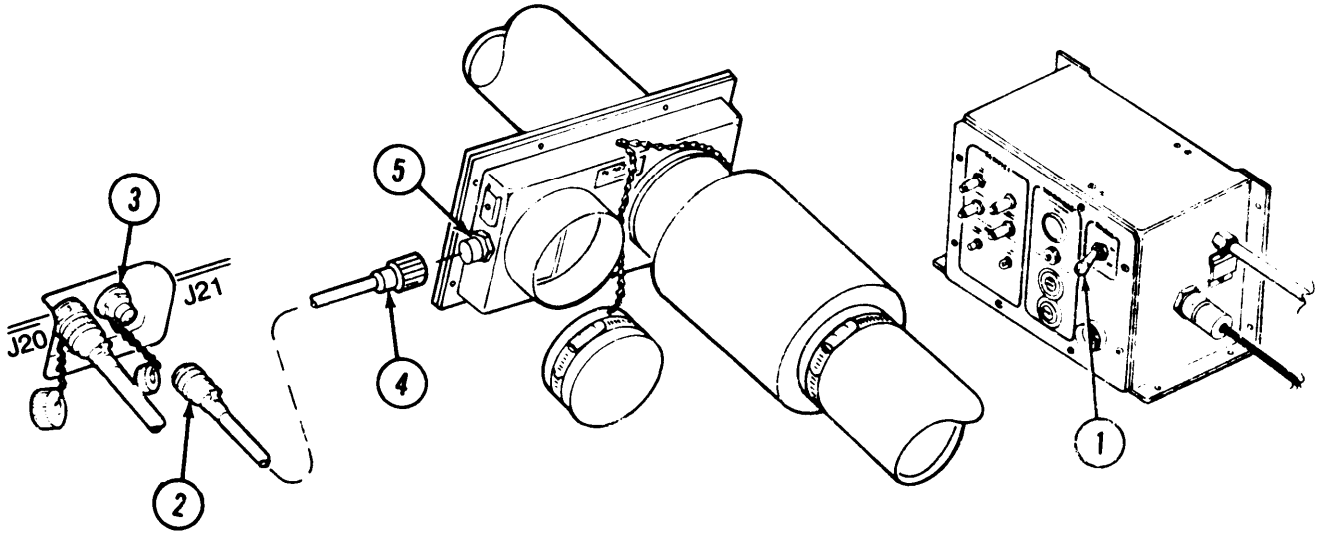
LOCATION	ITEM	ACTION

REMOVAL

WARNING

Before removing protective entrance cables, be sure that POWER switch on the compartment control module is in the OFF position and that the collective protection equipment power source is shut down.

M12 Protective Entrance and Airflow Valve and Silencer	Cable C5-19-6170-40	Set compartment control module POWER switch (1) to OFF. Shut down collective protection equipment power source. Disconnect cable plug P21 (2) from protective enclosure connector J21 (3). Disconnect cable plug P15 (4) from airflow valve and silencer connector J15 (5).



2-21. CABLE C5-19-6170-40 - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION

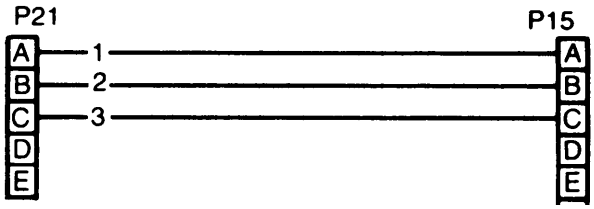
TEST

Cable C5-19-6170-40

Check continuity of each wire between P21 and P15.

NOTE

Use multimeter and cable C5-19-6170-40 wiring diagram.

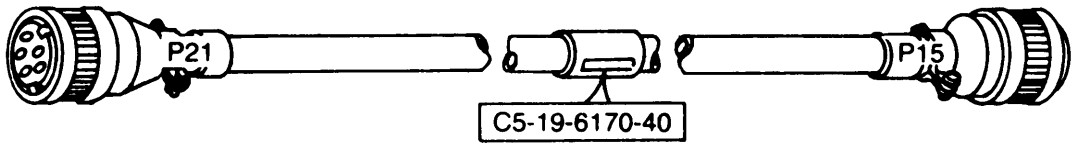


C5-19-6170-40
CABLE ASSEMBLY WIRING DIAGRAM

REPLACE

Cable C5-19-6170-40

Replace cable if it fails continuity check.



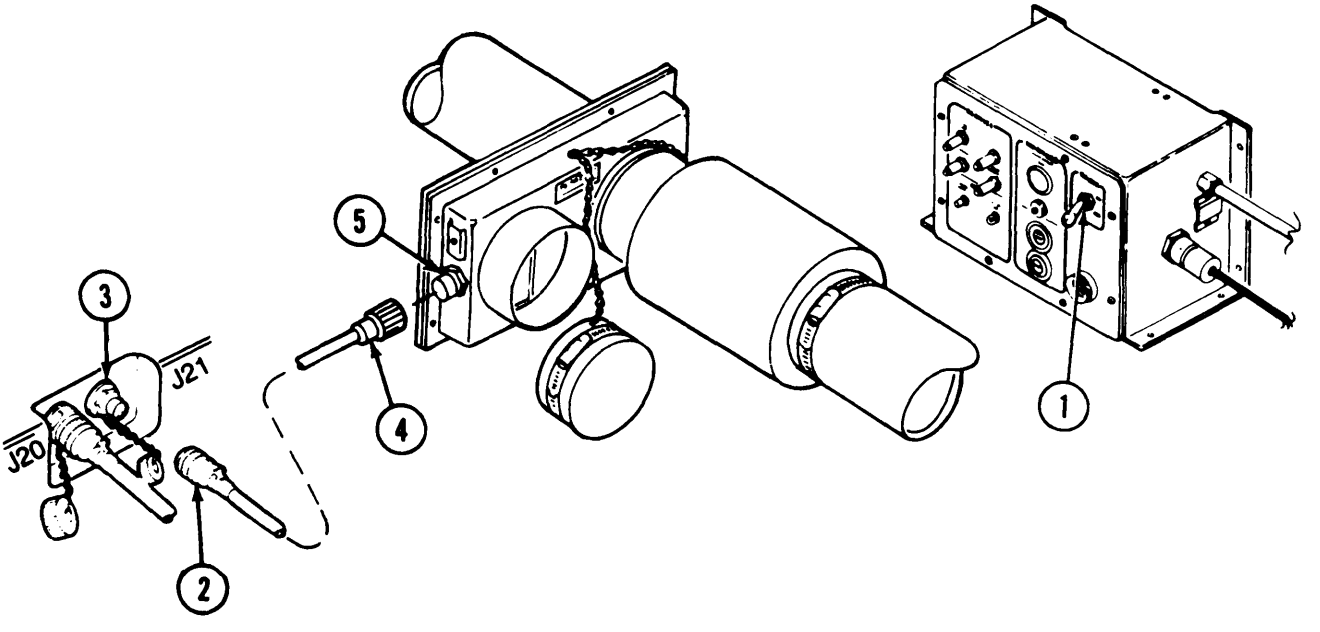
LOCATION	ITEM	ACTION

INSTALLATION

WARNING

Before installing protective entrance cable, be sure that POWER switch on the compartment control module is in the OFF position and that the collective protection equipment power source is shut down.

M12 Protective Entrance and Airflow Valve and Silencer	Cable C5-19-6170-40	Set POWER switch (1) on compartment control module to OFF. Connect cable plug P15 (4) to airflow valve connector J15 (5). Connect cable plug P21 (2) to protective entrance connector J21 (3).



2-22. CABLE C5-19-6162-10 - MAINTENANCE INSTRUCTIONS.

This task covers:

a. Removal b. Test c. Installation

INITIAL SETUP

Test Equipment
Multimeter AN/USM223

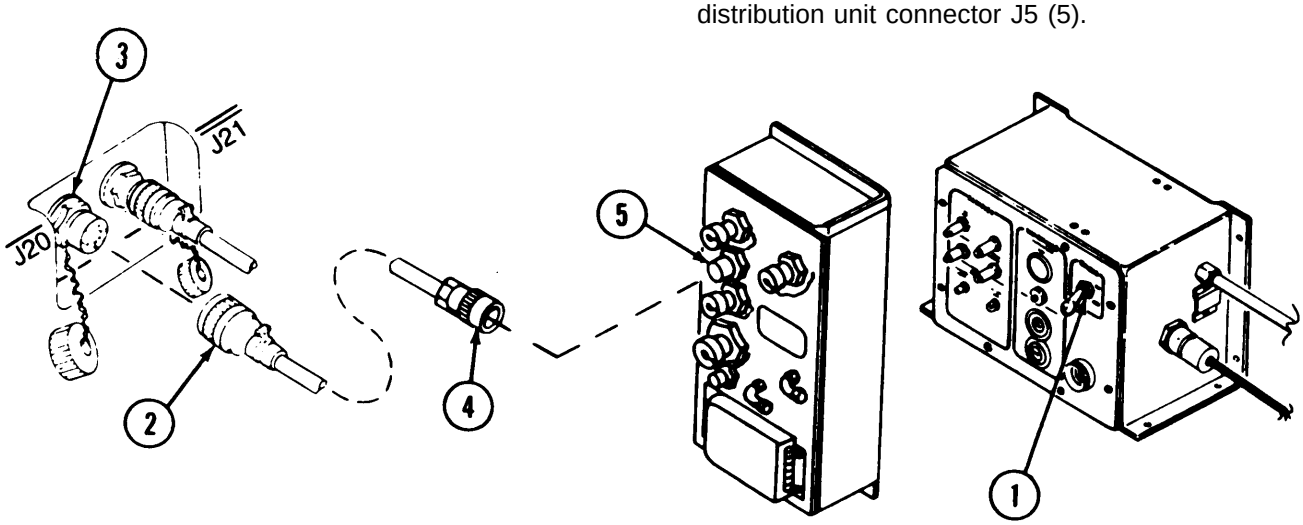
LOCATION	ITEM	ACTION

REMOVAL

WARNING

Before removing protective entrance cables, be sure that POWER switch on compartment control module is in the OFF position and that the collective protection equipment power source is shut down.

M12 Protective Entrance and Power Distribution Unit	Cable C5-19-6162-10	Set compartment control module POWER switch (1) to OFF. Shut down collective protection equipment power source. Disconnect electrical cable plug P20 (2) from protective entrance enclosure connector J20 (3). Disconnect electrical cable plug P5 (4) from power distribution unit connector J5 (5).



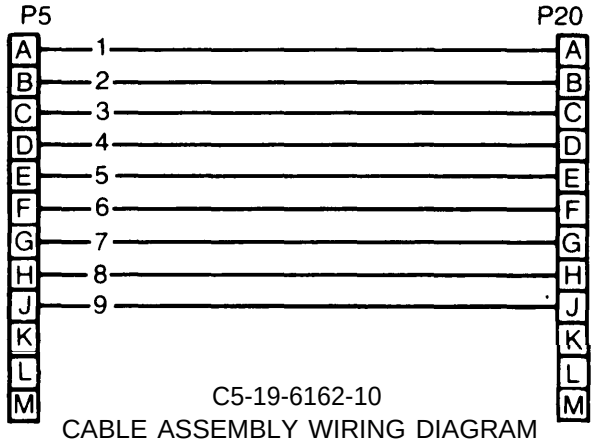
LOCATION	ITEM	ACTION

TEST

Cable C5-19-6162-10 — Check continuity of each wire between P5 and P20.

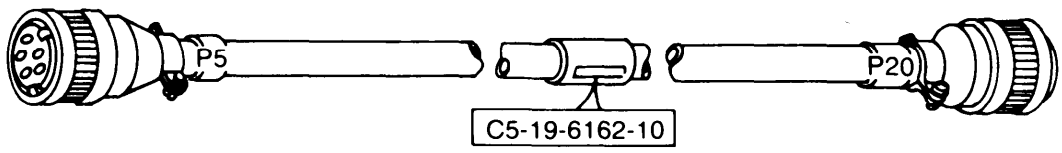
NOTE

Use multimeter and cable C5-19-6162-10 wiring diagram.



C5-19-6162-10
CABLE ASSEMBLY WIRING DIAGRAM

Cable C5-19-6162-10 — Replace cable if it fails continuity check.



2-22. CABLE C5-19-6162-10 - MAINTENANCE INSTRUCTIONS (CONT).

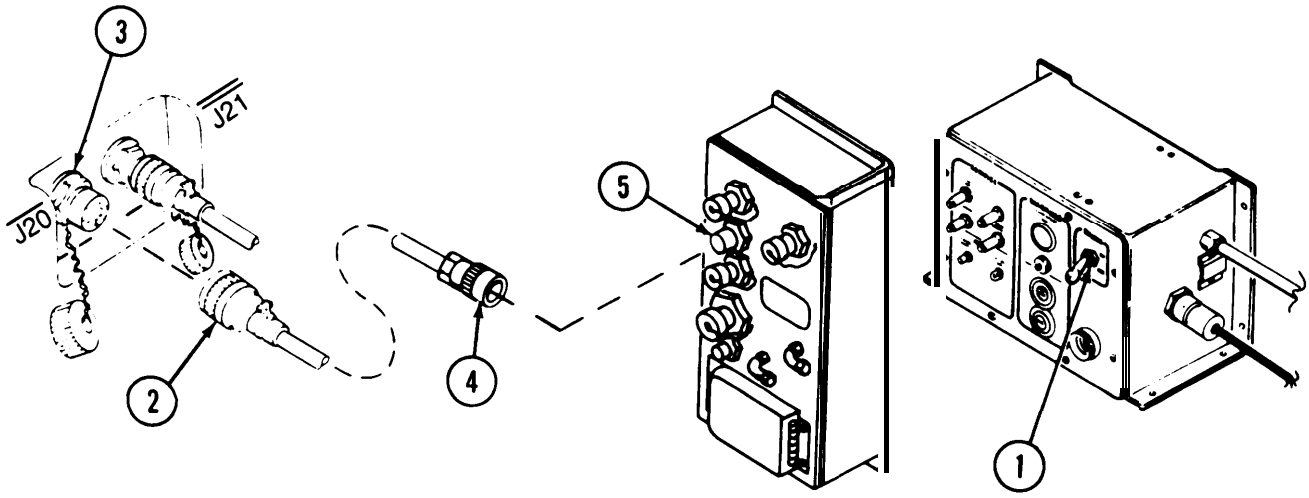
LOCATION	ITEM	ACTION

INSTALLATION

WARNING

Before installing protective entrance cables, be sure that POWER switch on the compartment control module is in the OFF position and that the collective protection equipment power source is shut down.

M12 Protective Entrance and Power Distribution Unit	Cable C5-19-6162-10	Set POWER switch (1) on compartment control module to OFF. Connect electrical cable plug P5 (4) to power distribution unit connector J5 (5). Connect electrical cable plug P20 (2) to protective entrance enclosure connector J20 (3).



2-23. CABLE C5-19-6170-10 - MAINTENANCE INSTRUCTIONS.

This task covers:

a. Removal
b. Test
c. Replace
d. Installation

INITIAL SETUP

Test Equipment
Multimeter AN/USM223

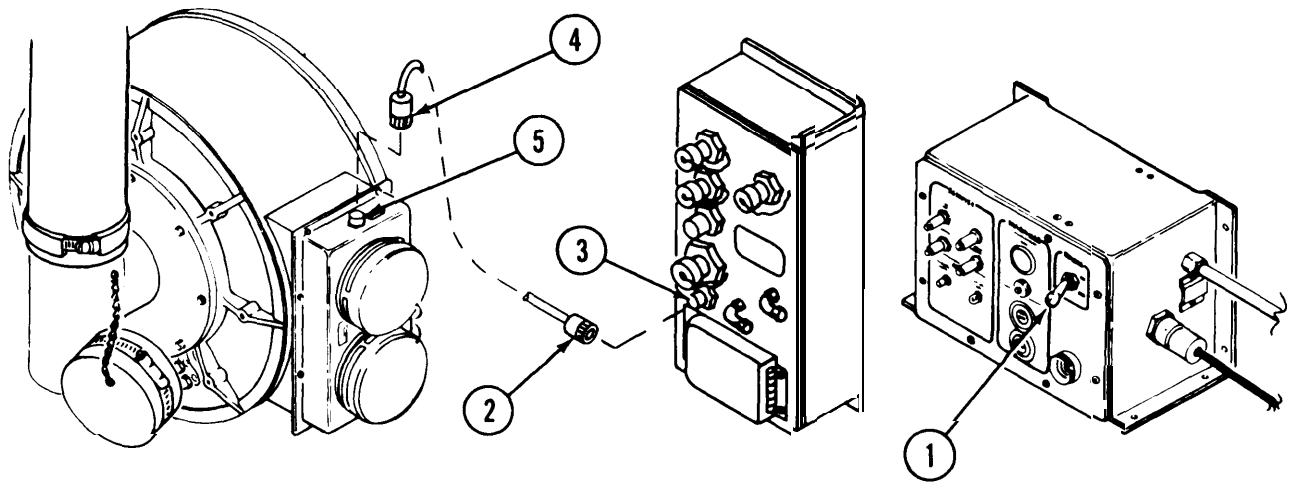
LOCATION	ITEM	ACTION

REMOVAL

WARNING

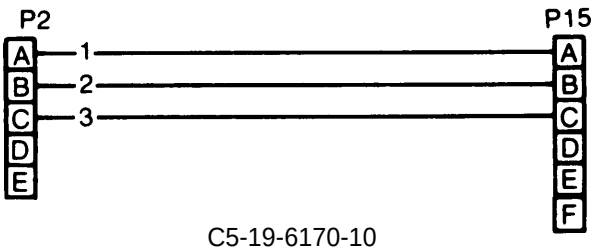
Before removing protective entrance cables, be sure that POWER switch on compartment control module is in the OFF position and that the collective protection equipment power source is shut down.

Power Distribution Unit and Airflow Valve on Filter Unit	Cable C5-19-6170-10	Set compartment control module POWER switch (1) to OFF. Shut down collective protection equipment power source. Disconnect cable assembly plug P2 (2) from PDU connector J2 (3). Disconnect cable assembly plug PI 5 (4) from airflow valve connector J15 (5).



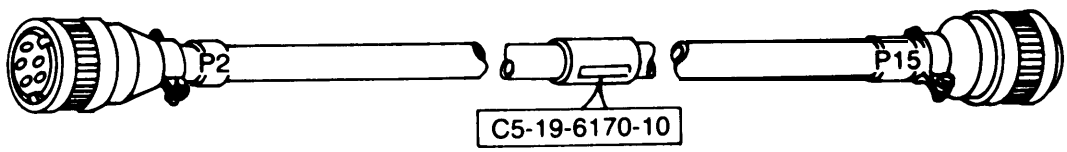
2-23. CABLE C5-19-6170-10 - MAINTENANCE INSTRUCTIONS (CONT).

LOCATION	ITEM	ACTION
TEST		
Power Distribution Unit and Airflow Valve on Filter Unit	Cable C5-19-6170-10	Check continuity of each wire between P2 and P15. **NOTE** Use multimeter and cable C5-19-6170-10 wiring diagram.



C5-19-6170-10
CABLE WIRING DIAGRAM

REPLACE		
Power Distribution Unit and Airflow Valve on Filter Unit	Cable C5-19-6170-10	Replace cable if it fails continuity check.



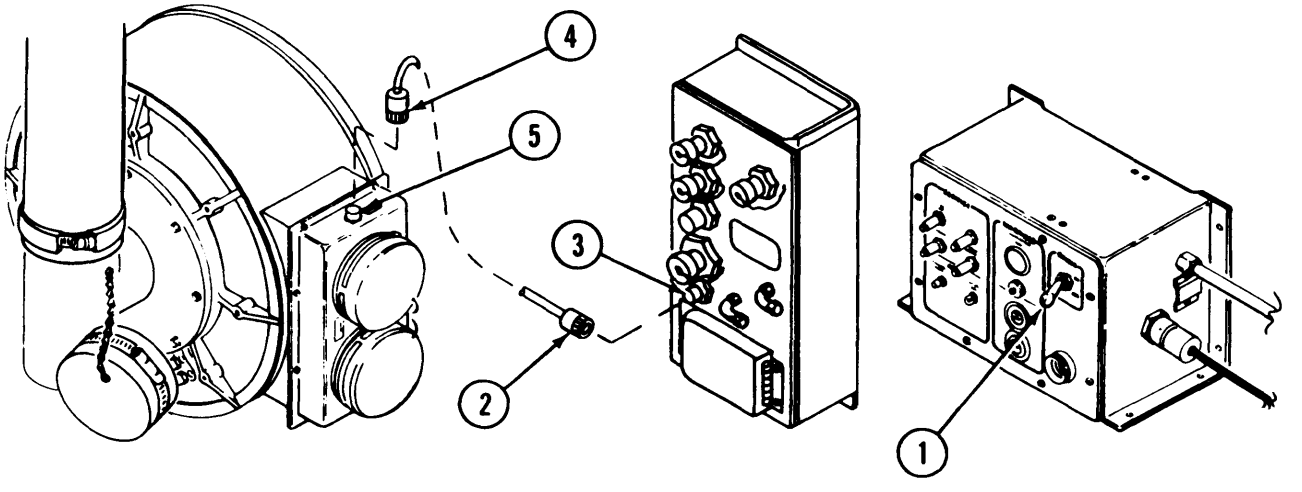
LOCATION	ITEM	ACTION

INSTALLATION

WARNING

Before installing protective entrance cables, be sure that POWER switch on the compartment control module is in the OFF position and that the collective protection equipment power source is shut down.

Power Distribution Unit and Airflow Valve on Filter Unit	Cable C5-19-6170-10	Set POWER switch (1) on compartment control module to OFF. Connect cable assembly plug P15 (4) to airflow valve connector J15 (5). Connect cable assembly plug P2 (2) to power distribution unit connector J2 (3).



2-24. CABLE C5-19-6160-50 - MAINTENANCE INSTRUCTIONS.

This task covers:

a. Removal
b. Test
c. Replace
d. Installation

INITIAL SETUP

Test Equipment
Multimeter AN/USM223

LOCATION	ITEM	ACTION

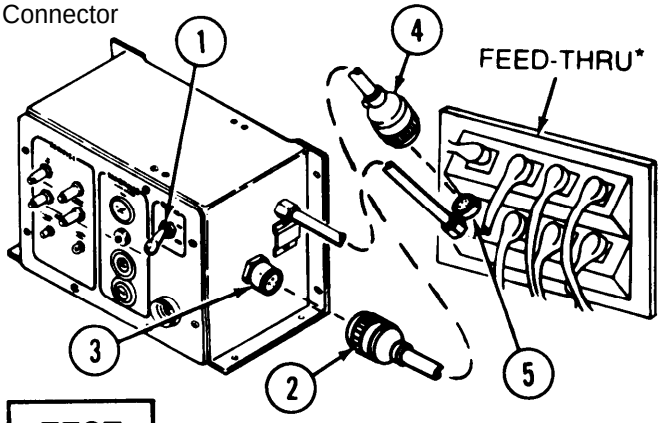
REMOVAL

WARNING

Before removing protective entrance cables, be sure that POWER switch on the compartment control module is in the OFF position and that the collective protection equipment power source is shutdown.

Compartment Control Module and Feed-Thru* Connector

Cable C5-19-6160-50



Set compartment control module POWER switch (1) to OFF.

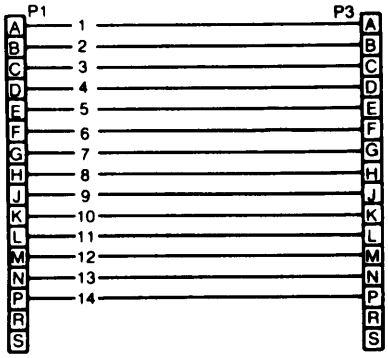
Shut down collective protectection equipment power source.

Disconnect cable assembly plug P1 (2) from compartment control module connector J1 (3).

Disconnect cable assembly plug P3 (4) from feed-thru* connector J3 (5).

TEST

Cable C5-19-6160-50



C5-19-6160-50
CABLE ASSEMBLY WIRING DIAGRAM

Check continuity of each wire between P1 and P3.

NOTE

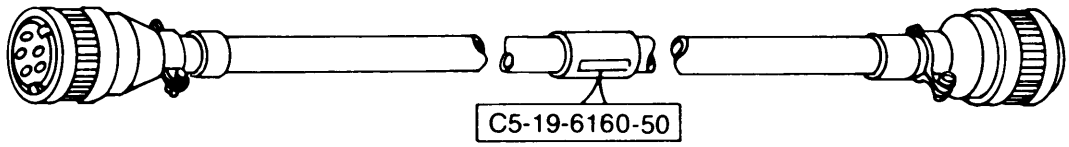
Use multimeter and cable C5-19-6160-50 wiring diagram.

*MCPE/DISPLAY DEMARK

LOCATION	ITEM	ACTION

REPLACE

Compartment Control Module and Feed-Thru* Connector	Cable C5-19-6160-50	Replace cable if it fails continuity check.

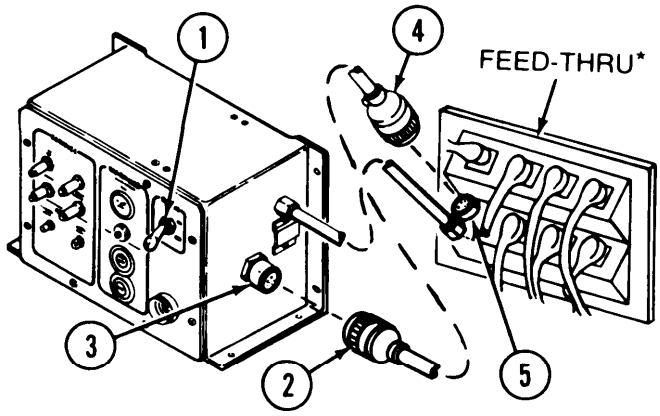


INSTALLATION

WARNING

Before installing any cable, be sure that POWER switch on compartment control module is in the OFF position and that the collective protection equipment power source is shut down.

Compartment Control Module and Feed-Thru* Connector	Cable C5-19-6160-50	Set compartment control module POWER switch (1) to OFF. Connect cable assembly plug P3 (4) to feed-thru* connector J3 (5). Connect cable assembly plug P1 (2) to compartment control module connector J1 (3).



*MCPE/DISPLAY DEMARK

2-25. CABLE C5-19-6160-40 - MAINTENANCE INSTRUCTIONS.

This task covers:

a. Removal
b. Test
c. Replace
d. Installation

INITIAL SETUP

Test Equipment
Multimeter AN/USM223

LOCATION	ITEM	ACTION

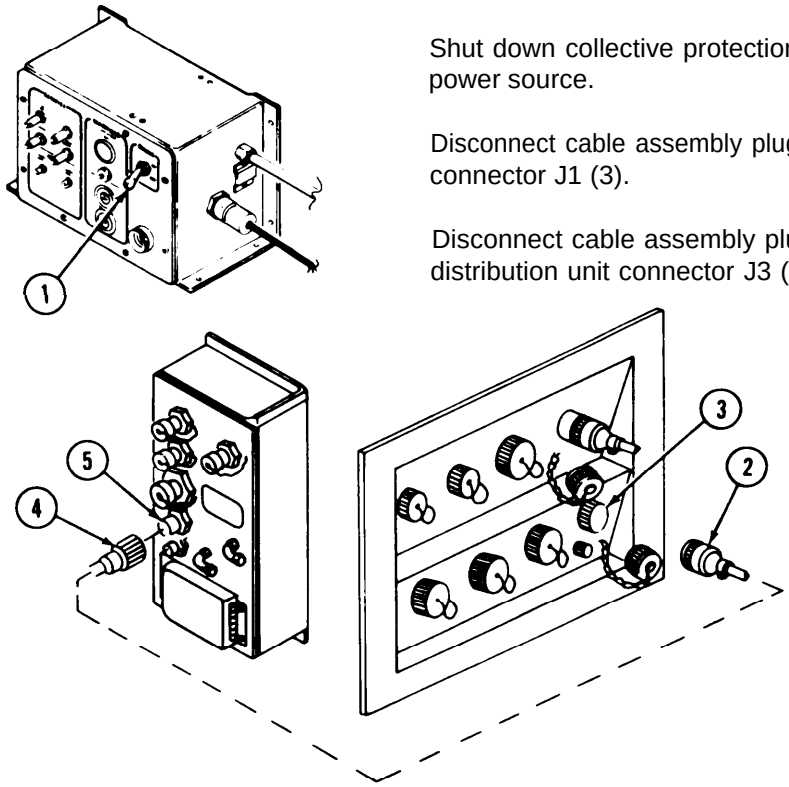
REMOVAL

WARNING

Before removing any cable, be sure that POWER switch on compartment control module is in the OFF position and that the collective protection equipment power source is shut down.

Power Distribution Unit and Feed-Thru* Connector

Cable C5-19-6160-40



Set compartment control module POWER switch (1) to OFF.

Shut down collective protection equipment power source.

Disconnect cable assembly plug P1 (2) from feed-thru* connector J1 (3).

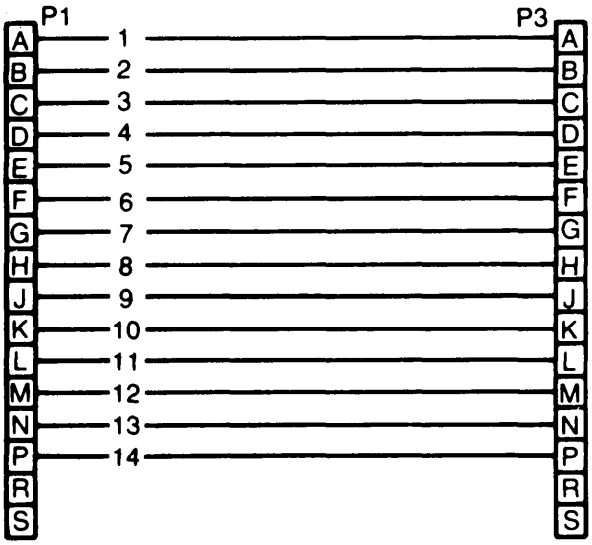
Disconnect cable assembly plug P3 (4) from power distribution unit connector J3 (5).

*MCPE/DISPLAY DEMARK

LOCATION	ITEM	ACTION

TEST

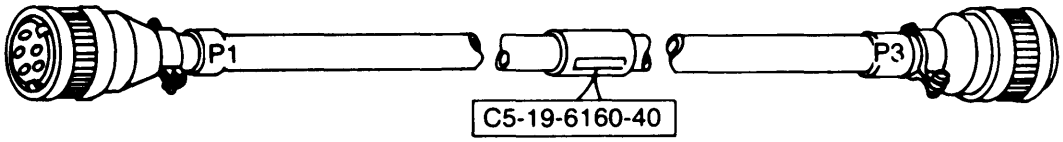
Cable C5-19-6160-40 — Check continuity of each wire between P1 and P3.



C5-19-6161-40
CABLE ASSEMBLY WIRING DIAGRAM

REPLACE

Power Distribution Unit and Feed-Thru* Connector — Cable C5-19-6160-40 — Replace cable if it fails continuity check.



INSTALLATION

WARNING

Before installing any cable, be sure that POWER switch on compartment control module is in the OFF position and that the collective protection equipment power source is shut down.

Power Distribution Unit and Feed-Thru* Connector — Cable C5-19-6160-40

Set compartment control module POWER switch (1) to OFF.

Connect cable assembly plug P3 (4) to power distribution unit connector J3 (5).

Connect cable assembly plug P1 (2) to feed-thru* connector J1 (3).

*MCPE/DISPLAY DEMARK

2-26. CABLE C5-19-6684 - MAINTENANCE INSTRUCTIONS.

This task covers:

a. Removal
b. Test
c. Replace
d. Installation

INITIAL SETUP

Test Equipment
Multimeter AN/USM223

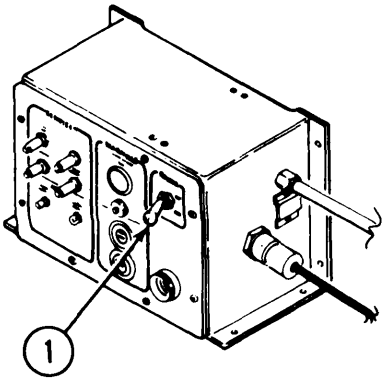
LOCATION	ITEM	ACTION

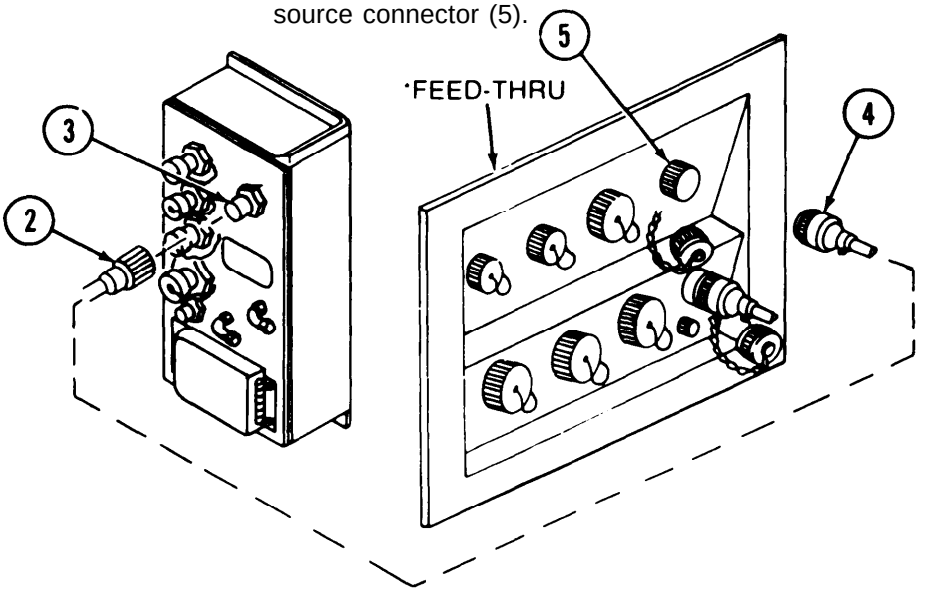
REMOVAL

WARNING

Before removing any cable, be sure that POWER switch on compartment control module is in the OFF position and that the collective protection equipment power source is shut down.

Power Distribution Unit and Power Source Connector	Cable C5-19-6684	Set compartment control module POWER switch (1) to OFF. Shut down collective protection equipment power source. Disconnect cable assembly plug P7 (2) from power distribution unit connector J7 (3). Disconnect cable assembly plug P12 (4) from power source connector (5).





*MCPE/DISPLAY DEMARK

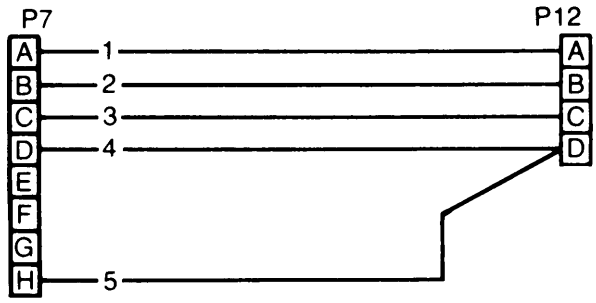
LOCATION	ITEM	ACTION

TEST

Power Distribution Unit and Power Source Connector	Cable C5-19-6684	Check continuity of each wire between P7 and P12.

NOTE

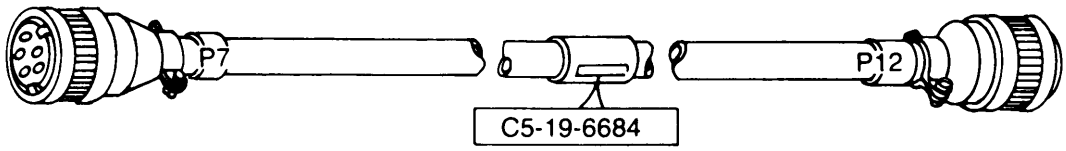
Use multimeter and cable C5-19-6684 wiring diagram.



C5-19-6684
CABLE WIRING DIAGRAM

REPLACE

Power Distribution Unit and Power Source Connector	Cable C5-19-6684	Replace cable if it fails continuity check.



INSTALLATION

WARNING

Before installing any cable, be sure that POWER switch on compartment control module is in the OFF position and that the collective protection equipment power source is shut down.

Power Distribution Unit and Power Source Connector	Cable C5-19-6684	Set compartment control module POWER switch (1) to OFF. Connect cable assembly plug P12 (4) to power source connector (5) at feed-thru. Connect cable assembly plug P7 (2) to power distribution unit connector J7 (3).

2-27. AIRDUCT HOSES - MAINTENANCE INSTRUCTIONS.

This task covers:

a. Removal b. Replace/Repair c. Installation

INITIAL SETUP

Tools
General Mechanics Tool Kit
SC 5180-90-CL-R16

LOCATION	ITEM	ACTION

REMOVAL

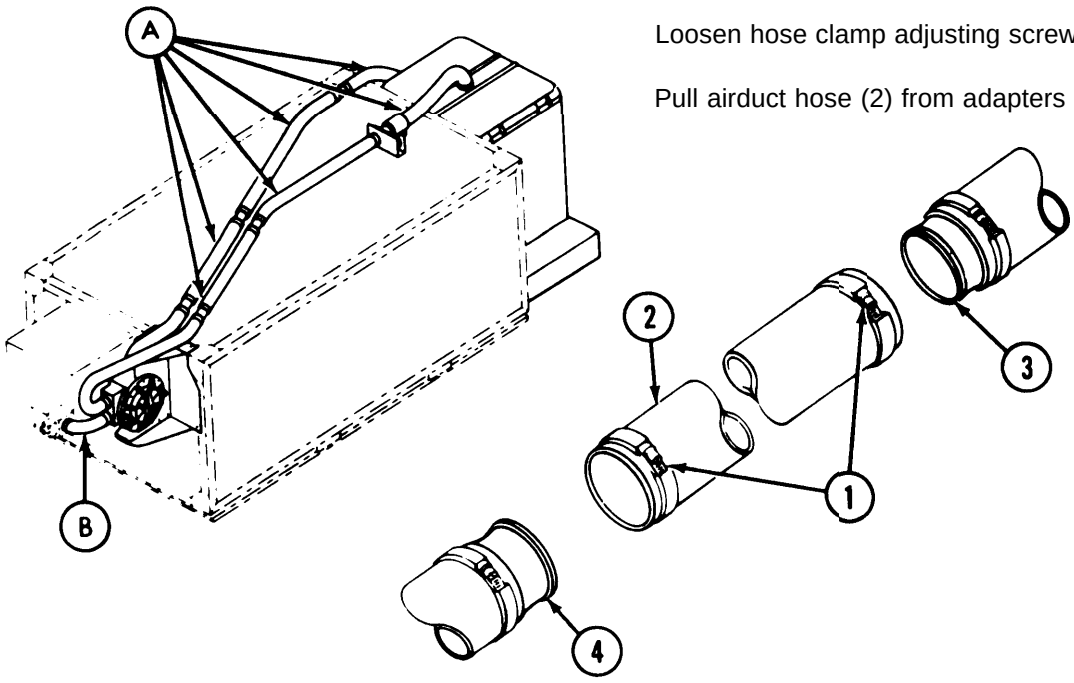
AN/TSQ-73 Airduct hoses

NOTE

Airduct hoses A are 6 ft long. Airduct hose B is 3 ft long. Each airduct hose section can be removed or installed as explained below.

Loosen hose clamp adjusting screws (1).

Pull airduct hose (2) from adapters (3 and 4).



LOCATION	ITEM	ACTION

REPLACE/REPAIR

AN/TSQ-73 — Airduct hoses

Replace if not repairable.

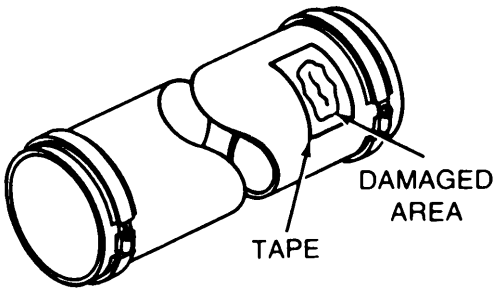
Repair:

Clean damaged areas using rags (item 6, app D) and dry-cleaning solvent (item 4, app D).

Cut a piece of tape (item 7, app D) 4 inches longer than the slit or tear.

Apply the tape over the damaged area leaving 2 inches of tape beyond the tear or slit at each end.

Press tape firmly in place.



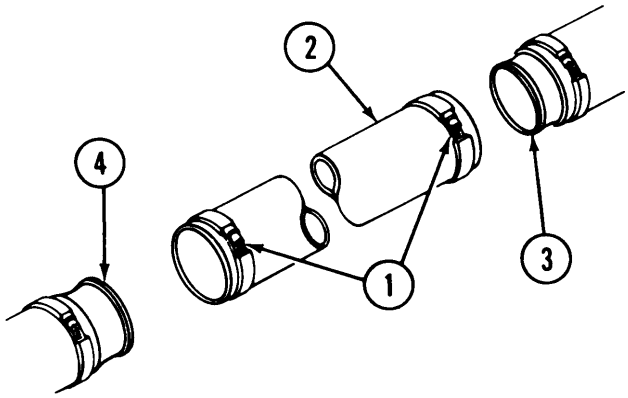
INSTALLATION

AN/TSQ-73 — Airduct hoses (1).

Push each end of airduct hose (2) over adapters (3 and 4).

Check that edge of hose is pushed against the bead on the adapter.

Tighten hose clamp adjusting screws (1) securely.



APPENDIX A
REFERENCES

The following publications are related to information contained in this manual.

A-1. TECHNICAL MANUALS.

TM 3-220	Chemical, Biological and Radiological (CBR) Decontamination
TM 9-1430-651-12	Operator's and Organizational Maintenance Manual, Emplacement and Preparation for Travel, Guided Missile Air Defense System, AN/TSQ-73
TM 9-1430-652-10-3	Operator's Manual: Initialization and Operating Procedures. Guided Missile Air Defense System. AN/TSQ-73
TM l0-277	Protective Clothing Chemical Operations
TM 38-750	The Army Maintenance Management System (TAMMS)
TM 43-0002-31	Destruction of Chemical Weapons and Defense Equipment to Prevent Enemy Use
TM 43-0139	Painting Instructions for Field Use
TM 740-90-1	Administrative Storage of Equipment

A-2. COMMON TABLE OF ALLOWANCES.

CTA **50-970**	Expendable Items (Except: Medical, Class V, Repair Parts and Heraldic Items)

A-3. SUPPLY BULLETIN.

SB708-42	Federal Supply Code for Manufacturers; United States and Canada--Code to Name (Cataloging Handbook H4-2)

A-4. FIELD MANUALS.

FM 21-11	First Aid for Soldiers
FM 21-40	Chemical, Biological, Radiological, and Nuclear Defense
FM 21-41	Soldier's Handbook for Defense Against Chemical and Biological Operations and Nuclear Warfare

APPENDIX B
MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. GENERAL.

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

b. The Maintenance Allocation Chart (MAC) in section II designates overall responsibility for the performance of maintenance functions on 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.

B-2. MAINTENANCE FUNCTIONS. Maintenance functions will be limited to and defined as follow':

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 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 (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.

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

e. *Aline.* 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 equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. *Install.* The act of emplacing, seating, or fixing into position an item, part, 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[1] or other maintenance actions[2] to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

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

[1] Services - inspect, test, service, adjust, aline, calibrate, or replace.

[2] Actions - welding, grinding, riveting, straightening, facing, remachining. or resurfacing.

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

B-3. EXPLANTION OF COLUMNS IN THE MAC. SECTION II.

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

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

c. *Column 3. Maintenance Function.* Column 3 lists the functions to be performed on the item listed in Column 2. (For detailed explanation of these functions. see paragraph B-2.)

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

C Operator or crew.
O Organizational maintenance.
F Direct support maintenance.
H General support maintenance.
D Depot maintenance.

e. *Column 5, Tools and Equipment.* Column 5 specifies, by code, those common tool sets (not individual tools) and special tools, TMDE, 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.

B-4. EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION III.

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

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

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

d. *Column 4. National Stock Number.* The National stock number of the tool or test equipment.

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

B-5. EXPLANATION OF COLUMNS IN REMARKS. SECTION IV.

a. *Column 1, Reference Code. The code re*corded in column 6, Section II.

b. *Column 2, 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 CATEGORY					(5) TOOLS AND EQPT.	(6) REMARKS
			C	O	F	H	D		
0100	M12 PROTECTIVE ENTRANCE	Inspect	0.2						
		Test		0.2				4	
		Install	0.3						
		Replace		0.5					
		Repair		0.3	2.0			1	
0110	PROTECTIVE ENTRANCE CONTROL MODULE	Test			0.5			4, 5, 6, 8, 9, 10, 11	
		Replace		0.4				1	
		Repair		0.1	4.0			2	
0200	M56 GAS-PARTICULATE FILTER UNIT	Inspect	0.2						
		Test		0.5				4	
		Replace		0.3				1	
		Repair		1.0				1, 3	
0210	MAIN FAN	Test			0.5			4	
		Replace		0.8				1	
		Repair			4.0			2, 12, 13, 14	
0220	AIRFLOW VALVE	Test			0.3			4	
		Replace		0.3				1	
		Repair		0.5	2.0			2	
0230	POWER DISTRIBUTION UNIT	Replace		0.2				1	
		Repair			0.1			2	
0231	POWER DISTRIBUTION PANEL	Test			0.5			4,5,6,7, 9, 10, 11	
		Repair		0.1	2.0			2	
0240	COMPARTMENT CONTROL MODULE	Test			1.0			4,5,6,8, 9, 10, 11	
		Replace		0.2				1	
		Repair		0.1	4.0			2	
0300	M263 INSTALLATION KIT	Test		0.3				4	
		Inspect	0.5						
		Install	0.7						
		Replace	0.2	0.2					
		Repair	0.1	0.7					
0310	AIRFLOW VALVE AND SILENCER	Test		0.2				4	
		Install	0.1						
		Replace		0.3				1	
		Repair		1.0					
0311	AIRFLOW VALVE	Replace		0.3				1	
		Repair		0.5				2	

SECTION III TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
1	O	TOOL KIT, GENERAL MECHANICS	5180-00-177-7033	SC 5180-90-CL-N26
2	F	TOOL KIT, ELECTRICAL EQUIPMENT	5180-00-610-8177	SC 5180-91-CL-R07
3	O	WRENCH TORQUE	5120-00-247-2536	
4	O	MULTIMETER	6625-00-999-7465	AN/USM223
5	F	VOLTAGE REGULATOR, DIRECT CURRENT	6110-00-763-7152	
6	F	GAGE, DIFFERENTIAL DIAL INDICATING, 0-6 INCHES (H2O)	6685-00-087-6331	
7	F	RESISTOR, 680 OHM, ±5%, 2 WATT	5905-00-256-0390	
8	F	RESISTOR, 100 OHM ±10%, 10 WATT	5905-00-752-6460	
9	F	SYRINGE, HYPODERMIC	6515-00-754-0412	
10	F	TEE,HOSE	4730-00-082-5402	
11	F	TUBING, NONMETALLIC	4720-00-059-5819	
12	F	PULLER KIT	5120-00-289-9597	
13	F	GAGE, DEPTH, MICROMETER	5210-00-619-4045	
14	F	PRESS, ARBOR	3444-00-243-2655 (OR EQUIVALENT)	

Section IV. REMARKS

REFERENCE CODE	REMARKS
	None

APPENDIX C
ORGANIZATIONAL MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

C-1. SCOPE. This manual lists spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE), and other special support equipment required for performance of organizational maintenance of the collective protection equipment. It authorizes the requisitioning and issue of spares and repair parts as indicated by the source and maintenance codes.

C-2. GENERAL. This Repair Parts and Special Tools List is divided into the following sections:

a. *Section II. Repair Parts List.* A list of spares and 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 numeric sequence, with the parts in each group listed in figure and item number seuence. Bulk materials are listed in NSN sequence.

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

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

C-3. EXPLANATION OF COLUMNS.

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

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

(2) *Item Number. The* number used to identify item called out in the illustration.

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

(1) *Source code.* Source codes 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 purpose because essentiality dictates that a minimum quantity be available in the supply system.
PC	Item procured and stocked and 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 outfittings. 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.

code	*Definition*
KD	An item of a depot overhaul/repair kit and not purchased separately. Depot kit 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 defined as a kit that provides an item that can be replaced at organizational 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 organizational level.
MF	Item to be manufactured or fabricated at the direct support maintenance level.
MH	Item to be manufactured or fabricated at the general support maintenance level.
MD	Item to be manufactured or fabricated at the depot maintenance level.
AO	Item to be assembled at organizational level.
AF	Item to be assembled at direct support maintenance level.
AH	Item to be assembled at general support maintenance level.
AD	Item to be 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.
XC	Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.
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 items 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*
C	Crew or operator maintenance performed within organizational maintenance.
O	Support item is removed, replaced, used at the organizational level.
F	Support item is removed, replaced, used at the direct support level.
H	Support item is removed, replaced, used at the general support level.
D	Support items that are removed, replaced, used at depot, mobile depot, or 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 organizational level.
F	The lowest maintenance level capable of complete repair of the support item is the direct support level.

Code	*Application / Explanation*
H	The lowest maintenance level capable of complete repair of the support item is the general support level.
D	The lowest maintenance level capable of complete repair of the support item is the depot level.
L	Repair restricted to Specialized Repair Activity.
Z	Nonreparable. No repair is authorized.
B	No repair is authorized. The item may be reconditioned by adjusting, lubricating, etc., at the user level. No parts or special tools are procured for the maintenance of this item.

(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:

Recoverability 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 organizational level.
F	Reparable item. When uneconomically reparable, condemn and dispose at the direct support level.
H	Reparable item. When uneconomically reparable, condemn and dispose at the general support level.
D	Reparable item. When beyond lower level Repair capability, return to depot. Condemnation and disposal not authorized below depot level.

Recoverability Codes	*Definition*
L	Reparable item. Repair, condemnation, and disposal not authorized below depot/ specialized repair activity level.
A	Item requires special handling or condemnation procedures because of specific reasons (i. e., precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.

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

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 an item or range of items.

NOTE

When a stock numbered item is requisitioned, the item 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.

g. *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.* Indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column in lieu of a quantity indicates that no specific quantity is applicable, (e.g., shims, spacers, etc).

C-4. SPECIAL INFORMATION.

a. Usable on codes are shown in description column. Identification of the usable on codes used in this publication are:

Code	*Used On*
E11	M12 Protective Entrance
Z01	M56 Gas-Particulate Filter Unit
Y02	M263 Installation Kit

b. Detailed manufacturing instructions for items source coded to be manufactured or fabricated are found in appendix E of this manual. Bulk materials required to manufacture items are listed in the Bulk Material Group of this manual.

c. Action change codes indicated in the lefthand margin of the listing page denote the following

N	Indicates an added item.
C	Indicates a change in data.
R	Indicates a change in NSN only.

C-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 functional group within which the item belongs. This is necessary since illustrations are prepared for fictional groups, and listings are divided into the same groups.

(2) *Second.* Find the illustration covering the fictional group to which the item belongs.

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

(4) *Fourth.* Using the Repair Parts Listing, find the 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 NIIN sequence followed by a list of part numbers in alphameric sequence, cross-referenced to the illustration figure number and item number.

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

C-6. ABBREVIATIONS.

Abbreviation	*Explanation*
CFM	cubic feet per minute
dia	diameter
hd	head
hex	hexagon
in.	inch
id	inside diameter
lg	long
MFD	manufactured
mtg	mounting
NPS	National Pipe Standard
nom	nominal
no.	number
oa	overall
od	outside diameter
porm	plus or minus
PSI	pounds per square inch
thk	thick
thd	thread
UNC	United National Course
UNF	United National Fine
W/	with

Section II. REPAIR PARTS LIST

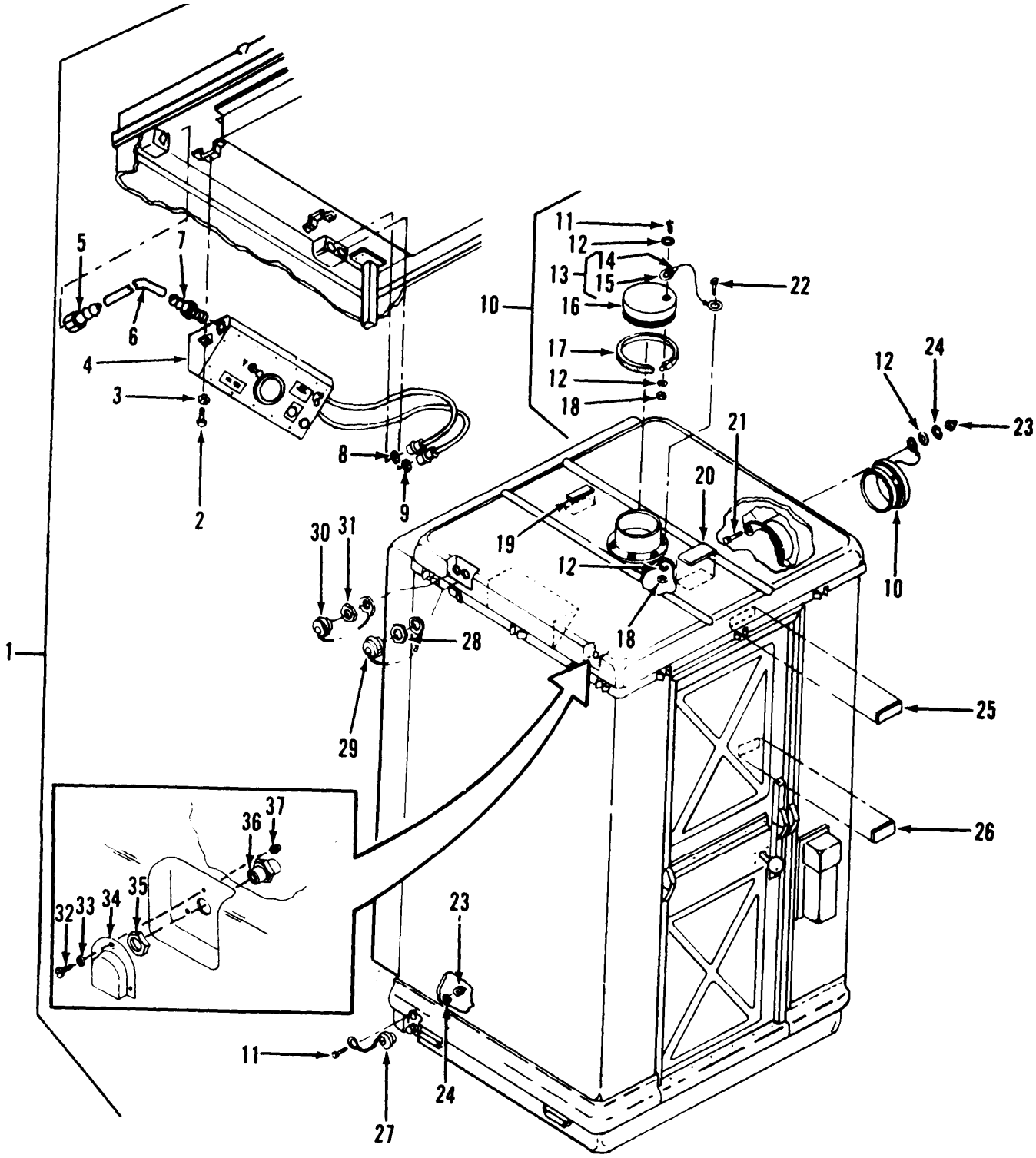


Figure C-1. M12 Protective entrance

(1) ILLUSTRATION (a) FIG NO.	(b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U\M	(8) QTY INC IN UNIT
						GROUP 0100 M12 PROTECTIVE ENTRANCE			
						E5-19-6201-20			
C-1	1	PAOFF	4240-01-048-2923	E5-19-6201-20	81361	ENTRANCE, PROTECTIVE, PRESSURIZED: M12	E11	EA	1
C-1	2	PAOZZ	5305-00-179-8946	MS51849-66	96906	SCREW, MACHINE: HEX HD, NOD. 10-32UNF-2A, 3/4 IN LG	E11	EA	3
C-1	3	PAOZZ	5310-00-045-3296	MS35338-43	96906	WASHER, LOCK: SPRING, NO. 10 NOM SIZE	E11	EA	3
C-1	4	PAOFF	4240-01-048-2803	E5-19-6357	81361	CONTROL MODULE, PROTECTIVE ENTRANCE	E11	EA	1
C-1	5	PAOZZ	4730-01-050-7540	KF03-04RV	30327	ADAPTER,STRAIGHT,PIPE	E11	EA	1
C-1	6	MOOZZ		C403	30327	HOSE,NONMETALLIC,RUBBER MFD FROM 4720-00-065-8682	E11	FT	1
C-1	7	PAOZZ	4730-01-017-5119	KF03-02PS	30327	ADAPTER,STRAIGHT,PIPE	E11	EA	1
C-1	8	PAOZZ	5330-00-250-0236	MS29513-24	96906	PACKING,PREFORMED	E11	EA	1
C-1	9	PAOZZ	5330-00-248-3849	MS29513-019	96906	PACKING, PREFORMED	E11	EA	1
C-1	10	PAOZZ	5340-01-048-6327	C5-19-6145	81361	CAP, PROTECTIVE, DUST AND MOISTURE SEAL	E11	EA	2
C-1	11	PAOZZ	5305-00-115-9934	MS51849-55	96906	SCREW, MACHINE: HEXAGON HEAD, NO. 8-32UNC-2A, 5/8 IN. LG	E11	EA	3
C-1	12	PAOZZ	5310-00-765-3197	MS27183-41	96906	WASHER, FLAT: .188 IN. ID., .438 IN. OD., .049 IN. THK	E11	EA	5
C-1	13	AOOZZ		CL-2-FANDCL-2 C-8.0	99862	CABLE, MFD FROM 4010-00-069-5180 AND 4030-00-878-8693	E11	EA	2
C-1	14	PAOZZ	4030-00-878-8693	CL2F	99862	FERRULE, WIRE ROPE	E11	EA	4
C-1	15	MOOZZ		CL-2-C-8.0	99362	CABLE, NYLON: 8IN. LG MFD FROM 4010-00-069-5180	E11	EA	2
C-1	16	XAOZZ		C5-19-6309	81361	CAP, RUBBER	E11	EA	2
C-1	17	PAOZZ	4730-00-908-6294	MS35842-16	96906	CLAMP, HOSE: 4-1/8 TO 7 IN. DIA RANGE	E11	EA	2
C-1	18	PAOZZ	5310-00-811-3494	MS21044N08	96906	NUT, SELF-LOCKING, HEXAGON: 8-32 UNJC-3B	E11	EA	3
C-1	19	PAOZZ	9905-01-068-2368	B5-19-6657	81361	PLATE, INSTRUCTION: NO STEP	E11	EA	1
C-1	20	PAOZZ	9905-01-049-1385	C5-19-6175	81361	PLATE,INSTRUCTION	E11	EA	1
C-1	21	PAOZZ	5305-00-211-8193	MS51849-54	96906	SCREW, MACHINE: HEXAGON HEAD, NO. 8-32UNC-2A, 1/2 IN. LONG	E11	EA	1
C-1	22	PAOZZ	5305-00-157-5621	MS51849-56	96906	SCREW, MACHINE: HEX HD, NO. 8-32UNC-2A, 3/4 IN. LG	E11	EA	1
C-1	23	PAOZZ	5310-00-928-9821	MS24679-2	96906	NUT, PLAIN, CAP: NO. 8-32UNC-2B	E11	EA	2
C-1	24	PAOZZ	5310-00-045-3299	MS35338-42	96906	WASHER, LOCK: SPRING, NO.8 NOM SIZE	E11	EA	2
C-1	25	PAOZZ	9905-01-061-7139	C5-19-6316-10	81361	PLATE, IDENTIFICATION: ENTRANCE, PROTECTIVE, PRESSURIZED, M12	E11	EA	1
C-1	26	PAOZZ	9905-01-048-2790	B5-19-6238	81361	PLATE, INSTRUCTION: CAUTION, DO NOT ENTER WHEN PROTECTIVE ENTRANCE IS OCCUPIED	E11	EA	1
C-1	27	PAOZZ	5410-00-981-8701	8173	01943	DRAIN, PLUG: W/CHAIN	E11	EA	1
C-1	28	PAOZZ	5310-01-054-4643	MS3186-34	96906	NUT, PLAIN, HEXAGON: 11/16-24UNEF-2B	E11	EA	1
C-1	29	PAOZZ	5935-00-912-9599	MS3181-10N	96906	COVER,ELECTRICAL CONNECTOR	E11	EA	1
C-1	30	PAOZZ	5935-00-990-5580	MS3181-14N	96906	COVER, ELECTRICAL CONNECTOR	E11	EA	1
C-1	31	PAOZZ	5310-00-435-8983	MS3186-43	96906	NUT, PLAIN, HEXAGON: 1-20UNEF-2B E-11	E11	EA	1
C-1	32	PAOZZ	5305-00-115-9406	MS51849-53	96906 E-11	SCREW, MACHINE HEXAGON HEAD NO.6-32 UNC-2A .38 IN LONG	E11	EA	3
C-1	33	PAOZZ	5310-00-045-3299	MS35338-42	96906	WASHER, LOCK SPRING NO.8 NOM SIZE	E11	EA	3
C-1	34	PAOZZ	4240-01-049-0804	CS-19-6236	81361	COVER	E11	EA	1
C-1	35	PAOZZ	5310-00-897-6081	MS35691-32	96906	NUT,PLAIN,HEXAGON JAM, 7/16-20 UNF-2B	E11	EA	1
C-1	36	PAOZZ	4730-01-067-9232	C5-19-6654	81361	ADAPTER,PIPE TO TUBE: 1/4 NPS, 7/16-20UNF-2A	E11	EA	1
C-1	37	PAOZZ	5310-00-928-9821	MS24679-2	96906	NUT,PLAIN,CAP NO.8-32UNC-2B	E11	EA	3

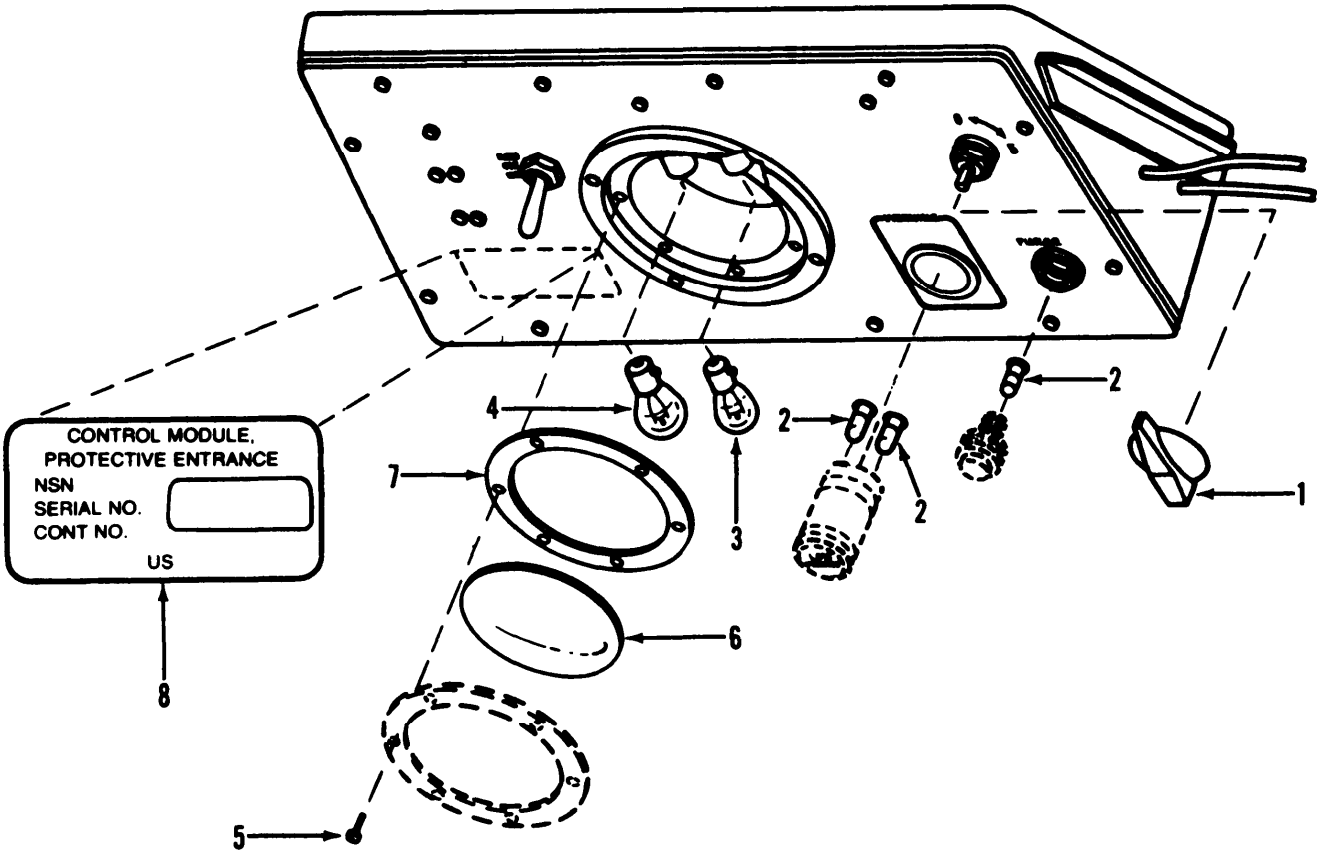


Figure C-2. Protective entrance control module

(1) ILLUSTRATION (a) FIG NO.	(b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U\M	(8) QTY INC IN UNIT
						GROUP 0110 PROTECTIVE ENTRANCE			
						CONTROL MODULE			
						E5-19-6357			
C-2	1	PAOZZ	5355-00-821-5225	K35B1	79919	KNOB	E11	EA	1
C-2	2	PAOZZ	6240-00-763-7744	MS25237-387	96906	LAMP, INCANDESCENT	E11	EA	3
C-2	3	PAOZZ	6240-00-155-7784	MS35478-307	96906	LAMP,INCANDESCENT	E11	EA	1
C-2	4	PAOZZ	6240-00-155-7932	MS25235R311	96906	LAMP, INCANDESCENT: RED	E11	EA	1
C-2	5	PAOZZ	5305-00-889-2999	MS35206-217	96906	SCREW, MACHINE: PAN HD, NO. 4-4OUNC-2A, 1/2 IN. LG	E11	EA	6
C-2	6	PAOZZ	6220-00-283-9732	MS25358-4	96906	LENS,LIGHT	E11	EA	1
C-2	7	PAOZZ	5330-00-143-8571	MS25358-6	96906	GASKET: DOME LIGHT	E11	EA	1
C-2	8	PAOZZ	9905-01-053-3006	C5-19-6316-4	81361	PLATE, IDENTIFCATION: CONTROL MODULE, PROTECTIVE ENTRANCE	E11	EA	1

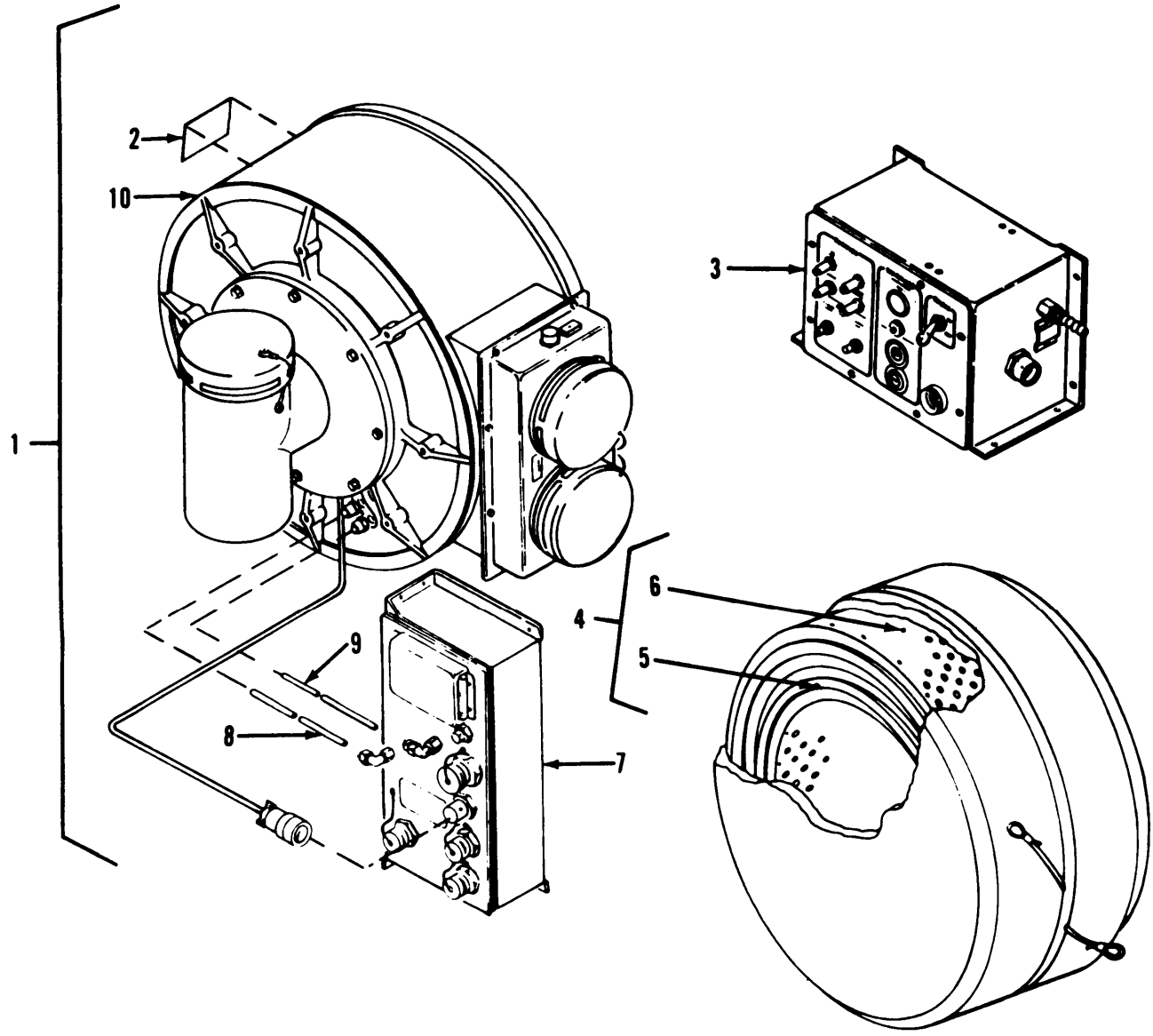


Figure C-3. M56 gas-particulate filter unit (1 of 2)

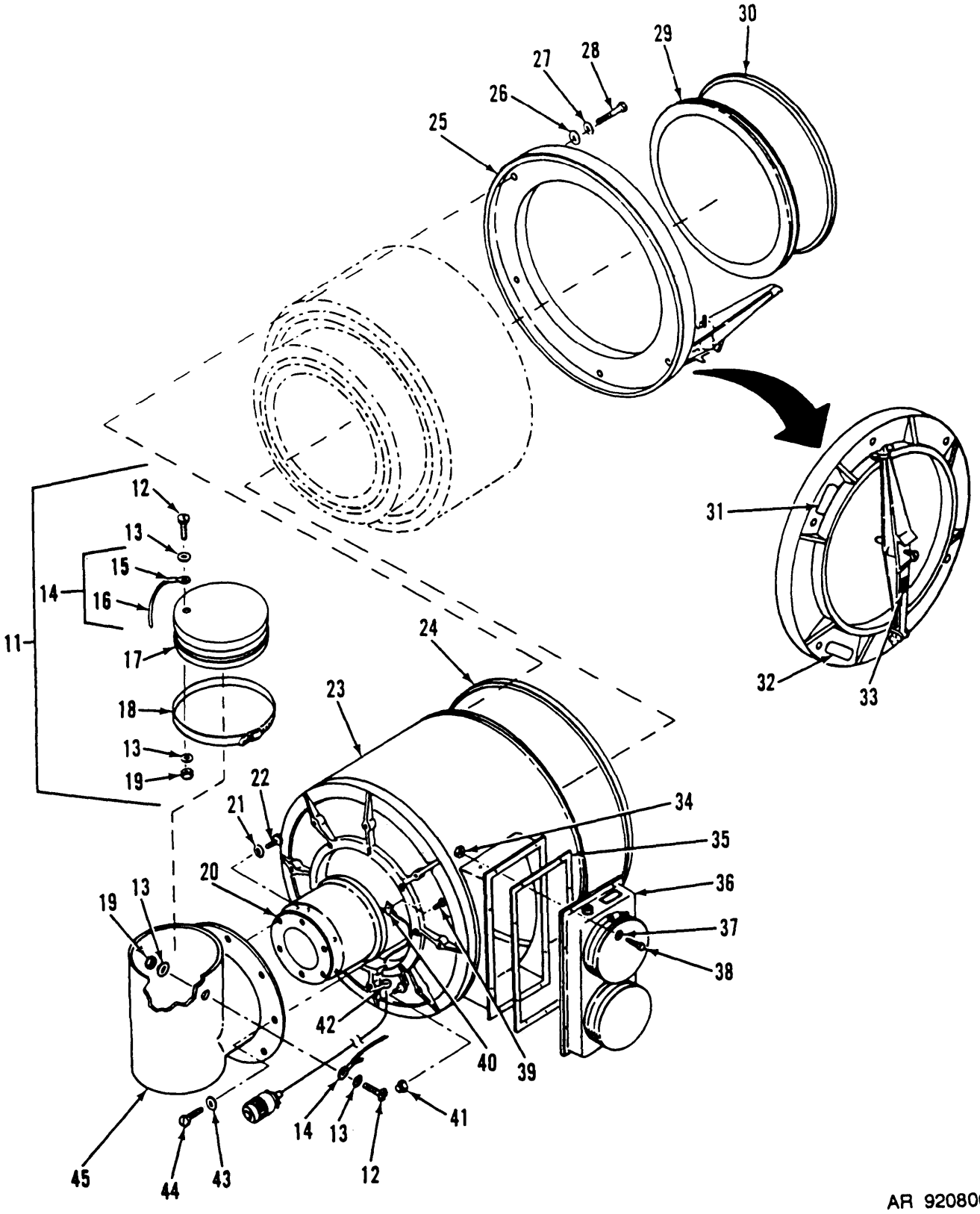


Figure C-3. M56 gas-particulate filter unit (2 of 2)

(1) ILLUSTRATION (a) FIG NO.	(b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U\M	(8) QTY INC IN UNIT
						GROUP 0200 M56 GAS PARTICULATE FILTER UNIT			
						E5-19-6402			
* C-3	1	PAOFA	4240-00-237-0227	E5-19-6402	81361	FILTER UNIT, GAS-PARTICULATE: M56	Z01	EA	1
C-3	2	PAOZZ	9905-01-071-5711	C5-19-6316-9	81361	PLATE, IDENTIFICATION: FILTER UNIT, GAS-PARTICULATE, M56	Z01	EA	1
C-3	3	PAOFF	4240-01-057-3378	E5-19-6376	81361	CONTROL MODULE, COMPARTMENT	Z01	EA	1
C-3	4	PAOZA	4240-01-067-5605	PL5-19-6718	81361	FILTER SET, GAS AND PARTICULATE	Z01	SE	1
C-3	5	PAOZA	4240-01-066-3266	D5-19-6262	81361	FILTER, PARTICULATE	Z01	EA	1
C-3	6	XAOZA		D5-19-6368	81361	FILTER, GAS	Z01	EA	1
C-3	7	PAOFF	4240-01-068-8645	E5-19-6387	81361	POWER DISTRIBUTION UNIT	Z01	EA	1
C-3	8	MOOZZ		44P	30327	TUBING, NONMETALLIC: 1/4 IN. OD. GREEN, MFD FROM 4720-00-996-0381	Z01	IN	50
C-3	9	MOOZZ		44P	30327	TUBING, NONMETALLIC: 1/4 IN. OD. RED, MFD FROM 4720-00-996-0381	Z01	IN	50
C-3	10	XBOFF	4240-01-054-7020	D5-19-6314-20	81361	HOUSING UNIT, FAN AND AIRFLOW VALVE	Z01	EA	1
C-3	11	PAOZZ	5340-01-048-6327	C5-19-6145	81361	CAP, PROTECTIVE, DUST AND MOISTURE SEAL	Y02,Z01	EA	1
C-3	12	PAOZZ	5305-00-115-9934	MS51849-55	96906	SCREW, MACHINE: HEX HD, NO. 8-32 UNC-2A, 5/8 IN. LG	Y02,Z01	EA	2
C-3	13	PAOZZ	5310-00-765-3197	MS27183-41	96906	WASHER, FLAT: .188 IN. OD, .049 IN. THK	Y02,Z01	EA	4
C-3	14	MOOZZ		CL-2-FANDCL-2-C-8.0	99862	CABLE, MFD FROM 4010-00-069-5180 AND 4030-00-878-8693,	Y02,Z01	EA	1
C-3	15	PAOZZ	4030-00-878-8693	CL2F	99862	FERRULE, WIRE ROPE	Y02,Z01	EA	2
C-3	16	MOOZZ		CL-2-C-8.0	99862	CABLE, NYLON: 8. IN. LG, MFD FROM 4010-00-069-5180.,	Y02 E11, Z01	EA	1
C-3	17	XBOZZ		C5-19-6309	81361	CAP, RUBBER	Y02,Z01	EA	1
C-3	18	PAOZZ	4730-00-908-6294	MS35842-16	96906	CLAMP, HOSE: 4-1/8 TO 7 IN. DIA RANGE YO2	Y02,Z01	EA	1
C-3	19	PAOZZ	5310-00-811-3494	MS21044N08	96906	NUT, SELF-LOCKING, HEXAGON: NO.8-32UNJC-3B	Y02,Z01	EA	2
C-3	20	PAOFF	4140-01-059-2095	E5-19-6240	81361	FAN, MAIN: 200 CFM	Z01	EA	1
C-3	21	PAOZZ	5310-00-809-4058	MS27183-10	96906	WASHER, FLAT: .281 IN. ID, .625 IN. OD, .065 IN. THK	Z01	EA	6
C-3	22	PAOZZ	5305-00-068-0513	MS90727-6	96906	SCREW,CAP,HEXAGON CAP, HEXAGON HEAD: 1/4-28UNF-2A, 3/4 IN. LG	Z01	EA	6
C-3	23	XBOZZ		E5-19-6120	81361	HOUSING, 1 FILTER	Z01	EA	1

(1) ILLUSTRATION (a) FIG NO.	(b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U\M	(8) QTY INC IN UNIT
C-3	24	PAOZZ	5330-01-069-9824	C5-19-5687-2	81361	SEAL,RUBBER SPECIAL	Z01	EA	1
C-3	25	XBOZZ		E5-19-6128	81361	COVER, ACESS	Z01	EA	1
C-3	26	PAOZZ	5310-00-080-6004	MS27183-14	96906	WASHER, FLAT: .406 IN. ID, .812 IN. OD, .065 IN. THK	Z01	EA	6
C-3	27	PAOZZ	5310-00-187-2400	AN960PD616	88044	WASHER, FLAT: 0.390 IN. ID, 0.625 IN. OD, 0.063 IN. THK	Z01	EA	6
C-3	28	PAOZZ	5305-00-269-3240	MS90727-64	96906	SCREW,CAP,HEXAGON CAP, HEXAGON HEAD: 3/8-24UNF-2A, 1-1/2 IN. LG	Z01	EA	6
C-3	29	XBOZZ		D5-19-6260	81361	COVER, INNER	Z01	EA	1
C-3	30	PAOZZ	5330-01-068-0515	C5-19-5687-1	81361	GASKET	Z01	EA	1
C-3	31	PAOZZ	9905-01-067-8634	B5-19-6134	81361	PLATE, INSTRUCTION: WARNING TORQUE OUTER COVER BOLTS 180 TO 200INCH POUNDS	Z01	EA	1
C-3	32	PAOZZ	9905-01-066-3084	C5-19-6135	81361	PLATE, INSTRUCTION: WARNING DO NOT REMOVE COVERS TO SERVICECOMPONENTS AFTER TOXIC EXPOSURE WITHOUT OBSERVING PROPERHANDLING PROCEDURES	Z01	EA	1
C-3	33	XDOZZ	9905-01-050-7557	B5-19-6133	81361	PLATE, INSTRUCTION: WARNING TIGHTEN UNTIL SLEEVE IS FLUSH WITH TOPSURFACE	Z01	EA	1
C-3	34	PAOZZ	5310-00-877-5797	MS21044N3	96906	NUT, SELF-LOCKING, HEXAGON: NO.10-32UNJF-3B	Z01	EA	8
C-3	35	PAOZZ	5330-01-088-4442	C5-19-6348	81361	GASKET: AIRFLOW VALVE	Y02,Z01	EA	1
C-3	36	PAOFF	4240-01-055-1493	E5-19-6136	81361	VALVE, AIRFLOW	Z01	EA	1
C-3	37	PAOZZ	5310-00-014-5850	MS27183-42	96906	WASHER, FLAT: .219 IN. ID, .500 IN. OD, .049 IN. THK	Z01	EA	8
C-3	38	PAOZZ	5305-00-824-7363	MS9122-07	96906	SCREW, MACHINE: HEX HD, NO. 10-32NF-3A, 3/4 IN. LG	Z01	EA	8
C-3	39	PAOZZ	5305-00-180-4966	MS51849-64	96906	SCREW, MACHINE: HEX HED, NO. 10-32UNF-2A, 1/2 IN. LG	Z01	EA	1
C-3	40	PAOZZ	5340-00-119-4705	MS9352-05	96906	CLAMP, LOOP: CUSHIONES, 3/8 IN. NOM TUBE OD	Z01	EA	1
C-3	41	PAOZZ	4730-00-817-1891	261P1-4	30327	NUT, TUBE COUPLING: 1/4 IN. TUBE OD, 3/8-24 THD SIZE, W/SLEEVE	Z01	EA	2
C-3	42	PAOZZ	5365-01-057-7379	B5-19-6347	81361	GROMMET, RUBBER	Z01	EA	1
C-3	43	PAOZZ	5310-00-081-4219	MS27183-12	96906	WASHER, FLAT: .344 IN. ID. .688 IN. OD. .065 IN. THK	E11,Z01	EA	8
C-3	44	PAOZZ	5305-00-051-4075	MS90727-33	96906	SCREW,CAP,HEXAGON HEAD: 5/16-24UNF-2A, 7/8 IN.	Z01	EA	8
C-3	45	PAOZZ	4520-01-057-7010	C5-19-6401-1	81361	TEE. INLET	Z01	EA	1

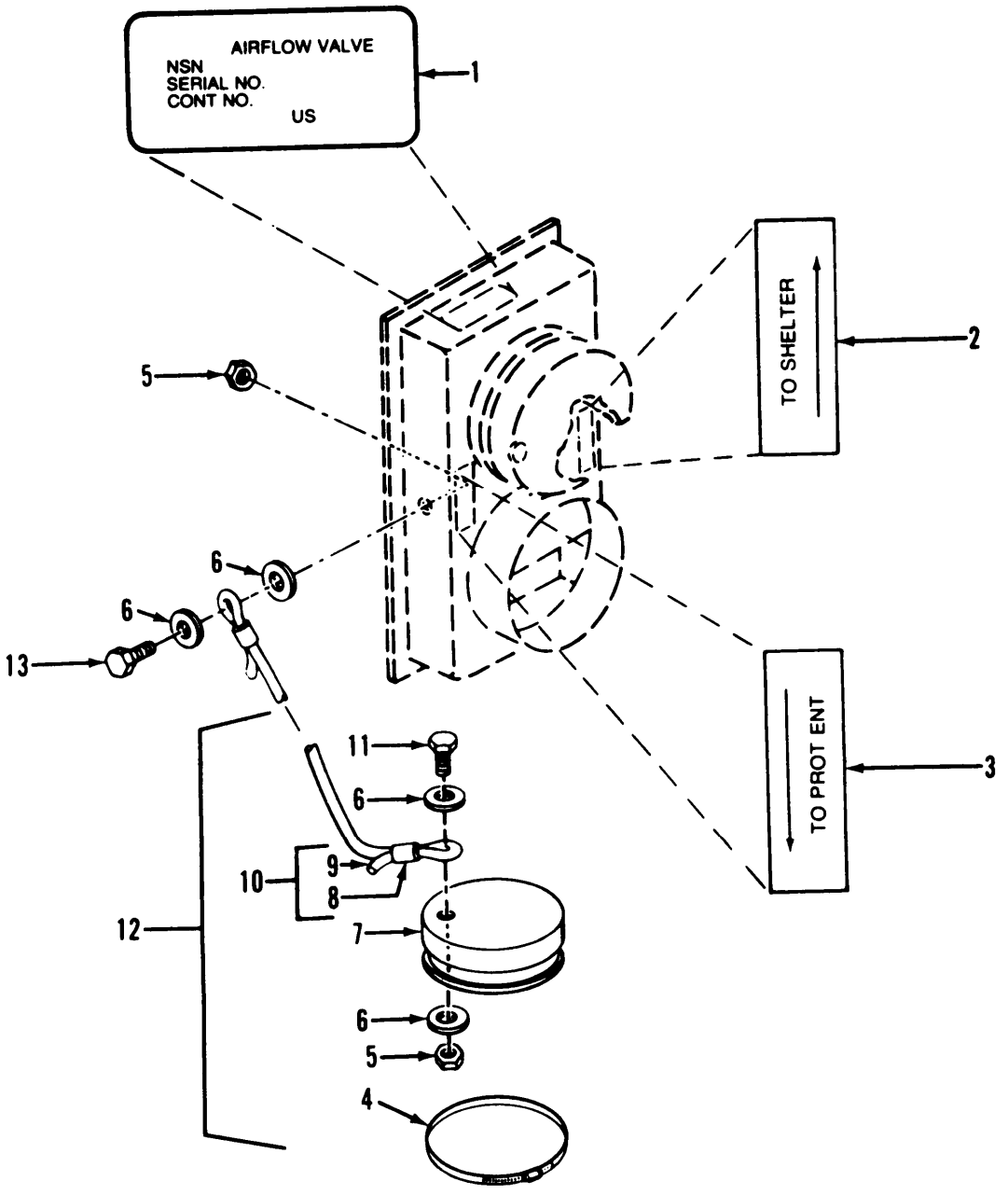


Figure C-4. Airflow valve

(1) ILLUSTRATION (a) FIG NO.	(b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U\M	(8) QTY INC IN UNIT
						GROUP 0220 AIRFLOW VALVE			
						E5-19-6136			
C-4	1	PAOZZ	9905-01-065-9382	C5-19-6149	81361	PLATE, IDENTIFIATION: AIRFLOW VALVE	Y02,Z01	EA	1
C-4	2	PAOZZ	9905-01-051-0186	B5-19-6147	81361	PLATE, INSTRUCTION TO SHELTER	Y02,Z01	EA	1
C-4	3	PAOZZ	9905-01-050-7556	B5-19-6148	81361	PLATE, INSTRUCTION: TO PROT ENT	Y02,Z01	EA	1
C-4	4	PAOZZ	4730-00-908-6294	MS35842-16	96906	CLAMP,HOSE 4-1/8 TO 7 IN. DIA RANGE		EA	2
C-4	5	PAOZZ	5310-00-811-3494	MS21044N08	96906	NUT, SELF-LOCKING, HEXAGON: NO. 8-32UNJC-3B		EA	3
C-4	6	PAOZZ	5310-00-765-3197	MS27183-41	96906	WASHER, FLAT: .188 IN. ID. .438 IN. OD, .49 IN. THK	Y02,Z01	EA	6
C-4	7	XAOZZ		C5-19-6309	81361	CAP. RUBBER	Y02,Z01	EA	2
C-4	8	PAOZZ	4030-00-878-8693	CL2F	99862	FERRULE, WIRE ROPE	Y02,Z01	EA	4
C-4	9	MOOZZ		CL-2-C-8.0	99862	CABLE, NYLON: 8 IN LG. MFD FROM 4010-00-069-5180	Y02,Z01	EA	2
C-4	10	AOOZZ		CL-2-FANDCL-2-C-8.0	99862	CABLE, MFD FROM 4010-00-069-5180 AND 4030-00-878-8693	Y02 Z01	EA	2
C-4	11	PAOZZ	5305-00-115-9934	MS51849-55	96906	SCREW, MACHINE: HEX HD, NO. 8-32 UNC-2A, 5/8 IN LG	Y02,Z01	EA	2
C-4	12	PAOZZ	5340-01-048-6327	C5-19-6145	81361	CAP, PROTECTIVE, DUST AND MOISTURE SEAL		EA	2
C-4	13	PAOZZ	5305-00-157-5621	MS51849-56	96906	SCREW, MACHINE: HEX HD, NO. 8-32UNC-2A, 3/4 IN. LG	Y02,Z01	EA	1

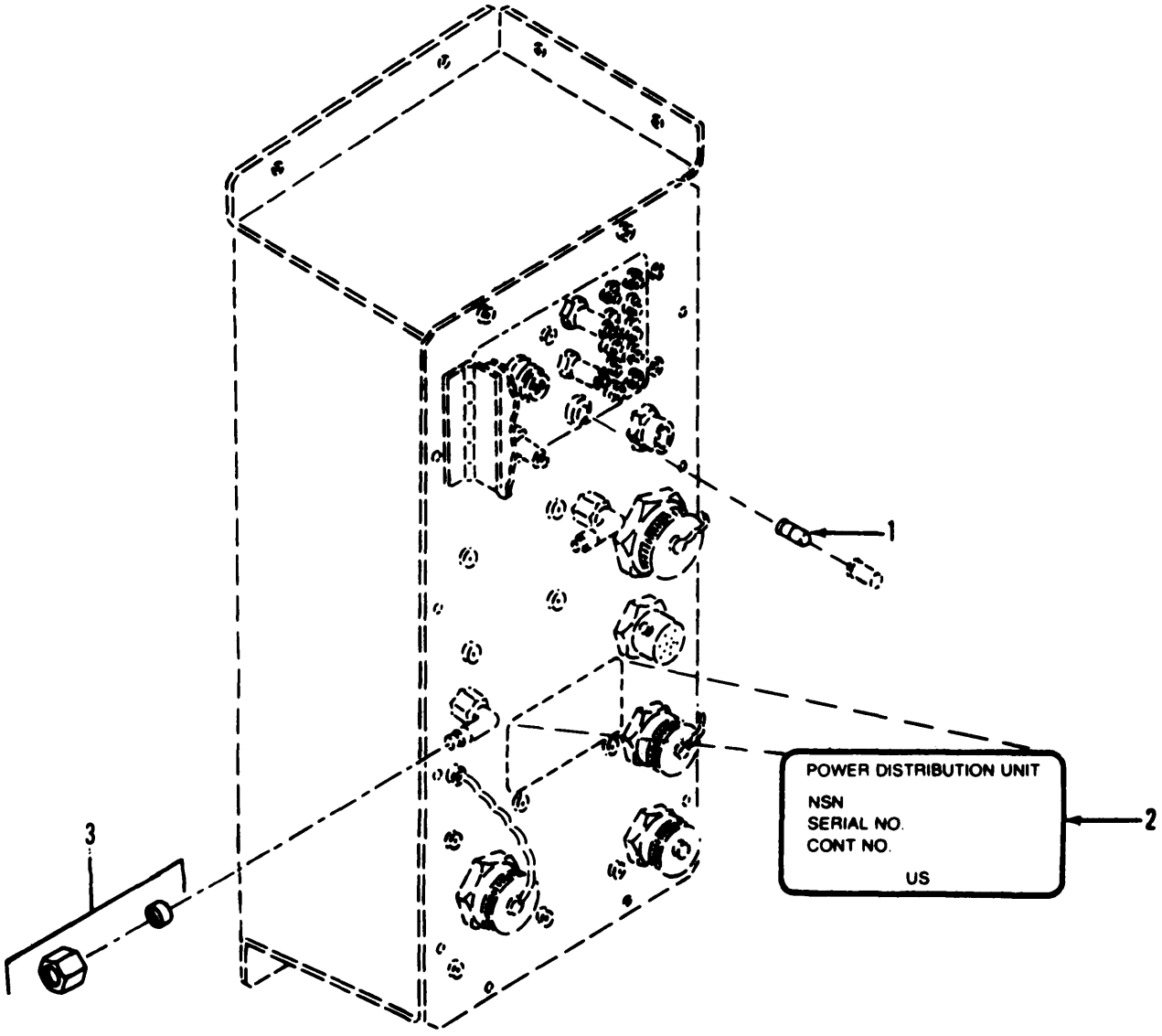


Figure C-5. Power distribution panel

(1) ILLUSTRATION (a) FIG NO.	(b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U\M	(8) QTY INC IN UNIT
						GROUP 0231 POWER DISTRIBUTION PANEL			
						E5-19-6391			
C-5	1	PAOZZ	6240-00-892-4420	MS25252C7A	96906	LAMP, GLOW	Z01	EA	1
C-5	2	PAOZZ	9905-01-065-3065	C5-19-6316-6	81361	PLATE, IDENTIFICATION: POWER DISTRIBUTION UNIT	Z01	EA	1
C-5	3	PAOZZ	4730-00-817-1891	261P1-4	30327	NUT, TUBE COUPLING: 1/4 IN. TUBE OD., 3/8-24 THD SIZE, W/SLEEVE	Z01	EA	2

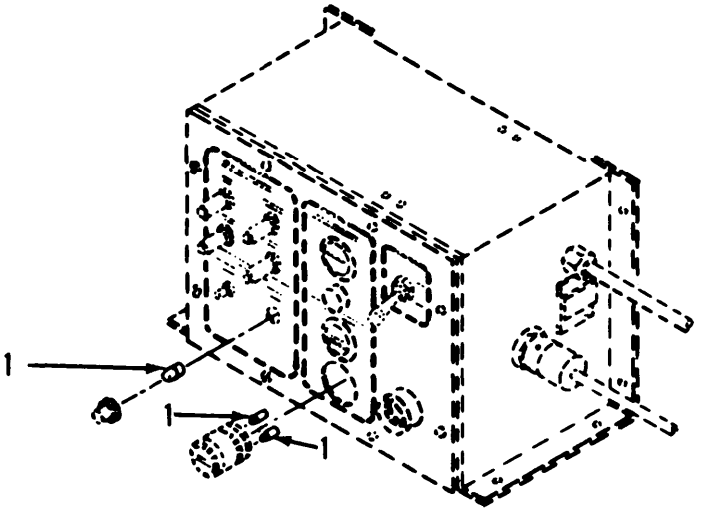


Figure C-6. Compartment control module

(1) ILLUSTRATION (a) FIG NO.	(b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U\M	(8) QTY INC IN UNIT
						GROUP 0240 COMPARTMENT CONTROL MODULE			
						E5-19-6376			
C-6	1	PAOZZ	6240-00-763-7744	MS25237-387	96906	LAMP, INCANDESCENT Z01	Z01	EA	8

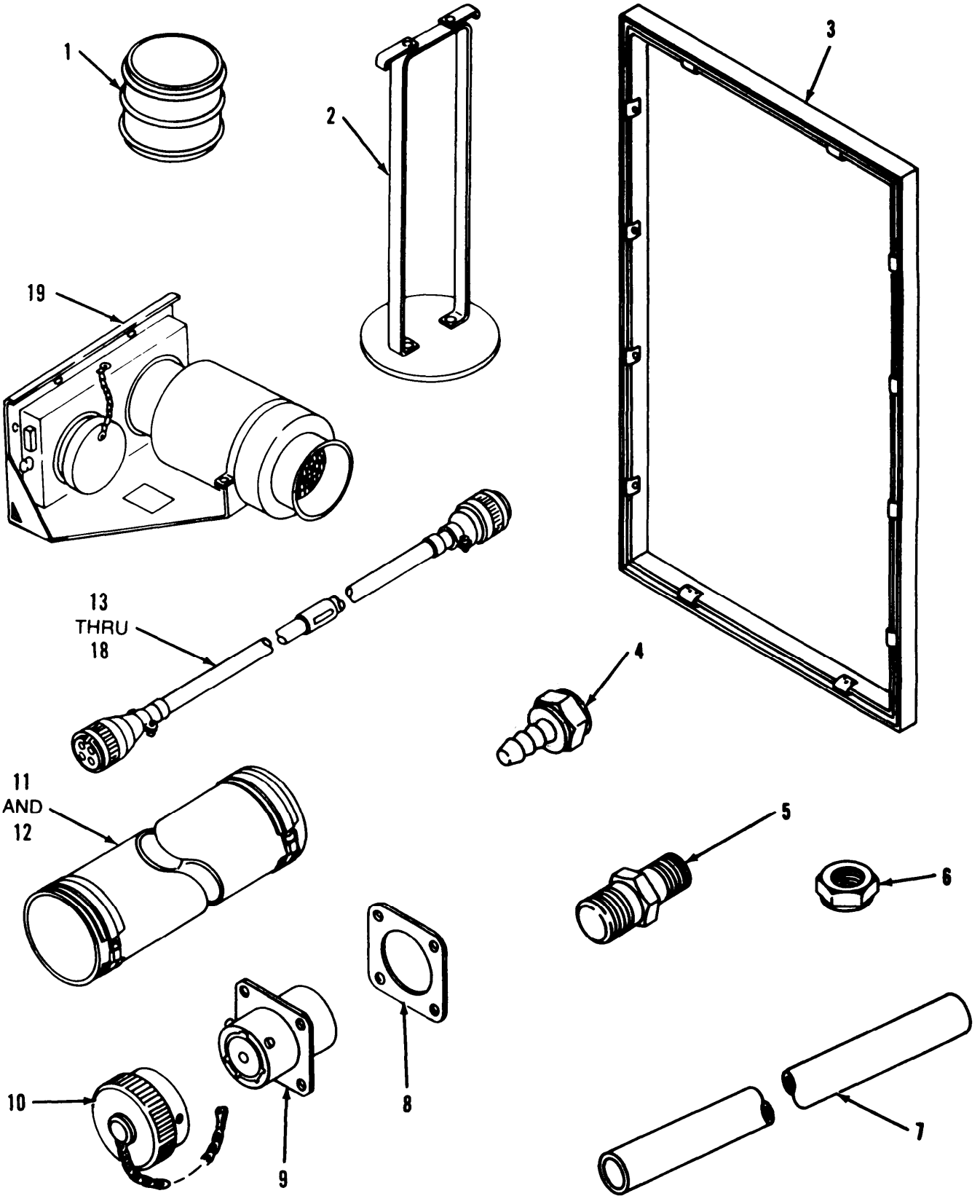


Figure C-7. M263 Installation kit

(1) ILLUSTRATION (a) FIG NO.	(b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U\M	(8) QTY INC IN UNIT
						GROUP 0300 M263 INSTALLATION KIT PL5-19-6705			
C-7			4240-01-063-7679	PL-19-6705	81361	INSTALLATION KIT, CBR PROTECTIVE EQUIPMENT, AN/TSQ-73 M263	E11,Z01	EA	1
C-7	1	PAOZZ	4730-01-049-0805	C5-19-6182	81361	ADAPTER, AIR DUCT Y02	Y02	EA	5
C-7	2	PAOZZ	4730-01-052-3783	C5-19-6180	81361	HOLDER, AIR DUCT Y02	Y02	EA	9
C-7	3	PAOZZ	4240-01-061-7233	ES-19-5908	81361	FRAME, INTERFACE ENTRANCE	E11	EA	1
C-7	4	PAOZZ	4730-01-050-7540	KF03-04RV	30327	ADAPTER, STRAIGHT, TUBE TO HOSE	E11	EA	1
C-7	5	PAOZZ	4730-01-067-9232	B5-19-6654	81361	ADAPTER, STRAIGHT, PIPE TO TUBE: 1/4NPS, 7/16-OUNF-2A	E11	EA	1
C-7	6	PAOZZ	5310-00-897-6081	MS35691-32	96906	NUT, PLAIN, HEXAGON: JAM, 7/16-20UNF-2B	E11	EA	1
C-7	7	MOOZZ		C403	30327	HOSE, RUBBER, 3/16 IN. NOM ID MED FROM 4720-00-065-8682	E11	FT	12
C-7	8	PAOZZ	5330-01-054-0857	MS90484-20-1	96906	GASKET, FLANGE MOUNT, ELECTRICAL CONNECTOR	E11	EA	1
C-7	9	PAOZZ	5935-00-994-0234	MS3119E20-16PS	96906	CONNECTOR, RECEPTACLE, ELECTRICAL: THRU-BULKHEAD MTG	E11	EA	1
C-7	10	PAOZZ	5935-00-762-1392	MS3181-20C	96906	COVER, ELECTRICAL CONNECTOR	E11	EA	1
C-7	1	PAOOO	4720-01-074-9220	C5-19-6181-10	83144	HOSE, AIRDUCT 6 IN. ID, 72 IN LG O/A	E11,Z01	EA	1
C-7	12	PAOOO	4720-01-063-4567	C5-19-6181-20	83144	HOSE, AIRDUCT 6 IN. ID, 36 IN. LG O/A	Z01	EA	8
C-7	13	PAOZZ	4720-01-069-3494	C5-19-6160-40	81361	CABLE ASSEMBLY6, SPECIAL PURPOSE, ELECTRICAL: 72 IN. NOM. LG. EXCLUDING TERMINATIONS	Z01	EA	1
C-7	14	PAOZZ	4240-01-068-2356	C5-19-6160-50	81361	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL: 144 IN. NOM. LG. EXCLUDING TERMINATIONS	Z01	EA	1
C-7	15	PAOZZ	4240-01-073-3439	C5-19-6162-10	81361	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL: 240 IN NOM. LG. EXCLUDING TERMINATIONS	E11,Z01	EA	1
C-7	16	PAOZZ	4240-01-069-9826	C5-19-6684	81361	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL: 72 IN. NOM. LG. EXCLUDING TERMINATIONS	Z01	EA	1
C-7	17	PAOZZ	4240-01-067-8376	C5-19-6170-10	81361	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL: 54 IN. NOM LG. EXCLUDING TERMINATIONS	Z01	EA	1
C-7	18	PAOZZ	4240-01-068-2355	C5-19-6170-40	81361	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL: 76 IN. NOM. LG	E11	EA	1
C-7	19	AOOOF		D5-19-6628	81361	AIRFLOW VALVE AND SILENCER	E11	EA	1

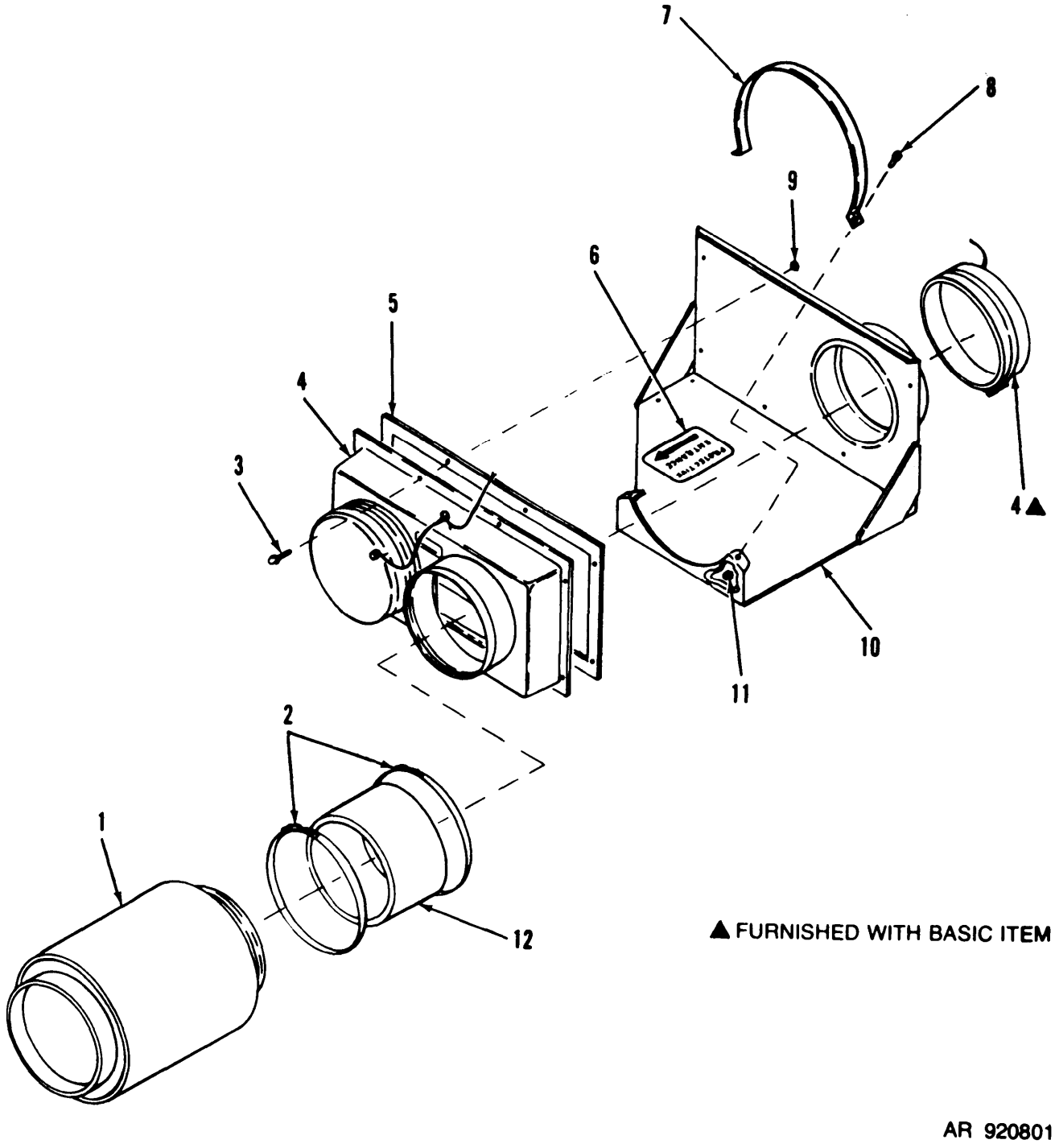


Figure C-8. Airflow valve and silencer

(1) ILLUSTRATION (a) FIG NO.	(b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U\M	(8) QTY INC IN UNIT
						GROUP 0310 AIRFLOW VALVE AND SILENCER			
						D5-19-6628			
C-8	1	PAOZZ	2990-01-057-3475	C5-19-6627	81361	SILENCER	Y02	EA	1
C-8	2	PAOZZ	4730-00-908-6294	MS35842-16	96906	CLAMP, HOSE: 4-1/8 TO 7 IN. DIA RANGE	Y02	EA	2
C-8	3	PAOZZ	5305-00-179-8946	MS51849-66	96906	SCREW, MACHINE: HEX HD, NO. 10-32UNF-2A, 3/4 IN. LG	Y02	EA	8
C-8	4	PAOFF	4240-01-055-1493	E5-19-6136	81361	VALVE, AIRFLOW	Y02,Z01	EA	1
C-8	5	PAOZZ	5330-01-088-4442	C5-19-6348	81361	GASKET. AIRFLOW VALVE	Y02	EA	1
C-8	6	XDOZZ	9905-01-051-0187	B5-19-6656	81361	PLATE, INSTRUCTION: PROTECTIVE ENTRANCE	Y02	EA	1
C-8	7	XBOZZ		C5-19-6626	81361	STRAP, RETAINING	Y02	EA	1
C-8	8	PAOZZ	5305-00-157-5621	MS51849-56	96906	SCREW, MACHINE: HEX HD, NO. 8-32UNC-2A, 3/4 IN LG	Y02	EA	2
C-8	9	PAOZZ	5310-00-877-5797	MS21044N3	96906	NUT, SELF-LOCKING, HEXAGON: NOC 10-32UN JF-3B	Y02	EA	8
C-8	10	XBOZZ		D5-19-6625	81361	BRACKET, MOUNTING	Y02	EA	1
C-8	11	PAOZZ	5310-00-811-3494	MS21044N08	96906	NUT, SELF-LOCKING, HEXAGON: NO. 8-32UNJC-3B	Y02	EA	2
C-8	12	MOOZZ		D5-19-6628-14	81361	HOSE,NONMETALLIC: 3-1/2 IN. LG, MFD FROM 4720-00-288-9757	Y02	EA	1

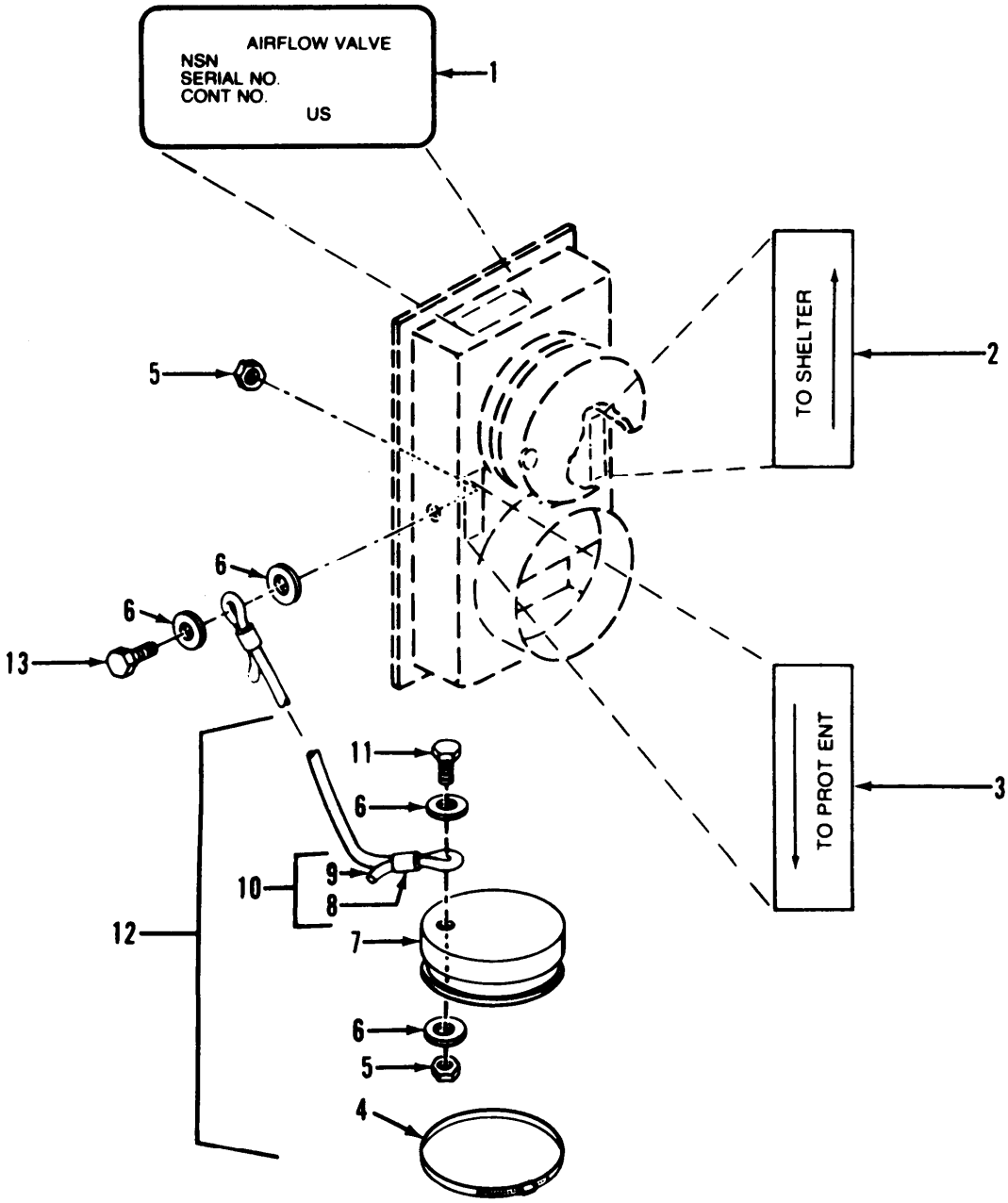


Figure C-9. Airflow valve

(1) ILLUSTRATION (a) FIG NO.	(b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U\M	(8) QTY INC IN UNIT
						GROUP 0311 AIRFLOW VALVE			
						E5-19-6136			
C-9	1	PAOZZ	9905-01-065-9382	C5-19-6149	81361	PLATE, IDENTIFICATION: AIRFLOW VALVE	Z01	EA	1
C-9	2	PAOZZ	9905-01-051-0186	B5-19-6147	81361	PLATE, INSTRUCTION: TO SHELTER	Z01,Y02	EA	1
C-9	3	PAOZZ	9905-01-050-7556	B5-19-6148	81361	PLATE, INSTRUCTION: TO PROT	Y02,Z01	EA	1
C-9	4	PAOZZ	4730-00-908-6294	MS35842-16	96906	CLAMP, HOSE: 4-1/8 TO 7 IN. DIA RANGE	Y02,Z01	EA	2
C-9	5	PAOZZ	5310-00-811-3494	MS21044N08	96906	NUT, SELF-LOCKING, HEXAGON: NO.L 8-32UNJC-3B	Y02,Z01	EA	3
C-9	6	PAOZZ	5310-00-765-3197	MS27183-41	96906	WASHER, FLAT: .188 IN. ID, .438 IN. OD, .049 IN. THK.	Y02,Z01	EA	6
C-9	7	XAOZZ		C5-19-6309	81361	CAP, RUBBER	E11,Y02	EA	2
C-9	8	PAOZZ	4030-00-878-8693	CL2F	99862	FERRULE,WIRE ROPE	Y02,Z01	EA	4
C 9	9	MOOZZ		CL-2-C-8.0	99862	CABLE, NYLON: 8 IN. LG. MFD FROM 4010-00-069-5180	Y02,Z01	EA	2
C-9	10	MOOZZ		CL-2-FANDCL-2-C-8.0	99862	CABLE, MFD FROM 4010-00-069-5180 AND 4030-00-878-8693	Y02 Z01	EA	2
C-9	11	PAOZZ	5305-00-115-9934	MS51849-55	96906	SCREW, MSCHINE: HEX HD. NO. 8-32 UNC-2A, 5/8 IN LG	Y02,Z01	EA	2
C-9	12	PAOZZ	5340-01-048-6327	C5-19-6145	81361	CAP, PROTECTIVE, DUST AND MOISTURE SEAL	Y02,Z01	EA	2
C-9	13	PAOZZ	5305-00-157-5621	MS51849-56	96906	SCREW, MACHINE: HEX HD, NO. 8-32UNC-2A,374 IN. LG	Y02,Z01	EA	1

(1) ILLUSTRATION (a) FIG NO.	(b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION	USABLE ON CODE	(7) U\M	(8) QTY INC IN UNIT
						GROUP 0500 BULK SUPPLIES			
BULK		PAOZZ	4010-00-069-5180	CL2C	99862	CABLE, NYLON COVERED		FT	
BULK		PAOZZ	4720-00-065-8682	C403	30327	HOSE, NONMETALIC RUBBER 3/16 IN. NOM. ID	E11 Z01	FT	
BULK		PAOZZ	4720-00-288-9757	MS521301B225360	96906	HOSE,PREFORMED 3.5 IN. RUBBER, RADIATOR, 3.00 PORM .03 ID X .10 PORMWALL (3 PLY) 50 PSI BURST PRESSURE		FT	
BULK		PAOZZ	4720-00-996-0381	44P	30327	TUBING, NONMETALIC: ;PLASTIC, 1/4 IN. OD, .040 IN. WALL THK, RED	Z01	FT	
BULK		PAOZZ	4720-00-996-0381	44P	30327	TUBING, NONMETALIC: PLASTIC, 1/4 IN. OD, .040 IN WALL THK. GREEN	Z01	FT	

SECTION III. SPECIAL TOOLS AND EQUIPMENT LIST
NOT APPLICABLE
SECTION IV. NATIONAL STOCK NUMBER AND PART NUMBER INDEX

STOCK NUMBER	FIGURE NO.	ITEM NO.	STOCK NUMBER	FIGURE NO.	ITEM NO.
5310-00-014-5850	C-3	37	4730-00-908-6294	C-9	4
5310-00-045-3296	C-1	3	5935-00-912-9599	C-1	29
5310-00-045-3299	C-1	24	5310-00-928-9821	C-1	23
5310-00-045-3299	C-1	33	5310-00-928-9821	C-1	37
5305-00-051-4075	C-3	44	5410-00-981-8701	C-1	27
4720-00-065-8682	BULK		5935-00-990-5580	C-1	30
5305-00-068-0513	C-3	22	5935-00-994-0294	C-7	9
4010-00-069-5180	BULK		4720-00-996-0381	BULK	
5310-00-080-6004	C-3	26	4730-01-017-5119	C-1	7
5310-00-081-4219	C-3	43	9905-01-048-2790	C-1	26
5305-00-824-7363	C-3	38	4240-01-048-2803	C-1	4
5305-00-115-9406	C-1	32	4240-01-048-2923	C-1	1
5305-00-115-9934	C-1	11	5340-01-048-6327	C-1	10
5305-00-115-9934	C-3	12	5340-01-048-6327	C-3	11
5305-00-115-9934	C-4	11	5340-01-048-6327	C-4	12
5305-00-115-9934	C-9	11	5340-01-048-6327	C-9	12
5340-00-119-4705	C-3	40	4240-01-049-0804	C-1	34
5330-00-143-8571	C-2	7	4730-01-049-0805	C-7	1
6240-00-155-7784	C-2	3	9905-01-049-1385	C-1	20
6240-00-155-7932	C-2	4	4730-01-050-7540	C-1	5
5305-00-157-5621	C-1	22	4730-01-050-7540	C-7	4
5305-00-157-5621	C-4	13	4730-01-052-3783	C-7	2
5305-00-157-5621	C-8	8	9905-01-050-7556	C-4	3
5305-00-157-5621	C-9	13	9905-01-050-7556	C-9	3
5305-00-179-8946	C-1	2	9905-01-050-7557	C-3	33
5305-00-179-8946	C-8	3	9905-01-051-0186	C-4	2
5305-00-180-4966	C-3	39	9905-01-051-0186	C-9	2
5310-00-187-2400	C-3	27	9905-01-051-0187	C-8	6
5305-00-211-8193	C-1	21	9905-01-053-3006	C-2	8
4240-00-237-0227	C-3	1	5310-01-054-4643	C-1	28
5330-00-248-3849	C-1	9	5330-01-054-0857	C-7	8
5330-00-250-0236	C-1	8	4240-01-054-7020	C-3	10
5305-00-269-3240	C-3	28	4240-01-055-1493	C-3	36
6220-00-283-9732	C-2	6	4240-01-055-1493	C-8	4
4720-00-288-9757	BULK		4240-01-057-3378	C-3	3
5310-00-435-8983	C-1	31	2990-01-057-3475	C-8	1
5935-00-762-1392	C-7	10	4520-01-057-7010	C-3	45
6240-00-763-7744	C-2	2	5365-01-057-7379	C-3	42
6240-00-763-7744	C-6	1	4140-01-059-2095	C-3	20
5310-00-765-3197	C-1	12	9905-01-061-7139	C-1	25
5310-00-765-3197	C-3	13	4240-01-061-7233	C-7	3
5310-00-765-3197	C-4	6	4720-01-063-4567	C-7	12
5310-00-765-3197	C-9	6	4240-01-063-7679	C-7	
5310-00-809-4058	C-3	21	9905-01-065-3065	C-5	2
5310-00-811-3494	C-1	18	9905-01-065-9382	C-4	1
5310-00-811-3494	C-3	19	9905-01-065-9382	C-9	1
5310-00-811-3494	C-4	5	9905-01-066-3084	C-3	32
5310-00-811-3494	C-8	11	4240-01-066-3266	C-3	5
5310-00-811-3494	C-9	5	4240-01-067-5605	C-3	4
4730-00-817-1891	C-3	41	4240-01-067-8376	C-7	17
4730-00-817-1891	C-5	3	9905-01-067-8634	C-3	31
5355-00-821-5225	C-2	1	4730-01-067-9232	C-1	36
5310-00-877-5797	C-3	34	4730-01-067-9232	C-7	5
5310-00-877-5797	C-8	9	5330-01-068-0515	C-3	30
4030-00-878-8693	C-1	14	9905-01-068-2368	C-1	19
4030-00-878-8693	C-3	15	4240-01-068-2355	C-7	18
4030-00-878-8693	C-4	8	4240-01-068-2356	C-7	14
4030-00-878-8693	C-9	8	4240-01-068-8645	C-3	7
5305-00-889-2999	C-2	5	4240-01-069-3494	C-7	13
6240-00-892-4420	C-5	1	4240-01-069-9826	C-7	16
5310-00-897-6081	C-1	35	5330-01-069-9824	C-3	24
5310-00-897-6081	C-7	6	9905-01-071-5711	C-3	2
4730-00-908-6294	C-1	17	4240-01-073-3439	C-7	15
4730-00-908-6294	C-3	18	4720-01-074-9220	C-7	11
4730-00-908-6294	C-4	4	5330-01-088-4442	C-3	35
4730-00-908-6294	C-8	2	5330-01-088-4442	C-8	5

PART NUMBER	FSCM	FIG NO	ITEM NO
AN960PD616	88044	C-3	27
B5-19-6133	81361	C-3	33
B5-19-6134	81361	C-3	31
B5-19-6147	81361	C-4	2
B5-19-6147	81361	C-9	2
B5-19-6148	81361	C-4	3
B5-19-6148	81361	C-9	3
B5-19-6238	81361	C-1	26
B5-19-6347	81361	C-3	42
B5-19-6654	81361	C-7	5
B5-19-6656	81361	C-8	6
B5-19-6657	81361	C-1	19
C-5-19-6309	81361	C-3	17
CL-2-C-8.0	99862	C-1	15
CL-2-C-8.0	99862	C-3	16
CL-2-C-8.0	99862	C-4	9
CL-2-C-8.0	99862	C-8	9
CL-2-FANDCL-2-C-8.0	99862	C-1	13
CL-2-FANDCL-2-C-8.0	99862	C-3	14
CL-2-FANDCL-2-C-8.0	99862	C-4	10
CL-2-FANDCL-2-C-8.0	99862	C-9	10
CL2C	99862	BULK	
CL2F	99862	C-1	14
CL2F	99862	C-3	15
CL2F	99862	C-4	8
CL2F	99862	C-9	8
CS-19-6236	81361	C-1	34
C403	30327	C-1	6
C403	30327	C-7	7
C403	30327	BULK	
C5-19-5687-1	81361	C-3	30
C5-19-5687-2	81361	C-3	24
C5-19-6135	81361	C-3	32
CS-19-6145	81361	C-1	10
C5-19-6145	81361	C-3	11
C5-19-6145	81361	C-4	12
C5-19-6145	81361	C-9	12
C5-19-6149	81361	C-4	1
C5-19-6149	81361	C-9	1
MS25252C7A	96906	C-5	1
MS25358-4	96906	C-2	6
MS25358-6	96906	C-2	7
MS27183-10	96906	C-3	21
MS27183-12	96906	C-3	43
MS27183-14	96906	C-3	26
MS27183-41	96906	C-1	12
MS27183-41	96906	C-3	13
MS27183-41	96906	C-4	6
MS27183-41	96906	C-9	6
MS27183-42	96906	C-3	37
MS29513-019	96906	C-1	9
MS29513-24	96906	C-1	8
MS3119E20-16PS	96906	C-7	9
MS3181-10N	96906	C-1	29
MS3181-14N	96906	C-1	30
MS3181-20C	96906	C-7	10
MS3186-34	96906	C-1	28
MS3186-43	96906	C-1	31
MS35206-217	96906	C-2	5
MS35338-42	96906	C-1	24
MS35338-42	96906	C-1	33
MS35338-43	96906	C-1	3
MS35478-307	96906	C-2	3
MS35691-32	96906	C-1	35
MS35691-32	96906	C-7	6
MS35842-16	96906	C-1	17
MS35842-16	96906	C-3	18
MS35842-16	96906	C-4	4
MS35842-16	96906	C-8	2
MS35842-16	96906	C-9	4
MS51849-53	96906	C-1	32
MS51849-54	96906	C-1	21
MS51849-55	96906	C-1	11
MS51849-55	96906	C-3	12
MS51849-55	96906	C-4	11
MS51849-55	96906	C-9	11
MS51849-56	96906	C-1	22
MS51849-56	96906	C-4	13
MS51849-56	96906	C-8	8
MS51849-56	96906	C-9	13
MS51849-64	96906	C-3	39
MS51849-66	96906	C-1	2
MS51849-66	96906	C-8	3
MS521301B225360	96906	BULK	
MS90484-20-1	96906	C-7	8
MS90727-33	96906	C-3	44
MS90727-6	96906	C-3	22
MS90727-64	96906	C-3	28
MS9122-07	96906	C-3	38
MS9352-05	96906	C-3	40
PL5-19-6718	81361	C-3	4
PL-19-6705	81361	C-7	
261P1-4	30327	C-3	41
261P1-4	30327	C-5	3
44P	30327	C-3	8
44P	30327	C-3	9
44P	30327	BULK	
44P	30327	BULK	
8173	01943	C-1	27
KF03-02PS	30327	C-1	7
KF03-04RV	30327	C-1	5
KF03-04RV	30327	C-7	4
K35B1	79919	C-2	1
MS21044N08	96906	C-1	18
MS21044N08	96906	C-3	19
MS21044N08	96906	C-4	5
MS21044N08	96906	C-8	11
MS21044N08	96906	C-9	5
MS21044N3	96906	C-3	34
MS21044N3	96906	C-8	9
MS24679-2	96906	C-1	23
MS24679-2	96906	C-1	37
MS25235R311	96906	C-2	4
MS25237-387	96906	C-2	2
MS25237-387	96906	C-6	1

APPENDIX D
EXPENDABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

D-1. SCOPE. This appendix lists expendable supplies and materials you will need to operate and maintain the collective protection equipment. These items are authorized to you by CTA 50-970. Expendable Items (Except Medical. CIass V. Repair Parts and Heraldic Items).

D-2. EXPLANATION OF COLUMNS.

a. *Column 1 - Item Number.* This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e. g., "Use dry-cleaning solvent. item 2, app D").

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

O - Organizational Maintenance
F - Direct Support Maintenance

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

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

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
1	F		ADHESIVE, BONDING VULCANIZED: MMM-A-121 (81348)	
		8040-00-165-8614	1 qt can	QT
2	0		ALIPHATIC POLYURETHANE COATING: low reflective, chemical agent resistant MIL-C-46168 (MR)	
		8010-01-055-2319	1 gal cntr	EA
3	0	7920-00-223-8002	BRUSH, ACID SWABBING: horsehair bristle, 5.750 length HR643	EA

SECTION II.
EXPENDABLE SUPPLIES AND MATERIALS LIST

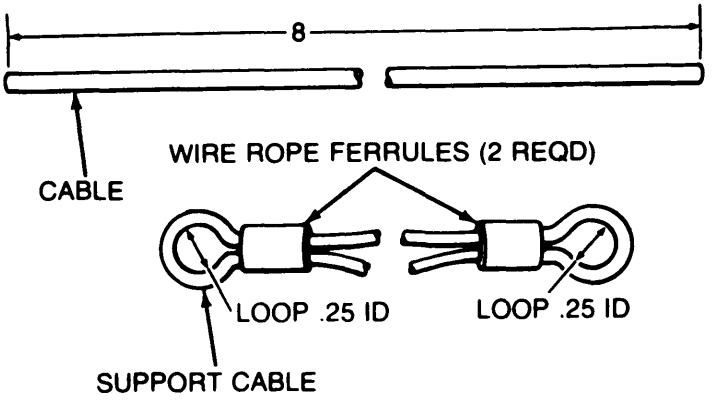
(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
4	0		DRY-CLEANING SOLVENT: P-D-680	
		6850-00-664-5685	1 QT CNTR	EA
		6850-00-281-1985	1 GAL CNTR	EA
5	0		PRIMER: CLASS 2 MIL-P-23377	
		8010-00-142-9279	KIT	EA
6	0		RAG, WIPING: COTTON DESIGNED FOR GENERAL PURPOSE USE DDD-R-30 (81348)	
		7920-00-205-1711	50 LB BALE	EA
7	0		TAPE: OLIVE DRAB, CLASS 1, 3" WIDE PP-T-60	
		7510-00-663-3738	ROLL	EA

APPENDIX E
ILLUSTRATED LIST OF MANUFACTURED ITEMS

E-1. INTRODUCT1ON.

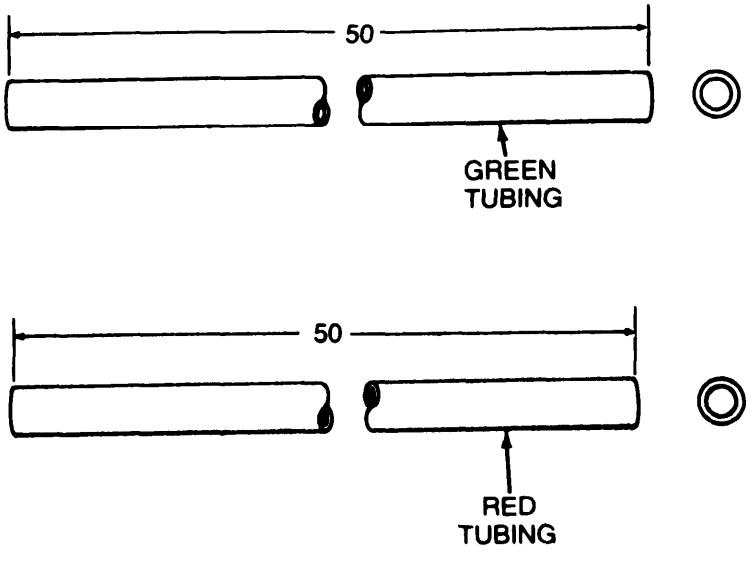
a. This appendix includes complete instructions for making items authorized to be manufactured or fabricated at organizational maintenance level.

b. All bulk materials needed for manufacture ofan item are listed by National Stock Number in a tabular list on the illustration.



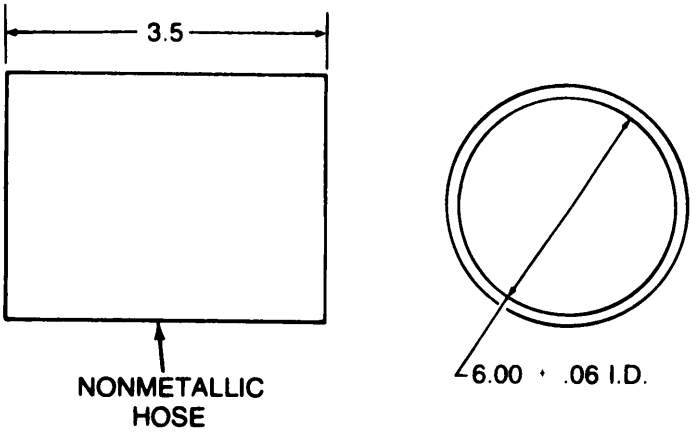
NOTES:
1. FABRICATE SUPPORT CABLE FROM NSN 4010-00-069-5180 STOCK.
2. CRIMP WIRE ROPE FERRULES (NSN 4030-00-878-8693) ON CABLE AS SHOWN.
3. ALL DIMENSIONS ARE IN INCHES.

Figure E-1. Support cable



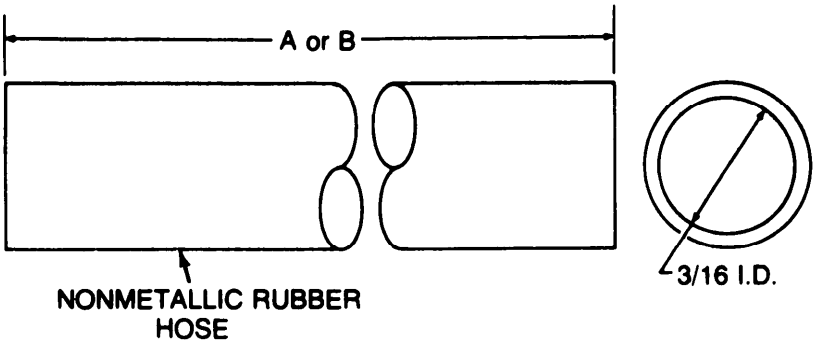
NOTES:
1. FABRICATE GREEN NONMETALLIC TUBING FROM NSN 4720-00-996-0381 STOCK.
2. FABRICATE RED NONMETALLIC TUBING FROM NSN 4720-00-996-0381 STOCK.
3. ALL DIMENSIONS ARE IN INCHES.

Figure E-2. Nonmetallic tubing



NOTES:
1. FABRICATE FROM NSN 4720-00-288-9757 STOCK
2. ALL DIMENSIONS ARE IN INCHES

Figure E-3. Nomettalic hose



NOTES:
1. FABICATE FROM NSN 4720-00-065-8682 STOCK.
2. ALL DIMENSIONS ARE INCHES

	LENGTH
A	12
B	22

Figure E-4. Rubber hose

ALPHABETICAL INDEX

* U.S. ☆U.S. GOVERNMENT PRINTING OFFICE: 1994 - 300-421/00000

By Order of the Secretary of the Army

E. C. MEYER
General, United States Army
Chief of Staff

Official:

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Major General, United States *Army*
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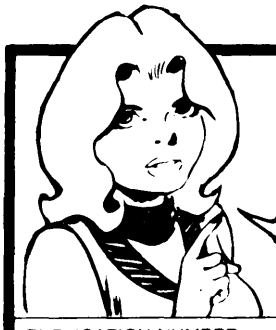

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BE EXACT. PIN-POINT WHERE IT IS

PAGE NO.	PARAGRAPH	FIGURE NO.	TABLE NO.
1-6	1-7		
2-7	2-7		
2-74	2-17		

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

ITEM 1. LINE 13. Change "Rock Island, IL. 61299" to read, "Aberdeen Proving Ground, Md 21010."
REASON: Wrong Address.

ITEM 2. IN REMARKS column add, "Do not use a wrench." Place remark in line with, "Tighten finger tight."
REASON: Incomplete information.

ITEM 3. Add callout "33" to the hose clamp in the illustration.
REASON: Call out missing from illustration.

SAMPLE

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE J.J.G.J.M. De Spirito

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TEAR ALONG DOTTED LINE

THE METRIC SYSTEM AND EQUIVALENTS

'NEAR MEASURE

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

'VEIGHTS

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

LIQUID MEASURE

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

SQUARE MEASURE

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

CUBIC MEASURE

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

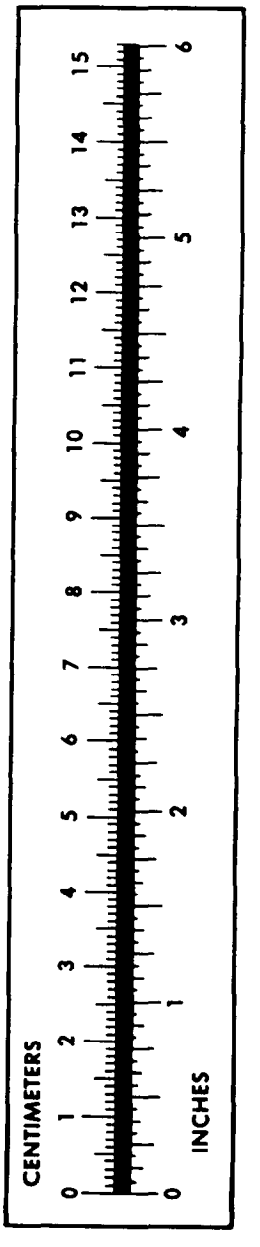
TEMPERATURE

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

APPROXIMATE CONVERSION FACTORS

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

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



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