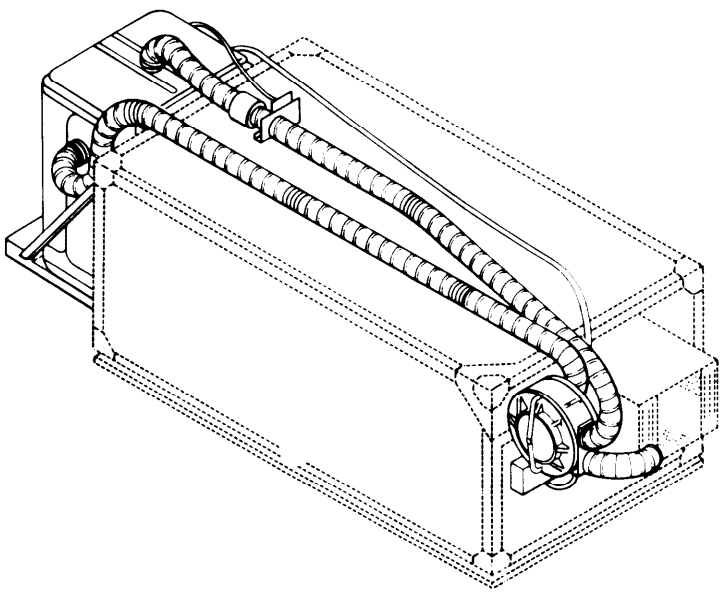
TM 11-7440-294-14

TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE MANUAL



INSTALLATION OF MODULAR COLLECTIVE PROTECTION EQUIPMENT (MCPE) (NSN 4240-00-229-2610) IN TACFIRE DISPLAY AND COMPUTER SHELTERS (S-280)

HEADQUARTERS, DEPARTMENT OF THE ARMY

15 JUNE 1983

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

1. DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL

2. IF POSSIBLE , TURN OFF THE ELECTRICAL POWER

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

4. SEND FOR HELP AS SOON AS POSSIBLE

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

WARNING

High voltage is used to power this equipment. Before installing or removing any power cable, be sure that POWER switch on compartment control module is in OFF position and that the collective protection equipment power source is shut down to avoid personal injury or loss of life.

If filter unit is operating, high voltage is present at the 208 v indicator lamp socket on the power distribution unit. Personal injury or loss of life may result if socket is contacted.

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

Filter seals must be properly seated to prevent bypass of contaminated air.

Torque access cover bolts 180 to 200 inch-pounds to seat gas filter.

Tighten inner cover retaining bar until sleeve is flush with top surface, to seat particulate filter.

If the power switch located on the compartment control module is switched on, and if mask light flashes and the horn sounds for more than 30 seconds, put on individual protective mask.

The modular collective protection equipment will not protect against carbon monoxide from the exhaust of an internal combustion engine.

During a tactical mission or a training exercise involving chemical or biological agents, do not reuse a filter that has been removed from a filter unit.

Do not step on protective entrance top shell when erected or collapsed.

Ensure that pressure port on compartment control module is covered and sealed prior to shelter decontamination procedures.

TECHNICAL MANUAL
No. 11-7440-294-14

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, ***15 June 1983***

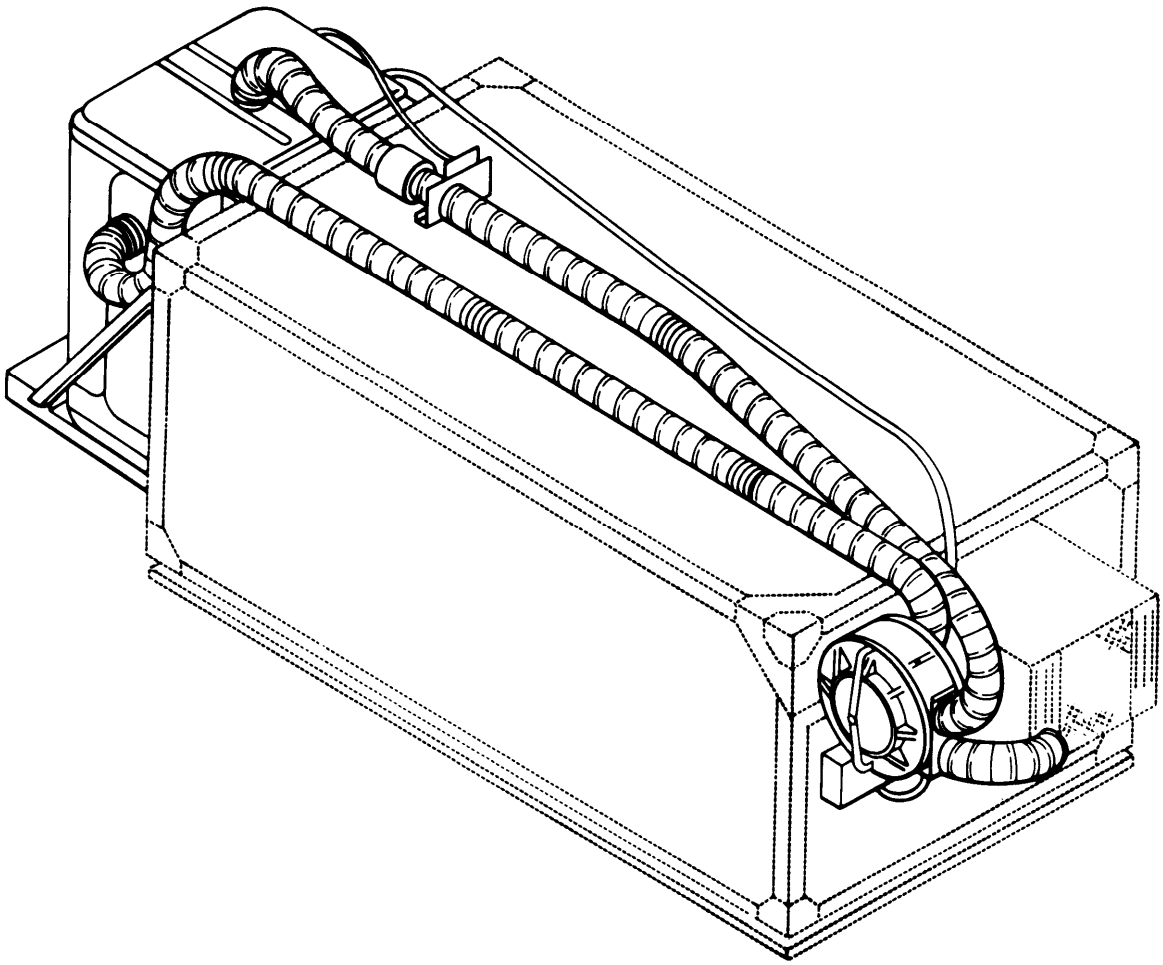
OPERATOR'S ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL FOR INSTALLATION OF MODULAR COLLECTIVE PROTECTION EQUIPMENT (MCPE) (NSN 4240-00-229-2610) IN TACFIRE DISPLAY AND COMPUTER SHELTERS (S-280)

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 or DA Form 2028 (Recommended Changes to Equipment Publications and Blank Forms) or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703. A reply will be furnished to you.

HOW TO USE THIS MANUAL

In this manual paragraphs are numbered by chapter and order in each chapter. To find the paragraph you need, first locate your subject in the table of contents. Turn to the page shown and read the paragraph headings until you see what you're looking for. if you find a word or term you don't understand, refer to the glossary in the back of the book.



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MODULAR COLLECTIVE PROTECTION EQUIPMENT (MCPE)

CHAPTER 1

INTRODUCTION

OVERVIEW

This chapter contains general information, equipment descriptions, and principles of operation for modular collective protection equipment.

Section I GENERAL INFORMATION

1-1. SCOPE.

Type of Manual: Operator's, Organizational, Direct Support, and General Support Maintenance.

Equipment Name and Model Number: The Modular Collective Protection Equipment, Fire Direction System, Artillery, (Tacfire) AN/GSG-10(V) consists of: M10 protective entrance, M56 gas-particulate filter unit and M262 installation kit.

Purpose of Equipment: Provides filtered air under positive pressure to the M10 protective entrance and to the tacfire shelter.

1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS.

REPORTS OF MAINTENANCE AND UNSATISFACTORY EQUIPMENT

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750, The Army Maintenance Management System (TAMMS)

REPORT OF PACKING AND HANDLING DEFICIENCIES

Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 4140.55/NAVMATINST 4355.73/AFR 400-54/MC0 4430.3E.

1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS. (CONT)

DISCREPANCY IN SHIPMENT REPORT (DISREP) (SF 361)

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

1-3. CONSOLDIATED INDEX OF ARMY PUBLICATIONS AND BLANK FORMS.

Refer to the latest issue os DA Pam 310-1 to determine whether there are new editions, changes or additional publications pertaining to the equipment.

1-4. DESTRUCTION OF ARMY ELECTRONICS MATERIEL.

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

1-5. ADMINISTRATIVE STORAGE.

Administrative storage of equipment issued to and used by Army activities will have preventive maintenance performed in accordance with the PMCS charts before storing. When removing the equipment from administrative storage, the PMCS should be performed to assure operational readiness. Disassembly and repacking of equipment for shipment or limited storage are covered in Section Vlll of Chapter 4.

1-6. REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS (EIR).

If your modular 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. Put your comments on an SF 368 (Quality Deficiency Report). Mail it to: Commander, U.S. Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703. In either case, a reply will be furnished direct to you.

1-7. NOMENCLATURE CROSS REFERENCE LIST

This list contains common names used throughout this manual in place of official nomenclature.

Common Name	Offical Nomenclature
M10 protective entrance	Entrance, Protective, Pressurized, Collapsible, M10
M56 gas particulate filter unit	Filter Unit, Gas Particulate, 200 CFM, 208 V, 400 Hz, M56
M262 installation kit	Installation Kit, M262
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 C5-19-6170-40	Cable Assembly, Special Purpose Electrical, C5-19-61 70-40
cable C5-19-6691	Cable Assembly, Special Purpose Electrical, C5-19-6691
cable C5-19-6693	Cable Assembly, Special Purpose Electrical C5-19-6693
silencer	muffler, intake

1-8. LIST OF ABBREVIATIONS.

This list contains abbreviations used in this manual.

Abbreviation	Word or Term
CCM	Compartment Control Module
E/P	Electrical/Pneumatic
GPFU	Gas Particulate Filter Unit
MCPE	Modular Collective Protection Equipment
PE	Protective Entrance
PDU	Power Distribution Unit
SP	Special Purpose

Section II EQUIPMENT DESCRIPTION

1-9. PURPOSE OF EQUIPMENT.

Provides filtered air under positive pressure to the M10 protective entrance and to the tacfire shelter.

1-10. EQUIPMENT CHARACTERISTICS.

The MCPE is designed to operate in a chemical/biological agent contaminated zone.

The filter unit provides filtered air under positive pressure to the M10 protective entrance and to the tacfire shelter.

Positive pressure prevents dangerous amounts of chemical and biological agents from entering the protected area.

The M10 protective entrance, while under positive pressure, allows personnel to enter or leave without loss of positive pressure protection in the tacfire shelter.

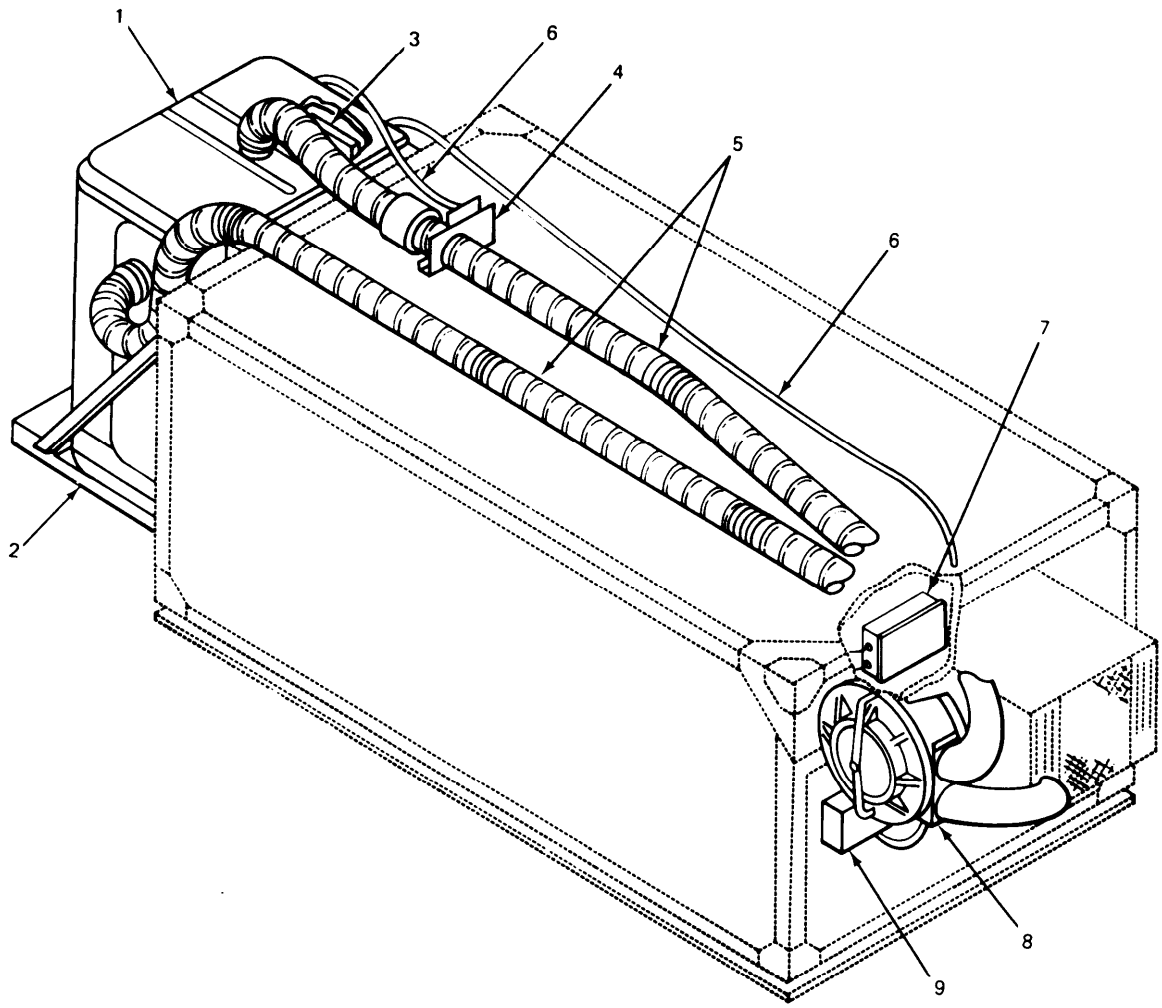
1-11. EQUIPMENT CAPABILITIES AND FEATURES.

Control modules are provided for both the M10 protective entrance and the tacfire shelter.

Major components of the MCPE may be attached or detached from the tacfire shelter without affecting the operation of the shelter.

Modular design of MCPE permits easy access to the major components for servicing and maintenance, and quick replacement of malfunctioning components.

1-12. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.



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1-12. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS. (CONT)

REAR OF SHELTER

1 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.

2 PROTECTIVE ENTRANCE PLATFORM. Temporary platform to support protective entrance.

INSIDE SHELTER

3 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.

TOP OF SHELTER

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

5 AIR DUCT HOSE. Large diameter (6') impermeable fabric hose, in 3 foot and 6 foot sections, connects filter unit, shelter, and protective entrance for filtered and return air circulation.

6 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.)

FRONT OF SHELTER

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

8 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.

9 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.

1-13. SAFETY, CARE AND HANDLING.

Be sure to obey all WARNINGS AND CAUTIONS given in this manual. Serious injury to personnel or damage to equipment may result if WARNINGS and CAUTIONS are not followed exactly.

Section III PRINCIPLES OF OPERATION

1-14. AIR FILTRATION AND PRESSURIZATION SYSTEM.

The M56 gas-particulate filter unit removes toxic gases and dust from the air supplied to the M10 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 air duct hoses to the protective entrance through the airflow valve and silencer assembly 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.

The M10 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 filtered 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

OPERATING INSTRUCTIONS

OVERVIEW

This chapter contains description and use of operator's controls and indicators, operator preventive maintenance checks and services, and operation under usual and unusual conditions for the modular protective collection equipment.

Section I DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

For operating instructions of the modular collective protection equipment, refer to TM 3-4240-272-14.

Section II OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES

There are no operator PMCS procedures for this equipment. Routine checks like equipment inventory, cleaning, checking for frayed or broken cables, replacing items not in use, and checking for loose hardware, such as nuts, bolts, and screws should be done daily.

Section III OPERATION UNDER USUAL CONDITIONS

2-1. OPERATING PROCEDURES

This section contains instructions for operating the modular collective protection equipment under usual conditions.

Before operating the filter unit, erect the protective entrance (para 4-7) and connect air hoses and the airflow valve and silencer if they have been removed (para 4-8). Close all doors and vents that would prevent pressurization of the shelter or compartment.

NOTE

Leave air conditioner and door vent open.

LOCATION	ITEM	ACTION	REMARKS
STARTING PROCEDURE			
			WARNING The filter unit will not protect against carbon monoxide exhaust of an internal combustion engine.
1. CCM	Power switch (1)	Pull out and move up.	
			WARNING Warning horn and MASK indicator light will go on for thirty seconds or less. If horn sounds and MASK light flashes for more than thirty seconds, put on individual protective mask.
			NOTE Pushing HORN OFF button will stop the horn from sounding and cause MASK light to stay on, indicating that the warning has been recognized.
2.	Circuit breakers (2)	Set.	
			CAUTION Do not horn any circuit breaker in its set position or damage from overheating may occur.

2-1. OPERATING PROCEDURES. (CONT)

LOCATION	ITEM	ACTION	REMARKS

STARTING PROCEDURE (CONT)

NOTE

If you cannot set circuit breakers, tell your supervisor.

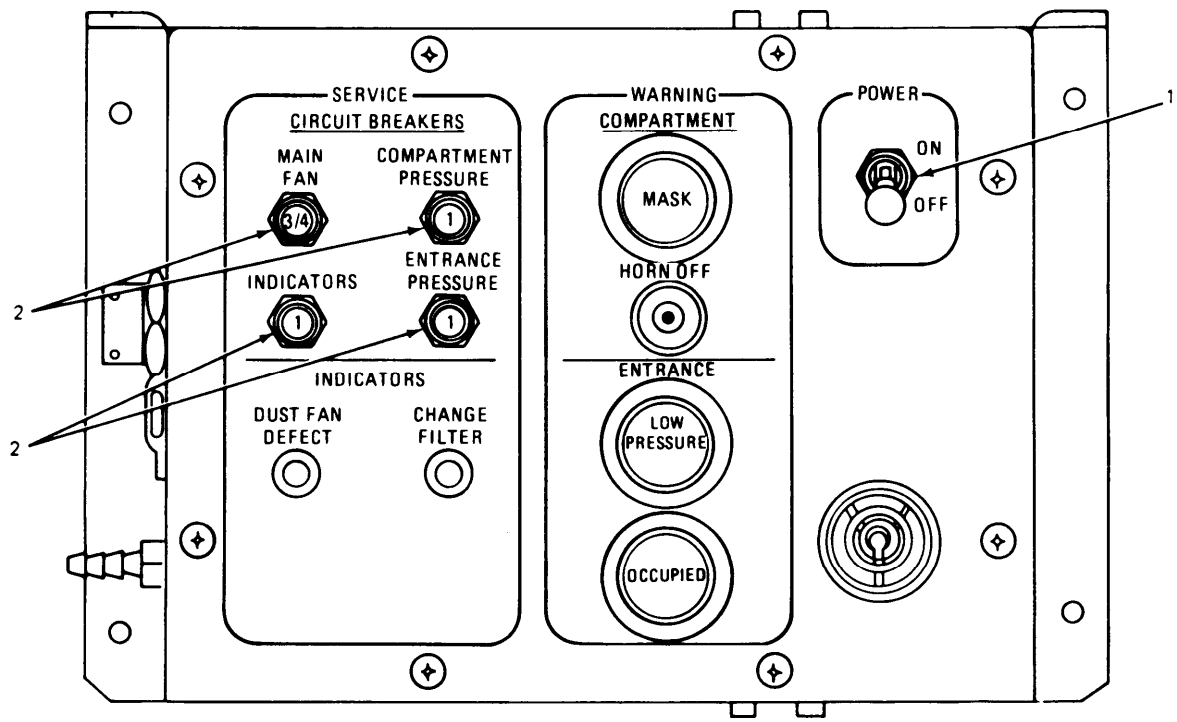
Check if CHANGE FILTER indicator light is off. If not, replace filters, see paragraphs 4-45 and 4-46.

STOPPING PROCEDURE

1. CCM	Power switch (1)	Pull out and move down.	

NOTE

To strike (collapse) protective entrance, see paragraph 4-61.



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Section IV OPERATION UNDER UNUSUAL CONDITIONS

There are no operating procedures under unusual conditions for this equipment.

CHAPTER 3

OPERATOR MAINTENANCE

OVERVIEW

This chapter contains Lubrication, troubleshooting, and maintenance instructions for the modular collective protection equipment.

Section I LUBRICATION INSTRUCTIONS

There are no lubrication instructions for this equipment.

Section II TROUBLESHOOTING PROCEDURES

For troubleshooting procedures refer to TM 3-4240-284-20&P

Section III MAINTENANCE PROCEDURES

For maintenance procedures refer to TM 3-4240-284-20&P.

CHAPTER 4

ORGANIZATIONAL MAINTENANCE

OVERVIEW

This chapter contains instructions for the assembly, installation and removal of the modular collective protection equipment.

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

4-1. Common Tools and Equipment.

The common tools and equipment needed for the installation of the modular collective protection equipment will be listed in the Maintenance Allocation Chart found in Appendix B, and at the beginning of each installation procedure.

4-2. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT.

There are no special tools or equipment required to maintain this equipment.

Section II SERVICE UPON RECEIPT

4-3. UNPACKING MODULAR COLLECTIVE PROTECTION EQUIPMENT.

This task covers:

Unpacking

INITIAL SETUP

Tools

Pliers
Claw hammer
Shears
Pocket knife

Materials/Parts

None

Personnel Required

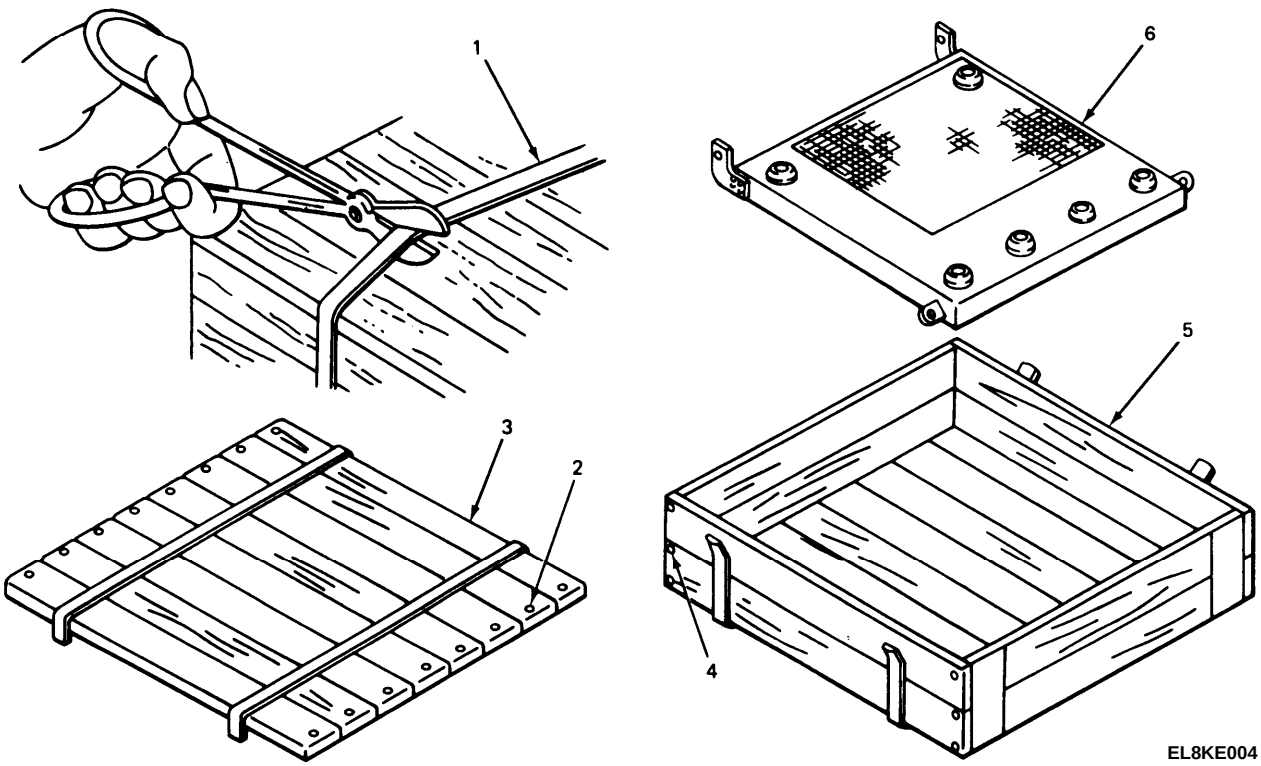
Two mechanics

Equipment Condition

PE platform crated and shelter at installation site.

LOCATION	ITEM	ACTION / REMARKS
		NOTE Do not mix parts from different kits. All parts except PE piatform are stored for shipment inside shelter. See steps 1 thru 6 for uncrating PE platform.
		WARNING Stand to the side of each packing band when cutting
1. Wooden crate	Packing bands(1)	Using shears, cut.
2. Top cover	Nails (2)	Using claw hammer, remove.
3. Wooden crate	Top cover (3)	Remove.
4. Side cover	Nails (4)	Using claw hammer, remove.
5. Wooden crate	Side cover (5)	Remove.
6. Platform (6)		Remove.

4-3. UNPACKING MODULAR COLLECTIVE PROTECTION EQUIPMENT.



4-4. CHECKING UNPACKED MATERIEL.

When the MCPE is received, the unpacker must check equipment for damage resulting from shipment, proper amount of items or parts shipped, and if the right units were sent in the kit.

If damage to a unit or a part of the kit, other than minor scratches or dents are found, refer to paragraph 1-2, Maintenance Forms, Records and Reports. Check the parts list with the parts received and if there is a difference in the amount received, report on forms shown in TM 38-750. If the part numbers are not the same, check the current Modification Work Order (MWO) DA Pam 310-1 for a change in parts listing.

Section III ASSEMBLY AND INSTALLATION OF MODULAR COLLECTIVE PROTECTION EQUIPMENT

4-5. INSTALLING PE PLATFORM.

This task covers:

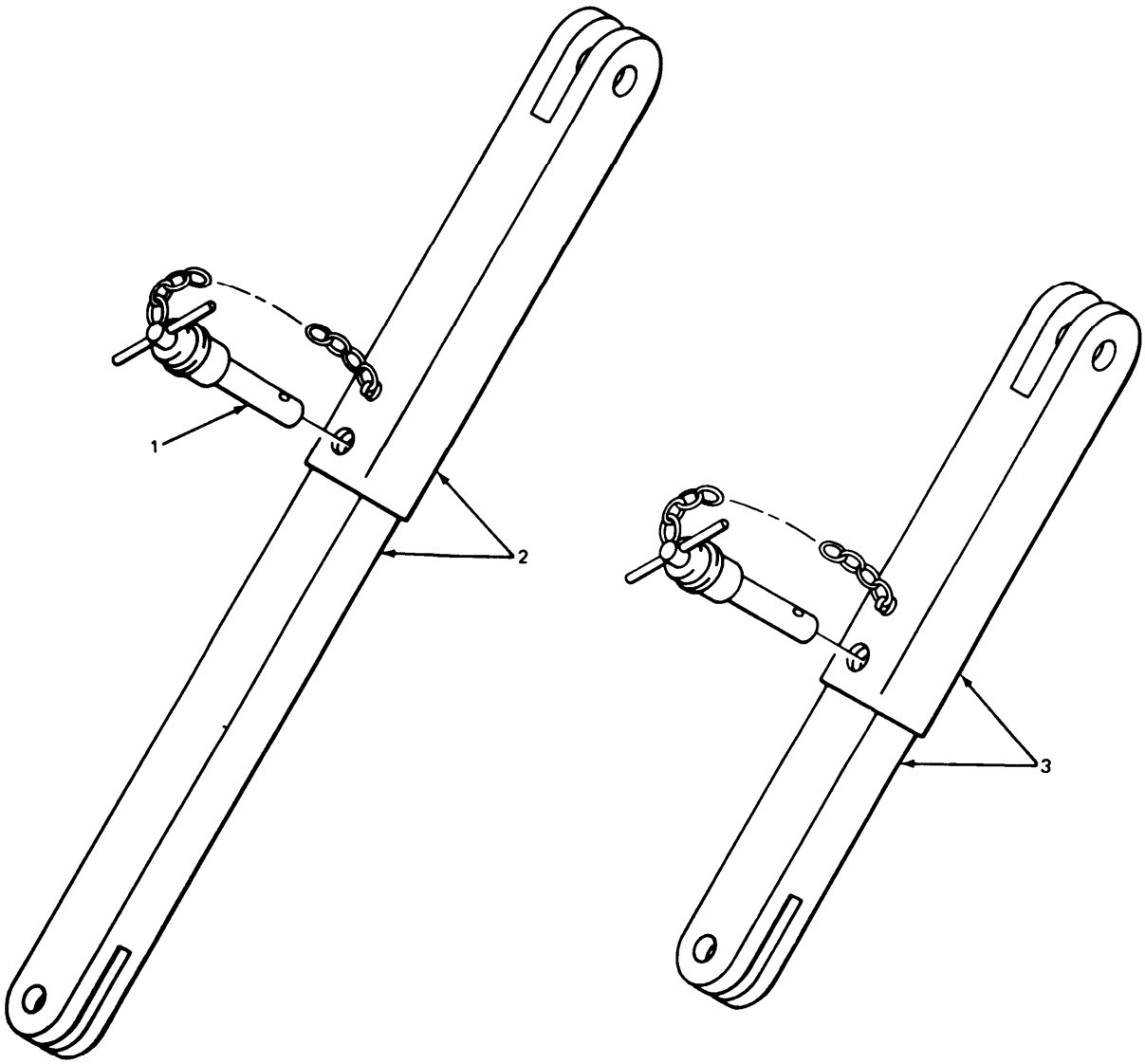
Installation

INITIAL SETUP

Tools	Personnel Required
3/16 inch hex wrench	Four mechanics
Materials/Parts	**Equipment Condition**
Platform assembly Support tube (4 required) Quick release pin (6 required)	Vehicle at installation site. Modifications to shelter per drawing number DL-SC-B-913352 performed at depot.

LOCATION	ITEM	ACTION	**REMARKS**
		NOTE Support tubes are marked for upper and lower sections. Curbside support tube assembly is longer than roadside support tube assembly when extended.	
1. Roadside tube assembly	Pin (1)	Remove.	
2. Rear of shelter	Roadside tube assembly (2)	Expand to extended position.	
3. Roadside tube assembly	Pin (1)	install.	**There are two tube assemblies. Steps 1 thru 3 are typical for both tube assemblies.**
4. Rear of shelter	Curbside tube assembly (3)	Do steps 1 thru 3 again.	

4-5. INSTALLING PE PLATFORM. (CONT)



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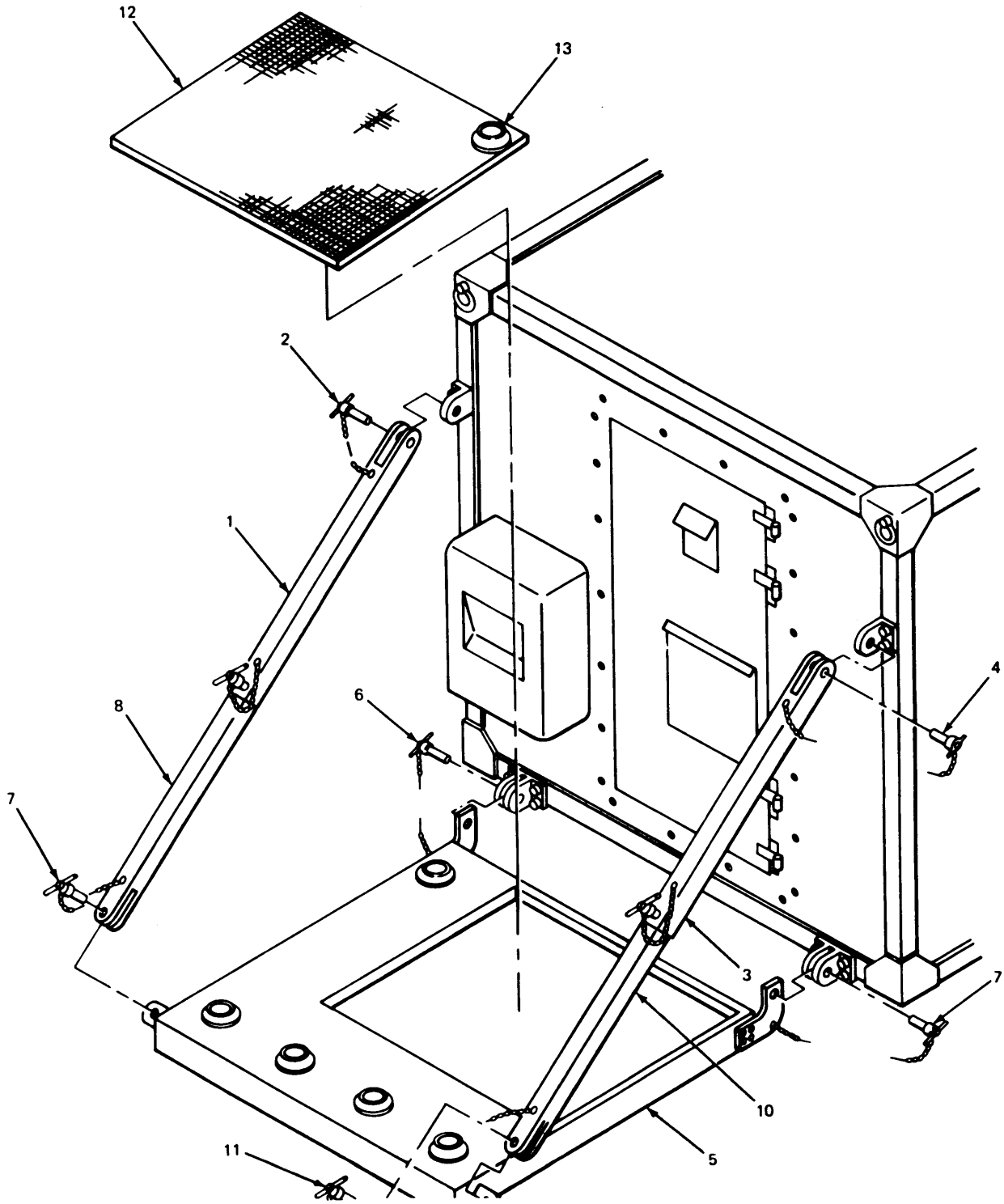
4-5. INSTALLING PE PLATFORM. (CONT)

LOCATION	ITEM	ACTION / **REMARKS**
5. Roadside upper arm bracket	Upper tube assembly (1) and pin (2)	Install.
6. Curbside upper arm bracket	Upper tube assembly (3) and pin (4)	Install.
	NOTE Three men will be needed to lift PE platform into place while fourth man installs pins.	
7. Lower bracket supports	PE platform (5)	Put in place. **Aline holes.**
8.	Pin (6)	Install.
9.	Pin (7)	Install.
10. Roadside platform bracket	Roadside lower tube (8) and pin (9)	Install.
11. Curbside platform bracket	Curbside lower tube (10) and pin (11)	Install.
	NOTE The floor grate welded assembly is installed only when protective entrance is not being used.	
12. PE platform	Floor grate welded assembly (12)	Place in recess of PE platform. **Utility chain pipe flange (13) faces curbside.**
	NOTE Utility chain pipe flanges are part of the PE platform. When protective entrance is used only five utility chain pipe flanges are used.	

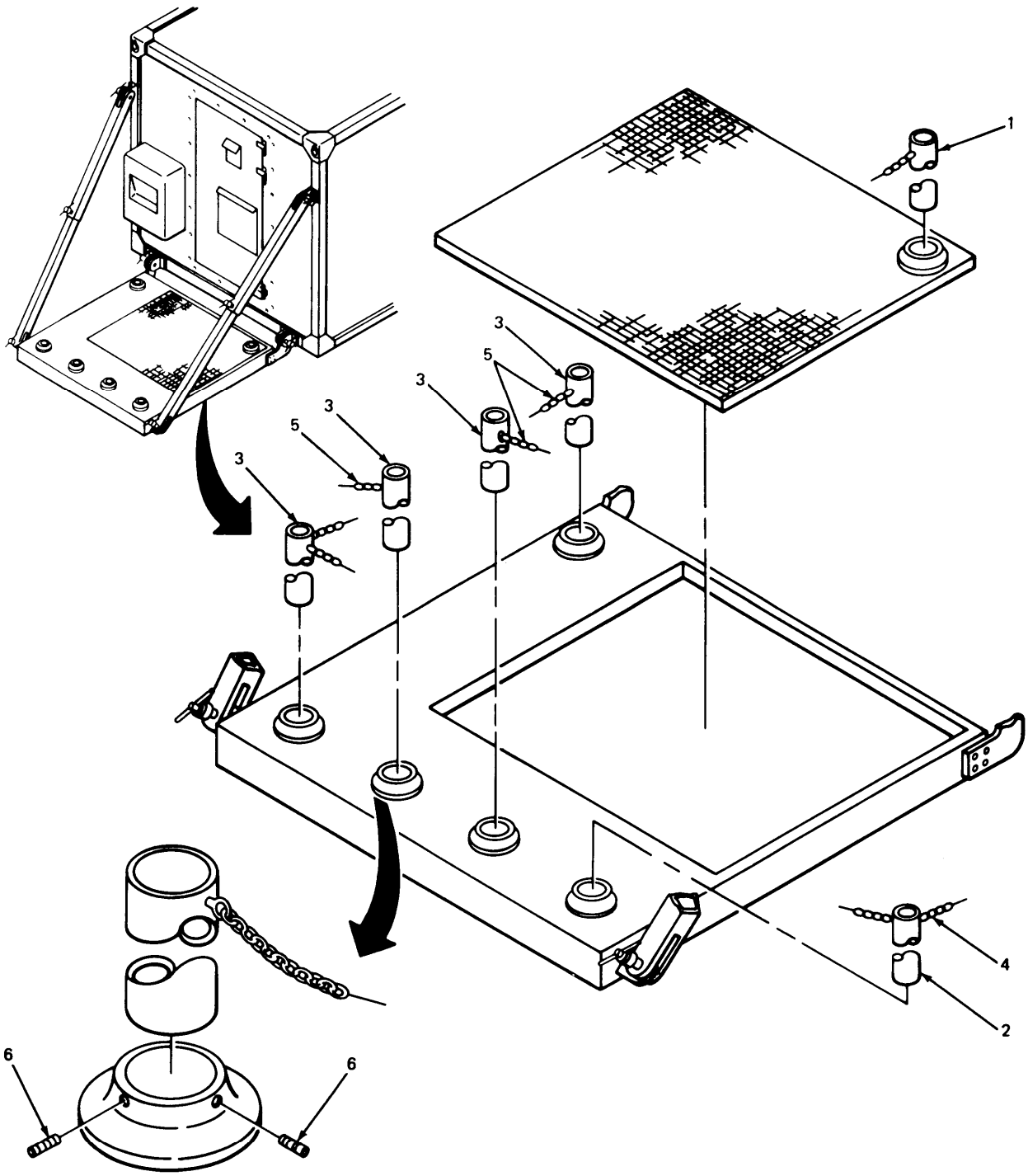
4-5. INSTALLING PE PLATFORM. (CONT)



4-5. INSTALLING PE PLATFORM. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
13. Floor grate welded assembly	Pipe (1)	Install. **Install only if protective entrance is not being used.**
14. PE platform	Pipe (2)	Install. **There are five pipes installed on the PE platforrn. Step 13 is typical for all five pipes.**
15.	Pipes (3)	Do step 13 again.
16.	Utility chain (4)	Install. **There are four chains. Step 15 is typical for all four chains.**
17.	Utility chains (5)	Do step 15 again.
18. Utility chain pipe flange	Screw (6)	Using 3/16 inch hex wrench, tighten. **There are twelve screws. Step 17 is typical for all twelve screws.**
19.		Do step 17 for remaining eleven screws.

4-5. INSTALLING PE PLATFORM. (CONT)



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4-6. INSTALLING PE INTERFACE BRACKET ASSEMBLY.

This task covers:

Installation

INITIAL SETUP

Tools

Cross tip screwdriver

Materials/Parts

PE interface installation assembly

Personnel Required

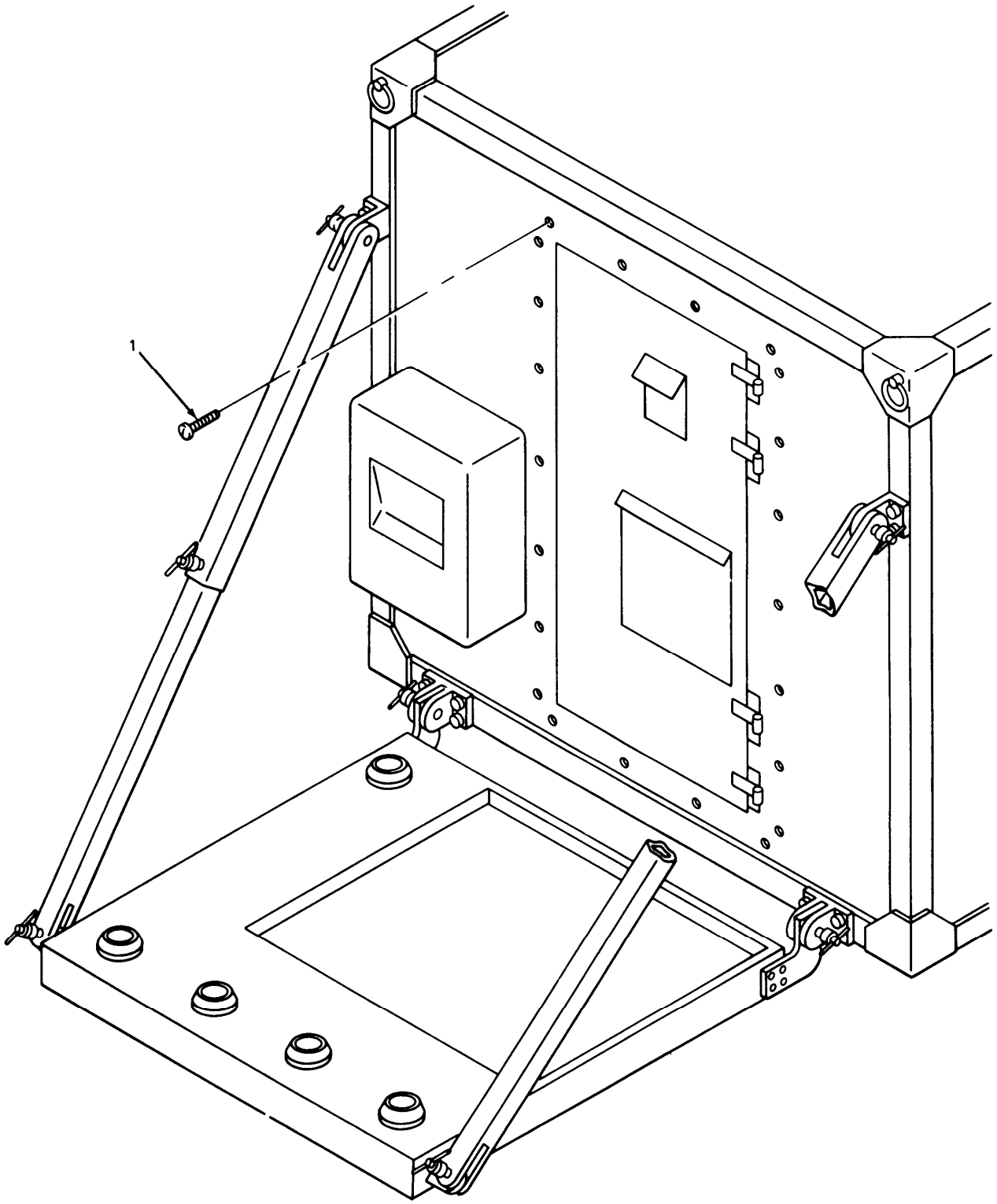
One mechanic

Equipment Condition

Vehicle non-mobile.

LOCATION	ITEM	ACTION / REMARKS
		NOTE Not all shelters have screws installed. If so, disregard this task.
1. Rear of shelter	Screw (1)	Using cross tip screwdriver, remove. **Throw away. There are twenty-two screws. Step 1 is typical for all twenty-two screws.**
2.		Do step 1 for all twenty-two screws.

4-6. INSTALLING PE INTERFACE BRACKET ASSEMBLY. (CONT)



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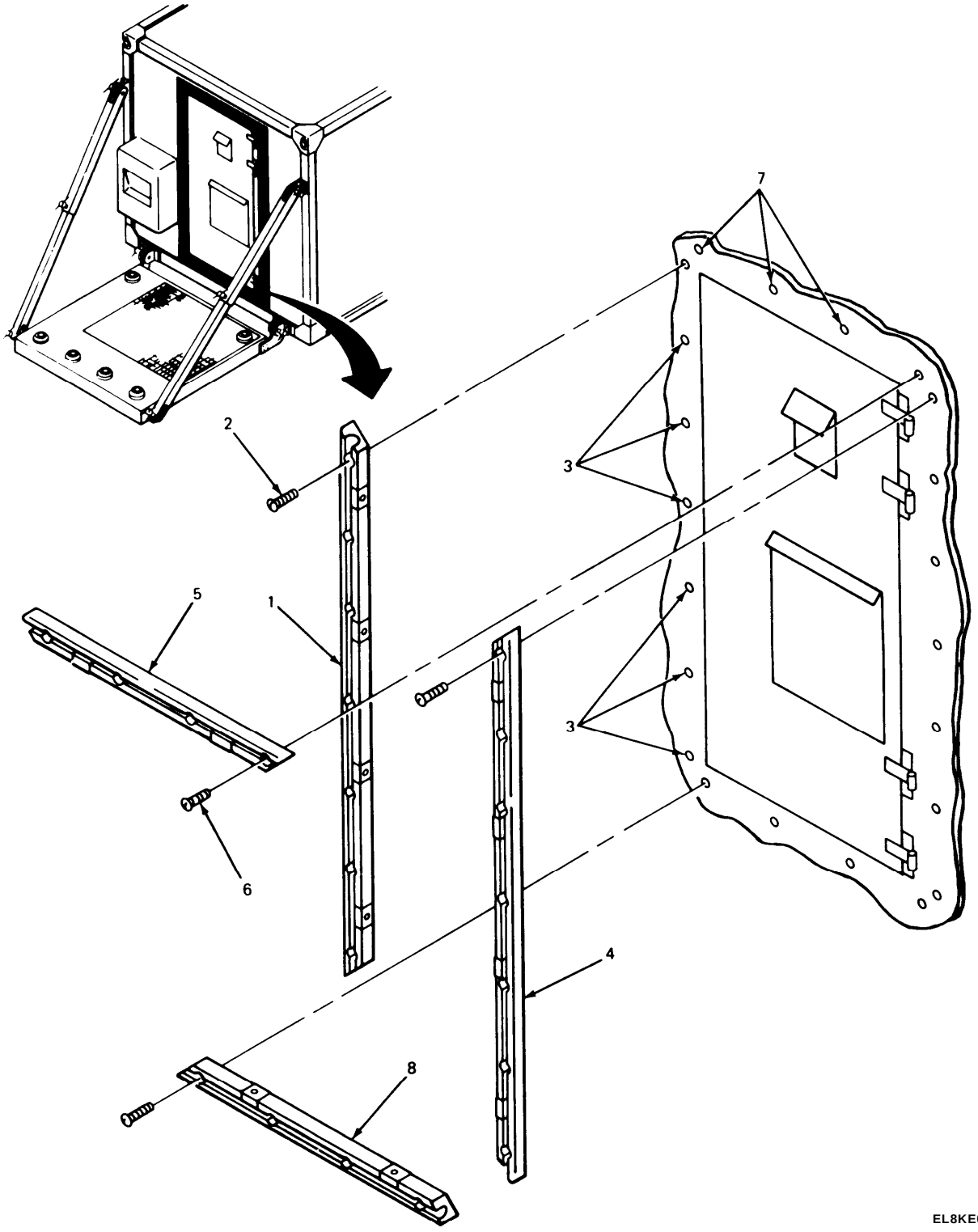
4-6. INSTALLING PE INTERFACE BRACKET ASSEMBLY. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
		NOTE Apply a bead of sealant in groove of extrusions before mounting.
3. Rear of shelter	Extrusion (1)	Mount. **Aline holes.**
4. Extrusion	Screw (2)	Install, hand tighten. **There are seven screws. Step 4 is typical for all seven screws.**
5.	Screw holes (3)	Do step 4 again.
6. Rear of shelter	Extrusion (4)	Do steps 3 thru 5 again.
7.	Extrusion (5)	Mount. **Aline holes.**
8. Extrusion	Screw (6)	Install, hand tighten. **There are four screws. Step 8 is typical for all four screws.**
9.	Screw holes (7)	Do step 8 again.
10. Rear of shelter	Extrusion (8)	Do steps 7 thru 9 again.
11.	Screw (2)	Using cross tip screwdriver, tighten. **There are twenty-two screws. Step 11 is typical for all twenty-two screws.**
12.		Do step 11 for all twenty-two screws.

4-6. INSTALLING PE INTERFACE BRACKET ASSEMBLY. (CONT)



4-7. PE ERECTING PROCEDURE.

This task covers:

Erection

INITIAL SETUP

Tools

Flat tip screwdriver

Materials/Parts

Protective entrance - M10 air duct hose (72 inch)

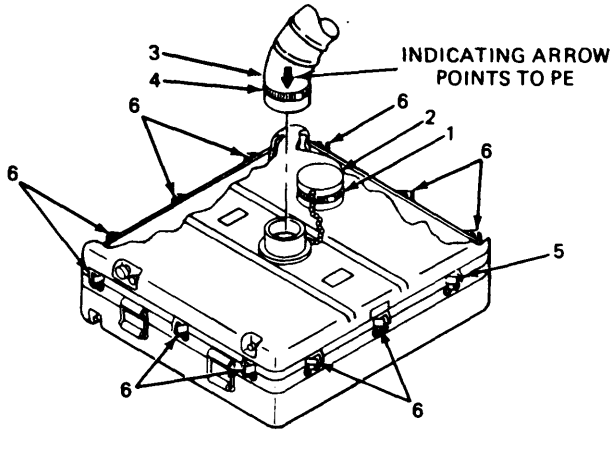
Personnel Required

Two mechanics

Equipment Condition

Protective entrance at installation site and air duct hose removed from holder. Have stored for future use.

LOCATION	ITEM	ACTION / REMARKS
1. PE inlet	Hose clamp (1) and air duct cover (2)	Using screwdriver, remove. **Leave air duct cover attached to PE.**
2.	Air duct hose (3) and hose clamp (4)	Using screwdriver, install.
3. Top shell	Latch (5)	Unfasten. **There are twelve latches. Step 3 is typical for all twelve latches.**
4.	Latches (6)	Do step 3 again.



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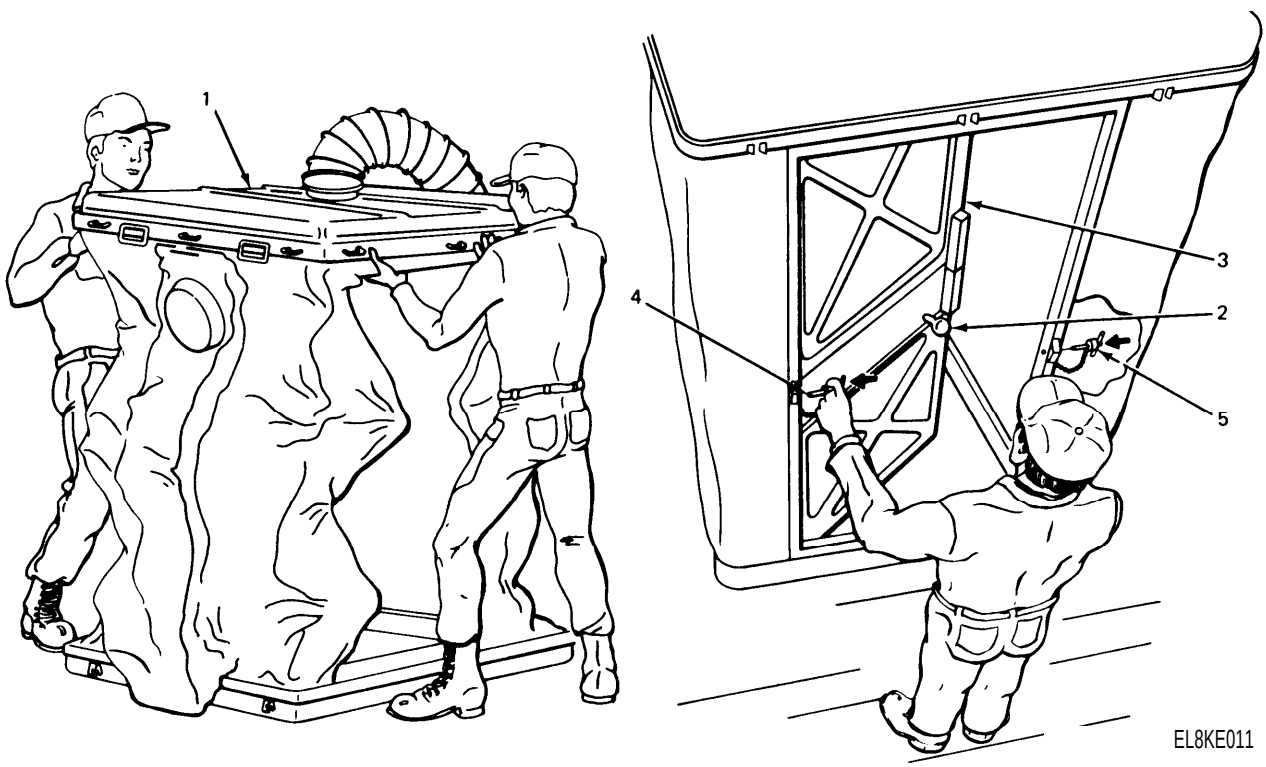
4-7. PE ERECTING PROCEDURE. (CONT)

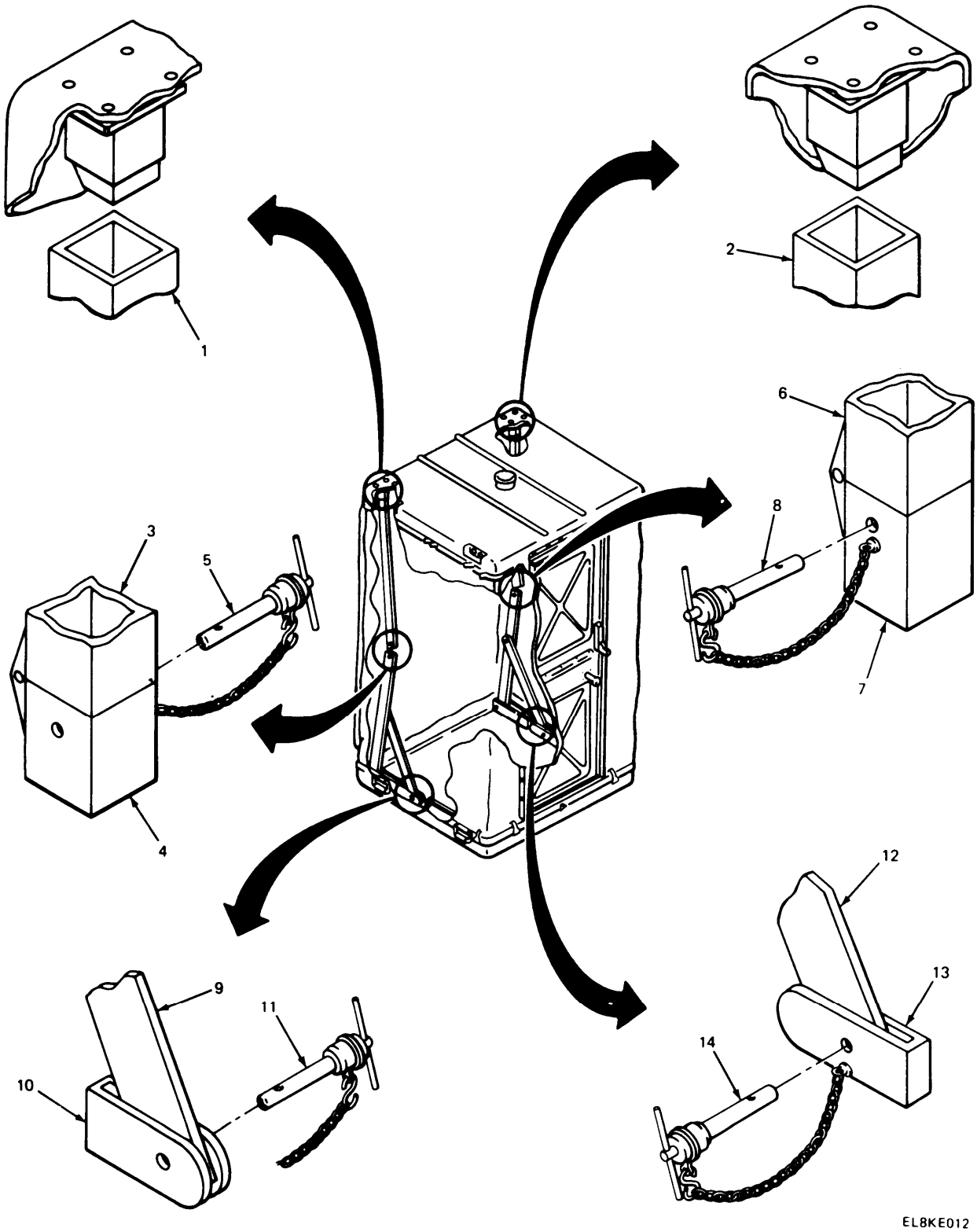
LOCATION	ITEM	ACTION **REMARKS**
		NOTE Two persons will be needed to open PE.
5. PE	Top shell (1)	Raise until fabric walls are tight.
6. Front of PE	Latch (2) and door (3)	Unlatch and open door.
		NOTE Top shell must be held up until rear supports are in place. Door must be held open while installing detent pins.
7. Door frame	Roadside detent pin (4)	From outside of PE, install.
	Curbside detent pin (5)	From inside of PE, install. **Detent pins are installed correctly if they stick out of frame rails.**



4-7. PE ERECTING PROCEDURE. (CONT)

LOCATION	ITEM	ACTION / **REMARKS**
		NOTE Unfasten two straps to release rear supports for installation. Top end of rear supports must mate with ceiling supports. Rear supports must be held straight.
9. Inside PE	Upper roadside Tube (1)	Install.
10.	Upper curbside Tube (2)	Install. **Tube must be pushed up completely**
11.	Roadside upper tube (3) and roadside lower tube (4)	Straighten and aline holes.
12.	Detent pin (5)	Install.
13.	Curbside upper tube (6) and curbside lower tube (7)	Straighten and aline holes.
14.	Detent pin (8)	Install.
15.	Roadside brace (9) and lower bracket (10)	Insert and aline holes.
16.	Roadside detent pin (11)	Install
17.	Curbside brace (12) and lower bracket (13)	Insert and aline holes.
18.	Curbside detent pin (14)	Install. **Detent pins must be pushed in completely.**
		NOTE Additional instructions for erecting PE can be found on inside right-hand wall of PE.

4-7. PE ERECTING PROCEDURE. (CONT)



4-8. INSTALLING PE AIRFLOW VALVE AND SILENCER ASSEMBLY.

This task covers:

Installation

INITIAL SETUP

Tools

3/8 inch socket
ratchet wrench
6 inch extension
1/4 inch box wrench
11/32 inch box wrench

Materials/Parts

PE airflow valve and silencer assembly

Personnel Required

One mechanic

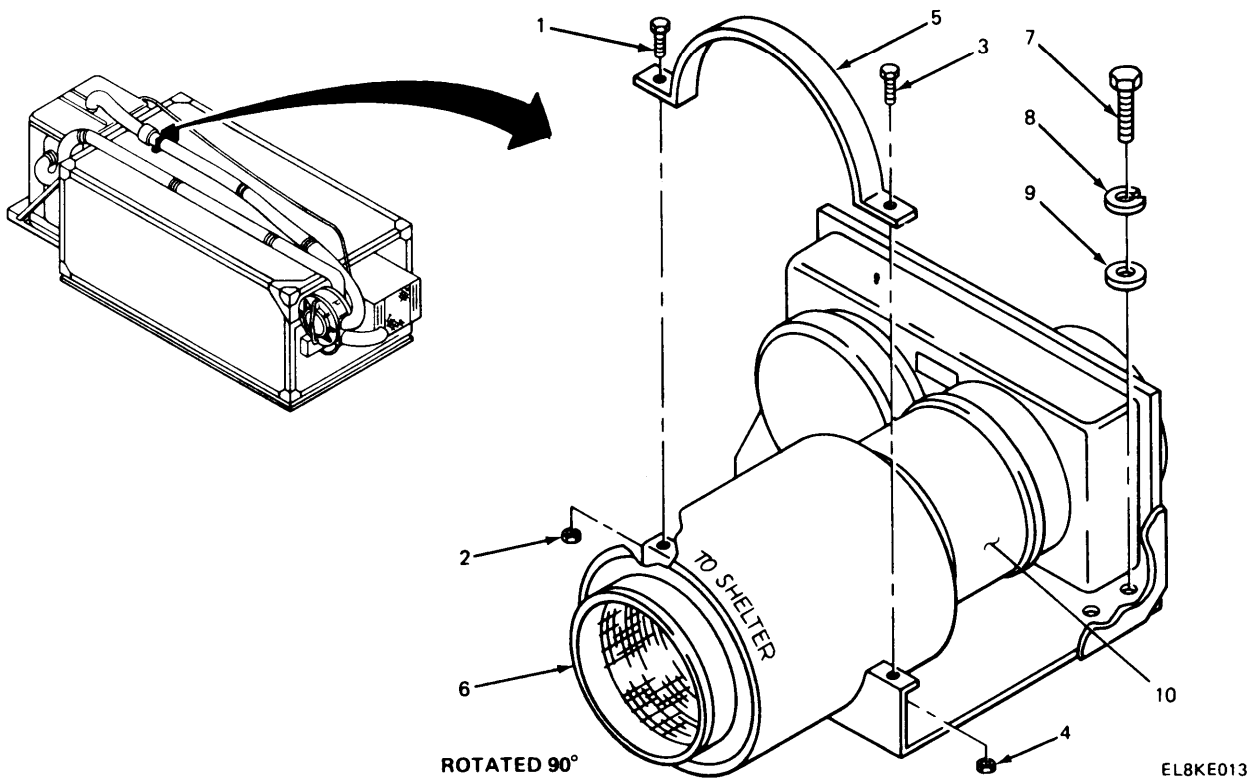
Equipment Condition

Rivnuts and hardware installed at depot.

LOCATION	ITEM	ACTION / **REMARKS**
1. Airflow valve mounting plate	Screw (1) and nut (2)	Using 1/4 inch and 11/32 inch box wrenches, remove.
2.	Screw (3), nut (4) and strap (5)	Using 1/4 inch and 11/32 inch box wrenches, remove.
3.	Silencer (6) and strap (5)	Put in place. **Use airflow valve port marked 'TO SHELTER'.**
4.	Screw (1) and nut (2)	Using 1/4 inch and 11/32 inch box wrenches, install.
5.	Screw (3) and nut (4)	Using 1/4 inch and 11/32 inch box wrenches, install.
6. Shelter roof	Screw (7), lock-washer (8) and flat washer (9)	Using 7/16 inch socket, ratchet wrench, and extension, remove. **There are four screws. Step 6 is typical for all four screws.**
7.		Do step 6 for remaining three screws.

4-8. INSTALLING PE AIRFLOW VALVE AND SILENCER ASSEMBLY. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
8. Shelter roof	Assembly (10)	Put in place. **Aline holes.**
9. Airflow valve mounting plate	Screw (7), lock-washer (8) and flat washer (9)	Install, hand tighten. **There are four screws. Step 9 is typical for all four screws.**
10.		Do step 9 for remaining three screws.
11.	Screw (7)	Using 7/16 inch socket, extension, and ratchet wrench, tighten, carefully. **There are four screws. Step 11 is typical for all four screws.**
12.		Do step 11 for remaining three screws.



4-9. INSTALLING PE INTERFACE TO INTERFACE BRACKET.

This task covers:

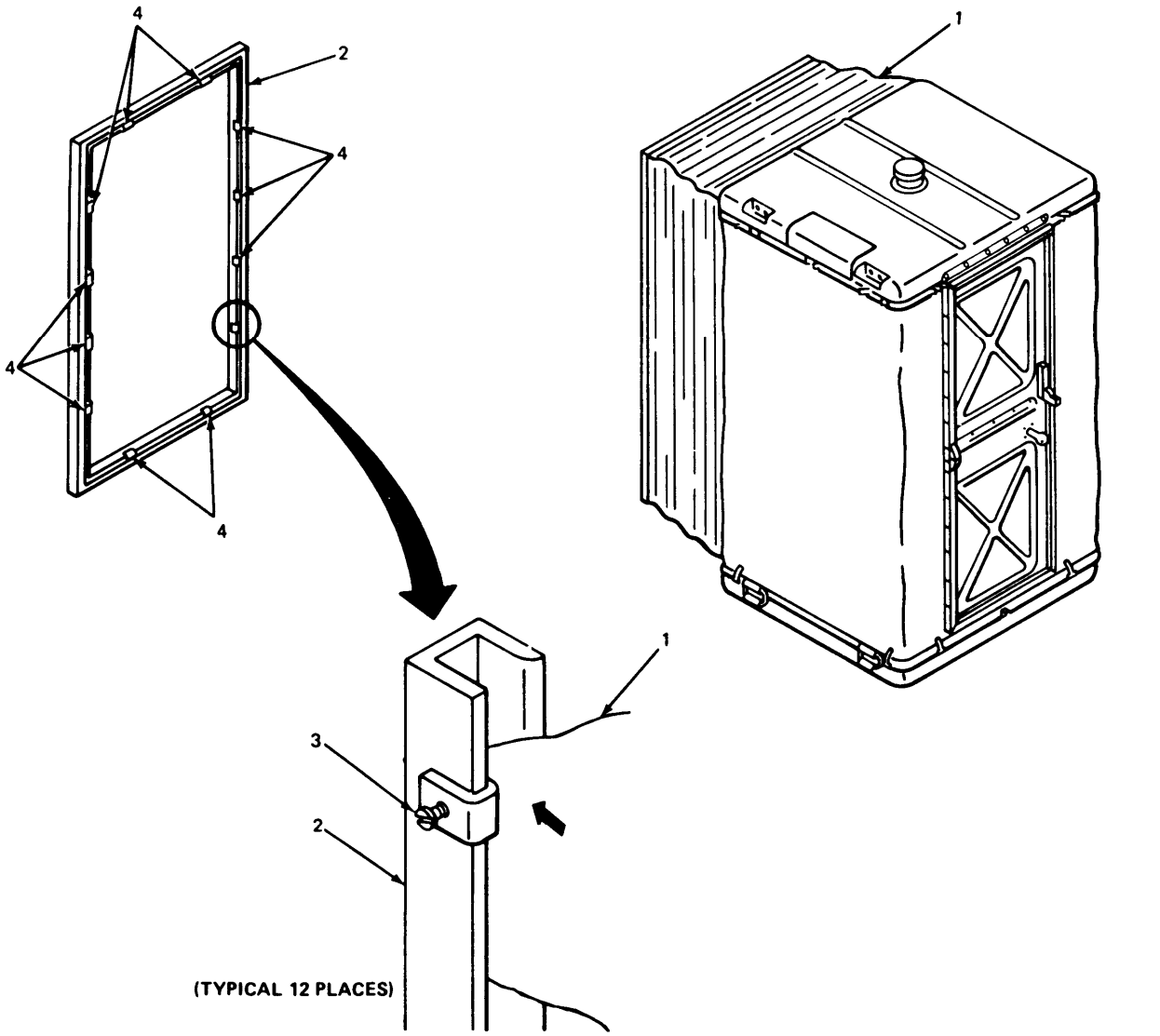
Installation

INITIAL SETUP

Tools	Personnel Required
Cross tip screwdriver	Five
Materials/Parts	**Equipment Condition**
None	PE assembled and grate removed.

LOCATION	ITEM	ACTION	REMARKS
		NOTE Five persons will be needed to lift and position protective entrance on PE platform assembly.	
1. Front of PE	Interface (1) and bracket channel (2)	Aline interface with bracket channel.	
		NOTE Loosen all clamping screws before installing interface in bracket channel.	
2.	Interface (1) and bracket channel (2)	Insert interface into bracket channel.	**Push edges into bracket channel to depth shown by arrow heads on fabric.**
3. Bracket channel	Clamping screw (3)	Using cross tip screwdriver, tighten.	**There are twelve clamping screws. Step 3 Is typical for all twelve clamping screws.**
4.	Clamping screws (4)	Do step 3 again.	

4-9. INSTALLING PE INTERFACE TO INTERFACE BRACKET. (CONT)



4-10. ELECTRICAL/PNEUMATIC FEED-THRU BOX.

Assembly instructions for the E/P feed-thru box are given in this section.

Installing feed-thru connector MS3119E20-16PS
Installing feed-thru adapter and cover
Installing feed-thru connector TBF16SSPS

4-11. INSTALLING FEED-THRU CONNECTOR MS3119E20-16PS.

This task covers:

Installation

INITIAL SETUP

Tools

Cross tip screwdriver
1/4 inch box wrench

Materials/parts

Feed-thru Connector MS3119E20-16PS
Protective cover
Electric connector flange mount gasket
4-40 x 1/2 inch long pan head screw (4 required)

Materials/pads (Cont)

No. 4 flat washer (4 required)
4-40 self-locking nut (4 required)

Personnel Required

Two

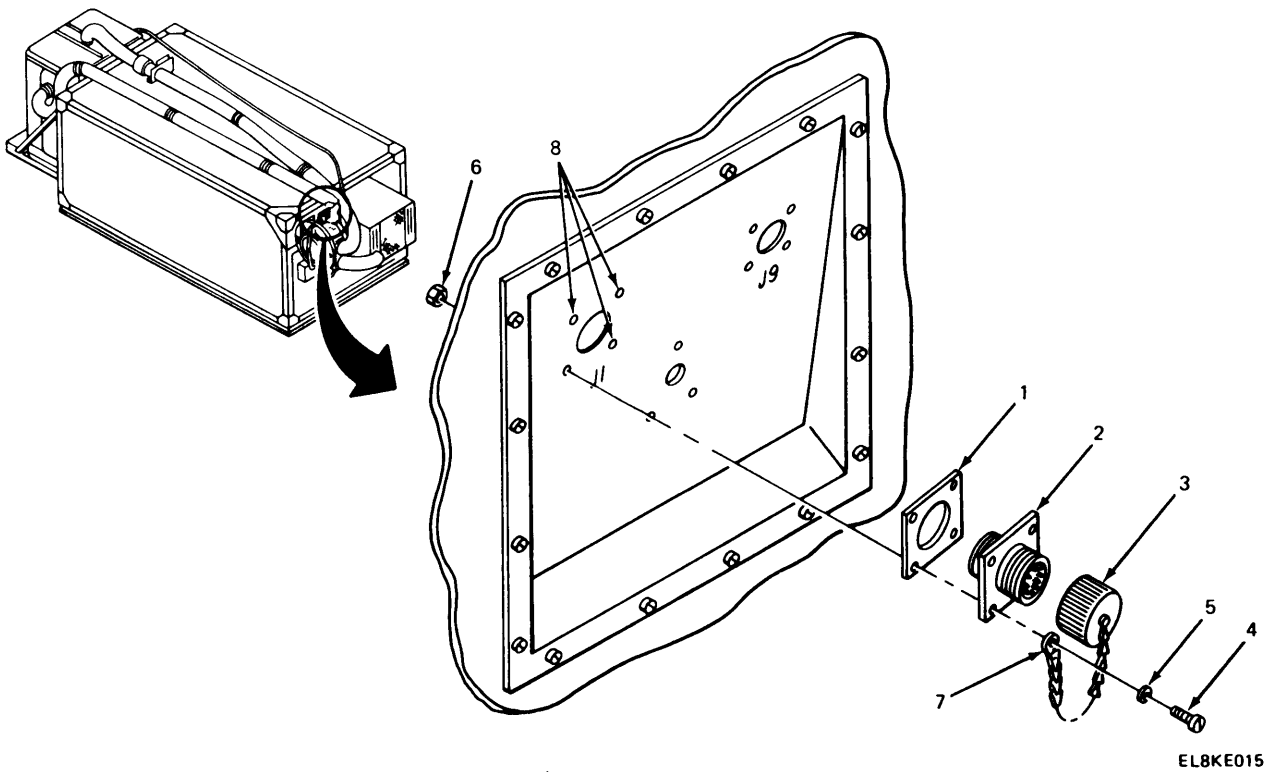
Equipment Condition

E/P feed-thru plate installed at depot.

LOCATION	ITEM	ACTION **REMARKS**
1. E/P feed-thru plate	Gasket (1), feed-thru connector (2) and protective cover (3)	Install. **Aline holes. Connector pins face outside of shelter. Widest key slot faces bottom.**
2.	Screw (4), flat washer (5), nut (6) and chain (7)	Install, hand tighten. **There are four screws. Step 2 is typical for all four screws.**

4-11. INSTALLING FEED-THRU CONNECTOR MS3119E20-16PS. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
3. E/P feed-thru plate	Screw holes (8)	Do step 2 again.
4.	Screw (4) and nut (6)	Using screwdriver and 1/4 inch box wrench, tighten. There are four screws. Step 4 is typical for all four screws.
5.		Do step 4 for remaining three screws.



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4-12. INSTALLING FEED-THRU ADAPTER AND COVER.

This task covers:

Installation

INITIAL SETUP

Tools

5/8 inch open end wrench
9/16 inch open end wrench
5/16 inch box wrench
Cross tip screwdriver

Materials/Parts

Adapter
Cover
7/16 inch brass nut
6-32 x 1/2 inch long pan head screw (3 required)

Materials/Parts (Cont)

No. 6 flat washer (3 required)
6-32 self-locking nut (3 required)

Personnel Required

Two mechanics

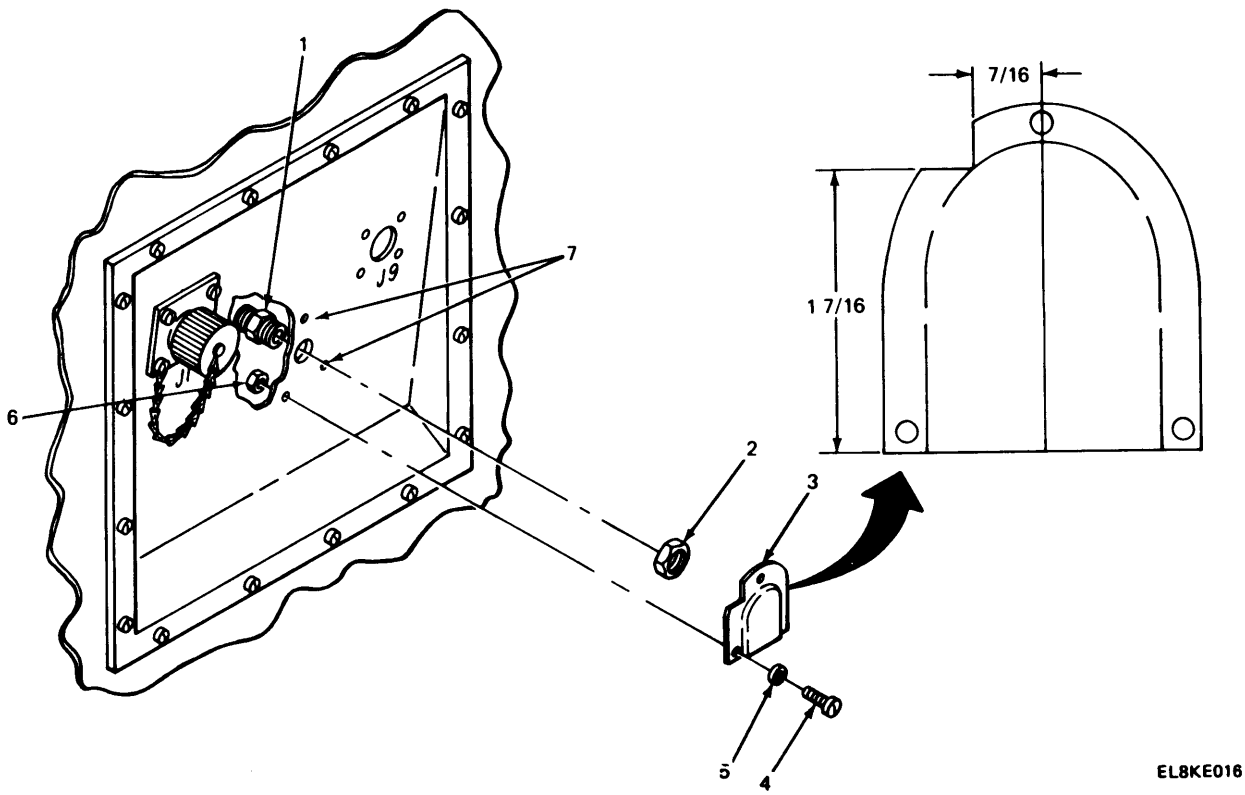
Equipment Condition

E/P feed-thru plate installed at depot.

LOCATION	ITEM	ACTION	REMARKS
		NOTE	
		Modify cover as shown in illustration before installing. If previously modified, disregard this procedure.	
1. E/P feed-thru plate	Adapter (1) and brass nut (2)	Using 9/16 inch and 5/8 inch open end wrenches, install.	**Install adapter from inside shelter. Smaller diameter of two ends faces out.**
2.	Cover (3)	Put in place.	**Aline holes.**
3.	Screw (4), flat washer (5) and nut (6)	Install, hand tighten.	**There are three screws. Step 3 is typical for all three screws.**

4-12. INSTALLING FEED-THRU ADAPTER AND COVER. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
4. E/P feed-thru plate	Screw holes (7)	Do step 3 again.
5.	Screw (4) and nut (6)	Using cross tip screwdriver and 5/16 inch box wrench, tighten. **There are three screws. Step 5 is typical for all hree screws.**
6.		Do step 5 for remaining screws.



4-13. INSTALLING FEED-THRU CONNECTOR TBF16S-8PS.

This task covers:

Installation

INITIAL SETUP

Tools

Flat tip screwdriver
1/4 inch box wrench

Materials/parts

Feed-thru connector TBF16S-8PS
4-40 x 1/2 inch long pan head screw (4 required)
No. 4 flat washer (4 required)
4-40 self-locking nut (4 required)

Personnel Required

Two mechanics

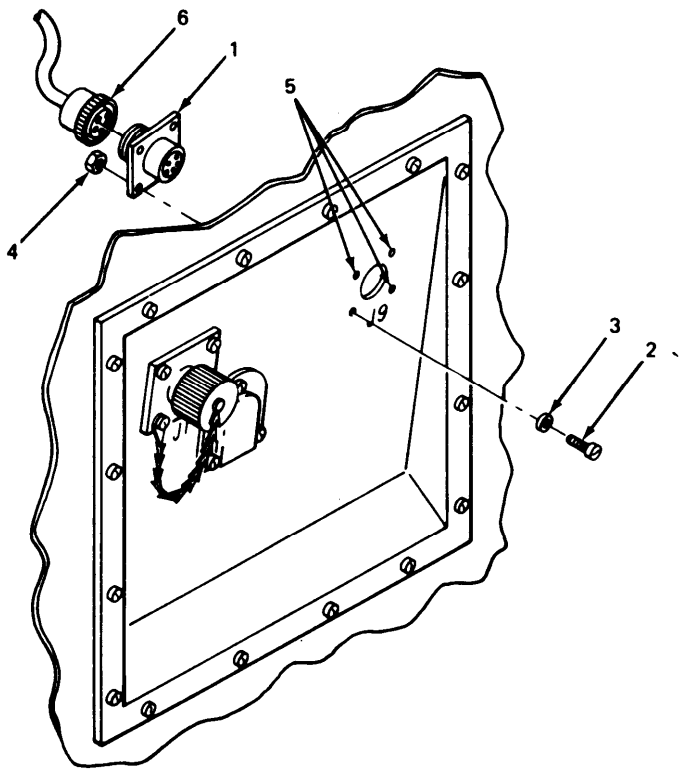
Equipment Condition

E/P feed-thru plate installed at depot.

LOCATION	ITEM	ACTION **REMARKS**
1. E/P feed-thru plate	Feed-thru connector (1)	Put in place. **Aline holes. Connector pins face inside of shelter.**
2.	Screw (2), flat washer (3) and nut (4)	Install, hand tighten. **There are four screws. Step 2 is typical for all four screws.**
3.	Screw holes (5)	Do step 2 again.
4.	Screw (2) and nut (4)	Using screwdriver and 1/4 inch box wrench, tighten. **There are four screws. Step 4 is typical for all four screws.**
5.		Do step 4 for remaining three screws.

4-13. INSTALLING FEED-THRU CONNECTOR TBF16S-8PS. (CONT)

LOCATION	ITEM	ACTION	REMARKS
		WARNING	
			Make sure all power is off.
6. E/P feed-thru plate	Cable end (6)	Connect.	
		NOTE	
			Cable has been routed and connected to power entry panel by depot.



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4-14. INSTALLING COMPARTMENT CONTROL MODULE (CCM).

This task covers:

Installation

INITIAL SETUP

Tools

Flat tip screwdriver
5/8 inch box wrench

Materials/Parts

Cable assembly, SP, electrical C5-19-6693
Hose, low pressure (22 inches long)
Coupling, swivel, female
Compartment control module
10-32 x 3/4 inch long pan head screw (4 required)
No. 10 lockwasher (4 required)

Personnel Required

One mechanic

Equipment Condition

Left and right CCM supports installed at depot. E/P feed-thru box installed.

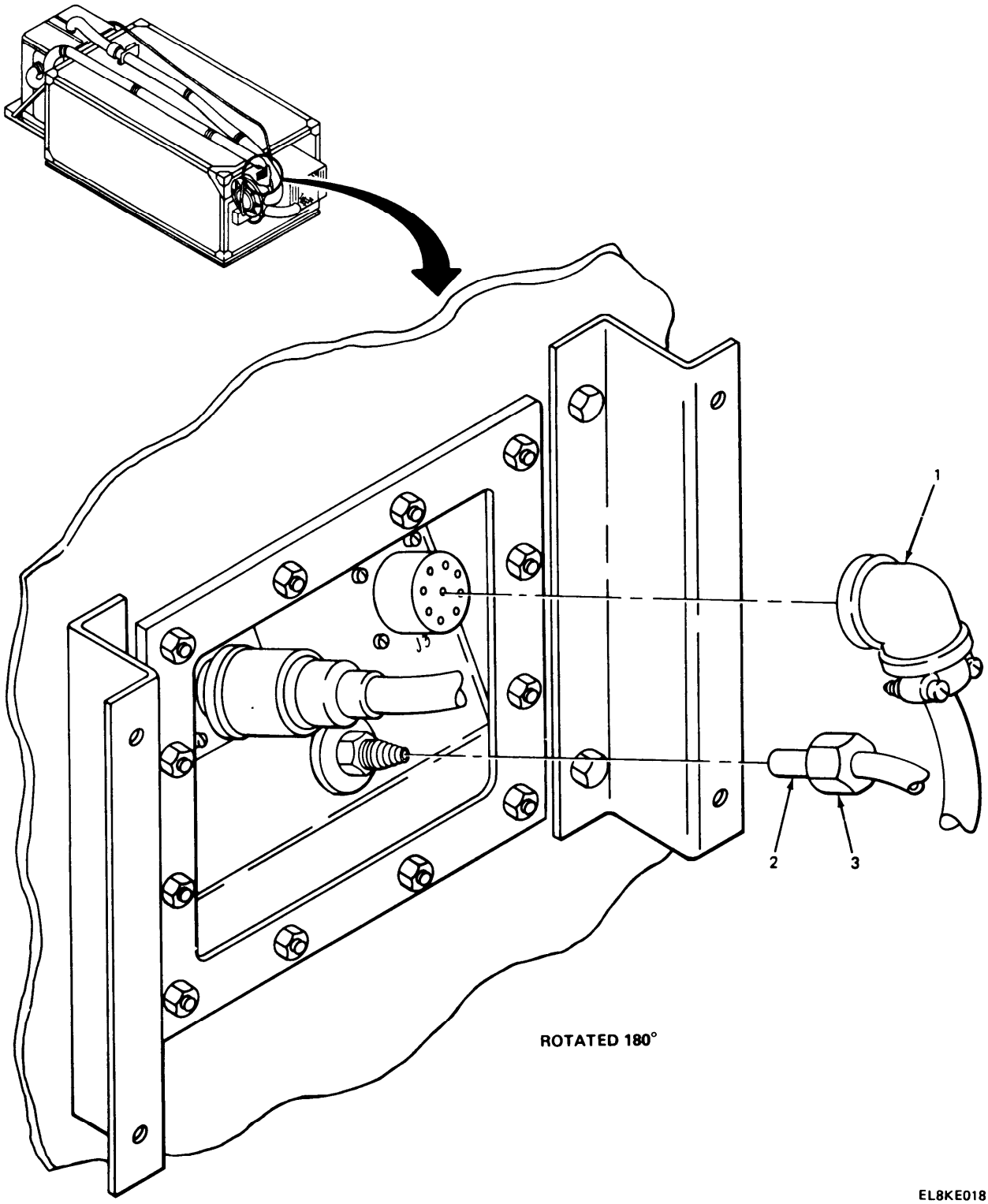
LOCATION	ITEM	ACTION	REMARKS

WARNING

Make sure all power is off.

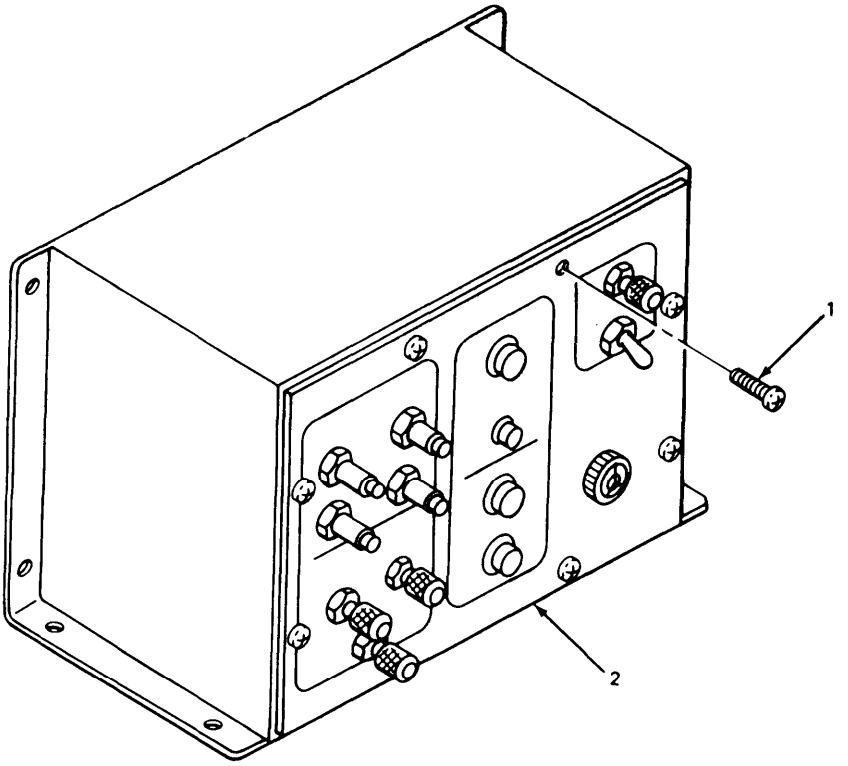
1.	Interior side of E/P feed-thru box at J3	Cable end P3 (1)	Connect.
2.	Low pressure hose	Hose (2)	Connect.
3.	Adapter on E/P feed-thru box, interior	Coupling (3)	Using 5/8 inch box wrench, tighten.

4-14. INSTALLING COMPARTMENT CONTROL MODULE. (CONT)



4-14. INSTALLING COMPARTMENT CONTROL MODULE. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
4. Front panel of CCM	Screw (1)	Using screwdriver, remove. **There are eight screws. Step 4 is typical for all eight screws.**
5.		Do step 4 for remainings seven screws.
6. CCM	Front panel (2)	Remove.



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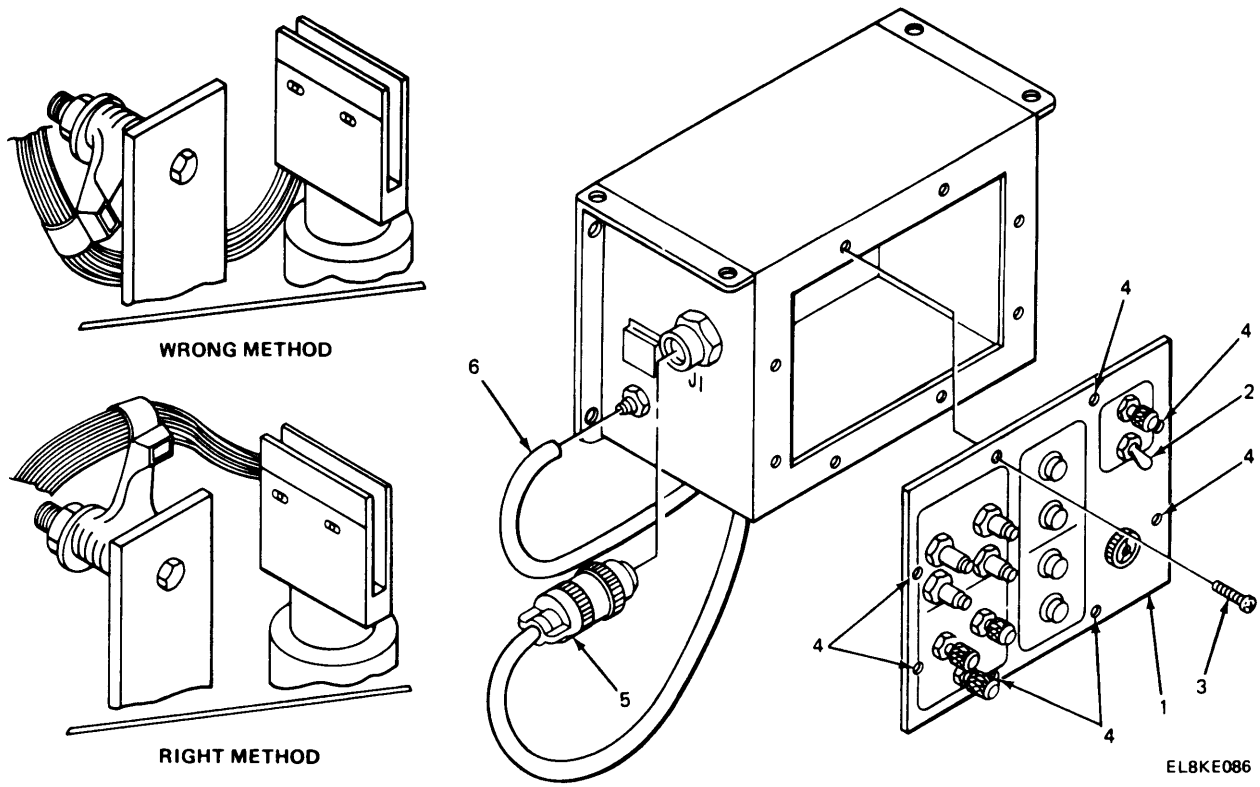
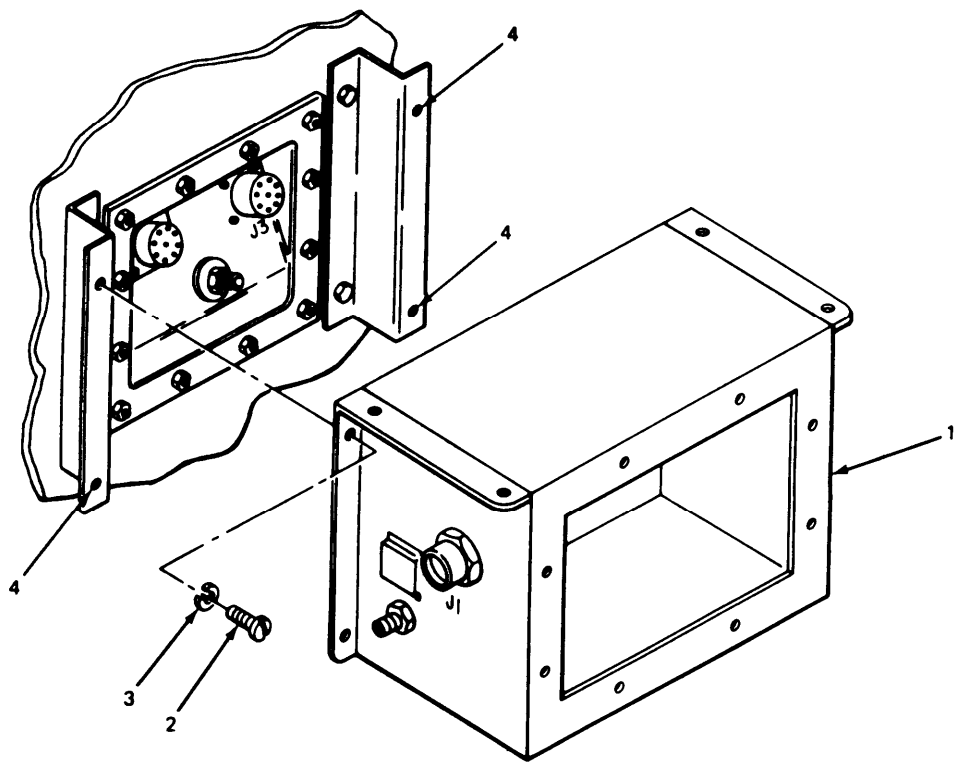
4-14. INSTALLING COMPARTMENT CONTROL MODULE (CCM). (CONT)

LOCATION	ITEM	ACTION **REMARKS**
		NOTE
		Note cable harness routing on back of panel. If cable harness is routed as shown in wrong method of illustration, unbolt and rotate cable harness to location as shown in right method. Reattach cable harness to bracket.
7. CCM	Front panel (1) and power switch (2)	Put front panel in place. **Aline holes. Place front panel so that power switch is in upper curbside comer (on side opposite J1).**
8. Front panel	Screw (3)	Using screwdriver, install. **There are eight screws. Step 8 is typical for all eight screws.**
9.	Screw holes (4)	Do step 8 again.



4-14. INSTALLING COMPARTMENT CONTROL MODULE (CCM). (CONT)

	LOCATION	ITEM	ACTION **REMARKS**
10.	CCM supports	CCM (1)	Put in place. **Aline holes. Place CCM so that J1 terminal faces roadside.**
11.	CCM	Screw (2) and lockwasher (3)	Install, hand tighten. **There are four screws. Step 11 is typical for all four screws.**
12.		Screw holes (4)	Do step 11 again.
13.		Screw (2)	Using screwdriver, tighten. **There are four screws. Step 13 is typical for all four screws.**
14.			Do step 13 for remaining three screws.



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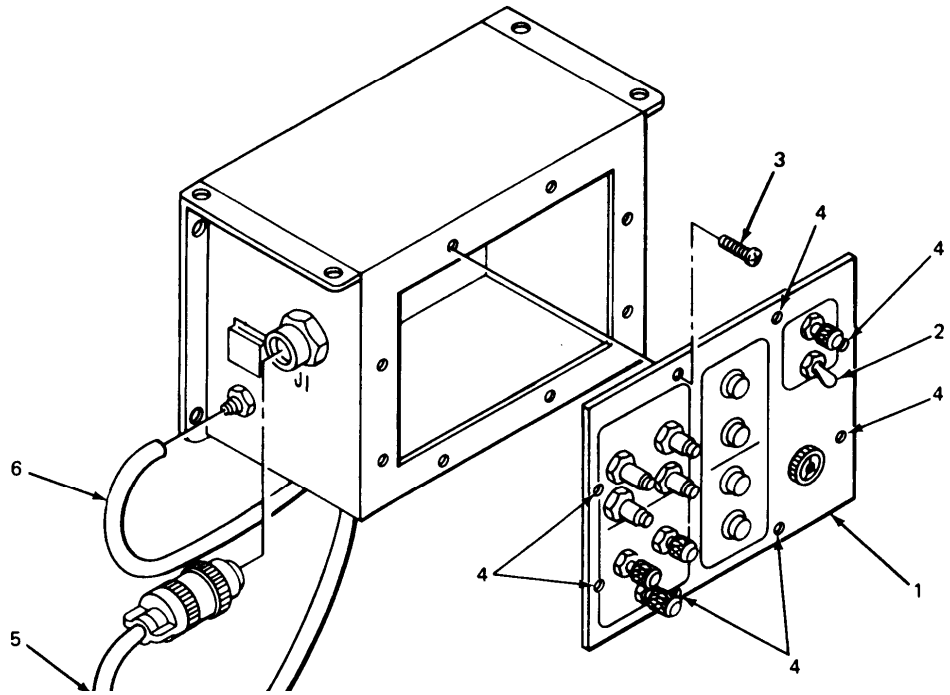
4-14. INSTALLING COMPARTMENT CONTROL MODULE (CCM). (CONT)

LOCATION	ITEM	ACTION REMARKS
15. CCM at J1	Cable and P1 (5)	Connect.
16. CCM pneumatic fitting	Low pressure hose end (6)	Connect.



4-15. INSTALLING POWER DISTRIBUTION UNIT.

This task covers:

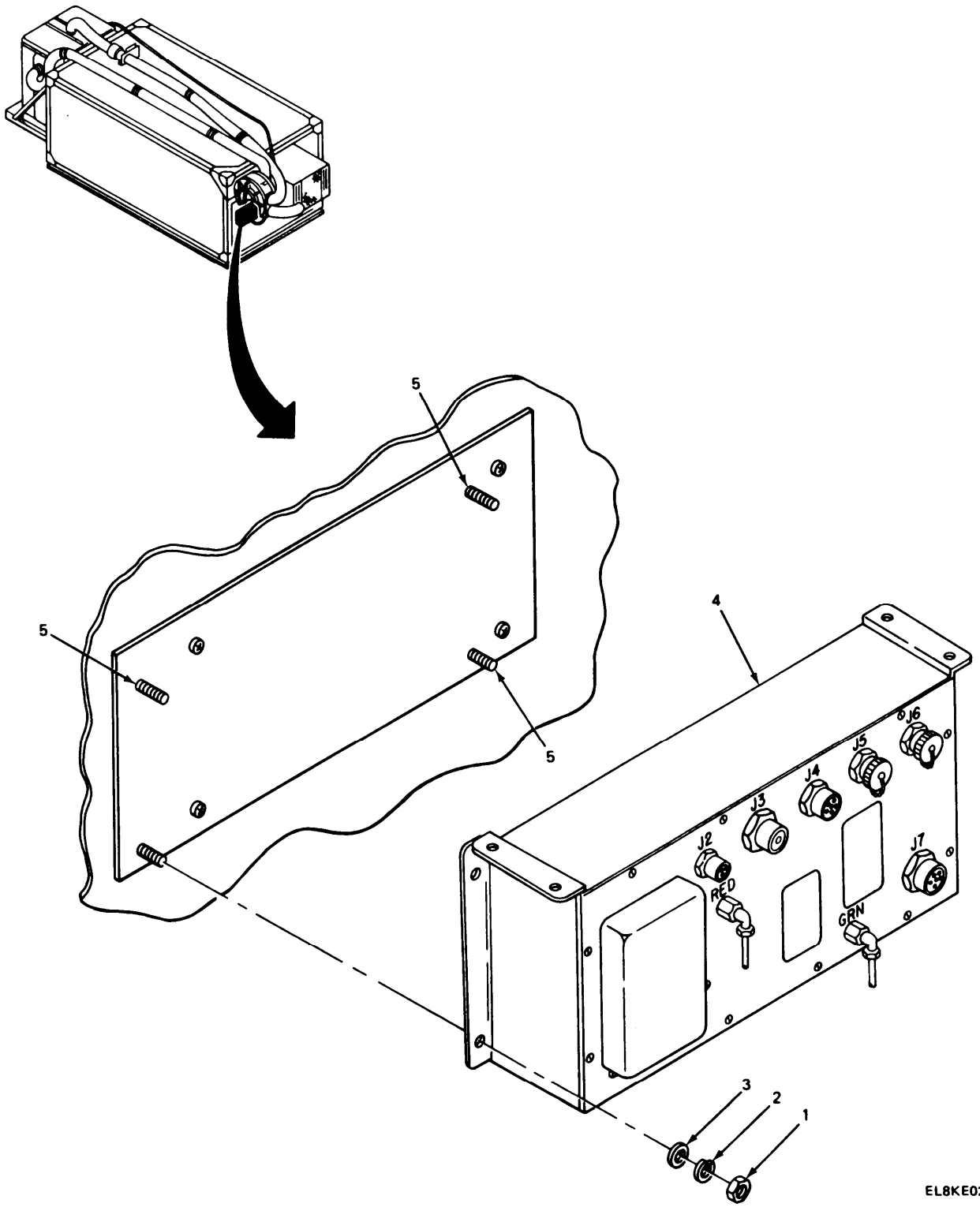
Installation

INITIAL SETUP

Tools	Personnel Required
7/16 inch box wrench	One mechanic
Materials/Parts	**Equipment Condition**
Power distribution unit (PDU)	Mounting plate assembly and hardware installed at depot.

LOCATION	ITEM	ACTION / REMARKS
1. Mounting plate assembly	Nut (1), lock-washer (2) and flat washer (3)	Using 7/16 inch box wrench, remove. **There are four nuts. Step 1 is typical for all four nuts.**
2.		Do step 1 for remaining three screws.
		NOTE Install PDU with test points, circuit breakers, and indicator cover to roadside of shelter.
3.	PDU (4)	Put in place.
4. Lower roadside stud	Flat washer (3), lockwasher (2) and nut (1)	Using 7/16 inch box wrench, install. **There are four studs. Step 4 is typical for all four studs.**
5. Mounting plate assembly	Studs (5)	Do step 4 again.

4-15. INSTALLING POWER DISTRIBUTION UNIT. (CONT)



4-16. INSTALLING CABLE C5-19-6691 TO E/P FEED-THRU BOX AND PDU.

This task covers:

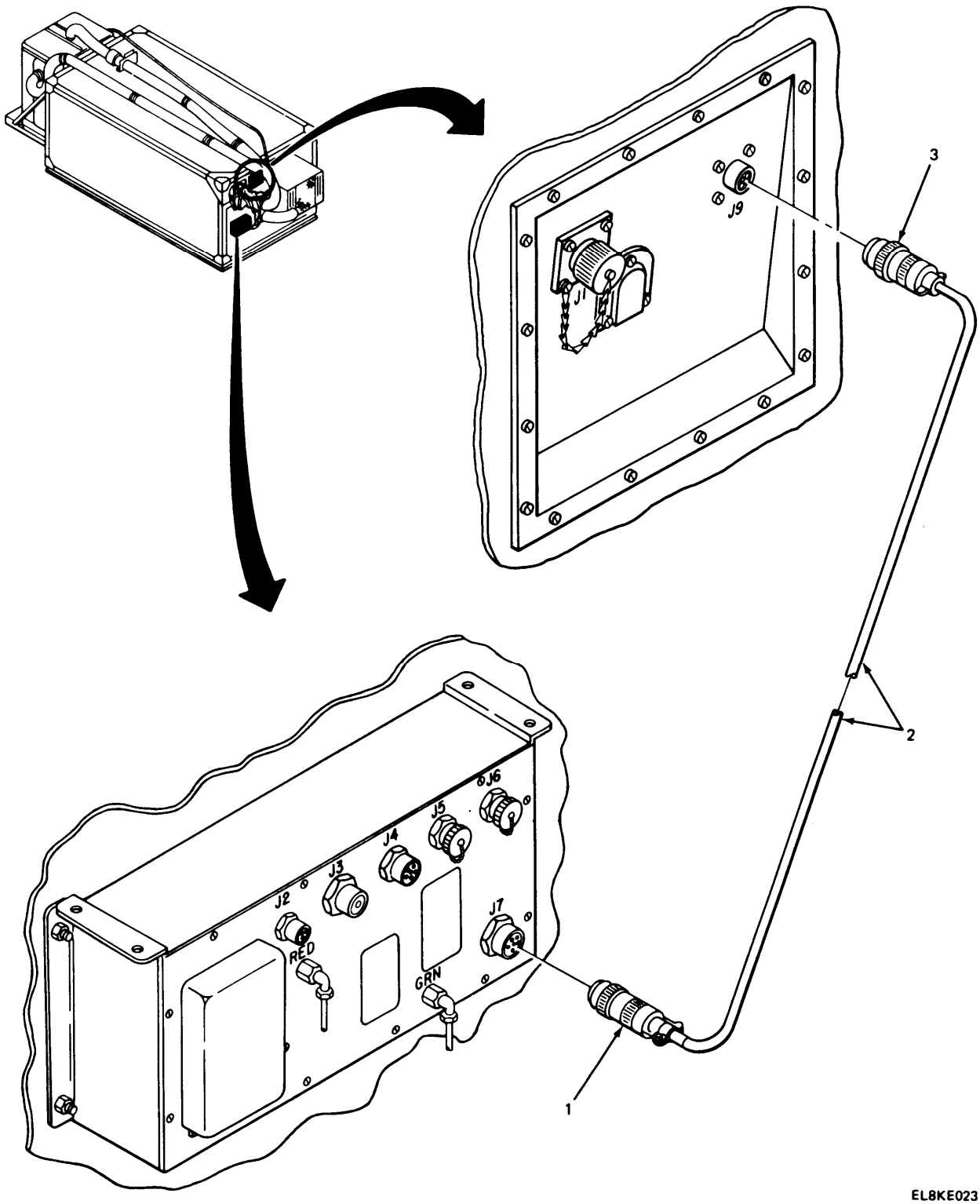
Installation

INITIAL SETUP

Tools	Personnel Required
None	One mechanic
Materials/Parts	**Equipment Condition**
Cable assembly, SP, electrical C5-19-6691	PDU installed and HP feed-thru box installed.

LOCATION	ITEM	ACTION / REMARKS
		WARNING Make sure all power is off.
1. PDU at J7	Cable end (1)	Connect.
		NOTE Route cable between air conditioner brackets and shelter front wall.
2. PDU and E/P feed-thru box	Cable (2)	Route.
3. E/P feed-thru box at J9	Cable end (3)	Connect.

4-16. INSTALLING CABLE C5-19-6691 TO E/P FEED-THRU BOX AND PDU. (CONT)



4-17. INSTALLING CABLE C5-19-6693 TO E/P FEED-THRU BOX AND PDU.

This task covers:

Installation

INITIAL SETUP

Tools	Personnel Required
None	One mechanic
Materials/Parts	**Equipment Condition**
Cable assembly, SP, electrical C5-19-6693	PDU installed and E/P feed-thru box installed.

LOCATION	ITEM	ACTION	REMARKS

WARNING

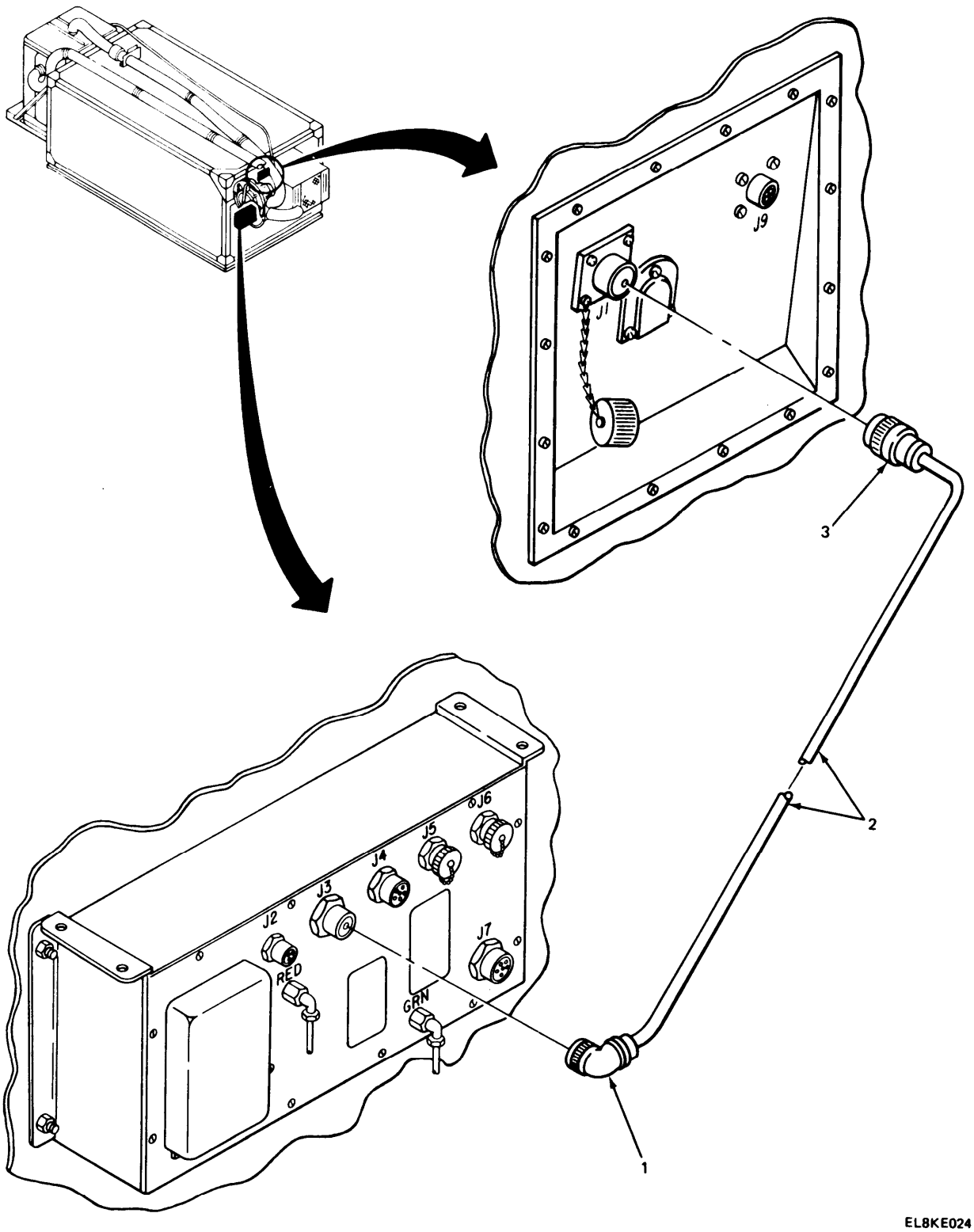
Make sure all power is off.

NOTE

Route cable between air conditioner brackets and shelter front wall.

1. PDU at J3	Cable end (1)	Connect.	
2. PDU and E/P feed-thru box	Cable (2)	Route.	
3. E/P feed-thru box at J1	Cable end (3)	Connect.	

4-17. INSTALLING CABLE C5-19-6693 TO E/P FEED-THRU BOX AND PDU. (CONT)



4-18. INSTALLING GPFU CRADLE BRACKET.

This task covers:

Installation

INITIAL SETUP

Tools

1/2 inch box wrench

Materials/Parts

Cradle bracket
5/16-18 x 1 1/4 inch long hex head screw (19 required)
5/16 inch flat washer (19 required)
5/16 inch lockwasher (19 required)

Personnel Required

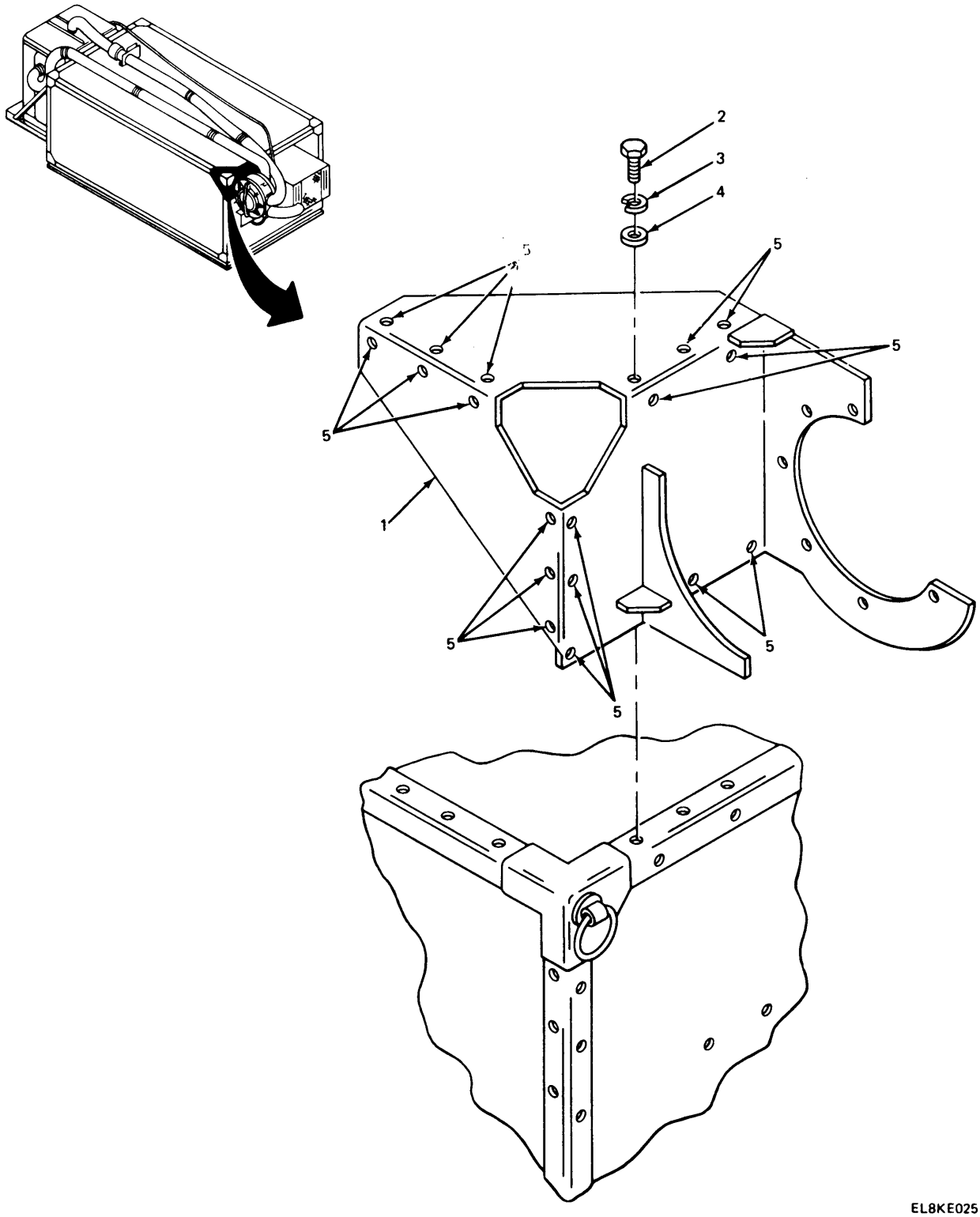
Two mechanics

Equipment Condition

Rivnuts installed at depot.

LOCATION	ITEM	ACTION / REMARKS
		NOTE Two persons will be needed to lift and position cradle bracket.
1. Upper front curb-side corner of shelter	Cradle bracket (1)	Put in place. **Aline holes.**
2.	Screw (2), lock-washer (3) and flat washer (4)	Install, hand tighten. **There are nineteen screws. Step 2 is typical for all nineteen screws.**
3.	Screw holes (5)	Do step 2 again.
4.	Screw (2)	Using 1/2 inch box wrench, tighten. **There are nineteen screws. Step 4 is typical for all nineteen screws.**
5.		Do step 4 for remaining eighteen screws.

4-18. INSTALLING GPFU CRADLE BRACKET. (CONT)



4-19. GAS PARTICULATE FILTER UNIT (GPFU)

Assembly instructions for the GPFU are given in this section.

Installing fan to inlet tee
Installing fan and inlet tee assembly to GPFU housing
installing gas filter
Installing particulate filter

4-20. INSTALLING FAN TO INLET TEE

This task covers:

Installation

INITIAL SETUP

Tools

7/16 inch box wrench

Materials/Parts

200 cfm, fan
Inlet tee
1/4-28 x 1 inch long hex head screw (6 required)
1/4-inch flat washer (6 required)

Personnel Required

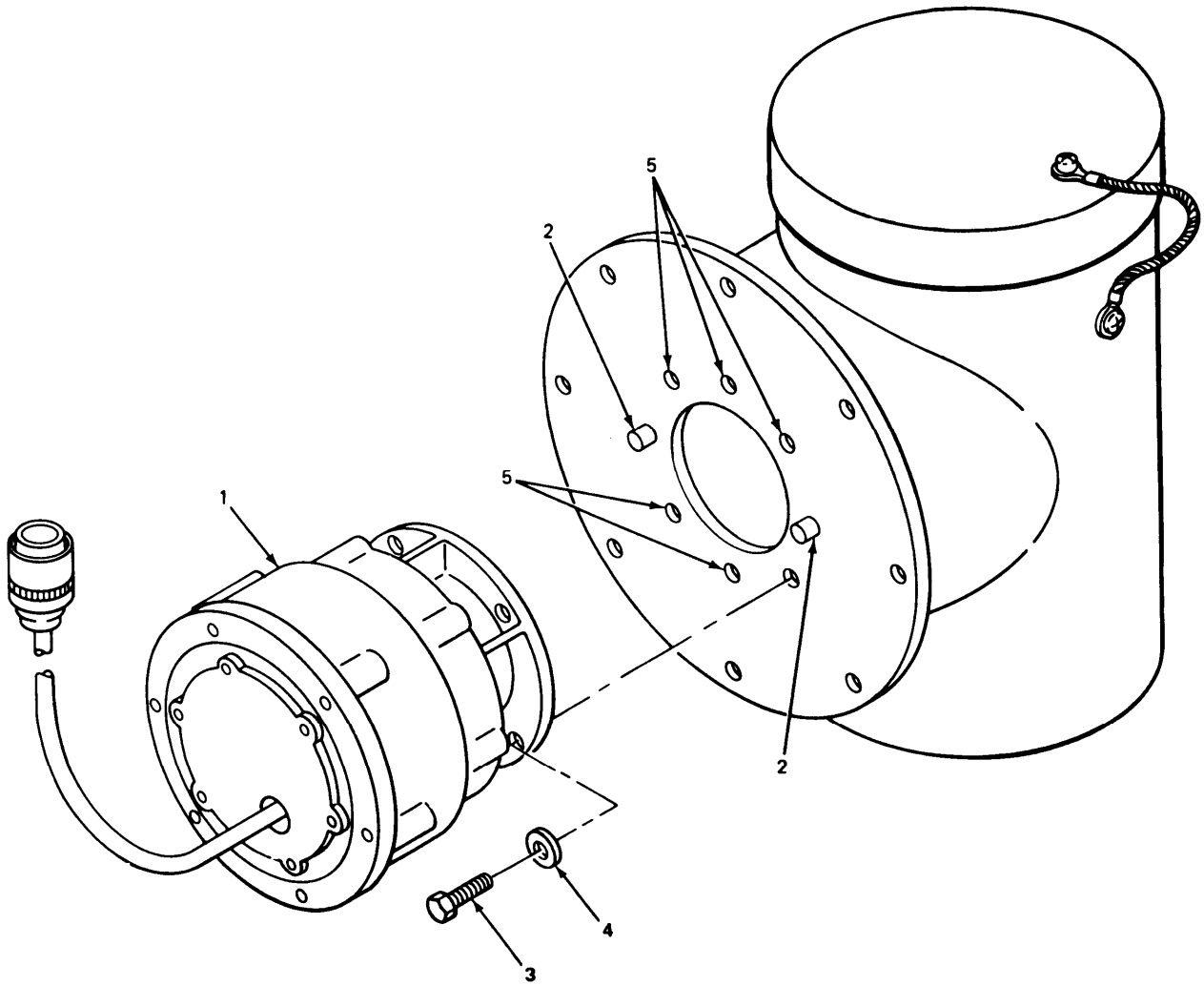
One mechanic

Equipment Condition

Fan and inlet tee on bench.

LOCATION	ITEM	ACTION **REMARKS**
1. Inlet tee	Fan (1) and alining pins (2)	Aline and push in place.
2. Fan	Screw (3) and flat washer (4)	Using 7/16-inch box wrench, install. **There are six screws. Step 2 is typical for all six screws.**
3.	Screw holes (5)	Do step 2 again.

4-20. INSTALLING FAN TO INLET TEE. (CONT)



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4-21. INSTALLING FAN AND INLET TEE ASSEMBLY TO GPFU HOUSING.

This task covers:

Installation

INITIAL SETUP

Tools

1/2 inch box wrench

Materials/Parts

GPFU housing
Fan and inlet tee assembly
5/16-24 x 1 inch long hex head screw (8 required)
5/16 flat washer (8 required)
Grommet

Personnel Required

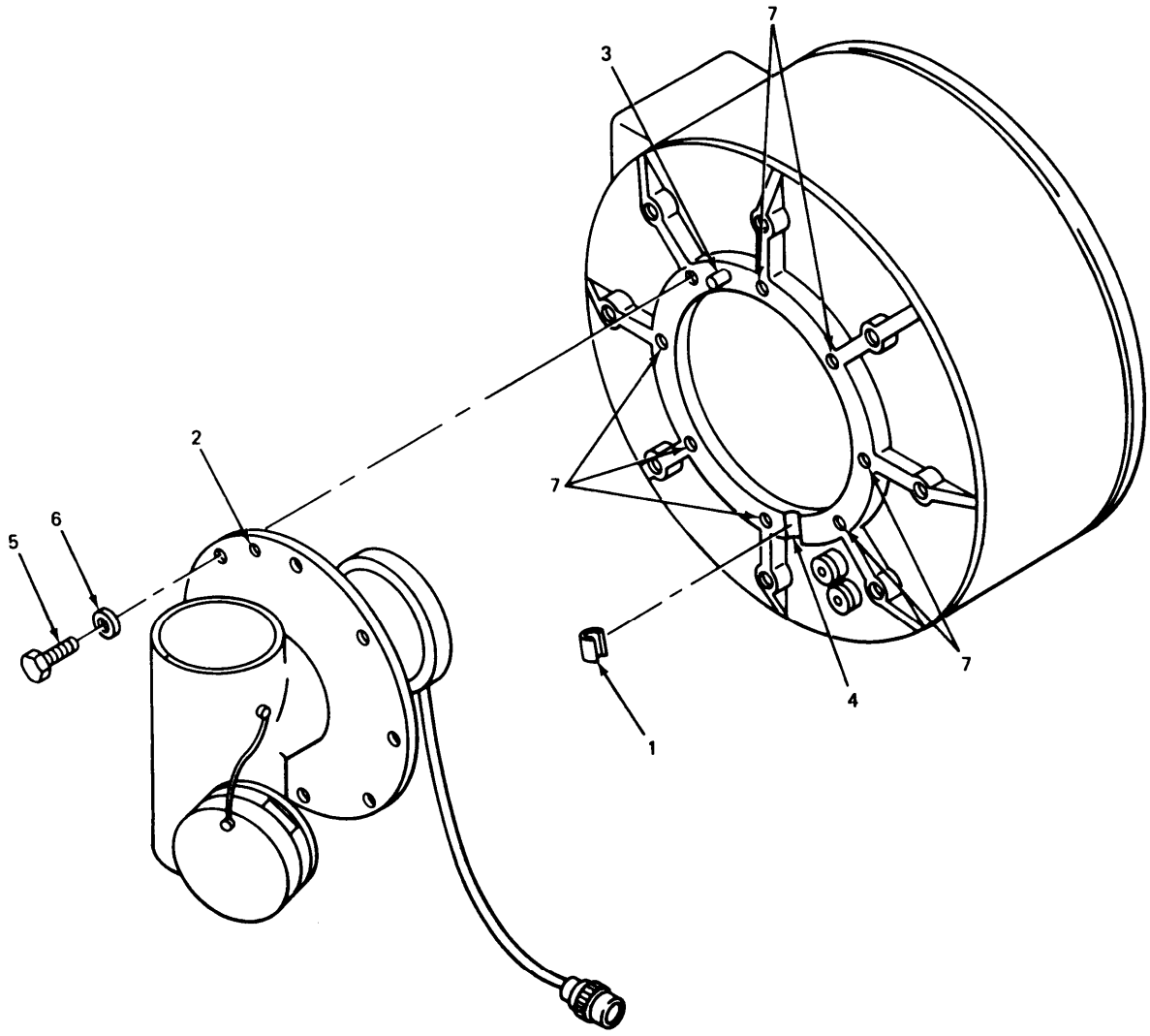
One mechanic

Equipment Condition

Fan and inlet tee assembled.

	LOCATION	ITEM	ACTION / **REMARKS**
1.	Fan cable	Grommet (1)	Install.
2.	GPFU housing and fan and inlet tee assembly	Guide hole (2) and guide pin (3)	Aline and push in place. **Slide grommet up cable to sit in slot in housing with slit in grommet away from housing.**
3.	GPFU housing	Grommet (1) and housing slot (4)	Install.
4.		Screw (5) and flat washer (6)	Using 1/2 inch box wrench, install. **There are eight screws. Step 4 is typical for all eight screws.**
5.		Screw holes (7)	Do step 4 again.

4-21. INSTALLING FAN AND INLET TEE ASSEMBLY TO GPFU HOUSING. (CONT)



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4-22. INSTALLING GAS PARTICULATE FILTER UNIT (GPFU).

This task covers:

Installation

INITIAL SETUP

Tools

9/16 inch box wrench

Materials/Parts

Gas particulate filter unit
3/8-24 x 1 inch long hex head screw (6 required)
3/8 inch flat washer (6) required
3/8 inch lockwasher (6 required)

Personnel Required

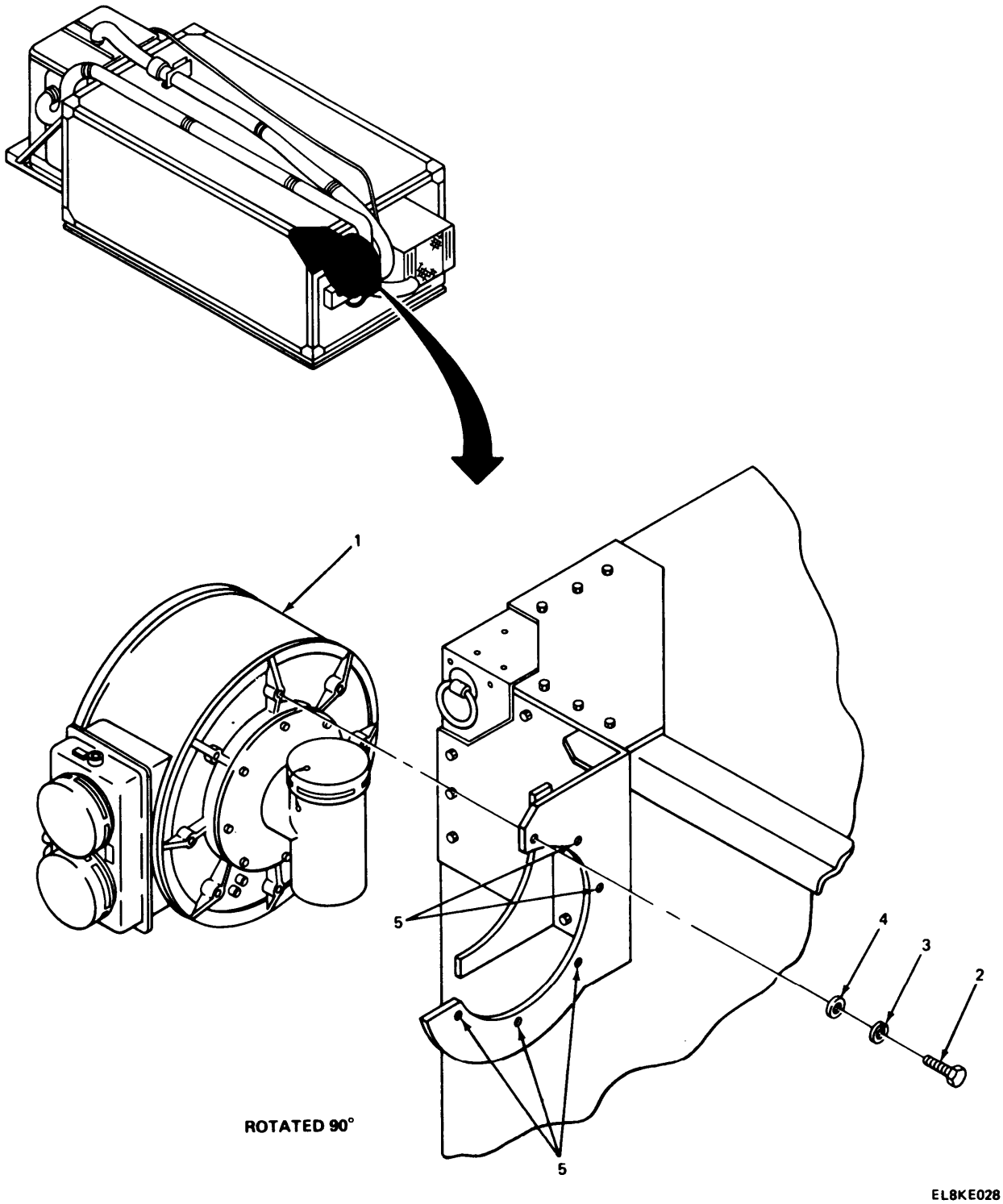
Three mechanics

Equipment Condition

GPFU cradle bracket installed on shelter.

LOCATION	ITEM	ACTION	**REMARKS**
		NOTE Three persons will be needed to lift and position GPFU.	
1. GPFU cradle bracket	GPFU (1)	Put in place.	**Aline holes. Air duct cap on inlet tee faces upward.**
2. GPFU	Screw (2), lock-washer (3) and flat washer (4)	Install, hand tighten.	**There are six screws. Step 2 is typical for ail six screws.**
3.	Screw holes (5)	Do step 2 again.	
4.	Screw (2)	Using 9/16 inch box wrench, tighten.	**There are six screws. Step 4 is typical for all six screws.**
5.		Do step 4 for remaining five screws.	

4-22. INSTALLING GAS PARTICULATE FILTER UNIT (GPFU). (CONT)



4-23. INSTALLING GAS FILTER.

This task covers:

Installation

INITIAL SETUP

Tools

80 to 200 inch/pound torque wrench
9/16 inch box wrench

Materials/Parts

Gas filter

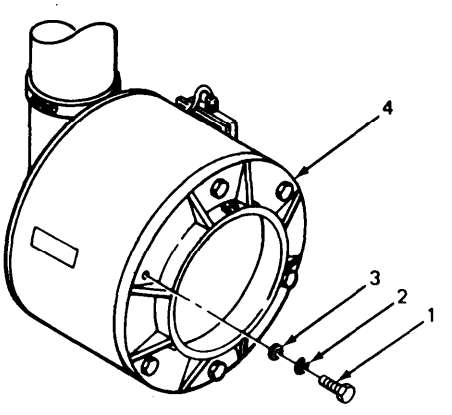
Personnel Required

One mechanic

Equipment Condition

Filter unpacked.

LOCATION	ITEM	ACTION **REMARKS**
1. GPFU housing	Screw (1), lock-washer (2) and flat washer (3)	Using 9/16 inch box wrench, remove. **There are six screws. Step 1 is typical for all six screws.**
2.		Do step 1 for remaining five screws.
3.	Outer cover (4)	Remove.



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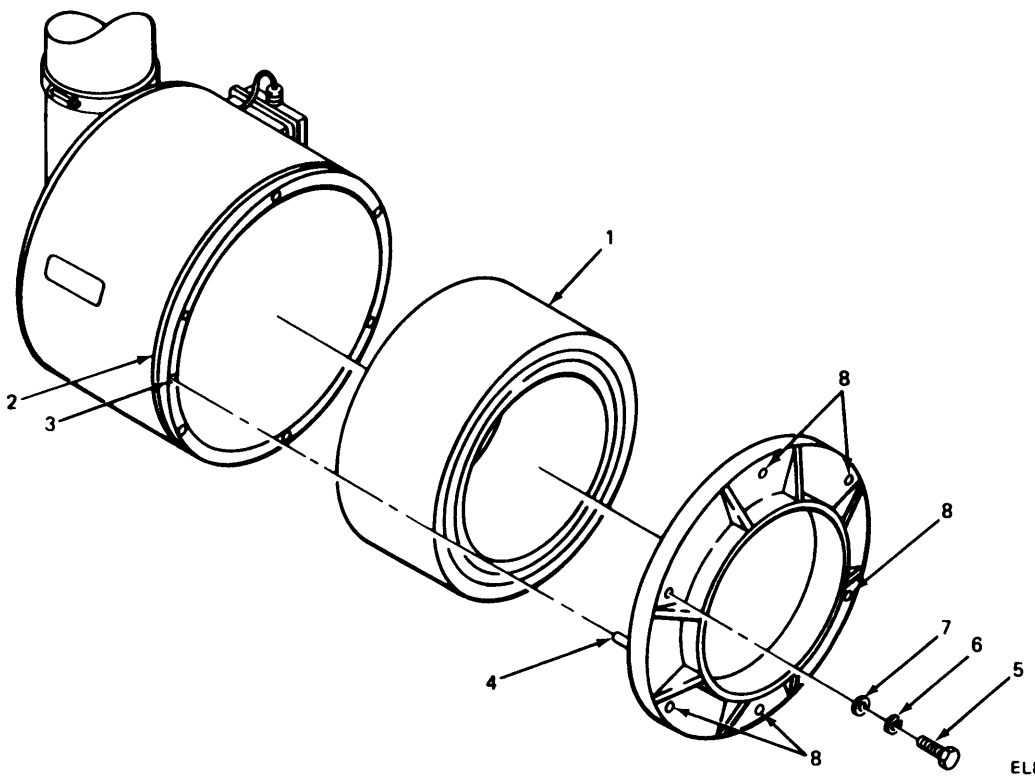
4-23. INSTALLING GAS FILTER. (CONT)

LOCATION	ITEM	ACTION / **REMARKS**

WARNING

Filter seal must be properly seated to prevent bypass of contaminated air.

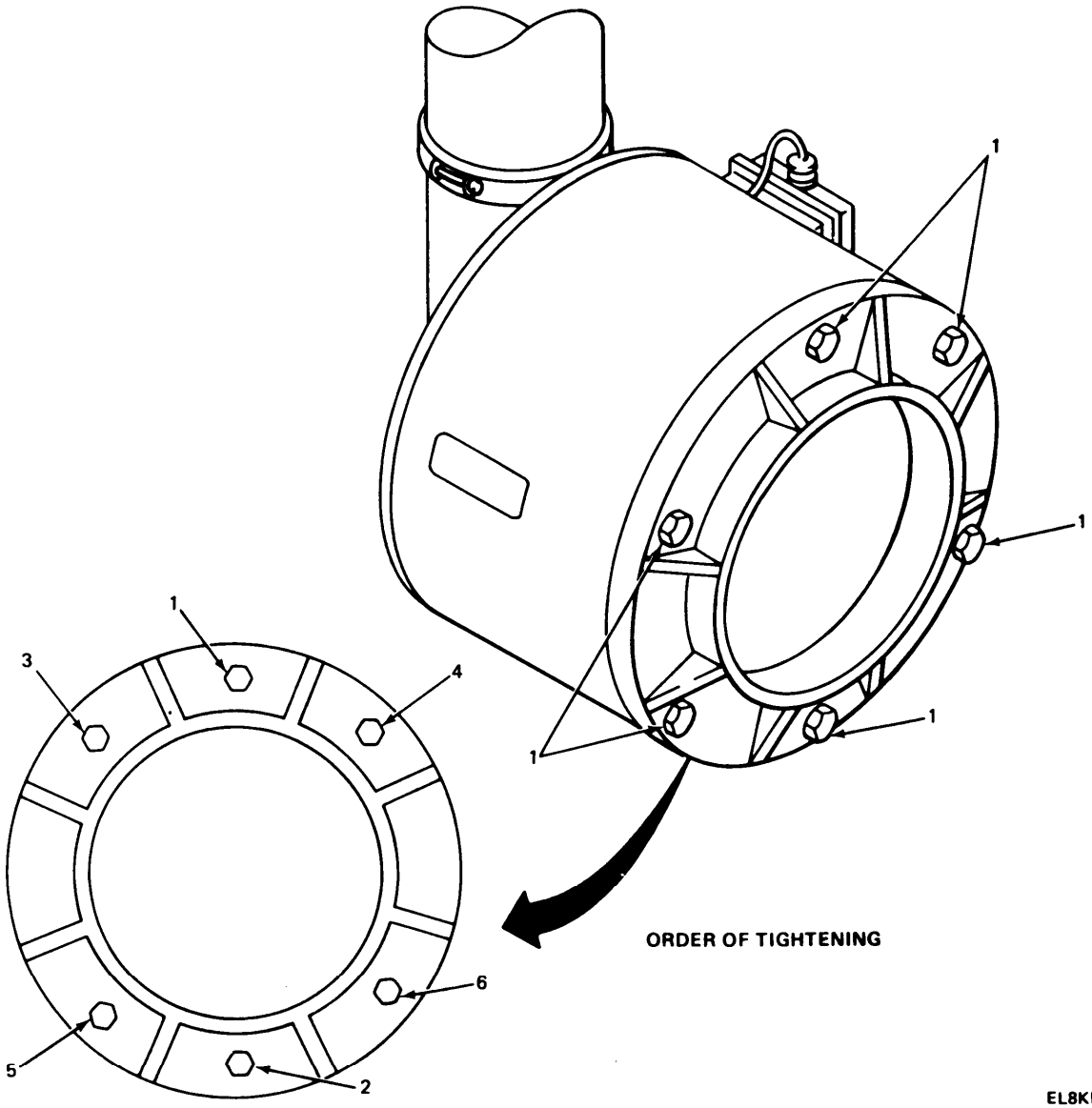
4.	GPFU housing	Filter (1)	Install. **Filter can be installed with either end first.**
5.		Cover seal (2)	Install. **Make sure cover seal is in groove before replacing cover.**
6.	GPFU housing and cover	Guide hole (3) and guide pin (4)	Aline and push in place.
7.	GPFU housing	Screw (5), lock-washer (6) and flat washer (7)	Install, hand tighten. **There are six screws. Step 7 is typical for all six screws.**
8.		Screw holes (8)	Do step 7 again.



4-23. INSTALLING GAS FILTER. (CONT)

LOCATION	ITEM	ACTION / **REMARKS**
		CAUTION Be sure to observe torque values for torque wrench being used.
		NOTE To prevent binding of outer cover against housing rim, screws must be tightened in a criss-crossed manner.
9. GPFU housing	Screws (1)	Using torque wrench, tighten screws 100-125 inch pounds. **Tighten in order shown in illustration.**
10.	Screws (1)	Using torque wrench, tighten screws 180-200 inch pounds. **Tighten in order shown in illustration.**

4-23. INSTALLING GAS FILTER. (CONT)



4-24. INSTALLING PARTICULATE FILTER.

This task covers:

Installation

INITIAL SETUP

Tools

9/16 inch box wrench

Materials/Parts

Particulate filter

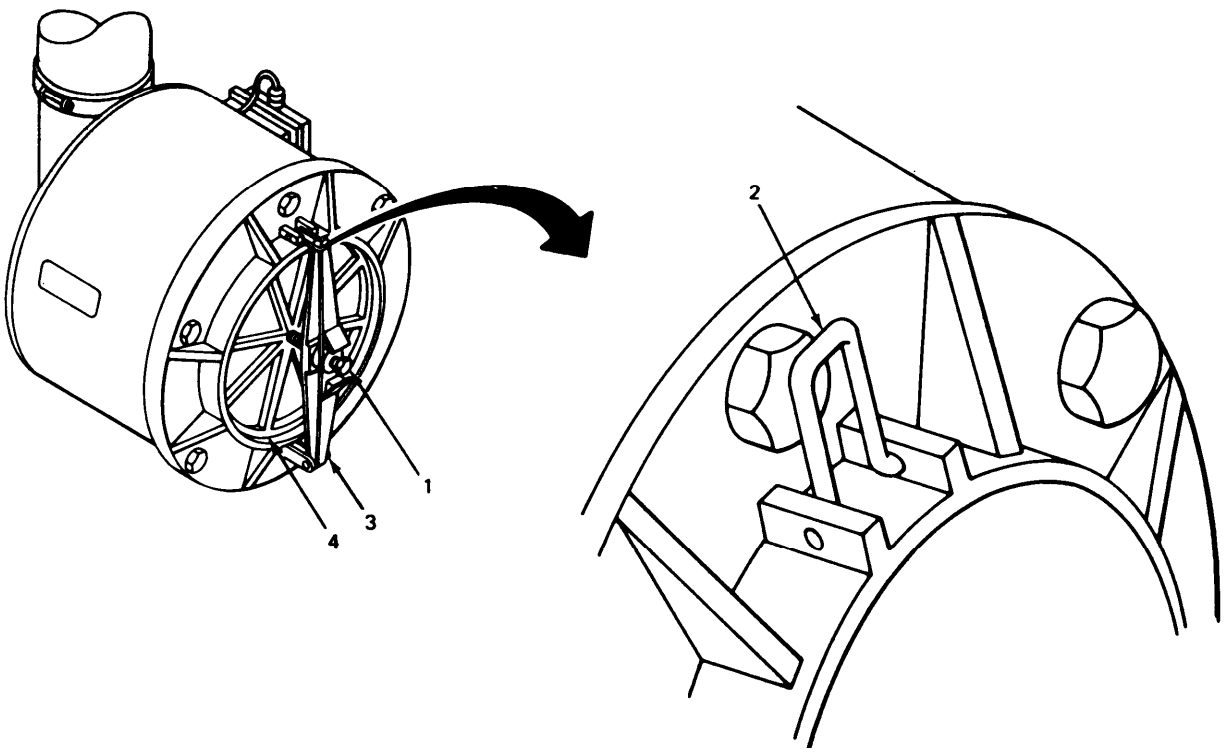
Personnel Required

One mechanic

Equipment Condition

Filter unpacked.

LOCATION	ITEM	ACTION **REMARKS**
1. GPFU housing	Screw (1)	Using 9/16 inch box wrench, loosen.
2.	Catch (2)	Lift to free retainer bar.
3.	Retainer bar (3)	Swing away from inner cover.
4.	Inner cover (4)	Remove.



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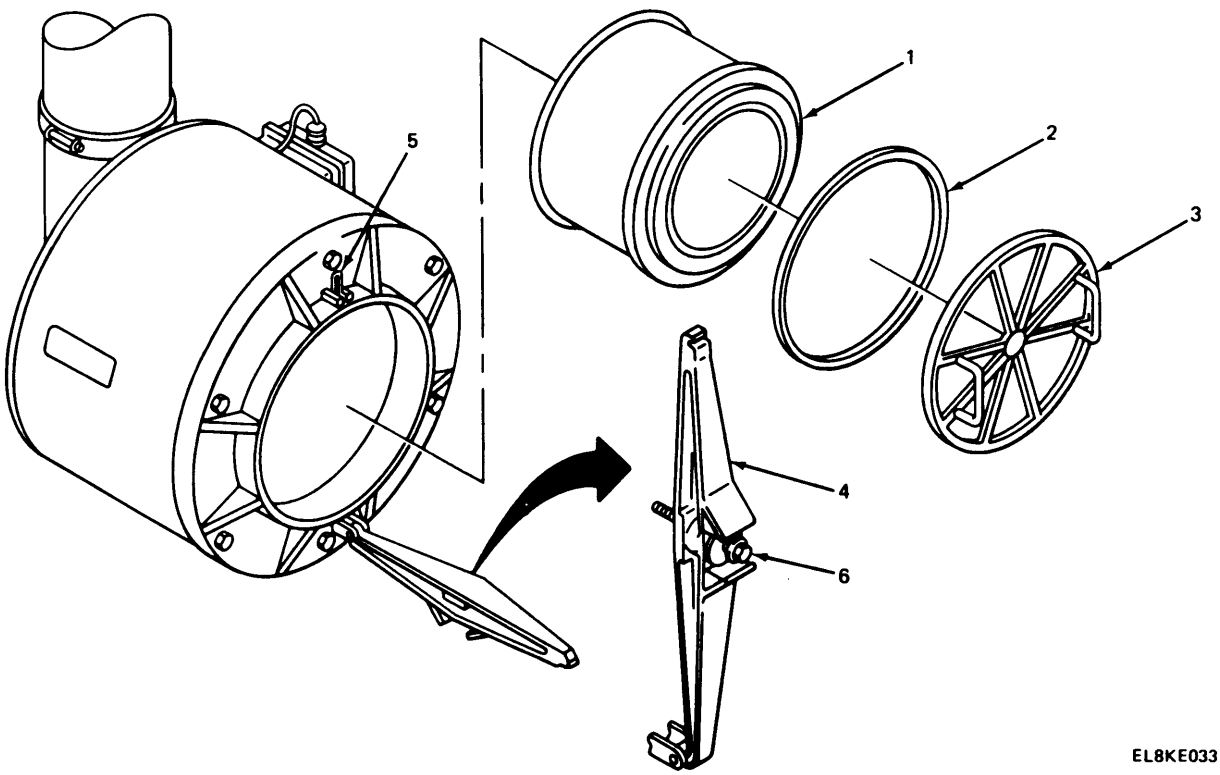
4-24. INSTALLING PARTICULATE FILTER. (CONT)

	LOCATION	ITEM	ACTION / **REMARKS**

WARNING

Filter gasket must be properly seated to prevent bypass of contaminated air.

5.	GPFU housing	Filter (1)	Install. **Filter can be installed with either end first.**
6.	Inner cover	Gasket (2)	Install.
7.	GPFU housing	Inner cover (3)	Install. **Note positioning of handles.**
8.		Retainer bar (4)	Lift to engage with catch (5).
9.		Screw (6)	Using 9/16 inch box wrench, tighten. **Tighten until screw sleeve is flush with retainer bar.**



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4-25. INSTALLING PNEUMATIC TUBING AND FAN CABLE TO GPFU AND PDU.

This task covers:

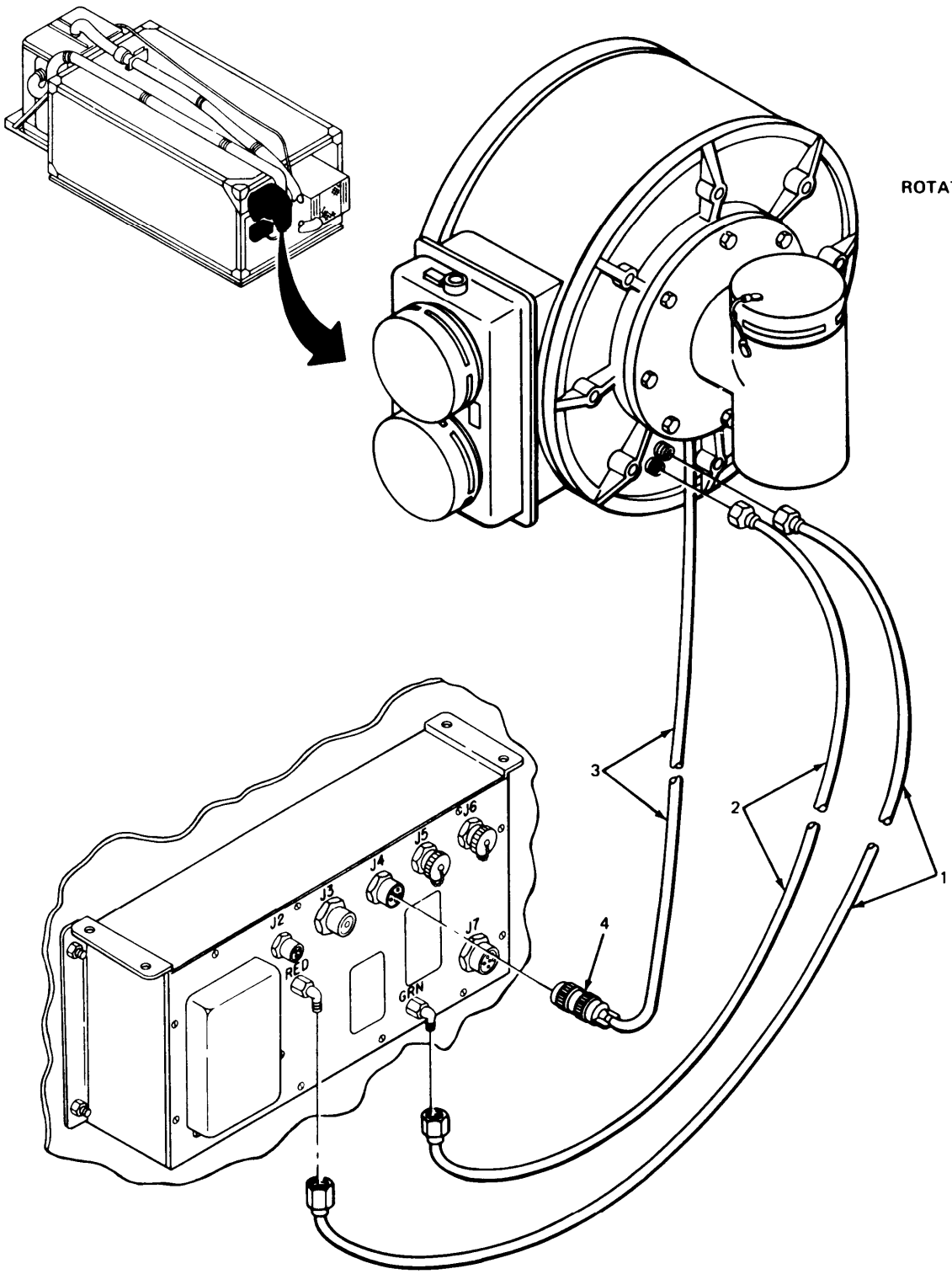
Installation

INITIAL SETUP

Tools	Personnel Required
Knife	One mechanic
Materials/Parts	**Equipment Condition**
Red tubing Green tubing	Tape removed from pneumatic fittings on GPFU housing.

LOCATION	ITEM	ACTION	REMARKS
		NOTE Fittings on GPFU housing and PDU are color coded with dots to match tubing being used.	
1. GPFU housing	Red tubing (1)	Install, hand tighten.	
2. PDU	Red tubing (1)	Install, hand tighten.	
3. GPFU housing	Green tubing (2)	Install, hand tighten.	
4. PDU	Green tubing (2)	Install, hand tighten.	
5. GPFU housing and PDU	Cable (1), (2), and (3)	Route.	**Route cable between air conditioner curbside bracket and shelter front wall.**
6. PDU at J4	Cable end (4)	Connect.	

4-25. INSTALLING PNEUMATIC TUBING AND FAN CABLE TO GPFU AND PDU. (CONT)



4-26. INSTALLING CABLE C5-19-6170-10 to GPFU AND PDU.

This task covers:

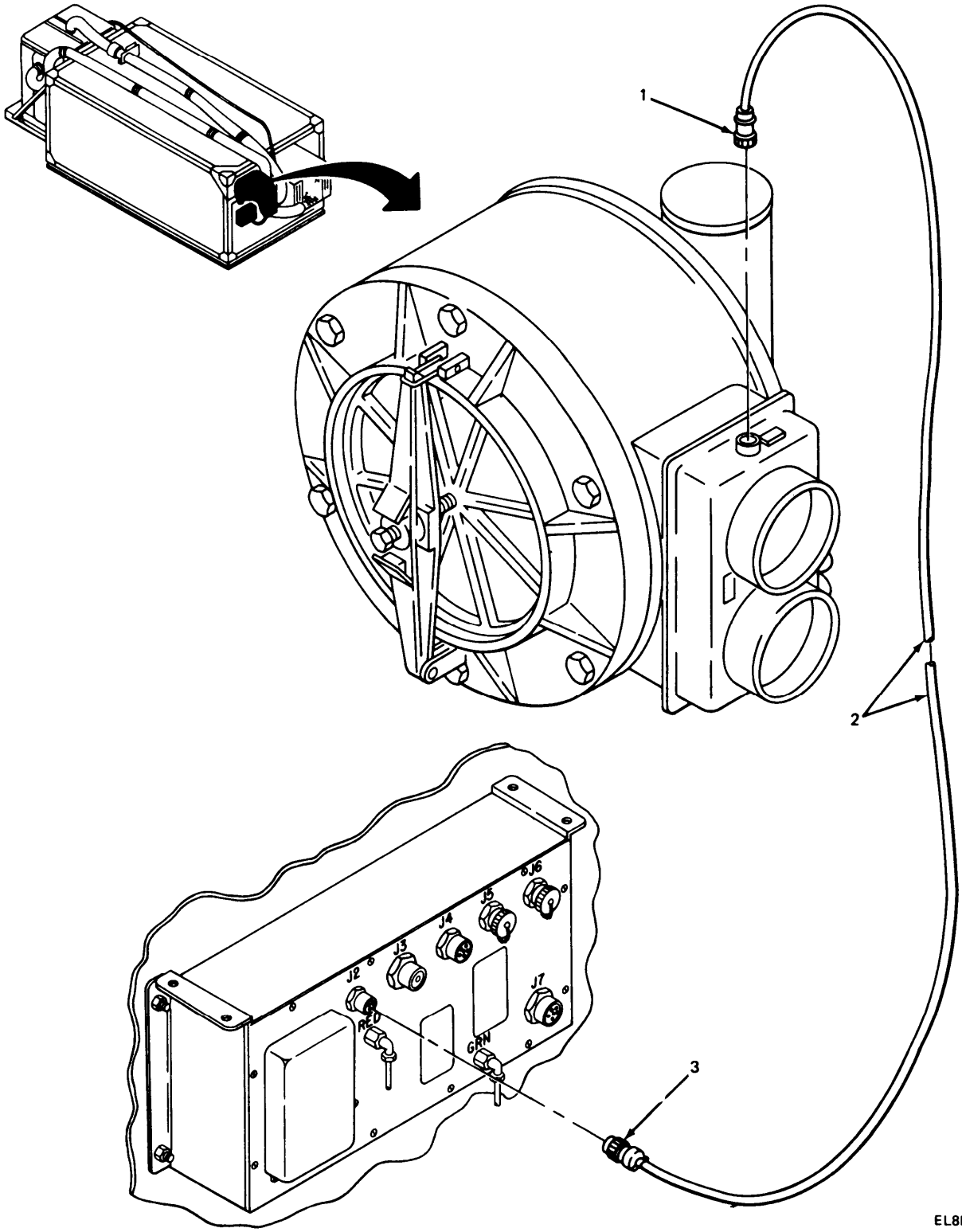
Installation

INITIAL SETUP

Tools	Personnel Required
None	One mechanic
Materials/Parts	**Equipment Condition**
Cable assembly, SP, electrical C5-19-6170-10	GPFU and PDU installed.

LOCATION	ITEM	ACTION	REMARKS
		WARNING Make sure all power is off.	
		NOTE Route cable between air conditioner curbside bracket and shelter front wall.	
1. GPFU airflow valve at J15	Cable end (1)	Connect.	
2. GPFU airflow valve and PDU	Cable (2)	Route.	
3. PDU at J2	Cable end (3)	Connect.	

4-26. INSTALLING CABLE C5-19-6170-10 TO GPFU AND PDU. (CONT)



4-27. INSTALLING AIR CONDITIONER INLET TRANSITION DUCT.

This task covers:

Installation

INITIAL SETUP

Tools

Cross tip screwdriver

Materials/parts

Transition duct assembly

Personnel Required

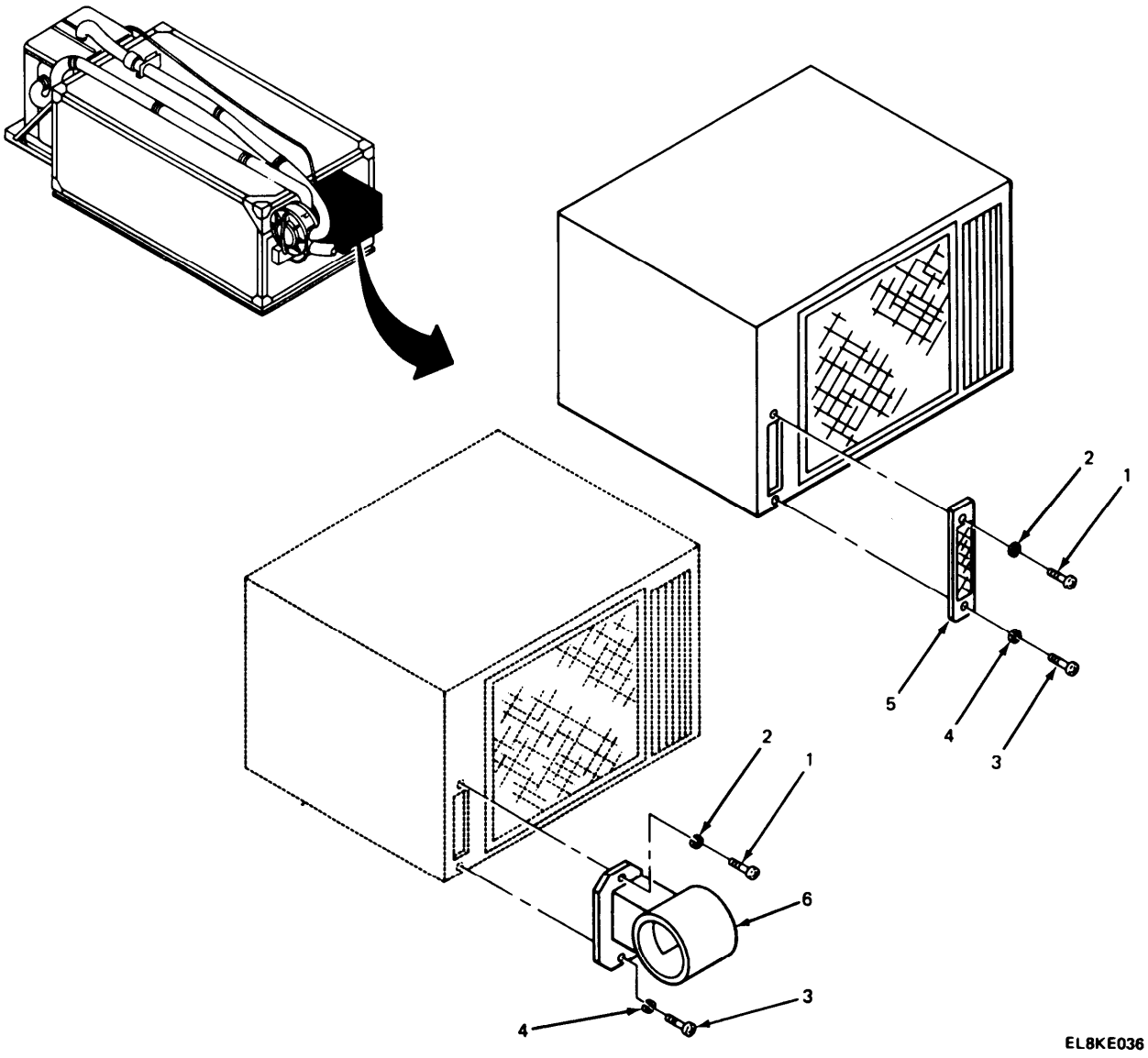
One mechanic

Equipment Condition

Air conditioner screen and transition duct hardware installed at depot.

LOCATION	ITEM	ACTION **REMARKS**
1. Lower curbside corner of air conditioner	Screw (1) and lockwasher (2)	Using screwdriver, remove.
2.	Screw (3) and lockwasher (4)	Using screwdriver, remove.
3.	Air screen (5)	Remove. **Store for future use when MCPE is removed.**
4.	Inlet transition duct (6)	Place in position. **Circular duct opening faces curbside.**
5.	Screw (1) and lockwasher (2)	Using screwdriver, install.
6.	Screw (3) and lockwasher (4)	Using screwdriver, install.

4-27. INSTALLING AIR CONDITIONER INLET TRANSITION DUCT. (CONT)



4-28. INSTALLING AIR DUCT HOSE FROM PE AIRFLOW VALVE AND SILENCER ASSEMBLY TO GPFU AIRFLOW VALVE OUTLET.

This task covers:

Installation

INITIAL SETUP

Tools

Flat tip screwdriver

Materials/Parts

Air duct hose (72 inch) (2 required)
Air duct hose (36 inch)
Hose adapter (2 required)

Personnel Required

Two mechanics

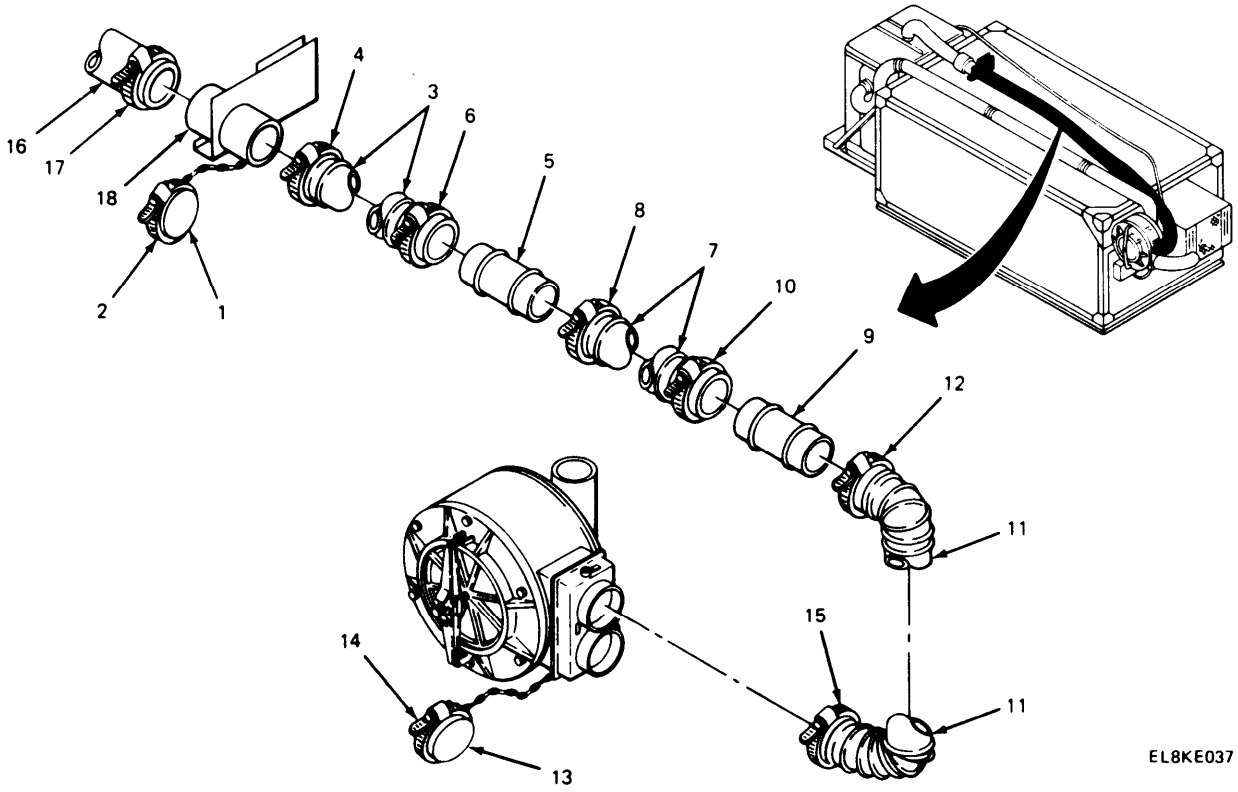
Equipment Condition

Air duct hoses and adapters removed from holders.
Holders stored for future use.

LOCATION	ITEM	ACTION	REMARKS
		NOTE Direction of airflow is marked on hoses. Airflow is toward protective entrance, as shown by arrows on hose.	
1. Airflow valve and silencer assembly	Air duct cover (1) and hose clamp (2)	Using screwdriver, remove	
2.	Air duct hose (36 inch) (3) and hose clamp (4)	Using screwdriver, install.	
3. Air duct hose	Adapter (5) and hose clamp (6)	Using screwdriver, install.	
4. Adapter	Air duct hose (72 inch) (7) and hose clamp (8)	Using screwdriver, install.	
5. Air duct hose	Adapter (9) and hose clamp (10)	Using screwdriver, install.	
6. Adapter	Air duct hose (72 inch) (11) and hose clamp (12)	Using screwdriver, install.	

4-28. INSTALLING AIR DUCT HOSE FROM PE AIRFLOW VALVE AND SILENCER ASSEMBLY TO GPFU AIRFLOW VALVE OUTLET. (CONT)

LOCATION	ITEM	ACTION / REMARKS
7. GPFU airflow valve outlet	Air duct cover (13) and hose clamp (14)	Using screwdriver, remove.
8.	Air duct hose (11) and hose clamp (15)	Using screwdriver, install.
		NOTE Hose already installed on PE.
9. Top of shelter	Hose (16), hose clamp (17) and airflow valve and silencer assembly (18)	Using screwdriver, install.



4-29. INSTALLING AIR DUCT HOSE FROM PE OUTLET TO GPU INLET TEE.

This task covers:

Installation

INITIAL SETUP

Tools

Flat tip screwdriver

Materials/Parts

Air duct hose (72 inch) (3 required)
Hose adapter (2 required)
Hose clamp (6 required)

Personnel Required

Two mechanics

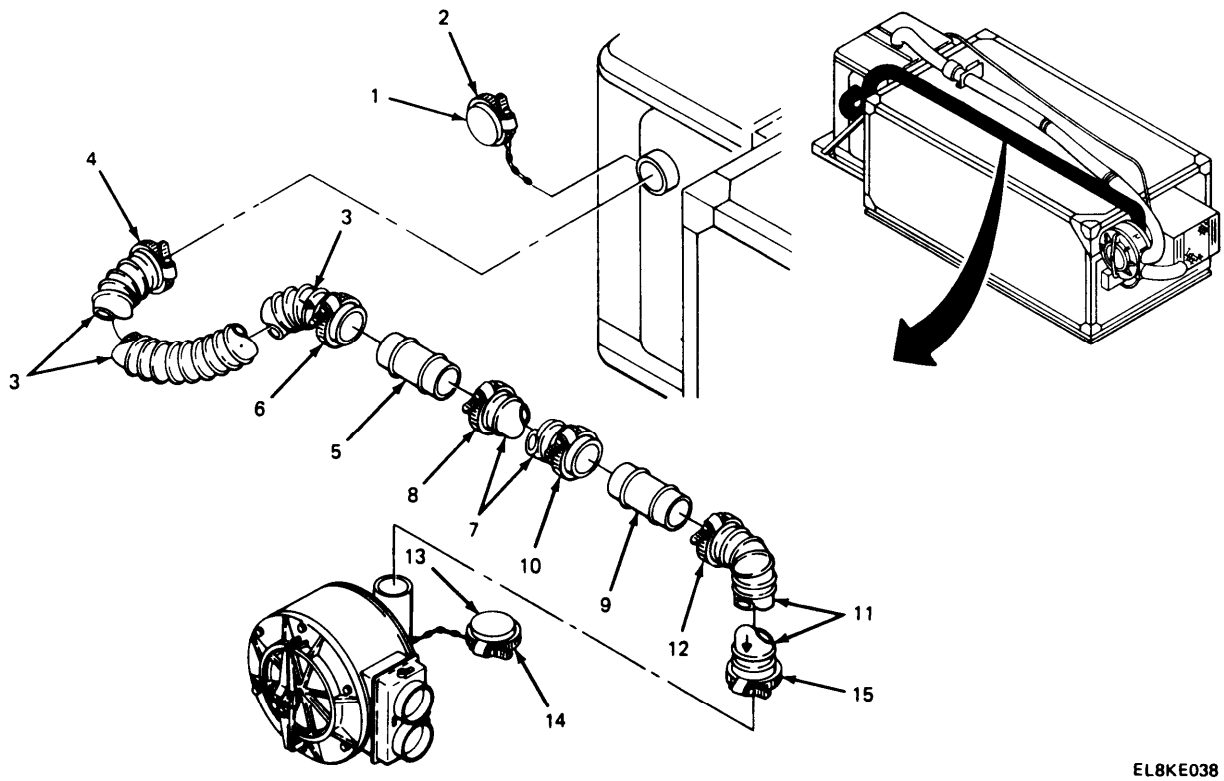
Equipment Condition

Air duct hoses and adapters removed from holders.
Holders stored for future use.

LOCATION	ITEM	ACTION / REMARKS
1. PE outlet	Air duct cover (1) and hose clamp (2)	Using screwdriver, remove.
		NOTE Direction of airflow is marked on hoses. Airflow is from PE outlet toward GPFU.
2.	Air duct hose (3) and hose clamp (4)	Using screwdriver, install.
3. Air duct hose	Adapter (5) and hose clamp (6)	Using screwdriver, install.
4. Adapter	Air duct hose (7) and hose clamp (8)	Using screwdriver, install.
5. Air duct hose	Adapter (9) and hose clamp (10)	Using screwdriver, install.
6. Adapter	Air duct hose (11) and hose clamp (12)	Using screwdriver, install.

29. INSTALLING AIR DUCT HOSE FROM PE OUTLET TO GPFU INLET TEE. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
7. GPFU inlet tee	Air duct cover (13) and hose clamp (14)	Using screwdriver, remove.
8.	Air duct hose (11) and hose clamp (15)	Using screwdriver, install.



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4-30. INSTALLING AIR DUCT HOSE FROM GPFU AIRFLOW VALVE TO AIR CONDITIONER INLET.

This task covers:

Installation

INITIAL SETUP

Tools

Flat tip screwdriver

Materials/Parts

Air duct hose (36 inch)
Hose clamp (2 required)

Personnel Required

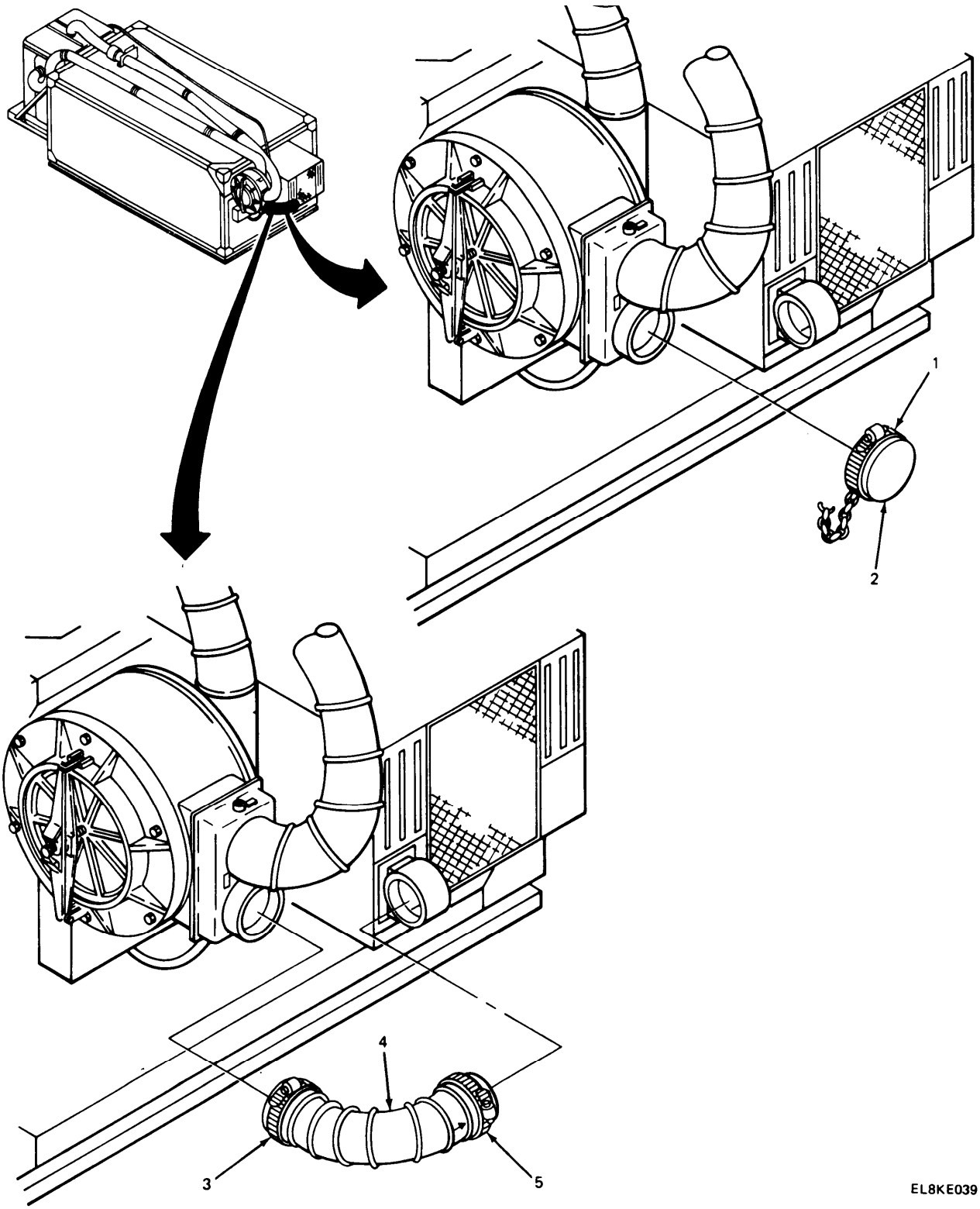
One mechanic

Equipment Condition

Air conditioner inlet transition duct installed.

LOCATION	ITEM	ACTION	**REMARKS**
		NOTE Direction of airflow is marked on hoses. Airflow is from GPFU toward air conditioner.	
1. GPFU airflow valve, TO SHELTER	Hose clamp (1) and air duct cover (2)	Using screwdriver, remove.	
2.	Hose clamp (3) and air duct hose (4)	Using screwdriver, install.	
3. Air conditioner inlet transition duct	Hose clamp (5) and air duct hose (4)	Using screwdriver, install.	

4-30. INSTALLING AIR DUCT HOSE FROM GPFU AIRFLOW VALVE TO AIR CONDITIONER INLET. (CONT)



4-31. INSTALLING CABLE C5-19-6170-40 TO PE AND PE AIRLOW VALVE AND SILENCER ASSEMBLY.

This task covers:

Installation

INITIAL SETUP

Tools	Personnel Required
None	One mechanic
Materials/Parts	**Equipment Condition**
Cable assembly, SP electrical C5-19-6170-40	PE erected and PE air-flow valve and silencer assembly installed.

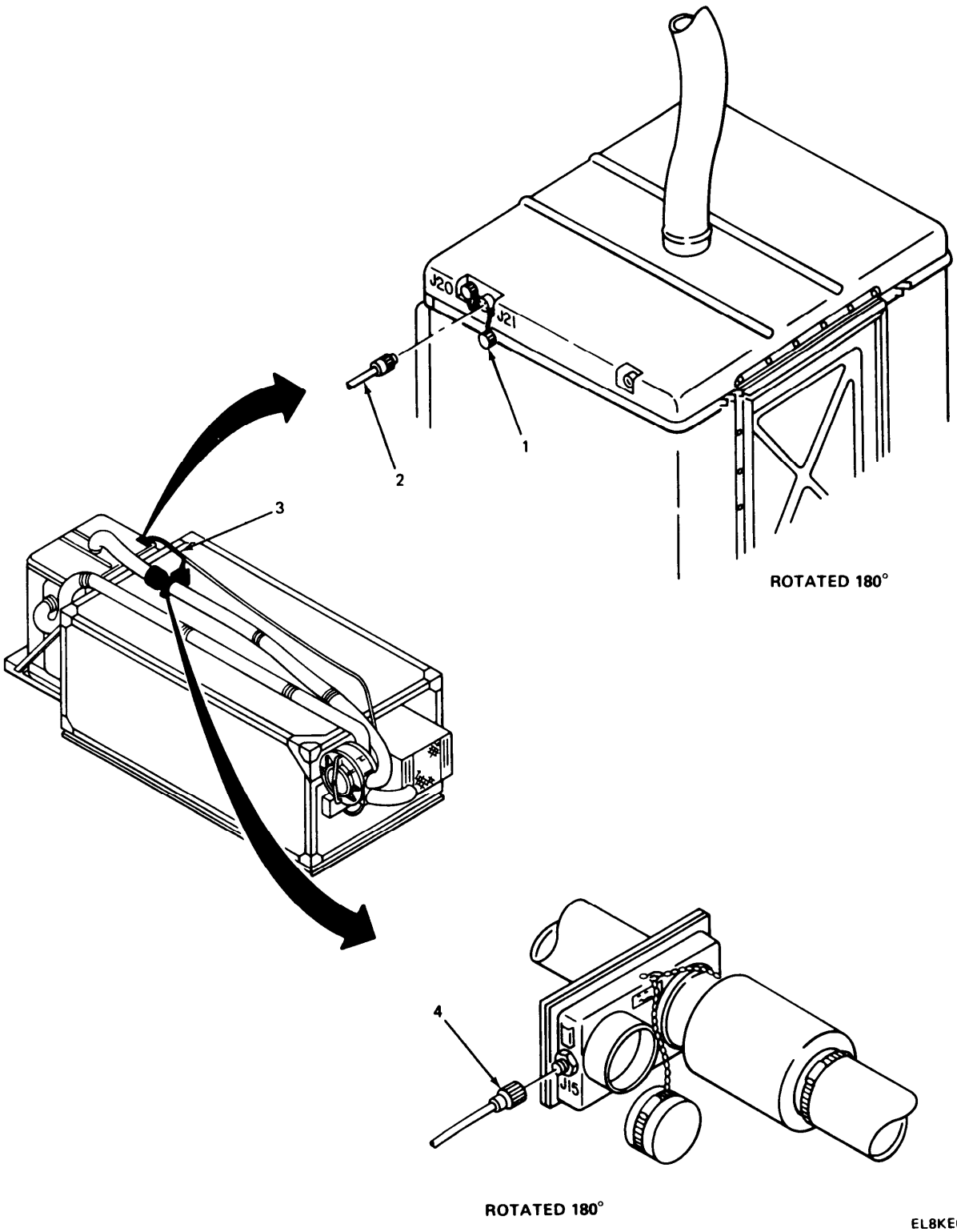
LOCATION	ITEM	ACTION	**REMARKS**

WARNING

Make sure all power is off.

1.	PE at J21	Terminal cap (1)	Remove.
2.		Cable end (2)	Connect.
3.	PE and PE airflow valve and silencer assembly	Cable (3)	Route.
4.	PE airflow valve and silencer assembly at J15	Cable end (4)	Connect.

4-31. INSTALLING CABLE C5-19-6170-40 TO PE AIRFLOW VALUE AND SILENCER ASSEMBLY. (CONT)



4-32. INSTALLING CABLE C5-19-6162-10 TO PE AND PDU.

This task covers:

Installation

INITIAL SETUP

Tools

None

Materials/Parts

Cable assembly, SP, electrical C5-19-6162-10
Tie-down strap, plastic (4 required)

Personnel Required

One mechanic

Equipment Condition

PE erected and PDU installed.

LOCATION	ITEM	ACTION	REMARKS

WARNING

Make sure all power is off.

NOTE

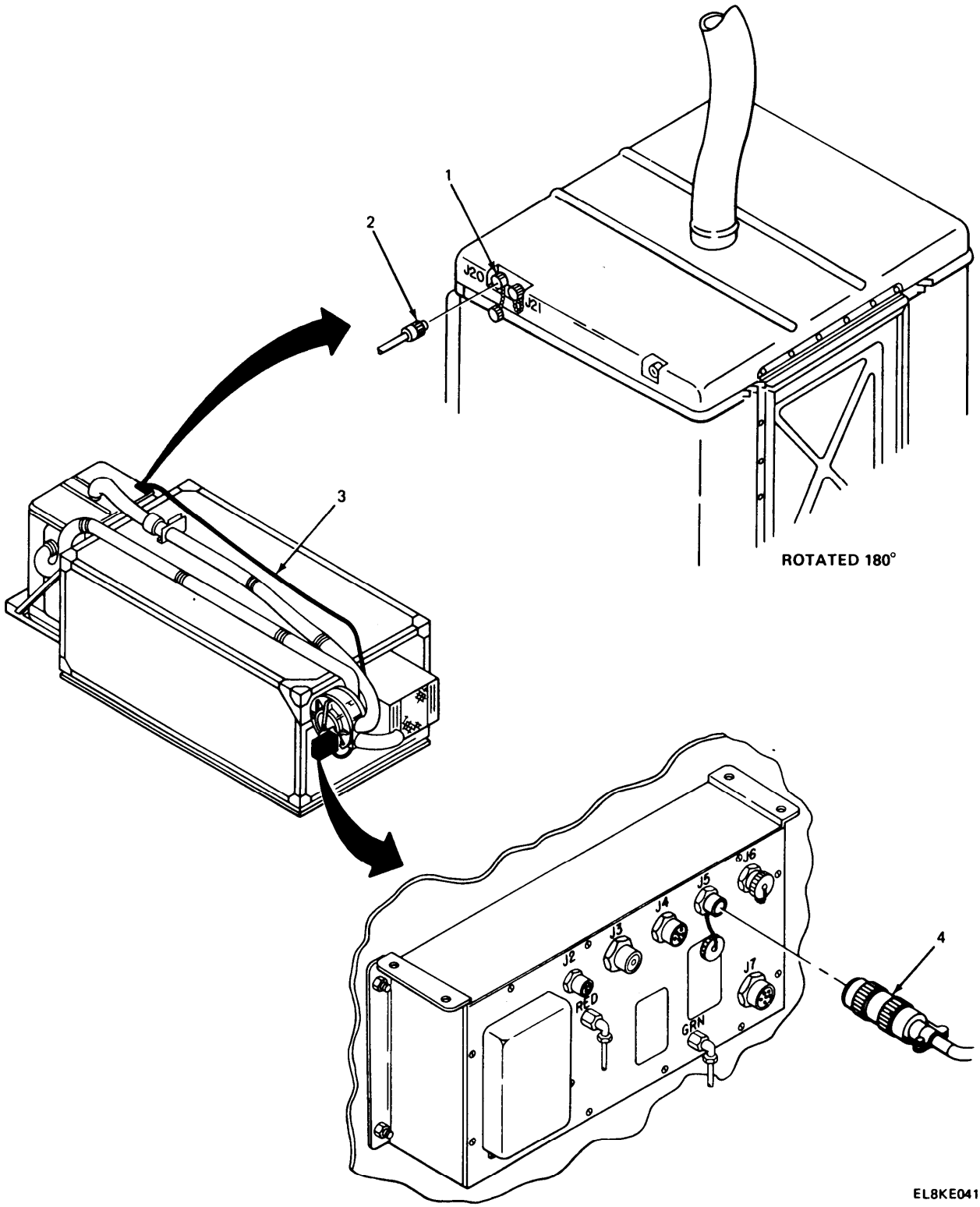
Route cable across shelter roof and between air conditioner curbside bracket and shelter front wall.

1.	PE at J20	Terminal cap (1)	Remove.
2.		Cable end (2)	Connect.
3.	PE and PDU	Cable (3)	Route.
4.	PDU at J5	Cable end (4)	Connect.

NOTE

Secure cable C5-19-6162-10 to cable C5-19-6170-40 with tie-down straps.

4-32. INSTALLING CABLE C5-19-6162-10 TO PE AND PDU. (CONT)



Section IV ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

OVERVIEW

Preventive Maintenance Checks and Sewices (PMCS)are the semi-annual requirements to keep your equipment in good operating condition. Semi-annual(S) PMCS are to be performed every 180 days and are listed on the table.

If the equipment fails to operate, refer to TM 3-4240-284-20&P for troubleshooting procedures.

If the equipment must be kept in service continuously, check and service oniy the things that can be checked and serviced without disturbing operation. Make complete checks and services when the equipment can be shut down.

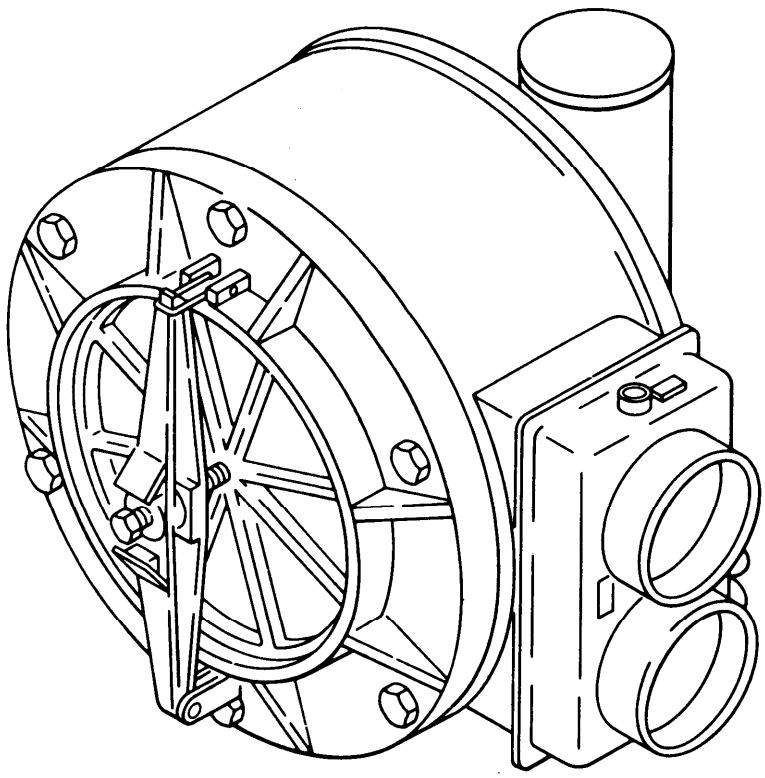
Routine checks like equipment inventory, cleaning, checking for frayed cables, storing items not in use, and checking for loose hardware, nuts, bolts, and screws are not listed in the PMCS table. You should do these things any time that you see that they need to be done. If you find a routine check listed in the PMCS table, it is because other persons reported problems with this item.

The Item No. column in the PMCS table is to be used as a source of item numbers for the TM Number column on DA FORM 2404, Equipment Inspection and Maintenance Worksheet, for recording PMCS results.

4-33. PREVENTIVE MAINTENANCE CHECKS AND SERVICES.

S - SEMI-ANNUAL

ITEM NO.	INTERVAL S	ITEM TO BE INSPECTED	PROCEDURE
1	•	Filter Housing	Inspect identification and instruction plates. You must be able to read them. Replace if necessary. Inspect outside surfaces for rust, chipped paint, or bare metal on painted surfaces. Repaint or touchup as necessary. Make sure all parts are secure and tighten loose hardware. Replace missing hardware.



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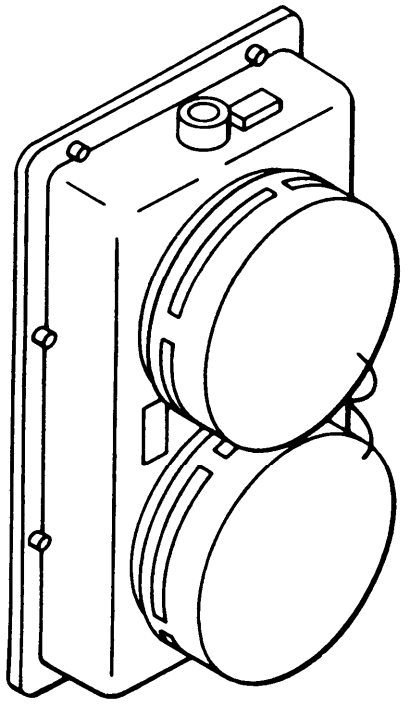
4-33. PREVENTIVE MAINTENANCE CHECKS AND SERVICES. (CONT)

S - SEMI-ANNUAL

ITEM NO.	INTERVAL S	ITEM TO BE INSPECTED	PROCEDURE
2	•	Special Purpose Electrical Cable Assemblies	Inspect cable assemblies for bare wires, broken insulation, broken or damaged connectors. Replace damaged cable assemblies.
3	•	Main Fan Assembly Cable	Inspect cable assembly for bare wire, broken insulation, broken or damaged connector. Replace damaged main fan assembly.
4	•	Airflow Valve	Inspect valve for damage and loose mounting hardware. Replace missing mounting hardware. Replace damaged air-flow valve.



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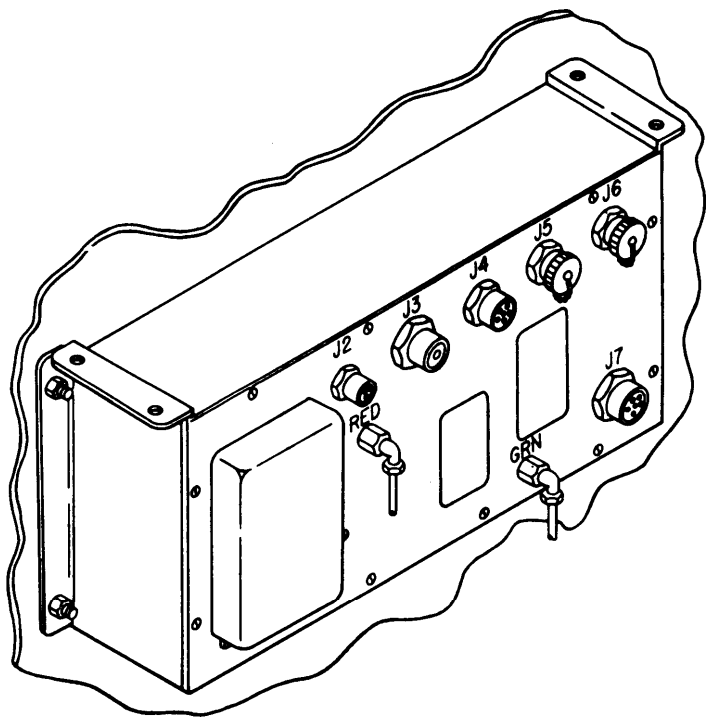
4-33. PREVENTIVE MAINTENANCE CHECKS AND SERVICES. (CONT)

S - SEMI-ANNUAL

ITEM NO.	INTERVAL S	ITEM TO BE INSPECTED	PROCEDURE
5	•	Power Distribution Unit	Inspect unit for loose or missing mounting hardware. Tighten loose hardware. Replace missing hardware. Inspect for damaged or missing electrical covers. Replace power distribution unit if the covers are damaged or missing.



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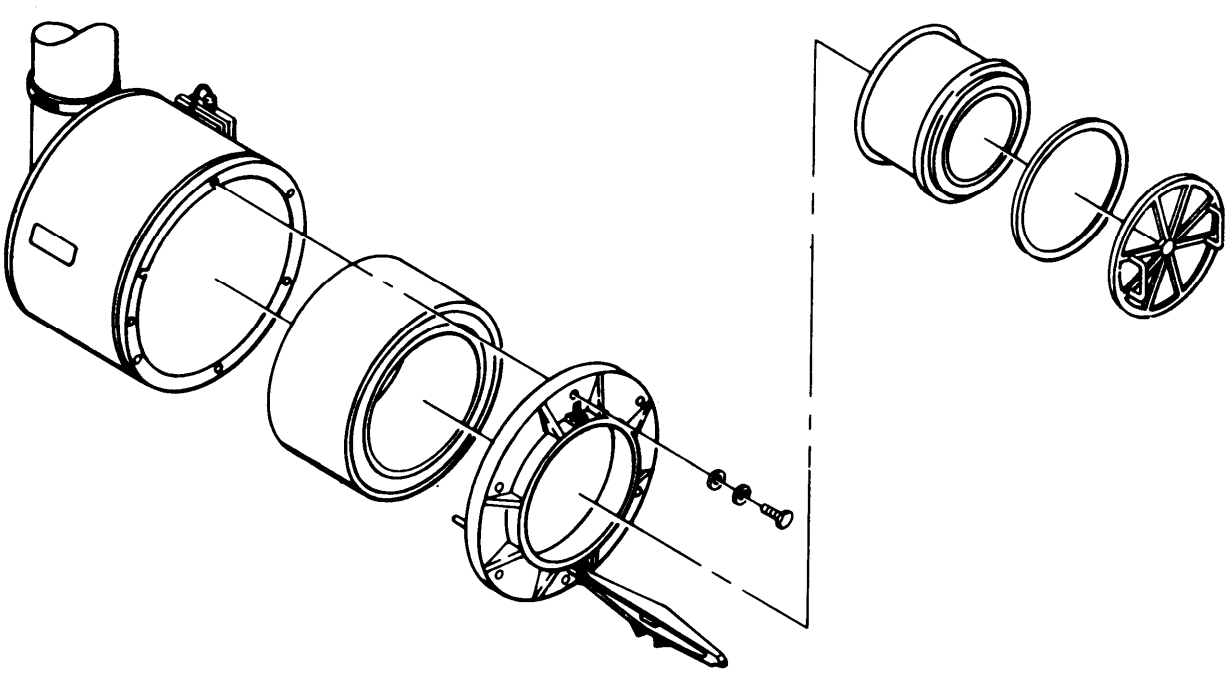
4-33. PREVENTIVE MAINTENANCE CHECKS AND SERVICES. (CONT)

S - SEMI-ANNUAL

ITEM NO.	INTERVAL S	ITEM TO BE INSPECTED	PROCEDURE
6	•	Gas Particulate Filters	Remove filters and check for physical or water damage. Inspect housing seal and inner cover gasket for damage. Replace seal or gasket if unserviceable. Reinstall filters or install new filters.



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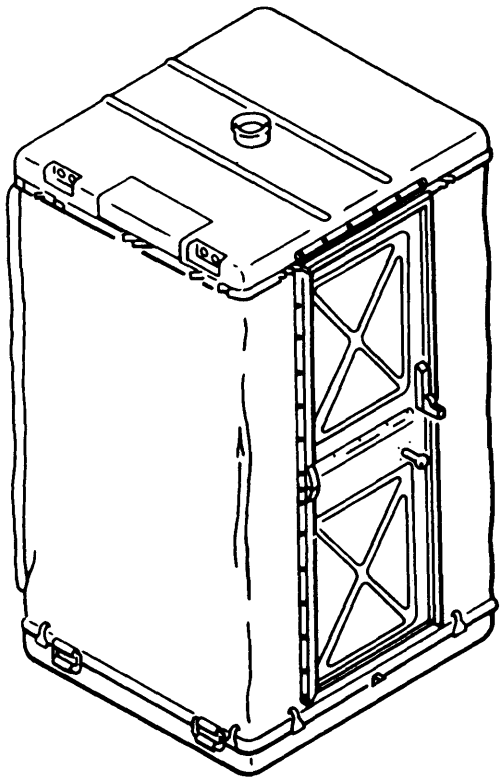
7	•	Air duct Hoses	Inspect air duct hoses for damage or missing clamps. Repair or replace air duct hoses if necessary. Replace missing clamps.

4-33. PREVENTIVE MAINTENANCE CHECKS AND SERVICES. (CONT)

S - SEMI-ANNUAL

ITEM No.	INTERVAL S	ITEM TO BE INSPECTED	PROCEDURE
8	•	M10 Protective Entrance	Inspect identification and instruction plates. You must be able to read them. Replace plates if necessary. Inspect outside surface for chipped paint or bare metal on painted surfaces. Repaint or touch up as necessary. Make sure that all parts are secure and that there is no loose or missing hardware. Tighten loose hardware. Replace missing hardware.



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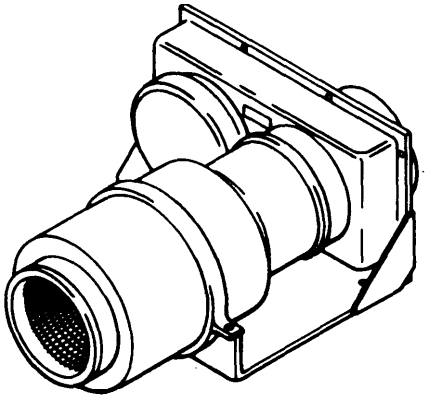
4-33. PREVENTIVE MAINTENANCE CHECKS AND SERVICES. (CONT)

S - SEMI-ANNUAL

ITEM NO.	INTERVAL S	ITEM TO BE INSPECTED	PROCEDURE
9	•	Valve and Silencer	Inspect identification and instruction plates. You must be able to read them. Replace instruction plate. Inspect valve and silencer for damage and loose or missing hardware. Tighten loose hardware. Replace missing hardware. Replace damaged valve and silencer.



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10	•	Collective Protection Equipment	Perform functional testing. See TM 3-4240-284-20&P.

Section V ORGANIZATIONAL TROUBLESHOOTING

4-34. ORGANIZATIONAL TROUBLESHOOTING

No troubleshooting procedures for the modular collective protection equipment are given in this manual. For organizational troubleshooting procedures, refer to TM 3-4240-284-20&P.

Section VI MAINTENANCE PROCEDURES

4-35. MAINTENANCE PROCEDURES

For maintenance procedures for the modular collective protection equipment, refer to TM 3-4240-284-20&P.

Section VII REMOVAL OF MODULAR COLLECTIVE PROTECTION EQUIPMENT

4-36. REMOVING CABLE C5-19-6162-10 FROM PE AND PDU.

This task covers:

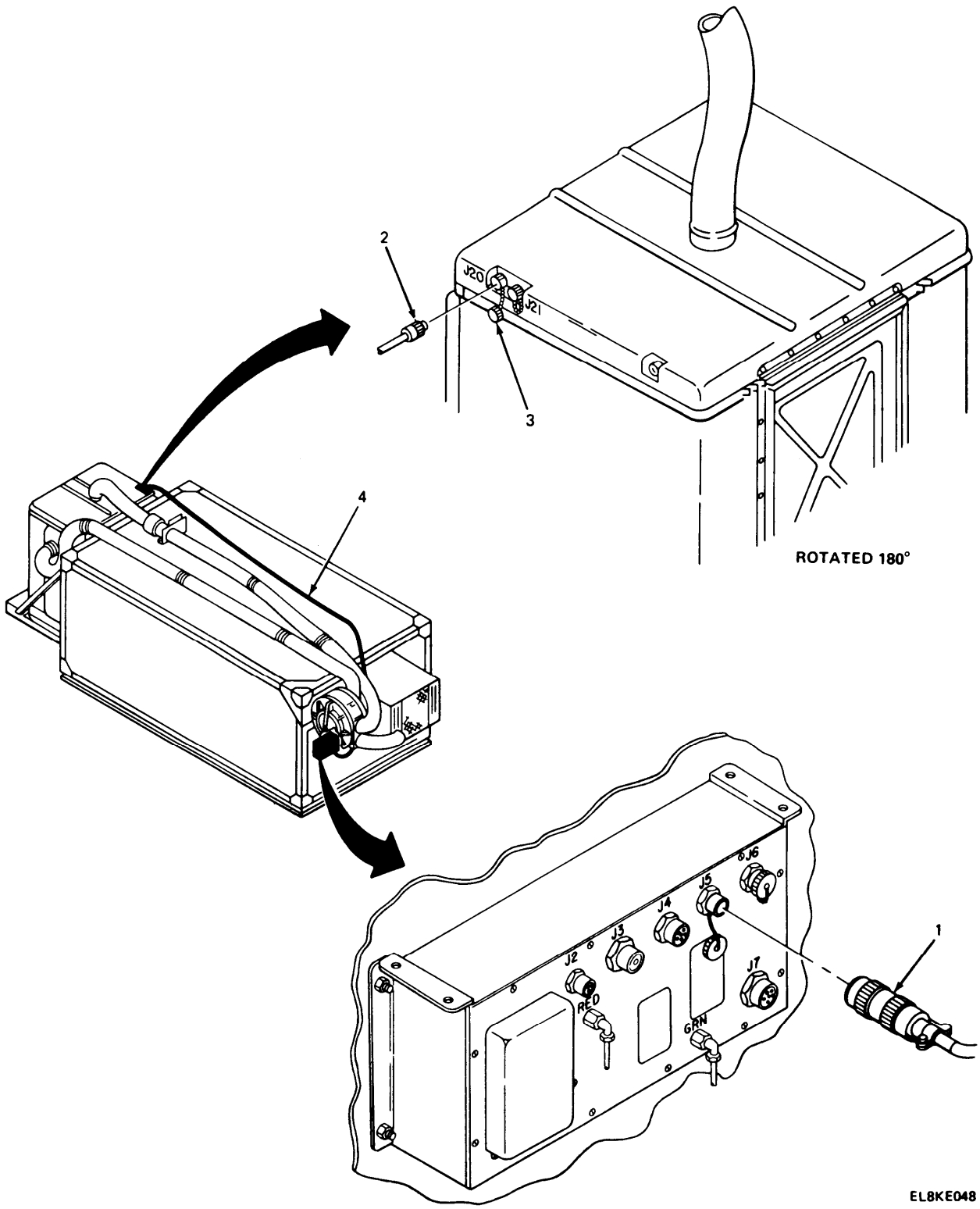
Removal

INITIAL SETUP

Tools	Personnel Required
None	One mechanic
Materials/Parts	**Equipment Condition**
Cloth packing bag	All power turned off.

LOCATION	ITEM	ACTION **REMARKS**
		NOTE Remove tie down straps, place in cloth bag and attach to cable.
1. PDU	Cable end (1)	Disconnect.
2. PE	Cable end (2)	Disconnect.
3. PE at J20	Terminal cap (3)	Install.
4.	Cable (4)	Remove.
5.	Cable (4)	See paragraph 4-32 for installation. **Place cable in shelter for storage.**

4-36. REMOVING CABLE C5-19-6162-10 FROM PE AND PDU. (CONT)



4-37. REMOVING CABLE C5-19-6170-40 FROM PE AND PE AIRFLOW VALVE AND SILENCER ASSEMBLY.

This task covers:

Removal

INITIAL SETUP

Tools

None

Personnel Required

One mechanic

Materials/Parts

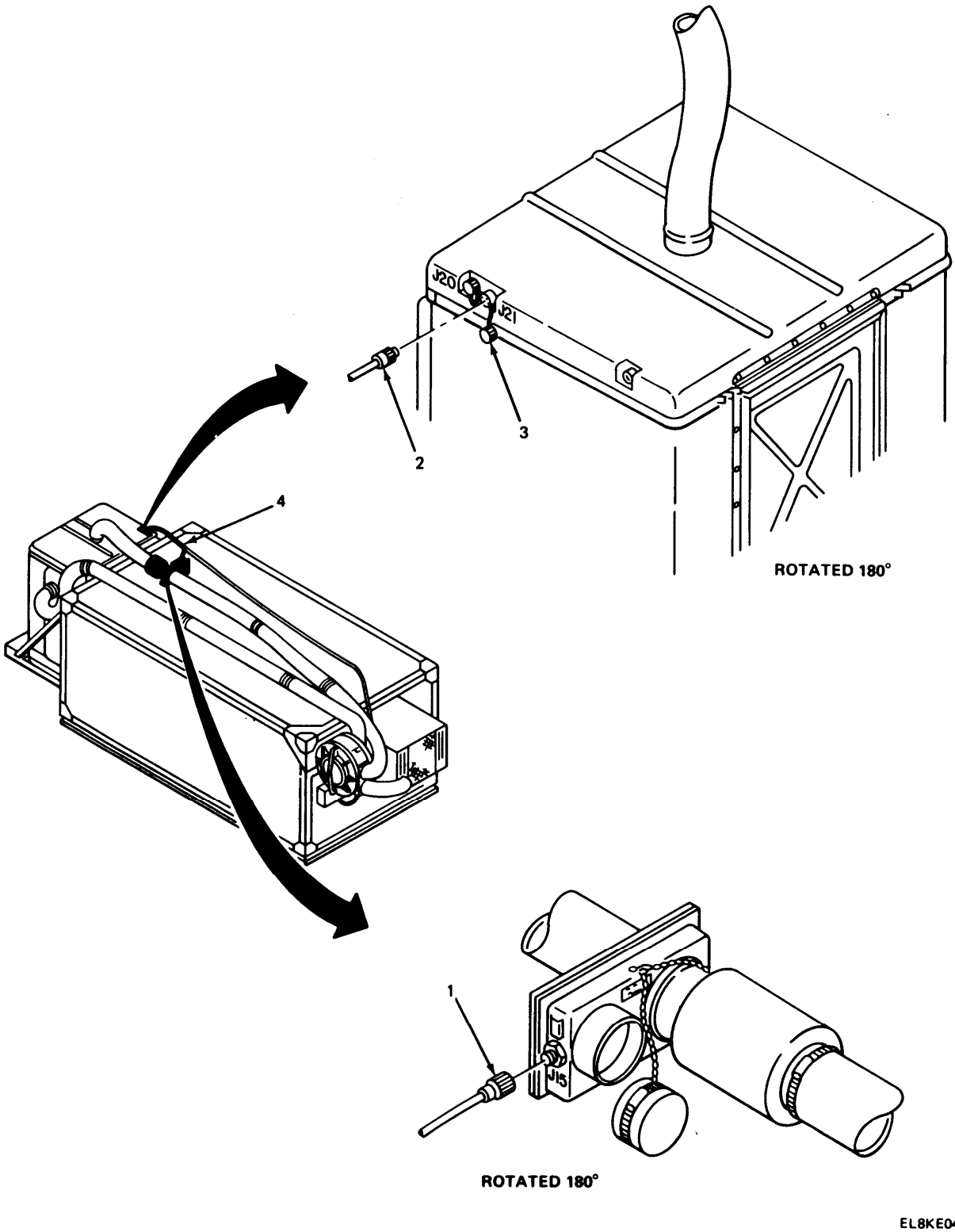
None

Equipment Condition

All power turned off.

LOCATION	ITEM	ACTION / REMARKS
1. PE airflow valve and silencer assembly	Cable end (1)	Disconnect.
2. PE	Cable end (2)	Disconnect.
3. PE at J21	Terminal cap (3)	Install.
4.	Cable (4)	Remove.
5.	Cable (4)	See paragraph 4-31 for installation. **Place cable in shelter for storage.**

4-37. REMOVING CABLE C5-19-6170-40 FROM PE AND PE AIRFLOW VALVE AND SILENCER ASSEMBLY.



4-38. REMOVING AIR DUCT HOSE FROM GPFU AIRFLOW VALVE TO AIR CONDITIONER INLET.

This task covers:

Removal

INITIAL SETUP

Tools

Flat tip screwdriver

Materials/Parts

None

Personnel Required

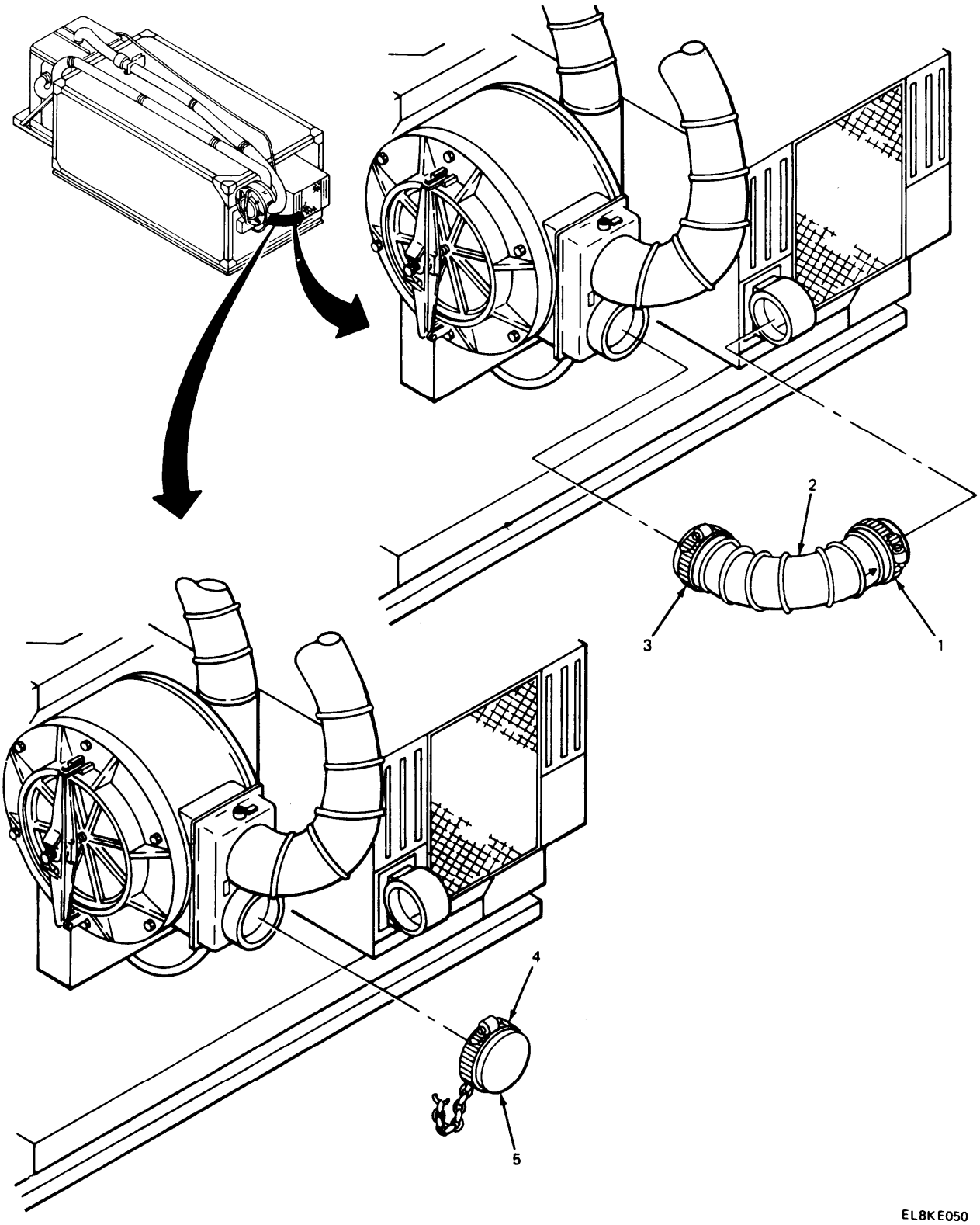
One mechanic

Equipment Condition

GPFU and air conditioner off.

LOCATION	ITEM	ACTION **REMARKS**
1. Air Conditioner inlet transition. duct	Hose clamp (1) and air duct hose (2)	Using screwdriver, loosen clamp and remove.
2. GPFU airflow valve, TO SHELTER	Hose clamp (3) and air duct hose (2)	Using screwdriver, loosen clamp and remove.
3.	Hose clamp (4) and air duct cover (5)	Using screwdriver, install.
4.	Air duct hose (2)	See paragraph 4-30 for installation. **Place air duct hose in holder for storage during transit.**

4-38. REMOVING AIR DUCT HOSE FROM GPFU AIRFLOW VALVE TO AIR CONDITIONER INLET. (CONT)



4-39. REMOVING AIR DUCT HOSE FROM PE OUTLET TO GPFU INLET TEE.

This task covers:

Removal

INITIAL SETUP

Tools

Flat tip screwdriver

Material/Parts

None

Personnel Required

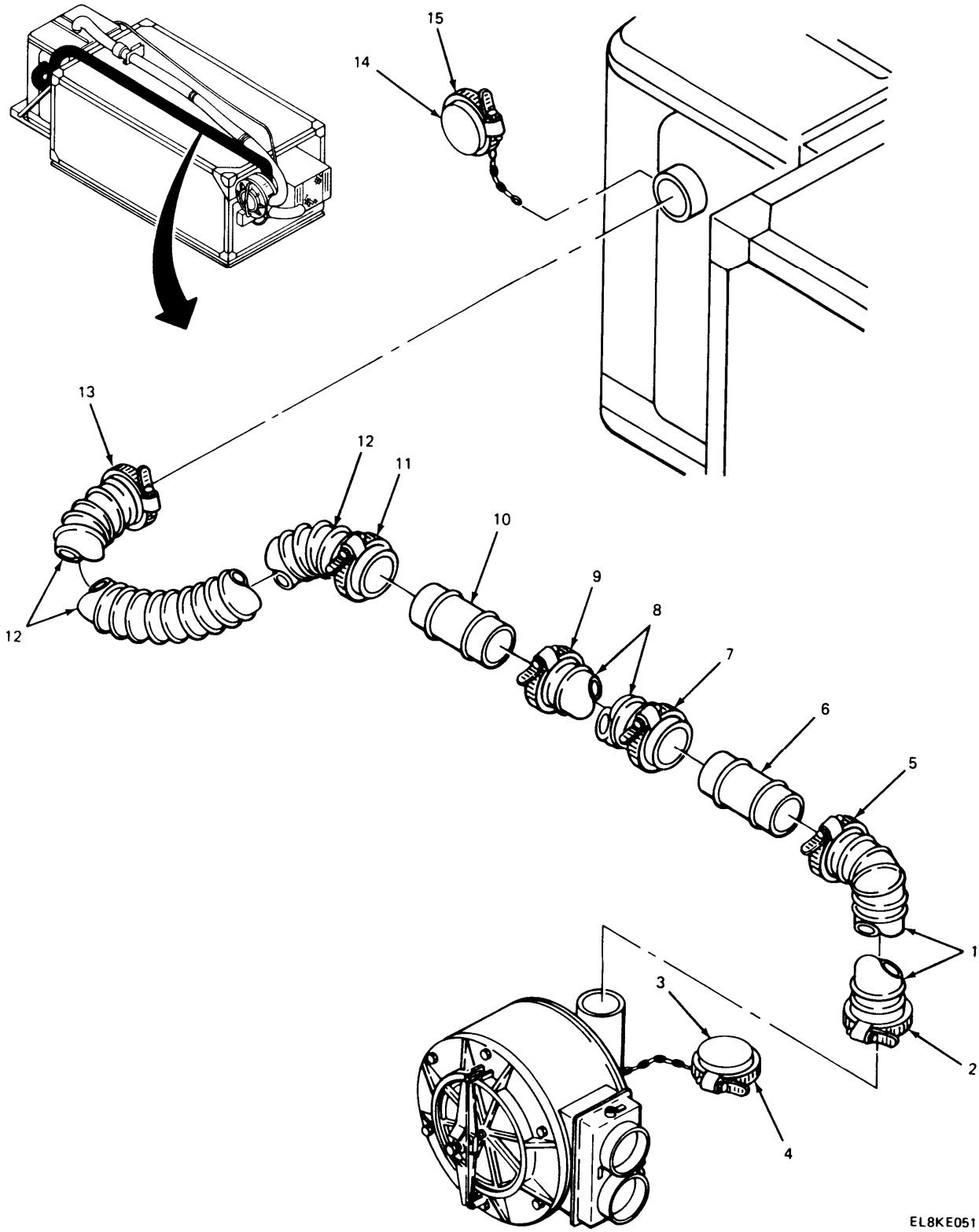
Two mechanics

Equipment Condition

GPFU turned off.

LOCATION	ITEM	ACTION **REMARKS**
1. GPFU Inlet tee	Air duct hose (1) and hose clamp (2)	Using screwdriver, loosen clamp and remove.
2.	Air duct cover (3) and hose clamp (4)	Using screwdriver, loosen clamp and remove.
3. Adapter	Air duct hose (1) and hose clamp (5)	Using screwdriver, loosen clamp and remove.
4. Air duct hose	Adapter (6) and hose clamp (7)	Using screwdriver, ioosen clamp and remove.
5. Adapter	Air duct hose (8) and hose clamp (9)	Using screwdriver, loosen clamp and remove.
6. Air duct hose	Adapter (10) and hose clamp (11)	Using screwdriver, loosen clamp and remove.
7. PE Outlet	Air duct hose (12) and hose clamp (13)	Using screwdriver, loosen clamp and remove.
8.	Air duct cover (14) and hose clamp (15)	Using screwdriver, install.
9.	Air duct hoses (1), (8) and (12)	See paragraph 4-29 for installation. **Place air duct hoses in holder for storage during transit.**

4-39. REMOVING AIR DUCT HOSE FROM PE OUTLET TO GPFU INLET TEE. (CONT)



4-40. REMOVING AIR DUCT HOSE FROM PE AIRFLOW VALVE AND SILENCER ASSEMBLY TO GPFU AIRFLOW VALVE OUTLET.

This task covers:

Removal

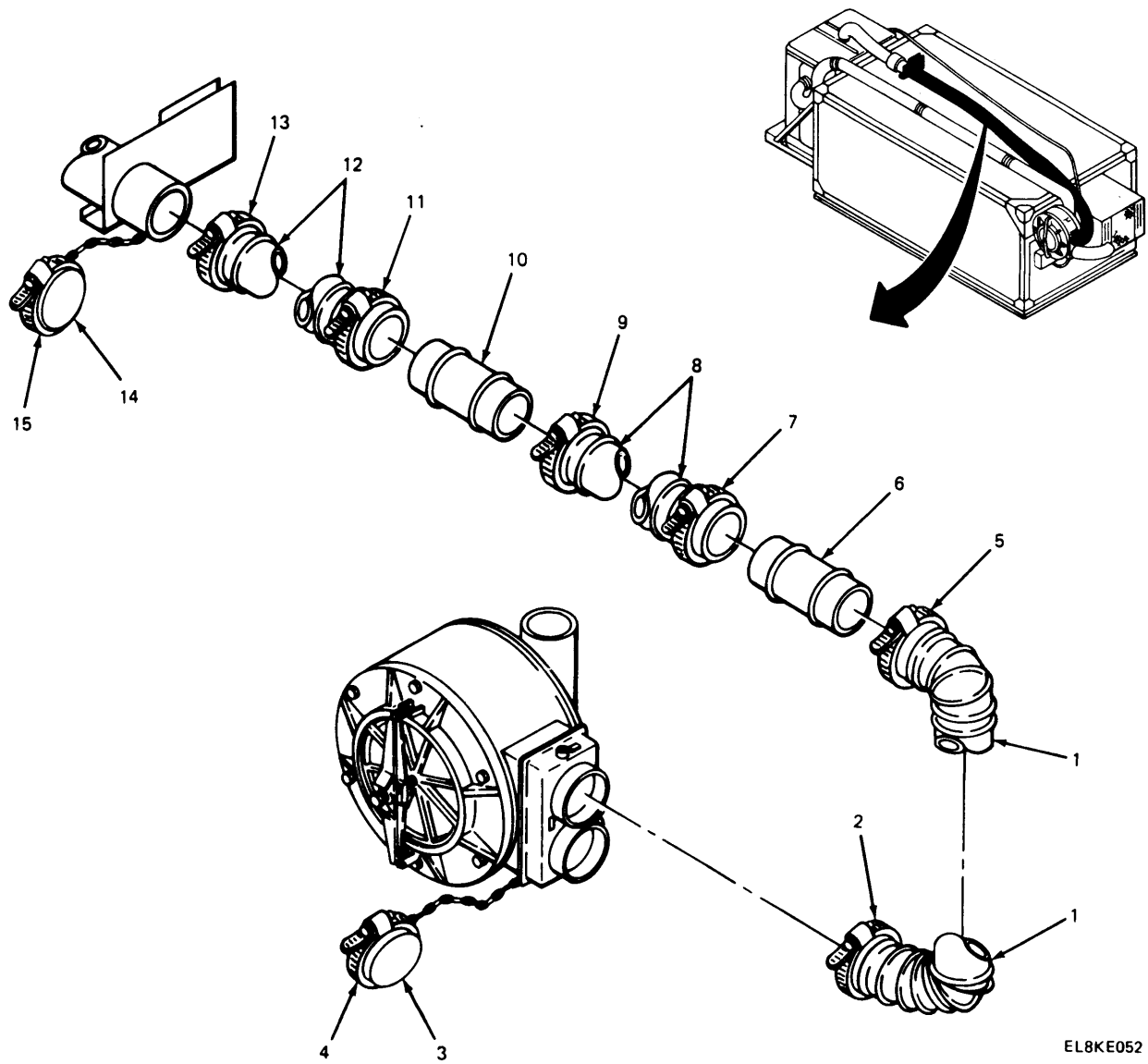
INITIAL SETUP

Tools	Personnel Required
Flat tip screwdriver	Two mechanics
Materials/Parts	Equipment Condition
None	GPFU off.

LOCATION	ITEM	ACTION / REMARKS
1. GPFU airflow valve outlet	Air duct hose (1) and hose clamp (2)	Using screwdriver, loosen clamp.
2.	Air duct cover (3) and hose clamp (4)	Using screwdriver, install.
3. Adapter	Air duct hose (1) and hose clamp (5)	Using screwdriver, loosen clamp.
4. Air duct hose	Adapter (6) and hose clamp (7)	Using screwdriver, loosen clamp.
s. Adapter	Air duct hose (8) and hose clamp (9)	Using screwdriver, loosen clamp.
6. Air duct hose	Adapter (10) and hose clamp (11)	Using screwdriver, loosen clamp.
7. Airflow valve and silencer assembly	Air duct hose (12) and hose clamp (13)	Using screwdriver, loosen clamp.

4-40. REMOVING AIR DUCT HOSE FROM PE AIRFLOW VALVE AND SILENCER ASSEMBLY TO GPFU AIRFLOW VALVE OUTLET. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
8. Airflow valve and silencer assembly	Air duct cover (14) and hose clamp (15)	Using screwdriver, install.
9.	Air duct hoses (1), (8) and (12)	See paragraph 4-28 for installation. Place air duct hoses in holder for storage during transit.



4-41. REMOVING/INSTALLING AIR CONDITIONER INLET TRANSITION DUCT.

This task covers:

1. Removal
2. Installation

INITIAL SETUP

Tools	Personnel Required
Cross tip screwdriver	One mechanic
Materials/Parts	**Equipment Condition**
Air screen	All power turned off.

LOCATION	ITEM	ACTION / **REMARKS**

REMOVAL

NOTE

Disconnect air duct hose from air conditioner transition duct before starting removal.

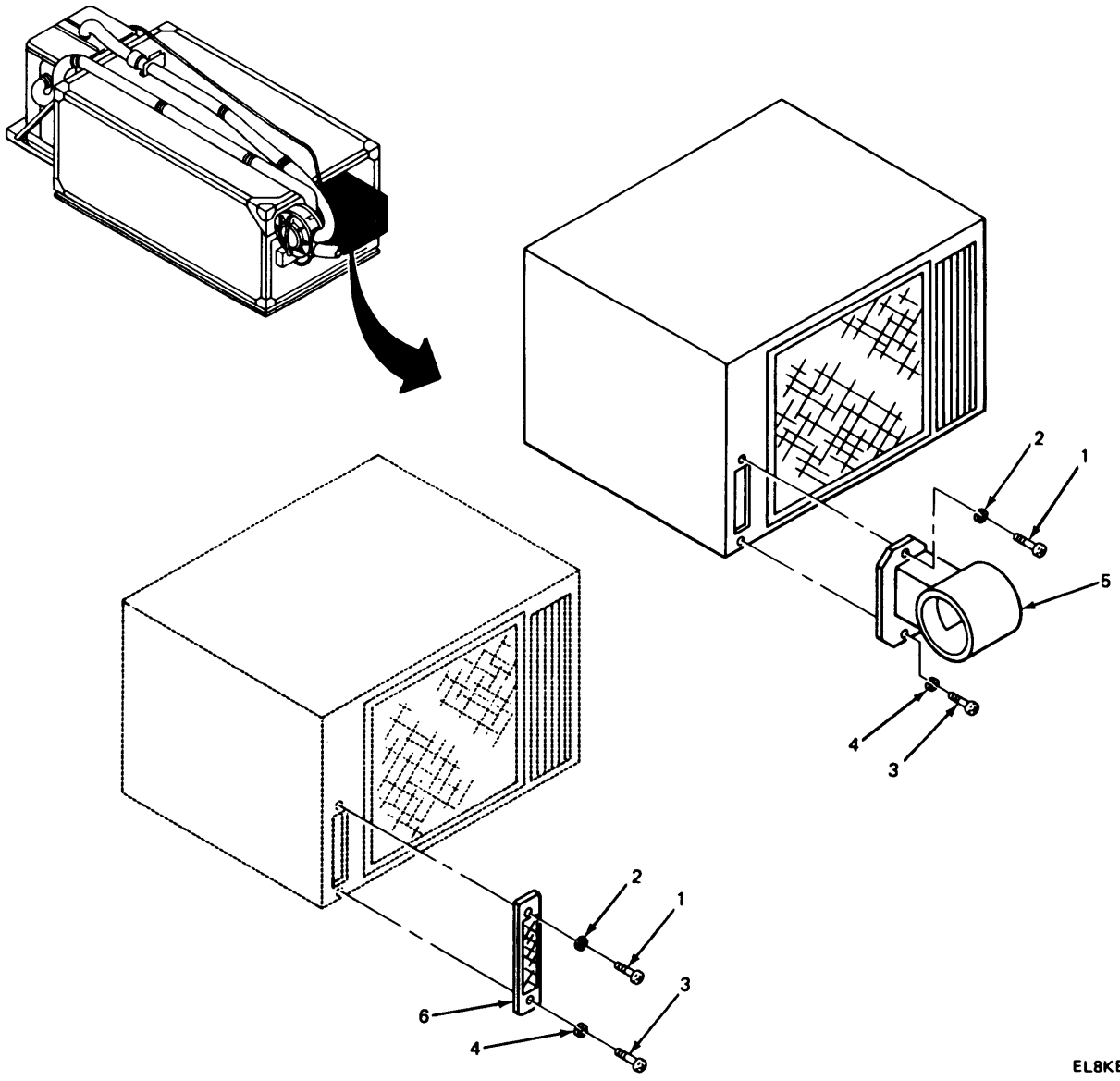
1. Lower curbside corner of air conditioner	Screw (1) and lockwasher (2)	Using screwdriver, remove.
2.	Screw (3) and lockwasher (4)	Using screwdriver, remove.
3.	Inlet transition duct (5)	Remove.
4.	Air screen (6)	Put in place. **Aline holes. Use air screen only when MCPE is removed.**
5.	Screw (1) and lockwasher (2)	Using screwdriver, install.
6.	Screw (3) and lockwasher (4)	Using screwdriver, install.
7.	Inlet transition duct (5)	Place in original carton for storage in shelter.

4-41. REMOVING/INSTALLING AIR CONDITIONER INLET TRANSITION DUCT. (CONT)

LOCATION	ITEM	ACTION	REMARKS
			INSTALLATION
1. Lower curbside corner of air conditioner	Inlet transition duct (5)	See paragraph 4-27 for installation.	

NOTE

Connect air duct hose to air conditioner transition duct to complete installation.



EL8KE053

4-42. REMOVING CABLE C5-19-6170-10 FROM GPFU AND PDU.

This task covers:

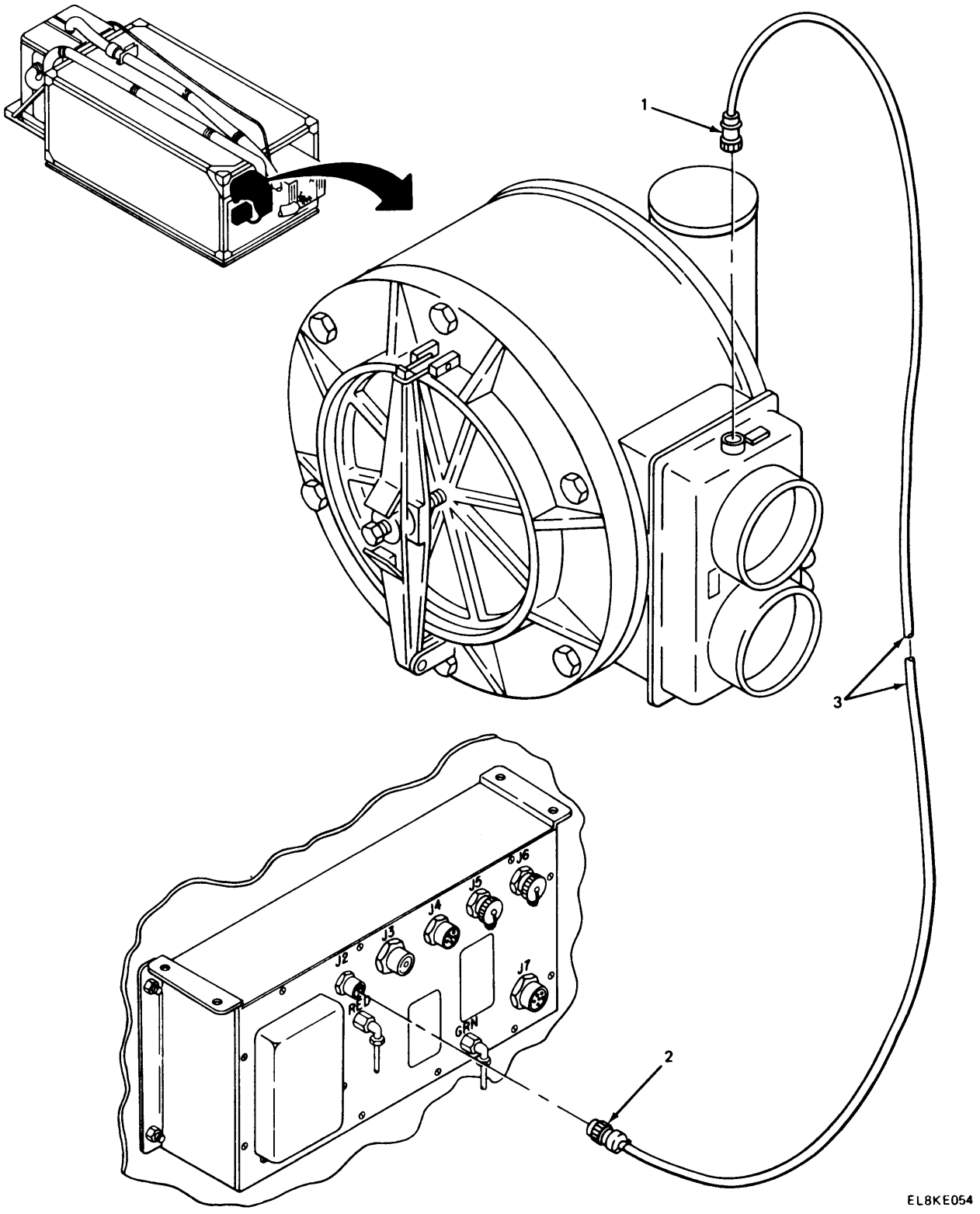
Removal

INITIAL SETUP

Tools	Personnel Required
None	One mechanic
Materials/Parts	Equipment Condition
None	All power turned off.

	LOCATION	ITEM	ACTION **REMARKS**
1.	GPFU airflow valve	Cable end (1)	Disconnect.
2.	PDU at J2	Cable end (2)	Disconnect.
3.		Cable (3)	Remove.
4.		Cable (3)	See paragraph 4-26 for installation. **Place cable in original carton for storage in shelter.**

4-42. REMOVING CABLE C5-19-6170-10 FROM GPFU AND PDU. (CONT)



4-43. REMOVING PNEUMATIC TUBING AND FAN CABLE FROM GPFU AND PDU.

This task covers:

Removal

INITIAL SETUP

Tools

7/16 inch tubing wrench

Materials/Parts

None

Personnel Required

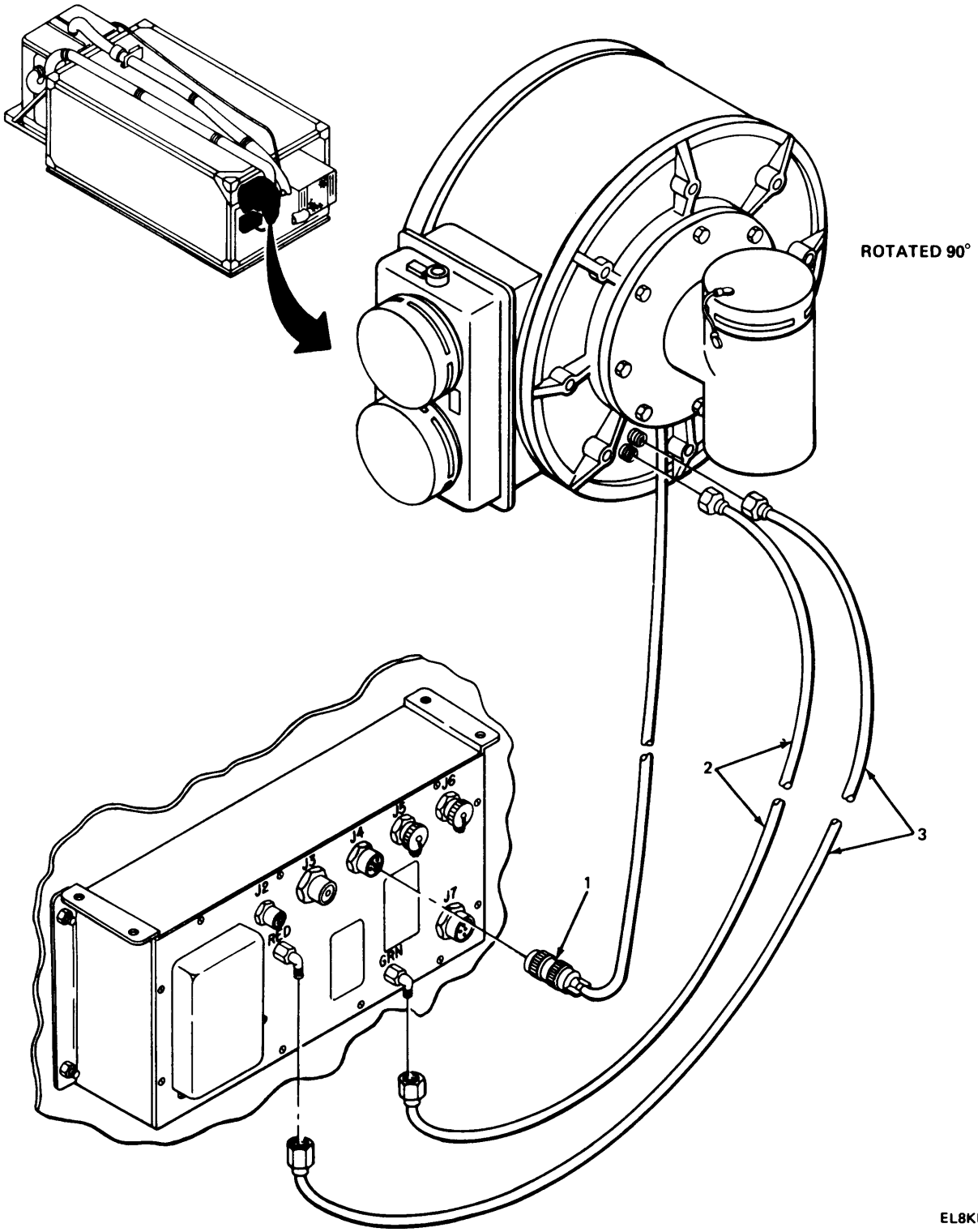
One mechanic

Equipment Condition

All power turned off.

LOCATION	ITEM	ACTION **REMARKS**
1. PDU at J4	Cable end (1)	Disconnect.
2. PDU	Green tubing (2)	Using 7/16 inch tubing wrench, remove.
3. GPFU housing	Green tubing (2)	Using 7/16 inch tubing wrench, remove.
4. PDU	Red tubing (3)	Using 7/16 inch tubing wrench, remove.
5. GPFU housing	Red tubing (3)	Using 7/16 inch tubing wrench, remove.
6.	Green tubing (2), red tubing (3) and cable (1)	See paragraph 4-25 for installation. **Place tubing and cable in original carton for storage in shelter.**

4-43. REMOVING PNEUMATIC TUBING AND FAN CABLE FROM GPFU AND PDU. (CONT)



4-44. REMOVING/INSTALLING GAS PARTICULATE FILTER UNIT.

This task covers:

1. Removal
2. Installation

INITIAL SETUP

Tools	Personnel Required
9/16 inch box wrench	Three mechanics
Materials/Parts	**Equipment Condition**
Cloth packing bag	Pneumatic tubing and fan cable removed. See paragraph 4-43.

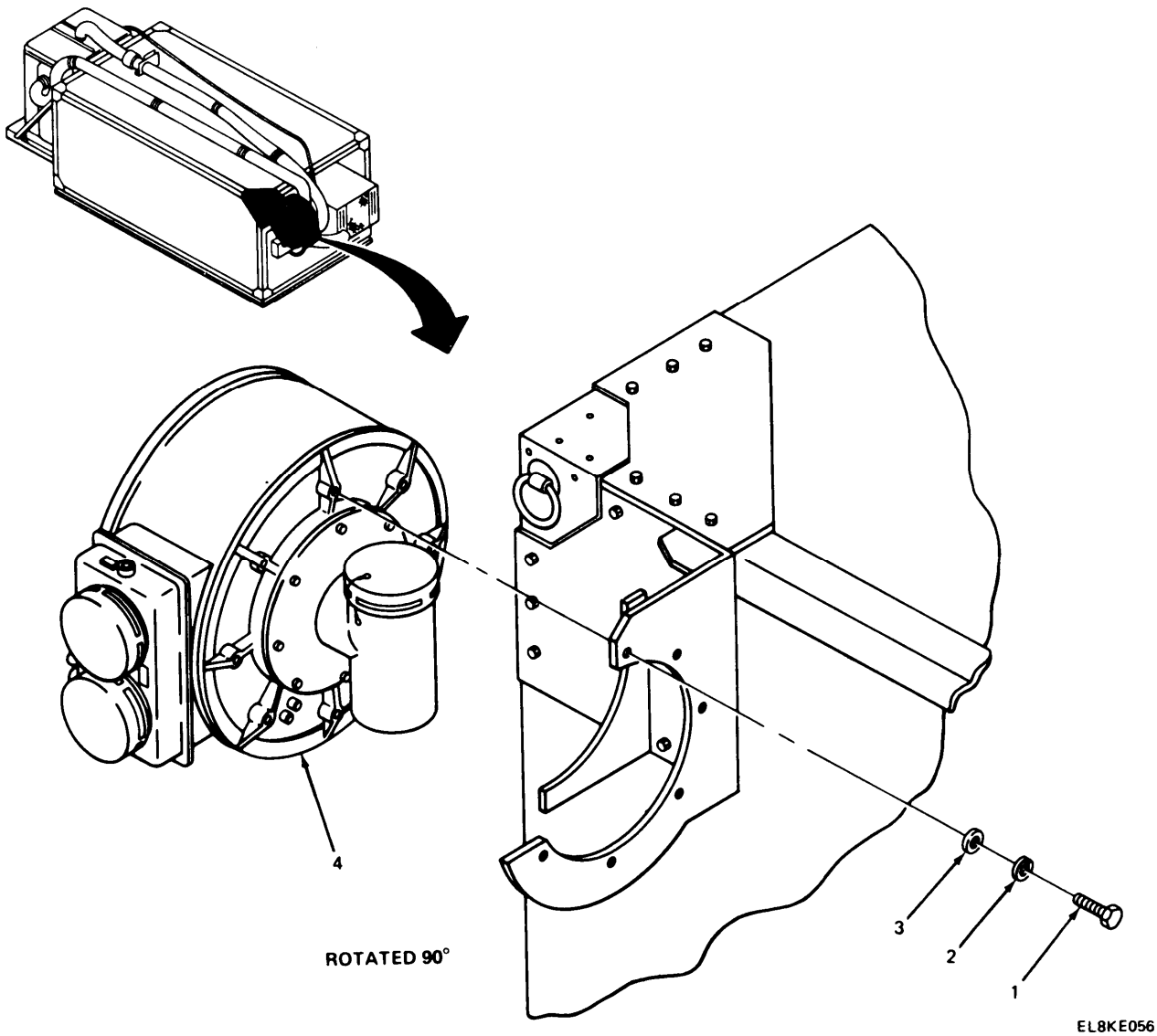
LOCATION	ITEM	ACTION	REMARKS
REMOVAL			
		NOTE Disconnect air duct hoses, all cables, and pneumatic tubing from GPFU before starting removal.	
1. GPFU	Screw (1), lock-washer (2) and flat washer (3)	Using 9/16 inch box wrench, remove.	**There are six screws. Step 1 is typical for all six screws.**
2.		Do step 1 for remaining five screws.	
		NOTE Three persons will be needed to lift GPFU from cradle bracket.	
3. GPFU cradle bracket	GPFU (4)	Remove.	
4.	GPFU (4)	Place hardware in cloth bag, attach to GPFU and store in shelter.	

4-44. REMOVING/INSTALLING GAS PARTICULATE FILTER UNIT. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
INSTALLATION		
1. GPFU cradle bracket	GPFU (4)	See paragraph 4-24 for installation.

NOTE

Connect air duct hoses, cables, and pneumatic tubing to GPFU to complete installation.



4-45. REMOVING/INSTALLING PARTICULATE FILTER.

This task covers:

1. Removal
2. Installation

INITIAL SETUP

Tools

9/16 inch box wrench

Materials/Parts

Particulate filter
Solvent
Adhesive

Personnel Required

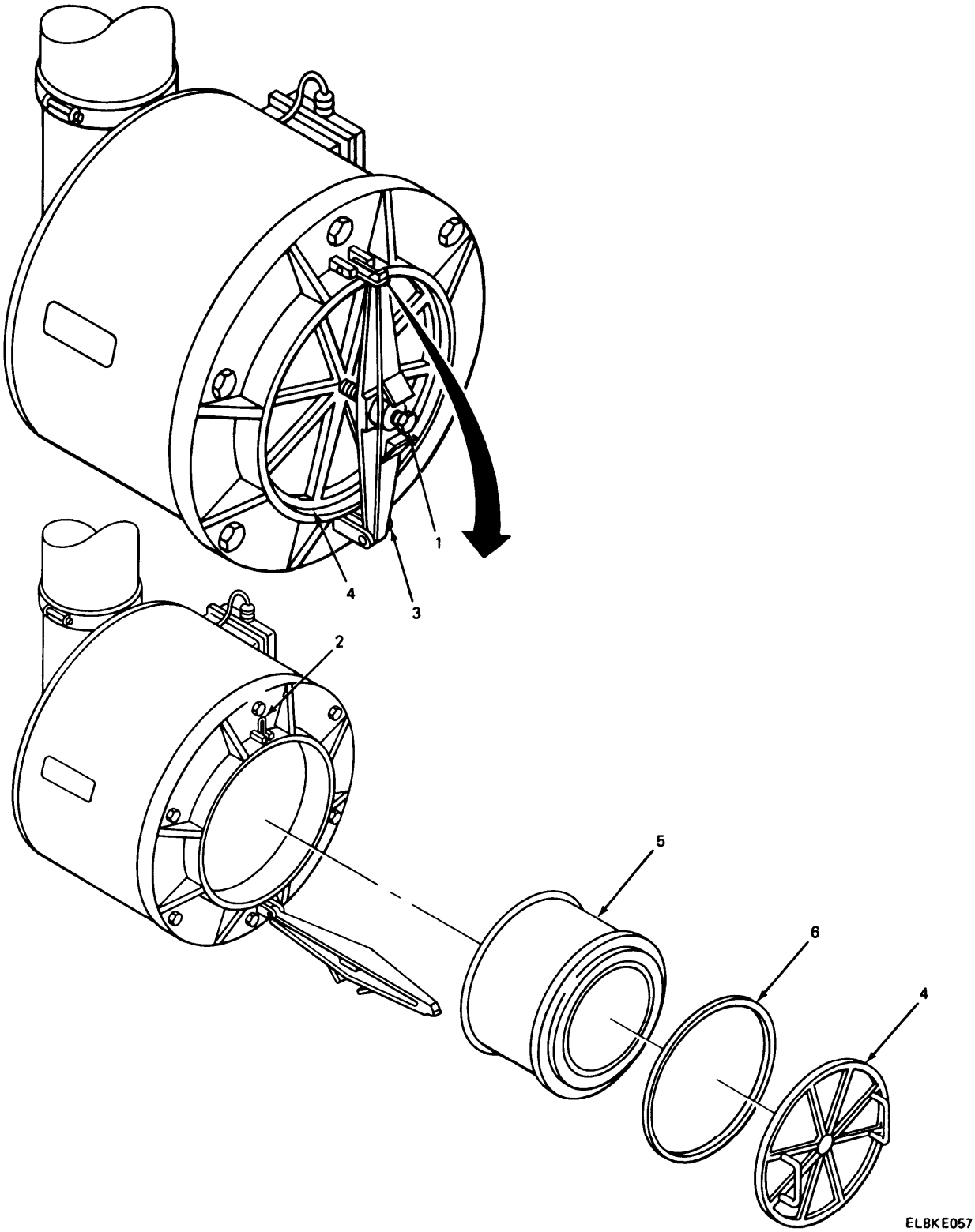
One mechanic

Equipment Condition

Contaminated filter.

LOCATION	ITEM	ACTION / REMARKS
REMOVAL		
1. GPFU housing	Screw (1)	Using 9/16 inch box wrench, loosen.
2.	Catch (2)	Lift to free retainer bar.
3.	Retainer bar (3)	Swing away from inner cover.
4.	Inner cover (4)	Remove.
		WARNING Dispose of contaminated filter per TM 10-277. Observe safety measures per TM 3-220.
5. GPFU housing	Filter (5)	Remove.
6. Inner cover	Gasket (6)	Remove.
		NOTE Clean groove for gasket with solvent.

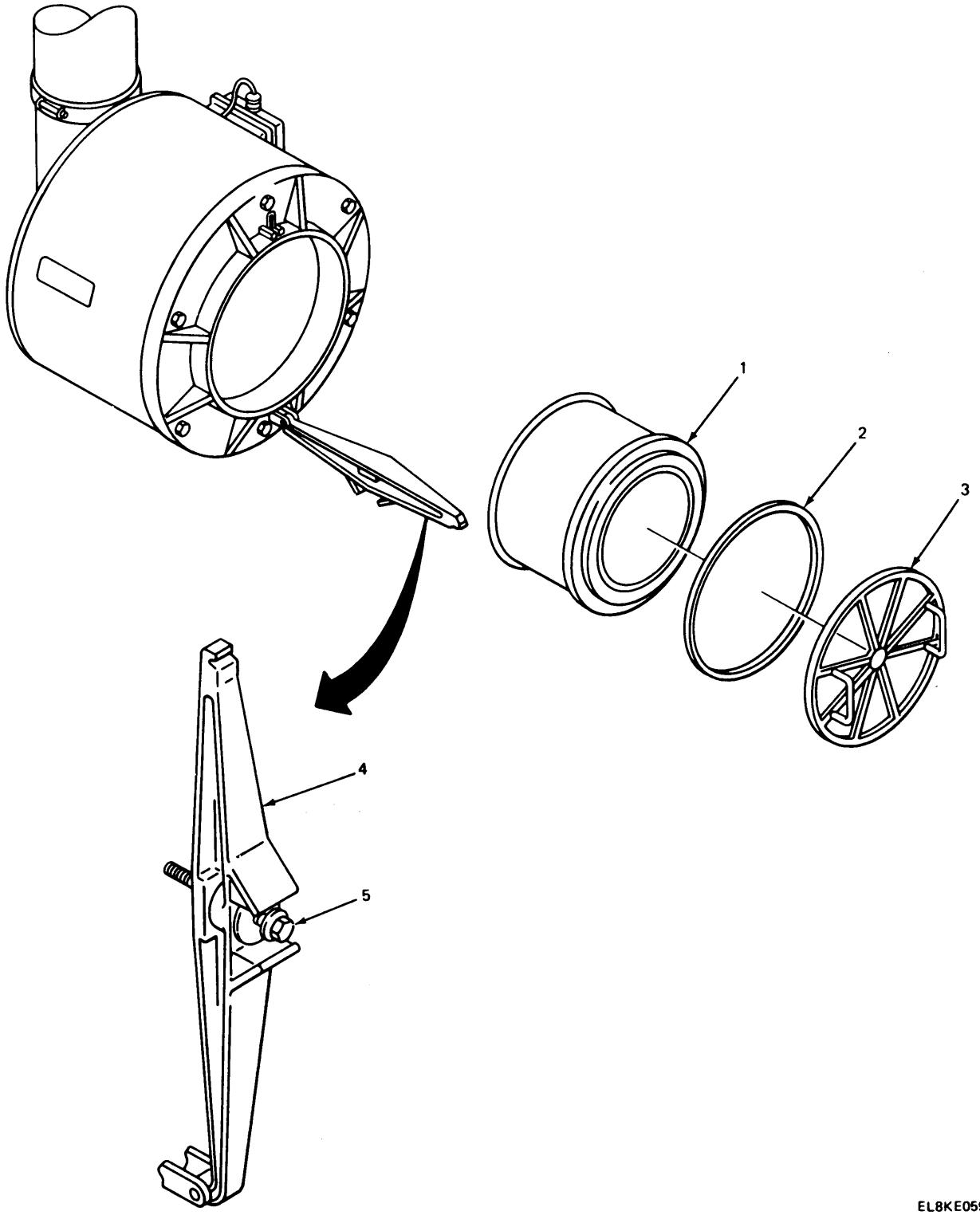
4-45. REMOVING/INSTALLING PARTICULATE FILTER. (CONT)



US. REMOVING/INSTALLING PARTICULATE FILTER. (CONT)

LOCATION	ITEM	ACTION	**REMARKS**
INSTALLATION			
		WARNING	
		Filter gasket must be properly seated to prevent bypass of contaminated air.	
1. GPFU housing	Filter (1)	Install.	**Filter can be installed with either end first.**
		NOTE	
		Apply adhesive in groove for cover gasket.	
2. Inner cover	Gasket (2)	Install.	
3. GPFU housing	Inner cover (3)	Install.	**Note positioning of handles.**
4 .	Retainer bar (4)	Lift to engage with catch.	
5 .	Screw (5)	Using 9/16 box wrench, tighten.	**Tighten until screw sleeve is flush with retainer bar.**

4-45. REMOVING/INSTALLING PARTICULATE FILTER. (CONT)



4-46. REMOVING/INSTALLING GAS FILTER.

This task covers:

1. Removal
2. Installation

tNITiAL SETUP

Tools

9/16 box wrench
60 to 200 inch/pound torque wrench

Personnel Required

One mechanic

Materials/Parts

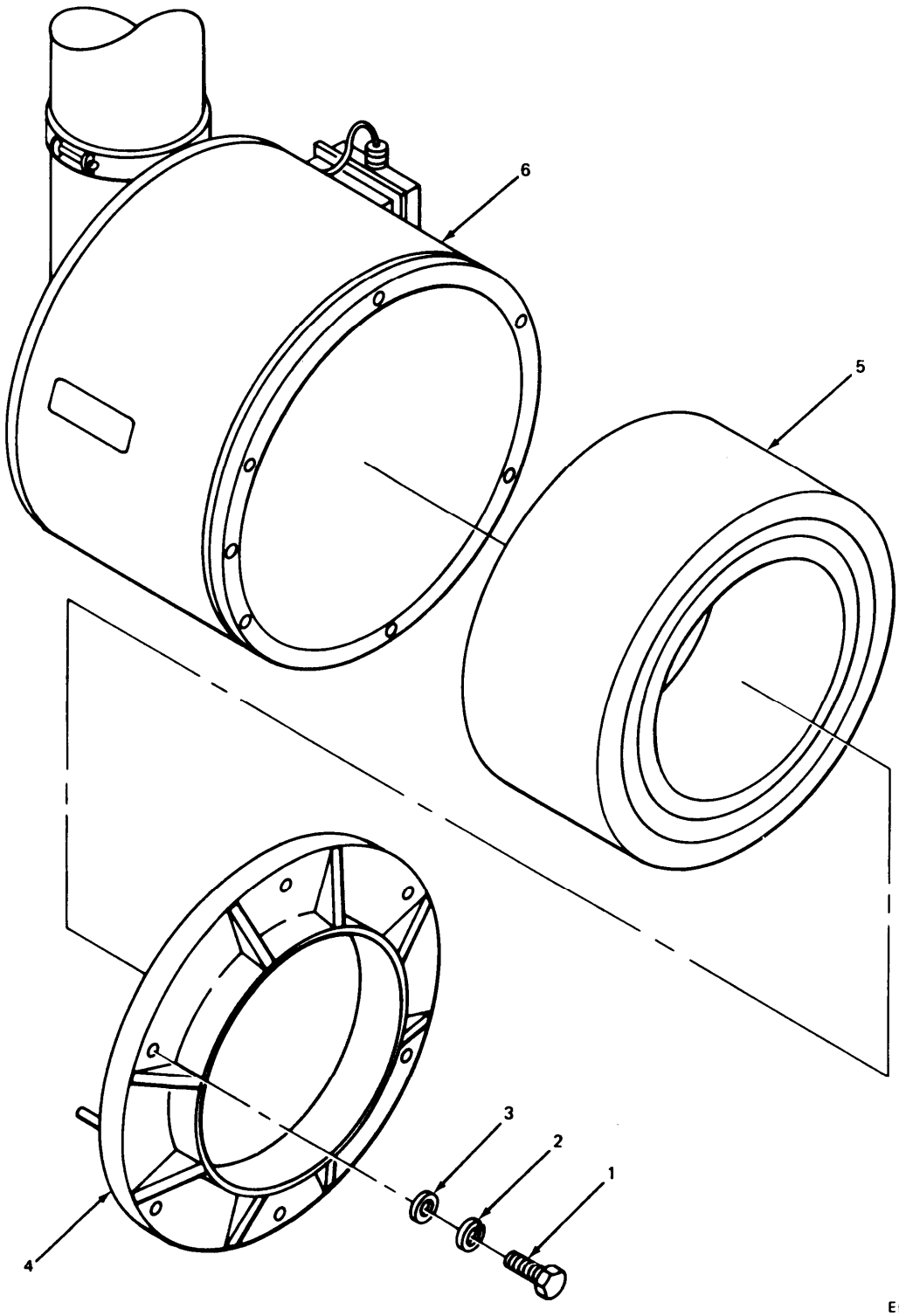
Gas filter
Solvent

Equipment Condition

Contaminate filter.

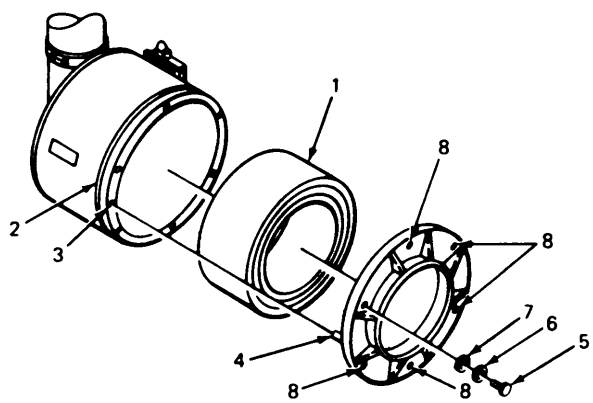
LOCATION	ITEM	ACTION **REMARKS**
REMOVAL		
1. GPFU housing	Screw (1), lock-washer (2) and flat washer (3)	Using 9/16 inch box wrench, remove. **There are six screws. Step 1 Is typical for all six screws.**
2.		Do step 1 for remaining five screws.
3.	Outer cover (4)	Remove.
		WARNING **Observe safety measures per TM 3-220.**
4.	Filter (5)	Remove.
		WARNING Dispose of contaminated filter per TM 10-277
5.	Cover seal (6)	Remove.
		NOTE Clean groove for cover seal with solvent.

4-46. REMOVING/INSTALLING GAS FILTER. (CONT)



4-46. REMOVING/INSTALLING GAS FILTER. (CONT)

LOCATION	ITEM	ACTION / REMARKS
INSTALLATION		
		WARNING Filter seal must be properly seated to prevent bypass of contaminated air.
1. GPFU housing	Filter (1)	Install. **Filter can be installed with either end first.**
		NOTE Apply adhesive in groove for cover seal.
2.	Cover seal (2)	Install. **Make sure cover seal is in groove before replacing cover.**
3. GPFU housing and cover	Guide hole (3) and guide pin (4)	Aline and push in place.
4. GPFU housing	Screw (5), lock-washer (6) and flat washer (7)	Install, hand tighten. **There are six screws. Step 4 is typical for all six screws.**
5.	Screw holes (8)	Do step 4 again.



EL8KE061

4-46. REMOVING/INSTALLING GAS FILTER. (CONT)

LOCATION	ITEM	ACTION **REMARKS**

INSTALLATION (CONT)

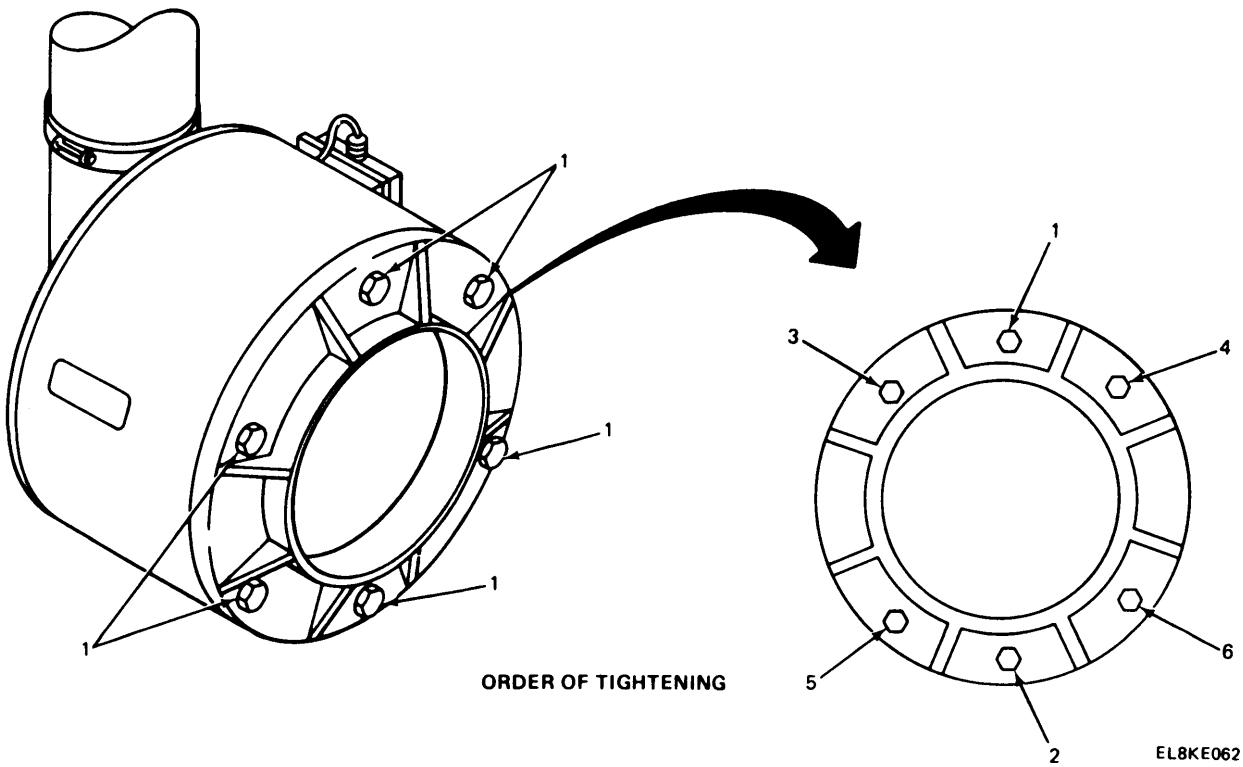
WARNING

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

NOTE

To prevent binding of outer cover against housing rim, screws must be tightened in a criss-crossed manner.

6. GPFU housing	Screws (1)	Using torque wrench, tighten screws 100-125 inch pounds. **Tighten in order shown in illustration.**
7.	Screws (1)	Using torque wrench, tighten screws 180-200 inch pounds. **Tighten in order shown in illustration.**



4-47. REMOVING/INSTALLING FAN AND INLET TEE ASSEMBLY.

This task covers:

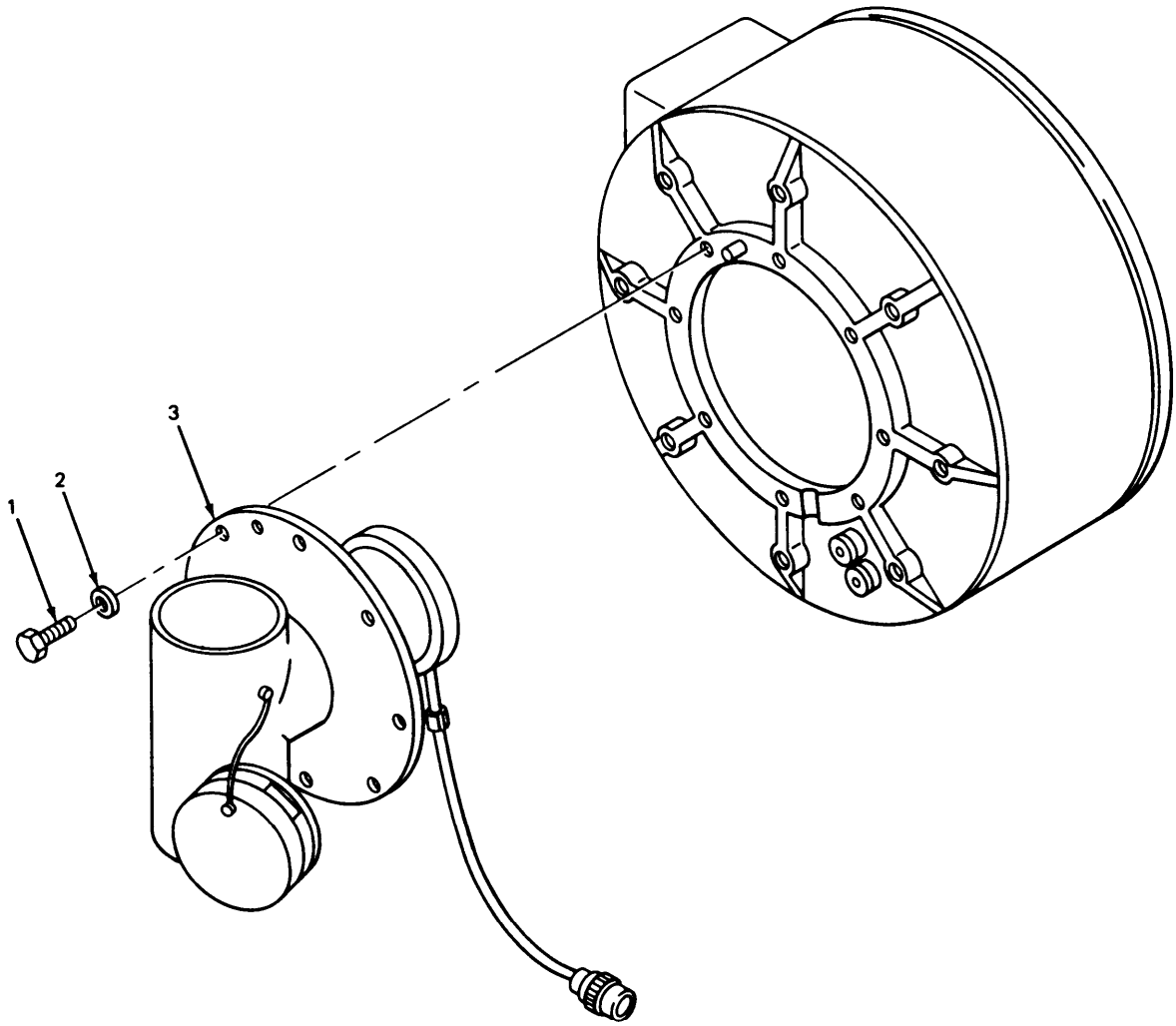
1. Removal
2. Installation

INITIAL SETUP

Tools	Personnel Required
1/2 inch box wrench	One mechanic
Materials/Parts	**Equipment Condition**
None	All power turned off.

LOCATION	ITEM	ACTION / **REMARKS**
REMOVAL		
		NOTE Disconnect fan cable from PDU and air duct hose from fan and inlet tee assembly before starting removal.
1. GPFU housing	Screw (1) and flat washer (2)	Using 1/2 inch box wrench, remove. **There are eight screws. Step 1 is typical for all eight screws.**
2.		Do step 1 for remaining seven screws.
3.	Fan and inlet tee assembly (3)	Remove.
INSTALLATION		
1. GPFU housing	Fan and inlet tee assembly (3)	See paragraph 4-21 for installation.
		NOTE Connect fan cable to PDU and air duct hose to fan inlet tee assembly to complete installation.

4-47. REMOVING/INSTALLING FAN AND INLET TEE ASSEMBLY. (CONT)



EL8KE063

4-46. REMOVING FAN/INLET TEE.

This task covers:

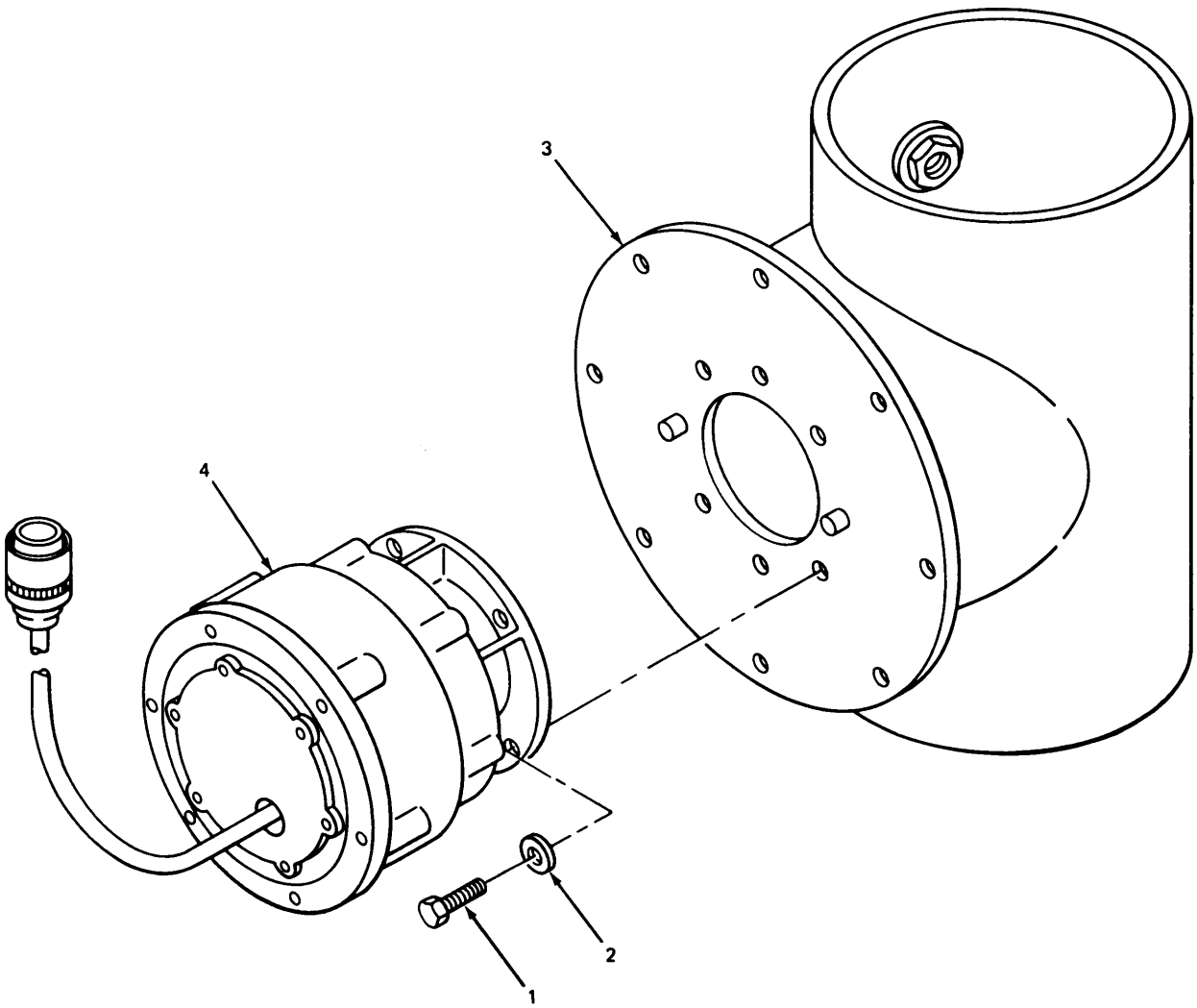
1. Removal of fan
2. Removal of inlet tee

INITIAL SETUP

Tools	Personnel Required
7/16 inch box end wrench	One mechanic
Materials/Parts	**Equipment Condition**
None	Fan and inlet tee assembly removed. See paragraph 4-47.

LOCATION	ITEM	ACTION **REMARKS**
		NOTE The steps given are typical for both.
1. Fan	Screw (1) and flat washer (2)	Using 7/16 inch box wrench, remove. **There are six screws. Step 4 is typical for all six screws.**
2.		Do step 4 for remaining five screws.
3.	Inlet tee (3)	Remove.
4.	Inlet tee (3) and fan (4)	See paragraph 4-20 for assembly. **Place Inlet tee and fan in shelter for storage.**

4-48. REMOVING FAN/INLET TEE. (CONT)



EL8KE064

4-49. REMOVING GPFU CRADLE BRACKET.

This task covers:

Removal

INITIAL SETUP

Tools

1/2 inch box wrench

Materials/Parts

Cloth packing bag

Personnel Required

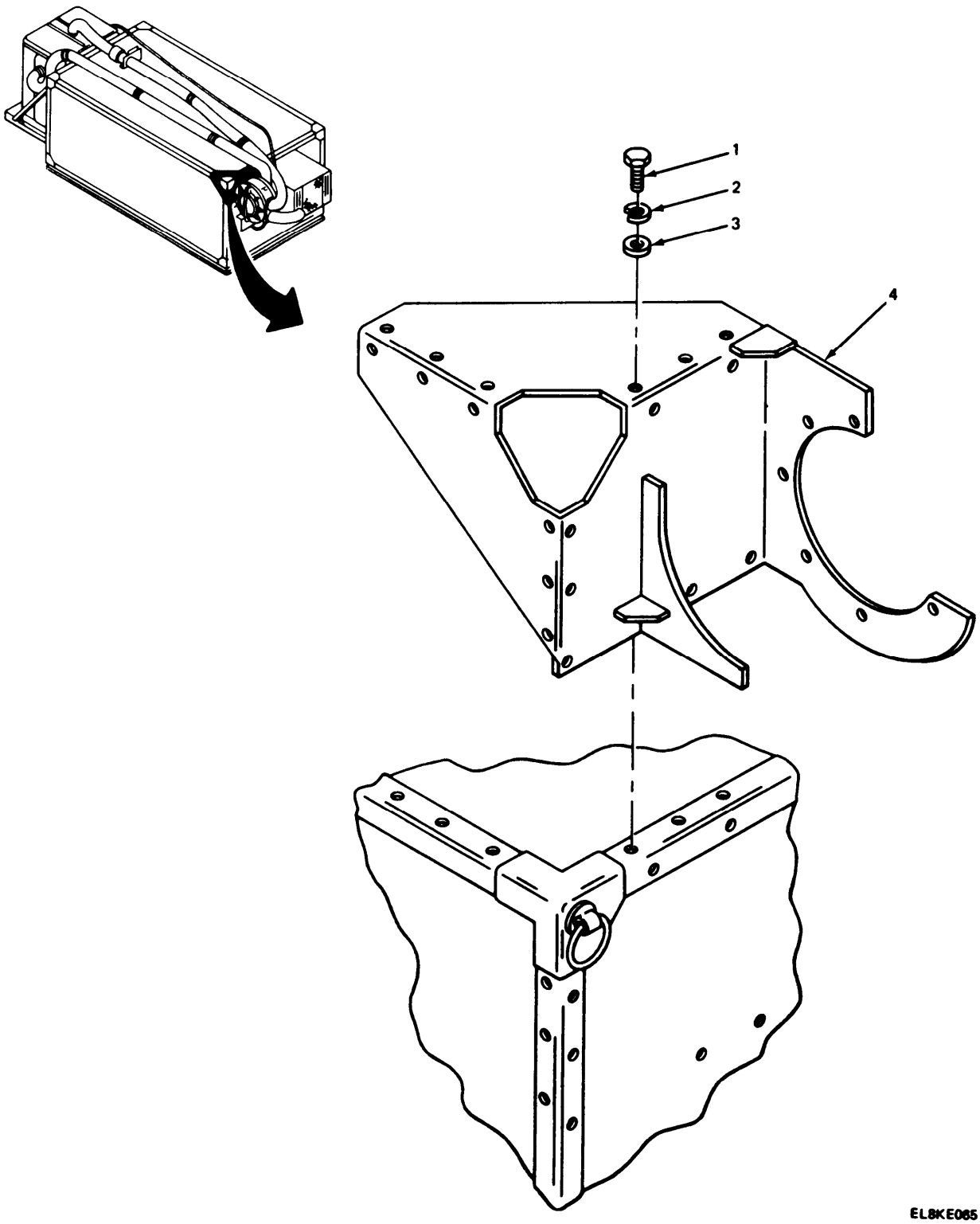
Two mechanic

Equipment Condition

GPFU removed. See paragraph 4-44.

LOCATION	ITEM	ACTION **REMARKS**
1. Upper front curbside corner of shelter	Screw (1), lock-washer (2) and flat washer (3)	Using 1/2 inch box wrench, remove. **There are nineteen screws. Step 1 is typical for all nineteen screws.**
2.		Do step 1 for remaining eighteen screws.
		NOTE Two persons will be needed to lift cradle bracket from shelter.
3.	Cradle bracket (4)	Remove.
4.	Cradle bracket (4)	See paragraph 4-18 for installation. **Place hardware in cloth bag, attach to cradle bracket and store in shelter.**

4-49. REMOVING GPFU CRADLE BRACKET. (CONT)



4-50. REMOVING CABLE C5-19-6693 FROM E/P FEED-THRU BOX AND PDU.

This task covers:

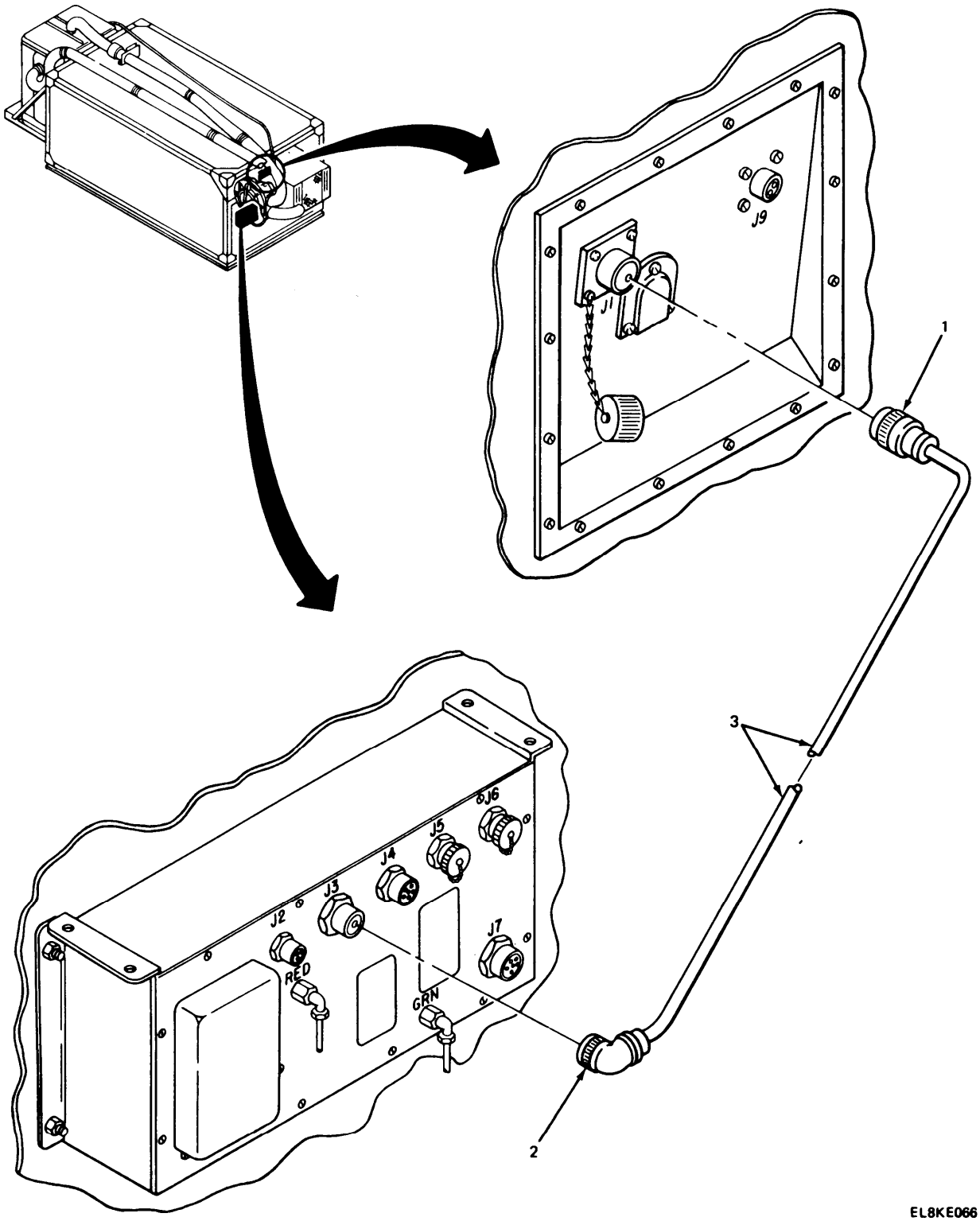
Removal

INITIAL SETUP

Tools	Personnel Required
None	One mechanic
Materials/Parts	**Equipment Condition**
None	All power turned off.

LOCATION	ITEM	ACTION **REMARKS**
1. E/P feed-thru box	Cable end (1)	Disconnect.
2. PDU at J3	Cable end (2)	Disconnect.
3.	Cable (3)	Remove.
4.	Cable (3)	See paragraph 4-17 for installation. **Place in original carton for storage in shelter.**

4-50. REMOVING CABLE C5-19-6693 FROM E/P FEED-THRU BOX AND PDU. (CONT)



4-51. REMOVING CABLE C5-19-6691 FROM E/P FEED-THRU BOX AND PDU.

This task covers:

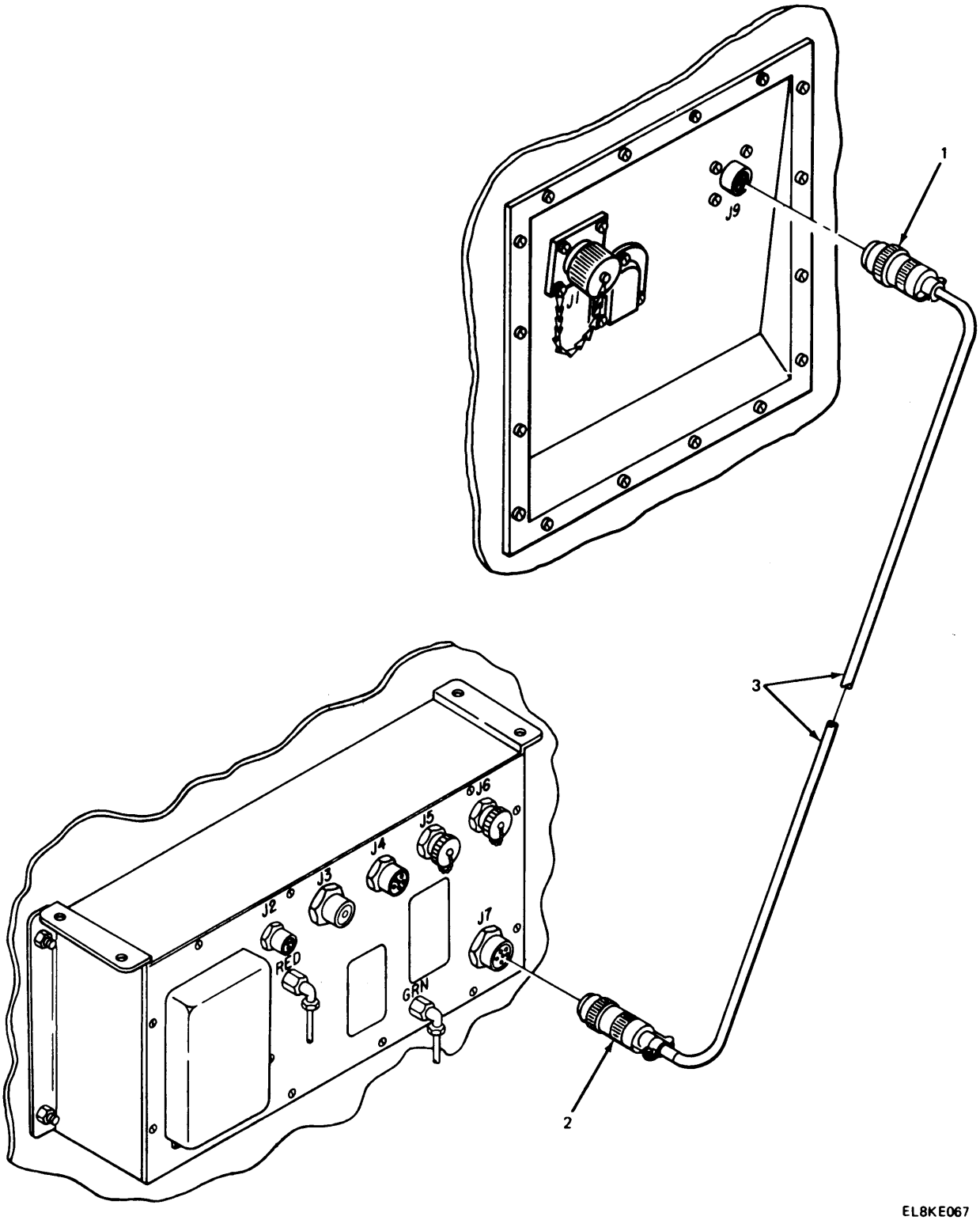
Removal

INITIAL SETUP

Tools	Personnel
None	One mechanic
Materials/Parts	**Equipment Condition**
None	All power turned off.

LOCATION	ITEM	ACTION / **REMARKS**
1. E/P feed-thru box	Cable end (1)	Disconnect.
2. PDU at J7	Cable end (2)	Disconnect.
3.	Cable (3)	Remove.
4.	Cable (3)	See paragraph 4-16 for installation. **Place in original carton for storage in shelter.**

4-51. REMOVING CABLE C5-19-6691 FROM E/P FEED-THRU BOX AND PDU. (CONT)



4-52. REMOVING/INSTALLING POWER DISTRIBUTION UNIT.

This task covers:

1. Removal
2. Installation

INITIAL SETUP

Toots

7/16 inch box wrench

Materials/Parts

None

Personnel Required

One

Equipment Condition

All power turned off and pneumatic tubing and fan cable removed. See paragraph 4-43.

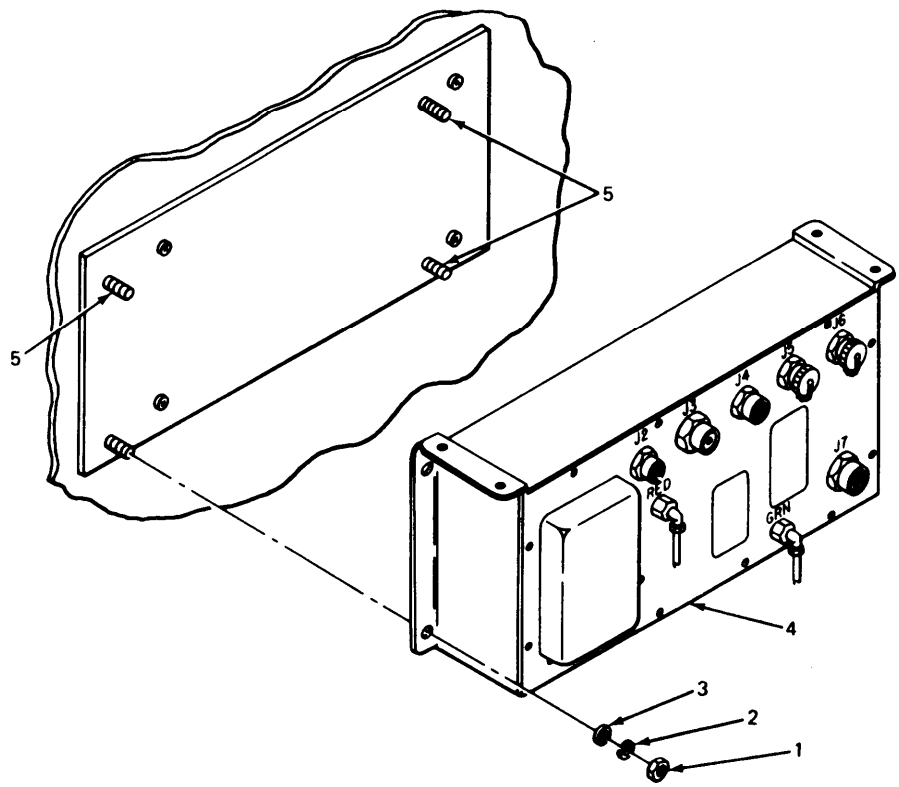
LOCATION	ITEM	ACTION **REMARKS**
REMOVAL		
		NOTE Disconnect all cable ends before beginning removal.
1. Front of shelter, curbside position	Nut (l), lock-washer (2) and flat washer (3)	Using 7/16 inch box wrench, remove. **There are four nuts. Step 1 is typical for all four nuts.**
2.		Do step 1 for remaining three screws.
3.	PDU (4)	Remove.
		NOTE Replace hardware on PDU bracket. See steps 4 and 5.
4. Lower roadside stud	Flat washer (3), lockwasher (2) and nut (1)	Using 7/16 inch box wrench, install, **There are four studs. Step 4 is typical for all four studs.**

4-52. REMOVING/INSTALLING POWER DISTRIBUTION UNIT. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
REMOVAL (CONT)		
5. Mounting plate assembly	Studs (5)	Do step 4 again.
6.	PDU (4)	Place in original carton for storage in shelter.
INSTALLATION		
1.	PDU (4)	See paragraph 4-15 for installation.

NOTE

Connect all cable ends to complete installation.



EL8KE068

4-53. REMOVING/INSTALLING COMPARTMENT CONTROL MODULE.

This task covers:

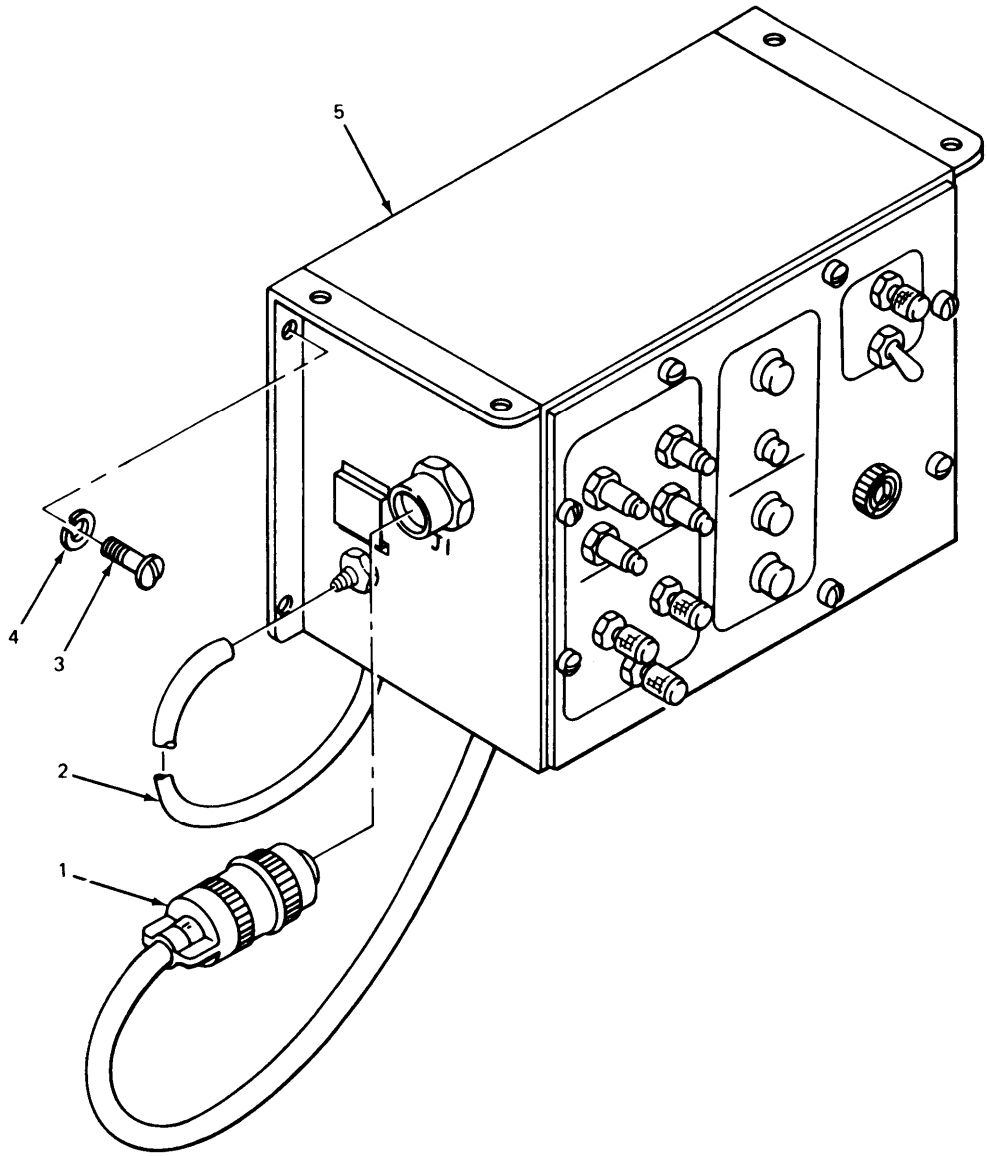
1. Removal
2. Installation

INITIAL SETUP

Tools	Personnel Required
Flat tip screwdriver	One mechanic
Materials/Parts	**Equipment Condition**
Cloth packing bag	All power turned off.

LOCATION	ITEM	ACTION / **REMARKS**
REMOVAL		
1. CCM	Cable end (1)	Disconnect.
2.	Low pressure hose end (2)	Disconnect.
3.	Screw (3) and lockwasher (4)	Using screwdriver, remove. **There are four screws. Step 3 is typical for all four screws.**
4.		Do step 3 for remaining three screws.
5. Box supports	CCM (5)	Remove. **Place hardware in cioth bag, attach to CCM and store in shelter.**

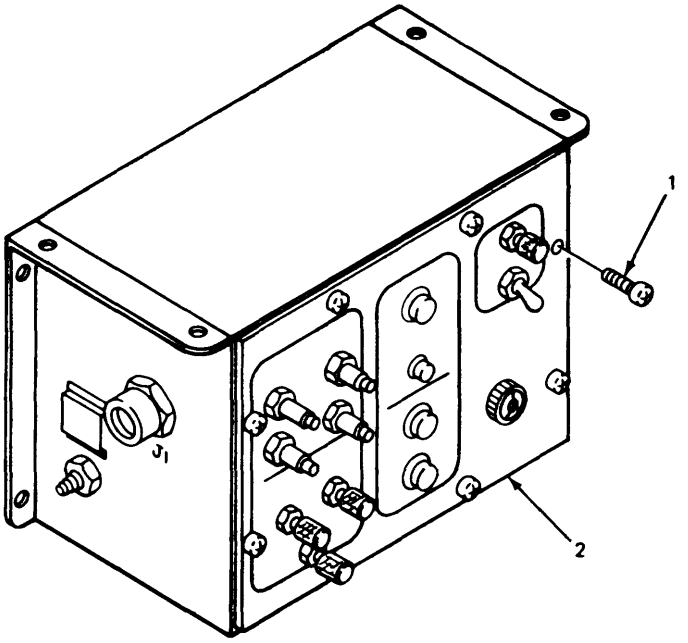
4-53. REMOVING/INSTALLING COMPARTMENT CONTROL MODULE. (CONT)



EL8KE069

4-53. REMOVING/INSTALLING COMPARTMENT CONTROL MODULE. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
INSTALLATION		
1. Front panel of CCM	Screw (1)	Using screwdriver, remove. **There are eight screws. Step 1 is typical for all eight screws.**
2.		Do step 1 for remaining seven screws.
3. CCM	Front panel (2)	Remove.



EL8KE070

4-53. REMOVING/INSTALLING COMPARTMENT CONTROL. (CONT)

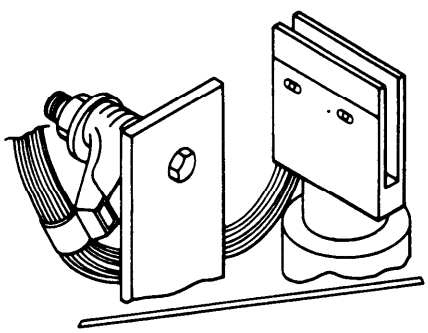
LOCATION	ITEM	ACTION **REMARKS**

INSTALLATION (CONT)

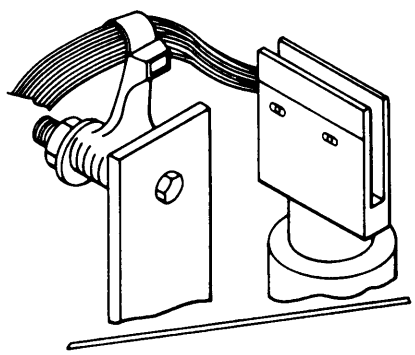
NOTE

Note cable harness routing on back of panel. If cable harness is routed as shown in wrong method of illustration, unbolt and rotate cable harness to location as shown in right method. Reattach cable harness to bracket.

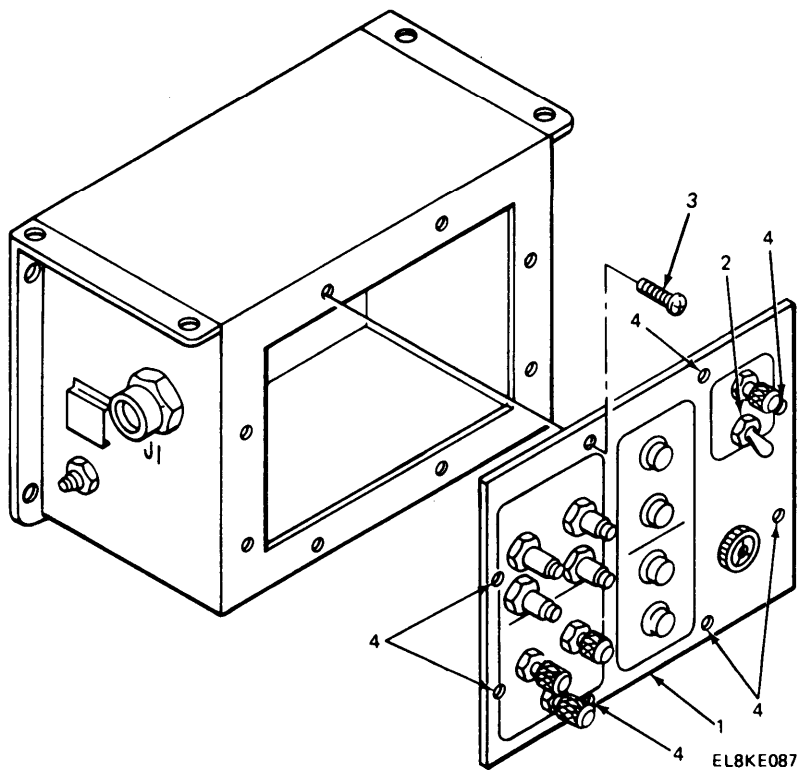
4. CCM	Front panel (1) and power switch (2)	Put front panel in place. **Aline holes. Place front panel so that power switch is in upper curbside comer, (opposite J1).**
5. Front panel	Screw (3)	Using screwdriver, install. **There are eight screws. Step 5 is typical for all eight screws.**
6.	Screw holes (4)	Do step 5 again.



WRONG METHOD

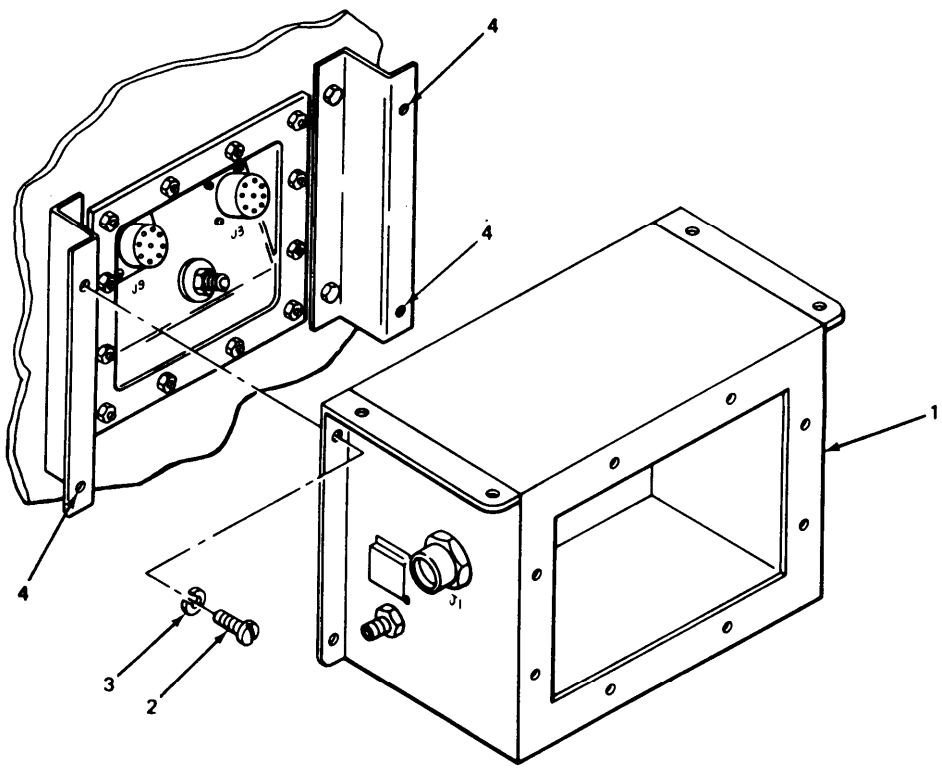


RIGHT METHOD



4-53. REMOVING/INSTALLING COMPARTMENT CONTROL MODULE. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
INSTALLATION (CONT)		
7. CCM supports	CCM (1)	Put in place. **Aline holes. Place CCM so that J1 terminal faces roadside.**
8. CCM	Screw (2) and lockwasher (2)	Install, hand tighten. **There are four screws. Step 8 is typical for all four screws.**
9.	Screw holes (4)	Do step 8 again.
10.	Screw (2)	Using screwdriver, tighten. **There are four screws. Step 10 is typical for all four screws.**
11.		Do step 10 for remaining three screws.



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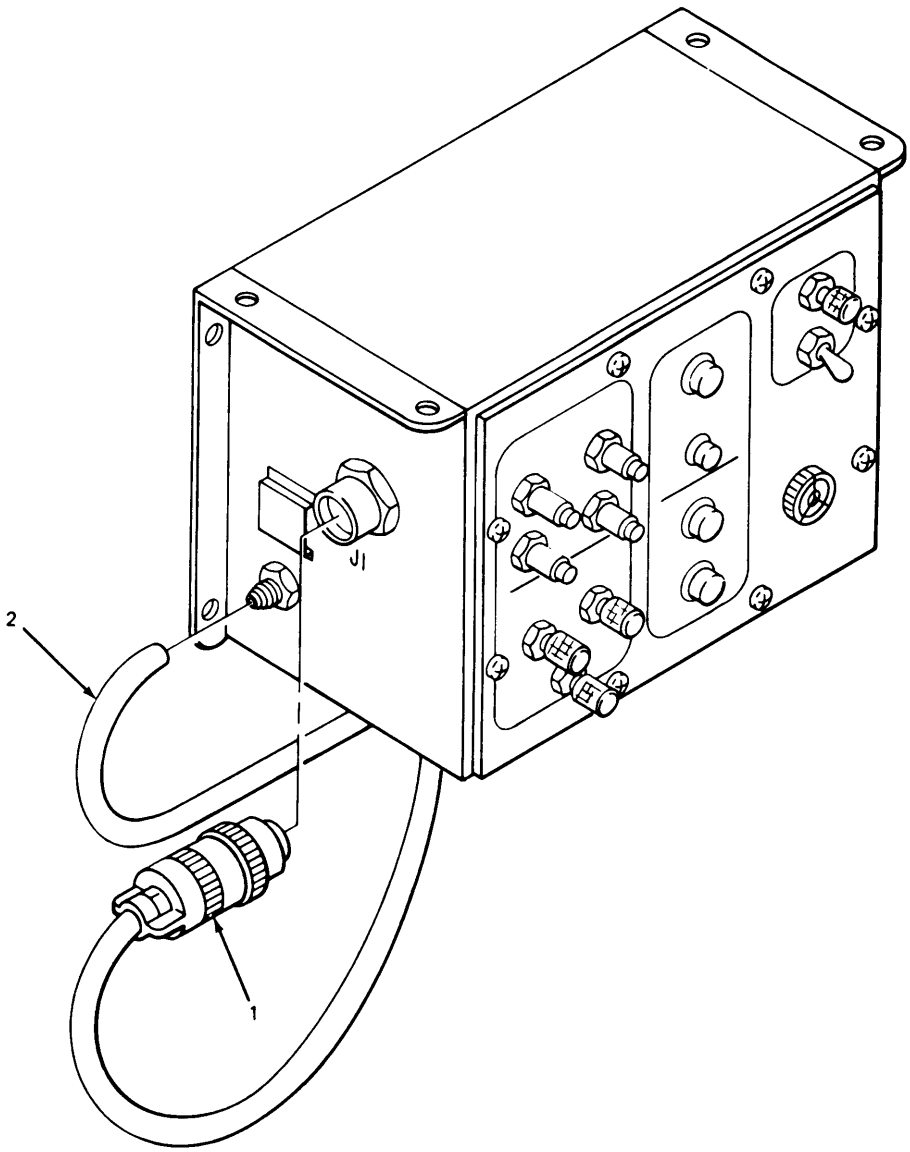
4-53. REMOVING/INSTALLING COMPARTMENT CONTROL MODULE. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
INSTALLATION (CONT)		
12. CCM at J1	Cable and P1 (1)	Connect.
13. CCM pneumatic fitting	Low pressure hose end (2)	Connect.



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4-54. REMOVING/INSTALLING LOW PRESSURE HOSE FROM E/P FEED-THRU BOX AND CCM.

This task covers:

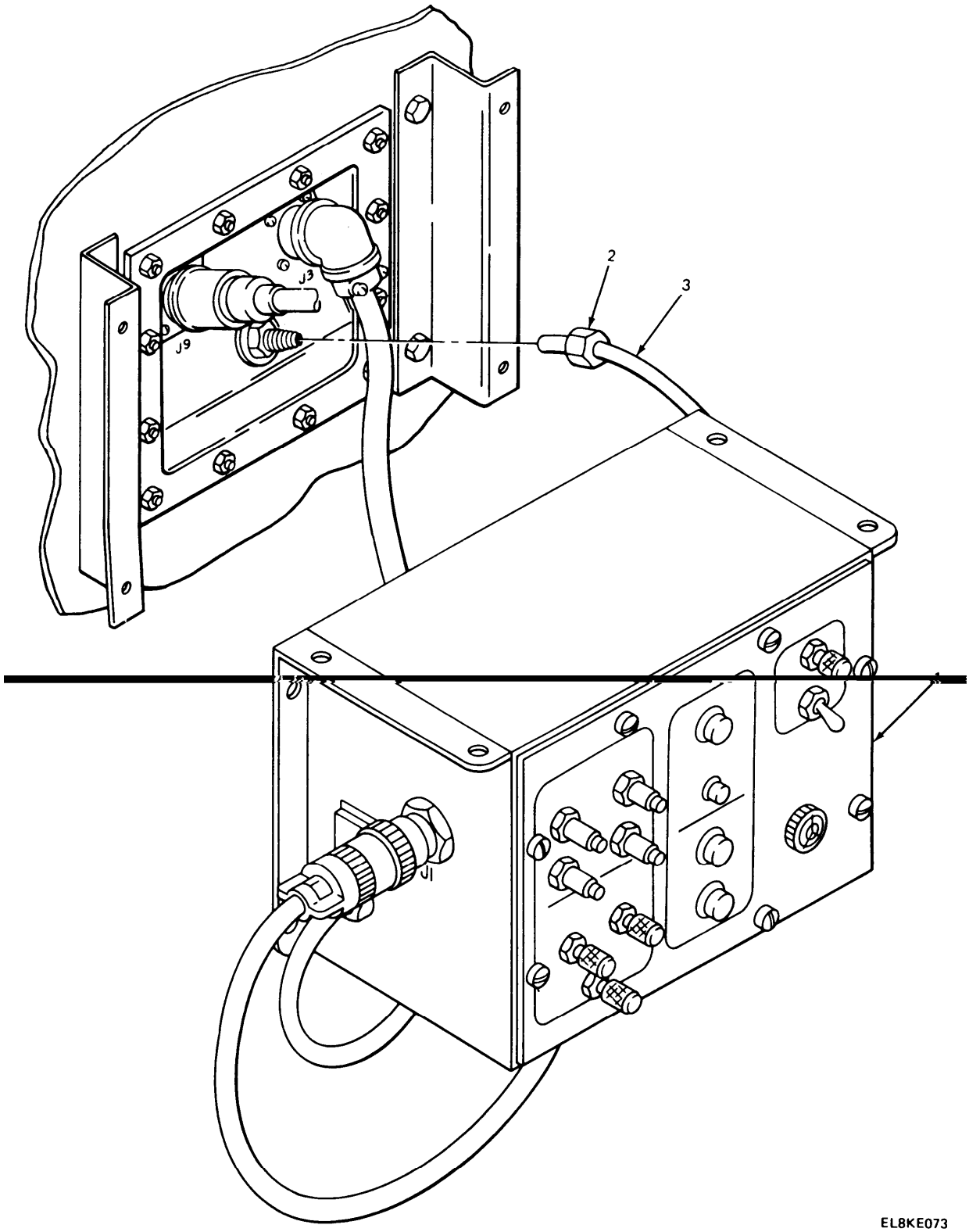
1. Removal
2. Installation

INITIAL SETUP

Tools	Personnel Required
518 inch box wrench	One mechanic
Materials/Parts	**Equipment Condition**
None	All power turned off.

LOCATION	ITEM	ACTION / **REMARKS**
REMOVAL		
t. CCM support	CCM (1)	See paragraph 4-53 for removal.
2. Interior side of E/P feed-thru box	Coupling (2)	Using 5/8 inch box wrench, remove.
3.	Low pressure hose (3)	Remove. **Place hose in shelter for storage.**
INSTALLATION		
1. Adapter on E/P feed-thru box, interior	Coupling (2)	Using 5/8 inch box wrench, connect.
2. CCM support	CCM (1)	See paragraph 4-14 for installation.

4-54. REMOVING/INSTALLING LOW PRESSURE HOSE FROM E/P FEED-THRU BOX AND CCM. (CONT)



4-55. REMOVING/INSTALLING CABLE C5-19-6693 FROM E/P FEED-THRU BOX AND CCM.

This task covers:

1. Removal
2. Installation

INITIAL SETUP

Tools

None

Materials/parts

None

Personnel Required

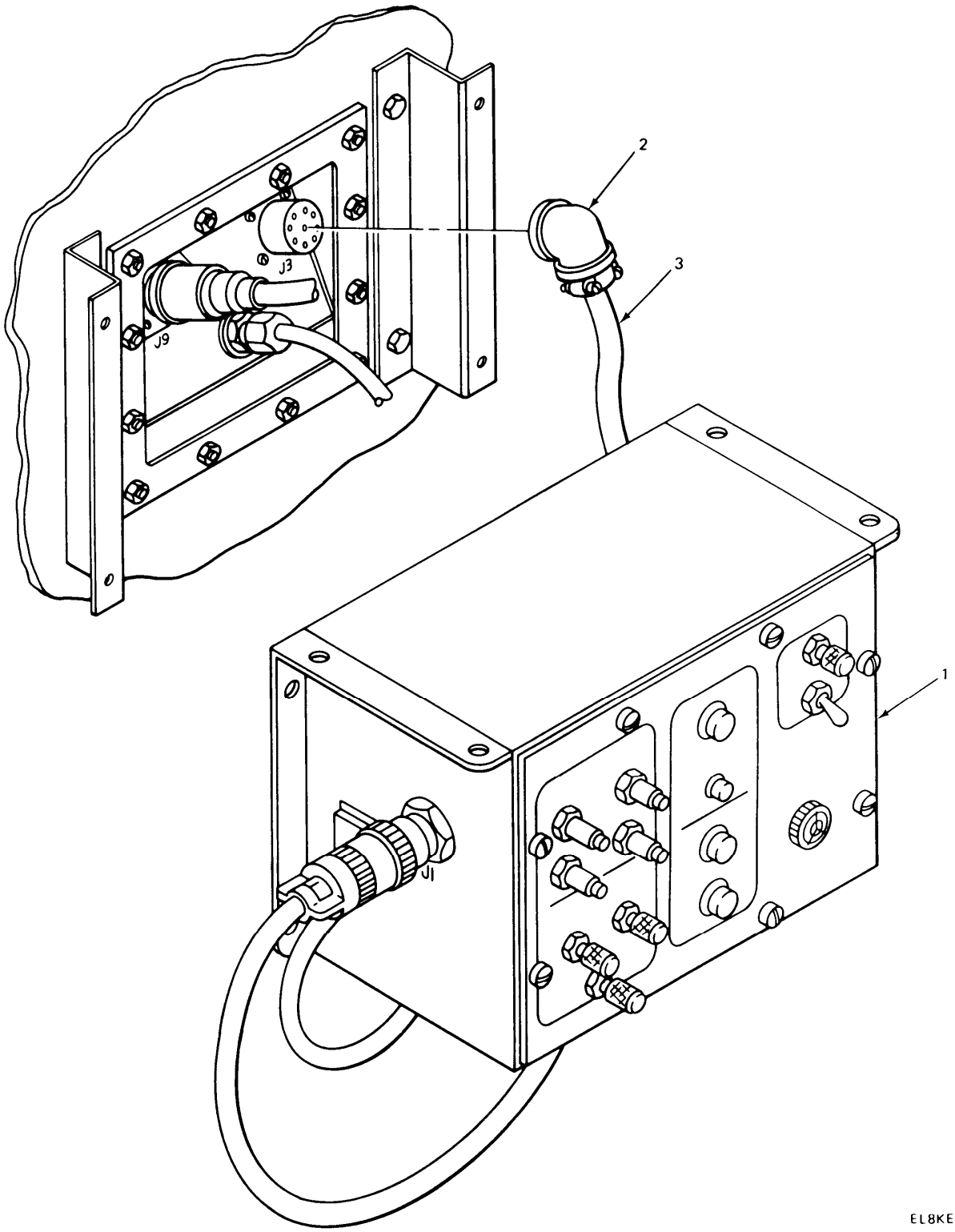
One mechanic

Equipment Condition

All power turned off.

LOCATION	ITEM	ACTION **REMARKS**
REMOVAL		
1. CCM support	CCM (1)	See paragraph 4-53 for removal.
2. Interior side of E/P feed-thru box at J3	Cable end (2)	Disconnect.
3.	Cable (3)	Remove. **Place cable in shelter for storage.**
INSTALLATION		
1. Interior side of E/P feed-thru box at J3	Cable end (2)	Connect.
2. CCM support	CCM (1)	See paragraph 4-14 for installation.

4-55. REMOVING/INSTALLING C5-19-6693 FROM E/P FEED-THRU BOX AND CCM. (CONT)



4-56. REMOVING/INSTALLING FEED-THRU CONNECTOR TBF16S-8PS.

This task covers:

1. Removal
2. Installation

INITIAL SETUP

Tools

Flat tip screwdriver
1/4 inch box end wrench

Materials/Parts

Cloth packing bag

Personnel Required

Two mechanics

Equipment Condition

All power turned off and CCM removed. See paragraph 4-53.

LOCATION	ITEM	ACTION	REMARKS

REMOVAL

NOTE

Disconnect cable end from exterior terminai of feed-thru connector before beginning this task.

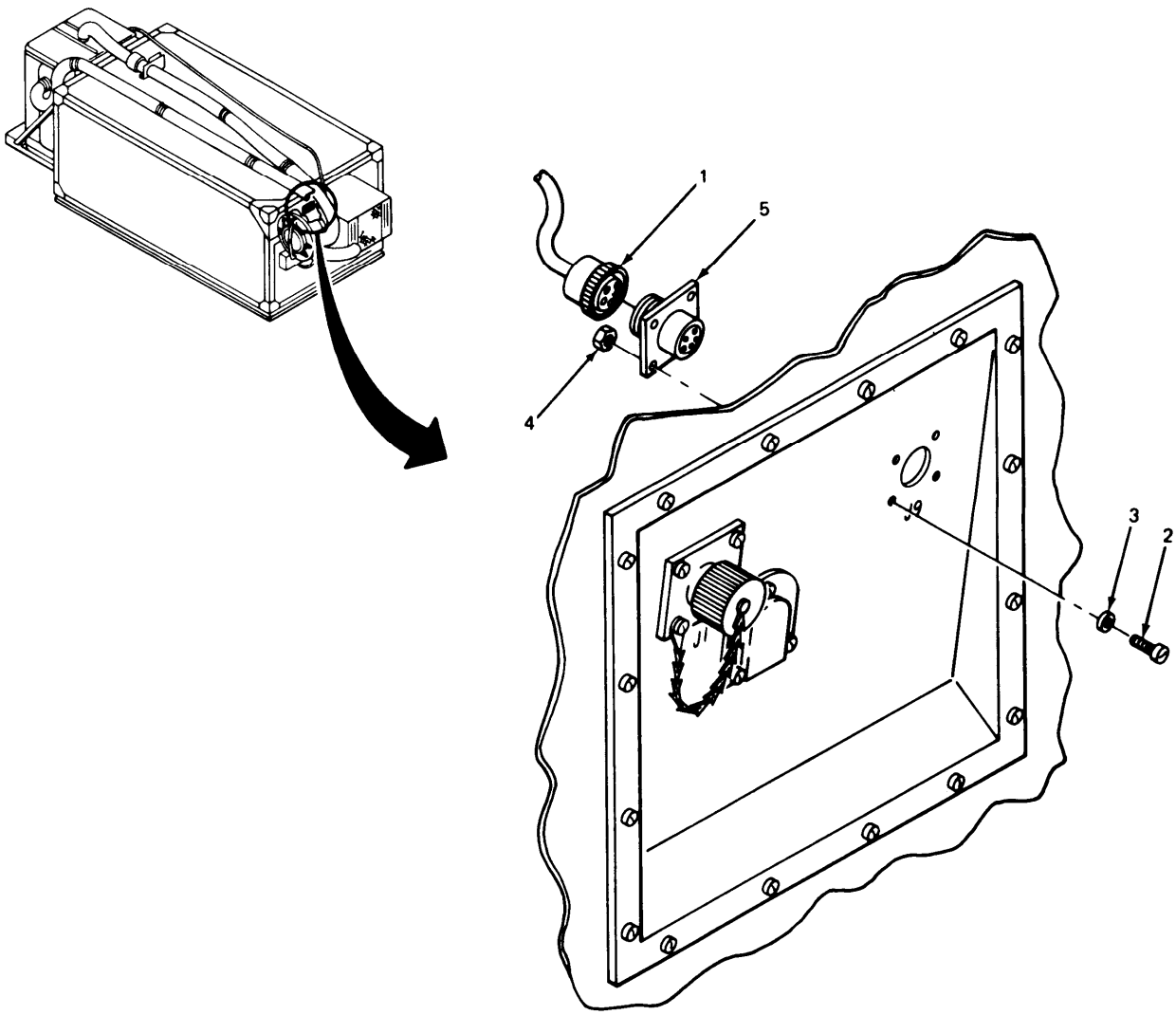
1. E/P feed-thru plate	Cable end (1)	Disconnect.	
2.	Screw (2), flat washer (3) and nut (4)	Using screwdriver and 1/4 inch box wrench, remove.	**There are four screws. Step 2 is typical for all four screws.**
3.		Do step 2 for remaining three screws.	
4.	Feed-thru connectors (5)	Remove.	**Place hardware and feed-thru connector in cloth bag for storage in shelter.**

4-56. REMOVING/INSTALLING FEED-THRU CONNECTOR TBF16S-8PS. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
INSTALLATION		
E/P feed-thru plate	Feed-thru connector (5)	See paragraph 4-13 for installation.

NOTE

Connect cable end to exterior terminal of feed-thru connector to complete installation.



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4-57. REMOVING/INSTALLING FEED-THRU ADAPTER AND COVER.

This task covers:

1. Removal
2. Installation

INITIAL SETUP

Tools

5/8 inch open end wrench
9/16 inch open end wrench
5/16 inch box wrench
Flat tip screwdriver

Materials/Parts

Cloth packing bag

Personnel Required

Two mechanics

Equipment Condition

All power turned off and CCM removed. See paragraph 4-53.

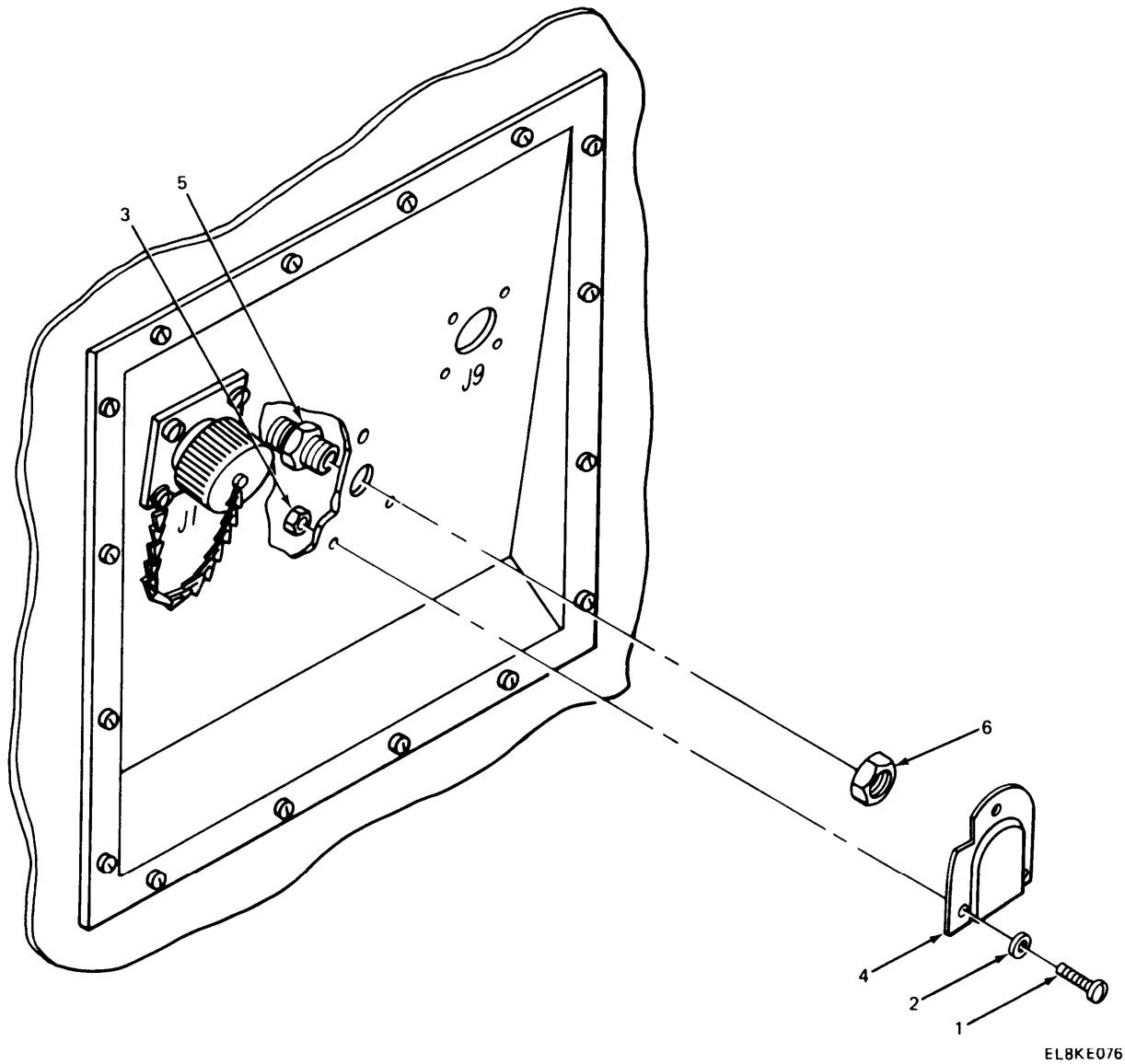
LOCATION	ITEM	ACTION	REMARKS
REMOVAL			
		NOTE Disconnect low pressure hose from interior terminal of adapter before beginning this task.	
1. E/P feed-thru plate	Screw (l), flat washer (2) and nut (3)	Using screwdriver and 5/16 inch box wrench, remove.	**There are three screws. Step 1 is typical for all three screws.**
2.		Do step 1 for remaining screws.	
3.	Cover (4)	Remove.	
4.	Adapter (5) and brass nut (6)	Using 9/16 inch and 5/8 inch open end wrenches, remove.	**Place hardware, adapter and cover in cloth bag for storage in shelter.**

4-57. REMOVING/INSTALLING FEED-THRU ADAPTER AND COVER. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
INSTALLATION		
E/P feed-thru plate	Adapter (5) and cover (4)	See paragraph 4-12 for installation.

NOTE

Connect low pressure hose to interior terminal of adapter to complete installation.



4-58. REMOVING/INSTALLING FEED-THRU CONNECTOR MS3119E20-16PS.

This task covers:

1. Removal
2. Installation

INITIAL SETUP

Tools

Flat tip screwdriver
1/4 inch box wrench

Materials/Parts

Cloth packing bag

Personnel Required

Two mechanics

Equipment Condition

All power turned off and CCM removed. See paragraph 4-53.

LOCATION	ITEM	ACTION **REMARKS**

REMOVAL

NOTE

Disconnect cabie ends from interior and exterior terminais of feed-thru connector before beginning this task.

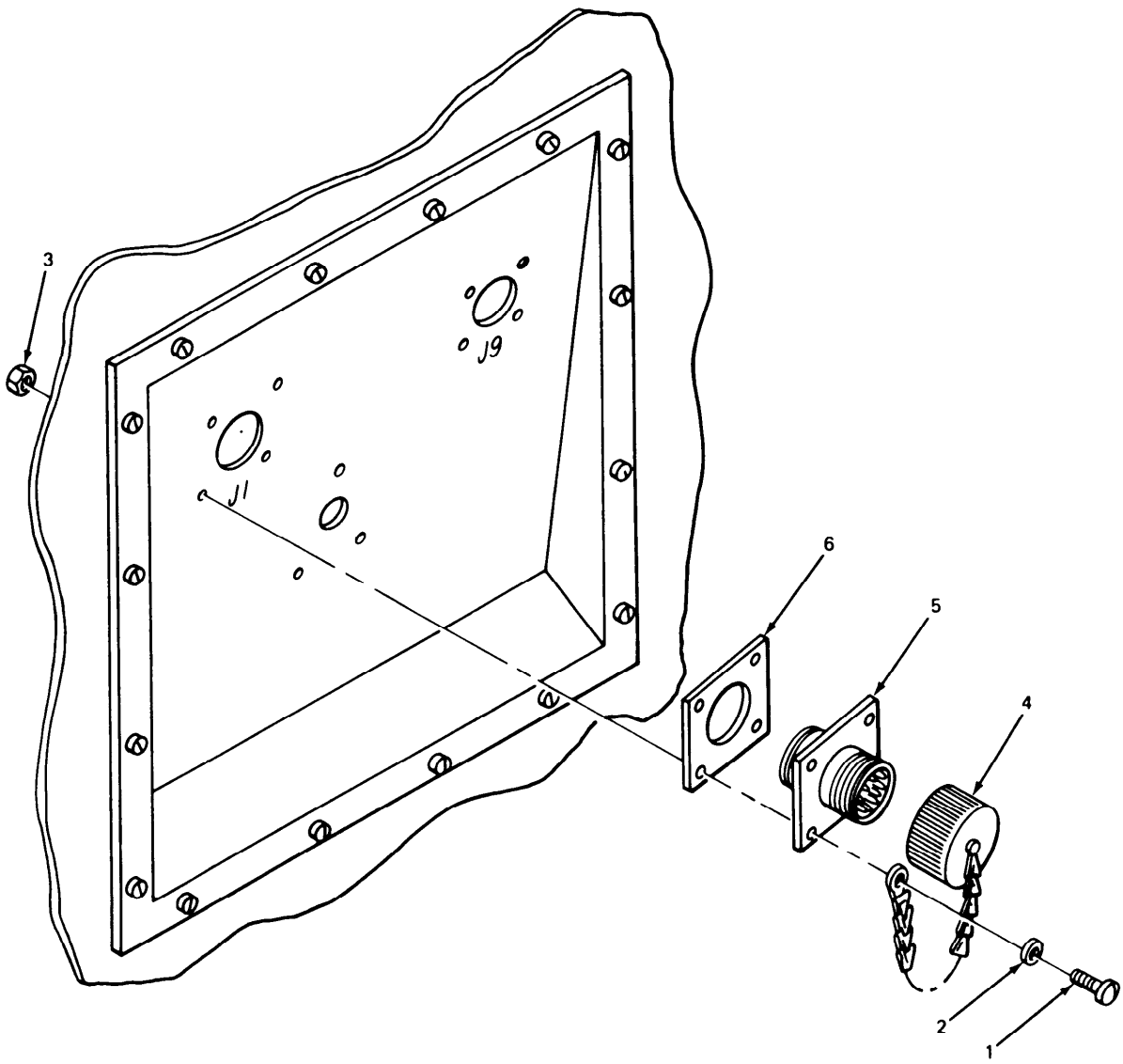
1. E/P feed-thru plate	Screw (1), fiat washer (2) and nut (3)	Using screwdriver and 1/4 inch box wrench, remove. **There are four screws. Step 1 is typical for all four screws.**
2.		Do step 1 for remaining three screws.
3.	Protective cover (4), feed-thru connector (5) and gasket (6)	Remove. **Place hardware, protective cover, feed-thru connector and gasket in cloth bag for storage in shelter.**

4-58. REMOVING/INSTALLING FEED-THRU CONNECTOR MS3119E20-16PS. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
INSTALLATION		
1. E/P feed-thru plate	Feed-thru connector (5)	See paragraph 4-11 for installation.

NOTE

Connect cable ends to interior and exterior terminals of feed-thru connector to complete installation.



4-59. REMOVING/INSTALLING PE INTERFACE FROM INTERFACE BRACKET.

This task covers:

1. Removal
2. Installation

INITIAL SETUP

Tools

Flat tip screwdriver

Materials/Parts

None

Personnel Required

Two mechanics

Equipment Condition

PE entrance on platform and
PE outlet air duct cover installed.

LOCATION	ITEM	ACTION	REMARKS

REMOVAL

CAUTION

Perform decontamination procedures before striking the protective entrance if contaminated.

NOTE

Disconnect cable ends and air duct hoses from PE before starting removal.

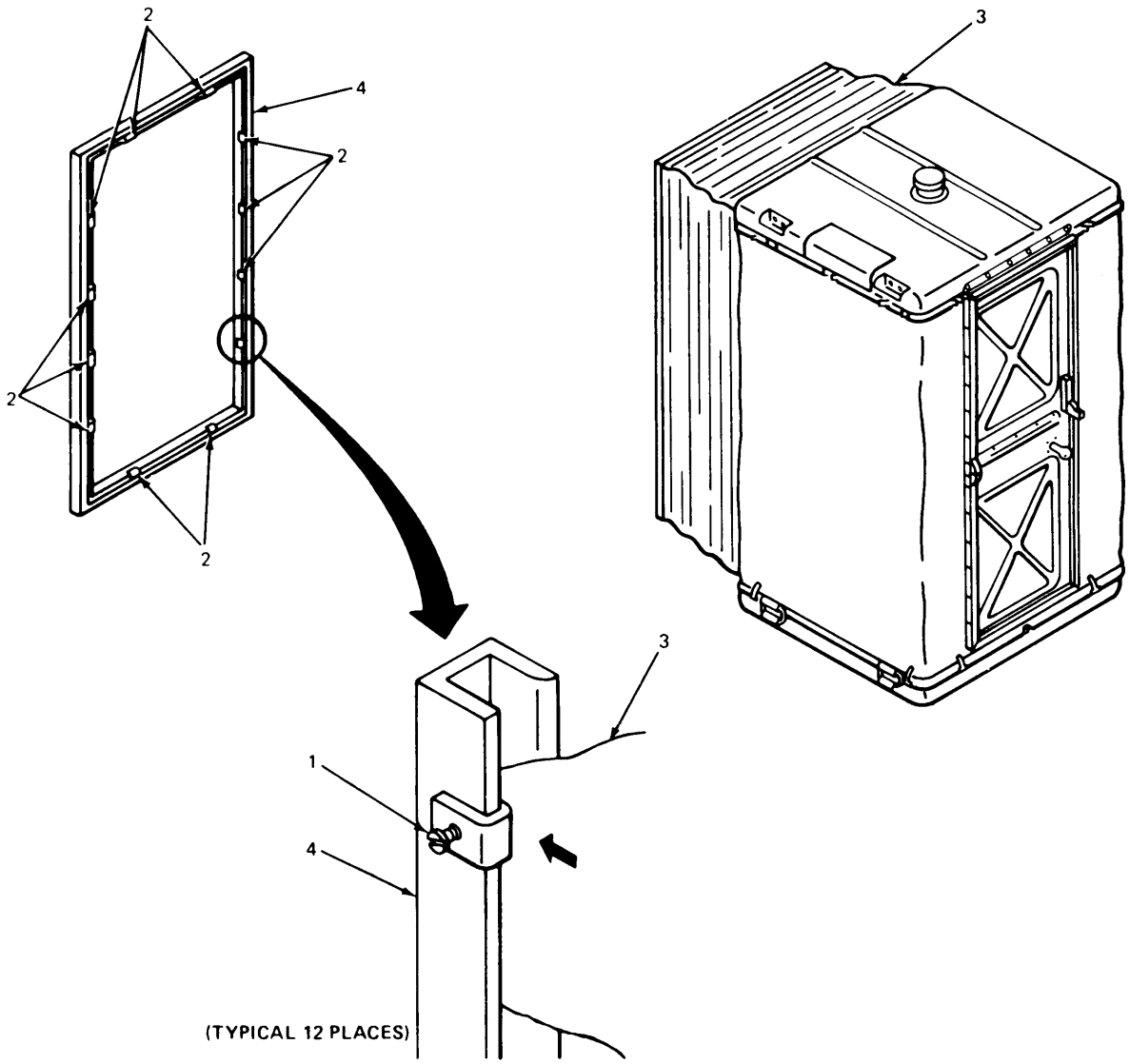
1. Bracket channel	Clamping screw (1)	Using screwdriver, loosen.	**Do not remove screws from bracket channel. There are twelve screws. Step 1 is typical for all twelve screws.**
2.	Clamping screws (2)	Do step 1 again.	
3.	Interface (3) and bracket channel (4)	Pull interface out of bracket channel.	**Push interface into PE flush with wall. Place interface bracket channel in shelter for storage.**

4-59. REMOVING/INSTALLING PE INTERFACE FROM INTERFACE BRACKET. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
INSTALLATION		
1. Interface bracket	Interface (3) and bracket channel (4)	See paragraph 4-9 for installation.

NOTE

Connect cable ends and air duct hoses to PE to complete installation.



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4-60. REMOVING/INSTALLING PE AIRFLOW VALVE AND SILENCER ASSEMBLY.

This task covers:

1. Removal
2. Installation

INITIAL SETUP

Tools

7/16 inch socket
3/8 inch ratchet wrench
6 inch extension
1/4 inch box wrench
11/32 inch box wrench

Materials/Parts

None

Personnel Required

One mechanic

Equipment Condition

All power turned off.

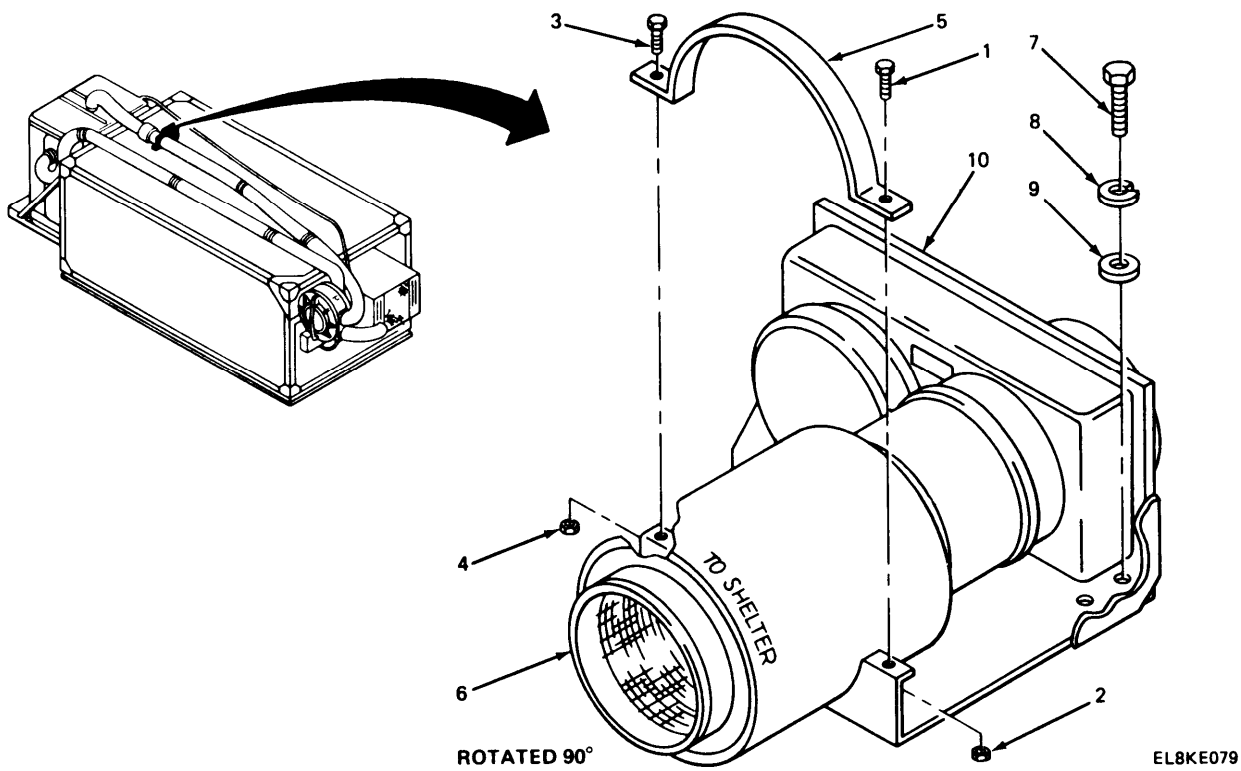
LOCATION	ITEM	ACTION / REMARKS
REMOVAL		
		NOTE Disconnect cable end and air duct hoses from assembly before removal.
1. Airflow valve mounting plate	Screw (1), nut (2), screw (3) and nut (4)	Using 1/4 inch and 11/32 inch box wrenches, remove.
2.	Strap (5) and siiencer (6)	Remove.
3.	Screw (1) and nut (2)	Using 1/4 inch and 11/32 inch box wrench, install.
4.	Screw (3) and nut (4)	Using 1/4 inch and 11/32 inch box wrench, install.
5.	Screw (7), lock-washer (8) and fiat washer (9)	Using 9/16 inch socket, ratchet wrench, and extension. remove. **There are tour screws. Step a is typical for all four screws.**
6.		Do step 5 for remaining three screws.
7. On shelter roof	Assembly (10)	Remove.

4-60. REMOVING/INSTALLING PE AIRFLOW VALVE AND SILENCER ASSEMBLY. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
REMOVAL (CONT)		
8. Shelter roof	Screw (7), lock-washer (8) and flat washer (9)	Using 7/16 inch socket, ratchet wrench, and extension, install. **There are four screws. Step 8 is typical for all four screws.**
9.		Do step 8 for remaining three screws.
10.	Assembly (10), strap (5) and silencer (6)	Place assembly, strap, and silencer in shelter for storage.
INSTALLATION		
Airflow valve mounting plate	Assembly (10), strap (5) and silencer (6)	See paragraph 4-8 for installation.

NOTE

Connect cable end and air duct hoses to assembly to complete installation.



4-61. PE STRIKING PROCEDURE.

This task covers:

Striking

INITIAL SETUP

Tools	Personnel Required
None	Four
Materials/Parts	**Equipment Condition**
None	PE removed from platform.

LOCATION	ITEM	ACTION **REMARKS**

NOTE

Remove any articles from inside PE that do not belong and clean floor area.

PE door must remain open until afterstep 7.

CAUTION

Top shell must be supported from interface side of PE to prevent rear support from closing when detent pins are removed.

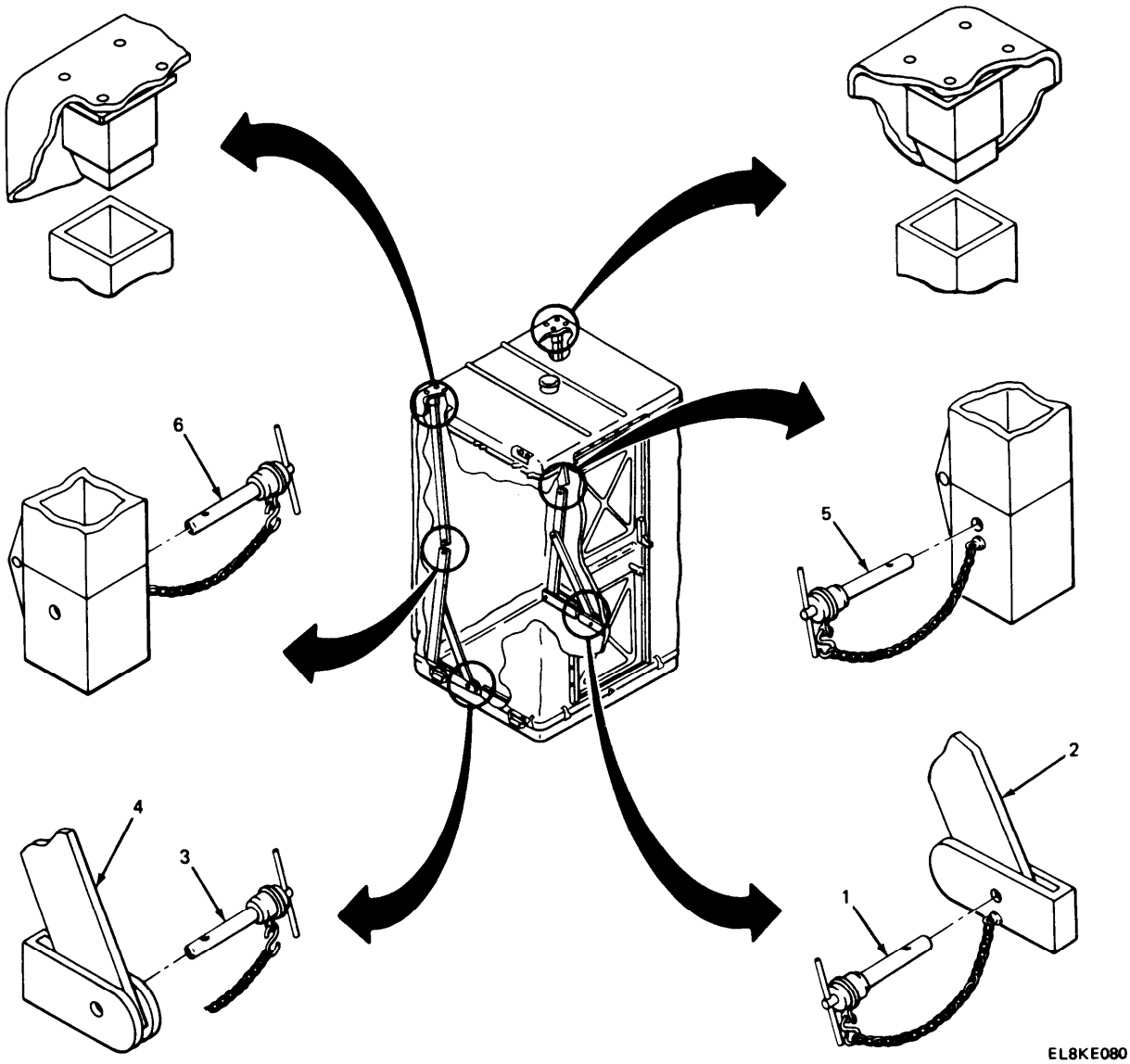
1.	Inside PE	Detent pin (1)	Remove.
2.		Curbside brace (2)	Remove from bracket.
3.		Detent pin (3)	Remove.
4.		Roadside brace (4)	Remove from bracket.
5.		Curbside detent pin (5)	Remove.
6.		Roadside detent pin (6)	Remove.

4-61. PE STRIKING PROCEDURE. (CONT)

LOCATION	ITEM	ACTION **REMARKS**

NOTE

Fold rear support and brace to floor. Guide folding joint into holding bracket, secure with straps.

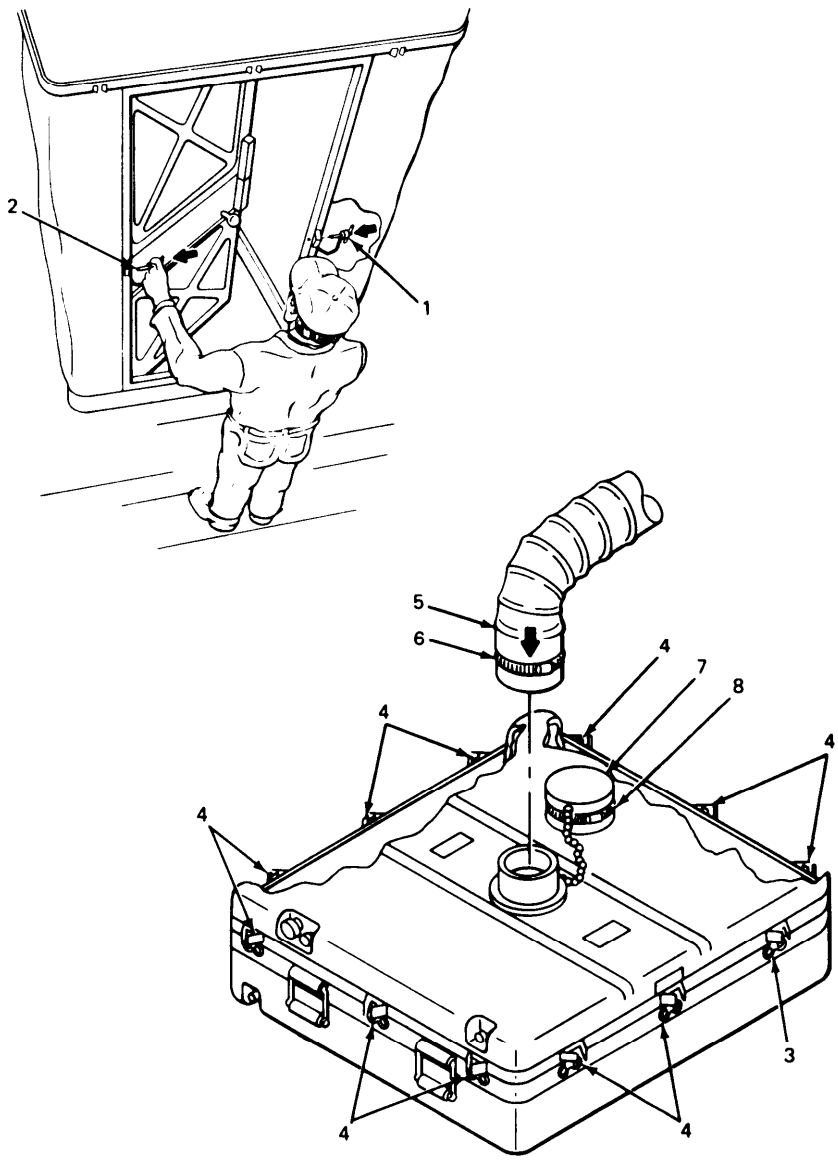


4-61. PE STRIKING PROCEDURE. (CONT)

LOCATION	ITEM	ACTION / **REMARKS**
7. Door frame	Curbside detent pin (1)	From inside PE, remove.
		NOTE Close and latch PE door at this time. Support top shell from door side.
8.	Roadside detent pin (2)	From outside PE, remove.
		NOTE Support from opposite sides. Lower top shell slowly and keep it level. As top shell is lowered, the interface edge must form an accordion fold. Keep interface away from folding door while lowering interface side to two feet above bottom shell. Continue to lower door side until top and bottom shells touch each other. Tuck all fabric on interface side into bottom shell, then continue to lower top shell until both shells are touching completely. Tuck in capped outlet so it lies flat and clears folded support assemblies. **CAUTION** All fabric must be clear of shell mating surfaces.
9. Top shell	Latch (3)	Fasten. **There are twelve latches. Step 9 is typical for all twelve latches.**
10.	Latches (4)	Do step 9 again.
11. PE inlet	Air duct hose (5) and hose clamp (6)	Using screwdriver, loosen clamp and remove. **Store in holder for future use.**

4-61. PE STRIKING PROCEDURE. (CONT)

LOCATION	ITEM	ACTION	REMARKS
12. PE inlet	Air duct cover (7) and hose clamp (8)	Using screwdriver, install.	**See paragraph 4-7 for erecting procedure.**



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4-62. REMOVING PE INTERFACE BRACKET ASSEMBLY.

This task covers:

Removal

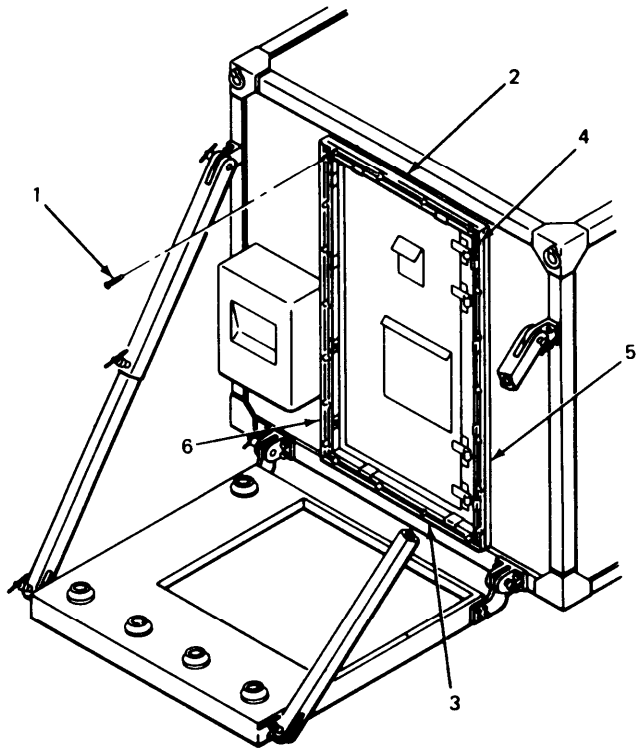
INITIAL SETUP

Tools	Personnel Required
Cross tip screwdriver	One mechanic
Materials/Parts	Equipment Condition
None	PE removed. See paragraph 4-61.

LOCATION	ITEM	ACTION / **REMARKS**
1. Extrusion	Screw (1)	Using cross tip screwdriver, remove. **There are four screws. Step 1 is typical for all four screws.**
2.		Do step 1 for remaining three screws.
3. Rear of shelter	Extrusion (2)	Remove. **There are two 41 1/4 inch extrusions. Steps 1 thru 3 are typical for both extrusions.**
4.	Extrusion (3)	Do steps 1 thru 3 again.
5. Extrusion	Screw (4)	Using flat tip screwdriver, remove. **There are seven screws. Step 5 is typical for all seven screws.**
6.		Do step 5 again for remaining six screws.

4-62. REMOVING PE INTERFACE BRACKET ASSEMBLY. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
7. Rear of shelter	Extrusion (5)	Remove. **There are two 71 inch extrusions. Steps 5 thru 7 are typical for both extrusions.**
8.	Extrusion (6)	Do steps 5 thru 7 again.
9.	Extrusions (2), (3), (5), and (6)	See paragraph 4-6 for installation. **Place extrusions in shelter for storage.**



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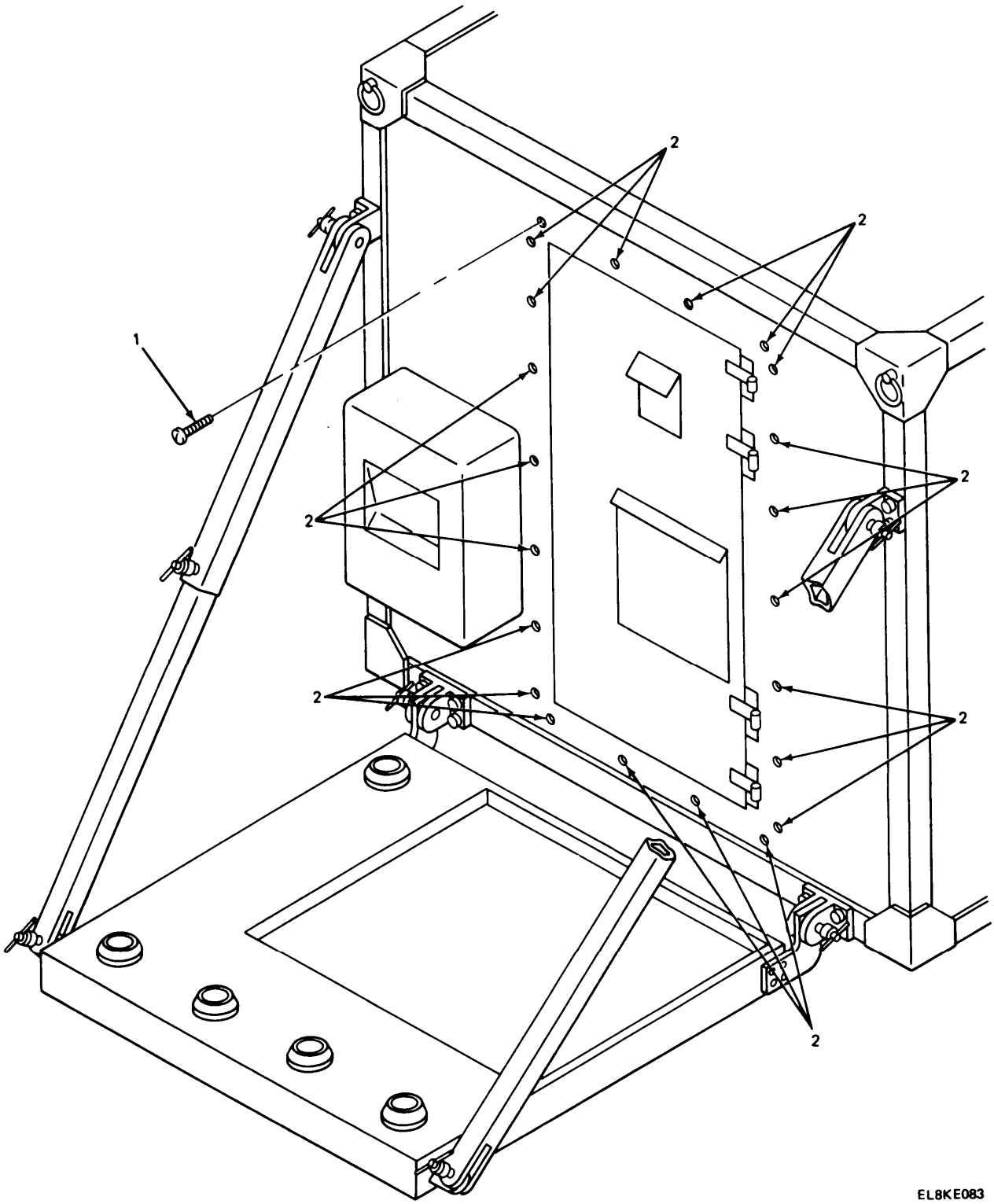
4-62. REMOVING PE INTERFACE BRACKET ASSEMBLY, (CONT)

LOCATION	ITEM	ACTION **REMARKS**
		NOTE Screws will be reinstalled in shelter for future use. See steps 10 and 11.
10. Shelter door	Screw (1)	Using cross tip screwdriver, install. **There are twenty-two screws. Stop 9 is typical for all twenty-two screws.**
11.	Screw holes (2)	Do step 9 again.

4-62. REMOVING PE INTERFACE BRACKET ASSEMBLY. (CONT)



4-63. REMOVING PE PLATFORM.

This task covers:

Removal

INITIAL SETUP

Tools

3/16 inch hex wrench

Materials/Parts

None

Personnel Required

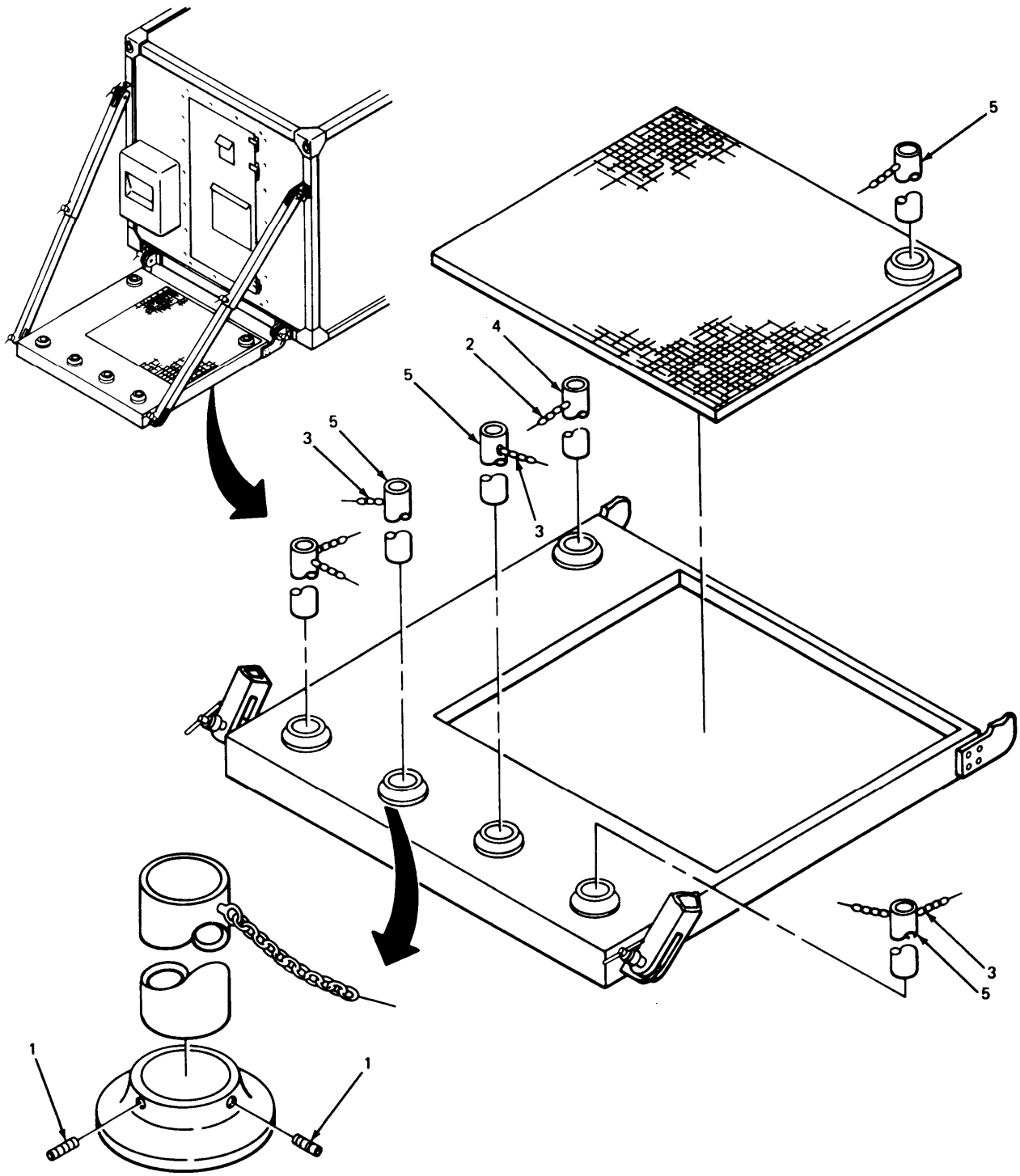
Three mechanics

Equipment Condition

PE removed. See paragraph 4-61.

LOCATION	ITEM	ACTION **REMARKS**
1. Utility chain pipe flange	Screw (1)	Using 3/16 inch hex wrench, loosen. **There are twelve acrews. Step 1 is typical for all twelve screws.**
2.		Do step 1 again for remaining eleven screws.
3. PE platform	Utility chain (2)	Remove. **There are three chains, four if protective entrance is not being used. Step 3 is typical for ail chains.**
4.	Utility chains (3)	Do step 3 again.
5.	Pipe (4)	Remove. **There are five pipes, six if protective entrance is not being used. Step 5 is typical for all pipes.**
6.	Pipes (5)	Do step 5 again.

4-63. REMOVING PE PLATFORM. (CONT)

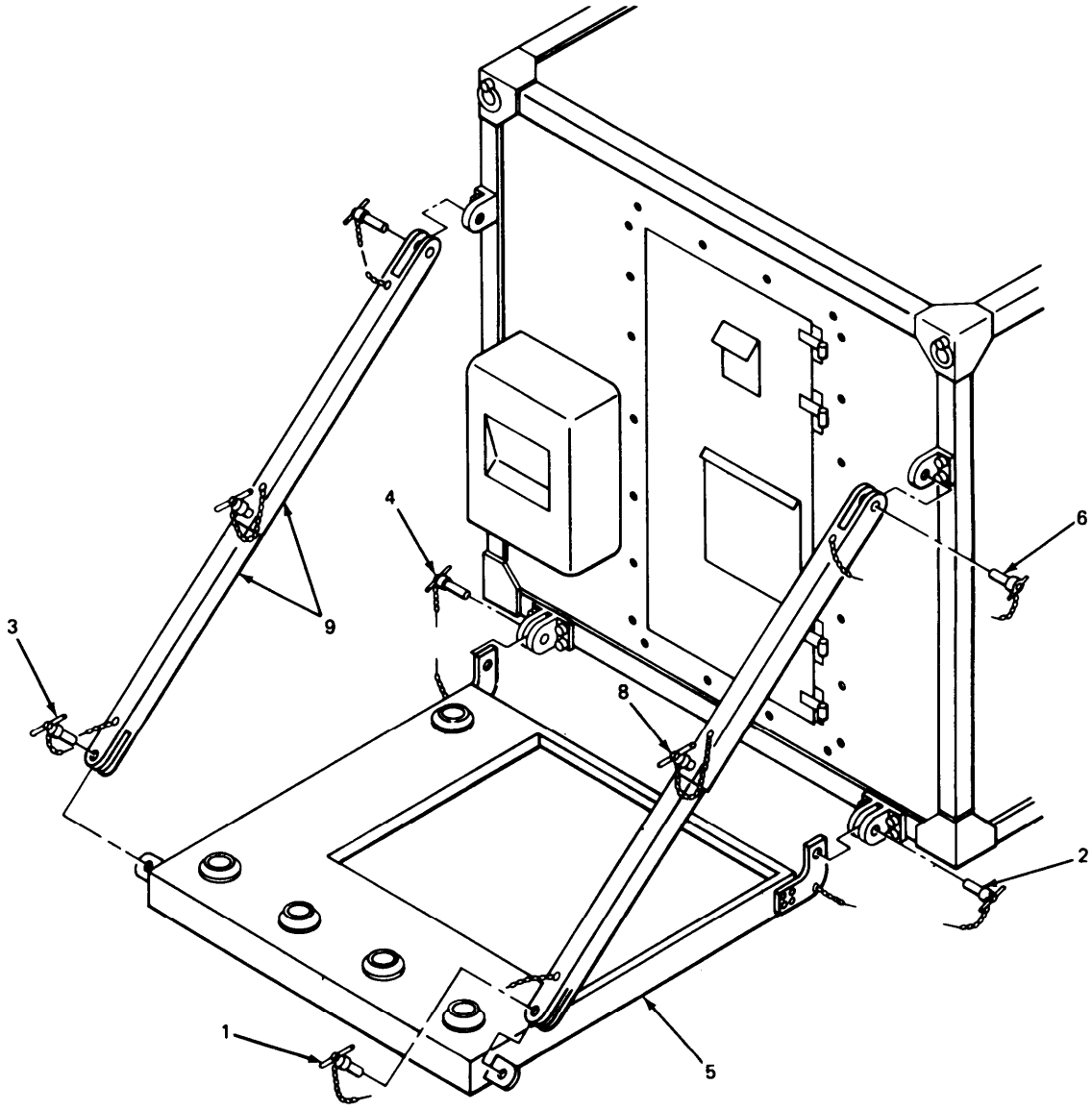


4-63. REMOVING PE PLATFORM. (CONT)

	LOCATION	ITEM	ACTION / **REMARKS**
			NOTE Three persons must hold platform up while fourth person removes pins.
7.	Curbside platform bracket	Pin (1)	Remove.
8.	Curbside lower wall bracket	Pin (2)	Remove.
9.	Roadside platform bracket	Pin (3)	Remove.
10.	Roadside lower wall bracket	Pin (4)	Remove.
11.	Rear of sheiter	PE platform (5)	Remove.
12.	Curbside upper arm bracket	Pin (6)	Remove.
13.	Curbside of platform	Curbside tube assembly (7)	Remove.
14.	Curbside tube assembly	Pin (8)	Remove.
15.	Curbside of platform	Curbside tube assembly (7)	Contract.
16.	Curbside tube assembly	Pin (8)	Install. **There are two tube assemblies. Steps 13 thru 17 are typical for both.**
17.	Roadside of platform	Roadside tube assembly (9)	Do steps 13 thru 17 again.

4-63. REMOVING PE PLATFORM. (CONT)

LOCATION	ITEM	ACTION **REMARKS**
18. Rear of shelter	PE platform (5)	See paragraph 4-5 for installation. **Place all items in wooden crate for storage.**



Section VIII PREPARATION FOR STORAGE AND SHIPMENT

Refer to SB 38-100 for presenation, packaging, packing, and marking materials, supplies, and equipment used by the Army.

CHAPTER 5

DIRECT SUPPORT MAINTENANCE

There are no direct or general support maintenance instructions for this manual.

APPENDIX A

REFERENCES

A-1. SCOPE.

The following publications contain information applicable to the installation of the Modular Collective Protection Equipment (MCPE) in Tacfire Display and Computer Shelters (S-280).

A-2. PAMPHLETS.

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

Report of Packaging and Handling Deficiencies . . . . . AR 700-58

A-3. SUPPLY BULLETINS.

Preservation, Packaging, Packing and Marking Materials, Supplies, and Equipment Used by the Army . . . . . SB 38-100

Federal Supply Code for Manufacturers; United States and Canada-Code to Name (Cataloging Handbook H4-2) . . . . . SB 708-42

A-4. TECHNICAL BULLETINS.

Field Instructions for Painting and Preserving Electronics Command Equipment, Including Camouflage Pattern Painting of Electrical Equipment Shelters . . . . . TB 43-0118

A.5. TECHNICAL MANUALS.

Chemical, Biological, and Radiological (CBR) Decontamination . . . . . TM 3-220

Collective Protection Equipment, Fire Direction System Artillery, (TACFIRE) AN/GSG-10(V) . . . . . TM 3-4240-284-20&P

Protective Clothing Chemical Operations . . . . . TM 10-277

The Army Maintenance Management System (TAMMS) . . . . . TM 38-750

Destruction of Chemical Weapons and Defense Equipment to Prevent Enemy Use . . . . . TM 43-0002-31

Painting Instructions For Field Use . . . . . TM 43-0139

Administrative Storage of Equipment . . . . . TM 740-90-1

APPENDIX B

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

B-1. General

This appendix provides a summary of the maintenance operations for the equipment. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

B-2. Maintenance Function

Maintenance functions will be limited to and defined as follows:

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

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

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

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

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

f . Calibrate. To determine and cause corrections to be made or to be 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, module (component or assembly) in a manner to allow the proper functioning of the equipment or system.

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

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

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

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

B-3. Column Entries

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

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

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

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

C - Operator/Crew

O - Organizational

F - Direct Support

H - General Support

D - Depot

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

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

B-4. Tool and Test Equipment Requirements (Sect. Ill)

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

b. *Maintenance Category.* The codes in this column indicate the maintenance category allocated the tool or test equipment.

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

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

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

B-5. Remarks (Sect. IV)

a. *Reference Code.* This code refers to the appropriate item in section II, column 6.

b. *Remarks.* This column provides the required explanatory information necessary to clarify items appearing in section Il.

Section II MAINTENANCE ALLOCATION CHART FOR MCPE

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	T	(5) TOOLS AND EQPT	(6) REMARKS
00	M10 Protective Entrance	Inspect	0.2						
		Test		0.2					
		Install	0.3						
		Replace		0.5					
		Repair		0.3				1	
01	Protective Entrance Control Module	Test			0.5			4,5,6,8 3,10,11	
		Replace		0.4				1	
		Repair		0.1	4.0			2	
02	M56 Gas-Particulate Filter	Inspect	0.2						
		Test		0.5				4	
		Replace		0.3				1	
		Repair		1.0				1,3	
0201	Main Fan	Test			0.5			4	
		Replace		0.8				1	
		Repair			4.0			2,12,13 14	
0202	Airflow Valve	Test			0.3			4	
		Replace		0.3				1	
		Repair		0.5	2.0			2	
03	Power Distribution Unit	Replace		0.2				1	
		Repair			0.1			2	
0301	Power Distribution Panel	Test			0.5			4,5,6,7, 1,10,11	
		Repair		0.1	2.0			2	

Section II MAINTENANCE ALLOCATION CHART FOR MCPE (CONT)

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQPT	(6) REMARKS
04	Compartment Control Module	Test			1.0			4,5,6,8, 9,10,11	
		Replace		0.2				1	
		Repair		0.1	4.0			2	
05	M262 Instal-lation Kit	Test		0.3				4	
		Inspect	0.5						
		Install	0.7						
		Repair	0.1	0.7					
06	Airflow Valve and Silencer	Test		0.2				4	
		Install	0.1						
		Repair		1.0					
0601	Airflow Valve	Test			0.3			4	
		Replace		0.3				1	
		Repair		0.5	2.0			2	

Section III TOOL AND TEST EQUIPMENT REQUIREMENTS FOR MCPE

TOOLS 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-N2-6
2	F	Tool Kit, Electronic Equipment	5180-00-610-8177	SC 5180-91-CL-RO-7
3	O	Wrench, Torque	5120-00-247-2536	
4	O	Multimeter	6625-00-999-7465	AN/ USM223
5	F	Power Supply, Direct Current	6130-00-408-4962 (or equivalent)	
6	F	Gage, Differential, Dial Indicating, 0-6 in. (H20)	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)	

GLOSSARY

A collection of words or terms and their definitions are given in this section.

Word or Term	Definition
Contaminated	Not clean.
Contract	To make smaller.
Expand	To make larger.
Extend	To make longer.
Exterior	Outside.
Install	To put in place.
Interior	Inside.
Terminal	A device attached to the end of a wire or cable or to an electrical apparatus for convenience in making corrections.

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Stateside, N.J. 07703

DATE SENT
10 July 1975

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

BE EXACT PIN-POINT WHERE IT IS				IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:
PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO	
2-25	2-28			Recommend that the installation antenna alignment procedure be changed throughout to specify a 2^{o} IFF antenna lag rather than 1^{o}. REASON: Experience has shown that with only a 1^{o} lag, the antenna servo system is too sensitive to wind gusting in excess of 25 knots, and has a tendency to rapidly accelerate and decelerate as it hunts, causing strain to the drive train. Hunting is minimized by adjusting the lag to 2^{o} without degradation of operation.
3-10	3-3		3-1	Item 5, Function column. Change "2 db" to "3db." REASON: The adjustment procedure the the TRANS POWER FAULT indicator calls for a 3 db (500 watts) adjustment to light the TRANS POWER FAULT indicator.
5-6	5-8			Add new step f.1 to read, "Replace cover plate removed in step e.1, above." REASON: To replace the cover plate.
		F03		Zone C 3. On J1-2, change "+24 VDC to "+5 VDC." REASON: This is the output line of the 5 VDC power supply. +24 VDC is the input voltage.

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

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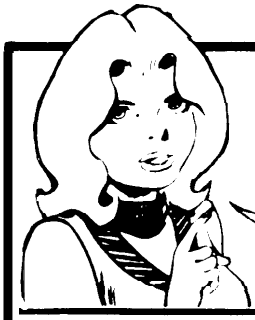

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PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
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