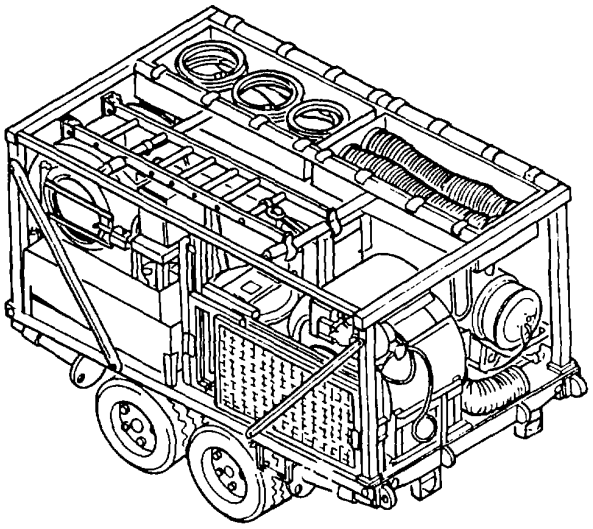
OPERATOR'S MANUAL



LAUNDRY UNIT,
TRAILER MOUNTED, M85
MODEL: M85-200
NSN 3510-01-365-5687

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

H E A D Q U A R T E R S , D E P A R T M E N T O F T H E A R M Y
3 0 A P R I L 1 9 9 3

CHANGE

NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 31 OCTOBER 1994

OPERATOR'S MANUAL

LAUNDRY UNIT, TRAILER MOUNTED, M85
MODEL: M85-200
NSN 3510-01-365-5687

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TM 10-3510-222-10, 30 April 1993, is changed as follows:

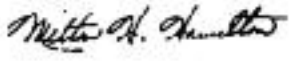
1. Remove and insert pages as indicated below. New or changed text material is indicated by a vertical bar in the margin. An illustration change is indicated by a miniature pointing hand.

Remove pages	Insert pages
2-45 and 2-46	2-45 and 2-46
2-59 through 2-62	2-59 through 2-62

2. Retain this sheet in front of manual for reference purposes.

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official: 

MILTON H. HAMILTON
Administrative Assistant to the
Secretary of the Army
07616

DISTRIBUTION:
To be distributed in accordance with DA Form 12-25-E, block no. 6050, requirements for TM 10-3510-222-10.

WARNING

CARBON MONOXIDE (EXHAUST GAS) CAN KILL YOU

Carbon monoxide is without color or smell, but can kill you. Breathing carbon monoxide produces symptoms of headache, dizziness, loss of muscular control, a sleepy feeling, and coma. Brain damage or death can result from heavy exposure. Carbon monoxide occurs in the exhaust fumes of fuel-burning heaters and internal combustion engines. Carbon monoxide can become dangerously concentrated under conditions of no ventilation.

Precautions must be followed to ensure operator's safety when the Laundry Unit is in operation.

- DO NOT operate Laundry Unit in an enclosed area without proper ventilation.
- BE ALERT at all times during operating procedures for carbon monoxide poisoning. If exposure is present, IMMEDIATEI,Y evacuate personnel to fresh air.
- BE AWARE the field protection mask used for nuclear-biological-chemical attack WILL NOT protect you from carbon monoxide poisoning.

THE BEST DEFENSE AGAINST CARBON MONOXIDE POISONING IS GOOD VENTILATION.

WARNING

JEWELRY

Remove rings, bracelets, wristwatches, and neck chains before working around or on the laundry Unit. Jewelry can catch on equipment and cause injury, or may short across an electrical circuit and cause severe burns or electrical shock.

WARNING

GROUNDING BEFORE OPERATION

Do not operate the unit until the ground terminal stud of the engine-generator set has been connected to a suitable ground. Electrical faults in the engine-generator set, load lines, or load equipment can cause death by electrocution from contact with an ungrounded system.

WARNING

DURING OPERATION

Do not make or change electrical connections while the unit is in operation. The voltage generated by the engine-generator can cause death by electrocution. Keep moisture away from the engine-generator and keep the surrounding area dry when operating the unit. Failure to observe this warning may result in death by electrocution.

WARNING

COMPRESSED AIR

Death or serious injury could occur if compressed air is directed against the skin. Do not use compressed air for cleaning or drying unless the pressure is/has been reduced to 30 psi (211 kPag) or less. When working with compressed air always use chip guards, eye protection and other personnel protective equipment.

WARNING

FROSTBITE

Do not touch cold metal parts with bare hands Frostbite can cause permanent injury to personnel.

WARNING

CLEANING

Do not direct high-pressure water hose nozzles or steam cleaner nozzles into electrical connections/junction boxes. Electrical shock can kill you.

WARNING

MOVING PARTS

Be careful not to come in contact with rotating belts or other moving parts. To do so will cause serious injury.

WARNING

SERVICING UNIT

Do not service the unit with fuel while the unit is in operation. Failure to observe this warning may result in serious injury or death to personnel.

WARNING

FLAMMABLE FUELS

Fuels are toxic and flammable. Wear protective goggles and refuel only in a well ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. If you become dizzy, get fresh air immediately and get medical aid. If contact with eyes or skin is made, immediately flush with clean water and get medical aid for eyes immediately.

WARNING

EAR PROTECTION

Serious hearing loss or deafness could occur if this equipment is operated without professionally-fitted ear protection for operating and maintaining personnel. The noise level for this equipment exceeds the allowable limits for unprotected personnel. Unprotected / unnecessary personnel must be kept out of the immediate area.

WARNING

ELECTRICAL HIGH VOLTAGE CAN KILL YOU

Electrical high voltage cannot be seen but it can kill you. Electricity is unlike most other dangerous things you can come in contact with because it gives no warning and no symptoms to be wary of. Its effect is immediate. It can kill you, render you unconscious, or severely burn you. To ensure your safety and that of other maintenance personnel, always observe the following precautions:

- DO NOT perform any maintenance on electrical equipment unless all power is removed.
- BE CERTAIN that there is someone assisting you who can remove power immediately.
- ALWAYS place POWER OFF warning tags on power supply switches so that no one will apply power while you are performing maintenance.
- FOR ARTIFICIAL, RESPIRATION, REFER TO FM 21 -11.

TECHNICAL MANUAL

NO: 10-3510-222-10

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON D.C., 30 APRIL 1993

OPERATOR'S MANUAL
LAUNDRY UNIT, TRAILER MOUNTED, M85
MODEL: M85-200
(NSN 3510-01-365-5687)

REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, U.S. Army Aviation and Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished to you.

TABLE OF CONTENTS

TABLE OF CONTENTS - continued.

LIST OF ILLUSTRATIONS

LIST OF TABLES

HOW TO USE THIS MANUAL

Be sure to read all Warnings before using your equipment.

This manual contains operating and maintenance instructions for the operator of the Laundry Unit.

- General Introduction On the title page of the manual are boxes near the right-hand edge with subject titles in them. Bend the pages of the manual and look for a black bar on the right side of the page that corresponds with the subject matter you want. At the beginning of each chapter, there is an index for quick reference for the subject matter of that chapter. The Table of Contents lists the Chapters and Sections of this manual for an easy index. A List of Illustrations and List of Tables follow the Table of Contents for easy reference to illustrations and tables.

- Chapter 1 Introduces you to the equipment and gives you information such as weight, height, length, generally used abbreviations and information on how the unit works. The chapter is preceded by a full page illustration of the equipment.

- Chapter 2 Provides information necessary to identify and use the equipment's operating controls. Operating instructions in this chapter tell you how to use the equipment in both usual and unusual weather conditions. In addition, preventive maintenance instructions provide information needed to inspect and service the Laundry Unit.

- Chapter 3 - Provides operator troubleshooting procedures for identifying equipment malfunctions and maintenance instructions for performing operator maintenance tasks.

- Appendix A gives you a list of frequently used forms and publications referenced or used in this manual.

- Appendix B lists components that are not mounted on the equipment, but are required to make the unit functional. All components in the Components of End Item and Basic Issue Items Lists are illustrated for easy identification.

- Appendix C lists additional equipment authorized for your unit for use with the Laundry Unit, but which are not supplied as part of the system. This equipment list may include buckets, protective clothing, etc.

- Appendix D provides you with information about expendable supplies such as sealants, lubricants, chemicals, etc. that are used when operating or maintaining equipment.

- The Alphabetical Index can be found at the end of this manual for easy alphabetical reference.

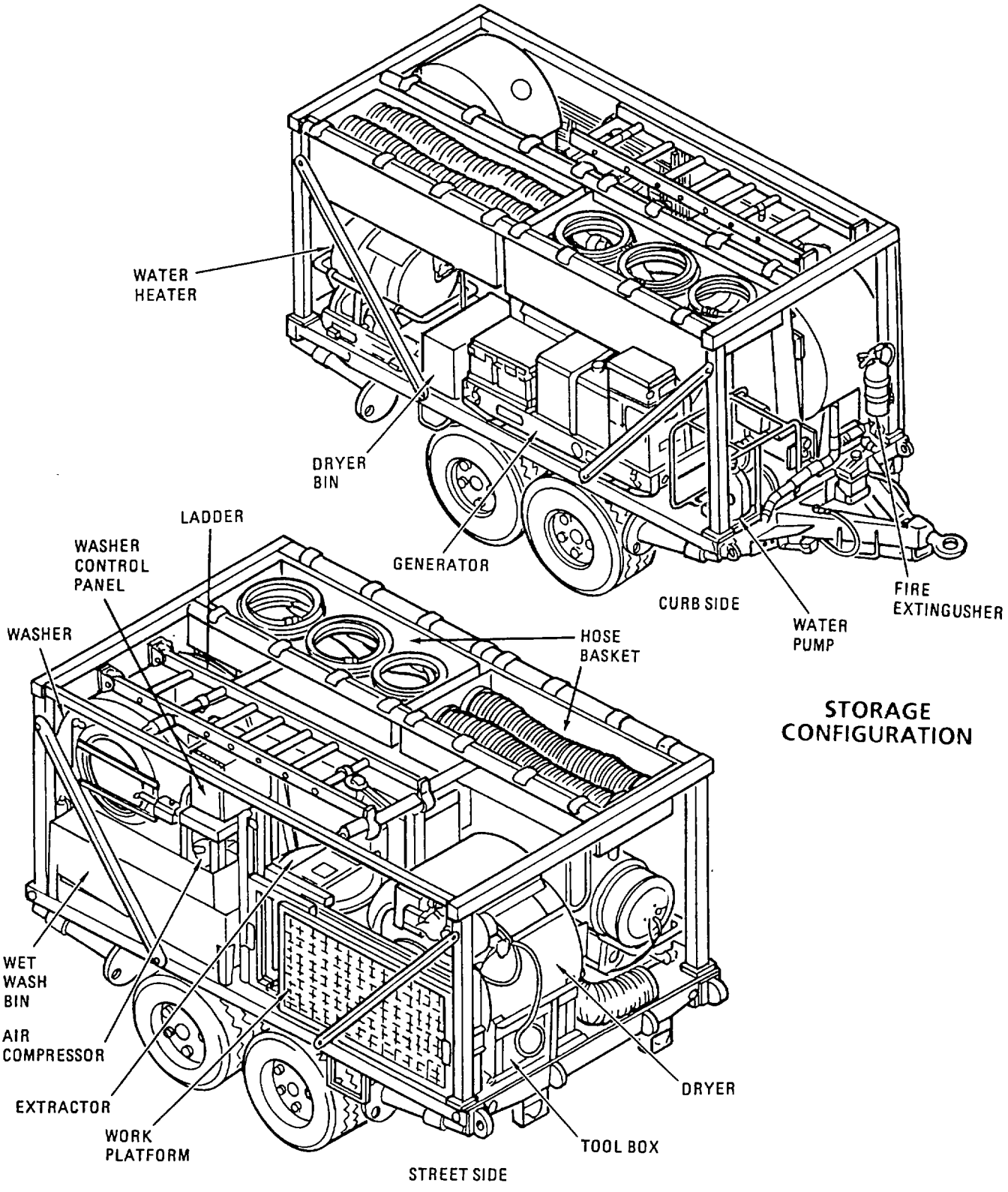


Figure 1-0. Laundry Unit

CHAPTER 1

INTRODUCTION

Section I. GENERAL, INFORMATION

1-1. SCOPE.

This operator's manual describes the operating procedures and maintenance for the M85-200 Laundry Unit.

1-2. MAINTENANCE FORMS AND PROCEDURES.

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750 (The Army Maintenance Management System (TAMMS)).

1-3. CORROSION PREVENTION AND CONTROL (CPC).

a. Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any problems with this item be reported so the problem can be corrected and improvements made to prevent the problem in future items.

1-3. CORROSION PREVENTION AND CONTROL (CPC)- continued.

b. While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.

c. If a corrosion problem is identified, it can be reported using SF 368, (Product Quality Deficiency Report). Check the box to indicate that the problem may be corrosion-related. Using key words such as "rust" , "deterioration" , "pitting" , or "cracking" or even including color photos of the corroded area will aid problem diagnosis and solution.

d. Submit completed SF 368 to Commander, U.S. Army Aviation and Troop Command, ATTN: AMSAT-I-MDO, 4300 Goodfellow Boulevard, St. Louis, MO 63120-1798.

1-4. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE.

Methods and procedures for destruction of Army materiel to prevent enemy use are covered in TM 750-244-3.

1-5. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR).

If your Laundry Unit 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 or performance. Put it on an SF 368 (Product Quality Deficiency Report). Mail it to: Commander, U. S. Army Aviation and Troop Command, ATTN: AMSAT-I-MDO, 4300 Goodfellow Boulevard, St. Louis, MO 631201798. We will send you a reply.

1-6. NOMENCLATURE CROSS-REFERENCE LIST.

This paragraph includes the nomenclature cross-reference list.

Common Name	Official Nomenclature
Air Compressor	Compressor Assembly, Air
Dryer	Dryer Assembly, Tumbler
Dryer Bin	Bin Assembly, Dryer
Extractor	Extractor Assembly
Fuel Pump	Rotary Pump
Generator	Generator Set, Diesel Engine Driven, Tactical Skid Mounted, 10 Kw, 3 Phase, 120/208 Volts (60 Hz)
Laundry Unit	Laundry Unit, Trailer Mounted, M85
Main Power Cable	Power Cable Assembly
Trailer	TRAILER, FLAT-BED, GEN. PURPOSE, 5 TON, 4 WHEEL, XM1061E1
Washer	Washing Machine, Laundry, Open-End Type
Washer Control Panel	Control Panel, Controller, Washer
Washer Control Stand	Stand, Controller, Washer
Washer Formula Card	Uniform Nurse Timer Card
Water Pump	Water Pump and Motor Assembly

1-6. NOMENCLATURE CROSS-REFERENCE LIST - continued.

Common Name	Official Nomenclature
Wet Wash Bin	Bin Assembly, Pre-Extract
Work Platform	Platform Assembly

1-7. LIST OF ABBREVIATIONS.

This paragraph includes a list of abbreviations, consisting of all abbreviations, acronyms, signs, or symbols used in this manual.

Abbreviation	Nomenclature
ac	Alternating Current
AR	As Required
BDU	Battle Dress Uniform
BII	Basic Issue Items list
CAGE	Commercial And Government Entity
CW	Clockwise
CCW	Counterclockwise
COEI	Component Of End Item
dia	Diameter
ea	Each
EIR	Equipment Improvement Recommendation
ft	Foot
gpm	Gallons per Minute
Hz	Hertz
hp	Horsepower
in	Inch
kg	Kilogram(s)
kPa	Kilopascal(s)
m	Meter(s)
NA	Not Applicable
QD	Quick Disconnect
qt	Quart
rpm	Revolutions per Minute
UV	Ultra Violet
vac	Volts Alternating Current
W	Watt(s)
wt	Weight

1-8. GLOSSARY.

The glossary includes all terms that are not adequately defined in this manual.

Extract - To remove most of the water from a wet wash load by spinning load in a perforated drum.
Hertz - - Cycles per second of electrical current.
Tumbler - Horizontal, rotating drum that tosses wash load about and effects more efficient washing or drying.

Section II. EQUIPMENT DESCRIPTION

1-9. EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES.

a. Characteristics. The Laundry Unit is to be used in the field to provide troop units and hospitals with field laundry service. The Laundry Unit is mounted on a tandem-wheel trailer.

b. Capabilities and Features.

(1) Capable of providing washing and drying 120 pounds (54 kg) of cotton, woolen, and durable press items in one hour, with two operators.

(2) Powered by a generator.

(3) Designed to pump water from an available source (e.g. lake, river, or stream).

(4) Heat water to desired temperature for washing laundry.

(5) Extract water from clothes in the extractor.

(6) Completely dry washed laundry in the dryer.

(7) The Laundry Unit can also be used for the decontamination of personnel clothing from chemical and bacteriological warfare agents and radioactive materials.

1-10. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.

a. Overpack. To provide room for all operating components, material is stored in layers inside the Laundry Unit during transportation and storage. The following figure describes major components which can be identified after unpacking the unit.

b. Laundry Unit Components. Refer to Figure 1-1.

1-10. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - continued.

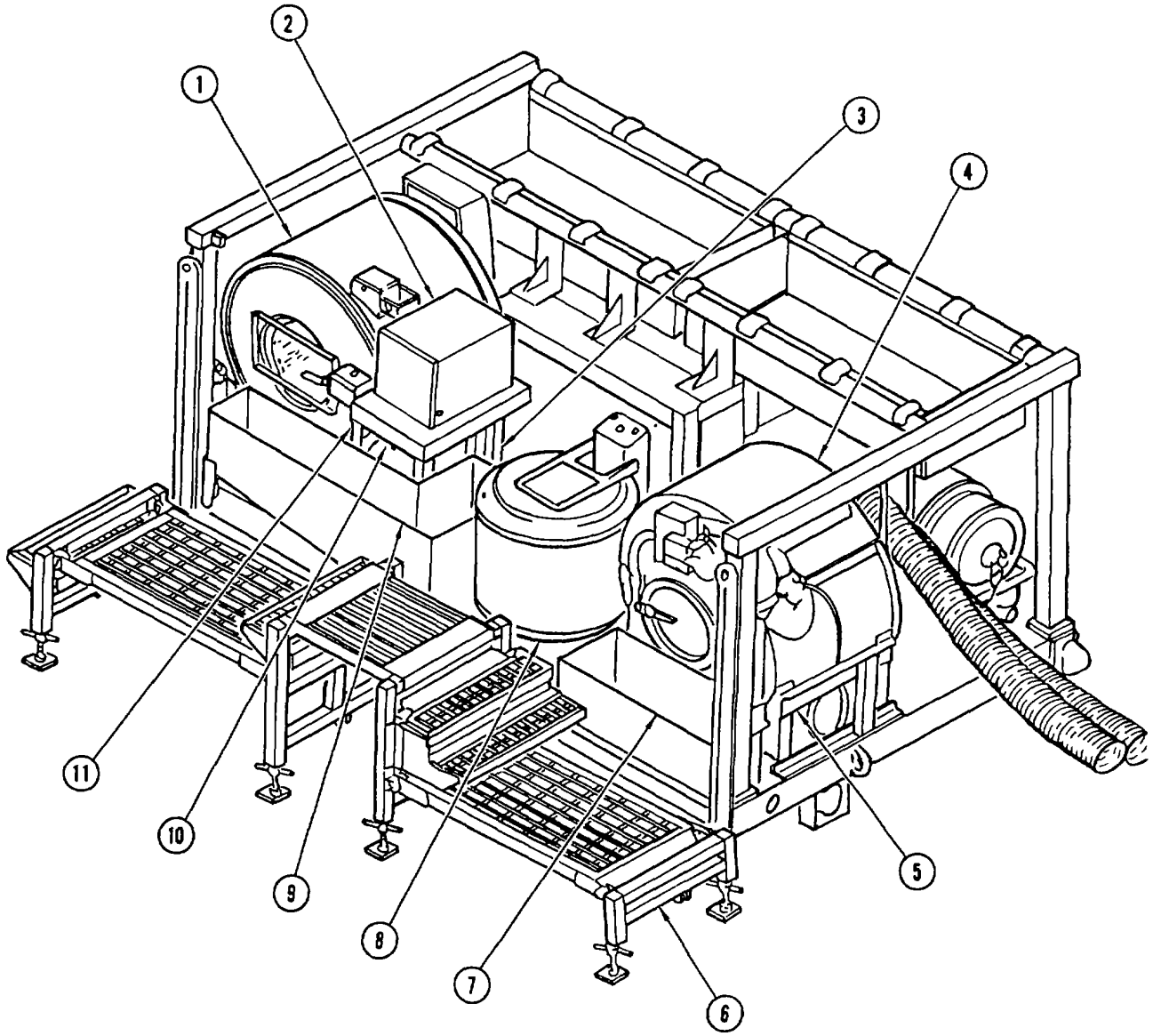


Figure 1-1. Laundry Unit Components Location (Sheet 1 of 2)

1-10. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - continued.

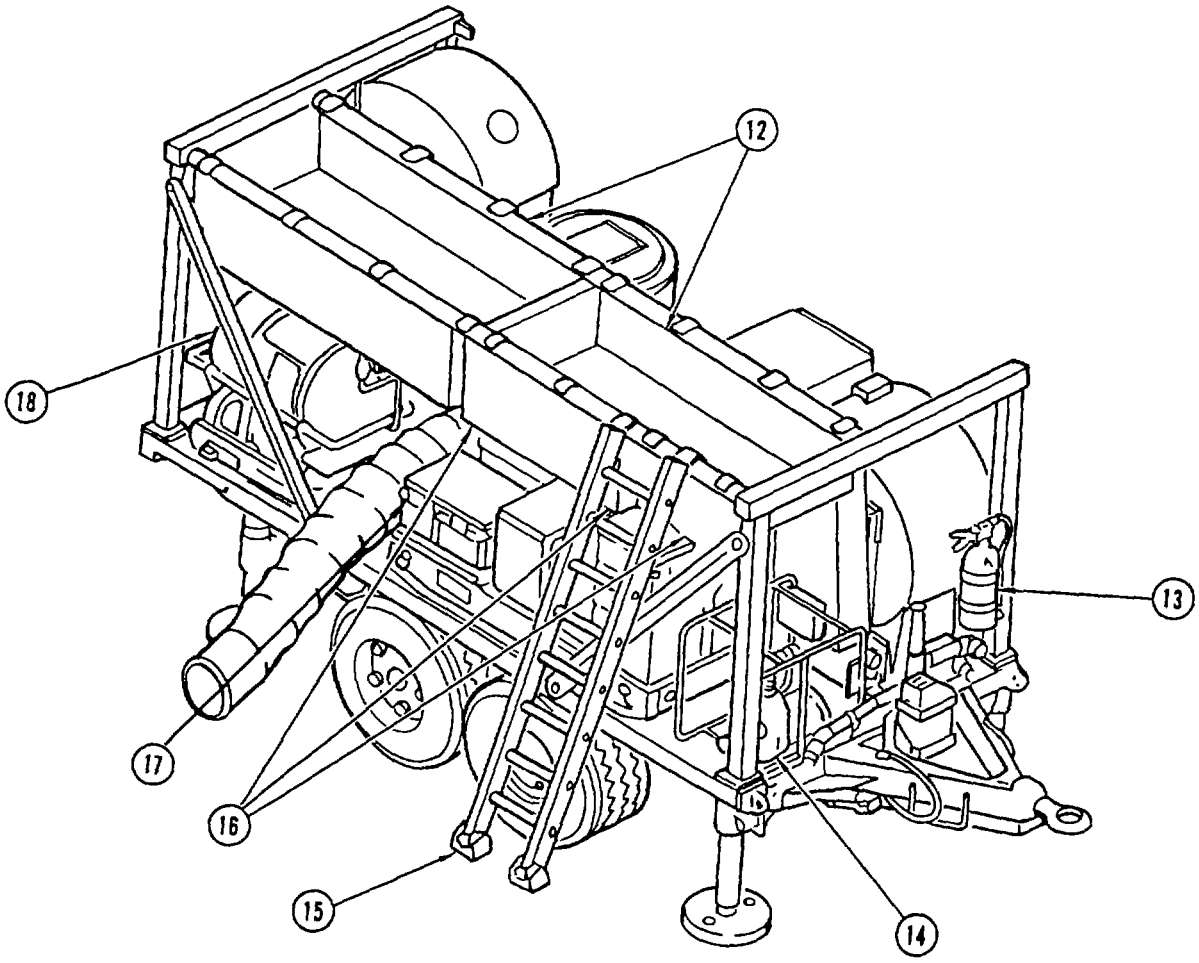


Figure 1-1. Laundry Unit Components Location (Sheet 2)

1-10. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - continued.

1 **WASHER**. Washer is an open-end loader, reversible-type cylinder. The washer washes soiled clothes and linens during the wash cycle.

2 **WASHER CONTROL PANEL**. Washer control panel controls the operations of the washer assembly.

3 **POWER DISTRIBUTION PANEL**. Power distribution panel is located behind control stand and provides safety cutouts for electrical circuits.

4 **DRYER.** Dryer assembly is an open-end, nonreversible-type cylinder The dryer dries the clothes after they are removed from the extractor.

5 **TOOL BOX**. Tool box is for storage of tools to be used on laundry Unit.

6 **WORK PLATFORM**. Work platform provides the operator with a place to stand and walk while operating the Laundry Unit.

7 **DRYER BIN**. Dryer bin provides a holding place for the dry clothes after they are removed from the dryer. During transport, the dryer bin is stored on the right-hand side of the trailer.

8 **EXTRACTOR**. Extractor is a heavy-duty, top-loading-type cylinder. It removes excess water from the clothes before they are placed in the dryer.

9 **WET WASH BIN**. Wet wash bin provides a holding place for the wet clothes before they are place in the extractor.

10 **AIR COMPRESSOR**. Air compressor provides air pressure for the operation of the water valves and washer air tank.

11 **WASHER CONTROL STAND**. Washer control stand is the housing for the controller and compressor.

12 **HOSE BASKET**. Hose basket provides storage for hoses, heater ducts, and other equipment.

13 **FIRE EXTINGUISHER**. Portable fire extinguisher is provided for emergency use in case of fire.

14 **WATER PUMP**. Water pump provides the necessary water needed for the Laundry Unit.

15 **LADDER.** Ladder assists operator in reaching hose baskets.

16 **SOUND DEADENING PANELS**. Sound deadening panels shield the operator from generator noise.

17 **GENERATOR**. Generator provides electrical power to major components of the Laundry Unit

18 **WATER HEATER**. Water heater heats incoming water to desired temperatures as needed for the washer.

1-11. EQUIPMENT DATA.

The following items are detailed information needed by the operator to maintain the equipment. See Table 1-1.

TABLE 1-1. EQUIPMENT SPECIFICATIONS

Laundry Unit	
Model Number	M85-200
Length	18 ft 2 in (5.54 m)
Height	7 ft 10 in (2.39 m)
Width	8 ft (2.44 m)
Weight	12,570 lb (5,687 kg)
Power Requirement	Class L, 60 amps, 208 vac, 3-phase
Fuel Requirements	Diesel fuel
Washer	
Model Number	36260EW/EASIW2
Capacity	60 lb (27 kg)
Weight	950 lb (428 kg)
Maximum Speed	33 rpm
Water Pressure Required	10 psi (69 kPa) minimum,
75 psi (517 kPa) maximum	
Air Pressure Required	30 psi (207 kPa) minimum, 110 psi (758 kPa) maximum
Motor	
Volts	208 vac
Phase	3
Frequency	60 Hz
Amps	5.3 - 5/2.5
Power Rating	1.5 hp(119 W)
Motor Speed	1725 rpm
Extractor	
Model Number	605 MIL
Capacity	30 lb (14 kg)
Weight	609 lb (276 kg)
Motor	
Volts	208/220 vac
Phase	3
Frequency	60 Hz
Amps	9.3 amps
Power Rating	3 hp (2237 W)
Motor Speed	1750 rpm

TABLE 1-1. EQUIPMENT SPECIFICATIONS - continued.

Dryer	
Model Number	LDU-300
Capacity	30 lb (14Kg)
Weight	1060 lb (480 Kg)
Burner Blower and Fuel Pump Motor	
Volts	200/230 vac
Phase	3
Frequency	60 Hz
Amps	1.8 - 2.0/1.0
Power Rating	1/2 hp (373 W)
Motor Speed	3450 rpm
Tumbler Cylinder Motor	
Volts	208 vac
Phase	3
Frequency	60 Hz
Amps	2.1 amps
Power Rating	1/2 hp (373 W)
Motor Speed	1725 rpm
Tumbler Exhaust Motor	
Volts	208 vac
Phase	3
Frequency	60 Hz
Amps	2.2 amps
Power Rating	1/2 hp (373 W)
Motor Speed	1725 rpm
Air Compressor	
Model Number	GH-510B-PS
Weight	32 lb (14 Kg)
Motor	
Volts	208/230 vac
Phase	3
Frequency	60 Hz
Amps	2.0 - 1.9/.95
Power Rating	1/2 hp (373 W)
Motor Speed	1725 rpm

TABLE 1-1. EQUIPMENT SPECIFICATIONS - continued.

Water Pump

Model Number	4057E-3S
Weight	67 lb (30 kg)
Capacity	18-20 gpm (68-76 liters/minute) at 65-foot (19.8 m) head
Type	Centrifugal, self-priming after initial prime

Pump Motor

Volts	208/230 vac
Phase	3
Frequency	60 Hz
Amps	5.0 - 4.6/2.3 amps
Power Rating	1.5 hp (1119 W)
Motor Speed	3450 rpm

Water Heater

Refer to TM 10-4520-259-13&P for Equipment Data.

Generator

Refer to TM 5-6115-585-12 for Equipment Data.

Trailer

Refer to TM 9-2330-376-14&P for Equipment Data.

Section III. PRINCIPLES OF OPERATION

1-12. INTRODUCTION.

The laundry system consists of the following functional systems:

a. Washer. The washer is powered by an externally-mounted motor and drive train. The washer is controlled either automatically or manually and has a 60-pound (27 kg) capacity. Two 60-pound (27 kg) loads can be washed per hour in the automatic mode. Automatic operation is provided by a washer control console to regulate all functions of the laundry cycle. These functions are the number of washes and rinses, water level, and water temperature. Washer Formula Cards, used to operate the controller, are pre-punched with standard cycles. Blank Washer Formula Cards (10 each), with a card punch, are also supplied and can be used for different washing cycles depending on the length of cycle desired Manual operation has a variable wash time of up to 60 minutes.

b. Extractor. The extractor uses centrifugal force to extract water from the wash load prior to the drying process. It spins at 1700 rpms and is powered by a 3-hp (2237 W) motor. The extractor control has a 10-minute variable timer and has a load capacity of 30 pounds (14 kg) dry weight.

c. Dryer. The dryer is powered by an externally-mounted motor and drive train. It has a capacity of 30 pounds (14 kg) per load, approximately four loads per hour. Controls provide for an adjustable range of 15 minutes for the drying cycle. Air is heated by a fuel fired air heater mounted on the dryer.

d. Water Heater. The water heater heats incoming water for the washer. Refer to TM 10-4520-259-13&P.

e. Water Pump. The portable, centrifugal-type water pump is mounted in a carrying frame. The pump is stored on the right front side of the trailer during transport. During use, it is placed near the water source and connected to the facility by a water output hose and power cable. After the initial prime, the pump will deliver 70 gallons (256 liters) of water per minute at a 25 foot (8 meters) head loss.

f. Air Compressor. The air compressor provides air pressure for the operation of washer water intake and drain valves and the water heater hot water valve. The adjustable range of compressed air is 20 to 100 psi (138 to 690 kPa).

g. Generator. The generator is mounted on the right-hand side of the trailer. Refer to TM 5-6115585-12 for general description. The Laundry Unit operates on 60-Hertz, 3-phase, 208 vac power. A power distribution panel provides power distribution from the generator to the components of the Laundry Unit. The panel includes the necessary circuit breakers for power distribution and safety to the facility components.

h. Trailer. The trailer is the 5-ton, 4-wheel (tandem axle), flatbed type. Leveling jacks are on the four corners of the trailer to provide stability and level during operation of the Laundry Unit. Refer to TM 9-2330-376-14&P

CHAPTER 2

OPERATING INSTRUCTIONS

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

2-1. INTRODUCTION.

This section shows the location and describes the use of controls and indicators you will use in operating your equipment.

2-2. LOCATION AND USE OF CONTROLS AND INDICATORS.

a. Trailer. Refer to TM 9-2330-376-14&P for controls and indicators.

2-2. LOCATION AND USE OF CONTROLS AND INDICATORS - continued.

b. Generator. Refer to TM 5-6115-585-12 for controls and indicators.

c. Water Heater. Refer to TM 10-4520-259-13&P for controls and indicators.

d. Laundry Unit. For locations and functions of the controls and indicators, refer to the following figures:

Controls/Indicators	Figure
Washer	2-1
Washer Formula Card	2-2
Dryer	2-3
Extractor	2-4
Water Pump	2-5
Power Distribution Panel	2-6
Air Compressor	2-7

2-2. LOCATION AND USE OF CONTROLS AND INDICATORS - continued.

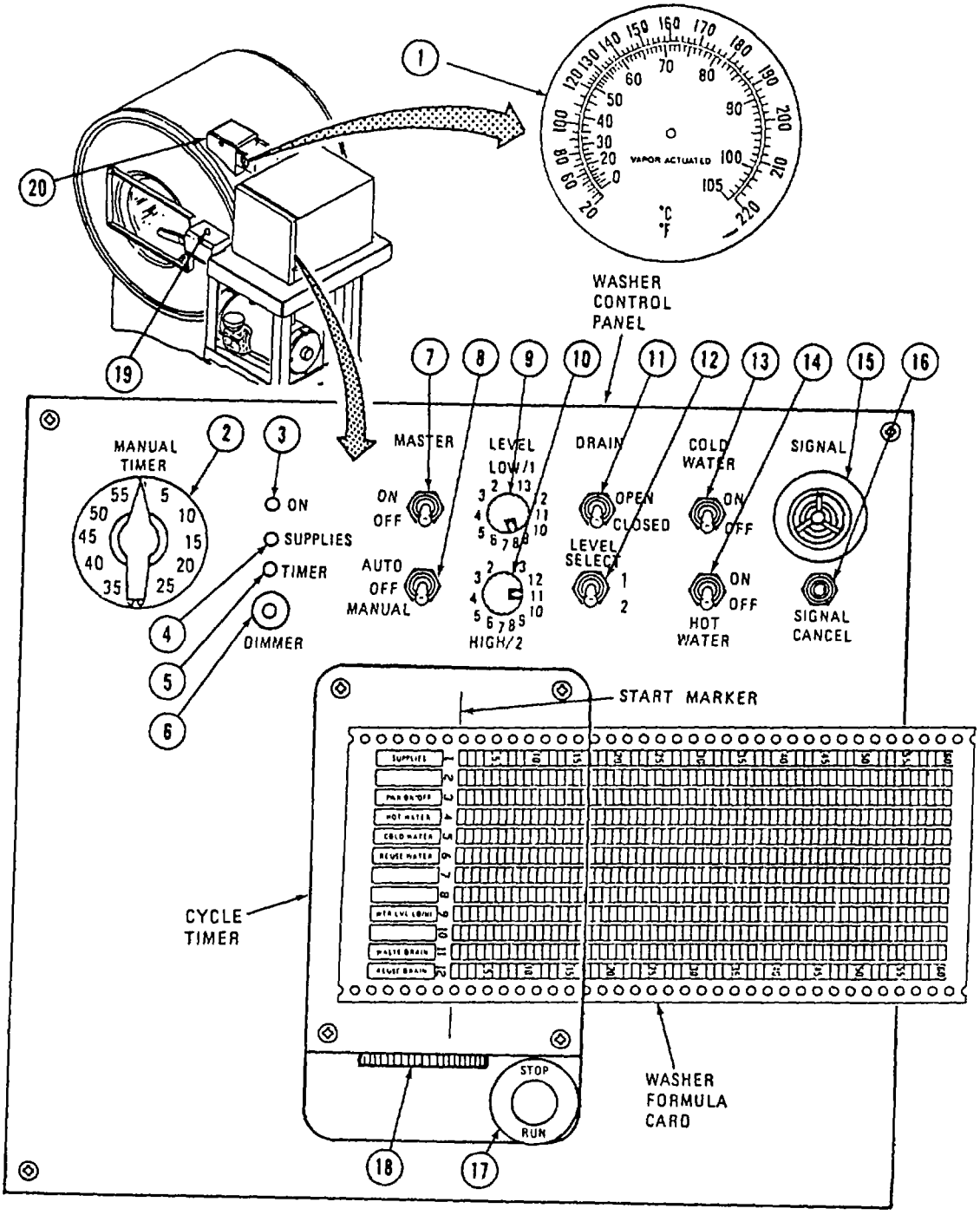


Figure 2-1. Washer Controls and Indicators (Sheet 1 of 2)

2-2. LOCATION AND USE OF CONTROLS AND INDICATORS - continued.

Key	Control or Indicator	Function/Use
1	Temperature Gage	Indicates temperature of water coming from water heater.
2	MANUALTIMER	Controls time (60 minutes) of operation during manual operation.
3	ON Indicator Light	Indicates machine is on.
4	SUPPLIES Indicator Light	In auto mode, indicates to operator that supplies are required.
5	TIMER Indicator Light	In manual mode, indicates time-out or supplies are needed.
6	DIMMER Switch	Provides control of brightness for ON/SUPPLIES/TIMER Indicator Lights.
7	MASTER ON/OFF Switch	Turns controller on/off.
8	AUTO/MANUAL /OFF Switch	Selects auto or manual operation, off position enables door unlock switch.
9	LEVEL LOW/1 Switch	Sets low level of water for automatic wash cycle or sets water level for manual when LEVEL, SELECT is switched to 1.
10	LEVEL HIIGH/2 Switch	Sets high level of water for automatic wash cycle or sets water level for manual when LEVEL SELECT is switched to 2.
11	DRAIN OPEN/CLOSED Switch	Opens and closes drain valve.
12	LEVEL SELECT 1 or 2 Switch	Enables LEVEL LOW/1 switch or HIGH/2 switch to operate.
13	COLD WATER ON/OFF Switch	Turns cold water valve on/off.
14	HOT WATER ON/OFF Switch	Turns hot water valve on/off.
15	Audible SIGNAL	Alerts operator that washer controls require attention.
16	SIGNAL CANCEL Switch	Cancels audible signal indicator.
17	RUN/STOP/Motor Switch	Engages/disengages auto mode drive and starts cycle timer.
18	Cylinder Control Wheel	Manually advances cylinder.
19	Door Unlock Switch	Unlocks washer door.
20	Soap Dispenser	Allows operator access to add supplies during the washing cycle

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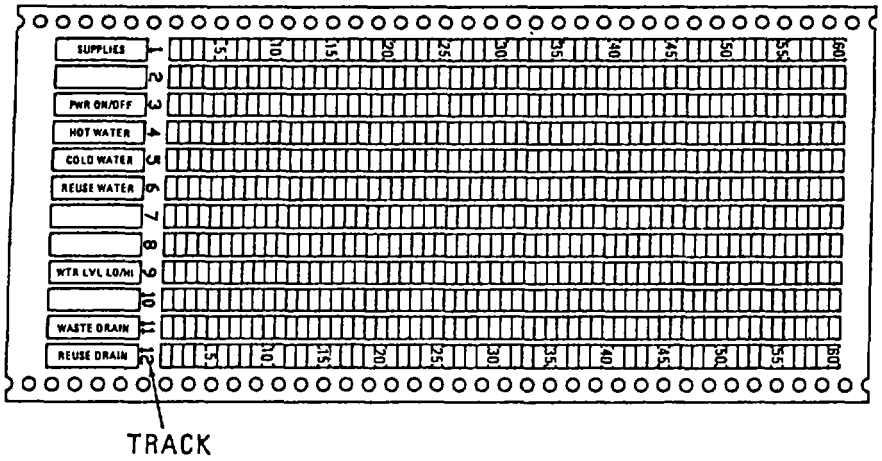
Figure 2-1. Washer Controls and Indicators (Sheet 2)

2-2. LOCATION AND USE OF CONTROLS AND INDICATORS - continued.



Track	Title	Function
1	SUPPLIES	Alerts operator to add supplies or that cycle is ending.
2	Blank	
3	PWR ON/OFF	Stops machine at end of formula card.
4	HOT WATER	Adds proper amount of hot water.
5	COLD WATER	Adds proper amount of cold water.
6	REUSE WATER	Adds proper amount of reuse water. Not in Use.
7	Blank	
8	Blank	
9	WTR LVL LO/HI	Selects one of two preset levels of water.
10	Blank	
11	WASTE DRAIN	Opens waste drain.
12	REUSE DRAIN	Opens reuse drain. Not in Use.

Figure 2-2. Washer Formula Card Controls and Indicators

2-2. LOCATION AND USE OF CONTROLS AND INDICATORS - continued.

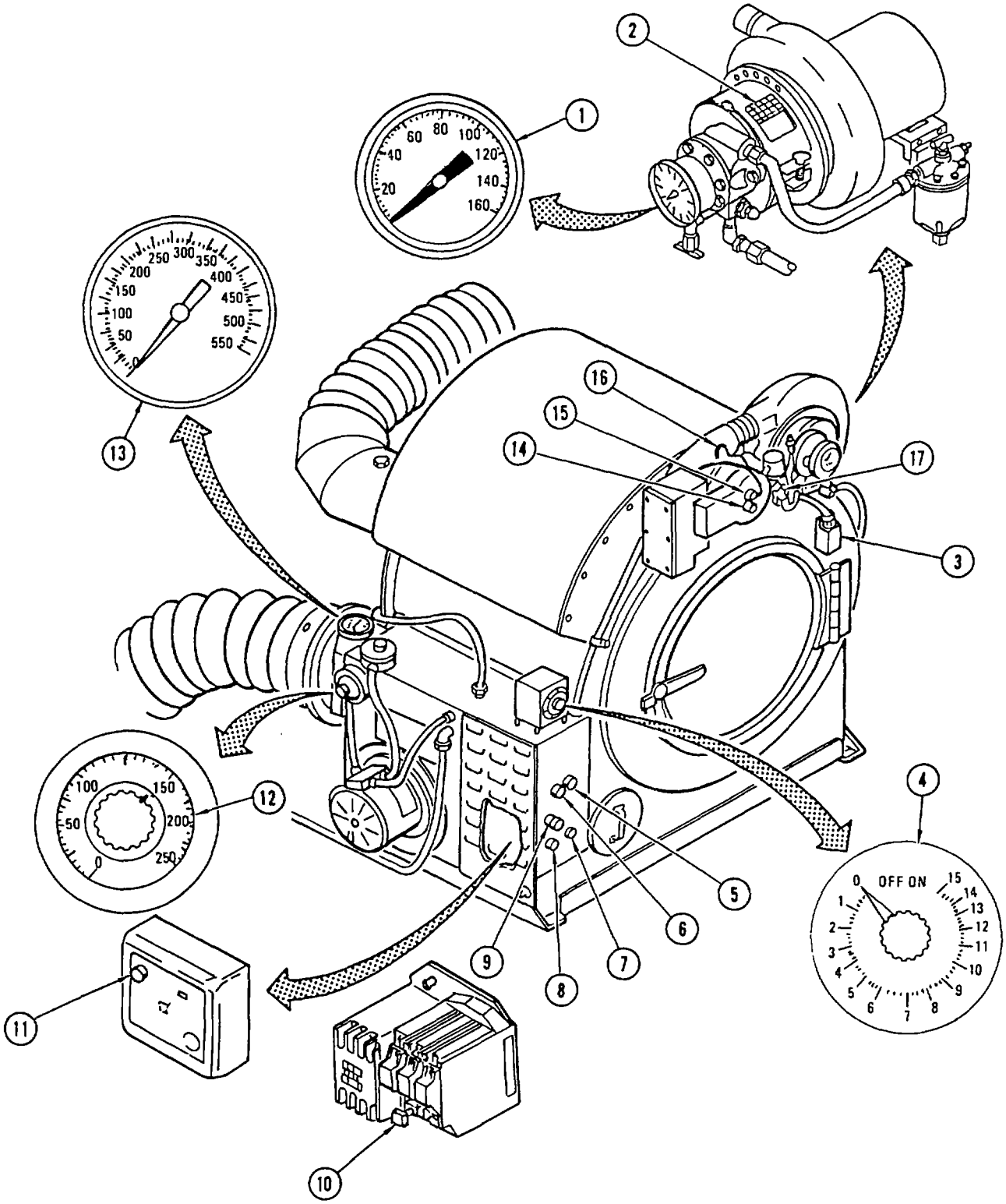


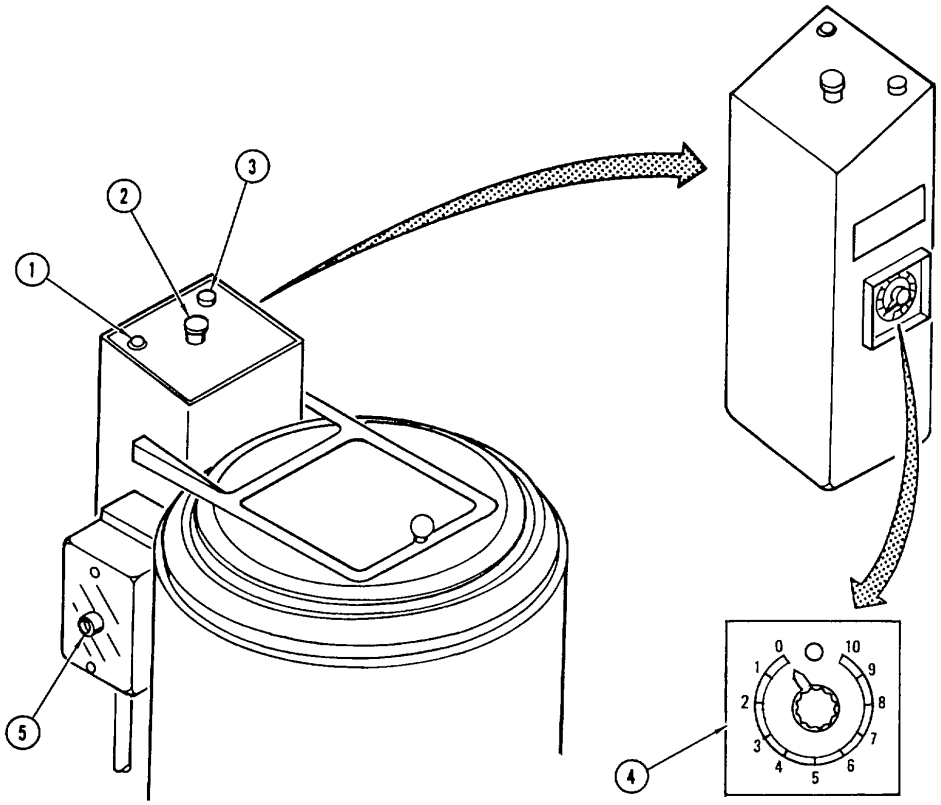
Figure 2-3. Dryer Controls and Indicators (Sheet 1 of 2)

2-2. LOCATION AND USE OF CONTROLS AND INDICATORS- continued.

Key	Control or Indicator	Function/Use
1	Fuel Pressure Gage	Indicates pressure of fuel to burner.
2	Shutter Air Intake	Controls amount of air to burner. a. Turned downward, increases air to burner. b. Turned upward, decreases air to burner.
3	Sensor Switch	Stops tumbler rotation when dryer door is opened.
4	ON/OFF Sequential Timer	Controls drying time.
5	STOP RESET Button	Stops blower motor and turns ignition off.
6	START Button	Starts blower motor and turns ignition on.
7	Timer Buzzer	Slow beeping tone alerts operator that cycle is complete.
8	Alarm Buzzer	Fast beeping tone alerts operator that a safety shutdown has occurred.
9	UV Scanner Indicator Light	Gives visual indication that a safety shutdown has occurred.
10	Burner Starter Motor Reset Button	Reset burner motor relays.
11	UV Scanner Flame Safeguard Control Reset Button	Closes fuel solenoid valve, stops spark for ignition, and sounds alarm buzzer when tripped.
12	Temperature Control	Controls temperature of hot air exhaust.
13	Thermometer	Indicates exhaust temperature of drying air tumbler.
14	Tumbler Burner Sight Glass	To observe flame inside the burner.
15	UV Scanner Flame Safeguard Control Eye	Initiates safety shutdown if flame inside burner goes out.
16	Air Nozzle	Allows operator to fine-tune air fuel mixture.
17	Globe Valve	Opens and closes fuel supply to burner.

Figure 2-3. Dryer Controls and Indicators (Sheet 2)

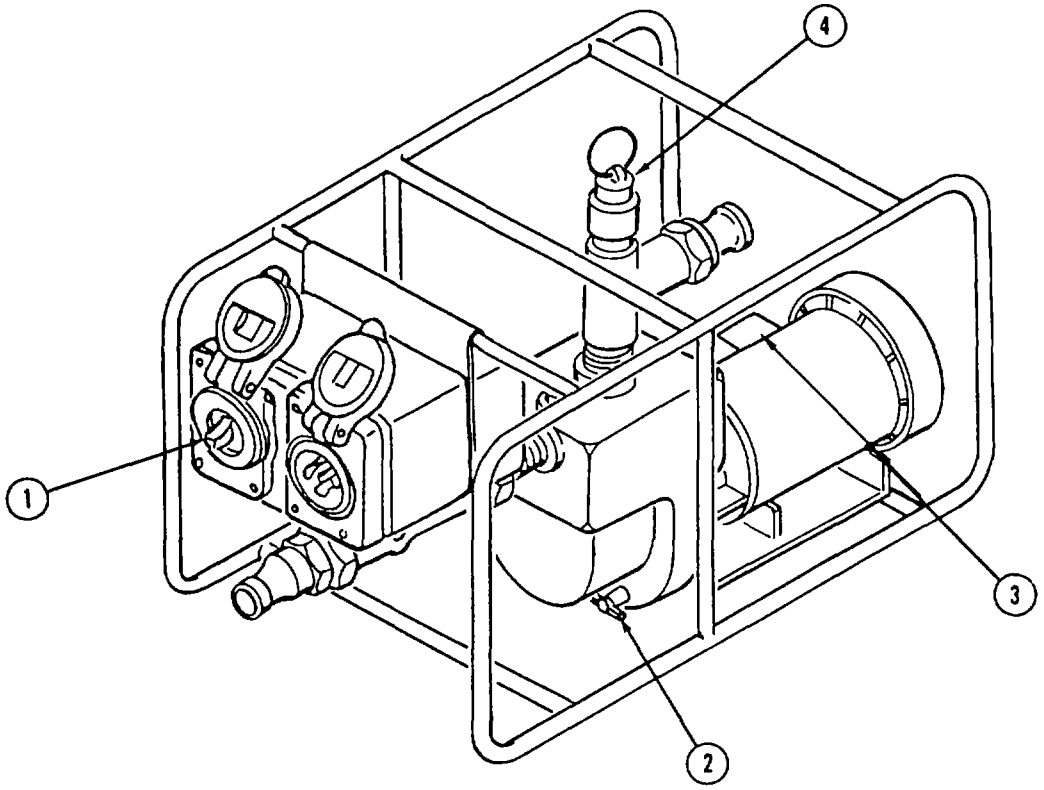
2-2. LOCATION AND USE OF CONTROLS AND INDICATORS - continued.



Key	Control or Indicator	Function/Use
1	LID LOCKED Indicator Light	Light indicates that lid is locked in closed position Turn indicator light cw for off, and ccw for on.
2	EMERGENCY STOP ONLY Button	Allows the operator to shut down the extractor.
3	PUSH TO START Button	Starts the extractor motor.
4	Timer Interval	Allows the operator to control extractor times, 0-10 minutes. Has built in light and timer resets automatically.
5	RESET Overload Relay	Resets overload relay to motor.

Figure 2-4. Extractor Controls and Indicators

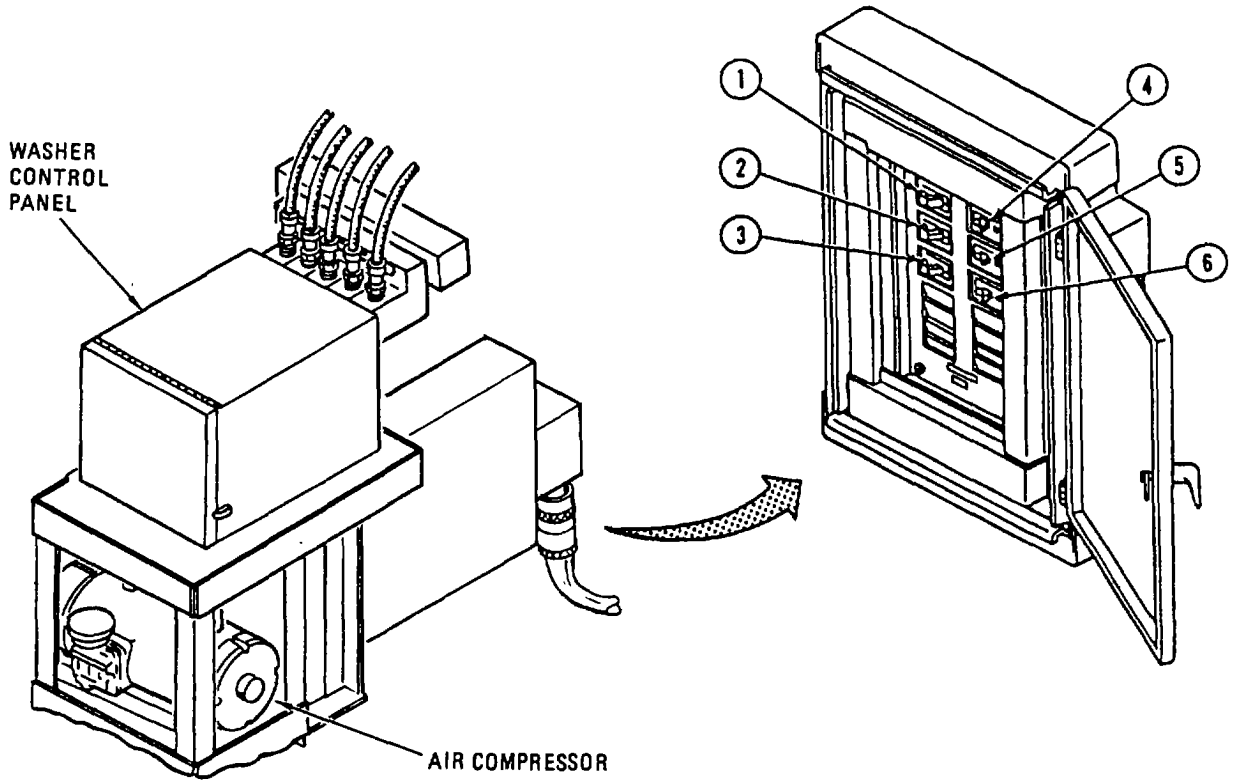
2-2. LOCATION AND USE OF CONTROLS AND INDICATORS - continued.



Key	Control or Indicator	Function/Use
1	Toggle Switch	Turns water pump on or off.
2	Drain Cock	Allows the operator to drain water from water pump.
3	Temperature/Amperage Reset Button	Resets thermal overload protector.
4	Quick Disconnect Plug	Allows operator to prime pump.

Figure 2-5. Water Pump Controls and Indicators

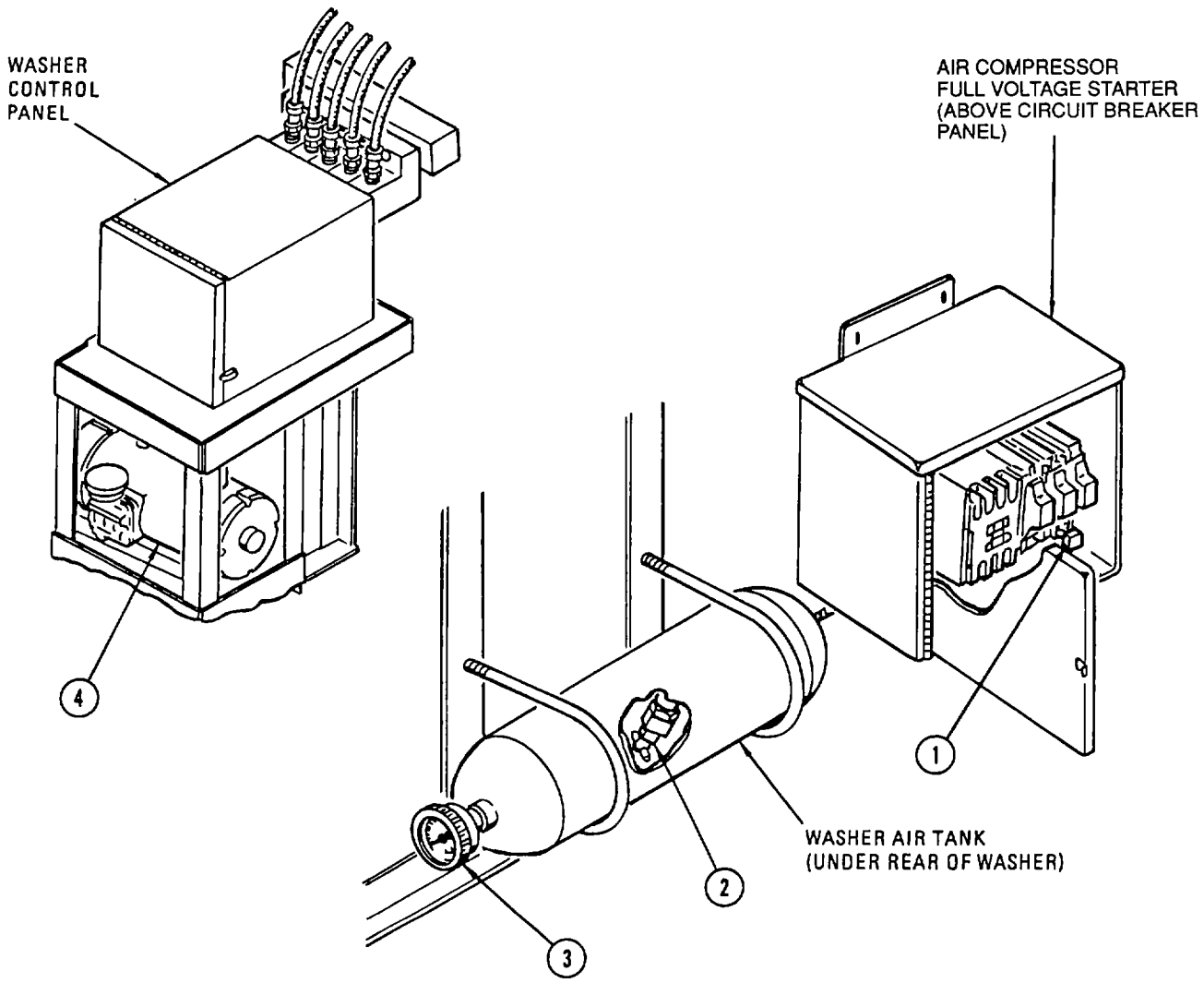
2-2. LOCATION AND USE OF CONTROLS AND INDICATORS - continued.



Key	Control or Indicator	Function/Use
1	Circuit Breaker	Main 60-amp circuit breaker for the Laundry Unit.
2	Circuit Breaker	20-amp circuit breaker used to power the extractor.
3	Circuit Breaker	20-amp circuit breaker used to power the compressor.
4	Circuit Breaker	20-amp circuit breaker used to power the dryer.
5	Circuit Breaker	20-amp circuit breaker used to power the water heater.
6	Circuit Breaker	20-amp circuit breaker used to power the washer.

Figure 2-6. Power Distribution Panel Controls and Indicators

2-2. LOCATION AND USE OF CONTROLS AND INDICATORS - continued.



Key	Control or Indicator	Function/Use
1	Full Voltage Starter Reset Button	Reset button connects electrical circuit to the air compressor from an overloaded condition.
2	Drain Cock	Allows operator to bleed water from washer air tank.
3	Pressure Dial Gage	Indicates pressure inside washer air tank (Part of Washer)
4	Air Compressor	Generates air for the system.

Figure 2-7. Air Compressor Controls and Indicators

Section II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

2-3. INTRODUCTION.

a. General. Your Preventive Maintenance Checks and Services Table lists the inspections and care your equipment requires to keep it in good operating condition.

(1) Before, During and After You Operate - Always keep in mind the WARNINGS and CAUTIONS. Perform your Before, During and After PMCS.

(2) If Your Equipment Fails To Operate - If your equipment does not perform as required, refer to Chapter 3 under Troubleshooting for possible problems. Report any malfunctions or failures on the proper DA Form 2404, or refer to DA PAM 738-750, The Army Maintenance Management System (TAMMS)

b. PMCS Columnar Entries. See Table 2-1.

(1) Item number column. Numbers in this column are for reference. When completing DA Form 2404 (Equipment Inspection and Maintenance Worksheet), include the item number for the check/service indicating a fault. Item numbers also appear in the order that you must do checks and services for the intervals listed.

(2) Interval column. This column tells you when you must do the procedure in the procedure column. BEFORE procedures must be done before you operate or use the equipment for its intended mission. DURING procedures must be done during the time you are operating or using the equipment for its intended mission. AFTER procedures must be done immediately after you have operated or used the equipment.

(3) Location, check/service column. This column provides the location and the item to be checked or serviced. The item location is underlined.

(4) Procedure column. This column gives the procedure you must do to check or service the item listed in the Check/Service column to know if the equipment is ready or available for its intended mission or for operation. You must do the procedure at the time stated in the interval column.

(5) Not fully mission capable if: column. Information in this column tells you what faults will keep your equipment from being capable of performing its primary mission. If you make check and service procedures that show faults listed in this column, do not operate the equipment. Follow standard operating procedures for maintaining the equipment or reporting equipment failure.

c. Special Instructions.

(1) Perform Weekly, as well as Before, operations PMCS if:

(a) You are the assigned operator and have not operated the item since the last weekly check.

(b) You are operating the item for the first time.

2-3. INTRODUCTION -continued.

c. Special Instructions continued.

(2) Leakage definitions for operator/crew PMCS shall be classified as follows:

NOTE

Equipment operation is allowable with minor leakage (Class I or II). Of course, you must consider the fluid capacity in the item/system being checked/inspected. When operating with Class I or II leaks, continue to check fluid levels as required in your PMCS. When in doubt, notify your supervisor.

NOTE

Class II[leaks should be reported to your supervisor.

(a) Class I. Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.

(b) Class II. Leakage of fluid great enough to form drops but not enough to cause drops to drip from item being checked/inspected.

(c) Class III. Leakage of fluid great enough to form drops that fall from the item being checked/inspected.

2-4. GENERAL MAINTENANCE PROCEDURES

As you perform your PMCS, keep in mind the following:

a. Cleanliness. Dirt, grease, oil, and debris only get in the way and may cover up a serious problem.

b. Bolts, Nuts, and Screws. Check them all for obvious looseness and missing, bent, or broken condition. You cannot try them all with a tool, of course, but look for chipped paint, bare metal, or rust around bolt heads. If you find a problem, report it to your supervisor.

c. Welds. Look for loose or chipped paint, rust, or gaps where parts are welded together. If you find a bad weld, report it to your supervisor.

d. Electrical Wires and Connections. Look for cracked or broken insulation, bare wires, and loose or broken connectors. Tighten loose connections and make sure the wires are in good condition. If you find a bad wire or connector, report it to your supervisor.

e. Water Lines and Fittings. Look for wear, damage, and leaks. Make sure clamps and fittings are tight. Wet spots show leaks, but a stain around a fitting or connector can mean a leak. If a leak comes from a loose fitting or connector, or if something is broken or worn out, report it to your supervisor.

2-5. PMCS TABLE

a. See Table 2-1 for PMCS

b. Generator Set. Refer to TM 5-6115-585-12 for PMCS.

c. Trailer. Refer to TM 9-2330-376-14&P for PMCS.

d. Water Heater. Refer to TM 10-4520-259-13&P for PMCS.

e. Walk-Around PMCS. Routing (Figure 2-8) will be of help to complete Before, During, After or Weekly PMCS. It shows Laundry Unit PMCS routing track which matches the sequence of PMCS to be performed.

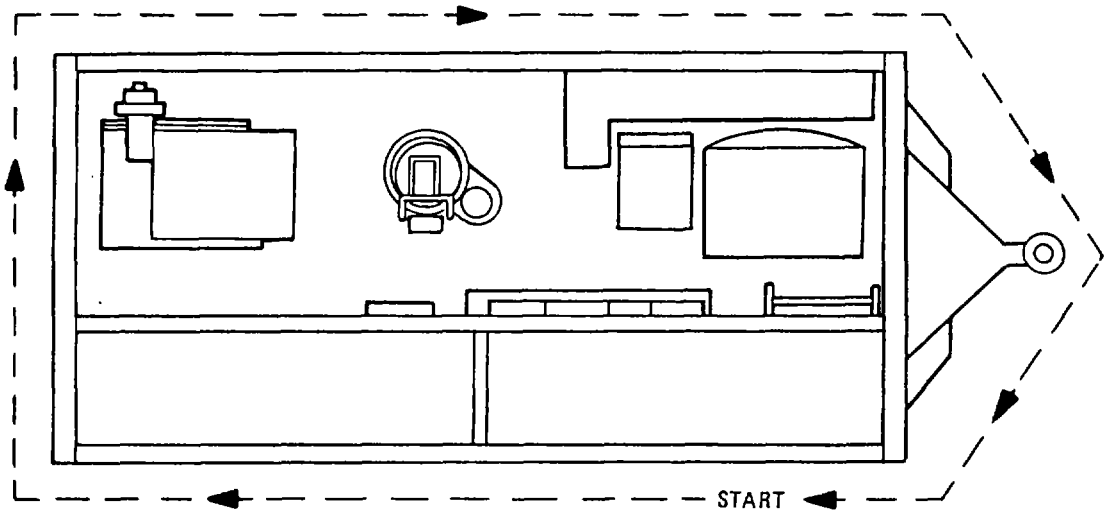
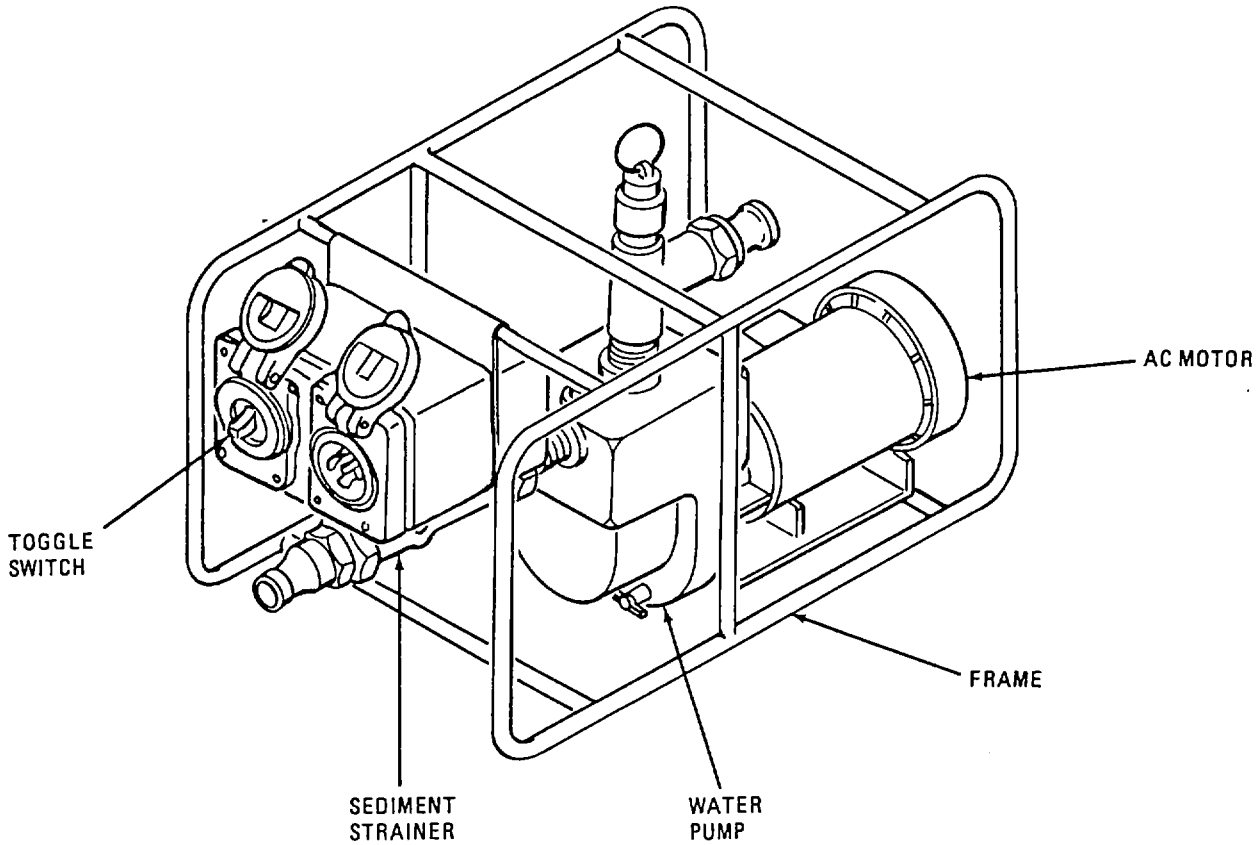


Figure 2-8. Walk-Around PMCS Routing

Table 2-1. Preventive Maintenance Checks and Services

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
1	Per LO	Laundry Unit	Perform lubrication prior to or in conjunction with your PMCS. Refer to LO 10-3510-222-12.	Not properly lubed.
2	Before	Tarpaulin (when removing cover)	Inspect for cuts, frays and damage. Missing metallic grommets and fibrous rope.	
3	Before	Ladder	Inspect for broken welds and loose attaching hardware.	
4	Before	Water Pump		



			a. Inspect frame for broken welds or bends.	Frame broken or needs welding.

Table 2-1. Preventive Maintenance Checks and Services - continued.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
4 cont.	Before	Water Pump		
			b. Inspect nonmetallic hoses for cracks, breaks and missing hardware. missing hardware.	Nonmetallic hoses cracked or broken or
			c. Inspect ac motor for obstruction to ventilation and for loose mounting.	AC motor is restricted or loose.
			d. Inspect water pump piping and for loose mounting of the pump. missing hardware.	Water pump is loose and/or
			e. Inspect sediment strainer for clog. (Unit Maintenance, everyday if water source has residue buildup.)	Sediment strainer clogged.
			f. Inspect toggle switch for loose, broken or missing hardware. missing hardware.	Toggle switch loose, broken or

Table 2-1. Preventive Maintenance Checks and Services - continued.

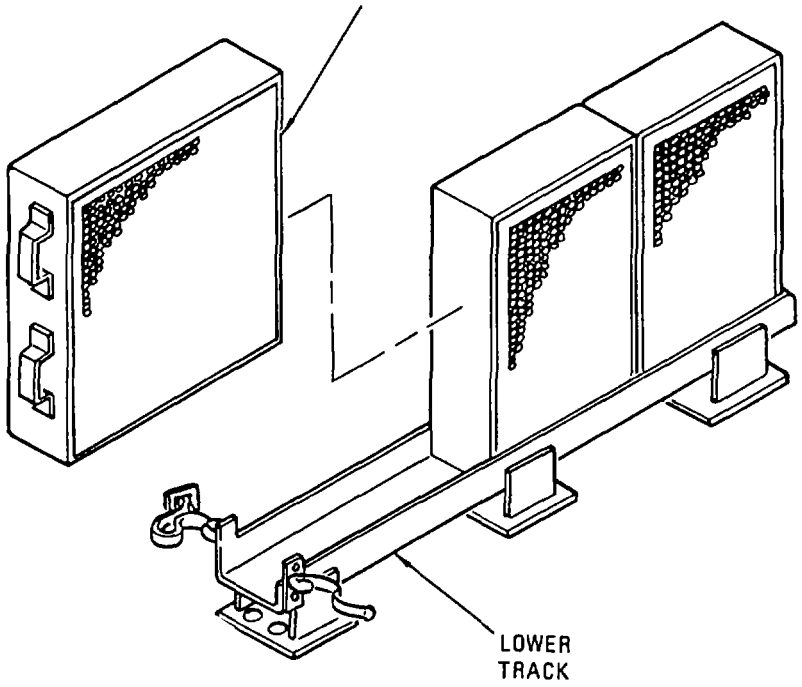
Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
5	Before	Sound Controlling Panel and Lower Tracking	**SOUND CONTROLLING PANEL**  	
6	Before	Generator	a Inspect sound controlling panels for proper position in lower and upper tracking. b. Inspect lower tracking welds and attaching hardware. a Inspect wood battery cover and attaching hardware. b. Inspect generator exhaust hose.	Battery cover hardware loose or missing. exhaust hose not fully installed or Loose.

Table 2-1. Preventive Maintenance Checks and Services - continued.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
7	Before	Tool Box	Inspect tool box mounting hardware and attaching hardware.	
8	Before	Work Platform	Inspect work platform to make sure it is level and close to Laundry Unit trailer. Check for broken welds	

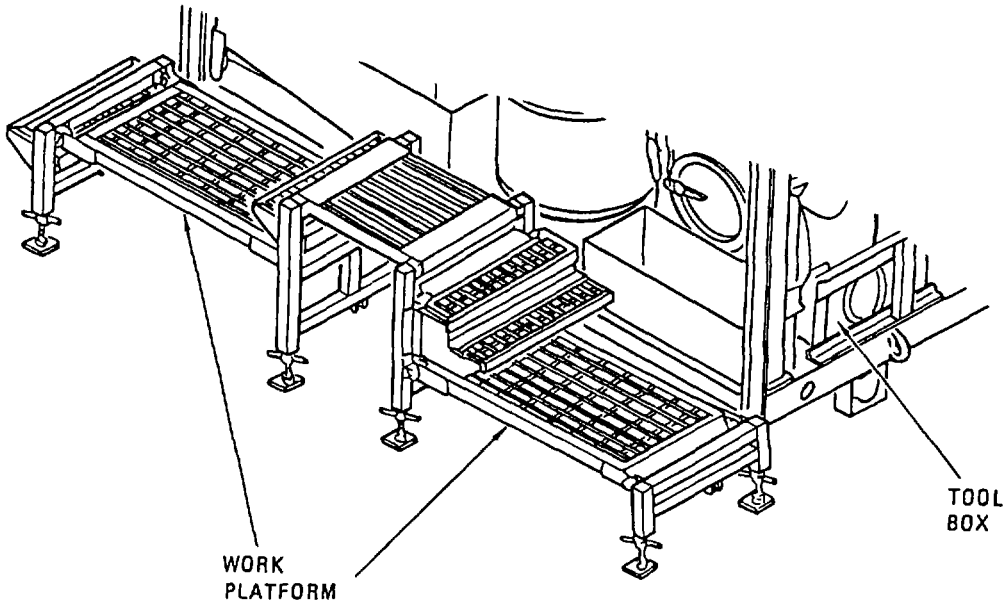


Table 2-1. Preventive Maintenance Checks and Services - continued.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
9	Before	Dryer Bin	Inspect welds and look for sharp edges.	
10	Before	Dryer		
			a. Inspect hood for loose or missing attaching hardware.	Hood loose or missing hardware.
			b. Inspect base to make sure properly attached to trailer with hardware.	Base loose or missing hardware.

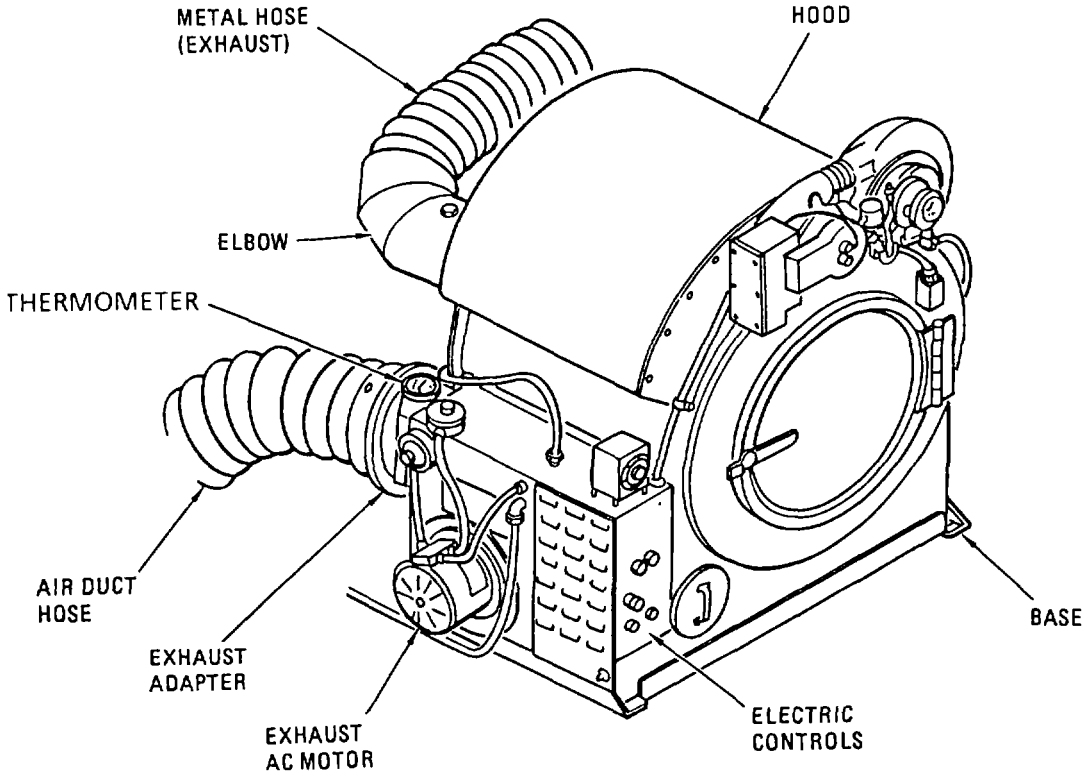


Table 2-1. Preventive Maintenance Checks and Services - continued.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
10 cont.	Before	Dryer	c Inspect electric controls for loose or broken switches. broken switches.	Electric controls have loose or
			d. Inspect exhaust ac motor for loose mounting hardware. hardware.	Exhaust ac motor has loose
			e. Inspect air duct hose for cuts, rips, and hose out of round.	Air duct hose has cuts and/or rips.
			f Inspect thermometer for broken lens.	Thermometer has broken lens.
			g. Inspect elbow (exhaust) for tight fit on dryer and position of elbow.	Elbow fits incorrectly.
			h. Inspect metal hose (exhaust) is properly installed on elbow.	Metal hose improperly installed on elbow.
			i. Remove air duct hose.	
			j. Remove lint from around thermometer, thermostatic switch and temperature control probes.	Lint builds up around probes.
			k. Install air duct hose.	

Table 2-1. Preventive Maintenance Checks and Services - continued.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
10 cont.	Before	Dryer		
			1. Inspect fuel filter for leaks or loose attaching hardware.	Fuel filter leaking or loose hardware.

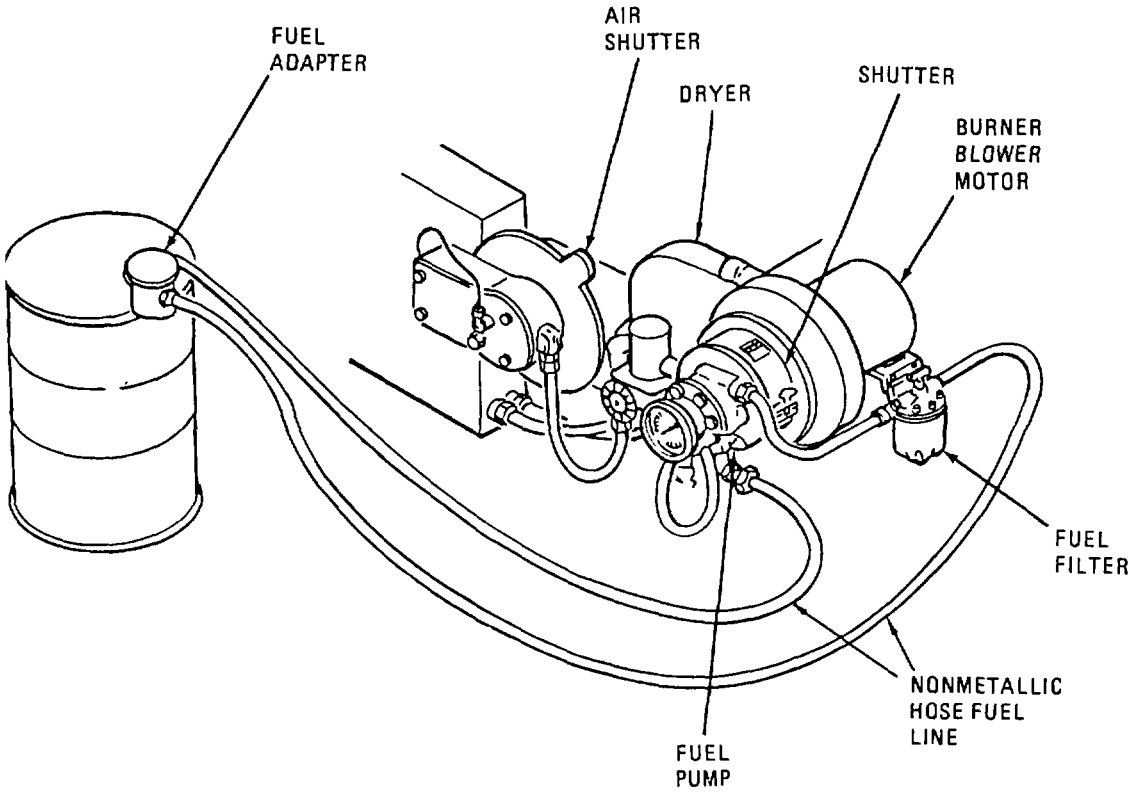


Table 2-1. Preventive Maintenance Checks and Services - continued.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
10 cont.	Before	Dryer	m. Inspect nonmetallic hose fuel lines for leaks and tight connections.	Nonmetallic hose fuel lines leak.
			n. Inspect fuel pump for loose connections, leaks, and loose attaching hardware.	Fuel pump has loose connections, leaks, or hardware is loose.
			o. Inspect fuel adapter for loose installation in fuel container or loose attaching hardware. hardware.	Fuel adapter is loose or loose attaching
			p. Inspect air shutter for bent condition and/or binding.	Air shutter bent or binding.
			q. Inspect shutter for bent condition and/or binding.	Shutter bent or binding.
			r. Inspect burner blower motor for loosely mounted hardware.	Burner blower motor loose.

Table 2-1. Preventive Maintenance Checks and Services - continued.

Item No.	Interval	Location / Item to Check/Service	Procedure	Not Fully Mission Capable If:
11	Before	Extractor		
			a. Inspect extractor lid for bent, broken and loose hardware.	Bent, broken or loose hardware.
			b. Inspect control panel for loose or broken switches	Loose or broken switches.

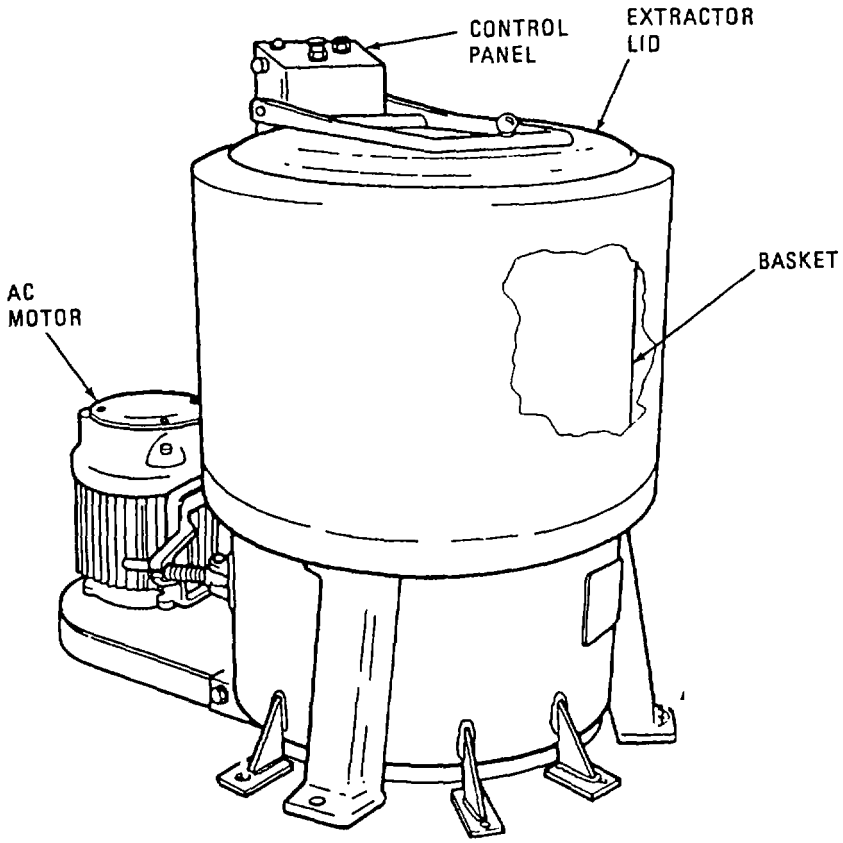


Table 2-1. Preventive Maintenance Checks and Services - continued.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
11 cont.	Before	Extractor	c. Inspect ac motor for loose mounting hardware. d. Inspect basket for sharp edges and burrs. burrs.	AC motor has loose hardware. Basket has sharp edges and/or
12	Before	Electrical Conduit and Flex Conduit	Inspect conduit, flex conduit for tight connections and mounting hardware.	
13	Before	Wet Wash Bin	Inspect wet wash bin for loose mounting hardware, damaged and loose piping.	Wet wash bin mounting loose, damaged or loose piping.

Table 2-1. Preventive Maintenance Checks and Services - continued.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
14	Before	Washer		
			a. Washer control panel: Inspect for switch damage, faceplate damage to timer, clean as required.	Faceplate is damaged or broken.
			b. Washer door assembly: Inspect observation window and gasket for cracks, breaks, and missing window.	Glass is broken or missing.

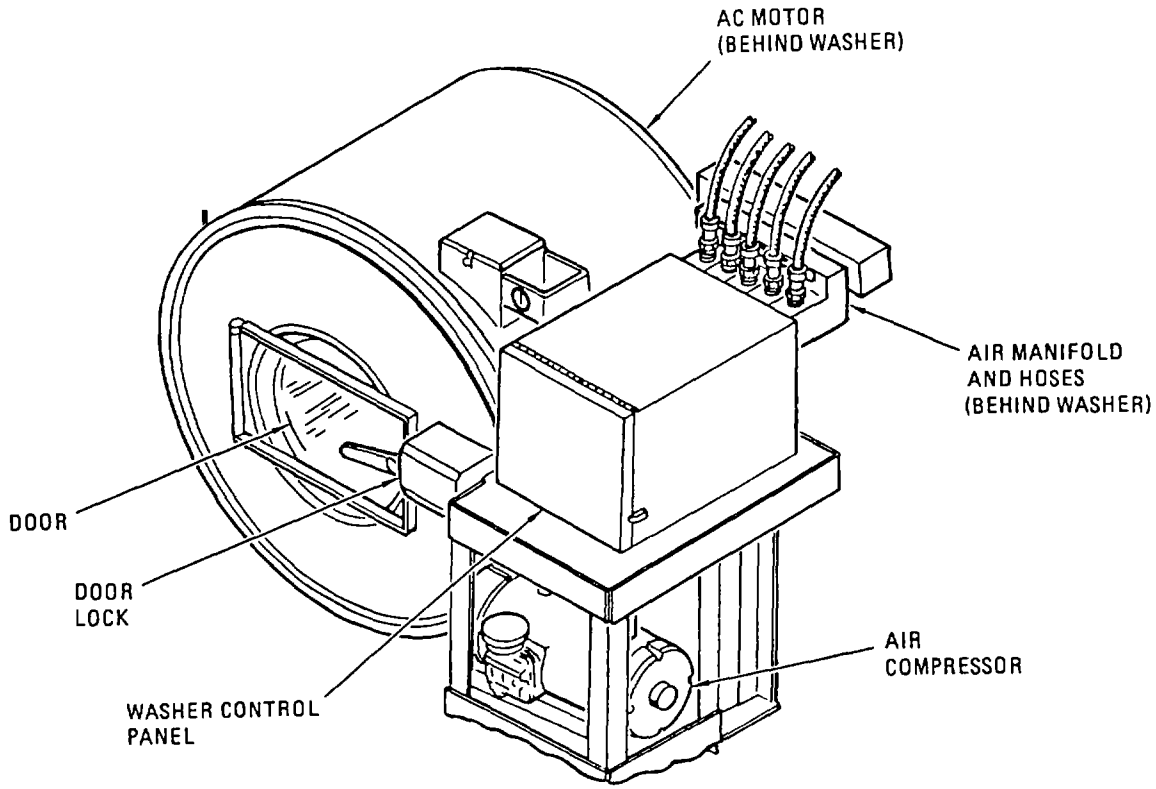


Table 2-1. Preventive Maintenance Checks and Services - continued.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
14 cont.	Before	Washer	c. Inspect ac motor for loose mounting hardware.	AC motor has loose hardware.
			d. Inspect air manifold and hoses for loose mounting hardware and cracks or cuts in hose.	Air manifold, hoses, and other hardware loose and cracked or cut hose.
			e. Inspect door lock for loose hardware.	Door lock has loose hardware.
			f. Inspect door gasket for cracks, breaks and loose hardware.	Door gasket cracked, broken or loose.

Table 2-1. Preventive Maintenance Checks and Services - continued.

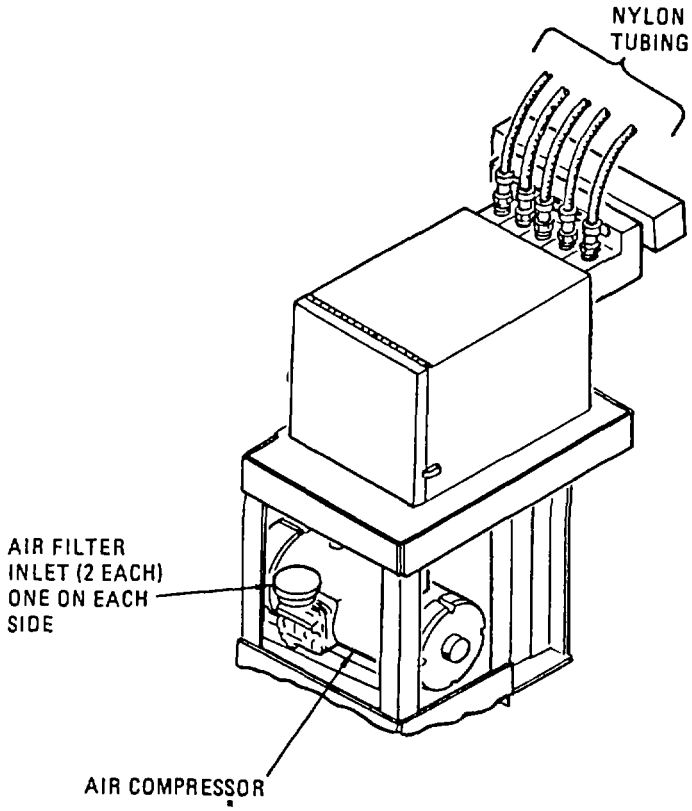
Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
15	Before	Air Compressor	a. Inspect air compressor for loose mounting hardware. mounting hardware.	Air compressor has loose
			b. Inspect air filter inlet for restriction. each side)	Air filter (Two filters, one on restricted.
			c. Inspect nylon tubing (air line) on air compressor for cracks or cuts	Nylon tubing (air lines) cracked or cut.
				
16	Before	Water Piping	Inspect water piping for mounting hardware properly installed, tight and/or damage.	Water piping mounting hardware loose or damaged.

Table 2-1. Preventive Maintenance Checks and Services - continued

Item No.	Interval	Location / Item to Check/Service	Procedure	Not Fully Mission Capable If:
17	Before	Fire Extinguisher		
			a. Inspect fire extinguisher pin for damage or missing pin. b. Inspect pressure gage for indication of being fully charged.	Pin is damaged or missing. Fire extinguisher not fully charged.

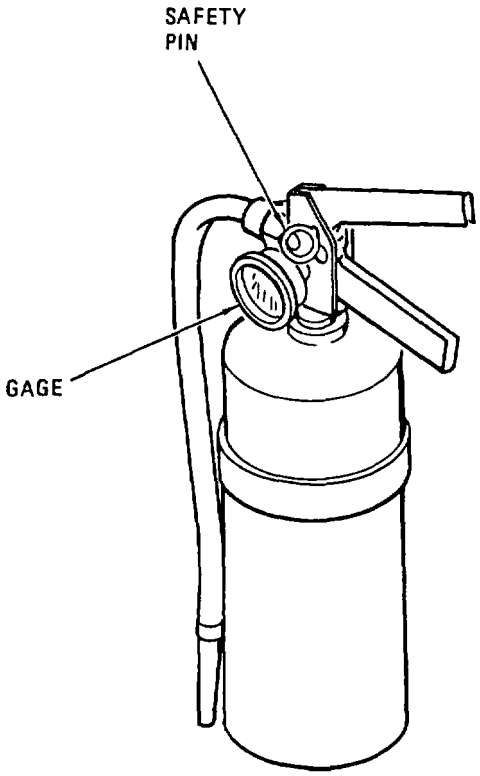


Table 2-1. Preventive Maintenance Checks and Services - continued.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
18	Before	Ground Rod	Inspect ground rod sections, threaded ends, and braided wire for damage.	Ground rod damaged.
19	Before	M13 Decontamination Apparatus Bracket	Inspect M13 Decontamination apparatus bracket for mounting hardware properly installed, tight, and for damage.	
20	Before	Main Power Cable	Inspect main power cable for frayed condition or cuts and connection to power distribution panel.	Main power cable cut or frayed, plug electrical connector not fully connected.
21	Before	Power Distribution Panel	Inspect power distribution panel for loose mounting or damage.	Power distribution panel loose or damaged.

Table 2-1. Preventive Maintenance Checks an(d Services - continued.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
22	During	Dryer		
			a. Inspect metal hose (exhaust) visually for leaks. leaks.	Metal hose (exhaust) duct
			b. Inspect fuel pump, fuel filter, and nonmetallic hose fuel lines for fuel leaks.	Fuel is leaking.
			c. Inspect fuel supply for sufficient amount of fuel.	Fuel supply is empty.

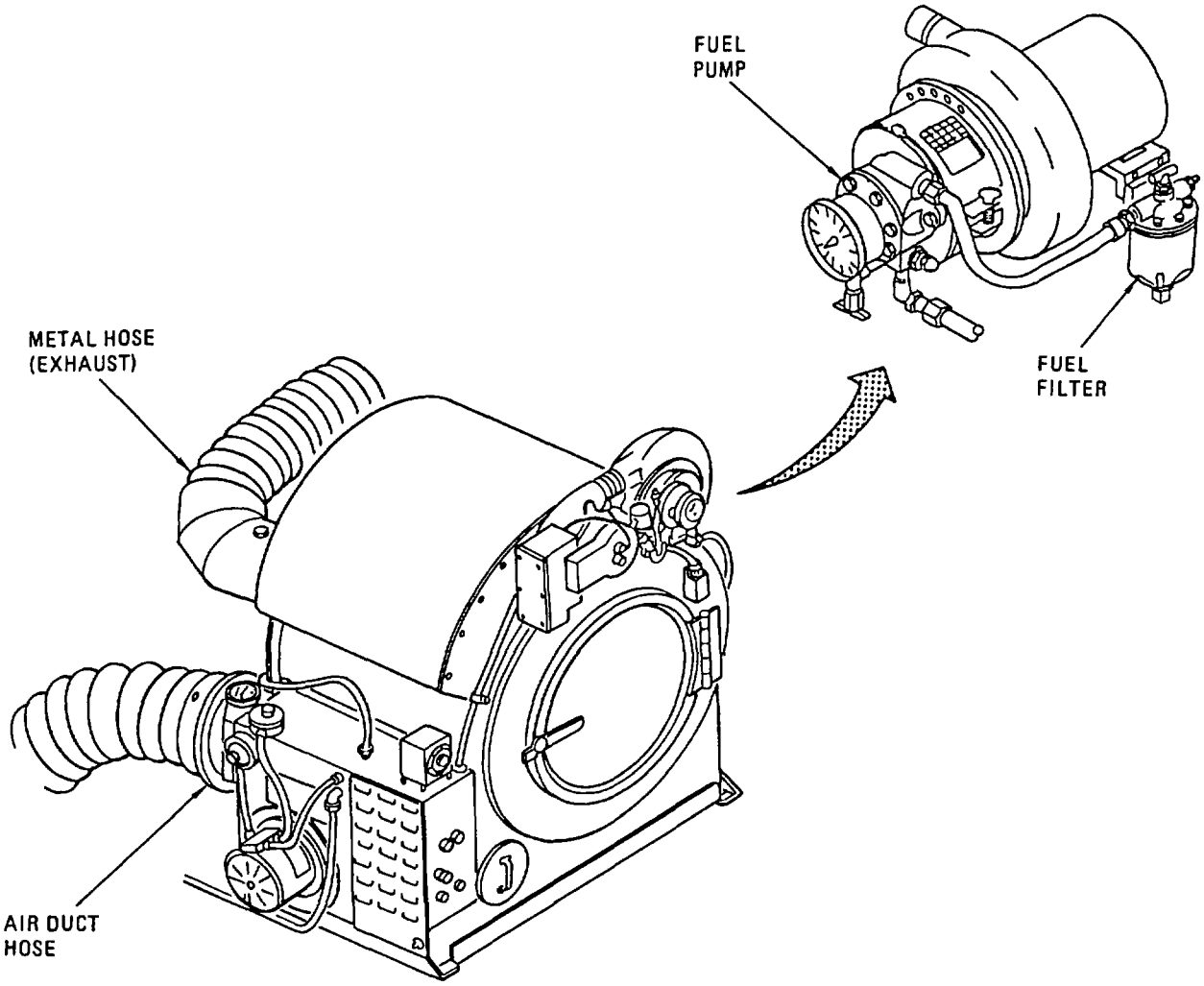


Table 2-1. Preventive Maintenance Checks and Services - continued.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
23	During	Generator	a. Inspect fuel supply for sufficient amount of fuel. Refer to TM 5-6115-585-12 for refueling.	Fuel supply is empty.
			b. Inspect for fuel leaks. Refer to TM 5-6115-585-12.	Fuel is leaking.
24	During	Water [Heater	a. Inspect fuel supply for sufficient amount of fuel.	Fuel supply is empty.
			b. Inspect for fuel leaks. Refer to TM 10-4520-259-13&P.	Fuel is leaking.
			c. Inspect for fuel leaks on nonmetallic hose fuel lines.	Fuel is leaking.

Table 2-1. Preventive Maintenance Checks and Services - continued.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
25	Weekly	Dryer		
			a. On fuel filter, turn tee handle on top of filter four times to clean permanent element. b. Remove drain plug from bottom of fuel filter to remove sediment and water. c. Install drain plug.	Fuel filter is clogged. Fuel has water in it.

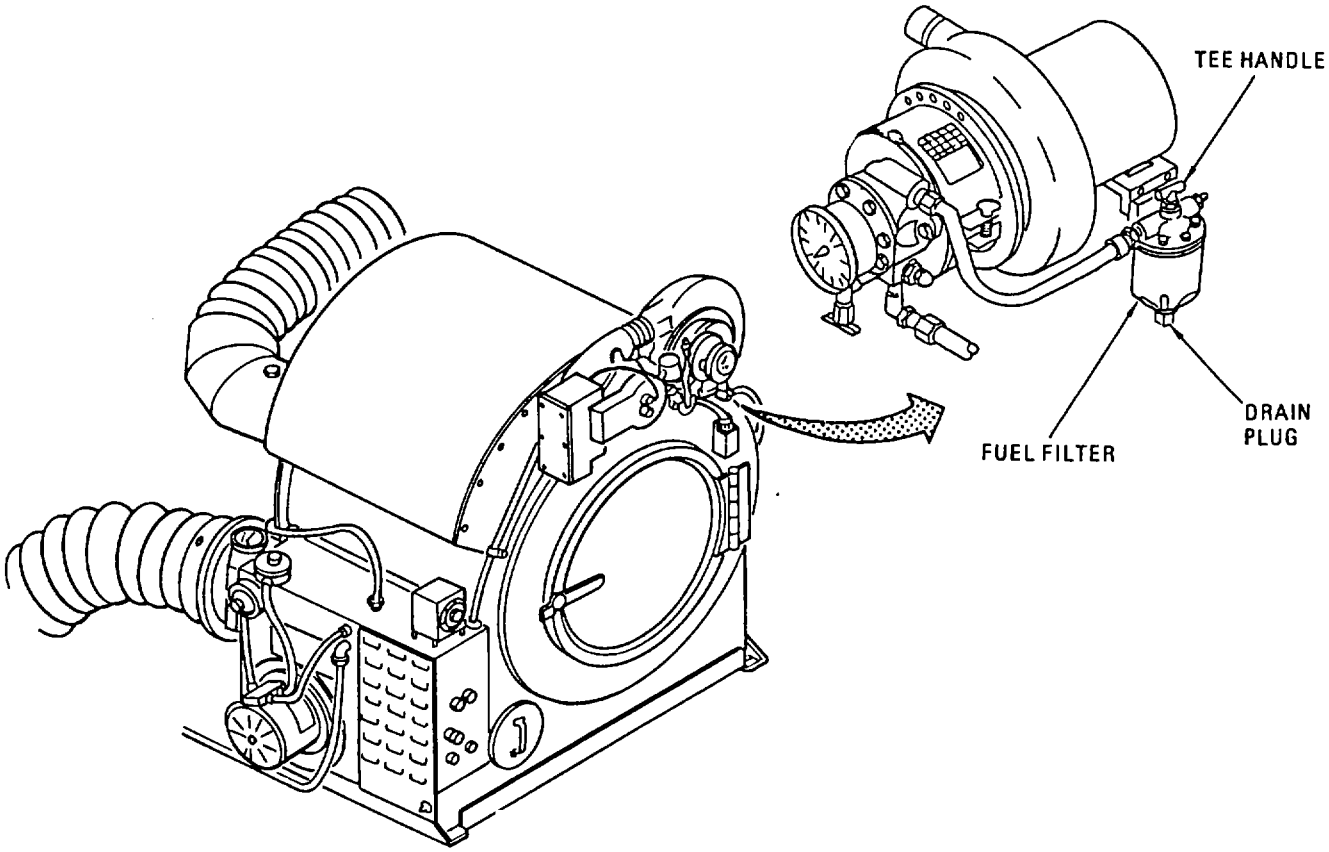
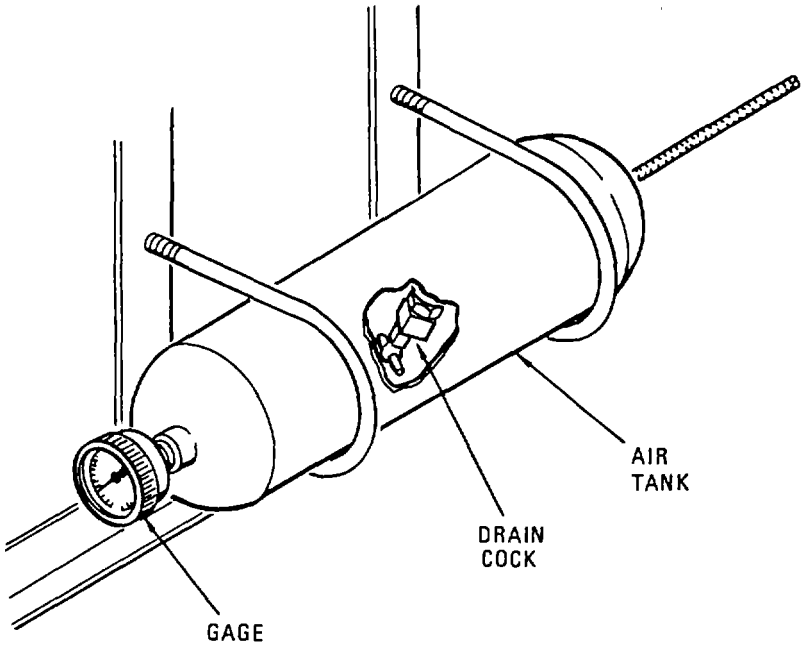


Table 2-1. Preventive Maintenance Checks and Services - continued.

Item No.	Interval	Location / Item to Check/Service	Procedure	Not Fully Mission Capable If:
26	Weekly	Washer Air Tank		
			a. Make sure gage has at least 30 psi.	
			b. Open drain cock to bleed condensation from air tank.	Washer air tank has water in it.
			c. Close drain cock.	



Section III. OPERATION UNDER USUAL CONDITIONS

2-6. SCOPE.

This section contains procedures for operation of the Laundry Unit under normal conditions.

2-7. ASSEMBLY AND PREPARATION FOR USE.

WARNING

Requires two people for lifting components of the Laundry Unit. Failure to observe standard lifting procedures may result in serious injury to personnel.

Components are mounted or stored on the trailer for shipment and storage. During use, some components are removed from the trailer. The setup instructions that follow include steps for unpacking and positioning components. Components should be unpacked only when the facility is planned for use or when maintenance is needed. Figure 2-9 shows the Laundry Unit as it would be for shipping or storage.

a. Initial Preparation.

NOTE

When setting up Laundry Unit nonmetallic hose or electrical cable that need to be positioned or repositioned, use safety ties for positioning of equipment.

(1) Select a site for the Laundry Unit that has adequate water and drainage for operational needs. Select a relatively level area.
(2) Position the Laundry Unit water heater within approximately 30 feet of water source. Refer to FM 10-280, Mobile Field Laundry, Clothing Exchange, and Bath Operations.
(3) Set the parking levers, lower the trailer supports, and unhitch towing vehicle. If necessary, dig holes or block wheels to ensure the trailer is level. Refer to TM 9-2330-37614&P.
(4) Remove tarpaulin per substeps below:

(a) Unhook fibrous rope from trailer.

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

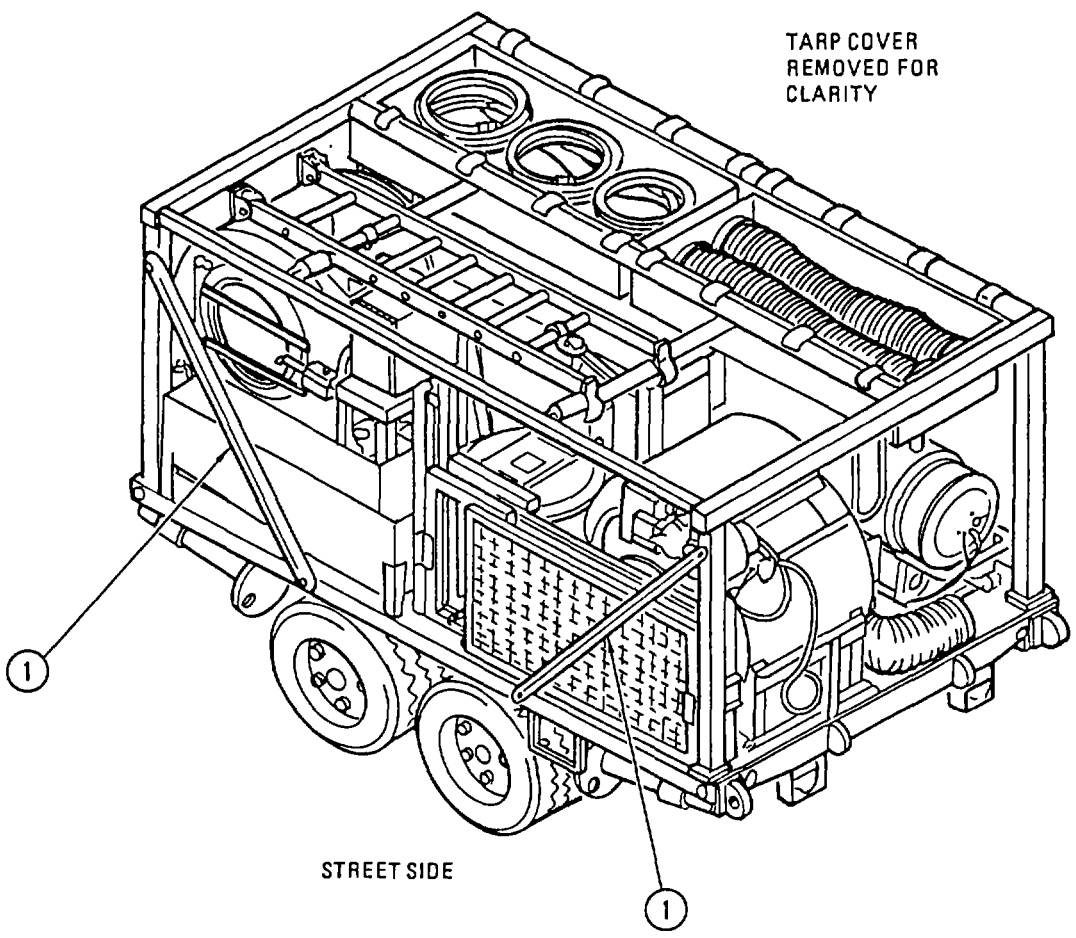


Figure 2-9. Laundry Unit for Shipping or Storage (Sheet 1 of 2)

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

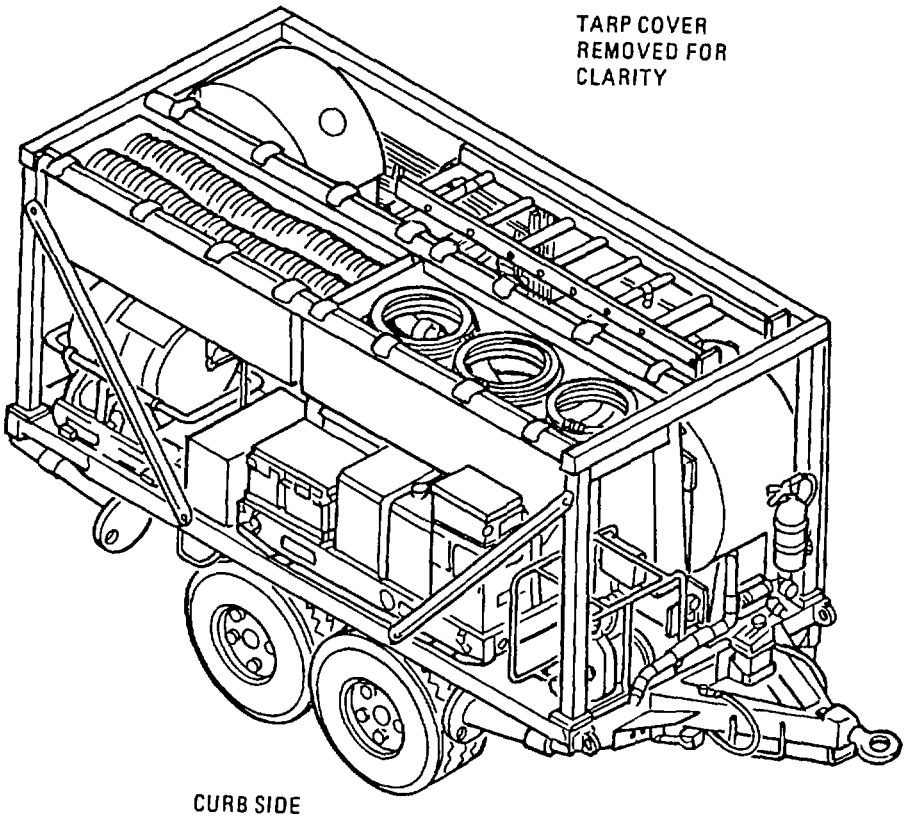


Figure 2-9. Laundry Unit for Shipping or Storage (Sheet 2)

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

a. Initial Preparation - continued.

(b) Undo pile fastener tape on weather flap.

(c) Remove half-hitch knot.

NOTE

Lacing is on all four corners of tarpaulin. Unlace one corner at a time.

(d) Undo lacing.

(e) After all four corners are open, fold sides up on top of tarpaulin and then fold the ends of tarpaulin.

(f) Fold tarpaulin in half(lengthwise) then fold again. Keep folding until desired size is achieved for storage.

(5) Remove bottom bolts, washers, and nuts from tarpaulin support frames (1) on the street sid e of Laundry Unit. Rotate tarpaulin support frames down. Store hardware in toolbox.

b. Work Platform. See figure 2-10.

WARNING

Requires two people for lifting various components. Failure to observe proper lifting procedures may result in serious injury to personnel.

(1) Remove single acting pin (12) from upright (13).

(2) Remove upright (13) and store under wet washer bin.

(3) Remove short clamp (1 i1) and store in toolbox (4).

(4) Slide washer platform (1) toward front of trailer and remove washer platform (1) from trailer.

(5) Remove long clamp (10) from short platform (2) and dryer platform (3) and store long clamp in tool box (4).

(6) Remove short platform (2) from trailer.

(7) Remove single acting pin (12) from upright (13).

(8) Remove upright (13) and store under wet washer bin.

(9) Slide dryer platform (3) toward front of trailer and remove washer platform from trailer.

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

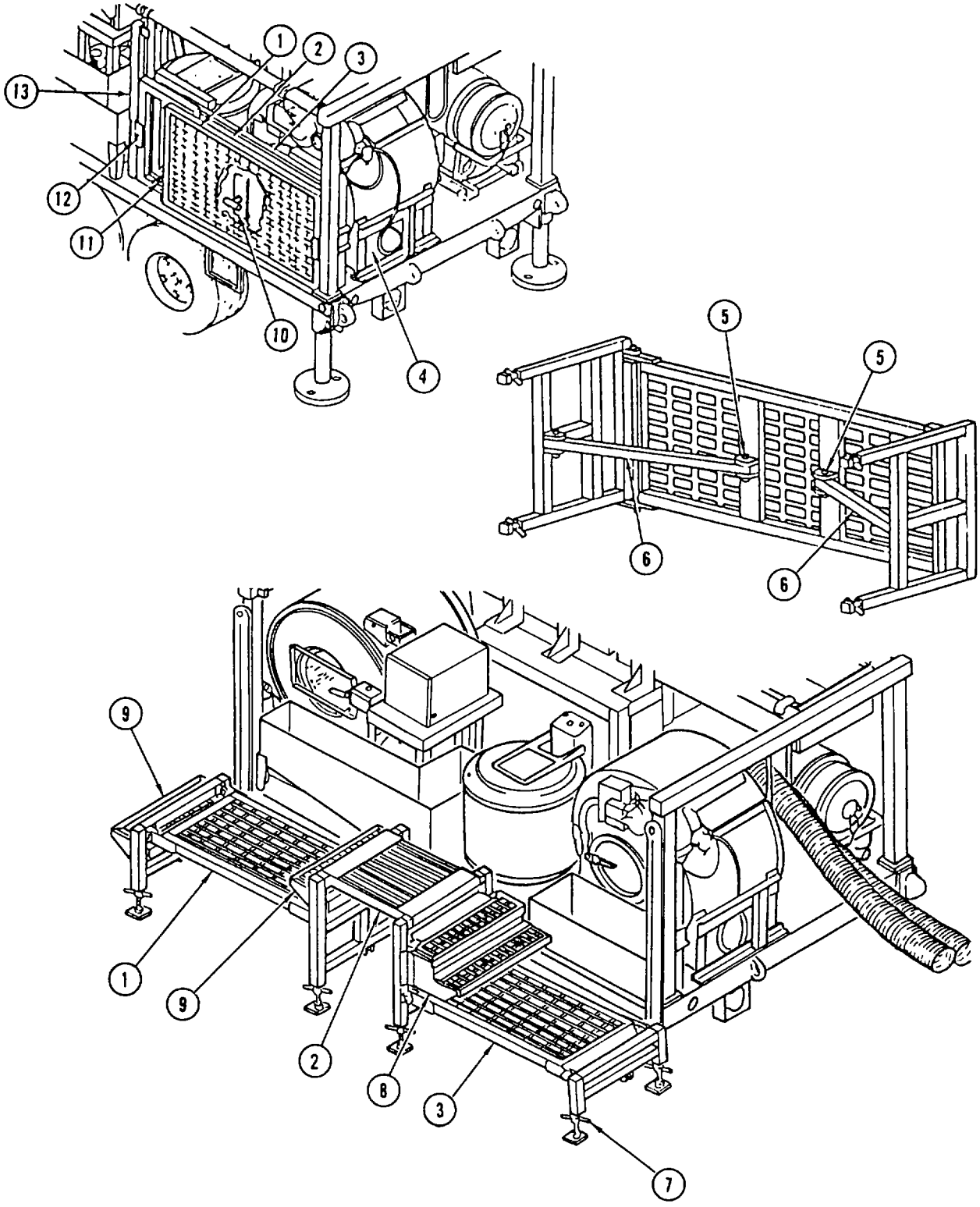


Figure 2-10. Work Platform

2-7 ASSEMBLY AND PREPARATION FOR USE - continued.

b. Work Platform continued.

(10) Remove quick release pins (5) from platform assemblies. Adjust washer/dryer platform brace (6) and insert quick release pins (5) in holes.

(11) Place washer platform (1) and dryer work platform (3) next to the trailer. Install short platform (2).

(12) Remove two step stairs platform (8), in front of circuit breaker panel, and install on dryer platform (3).

(13) Locate and remove stair (1 step) (9) from wet washer bin of trailer and install on washer platform (1).

NOTE

If platform is in soft ground, use platform footings (8 each) to support platform. Stored in basket.

(14) Adjust platform level (7) and brace with platform footing if needed.

c. Ladder. See figure2-11.

(1) Release two tiedown straps (6) and remove ladder (3).

(2) Position ladder (3) on curb side beam (4).

(3) Remove four single acting pins (5) from two struts (1), remove two struts (1) and set struts (1) aside.

WARNING

When removing street side beam it requires two personnel. Personnel or dryer could be hurt or damaged during removal.

(4) Remove two single acting pins (8) from street side beam (7) and remove left beam. Store street side beam (7) underneath trailer.

(5) Remove contents from baskets (2).

(6) Store two struts (1) in basket (2).

2-7. ASSEMBLY AND PREPARATION FOR USE -continued.

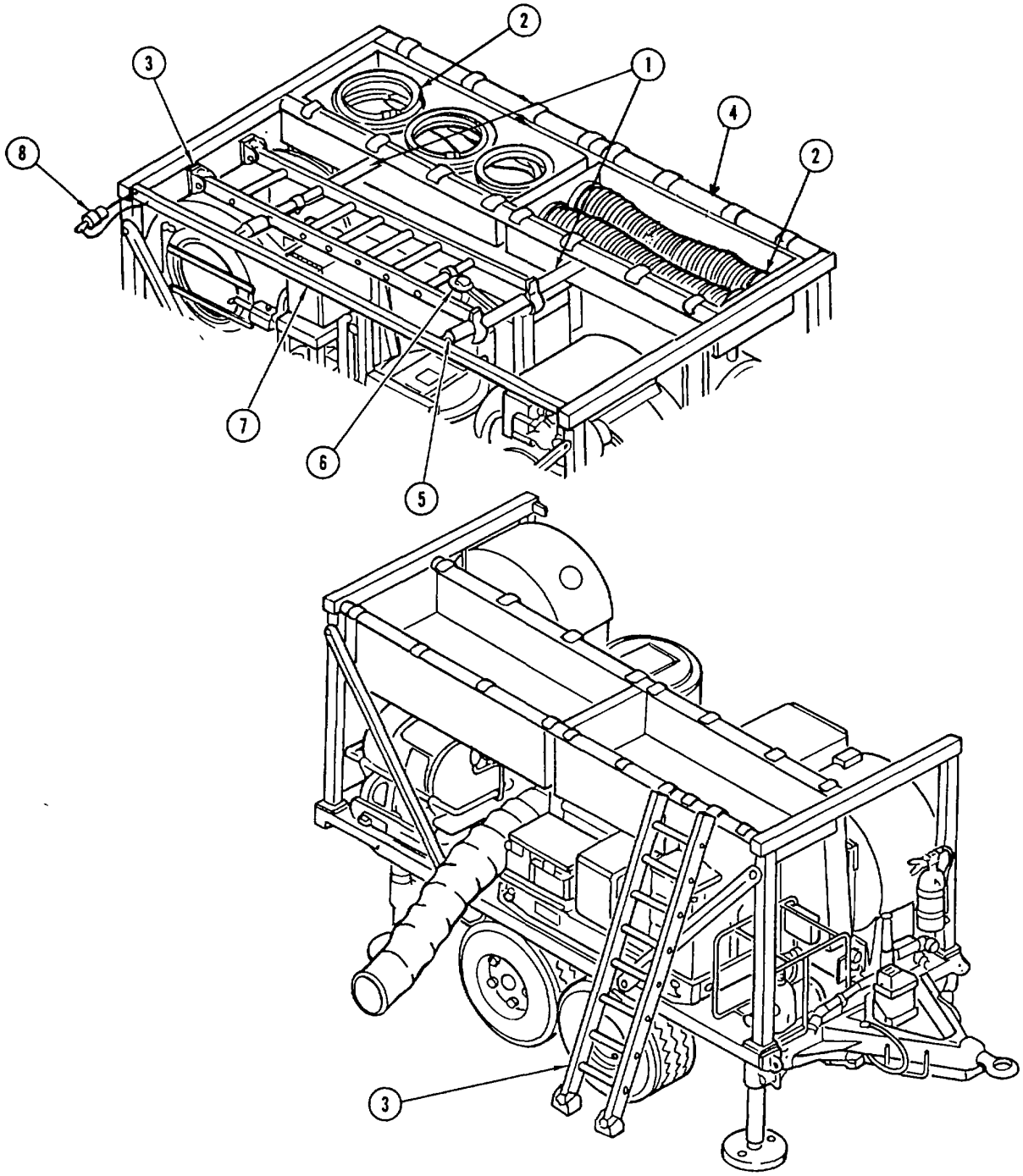


Figure 2-11. Ladder Storage

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

d. Quick Disconnect (QD) Couplings. See figure 2-12.

(1) Connect QD coupling per substeps below:

WARNING

To prevent injury to personnel and damage to equipment, use care when connecting QD couplings. Avoid getting dirt, sand and debris on QD coupling matting surfaces or in hoses.

(a) Make sure QD coupling is clean
(b) Lift locking arms (1) up and out from QD cap (2) if installed
(c) Remove QD cap (2) from QD coupling half (3) (male coupling) if installed.
(d) Lift locking arms (1) up and out from QD coupling half (4) (female coupling).
(e) Position QD coupling half (4) (female coupling) on QD coupling half (3) (male coupling) and hold in place.
(f) Pull both locking arms (1) back at same time until arms (1) are down against body of QD coupling half (4) (female coupling).
(g) Pull on QD coupling half(4) (female coupling) to make sure that QD coupling is connected.

e. Water Pump. See figure 2-13.

(1) Remove two bolts (3) from right and left water tiedowns (2), and remove water tiedowns (2).
(2) Remove water pump (1) and locate it no more than 20 feet (6m) from the water source.

WARNING

Hose clamps on nonmetallic hoses can have sharp edges. Be careful when handling nonmetallic hoses.

(3) Connect nonmetallic hose (10) to quick coupling half (9) on water pump (1).

2-7. ASSEMBLY AND PREPARATION FOR USE - continued

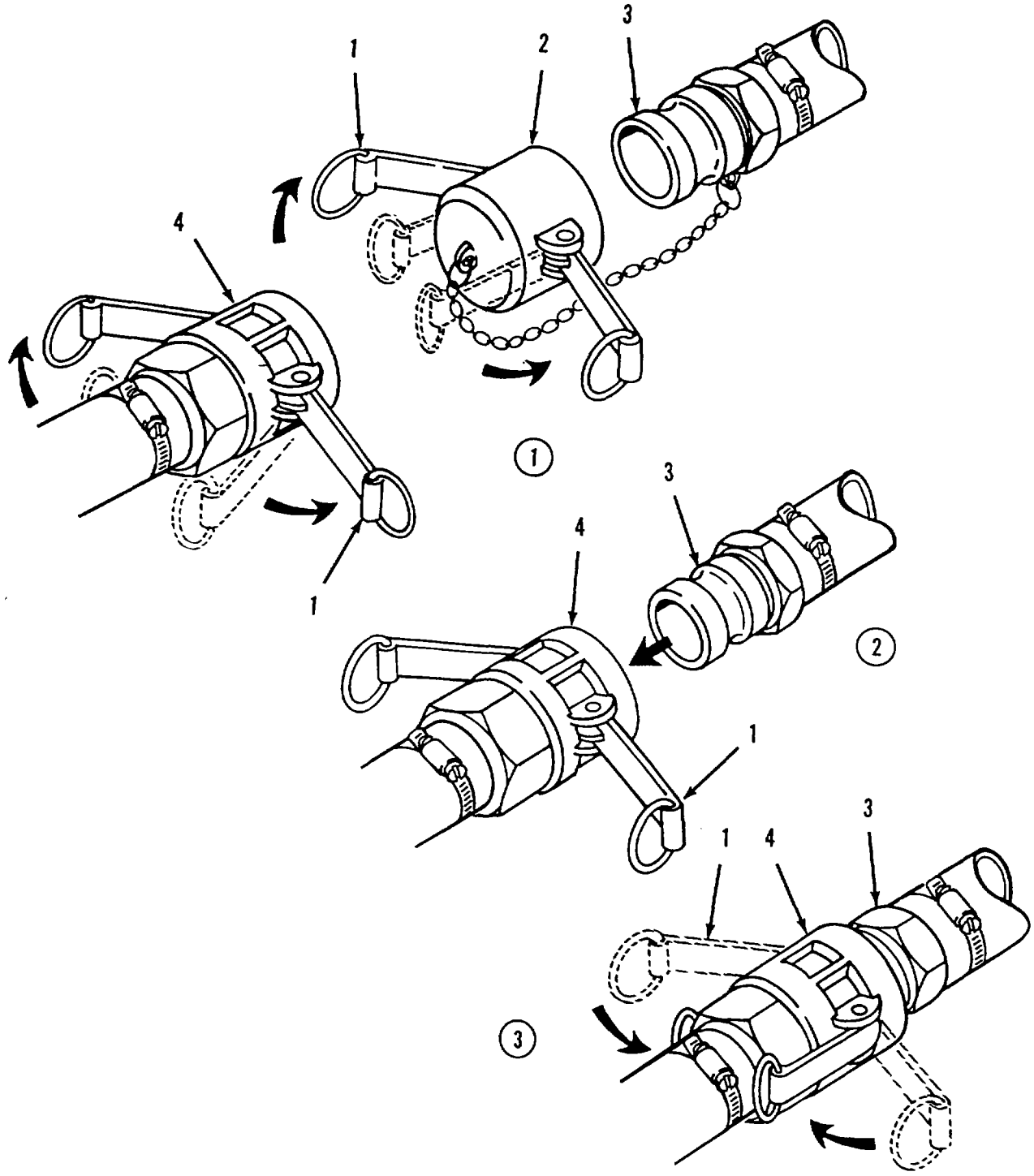


Figure 2-12. Quick Disconnect Coupling

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

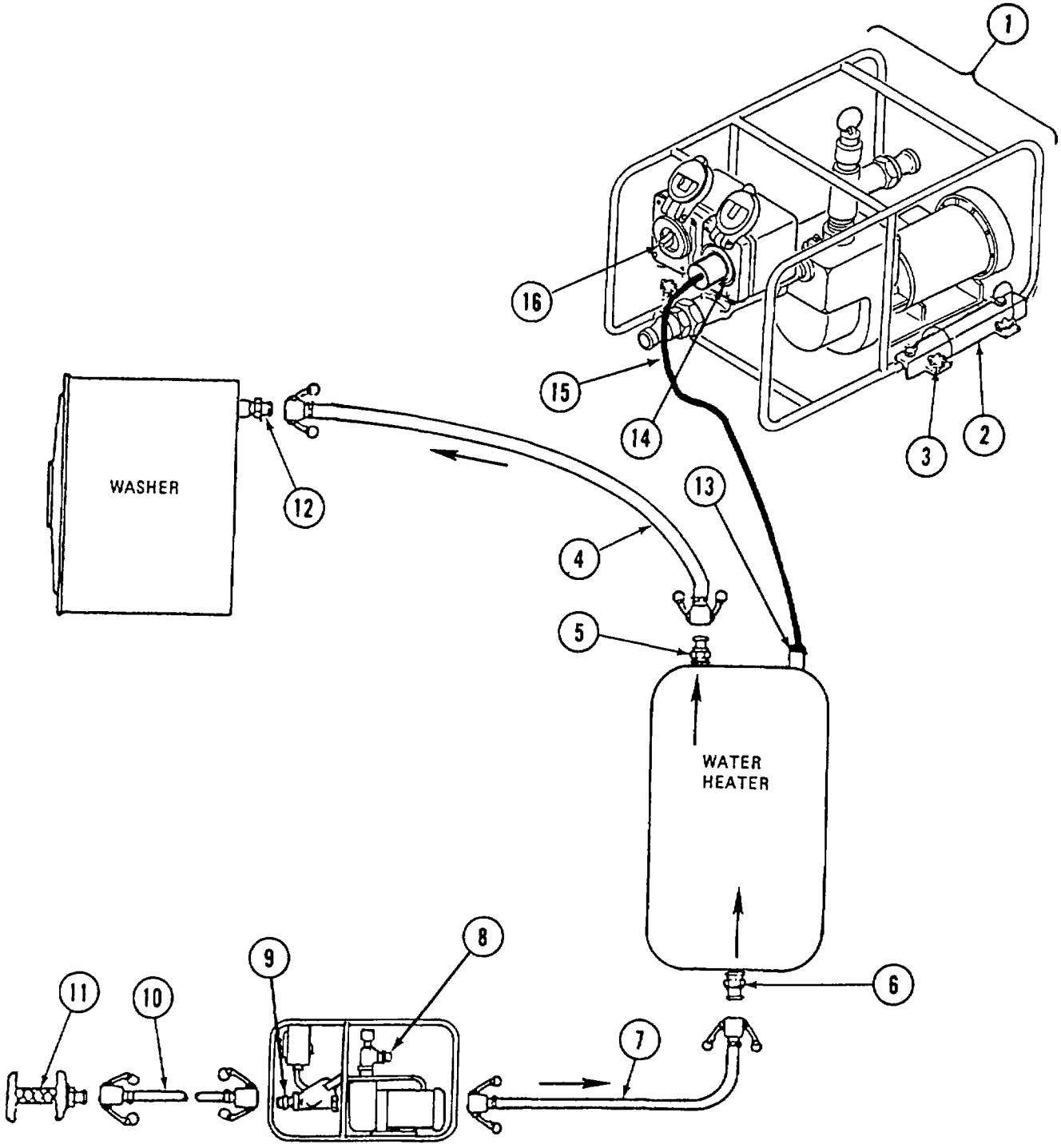


Figure 2-13. Water Pump/Electrical Nonmetallic Hose/Electrical Connections

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

e. Water Pump - continued.

WARNING

Ensure that water hoses do not touch or cross other water hoses, exhaust ducts, power cables, or fuel lines. Melting/damage can occur causing leaking fuel and water or electrical hazards. Death by electrocution, fire, or explosion could result.

(4) Connect suction strainer (11) to the other end of nonmetallic hose (10). Position the suction strainer (11) in the water source above the stream bed. Make a tripod from tree branches or saplings and hang the strainer from the place where the branches are tied together, or position the strainer on a bed of stones or gravel.

(5) Connect nonmetallic hose (7) to water pump quick coupling half(8).

(6) Connect the other end of the nonmetallic hose (7) to water heater quick coupling half (6).

(7) Make sure water pump toggle switch (16) is OFF.

(8) Make sure water heater electrical receptacle connector switch is OFF. (Reference TM 10-4520-259-13&P)

WARNING

Be sure that water pump cable does not touch or cross other water hoses, exhaust ducts, or fuel lines. Melting/damage can occur causing leaking fuel and water or electrical hazards. Death by electrocution, fire, or explosion could result.

(9) Connect water pump distribution power cable (15) between water heater electrical receptacle connector (13) and water pump electrical receptacle connector (14).

(10) Install nonmetallic hose (4) to washer quick coupling half(12) and to water heater quick coupling half(5).

f Nonmetallic HoseDrains. See Figure 2-14.

(1) Be sure that nonmetallic hose (4) is connected to extractor quick coupling half (5) and washer quick coupling half (3).

WARNING

Be sure that drain hoses do not touch or cross other water hoses, power cables, exhaust ducts, or fuel lines. Melting/damage can occur causing leaking fuel and water or electrical hazards. Death by electrocution, fire, or explosion could result.

(2) Connect one 25-foot (7.6 m), 1-1/2-inch-diameter nonmetallic hose (7) to wet wash bin quick coupling half(6) and route the nonmetallic hose to a drain field.

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

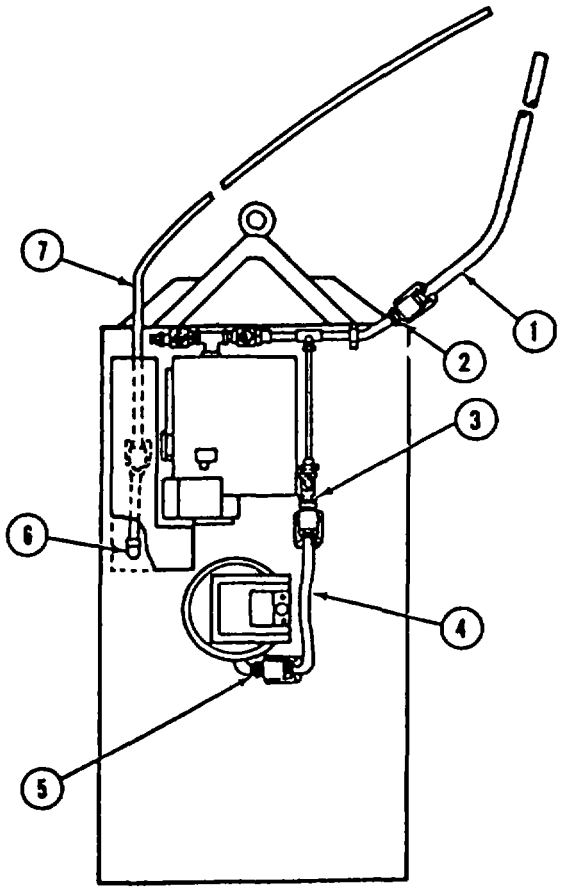


Figure 2-14. Nonmetallic Hose Drain Field Connection

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

f. Nonmetallic Hose Drains - continued.

(3) Remove quick disconnect cap from quick disconnect coupling half on washer/extractor drain piping.

CAUTION

Nonmetallic hoses can collapse. Make sure there are no collapsed nonmetallic hoses.

(4) Connect one 25-foot (7.6 m), 2-1/2-inch-diameter nonmetallic hose (1) to washer quick coupling half (2) and route the nonmetallic hose to a drain field.

g. Main Power Cable. See figure 2-15. If not installed, install per substeps below. If installed, go to next step.

WARNING

Make sure generator is off prior to installing main power cable. Failure to observe may result in death or serious injury.

(1) Turn MASIER SWITCH to OFF, refer to TM 5-6115-585-12.
(2) Remove dust cap from main power cable (1).
(3) Remove dust cap from power distribution panel (2).
(4) Connect main power cable (1) electrical plug connector to power distribution panel (2) left side receptacle connector.
(5) Connect pigtail end of main power cable to generator, refer to TM 5-6115-585-12.

Generator	Main Power Cable
L1	BLACK
L2	RED
L3	BLUE
LO	WHI
GROUND	GREEN

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

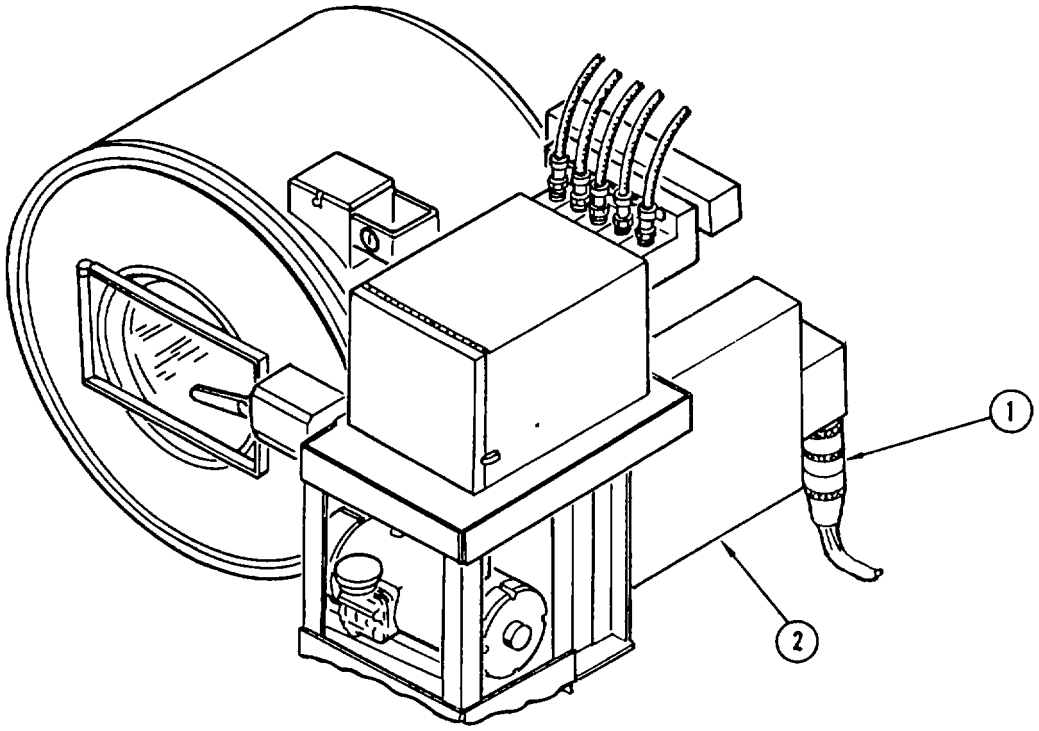


Figure 2-15. Main Power Cable

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

h. Ground Rod. See figure 2-16.

WARNING

ELECTRICAL HIGH VOLTAGE CAN KILL YOU. Electrical high voltage cannot be seen but it can kill you. Electricity is unlike most other dangerous things you can come in contact with because it gives no warning and no symptoms to be wary of. Its effect is immediate. It can kill you, render you unconscious, or severely burn you.

Extreme care must be taken to prevent injury to fingers or hands when driving the ground rods. Do not place hands between the ram and drive collar. Gloves should be worn. Be sure all connections are tight so as to avoid a possible spark between the units and ground rod.

(1) Locate ground rod (3) with ground rod coupling (2) and driving stud (1).

NOTE

If driving gets too hard, soak the earth with water and try driving rod until eight feet of rod is in the ground. If this does not work initially, continue soaking ground. If unable to get eight feet of rod into the soil, then keep soil moist around the rod for the duration of the operation.

(2) Drive ground rod (3) into ground with hammer. When ground rod (3) is six inches above ground, remove driving stud (1).
(3) Screw the next ground rod (3) into ground rod coupling (2). Screw driving stud (1) into ground rod coupling (2).
(4) Continue process until ground rod (3) is eight feet below earth's surface.
(5) Install bare copper wire (5) in electrical clamp (4). Tighten electrical clamp (4).
(6) Install bare copper wire (5) in lug (6) of generator marked GROUND.
(7) Place lug terminal that comes on braided wire with ground rod in toolbox.

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

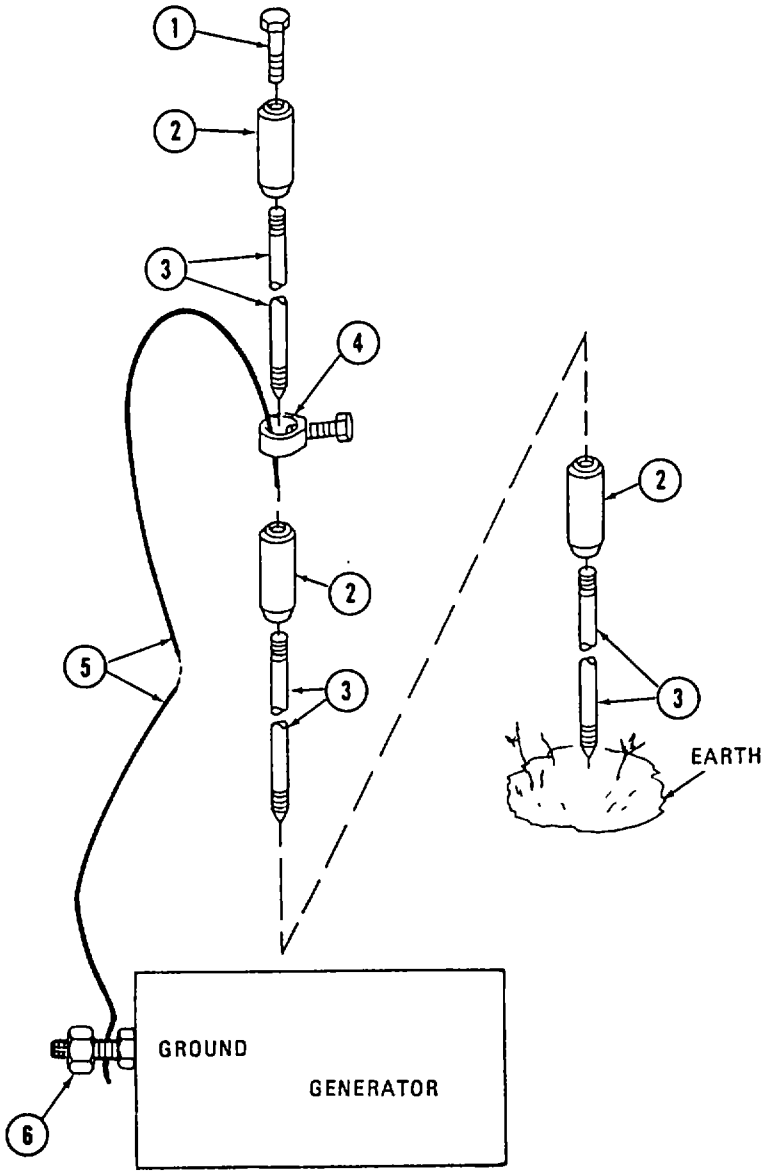


Figure 2-16. Ground Rod

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

i. Dryer Bin. See figure 2-17.

(1) Remove four hexagon head cap screws (1), lock washers (2), and washers (3) located inside dryer bin (4). Place hardware in toolbox.
(2) Remove dryer bin (4) and place in front of dryer (5).

j. Dryer Nonmetallic Hose Fuel Lines. See figure 2-18.

WARNING

Use diesel or JP-8 fuel only. Failure to do so may result in death or serious injury to personnel or damage to equipment.

(1) Do one of the steps below:

(a) If using a 55-gallon (208 liters) drum, follow substeps below.

1. Remove drum extension (4) from return outlet (8).
2. Install drum extension (4) on pipe coupling (7).
3. Install drum fill adapter (6) in drum (5).

(b) If using a 5-gallon (19 liter) military gas can, install drum fill adapter (6) in military gas can.

WARNING

Be sure that nonmetallic hose fuel lines do not touch or cross water hoses, power cables, or exhaust ducts. Melting/damage can occur causing leaking fuel and water or electrical hazards. Death by electrocution fire, or explosion could result.

(2) Locate nonmetallic hose fuel line (3) under dryer.
(3) Connect one nonmetallic hose fuel line (3) to dryer fuel filter brass male connector (2) and one nonmetallic hose fuel line (3) to dryer fuel pump 90° crescent fitting (1).
(4) Position nonmetallic hose fuel lines (3) in clamp on right side of dryer and tighten clamp.
(5) Connect the other ends of nonmetallic hose fuel lines (3) to drum fill adapter (6). The line from the fuel filter connects to fitting labeled SUPPLY on drum fill adapter. The line from the bottom of fuel pump connects to fitting labeled RETURN on the drum fill adapter.

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

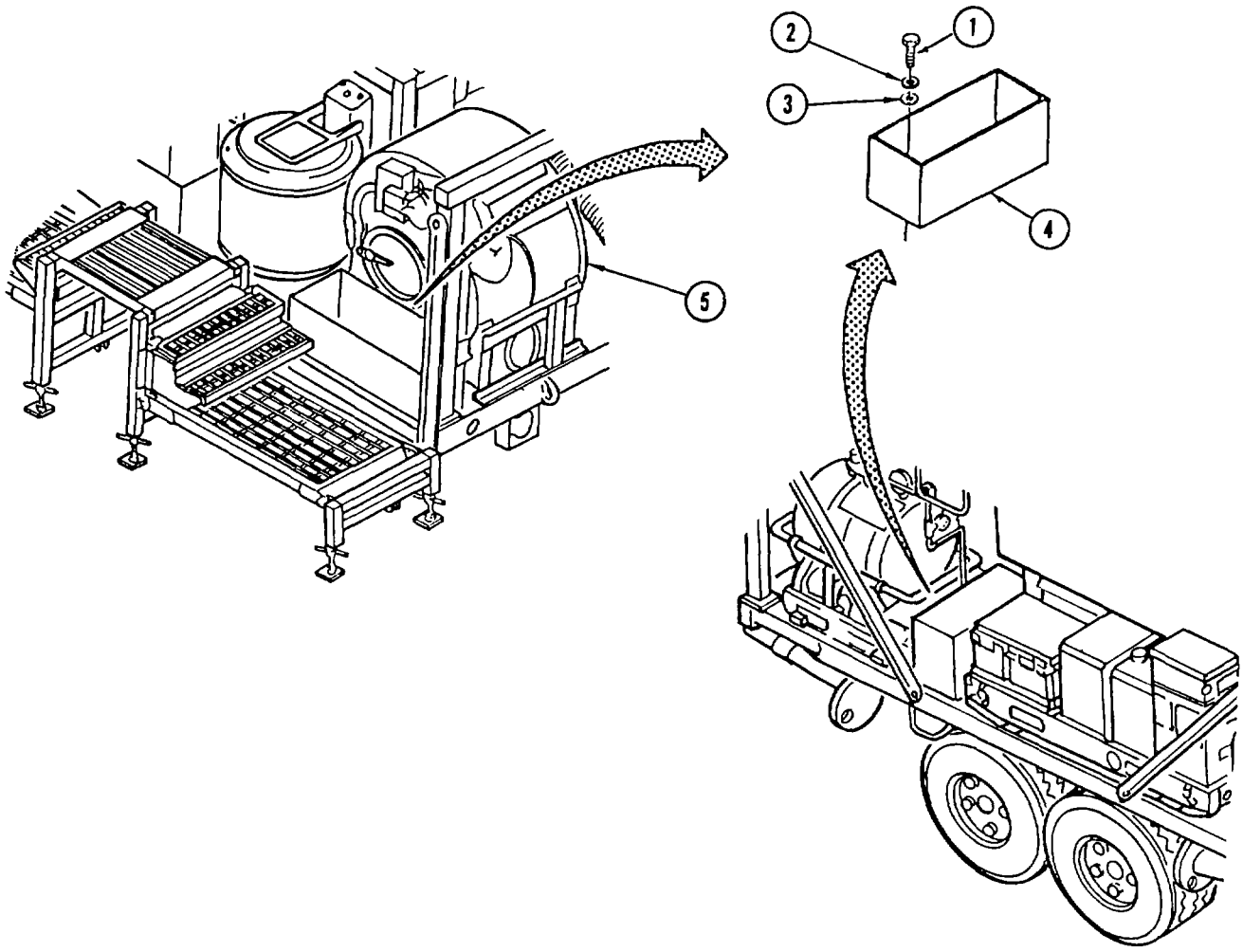


Figure 2-17. Dryer Bin Removal and Installation

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

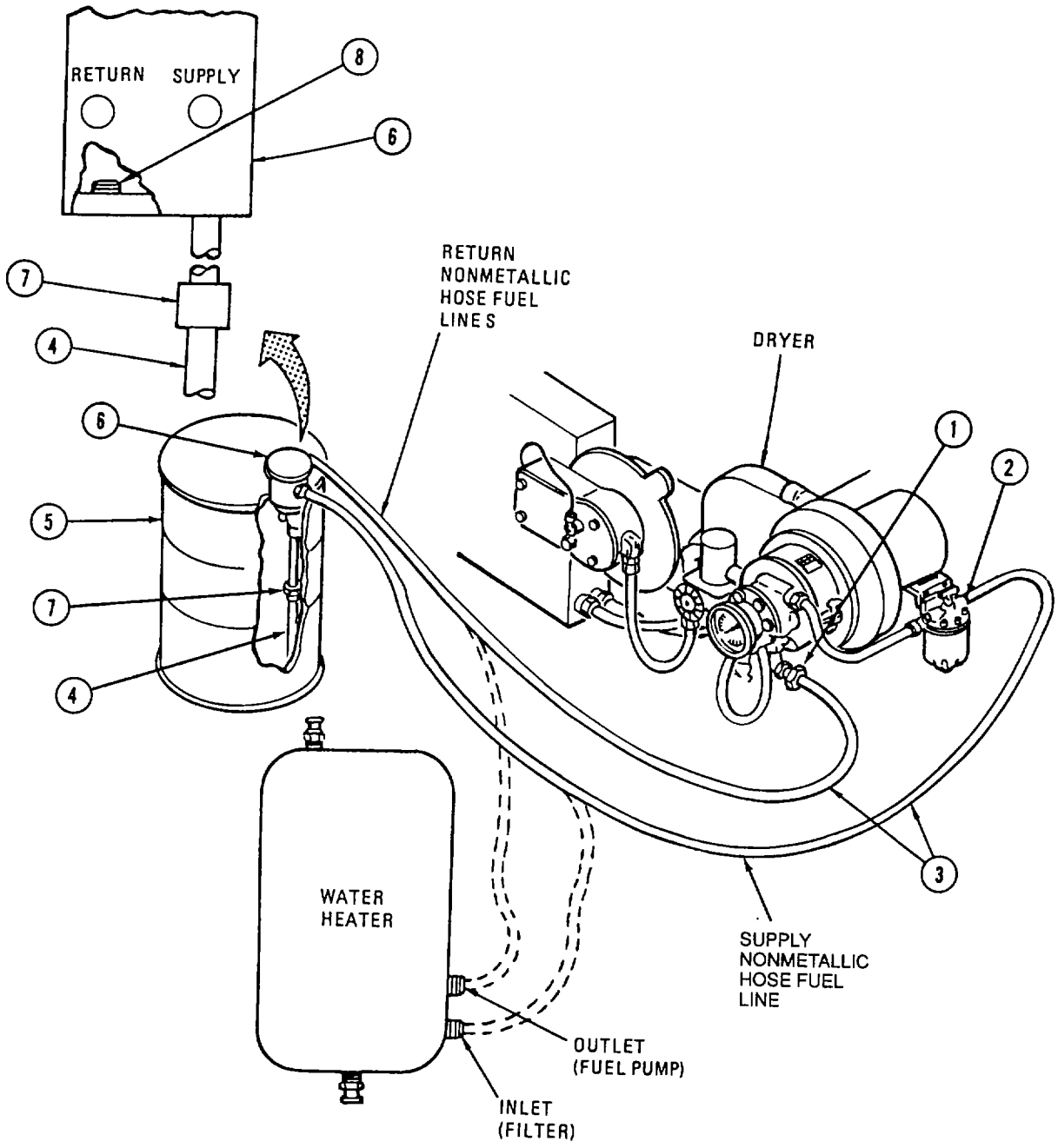


Figure 2-18. Dryer/Water Heater Nonmetallic Hose Fuel Lines Installation

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

k. Water Heater Nonmetallic Hose Fuel Lines. See figure 2-18.

(1) Do one of the steps below:

(a) If using a 55-gallon (208 liters) drum, follow substeps below:

1. Remove drum extension (4) from return outlet (8).
2. Install drum extension (4) on pipe coupling (7).
3. Install drum fill adapter (6) in drum (5).

(b) If using a 5-gallon (19 liters) military gas can, install drum fill adapter (6) in military gas can.

(2) Locate nonmetallic hose fuel line (3) under water heater.

WARNING

Be sure that nonmetallic hose fuel lines do not touch or cross water hoses, power cables, or exhaust ducts. Melting/damage can occur causing leaking fuel and water or electrical hazards. Death by electrocution fire, or explosion could result.

(3) Connect nonmetallic hose fuel lines (3) to water heater fuel filter inlet and to fuel pump outlet. Refer to TM 10-4520-259-13&P for location of water heater components.

(4) Connect the other ends of nonmetallic hose fuel lines (3) to drum fill adapter (6). The line from the fuel filter connects to fitting labeled SUPPLY on drum fill adapter. The line from the bottom of fuel pump connects to fitting labeled RETURN on the drum fill adapter.

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

l. Generator, Dryer, and Water Heater Exhaust Hoses. See figure 2-19.

WARNING

Carbon monoxide is dangerous. Ensure that exhausts are properly vented to an open-air area. Death or serious injury to personnel can result from heavy exposure to exhaust gas.

(1) Unhook three exhaust straps (3) and remove metal hose (2) from Laundry Unit.

WARNING

Be sure that exhaust ducts do not touch or cross other exhaust ducts, power cables, fuel lines, or water hoses. Melting/damage can occur causing leaking fuel and water or electrical hazards Death by electrocution, fire, or explosion could result.

(2) Connect 5-inch (126 mm) metal hose (2) to dryer exhaust port elbow (6) and thro ugh bracket (1). Extend metal hose away from Laundry Unit.

NOTE

The dryer air duct hose is stored inside the dryer assembly during transportation.

(3) Install 12-inch (305 mm) air duct hose (5, sheet 2) on dryer exhaust duct adapter (discharge) (4, sheet 2). Fully extend air duct hose (5, sheet 2) along curb side of trailer

(4) Connect two 7-inch (178 mm) burner exhaust ducts (7, sheet 2) together and connect to water heater exhaust port. Extend duct full length away from rear of trailer.

(5) Connect two 2-inch (51 mm) generator exhaust hoses (8, sheet 2) to generator exhaust ports. Extend ducts away from trailer assembly.

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

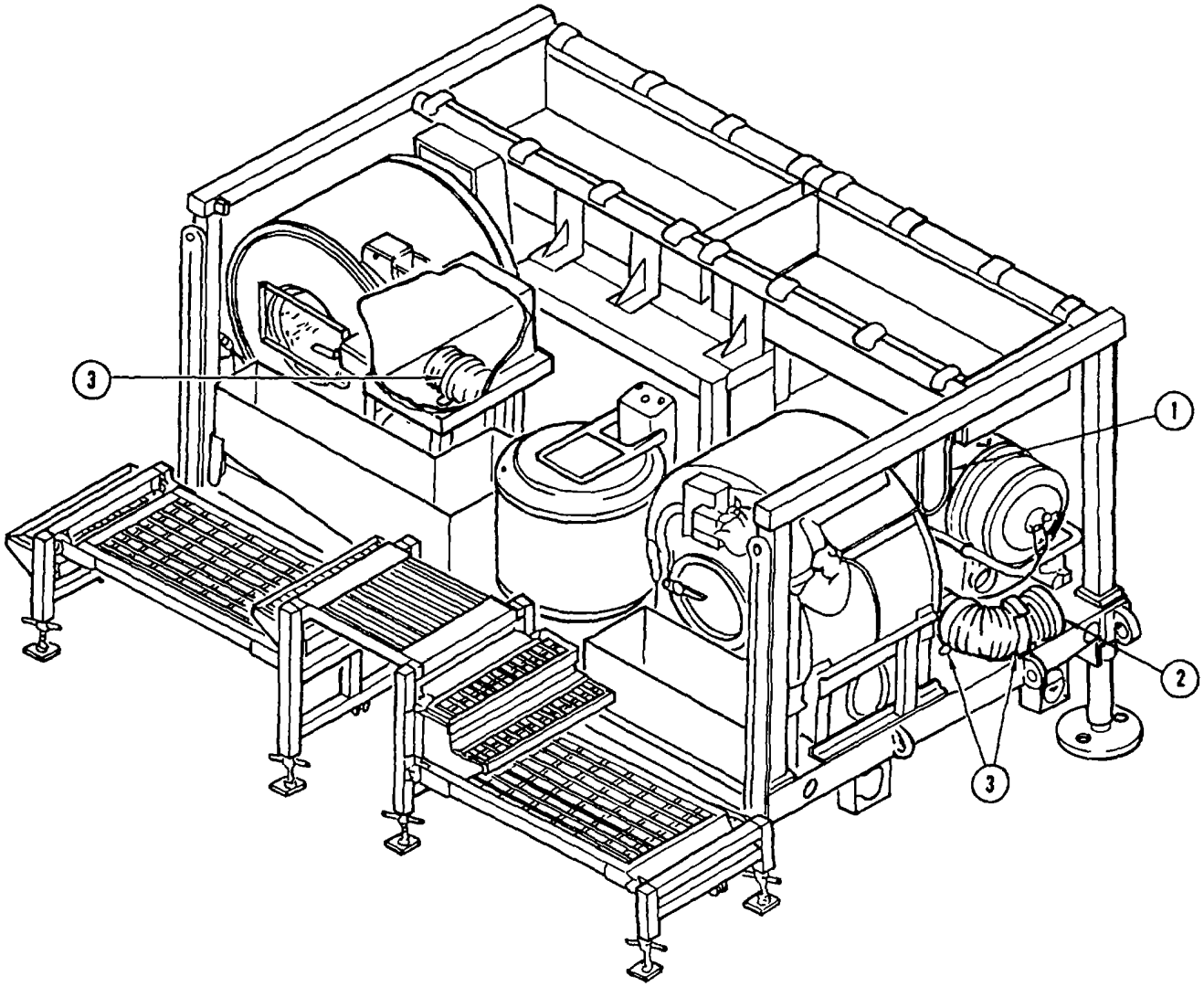


Figure 2-19. Exhaust Metal Hose Stowage/Installation (Sheet 1 of 2)

2-7. ASSEMBLY AND PREPARATION FOR USE - continued.

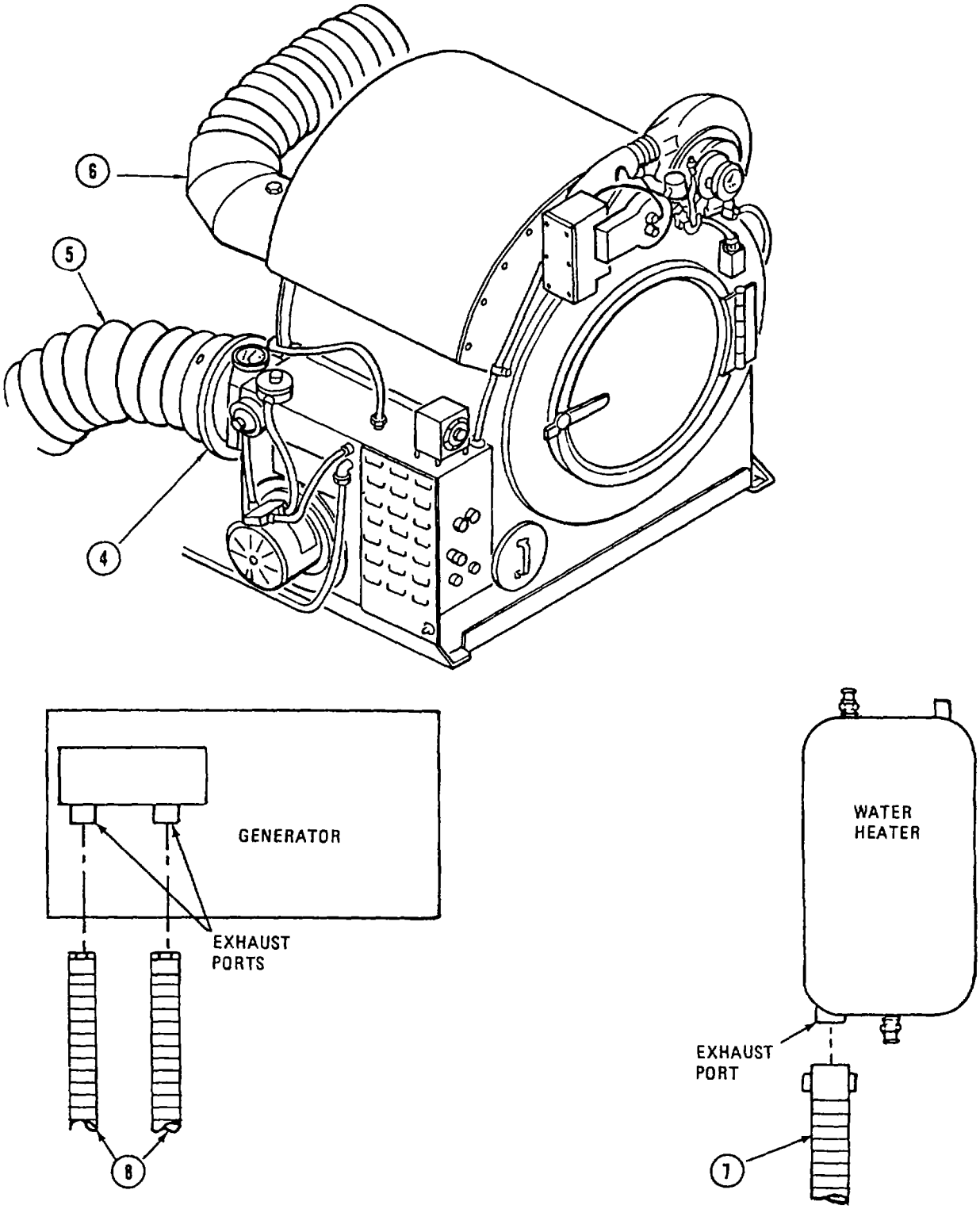


Figure 2-19. Exhaust Metal Hoses Storage/Installation (Sheet 2)

2-8. INITIAL ADJUSTMENTS AND CHECKS.

WARNING

If EMERGENCY SHUTDOWN is required, on generator control panel turn MASTER SWITCH to OFF. All electrical power to Laundry Unit will be cut off. Failure to observe this warning may result in serious injury or death to personnel.

WARNING

Ear protection is required when operating the Laundry Unit. Serious hearing loss could occur if the Laundry Unit is operated without ear protection.

a. Generator. Refer to TM 5-6115-585-12 for starting procedures and start the generator.
b. Water Pump. See figure 2-20.

(1) Remove quick disconnect plug (I) located at the top of pipe tee (2).
(2) Prime pump with clean water and fill up pipe tee (2) with water.
(3) Replace quick disconnect plug (1).
(4) Press temperature/amperage reset button.
(5) Set toggle switch (3) to ON

2-8. INITIAL ADJUSTMENTS AND CHECKS - continued.

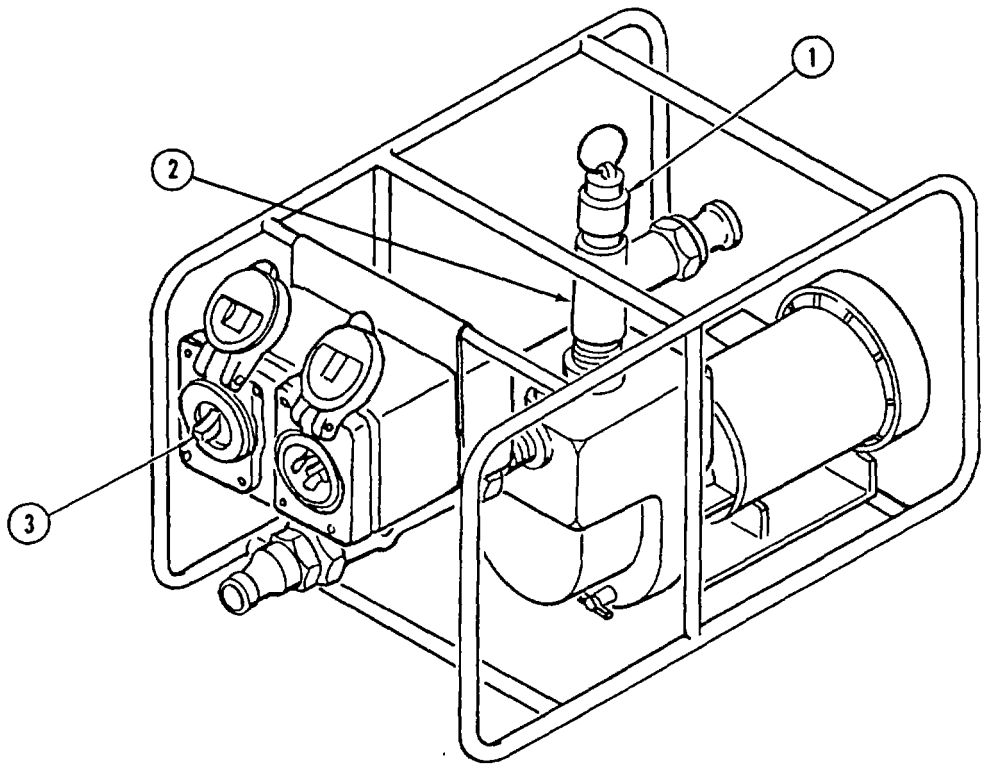


Figure 2-20. Water Pump Start-Up.

2-8. INITIAL ADJUSTMENTS AND CHECKS - continued.

c Water Heater. See figure 2-21.

(1) Make sure water ball valve (1) is open. (Handle is parallel with piping).
(2) Open draincock (2) until water flows from vent hose (5). Close draincock (2). Clockwise rotation closes draincock.
(3) Fully open air band (8).

NOTE

If water heater thermometer reading is above temperature control setting, temperature control must be set to higher temperature. This will cause the water heater not to operate.

(4) Set water temperature control (3) to 1600F (71°C).
(5) Open control box and press UV scanner flame safeguard control reset button. Close control box.

WARNING

Do not touch exhaust ducts while running or immediately after shutdown, as severe burns may result.

(6) Open fuel shutoff globe valve (7). Counterclockwise opens valve.
(7) Set subcircuit breaker (4) to ON.
(8) Open pump bleeder valve on fuel pump (9) until fuel flows, then close.
(9) Adjust fuel pressure for elevations as follows:

(a) Up to 2500 ft 125 psi (preset at factory)

2501 ft to 4000 ft 115 psi

4001 ft and UP 100 psi

(b) Remove cap plain nut from right side of fuel pump (9).
(c) Turn screw in or out to the desired setting on fuel pressure gage (6).
(d) Install cap plain nut.

(10) Adjust air band (8) until there is little or no smoke in the heater exhaust.
(11) If any questions on water heater, refer to TM 10-4520-259-13&P.

2-8. INITIAL ADJUSTMENTS AND CHECKS - continued.

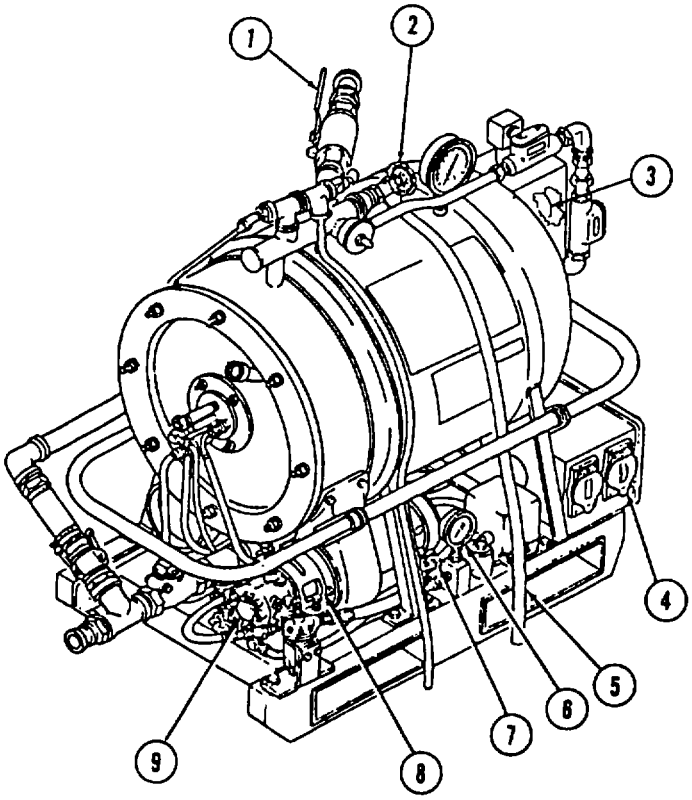


Figure 2-21. Water Heater Initial Adjustments

2-8. INITIAL ADJUSTMENTS AND CHECKS - continued.

d. Dryer. See figure 2-22.

CAUTION

When setting temperature control knob, always turn knob to the right. Failure to do this will damage temperature control.

(1) Set temperature control (9) to 200°F (39°C).
(2) Set sequential timer (10) to ON approximately 10 minutes.
(3) Adjust air shutter (1) to approximately 1/2 inch open (12.7 mm).
(4) Open fuel shutoff globe valve (5). Counterclockwise opens valve.
(5) Loosen three captive fasteners on control cover and open control cover.
(6) Push UV scanner flame safeguard control reset button (8).
(7) Close control cover and tighten three captive fasteners.
(8) Push motor START button (6) on switch box cover (7).
(9) Open petcock on fuel pump until fuel flows, then close.
(10) Adjust fuel pressure for elevations as follows:

(a) Up to 3000 ft	120 psi (preset at factory)
3001 ft to 5000 ft	110 psi
5001 ft and UP	100 psi

(b) Remove cap plain nut from right side of fuel pump.
(c) Turn screw in or out to the desired setting on fuel pressure gage.
(d) Install cap plain nut.

(11) On tumbler blower, adjust air shutter (1) by loosening thumbscrew (2) and sliding shutter (1) up or down to increase or decrease air opening so that the heater burner has a steady roar. A bright clean flame will be seen in sight glass (4).
(12) On burner. adjust air nozzle (3) for fine operation.
(13) Push STOP/RESET button.

2-8. INITIAL ADJUSTMENTS AND CHECKS - continued.

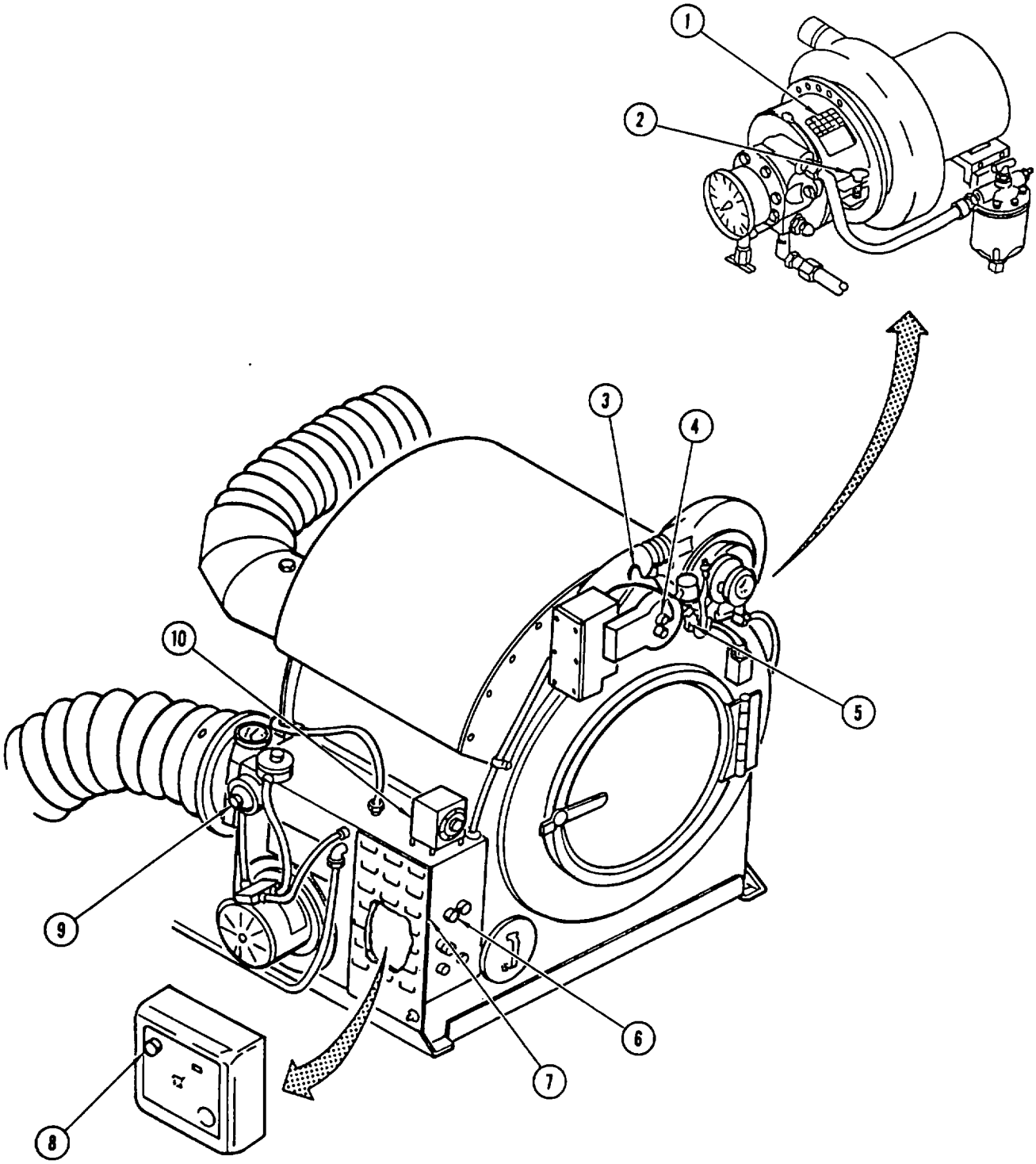


Figure2-22. Dryer Initial Adjustments

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2-9. OPERATING PROCEDURES.

WARNING

If EMERGENCY SHUTDOWN is required, on generator control panel turn MASTER SWITCH to OFF. All electrical power to Laundry Unit will be cut off. Failure to observe this warning may result in serious injury or death to personnel.

a. Daily Start up.

WARNING

Ear protection is required when operating the Laundry Unit. Serious hearing loss could occur if the Laundry Unit is operated without ear protection.

NOTE

If Laundry Unit was shutdown for a period of time, do steps below; if coming from initial adjustment and checks, start with automatic washing or manual washing steps.

(1) On generator, do starting procedures for generator. Refer to TM 5-6115-585-12.
(2) On water pump, set toggle switch (3, figure 2-20) to ON.
(3) On water heater, do substeps below.

NOTE

If water heater thermometer reading is above temperature control setting, temperature control must be set to higher temperature.

(a) Set water temperature control (1) to 160°F (71°C).
(b) Open fuel shutoff globe valve (5, figure 2-21). Counterclockwise opens valve.
(c) Set subcircuit breaker to ON.
(d) If any questions on water heater, refer to TM 10-4520-259-13&P.

2-9. OPERATING PROCEDURES- continued.

a. Daily Start up - continued.

(4) On dryer, do substeps below.

(a) Set temperature control (9, figure 2-22) to 200°F (93°C).
(b) Open fuel shutoff globe valve (5). Counterclockwise opens valve.
(c) Push motor START button (6) on switch box cover (7).

b. Automatic Washing. See figure 2-23. The following steps are for operating the washer using pre-punched washer Formula card to control the wash cycle.

WARNING

If EMERGENCY SHUTDOWN is required, on generator control panel turn MASTER SWITCH to OFF. All electrical power to Laundry Unit will be cut off. Failure to observe this warning may result in serious injury or death to personnel.

CAUTION

Door unlock switch is interlocked with other switches. If washing machine still contains water, door will not unlock until washing machine has drained or damage to equipment may result.

(1) Remove top cover from washer control panel.
(2) Remove formula cards.
(3) Install top cover on washer control panel.
(4) Open front cover on washer control panel.
(5) Set MASTER switch (2) to ON.
(6) Set AUTO/MANUAL switch (14) to OFF.
(7) Turn LEVEL LOW/1 (3) indicator to 8.
(8) Turn HIGH/2 (4) indicator to 11.
(9) Press door unlock switch (17), rotate handle and open door.
(10) Load the washer with up to 60 lbs (27.2 kg) of wash. Close door and rotate handle. Table 2-2 lists weight of specific clothing items.
(11) Refer to FM 10-280 for field laundry washing and decontamination formulas. Select proper washer formula card.

2-9. OPERATING PROCEDURES - continued.

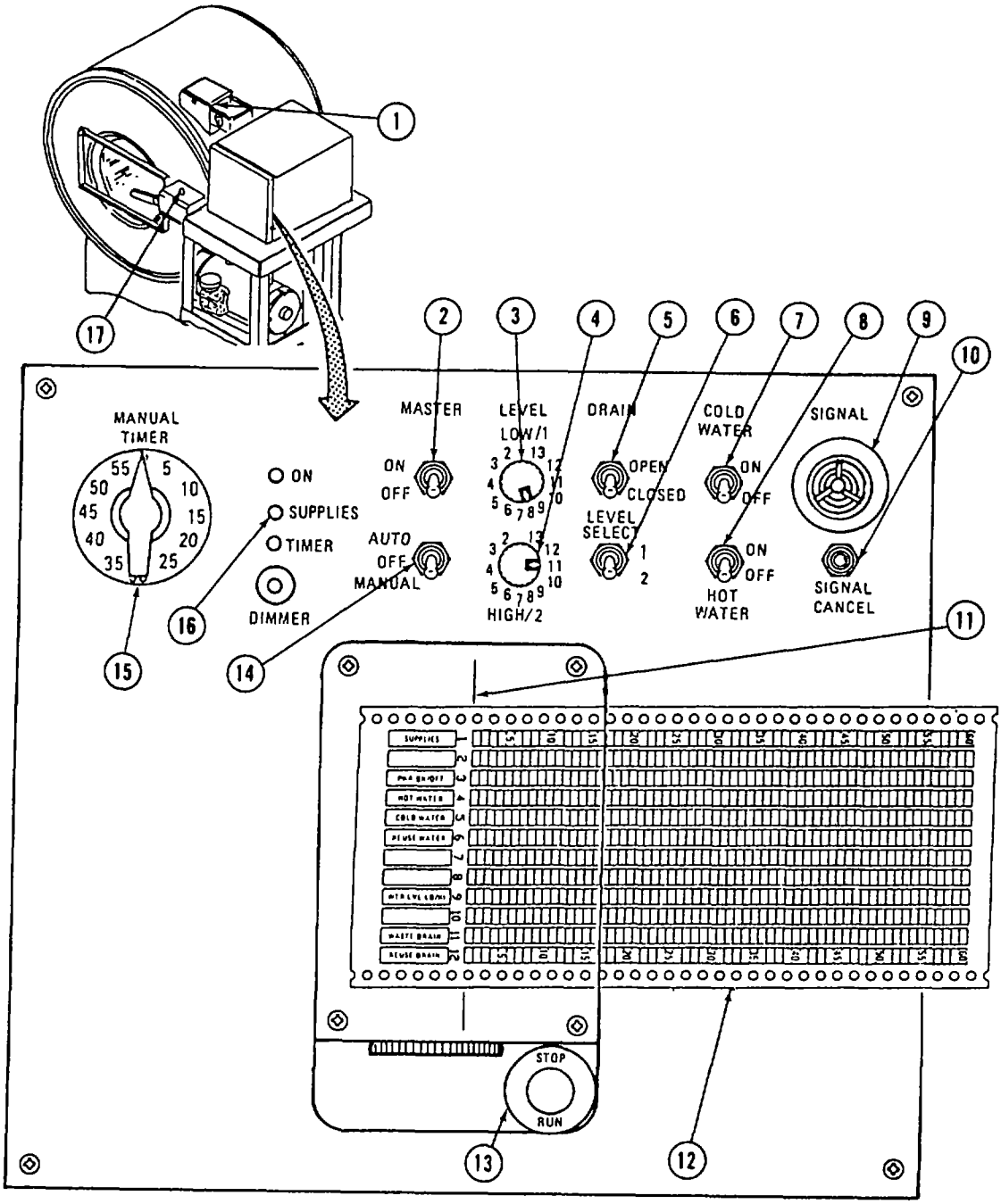


Figure 2-23. Operating Washer Control Panel

2-9. OPERATING PROCEDURES - continued.

Table 2-2. Clothing Weights List.

Item (One each - medium size)	Dry Weight Pounds	(kg)
CAP, field, pile, M-51	0.45	(0.20)
HOOD, winter, w/fur ruff, M-51	0.85	(0.39)
MITTEN SET, arctic	1.45	(0.66)
MITTEN, inserts, 3-finger	0.20	(0.09)
SOCKS, wool, cushion sole	0.20	(0.09)
BOOTS, insulated, combat, rubber, white (cold-dry)	5.00	(2.27)
MUFFLER, wool	0.40	(0.18)
SUSPENDERS, trousers	0.25	(0.11)
UNDERSHIRTS, winter, M-1950	0.87	(0.39)
DRAWERS, winter, M-1950	0.88	(0.40)
TROUSERS, shell, field, M-51	2.25	(1.02)
LINER, trousers, shell, field, M-51	1.70	(0.77)
SHIRT, field, wool, OG108	1.60	(0.73)
COAT, field, cotton, M-51	3.25	(1.47)
LINER, coat, field, cotton, M-51	2.20	(0.99)
TROUSERS, shell, arctic, M-51	1.12	(0.51)
LINER, trousers, shell, arctic, M-51	2.20	(0.99)
PARKA, shell, M-51	2.25	(1.02)
LINER, parka, shell, M-51	3.10	(1.41)
MITTENS, overwhite	0.20	(0.09)
PARKA, overwhite	1.50	(0.68)
TROUSERS, overwhite	0.90	(0.41)
CHEMICAL PROTECTION		
HOOD, field, protective, M-4	0.60	(0.27)
UNDERSHIRT, cotton, lightweight, special protective	0.70	(0.32)
DRAWERS, cotton, lightweight, special protective	0.85	(0.39)
COAT (PARKA), vesicant protective	1.80	(0.82)
TROUSERS, vesicant protective	0.95	(0.43)
GLOVES, cotton, special (CW protective)	0.35	(0.16)
HOT WEATHER STANDARD ENSEMBLE		
CAP, cotton, utility, OD	0.18	(0.08)
SOCKS, wool, cushion sole	0.20	(0.09)
UNDERSHIRT, cotton, knit, 1/4 sleeve	0.30	(0.14)
DRAWERS, cotton, shorts	0.22	(0.10)
TROUSERS, cotton utility, OG 107	1.39	(0.63)
SHIRT, cotton, utility, OG 107	1.35	(0.61)

2-9. OPERATING PROCEDURES - continued.

Table 2-2. Clothing Weights List- continued.

Item (One each - medium size)	Dry Weight Pounds	(kg)
HOSPITAL CLOTHING/LINEN		
SLIPPERS, canvas, pair	1.2860	(0.5833)
CAP, operating, surgical, green	0.0781	(0.0354)
GOWN, operating, surgical, green	1.2600	(0.5715)
TROUSERS, operating, surgical	0.7333	(0.3326)
SHIRT, man's, operating	0.7167	(0.3251)
ROBE, dress, cord	2.2500	(1.0206)
GOWN, operating, surgical, white	2.000	(0.9072)
SHEET, bed, cotton, white	2.000	(0.9072)
PILLOWCASE, cotton, white	0.400	(1.8144)
SHEET, bed, cotton, green	2.000	(0.9072)
SHEET, bed, cotton, fitted	0.5833	(0.2646)
BLANKET, bed, cotton, white	3.3750	(1.5309)
BLANKET, bed, wool, OD	4.6667	(2.1168)

2-9. OPERATING PROCEDURES - continued.

b. Automatic Washing - continued.

CAUTION

When installing washer formula card, install from right side and always remove from left side of cycle timer. Do not remove washer formula card from right side or it could damage washer formula card or cycle timer.

(12) With RUN/STOP motor switch (13, Figure 2-23) on STOI', insert washer formula card (12) into cycle timer from the right side. Line up with start marker (11) and washer formula card cutout. Turn RUN/STOIP knob (13) to RUN.

NOTE

When washing camouflage clothing, use warm water and mild detergent. Do not use chlorine bleach or starch on camouflage clothing.

After adding powder to soap dispenser, add water to keep finger guard from being clogged.

NOTE

Every time you add supplies through soap dispenser, close cover after adding supplies. If cover is not closed, hot air will be vented causing water in washer to cool down.

(13) Add proper amount of washing supplies through soap dispenser (1) and add water.
(14) Set AUTO/MANUAL switch (14) to AUTO.
(15) Set MASTER switch (2) to ON. Washer will start and run the washer fo rmula card selected.

NOTE

When audible signal sounds, push SIGNAL CANCEL to stop. If SIGNAL CANCEL is not pushed, audible signal will sound for 20 seconds and then stop.

(16) When SUPPLIES light (16) and audible SIGNAL (9) activate, add supplies called for in washer formula into soap dispenser.

NOTE

At end of wash cycle, ON light will shut off.

(17) Turn AUTO/MANUAL (14) switch to OFF.
(18) Press door unlock switch (17), rotate handle and open door.
(19) Transfer laundry to wet wash bin.

2-9. OPERATING PROCEDURES - continued.

b. Automatic Washing - continued.

(20) If additional laundry is required to wash, repeat steps 6 through 15 until last wash cycle is complete.
(21) Close door and rotate handle.
(22) Turn MASTER ON/OFF switch (2) to OFF
(23) Close front cover on washer control panel
(24) Remove top cover from washer control panel
(25) Place formula cards in washer control panel.
(26) Install top cover on washer control panel.

c. Manual Washing. See Figure 2-23. The following steps are for operating the washer using washer control panel for manual operation.

WARNING

If EMERGENCY SHUTDOWN is required, on generator control panel turn MASTER SWITCH to OFF. All electrical power to Laundry Unit will be cut off. Failure to observe this warning may result in serious injury or death to personnel.

CAUTION

Door unlock switch is interlocked with other switches. If washing machine still contains water, door will not unlock until washing machine has drained or damage to equipment may result.

(1) Open front cover on washer control panel.
(2) Set AUTO/MANUAL switch (14) to OFF.
(3) Set MASTER switch (2) to ON.
(4) Set LEVEL SELECT Switch (6) to 2.
(5) Turn HIGH/2 indicator (4) to 11 (3 meaning 3 inches of water, 11 meaning 11 inches of water and so forth).
(6) Press door unlock switch (17), rotate handle and open door.
(7) Load washer with up to 60 lbs (27 2 kg) of wash. Table 2-2 lists the weights of specific clothing items.
(8) Close door and rotate handle.

2-9. OPERATING PROCEDURES - continued.

c. Manual Washing- continued.

NOTE

The washer DRAIN switch must be in CLOSED position before water inlet valves will operate

(9) Set DRAIN switch (5) to CILOSED.
(10) Set HOT WATER (8), COII) WATER (7), switches for desired operation

(a) Warm = HOT WATER to ON
COLD WATER to ON

(b) Hot = HOT WATER to ON
COLD WATER to OFF

(c) Cold = HOT WATER to OFF
COLD WATER to ON

NOTE

When washing camouflage clothing, use warm water and mild detergent. Do not use chlorine bleach or starch on camouflage clothing

After adding powder to soap dispenser, add water to keep finger guard from being clogged.

(11) Add proper amount of washing supplies through soap dispenser (1) and add water.
(12) On MANUAL TIMER (15), TURN PAST 10, THEN SET TIME to desired time.
(13) Set AUTO/MANUAL switch (14) to MANUAL.

NOTE

Washer will continue to run indefinitely. Machine will not stop agitating until AUTO/MANUAL switch is switched to OFF.

(14) When audible SIGNAL sounds, and TIMER light comes on, set DRAIN switch (5) to OPEN, depending on amount of water in washer.
(15) Set DRAIN switch (5) to CLOSED after water has drained.
(16) Set HOT WATER (8), and COLD WATER (7) switches for next desired cycle.

2-9. OPERATING PROCEDURES - continued.

c. Manual Washing - continued.

(17) On MANUAL TIMER (15) TURN PAST 10 THEN SET TIME, to desired time.

(18) Continue sequence until cycle is completed.

(19) When audible signal sounds and TIMER light comes on, set DRAIN switch (5) to OPEN, depending on amount of water in washer.

(20) Set AUTO/MANUAL switch (14) to OFF.

(21) Press door unlock switch (17), rotate handle and open door.

(22) Transfer laundry to wet wash bin.

(23) If additional laundry is required to wash, repeat steps 3 through 22 until last wash cycle is complete.

(24) Close door and rotate handle.

(25) Turn MASTER ON/OFF switch (2) to OFF.

(26) Close front cover on washer control panel.

d. Extractor. See Figure 2-24.

CAUTION

Do not force extractor lid open. Failure to observe this caution may cause serious damage to equipment.

(1) Open extractor lid (5).

(2) Place 30 pounds (13.6 kg) of laundry (approximately one-half of a full load) from the wet wash bin into the extractor.

(3) Distribute load evenly around the basket for balance. Ensure laundry is completely inside basket.

(4) Close extractor lid (5).

(5) Set interval timer (4) to desired setting (normally 3 minutes). If not fully extracted of water, repeat procedure.

WARNING

If an emergency exists, press EMERGENCY STOP ONLY for safety of personnel or equipment.

(6) Pull up on EMERGENCY STOP ONLY button (2) to make sure it has not been pushed.

2-9. OPERATING PROCEDURES- continued.

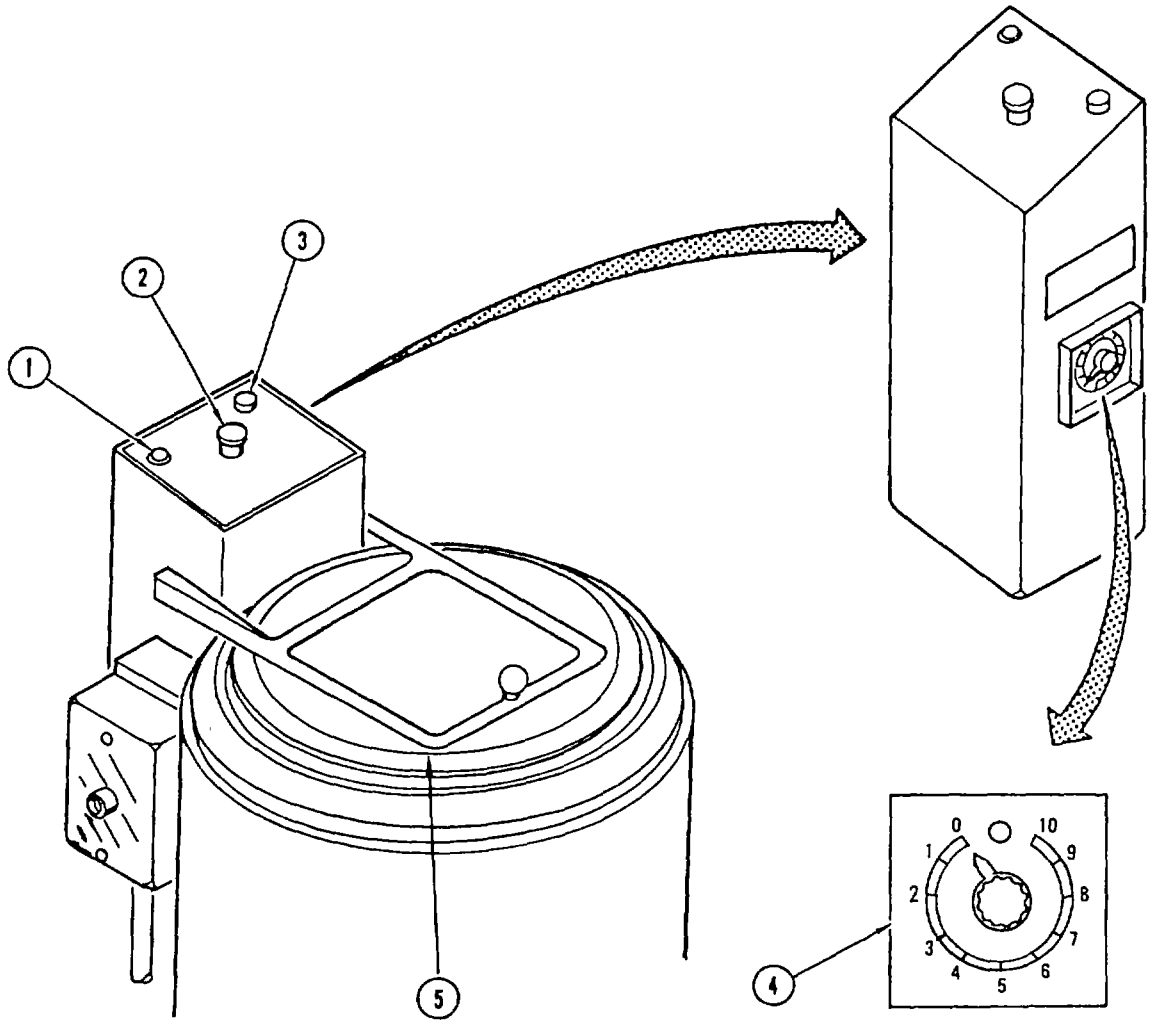


Figure 2-24. Operating Extractor Control Panel

2-9. OPERATING PROCEDURES-continued.

d. Extractor - continued.

(7) Press PUSH TO START button (3). The lid will lock, the 1,11) LOCKED indicator light (1) will come on, and machine will spin.

(8) If EMERGENCY STOP ONI,Y button (2) was pressed, follow substeps below; if not, go to next step:

(a) When LID LOCKED indicator light (1) goes out, open the lid and rebalance the load. Ensure nothing has dropped between the basket and the curb

(b) To restart extractor, close the extractor lid (5) and pull out EMERCGENCY STOP ONLY button (2).

(c) Press the PUSI[TO START button (3). When extraction is completed, basket will stop and I,ID L,OCKED indicator light (1) will go out.

(9) Open extractor lid (5) and transfer laundry to dryer.

e. Dryer. See Figure 2-25.

WARNING

If, when opening dryer door, tumbler barrel still rotates, sensing switch (on front door) needs to be adjusted. If sensing switch is not adjusted, personnel could be injured.

(1) Open dryer door (1).

(2) Transfer laundry from extractor and place 30 pounds (13.6 kg) or less in dryer.

(3) Close dryer door (1).

(4) For temperature control (6) setting refer to FM 10-280, Mobile Field Laundry Formulas.

(5) Set ON/OFF SEQUENTIAL TIMER (2) drying time to approximately 10 minutes, and only turn timer to the right.

(6) Press START button (4) on dryer.

(7) When buzzer sounds (5), turn ON/OFF SEQUENTIAL TIMER (2) to OFF, push STOP/RESET button (3), open dryer door (1), and check laundry for dryness. If laundry is dry, remove laundry.

(8) If laundry is not dry, do substeps below:

(a) Set ON/OFF SEQUENTIAL TIMER (2) to 3 minutes (drying cycle is 3 minutes until laundry is dry).

(b) Press START button (4) on dryer.

2-9. OPERATING PROCEDURES - continued.

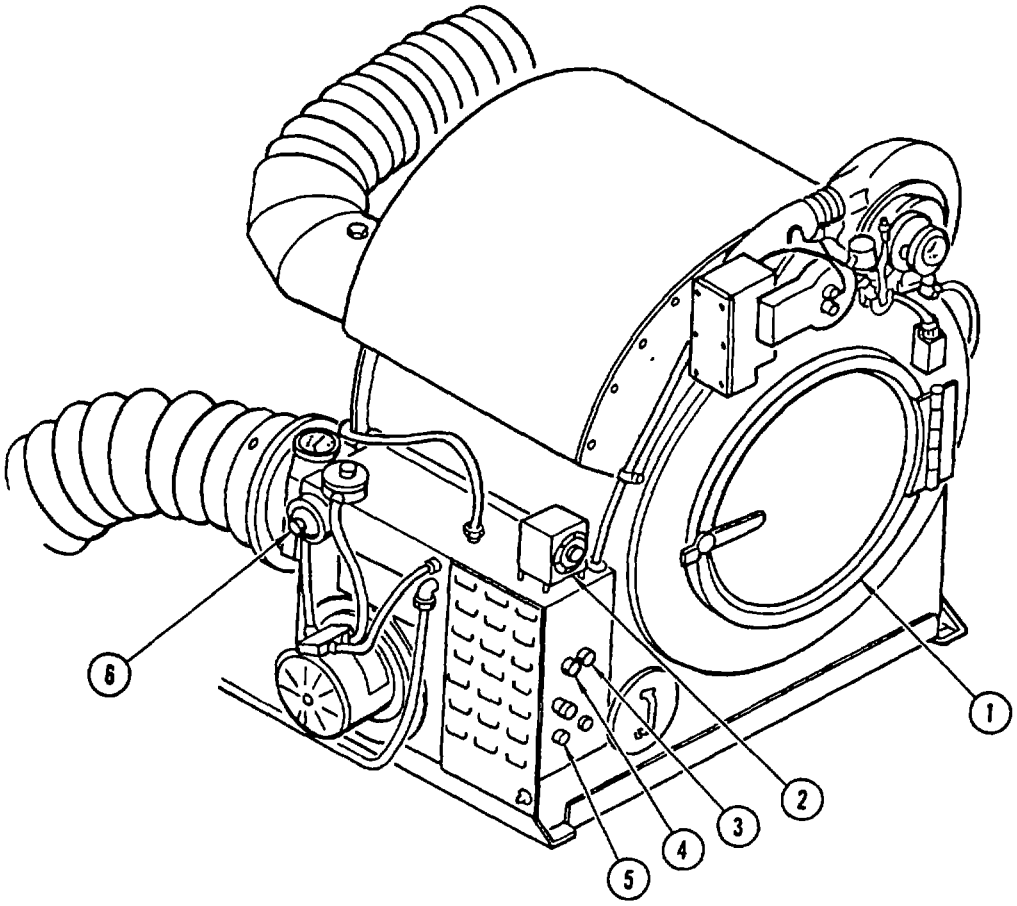


Figure 2-25. Operating Dryer Control Panel

2-9. OPERATING PROCEDURES - continued.

e. Dryer - continued.

(c) When buzzer sounds (5), turn ON/OFF SEQUENTIAI, TIMER (2) to OFF, push STOP/RESET button (3), open dryer door (1), and check laundry for dryness. If laundry is dry, remove laundry.

(9) Transfer laundry from dryer and place in dryer bin.

f. Shutdown (Overnight or preparation for movement).

(1) On water heater, do substeps below:

(a) Set sub circuit breaker switch (water heater switch) to OFF.

(b) Close fuel globe valve. Clockwise rotation closes valve.

(2) On water pump, set toggle switch (1, Figure 2-5) to OFF.

(3) On dryer close fuel globe valve, clockwise rotation closes valve.

(4) Shut down generator, per TM 5-6115-585-12.

(5) Reverse the steps when starting up after shutdown.

2-10. DECALS AND INSTRUCTION PLATES.

Figure 2-26 shows the location of Laundry Unit decals and operator warnings and cautions.

2-10. DECALS AND INSTRUCTION PLATES - continued.

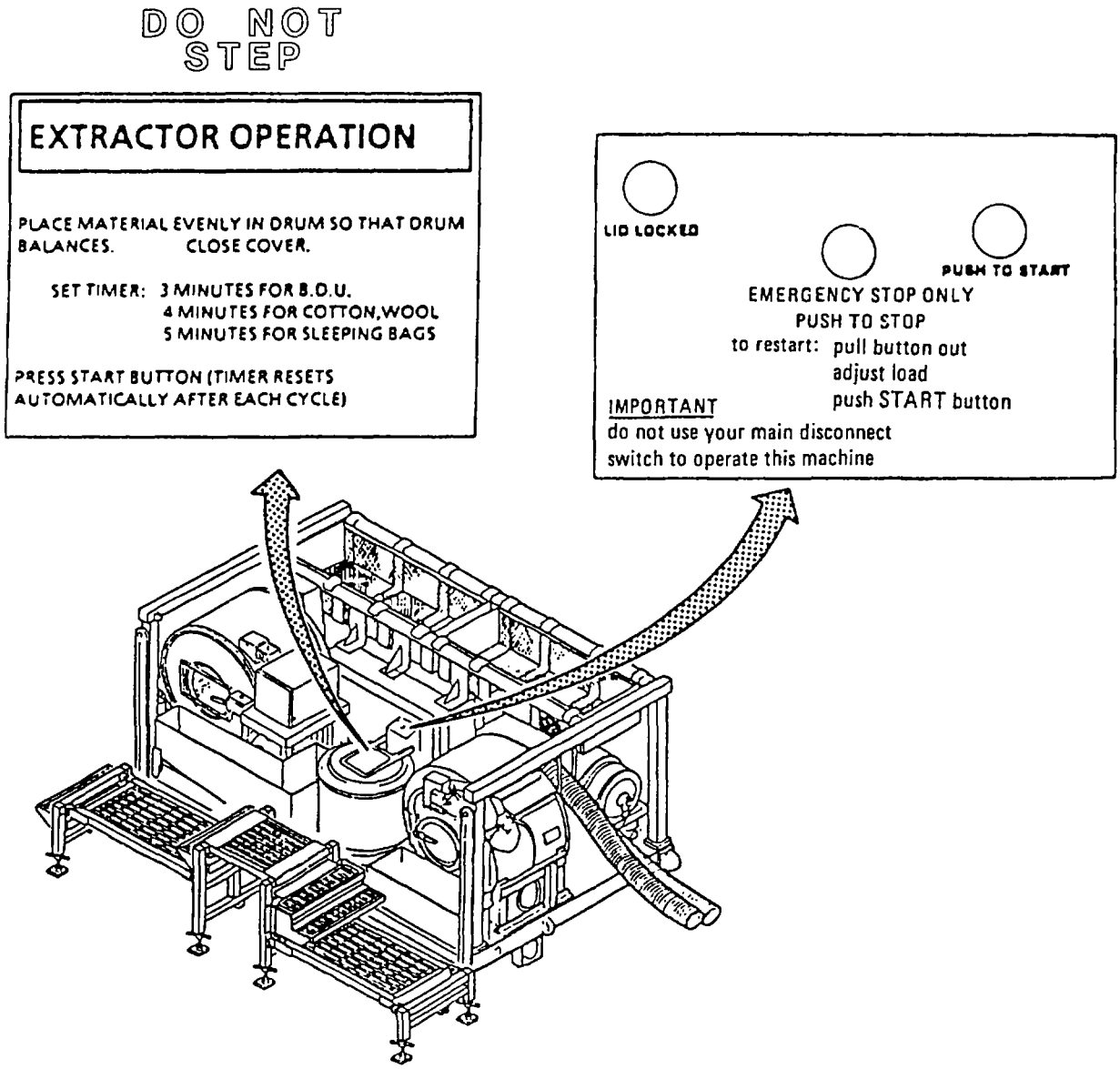


Figure 2-26. Decal and Instruction Plates (Sheet 1 of 4)

2-10. DECALS AND INSTRUCTION PLATES - continued.

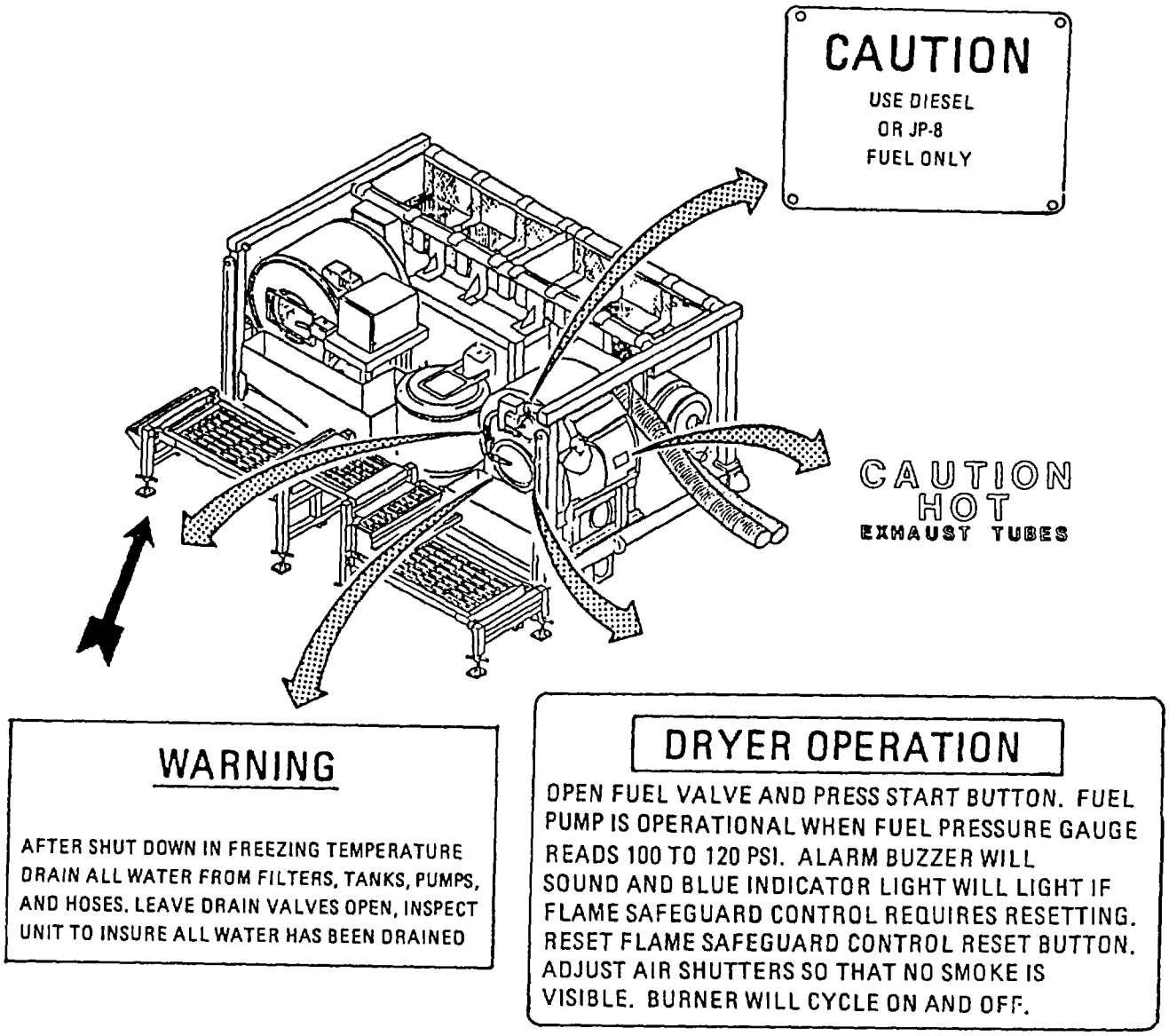


Figure 2-26. Decal and Instruction Plates (Sheet 2)

2-10. DECALS AND INSTRUCTION PLATES - continued.

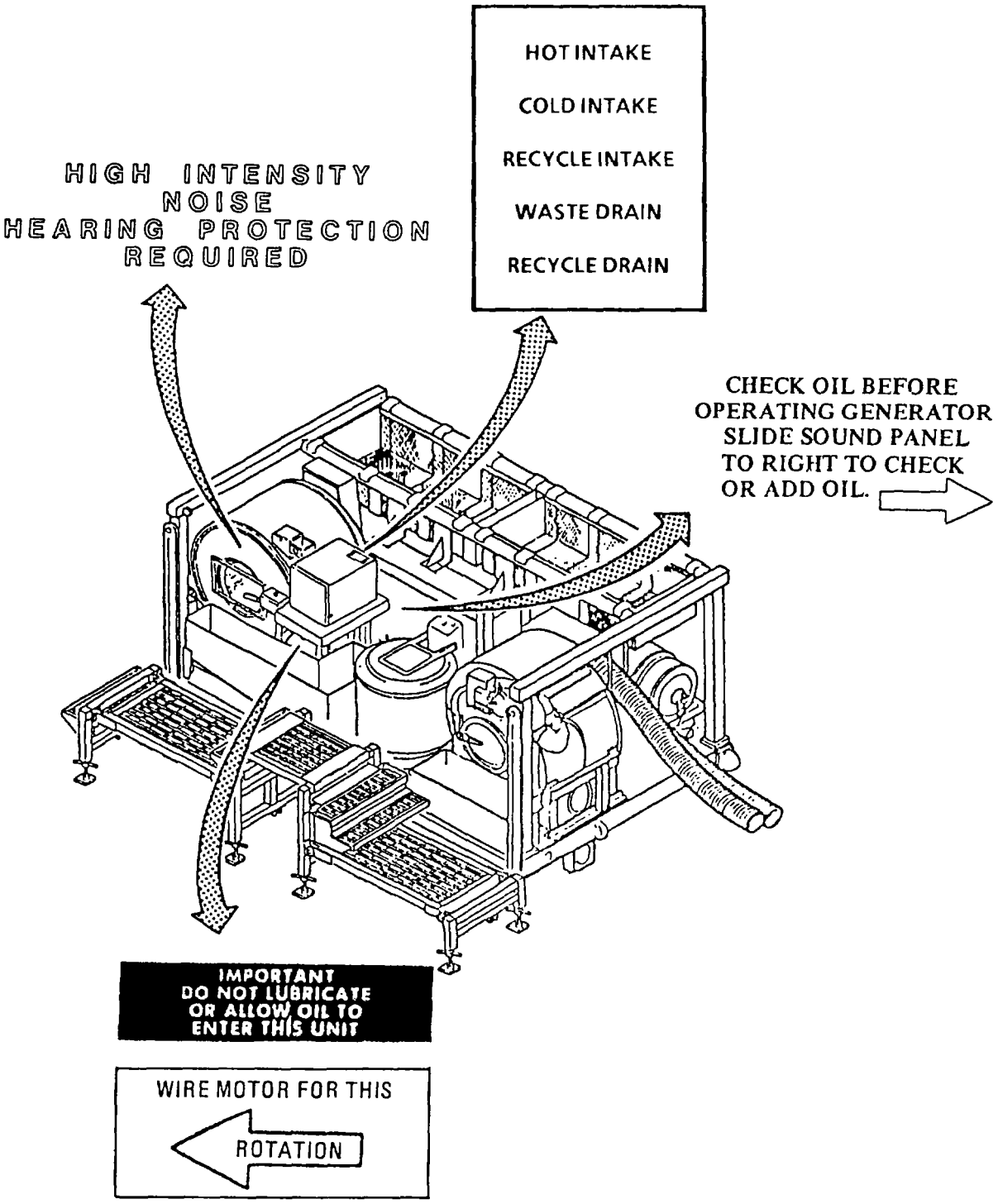


Figure 2-26. Decal and Instruction Plates (Sheet 3)

2-10. DECALS AND INSTRUCTION PLATES - continued.

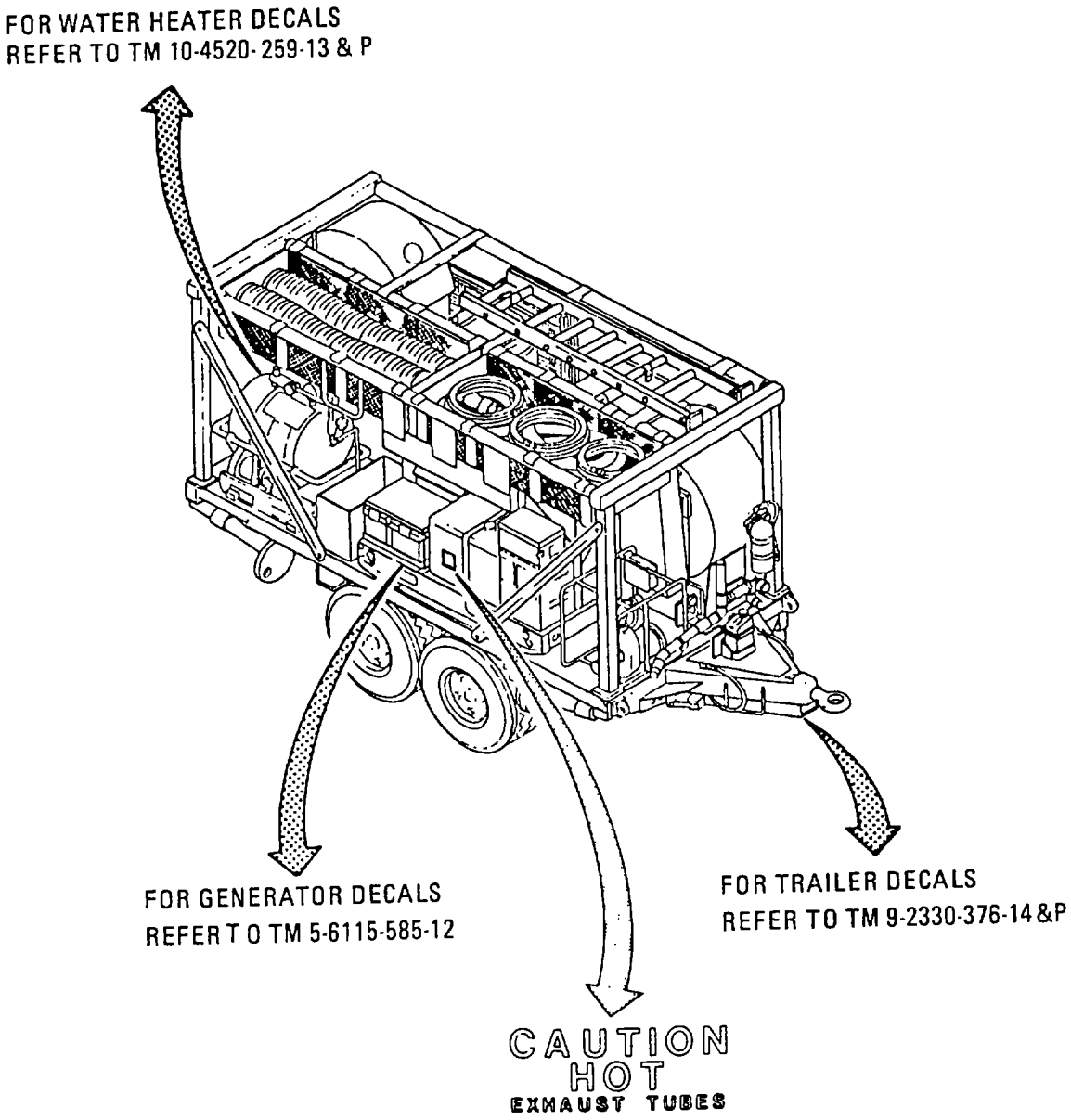


Figure 2-26. Decal and Instruction Plates (Sheet 4)

2-11. PREPARATION FOR MOVEMENT.

a. Quick Disconnect (QD) Couplings See figure 2-12. Disconnect QD coupling per sub-steps below:

WARNING

Do not disconnect QD couplings while water system is pressurized. Hose end may whip causing injury to personnel and damage to equipment.

(a) On QD coupling half(4) (female coupling) pull locking arms (1) up and out.

(b) Remove QD coupling half(4) (female coupling) from QD coupling half (3) (male coupling).

(c) On QD coupling half (4) (female coupling) pull both locking arms (1) back at same time until arms are down against body.

(d) If QD coupling cap (2) was removed, position on QD coupling half (3) (male coupling) and hold in place.

(e) If QD coupling cap (2) was removed, pull both locking arms (1) back at same time until arms (1) are down against body of QD coupling half (4) (female coupling).

WARNING

Requires two people for lifting components of the Laundry Unit. Failure to observe standard lifting procedures may result in serious injury to personnel.

b. Water Pump.

(1) Disconnect distribution power cable between water pump electrical receptacle connector and water heater electrical receptacle connector.

(2) Disconnect and drain nonmetallic hose from quick coupling half on water pump and water heater.

(3) Disconnect suction strainer from nonmetallic hose quick coupling half on water pump.

(4) Disconnect and drain nonmetallic hose from quick coupling half on water pump.

(5) Open drain cock and drain water. Close drain cock when pump has drained.

(6) Position water pump on Laundry Unit and install two water tiedowns.

2-11. PREPARATION FOR MOVEMENT - continued.

c. Water Heater.

WARNING

This equipment can produce scalding water. To avoid injury, be careful when draining water.

(1) Connect hose to drain valve on bottom of water heater.

(2) Open drain valve bottom of water heater.

(3) Open draincock 50 ips on top of water heater.

(4) Disconnect fuel lines from drum fill adapters and drain.

(5) Connect fuel lines to union on curb side of water heater frame

(6) Remove drum fill adapter from 55-gallon (208 liter) drum or 5-gallon (19 liter) military gas can.

(7) Remove drum extension from piping coupling if 55-gallon (208 liter) drum was used.

(8) Install drum extension on return outlet drum fill adapter.

(9) After water has stopped draining from hose, close drain valve

(10) Close draincock 50 ips.

(11) Disconnect hose from drain valve. Store hose under water heater.

WARNING

Hot burner exhaust ducts must cool before disconnecting. Failure to let cool will cause burns .

(12) Remove burner exhaust ducts.

(13) Refer to TM 10-4520-25913&P for any questions about water heater.

d. Nonmetallic Hose Drains.

(1) Disconnect and drain nonmetallic hose from quick coupling half on wet wash bin.

(2) Disconnect and drain nonmetallic hose from quick coupling half on washer/extractor drain piping.

(3) Install quick disconnect cap on quick disconnect coupling half of drain piping.

2-11. PREPARATION FOR MOVEMENT - continued.

e. Generator.

WARNING

Hot exhaust hoses must cool before disconnecting. Failure to let cool will cause burns.

(1) Disconnect exhaust hoses.

(2) Disconnect main power cable from generator and coil and store between water pump and generator.

(3) Refer to TM 5-6115-585-12 for any questions about generator.

f. Dryer.

(1) Disconnect fuel lines from drum fill adapters and drain. Store fuel lines under dryer.

(2) Remove drum fill adapter from 55-gallon (208 liter) drum or 5-gallon (19 liter) military gas can.

(3) Remove drum extension from piping coupling if 55-gallon (208 liter) drum was used.

(4) Install drum extension on return outlet drum fill adapter.

(5) Disconnect air duct hose (dryer lint exhaust) from dryer. Compress and fasten hook. Store inside tumbler barrel of dryer.

WARNING

Hot exhaust hoses must cool before disconnecting. Failure to let cool will cause burns .

(6) Disconnect exhaust metal hoses. Store exhaust metal hose on center of Laundry Unit with three straps that are attached to trailer bed..

g. Dryer Bin.

(1) Position dryer bin on Laundry Unit between generator and water heater.

(2) Install four hexagon head cap screws and four lockwashers in dryer bin and Laundry Unit. (Hardware in toolbox)

h. Ground Rod.

(1) Remove bare copper wire from electrical clamp on rod and store under generator.

(2) Remove ground rod from ground and disassemble.

2-11. PREPARATION FOR MOVEMENT- continued.

i. Basket Storage.

(1) Front basket (hitch end). Place the following items into front basket in the order given.

(a) Remove struts (2 each)

(b) Generator exhaust hoses (2 each)

(c) Washer/extractor drain hose

(d) Nonmetallic drain hose (3 each)

- Suction strainer to water pump
- Water pump to water heater
- Washer bin to drain field

(e) Platform footings (8 each)

(f) Secure straps on basket.

(2) Rear basket (above water heater). Place the following items into rear basket in the order given:

(a) Exhaust hoses from water heater (2 each)

(b) Ground rod

(c) Suction strainer

(d) Drum adapters (2 each)

(e) Water pump power distribution cable

(f) Secure straps on basket.

j. Ladder.

WARNING

When installing left beam, it requires two personnel. Personnel or dryer could be hurt or damaged during installation.

(1) Position left beam on Laundry Unit with two brackets on beam toward center of Laundry Unit and install two single acting pins.

(2) Position two struts on Laundry Unit, with cable attaching rivets facing the front (hitch end), and install two single acting pins.

(3) Position ladder on Laundry Unit and fasten two tiedown straps.

2-11. PREPARATION FOR MOVEMENT- continued.

k. Work Platform.

WARNING

Requires two people for lifting work platform components. Failure to observe standard lifting procedures may result in serious injury to personnel.

(1) Remove one step stairs (2 each) and place in wet washer bin.

(2) Remove two step stairs and place in front of circuit breaker panel.

(3) Remove short platform

(4) Position washer and dryer platforms on side and remove quick release pins from platform brace.

(5) Fold ends of platform in and install quick release pins.

(6) Position washer platform on Laundry Unit.

(7) Install rail assembly upright with quick release pin. (Pin head toward curb side.)

(8) Position short platform on Laundry Unit and install long clamp.

(9) Position dryer platform on Laundry Unit.

(10) Install rail assembly upright with quick release pin. (Pin head toward street side.)

(11) Install short clamp on washer and dryer platforms.

2-11. PREPARATION FOR MOVEMENT - continued.

1. Final Preparation.

   (1) Rotate tarpaulin support frames up on Laundry Unit and install bottom bolts, washers, and nuts. (Hardware in toolbox).

   (2) Install tarpaulin per substeps below: See figure 2-28.

      (a) Position tarpaulin on top of Laundry Unit and unfold.

      (b) Pull the four sides down from the top.

      (c) Find first lace and grommet next to top of the corner.

      (d) Insert first and second laces through first and second grommets.

      (e) Insert second lace up through loop in first lace.

      (f) Pull second lace tight.

      (g) Insert third lace through grommet and through loop in second lace.

      (h) Pull third lace tight.

      (i) Continue lacing and insert next-to-last lace through loop in last lace.

      (J) Pull the next-to-last lace tight and tie off with half-hitch knot.

      (k) Close weather flap.

      (l) Continue on until all corners are laced and close weather flaps.

      (m) Hook fibrous rope on trailer (four corners).

2-11. PREPARATION FOR MOVEMENT - continued.

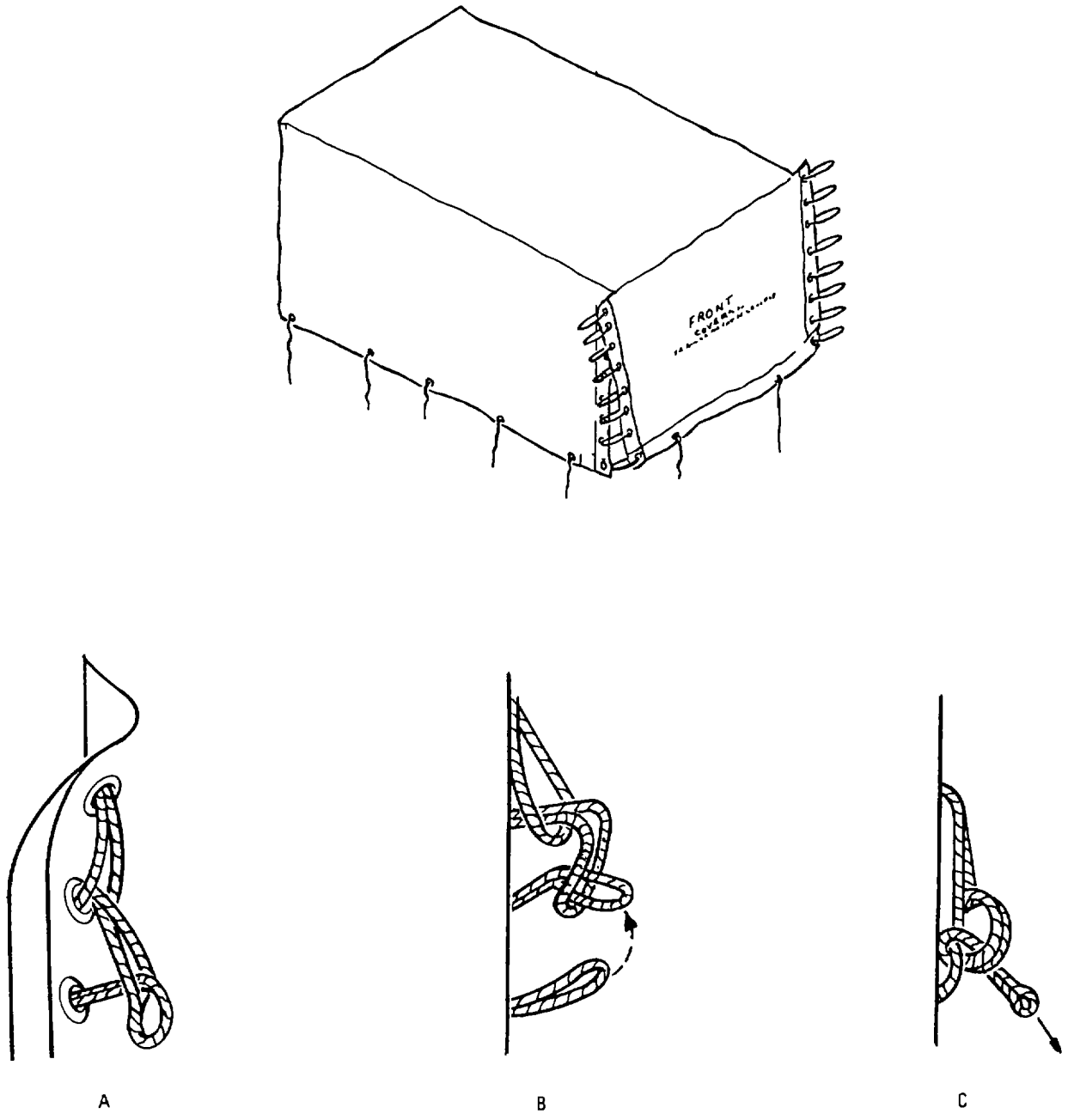


Figure 2-27. Tarpaulin Installation

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

2-12. OPERATION IN COLD.

WARNING

Do not touch cold metal parts with bare hands. Cold metal parts can cause frostbite and injury to personnel.

CAUTION

Subzero temperatures cause rubber and metal parts to become brittle and prone to breakage. Use proper lubrication for extreme cold operations.

a. Operating When Laundry Unit is Set-up. The Laundry Unit must not be operated under 32° F (0° C). During operation in cold weather, steps must be taken to protect equipment from freezing. Operate Laundry Unit inside tent or other suitable enclosure. If Laundry Unit is operational, and it will freeze at night when not operating, do the following substeps:

(1) Water Pump. Do substeps below:

(a) Set toggle switch to OFF.

(b) Remove water suction strainer from water source.

(c) Disconnect and drain nonmetallic hose from quick coupling half on inlet side of water pump

(d) Disconnect and drain nonmetallic hose from quick coupling half on outlet side of water pump and inlet quick coupling half side of water heater.

(e) Open drain cock and drain water. Close drain cock when pump has drained.

(2) Water Heater. Do substeps below:

(a) Set subcircuit breaker switch (water heater switch) to OFF.

(b) Close fuel globe valve. Clockwise rotation closes valve.

WARNING

This equipment can produce scalding water. To avoid injury, be careful when draining water .

(c) Connect hose to drain valve on bottom of water heater.

(d) Open drain valve on bottom of water heater.

(e) Open draincock 50 ips on top of water heater.

(f) After water has stopped draining from hose, close drain.

2-12. OPERATION IN COLD- continued.

a. Operating When Laundry Unit is Set-up - continued.

(g) Disconnect hose from drain valve.

(h) Close draincock 50 ips on top of water heater.

(i) Refer to TM 10-4520-259-13&P for any questions about water heater.

(3) Remove water from valves per substeps below:

(a) On washer air tank, make sure gage has at least 90 psi. If less than 90 psi, start generator. (Refer to TM 5-6115-585-12.)

(b) Remove cap from washer recycle drain.

(c) On washer control panel back side, turn yellow arrow to the right 90° and back three times to drain water from the following valves:

1. RECYCLE DRAIN
2. HOT INTAKE
3. COLD INTAKE

(d) Install cap on washer recycle drain

(e) If generator was running, shut down and refer to TM 5-6115-585-12.

(4) Water Pump. Do substeps below:

(a) Connect nonmetallic hose quick coupling half on outlet side of water pump and inlet quick coupling half of water heater.

(b) Connect nonmetallic hose to quick coupling half on inlet side of water pump.

(5) Washer. Do substeps below:

(a) Open draincock under washer air tank and drain any water.

(b) Close draincock on washer air tank.

b. Generator. Refer to TM 5-6115-585-12 for cold weather operation.

c. Water Heater. Refer to TM 10-4520-259-13&P for cold weather operation

d. Trailer. Refer to TM 9-2330-376-14&P for cold weather operation.

2-13. OPERATION IN DUST OR SAND.

Shut down the Laundry Unit during severe dust storms and cover it with a tarpaulin or other suitable protective covering. When the area is reasonably clear of dust, clean the Laundry Unit thoroughly.

2-14. OPERATION IN SNOW OR MUD.

Take necessary precautions to ensure a firm footing for the platform by using a field-expedient blocking underneath the platform pads.

2-15. OPERATION IN SALTWATER AREAS.

Inspect the Laundry Unit frequently for rust and corrosion. Rusted or corroded condition must be corrected immediately. Frequently wash the Laundry Unit with fresh water to prevent a buildup of salt deposits.

2-16. EMERGENCY PROCEDURES.

If there is an emergency, on generator control panel, turn MASTER SWITCH to OFF, or turn off 60 amp circuit breaker on power distribution panel to shut down all electrical power to Laundry Unit. Mounted on the Laundry Unit is a fire extinguisher with dry chemical for class A, B, or C type fires.

CHAPTER 3

MAINTENANCE INSTRUCTIONS

Section I. LUBRICATING INSTRUCTIONS

3-1. LUBRICATION ORDERS.

a. Laundry Unit. Refer to LO 10-3510-222-12 for lubrication order.

b. Generator. Refer to LO 5-6115-585-12 for lubrication order.

c. Trailer. Refer to TM 9-2330-376-14&P for lubrication order.

Section II. TROUBLESHOOTING PROCEDURES

3-2. INTRODUCTION.

The Malfunction Index lists the common malfunctions which you may find during operation or maintenance of the Laundry Unit or its components. You should perform test/inspections and corrective actions in the order listed. This manual cannot list all malfunctions that may occur nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

3-3. TROUBLESHOOTING.

a. Malfunction Index. For quick access to troubleshooting procedures, refer to Table 3-1.

b. Generator. Refer to TM 5-6115-585-12 for troubleshooting.

c. Trailer. Refer to TM 9-2330-376-14&P for troubleshooting

d. Water Heater. Refer to TM 10-4520-259-13&P for troubleshooting.

MALFUNCTION INDEX

Table 3-1. Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

WARNING

Be sure to read all Warnings in front of manual before troubleshooting.

NOTE

Before you use the troubleshooting tables, be sure you have performed all applicable operating checks and verified that a malfunction exists. When a corrective action is performed, verify that the action has corrected the malfunction. All malfunction deferred to the next higher level of maintenance must be reported according to the instructions given in DA PAM 738-750.

1. NO POWER TO COMPONENT CIRCUIT BREAKERS.

Step 1. On power distribution panel, check for electrical power.

a. Remove electrical power. Refer to generator TM 5-6115-585-12.

b. Open door on power distribution panel.

c. See if number 1 main circuit breaker (60 amp) has tripped. If tripped, reset circuit breaker.

Table 3-1. Troubleshooting

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

1. NO POWER TO COMPONENT CIRCUIT BREAKERS - continued.

d. Close door on power distribution panel.

e. Apply electrical power. Refer to generator TM 5-6115-585-12.

Step 2. Check for electrical power on generator.

a. Place AC CIRCUIT BR3EAKER to ON.

b. If no electrical power, notify unit maintenance.

2. WATER PUMP FAILS TO START.

Check for electrical power.

a. Set ON/OFF switch to OFF

b. Make sure distribution power cable is plugged in.

c. Push terminal overload protector on motor.

d. Open power distribution panel and see if water heater number 5 circuit breaker has tripped, if tripped reset circuit breaker. Close power distribution panel.

e. Set ON/OFF switch on water pump to ON.

f. If water pump fails to start, set ON/OFF switch to OFF on water pump and notify unit maintenance.

3. WATER PUMP FAILS TO DELIVER WATER.

Step 1 Check pump to verify adequately primed.

a. Set ON/OFF switch to OFF.

b. If pump is not primed, refer to paragraph 2-8b water pump and prime pump.

c. Set ON/OFF switch to ON.

Table 3-1. Troubleshooting - continued.

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

3. WATER PUMP FAILS TO DELIVER WATER continued.

Step 2. Check water source.

a. Set ONOFF switch to OFF on water pump.

b. Check water suction strainer for clogs. If clogged, remove and clean.

c. If problem with water source, refer to FM 10-280.

d. Disconnect nonmetallic hose on inlet side of water pump.

e. Check nonmetallic hose for clogs. If clogged, clean nonmetallic hose.

f. Connect nonmetallic hose to water pump.

g. Disconnect nonmetallic hose on outlet side of water pump and water heater.

h. Check nonmetallic hose for clogs. If clogged, clean nonmetallic hose.

i. Connect nonmetallic hose to water pump and water heater.

j. Set ON/OFF switch to ON.

NOTE
Removing sediment strainer to check for clog is a unit maintenance procedure.

k. If no water, set ON/OFF switch to OFF and notify unit maintenance.

4. DRYER FAILS TO START.

Check for electrical power.

a. On STOP RESET button, push STOP.

b. Open power distribution panel and see if dryer number 4 circuit breaker has tripped If tripped, reset circuit breaker.

c. Close power distribution panel.

d. Open control box cover.

e. On burner starter motor relay, push burner starter motor reset button.

Table 3-1. Troubleshooting - continued.

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

4. DRYER FAILS TO START - continued.

f. On UV scanner control box terminal box relay, push UV scanner control terminal box reset button.

g. Close control box cover.

h. Push START button.

i. If dryer fails to start, push STOP RESET button and notify unit maintenance.

5. DRYER FAILS TO DRY LAUNDRY.

WARNING

Fuel is flammable and can explode easily. To avoid serious injury or death, keep fuel away from open fire or hot dryer parts.

Step 1. Check if UV Scanner control terminal box is tripped.

a. On STOP RESET button, push STOP.

b. Open control box cover.

c. Push UV Scanner control terminal box reset.

d. Close control box cover.

e. On START button, push START.

Step 2. Check UV Scanner safeguard flame control for cleanliness/cracks.

a. On STOP RESET button, push STOP.

b. Unscrew UV Scanner safeguard flame control on front of dryer and remove.

c. Clean UV Scanner safeguard flame control with a dry clean cloth and check for cracks.

Table 3-1. Troubleshooting - continued.

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

5. DRYER FAILS TO DRY LAUNDRY continued.

CAUTION

When installing UV scanner safeguard flame control, do not overtighten or it will crack.

d. Install UV Scanner safeguard flame control into sighteye.

e. On START button, push START.

f. If dryer fails to dry laundry, push STOP RESET button.

Step 3. Check for clogged fuel filter.

a. On STOP RESET button, push STOP.

b. On fuel filter, turn tee handle on top of filter four times to clean.

c. On START button, push START.

d. If fuel pressure is low, pulsates, or there is no pressure, push STOP RESET button and notify unit maintenance.

6. EXTRACTOR FAILS TO START.

Step 1. Check EMERGENCY STOP ONLY button.

a. If EMERGENCY STOP ONLY button is pushed in, reset by pulling EMERGENCY STOP ONLY button out.

b. Press PUSH TO START button.

Step 2. Check lid and make sure it is closed.

a. If lid is open, close lid all the way down on the seal.

b. Press PUSH TO START button.

Table 3-1. Troubleshooting - continued.

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

6. EXTRACTOR FAILS TO START continued.

Step 3. Check for electrical power.

a. Open power distribution panel and see if extractor number 2 circuit breaker has tripped. If tripped, reset circuit breaker.

b. Close power distribution panel.

c. Press PUSH TO START button.

Step 4. Check RESET button.

a. Press RESET button to make sure button is reset.

b. Press PUSH TO START button.

Step 5. Check timer interval for correct setting.

a. Set timer interval to three minutes.

b. Press PUSH TO START button.

c. If extractor fails to start, notify unit maintenance.

7. EXTRACTOR FAILS TO DRAIN.

Inspect drain hose/piping for clogged condition.

a. Remove drain hose.

b. If hose is clogged, remove clog.

c. Install drain hose.

d. If piping is clogged, remove clog.

e. Press PUSH TO START button. If extractor fails to drain, push EMERGENCY STOP ONLY button and notify unit maintenance.

Table 3-1. Troubleshooting- continued.

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

8. WASHER FAILS TO START IN AUTOMATIC.

Step 1. Check for electrical power.

a. Set MASTER switch to OFF.

b. Open power distribution panel and see if number 6 washer circuit breaker has tripped. If tripped, reset circuit breaker.

c. Close power distribution panel.

d. Set MASTER switch to ON.

Step 2. Check door handle position.

a. Set MASTER switch to OFF.

b. Close door and rotate handle.

c. Set MASTER switch to ON.

Step 3. Check AUTO/MANUAL switch position on washer control panel.

a. Set MASTER switch to OFF.

b. Set AUTO/MANUAL switch to AUTO.

c. Set MASTER switch to ON.

Step 4. Check formula card RUN/STOP motor switch for correct position.

a. Set MASTER switch to OFF.

b. Set RUN/STOP motor switch to STOP.

c. Remove formula card from left side.

Table 3-1. Troubleshooting - continued.

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

8. WASHER FAILS TO START IN AUTOMATIC - continued.

d. Re-insert washer formula card into cycle timer from the right side. Line up with start marker and washer formula card first cutout.

e. Turn RUN/STOP knob to RUN.

f. Set MASTER switch to ON.

g. If washer fails to start, set MASTER switch to OFF and notify unit maintenance.

9. WASHER FAILS TO START IN MANUAL.

Step 1. Check for electrical power.

a. Set MASTER switch to OFF.

b. Open power distribution panel and see if number 6 washer circuit breaker has tripped. If tripped, reset circuit breaker.

c. Close power distribution panel.

d. Set MASTER switch to ON.

Step 2. Check door handle position.

a. Set MASTER switch to OFF.

b. Close door and rotate handle.

c. Set MASTER switch to ON.

Step 3. Check AUTO/MANUAL switch position on washer control panel.

a. Set MASTER switch to OFF.

b. Set AUTO/MANUAL switch to MANUAL.

c. Set MASTER switch to ON.

Table 3-1. Troubleshooting - continued.

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

9. WASHER FAILS TO START IN MANUAL - continued.

Step 4. Check DRAIN switch position on washer control panel.

a. et MASTER switch to OFF.

b. et DRAIN switch to CLOSED.

c. et MASTER switch to ON.

d. f washer fails to start in manual set MASTER switch to OFF and notify unit maintenance.

10. WASHER FAILS TO FILL WITH WATER IN AUTOMATIC.

Step 1. Check to see if nonmetallic hose between washer and water heater is connected.

a. Set MASTER switch to OFF.

b. Connect nonmetallic hose between washer and water heater.

c. Set MASTER switch to ON.

Step 2. Check nonmetallic hose between washer and water heater for clogged condition.

a. Set MASTER switch to OFF.

b. Disconnect nonmetallic hose.

c. Inspect nonmetallic hose for clogged condition.

d. Connect nonmetallic hose.

e. Set MASTER switch to ON.

Table 3-1. Troubleshooting - continued.

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

10. WASHER FAILS TO FILL WITH WATER IN AUTOMATIC - continued.

Step 3. Check AUTO/MANUAL switch position.

a. Set MASTER switch to OFF.

b. Set AUTO/MANUAL switch to AUTO.

c. Set MASTER switch to ON.

d. If washer fails to fill with water in automatic, set MASTER switch to OFF and notify unit maintenance.

11. WASHER FAILS TO FILL WITH WATER IN MANUAL.

Step 1. Check to see if nonmetallic hose between washer and water heater is connected.

a. Set MASTER switch to OFF.

b. Connect nonmetallic hose between washer and water heater.

c. Set MASTER switch to ON.

Step 2. Check nonmetallic hose between washer and water heater for clogged condition.

a. Set MASTER switch to OFF.

b. Disconnect nonmetallic hose.

c. Inspect nonmetallic hose for clogged condition.

d. Connect nonmetallic hose.

e. Set MASTER switch to ON.

Step 3. Check AUTO/MANUAL switch position.

a. Set MASTER switch to OFF.

b. Set AUTO/MANUAL switch to MANUAL.

c. Set MASTER switch to ON.

Table 3-1. Troubleshooting - continued.

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

11. WASHER FAILS TO FILL WITH WATER IN MANUAL - continued.

Step 4. Check DRAIN switch position.

a. Set MASTER switch to OFF.

b. Set DRAIN switch to CLOSED.

c. Set MASTER switch to ON.

d. If washer fails to fill with water in manual, set MASTER switch to OFF and notify unit maintenance.

12. WASHER FAILS TO DRAIN.

Step 1. Check nonmetallic drain hose for clogged condition.

a. Set MASTER switch to OFF.

b. Disconnect nonmetallic drain hose.

c. Check nonmetallic drain hose for clog.

d. Connect nonmetallic drain hose.

e. Set MASTER switch to ON.

Step 2. Check manual DRAIN switch for setting.

a. Set AUTO/MANUAL switch to MANUAL.

b. Set DRAIN switch to OPEN.

c. If washer fails to drain, set MASTER switch to OFF and notify unit maintenance.

Table 3-1. Troubleshooting - continued.

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

13. AIR COMPRESSOR FAILSTO START.

Step 1. Check for electrical power.

a. Open power distribution panel.

b. Check to see if air compressor number 3 circuit breaker has tripped. If tripped, reset circuit breaker.

c. Close power distribution panel.

Step 2. Check for tripped full voltage starter.

a. Open power distribution panel door.

b. Set air compressor number 3 circuit breaker to OFF.

c. Open enclosure box above power distribution panel.

d. Press full voltage starter manual reset.

e. Close enclosure box above on power distribution panel.

f. Set air compressor number 3 circuit breaker to ON.

g. Close power distribution panel door.

h. If air compressor fails to start, notify unit maintenance.

14. AIR COMPRESSOR FAILS TO DELIVER AIR PRESSURE.

Check for air pressure leaking.

a. On air tank, see if drain cock is open. If open, close drain cock.

b. If no air pressure, turn off air compressor number 3 circuit breaker and notify unit maintenance.

Section III. MAINTIENANCE PROCEDURES

3-4. INTRODUCTION.

There are no maintenance procedures in this manual. All maintenance procedures for the Laundry Unit can be found in TM 10-3510-222-24.

3-5. MAINTENANCE PROCEDURES.

a. Generator. Refer to TM 5-6115-585-12 for maintenance procedures.

b. Trailer. Refer to TM 9-2330-376-14&P for maintenance procedures.

c. Water Heater. Refer to TM 10-4520-259-13&P for maintenance procedures.

d. Laundry Unit. Refer to TM 10-3510-222-24 for maintenance procedures.

APPENDIX A

REFERENCES

A-1. SCOPE.

This appendix lists all forms, field manuals, technical manuals, and miscellaneous publications referenced in this manual. Also listed are those publications that should be consulted for additional information about the Laundry Unit and its major components.

A-2. FORMS.

Recommended Changes to Publications and Blank Forms ..... DA FORM 2028

Recommended Changes to Equipment Technical Publications ..... DA FORM 2028-2

Equipment Inspection and Maintenance Worksheet ..... DA FORM 2404

Maintenance Request..... DA FORM 2407

Equipment Log Assembly (Records) ..... DA FORM 2408-9

Product Quality Deficiency Report ..... SF 368

A-3 FIELD MANUALS.

Operation and Maintenance or Ordinance Material in Cold Weather..... FM 9-207

Mobile Field Laundry, Clothing Exchange, and Bath Operations ..... FM 10-280

First Aid for Soldiers ..... FM 21-11

Basic Cold Weather Manual ..... FM 31-70

Northern Operations..... FM 31-71

A-4. TECHNICAL MANUALS.

Painting Instruction For Field Equipment ..... TM 43-0139

Unit, Direct Support, and General Support Maintenance
Repair Parts and Special Tools List, Laundry Unit,
Trailer-Mounted, Model M85-200 ..... TM 10-3510-222-24P

Unit, Direct Support, and General Support Maintenance Manual;
Laundry Unit, Trailer-Mounted, M85, Model M85-200 ..... TM 10-3510-222-24

Operator and Organizational Maintenance Manual for Generator
Set, Diesel (60 Hz), Engine Driven, Tactical Skid MTD, 10kW,
3 Phases, 120/208 Volts (60 Hz) ..... TM 5-6115-585-12

Operator, Unit, Intermediate, Direct Support and General
Maintenance (including Repair Parts and Special Tools List),
Trailer, Flatbed, 5-Ton, 4-Wheel, XM1061E1 ..... TM 9-2330-376-14&P

Procedures for Destruction of Tank-Automotive Equipment to
Prevent Enemy Use ..... TM 750-244-3

Operator, Unit, Intermediate, Direct Support and General
Maintenance (including Repair Parts and Special Tools List),
Water Heater ..... TM 10-4520-259-13&P

A-5. LUBRICATION ORDER

Lubricating Order, Laundry Unit, Trailer-Mounted, M85 ..... LO 10-3510-222-12

Lubricating Order, Generator Set, Diesel Engine Driven,
Tactical Skid Mounted, 10 kW ..... LO 5-6115-585-12

A-6. MISCELLANEOUS PUBLICATIONS

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

CTA 50-970

CTOA 8-100

APPENDIX B

COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS

Section I. INTRODUCTION

B-1. SCOPE.

This appendix lists components of end item and basic issue items for the Laundry Unit to help you inventory items required for safe and efficient operation.

B-2. GENERAL

The Components of End Item and Basic Issue Items List are divided into the following sections:

a. Section II. Components of End Item. This listing is for informational purposes only, and is not authority to requisition replacements. These items are part of the Laundry Unit, but are removed and separately packaged for transportation or shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

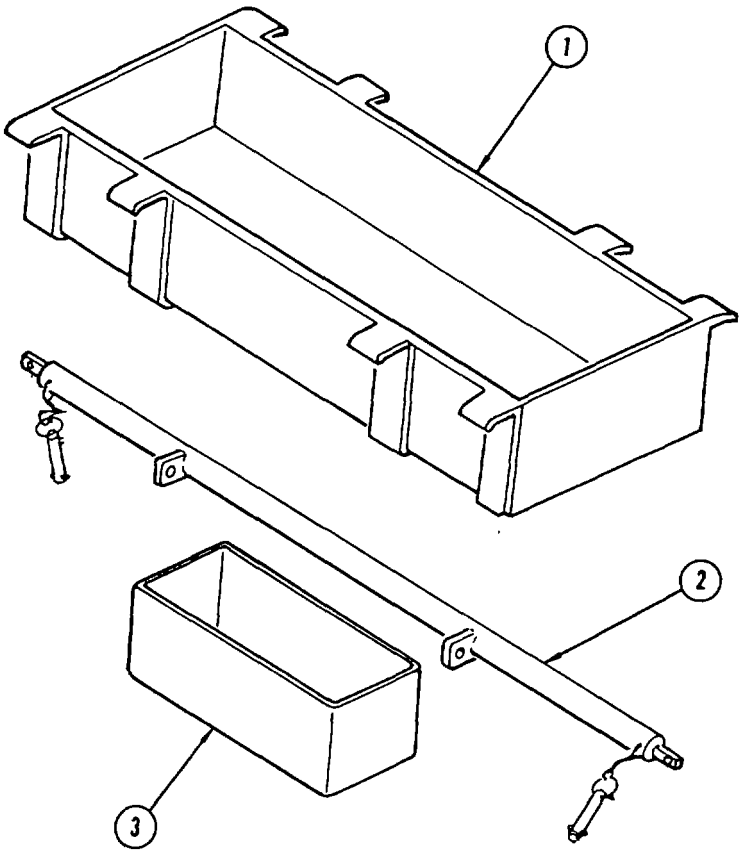
b. Section III. Basic Issue Items. These are the minimum essential items required to place the Laundry Unit in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, BII must be with the Laundry Unit during operation and whenever it is transferred between property accounts. The illustrations will assist you with hard-to-identify items. This manual is your authority to request/requisition replacement BII, based on authorization of the end item by the TOE/MTOE.

B-3. EXPLANATION OF COLUMNS.

The following provides an explanation of columns found in the tabular listing:

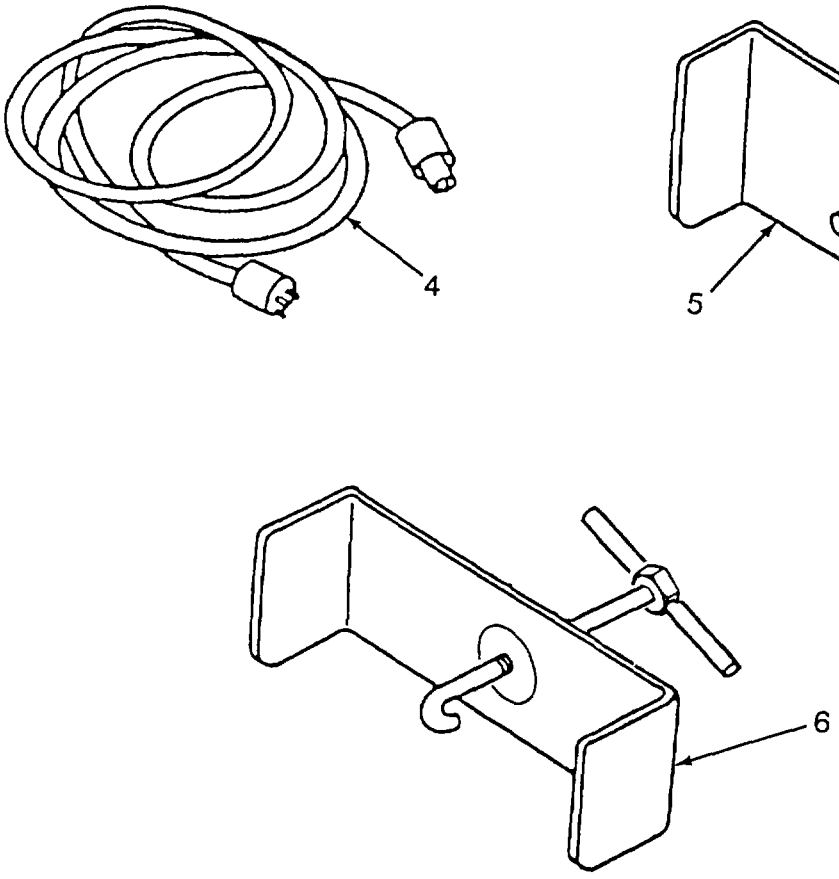
a. ILLUS NUMBER Column. This column gives you the number of the item illustrated.
b. NATIONAL STOCK NUMBER Column. Indicates the stock number of the item to be used for requisitioning purposes.
c. DESCRIPTION AND USABLE ON CODE Column. Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the CAGEC (Commercial and Government Entity Code) (in parenthesis) and the part number.
d. UNIT OF ISSUE Column. Indicates how the item is issued for the National Stock Number shown in column two.
e. QTY REQD Column. Indicates the quantity required.

Section II. COMPONENTS OF THE END ITEM



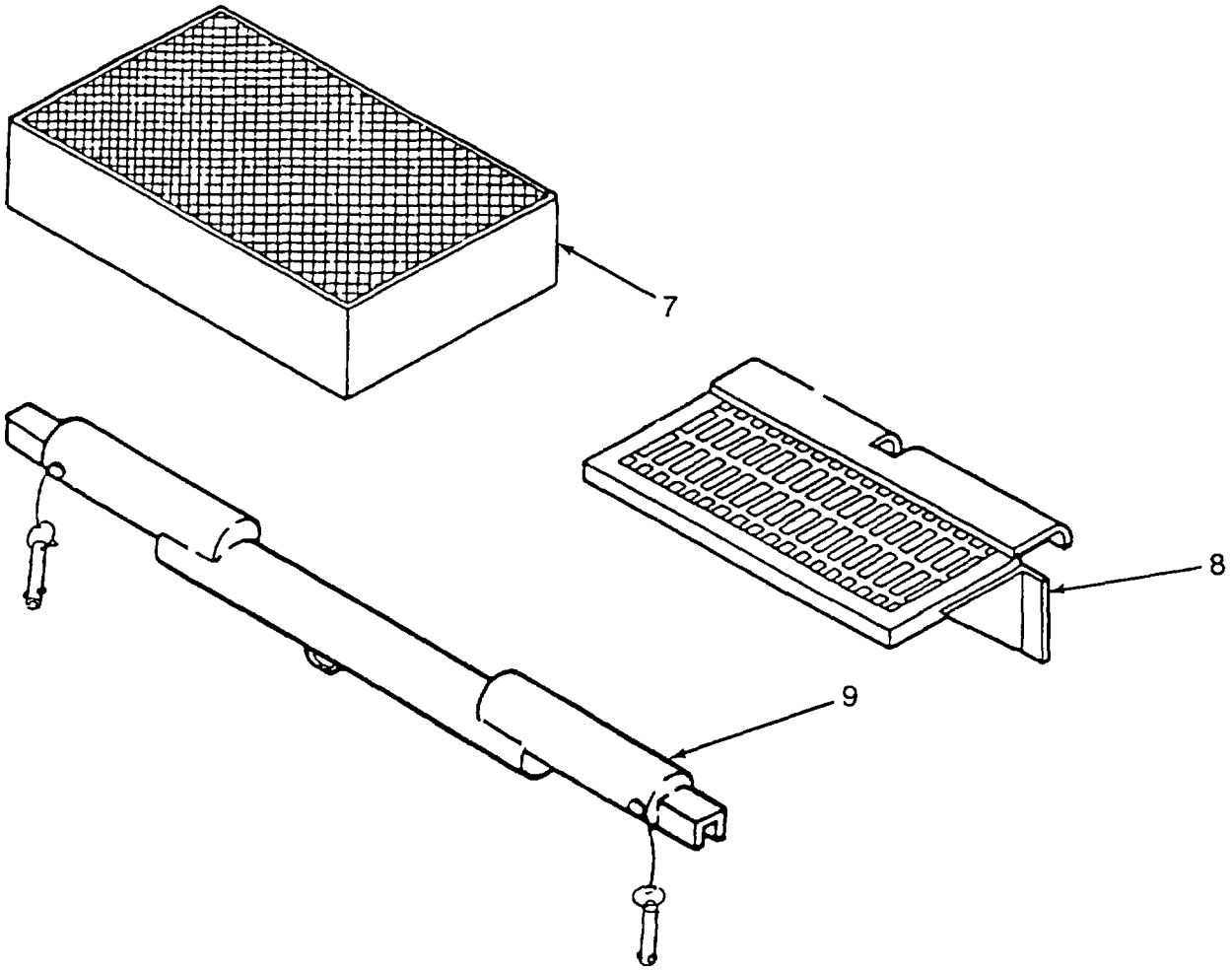
Illus Number	National Stock Number	Description CAGEC and Part Number	U/I	Qty Req'd
1		BASKET (81337) 6-1-9955	EA	2
2		BEAM, LEFT (81337) 6-2-2418	EA	1
3	3510-01-248-5296	BIN, DRYER (81337) 6-1-9906	EA	1

Section II. COMPONENTS OF THE END ITEM-continued.



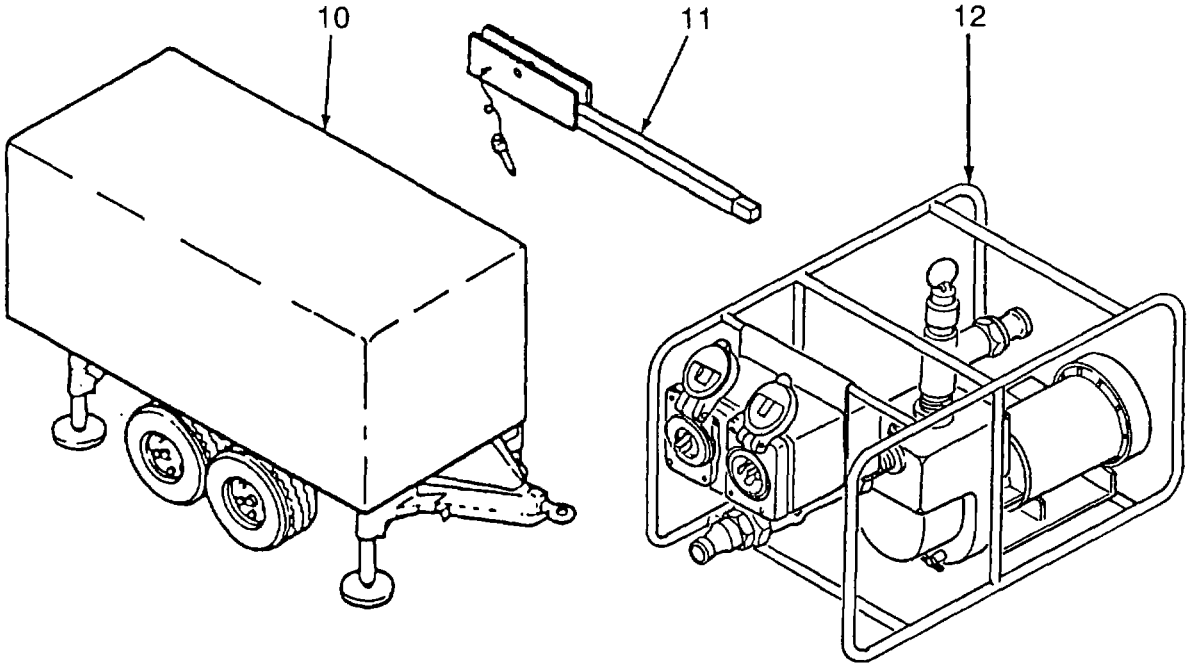
Illus Number	National Stock Number	Description CAGEC and Part Number	U/I	Qty Req'd
4		POWER DISTRIBUTION (Water Pump) (81337) 6-1-9926	EA	1
5	3510-01-279-3980	CLAMP, SHORT (81337) 6-1-9433	EA	1
6	3510-01-247-4797	CLAMIP, LONG (81337) 6-1-9430	EA	1

Section II. COMPONENTS OF THE END ITEM-continued.



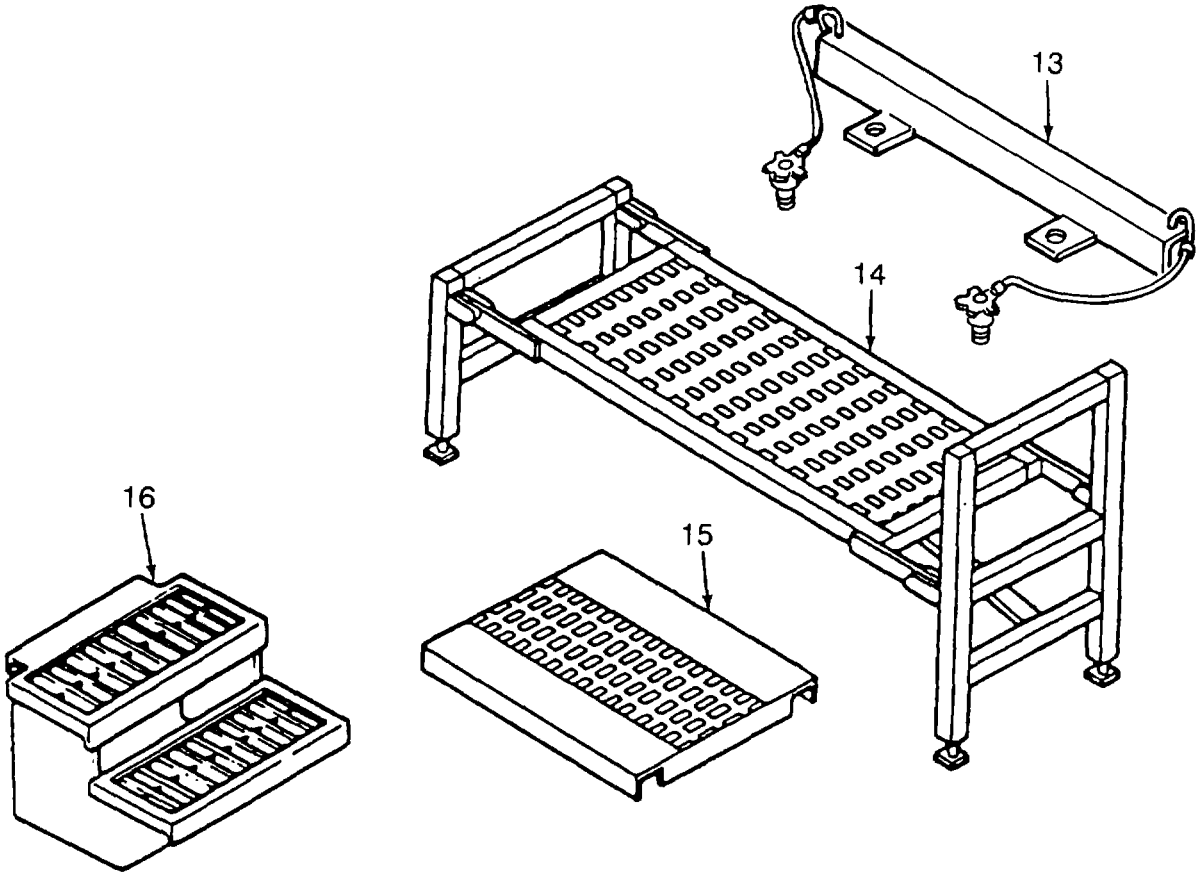
Illus Number	National Stock Number	Description CAGEC and Part Number	U/I	Qty Req'd
7	NA	PANEL, SOUND DEADENING	--	--
	5640-01-245-6934	• Side Panel, Small (81337) 1-6-0114	EA	2
	5640-01-285-4288	• Side Panel, Large (81337) 6-2-2400	EA	1
		• Top Panel (81337) 1-6-0118	EA	3
8	3510-01-242-7258	STAIR (81337) 6-1-9949	EA	2
9	3510-01-246-9258	STRUT (81337) 6-1-9416	EA	2

Section II. COMPONENTS OF THE END ITEM-continued.



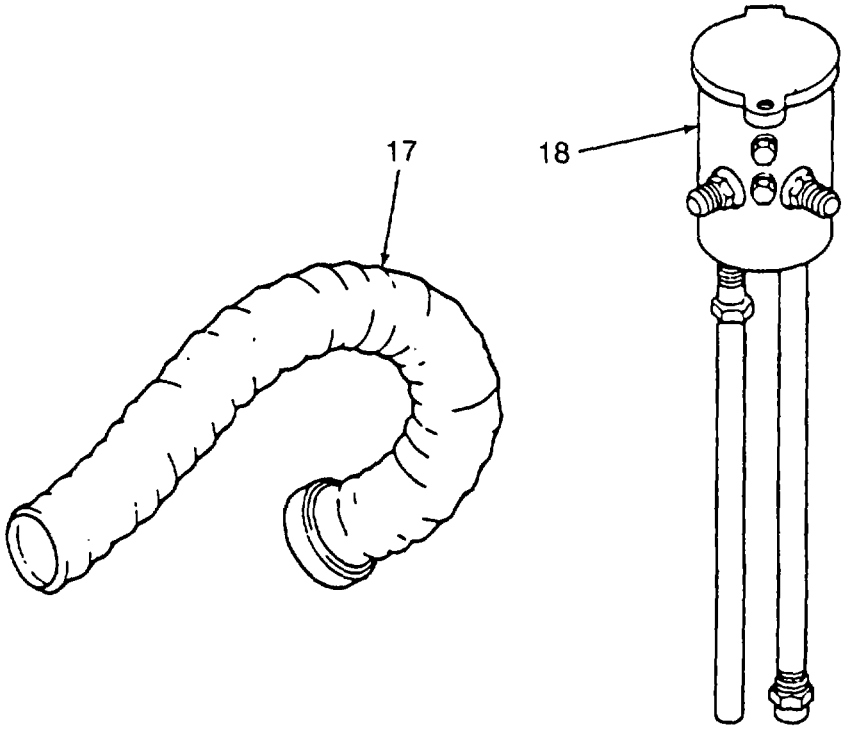
Illus Number	National Stock Number	Description CAGEC and Part Number	U/I	Qty Req'd
10	3510-01-253-4303	TARPAULIN (Cover) (81337) 6-1-9962	EA	1
11	3510-01-250-3645	RAIL, UPRIGHT (81337) 6-1-9859	EA	2
12	4510-01-245-6936	WATER PUMP (81337) 6-1-9932	EA	1

Section II. COMPONENTS OF THE END ITEM-continued.



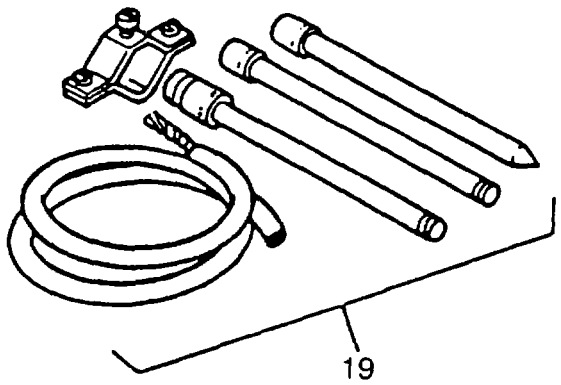
Illus Number	National Stock Number	Description CAGEC and Part Number	U/I	Qty Req'd
13	2930-01-248-9889	TIEDOWN, WATER (Water Pump) (81337) 6-1-9443	EA	2
14	NA	PLATFORM		
		• Platform, Washer (81337) 6-1-8356	EA	1
		• Platform, Dryer (81337) 6-2-2411	EA	1
15		PLATFORM, SHORT (81337) 6-1-9855	EA	1
16	4940-01-309-4488	STAIR, TWO STEP (81337) 6-2-2403	EA	1

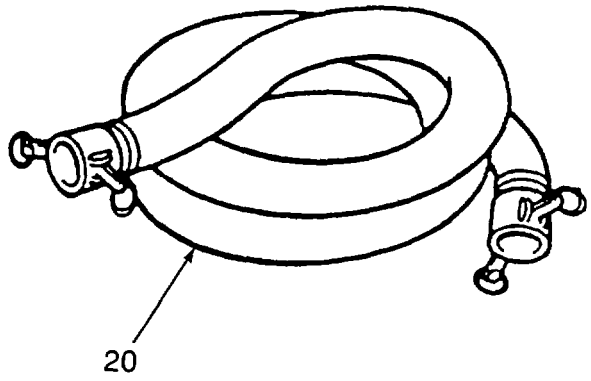
Section II. COMPONENTS OF THE END ITEM-continued.

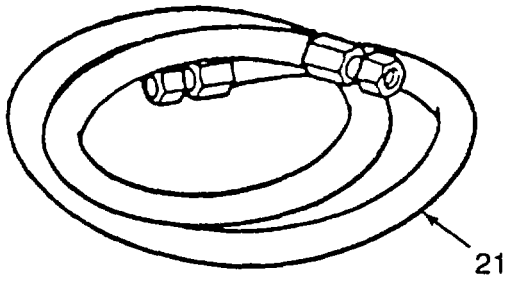


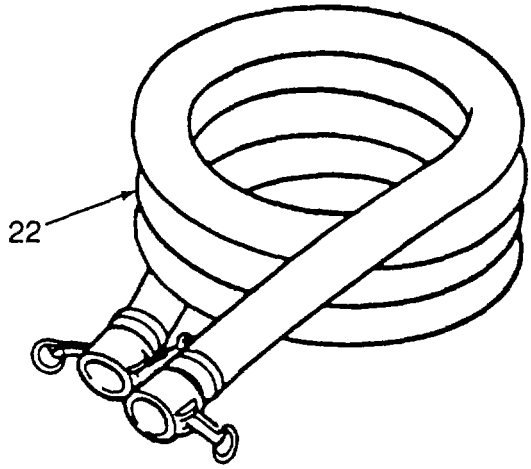
Illus Number	National Stock Number	Description CAGEC and Part Number	U/I	Qty Req'd
17	4720-00-708-0407	HOSE, AIR DUCT (Dryer Lint Exhaust) (81349) MIL,-fH-7365, Size A	EA	1
18	4510-01-214-9139	ADAPTER (Drum Fill) (81337) 6-1-8285	EA	1

Section II. COMPONENTS OF THE END ITEM-continued.



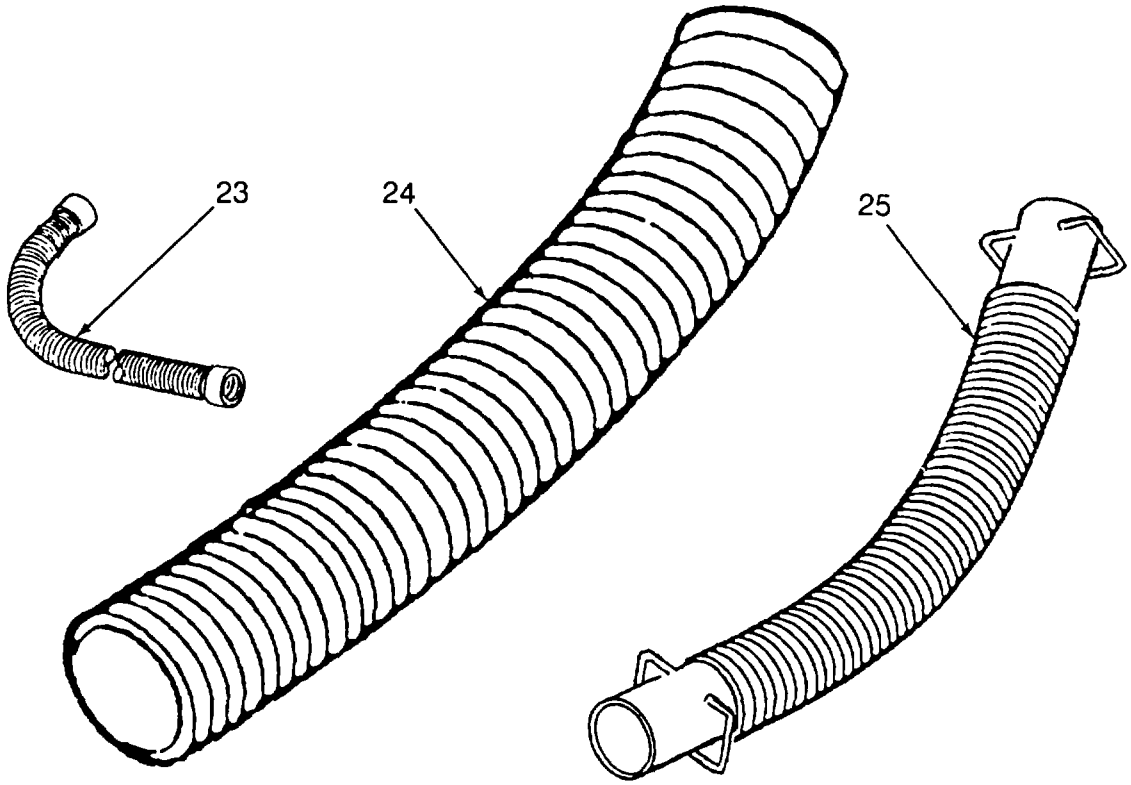






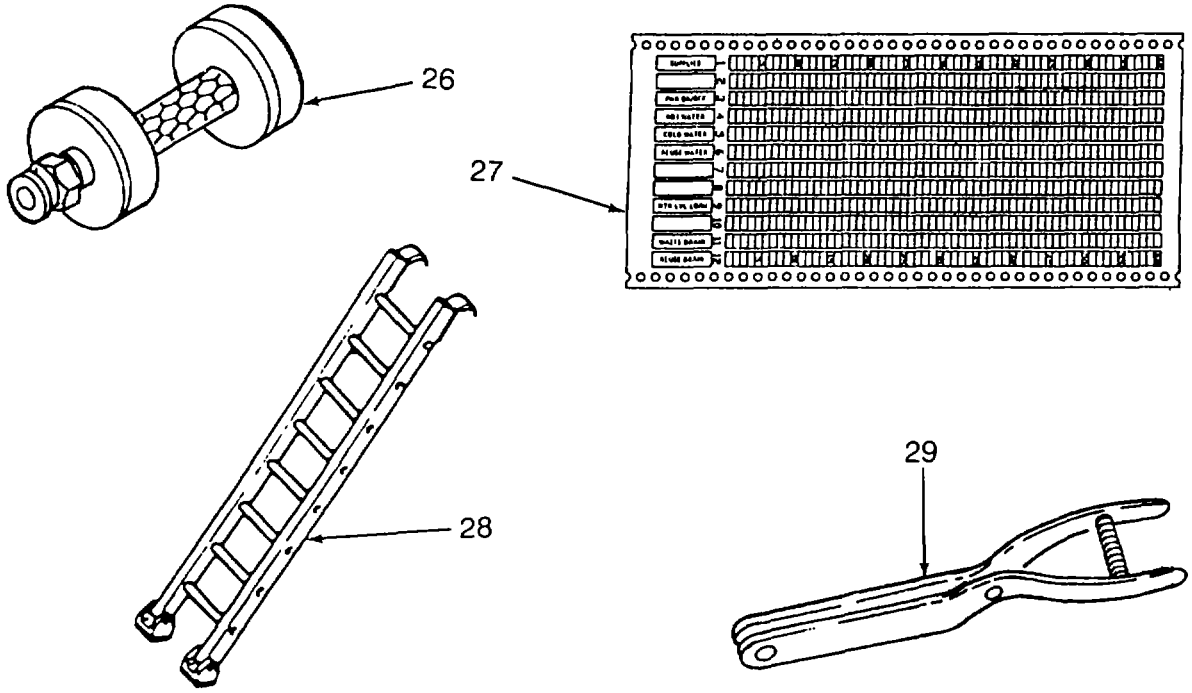
Illus Number	National Stock Number	Description CAGEC and Part Number	U/I	Qty Req'd
19	5975-00-878-3791	GROUND ROI) (81349) MIL,-R-11461	EA	1
20	4720-01-297-9083	HOSE, NONMETALI,IC (81337) 6-1-9946-3 (25 ft, 1-1/2 in dia) • Suction Strainer to Water Pump • Water Pump to Water Heater • Washer Bin to Drain Field	EA	3
21		HOSE, FUEL (Dryer, Water Heater) (96906) MS28741-8-3000 (25 ft)	EA	4
22		HOSE, NONMETALI,IC (Washer/Dryer Drain Field) (81337) 6-1-9946-4 (25 ft, 2-1/2 in dia)	EA	1

Section II. COMPONENTS OF THE END ITEM-continued.



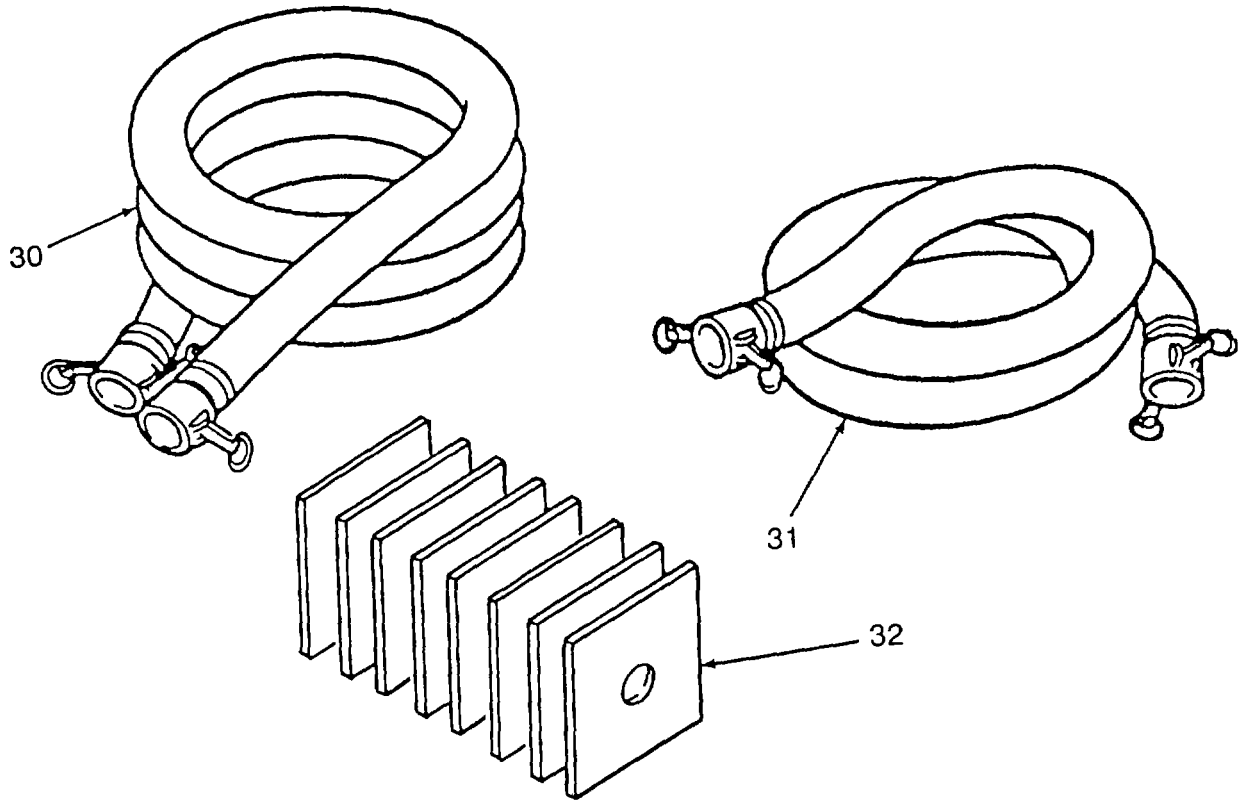
Illus Number	National Stock Number	Description CAGEC and Part Number	U/I	Qty Req'd
23		HOSE, GENERATOR EXHAUST (81337) 6-2-2419	EA	2
24	4720-01-261-6815	HOSE, METAL, (Dryer Heater Exhaust) (81337) 6-2-2303	EA	2
25		DUCT, BURNER EXHAUST (Water Heater) (81337) 6-2-2427	EA	2

Section II. COMPONENTS OF THE END ITEM-continued.



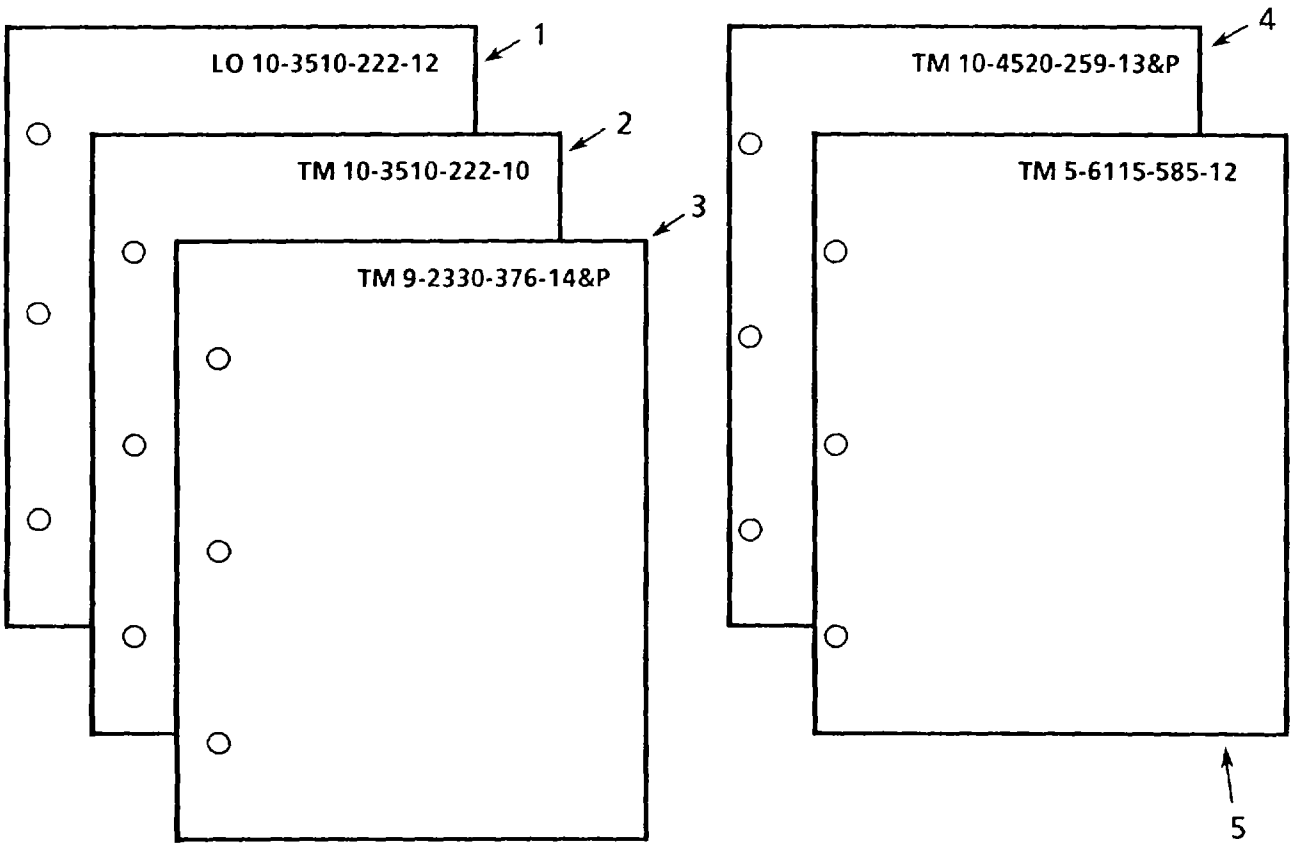
Illus Number	National Stock Number	Description CAGEC and Part Number	U/I	Qty Req'd
26	4730-01-249-1969	STRAINER, SUCTION (81337) 6-1-8359	EA	1
27		CARD, WASHER FORMULA (05789) 178-8015 (10 blank) CARD, CUT, FORMULA (05789) #1 = 178-8030 #6 = 178-8035 #2 = 178-8031 #7 = 178-8036 #3 = 178-8032 #8 = 178-8037 #4 = 178-8033 #9 = 178-8038 #5 = 178-8034 #10 = 178-8039	EA	20
28		LADDER ASSY (81337) 6-2-2426	EA	1
29		PUNCH, CARD (31432) A90	EA	1

Section II. COMPONENTS OF THE END ITEM-continued.



Illus Number	National Stock Number	Description CAGEC and Part Number	U/I	Qty Req'd
30	4720-01-297-9085	HOSE, NONMETALLIC (Washer to Water Heater) (81337) 6-1-9946-1 (8 ft, 1 1/2 in dia)	EA	1
31	4720-01-297-9082	HOSE, NONMETALLIC (Extractor to Washer/Extractor Drain Piping) (81337) 6-1-9946-2 (40 in, 1 1/2 in dia)	EA	1
32		FOOTING, PLATFORM (81337) 6-2-2434	EA	8

Section III. COMPONENTS OF THE END ITEM-continued.



Illus Number	National Stock Number	Description CAGEC and Part Number	U/I	Qty Req'd
1	NA	LUBRICATION ORDER LO 10-3510-222-12	EA	1
2	NA	OPERATOR'S MANUAL TM 10-3510-222-10	EA	1
3	NA	TRAILER MANUAL TM 9-2330-376-14&P	EA	1
4	NA	WATER HEATER MANUAL TM 10-4520-259-13&P	EA	1
5	NA	GENERATOR OPERATOR'S MANUAL TM 5-6115-585-12	EA	1

APPENDIX C

ADDITIONAL AUTHORIZATION LIST (AAL)

Section I. Introduction.

C-1. SCOPE.

This appendix lists additional items that you are authorized for the support of the Laundry Unit.

C-2. GENERAL.

This list identifies items that do not have to accompany the Laundry Unit and that do not have to be turned in with it. These items are all authorized for use by CTA, MTOE, TDA, or JTA.

C-3. EXPLANATION OF LISTING.

National stock number, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment. The items are listed in alphabetical sequence by item name. If the item you require differs between serial numbers of the same model, effective serial numbers are shown in the last line of the description. If item required differs for different models of this equipment, the model is shown under the "Usable on" heading in the description column. These codes are identified as:

Code	Used On
PAA	Model 114
PAB	Model 114A
PAC	Model 114B

Section II. Additional Authorization Items List

NATIONAL STOCK NUMBER	DESCRIPTION CAGEC & PART NUMBER	USABLE ON CODE	U/I RECM	QTY
7240-00-025-3377	Can, Gas, Military (81349) MIL-C-1283 (5 Gallon)		EA	AR
4230-01-133-4124	Decontaminating Apparatus (81349) MIL-D-12468		EA	1
6230-00-163-1856	Flashlight (81348) W-F-00421		EA	1
6640-00-063-7879	Funnel, Common Laboratory (95352) 802PE		EA	1
5120-00-061-8543	Hammer, Hand (81348) GGG-H-86		EA	1
NO NSN	Nipple, Quick-Disconnect (7G217) 25 SAAL (2.50" ID adapter, male to male)		EA	AR
4730-01-338-5165	Nipple, Quick-Disconnect (7G217) MS 39352-1 (1.50" ID adapter, male to male)		EA	AR
5340-00-682-1508	Padlock (81348) FF-P-101		EA	1
5120-00-278-0352	Pliers, Slip Joint (81348) GGG-P-471		EA	1
5120-00-473-6476	Pliers, Slip Joint: 10-IN., Adjustable (80212) P489		EA	1
5120-00-234-8912	Screwdriver, Cross Tip: 6-IN. (C7127) SSDP63		EA	1
5120-00-227-7334	Screwdriver, Flat Tip; 10-IN (81348) GGG-S-121		EA	1
5120-00-237-6985	Screwdriver, Flat Tip; 8-IN. (81348) GGG-S-121		EA	1
5120-01-013-1676	Slide Hammer, Ground (45225) P74-144 (for ground rod)		EA	1
5120-00-264-3796	Wrench, Adjustable: 12-IN. (81348) GGG-W-631		EA	1
5120-00-240-5328	Wrench, Adjustable: 8-IN. (81348) GGG-W-631		EA	1

APPENDIX D

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

D-1. SCOPE.

This appendix lists expendable/durable supplies and materials you will need to operate and maintain the Laundry Unit. This listing is for informational purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

D-2. EXPLANATION OF COLUMNS.

a. ITEM NUMBER Column. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material; e.g., "Use Cleaning Compound (Item 5, APP D)."

b. LEVEL Column. This column identifies the lowest level of maintenance that requires the listed item:

C - Operator/Crew
O - Unit Maintenance
F - Direct Support Maintenance
H - General Support Maintenance

c. NATIONALSTOCK NUMBER Column. This is the national stock number assigned to the item; use it to request or requisition the item.

d. ITEMNAME, DESCRIPTION, CAGE CODE, PART NUMBER Column. Indicates the federal item name and, if required, a description to identify the item. The last line for each item indicates the Commercial And Government Entity (CAGE) Code for Manufacturer in parentheses, followed by the part number.

e. UNITOF ISSUE (U/I) Column. Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two character alphabetical abbreviation (e.g., ea., in, pr). If the unit of measure differs from the rest of the issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II. EXPENDABLE/DURABLE ITEMS LIST

ITEM NUMBER	LEVEL	NATIONAL STOCK NUMBER	ITEM NAME, DESCRIPTION, CAGE CODE, PART NUMBER	U/I
1	C	7930-00-965-9830	Rinse Additive, Laundry	DR (175 lb)
2	C		Agent, Chelate	NA
3	C	6850-01-015-7939	Spot Remover	GL (One gl)
4	C	6850-00-297-6653	Decontaminating Agent	DR (50 lb)
5	C	8030-00-264-3875	Water Repellent Compound, Textile Finish	CN (5 gl)
6	C	6810-00-141-2942	Citric Acid, Anhydrous, Technical	DR (50 lb)
7	C	7930-00-929-1220	Detergent, Laundry	DR (50 lb)
8	C	9140-00-286-5284	Fuel, Diesel VVF-800 (DF-A, DF-I, DF-2)	DR (55 gl)
9	C	9130-01-305-5597	Turbine Fuel, Aviation (JP-8) MIL-T-83133	GL (One gl)
10	C		Permanone 40 EC	NA
11	C	6810-00-264-6523	Sodium Orthosilicate, Technical	DR (100 lb)
12	C	7930-00-924-5366	Sour, Laundry	DR (100 lb)
13	C	5975-00-156-3253	Strap, Tiedown, Electrical Components (81349) MIL-S-23190	HD

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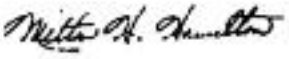
INDEX-continued.

INDEX-continued.

INDEX-continued.

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official: 

MILTON H. HAMILTON
Administrative Assistant to the
Secretary of the Army
04272

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The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 decagram = 10 grams = .35 ounce
1 hectogram = 10 decagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

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