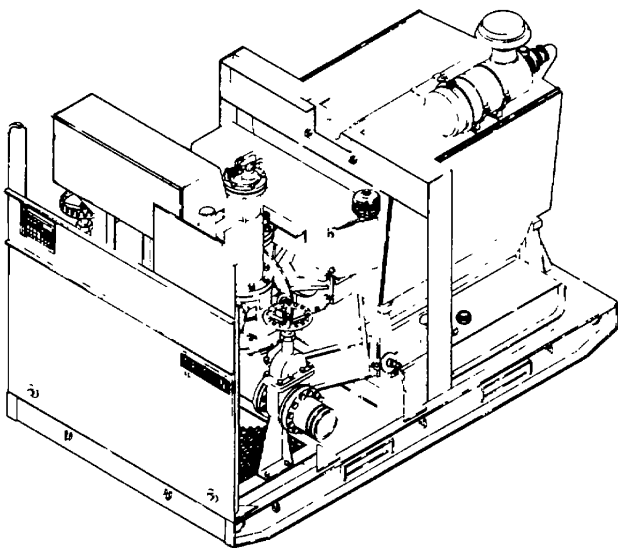


TECHNICAL MANUAL**ORGANIZATIONAL,
DIRECT SUPPORT AND GENERAL SUPPORT
MAINTENANCE MANUAL**

This copy is a reprint which includes current pages from Changes I through 2.

**PUMP UNIT, CENTRIFUGAL,
FLOOD AND TRANSFER,
DIESEL-ENGINE-DRIVEN,
1250 GPM AT 180 FTH
MODEL US612ACD
NSN 4320-01-194-5601**

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TECHNICAL MANUAL

TM 5-4320-306-24

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 30 June 1987**Organizational, Direct Support and General Support Maintenance Manual****PUMP UNIT, CENTRIFUGAL, FLOOD AND TRANSFER,
DIESEL-ENGINE-DRIVEN, 1250 GPM AT 180 FTH
MODEL US612ACD NSN 4320-01-194-5601**

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REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

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

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CHAPTER 1 INTRODUCTION

Section 1. GENERAL INFORMATION

1-1. SCOPE

Type of Manual: Organizational, Direct Support, and General Support Maintenance

Model Number and Equipment Name: Pump Unit, Centrifugal, Flood and Transfer, 1250 gpm, Diesel-Engine-Driven, Model US612ACD

Purpose of Equipment: Pumps fuel or potable water

1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS

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. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Refer to TM 750-24-3 for instructions.

1-4. PREPARATION FOR STORAGE AND SHIPMENT

Instructions for preparation for storage and shipment are in Chapter 2.

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

If your centrifugal pump Unit needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design or performance. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at: U. S. Army Troop Support Command, ATTN: AMSTR-QX, 4300 Goodfellow Blvd. , St. Louis, MO 63120-1798. We will send you a reply.

1-6. NOMENCLATURE CROSS-REFERENCE

For precise identification, simplified nomenclature has been established for clarity and is shown in the nomenclature cross-reference list.

NOMENCLATURE CROSS-REFERENCE LIST

This listing includes nomenclature cross-references used in this manual

<u>Common Name</u>	<u>Official Nomenclature</u>
Centrifugal Pump Unit	Pump Unit, Centrifugal, Flood and Transfer, Diesel-Engine-Driven, 1250 gpm at 180 feet total head
Engine	Diesel Engine
Pump	Centrifugal Pump
Starter	Starter Motor

Section II. EQUIPMENT DESCRIPTION AND DATA

1-7. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

- Pumping rate of 1250 gpm at 180 feet total head
- Automatic shutdown for high temperature, low oil pressure, and overspeed
- Operates in surrounding temperature between +155° and -65°F (+68.3° and -53.9°C)
- Operates at altitudes between sea level and 9000 feet above sea level
- Continuous operation during periods of blowing sand
- Operator station protected by noise shield
- Ether start kit (cold weather starting aid)
- Skid mounted for transport

1-8. LOCATION AND DESCRIPTION OF EXTERNAL COMPONENTS

CONTROL PANEL AND ELECTRICAL SYSTEM (1). Used to operate and control the centrifugal pump unit. The control panel assembly is located at the front of the unit. It is supported by the suction assembly and noise shield. The control panel assembly contains the operating and instrument panels. The electrical system contains the wiring and hardware connecting the control panel components with the engine and pumping controls and sensors.

ETHER START KIT (2) Used when engine will not start normally in cold weather. Injects a mist of liquid ether into the engine air intake system to aid ignition. The starting aid components are the ether cylinder, control nozzle, and the hose between the nozzle and the air intake.

DISCHARGE MANIFOLD ASSEMBLY (3) Controls the liquid pumped out of the pump body discharge port. The manifold is attached to the discharge port flange at the top of the pump body. It is supported by this connection and support brackets on the skid frame. The assembly consists of a gate valve, a check valve, an air valve, connective piping, and a victaulic coupling flange.

FUEL TANK (4). Contains a 20-gallon supply of diesel fuel for the engine. The tank is mounted to the rear third of the skid frame, just below the engine. The tank includes a filler cap, fuel gage, and various fittings for fuel lines.

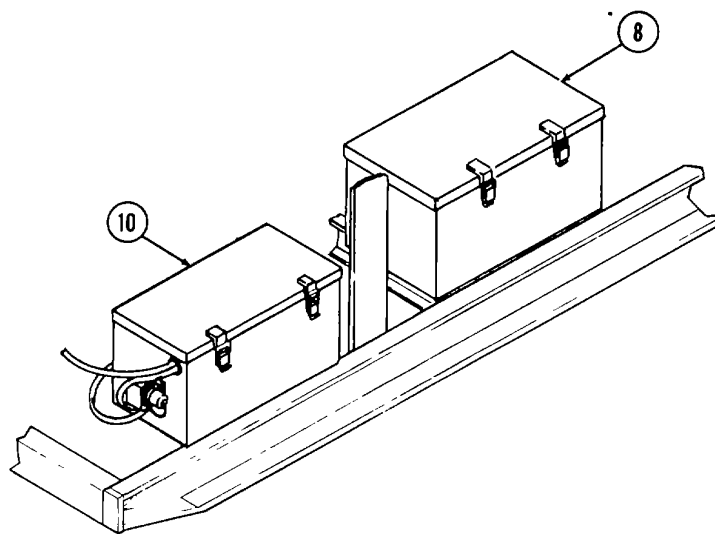
NOISE SHIELD (5). Reduces pump and engine noise at the operator's position in front of the control panel. In addition, the shield reduces vibration of the control panel and supports the front portion of the fabric cover. The base of the shield is mounted to the front of the skid frame, and to the supports of the control panel.

SUCTION ASSEMBLY (6). This assembly controls the liquid supply to the pump body suction port. The assembly is secured to the suction port mounting studs at the front of the pump body. It is supported by this connection and support brackets on the skid frame. The suction assembly consists of a gate valve, a strainer assembly, connective piping, and a victaulic coupling flange.

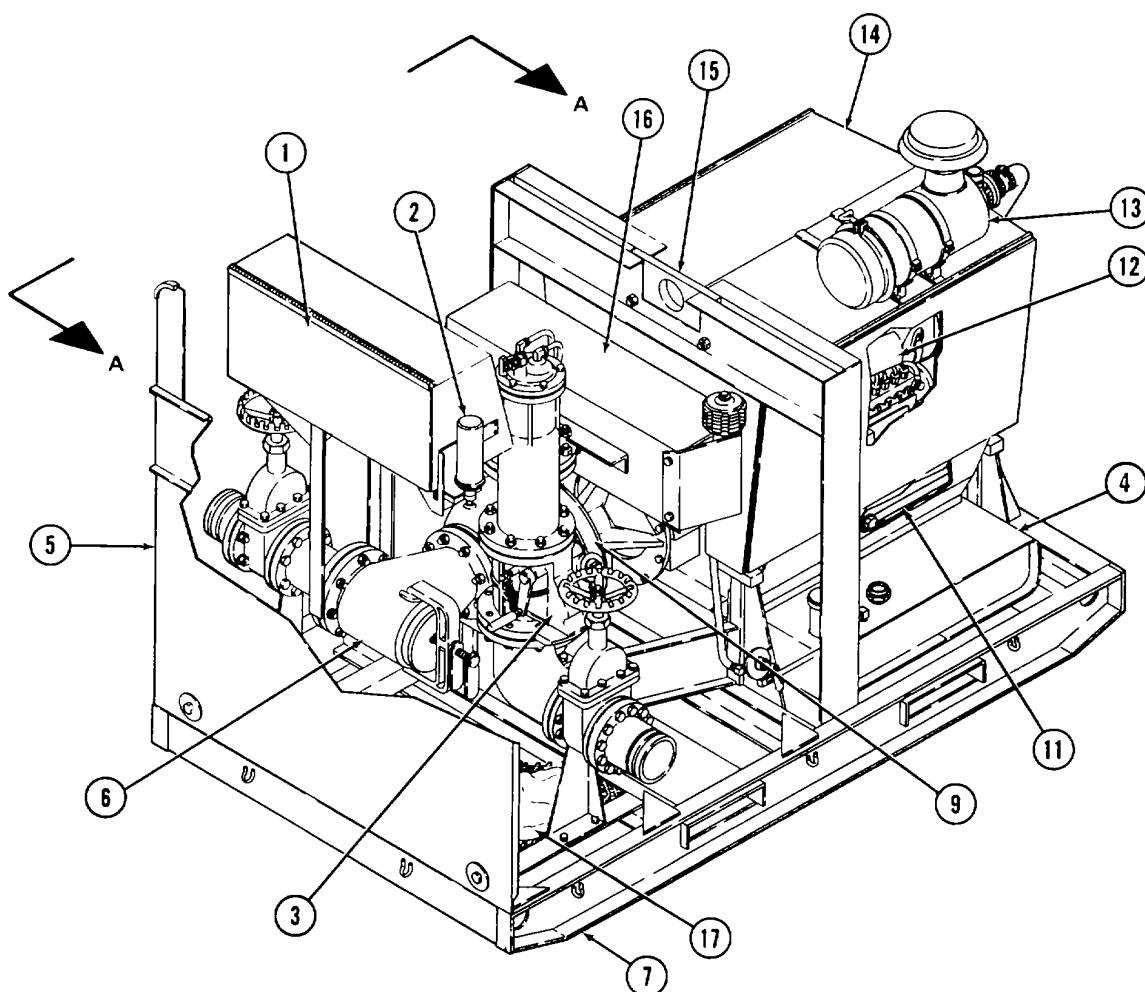
SKID ASSEMBLY (7). The skid assembly is a movable mounting platform for the major components of the centrifugal pump unit. The skid is a welded frame with provisions for mounting the components, runners which incorporate enclosed forklift pockets, battery and tool boxes, and a 20-gallon engine fuel tank.

TOOL BOX (8). Centrifugal pump unit accessories are stored in the tool box. It is attached to left side of the skid frame, in front of the battery box.

1-8. LOCATION AND DESCRIPTION OF EXTERNAL COMPONENTS (Continued)



VIEW A-A



1-8. LOCATION AND DESCRIPTION OF EXTERNAL COMPONENTS (Continued)

PUMP ASSEMBLY (9). The pump assembly uses the turning force of the engine to pump liquid from the suction port to the discharge port of the pump body. The pump assembly is a single-stage, centrifugal pump which is self priming after initial filling. The pump body portion of the assembly is mounted to the front portion of the skid frame. The bearing housing portion of the assembly attaches to the engine bell housing and flywheel.

BATTERY SYSTEM (10). The battery system components supply dc power to the starting motor, control panel, and electrical system. The components include a battery box, two 12-volt batteries, a charging receptacle, and connecting cables and wires.

OIL DRAIN ASSEMBLY (11). The oil drain assembly is an extension of the engine oil drain. It makes draining the engine oil easier. The drain assembly is located below the engine and projects from the rear of the pump assembly.

ENGINE (12). The engine provides turning force to the pump rotor. The engine is a turbocharged, six-cylinder, in-line, diesel engine. It has a standard, continuous output rating of 102 hp at 2400 rpm. The engine is mounted to the rear portion of the skid frame. The engine flywheel is directly connected to the pump with a dry-type flexible coupling.

AIR INLET COMPONENTS (13). Supply filtered air to the inlet of the engine through the turbocharger. The components include a dry-type air cleaner and air hoses between the air cleaner and turbocharger.

ENGINE COVER ASSEMBLY (14). Encloses and protects the engine from environmental conditions during operation. The cover consists of a metal frame; and side, top, and end panels. The frame is attached to the skid assembly. The cover panels are attached to the frame with hand-operated fasteners. The rear panel includes an air intake duct and filter that provide filtered cooling air to the engine.

LIFTING BAIL (15). Provides a secure point of attachment for lifting the centrifugal pump unit. The bail is secured to the skid frame at the centrifugal pump unit center of gravity.

EXHAUST SYSTEM (16). Vents engine exhaust gases from the exhaust side of the turbocharger. The components include a spark arrestor, muffler, and the exhaust pipes between the muffler and turbocharger.

FABRIC COVER (17) Fits over the centrifugal pump unit. It protects the components from environmental conditions when the unit is not in operation. The cover is made of a flame-resistant, vinyl-coated nylon material with rubber tiedowns that hold it in place.

1-9. LOCATION AND DESCRIPTION OF INSTRUCTION AND WARNING PLATES

The centrifugal pump unit has the following identification, instruction, and warning plates.

a. *Instruction plate.* Mounted on the throttle panel on the control panel assembly. It displays operating instructions for starting, running, and stopping the centrifugal pump unit.

