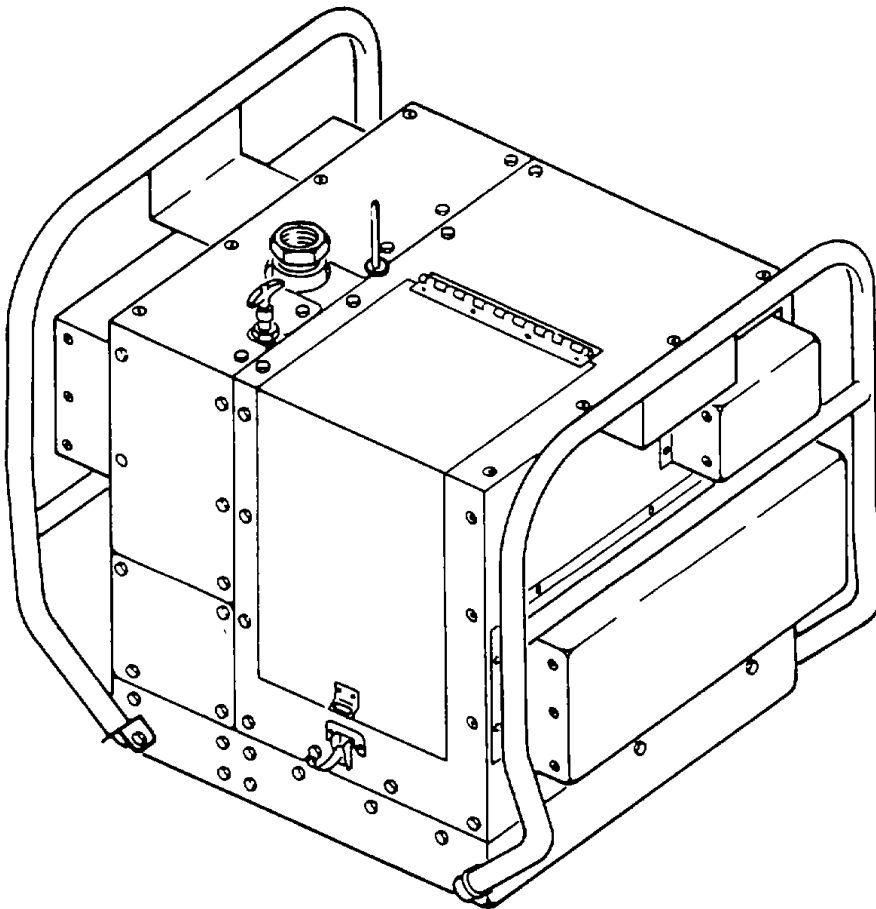


**TECHNICAL MANUAL
OPERATOR'S, UNIT,
DIRECT SUPPORT, AND GENERAL SUPPORT
MAINTENANCE MANUAL**

**PUMP UNIT, CENTRIFUGAL,
DIESEL ENGINE DRIVEN,
SELF PRIMING, 65 GPM WATER
MODEL 4M SDQ 2000
NSN 4320-01-338-8010**



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Distribution Statement A: Approved for public release; distribution is unlimited.

**HEADQUARTERS, DEPARTMENT OF THE ARMY
18 JANUARY 1994**

TECHNICAL MANUAL
TM10-4320-316-14

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 18 January 1994

**Operator's, Unit, Direct Support,
and General Support Maintenance Manual**

For

**PUMP UNIT, CENTRIFUGAL, DIESEL ENGINE DRIVEN,
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MODEL 4M SDQ 2000
NSN 4320-01-338-8010**

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA Form 2028-2 located in the back of this manual direct to: Commander, 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.

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HOW TO USE THIS MANUAL

GENERAL. This technical manual provides you with the information needed to operate and to maintain the DED Pump Assembly. By properly using this manual, you will be able to identify any problem you may have in operating the pump assembly and then locate the proper procedure needed to correct any problem found.

MANUAL ORGANIZATION. This manual has been organized in a manner that groups together the information that an operator or a maintenance technician will need to perform their duties. The following list indicates how this information has been organized.

- | | |
|-------------------|--|
| Chapter 1 | This chapter contains a complete description of the pump assembly and includes such information as general equipment data, location/descriptions of major pump assembly components, and general theory of operations for the pump assembly. |
| Chapter 2 | The information needed to set up and to operate the pump assembly are included in this chapter. It includes assembly information, operator PMCS, and special instructions for unusual or emergency conditions. |
| Chapter 3 | All operator maintenance procedures have been placed within this chapter. |
| Chapter 4 | In the event that unit level maintenance is required for the pump assembly, the required maintenance instructions can be found in this chapter. |
| Chapter 5 | The required maintenance instructions authorized for direct support level maintenance can be found in this chapter. |
| Chapter 6 | This chapter contains the maintenance procedures for general support maintenance personnel. |
| Appendix A | Some of the procedures in this manual have references to other military technical manuals and forms. A complete list of all of these Reference Documents is included in this appendix. |
| Appendix B | This appendix contains the Maintenance Allocation Chart for the pump assembly. This chart defines which of the items on the pump assembly will likely require maintenance and what military maintenance level is authorized to perform these maintenance procedures. |
| Appendix C | The Components of End Item List containing a complete listing of all of the items required for a complete pump assembly and the Basic Issue Items List showing the essential items needed to operate the pump assembly are contained in this appendix. |

- Appendix D** If any additional items are authorized for support of the pump assembly, they will be shown on the Additional Authorization List contained in this appendix.
- Appendix E** As you operate and maintain the pump assembly you will be required to use some special expendable items. The Expendable/Durable Supplies and Materials List in this appendix is a complete list of these items which appear elsewhere in the operating and maintenance procedures in this manual.
- Appendix F** Some components of the pump assembly must be manufactured from bulk or stock material before they can be replaced on the unit. A complete set of instructions required to manufacture these items from bulk stock is included in this Illustrated List of Manufactured Parts.
- Appendix G** It is very important to properly tighten all fasteners used in the pump assembly to insure proper operation of the pump assembly and to protect operating personnel. To assist you in properly tightening these fasteners, this appendix contains the standard Torque Limits for the fasteners used on the pump assembly.

AIDS TO FINDING INFORMATION. The following aids have been placed within this technical manual to help you quickly locate the information you may need.

- Front Cover Index** To provide you with a quick reference to the most used portions of this manual, an index has been placed on the cover of this manual.
- Bleeder Edges On Pages** On the right edge of the front cover index of this manual you will see a black box area that goes to the edge of the front cover page. If you hold this manual with you left hand and bend back the outer right edges of the pages with your right hand, you will find that there are pages inside the technical manual that also have black boxes on the right edges of the page and that these boxes line up with the boxes on the front cover index. By turning to the page in the technical manual that lines up with the box on the front cover, you will be able to quickly turn to the topic shown in the front cover index.
- Table Of CONTENTS AND Boxed Titles** In the event that the front cover has been removed from this manual, the items that appear in the front cover index have also been placed in a box where they appear in the Table of Contents of this manual.

Alphabetical Index

To assist you in locating any other information not found in the front cover index or the Table of Contents, an alphabetical index has been placed in the back of this manual to help you find any information you may need.

GENERAL MAINTENANCE METHOD. Although your local standard operating and maintenance procedure may vary, a simple method of using this technical manual to operate and maintain the pump assembly is shown in the following steps.

WARNINGS And CAUTIONS.

Always Read, Understand, and Perform ALL WARNINGS and CAUTIONS Found In This Technical Manual BEFORE Performing The Step Immediately Following The WARNING or CAUTION.

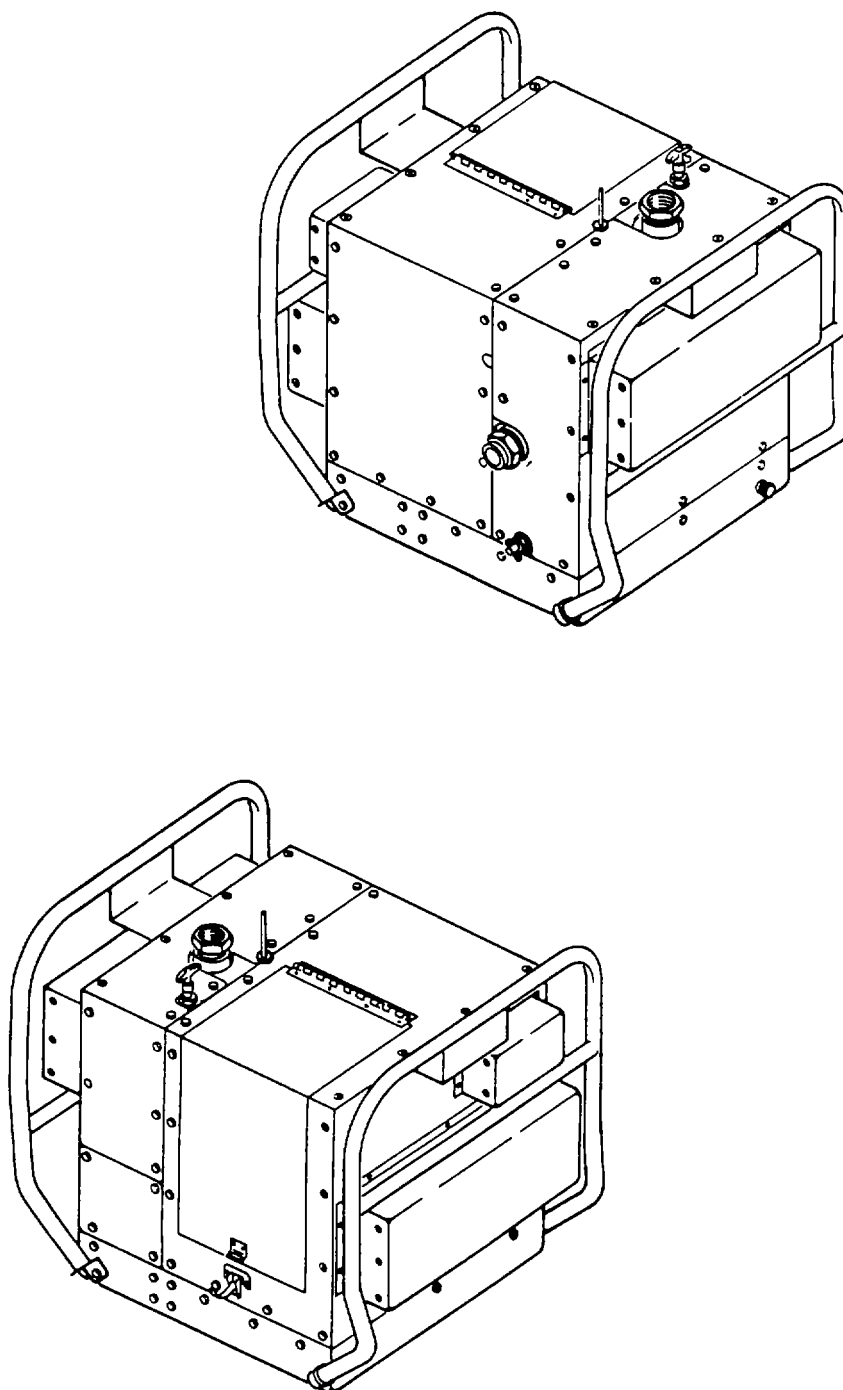
Throughout this technical manual there are certain procedures and operations that are hazardous to you or to the pump assembly. If you see a WARNING, pay special attention to the information stated in it because all WARNINGS provide you with data that will prevent serious injury to you or others around you. When you see a CAUTION read it carefully because the information given in it will keep you from damaging the pump assembly and making the pump assembly unable to fulfill its mission.

Equipment Set Up And Operation. Unpack and set up the pump assembly in accordance with the procedures shown in Chapter 2.

Preventive Maintenance Checks And Services (PMCS). Perform the operator PMCS procedures shown in Chapter 2.

Troubleshooting Procedures. If the pump assembly should not operate properly, refer to either the operating troubleshooting procedures in Chapter 3, the unit troubleshooting procedures in Chapter 4, or the direct support troubleshooting procedures in Chapter 5. The most likely pump assembly malfunctions have been placed within these troubleshooting procedures and a test and/or repair procedure paragraph has been indicated to correct the malfunction found. If a repair is required, refer to the maintenance paragraph shown in the troubleshooting procedure.

Maintenance Procedures. The complete repair procedures needed to correct a problem found with the pump assembly have been included in Chapters 3, 4, 5, and 6.



**Figure 1-1. Pump Unit, Centrifugal, Diesel Engine Driven,
Self-Priming, 65 GPM.**

CHAPTER 1

INTRODUCTION

SECTION I. GENERAL INFORMATION

1-1. SCOPE.

- a. Type of Manual. Operator's, Unit, Direct Support, and General Support Maintenance Manual
- b. Model Number and Equipment Name. Model 4M SDQ 2000 Pump Unit, Centrifugal, Diesel Engine Driven (DED), Self-Priming, 65 GPM.
- c. Purpose of Equipment. The pump unit covered by this manual is intended for use in pumping water to and from various water storage and distribution systems.

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) (Maintenance Management UPDATE).

1-3. CORROSION AND PREVENTION CONTROL. Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

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

If a corrosion problem is identified, it can be reported using Standard Form 368, Product Quality Deficiency Report. Use of key words such as "rust", "deterioration", "corrosion", or "cracking" will insure that the information is identified as a CPC problem. The form should be submitted to the address specified in the DA PAM 738-750.

1-4. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE. Refer to TM 750-244-3, Procedures for Destruction of Equipment to Prevent Enemy Use.

1-5. PREPARATION FOR STORAGE OR SHIPMENT. Contact unit maintenance for preparation and storage or shipment. Refer to Section VI, Chapter 4.

1-6. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S). If your pump assembly 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 a SF 368 (Product Quality Deficiency Report). Mail it to us at;

Commander
U.S. Army Aviation and Troop Support Command
Attention: AMSAT-I-MDO
4300 Goodfellow Blvd.
St. Louis, Missouri 63120-1798.

We will send you a reply.