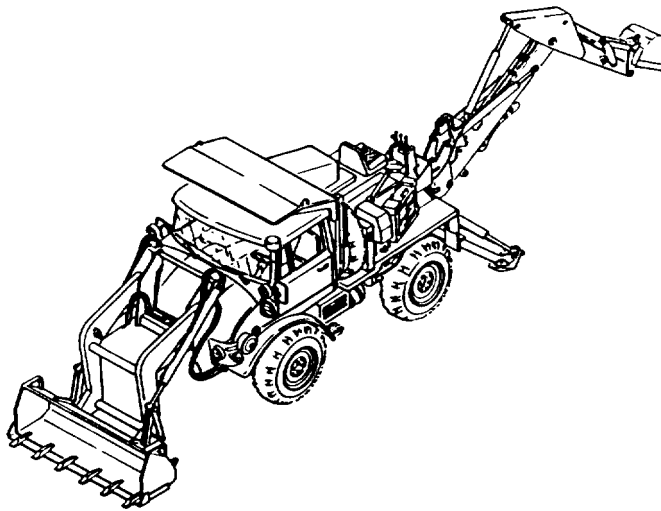


TECHNICAL MANUAL

DIRECT AND GENERAL SUPPORT MAINTENANCE MANUAL FOR

TRACTOR, WHEELED, 4 X 4 DED
SMALL EMPLACEMENT EXCAVATOR (SEE)
(NSN 2420-01-160-2754) (EIC:EDL)



TRACTOR, WHEELED, 4 X 4 DED
HIGH MOBILITY MATERIAL HANDLER (HMMH)
(NSN 2420-01-205-8636)

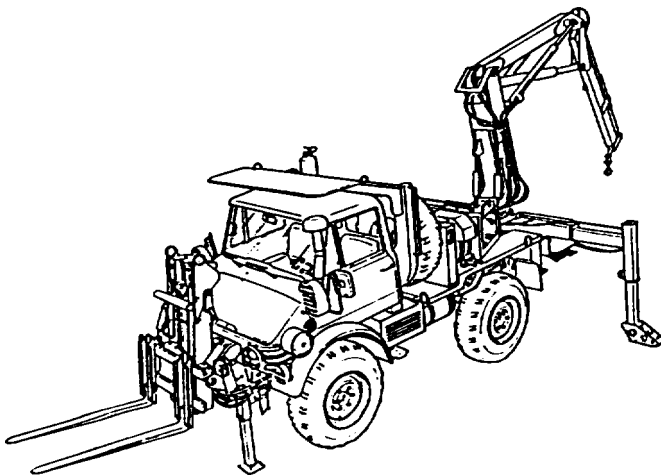


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HEADQUARTERS, DEPARTMENT OF THE ARMY

28 JULY 1993

This manual along with TM5-2420-224-20-1 and TM5-2420-224-20-2 supersedes
TM5-2420-224-24 dated December 1989

Approved for public release; distribution unlimited.

TECHNICAL MANUAL
No. 5-2420-224-34

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington D .C., 28 July 1993

**DIRECT AND GENERAL SUPPORT
MAINTENANCE MANUAL
FOR
TRACTOR, WHEELED, 4 X 4 DED
SMALL EMPLACEMENT EXCAVATOR (SEE)
(NSN 2420-01-160-2754) (EIC:EDL)**

AND

**TRACTOR, WHEELED, 4 X 4 DED
HIGH MOBILITY MATERIAL HANDLER (HMMH)
(NSN 2420-01-205-8636)**

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

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HOW TO USE THIS MANUAL

This manual has an edge index that will help you find specific information in a hurry. Simply spread the pages in the right edge of the manual until the printed blocks can be seen. Open the manual where the block on the edge of the page lines up with your selected topic printed in the front cover block.

OVERVIEW

This manual is organized by chapters, sections, and appendices. A summary of the organization of this manual, by major divisions, follows:

Front cover index gives you a quick reference to chapters, sections, and appendices that you will use often.

WARNINGS—All warnings you should observe while working on or around the SEE/HMMH are shown in this part of the manual. These are repeated in the parts of the manual where they apply.

Table of Contents—The contents of the chapters and appendices are listed here.

Chapter 1—This chapter contains general information about the SEE/HMMH.

Chapter 2—This chapter outlines troubleshooting of the SEE/HMMH and their systems. It includes a troubleshooting index, by symptom and system, for troubleshooting. Other sections include information on tools, repair parts, general maintenance instructions, and general hydraulic system repair methods.

Chapters 3 thru 21—These chapters contain step-by-step instructions for doing the maintenance tasks. Each system of the SEE/HMMH has its own chapter, and any special tools, equipment, or supplies you may need for a task are listed,

Appendix A—This appendix lists the technical manuals and other publications you may have to refer to while working on the SEE/HMMH.

Appendix B—This appendix lists the expendable supplies and materials you will need while performing maintenance on the SEE/HMMH.

Appendix C—This appendix describes any manufactured items you will need for performing maintenance on the SEE/HMMH.

Appendix D—This appendix describes the proper method of tightening fasteners.

Index—The index is an alphabetical listing of the contents of this manual.

Back Cover—The inside back cover contains a metric conversion table.

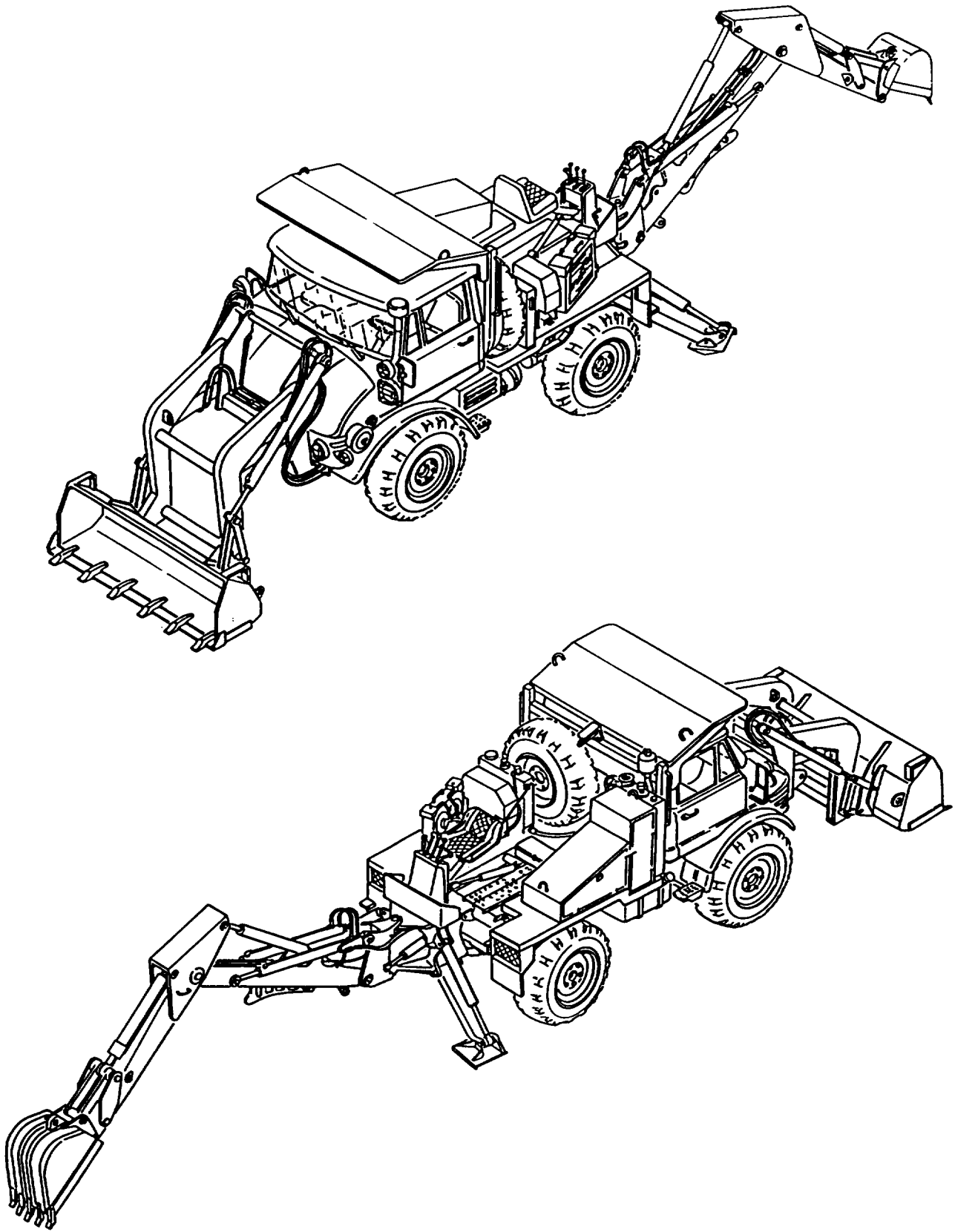
USING THE MANUAL ON THE JOB

Find the task or component that needs repair by using the Index (page Index-1), then turn to the page listed for that task or component.

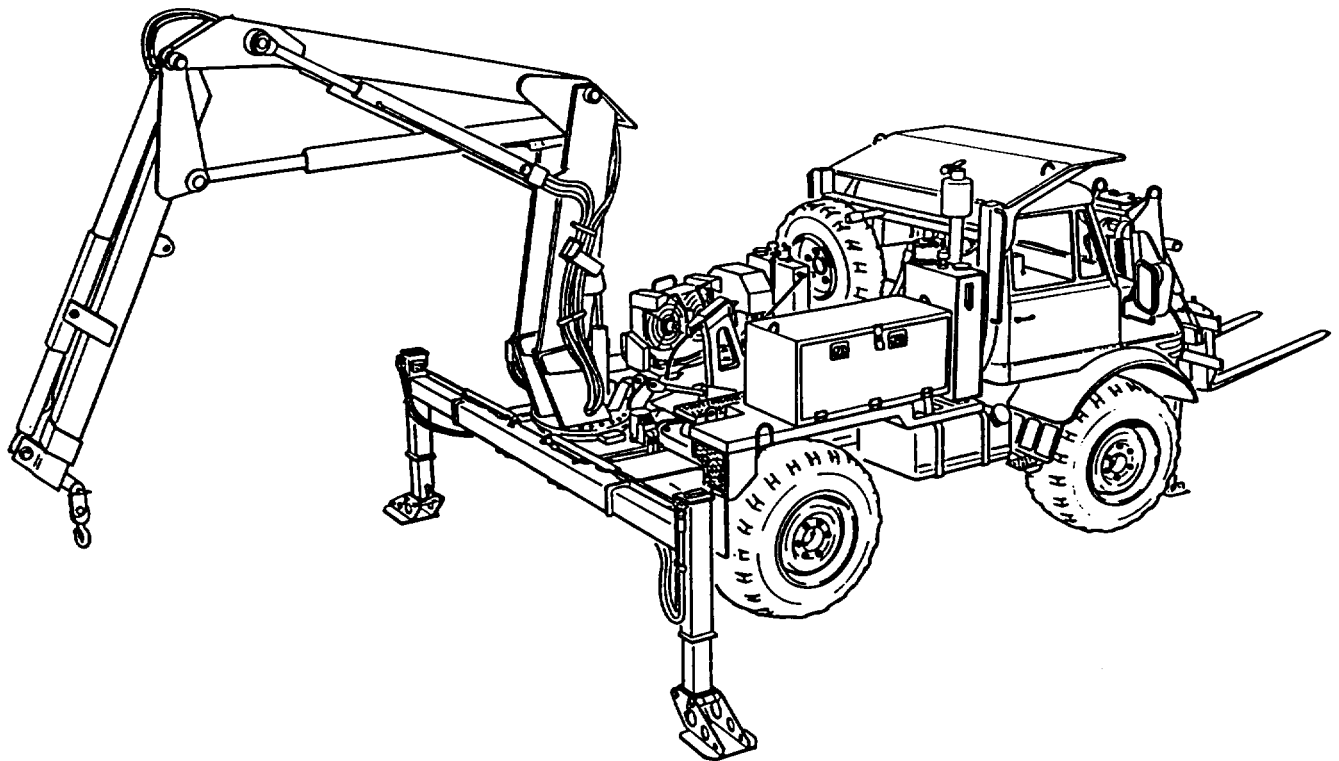
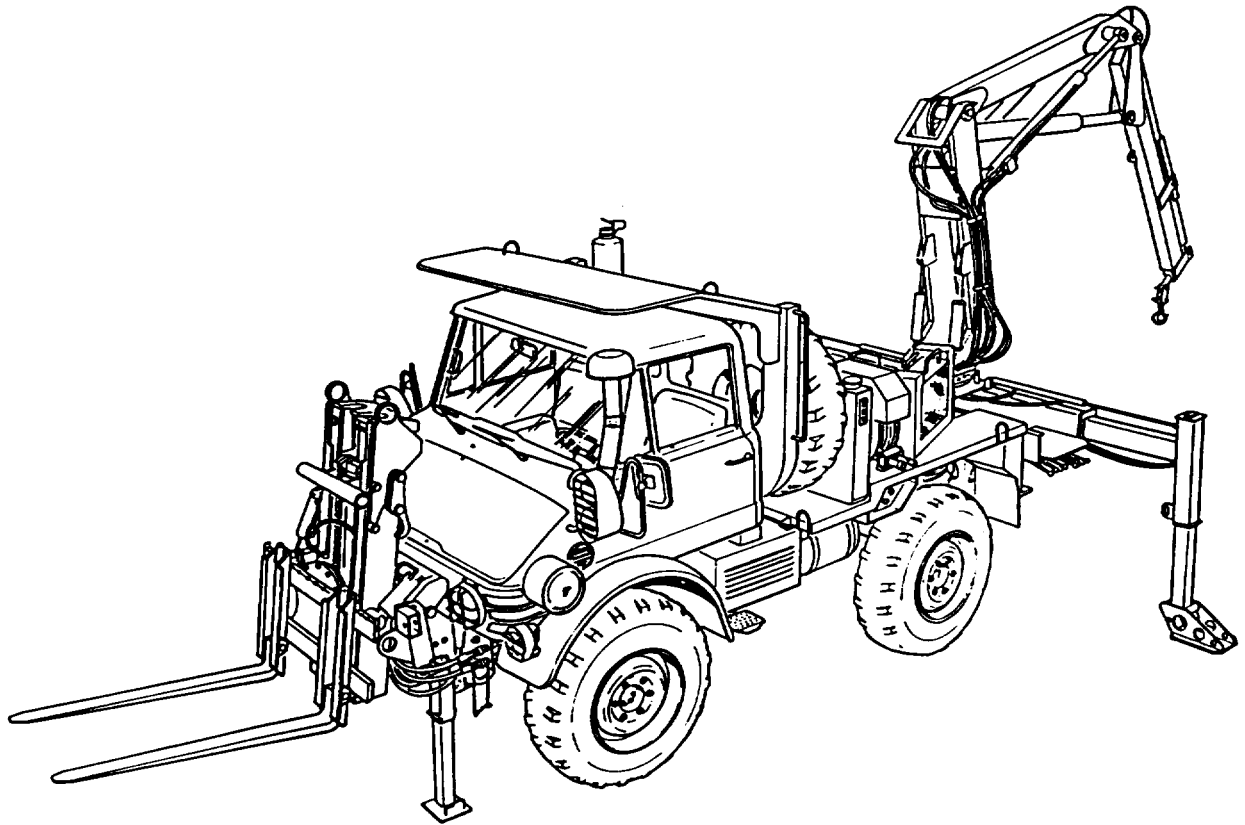
Read the INITIAL SETUP procedures, and gather the necessary items and personnel. Pay attention to the warnings. The INITIAL SETUP sheet is described on page xi.

① ② ③ ④ ⑤	FORKLIFT LIFT CYLINDER REPAIR This task covers: a. Disassembly b. Assembly INITIAL SETUP Applicable Configuration: HMMH Tools and Special Equipment: Shop Equipment, SC 4910-95-CL-A31 Tool Kit, SC 5180-90-CL-N26 Tool Outfit (HSTRU), NSN 4940-01-036-5784 Materials/Parts: Nut, Lock Pin, Cotter Nut, Lock Kit Kit Caps and Plugs Oil, Lubricating Rags	Personnel Required: (2) References: LO 5-2420-224-12 Equipment Condition: <table border="0"> <thead> <tr> <th>Reference</th> <th>Condition Description</th> </tr> </thead> <tbody> <tr> <td>Page 11-51</td> <td>Forklift Lift Cylinder Removed</td> </tr> </tbody> </table> General Safety Instructions: WARNING Fuel and oil are slippery and can cause falls. To avoid injury, wipe up spilled fuel or oil with rags.	Reference	Condition Description	Page 11-51	Forklift Lift Cylinder Removed	⑥ ⑦ ⑧ ⑨
Reference	Condition Description						
Page 11-51	Forklift Lift Cylinder Removed						

1. TITLE—This is the name of the task.
2. TASK COVERS—This lists all the tasks included in the module.
3. APPLICABLE CONFIGURATION—If the task is applicable to only one of the vehicles, SEE or HMMH (as appropriate) will be listed here.
4. TOOLS AND SPECIAL EQUIPMENT—These are the tools and equipment you will need to do the task.
5. MATERIALS/PARTS—These are the supplies you will need to do the task. If parts or materials are required, they are listed here or referenced to Appendix B.
6. PERSONNEL REQUIRED—Personnel required to perform a task will be identified if the task requires more than one.
7. REFERENCES—These are the other technical publications you will need to do the task.
8. EQUIPMENT CONDITION—This is the condition(s) the vehicle must be in before you start the task. Other tasks that must be done first are listed by page number or by technical manual number if another manual is required.
9. GENERAL SAFETY INSTRUCTIONS—These are the safety precautions that must be observed while you are doing the task.
10. FOLLOW-ON MAINTENANCE—These are the tasks listed at the end of the procedure that must be completed to return the vehicle to an operational condition.



Small Emplacement Excavator (SEE)



High Mobility Material Handler (HMMH)

CHAPTER 1

INTRODUCTION

SCOPE

Page

A list of sections contained in this chapter is shown below.

Section I. General Information	1-1
Section II. Equipment Description and Data	1-2
Section III. Principles of Operation	1-2

Section I. GENERAL INFORMATION

OVERVIEW

Type of Manual. Direct and General Support Maintenance.

Model Number and Equipment Name.

Model No. FLU419 Tractor, Wheeled, 4 x 4 DED Small Emplacement Excavator (SEE) with attachments, NSN 2420-01-160-2754 (EIC:EDL).

Model No. FLU10344 Tractor, Wheeled, 4 x 4 DED High Mobility Material Handler (HMMH) with attachments, NSN 2420-01-205-8636.

Purpose of Equipment:

The SEE is used for excavating, loading, lifting, and grading on various types of terrain. The vehicle is equipped with a front loader, backhoe, chain saw, pavement breaker, and hammer drill and is capable of rapid deployment for constructing protective positions.

The HMMH is used for material handling with forklift and crane attachments. The vehicle is equipped with an impact wrench to assist in maintenance of other equipment and is capable of rapid deployment.

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).

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

When the tactical situation requires that Army materiel be abandoned, refer to TM 750-244-6, Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use, for procedures on destruction of the vehicle(s).

PREPARATION FOR STORAGE OR SHIPMENT

Instructions for storage and shipment, including administrative storage, are found in TM 740-90-1, MIL-V-62038D, and TM 5-2420-224-20.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRs)

If your vehicle needs improvement, let us know. Send us a Quality Deficiency Report. 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 (QDR) and mail it to:

U.S. Army Tank-automotive and Armaments Command
ATTN: AMSTA-TR-E/PQDRMS 267
6501 E. 11 Mile Road
Warren, MI 48397-5000

WARRANTY INFORMATION

The vehicles are warranted by Freightliner Corporation in accordance with TB 5-2420-224-15. Warranty starts on the date found in block 23, DA Form 2408-9 in the logbook. Report all defects in material or workmanship to your supervisor, who will take appropriate action through your direct and general support maintenance shop.

METRIC SYSTEM

The equipment described herein contains metric components and requires metric common and special tools; therefore, metric units in addition to English units will be used throughout the manual. An English-to-metric conversion table is included as the last page of this manual inside the back cover.

Section II. EQUIPMENT DESCRIPTION

OVERVIEW

This section contains information that can be useful when performing direct and general support maintenance tasks on the SEE/HMMH. For equipment operating data, refer to TM 5-2420-224-10.

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

Refer to TM 5-2420-224-10 and TM 5-2420-224-20 for equipment characteristics, capabilities, and features.

LOCATION AND DESCRIPTION OF COMPONENTS

Refer to TM 5-2420-224-10 and TM 5-2420-224-20 for location and description of components.

EQUIPMENT DIFFERENCES

Refer to TM 5-2420-224-10 and TM 5-2420-224-20 for equipment differences.

Section III. PRINCIPALS OF OPERATION

PRINCIPALS OF OPERATION

Refer to TM 5-2420-224-10 and TM 5-2420-224-20 for principals of operation.

CHAPTER 2

DIRECT AND GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

SCOPE

This chapter contains information for troubleshooting the SEE/HMMH, as well as general maintenance instructions. The following sections are included in this chapter:

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Section I. REPAIR PARTS, SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE); AND SUPPORT EQUIPMENT

OVERVIEW

This section includes information on tools and equipment you need to support the SEE and HMMH tractors.

COMMON TOOLS AND EQUIPMENT

For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit. Tool kits required for each task in this manual are listed on the INITIAL SETUP page of each task.

SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

Special tools required to maintain the SEE/HMMH are listed in the Maintenance Allocation Chart (TM 5-2420-224-20) and on the INITIAL SETUP page of each task. Special tools are also listed in the Repair Parts and Special Tools List (TM5-2420-224-24P). Tools that are to be fabricated are described and listed in Appendix C of this manual.

REPAIR PARTS

Repair parts are listed and illustrated in the Repair Parts and Special Tools List (TM5-2420-224-24P).