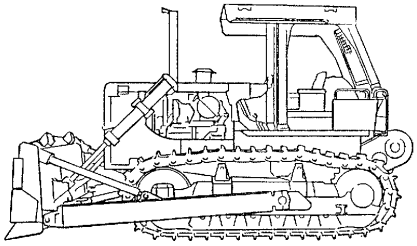
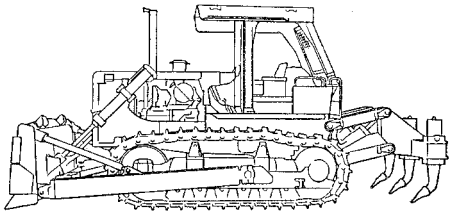
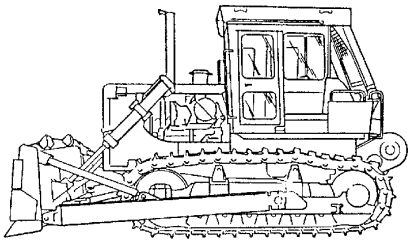
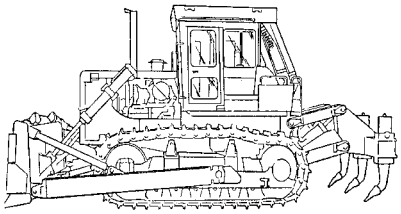
TECHNICAL MANUAL
UNIT MAINTENANCE MANUAL
FOR

TRACTOR, FULL TRACKED, LOW SPEED: DED, MEDIUM DRAWBAR PULL, SSN M061









TRACTOR WITH RIPPER
NSN 2410-01-223-0350
TRACTOR WITH WINCH,
NSN 2410-01-223-7261
TRACTOR WITH RIPPER AND WINTERIZED CAB,
NSN 2410-01-253-2118
TRACTOR WITH WINCH AND WINTERIZED CAB,
NSN 2410-01-253-2117

HEADERQUARTER, DEPARTMENT OF THE ARMY
***This publication along with TM 5-2410-237-34 supersedes TM 5-2410-237-24**

Approved for public release; distribution is limited.
30 MARCH 1993

* **TECHNICAL MANUAL**
NO. 5-2410-237-20

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

Organizational Maintenance Manual

TRACTOR, FULL TRACKED, LOW SPEED: DED, MEDIUM DRAWBAR PULL, SSN M061

TRACTOR WITH RIPPER,
NSN 2410-01-223-0350
TRACTOR WITH WINCH,
NSN 2410-01-223-7261
TRACTOR WITH RIPPER AND WINTERIZED CAB,
NSN 2410-01-253-2118
TRACTOR WITH WINCH AND WINTERIZED CAB,
NSN 2410-01-253-2117

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, US Army Tank Automotive Command, ATTN: AMSTA-MP, Warren, MI 48397-5000. A reply will be furnished to you.

Approved For Public Release; Distribution is Unlimited

*This publication along with TM5-2410-237-34 supersedes TM5-2410-237-24

HOW TO USE THIS MANUAL

1. ABOUT YOUR MANUAL

Spend some time looking through this manual. You'll find that it has a new look, different than most of the TMs you've been using.

New features added to make this manual easier for you to use are:

a. **Finding Information** These include entry features such as the thumb indexing indicators on the cover and edge of the manual. Extensive troubleshooting guides for specific systems lead directly to step by step directions for problem solving and maintenance tasks.

b. **Illustrations** Many methods are used to make finding and fixing parts much easier. Locator illustrations with keyed text, exploded views, and cut-away diagrams make the information in this manual easier to understand and follow.

c. **Keying Text With Illustrations** Instructions/text are located together with figures that illustrate the specific task you are working on. In most cases, the task steps and figures are located side by side.

This TM is organized so that the information and procedures, needed to perform maintenance tasks, is easily located. Take a few minutes to read through this How To Use part of the manual to learn how it is put together and how to find the information you need.

2. BEFORE YOU START

a. Read and understand all warning and first aid data in the front of this manual. This data contains general shop safety practices not included in maintenance tasks.

b. Read Chapter 1 to learn more about the tractor and its purpose, capabilities and features.

3. CONTENTS OF MANUAL

a. This TM contains unit maintenance instructions at the organizational level for the D7G Tractor. Included are principles of operation, fault isolation troubleshooting, and corrective maintenance tasks as authorized by the Maintenance Allocation Chart (MAC).

b. This TM is made up of:

(1) Chapters. There are 16 chapters.

(a) Chapter 1, Introduction. This chapter contains general tractor information of interest to organizational level maintenance technicians.

HOW TO USE THIS MANUAL (Cont'd)

(b) Chapter 2, Maintenance Instructions. This chapter contains instructions of interest to organizational level maintenance technicians on tools, equipment, preventive maintenance and troubleshooting.

(c) Chapter 3, Engine Systems Maintenance. This chapter contains engine maintenance divided by major systems.

(d) Chapter 4, Electrical Systems Maintenance. This chapter contains electrical maintenance divided by major systems.

(e) Chapter 5, Transmission Maintenance. This chapter contains maintenance of transmission components.

(f) Chapter 6, Final Drives Maintenance. This chapter contains maintenance of final drive components.

(g) Chapter 7, Drive Shaft Maintenance. This chapter contains maintenance of drive shaft components.

(h) Chapter 8, Track Maintenance. This chapter contains maintenance of track components.

(i) Chapter 9, Steering and Brake Maintenance. This chapter contains maintenance of steering and brake components.

(j) Chapter 10, Body, Cab, Hood and Hull Maintenance. This chapter contains maintenance of body, cab, hood and hull components.

(k) Chapter 11, Winch Maintenance. This chapter contains maintenance of winch components.

(l) Chapter 12, Accessory Items and Winterization Equipment. This chapter contains maintenance of accessory and winterization equipment components.

(m) Chapter 13, Hydraulic System Maintenance. This chapter contains maintenance of hydraulic components.

(n) Chapter 14, Gages Maintenance. This chapter contains maintenance of non-electrical gages.

(o) Chapter 15, Earth Moving Equipment Maintenance. This chapter contains maintenance of blade and ripper components.

(p) Chapter 16, Preparation for Storage and Shipment. This chapter contains information on storing the tractor for extended periods of time.

HOW TO USE THIS MANUAL (Cont'd)

(2) Sections. Some chapters are further subdivided into sections. Sections allow for easier break-up of material. They are:

(a) Chapter 1 has three sections: General Information, Equipment Description and Data, and Technical Principles of Operation.

(b) Chapter 2 has five sections: Repair Parts, Special Tools, TMDE and Support Equipment, Service Upon Receipt of Material, Preventive Maintenance Checks and Services, Troubleshooting Procedures, and General Maintenance Instructions.

(c) Chapter 3 has four sections: Oil System, Fuel System, Exhaust System, and Cooling System.

(d) Appendix B has four sections: Introduction, Maintenance Allocation Chart, Tool and Test Equipment Requirements, and Remarks.

(e) Appendix E has two sections: Introduction and Manufactured Items Illustrations.

(3) Paragraphs. Paragraphs make up sections. The paragraphs have the information needed to do the job properly. Each paragraph is the start of a major topic within the chapter.

(4) Pages. Pages are numbered consecutively within each chapter. The first part is the chapter number followed by a dash and the consecutive page number. For example, page 3 of Chapter 2 is numbered 2-3.

(5) Appendices. Appendices are found in the back of the manual. They provide reference information required for maintenance.

(a) Appendix A, References. This appendix contains other information you may need to do your job.

(b) Appendix B, Maintenance Allocation Chart (MAC). This appendix contains information needed by all maintenance levels. The MAC lists all tasks assigned to each maintenance level and grouped by functional group code. Refer to Section I of Appendix B for more information.

(c) Appendix C, Repair Parts and Special Tools List. This appendix (included only in TMs ending with a "P") contains repair parts information for the tractor. Refer to TM5-2410-237-24P.

(d) Appendix D, Expendable Supplies and Materials List. This appendix contains information on expendable items you need for maintenance.

HOW TO USE THIS MANUAL (Cont'd)

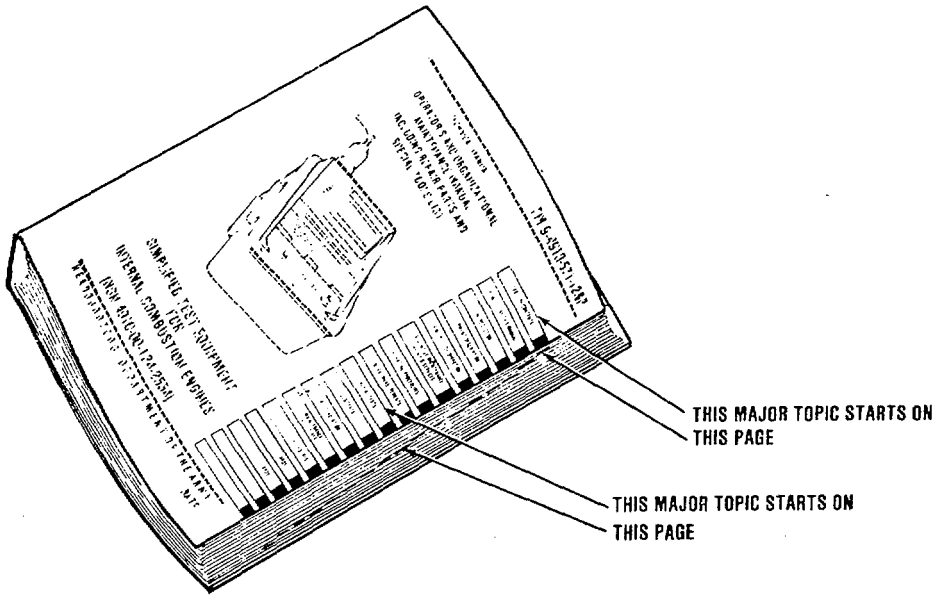
(e) Appendix E, Illustrated List of Manufactured Items. This appendix contains information you need to make parts that are not procured.

(f) Appendix F, Torque Limits. This appendix contains torquing information for hardware without specific torques.

(6) Glossary. The glossary is located in the back of the manual. It contains a listing of unusual terms and abbreviations used in this manual and their explanation.

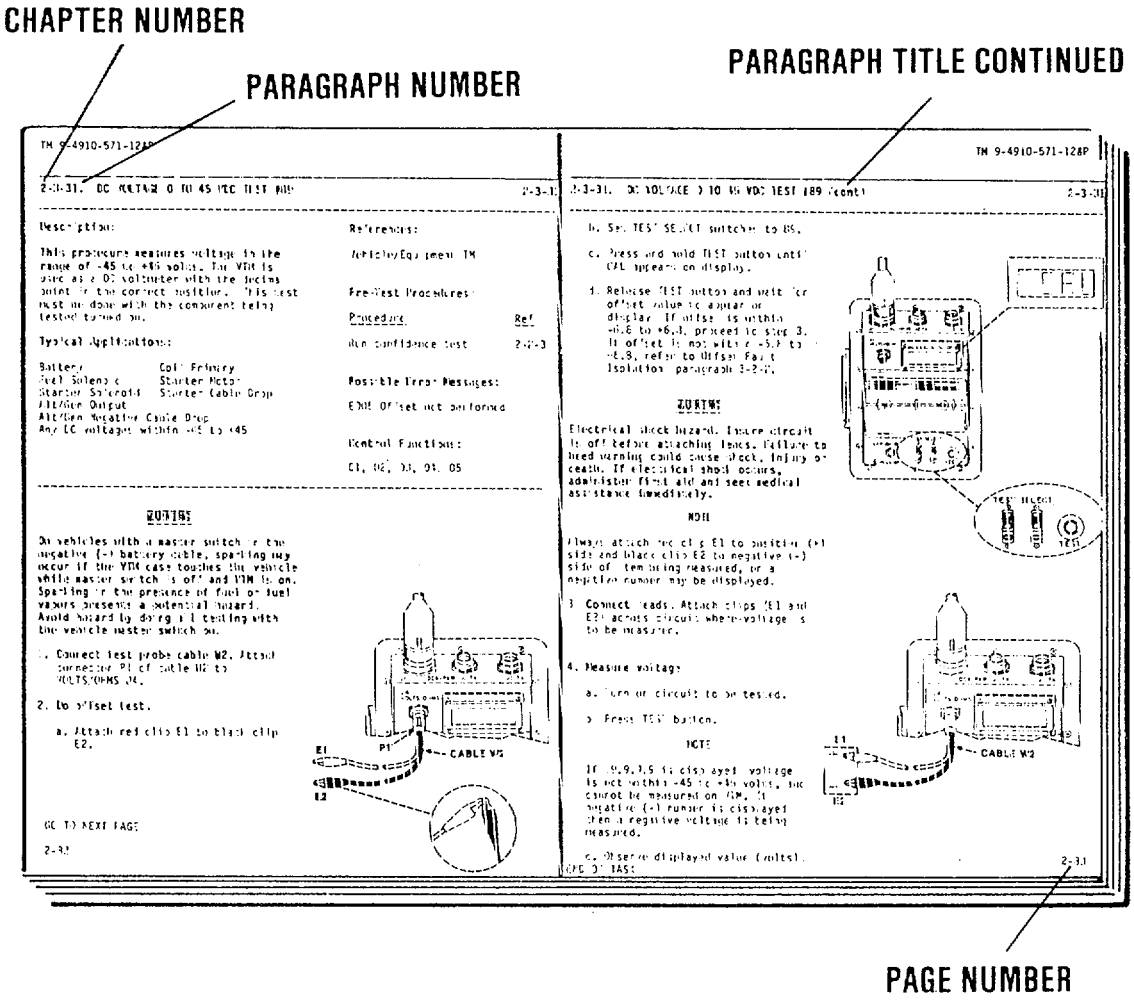
(7) Index. The index is located in the back of the manual. It lists topics in alphabetical order and references the paragraph numbers where information on the topic can be found.

4. HOW TO FIND INFORMATION QUICKLY



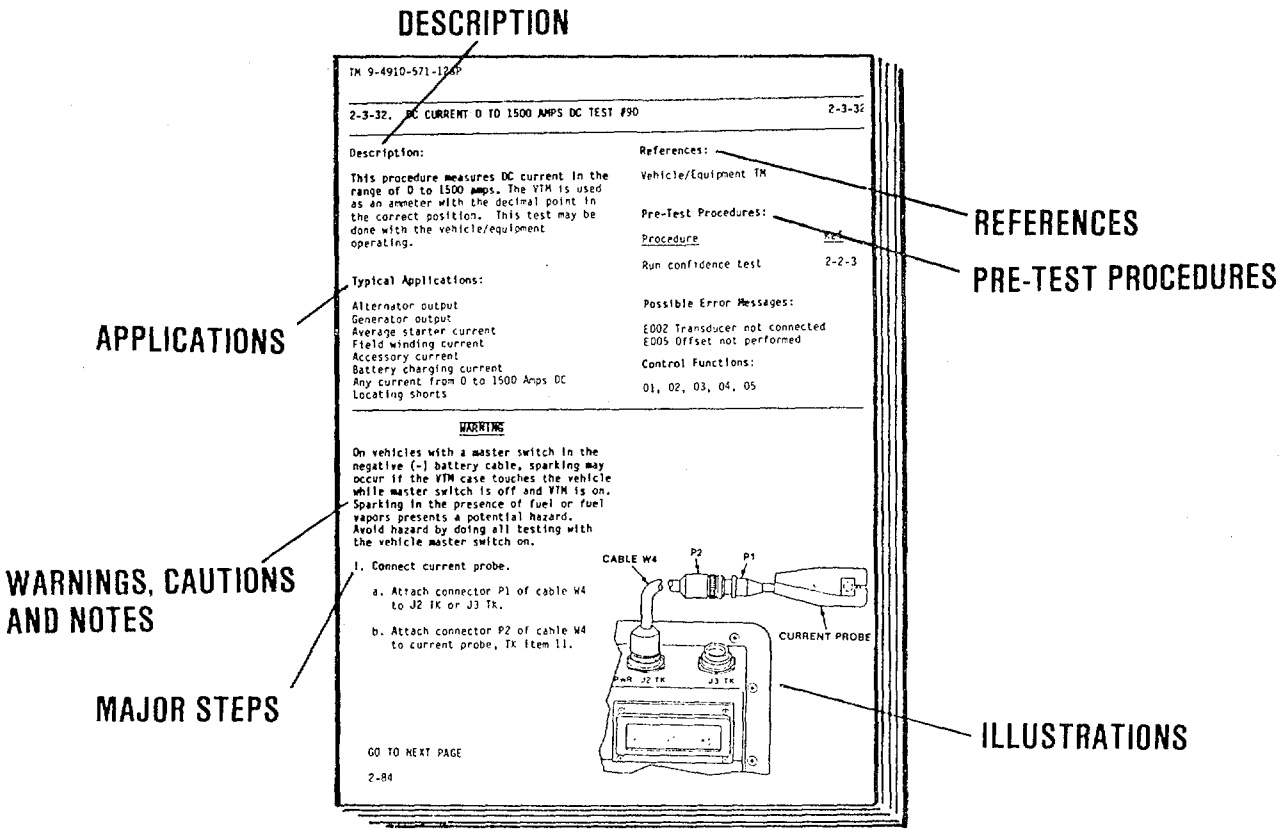
a. Using Front Cover. The front cover of the manual has boxed titles for major topics. At the right side of each box is a blackened area. The blackened area matches black markings on the first page of that major topic in the manual. Fan the outer edge of the manual to find the topic material.

HOW TO USE THIS MANUAL (Cont'd)



b. Using Paragraph Numbers and Titles. Paragraph numbers include the chapter number. The paragraph number appears before the title of the paragraph title line. Paragraphs that are longer than one page will have the paragraph number and title continued at the top of each following page.

HOW TO USE THIS MANUAL (Cont'd)



5. HOW TO USE A PROCEDURE

Each procedure consists of two parts, an initial setup table and a task section. You must familiarize yourself with the entire maintenance procedures before beginning the maintenance task.

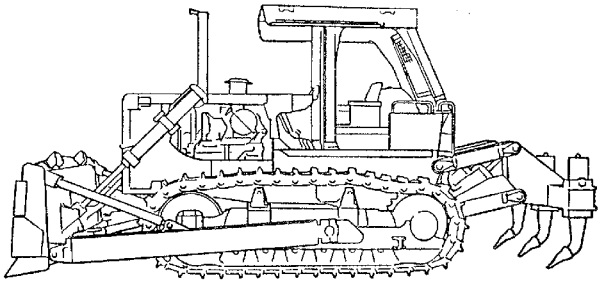
The initial setup table contains the following parts:

Description - Describes the procedure.

Applications - Gives examples of how/where the procedure is used.

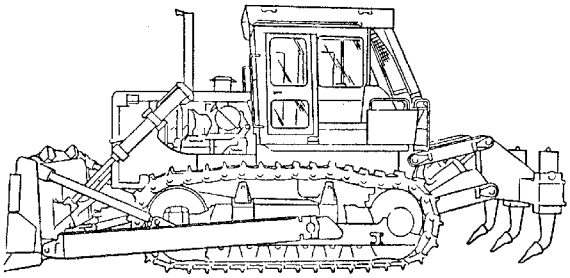
References - Shows where reference material can be found.

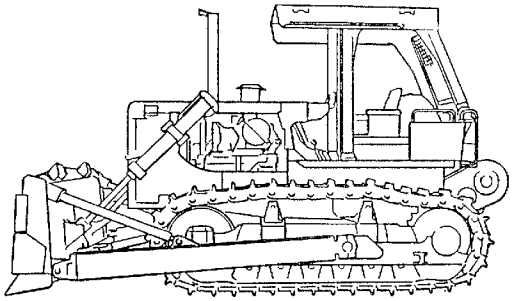
Pre-Test Procedures - Refers to procedures that must be done before attempting this procedure.



TRACTOR WITH RIPPER
NSN 2410-01-223-0350

TRACTOR WITH RIPPER
AND WINTRIZED CAB
NSN 2410-01-253-2118





TRACTOR WITH WINCH
NSN 2410-01-223-7261

TRACTOR WITH WINCH
AND WINTRIZED CAB
NSN 2410-01-253-2217

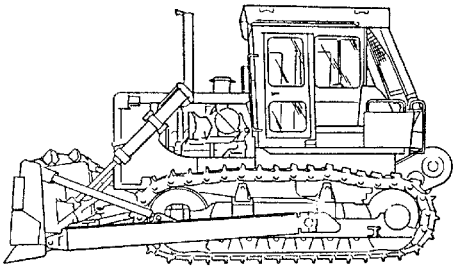


Figure 1-1. Features and components of the D7G CCE Tractor.

CHAPTER 1
INTRODUCTION

Section I. GENERAL INFORMATION

1-1. SCOPE

a. Type of Manual. This manual contains maintenance instructions, at the organizational level, for the D7G Tractor.

b. Model Numbers and Equipment Names. D7G Tractor, Full Tracked, Low speed: Diesel Engine-Driven, Medium-Drawbar Pull. Equipped with rollover protective structure (ROPS) and Semi-U (straight) tilt type blade. Available in four versions:

- Tractor with rear-mounted ripper
- Tractor with rear-mounted winch
- Tractor with rear-mounted ripper and winterized cab
- Tractor with rear-mounted winch and winterized cab

c. Purpose of Equipment. This tractor is designed for dozing soil and rocks, and for clearing land of small trees and brush.

(1) Tractors equipped with ripper are designed for dozing and also for ripping soil, rocks, asphalt, and concrete.

(2) Tractors equipped with winch are designed for dozing and also for all types of winching operations.

1-2. MAINTENANCE FORMS AND RECORDS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 25-30, The Army Maintenance Management System (TAMMS).

1-3. EQUIPMENT IMPROVEMENT REPORT AND MAINTENANCE DIGEST (EIR MD)

The quarterly Equipment Improvement Report and Maintenance Digest, TB 43-0001-39 series, contains valuable information on the equipment covered in this manual. The information in the TB 43-0001-39 series is compiled from some of the Equipment Improvement Reports that you prepared on the vehicles covered in this manual. Many of these articles result from comments, suggestions, and improvement recommendations that you submitted to the EIR program. The TB 43-0001-39 series contains information on equipment improvements, minor alterations, proposed Modification Work Orders (MWO's), warranties (if applicable), actions taken on some of your DA Forms 2028-2 (Recommended Changes to Publications), and advance information on proposed changes that may affect this manual. The information will help you in doing your job better and will help in keeping you advised of the latest changes to this manual. Also refer to DA PAM 25-30 Consolidated Index of Army Publications and Blank Forms, and Appendix A, References of this manual.

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

Demolition of materiel to prevent enemy use shall be in accordance with the requirement of TM 750-244-3 (Procedures for Destruction of Equipment to Prevent Enemy Use for U.S. Army).

1-5. PREPARATION FOR STORAGE OR SHIPMENT

Refer to Chapter 16 for all storage and shipment instructions.

1-6. OFFICIAL NOMENCLATURE, NAMES, AND DESIGNATIONS.

Refer to the nomenclature cross-reference list below. This listing gives nomenclature cross-references used in this manual. The common name is in the left column and the official name is in the right.

NOMENCLATURE CROSS-REFERENCE LIST

Common Name	Official Nomenclature
D7G Tractor	D7G Tractor, Full Tracked, Low Speed: Diesel Engine-Driven, Medium-Drawbar Pull
Bulldozer	Blade and Pusharm
Brakes	Steering Brakes
Parking Brake	Steering Brake Lock
Start Receptacle	Slave Receptacle

1-7. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S)

If your D7G tractor 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 (Quality Deficiency Report). Mail it to: Commander, US Army Tank-Automotive Command, ATTN: AMSTA QRD, Warren, MI 48397-5000. We'll send you a reply.

1-8. WARRANTY INFORMATION

Refer to warranty TB, Technical Bulletin 5-2410-237-15.

Section II. EQUIPMENT DESCRIPTION AND DATA

1-9. EQUIPMENT PURPOSE, CAPABILITIES AND FEATURES

a. Purpose. The D7G is designed for earth moving and construction operations.

b. Capabilities and Features.

(1) Can dig and backfill in undisturbed or compacted soil.

(2) Tractors with ripper can penetrate and rip compacted soil imbedded with boulders up to a depth of 29" .

(3) Tractors with winch can winch loads of 50, 000 lbs at a line speed of 80 ft per minute.

(4) Tractors with winch delivers 35, 000 lbs drawbar pull at a speed of 1.4 mph.

(5) Operates over rough terrain.

(6) All weather operational.

(7) Can ford water at depths up to 30 inches.