

TECHNICAL MANUAL
OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL

DRILL, PNEUMATIC, DRIFTER: SELF PROPELLED

JOY MODEL RAM-MS-5/450A-DR

FSN 3820-445-3766

HEADQUARTERS, DEPARTMENT OF THE ARMY

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*This manual supersedes TM 5-3820-241-12, 29 September 1971 including all changes

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CHAPTER 1 INTRODUCTION

Section I. GENERAL

1-1. Scope

This manual contains instructions for use by operator and organizational maintenance personnel to whom the pneumatic rock drill is issued. It provides information on the operation and organizational maintenance of the equipment. Also included are descriptions of main units and their functions in relation to other components.

1-2. Maintenance Forms and Records

Maintenance forms and records that you are required to use are explained in TM 38-750 (The Army Maintenance Management System).

1-3. Reporting of Errors

You can improve this manual by calling attention to errors and by recommending improvements, using DA Form 2028 (Recommended Changes to Publications) or by a letter and mailing directly to Commander, U.S. Army Troop Support Command, ATTN: AMSTS-MPP,

4300 Goodfellow Blvd., St. Louis, Missouri 63120. A reply will be furnished directly to you.

1-4. Equipment Serviceability Criteria

This equipment is not covered by an equipment serviceability criteria.

1-5. Destruction of Army Material to Prevent Enemy Use

Refer to TM 750-244-3 (Procedures for Destruction of Equipment to Prevent Enemy Use) for information and instructions on destruction of equipment to prevent enemy use.

1-6. Administrative Storage

Refer to TM 740-90-1 (Administrative Storage of Equipment) for information and instructions pertaining to organizational maintenance administrative storage.

Section II. DESCRIPTION AND DATA

1-7. Description

a. General. The pneumatic drifter drill (figs. 1-1 and 1-2) is a heavy duty, self-propelled crawler drill. The ram mounts a hydraulically operated swing boom jib that permits positioning of the feed and drill. The hydraulically operated boom also permits power positioning of the feed for vertical and horizontal drilling. The drill also can be positioned over the side of the crawler track for drilling in confined areas.

b. The pneumatic rock drill assembly is equipped with the following major components:

(1) A heavy duty precision type drill engine (fig. 1-1), designed for deep hole drilling in hard rock.

(2) A drill feed and control valve (fig. 1-1) to control the drill, blow, feed, and rotation functions.

(3) A feed assembly (fig. 1-1) used as a track for the drill engine to slide back and forth during the drilling operation.

(4) A hydraulic feed extension cylinder (fig. 1-2) to provide a four foot extension for the feed mechanism and to maintain pressure on the stinger.

(5) A stinger (fig. 1-1) mounted on the front end of feed to provide a pressure point for drilling.

(6) A centralizer (fig.1-1) used to maintain drilling alignment.

(7) A feed motor and transmission (fig. 1-1), used to pull the drill slab back, forward or backward along the feed.

(8) A boom (fig. 1-1), which is a connecting assembly between the feed mechanism and the tractor.

(9) A boom lift cylinder (fig.1-2) used to raise and lower the boom assembly.

(10) A boom swing cylinder (fig.1-2) used to move the boom assembly from left to right.

(11) A feed tilt cylinder (fig. 1-2) to control the horizontal and vertical position of the feed.

(12) A feed swing cylinder (fig.1-2) used to move the forward end of the feed from left to right.

(13) An upper main frame assembly or pedestal (fig. 1-1) is a steel weldment which mounts the boom controls, tramming controls, pump motor shut-off and lubricator.

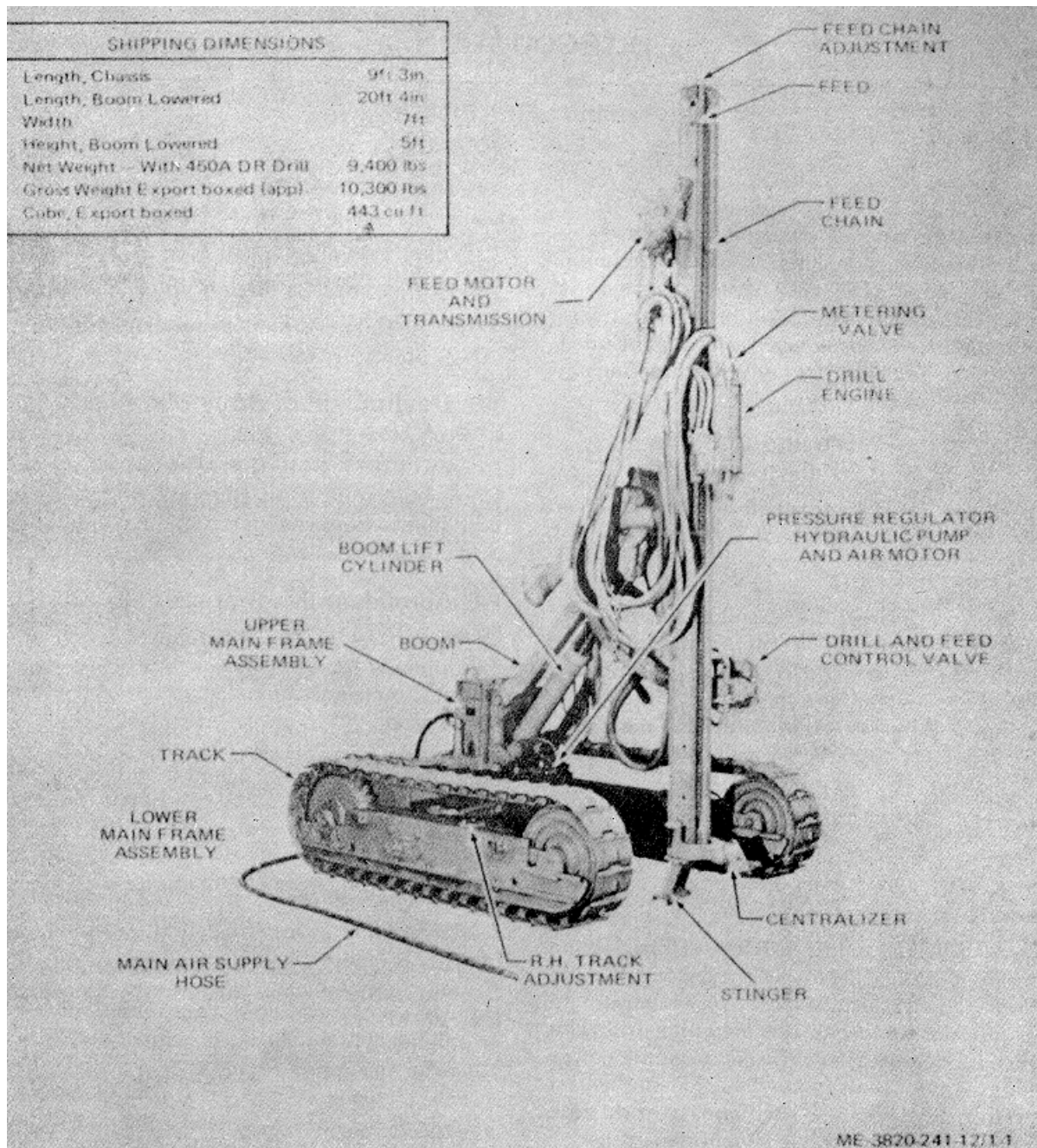


Figure 1-1. Rock drill assembly, right front, 3/4 view with shipping dimensions.

(14) A hydraulic boom control valve (fig. 1-2) which controls the feed tilt, boom lift, feed swing and feed extension, and boom swing functions.

(15) Two air operated tram control valves (fig. 1-2) to operate the left and right hand tram motors.

(16) A pump motor shut-off valve (fig. 1-2) to maintain hydraulic pressure for the hydraulic functions.

(17) A lubricator fitting (fig.1-2) which is used to 1-2 introduce oil into the air stream.

(18) A lower main frame assembly (fig.1-1) which is the tractor section of the drill carrier.

(19) A track oscillating system which permits each track to move separately to conform with terrain.

(20) Two tramping motors and transmissions to power the drill carrier.

(21) A hydraulic pump and air motor pressure