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DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR, ORGANIZATIONAL, DIRECT AND GENERAL
SUPPORT, AND DEPOT MAINTENANCE MANUAL

DRILL, PNEUMATIC, DRIFTER: BOOM-TYPE; CRAWLER-MOUNTED; SELF-PROPELLED (INGERSOLL-RAND MODEL CM150A/D475A) FSN 3820-854-4149

HEADQUARTERS, DEPARTMENT OF THE ARMY

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CHAPTER 1

INTRODUCTION

Section 1. GENERAL

1-1. Scope

a. These instructions are published for use by personnel to whom the Ingersoll-Rand Model CM150A/D475A pneumatic drills are issued. Chapters 1 through 3 provide information on operation, preventive maintenance services, and organizational maintenance of equipment, accessories, components, and attachments. Chapters 4 through 6 provide information for direct and general support and depot maintenance. Also included are descriptions of main units and their functions in relationship to other components.

b. Appendix A contains a list of publications applicable to this manual. Appendix B contains the list of basic issue items authorized the operator of this equipment, and the list of maintenance and operating supplies required for initial operation. Appendix C contains the maintenance allocation chart. Organizational, direct and general support, and depot maintenance repair parts and special tools are listed in TM 5-3820-239-20P and 35P.

c. Numbers in parenthesis following nomenclature callouts on illusrations indicate quantity; numbers preceding nomenclature callouts indicate preferred sequence.

d. Report of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submittedon DA Form 2028 (Recommended Changes to DA Publications) and forwarded direct to the Commanding General, U. S. Army Mobility Equipment Command, ATTN: AMSME-MPP, 4300 Goodfellow Blvd., St. Louis Mo. 63120

1-2. Record and Report Forms

a. DA Form 2258 (Depreservation Guide for Vehicles and Equipment).

b. For other record and report forms applicable to operator, crew, and organizational maintenance, refer to TM 38-750.

Note. Applicable forms, excluding Standard Form 46 (United States Government motor vehicle identification card) which is carried by the operator, shall he kept in a canvas bag mounted on the equipment.

Section II. DESCRIPTION AND TABULATED DATA

1-3. Description

a. General. The Ingersoll-Rand Model CM 150A/D475A pneumatic drill (fig. 1-1 and 1-2) is a self-propelled, compressed air operated, crawler-mounted, boom-type drifter drill that is used for drilling holes in rocklike formations. The unit is designed to drill both vertical and angular primary blasting holes, within the range of boom travel. The drill as furnished does not include its own air supply. A portable compressor capable of supplying 600 cfm (cubic feet per minute) of air at 90 psi (pounds per square inch), and a 2-inch bull hose are required to supply all operating air needed for drilling and tramming (propelling).

b. Tramming. The pneumatic drill traction unit (fig. 1-1) is equipped with two 5-roller tank-type tracks which are driven by propelling air motors through clutches and automatic air brakes (all part of the traction drive, fig.

1-2). This arrangement, used for tramming, allows the operator to stand on the operator's platform (fig. 1-2) or walk either alongside or behind the unit while operating the propelling controls (fig. 1-2). Refer to paragraph *d* below.

c. Towing the Pneumatic Drill. The traction drive allows the propelling air motors to be declutched and the brake deactivated for towing. In this way, the tracks turn freely when the pneumatic drill is being towed to a new location. The tow hitch (fig. 1-2) provides a convenient connection point for towing purposes.

d. Propelling Controls. The propelling controls (fig. 1-2) are mounted on a propelling control arm which can be mounted in one of three locations for operator convenience. If the operator desires to stand on the operator's platform while tramming, the controls are mounted on a fixed bracket on top of the boom base (fig. 1-2). If the operator desires to walk either alongside or behind the pneumatic drill, the propelling controls are attached to a propelling control arm which can be swiveled to the side or to the rear of the unit. The propelling controls consist of two identical control valves, each of which controls one track independently of the other. The valves can be moved either forward or back, and are spring-returned to the center (off) position for safety. The independent action of each valve permits turning in a smaller radius than would normally be possible in a unit of this size.

e. Drifter Drill Positioning. The hydraulic boom assembly (fig. 1-1) consists of several hydraulically-operated (boom lift and boom swing) cylinders which position the entire drill guide and power dump and swing assembly as required for drilling operations. The complete range of boom travel is 100° in a horizontal direction and 82° in a vertical direction. The power dump and swing assembly (fig. l-l) consists of a dump cylinder and swing cylinder which hydraulically position the drill guide at the desired drilling angle. The power dump and solving assembly permits a full 180° vertical travel of the drill guide. All positioning is controlled by the hydraulic valve (fig. 1-2), and no manual repositioning or connections are required.

f. Drilling. The drifter drill (fig. 1-1) is mounted on the drill guide and is positioned by a chain drive. The power guide extension mounting contains a drill guide extension cylinder which is hydraulically controlled from the hydraulic valve (fig. 1-2) to lower the drill guide in order to place the foot piece (fig. 1-1) against the ground for added stability. The drill itself is operated from the remote control manifold, which has five valves, four of which are used. A rotation selector valve drives the drifter drill in the desired direction of rotation. A drill feed control valve moves the drill up and down. A drill throttle control valve selects the speed of drilling. A blow line valve allows air to clean out the hole.

1-4. Identification and Tabulated Data

a. Identification The Ingersoll-Rand Model CM150A/D475A pneumatic drill has one major identification plate. The information contained on the plate is listed below.

U.S. Army
Drill, pneumatic, drifter
MODEL—CMl50A/D475A
CONTR NO.—DAAK01-67-C-D096
SER
CAPACITY
REG NO.
FSN 3820-854-4149
GVW 8,600 LB
LG—192 IN.
HGT—72 IN.
W—84 IN.
SHIP WT—8,600 LB
CUBE—700 FT
DATE MFD—1967
ENG SER
WARRANTY
DATE SHIPPED
DATE INSP
INSP STAMP
MFD BY—Ingersoll-Rand

b. Tabulated Data.

(1) *Pneumatic drill.*

Manufacturer	Ingersoll-Rand
Model	CM150A/D475A
Type	Self-propelled
Specification	MIL-D-52335 (MO)

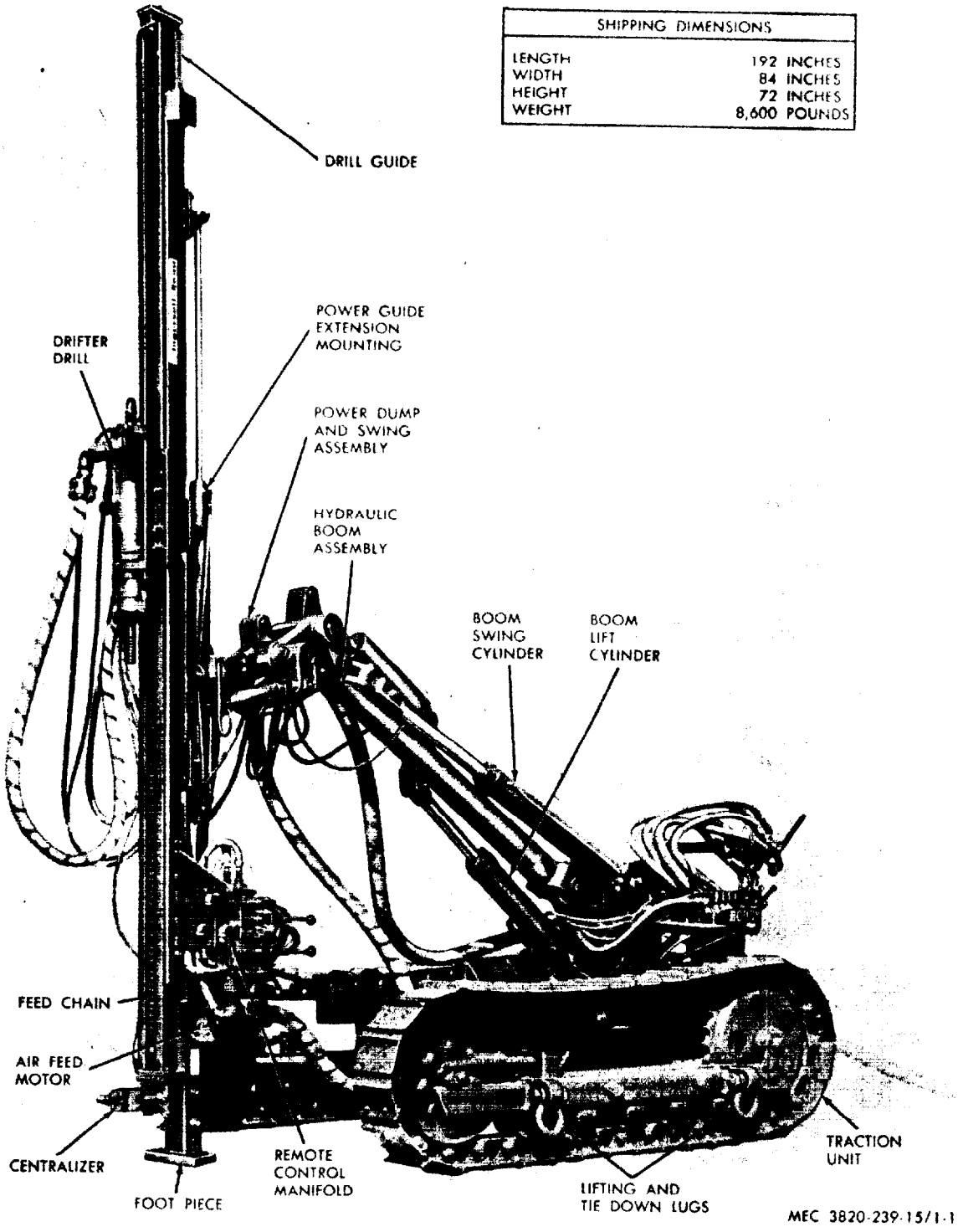

Figure 1-1. Pneumatic drill, left-front, three quarter view with shipping dimensions.