

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

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

**COMPRESSOR, RECIPROCATING;
POWER-DRIVEN AIR 3500 PSI, TYPE II,
CLASS 1, 15 CFM
(NSN 4310-01-070-5615)**



INTRODUCTION

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HEADQUARTERS, DEPARTMENT OF THE ARMY

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OPERATOR, ORGANIZATIONAL, DIRECT SUPPORT
AND GENERAL SUPPORT MAINTENANCE MANUAL
FOR
**COMPRESSOR, RECIPROCATING; POWER-DRIVEN,
AIR 3500 PSI, TYPE II, CLASS 1, 15 CFM
(DAVEY MODEL 1MCAA)
NSN 4310-01-070-5615**

REPORTING OF ERRORS

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 the manual directly to Commander, U.S. Army Troop Support and Aviation Materiel Readiness Command, ATTN: DRSTS-MTT, 4300 Goodfellow Boulevard, St. Louis, Missouri 63120. A reply will be furnished to you.

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CHAPTER 1
INTRODUCTION

Section I. GENERAL INFORMATION

1-1. Scope. This manual is for your use in operating and maintaining the Davey Compressor Company Model 1MCAA, Reciprocating Air Compressor. These air compressors are intended to provide clean, dry, high-pressure air for missiles and flame throwers.

1-2. Maintenance Forms and Records. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750, the Army Maintenance Management System (TAMMS).

1-2.1. Hand Receipt Manual. Hand receipts for the End Item/Components of End Item (COEI), Basic Issue Items (BI), and Additional Authorization List (AAL) items are published in a Hand Receipt Manual. The Hand Receipt Manual numerical designation is the same as the related Technical Manual with letters HR added to the number. These manuals are published to aid in property accountability and are available through: Commander, US Army Adjutant General Publications Center, 2800 Eastern Boulevard, Baltimore, MD.

1-3. Reporting Equipment Improvement Recommendations (EIR's). EIR's can and must be submitted by anyone who is aware of an unsatisfactory condition with the equipment design or use. It is not necessary to show a new design or list a better way to perform a procedure, just simply tell why the design is unfavorable or why a procedure is difficult. EIR's may be submitted on DA Form SF368. Mail directly to: Commander, U.S. Army Troop Support and Aviation Materiel Readiness Command, ATTN: DRSTS-MEM, 4300 Goodfellow Boulevard, St. Louis, Missouri 63120. A reply will be furnished to you.

1-4. Warranty Information. The Model 1MCAA air compressors are warranted by Davey Compressor Company for 12 months or 1000 hours, whichever comes first. Report all defects in material or workmanship to your supervisor, who will take appropriate action through your organizational maintenance shop.

1-5. Nomenclature Cross-Reference. This listing includes the nomenclature cross-reference, list of abbreviations, and explanation of terms (glossary) used in this manual.

a. *Nomenclature Cross-Reference.*

Common Name Official Nomenclature

Air Compressor	Compressor, Reciprocating; Power-Driven, Air 3500 PSI, Type II, Class 1, 15 CFM
Engine	Engine, Gasoline, Air Cooled, Wisconsin Model VH4D, Specification No. 414926

b. *List of Abbreviations*

AMP, amp	Amperes
ASSY, assy	Assembly(ies)
ATTN	Attention
BAT	Battery
°C	Degrees Centigrade
CC, cc	Cubic centimeters
CFM, cfm	Cubic feet per minute
CU IN., cu in.	Cubic inch(es)
DA	Department of the Army
DC	Direct current
ECM	Electronic counter-measures
EIR's	Equipment Improvement Recommendations
EMI	Electromagnetic Interference
°F	Degrees Fahrenheit
FED SPEC	Federal Specification
GAL, gal	Gallons
HP, hp	Horsepower
IDENT, ident	Identification
IN., in.	Inch(es)
KGS/CM ² , kgs/cm ²	Kilograms per square centimeter
KMS/HR, kms/hr	Kilometers per hour
kPa	Kilopascals
LH, lh	Left-hand
LO	Lubrication Order
MAC	Maintenance Allocation Chart
MAX, max	Maximum
MIN, min	Minimum
MM, mm	Millimeter(s)
MPH, mph	Miles per hour
MS	Military Standard
MTOE	Modified Table of Organizations and Equipment
NSN	National Stock Number
ON-HI	On-high
ON-LO	On-low
PMCS	Preventive Maintenance Checks and Services

RPM, rpm	Revolutions per minute
SAE	Society of Automotive Engineers
SMR	Source, Maintenance and Recoverability
TM	Technical Manual
TMDE	Test, Measurement, and Diagnostic Equipment
TS	Troop Support
V	Volt(s)
VDC, vdc	Volts direct current
PSI, psi	Pounds per square inch
QA/QC	Quality assurance/quality control
RCMS	Reliability Centered Maintenance Strategy
RH, rh	Right-hand

c. *Glossary.*

Front	Towing end of unit
Rear	Operating control end of unit, opposite towing end
Right side	Right-hand side of unit facing control panel
Left side	Left-hand side of unit facing control panel
Unit	Compressor, Air, Reciprocating; Gasoline Engine, Power Driven, 3500 PSI, Type II, Class 1, 15 CFM, Davey Model 1MCAA
Manufacturer	Davey Compressor Company, Cincinnati, Ohio 45242

Section II. EQUIPMENT DESCRIPTION

1-6. Equipment Purpose, Capabilities, and Features.

a. Equipment Purpose. The air compressors are intended to provide clean, dry, high-pressure air for charging air systems on missiles and flame throwers.

b. Capabilities and Features.

- (1) 15 Cubic feet of air per minute (CFM) (0.425 m³/min)

- (2) 3500 pounds per square inch (PSI) (246.05 kgs/cm²)
- (3) Four-wheel mounted, steerable
- (4) Air-cooled gasoline engine driven
- (5) Reciprocating air compressor, four stages
- (6) Winterization system
- (7) Moisture separation system

Legend for fig. 1-1:

ENGINE ASSEMBLY (1). Provides driving power for air compressor.

AIR HEATER ASSEMBLY (2). Provides heated air in engine and compressor compartment for cold weather starting.

CLUTCH ASSEMBLY (3). Connection between engine and compressor. Disengage for starting and stopping, engage for compressor operation.

AIR COMPRESSOR ASSEMBLY (4). Provides compressed air at rate of 15 CFM (0.43 M³/MIN) at pressure of 3500 PSI (246.05 KGS/CM²) by compression through four stages.

AIR COOLER ASSEMBLY (5). A four stage finned-type cooler to cool compressed air after each stage of compression. Cooling is accomplished by air being drawn through the cooling sections by a suction type fan attached to compressor crankshaft.

COMPRESSOR ENCLOSURE (6). A sheet metal housing with access doors providing a protective enclosure for the unit components.

1-7. Location and Description of Major Components. Refer to figure 1-1 for location and description of major components.

AIR RECEIVER ASSEMBLY (7). Provides a reservoir for the compressed air. Has capacity of 1370 CU IN. (22.45 liters).

FUEL TANK (8). Reservoir for engine and heater operating fuel (gasoline). Capacity of 20-3/4 gallons (78.45 liters).

HAND BRAKE LEVER (9). Actuates rear axle parking brakes.

SAFETY CHAINS (10). Safety attachment to towing vehicle.

DEHYDRATORS AND FILTER GROUP (11). Filtering medium for removal of moisture and contaminants from compressed air. Dehydrators use chemical-type cartridges, type MA-2.

INSTRUMENTS AND CONTROL PANEL (12). Contains all operating controls and indicating instruments necessary for unit operation.

AIR SERVICE HOSE AND AIR CHUCK SERVICE VALVE (13). Air service hose for supplying air to system being serviced. Air chuck service valve provided for control of service air at end of hose.

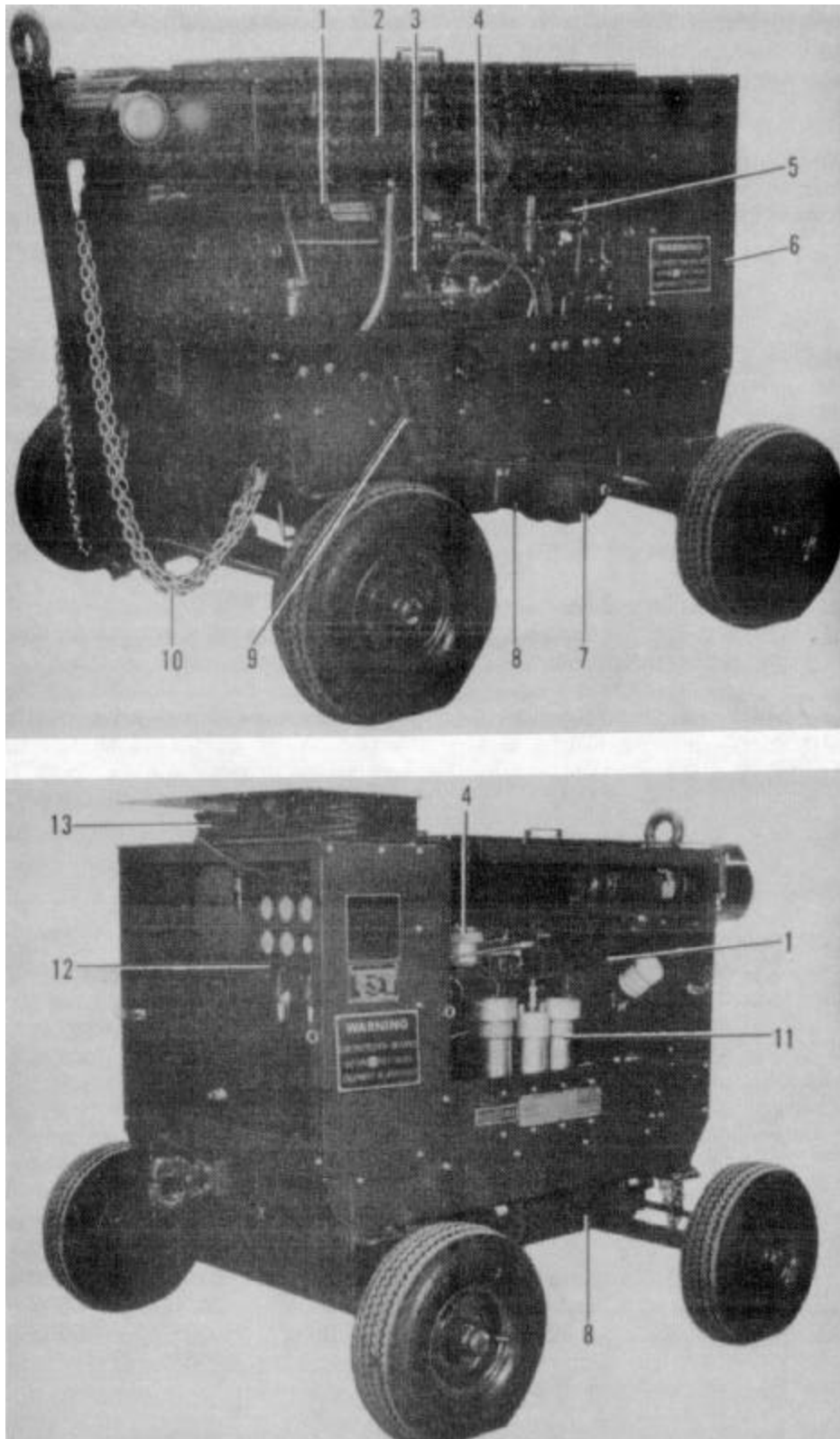


Figure 1-1. Location and description of major components