

TM 5-4310-247-15

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

ORGANIZATIONAL, DS, GS,
AND DEPOT MAINTENANCE MANUAL

COMPRESSOR, ROTARY,
DIESEL ENGINE DRIVEN, AIR,
TRAILER MOUNTED, 250 CFM, 100 PSI
(JOY MODEL RPV 250 DC20MS1)

FSN 4310-952-7142

**This reprint includes all changes in effect at the time of
publication; changes 1 through 3.**

HEADQUARTERS, DEPARTMENT OF THE ARMY

APRIL 1965

ORGANIZATIONAL, DS, GS, AND DEPOT MAINTENANCE MANUAL
 COMPRESSOR, ROTARY, DIESEL ENGINE DRIVEN, AIR,
 TRAILER MOUNTED, 250 CFM, 100 PS1
 (JOY MODEL RPV 250 DC20MSI
 FSN 4310-952-7142

	Paragraph	Page
CHAPTER 1. INTRODUCTION		
Section I. General-----	1,2	2
II. Description and data-----	3-5	2
CHAPTER 2. INSTALLATION AND OPERATING INSTRUCTIONS		
Section I. Service upon receipt of equipment-----	6-10	8
II. Movement to a new worksite-----	11,12	10
III. Controls and instruments-----	13,14	10
IV. Operation of equipment and auxiliary material used in conjunction with the equipment--	15-25	10
CHAPTER 3. OPERATOR AND ORGANIZATIONAL MAINTENANCE INSTRUCTIONS		
Section I. Operator and organizational maintenance tools and equipment -----	26-28	13
II. Lubrication-----	29,30	13
III. Preventive maintenance services-----	31-33	18
IV. Operator maintenance-----	34-40	24
V. Troubleshooting-----	41-55	29
VI. Radio interference suppression-----	56-60	30
VII. Body-----	61-63	31
VIII. Electrical system-----	64-69	33
IX. Fuel system-----	70-74	41
X. Cooling and exhaust-----	75-77	42
XI. Compressor -----	78-81	43
XII. Valve adjustment -----	81.1, 81.2	48
XIII. Engine lubrication system-----	81.3, 81.4	48
CHAPTER 4. DEMOLITION, SHIPMENT, AND LIMITED STORAGE		
Section I. Demolition of the air compressor to prevent enemy use-----	82-86	50
II. Shipment and limited storage-----	87-90	51
CHAPTER 5. DIRECT AND GENERAL SUPPORT AND DEPOT MAINTENANCE INSTRUC-		
TIONS.		
Section I. General-----	91,92	54
II. Description and data-----	93,94	54
CHAPTER 6. GENERAL MAINTENANCE INSTRUCTIONS		
Section I. Special tools and equipment-----	95-97	58
II. Troubleshooting-----	98-113	58
III. Removal and installation of major components-----	114,115	59
CHAPTER 7. REPAIR INSTRUCTIONS		
Section 1. Electrical system-----	116,117	61
II. Fuel system-----	118-120	64
III. Cooling system-----	121,122	68
IV. Compressor lubrication system-----	123, 124	69
V. Compressor-----	125-129	71
VI. Engine-----	130-134	75
VII. Frame parts-----	135,136	92
APPENDIX I. REFERENCES-----		95
II. MAINTENANCE ALLOCATION CHART-----		97
III. BASIC ISSUE ITEMS LIST AND MAINTENANCE AND OPERATING SUPPLIES-----		105
INDEX-----		109

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

a. These instructions are published for the use of the personnel to whom the Joy Air Compressor, Model RPV 250 DC20MS1 is issued. Chapters 1 through 4 provide information on the operation, preventive maintenance services, and organizational maintenance of the equipment, accessories, components, and attachments. Chapters 5 through 7 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 I contains a list of publications applicable to this manual. Appendix II contains the maintenance allocation chart. Appendix III 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.

c. The direct reporting by the individual user, of errors, omissions, and recommendations for improving this manual is authorized and en-

couraged. DA Form 2028 (Recommended Changes to DA Publications) will be used for reporting these improvements. This form will be completed in triplicate using pencil, pen, or typewriter. The original and one copy will be forwarded direct to Commanding General, U.S. Army Mobility Equipment Center, Attn: SMOME-MMP, P.O. Drawer 58, St. Louis, Mo. 63166. One information copy will be provided to the individual's immediate supervisor (e.g., officer, noncommissioned officer, supervisor, etc.).

d. Report all equipment improvement recommendations as prescribed by TM 38-750.

2. Record and Report Forms

a. DA Form 2258 (Depreservation Guide of Engineer Equipment).

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

Note. Applicable forms, excluding standard Form 46 which is carried by the operator, will be kept in a canvas bag mounted on the equipment.

Section II. DESCRIPTION AND DATA

3. Description

a. General. The portable air compressor, model RPV260DC20MS1 (figs. 1 and 2), is a skid-mounted, self-contained, canopy-covered unit. The unit, driven by a diesel engine, is complete with controls, switches and gages necessary for operation. It has a standard operating pressure of 100 psi (pounds per square inch) which delivers a rated output of 250 cfm (cubic feet per minute) of air, at rated maximum speed of 1,800 rpm (revolutions per minute).

b. Compressor. The air compressor is a single-stage, flood lubricated, sliding-vane type, rotary unit. Compression is accomplished by rotating a slotted rotor, equipped with sliding vanes, within a stator having radial inlet and discharge ports. The rotor is off center with the

stator bore so that the air trapped by the vanes diminishes in volume while moving from inlet port to outlet port.

c. Engine. The compressor is directly connected to and powered by a Continental engine, Model JD403. It is a 4-cylinder, 4-cycle, water cooled, diesel engine rated at 72 hp (horsepower) at 1,800 rpm.

d. Housing. The housing is designed to protect the unit under all climatic conditions. Access to the operating components of the unit is provided by hinged doors that have piano-type hinges and latches.

e. Skid Base. The skid base, which includes five covered toolboxes, is designed for mounting on an M-353 two-wheel trailer. Refer to TM 9-2330-247-14 for maintenance instructions on the trailer.

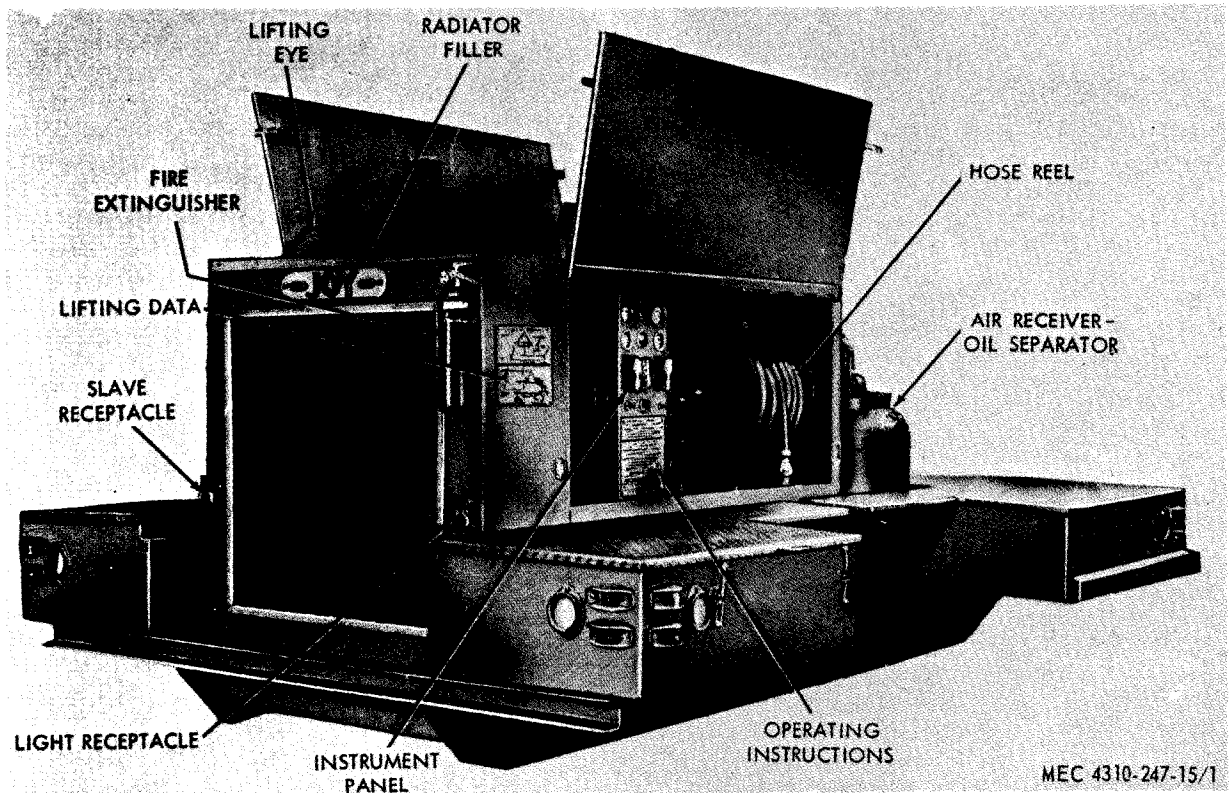


Figure 1. Left-front view.

4. Identification

The air compressor has the following major identification plates.

a. Corp of Engineers identification plate specifies official nomenclature, model and serial numbers of the equipment.

b. Joy Manufacturing Company identification plate specifies class, model number, shop number, operating pressure, operating speed, and manufacturer's name and address.

c. Engine identification plate specifies model number, serial number, specification number, tappet clearance and lubrication data.

5. Tabulated Data

a. Air Compressor Unit.

Manufacturer ----- Joy Manufacturing Co.
 Model ----- RPV250DC20MS1
 Type ----- Rotary
 Serial Nos. ----- 81315 through 81722

b. Engine.

Manufacturer ----- Continental Motors Corp.
 Model ----- JD 403

Type ----- Diesel
 Cycle ----- 4 stroke
 Cylinder ----- 4
 Cooling ----- Water
 Cylinder bore ----- 4 1/8 in.
 Stroke ----- 6 in.
 Piston displacement ----- 403403 cu. in.
 Horsepower ----- 72 at 1,800 rpm.
 Firing order ----- 1-3-4-2
 Specification number ----- 6001

c. Generator.

Manufacturer ----- Electric Autolite Co.
 Type ----- DC
 Model ----- MS13823-1
 Voltage ----- 24 volts, 18 amps
 Speed range ----- 1750-4000 rpm
 Specification ----- MIL-G-12604

d. Engine Accessories.

(1) Starter.

Manufacturer ----- Prestolite Division of
 ELTRA Corp.
 Model ----- MFY8001AT001AT

(2) Oil filter.

Manufacturer ----- Fram Corp.
 Model ----- FHB93PLMIL
 Type ----- Replaceable element