

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

TECHNICAL MANUAL

ORGANIZATIONAL, DIRECT SUPPORT, AND GENERAL SUPPORT

MAINTENANCE MANUAL

(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST

FOR ORGANIZATIONAL, DIRECT SUPPORT, GENERAL

SUPPORT, AND DEPOT MAINTENANCE)

COMPRESSOR ASSEMBLY, RECIPROCATING AIR,

6 CFM, 3000 PSI (WALTER KIDDE PART NUMBER

894780) FSN 4310-228-0766

COMPONENT OF M60A2 TANK

HEADQUARTERS , DEPARTMENT OF THE ARMY

MARCH 1973

TECHNICAL MANUAL

NO. 5-4310-340-24

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C. 15 March 1973**ORGANIZATIONAL, DIRECT SUPPORT,
AND GENERAL SUPPORT
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GENERAL SUPPORT AND DEPOT MAINTENANCE)****COMPRESSOR ASSEMBLY, RECIPROCATING AIR,****6 CFM, 3000 PSI****(WALTER KIDDE PART NUMBER 894780)****FSN 4310-228-0766****(COMPONENT OF M60A2 TANK)****Current as of 24 January 1973**

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CHAPTER 1

INTRODUCTION

SECTION I. GENERAL

1-1. Scope

a. This manual is prepared for the information and guidance of organizational, direct support, and general support personnel responsible for maintenance and repair of the 3,000 psi 6 cfm Compressor Assembly, Part Number 894780. It is complementary to TM 9-2350-232-20 and TM 92350-232-34.

b. Appendix A lists references pertaining to the air compressor.

c. Appendix B contains the maintenance allocation chart.

d. Appendix C lists repair parts and special tools through depot maintenance level.

1-2. Forms and Records

Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38-750.

1-3. Reporting of Errors

Report of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028, Recommended Changes to Publications, and forwarded direct to: Commanding Officer, U. S. Army Mobility Equipment Command. ATTN: AMSME-MPP. 4300 Goodfellow Blvd., St. Louis, Mo. 63166.

Section II. DESCRIPTION AND DATA

1-4. Description

a. *General.* The compressor assembly (fig C-1) is a component of the closed breech scavenge system used on the M60A2 tank. The system provides compressed air for cleaning the gun / launcher of any ignited powder or powder bag particles prior to opening the breech.

NOTE

For purposes of orientation, the compressor mounting adapter end will be called the rear and the fan end will be called the front. The term left or right as used will be referenced to the compressor as viewed from the front looking to the rear.

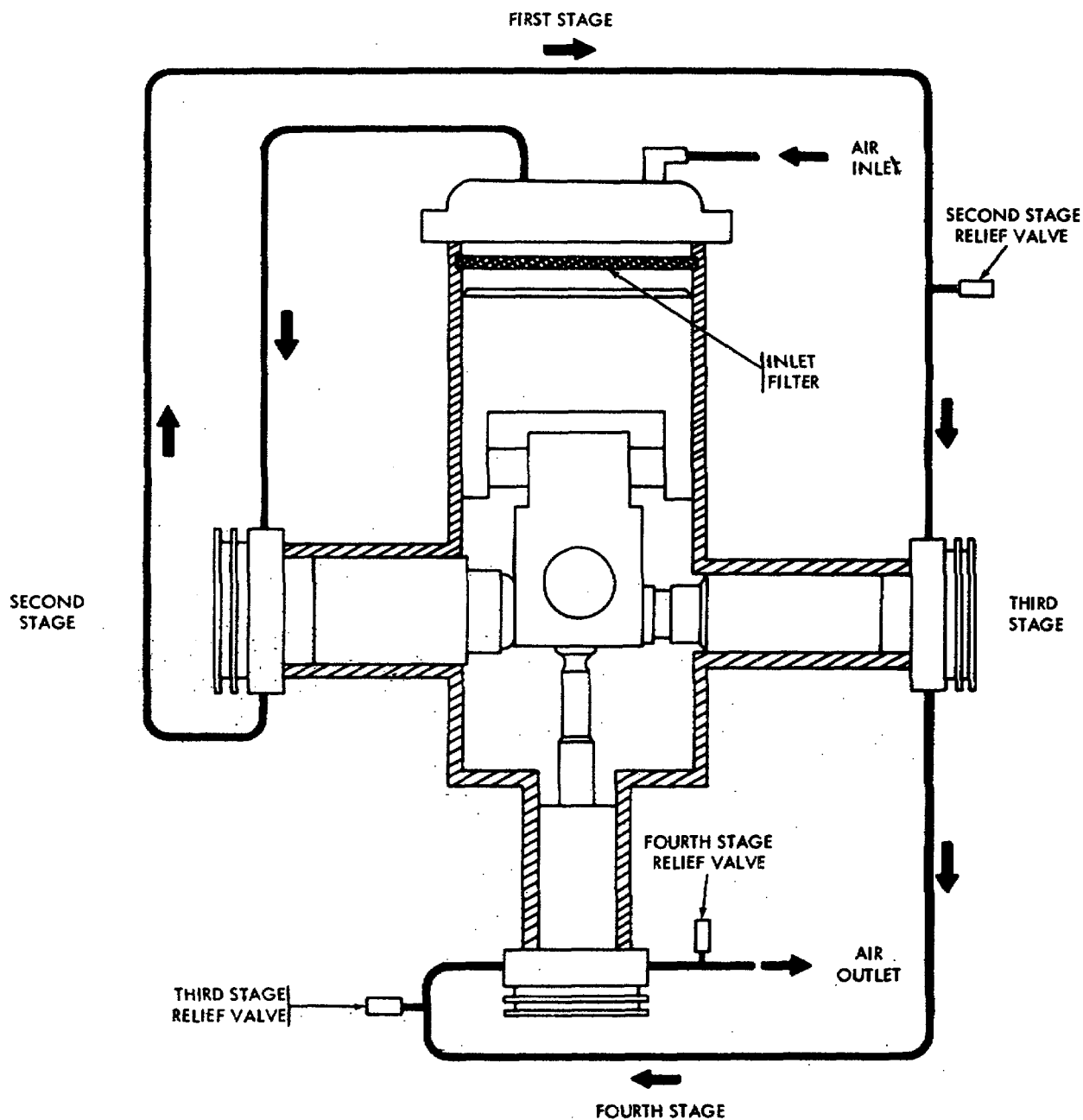
b. *Theory of Operation.* In a pneumatic system, changing the value of a given quantity of air (under ambient conditions) results in a change in pressure, temperature, and vapor content characteristics. The change in pressure is directly proportional to the change in volume. The change in temperature is directly related to the change in pressure. The vapor content of a given volume of air is directly dependent on the temperature and inversely dependent on the pressure. The compressor assembly is part of a pneumatic system. The function of the compressor in the pneumatic system is to change the air volume. Air volume change in a pneumatic system can be positive (pressurized) or

negative (evacuated) dependent upon whether the pneumatic system is located upstream or downstream of the compressor. The compressor in this manual is used to pressurize the pneumatic system.

c. *Operation.* The compressor compresses ambient air to the operating pressure of 3,000 psi with a flow rate of 6.0 scfm. In order to supply this compressed air, the compressor drive rotates the compressor in a clockwise direction (facing fan) at a rated speed of 4,250 to 4,450 rpm. The compressed air flow from one compression stage to the next passes through relief valves and intercoolers up to the fourth compressor stage. From the fourth stage, the compressed air flow (fig 1-1) is directed through an air flow restrictor fitting to a high pressure relief valve and to the aftercooler and compressor outlet (discharge) fitting. From the compressor outlet (discharge) fitting, the compressed air flow is directed to the air processing assemblies in the pneumatic system, then to the using equipment. The hot, high pressure compressed air, when passing through the finned intercoolers and aftercoolers, loses the heat of compression to the ambient air. To increase the heat transfer rate, the compressor fan forces the ambient air past the finned cooler surfaces. Excessive interstage or pneumatic system pressure is

relieved to atmosphere through the relief valves. Lubrication of the compressor (fig 1-29) is accomplished by the gerotor which is installed within the crankcase adjacent to the fan. the gerotor draws filtered oil from the crankcase oil sump and discharges the oil through the crankshaft to

components to be lubricated. A spring loaded, oil bypass, relief valve is located in the crankcase permitting the oil to bypass from the gerotor outlet to the gerotor inlet passage in case of oil over-pressurization.



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Figure 1-1. Compressed air flow-schematic.