

TM 9-1828A

WAR DEPARTMENT TECHNICAL MANUAL

ORDNANCE MAINTENANCE

FUEL PUMPS

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(For explanation of symbols, see FM 21-6.)

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CHAPTER 1—INTRODUCTION

1. SCOPE.

a. The instructions contained in this manual are for the guidance of personnel charged with the maintenance and repair of AC mechanical fuel pumps and Carter electric fuel pumps. These instructions are supplementary to field and technical manuals prepared for the using arms. This manual does not contain information which is intended primarily for the using arms, since such information is available to ordnance personnel in 100 series TM's and FM's. It should be noted that the groupings of fuel pump series in the chapters of this book have no significance from the standpoint of pump interchangeability.

b. This manual contains a description of, and procedure for, disassembly, inspection, repair, and assembly of Carter fuel pumps and the following series of AC fuel pumps: B, D, G, IHC Special, O, P, R, S, T, W, AC, AF, AG, AH, AJ, AK, AT, AV, AU, AW, AX, BE, BF, BH, BK, BL, BM, and BN.

c. For fuel pump replacement, refer to the pertinent operators' manual.

2. RECORDS.

a. Forms and records applicable for use in performing prescribed operations are listed below with a brief explanation of each.

(1) W.D., A.G.O. FORM No. 468, UNSATISFACTORY EQUIPMENT REPORT. This form will be used for reporting manufacturing, design, or operational defects in materiel with a view to improving and correcting such defects, and for use in recommending modifications on materiel. This form will not be used for reporting failures, isolated materiel defects, or malfunctions of materiel resulting from fair wear and tear or accidental damage; nor for the replacement, repair, or the issue of parts and equipment. It does not replace currently authorized operational or performance records.

(2) W.D., A.G.O. FORM No. 478, MWO AND MAJOR UNIT ASSEMBLY REPLACEMENT RECORD. This form, carried with the vehicle, will be used by all personnel completing a modification or major unit assembly replacement to record clearly the description of work completed, date, vehicle hours and/or mileage, and MWO number or nomenclature of unit assembly. Personnel performing the operation will initial in the column provided. Minor repairs, parts, and accessory replacements will not be recorded.

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(3) **W.D., A.G.O. FORM NO. 10-144 (TALLY SHEET, INCOMING).** This form may be used to record all incoming materials or supplies pending negotiation of a final voucher. It may also be used in exchanging vehicles, parts, or tools, or in lieu of shipping ticket.

(4) **W.D., A.G.O. FORM NO. 10-145 (TALLY SHEET, OUTGOING).** This form may be used to record all outgoing materials or supplies pending negotiations of the final voucher. It may also be used in exchanging vehicles, parts, or tools, or in lieu of shipping ticket.

(5) **W.D., A.G.O. FORM NO. 9-71 (LOCATOR AND INVENTORY CONTROL CARD).** This form may be used as a bin tag, locator card, or inventory control card in maintaining spare parts stocks. This form is for tactical units only.

(6) **W.D., A.G.O. FORM NO. 9-76 (REQUEST FOR JOB ORDER).** This form may be used by any officer or authorized person requiring production, repair, alteration, inspection, or any other type of work from another organization, department, or echelon. Not required for second or third echelon repairs.

(7) **W.D., A.G.O. FORM NO. 9-77 (JOB ORDER REGISTER).** This form will be prepared, in single copy only, when job orders are used by service echelons to furnish a chronological order and record of job order numbers and related information.

(8) **W.D., A.G.O. FORM NO. 9-78 (JOB ORDER).** This form, properly executed, may be used as an authority for work. No work of any nature will be performed in a service echelon shop keeping a cost accounting-type record system without a properly authenticated job order.

(9) **W.D., A.G.O. FORM NO. 9-79 (PARTS REQUISITION).** This form will be used as an interdepartmental shop requisition to request parts where job orders are required.

(10) **W.D., A.G.O. FORM NO. 9-80 (JOB ORDER FILE).** This folder may be used to hold under one cover all shop papers and records incident to a particular job order or to a particular vehicle.

(11) **W.D., FORM NO. 9-81 (EXCHANGE PART OR UNIT IDENTIFICATION TAG).** This tag, properly executed, may be used when exchanging unserviceable items for like serviceable assemblies, sub-assemblies, parts, vehicles, and tools.

Operation

CHAPTER 2—AC FUEL PUMPS**Section I****OPERATION****3. FUEL PUMP OPERATION** (figs. 1 and 2).

a. Installation. The AC mechanical fuel pump is installed on the engine between the fuel tank and the carburetor. The suction side of the pump is connected to the fuel tank and the discharge side to the carburetor by tubing designed to carry the fuel. The purpose of the pump is to suck fuel from the supply tank and push it into the carburetor float bowl as required by the engine.

b. Identification. The pump part number is usually stamped on the edge of the mounting flange. Some high production pumps have the part number cast into the body beneath the diaphragm flange.

c. Operation.

(1) **MECHANICAL ACTION.** Operation is accomplished through a rocker arm on the pump contacting an eccentric on the engine camshaft. Downward movement of the pump diaphragm, or the suction stroke, is caused by the rotation of an eccentric on the camshaft actuating the pump rocker arm. This pulls the diaphragm downward against the pressure of the diaphragm spring, producing a vacuum in the fuel chamber. This vacuum holds the outlet valve closed and pulls the inlet valve open, making fuel flow from the supply tank through the inlet, the filter screen, and the inlet valve into the fuel chamber. On the return stroke of the rocker arm, the diaphragm spring forces the diaphragm upward, the inlet valve closes, and the outlet valve is forced open, allowing fuel to flow through the outlet to the carburetor.

(2) **LINK ACTION.** The link is hinged to the rocker arm so that the link and the connected diaphragm can be moved down, but not up, by the rocker arm. The link and the diaphragm are moved upward only by the diaphragm spring. The pump, therefore, delivers fuel to the carburetor only when the fuel pressure in the outlet line is less than the pressure maintained by the diaphragm spring. This condition arises when the float needle valve is not seated and the fuel passage from the pump into the carburetor float chamber is open. When the needle valve in the carburetor float chamber is closed and held in place by the pressure of the fuel on the float, the pump builds

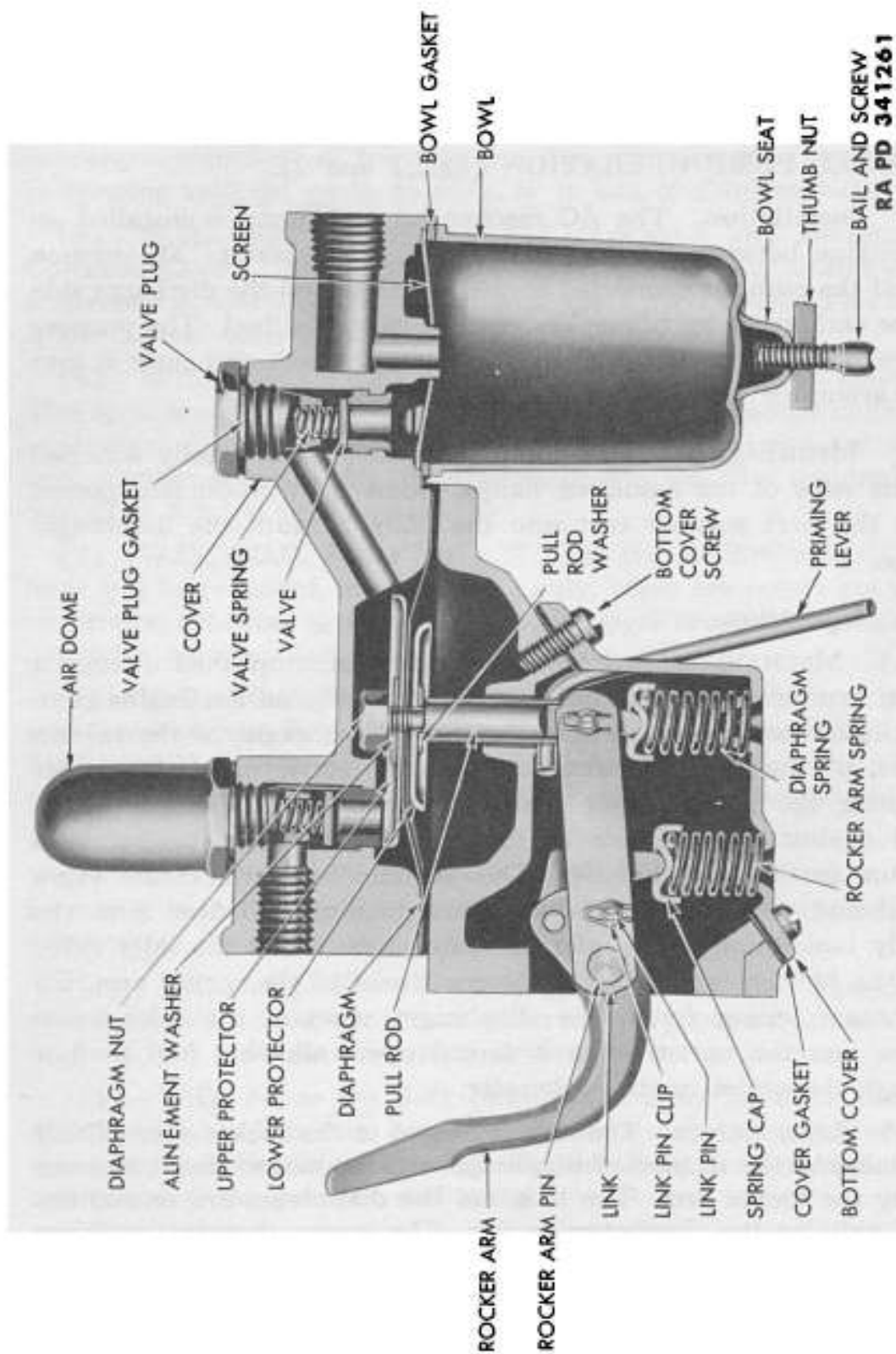


Figure 1—Fuel Pump, Series B—Sectional View