

TM 5-4520-208-15

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR, ORGANIZATIONAL, DIRECT AND GENERAL
SUPPORT AND DEPOT MAINTENANCE MANUAL FOR
HEATER, DUCT TYPE, PORTABLE

400,000 BTU/HR

MODELS BT400-40 AND BT400-40-1

FSN 4520-792-8257 AND FSN 4520-930-9474

This copy is a reprint which includes current
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TECHNICAL MANUAL

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HEADQUARTERS
DEPARTMENT OF THE ARMY
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Support and Depot Maintenance Manual
For
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400,000 BTU/HR
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CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

a. These instructions are published for the use of personnel to whom the American Air Filter Model BT400-40 and BT400-40-1 Heaters (figs. 1 and 2) are issued. Chapters 1 through 4 provide information on the operation, preventive maintenance services, and organizational maintenance of the equipment, accessories, components, and attachment. Chapters 5, 6, and 7, provide information for direct support, 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 H contains the Maintenance Allocation Chart. Appendix III contains the list of Basic Issue Items authorized the operator of this equipment. The Organizational, Direct and General Support, and Depot Maintenance Repair Parts and Special Tools are listed in TM 5-4520-208-25P.

c. Numbers in parentheses on illustrations indicate quantity. Numbers preceding nomen-

clature callouts on illustrations indicate the preferred maintenance sequence.

d. The front of the heater is the basket end. The rear of the heater is the outlet end. Left and right are defined as facing the outlet end of the heater.

e. The direct reporting of errors, omissions, and recommendations for improving this manual is authorized and encouraged, DA Form 2028 (Recommended Changes to DA Publications) will be used for reporting these improvements. This form will be completed using pencil, pen, or typewriter and forwarded direct to the Commanding General, U. S. Army Mobility Equipment Command, ATTN: AMSME-MPD, 4300 Goodfellow Blvd., St. Louis, Mo. 63120

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

2. Record and Report Forms

For record and report forms applicable to the operator, crew, and organizational maintenance, refer to TM 38-760.

Note. Applicable forms shall be kept in a canvas case mounted on the equipment.

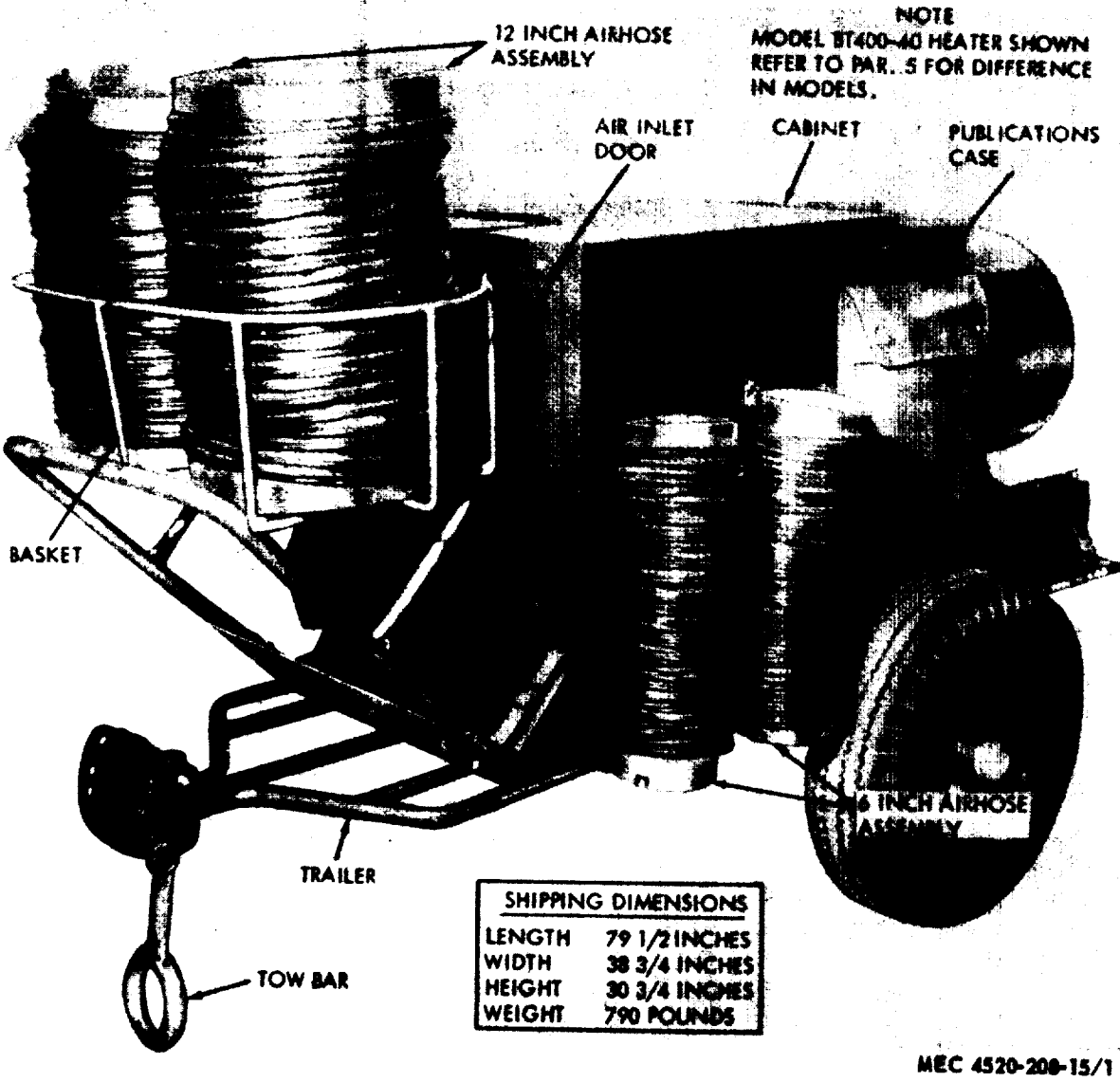
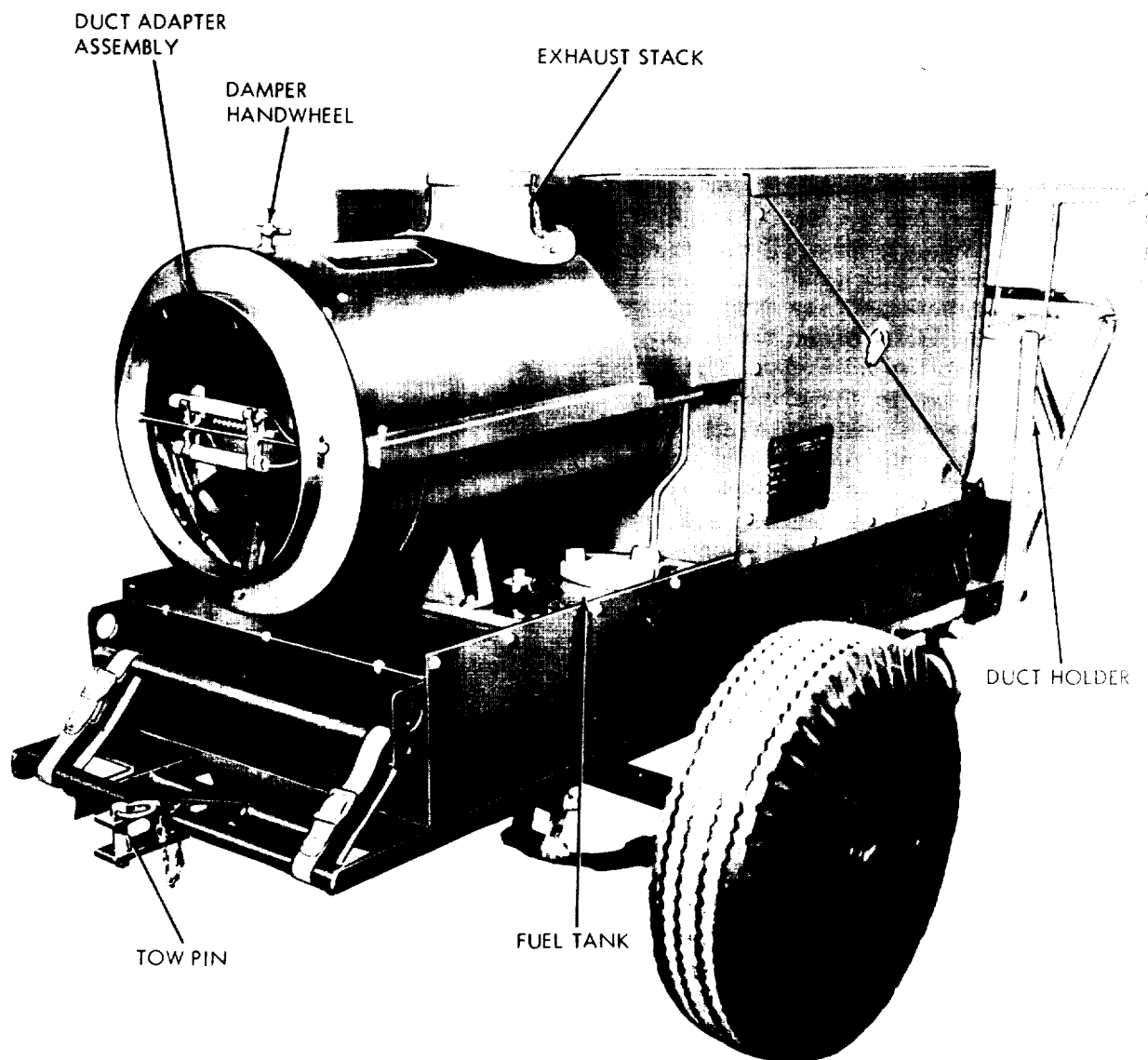


Figure 1. Heater, three-quarter left front view.



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Figure 2. Heater, three quarter right rear view.

Section II. DESCRIPTION AND DATA

3. Description

a. General. The heater, (fig. 1), is a fully inclosed, portable, trailer mounted unit, intended primarily for use in ground heating

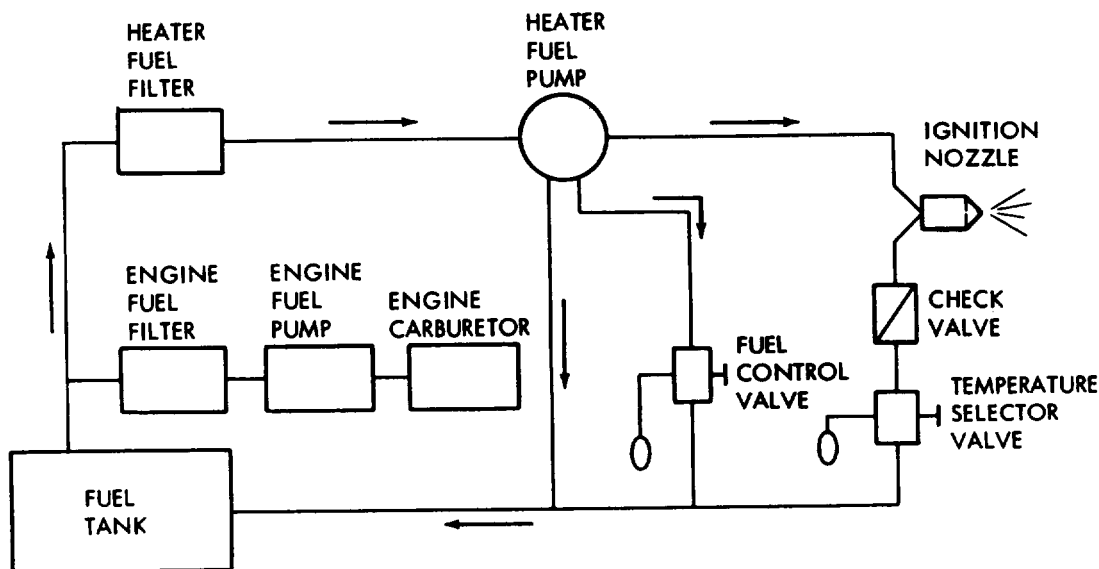
aircraft engines and fuselages, and secondarily, for use in ground heating maintenance shelters, portable hangers and other similar inclosures.

b. Power Units. The Model BT400-40 heater is supplied with two power units: one is a Military Standard gasoline engine, Model 1A08-III; the other a 2-horsepower, 208-220 volt, 60-cycle, 3-phase alternating current electric motor. The Model BT400-40-1 heater is supplied with only the Military Standard gasoline engine, Model 1A08-III. Each power unit supplies all the air necessary for operation of the heater. Air is drawn through the air inlet door (fig. 1), passes through and around the heat exchanger, and is discharged through ducts mounted on the duct adapter assembly (fig. 2). Both power units have a coupling attached to the drive shaft. The drive coupling is connected to the driven coupling by a flexible rubber sleeve which mates the two. The driven coupling drives the heater fan and, through a pulley which is an integral part of the driven coupling, a V-belt. The belt drives the fuel pump mounted on the right side and the heater ignition magneto on the left side of the power unit.

c. Fuel System. The fuel system, figure 3, supplies gasoline to the heater and to the

gasoline engine power unit when the engine is used to drive the heater.

- (1) *Fuel tank.* The 16-gallon fuel tank is suspended by straps in the base of the heater and is removable. Fuel is drawn from the tank through automotive-type filters and delivered to the gasoline engine power unit and the heater fuel pump.
- (2) *Engine fuel system.* Fuel from the tank is drawn through the filter by the engine fuel pump. The fuel passes through the engine fuel filter to the carburetor and is ignited by the engine. A quick-disconnect coupling is supplied on the fuel line at the engine fuel line at the engine fuel filter inlet line to facilitate removal of gasoline engine.
- (3) *Heater fuel pump.* The belt-driven heater fuel pump draws fuel through the filter and delivers fuel at a constant high pressure to the nozzle. The pump operates continuously when power unit is in operation. Unused



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Figure 3. Fuel system, schematic diagram.