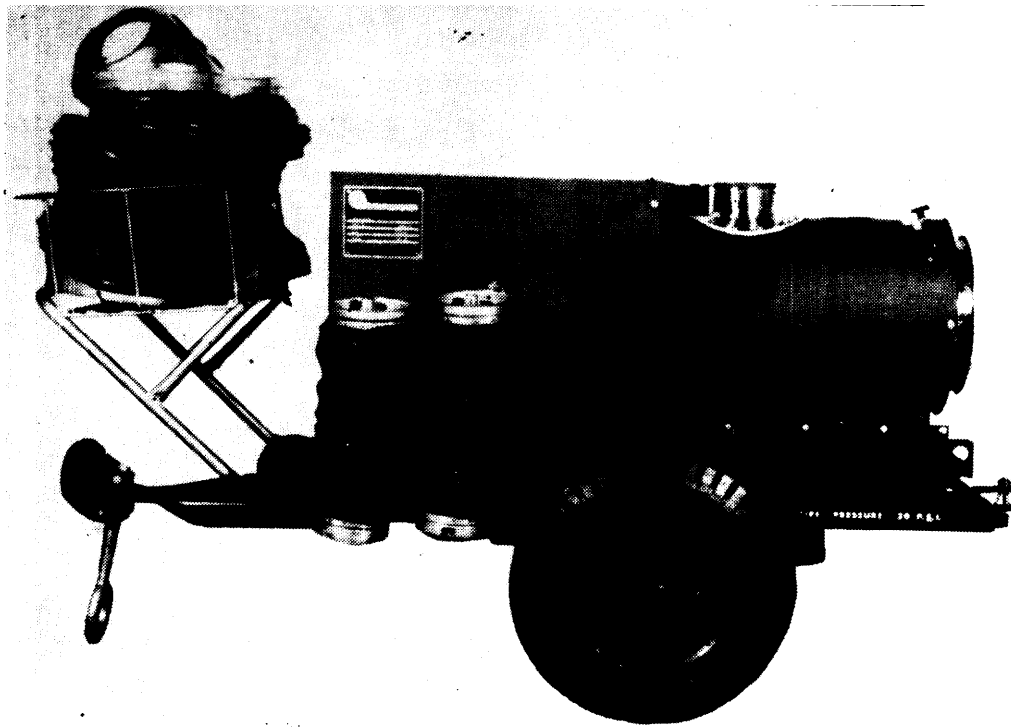


OPERATOR'S, ORGANIZATIONAL,
DIRECT SUPPORT AND
GENERAL SUPPORT
MAINTENANCE MANUAL



HEATER, DUCT TYPE, PORTABLE,
TRAILER MOUNTED, 400,000 BTU/HR
FIESTA MODEL FC-400-1

(4520-01-071-7191)

HEADQUARTERS, DEPARTMENT OF THE ARMY

11 JULY 1980

This copy is a reprint which includes current pages from Changes 1 through 4., 5

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AND GENERAL SUPPORT MAINTENANCE MANUAL

HEATER, DUCT TYPE, PORTABLE, TRAILER MOUNTED
400,000 BTU/HR, FIESTA MODEL FC-400-1(4520-01-071-7191)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistake 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 this manual direct to: Commander, U.S. Army Troop Support Command, ATTN: AMSTR-MCTS, 4300 Goodfellow Boulevard, St. Louis, MO 63120-1798. A reply will be furnished directly to you.

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Chapter I

INTRODUCTION

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1-1 OVERVIEW

Chapter 1 of this TM is intended to give you a general idea of the type of equipment, its use and the main characteristics of the heater covered by this manual .

SECTION I

GENERAL INFORMATION

1-2 SCOPE

This TM Chapter applies to Fiesta Model FC-400-1 Portable Duct Type Heater which delivers 400,000 BTU per hour of heated air. Included in this manual are :

- a. Information on operating the heater.
- b. The theory of operation of the heater.
- c. Troubleshooting and servicing information,
 - (1) For the operator
 - (2) For organizational maintenance
 - (3) For direct support maintenance
 - (4) For general support maintenance

The information in this manual is primarily intended for use by Army personnel having the responsibility of operating and maintaining the Model FC-400-1 heater.

1-3 MAINTENANCE FORMS, RECORDS AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750, The Army Maintenance Management System.

1-4 REPORTING EQUIPMENT IMPROVEMENTS, RECOMMENDATIONS

If your heater needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Tell us why a procedure is hard to perform. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at:

Commander, Headquarters , U. S. Army Troop Support Command, ATTN: AMSTR-QX, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. We'll send you a reply.

1-5 HAND RECEIPT

Hand receipts for Components of End Item (COEI), Basis Issue Items (BII), and additional Authorization List (AAL) items are published in a Hand Receipt Manual, TM5-4520-224-14-HR. This manual is published to aid in property accountability and is available through: Commander, U.S. Army Adjutant General Publication Center, ATTN: AGDL-OD, 2800 Eastern Boulevard, Baltimore, MD 21220.

SECTION II

EQUIPMENT DESCRIPTION AND DATA

1-6 DESCRIPTION

Model FC-400-1 burns gasoline to generate fresh, uncontaminated heated air. heater is shown in figure 1-1.

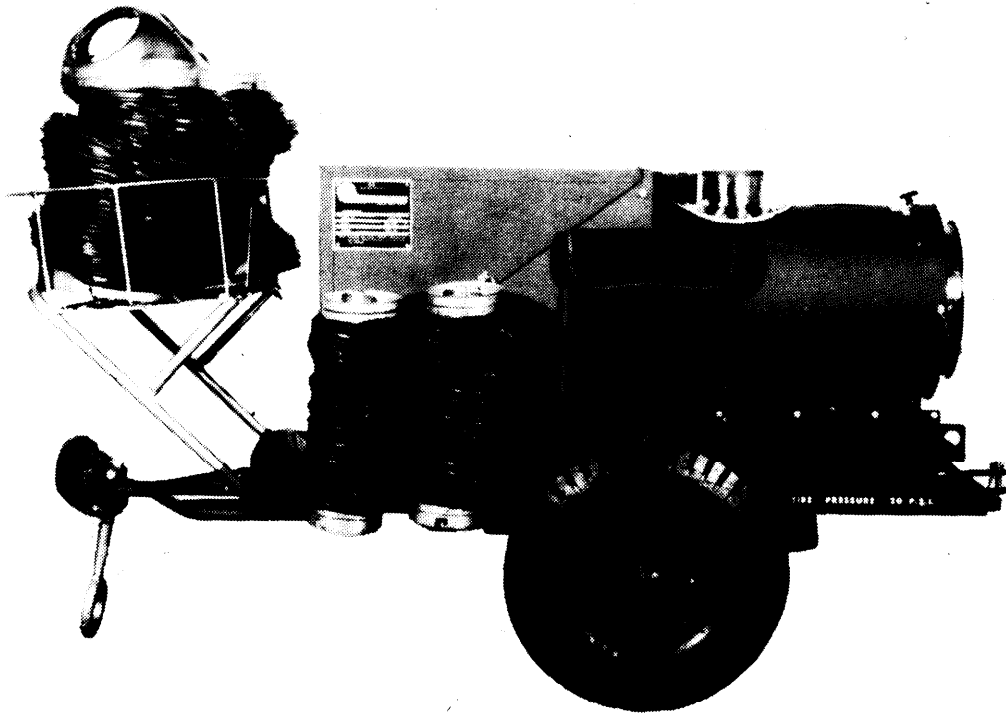


Figure 1-1. Model FC 400-1 Heater

Figure 1-4 describes the operation of the fuel system. The gasoline is pumped from a fuel tank, forced through a spray nozzle, ignited, and burned in the combustion chamber of a heat exchanger. A fan blows air through the heat exchanger where it is heated and delivered through ducts to the area to be heated.

1-7 PURPOSE

Model FC-400-1 is used in the following applications.

- a. To preheat aircraft engines and fuselage.
- b. To heat up ground vehicles.
- c. To heat maintenance building, field shelter, and temporary structures.

Also for forced fresh air ventilation without heating.

1-8 CAPABILITIES AND FEATURES

- . Fully-enclosed, self-contained unit
- . Trailer mounted - ground portable
- . Gasoline fuel - gasoline engine driven
- . Variable temperature range
- . With exhaust properly vented, heater delivers uncontaminated air through the flexible duct

1-9 LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

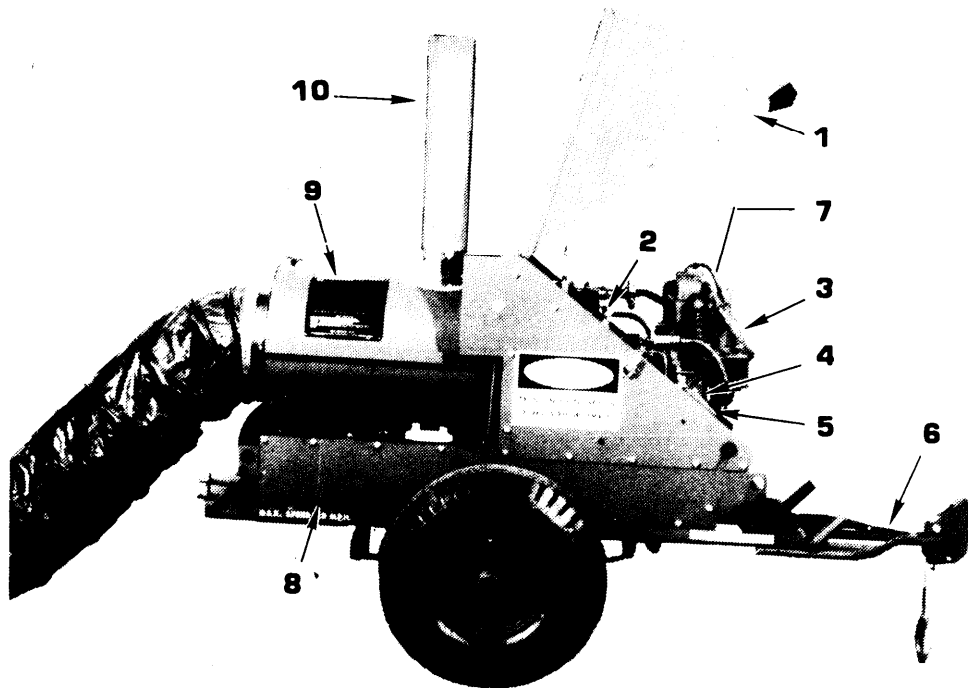
Refer to figure 1-? f-or the location and description of the major components of the Model FC-400-1 heater.

1-10 EQUIPMENT DATA

See Table 1-1.

MAJOR COMPONENTS

- 1 CABINET TOP, open for access to prime mover.
- 2 FAN . Provides combustion air and ventilating air.
- 3 PRIME MOVER. Gasoline engine to drive fan, fuel pump and magneto.
- 4 FUEL PUMP. Pumps gasoline from fuel tank to combustor.
- 5 FUEL FILTER. Insures that only clean fuel is fed to combustor.



- 6 SKID . Provides mounting for heater assembly and a means of transporting heater to location of use.
- 7 MAGNETO . Provides high-voltage spark for igniting fuel.
- 8 FUEL TANK. Holds supply of gasoline for combustor flame and for operation of prime mover.
- 9 HEAT EXCHANGER. Fuel burns inside heat exchanger. Fan blows air over exterior of heat exchanger. Heated air is blown out of heat exchanger.
- 10 EXHAUST STACK. Expels burned gasoline fumes to exterior of heater.

Figure 1-2. Location and Description of Major Components

Table 1-1. Equipment Data, Model FC-400-1

Manufacturer	Fiesta Corporation
Model	FC-400-1
Heated Air Output:	
Maximum	400,000 BTUH @-65-degrees F ambient
Minimum	400,000 BTUH @ 70-degrees F ambient
Heated Air Temperature Range:	
Maximum	280 F (138-degrees C)
Minimum	150 F (65.5-degrees C)
Air Delivery Rate:	
Maximum	1500 CFM
Minimum	600 CFM
Fuel	Gasoline. IAW MIL-G-3506
Fuel Tank Capacity	16 gal (nominal)
Overall Dimensions:	
Length	78 inches
Height	39 inches
Width	40 inches
Shipping Cubit	70.3 cu.ft.
Weight, Empty	295 lbs.
Prime Mover (Gasoline Engine)	MS Model 1 A08-III
Engine Speed, factory set	3450-3750 RPM

SECTION III

TECHNICAL PRINCIPLES OF OPERATION

1-11 HEATER OPERATING PRINCIPLES

Basic heater operating principles are given in Figures 1-3 and 1-4.