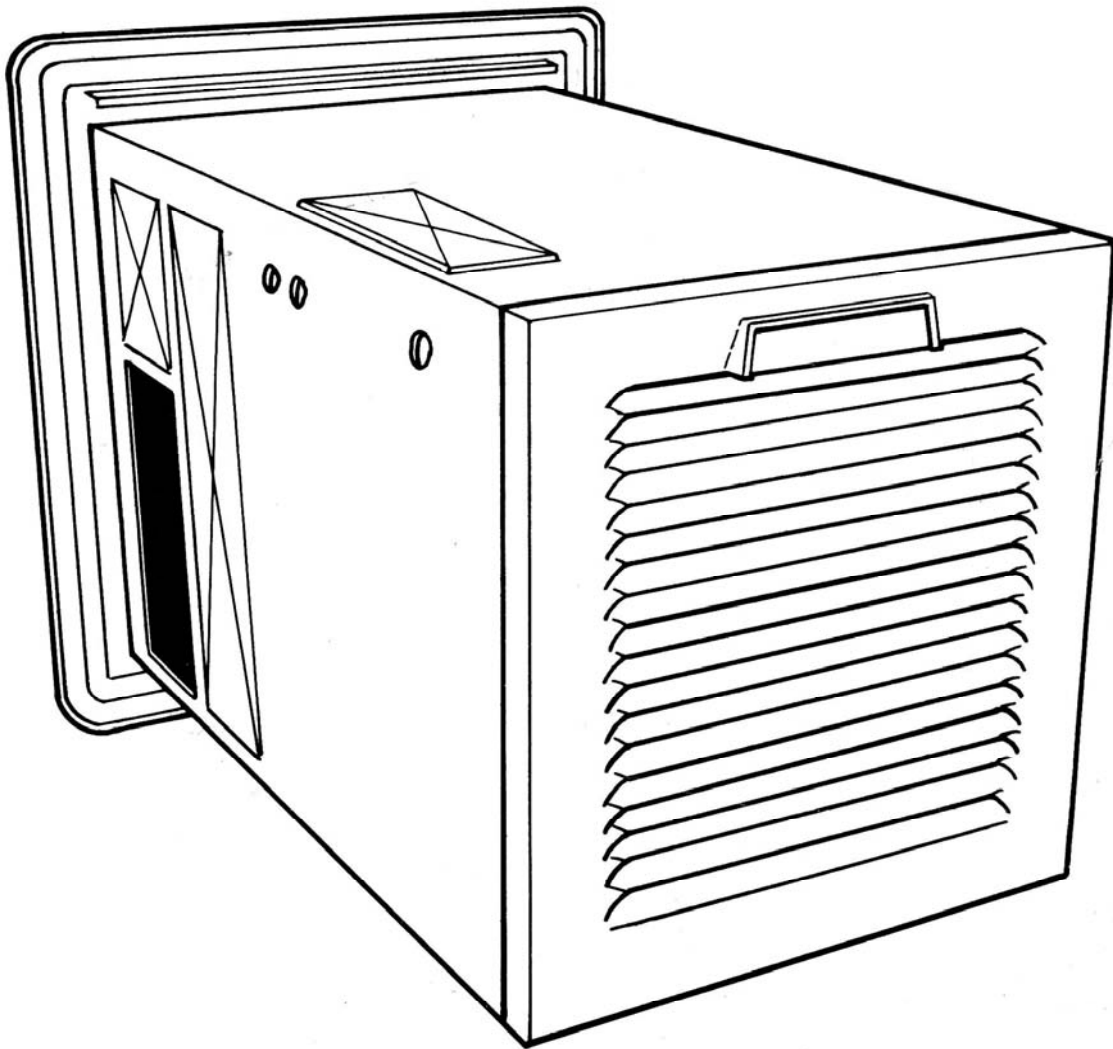
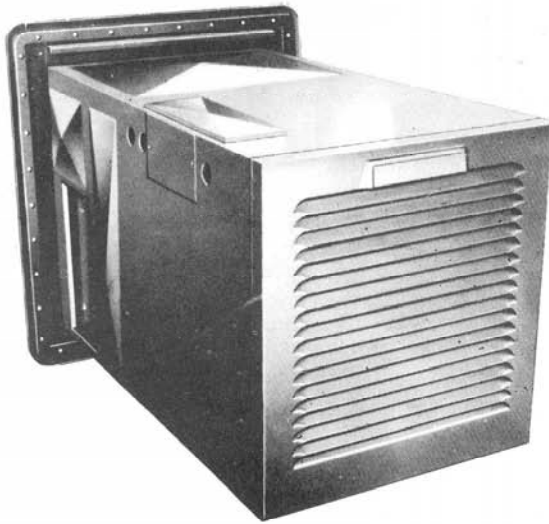


MGF 1525 SERVICE MANUAL





HOW THE FURNACE OPERATES

Servicing the International MGF 1525 furnace, just as the servicing of any other fine piece of equipment, requires a clear understanding of how the unit operates. From that point it requires only additional servicing information for the skilled serviceman to become familiar with the adjustment of this unit.

Therefore, we are first going to describe completely the operation of the furnace, and will give specialized service information in the last section of this manual. We will cover the operation of the furnace as it applies to the main systems: combustion, fuel, air circulation, electric safety device and electric control.

COMBUSTION SYSTEM

Heating is the main function of all furnaces - they differ only in their efficiency (that is, the percentage of available heat that is extracted from the fuel and used to warm a home, and not lost up the chimney). Safety demands that a furnace be able to dispose of the waste products of combustion, while holding operating temperatures low enough that combustible material in the home is not heated beyond a safe limit. The MGF 1525 has been tested and listed by Underwriters' Laboratories - proof of its safe design.

Air for combustion is drawn into the heat exchanger through the outside wall-mounted vent by the natural draft process. The heat from the main burner and pilot burner cause the hot flue gases to rise through the risers of the heat exchanger and to be vented out

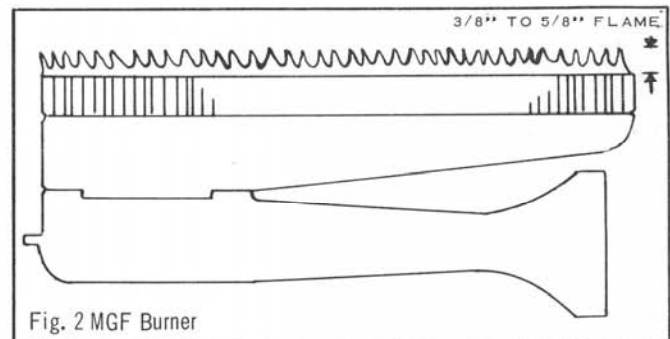


Fig. 2 MGF Burner

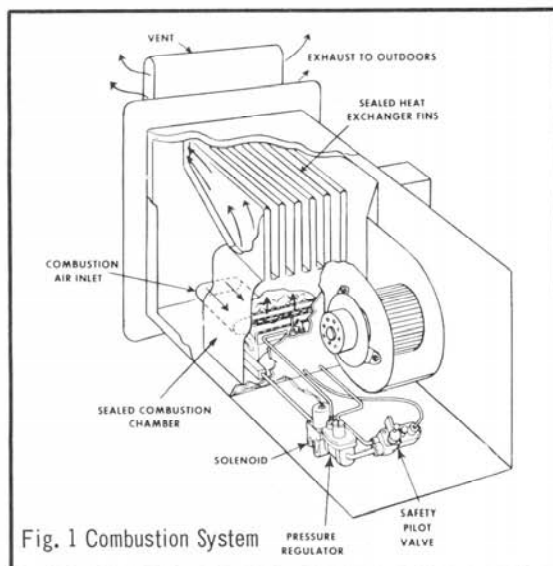
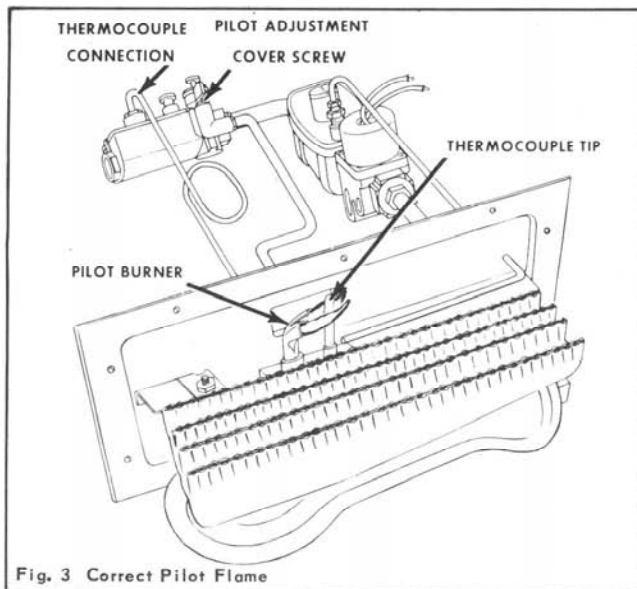


Fig. 1 Combustion System

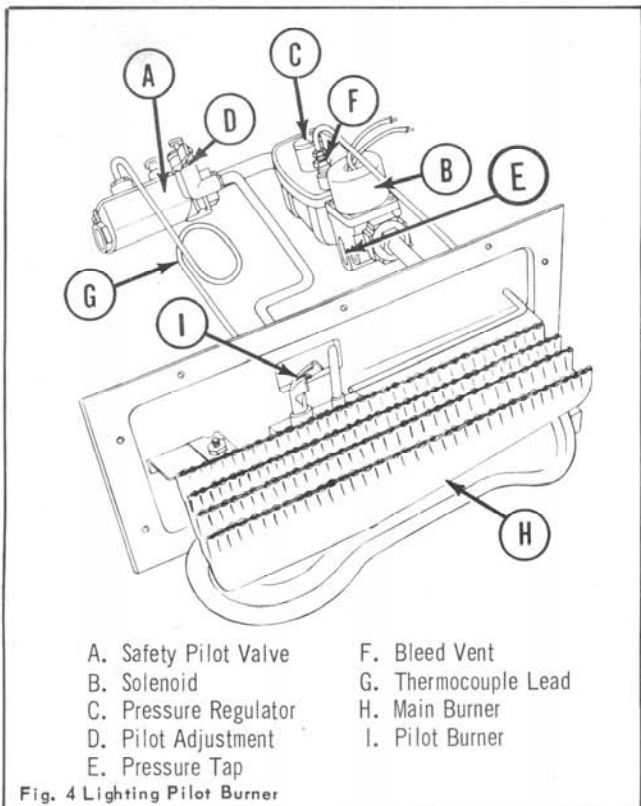
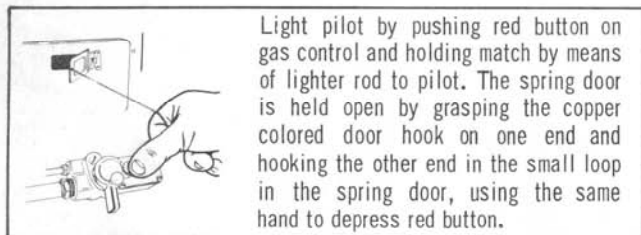
through the sealed combustion vent. The heat exchanger has been completely sealed, with all air for combustion coming from the outside.

The MGF 1525 uses a multi port venturi-type burner. The gas and air mix in the venturi of the burner so that complete combustion can take place at the ports. The primary air shutter of the burner has been removed to eliminate the possibility of maladjustment.

Gas flows through the gas control into the main burner when the wall thermostat is in a closed position and the gas control knob is set to ON. The pilot flame ignites the gas-air mixture at the top of the burner; the flame can be seen through the glass window in the burner mounting plate. In order to obtain proper ignition the main burner and pilot should always remain in their original positions. The burner is bolted to the burner mounting plate brackets and the pilot spaced off the mounting plate 9/16 in. The main burner flame should remain blue at all times.



The pilot produces one V-shaped flame which is used to heat the thermocouple and ignite the gas from the main burner. The pilot flame is ignited by a match through the match light door, as shown in fig. 4.



The combustion products are vented to the outside through the sealed combustion and balanced draft system, thus eliminating the down draft diverter. Because of the sealed combustion system, the flue products cannot escape from the furnace to the air of the living space.

Operating exhaust fans will not influence the operation of the furnace. If any of the burner or vent parts are removed for service, it is important when replacing the parts that all connections are tightly fitted, and that the burner mounting plate is properly secured to the heat exchanger to maintain the sealed system.

FUEL SYSTEM

The MGF 1525 is designed for L.P. and natural gas. The fuel system consists of the fuel line and manifold. (Fig. 5) When operating, the furnace burns 25,000 BTU's per hour of gas. Minimum size for the gas line supplying the MGF 1525 for any length up to 30 feet is 3/8 in. tubing or black iron pipe. For lengths longer than 30 feet use 1/2 in. tubing or black iron pipe. See that the gas supply line is installed without sharp bends and kinks.

CAUTION: TO CHECK THE LINE FOR LEAKS, DO NOT USE FLAME IN ANY WAY. USE SOAP AND WATER SOLUTION OR A COMMERCIAL SOLUTION SUCH AS LEAK TEC TO SEE IF GAS LINE IS LEAK TIGHT.

The operation of the gas controls are as follows: with pilot lighted, when the wall thermostat is in closed position calling for heat and the gas control knob is turned to ON, gas will flow through the gas control to the main burner. The main gas valve is a solenoid valve that opens immediately when the thermostat circuit is completed.

Correct gas pressure for L.P. gas is 11 inches W.C. at the gas control and 3 1/2" W.C. for Natural gas. Pressure adjustment can be made by removing the cap on the regulator and adjusting the spring assembly in the stem of the regulator. The gas pressure tap (fig. 5) located on the solenoid valve has to be removed and a pressure gauge attached to read the pressure.

To convert the regulator from Natural to L.P. gas or vice versa invert the plug under the cap so that the proper regulation is obtained.

The thermocouple is used to supply the necessary voltage to operate the 100% safety valve, which is combined with the "A" cock. Extreme caution should be taken when making connections to see that they are all tightly secured. A poor connection will result in the closing of the main valve and the pilot outage.

If it is desirable to remove the burner and burner control assemblies, the gas will have to be shut off at the tanks, the fuel supply line disconnected at the gas control and the hex-head nuts removed from around the burner mounting plate. Also, there are wires to be disconnected at the control panel. When replacing parts, be sure all connections are tight and the gasket is in place. To relight the burner, follow lighting instructions on the front of the furnace.

AIR CIRCULATION SYSTEM

Since the purpose of any furnace is to provide heat to warm the home to a desired temperature, it is necessary to extract the heat from the furnace and distribute it. This is the function of the air circulation system.

Six "L" shaped risers that carry the flue gases make up the heat exchanger (fig. 6). The air circulator moves the room air across all surfaces of the heat exchanger and out through the ducts. A high heating efficiency is obtained with this design.

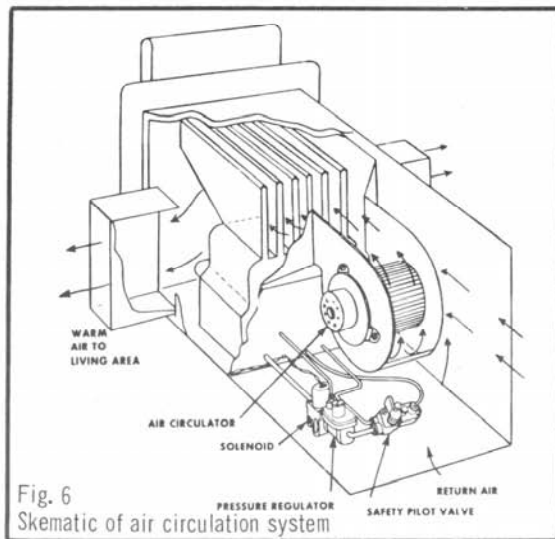


Fig. 6
Schematic of air circulation system

To control condensation, outside air should be circulated through the living area with a ventilating fan. This will have no adverse effect on the operation of the furnace.

The air circulator motor and centrifugal blower wheel are located at the front of the furnace - mounted to the air casing. The wheel draws air into the furnace from the living area through a filter in the louvered front door. The filter will remove the dust and lint from the air and circulate clean air through the living area.

AIR CIRCULATOR MOTOR This is a series motor, suitable for use with either alternating or direct current. A motor used with direct current must be equipped with brushes on the commutator. After 750 to 1,000 hours use, examine these brushes for wear - replace brushes if they have reached 1/4 inch or less in length. The brushes are removed by unscrewing the two plastic caps at the back of the motor and removing the spring and brush assembly. When replacing the assembly be sure that the curve of the brushes is running in the correct direction to match the curve of the commutator. The motor has built-in overload protection to prevent it from becoming overheated.

The motor operates on 12 volts D.C. and 23 volts A.C. It should never be plugged into a standard 115 volt outlet. The motor would be destroyed in a few moments if this were done.

ELECTRIC SAFETY DEVICES

The furnace is equipped with several safety devices. The first of these is the 100% shutoff valve, an integral part of the "A" cock assembly. The 100% shutoff valve will open when it receives a voltage of approximately 5 millivolts or more from the thermocouple tip. When heated by the pilot flame, the thermocouple tip constantly generates a voltage of from 25 to 30 millivolts. (see page 7 for millivolt meter for checking thermocouple output.) If the pilot flame should go out, the thermocouple tip cools, shutting off the current to the 100% shutoff valve; this closes the valve, shutting off completely the flow of gas to the main gas valve and to the pilot line.

When the furnace is being lighted, the 100% shutoff valve is held open mechanically by pressing down on the Gas Control button when the "A" cock is in the pilot position. This allows gas to flow to the pilot. When the pilot is lighted, the thermocouple tip will become

heated and generate enough current in about 30 seconds to hold open the 100% shutoff valve. Then the Gas Control knob is turned to ON (with the thermostat contacts closed, calling for heat) and the main gas valve will open.

The automatic limit switch (fig. 7) is a safety device, set to maintain the outlet air temperature at 165° or less. If it opens because of overheating, the circuit to the solenoid valve will be broken, shutting off the main burner but leaving the pilot burning. When the furnace cools, the limit switch will close, completing the circuit to the solenoid valve, and the furnace will return to high fire operation. However, if this failure were caused by some restriction in the filter (dirty filter) or in the duct system, or caused by a blower failure, the limit switch will continue to cut off until the condition is corrected.

The air circulator motor is grounded to the blower housing. Check to see that this ground lead is connected before and after servicing the furnace. The motor itself contains a thermal overload switch which shuts off the motor if it should become overheated.

Aside from the controls which maintain safe furnace operation, some controls function as part of the normal operating cycle of the furnace.

FAN SWITCH The air circulator is provided with a fan switch that causes the motor to operate at high speed or to shut off. The fan switch is located on a plate 4 1/4 inches from the back wall of the control panel. (fig. 7) A temperature rise in the furnace caused by the high fire flame will cause the fan switch to snap closed, turning on the air circulator motor. After the thermostat has been satisfied and has shut off the high fire flame, the outlet air temperature will fall rapidly. When it reaches approximately 100° the fan switch will snap open, turning off the air circulator. The length of time required for the first fan cycle is determined by the room temperature at the time the furnace is lighted.

TRANSFORMER A 115 volt primary, 23 volt secondary, 200 V.A. transformer is provided to control the motor voltage at 23 volts when a 115 volt power supply is used. This is done so that the motor will have the same operating characteristics on either A.C. or D.C. voltage. The 12 volt direct current voltage from the battery is not affected by the transformer.

WIRING It is important that all wire connections be properly secured.

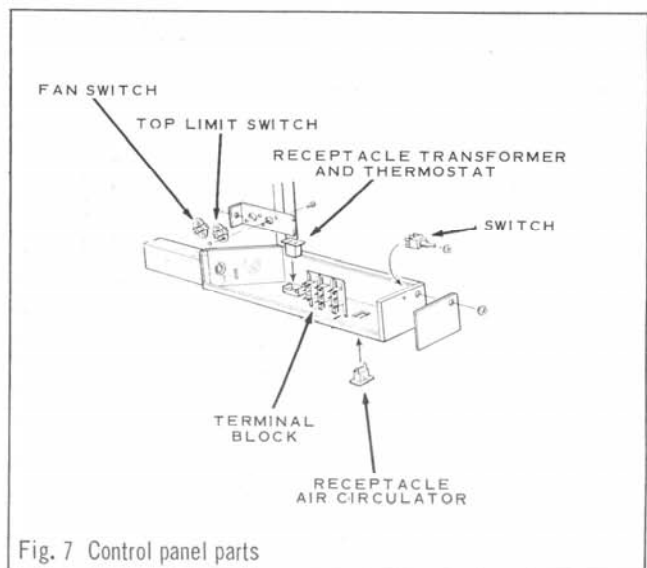


Fig. 7 Control panel parts

WIRING DIAGRAM MGF 1525

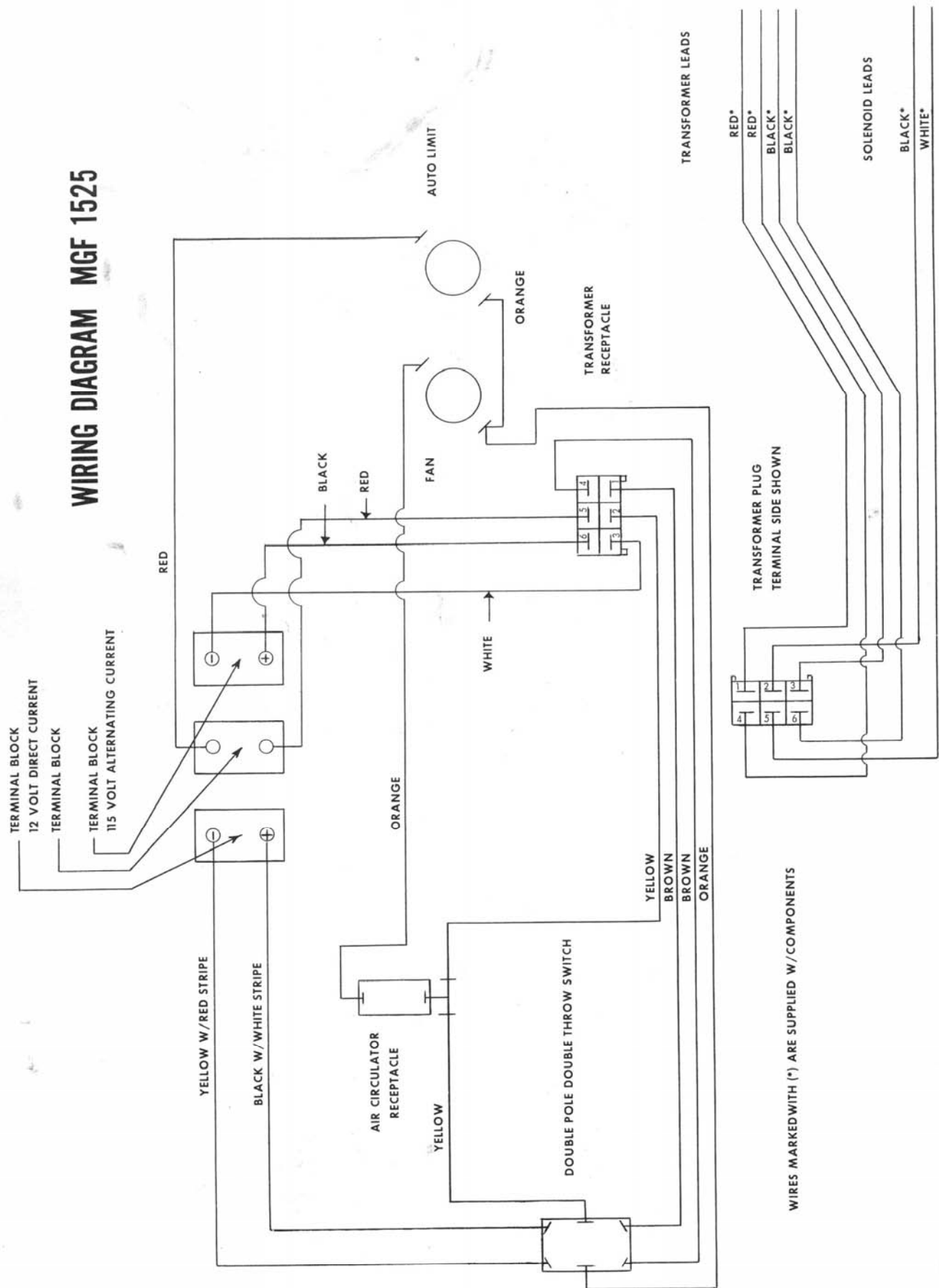


Fig. 8 MGF 1525 Wiring Diagram

When servicing the furnace, be sure that all wires are replaced in their original position.

ALSO, SEE THAT ALL PLUG-IN CONNECTIONS ARE TIGHT. WARNING: WHEN CONNECTING THE POWER SUPPLY LINES TO THE FURNACE, BE SURE THE 115 V. LINE IS CONNECTED TO THE 115 V. TERMINAL BLOCK AND THE 12 V. LINE IS CONNECTED TO THE 12 V. TERMINAL BLOCK.

THERMOSTAT The thermostat is constructed for use with line voltage power sources. Wiring to the thermostat should also be acceptable for class I wiring applications. The short circuiting currents of the transformer and battery necessitate the use of the line voltage thermostat. The thermostat leads are connected at the center terminal block in the control panel.

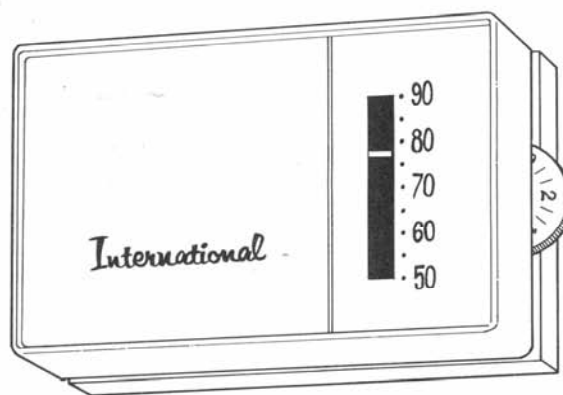


Fig. 9 MGF Thermostat

LIGHTING THE MGF 1525

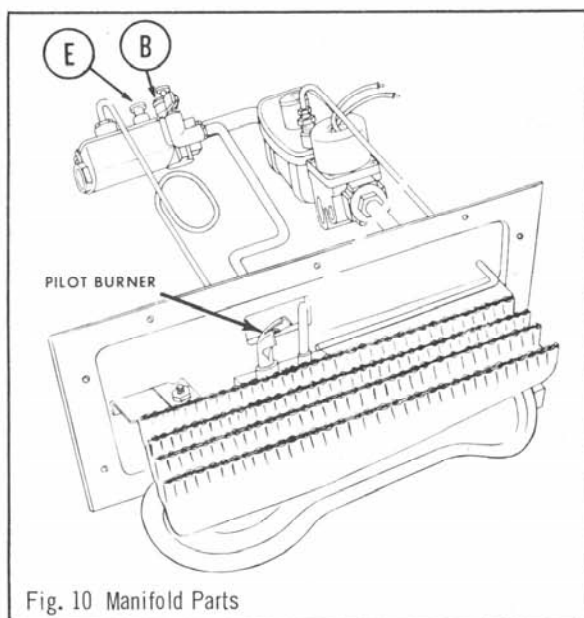


Fig. 10 Manifold Parts

1. Remove cabinet door from furnace by pulling at top of door.
2. Set thermostat to the "OFF" position.
3. Set power switch A to "OFF".
4. Be sure shut off valve B is in the "OFF" position. If valve was not in the "OFF" position turn to off by rotating the knob. When the knob reaches the pilot position it is necessary to raise the lock button to continue rotating the knob. Wait 5 min. before proceeding with lighting.
5. Turn the shut off valve to the pilot position.
6. Hold lighting door C open with wire hook D provided with furnace. While door is being held open depress pilot gas button E with thumb of same hand used to open door.

7. Light pilot with match held with lighter rod. When pilot gas is lit continue to hold button down for 30 seconds or until pilot continues to burn. Close door when pilot is lit.

8. Turn shut-off valve to the on position.
9. Set power switch A to either alternating or direct current.
10. Replace cabinet door.
11. Set thermostat to desired position.

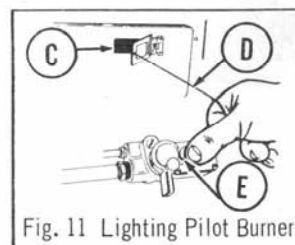


Fig. 11 Lighting Pilot Burner

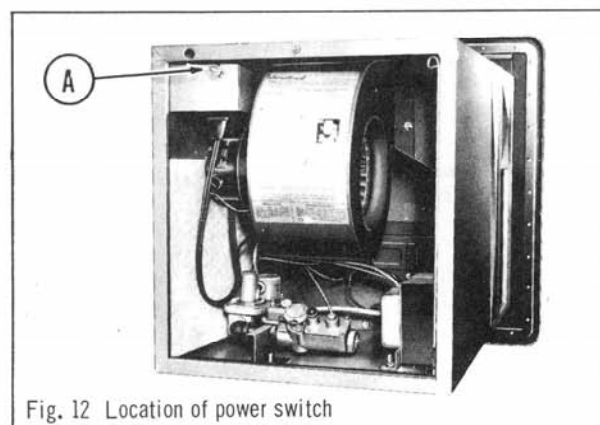


Fig. 12 Location of power switch

NOTES:

- (A) The MGF 1525 is a sealed combustion chamber furnace. If high winds are in effect when pilot is being lit, the match will be affected when it enters the heat exchanger through the lighting door. Use a large wooden match – “country match.” It is possible to cover the vent while lighting the pilot but extreme

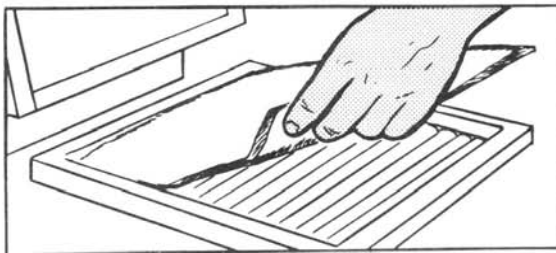
caution should be taken to remove cover before starting main burner.

- (B) If pilot does not stay lit after pilot flame is established the thermocouple is not producing enough millivoltage to hold pilot valve open., the thermocouple connection is not tight (1/4 inch turn past finger tight) or thermocouple is defective.

MAINTENANCE

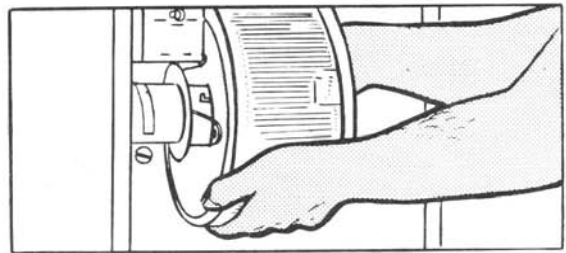
Your furnace is designed for maximum safety under all operating conditions. To insure service-free operation keep the furnace cleaned and free of dust and lint. Follow the maintenance procedure listed below.

AFTER TWO WEEKS OPERATION



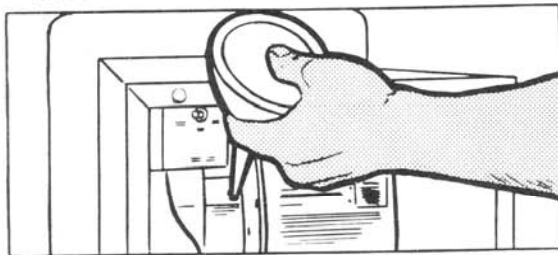
1. If filter is dirty, remove and clean with vacuum cleaner. Replace with new filter every two months. If unit is operated without filter, the blower wheel, motor and controls will require frequent cleaning.

AFTER SIX MONTHS OPERATION

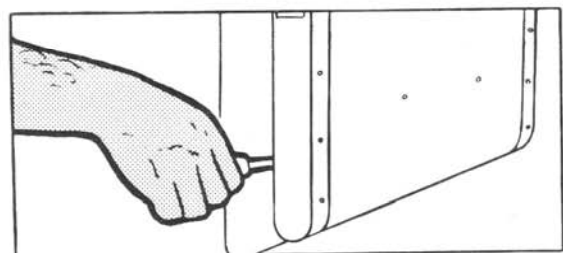


1. Remove air circulator wheel and clean. To remove assembly, turn gas shutoff valve to Pilot, set Current switch to OFF and allow furnace to cool. Unplug air circulator motor and remove nuts on right side while supporting housing. Pull housing to right and lift assembly from furnace. Clean dust and lint from air circulator wheel and motor. Use 1/4 inch Allen wrench to tighten wheel setscrew to flat of motor shaft when reassembling, and see that motor ground wire is in place.

AFTER THREE MONTHS OPERATION



1. Oil air circulator motor with 5 drops per bearing of SAE 20 motor oil only. Never use light machine oil.



2. Remove vent from back of furnace and check for obstructions. To remove, lift upward after taking out 2 screws near bottom of vent. Check vent louvers and combustion air passageways for leaves, dirt, etc. Remove deposits from top of vent if deposits are present.
3. Clean outlets of air ducts with vacuum cleaner to remove lint and dust and insure clean air circulation. If ducts have registers, adjust them for balanced air distribution after replacing them.

EQUIPMENT LIST FOR SERVICING THE FURNACE AND HEATING SYSTEM

The following equipment list has been compiled from suggestions of field servicemen and heating engineers. This is a minimum tool list which will help you with any unit you might be called on to service. You may wish to add other tools. Items marked with an (*) are available from International, Parts Department.

SCREWDRIVERS

- 1 - Small 1/8" wide blade
- 1 - Medium 5" blade
- 1 - Short, stub

WRENCHES

- 2 - 8" adjustable
- or
- 1 - 1/2", 5/8" and 3/4" open end
- 1 - Set Allen setscrew wrenches

CUTTING AND FORMING TOOLS

- 1 - Set metal snips
- 1 - Key hole saw
- 1 - 3" hole saw
- 1 - Sharp punch or drill with 1/16", 1/8", 1/4" bits
- 1 - Claw hammer

MISCELLANEOUS

- 60 - Sheet metal screws (assorted sizes - no. 6, no. 10, no. 14)
- 40 - Speed nuts - no. 10, no. 14
- 1 - Small can penetrating oil
- 1 - Small can SAE 20 oil
- 1 - Bubble level
- 1 - Vacuum cleaner with suction tube
- 1 - Container pipe "dope"

TEST EQUIPMENT

- 1 - Thermometer (-50° to 250° F)
- 1 - Volt-Amp Meter
- *1 - Draft Gauge no. 25 (Approximately \$9.50)
F. W. Dwyer Co., P. O. Box 373
Michigan City, Ind.
- *1 - Millivolt and Continuity Meter - Test Kit no. 120
Basco, Inc., Milwaukee, Wisconsin
- *1 - Gas Leak Tester, Leak Tec no. 372
(Approximately \$1.50)
American Gas and Chemicals, Inc., N.Y., New York
- *1 - Manometer, Gas Pressure Gauge
Fisher, No. 50-B-2 (Approximately \$15.00)
Fisher Governor Co., Marshalltown, Iowa

STANDARD SERVICE CHECK LIST - MGF 1525

This should help you develop a routine method of locating the cause of heating difficulties and help you detect weak spots in the heating system that could lead to service calls in the future. The check list given has been made from suggestions by field service engineers and provides a rapid method of locating trouble.

OUTSIDE THE MOBILE HOME

1. Check pressure at L.P. tanks (13 inch W.C. if used to supply the furnace only).
2. If other appliances are connected to the L.P. gas line, the tank regulator should be adjusted to supply 11 inch W.C. at the furnace manifold.
3. Open all valves in furnace fuel line. Check fuel line for leaks. Do not use fire in any way. (see page 7 for "Leak-Tec.")
4. See that fuel line flows smoothly to the furnace and has no kinks or sharp bends that could restrict the flow of fuel.
5. See that vent is properly connected and free of leaves, toys, etc. If vent is damaged, it should be replaced.

INSIDE MOBILE HOME - ELECTRICAL

1. Check electrical circuit from the fuse box to furnace to be certain it is receiving proper power supply - 115 Volt A.C. or 12 Volt D.C. from the battery.
2. Check thermostat to be certain it is operating properly.
3. Check wiring from furnace to thermostat for shorts, broken wires or loose connections.

INSIDE MOBILE HOME - FUEL SUPPLY LINE

1. Check fuel line fittings for tightness and absence of leaks. Open all valves in fuel line. USE NO FLAME IN TESTING. See page 7 for "Leak Tec".
2. Check fuel line fittings at bottom of furnace carefully.

INSIDE MOBILE HOME - HEAT EXCHANGER

1. See that proper pilot and main burner orifices are installed and that the pressure regulator in gas control is correctly adjusted.
2. Check flame by observing through opening provided by spring-loaded fire door for full size flame. Check pilot flame.

INSIDE MOBILE HOME - AIR CIRCULATION

1. See that air filter in furnace door is clean.
2. See that air duct registers are adjusted for balanced air distribution.
3. Check air circulator blower wheel to see that it is free of dust and lint.
4. See that owner understands the operation of his furnace and has read the operating and maintenance instructions on the furnace.

DETAILED SERVICE PROCEDURE

Most service calls on this furnace may be traced to one or more of the complaints listed below. The possible causes are listed under each complaint. The corrective procedure is explained in detail after each cause so that the trouble can be promptly corrected.

PILOT DOES NOT LIGHT

- | | |
|--|--|
| 1A Air in gas supply lines. | Light the kitchen range and let it burn for several minutes. |
| 1B Obstruction in pilot line or pilot orifice. | Remove and clean pilot line and orifice |
-

2. PILOT DOES NOT HOLD - THERMOSTAT IN OPEN POSITION

- | | |
|---|--|
| 2A Not enough voltage reaching pilot valve to hold it open. | A test reading taken at the thermocouple terminals should show a reading of 25 to 35 millivolts open circuit when the pilot is burning. The pilot valve will close if the voltage is 4 millivolts or less. Check for poor connections at the gas control. |
| 2B Jumper lead too tight. | The thermocouple connection at the solenoid valve should be tightened 1/4 turn past hand-tight. If it has been tightened too far, a poor connection will result. Sometimes an adjustment of the connection will show an increase in the millivoltage output. |
| 2C Pilot flame set too low. | Adjust pilot flame to proper size. Remove pilot adjustment cover screw from gas control to reach pilot adjustment screw. |
-

3. MAIN GAS VALVE DOES NOT OPEN WHEN THERMOSTAT IS IN CLOSED POSITION

- | | |
|---|---|
| 3A Poor connection in thermostat circuit. | Check thermostat circuit. |
| 3B Gas pressure at the gas control too high | If the pressure in the gas supply line exceeds 15 to 16 inch W.C., the regulator will not open. Reduce the pressure at the tank regulator or at main regulator if furnace uses Natural gas. |
| 3C Poor solenoid on transformer connection. | The terminals of the transformer and solenoid terminate in the plug housing. They may have pushed out when plug was attached to the receptacle at the control panel. |
-

4. MAIN BURNER CYCLES FROM LIMIT SWITCH, OR POOR AIR CIRCULATION

- | | |
|--|---|
| 4A Dirty filter or duct obstruction. | If the outlet air temperature reaches 165°, the limit switch will close the main gas valve. Then when the furnace cools, the main gas valve will open again. Replace filter or remove obstruction-never by-pass the limit. If power failure occurred with the limit by-passed, the fan would shut off and the burner would continue to burn, a dangerous situation. |
| 4B Battery almost exhausted. | Air circulator motor will run at lower speed, causing outlet air temperature to reach 165° and activating limit switch. Have the battery recharged. |
| 4C Motor brushes wearing out. | Brushes on the air circulator motor should be replaced after 750 to 1,000 hours of operation, or when the brushes are 1/4 inch or less in length. Brushes are used on A.C. - D.C. models only. |
| 4D Air circulator wheel loose on motor shaft, or needs cleaning. | Remove air circulator wheel and clean if necessary. Use 1/4 inch Allen wrench to tighten wheel setscrew to flat of motor shaft when reassembling replace ground wire. |

CAUSE

CORRECTION

5. NOISY OPERATION

- | | |
|--|---|
| 5A Popping noise on "OFF" cycle of burner, and possible pilot outage - manifold gas pressure too high. | Reduce gas pressure at solenoid valve to 11 inch W.C. |
| 5B Air circulator making noise-housing loose. | Tighten two nuts on right side of housing assembly. Also, check tightness of blower wheel and tab at left side of blower housing. |
-

6. POOR COMBUSTION - WIND EFFECTS

- | | |
|--|---|
| 6A Vent restricted with leaves or debris. | Remove vent from back of furnace by lifting vent upwards after taking out 2 screws near bottom of vent. Check vent louvers and combustion air passageway for leaves, dirt, toys, etc. Remove deposits from top of vent if deposits are present. |
| 6B High fire flame reverses direction and goes out, blowing out pilot - wind causing down draft. | On early model vent assemblies, heavy winds can cause down draft conditions. Order special down draft guard from the factory to install in the vent. |
-

7. SOOTING BY MAIN BURNER OR PILOT

- | | |
|---|---|
| 7A Butane L.P. gas used at temperatures below 32°F. | At temperatures below 32°F., butane L.P. gas remains liquid in the tank, causing low operating pressure. Replace with propane L.P. gas. |
| 7B Wrong size orifice used on main burner. | Install correct orifice, for L.P. gas use part no. 1098120. |
-

8. RECYCLING OF OUTSIDE POWER GENERATOR

- | | |
|---|--|
| 8A Furnace transformer causing recycling. | When furnace is shut off or on pilot, the transformer will cause a voltage loss when connected to an A.C. power generator. Unplug the furnace motor transformer while furnace is not being used. |
|---|--|
-

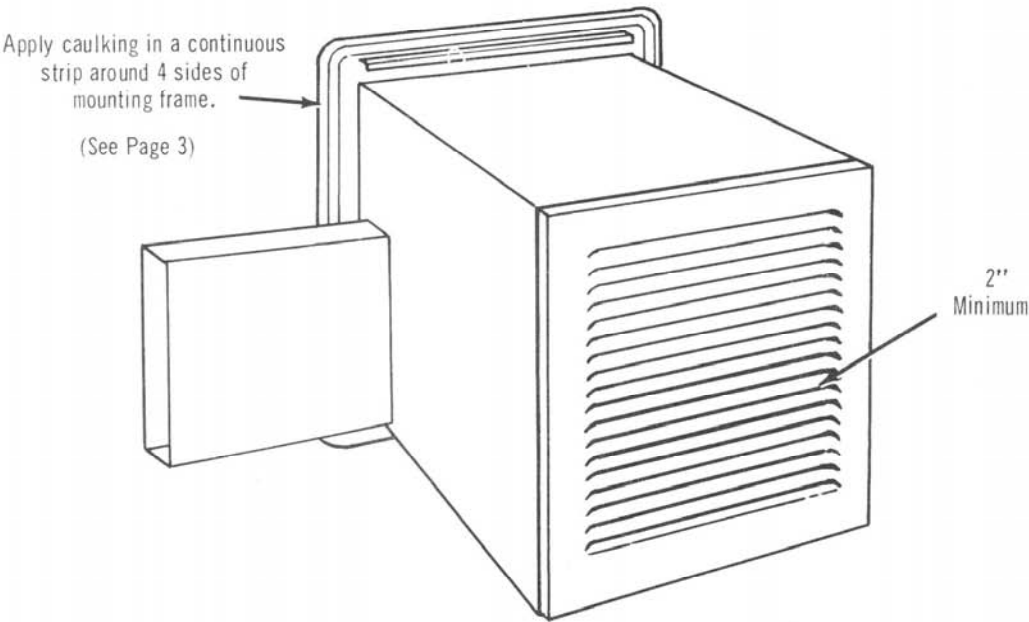
9. WATER LEAKAGE

- | | |
|--|---|
| 9A Water entering furnace from around mounting flange, flange not water tight. | Side wall mounting flange should be caulked heavily before it is attached to side wall. |
|--|---|
-

Installation Instructions MGF 1525

Model MGF 1525
NAT. – L.P. Gas
115 Volt A.C. and 12 volt D.C. operation

Fig. 1 CLEARANCES
(To combustible materials)



Wall Mounting Flange	0 inches
Right Side	0 inches
Left Side	0 inches
Top and Top Frame Angle	0 inches
Heat Ducts, overfloor	0 inches
Heat Ducts, underfloor	½ inch within 3 ft. of furnace

Provide at least 2 inches clearance from air intake louvers at front of furnace for return air area.

SECTION VIEW — SERIES MGF 1525 INSTALLED

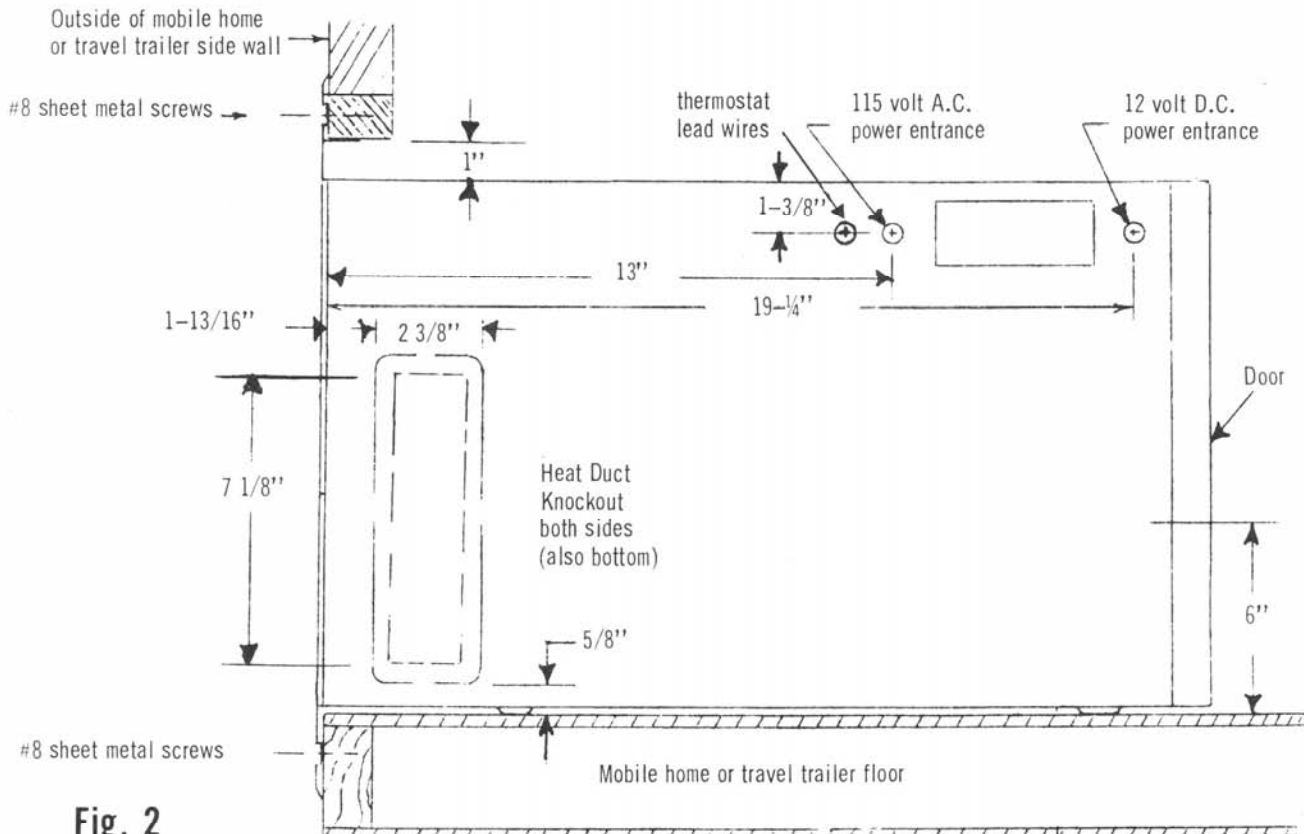


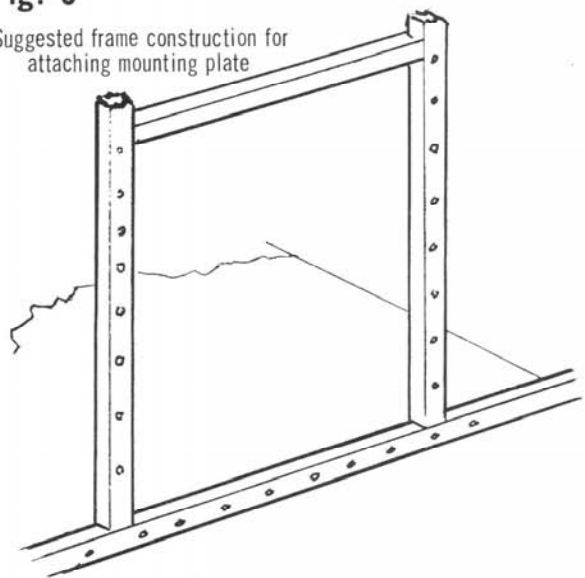
Fig. 2

INSTALLATION SEQUENCE

STEP 1 The Series MGF 1525 Furnace may be installed through the outside wall at any location in the mobile home or travel trailer because of its "Sealed Combustion System" design. In choosing the furnace location look for a spot midpoint in the length of the unit at a point where the sound of operation will not be objectionable. Closets and undercounter spaces (especially under the oven) are usually excellent locations. Remember that heated air ducts of a minimum area of 30 square inches must be run to registers near the ends of the mobile home or travel trailer. Also the wiring must be permanently wired into the furnace electrical panel at the left side of the furnace with non-metallic sheathed cable of 14 gauge conductor or heavier. Having chosen the furnace location, cut the opening through the outside wall.

Fig. 3

Suggested frame construction for attaching mounting plate



OPENING IN OUTSIDE WALL AND FUEL LINE ENTRIES

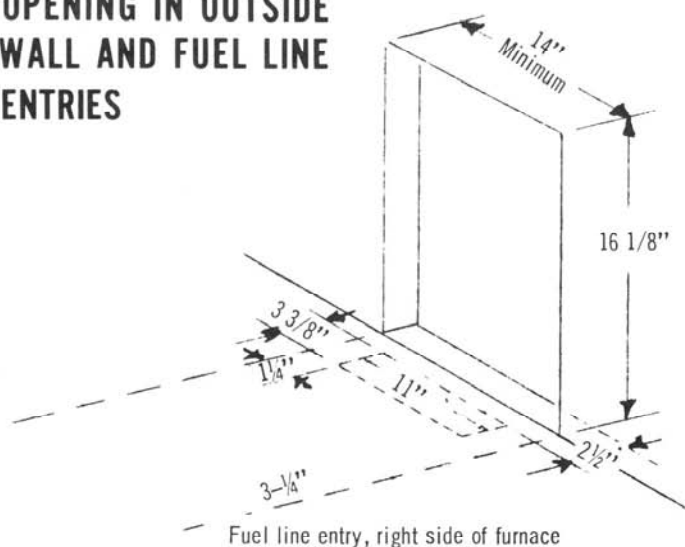


Fig. 4 Bottom duct location (if used). Use Duct Adapter C882 with caulking to connect to duct.

STEP 2. Slide furnace with mounting frame less vent assembly through hole in side wall and mount to side wall with No. 8 sheet metal screws.

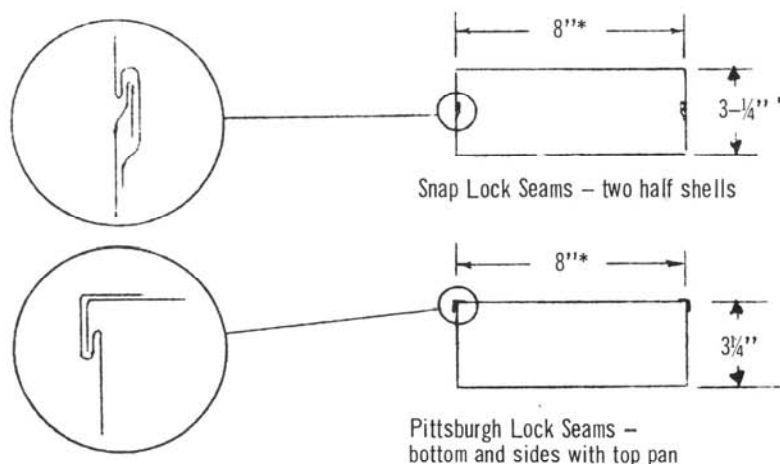
STEP 3. Determine length of 3/8" tubing inlet gas line required. Install brass connector 3/8" NPT x 3/8" flare in valve. Connect flared tube to connector. L.P. gas only – Piping to gas tank may be done with 3/8" O.D. copper tube of minimum 0.032" thick wall. If copper tubing is used for fuel supply lines it must be internally tinned.

Apply caulking compound to inboard side of mounting frame. (Fig. 1)

Length of Incoming Fuel line needed	Natural Gas Outside Diameter of Tubing Required	L.P. Gas Outside Diameter of Tubing Required
up to 30 ft.	3/8	3/8
30 to 100 ft.	1/2	1/2

STEP 4. Mount furnace to floor with No. 8 sheet metal screws through two holes provided just inside entrance to furnace casing.

STEP 5. Connect air supply ducts. Ducts should be of lock seam construction (substantially airtight). (Fig. 5) (A) Remove knockouts (Fig. 2) in sides or bottom of cabinet whichever are used for duct connections. A 2 1/4" x 7" duct on each side of furnace is satisfactory. If standard wall stack is used, adapters will be needed.



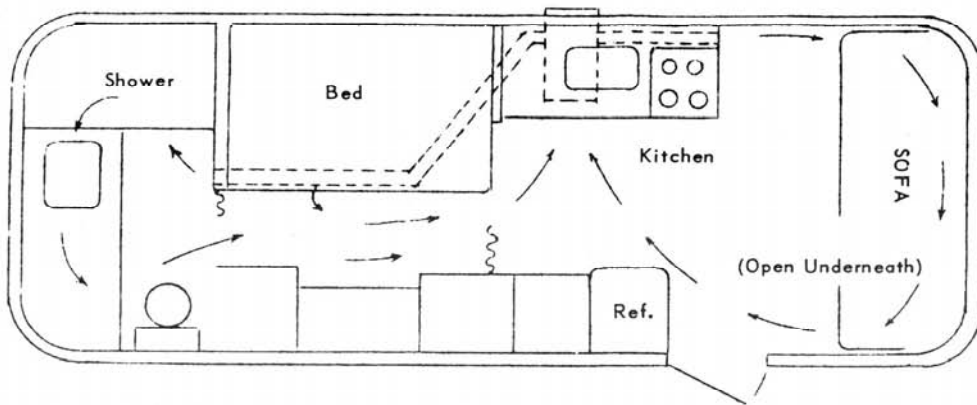
RECOMMENDED DUCT CONSTRUCTION

*Recommended overfloor duct sizes (standard prefabricated wall stack of 28 gauge galvanized steel).

Fig. 5

Fig. 6

EXAMPLE OF DUCT LAYOUT



Ducts should have at least 30 square inches cross sectional area proportioned in relation to the distance of the furnace from the ends of the mobile home or travel trailer. Registers installed at the ends of the heat duct runs should have a total nominal area of at least 90 square inches (open area of 72 sq. inches). Registers should be located to encourage heated air movement throughout the living space without creating "drafts" in seating locations.

STEP 6. Connect electrical wiring (non-metallic sheathed cable) to the terminals provided. Use listed strain relief type electrical bushings for non-metallic sheathed cable at the point of entrance through the furnace cabinet. If a ground lead is run from the 12 V. terminal block, be sure it is connected to a metal part of the trailer that is not covered with paint. Allow about 8 in. of excess wire for removing the control panel from the front of the furnace.

CONNECT POWER LINES TO CONTROL PANEL

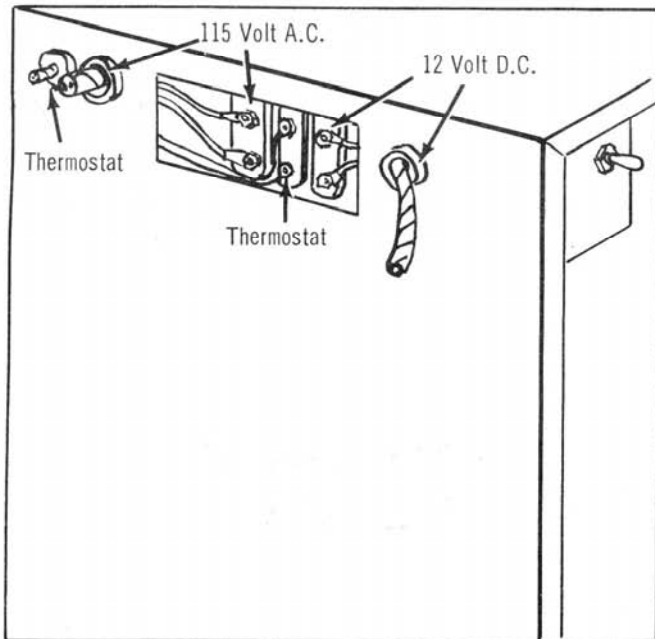


Fig. 7

STEP 7. Locate the thermostat at a point about 4 feet above the floor, preferably on an outside wall at least one foot from windows and 4 feet from door and heat making lamps or appliances. Run two-conductor, 14 gauge *non-metallic sheathed cable wire from thermostat to thermostat wire connections at furnace. Protect thermostat wire with grommets whenever wires pass through metal to protect against "shorts."

Thermostat should be installed on the outside wall only if the wall is insulated with at least 1 in. insulation and the insulation is left behind the thermostat.

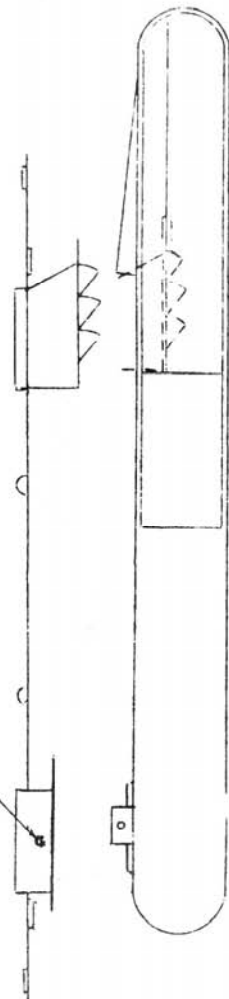
STEP 8. Install vent by hanging inner top vent opening over flange extending upward from louvered vent connector opening. Secure vent in place with 2 No. 8 corrosion protected sheet metal screws at sides of combustion air intake opening. See Fig. 8

*The gas valve operator is the same voltage as the air circulator motor therefore the wiring to the thermostat is considered class 1 by Underwriters' Laboratories. Also a line voltage thermostat is used.

Fig. 8

ATTACH VENT TO BACK OF FURNACE

Fasten vent with 2 #8 sheet metal screws



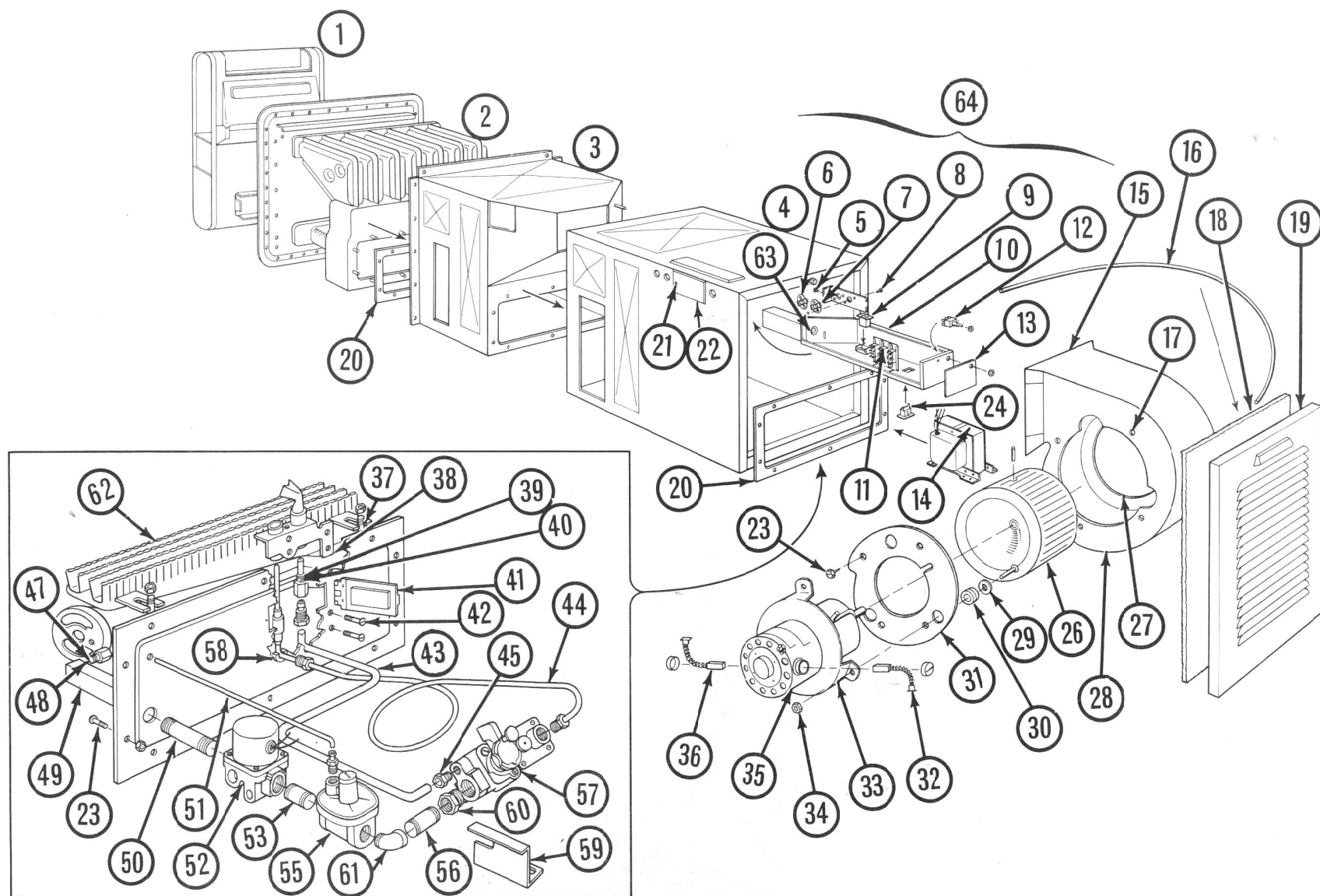
International OIL BURNER CO.

3800 PARK AVENUE • SAINT LOUIS 10, MISSOURI

NOTES

Reference	Specification	Description
No.	No.	
1	4063001	Wrapper combustion air vent
2	4081200	Heat exchanger TT29
3	4064100	Wrapper air casing
4	4096200	Wrapper cab assembly
5	6000250	Screw, sheet metal
6	6260570	Fan switch 18T12 TT5
7	6261050	Switch, Top limit
8	6000090	Screw, machine
9	6314060	Receptacle Housing
10	3116200	Control panel assembly
11	6313090	Terminal block TT4
12	6314000	SWD pot 82609P
13	1071801	Plate SW
14	6200460	Trans 3443
15	3083600	Wrapper blower housing
16	6675450	Wire retainer TT27
17	6060440	Speed nut
18	6675460	FG Filter 3 TT16
19	4065100	Front door TT14
20	2077500	Gasket BR mtg PL TT25
21	6060500	Nut
22	1098700	Plate power accessories
23	6000030	Sheet metal screw
24	6313000	Receptacle Black
25	2077500	Gasket BR Mtg PL TT25
26	6670150	AC wheel FE 519 305 TT3
27	3083500	Plate orifice side
28	3083400	Plate motor side
29	1073100	Washer motor mounting
30	6675440	Motor mounting
31	2076900	Close off plate
32	6200520	Brush spr assembly TT2A

Reference	Specification	Description
No.	No.	
33	2076400	Bracket motor mounting
34	6000420	Machine screw
35	6200200	A.C. motor 8093 TT2
36	6200520	Brush spr assy TT-2-A
37	6000190	Drwr pipe ext. MAC 95 M
38	6600910	Bracket pilot burner
39	6660930	Orifice pilot burner L.P.
40	6660940	Orifice pilot burner Nat.
41	1098001	DR Ignition
42	6000570	Machine screw
43	3115301	Pilot tube
44	6310043	Thermocouple Q309 MAC 49
45	6622290	Nut and sleeve
47	1098120	Orifice main L.P.
48	1098110	Orifice main Nat.
49	1097600	Head orifice
50	6622190	Nipple
51	1097400	Tube vent pressure regulator
52	6241681	Solenoid valve GF20G37
53	6620750	Nipple
54	6622240	Tubing connector
55	6241740	Pressure regulator RV30
56	6622200	Nipple
57	6241660	Safety pilot valve B 8433
58	6313540	Bushing
59	1097900	Main bracket support
60	6621970	Reducing brush
61	6621360	Elbow
62	6600300	Main burner TT24
63	6313550	Bushing
64	4096600	MGF 1525 control panel assembly



SERVICE MANUAL
MGF 1525 TRAVEL TRAILER OR MOBILE HOME GAS FURNACE

CONTENTS

HOW THE FURNACE OPERATES

Combustion System	1
Fuel System	2
Air Circulation System	2
Electric Safety Devices	3
Electric Control System	3
Lighting the Furnace	5

MAINTENANCE 6

SERVICE

Equipment List	7
Standard Service Check List	8
Pilot Does Not Light	9
Pilot Does Not Hold – Thermostat Open	9
Pilot Does Not Hold – Thermostat Closed	9
Main Gas Valve Does Not Open	9
Main Burner Cycles From Limit Switch	9
Noisy Operation	10
Poor Combustion – Wind Effects	10
Sooting by Main Burner or Pilot	10
Recycling of Outside Power Generator	10
Water Leakage	10

INSTALLATION INSTRUCTIONS 11-14

NOTES: 15

PARTS AND ACCESSORIES 16-17

International OIL BURNER CO.
3800 PARK AVENUE • SAINT LOUIS 10, MISSOURI