

-----**INITIAL INSPECTION**-----

When you receive your wood-burning furnace inspect it immediately for any transportation damage. Make an inventory check to see if you have all the necessary parts for the installation. The F2500-A wood burning furnace add-on packaged and shipped as two components:

- 1) The wood heat exchanger body
- 2) The hardware and electrical package

See the parts list at the end of the manual for a detailed account of all parts. If there is any damage or any parts missing, notify your dealer immediately.

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CAUTION: This furnace shall be installed in accordance to manufacturer's instructions and in a manner acceptable to the regulatory authority by mechanics experienced in such services. When required by the regulatory authority, such mechanics shall be licensed to perform this service. Also: The combustion air damper should not be altered for increased firing for any reason.

LOCATING YOUR FALCON

Locating your unit is very important for proper draft and the most efficient heating possible.

The furnace should be located close to the base of the chimney so that the furnace smoke pipe has the shortest path to the chimney with a minimum of bends.

PLACEMENT AND MINIMUM CLEARANCES (See Fig. 1)

Your unit should be placed on a non-combustible floor which extends at least 8" from sides and rear and 24" from front. Have a minimum of 18" from rear, sides and top of your unit to any combustible material. Leave a minimum clearance of 48" in front of your unit. This is for safe, easy loading and cleaning of your unit.

REDUCED CLEARANCES

Most building codes permit reduced clearances to combustible walls and ceilings if adequate protection is added. A common mistake is to assume that sheet metal, masonry, or asbestos board placed directly against a wall protects it. Materials installed in this manner give very little protection. These materials are good heat conductors, so they will be almost as hot on their backside as well as on the exposed side. Therefore, the combustible wall behind is still a fire hazard.

A wall can be kept cool using these items, but only if they're mounted spaced out from the wall by an inch or two to allow free circulation of room air behind the protective panel. Circulating the air keeps the wall cool by carrying the heat from the space between the wall and panel. The protective panel should start within a few inches of floor level. (See Fig. 2).

The three rules to follow when constructing wall protectors:

1. Non-combustibility of all materials including mounting or supporting system.
2. A well ventilated air space between protector and wall.
3. Sufficient strength and rigidity so that the protector and air space will be durable.

PLACEMENT AND MINIMUM CLEARANCE TO CUMBUSTABLES

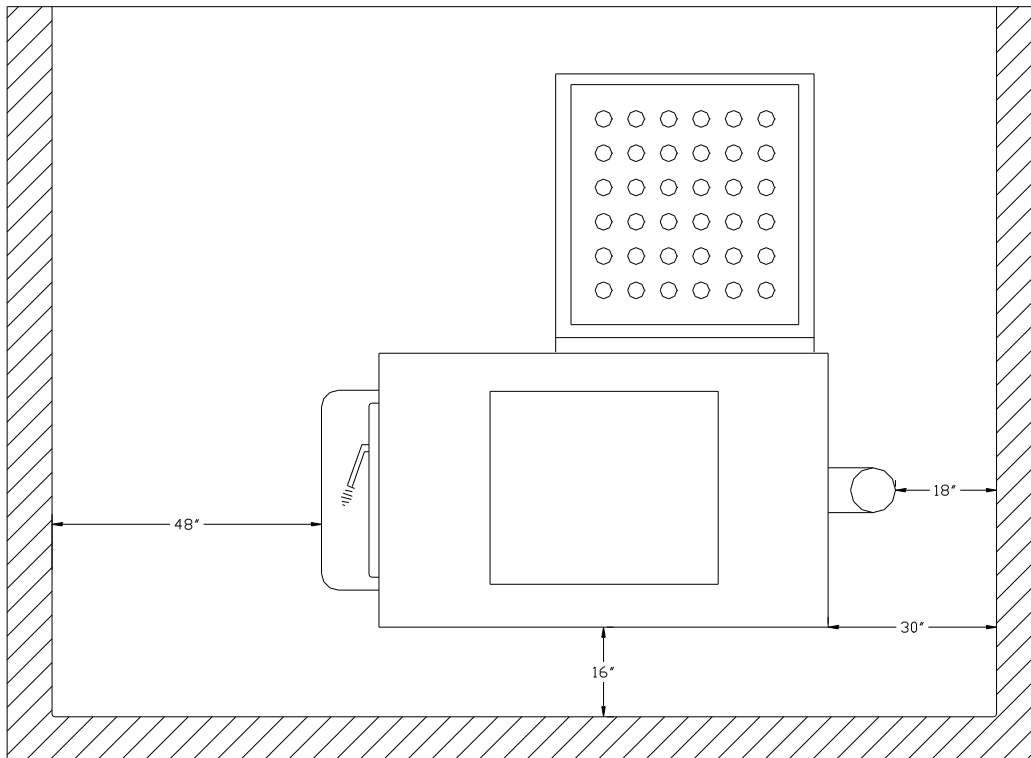


FIG. 1

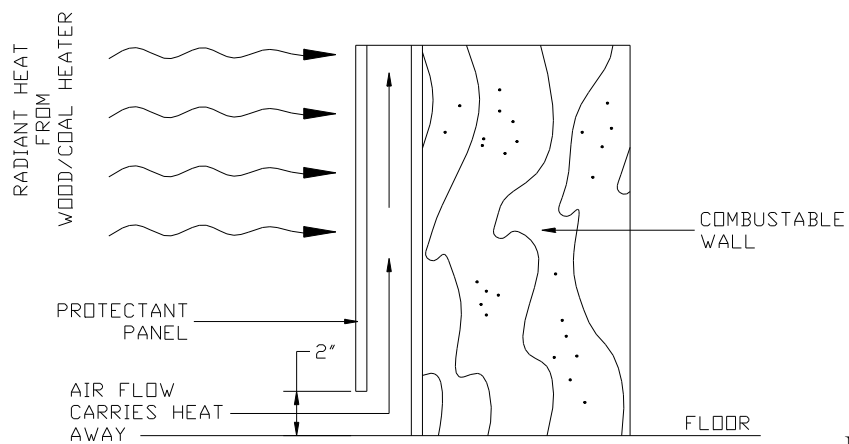


FIG. 2

CHIMNEY INSTALLATION

- It is extremely important that the flue of your furnace be installed into a suitable CHIMNEY ONLY. These chimneys consist of flue-lined brick-chimney, or an approved all fuel factory-built type. Any other installation constitutes a fire hazard, as wood burning units have stack temperatures as high as 1000°C, and may also deposit creosote which can reignite and cause severe damage to any chimney. MAKE SURE YOUR FALCON IS INSTALLED INTO A PROPER CHIMNEY.
- Separate chimney breechings are required. NEVER “Y” or “T” smoke pipes of oil furnace and F-2500A.
- The wood furnace chimney connection must be below that of oil furnace, a minimum of 12 inches center to center between them.. (See Fig. 3)

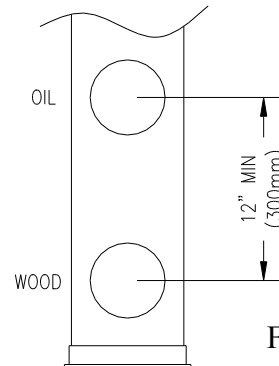


FIG. 3

STOVE PIPE INSTALLATION

- Install your Wood unit as close to the chimney as possible with a minimum of elbows (we recommend no more than two) and a run of no more than 6 feet horizontally. The pipe should maintain a $\frac{1}{4}$ " rise per foot and NEVER be installed closer than 18" from combustibles. Exceeding these recommendations normally represents creosote build-up, a smoking furnace, or one with poor draft.
- When connecting stove pipe, all joints should be secured with at least three (3) sheet metal No. 10 screws. If it is absolutely necessary to make a run of more than 6' (not recommended), uses extra support hangers or brackets every 3'.
- The connection to the wood burner's collar must also be more than just a snug fit. Drill holes through the collar and secure with sheet metal screws. Mark connection for cleaning. This will prevent frustration when matching your hole pattern.

FLUE DRAFT REGULATOR

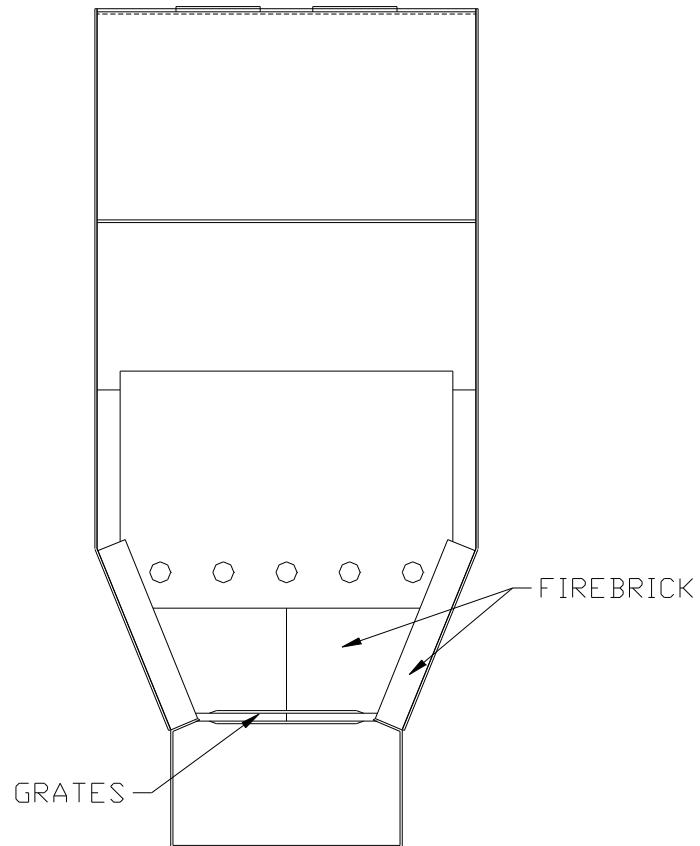
IMPORTANT:

- This furnace was designed to operate with a flue draft of .04 inches W.C. A draft stronger than this will greatly reduce the efficiency of the furnace and more importantly may cause a safety hazard. Be sure to install the barometric draft regulator supplied as per instructions included and keep it set at .04 inches W.C.

FURNACE ASSEMBLY

BRICKS AND GATES (See Fig. 4)

- Lay bricks into place starting with the rear.
- Lay grates on retainers in between bricks.



CROSS-SECTIONAL VIEW

FIG. 4

BRICK AND GRATE ASSEMBLY

PANEL INSTALLATION (See Fig. 5)

- The F-2500A can be installed on either side of the Oil Furnace to suit existing ductwork.
- The bottom side panel must be installed opposite the Oil Furnace side. The F-2500A is shipped with the panel installed on the right hand side. Remove and re-install on the left hand side if so desired. With the screws supplied install the 13 1/2" X 11" filler panel (included with hdw. & electrical package) on the front bottom corner of the opposite side. The filler panel tucks under the large side panel and is fastened together with it to the side panel, position the filler panel and re-install screws through side and filler panels).
- This leaves an opening of 10 1/2" X 20" for connection of the transfer duct from the oil furnace.

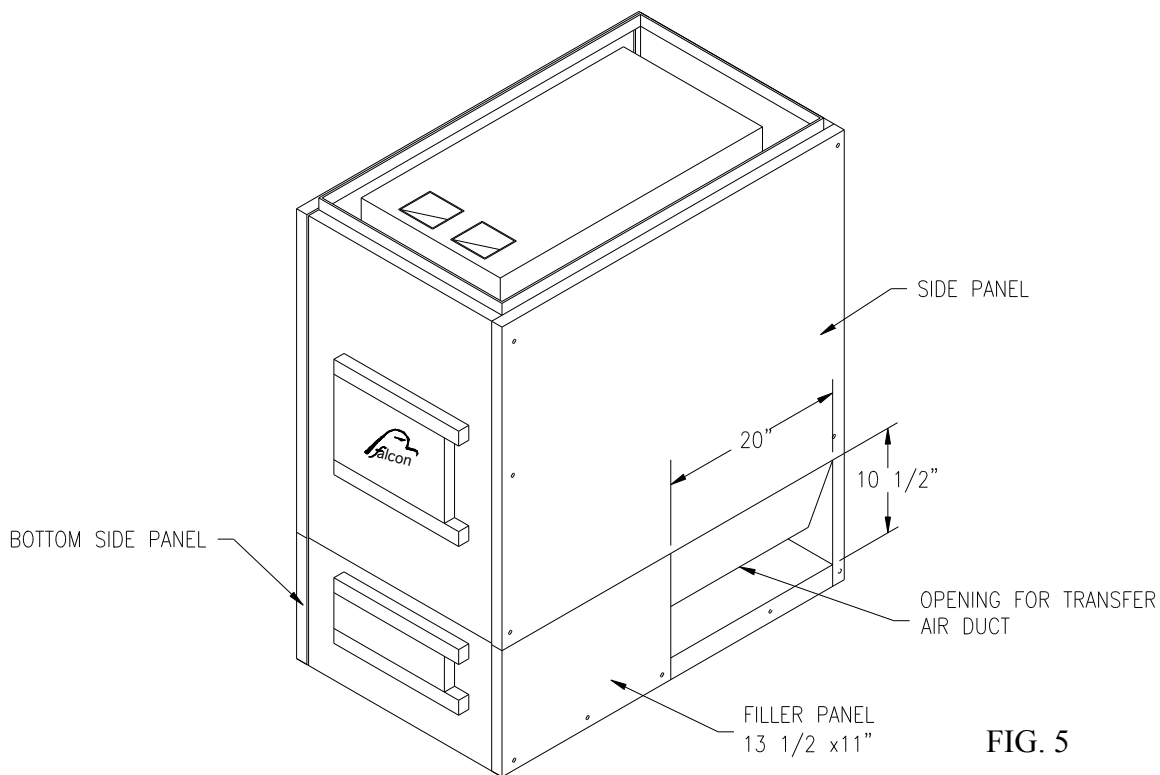


FIG. 5

AIR DISTRIBUTION DUCTWORK

- The Falcon F-2500A Wood burning Add-On is designed to be used with present forced air heating systems. It utilizes the existing air distribution duct work requiring only minor sheet metal work for its installation.
- The Model F-2500A is designed for series connection to the outlet only of an existing oil fired furnace.
- This furnace shall only be installed to a duct system and chimney which are in good operating condition.
- The F-2500A may be added to an oil furnace having an oil input rating (as shown on original furnace nameplate) between 0.8 g.p.h. (U.S.) minimum and 1.0 g.p.h. (U.S.) maximum.
- Position of oil safety controls must not be altered.
- The operating efficiency of the existing furnace will not be affected as long as the installation is properly carried out. The following installation instructions should therefore be read carefully and should be thoroughly understood before proceeding. It is very important that the installation clearances and restrictions be followed carefully for a safe installation. The installation shall comply with the applicable requirements of CSA Standard B365, Installation Code for Solid Fuel Burning Appliances and Equipment, and if any changes are made to the installation of the oil furnace, this shall comply with CSA Standard B139, Installation Code of Oil Burning Equipment.

INSTALLATION REQUIREMENTS

- The addition of an Add-On Furnace and transfer duct will probably increase the restriction on the oil furnace blower. This will result in a decreased air flow and hence the temperature rise across the oil furnace will increase. The blower speed must be increased to overcome this restriction and maintain proper air flow and temperature rise over the oil furnace, temperature rise measurements must be taken and the blower must be adjusted to obtain original readings. (See Section on “Blower Modifications”).

TEMPERATURE RISE MEASUREMENTS TEST

- Temperature measurements are taken at two points in the oil furnace duct work. One at the cold air return plenum and one at the warm air plenum. (See Fig. 6). These measurements can be taken using a dial thermometer or a thermocouple temperature indicator. Holes must be drilled into the plenums to allow insertion of the thermometer stem or thermocouple wire. Care should be taken while measurements are obtained to reduce the amount of air leakage around the stem or wire. Leakage could result in measurement error. The oil furnace must be operated at least 10 minutes to reach operating temperatures before measurements can be taken and recorded. The temperature rise is determined by subtracting the inlet temperature from the outlet temperature.
- Once the temperature rise has been determined, the Add-On Furnace and new ductwork can be installed. (See Section on Ductwork Modifications). Once installed temperature measurements are again taken at the cold air return plenum of the oil furnace, and at the warm air plenum of the wood add-on furnace. (See Fig. 7).

DUCTWORK MODIFICATIONS

- A transfer duct (minimum cross-sectional area of 210 square inches (10" X 20")) is connected from the oil furnace plenum to the F-2500A casing side. The transfer duct elbows must have a minimum inside radius of 6 inches. The transfer duct enters the F-2500A casing side as shown in Figure 7.
- The warm air plenum is attached to the F-2500A and outlet ducts are attached to it.
- Minimum oil furnace ductwork clearances to combustible material are less than those of solid fuel fired appliances; therefore, it is likely that some ductwork will have to be lowered to allow for increased clearance. The plenum on your Falcon Furnace should be 22" X 31" and no closer than 2" from the ceiling or any combustibles. In a power outage situation, excessive heat buildup in the plenum may be dangerous, so make sure clearances are maintained. All ductwork within six feet of the plenum must be installed no closer than 2" from combustibles and no closer than 6" from combustibles thereafter.

OIL FURNACE BEFORE ADD ON INSTALLATION

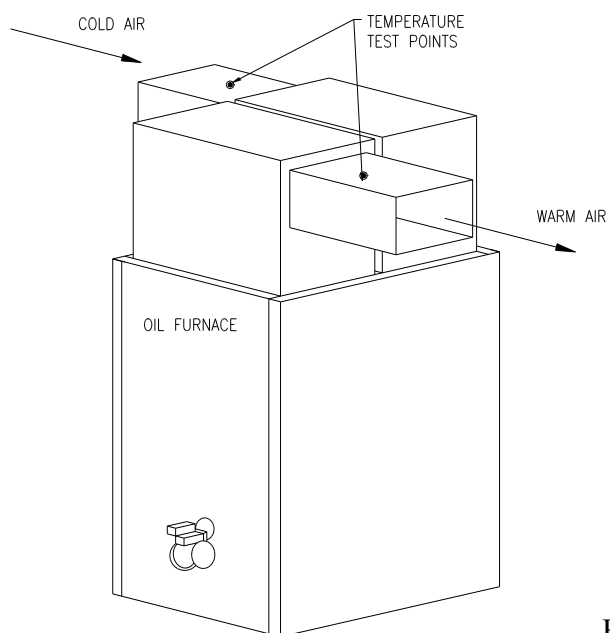


FIG. 6

OIL FURNACE WITH ADD ON INSTALLED

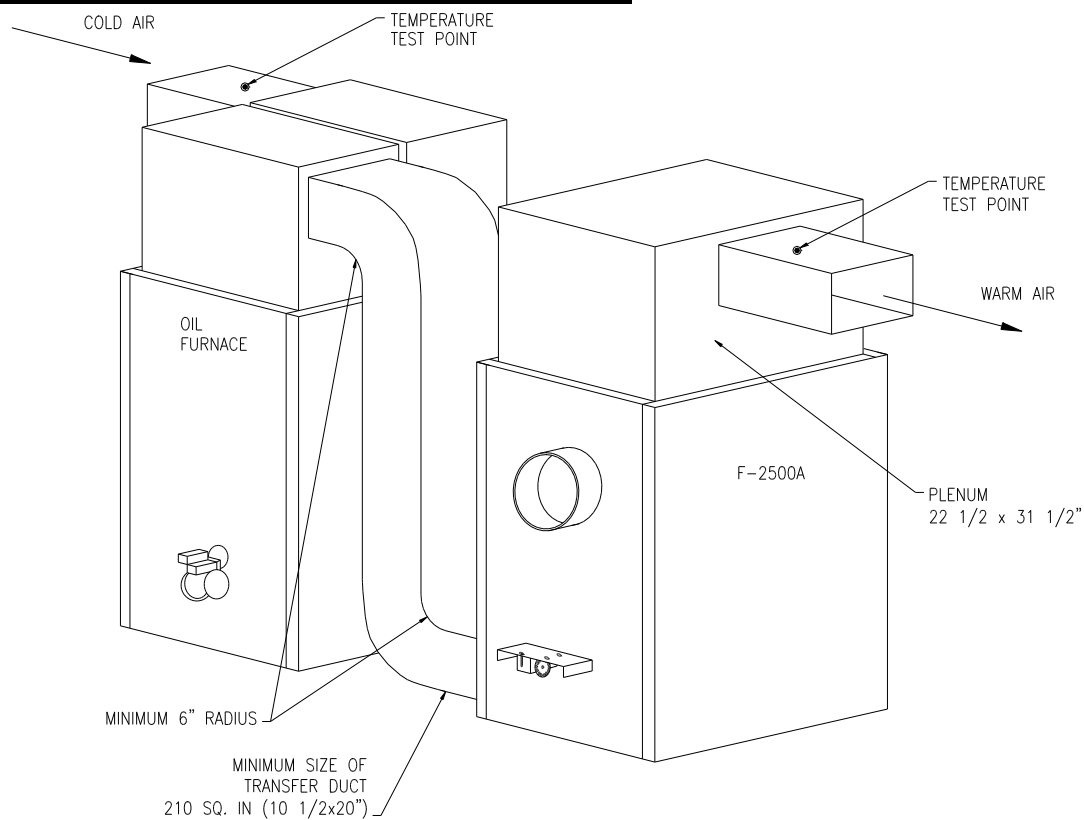


FIG. 7

BLOWER MODIFICATIONS

- If the temperature rise measured after the addition of the wood furnace is greater than was previously recorded before the addition, the oil furnace blower will have to be adjusted to maintain original air flow. The blower pulley or motor will have to be changed to accomplish this.

NOTE: The oil furnace blower must not be changed.

- The electric motor located on the oil furnace blower must be checked if any pulleys have been changed. Use an “amprobe” or similar current measuring device to check the motor current draw under load. If the current measured exceeds that listed on motor nameplate increase size of motor. The current draw of replacement motor should also be checked.

NOTE: Be sure replacement motor is same speed as original.

INSTALLATION OF ELECTRICAL CONTROLS

DAMPER MOTOR (See Fig. 8)

- Hold damper motor in place under mount plate in back of furnace.
- Line up holes.
- Fasten in place with machine screws and nuts provided.
- Do not tighten screws yet as chain tension is adjusted by motor position.

DRAFT DOOR LINKAGE ASSEMBLY (See Fig. 9)

- Hook one end of the linkage chain through the hole in the damper motor wheel which is in the 6 o'clock position.
- Hook the other end through the hole in the draft door flange. (Left Side)
- Adjust the chain tension by positioning the damper motor (use the slots in the motor mount plate for adjustments).
- There should be little slack in the chain if any when the motor is disengaged and the door is closed.

FAN/LIMIT CONTROL (See Fig. 10)

- The fan/limit control is mounted on the rear panel. Two knock-out holes are provided (one on each top corner). The fan/limit control must be installed on the corner closest to the electric furnace.
- Punch out the slug closest to the electric furnace on the rear panel and insert the fan/limit control with its cover removed. Mark off and drill two 9/64" mounting holes. Fasten the fan/limit control to the panel with two #10 sheet metal screws provided.

JUNCTION BOX (See Fig. 8, 9, 10)

- The junction box (4" square electrical box connected to the fan/limit control) is mounted on top of the damper motor mount plate. Remove a slug on the bottom of the box to line up with the hole in the motor mount plate.
- Fasten the junction box to the motor mount plate with 2 sheet metal screws. (Holes must be drilled).
- Feed the low voltage damper motor cable into the junction box via the hole in the mount plate.

INTERLOCK RELAY

- Temporarily position the interlock relay next to the junction box to provide accessibility to its lead wires for electrical connections. The interlock relay will ultimately be fastened on top of the junction box once all the electrical connections are made.

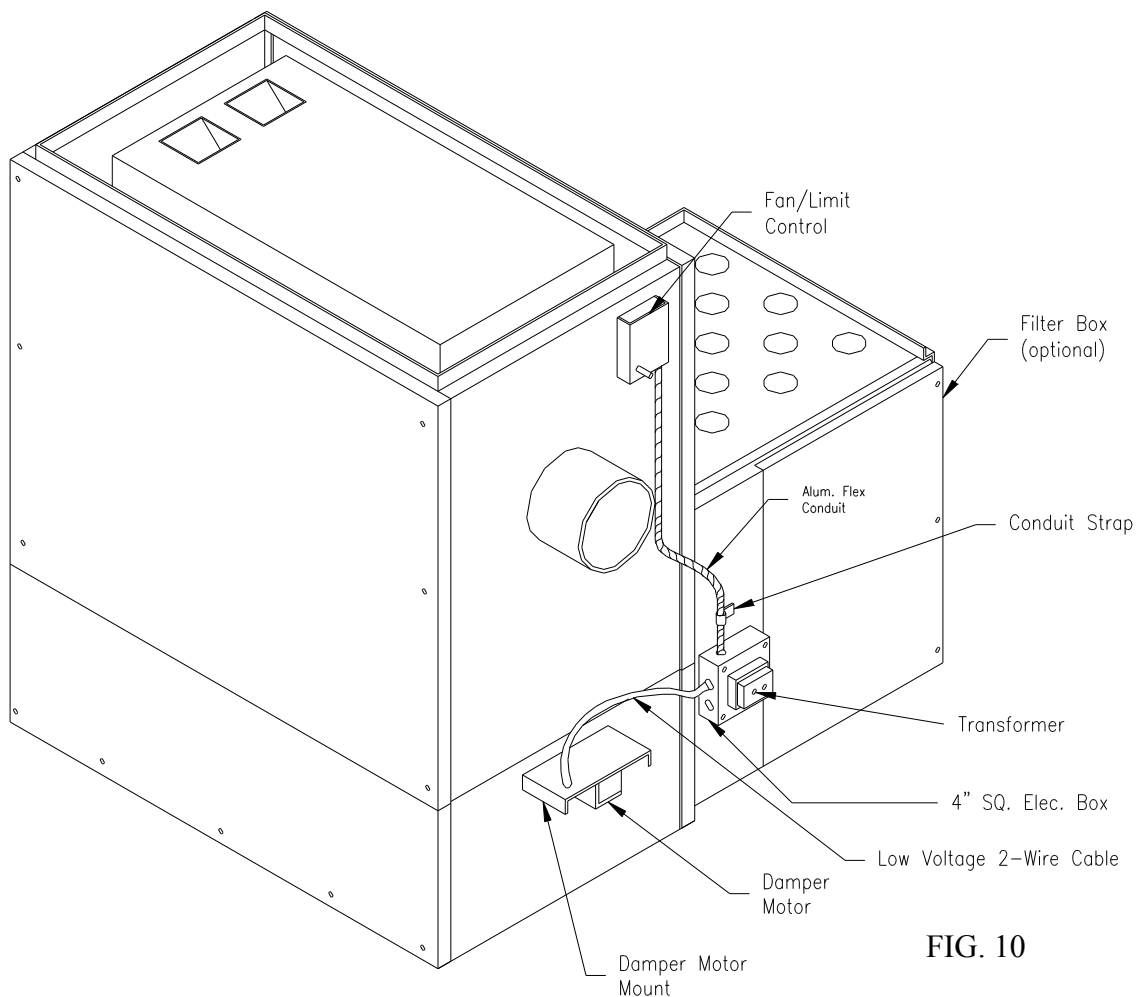


FIG. 10

INSTALLATION OF ELECTRICAL COMPONENTS

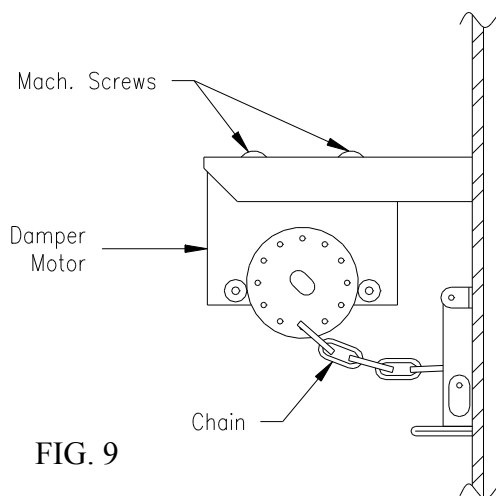


FIG. 9

DRAFT DOOR LINKAGE ASSEMBLY

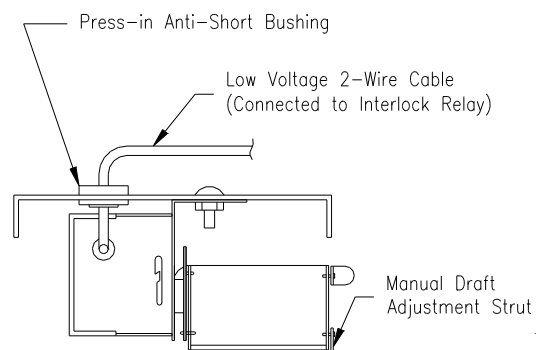


FIG. 8

DAMPER MOTOR INSTALLATION

ELECTRICAL CONNECTIONS (See Fig.11)

NOTE: A qualified electrician MUST perform all electrical wiring.

The electrical system of both furnaces MUST be powered from a single branch circuit.

The electrical connections between the furnaces are such that:

- a) Heat in either warm air plenum will cause the blower to operate (fan controls wired in parallel).
- b) Excessive temperatures in either warm air plenum will not allow either fuel to fire (safety limit control wired in series).

Four line connectors will have to be made between oil furnace and F-2500A control pack (junction box), Use 2 runs of 14-2 BX wire 75°C minimum temperature rating. Avoid routing wire near smoke pipe or fire door.

Inside the junction box you will find:

- a) A red wire tagged No.1 from line side of fan/limit control.
- b) A pair of black wires tagged No.2 (one from load side of limits, one from transformer/interlock relay).
- c) A blue wire tagged No.3 from load side of fan switch.
- d) A white wire tagged No.4 from transformer/interlock relay.

To inter-connect both furnaces safely, proceed as follows:

1. Shut off power to furnace.
2. Locate line entry into oil furnace from power switch
3. Connect one wire from line to No.1 wire (red) of control pack.
4. Locate limits control of oil furnace. Disconnect line side of this limit control.
5. Connect No.2 (black) wires from F-2500A control pack (one from transformer relay, one from limit control) to line side of disconnected limit switch of oil furnace.
6. Locate fan control of oil furnace.

7. Connect one wire from load side of fan control to No.3 wire (blue) of F-2500A control pack.
8. Connect neutral of oil furnace to neutral, No.4 wire (white) of F-2500A control pack.
9. Be sure to ground F-2500A control pack to ground of oil furnace.
10. This completes line voltage connection between both furnaces.
11. Mount interlock relay on control pack junction box.

ELECTRICAL CONNECTIONS VOLTAGE CONNECTIONS

-use 14GA. Bx 75C min for line

-avoid routing wire near smoke pipe or fire door

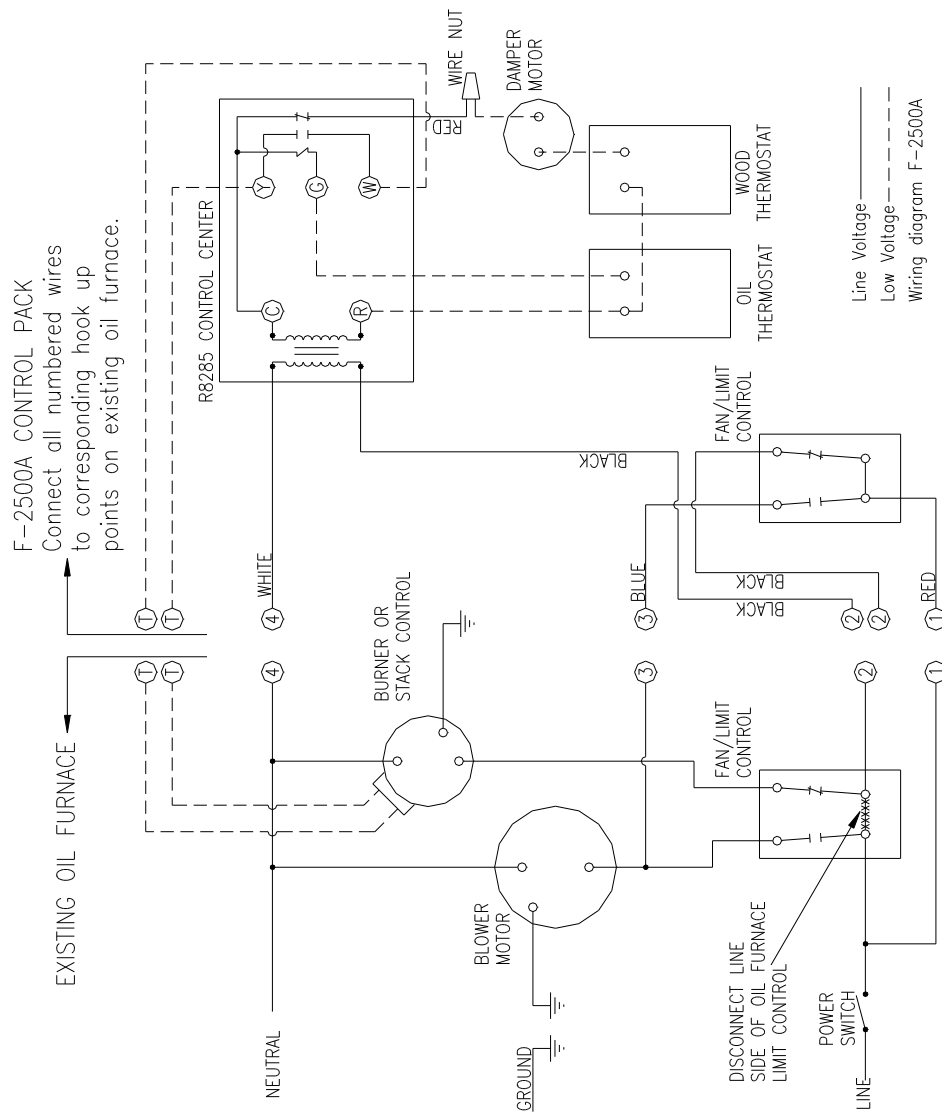


FIG. 11

LOW VOLTAGE WIRING

1. Remove the oil furnace thermostat wires from oil furnace stack control or oil burner control and connect them to the interlock relay, mounted on the junction box of the F-2500A control pack. Connect these two wires to the “G” and “R” terminals of the interlock relay. (See wiring diagram, Figure 11.)
2. Run a pair of wires from stack control or oil burner control (where oil furnace thermostat has been previously disconnected in Step “1”) to the “W” and “Y” terminals of the interlock relay.
3. Mount wood thermostat on wall beside the oil furnace Thermostat. A location least affected by drafts or heat from outlet ducts should be chosen.
4. The wood thermostat is then connected in series with the damper motor to the “R” terminal of the interlock relay and the red wire from the interlock relay marked “Damper motor”.

This completes the electrical wiring between both furnaces.

HEAT EXCHANGER

It will be necessary to set the heat anticipator of the thermostats to suit the characteristics of the installation. Longer thermostat cycles suit this furnace best.

1. Set original furnace anticipator pointer to .25
2. Set add-on thermostat anticipator to .32
3. If Longer furnace cycles are required, move pointer counter-clockwise.
If shorter furnace cycles are required, move pointer clockwise.

INSTALLATION TESTING

- Once the electrical connections have been completed and ductwork installed the fan of the oil furnace must be operated and static pressure measured at the same test point(s).
- The blower or motor pulley may have to be changed to obtain original static pressure.
- The blower motor may require changing if its current draw exceeds that on the nameplate rating label.
- To test the wiring interconnections:
 - 1) Turn on power to furnace.
 - 2) Turn electric thermostat to minimum.
 - 3) Turn wood thermostat to setting above room temperature.
 - 4) Check to see that the combustion air damper of wood furnace has opened.
 - 5) Reset wood thermostat below room temperature, check to see that the damper has closed. This verifies that the damper motor is operational. Reset above room temperature.
 - 6) Set electric furnace to operate above room temperature, 5°F above setting of the F-2500A thermostat – the oil burner should fire. Combustion air damper should remain closed.
 - 7) Allow burner to operate until fan switches on. This verifies that the oil furnace fan control is operating.
 - 8) To check fan control of wood furnace, the manual fan switch located on fan/limit control (L4064J) should be pushed in. Fan should operate. This verifies that fan controls are properly wired and operational.
 - 9) With a wood fire in Model F-2500A the air flow in duct system is controlled by L4064J fan control. When temperature in wood furnace plenum reaches 130°F fan will operate until temperatures drop below 110°F.

NOTE: OPERATE OIL FURNACE PERIODICALLY TO ENSURE IT WILL OPERATE SATISFACTORILY WHEN NEEDED.

SETTING THE THERMOSTATS

This unit is equipped with a dual-fuel interlock relay to insure against simultaneous operation of the wood and oil furnaces which could result in unsafe temperatures in the ducting.

The typical operational sequence of the two sections would be as follows:

- The wood burning section is charged and manually ignited. The thermostat controlling the wood section is set higher (say at 22°C) than the electric section thermostat. When wood is being used, the electric section thermostat is typically set below the setting of the wood fuel thermostat (at say 15°C).
- When the wood thermostat calls for heat the draft damper motor is energized by interlock relay. The draft damper motor opens the draft door to accelerate the rate of combustion of the wood.
- The damper motor continues to respond to the wood thermostat – increasing and decreasing the amount of combustion air to the fire box – until all the wood has been burned. If the wood furnace is not recharged the temperature in the space will drop to the setting of the oil thermostat (15°C) when this occurs the relay de-energizes the draft damper motor and energizes the oil furnace.
- It is important to remember that whenever the thermostat controlling the oil furnace is set above the Room Temperature, the wood furnace will not operate regardless of the setting of the wood fuel thermostat.

CAUTION

- Burn wood only.
 - Do not use chemicals or fluids to start the fire. Do not burn garbage, gasoline, naphtha or engine oil.
 - This unit is not to be used with an automatic stoker.
-

STARTING A WOOD FIRE

- Set the thermostat up high and make sure the draft door is fully open.
- Lay several pieces of dry kindling wood (1/2 or 3/4 inch thick) in your unit on top of several crumpled pieces of newspaper. Ignite the newspaper and close the door. The door should remain shut for at least 5 to 10 minutes in order to establish the fire. If the fire has established itself, you are ready to load.
- Do not load wood above the level of the bricks, as hazardous high temperatures may occur.
- Once the unit is loaded keep the firing and de-ashing doors tightly shut.

NOTE: It is important to maintain a good seal around the doors, check the seals regularly and replace if necessary.

- The thermostat can be adjusted according to your heating needs approximately one-half hour after your fire has been established.
- After 5 to 7 days of regular burning, burn your unit hot for about 30 to 45 minutes with the draft door open. This will help minimize creosote formation. During this process **DO NOT LEAVE UNIT UNATTENDED!**

PLEASE NOTE: Because of the oils used in the manufacturing process and the time for the paint to set-up permanently, some odor may result the first few days of operation. Should any usual odors persist, consult your dealer immediately.

EMERGENCY PROCEDURE – CHIMNEY FIRE

IN CASE OF AN EMERGENCY SUCH AS A CHIMNEY FIRE, CALL YOUR FIRE DEPARTMENT IMMEDIATELY AND SHUT ALL DRAFT CONTROLS. HAVE A FLARE-TYPE EXTINGUISHER ON HAND (THE KIND SPECIFICALLY DESIGNED FOR CHIMNEY FIRES). DON'T POUR WATER INTO THE FIREBOX. RAPID COOLING OF THE FURNACE COULD CAUSE STRUCTURAL DAMAGE.

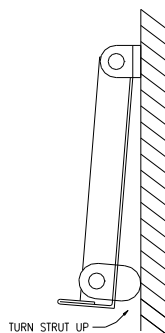
A fire will probably last only a few minutes...but on rare occasions a chimney blaze might last up to an hour. Keep checking the flue pipe temperature, and watch nearby flammable objects to see that they don't become dangerously hot. In addition, check outside every once in a while to be sure that the sparks coming from the chimney haven't ignited anything in the area (especially your roof!).

Once the fire's out, clean and inspect your furnace, chimney and flue pipe...and resolve to do the job more often in the future.

NOTE: A chimney fire will not insure that your chimney is clean of creosote! Often the fire merely transforms the creosote into a thicker, crustier layer...and the transformation usually leads to very rapid additional accumulations. Check the flue liner carefully for damage, too. Chimney fires can produce temperatures as high as 2500°F...which may crack masonry or warp steel.

OPERATION DURING A POWER FAILURE

IN CASE OF A POWER FAILURE OR DAMPER MOTOR FAILURE A SMALL FIRE CAN BE MAINTAINED BY MANUALLY JAMMING THE DRAFT DOOR OPEN WITH THE OVAL-SHAPED STRUT ON THE BOTTOM RIGHT HAND SIDE OF THE DOOR. SINCE THE FURNACE BLOWER AND SAFETY LIMIT SWITCH WILL NOT FUNCTION DURING A POWER OUTAGE TRY TO MAINTAIN A SMALL FIRE ONLY, AS EXCESSIVE HEAT WILL BUILD UP IN THE PLENUM AND DUCTWORK. REMOVE THE LOWER SIDE PANEL FROM THE WOOD FURNACE SO AS TO INCREASE THE FLOW OF AIR THROUGH THE SYSTEM. WHEN POWER RESUMES THE STRUT WILL AUTOMATICALLY RETRACT AND THE FURNACE WILL RESUME NORMAL OPERATION.



CHIMNEY AND SMOKE PIPE MAINTENANCE

The chimney, smoke pipe and furnace must be cleaned periodically depending upon the soot or creosote buildup. The frequency of cleaning will depend upon a number of factors but mainly upon the type of fuel being burned. Check weekly for creosote build-up until experience shows how often you need to clean to be safe. Be aware that the hotter the fire the less creosote is deposited and weekly cleanings may be necessary in mild weather even though monthly cleanings are enough in the coldest months. Also, small hot fires are more efficient and deposit less creosote than large smoldering ones. Again, depending on the weather, you may not need a full load for a good overnight burn. You will get the best efficiency when you add only the amount of wood needed until the next time you are available to load. The buildup of soot or creosote can usually but not always be determined by tapping the outside of the chimney connector with a metallic object. If there is a sharp sound, the interior is probably clean, if there is a dull thudding sound, the chimney and chimney connector interiors should be checked further. If the chimney cap is easily accessible, then the chimney connector must be removed so that the interior surfaces may be examined.

In the furnace, creosote may buildup around the flue collar and on the flue side of the heat exchanger tubes. For inspection and/or cleaning of the furnace, the smoke pipe must be removed. Scrape away creosote build-up with the scraping/stoking tool supplied.

Brushes are available for chimney and smoke pipe cleaning.

Also, inspect smoke pipes, smoke pipe joints and smoke pipe seals regularly to ensure that smoke and flue gases are not drawn into and circulated by the air circulation system.

ASH REMOVAL

When burning wood every morning when there is just a bed of hot embers, run your poker over top of grates to be sure grate slots are clear of burnt fuel.

About once every week or two, depending on weather and how much fuel you burn, you should remove ashes.

CAUTION: NEVER LET ASHES BUILD UP O GRATE LEVEL. THIS WILL GREATLY REDUCE THE LIFE SPAN OF YOU GRATE.

Wood ash is useful as a fertilizer particularly because of its potassium content. Ashes will also provide good traction on ice and snow during the heating months.

To remove ash pan, simply pull out your ash pan.

CAUTION: Ash pan can get very hot. Dump ashes in a metal container with a lid, Ash can must be placed on a non-combustible surface.

CAUTION: Never use anything but a metal container to put your ashes in. Every year many fires are caused by emptying ashes into cardboard boxes or paper bags. Proven fact small red embers buried in ash cans stay red hot for days. Ashes are good thermal insulators and keep enough oxygen away so the embers do not burn out.

WOOD FOR YOUR FURNACE

Which Kind

- Each wood species offer different qualities that must be considered when deciding just what type of fuel is needed in your wood stockpile.
- Softwoods, such as spruce, fir and pine ignite easily because they contain more resin than hardwood. They are good for starting fires or reviving a slow fire. Also once a fire is started, softwoods can be mixed with hardwoods. Like hardwoods, softwoods need plenty of oxygen to avoid a smoldering fire which can deposit creosote on the flue and stack. Softwoods do burn more quickly and your furnace will require more frequent replenishing.
- Hardwoods such as oak, maple, birch, beech and ash are best for long lasting fire. These species are produce a shorter flame and burn less vigorously than softwoods. Oak gives the most uniform and shortest flames and produces steady, glowing coals.
- Green wood yields approximately 15% to 45% less heat value than air-dried wood. The moisture content cuts the heat output and increases the possibility of creosote build-up.
- The standard cord measures 4 feet by 4 feet by 8 feet. The “Face Cord” measures 4 feet by 8 feet by 16 inches. Green wood is best stored partially covered, to air dry at least six (6) months.
- When bringing wood indoors be sure not to store it within the furnace installation clearances or within the space required for charging and ash removal.

B.T.U. HEAT VALUE PER CORD

<u>TYPE</u>	<u>B.T.U. IN MILLIONS</u>
Hickory	26.8
Maple (Hard)	25.2
Beech	23.8
Oak (White)	23.5
Oak (Red)	21.3
Birch (Yellow)	21.2
Ash	20.5
Maple (Soft)	18.8
Spruce	18.0
Elm	17.4
Pine (White)	13.1

TROUBLE-SHOOTING PROBLEM FOR YOUR SOLID FUEL FURNACE

PROBLEM: SMOKE PUFFS FROM FURNACE

CAUSES/SOLUTIONS:

- Check chimney draft. Check for blocked chimney or flue pipe. Use mirror to check chimney clearance.
- Check ash pit – if too full, empty.
- Make sure the furnace room is not too airtight.
- Check cleanout. Make sure it's airtight.
- Check chimney for possible down-draft caused by taller surrounding trees or objects. Correct with proper chimney vent cap.
- Check the possibility of cold chimney forcing cool gas blockage. Remedy by properly insulating chimney with non-combustible liner – non-combustible insulation.
- Wood may be too green.

PROBLEM: INADEQUATE HEAT BEING DELIVERED TO YOUR HOME

CAUSES/SOLUTIONS:

- Check home insulation – is it adequate?
- Check hook-up to furnace – is it installed correctly? (Review Manual)
- Check fan limit control – is it set too low?
- Cool air inlet may be inadequate or furnace room too airtight.
- Your fuel may be too low grade and or too green.
- Make sure your hot air duct (and other duct work) is airtight.
- Insufficient draft – too much horizontal pipe and/or elbows, chimney too short and/or poorly insulated, down-draft caused by taller surrounding objects and/or poor vent cap.

PROBLEM: EXCESS SMOKE OR FLAMES COMING OUT DOOR WHEN RE-FUELING

CAUSES/SOLUTIONS:

- Open fire door slowly – then refuel.
- Check length of flue pipe to chimney. Your unit should be within six (6) feet of your chimney.
- Make sure chimney cap is not too close to the top of the chimney.
- Check chimney draft – make sure chimney flue pipe is clean and chimney is of adequate height.
- Make sure you're not suffocating the fire with excess amounts of unburnt fuel.

PROBLEM: DISTRIBUTION BLOWER CONTINUES TO RUN OR WILL NOT RUN

SOLUTION:

- Check to see if fan limit control is set incorrectly or is faulty.
- Check to see that blower is properly wired. (See Wiring and Assembly Instructions).
- Check to see that limit controls are on the proper setting.

PROBLEM: EXCESSIVE CREOSOTE

SOLUTION:

- Check the grade of solid fuel you are burning.
- Make sure your unit is serviced by its own proper chimney.
- Check length of flue pipe and its connections.
- Make sure you are burning the smallest, hottest fire to adequately heat you home.
- Also see Solutions to Problem 1.

<u>No.</u>	<u>Description</u>	<u>Quantity</u>
1.	FIRE BOX ASSEMBLY	1
2.	FIRE DOOR	1
3.	ASH DOOR	1
4.	HANDLES	2
5.	DRAFT DOOR CHAIN	1
6.	ASH COLLECTOR	1
7.	RIDGID GRATES	2
8.	HINGE PINS	4
9.	FIRE BRICKS	12
10.	PANEL – SIDE	2
11.	PANEL – FRONT	1
12.	PANEL – BACK	1
13.	PANEL – BOTTOM SIDE	1
14.	PANEL – BOTTOM (FILLER)	1
15.	FLASHING – DOOR FRAME	1
16.	FLASHING – FLUE RING	1
17.	FAN/LIMIT SWITCH C/W 3 Wire Armored Conduit	1
18.	INTERLOCK RELAY	1
19.	DAMPER MOTOR C/W Wire Leads	1
20.	4” ELECTRICAL BOX	1
21.	MARRETTES (WIRE CONNECTORS)	4
22.	CONDUIT HOLD-DOWN STRAPS	1
23.	MACHINE SCREWS C/W NUTS	2
24.	_” LONG SHEET METAL SCREWS	10
25.	9/64” DRILL BIT (NOT SHOWN)	1
26.	FLUE DAMPER (NOT SHOWN)	1

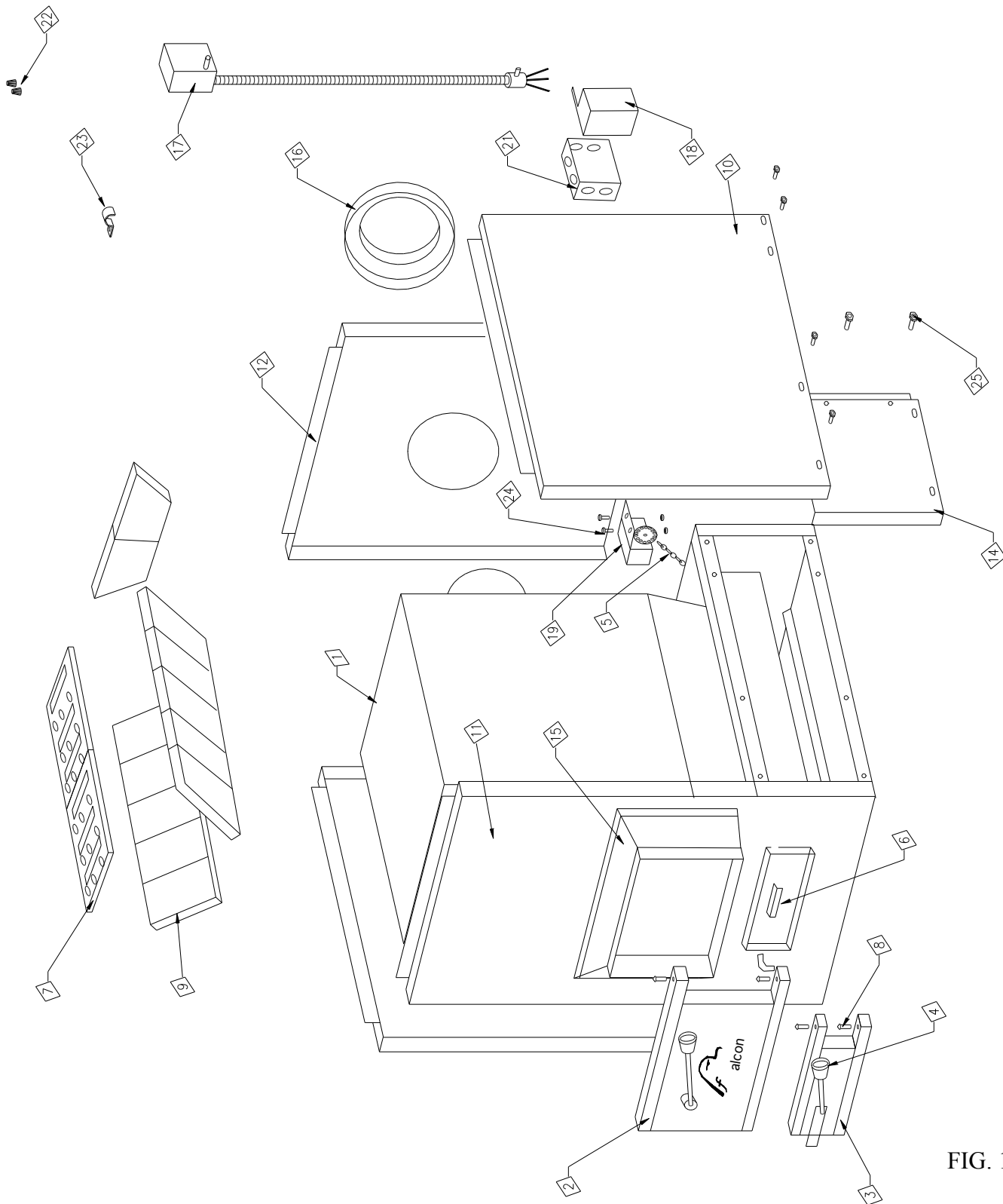


FIG. 12

FALCON MACHINERY 1965 LIMITED**“LIMITED TRANSFERABLE WARRANTY”**

Falcon Machinery 1965 Ltd. warrants all parts and components manufactured by them to be free from defects in material and workmanship for a period of 2 (two) years from the date of installation. The manufacturer's obligation will be to effect all warranted repairs or parts replacements at the manufacturers option, for parts or labor required to complete the actual repair.

CONDITIONS

1. The warranty registration card supplied with each unit, **MUST BE** completed and ailed to Falcon Machinery within 10 (ten) days of the installation date.
2. Service estimates must be issued to the manufacturer for written authorization prior to effecting repairs.
3. Components not manufactured by Falcon Machinery are **NOT** covered by the terms of this warranty. They may be covered under specific warrantees outlined by their respective manufacturers.
4. The operation of the heating unit in a corrosive environment is considered misuse and voids this warranty.
5. This unit must not have been previously altered, repaired, modified or serviced by anyone other than the service facilities authorized by Falcon Machinery. The serial number on the unit must not have been altered or removed. The unit must not have been subject to accident, misuse, abuse or operated contrary to the instructions contained in the accompanying manual. The opinion of Falcon Machinery Limited with respect to these matters shall be final.

**FALCON MACHINERY 1965 LIMITED
57 DAWSON ROAD
WINNIPEG, MANITOBA**