

OWNER'S MANUAL

- Assembly
- Installation
- Operation
- Repair Parts

**Model No.'s
BJ90 - SJ125**

CAUTION:

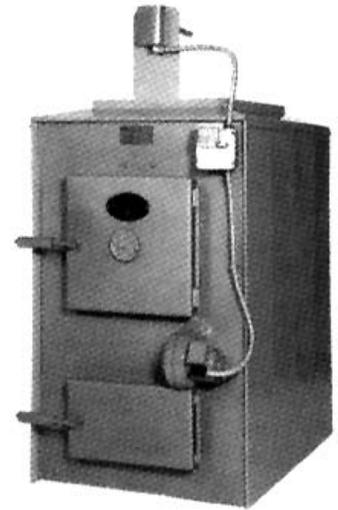
**Read Rules And Instructions
Carefully For Safe Operation**

IMPORTANT:

Installation must be made in accordance with state and local ordinances which may differ from this installation manual.



**SUPER JACK
SJ125**



**BIG JACK
BJ90**

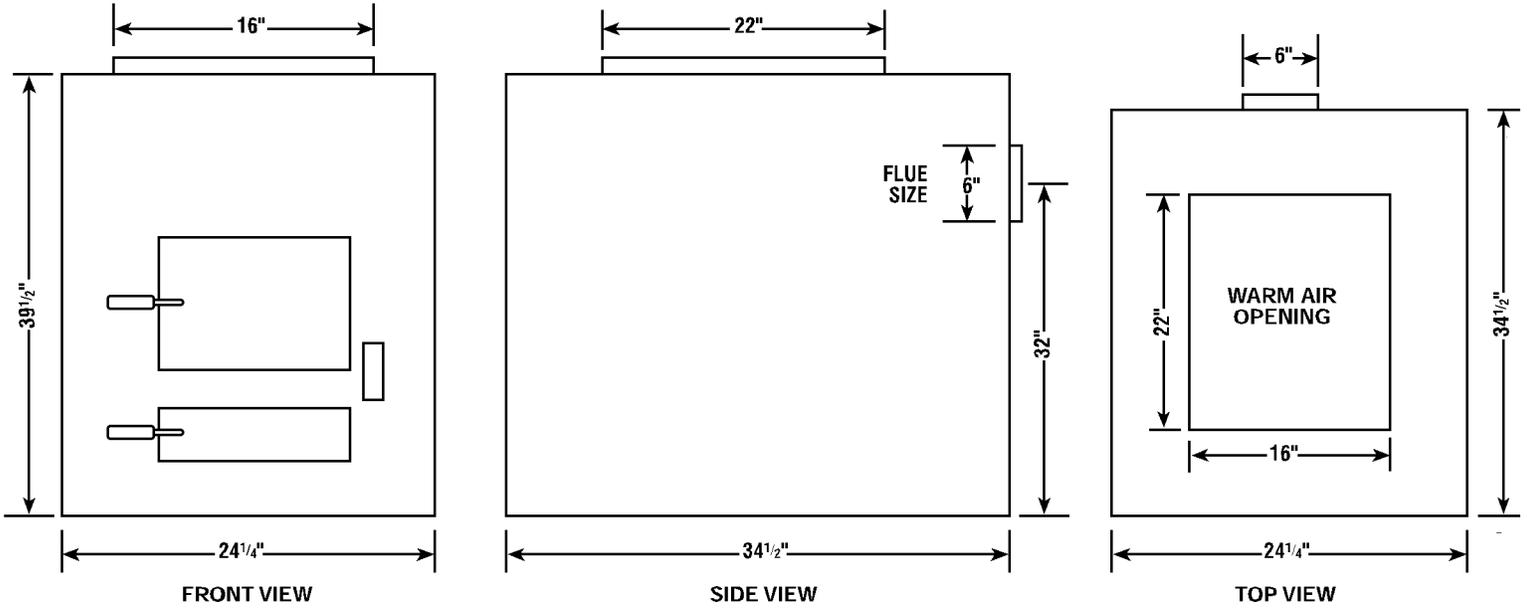
SUPER JACK/ BIG JACK WOOD BURNING FURNACES

FOR YOUR SAFETY:

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

**TESTED BY
WARNOCK HERSEY
INTERNATIONAL TO
U/L 391 STANDARDS**

FURNACE DIMENSIONS BIG JACK BJ 90



FURNACE DIMENSIONS SUPER JACK SJ 125

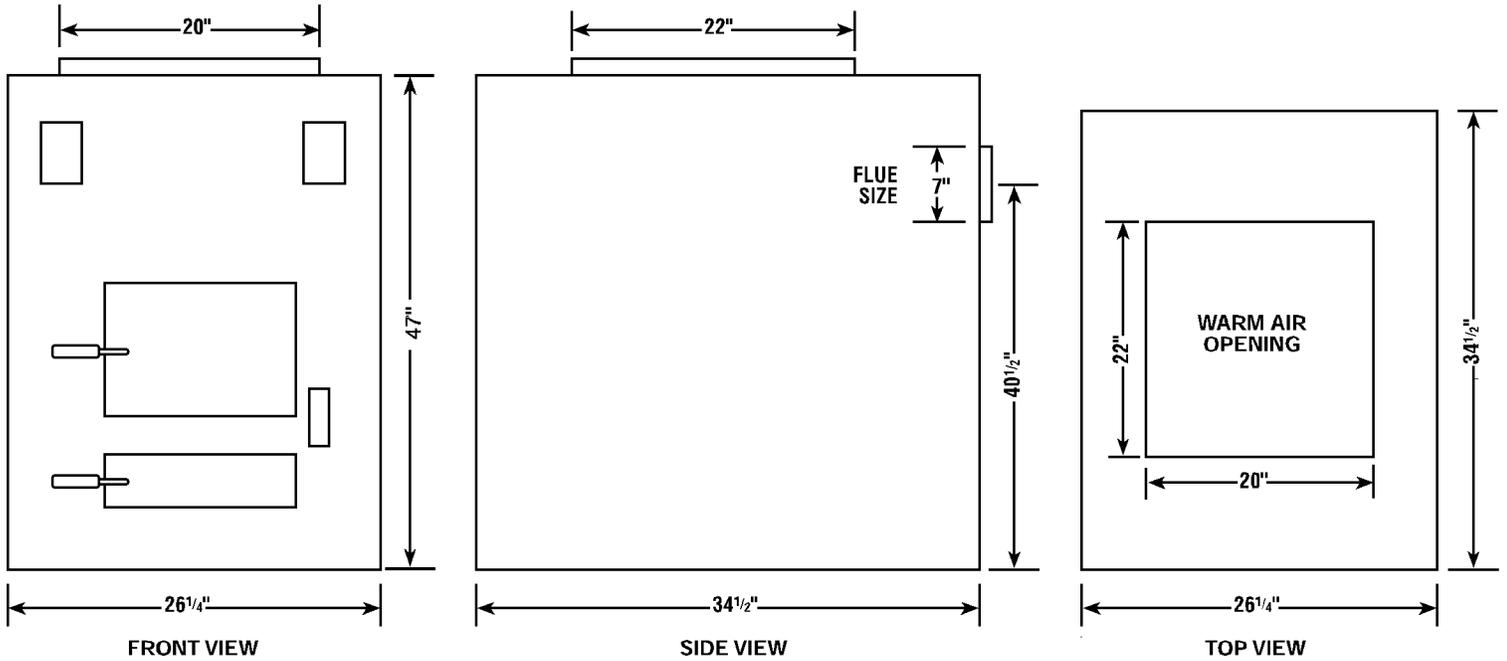


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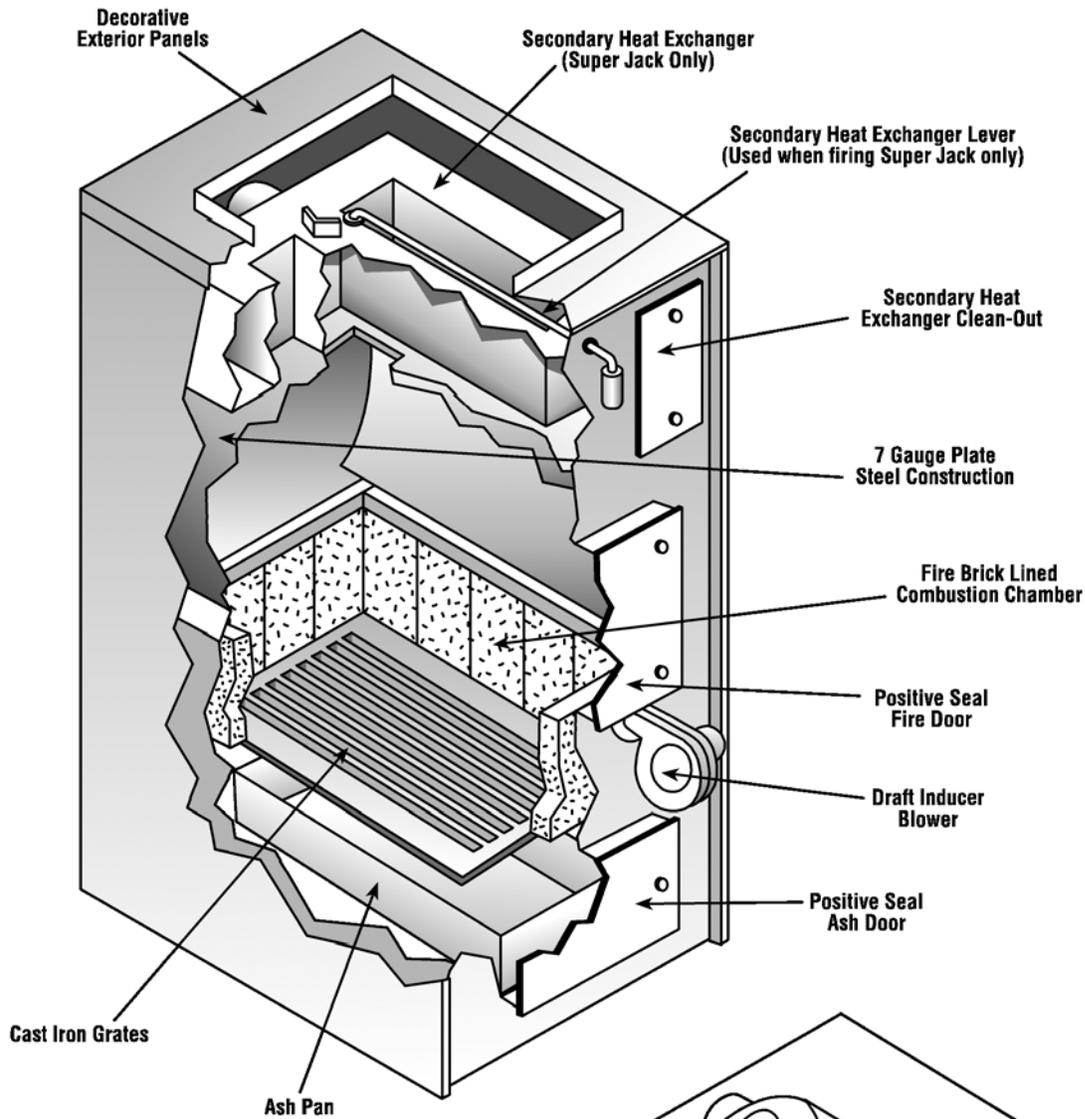
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JACK LINE SPECIFICATIONS

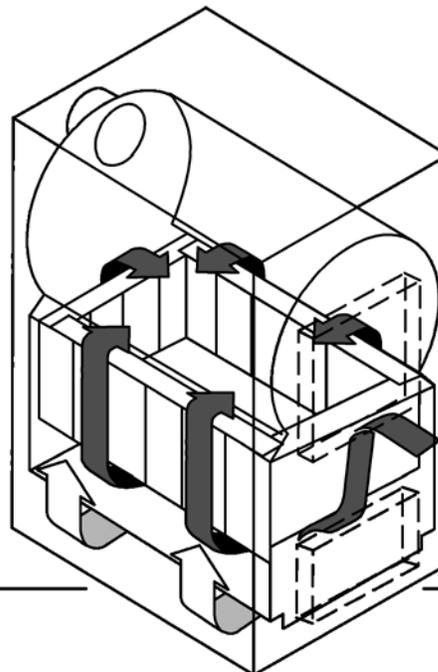
MODEL NO.	BIG JACK BJ90	SUPER JACK SJ125
Height	39.5"	47"
Width	24.25"	26.25"
Depth	34.5"	34.5"
Warm Air Plenum Opening	22" x 16"	22" x 20"
Blower	(Optional) 1460 CFM	(Optional) 1460 CFM
Approximate BTU Capacity	90,000	125,000
Maximum Wood Length	24"	24"
Smoke Collar	6"	7"
Fire Door	13" x 13"	13" x 13"
Weight	475 Lbs.	560 Lbs.
Wood Capacity	5.25 Cu. Ft.	5.25 Cu. Ft.
Heat Exchanger Total Area	17 Sq. Ft.	29.8 Sq. Ft.
Secondary Heat Exchanger (Area)	None	15.56 Sq. Ft.

FEATURES OF A JACK LINE WOOD BURNING FURNACE



Secondary Combustion Air Chamber Feature

- Providing a more complete burn of secondary gases.
- A more durable, longer lasting Fire Chamber



DANGER

RISK OF FIRE OR EXPLOSION

Do not burn garbage, gasoline, drain oil, kerosene, thinners, etc.

WARNING

RISK OF FIRE

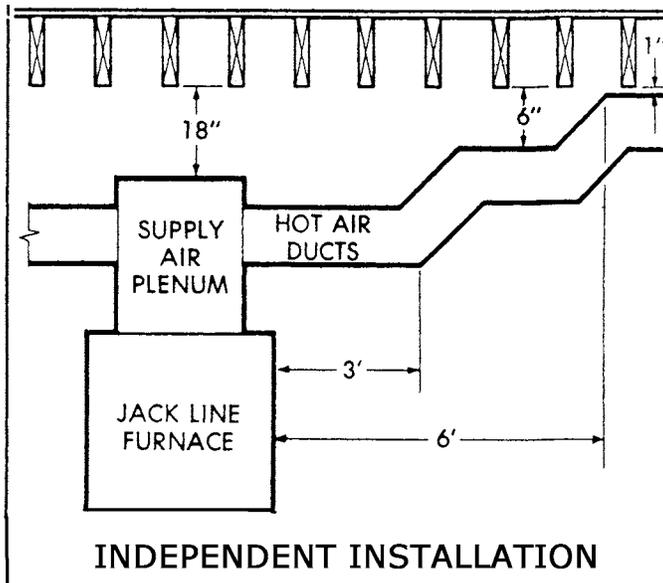
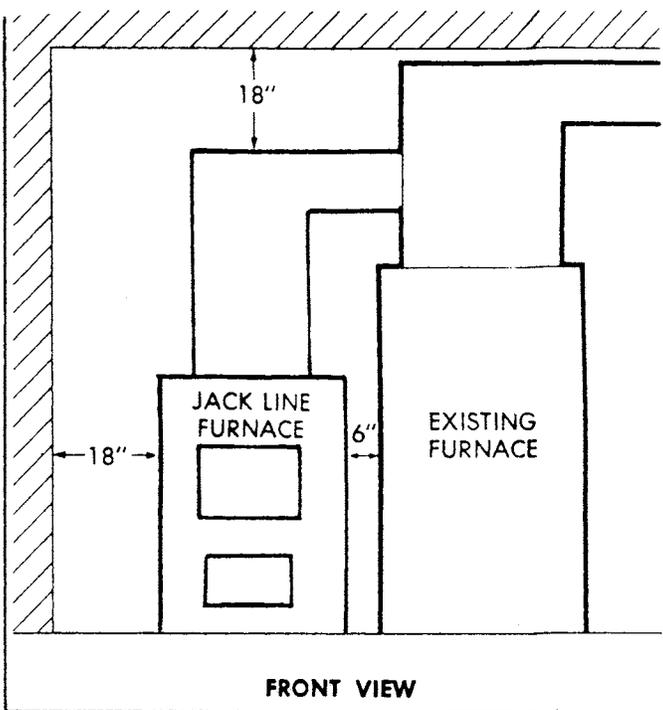
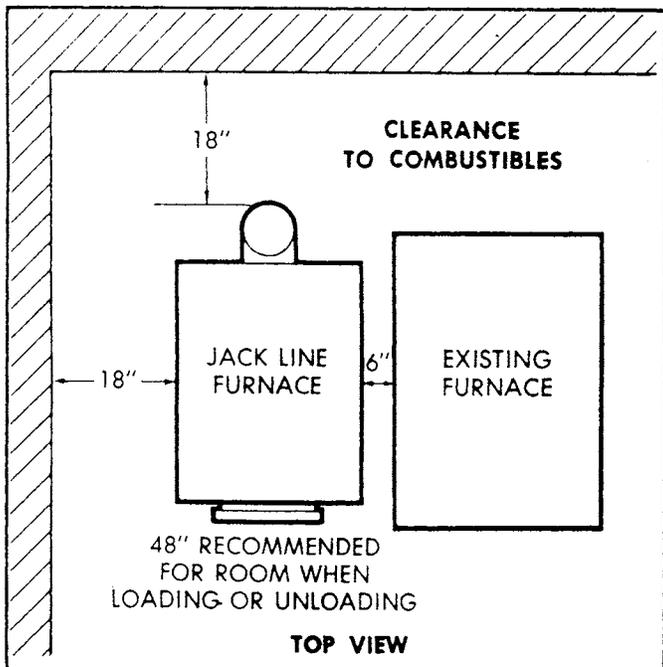
- **Firing door and ash door must be tightly closed during operation.**
- **Do not operate with flue draft exceeding .03" W.C.**
- **Do not store flammable materials within marked installation clearances.**
- **Frequently inspect and clean heat exchanger, smoke pipe, and chimney of soot and/or creosote.**
- **Do not connect this unit to a chimney flue serving another appliance.**

CAUTION

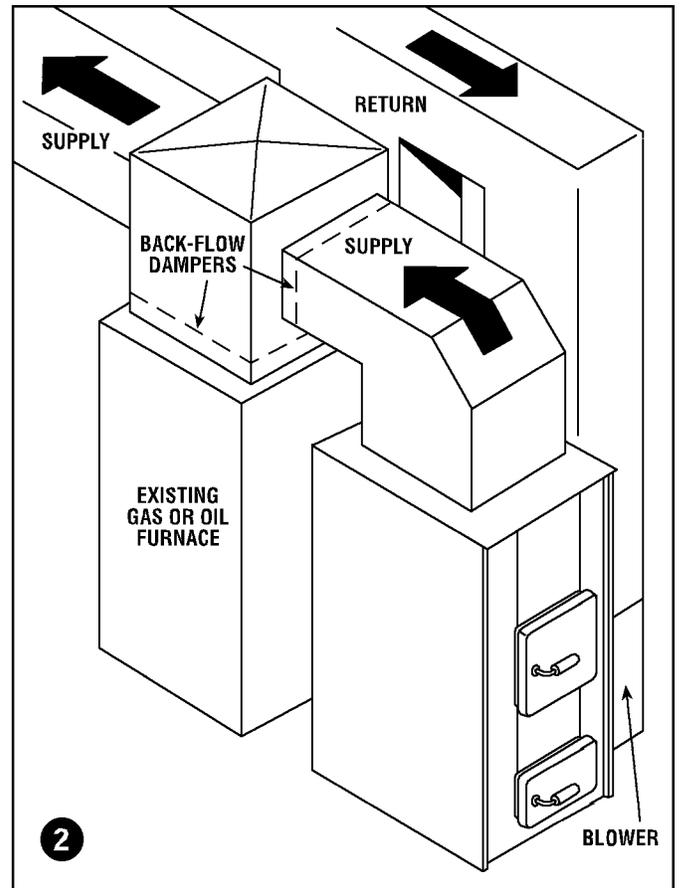
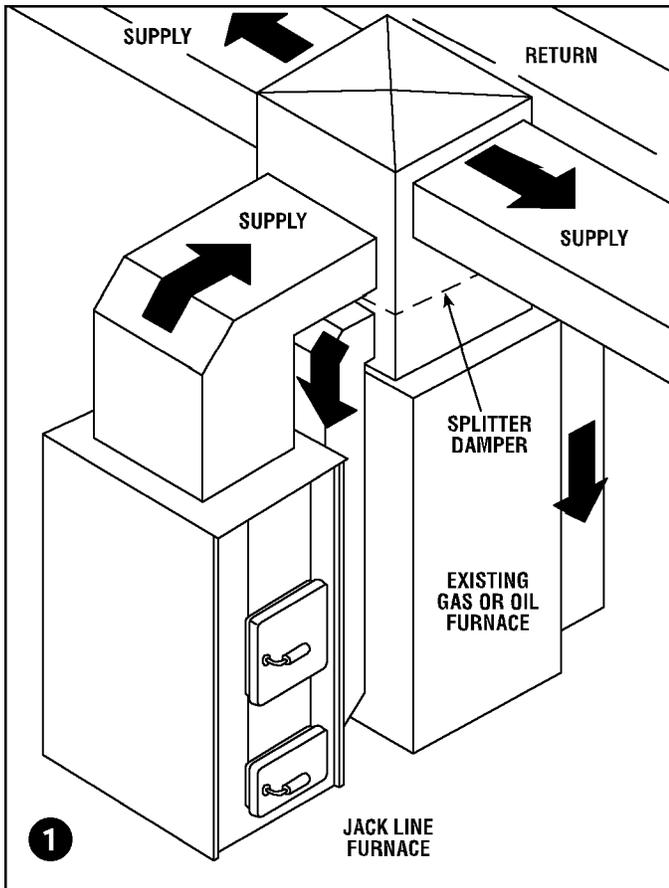
BLACK SURFACES ARE HOT

Keep children away. Do not touch.

DANGERS - CAUTION - FIRE HAZARDS (Burn wood logs or coal only)



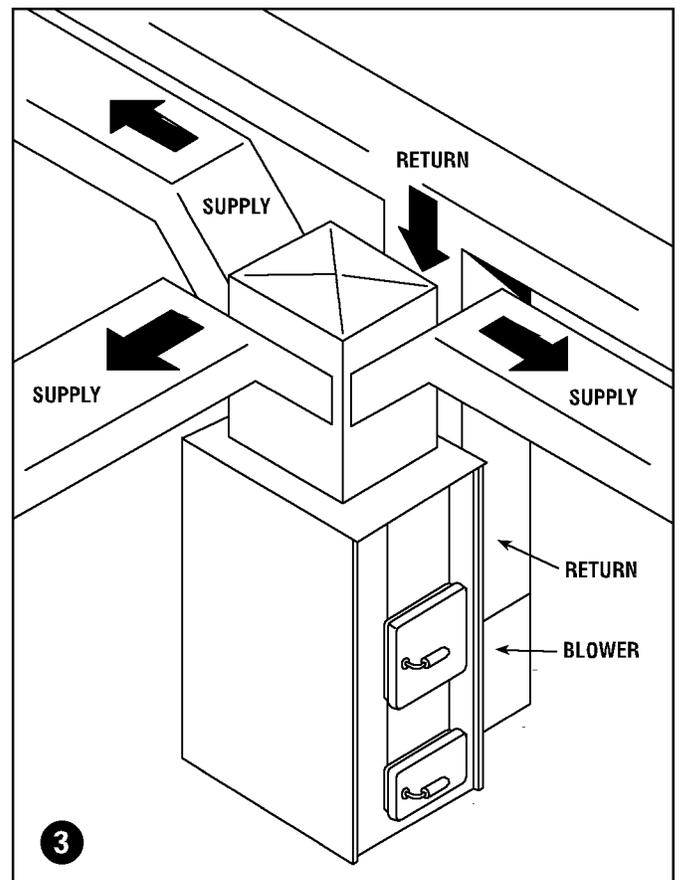
- This furnace must be installed according to the manufacturer's instructions, NFPA and local codes.
 - Ducts and plenums shall be constructed entirely of sheet metal.
 - Do not use flammable liquids to start a fire.
 - Do not attempt to light a wood fire when gas or oil vapors are present.
 - Do not install on a burnable floor.
 - In the event of an electrical power failure, be sure ash door and fire door remain closed. Turn thermostat down to shut off combustion fan.
 - Do not install a power humidifier on warm air plenum.
 - Store all ashes in a metal container with a tight fitting lid. Allow ashes to cool before disposing of them.
 - Be sure there is a sufficient supply of outside combustion air to the area where the furnace is located.
 - Keep smoke pipe connection as short as possible with a minimum of 12-inch rise from the furnace to the chimney opening. Smoke pipe should be 24 gauge galvanized steel or heavier.
 - This furnace has hot surfaces. Keep children away.
 - Before servicing, allow furnace to cool. Shut off electricity.
 - Familiarize yourself with this wood-burning furnace before leaving it unattended.
 - Follow a regular service and maintenance schedule of furnace and chimney.
 - IN THE EVENT OF A CHIMNEY FIRE, CALL FIRE DEPARTMENT, AND THEN BE SURE ALL FURNACE DOORS ARE CLOSED TIGHTLY.
- Important: Make these adjustments when installing.**



TYPICAL INSTALLATIONS

- 1** SERIES ADD-ON INSTALLATION
- 2** PARALLEL ADD-ON INSTALLATION
- 3** PRIMARY INDEPENDENT INSTALLATION

***IMPORTANT NOTE TO INSTALLER** — power failure registers must be installed on all Jack Line Unit Installations. (Supplied by others.)



INTRODUCTION

This manual provides installation, operation, maintenance instructions and parts ordering information for the Big Jack Model BJ90 and the Super Jack Model SJ125 wood burning furnaces.

IMPORTANT

Please read all instructions carefully before attempting installation of this unit. Installation should only be done by a qualified installer.

UNPACKING AND INSPECTION

Inspect the furnace for visible damage. The furnace is shipped in one carton.

Inside the wood loading door is another carton. It contains a gasket, conduit clip, wiring harness, fan and limit control, transformer-relay, combustion blower and barometric draft control.

A circulating blower, if ordered, is shipped in a separate carton.

RULES FOR SAFE INSTALLATION AND OPERATION

1. Read these rules and the instructions carefully. Failure to follow these rules and instructions could cause a malfunction of the furnace. This could result in death, serious bodily injury and/or property damage.
2. Check your local codes. The installation must comply with them.
3. Use only the type of fuel approved for this furnace. Over-firing will result in failure of heat exchanger and cause dangerous operation.
4. You must have a sufficient supply of combustion air to the area in which the furnace is located. (page 12)
5. Factory Built Chimneys: Connect this furnace to a chimney that complies with NFPA 211 3-1.2. Factory built chimneys for use with wood-burning appliances shall comply with the HT requirements of UL 103 or CAN/ULC-S629-M87. This means you must install what is referred to as type HT all fuel chimney.
Masonry Chimneys: Connect this furnace to a chimney that complies with NFPA 211 3-1.2. A field constructed chimney of solid masonry units, bricks, stones, listed masonry chimney units, or reinforced Portland cement concrete that is lined with suitable chimney flue liners and built in accordance with the provisions of Chapter 4 of this standard.

6. Follow a regular service and maintenance schedule for efficient and safe operation.
7. Before servicing, allow furnace to cool. Always shut off electricity and fuel to furnace when working on it. This will prevent electrical shocks or burns.

LOCATING THE FURNACE

Locate the furnace as close to the chimney or flue as possible and near the center of the heat distribution system or next to primary furnace if used.

Locate furnace where there is sufficient air supply for ventilation and proper combustion to comply with the minimum clearances required for fire protection and accessibility. See page 7 for typical installations. See also Combustion Air. (page 12)

NOTE

It is recommended that a 2", noncombustible raised pad be used for the furnace. This will prevent moisture from getting under the furnace and causing corrosion.

PLACEMENT AND MINIMUM CLEARANCES

For installation of our Jack Line furnace, the National Fire Protection Association (NFPA) Standard 90B specifies the minimum standard clearances to combustible surfaces as summarized below.

CLEARANCE CHART

Above Top of Plenum	18"
From the Front	48"
From Sides and Back	18"
From Flue Pipe	18"
From Existing Furnace	6"
From Horizontal Warm Air Duct:	
Within 3 ft. of Plenum	18"
Within 3 to 6 ft. Plenum	6"
Beyond 6 ft. of Plenum	1"
All heat runs	1"

PARTS ASSEMBLY

1. Install the combustion blower & gasket to the provided opening just below the wood-loading door on the front of the furnace.
2. Attach the 4x4 junction box with the transformer/relay to the mount provided at the top right hand side of the front of the furnace.
3. Insert the fan-limit control into the sheet metal plenum approximately 6 inches above the furnace.
4. Wire according to the enclosed wiring instructions & local codes. (See page 13)

FURNACE CASING

1. The furnace is shipped unassembled in a carton attached to the furnace.
2. Insert the left and right side panels into the slots at the base of the furnace.
3. Place top panel over the front edge of the furnace and then into the side panels.

MOUNTING THERMOSTAT & SUB-BASE

Thermostat must be mounted on an interior, centrally located wall away from direct sunlight and drafts and approximately 5 feet above the floor.

REDUCED CLEARANCES

Up to 50% less clearance between combustible walls and chimney connector to furnace and ducts is allowed if insulated according to NFPA Standard 90B or your local building code. This copyrighted book is available from the National Fire Protection Association Inc. 1 Batterymarch Park, Quincy, MA. 02169-7471. Phone orders: 1-800-344-3555. Their internet address is www.nfpacatalog.org.

It is a mistake to assume that sheet metal, masonry, or asbestos-like board placed directly against a wall protects it. Materials installed in this manner give very little protection. These materials are good conductors, so they will be almost as hot on their backside as well as on their exposed side. Therefore, the combustible wall behind it is **still** a fire hazard.

CAUTION

Do not use any smoke pipes less than 24 gauge between furnace and chimney.

CONNECTING SMOKE PIPE

Set the smoke pipe end of the furnace as close to the chimney as possible. For every foot of lateral pipe, the rise of the smoke pipe toward the chimney must be at least one inch. Do not exceed 10 feet in length. A cleanout tee should be installed for removal of soot and fly ash.

Do not install the smoke pipe longer than necessary to reach the chimney for purposes of trapping heat. The smoke outlet temperature is designed so that the heat emitted is needed to carry the by-products of combustion out through the chimney.

The smoke pipe must not pass through any combustible material.

The smoke pipe entrance into a masonry chimney should be at least 2 feet above the cleanout. The smoke pipe must not extend into the chimney beyond the inner face of the chimney liner.

WARNING

Check your chimney. The chimney is a very important part of your heating system. It must be the right size, properly constructed and in good condition. No furnace can function properly with a bad chimney. The chimney must supply a draft of .03 Water Column. If possible, use a 15 foot or higher chimney. Add an additional foot to the chimney for each 1,000 feet of elevation above sea level.

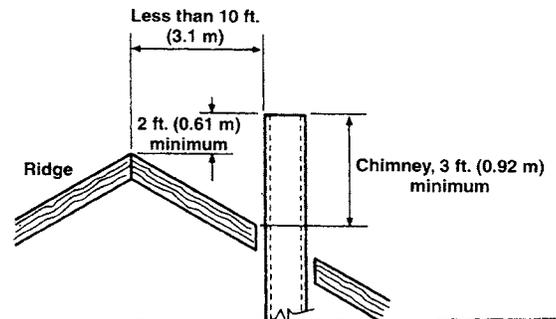
PROPER CHIMNEYS

The National Fire Protection Association (NFPA) requires that all factory built chimneys be Listed and installed in accordance with conditions of the Listing in the manufacturers instructions. NFPA also requires that your chimney extend at least three (3) feet above the highest point when it passes through the roof and at least two (2) feet higher than any portion of the building within ten (10) feet of the chimney.

Factory built chimneys must be what NFPA refers to NFPA 211 1-5.2.17.4 as Type HT. HT is an abbreviation meaning High Temperature.

Masonry Chimneys as referred to in NFPA 211 1-5.2.17.6, a field constructed chimney of solid masonry units, bricks, stones, listed masonry chimney units, or reinforced concrete that is lined with suitable chimney flue liners and built with the provisions of Chapter 4 of this standard.

CHIMNEY TERMINATION (LESS THAN 10 FT.)



CHIMNEY TERMINATION (MORE THAN 10 FT.)

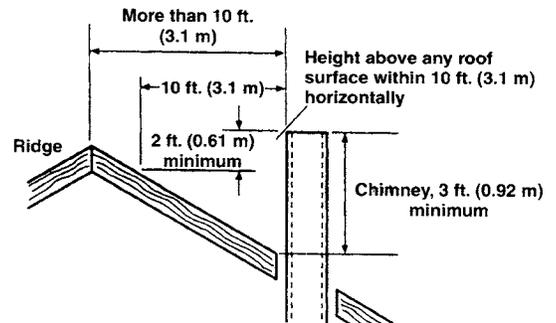


Fig. 12

DO NOT CONNECT THIS FURNACE TO A CHIMNEY SERVING ANOTHER APPLIANCE

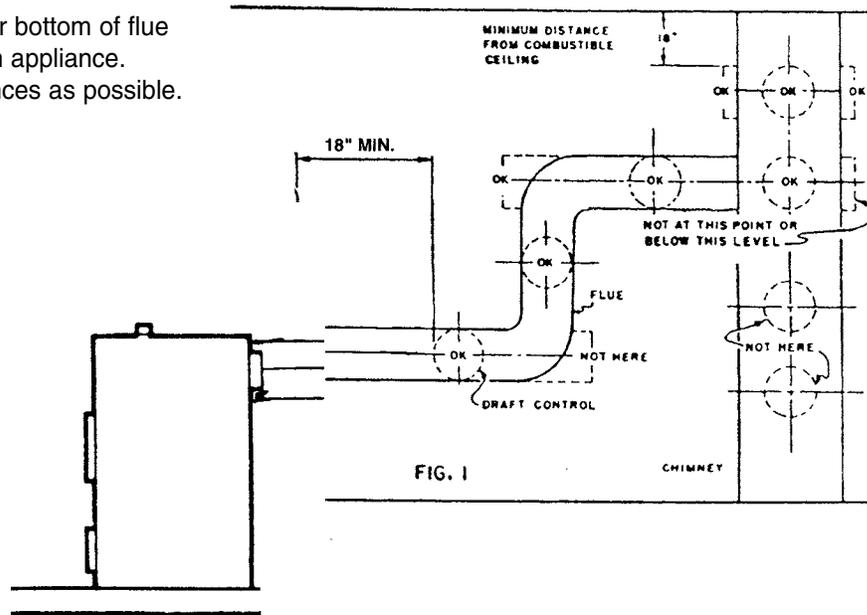
WARNING

Return air **MUST NOT** be drawn from inside the room where the furnace is located.

INSTRUCTIONS FOR INSTALLING

FIELD R-C BAROMETRIC DRAFT CONTROLS CHOOSING THE LOCATION

Do not attach draft control to top or bottom of flue pipe, nor in a room separated from appliance. Best location is as close to appliances as possible.



INSTALLATION

VERTICAL FLUE:

1. Adjustment weight must be in RIGHT HAND SLOT (marked "V") in bracket on gate.
2. The arrow on flap at bottom of gate must line up with letter "V" on lower right part of gate. If it does not, remove flap, turn over and snap onto gate again.

Flap can be removed by inserting small screwdriver at the back side of the gate between the gate and the flap, then pulling downward on flap.

HORIZONTAL FLUE:

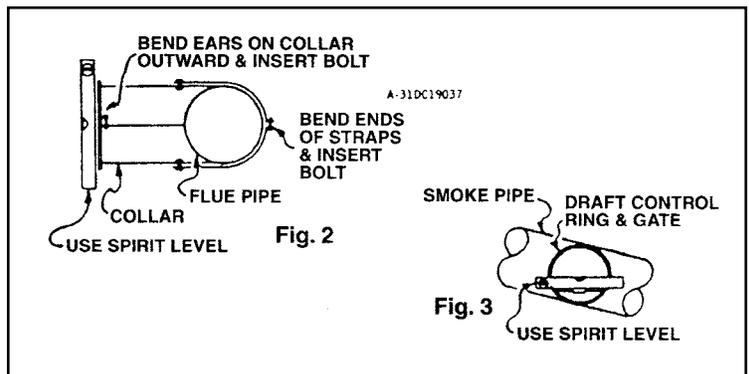
1. Adjustment weight must be in LEFT HAND SLOT (marked "H") in bracket on gate.
2. The arrow on flap at bottom of gate must line up with letter "H" on lower left part of gate. If it does not, remove flap, turn over and snap onto gate again.

Bend outward the two ears at the front corners of collar and insert clamping screw. Bolt the remainder of the collar together. See Figure 2. Hold the collar against the flue in the EXACT position and mark the outline of the collar on the flue. Cut a hole in the flue about half an inch smaller than the marks.

Then cut a series of short slits (about 3/8" or 1/2" deep) around the edges of the opening. After the collar is strapped on the flue the cut edges can be bent outward into the collar and thus make a better joint. WHEN FINISHED, THE OPENING INTO THE FLUE MUST BE EQUAL IN SIZE TO THE COLLAR OF THE DRAFT CONTROL. If flue pipe is made of material too heavy to bend out into the collar, the opening into the flue must be within 1/4" of the same diameter as the collar.

Strap the collar to the flue pipe and place the draft control into the collar, fastening it there by tightening the clamping screw in the collar.

Use a spirit level to make sure that the control does not lean forward or backward but instead is plumb in both directions, regardless of whether the flue is horizontal, vertical or sloping.



INITIAL SETTING OF BAROMETRIC CONTROL

Set the control at a maximum of .03 or as low a draft as will give good combustion and meet the requirements for heat. Turn adjustment weight counter-clockwise to loosen, then slide in slot to proper position and tighten. Bracket is marked 2, 4, 6, and 8, which indicates draft settings of .02, .04, etc. (These are drafts in flue adjacent to control, not over-fire drafts.) A monometer must be used to accurately adjust flue draft.

FURNACE LOCATED IN CONFINED SPACE

When the furnace is in a utility room, install two open grilles in a wall or door opening to the rest of the house. One grille will supply combustion air. Locate it near the floor. The other grille is for ventilation. Locate it close to the ceiling. Each grille must have a free area of not less than one square inch for each 1000 BTU/hr. of the total input rating of all the appliances in the confined space. (See Fig. 16)

FOR EXAMPLE: Your furnace is rated at 150,000 BTU per hour. The water heater is rated 30,000 BTU per hour. The total is 180,000 BTU per hour.

You need two grilles, each with 180 square inches of free opening. Metal grilles have about 60% free (open) area, so you need two metal grilles with 300 square inches each of louvered area. The height should be about half the width.

FRESH AIR DUCT CAPACITIES

Fresh air duct capacities for duct supplying fresh air.

BTU Per Hour Input*

Size	1/4 in. Mesh Screen BTU	Wood Louvers BTU	Metal Louvers BTU
3-1/4 x 12 in.	144,000	36,000	108,000
8 in. round	200,000	50,000	150,000
8 x 12 in.	382,000	96,000	288,000
8 x 16 in.	512,000	128,000	384,000

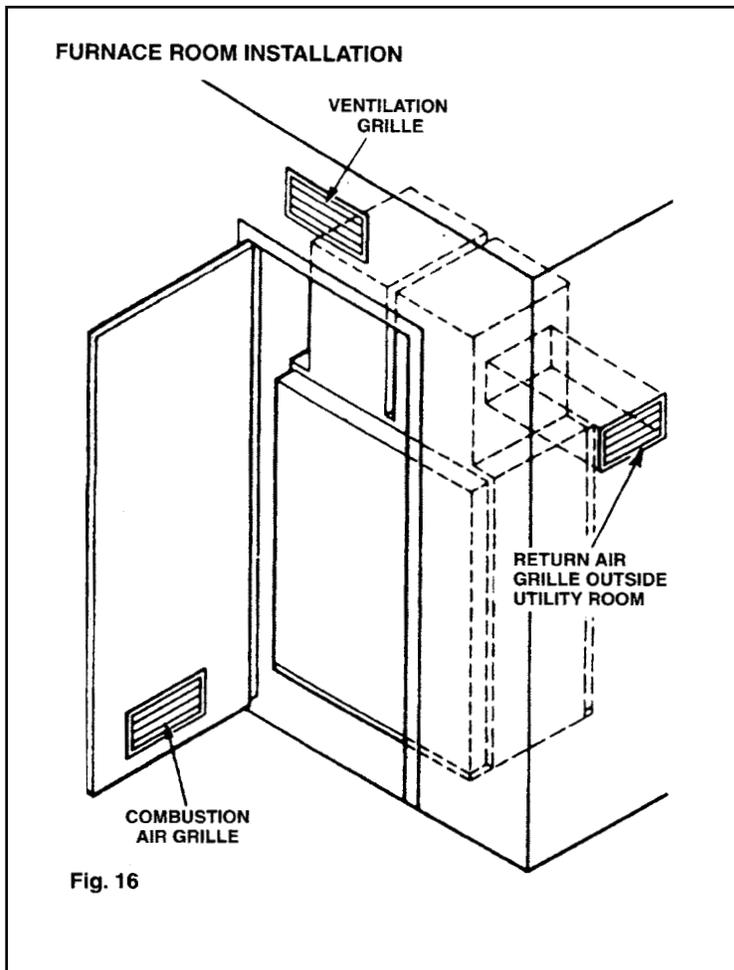
* Based on opening covered by 1/4 inch mesh screen, wood or metal louvers.

WARNING

Enough air insures proper combustion and assures that no hazard will develop due to the lack of oxygen.

NOTE

If you have a fireplace, a kitchen fan, bath fan or water heater that vents to the outside, add enough duct size to your fresh air requirements to accommodate their air needs.



WARNING

Return air **MUST NOT** be drawn from inside the room where the furnace is located.

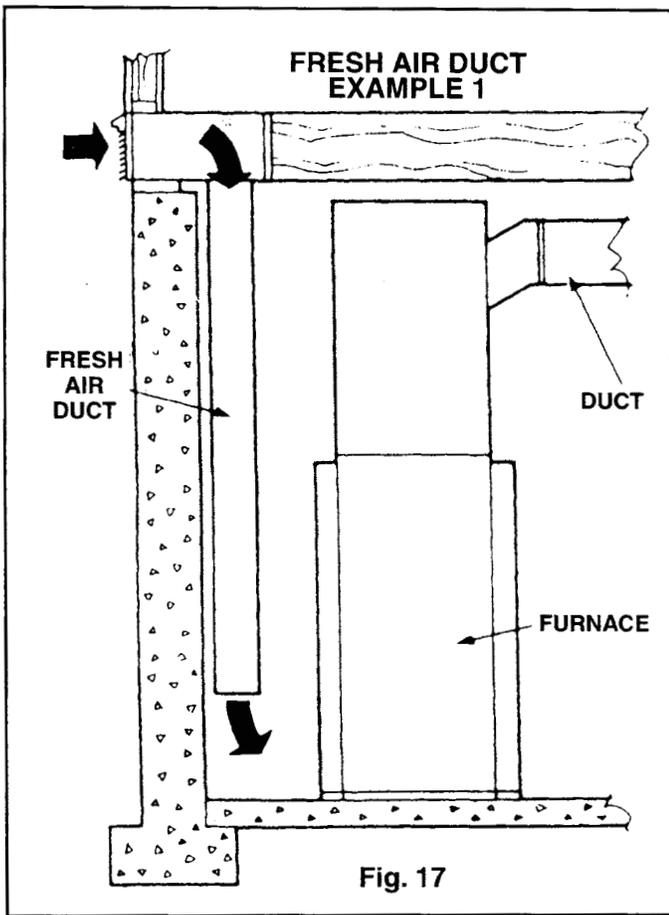
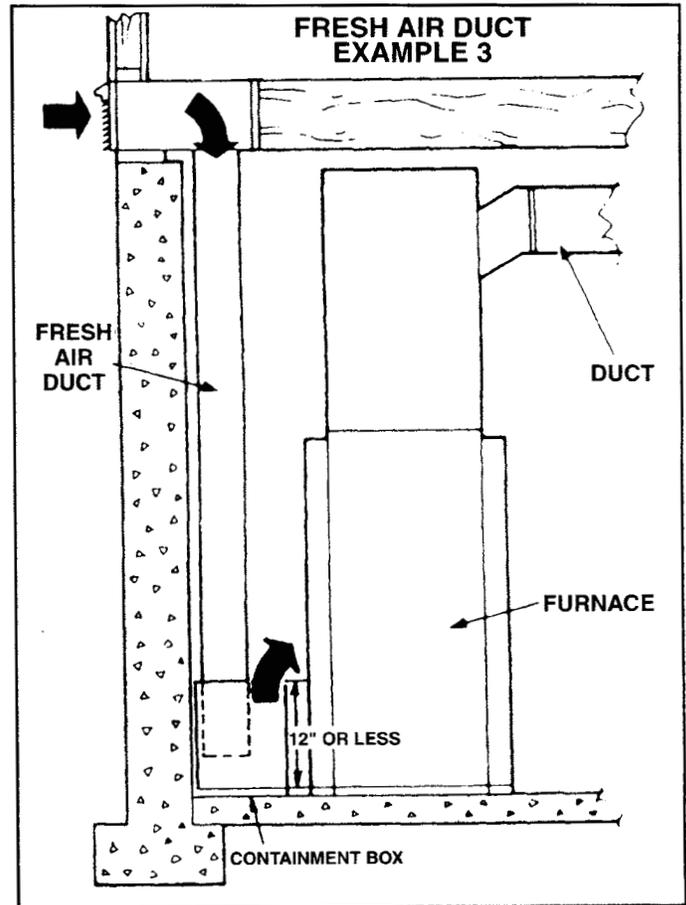
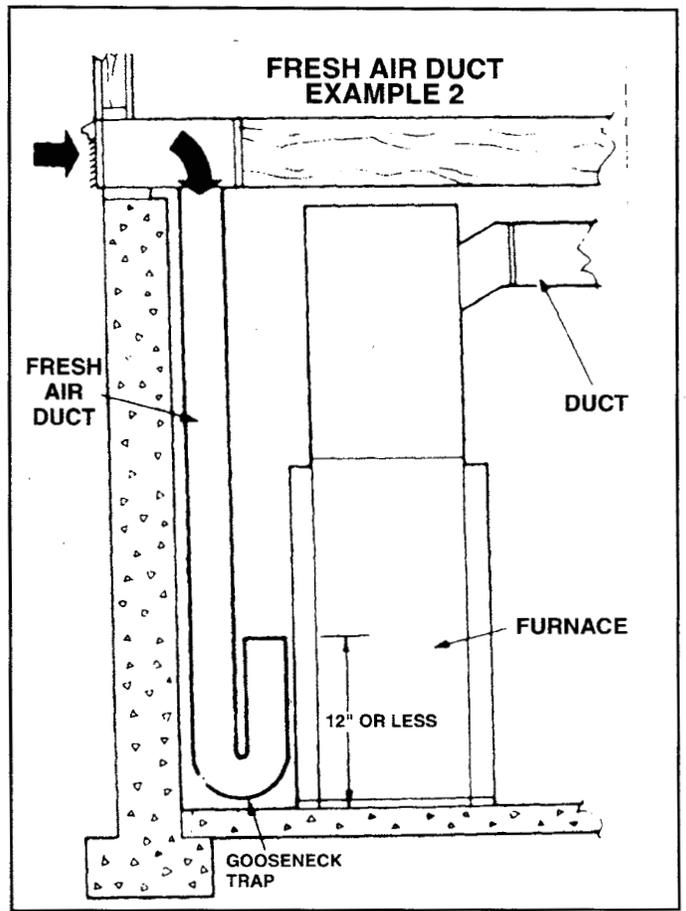


Fig. 17



COMBUSTION AIR

Make-up outside air to the furnace for proper fuel combustion must be provided by openings to the outside of the building. The openings of ducts supplying such make-up air shall have unobstructed areas not less than the area of the flue furnace pipe.

NOTE

Outside air is needed to replace the air used by the burner and wood combustion process. Outside air is also required to replace the air used for taking the by-products of combustion of the gas or oil burner and wood/coal smoke out the chimney. Outside air is also needed to replace any air expelled by kitchen or bathroom fans as well as water heater chimneys or fans.

Failure to provide outside air to the area in which the furnace is located will result in a negative pressure or vacuum in the home. Smoke from the wood fire may not be drawn up the chimney, causing creosote buildup and sometimes causing smoke to enter the furnace room.

WARNING

You must provide for enough fresh air to assure proper combustion. The fire in the furnace uses oxygen and must have a continuous supply. The air in a house contains only enough oxygen to supply the furnace for a short time. Outside air must enter the house to replace that used by the burner.

OPERATION OF YOUR NEW JACK LINE WOOD BURNING FURNACE

Check that your main blower and draft blower are in proper working order before lighting a fire.

Turn thermostat upstairs to high temperature so draft blower turns on, then turn thermostat back to proper setting, turning draft blower off.

Crumple a piece of paper, place inside, light paper, making sure you have a good draft (.03 water column).

Now proceed with lighting a fire.

1. Open manual draft spinner 3-4 turns.
2. Make sure your smoke pipe damper is open. Place several pieces of crumpled paper in the center of your firebox. In a criss-cross pattern, place a couple handfuls of dry kindling wood 3/4" thickness, then several small dry pieces of firewood.

CAUTION

Never use chemicals or fluids such as gasoline, charcoal lighter fluid, drain oil or kerosene to light a fire in your Jack furnace.

3. Ignite the paper and close the door. Do not attempt to open door immediately after igniting the fire. There could be a flame flash out.
4. It will take a few minutes for the fire to establish itself. Once you have some good red hot burning embers, add larger pieces of wood. All chimneys and hook-ups act differently. After a while you will find out how your unit works best for you.
5. After a time you can adjust draft according to your needs. On air tight units, the burning time is controlled very much by the draft control on the furnace, contrary to the old type stove where the smoke pipe damper controlled the burning time. Your Jack Line furnace is capable of putting out many BTU's, so don't fully load your furnace or open all drafts fully until you have become familiar with the operation of the furnace. Keep in mind, a full load will not always give you the best results for your needs.

NOTE

With new steel, there is a small amount of oil or dirt on the metal — you may smell an odor. This is normal during the first operation.

CAUTION

Use caution when opening loading door. Avoid opening loading door rapidly. This could cause flame to flash out door. This occurs when there is unburned fuel and a large amount of gases on top of the fire box. When the door is opened, oxygen is combined with the gases and ignites.

HELPFUL HINTS

Set the draft to proper setting. The chimney, hook-ups, and kinds of wood will be a factor.

Your Jack is capable of holding very large logs. **DO NOT** try to add a log that is larger than what you can easily place in the furnace. You will get best efficiency when you add only the amount of wood needed for a 4 to 6 hour burn.

In the spring and in the fall when the weather is mild, burning large loads of wood for long periods may cause creosote. Stack temperature should be 300° for good burning. Again, depending on the weather, you may not need a full load of wood for a good overnight burn. You will get the best efficiency when you add only small amounts of wood.

You can use wood of various shapes, diameters and lengths, but not to exceed your unit's specifications.

Always try to place the logs so air has free flow between them, increasing combustion.

ASH REMOVAL

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

Once every week or two, depending on how much fuel you burn, ashes should be removed.

CAUTION

Never let ashes build up to grate level. This will reduce the life of your grate.

To remove ashes, simply pull out your ash pan. But remember, the ash pan can get very hot. Dump ashes in a metal container with a lid that is placed on a non-combustible surface.

CAUTION

Never use anything but a metal container to put your ashes in. Every year fires are caused by emptying ashes into cardboard boxes or paper bags.

MAINTENANCE

1. AT THE START OF THE HEATING SEASON...

- It is advisable to have your local furnace man inspect and service your furnace for the coming heating season.
- The furnace, smoke pipe and chimney should be cleaned and checked for repairs.

2. EMERGENCY STOPS

- Shut off all electrical power at the main electric service entrance.

3. SMOKE PIPE, HEAT EXCHANGER AND SECONDARY HEAT EXCHANGER

- Do not burn green or freshly felled wood. If you do, creosote and soot may build-up in the chimney, smoke pipe and secondary heat exchanger. This should be checked and cleaned several times each heating season.

4. Turn on regular (primary) furnace once every month to make sure it is functioning properly.

CLEANING THE CHIMNEY, SMOKE PIPE AND HEAT EXCHANGER

On a regular schedule, check for creosote and soot build-up in the chimney, smoke pipe and heat exchanger. They must be kept clean.

Steel brushes are the safest for cleaning metal surfaces. Salt solutions and some chemicals may damage metal surfaces. When cleaning chimney, obtain a stiff steel brush with an extension handle and insert brush into chimney from the top. Continue brushing and sweeping downward until the full length of the chimney is cleaned. Open the clean-out door at the bottom of the chimney and sweep the debris into a plastic bag or container. When cleaning the smoke pipe or the heat exchanger, use a steel brush.

IN CASE OF CHIMNEY FIRE

1. Alert everyone in the house.
2. Call Fire Department immediately.
3. Shut any doors and air inlet dampers and draft control.
This should take no longer than a few seconds.

DO NOT use your furnace until a professional inspection has been made of your furnace, smoke pipe and chimney.

SERVICE HINTS

Main blower vibrating when in use...

POSSIBLE CAUSE

- Loose allen screw on squirrel cage
- Bad motor bearings
- Weight on squirrel cage wheel moved in shipment

SOLUTION

- Tighten the allen screw, be sure squirrel cage did not move to one side or the other.
- Return blower for a replacement.
- Try to adjust it or return blower for replacement.

Main blower or blowers continue to run...

POSSIBLE CAUSE

- Fan limit control on unit is set too low
- Bad fan limit control
- Improper wiring

SOLUTION

- Remove cover on fan limit control and set dials to the proper settings. Recommended temps: 160° on — 130° off. NOTE: Never adjust fan limit by turning dial itself (picture of fan limit dials.)
- Check by turning one pointer down to where blower should turn off, if they don't, they need to be replaced.
- Go over wiring diagram again.

Main blower or blowers won't turn on...

POSSIBLE CAUSE

- Improper wiring
- Bad fan limit control

SOLUTION

- Go over wiring diagram again.
- Replace fan limit control with a new one.

Combustion blower staying on...

POSSIBLE CAUSE

- Wall thermostat bad, check by turning temp. to 60° then check if draft blower is running
- Short in thermostat wire
- Home is not getting heat needed to satisfy wall thermostat

SOLUTION

- Replace wall thermostat.
- Check all wiring again.
- Check on spec's chart to be sure your unit is large enough for your home. Be sure installation is proper, check with your local heating service provider.

Combustion blower not turning on...

POSSIBLE CAUSE

- Switch on blower to the off position. Bad wall thermostat; check by turning it up to 80° and if the draft blower does not turn on, replace thermostat
- Limit control open

SOLUTION

- Replace thermostat.
- Check, then repair or replace.

Smell an odor from the first fire in the home...

POSSIBLE CAUSE

- New steel, small amounts of residue on steel

SOLUTION

- This will disappear in a matter of hours.

Excessive creosote build-up. A small reminder, whatever kind of fuel you burn, there is some kind of residue build-up on the furnace and chimney. Same with wood no matter how good the conditions...

POSSIBLE CAUSE

- The use of wet, frozen or unseasoned wood
- The use of soft wood, particularly those of high resin content such as plywood or blandex with glue
- Poor natural draft or an obstruction in the stove pipe or chimney flue
- Too long of burning times
- Inadequate amount of oxygen supplied to the combustion chamber
- Low fire or flue gas temperatures
- Uninsulated stove pipe or chimney flues, especially if construction is exterior to the house
- Air leaks in the stove pipe or chimney

SOLUTION

- If you have to use wet wood, make loads smaller and burn them hotter.
- Avoid using if possible.
- Measure draft with gauge. Should be set at .03 water column.
- Smaller and hotter fires.
- Check page 12 of this manual for proper installation of outside combustion air to the furnace room. The air that goes out the chimney in the form of smoke must be replaced with fresh outside air.
- Smaller loads of wood and hotter fires. Stack temps should maintain minimum of 300°.
- Never use uninsulated pipes for chimneys. If installed on the outside of the house, INSULATE!
- Check chimney top to bottom.

NOTE: Creosote is a tarry liquid or solid coming from distillation of wood during the combustion process. The heavier the build-ups, the greater chance of a chimney fire.

NOTE: No matter how seasoned the wood, no matter how good the draft, you will always get a small amount of soot build-up. It should be cleaned out before the winter firing and during the mid-winter firing.

Not getting heat in the home...

POSSIBLE CAUSE

- Unit may be too small for your home; check specifications chart
- Improper insulation in home, allowing heat to escape
- Improper hook up to furnace
- Fan limit control set too low

SOLUTION

- Replace with a larger unit. In colder weather your furnace will turn on once a day, one tank of fuel oil will last for a long time.
- Reinsulate!
- Check installation drawings and/or consult your heating service provider.
- Check settings; refer to operation on proper settings and adjust accordingly. If needed to set higher, never exceed 180° on — 150° off.

Excessive amounts of smoke coming out of loading door when loading...

POSSIBLE CAUSE

- Improper draft
- Chimney cap too close to top of chimney
- Too long of run of smoke pipe from Jack to chimney
- Negative pressure in home

SOLUTION

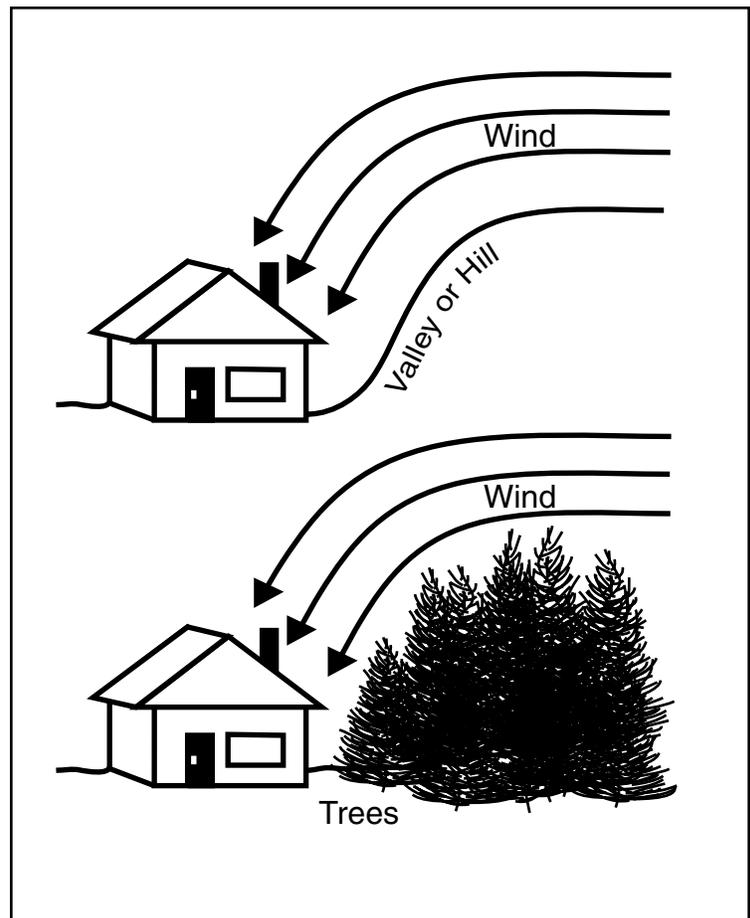
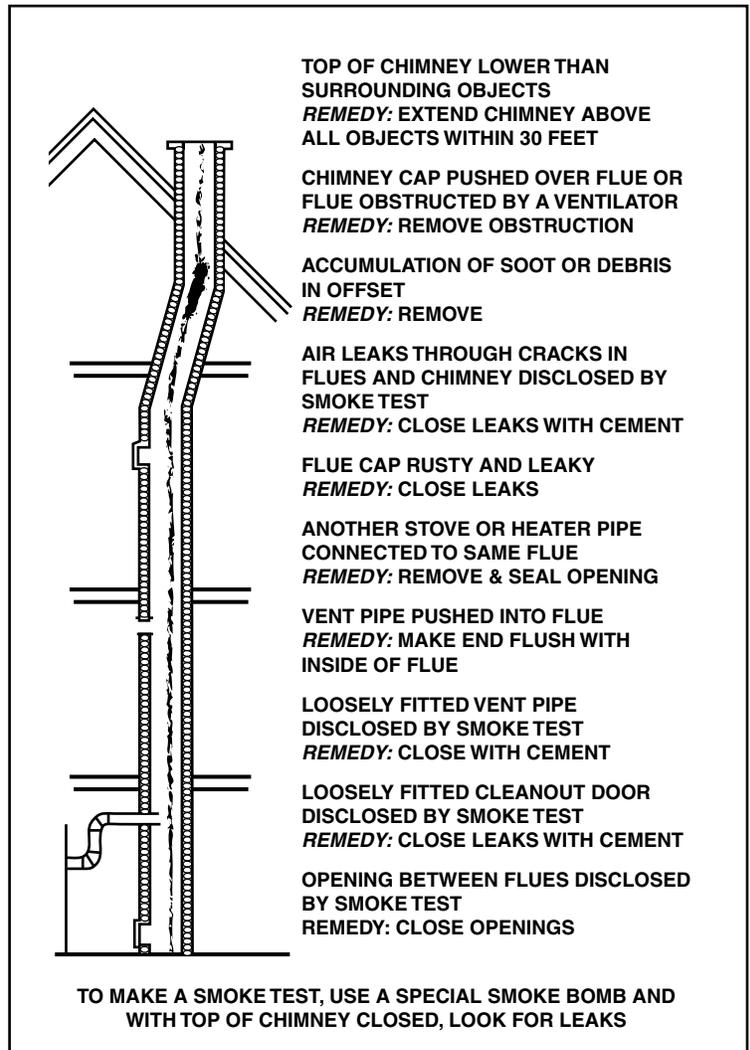
- Measure draft with gauge. Should be set at .03 Water Column.
- Relocate. CAUTION: Always open smoke pipe damper when loading.
- Relocate Jack closer to chimney.
- Install outside combustion air to furnace room.

FAULTY CHIMNEY AND/OR DRAFT PROBLEMS - CAUSES AND CURES

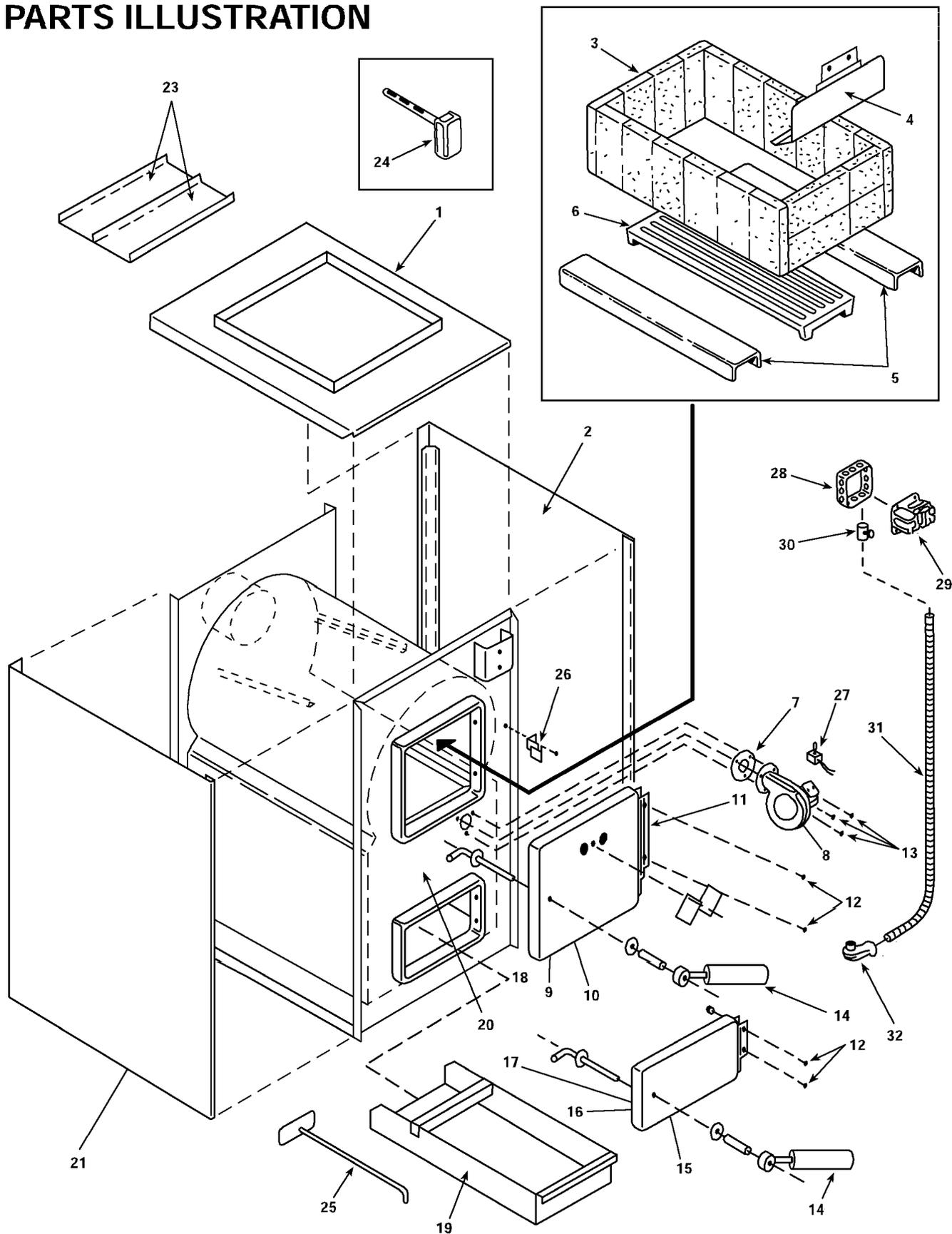
A sound chimney system is imperative, especially when burning wood. Indoor chimneys, either masonry or type "HT" metal chimneys are best. Because warm air rises, a warm chimney allows the smoke and other by-products of combustion a natural exit up and out the chimney. Outdoor chimneys should be your last choice. Cold air naturally falls right down the cold chimney. Until the heat from the furnace warms the chimney, there is no natural draft to allow the smoke and by-products of combustion to rise naturally up the chimney. Outdoor class "A" triple wall is not acceptable because their thermo-siphon design will not allow the chimney to heat up, causing heavy creosote build-up and possible chimney fires.

If you know your chimney is sound and you still have downdraft problems such as smoke or smell in the room in which the furnace is located, your chimney may not be operating properly. One or more of the following suggestions may be necessary.

1. **Barometric draft control** - This control must be set at .03. This is just a guide. It must be set with a draft gauge to prove that the chimney is drawing .03.
2. **Combustion air** - You must have outdoor combustion air introduced into the room where the furnace resides in the manner described on page 12. This method supplies air for combustion as well as replacing air that is drawn out by the chimney. Leaky doors and windows will not provide acceptable results.
3. **Cold outdoor chimney** - Sometimes in the spring or fall, or if you live in a mild climate, your heat demands are small and your chimney just does not heat up enough to induce a natural exit up draft, you may want to consider a power vent to force a draft up the chimney. A Model D-3 or AD-1 power venter is available from Tjurnland Manufacturing Co. in White Bear Lake, Minnesota or Model D1-2 is available from Field Controls Co., Kinston, North Carolina.
4. **Chimney not tall enough** - Your chimney must terminate at least 2 feet above the peak of the roof. Adding more chimney height sometimes cures the problem. (See Fig. 12, page 9)
5. **Home located on side of hill** - When the wind blows over a hill toward your home, the wind will fall. This could cause a down-draft into your chimney. Some common solutions to correct down-drafts are to add a chimney cap with a weather vane, add height to the chimney or add a power venter.
6. **Tall trees near your home** - If you have trees that are near to and higher than your home, a down-draft can occur when the wind blows. Correct the same way as if you live on the side of a hill or in a valley.
7. **Chimney too large** - Your chimney should not be more than 8 inches in diameter or the equivalent. If too large, the sides of the chimney may not heat up to create a natural draft. When this happens, the smoke and gases cool. They become heavy and other gases from the fire try to penetrate this heavy column of cool air. This results in back puffing, poor combustion or burning and may cause odors in your home. The solution is to improve your chimney or line it with 8-inch type 304 stainless steel flue liner. If your large chimney is outside masonry, insulate between the masonry and 8-inch flue pipe.



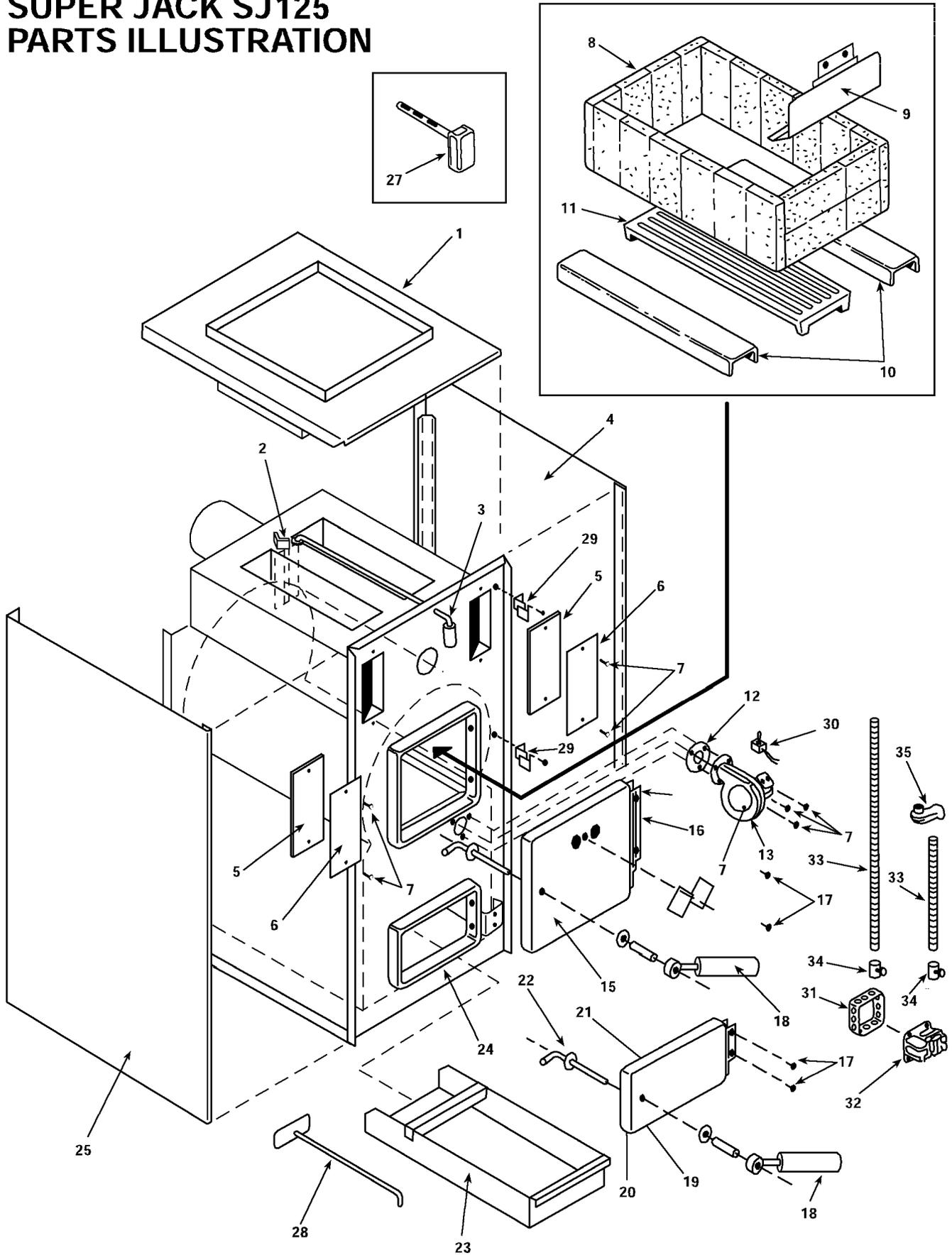
BIG JACK BJ90 PARTS ILLUSTRATION



BIG JACK BJ90 PARTS LIST

KEY NO.	PART NO.	DESCRIPTION	QTY.
1	205	Jacket (top)	1
2	204	Jacket Side (right)	1
3	113	Fire Brick	16
4	119	Smoke Flap (assembly)	1
5	117	Grate Fillers	2
6	105	Cast Iron Grate	1
7	111	Draft Inducer Gasket	1
8	110	Draft Inducer	1
9	116	Fire Door Liner	1
10	115	Fire Door Gasket	1
11	114	Fire Door & Fire Door Hinge	1
12	106	Door Bolts (w/Nuts)	4
13	109	Fire Door Assembly Screws (4) - Ash Door Screws (2) Draft Inducer Screws (3)	9
14	107	Door Handle (assembly)	2
15	101	Ash Door & Ash Door Hinge	1
16	102	Ash Door Gasket	1
17	103	Ash Door Liner	1
18	108	Door Handle Collar 1/2 - inch	2
19	104	Ash Pan	1
20	201	Fire Box (assembly)	1
21	203	Jacket Side (left)	1
23	206	Two-piece Baffle	1
24	112	Fan & Limit Control (Honeywell)	1
25	118	Poker (assembly)	1
26	122	Conduit Clips	1
27	123	Toggle Switch	1
28	414	Wire Outlet Box	1
29	121	Trans/Relay	1
30	407	Conduit Connector	2
31	406	Conduit	2
32	407E	Conduit Connector 90° EL	1

SUPER JACK SJ125 PARTS ILLUSTRATION



SUPER JACK SJ125 PARTS LIST

KEY NO.	PART NO.	DESCRIPTION	QTY.
1	309	Jacket (top)	1
2	304	Damper Plate w/Rod	1
3	303	Damper Control Rod	1
4	307	Jacket Side (right)	2
5	302	Clean Out Plate Gasket	2
6	301	Clean Out Plate	2
7	109	Clean Out Plate Screws (4) - Fire Door Screws (4) - Ash Door Screws (2) - Draft Inducer Screws (3)	13
8	113	Fire Brick	16
9	119	Smoke Flap	1
10	117	Grate Fillers	2
11	105	Cast Iron Grate	1
12	111	Draft Inducer Gasket	1
13	110	Draft Inducer	1
14	116	Fire Door Liner	1
15	115	Fire Door Gasket	1
16	114	Fire Door w/Hinge assembly	1
17	106	Door Bolts (w/Nuts) (Ash Door (2) - Fire Door (2)	4
18	107	Door Handles	2
19	101	Ash Door w/ Hinge assembly	1
20	102	Ash Door Gasket	1
21	103	Ash Door Liner	1
22	108	Door Handle Collar 1/2 - inch	2
23	104	Ash Pan	1
24	305	Fire Box (assembly)	1
25	308	Jacket Side (left)	1
27	112	Fan & Limit Control (Honeywell)	1
28	118	Poker (assembly)	1
29	122	Conduit Clips	2
30	123	Toggle Switch	1
31	414	Wire Outlet Box	1
32	121	Trans/Relay	1
33	406	Conduit	2
34	407	Conduit Connector	3
35	407E	Conduit Connector 90° EL	1



OWNER'S MANUAL

**Model No.'s
BJ90 - SJ125**

CAUTION:

**Read Rules And Instructions
Carefully For Safe Operation**

IMPORTANT:

Installation must be made in accordance with state and local ordinances which may differ from this installation manual.

SUPER JACK/ BIG JACK

WOOD BURNING FURNACES

HOW TO ORDER REPAIR PARTS

**WHEN ORDERING REPAIR PARTS,
ALWAYS GIVE THE FOLLOWING INFORMATION:**

- PART NUMBER
- PART DESCRIPTION
- MODEL NUMBER
- NAME OF ITEM

**ALL PARTS MAY BE PURCHASED FROM ANY HEATING
CONTRACTOR, OR DIRECT FROM THE FACTORY.**

PHONE: 1-800-358-0060
FAX: 1-800-440-1994
E-MAIL: info@yukon-eagle.com
WEBSITE: www.yukon-eagle.com