

OWNER'S MANUAL

- ASSEMBLY
- INSTALLATION
- OPERATION
- REPAIR PARTS

MODEL NUMBERS BJ90 AND SJ125

CANADIAN MODELS BJ90-C AND SJ125-C

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 MODEL SJ125

BIG JACK MODEL BJ90



SUPER JACK & BIG JACK WOOD BURNING FURNACES





FOR YOUR SAFETY:

If you smell gas:

- 1. Open windows
- 2. Do not touch electrical switches
- 3. Extinguish any open flame
- 4. Immediately call your gas supplier



FOR YOUR SAFETY:

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

DANGER RISK OF FIRE OR EXPLOSION

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

 \triangle Tightly close the firing door and ash door during operation.

A Do not operate with flue draft exceeding .03" W.C.

🖄 Do not store flammable materials within marked installation clearance.

 $\underline{\bigwedge}$ Frequently inspect and clean soot and/or creosote from the heat exchanger, smoke pipe, and chimney.

A Do not connect this unit to a chimney flue serving another appliance.



Before installing this furnace, read and follow all instructions in this manual. It is recommended that a heating professional installs or supervises the entire installation of the furnace, ducts, chimney and electrical connections.



Visit www.yukon-eagle.com or call

1-800-358-0060

For repair or replacement parts, See back cover for details.

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Big Jack (BJ90)	
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Safety Statements

SAVE THESE INSTRUCTIONS



STOP FOR SAFETY!

Safe assembly, operating and maintenance practices should always be followed whenever using any equipment. Wherever you see the caution sign, extra safety precautions should be taken.



You must stop, read, and carefully follow the safety instructions before proceeding.

READ THROUGH THE ENTIRE MANUAL

It is recommended to read through the entire manual before beginning your installation and/or operating your furnace. Follow all steps exactly.

NFPA PRACTICES

Areas of this manual refer to the National Fire Protection Association (NFPA). NFPA is a non-profit organization.

This furnace must be installed according to NFPA codes. NFPA Codes, Standards, recommended practices, and guides referred to in this document are approved by

the American National Standards Institute. State and local codes are adopted from these standards.



DANGERS-CAUTION - FIRE HAZARDS (BURN WOOD LOGS OR COAL ONLY)

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 combustible floor.

In the event of an electrical power failure, be sure ash door and fire door remain closed.

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 1-inch rise per linear foot from the furnace to the chimney opening. Smoke pipe shall be 24 gauge galvanized or black pipe.

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. TURN OFF ELECTRIC POWER TO FURNACE.

Safety Statements





INSPECT FLUE PIPES, FLUE PIPE JOINTS, AND FLUE PIPE SEALS REGULARLY TO ENSURE THAT SMOKE AND FLUE GASES ARE NOT DRAWN INTO, AND CIRCULATED BY, THE AIR-CIRCULATION SYSTEM.

CAUTION

THE WARM-AIR SUPPLY OF THE SUPPLEMENTARY FURNACE SHALL NOT BE CONNECTED TO THE COLD-AIR RETURN DUCTING OF THE CENTRAL FURNACE.

Installation shall comply with CAN/CSA-B365 and if changes are made to the central furnace, changes are to comply with CSA-B139 (add-on to oil furnaces), CSA C22.1 (add-on to electric furnaces), or CAN/CGA-B149.1 or B149.2 (add-on to gas furnaces).

ADD-ON to GAS FURNACE INSTALLATIONS



When adding on to a gas furnace, the operation of the gas furnace must be verified for acceptable operation before and after installation of the Jack add-on furnace by a gas fitter who is recognized by the regulatory authority.



DO NOT connect, under any circumstances, to the chimney or vent serving a gas furnace or gas appliance.



Operate the gas-fired unit periodically to ensure that it will operate satisfactorily when needed.

DO NOT relocate or bypass any of the safety controls in the original furnace installation.





Unit shall only be installed on a furnace duct system and chimney that are in good operating condition.



External static pressure of the central furnace shall be measured before any changes are made for the Jack add-on installation. These values shall be maintained following the add-on installation.

Questions? Visit www.yukon-eagle.com or call 1-800-358-0060

Safety Statements

TO THE INSTALLER

It is necessary to ensure that there is sufficient air flow through each furnace after the addon installation has been completed. It is suggested that the temperature rise method be used since most installers are likely to have the necessary equipment. The temperature measurements may be made using a potentiometer and thermocouples, mercury thermometers. If thermometers are used, sufficient time must be allowed for the thermometer to reach actual temperature. As much as twenty minutes may be required.

PROCEDURE

To check the existing system, drill a hole 1/4" in the side of the return plenum on the primary furnace and a similar 1/4" hole in the side of the main supply air duct, 24" from the supply air plenum. Insert a temperature measuring device in each of these holes and start the primary furnace. Allow the furnace to operate until all temperatures have stabilized. This will take at least 1/2 an hour. Read the two temperatures thus obtained and not the difference, TS - TR. (see diagram 1, page 16). This difference should not exceed 85 degrees F. (29° C) Complete the installation of the Jack as an add-on furnace and drill a third 1/4" hole in the TA (See TA, page 16). Insert a temperature measuring device.

Operate the primary furnace until the temperature rise TA - TR across the primary furnace is equal to or less than 85 degrees F (29° C). Should this temperature difference exceed 85 degrees (29° C), increase the blower speed until the temperature rise TA - TR is equal or less than 85 degrees F (29° C).

Shut off the primary furnace and build a fire in the Jack unit. When the fire is established, fill the fire box to the top of the firebrick (maximum level). Open the combustion blower air damper. Allow the temperature to stabilize and measure the temperature difference TS - TR. Should it exceed 85 degree F (29° C), a further increase in blower speed will be necessary. Once the proper air temperature rise has been obtained, an ammeter should be connected to the blower motor to measure current draw. If it exceeds the name plate rating, change the motor to a higher rating (if the old motor was a two stage, ensure that the new motor is as well). It is permissible to change the blower motor and blower drive pulleys in the primary furnace but not the blower unit.

This equipment must be installed according to the manufacturer's instructions and in a manner acceptable to the regulatory authority having jurisdiction by mechanics experienced in such a service. When required by regulatory authority, such mechanics shall be licensed to perform this service.

Unpack and Check your Cartons

INSPECT SHIPMENT

Note any damage to the shipping cartons. Remove all items from your shipping cartons. Check all items against the packing list below. Note any items lost or damaged in shipment. Refer to the exploded view and parts list in the back of the manual for the part names and numbers of missing or damaged items. Keep the small parts in the parts bag until you are ready to install them.

Inspect the furnace for visible damage.

The furnace is shipped strapped to a pallet. Inside the wood loading door is another carton.

This carton contains:

- Barometric Draft Regulator
- Gasket
- Conduit Clip
- Wiring Harness
- Fan and Limit control
- Combustion Blower
- Transformer-Relay
- Interlock Relay
- Thermostat
- Owner's Manual
- Warranty Sheet

Note:

If ordered, the Circulating Blower and Motor and Cabinet are shipped in separate cartons.

Plenum Packages are also shipped in a separate carton.



Super Jack - SJ125



Big Jack - BJ90

Furnace Features - SJ125



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FAN AND LIMIT CONTROL

The fan limit control turns the fan on and off. It works off of temperature and also provides a high temperature safety limit.

SECONDARY HEAT EXCHANGER More heat exchanger surface means less heat up the Chimney. Made of 10 gauge steel rectangular tubes, which the heat produced by the furnace, passes through, before entering the chimney.

EASY ACCESS CLEAN OUTS The two clean out plates on the front of the furnace allow easy access to clean the Secondary Heat Exchanger tubes. Keeping the inside of your furnace clean insures high efficiency and helps prevent creosote fires.

PICTURE FRAME FRONT

The front and back of the furnace is built of 10 gauge steel and painted with high temperature black paint. The 22 gauge painted side panels are designed to slide onto the flanged steel for easy installation.

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LARGE LOADING FIRE DOOR WITH POSITIVE DOOR LOCK

This 13" x 13" opening allows for easy loading and larger diameter split logs. The positive door lock ensures that smoke and heat will not escape from the furnace.

The round cast iron disc allows secondary air over the flame. It helps burn smoke and unburned gases that leave the flame, thereby increasing efficiency.



FORCED DRAFT COMBUSTION BLOWER

This furnace operates on a forced draft principle. When the thermostat is calling for heat, the draft blower will turn on to get the fire burning. Draft blower air disc must be open.

7

HONEYWELL TRANSFORMER / RELAY

These Honeywell Transformers are the industry standard and made for heating systems. This 24V control circuit stepdown transformer is designed to power any 24V control system, including thermostats and relays.



EASY ACCESS ASH PAN

Designed to allow for easy removal of ashes. Pulls out of furnace, equipped with additional cross bar handle for easy ash disposal.



HIGH TEMPERATURE FIREBRICK

1-1/4 thick Hi-Temperature firebrick surrounds the wood/coal fire. The Super Jack features 90 pounds of firebrick. This firebrick not only protects the steel from the extreme combustion temperature in the firebox, but it also retains a substantial amount of heat after the wood/coal fire burns down.

HEAVY CAST IRON GRATE

It is imperative that 80 percent of the air for combustion enter the firebox from below a wood/coal grate to insure an efficient and clean burning fire. This grate is made of heavy cast iron that can endure the temperatures of wood and coal fires.



Furnace Features - BJ90

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FAN AND LIMIT CONTROL

The fan limit control turns the fan on and off in furnace applications. It works off of temperature and also provides a high temperature safety limit.

PICTURE FRAME FRONT

The front and back of the furnace is built of 10 gauge steel and painted with high temperature black paint. The 22 gauge painted side panels are designed to slide onto the flanged steel for easy installation.

LARGE LOADING FIRE DOOR WITH POSITIVE DOOR LOCK

This 13" x 13" opening allows for easy loading and larger diameter split logs. The positive door lock ensures that smoke and heat will not escape from the furnace.

The round cast iron disc allows secondary air over the flame. It helps burn smoke and unburned gases that leave the flame, thereby increasing efficiency.

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FORCED DRAFT COMBUSTION BLOWER

This furnace operates on a forced draft principle. When the thermostat is calling for heat, the Draft Blower will turn on to get the fire burning. Draft blower disc must be open.

HONEYWELL TRANSFORMER / RELAY

These Honeywell Transformers are the industry standard and made for heating systems. This 24V control circuit stepdown transformer is designed to power any 24V control system, including thermostats and relays.

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Designed to allow for easy removal of ashes. Pulls out of furnace, equipped with additional cross bar handle for easy ash disposal.

7

HIGH TEMPERATURE FIREBRICK

1-1/4 thick Hi-Temperature firebrick surrounds the wood/coal fire. The Big Jack features 90 pounds of firebrick. This firebrick not only protects the steel from the extreme combustion temperature in the firebox, but it also retains a substantial amount of heat after the wood/coal fire burns down.

HEAVY CAST IRON GRATE

It is imperative that 80 percent of the air for combustion enter the firebox from below a wood/coal grate to insure an efficient and clean burning fire. This grate is made of heavy cast iron that can endure the temperatures of wood and coal fires.

Specifications

BIG JACK 90 MODEL BJ90

BTU Capacity	
Wood Capacity	5.25 Cu. Ft
Heat Exchanger (Total Area)	
Maximum Wood Length	
Fire Box Dimensions	16" wide x 24" long x 23" high
Smoke Collar	6"
Weight	
Height	
Width	
Depth	
Warm Air Plenum Opening	
Fire Door Opening.	
Secondary Heat Exchanger (Area)	None
Blower (Optional)	1460 CFM

PLAN YOUR INSTALLATION

It is recommended to read through the entire manual before beginning your installation. Follow all steps exactly. Reading this manual will also help you get all the benefits from your furnace.

CAUTION: 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.

IMPORTANT!

CHECKING THE FURNACE INSTALLATION AND MAKING ADJUSTMENTS

It is imperative that a heating professional, before startup and at the beginning of each heating season, inspects the entire installation and make any necessary adjustments.

RULES FOR SAFE INSTALLATION AND OPERATION

- 1. Check your local codes. The installation must comply with them.
- 2. USE ONLY WOOD LOGS OR COAL in this furnace. Over firing will result in failure of heat exchanger and cause dangerous operation.
- 3. You must have a sufficient supply of outside combustion air to the area in which the furnace is located. (See page 19).
- 4. Factory Built Chimneys: Connect this furnace to a chimney that complies with NFPA 211. 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. 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.

- 5. Follow a regular service and maintenance schedule for efficient and safe operation.
- 6. Before servicing, allow furnace to cool. Always shut off electricity to furnace.

DUCTS SHOULD BE LARGE ENOUGH TO HANDLE GRAVITY AIR FLOW IN THE EVENT OF ELECTRIC POWER OR FURNACE FAN FAILURE

AIR CONDITIONING COIL MUST BE INSTALLED WITH A METAL CONDENSATE PAN.

DO NOT USE PLASTIC CONDENSATE PAN

LOCATING THE FURNACE

Locate the furnace as close to the chimney or flue as possible. The furnace should be located no more than 10 feet away from the chimney. You will need 1" rise per linear foot of pipe as a minimum.

The furnace should be located with respect to building construction and the placement of other equipment. Consideration should be given to sufficient clearance. Sufficient clearance provides adequate access for the cleaning of surfaces; the replacement of blowers, motors, controls and the chimney connector; and for the lubrication and servicing of moving parts.

Making sure that sufficient air supply for ventilation and proper combustion are piped into the room where the furnace is located.

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., PO Box 9101, Quincy, MA 02269-9101.

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 back-side as well as on their exposed side. Therefore, the combustible wall behind it is still a fire hazard.

NOTE:

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

1" CLEARANCE TO COMBUSTIBLES BEYOND 6' TO A POINT WHERE THERE IS A CHANGE IN DIRECTION OF 90 DEGREES OR MORE.

TYPICAL INSTALLATIONS SERIES ADD-ON PARALLEL ADD-ON INDEPENDENT INSTALLATION IMPORTANT INSTALLATION DUCTS AND PLENUMS SHALL BE CONSTRUCTED ENTIRELY OF SHEET METAL.

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 in NFPA 211 1-5.217.4 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.

FURNACE ROOM INSTALLATION

FURNACE LOCATED IN CONFINED SPACE

When the furnace is in utility room, install two open grilles. Place them 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. It should be not less than one square inch for each 1000 BTU/hr. of the total input rating of appliances in confined space.

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. Therefore, 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

SIZE	1/4" MESH SCREEN BTU	WOOD LOUVERS BTU	METAL LOUVERS BTU
3-1/4 X 12 INCH	144,000	36,000	108,000
8 INCH ROUND	200,000	50,000	150,000
8 X 12 INCH	382,000	96,000	288,000
8 X 16 INCH	512,000	128,000	384,000

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

COMBUSTION AIR

Make-up outside air must be provided to furnace for proper fuel combustion. This is provided by openings to outside of building. These openings shall have unobstructed areas not less than the areas of the flue pipe.

IMPORTANT:

Outside air is needed to replace air used by the burner and wood combustion process. Outside air is required to replace air used for taking the byproducts of combustion out the chimney. Outside air is needed to replace air expelled by kitchen or bathroom fans. It is also needed to replace air expelled by water heater chimneys or fans.

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

PLACE FURNACE

Review all instructions in the Planning Your Installation section. Place the furnace in the pre-selected location.

Refer to Page 15 in the Plan Your Installation section. Make sure the furnace is level.

Furnace Casing

The furnace casing is shipped unassembled in a carton attached to the furnace.

Slide side panels down over angled edges of the black steel on the front and back of the furnace. See Fig. 1

Place top panel over the front edge of the furnace and set down over the side panels. See Fig. 2

CANADIAN FURNACES ONLY

All Jack furnaces that are shipped to Canada will include an insulated front panel casing and an insulated back panel casing.

Front panel installation: (BJ90-C)

Slide front panel down to straddle over the firing door. Press top of panel in securely. Attach to furnace by lining up the screw holes (pre punched on flange and holes on black steel and screwing in 2 screws (furnished).

Back panel installation:

Slide hole in panel casing over the flue collar of the furnace (do this prior to connecting smoke pipe), press tight to back of furnace, line up pre drilled holes in bottom flange of casing and black steel of the furnace. Secure with 3 screws (furnished).

Front panel installation: (SJ125-C)

With firing door open, pull damper rod all the way out. Slide panel casing on by tilting and maneuvering all the way to the right and up - taking care that the fire door hinges are missed. Snug the left side to the furnace front, line up the holes in the bottom flange on the casing and on the black steel of furnace (pre drilled), screw in the two screws (furnished) to secure front panel.

Back panel installation:

Slide hole in panel casing over the flue collar of the furnace (do this prior to connecting smoke pipe), press tight to back of furnace, line up pre drilled holes in bottom flange and black steel of furnace. Secure with 3 screws (furnished)

Model SJ125-C shown.

Combustion Blower

Remove the three (3) self tapping screws off the front of the furnace. (Set aside) Line up the gasket to the mounting flange of the combustion blower and using the 3 screws, tighten onto the front of the furnace. See Fig. 3

4x4 Junction Box

Big Jack

Attach the junction box with the transformer/relay to the mount provided at the top right hand side of the front of the furnace. See Fig. 4

Note: BJ90-C (Canada)

FIG. 4

Attach by mounting the junction box onto insulated panel and place screws into two holes pre-punched into panel casing.

Super Jack

Attach the junction box with the transformer/relay to the mount provided at the bottom right hand side of the front of the furnace. See Fig. 5

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Big Jack

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INSTALLING THE HONEYWELL FAN/LIMIT CONTROL

Included in the accessory carton is a white sheet metal bracket that is 8-1/4 inches high and 3-1/4 inches wide. It has a 7/8" hole in it 6 inches from the bottom. Right below the 7/8" hole are 2 screw holes. This bracket also has 2 screw mounting holes on the bottom 1-1/4 inch flange.

1. Place the sheet metal plenum on top of the warm air duct opening.

2. Attach the fan/limit control mounting bracket to the top of the furnace using sheet metal screws.

3. With the fan/limit control bracket up against the sheet metal plenum, drill a 7/8" hole and two 1/8" holes through the holes in the bracket and through the sheet metal plenum using the bracket as a template.

4. Screw the mounting bracket clamp onto the bracket and plenum with the 2 screws that are furnished.

5. Install the fan/limit control through the mounting bracket and into the plenum.

6. Tighten the mounting bracket set screw into the fan/limit control.

MOUNTING THE THERMOSTAT

The thermostat must be mounted on an interior centrally located wall. Place it away from direct sunlight, drafts, and approximately 5 feet above the floor. It is not required that it is level. Place it right next to your thermostat for your existing furnace. See Fig. 6

Honeywell Digital Thermostat

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ELECTRIC WIRING

All electrical wiring must be done in accordance with the National Electrical Code. The code needs to be legally authorized in the area where the installation is being made. The circuit protector device must be located in a convenient place near the furnace. No lighter than 14 AWG wire should be used in the furnace power supply circuit. All furnaces covered by this manual and installed in the United States of America operate on 115 Volts, 60 Cycle, 1-Phase Alternating Current with a 20 amp circuit protector device.

WARNING: Turn off electric power at circuit protector device before making any line voltage connections.

WIRING THE FURNACE

The furnace wiring is provided in harness form. Mount the 4 x 4 junction box to the mounting bracket on front of the furnace. See Fig. 4 & 5 (page 22) Connect components as shown in wiring diagram on page 26.

CAUTION: This furnace is not approved for use with aluminum wire.

NOTE: 24 volt wires from the transformer/relay to thermostat need not be enclosed in conduit. (See wiring diagram on page 26)

Wiring Diagram

Wiring Diagram

Wiring for 4-SPEED - 1/4 HP MOTOR (OPTIONAL)

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 and no more than 2 elbows. A Clean out 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 clean out. The smoke pipe must not extend into the chimney beyond the inner face of the chimney liner.

CAUTION:

DO NOT USE ANY SMOKE PIPES LESS THAN 24 GAUGE BETWEEN FURNACE AND CHIMNEY.

 \bigwedge warning \bigwedge

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 <u>.03 Water Column</u>. 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.

VERTICAL FLUE:

Adjustment weight must be in RIGHT HAND SLOT (Marked "V") in bracket on gate. See Fig. 7

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 on to gate again.

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

HORIZONTAL FLUE:

Adjustment weight must be in LEFT HAND SLOT (Marked "H") in bracket on gate. See Fig. 8

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 on to gate again.

DRAFT CONTROL INSTALLATION

Insert the draft control in the open end of the stub. Revolve it so it is right-side-up and imprinting on control reads normally. See Fig. 9

To function properly, the draft control must be mounted level and plumb in the tee joint stub. Using a carpenter's spirit level placed vertically across the ring, position the draft control so it is plumb and does not lean forward or backward. (See Fig. 10) Also, place the spirit level horizontally across the front, in line with the pivot pins and position the control so it sets true (level). (See Fig. 11) Tighten locking screw to hold draft control in place.

FIG. 10

FIG. 11

SETTING THE DRAFT REGULATOR AND SOME INFORMATION ON CREOSOTE

TO FUNCTION PROPERLY AND SAFELY, it is imperative that the draft control when installed in the Tee stub, is pointing away from surrounding walls or obstructions. (See Fig. 12) Placement of draft control pointing toward nearby wall(s) or obstruction(s) could result in a hot spot on the exposed surface and subsequent fire hazard.

REGARDLESS OF LOCATION AND POSITION, the Tee stub opening MUST be plumb (perpendicular) for the draft control to function properly.

AFTER THE TEE SECTION LOCATION HAS BEEN DETERMINED, secure the section with both ends to adjacent sections of standard smoke pipe. Three sheet metal screws placed at equal distance around each end of pipe will hold it firmly in place.

INITIAL SETTING OF BAROMETRIC CONTROL

Before adjusting the draft control, be sure there is a good fire burning.

Set the control at a maximum of -.03 to -.04 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 draft in flue adjacent to control, not over-fire drafts.) A manometer must be used to accurately adjust flue draft.

FIG. 12

CREOSOTE BUILD UP - Creosote, in a vaporized state, is present in the gases emitted by burning wood and is highly combustible in its solid and semi-liquid states. Creosote may build up on the interior surface of the chimney and subsequently reduce the draft opening. A DANGEROUS CHIMNEY FIRE MAY RESULT IF ANY APPRECIABLE CREOSOTE BUILD UP IS PERMITTED.

ADVERSE CONDITIONS CONDUCIVE TO CREO-SOTE BUILD UP - Creosote condenses from the flue gases more rapidly when the temperature in the chimney is cool. The amount of creosote build up is dependent on:

- The amount of moisture in the flue gases
- The temperature of the stack
- The rate at which the wood is burned
- The amount of draft in the stack
- How completely the combustible elements in the flue gases have been burned in the combustion chamber

Most problems with creosote are due to insufficiently dry or cured wood, inadequate chimneys with low draft and cold walls (below 250°F), and/or too low a rate of burning when little heat is required during spring and fall months.

CONTROL OF CREOSOTE - Moisture in the flue gases may be controlled by:

- Using properly seasoned fire wood
- Mixing small pieces of air dried wood with every load
- Never using only large wood (usually less dry) during mild weather when combustion is relatively slow

The temperature in the stack may be controlled by:

- Using as short a length of stove pipe as possible between the appliance and the chimney
- Using an insulated (double wall) smoke pipe to connect the appliance to the chimney

The amount of draft in the stack may be improved by:

- Having as few bends as possible
- Insuring adequate chimney height and preventing air leaks
- Eliminating external obstructions in the chimney outlet
- Having only one appliance per flue (Code)

REMOVAL OF CREOSOTE - Accumulations of creosote in smoke pipe and chimney flue should be removed on a regular basis by dismantling and scraping connector pipes and by scraping and brushing flue until free of deposits. In many areas there are professional chimney cleaning services available to perform this cleaning operation.

BEST WOOD TO BURN

All solid fuel, whether it is coal, pine, oak or any grain has about 12,000 BTU's per pound if its moisture content is zero. Wood that has been cut, split and air dried for 2 years has about 8,000 usable BTU's per pound. Hardwood such as oak or hard maple has nearly twice the BTU's per cord as pine or aspen because it is nearly twice as heavy.

Freshly cut wood has about 50% moisture content. Wood that has been cut and split for 2 years has about 20%. Wood must reach at least 435° to ignite. High moisture content wood does not allow the gases in wood to get hot enough to provide complete combustion, thereby creating smoke and creosote, which is usable energy, but wasted because of incomplete combustion.

Our Jack furnaces are designed to wring the most energy possible from each log. Your furnace is designed to allow the primary air under the grate to create the initial burning. As the wood burns, gases, which contain 40% of the energy in the wood, escape to the top of the flame. The Cast Iron Spinner on the firing door, when opened 3 full turns, will provide secondary air to the top of the fire to burn these gases. The result is you will use up to 75% less wood than stoves, furnaces or outdoor boilers without this feature.

Species	Pound Weight Per Cord	BTU's per Cord Air Dried Wood	Equivalent Value #2 Fuel Oil Gallons
Hickory	4,327	27,700,000	198
Apple	4,100	26,500,000	189
White Oak	4,012	25,700,000	184
Beech	3,757	24,000,000	171
Red Oak	3,757	24,000,000	171
Sugar Maple	3,757	24,000,000	171
Yellow Birch	3,689	23,600,000	169
White Ash	3,689	23,600,000	169
Tamarack	3,247	20,800,000	149
Paper Birch	3,179	20,300,000	145
Cherry	3,121	20,000,000	143
Elm	3,052	19,500,000	139
Black Ash	2,992	19,100,000	136
Red Maple	2,924	18,700,000	134
Box Elder	2,797	17,900,000	128
Black Spruce	2,482	15,900,000	114
Ponderosa Pine	2,380	15,200,000	109
Aspen	2,290	14,700,000	105
Cottonwood	2,108	13,500,000	96

Questions? Visit www.yukon-eagle.com or call 1-800-358-0060

HELPFUL HINTS

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

Open the disc on the side of the Draft Inducer Motor (supplied with your Jack furnace) to allow air into the furnace for combustion. While lighting the fire, open disc all the way. Once a good fire is established, adjust the disc back to a point where you are achieving the desired amount of heat and burn times.

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 (chimney) 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.

Let the thermostat and draft inducer blower do their jobs. They should cause a "high burn - low burn" cycle. Do not let the wood smolder.

You can use wood of various shapes, diameters and lengths, but not to exceed the maximum recommended loading height.

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

CAUTION: DO NOT LOAD WOOD OR COAL HIGHER THAN THE TOP OF THE FIREBRICKS. Failure or damage to the firebox could result.

STARTING A WOOD FIRE

1. Place several pieces of crumpled paper in the center of your firebox. In a criss-cross pattern, place a couple hand-fuls of dry kindling wood 3/4" thickness, then several small dry pieces of firewood.

A NEVER USE CHEMICALS OR FLUIDS SUCH AS GASOLINE, CHARCOAL LIGHTER FLUID, DRAIN OIL OR KEROSENE TO LIGHT A FIRE IN YOUR JACK FURNACE.

2. Ignite the paper and kindling with a match. Close the door. Do not attempt to open door immediately after igniting the fire. There could be a flame flash out.

Super Jack models only: Pull out pull handle before lighting fire. This opens the secondary heat exchanger damper.

3. Turn thermostat above room temperature. Draft blower will start. Make sure the Air Inlet disc on draft blower is open. Adjustment can be made after fire is established.

4. It will take a few minutes for the fire to establish itself. Once you have some burning embers, add larger pieces of wood. **DO NOT ALLOW BURNING EMBERS ABOVE THE TOP OF FIREBRICK.**

5. Open manual draft spinner (on fire door) 3 - 4 turns. This manual draft spinner controls the amount of secondary air allowed into the firing chamber. Shutting it off tight will make for a slower burn but will allow creosote to build up in furnace, smoke pipe and chimney. Leaving it open will increase the efficiency of the burning wood by up to 40% and reduce creosote buildup. The wood fire will not last as long as secondary air, while burning the unburned gases at the top of the flame, tends to burn the wood a little faster.

6. After substantial fire has been established for at least 30 minutes, set Barometric Draft control to .-03 using a Manometer.

7. When desired room temperature is reached, set thermostat accordingly.

NOTE:

All chimneys act differently depending on chimney size, chimney draft and the moisture content of the wood. You may have to experiment with different levels of wood logs until you are satisfied with the heat output.

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.

OPERATING INSTRUCTIONS FOR BURNING COAL ON 1/2-INCH OPENING GRATES (Optional)

The following instructions are for burning various types of coal, storage of coal, and the cleaning of the furnace.

Some coal is oil-treated at the mine. Some users have indicated that it tends to make the coal difficult to start.

Burning coal requires some patience and a regular procedure. With improper tending, a coal fire can go out in a short time. Once the fire starts to go out, it is almost impossible to reverse.

After a coal fire goes out, the coal must be removed from furnace. Then the starting process can be repeated.

Our coal burning instructions are general, as coal comes in various sizes and types. Anthracite coal is most recommended as it burns with little smoke when burning properly.

CAUTION: Burn Anthracite or Bituminous coals only. DO NOT BURN Petroleum, Coke, or Cannel Coals.

IGNITION TEMPERATURE OF COAL AND WOOD

How hot does coal have to get to ignite? Following are examples of the ignition points of various materials:

- Paper ignites @: 350°F
- Wood ignites @: 435°F
- Western lignite ignites @: 630°F
- Low volatile bituminous ignites @: 765°F
- High volatile bituminous ignites @: 870°F
- Anthracite coal ignites @: 925°F

STORAGE OF COAL

Coal may be stored indoors or outdoors, with some precautions:

- 1. The storage area must be free of materials that are easily burned. Examples are paper, wood, rags, and leaves.
- Wetting and drying of coal should be avoided. Outside storage's should be protected from rain or snow. Wet coal should not be piled on dry coal.
- 3. Locate the storage area in a place that is 75° F or lower.

4. Nut coal weighs approximately 58 lbs. per cu. ft. A storage bin 4-feet square by 4-feet high will hold 2 tons.

Questions? Visit www.yukon-eagle.com or call 1-800-358-0060

WHAT SIZE COAL SHOULD I BURN?

The air space between the furnace grates is 1/2 inch. Therefore, coal smaller than 1/2 inch can fall through the grates into the ash pan.

- Pea size coal ranges from 9/16 to 11/16 inch.
- Nut size coal ranges from 1-3/16 to 1-5/8 inches.
- Stove size coal ranges from 1-5/8 to 2-7/16 inches.

Nut size is preferred by most people and is recommended for use in this furnace.

Anthracite coal is hard and burns like charcoal that is used in your barbecue grill. The coals must touch each other to ignite. Therefore, the smaller the coal, the easier to ignite. Stove coal is not likely to touch each other because of its size.

Bituminous coal is soft and not as desirable as hard coal. It creates dust when handled. It also produces large amounts of smoke and soot when burned at a slow rate. Soft coal from some areas of the country contains higher sulfur content. A large portion of it may be removed if the coal is cleaned.

HOW TO START A COAL FIRE

Place a small amount of crumpled paper and kindling wood on the ash-covered grates.

Ignite paper and after wood is burning briskly, cover with a thin layer of coal. As first layer of coal becomes ignited, add more coal gradually. Add coal until fire bed is built up to approximately 6 inches deep. As fresh coal is added always leave some of the glowing coal uncovered.

Draw the top red coals toward the front of the firebox. Pile the fresh coals toward the back.

The grates must be protected from direct contact with the fire. This is done by placing a layer of ash, one (1) or two (2) inches thick on grates. The ash left on the grate will help prevent overheating of the cast iron grates. It also keeps coal from falling through the grate's opening.

IMPORTANT:

Never smother fire when adding fresh coal.

MAINTAINING A COAL FIRE

Bituminous coal should be built into a cone shape once the fire has started. When refiring, break up the cone a little using a poker. Especially if it has caked over to form a crust. Be careful not to mix the coal as this increases the chance of forming clinkers.

Western lignite coal should be burned the same way you would burn wood. (Refer to wood burning instruction on previous pages.)

CAUTION: Do not use kerosene, gasoline, thinners, etc. to start a coal fire.

A coal fire should never be poked or broken up. This causes ash to come to the surface of the coal bed. The ash may fuse into lumps or clinkers which interfere with proper burning.

Anthracite Coal - To bank the fire for the night, pile the coal higher to the back of the firebox. Allow it to slope toward the fire box door. Always leave some red or burning coals uncovered in the front of the firebox.

Bituminous Coal - To bank fire for the night, shake the fire and add coal, forming the center cone. Allow enough time for the volatiles to burn off before closing the fire door.

RECOVERING UNBURNED COAL

Screen coal ashes through a piece of 1/4 inch or 3/8 inch mesh hardware cloth. This helps recover any unburned coal that has fallen though grates.

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.

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.

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.

COAL ASH DISPOSAL

Unlike wood ashes, coal ash should not be spread on the garden. The minerals in coal ash contains several chemicals which could be harmful to plant life.

FAULTY CHIMNEY AND/OR DRAFT PROBLEMS - CAUSES AND CURES

A sound chimney system is imperative, especially when burning wood. Indoor chimney, either masonry or type "HT" metal chimneys are the 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 19. 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 page 17.
- 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.

1. At the start of the heating season...

- It is advisable to have your local furnace professional 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.

- 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.

CAUTION: INSPECT FLUE PIPES, FLUE PIPE JOINTS, AND FLUE PIPE SEALS REGULARLY TO ENSURE THAT SMOKE AND FLUE GASES ARE NOT DRAWN INTO, AND CIRCULATED BY, THE AIR -CIRCULATION SYSTEM.

ENSURE THAT THE HEAT EXCHANG-ER, FLUE PIPE, AND CHIMNEY ARE CLEANED AT THE END OF THE HEAT-ING SEASON TO MINIMIZE CORRO-SION DURING THE SUMMER MONTHS. THE APPLIANCE, FLUE PIPE, AND CHIMNEY MUST BE IN GOOD CONDITION.

Exploded Views & Parts List

SUPER JACK - SJ125

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)	1
5	302	Clean Out Plate Gasket	2
6	301	Clean Out Plate	2
7	10090332 10090102	Fire Door Assembly Screws (4) - Ash Door Screws (2) - Draft Inducer Screws (3)	
8	113	Fire Brick 9 x 4-½ x 1-¼	19-1/2
9	119	Smoke Flap Assembly	1
10	117	Grate Fillers	2
11	105	Heavy Duty Cast Iron Grate	1
12	111	Draft Inducer Gasket	1
13	110	Draft Inducer	1
14	115	Fire Door Gasket	1
15	114	Fire Door w/Hinge Assembly	1
16	10090313 10104950	Door Bolts w/Nuts	4
17	107	Door Handle Assembly	2
18	101	Ash Door w/Hinge Assembly	1
19	102	Ash Door Gasket	1
20	104	Ash Pan	1
21	305	Fire Box Assembly	1
22	308	Jacket Side (Left)	1
23	10107000	Fan & Limit Control (Honeywell)	1
24	118	Poker Assembly	1
25	122	Conduit Clips	2
26	10110001	Junction Box	1
27	121	Transformer/Relay (Honeywell)	1
28	10111100	Conduit	2
29	10113200	Straight Conduit Connector	3
30	10113300	90 Degree Conduit Connector	1
*	10108700	Honeywell Interlock Relay	1
*	310-1	Insulated Front Panel (SJ125-C only)	1
*	311-1	Insulated Back Panel (SJ125-C only)	1
*	10108400	Honeywell Digital Thermostat	1
* Items no	ot shown		

Exploded Views & Parts List

BIG JACK - BJ90

Exploded Views & Parts List

BIG JACK - BJ90

Key No.	Part No.	Description	Qty
1	205	Jacket (Top)	1
2	204	Jacket Side (Right)	1
3	113	Firebrick (9 x 4-1/2 x 1-1/4)	19-1/2
4	119	Smoke Flap Assembly	1
5	117	Grate Fillers	2
6	105	Heavy Duty Cast Iron Grate	1
7	111	Draft Inducer Gasket	1
8	110	Draft Inducer	1
9	115	Fire Door Gasket	1
10	114	Fire Door & Fire Door Hinge	1
11	10090313 10104950	Door Bolts & Nuts	4
12	10090332 10090102	Fire Door Assembly Screws (4) - Ash Door Screws (2) - Draft Inducer Screws (3)	
13	107	Door Handle Assembly	2
14	101	Ash Door & Ash Door Hinge	1
15	102	Ash Door Gasket	1
16	104	Ash Pan	1
17	201	Fire Box Assembly	1
18	203	Jacket Side (Left)	1
19	206	Two-Piece Baffle	1
20	10107000	Fan & Limit Control (Honeywell)	1
21	118	Poker Assembly	1
22	122	Conduit Clips	1
23	10110001	Junction Box	1
24	121	Transformer/Relay	1
25	10113200	Straight Conduit Connector	2
26	10111100	Conduit	2
27	10113300	90 Degree Conduit Connector	1
*	10108700	Honeywell Interlock Relay	1
*	210-1	Front Panel (BJ90-C only)	1
*	211-1	Back Panel (BJ90-C only)	1
*	10108400		
* Items ar	e not shown		

SERVICE HINTS & TROUBLESHOOTING

Main blower vibrating when in use...

POSSIBLE CAUSE Loose allen screw on squirrel cage

Defective motor or blower bearings

Weight on squirrel cage wheel moved in shipment

Main blower or blowers continue to run...

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

POSSIBLE CAUSE Fan limit control on unit is set too low

Defective fan limit control

Improper wiring

Improper wiring

POSSIBLE CAUSE

POSSIBLE CAUSE

POSSIBLE CAUSE

should turn on.

Defective wall thermostat:

Short in thermostat wire

Defective fan limit control

Combustion blower staying on...

Combustion blower not turning on...

Thermostat set higher than room temperature.

Home is not getting heat needed to satisfy wall thermostat

check by turning it above room temperature, draft blower

SOLUTION

Tighten the allen screw, be sure squirrel cage did not move to one side or the other.

Return motor or blower for a replacement.

Try to adjust it or return blower for replacement.

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.

Check wiring diagram.

SOLUTION Check wiring diagram.

Replace fan limit control.

SOLUTION

Set thermostat to setting lower than room temperature.

Check all wiring or replace thermostat

Furnace may be undersized for the size of your home.

SOLUTION

Replace thermostat or combustion blower motor.

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 SOLUTION The use of wet, frozen or unseasoned wood If you have to use wet wood, make loads smaller and burn them hotter. The use of soft wood, particularly those of high resin con-Avoid using if possible. tent such as plywood or blandex with glue Measure draft with gauge. Should be set at .03 Water Poor natural draft or an obstruction in the stove pipe or chimney flue Column. Smoldering fire Smaller and hotter fires. Check page 19 of this manual for proper installation of Inadequate amount of oxygen supplied to the combustion chamber 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. Low fire or flue gas temperatures Smaller loads of wood and hotter fires. Stack temps should maintain minimum of 300°. Un-insulated stove pipe or chimney flues, especially if Never use un-insulated pipes for chimneys. If installed on construction is exterior to the house the outside of the house, INSULATE! Air leaks in the stove pipe or chimney Check chimney top to bottom. Not getting heat in the home... **POSSIBLE CAUSE** SOLUTION Unit may be too small for your home; check specifications Replace with a larger unit. In colder weather your furnace chart will turn on once a day, one tank of fuel oil will last for a long time. Improper insulation in home, allowing heat to escape Re-insulate! Improper hook up to furnace Check installation drawings and/or consult your heating service provider. Fan limit control set too low 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** SOLUTION Improper draft Measure draft with gauge. Should be set at .03 Water Column. (SJ125 Only: Pull out damper handle when loading. Chimney cap too close to top of chimney Remove and discard chimney cap. Too long of run of smoke pipe from Jack to chimney Relocate Jack closer to chimney.

Negative pressure in home

47

Install outside combustion air to furnace room.

OWNER'S MANUAL

- ASSEMBLY
- INSTALLATION
- OPERATION
- REPAIR PARTS

MODEL NUMBERS BJ90 AND SJ125

CANADIAN MODELS BJ90-C AND SJ125-C

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. MODEL BJ90-C

SUPER JACK & BIG JACK WOOD BURNING FURNACES

HOW TO ORDER REPAIR PARTS

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION:

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

Our service technicians will help you... Give us a call!

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

PHONE:	1-800-358-0060
FAX:	1-800-440-1994
EMAIL:	sales@yukon-eagle.com
WEB SITE:	www.yukon-eagle.com

MODEL SJ125-C