

Installation, operation and maintenance manual

Gas hot water boiler G 124 X SP/DP-Model Boilers

WARNING

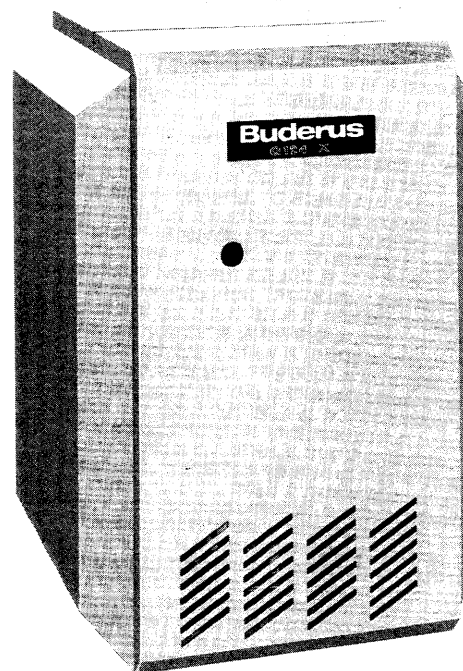
Before putting the boiler into operation read this manual carefully.

WARNING

Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information consult a qualified installer, service agency or the gas supplier.

CAUTION

The operating manual is part of the documentation that is delivered to the installation's operator. Go through the information in this manual with the owner/operator and make sure that he or she is made familiar with all the necessary operating instructions.



Notice: This manual must be retained for future reference!

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Read this manual carefully

Correct installation and adjustment of the burner and the control panel is a precondition for safe, efficient operation of the gas boiler.

Read this manual and the specifications on the safety label carefully before attempting to put the burner into operation.

1. Regulations and guidelines

The installation must conform to the requirements of the authority having jurisdiction or, in the absence of such requirements, to the National Fuel Gas Code, ANSI Z 223.1. In Canada, installation must be in accordance with the requirements of CAN/CGA B149.1 or 2 Installation Code for Gas Burning Appliances and Equipment.

Where required by the authority having jurisdiction, the installation must conform to the Standard for Controls and Safety Devices for Automatically Fired Boilers, ANSI/ASME CSD-1.

Install CO detectors per local regulations. Boiler requires yearly maintenance, see maintenance section page 22.

Installer détecteurs de CO suivant les réglementations locales. La chaudière doit être entretenue une fois par an (voir page 22 du section entretien).

Operating limits of the boiler:

max. boiler temperature: 220 °F
max. operating pressure: 58 psi

Only a qualified installing contractor may carry out the installation, the initial start-up, the connection for fixed gas and vent gas, and conversion to another type of gas.

The hot water distribution system must comply with all applicable codes and regulations. When replacing an existing boiler, it is important to check the condition of the entire hot water distribution system to insure safe operation.

Maintenance and cleaning should be carried out at least once a year by a trained service technician. The entire installation must be tested for proper operation. Any defects detected must be fixed immediately.

2. Dimensions and supply connections

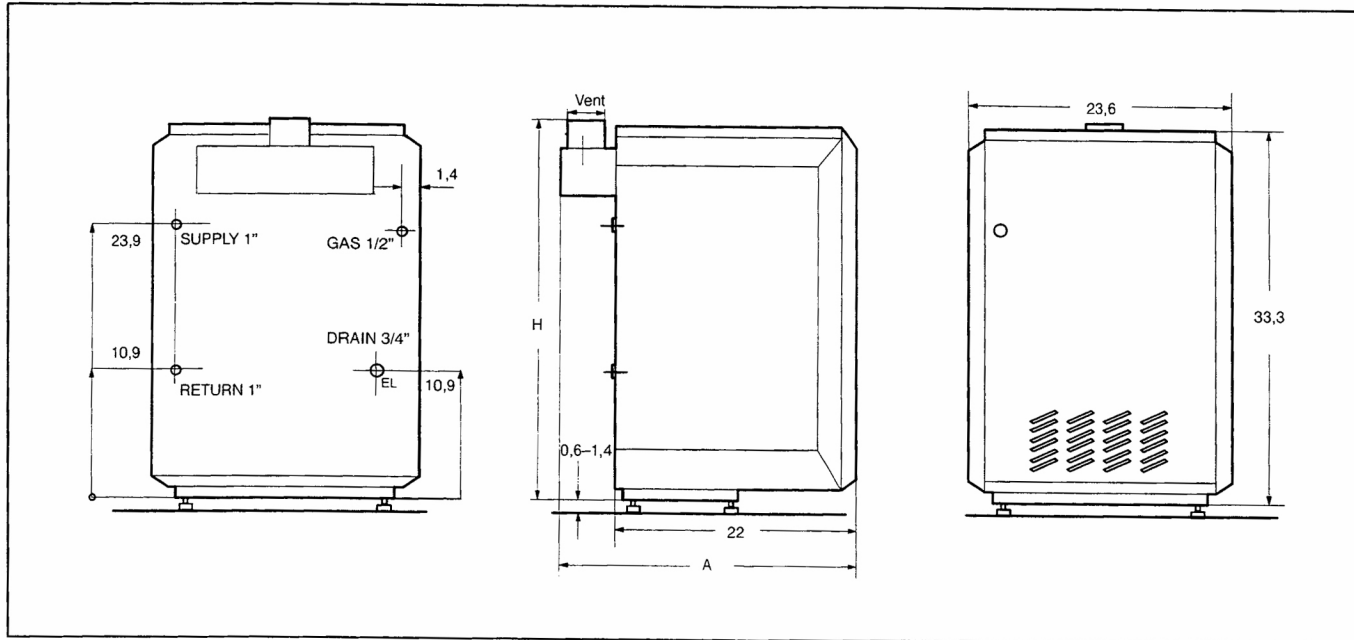


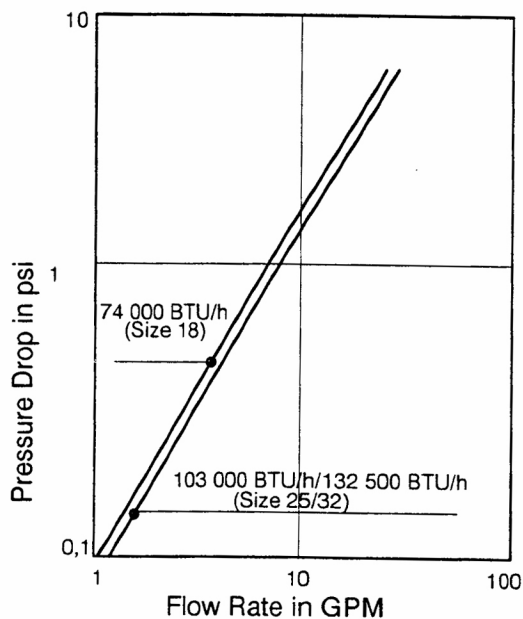
Fig. 1: Front, side and rear views, measurements in inches

Dimensions

boiler size	boiler input (BTU/h)	A inches	vent SP inches	vent DP inches	minimum relief valve cap. lb/hr	number of burners	boiler water volume US Gal.	dry weight lbs
18	74 000 BTU/h	29.4	5	3	62	2	2.4	229
25	103 000 BTU/h	30.2	5	3	86	3	2.9	240
32	132 500 BTU/h	30.9	6	3	110	4	3.4	337

Table 1

Diagram 1: Pressure Drop



model	H vent damper outlet	H middle draft inducer outlet
SP	37 inches	–
DP	–	38 inches

Table 1a

3. Boiler description

The boiler is supplied in its carton with a built in draft hood, gas burner and control, screw on feet, jacket, documentation packet, and base for combustible flooring. The following items are shipped in an accessory cartons:

- Supply manifold
- Pressure relief valve
- Temperature pressure gage
- 1" elbow
- 3/4" street elbow
- Vent damper with flue collar or draft inducer kit
- Drain valve

The following optional items are available:

- Circulator
- Cleaning brush

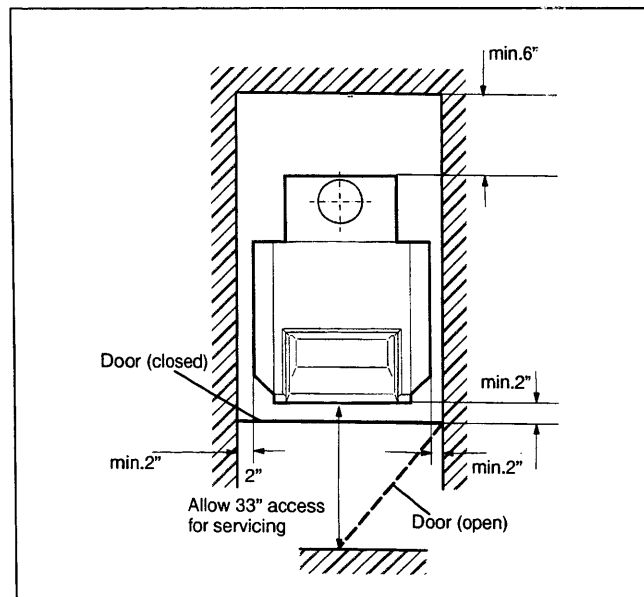


Fig. 2: Closet clearance

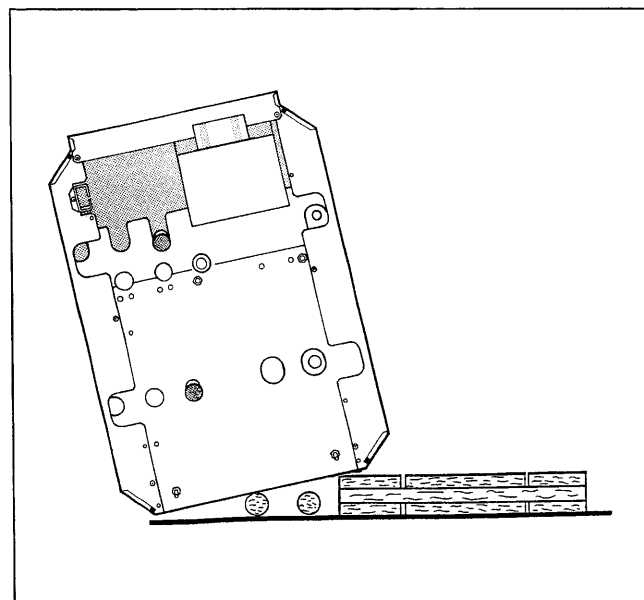


Fig. 3

Transporting the boiler

Transport the boiler to the installation site in shipping carton.

Remove banding.

Lift off carton.

Remove bolts from under pallet.

Lift the boiler from under the side panel and slide to side of pallet. Push a pipe under the boiler as shown in fig. 3 and roll it on pipes to the installation location.

Move the boiler to its final installation position.

Important

Always protect sheet metal parts, gas pipe, burner and control panel. **Never** lift the boiler on these parts.

- Screw the four rubber feet into the base leaving 0.25 – 1.0 inch extended from the base (Fig. 4).
- Put the boiler upright onto its rubber feet.
- Level the boiler by screwing the rubber feet in and out.

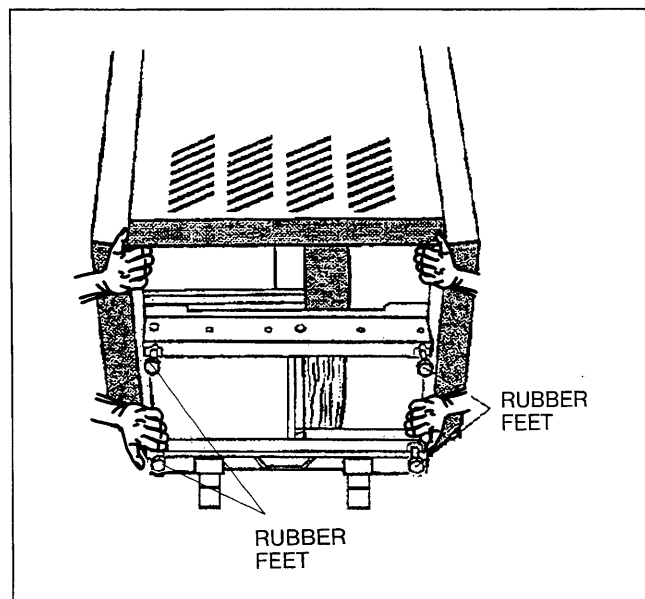


Fig. 4

Installation surface

The boiler is extremely heavy when filled. Before installing, it must be determined that the floor can carry the load.

Unpacking parts before installing

Unpack all boxes and cartons and check that all parts have been delivered using the packing slips provided.

Each boiler is checked and tested carefully before leaving the factory. If there is any damage or parts are missing, inform the supplier without delay. Before throwing away packaging material, check it carefully for parts.

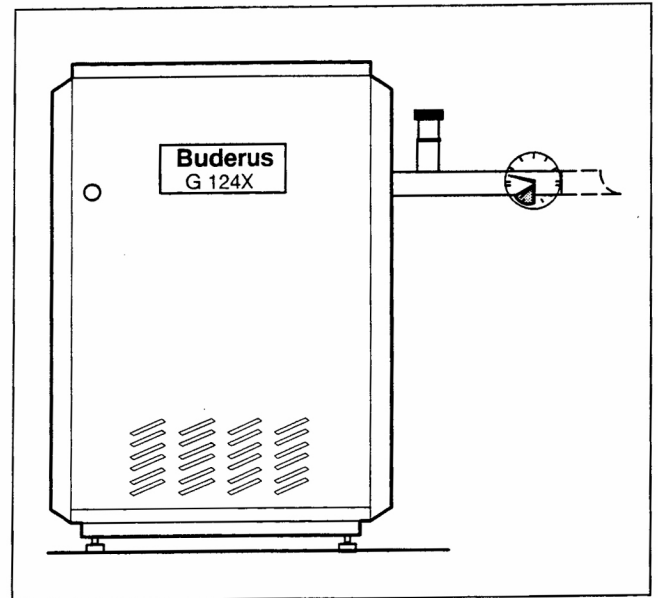


Fig. 5

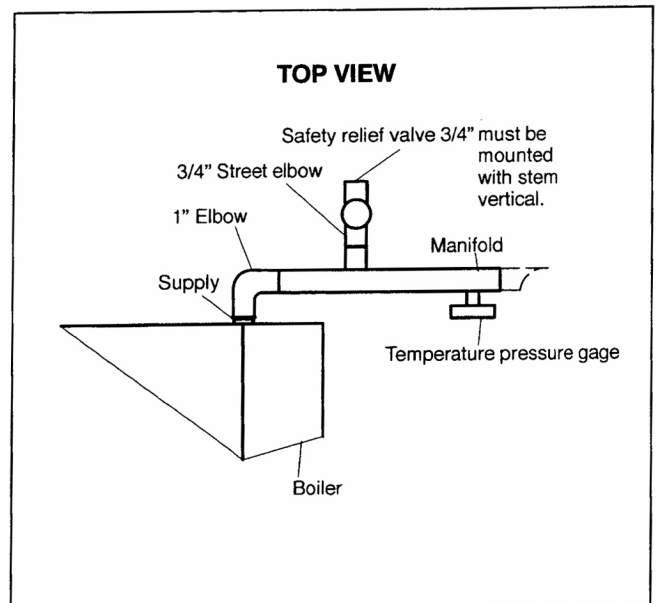


Fig. 6

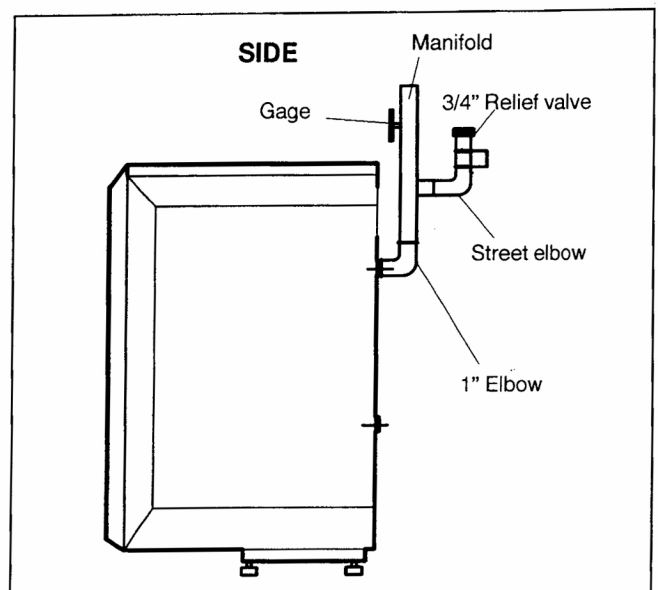


Fig. 6 a: Optional Piping

5. Boiler Piping

The boiler shall be installed such that the gas ignition system components are protected from water (dripping, spraying, rain, etc.) during appliance operation and service (circulator replacement, control replacement, etc.).

A hot water boiler installed above radiation level must be provided with a low water cutoff device either as a part of the boiler or at the time of boiler installation, fig. 6 a.

The boiler, when used in connection with a refrigeration system, must be installed so the chilled medium is piped in parallel with the boiler with appropriate valves to prevent the chilled medium from entering the boiler.

The boiler piping system of a hot water boiler connected to heating coils located in air handling units where they may be exposed to refrigerated air circulation must be equipped with flow control valves or other automatic means to prevent gravity circulation of the boiler water during the cooling cycle.

Install the supply piping manifold provided as shown in fig. 5. Install the pressure relief valve as shown in fig. 5 and 6. The relief valve must be installed per ANSI/ASME Boiler and Pressure Vessel Code, Section IV. The stem of the relief valve must be mounted vertically. Install the temperature/pressure gage as shown. Follow good piping practices per local codes.

Allow 2" clearance from hot water piping to combustible walls of closet.

Water Treatment

A water analysis should be done on the water that will be used to fill the system. Treatment may be required depending on the analysis results. For extremely hard water or pH below 7.0 consult your local water treatment company.

6. Electrical supply

The electrical connections to this boiler must be made in accordance with all applicable local codes and the latest revision of the National Electrical Code, ANSI/NFPA-70. Installation should also conform with CSA C 22.1 Canadian Electrical Code Part I if installed in Canada.

The boiler must be electrically grounded in accordance with the requirements of the authority having jurisdiction or, in the absence of such requirements, with the National Electrical Code, ANSI/NFPA 70.

A shutoff switch should be located at the boiler.

Caution: Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation.

Verify proper operation after servicing.

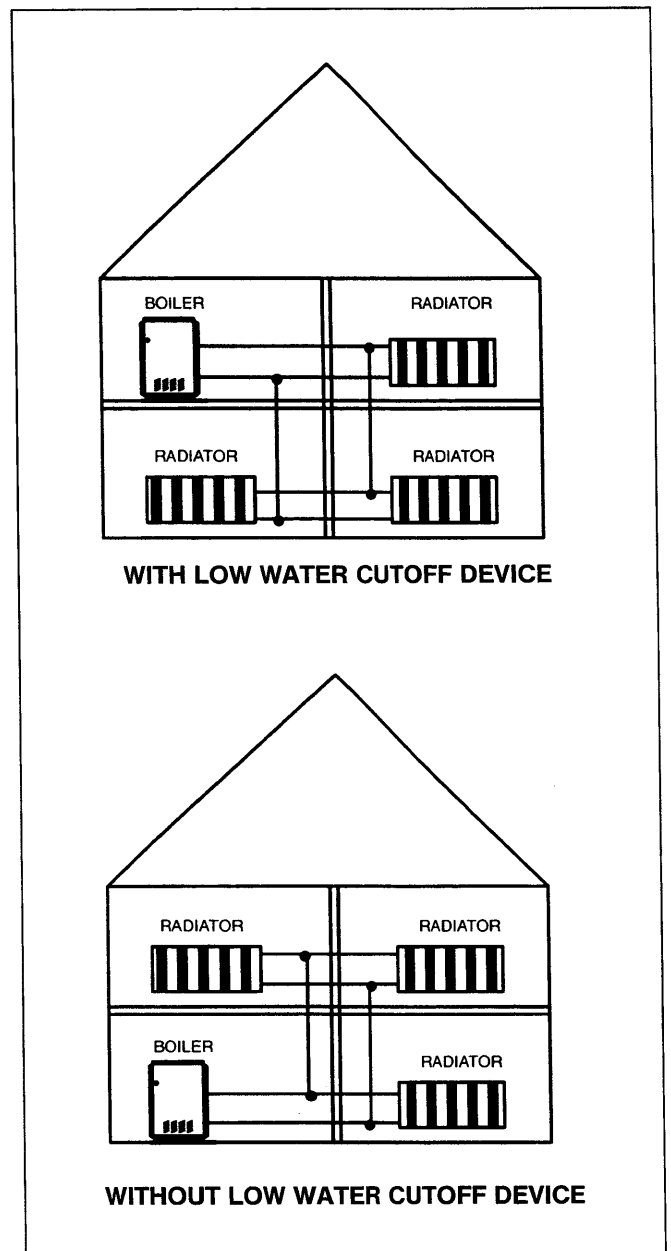


Fig. 6 a

7. Gas Supply

Gas connections

Determine the proper gas pipe size needed for the installation using tables 2 and 3. Do not neglect the pipe fitting losses.

A sediment trap must be installed at the inlet of the gas supply piping to the boiler. When local codes require, a manual shutoff valve must be installed outside the boiler jacket. It is recommended that a manual shutoff valve be installed on the main gas piping to the boiler. The gas piping must be supported external to the boiler.

When installing the gas supply connection, it must comply with the local regulations or, if such regulations do not exist, with the National Fuel Gas Code, ANSI Z 223.1.

In Canada, the gas supply connection must comply with local regulations or, if such regulations do not exist, with CSA/CGA-B149 Installation Guidelines.

WARNING

Do not check for gas leaks with an open flame – use soap and water solution. Failure to do so can cause severe personal injury, death or substantial property damage.

The boiler and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig.

The boiler must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psig. The boiler and its gas connection must be leak tested before placing the boiler in operation.

See "Placing the boiler in operation", page 15.

Pipe joint compound (pipe dope) must be resistant to corrosive action of liquified petroleum gases and applied sparingly only to male threads of pipe joints.

High Altitude

The boiler is factory shipped for installation below 2000 feet elevation. The boiler must be derated for installations above 2000 feet. The derate is accomplished by changing the main burner orifices. If your elevation is above 2000 feet, contact your supplier to order appropriate parts. Do not attempt to derate the appliance without Buderus certified parts and instructions.

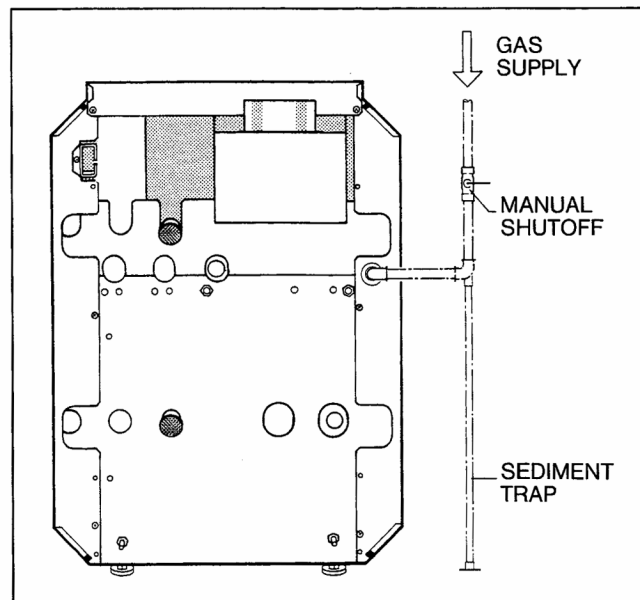


Fig. 7: Pipe connection to gas control – rear

Length of Pipe in Feet	CAPACITY OF PIPE IN CUBIC FEET OF GAS PER HOUR				
	1/2"	3/4"	1"	1 1/4"	1 1/2"
10	132	278	520	1060	1600
20	92	190	350	730	1100
30	73	152	285	590	890
40	63	130	245	500	760
50	56	115	215	440	670
75	45	93	175	360	545
100	38	79	160	305	480
150	31	64	120	250	380

Table 2: Gas Pipe Capacity

Maximum pipe capacity in ft/hr based on 0.60 specific gravity gas at pressure of 0.5 psig or less and a 0.3" W.C. Pressure drop.

Equivalent length of pipe fittings in feet				
Nominal Iron Pipe Size (inches)	Type of pipe fitting			
	90° Elbow	Tee (flow thru branch)	Gate Valve (full port)	Gas Cocks
Equivalent length in feet				
1/2"	1.4	2.7	0.3	0.80
3/4"	2.1	4.1	0.5	1.25
1"	2.6	5.2	0.6	1.60
1 1/4"	3.5	6.9	0.8	2.15
1 1/2"	4.0	8.1	0.9	2.50

Table 3: Equivalent Length Chart

8. Combustion Air and Ventilation Openings

Provisions must be made for combustion and ventilation air in accordance with section 5.3, Air for Combustion and Ventilation, of the National Fuel Gas Code, ANSI Z 223.1, or applicable provisions of the local building codes.

Canadian installations must comply with CAN/CGA B149.1 or 2. Installation Codes.

Ensure that there is no obstruction of the combustion and ventilation air flow.

Boiler area must be clear and free from combustible materials, gasoline and other flammable vapors and liquids, and corrosive liquids and vapors.

For boilers installed in a closet.

a. All Air from Inside the building

The closet shall be provided with two permanent openings communicating directly with an additional room(s). The total input of all gas utilization equipment installed in the combined space shall be considered in making this determination. Each opening shall have a minimum free area of 1 square inch per 1,000 Btu per hour of the total input rating of all gas utilization equipment in the confined space, but not less than 100 square inches. One opening shall commence within 12 inches of the top, and one opening shall commence within 12 inches of the bottom, of the enclosure. The minimum dimension of air openings shall be not less than 3 inches.

b. All Air from Outdoors

The closet shall be provided with two permanent openings, one commencing within 12 inches of the top, and one commencing within 12 inches of the bottom, of the enclosure. The openings shall communicate directly, or by ducts, with the outdoors or spaces (crawl or attic) that freely communicate with the outdoors. The minimum dimension of air openings shall be not less than 3 inches.

1. Where directly communicating with the outdoors, each opening shall have a minimum free area of 1 square inch per 4,000 Btu per hour of total input rating of all equipment in the enclosure
2. Where communicating with the outdoors through vertical ducts, each opening shall have a minimum free area of 1 square inch per 4,000 BTU per hour of total input rating of all equipment in the enclosure.
3. Where communicating with the outdoors through horizontal ducts, each opening shall have a minimum free area of 1 square inch per 2,000 BTU per hour of total input rating of all equipment in the enclosure.
4. Where ducts are used, they shall be of the same cross-sectional area as the free area of the opening to which they connect.

9. Chimney or Vent Requirements

Venting must be installed according with Part 7, Venting of Equipment, of National Fuel Gas Code, ANSI Z 223.1 and applicable building codes. Canadian installations must comply with CAN/CGA B149.1 or 2 Installation Codes.

Vent connectors serving appliances vented by natural draft shall not be connected into any portion of mechanical draft systems operating under positive pressure.

The vent size must not be reduced from sizes shown in table.

If this boiler will be connected to a masonry chimney, a thorough inspection of the chimney must be performed. Ensure that the chimney is clean, properly constructed and properly sized.

A lined chimney is preferred and must be used when required by federal, provincial, territorial, state, or local building codes. Vitreous tile linings with joints that prevent retention of moisture and linings made of non-corrosive materials are best. Advice for flue connections and chimney linings can be obtained from local gas utility. Vent material of single wall metal vent pipe must be used for SP models.

Ensure the chimney is of adequate height per the tables in the National Fuel Gas Code, ANSI Z 223.1.

For DP-models use only 3" Z-flex, AL 29-4 C pipe and accessories available from Buderus Hydronic Systems or flex-L international 3" AL 29-4 C pipe and accessories available from others.

When removing boiler from common venting system

When an existing boiler is removed from a common venting system, the common venting system is likely to be too large for proper venting of the appliances remaining connected to it.

Test the venting system by the procedure set forth below

At the time of removal of an existing boiler, the following steps shall be followed with each appliance remaining connected to the common venting system placed in operation, while the other appliances remaining connected to the common venting system are not in operation.

- (a) Seal any unused openings in the common venting system.
- (b) Visually inspect the venting system for proper size and horizontal pitch and determine there is no blockage or restriction, leakage, corrosion and other deficiencies which could cause an unsafe condition.
- (c) Insofar as is practical, close all building doors and windows and all doors between the space in which the appliances remaining connected to the common venting system are located and other spaces of the building. Turn on clothes dryers and any appliance not connected to the common venting system. Turn on any exhaust fans, such as range hoods and bathroom exhausts, so they will operate at maximum speed. Do not operate a summer exhaust fan. Close fireplace dampers.
- (d) Place in operation the appliance being inspected. Follow the lighting instructions. Adjust thermostat so appliance will operate continuously.
- (e) Test for spillage at the draft hood relief opening after 5 minutes of main burner operation. Use the flame of a match or candle, or smoke from a cigarette, cigar or pipe.
- (f) After it has been determined that each appliance remaining connected to the common venting system properly vents when tested as outlined above, return doors, windows, exhaust fans, fireplace dampers and any other gas burning appliance to their previous condition of use.
- (g) Any improper operation of the common venting system must be corrected so the installation conforms with the National Fuel Gas Code, ANSI Z 223.1. When resizing any portion of the common venting system, the common venting system should be resized to approach the minimum size as determined using the appropriate tables in Part 11 in the National Fuel Gas Code, ANSI Z 223.1.

Canadian installations must comply with CAN/CGA B 149.1 or 2 Installation Codes.

10. Vent Piping Assembly

10.1 For SP Model Boilers

The draft hood must not be altered in any way. Install the flue collar on the draft hood outlet section. Secure the flue collar with four (4) corrosion resistant sheet metal screws. Install the vent damper supplied with the boiler. Install plug provided into hole in damper blade.

Note: The vent damper cannot be installed in Canada on a propane gas unit equipped with an intermittent ignition device.

Only the boiler may be vented through the vent damper supplied with the boiler. Ensure that the vent damper blade indicator is visible. Ensure a minimum of 6 inches of clearance to all combustible construction. Provide sufficient access for servicing of the vent damper.

Damper must be in the open position when the boiler's main burners are operating.

Secure the vent damper to the draft hood collar with three (3) corrosion resistant sheet metal screws. Connect vent damper outlet to the chimney using the shortest length of vent piping possible.

Use a vent pipe of the proper diameter for the boiler. Any horizontal section of the vent system should be sloped upward toward the chimney at a minimum rate of 1/4 inch/foot. Ensure that the vent pipe is properly supported to prevent sagging. Support every 5 feet with hangers. Each connection must be securely fastened with at least 3 corrosion resistant sheet metal screws. The termination of the vent pipe should be flush with the inside of the chimney flue.

Always provide a minimum clearance of 6 inches between vent pipe and any combustible materials.

Do not reduce the size of the vent piping or add any restrictive devices to the venting system.

Ensure that all electrical power has been disconnected from the boiler.

Plug the vent damper in to the Honeywell Aquastat Control on the panel in the front of the boiler, fig. 8 a. A cable chase is provided on the back of the boiler. Run the vent damper wiring harness through the chase, between the insulation and the jacket to the front of the boiler.

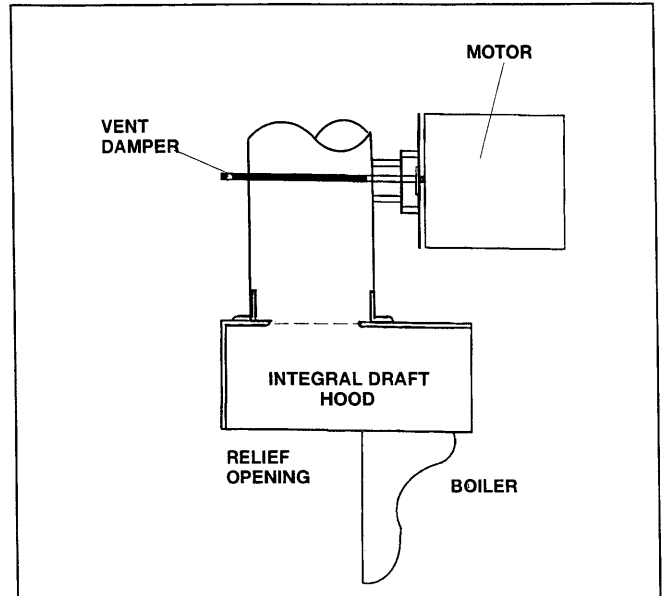


Fig. 8: Vent Damper Assembly

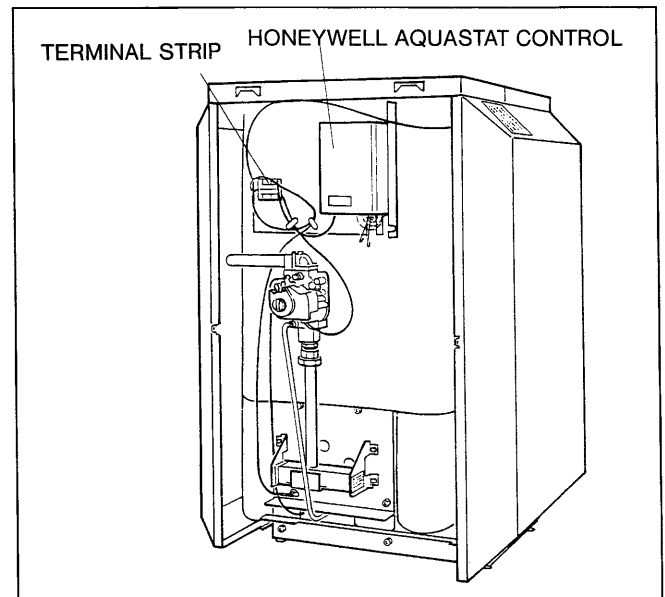


Fig. 8 a

For DP Model Boilers, the instructions for assembly of the vent pipe must be complied with for all aspects of the venting system. Use only 3" Z-flex or flex-L international AL 29-4 C venting components.

- INDUCER AND ADAPTER ASSEMBLY, CONSISTS OF ADAPTER, INDUCER, GASKET, AND SCREWS
- RELAY - VENT TERMINAL
- WIRING HARNESS - AMETEK CLAMP
- MOUNTING HARDWARE

- 5 FOOT PIPE
- 3 FOOT PIPE
- 1 FOOT PIPE
- 6 INCH PIPE
- 90° ELBOW
- 45° ELBOW
- WALL THIMBLE
- TERMINATION TEE
- LOCKING BAND
- FLASHING
- AMETEK CLAMP

**CANADA-CAN/CGA-B149.1 or.2 Fuel Burning
Installation Code**

The venting system of other than a direct vent appliance shall terminate at least 4 ft. below, 4 ft. horizontally from, or 1 ft. above any door, window, or gravity air inlet into any building. The bottom of the vent terminal shall be located at least 12 inches above grade.

Do not modify the adaptor, inducer, or any other components of the venting system. All components must be installed without alterations.

The vent system will be under positive pressure. Check all seams for gas tightness. Allow 24 hours for the silicone to cure before operating the boiler.

All horizontal runs must be sloped at least $\frac{1}{4}$ " per foot. The horizontal run that terminates outside must be sloped downward towards the outside wall. In the case of multiple horizontal runs, slope the other runs downward towards the boiler to prevent any moisture from collecting in the vent system. Maximum total equivalent vent length is 25 feet. Minimum vent length is 1 foot. Each elbow is equivalent to 3 feet.

Installation instructions

Align the inducer so that it is flush with the back of the collector hood and centered over the opening in the draft hood.

Using a $\frac{5}{16}$ " bit, drill 4 holes, where the drill spots are marked on the draft hood.

The inducer shall be flush with the back of the collector hood.

Mount the inducer and adapter assembly to the hood using the $\frac{1}{4}$ " allen head bolts, flat washer, lock washer and lock nuts provided, fig. 9.

All vent pipe shall be 3 inch Z-Flex or flex-L international AL 29-4 C stainless steel vent pipe and accessories.

The outside of all male ends and inside of female ends must be cleaned with any commercially available brake cleaner before applying silicone sealant. Install the venting system from the termination and work towards the boiler.

Side wall venting

Install wall thimble into wall, observing the aforementioned rules and/or local building codes. The wall thimble can be used for wall thickness of $4\frac{1}{2}$ to $7\frac{1}{2}$ inches. Select the point of wall penetration where the minimum $\frac{1}{4}$ " per foot of slope towards the termination can be maintained.

The pipe can be mortared in directly without using a wall thimble, if the wall is non-combustible. The pipe can be located between joists spaced 16" on center. Penetrating a combustible wall requires the use of a wall thimble. A framed opening is required to insert the thimble halves. The thimble is adjustable for different wall thickness. Caulk around outside edge of plates as necessary and fasten to wall using suitable screws or nails.

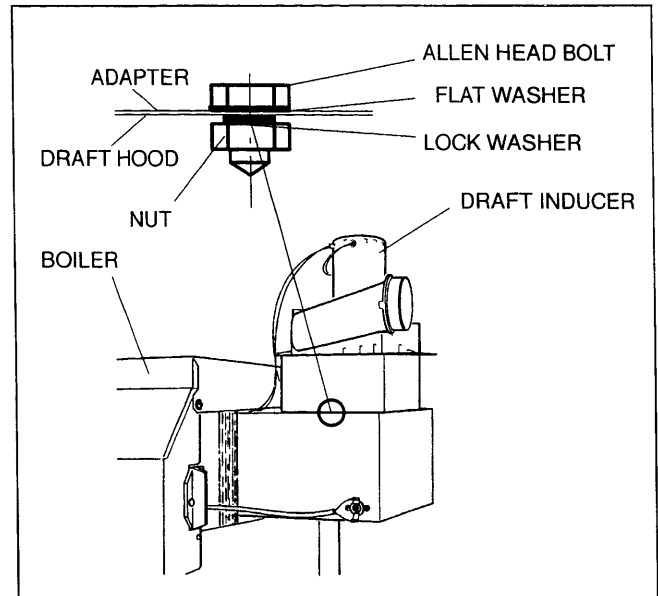


Fig. 9

Assemble the vent termination "T" to the section of pipe that will penetrate the wall.

Apply high temperature silicone (500°F rated silicone, G.E. 106 or equivalent) approximately one inch from the male end of the connection. Apply an even 1/4" wide bead.

Push the male end into the termination "T". Align the seams; apply another 1/4" bead of silicone around the outside of the connection and smooth out to fill the joint.

Slide a locking clamp over the center of the joint and tighten clamps. Make sure the clamp is centered on the joint.

Install the pipe through the wall, or wall thimble if required, from the outside until the locking clamp is flush with the outside of the wall. The locking clamp should be in such a position that the pipe is secure against the outside wall. The seam in the pipe must be oriented upwards. The "T" termination must be mounted with the openings in the vertical direction, with the termination 6 1/4" from the wall (see fig. 11).

Install a band or gear clamp to the pipe on the inside of the wall to prevent the pipe from sliding towards the outside.

For all other joints including elbows apply high temperature silicone (500°F rated silicone, G.E. 106 or equivalent) approximately one inch from the male end of the connection. Apply an even 1/4" wide bead.

Push male connection into the female end of the mating connection. The seams should be aligned and oriented upwards in all horizontal runs.

Apply another bead of silicone around the outside of the end of the female connection and smooth out to fill the joint.

Slide locking band over the center of the joint and tighten clamps. Make sure clamp is centered on the joint.

For the connection to the inducer apply high temperature silicone (500°F rated silicone, G.E. 106 or equivalent) on the male end of the vent connection on the inducer housing. Apply an even 1/4" wide bead.

Slide the end of the connecting section of vent pipe over the end of the inducer. The seam must be aligned upward.

Apply a bead of silicone around the outside of the joint and smooth out the silicone to ensure a gas tight seal.

Slide the special ametek clamp over the inducer collar and tighten clamps. Ensure that the clamp is positioned correctly over the tabs on the inducer.

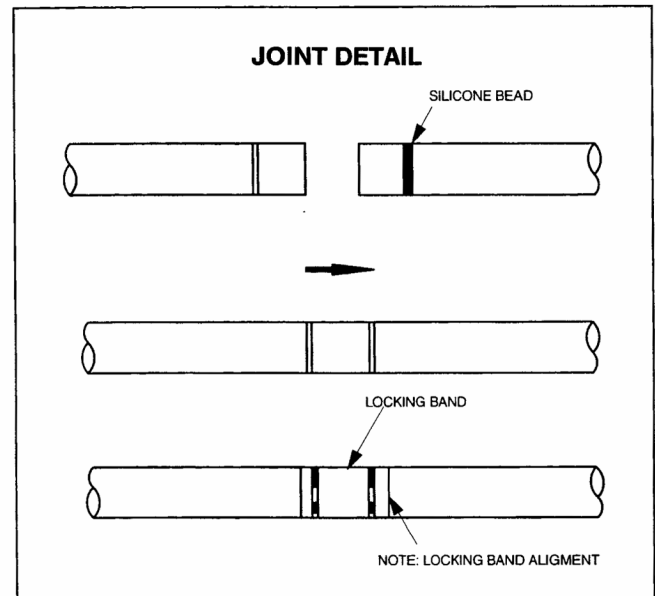


Fig. 10

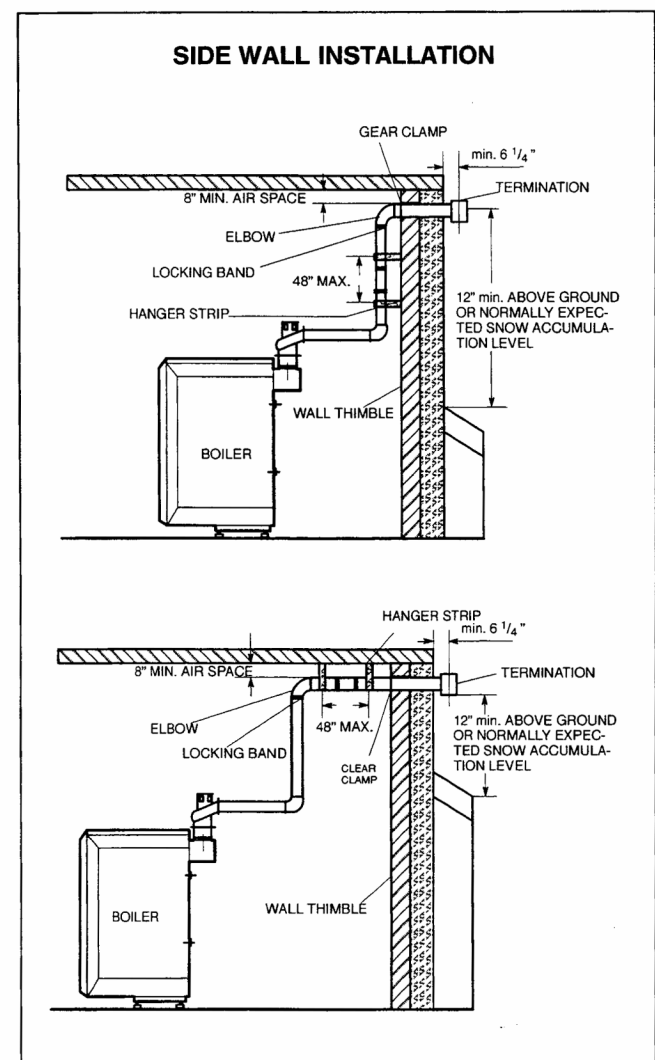


Fig. 11

The system must be supported along its horizontal length at all elbow locations and joints plus every forty-eight inches or less using straps around pipes.

The components of the system must not be penetrated by fasteners either when joining pipes and fittings or using support straps. If the lengths of pipe must be cut, the cut end must be filed or sanded smooth before joining. Do not cut off female end of pipe.

Imporant Notice

When any of the previous installation procedures are completed be sure to go over the entire system to make sure all joints are secure and sealed correctly. The seams and joints must be checked for gas tightness. It is required to have the entire system checked by a qualified inspector at least once annually following initial installation.

Ensure that all electrical power has been disconnected from the boiler.

Mount the relay on the control panel inside the front jacket panel as shown in fig. 11 a.

Run the inducer wiring through the chase, between the insulation and the jacket, to the front of the boiler. Fasten the strain relief to the slot in the control panel, as shown in fig. 11 a.

Wire the boiler as shown in the attached wiring diagram for model DP boilers.

Connect the black inducer wire to the 1/4" tab on the relay. Connect the white inducer wire to L 2 on the Honeywell Aquastat. Connect the green inducer wire to ground.

Connect one of the yellow relay wires to terminal 3 on the terminal strip.

Connect the other yellow relay wire to terminal 4 on the terminal strip.

Connect the black relay wire to terminal L 1 on the Aquastat.

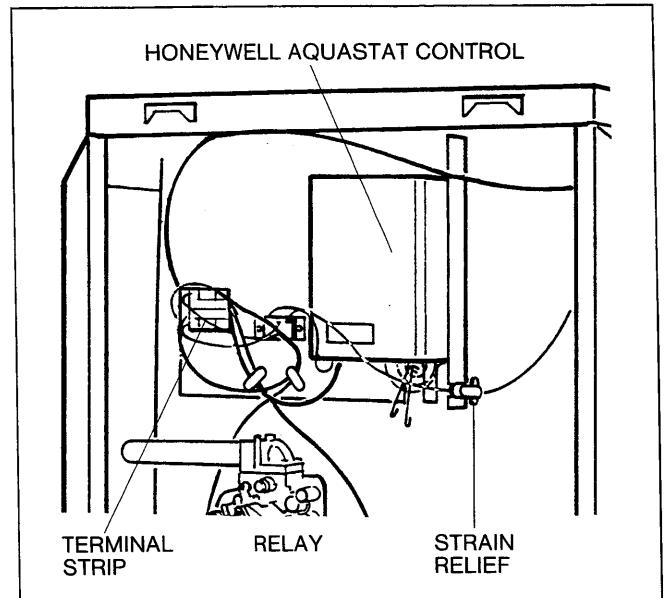


Fig. 11 a

11. Placing the boiler in operation

Safe lighting and other performance criteria were met with the gas manifold and control assembly provided on the boiler when the boiler underwent tests specified in ANSI Z 21.13 and CGA 4.9.

1. Ensure all electric power has been disconnected from the boiler and set thermostat to lowest setting.
2. Check the combustion air and ventilation openings.
3. Fill the boiler system with water and purge the air from the piping and radiation.
4. Remove the control access panel.
5. Open the main gas piping shutoff valve.
6. Test the gas piping on the side of gas control for leaks by applying a soap and water solution. If no leaks are found go to step 8. If any leaks are found, shut off the main gas piping shutoff valve.
7. Repair leaks and repeat step 6.
8. Shut off the main gas supply shutoff valve. Remove the line pressure tapping plug from gas control, fig. 12; install a test fitting and hook up a manometer so that line pressure can be checked.
9. Remove the manifold pressure tapping plug from the gas control, install a test fitting and hook up a manometer so that manifold pressure can be checked, fig. 12.
10. Open the main gas piping shutoff valve and measure the supply pressure to the boiler. The supply pressure must be between 4.7 and 10.5 inches water column for natural gas or 11 and 13 inches water column for propane gas. If pressure is not between 4.7" and 10.5" for natural gas or 11 and 13 inches for propane, call your service technician or gas supplier.
11. Follow the lighting instructions below.

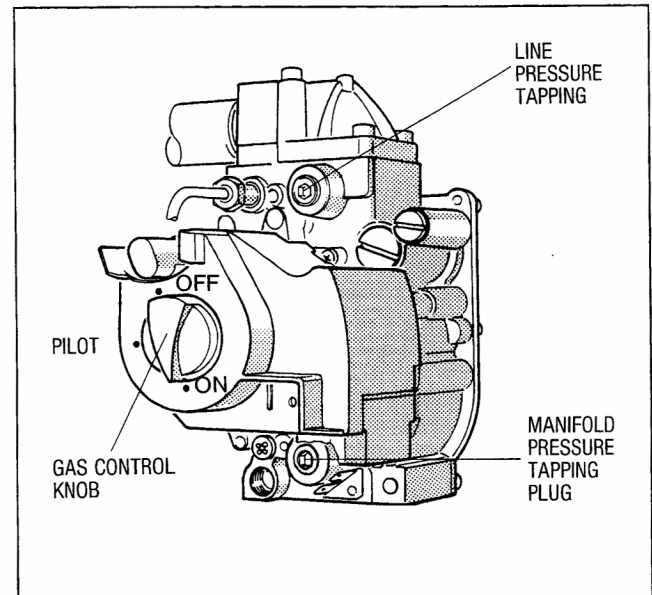


Fig. 12

Lighting Instructions

FOR YOUR SAFETY, READ BEFORE LIGHTING

WARNING: If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

- A. This appliance has a pilot which must be lighted by hand. When lighting the pilot, follow these instructions exactly.
- B. **BEFORE LIGHTING** smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
 - Do not touch any electric switch, do not use any phone in your building.
 - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
 - If you cannot reach your gas supplier, call the Fire Department.
- C. Use only your hand to turn the gas control knob. Never use tools. If the knob will not turn by hand, don't try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.
- D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

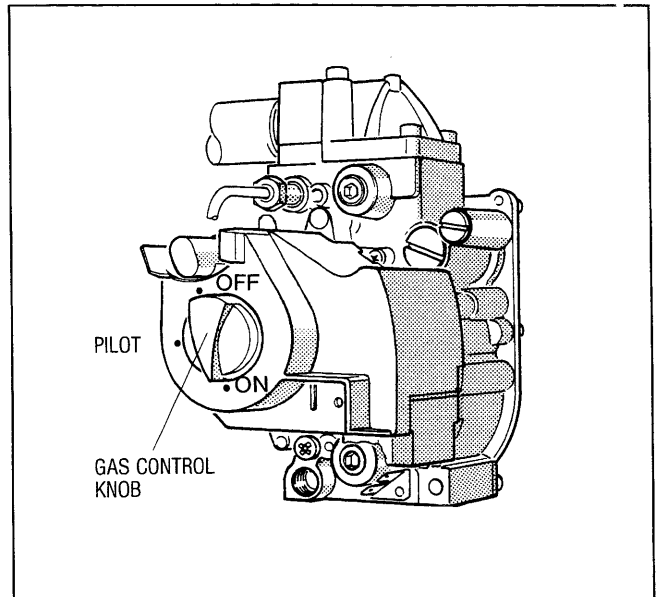


Fig. 13

OPERATING INSTRUCTIONS

STOP! Read the safety information printed on page 16 in these instructions.

1. Wait five (5) minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, **STOP!** Follow "B" in the safety information printed on page 16. If you do not smell gas, go to the next step.
2. Locate the pilot assembly by looking through the access hole in the burner assembly plate, fig. 14.
3. Turn gas control knob counterclockwise ↺ to "PILOT".
4. Push in red reset button all the way and hold in. Immediately light the pilot using the lighting rod provided, fig. 14 and a match. Continue to hold the red reset button in for about one (1) minute after the pilot is lit. Release the button and it should pop back up. Pilot should remain lit. If the pilot goes out, turn gas control knob clockwise ↻ to "OFF", and repeat steps 1 through 4.
 - If the button does not pop up when released, **stop.** Turn off main gas line shutoff valve, and immediately call your service technician or gas supplier.

If the pilot will not stay lit after several tries, turn the gas control knob clockwise ↻ to "OFF" and call your service technician or gas supplier.
5. Test pilot line for leaks with a soap solution. If no leaks are found go to step 7. If leaks are found, turn gas control knob clockwise ↻ to "OFF".
6. Repair leaks. Repeat steps 1 through 5.
7. Observe the pilot flame through hole in the burner assembly plate. The flame should envelop the thermocouple 3/8 – 1/2 inch, fig. 16. If the pilot flame is satisfactory then go to step 8. If the pilot flame is too small or too large, adjust the pilot using the pilot adjustment cover screw, fig. 16. Turn the inner adjustment screw clockwise ↻ to decrease, or counterclockwise ↺ to increase the pilot flame. After adjustment, replace the cover screw and tighten firmly.
8. Turn the gas control knob counterclockwise ↺ to "ON". The knob can be turned to "ON" only if the red reset button is up.
9. Turn on all electric power to the appliance.
10. Ensure that there is a call for heat from the thermostat control.

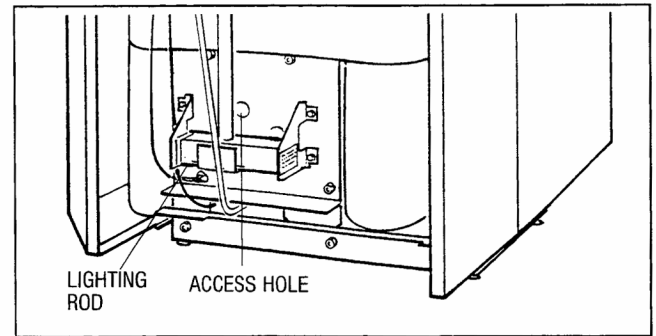


Fig. 14

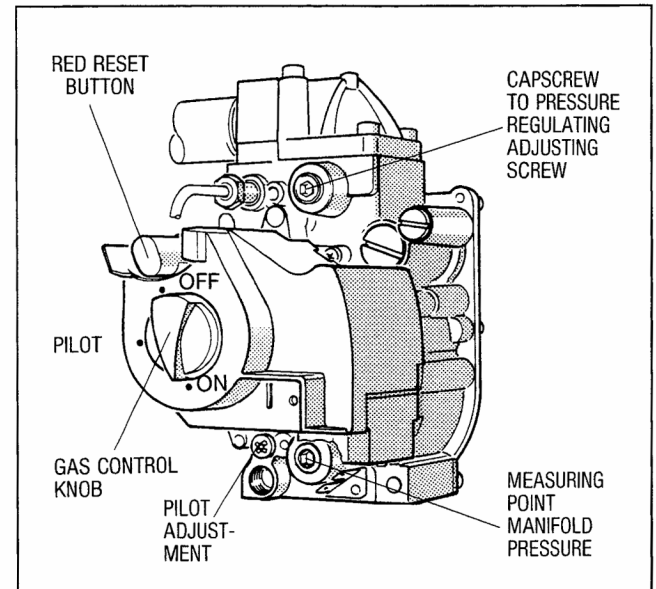


Fig. 15

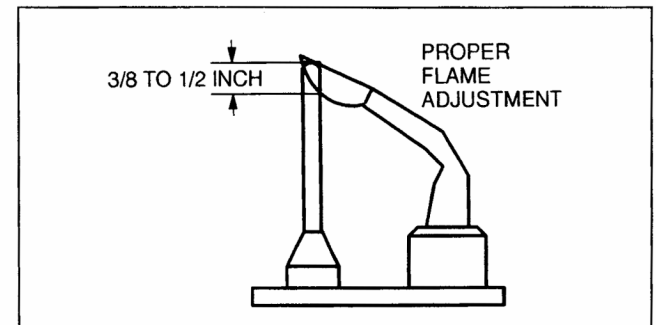


Fig. 16

11. The main burners should light at this time. If the main burners do not light, shut off the main gas piping shutoff valve, shut off all electric power to the appliance and call your service technician or gas supplier.
12. If the main burners light, then the gas fittings, union and orifices must be tested for leaks with a soap and water solution. If no leaks are found then go to step 14. If any leaks are found, turn gas control knob clockwise ↻ to "OFF". Turn of all electrical power to the appliance.
13. Repair leaks. Repeat steps 3 through 12.
14. The manifold pressure must be adjusted to the values shown in the table 4. To adjust the manifold pressure, remove the capscrew from the gas control. Turn the pressure regulating adjusting screw clockwise to increase, or counterclockwise to decrease the manifold pressure. This adjustment must be made while the boiler is in operation.
15. After adjustment, install the capscrew on the gas control, fig. 17.
16. Test the ignition safety shutoff means by turning the gas control knob clockwise ↻ to "OFF".
The main burner and the pilot flame will extinguish.
Turn the gas control knob counterclockwise ↻ to "PILOT". Wait three (3) minutes. Turn the gas control knob counterclockwise ↻ to "ON". There should be no gas flow to the main burners. Confirm zero (0) pressure on the manifold with manometer. If there is gas flow, immediately turn the gas control knob clockwise ↻ to "OFF". Shut off the main gas piping shutoff valve. Disconnect all electrical power to the appliance and call your service technician or gas supplier. If there is no gas flow, go to step 17.
17. Turn the gas control knob clockwise ↻ to "OFF".
18. Shut off the main gas piping shutoff valve.
19. Turn off electric power to the appliance.
20. Remove the pressure test fittings from the line pressure and manifold pressure taps in the gas control and replace the plugs.

21. Repeat steps 1 through 3, 8 through 11 and 16 to place the appliance back in operation. Check the plugs in the gas control with a soap and water solution. If no leaks are found go to step 24. If any leaks are found, shut off the main gas piping shutoff valve and turn the gas knob clockwise ↻ to "OFF". Turn off all electrical power to the appliance.
22. Repair leaks. Open the main gas shutoff valve and repeat step 21.
23. Wash off the soap and water solution used to test for leaks to ensure no corrosive affects from the soap.
24. Replace the control access panel.

Model G 124 X	Natural gas	Propane gas
18	3.6 Inches Water Column	9.8 Inches Water Column
25	3.5 Inches Water Column	10.3 Inches Water Column
32	3.6 Inches Water Column	10.0 Inches Water Column

Table 4

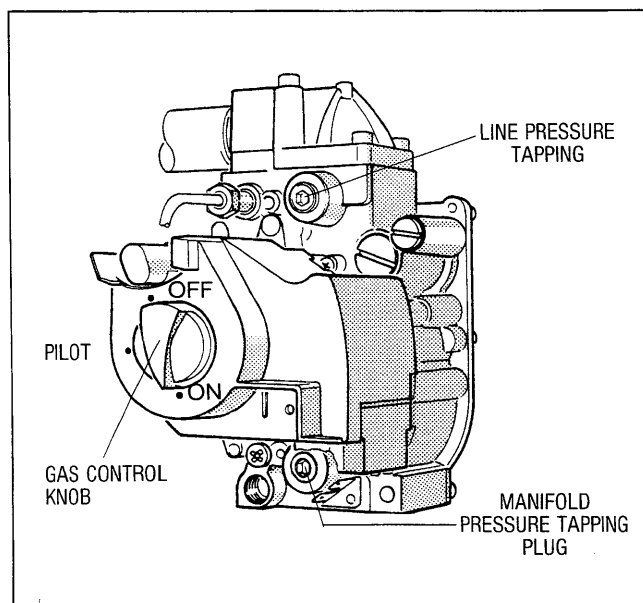


Fig. 17

TO TURN OFF GAS TO APPLIANCE

1. Set the thermostat to lowest setting.
2. Turn off all electric power to the appliance if service is to be performed.
3. Remove control access panel.
4. Turn gas control knob clockwise ↻ to "OFF". Do not force.
5. Replace control access panel.

Record of initial inspection and start up

Record the following information during initial start up of the boiler. This record will serve as a reference for yearly inspections.

Putting into operation	Remarks or measurement
1. Note type of gas	☐
2. Check combustion air and ventilation openings and flue connection	☐
3. Check boiler for correct orifices, see table 5 below	☐
4. Fill boiler with water and purge air from the system	☐
5. Measure gas inlet pressure in inches water column	_____
6. Check manifold pressure and adjust if necessary	_____
7. Leakage test during operation Check pilot and main burner flames and vent system operation	☐
8. Take stack measurements; see instructions page 20	☐
8.1 Gross stack gas temperature t_s in °F Record room temperature t_A in °F	$t_s =$ _____ $t_A =$ _____
8.2 Net stack gas temperature $t_s - t_A$ in °F	_____
8.3 Carbon dioxide content (CO ₂) in %	_____
8.4 Carbon monoxide content stack (CO), airfree in ppm	_____
8.5 Chimney draft min. in inches water column, for II models only Ensure that no flue gas is spilling from the relief opening	_____
9. Check high limit aquastat operation	☐
10. Inform owner/sign and hand over the technical documents	☐
11. Installing Contractor Signature _____	☐
Owner Signature _____	☐

Boiler Sizes	Orifice Size		
	18	25	32
Natural Gas	2.85 mm	2.75 mm	2.70 mm
Propane Gas	1.80 mm	1.75 mm	1.70 mm

Table 5

Taking vent gas measurements

Record all measurements on form on page 19.

For model SP

- Drill a hole in the vent pipe 2 feet downstream of the collector vent hood.

For model DP

Take sample from outside of house. **Do not penetrate the venting system at any point.**

- Take all the following vent measurements of the vent gas at this point.
- Allow unit to run for 5 minutes before taking measurements.

Carbon dioxide content

If the carbon dioxide content is less than 3 % or more than 7 % for natural gas or less than 4 % or more than 8 % for propane, the chimney draft, flapper position, and combustion air ventilation must be checked, fig. 18 a.

Vent gas loss

Vent gas loss can be calculated with the following formula:

$$q_A = (t_S - t_A) \cdot \left(\frac{A}{CO_2} + B \right) \text{ where}$$

q_A = vent gas loss
 t_S = gross vent gas temperature
 t_A = ambient air temperature
 $t_S - t_A$ = net vent gas temperature
 A, B see Table 6

Carbon monoxide content

The measured carbon monoxide content must be converted according to the following formula to an air free state and entered in the record. CO₂ max. for natural gas is approx. 12 % (propane, approx. 14 %).

$$CO \text{ airless} = \frac{CO_2 \text{ max.}}{CO_2 \text{ measured}} \cdot CO \text{ measured}$$

In an airless state, CO measurements must be lower than 400 ppm or 0.04 % volume. Measurements around or greater than 200 ppm indicate an erroneous burner setting, dirt in the gas burner or heat exchanger, or defects in the burner.

The problem must be corrected immediately.

Chimney draft for model SP

Values recommended between -0.012" wc and -0.12" wc.

Higher chimney drafts cause preventable vent losses which result in higher heating costs.

For values above 0.12" wc it is recommended that you consult the National Fuel Gas Code, ANSI Z 223.1 or applicable local codes. In Canada consult CAN CGA B 149.1 or 2 Installation Codes.

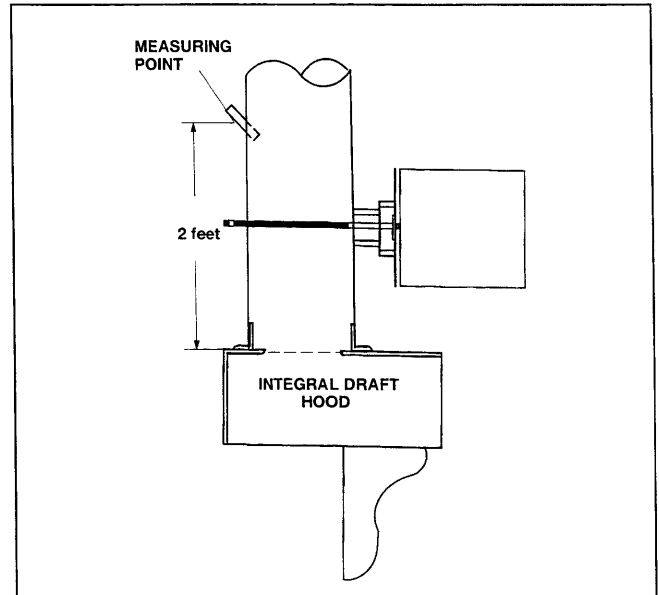


Fig. 18: Measuring point in flue pipe – schematic diagram for model SP

	A	B
natural gas	0.206	0.0050
propane	0.233	0.0044

Table 6

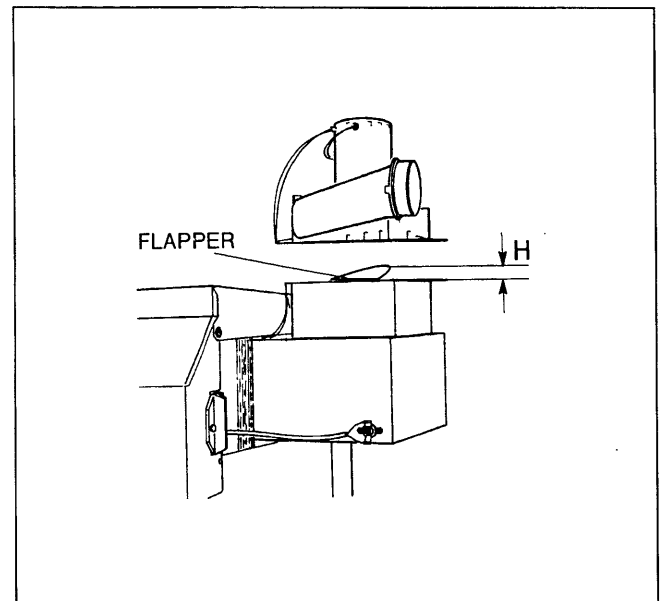


Fig. 18 a

size	18	25	32
H	5/8"	25/32"	1 17/32"

Table 6 a: Flapper settings for model DP

Inform the owner/operator and hand over the technical documents

Make the owner/operator familiar with the entire installation and the operation of the boiler. Sign the form with the owner on page 19 and turn over the documents to the owner.

If the heating installation is not operated in the winter months, the heating water must be drained from the installation to prevent freezing.

12. Maintenance

Maintenance record –

Maintenance should only be carried out by a qualified service technician on a yearly basis.

Check off the maintenance items once they are completed and enter the measurements where indicated.

Read and follow the maintenance instructions on the following pages.

Maintenance items	(date)		
1. Examine ventings system including combustion and ventilation air	☐	☐	☐
2. Cleaning of boiler flue	☐	☐	☐
3. Cleaning of gas burner	☐	☐	☐
4. Measure gas inlet pressure in inches water column	_____	_____	_____
5. Measure manifold pressure	_____	_____	_____
6. Leakage test during operation	☐	☐	☐
7. Check main burner and pilot flames	_____	_____	_____
8. Check damper or inducer operation	_____	_____	_____
9. Take measurements	☐	☐	☐
9.1 Gross stack gas temperature t_g in °F	_____	_____	_____
9.2 Air temperature t_a in °F	_____	_____	_____
9.3 Net flue gas temperature $t_g - t_a$ in °F	_____	_____	_____
9.4 Carbon dioxide content (CO ₂) in %	_____	_____	_____
9.5 Vent gas losses q_A , see p. 20 in %	_____	_____	_____
9.6 Carbon monoxide content (CO), airfree in ppm	_____	_____	_____
9.7 Chimney draft for model SP in inches water column	_____	_____	_____
10. Check high limit aquastat operation	☐	☐	☐
11. Check boiler area for combustible materials, gasoline and other flammable or corrosive liquids	☐	☐	☐
12. Confirm maintenance	☐	☐	☐
Signed			

☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
_____	_____	_____	_____	_____
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_____	_____	_____	_____	_____
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐

Maintenance Procedure

Maintenance should only be carried out by a qualified service technician. When replacing parts, use only Buderus authorized components. Maintenance should be done on a yearly basis. Results of the inspection must be recorded on the form provided on page 22.

1. Inspect the venting system including the combustion and ventilation air openings. Any repairs identified must be corrected immediately.

Ensure that there is no obstruction of combustion and ventilation air flow.

2. Inspect the boiler flueway. The boiler must be placed out of service prior to inspection of flueway. See instruction to Turn off gas appliance page 18.
3. Remove the control access panel.
4. Disconnect the pilot gas line from the gas control.
5. Disconnect the thermocouple from the gas valve.
6. Secure the gas line piping to the slot in the top jacket panel with wire or rope, fig. 19.
7. Disconnect the union between the gas valve and the manifold. Place the gasket from the union in a safe place.

Caution: Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation.
Verify proper operation after servicing.

8. Label the flame roll-out switch wires and disconnect the wires from the flame roll-out switch, fig. 19.
9. Remove the nuts and washers that secure the burner assembly to the boiler and remove the burner assembly from the boiler, fig. 19.
10. Remove the top rear jacket panel. Inspect for damage, fig. 20.
11. Remove the flueway access panel under the insulation. Visually inspect the flueway with a flashlight, if there is no deposit or scale, replace the access panel and jacket piece. If the flueway has deposits, they must be cleaned. If a liquid agent is used the floor plate must be covered with a cloth to protect base from moisture.

After the flueway has been cleaned, clean all debris from the combustion chamber, floor plate and the floor around the base of the boiler.

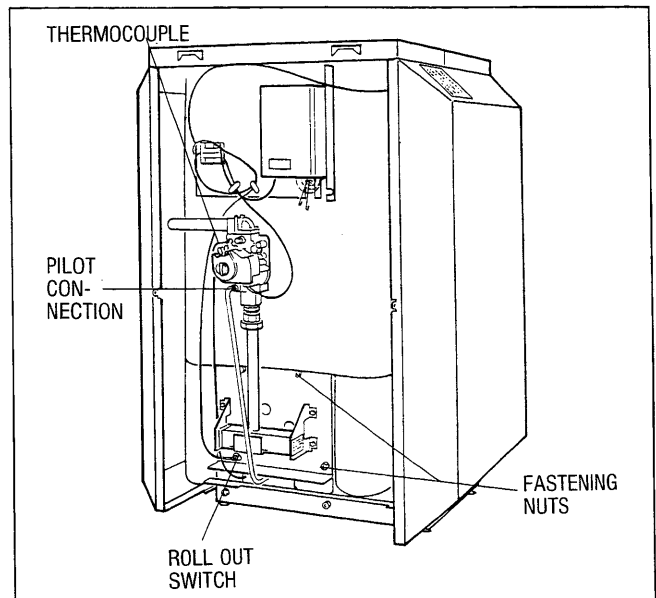


Fig. 19

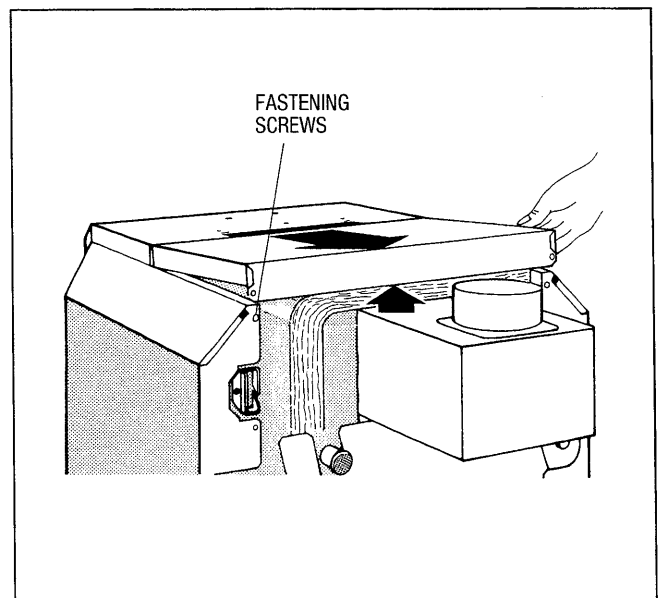


Fig. 20

Cleaning the gas burner

- Remove pilot burner assembly from burner assembly.
- Loosen the pilot gas line on the pilot burner (Fig. 21).
- Remove pilot gas orifice and blow out to clean.
- Dip burner tubes into water with diswashing cleaning agent and brush off. Ensure that insulation does not get wet.
- Rinse the burner rods with a stream of water; when doing so, hold the gas burner in such a way that the water penetrates into all the burner slits and can run out again through the Venturi tubes.
- Remove the rest of the water by shaking the burner tubes.

Dirt remaining in the burner tube can be removed with a vacuum cleaner.

- Check the burner slits for free passage; remove any water from in the slits. if any slits are damaged the burner must be replaced.
- Reassemble the pilot gas orifice and tighten pilot gas line on the pilot burner.
- When assembling and installing the gas burner, proceed in the opposite sequence as described for removal and disassembly.
- Ensure spacers are in place when installing burner assembly.
- Ensure that the gasket is installed in the gas piping union.

Place the boiler into operation per instructions on page 15 thru 21.

- **Take stack measurements per the procedure on page 20.**

- **Check low water cutoff if installed.**

- **Check boiler area for hazards**

The boiler area must be clear and free from combustible materials, gasoline and other flammable or corrosive vapors and liquids.

- **Confirm that all maintenance items are completed by filling out the Maintenance Record, signing at the bottom, and reviewing with the owner.**

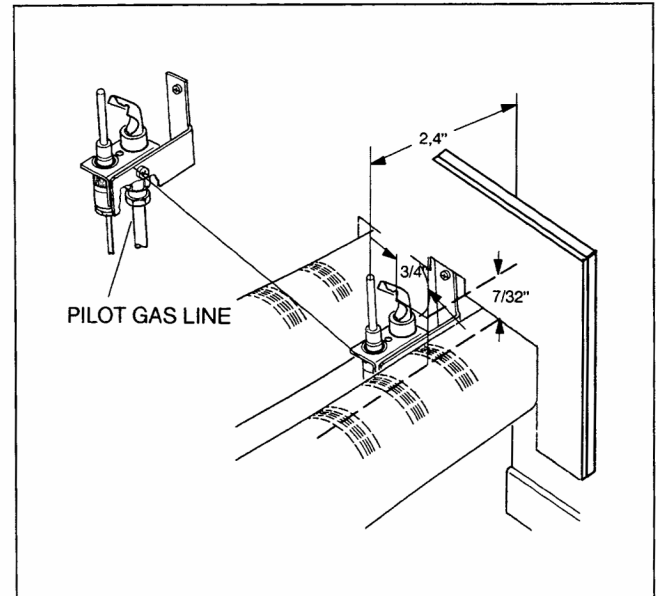
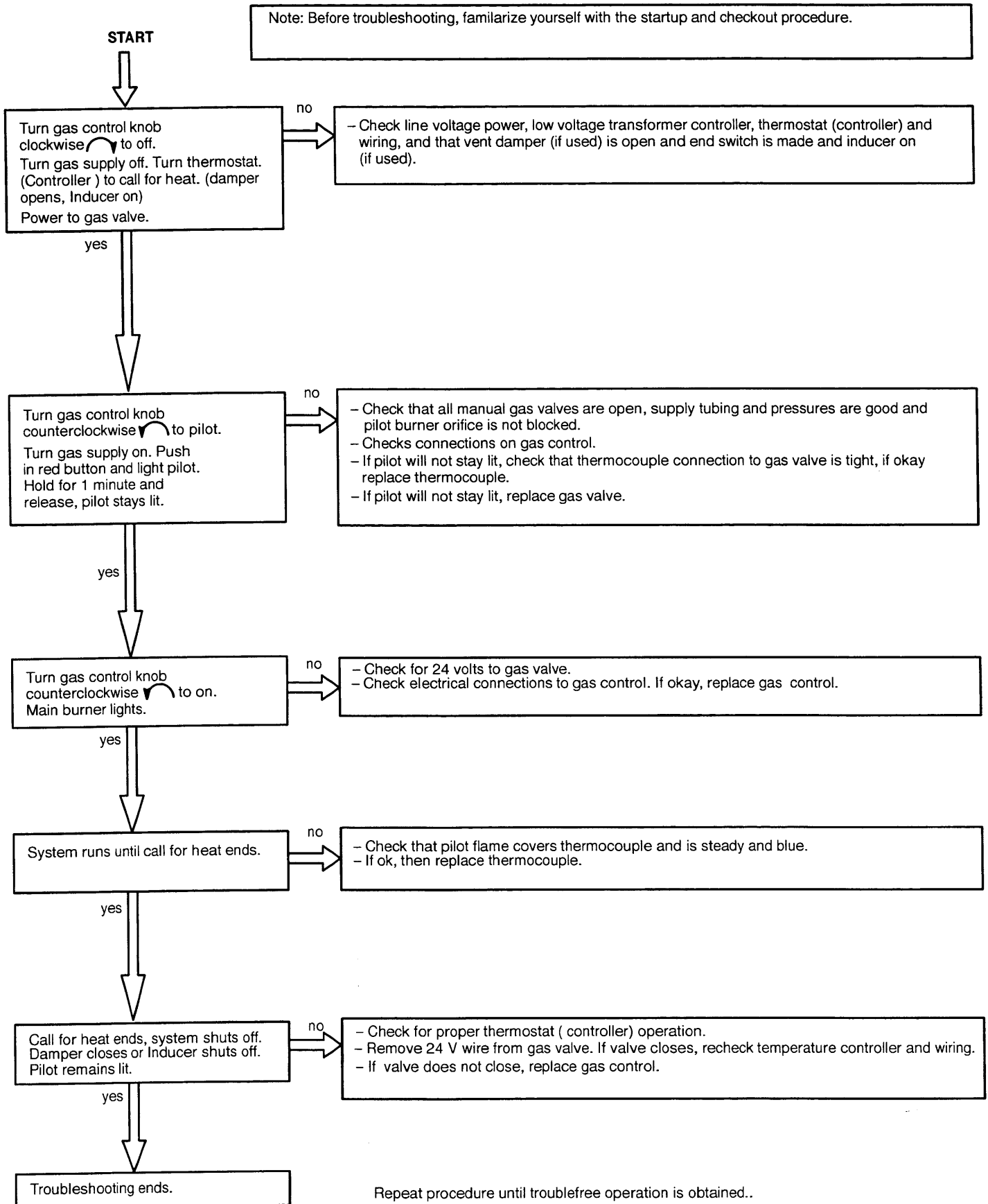
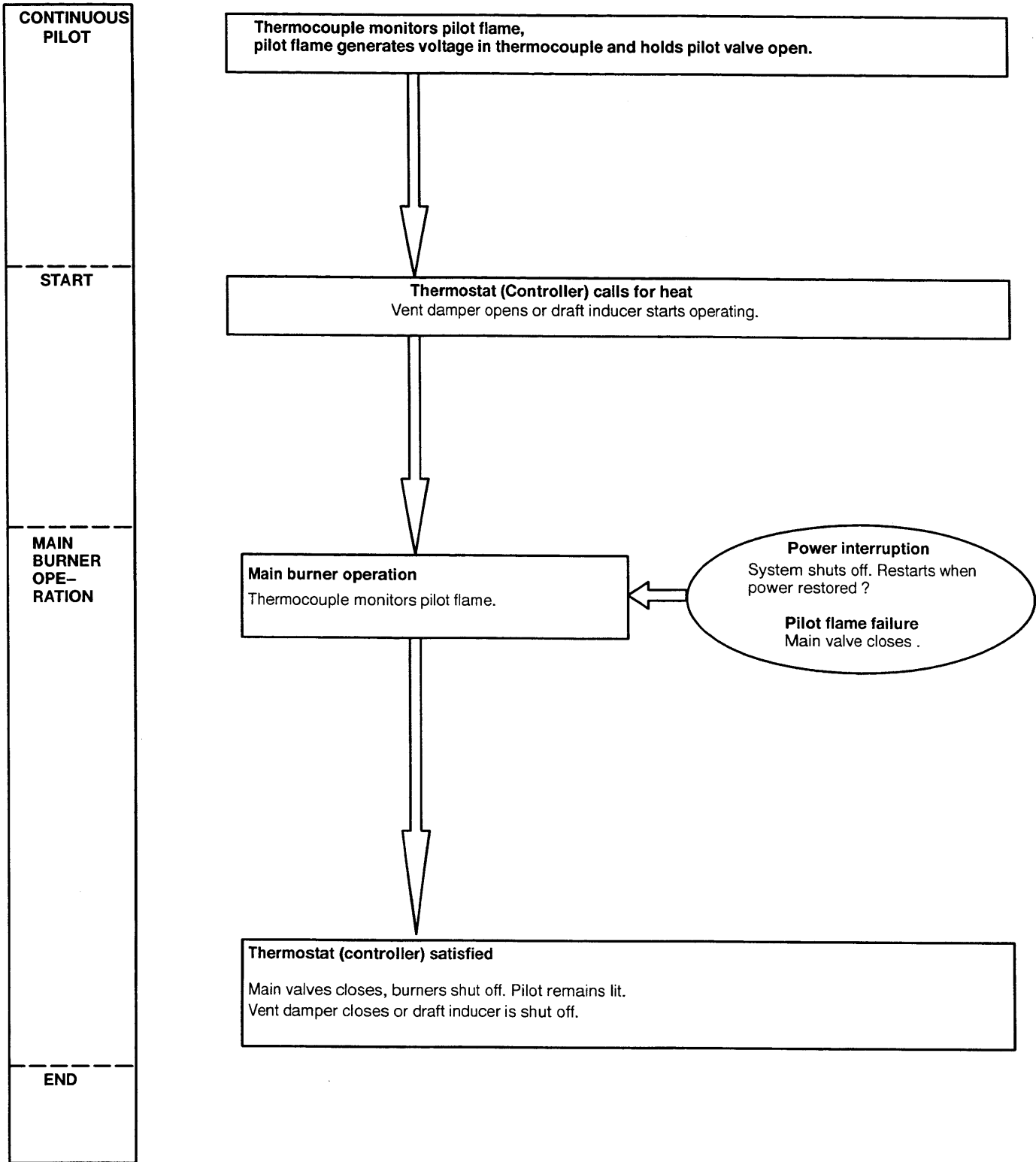


Fig. 21

Standing pilot system troubleshooting table



Sequence of normal operation

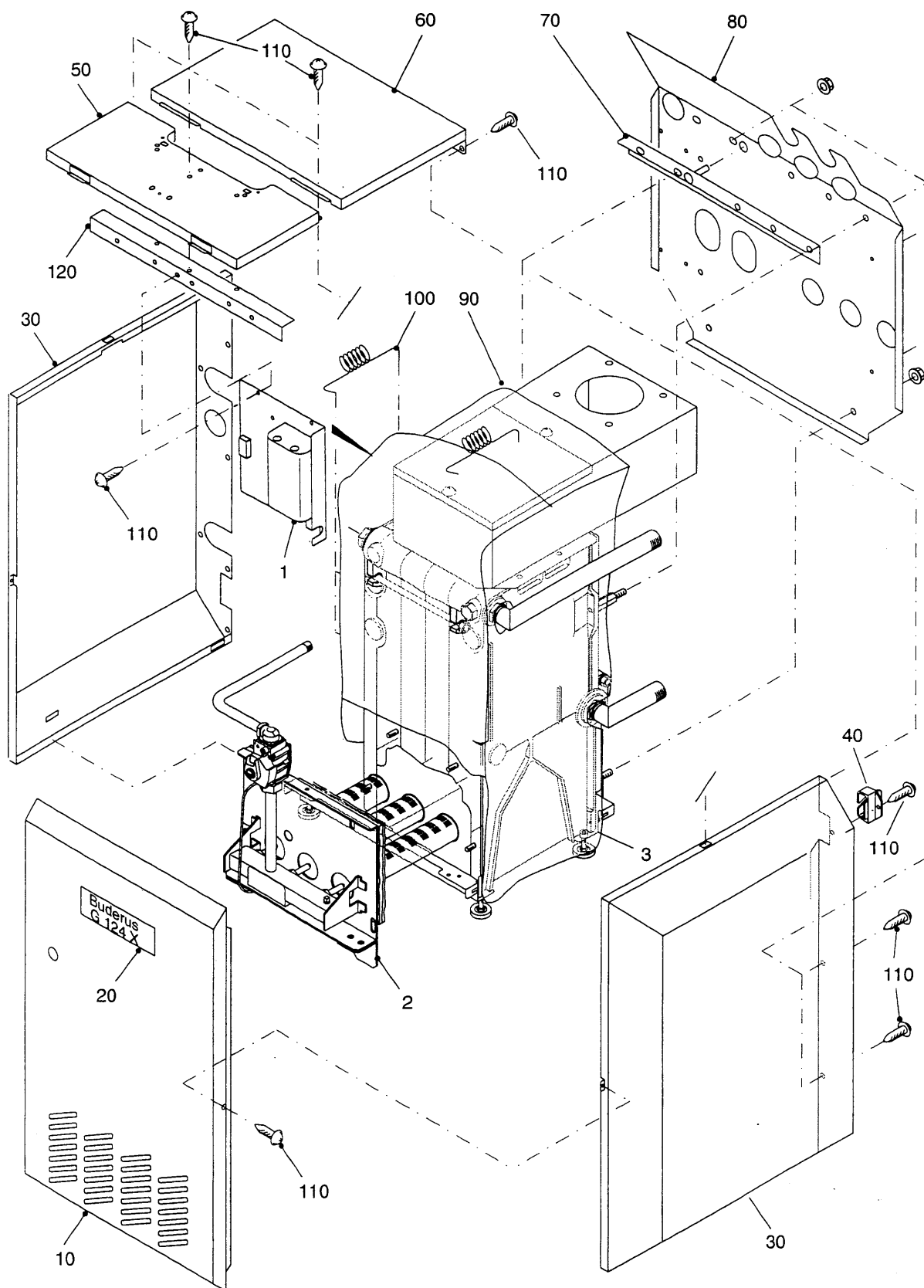


13. Parts List

The following parts are available from Buderus Hydronic Systems.

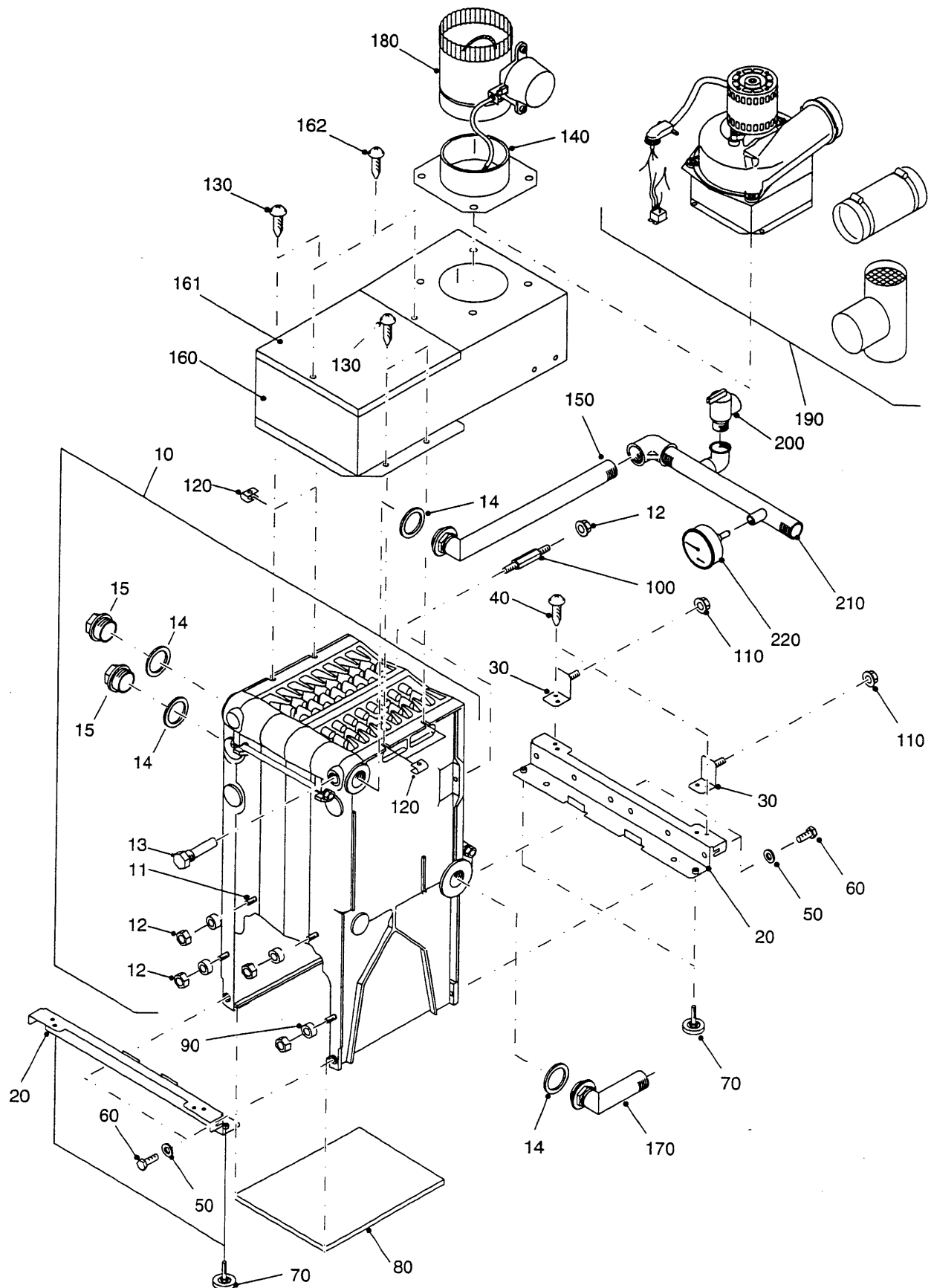
Pos. Nr.	Description	BHG Article Number	Model 18 Qty./Model	Model 25 Qty./Model	Model 32 Qty./Model
	Illustr. 1 Jacket Assembly				
1	Control Panel Assembly	5249 885	1	1	1
2	Manifold Assembly NG 2000 ft.	5272-	570	572	574
3	Block Assembly	8197-	252	254	256
10	Front Jacket Panel	5078 100	1	1	1
20	"Buderus" Plate for Pos. Nr. 10	5078 800	1	1	1
30	Side Jacket Panel	5078 110	2	2	2
40	Cable Raceway	7060 754	1	1	1
50	Top Front Jacket Panel	5078 120	1	1	1
60	Top Back Jacket Panel	5078 124	1	1	1
70	Back Brace	10001 809	1	1	1
80	Back Jacket Panel	5078 140	1	1	1
90	Insulation	5078-	292	294	296
100	Spring Clip	476 378	1	1	1
110	Jacket Screws	see M.Kit No. 4	12	12	12
120	Mounting Bracket for Control Panel Assy	67900 509	1	1	1
	Mounting Kit No. 4	5078 804	1	1	1

Illustr. 1 Jacket Assembly



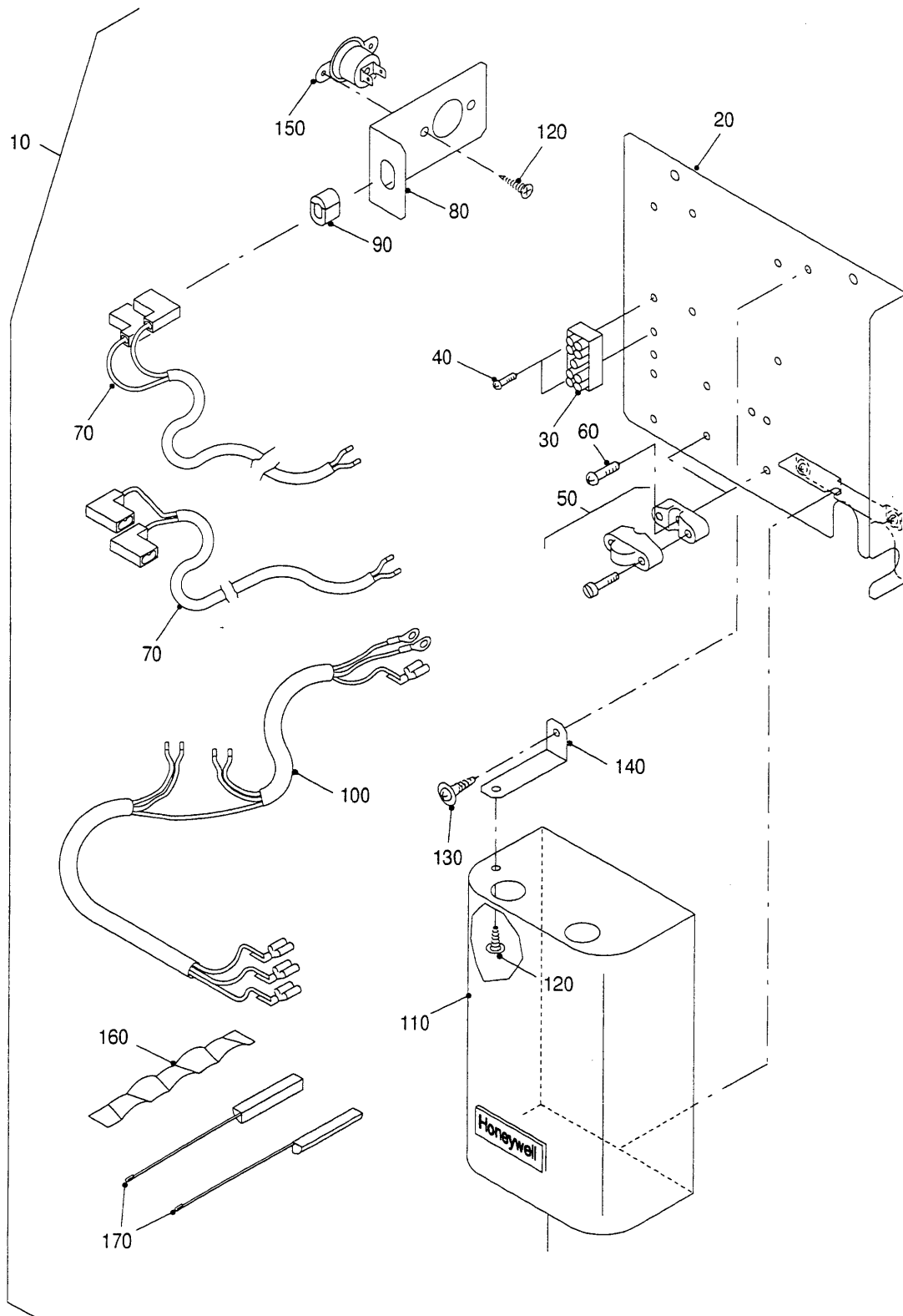
Pos. Nr.	Description	BHG Article Number	Model 18 Qty./Model	Model 25 Qty./Model	Model 32 Qty./Model
	Illustr. 2 Block Assembly – Component Parts				
10	Block Assembly	8197-	252	254	256
11	Studs for Manifold M8x30	see M.Kit No. 3	4	4	4
12	M8 Nut	see M.Kit No. 3	5	5	5
13	Sensor Well	5446 065	1	1	1
14	Gasket	86159 710	4	4	4
15	Plug	6073 304	2	2	2
20	Jacket Frame	5078 130	2	2	2
30	Bracket	5180 841	2	2	2
40	Bolt M5x12	see M.Kit No. 3	2	2	2
50	Washer A8,4	see M.Kit No. 3	4	4	4
60	Bolt M8x16	see M.Kit No. 3	4	4	4
70	Leveling Legs	5871 596	4	4	4
80	Combustion Chamber Floor Insulation	5078-	302	304	306
90	Spacer for Manifold	5176 794	4	4	4
100	Stand Off Stud	475 485	1	1	1
110	M10 Nut	see M.Kit No. 3	2	2	2
120	Clip Nut 4,8 SNU2012	see M.Kit No. 3	4	4	4
130	Screws F ST4,8x22	see M.Kit No. 3	2	2	2
140	Flue Collar	5521-	240	240	242
150	Supply Pipe	5407 352	1	1	1
160	Draft Hood	5181-	710	712	714
161	Flueway Access Panel	5371-	974	976	978
162	Screws C ST4,2x13	see M.Kit No. 3	2	2	2
170	Return Pipe	5407 350	1	1	1
180	Vent Damper	9990-	6864	6884	6865
190	Inducer Kit KG 124x18 DI	5176 910	1	-	-
190	Inducer Kit KG 124x25 DI	5181 008	-	1	-
190	Inducer Kit KG 124x32 DI	5181 009	-	-	1
200	Safety Relief Valve	5947 650	1	1	1
210	Manifold with 90° Elbow	5947 656	1	1	1
220	Tridicator	5947 652	1	1	1
	Mounting Kit No. 3	5078 806	1	1	1

Illustr. 2 Block Assembly – Component Parts



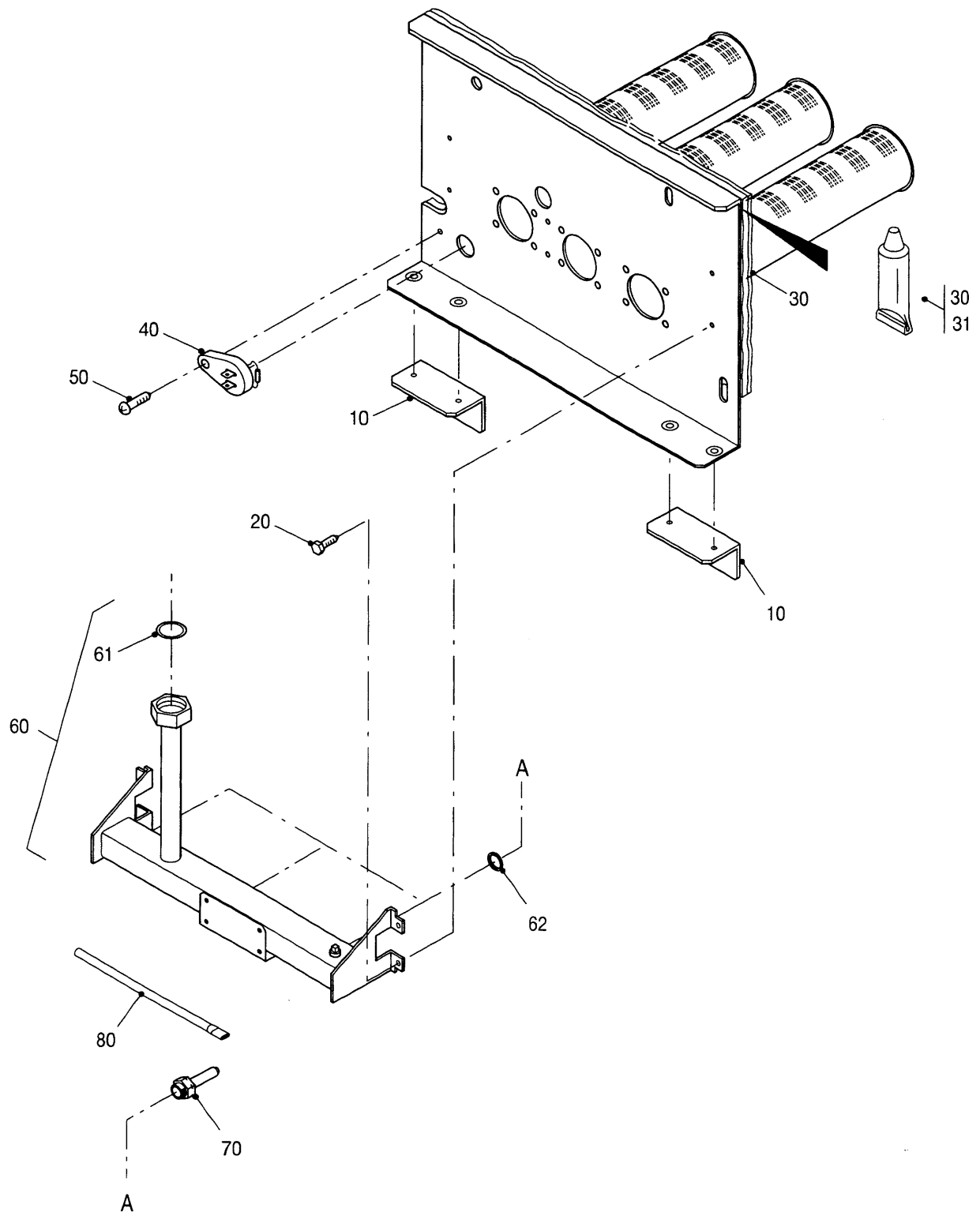
Pos. Nr.	Description	BHG Article Number	Model 18 Qty./Model	Model 25 Qty./Model	Model 32 Qty./Model
	Illustr. 3 Control Panel Assembly				
10	Control Panel Assembly	5249 885	1	1	1
20	Mounting Plate	5078 168	1	1	1
30	Terminal Strip	see M.Kit No. 1	1	1	1
40	Screw C ST3,5x16 A3K	see M.Kit No. 1	2	2	2
50	Strain Relief	see M.Kit No. 1	2	2	2
60	Screw F ST3,5x9,5 A3K	see M.Kit No. 1	2	2	2
70	Wiring Harness	70000 725	2	2	2
80	Strain Relief Bracket for blocked vent switch	see M.Kit No. 1	1	1	1
90	Strain Relief	see M.Kit No. 1	1	1	1
100	Cable Harness	7079 630	1	1	1
110	Aquastat	5996 360	1	1	1
120	Screw F ST3,5x6,5 A3K	see M.Kit No. 1	3	3	3
130	Screw (flathead) 3,9x9,5 A3E	see M.Kit No. 1	2	2	2
140	Bracket 2x23x79	–	1	1	1
150	Blocked Vent Switch	7079 498	1	1	1
160	Spring Clip	5446 800	1	1	1
170	Spacer	7060 110	2	2	2
	Mounting Kit No. 1	7079 534	1	1	1

Illustr. 3 Control Panel Assembly



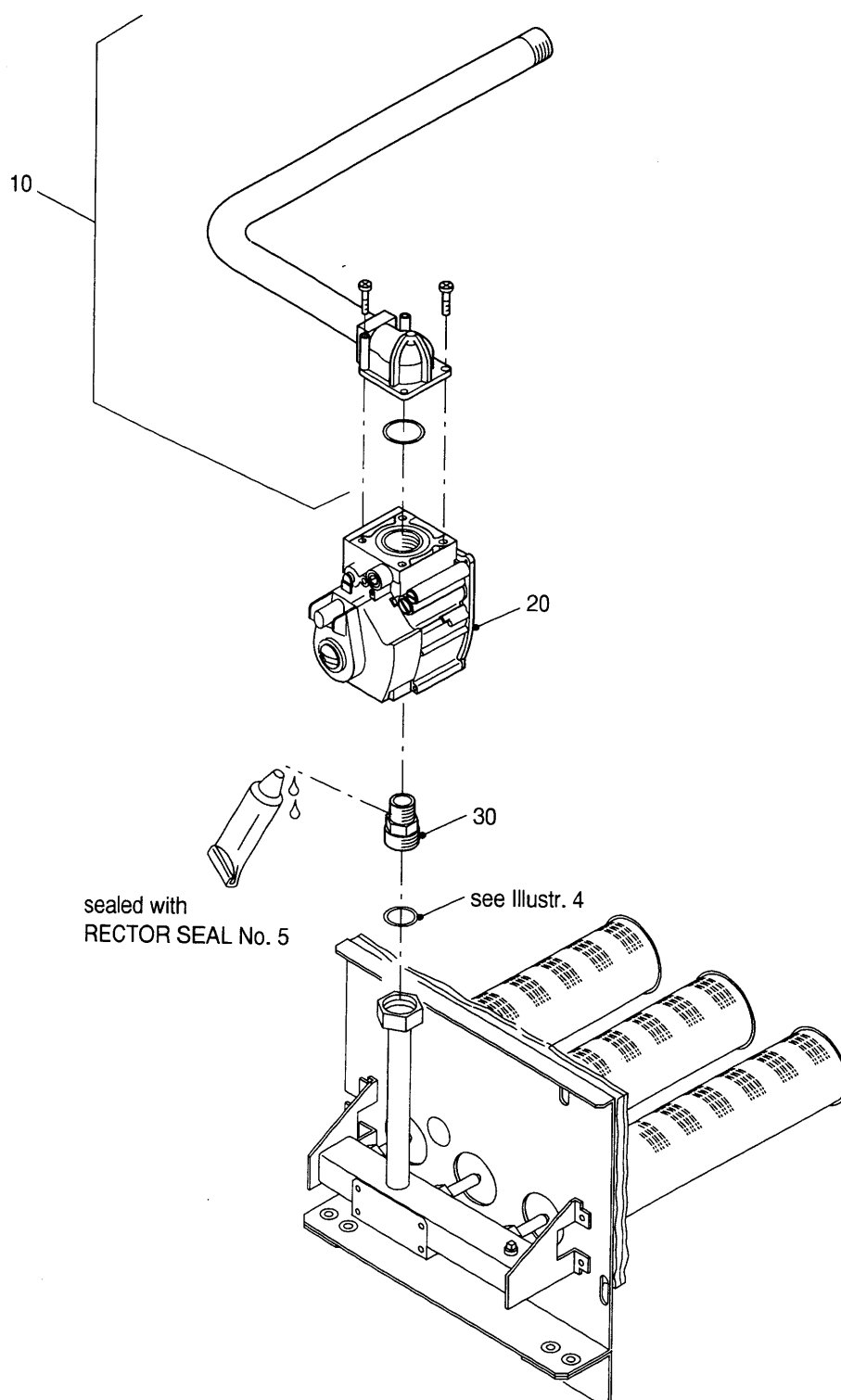
Pos. Nr.	Description	BHG Article Number	Model 18 Qty./Model	Model 25 Qty./Model	Model 32 Qty./Model
	Illustr. 4 Manifold – Component Parts				
10	Bracket	70000 -	463	464	465
20	Screw, M5x8-A3K	see M.Kit No. 2	4	4	4
30	Insulation including Adhesive	5176-	976	977	978
31	Adhesive for Insulation	2037 312	1	1	1
40	Roll Out Switch	471 336	1	1	1
50	Screw, M4x16-ST	see M.Kit No. 2	2	2	2
60	Manifold	5176-	979	980	981
61	Gasket for Union	5959 280	1	1	1
	ALL ORIFICES ARE FOR 0-2000 FEET ELEVATION. CONTACT BUDERUS HYDRONIC SYSTEMS FOR HIGH ALTITUDE CONVERSIONS.				
62	Gasket	5883 094	2	3	4
70	Orifice Kits NG-0-2000FT	5482-	838	836	752
80	Match Bracket	5176 863	1	1	1
	Mounting Kit No. 2	5176 996	1	1	1

Illustr. 4 Manifold – Component Parts



Pos. Nr.	Description	BHG Article Number	Model 18 Qty./Model	Model 25 Qty./Model	Model 32 Qty./Model
	Illustr. 5 Gas Union				
10	Gas Supply Pipe Assy 151 mm incl. O-Ring	5176 736	1	1	–
10	Gas Supply Pipe Assy 241 mm incl. O-Ring	5176 737	–	–	1
20	Gas Control for Natural Gas	5181 446	1	1	1
30	Gas Pipe for Union	905 239	1	1	1

Illustr. 5 Gas Union

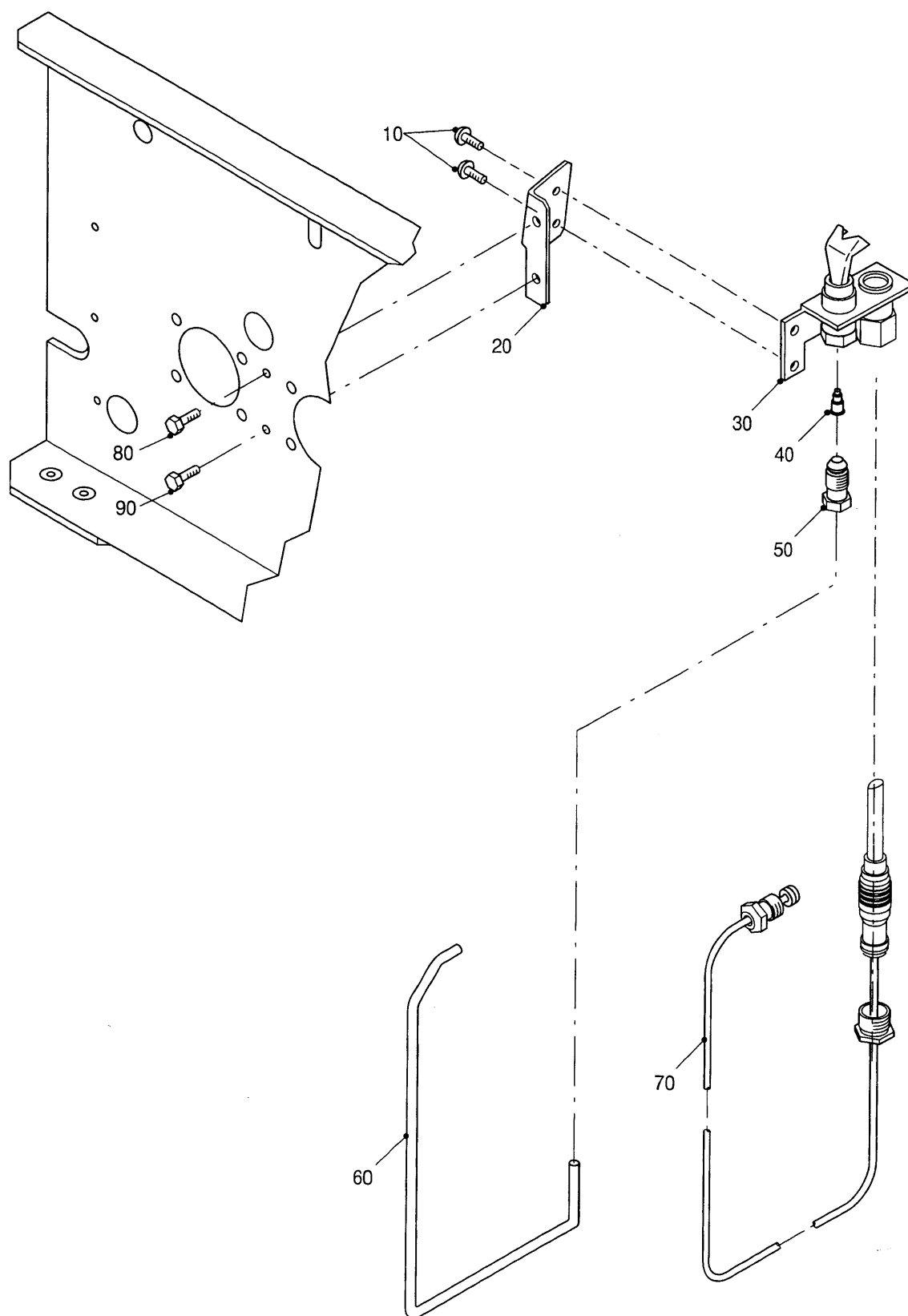


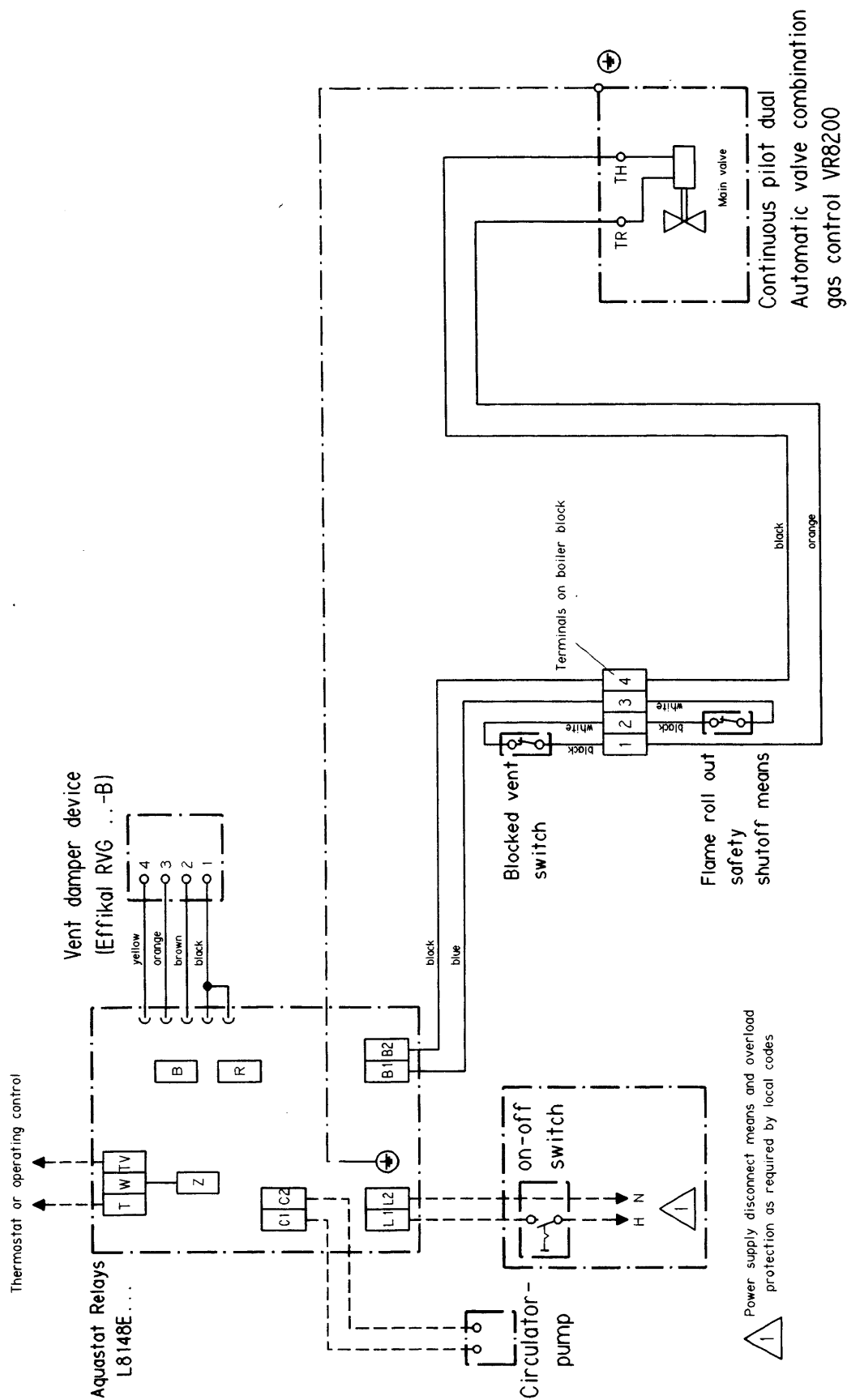
Pos. Nr.	Description	BHG Article Number	Model 18 Qty./Model	Model 25 Qty./Model	Model 32 Qty./Model
	Illustr. 6 Pilot Burner				
10	Hex Screw, 10x32x3/16-ST	see M.Kit No. 2	2	2	2
20	Pilot Bracket	5181 450	1	1	1
30	Pilot Burner, Q350	5181 314	1	1	1
40	Pilot Orifice, Natural Gas, CAR12	5181 016	1	1	1
40	Pilot Orifice, Propane Gas, GAF8	5181 017	1	1	1
50	Mounting for Pilot Line	5181 672	1	1	1
60	Pilot Line	5181-	924	924	926
70	Thermocouple, Q309	5176 988	1	1	1
80	Screw, M5x8-A3K	see M.Kit No. 2	1	1	1
90	Screw, M4x12-A3K	see M.Kit No. 2	1	1	1
	Mounting Kit No. 2	5176 996	1	1	1

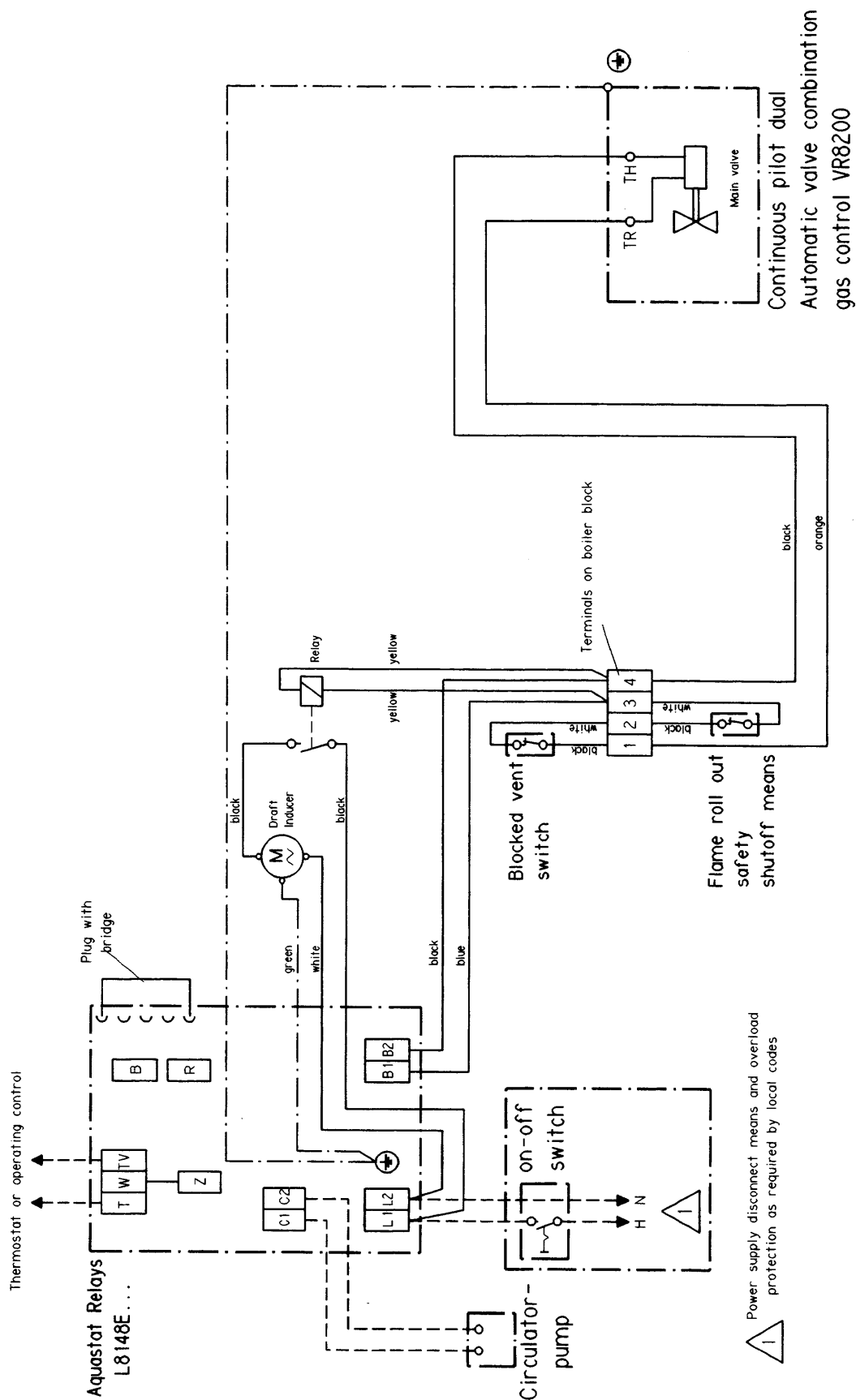
These parts are available from:

BUDERUS HYDRONIC SYSTEMS,
Salem N.H.
Phone: (603) 898 – 0505
Fax: (603) 898 – 1055

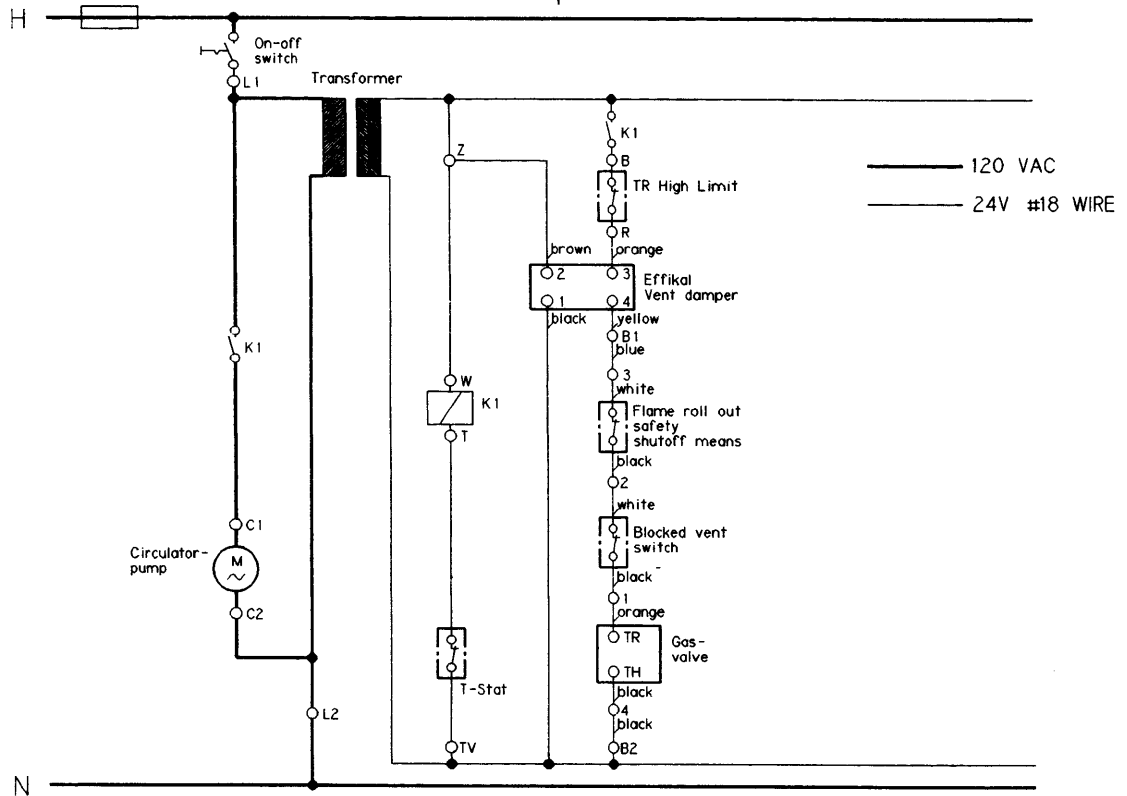
Illustr. 6 Pilot Burner



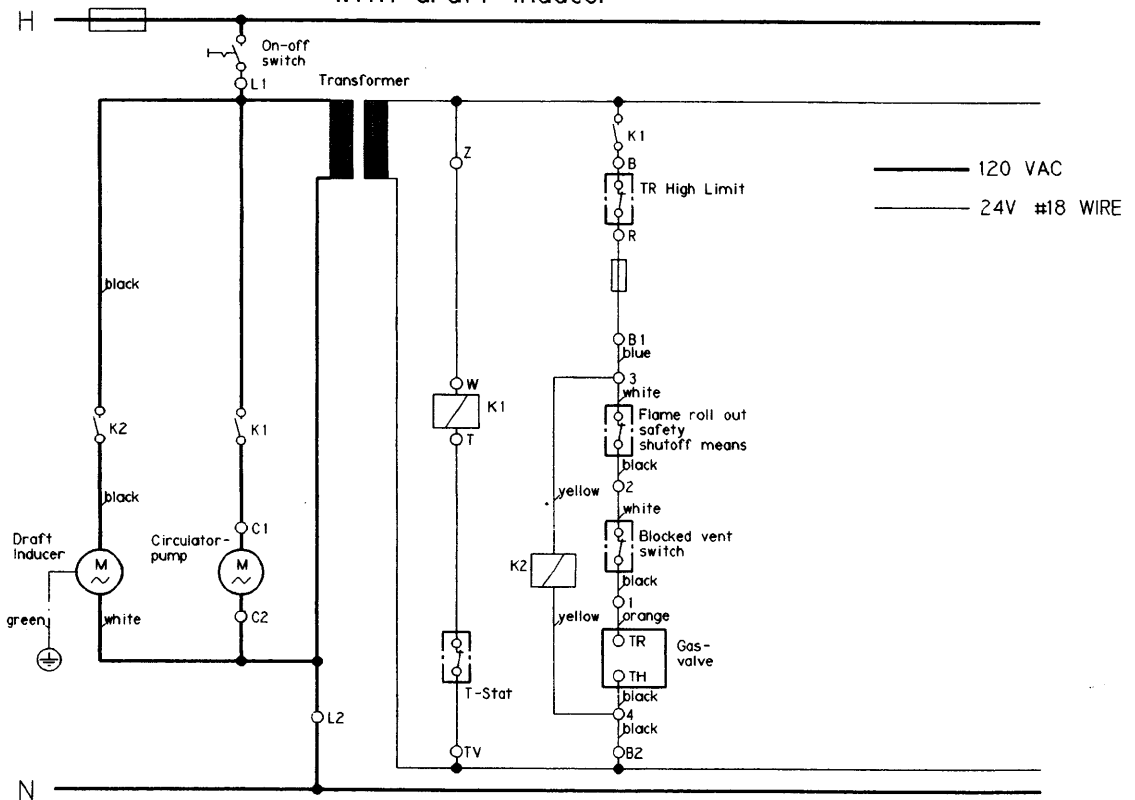




Wiring Schematic G124X/SP with vent damper



Wiring Schematic G124X/DP with draft inducer



Buderus

Wiring diagram gas-boiler G124X model USA-CDN
Standing pilot

Wiring diagram : G124X/SP/DP USA

Drwg. no. : R03.00.601.2458(4)

Ref. no. :

Reviewed : 5968.01 Edition : 09/96

NATURAL OR PROPANE BOILER INSTALLATION AND OPERATING INSTRUCTIONS

DANGER

ONLY THE BOILER MAY BE SERVED BY THE VENT DAMPER. DO NOT USE IT TO VENT AN ADDITIONAL APPLIANCE: THIS WILL CAUSE A FIRE OR CARBON MONOXIDE POISONING.

DANGER

LE VOLET DE VENTILATION DOIT SERVIR SEULEMENT A LA CHAUDIERE. NE PAS L'UTILISER POUR VENTILER D'AUTRES APPAREILS: SINON CELA POURRAIT PROVOQUER UN INCENDIE OU CAUSER UN EMPOISONNEMENT PAR LE MONOXYDE DE CARBONE.

METHOD OF INSTALLATION FOR MOTORIZED VENT DAMPER METHODE D'INSTALLATION POUR LE VOLET MOTORISE DE VENTILATION

The damper must be mounted to the draft hood adapter without modifying the draft hood and draft hood adapter or damper device.

Attach the lower portion of the vent damper to the draft hood adapter with 1/2" screws or pop rivets.

Do not install within 6 inches of combustible materials. Make sure the motor actuator and position indicator are readily visible and accessible.

Wire the damper per wiring diagram figure.

Determine the amperage draw of the gas control circuit and damper device. Check heat anticipator in comfort thermostat to determine that it's properly adjusted.

To manually open the damper, follow instructions inside the damper cover.

Le volet d'obturation doit être joint à l'adaptateur du coupe-tirage sans modifier le coupe-tirage il-même, l'adaptateur du coupe-tirage ou le volet d'obturation.

Attacher la partie inférieure du volet à l'adaptateur du coupe-tirage à l'aide de vis de 12 mm ou plus courtes, ou de rivets.

Ne pas installer le registre à moins de 152 mm de distance de matériaux combustibles. S'assurer que le dispositif de commande du moteur soit visible et facilement accessible.

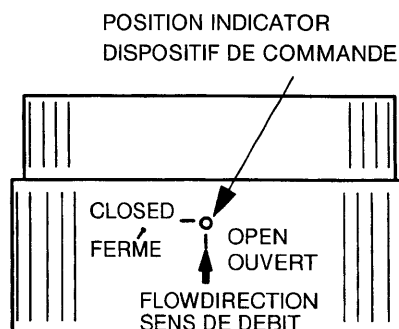
Faire la connection électrique entre le volet et le bornier à l'intérieur du couvercle d'accès du contrôle suivant le schéma électrique correspondant.

Determiner l'amperage du circuit de contrôle gaz et du volet. Vérifier la résistance anticipatrice de chaleur du thermostat d'ambiance afin de déterminer si elle est correctement réglée.

Pour ouvrir manuellement le registre, suivre les instructions qui se trouvent à l'intérieur du couvercle du volet.

DAMPER MUST BE IN OPEN POSITION WHEN APPLIANCE MAIN BURNERS ARE OPERATING.

LE REGISTRE DOIT ETRE EN POSITION OUVERTE LORSQUE LE BRULEUR PRINCIPAL EST EN MARCHE.



15. Installation and service certificate

Type _____

Operator _____

Manufacturer's no. _____

Location _____

Installing contractor
(specialist company) _____

The system described above has been installed
and put into operation according to all applicable
codes and regulations.

The technical documents have been delivered to the
operator who has also been made familiar with the
safety instructions and the maintenance of the installa-
tion described above.

Date, signature of installing contractor

Date, signature of operator

For the installing contractor

Type _____

Operator _____

Manufacturer's no. _____

Location _____

The technical documents have been delivered to the
operator who has also been made familiar with the
safety instructions and the maintenance of the installa-
tion described above.

Date, signature of operator



Addresses

Installing contractor

Manufacturer	Buderus Hydronic Systems, Inc. 16, Industrial Way Salem, N. H. 03079 Phone: (603) 898-0505 · Fax: (603) 898-1055
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