

User's Information Manual

Slant/Fin[®]

Galaxy GG, GXH & GXHA Series, Sentry Series and Sentinel SE Series Gas Boilers with Intermittent Pilot Ignition Device System (IID)

FOR YOUR SAFETY:

- Before operating this boiler, READ this manual.
- DO NOT attempt to install, service or repair this boiler yourself. There are no user serviceable parts. Contact a qualified service agency if your boiler needs repair or maintenance. Ask your gas supplier for a list of qualified service agencies.

WARNING: If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

- DO NOT store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- WHAT TO DO IF YOU SMELL GAS
 - DO NOT try to light any appliance.
 - DO NOT touch any electrical 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.
- Installation and service must be performed by a qualified installer, service agency or the gas supplier.

DO NOT use this boiler if any part has been underwater. Immediately call a qualified service technician to inspect the boiler and to replace any part of the control system and any gas control which has been underwater.

WARNING

Should overheating occur or the gas supply fail to shut off, **DO NOT** turn off or disconnect the electric supply to the circulator pump. Instead, shut off the gas supply at a location **EXTERNAL** to the appliance.

If your boiler is purchased with or will be equipped with an automatic vent damper, make certain that the damper is installed and wired by a qualified installer who has been certified by your local gas utility. See Vent Dampers page 7.

Keep the boiler area clean and free of all materials that can burn.

NEVER close or reduce openings that supply air for the boiler combustion and for ventilation.

Your gas boiler must be installed and serviced by a qualified service agency or gas supplier. The lack of proper service can result in a dangerous condition.

**SENTRY "S" SERIES BOILER
WITH INTEGRAL DRAFT DIVERTER**

Figure 1. MODEL S-34



**SENTINEL "SE" SERIES BOILER
WITH EXTERNAL DRAFT HOOD**

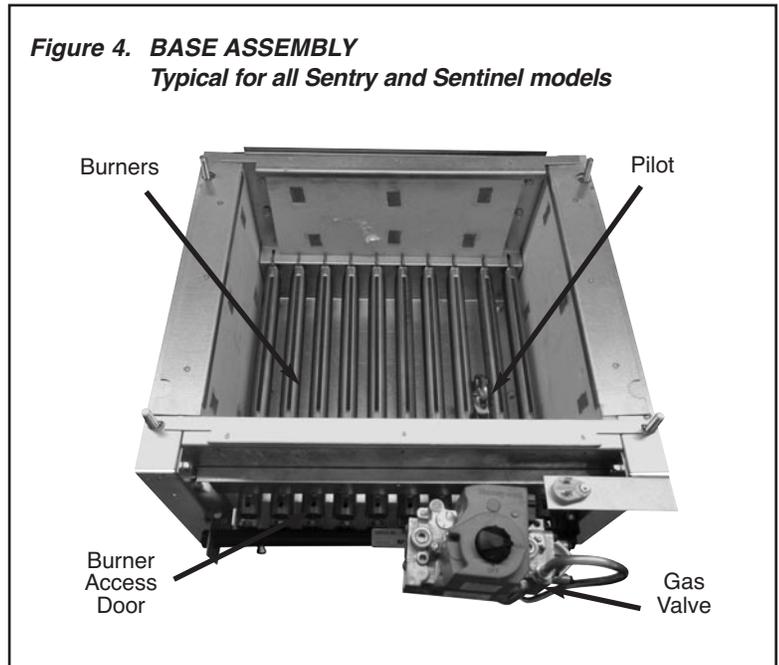
Figure 3. MODELS SE-70 through SE-245



Figure 2. MODELS S-60 through S-150



*Figure 4. BASE ASSEMBLY
Typical for all Sentry and Sentinel models*



Your gas boiler must be installed and serviced by a qualified service agency or gas supplier. The lack of proper service can result in a dangerous condition.

SENTINEL "SE" and SENTRY "S" SERIES BOILERS

GENERAL DIMENSIONS, LOCATIONS AND IDENTIFICATION OF PARTS

MODEL S-34

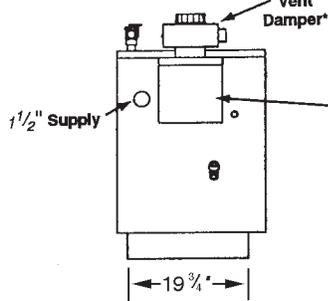


Figure 5. Left End View

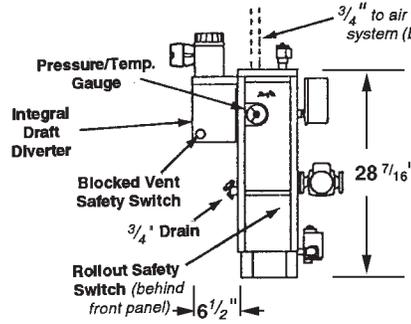


Figure 6. Front View

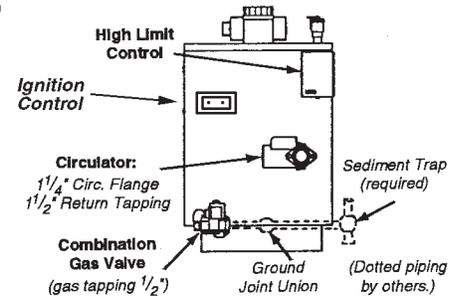


Figure 7. Right End View

MODELS S-60 to S-150

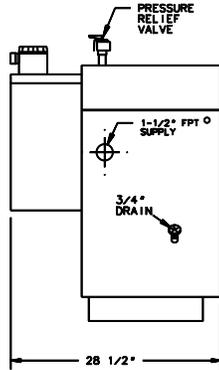


Figure 8. Left End View

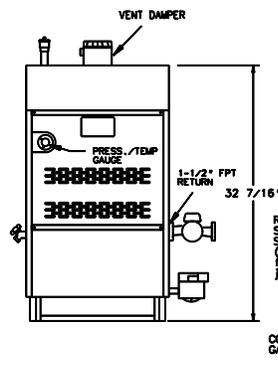


Figure 9. Front View

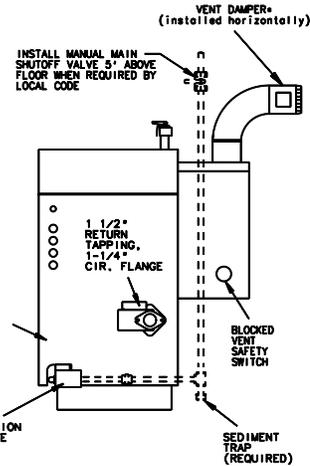


Figure 10. Right End View

MODELS SE-70 to SE-245

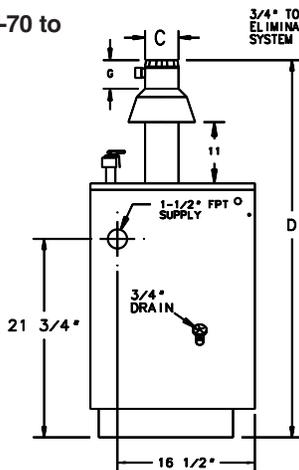


Figure 11. Left End View

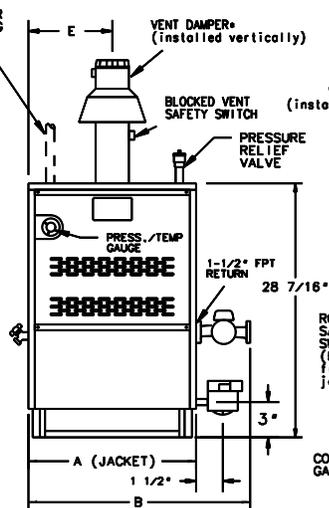


Figure 12. Front View

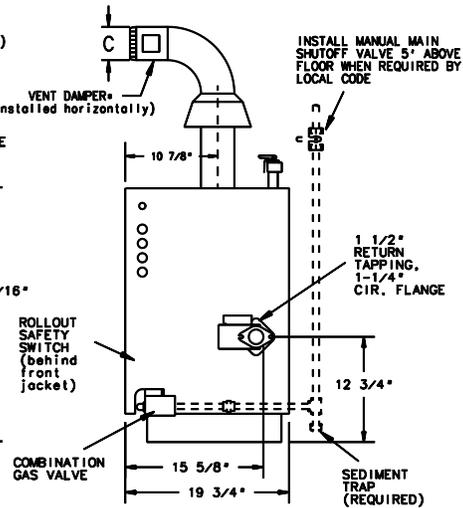


Figure 13. Right End View

* Vent damper may be installed horizontally on all models with use of a vent elbow.

See lighting instructions on page 8.

Your gas boiler must be installed and serviced by a qualified service agency or gas supplier. The lack of proper service can result in a dangerous condition.

GALAXY GG/GXH GXHA SERIES BOILER

Location and identification of parts

Figure 14. GG Series—Hot Water Boiler

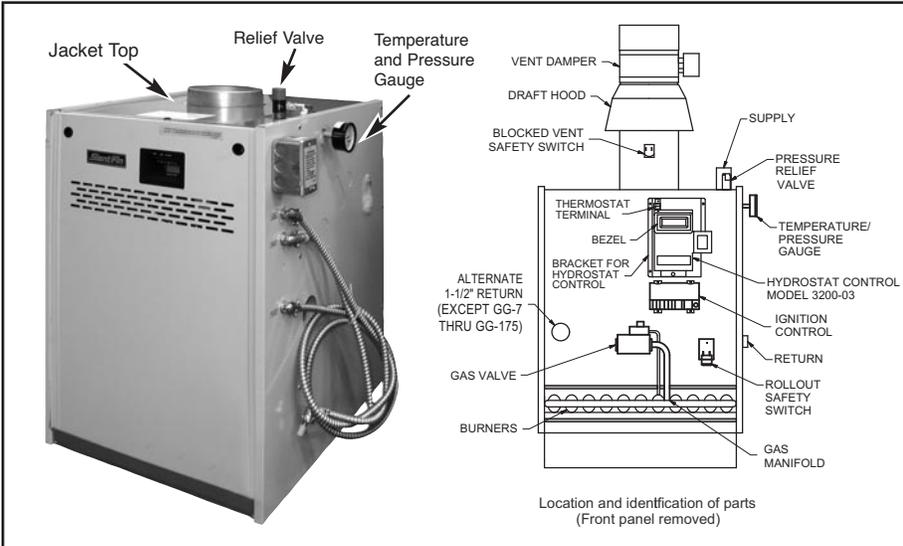


Figure 15. GXH Series—Steam Boiler

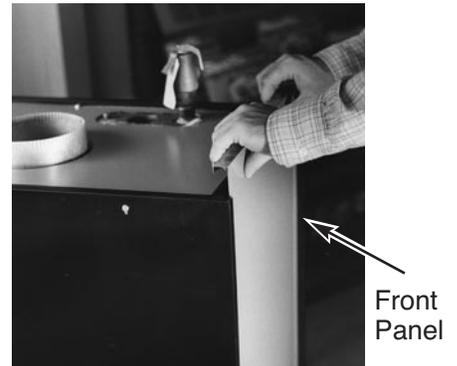
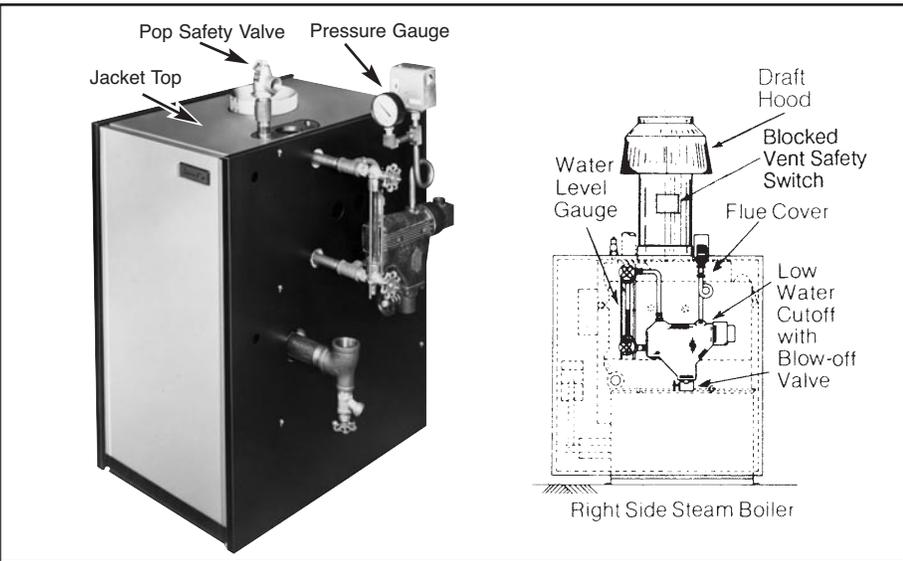
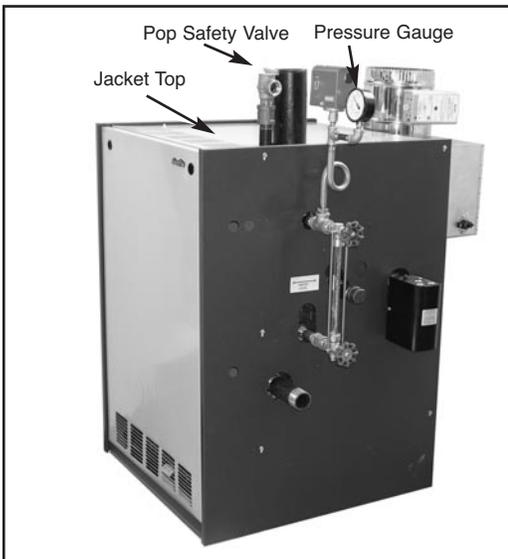


Figure 16 GXHA Series—Steam Boiler



Easy access front panel on standard extended jacket, is removed by simply pressing hand against panel and pushing up.

See lighting instructions on page 8.

Your gas boiler must be installed and serviced by a qualified service agency or gas supplier. The lack of proper service can result in a dangerous condition.

Inspection, cleaning, repair— Chimney, flue pipe and boiler

Your boiler and heating system will last an indefinitely long time at full efficiency, if it is inspected regularly and is kept in good repair and adjustment. You, the user, should make regular inspections, and report any problems to your service agency. At regular intervals, you should have that agency inspect the system, and clean the boiler and make repairs and adjustments as necessary. What you and the service agency should do are listed below.

Contact your gas supplier for a list of qualified service and repair agencies.

User inspection

At least once each month during the heating season and once just before cold weather starts:

- (1) Look closely at the smokepipe and draft hood (see figure 18, 19 & 20). Make sure pipe joints are snug and are fastened with screws. Cement at the chimney joint should fill the point and should not leak air. There should be no visible signs of rust (corrosion) or salts from water evaporation.
- (2) Look at all water (or steam) piping. There should be no leaks or signs of leaks at any pipe joints or around the boiler. Drain valves, other valves, and the relief valve (or steam safety valve) should not drip or leak.

(3A) On water boilers:

The temperature and pressure gauge indicates the pressure in the boiler at each water temperature. For most installations, it should indicate about 12 to 15 psi pressure when temperature is about 70 to 100 degrees F, and from 15 psi to 25 psi when temperature is up to 240 degrees F. **FOR YOUR SYSTEM, there is one correct pressure for each temperature. ASK YOUR INSTALLER OR SERVICEPERSON TO EXPLAIN AND SHOW YOU.**

Learn what normal pressures to look for. If pressure **decreases** from normal, your system is losing water. If pressure **rises** from normal, the relief valve will open to relieve the pressure. Call your service organization if pressures are higher or lower than normal, and if the relief valve spills water. Repair or adjustment is needed.

(3B) On steam boilers:

- (a) The water level in the gauge glass must be kept constant. You must have your installer or service organization explain to you how water is added to maintain water level.
- (b) Boiler models may be equipped with either a float type or electronic probe type low water cutoff.

Float Type:

You must be familiar with this LOW WATER CUT-OFF, how it works and HOW TO BLOW IT DOWN. Instructions are supplied with it. Ask your service organization to explain and show you blowdown. The cutoff should be blown down three times the first week and should be blown down weekly thereafter. Maintenance of the low water cutoff is vital in protecting your steam boiler against breakage due to loss of water.

Electronic Probe Type:

If your boiler is equipped with an electronic probe type low water cutoff, it requires periodic testing. Ask your service agency to test this low water cutoff twice a year.

- (4) Study the labels attached to your boiler, especially the LIGHTING AND SHUTDOWN instructions. Have your installer or service organization show you how to start and shut down the boiler following those instructions. The lighting instructions on your boiler are also reproduced, with pictures, in this manual.
- (5) Stand near the boiler, look and listen. As the burners start and shut off, there should be no unusual noise. No fire should be visible coming out of the front when the burners start or run.

Figure 18. (Galaxy GG, GXH, Sentinel SE boilers)

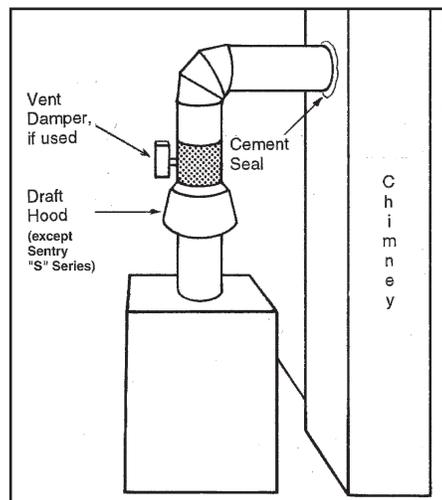


Figure 19. (Galaxy GXHA and Sentry S boiler)

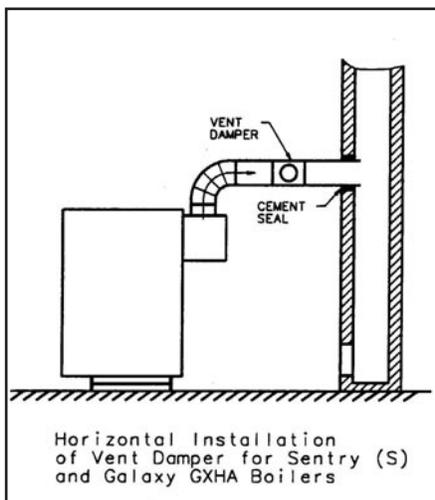
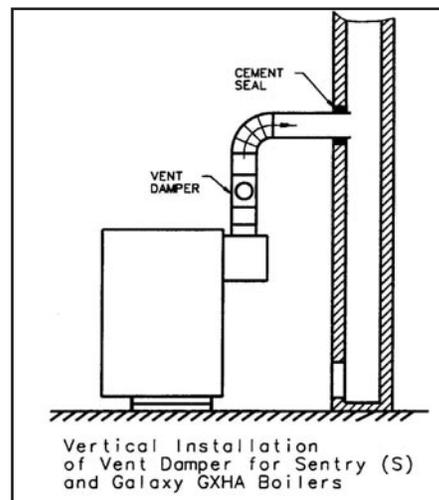


Figure 20. (Galaxy GXHA and Sentry S boilers)



Your gas boiler must be installed and serviced by a qualified service agency or gas supplier. The lack of proper service can result in a dangerous condition.

- (6) Ample air is required for your boiler to burn fuel cleanly and safely. Check to make sure the openings provided in your boiler room are not closed and are not obstructed. This is most important in colder weather, when most air is needed.
- (7) If equipped with vent damper
- (a) Your vent damper must be OPEN when the boiler is operating (BURNERS ARE ON). Ask your installer or serviceperson to show you the vent damper position indicator, indicating the open and closed damper positions. Inspect for proper operation monthly. If damper position indicator indicates that the damper is closed when the boiler is operating, SHUTDOWN the boiler immediately and call your service agency.
- (b) This device must be installed and inspected annually by a qualified installer in accordance with the

If you find during your inspection any unusual noise, water leak, corroded smokepipe, abnormal water pressure or flame rollout, call for service immediately.

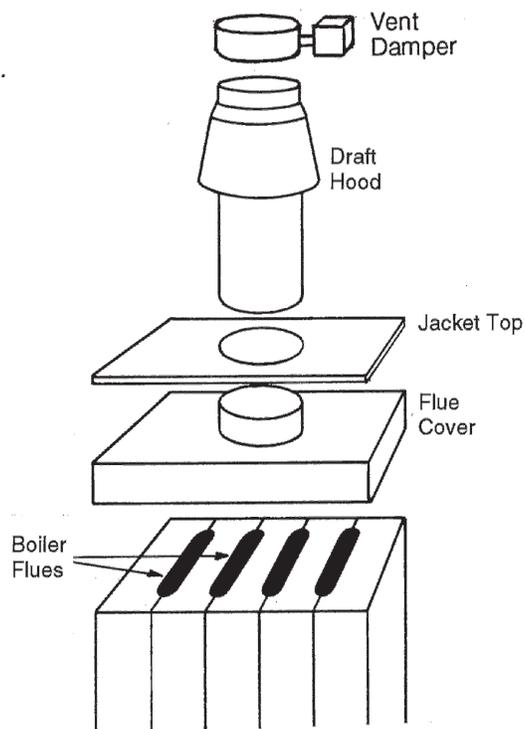
Slant/Fin vent damper installation instructions. If improperly installed, a hazardous condition such as explosion or carbon monoxide poisoning could result. If installed improperly, all vent damper and boiler warranties shall be voided.

SERVICE INSPECTION

The selected service organization should make these inspections, preferably once each year, before the cold weather begins:

- (1) Make the checks for leaks, corrosion, noise, flame, heat and outside air supply described under User's Inspection.
- (2) Check safety operation of the HIGH LIMIT CONTROL (and, for steam boilers, the LOW WATER CUTOFF). If the boiler is equipped with an intermittent pilot ignition system and/or an automatic vent damper, check those devices for safe and automatic operation.
- (3) Check gas input rate, by clocking the gas meter. Inspect burner flame. Clean and adjust burners and adjust gas rate as required.
- (4) Disconnect flue pipe from draft hood. Remove draft hood and inspect boiler heating surface below. If any soot, scale or rust is visible, clean the boiler as described in the next section.
- (5) Replace any corroded smokepipe. Repair or replace other devices as found necessary. Check and adjust for normal operation. Explain to the user what was done and what to look for to prevent future problems.

Figure 21.



CLEANING—BOILER, SMOKEPIPE, CHIMNEY

(See figure 21). If necessary as indicated in (4) above, the selected service organization should clean the boiler as follows:

- (1) Shut off electric power and gas supply.
- (2) Disconnect smokepipe and remove draft hood.
- (3) Remove jacket top panel. Remove flue cover from boiler.
- (4) Remove access door and remove burners, or place cover over burners for dirt protection.
- (5) Brush down boiler flues to bare metal. Clean all debris from bottom of boiler after brushing. Clean burner slots, if necessary.
- (6) Replace flue cover and seal with furnace cement. Replace burners if removed. Replace access door.
- (7) Inspect draft hood and smokepipe. If corroded, replace. If soot or deposits from condensation are found, clean out, and inspect inside of chimney for soot or other deposits. Clean if necessary.
- (8) Reconnect hood and flue pipe and fasten and seal all joints. Turn on gas and electric power.
- (9) Check boiler performance after cleaning, and adjust as necessary.

NOTE: Condensate (water), rust, scale and soot are not found in the boiler or smokepipe of normally operating system. If any of these is found, eliminate the cause. The most likely cause of condensate and corrosion or soot is

- (a) restricted air supply, or (b) a faulty chimney.

Your gas boiler must be installed and serviced by a qualified service agency or gas supplier. The lack of proper service can result in a dangerous condition.

VENT DAMPERS

A Slant/Fin vent damper is available only as part of a Slant/Fin gas boiler package equipped with a 24 volt gas valve. This vent damper is design certified by C.S.A. for use only on specific Slant/Fin Corporation gas boiler models. These boilers will be equipped with a plate or rating plate which states that the boiler may or must be used with a Slant/Fin Corp. automatic vent damper device and indicates the proper vent damper model number (or part number).

OTHER VENT DAMPER OR DEVICES WITH SIMILAR PURPOSE ARE NOT PERMITTED.

WITH ANY VENT DAMPER OR PILOT SYSTEM

- (a) DO NOT attempt to install or adjust or service it yourself.
- (b) Make certain that the installation is approved by your local gas utility.

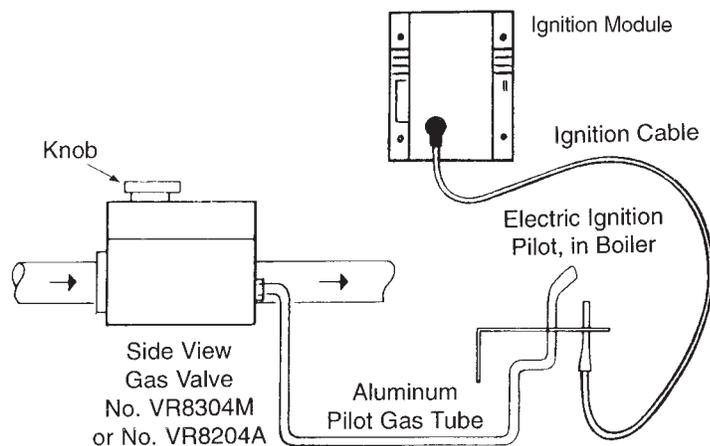
IGNITION SYSTEM—IID

Your gas boiler is equipped with INTERMITTENT PILOT IGNITION DEVICE (IID) System (Intermittent Spark Ignited Pilot) INCORPORATING GAS VALVE VR8304M or VR8204A. See Safety and Operating Instructions on page 8 (description figure 22).

The following instructions apply only to the exact intermittent pilot and control system supplied by Slant/Fin. A lighting instructions label on the boiler will be identical with the instructions in this manual. If an IID system was not ordered with the boiler and was supplied and installed locally, instructions must be furnished by the installer.

These instructions apply to the factory-installed IID system whether or not a VENT DAMPER was supplied with the factory package or is added later. If factory supplied, the wiring label on your boiler will show the damper device wiring also. Please read VENT DAMPERS above.

Figure 22. IID Control System



WARNING

Should overheating occur or the gas supply fail to shut off, DO NOT turn off or disconnect the electric supply to the circulator pump. Instead, shut off the gas supply at a location EXTERNAL to the appliance.

SAFETY AND OPERATING INSTRUCTIONS

INTERMITTENT IGNITION SYSTEMS EQUIPPED WITH HONEYWELL GAS VALVE VR8204A AND VR8304M

SAFETY INFORMATION For Your Safety Read Before Operating

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 is equipped with an ignition device which automatically lights the pilot. **DO NOT** try to light the pilot by hand.

B. **BEFORE OPERATING** 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

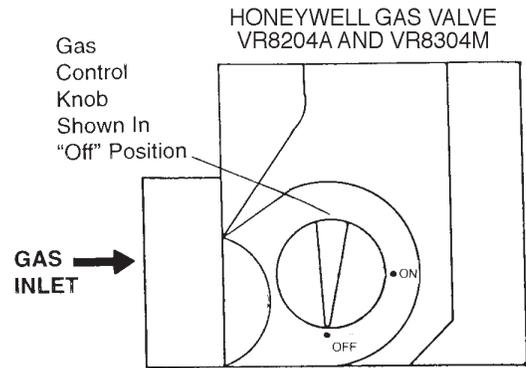
- DO NOT try to light any appliance.
- DO NOT touch any electric switch; DO NOT use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

C. Use only your hand to push in or turn the gas control knob. NEVER use tools. If the knob will not push in or 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 underwater. 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 underwater.

OPERATING INSTRUCTIONS

1. **STOP!** Read the safety information above.
2. Set the thermostat to lowest setting.
3. Turn off all electrical power to the appliance.
4. This appliance is equipped with an ignition device which automatically lights the pilot. **DO NOT** try to light the pilot by hand.



5. Remove control access panel. (Galaxy models only)
6. Turn gas control knob clockwise  to "OFF". DO NOT force.
7. Wait five (5) minutes (longer for propane) to clear out any gas, then smell for gas, including near the floor. If you then smell gas **STOP!** Follow "B" in the safety information on this page, if you don't smell gas, go to next step.
8. Turn gas control knob counterclockwise  to "ON".
9. Replace control access panel. (Galaxy models only)
10. Turn on all electric power to the appliance.
11. Set thermostat to desired setting.
12. If the appliance will not operate, follow the instructions "To Turn Off Gas To Appliance" below and call your service technician or gas supplier.

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. (Galaxy models only)
4. Turn gas control knob clockwise  to "OFF". DO NOT force.
5. Replace control access panel. (Galaxy models only)

These boilers are equipped with both a blocked vent safety switch and a rollout safety switch. The blocked vent safety switch is located on the draft hood flue stack. This is a manual reset control used to prevent excessive spillage of flue gases from the draft hood. The rollout safety switch is a single use (one time) thermal fuse to prevent the boiler from operation if flue passages are blocked. If either of these devices operate to shut down the burners, follow instructions in the section "To Turn Off Gas To Appliance" and call your service technician or gas supplier.



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