

User's Information for **Brute Mini**

Residential
Gas-Fired
Hydronic Boilers
Model BJVS

Sizes 50-225

U.S. Patent No. 1,609,692
Canada Patent No. 383,318

Vent damper is optional in some provinces of Canada..

⚠ WARNING: If this Users Information Manual not followed exactly, a fire or explosion may result causing property damage, personal injury or death.

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.

⚠ AVERTISSEMENT: Si cette information utilisateurs manuel n'a pas suivi exactement, un incendie ou une explosion peut entraîner des dommages matériels, des blessures ou la mort

Ne pas entreposer ni utiliser d'essence ni d'autres vapeurs ou liquides inflammables dans le voisinage de cet appareil ou de tout autre appareil.

QUE FAIRE SI VOUS SENTEZ UNE ODEUR DE GAZ:

- Ne pas tenter d'allumer d'appareils.
- Ne touchez à aucun interrupteur. Ne pas vous servir des téléphones dans le bâtiment où vous vous trouvez.
- Appelez immédiatement votre fournisseur de gaz depuis un voisin. Suivez les instructions du fournisseur.
- Si vous ne pouvez rejoindre le fournisseur de gaz, appelez le service des incendies.

L'installation et l'entretien doivent être assurés par un installateur ou un service d'entretien qualifié ou par le fournisseur de gaz.

A. System Start Up

1. Verify that the pump system is operating properly.
 - a. Shut off the manual gas valve.
 - b. Set the wall thermostat to a setting high enough to call for heat.
 - c. The pump should come on immediately. If it doesn't, have a service technician test the electrical circuits.
2. Light the pilot.
 - a. The BJVS boiler does not require manual lighting. The pilot is controlled by the automatic ignition system.
 - b. Different models of the JV boiler utilize various gas valves. Although the gas valves may have different control knobs, they are all similar in operation. The gas valve has a two-position knob - On and Off.

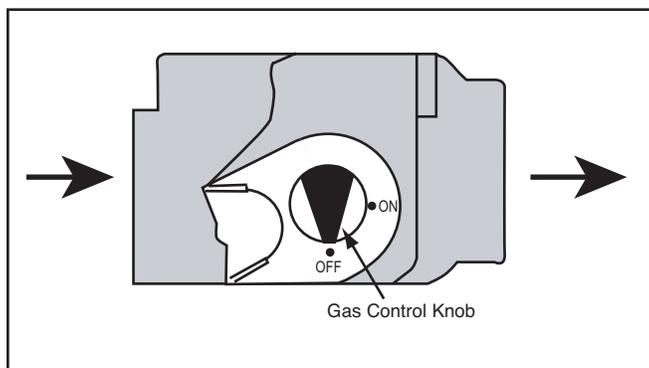


Figure 1 - Gas Control for Automatic Ignition System

Important: When lighting or relighting, wait the full 5 minutes specified in the lighting instructions. Unburned gases can accumulate in the fire box and may flash back. Allow ample time for natural air movement to clear the gases from the chamber before lighting or relighting.

Relighting - All Models:

1. Turn off electrical power to the boiler.
2. Turn the gas valve knob clockwise to Off.
3. Wait five minutes.
4. Turn the gas valve knob counterclockwise to On.
5. Restore power to the boiler, and set the thermostat to the desired temperature. The pilot will automatically ignite when there is a call for heat.

Circulator Pump:

In normal operation, the pump is energized by the wall thermostat via the pump relay supplied with the boiler.

Caution: Hazard of electrical shock!

Disconnect power to the boiler before servicing the relay or transformer.

B. System Shut Down

1. Turn off power to the boiler and set the thermostat to the lowest setting.
2. Turn the gas valve knob (clockwise for JVS) or switch to the Off position.
3. Whenever danger of freezing exists, shut off the water supply, remove the drain plugs in the left side of the heater and open the drain valve on the right side. Drain every part of the system which might be subject to freezing temperatures.

Should overheating occur or the gas supply fail to shut off, do not turn off or disconnect the electrical supply to the pump. Instead, shut off the gas supply at a location external to the appliance.

En cas de surchauffe ou si l'admission de gaz ne peut être coupée, ne pas couper ni débrancher l'alimentation électrique de la pompe. Fermer plutôt le robinet d'admission de gaz à l'extérieur de l'appareil.

C. Maintenance

1. Lubricate the water circulating pump according to the instructions found on the pump.
2. If a strainer is employed in a pressure reducing valve or in the piping, clean it every six months.
3. At start-up and periodically thereafter, the flame should be observed for proper performance. If the flame has "sooting" tips, check for debris near the orifices. If this continues, call a service technician.
4. Ensure proper operation of the mechanical damper, mounted in the flue collar, by observing the damper handle. Be sure the handle swings when the draft inducer starts. Depending on the boiler size, the swing may be as little as 30°. Remove any obstructions and clean around the pivot rod (handle) holes.
5. Inspect the venting system for obstructions, leakage and corrosion at least once each year.
6. Keep the boiler area clear and free from combustible material, gasoline and other flammable vapors and liquids.
7. Be certain all combustion air and ventilation openings are unobstructed.
8. Check for fouling on the external surfaces of the heat exchanger every six months. Fouling on the external surfaces of the heat exchanger is caused by incomplete combustion and is a sign of combustion air and/or venting problems. As soon as any fouling is observed, the cause of the fouling should be corrected. The heat exchanger can be checked using a flashlight by locating a mirror under the burners. An alternate method is to remove the venting and top panel as necessary to inspect from above. Also, check the vent system for defects at this time.

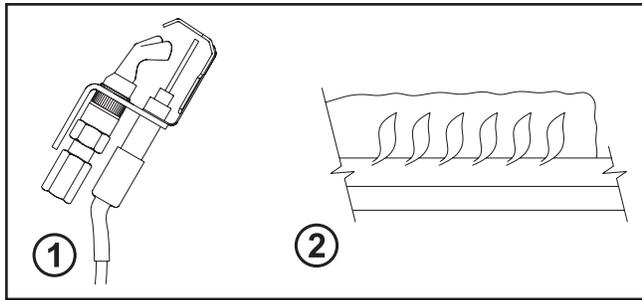


Figure 4 - Pilot Arrangements

- 1) Pilot
- 2) Main burner flame pattern

If cleaning is required:

- a. Shut off all power to the boiler.
 - b. Expose the heat exchanger by removing the draft hood (when equipped), and venting, top assembly, flue collector, and heat exchanger baffles.
 - c. Remove the burners by lifting them off the orifices and pulling them out of the boiler.
 - d. Use a hand-operated spray bottle filled with water and a wire brush to clean any soot and loose scale from the underside of the heat exchanger. Do not use compressed air, high pressure water or a garden hose.
 - e. Clean any fallen debris from the bottom of the unit.
 - f. Check to make sure that the burner ports and pilot assembly are free of debris before returning the burners to their original positions.
 - g. Reassemble the boiler in reverse order, making sure to replace the heat exchanger baffles.
9. The gas and electric controls installed on the boiler are engineered for both dependable operation and long life, but the safety of this equipment completely depends on their proper functioning. For this reason, it is strongly recommended that the basic items be checked by a competent service technician every year and replaced when necessary.

The basic controls are:

- a. Water temperature controls
 - b. Pilot safety system
 - c. Automatic electric gas valve(s)
 - d. Flue or vent damper
10. The blocked vent safety switch is used to shut the boiler down in the case of insufficient draft due to venting system problems. Before resetting the blocked vent safety switch see the Appendix

NOTE: After installation and first start-up, check the heat exchanger for fouling after the following periods of operation:

24 hours	30 days
7 days	90 days+

Then once every six months thereafter.

in Section 8D of the Installation and Operating Instructions (Document number 1254) to ensure that all possible causes have been investigated and corrected. If the problem continues and the boiler cannot be restored to normal operation call a qualified service agency.

11. The flame rollout safety switch provides additional safety, and will shut down the boiler should the flame from the main burners rollout (flashback) towards the main gas valve. Before resetting the flame rollout switch, see Section 8D of the Installation and Operating Instructions, (Document H2355800) to ensure that all possible causes have been investigated and corrected. If the problem continues and the boiler cannot be restored to normal operation call a qualified service agency. Never attempt to bypass the flame roll-out safety switch for the purpose of operating the boiler. Do not use this boiler if any part has been under water. 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 under water.
12. Check all heat exchanger water connections, flange or header gaskets for water tight integrity 24 hours after commissioning. If there are any signs of water leakage, re-torque fasteners or re-seat threaded connections as necessary

Note: The warranty does not cover any damage caused by lack of required maintenance or improper operating procedures.

Boiler Model	Size	Suffix*	Type of Gas	Part No.	Valve Mfr. No.	Manufacturer
BJVS	50-75	D	NAT	V0077400	VR8304H	HONEYWELL
BJVS	100-225	K	NAT	V0079000	VR8304H	HONEYWELL
BJVS	50-75	D	LP	V0077500	VR8304H	HONEYWELL
BJVS	100-225	K	LP	V0079100	VR8304H	HONEYWELL
BJVH	50-160	C	NAT	V2001800	SV9501H	HONEYWELL
BJVH	225	C	NAT	V2001900	SV9601H	HONEYWELL
BJVH	50-225	C	LP	V2002300	SV9501H	HONEYWELL

*Suffix Definitions
 C = On/Off Firing
 D = On/Off Firing
 K = Two-Stage Firing

Table 1 - Gas Control Valves

D. Air Shutter Adjustment (when required)

1. STOP! Read the safety information on the last page.
2. Perform a System Start-Up in accordance with Section A of this manual.
3. Remove the burner cover by loosening the two thumbscrews.
4. Observe the flame pattern on all burners. If the flame on any burner is pulsing, unstable or lifting continue with this procedure. Otherwise skip to step 10.
5. On all burners exhibiting an abnormal flame, loosen but do not remove the air shutter locking screw using a 5/16 inch wrench. (See Fig. 5 below.)
6. On each affected burner, slowly close the air shutter until a normal flame is observed, then re-tighten its associated locking screw.
7. Turn the boiler off.
8. Perform a System Start-Up in accordance with Section A of this manual.
9. Observe the flame pattern on all burners. If the flame on any burner is pulsing, unstable or lifting, repeat steps 5 and 6 until all burners are exhibiting a normal flame.
10. Re-install the burner cover and tighten it in place.

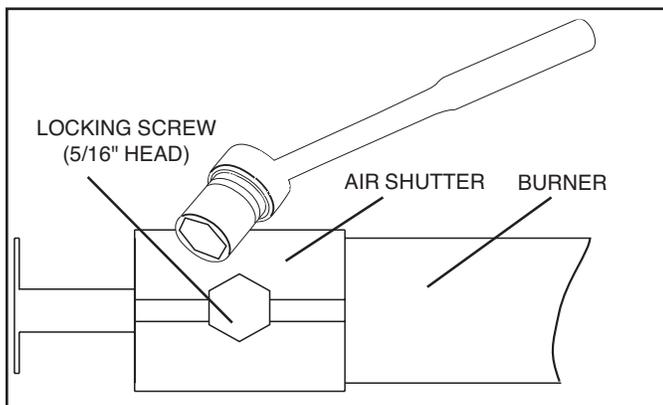


Figure 5 - Removing the Air Shutter Locking Screw



H2360400B