

**Electrical Connection:**

- Ensure that all electrical power has been disconnected from the boiler.
- Mount the BSHA relay on the control panel inside the front jacket panel.
- 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.
- (1) Connect the black inducer wire to the tab on the BSHA relay. (2) Connect the white inducer wire to L2 on the Honeywell aquastat. Connect the green inducer wire to ground (not shown).
- (3) Connect one of the yellow relay wires to terminal #3 on the white terminal strip.
- (4) Connect the other yellow relay wire to terminal #4 on the white terminal strip.
- (5) Connect the black relay wire to terminal L1 on the aquastat.

**Note:** This drawing is conceptual in nature and does not purport to address all design, installation or safety considerations. Additional safety and/or auxiliary equipment may be needed. This diagram is for reference use by officials, designers and licensed installers. It is expected that installers have adequate knowledge of accepted industry practices for the equipment, procedures, and applications involved. All wiring should be routed or installed according to National Electric Code and applicable local codes.

**Drawing is not to scale.**

1	2	3	4
1	2	3	4

**Buderus**

G124X oratt inducer wiring. Wiring not pertaining to inducer installation eliminated for clarity purposes.

Date: 1/20/2009 Drawing: 9-182401

## 10.2 For DI model Boilers

For DI 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 Kit consists of:

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

### VENT PARTS

available from Buderus Hydronic Systems

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

The vent parts are optional from BHS, but available at most supply houses also.

Contact Local Building or Fire Officials About Restrictions and Installation Inspections in your area as well as National codes:

- USA-National fuel gas code ANSI-Z 223.1
- CANADA-CAN/CGA-B 149.1 or 2 Fuel Burning Installation Code

A venting system that exits the structure through a sidewall or the like, shall terminate not less than 12 inches above the ground.

The termination of a system shall be located above the snow line in geographical areas where snow accumulates.

The vent shall not terminate less than 7 ft. above a paved sidewalk or driveway.

The termination shall be 6 ft. or more from the combustion air intake of any appliance.

The system shall terminate more than 3 ft. from any other building opening, gas utility meter, service regulator or the like.

A venting system shall terminate at least 3 feet above any forced air inlet located within 10 feet.

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.

The vent system is **only for a single appliance**. Venting of an additional appliance could cause serious injury or loss of life.

The venting system shall not be routed into, through, or within any other vent, such as an existing masonry or factory-built chimney flue.

The vent termination must be used on all installations to assure proper operation and to prevent debris from entering the venting system.

The vent pipe must be properly supported. Vertical runs must use firestops as lateral support at each ceiling level and at least one support collar at the base of the vertical run. For vertical runs exceeding 16", a support collar is required at 16" intervals. Horizontal runs require a loose fitting metal strap or similar support at each joint.

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.

Install plug provided into hole in adapter.

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 edges of plate as necessary and fasten to wall using suitable screws or nails.

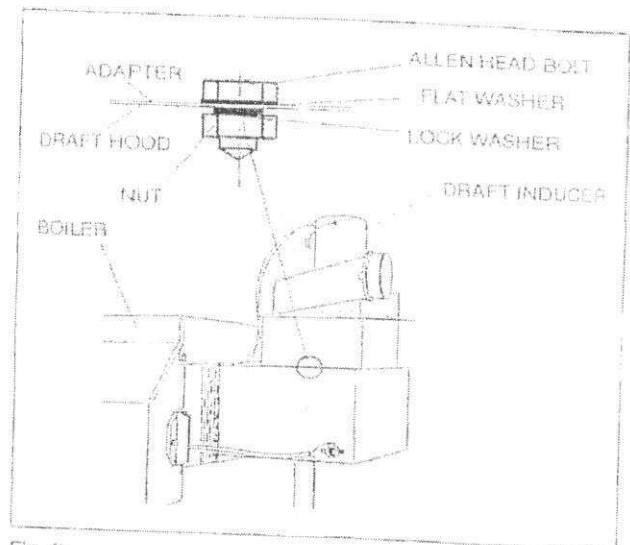


Fig. 9

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.

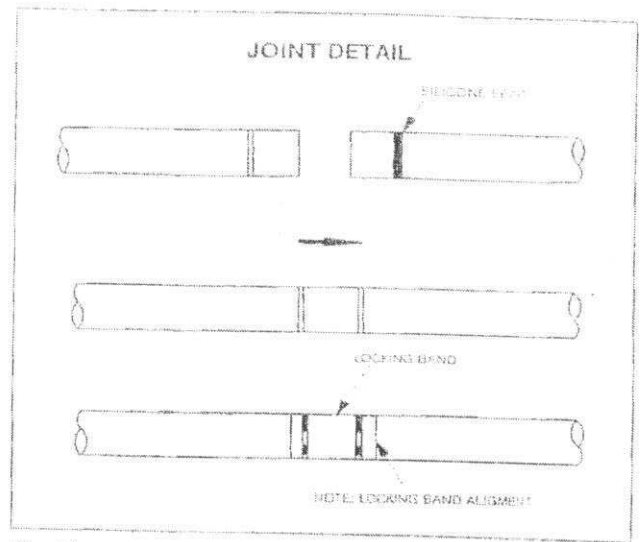


Fig. 10

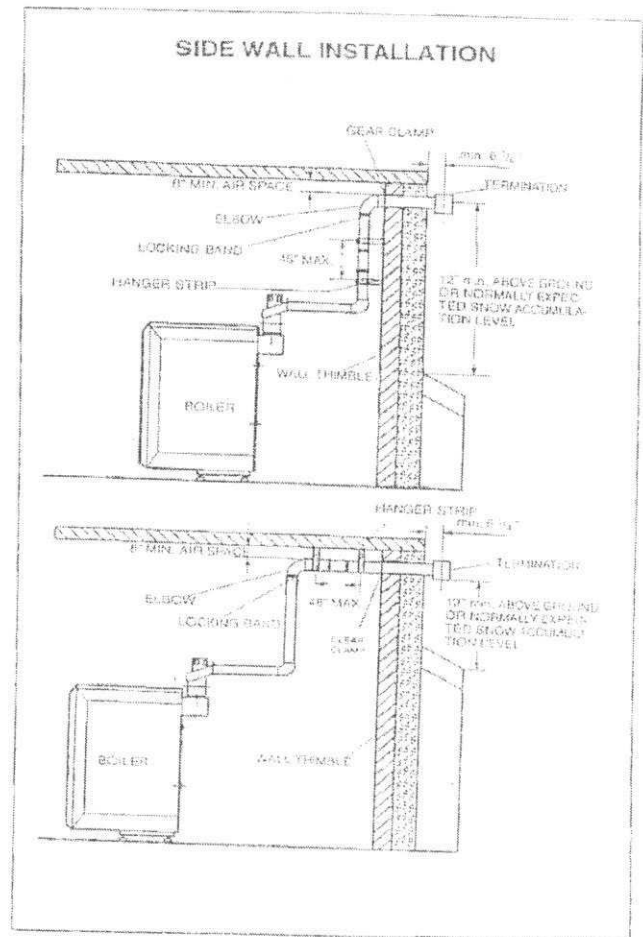


Fig. 11

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.

### Important 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.

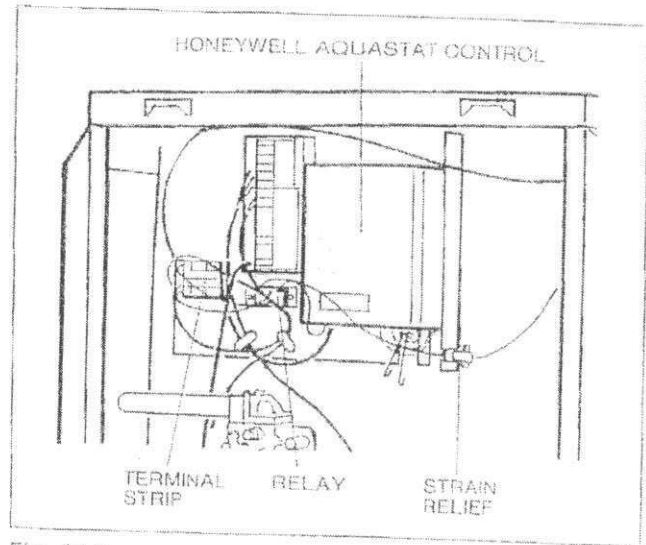


Fig. 11 a

### Electrical Connection

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 DI 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.