

Service Bulletin G3-31

Models: GWH715ES, GWH2400ES, GWH2700ES, Evolution 500

Reducing Backdraft on Non Condensing Appliances



BOSCH

Introduction



WARNING!

The following bulletin is not a substitute for the water heater's installation manual. Follow all warnings and guidelines outlined in the appliance's installation manual.

In cold climates, components of a tankless water heater can freeze and burst from negative draft. A leading cause of negative draft is combustion appliances in the building not being supplied with sufficient combustion air. A wood stove or furnace can pull its combustion air from the water heater's vent pipe, allowing the cold incoming air to freeze the cold water in the heat exchanger.

Supplying more combustion air for all combustion appliances is the solution. A HVAC specialist should be consulted to design solutions for providing more combustion air.

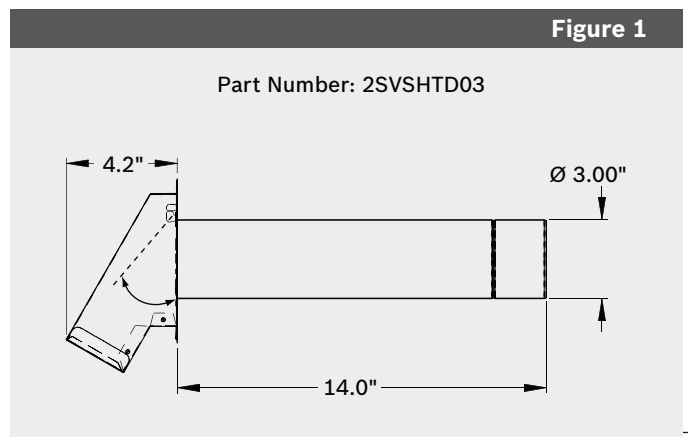
Drawing the water heater's combustion air from the outside is also essential to reducing backdraft. Both the exhaust vent and combustion air terminations should exit out the same wall or roof surface, however, never facing the direction of prevailing winds.

The solutions listed in this bulletin are designed to further limit backdraft in extreme conditions assuming all other possible causes have been addressed.

Solution One

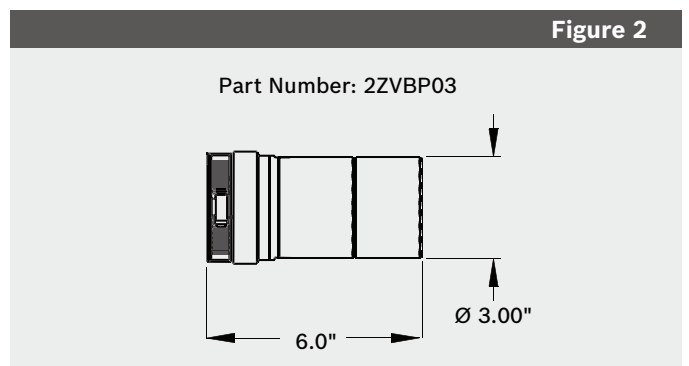
The Z-flex vent termination hood (2SVSHTD03) is the preferred option for limiting backdraft under the following conditions (See Fig.1):

- The vent hood is only be used in the exhaust vent piping.
- The vent hood can only be used for horizontal terminations.
- The vent hood is able to meet the required clearances outlined in the venting section of the water heater's installation manual.



Solution Two

If the required clearances of the Zflex termination hood (2SVSHTD03) cannot be met, the Zflex damper (2ZVBP03) is the preferred alternative (see Fig.2).



Installation

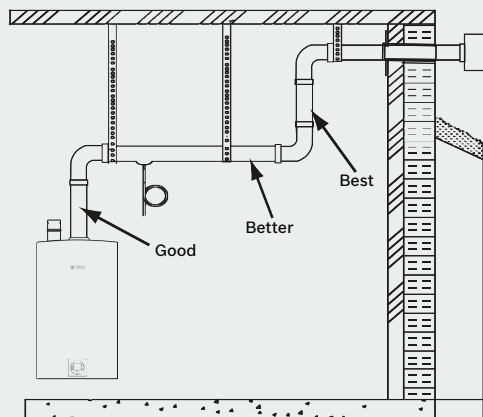
For these solutions to be effective, the internal flapper must be 100% closed when the water heater is not running. Refer to Figures 3 and 4 for preferred installation positions in the vent system.

If using the Zflex damper (2ZVBP03):

- Ensure directional arrow on damper label faces in the same direction as exhaust flow.
- If installed horizontally, the axis must be horizontal or slightly pitched up towards termination to ensure damper closes 100% when heater is not running.
- To allow accessibility, damper must not be installed in an enclosed section of vent pipe.
- Do not install damper in unconditioned spaces (e.g. attics) Condensation can build up while the heater is running which can later freeze and potentially block the flapper.

Figure 3

Preferred damper position for horizontal terminations



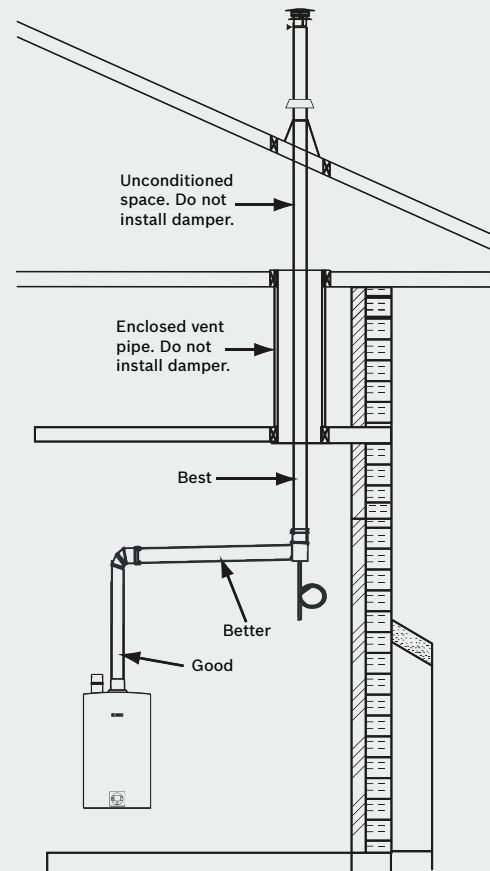
Note: Combustion air piping not shown for clarity purposes

Figure 3 legend:

- Good** – Vertical directly on top of the heater.
- Better** – Closer to the termination horizontally installed in a conditioned space.
- Best** – Closer to the termination vertically installed in a conditioned space.

Figure 4

Preferred damper position for vertical terminations



Note: Combustion air piping not shown for clarity purposes

Figure 4 legend:

- Good** – Vertical directly on top of the heater.
- Better** – Closer to the termination horizontally installed in a conditioned space.
- Best** – Closer to the termination vertically installed in a conditioned space.



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