TECHNICAL BULLETIN 60

Use of Rinnai Water Heaters with Non-Rinnai Air Handlers

This technical bulletin addresses the use of Rinnai tankless waters with non-Rinnai Air Handlers.

When a non-Rinnai air handler is used with a Rinnai tankless water heater, the following must be taken into consideration before installation:

Air handler pump:

The air handler pump must be sized for the flow rate of the heat load, pressure losses through air handler coil, pressure losses though Rinnai tanklesss water heater, piping and components connecting the air handler and tankless unit. Refer to the tankless water heater pressure loss curve and consult with the air handler/component manufacture for pressure loss information.

The pump must be of bronze, brass, or stainless steel construction. Iron pumps must never be used as it will oxidize and clog the inlet screen on the Rinnai thus restricting flow rate and compromising heat output.

Domestic priority:

There is a possibility of cold air blowing across the air handler coil during domestic water use. Consideration should be given to domestic priority when both air handler and domestic fixtures are being operated simultaneously. A domestic priority flow switch may be necessary to accomplish this.

Maximum Temp:

Rinnai recommends not exceeding 160º F (71º C) for space heating applications because scale build up increases with higher temperatures thus affecting efficiency and compromising the integrity of tankless heat exchanger.

Water quality:

Care must be taken to ensure water quality is at an acceptable level for the tankless unit. Reference target water quality levels found in the operation and installation manual and consider water treatment if these levels are exceeded.

Mixing valve:

Ensure the use of a mixing valve if space heating temperatures exceed 120º F (49º C).

Piping:

Refer to applicable codes to ensure the use of proper piping for your application.

Codes:

Refer to all applicable codes to ensure the proper application of the tankless water heater in combination with space heating and domestic hot water use for your area.

Rinnai water heaters in space heating applications:

Rinnai Tankless Water Heaters are certified to the American National Standard/CSA Standard for Gas Water Heaters ANSI Z21.10.3/CSA 4.3. The Scope of this standard includes water heaters for use with combination potable water/space heating applications, commonly referred to as open loop systems. The Scope of this standard does not apply to products that will be used in space heating only applications, commonly referred to as closed loop systems.

Products intended for use in closed loop systems are typically certified to the American National Standard/CSA Standard for Gas-Fired Low Pressure Steam and Hot Water Boilers ANSI Z21.13/CSA 4.9. The Scope of this standard applies to products that will be used in space heating only (closed loop) systems. For this reason, Rinnai America Corporation does not recommend or promote the use of its Tankless Water Heaters in any space heating only (closed loop) applications. Rinnai will not honor warranties for units installed after May 1, 2008 in closed loop applications.

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Rinnai Tankless Water Heaters may be used in combination potable water/space heating (open loop) applications (see figure 1). Rinnai Tankless Water Heaters may also be used in combination potable water/space heating (open loop) applications where the space heating system is a closed heating circuit that is separated from the Rinnai heated potable water supply via a heat exchanger.

NOTE: Open loop systems are generally defined as a system that is open to the atmosphere at any point. Depending on the governing code or code official's interpretation of the code an open loop system may include all or part of the potable water plumbing fixtures in a structure or may simply incorporate a drain valve or similar device that provides potable water and allows the system to be open to the atmosphere when operated. Consult local, State, Provincial, and Federal codes to determine requirements and applicability.

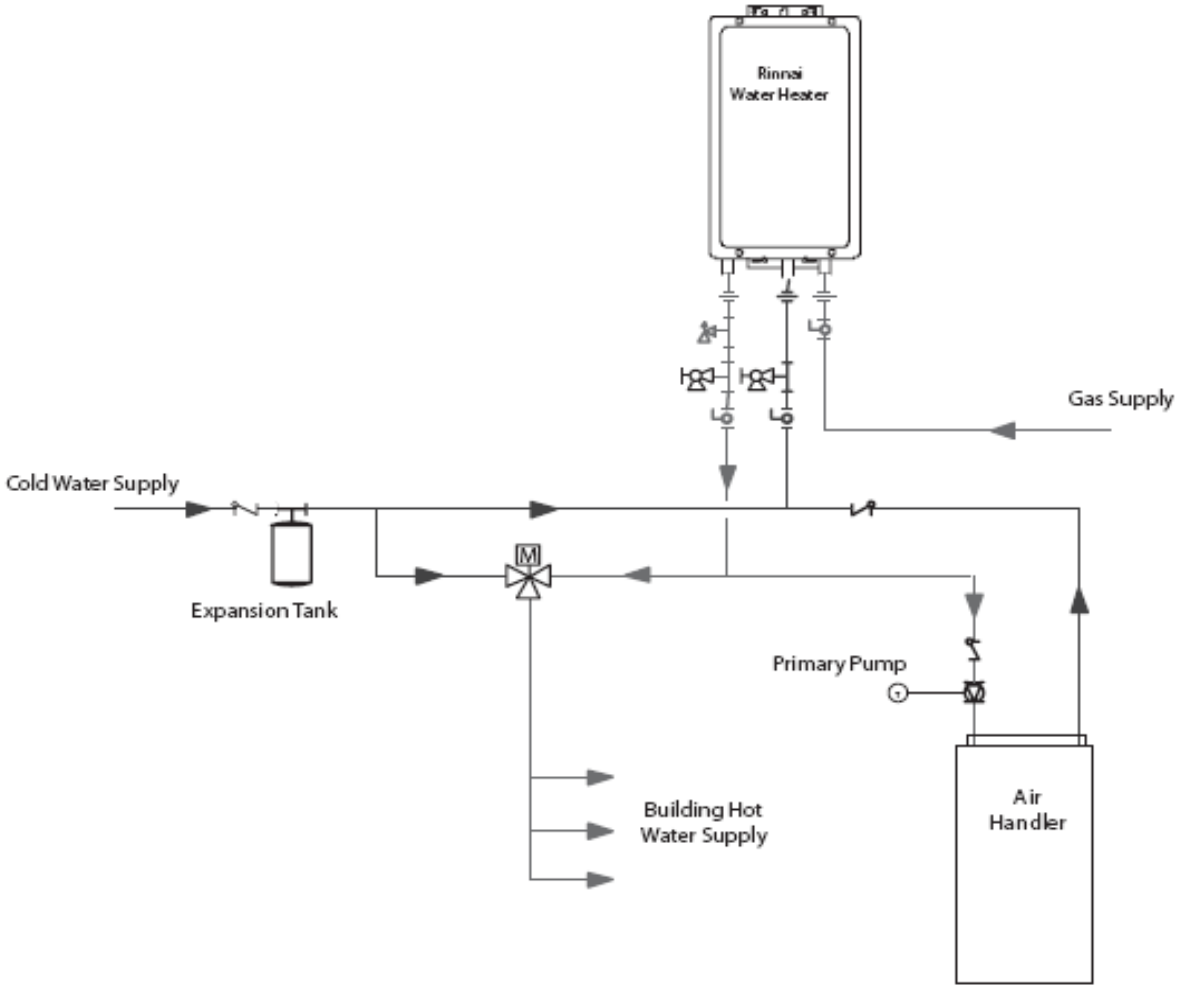

Figure 1 (Note: Domestic priority is not shown in drawing)