

**Note:**

Warranty does not cover damage to freezing. The unit may be drained manually. However, Rinnai highly recommends that drain down solenoid valves be installed that will automatically drain if power is lost. Rinnai also recommends the installation of a surge protector with terminals that attaches to the PC board in the unit and allows the solenoid valves to operate if the unit is disabled due to an error code. When electrical power to the water heater fails, the normally closed solenoid valve closes (stopping the flow of water into the heater) and the normally open solenoid valve opens (allowing the heater and associated piping to drain). Ensure that the drain for the solenoids runs to the outside environment to prevent discharging water inside the building causing water damage.

**Note:**  
Heat trace ALL water pipe and fittings located outside home, attic, crawl space, or building structure (ALL water pipe and fittings above dashed line in drawing).

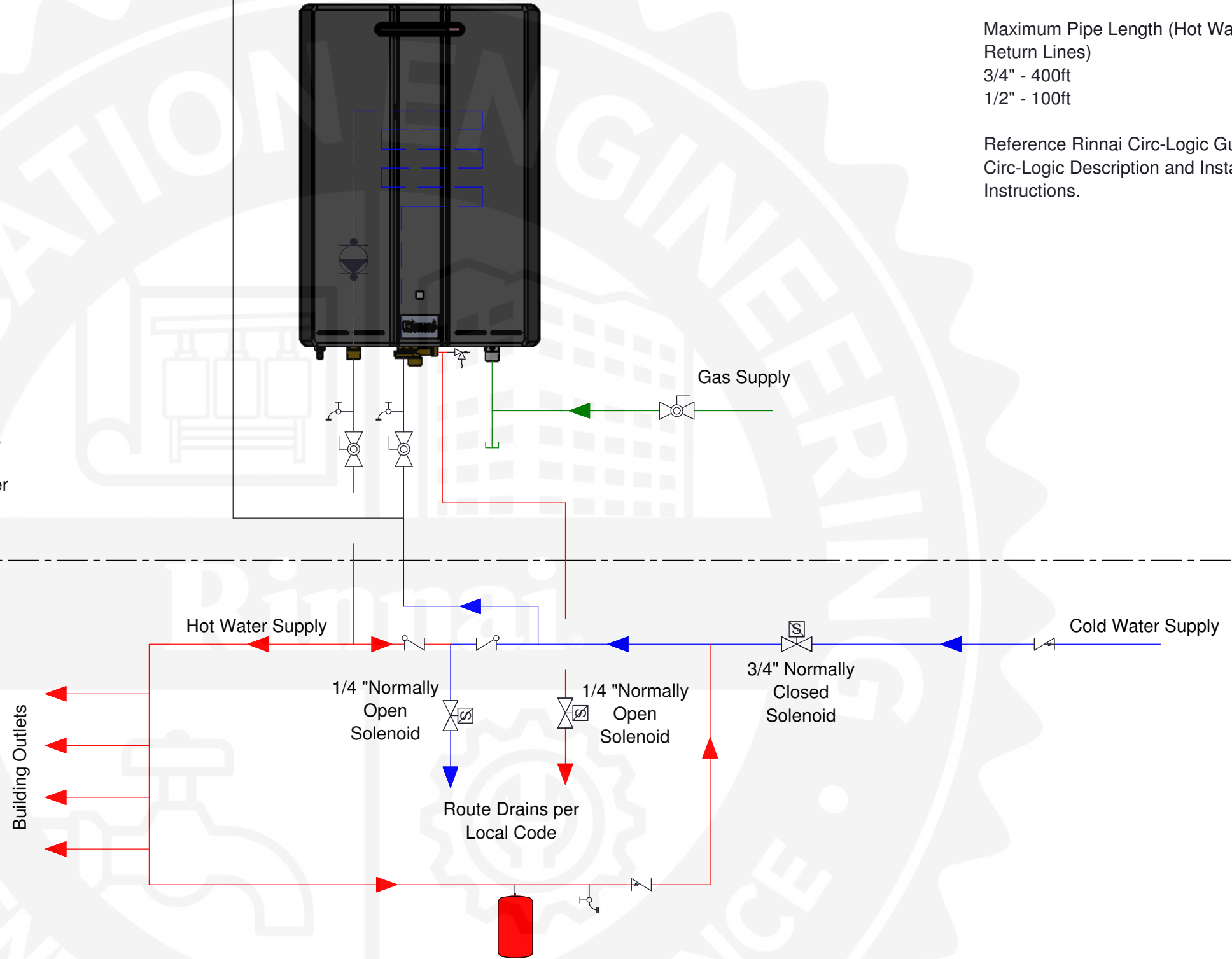
**Note:**  
ALL pipe and fittings shown below dashed line should be located inside home or building structure. The vacuum breaker line should be located in the building structure.

**For this application:**

Maximum Pipe Length (Hot Water Supply and Return Lines)  
3/4" - 400ft  
1/2" - 100ft

Reference Rinnai Circ-Logic Guide for Rinnai Circ-Logic Description and Installation Instructions.

Vacuum Breaker  
Sensei  
Circulation Unit



This is not an engineering drawing; it is intended only as a guide and not as a replacement for professional engineering project drawings. This drawing is not intended to describe a complete system. It is up to the contractor or engineer to determine the necessary components and configuration of the particular system to be installed. The drawing does not imply compliance with local building code requirements. It is the responsibility of the engineer or contractor to ensure that the installation is in accordance with all local building codes. Confer with local building officials before installation.

**UNLESS OTHERWISE SPECIFIED:**

TOLERANCES:  
Sheet Metal X.XX = ±0.030  
X.XXX = ±0.010  
Fraction = ±1/32  
Angle = ± 1.0°  
MACHINED X.XXX = ±0.005  
Angle = ± 0.010°

INTERPRET GEOMETRIC TOLERANCING PER:

MATERIAL

FINISH

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	AB	11.16.2018
CHECKED	SH	12.15.2018
ENG APPR.	RS	12.15.2018

COMMENTS:

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PROPRIETARY AND CONFIDENTIAL

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**Rinnai.**

TITLE:  
**Systems Design Manual**  
Rinnai Tankless  
Single Unit Freeze Protection

SIZE	DWG. NO.	REV
<b>B</b>	<b>CWH1-D-RUR</b>	

SCALE: NTS WEIGHT: SHEET 1 OF 1