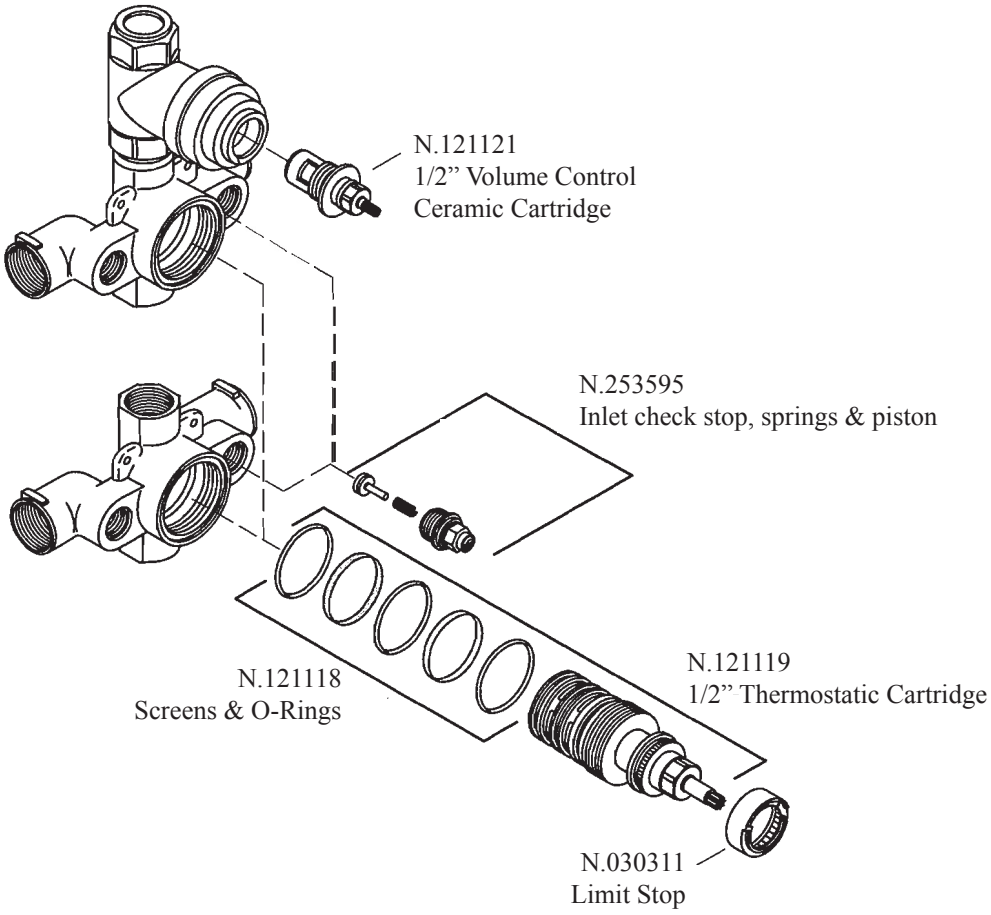
# INSTALLATION GUIDE
## Thermostatic Valves

NORTESCO INC.
Designer Brands for Kitchen & Bath

# PARTS BREAKDOWN




# IMPORTANT INSTRUCTIONS

## READ AND SAVE FOR THE CONSUMER

⚠ WARNING: Risk of scalding or other severe injury.

• Before completing installation, the installer must set the maximum water temperature setting of this valve to minimize the risks associated with scalding hazards according to ASTM F 444.
• Factors that change the temperature of the water supplied to the valve, such as seasonal water temperature changes, and water heater replacement or servicing, will change the maximum water temperature supplied by the valve and may create a scalding hazard.

This valve meets or exceeds ANSI A1l2.18.1 and ASSE 1016.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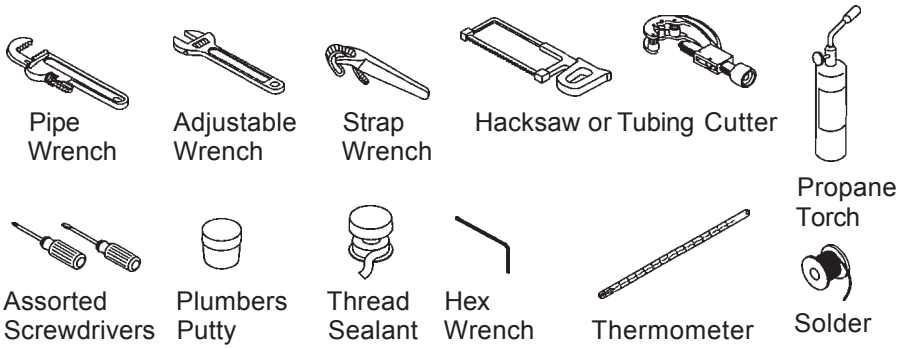
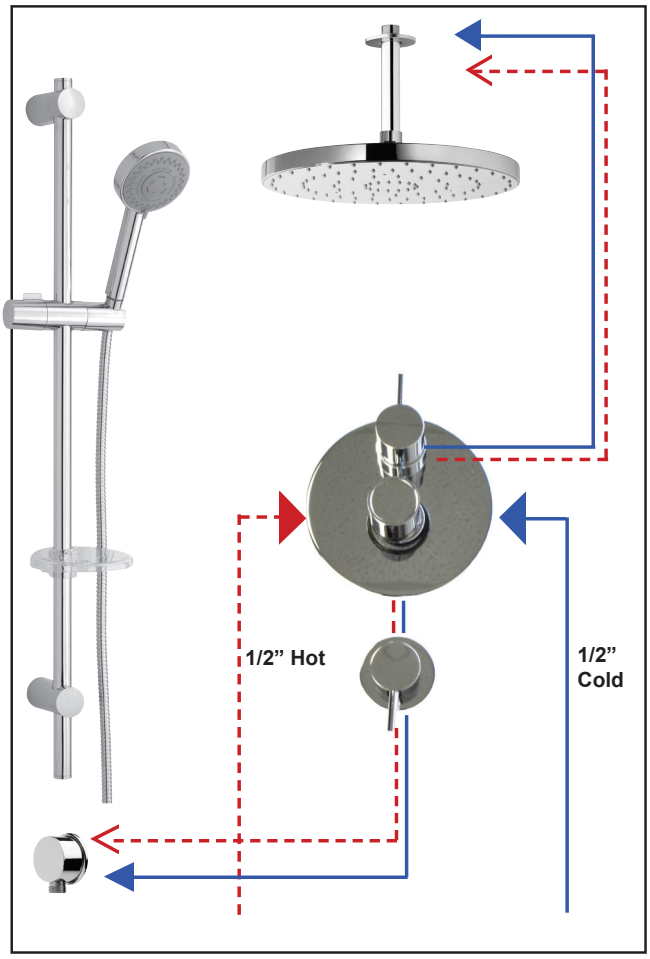
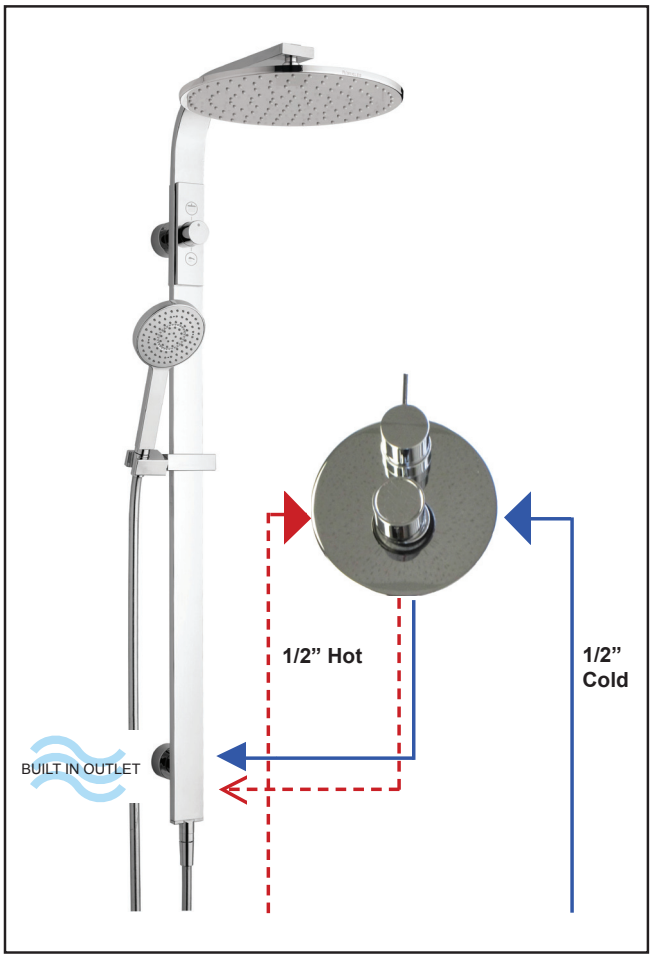
## Tools & Materials




## Typical Installation examples:




## Before you Begin

DANGER: Risk of scalding or other severe injury. Before completing installation, the installer must set the maximum water temperature setting of this valve to minimize the risks associated with scalding hazards according to ASTM F 444.

## Before you Begin, Continued...

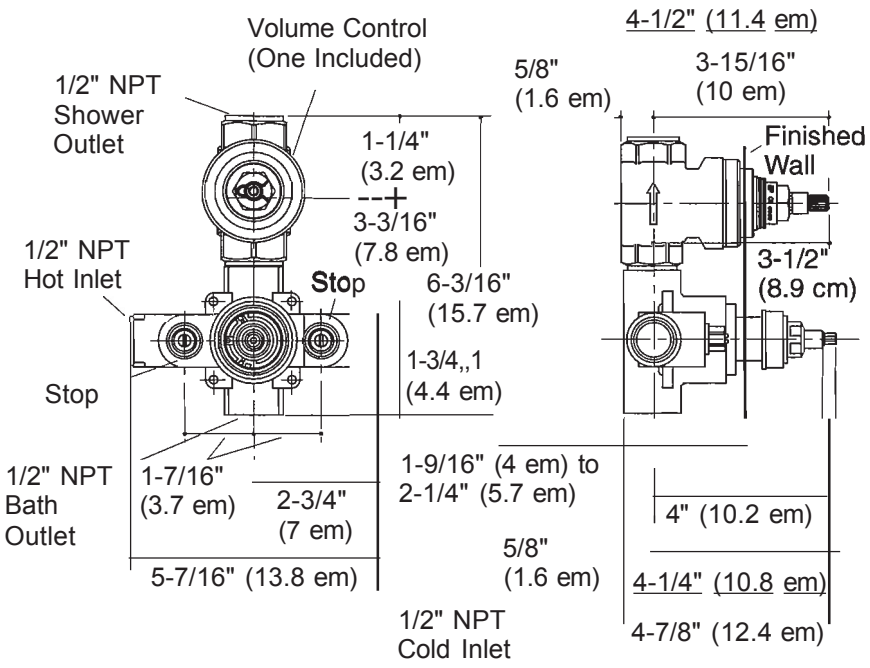
**CAUTION: Risk of scalding.** lhis device has been calibrated at the factory to ensure a safe maximum water temperature. Any variance in settings or water inlet conditions from those used during factory calibration may raise the discharge temperature above the safe limit, and may present a scalding hazard. Responsibility for installation and adjustment of this device in accordance with these instructions lies with the installer.

**CAUTION: Risk of product damage.** This valve contains plastic and rubber components. Do not apply excessive heat to the valve body when you make solder connections. Do not apply flux or acids directly to the valve, as damage to the seals~ plastic components, and trim finish may result.

**CAUTION: Risk of product damage.** Do not apply petroleum-based lubricants to the valve components, as damage may result.

o Shut off the main water supply.
o Observe all local plumbing and building codes.
o Inspect the waste and supply piping for damage. Replace as necessary.
o The thermostatic mixing valve cartridge does not contain an integral volume control/shut-off valve. You must install a separate volume control shut-off valve downstream of any valve outlet that does not have an integral shut-off valve. The thermostatic mixing valves require separate volume control shut-off valves downstream of each mixing valve outlet.
o The thermostatic mixing valves contain a single volume control shut-off valve for controlling the water flow through the shower outlet. When plumbing to the valve's bath outlet, you must install a separate volume control shut-off valve downstream from the bath outlet.
o Determine the correct drain size and capacity for your installation. If two thermostatic mixing valves are used together, water flow volumes between 16 and 24 gpm (61 and 91lpm) or more are possible, depending upon the water supply pressure. ASSE, CSA, and IAPMO/UPC.
o Determine the correct water heater size and capacity for your installation. A typical shower installation uses an approximate mix of 75% hot water and 25% cold. A custom shower application using three 2-1/2 gpm (9.5 lpm) showerheads can use about 45 gallons (170 liters) of hot water in 8 minutes. Choose a water heater large enough for your installation.
o The valve is calibrated to 104°F (40° C) at the first stop position, and the maximum temperature limit stop is positioned so the outlet water temperature does not exceed 120° F (49° C).
o Factory calibrated inlet conditions are: Hot and cold water pressure = 43-1/2 psi (3 kg/cm) Hot water supply temperature = 149° F (65° C) Cold water supply temperature = 59° F (15° C).
o If inlet conditions differ from those used during factory calibration, it may be necessary to re-calibrate the valve after installation. **The installer must check the mixed flow temperature after installation, and adjust the valve as needed according to the instructions.**
o This valve complies with ASME A112.181M, ASSE 1016, and CSA B125. The valve is listed with ASSE, CSA, and IAPMO/UPc.

Nortesco Inc. reserves the right to make revisions in the design of products without notice.




**Roughing-In for NORVA2 and NORVA3**

## Framing and Rough Plumbing Installation

Determine the desired location for the valve according to the rough-in information, and construct suitable stud and support framing.

Use 1/2” nominal copper tubing and fittings throughout this installation. Smaller diameter piping upstream or downstream of the valve will reduce performance of the valve.

## Install the Valve

**CAUTION: Risk of product damage.** This valve contams plastic and rubber components. Do not apply excessive heat to the valve body when you make solder connections. Do not apply flux or acids directly to the valve or you may damage the seals and plastic components. Do not apply petroleum-based lubricants to the valve components or damage may result.

NOTE: A plaster guard is attached to the face of the mixing valve with two screws. Do not remove it until instructed.

o Flush the hot and cold water supply lines to remove any debris.
o Install water hammer arrestors in the hot and cold water supply lines.
o Use thread sealant and connect the 1/2” hot and cold water supply lines to the valve inlet ports. The inlet ports are marked “HOT” and “COLD”; ensure that the corresponding water supply lines are connected to the correct inlet ports.
o Make certain that the integral volume controllshut-off valve portion of the assembly is on top when installed.
o Connect the water outlet lines to the valve ports. Install a 1/2” plug in any unused outlet port.

IMPORTANT! Secure the piping to the framing.

o Use the plaster guard to determine the depth of the valve in the wall, and to trace the cut-out line in the wall material. The finished wall must be within the MIN.-MAX. depth shown on the plaster guard.

## Complete the Valve Installation

**WARNING: Risk of personal injury.** Do not tum the thermostatic mixing valve stem after you adjust the temperature setting until you install the mixing handle trim. This device has been calibrated at the factory to ensure a safe, maximum water temperature. Any variance may raise the discharge temperature above the safe limit and present a scalding hazard.

o Turn on the water supply lines to the valves and check for leaks. Run water through the mixing valve, all showers and the spout. Check the system for leakage. Tum off the water.

o Remove the plaster guard. Do not tum the thermostatic mixing valve stem until you have installed the valve trim. Tum on the water supply lines to the valves and check for leaks. Run water through the mixing valve, all showers and the spout. Check the system for leakage. Use the volume controllshut-off valve (top control) to control the water flow to the shower outlet. Tum off the water. Reinstall the plaster guard.

o Complete the finished wall.

## Water Temperature Adjustment

**CAUTION: Risk of personal injury.** The water temperature should never be set above 120° F (49° C).

NOTE: This valve has been calibrated at the factory to provide 104° F (40° C) at the mixing valve's first stop position, and 120° F (49° C) at the maximum temperature limit stop. Check the "Before You Begin" section of this manual for detailed factory conditions and compare them to your inlet water conditions. If they differ dramatically, then you may need to re-calibrate the valve.

NOTE: Do not turn the mixing valve stem at this time. Turning it will change the factory calibration setting.

o Turn the water on and let the water run for several minutes. Position a thermometer in the water stream and check the maximum temperature.
o If the existing water supply conditions match the factory conditions, the water temperature should be close to 104° F (40° C). If the water temperature differs, then remove and discard the plaster guard if it is still attached.
o Slowly rotate the thermostatic mixing valve stem until the water temperature is a constant 104° F (40° C). The white mark on the limit stop should be in line with the black mark on the mixing valve body. If necessary, carefully pry the limit stop off the valve cartridge with a thin blade, and re-install it so the white mark faces upward as required. The limit stop must be correctly positioned to ensure trim fit.
o Do not turn the thermostatic mixing valve stem after you adjust the temperature setting until you have installed the mixing handle trim.
o Install the mixing valve trim according to the instructions packed with the trim.

## Check the Valve Operation

o Turn on the water again, and rotate the knob fully clockwise. Then, without depressing the knob button, rotate the knob counterclockwise to the first stop position.

o Use a thermometer to determine the water temperature, which should be about 104° F (40° C) at this position.

o After determining the water temperature at the first stop position, depress the knob button and turn the knob counterclockwise to the second position (the maximum temperature limit stop).

o Use the thermometer to determine the water temperature at the second position, which must not exceed 120° F (49° C).

o If the maximum temperature must be adjusted, repeat the mixing valve calibration steps in the 'Water Temperature Adjustment" section.

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