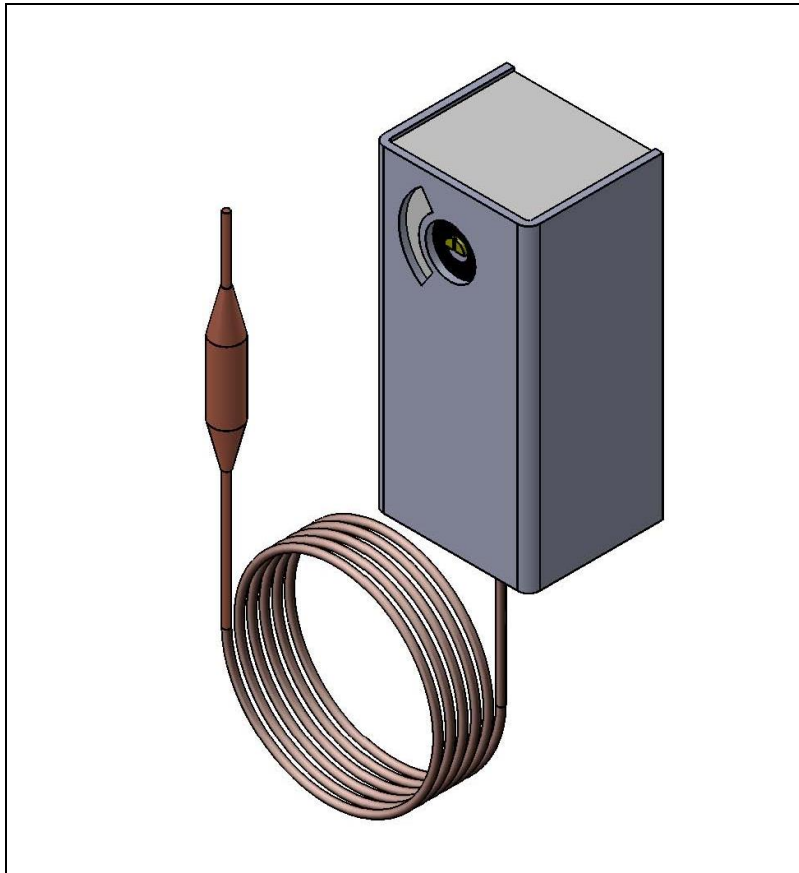




EARTHLINKED
TECHNOLOGIES

EarthLinked[®]
Temperature Control Kit
Model HHK/CWK-1872
Installation Instructions



Disclaimer

Proper installation and servicing of this EarthLinked® part is essential to the Heating and Cooling Systems reliable performance. All EarthLinked® parts must be installed and serviced by an authorized, trained technician who has successfully completed the training class and passed the final examination. Installation and service must be made in accordance with the instructions set forth in this manual. Failure to provide installation by an authorized, trained installer in a manner consistent with this manual will void and nullify the limited warranty coverage for the system.

EarthLinked Technologies shall not be liable for any defect, unsatisfactory performance, damage or loss, whether direct or consequential, relative to the design, manufacture, construction, application or installation of field specified components.

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CSI # 23 80 00

Pre-Installation

The application of this temperature control is limited to hydronic or service water heating (Model HHK-1872) or chilled water cooling (Model CWK-1872) when used with an EarthLinked® Heating and Cooling System and storage water heater or storage water tank as described in this manual.

The temperature control kit consists of the items listed in the following table:

DESCRIPTION	QUANTITY
Temperature Control (ETI # THAQ) (Johnson # A19AAF-12C)	1
Bulb Well (ETI # THAQW), (Johnson # WEL14A-602R)	1
Packet of Thermal Transfer Compound (ETI # THAQHTC)	1
Packet of Leak Lock Liquid Sealant (ETI # LLS-01)	1
Screws (#10 x 3/8) (ETI # SCRM-10-06)	2

NOTE: A field supplied roll of 1/2" wide Teflon tape will be required.

The temperature control senses water temperature at a location in the storage water heater or storage water tank and controls compressor unit operation to maintain the water temperature. The control has a single pole double throw action enabling it to close or open on temperature rise. The temperature range is adjustable from 20°F to 225°F with a temperature differential of 3.5°F. The bulb capillary tube length is 10 feet.

Installation



IMPORTANT!

READ THESE INSTALLATION INSTRUCTIONS COMPLETELY BEFORE PROCEEDING TO INSTALL!



WARNING

BEFORE REMOVING ANY ACCESS PANELS AND INITIATING ANY PHASE OF THIS INSTALLATION MAKE SURE THAT POWER IS TURNED "OFF" TO ALL EARTHLINKED® AND FIELD SUPPLIED SYSTEM COMPONENTS. FAILURE TO DO SO COULD RESULT IN PROPERTY DAMAGE, SERIOUS INJURY OR DEATH.



WARNING

WEAR ADEQUATE PROTECTIVE CLOTHING AND PRACTICE ALL APPLICABLE SAFETY PRECAUTIONS WHILE INSTALLING THIS EQUIPMENT. FAILURE TO DO SO MAY RESULT IN EQUIPMENT AND/OR PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

The temperature control may be located on the storage water heater or on a nearby wall as shown in Figure 1. Be sure there is sufficient capillary tube between the control and the bulb insertion point on the storage water heater. Note the typical bulb insertion points on the storage water heater for chilled water and heated hydronic water in Figure 1. Allow some excess capillary tube so it can be formed and aligned to the contour of the storage water heater after installation.

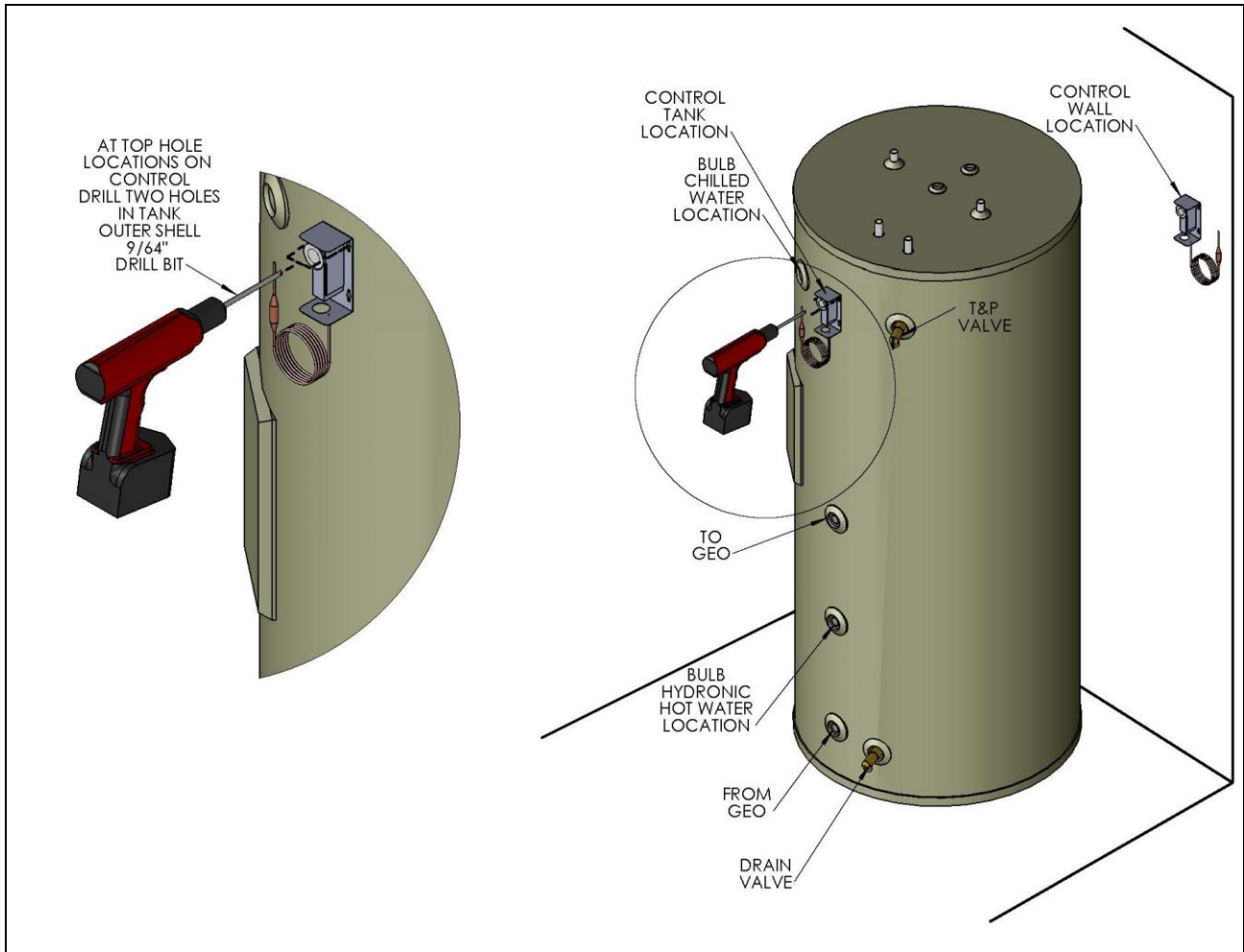


Figure 1. Locating the Temperature Control



CAUTION

Locate and mount the temperature control **AFTER** water lines have been connected to the storage water heater and tested to ensure there is no water leakage.

Locate the temperature control so that it is **NOT** under a water connection to the side of the storage water heater.

When fastening the temperature control to the outer shell of the storage water heater or to a wall, **use the top two mounting holes only**. Use screws in all four holes may affect the control calibration and operation.

Fasten the temperature control at the top two mounting holes using the two #10 X 3/8 screws provided, as shown in Figure 2. **Avoid driving screws near wires located under the storage water heater shell.**

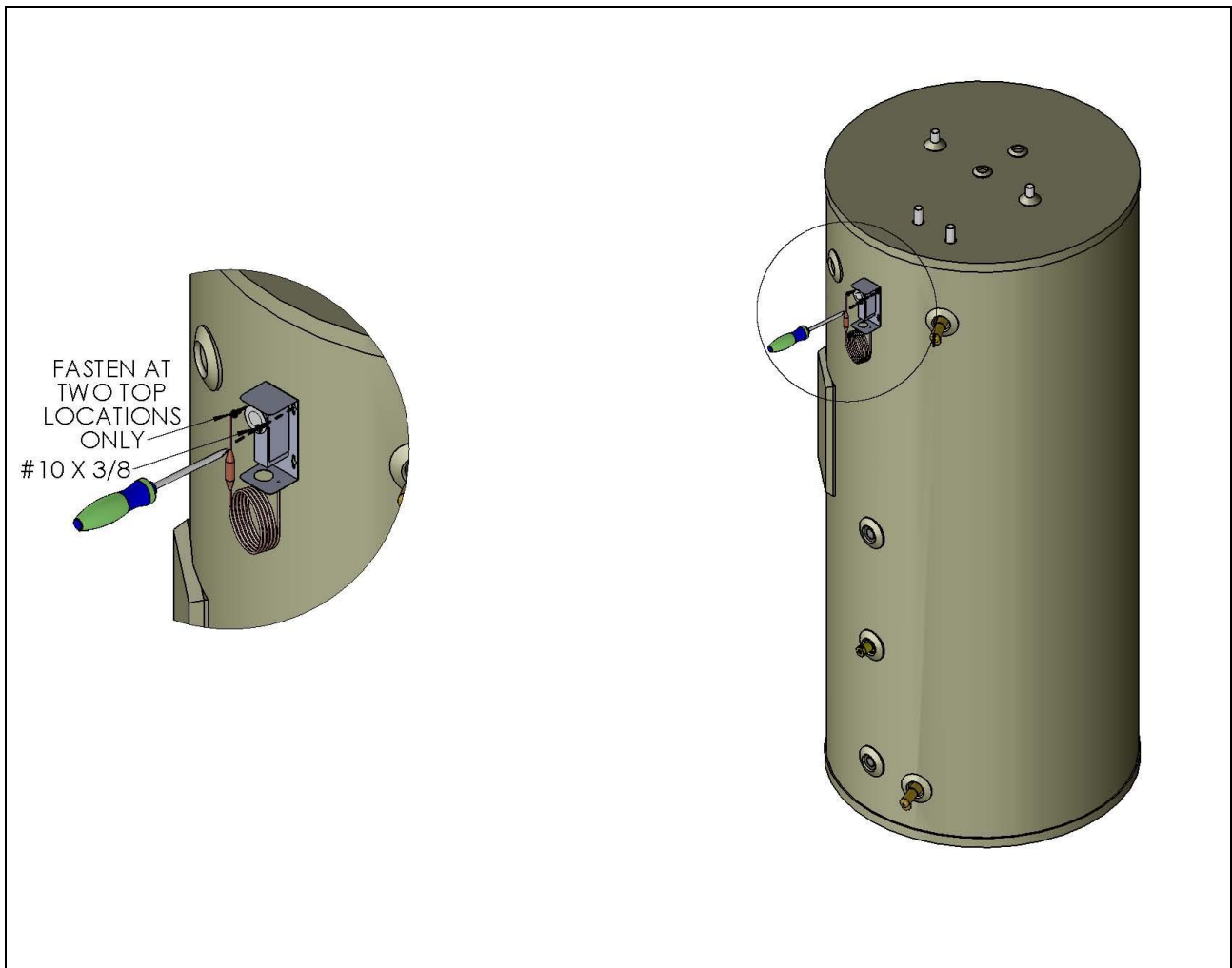


Figure 2. Fastening the Temperature Control

The bulb well shown in Figure 3 is 1/2" NPT. Select a bushing with an outer NPT thread size to match that of the storage water heater port, and 1/2" NPT inner thread size to receive the bulb well.

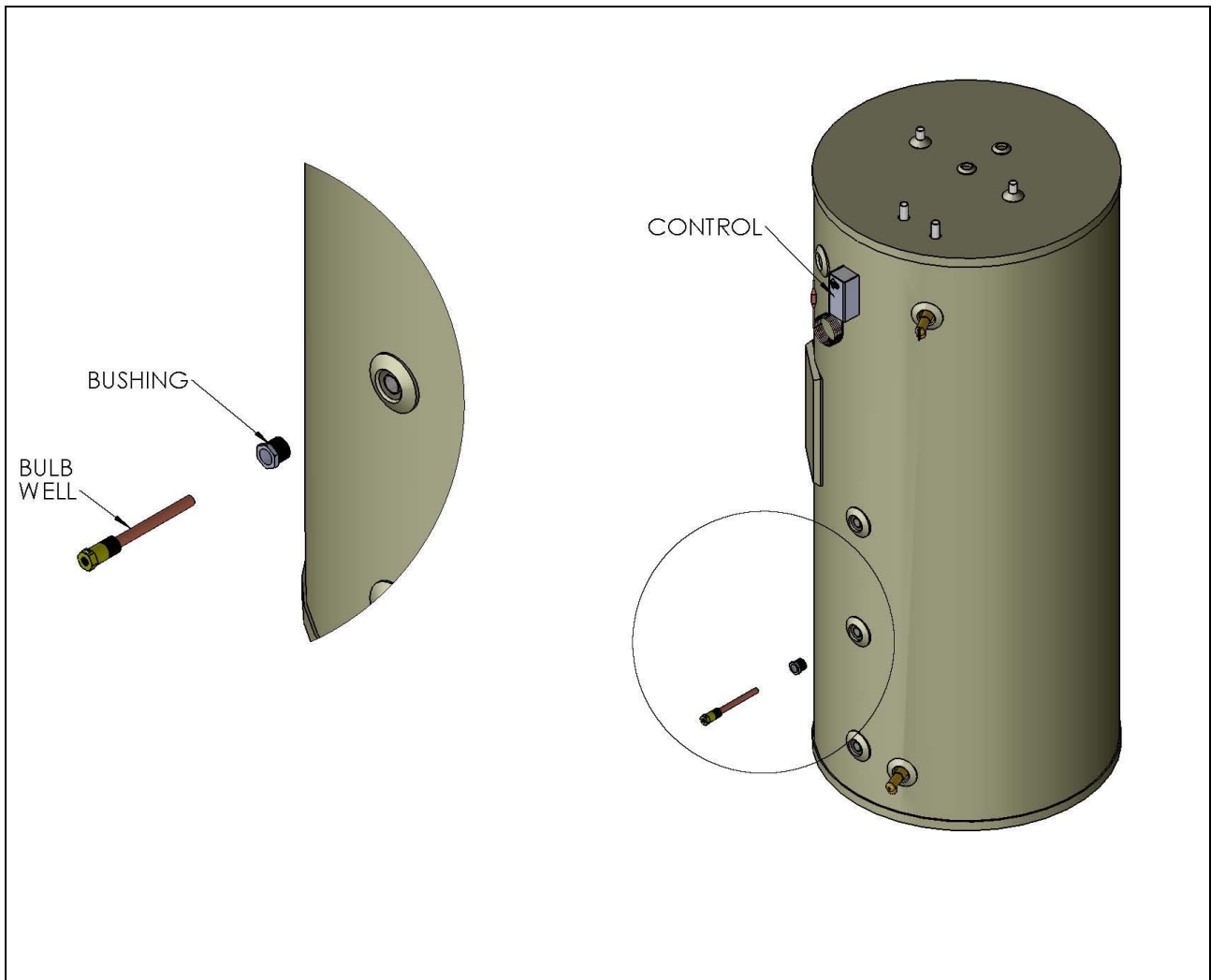


Figure 3. Select the Appropriate Bushing

As illustrated in Figure 4, apply teflon tape to the threads on the bulb well and the bushing. In addition, apply the Leak Lock liquid sealant over the teflon tape to ensure a water tight seal.

Insert and tighten the bushing first. After the bushing is tightened, insert the bulb well into the bushing and tighten it. **Do not tighten both bushing and bulb well by tightening the bulb well!**

Extend the bulb capillary tube as shown in Figure 4 to enable insertion of the bulb into the bulb well. Prior to insertion, thoroughly and completely coat the thermal bulb with the thermal paste provided. **When properly coated, excess thermal paste should come out of the bulb well as the coated thermal bulb is being inserted.**

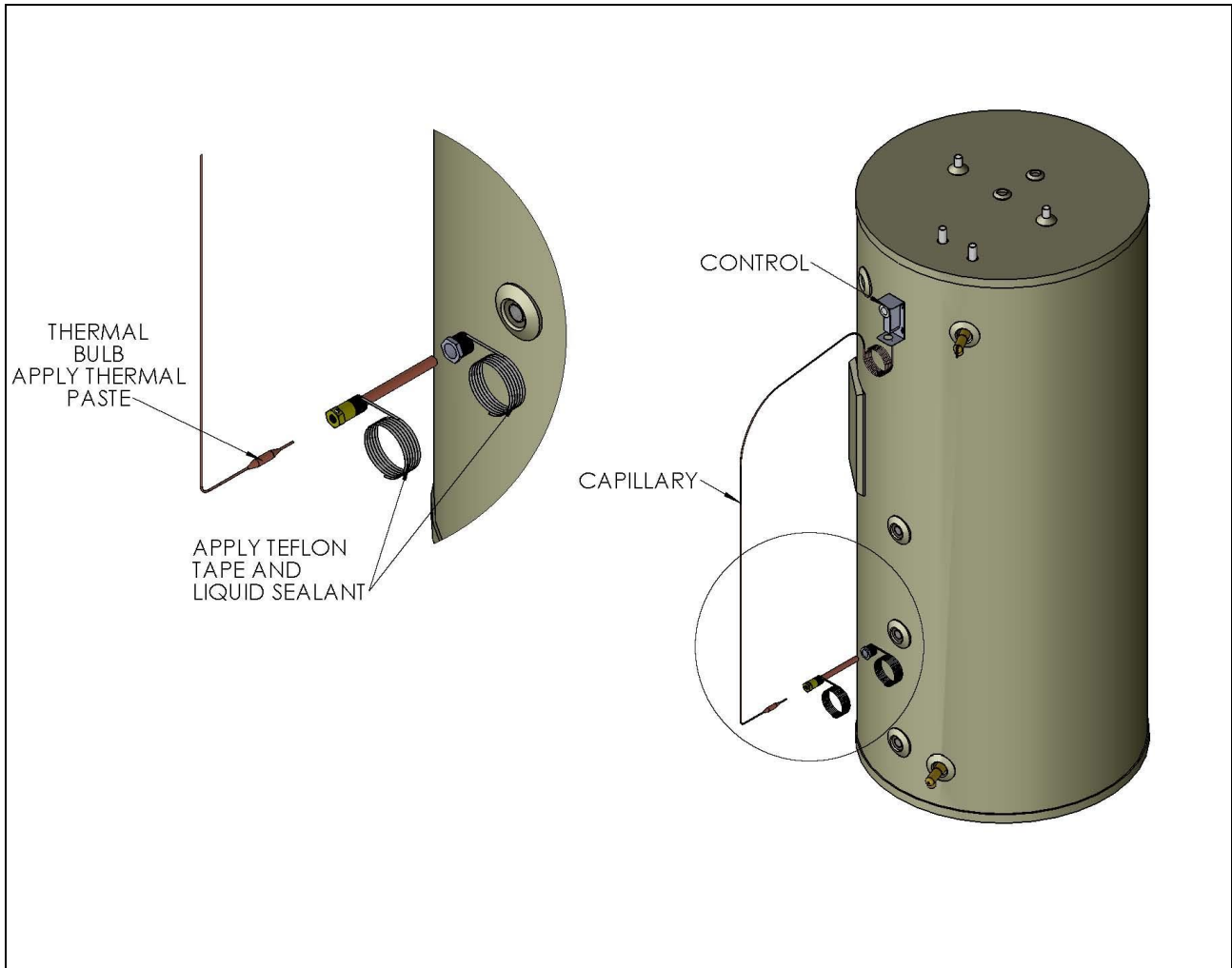


Figure 4. Installing the Thermal Bulb

After the thermal bulb is firmly seated in the bulb well and excess thermal paste is wiped away, fasten the thermal bulb in place by tightening the set screw as illustrated in Figure 5.

Align the capillary tubing to the contour of the storage water heater surface and hold in place with the appropriate foil tape to avoid bending or kinking the capillary tubing.

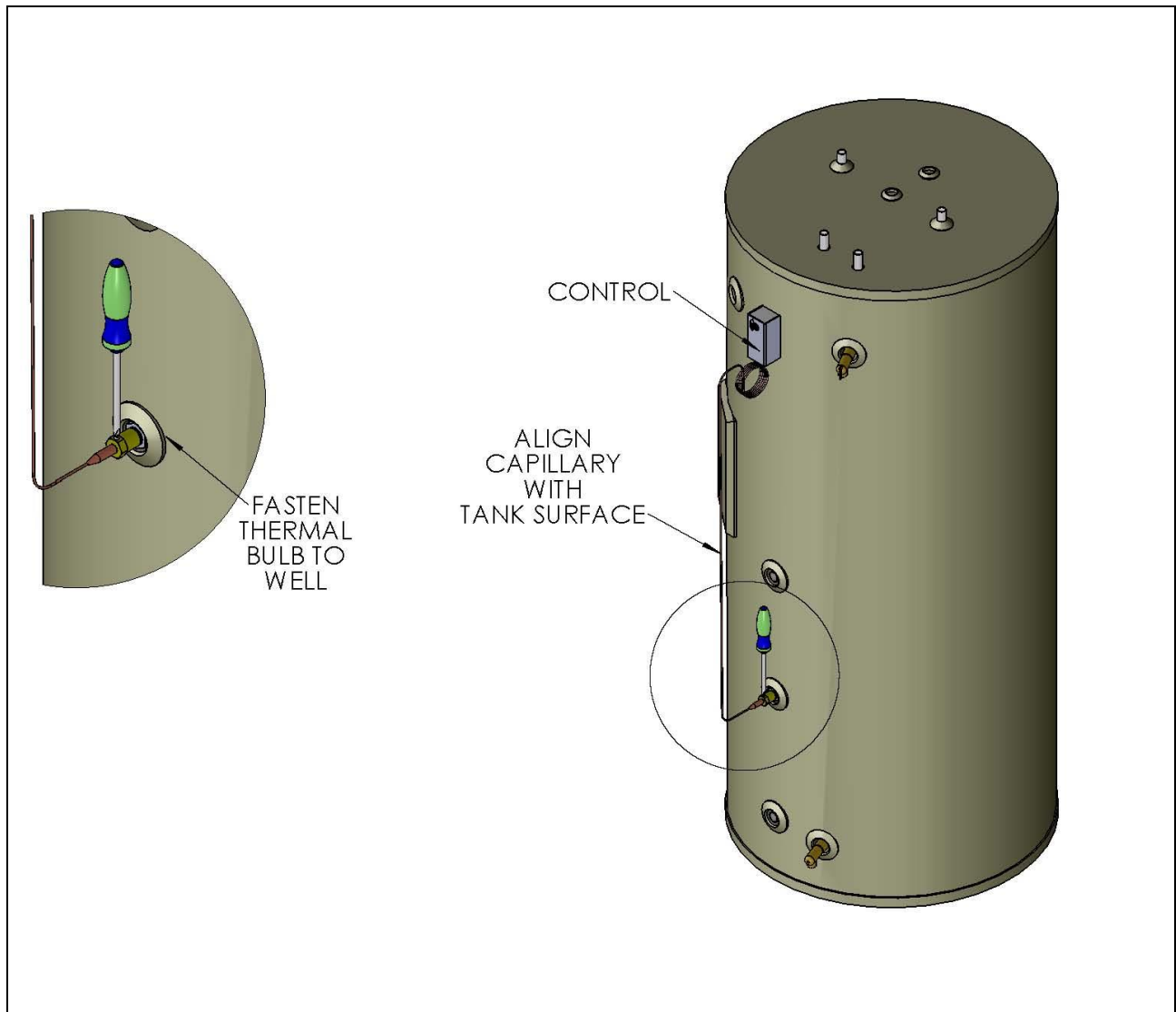


Figure 5. Fastening the Thermal Bulb & Capillary Tubing

Field Wiring

For Hydronic Heating:

With the control cover removed, connect the two electrical leads to the **RED** and **BLUE** terminals (opens on temperature increase) as illustrated in Figure 6. Refer to the appropriate EarthLinked® Compressor Unit Quik-Start Manual for compressor unit wiring connection details.

For Chilled Water Cooling:

With the control cover removed, connect the two electrical leads to the **RED** and **YELLOW** terminals (closes on temperature increase) as illustrated in Figure 6. Refer to the appropriate EarthLinked® Compressor Unit Quik-Start Manual for compressor unit wiring connection details.

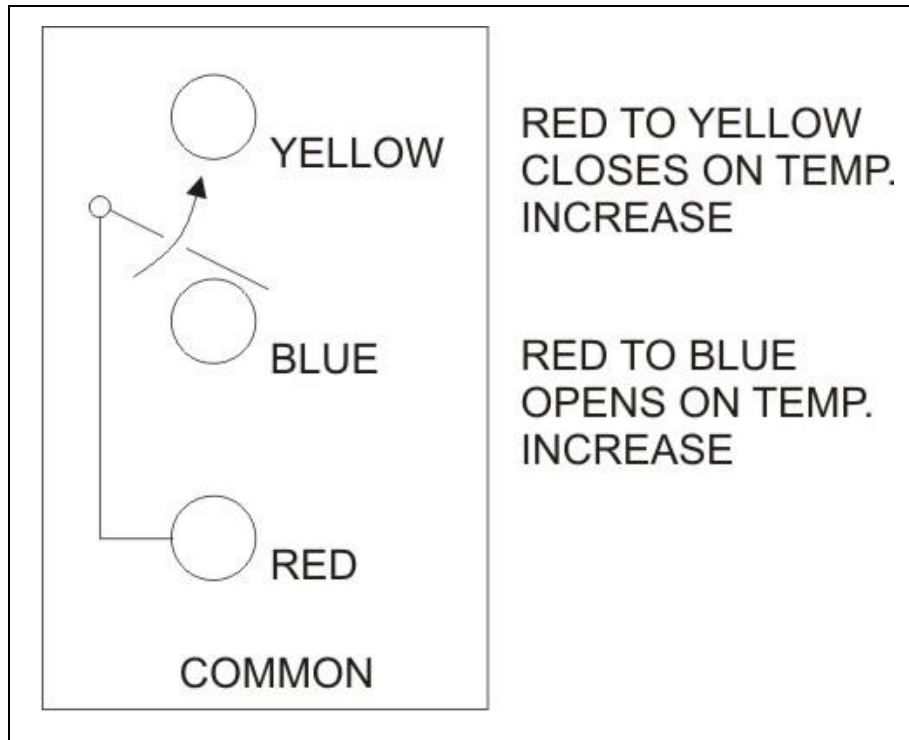


Figure 6. Terminal Arrangement on Temperature Control

Check all electrical connections for accuracy and tightness and replace the cover on the temperature control before restoring power to the system.

Setting the Temperature

Prior to setting the temperature on the temperature control, attach a thermocouple to the storage water heater water outlet and insulate it. Read this temperature when adjusting the temperature control set point temperature.



IMPORTANT!

Adjustment of the temperature control is by a screwdriver slot accessed through the cover of the control. The indicated temperature opposite the dial pointer is only the **approximate** temperature setting for the control. The desired water temperature is to be set by reading the thermocouple temperature and using the following adjustment method.

For Hydronic Heating:

Set the temperature control for approximately 150°F and start the system to heat water. Partially open the storage water heater outlet valve so heated water **slowly** flows out of the tank. As outlet water temperature increases, **measured by the thermocouple**, adjust the temperature setting (the dial on the temperature control) to **turn the compressor unit off when outlet water temperature is 5°F higher than the desired water temperature**. For example if the desired hot water temperature is 105°F, the temperature control should shut the compressor unit off when the water outlet temperature reaches 110°F.



IMPORTANT!

Maximum Hot water Temperature is 110°F

For Chilled Water Cooling:

Set the temperature control for approximately 35°F and start the system to chill water. Partially open the storage water heater outlet valve so chilled water **slowly** flows out of the tank. As outlet water temperature decreases, **measured by the thermocouple**, adjust the temperature setting (the dial of the temperature control) to **turn the compressor unit off when outlet water temperature is 5°F lower than the desired water temperature**. For example, if the desired chilled water temperature is 47°F, the temperature control should shut the compressor unit off when the water outlet temperature reaches 42°F.