

---

# TR/HL and SMART Series Thermostat Replacement Instructions

---



## Kit Part Numbers:

**P3KITTH01 (Residential 160°F)**  
**P3KITTH03 (Commercial 194°F)**

## Included in the kit:

1. (1) Thermostat
2. (2) Machine screw

## Tools required:

- Screwdriver, Phillips
- Screwdriver, Slotted

---

The following symbols are used in these instructions to indicate presence of hazards of various risk levels.

### **DANGER**

**Indicates the presence of a hazardous situation which, if ignored, will result in death, serious injury or substantial property damage.**

### **WARNING**

**Indicates the presence of a hazardous situation which, if ignored, can result in death, serious injury or substantial property damage.**

### **WARNING**

**Failure to follow information below can result in severe personal injury, death or substantial property damage:**

- **Instructions are for use only by a qualified installer/service technician.**
- **Read all instructions before proceeding.**
- **Follow instructions in proper order.**

---

# TR/HL and SMART Series

## Thermostat Replacement Instructions

---

### HL Series - Installed Prior To 1998

1. Disconnect power to the water heater.
2. Remove the old thermostat knob. **DO NOT DISCARD THE KNOB.**
3. Slide the plastic flanges up on the domestic piping allowing clearance to lift the top black lid.
4. Remove the capillary tube and sensing bulb from the drywell located under the lid, on the top of the tank near the domestic hot water outlet tapping.
5. Disconnect the (3) wires connected to the thermostat beneath the lid.
6. To remove the thermostat from the lid and bezel ring, remove the (2) mounting screws.
7. Discard the thermostat in a proper manner, unless the distributor has requested its return.
8. Reconnect the (2 of 3) wires to the new thermostat as shown in Figure 1A or 1B. **DO NOT** connect the yellow/green ground wire.
9. Mount the new thermostat to the lid and bezel ring with the (2) mounting screws. Position the indication mark on the bezel ring 90° counter-clockwise from the wire connections. Figure 2
10. Re-insert the capillary line and sensing bulb into the drywell until the bulb reaches the bottom.
  - If the bulb does not slide into the drywell, remove the burrs inside the drywell with a 3/8" drill to a depth of 1 1/2".

#### WARNING

**Make sure capillary line is not kinked or damaged. A defective capillary line can cause the thermostat to fail, resulting in a situation that can result in severe personal injury or death.**

11. Reposition the lid on the tank and slide the plastic flanges flush to the lid.
12. Reconnect power to the water heater.
13. Install the old knob and adjust the thermostat to desired temperature according the instructions at the end of this document.

### HL Series - Installed After 1998

1. Disconnect power to the water heater.
2. Remove the old thermostat knob. **DO NOT DISCARD THE KNOB.**
3. Pry the large black plug (on which the thermostat is mounted) from the top lid. Use extreme care not to damage the top lid.
4. Remove the capillary line and sensing bulb from the drywell located under the black plug.
5. Disconnect the (3) wires connected to the thermostat.
6. To remove the thermostat from the black plug and bezel ring, remove the (2) mounting screws.
7. Discard the thermostat in a proper manner, unless the distributor has requested its return.
8. Reconnect the (2 of 3) wires to the new thermostat as shown in Figure 1A or 1B. **DO NOT** connect the yellow/green ground wire.
9. Mount the new thermostat to the plug and bezel ring with the (2) mounting screws. Position the indication mark on the bezel ring 90° counter-clockwise from the wire connections. Figure 2
10. Re-insert the capillary line and sensing bulb into the drywell until the bulb reaches the bottom.
  - If the bulb does not slide into the drywell, remove the burrs inside the drywell with a 3/8" drill to a depth of 1 1/2".

#### WARNING

**Make sure capillary line is not kinked or damaged. A defective capillary line can cause the thermostat to fail, resulting in a situation that can result in severe personal injury or death.**

11. Re-insert the large black plug into the top lid cut-out
12. Reconnect power to the water heater.
13. Install the old knob and adjust the thermostat to desired temperature according the instructions at the end of this document.

---

# TR/HL and SMART Series

## Thermostat Replacement Instructions

---

### TR Series

1. Disconnect power to the water heater.
2. Remove the old thermostat knob. **DO NOT DISCARD THE KNOB.**
3. Slide the plastic flanges up on the domestic piping allowing clearance to lift the top jacket panel.
4. Remove the (9) screws securing the top jacket panel to the side and back jacket panels.
5. Remove the (6) screws from the control panel, and lift top panel from the unit.
6. Remove the two capillary lines and sensing bulbs from the drywell located in the top front of the tank. The white plastic coated capillary is the thermometer sensing bulb. The bare or black plastic coated capillary is the thermostat sensing bulb.
7. To remove the thermostat from the control panel and bezel ring, remove the (2) mounting screws.
8. Discard the thermostat in a proper manner, unless the distributor has requested its return.
9. Reconnect the (2 of 3) wires to the new thermostat as shown in Figure 1A or 1B. **DO NOT** connect the yellow/green ground wire.
10. Mount the new thermostat to the lid and bezel ring with the 2 mounting screws. Position the indication mark on the bezel ring 90° counter-clockwise from the wire connections. Figure 2
11. Re-insert the (2) capillary lines and sensing bulbs into the drywell until the thermostat bulb reaches the bottom. The temperature bulb should be inserted a minimum of 10 inches and a maximum of 12 inches into the drywell.
  - If the thermostat bulb does not slide into the drywell, remove the burrs inside the

drywell with a 3/8" drill to a depth of 1 1/2".

### WARNING

**Make sure the thermostat capillary line is not kinked or damaged. A defective capillary line can cause the thermostat to fail, resulting in a situation that can result in severe personal injury or death.**

12. Remount the control panel on the unit and secure it with the (6) screws.
13. Reattach the top jacket panel with the (9) mounting screws and slide the plastic flanges flush to the lid.
14. Reconnect power to the water heater.
15. Install the old knob and adjust the thermostat to desired temperature according the instructions at the end of this document.

---

## TR/HL and SMART Series Thermostat Replacement Instructions

---

### SMART Series - Installed prior to 2009

1. Disconnect power to the water heater.
2. Remove the thermostat knob, **DO NOT DISCARD THE KNOB.**
3. Slide the plastic flanges up on the auxiliary (third) domestic piping allowing clearance to lift the thermostat cover plate.
4. Use a slotted screwdriver between the top lid and the thermostat cover plate to disengage the snap down pins. Use care not to damage the lid or cover plate.
5. Remove the capillary line and sensing bulb from the drywell located under the cover plate. Prior to removing the thermostat note the position of the thermostat terminals.
6. Disconnect the (3) wires connected to the thermostat.
7. Remove (2) mounting screws to separate the thermostat from the cover plate.
8. Discard the thermostat in a proper manner, unless the distributor has requested its return.
9. Reconnect the (2 of 3) wires to the new thermostat as shown in Figure 1C. **DO NOT** connect the yellow/green ground wire.
10. Mount the new thermostat to the cover plate with the (2) machine screws. Orientate the thermostat terminals in the same direction as the original thermostat.
11. Re-insert the capillary line and sensing bulb into the drywell until the bulb reaches the bottom.
12. Position the cover plate onto the lid, snap the locking pins into the lid securing the cover plate.
13. Reconnect power to the water heater.
15. Install the existing knob and adjust the thermostat to desired temperature according the instructions at the end of this document.

### WARNING

**Make sure the thermostat capillary line is not kinked or damaged. A defective capillary line can cause the thermostat to fail, resulting in a situation that can result in severe personal injury or death.**

---

## TR/HL and SMART Series Thermostat Replacement Instructions

---

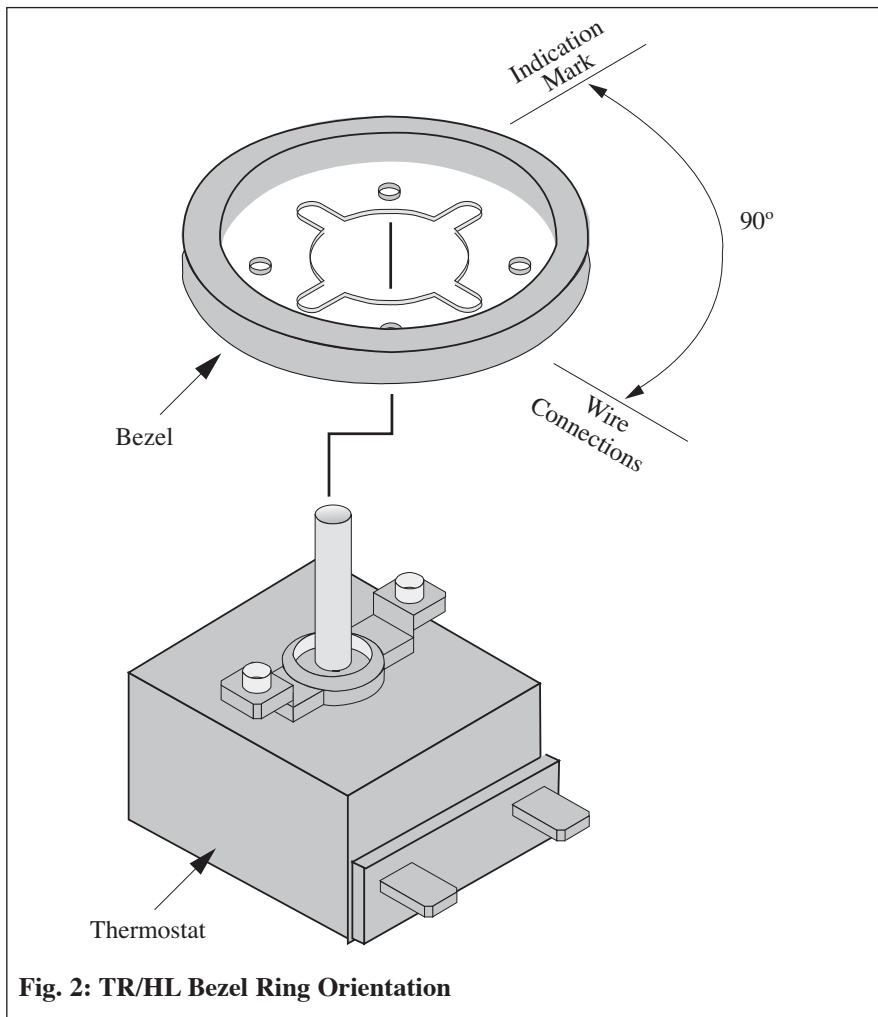
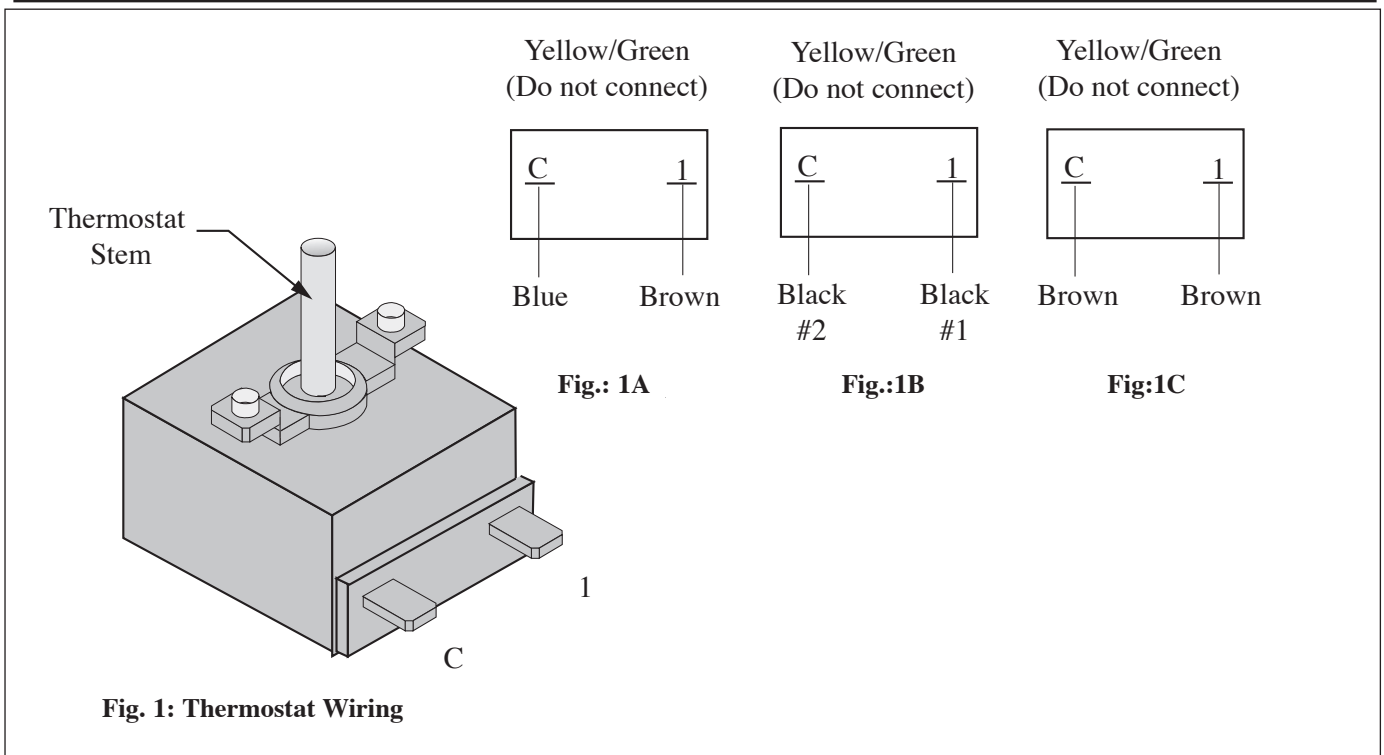
### SMART Series - Installed after 2009

1. Disconnect power to the water heater.
2. Remove the thermostat knob, **DO NOT DISCARD THE KNOB.**
3. Slide the plastic flanges up on the auxiliary (third) domestic piping allowing clearance to lift the thermostat cover plate.
4. Use a slotted screwdriver between the top lid and the thermostat cover plate to disengage the snap down pins. Use care not to damage the lid or cover plate.
5. Remove the capillary line and sensing bulb from the drywell located under the cover plate. Prior to removing the thermostat note the position of the thermostat terminals.
6. Disconnect the (2) wires connected to the thermostat.
7. Remove (2) mounting screws to separate the thermostat from the cover plate.
8. Discard the thermostat in a proper manner, unless the distributor has requested its return.
9. Reconnect the (2) wires to the new thermostat terminals shown in Figure 1. On the Smart 80, 100 and 120 place the ring terminal of the Yellow/Green wire over the thermostat stem prior to mounting the thermostat onto the cover plate.
10. Mount the new thermostat to the cover plate with the (2) machine screws. Orientate the thermostat terminals in the same direction as the original thermostat.
11. Re-insert the capillary line and sensing bulb into the drywell until the bulb reaches the bottom.
12. Position the cover plate onto the lid, snap the locking pins into the lid securing the cover plate.
13. Reconnect power to the water heater.
15. Install the existing knob and adjust the thermostat to desired temperature according the instructions at the end of this document.

### WARNING

**Make sure the thermostat capillary line is not kinked or damaged. A defective capillary line can cause the thermostat to fail, resulting in a situation that can result in severe personal injury or death.**

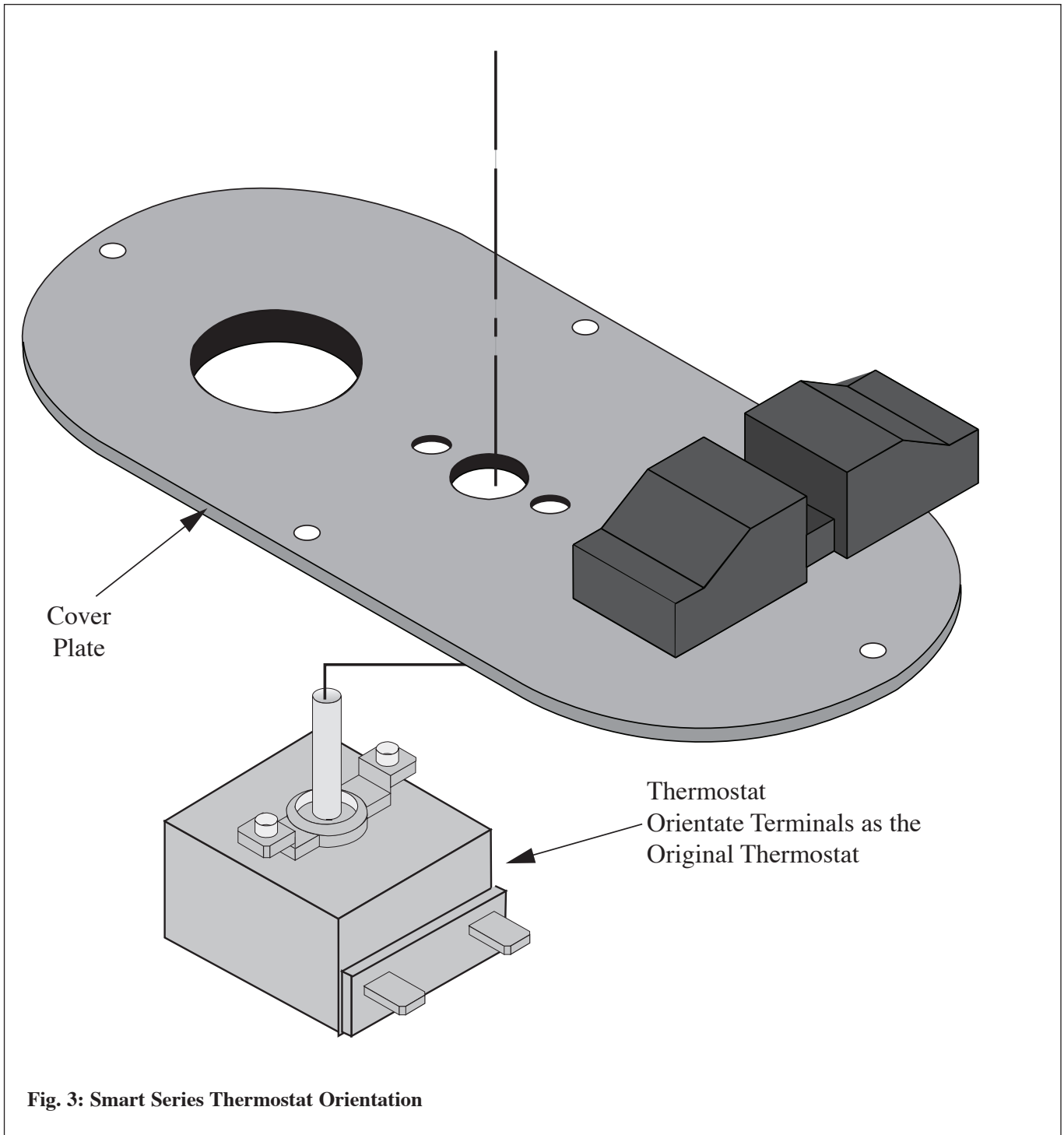
# TR/HL and SMART Series Thermostat Replacement Instructions



---

## TR/HL and SMART Series Thermostat Replacement Instructions

---



---

# TR/HL and SMART Series Thermostat Replacement Instructions

---

## DANGER

### HOT WATER CAN SCALD!

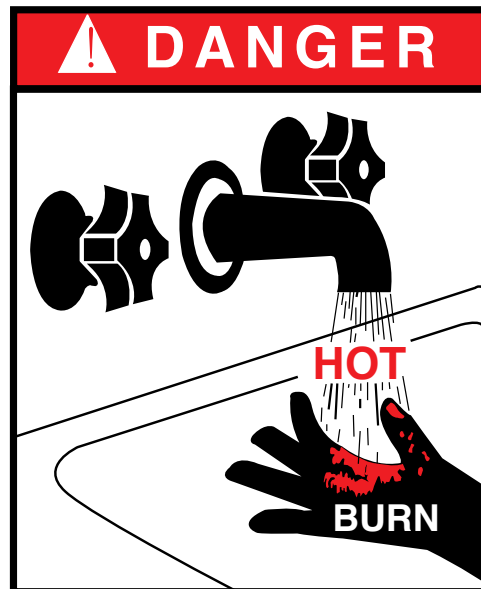
- Water temperatures over 125°F can cause severe burns instantly, or death from scalds.
- Feel water before bathing or showering.
- Consumer Product Safety Commission and some states recommend temperatures settings of 130°F or less. Setting thermostat higher than 130°F setting will increase risk of scald injury and cause severe personal injury or death.
- Water heated to a temperature suitable for clothes washing, dish washing and other sanitizing needs will scald and cause permanent injury.
- Children and elderly, infirm, or physically handicapped persons are more likely to be injured by hot water. Never leave them unattended in or near a bathtub. If anyone using hot water in the building fits this description, or if state laws or local codes require certain water temperatures at hot water faucets, take special precautions.
  - Install an automatic mixing valve at water heater or at each hot water faucet, bath and shower outlet. Selection and installation must comply with valve manufacturer's recommendation and instructions.
  - Use the lowest practical temperature setting.
  - Check water temperature after any adjustment. You must follow "Adjusting the water heater Thermostat" procedures.

### General Notes

- Household water usage patterns will affect water temperature at any faucet or shower. Occasionally check temperature at each point of use, then adjust thermostat accordingly. Always recheck temperature after adjusting thermostat.
- When hot water is used in repeated small quantities, a "stacking" effect can develop in the water heater. The upper layer of water in tank can be hotter than lower layer.
- Lowering the thermostat setting or installing automatic mixing valves as indicated in these instructions will reduce water temperature levels. Consult your installer or service technician.

## WARNING

**At no time should boiler limit control be set above 210° F. This can cause severe personal injury, death or substantial property damage if ignored.**





---

# TR/HL and SMART Series Thermostat Replacement Instructions

---

## Adjusting the Water Heater Thermostat

Water heater thermostat is factory set to its lowest temperature. This may or may not be suitable for your needs.

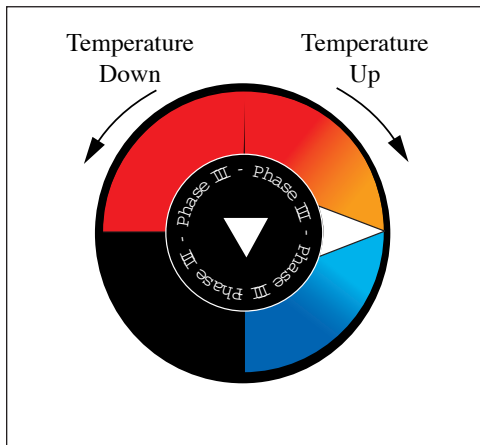
Turn thermostat knob **clockwise** to **increase** water temperature.

Turn thermostat knob **counter-clockwise** to **decrease** water temperature.

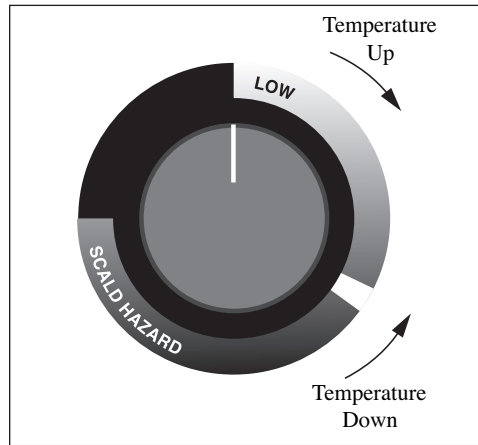
- Check water temperature at a hot water faucet immediately after first heating cycle. Further temperature adjustment may be necessary as water heating system is used. Recheck water temperature at faucet after adjustment.
- When adjusting thermostat, be sure boiler limit control is set at a minimum of 20°F higher than the desired domestic water temperature.

### WARNING

Studies have indicated that dangerous bacteria, including legionella, pneumophila, can form in the potable water distribution system if certain minimum water temperatures are not maintained. Contact your local health department for more information.



TR Series Knob  
HL Series Knob



SMART Series Knob