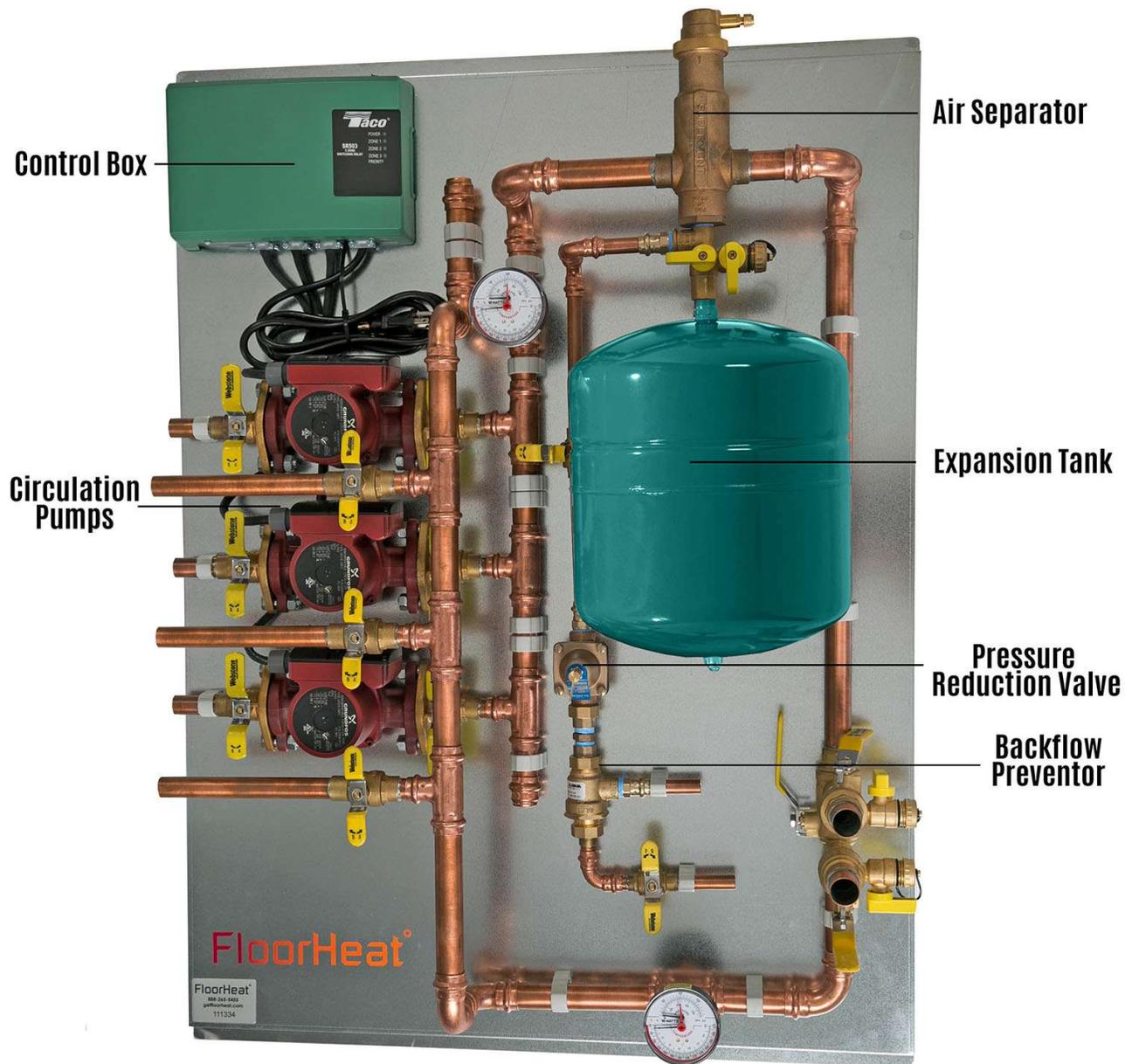


## FloorHeat° Pre-Assembled Radiant Control Panel Installation Manual



## Installation Guide

### Thank You for Your Purchase!

To ensure a successful installation, please carefully follow these instructions.

#### Important Notes:

- **Read the entire manual before beginning installation, paying special attention to the Important Notes, System Startup Checklist, and Troubleshooting Guide for a quick understanding of key steps.**
- **Do NOT plug in the power cord** until the panel is fully installed, connected, and filled with fluid.
- **Inspect for shipping damage** before installation. If damaged, call **888-265-5455** for support. Do NOT return the panel to the store.
- **Installation must be performed by a qualified professional** in accordance with national and local codes.
- **All electrical connections must be completed by a licensed electrician.**
- **Refer to the plumbing schematic in the appendix** for specific panel configurations.
- **Failure to follow these instructions may result in fire, electrical shock, property damage, personal injury, or death.**

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## 1. Planning the Installation

- Mount the control panel **near the boiler** on a **stable, vertical surface** for easy access.
- Install at a **convenient height** for ease of maintenance.
- Ensure sufficient clearance around the panel for piping and wiring.

## 2. Panel Mounting

1. Drill (2) 1/4" holes on each of the two mounting flanges.
2. Attach a **1x wood cleat (28" long)** to the wall at the top mounting location. Ensure it is level.
3. Use the cleat for support and secure the panel with **1-1/2" screws**.

## 3. Connecting Boiler Supply & Return Lines

1. Use **1" type L copper tubing** to connect the supply and return lines.
2. Follow the **plumbing schematic in the appendix** for proper configuration.
3. Minimize the distance and number of **90-degree fittings** to maintain efficient water flow.
4. Use **mounting clamps** and support for tubing, according to local codes in your area.

**💡 Tip:** Fewer fittings reduce flow resistance, improving system efficiency and reducing strain on the pump. This helps maintain consistent heat distribution, extends the lifespan of system components, and minimizes maintenance needs over time.

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## 4. Connecting Manifold Transmission Lines

1. Use **3/4" type L copper tubing or 3/4" oxygen barrier PEX tubing**.
  2. Refer to the plumbing schematic to locate the **supply and return lines**.
  3. The **upper zone manifold** typically serves as the return line to bring trapped air back for purging.
  4. **Follow the same guidelines** as boiler lines (short runs, minimal fittings, and proper support).
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## 5. Water Makeup Line Connection

- Use **1/2" type L or M copper tubing** to connect the "cold water supply" line to a **clean water source**.
- **Do NOT turn on water yet!**

## 6. Checking the Expansion Tank Pressure

1. Remove the **plastic cap** on the expansion tank.
2. Use a **standard tire pressure gauge** to check tank pressure (**should be 10-12 psi**).
3. **Add pressure if necessary.**

💡 **Note:** If using an antifreeze solution (for cold climates or snowmelt systems), ensure it is properly mixed before filling the system.

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## 7. Initial System Fill

💡 **What You'll Need:**

- **High-flow submersible pump**
  - **5-gallon bucket**
  - **(2) 1" hoses (6' long)**
  - **Necessary fittings**
1. **Open all ball valves** to the zone manifolds and boiler.
  2. Open the **water supply ball valves** to begin filling.
  3. Once the **system pressure reaches 15-20 psi**, the pressure-reducing valve will shut off the water supply.
  4. **Close the water supply ball valve.**
- 

## 8. Purging Air from the System

**Why is This Important?**

- Air in the system can cause **noise, corrosion, and cold spots.**
- A properly purged system will operate **quietly and efficiently.**

## Step-by-Step Purging:

1. **Connect hoses** to the purge ports as per the schematic.
2. **Fill the bucket with clean water or glycol mix** and place the pump inside.
3. **Turn on the pump** and slowly open the ball valves.
4. Watch for **air bubbles in the return water**—continue purging until no more air is present.
5. **Repeat for each zone** (open one at a time, closing others).
6. **After purging all zones, switch to the boiler side** and repeat.
7. **Once air is fully removed, close valves, disconnect hoses, and secure the drain caps.**

✓ **Check:** System should be silent and pressure stable at **12-21 psi**.

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## 9. Thermostat and Boiler Control Wiring

1. Open the **green control box**.
  2. Connect **thermostat wires** to the corresponding **zone terminals**.
  3. Use **3-conductor solid thermostat wire** routed through rubber grommets.
  4. Connect **X1 and X2 terminals** to the boiler control circuit.
  5. Ensure compliance with **local codes** for additional safety devices (e.g., low water cut-off, high temp limit switches).
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## 10. Connecting to Line Voltage

- Depending on local codes, plug the cord into an **outlet** or hardwire into a **junction box**.
-

## 11. System Startup Checklist

✓ Activate all thermostats—zone circulators should turn on. ✓ Listen for any **gurgling noises** (air should purge out automatically). ✓ Check for **leaks** at all connections. ✓ Turn on **boiler power**—circulator and boiler should start. ✓ Observe **temperature & pressure gauges**:

- **In-floor zones**: Max 140°F
  - **Radiators**: Max 180°F
  - **Pressure increase should not exceed 1 psi.** ✓ Adjust water temperature gradually, starting with a setting that aligns with the recommended range for your heating system (e.g., 120-140°F for in-floor heating). Monitor the system's performance and make small adjustments as needed. For specific guidance, see the boiler manual.
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## Troubleshooting Guide

Issue	Possible Cause	Solution
No heat in one or more zones	Air trapped in system	Re-purge affected zones
System making noise	Air in the lines	Ensure all air is purged. This process can take anywhere from a few minutes to an hour, depending on the size and complexity of the system. Monitor for air bubbles in the return water and repeat purging if necessary.
Boiler not firing	Incorrect wiring	Verify thermostat and boiler wiring
Pressure too high	Overfilled system	Drain excess water to 15-20 psi
Low heat output	Mixing valve set too low	Adjust mixing valve or boiler settings
Low system pressure	Leak in the system	Check all connections for leaks and re-pressurize
Thermostat not responding	Wiring issue or faulty thermostat	Check wiring and replace thermostat if needed
Boiler cycling on and off frequently	Faulty sensor or incorrect settings	Verify settings and inspect sensors

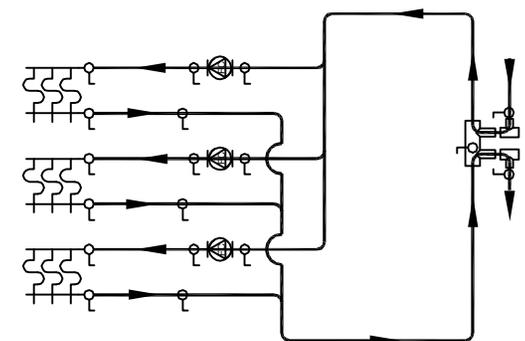
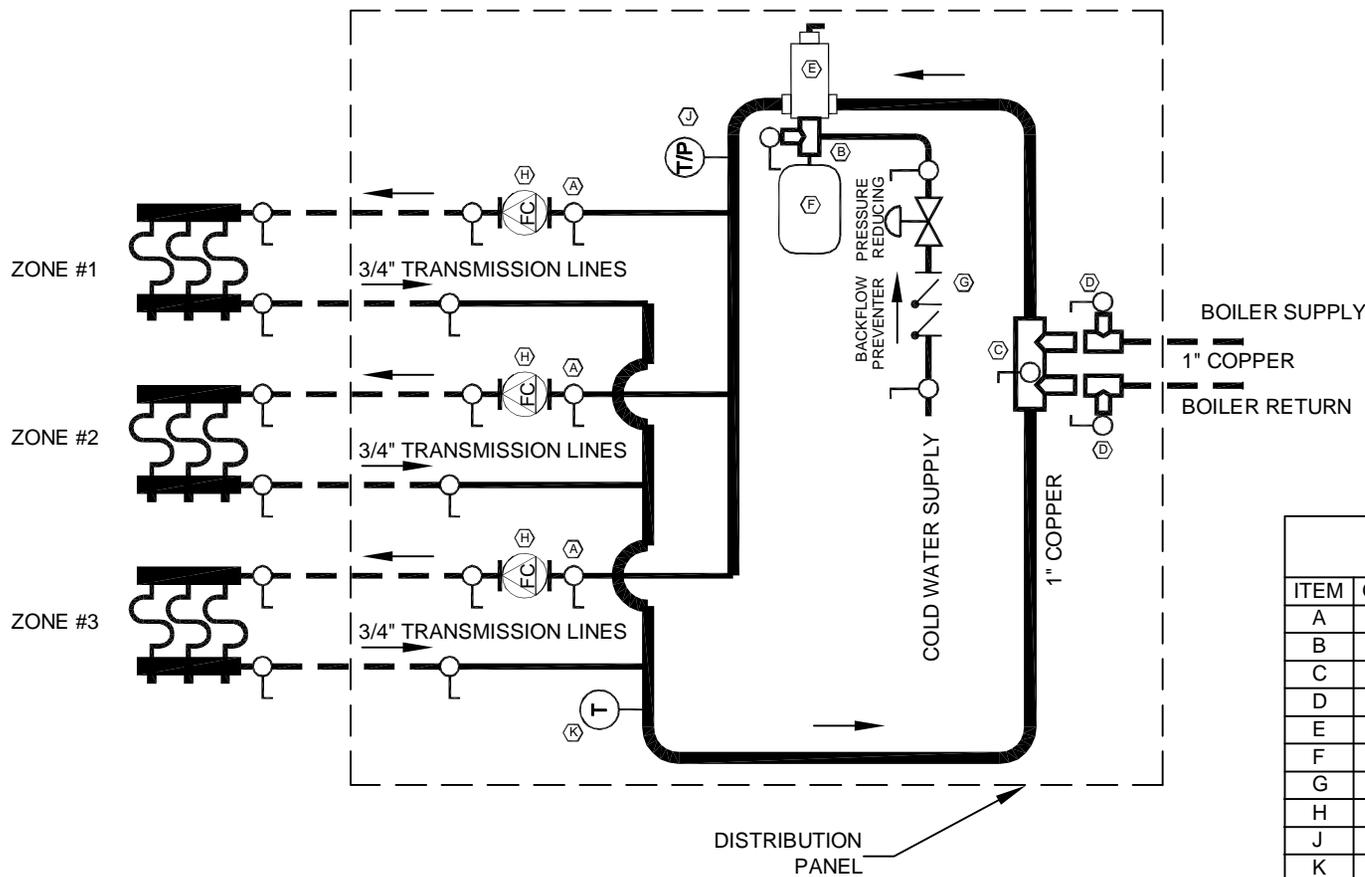
## Need Help?

 Call **888-265-5455** for technical support.  Visit **[www.floorheat.com](http://www.floorheat.com)** for additional resources.

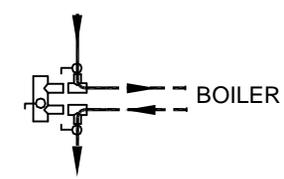
 **Congratulations!** Your system is now fully installed and ready for **years of trouble-free operation!**

# HYDRONIC PIPING SCHEMATIC

1-4 ZONE, PRIMARY/SECONDARY  
3 ZONE SHOWN



SECONDARY PURGE/FILL DIAGRAM



PRIMARY PURGE/FILL DIAGRAM

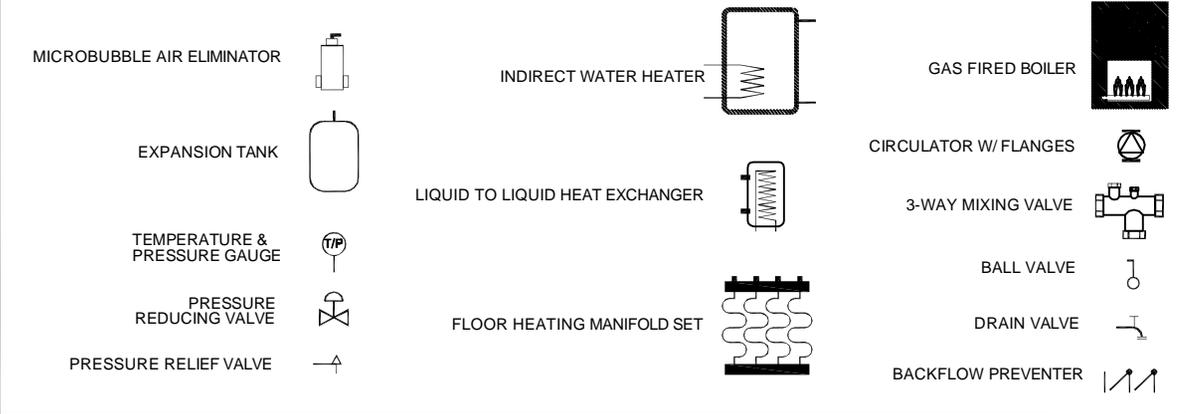
## BOM

ITEM	QTY	DESCRIPTION	PART NO.
A	X*	3/4" SWEAT ISOLATION FLANGE KIT	50403
B	1	EXPANSION TANK VALVE	41672
C	1	1" X 1" SWEAT PURGE TEE	58644
D	2	1" SWEAT BALL DRAIN VALVE	50614
E	1	1" SWEAT AIR ELIMINATOR	PV100S
F	1	TYPE #30 EXP TANK	102-1
G	1	1/2" SWEAT COMBO FILL/BACKFLOW	B 911S
H	X*	CIRCULATOR	UPS15-58FC
J	1	TEMP/PRESS GAUGE	TD-090
K	1	TEMP GAUGE	GT162

\* X - THE NUMBER OF ZONES

Designed for:	FloorHeat
Designed by:	Mike Huhn
Date:	February 21, 2014
Revised:	-

## LEGEND



**FloorHeat**  
RADIANT HEATING SYSTEMS