

# Electric Boiler Board Install - Open System

## Step 1

Mounting the boiler board to the wall

Make sure you find `backing` material in the mounting wall to properly secure the boiler board to the wall

Wall studs are generally 16" on center however other spacing's are used so you may want to open a section of wall cover or use a **stud finder** to locate wall studs

Use a **drill and 1/8" drill bit** to drill holes in the flanges of the board once you have found desired location

Recommended fasteners would be **3" #10 wood screw** or greater

Minimum of 4 fasteners would be recommended, for larger boards (48" and 60") a minimum of 6 fasteners would be recommended

## NOTE

It is the customer's responsibility to ensure boiler board is properly fastened to the wall, failure to do so can result in damage to the unit and or injury

When mounting an open to atmosphere boiler board keep in mind bottom of expansion tank needs to be mounted well above top of boiler (hydronic practice recommends 32")

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## Step 2

Attach the floor pipes to the manifold

Make sure all loops are matched supply and return (blow into pipe)

Make sure all pipes are free of dirt or debris, compressed air or water may be used to flush lines

Always trim pipe to proper length using a proper **pipe cutter** and ream using a proper pipe **reamer**

Always use **plumbers grease** to lube o rings on **manifold adapters** before inserting

Manifold adapter nuts should spin on freely by hand and require snugging with **adjustable wrench**

## NOTE

Manifold adaptor nuts cross thread easily, they should turn on the first few threads easily by hand, if not take care to move pipe slightly to straighten the adapter

Installing manifold adapters from left to right side of manifold works best, snugging each one as you go

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## Step 3

Open all valves and add fluid (glycol/water mix) to expansion tank

Once all pipes are installed and manifold adapters are snug, open all valves and add fluid to the expansion tank

As air bubbles rise to the top more fluid can be added

Once the level stays constant (about 1/3 full) circulator pump cord end can be installed to pre-circulate system (always use qualified electrician for all electrical connections)

As the circulator runs make sure the expansion tank never runs dry, keep adding fluid as needed (about 1/3 full)

With the circulator pump on speed 3 close all but 2 loops (2 supply and 2 return) on manifold (large white knobs) allowing full flow into those two loops until all air is out. Then open next 2 loops and close the 2 you just did and so on until all floor loops are free of air

## NOTE

Recommended fluid consists of 1/3 propylene glycol and 2/3 treated town or city water (rain or well water not recommended)

Make sure all valves on boiler board are open before starting circulator pump or damage to pump may occur

You can usually see when air is gone as it travels through the pipe (pex). If not, just let it circulate a few minutes per pair of lines and see that fluid level in tank stays level

When connecting a cord end black is line (L) white is common (N) and green is ground ( $\perp$ )

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## Step 4

### Final connections

After all air is bled from system connect circulator pump to boiler terminals P and N and ground inside boiler

Connect thermostat to the low water cut-off on the expansion tank then to terminals C and W1 inside boiler

Connect outdoor reset to terminals OT and OT inside boiler

Connect boiler power feed to terminals N and L1 and L2 and ground inside boiler

Once all connections are made and all valves are open and all loops are open main power breaker may be energized

### NOTE

All electrical connections must be done by a qualified electrician

Outdoor reset should be placed outside under the eaves on the north side or in the eaves, exposed to outside temperature but not in the sunlight. Connecting the outdoor reset will save you money!

When the thermostat calls, the circulator pump should immediately run and the boiler should start to heat. The boiler modulates so it takes a few moments to start all elements, however you should start to feel warmer water in the lines to the floor (the top manifold) and cold return from the bottom manifold

The circulator canister should be bled after everything is running (open silver screw on center of pump and allow any air to come out. Tighten screw after air has escaped). This can be done while pump is running

After everything is running for a while (30 minutes) top up the expansion tank to approximately 1/2 to 2/3 full

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Keep an eye on connections for the first while as some fittings may need snugging up as the system first runs

Periodically check level in expansion tank to ensure proper level

Make sure boiler fluid never exceeds 120°F (recommended 100°F or less). The temperature adjustment dial is located inside the boiler panel. The cooler the water the more efficient the heating system will run.

## Tools and supplies needed

List of tools needed

Drill, 1/8" drill bit, Stud finder, adjustable wrench, screw drivers, pipe cutter, pipe reamer, cord end

List of supplies needed

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#10 3" wood screws, manifold adapters, plumbers grease, glycol, electrical cord (supplied by electrician) 989