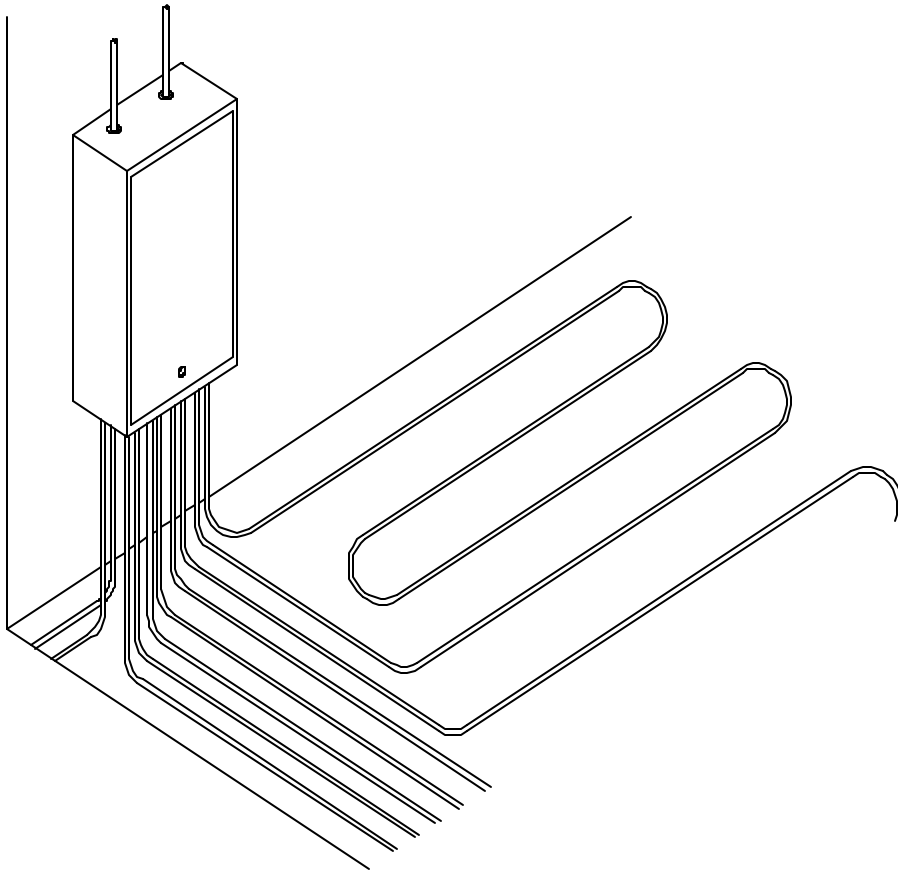


Introduction



MIB™ (Manifold In a Box) is a self-contained package for radiant floor heating of up to eight loops and 2400 sq. ft. It can provide floor warming or room heating in bathrooms, kitchens, foyers, basements or anywhere that requires extra comfort through radiant floor heating. It is suitable for new construction or for renovations.

Pump, temperature control valve, plumbing connections, a pair of manifolds and electrical controls are contained in an attractive cabinet that can be mounted anywhere. The unit comes pre-assembled to save time and simplify installation.

Physical Properties

Model	Cabinet dimensions			Water Connections*		Shipping Weight
	height	width	depth	Heat source	Radiant loops	
MIB3, MIB4, MIB5	24"	14 ¼"	8"	3/4" Sweat	1/2" PEX	40 lb.
MIB6, MIB8	30"	22 ¼"	8"	3/4" Sweat	1/2" PEX	50 lb.

* All line connections are barbed fittings for PEX tubing. Other connections are available upon request.

Mounting

The MIB™ may be mounted on a utility room or basement wall or in a closet. It may be surface mounted or recessed into the wall.

For **surface mounting**, use anchors suitable for the wall surface (concrete, drywall or wood screws). The cabinet should be screwed through the top and bottom flanges.

For **recessed installations**, the cabinet may be screwed from the inside through the sides of the cabinet into the wall stud. The cabinet is designed to fit between wall studs that are 16 or 24 inches on centre. Additional wood blocking may be necessary to support both sides of the cabinet. It is recommended that the MIB™ be recessed at least 3-1/2" in order to hide all plumbing connections.

Note: for recessed installations, all plumbing connections must be completed before the drywall is installed around the cabinet.

Piping Layout

The MIB™ can be connected to up to eight 1/2" PEX loops of up to 300 feet each in length. Total nominal heating capacity is 70,000 Btu/hr.* (capacity may vary depending on design and floor covering.)

The MIB™ comes with 3/4" connections for hot water supply and return.

Contact Ecologix for assistance with your radiant heating system design.

Plumbing Connections

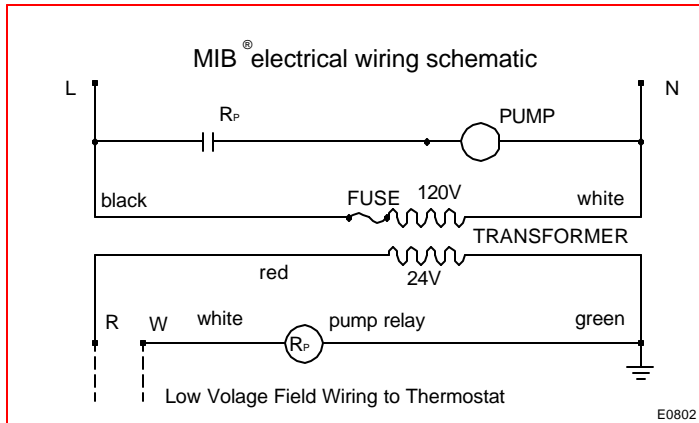
Install up to eight radiant floor loops. Close the valves on any unused manifold branches and cap them off with a short length of PEX from the supply branch to the return branch. Note that PEX with an oxygen barrier is required for closed loop (boiler) systems. The oxygen barrier is not required for open (water heater) systems. Identify the inlet and outlet of each loop. Connect radiant floor heating loop supply (5) and return (6) from the heat source to the connections on the MIB™ as shown in the diagram and labeled inside the cabinet.

Shut off the water supply and power for the boiler or water heater (heat source). Connect 3/4" plumbing supply (3) and return (4) from the heat source to the connections on the top of the MIB™ as shown in the diagram and labeled inside the cabinet.

Electrical Connections

Plug the electrical cord into a standard 120VAC/60Hz/1Ph grounded outlet. This device draws less than 1 amp and does not need to be on a separate circuit. The cord can be removed and the unit hard wired by a qualified electrician. Follow all local electrical codes.

Mount the heat only thermostat or programmable thermostat on the wall of the room to be heated. If more than one room is to be heated, mount the thermostat in the most critical room or the room with the greatest window area or number of walls exposed to the outdoors. Connect low voltage thermostat wire from the red and white wires (R & W) of the MIB™ control (11) to the thermostat. The MIB™ includes a pre-wired 24VAC power supply for the controls.



Start up

Ensure all plumbing connections are complete.

Purge all air from the heat source and plumbing or hydronic system. To purge air from the heating loops, open both heat source isolation valves (3) and (4). Connect a drain hose to the return leg purge valve (10). Open the return leg purge valve (10) Once the water starts flowing through the drain hose, close the return isolation valve (9). Close all but one of the individual circuit isolation valves (7) taking turns to purge all of the air out of each of the circuits. Close the return leg purge valve (10) and open the valve on the return leg of the radiant floor-heating loop (9).

Start the boiler or water heater according to manufacturer's instructions.

Once the heat source is up to temperature, plug in the MIB™ and set the room thermostat at the desired setting.

Set the mixing valve (2) to the desired temperature. Refer to the following table and the mix valve instructions.

	Loop Temp.	Mix Valve Setting	
		w.h. (140F)	Boiler (180F)
Floor warming (15 Btu/hr./sq.ft.)*			
in-slab with vinyl or ceramic floor	88	5	3
in-slab with carpeting	103	9	7
In-joist with vinyl or ceramic floor	103	9	7
In-joist with carpeting	118	13	11
Space Heating (30 Btu/hr./sq.ft.)*			
in-slab with vinyl or ceramic floor	108	11	9
in-slab with carpeting	138	23	17
In-joist with vinyl or ceramic floor	138	23	17
In-joist with carpeting	168	Not rec.	21

- These are guidelines only. Temperature adjustments may be required. For space
- heating, a proper heat loss is required. Contact Ecologix for assistance.

Balancing

The manifolds include balance valves to balance the flow through individual loops. To adjust the flow on any loop, remove the safety cap and use an Allen key or hex wrench to turn the spindle the required number of turns. Turn the spindle completely clockwise to close it. Ten turns counter clockwise is fully open. Set each loop according to the following steps.

1. Note the longest tubing length connected to the manifold (ex. 300 ft.). This loop should receive maximum flow (fully open) and all other loops will have their flows adjusted relative to the longest loop.
2. The flow through all of the other loops, are a ratio of their length relative to the longest length times 10 turns. For example, a 75 ft. loop would be set to 2.5 turns from fully closed.
(75ft./300ft. x 10 turns = 2.5 turns)

Troubleshooting

No heat-- check the following:

- Heat source is on
- Heat source supply and return are not reversed
- All required valves are open.
- Power available
- Pump is running (a screwdriver held to the pump can work like a stethoscope)

Noisy Pump

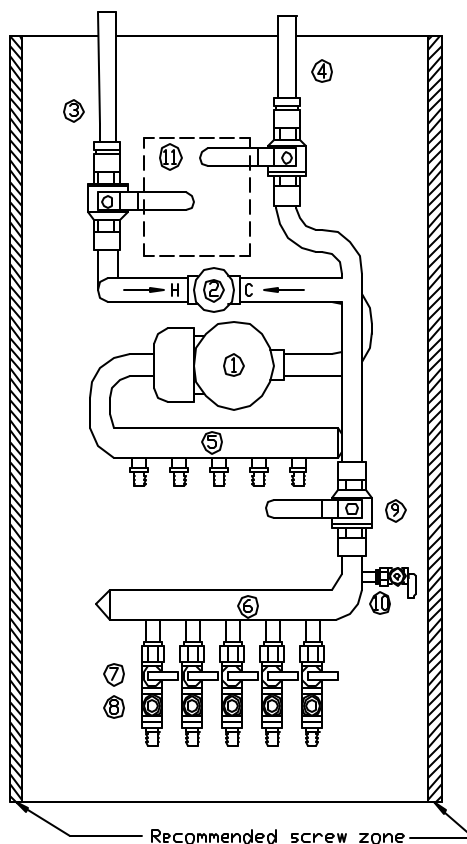
- Repeat purge procedure

Insufficient Heat

- Increase mixed water temperature at the mix valve
- Partial blockage of pipes or pumps
- Heat source supply and return may be reversed

Overheating (Large Temperature Swings)

- Adjust room thermostat anticipator according to manufacturer's instructions. It should be set to provide 3-4 on cycles per hour during the heating season.
- Reduce mixed water temperature at the mix valve.



1. Pump
2. Thermostatic mixing valve with built-in check
3. Supply from heat source -- 3/4" sweat connection
4. Return to heat source -- 3/4" sweat connection
5. Supply manifold to four or five floor loops -- 1/2" barb connections
6. Return manifold from four or five floor loops -- 1/2" barb connections
7. Floor loop isolation valve
8. Floor loop balance valve
9. Isolation valve -- for purging
10. Purge/drain valve
11. Control