# INSTALLING SUPPLY AND RETURN MAINS FOR MANIFOLDS

## GENERAL PLUMBING

All supply and return mains should be plumbed in accordance with current plumbing standards and practices applicable to hydronic heating and/or in accordance with local code and building requirements.

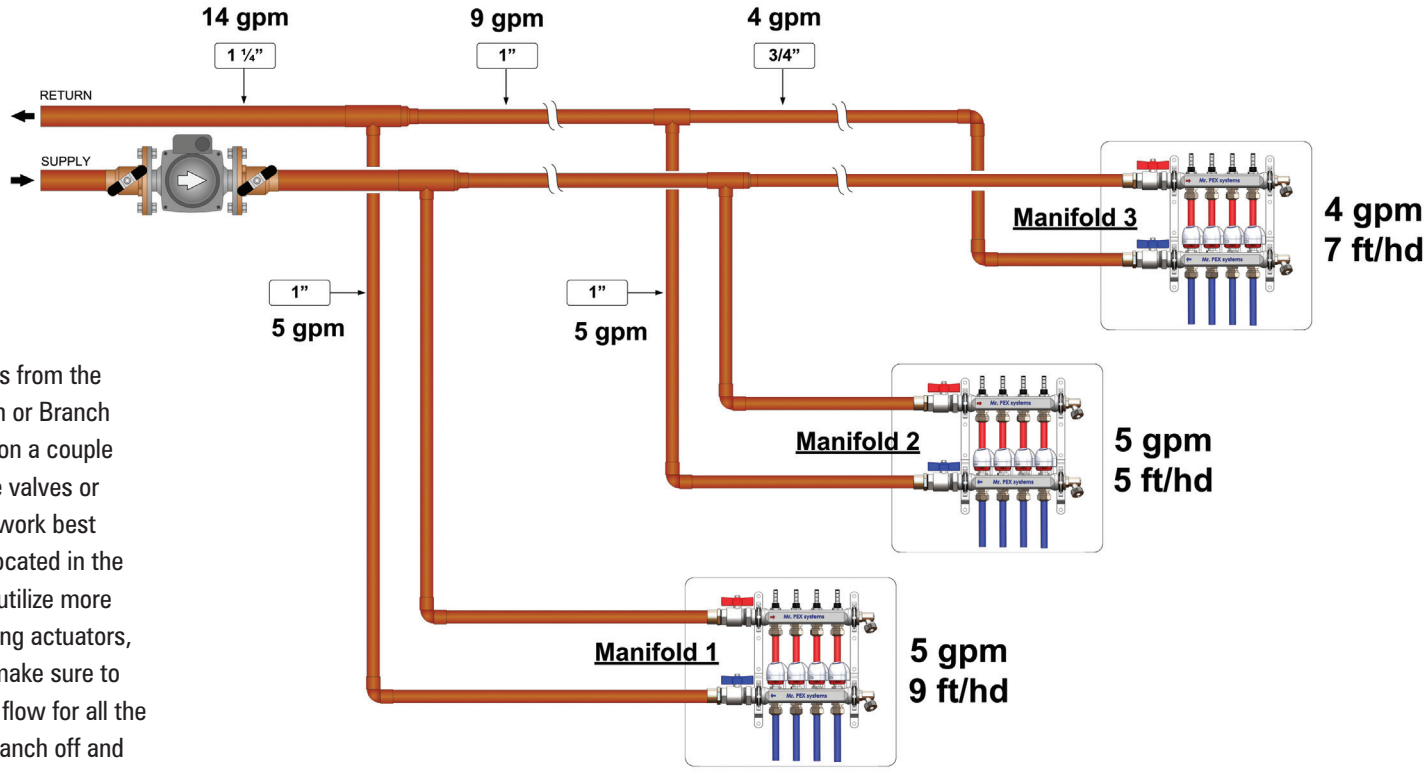
## SIZING OF MAINS

***NOTE: Consider using Mr PEX® Barrier tubing instead of copper for applications where possible.***

All supply and return mains should be sized so the fluid velocity at design conditions is high enough to prevent mains from becoming air-bound (an air eliminator is recommended), but not so high as to produce excessive friction losses, noise, or erosion of pipe and fitting surfaces.

▶ Fluid Velocities should be between 1.5 and 4 feet per second for mains 1/2" through 2", and between 1.5 and 5 feet per second for mains 2.5" and larger.

| General Guidelines | |
|---|---|
| **GPM** | **Main Size** |
| **0–4** | 3/4" |
| 4–8 | 1" |
| 8–14 | 1.25" |
| 14–25 | 1.5" |
| 25–45 | 2" |




## ROUTING OF MAINS

There are two methods used to route the mains from the mechanical room to the manifold(s), Home Run or Branch and Tee. The decision of which to use depend on a couple of things. If the manifolds are zoned using zone valves or zone pumps, the Home Run methods seem to work best since the zone valve and pumps are typically located in the mechanical room. This method does however utilize more piping for mains. If the manifolds are zoned using actuators, you can use either method. In either method, make sure to size the mains and pump to accommodate the flow for all the manifolds served by that pump, then as you branch off and flow is reduced, you can down size as needed.