

## The Glitch & The Fix, May 2014

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### Devil in the details

#### The Glitch

The three photos shown below are all from the same installation. They were provided by a friend of the industry.

Can spot at least five causes for concern among these three photos? If so, what would you do to correct them?



Figure 1: The galvanized pipe is venting a gas-fired cast-iron boiler.



Figure 2: Flow is from left to right.



Figure 3: A least two issues here. Flow is up the left side.

### The Fix

**Figure 1:** PEX tubing is great stuff, but why route it that close to, or possibly in contact with, a vent connector pipe that's probably operating with flue gases in excess of 300° F? There is plenty of wall space behind the vent connector. Change the manifold connections to keep the tubing close to the wall.

That “coat hanger” support on the PEX tubing also is not impressive. Use a legitimate pipe hanger that spreads the load across the tubing.

**Figure 2:** All circulators should have 10 to 12 pipe diameters of straight tubing upstream of their inlet port. This reduces turbulence and allows the circulator to operate with reduced noise. A circulator mounted this close to an air separator with an internal coalescing media is likely to get its share of swishes and swirls.

Most circulators are designed to be mounted with their shaft horizontal. This reduces axial stress on bushings and improves circulator life. A 90° rotation of the flanges would correct this. It would also be a good idea to install a pair of isolation flanges on that circulator. Eventually they will be needed.

**Figure 3:** As with circulators, good practice calls for 10 to 12 pipe diameters of straight pipe upstream of check valves. The turbulence coming off the upstream elbow is likely to cause rattlings of the swing check's flapper. While this isn't likely to damage the valve, it's an annoying noise, especially if this valve happens to be under a bedroom.

This piping also creates an intermediate high point in the system and doesn't provide a vent. My preference would be to eliminate the high point if possible. If that can't be done, install a vent at the top of the down-flowing piping.