Product Overview | Three-pipe Bleeder

If plant gas pressure is less than combustion air pressure, 8654 Bleeders allow a constant air/gas ratio to be held by cross-connected ratio regulators feeding nozzle-mix burners.

APPLICATION

To maintain gas and air flows proportional to each other from high fire to low, air impulse pressure to the regulator at high fire must be reduced below maximum available gas pressure (inlet pressure to regulator less pressure drop across regulator at high fire).

An 8654 Bleeder accomplishes this reduction in impulse pressure.

Example: A burner is sized for **14 osi** air pressure at the burner. Maximum inlet gas pressure into a North American 7218 or 7216 Regulator is 12 osi.

The regulator will take about 2 osi drop to pass appropriate cfh gas at high fire, leaving **10 osi** at regulator outlet.

Therefore, at least **4 osi** air impulse must be bled to reduce it below 10 osi (good practice would bleed 5-6 osi to provide a little margin).

Such bleed arrangement maintains a constant relationship between air pressure and gas pressure going to the burner from high fire to low.

Ratio changes due to combustion chamber pressure fluctuations are neutralized by connecting a third line from bleeder to combustion chamber (see sketch). This arrangement applies pressure variations to both sides of regulator diaphragm.

INSTALLATION

Make impulse connection to air manifold by welding a half coupling on top or side of pipe; then drill a ½" hole through pipe. Remove burrs from the inside.

Locate connection at least 5 pipe diameters downstream and 3 diameters upstream of any valve or fitting.

Bleeders should be installed as close to the air line as possible to speed response by minimizing pressure drop through that part of the impulse line in which air flows. On very short impulse runs with low bleed rates ¼" pipe may be okay--never ¼" tubing. ⅜" pipe or tubing is preferred, with a reducer at the bleeder.

CLEANING

In installations with excessive dirt in the air, frequent cleaning is required. This is accomplished by brushing out all orifices. Clean-out plugs in the bleeder and a convenient brush are provided for orifice cleaning.

An alternate to the 8654 Bleeder with brush is the 8655 Bleeder and Filter assembly: An 8654 Bleeder with 8647-01 Filter.

Filter elements must be replaced when they accumulate enough dirt to cause an additional decrease in impulse pressure and accompanying lean burner operation. If the filter element is allowed to plug with dirt, its pressure drop will increase, changing air/fuel ratio. Spare filter elements (2-4920-1) are recommended.