



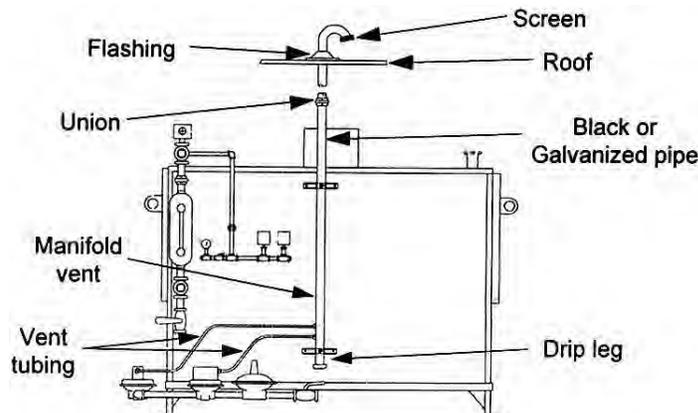
TECH TIP #13

GAS TRAIN BASICS

GAS TRAIN COMPONENTS..To Vent or Not To Vent

- Do I need to vent the gas pressure switches?
 - The gas regulator?
 - What about my V88 diaphragm gas valve?
 - What about the normally open vent valve?
 - Can I combine these vents so I don't have to run several lines?
- A. According to UL 795, the “normally open” vent valve line must be run to a safe location outside by itself, no other vent line can be combined with it. (See below for an alternative to using normally open vent valves.)
- B. According to UL 795, the vent off of a gas regulator must be run to a safe location outside by itself, no other vent line can be combined with it.
- C. In order to use a vent limiter on a gas regulator, the following guidelines are suggested:
1. Maximum inlet pressure to regulator 5#.
 2. Maximum regulator size is 1”.
 3. Regulator must be mounted in upright, horizontal position.
 4. Can only be used if boiler/appliance is within 6’ of regulator.
 5. Vent limiter must be manufactured by the regulator mfg.
- D Vent outlets from gas pressure switches & diaphragm gas valves (V88) can be “ganged together” into a single vent line, provided the cross-sectional area is at least the size of the largest vent opening plus 50% of the area of all additional vent lines. See the following photo for details.

NOTICE: Always terminate vents away from air intakes or sources of ignition. Be sure that moisture and insects cannot enter the pipe(s) as well. Always utilize a drip leg to keep incidental moisture from traveling back down vent tubing and damaging the diaphragm.



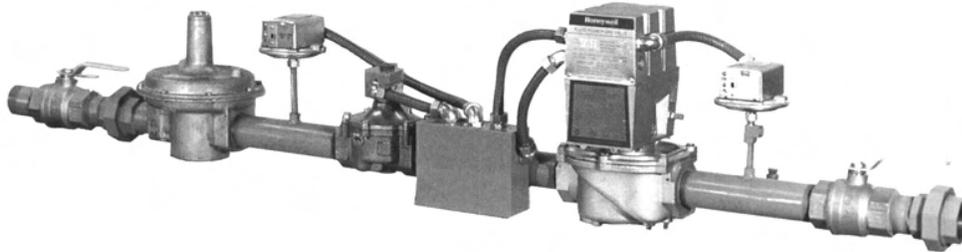
How to Avoid the Need for a NORMALLY OPEN VENT VALVE

Honeywell (and possibly others) now manufacture combustion flame safeguard control systems called VPS (Valve Proving Systems) which prove the “double block” valves. We recommend this system instead of the “double block and bleed” system which has traditionally been used. This new system eliminated possible fuel leaks to the atmosphere, saves expense in installation and also increases safety.



TECH TIP #13 (Cont.)

GAS TRAINS—WHAT DO THE CODES REQUIRE?

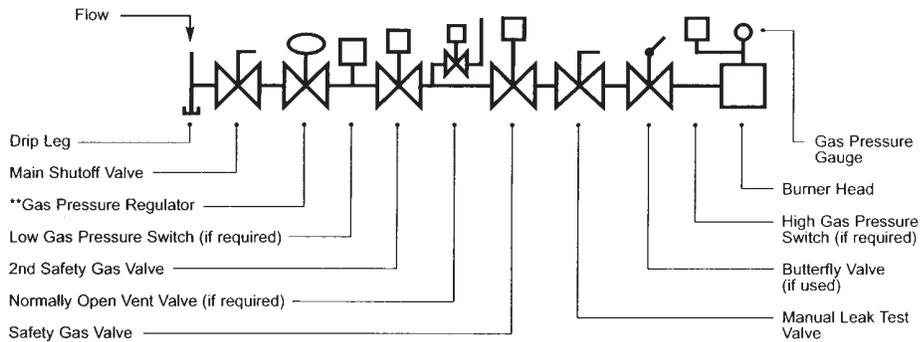


GENERAL

Proper operation of a gas or gas-fired forced draft burner is very dependent on a properly selected and assembled gas train.

The data contained in this bulletin has been compiled to assist in the selection of a UL, CSD-1, FM or IRI gas control train and the individual gas controls used in conjunction with these approval agencies. For other agency gas control trains, consult factory.

The schematic below gives the location of the various components in a typical gas train. In the interest of SAFETY, John Zink's standard policy is to supply TWO safety gas valves.



NOTE

Underwriters Laboratories (UL) regulations require that all gas or gas-oil burners bearing the UL label must be furnished with a gas train which meets UL requirements matching the input rating of the burner.

** Gas Pressure regulators with internal control require a length of five (5) pipe diameters of straight uninterrupted pipe on the outlet side. Consult manufacturer's instructions for all other regulators.

Additional information on gas trains can be found in the John Zink catalog sheet 1-gen-10.53.

VENT LINE SIZING	
Fuel Line size, Nominal Pipe Size, Inches	Vent Line Size, Nominal Pipe Size, Inches
Up to 1-1/2	3/4
2	1
2-1/2	1-1/4
3	1-1/4
4	2





TECH TIP #13 (Cont.)

GAS SYSTEM SCHEMATICS

UL, FM & CSD-1 (which requires a plugged leak test cock downstream of each safety gas valve) Systems

