

GAS VALVES/PIPING SIZES

The gas valves and piping make up the gas train leading to the burner. There are different sizes and types of gas valves such as manual, combination, hydraulic, and modulating. The following chart summarizes which gas valves and what quantities are used in which units:

GAS VALVE SUMMARY CHART

| Unit | White Rodgers 36C68 Combo Valve | Robertshaw 700DERHC Combo Valve | Asco K3A6 Solenoid Valves | Honeywell Hydraulic Valve | Manual Ball Valve | Maxitrol Modulating Valve | Pilot Regulator |
|-----------------------|---------------------------------|---------------------------------|---------------------------|---------------------------|-------------------|---------------------------|-----------------|
| Size 1 Direct Fired | 1 | | | | 1 | 1 M511 | |
| Size 2 Direct Fired | | 1 | | | 1 | 1 M611 | |
| Size 3 Direct Fired | | 1 | | | 1 | 1 M611 | |
| Size 4 Direct Fired | | | 1 | 1 | 1 | 1 MR212 | 1 |
| Size 5 Direct Fired | | | 1 | 1 | 1 | 1 MR212 | 1 |
| Size 1 Indirect Fired | 1 | | | | 1 | 1 MR510 | |
| Size 2 Indirect Fired | 1 | | | | 1 | 1 MR510 | |
| Size 3 Indirect Fired | 2 | | | | 2 | 2 MR510 | |

An extra manual ball valve is shipped loose with every heater for field installation.

VALVE TYPES

Manual Ball Valve

The manual ball valve, to begin with, is a simple on-off valve that is manually operated. Ball valves can be used to leak test gas trains and to shut the gas supply down to a unit. There is a manual gas valve installed on every heater between the last electronic valve and the burner. There is also a manual valve shipped loose with every heater for field installation.

Combination Valve

The combination valve is one valve body that houses redundant solenoid valves and has a pilot tap. The valve also serves as the main gas regulator. Combination valves are on-off electronic valves and are energized by the flame safety controller. This type of valve is useful for consolidating valves and conserving space in smaller heaters. Combination valves are used on the size 1-3 direct fired heater and all indirect fired heaters.

Solenoid Valve

Solenoid valves are used on heaters where the gas flow requirements are large. Solenoid valves are on-off electronic valves and are energized by the flame safety controller.

Hydraulic Valve

Hydraulic valves are fast closing on-off electronic valves. These valves are powered by the flame safety controller and are used when the proof-of-closure option is needed.

Modulating Valve

Modulating valves are variable flow valves that are electronically powered by the modulating system. These valves vary the gas flow to the burner to satisfy different temperature rise demands. "Low Fire" pressure adjustments are made within this valve and the main gas regulator is built into the MR212 modulating valve.

GAS PIPING CONNECTION SIZE

| Unit | Pipe Size | Maximum Inlet Pressure |
|-----------------------|-----------|------------------------|
| Size 1 Direct Fired | 3/4" | 1/2 PSI |
| Size 2 Direct Fired | 1" | 1/2 PSI |
| Size 3 Direct Fired | 1" | 1/2 PSI |
| Size 4 Direct Fired | 1-1/4" | 5 PSI |
| Size 5 Direct Fired | 1-1/2" | 5 PSI |
| Size 1 Indirect Fired | 3/4" | 1/2 PSI |
| Size 2 Indirect Fired | 1" | 1/2 PSI |
| Size 3 Indirect Fired | 1" | 1/2 PSI |

If inlet pressure exceeds values in table, a high gas pressure regulator is required.