

Product Overview | Gas Ratio Regulators

7218 and 7219A Regulators accurately maintain a constant air/gas ratio over a wide range of firing rates in both nozzle-mix and premix gas burner systems. Molded diaphragms ensure excellent tracking, repeatability, maximum flows, and superior turndown.

Nozzle-mix burners

When used with nozzle-mix burners, the vent of a 7218 Regulator is cross-connected to the main air line downstream of the control valve. Regulator outlet pressure then equals air impulse pressure, and gas flow remains proportional to air flow at all firing rates.

One regulator can be used for several burners controlled by the same air valve, but often it is better to have a separate regulator for each burner.

Dual-Fuel Burners. When a dual-fuel burner's atomizing air is left on during gas operation, the 7218 Regulator can be set to compensate for the extra air over the controlled main air by adjusting the spring for up to 1 osi "leak" with no impulse pressure.

Premix burners

With its vent open to atmosphere, a 7218 Regulator can be used as an atmospheric regulator (zero governor) to supply gas to an aspirator mixer feeding premix burners.

If burner nozzles are sealed-in and furnace pressure is other than atmospheric, regulator vent must be connected to the combustion chamber. Controlled gas pressure then will match furnace pressure; this is necessary to maintain the same air/gas ratio at all firing rates. (See Instructions 7218-2.)

A separate regulator for each mixer is preferred to avoid interference or interaction.

7219A

7219A Regulators are modified **7218 Regulators** (7218 regulators have internal pressure sensing), with provision for remote downstream pressure sensing. The 7219A is used to sense downstream pressure at a point closer to burner or mixer. The downstream pressure sensing connection is made in the field.

7218/7219A AIR/GAS RATIO REGULATORS

Regulator selection

To size a regulator, determine required cfh of gas and pressure drop available at high fire. Divide required cfh by Table 2 Factor for available pressure drop. Select smallest regulator with Table 1 (2 osi) capacity above this adjusted capacity. Never choose a regulator capacity based on more than 16 osi drop (even if more is available).

Table 1.

CAPACITIES
scfh
MAXIMUM WIDE OPEN
with 2 osi drop through regulator
and 2 psig inlet pressure

Regulator designation	gas gravity	
	0.6	1.5
7218-01	285	180
7218-0	540	341
7218-1	700	442
7218-2	1730	1090
7218-3	2800	1770
7218-4	4800	3030
7218-5	6900	4360
7218-6	9100	5750
7218-7	17600	11120

(For capacities at other drops, use square root law or Table 2 below.)

Table 2.

FACTORS
for capacities at various pressure drops

Pressure drop, osi	Factor	Pressure drop, osi	Factor
1	0.707	8	2.00
2	1.00	10	2.24
2½	1.12	12	2.45
3	1.22	14	2.65
4	1.41	16	2.83
6	1.73		

SPECIFICATIONS

Diaphragm Cover and Case: Unpainted Aluminum

Body: Cast Iron

Seat: SST

Shaft: SST

Balancing Diaphragm: BUNA/Nylon (Standard)
FKM/Polyester (7218-V)

Gas Diaphragm: BUNA/Nylon (Standard)
FKM/Nomex (7218-V)

Maximum Inlet/Outlet Pressure: 2 psi

Emergency Pressure: 5 psi (resulting in internal parts damage)

Maximum Ambient Temperature: 180°F (Standard)
350°F (7218-V)