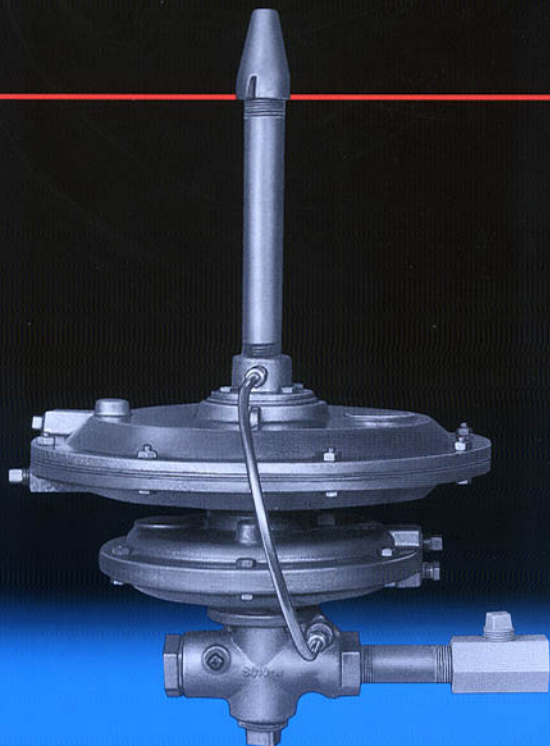
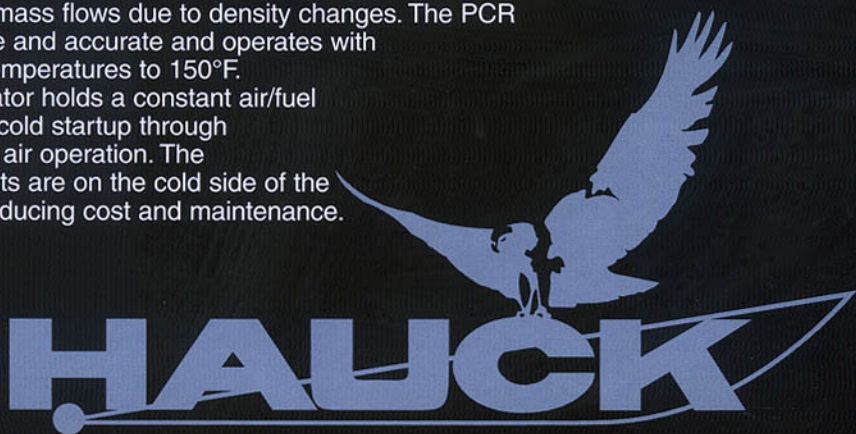

PCR PILOT CONTROL REGULATOR

The Hauck PCR Pilot Control Regulator provides combustion system ratio control in preheated air applications that have changing mass flows due to density changes. The PCR is sensitive and accurate and operates with ambient temperatures to 150°F.

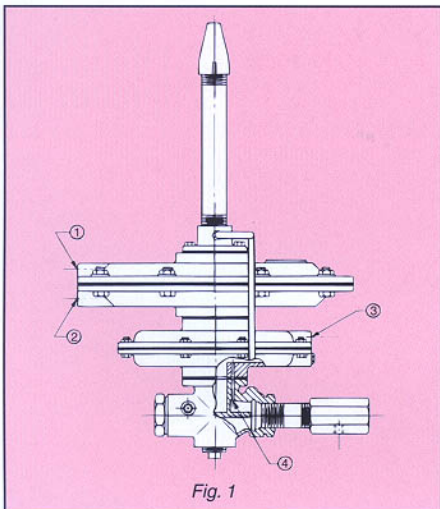
The regulator holds a constant air/fuel ratio from cold startup through preheated air operation. The components are on the cold side of the system, reducing cost and maintenance.



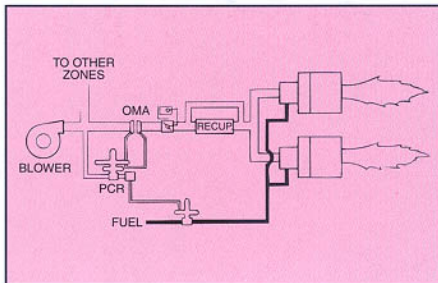
- **CONSTANT RATIO—COLD START-UP THRU HOT AIR OPERATION**
- **RATIO CONTROL INDEPENDENT OF BACKPRESSURE CHANGES**
- **SENSITIVE AND ACCURATE**
- **APPLICABLE FOR ANY PREHEATED AIR TEMPERATURE**
- **MAXIMUM FUEL EFFICIENCY ON PREHEATED AIR APPLICATION**

An ambient combustion air orifice measures mass flow and the differential pressure is then applied to the top diaphragm of the regulator. The bottom diaphragm automatically proportions the fuel delivery pressure in direct relation to the top diaphragm differential pressure. The original air/fuel ratio is maintained despite changes in air density or back pressure downstream of the measuring orifice, which can occur in a recuperated system. The top diaphragm is 2.5 times larger than the bottom diaphragm for improved low fire resolution.

The PCR is illustrated in cutaway form in figure 1. As an operation example, if the combustion air orifices supplies 20 osi to (1) and 15 osi (2), a downward pressure of 5 osi results across the upper diaphragm. This downward pressure opens the flow valve until a counteracting pressure of 12.5 osi is developed at (4), the lower portion of the bottom diaphragm. Point (3) is assumed open to the atmosphere. However, point (3) can be backloaded and backloading is recommended if pressures exceed 0.1" wc in the furnace. The pressure applied to point (3) would add directly to the point (4) pressure of 12.5 osi.



TYPICAL PIPING SCHEMATIC



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