

CONOFLOW HIGH-PRESSURE REGULATOR - HP200

Back Pressure - Diaphragm Type -
High Purity

FEATURE SUMMARY

Metal-to-metal sealed diaphragm
Vacuseal, VCR, and Ultra Seal welded fittings - optional
High purity internal connections - optional
Leak rate less than 2×10^{-8} atm cc/sec helium
Line and rear mounting - standard
Panel mounting available
Electronic grade cleaning available
Regulator cleaned to ITT Conoflow Specification (ES8A 01 294)

OPTIONS:

MOUNTING:

Line - All variations (Supplied with plain bonnet)
Panel - (2 panel mounting nuts) - Optional
Rear Mounting - Standard

ADJUSTMENTS:

Handwheel (Large) - Standard
Knob (Wrench style - with locking device) - Optional
"T" bar handle - Optional

GAUGES:

2" and 2-1/2" diameters
Brass, steel and stainless steel construction

HP200 CONTROL KIT:

83200-11, 12, 13 & 14 For control setting range 0-25 PSIG (0-0.173 MPa)
83201-11, 12, 13 & 14 For control setting range 0-50 PSIG (0-0.345 MPa)
83202-11, 12, 13 & 14 For control setting range 0-100 PSIG (0-.690 MPa)
83203-11, 12, 13 & 14 For control setting range 0-250 PSIG (0-1.73 MPa)

HP200 MAINTENANCE KIT:

80200-11, 12, 13 & 14 For all control setting ranges

HP200 OVERHAUL KIT:

81200-11, 12, 13 & 14 For control setting ranges 0-25 & 0-50 PSIG (0-0.173 & 0-0.345 MPa)
81201-11, 12, 13 & 14 For control setting ranges 0-100 & 0-250 PSIG (0-0.690 & 0-1.73 MPa)



The Conoflow HP200 is a self-contained, spring loaded back pressure regulator. This diaphragm sensing, high purity regulator is designed to provide accurate regulation of corrosive and non-corrosive fluids in applications such as compressors, controlling of pump pressures, gas and liquid sampling and petrochemical processing.

This regulator uses a soft-seated main valve for helium leak-tight shutoff and a 316 stainless steel diaphragm for accurate and sensitive control of supply pressure. Control setting ranges offered are 0-25, 0-50, 0-100 and 0-250 PSIG (0-0.173, 0-0.345, 0-0.690, and 0-1.73 MPa). Adjustments are made with a standard large handwheel. A wrench style knob with a locking device or a "T" bar handle are available as options.

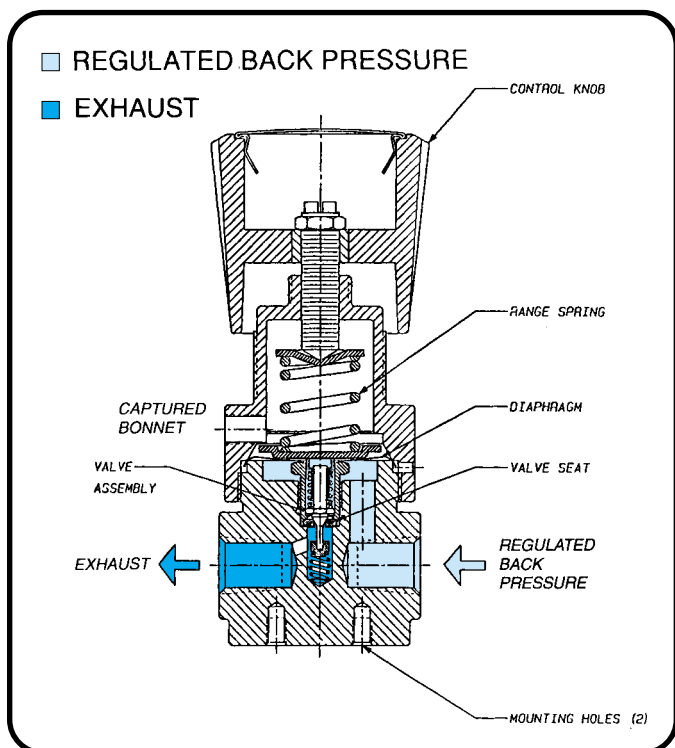
When controlling corrosive media, the HP200 Series stainless steel model can be utilized. For non-corrosive applications the brass model is offered. N.A.C.E. configurations are also available. These units are rated for a 500 PSIG (3.45 MPa) maximum supply pressure. A captured bonnet is standard on this regulator.

In the standard configuration, this unit is supplied with 1/4" NPT inlet and outlet connections. 1/4" NPT gauge ports are optional. Vacuseal, VCR, Ultra Seal welded fittings and High Purity Internal Connections are available upon request.

This regulator is designed for reliability with an absolute minimum of maintenance. The characteristics are a result of Conoflow's high standards of manufacturing and years of experience as a leading producer of pneumatic instrumentation.

DIMENSIONAL DATA - ADVERTISING DRAWINGS:

HP200 - C1: Standard unit
HP200 - C2: "T" bar handle
HP200 - C3: Wrench knob with locking device



HP200 Series

SPECIFICATIONS

Maximum Supply Pressure: 500 PSIG (3.45 MPa)
Control Setting Ranges: 0-25 PSIG (0.173 MPa)
 0-50 PSIG (0.345 MPa)
 0-100 PSIG (0.690 MPa)
 0-250 PSIG (1.73 MPa)

Proof Pressure: 150% maximum operating
Burst Pressure: 400% maximum operating
Flow Capacity: C_v - 0.19 (See Flow Graphs)
 Orifice Diameter: 0.110"

Operating and Fluid Temperature Range:
 -40°F to +165°F (-40°C to +74°C)
Leakage: 2×10^{-8} atm cc/sec Helium (In Board and Main Valve)
Maximum Operating Torque: 25 in/lbs. (29 Kg-cm)
Ports: 1/4" NPTF supply and outlet
 1/4" NPTF gauge ports optional (80°). Other porting sizes and configurations available.
Weights (Without gauges): 2.0 lbs. (0.91 Kg)

MATERIALS OF CONSTRUCTION

Body: Brass/316 SS/N.A.C.E. 316SS
Bonnet: Brass/Plated Brass
Diaphragm and Trim: 316 Stainless Steel (Elgiloy - N.A.C.E.)
Main Valve Seat: Kel-F (Teflon - Optional)

OXYGEN SERVICE

Specification of materials in regulators used for oxygen service is the user's responsibility. Cleaning for oxygen service (Per ES8A 01 297) to 3500 PSIG (24.20 MPa) is supplied by ITT Conoflow at no additional cost. Special cleaning may be performed to user's specifications at an additional cost through an outside service.

PRINCIPLE OF OPERATION

Turning the control knob clockwise will increase the force on the range spring and, in turn, the inlet set pressure. Conversely, turning the control knob counterclockwise will decrease the force on the range spring and decrease the inlet set pressure. In equilibrium, the force exerted by the range spring is balanced by the inlet pressure acting on the diaphragm.

An unbalance between the inlet pressure and the set pressure causes a corresponding reaction in the diaphragm and valve. If the inlet pressure rises above the set pressure, the diaphragm will rise allowing the plug to unseat. As the inlet pressure decreases, the diaphragm and valve will move toward the closed position. When the inlet pressure is reduced to the set pressure, the valve will seat and shut off the relieving flow.

If the supply pressure is below the set pressure, the valve will remain closed.

HIGH PURITY INTERNAL CONNECTIONS

Available at additional cost. ITT Conoflow High Purity Internal Connections are machined into the regulator body to accommodate 1/4" Vacuseal, VCR, Ultra Seal or equivalent male vacuum fittings (fittings supplied by the customer).

WELDED FITTINGS

Available at additional cost. Straight tubing, 90° elbows, Vacuseal, VCR, Ultra Seal or equivalent compatible fittings are available butt welded in the regulator body (ITT Conoflow to provide fitting).

ELECTRONIC GRADE CLEANING

Available at additional cost. ITT Conoflow will perform electronic grade cleaning to customer supplied specifications. Cost will be advised prior to performing cleaning.

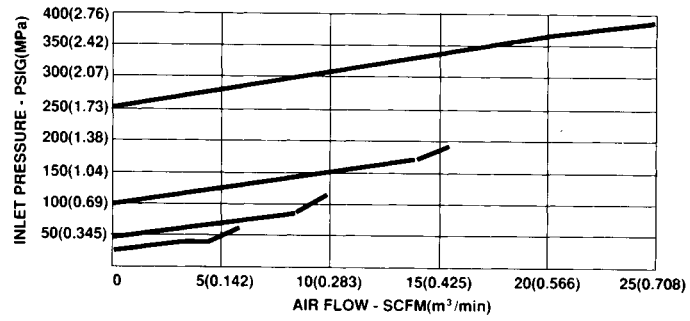
LEAK RATE CERTIFICATION (ES8A 01 295)

Available at additional cost. ITT Conoflow will certify a leak rate to 2×10^{-8} atm cc/sec of Helium.

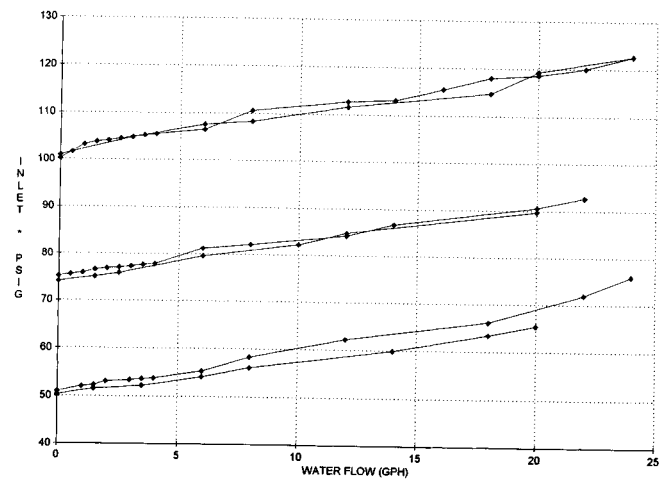
INTERNAL SURFACE FINISH

Available at additional cost. ITT Conoflow can provide an internal surface finish, on wetted components, of 15 Ra microinch. Other surface finishes available, consult the factory.

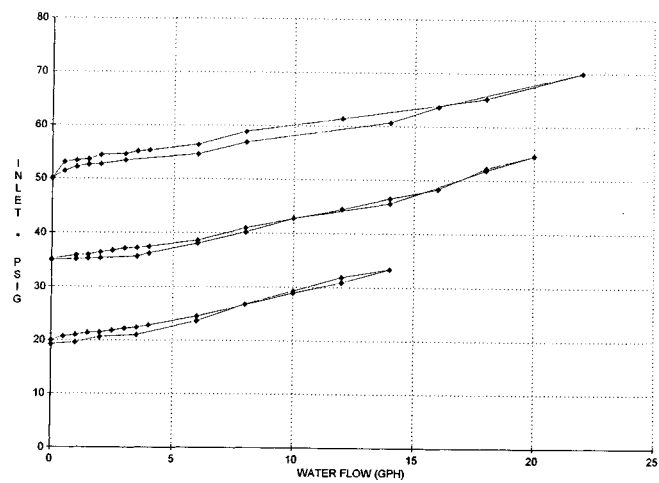
FLOW CHART



HP200F11RN1RABC WATER FLOW CURVES



HP200F11RN1RABB WATER FLOW CURVES

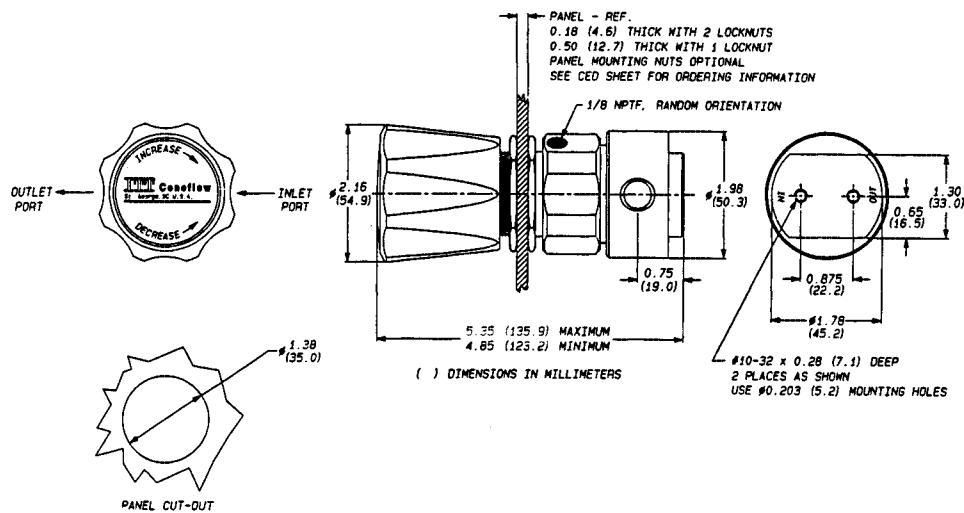


CONTROL ENGINEERING DATA

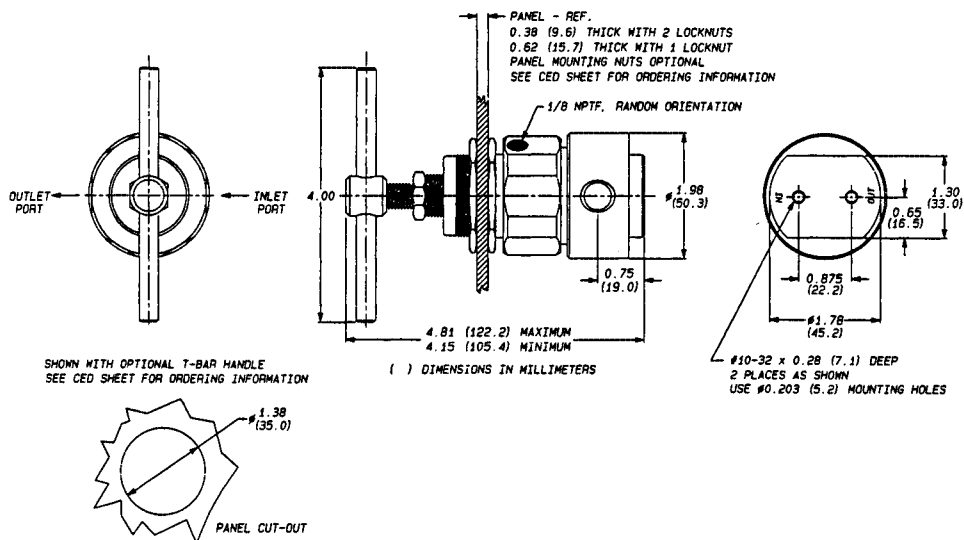
Control Engineering Data is intended to provide a single source from which one can determine, in detail, the full scope of the product line. In addition to materials of construction and diaphragm selection, it also provides all necessary data, regarding adjustment options and range selections. Control Engineering Data also provides a means of communicating, by way of a code number, which is fully descriptive of the product selection.

NOTE: 1. Catalog numbers as received must contain fifteen (15) characters.

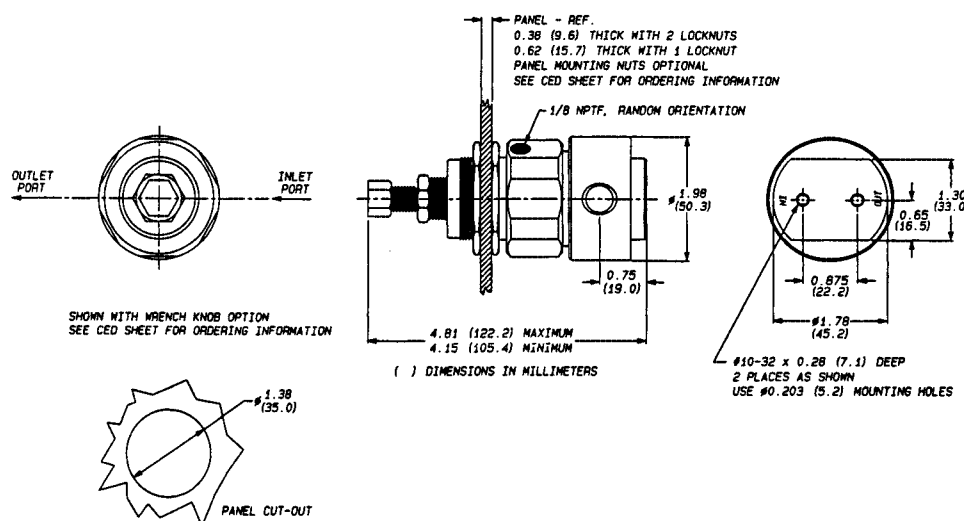
[illegible]



For certified dimensional drawing, refer to HP200-C1.



For certified dimensional drawing, refer to HP200-C2.



For certified dimensional drawing, refer to HP200-C3.