

# CONOFLOW HIGH-PRESSURE REGULATOR- HP900 Pressure Reducing Piston Type



Conoflow's HP900 series is a self-contained pressure reducing regulator. This model is offered in an economical brass construction, but incorporates a piston style sensor which provides for a safe and reliable service life.

The HP900 has a maximum supply pressure rating of 6000 PSIG (41.4 MPa) and will regulate to a secondary pressure of 0-2500 PSIG (0 - 17.25 MPa). There are four 1/4" NPT connections on this model including inlet and outlet ports and two gauge ports.

The unit is designed for in-line mounting. Pressure adjustments are made with a large handwheel or an optional "T" bar handle.

A self-relieving design is standard and a non-relieving model is optional. Having a piston styled sensor, this unit can be used in applications ranging from instrument calibration, dead-ended systems, research labs, and industrial controls to other pneumatic systems.

## OPTIONS

### Mounting

Line - All variations

### Adjustments

Handwheel (Large)

### Cylinder Connections

CGA cylinder connections are available

### Gauges

2" and 2-1/2" diameters

Brass, steel and stainless steel construction

### HP900 Maintenance Kit (RELIEVING):

80900-11, 12, 13 & 14 - For all control setting ranges

### HP900 Maintenance Kit (NON-RELIEVING):

80905-11, 12, 13 & 14 - For all control setting ranges

### HP900 Overhaul Kit (RELIEVING):

81900-11, 12, 13, & 14 - For all control setting ranges

### HP900 Overhaul Kit (NON-RELIEVING):

81905-11, 12, 13, & 14 - For all control setting ranges

## FEATURE SUMMARY

Piston style sensor provides safe and reliable service

Economical brass construction

Inlet and outlet gauge ports standard

High supply pressure ratings - 6000 PSIG (41.4 MPa)

Regulator cleaned to ITT Conoflow Specification ES8A 01 294

CGA cylinder connections available

Non-rising stem

## DIMENSIONAL DATA - ADVERTISING DRAWINGS:

HP900-C1: Standard Unit (Large Handwheel)

HP900-C2: "T" Bar Handle

## PRINCIPLE OF OPERATION

The HP900 is a self-contained, spring-loaded, pressure-reducing regulator. Turning the control knob clockwise will increase the force on the range spring and in turn increase the outlet set pressure. Conversely, turning the control knob counterclockwise will decrease the outlet set pressure of the regulator. In equilibrium, the force exerted by the range spring is balanced by the outlet pressure acting on the piston sensor.

An unbalance between the outlet pressure and the set pressure causes a corresponding reaction in the sensor and valves. When the outlet pressure falls below the set pressure, the range spring will push the sensor down and unseat the main valve. In equilibrium, the valve plug will assume a position which supplies the required flow while maintaining the outlet set pressure.

The HP900 is a piston sensing, pressure relieving regulator. When the set pressure is less than the outlet pressure, an internal relief valve will open until the outlet pressure is reduced to the set pressure. When the outlet pressure equals the set pressure, the relief and main valves will close.

## SPECIFICATIONS

**Maximum Supply Pressure:** 6000 PSIG (41.4 MPa)

**Control Setting Range:** 0 - 2500 PSIG (17.25 MPa)

**Proof Pressure:** 150% maximum operating

**Burst Pressure:** 400% maximum operating

**Flow Capacity:**  $C_v - 0.06$  (See flow chart)  
Orifice Diameter: 0.082"

**Supply Pressure Effect:** 0.8 PSIG (0.006 MPa) increase for a 100 PSIG (0.690 MPa) supply decrease

**Operating and Fluid Temperature Range:**

-40°F to +165°F (-40°C to +74°C)

**Leakage:** Bubble Tight (In Board and Main Valve)

**Maximum Operating Torque:** 50 in.-lbs. (34.5 Kg-cm)

**Ports:** 1/4" NPTF supply and outlet. Two gauge ports (90°)

**Weight (Without Gauges):** 3.6 lbs. (1.63 Kg)

## MATERIALS OF CONSTRUCTION

**Body:** Brass

**Bonnet:** Brass

**Main Valve Seat:** Kel-F (Vespel optional)

**Vent Valve Seat:** Buna-N (Viton optional)

**Sensor and Trim:** 300 Series Stainless Steel

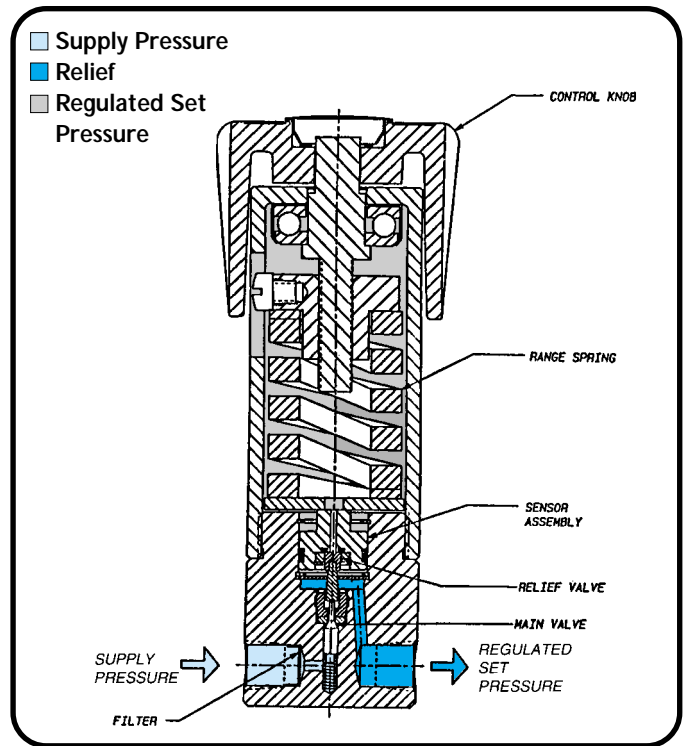
**Seals:** Buna-N (Viton/Teflon optional)

**Filter:** 316 SS screen (120 mesh)

## OXYGEN SERVICE

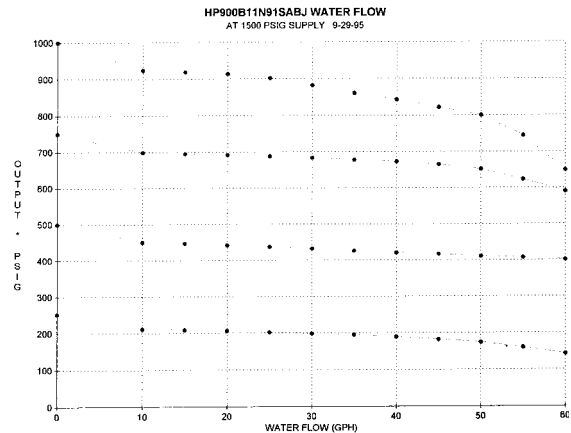
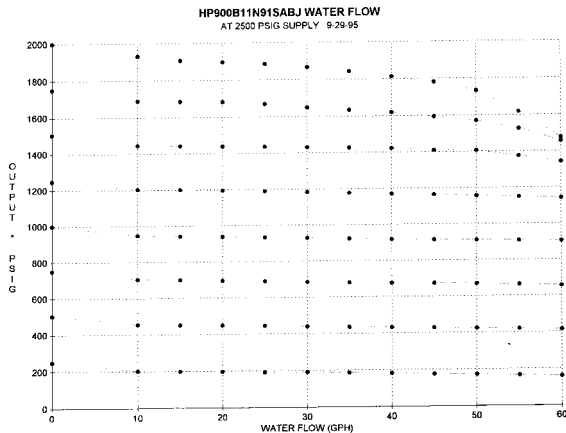
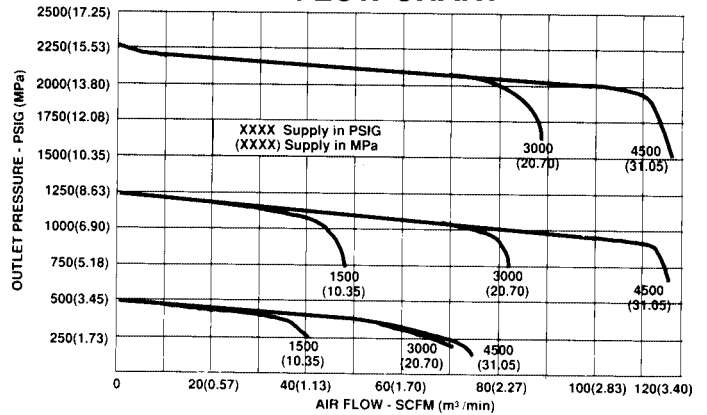
Specification of materials in regulators used for oxygen service is the **user's responsibility**. Cleaning for oxygen service (Per ES8A 01 297) to 3500 PSIG (24.20 MPa) is supplied by ITT Conoflow at no additional cost. Cleaning for service above 3500 PSIG (24.20 MPa) may be performed to the user's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

For special cleaning requirements, the customer must supply specifications for desired level of cleanliness. Cost will be advised prior to performing the cleaning operation.



HP900 - Relieving Piston

## FLOW CHART

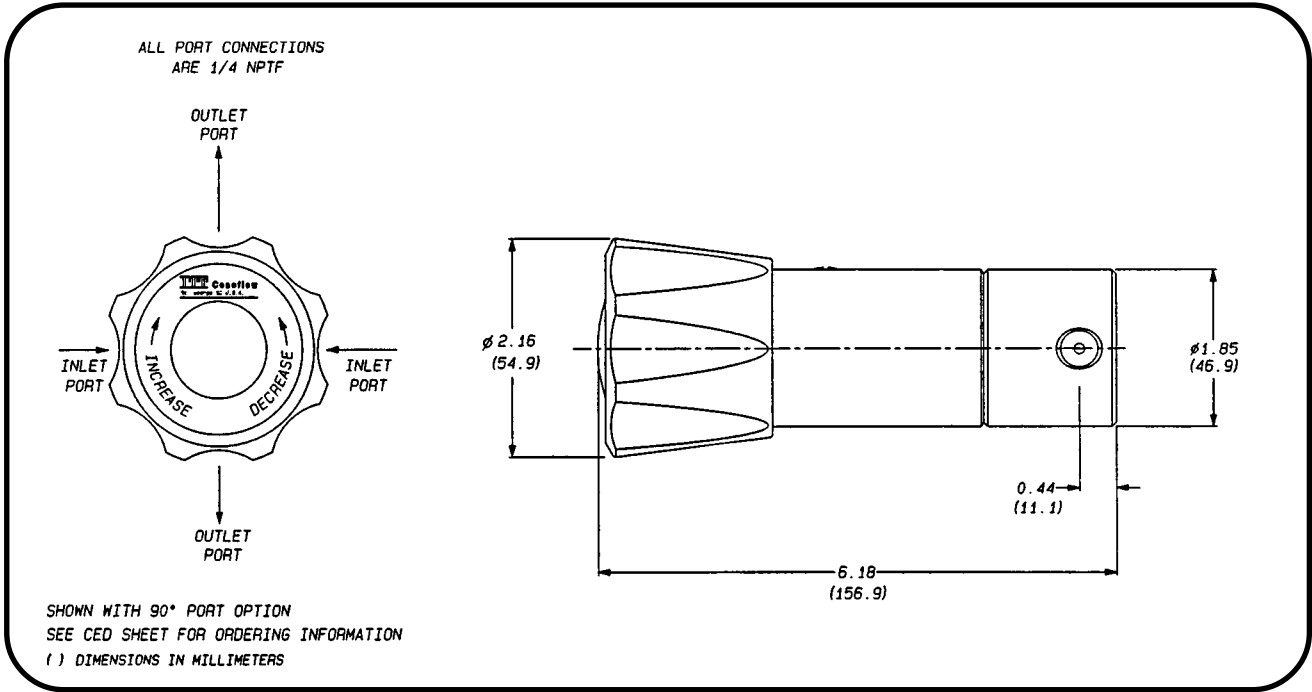


## CONTROL ENGINEERING DATA

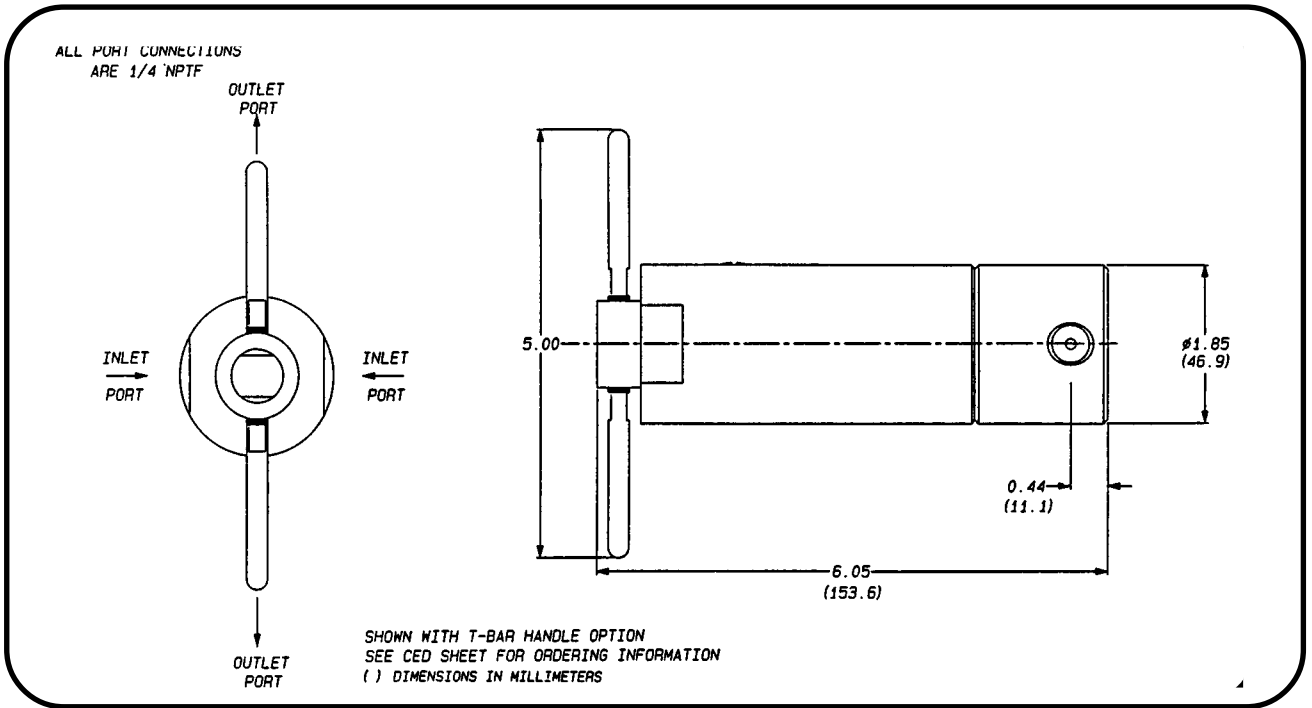
Control Engineering Data is intended to provide a single source from which one can determine, in detail, the full scope of the product line. In addition to materials of construction, diaphragm and elastomer selection, it also provides all necessary data, regarding adjustment options and range selections.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

1-5 Model	HP900 = Pressure Reducing Regulator - Piston Type (High Outlet)															
6 Materials of Construction	<b>Body/Bonnet/Trim</b> B = Brass/Brass/300 Stainless Steel <b>NOTE:</b> 1. Maximum supply pressure must not exceed the maximum pressure rating of the supply connection and supply gauge connection															
7-8 Elastomers and Diaphragms	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Main Valve Seat(s)</th> <th style="text-align: left;">Backup Rings</th> <th style="text-align: left;">O-Ring(s)</th> </tr> </thead> <tbody> <tr> <td>11 = Kel-F</td> <td>Buna-N</td> <td>Buna-N (Standard)</td> </tr> <tr> <td>12 = Vespel</td> <td>Buna-N</td> <td>Buna-N</td> </tr> <tr> <td>13 = Kel-F</td> <td>Teflon</td> <td>Viton</td> </tr> <tr> <td>14 = Vespel</td> <td>Teflon</td> <td>Viton</td> </tr> </tbody> </table>	Main Valve Seat(s)	Backup Rings	O-Ring(s)	11 = Kel-F	Buna-N	Buna-N (Standard)	12 = Vespel	Buna-N	Buna-N	13 = Kel-F	Teflon	Viton	14 = Vespel	Teflon	Viton
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14 = Vespel	Teflon	Viton														
9 Relieving Option	N = Non-relieving (Optional) V = Relieve to atmosphere															
10--11 Inlet/Outlet/ Gauge Ports	<b>Inlet/Outlet/2-Gauge Ports (90 Degrees)</b> NPT Connections 91 = 1/4" <b>NOTE: 1. All gauge port connections are 1/4" NPT.</b>															
12 Mounting Option	S = Plain Bonnet (No Threads)															
13 Cleaning Options	A = Regulator is cleaned to ITT Conoflow Specification ES8A 01 294. B = <b>OXYGEN CLEANING.</b> Specification of materials in regulators used for oxygen service is the <b>user's responsibility.</b> Cleaning for oxygen service ( <b>Per ES8A 01 297</b> ) to 3500 PSIG (24.20 MPa) is supplied by ITT Conoflow at no additional cost. C = <b>CUSTOMER SPECIFIED CLEANING</b> Customer to specify the desired level of cleanli- ness. ITT Conoflow will advise cost prior to perform- ing cleaning operation. Specification of materials is the <b>USER'S RESPONSIBILITY.</b>															
14 Adjustment Selections	B = Handwheel T = "T" bar handle (Optional)															
15 Control Setting Ranges	J = 0 - 2500 PSIG (0-17.25 MPa)															



For Certified Dimensional Drawing, Refer to HP900-C1



For Certified Dimensional Drawing, Refer to HP900-C2