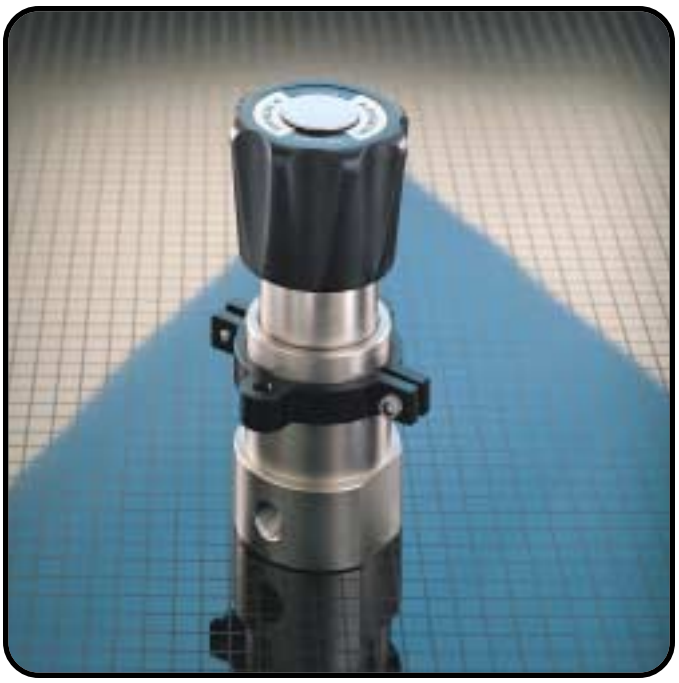
CONOFLOW HIGH-PRESSURE REGULATOR - HP800

Back Pressure - Piston Type



The HP800 is a piston sensing, spring loaded back pressure regulator. Unlike conventional regulators, a back pressure regulator controls inlet pressure rather than the outlet pressure. These units are very similar in operation to relief valves and are often used as such. Applications include controlling pump pressure, industrial controls, hydraulic system pressure control, overpressurization protection, and fluid sampling.

The piston sensing design provides safe and reliable service when operating with maximum supply pressures to 15,000 PSIG (103.5 MPa). Construction of the HP800 Regulator is 303 Stainless Steel with N.A.C.E. materials available upon request.

An easily adjusted, low torque handwheel provides adjustment over eight pressure ranges: 0-500, 0-800, 0-1500, 0-2500, 0-4000, 0-6000, 0-10,000, and 0-15,000 (0-3.45, 0-5.52, 0-10.35, 0-17.25, 0-27.60, 0-41.4, 0-69.0, and 0-103.5 MPa). All of these pressure ranges can be obtained from one regulator by interchanging sensor assemblies and range springs.

Standard inlet and outlet connections are 1/4" NPT. SAE and MS33649 connection configurations are available upon request.

DIMENSIONAL DATA - ADVERTISING DRAWINGS:

HP800-C1: Standard Unit (Large Handwheel)
HP800-C2: "T" Bar Handle

FEATURE SUMMARY

High pressure capability - 15,000 PSIG (103.5 MPa)
Eight control setting ranges: 0-500, 0-800, 0-1500, 0-2500, 0-4000, 0-6000, 0-10,000, and 0-15,000 (0-3.45, 0-5.52, 0-10.35, 0-17.25, 0-27.60, 0-41.4, 0-69.0, and 0-103.5 MPa)
Pressure adjustments made with large handwheel or optional "T" bar handle
Safe and reliable piston sensing design
Control pressure ranges interchangeable throughout one unit with sensor and range spring change
Can be either line or panel mounted. Bracket furnished for panel mounting
Regulator cleaned to ITT Conoflow Specification ES8A 01 294

OPTIONS

Mounting
Line - All variations (Supplied with plain bonnet)
Panel Mounting - Panel mounting bracket

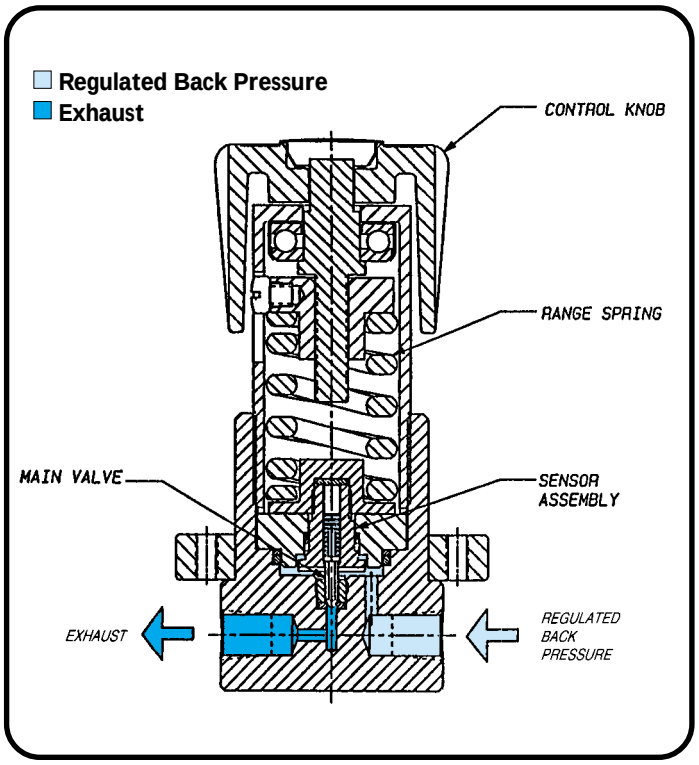
Adjustments
Handwheel (Large)
"T" Bar Handle - Optional

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

HP800 Control Kit:
83800-11 &12 - For control setting range 0-500 PSIG (0-3.45 MPa)
83800-14 &15 - For control setting range 0-500 PSIG (0-3.45 MPa)
83801-11 &12 - For control setting range 0-800 PSIG (0-5.52 MPa)
83801-14 &15 - For control setting range 0-800 PSIG (0-5.52 MPa)
83802-11 &12 - For control setting range 0-1500 PSIG (0-10.35 MPa)
83802-14 &15 - For control setting range 0-1500 PSIG (0-10.35 MPa)
83803-11 &12 - For control setting range 0-2500 PSIG (0-17.25 MPa)
83803-14 &15 - For control setting range 0-2500 PSIG (0-17.25 MPa)
83804-11 &12 - For control setting range 0-4000 PSIG (0-27.60 MPa)
83804-14 &15 - For control setting range 0-4000 PSIG (0-27.60 MPa)
83805-11 &12 - For control setting range 0-6000 PSIG (0-41.40 MPa)
83805-14 &15 - For control setting range 0-6000 PSIG (0-41.40 MPa)
83806-11 &12 - For control setting range 0-10000 PSIG (0-69.00 MPa)
83806-14 &15 - For control setting range 0-10000 PSIG (0-69.00 MPa)
83807-11 &12 - For control setting range 0-15000 PSIG (0-103.50 MPa)
83807-14 &15 - For control setting range 0-15000 PSIG (0-103.50 MPa)

HP800 Maintenance Kit:
80800-11, 12, 14 & 15 - For control setting range 0-500 PSIG (0-3.45 MPa), 0-800 PSIG (0-5.52 MPa) and 0-1500 PSIG (0-10.35 MPa)
80801-11, 12, 14 & 15 - For control setting range 0-2500 PSIG (0-17.25 MPa)
80802-11, 12, 14 & 15 - For control setting range 0-4000 PSIG (0-27.60 MPa) and 0-6000 PSIG (0-41.40 MPa)
80803-11, 12, 14 & 15 - For control setting range 0-10000 PSIG (0-69.00 MPa)
80804-11, 12, 14 & 15 - For control setting range 0-1500 PSIG (0-103.50 MPa)

HP700 Overhaul Kit:
81800-11, 12, 14 & 15 - For control setting range 0-500 PSIG (0-3.45 MPa), 0-800 PSIG (0-5.52 MPa) and 0-1500 PSIG (0-10.35 MPa)
81801-11, 12, 14 & 15 - For control setting range 0-2500 PSIG (0-17.25 MPa)
81802-11, 12, 14 & 15 - For control setting range 0-4000 PSIG (0-27.60 MPa) and 0-6000 PSIG (0-41.40 MPa)
81803-11, 12, 14 & 15 - For control setting range 0-10000 PSIG (0-69 MPa)
81804-11, 12, 14 & 15 - For control setting range 0-15000 PSIG (0-103.50 MPa)



HP800 - Non-Relieving Piston

PRINCIPLE OF OPERATION

The HP800 is a self-contained, spring-loaded, piston-sensing, back-pressure regulator. Unlike a pressure reducing regulator, the HP800 acts like a precise pressure relief valve.

Turning the control knob clockwise will increase the force on the range spring and in turn increase the set pressure of the regulator. Conversely, turning the control knob counterclockwise will reduce the force on the range spring and will decrease the set pressure of the regulator. In equilibrium, the force exerted by the range spring is balanced by the supply pressure acting on the piston style sensor.

An unbalance between the supply pressure and the set pressure will cause a corresponding reaction in the sensor and valve. If the supply pressure rises above the set pressure, the sensor will rise and unseat the valve plug. As the supply pressure decreases, the sensor and valve will move down towards the closed position. When the supply pressure is reduced to the set pressure, the valve will seat and shut off the back pressure flow.

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

SPECIFICATIONS

Maximum Supply Pressure: 15,000 PSIG (103.5 MPa)
Outlet Pressure Ranges:
0 - 500 PSIG (0-3.45 MPa)
0 - 800 PSIG (0-5.52 MPa)
0 - 1500 PSIG (0-10.35 MPa)
0 - 2500 PSIG (0-17.25 MPa)
0 - 4000 PSIG (0-27.60 MPa)
0 - 6000 PSIG (0-41.40 MPa)
0 - 10,000 PSIG (0-69.00 MPa)
0 - 15,000 PSIG (0-103.5 MPa)
Proof Pressure: 150% maximum operating
Burst Pressure: 400% maximum operating
Flow Capacity: C_v - 0.085 (See Flow Graph)
Orifice Diameter: 0.082"
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: 55 in-lbs. (63.3 Kg-cm)
Ports: 1/4" NPTF supply and exhaust.
Other porting sizes and configurations available.
Weight (With Panel Bracket): 4.75 lbs. (2.2 Kg)

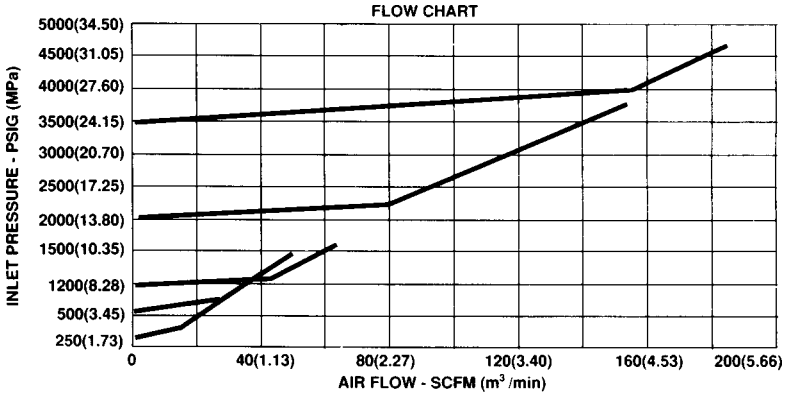
MATERIALS OF CONSTRUCTION

Body: 303SS/N.A.C.E. 316SS
Bonnet: Plated Brass
Main Valve Seat: Kel-F (Vespel optional)
Sensor End Seal: Kel-F
Sensor and Trim: 300 Series Stainless Steel
Seals: Buna-N/Teflon (Viton optional)

OXYGEN SERVICE

Specification of materials in regulators used for oxygen service is the **user's responsibility.** Cleaning for oxygen service **(Per ES8A 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.



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

HP800 = Back Pressure Regulator - Piston Type

6 Materials of Construction

Body/Bonnet/Trim

E = 303 Stainless Steel/Nickel Plated Brass/ 300 Stainless Steel

R = N.A.C.E.316SS/Nickel Plated Brass/316 SS (See Note 1)

NOTE: 1. National Association of Corrosion Engineers

7-8 Elastomers and Diaphragms

	Sensor End Seal	Main Valve Seat(s)	Backup Rings	O-Ring(s)
11 =	Kel-F	Kel-F	Buna-N/ Teflon	Buna-N (Standard)
12 =	Kel-F	Vespel	Buna-N/ Teflon	Buna-N
14 =	Kel-F	Kel-F	Teflon	Viton
15 =	Kel-F	Vespel	Teflon	Viton

9 Future Options

X = Absence of Specification

10--11 Inlet/Outlet/ Gauge Ports

Inlet/Outlet Ports (No Gauge Ports)

NPT Connections	SAE Connections	MS33649 Connections
N1 = 1/4"	S1 = 1/4"	M1 = 1/4"
N2 = 3/8"	S2 = 3/8" (See Note 1)	M2 = 3/8"

AMINCO Connections	SLIMLINE Connections
A1 = 1/4"	L1 = 1/4"
A2 = 3/8"	L2 = 3/8"

NOTE: 1. SAE ports are O-Ring boss style.

12 Mounting Option

P = Panel Mounting Bracket

13 Cleaning Options

A = Regulator is cleaned to ITT Conoflow Specification ES8A 01 294.

B = **OXYGEN CLEANING.** 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.

C = **CUSTOMER SPECIFIED CLEANING** Customer to specify the desired level of cleanliness. ITT Conoflow will advise cost prior to performing cleaning operation. Specification of materials is the **USER'S RESPONSIBILITY.**

14 Adjustment Selections

B = Handwheel (Large)

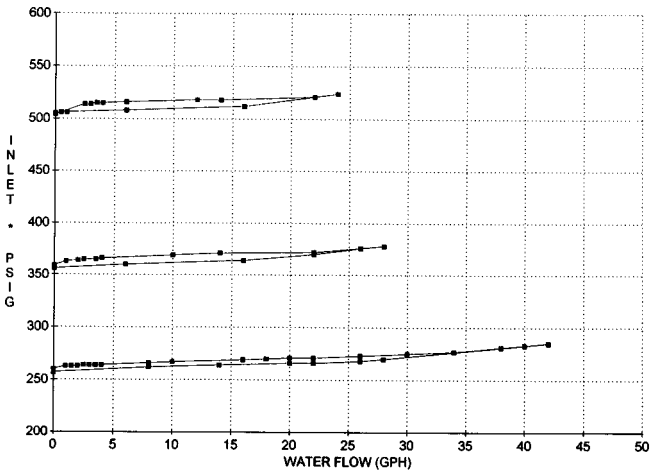
T = "T" bar handle (Optional)

15 Control Setting Ranges

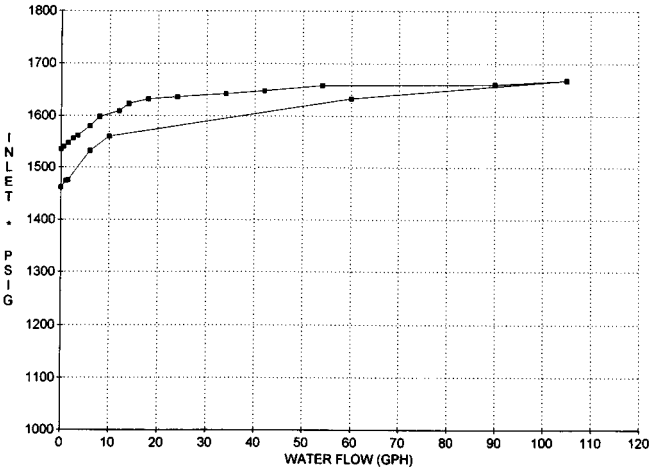
F = 0 - 500 PSIG (0-3.45 MPa)
G = 0 - 800 PSIG (0-5.52 MPa)
H = 0 - 1500 PSIG (0-10.35 MPa)
J = 0 - 2500 PSIG (0-17.25 MPa)
K = 0 - 4000 PSIG (0-27.60 MPa)
L = 0 - 6000 PSIG (0-41.40 MPa)
M = 0 - 10,000 PSIG (0-69.00 MPa)
N = 0 - 15,000 PSIG (0-103.5 MPa) (See Note 1)

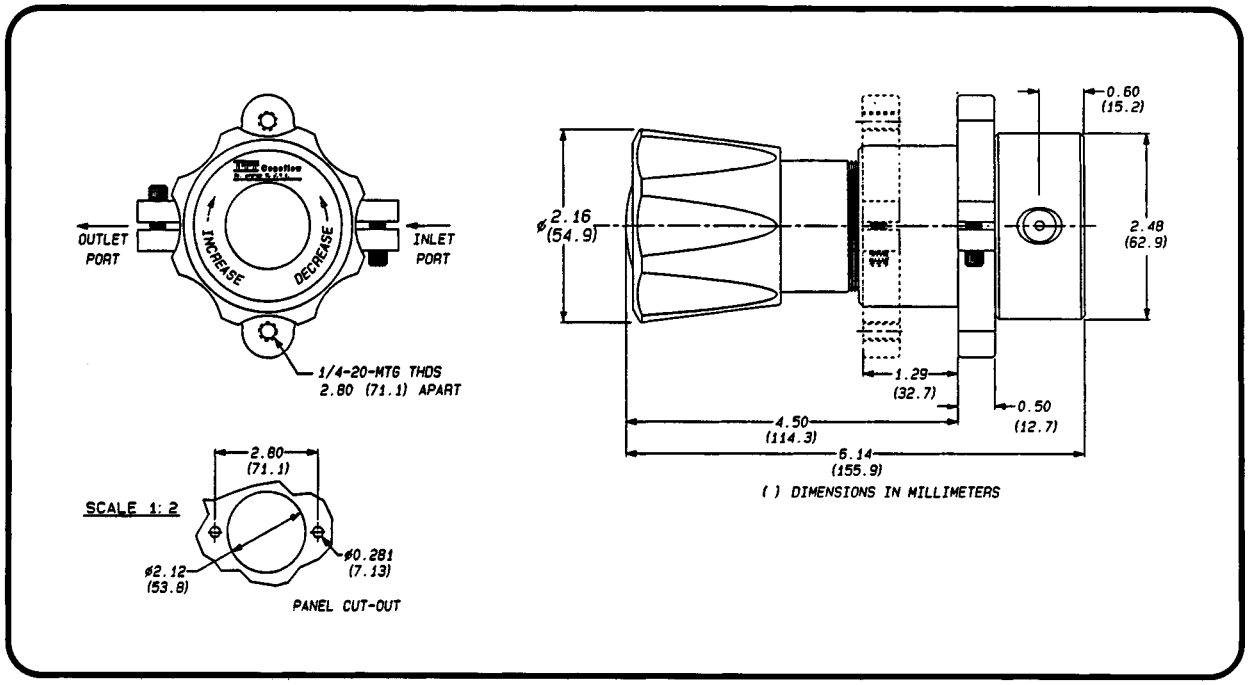
NOTE: 1. Consult the factory for design, specifications and pricing for this output range.

HP800E11XN1PABF WATER FLOW CURVES

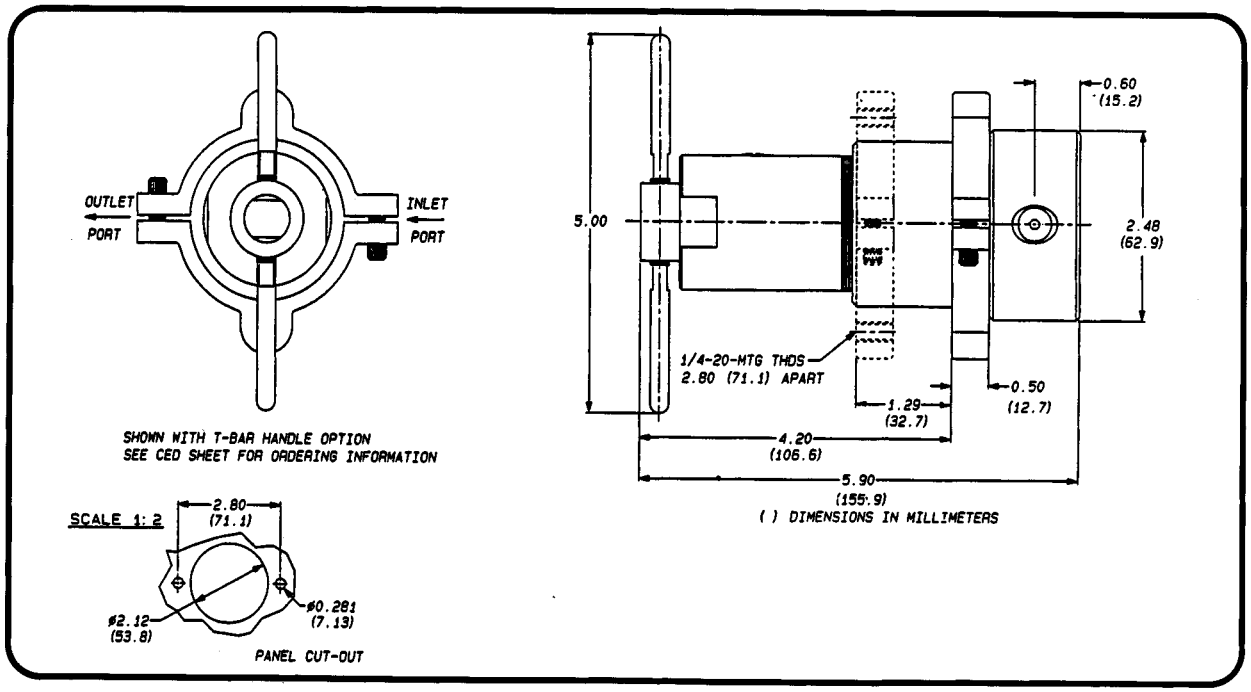


HP800E11XN1PABH WATER FLOW CURVES





For Certified Dimensional Drawing, Refer to HP800-C1



For Certified Dimensional Drawing, Refer to HP800-C2