

CONOFLOW SERVICE AND PRESSURE REDUCING REGULATORS GH20, GH40, GH24 AND GH25 Series

Conoflow's Service (GH20 Series) and Pressure Reducing (GH24/25 Series) Regulators are rugged units with flow capacities and performance characteristics which allow the units to operate in both instrument and industrial applications. For applications where positive shut-off and minimum air consumption are required, the soft-seated nozzle GH40 versions are available.

The GH20/40 Series units are available in brass/aluminum combinations, all brass or all stainless steel constructions. The GH24/25 Series are constructed of aluminum. Maximum supply pressure ratings for the GH20 Series are 200 PSI (1379 kPa), 300 PSI (2068 kPa) for stainless steel models and the GH24/25 Series are rated at 250 PSI (1724 kPa). Buna "N" diaphragms are standard in the brass and aluminum units with Teflon/Buna "N"/Teflon sandwich diaphragms



used in the stainless steel models. Other diaphragm materials are available. Consult the factory.

Connections for the GH20/40 Series are 1/4" NPT. The GH24 has 3/8" NPT connections and the GH25 has 1/2" NPT. Each unit has an easily adjustable wrench

knob with handwheels, tamperproof and preset versions available.

These units are manufactured to Conoflow's high standards and are backed by years of experience as a leading producer of precision built instruments.

OPTIONS:

MOUNTING:

Line - All Variations

Flush-Back Panel Mounting

GH20/40 - 3 Hole (Refer to Drawing A17-2)

GH24/25 - 2 Hole (Refer to Drawing A17-35)

ADJUSTMENT:

Knob - Standard GH20/40 (Optional GH24/25)

Handwheel - Standard GH24/25 (Optional GH20/40)

Preset - Factory output setting CAN be field adjusted

Tamperproof - Factory output setting CANNOT be field adjusted

DIMENSIONAL DATA - ADVERTISING DRAWINGS:

GH20/40: A17-3

GH24/25: A17-35

PRINCIPLE OF OPERATION

(Refer to Figure 1)

Turning the handwheel changes the force exerted by the range spring on the diaphragm assembly. In equilibrium, the force exerted by the range spring is balanced by the force from the output pressure acting underneath the diaphragm assembly.

An unbalance between the output pressure and the range spring force causes a corresponding reaction in the diaphragm and nozzle assemblies. If the output pressure rises above the set pressure, the diaphragm seat is lifted from the plug, venting the excess pressure to atmosphere until equilibrium is reached. If the output pressure drops below the set pressure, the unbalanced force from the range spring acts through the diaphragm assembly unseating the nozzle plug. This allows supply pressure to flow through the nozzle to the downstream port increasing the output pressure. The output pressure increases until it balances the force on the diaphragm assembly by the range spring. At equilibrium, the plug assumes a position which supplies the required flow while maintaining the output pressure at the set pressure.

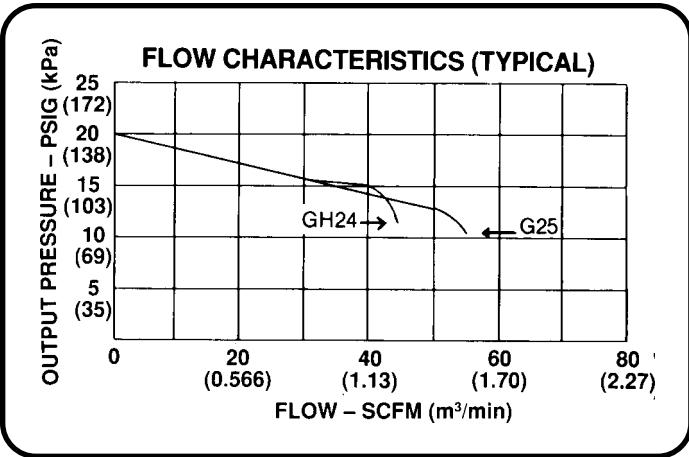
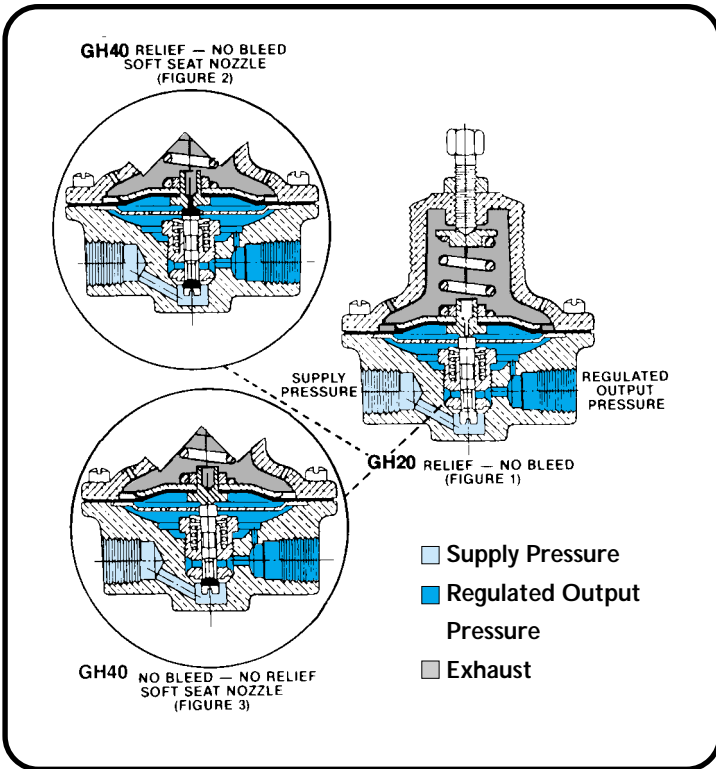
(Refer to Figure 2)

For applications where positive shut-off and minimum air consumption are required, molded rubber seats on the top and bottom of the nozzle plug are available.

(Refer to Figure 3)

A no bleed/no relief diaphragm assembly is used to prevent the process medium from exhausting to atmosphere. This option is typically used with liquids and toxic gases. The principle of operation is the same as above except that excess output pressure is not vented to atmosphere. Instead, as the diaphragm seat lifts off of the plug and the nozzle closes, the excess pressure is relieved downstream.

A molded rubber seat on the nozzle plug is available for applications where positive shut-off is required.



Typical curves for a 0-60 PSI (0-414 kPa) unit with a 20 PSI (138 kPa) set pressure and 100 PSI (690 kPa) supply

CHART 2. Flow Characteristics. GH20, 0-60 PSIG Range

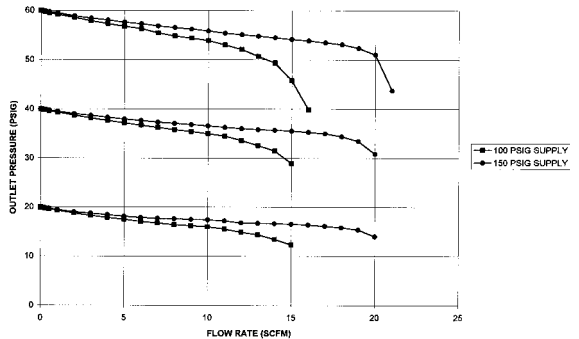


CHART 1. Flow Characteristics. GH20, 0-25 PSIG Range

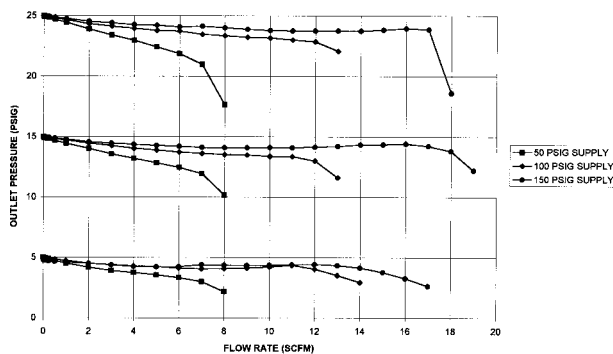
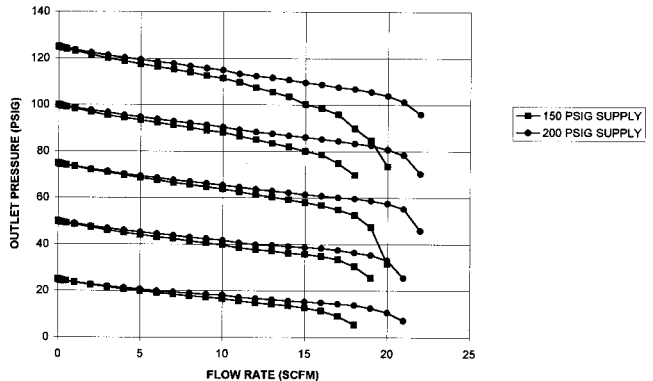


CHART 3. Flow Characteristics. GH20, 0-125 PSIG Range



SPECIFICATIONS

Operating Characteristics	GH20XTKEXXX_	GH20XTKXBX_	GH20XTKHXXK_	GH20XTKHXSX_	GH40XTKEAXX_	GH40XTKMAXX_	GH40CTKEAXX_	GH2X4FHEXXX_	GH25XFHEXXX_
Maximum Supply Pressure	200 PSI (1379 kPa)		300 PSI (2068 kPa)		200 PSI (1379 kPa)			250 PSI (1724 kPa)	
Connections	1/4" NPT (No Gauge Ports)							GH24 - 3/8" NPT - (1 Gauge Port) GH25 - 1/2" NPT - (1 Gauge Port)	
Regulated Output Pressure	0-25, 60 and 125 PSI (0-172, 414, and 862 kPa)							0-30, 60 and 100 PSI (0-207, 414, and 690 kPa)	
Flow Capacity	See Flow Graphs							Table 1, Chart 2	
Sensitivity	0.05 PSI (0.345 kPa)							0.1 PSI (0.69 kPa)	
Supply Pressure Effect	0.12 PSI (0.827 kPa) for 25 PSI (172 kPa) Change in Supply Pressure							0.2 PSI (1.38 kPa) for 25 PSI (172 kPa) change in Supply Pressure	
Ambient Temperature Range	-20°F to +150°F (29°C to + 66°C) (w/Buna "N" diaphragm)								
Approximate Shipping Weight	1.75 lbs. (0.79 Kg)				3.75 lbs. (92.3 Kg)				

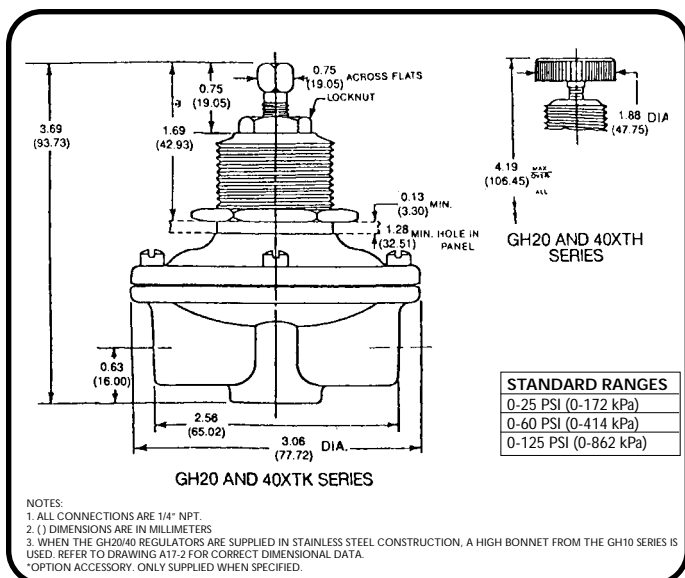
MATERIALS OF CONSTRUCTION

Body	Brass	Brass	316 St. Stl.	316 St. Stl.	Brass	Aluminum
Bonnet	Aluminum	Brass	316 St. Stl.	316 St. Stl.	Aluminum	Aluminum
Diaphragm Assembly (1)	Buna "N"	Buna "N"	Teflon Buna "N" Teflon	Teflon Buna "N" Teflon	Buna "N"	Buna "N"
Nozzle Assembly	Brass Body St. Stl. Plug	Brass Body St. Stl. Plug	302/303 St. Stl.	316 St. Stl.	Brass Body St. Stl. Plug	Aluminum Body St. Stl. Plug
Range Spring	St. Cad. Plt.	St. Cad. Plt.	316 St. Stl.	316 St. Stl.	St. Cad. Plt.	St. Cad. Plt.

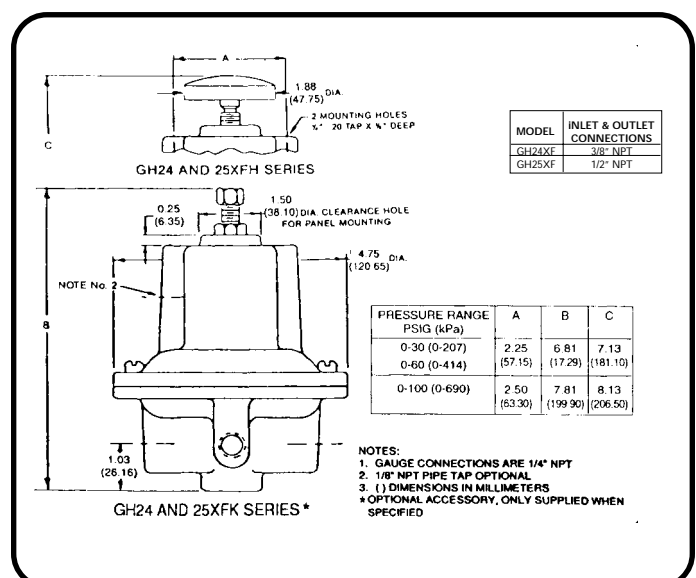
NOTE: 1. Other diaphragm materials available, consult the factory.

LIQUID FLOW CAPACITY - GPM

SUPPLY PRESSURE PSIG (kPa)	DOWNSTREAM SET PRESSURE									
	15 PSIG (103 kPa)		25 PSIG (172 kPa)		30 PSIG (207 kPa)		50 PSIG (345 kPa)		90 PSIG (621 kPa)	
	GH24	GH25	GH24	GH25	GH24	GH25	GH24	GH25	GH24	GH25
50 (345)	3.7	4.6	4.6	6.8	2.6	3.2	2.9	3.6	--	--
75 (517)	5.12	6.4	5.9	7.4	3.7	4.7	4.8	6.0	--	--
100 (690)	5.8	7.2	9.0	11.3	5.9	7.4	6.1	7.6	--	--
125 (862)	--	--	--	--	--	--	--	--	7.0	8.8
Regulator Range @ 20% Offset from Set Pressure	0-30 PSI (0-207 kPa)		0-60 PSI (0-414 kPa)		0-100 PSI (0-690 kPa)					



For Certified Dimensional Drawing, refer to A17-3 (GH20/40).



For Certified Dimensional Drawing, refer to A17-3 (GH24/25).

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 twelve (12) characters.

For Dimensional Data,
Refer to Drawing:

1-4 Models	GH20 = Regulator - Service GH24 = Regulator - Pressure Reducing (3/8" NPT) GH25 = Regulator Pressure Reducing (1/2" NPT) GH40 = Regulator - Service (Soft Seat) Note 1. (Refer to Note 2 in Position 10)	A17-2. (See Note 1) A17-35 A17-35 A17-2 (See Note 1)
5 Operational Features	C = High Exhaust Capacity (GH40 Only) X = Standard	
6 Bonnet Options	A = Bonnet w/1/8" NPT Tapped Vent F = Tapped Bonnet for Flush Back Panel Mounting (3 hole - GH20) (See Notes 1 and 3) S = Plain Bonnet (See Notes 2 and 3) T = Threaded Bonnet - Standard GH20/40 NOTES: 1. This option is standard on the GH24 and GH25 (2 Hole). 2. This option is not available on the GH24 and GH25. 3. For list price adder, refer to price list CP-5000.	
7 Adjustment Selections	C = Tamperproof - Factory output setting CANNOT be field adjusted (See Notes 1 and 2) H = Handwheel - Standard GH24/25 K = Knob (Wrench Style) - Standard GH20/40 P = Preset - Factory output setting CAN be field adjusted NOTES: 1. Customer must specify output setting, supply pressure and flow. 2. For list price adder, refer to price list CP-5000.	
8 Diaphragm Selections	The catalog number(s) listed under each diaphragm option is the standard diaphragm used in that regulator. These options apply to all output ranges of that unit. For non-standard diaphragm price adders, refer to price list CP-5000.	
	A = Teflon (Rubber Backed) Corrosive Service On Process Side (No Bleed, No Relief) (See Note 1) B = Silicone on Glass (No Bleed, No Relief) (See Note 1) D = Neoprene (w/Relief, No Bleed) (See Note 1) E = Buna "N" (w/Relief, No Bleed) GH20XTKEXBX_, GH40CTKEAXX_, GH40XTKEAXX_, GH24XFHEXXX_ and GH25XFHEXXX_ F = Viton on Nomex (No Bleed, No Relief) (See Note 1) G = Silicone on Glass (w/Relief, No Bleed) (See Note 1) H = Teflon (Sandwich Type - No Bleed, w/Relief) (See Note 1) GH20XTKHXXK_ AND GH20XTKHXSX_ J = Viton on Nomex (w/Relief, No Bleed) (See Note 1) K = Teflon (Sandwich Type - No Bleed, No Relief) (See Note 1) L = Nordel on Nomex (EPDM) (w/Relief, No Bleed) (See Note 1) M = Buna "N" (No Bleed, No Relief) GH40XTKMAXX_, GH24XFHMXXX_ and GH25XFHMXXX_ N = Nordel on Nomex (EPDM) (No Bleed, No Relief) (See Note 1) P = Neoprene (No Bleed, No Relief) (See Note 1) R = Teflon (Sandwich Type - w/Relief and Bleed) GH20XTHRXXK_ (See Notes 1 and 2) NOTES: 1. These options are not available on the GH24 and GH25. 2. This option cannot be supplied in 316 Stainless Steel construction.	
9 Seat Selections	A = Buna "N" B = Neoprene C = Viton D = Low Leak Nozzle w/Metal Seat GH20 - 20CC Air/Min. F = Low Leak Nozzle w/Metal Seat GH20 - Less than 15CC Air/Min. N = Nordel X = Standard - Unless option code is specified NOTES: 1. All GH40 Models are standardly supplied with Buna "N" Soft Seats. If options B or C are required, specify accordingly. GH20 with soft seats are supplied as GH40. 2. Soft Seats cannot be supplied on the GH24 and GH25. 3. Option "F" is not available in 316 Stainless Steel Construction. 4. For list price adders, refer to price list CP-5000.	
10 Material Options	B = Brass Construction (GH20 only) K = Stainless Steel Construction (302/303 Stainless Steel Internals) (See Notes 1 and 2) S = Stainless Steel Construction (316 Stainless Steel Internals) (See Notes 1 and 2) X = Standard - Unless option code is specified. NOTES: 1. Options "K" and "S" are not available on the GH24 and GH25. 2. When the GH20/40 Regulators are supplied in Stainless Steel Construction, a High Bonnet from the GH10 Series is used. Refer to Drawing A17-2 for correct Dimensional Data.	
11 Cleaning Options	A = Cleaned for Oxygen Service X = Standard - Unless option code is specified.	
12 Range Selections	C = 0-25 PSI (0-172 kPa) F = 0-60 PSI (0-414 kPa) (For Model "1166" only) G = 0-125 PSI (0-862 kPa) H = 0-30 PSI (0-207 kPa) J = 0-100 PSI (0-690 kPa) - GH24/25 Only	