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Engineered for life

WARNING

Conoflow's products are designed and manufactured using materials and workmanship required to meet applicable standards. The use of these products should be confined to services specified and/or recommended in the Conoflow catalogs, instructions, or by Conoflow application engineers.

To avoid personal injury or equipment damage resulting from misuse or misapplication of a product, it is necessary to select the proper materials of construction and pressure-temperature ratings which are consistent with performance requirements.

INSTRUCTION AND MAINTENANCE MANUAL
GH10 Series Pressure Regulator

WARNING: These instructions must be read carefully prior to installation and system startup.

INTRODUCTION

The ITT Conoflow GH10 series manual loading regulators are precision units designed for use in laboratory environments, remote loading of pneumatic devices, speed changers and other general purpose applications. Various configurations of this regulator are available, based on the needs of the application.

PRINCIPLE OF OPERATION

Turning the handwheel (or optional wrench knob) changes the compression of a range spring against a diaphragm assembly, in turn changing the force on the diaphragm. In equilibrium, this spring force is balanced by the force of output pressure acting underneath the regulators diaphragm assembly.

Turning the handwheel clockwise increases the force on the diaphragm, which in turn pushes open a nozzle plug and admits inlet pressure to flow in and through the regulator. This flow pressurizes the volume beneath the diaphragm, and the downstream piping. As the pressure builds, the force exerted by the fluid pressure acting beneath the diaphragm increases, until equilibrium is reached and the nozzle plug closes.

In cases where the output pressure exceeds the setting of the diaphragm assembly will lift off the nozzle plug and vent (relieve) excessive pressure through the diaphragm assembly to the atmosphere. This relieving of downstream pressure will continue until equilibrium is achieved.

A constant bleed feature is available on some of the diaphragm assemblies to allow the most precise pressure controls in applications where flow demand is very low. By constantly bleeding some of the output pressure, the nozzle plug is always open and throttling flow for the utmost pressure control.

No bleed / no relief diaphragms are available for those applications where process media must not escape to the atmosphere. This option is typically used with liquids and / or hazardous gases.

Soft seat nozzle assemblies are also available for those applications where bubble tight shutoff is required.

INSTALLATION:

WARNING: The Maximum Inlet (supply) Pressure is 200 psi (1379 kPa) for the standard brass body model or 300 psi (2068 kPa) for the optional stainless steel model.

The regulator has two (2) ¼ npt connections. The inlet connection is marked "IN". ***It is recommended that a filtered air supply is used.***

All connections should be checked for leakage after installation. The adjusting screw should be kept well lubricated with grease.

SPECIFICATIONS:

Maximum Inlet Pressure (brass): 200 psi (1379 kPa)
(stainless steel): 300 psi (2068 kPa)

Connections: 1/4" NPT (Inlet / Outlet)
1/8" NPT (optional stainless bonnet)

Sensitivity: 0.2" H2O (bleed and relief diaphragm)

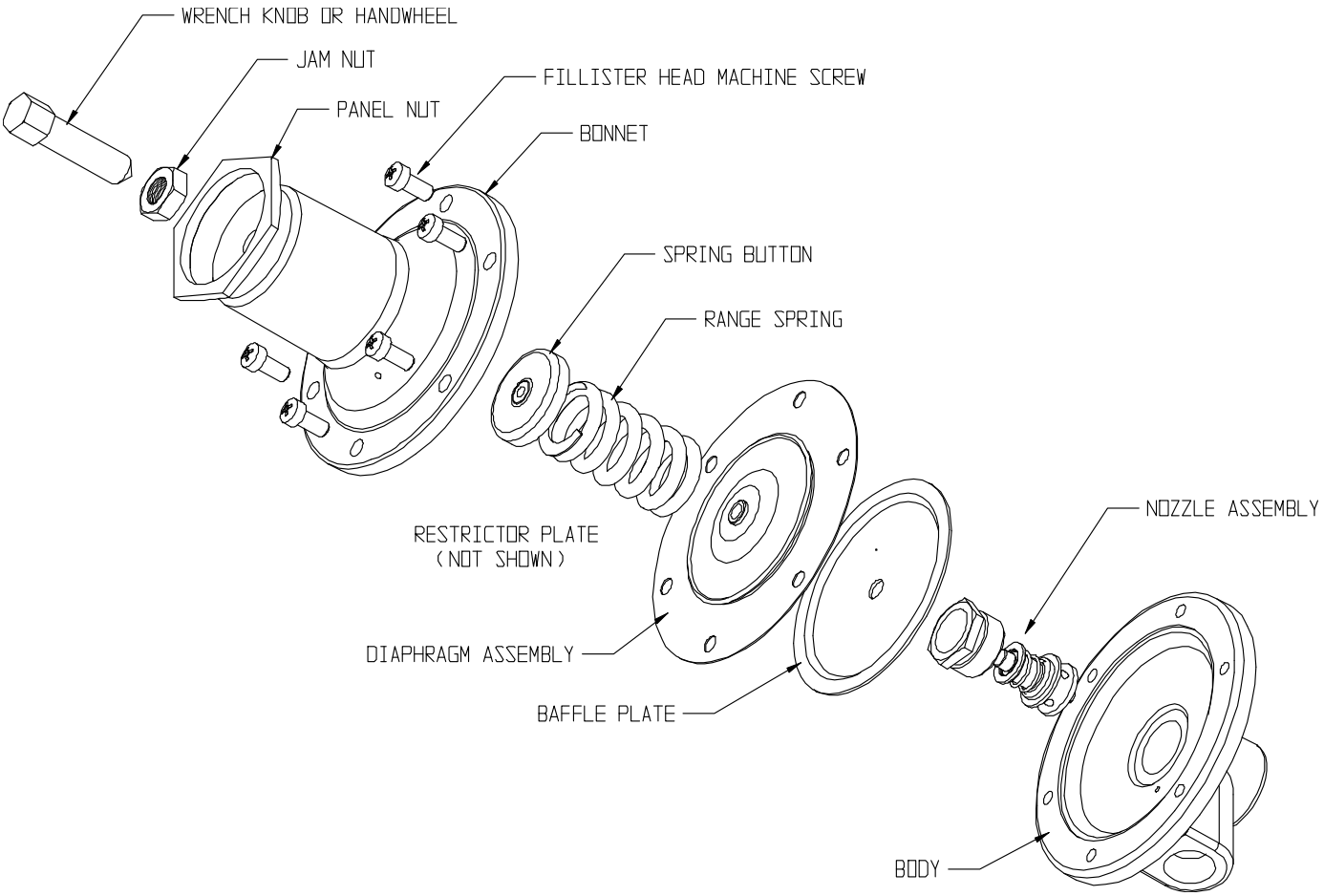
Effect of Changing Inlet Pressure: 0.1 psi per 25 psi

Temperature Range: -20 °F to 150 °F

Weight: Approx. 1.75 lb (0.79 kg)

Catalog Part Number Breakdown (Control Engineering Data or CED Codes) for the GH10 Series Regulator

Character Position	Feature by Code Character
1-4 Model	GH10 = Regulator
5 - Operational Feature	X = Standard
6 – Bonnet Options	A = Bonnet w/1/8" NPT Tapped Vent F = Tapped Bonnet for Flush Back Panel Mounting NOTE: This option is standard on the GH10XF. S = Plain Bonnet T = Threaded Bonnet (Standard)
7 - Adjustment Selections	C = Tamperproof (Factory output setting CANNOT be field adjusted) (See Notes 1 and 2) H = Handwheel (Standard) K = Knob (Wrench Style) P = Preset (Factory output setting CAN be field adjusted) (See NoteS 1 and 2) NOTES: 1. Customer must specify output setting, supply pressure and flow. 2. For list price adder, refer to price list CP-5000. 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.
8 – Diaphragm Selections	A = Teflon (Rubber Backed) Corrosive Service On Process Side (No Bleed, No Relief) B = Silicone on Glass (No Bleed, No Relief) C = Buna "N" (w/Relief and Bleed) (See Note 1) D = Neoprene (w/Relief, No Bleed) E = Buna "N" (w/Relief, No Bleed) F = Viton on Nomex (No Bleed, No Relief) G = Silicone on Glass (w/Relief, No Bleed) H = Teflon (Sandwich Type - w/Relief, No Bleed) J = Viton on Nomex (w/Relief, No Bleed) L = Nordel on Nomex (EPDM) (w/Relief, No Bleed) M = Buna "N" (No Bleed, No Relief) N = Nordel on Nomex (EPDM) (No Bleed, No Relief) P = Neoprene (No Bleed, No Relief) R = Teflon (Sandwich Type - w/Relief and Bleed) NOTE: 1. This option cannot be supplied in 316 Stainless Steel construction.
9 – Seat Selections	A = Buna "N" B = Neoprene C = Viton X = Standard - Unless option code is specified
10 – Material Options	B = Brass Construction (body and bonnet are brass) S = Stainless Steel Construction (Stainless Steel Internals) X = Standard - Unless option code is specified.
11 – Cleaning Options	A = Cleaned for Oxygen Service X = Standard - Unless option code is specified
12 – Range Selections	A = 0-5 PSI (0-35 kPa) B = 0-15 PSI (0-103 kPa) C = 0-25 PSI (0-172 kPa) D = 0-35 PSI (0-241 kPa) E = 0-50 PSI (0-345 kPa) F = 0-60 PSI (0-414 kPa) (For Model "1166" only G = 0-125 PSI (0-862 kPa) L = 0-3 PSI (0-21 kPa)



When replacement parts are required, please contact the factory with the full model number and serial number of the regulator.

MAINTENANCE

CAUTION: Remove air supply pressure and thoroughly vent the inlet and outlet pressure prior to performing maintenance.

Periodic replacement of the diaphragm assembly and nozzle assembly is recommended for services where the unit is on-stream continuously and where consistent, high accuracy regulation is required. The frequency of replacement is dependent on the nature of the application and can be affected by the cleanliness of the media, the temperature and humidity of the environment, the rate of flow, and other factors.

To replace the diaphragm assembly, loosen the wrench knob (or handwheel) and jam nut until compression is relieved from the range spring. Loosen and remove the fillister head machine screws and lift off bonnet, spring button, range spring, restrictor plate (0-125 psi models) and diaphragm assembly. Place the new diaphragm assembly on the bonnet, with the diaphragm plate and staked side face upward (away from the body). Place the range spring, spring button, restrictor plate (if applicable) and bonnet over the diaphragm assembly then secure the bonnet with the fillister head machine screws tightened to 30 in-lb. Replace wrench knob or handwheel and jam nut if previously removed.

To replace the nozzle assembly, disassemble the regulator as previously described, then remove the baffle plate and the nozzle assembly. Use a 5/8" socket wrench to remove and install the nozzle assembly.

An all metal nozzle assembly may be cleaned in solvent, however a nozzle assembly that uses any rubber components must be replaced with the equivalent factory part.

When replacing the nozzle assembly, the metal to metal seal nozzles are installed with 80 in-lb assembly torque; the rubber bottom nozzle assemblies are installed with 30 in-lb assembly torque. Incorrect torque can create leakage and damage the nozzle assembly.

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