

Conoflow

ITT Fluid Technology Corporation

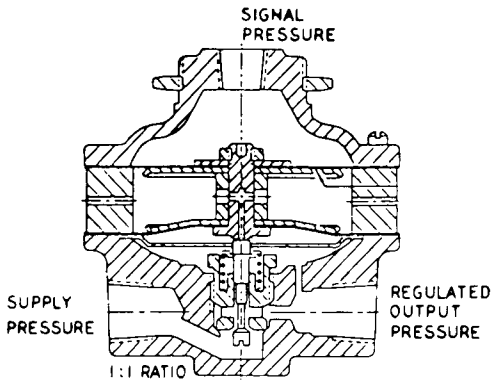
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WARNING

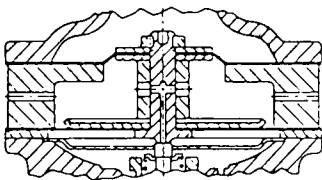
Conoflow's products are designed and manufactured using materials and workmanship required to meet all applicable industry standards. The use of these products should be confined to services specified and/or recommended in the Conoflow catalogs, instructions or by Conoflow application engineers (i.e. exceeding pressure-temperature rating or using device for services other than those specified).

To avoid personal injury or equipment damage due to 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.

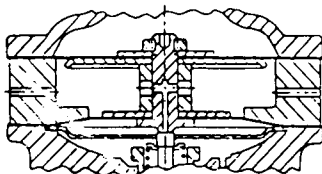
INSTRUCTION AND MAINTENANCE MANUAL GH22 SERIES RATIO RELAYS



GH22 SERIES
 RELIEF-NO BLEED DIAPHRAGM



3:1 & 2:1 RATIO



1:2 & 1:3 RATIO

PRINCIPLE OF OPERATION

The Conoflow Model GH22XT Ratio Relay provides an output pressure proportional to the signal pressure applied to the bonnet connection. The ratio of output pressure to signal pressure is determined by the ratio of effective areas of the top and bottom diaphragms. In the 1:1 ratio model, the effective areas of the two diaphragms are equal. Therefore, in equilibrium, the output pressure is equal to the signal pressure. If the signal pressure is increased above the output pressure, there is a net downward force on the diaphragm assembly causing the nozzle to open. Supply pressure flows through the nozzle to the output port until the output pressure equals the signal pressure. The nozzle remains in a position to supply the required flow while maintaining the output pressure equal to the signal pressure. If the signal pressure drops below the output pressure, there is a net upward force on the diaphragm assembly which causes the diaphragm seat to lift off of the nozzle plug. This allows the excess pressure to vent to atmosphere until equilibrium is again established.

In the 3:1 and 2:1 ratio models, the effective area of the top diaphragm is proportionately less than the effective area of the bottom diaphragm. Since force is equal to pressure times area, less output pressure is required to balance the force resulting from a given signal pressure. For example, in the 2:1 ratio model, a signal pressure of 2 PSI (14kPa) would result in an output pressure of only 1 PSI (7kPa) since the effective area of the bottom diaphragm is twice that of the top diaphragm.

In the 1:3 and 1:2 ratio models, the effective area of the top diaphragm is proportionately larger than the area of the bottom diaphragm which results in an output pressure proportionately higher than the signal pressure.

INSTALLATION

CAUTION: Maximum Supply Pressure (Body) is 200 P.S.I. (1379kPa).

Unit has three 1/4" NPT connections. The inlet is marked "IN". It is recommended that a filtered air supply be used.

Check all connections for leakage after installation.

MAINTENANCE

Remove air supply 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 will depend on the nature of the service, cleanliness of air, humidity of the air, etc.

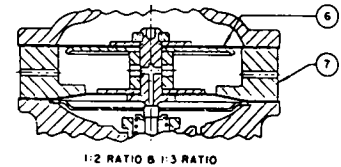
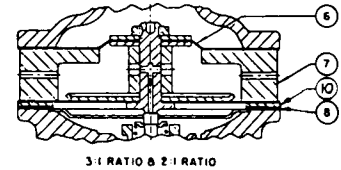
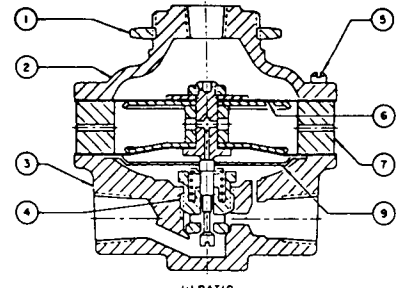
To replace the diaphragm assembly (6), remove six screws (5) and lift off bonnet (2), diaphragm assembly (6) and spacer (7). Place new diaphragm assembly (6) over spacer (7) and line up through holes. Place these two items over body (3) and orient

diaphragm assembly/spacer holes over tapped holes in the bonnet. Re-install bonnet (2) and tighten six screws (5). The six screws should be tightened alternately.

NOTE: On the 2:1 and 3:1 versions line-up spacer ring (10) and gasket (8) prior to proceeding.

To replace nozzle assembly (4) proceed as above also removing baffle plate (9). Use 5/8" socket wrench to remove and replace nozzle assembly to avoid damage to the nozzle. Nozzle assembly may be cleaned by immersion in a suitable solvent and blowing dry with air stream.

ITEM NO.	DESCRIPTION	QTY. REQ'D.	GH22XTXEXX(2)
1	Locknut	1	6017628
2	Bonnet	1	6030309
3	Body	1	6320741
4	Nozzle Assembly	1	6347843
5	Fill. Hd. Screw #8-32 x 1" Lg.	6	6900040
6(1)	Diaphragm Assembly		
	1:1 Ratio	1	6018881
	1:2 Ratio	1	6018949
	1:3 Ratio	1	6018899
	2:1 Ratio	1	6018907
	3:1 Ratio	1	6018915
7	Spacer		
	1:1 Ratio	1	6017230
	1:2 Ratio	1	6017313
	1:3 Ratio	1	6017321
	2:1 Ratio	1	6018394
	3:1 Ratio	1	6018410
8(1)	Gasket (2:1 - 3:1 Ratio Only)	1	6017545
9	Baffle Plate	1	6319115
10	Spacer Ring (2:1 - 3:1 Only)	1	6384274

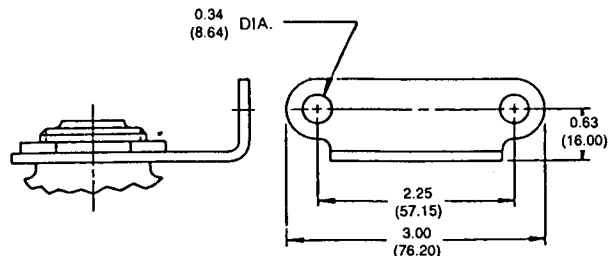
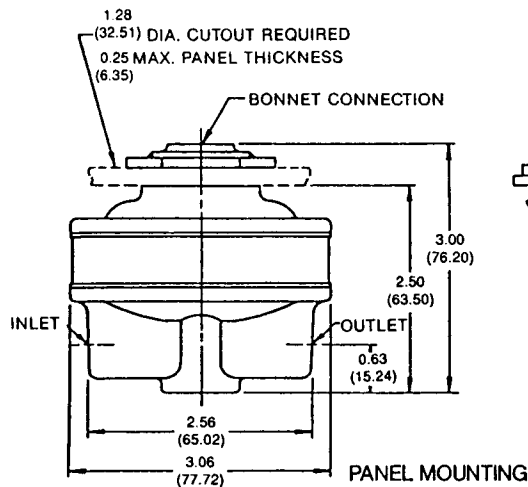


Notes: (1) Recommended Spare Parts can be purchased individually or as a spare parts kit, under number:

Ratio	
2:1	6385352
3:1	6385353

- (2) For definition of catalog number, refer to Sales Bulletin C-2007.
 (3) When ordering spare parts, specify complete catalog no., item no. and part no. This will permit positive identification and rapid handling of order.

DIMENSIONS



WITH WALL MOUNTING BRACKET*

*OPTIONAL ACCESSORY, SUPPLIED ONLY WHEN SPECIFIED.

NOTE:

1. ALL CONNECTIONS ARE 1/4" NPT
 2. () DIMENSIONS IN MILLIMETERS



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FOR CERTIFIED DIMENSIONAL DATA, REFER TO A-17-12

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