



CONOFLOW REGULATORS & CONTROLS

P.O. Box 768
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(803) 563-9281 TELEX 4945706

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.



FOREMOST
IN
CONTROL
ELEMENTS

INSTRUCTION AND MAINTENANCE MANUAL GEB Series Piston Actuator

These instructions should be read carefully before installation or maintenance.

This booklet describes the GEB Series Piston Actuator. Each unit consists of a pneumatic piston actuator, a rack and pinion mechanism and an electrical component.

STANDARD MODELS

Series GEB40 (figure 1)
Series GEB51XC (Refer to C-8000 for instructions)
Series GEB52XC and GEB53XC (Refer to C-8000 for instructions)

UNPACKING ACTUATOR

Check for accessory equipment packed with the actuator. Match all parts with items listed on packing list and record nameplate serial numbers. The actuator nameplate will provide necessary data required for complete identification. Always refer to serial numbers when ordering spare parts, conversion parts, or accessory equipment.

INSTALLATION

The piston actuator can be mounted in any position. Regulator and gauge for loading one side of piston are mounted and piped. Air supply should be regulated and filtered.

Note: A Conoflow Airpak (filter-regulator) can be integrally mounted to provide constant regulation and filtration of air supply at the actuator.

OPERATION

Normal range of the actuator positioner for full stroke is 3-15 psi (other ranges, including 3-9 psi and 9-15 psi, are available). Connect the signal input to the connection marked INST. on the positioner. Then connect a supply of clean, filtered air to the supply connection to supply both the positioner and the cushion loading regulator. The supply pressure required is a function of the cylinder diameter and the force required. Air supply up to 100 psi can safely be used to insure a reverse of power and maximum speed. However, for economy of operation, use the lowest supply

pressure with which satisfactory results can be obtained. Refer to instruction booklets for GC31 through GC34 Positioners.

ZERO ADJUSTMENT

To check zero adjustment (preset at factory), set the instrument output signal at the mid-point of its range (9 psi on a 3-15 psi range), turn zero adjustment coupling and note position of actuator stem. Continue rotation of zero adjustment coupling in proper direction until actuator stem is at the mid-point of stroke. Adjust instrument output signal to low and high points in range and check the stem position at both ends of the stroke.

If stroke adjustment does not fall within specifications, refer to positioner manual for further instructions.

CUSHION LOADING REGULATOR [H04XSK]

The cushion loading pressure has been arbitrarily set at approximately 20 psi. This pressure may be adjusted by means of the cushion loading regulator when higher or lower return forces are required. The standard regulator supplied can provide settings up to 60 psi and as low as 5 psi.

RANGE CHANGES

Standard range is 3-15 psi. Other ranges are available. Consult the factory.

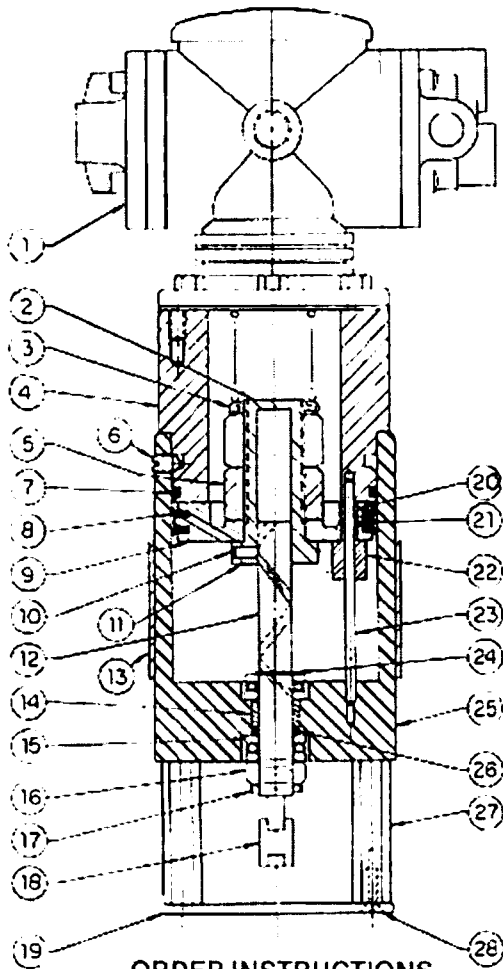
CYLINDER

Life of the lipseals (8) and the "O" Rings (7), (21) and (26) is such that replacement will seldom be necessary under normal operating conditions. Should disassembly become necessary the following procedure must be followed.

Piston (9) should be in the "up" position. Disconnect necessary tubing and bleed all air out of the unit. Remove the cap from positioner (1) and spirolox ring directly under the cap, so the positioner headplate can be lifted out. Loosen set screw and remove spring rod nut. Then remove six cap screws around positioner flange and lift positioner from headplate (4). Remove four set screws (6) and lift out headplate (4). Remove

coupling (18), palnut (17) and locknut (16). Lift piston (9) from cylinder (25) and inspect lipseals (8). At this time, inspection of the bearings (14) and "O" Rings (21), (7) and (26) should be done. While the piston is out of the cylinder, guide pin (11) should be carefully removed and run through the stem groove to assure a snug fit. A sloppy stem/pin fit will result in poor response. Any water, dirt or sludge which may have accumulated inside the cylinder should be removed.

Before reassembling the unit, apply a thin layer of grease (Dow Corning #DC-33 light lubricant or equivalent) to the inner wall of the cylinder (25), actuator stem (12)*, lipseals (8)* and the lipseal grooves in piston (9).



ORDER INSTRUCTIONS

When ordering replacements or spare parts, specify complete MODEL NO., item no. and description. This will permit positive identification and rapid handling of order.



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* Care should be exercised when installing the following parts:

A) When installing the stem, carefully align guide pin (11) in the groove in stem (12). These parts are machined and lapped as a set. Damage to the pin or groove could cause poor response.

B) Care should be exercised when reinserting piston (9) into cylinder (25) because lipseals (8) flare is designed of a larger diameter than the cylinder bore. If the piston will not enter the cylinder bore, run a shim [approximately .010" thick x 1/2" wide] between the lipseals and cylinder wall while applying slight pressure on the piston.

ITEM	QTY.	DESCRIPTION	PART NO.
1	1	Positioner	As Specified
2	1	Stem Guide	6004857
3	1	Range Spring Assembly	Consult Factory
4	1	Cylinder Headplate	6005177
5	1	Locknut	6002414
6	4	Setscrew - Nylok	6076392
7 ¹¹	1	O Ring	6077168
8 ¹¹	2	Lipseal	6004121
9	1	Piston	6004972
10	1	Spring	6005086
11 ²¹	1	Guide Pin	6004832
12 ²²	1	Stem	6004865
13	1	Mounting Bracket	6003255
14	1	Oilite Bearing	6004907
15	2	Thrust Bearing	6075154
16	1	Locknut	6002380
17	1	Palnut	6075931
18	1	Tinymite Coupling	6078232
19	1	Mounting Plate	6004923
20	2	Oilite Bearing	6074538
21 ¹¹	2	O Ring	6076574
22	2	Bushing	6004949
23	2	Guide Shaft	6004915
24	1	Spirolox Ring	6076558
25	1	Cylinder	6005185
26 ¹¹	1	O Ring	6076715
27	2	Spacer Bars	6004899
28	2	No. 8-32 N.C - F.H.M.S. x 1 1/2"	6900033
29 ³¹	1	Regulator (0-25 P.S.I.)	As Specified
30 ³²	1	2 Press. Ga. (0-30) 1/2 M.P.T. B.C.	6077705

- NOTES: 1. Recommended Spare Parts can be purchased individually or as a spare parts kit, under number 6385375 Spare Parts Kit (Consists of items 7, 8, 21 and 26)
2. Stem and Guide Pin are machined and lapped as a matched set and should be purchased as a set.
3. Not Shown
4. When ordering replacements or spare parts, specify complete model no., item no. and description. This will permit positive identification and rapid handling of order.

WARNING - TECHNICAL DATA SUBJECT TO EAR CONTROLS

This document contains technical data whose export is restricted by the Export Administration Act of 1979, as amended (Title 50, U.S.C., App. 2401, et seq.) Violation of this export control law is subject to severe criminal penalties.