

# AUXILIARY MANUAL ACTUATORS

## GB2700 - GB2800

ITEM NUMBER	NUMBER REQUIRED	DESCRIPTION
1	4	Hex Head Capscrew
2	1	Adapter
3	2	Bearing
4	1	Bearing
5	1	Worm
6	1	Key
7	1	Key
8	1	Worm Shaft
9	1	Clutch Shaft
10	1	Key
11	1	Ball
12	1	Detent Spring
13	1	Detent Body
14	1	Spur Gear
15	1	Key
16	1	Worm Gear
17	1	Bearing
18	1	Grease Fitting
19	2	Locknut
20	1	Retaining Ring
21	1	Spacer
22	1	Rack
23	1	Housing
24	7	Spacer
25	1	Handwheel
26	1	Retaining Ring
27	1	Hex Head Capscrew
28	1	Lockwasher
29	1	Washer
30	1	Bearing
31	1	Lockwasher
32	1	Bearing
33	1	Shaft
34	1	Worm Gear Insert
35	1	Bearing
36	1	Bearing
37	1	Pin

ITT Conoflow offers two auxiliary manual actuators. One unit incorporates a 6" diameter handwheel and generates 1500 lbs. of thrust. The other unit has an 18" diameter handwheel and generates 4000 lbs. of thrust.

The auxiliary manual actuator permits manual operation of the actuator assembly during start-up or emergency periods. These actuators have a clutch mechanism that is engaged during emergency conditions and is disengaged during normal (automatic) operation.

## PRINCIPLE OF OPERATION

### MANUAL OPERATION

For manual operation, the SUPPLY AIR MUST FIRST BE TURNED OFF AND THE EQUALIZING VALVE OPENED. This procedure is necessary to equalize the pressure across the piston of the cylinder actuator. The clutch shaft (9) may now be **pushed into** the housing (23) and the handwheel (25) rotated to engage and move the rack (22) as required.

To return the cylinder actuator to normal (Automatic) operation, the clutch shaft (9) must be pulled out of the housing (23) to the index point so that handwheel (25) is disengaged from the rack (22). With the clutch shaft (9) disengaged, close the equalizing valve and turn on full supply air. The unit is now ready for normal automatic operation.

The handwheel (25) is fixed to worm (5), which upon rotation of the handwheel (25), turns worm gear (16). The worm gear (16) is keyed to worm gear insert (34) and is coupled to the shaft (33) by means of pin (37). The shaft (33) extends through (not attached to) the spur gear (14), and is attached to clutch shaft (9) by means of a running key (10). The running key (10) allows the clutch shaft (9) to be in either an open or engaged position, determined by two circular "V" Grooves in the clutch shaft (9) near the indexing ball (11). Pushing the clutch shaft (9) into the housing (23) to the index point engages the tongues of the clutch shaft (9) with the tongues of the spur gear (14). Spur gear (14) teeth are meshed with the teeth of the rack (22). Engagement of the clutch shaft (9), allows rotation of the handwheel (25) to move the rack (22) automatically without turning the handwheel (25).

**GB2700 — DRAWING**

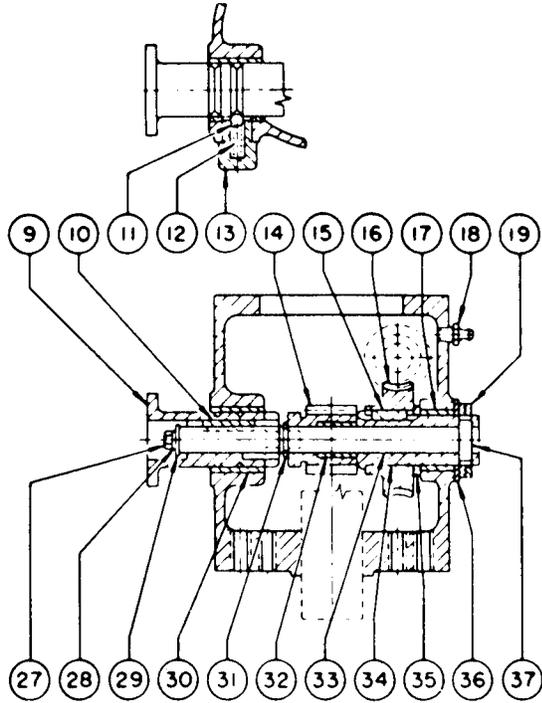
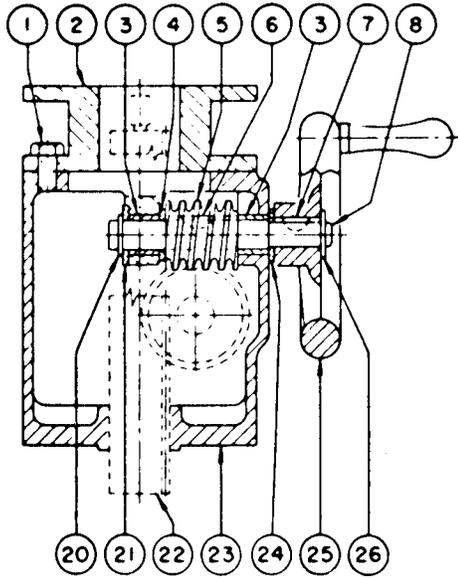
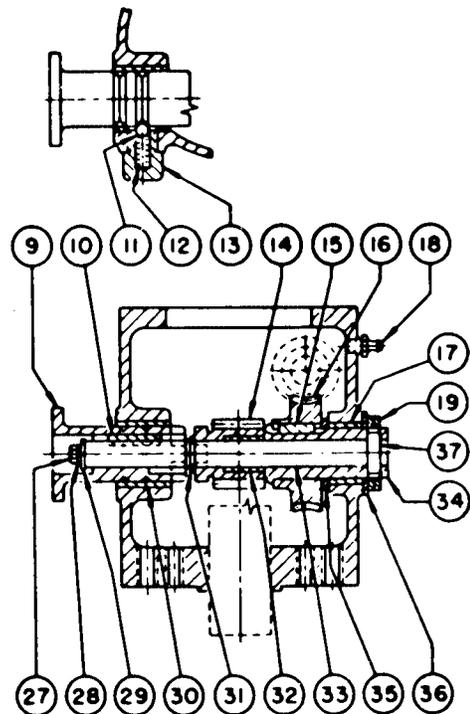
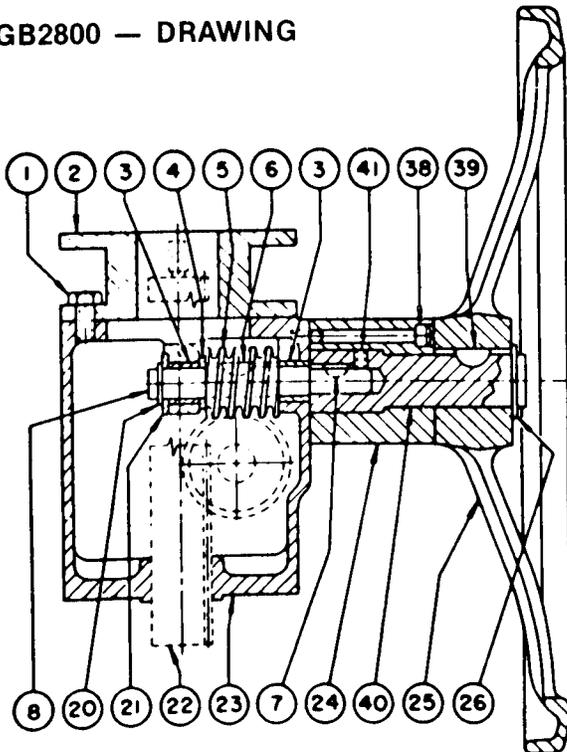
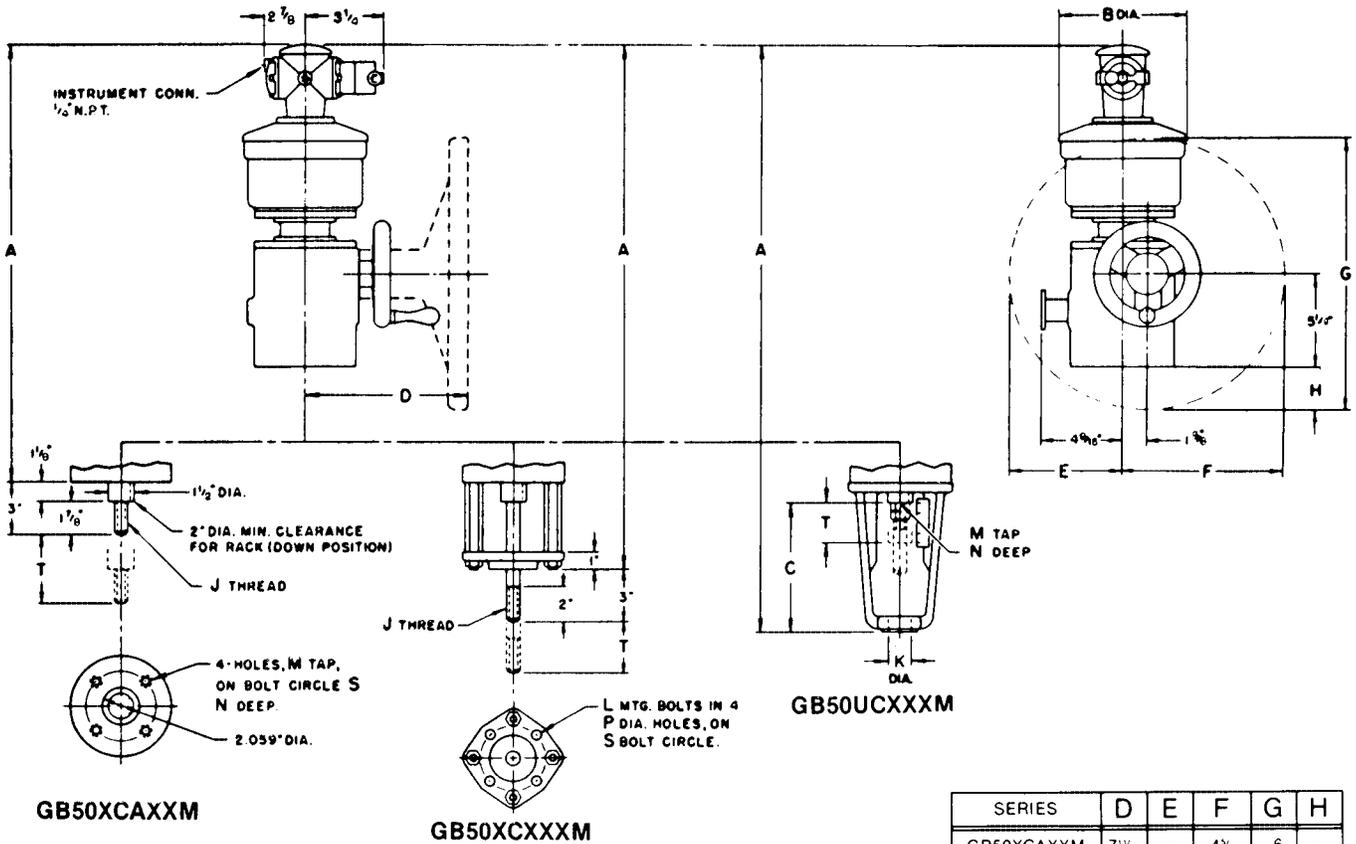


TABLE II	
ACTUATOR	PART NO
GB52UC (6" BORE) FOR 1/2" 8 1" VALVES	6236749
GB53UC (8" BORE) FOR 1 1/2" 8 2" VALVES	6005888
GB54UC (10" BORE) FOR 3" 8 4" VALVES	6005896
GB51 XC (4" BORE)	6006464
ALL SERIES 50 ACTUATORS NOT LISTED ABOVE	6005953

TABLE I	
ACTUATOR	PART NO
GB51 (4" BORE)	6003552
GB52 (6" BORE)	6003594
GB53 (8" BORE)	
GB54 (10" BORE)	

**GB2800 — DRAWING**





SERIES	D	E	F	G	H
GB50XCAXXM	7 1/4	—	4 3/4	6	—
GB50XCAXXR	9 1/2	7 3/4	10 3/4	18	3 1/2

SMALL H-W	LARGE H-W	SIZE	A	B	C	J	K	L	M	N	P	S	T
GB51XCAXXM	GB51XCAXXR	4"	20 1/2	5 3/8	—	3/8 - 18	—	—	3/8 - 16	3/8	—	3 1/2	3
GB51XCAXXM	GB51XCAXXR	4"	21 1/8	5 3/8	—	3/8 - 18	—	—	3/8 - 16	3/8	—	3 3/8	4
GB52XCAXXM	GB52XCAXXR	6"	22 1/8	7 3/8	—	3/4 - 16	—	—	1/2 - 13	3/4	—	4 1/2	4
GB53XCAXXM	GB53XCAXXR	8"	22 3/8	9 3/8	—	3/8 - 14	—	—	1/2 - 13	3/4	—	4 1/2	4
GB54XCAXXM	GB54XCAXXR	10"	24 3/8	11 3/8	—	1 1/8 - 12	—	—	1/2 - 13	3/4	—	4 1/2	4
GB51XCXXXM	GB51XCXXXR	4"	27	5 3/8	—	3/8 - 18	—	3/8	—	—	1 1/2	2 3/8	3
GB51XCXXXM	GB51XCXXXR	4"	29	5 3/8	—	3/8 - 18	—	3/8	—	—	1 1/2	2 3/8	4
GB52XCXXXM	GB52XCXXXR	6"	29 1/4	7 3/8	—	3/4 - 16	—	1/2	—	—	1 1/2	3 3/8	4
GB53XCXXXM	GB53XCXXXR	8"	30 1/4	9 3/8	—	3/8 - 14	—	1/2	—	—	1 1/2	3 3/8	4
GB54XCXXXM	GB54XCXXXR	10"	30 1/4	11 3/8	—	1 1/8 - 12	—	1/2	—	—	1 1/2	3 3/8	4
GB52UCXXXM	GB52UCXXXR	6"	26	7 3/8	5 3/8	—	1 1/8	—	3/8 - 24	1	—	—	1
GB53UCXXXM	GB53UCXXXR	8"	28 3/8	9 3/8	7 3/8	—	1 1/8	—	1/2 - 20	1 1/2	—	—	1 1/2
GB54UCXXXM	GB54UCXXXR	10"	30	11 3/8	7 3/8	—	1 1/8	—	3/8 - 18	1 3/8	—	—	2 1/2

For Certified Dimensional Drawing, Refer To A6-15.