

# 1800 LIQUID LEVEL CONTROLS

## DESCRIPTION AND OPERATION

The CEMCO® 1800 Liquid Level Control offers design simplicity, easy installation, adjustment and reliable liquid level monitoring. The Model 1800 can be equipped with a snap action 3-way 2 port valve (1800M, 1800MM), an electrical contact switch (1800E, 1800EE) or a combination of both (1800EM).

The Model 1800 is actuated by movable arms that permit the control range to be adjusted easily and accurately set to the range desired. With the liquid level below the float, the 3-way 2-port valve or micro switch will be in low level position and will remain there until the float rises to the pre-set high level. The 3-way 2-port valve or micro switch reverses positions as the float rises or drops through the pre-set level.

### Application:

Applications of the control are oil and gas processing, manufacturing plants, hazardous waste disposal, food processing, petro-chemical facilities or wherever fluid level needs to be monitored or controlled.

The CEMCO® Model 1800 controls have a selection of five (5) different configurations which control either Pneumatic or electrical supply to pressure switches, solenoids, relays, control valves, annunciators, or counters used in response to liquid level changes.

The Model 1800 controls are:

- 1800M Pneumatic Control equipped with a 3-way 2-port valve.
- 1800MM Pneumatic Control equipped with two (2) 3-way 2-port valves.
- 1800E Electric Control with an explosion-proof micro switch.
- 1800EE Electric Control with two (2) explosion-proof micro switches.
- 1800EM: Combination of electric and pneumatic control equipped with a 3-way 2-port valve and an explosion-proof micro switch.

### Installation:

The CEMCO® Model 1800 is available with various standard pipe closures such as ANSI flanges, and grooved or union connections.

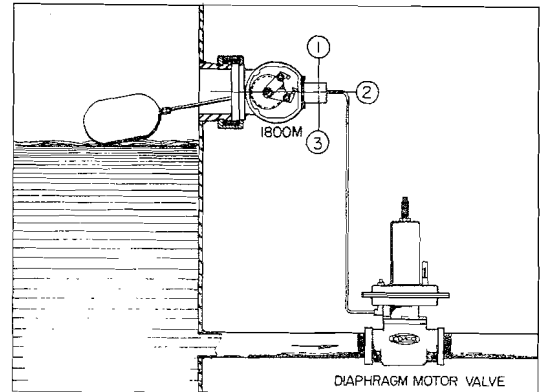


Figure 1

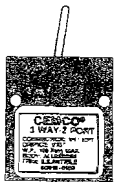
### Pneumatic Control Valve Piping

The CEMCO® Model 1800 Pneumatic Level Control is equipped with a 3-way 2-port valve with three 1/4" NPT ports. The 3-way 2-port Valve has a standard working pressure of 100 psig.

Connection to the ports depends on the control action desired. Port positions are shown below, reference fig. 1.

WITH FLOAT AT LOW LEVEL	WITH FLOAT AT HIGH LEVEL
Port 1 closed to 2	Port 1 open to 2
Port 2 common	Port 2 common
Port 3 open to 2	Port 3 closed to 2

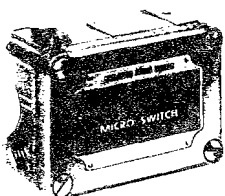
## SPECIFICATIONS



Body	Anodized aluminum
Trim	S.S./Nitrile
Ports	1/4 NPT
Orifice	1/16"
W.P. (max)	100 psi

3 WAY - 2 PORT

## SPECIFICATIONS



Single pole double throw
UL/CSA Rating: L96
15 amps, 125, 250 or 480 VAC;
1/8 HP, 125 VAC; 1/4 HP, 250 VAC;
1/2 amp, 125 VDC; 1/4 amp, 250 VDC

EXPLOSION—PROOF MICRO SWITCH

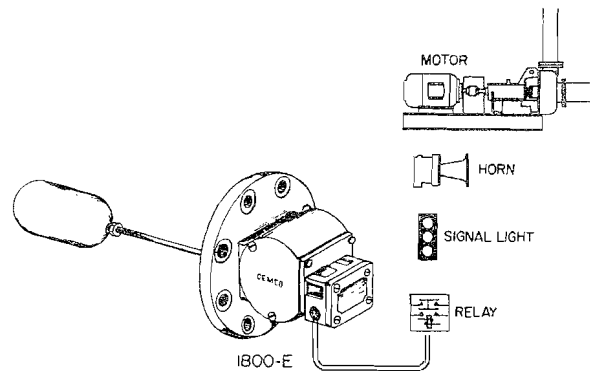
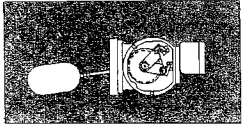


Figure 2

The CEMCO® Model 1800 Electric Level Control provides electrical contact switch closure for alarm or control functions. Reference fig. 2.





## ADJUSTMENT & GENERAL DIMENSIONS

### Level Adjustment

The model 1800 Control is provided with two (2) adjustments permitting the setting of both the high and low level set points. To change the set point span, the following procedure should be used, (reference figure 3).

#### TO CHANGE LOW LEVEL SET POINT

1. Loosen lock nut "C"
2. Turn pinion gear "D" until the 2-way 2-port valve or micro switch operates at the desired position.
3. Tighten lock nut "C" holding pinion gear "D" in position

#### TO CHANGE HIGH LEVEL SET POINT

1. Loosen lock nut "A"
2. Turn pinion gear "B" until the 2-way 2-port valve or micro switch operates at the desired position.
3. Tighten lock nut "A" holding pinion gear "B" in position.

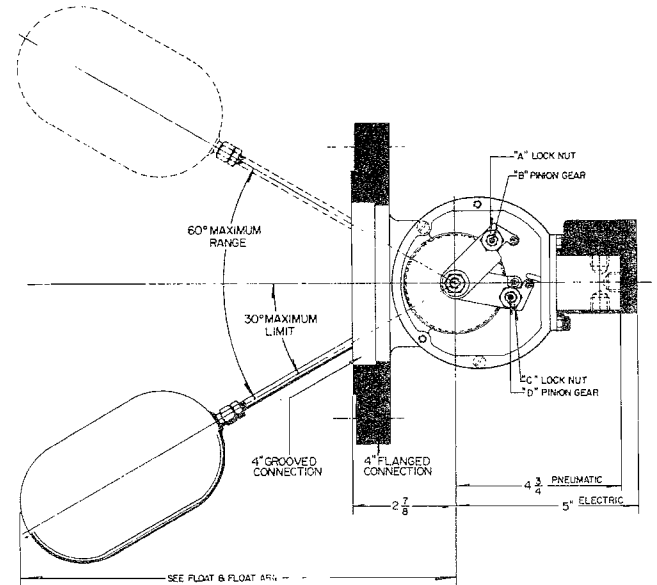


Figure 3  
4" GROOVED & FLANGED

## FLOATS & FLOAT ARMS



FLOAT SIZE	PART NUMBER	MATERIAL	VOLUME CU. IN.	WEIGHT OZ.	NET BOUYANT FORCE OZ.	MAX W.P. PSIG
3 1/2" x 6"	06500-0143	304SS	46.5	9.9	16.95	500
3 1/2" x 12"	06500-0226	304SS	104.2	22.2	38.0	225



Float Arms: 1/4" Dia. 303 stainless steel; Lengths: 3-3/4" to 36" long.  
304 or 316 Stainless Steel and other lengths are available on request.

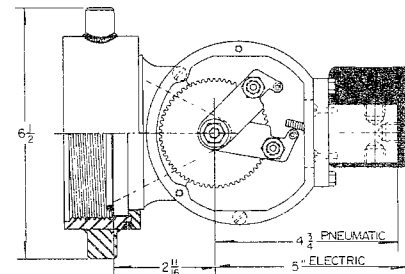
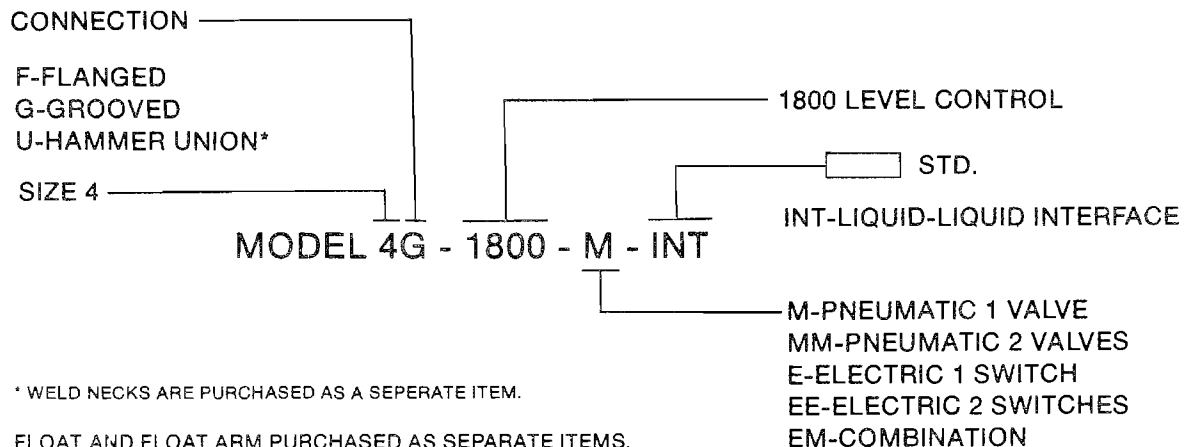


Figure 4  
4" UNION

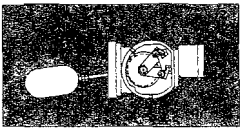
## DETERMINING THE MODEL NUMBER



\* WELD NECKS ARE PURCHASED AS A SEPERATE ITEM.

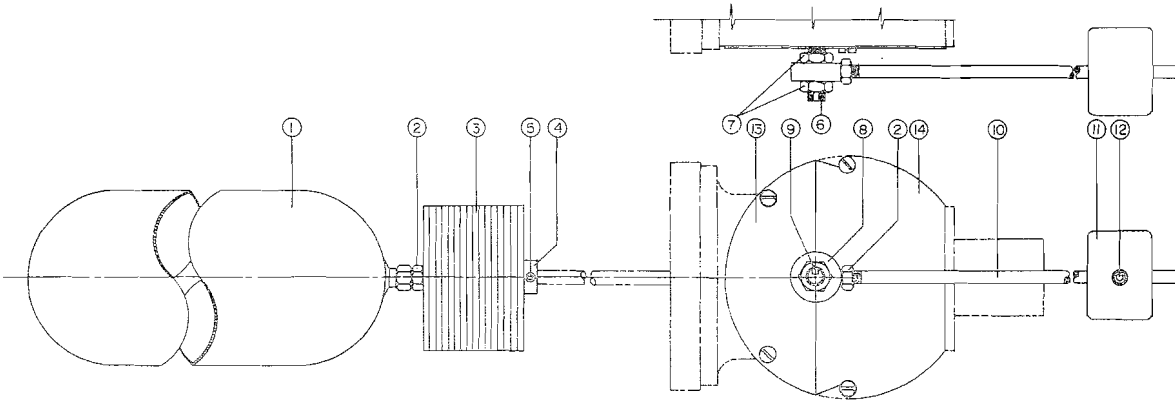
FLOAT AND FLOAT ARM PURCHASED AS SEPERATE ITEMS.





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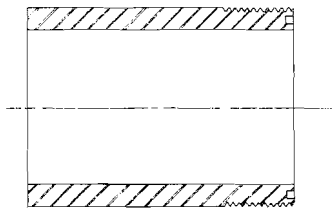
## LIQUID-LIQUID INTERFACE



### OPTIONAL PARTS

ITEM	PART NAME	MATERIAL	PART NUMBER	QTY.
1	Float (3½ x 12")	Stainless steel	06500-0226	1
2	Hex nut	18-8 Stain. steel	05000-2245	2
3	Weight	ASTM A-36	05010-6954	16
4	Collar	ASTM A-532 Ty. 303	05010-4140	1
5	Socket set screw	ASTM A-307 Gr. B	05000-2351	1
6	Pivot shaft	ASTM A-582 Ty. 303	05010-7366	1
7	Jam nut	ASTM A-307 Gr. B	05000-2435	2
8	Collar	ASTM A-582-Ty. 303	05010-7853	1
9	Key	ASTM A-582 Ty. 303	05010-8421	1
10	Weight arm	ASTM A-582 Ty. 303	05010-8844	1
11	Weight	ASTM A-108 Gr. 1018	05010-7861	1
12	Socket set screw	ASTM A-307 Gr. B	05000-2468	1
13	Upper cover plate	ASTM A-366	05011-2762	1
14	Lower cover plate	ASTM A-366	05010-7374	1

## ACCESSORIES

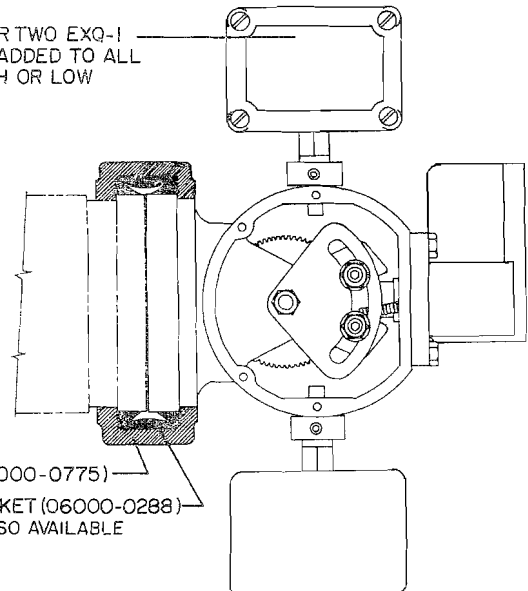


WELD NECKS

SIZE	PART NUMBER	MATERIAL	WT.
4" x 4"	05010-9669	ASME A-106 Gr. B	6#
4" x 6"	05011-4016	ASME A-106 Gr. B	9#



AN EXTRA ONE OR TWO EXQ-1 SWITCHES CAN BE ADDED TO ALL MODELS FOR HIGH OR LOW LEVEL CONTROL



4" COUPLING (06000-0775)

4" UNIVERSAL GASKET (06000-0288)  
OTHER SIZES ALSO AVAILABLE