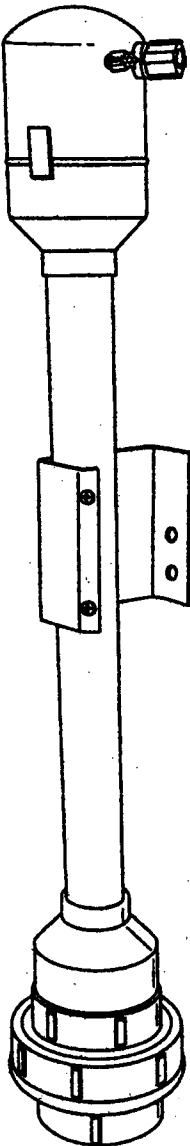


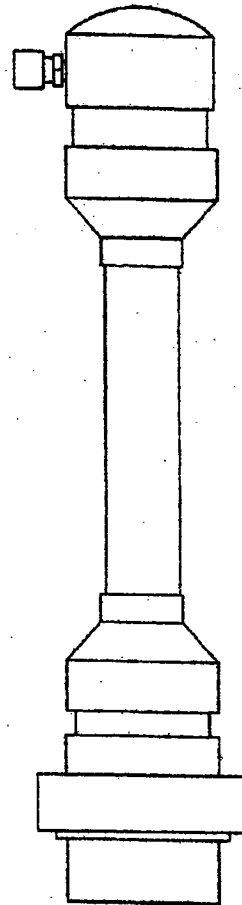
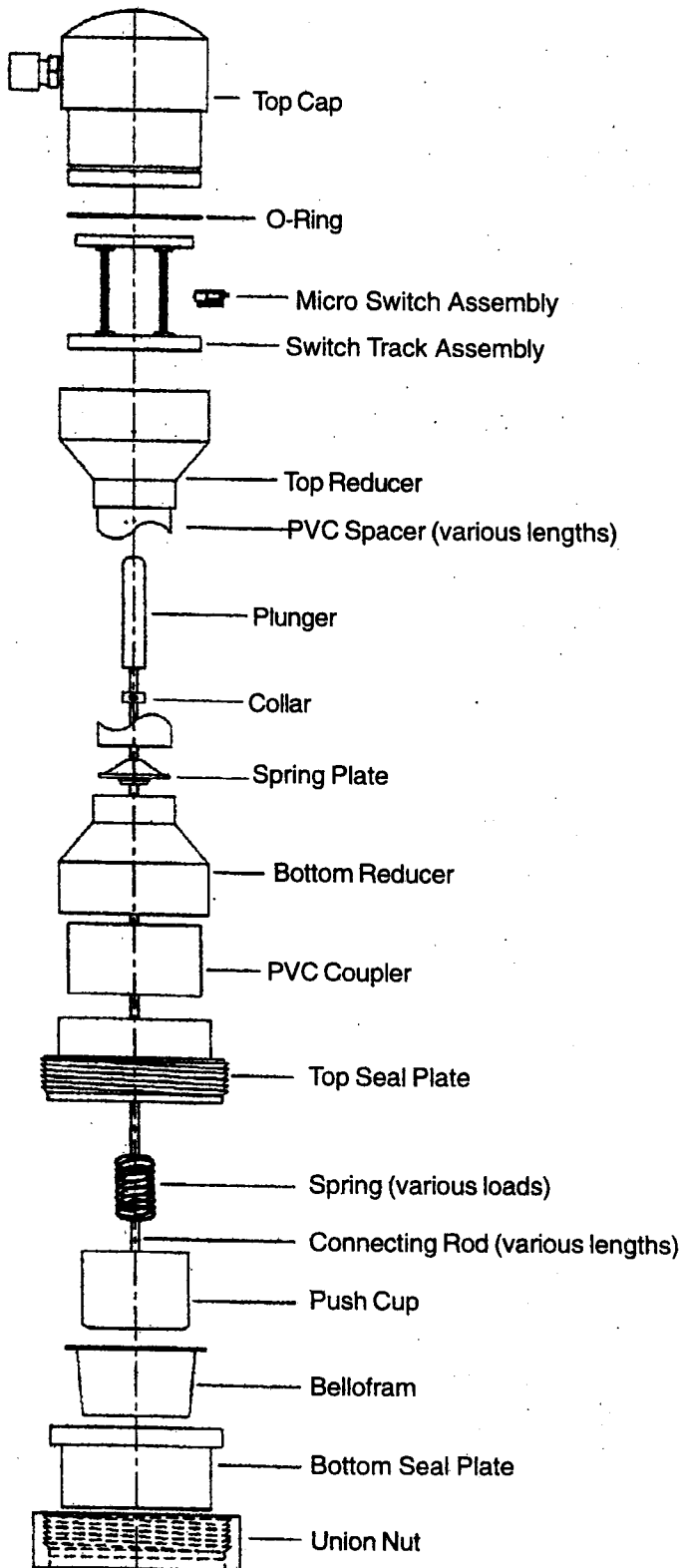
# Myers®

Pentair Pump Group

## LLC Controller

Safety Instructions  
Installation & Service Manual





## The Concept

The LLC is compact and works within its own diameter, requiring no lateral movement. The key to its unique operation is in the "Rolling Diaphragm" assembly. The Rolling Diaphragm Assembly consists of a durable Nitrile® diaphragm, push-cup and load spring.

While the housing of the LLC remains stationary, increases in the liquid level exert pressure on the "Rolling Diaphragm" and push-cup, which, in turn, drives a piston through a series of adjustable switches located in the head of the unit. As the liquid level decreases the "Load Spring" gradually returns the "Rolling Diaphragm" to the neutral position. In addition the tension of the "Load Spring" determines the overall diaphragm/piston travel to level ratio.

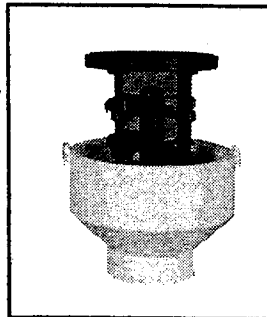
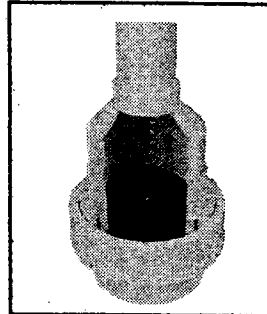


Figure 1

## FOUR STEP INSTALLATION

The LLC is quick and easy to install in just four steps.

### 1. Set the Adjustable Level Switches

The standard LLC comes complete with 4 adjustable switch assemblies. (Note: up to 14 switch assemblies can be mounted to the switch track to facilitate multiple functions).

First determine which model LLC you have. This information is located on the serial tag inside the cap of the LLC assembly. (Note: LLC18 = 18" switching range / LLC42 = 42" switching range).

Release the latches, on the top cap of the unit, and remove cap. You may notice some resistance in removing the cap due to the o-ring seal. Use of a twisting motion to remove the cap may be required).

With the cap removed, the switch track is readily accessible. It may be removed by gently lifting the assembly parallel with the piston away from the housing. Switch locations may be changed simply by snapping them in or out of the track assembly (see figure 2). **When moving the switch assemblies, be certain to keep the switch orientation as indicated by the arrow in figure 2; switch on the top of the snap bracket.**

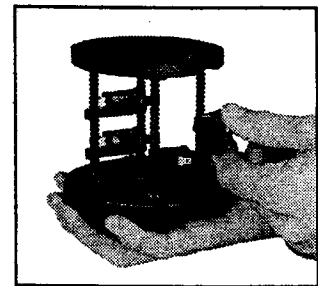


Figure 2

Using Table 1, refer to the "Setting" column that matches the model No. of your LLC. Read down the column until you reach the approximate setting, in inches, of the first switching level desired. Follow across the chart to the "Notch Setting" column. This number gives you the notch location, from the bottom of the track assembly, to snap your first switch.

Repeat this procedure for the remaining level switch settings. (Note: arrange a similar number of switches on each side of the track assembly to avoid unbalanced piston movement.)

Make note of wire colors utilized for each switching level for use in connecting switches to your system.

**Note:** The inches called out in Table 1 refer to inches of liquid level above top of union nut.

Table 1

Desired Switching Depth for 18" LLC (inches)	Desired Switching Depth for 42" LLC (inches)	Notch Setting Number (from bottom of switch track)
7/8	2	1
1-3/4	4	2
2-5/8	6	3
3-1/2	8	4
4-3/8	10	5
5-1/4	12	6
6-1/8	14	7
7	16	8
7-7/8	18	9
8-3/4	20	10
9-5/8	22	11
10-1/2	24	12
11-3/8	26	13
12-1/4	28	14
13-1/8	30	15
14	32	16
14-7/8	34	17
15-3/4	36	18
16-5/8	38	19
17-1/2	40	20
18-3/8	42	21
***	***	22
***	***	23

## 2. Mounting the LLC

**Special Note:** If the rolling diaphragm assembly has been pushed up by some other method than water pressure (someone manually pushing on it) it will be necessary to reset the push cup in the bellofram. This can be done by inserting the LLC into water to a depth equal to the full measurement range.

Follow these instructions if you purchased a stainless steel mounting bracket for your LLC. To determine the recommended location for mounting the bracket, hold the LLC with the top of the Union Nut at the level which you wish to start measurement. Once this position has been determined mount the bracket approximately 1/3 of the distance from the top of the LLC. Refer to the "Typical Installation" sketch. Next install the LLC assembly in the bracket and tighten the bolts. (CAUTION: Bolts should be snug only - overtightening the bolts could damage the unit). If other means of mounting are utilized, do not cut any holes in the housing.

### 3. Connecting the LLC to Your System

Connecting your LLC to an existing system or a brand new system couldn't be easier! The LLC will come with the switches connected in the normally open configuration. If your system requires normally closed contact(s) only one wire will need to be moved. (Refer to figures 3 and 4).

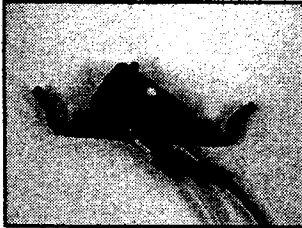


Figure 3  
Normally Open Setting

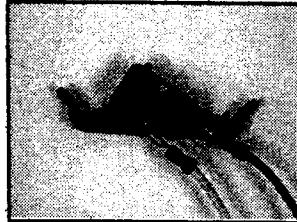


Figure 4  
Normally Closed Setting

Once the switches are wired, simply connect the loose color-coded ends into your control system.

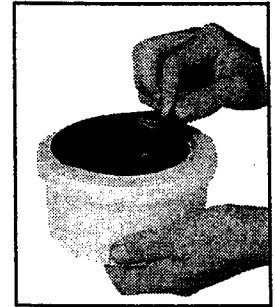
### 4. Ensuring Proper Venting

Your LLC came with a vent tube already attached. **The LLC must be properly vented in order to operate correctly!** Simply run the free end of the vent tube to a clean, dry unobstructed air source. Once this is done you have successfully installed your LLC!

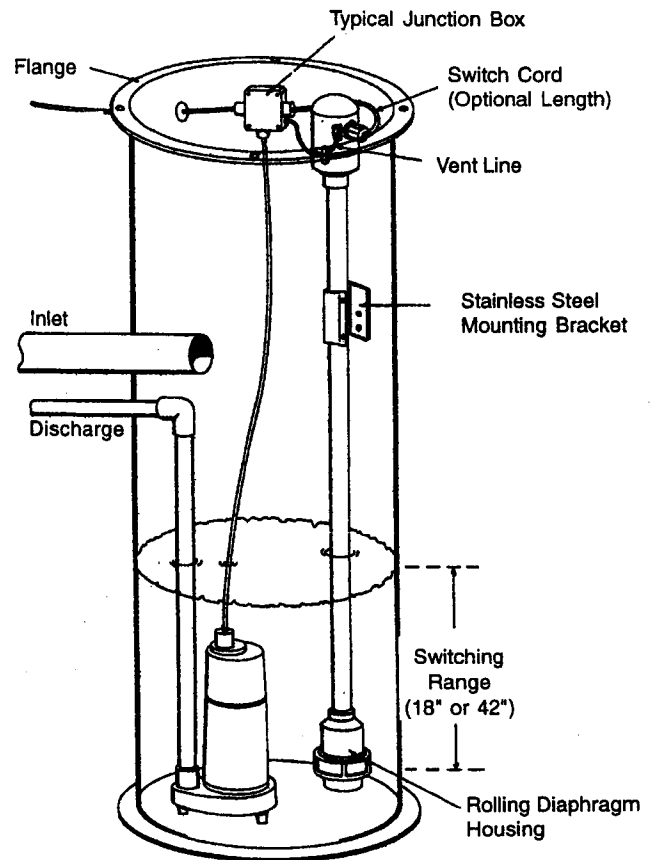
## REPLACING BELLOFRAM DIAPHRAGM

The bellofram is a durable Nitrile® diaphragm. It should last the lifetime of your LLC. However, if it should become cut or punctured by a sharp object it will need to be replaced for the LLC to continue to work properly. To replace the bellofram first unscrew the union nut.

Next pull off the bottom seal plate and the old bellofram. Place the new bellofram in the bottom seal plate. Lastly place the bottom seal plate and bellofram back over the push-cup, and then screw the union nut back on to the top seal plate.



## Typical Installation



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