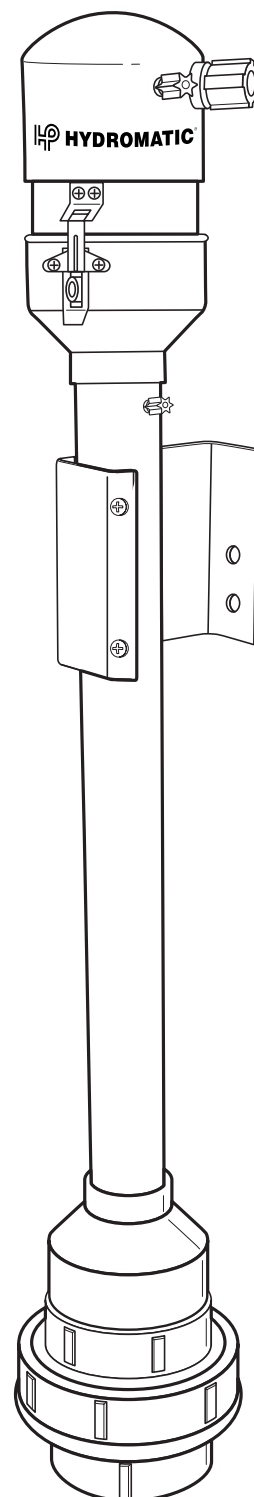


# HYDROMATIC®

## HPLC

### Liquid Level Control

- **Highly Reliable**
  - No grease, fat or oil build-up on the switch operating mechanism
  - Completely sealed switch to void contact with liquid
  - Unaffected by turbulent conditions
  - No power cords or electrical components in the liquid
- **Corrosion Resistant**
  - Rugged PVC housing assembly
  - Stainless steel mounting bracket
  - Durable nitrile diaphragm
- **Customized**
  - Built to meet your requirements
  - Capable of handling up to 14 functions
  - 4' through 10' lengths
  - 10' through 50' cord lengths
  - 18" or 42" switching range
- **Maintenance Friendly**
  - Quick and easy installations for new or retrofit systems
  - Number of functions and switch settings
  - Totally adjustable in the field
  - No tools required to service the unit
- **Full Two Year Warranty**



NOTE! To the installer: Please make sure you provide this manual to the owner of the pumping equipment or to the responsible party who maintains the system.

## General Information

Thank you for purchasing your Hydromatic HPLC. To help insure years of trouble free operation, please read the following manual carefully.

### Before operation:

Read the following instructions carefully. Reasonable care and safe methods should be practiced. Check local codes and requirements before installation.

### Attention:

This manual contains important information for the safe use of this product. Read this manual completely before using this product and refer to it often for continued safe product use. **DO NOT THROW AWAY OR LOSE THIS MANUAL.** Keep it in a safe place so that you may refer to it often.

### Warning:

Before handling pump(s) and controls, always disconnect the power first. Do not smoke or use sparkable electrical devices or flames in a septic (gaseous) or possible septic sump.

## The HPLC

This is an innovative pressure activated linear control switch that will meet your pump control needs.

The Hydromatic HPLC has no external moving parts. It is compact and works within its own diameter. The key to its operation is in the rolling diaphragm assembly. (See figure A)

The housing of the Hydromatic HPLC remains stationary while a pressure activated, rolling diaphragm drives a piston through a series of micro-switches that are held in a unique switch track located in the head. The track can hold up to 14 switches for starting and stopping pumps, activating high or low level and audible alarms and controlling various other functions. (See figure B)

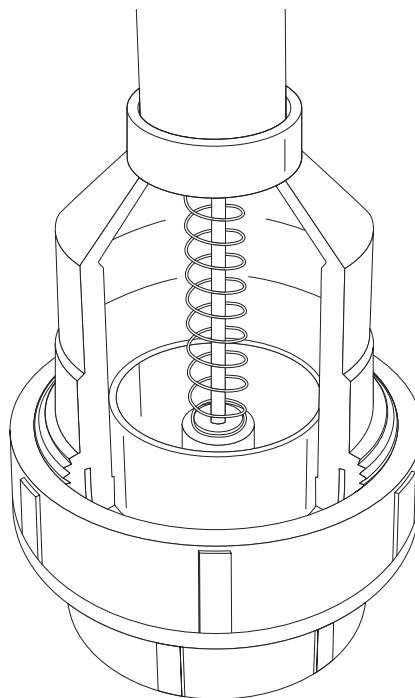


Figure A

This design is a reliable and accurate method for level control. It's easy and convenient to replace existing float systems. The Hydromatic HPLC is not affected by turbulent conditions, and is not affected by grease or floating debris. It is made completely of non-corrosive materials.

## Four Step Installation

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

### 1. Set The Microswitches

The first step is to set the microswitches for your liquid level control. Up to 14 micro-switches can be held by the track at a time. Each switch has its own connections for normally open or normally closed to meet your control needs. (See figure B)

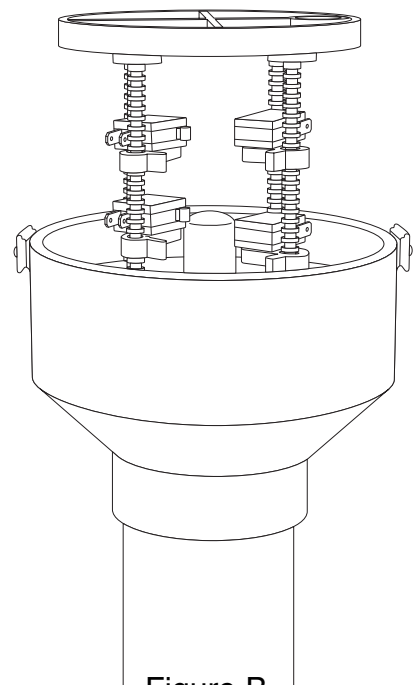


Figure B

The switches are easy to insert and easy to change. Simply snap them in and out from the outside of the track as shown in (figure C). Make sure to keep the switches balanced on the switch track. Too many switches all on one side of the piston could cause unwanted friction in the piston movement.

To determine where on the track to snap the switch in at first determine the water depth that you want the switch to be activated.

# HPLC Installation

Next if you have purchased a standard 18" or 42" Hydromatic HPLC, review Table 1 to determine which notch to snap the switch into. If you have purchased a non-standard range HPLC continue to follow these instructions.

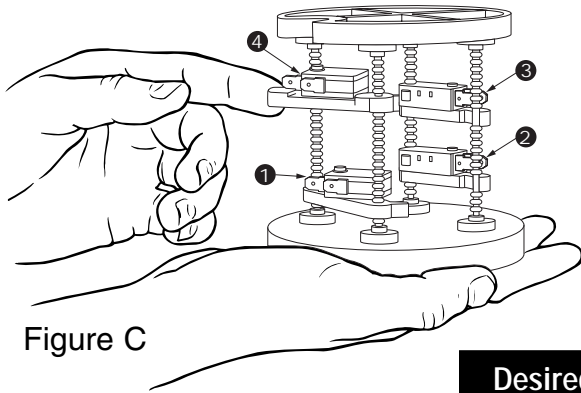


Figure C

Next determine the number of inches of water each notch is equivalent to. Do this by calculating the following equation. (See Equation 1)

Once this is done, complete equation 2 to determine which notch to snap the switch into. (See Equation 2)

**Warning:**  
**Disconnect all power to the control panel before connecting the Hydromatic HPLC! Risk of Electric Shock!**

## 2. Connecting the Switches to Your System

Connecting the HPLC to an existing Hydromatic system or a brand new Hydromatic system couldn't be easier! The HPLC will come with the switches connected in the normally open configuration.

$$\frac{\text{full switching range (inches)}}{21} = \text{inches of water per notch}$$

Equation 1

$$\frac{\text{desired switching range depth}}{\text{inches of water per notch}} = \text{notch setting}$$

Equation 2

**Wire color codes for standard HPLC switch configuration**

Off	
Switch #1	Black & White with Black Stripe
On	
Switch #2	White & Green
Lag	
Switch #3	Blue & Orange
High Level Alarm	
Switch #4	Red & Red with Black Stripe

Table 1

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

# HPLC Installation

Changing a switch to normally closed, however is as easy as moving one wire! Shown in figures D and E are both settings.

Once the switches are connected to as desired simply wire in the other end of the wires to your system, as you would with a standard float switch.

## 3. Mounting the HPLC

**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 HPLC into water to a depth equal to the full measurement range.

Follow these instructions for the stainless steel mounting bracket of your HPLC. Mounting your HPLC is simple using the non-corrosive stainless steel mounting bracket. First mount your bracket in the liquid holding tank so that the bracket will be approximately 1/3 of the distance from the top of the HPLC. Next insert the HPLC into the mounting bracket. Adjust the height of the HPLC so that the bottom of the HPLC is at the lowest point in which you wish to start measurement. Once this position has been determined tighten the bolts to hold the HPLC in place.

## 4. Ensuring Proper Venting

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

## Replacing Bellofram Diaphragm

The bellofram is a durable Nitrile® diaphragm. It should last the lifetime of your HPLC. However, if it should become cut or punctured by a sharp object it will need to be replaced for the HPLC 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. (See figure F) 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. See the detailed drawing on the last page for the parts diagram.

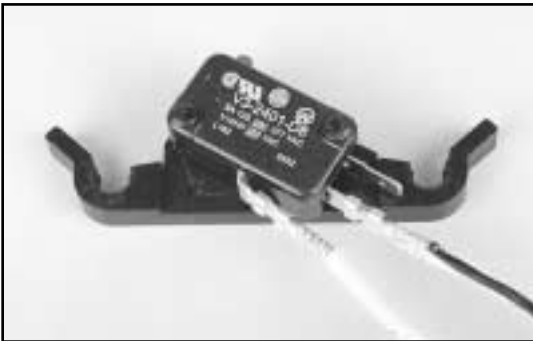


Figure D  
Normally Open Setting

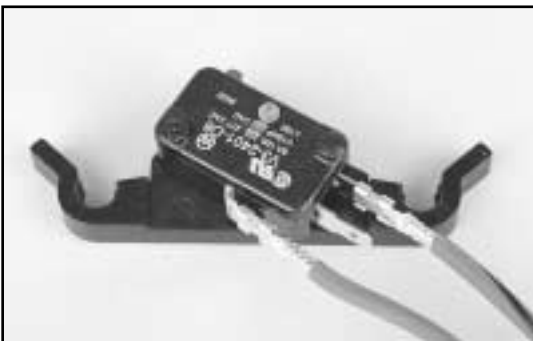


Figure E  
Normally Closed Setting

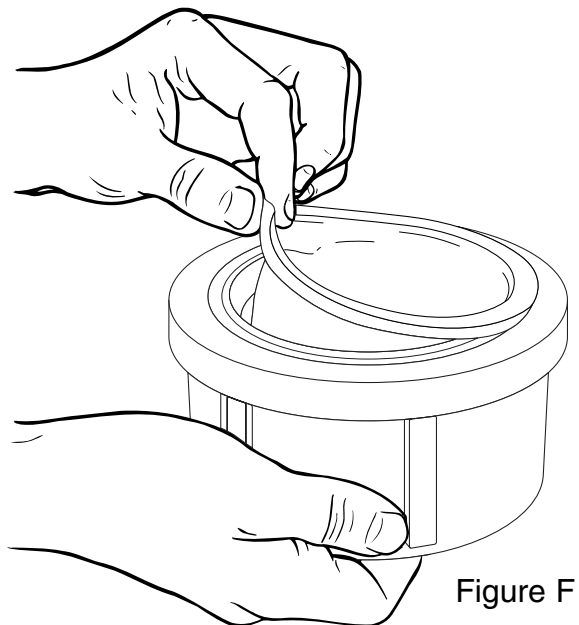
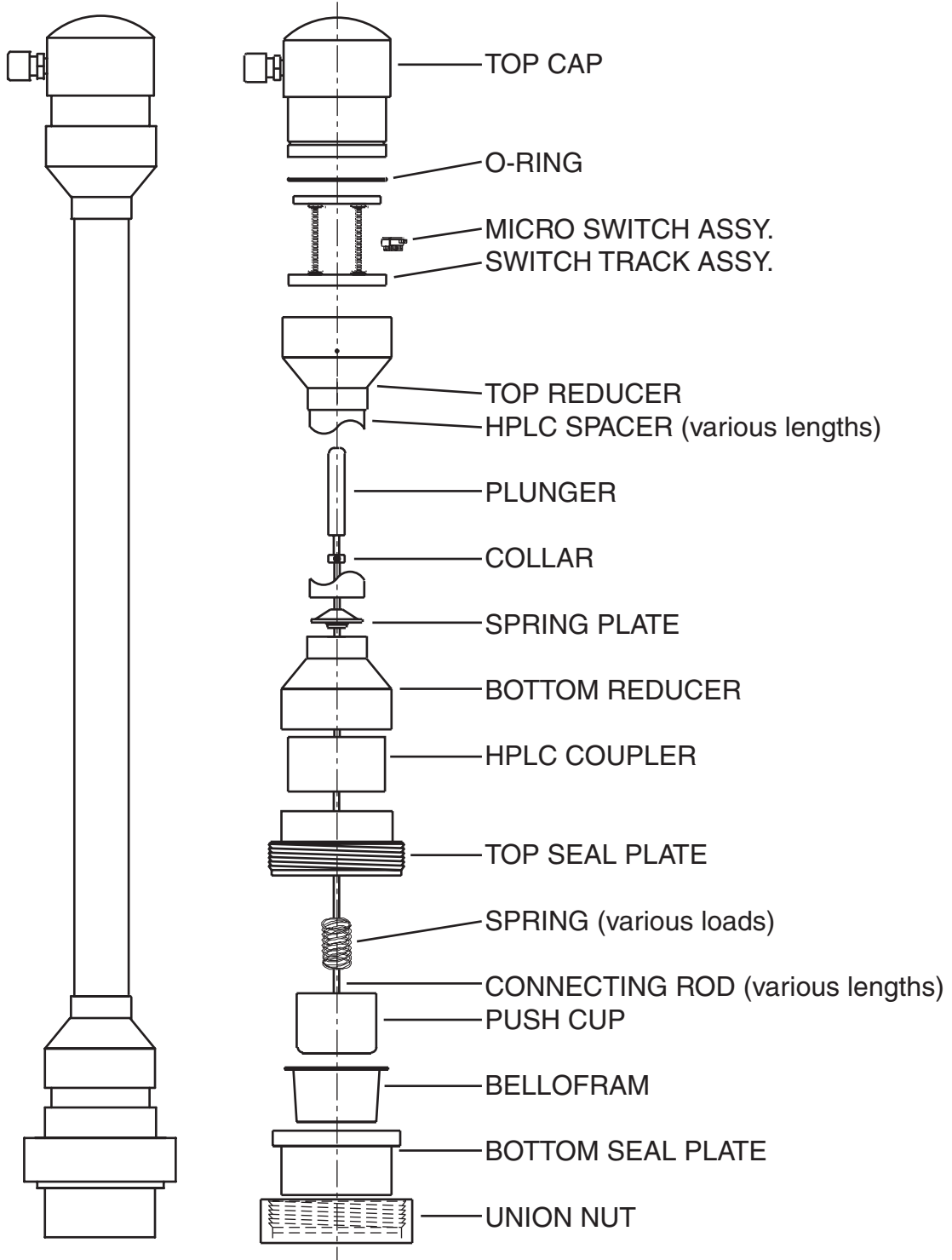


Figure F

# HPLC Parts List



## WARRANTY


Hydromatic Pumps, Inc. warrants to the original purchaser of each Hydromatic product(s) that any part thereof which proves to be defective in material or workmanship within one year from date of installation or 18 months from manufacture date, whichever comes first, will be replaced at no charge with a new or remanufactured part, F.O.B. factory. Purchaser shall assume all responsibility and expense from removal, reinstallation and freight. Any item(s) designated as manufactured by others shall be covered only by the express warranty of the manufacturer thereof. This warranty does not apply to damage resulting from accident, alteration, design, misuse or abuse. The pump must be installed, operated and maintained in accordance with the published instructions of the appropriate Installation & Service Manual.

All dual seal non-clogs and 3–5 HP grinders must have seal failure and heat sensors attached and functional for Warranty to be in effect. If a seal failure should occur, Hydromatic Pumps will cover only the lower seal and labor thereof. Labor based on Authorized Service Center contract allowance. If the heat sensor is not attached and functional, Warranty is void. If the seal failure sensor is not attached and functional, Warranty is void.

If the material furnished to the Buyer shall fail to conform to this contract or to any of the terms of this written warranty, Hydromatic Pumps, Inc. shall replace such nonconforming material at the original point of delivery and shall furnish instruction for its disposition. Any transportation charges involved in such disposition shall be for the Buyer's account. The Buyer's exclusive and sole remedy on account or in respect of the furnishing of material that does not conform to this contract or to this written warranty, shall be to secure replacement thereof as aforesaid. Hydromatic Pumps, Inc. shall not in any event be liable for the cost of any labor expended on any such material or for any incidental or consequential damages to anyone by reason of the fact that such material does not conform to this contract or to this written warranty.

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