

## LIMITED WARRANTY

SHURflo warrants FLOport Gas Pump model #166-226-XX to be free from material and workmanship defects (under normal use and service) for a period of five (5) year from the date of manufacture.

The limited warranty will not apply to pumps that were improperly installed, misapplied, or not suitable with components of other manufacturers. The limited warranty will not apply to pumps subjected to fluids that are incompatible with pump materials, or pumps operated by a contaminated air supply. SHURflo will not warrant any pump that is physically damaged or modified outside the SHURflo factory.

All FLOport gas pumps are to be returned to SHURflo Ltd., West Sussex, England, postage prepaid. Package returns carefully; SHURflo is not responsible for damage. SHURflo's obligation under this warranty policy is limited to repair or replacement. Pumps found not defective (under the terms of this limited warranty) are subject to charges to be paid by the returnee for the testing and packaging of "tested good" units.

No credit or labor allowances will be given to the returnee for pumps returned as defective. Warranty replacements will be shipped on a freight allowed basis. SHURflo reserves the right to choose the method of transportation.

This limited warranty is in lieu of all other warranties, expressed or implied, and no other person is authorized to give any other warranty or assume obligation or liability on SHURflo's behalf. SHURflo shall not be liable for any labor, damage or other expense, nor shall SHURflo be liable for any indirect, incidental or consequential damages of any kind incurred by the reason of the use or sale of any defective product or part. This limited warranty covers beverage products distributed within the United States of America. Other world market areas should consult with the distributor for any deviation from this document.



★ ISO Certified Facility



a WICOR Company



COMPONENT

**SHURflo reserves the right to update specifications, prices, or make substitutions.**

### SHURflo ★

5900 Katella Avenue  
Cypress, CA 90630  
(800) 854-3218 (562) 795-5200  
FAX (562) 795-7564

Shipping: 5900 Katella Ave., Suite B  
Cypress, CA 90630

### SHURflo East

52748 Park Six Court  
Elkhart, IN 46514-5427  
(800) 762-8094  
(219) 262-0478

FAX (219) 264-2169  
© 1998 Printed in USA

### SHURflo Ltd.

Unit 5 Sterling Park  
Gatwick Road, Crawley  
West Sussex, RH10 2QT  
United Kingdom  
+44 1293 424000  
FAX +44 1293 421880



## H.D.A. FLOport BEVERAGE GAS PUMP (166-226-XX)

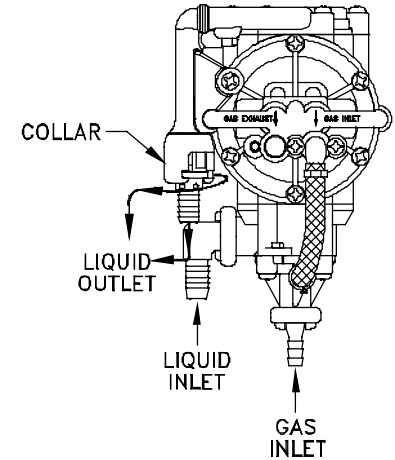
### Installation and Operation Manual

#### LIQUID OUTLET FITTING

##### REMOVAL / INSTALLATION:

1. Remove the CO<sub>2</sub>/gas inlet fitting\*.  
Operate the dispenser valve to relieve **all** pressure within the outlet tubing.
2. Rotate the Locking Collar clockwise a ¼ turn and allow the Locking Collar and outlet fitting to drop down.
3. Slide the fitting sideways through opening in the Locking Collar.
4. Install in reverse order.

\*Q.D. operation for CO<sub>2</sub>/gas and liquid inlet fittings illustrated on page: 3.



#### PUMPING CAPABILITY

Due to diversity of both the installations and equipment used within beverage systems, it is difficult to calculate/predict total pumping distance. The ability to deliver fluid is limited by the dynamics of the fluid (flow) and pump displacement at pressure. Consider the following factors when estimating pressure drop within a beverage system.

- Fluid viscosity and temperature.
- Inside diameter of the inlet/outlet tubing, fittings, etc.
- Total flow rate of valve(s) connected to a pump.
- Horizontal distance of the outlet tubing.
- The pressure drop per foot within vertical tubing runs is significant. To estimate the losses use the appropriate distance given by Max. Horz. Dist. Chart. Take 3% of that distance. Multiply the vertical distance by that number. Subtract the product from the original Max. Horz. distance. The result is the total tubing run (includes vertical) that should be attempted for that flow rate, tubing I.D., and viscosity.

#### MAXIMUM HORIZONTAL DISTANCE by VISCOSITY

TABLES ARE TO BE USED AS A GUIDELINE ONLY (Centipose = cP.)

SYRUP TYPE/VISCOSITY	FLOWRATE	10 MM I.D. TUBING
Standard Sugar (15-30 cP.)	15 cc/sec	152+ meters
	30 cc/sec	118 meters
Heavy Soda (30-45 cP.)	15 cc/sec	150 meters
	30 cc/sec	73 meters

Diet soda syrups are substantially less viscous (3 cP.) The tables above are the results of tests conducted with 5.8 bar (to the pump), with a minimum of 2.38 bar at the dispenser valve (to maintain brx). Ambient temperature = 21°C.

## INSTALLATION GUIDELINES

- Mount the pump so the CO<sub>2</sub> inlet and liquid outlet fittings are point down.

**NOTE:** The right bracket keyhole slot is **not** accessible with a screwdriver. The screw **must** be installed first allowing clearance to slip the keyhole slot over screwhead. Tighten the left mounting screw securely.

- The pump should be mounted above the B-I-B or at least at the same level. Pumps placed lower than the B-I-B's will increase the ability to entrap air in the B-I-B.
- The **MAXIMUM** length of **INLET** tubing is **3 M**, with **NO MORE** than a **1.5 M** vertical lift. Use clear, 10mm I.D., vacuum rated heavy wall (3 mm), food grade tubing from the B-I-B to the pump inlet.
- If necessary to connect B-I-B's together, plumb (Tee) B-I-B's **side-by-side** horizontally, rather than one on top of the other, vertically.
- **OUTLET** tubing from the pump to the dispenser should be 10mm I.D.. high pressure, food grade, braided tubing. Always cut outlet tubing longer than necessary to provide a "service loop" so the B-I-B rack can be moved for cleaning or service.
- Tie-wrap all tubing securely to prevent kinks or sags that inhibit performance or cause damage to the pump fittings.
- Use only **new** 6mm I.D., CO<sub>2</sub> approved high pressure tubing between low pressure regulator and the pump.

**NOTE: NEVER** connect a transfer tank "system" in series with a B-I-B system. Syrup contaminants in old components may work their way through the air supply causing premature failure to the gas pump. The gas used to drive the pump **MUST** be clean and contain no contaminants (syrup, oil, rust, water, etc.). Air compressors may be used with proper particle filters and moisture separators. Air storage tanks should be drained weekly. Pumps subjected to contaminated air **are not** covered by warranty.

**CAUTION:** Pumps driven with CO<sub>2</sub> are to be operated in well-ventilated areas. If used in a confined area (basement, closet, cooler box, etc.), CO<sub>2</sub> exhaust should be vented to the outside.

## START-UP PROCEDURE

1. Confirm that all tubing connections are properly clamped, fittings are locked, and tubing is not kinked.
2. Connect the bag connector/inlet tube onto the bag fitting. Open the dispenser valve (syrup side).
3. Adjust gas regulator to about 1.4 bar, allowing the pump to stroke slowly. Once the pump is primed the regulator can be adjusted up.
4. Continue dispensing syrup until **all** the air trapped within the tubing has been purged.
5. Once the air has been purged, adjust the CO<sub>2</sub> regulator to the pressure necessary to maintain the brix. The most efficient gas usage occurs at 2.8 bar. **Maximum** gas pressure to the pump is 5.9 bar; minimum is 1.4 bar.

**NOTE:** To prevent air from entering the system always leave the bag connector connected to the empty B-I-B until a new B-I-B can be installed. Air entered into the system, via air in the bags or vacuum leaks, may cause brix fluctuation, foaming, spitting, non-operation of the vacuum shut-off, or the pump to run while the dispenser is closed. Symptoms of this kind can lead to a misdiagnosis of the pump as the problem.

## PUMP SANITIZING / WINTERIZING

The SHURflo pump is only one piece of a beverage dispensing system. Therefore, frequent sanitization of the pump and **ALL** equipment in the system is required. **Sanitization is dependent on the syrup or beverage type and its manufacturer's requirements.** Factors which also affect the frequency of this procedure are temperature, facility conditions, installation, and equipment. Consult other equipment manufacturer's instructions for their sanitizing requirements. Refer to SHURflo Service Bulletin #1025 for the N.S.F. listed sanitizing procedure for the SHURflo pump (*only*).

**CAUTION:** Never use pressurized tanks to sanitize or purge the pump of fluid (operating or not). Applying pressure to the pump inlet could damage internal components.

If the pump is subjected to temperatures of 0°C or lower, the system must be drained of all liquid to prevent damage due to freezing. It is suggested that when taking a pump out of service, the pump and lines, etc. must be sanitized and purged of all fluid. Refer to the equipment manufacturer's recommendation on purging lines and dispenser equipment. Refer to SHURflo Service Bulletin #1025 for complete winterizing procedure.

## GENERAL SPECIFICATIONS

<b>DESIGN:</b>	Twin Chamber Double Diaphragm
<b>MATERIALS OF CONSTRUCTION:</b>	Polypropylene, Celcon, EDPM, Santoprene, Stainless Steel, FDA sanctioned, NSF listed
<b>POWER SOURCE:</b>	CO <sub>2</sub> , Nitrogen, or dry compressed filtered air
<b>OPERATING PRESSURE:</b>	1.4 bar <b>MIN.</b> / 5.9 bar <b>MAX.</b>
<b>DISPLACEMENT:</b>	100 cc per cycle
<b>SOLD OUT:</b>	Automatic-No reset required, activated at 508 mm/Hg min.
<b>MAX. STROKE RATE:</b>	2 strokes per second; intermittent duty
<b>TEMPERATURE LIMITS:</b>	1.1°— 49°C

