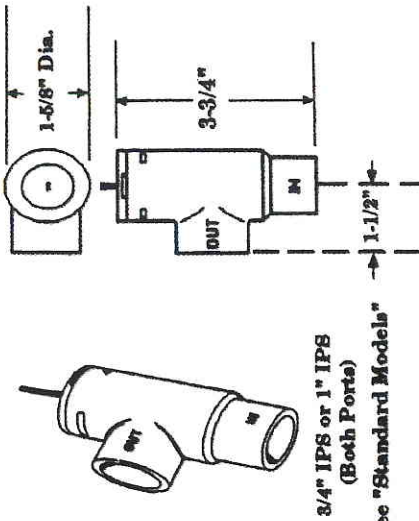


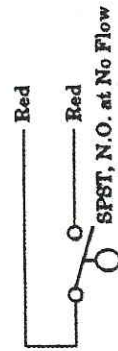
INSTALLATION AND MAINTENANCE



Specifications...

| | |
|------------------------------|---|
| Housing, Shuttle, Bonnet | PVC |
| O-Ring | Buna N |
| Other Wetted Parts | Epoxy |
| Oper. Temperature (Max) | +140°F (+60°C) |
| Oper. Pressure (Max) | 150 psig @ +70° to 100°F (+21° to +38°C) 50 psig @ +101° to +140°F (+38° to +60°C) |
| Mounting Position | Vertical Lead Wires Up |
| Set Point Differential | 20% Maximum |
| Switch, See "Switch Ratings" | SPST, 20 VA |
| Wire Leads | No. 22 AWG., PVC, 24" L. |

Typical Wiring Diagram...



Switch Ratings

| VA | Volts | Amps AC | Amps DC |
|----|-------|---------|---------|
| 20 | 0-30 | .4 | .3 |
| | 120 | .17 | .13 |
| | 240 | .08 | .06 |

Standard Models...

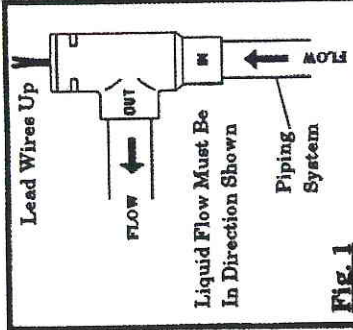
| Port Size | Actuation on Incr. Flow | Unit P/N |
|-----------|-------------------------|----------|
| 1/2" NPT | 0.5 GPM ±20% | 127045 |
| 3/4" IPS | 0.5 GPM ±20% | 127050 |
| 1" IPS | 2.0 GPM ±20% | 127080 |

Installation...

FS-400P Series Flow Switches are for use in plastic piping systems. Installation is vertical. Lead wires up, as shown (Fig. 1, below).

Clean and prepare plastic piping to receive unit, using standard procedures. Use a suitable chemical adhesive in accordance with manufacturer's instructions and install unit in piping. Allow installation to stand, dry and unpressurized, for 24 hours.

Connect lead wires to proper interface.



Maintenance...

Disassembling for Cleaning... It is not necessary to remove the unit from the piping system.

CAUTION: Make sure the system is turned off and that no residual pressure remains in the piping.

- Carefully slide out the two retaining keys, using a screwdriver or similar tool.
- Insert wide-bladed screwdriver in one of bonnet removal slots and twist screwdriver slowly, forcing bonnet out of housing. Do not pull on lead wires, as this can damage unit.

Cleaning...

Clean shuttle, stem and inside of housing by lightly scraping and/or wiping. Be careful not to damage guide finders in bottom of housing or flutes inside of shuttle. Check O-Ring, bonnet assembly and shuttle, and replace if necessary. See "Replacement Parts" (below). **Note:** Replacement of O-Ring is recommended whenever unit is disassembled.

To Reassemble Unit...

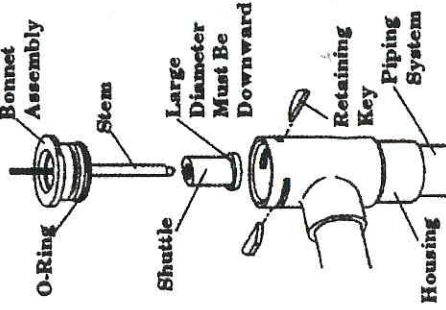
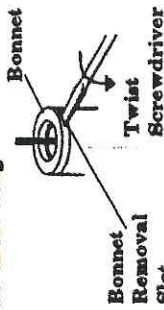
- Assemble shuttle on bonnet stem, making sure large, round end of shuttle is downward.
- Hold shuttle on stem and insert bonnet squarely into housing. Gently press bonnet into place with a slight twisting motion.
- Slide two retaining keys into slots in housing.

*Replacement Parts...

Complete Repair Kit
(Includes Bonnet Assy,
Shuttle, O-Ring).....P/N 127645

*Order by P/N from Gems

Removal of Bonnet From Housing



WARNING

Product must be maintained and installed in strict accordance with the Gems technical brochure and instruction bulletin. Failure to observe this warning could result in serious injuries or damages. For hazardous areas applications involving such things as (but not limited to) ignitable mixtures, combustible dust and flammables, use an appropriate explosion-proof enclosure or intrinsically safe interface device.

CAUTION

The pressure and temperature limitations shown on the individual catalog pages and drawings for the specified flow switches must not be exceeded. These pressure and temperature must take into consideration possible system surge pressures, temperatures and their frequencies.

The liquids used must be compatible with the materials of construction. Specifications of materials will be given upon request. Life expectancy of switch contacts varies with application. Contact the Factory if life cycle testing is required.

Ambient temperature changes do affect switch set points, since specific gravities of liquids vary with temperature. Consult Factory for assistance.

Flow switches have been designed to be shock and vibration resistant; however, shock and vibration should be minimized. Consult Factory for assistance.

Excessive contaminants in fluid may inhibit shuttle operation and occasional wipe-down may be necessary. Consult Factory for assistance.

Troubleshooting and maintenance of flow switches should be in strict compliance with procedures set forth in the troubleshooting and maintenance sections of the technical brochure or an instruction bulletin.

Electrical entries and mounting points require liquid/vapor sealing.

Flow switches must not be field-repaired.

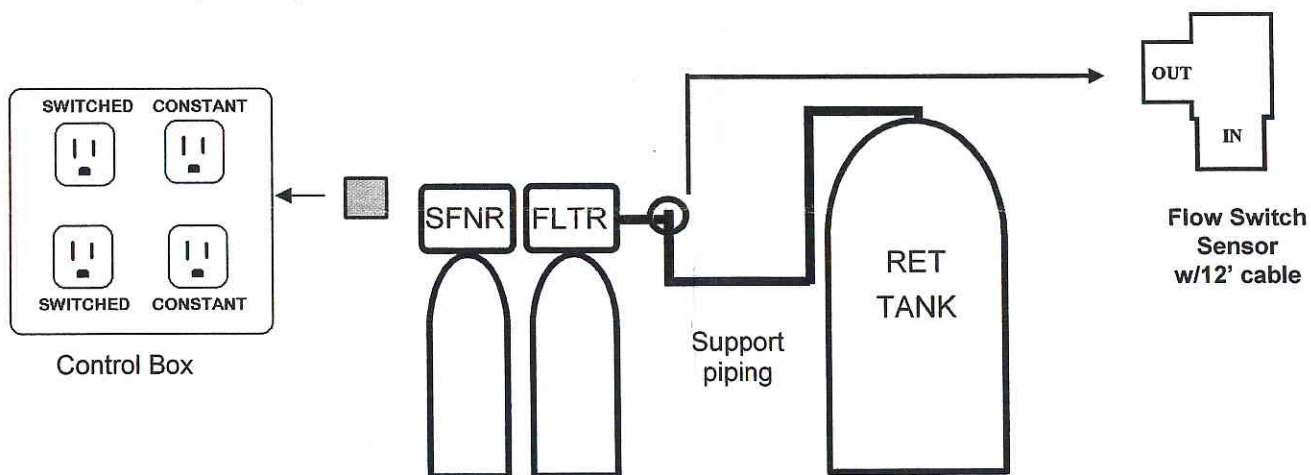
Physical damage to product may render product unserviceable.

THE "NO-GLITCH" FLOW SWITCH

Note to the Installer: "I designed this Flow Switch for ease of installation and servicing. I always wanted a Flow Switch that would work the 1st time—right out of the box!—and be virtually maintenance free. This one is... Or I want to know about it!! We physically test EACH one FOUR TIMES before we close the cover on the box. And when you install this in the best location (which I found by tough trial and error—I was the one who had to "go back") this Flow Switch will work for you and your customer for YEARS!" -Phil LaHaye Over 6000 in use!

5 EASY INSTALLATION STEPS:

- 1) Glue or attach piping to Flow Switch sensor. Let dry and **MAKE SURE THE SHUTTLE (the red thing) MOVES FREELY!**
- 2) Pipe the Flow Switch sensor vertically on the DOWNSTREAM side of the Retention Tank and UPSTREAM from the filter. (This normally requires that you pipe down below the location of the Flow Switch sensor and then back up to it. **REMEMBER TO SUPPORT THE PIPING!** We do not recommend that you mount the sensor on top of the Retention Tank as trapped air can become a problem and you may have difficulty servicing it without a ladder.)
- 3) Mount Control Box on wall, post or to piping with mounting brackets (included)
- 4) Plug the power cord into an approved electrical outlet. Plug the Chemical Feed Pump(s) into the SWITCHED outlet(s) (see diagram below) and the filter and softener into the CONSTANT outlets.
- 5) Test by turning water on/off downstream from sensor and adjust Chemical Feed Pumps. **SIMPLE!**



DO NOT APPLY LUBRICANTS TO THE SHUTTLE OR SHAFT!!! EVER!!

CAUTION!!! WHEN GLUING FLOW SWITCH INTO PIPING, MAKE SURE THE SWITCH SHUTTLE (the RED part that moves up and down on the inside stem) IS NOT GLUED. ALWAYS TEST THE FLOW SWITCH AFTER GLUING TO THE PIPING.

DANGER: ALWAYS UNPLUG THE FLOW SWITCH ASSEMBLY BEFORE WORKING ON IT!!

CAUTION: THERE ARE NO USER SERVICEABLE PARTS INSIDE!! REMOVING THE COVER TO EXPOSE THE WIRING VOIDS THE WARRANTY.

CAUTION: ALTERING THE WIRING IS DANGEROUS AND CAN EASILY "FRY" THE ELECTRONICS RESULTING IN COSTLY AND TIME CONSUMING REPAIRS.