

## INSTALLATION INSTRUCTIONS FOR SLOAN SERIES 900 HYDRAULIC FLUSHING SYSTEM — ROYAL® AND REGAL® XL CONCEALED CLOSET AND URINAL INSTALLATIONS



Concealed Closet Flushometer  
1-1/2" (38 mm) Back Spud  
MODEL 940  
MODEL 952

Concealed Closet Flushometer  
No-Flush Connection  
MODEL 950

Concealed Closet Flushometer  
1-1/2" (38 mm) Top Spud  
MODEL 953

Concealed Urinal Flushometer  
1-1/4" (32 mm) Back Spud  
MODEL 990

Concealed Urinal Flushometer  
3/4" (19 mm) Back Spud  
MODEL 995

### LIMITED WARRANTY

Unless otherwise noted, Sloan Valve Company warrants this product, manufactured and sold for commercial or industrial uses, to be free from defects in material and workmanship for a period of three (3) years (one (1) year for special finishes, SF faucets, PWT electronics and 30 days for PWT software) from date of first purchase. During this period, Sloan Valve Company will, at its option, repair, replace, or refund the purchase price of any product which fails to conform with this warranty under normal use and service. This shall be the sole and exclusive remedy under this warranty. Products must be returned to Sloan Valve Company, at customer's cost. No claims will be allowed for labor, transportation or other costs. This warranty extends only to persons or organizations who purchase Sloan Valve Company's products directly from Sloan Valve Company for purpose of resale. This warranty does not cover the life of the batteries.

**THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO EVENT IS SLOAN VALVE COMPANY RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY MEASURE WHATSOEVER.**

### PRIOR TO INSTALLATION

Prior to installing the Sloan Flushometer, install the items listed below as illustrated in the Rough-in Diagrams on Pages 2 and 3.

- Bore a 2" (51 mm) hole in wall for piping, if required.
- Install closet or urinal fixture.
- Install 1-1/2" (38 mm) drain line (NOT supplied by Sloan).
- Install water supply line.
- Bore a 1-1/2" (38 mm) hole in wall for Hydraulic Push Button Actuator.
- For Model HY-72-A Push Button Actuator, install an electrical box at the Push Button Actuator location.

**NOTE: MAXIMUM DISTANCE FROM BUTTON TO VALVE IS 20' (LONGER TUBING REQUIRED)**

#### Important:

- **INSTALL ALL PLUMBING IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.**
- **WATER SUPPLY LINES MUST BE SIZED TO PROVIDE AN ADEQUATE VOLUME OF WATER FOR EACH FIXTURE.**
- **FLUSH ALL WATER LINES PRIOR TO MAKING CONNECTIONS.**

Sloan Royal and Regal XL Flushometers are designed to operate with 15 to 80 psi (103 to 552 kPa) of water pressure. **THE MINIMUM PRESSURE REQUIRED TO THE VALVE IS DETERMINED BY THE TYPE OF FIXTURE SELECTED.** Consult fixture manufacturer for minimum pressure requirements.

Most Low Consumption water closets (1.6 gpf/6.0 Lpf) require a minimum flowing pressure of 25 psi (172 kPa).

**IMPORTANT: With the exception of Control Stop Inlet, DO NOT use pipe thread sealant or plumbing grease on valve components or couplings!**

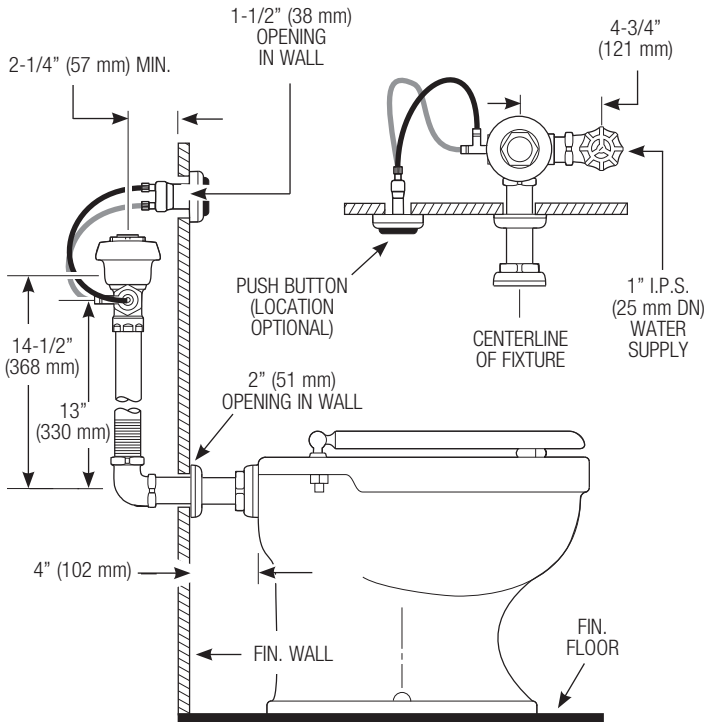
**Protect the chrome or special finish of this Flushometer — DO NOT use toothed tools to install or service the valve. Also, see "Care and Cleaning" section of this manual.**

### TOOLS REQUIRED FOR INSTALLATION

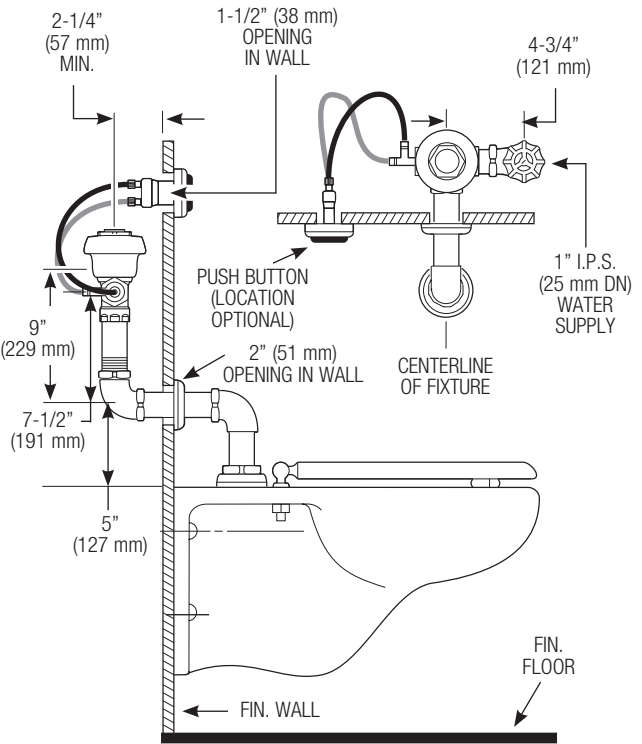
- Straight blade (flathead) screwdriver
- 5/64" hex wrench
- Sloan A-50 Super-Wrench™, Sloan A-109 Plier Wrench or smooth jawed spud wrench
- Parker Tube Cutter (PTC)

## VALVE ROUGH-INS

MODEL 940-1.6 — Low Consumption, 1.6 gpf (6.0 Lpf)  
 MODEL 940 — Water Saver, 3.5 gpf (13.2 Lpf)

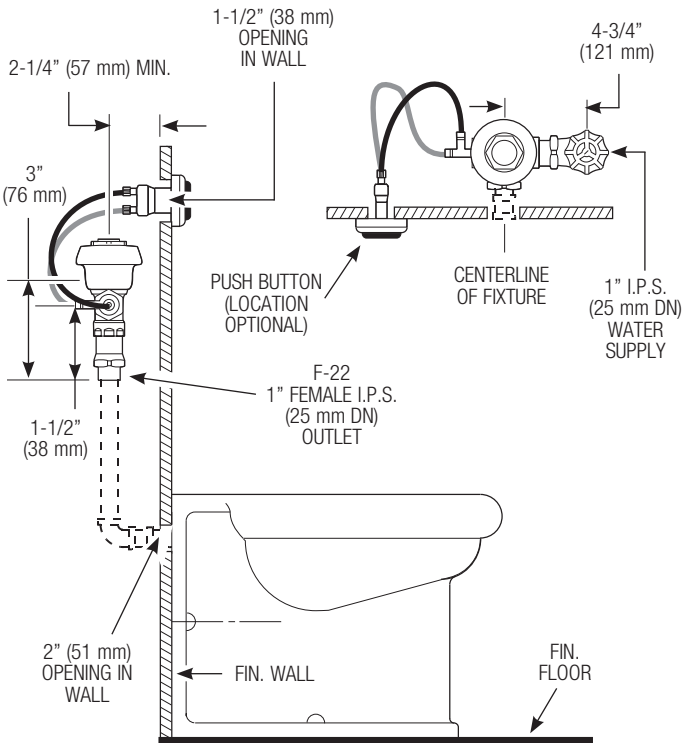


MODEL 953-1.6 — Low Consumption, 1.6 gpf (6.0 Lpf)  
 MODEL 953 — Water Saver, 3.5 gpf (13.2 Lpf)

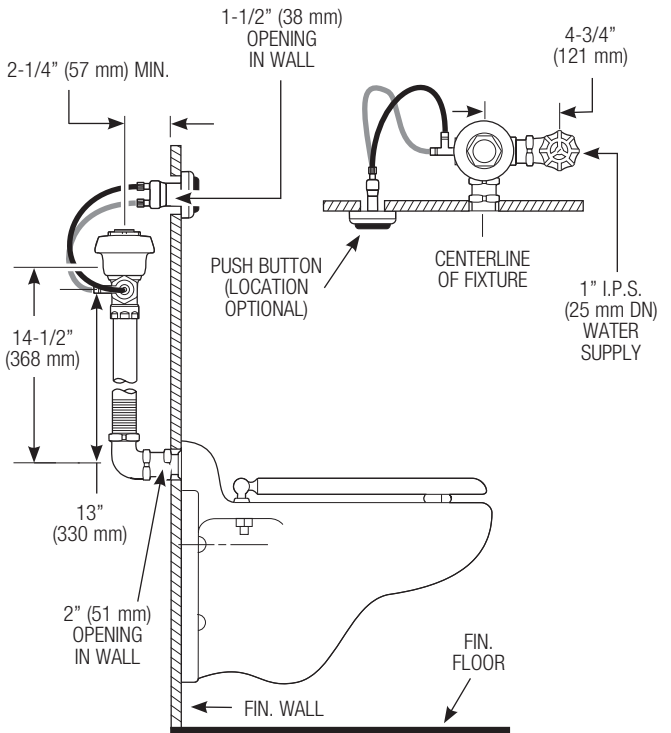


MODEL 950-1.6 — Low Consumption, 1.6 gpf (6.0 Lpf)  
 MODEL 950 — Water Saver, 3.5 gpf (13.2 Lpf)

Note: Also for use with Flushing Rim Floor Drains and Squat Toilets.  
 Note: Valve can be located in ceiling above fixture.



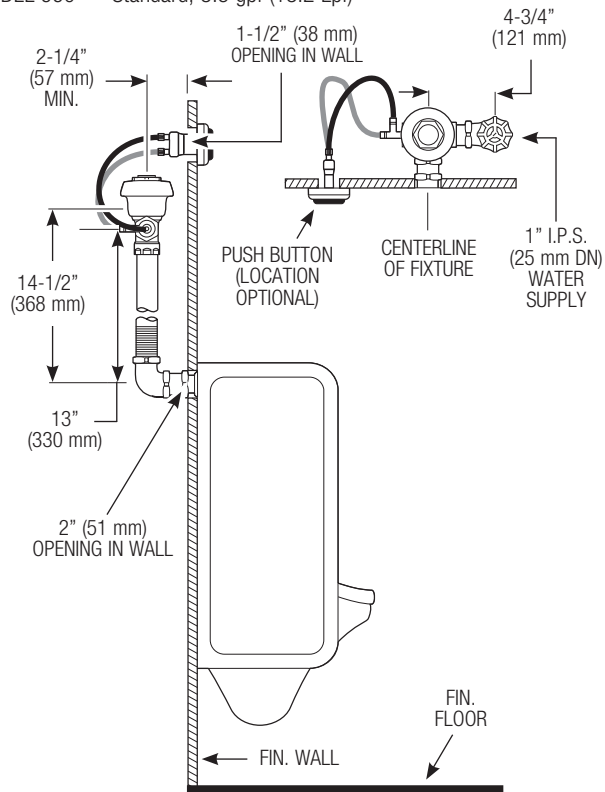
MODEL 952-1.6 — Low Consumption, 1.6 gpf (6.0 Lpf)  
 MODEL 952 — Water Saver, 3.5 gpf (13.2 Lpf)



Note: Water Closet Valves with "-2.4" Model Designation deliver 2.4 gpf (9.0 Lpf).

## VALVE ROUGH-INS (CONTINUED)

MODEL 990-1.0 — Low Consumption, 1.0 gpf (3.8 Lpf)  
 MODEL 990-1.5 — Water Saver, 1.5 gpf (5.7 Lpf)  
 MODEL 990 — Standard, 3.5 gpf (13.2 Lpf)



### !!! IMPORTANT !!!

Carefully read this manual to ensure proper product installation and longevity. Also, please visit our website [www.sloan.com](http://www.sloan.com) to download our most recent documentation for this product.

### !!! IMPORTANT !!!

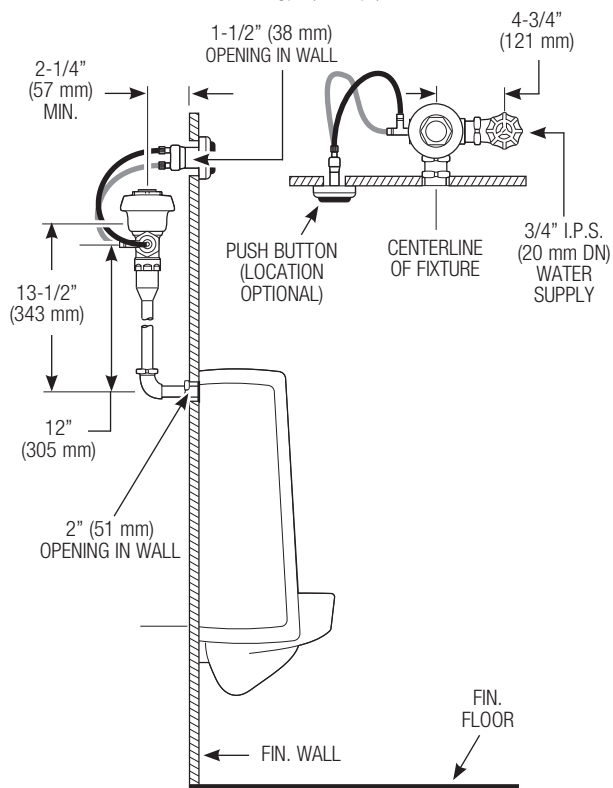
With the exception of the Control Stop Inlet, do NOT use pipe thread sealant or plumbing grease on valve components or couplings.



### !!! IMPORTANT !!!

This product contains mechanical and/or electrical components that are subject to normal wear. These components should be checked on a regular basis and replaced as needed to maintain the valve's performance.

MODEL 995-0.5 — 0.5 gpf (1.9 Lpf)  
 MODEL 995-1.0 — Low Consumption, 1.0 gpf (3.8 Lpf)  
 MODEL 995 — Water Saver, 1.5 gpf (5.7 Lpf)



### !!! IMPORTANT !!!

When ordering, specify the model variation required. Note: Water Closet Valves with "-2.4" Model Designation deliver 2.4 gpf (9.0 Lpf).

### !!! IMPORTANT !!!

Protect the chrome or special finish of Sloan Flushometers. Do NOT use toothed tools to install or service valves. Use a Sloan A-50 Super Wrench™, Sloan A-109 Plier Wrench or smooth jawed spud wrench to secure couplings. See "Care and Cleaning" section of this manual.

Never open the Control Stop to where the flow from the valve exceeds the flow capability of the fixture. In the event of a valve failure, the fixture must be able to accommodate a continuous flow from the valve.

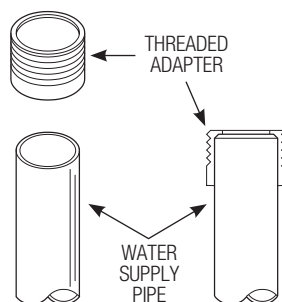
### !!! IMPORTANT !!!

If you have questions about how to install your Sloan Flushometer, consult your local Sloan Representative, or call the Sloan Installation Engineering Department at:

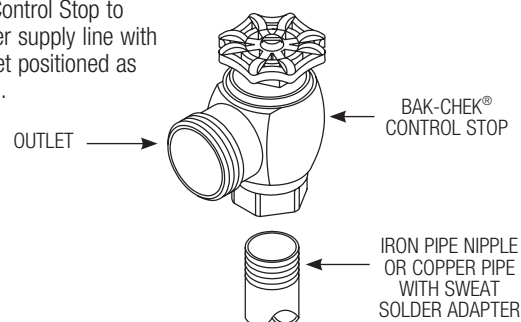
1-888-SLOAN-14 (1-888-756-2614)

## 1- INSTALL OPTIONAL SWEAT SOLDER ADAPTER (ONLY IF YOUR SUPPLY PIPE DOES NOT HAVE A MALE THREAD) AND INSTALL CONTROL STOP

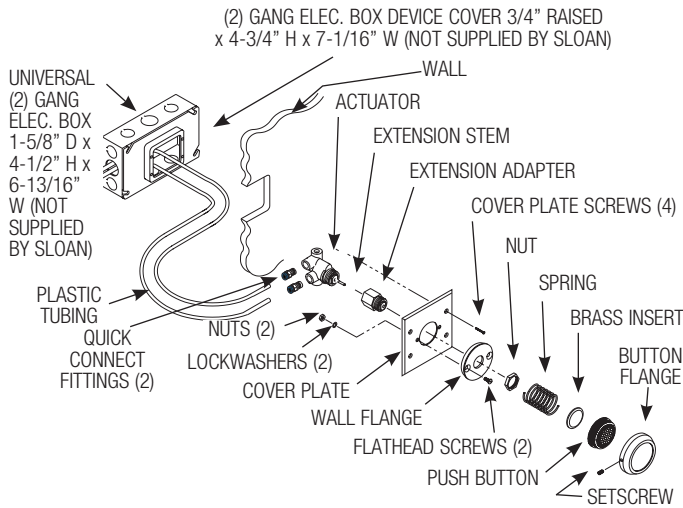
**A** For Sweat Solder applications, slide Threaded Adapter onto water supply pipe until end of pipe rests against shoulder of Adapter. Sweat solder the Adapter to water supply pipe.



**B** Install the Sloan Bak-Chek® Control Stop to the water supply line with the outlet positioned as required.



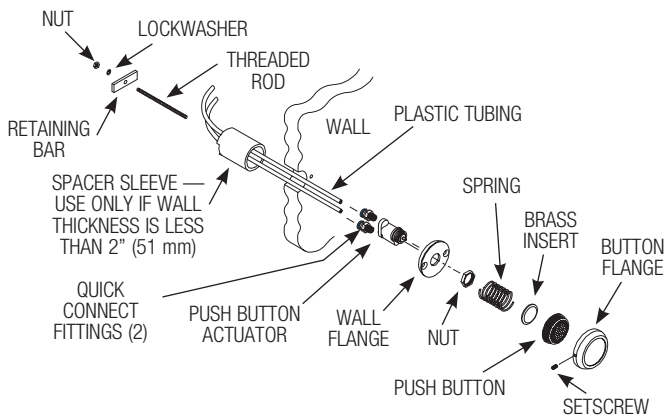
## 2A - INSTALL HY-72-A SIDE WALL (SW VARIATION) PUSH BUTTON ACTUATOR



- A** Mount Wall Flange onto Cover Plate using (2) Flathead Screws, Lockwashers and Nuts provided. Tighten Fasteners securely.
- B** Insert Extension Stem into Extension Adapter and thread Extension Adapter onto Push Button Actuator.
- C** Insert threaded end of Push Button Actuator Assembly through Cover Plate Assembly. Fasten to Plate with Nut. Tighten securely.
- D** Place Brass Insert into black Push Button. Concave side of Brass Insert must face outward of Push Button.
- E** Insert black Push Button into Button Flange. Place Spring against Brass Insert of Push Button. Install Push Button Assembly onto Wall Flange. Secure with Setscrew located on Button Flange.
- F** Attach Plastic Tubing. See: Steps to Attach Plastic Tubing (Page 5).
- G** Mount Cover Plate Assembly onto electrical box cover using the four (4) Screws provided.

## 2B - INSTALL HY-33-A FIXTURE WALL (FW VARIATION) PUSH BUTTON ACTUATOR

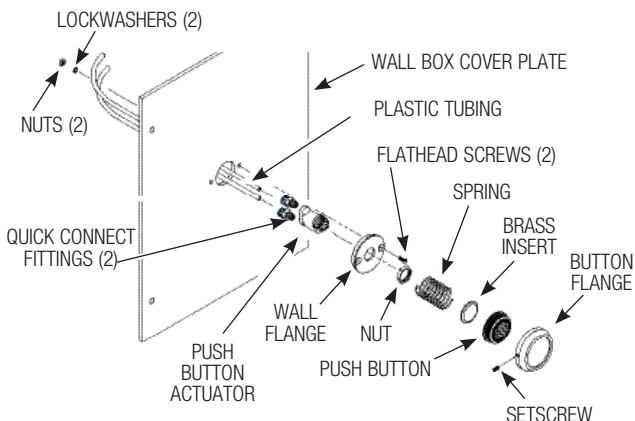
Note: The HY-33-A Fixture Wall may be installed directly onto fixture wall where access behind wall is available. If rear access is not available, HY-33-A may be installed onto a Sloan Easy Access Wall Box Assembly. Parts for both installations are included with the HY-33-A Push Button.



- A** If not already completed, bore a 1-1/2" (38 mm) diameter hole in wall for the Push Button Actuator. Refer to the Rough-in drawings on Pages 2 and 3.
- B** Screw Threaded Rod into back of Push Button Actuator.
- C** Insert threaded end of Push Button Actuator into Wall Flange and install Nut. Tighten Nut securely.
- D** Place Brass Insert into black Push Button. Concave side of Brass Insert must face outward of Push Button.
- E** Insert black Push Button into Button Flange. Place Spring against Brass Insert of Push Button. Install Push Button Assembly onto Wall Flange. Secure with Setscrew located on Button Flange.
- F** If Spacer Sleeve is required, from behind wall, run Plastic Tubing through Sleeve (notched end of Sleeve toward rear) and through Wall. Spacer Sleeve is only required if wall thickness is less than 2" (51 mm).
- G** Attach Plastic Tubing. See: Steps to Attach Plastic Tubing (Page 5).
- H** Insert Push Button Assembly into the 1-1/2" (38 mm) wall hole.
- I** From behind wall, slide Spacer Sleeve (if required) over Threaded Rod and rest it against rear of wall. Slide Retaining Bar onto Threaded Rod and into slots of Sleeve (if required), or against wall if Sleeve is not required. Install Lockwasher and Nut onto Threaded Rod. Tighten securely. Carefully cut excess Threaded Rod, making certain to not damage Plastic Tubing.

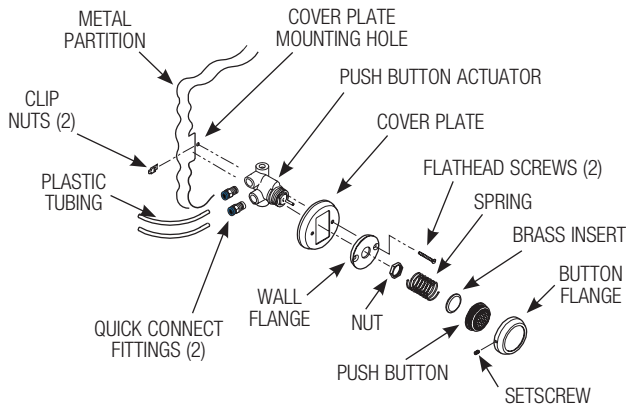
## 2C - INSTALL HY-33-A FIXTURE WALL (FW VARIATION) WITH WALL BOX PUSH BUTTON ACTUATOR

Note: Sloan WB-1-A easy access wall box is designed for use with HY-33-A and HY-108-A Actuators.



- A** Insert threaded end of Push Button Actuator through Wall Flange and install Nut. Tighten Nut securely.
- B** Mount Wall Flange and Push Button Actuator to Wall Box Cover Plate using Flathead Screws, Lockwashers and Nuts provided. Tighten fasteners securely.
- C** Place Brass Insert into black Push Button. Concave side of Brass Insert must face outward of Push Button.
- D** Insert black Push Button into Button Flange. Place Spring against Brass Insert of Push Button. Install Push Button Assembly onto Wall Flange. Secure with Setscrew located on Button Flange.
- E** Attach Plastic Tubing. See: Steps to Attach Plastic Tubing (Page 5).

## 2D - INSTALL HY-49-A METAL PARTITION (MP VARIATION) PUSH BUTTON ACTUATOR

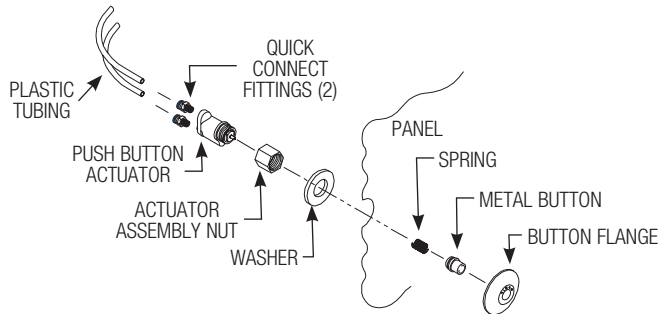


- A** Using Cover Plate as a template, drill two 3/16" (5 mm) Cover Plate Mounting holes and cut opening for Push Button Actuator into the metal partition. Install Clip Nuts with threaded side toward back.

- B** Insert threaded end of Push Button Actuator through Cover Plate and Wall Flange and install Nut. Tighten Nut securely.
- C** Attach Plastic Tubing. See: Steps to Attach Plastic Tubing (below).
- D** Insert Flathead Screws through Wall Flange and Cover Plate mounting holes. Mount Wall Flange and Cover Plate to metal partition using Flathead Screws provided. Tighten fasteners securely.
- E** Place Brass Insert into black Push Button. Concave side of Brass Insert must face outward of Push Button.
- F** Insert black Push Button into Button Flange. Place Spring against Brass Insert of Push Button. Install Push Button Assembly onto Wall Flange. Secure with Setscrew located on Button Flange.

## 2E - INSTALL HY-108-A METAL BUTTON – PANEL MOUNT (MBPM VARIATION)

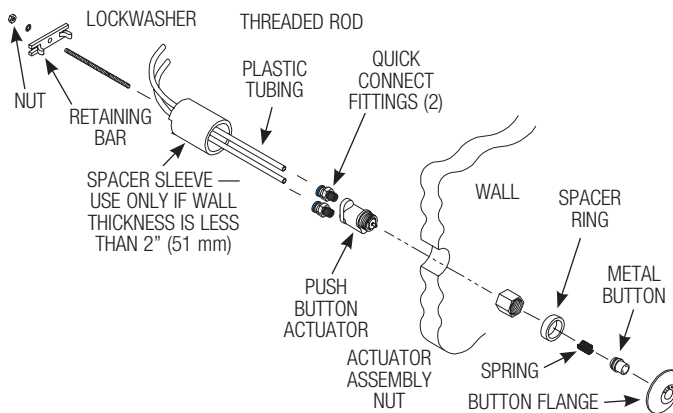
Note: Use HY-108-A (MBPM) on punched stainless steel plates and security fixtures with front access.



- A** Attach Plastic Tubing to Push Button Actuator. See: Steps to Attach Plastic Tubing (below).
- B** Thread Actuator Assembly Nut onto threaded end of Push Button Actuator.
- C** Slide Spring over Metal Push Button until it snaps into place. Insert Metal Push Button into Button Flange.
- D** From front of panel, insert Button Flange Assembly into hole of panel. Behind panel, place Washer over threads of Button Flange. Thread Button Flange onto Actuator. Tighten Flange securely.

## 2F - INSTALL HY-100-A METAL BUTTON – FIXTURE WALL (MBFW VARIATION)

Note: Behind wall access required to install HY-100-A (MBFW)



- A** If not already completed, bore a 1-1/2" (38 mm) diameter hole in wall for the Push Button Actuator. Refer to the Rough-in drawings on Pages 2 and 3.
- B** Screw Threaded Rod into back of Push Button Actuator.
- C** Thread Actuator Assembly Nut onto end of Push Button Actuator.
- D** Slide Spring over Metal Push Button until it snaps into place. Insert Metal Push Button into Button Flange.
- E** Place Spacer Ring over threads of Button Flange and thread Button Flange Assembly into Actuator Assembly Nut.

- F** From behind wall, run Plastic Tubing through optional Spacer Sleeve (notched end of sleeve toward rear) and wall. Spacer Sleeve only required if wall thickness is less than 2" (51 mm).
- G** Attach Plastic Tubing. See: Steps to Attach Plastic Tubing (below).
- H** Insert Push Button Assembly into the 1-1/2" (38 mm) wall hole.
- I** From behind wall, slide Spacer Sleeve (if required) over Threaded Rod and rest it against rear of wall. Slide Retaining Bar onto Threaded Rod and into slots of Sleeve (if required), or against wall if Sleeve is not required. Install Lockwasher and Nut onto Threaded Rod. Tighten securely. Carefully cut excess Threaded Rod, making certain to not damage Plastic Tubing.

### STEPS TO ATTACH PLASTIC TUBING

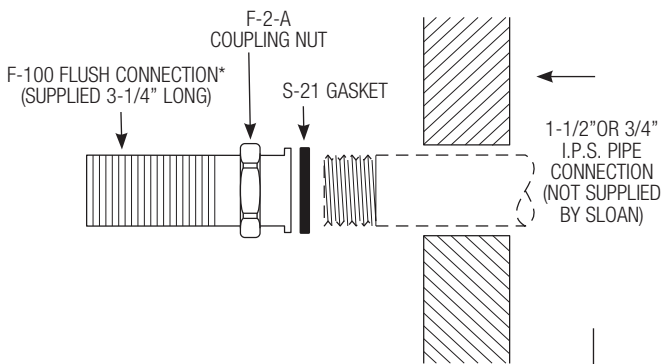
- (1) The Push Button Actuator is connected to the Flushometer Body by two Plastic Tubes, Yellow and Blue. Match color of the Tubes to color on the Actuator.
- (2) Cut off excess Plastic Tubing leaving 3" to 4" (76 to 102 mm) of slack when Push Button Actuator is installed.
- (3) Slide plastic tubing into its corresponding valve actuator fitting. Pull tubing to make sure connection is secure. (tubing can be removed by pressing on blue/yellow connection button to release.)

### 3- INSTALL VACUUM BREAKER FLUSH CONNECTION

#### NOTE

Sloan Prison Flushometers are designed to connect to a stainless steel steel prison fixture in the chase behind the wall. A 1-1/2" (38 mm) pipe connection (NOT supplied by Sloan) must be used to connect the fixture inlet from the wall to the flush connection. For urinals using a Model 613 or 9613 valve, a 3/4" (19 mm) pipe connection must be used to connect the fixture inlet from the wall to the flush connection.

- A** Secure flanged end of F-100 Flush Connection to the 1-1/2" (38 mm) pipe using a 1-1/2" F-2-A Coupling Nut with S-21 Gasket. Tighten securely.
- For urinals using a Model 613 or 9613 Valve, secure flanged end of F-15-A Flush Connection to the 3/4" (19 mm) pipe using a 3/4" F-2-AW slip joint coupling (Rubber Gasket, Nylon Slip Gasket and Coupling Nut). Tighten securely.



- B** Cut Vacuum Breaker and Flush Connection tubes to length.

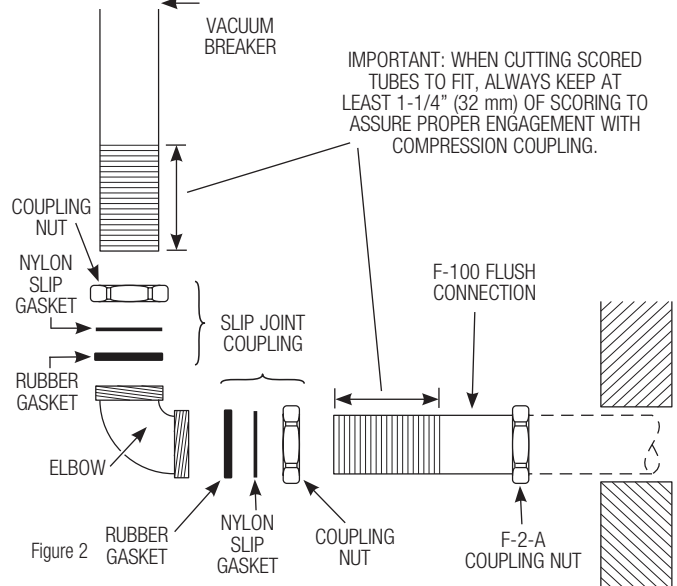
**!!! IMPORTANT !!!**  
**IMPORTANT: WHEN CUTTING SCORED TUBES TO FIT, ALWAYS KEEP AT LEAST 1-1/4" (32 MM) OF SCORING TO ASSURE PROPER ENGAGEMENT WITH COMPRESSION COUPLING.**

- C** Slide the Coupling Nut, Nylon Slip Gasket and Rubber Gasket onto the Vacuum Breaker and Flush Connection tubes.

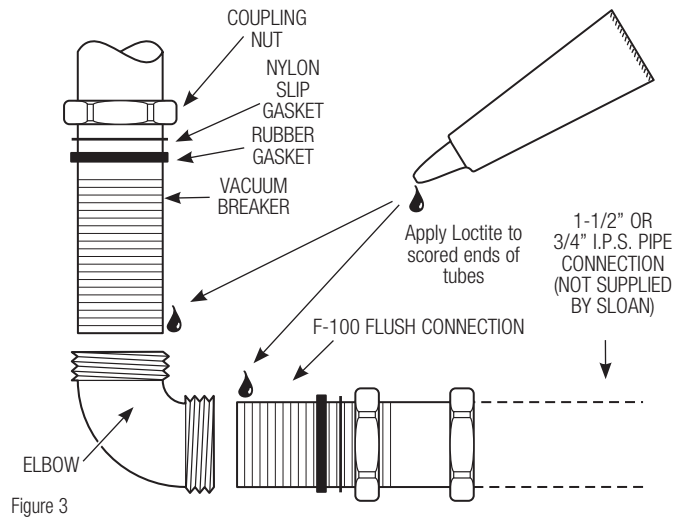


#### Install Slip Elbow (Figure 2)

Connect scored ends of vacuum breaker tube and F-100/F-102 flush connection to the elbow using coupling, slip gasket and rubber compression gasket. After applying Loctite® to scored ends, tighten securely.

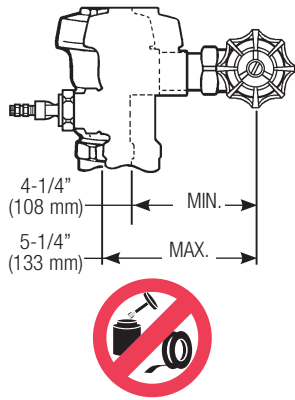


**IMPORTANT:** Before inserting the scored ends into the Elbow, apply several drops of Loctite (supplied by Sloan) to the scored ends of the tubes (Figure 3). This sealant helps prevent separation under high-pressure conditions. **DO NOT** use any other pipe sealant or lubricant on this connection.



Loctite can also be used to secure Push Button Flange. See Sealant package for details.

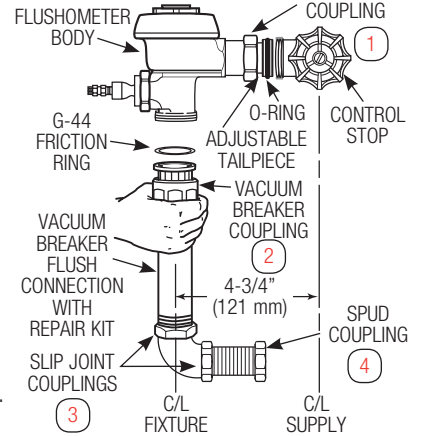
## 4 - INSTALL FLUSHOMETER



Maximum adjustment of Sloan Adjustable Tailpiece is 1/2" (13 mm) IN or OUT from the standard 4-3/4" (121 mm) (centerline of Flushometer to centerline of Control Stop). If rough-in measurement exceeds 5-1/4" (133 mm), consult factory for longer tailpiece.

**IMPORTANT:** Use a Sloan A-50 Super-Wrench™, Sloan A-109 Plier Wrench or smooth jawed spud wrench to secure all couplings. This will eliminate damage to chrome or special finish that normally occurs when slip-joint pliers, pipe wrenches or other "toothed" tools are used.

- A** Insert Adjustable Tailpiece into Control Stop. Lubricate O-ring seal with water. Hand tighten Tailpiece Coupling.
- B** Align Flushometer Body on top of Vacuum Breaker Flush Connection. Hand tighten Vacuum Breaker Coupling.
- C** Align Flushometer Body. Using a wrench, securely tighten couplings in order given: (1) Tailpiece Coupling, (2) Vacuum Breaker Coupling, (3) Slip Joint Couplings and (4) Spud Coupling.

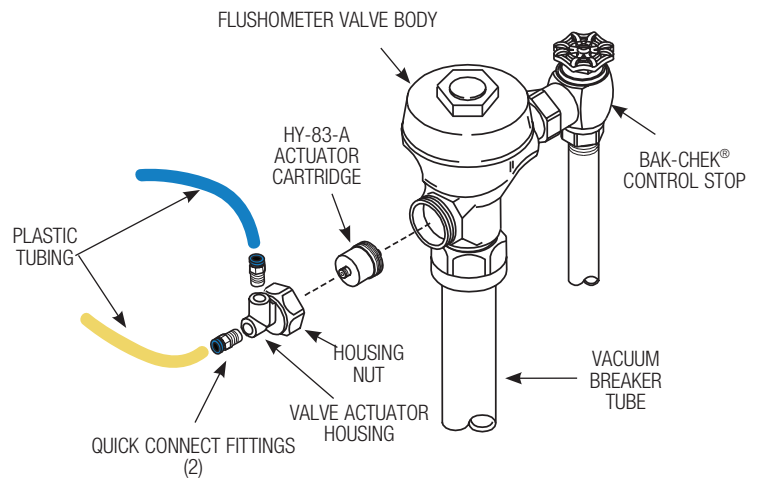


## 5 - INSTALL VALVE ACTUATOR

### NOTE

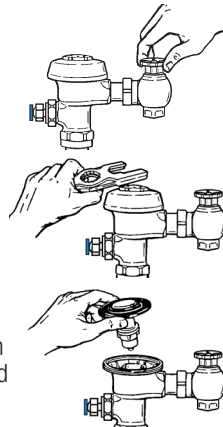
**TUBING MUST BE CONNECTED TO PROPER VALVE ACTUATOR. YELLOW TUBE MUST BE CONNECTED TO YELLOW/"O" FITTING AND BLUE TUBE MUST BE CONNECTED TO BLUE/"L" FITTING.**

- A** Insert Actuator Cartridge into Flushometer Valve Body.
- B** Install Valve Actuator Housing onto Flushometer Valve Body. Tighten Housing Nut with a wrench.
- C** Cut excess Tubing so that there will be 3" to 4" (76 to 102 mm) of slack when connected to Valve Actuator.
- D** Slide colored plastic tubing into its corresponding colored valve actuator fitting. Pull tubing to make sure connection is secure. (Tubing can be removed by pressing on blue/yellow connection button to release.)

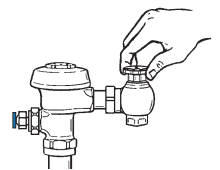


## 6 - FLUSH OUT SUPPLY LINE AND ADJUST CONTROL STOP

- A** Shut off Control Stop by turning handle CLOCKWISE. Then remove Flushometer Cover.
- B** Lift out the inside Parts Assembly as a complete unit. Reinstall Flushometer Cover and tighten with wrench. Open Control Stop. Turn on water supply to flush line of any debris or sediment.
- C** Shut off Control Stop and remove Flushometer Cover. Reinstall Inside Parts Assembly and Flushometer Cover. Tighten Cover with wrench. Open Control Stop and activate Flushometer Valve.



- D** Adjust Control Stop to meet flow rate required for proper cleansing of fixture. Open Control Stop COUNTERCLOCKWISE ONE FULL turn from closed position. Activate Flushometer. Adjust Control Stop after each flush until the rate of flow delivered properly cleanses the fixture.



### !!! IMPORTANT !!!

Sloan Flushometers are engineered for quiet operation. Excessive water flow creates noise, while too little water flow may not satisfy the needs of the fixture. Proper adjustment is made when the plumbing fixture is cleansed after each flush without splashing water out from the lip AND a quiet flushing cycle is achieved.

Never open Control Stop to where the flow from the valve exceeds the flow capability of the fixture. In the event of a valve failure, the fixture must be able to accommodate a continuous flow from the valve.

## CARE AND CLEANING

DO NOT USE abrasive or chemical cleaners (including chlorine bleach) to clean Flushometers that may dull the luster and attack the chrome or special decorative finishes. Use ONLY mild soap and water, then wipe dry with clean cloth or towel.

While cleaning the bathroom tile, protect the Flushometer from any splattering of cleaner. Acids and cleaning fluids will discolor or remove chrome plating.

## TROUBLESHOOTING

### Push Button Actuator Assembly

#### 1. Push Button Leaks.

The actuator cartridge has an accumulation of lime or its seals are damaged or worn. Replace with a new HY-32-A cartridge.

2. The Flushometer does not flush and a small amount of leakage is visible below the valve.
  - A. Foreign material lodged in the cartridge. Remove the cartridge and inspect for foreign material. Clean under running water.
  - B. The actuator cartridge has an accumulation of lime or its seals are damaged or worn. Replace with a new HY-32-A cartridge.
  - C. Plastic Tubing is installed incorrectly. Install Plastic Tubing correctly (see Steps 2 and 5).

### ACTUATOR CARTRIDGE REMOVAL

#### Plastic Push Button Actuator Removal:

- (1) Loosen the setscrew in the button flange and remove the button, flange, and spring from the actuator body.
- (2) Unscrew the cartridge from the actuator body.

#### Metal Push Button Actuator Removal:

- (1) Remove the button or actuator assembly from the wall or fixture.
- (2) Disassemble the flange or button assembly from the actuator body.
- (3) Unscrew the cartridge from the actuator body.

NOTE: The metal Push Button is designed to be vandal-proof and must be removed from the wall or fixture for service.

### Flushometer Actuator Assembly

1. The Flushometer does not flush or flushes only once and will not flush a second time when the button is pushed.
  - A. The plunger is lodged in the actuator cartridge or the plunger bypass hole is clogged. Remove actuator housing and cartridge from the Flushometer. Clean under running water. If cartridge parts are worn, deteriorated or limed up and problem persists after cleaning, replace with a new HY-83-A cartridge.
  - B. Plastic Tubing is installed incorrectly. Install Plastic Tubing correctly (see Steps 2 and 5).

#### REMOVAL OF THE ACTUATOR FROM THE FLUSHOMETER:

- (1) Turn off water at the Control Stop.
- (2) Unscrew the actuator housing coupling nut from the Flushometer.
- (3) Remove the actuator housing from the Flushometer. The tubing connections can be left intact.
- (4) Carefully remove the actuator cartridge from the Flushometer body to prevent the actuator from abrupt separation due to expansion of an internal spring. If the actuator cartridge is lodged in the Flushometer body cavity, gently grip the exposed portion of the cartridge with a channel-lock pliers and rotate back and forth to loosen the O-ring seal.
- (5) Carefully separate the actuator housing to reveal the spring and plunger.

### Flushometer Service

#### 1. Flushometer does not function (no flush).

- A. Control Stop or Main Valve is Closed. Open Control Stop or Main Valve.
- B. Relief Valve is worn. Replace Royal Performance Kit (Royal Flushometers) or Inside Parts Kit (Regal XL Flushometers).

#### 2. Volume of water is not sufficient to siphon fixture.

- A. Control Stop is not open wide enough. Adjust Control Stop for desired delivery of water volume.
- B. Urinal Flushometer parts installed in a Closet Flushometer. Replace inside Urinal Flushometer parts with proper Closet Flushometer parts.
- C. Incorrect Dual Filtered Diaphragm Assembly (Royal Flushometers) or Inside Parts Kit (Regal XL Flushometers) is installed in Flushometer; for instance, Urinal assembly inside a Closet Flushometer, or Low Consumption assembly inside a higher consumption fixture. Determine the flush volume required by the fixture and replace Royal Performance Kit or Inside Parts Kit. Use valve label and markings on fixture for reference.
- D. Water supply volume or pressure is inadequate. If no gauges are available to properly measure supply pressure or volume of water at the Flushometer, then remove the Relief Valve from the Dual Filtered Diaphragm Assembly (Royal Flushometers) or Inside Parts Kit (Regal XL Flushometers), reassemble the Flushometer and completely open the Control Stop. If the fixture siphons, more water volume is required.

**For Royal Flushometers** — Install a higher flushing volume Royal Performance Kit.

**For Regal XL Flushometers** — If a 3.5 gpf Inside Parts Kit is installed in the

Flushometer, then first flip the Refill Head (under the Diaphragm) to obtain a 4.5 gpf volume. If this volume is still inadequate, remove the Flow Ring from the Guide to obtain a 6.5 gpf Kit. If additional flow is still required, try a Low Pressure Guide Kit A-175-A (#0301104).

**IMPORTANT — Laws and Regulations requiring Low Consumption Fixtures (1.6 gpf/6.0 Lpf Water Closets and 1.0 gpf/3.8 Lpf Urinals) prohibit the use of higher flushing volumes.**

If the fixture does not siphon or if a Low Consumption flush is required, steps must be taken to increase the water supply pressure and/or volume. Contact the fixture manufacturer for minimum water supply requirements of the fixture.

#### 3. Flushometer closes off immediately.

- A. Ruptured or damaged diaphragm. Replace Royal Performance Kit (Royal Flushometers) or Inside Parts Kit (Regal XL Flushometers).
- B. For Regal XL Flushometers — An enlarged bypass orifice from corrosion or damage. Replace Inside Parts Kit.

#### 4. Length of flush is too short (Short Flush).

- A. For Regal Flushometers — The Diaphragm Assembly and Guide Assembly are not hand tight. Screw the two assemblies hand tight.
- B. For Regal XL Flushometers — An enlarged bypass orifice from corrosion or damage. Replace Inside Parts Kit.
- C. Dual Filtered Diaphragm Assembly (Royal Flushometers) or Inside Parts Kit (Regal XL Flushometers) is damaged. Replace Royal Performance Kit or Inside Parts Kit.
- D. Incorrect Dual Filtered Diaphragm Assembly (Royal Flushometers) or Inside Parts Kit (Regal XL Flushometers) is installed in Flushometer; for instance, Urinal assembly inside a Closet Flushometer, or Low Consumption assembly inside a higher consumption fixture. Determine the flush volume required by the fixture and replace Royal Performance Kit or Inside Parts Kit. Use valve label and markings on fixture for reference.

#### 5. Length of flush is too long (Long Flush) or continuous.

- A. For Royal Flushometers — Metering bypass hole in Diaphragm is clogged. Remove the Dual Filtered Diaphragm Assembly. Remove the Primary and Secondary Filter Rings from the Diaphragm and wash under running water. Replace Royal Performance Kit if cleaning does not correct the problem.
- B. For Regal XL Flushometers — Relief Valve (A-19-A) is not seating properly or bypass orifice is clogged. Disassemble the working parts and wash thoroughly.

**NOTE: SIZE OF THE ORIFICE IN THE BYPASS IS OF UTMOST IMPORTANCE FOR THE PROPER METERING OF WATER INTO THE UPPER CHAMBER OF THE FLUSHOMETER. DO NOT ENLARGE OR DAMAGE THIS ORIFICE. REPLACE INSIDE PARTS KIT IF CLEANING DOES NOT CORRECT PROBLEM.**
- C. Supply line water pressure has dropped and is not sufficient to close the valve. Close Control Stop until pressure is restored.
- D. Dual Filtered Diaphragm Assembly (Royal Flushometers) or Inside Parts Kit (Regal XL Flushometers) is damaged. Replace Royal Performance Kit or Inside Parts Kit.
- E. Incorrect Dual Filtered Diaphragm Assembly (Royal Flushometers) or Inside Parts Kit (Regal XL Flushometers) is installed in Flushometer; for instance, Urinal assembly inside a Closet Flushometer, or Low Consumption assembly inside a higher consumption fixture. Determine the flush volume required by the fixture and replace Royal Performance Kit or Inside Parts Kit. Use valve label and markings on fixture for reference.
- F. White Closet Relief Valve has been used in a Urinal Flushometer. Replace Closet Relief Valve (A-19-AC) with Black Urinal Relief Valve (A-19-AU).
- G. Inside Cover is cracked or damaged. Replace the Inside Cover (A-71).
- H. Conditions in the piping system may contribute to the noise. A degree of high pressure in the piping may be relieved by adjustments to Control Stop. Other noises created by loose pipes, lack of air chambers, inadequate pipe sizes, etc., are problems that must be discussed with the building engineer.

#### 6. Chattering noise is heard during flush.

- A. Inside Cover is damaged. Replace Inside Cover (A-71).
- B. For Regal XL Flushometers — A-156-A Segment Diaphragm has been installed upside-down. Reposition the Segment Diaphragm properly (see markings on the Diaphragm).

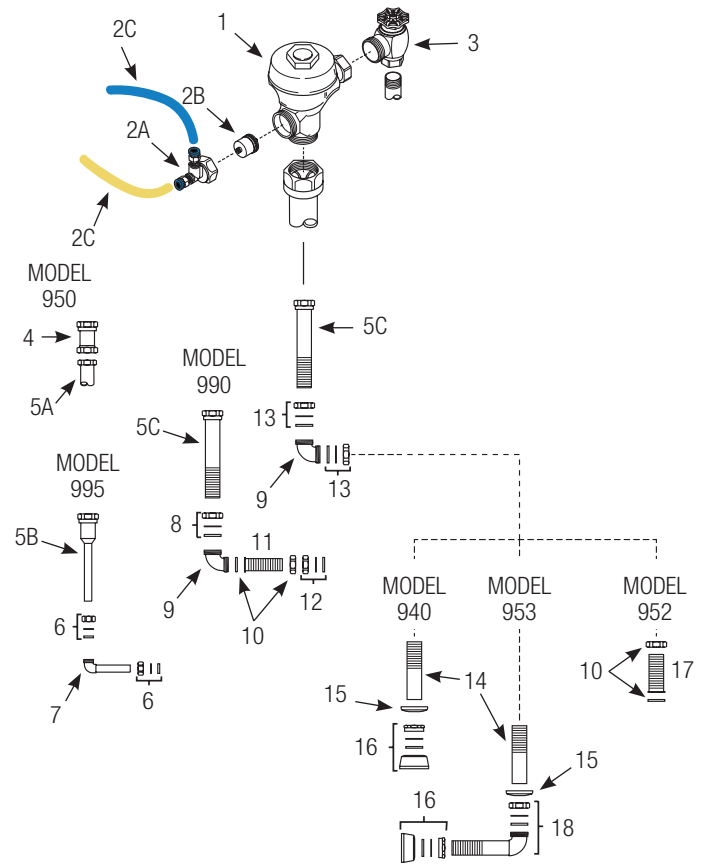
**For more information concerning Royal and Regal XL Flushometers, consult Sloan Hydraulic Valve Repair and Maintenance guides. You may also wish to contact your local Sloan Representative. If further assistance is required, please contact the Sloan Valve Company Installation Engineering Department at: 1-888-SLOAN-14 (1-888-756-2614)**



## PARTS LIST

Item No.	Part No.	Description
1	†	Valve Assembly
2A	HY-109-A	Valve Actuator Housing
2B	HY-83-A	Actuator Cartridge
2C	HY-145-X	Blue 1/4" Connecting Tube
2C	HY-146-X	Yellow 1/4" Connecting Tube
3	H-730-A	Bak-Chek® Control Stop
4	V-500-A	1-1/2" (38 mm) Vacuum Breaker Assembly RB
5A	F-22	1" (25 mm) Female Outlet RB
5B	V-500-AA	3/4" (19 mm) x 10-1/2" (267 mm) Vacuum Breaker Assembly RB
5C	V-500-AA	1-1/2" (38 mm) x 11-1/2" (292 mm) Vacuum Breaker Assembly RB
		1-1/2" (38 mm) x 7-1/2" (191 mm) Vacuum Breaker Assembly RB
		1-1/2" (38 mm) x 6" (152 mm) Vacuum Breaker Assembly RB
		1-1/2" (38 mm) x 22" (559 mm) Vacuum Breaker Assembly RB
6	F-2-AW	3/4" (19 mm) Slip Joint Coupling RB
7	F-15-A	ELL with 3/4" (19 mm) Tail RB (Model 995)
8	F-2-A	1-1/2" (38 mm) Slip Joint Coupling
9	F-21	1-1/2" (38 mm) Double Slip Elbow
10	F-2-A	1-1/2" (38 mm) Coupling with S-21 Gasket
11	F-110	1-1/4" (32 mm) Outlet Tube
12	F-2-AU	1-1/4" (32 mm) Slip Joint Coupling RB
13	F-2-AA	1-1/2" (38 mm) Slip Joint Coupling (Set of Two)
14	F-102	1-1/2" (38 mm) Outlet Tube CP
15	F-7	Flange
16	F-5-A	1-1/2" (38 mm) Spud Coupling Assembly CP
17	F-100	1-1/2" (38 mm) Outlet Tube RB
18	F-15-A	1-1/2" (38 mm) Elbow Assembly CP

† Part number varies with valve model variation; consult factory.



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