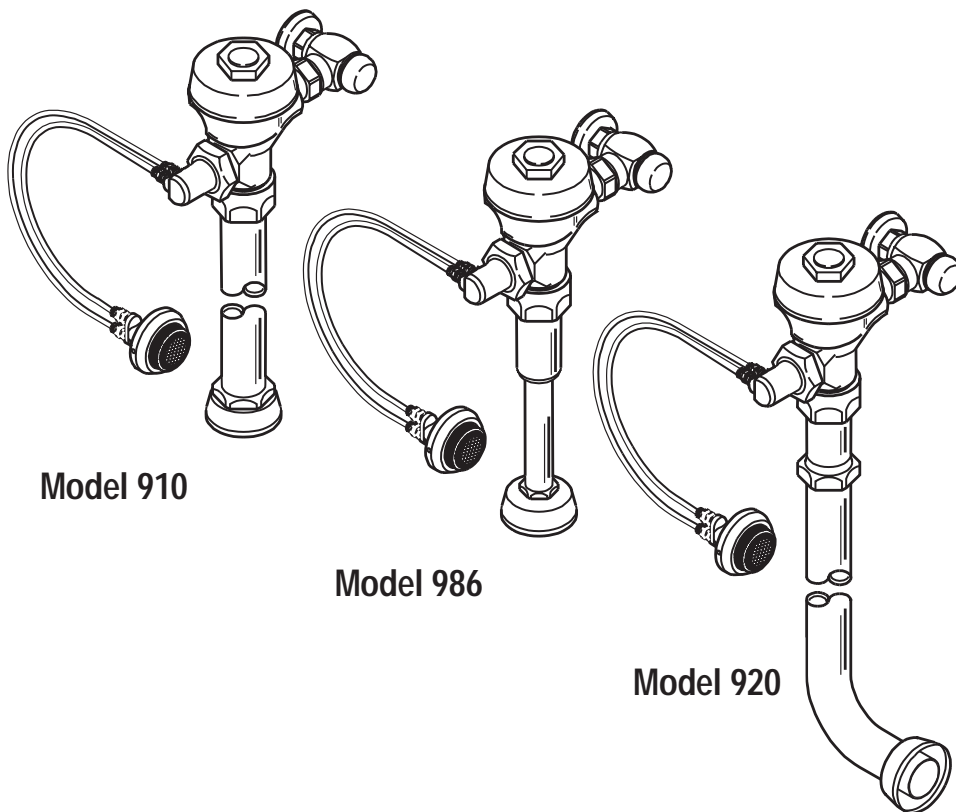


# SLOAN®

## INSTALLATION INSTRUCTIONS SLOAN SERIES 900 HYDRAULIC FLUSHING SYSTEM *Royal®* FLUSHOMETERS EXPOSED CLOSET, URINAL & SERVICE SINK INSTALLATIONS



Exposed Closet Flushometer —  
1-1/2" Top Spud  
Model 910  
Model 913  
Model 915  
Model 916

Exposed Closet Flushometer —  
1-1/2" Back Spud  
Model 920  
Model 921  
Model 922

Exposed Urinal Flushometer —  
1-1/4" Top Spud  
Model 980

Exposed Urinal Flushometer —  
3/4" Top Spud  
Model 986

Exposed Service Sink  
Flushometer — 1-1/2" Top Spud  
Model 917

**THESE INSTRUCTIONS ALSO  
FOR USE WITH SLOAN REGAL®  
FLUSHOMETERS**

Made in the U.S.A.



Installation of the Sloan Series 900 Hydraulic Flushometer provides the quality, long life and water economy that makes Sloan the most dependable flushometers ever. Sloan Flushometers provide outstanding water saving capabilities by precisely metering every flush. Royal and Regal Flushometers have been engineered to deliver a consistent, quiet flush, time after time. No internal adjustment to the Flushometer is required. Additionally, the Sloan Series 900 hydraulic flushing system is designed to actuate the Flushometer by use of a conveniently located push button.

The Sloan Flushometer is designed for easy installation and maintenance and comes complete with a button actuator, Bak-Chek® control stop, adjustable tailpiece, vacuum breaker flush connection, and spud coupling and wall and spud flanges for exposed piping.

The following instructions will serve as a guide when installing the Sloan Flushometer. As always, good safety practices and care are recommended when installing your new Flushometer. If further assistance is required, contact your nearest Sloan Representative office.

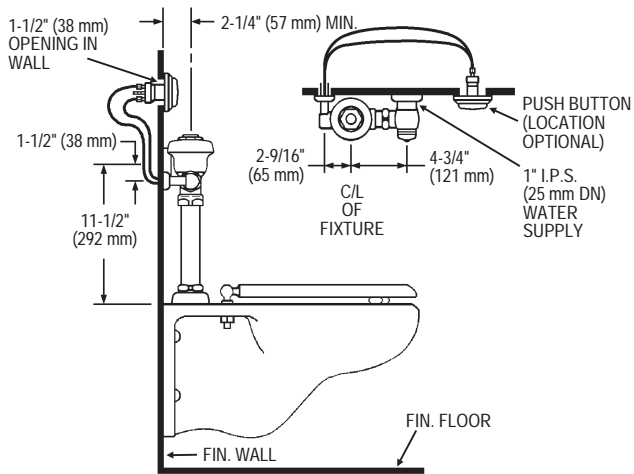
### LIMITED WARRANTY

Sloan Valve Company warrants its Series 900 Hydraulic Flushometers to be made of first class materials, free from defects of material or workmanship under normal use and to perform the service for which they are intended in a thoroughly reliable and efficient manner when properly installed and serviced, for a period of three years (1 year for special finishes) from date of purchase. During this period, Sloan Valve Company will, at its option, repair or replace any part or parts which prove to be thus defective if returned to Sloan Valve Company, at customer's cost, and this shall be the sole remedy available under this warranty. No claims will be allowed for labor, transportation or other incidental 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.

**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.**

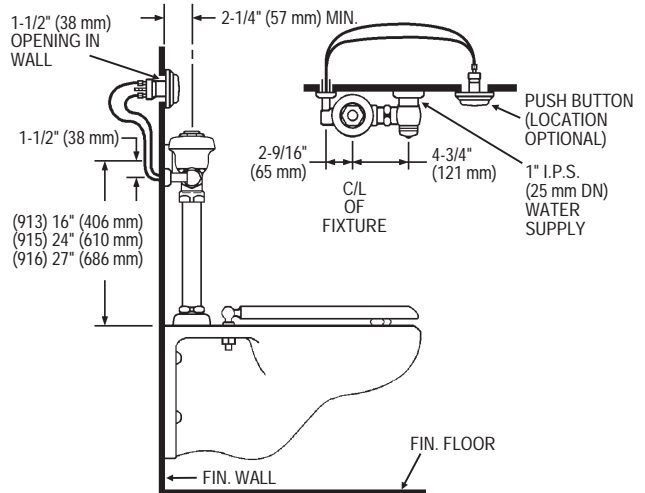
## VALVE ROUGH-IN

Model 910 † — Water Saver, 3.5 gpf (13.2 Lpf)  
 Model 910-1.6 † — Low Consumption, 1.6 gpf (6.0 Lpf)



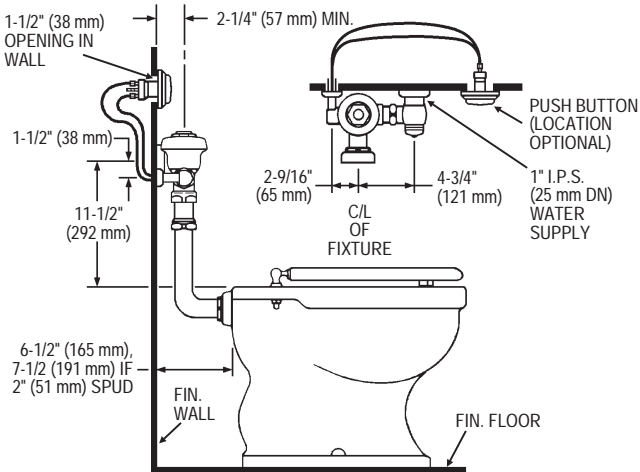
† NOTE: SPECIFY ACTUATOR VARIATION.

Models 913, 915 & 916 † — Water Saver, 3.5 gpf (13.2 Lpf)  
 Models 913-1.6, 915-1.6 & 916-1.6 † — Low Consumption, 1.6 gpf (6.0 Lpf)



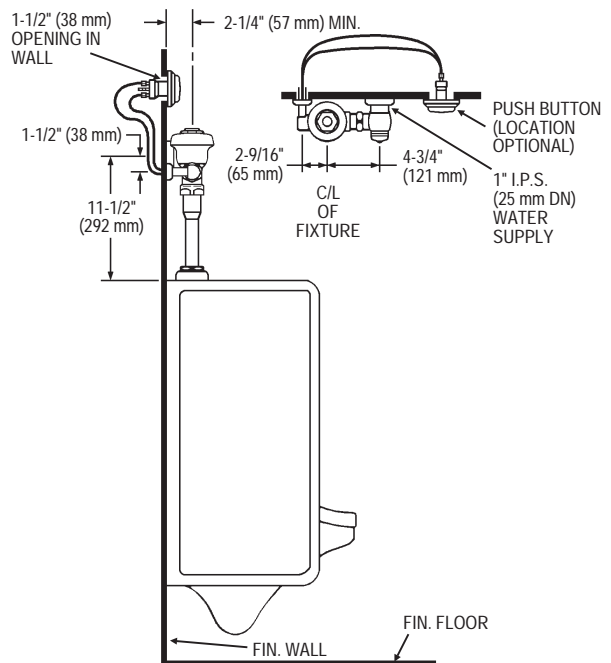
† NOTE: SPECIFY ACTUATOR VARIATION.

Models 920, 921 & 922 † — Water Saver, 3.5 gpf (13.2 Lpf)  
 Models 920-1.6, 921-1.6 & 922-1.6 † — Low Consumption, 1.6 gpf (6.0 Lpf)



† NOTE: SPECIFY ACTUATOR VARIATION.

Model 980 † — Standard, 3.5 gpf (13.2 Lpf)  
 Model 980-1.5 † — Water Saver, 1.5 gpf (5.7 Lpf)  
 Model 980-1 † — Low Consumption, 1.0 gpf (3.8 Lpf)



† NOTE: SPECIFY ACTUATOR VARIATION.

Figure 1

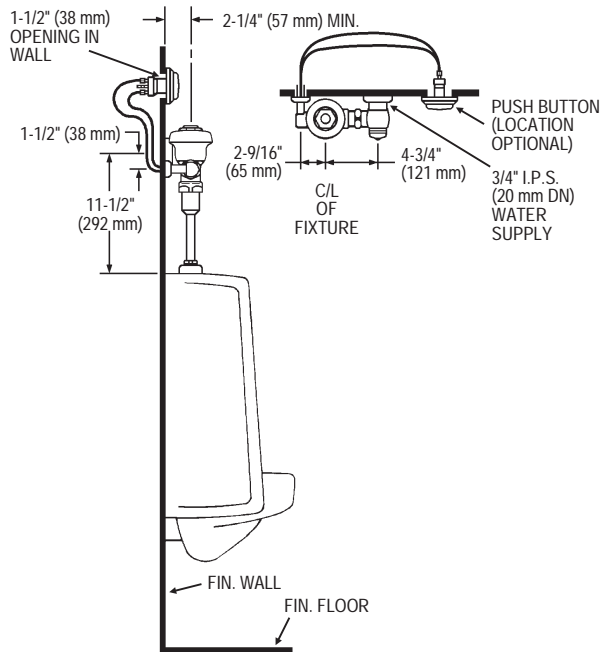
NOTE: Water Closet Valves with "-2.4" Model Designation Deliver 2.4 gpf (9.0 Lpf)

## VALVE ROUGH-IN (Continued)

Model 986 † — Water Saver, 1.5 gpf (5.7 Lpf)

Model 986-1 † — Low Consumption, 1.0 gpf (3.8 Lpf)

Model 986-0.5 † — 0.5 gpf (1.9 Lpf)

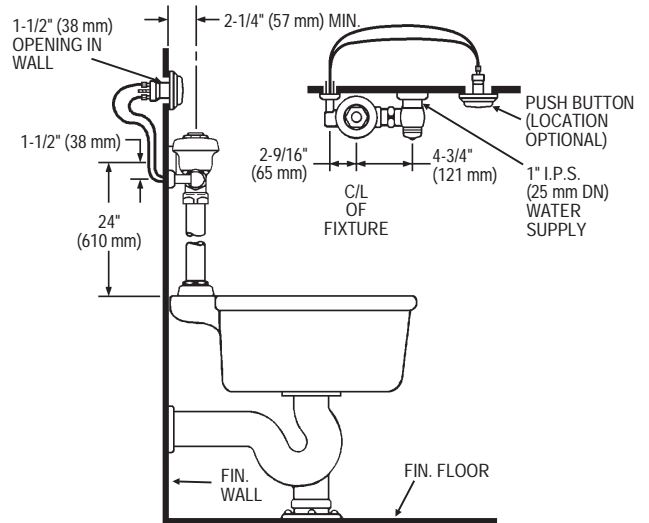


† NOTE: SPECIFY ACTUATOR VARIATION.

Figure 1 (Continued)

NOTE: Water Closet Valves with “-2.4” Model Designation Deliver 2.4 gpf (9.0 Lpf)

Model 917 † — Standard, 6.5 gpf (24.6 Lpf)



† NOTE: SPECIFY ACTUATOR VARIATION.

## SUPPLY AND ACTUATOR ROUGH-IN

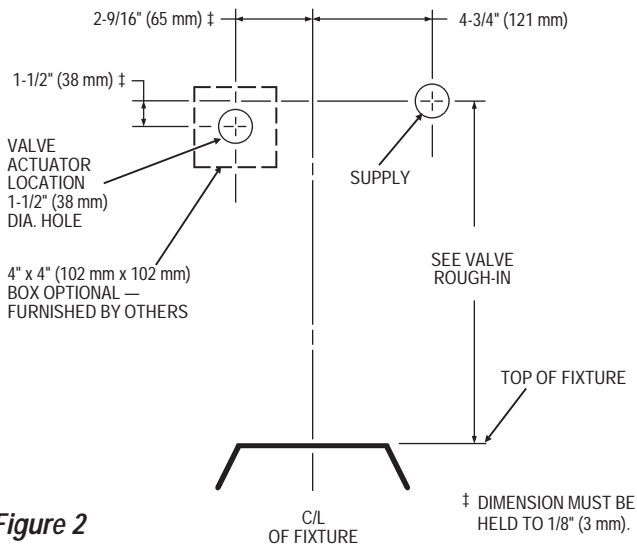


Figure 2

## PRIOR TO INSTALLATION

Prior to installing the Sloan Flushometer, install the items listed below as illustrated in Figure 1.

- Closet or urinal fixture
- Drain line
- Water supply line
- Bore holes for Push Button Actuator and Valve Actuator

- For Model HY-72-A Push Button Actuator, install electrical box at Push Button Actuator and Valve Actuator locations. Run conduit between electrical boxes.

### Important:

- ALL PLUMBING IS TO BE INSTALLED 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.

The Sloan Royal® and Regal® are designed to operate with 10 to 100 psi (69 to 689 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 and GPF requirements. Most Low Consumption water closets (1.6 gallon/6 liter) require a minimum flowing pressure of 25 psi (172 kPa).

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.

**IMPORTANT: WITH THE EXCEPTION OF CONTROL STOP INLET, DO NOT USE PIPE SEALANT OR PLUMBING GREASE ON ANY VALVE COMPONENT OR COUPLING!**

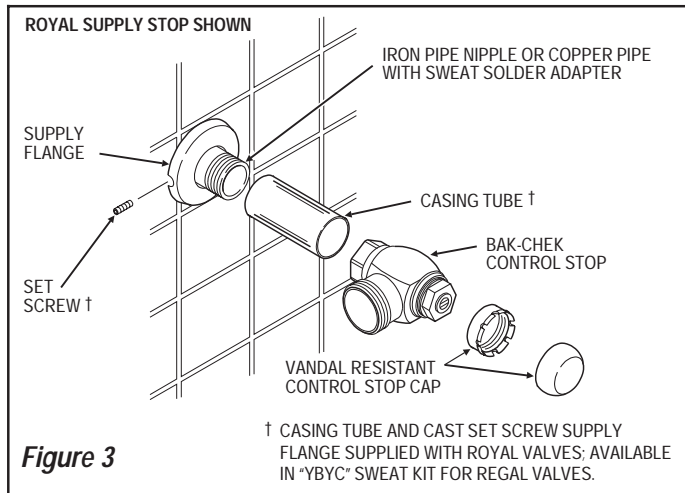
## TOOLS REQUIRED FOR INSTALLATION

- Slotted screwdriver
- 5/64" hex wrench
- Sloan A-50 “Super-Wrench™” or smooth jawed spud wrench for couplings

## INSTALLATION

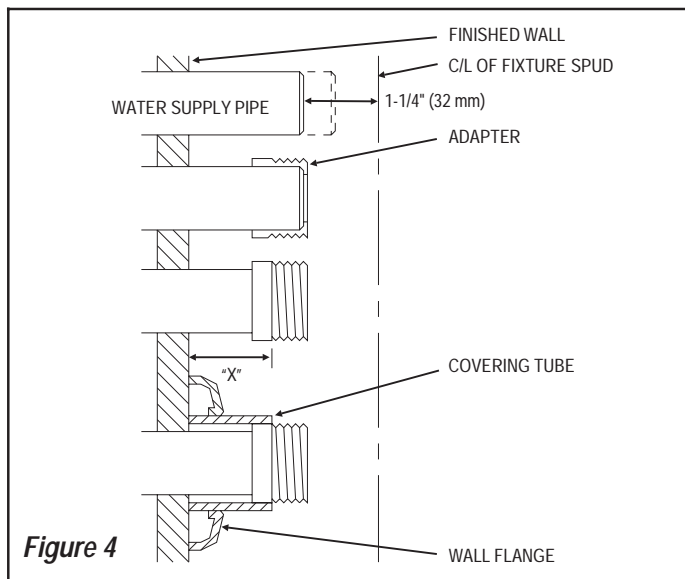
### Step 1 — Control Stop Installation (Figure 3)

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



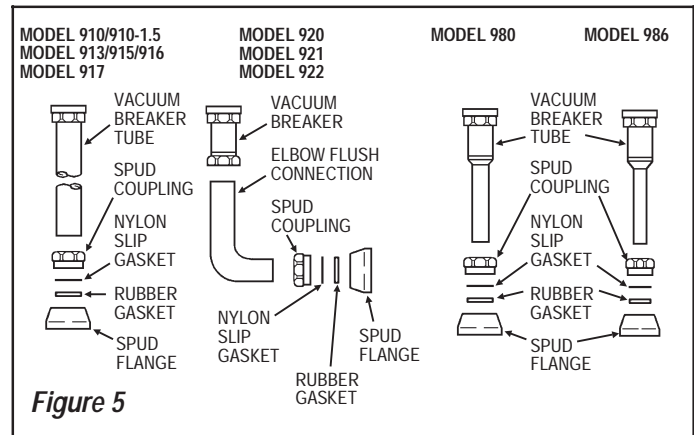
For Sweat Solder applications, refer to the following instructions and Figure 4:

- Measure distance from finished wall to centerline of fixture spud. Cut water supply pipe 1-1/4" (33 mm) shorter than this measurement. Chamfer O.D. and I.D. of water supply pipe.
- Slide Threaded Adapter onto water supply pipe until end of pipe rests against shoulder of Adapter. Sweat solder Adapter to water supply pipe.
- Determine length of Covering Tube by measuring distance from finished wall to the first thread of Adapter (dimension "X" in Figure 4). Cut Covering Tube to this length.
- Slide Covering Tube onto water supply pipe. Slide Wall Flange over Covering Tube until it rests against the finished wall.
- Install the Sloan Bak-Chek® Control Stop to the water supply line with the outlet positioned as required.



### Step 2 — Install Vacuum Breaker Flush Connection (Figure 5)

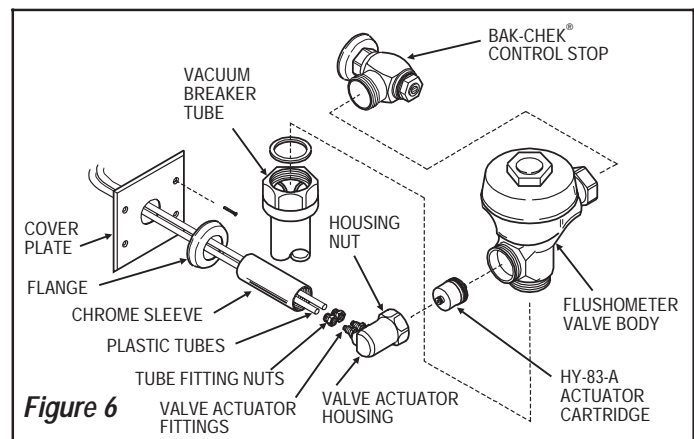
Slide the Spud Coupling, Nylon Slip Gasket, Rubber Gasket and Spud Flange over the Vacuum Breaker Tube and insert tube into fixture spud. Hand tighten Spud Coupling onto fixture spud.



### Step 3 — Install Valve Actuator (Figure 6)

- Insert Actuator Cartridge into Flushometer Valve Body as illustrated in Figure 6.
- Install Valve Actuator Housing onto Flushometer Valve Body as shown in Figure 6. Tighten Housing Nut hand tight.
- Remove Tube Fitting Nuts from Valve Actuator and slide one Nut onto each Plastic Tube.
- Slide Plastic Tubing onto Valve Actuator Fittings and tighten Tube Fitting Nuts.
 

**Important:** Mark one Plastic tube "L" and the other "O." Connect "L" Plastic Tube to Fitting closest to Valve Body. Connect "O" Plastic Tube to Fitting furthest from Valve Body.
- Slide Chrome Sleeve (threaded end first) over Plastic Tubing and thread onto Valve Actuator until Chrome Sleeve is tight against Valve Actuator Housing.
- Slide Flange and Cover Plate over Plastic Tubing and onto Chrome Sleeve.



### Step 4 — Install Flushometer

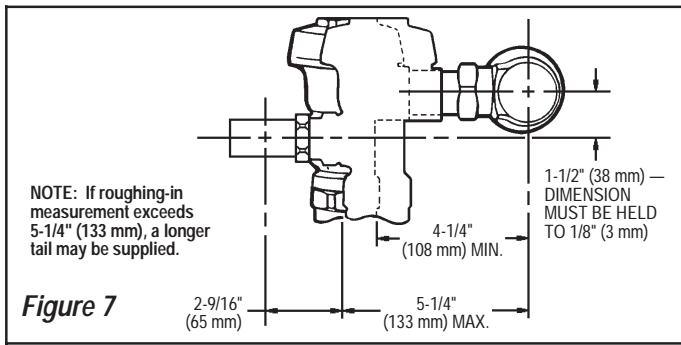
#### SLOAN ADJUSTABLE TAILPIECE (Figures 7 and 8)

The Sloan Adjustable Tailpiece compensates for "off-center" roughing-in on the job. Maximum adjustment is 1/2" (13 mm) IN or 1/2" (13 mm) OUT from the standard 4-3/4" (121 mm) (centerline of flushometer to centerline of control stop).

#### ALL FLUSHOMETER INSTALLATIONS (Figure 8)

Align Flushometer Body on top of Vacuum Breaker Flush Connection. Measure distance from Valve Actuator Housing to finished wall. Cut Chrome Sleeve adding an additional 1 inch (25 mm) to the previously measured distance.

**Note:** DO NOT cut off threaded end of Chrome Sleeve. Cut off non-threaded end only.



Remove Flushometer Body from top of Vacuum Breaker Flush Connection. Run Plastic Tubing through hole in Cover Plate to Push Button Actuator location. If installing the HY-72-A Push Button Actuator, remove Cover Plate and run Plastic Tubing through hole in Cover Plate, into conduit and out through electrical box at Push Button Actuator location. Reinstall Cover Plate.

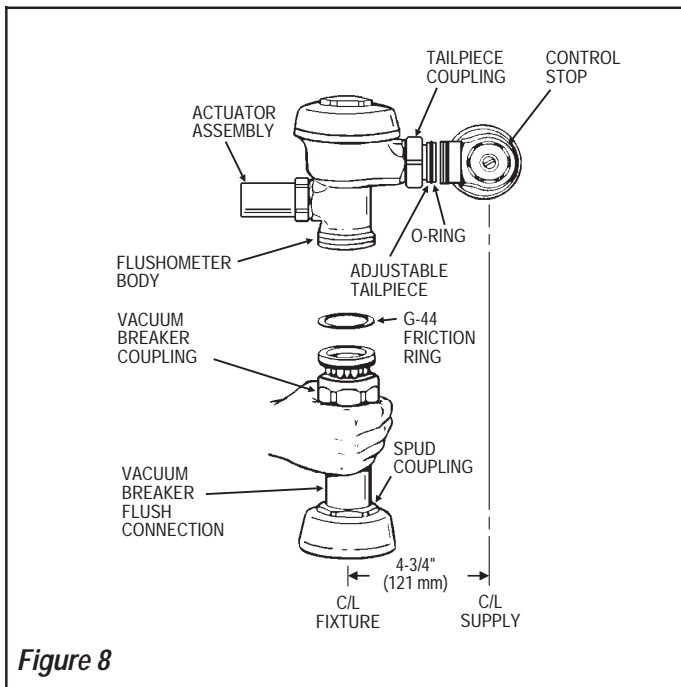
Insert Adjustable Tailpiece into Control Stop. Wet O-ring seal with water to lubricate. Secure by hand tightening Tailpiece Coupling.

Align Flushometer Body on top of Vacuum Breaker Flush Connection and secure by hand tightening Vacuum Breaker Coupling.

Align Flushometer Body and securely tighten Tailpiece Coupling, Vacuum Breaker Coupling and Spud Coupling, respectively. Tighten Valve Actuator Housing Nut securely.

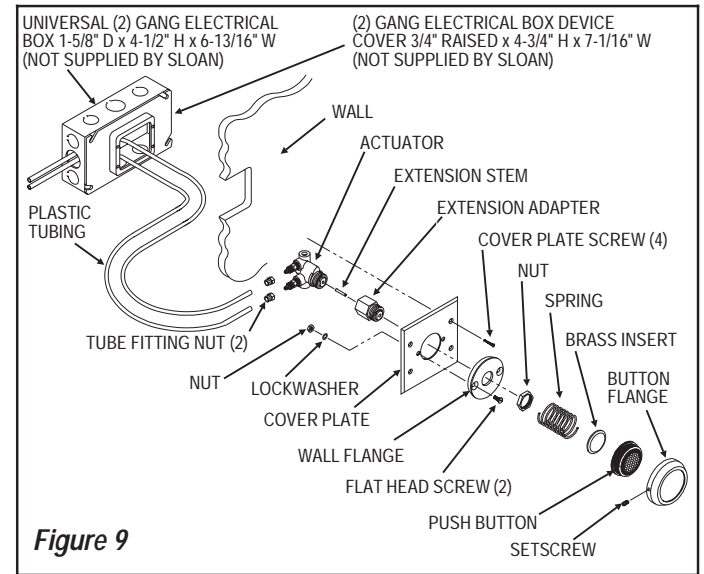
**Important Note:** Use a Sloan A-50 "Super-Wrench™" or smooth jawed spud wrench to secure all couplings. This will eliminate damage to chrome or special finish that normally occurs when slip-joint pliers, pipe wrenches or other "toothed" tools are used.

With Flushometer Body aligned on top of Vacuum Breaker Flush Connection, assemble Cover Plate to Plaster Ring with Hex Head Screws and slide Flange against Cover Plate.



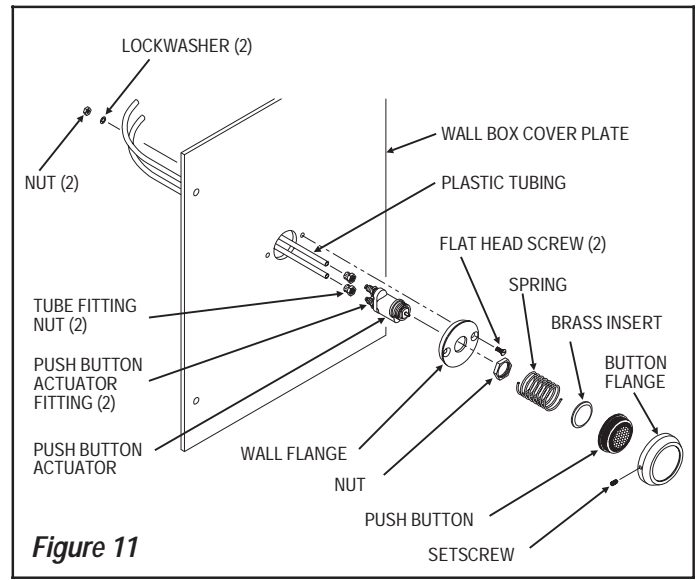
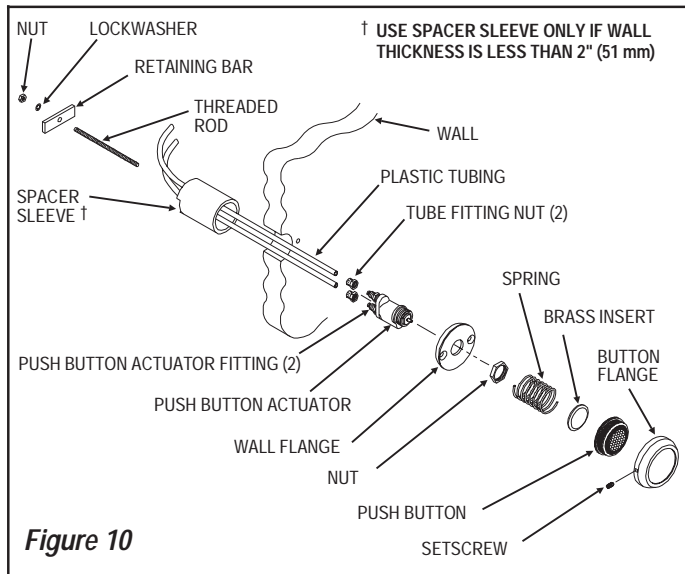
## Step 5 — Install Push Button Actuator

### SW VARIATION — HY-72-A



### INSTALLATION OF MODEL HY-72-A SIDE WALL PUSH BUTTON ACTUATOR (Figure 9)

- Mount Wall Flange onto Cover Plate using (2) Flat Head Screws, Lockwashers and Nuts provided. Tighten Fasteners securely.
  - Insert Extension Stem into Extension Adapter and thread Extension Adapter onto Push Button Actuator.
  - Insert threaded end of Push Button Actuator Assembly through Cover Plate Assembly and secure to Plate with Nut. Tighten Nut securely.
  - Place Brass Insert into black Push Button. Concave side of Brass Insert must face outward of Push Button.
  - Insert black Push Button into Button Flange. Place Spring against Brass Insert of black Push Button and install Push Button Assembly onto Cover Plate Assembly. Secure with Setscrew located at side of Button Flange.
  - Cut off excess Plastic Tubing so that there will be about 3 to 4 inches (76 to 102 mm) of slack when Push Button Actuator is installed. If the "L" and "O" markings on the Tubing will be cut off, remark Tubing appropriately so as not to lose identification.
  - Remove Tube Fitting Nuts from Push Button Actuator Fittings and slide one Nut onto each Plastic Tube.
  - Slide each Plastic Tube onto its corresponding Push Button Actuator Fitting and tighten Tube Fitting Nuts.
- Note:** Observe "L" and "O" markings on Push Button Actuator and Plastic Tubing. "L" and "O" Tubes must be connected to corresponding Push Button Actuator Fittings.
- Mount Cover Plate Assembly onto electric box cover using (4) Screws provided.



**INSTALLATION OF MODEL HY-33-A FIXTURE WALL PUSH BUTTON ACTUATOR (Figures 10 and 11)**

**Wall Installation**

**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 (refer to Figure 11).

- A. Drill a 2" (51 mm) diameter hole through wall for Wall Flange.
- B. Screw Threaded Rod into back of Push Button Actuator.
- C. Insert threaded end of Push Button Actuator into Wall Flange and secure with Nut.
- 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 black Push Button and install Push Button Assembly onto Wall Flange. Secure with Setscrew located at side of 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. Cut off excess Plastic Tubing so that there will be about 3 to 4 inches (76 to 102 mm) of slack when Push Button Actuator is installed. If the "L" and "O" markings on the Tubing will be cut off, remark Tubing appropriately so as not to lose identification.
- H. Remove Tube Fitting Nuts from Push Button Actuator Fittings and slide one Nut onto each Plastic Tube.
- I. Slide each Plastic Tube onto its corresponding Push Button Actuator Fitting and tighten Tube Fitting Nuts.  
**Note:** Observe "L" and "O" markings on Push Button Actuator and Plastic Tubing. "L" and "O" Tubes must be connected to corresponding Push Button Actuator Fittings.
- J. Insert Push Button Assembly into the 2" (51 mm) diameter hole in wall.
- K. 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. Install Lockwasher and Nut onto Threaded Rod and tighten securely. Carefully cut excess Threaded Rod making certain not to damage Plastic Tubing.

**INSTALLATION OF MODEL HY-33-A FIXTURE WALL PUSH BUTTON ACTUATOR (Figures 10 and 11)**

**Wall Box Installation**

**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 using Flat Head 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 black Push Button and install Push Button Assembly onto Wall Flange. Secure with Setscrew located at side of Button Flange.
- E. Cut off excess Plastic Tubing so that there will be about 3 to 4 inches (76 to 102 mm) of slack when Push Button Actuator is installed. If the "L" and "O" markings on the Tubing will be cut off, remark Tubing appropriately so as not to lose identification.
- F. Remove Tube Fitting Nuts from Push Button Actuator Fittings and slide one Nut onto each Plastic Tube.
- G. Slide each Plastic Tube onto its corresponding Push Button Actuator Fitting and tighten Tube Fitting Nuts.  
**Note:** Observe "L" and "O" markings on Push Button Actuator and Plastic Tubing. "L" and "O" Tubes must be connected to corresponding Push Button Actuator Fittings.

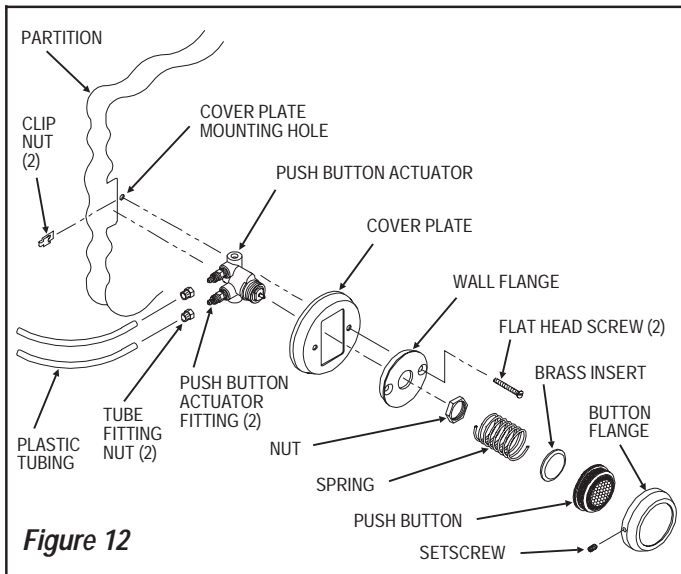


Figure 12

**INSTALLATION OF MODEL HY-49-A METAL PARTITION PUSH BUTTON ACTUATOR (Figure 12)**

- A. Drill two 3/16" Cover Plate mounting holes and cut opening for Push Button Actuator into metal partition using Cover Plate as a template. 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. Cut off excess Plastic Tubing so that there will be about 3 to 4 inches (76 to 102 mm) of slack when Push Button Actuator is installed. If the "L" and "O" markings on the Tubing will be cut off, remark Tubing appropriately so as not to lose identification.
- D. Remove Tube Fitting Nuts from Push Button Actuator Fittings and slide one Nut onto each Plastic Tube.
- E. Slide each Plastic Tube onto its corresponding Push Button Actuator Fitting and tighten Tube Fitting Nuts.  
*Note: Observe "L" and "O" markings on Push Button Actuator and Plastic Tubing. "L" and "O" Tubes must be connected to corresponding Push Button Actuator Fittings.*
- F. Insert Flat Head Screws through Wall Flange and Cover Plate mounting holes. Mount Wall Flange and Cover Plate to metal partition using Flat Head Screws provided. Tighten Fasteners securely.
- G. Place Brass Insert into black Push Button. Concave side of Brass Insert must face outward of Push Button.
- H. Insert black Push Button into Button Flange. Place Spring against Brass Insert of black Push Button and install Push Button Assembly onto Wall Flange. Secure with Setscrew located at side of Button Flange.

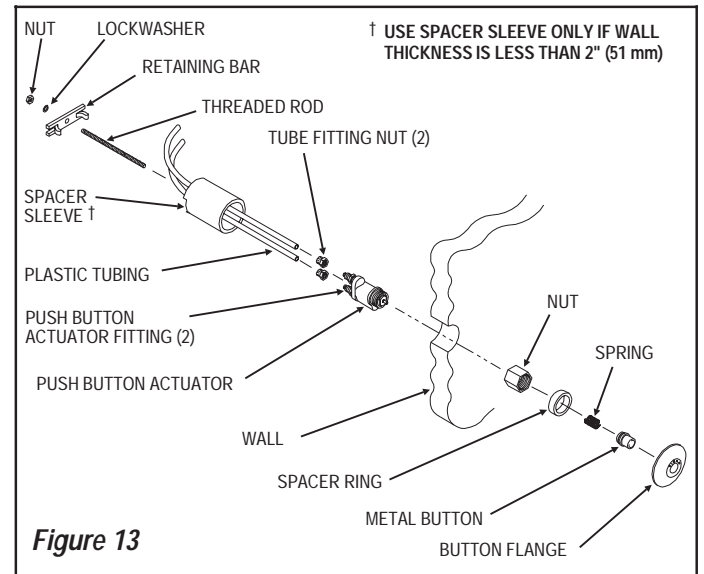


Figure 13

**INSTALLATION OF MODEL HY-100-A FIXTURE WALL METAL PUSH BUTTON ACTUATOR (Figure 13)**

*Note: Access behind wall required to install HY-100-A Fixture Wall Metal Push Button.*

- A. Drill a 2" (51 mm) diameter hole through wall.
- B. Screw Threaded Rod into back of Push Button Actuator.
- C. Thread Nut onto threaded end of Push Button Actuator.
- D. Slide Spring over Metal Push Button until it snaps into place. Place 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 Spacer 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. Cut off excess Plastic Tubing so that there will be about 3 to 4 inches (76 to 102 mm) of slack when Push Button Actuator is installed. If the "L" and "O" markings on the Tubing will be cut off, remark Tubing appropriately so as not to lose identification.
- H. Remove Tube Fitting Nuts from Push Button Actuator Fittings and slide one Nut onto each Plastic Tube.
- I. Slide each Plastic Tube onto its corresponding Push Button Actuator Fitting and tighten Tube Fitting Nuts.  
*Note: Observe "L" and "O" markings on Push Button Actuator and Plastic Tubing. "L" and "O" Tubes must be connected to corresponding Push Button Actuator Fittings.*
- J. Insert Push Button Actuator Assembly into the 2" (51 mm) diameter hole in wall.
- K. 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. Install Lockwasher and Nut onto Threaded Rod and tighten securely. Carefully cut excess Threaded Rod making certain not to damage Plastic Tubing.

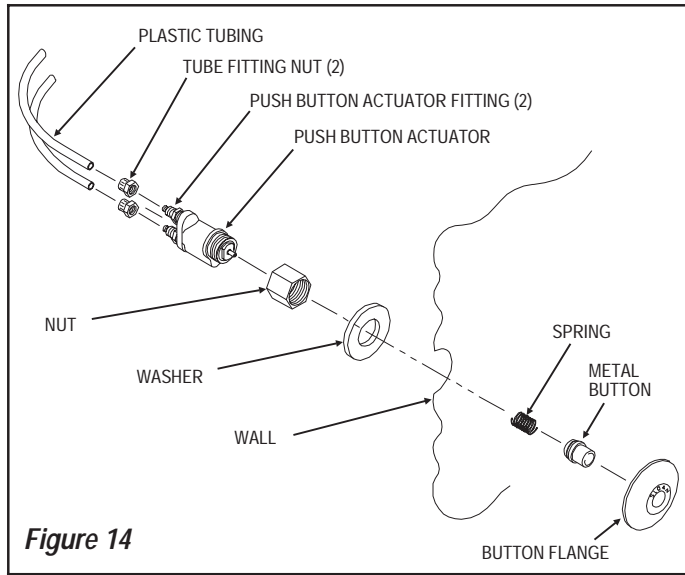


Figure 14

**INSTALLATION OF MODEL HY-108-A METAL PUSH BUTTON ACTUATOR (Figure 14)**

**Note:** To be used on punched stainless steel plates and security fixtures with front access.

- A. Cut off excess Plastic Tubing so that there will be about 3 to 4 inches (76 to 102 mm) of slack when Push Button Actuator is installed. If the “L” and “O” markings on the Tubing will be cut off, remark Tubing appropriately so as not to lose identification.
- B. Remove Tube Fitting Nuts from Push Button Actuator Fittings and slide one Nut onto each Plastic Tube.
- C. Slide each Plastic Tube onto its corresponding Push Button Actuator Fitting and tighten Tube Fitting Nuts.  
**Note:** Observe “L” and “O” markings on Push Button Actuator and Plastic Tubing. “L” and “O” Tubes must be connected to corresponding Push Button Actuator Fittings.
- D. Thread Nut onto threaded end of Push Button Actuator.
- E. Slide Spring over Metal Push Button until it snaps into place. Place Metal Push Button into Button Flange.
- F. From front of fixture, insert Button Flange Assembly into hole of fixture. From behind fixture, place Washer over threads of Button Flange. Thread Button Flange onto Push Button Actuator. Tighten Flange securely.

**Step 6 — Flush Out Supply Line (Figures 15 and 16)**

Shut off Control Stop and remove Flushometer cover. Lift out the Inside Parts Assembly as a complete unit. Install Flushometer Cover wrench tight and open Control Stop. Turn on water supply to flush line of any debris or sediment.

After completion, shut off Control Stop, remove Cover and reinstall Inside Parts Assembly. Install Flushometer Cover wrench tight. Open Control Stop and activate Flushometer valve.

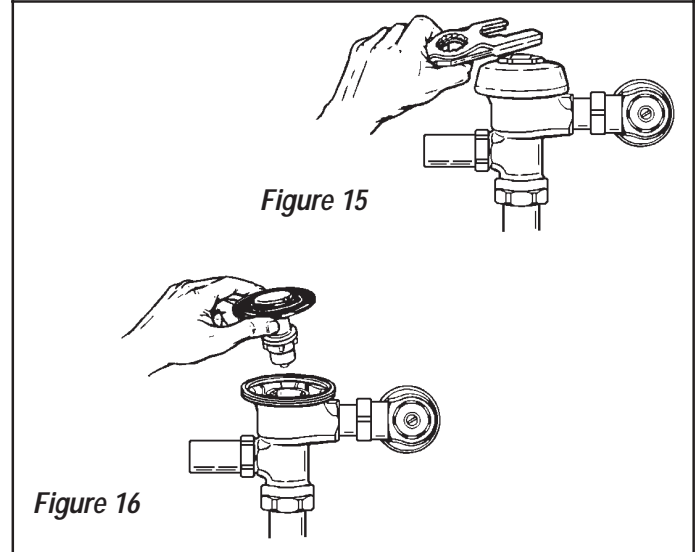


Figure 15

Figure 16

**Step 7 — Adjust Control Stop (Figure 17)**

Adjust Control Stop to meet the flow rate required for proper cleansing of the fixture. Open Control Stop COUNTERCLOCKWISE 1/2 turn from the closed position. Activate Flushometer. Adjust Control Stop after each flush until the rate of flow delivered properly cleanses the fixture.

**Important Note:** The Sloan Flushometer is 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:

1. The plumbing fixture is cleansed after each flush without splashing water out from the lip.
2. A quiet flushing cycle is achieved.

**After adjustment:** Install the Vandal Resistant Control Stop Cap to the Control Stop (refer to Vandal Resistant Control Stop Cap installation instructions).

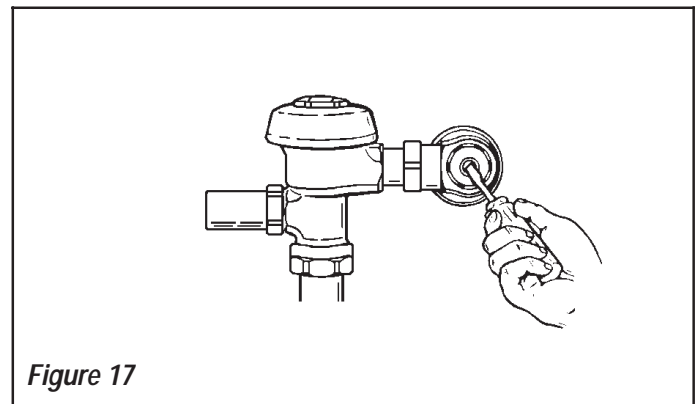


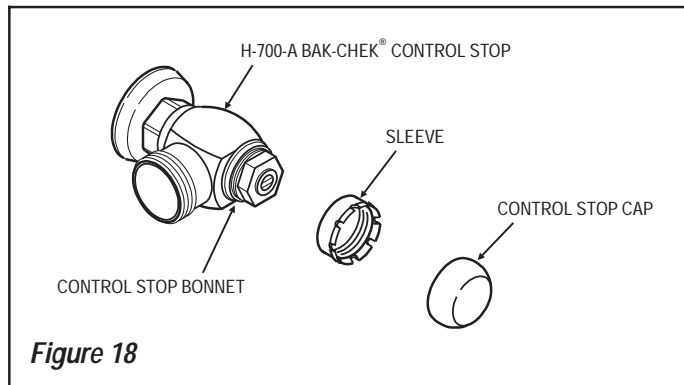
Figure 17



## VANDAL RESISTANT CONTROL STOP CAP INSTALLATION INSTRUCTIONS (Figure 18)

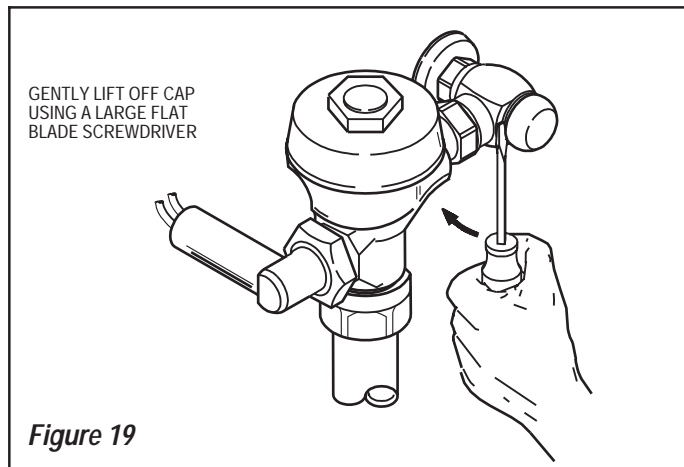
1. Thread the Plastic Sleeve onto the Stop Bonnet until it is snug (hand tight only; do not use pliers or a wrench).
2. Place the metal Control Stop Cap over the plastic Sleeve and using the palm of the hand, push or "pop" the Cap over the fingers of the Sleeve. The Cap should spin freely on the insert.

**Important:** DO NOT install the Cap onto the Sleeve unless the Sleeve has been threaded onto the Control Stop Bonnet. If assembled when off of the Control Stop, the Sleeve WILL NOT come apart from the Cap.



## VANDAL RESISTANT CONTROL STOP CAP REMOVAL INSTRUCTIONS (Figure 19)

1. Using a large flat screwdriver, gently lift the Cap from the Control Stop as follows. Insert the screwdriver blade between the bottom edge of the Cap and the flat surface of the Control Stop body as shown in Figure 19. Using the screwdriver as a lever, push the screwdriver handle straight back toward the wall. Gently lift the Cap from the Sleeve. It may be necessary to work the screwdriver around the diameter of the cap to further lift the Cap from the Sleeve.
2. Once the Cap has been lifted away from the Control Stop, grasp the Cap and pull it off the Sleeve.



## CARE AND CLEANING INSTRUCTIONS

DO NOT use abrasive or chemical cleaners to clean Flushometers as they may dull the luster and attack the chrome or special decorative finishes. Use ONLY soap and water, then wipe dry with clean cloth or towel.

While cleaning the bathroom tile, the Flushometer should be protected from any splattering of cleaner. Acids and cleaning fluids can discolor or remove chrome plating.

## TROUBLESHOOTING AND MAINTAINING THE SERIES 900 HYDRAULIC FLUSHING SYSTEM

### Push Button Actuator Assembly

- I. **Leakage occurring at the Push Button.**
  - A. Damaged or worn seals or lime build up in the actuator cartridge. Replace with new HY-32-A cartridge.
- II. **The Flushometer does not flush and a small amount of leakage is visible on the fixture.**
  - A. Foreign material lodged in the cartridge. Remove the cartridge and inspect for foreign material. Clean under running water.
  - B. Damaged or worn seals or lime build up in the actuator cartridge. Replace with new HY-32-A cartridge.
  - C. Plastic Tubing installed incorrectly. Install Plastic Tubing Correctly (refer to Steps 4 & 5).

### TO REMOVE THE ACTUATOR CARTRIDGE

#### If the Actuator Is a *Plastic* Push Button:

1. Loosen the set screw in the button flange and remove the button, flange and spring from the actuator body.
2. Unscrew the cartridge from the actuator body. NOTE: An automatic check valve in the actuator body allows removal of the cartridge without turning off the water.

#### If the Actuator Is a *Metal* Push Button:

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 was designed to be vandal-proof and thus requires removal from the wall for servicing.

(Continued on following page.)

## TROUBLESHOOTING AND MAINTAINING THE SERIES 900 HYDRAULIC FLUSHING SYSTEM — Continued

### Flushometer Actuator Assembly

- I. **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 by-pass hole is clogged. Remove the 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 new HY-83-A cartridge (item #2B).
  - B. Plastic Tubing Installed Incorrectly. Install Plastic Tubing Correctly (refer to Steps 4 & 5).

#### TO REMOVE THE ACTUATOR FROM THE FLUSHOMETER

1. Turn off water at the stop.
2. Unscrew the housing coupling nut from the Flushometer.
3. Remove the actuator housing from the Flushometer. The tubing connections can be left intact.
4. Remove the actuator cartridge from the Flushometer body. Care should be taken so that upon removal the actuator does not abruptly separate due to spring compression within. If the actuator cartridge is lodged in the body cavity, grip the exposed portion gently with a pair of channel-lock pliers and rotate back and forth to loosen the "O" ring seal.
5. Separate the actuator housing to reveal the spring and plunger.

### Servicing the Flushometer

- I. **The Flushometer does not function.**
  - A. The control stop or main valve is closed. Open the control stop or the main valve.
- II. **Insufficient volume of water to adequately siphon the fixture.**
  - A. The control stop is not open enough. Adjust the control stop for desired delivery of water.
  - B. Urinal Flushometer parts installed in a Closet Flushometer. Replace inside Urinal Flushometer parts with proper Closet Flushometer parts.
  - C. Inadequate volume of pressure at the supply. If no gauges are available to properly measure the supply pressure or the volume of water at the Flushometer, then completely remove the entire Diaphragm Assembly and open the control stop to allow water to pass through the empty Flushometer. Make sure that the supply is adequate enough to siphon the fixture. If this does not prove satisfactory, then steps should be taken to increase the pressure and/or supply.
- III. **The Flushometer closes off immediately.**
  - A. A ruptured or damaged diaphragm. Install Inside Parts Kit to correct the problem.
  - B. An enlarged by-pass orifice from corrosion or damage. Install Inside Parts Kit to correct the problem.
- IV. **The length of the flush is too short.**
  - A. The Diaphragm Assembly and the Guide Assembly are not hand tight. Screw the two assemblies hand tight.
  - B. An enlarged by-pass orifice from corrosion or damage. Install Inside Parts Kit.
  - C. A Urinal relief valve (A-19-AU) in a Closet Flushometer. Install Closet Relief Valve (A-19-AC).
- V. **The length of the flush is too long or fails to close off.**
  - A. The relief valve (A-19-A) is not seating properly or the by-pass orifice is clogged because of foreign material or is closed by a gelatinous film from "overtreated" water. Disassemble the working parts and wash them thoroughly. **NOTE: The size of the by-pass orifice is of the utmost importance for the proper metering of water into the upper chamber of the Flushometer. DO NOT enlarge or damage this orifice by sticking a pin or other small objects into it in order to clean it.**
  - B. The line pressure has dropped and it is not sufficient enough to force the relief valve to sit properly. Shut off all control stops until pressure has been restored, then open them again.

(Continued on following page.)

## **TROUBLESHOOTING AND MAINTAINING THE SERIES 900 HYDRAULIC FLUSHING SYSTEM — Continued**

### **Servicing the Flushometer — Continued**

#### **VI. Water splashes out of the fixture.**

- A. The supply volume is more than necessary. Throttle down the control stop.
- B. Lime accumulation on the vortex or spreader holes of the fixture. Remove the lime build up.

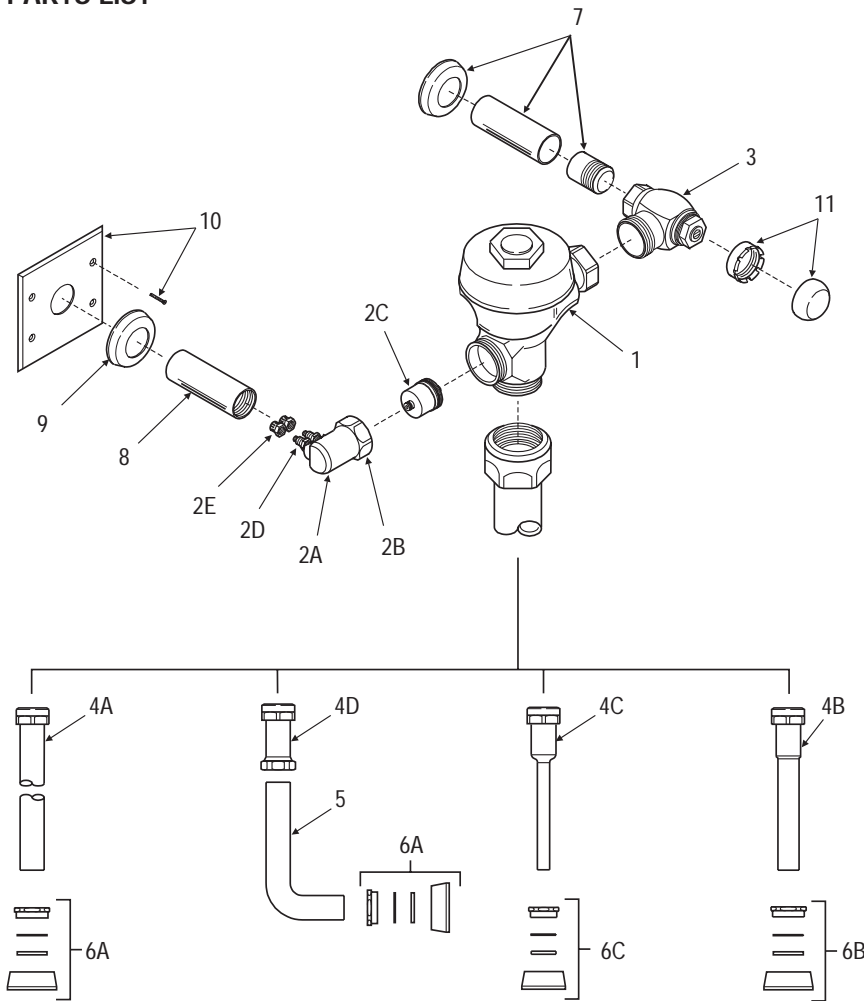
#### **VII. The flush is not considered “Quiet.”**

- A. The control stop may not be adjusted for quiet operation. Adjust the control stop for quiet operation while the Flushometer is flushing, bearing in mind the fixture requirements for proper siphonage.
- B. The fixture may be contributing to the noise. Determine that the noise is in the fixture by covering the fixture with a “quilt” or by placing cardboard under the toilet seat to separate the bowl noise from the Flushometer noise. If the fixture proves to be noisy, it should be replaced by a quiet-action fixture.
- C. Conditions in the piping system may be contributing to the noise. A degree of high pressure in the piping may be dealt with by adjustments of the control stop. Other noises which may be created by loose pipes, lack of air chambers, inadequate pipe sizes for pressure, etc., must be taken up with the building engineer.

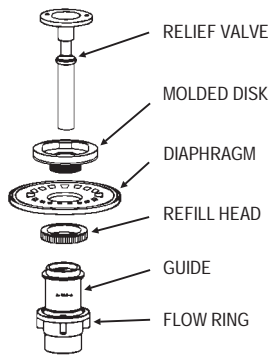
For more information concerning Royal and Regal flushometers, consult Sloan Hydraulic Valve Repair and Maintenance guides or contact your local Sloan Representative.

If further assistance is required, please contact the Sloan Valve Company Installation Engineering Department at 847/671-4300.

## PARTS LIST



Item No.	Part No.	Description
1		Valve Assembly
2A	HY-65	Valve Actuator Housing
2B	A-6	Housing Nut
2C	HY-83	Actuator Cartridge
2D	HY-24	Fitting Nut (2 Required)
2E	HY-35	Fitting Nut (2 Required)
3	H-700-A	Bak-Chek® Control Stop (Royal Valves)
	H-740-A	Bak-Chek® Control Stop (Regal Valves)
4A	V-600-AA	1-1/2" (38 mm) x 9" (229 mm) Vacuum Breaker Assembly
4B	V-600-AA	1-1/4" (32 mm) x 9" (229 mm) Vacuum Breaker Assembly
4C	V-600-AA	3/4" (19 mm) x 9" (229 mm) Vacuum Breaker Assembly
4D	V-600-A	Vacuum Breaker
5	F-109	1-1/2" (38 mm) Elbow Flush Connection
6A	F-5-A	1-1/2" (38 mm) Spud Coupling Assembly (Royal)
	F-56-A	1-1/2" (38 mm) Spud Coupling Assembly (Regal)
6B	F-5-A	1-1/4" (32 mm) Spud Coupling Assembly (Royal)
	F-57-A	1-1/4" (32 mm) Spud Coupling Assembly (Regal)
6C	F-5-A	3/4" (19 mm) Spud Coupling Assembly (Royal)
	F-58-A	3/4" (19 mm) Spud Coupling Assembly (Regal)
7	H-633-AA	1" (25 mm) Sweat Solder Kit with Cast Set Screw Flange
	H-636-AA	3/4" (19 mm) Sweat Solder Kit with Cast Set Screw Flange
8	HY-64	Chrome Sleeve
9	F-7	Tube Flange
10	HY-112-A	Plate w/Screws
11	H-1009-A	Vandal Resistant Stop Cap for 3/4" I.P.S. (20 mm DN) Bak-Chek® Control Stop
	H-1010-A	Vandal Resistant Stop Cap for 1" I.P.S. (25 mm DN) Bak-Chek® Control Stop



### SPECIAL NOTE

For Service Sinks, which require a 6.5 gpf (24.6 Lpf), use Sloan Repair Kit No. A-36-A and remove Flow Ring before installing.

### NOTICE:

The information contained in this document is subject to change without notice.

## INSIDE PARTS KIT FOR SLOAN ROYAL AND REGAL FLUSHOMETERS

### REPAIR KIT SELECTION GUIDE

Kit Number	Flush Volume	"Used On"
A-36-A	4.5 gpf (17 Lpf)	Very old Water Closets, primarily Blow Outs
A-37-A	1.5 gpf (5.7 Lpf)	Older Siphon Jet and some Blow Out Urinals
A-38-A	3.5 gpf (13.2 Lpf)	Water Saver Water Closets and old Blowout Urinals †
A-41-A	1.6 gpf (6.0 Lpf)	Low Consumption Water Closets ‡
A-42-A	1 gpf (3.8 Lpf)	Low Consumption Urinals (Siphon Jet and Blow Out)
A-43-A	0.5 gpf (1.9 Lpf)	Wash Down Urinals only §
A-44-A	2.4 gpf (9.0 Lpf)	European and Asian Style 9 Liter Water Closets
† Includes newer Blow Out Water Closets.		
‡ Low Consumption Water Closets are marked "1.6 gpf" or "6.0 Lpf."		
§ Some Wash Down Urinals may require a 1.0 gallon (3.8 Liter) flush.		