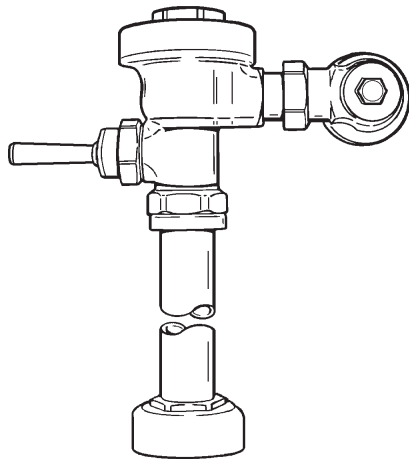


SLOAN®

Regal®

INSTALLATION INSTRUCTIONS FOR STANDARD EXPOSED CLOSET AND URINAL FLUSHOMETERS



Exposed Closet Flushometer —

1-1/2" Top Spud

MODEL 110/111

MODEL 113

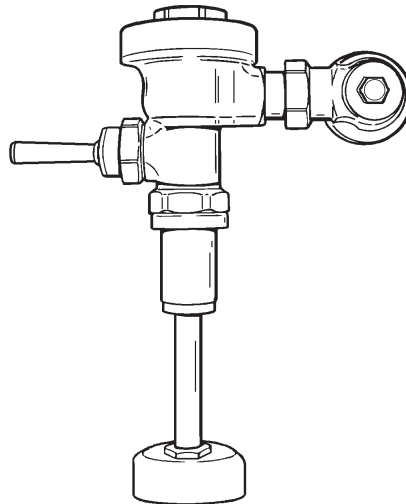
MODEL 115

MODEL 116

Exposed Service Sink Flushometer —

1-1/2" Top Spud

MODEL 117



Exposed Urinal Flushometer —

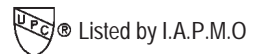
1-1/4" Top Spud

MODEL 180

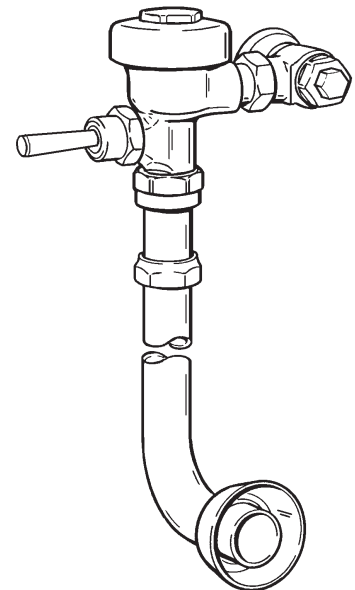
Exposed Urinal Flushometer —

3/4" Top Spud

MODEL 186



Made in the U.S.A.



Exposed Closet Flushometer —

1-1/2" Back Spud

MODEL 120

MODEL 121

MODEL 122

Installation of the Sloan Regal® 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. Regal Flushometers have been engineered to deliver a consistent, quiet flush, time after time. No internal adjustment of the Flushometer is required. Patented features provide unequalled performance on today's new generation of low consumption fixtures.

Regal Flushometers are designed for easy installation and maintenance and

comes complete with a metal oscillating Non-Hold-Open lever actuator, Bak-Chek® control stop, adjustable tailpiece, vacuum breaker flush connection, spud coupling, and wall and spud flange.

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.

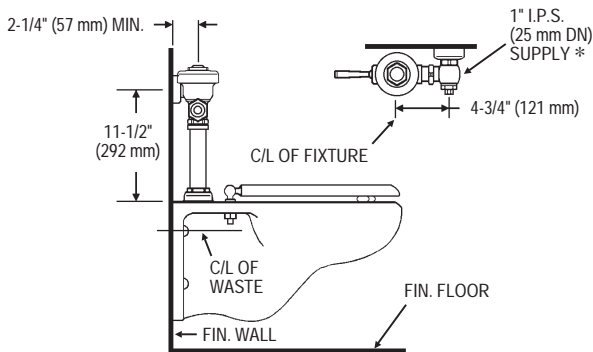
LIMITED WARRANTY

Sloan Valve Company warrants its Regal 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.

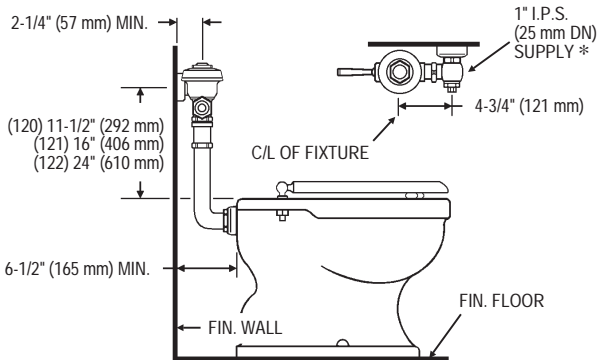
VALVE ROUGH-IN

MODEL 110 — Water Saver, 3.5 gpf (13.2 Lpf)
MODEL 111 — Low Consumption, 1.6 gpf (6.0 Lpf)



* 1" CONTROL STOP IS AVAILABLE WITH WHITWORTH THREAD

MODEL 120, 121 & 122 — Water Saver, 3.5 gpf (13.2 Lpf)
MODEL 120-1.6, 121-1.6 & 122-1.6 — Low Consumption, 1.6 gpf (6.0 Lpf)



* 1" CONTROL STOP IS AVAILABLE WITH WHITWORTH THREAD

MODEL 186 — Water Saver, 1.5 gpf (5.7 Lpf)
MODEL 186-1 — Low Consumption, 1 gpf (3.8 Lpf)
MODEL 186-0.5 — 0.5 gpf (1.9 Lpf)

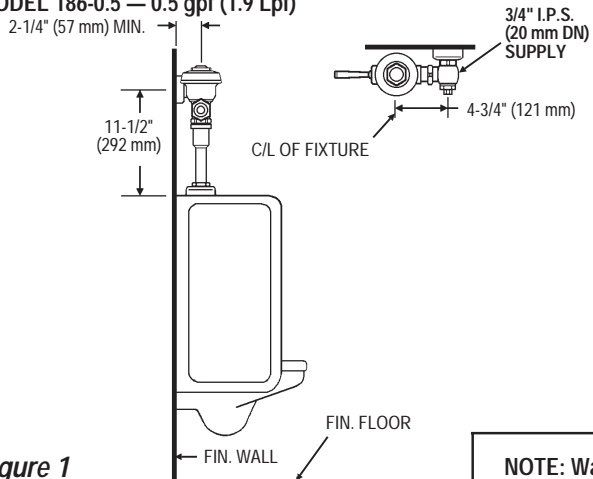
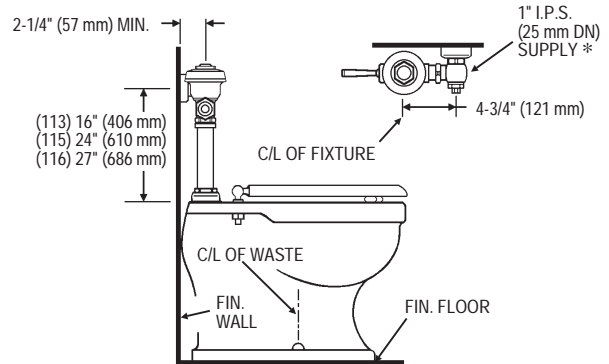


Figure 1

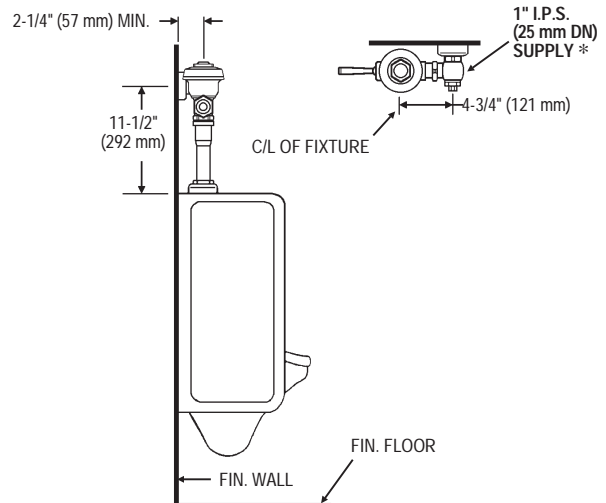
MODEL 113, 115 & 116 — Water Saver, 3.5 gpf (13.2 Lpf)
MODEL 113-1.6, 115-1.6 & 116-1.6 — Low Consumption, 1.6 gpf (6.0 Lpf)



* 1" CONTROL STOP IS AVAILABLE WITH WHITWORTH THREAD

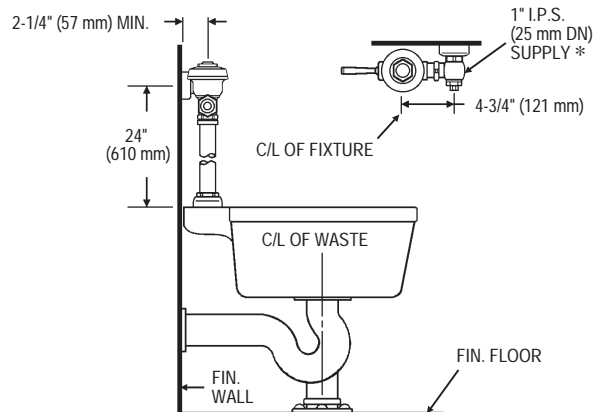
MODEL 180 — Standard, 3.5 gpf (13.2 Lpf)
MODEL 180-1.5 — Water Saver, 1.5 gpf (5.7 Lpf)
MODEL 180-1 — Low Consumption, 1 gpf (3.8 Lpf)

NOTE: Requires 1" I.P.S. (25 mm DN) SUPPLY *



* 1" CONTROL STOP IS AVAILABLE WITH WHITWORTH THREAD

MODEL 117 — Standard, 6.5 gpf (24.6 Lpf)



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

PRIOR TO INSTALLATION

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

- Closet/urinal fixture
- Drain line
- Water supply line

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 INSTALLING FLUSHOMETER

The Sloan Regal is 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 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!

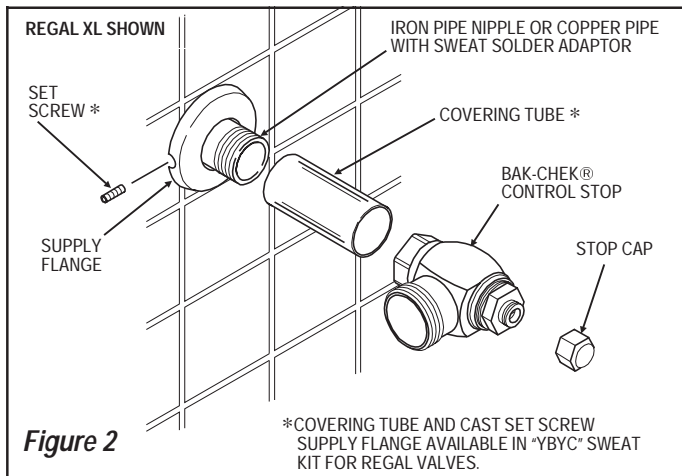
TOOLS REQUIRED FOR INSTALLATION

- Slotted screwdriver to adjust control stop.
- Sloan A-50 "Super-Wrench™" or smooth jawed spud wrench for couplings.

INSTALLATION

Step 1 - Control Stop Installation (Figure 2)

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 3:

- Measure distance from finished wall to centerline of Fixture Spud. Cut water supply pipe 1-1/4" (32 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 3). Cut Covering Tube

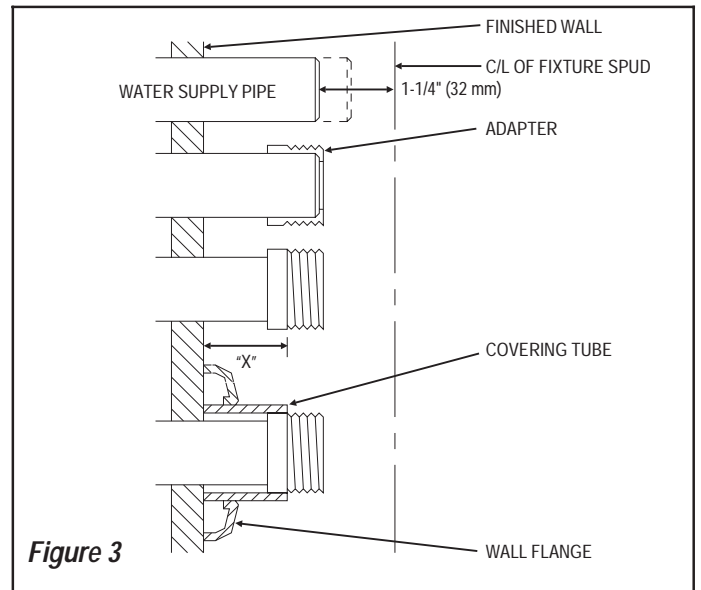


Figure 3

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 4)

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

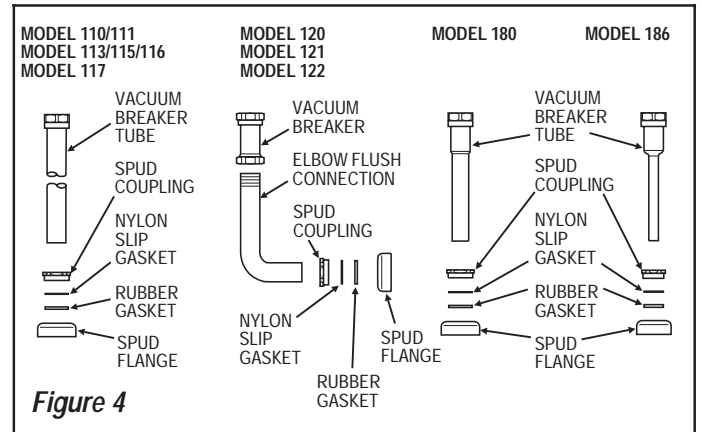


Figure 4

Spud Coupling onto Fixture Spud.

Step 3 - Install Flushometer SLOAN ADJUSTABLE TAILPIECE (Figure 5)

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

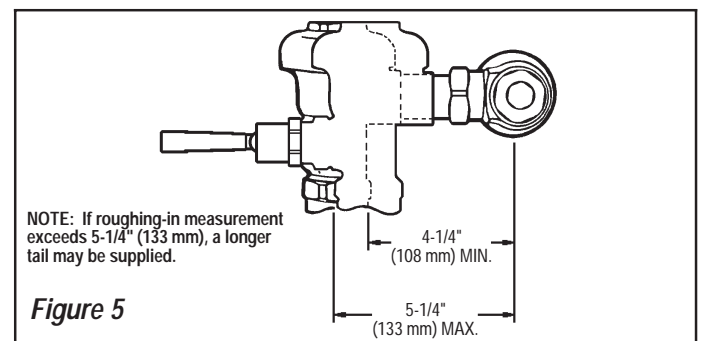


Figure 5

Stop).

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

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

Align Flushometer 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.

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.

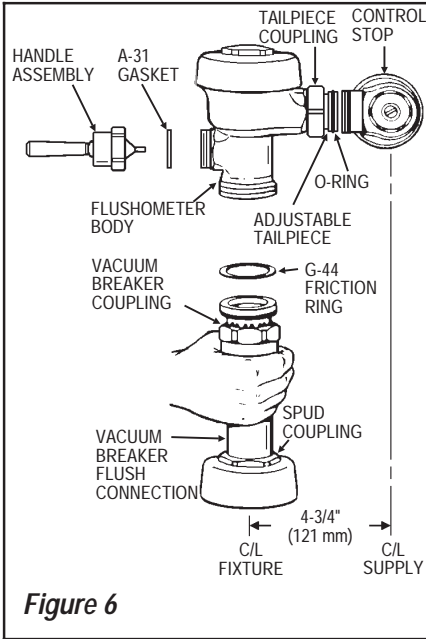


Figure 6

Step 4 - Install Handle (Figure 6)

Install Handle Assembly to Valve Body and tighten securely.

Step 5 - Flush Out Supply Line (Figure 7)

Shut off Control Stop and remove Flushometer Cover. Lift out the Inside Parts Assembly. 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 Flushometer Cover and reinstall Inside Parts Assembly. Install Flushometer Cover wrench tight. Open Control

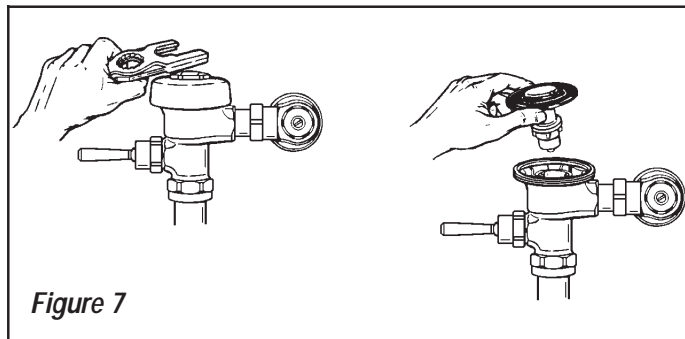


Figure 7

Stop and activate Flushometer Valve.

Step 6 - Adjust Control Stop (Figure 8)

Adjust Control Stop to meet the flow rate required for the 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.

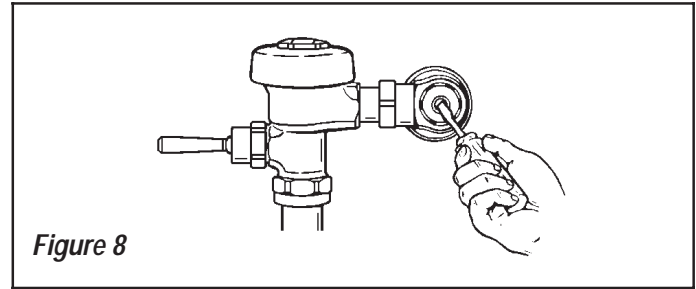


Figure 8

Important: The Sloan REGAL 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: **Wrench Tighten Control Stop Cap to Eliminate Vandalism.**

CARE AND CLEANING OF CHROME AND SPECIAL FINISHES

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 GUIDE

I. Flushometer does not function.

- A. Control Stop or Main Valve is Closed. Open Control Stop or Main Valve.
- B. Handle Assembly is worn. Install Sloan Handle Repair Kit (B-50-A) or replace handle.
- C. Relief Valve is worn. Replace Inside Parts Kit.

II. Insufficient volume of water to adequately siphon fixture.

- A. Control Stop not open enough. Adjust Control Stop for desired delivery of water.
- B. Urinal Flushometer Parts inside a Closet Flushometer. Replace Inside Urinal Parts with proper Closet Flushometer Parts.
- C. Low Consumption Flushometer installed on a non-Low Consumption fixture. Replace A-41-A Inside Parts Kit with A-38-A Water Saver Kit.
- D. Water Saver Kit installed in old, non-Water Saver bowl. Position Refill Head A-170 so that SIDE 1 is in the UP Position.
- E. Inadequate volume or pressure at supply.
 - If no gauges are available to properly measure supply pressure or volume of water at the Flushometer, then remove the Relief Valve from the Inside Parts Kit, reassemble the Flushometer and open the Control Stop. If the fixture siphons, more water volume is required. 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 Water Closets and 1.0 gpf Urinals) prohibit the use of higher flushing volumes.**
 - If fixture does not siphon or if a Low Consumption fixture is installed, or if the above steps do not prove satisfactory, steps must be taken to increase the pressure and/or supply.

III. Flushometer closes off immediately.

- A. Ruptured or damaged Diaphragm. Install Inside Parts Kit to correct problem and update Flushometer.
- B. Enlarged By-pass orifice from corrosion or damage. Install Inside Parts Kit to correct problem and update Flushometer.

IV. Length of flush is too short (Short Flushing).

- A. Diaphragm Assembly and Guide Assembly are not hand-tight. Screw the two assemblies hand-tight.
- B. Enlarged By-pass orifice from corrosion or damage. Install NEW Inside Parts Kit to correct problem and update Flushometer.

- C. A-19-AU (Black) Urinal Relief Valve in Closet Flushometer. Replace Relief Valve with A-19-AC (White) Closet Relief Valve.
- D. A-41-A Low Consumption Kit installed in non-Low Consumption fixture. Replace with proper Inside Parts Kit.
- E. Handle Assembly is worn. Install Handle Repair Kit B-50-A or replace the Handle.

V. Length of flush is too long (Long Flushing) or fails to close off.

- A. Relief Valve (A-19-A) is not seating properly or By-pass orifice is clogged because of foreign material, or By-pass orifice is closed by an invisible gelatinous film from "over-treated" water. Disassemble the working parts and wash thoroughly. NOTE: SIZE OF THE ORIFICE IN THE BY-PASS 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 KIT IF CLEANING DOES NOT CORRECT PROBLEM.
- B. Line pressure has dropped and is not sufficient to force Relief Valve to seat. Shut off all control stops until pressure has been restored, then open them again.
- C. A-19-AC (White) Closet Relief Valve has been used in a 1 or 1-1/2 gpf Urinal. Replace with A-19-AU (Black) Relief Valve.
- D. Inside Cover is cracked or damaged. Replace the Inside Cover (A-71).

VI. Chattering noise in Flushometer.

- A. The A-156-A Segment Diaphragm has been installed upside-down. Replace the Segment Diaphragm to the proper position as instructed by markings on the Diaphragm.
- B. The Inside Cover has become distorted from wear, freezing or abuse. Replace Inside Cover.

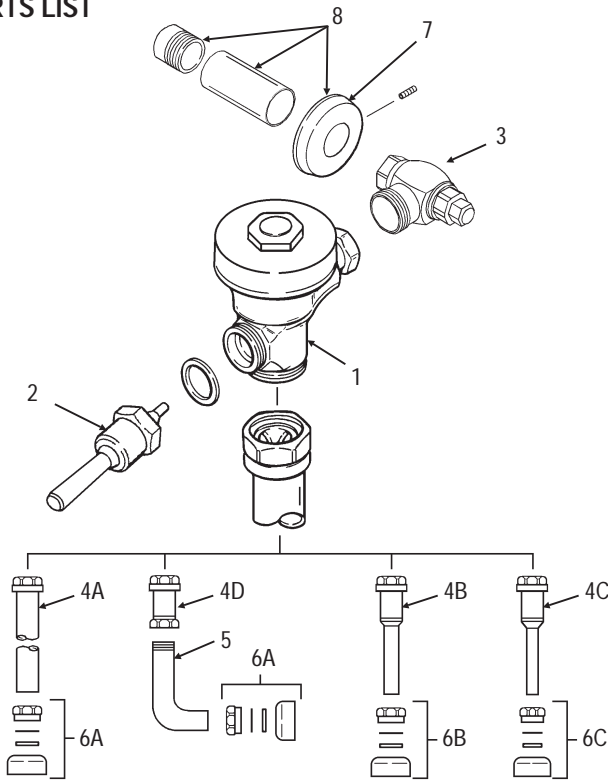
VII. Leaking at Handle Assembly.

- A. The B-39 Seal is worn or deteriorated. Install new B-39 Seal. NOTE: The B-39 Seal will easily slide onto the B-40 Bushing if it is wet.
- B. Handle gasket has been omitted. Install A-31 Handle Gasket or Sloan Handle Repair Kit (B-50-A).
- C. Valve Handle Bushing is worn. Install Sloan Handle Repair Kit (B-50-A).

Refer to the Regal Flushometer Maintenance Guide for additional Troubleshooting and Repair Part information.

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
2	B-32-A	Handle Assembly
	B-73-A	ADA Compliant Handle Assembly †
3	H-540-A	Bak-Chek® Control Stop
4A	V-500-AA	1-1/2" (38 mm) x 9" (229 mm) Vacuum Breaker Assembly ‡
4B	V-500-AA	1-1/4" (32 mm) x 9" (229 mm) Vacuum Breaker Assembly
4C	V-500-AA	3/4" (19 mm) x 9" (229 mm) Vacuum Breaker Assembly
4D	V-500-A	Vacuum Breaker Assembly
5	F-109	1-1/2" (38 mm) Elbow Flush Connection ‡
6A	F-56-A	1-1/2" (38 mm) Spud Coupling Assembly
6B	F-57-A	1-1/4" (32 mm) Spud Coupling Assembly
6C	F-58-A	3/4" (19 mm) Spud Coupling Assembly
7	F-7	Supply Flange (Supplied when Valve is not Ordered with Sweat Solder Kit)
8	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

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

‡ Length varies with valve model variation; consult factory.

♦ Supplied with Regal XL Valves.

INSIDE PARTS KIT FOR SLOAN 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	.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.

REGAL VALVE REBUILD KITS §

Kit Number	Flush Volume	"Used On"
R-1001-A	4.5 gpf (17 Lpf)	Water Closets
R-1002-A	1.5 gpf (5.7 Lpf)	Urinals
R-1003-A	3.5 gpf (13.2 Lpf)	Water Closets
R-1004-A	1.6 gpf (6.0 Lpf)	Water Closets
R-1005-A	1 gpf (3.8 Lpf)	Urinals
R-1011-A	.5 gpf (1.9 Lpf)	Urinals
R-1012-A	2.4 gpf (9.0 Lpf)	Water Closets

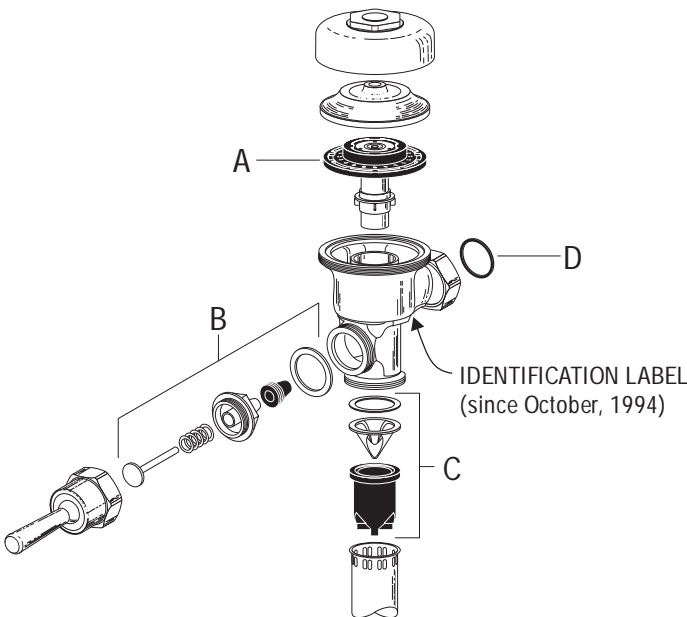
§ Kit includes:

A — Inside Parts Kit

B — Handle Repair Kit

C — Vacuum Breaker Repair Kit

D — Tailpiece "O" Ring



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.

For a complete listing of Flushometer Valve components and Repair Kits, see the Regal Maintenance Guide or consult your nearest Plumbing Wholesaler.

For optimum water conservation and Flushometer performance, use *only* Genuine Sloan Parts.

NOTICE

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