

INSTALLATION INSTRUCTIONS FOR EXPOSED ROYAL® WATER CLOSET AND URINAL FLUSHOMETERS



**Closet Flushometer
for 1 1/2" Top Spud**

MODELS 110/111,
113, 115 & 116

**Service Sink
Flushometer for 1 1/2"
Top Spud**
MODEL 117



**Urinal Flushometer
for 1 1/4" Top Spud**

MODEL 180

**Urinal Flushometer
for 3/4" Top Spud**

MODEL 186



**Closet Flushometer
for 1 1/2" Back Spud**

MODELS 120, 121 & 122

UL Listed SP Certified UPC Listed by I.A.P.M.O. Made in the U.S.A.

LIMITED WARRANTY

Sloan Valve Company warrants its Royal 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.

PRIOR TO INSTALLATION

Before you install the Royal Flushometer, be sure the items listed below are installed. Also, refer to the rough-in diagram below.

- Closet fixture
- Drain line
- Water supply line

Important:

- ALL PLUMBING SHOULD 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.

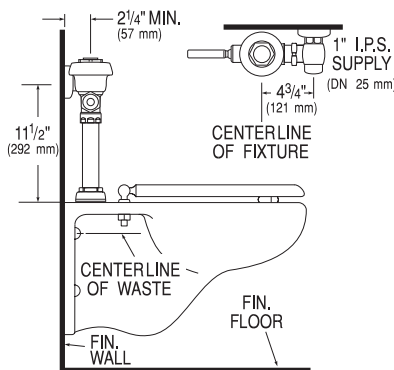
The Royal Flushometer is designed to operate with 10 to 100 psi (69 to 689 kPa) of water pressure. THE MINIMUM PRESSURE REQUIRED TO THE VALVE IS DETERMINED BY THE TYPE OF FIXTURE SELECTED. Consult fixture manufacturer for minimum pressure requirements. Most Low Consumption water closets (1.6 gpf/6.0 Lpf) require a minimum flowing pressure of 25 psi (172 kPa).

TOOLS REQUIRED FOR INSTALLATION

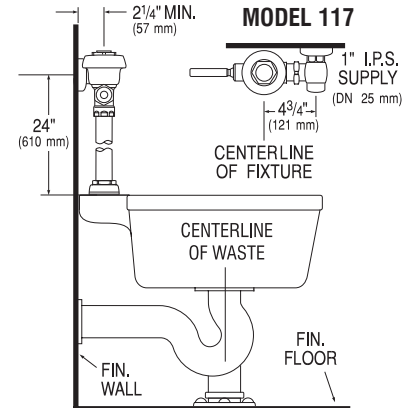
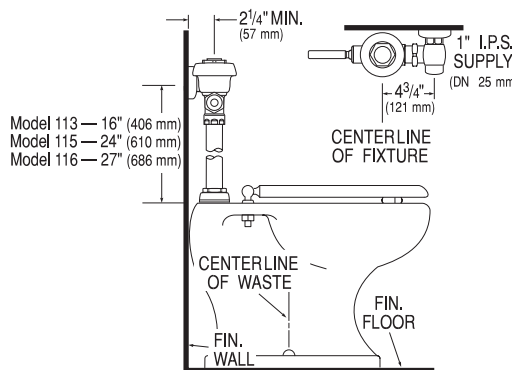
- Straight blade screwdriver
- Sloan A-50 Super-Wrench™, Sloan A-109 Plier Wrench or smooth jawed spud wrench

VALVE ROUGH-IN

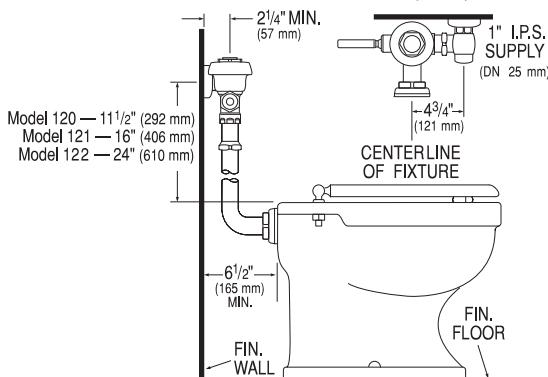
MODEL 110/111



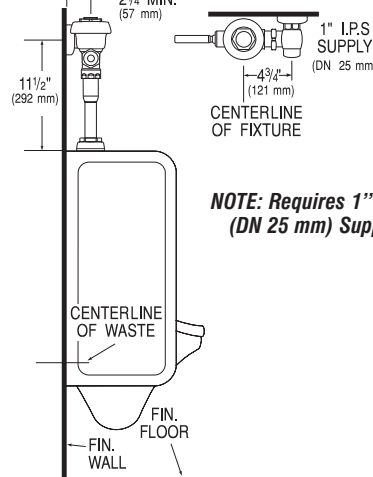
MODELS 113, 115 & 116



MODELS 120, 121, & 122

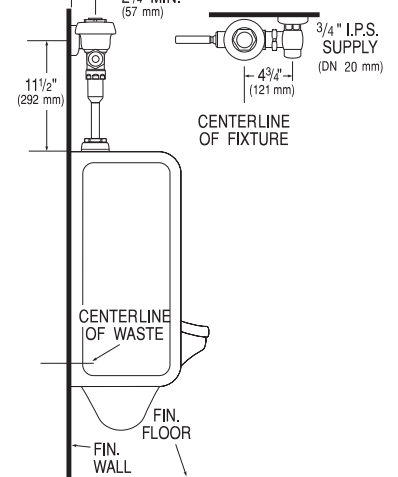


MODEL 180



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

MODEL 186



IMPORTANT NOTES:

- When mounted on an ADA accessible bowl, the rough-in to the supply inlet should be no higher than 37 1/2" or the handle will exceed maximum height allowances under ADA guidelines.
- New ADAAG Guidelines allow for Split or Offset Grab Bars, check with local authorities or reference section 604.5.2 of ADAAG.

!!! IMPORTANT !!!

With the exception of Control Stop Inlet, DO NOT use pipe sealant or plumbing grease on any valve component or coupling!

!!! IMPORTANT !!!

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.

!!! IMPORTANT !!!

Protect the chrome or special finish of Sloan Flushometers — DO NOT USE toothed tools to install or service these valves. Use a Sloan A-50 Super-Wrench™, Sloan A-109 Plier Wrench or smooth jawed spud wrench to secure all couplings. Also see “Care and Cleaning” section of this manual.

!!! 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.

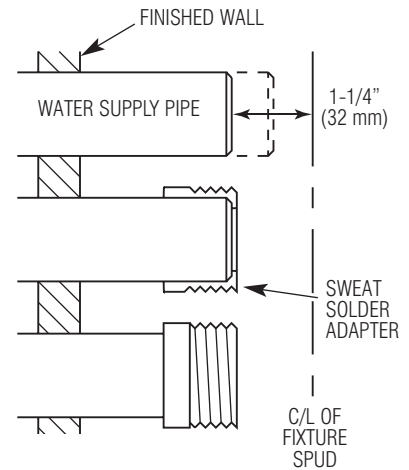
Please take the time to read this manual to ensure proper product installation and longevity. Also, please visit our website to download our most recent documentation for this product.

If you have questions about how to install your Sloan Flushometer, consult your local Sloan Representative or call 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)

- A** Measure from finished wall to C/L of Fixture Spud. Cut pipe 1¼" (32 mm) shorter than this measurement. Chamfer O.D. and I.D. of water supply pipe.

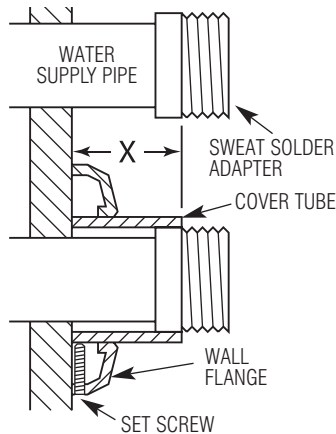


- B** Slide Threaded Adapter fully onto pipe.

- C** Sweat solder the Adapter to pipe.

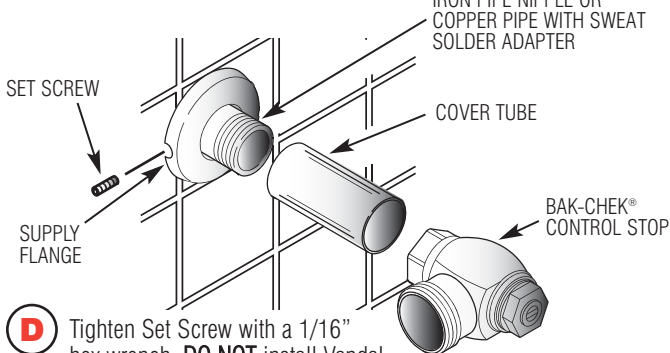
2 Install Cover Tube, Wall Flange and Control Stop to supply pipe.

- A** Measure from finished wall to first thread of Adapter or threaded supply pipe (dimension "X"). Cut Cover Tube to this length.



- B** Slide Cover Tube over pipe. Slide Wall Flange over Cover Tube until against wall.

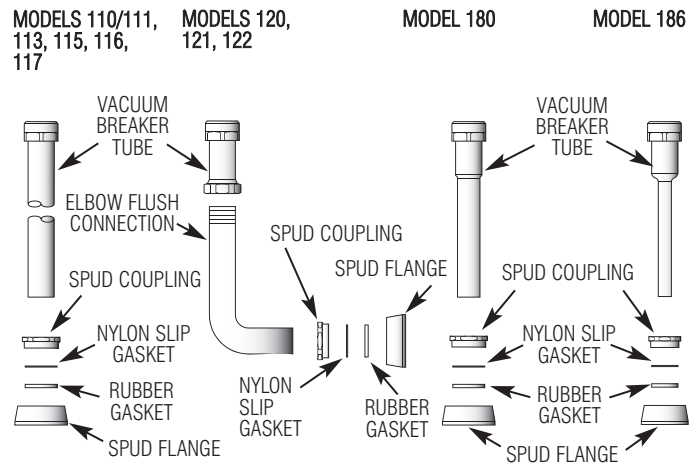
- C** Thread Control Stop onto pipe. Tighten with a wrench.



- D** Tighten Set Screw with a 1/16" hex wrench. **DO NOT** install Vandal Resistant Stop Cap at this time.

3 Install Vacuum Breaker Flush Connection

- A** Slide Spud Coupling, Nylon Slip Gasket, Rubber Gasket and Spud Flange over Vacuum Breaker Tube.



- B** Insert Tube into Fixture Spud.

- C** Hand tighten Spud Coupling onto Fixture Spud.

4 Install Flushometer and Triple Seal Handle Assembly

- A** Lubricate tailpiece O-ring with water. Insert Adjustable Tailpiece into Control Stop. Tighten Tailpiece Coupling by hand.
- B** Align Flushometer directly above the Vacuum Breaker Flush Connection by sliding the Flushometer Body IN or OUT as needed. Tighten Vacuum Breaker Coupling by hand.



NOTE

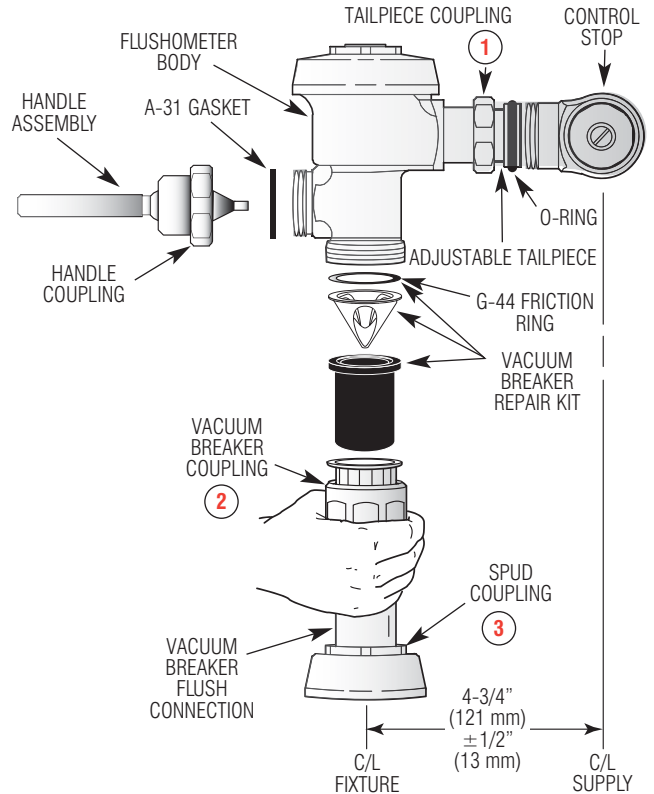
Maximum adjustment of the Sloan Adjustable Tailpiece is 1/2" (13 mm) IN or OUT from the standard 4-3/4" (121 mm) (centerline of Flushometer to centerline of Control Stop).

If roughing-in measurement exceeds 5-1/4" (133 mm), consult factory for longer tailpiece.

- C** Align Flushometer Body and securely tighten first the Tailpiece Coupling (1), then the Vacuum Breaker Coupling (2), and finally the Spud Coupling (3). Use a wrench to tighten these couplings in the order shown.

- D** Install the red A-31 Handle Gasket on the Handle Assembly. Insert the Handle Assembly into the Handle opening in the Flushometer Body. Securely tighten the Handle coupling with a wrench.

Sloan's triple-sealed Flushometer Handle is ADA-compliant.

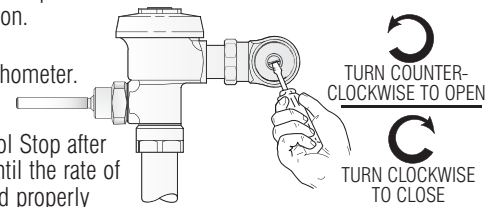


5 Flush Out Supply Line

- A** Make sure Control Stop is CLOSED and remove Flushometer Outer Cover.
- B** Remove Inside Cover and lift out Inside Parts Assembly.
- C** Reinstall Outside and Inside Cover wrench tight. Open Control Stop to flush supply line. Close Control Stop and remove Outside and Inside Cover.
- D** Reinstall Inside Parts Assembly, Inside Cover and Outside Cover wrench tight.

6 Adjust Control Stop and Install Vandal Resistant Stop Cap

- A** Open Control Stop COUNTERCLOCKWISE one FULL turn from closed position.
- B** Activate Flushometer.
- C** Adjust Control Stop after each flush until the rate of flow delivered properly cleanses the fixture.

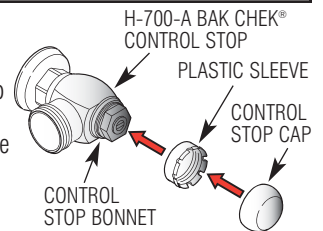


!!! IMPORTANT !!!

The Royal 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 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.

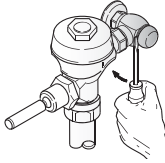
- D** Install Vandal Resistant Control Stop Cap onto Control Stop.
- Thread the Plastic Sleeve onto the Stop Bonnet until it is snug (tighten only by hand; do not use pliers or a wrench).
 - Place the metal Control Stop Cap over the plastic Sleeve and use the palm of the hand to push or "pop" the Cap over the fingers of the Plastic Sleeve. The Cap should spin freely.



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

VANDAL RESISTANT CONTROL STOP CAP REMOVAL

Use a large flat screwdriver as a lever to remove the Cap from the Control Stop. Insert the screwdriver blade between the bottom edge of the Cap and the flat surface of the Control Stop body as shown. Push the screwdriver handle straight back toward the wall to gently lift the Cap. If necessary, work the screwdriver around the diameter of the Cap until you can grasp the Cap and lift it completely off the Sleeve. The Sleeve should remain attached to the bonnet of the Control Stop.



CARE AND CLEANING OF CHROME AND SPECIAL FINISHES

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 GUIDE

I. Flushometer does not function (no flush).

- Control Stop or Main Valve is Closed. Open Control Stop or Main Valve.
- Handle Assembly is damaged. Replace Handle (B-73-A) or install Handle Repair Kit (B-51-A).
- Relief Valve is damaged. Replace Royal Performance Kit.

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

- Control Stop is not open wide enough. Adjust Control Stop for desired delivery of water volume.
- Dual Filtered Diaphragm Assembly is damaged. Replace Royal Performance Kit.
- Incorrect Dual Filtered Diaphragm Assembly 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. Use valve label and markings on fixture for reference.
- 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, reassemble the Flushometer and completely open the Control Stop.
 - If the fixture siphons, more water volume is required. Install a higher flushing volume Royal Performance Kit. **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. Length of flush is too short (short flush).

- Dual Filtered Diaphragm Assembly is damaged. Replace Royal Performance Kit.
- Handle Assembly is damaged. Replace Handle (B-73-A) or install Handle Repair Kit (B-51-A).
- Incorrect Dual Filtered Diaphragm Assembly 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. Use valve label and markings on fixture for reference.

4. Length of flush is too long (long flush) or continuous.

- 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.
- Diaphragm or Relief Valve is damaged. Replace Royal Performance Kit.
- Incorrect Dual Filtered Diaphragm Assembly is installed in Flushometer; for instance, Closet assembly inside a Urinal Flushometer, or Water Saver assembly inside a Low Consumption Flushometer. Determine the flush volume required by the fixture and replace the Royal Performance Kit. Use valve label and markings on fixture for reference.
- Inside Cover is damaged. Replace Inside Cover (A-71).
- Supply line water pressure has dropped and is not sufficient to close the valve. Close Control Stop until pressure is restored.

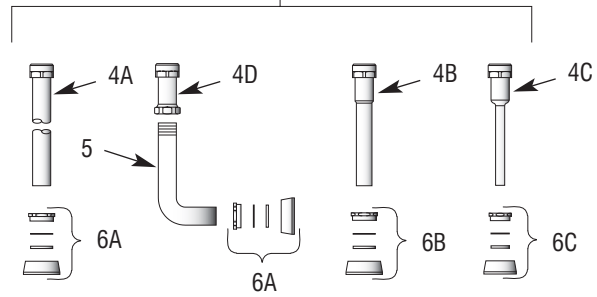
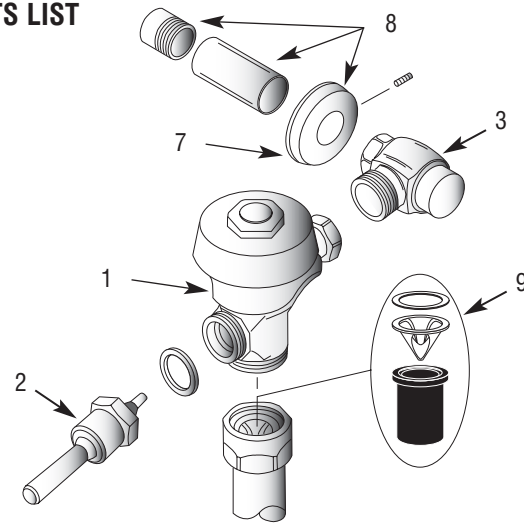
5. Chattering noise is heard during flush.

- Inside Cover is damaged. Replace Inside Cover (A-71).

6. Handle Leaks.

- Handle Seal or Assembly is damaged. Replace Handle (B-73-A) or install Handle Repair Kit (B-51-A).

PARTS LIST



Item No.	Part No.	Description
1	†	Valve Assembly
2	B-73-A	ADA Compliant Handle Assembly
3	H-700-A	Bak-Chek® Control Stop
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 Assembly
5	F-109	1-1/2" (38 mm) Elbow Flush Connection ‡
6A	F-5-A	1-1/2" (38 mm) Spud Coupling Assembly
6B	F-5-A	1-1/4" (32 mm) Spud Coupling Assembly
6C	F-5-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 & Cast Wall Flange w/Set Screw
	H-636-AA	3/4" (19 mm) Sweat Solder Kit & Cast Wall Flange w/Set Screw
9	V-651-A	High Back Pressure Vacuum Breaker Repair Kit

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

For a complete listing of Flushometer Valve components and Repair Kits, see one of our Maintenance Guides or consult your nearest Plumbing Wholesaler.

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

NOTICE:

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

When assistance is required, please contact the Sloan Valve Company Installation Engineering Department at:

1-888-SLOAN-14 (1-888-756-2614) or 1-847-233-2016

SLOAN

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