



INSTALLATION INSTRUCTIONS FOR RETROFIT AND COMPLETE VALVE INSTALLATION FOR SLOAN SOLIS®, SOLAR POWERED, SINGLE AND DUAL FLUSH WATER CLOSETS AND URINALS





8100 Series Complete Flushometer Models

8100 Series Sloan SOLIS® Valves are complete Flushometer Valves and ideal for new installations.





RESS Series Retrofit Conversion Kit Models

RESS Sloan SOLIS® Models are used to convert existing Flushometers to Solar Powered, Sensor Operation.

Sloan SOLIS® Dual Flush Water Closet Models can be furnished for the following:

1.1 gpf/4.2 Lpf Reduced Flush

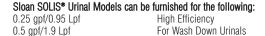
1.6 gpf/6.0 Lpf (Full Flush) For Low Consumption Bowls

Sloan SOLIS® Water Closet Models can be furnished for the following:

1.28 gpf/4.7 Lpf High Efficiency

1.6 gpf/6.0 Lpf For Low Consumption Bowls

Made in the U.S.A.







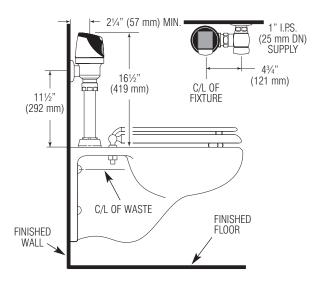
LIMITED WARRANTY

Sloan Valve Company warrants its Sloan SOLIS® 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. This warranty does not cover the life of the batteries.

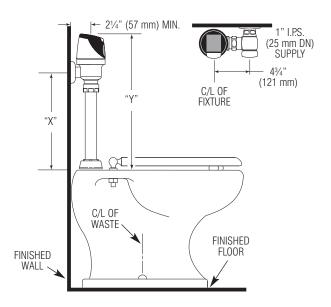
VALVE ROUGH-IN

Typical Water Closet Installation Model 8110/8111

Reference for RESS-C Retrofit



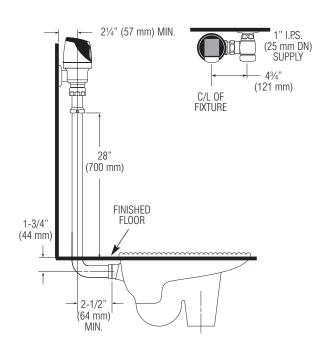
High Rough-in Water Closet Installation Models 8113, 8115 & 8116



Typical Water Closet Installation

Model 8137

Reference for RESS-C Retrofit



Model 8115 & 8116 valves are designed for installations where the water supply is roughed-in 24° - 27° (610 mm - 686 mm) above the top of the water closet.

For new installations, Sloan strongly recommends the use of our Model 8111 which has a shorter installation height.

Model	"X"	"Υ"
8113	16" (406 mm)	21" (533 mm)
8115	24" (610 mm)	29" (737 mm)
8116	27" (686 mm)	32" (813 mm)

Use the Model 8113 when toilet seat with covers are being used.

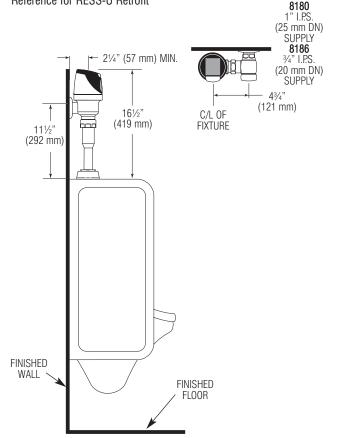
When installing the Sloan SOLIS® in a handicap stall:

Per the ADA Guidelines (section 604.9.4) it is recommended that the grab bars be split or shifted to the wide side of the stall. If grab bars must be present over the valve, use the Alternate ADA Installation.

Typical Urinal Installation

Models 8180 & 8186

Reference for RESS-U Retrofit



!!! IMPORTANT !!!

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

!!! 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.

!!! IMPORTANT !!!

The Strap Wrench provided with Sloan SOLIS® is a convenience tool and is not to be used to remove or install the Flushometer Couplings. Use Strap Wrench ONLY to install Sloan SOLIS® Locking Ring.

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) OR 1-847-233-2016

PRIOR TO INSTALLING THE SLOAN SOLIS® FLUSHOMETER

Prior to installing the Sloan SOLIS® Flushometer, install the items listed below as illustrated in the Rough-in Diagram. (New installations only.)

- · Closet or Urinal fixture
- · Drain line
- Water supply line

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.
- WHEN INSTALLING A FLUSHOMETER, IT IS IMPORTANT THAT THE FLUSH MODEL MATCHES THE REQUIREMENTS OF THE PLUMBING FIXTURE.
- FLUSH ALL WATER LINES PRIOR TO MAKING CONNECTIONS.

The Sloan SOLIS® is designed to operate with 15 to 100 PSI (104 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 pressure requirements.

Most Low Consumption water closets (1.6 gallon/6 liter) require a minimum flowing pressure of 25 psi (172 kPa).

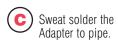
TOOLS REQUIRED FOR INSTALLATION

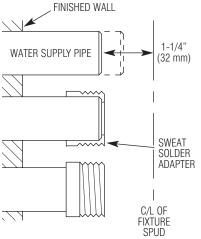
- · Slotted screwdriver to adjust control stop.
- Sloan A-50 Super-Wrench[™], Sloan A-109 Plier Wrench or smooth jawed spud wrench for couplings.
- Trimpot adjustment screwdriver (supplied) to adjust range, if necessary.
- Strap wrench (supplied) to install Sloan SOLIS® to valve body.
- 7/64" hex wrench (supplied) to secure Sloan SOLIS® cover to base plate.

For Complete Valve Installation, Start here. For RESS Retrofit Installations, Start at Step 6. Install Optional Sweat Solder Adapter (only if your supply pipe does not have a male thread).

Measure from finished wall to C/L of Fixture Spud. Cut pipe 1½" (32 mm) shorter than this measurement. Chamfer O.D. and I.D. of water supply pipe.







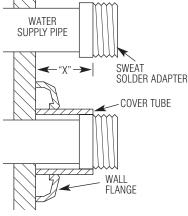
!!! IMPORTANT !!!

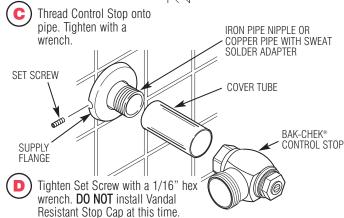
With the exception of Control Stop Inlet, DO NOT use pipe sealant or plumbing grease on any valve component or coupling!

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

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







3 Flush Out Supply Line

Open Control Stop.



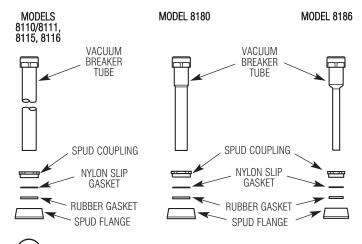
- Turn on water supply to flush line of any debris or sediment.
- Close Control Stop.

Install Vacuum Breaker Flush Connection

NOTE

If cutting Vacuum Breaker Tube to size, note that Critical Line (C/L) on Vacuum Breaker must typically be 6" (152 mm) above fixture. Consult Code for details.

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.

Install Flushometer

Lubricate tailpiece O-ring with water. Insert Adjustable Tailpiece into Control Stop. Tighten Tailpiece Coupling by hand.

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.

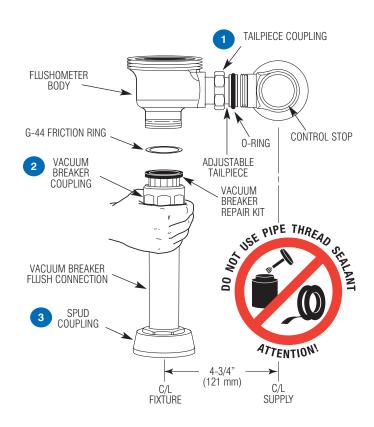


NOTE

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).

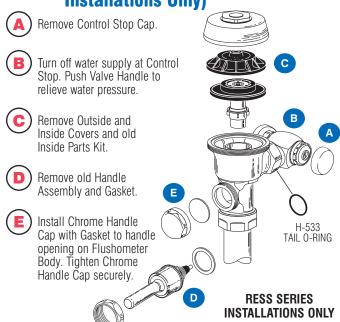
If roughing-in measurement exceeds 5-1/4" (133 mm), consult factory for longer tailpiece.

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.



When Retrofitting an Existing Valve, Start Here.

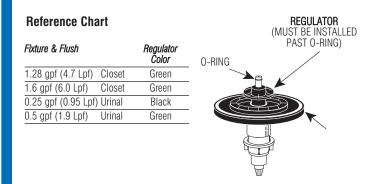
Remove Components from Existing Flushometer (RESS Retrofit Installations Only)



NOTE: An extra H-533 Tail O-ring is included in the event leakage occurs if the valve is repositioned during the installation of the new Sloan SOLIS®. Use only as needed.

Sloan SOLIS® Flush Volume (RESS Retrofit Installations Only)

The Flush Volume of the Sloan SOLIS® is controlled by the Regulator in the Flex Tube Diaphragm Kit. Regulators are identified by color.



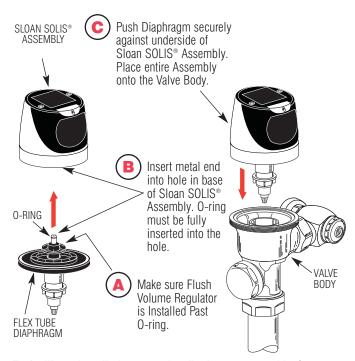
Note: A 0.5 gpf (1.9 Lpf) Urinal kit can be converted to a 1.0 gpf (3.8 Lpf) by cutting and removing the smooth A-164 Flow Ring from the Guide.

RESS-C and RESS-U SOLIS® valves are supplied with multiple Regulators to address multiple flushing applications. The product is shipped with it's lowest flush volume configuration. To convert the flush to a higher flushing volume, simply change the Regulator.

When installing a new Regulator on a Flex Tube Diaphragm Kit, be sure to push the Regulator past the O-ring when installing.

Note: Never use more water than needed. Low Consumption water closets and urinals will not function properly on excess water.

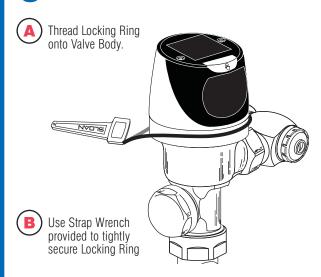
Assemble Flex Tube Diaphragm to Sloan SOLIS® Assembly



To facilitate installation, wet the diaphragm assembly (on top or completely).

Note: Sensor Lens must face directly forward. Rotating the Sensor to either side will decrease the Sensor's ability to detect a target.

Tighten Locking Ring

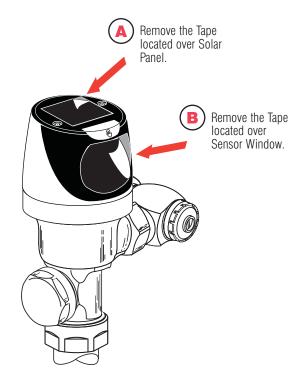


Important: The Locking Ring must be installed down past the valve body threads by at least one thread. If difficulty is experienced installing the Locking Ring, turn the Locking Ring back and forth, each time working it further down the threads. The Locking Ring will act as a thread chaser in the event there has been a build-up of matter on the threads of the old valve body.

If retrofitting the Sloan SOLIS® onto a Zurn valve body, a special Locking Ring must be used (identified by a machined groove around the ring).

Order the Sloan SOLIS $^{\! \circ}$ with the "Z" variation to receive the unit supplied with this Ring.

10 Remove Tape from Solar Panel and Sensor Window to activate.



For the first ten (10) minutes of operation, a Visible Light flashes in the Sensing Window of the Sloan SOLIS® Flushometer when a user is detected.

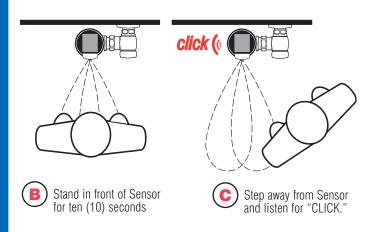
1 Test Sensor Operation

The Sloan SOLIS® has a factory set sensing range:

Water Closet Models - 22" to 42" (559 mm to 1067 mm) Urinal Models - 15" to 30" (381 mm to 762 mm)



Test Sensor with Cover in Place.



The Factory setting should be satisfactory for most installations. If a range adjustment is required, refer to the Range Adjustment instructions on this page.

12 Adjust Control Stop and Install Vandal Resistant Stop Cap

A

Open Control Stop COUNTERCLOCKWISE ½ turn from closed position.



Activate Flushometer by placing hand in front of Sloan SOLIS® Sensor Lens for ten (10) seconds (or press override button) and then moving it away.



(C)

Adjust Control Stop after each flush until the rate of flow delivered properly cleanses the fixture.

Important: 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 plumbing fixture is cleansed after each flush without splashing water out from the lip AND a quiet flushing cycle is achieved.

Important: The Control Stop should never be opened to the point 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.

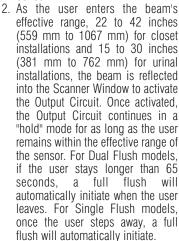


Install Control Stop Cap onto Control Stop. For RESS retrofit applications, reuse Stop Cap from existing valve. In complete valve installations, a new Stop Cap is provided.

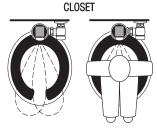
Follow the instructions packaged with the Free Spinning Vandal Resistant Stop Cap.

Operation

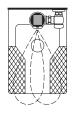
 A continuous, INVISIBLE light beam is emitted from the Sloan SOLIS® Sensor.

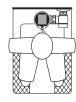


3. For a Dual Flush models, once a user is detected, if the user leaves in 65 seconds or less, a reduced flush will automatically initiate. The circuit automatically resets and is ready for the next user. For a Single Flush models, when the user steps away, this initiates a full flush. The circuit automatically resets and is ready for the next user.









URINAL





Range Adjustment (Adjust only if Necessary)

The Sloan SOLIS® has a factory set sensing range: Water Closet Models - 22" to 42" (559 mm to 1067 mm) Urinal Models - 15" to 30" (381 mm to 762 mm)

The Factory setting should be satisfactory for most installations.

If the range is too short (i.e., not picking up users) or too long (i.e., picking up opposite wall or stall door) the range can be adjusted.

Note: Water does not have to be turned off to adjust range.

Loosen the two Screws on top of the unit and remove cover. Remove the Rubber Plug from top of Electronic Sensor Module to uncover the Potentiometer.

RANGE ADJUSTMENT PROCEDURE

For the first ten (10) minutes of operation, a Visible Light flashes in the Sensing Window of the Sloan SOLIS® Flushometer when a user is detected. This Visible Light feature can be reactivated after ten (10) minutes by opening and closing the Battery Compartment Door.

Check the range by stepping toward the unit until the Light flashes, indicating the Sensor's maximum detection limit. Adjust the Range Potentiometer Screw located on top of the Sensor Module a few degrees CLOCKWISE to increase the range or a few degrees COUNTERCLOCKWISE to decrease the range. Repeat this adjustment until the desired range is achieved.

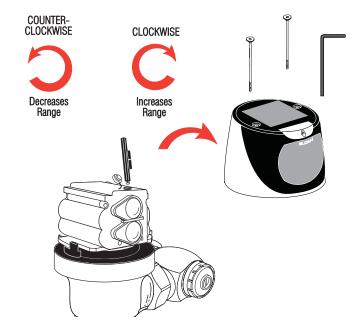
Always Determine the Sensing Range with Metal Cover and Lens Window On Top of the Unit.

Important: Adjust in small increments only! Range Potentiometer Adjustment Screw rotates only ³/₄ of a turn; **DO NOT** over-rotate.

When range adjustment is satisfactory, replace the Rubber Plug. Reinstall Cover and tighten the two Screws on top of the unit.

Important: Adjust in small increments only! Range Potentiometer Adjustment Screw rotates only ³/₄ of a turn; **DO NOT** over-rotate.

When range adjustment is satisfactory, replace the Rubber Plug. Reinstall Cover and tighten the two Screws on top of the unit.

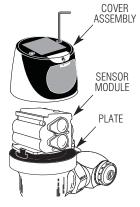


Battery Replacement

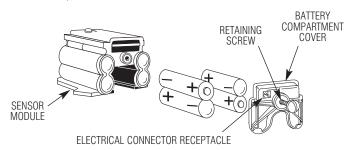
When required, replace batteries with four (4) Alkaline AA-Size Batteries.

Note: Water does not have to be turned off to replace Batteries.

Loosen the two (2) Screws on top of unit. Remove the complete Cover Assembly. Lift the Sensor Module from its Plate. Unplug the Electrical Connector from Battery Compartment Cover. Loosen the Retaining Screw on Battery Compartment Cover and remove Battery Compartment Cover. Install four (4) Alkaline AA-Size Batteries exactly as illustrated.



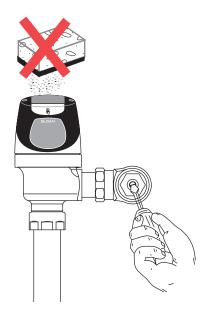
Install Battery Compartment Cover and secure with Retaining Screw. Make certain that Battery Compartment Cover is fully compressed against Gasket to provide a seal; **Do Not** overtighten. Plug the Electrical Connector into the Battery Compartment Cover. Reinstall the Sensor Module onto the Plate. Reinstall the complete Cover Assembly onto the Plate. Tighten the two (2) Screws on top of the unit.



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

- 1. Sensor Flashes Continuously Only When User Steps Within Range.
- A. Unit in Start-Up mode; no problem. This feature is active for the first ten (10) minutes of operation.
- 2. Valve Does Not Flush; Sensor Not Picking Up User.
 - A. Range too short; increase the range.
- Valve Does Not Flush; Sensor Picking Up Opposite Wall or Surface, or Only Flushes When Someone Walks By. Light Flashes Continuously for First 10 Minutes Even with No One in Front of the Sensor.
 - A. Range too long: shorten range.

4. Valve Does Not Flush Even After Adjustment.

- A. Range Adjustment Potentiometer set at full "max" or full "min" setting. Readjust Potentiometer away from full "max" or "min" setting.
- B. Batteries completely used up; replace batteries.
- C. Problem with Electronic Sensor Module; replace Electronic Sensor Module.

5. Unit Flashes 4 Quick Times When User Steps Within Range.

A. Batteries low; replace batteries.

6. Valve Does Not Shut Off.

- A. Bypass Orifice in Diaphragm is clogged with dirt or debris, or Bypass is clogged by an invisible gelatinous film due to "over-treated" water. Remove Flex Tube Diaphragm and wash under running water.

 Note: Size of Orifice in the Bypass is of utmost importance for the proper metering of water by the valve. DO NOT ENLARGE OR DAMAGE THIS ORIFICE. Replace Flex Tube Diaphragm if cleaning does not correct the problem.
- B. Dirt or debris fouling Stem or Flex Tube Diaphragm. Remove Flex Tube Diaphragm and wash under running water.
- C. O-ring on Stem of Flex Tube Diaphragm is damaged or worn. Replace O-ring if necessary.
- D. Problem with Electronic Sensor Module; replace Sensor Module.

7. Not Enough Water to Fixture.

- A. Wrong Flush Volume Regulator installed in Flex Tube Diaphragm Kit. Install the correct Regulator (see Step 7 of these instructions).
- B. Wrong Sloan SOLIS® model installed; i.e., 1 gpf. Urinal installed on 3.5 gal. Closet fixture. Replace with proper Sloan SOLIS® model.
- C. Enlarged Bypass in Diaphragm. Replace Flex Tube Diaphragm.
- D. Control Stop not adjusted properly. Readjust Control Stop.
- E. Inadequate volume or pressure at supply. Increase water pressure or supply (flow) to valve. Consult factory for assistance.

8. Too Much Water to Fixture.

- A. Wrong Flush Volume Regulator installed in Flex Tube Diaphragm Kit. Install the correct Regulator (see Step 7 of these instructions).
- B. Control Stop not adjusted properly. Readjust Control Stop.
- C. Wrong Sloan SOLIS® model installed; i.e., 3 gpf. Model installed on 1.0 or 1.5 gal. Urinal fixture. Replace with proper Sloan SOLIS® mode.
- D. Dirt in Diaphragm Bypass. Clean under running water or replace Flex Tube Diaphragm.

Note: The EBV-46-A Beam Deflector is not required or available for the Sloan SOLIS®.

Refer to the Sloan SOLIS® Flushometer Maintenance Guide for additional Troubleshooting and Repair Part information.

The Sloan SOLIS $^{\! \otimes }$ Repair and Maintenance Guide is available at $\underline{www.sloanvalve.com}.$

If further assistance is required, please contact the Sloan Valve Company Installation Engineering Department at: 1-888-SLOAN-14 (1-888-756-2614)

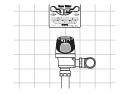
Part # Description

ι αιι #	Description
ncluded with RE EBV-304-A	SS Retrofit and Complete Sloan SOLIS® Valves Cover/Sensor/Assembly - Closet Solis Electronic Single
EBV-320-A	Button Flush Cover/Sensor/Assembly (Zurn) - Closet Solis Electronic
	Single Button Flush
WES-24-A	Cover/Sensor/Assembly - Closet Solis Electronic Dual Flush
WES-28-A	Cover/Sensor/Assembly (Zurn) - Closet Solis Electronic Dual Flush
EBV-306-A	Cover/Sensor/Assembly - Urinal Solis Electronic Single Button
EBV-321-A	Cover/Sensor/Assembly (Zurn) - Urinal Solis Electronic Single Button
EBV-311-A	Cover Assembly - Solis Electronic Dual Flush Flush
EBV-309-A	Cover Assembly - Solis Electronic Single Button Flush
EBV-14	Locking Ring
	Locking Ring - for Zurn valves
	Sensor Assembly Solis - Water Closet
	Sensor Assembly Solis - Urinal
	Sensor Assembly Solis - Water Closet (Dual Flush)
	Cover Rest Plate
	Inside Cover Assembly (includes solenoid)
	Solenoid
	Flex Tube Diaphragm Assembly
	Flush Volume Regulator
	Handle Cap
	Range Adjustment Tool
	Strap Wrench 7/64" Hex Wrench
	English Plate (Dual Flush only)
	Spanish Plate (Dual Flush only)
	omplete Sloan SOLIS® Valves Only
	1" (25 mm) Sweat Solder Kit
	3/4" (19 mm) Sweat Solder Kit
	1" (25 mm) Bak-Chek® Control Stop
	3/4" (19 mm) Bak-Chek® Control Stop
	Vandal Resistant Stop Cap
	Valve Body
	1½" (38 mm) x 9" (229 mm) Vacuum Breaker
	(Model 8110)
V-600-AA	1½" (38 mm) x 23" (584 mm) Vacuum Breaker (Model 8115)
V-600-AA	1½" (38 mm) x 26" (660 mm) Vacuum Breaker (Model 8116)
V-600-A	Vacuum Breaker Assembly
V-600-AA	1½" (32 mm) x 9" (229 mm) Vacuum Breaker (Model 8180)
V-600-AA	3/4" (19 mm) x 9" (229 mm) Vacuum Breaker (Model 8186)
F-109 F-5-AT	1-1/2" (38 mm) Elbow Flush Connection 11/2" Spud Coupling Assembly
F-5-AU F-5-AW	(Models 8110, 8115 & 8116) 1½" Spud Coupling Assembly (Model 8180) ¾" Spud Coupling Assembly (Model 8186)
	REN-304-A EBV-320-A WES-24-A WES-28-A EBV-306-A EBV-321-A EBV-321-A EBV-311-A EBV-311-A EBV-312-A-C EBV-312-A-C EBV-312-A-U WES-33-A EBV-134 EBV-136-A See Chart See Chart See Chart See Chart See Chart See Chart CBV-22 CBV-137 WES-27 WES-29 ncluded with Co H-633-AA H-700-A H-700-A H-700-A H-700-A W-600-AA V-600-AA V-600-AA V-600-AA V-600-AA F-109 F-5-AT F-5-AU

Manufactured in the U.S.A. by Sloan Valve Company under one or more of the following patents: U.S. Patents: 4,893,039; 5,169,118; 5,244,179; 5,295,655; Des. 345,113; Des. 355,478. Other Patents Pending. BAK-CHEK®, PARA-FLO®, PERMEX®, TURBO-FLO®.

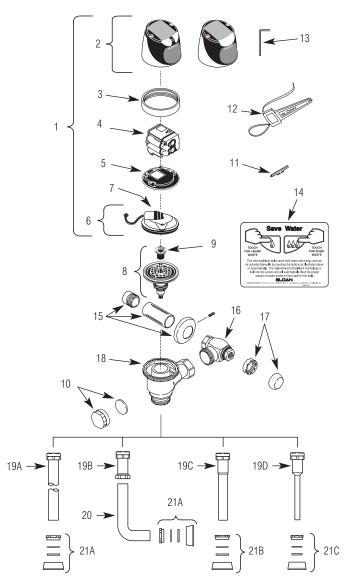
RECOMMENDED WALL PLATE LOCATIONS

· Centered over Flushometer



· On stall door





FLEX TUBE DIAPHRAGM KIT SELECTION GUIDE

Flush Volume and Fixture	Item No. 10 Flex Tube Diaphragm Kit No.	ltem No. 11 Flush Volume Regulator Part No.	Regulator Color
0.5 gpf/1.9 Lpf Urinal	EBV-1023-A	EBV-95	Green
1.6 gpf/6.0 Lpf Closet	EBV-1020-A	EBV-95	Green

The EBV-1020-A and EBV-1022-A Kits are supplied with multiple Flush Volume Regulators. The installer <u>must</u> use the correct Regulator when installing the kit.

FLEX TUBE DIAPHRAGM ASSEMBLY



Sloan SOLIS® Valve Models Feature Sloan's Exclusive Flex Tube Diaphragm™ for the ultimate in valve performance, reliability and chloramines resistance.

This Installation Instructions and the Optima Plus Repair and Maintenance Guide are available at www.sloanvalve.com.

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



SLOAN VALVE COMPANY • 10500 Seymour Avenue • Franklin Park, IL 60131 Phone: 1-800-982-5839 or 1-847-671-4300 • Fax: 1-800-447-8329 or 1-847-671-4380 www.sloanvalve.com