

# Flushometer Identification

**IN ORDER FOR THE WATER CLOSET OR URINAL TO PERFORM PROPERLY FOR ITS INTENDED USE, YOU MUST FOLLOW THESE INSTRUCTIONS:**

**A. IDENTIFY YOUR FLUSHOMETER MODEL NO.**

**B. CHECK FOR THE WATER CONSUMPTION LABEL ATTACHED TO FLUSHOMETER AND FIXTURE, ENSURING THEY MATCH.**

**C. REFER TO SPECIFIC FLUSHOMETER SECTION IN GUIDE FOR APPROPRIATE REPLACEMENT PART NO.**

## 1. IDENTIFY YOUR SLOAN FLUSHOMETER

Identify our Sloan flushometer from the vacuum breaker, cap, cover, or from identification label at the bottom of the valve body. (Sloan parts only supplied.)

**Exposed**



**Concealed**



**Water Closet**



(Check water inlet at top or back of fixture. Typically 3.5 gpf to 1.6 gpf, larger vacuum breaker)

**Urinal**



(Typically 1.0 gpf or 0.5 gpf, smaller, beveled vacuum breaker, wall mounted)

## Manual Diaphragm Flushometers (Pages 15-25)

Royal®



Royal II®



Continental®



UPPERCUT®



Sloan®



Regal®



Known as Regal® XL (Since mid-2010)

## Hydraulic & Concealed Diaphragm Flushometers (Pages 26-34)

Series 900® Exposed



Series 900® Concealed



Concealed



## Manual Piston Flushometers (Pages 35-49)

Crown®/Crown II®



Gem-2®



Naval®



TruFlush



Sloan CX



## Manual Self-closing Flushometers (Pages 50-52)

Dolphin®



## Slimline® Bedpan Washer (Pages 53-55)



For electronic components use Sensor Flushometer Section.

# Flushometer Identification

## Sensor Activated Hardwire Flushometers (Pages 56-83)

Optima® Hardwired



Optima® ES-S-WB



Optima® ES-S TMO



SMOOTH® Hardwired



Sloan ECOS® Hardwired



Royal® ESS SWB Hardwired



Optima® Royal® ES-S TMO Concealed



Optima® Royal® ES-S TMO Concealed with SWB



TruFlush Hardwired/Battery



Sloan CX Hardwired/Battery



Optima® Hardwired 120/24V



Optima® Crown® Hardwired 120/24V



## Battery/Solar-powered Sensor Activated Flushometers (Pages 84-117)

G2 Optima Plus®



SLOAN® Optima Plus®



DFSM/SFSM



SMOOTH®



SMO



Sloan ECOS®



Sloan SOLIS®



SOLIS® CONCEALED



## Accessories/Tools (Pages 13-14)



## 2. CHOOSE REPLACEMENT PARTS FROM THESE PAGES:

Tools/Accessories.....	13-14	Flushometer Body Sub-Assemblies.....	128
Manual Diaphragm Flushometers .....	15-25	Trap Primer .....	129-132
Hydraulic & Concealed Diaphragm Flushometer .....	26-34	Small Vacuum Breaker Repair Kits.....	133
Manual Piston Flushometers.....	35-49	Push Buttons.....	134-137
Manual Self-Closing Flushometer.....	50-52	Flush Connections & Flanges.....	138-143
Manual Diaphragm Bedpan Washer Flushometer.....	53-55	Offset Outlet Tubes .....	144
Sensor Activated Hardwired Flushometers.....	56-83	Bumpers, Pipe & Tube Supports.....	145
Sensor Activated Battery/Solar-Powered Flushometers.....	84-117	Floor Valve.....	146
Control Stops.....	118-125	Sweat Solder Kits.....	147
Tail Pieces.....	126-127	Flushometer Parts Quick Reference Guide.....	148

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

## Faucet Identification

IDENTIFY YOUR SLOAN FAUCET AND CHOOSE REPLACEMENT PARTS FROM THE PAGES LISTED:

### BASYS® Faucets (Pages 149-171)



EFX-1 (IR) SERIES



EFX-2 (IR) SERIES



EFX-3 (IR) SERIES



EFX-6 (IR) SERIES



EFX-8 (IR) SERIES



EFX-3 (CAP) SERIES



EFX-6 (CAP) SERIES

### NEW Bluetooth EBF/ETF Optima® Battery, Hardwire & Turbine Faucets (Pages 172-207)



EBF-85/ETF-80



EBF-187/ETF-880



EBF-650/ETF-600



EBF-615/ETF-610



EBF-750/ETF-700  
EBF-750-2/ETF-700-S



EBF-550/ETF-500  
EBF-550-2/ETF-500-S



EBF-665/ETF-660



EBF-755/ETF-770



EBF-850/ETF-800



EBF-425/ETF-420



EBF-415/ETF-410



EBF-825/ETF-820



EBF-815/ETF-810

### OLD EBF/ETF Optima® Battery, Hardwire Faucets (Pages 208-230)



EBF-85/EBF-187  
ETF-80/ETF-880



EBF-650/ETF-600



EBF-615/ETF-610



EBF-625/EBF-655



EBF-750/ETF-700  
EBF-750-S/ETF-700-S



EBF-550/ETF-500  
EBF-550-S/ETF-500-S



EBF-660/EBF-665



ETF-770



ETF-800

## Faucet Identification

IDENTIFY YOUR SLOAN FAUCET AND CHOOSE REPLACEMENT PARTS FROM THE PAGES LISTED:

### EAF Solar, Battery & Hardwire Faucets (Pages 231-255)



EAF-150/EAF-100



EAF-250/EAF-200



EAF-275



EAF-350



EAF-750/EAF-700



EAF-900

### SF Battery & Hardwire Faucets (Pages 256-265)



SF-2100/SF-2150



SF-2200/SF-2250



SF-2300/SF-2350



SF-2400/SF-2450



SF-2800/SF-2850



SF-2900/SF-2950

### Discontinued Faucets (Pages 266-269)



ERF-885



ELF-10



ESF-20/30

### Accessories (Pages 270-272)



Trim Plates



Aerators

## Vitreous China Fixture Identification

IDENTIFY YOUR SLOAN MODEL AND CHOOSE REPLACEMENT PARTS FROM THE PAGES LISTED:

### Water Closets (Pages 273-274)



ST-2459



ST-2469



ST-2009



ST-2029



ST-2229



ST-2309



ST-2449

### Pressure Assist and Gravity Water Closets (Pages 277-279)



WETS-8009 Series  
STD



WETS-8029 Series  
ADA



WETS-4009 Series  
STD



WETS-4029 Series  
ADA

### Washdown, Retrofit, and Small Urinals (Page 280)



SU-1009



SU-1019



SU-1209



SU-1219



SU-7009



SU-7019



SU-7409



SU-7419

### Hybrid and Waterfree Urinals (Pages 281)



HYB-1000



HYB-1000-RET



HYB-4000



HYB-7000



WES-1000



WES-4000



WES-7000

### Lavatories (Page 287)



SS-3001



SS-3002



SS-3003



SS-3004



SS-3006



SS-3065



SS-3021



SS-3026



SS-3036



SS-3145



SS-3017



SS-3055



SS-3200

# Sink System, Soap Dispenser, Hand Dryer, and Showerhead Identification

IDENTIFY YOUR SLOAN MODEL AND CHOOSE REPLACEMENT PARTS FROM THE PAGES LISTED:

## Sink Systems (Pages 288-340)



## Soap Dispenser (Pages 341-346)



## Sink System, Soap Dispenser, Hand Dryer, and Showerhead Identification

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IDENTIFY YOUR SLOAN MODEL AND CHOOSE REPLACEMENT PARTS FROM THE PAGES LISTED:

### Hand Dryer (Page 347)

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EHD-502 Series

### Showerheads (Pages 348-349)

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AC-11 Series



AC-51 Series



AC-450 Series



AC-460 Series

# FAUCET PRODUCT VARIATION SUFFIXES

ABBREVIATION	DEFINITION	ABBREVIATION	DEFINITION
0.35	0.35 gpm	IR	Infrared Sensor
0.5	0.5 gpm	ISM	Integrated Side Mixer, Integrated Side Mount Mixer
1	1.0 gpm	KIT	Kit
1.5	1.5 gpm	L. CONTL MOD	Less Control Module
2.2	2.2 gpm	L/BATT	Less Batteries
4	4 inch trim plate	L/LOGO	Less Logo
8	8 inch trim plate	LAM	Laminar
10S	10 second timeout	12S	12 second timeout LCM
LB	Less Battery	LCM	Less Control Module
4 in center	4 inch centerset	ADM	Above Deck Mechanical Mixing Valve, Above Deck Mixer
LESS TRIM	less Trim Plate	LF	Line Flush
AER	Aerated LINE	LINE FLSH NYP	Line Flush
ASM	Assembly	LINE FLUSH	Line Flush
B	Box Mount Transformer	LL	Less Logo
B BACKUP	Battery Back-Up	LP	Line Purge
BA	Buy America Act	LR	Long Range Sensor
BAA	Buy America Act	LT	Less Transformer
BAT B	Battery Back-Up	MB	Matte Black
MLM	Multi-Laminar Spray	BDM	Below Deck Mechanical Mixing Valve
NON	None - No Sprayhead	BDT	Below Deck Thermostatic Mixing Valve
P	Plug-In	BN	Brushed Nickel
PB	Polished Brass	PED	Pedestal Body Style
BOX	Box Adaptor or Transformer	CAP	Capacitance PLG Adapter Plug
Chek	Chek Tee	PRX	Proximity
CP	Polished Chrome, Finish Chrome Plated	PVDBN	PVD Brushed Nickel Finish
CT	Chek Tee	PVDMB	PVD Matte Black
DPU	Drain Pop Up	PVDPB	PVD Polished Brass Finish
EAF	Electronic Above-Deck Faucet	PVDSB	PVD Satin Brass Finish
EBF	Electronic Battery Faucet	PVDSF	PVD Brushed Stainless Finish
EFP	Electronic Faucet Part	S	Surgical (Hospital) Bend Spout
EFX	Electronic Faucet Generation X (BASYS)	SF	Sloan Faucet Product Family
EL 3500	EL 3500 Sensor	SF	Brushed Stainless
ETF	Electronic Transformer Faucet	EXT	Extension SOL Solar
SHR	Shower Shower Head Attached	F	Flow Restrictor TEE Back Check Tee
FCT	Faucet TUR Turbine	G'NECK	Gooseneck WS Wash Station
GOOSENECK	Gooseneck	H	Showerhead Type Spray Unit
HLP	Hardwired Less Plug	HLT	Hardwired Less Transformer
HW	Hardwired	IC	IC Click Feature
INT	Integrated Base	INTL	International Spec
IQ	IQ Click Feature		

## SLOANSTONE SINK PRODUCT VARIATION SUFFIXES

**SINKS VARIATIONS (40000/50000 Series)**

<b>AB</b>	Angle Bracket
<b>ADM</b>	Above Deck Mechanical Mixing Valve
<b>BDT</b>	Below Deck Thermostatic Mixing Valve
<b>DS</b>	Drain Shroud
<b>ESD</b>	Electronic Soap Dispenser
<b>FA</b>	Integrated Front Apron
<b>FL</b>	Floor Mounted
<b>FM</b>	Floor Mount Kit
<b>JVC</b>	Juvenile Height Cabinet
<b>LS</b>	Left Side Splash
<b>MSD</b>	Manual Soap Dispenser
<b>RS</b>	Right Side Splash

**VARIATIONS (Designer Series)**

<b>AB</b>	Angle Bracket
<b>ESD</b>	Electronic Soap Dispenser
<b>ENC</b>	Enclosure

**SINK COLORS (4000 Series)**

<b>AH</b>	Ash
<b>AM</b>	Amber
<b>IN</b>	Indigo
<b>JD</b>	Jade
<b>JT</b>	Jet
<b>PL</b>	Pearl
<b>SL</b>	Slate
<b>SS</b>	Sand
<b>TP</b>	Taupe

**SINK COLORS (60000/70000/80000 Series)**

<b>WH</b>	White
<b>CO</b>	Cameo
<b>BO</b>	Bone
<b>PH</b>	Peach
<b>AL</b>	Almond
<b>SH</b>	Shell
<b>PE</b>	Pea
<b>BI</b>	Biscuit
<b>MWH</b>	Matrix White
<b>MSI</b>	Matrix Silver
<b>MPI</b>	Matrix Pink
<b>MJA</b>	Matrix Jade
<b>MLG</b>	Matrix Light Gray
<b>MDG</b>	Matrix Dark Gray
<b>MGR</b>	Matrix Green
<b>MBR</b>	Matrix Brown
<b>MBO</b>	Matrix Bone
<b>MFR</b>	Matrix Frost
<b>MLB</b>	Matrix Light Blue
<b>MSA</b>	Matrix Sand
<b>MDB</b>	Matrix Dark Blue
<b>MDU</b>	Matrix Dusk
<b>MKH</b>	Matrix Khaki
<b>MSU</b>	Matrix Summit
<b>WNT</b>	Walnut/Riverstone

**SINK COLORS (Bio-Deck Series)**

<b>CC</b>	Corn Cob
<b>RM</b>	Rustic Maple
<b>G</b>	Grey
<b>JG</b>	Jade Green

**MIXING VALVES**

<b>ADM</b>	Above Deck Mixing Valve
<b>BDM</b>	Below Deck Mechanical Mixing Valve
<b>BDT</b>	Below Deck Thermostatic Mixing Valve
<b>Check/CT</b>	Check T
<b>ISM</b>	Integrated Side Mixing Valve

**FINISHES**

<b>CP</b>	Chrome Plated
<b>PVDBN</b>	Brushed Nickel Finish
<b>PVDPB</b>	Polished Brass Finish
<b>PVDSF</b>	Brushed Stainless Finish

**FAUCET FAMILY**

<b>EAF</b>	Electronic Above Deck Faucet
<b>EBF</b>	Electronic Battery Faucet
<b>ETF</b>	Electronic Transformer Faucet
<b>EFX</b>	Electronic Faucet Generation X (BASYS)
<b>SF</b>	Sloan Faucet

**MISCELLANEOUS**

<b>BAA/BA</b>	Buy American
<b>ASM</b>	Assembly
<b>DPU</b>	Drain Pop up
<b>Ext.</b>	Extension
<b>IC</b>	IC Click Feature
<b>INTL</b>	International Specification
<b>IQ</b>	IQ Click Feature
<b>KIT</b>	Kit
<b>L CONT MOD.</b>	Less Control Module
<b>L/LOGO, LL</b>	Less Logo
<b>LR</b>	Long Range Sensor
<b>WS</b>	Wash Station

## SloanStone® Identification

### IDENTIFY YOUR SLOANSTONE LAVATORY SINK:

Careful consideration was given to the naming convention for SloanStone® solid-surface lavatories. This page helps explain the logic behind the model names and will help you to be able to identify the product easily and consistently via the model numbers. Please take the time to look through the specification sheets and Sink System brochure to help you better understand the naming convention.

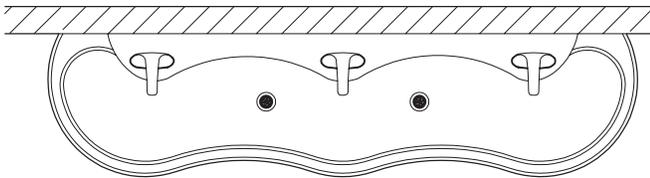
### THE PREFIX

Prefixes are used to identify the group/category of Bio-Deck and SloanStone solid-surface lavatory systems. Here are some ways to help you remember the group:

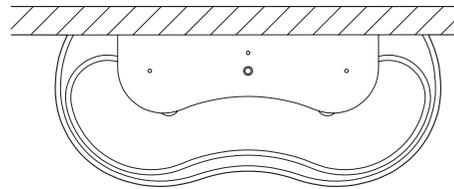
<b>ELS</b>	<b>Electronic Lavatory System</b>	These have a curved basin and Sloan faucets
<b>EW</b>	<b>Electronic Washstation</b>	These have a curved basin and an integrated EL-1500 sensor
<b>ELC</b>	<b>Electronic Lavatory Countertop</b>	These are flat lavatory decks with Sloan faucets
<b>EFW</b>	<b>Electronic Wash Fountain</b>	These have a square type basin and an integrated EL-1500 sensor
<b>ELB</b>	<b>Electronic Lavatory Bio-Deck</b>	These are flat lavatory decks made of biobased material with Sloan pedestal faucets

The sample images below show the various groups/categories of SloanStone lavatory systems

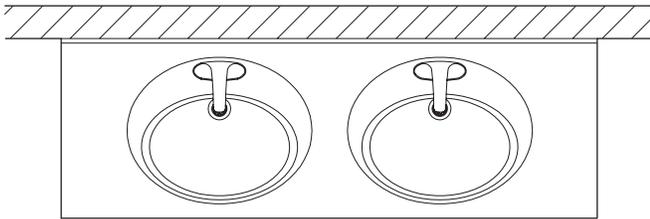
**ELS-43XXX/ELS-63XXX/ELS-73XXX**



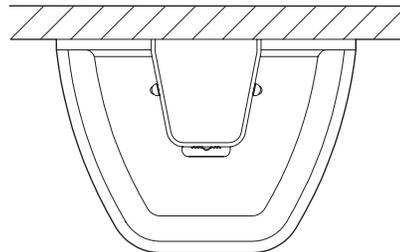
**EW-42000\***



**ELC-42XXX/ELC-72XXX/ELB-52XXX**



**EFW-43000\***



### THE NUMBERS

Numbers are used to identify the style of Bio-Deck and SloanStone solid-surface lavatory systems. Let's review the ELS-42650. This is a SloanStone, 2 station lavatory system with a curved basin and two Optima Plus® EBF-650 faucets. The first number is 4. The number 4 denotes the origin as United States. All SloanStone sinks with a 4 or 5 will be Buy American Act Compliant, while 6, 7 and 8 will comply with the Trade Agreements Act. The next number is 2. This number indicates the number of users the sink can service or the amount of stations, which vary from model to model. The next 3-4 digits are used to identify the Sloan faucet that is installed on the unit, or in some cases, to denote that there are not Sloan faucets on the lavatory system, in which case 000 will be the last three digits. **\*Both EW and EWF models will always end in 000.**

Let's break down the components of the **ELS-42650**.



Let's break down the components of the **ELB-522150**.



## Tools/Accessories

### Description

Sloan's A-50 Super-Wrench™ Smooth-jawed spud wrench for various Sloan components is the ideal tool to use when installing or servicing a Sloan Flushometer. Its smooth edges, solid construction and tight grip prevent damage to the valve's finely machined surfaces and plated finishes.

The 7-3/4" A-50 Super-Wrench combines the versatility of several tools into a single wrench. It is the ideal tool for anyone who regularly installs and services Flushometer valves.

### Specifications

Unique Super-Wrench is an ergonomic tool that offers good leverage and fast adjustments to Flushometers.

Superior tool for gripping, holding and bending  
Multiple wrenches in one Super-Wrench sized to fit the following Sloan parts:

- F-20
- B-40/H-582
- F-20/A-72/A-6
- H-579
- H-577
- H-573
- V-553



### Description

Sloan's A-109 Plier Wrench is the ideal tool to use when installing or servicing a Sloan Flushometer. It's smooth jaws and tight grip prevent damage to the valve's finely machined surfaces and plated finishes.

The 12" (305 mm) A-109 Plier Wrench combines the versatility of several pliers with the convenience of a wrench. It is the ideal tool for anyone who regularly installs and services Flushometers.

### Specifications

Unique Plier and Wrench in one ergonomic tool offers enormous leverage, fast adjustment, and the following features:

- Cam-action ratcheting mechanism
- 13 preset push button positions
- Maximum jaw capacity across flats: 2-3/8" (60 mm)
- Smooth parallel jaws prevent damage to chrome-plated and special finishes and soft fittings
- Memory button retains jaw opening size for repetitive work
- Self-locking mechanism
- Smooth box joint construction for greater strength
- Superior tool for gripping, holding and bending



### Description

Sloan's A-124 Strap Wrench is the ideal tool to use when installing or servicing Sloan's Optima® Plus Battery Operated Flushometers.

The A-124 Strap Wrench is completely adjustable for diameters 1-1/2" to 5" (38 mm to 127 mm). It is easy to use even in tight areas.

### Specifications

Urethane-covered belting attached to lightweight, i-beam handle offers industrial strength and the following features:

- Cam-action design permits uniform, high-torque application
- Belting will not scratch, damage or deform polished pipe and fittings under normal conditions
- Ideal for use on all Sloan Flushometers
- Works in the tightest quarters
- Can be ratcheted with one hand
- Prevents damage to chrome-plated and special finishes



### Description

Our new H-1018A Offset Adapter for G2, SOLIS®, and ECOS® Flushometers helps keep your facilities accessible. This unassuming adapter creates enough space for an ADA-compliant grab bar by lowering the total height of the flushometer by 1 1/2 inches without having to relocate the water supply inlet pipe. It's a simple update that saves your facility from the costs and complexities of opening walls or workarounds like split grab bars.

### Specifications

Solid chrome plated semi-red brass adapter offers the following features:

- Updates flushometers to enable ADA grab bar installation
- Avoids costly wall modifications
- Includes mud guard and flange for easy installation
- Extensively tested for optimal performance and pressure
- Durable, patent-pending design that's easy to maintain
- Available in finishes to match your existing flushometers, including Polished Chrome, Polished Brass, Brushed Nickel, Brushed Stainless, and Graphite
- Industry standard 1" NPT connection to the control stop

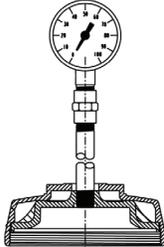


## Flushometer Pressure Gauges

Sloan Flushometer pressure gauges, for measuring static & approximate dynamic water pressure (flowing water pressure).

- **Sloan Diaphragm Flushometer Gauge A-115-A (0301141) for manual, 24/120 VAC solenoid operated & Hydraulic Diaphragm Flushometers**

Rough brass, diaphragm top outside cover, inside cover with attached RB tube w/pressure gauge. For reading static pressure and approximate dynamic (flow) pressure at the valve.



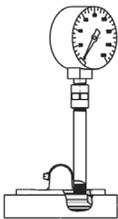
**Diaphragm Flushometer Pressure Gauge A-115-A**



**Optima® 8100 Series Flushometer Pressure Gauge EBV-375-A**

- **Sloan Optima® 8100 Series Flushometer Gauge, EBV-375-A (0325378) Works for all SLOAN diaphragm type flushometers since 1906.**

Chrome plated locking ring, nickel plated brass cover, attached RB tube w/pressure gauge. For reading static pressure and approximate dynamic (flow) pressure at the valve. For existing as well as new Sloan diaphragm Flushometers with top mounted sensor.



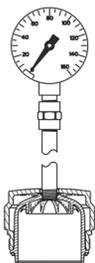
**Crown Piston Flushometer Pressure Gauge CR-150-A**



**GEM 2 Piston Flushometer Pressure Gauge G-150-A**

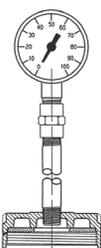
- **Sloan Crown Piston Flushometer Gauge CR-150-A (0332070) for CROWN and CROWN II flushometers since 2002.**

Rough brass cover, inside cover with attached RB tube w/pressure gauge. For reading static pressure and approximate dynamic (flow) pressure at the valve.



- **Sloan GEM2 Piston Flushometer Gauge G-150-A (0307214) for all GEM and GEM 2 flushometers made since 1929.**

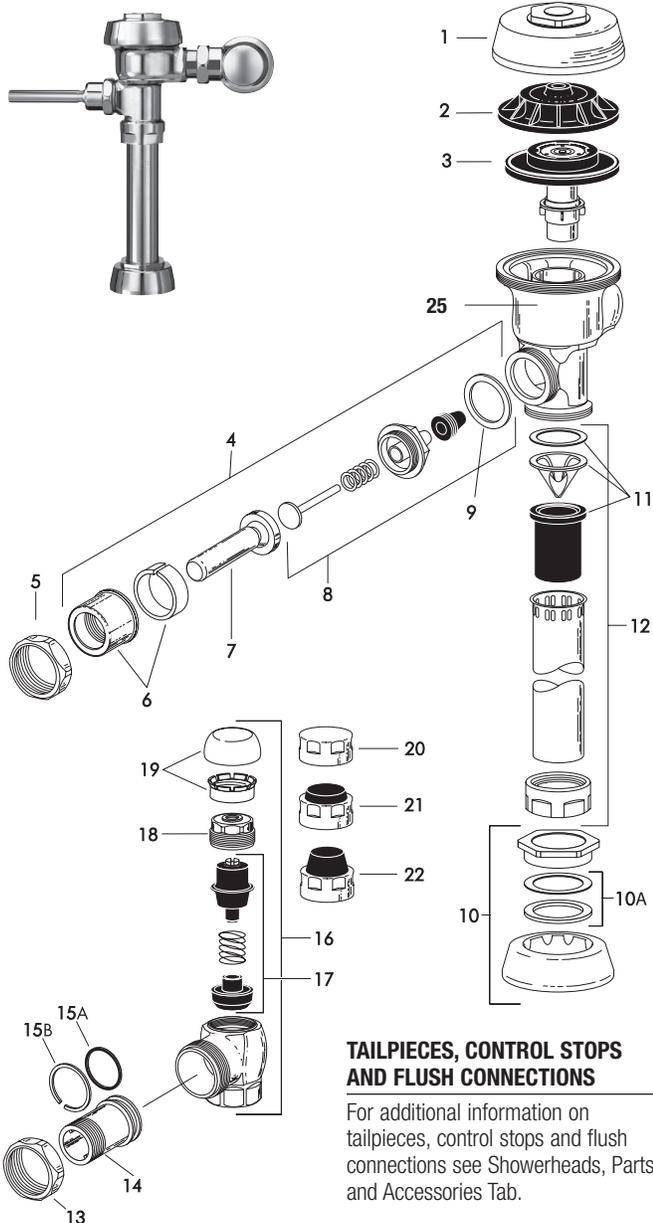
Chrome Plated brass cover and gasket, with attached RB tube w/pressure gauge. For reading static pressure and approximate dynamic (flow) pressure at the valve.



**Note: Flushometer Gauge NOT to remain on Flushometer**

\*\* Sloan uses a 160 PSI gauge fitted to pressure cap gauge assemblies. Plumbing system pressure shall not exceed 80 PSI; a 160 PSI gauge allows measuring plumbing systems that happen to be above the acceptable range without damaging the gauge; max pressure 160 PSI. Many building codes and the ASME A112.19.2 fixture standard list maximum static water pressure as 80 PSI (552 kPa).

# Royal® Flushometer



### TAILPIECES, CONTROL STOPS AND FLUSH CONNECTIONS

For additional information on tailpieces, control stops and flush connections see Showerheads, Parts and Accessories Tab.

### ITEM 10A. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	<b>5306058</b>	F-3	Red Friction Ring
	<b>5322001</b>	VBF-5	Black Slip Joint Gasket
	<b>0319086/5319086</b>	S-30	Flexible Seat
	<b>0319079</b>	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	<b>0396062</b>	F-105	Slip Joint Gasket – Rigid
1-1/4"	<b>5306057</b>	F-3	Red Friction Ring
	<b>5322176</b>	VBF-5	Black Slip Joint Gasket
	<b>0307052/5307052</b>	G-21	Rigid Seat (rubber over brass)
1"	<b>5306056</b>	F-3	Red Friction Ring
	<b>5306115</b>	F-5	Black Slip Joint Gasket
3/4"	<b>5306055</b>	F-3	Red Friction Ring
	<b>5306113</b>	F-5	Black Slip Joint Gasket

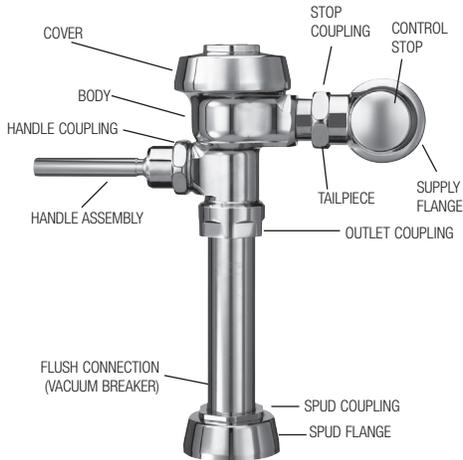
\* See pages 102-103 for additional lengths  
 † For use with 1" and 3/4" H-700-A and 1" H-600-A Bak-Chek® screwdriver control stop  
 ‡ For use with 3/4" H-600-A Bak-Chek® screwdriver control stop  
 RW for use with Reclaimed Water Flushometers

### PARTS LIST

Item No.	Code No.	Part No.	Description
1.	<b>0301172PK</b>	A-72	CP Cover
	<b>0301435PK</b>	A-72-HE	CP High Efficiency Cover
2.	<b>0301168</b>	A-71	Inside Cover
	<b>0301336</b>	A-71-1	Inside Cover (Purple)
3.	—		Dual-Filtered Bypass Diaphragm Assembly (refer to table and diagram on following page)
4.	<b>0302390</b>	B-73-A	CP ADA-Compliant Triple Seal Handle Assembly
	<b>0302267</b>	B-73-A-PH	CP ADA-Compliant Triple Seal Handle Assembly
5.	<b>0301082</b>	A-6	CP Handle Coupling
6.	<b>0302109</b>	B-7-A	CP Socket Assembly
7.	<b>0302389</b>	B-74-A	CP ADA-Compliant Handle
	<b>0302264</b>	B-74-A-PH	CP ADA-Compliant Handle (Purple Handle)
8.	<b>3302306</b>	B-51-A	Triple Seal Handle Repair Kit
9.	<b>5301139</b>	A-31	Handle Gasket – 48 per package
10.	<b>0306125</b>	F-5-AW	3/4" (19 mm) CP Spud Coupling Assembly
	<b>0306140</b>	F-5-AU	1-1/4" (32 mm) CP Spud Coupling Assembly
	<b>0306146</b>	F-5-AT	1-1/2" (38 mm) CP Spud Coupling Assembly
10A.	<b>SEE SLIP JOINT GASKETS AND RINGS TABLE BELOW LEFT</b>		
11.	<b>3323182</b>	V-651-A	High Back Pressure Vacuum Breaker Repair Kit
12.	<b>3393004</b>	V-600-AA	3/4" (19 mm) x 9" (228 mm) CP Vacuum Breaker
	<b>3393006</b>	V-600-AA	1-1/4" (32 mm) x 9" (228 mm) CP Vacuum Breaker
	<b>3393007</b>	V-600-AA	1-1/2" (38 mm) x 9" (228 mm) CP Vacuum Breaker
13.	<b>0308676</b>	H-550	CP Stop Coupling
14.	<b>0308801</b>	H-551-A	CP Adjustable Tailpiece 2-1/16" (52 mm long) Standard Length*
15A.	<b>5308696</b>	H-553	O-ring – 24 per package
15B.	<b>5308381</b>	H-552	Locking Ring – 12 per package
16.	<b>3308386</b>	H-700-A	1" (25 mm) CP Bak-Chek® Screwdriver Stop
	<b>0388141</b>	H-700-A-RW	1" (25 mm) CP Bak-Chek® Screwdriver Stop
	<b>3308384</b>	H-700-A	3/4" (19 mm) CP Bak-Chek® Screwdriver Stop
	<b>0388142</b>	H-700-A-RW	3/4" (19 mm) CP Bak-Chek® Screwdriver Stop
17.	<b>3308853</b>	H-541-ASD	Control Stop Repair Kit †
	<b>3308856</b>	H-543-ASD	Control Stop Repair Kit †
18.	<b>0308612</b>	H-622	CP Bonnet †
	<b>0308892</b>	H-608-RW	CP Bonnet †
	<b>0308843</b>	H-577	CP Bonnet † – <b>DISCONTINUED</b>
19.	<b>3308772</b>	H-1010-A	Vandal Resistant Control Stop Cap Assembly †
	<b>3308790</b>	H-1009-A	Vandal Resistant Control Stop Cap Assembly † H-600 3/4" Stop only
20.	<b>0308738</b>	H-573	Control Stop Cap CP †
	<b>0308848</b>	H-582	Control Stop Cap CP †
21.	<b>3308866</b>	H-574	Control Stop Cap with Bumper † (-YO Variation)
22.	<b>3308867</b>	H-576	Control Stop Cap with Extended Bumper † (-YG Variation)
23.	<b>3388015</b>	H-1015	Flow Control Kit (not Shown) (HEU Only)
24.	<b>3308735</b>	H-634-AA-RW	1" (25 mm) Sweat Solder Kit w/ Cast Set Screw (Purple Flange not shown)
	<b>3308736</b>	H-636-AA-RW	3/4" (19 mm) Sweat Solder Kit w/ Cast Set Screw (Flange not shown)
25.	<b>3308785</b>	H-636-AA	1" (25 mm) Sweat Solder Kit w/ Cast Set Screw (Purple Flange not shown)
	<b>3308788</b>	H-636-AA	3/4" (19 mm) Sweat Solder Kit w/ Cast Set Screw (Flange not shown)
25.	<b>0301043PK</b>	A-3	CP Body no tail assembly (H-551-A)

Sloan products are also available in satin, brushed nickel, chrome, gold and polished brass finishes – contact factory for part numbers.

## Royal® Flushometer



### DUAL-FILTERED DIAPHRAGM ASSEMBLY

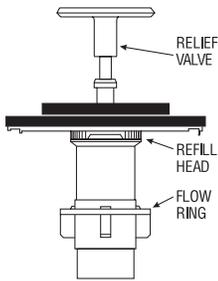
Available in diaphragm only and Royal® Performance™ Kits.

Royal® Performance™ Kit includes dual-filtered diaphragm assembly (item 3), handle repair kit with triple seal packing (item 8), high back pressure vacuum breaker repair kit (item 11), and one tailpiece O-ring (item 15A). DIAPHRAGM ONLY KIT contains "drop-in" dual-filtered diaphragm assembly (item 3) ONLY.

The dual-filtered diaphragm can be used in Royal®, Regal®, and similar diaphragm-style valve bodies. For use in Sloan valve bodies with a bell-shaped cover (manufactured before 1964), replace the bottom filter ring in these kits with a blue A-108 filter ring (not shown Sloan Code No. **5301283**).

NOTE: In January 1998, the Royal® diaphragm design was upgraded to a preassembled unit with two (2) plastic filtering rings attached to the rubber diaphragm (one on top and one on bottom). If the flushometer you are servicing has our older, segmented diaphragm with brass by-pass hole, refer to our Regal section for additional troubleshooting information.

### ROYAL® PERFORMANCE KIT



THE COLORS OF THE RELIEF VALVE AND THE REFILL HEAD PLUS THE SHAPE OF FLOW RING IDENTIFY THE FLUSH VOLUME OF A DUAL-FILTERED DIAPHRAGM ASSEMBLY.

Code No.	Relief Refill Part No.	Flow Description	Valve†	Head*	Ring
<b>3301070</b>	A-1101-A	Low Consumption Water Closets-1.6 gpf (6.0 Lpf)**	Green	Gray	Smooth
<b>3301071</b>	A-1102-A	Water Saver Water Closets-3.5 gpf (13.2 Lpf)**	White	Gray	Smooth
<b>3301072</b>	A-1103-A	9 Liter European Water Closets-2.4 gpf (9.0 Lpf)	Blue	Gray	Smooth
<b>3301073</b>	A-1106-A	Wash Down Urinals-0.5 gpf (1.9 Lpf)	Green	Black	Smooth
<b>3301074</b>	A-1107-A	Low Consumption Urinals-1.0 gpf (3.8 Lpf)**	Green	Black	Slotted
<b>3301075</b>	A-1108-A	Water Saver Urinals-1.5 gpf (5.7 Lpf)**	Black	Black	Smooth

\*CLOSET REFILL HEADS (GRAY) HAVE LARGER SLOTS THAN URINAL REFILL HEADS (BLACK).

### DIAPHRAGM ONLY KIT

Code No.	Part No.	Description	Relief Valve†	Refill Head*	Flow Ring
<b>3301502</b>	A-1041-A	Low Consumption Water Closets-1.6 gpf (6.0 Lpf)**	Green	Gray	Smooth
<b>3301501</b>	A-1038-A	Water Saver Water Closets-3.5 gpf (13.2 Lpf)**	White	Gray	Smooth
<b>3301505</b>	A-1044-A	9 Liter European Water Closets-2.4 gpf (9.0 Lpf)	Blue	Gray	Smooth
<b>3301504</b>	A-1043-A	Wash Down Urinals-0.5 gpf (1.9 Lpf)	Green	Black	Smooth
<b>3301503</b>	A-1042-A	Low Consumption Urinals-1.0 gpf (3.8 Lpf)**	Green	Black	Slotted
<b>3301500</b>	A-1037-A	Water Saver Urinals-1.5 gpf (5.7 Lpf)**	Black	Black	Smooth
<b>3301506</b>	A-1045-A	High-Efficiency Water Closets-1.28 gpf (4.8 Lpf)	Blue	Gray	Smooth
<b>3301142</b>	A-1047-A	High-Efficiency Urinals-0.25 gpf (1.0 Lpf) with White Inserts	White	HEU Black	Smooth
<b>3301143</b>	A-1050-A	High-Efficiency Urinals-0.125 gpf (0.5 Lpf) with White Inserts	Blue	HEU Black	Smooth
<b>3301594</b>	A-1075-A-BX	High-Efficiency Water Closets-1.28 gpf (4.8 Lpf) RW	Blue	Black	Smooth
<b>3301592</b>	A-1073-A-BX	High-Efficiency Urinals-0.5 gpf (1.9 Lpf) RW	Green	Black	Smooth + Slotted
<b>3301591</b>	A-1077-A-BX	High-Efficiency Urinals-0.25 gpf (1.0 Lpf) RW	White	HEU Black	Smooth
<b>3301590</b>	A-1070-A-BX	High-Efficiency Urinals-0.125 gpf (0.5 Lpf) RW	Blue	HEU Black	Smooth

† Consult factory for availability of replacement plastic relief valves (green, black, blue, and white) and brass relief valves.

NOTE: For older water closets that require 4.5 gpf (17.0 Lpf), choose kits A-1102-A or A-1038-A, but remove the flow ring before use. For blowout-style urinals that require 3.5 gpf (13.2 Lpf), choose kits A-1102-A or A-1038-A. For service sinks that require 6.5 gpf (24.6 Lpf), order A-36-A diaphragm repair kit (not shown Sloan Code No. **3301036**) and remove the flow ring before use. Regulations for low consumption fixtures prohibit the use of higher flush volumes.

\*CLOSET REFILL HEADS (GRAY) HAVE LARGER SLOTS THAN URINAL REFILL HEADS (BLACK).

\*\* WATER SAVER (3.5 GPF CLOSET AND 1.5 GPF URINAL) AND LOW CONSUMPTION (1.6 GPF CLOSET AND 1.0 GPF URINAL) FIXTURES MUST USE MATCHING GPF (LPF) DIAPHRAGM KITS; USING A SMALLER GPF (LPF) KIT IN FIXTURES NOT INTENDED FOR LESS VOLUME WILL RESULT IN INADEQUATE DILUTION IN URINALS AND IMPROPER EVACUATION IN CLOSETS.

RW for use with Reclaimed Water Flushometers.

### ROYAL® TUNE UP KIT

Code No.	Part No.	Description
<b>3301184</b>	A1121-A	Tune-up Kit (1.6 gpf/6.0 Lpf) Closet
<b>3301185</b>	A1122-A	Tune-up Kit (3.5 gpf/13.2 Lpf) Closet
<b>3301187</b>	A1125-A	Tune-up Kit (1.28 gpf/4.8 Lpf) Closet
<b>3301188</b>	A1126-A	Tune-up Kit (0.125 gpf/0.5 Lpf) Urinal
<b>3301189</b>	A1127-A	Tune-up Kit (1.0 gpf/3.8 Lpf) Urinal
<b>3301190</b>	A1128-A	Tune-up Kit (1.5 gpf/5.7 Lpf) Urinal
<b>3301191</b>	A1129-A	Tune-up Kit (0.25 gpf/1.0 Lpf) Urinal

Includes Dual-Filtered Diaphragm Assembly, B-51-A Handle Repair Kit, H-553 O'ring, V-651-A High Back Pressure Vacuum Breaker Repair Kit, A-71 Inside Plastic Cover.

## Royal® Flushometer

### TROUBLESHOOTING GUIDE

**ATTENTION INSTALLERS:** With the exception of the control stop inlet, **DO NOT USE** pipe sealant or plumbing grease on any valve component or coupling! To protect the chrome or special finish of Sloan flushometers, **DO NOT USE** toothed tools to install or service these valves. Use our A-50 Super-Wrench or other smooth-jawed wrench to secure couplings. Regulations for low consumption fixtures (1.6 gpf/6.0 Lpf closets and 1.0 gpf/3.8 Lpf urinals) prohibit use of higher flush volumes.

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

- Control stop or main supply valve is closed. Open control stop or main supply valve.
- Handle assembly is damaged. Replace B-73-A handle or repair with B-51-A handle repair kit.
- Relief valve is damaged. Replace relief valve.

#### 2. Handle leaks.

- Handle seal or handle assembly is damaged. Replace B-73-A handle or repair with B-51-A handle repair kit.

#### 3. Water splashes from fixture.

- Control stop is open wider than necessary. Adjust control stop for desired delivery of water volume.
- Water saver/conventional diaphragm assembly is installed on low consumption fixture or closet diaphragm assembly is installed on urinal fixture. Determine the required flush volume (see label on valve or markings on fixture). Replace diaphragm assembly or relief valve for appropriate flush volume of fixture.

#### 4. Volume of water is insufficient to adequately siphon fixture.

- Control stop is not open wide enough. Adjust control stop for desired delivery of water volume.
- Diaphragm assembly is damaged. Replace diaphragm assembly.
- Low consumption diaphragm assembly is installed on water saver/conventional fixture or urinal diaphragm assembly is installed on closet fixture. Determine the required flush volume (see label on valve or markings on fixture). Replace diaphragm assembly or relief valve for appropriate flush volume of fixture.
- Inadequate water volume or pressure is available from supply. Increase flow rate or pressure to the valve. If gauges are not available to measure supply pressure/volume, remove relief valve from diaphragm assembly and open the control stop.

If the fixture siphons: Additional water volume is required. Install higher flushing volume relief valve or diaphragm assembly or cut flow ring from guide. **IMPORTANT: LAWS AND REGULATIONS PROHIBIT THE USE OF HIGHER FLUSHING VOLUMES THAN LISTED ON FIXTURE OR FLUSHOMETER.**

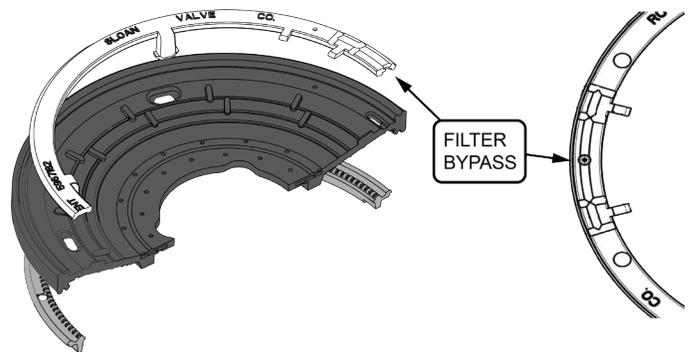
If the fixture **DOES NOT** siphon (or a low consumption flush is required): Additional steps must be taken to increase the water pressure and/or volume at the water supply. Contact fixture manufacturer for minimum supply requirements of fixture.

#### 5. Flushometer valve closes immediately (short flush).

- Worn or damaged diaphragm assembly. Replace diaphragm assembly.
- Handle assembly is damaged. Replace B-73-A handle or repair with B-51-A handle repair kit.
- Low consumption diaphragm assembly is installed on water saver/conventional fixture or urinal diaphragm assembly is installed on closet fixture. Determine the required flush volume (see label on valve or markings on fixture). Replace relief valve or diaphragm assembly for appropriate flush volume of fixture.

#### 6. Length of flush is too long (long flush) or fails to shut off.

- Bypass hole (upper filter ring) of diaphragm assembly is dirty. Remove the diaphragm assembly. Disassemble the filter rings from the diaphragm, wash under running water, and reassemble. Replace as necessary.



- Relief valve or diaphragm assembly is damaged. Replace relief valve or diaphragm assembly.
- Water saver/conventional diaphragm assembly is installed on low consumption fixture or closet diaphragm assembly is installed on urinal fixture. Determine the required flush volume (see label on valve or markings on fixture). Replace diaphragm assembly or relief valve for appropriate flush volume of fixture.
- Inside cover is damaged. Install new A-71 part.
- Line water pressure dropped and is insufficient to close valve. Close the control stop until pressure is restored.
- Relief valve is not seated properly. Disassemble diaphragm components (relief valve, filter rings, and diaphragm unit), wash under running water, and reassemble. Replace as necessary.

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

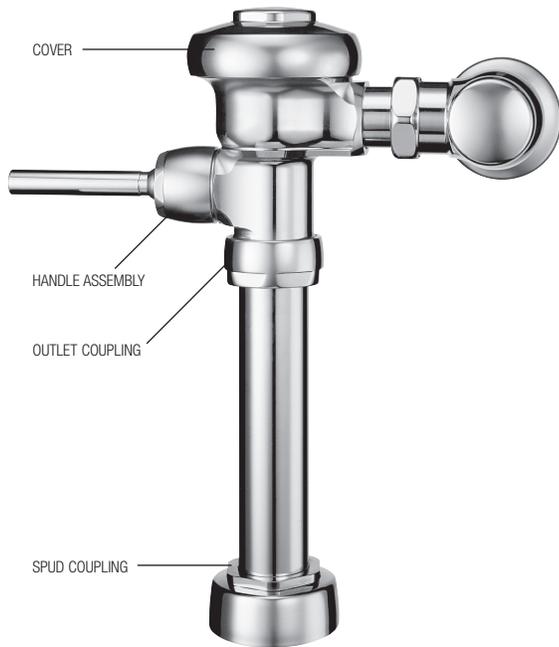
- Inside cover is damaged. Install new A-71 part.
- Relief valve or diaphragm assembly is damaged. Replace relief valve or diaphragm assembly.

### CARE AND CLEANING INSTRUCTIONS

**DO NOT USE** abrasive or chemical cleaners to clean flushometers that may dull the luster and attack the chrome or decorative finish. Use **ONLY** mild soap and water, then wipe dry with a clean towel or cloth. When cleaning the bathroom tile, protect the flushometer from any splattering of cleaner. Acids and cleaning fluids can discolor or remove chrome plating.

**When assistance is required, please contact  
Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

## Royal II® Flushometer



The Royal II® flushometer offers everything the Royal® has – and more. **PLEASE REFER TO THE ROYAL® SECTION** for all maintenance issues on the Royal II, with the exceptions noted in the chart below.

Royal II®'s new handle is a one-piece design for smoother lines. Its aesthetic cover accentuates the Royal II®'s new design, and the new vacuum breaker couplings and flange add the finishing touches.

### PARTS LIST

Code No.	Part No.	Description
0301298	A-206	Royal II® Cover
0302375	B-95-A	Royal II® Handle Assembly
0306145	F-56-A	Royal II® Spud Coupling Assembly 1-1/2" CP
0306128	F-57-A	Royal II® Spud Coupling Assembly 3/4" CP
0306127	F-58-A	Royal II® Spud Coupling Assembly 1-1/4" CP
0323369	V-572	Royal II® Coupling CP

**AVAILABLE AS A COMPLETE ASSEMBLY.  
REPAIR PARTS REMAIN AVAILABLE  
FOR A LIMITED TIME.**

## Continental® Flushometer



The Continental® flushometer is part of the Sloan flushometer designer series, and offers proven Royal® performance – and more. **PLEASE REFER TO THE ROYAL® SECTION** for all maintenance issues on the Continental®, with the exceptions noted in the chart below.

Continental®'s sleek styling make it ideal for many applications.

### PARTS LIST

Code No.	Part No.	Description
0301077	A-4	Continental® Cover
0301221	A-71	Continental® Inside Cover

### SLIP JOINT GASKETS AND RINGS

For additional information on Slip Joint Gaskets and Rings see Item 10A table at bottom of page 15.

**AVAILABLE AS A COMPLETE ASSEMBLY.  
REPAIR PARTS REMAIN AVAILABLE  
FOR A LIMITED TIME.**

\* Limited complete assemblies still available.

## UPPERCUT® Dual-flush Flushometer



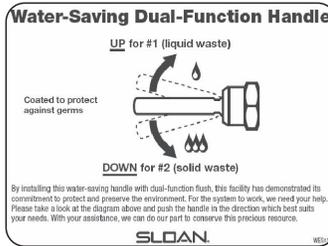
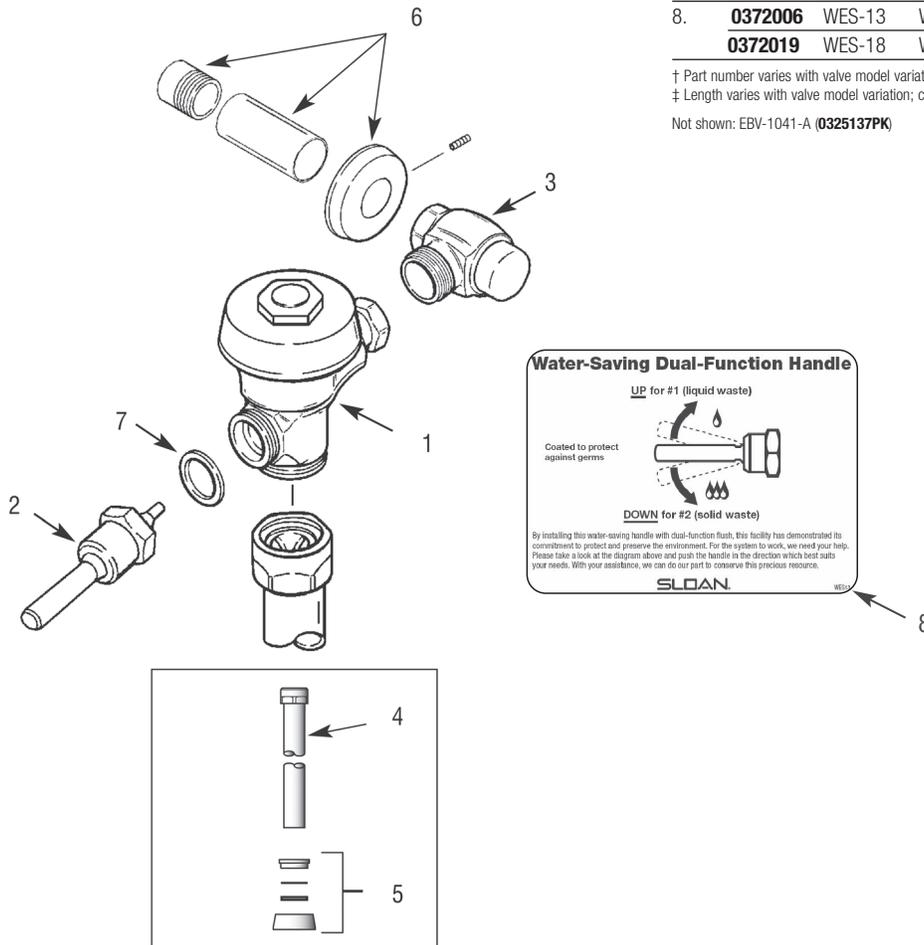
### PARTS LIST

Item No.	Code No.	Part No.	Description
1.	—	†	Valve Assembly
2.	<b>3372003</b>	WES-212	ADA Compliant Dual-Flush Handle
	<b>3372010</b>	WES-212	ADA Compliant Dual-Flush Handle (Spanish)
3.	<b>3308386</b>	H-700-A	Bak-Chek® Control Stop
4.	<b>3393007</b>	V-600-AA	1-1/2" (38 mm) x 9" (229 mm) Vacuum Breaker Assembly ‡
5.	<b>0306146</b>	F-5-AT	1-1/2" (38 mm) Spud Coupling Assembly
6.	<b>3308782</b>	H-633-AA	1" (25 mm) CP Sweat Solder Kit with Cast Set Screw Flange
7.	<b>5301139</b>	A-31	Handle Gasket – 48 per package
8.	<b>0372006</b>	WES-13	Wall Plate (English)
	<b>0372019</b>	WES-18	Wall Plate (Spanish)

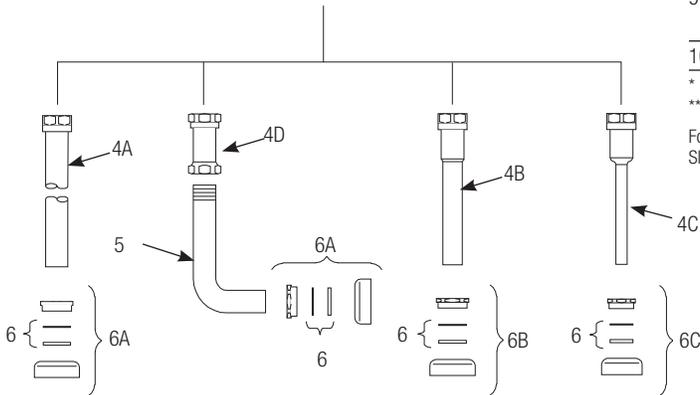
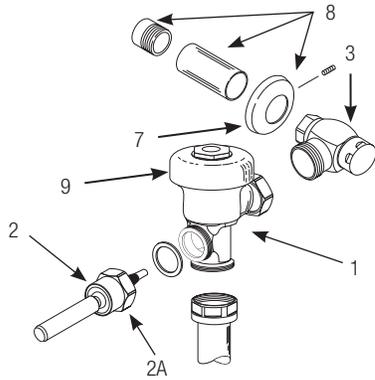
† Part number varies with valve model variation; consult factory.

‡ Length varies with valve model variation; consult factory.

Not shown: EBV-1041-A (**0325137PK**)



## Sloan® Flushometer



### PARTS LIST

Item No.	Code No.	Part No.	Description
1.	—	A-3-A	Valve Assembly – contact Tech Support for proper assembly
2.	<b>0302390</b>	B-73-A	ADA Compliant Handle Assembly
2A.	<b>0301082</b>	A-6	CP Handle Coupling
3.	—	H-710-A	Bak-Chek® Control Stop – 3/4" or 1"
4A.	<b>5323007</b>	V-500-AA	1-1/2" (38 mm) x 9" (229 mm) Vacuum Breaker Assembly ** – 6 per package
4B.	<b>5323006</b>	V-500-AA	1-1/4" (32 mm) x 9" (229 mm) Vacuum Breaker Assembly – 6 per package
4C.	<b>5323005</b>	V-500-AA	3/4" (19 mm) x 9" (229 mm) Vacuum Breaker Assembly – 6 per package
4D.	—	V-500-A	Vacuum Breaker Assembly
5.	<b>0396293</b>	F-109	1-1/2" (38 mm) Elbow Flush Connection
6.	<b>SEE SLIP JOINT GASKETS AND RINGS TABLE BELOW</b>		
6A.	<b>0306145</b>	F-56-A	1-1/2" (38 mm) Spud Coupling Assembly
6B.	<b>0306142</b>	F-55-A	1-1/4" (32 mm) Spud Coupling Assembly
6C.	<b>0306102</b>	F-54-A	3/4" (19 mm) Spud Coupling Assembly
7.	F-7	Supply Flange	(Supplied when Valve is not Ordered with Sweat Solder Kit)
8.	<b>3308782</b>	H-633-AA	1" (25 mm) Sweat Solder Kit with Cast Set Screw Flange
	<b>3308788</b>	H-636-AA	3/4" (19 mm) Sweat Solder Kit with Cast Set Screw Flange
9.	<b>0378000PK</b>	SV-10	CP Sloo Cover
	<b>0378003PK</b>	SV-10-HE	CP High Efficiency Sloo Cover
10.	<b>3388015</b>	H-1015	Flow Control Kit (not Shown)(HEU Only)

\* Part number varies with valve model variation; consult factory.

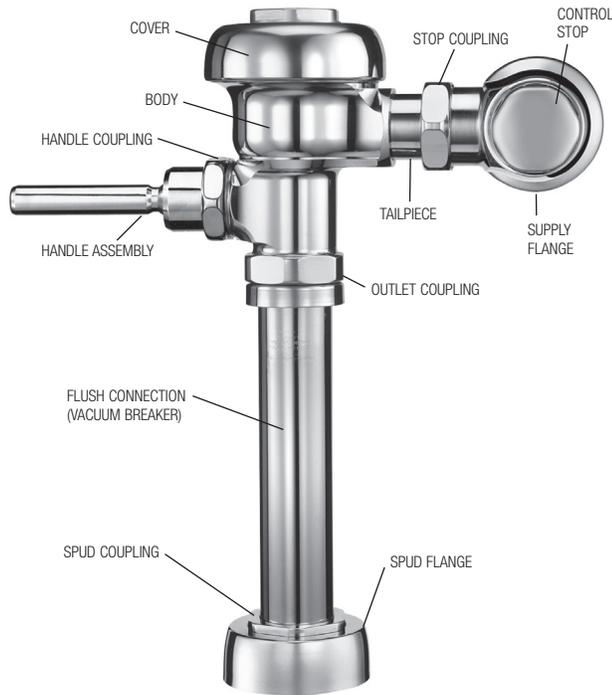
\*\* Length varies with valve model variation; consult factory.

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

### ITEM 6. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	<b>5306058</b>	F-3	Red Friction Ring
	<b>5322001</b>	VBF-5	Black Slip Joint Gasket
	<b>0319086/5319086</b>	S-30	Flexible Seat
	<b>0319079</b>	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	<b>0396062</b>	F-105	Slip Joint Gasket – Rigid
1-1/4"	<b>5306057</b>	F-3	Red Friction Ring
	<b>5322176</b>	VBF-5	Black Slip Joint Gasket
	<b>0307052/5307052</b>	G-21	Rigid Seat (rubber over brass)
1"	<b>5306056</b>	F-3	Red Friction Ring
	<b>5306115</b>	F-5	Black Slip Joint Gasket
3/4"	<b>5306055</b>	F-3	Red Friction Ring
	<b>5306113</b>	F-5	Black Slip Joint Gasket

## Sloan® Flushometer



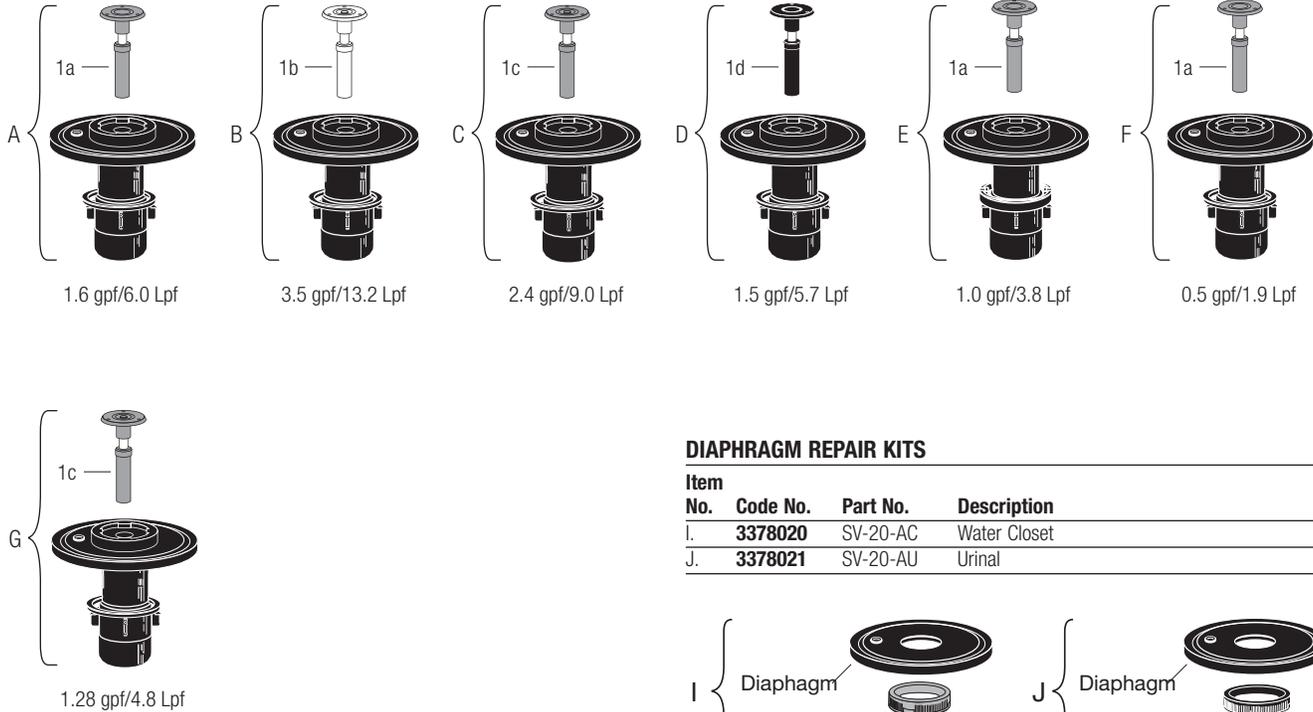
### DIAPHRAGM INSIDE PARTS KITS (SEE ILLUSTRATION BELOW)

Refer to Parts List. Includes Relief Valve and Diaphragm Assembly

Item No.	Code No.	Part No.	Application
A.	<b>3378041</b>	SV-41-A	1.6 gpf/6.0 Lpf - Closet
B.	<b>3378038</b>	SV-38-A	3.5 gpf/13.2 Lpf - Closet
C.	<b>3378044</b>	SV-44-A	2.4 gpf/9.0 Lpf - Closet
D.	<b>3378037</b>	SV-37-A	1.5 gpf/5.7 Lpf - Urinal
E.	<b>3378042</b>	SV-42-A	1.0 gpf/3.8 Lpf - Urinal
F.	<b>3378043</b>	SV-43-A	0.5 gpf/1.9 Lpf - Urinal
G.	<b>3378047</b>	SV-47-A	1.28 gpf/4.8 Lpf - Closet

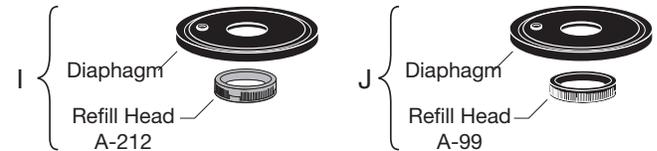
### INSIDE COMPONENTS

Item No.	Code No.	Part No.	Description
1a.	<b>5301211</b>	A-19-ALC	Relief Valve, Green (Closet/Urinal-LC) – 12 per package
1b.	<b>5301058</b>	A-19-AC	Relief Valve, White (Closet) – 12 per package
1c.	<b>0301143</b>	A-19-AL	Relief Valve, Blue (9 Liter Closet)
1d.	<b>5301059</b>	A-19-AU	Relief Valve, Black (Urinal) – 12 per package



### DIAPHRAGM REPAIR KITS

Item No.	Code No.	Part No.	Description
I.	<b>3378020</b>	SV-20-AC	Water Closet
J.	<b>3378021</b>	SV-20-AU	Urinal



## Sloan® Flushometer

## TROUBLESHOOTING GUIDE

**ATTENTION INSTALLERS:** With the exception of the control stop inlet, **DO NOT USE** pipe sealant or plumbing grease on any valve component or coupling! To protect the chrome or special finish of Sloan flushometers, **DO NOT USE** toothed tools to install or service these valves. Use our A-50 Super-Wrench or other smooth-jawed wrench to secure couplings. Regulations for low consumption fixtures (1.6 gpf/6.0 Lpf closets and 1.0 gpf/3.8 Lpf urinals) prohibit use of higher flush volumes.

**1. Flushometer DOES NOT function (no flush).**

- A. Control stop or main valve is closed. Open control stop or main valve.
- B. Handle assembly is worn. Install handle repair kit or replace handle assembly.
- C. Relief valve is worn. Replace inside parts kit.

**2. Insufficient volume of water to adequately siphon fixture.**

- A. Control stop not open enough. Adjust control stop for desired delivery of water volume.
- 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 inside parts kit with water saver kit.
- D. Water saver kit installed in old, non-water saver bowl. Position refill head so that SIDE 1 is in the UP position.
- E. 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 inside parts kit, reassemble the flushometer and completely 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. **IMPORTANT: LAWS AND REGULATIONS PROHIBIT THE USE OF HIGHER FLUSHING VOLUMES THAN LISTED ON FIXTURE OR FLUSHOMETER.**
  - 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 water supply pressure and/or volume. Contact the fixture manufacturer for minimum water supply requirements of the fixture.

**3. Flushometer closes off immediately.**

- A. Ruptured or damaged diaphragm. Replace inside parts kit.
- B. Enlarged bypass orifice from corrosion or damage. Replace inside parts kit.

**4. 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 bypass orifice from corrosion or damage. Replace inside parts kit.
- C. Urinal flushometer parts inside a closet flushometer. Replace inside urinal parts with proper closet flushometer parts.
- D. Low consumption flushometer installed on a higher consumption fixture. Replace inside parts kit with water saver kit.
- E. Handle assembly is damaged. Replace handle.

**5. Length of flush is too long (long flushing) or continuous.**

- A. Relief valve is not seating properly or bypass orifice is clogged because of foreign material, or bypass orifice is closed by an invisible gelatinous film from "over-treated" water. Disassemble the working parts and wash thoroughly.

**NOTE: SIZE OF ORIFICE IN THE BY-PASS IS EXTREMELY IMPORTANT FOR 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. Supply line water pressure has dropped and is not sufficient to close the valve. Close control stop until pressure has been restored.
- C. Closet flushometer parts inside an urinal flushometer. Replace Inside closet parts with proper urinal flushometer parts.
- D. Inside cover is damaged. Replace inside cover.

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

- A. The segment diaphragm is installed upside-down. Replace the segment diaphragm to the proper position as instructed by markings on the diaphragm.
- B. Inside cover is damaged. Replace inside cover.

**7. Handle Leaks.**

- A. Handle gasket, seal or assembly is damaged. Replace as required.

**CARE AND CLEANING INSTRUCTIONS**

**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 a clean towel or cloth.

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

**When assistance is required, please contact  
Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

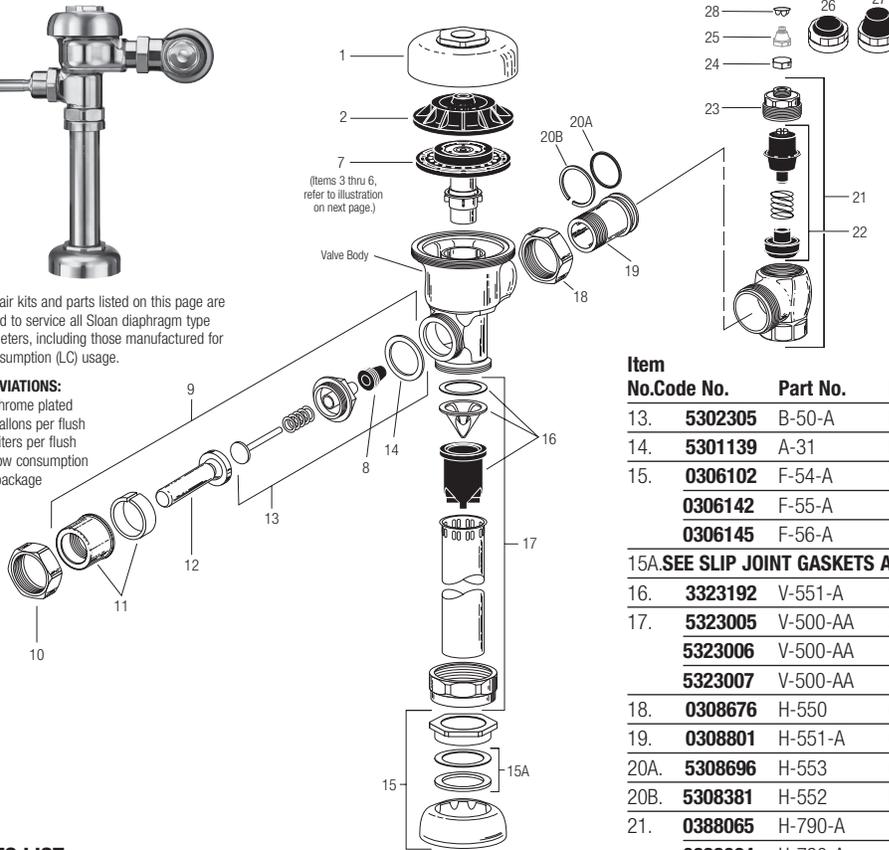
# Regal® Flushometer

NOTE: Also for use with Regal® XL  
(Since mid-2010)



The repair kits and parts listed on this page are designed to service all Sloan diaphragm type flushometers, including those manufactured for low consumption (LC) usage.

**ABBREVIATIONS:**  
 CP = Chrome plated  
 gpf = gallons per flush  
 Lpf = Liters per flush  
 LC = Low consumption  
 pkg = package



## TAILPIECES, CONTROL STOPS AND FLUSH CONNECTIONS

For additional information on tailpieces, control stops and flush connections see Showerheads, Parts and Accessories Tab.

## PARTS LIST

Item No.	Code No.	Part No.	Description
1.	<b>0317004</b>	R-10	CP Cover
	—	R-10-HE	CP High Efficiency Cover
2.	<b>0301168</b>	A-71	Inside Cover
<b>SEE ITEMS 3A THROUGH 6E IN CHART ON NEXT PAGE</b>			
3A.	<b>5301058</b>	A-19-AC	Relief Valve, White (Closet) – 12 per package
3B.	<b>5301059</b>	A-19-AU	Relief Valve, Black (Urinal) – 12 per package
3C.	<b>5301211</b>	A-19-ALC	Relief Valve, Green (Closet/Urinal-LC) – 12 per package
3D.	<b>0301143</b>	A-19-AL	Relief Valve, Blue (9 Liter Closet)
4.	<b>5301111</b>	A-15-A	Disc – for all Inside Parts Kits – 12 per package
5.	<b>5301188</b>	A-156-A	Diaphragm – for all Inside Parts Kits – 12 per package
6A.	<b>5301236</b>	A-163-A	Guide Assembly 4.5 gpf/17.0 Lpf Closet & 1.5 gpf/5.7 Lpf Urinal – 12 per package
6B.	<b>5301032</b>	A-152-A	Guide Assembly 3.5 gpf/13.2 Lpf Closet – 12 per package
6C.	<b>5301031</b>	A-151-A	Guide Assembly 1.6 gpf/6.0 Lpf LC Closet – 12 per package
6D.	<b>5301155</b>	A-155-A	Guide Assembly 1.0 gpf/3.8 Lpf LC Urinal – 12 per package
6E.	<b>5301157</b>	A-157-A	Guide Assembly 0.5 gpf/1.9 Lpf Urinal – 12 per package
7.	<b>SEE INSIDE PARTS KITS CHART ON NEXT PAGE</b>		
8.	<b>5302297</b>	B-39	Seal – 12 per package
9.	<b>5302279</b>	B-32-A	CP Handle Assembly – 6 per package
	<b>0302390</b>	B-73-A	CP Handicap Handle Assembly (ADA Compliant)
10.	<b>0301082</b>	A-6	CP Handle Coupling
11.	<b>0302109</b>	B-7-A	CP Socket Assembly
12.	<b>5302274</b>	B-32	CP Handle Grip – 12 per package
	<b>0302389</b>	B-74-A	CP Handicap Handle Grip (ADA Compliant)

## Item

No.	Code No.	Part No.	Description
13.	<b>5302305</b>	B-50-A	Handle Repair Kit – 6 per package
14.	<b>5301139</b>	A-31	Handle Gasket – 48 per package
15.	<b>0306102</b>	F-54-A	3/4" CP Spud Coupling Assembly
	<b>0306142</b>	F-55-A	1-1/4" CP Spud Coupling Assembly
	<b>0306145</b>	F-56-A	1-1/2" CP Spud Coupling Assembly
<b>15A. SEE SLIP JOINT GASKETS AND RINGS TABLE BELOW</b>			
16.	<b>3323192</b>	V-551-A	Vacuum Breaker Repair Kit
17.	<b>5323005</b>	V-500-AA	3/4" x 9" CP Vacuum Breaker – 6 per package
	<b>5323006</b>	V-500-AA	1-1/4" x 9" CP Vacuum Breaker – 6 per package
	<b>5323007</b>	V-500-AA	1-1/2" x 9" CP Vacuum Breaker – 6 per package
18.	<b>0308676</b>	H-550	CP Stop Coupling †
19.	<b>0308801</b>	H-551-A	CP Adjustable Tailpiece 2-1/16" long †
20A.	<b>5308696</b>	H-553	O-ring – 24 per package
20B.	<b>5308381</b>	H-552	Locking ring – 12 per package
21.	<b>0388065</b>	H-790-A	1" Screwdriver Bak-Chek® Stop CP – complete
	<b>0388064</b>	H-790-A	3/4" Screwdriver Bak-Chek® Stop CP – complete
	<b>0388029</b>	H-740-A	1" Screwdriver Bak-Chek® Stop CP – <b>DISCONTINUED</b>
	<b>0388031</b>	H-740-A	3/4" Screwdriver Bak-Chek® Stop CP – <b>DISCONTINUED</b>
22.	<b>3308853</b>	H-541-ASD	1" Control Stop Repair Kit *
	<b>3308856</b>	H-543-ASD	3/4" Control Stop Repair Kit **
23.	<b>0308612</b>	H-622	CP Bonnet (Current Regal)
	<b>0308991</b>	H-639	CP Bonnet – Pre 2010 Regal Stops*
	<b>0308601</b>	H-538	CP Bonnet ** – <b>DISCONTINUED</b>
24.	<b>5388001</b>	H-1012-A	CP Cap – 6 per package VP
25.	<b>5310034</b>	J-2/J-7	Bumper Assembly – 6 per package – <b>DISCONTINUED</b>
26.	<b>3308866</b>	H-574	Stop Cap, chrome plated with Seat Bumper (-YO)
27.	<b>3308867</b>	H-576	Stop Cap, chrome plated with Extended Seat Bumper (-YG)
28.	<b>5388002</b>	H-528	Hole Plug
29.	<b>3388015</b>	H-1015	Flow Control Kit (HEU Only) (not Shown)

† See pages 100-101 for additional lengths

\*For use with 1" and 3/4" H-740-A CP (less cap) and 1" – H-540-A CP (with H-37 cap) Bak-Chek® screwdriver control stops

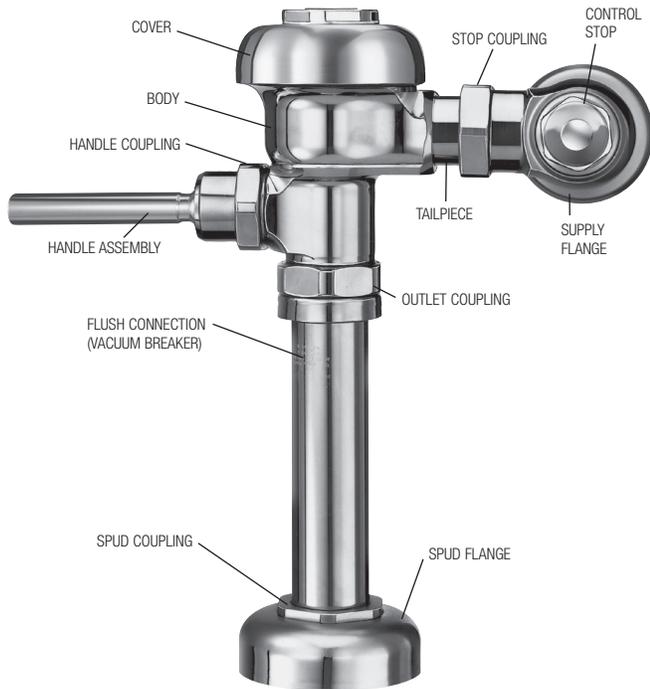
\*\*For use with 3/4" H-740-A CP Bak-Chek® screwdriver control stops

## ITEM 15A. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	<b>5306058</b>	F-3	Red Friction Ring
	<b>5322001</b>	VBF-5	Black Slip Joint Gasket
	<b>0319086/5319086</b>	S-30	Flexible Seat
	<b>0319079</b>	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	<b>0396062</b>	F-105	Slip Joint Gasket – Rigid
1-1/4"	<b>5306057</b>	F-3	Red Friction Ring
	<b>5322176</b>	VBF-5	Black Slip Joint Gasket
	<b>0307052/5307052</b>	G-21	Rigid Seat (rubber over brass)
1"	<b>5306056</b>	F-3	Red Friction Ring
	<b>5306115</b>	F-5	Black Slip Joint Gasket
3/4"	<b>5306055</b>	F-3	Red Friction Ring
	<b>5306113</b>	F-5	Black Slip Joint Gasket

# Regal® Flushometer

NOTE: Also for use with Regal® XL  
(Since mid-2010)



### REGAL TUNE UP KIT

Code No.	Part No.	Description
3317027	R1121-A	Tune-up Kit (1.6 gpf/6.0 Lpf) Closet
3317026	R1122-A	Tune-up Kit (3.5 gpf/13.2 Lpf) Closet
3317028	R1124-A	Tune-up Kit (1.28 gpf/4.8 Lpf) Closet
3317031	R1126-A	Tune-up Kit (0.5 gpf/1.9 Lpf) Urinal
3317030	R1127-A	Tune-up Kit (1.0 gpf/3.8 Lpf) Urinal
3317029	R1128-A	Tune-up Kit (1.5 gpf/5.7 Lpf) Urinal

Includes Diaphragm Assembly, B-50-A Handle Repair Kit, H-553 O'ring, V-551-A Vacuum Breaker Repair Kit, A-71 Inside Plastic Cover.

### MASTER FLUSHOMETER REBUILDING KITS (SEE PARTS LIST – ON PREVIOUS PAGE)

Refer to Parts List. Includes Items 7, 13, 16 & 20

Code No.	Part No.	Description
3317001	R-1001-A	Rebuild Kit (4.5 gpf/17.0 Lpf) Closet/Service Sink
3317002	R-1002-A	Rebuild Kit (1.5 gpf/5.7 Lpf) Urinal
3317003	R-1003-A	Rebuild Kit (3.5 gpf/13.2 Lpf) Closet
3317004	R-1004-A	Rebuild Kit (1.6 gpf/6.0 Lpf) Closet
3317005	R-1005-A	Rebuild Kit (1.0 gpf/3.8 Lpf) LC Urinal
3317011	R-1011-A	Rebuild Kit (0.5 gpf/1.9 Lpf) Urinal
3317012	R-1012-A	Rebuild Kit (2.4 gpf/9.0 Lpf) Closet
3301143	A-1050-A	DPB Rebuild Kit (0.125 gpf/0.5 Lpf) Urinal

### REPAIR KIT WASHER SET (SEE PARTS LIST – ON PREVIOUS PAGE)

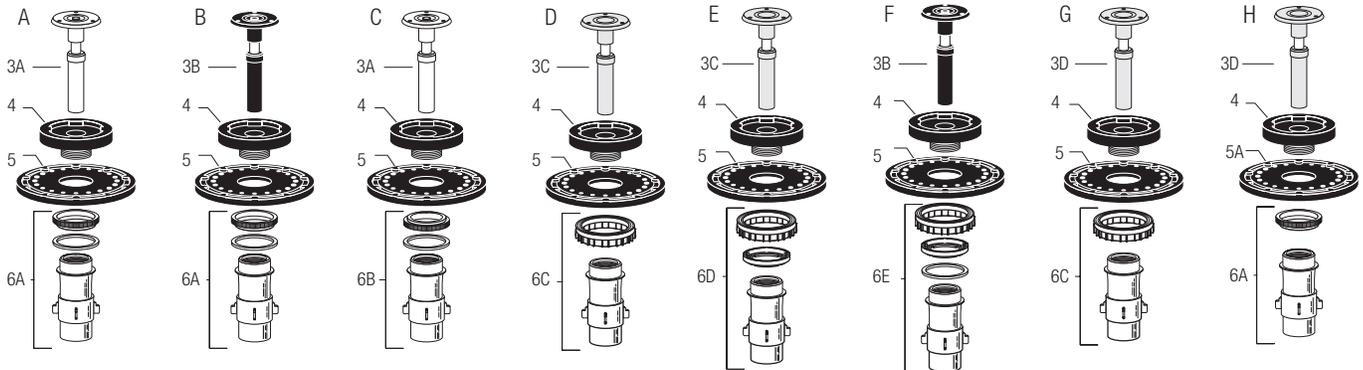
5301189	A-156-AA	Repair Kit Washer Set – Includes: 4, 5, 8 & 14
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### ITEM 7. INSIDE PARTS KITS (SEE ILLUSTRATIONS BELOW)

Item No.	Code No.	Part No.	Application
A.	3301036	A-36-A	4.5 gpf/17.0 Lpf - Closet
B.	3301037	A-37-A	1.5 gpf/5.7 Lpf - Urinal
C.	3301038	A-38-A	3.5 gpf/13.2 Lpf - Closet
D.	3301041	A-41-A	1.6 gpf/6.0 Lpf - Closet
E.	3301044	A-42-A	1.0 gpf/3.8 Lpf - Urinal
F.	3301081	A-43-A	0.5 gpf/1.9 Lpf - Urinal
G.	3301024	A-44-A	2.4 gpf/9.0 Lpf - Closet
H.	3301045	A-140-A	1.28 gpf/4.8 Lpf - Closet

### ITEM 7. INSIDE PARTS COMPONENTS (SEE ILLUSTRATIONS BELOW)

Item No.	Code No.	Part No.	Description
3A.	5301058	A-19-AC	Relief Valve, White (Closet) – 12 per pkg.
3B.	5301059	A-19-AU	Relief Valve, Black (Urinal) – 12 per pkg.
3C.	5301211	A-19-ALC	Relief Valve, Green (Closet/Urinal-LC) – 12 per pkg.
3D.	0301143	A-19-AL	Relief Valve, Blue (9 Liter Closet)
4.	5301111	A-15-A	Disc – for all Inside Parts Kits – 12 per pkg.
5.	5301188	A-156-A	Diaphragm – for all Inside Parts Kits – 12 per pkg.
5A.	5301176	A-56-A	Diaphragm – for all Inside Parts Kits – 6 per pkg.
6A.	5301236	A-163-A	Guide Assembly 4.5 gpf/17.0 Lpf Closet & 1.5 gpf/5.7 Lpf Urinal – 12 per package
6B.	5301032	A-152-A	Guide Assembly 3.5 gpf/13.2 Lpf Closet – 12 per package
6C.	5301031	A-151-A	Guide Assembly 1.6 gpf/6.0 Lpf LC Closet – 12 per package
6D.	5301155	A-155-A	Guide Assembly 1.0 gpf/3.8 Lpf LC Urinal – 12 per package
6E.	5301157	A-157-A	Guide Assembly 0.5 gpf/1.9 Lpf Urinal – 12 per package



## Regal® Flushometer

NOTE: Also for use with Regal® XL  
(Since mid-2010)

## TROUBLESHOOTING GUIDE

**ATTENTION INSTALLERS:** With the exception of the control stop inlet, DO NOT USE pipe sealant or plumbing grease on any valve component or coupling! To protect the chrome or special finish of Sloan flushometers, DO NOT USE toothed tools to install or service these valves. Use our A-50 Super-Wrench™ or other smooth-jawed wrench to secure couplings. Regulations for low consumption fixtures (1.6 gpf/6.0 Lpf closets and 1.0 gpf/3.8 Lpf urinals) prohibit use of higher flush volumes.

### 1. Flushometer DOES NOT function (no flush).

- A. Control stop or main valve is closed. Open control stop or main valve.
- B. Handle assembly is worn. Install handle repair kit B-50-A or replace handle.
- C. Relief valve is worn. Replace inside parts kit.

### 2. 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-170-1 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. **IMPORTANT: LAWS AND REGULATIONS PROHIBIT THE USE OF HIGHER FLUSHING VOLUMES THAN LISTED ON FIXTURE OR FLUSHOMETER.**
  - 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.

### 3. Flushometer closes off immediately.

- A. Ruptured or damaged diaphragm. Install inside parts kit to correct above problems and update flushometer.
- B. Enlarged by-pass orifice from corrosion or damage. Install inside parts kit to correct above problem and update flushometer.

### 4. 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. B-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.

### 5. Length of flush is too long (long flushing) or fails to close off.

- A. Relief valve 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 ORIFICE IN THE BY-PASS IS EXTREMELY IMPORTANT FOR 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.

### 6. 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 been distorted from wear, freezing or abuse. replace inside cover.

### 7. 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 right onto the B-40 bushing if it is wet.
- B. Handle gasket has been omitted. Install A-31 handle gasket or handle repair kit B-50-A.
- C. Valve handle bushing is worn. Install handle repair kit B-50-A.

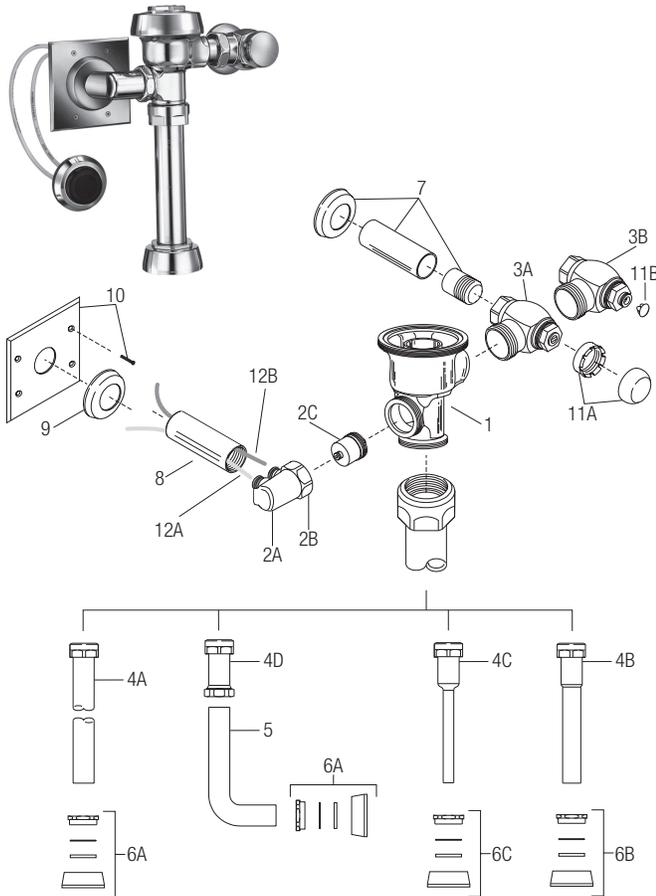
### CARE AND CLEANING INSTRUCTIONS

**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 a clean towel or cloth.

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

**When assistance is required, please contact  
Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

## Series 900® Flushometer



### PARTS LIST FOR SERIES 900® EXPOSED FLUSHOMETER

Item No.	Code No.	Part No.	Description
1.	<b>0301048</b>	A-143-A	Valve Body
2A.	<b>0318065PK</b>	HY-65	Valve Actuator Housing (fittings not included)
2B.	<b>0301082PK</b>	A-6	Housing Nut
2C.	<b>3318001PK</b>	HY-83-A	Actuator Cartridge Assembly
3A.	<b>3308386</b>	H-700-A	Bak-Chek® Control Stop (Royal Valves) for 1" 3308384 for ¾"
3B.	<b>0388065</b>	H-790-A	Bak-Chek® Control Stop (Regal XL Valves) for 1" 0388064 for ¾"
4A.	<b>3893004</b>	V-600-AA	1½" (38 mm) Vacuum Breaker Assembly
4B.	<b>3393006</b>	V-600-AA	1¼" (32 mm) Vacuum Breaker Assembly
4C.	<b>3393004</b>	V-600-AA	¾" (19 mm) Vacuum Breaker Assembly
4D.	<b>0393003</b>	V-600-A	Vacuum Breaker
5.	<b>0396293</b>	F-109	1½" (38 mm) Elbow Flush Connection
6A.	<b>0306146</b>	F-5-AT	1-1/2" (38 mm) Spud Coupling Assembly (Royal Valves)
	<b>0306145</b>	F-56-A	1½" (38 mm) Spud Coupling Assembly (Regal XL Valves)
6B.	<b>0306140</b>	F-5-AU	1¼" (32 mm) Spud Coupling Assembly (Royal Valves)
	<b>0306142</b>	F-55-A	1¼" (32 mm) Spud Coupling Assembly (Regal XL Valves)
6C.	<b>0306125</b>	F-5-AW	¾" (19 mm) Spud Coupling Assembly (Royal Valves)
	<b>0306102</b>	F-54-A	¾" (19 mm) Spud Coupling Assembly (Regal XL Valves)
7.	<b>3308782</b>	H-633-AA	1" (25 mm) Sweat Solder Kit & Cast Wall Flange w/ Set Screw
	<b>3308788</b>	H-636-AA	¾" (19 mm) Sweat Solder Kit & Cast Wall Flange w/ Set Screw
8.	<b>0318064PK</b>	HY-64	6" Chrome Sleeve
9.	‡	F-7	Supply Flange
10.	<b>3318002</b>	HY-112-A	Plate with Screws
11A.	<b>3308772</b>	H-1010-A	Free Spinning Vandal Resistant Stop Cap (Royal Valves)
11B.	<b>5388002</b>	H-528	Vandal Resistant Hole Plug (Regal Valves)
12A.	<b>0318221</b>	HY-146	1/4" (6mm) x 48" (1219 mm) Yellow connecting tube
12B.	<b>0318217</b>	HY-145	1/4" (6mm) x 48" (1219 mm) Blue connecting tube

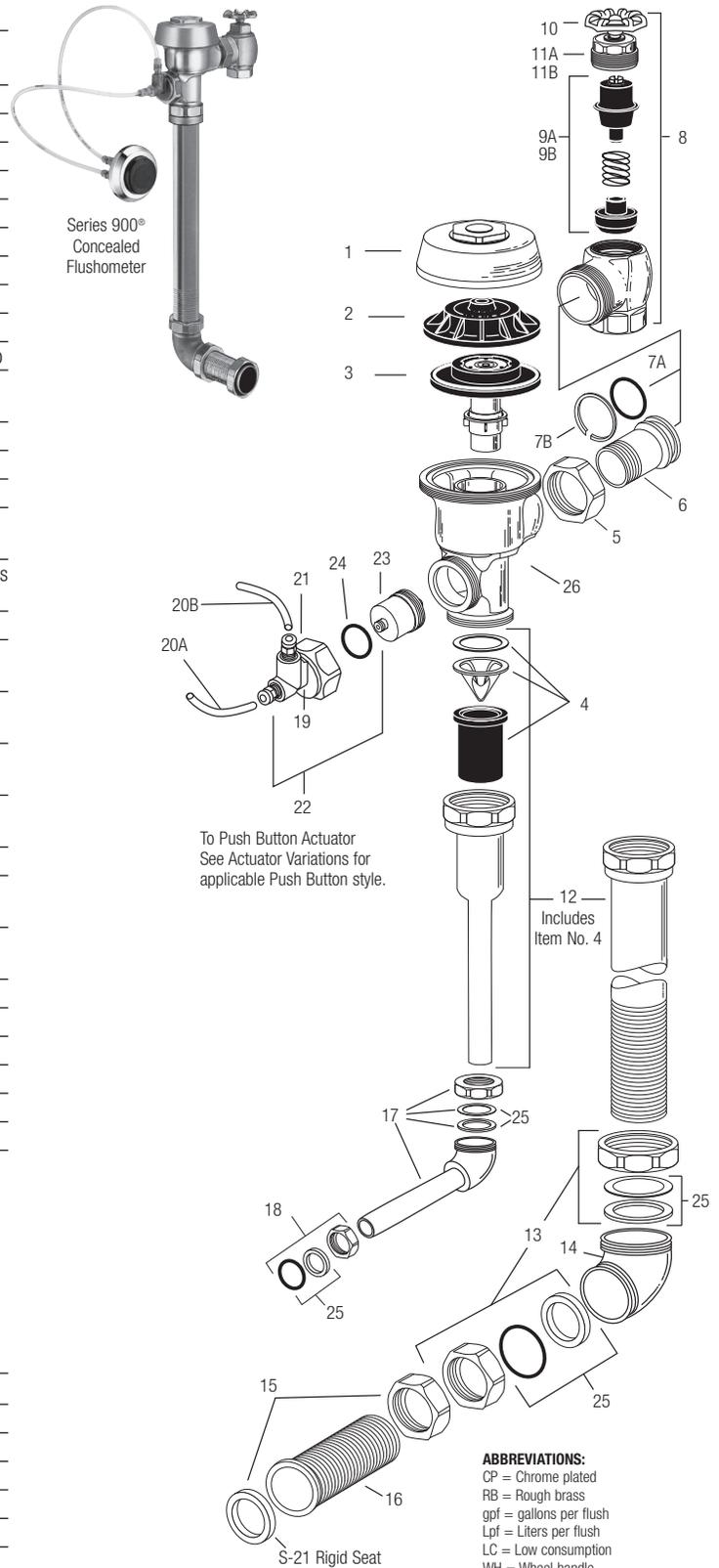
† Part number varies with valve model variation; consult factory.

‡ Length varies with valve variation; consult factory.

## Series 900® Flushometer

### PARTS LIST FOR SERIES 900® CONCEALED FLUSHOMETER

Item No.	Code No.	Part No.	Description
1.	0301173	A-72	RB Royal® Cover
2.	0301168	A-71	Inside Cover
3.	<b>SEE THE INSIDE PARTS KIT CHART ON NEXT PAGE</b>		
4.	3323182	V-651-A	Vacuum Breaker Repair Kit
5.	0308690	H-550	RB Tailpiece Coupling
6.	0308802	H-551-A	RB Adjustable Tailpiece, 2-1/16" (52 mm)
7A.	5308696	H-553	O-ring – 24 per package
7B.	5308381	H-552	Locking ring – 12 per package
8.	0388010	H-730-A	RB Wheel Handle Bak-Chek® Control Stop
9A.	3308855	H-541-A	1" Wheel Handle Repair Kit for H-730-A Control Stop
9B.	3308858	H-543-A	3/4" Wheel Handle Repair Kit for H-730-A Control Stop
10.	0308919	H-558-A	Wheel Handle
11A.	0208083	H-623	1" RB Bonnet
11B.	0208083	H-623	3/4" RB Bonnet
12.	See page 148	V-500-AA	Royal Vacuum Breaker Flush Connection (specify length and size)
13.	0306619	F-2-AA	1-1/2" (38 mm) RB Couplings (2 each), Friction Rings (2 each), and Rubber Gaskets (2 each)
14.	0206146	F-21	RB Elbow
15.	0306091	F-2-A	1-1/2" (38 mm) RB Coupling and S-21 Flat Rigid Gasket
16.	See pages 148	F-100	RB Flared End Flush Connection (specify length)
17.	See pages 148	F-15-A	3/4" (19 mm) RB Elbow Flush Connection with Coupling and Rubber Gasket (specify length)
18.	0306054	F-2-A	3/4" (19 mm) RB Coupling, Friction Ring, and Rubber Gasket
19.	0318024	HY-25-1	RB Valve Actuator Housing (includes fittings)
20A.	0318221	HY-146	1/4" (6 mm) x 48" (1219 mm) Yellow Connecting Tubes (2 required)
20B.	0318217	HY-145	1/4" (6 mm) x 48" (1219 mm) Blue Connecting Tubes (2 required)
21.	0301082	A-6	RB Handle Coupling Nut
22.	3318005	HY-109-A	Actuator Housing Assembly (includes items 21 & 24)
23.	3318001	HY-83-A	Actuator Cartridge Assembly
24.	0337086	DO-22	O-ring for HY-109-A Adapter
25.	<b>SEE SLIP JOINT GASKETS AND RINGS TABLE BELOW</b>		
26.	0301050	A143-A	RB Valve Body



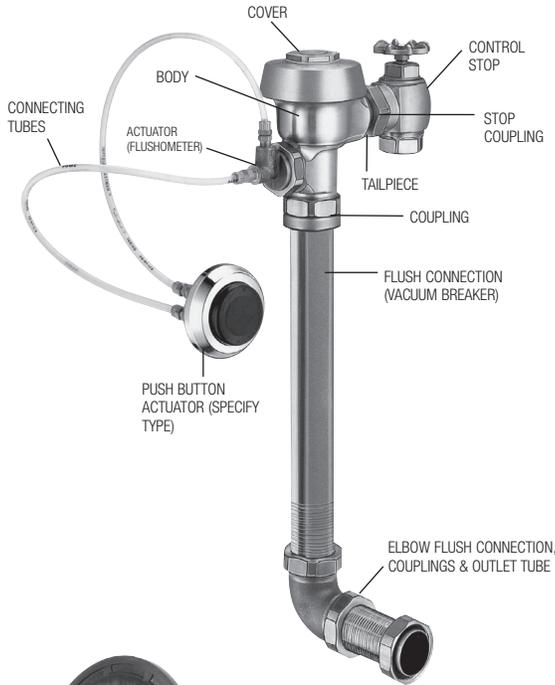
### ITEM 27. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	5306058	F-3	Red Friction Ring
	5322001	VBF-5	Black Slip Joint Gasket
	0319086/5319086	S-30	Flexible Seat
	0319079	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	0396062	F-105	Slip Joint Gasket – Rigid
1-1/4"	5306057	F-3	Red Friction Ring
	5322176	VBF-5	Black Slip Joint Gasket
	0307052/5307052	G-21	Rigid Seat (rubber over brass)
	5306056	F-3	Red Friction Ring
1"	5306115	F-5	Black Slip Joint Gasket
	5306055	F-3	Red Friction Ring
3/4"	5306113	F-5	Black Slip Joint Gasket

### TAILPIECES, CONTROL STOPS, PUSH BUTTONS AND FLUSH CONNECTIONS

For additional information on tailpieces, control stops, push buttons and flush connections see Showerheads, Parts and Accessories Tab.

## Series 900® Flushometer



### Royal Flushometer

#### ITEM 3 INSIDE PARTS KITS (SEE ILLUSTRATION ON PREVIOUS PAGE)

Code No.	Part No.	Application
3301502	A-1041-A	Low Consumption Water Closets- 1.6 gpf (6.0 Lpf)*
3301501	A-1038-A	Water Saver Water Closets-3.5 gpf (13.2 Lpf)*
3301505	A-1044-A	9 Liter European Water Closets-2.4 gpf (9.0 Lpf)
3301504	A-1043-A	Wash Down Urinals-0.5 gpf (1.9 Lpf)
3301503	A-1042-A	Low Consumption Urinals-1.0 gpf (3.8 Lpf)*
3301500	A-1037-A	Water Saver Urinals-1.5 gpf (5.7 Lpf)*
3301506	A-1045-A	High-Efficiency Water Closets-1.28 gpf (4.8 Lpf)

\* WATER SAVER (3.5 GPF CLOSET AND 1.5 GPF URINAL) AND LOW CONSUMPTION (1.6 GPF CLOSET AND 1.0 GPF URINAL) FIXTURES MUST USE MATCHING GPF (LPF) DIAPHRAGM KITS; USING A SMALLER GPF (LPF) KIT IN FIXTURES NOT INTENDED FOR LESS VOLUME WILL RESULT IN INADEQUATE DILUTION IN URINALS AND IMPROPER EVACUATION IN CLOSETS.

#### HYDRAULIC INSIDE PARTS REPAIR KITS

Code No.	Part No.	Description
3318011	HY-1101-A	Hydraulic Royal 1.6C
3318012	HY-1102-A	Hydraulic Royal 3.5C
3318013	HY-1103-A	Hydraulic Royal 2.4C
3318014	HY-1106-A	Hydraulic Royal 0.5U
3318015	HY-1107-A	Hydraulic Royal 1.0U
3318016	HY-1108-A	Hydraulic Royal 1.5U

Comes with: Diaphragm, Actuator Cartridge Assembly, Tailpiece O-ring and Vacuum Breaker Assembly



### Regal Flushometer

#### DIAPHRAGM INSIDE PARTS KITS

Code No.	Part No.	Application
3301036	A-36-A	4.5 gpf/17.0 Lpf - Closet
3301037	A-37-A	1.5 gpf/5.7 Lpf - Urinal
3301038	A-38-A	3.5 gpf/13.2 Lpf - Closet
3301041	A-41-A	1.6 gpf/6.0 Lpf - Closet
3301044	A-42-A	1.0 gpf/3.8 Lpf - Urinal
3301081	A-43-A	0.5 gpf/1.9 Lpf - Urinal
3301024	A-44-A	2.4 gpf/9.0 Lpf - Closet
3301045	A-140-A	1.28 gpf/4.8 Lpf - Closet

#### INSIDE PARTS COMPONENTS

Code No.	Part No.	Description
5301058	A-19-AC	Relief Valve, White (Closet) – 12 per pkg.
5301059	A-19-AU	Relief Valve, Black (Urinal) – 12 per pkg.
5301211	A-19-ALC	Relief Valve, Green (Closet/Urinal-LC) – 12 per pkg.
0301143	A-19-AL	Relief Valve, Blue (9 Liter Closet)
5301111	A-15-A	Disc – for all Inside Parts Kits – 12 per pkg.
5301188	A-156-A	Diaphragm – for all Inside Parts Kits – 12 per pkg.
5301236	A-163-A	Guide Assembly 4.5 gpf/17.0 Lpf Closet & 1.5 gpf/5.7 Lpf Urinal – 12 per package
5301032	A-152-A	Guide Assembly 3.5 gpf/13.2 Lpf Closet – 12 per package
5301031	A-151-A	Guide Assembly 1.6 gpf/6.0 Lpf LC Closet – 12 per package
5301155	A-155-A	Guide Assembly 1.0 gpf/3.8 Lpf LC Urinal – 12 per package
5301157	A-157-A	Guide Assembly 0.5 gpf/1.9 Lpf Urinal – 12 per package



### Sloan Flushometer

#### DIAPHRAGM INSIDE PARTS KITS

Includes Relief Valve and Diaphragm Assembly

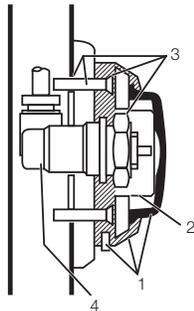
Code No.	Part No.	Application
3378041	SV-41-A	1.6 gpf/6.0 Lpf - Closet
3378038	SV-38-A	3.5 gpf/13.2 Lpf - Closet
3378044	SV-44-A	2.4 gpf/9.0 Lpf - Closet
3378037	SV-37-A	1.5 gpf/5.7 Lpf - Urinal
3378042	SV-42-A	1.0 gpf/3.8 Lpf - Urinal
3378043	SV-43-A	0.5 gpf/1.9 Lpf - Urinal
3378047	SV-47-A	1.28 gpf/4.8 Lpf - Closet

#### INSIDE COMPONENTS

Code No.	Part No.	Description
5301211	A-19-ALC	Relief Valve, Green (Closet/Urinal-LC) – 12 per package
5301058	A-19-AC	Relief Valve, White (Closet) – 12 per package
0301143	A-19-AL	Relief Valve, Blue (9 Liter Closet)
5301059	A-19-AU	Relief Valve, Black (Urinal) – 12 per package

## Series 900® Flushometer

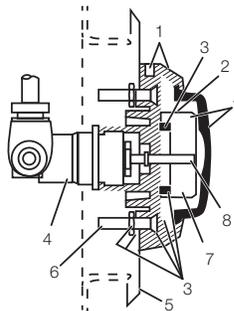
### HY-49-A (0318049) METAL PARTITION PUSH BUTTON



Item No.	Code No.	Part No.	Description
1.	<b>3318007</b>	HY-1000-A	Push Button Kit – includes Push Button, Flange, Spring & Set Screw
2.	<b>0318004</b>	HY-3	Spring
3.	<b>3318010</b>	HY-1003-A	Mounting Flange Kit – includes Mounting Flange, Mounting Nut, Screws (2) & Tinnerman Nuts (2)
4.	<b>0318123</b>	HY-71-A	Actuator Assembly

NOTE: Includes HY-32-A cartridge (shown at right)  
NOTE: Maximum distance from button to valve is 20' (longer tubing required)  
NOTE: HY-30 84" longer tubing (0318094)

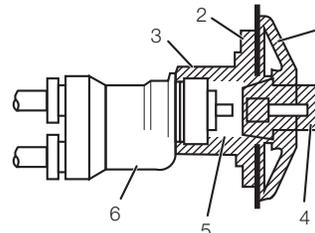
### HY-72-A (0318072) SIDE WALL PUSH BUTTON



Item No.	Code No.	Part No.	Description
1.	<b>3318007</b>	HY-1000-A	Push Button Kit – includes Push Button, Flange, Spring & Set Screw
2.	<b>0318004</b>	HY-3	Spring
3.	<b>3318008</b>	HY-1001-A	Mounting Flange Kit – includes Mounting Flange, Mounting Nut, Screws (2), Nuts (2) & Washers (2)
4.	<b>0318123</b>	HY-71-A	Actuator Assembly
5.	<b>0318041</b>	HY-40	Plate
6.	<b>0305173</b>	EL-173	Screws (4)
7.	<b>0318073</b>	HY-73	Extension Adapter
8.	<b>0318074</b>	HY-74	Extension Stem

NOTE: Includes HY-32-A cartridge (shown at right)  
NOTE: Maximum distance from button to valve is 20' (longer tubing required)  
NOTE: HY-30 84" longer tubing (0318094)

### HY-108-A (0318119) PENAL WARE METAL PUSH BUTTON



Item No.	Code No.	Part No.	Description
1.	<b>0318116</b>	HY-91	Flange
2.	<b>0318111</b>	HY-94	Mounting Washer
3.	<b>0318112</b>	HY-93	Mounting Nut
4.	<b>0318115</b>	HY-86-A	Push Button Assembly
5.	<b>0305134</b>	EL-109	Spring
6.	<b>0318078</b>	HY-50-A	Actuator Assembly

NOTE: Includes HY-32-A cartridge (shown below)  
NOTE: Maximum distance from button to valve is 20' (longer tubing required)  
NOTE: HY-30 84" longer tubing (0318094)



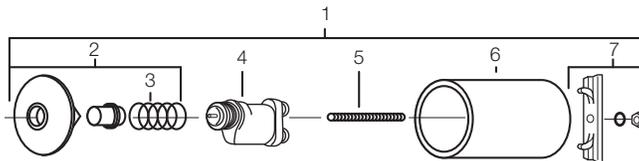
### HY-32-A ACTUATOR CARTRIDGE ASSEMBLY



For use with HY-50-A and HY-71-A actuator assemblies

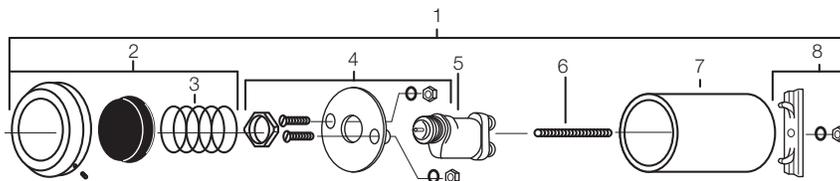
### HY-100-A (0318117) FIXTURE WALL METAL PUSH BUTTON

Item No.	Code No.	Part No.	Description
1.	<b>0318117</b>	HY-100-A	Fixture Wall Metal Button Assembly
2.	<b>3318006</b>	HY-111-A	Metal Button Kit
3.	<b>0305134</b>	EL-109	Spring
4.	<b>0318078</b>	HY-50-A	Actuator Assembly
5.	<b>0318028</b>	HY-29	Threaded Rod
6.	<b>0318109</b>	HY-105	Spacer
7.	<b>3318009</b>	HY-1002-A	Mounting Strap Kit



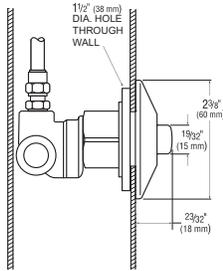
### HY-33-A (0318001) FIXTURE WALL PUSH BUTTON

1.	<b>0318001</b>	HY-33-A	Fixture Wall Push Button Assembly
2.	<b>3318007</b>	HY-1000-A	Push Button Kit
3.	<b>0318004</b>	HY-3	Spring
4.	<b>3318008</b>	HY-1001-A	Mounting Flange Kit
5.	<b>0318078</b>	HY-50-A	Actuator Assembly
6.	<b>0318028</b>	HY-29	Threaded Rod
7.	<b>0318109</b>	HY-105	Spacer
8.	<b>3318009</b>	HY-1002-A	Mounting Strap Kit

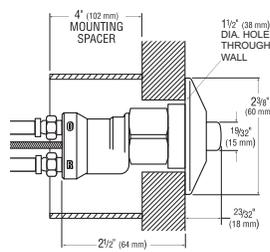


## Series 900® Flushometer

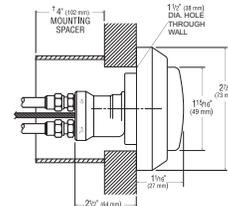
### HY-113-A (0318120) METAL PUSH BUTTON PANEL MOUNT (MBPM VARIATION)



### HY-100-A (0318117) METAL PUSH BUTTON PANEL MOUNT (MBFW VARIATION)



### HY-125-A (0318183) METAL PUSH BUTTON FIXTURE WALL (FW VARIATION)



<sup>†</sup> Use Mounting Spacer only if wall thickness is less than 2" (50 mm).

Item No.	Code No.	Part No.	Description
1.	<b>0318115</b>	HY-86-A	Push Button Kit – includes Push Button, Flange, Spring & Set Screw
2.	<b>0305134</b>	EL-109	Spring
3.	<b>0318111</b>	HY-94-A	Mounting Flange Kit – includes Mounting Nut, Screws (2) & Tinnerman Nuts (2)
4.	<b>0318123</b>	HY-91-A	Flange

NOTE: Includes HY-32-A cartridge (0318031)  
NOTE: Maximum distance from button to valve is 20' (longer tubing required)  
NOTE: HY-30 84" longer tubing (0318094)

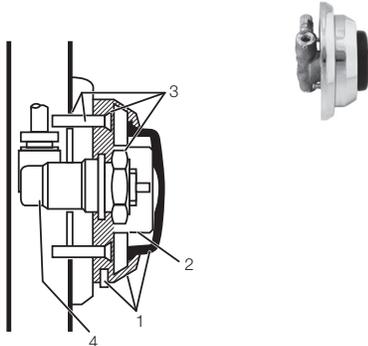
Item No.	Code No.	Part No.	Description
1.	<b>0318115</b>	HY-86-A	Push Button Kit – includes Push Button, Flange, Spring & Set Screw
2.	<b>0318109</b>	HY-105	Spacer Mounting Tube
3.	<b>0318125</b>	HY-95-A	Mounting Flange Kit – includes Mounting Flange, Mounting Nut, Screws (2), Nuts (2) & Washers (2)
4.	<b>0318123</b>	HY-4-A	RB Actuator Assembly
5.	<b>0318019</b>	HY-20-A	Inner Bushing
6.	<b>0305173</b>	HY-4	RB Body Hyd Actuator

NOTE: Includes HY-32-A cartridge (0318031)  
NOTE: Maximum distance from button to valve is 20' (longer tubing required)  
NOTE: HY-30 84" longer tubing (0318094)

Item No.	Code No.	Part No.	Description
1.	<b>0318002</b>	HY-1	CP Button Flange
2.	<b>0318111</b>	HY-105	Spacer Mounting Tube
3.	<b>0318003</b>	HY-2	RB Mounting Nut
4.	<b>0318067</b>	HY-123-A	Push Button Assembly
5.	<b>0318078</b>	HY-50-A	Actuator Assembly

NOTE: Includes HY-32-A cartridge (shown below)  
NOTE: Maximum distance from button to valve is 20' (longer tubing required)  
NOTE: HY-30 84" longer tubing (0318094)

### HY-79-A (0318081) METAL PARTITION PUSH BUTTON



Item No.	Code No.	Part No.	Description
1.	<b>0318002</b>	HY-1-A	Push Button Kit – includes Push Button, Flange, Spring & Set Screw
2.	<b>0318004</b>	HY-3	Spring
3.	<b>0318003</b>	HY-2-A	Mounting Flange Kit – includes Mounting Flange, Mounting Nut, Screws (2) & Tinnerman Nuts (2)
4.	<b>0318123</b>	HY-71-A	Actuator Assembly

NOTE: Includes HY-32-A cartridge (shown at right)  
NOTE: Maximum distance from button to valve is 20' (longer tubing required)



## Series 900® Flushometer

### TROUBLESHOOTING GUIDE

#### 1. Push button leaks.

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

#### 2. The flushometer DOES NOT flush and a small amount of leakage is visible below the valve.

- A. Foreign material lodged in the cartridge. Remove the cartridge and inspect for foreign material. Clean under running water.
- B. The actuator cartridge has an accumulation of lime or its seals are damaged or worn. Replace with a new HY-32-A cartridge.
- C. Plastic tubing is installed incorrectly. Install plastic tubing correctly.

#### ACTUATOR CARTRIDGE REMOVAL

##### Plastic Push Button Actuator Removal:

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

##### Metal Push Button Actuator Removal:

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

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

#### 3. The flushometer DOES NOT flush or flushes only once and will not flush a second time when the button is pushed.

- A. The plunger is lodged in the actuator cartridge or the plunger bypass hole is clogged. Remove actuator housing and cartridge from the flushometer. Clean under running water. If cartridge parts are worn, deteriorated or limed up and problem persists after cleaning, replace with a new HY-83-A cartridge.
- B. Plastic tubing is installed incorrectly. Install plastic tubing correctly (Blue tube/Blue fitting, Yellow tube/Yellow fitting).

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

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

#### 4. Flushometer DOES NOT function (no flush).

- A. Control stop or main valve is closed. Open control stop or main valve.
- B. Relief valve is worn. Replace performance kit (Royal) or inside parts kit (Regal XL).

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

- A. Control stop is not open wide enough. Adjust control stop for desired delivery of water volume.
- B. Urinal flushometer parts installed in a closet flushometer. Replace inside urinal flushometer parts with proper closet flushometer parts.
- C. Incorrect dual-filtered diaphragm assembly (Royal) or inside parts kit (Regal XL) is installed in flushometer; for instance, urinal assembly inside a closet flushometer, or low consumption assembly inside a higher consumption fixture. Determine the flush volume required by the fixture and replace Royal performance kit or inside parts kit. Use valve label and markings on fixture for reference.
- D. Water supply volume or pressure is inadequate. If no gauges are available to properly measure supply pressure or volume of water at the flushometer, then remove the relief valve from the dual-filtered diaphragm assembly (Royal) or inside parts kit (Regal XL), reassemble the flushometer and completely open the control stop. If the fixture siphons, more water volume is required.

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

**For Regal XL** — 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 PROHIBIT THE USE OF HIGHER FLUSHING VOLUMES THAN LISTED ON FIXTURE OR FLUSHOMETER.

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.

#### 6. Flushometer closes off immediately.

- A. Ruptured or damaged diaphragm. Replace Royal performance kit (Royal) or inside parts kit (Regal XL).
- B. **For Regal XL** — An enlarged bypass orifice from corrosion or damage. Replace inside parts kit.

#### 7. Length of flush is too short (short flush)

- A. **For Regal XL** — The diaphragm assembly and guide assembly are not hand tight. Screw the two assemblies hand tight.
- B. **For Regal XL** — An enlarged bypass orifice from corrosion or damage. Replace inside parts kit.
- C. Dual-filtered diaphragm assembly (Royal) or inside parts kit (Regal XL) is damaged. Replace Royal performance kit or inside parts kit.
- D. Incorrect dual-filtered diaphragm assembly (Royal) or inside parts kit (Regal XL) is installed in flushometer; for instance, urinal assembly inside a closet flushometer, or low consumption assembly inside a higher consumption fixture. Determine the flush volume required by the fixture and replace Royal performance kit or inside parts kit. Use valve label and markings on fixture for reference.

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**Series 900® Flushometer**

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**TROUBLESHOOTING GUIDE (CONTINUED)**

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**8. Length of flush is too long (long flush) or continuous.**

- A. **For Royal** — Metering bypass hole in diaphragm is clogged. Remove the dual-filtered diaphragm assembly. Remove the primary and secondary filter rings from the diaphragm and wash under running water. Replace Royal performance kit if cleaning does not correct the problem.
- B. **For Regal XL** — Relief valve (A-19-A) is not seating properly or bypass orifice is clogged. Disassemble the working parts and wash thoroughly.

**NOTE: SIZE OF THE ORIFICE IN THE BYPASS IS OF UTMOST IMPORTANCE FOR THE PROPER METERING OF WATER INTO THE UPPER CHAMBER OF THE FLUSHOMETER. DO NOT ENLARGE OR DAMAGE THIS ORIFICE. REPLACE INSIDE PARTS KIT IF CLEANING DOES NOT CORRECT PROBLEM.**

- C. Supply line water pressure has dropped and is not sufficient to close the valve. Close control stop until pressure is restored.
- D. Dual-filtered diaphragm assembly (Royal) or inside parts kit (Regal XL) is damaged. Replace Royal performance kit or inside parts kit.
- E. Incorrect dual-filtered diaphragm assembly (Royal) or inside parts kit (Regal XL) is installed in flushometer; for instance, urinal assembly inside a closet flushometer, or low consumption assembly inside a higher consumption fixture. Determine the flush volume required by the fixture and replace Royal performance kit or inside parts kit. Use valve label and markings on fixture for reference.
- F. White closet relief valve has been used in a urinal flushometer. Replace closet relief valve (A-19-AC) with black urinal relief valve (A-19-AU).
- G. Inside cover is cracked or damaged. Replace the inside cover (A-71).
- H. Conditions in the piping system may contribute to the noise. A degree of high pressure in the piping may be relieved by adjustments to control stop. Other noises created by loose pipes, lack of air chambers, inadequate pipe sizes, etc., are problems that must be discussed with the building engineer.

**9. Chattering noise is heard during flush.**

- A. Inside cover is damaged. Replace inside cover (A-71).
- B. **For Regal XL** — A-156-A segment diaphragm has been installed upside-down. Reposition the segment diaphragm properly (see markings on the diaphragm).

**CARE AND CLEANING INSTRUCTIONS**

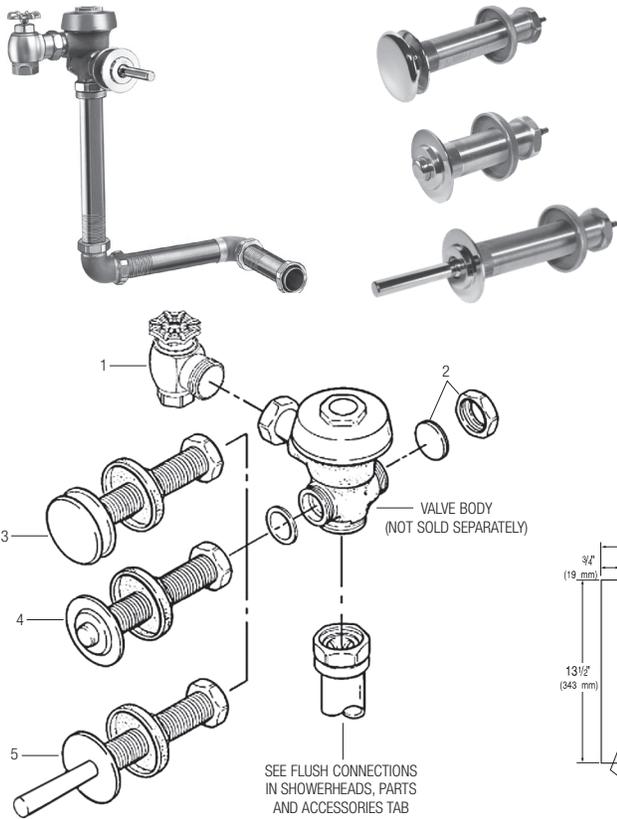
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**DO NOT USE** abrasive or chemical cleaners (including chlorine bleach) to clean flushometers that may dull the luster and attack the chrome or special decorative finishes. Use **ONLY** mild soap and water, then wipe dry with a clean towel or cloth.

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

**When assistance is required, please contact Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

## Concealed Flushometer (Royal®)

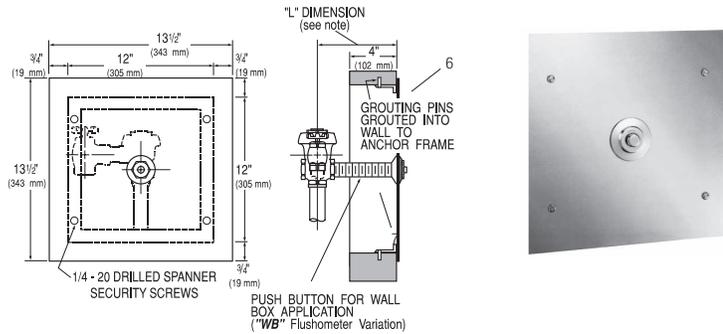


### TAILPIECES, CONTROL STOPS, FLUSH CONNECTIONS AND HANDLE ASSEMBLIES

For additional information on tailpieces, control stops, flush connections, and handle assemblies see Showerheads, Parts and Accessories Tab.

#### PARTS LIST

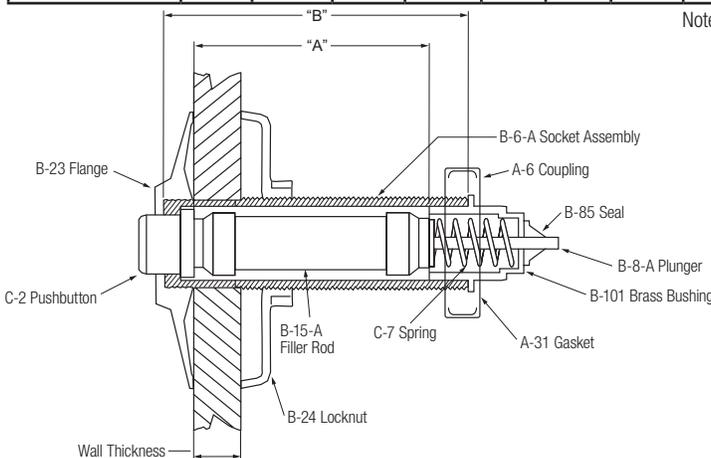
Item No.	Code No.	Part No.	Description
1.	<b>0388010</b>	H-730-A	1" RB Wheel Handle Bak-Chek® Control Stop
	<b>0388011</b>	H-730-A	3/4" RB Wheel Handle Bak-Chek® Control Stop
2.	<b>3301093</b>	A-1013-A	Concealed Valve Handle Cap Kit
<b>FOR SPECIFYING PROPER LENGTHS FOR ITEMS 3, 4 AND 5, SEE CHART BELOW</b>			
3.	—	C-43-A	3" (76 mm) Push Button Actuator Assembly
4.	—	C-9-A	Blind Nut Push Button Actuator Assembly
5.	—	B-12-A	Lever Actuator Assembly
6.	—	C-43-AWB	Wall Box Push Button Assembly
7.	—	C-9-A WB	Wall Button Push Button Actuator Assembly
8.	—	B-12-AWB	Wall Box Lever Actuator Assembly (Not Shown)



Specify the "L" dimension for the proper length of the push button assembly

"L" dimension PUSH BUTTON ID CHART (all dimensions in inches)

Wall Thickness	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
"L" Dimension	3 3/4	4 3/4	5 3/4	6 3/4	7 3/4	8 3/4	9 3/4	10 3/4	11 3/4	12 3/4	13 3/4	14 3/4	15 3/4	16 3/4	17 3/4
"A" (B-15-A) Filler Rod	1 5/8	2 5/8	3 5/8	4 5/8	5 5/8	6 5/8	7 5/8	8 5/8	9 5/8	10 5/8	11 5/8	12 5/8	13v5/8	14 5/8	15 5/8
"B" (B-6-A) Socket Assembly	2 1/2	3 1/2	4 1/2	5 1/2	6 1/2	7 1/2	8 1/2	9 1/2	10 1/2	11 1/2	12 1/2	13 1/2	14 1/2	15 1/2	16 1/2



- Notes: 1. "L" Dimension = Wall thickness (to nearest whole inch) + 2 3/4"  
 2. 1 1/2" Diameter Hole Opening Required Through Wall

## Concealed Flushometer (Royal®)

### TROUBLESHOOTING GUIDE

**ATTENTION INSTALLERS:** With the exception of the control stop inlet, **DO NOT USE** pipe sealant or plumbing grease on any valve component or coupling! To protect the chrome or special finish of Sloan flushometers, **DO NOT USE** toothed tools to install or service these valves. Use our A-50 Super Wrench or other smooth-jawed wrench to secure couplings. Regulations for low consumption fixtures (1.6 gpf/6.0 Lpf closets and 1.0 gpf/3.8 Lpf urinals) prohibit use of higher flush volumes.

#### 1. Flushometer DOES NOT function.

- Control stop or main valve is closed. Open control stop or main valve.
- Handle or push button assembly is worn. Install Sloan handle repair kit (C-70-A) or replace handle or push button.
- Relief valve is worn. Replace inside parts kit.

#### 2. Insufficient volume of water to adequately siphon fixture.

- Control stop not open enough. Adjust control stop for desired delivery of water.
- Urinal flushometer parts inside a closet flushometer. Replace inside urinal parts with proper closet flushometer Parts.
- Low consumption flushometer installed on a non-low consumption fixture. Replace A-41-A inside parts kit with A-38-A water saver kit.
- Water saver kit installed in old, non-water saver bowl. Position refill head A-170 so that SIDE 1 is in the UP position.
- 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 regulation prohibit the use of higher flushing volumes than listed on fixture or flushometer.**

    - 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.

#### 3. Flushometer closes off immediately.

- Ruptured or damaged diaphragm. Install inside parts kit to correct problem and update flushometer.
- Enlarged bypass orifice from corrosion or damage. Install inside parts kit to correct problem and update flushometer.

#### 4. Length of flush is too short (short flushing).

- Diaphragm assembly and guide assembly are not hand-tight. Screw the two assemblies hand-tight.
- Enlarged bypass orifice from corrosion or damage. Install NEW inside parts kit to correct problem and update flushometer.
- A-19-AU (Black) urinal relief valve in closet flushometer. Replace relief valve with A-19-AC (White) closet relief valve.
- A-41-A low consumption kit installed in non-low consumption fixture. Replace with proper Inside Parts Kit.
- Handle assembly is worn. Install handle repair kit (C-70-A) or replace the handle.

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

- Relief valve is not seating properly or bypass orifice is clogged because of foreign material, or bypass orifice is closed by an invisible gelatinous film from "over-treated" water. Disassemble the working parts and wash thoroughly. NOTE: SIZE OF ORIFICE IN THE BYPASS IS EXTREMELY IMPORTANT FOR 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.
- 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.
- A-19-AC (White) closet relief valve has been used in a 1.0 or 1.5 gpf urinal. Replace with A-19-AU (Black) relief valve.
- Inside cover is cracked or damaged. Replace the inside cover (A-71).

#### 6. Chattering noise in flushometer.

- 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.
- The inside cover has become distorted from wear, freezing or abuse. Replace inside cover.

#### 7. Leaking at handle or push button assembly.

- 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.
- Handle gasket has been omitted. Install A-31 handle gasket or Sloan handle repair kit (C-70-A).
- Valve handle bushing is worn. Install Sloan handle repair kit (C-70-A).

### CARE AND CLEANING INSTRUCTIONS

**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 a clean towel or cloth.

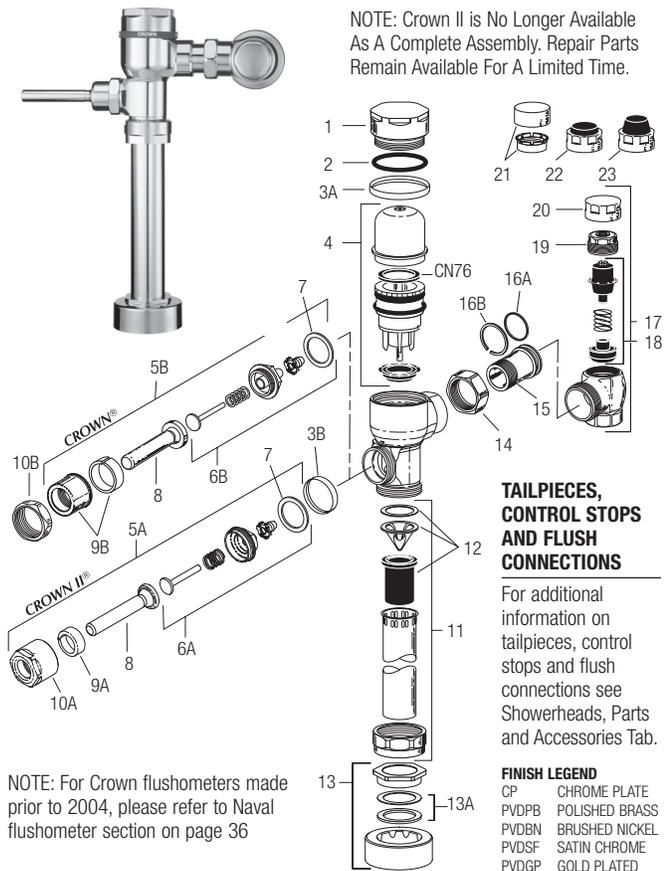
While cleaning the bathroom tile, protect the flushometer from any splattering of cleaner. Acids and cleaning fluids will discolor or remove chrome plating.

**When assistance is required, please contact**

**Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

# Crown® Flushometer

## Crown® II (DISCONTINUED)



**TAILPIECES, CONTROL STOPS AND FLUSH CONNECTIONS**

For additional information on tailpieces, control stops and flush connections see Showerheads, Parts and Accessories Tab.

**FINISH LEGEND**

CP	CHROME PLATE
PVDPB	POLISHED BRASS
PVDBN	BRUSHED NICKEL
PVDSF	SATIN CHROME
PVDGP	GOLD PLATED

NOTE: For Crown flushometers made prior to 2004, please refer to Naval flushometer section on page 36

**PARTS LIST**

Item No.	Code No.	Part No.	Description
1.	0332006	CR-116	CP Cover
2.	0332030	CR-133	Cover O-ring
3.	0332045	CR-132-A	CP Handle and Cover Trim Ring Kit (Includes items 3A & 3B) (CROWN® II ONLY)
	0332046	CR-132-A	PVDPB Handle and Cover Trim Ring Kit (Includes items 3A & 3B) (CROWN® II ONLY)
	0332048	CR-132-A	PVDBN Handle and Cover Trim Ring Kit (Includes items 3A & 3B) (CROWN® II ONLY)
	0332049	CR-132-A	PVDSF Handle and Cover Trim Ring Kit (Includes items 3A & 3B) (CROWN® II ONLY)
3A.	0332035	CR-134	Cover Trim Ring (CROWN® ONLY)
	0332009	CR-120	PVDPB Cover Trim Ring (CROWN® II ONLY) Discontinued
	0332032	CR-120	PVDGP Cover Trim Ring (CROWN® II ONLY) Discontinued
	0332033	CR-120	PVDBN Cover Trim Ring (CROWN® II ONLY) Discontinued
	0332034	CR-120	PVDSF Cover Trim Ring (CROWN® II ONLY) Discontinued
3B.	0332005	CR-113	PVDPB Handle Trim Ring (CROWN® II ONLY) Discontinued
	0332028	CR-113	PVDBN Handle Trim Ring (CROWN® II ONLY) Discontinued
	0332029	CR-113	PVDSF Handle Trim Ring (CROWN® II ONLY) Discontinued
4.	3332003	CR-1004-A	Piston Kit – 1.6 gpf (6.0 Lpf) Water Closet
	3332013	CR-1011-A	Piston Kit – 1.28 gpf (4.8 Lpf) Water Closet
	3332004	CR-1005-A	Piston Kit – 1.0 gpf (3.8 Lpf) Urinal
	3332005	CR-1006-A	Piston Kit – 0.5 gpf (1.9 Lpf) Urinal
	3332017	CR-1015-A	Piston Kit – 0.25 gpf (1.0 Lpf) Urinal
	3332016	CR-1014-A	Piston Kit – 0.125 gpf (0.5 Lpf) Urinal

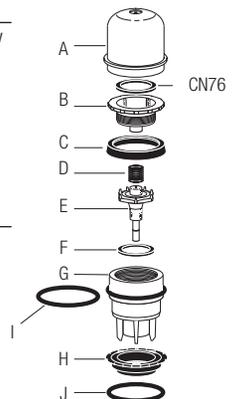
ALL PISTON KITS INCLUDE MAIN SEAT (see item 4 table to right) AND CR-124-A INSIDE COVER ASSEMBLY AS SHOWN IN ITEM 4. PISTON KIT COMPONENTS TABLE TO THE RIGHT.

Item No.	Code No.	Part No.	Description
5A.	0302353	B-30-A	ADA-Compliant Handle Assembly CP
5B.	0302390	B-73-A	ADA-Compliant Handle Assembly CP
6A.	3332006	CR-1007	Handle Repair Kit
6B.	3302306	B-51-A	Handle Repair Kit
7.	5301139	A-31	Handle Gasket – 48/pkg
8.	0302389	B-74-A	Handle Grip Sub-Assembly ADA
9A.	0302309	B-56	Sleeve
9B.	0302109	B-7-A	CP Socket Assembly
10A.	0302354	B-53	Handle Socket
10B.	0301082	A-6	CP Handle Coupling
11.	3393004	V-600-AA	3/4" x 9" (19 x 229 mm) Vacuum Breaker - 6/pkg
	3393006	V-600-AA	1-1/4" x 9" (32 x 229 mm) Vacuum Breaker - 6/pkg
	3393007	V-600-AA	1-1/2" x 9" (38 x 229 mm) Vacuum Breaker - 6/pkg
12.	3323182	V-651-A	High Back Pressure Vacuum Breaker Repair Kit
13.	3332000	CR-1008-A	3/4" (19 mm) Spud Coupling Assembly
	3332001	CR-1009-A	1-1/4" (32 mm) Spud Coupling Assembly
	3332002	CR-1010-A	1-1/2" (38 mm) Spud Coupling Assembly
13A.	<b>SEE SLIP JOINT GASKETS AND RINGS TABLE ON BOTTOM, PAGE 25</b>		
14.	0308676	H-550	Stop Coupling
15.	0308801	H-551-A	Adjustable Tailpiece (2-1/16" (52 mm) long)
16A.	5308696	H-553	O-ring – 24/pkg
16B.	5308381	H-552	Locking Ring – 12/pkg
17.	0388000	H-700-A	1" Screwdriver Bak-Chek® Stop CP
	0388001	H-700-A	3/4" Screwdriver Bak-Chek® Stop CP
18.	3308853	H-541-ASD	Control Stop Repair Kit†
	3308856	H-543-ASD	Control Stop Repair Kit† for 3/4" Stops H-600, H-640
19.	0308612	H-622	CP Bonnet †
	0308843	H-577	CP Bonnet † – DISCONTINUED
20.	3308840	H-573-A	Locking Vandal Resistant Control Stop Cap includes H-573 Stop Cap CP and H-648 Friction Ring †
	0308848	H-582	Locking Vandal Resistant Control Stop Cap CP †
21.	3308651	H-651	Vandal Resistant Control Stop Cap Assembly †
22.	3308866	H-574	Control Stop Cap w/Bumper (-YO Variation) †
23.	3308867	H-576	Control Stop Cap w/Extended Bumper (-YG Variation)†
24.	3388017	H-1017	Flow Control (HEU Only) (Not Shown)
25.	5314243	CN-76	Cover Gasket (Pack of 12)
—	0305190	EL-190-A	Handle Adapter (manual only) for Optima® version

† For use w/H-700-A 1" & 3/4" and H-600-A 1" Screwdriver Bak-Chek® Control Stops.  
‡ For use w/H-600-A 3/4" Screwdriver Bak-Chek® Control Stops.

**ITEM 4. PISTON KIT COMPONENTS**

Item	Code No.	Part No.	Description
A.	***	CR-124-A	Inside Cover Sub-Assembly
B.	***	***	Piston Cover
C.	5332095	CR-68-A	Molded Cup – 12/pkg
D.	5328019	SH-406	Spring – 12/pkg
E.	***	***	Relief Valve
F.	0307116	G-95	Relief Valve Seat
G.	***	***	Piston Body
H.	***	CR-125-A	Main Seat – 6/pkg (1.0 gpf)
	***	CR-170-A	Main Seat – 6/pkg (0.125 gpf, 0.25 gpf and 0.5 gpf)
I.	0307210	G-85	Filter O-ring
J.	0332124	CR-169	O-ring (for use with CR-125-A main seat ONLY)†
	5308958	H-589	O-ring* 6/pkg



\* Components are NOT interchangeable  
\*\*\* Indicates component is NOT available separately

# Crown® Flushometer

## Crown® II (DISCONTINUED)

### TROUBLESHOOTING GUIDE

**IMPORTANT:** The CROWN® 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.

**ATTENTION INSTALLERS:** With the exception of the control stop inlet, **DO NOT USE** pipe sealant or plumbing grease on any valve component or coupling! To protect the chrome or special finish of Sloan flushometers, **DO NOT USE** toothed tools to install or service these valves. Use our A-50 Super Wrench or other smooth-jawed wrench to secure couplings. Regulations for low consumption fixtures (1.6 gpf/6.0 Lpf closets and 1.0 gpf/3.8 Lpf urinals) prohibit use of higher flush volumes.

**1. Valve 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, or replace handle.
- C. Relief valve is worn and sticking in UP position. Replace piston.

**2. Insufficient volume of water to adequately siphon fixture.**

- A. Control stop not open enough. Adjust control stop for desired delivery of water.
- B. Urinal piston parts inside a closet valve. Replace piston parts with proper closet piston.
- C. Low consumption valve installed on a non-low consumption fixture. Replace with proper flushometer. Crown® flushometers are not available with flush volume higher than 1.6 gpf/6.0 Lpf.
- D. Inadequate volume or pressure at supply. Increase water pressure or supply (flow) to valve. Consult factory for assistance.

**3. Length of flush too short (short flushing) or valve closes off immediately.**

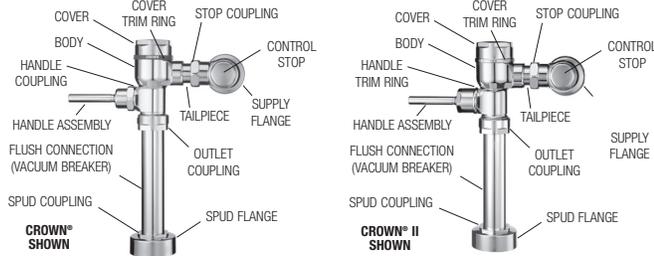
- A. Piston assembly is not hand-tight. Screw the assembly hand-tight.
- B. Enlarged bypass orifice from corrosion or damage. Install NEW inside parts kit to correct problem and update flushometer.
- C. Urinal piston in closet flushometer. Replace piston with proper closet piston.
- D. Low consumption piston installed in non-low consumption fixture. Replace with proper flushometer. Crown® flushometers are not available with flush volume higher than 1.6 gpf (6.0 Lpf).
- E. Handle assembly worn. Install Sloan handle repair kit.

**4. Length of flush too long (long flushing) or fails to close off.**

- A. Piston is not seating properly or bypass orifice is clogged because of foreign material, or bypass orifice is clogged by an invisible gelatinous film from "over-treated" water. Disassemble the working parts and wash thoroughly. NOTE: Size of the orifice in the bypass is of utmost importance for the proper metering of water into the upper chamber of the valve. DO NOT enlarge or damage this orifice. Replace piston 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. Main seat is fouled with debris or is worn. Clean or replace main seat.

**5. Leaking at handle assembly.**

- A. The B-85 seal may have deteriorated. Install new B-85 seal. NOTE: The B-85 seal will easily slide onto the bushing if it is wet.
- B. Handle gasket has been omitted. Install A-31 handle gasket or Sloan handle repair kit.
- C. Valve handle bushing is worn. Install Sloan handle repair kit.



**DISCONTINUED**

**CARE AND CLEANING**

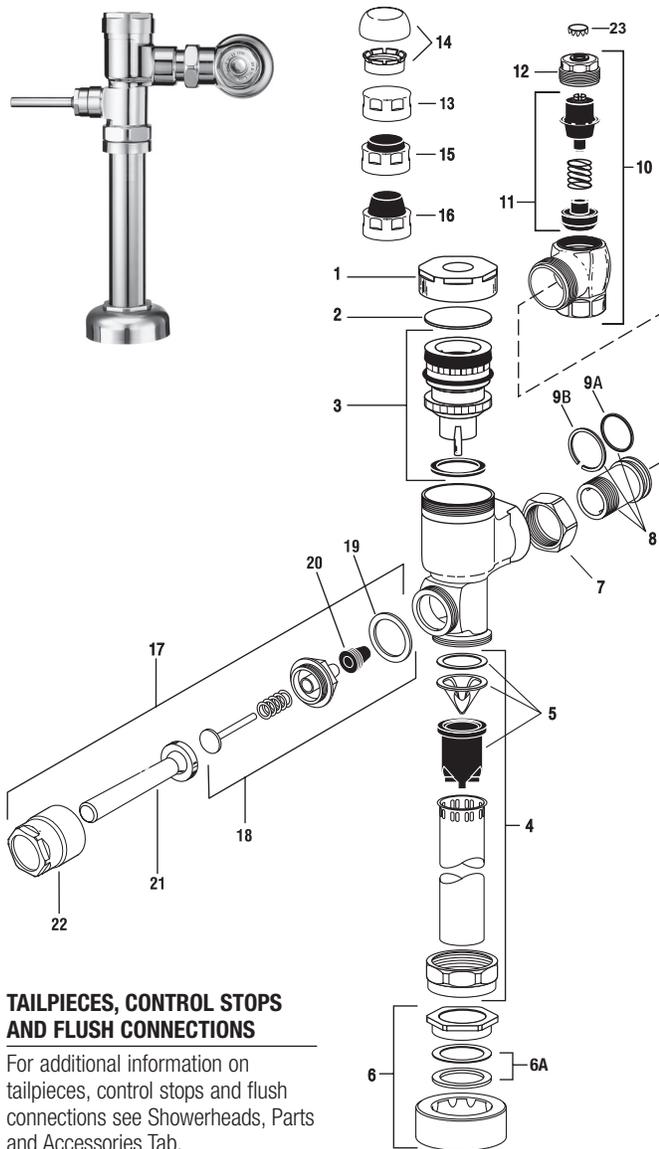
**DO NOT USE** abrasive or chemical cleaners (including chlorine bleach) to clean flushometers that may dull the luster and attack the chrome or special decorative finishes. Use **ONLY** mild soap and water, then wipe dry with clean cloth or towel.

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

Piston Identification Chart	Water Closet		Urinal			
	CR-1004-A	CR-1011-A	CR-1005-A	CR-1006-A	CR-1015-A	CR-1014-A
Piston Color	3332003	3332013	3332004	3332004	3332017	3332016
Cap Color	1.6 gpf (6.0 Lpf)	1.28 gpf (4.8 Lpf)	1.0 gpf (3.8 Lpf)	0.5 gpf (1.9 Lpf)	0.25 gpf (1.0 Lpf)	0.125 gpf (0.5 Lpf)
Stem Grooves						
Barrel (Large Ribs or Small Ribs)						
Cap Color	Green	Deep Purple	Yellow	Red	Burgundy	Pink
Piston Color	Green	Green	Clear	Burgundy	Burgundy	Burgundy
Barrel	Large Ribs	Large Ribs	Small Ribs	—	—	—
Seat Color	Green	Green	Black	Burgundy	Burgundy	Burgundy
Grooves	2	0	1	2	1	3

**When assistance is required, please contact Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

## Gem-2® Flushometer



### TAILPIECES, CONTROL STOPS AND FLUSH CONNECTIONS

For additional information on tailpieces, control stops and flush connections see Showerheads, Parts and Accessories Tab.

### ITEM 6A. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	<b>5306058</b>	F-3	Red Friction Ring
	<b>5322001</b>	VBF-5	Black Slip Joint Gasket
	<b>0319086/5319086</b>	S-30	Flexible Seat
	<b>0319079</b>	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	<b>0396062</b>	F-105	Slip Joint Gasket – Rigid
1-1/4"	<b>5306057</b>	F-3	Red Friction Ring
	<b>5322176</b>	VBF-5	Black Slip Joint Gasket
	<b>0307052/5307052</b>	G-21	Rigid Seat (rubber over brass)
1"	<b>5306056</b>	F-3	Red Friction Ring
	<b>5306115</b>	F-5	Black Slip Joint Gasket
	3/4"	<b>5306055</b>	F-3
<b>5306113</b>		F-5	Black Slip Joint Gasket

### PARTS LIST

Item No.	Code No.	Part No.	Description
1.	<b>0307142</b>	G-105	CP Cover
2.	<b>0307139</b>	G-106	Slip Disc
3.	<b>3307135</b>	G-1022-A	Piston Kit – 1.28 gpf/4.8 Lpf Water Closet
	<b>0307193</b>	G-1007-A	Piston Kit – 3.5 gpf/13.2 Lpf Water Closet
	<b>0307195</b>	G-1016-A	Piston Kit – 1.6 gpf/6 Lpf Water Closet
	<b>0307192</b>	G-1009-A	Piston Kit – 1.5 gpf/5.7 Lpf Urinal
	<b>0307185</b>	G-1017-A	Piston Kit – 1.0 gpf/3.8 Lpf Urinal
	<b>3307133</b>	G-1018-A	Piston Kit – 0.5 gpf/1.9 Lpf Urinal
	<b>3307134</b>	G-1019-A	Piston Kit – 2.4 gpf/9.0 Lpf Water Closet
	<b>3307136</b>	G-1023-A	Piston Kit – 0.125 gpf/0.5 Lpf Urinal
	<b>3307137</b>	G-1024-A	Piston Kit – 0.25 gpf/1.0 Lpf Urinal

### PISTON KITS FOR OLD STYLE ADJUSTABLE GEM FLUSHOMETERS

<b>0307043</b>	G-1003-A	Piston Kit – Water Closet
<b>0307044</b>	G-1002-A	Piston Kit – Urinal

### ALL PISTON KITS INCLUDE G-21 MAIN SEAT (See next page)

4.	<b>5323005</b>	V-500-AA	3/4" x 9" Vacuum Breaker – 6 per package
	<b>5323006</b>	V-500-AA	1-1/4" x 9" Vacuum Breaker – 6 per package
	<b>5323007</b>	V-500-AA	1-1/2" x 9" Vacuum Breaker – 6 per package
5.	<b>3323192</b>	V-551-A	Vacuum Breaker Repair Kit
6.	<b>3332002</b>	CR-1010-A	1-1/2" (38 mm) Spud Coupling
	<b>3332001</b>	CR-1009-A	1-1/4" (32 mm) Spud Coupling
	<b>3332000</b>	CR-1008-A	3/4" (19 mm) Spud Coupling
6A.	<b>SEE SLIP JOINT GASKETS AND RINGS TABLE BELOW LEFT</b>		
7.	<b>0308676</b>	H-550	Stop Coupling
8.	<b>0308801</b>	H-551-A	Adjustable Tailpiece 2-1/16" (Standard Length)
9A.	<b>5308696</b>	H-553	O-ring – 24 per package
9B.	<b>5308381</b>	H-552	Locking ring – 12 per package
10.	<b>3308876</b>	H-790-A	1" Screwdriver Bak-Chek® Stop CP – complete
	<b>3308875</b>	H-790-A	3/4" Screwdriver Bak-Chek® Stop CP – complete
11.	<b>3308853</b>	H-541-A	Control Stop Repair Kit*
	<b>3308856</b>	H-543-A	Control Stop Repair Kit**
12.	<b>0308612</b>	H-622	CP Bonnet*
	<b>0308843</b>	H-577	CP Bonnet** – DISCONTINUED
13.	<b>3308840</b>	H-573-A	Control Stop Cap**
14.	<b>3388017</b>	H-1017	Flow Control (HEU Only) (Not Shown)
15.	<b>3308866</b>	H-574	Control Stop w/Bumper (-YO Variation)*
16.	<b>3308867</b>	H-576	Control Stop w/Extended Bumper (-YG Variation)*

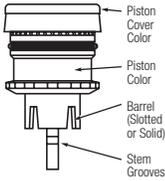
### HANDLE REPAIR KIT

17.	<b>0307100</b>	G-143	Handle Assembly
18.	<b>5307074</b>	G-50-A	Handle Repair Kit – 6 per package
19.	<b>5307065</b>	G-35	Handle Gasket – 48 per package
20.	<b>5302297</b>	B-39	Handle Seal – 12 per package
21.	<b>0307024</b>	G-145	Handle Grip
22.	<b>0307020</b>	G-144	Handle Socket
23.	<b>3308840</b>	H-528	Control Stop Plug CP* Standard on XL

\*For use with 1" and 3/4" H-700-A and 1" H-600-A Bak-Chek® screwdriver control stop

\*\*For use with 3/4" H-600-A Bak-Chek® screwdriver control stop

## Gem-2® Flushometer

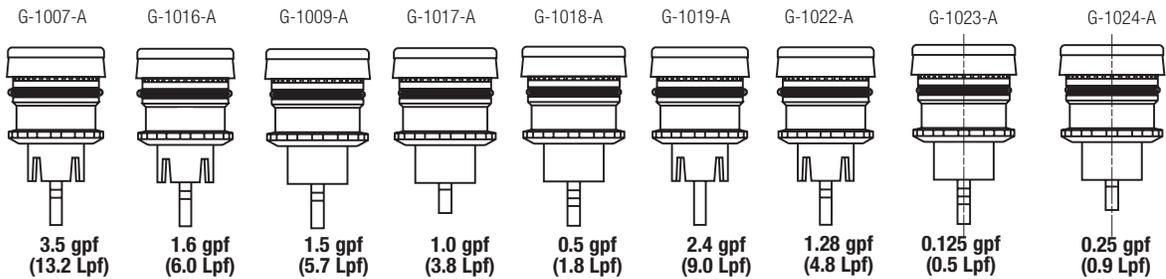


Gem-2 Pistons can be identified by the color, shape and marking of the above components.

### ITEM 3. PISTON KITS

Code No.	Part No.	Description	Cover Color	Piston Color	Barrel	Grooves
<b>0307193</b>	G-1007-A	3.5 gpf (13.2 Lpf) – Water Closet	White	Gray	Slotted	2
<b>0307195</b>	G-1016-A	1.6 gpf (6.0 Lpf) – Water Closet	Green	Green*	Slotted	2
<b>0307192</b>	G-1009-A	1.5 gpf (5.7 Lpf) – Urinal	Black	Black	Solid	2
<b>0307185</b>	G-1017-A	1.0 gpf (3.8 Lpf) – Urinal	Yellow	Black	Solid	1
<b>3307133</b>	G-1018-A	0.5 gpf (1.8 Lpf) – Urinal	Red	Black	Solid	3
<b>3307134</b>	G-1019-A	2.4 gpf (9.0 Lpf) – Water Closet	Blue	Gray	Slotted	0
<b>3307135</b>	G-1022-A	1.28 gpf (4.8 Lpf) – Water Closet	Deep Purple	Tan*	Slotted	2
<b>3307136</b>	G-1023-A	0.125 gpf (0.5 Lpf) – Urinal	Pink	Burgundy	Solid	3
<b>3307137</b>	G-1024-A	0.25 gpf (0.9 Lpf) – Urinal	Burgundy	Burgundy	Solid	1

\*Prior to February 2020 piston body color was black



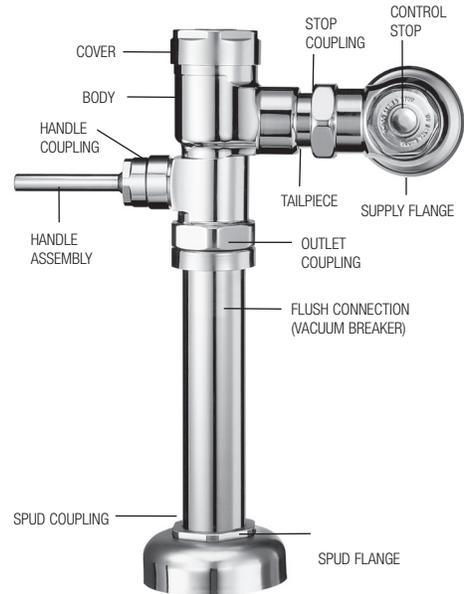
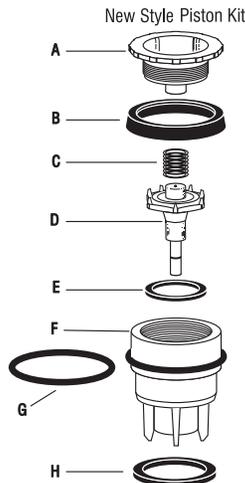
### ITEM 3. PISTON COMPONENTS

Item	Code No.	Part No.	Description
A.	***	***	Piston Cover
B.	<b>5307106</b>	G-78	Molded Cup – 12 per package
C.	<b>0307130</b>	G-102	Spring
D.	***	***	Relief Valve
E.	<b>0307116</b>	G-95	Relief Valve Seat
F.	***	***	Piston Body
G.	<b>0307210</b>	G-85	Filter O-ring
H.	<b>5307052</b>	G-21	Main Seat – 6 per package

### REPAIR KIT

Code No.	Part No.	Description
<b>3307128</b>	G-1011-A	Repair Kit includes Items: 2, B, C, E, G & H

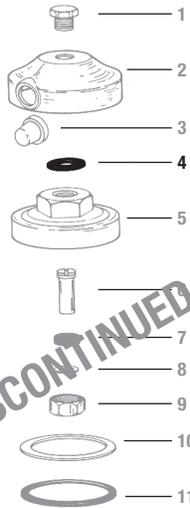
For old style adjustable GEM flushometers use kit: G-1005-A  
 \*\*\* Indicates component is NOT available separately



## Gem-2® Flushometer

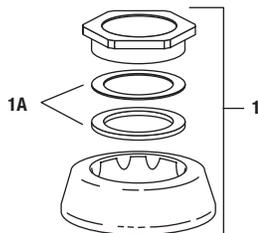
### REPAIR PARTS FOR OLD STYLE GEM FLUSHOMETERS (PRE-1985) Adjustable Cover

Item No.	Code No.	Part No.	Description
1.	—	G-24	CP Cover Screw – <b>DISCONTINUED</b>
2.	—	G-23	CP Cover – <b>DISCONTINUED</b>
	—	G-26	CP Cover for Bumper – <b>DISCONTINUED</b>
3.	—	G-27	Bumper (12 per package) – <b>DISCONTINUED</b>
4.	<b>0307058</b>	G-25	Cover Gasket (12 per package)
5.	—	G-4	RB Inside Cover – <b>DISCONTINUED</b>
6.	—	G-6	RB Regular Screw – <b>DISCONTINUED</b>
7.	—	S-26	Packing <b>DISCONTINUED</b>
8.	—	S-24	Packing Disc <b>DISCONTINUED</b>
9.	—	G-10	RB Packing Nut – <b>DISCONTINUED</b>
10.	—	G-65	Gasket – <b>DISCONTINUED</b>
11.	—	G-5	Gasket <b>DISCONTINUED</b>



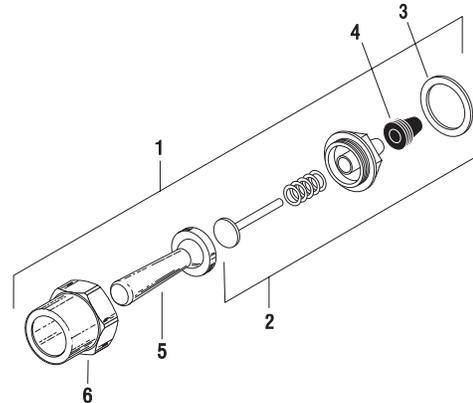
### SPUD COUPLING FOR OLD STYLE GEM FLUSHOMETERS (PRE-MAY, 2003)

Item No.	Code No.	Part No.	Description
1.	<b>0306125</b>	F-5-A	3/4" Spud Coupling
	<b>0305140</b>	F-5-A	1-1/4" Spud Coupling
	<b>0306146</b>	F-5-A	1-1/2" Spud Coupling
1A.	<b>SEE SLIP JOINT GASKETS AND RINGS TABLE ON BOTTOM, PAGE 37</b>		



### HANDLE ASSEMBLY FOR OLD STYLE GEM FLUSHOMETERS (PRE-MAY, 2003)

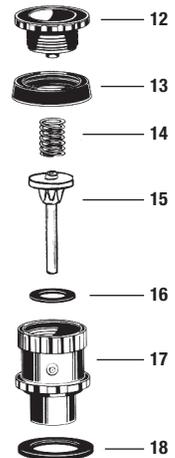
Item No.	Code No.	Part No.	Description
1.	<b>0307100</b>	G-143-A	Handle Assembly – 6 per package
2.	<b>5307074</b>	G-50-A	Handle Repair Kit – 6 per package
3.	<b>5307065</b>	G-35	Handle Gasket – 48 per package
4.	<b>5302297</b>	B-39	Handle Seal – (12 per package)
5.	G-36		Handle Grip
6.	G-28		Handle Socket



### REPAIR PARTS FOR OLD STYLE PISTON

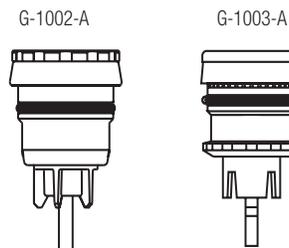
Item No.	Code No.	Part No.	Description
12.	<b>0307105</b>	G-77	Piston Cover
13.	<b>0307106</b>	G-78	Molded Cup*
14.	<b>0307113</b>	G-84	Spring
15.	<b>0307110</b>	B-81-A	Relief Valve
16.	<b>0307112</b>	G-83	Relief Valve Seat
17.	—	G-75	Closet Piston Body
	—	G-76	Urinal Piston Body
18.	<b>0307052</b>	G-21	Main Seat

\* In addition must replace w/ G105 & G-106



### PISTON KITS FOR OLD STYLE ADJUSTABLE GEM VALVES

Code No.	Part No.	Description	Piston Color	Barrel	Grooves
<b>0307044</b>	G-1002-A	Urinal	Black	Solid	0
<b>0307043</b>	G-1003-A	Water Closet	Black	Slotted	0



## Gem-2® Flushometer

### TROUBLESHOOTING GUIDE

**IMPORTANT:** The GEM 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.

**ATTENTION INSTALLERS:** With the exception of the control stop inlet, **DO NOT USE** pipe sealant or plumbing grease on any valve component or coupling! To protect the chrome or special finish of Sloan flushometers, **DO NOT USE** toothed tools to install or service these valves. Use our A-50 Super Wrench or other smooth-jawed wrench to secure couplings. Regulations for low consumption fixtures (1.6 gpf/6.0 Lpf closets and 1.0 gpf/3.8 Lpf urinals) prohibit use of higher flush volumes.

#### 1. Valve DOES NOT function.

- A. Control stop or main valve is closed. Open control stop or main valve.
- B. Handle assembly is worn. Install handle repair kit G-50-A or replace handle.
- C. Relief valve is worn and sticking in UP position. Replace piston.

#### 2. Insufficient volume of water to adequately siphon fixture.

- A. Control stop not open enough. Adjust control stop for desired delivery of water.
- B. Urinal piston parts inside a closet valve. Replace piston parts with proper closet piston.
- C. Low consumption valve installed on a non-low consumption fixture. Replace with proper piston kit.
- D. Inadequate volume or pressure at supply. Increase water pressure or supply (flow) to valve. Consult factory for assistance.

#### 3. Length of flush too short (short flushing) or valve closes off immediately.

- A. Piston assembly is not hand-tight. Screw the assembly hand-tight.
- B. Enlarged bypass orifice from corrosion or damage. Install NEW inside parts kit to correct problem and update flushometer.
- C. Urinal piston in closet flushometer. Replace piston with proper closet piston.
- D. Low consumption piston installed in non-low consumption fixture. Replace with proper piston kit.
- E. Handle assembly worn. Install handle repair kit G-50-A.

#### 4. Length of flush too long (long flushing) or fails to close off.

- A. Piston is not seating properly or bypass orifice is clogged because of foreign material, or bypass orifice is clogged by an invisible gelatinous film from "over-treated" water. Disassemble the working parts and wash thoroughly. **NOTE:** Size of the orifice in the bypass is of utmost importance for the proper metering of water into the upper chamber of the valve. **DO NOT** enlarge or damage this orifice. Replace piston 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. 3.5 gpf closet piston has been used in a 1.0 or 1.5 gpf urinal or on a 1.6 gpf toilet. Replace with proper piston.
- D. G-21 main seat is fouled with debris or is worn. Clean or replace main seat.

#### 5. Leaking at handle assembly.

- A. The B-39 seal may have deteriorated. Install new B-39 seal. **NOTE:** The seal will easily slide right onto the bushing if it is wet.
- B. Handle gasket is missing. Install G-35 handle gasket or Sloan handle repair kit G-50-A.
- C. Valve handle bushing is worn. Install Sloan handle repair kit G-50-A.

### CARE AND CLEANING

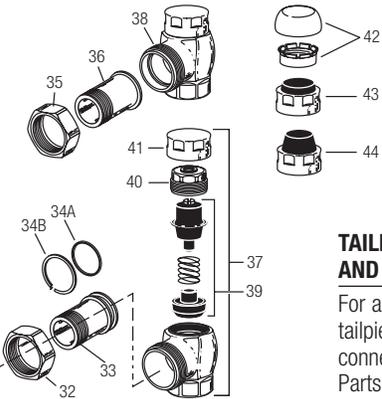
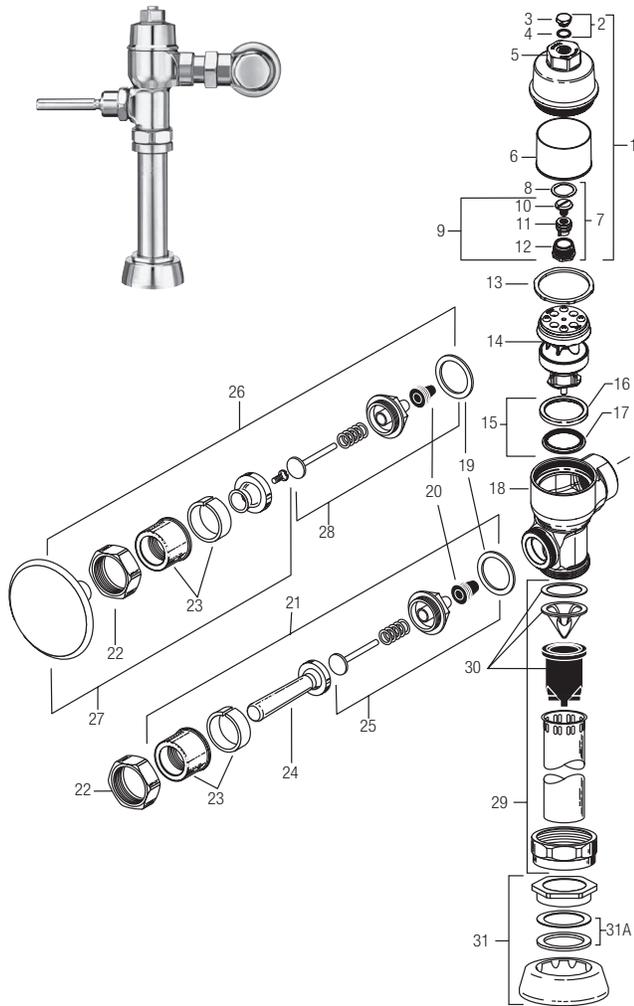
**DO NOT USE** abrasive or chemical cleaners to clean flushometers as they may dull the luster and attack the chrome or special decorative finishes. Use **ONLY** mild soap and water, then wipe dry with clean cloth or towel.

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.

**When assistance is required, please contact  
Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

# Naval® Flushometer

Also for use with Crown® (Old style),  
Star and Marine



### TAILPIECES, CONTROL STOPS, AND FLUSH CONNECTION'S

For additional information on tailpieces, control stops and flush connections see Showerhead's, Parts and Accessories Tab.

### PARTS LIST

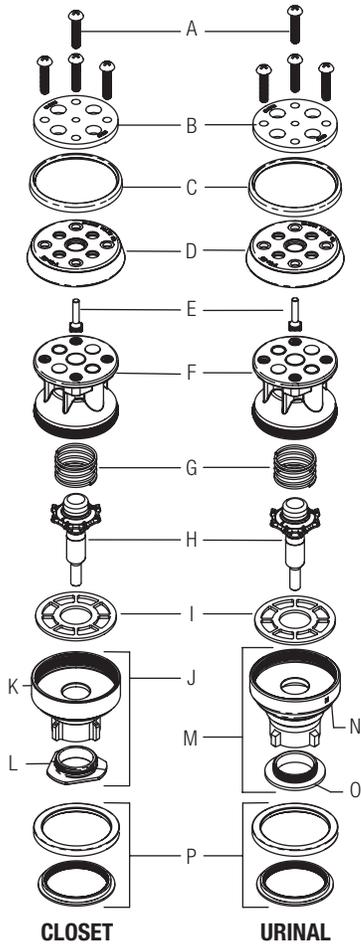
Item No.	Code No.	Part No.	Description
1.	0314229	CN-86-A	Cover Assembly CP
	0314310	CN-89-A	Cover Assembly CP One Pint* 1.6 gpf/6.0 Lpf, 1.0 gpf/3.8 Lpf
2.	5314010	CN-1007-A	Cap Screw Repair Kit – 6 per package
3.	0314208	CN-36	Cover Screw CP
4.	0314209	CN-30	Cover Screw Gasket
5.	0314304	CN-84	Cover
6.	0214019	CN-55	Cover Liner
7.	3314015	CN-1008-A	Regulating Screw Repair Kit**
8.	0314303	CN-81	Volume Adjustment Gasket
9.	0314315	CN-88-A	Low Consumption Volume Adjustment Sleeve Sub-Assembly 1.6 gpf/6.0 Lpf, 1.0 gpf/3.8 Lpf
10.	0314302	CN-80	Volume Adjustment Screw
11.	0314300	CN-78	Volume Adjustment Sleeve
	0314307	CN-87	Volume Adjustment Sleeve One Pint***
12.	0314301	CN-79	Volume Adjustment Housing
13.	5314243	CN-76	Cover Gasket – 12 per package
	0314016	CN-1002-A	Piston – Closet
	0314017	CN-1003-A	Piston – Urinal
15.	0314234	CN-21-A	Main Seat Assembly
16.	0314224	CN-111-A	Main Seat
	0314220	CN-113	Main Seat Ring
18.	0314020	CN-3	Body CP (Not sold separately)
19.	5301139	A-31	Handle Gasket – 48 per package

Item No.	Code No.	Part No.	Description
20.	5302297	B-39	Handle Seal – 12 per package
21.	0302390	B-73-A	Triple Seal Handicap Handle Assembly (ADA Compliant)
22.	0301082	A-6	Handle Coupling CP
23.	0302109	B-7-A	Socket Assembly CP
24.	0302389	B-74-A	Handicap Handle Grip CP (ADA Compliant)
25.	3302306	B-51-A	Triple Seal Handle Repair Kit – 1 per package
26.	0303351	C-42-A	3" Push Button Assembly CP
27.	3303347	C-1000-A	3" Push Button Replacement Kit
28.	3303396	C-64-A	3" Push Button Repair Kit
29.	5323005	V-500-AA	3/4" x 9" Vacuum Breaker
	5323006	V-500-AA	1-1/4" x 9" Vacuum Breaker
	5323007	V-500-AA	1-1/2" x 9" Vacuum Breaker
30.	3323192	V-551-A	Vacuum Breaker Repair Kit
31.	0306125	F-5-AW	3/4" Spud Coupling CP
	0306140	F-5-AU	1-1/4" Spud Coupling CP
	0306146	F-5-AT	1-1/2" Spud Coupling CP
31A.	<b>SEE SLIP JOINT GASKETS AND RINGS TABLE ON BOTTOM, PAGE 42</b>		
32.	0308676	H-550	Stop Coupling CP
33.	0314289	NH-551-A	Adjustable Tailpiece 2-1/16" CP
34A.	5308696	H-553	O-ring – 24 per package
34B.	5308381	H-552	Locking ring – 12 per package
35.	0308063	H-6	Ground Joint Stop Coupling CP
36.	0314028	NH-5	Ground Joint Tailpiece 1-5/8"
37.	0388022	H-710-A	1" Adjustable Tailpiece SD Bak-Chek® Control Stop CP
	0388025	H-710-A	3/4" Adjustable Tailpiece SD Bak-Chek® Control Stop CP
38.	0388024	H-710-AG	1" Ground Joint Screwdriver Bak-Chek® Control Stop CP
	0388026	H-710-AG	3/4" Ground Joint Screwdriver Bak-Chek® Control Stop CP
39.	3308853	H-541-A	Control Stop Repair Kit †
	3308856	H-543-A	Control Stop Repair Kit †
40.	0308612	H-622	Bonnet CP †
	0308843	H-577	Bonnet CP † – <b>DISCONTINUED</b>
41.	0308840	H-573	Control Stop Cap CP †
	0308848	H-582	Control Stop Cap CP †
42.	0308772	H-1010-A	Vandal Resistant Stop Cap Assembly †
	3308790	H-1009-A	Vandal Resistant Stop Cap Assembly †
43.	3308866	H-574	Control Stop Cap with Bumper †
44.	3308867	H-576	Control Stop Cap with Extended Bumper†

\* Use CN-89-A Cover Assembly One-Pint for reduced flush volumes 1.6 gpf/6.0 Lpf, 1.0 gpf/3.8 Lpf  
 \*\* CN-1008-A Regulating Screw Repair Kit contains the parts shown plus the parts for old style adjusting screw as currently shown on the repair guide (CN-24, CN-25, CN-26, CN-61)  
 \*\*\*Use CN-87 Volume Adjustment Sleeve One-Pint for reduced flush volumes  
 † For use with 1" and 3/4" H-740-A-CP (less cap) and 1" H-540-A-CP (w/H-37 cap) Bak-Chek® screwdriver control stops  
 ‡ For use with 3/4" H-740-A-CP Bak-Chek® screwdriver control stops

# Naval® Flushometer

Also for use with Crown® (Old style),  
Star and Marine



### NAVAL PISTON COMPONENTS (Items 14 thru 17 on previous page)

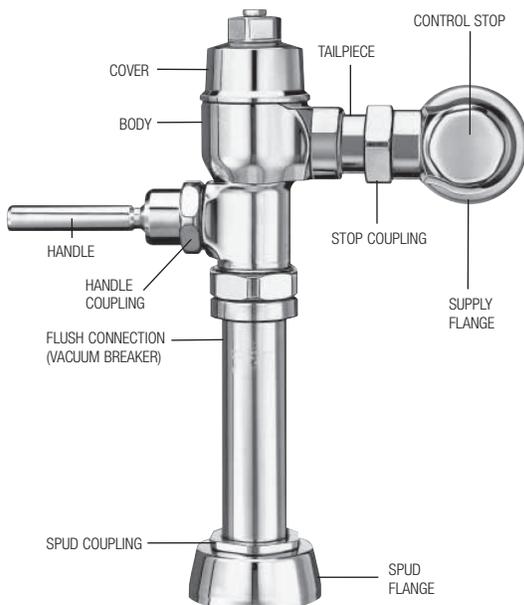
Item	Code No.	Part No.	Description
A.	<b>0314200</b>	CN-17	Top Plate Screws – 24 per package
B.	<b>0314082</b>	CN-15	Top Plate
	<b>0314179</b>	CN-15-A	Top Plate – Shower Valve only
C.	<b>0314314</b>	CN-92	Support Cup Lip Seal
D.	<b>5314188</b>	CN-68-A	Single Lip Cup – 12 per package
E.	<b>0314204</b>	CN-57	Xpelor
F.	<b>0314228</b>	CN-160	Piston Body
G.	<b>5328019</b>	SH-406	Spring – 12 per package (Replaces S/CN-58 Safety Bar)
H.	<b>0314078</b>	CN-18-A	Relief Valve
I.	<b>5314226</b>	CN-120	Relief Valve Seat – 12 per package
J.	<b>0314240</b>	CN-123-AC	Guide Assembly – Closet
K.	<b>0314231</b>	CN-23	Guide – Closet
L.	<b>0314237</b>	CN-144	Restriction Ring – Closet
M.	<b>0314242</b>	CN-123-AU	Guide Assembly – Urinal
N.	<b>0314189</b>	CN-43	RC Guide – Urinal
O.	—	CN-45	NK Restriction Ring – Urinal
P.	<b>0314234</b>	CN-21-A	Main Seat
	<b>0314223</b>	CN-121-A	Main Seat – Shower Valve only

NOTE: Naval® pistons can be used to replace pistons in older Crown® and Star flushometers.

### REPAIR KITS

Code No.	Part No.	Description
<b>0314016</b>	CN-1002-A	Piston with Main Seat – Closet
<b>0314017</b>	CN-1003-A	Piston with Main Seat – Urinal
<b>5314094</b>	CN-1004-A	Piston Rebuild Kit – Closet & Urinal – 6 per package includes: 13, A, B, C, D, E, I, K, Cap Screw Gasket & Regulating Screw Packing
<b>5314184</b>	CN-1006-A	Piston Rebuild Kit – Shower – 6 per package includes: 13, A, B, C, D, E, I, K, Cap Screw Gasket & Regulating Screw Packing
<b>5314184</b>	CN-1008-A	Regulating Screw Repair Kit – includes: 2, 8, 9, CN-24 Packing Disc, CN-25 Packing Gland, CN-26 Packing Regulating Screw, CN-61 Screw Regulating Stable Piston
<b>0314191</b>	CN-1009-A	Piston with Main Seat – Shower
<b>5314050</b>	CN-1010-A	Crown®/Naval® Valve Washer Set – 6 per package includes: 13, 19, 20, C, D, I, K, Cap Screw Gasket & Regulating Screw Packing
<b>5319049</b>	S-14-AA	Double Cup Repair Kit (Old style Crown, Star and Marine)
<b>5319046</b>	S-14-A	Double Cup Lip Seal only (Old style Crown, Star and Marine)

NOTE: Older Crown® pistons need S-14-A W/CN-1002, 1003 & 1009 if replacing piston.



### ITEM 31A. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	<b>5306058</b>	F-3	Red Friction Ring
	<b>5322001</b>	VBF-5	Black Slip Joint Gasket
	<b>0319086/5319086</b>	S-30	Flexible Seat
	<b>0319079</b>	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	<b>0396062</b>	F-105	Slip Joint Gasket – Rigid
1-1/4"	<b>5306057</b>	F-3	Red Friction Ring
	<b>5322176</b>	VBF-5	Black Slip Joint Gasket
	<b>0307052/5307052</b>	G-21	Rigid Seat (rubber over brass)
1"	<b>5306056</b>	F-3	Red Friction Ring
	<b>5306115</b>	F-5	Black Slip Joint Gasket
3/4"	<b>5306055</b>	F-3	Red Friction Ring
	<b>5306113</b>	F-5	Black Slip Joint Gasket

## Naval® Flushometer

Also for use with Crown® (Old style),  
Star and Marine

### TROUBLESHOOTING GUIDE

**IMPORTANT:** The NAVAL® 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.

**ATTENTION INSTALLERS:** With the exception of the control stop inlet, DO NOT USE pipe sealant or plumbing grease on any valve component or coupling! To protect the chrome or special finish of Sloan flushometers, DO NOT USE toothed tools to install or service these valves. Use our A-50 Super-Wrench™ or other smooth-jawed wrench to secure couplings. Regulations for low consumption fixtures (1.6 gpf/6.0 Lpf closets and 1.0 gpf/3.8 Lpf urinals) prohibit use of higher flush volumes.

**NOTE:** In all piston variations the SH-406 spring has replaced the "U" bar. In all piston variations the CN-68-A single lip cup has replaced the S-14-A double lip cup. When rebuilding a piston, install the CN-68-A single lip cup with the cup facing down.

#### 1. Valve DOES NOT function.

- Control stop or main valve closed. Open control stop or main valve.
- Handle assembly is worn. Install handle repair kit B-51-A or replace handle.

#### 2. Insufficient volume of water to adequately siphon fixture.

- Control stop not open enough. Adjust control stop for desired delivery of water.
- Urinal or shower piston installed in a closet valve or older blow out urinal. Replace piston with proper closet piston (see item 4).
- Regulating screw (on top of valve) not at proper setting. Turn regulating screw counterclockwise to increase flush. Adjustment range: urinal – 0.5 to 3 gpf (1.9 to 11.4 Lpf); closet – 1.5 to 7 gpf (5.7 to 26.5 Lpf).
- Piston worn out. Repair or replace piston.
- Inadequate volume or pressure at supply. If no gauges are available to properly measure supply pressure or volume of water at the valve, then completely remove the entire piston from the valve, reassemble cover and open control stop to allow water to pass through empty valve. If the supply is adequate to siphon the fixture, remove the flow ring from the bottom of the piston to provide additional flow. If the supply is not adequate to siphon the fixture, steps should be taken to increase the pressure and/or supply.

#### 3. Length of flush too short (short flushing) or valve closes off immediately.

- Regulating screw not at a proper setting. Turn regulating screw counterclockwise to lengthen flush.
- Water passing by damaged or worn piston cup. Repair or replace piston.
- Loose piston assembly or loose top plate screw. Tighten top plate screws. Screw piston body and guide together (hand tighten ONLY – rubber relief valve seat will distort if screwed too tight).
- Damaged or worn piston top plate or expelor. Repair or replace piston.
- Urinal or shower piston installed in a closet valve or older blow out urinal. Replace piston with closet piston CN-1002-A.

#### 4. Length of flush too long (long flushing) or fails to close off.

- Regulating screw not at proper setting. Turn regulating screw clockwise to shorten flush.
- Relief valve in piston is not seating properly due to wear or debris. Disassemble piston assembly and wash under running water. Repair or replace piston if necessary.
- Bypass holes in piston or top plate clogged or fouled with debris. Disassemble piston assembly and wash under running water. Repair or replace piston if necessary.
- Closet piston installed in urinal valve. Replace piston with urinal piston CN-1003-A.
- Line water pressure has dropped and is not sufficient to force relief valve to seat. Shut off control stop until pressure has been restored, then reopen stop.

#### 5. Water splashes from fixture.

- Supply volume is more than necessary. Adjust control stop to meet flow rate required for proper cleansing of fixture.
- Lime or mineral accumulation on fixture vortex or spreader holes. Remove lime or mineral build-up in fixture.

#### 6. Flush is not considered "quiet" or makes noise at close off.

- Control stop not properly adjusted. Adjust control stop to meet flow rate required for proper cleansing of the fixture.
- Worn, damaged or loose main seat. Replace main seat.
- Worn piston. Repair or replace piston.

#### 7. Leaking at handle assembly.

- The B-39 handle seal may be deteriorated. Install new B-39 handle seal. NOTE: The B-39 seal will easily slide right onto the bushing if it is wet.
- Handle gasket has been omitted. Install A-31 handle gasket or handle repair kit B-51-A.
- Valve handle bushing is worn. Install handle repair kit B-51-A.

### CARE AND CLEANING INSTRUCTIONS

**DO NOT USE** abrasive or chemical cleaners 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 can discolor or remove chrome plating.

#### When assistance is required, please contact

**Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

**TruFlush Flushometer**

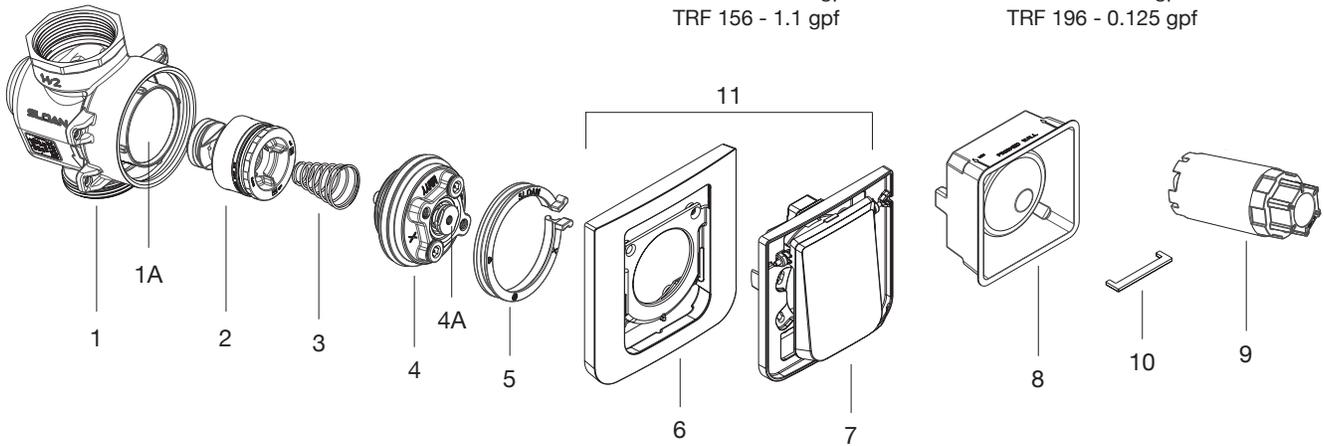
**Not available in USA or Canada**

**Manual Closet Flushometers**

- TRF 156 - 1.6 gpf
- TRF 156 - 1.28 gpf
- TRF 156 - 1.1 gpf

**Manual Urinal Flushometers**

- TRF 196 - 0.5 gpf
- TRF 196 - 0.25 gpf
- TRF 196 - 0.125 gpf



PARTS LIST			
Item No.	Code No.	Part No.	Description
1.	—	—	Valve Assembly
1A.	<b>0340085</b>	GBL-66-A	Shut Off Sleeve (with O-Ring)
2.	<b>See table to the right</b>		Piston Assembly with Spring
3.	—	—	Conical Spring*
4.	<b>See table on next page</b>		Activation Assembly
4A.	<b>3340018</b>	GBL-1018-A	Plunger Assembly
5.	<b>3340011</b>	GBL-1011-A	Safety Collar
6.	—	—	TRF Manual Finished Wall Plate, CP
7.	—	—	TRF Manual Wall Bracket with Button Assembly
8.	<b>33400034</b>	GBL-1061-A	Replacement Kit, Mud Guard Manual (4 Pack)
9.	<b>3340012</b>	GBL-1012-A	Activation Assembly Tool
10.	<b>0340094</b>	GBL-75	Depth Guide Tool
11.	—	GBL-200-A	TRF Manual Wall Bracket and Button Assembly Includes items 6 & 7.

\* Included with Piston Assembly. † Consult factory for finish options.

ITEM NO. 2 - MANUAL PISTON ASSEMBLY SELECTION GUIDE			
Code No.	Part No.	Description	Piston Color*
<b>3340024</b>	GBL-1024-A	1.6 gpf/6.0 Lpf Closet Piston Assembly (Washdown)	Orange
<b>3340005</b>	GBL-1005-A	1.6 gpf/6.0 Lpf Closet Piston Assembly	Green
<b>3340006</b>	GBL-1006-A	1.28 gpf/4.8 Lpf Closet Piston Assembly	Purple/Black
<b>33400064</b>	GBL-1089-A	1.1 gpf/4.2 Lpf Closet Piston Assembly	Grey/Black
<b>3340007</b>	GBL-1007-A	0.5 gpf/1.9 Lpf Urinal Piston Assembly	Red
<b>3340008</b>	GBL-1008-A	0.25 gpf/1.0 Lpf Urinal Piston Assembly	Burgundy
<b>3340009</b>	GBL-1009-A	0.125 gpf/0.48 Lpf Urinal Piston Assembly	Pink

\* Colors may differ. Consult factory to confirm you have the correct Piston Assembly.



**TRUFLUSH MANUAL PISTON**  
SEE CHART BELOW FOR MORE

**ITEM NO. 2 - MANUAL PISTON IDENTIFICATION CHART**

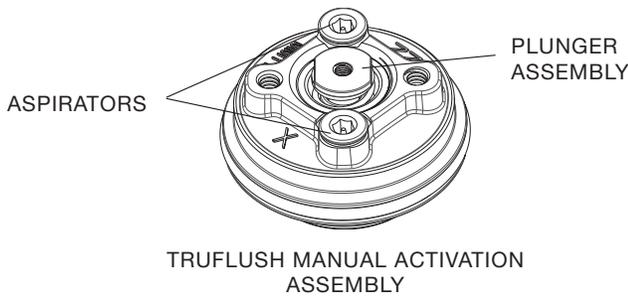
<b>Flush Volume</b>	1.6 gpf WD (India) Water Closet	1.6 gpf Water Closet	1.28 gpf Water Closet	1.1 gpf Water Closet	0.5 gpf Urinal	0.25 gpf Urinal	0.125 gpf Urinal
<b>Piston Body</b>	Orange with Screen	Green with Screen	Purple with Screen	Grey with Screen	Red with Screen	Burgundy with Screen	Pink with Screen
<b>Flow Control</b>	Orange	Green	Black Cage	Black Cage	Red	Burgundy	Pink
<b>Part Number</b>	GBL-1024-A	GBL-1005-A	GBL-1006-A	GBL-1089-A	GBL-1007-A	GBL-1008-A	GBL-1009-A
<b>Code Number</b>	<b>3340024</b>	<b>3340005</b>	<b>3340006</b>	<b>33400064</b>	<b>3340007</b>	<b>3340008</b>	<b>3340009</b>

<b>ITEM NO. 4 - MANUAL ACTIVATION ASSEMBLY SELECTION GUIDE</b>			
<b>Code No.</b>	<b>Part No.</b>	<b>Description</b>	<b>Aspirator Retainer Color*</b>
3340026	GBL-1026-A	1.6 gpf/6.0 Lpf Closet Activation Assembly (Washdown)	Orange
3340000	GBL-1000-A	1.6 gpf/6.0 Lpf Closet Activation Assembly	Green
3340001	GBL-1001-A	1.28 gpf/4.8 Lpf Closet Activation Assembly	Purple
3340063	GBL-1093-A	1.1 gpf/4.2 Lpf Closet Activation Assembly	Grey/Black
3340002	GBL-1002-A	0.5 gpf/1.9 Lpf Urinal Activation Assembly	Red
3340003	GBL-1003-A	0.25 gpf/1.0 Lpf Urinal Activation Assembly	Burgundy
3340004	GBL-1004-A	0.125 gpf/0.48 Lpf Urinal Activation Assembly	Pink

<b>ASPIRATOR SELECTION GUIDE</b>			
<b>Code No.</b>	<b>Part No.</b>	<b>Description</b>	<b>Aspirator Retainer Color*</b>
3340032	GBL-1032-A	1.6 gpf/6.0 Lpf Closet Aspirator Assembly (Washdown)	Orange
3340028	GBL-1028-A	1.6 gpf/6.0 Lpf Closet Aspirator Assembly	Green
3340030	GBL-1030-A	1.28 gpf/4.8 Lpf Closet Aspirator Assembly	Purple
3340058	GBL-1095-A	1.1 gpf/4.2 Lpf Closet Aspirator Assembly	Grey
3340031	GBL-1031-A	0.5 gpf/1.9 Lpf Urinal Aspirator Assembly	Red
3340029	GBL-1029-A	0.25 gpf/1.0 Lpf Urinal Aspirator Assembly	Burgundy
3340042	GBL-1033-A	0.125 gpf/0.48 Lpf Urinal Aspirator Assembly	Pink

\* Colors may differ. Consult factory to confirm you have the correct Aspirator.



**IMPORTANT NOTE FOR 1.1 GPF FLUSHOMETERS & REPLACEMENT KITS**

Sloan 1.1 gpf/4.2 Lpf ultra-high efficiency flushometers meets all applicable standards and requirements. However, with low flush volumes it is imperative that they only be used in conjunction with toilet fixtures and drain line systems designed to operate with adequate flow rates and volumes in order to effectively eliminate waste and move it out of the building. It is the responsibility of the user to ensure both of these conditions are met. Not doing so may void your warranty.

Sloan 1.1 gpf diaphragm and piston kits are designed as a replacement part for Sloan 1.1 gpf/4.2 Lpf flushometers only. They are not intended to be used as a means to reduce water consumption in flushometers with higher flush volumes such as 1.28 gpf/4.8 Lpf or 1.6 gpf/6.0 Lpf or higher. Using this kit in any manner other than with a Sloan 1.1 gpf flushometer may void your warranty.

## TROUBLESHOOTING GUIDE

### 1. Flushometer Does Not Function (No Water/Flush).

- A. Ensure water supply to Valve is turned on.
- B. Shut Off Sleeve is in closed position. Turn counter-clockwise to open water flow. **Note:** there is approximately 1/8-turn (45°) of free spinning as the Activation Assembly engages the Shut Off Sleeve between opening and closing the Valve.
- C. Plunger screw is not adjusted properly. Adjust screw using depth guide tool.

### 2. Volume Of Water Is Not Sufficient To Evacuate The Bowl.

- A. Plunger screw is not adjusted properly (short button engagement of plunger). Adjust screw using depth guide tool.
- B. Insufficient flow pressure. Readjust Activation Assembly by turning counter-clockwise to increase flow pressure.
- C. Water supply pressure is inadequate (low). Increase the water supply pressure. Contact the fixture manufacturer for minimum water supply requirements of the fixture.
- D. Wrong model installed; i.e., 0.5 gpf/1.9 Lpf urinal installed on a 1.6 gpf/6.0 Lpf closet fixture. Replace with proper model.
- E. Check lip seal for wear. Replace Piston if lip seal is worn or twisted.

### 3. Too Much Water To Fixture.

- A. Excessive flow pressure. Readjust Activation Assembly by turning clockwise to decrease flow pressure.
- B. Long Flush. Worn Piston; replace with new proper gpf/Lpf Piston.
- C. Wrong model installed; i.e., 1.6 gpf/6.0 Lpf model installed on 0.5 gpf/1.9 Lpf or 0.25 gpf/1.0 Lpf urinal fixture. Replace with proper model per guide.

### 4. Valve Does Not Shut Off.

- A. Plunger screw is not adjusted properly (constant contact on plunger). Adjust screw using depth guide tool.
- B. Supply line water pressure has dropped and is not sufficient to close the Valve. Close Activation Assembly until pressure is restored.
- C. Piston Filter Screen is clogged, Piston is damaged, or large debris stuck behind Piston. Turn off water at Shut Off Sleeve, release pressure, remove Safety Collar and Activation Assembly. Remove Piston and check inside Valve for large debris. **Do not attempt to remove Piston filter screen.** Replace Piston if damaged or cleaning does not correct the problem.

### 5. Leaking at Plunger.

- A. Seal worn. Replace Activation Assembly.

### 6. Chirping Noise Is Heard At Start Or End Of Flush.

- A. Caused by air purging from the system inside the Valve Assembly. Noise will subside with several flushes or within a day.

### 7. Valve Leaks Through Aspirator When Activated.

- A. Debris between the umbrella Valve and the Retainer. Blow air on the Aspirator. If this does not correct the problem, remove Retainer with 5 mm Allen Key (not included) and wash it under clean running water. Replace Aspirator if cleaning does not correct the problem.
- B. Loose Retainer. Hand tighten Retainer with 5 mm Allen key (not included). Do not overtighten. Replace Aspirator if this does not correct the problem.

## CARE AND CLEANING

**DO NOT USE** abrasive or chemical cleaners (including chlorine bleach) to clean Flushometers that may dull the luster and attack the chrome or special decorative finishes. Use **ONLY** mild soap and water, then wipe dry with a clean cloth or towel. If using a cleaner in a spray bottle, **DO NOT** spray directly onto the Flushometer, instead spray cleaner into a clean cloth and then wipe down the Flushometer.

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

**When assistance is required, please contact Sloan Technical Support at 1.888.SLOAN.14 (1.888.756.2614).**

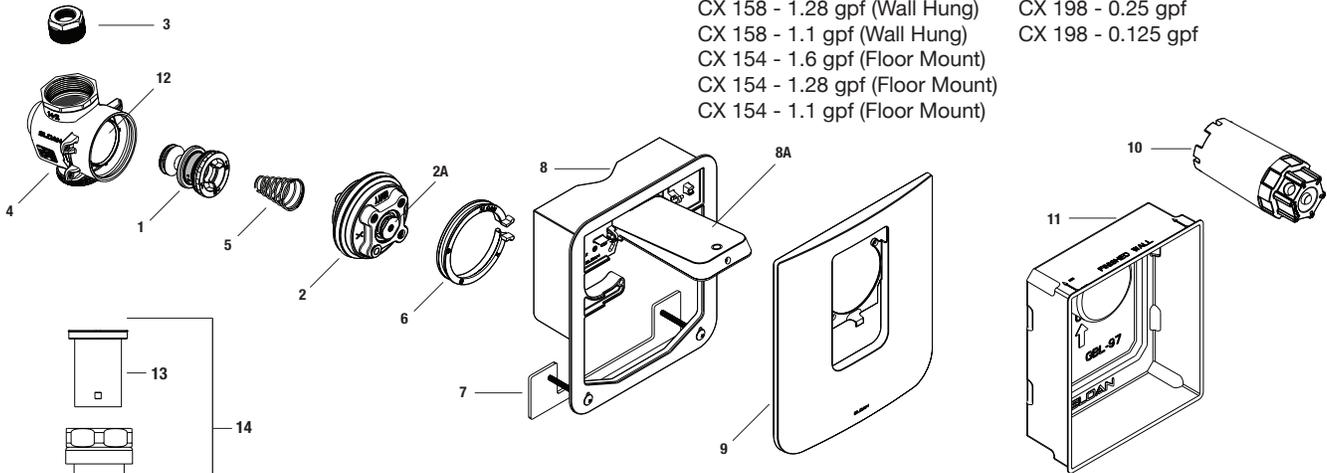
# Sloan CX Manual Flushometer

### Manual Closet Flushometers

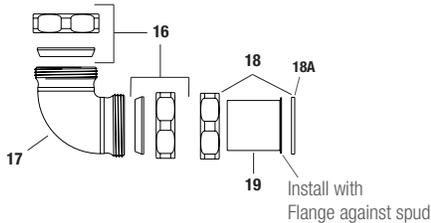
- CX 158 - 1.6 gpf (Wall Hung)
- CX 158 - 1.28 gpf (Wall Hung)
- CX 158 - 1.1 gpf (Wall Hung)
- CX 154 - 1.6 gpf (Floor Mount)
- CX 154 - 1.28 gpf (Floor Mount)
- CX 154 - 1.1 gpf (Floor Mount)

### Manual Urinal Flushometers

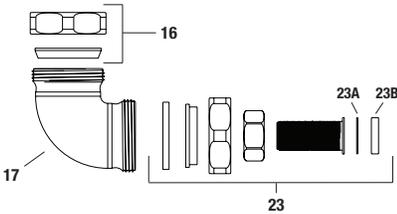
- CX 198 - 0.5 gpf
- CX 198 - 0.25 gpf
- CX 198 - 0.125 gpf



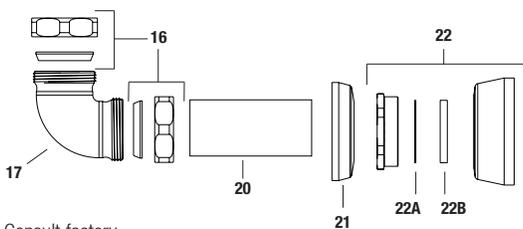
#### For Model 158, Wall Hung



#### For Model 198, Urinals



#### For Model 154, Floor Mount Exposed Rear Inlet



\* Consult factory

\*\* Consult factory for alternate finish options

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

PARTS LIST			
Item No.	Code No.	Part No.	Description
1.	See table on next page		Piston Assembly
2.	See table on next page		Activation Assembly
2A.	3340018	GBL-1018-A	Manual Plunger Assembly Repair Kit
3.	0340062	GBL-56	Inlet Adapter 1-1/2" NPT x 1" NPT Closet
	0340063	GBL-171	Inlet Adapter 1-1/2" NPT x 3/4" NPT Urinal
4.	—	—	Valve Body*
5.	—	—	Conical Spring**
6.	3340011	GBL-1011-A	Safety Collar (Collar for Bonnet)
7.	33400011	GBL-214-A	C-Bracket Kit with Screws
8.	—	—	Manual CX Wall Bracket*
8A.	See table on next page		Manual CX Button Only
9.	See table on next page		Manual CX Finished Wall Plate
10.	03340012	GBL-1012-A	Activation Assembly Tool
11.	33400033	GBL-1060-A	Manual CX Mud Guard (4 pack)
12.	0340085	GBL-66-A	Shut Off Sleeve (with O-Ring)
* Not sold separately. ** Included with Piston			
FLUSH CONNECTION PARTS			
Item No.	Code No.	Part No.	Description
13.	3323182	V-651	Vacuum Breaker Kit
14.	0323011	V-500-A	RB Vacuum Breaker Assembly
15.	33060011	F-227-A	Adjustable Tube 6.5" Replacement Kit, 158, 198
	33060012	F-228-A	Adjustable Tube 10.5" Replacement Kit, 154
16.	0306395	F-211-A	CX Poly Washer and Coupling (set of 2)
17.	0306392PK	F-305	CX Elbow for CX Poly Washer
18.	0306091	F-2-A	1-1/2" Coupling with S-21 Gasket
18A.	0319079	S-21	Rigid Gasket
19.	0306031PK	F-1	1-1/2" x 6" Tube
20.	0396119PK	F-101	CP Tube Outlet 1-1/2" x 10-1/2"
21.	0306237PK	F-7	Tube Flange 1-1/2" x 2-3/4" with Prongs

## Sloan CX Manual Flushometer

### FLUSH CONNECTION PARTS CONTINUED

Item No.	Code No.	Part No.	Description
22	<b>0306146PK</b>	F-5-A	1-1/2" Spud Coupling Assembly CP*
22A	<b>5306058</b>	F-3	Friction Ring 1-1/2"
22B	<b>5322001</b>	VBF-5	Slip Joint Gasket 1-1/2"
23	<b>0306396</b>	—	CX Urinal Flush Connection Kit
23A	<b>5306055</b>	F-3	Red Friction Ring 3/4"
23B	<b>5306113</b>	F-5	Gasket 3/4"

### ITEM NO. 1 - MANUAL PISTON ASSEMBLY SELECTION GUIDE

Code No.	Part No.	Description	Piston Color*
<b>3340053</b>	GBL-1037-A	1.6 gpf/6.0 Lpf Closet Piston Assembly	Green
<b>3340054</b>	GBL-1038-A	1.28 gpf/4.8 Lpf Closet Piston Assembly	Purple/Black
<b>33400059</b>	GBL-1087-A	1.1 gpf/4.2 Lpf Closet Piston Assembly	Grey/Black
<b>3340055</b>	GBL-1039-A	0.5 gpf/1.9 Lpf Urinal Piston Assembly	Red
<b>3340056</b>	GBL-1040-A	0.25 gpf/1.0 Lpf Urinal Piston Assembly	Burgundy
<b>33400004</b>	—	0.125 gpf/0.48 Lpf Urinal Piston Assembly†	Pink

\* Colors may differ. Consult factory to confirm you have the correct assembly. † 0.125 gpf/0.48 Lpf Valve Components (Piston, Main Seat, and Activation Assembly) are NOT interchangeable with any other flush volume Valves.

### IMPORTANT NOTE FOR 1.1 GPF FLUSHOMETERS & REPLACEMENT KITS

Sloan 1.1 gpf/4.2 Lpf ultra-high efficiency flushometers meets all applicable standards and requirements. However, with low flush volumes it is imperative that they only be used in conjunction with toilet fixtures and drain line systems designed to operate with adequate flow rates and volumes in order to effectively eliminate waste and move it out of the building. It is the responsibility of the user to ensure both of these conditions are met. Not doing so may void your warranty.

Sloan 1.1 gpf diaphragm and piston kits are designed as a replacement part for Sloan 1.1 gpf/4.2 Lpf flushometers only. They are not intended to be used as a means to reduce water consumption in flushometers with higher flush volumes such as 1.28 gpf/4.8 Lpf or 1.6 gpf/6.0 Lpf or higher. Using this kit in any manner other than with a Sloan 1.1 gpf flushometer may void your warranty.

### ITEM NO. 1 - MANUAL PISTON IDENTIFICATION CHART

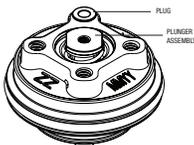
<b>Flush Volume</b>	1.6 gpf Water Closet	1.28 gpf Water Closet	1.1 gpf Water Closet	0.5 gpf Urinal	0.25 gpf Urinal	0.125 gpf Urinal
<b>Piston Body</b>	Green	Purple	Grey	Red	Burgundy	Pink
<b>Flow Control</b>	Green	Black Cage	Black Cage	Red	Burgundy	Pink
<b>Part Number</b>	GBL-1037-A	GBL-1038-A	GBL-1087-A	GBL-1039-A	GBL-1040-A	—
<b>Code Number</b>	<b>3340053</b>	<b>3340054</b>	<b>33400059</b>	<b>3340055</b>	<b>3340056</b>	<b>33400004</b>

### ITEM NO. 2 - ACTIVATION ASSEMBLY SELECTION GUIDE

Code No.	Part No.	Description	Plug Color*
<b>3340048</b>	GBL-1033-A	1.6 gpf/6.0 Lpf Closet Activation Assembly	Green
<b>3340049</b>	GBL-1034-A	1.28 gpf/4.8 Lpf Closet Activation Assembly	Purple
<b>33400057</b>	GBL-1091-A	1.1 gpf/4.2 Lpf Closet Activation Assembly	Grey
<b>3340051</b>	GBL-1035-A	0.5 gpf/1.9 Lpf Urinal Activation Assembly	Red
<b>3340052</b>	GBL-1036-A	0.25 gpf/1.0 Lpf Urinal Activation Assembly	Burgundy
<b>33400005</b>	—	0.125 gpf/0.48 Lpf Urinal Activation Assembly	N/A; Nickel plated brass

\* Colors may differ. Consult factory to confirm you have the correct Activation Assembly.

† 0.125 gpf/0.48 Lpf Valve Components (Piston, Main Seat, and Activation Assembly) are NOT interchangeable with any other flush volume Valves.



### ADDITIONAL PARTS

Code No.	Part No.	Description
—	F-304	Poly Washer 1-1/2" (Only available in F-211-A, Item 16)
<b>33400008</b>	GBL-212-A	Plunger Screw Kit (screws, wrench, nut, and gauge)
<b>33400012</b>	GBL-215-A	Manual Wall Bracket Mounting Screws (Wall Bracket to Valve, Finished Plate to Wall Bracket)
<b>33400014</b>	GBL-1045-A	Manual CX Finished Wall Plate and Button Assembly, SF†
<b>33400015</b>	GBL-1046-A	Manual CX Finished Wall Plate and Button Assembly, CP†
<b>33400016</b>	GBL-1047-A	Manual CX Finished Wall Plate and Button Assembly, BN†
<b>33400017</b>	GBL-1048-A	Manual CX Finished Wall Plate and Button Assembly, PB†
<b>33400018</b>	GBL-1049-A	Manual CX Finished Wall Plate and Button Assembly, GR†
<b>33400039</b>	GBL-1064-A	Manual CX Button Only Replacement Kit, SF
<b>33400041</b>	GBL-1065-A	Manual CX Button Only Replacement Kit, CP
<b>33400042</b>	GBL-1066-A	Manual CX Button Only Replacement Kit, BN
<b>33400043</b>	GBL-1067-A	Manual CX Button Only Replacement Kit, PB
<b>33400044</b>	GBL-1068-A	Manual CX Button Only Replacement Kit, GR

† Includes mounting screws and wrench.

## Sloan CX Manual Flushometer

### TROUBLESHOOTING GUIDE

#### 1. Flushometer Does Not Function (No Water/Flush).

- A. Ensure water supply to Valve is turned on.
- B. Shut Off Sleeve is in closed position. Turn counter-clockwise to open water flow. **Note:** there is approximately 1/8-turn (45°) of free spinning as the Activation Assembly engages the Shut Off Sleeve between opening and closing the Valve.
- C. Plunger screw is not adjusted properly. Adjust screw using depth guide.

#### 2. Volume Of Water Is Not Sufficient To Evacuate The Bowl.

- A. Plunger screw is not adjusted properly (short button engagement of plunger). Adjust screw using depth guide tool.
- B. Insufficient flow pressure. Readjust Activation Assembly by turning counter-clockwise to increase flow pressure.
- C. Water supply pressure is inadequate (low). Increase the water supply pressure. Contact the fixture manufacturer for minimum water supply requirements of the fixture.
- D. Wrong model installed; i.e., 0.5 gpf/1.9 Lpf urinal installed on a 1.6 gpf/6.0 Lpf closet fixture. Replace with proper model.
- E. Check lip seal for wear. Replace Piston if lip seal is worn or twisted.

#### 3. Too Much Water To Fixture.

- A. Excessive flow pressure. Readjust Activation Assembly by turning clockwise to decrease flow pressure.
- B. Long Flush. Worn Piston; replace with new proper gpf/Lpf Piston.
- C. Wrong model installed; i.e., 1.6 gpf/6.0 Lpf model installed on 0.5 gpf/1.9 Lpf or 0.25 gpf/1.0 Lpf urinal fixture. Replace with proper model per guide.

#### 4. Valve Does Not Shut Off.

- A. Plunger screw is not adjusted properly (constant contact on plunger). Adjust screw using depth guide tool.
- B. Supply line water pressure has dropped and is not sufficient to close the valve. Close Activation Assembly until pressure is restored.
- C. Piston Bypass is clogged, Piston is damaged, or large debris stuck behind Piston. Turn off water at Shut Off Sleeve, release pressure, remove Safety Collar and Activation Assembly. Remove Piston and check inside Valve for large debris. Replace Piston if damaged or cleaning does not correct the problem.

#### 5. Leaking at Plunger.

- A. Seal worn. Replace Activation Assembly.

#### 6. Chirping Noise Is Heard At Start Or End Of Flush.

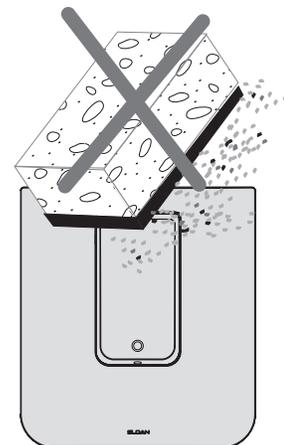
- A. Caused by air purging from the system inside the Valve Assembly. Noise will subside with several flushes or within a day.

### CARE AND CLEANING

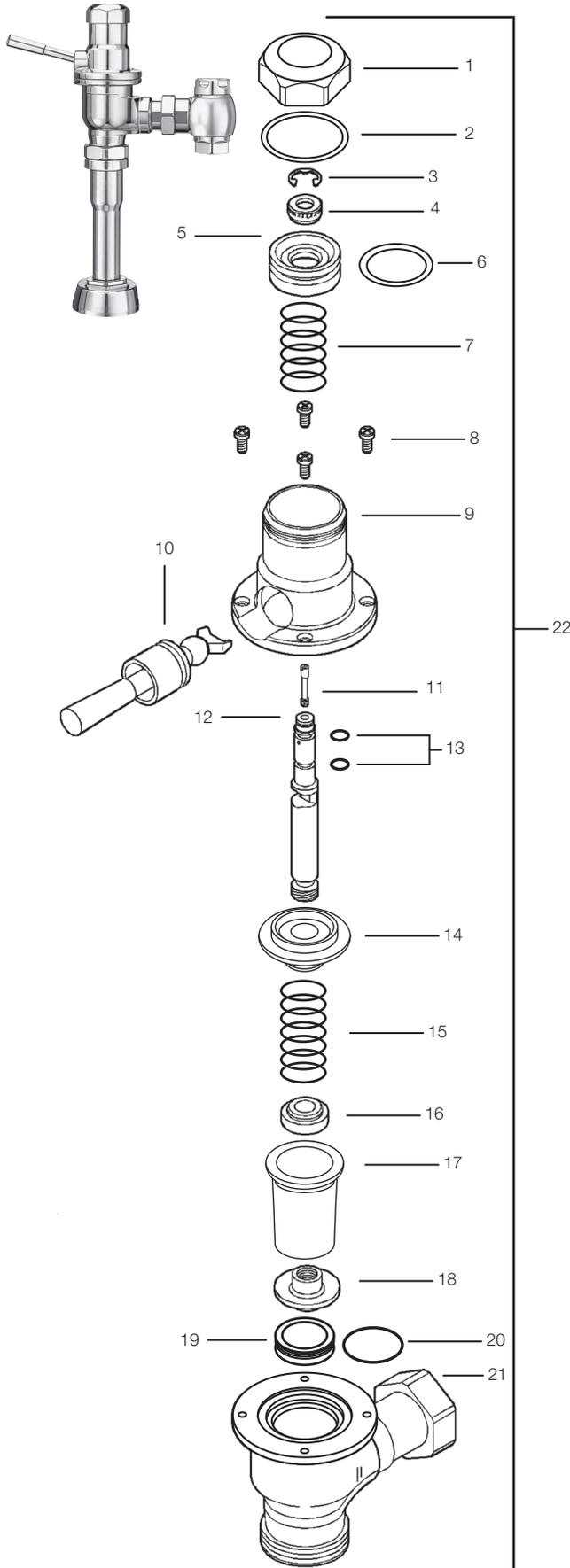
**DO NOT USE** abrasive or chemical cleaners (including chlorine bleach) to clean Flushometers that may dull the luster and attack the chrome or special decorative finishes. Use mild soap and water, then wipe dry with a clean soft cloth or towel. If using a cleaner in a spray bottle, **DO NOT** spray directly onto the Flushometer, instead spray cleaner into a clean cloth and then wipe down the Flushometer.

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

**When assistance is required, please contact Sloan Technical Support at 1.888.SLOAN.14 (1.888.756-2614).**



## Dolphin® Flushometer



### PARTS LIST—DOLPHIN® FLUSHOMETER

Item No.	Code No.	Part No.	Description
1.	<b>0337007</b>	DO-1	Cover Nut CP
2.	<b>5337125</b>	DO-2	O-ring-Seat – 1 required – 6 per package (Cover Gasket)
3.	<b>5337129</b>	DO-28	Retaining Ring – 1 required – 24 per package
4.	<b>5337006</b>	DO-4	Stem Nut RB – 1 required – 6 per package
5.	<b>0337004</b>	DO-5	Piston
6.	<b>5337075</b>	DO-6	O-ring-Piston – 1 required – 6 per package
7.	<b>5337039</b>	DO-7	Piston Spring – 1 required – 6 per package
8.	<b>5337011</b>	DO-11	Cover Screw CP – 4 required – 24 per package
9.	<b>0337003</b>	DO-10	Upper Body CP
10.	<b>0337042</b>	DO-20	Handle and Socket Assembly CP
	<b>0337012</b>	DO-26	Socket
11.	<b>5337126</b>	DO-3	Regulating Screw RB – 1 required – 6 per package
12.	<b>0337087</b>	DO-9	Stem RB
13.	<b>0328336</b>	SH-75	O-ring-Throttle Seal (2 required)
14.	<b>0337005</b>	DO-14	Bushing RB
15.	<b>0337009</b>	DO-16	Compression Spring (Main Spring)
16.	<b>5337034</b>	DO-17	Insert RB – 1 required – 6 per package
17.	<b>0337018</b>	DO-15	“Flex-Sac”
18.	<b>0337084</b>	DO-18	Seating Nut. Part of DO-32 “Flex-Sac” Assembly (See below)
19.	<b>0337016</b>	DO-19	Seat Assembly w/O-ring
20.	<b>0337086</b>	DO-22	O-ring
21.	<b>0337031</b>	DO-13-NC	Lower Body CP-Closet
	<b>0337032</b>	DO-13-NU	Lower Body CP-Urinal
22.	—	DO-90-AA	Complete Body Assembly
	—	DO-90-AAG	Complete Body Assembly
	—	DO-90-AAU	Complete Body Assembly

### REPLACEMENT AND REPAIR KITS

A.	<b>0337044</b>	DO-1000-A	Piston w/ o-ring. Component parts: Items 5 and 6
B.	<b>3337035</b>	DO-1001-A	Repair Kit-Dolphin Handle Component parts: Items 10, 11, 12, and 13
C.	<b>0337134</b>	DO-32	Flex-Sac Assembly Component parts: Items 17 and 18
D.	<b>0337136</b>	DO-32-AA	Repair Kit-“Flex-Sac” Assembly. Component parts: Items 2, 6, 13, 17, and 18
E.	<b>0337137</b>	DO-32-AAN	Repair Kit-“Flex-Sac” and Stem. Component parts: Items 2, 6, 7, 13, 15, 17, 18, 19, and 20
F.	<b>0337036</b>	DO-19-A	Seat Assembly w/ o-ring Component parts: Items 19 and 20
G.	<b>0337030</b>	DO-12-A	Upper Body Assembly. Component parts: Items 1 through 7 and 9 through 18
H.	<b>0337055</b>	DO-13-A-NC	Lower Body Assembly for Closet. Component parts: Item 21 Lower Body, Coupling (CP), and Ground Joint Tail (CP)

# Dolphin® Flushometer

## PARTS LIST—DOLPHIN® FLUSHOMETER MODELS AND VARIATIONS

Item No.	Code No.	Part No.	Description
1.	<b>0337023</b>	DO-90-AAGNC	Closet Valve Body and Handle Assembly — Dolphin Type I
	<b>0337025</b>	DO-90-AAGNU	Urinal Valve Body and Handle Assembly — Dolphin Type II
2A.	<b>0388025</b>	H-710-A	Bak-Chek® Control Stop CP with ¾" NPTF Inlet for Adjustable Tail
	<b>0388022</b>	H-710-A	Bak-Chek® Control Stop CP with 1" NPTF Inlet for Adjustable Tail
2B.	<b>0388048</b>	NH-710-AG	Bak-Chek® Control Stop w/ ¾" NPTF Inlet for Ground Joint Tail (Naval Brass; use w/ Shipboard flushometer Models Type II Class A and B; requires A-35 Reducer Bushing)
	<b>0388058</b>	NH-710-AG	Bak-Chek® Control Stop w/ 1" NPTF Inlet for Ground Joint Tail (Naval Brass)
	<b>0388044</b>	NH-710-AGS	Bak-Chek® Control Stop w/ 1" NPSM Inlet for Ground Joint Tail (Naval Brass; use w/ Shipboard flushometer Models Type I and II when Sil-Brace Adapter is used)
3.	<b>0306196</b>	F-7	1" (25 mm) Supply Flange CP (Supplied When Valve is NOT Ordered w/ Sweat Solder Kit)
	<b>0306191</b>	F-7	¾" (19 mm) Supply Flange CP (Supplied When Valve is NOT Ordered w/ Sweat Solder Kit)
4.	<b>3308782</b>	H-633-AA	1" (25 mm) Sweat Solder Kit with Cast Set Screw Flange CP ("–YBYC" Variation)
	<b>3308788</b>	H-636-AA	¾" (19 mm) Sweat Solder Kit with Cast Set Screw Flange CP ("–YBYC" Variation)
5A.	<b>0323013</b>	V-500-AA	1-½" (38 mm) x 10-½" (267 mm) Vacuum Breaker Assembly CP (Model 110/111)
	<b>0323019</b>	V-500-AA	1-½" (38 mm) x 23" (534 mm) Vacuum Breaker Assembly CP (Model 115)
5B1.	<b>0396119</b>	F-101	1-½" (38 mm) x 10-1/2" (267 mm) Outlet Tube CP Type I Class B
5B2.	<b>0306093</b>	F-2-AT	Coupling CP w/ S-30 gasket
5C1.†	<b>0314004</b>	NF-1	1-½" (38 mm) Scored Outlet CP (Shipboard Model, Type I, Class A)
5C2.‡	<b>2104180</b>	F-2-AT	Coupling CP w/ S-30 gasket
5D1.	<b>0323010</b>	V-500-A	1-½" (38 mm) Vacuum Breaker Assembly CP (Model 120 does not include F-2-A Coupling, see Item 5D2 below)
5D2.	<b>0306092</b>	F-2-A	Coupling CP w/ S-30 gasket
5E.†	<b>0306850</b>	NF-29-A	Outlet Tube Assembly ¾" (19 mm) x 6-½" (165 mm) Scored Outlet w/ ½" Offset (Shipboard Model, Type II, Class A)
5F.	<b>0306849</b>	NF-29-A	¾" (19 mm) x 6-½" (165 mm) Flush Connection with ½" Offset and ¾" x ½" Reducer for ½" Spud (Shipboard Model, Type II, Class B)
5G.‡	<b>0323004</b>	V-500-AA	¾" (19 mm) x 10-½" (267 mm) Vacuum Breaker Assembly CP (Model 186)
5H.†	<b>0306780</b>	F-29-A	¾" (19 mm) x 10-½" (267 mm) Flush Connection CP (Model 186–XYW)
6.†	<b>0396302</b>	F-109	1-½" (38 mm) Flush Connection CP
7.	<b>SEE SLIP JOINT GASKETS AND RINGS TABLE ON BOTTOM, PAGE 15</b>		
7A.	<b>0306146</b>	F-5-AT	1-½" (38 mm) Spud Coupling Assembly (Models 110/111, 115, 120)
7B.	<b>0306125</b>	F-5-AW	¾" (19 mm) Spud Coupling Assembly (Model 186)
8.	<b>0306982</b>	F-40	½" (13 mm) Sil-Brace Adapter

‡ Cut to proper length at installation. Allow a minimum of 5" (127 mm) between tube ends when using rubber hose for shock mounted equipment.

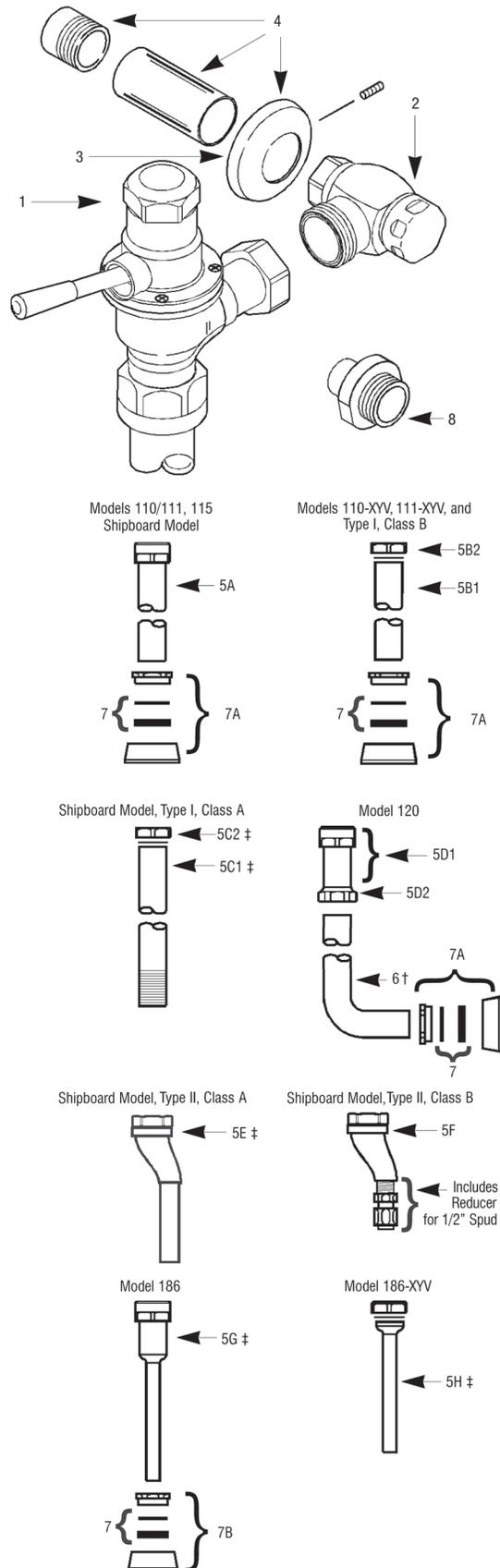
† This Outlet Tube is available in various lengths. Consult factory for assistance.

### IMPORTANT NOTES

With the exception of the control stop inlet, DO NOT USE pipe sealant or plumbing grease on any valve component or coupling!

Protect the chrome or special finish of Sloan flushometers — DO NOT USE toothed tools to install or service these valves.

Use a A-50 Super-Wrench™ or smooth jawed spud wrench to secure all couplings. The information contained in this document is subject to change without notice.



## Dolphin® Flushometer

### PARTS LIST—DOLPHIN® FLUSHOMETER MODELS AND VARIATIONS

Size	Code No.	Part No.	Description
<b>ITEM 7. Slip Joint Gaskets and Rings</b>			
1-1/2"	<b>5306058</b>	F-3	Red Friction Ring
	<b>5322001</b>	VBF-5	Black Slip Joint Gasket
	<b>0319086/5319086</b>	S-30	Flexible Seat
	<b>0319079</b>	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	<b>0396062</b>	F-105	Slip Joint Gasket – Rigid
1-1/4"	<b>5306057</b>	F-3	Red Friction Ring
	<b>5322176</b>	VBF-5	Black Slip Joint Gasket
	<b>0307052/5307052</b>	G-21	Rigid Seat (rubber over brass)
1"	<b>5306056</b>	F-3	Red Friction Ring
	<b>5306115</b>	F-5	Black Slip Joint Gasket
3/4"	<b>5306055</b>	F-3	Red Friction Ring
	<b>5306113</b>	F-5	Black Slip Joint Gasket

### TROUBLESHOOTING GUIDE

#### 1. Flushometer DOES NOT function.

- Control stop or main valve is closed. Open control stop or main valve.
- Handle socket assembly is damaged. Replace DO-20 handle socket assembly.

#### 2. Volume of water is inadequate to siphon fixture.

- Control stop is not open enough. Adjust control stop for desired delivery of water volume.
- Timing of flushometer closure is set too fast. Remove DO-1 cover nut. Use a small blade screwdriver to turn DO-3 regulating screw clockwise.
- Water supply volume or pressure is inadequate. If no gauges are available to properly measure supply pressure or volume, completely open control stop and hold down flushometer handle without allowing it to close. If fixture siphons, increase timing of closure (see previous solution). If fixture does not siphon, steps must be taken to increase the supply pressure and/or volume. Contact fixture manufacturer for minimum water supply requirements of fixture.

#### 3. Flushometer closes immediately.

- Oil chamber of upper body is empty. Remove DO-1 cover nut. Fill oil chamber with SAE 10 Oil.
- Piston seal is worn or damaged. Replace DO-6 piston O-ring seal.

#### 4. Length of flush is too short (short flushing).

- Volume of oil in oil chamber of upper body is low. Remove DO-1 cover nut. Fill oil chamber with SAE 10 oil.
- Timing of flushometer closure is not adequately adjusted. Remove DO-1 cover nut. Using small blade screwdriver, turn DO-3 regulating screw clockwise until a satisfactory flush is achieved.

#### 5. Length of flush is too long (long flushing).

- Timing of flushometer closure not adequately adjusted. Remove DO-1 cover nut. Using small blade screwdriver, turn DO-3 regulating screw counterclockwise until a satisfactory flush is achieved.

#### 6. Oil is leaking from handle.

- Stem seals are worn or damaged. Replace two (2) SH-75 throttle seal O-rings.

#### 7. Valve DOES NOT close completely (water trickle).

- Compression spring is worn or damaged. Replace DO-16 compression spring.
- Flex-sac assembly is worn. Replace DO-15 flex-sac.

### CARE AND CLEANING INSTRUCTIONS

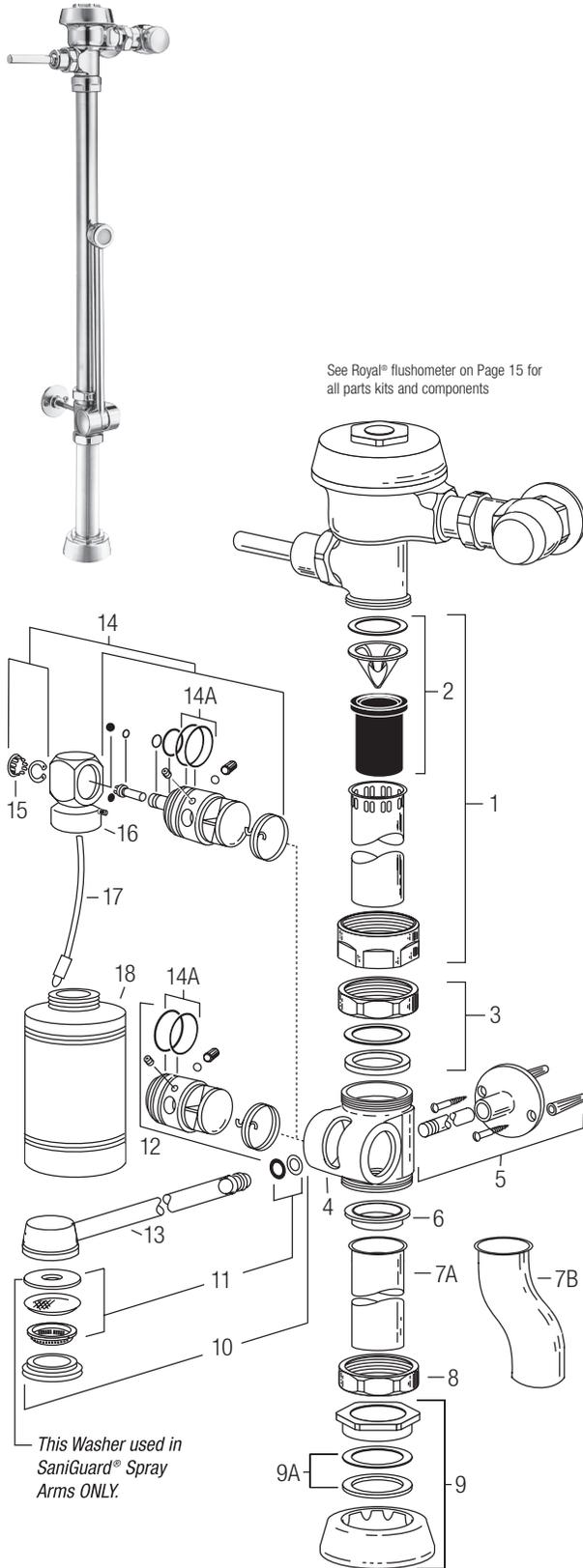
**DO NOT USE** abrasive or chemical cleaners to clean flushometers, they may dull the luster and attack the chrome finish. Use **ONLY** mild soap and water, and then wipe dry with a clean towel or cloth.

When cleaning, protect the exposed flushometer from any splattering of cleaner. Acids and cleaning fluids can discolor or remove chrome plating.

**When assistance is required, please contact**

**Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

## Slimline® Bedpan Washer Flushometer



### PARTS LIST

Item No.	Code No.	Part No.	Description
1.	<b>0393009</b>	V-600-AA	1-1/2" x 21-1/2" CP Vacuum Breaker
	<b>0393008</b>	V-600-AA	1-1/2" x 13-1/2" CP Vacuum Breaker (ADA height)
	<b>0393029</b>	V-600-AA	1-1/2" x 21-1/2" CP Vacuum Breaker w/2" Offset
2.	<b>3323182</b>	V-651-A	Vacuum Breaker Repair Kit
3.	<b>0306093</b>	F-2-A	1-1/2" Slip Joint Coupling
4.	<b>0309001PK</b>	DV-1	Diverter Valve Body (non-Deoseptic bottle)
	<b>0309052</b>	DV-17	Diverter Valve Body (Deoseptic bottle)
5.	<b>3309035</b>	DV-1001-A	Wall Support Kit
6.	<b>0309027</b>	F-1003	Outlet Tube Gasket – for Flanged Tubes only
7A.	<b>0309029</b>	F-1005	Outlet Tube
7B.	<b>0396525</b>	F-182	Outlet Tube w/1-1/2" Offset
8.	<b>0306045</b>	F-2	1-1/2" Coupling Nut
9.	<b>0306146</b>	F-5-A	1-1/2" Spud Coupling Assembly
9A.	<b>SEE SLIP JOINT GASKETS AND RINGS TABLE ON BOTTOM, PAGE 15</b>		
10.	<b>3309044</b>	DV-32-AA	12" Spray Arm Replacement Kit
	<b>3309077</b>	DV-1014-A	Short Spray Arm Replacement Kit (for use with F-182 Offset Outlet Tube)
11.	<b>3309032</b>	DV-1007-A	Spray Arm Repair Kit
12.	<b>3309037</b>	DV-1003-A	Pivot Replacement Kit
—	<b>0309021</b>	DV-55-A	Diverter Valve Assembly and 12" Spray Arm Assembly includes: 3, 4, 8, 10, 12
—	<b>0309022</b>	DV-69-A	Diverter Valve Assembly and 10" Spray Arm Assembly includes: 3, 4, 8, 10, 12
13.	<b>3309015</b>	DV-1017-A	Repair Kit 15" Sanigard® Spray Arm (.625-18 UNF-2A Thread)

### DEOSEPTIC UNIT PARTS

Item No.	Code No.	Part No.	Description
14.	<b>3309036</b>	DV-1002-A	Deoseptic Pivot Replacement Kit
14A.	<b>5337075</b>	DO-6	O-ring-Piston – 2 required – 6 per package
14B.	<b>0309004</b>	DV-4	Set Screw
14C.	<b>0309016</b>	DV-16	Diverter Valve Seal Washer
14D.	<b>0309014</b>	DV-14	Diverter Valve Seal
15.	<b>0309024</b>	DV-21	Plug Button
16.	<b>0309033</b>	DV-33-A	Swivel & ball check Assembly
17.	<b>0309036</b>	DV-36-A	Aspirator Tube Assembly
18.	<b>0309018</b>	DV-29	Deoseptic Solution Bottle

### BEDPAN WASHER REBUILD KITS

Code No.	Part No.	Description
<b>5309031</b>	DV-50-A	Diverter Rebuild Kit Includes Outlet Tube Gasket (Item 6), Spray Arm Repair Kit (Item 11), and all Items in Pivot Replacement Kit (Item 12) except Pivot.
<b>3309040</b>	DV-1004-A	Deoseptic Diverter Rebuild Kit Includes Outlet Tube Gasket (Item 6), Spray Arm Repair Kit (Item 11), and all Items in Pivot Replacement Kit (Item 13) except Pivot.

To convert a standard diverter assembly to a deoseptic diverter assembly use:

<b>3309048</b>	DV-1005-A	Deoseptic Conversion Kit
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### SANIGUARD® HANDLE ASSEMBLY

Code No.	Part No.	Description
<b>0302230</b>	B-73-A-SG	Handle Assembly CP (ADA complaint) with Sani-Guard

## Slimline® Bedpan Washer Flushometer

### ITEM 9A. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	<b>5306058</b>	F-3	Red Friction Ring
	<b>5322001</b>	VBF-5	Black Slip Joint Gasket
	<b>0319086/5319086</b>	S-30	Flexible Seat
	<b>0319079</b>	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	<b>0396062</b>	F-105	Slip Joint Gasket – Rigid
1-1/4"	<b>5306057</b>	F-3	Red Friction Ring
	<b>5322176</b>	VBF-5	Black Slip Joint Gasket
	<b>0307052/5307052</b>	G-21	Rigid Seat (rubber over brass)
1"	<b>5306056</b>	F-3	Red Friction Ring
	<b>5306115</b>	F-5	Black Slip Joint Gasket
3/4"	<b>5306055</b>	F-3	Red Friction Ring
	<b>5306113</b>	F-5	Black Slip Joint Gasket

### SLIMLINE® BEDPAN WASHER RETROFIT DIVERTERS

Code No.	Part No.	Description
<b>3309022</b>	DV-100	CP Diverter Valve Assembly
<b>3309047</b>	DV-105	CP Deoseptic Diverter Assembly
<b>3309052</b>	DV-135	CP Deoseptic Diverter Assembly 2" Offset
<b>3309061</b>	DV-115	CP Deoseptic Diverter Assembly ADA
<b>3309062</b>	DV-115-R	CP Deoseptic Diverter Assembly ADA
<b>3309065</b>	DV-120	CP Diverter Assembly ADA 1-1/2" Offset
<b>3309066</b>	DV-120-R	CP Diverter Assembly ADA 1-1/2" Offset
<b>3309069</b>	DV-125	CP Deoseptic Diverter Assembly ADA Offset
<b>3309070</b>	DV-125-R	CP Deoseptic Diverter Assembly ADA Offset
<b>3309051</b>	DV-130	CP Diverter Assembly 2 Offset

### SLIMLINE® BEDPAN REPAIR KITS

<b>3309035</b>	DV-1001	Kit Bedpan Washer Wall Support
<b>3309036</b>	DV-1002	Repair Kit Deoseptic Pivot
<b>3309037</b>	DV-1003	Repair Kit Bedpan Washer Pivot
<b>3309040</b>	DV-1004	Repair Kit Deoseptic Diverter
<b>3309048</b>	DV-1005	Conversion Kit Deoseptic Diverter Assembly
<b>3309032</b>	DV-1007	Repair Kit Spray Arm
<b>3309077</b>	DV-1014	Repair Kit 10" Spray Arm
<b>3309044</b>	DV-32-AA	Repair Kit 12" Spray Arm
<b>3309015</b>	DV-1017-A	Repair Kit 15" Spray Arm

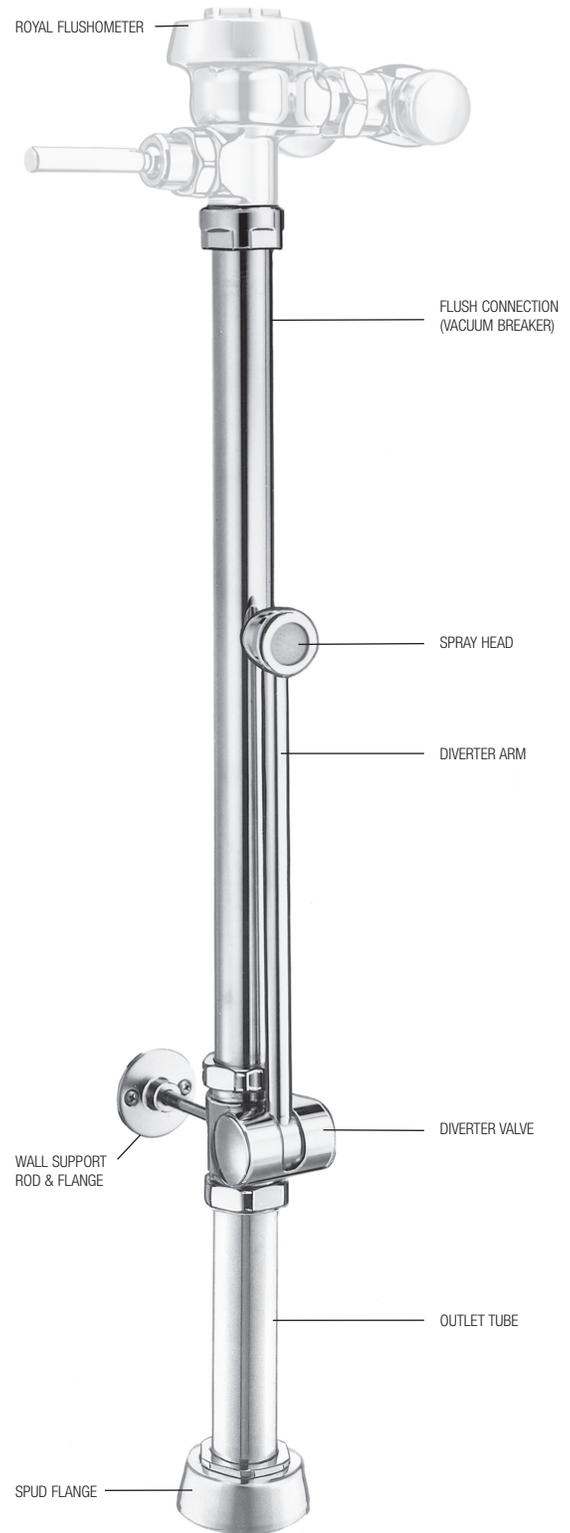
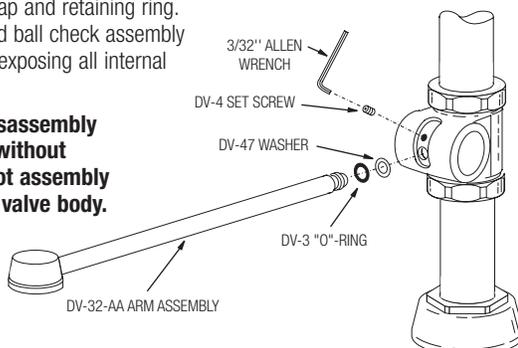
### REBUILDING THE SLOAN SLIMLINE DIVERTER ASSEMBLY:

**To disassemble diverter valve:** Loosen set screw and remove spray arm from pivot. Slide pivot out of diverter valve body.

#### To further disassemble deoseptic diverters:

Remove plug cap and retaining ring. Slide swivel and ball check assembly off pivot shaft, exposing all internal components.

**NOTE: This disassembly can be done without removing pivot assembly from diverter valve body.**



## Slimline® Bedpan Washer Flushometer

### TROUBLESHOOTING GUIDE

See Royal® flushometer troubleshooting section for all problems regarding the flushometer and the flushing discharge.

#### 1. Diverter leaking at spray arm.

- A. Diverter spray arm (old style) is damaged. Replace diverter arm with new spray arm replacement kit. **NOTE: On old style diverter spray arm, the spray arm O-ring was placed on groove at the end of the spray arm. When installing new spray arm kit, place washer into bottom of hole of nozzle pivot. Then place the O-ring on top of washer. Insert new spray arm into the pivot, pressing in slightly. While holding spray arm in place, tighten set screw.**
- B. Spray arm O-ring is damaged or installed improperly. Re-install O-ring as described above in step (A.). If leakage persists replace using spray arm kit DV-1007-A.

#### 2. Diverter leaking at nozzle pivot.

- A. One or both pivot O-rings are worn. Replace nozzle pivot assembly. Use pivot replacement kit.
- B. Diverter seal washer worn or missing. Replace pivot seals. Use diverter rebuild kit.
- C. Nozzle pivot damaged. Replace nozzle pivot assembly. Use pivot replacement kit.

#### 3. Erratic spray pattern from spray arm nozzle.

- A. Debris clogging nozzle screen. Wash nozzle screen under running water.
- B. Damaged or missing nozzle screen or spray disc. Replace using DV-1007-A spray arm replacement kit.

#### 4. Deoseptic solution not siphoning from bottle during flush cycle (deoseptic models only).

- A. Adjusting screw not open. Open adjusting screw until adequate amount of solution is siphoned from bottle during flush cycle.
- B. Aspirator tube screen clogged. Remove solution bottle. Remove aspirator tube from swivel & ball check assembly and wash screen under running water.
- C. Aspirator tube not installed completely onto swivel & ball check assembly. Remove solution bottle. Make sure aspirator tube is pushed completely onto nipple of swivel & ball check assembly.
- D. Aspirator tube cracked. Replace aspirator tube assembly.
- E. Rubber ball check stuck inside swivel & ball check assembly. Remove solution bottle and aspirator tube from swivel & ball check assembly. Gently insert small implement (paper clip, small dia. hex key, etc.) into nipple of swivel & ball check assembly to dislodge rubber ball check. Stop pushing once water starts to trickle from nipple.  
**NOTE: If ball is pushed too hard or too far it may fall out of seat. Should this occur, the swivel & ball check assembly must be removed and ball replaced. To do this, remove retaining ring using retaining clip pliers. Pull swivel & ball check assembly off of adjusting screw being careful not to drop rubber ball check. Place rubber ball back into seat of swivel & ball check assembly and reassemble. If ball and seals appear worn rebuild.**

#### 5. Water leaking back into solution bottle.

- A. Rubber ball damaged or missing. Replace rubber ball using DV-1004-A deoseptic diverter rebuild kit.
- B. Rubber ball not sitting in seat of swivel & ball check assembly. Remove swivel & ball check assembly taking care not to lose rubber ball. Insert rubber ball back into seat of swivel & ball check assembly and reassemble. **NOTE: Follow steps in solution (E.) of problem 4.**

### 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** mild soap and water, then wipe dry with clean cloth or towel.

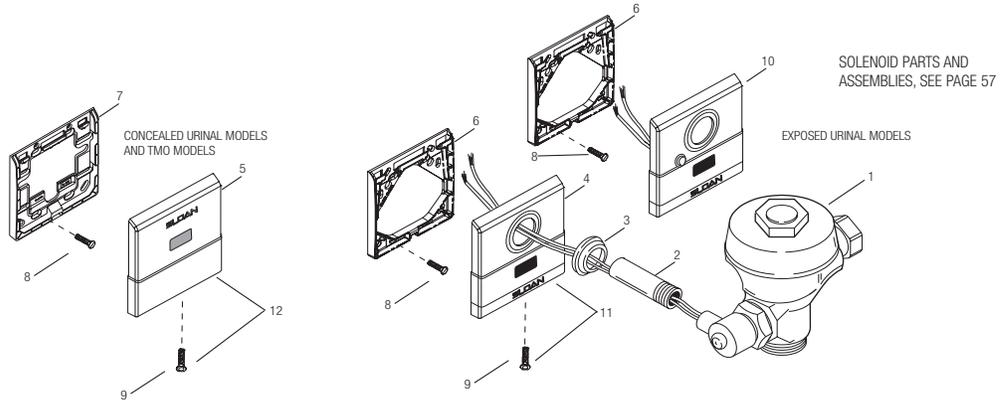
While cleaning the bathroom tile, the flushometer should be protected from any splattering of cleaner. Acids and cleaning fluids can discolor or remove chrome plating.

**When assistance is required, please contact**

**Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

## Optima® Flushometer

Current style Royal® (after 09/26/10)

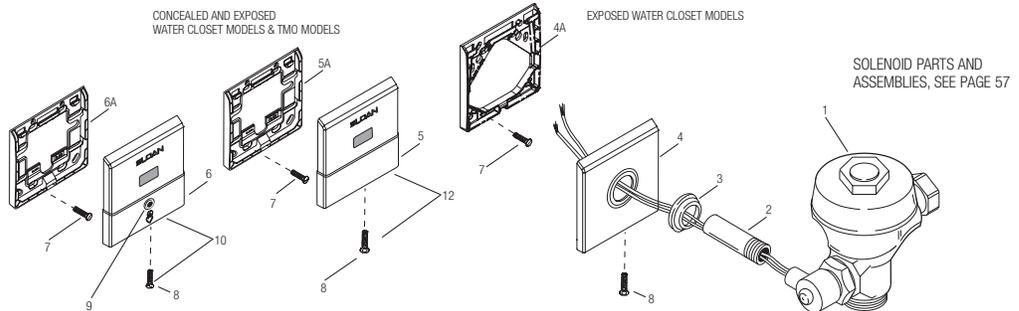


### CURRENT COVER AND MOUNTING PLATE PARTS FOR ROYAL® URINAL FLUSHOMETER

Item No.	Code No.	Part No.	Description
1.	‡		Solenoid Activated Valve Assembly
2.	<b>0306249PK</b>	F-15	Tail Assembly 3/4" x 6"
3.	<b>0345150</b>	EL-431-A	Flange Assembly
4.	<b>3305100</b>	EL-640-A	CP Cover Plate with Sensor and Mounting Hardware Assembled (Exposed Models) (includes EL-549 mounting plate)
5.	<b>3305101</b>	EL-645-A	CP Cover Plate with Sensor Assembled (Concealed Models) (includes EL-592 Moutning Plate)
6.	<b>0305251PK</b>	EL-549-A	Exposed Urinal Mounting Plate Kit

Item No.	Code No.	Part No.	Description
7.	<b>0305292PK</b>	EL-592-A	Concealed Urinal Mounting Plate Kit
8.	—		Screws (Flat Head Slotted #6/32)
9.	<b>5305100</b>	EL-674	Wall Plate Screw Kit ( #6-32 x 15.87mm)
10.	<b>03455361</b>	EL-680-A	CP Cover Plate with Sensor, OR Button and Mounting Hardware Assembled (Exposed Models) (includes EL-549 mounting plate)
†	<b>3305620</b>	EL-1500	Urinal Sensor Replacement (Exposed and Concealed Models, not shown)

† NOTE: For exposed & concealed solenoids manufactured before 2003 or not shown here, consult factory for individual part assembly. ‡ Part number varies with valve model variation; consult factory. For Solenoid Breakdown, See Pg 55.



### CURRENT COVER AND MOUNTING PLATE PARTS FOR ROYAL® CLOSET FLUSHOMETER

Item No.	Code No.	Part No.	Description
1.	‡		Solenoid Activated Valve Assembly
2.	<b>0306249PK</b>	F-15	Tail Assembly†
3.	<b>0345150</b>	EL-431-A	Flange Assembly
4.	<b>3305105</b>	EL-625-A	CP Cover Plate with Mounting Hardware (Closet only) (includes EL-549 mounting plate)
4A.	<b>0305251PK</b>	EL-549	Exposed Closet Mounting Plate
5.	<b>3305107</b>	EL-635-A	Concealed CP TMO Cover Plate with Sensor (includes Mounting Kit)
5A.	<b>0305292PK</b>	EL-592	Concealed Closet TMO Mounting Plate

Item No.	Code No.	Part No.	Description
6.	<b>3305104</b>	EL-595-A	CP Cover Plate with Sensor and Override Switch Assembled (Closet only) Exposed ES-S
6A.	<b>0305292PK</b>	EL-592	Exposed & Concealed Closet Mounting Plate
7.	—		Screws (Flat Head Slotted #6/32)
†	<b>3305621</b>	EL-1500-L	Closet Sensor Replacement Kit (Closet only, not shown)
	<b>3345095</b>	EL-1034-AB	Button Assembly Repair Kit
8.	<b>5305100</b>	EL-674	Wall Plate Screw Kit ( #6-32 x 15.87mm) (6 per kit)
9.	<b>3345095</b>	EL-1034-A	ESS Override Repair Kit for EL-595-A

### PLATES ONLY

Item No.	Code No.	Part No.	Description
10.	<b>3345090</b>	EL-1030-A	Plate Assembly Only w/ Set Screw*
11.	<b>3345091</b>	EL-1031-A	Plate Assembly Only w/ Set Screw*
12.	<b>3345092</b>	EL-1032-A	Plate Assembly Only w/ Set Screw*

† NOTE: For exposed & concealed solenoids manufactured before 2003 or not shown here, consult factory for individual part assembly. ‡ Part number varies with valve model variation; consult factory.

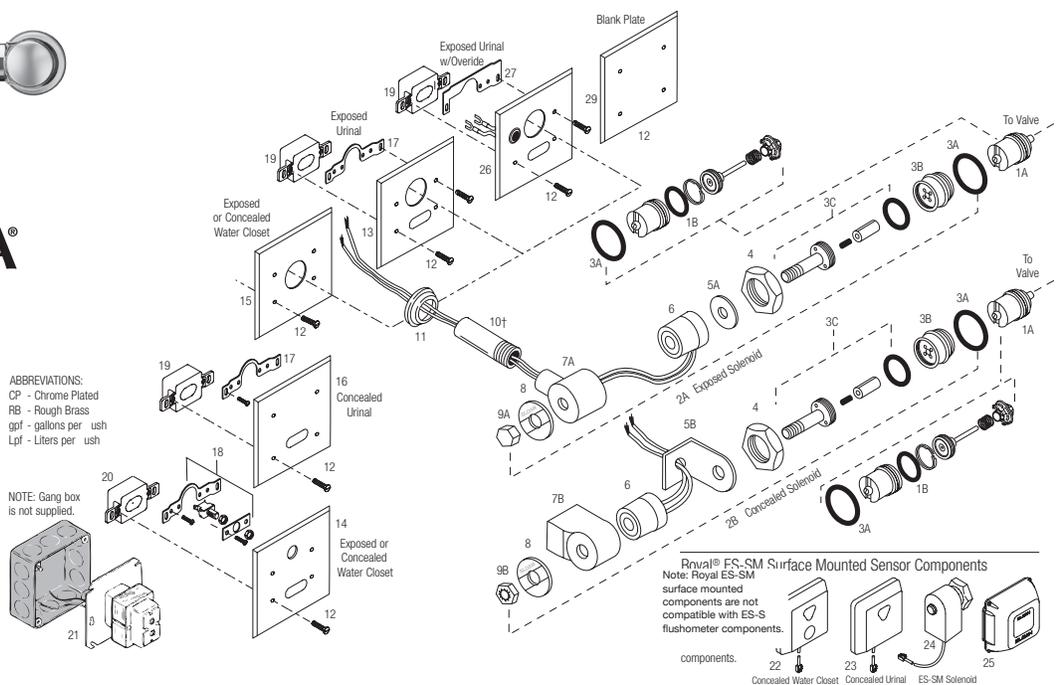
\* Mounting plates do not include sensor. For Solenoid Breakdown, See Pg 57.

# Optima® Flushometer

Old Royal® until 05/09, current Sloan/Regal®



**OPTIMA®**

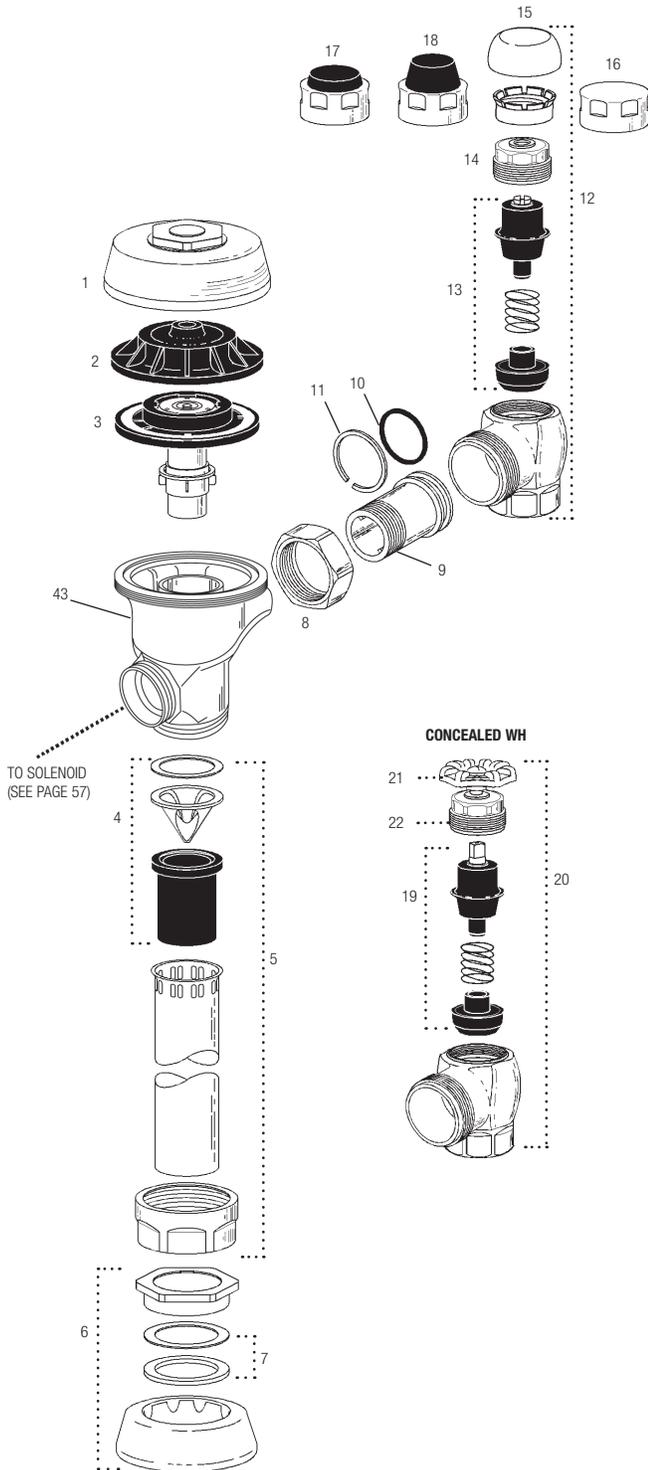


## SOLENOID/SENSOR PARTS AND ASSEMBLIES LIST

Item No.	Code No.	Part No.	Description
1A.	<b>3305043</b>	EL-128-A	Actuator Cartridge Assembly Repair Kit Includes Spring, Plunger Guide, Solenoid Valve Seat, Valve Piston Assembly, and O-Ring (also available for ES-SM flushometers)
1B.	<b>0305135</b>	EL-110	O-Ring
2A.	<b>0305328</b>	EL-124-1	120V only (no sensor)
	<b>3305044</b>	EL-1029-A	CP Cartridge/Solenoid Kit EL-124-1 (120V) and EL128-A
	<b>0305329</b>	EL-124-2	24 VAC Solenoid Assembly (exposed installation) Includes Handle Coupling, 24 VAC Coil, Face Plate for 24 VAC Solenoid, Solenoid Adapter, Solenoid Shaft Assembly, Nut for Solenoid, Solenoid Housing, Solenoid Flux Plate, and O-Ring
	<b>3305045</b>	EL-1028-A	CP Cartridge/Solenoid Kit EL-124-2 (24V) and EL128-A
2B.	<b>0305330</b>	EL-138-1	120V only (no sensor)
	<b>0305331</b>	EL-138-2	24 VAC Solenoid Assembly (concealed installation) Includes Handle Coupling, 24 VAC Coil, Face Plate for 24 VAC Solenoid, Solenoid Adapter, Solenoid Shaft Assembly, Nut for Solenoid, Solenoid Base Plate and Solenoid Cover Assembly
3A.	<b>0337086</b>	DO-22	O-Ring
3B.	<b>0305132</b>	EL-104	RB Adapter for Solenoid
3C.	<b>0305165</b>	EL-163-A	Solenoid Shaft Assembly Includes Gasket, Plunger, Plunger Spring, and Solenoid Shaft
4.	<b>0301082</b>	A-6	CP Handle Coupling (exposed installation)
5A.	<b>0305166</b>	EL-164	Solenoid Flux Plate (exposed installation) fine thread
5B.	—	EL-542	N/A Separately
6.	<b>0305119</b>	EL-165-1	120 V Coil
	<b>0305118</b>	EL-165-2	24 VAC Coil
7A.	<b>0345120</b>	EL-162-2	CP Solenoid Housing (exposed installation) fine thread
	<b>0305164</b>	EL-162-1	CP Solenoid Housing (120V) course thread also used on pre-2001 24 V
7B.	<b>0305336</b>	EL-541-A	Solenoid Cover Assembly (Includes Flux Plate)
8.	<b>0305127</b>	EL-102-2	Face Plate for 24 VAC Solenoid (exposed installation)
9A.	<b>0305125</b>	EL-101	CP Nut for Solenoid (exposed installation)
9B.	<b>0305167</b>	EL-166	Housing Nut for Solenoid (concealed installation)
10.	<b>0306249</b>	F-15	Tail †
	<b>0305145</b>	EL-123-A	Old Style ESS 24V course thread (120V also)
	<b>0305337PK</b>	EL-226	1-1/4" Extension for EL-123-A course thread
11.	<b>0345150</b>	EL-431-A	CP Flange Assembly (exposed installation)
	<b>0305139</b>	EL-176-A	Old Style ESS 24V course thread (120V also)
12.	<b>0305152</b>	EL-152	CP Screws (requires four screws per cover plate) Size# 6-32
13.	<b>0305151</b>	EL-151	CP Cover Plate for Sensor and Solenoid Operator (Urinal only) (L/L Variation-0305150)
14.	<b>0305219</b>	EL-201	CP Cover Plate for Sensor and Override Button (Closet only)
15.	<b>0318066</b>	HY-66	CP Cover Plate for Solenoid Operator (Closet only)
16.	<b>0305161</b>	EL-161	CP Cover Plate for Sensor
17.	<b>0305323</b>	EL-168-A	Yoke Assembly (Urinal only)
18.	<b>0305324</b>	EL-141-A	Override Switch and Yoke Assembly (Closet only)
19.	<b>3305620</b>	EL-1500	Urinal Sensor Replacement Kit (Urinal only)
20.	<b>3305621</b>	EL-1500-L	Closet Sensor Replacement Kit (Closet only)
21.	<b>0345154</b>	EL-154	Transformer (120 VAC) (also available for ES-SM flushometers) 50 VA plate mount
	<b>0345999</b>	EL-342	Transformer (240 VAC) (also available for ES-SM flushometers) 50 VA plate mount
22.	<b>3345047</b>	EL-461	Surface Mounted Sensor and Override Button Assembly (closet only)
23.	<b>3345048</b>	EL-497	Surface Mounted Sensor Assembly (urinal only)
24.	<b>0305802</b>	EL-297	Solenoid Assembly
25.	<b>3365003</b>	ETF-492-A	Control Module
26.	<b>0345266</b>	EL-566-A	Exposed Plate with Override Button (Urinal only)
27.	<b>0345267</b>	EL-567-A	Yoke Assembly for EL-566-A
28.	<b>3345080</b>	EL-1026-A	ESS to TMO Retrofit Kit (Exposed)*
—	<b>0305148</b>	EL-227	Repair Tool Kit for EL-163-A Repair Kit
—	<b>0345016</b>	EL-387-A	Override Button Replacement for EL-566-A
—	<b>3345021</b>	EL-1010-A	O-ring Repair Kit*
29.	<b>0305186PK</b>	EL-139	Blank Plate

† NOTE: For exposed & concealed solenoids manufactured before 2001 or not shown here, consult factory for individual part assembly. \* Not Shown

## Optima® Royal® Flushometer

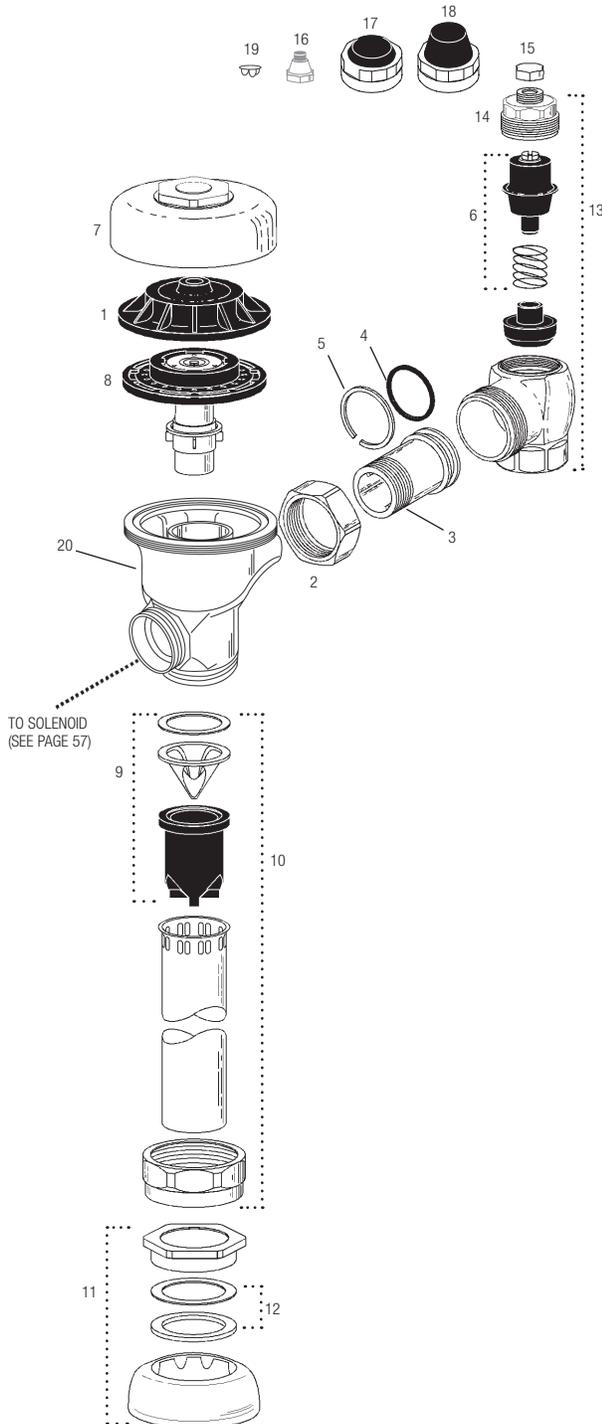


**ABBREVIATIONS:**  
 CP Chrome Plated  
 RB Rough Brass  
 SD Screwdriver  
 WH Wheel Handle  
 gpf gallons per flush  
 Lpf Liters per flush

Item No.	Code No.	Part No.	Description
1.	<b>0301172</b>	A-72	CP Cover
2.	<b>0301168</b>	A-71	Inside Cover
3.	<b>SEE DIAPHRAGM ASSEMBLY CHART ON PAGE 24</b>		
4.	<b>3323182</b>	V-651-A	Vacuum Breaker Repair Kit
5.	<b>3393004</b>	V-600-AA	3/4" (19 mm) x 9" (229 mm) CP Vacuum Breaker
	<b>3393006</b>	V-600-AA	1-1/4" (32 mm) x 9" (229 mm) CP Vacuum Breaker
	<b>3393007</b>	V-600-AA	1-1/2" (38 mm) x 9" (229 mm) CP Vacuum Breaker
6.	<b>0306125</b>	F-5-AW	3/4" (19 mm) CP Spud Coupling Assembly
	<b>0306140</b>	F-5-AU	1-1/4" (32 mm) CP Spud Coupling Assembly
	<b>0306146</b>	F-5-AT	1-1/2" (38 mm) CP Spud Coupling Assembly
7.	<b>SEE SLIP JOINT GASKETS AND RINGS TABLE ON PAGE 15</b>		
8.	<b>0308676</b>	H-550	CP Stop Coupling
9.	<b>0308801</b>	H-551-A	CP Adjustable Tail 2-1/16" (52 mm) long
10.	<b>5308696</b>	H-553	O-Ring – 24 per package
11.	<b>5308381</b>	H-552	Locking ring – 12 per package
12.	<b>3308386</b>	H-700-A	1" (25 mm) Screwdriver Bak-Chek® Angle Stop CP – complete
	<b>3308384</b>	H-700-A	3/4" (19 mm) Screwdriver Bak-Chek® Angle Stop CP – complete
13.	<b>3308853</b>	H-541-A-SD	Control Stop Repair Kit for use with 1" (25 mm) H-700-A & 3/4" (19 mm) H-700-A, 1" (25 mm) H-600-A, 1" (25 mm) & 3/4" (19 mm) H-700-A and 1" (25 mm) H-540-A SD Stops
	<b>3308856</b>	H-543-A-SD	Control Stop Repair Kit for use with 3/4" (19 mm) H-600-A and H-540-A SD Stops
14.	<b>0308612</b>	H-622 CP	Bonnet for use with 1" (25 mm) & 3/4" (19 mm) H-700-A and 1" (25 mm) H-600-A SD Stops
	<b>0308843</b>	H-577	CP Bonnet for use with 3/4" (19 mm) H-600-A SD Stops – <b>DISCONTINUED</b>
15.	<b>3308772</b>	H-1010-A	1" (25 mm) Vandal Resistant Control Stop Cap Assembly for use with 1" (25 mm) & 3/4" (19 mm) H-700-A and 1" (25 mm) H-600-A SD Stops
	<b>3308790</b>	H-1009-A	3/4" (19 mm) Vandal Resistant Control Stop Cap Assembly for use with 3/4" (19 mm) H-600-A SD
16.	<b>3308840</b>	H-573	1" (25 mm) Control Stop Cap CP for use with 1" (25 mm) & 3/4" (19 mm) H-700-A and 1" (25 mm) H-600-A SD Stops
	<b>0308848</b>	H-582	3/4" (19 mm) Control Stop Cap CP for use with 3/4" (19 mm) H-600-A SD Stops
17.	<b>3308866</b>	H-574	1" (25 mm) Control Stop Cap with Bumper for use with 1" (25 mm) & 3/4" (19 mm) H-700-A and 1" (25 mm) H-600-A SD Stops
18.	<b>3308867</b>	H-576	1" (25 mm) Control Stop Cap with Extended Bumper for use with 1" (25 mm) & 3/4" (19 mm) H-700-A and 1" (25 mm) H-600-A SD Stops
19.	<b>3308860</b>	H-1006-A	Repair Kit for 1" (25 mm) Stops with Concealed WH for use with 1" (25 mm) H-700-A, H-600-A, and H-543-AWH WH Series Stops
	<b>3308859</b>	H-1007-A	Repair Kit 3/4" (19 mm) Stops with Concealed WH for use with 3/4" (19 mm) H-700-A WH Series Stops
20.	<b>0388010</b>	H-730-A	1" (25 mm) Concealed WH Bak-Chek® Angle Stop RB
	<b>0388011</b>	H-730-A	3/4" (19 mm) Concealed WH Bak-Chek® Angle Stop RB
21.	<b>3308872</b>	H-1011-A	Repair Kit (for Concealed WH only; does not include bonnet)
42.	<b>0208083</b>	H-623	Bonnet
	<b>0308705</b>	H-561	Bonnet – <b>DISCONTINUED</b>
43.	<b>0301048</b>	A-143-A	CP Valve Body includes (H-550) coupling, (H-551) tailpiece, (H552) Locking Ring & (H553) O-ring
	<b>0301050</b>	A-143-A	RB Valve Body includes (H-550) coupling, (H-551) tailpiece, (H552) Locking Ring & (H553) O-ring
	<b>0301065PK</b>	A3SPL-1	CP Valve Body ONLY
	<b>3388015</b>	H-1015-A	Flow Control Kit (HEU Only) (not Shown)

# Optima® Regal® Flushometer

NOTE: Also for use with Regal® XL (Since mid-2010)



## OPTIMA® REGAL® FLUSHOMETER PARTS LIST

Item No.	Code No.	Part No.	Description
1.	<b>0301168</b>	A-71	Inside Cover
2.	<b>0308676</b>	H-550	CP Stop Coupling
3.	<b>0308801</b>	H-551-A	CP Adjustable Tail 2-1/16" (52 mm) long
4.	<b>5308696</b>	H-553	O-Ring – 24 per package
5.	<b>5308381</b>	H-552	Locking ring – 12 per package
6.	<b>3308853</b>	H-541-A-SD	Control Stop Repair Kit for use with 1" (25 mm) H-700-A & 3/4" (19 mm) H-700-A, 1" (25 mm) H-600-A, 1" (25 mm) & 3/4" (19 mm) H-700-A and 1" (25 mm) H-540-A SD Stops
	<b>3308856</b>	H-543-A-SD	Control Stop Repair Kit for use with 3/4" (19 mm) H-600-A
7.	<b>0317004</b>	R-10	CP Cover
8.	<b>SEE INSIDE PARTS ASSEMBLY CHART ON PAGE 42</b>		
9.	<b>3323192</b>	V-551-A	Vacuum Breaker Repair Kit
10.	<b>5323005</b>	V-500-AA	3/4" (19 mm) x 9" (229 mm) CP Vacuum Breaker
	<b>5323006</b>	V-500-AA	1-1/4" (32 mm) x 9" (229 mm) CP Vacuum Breaker
	<b>5323007</b>	V-500-AA	1-1/2" (38 mm) x 9" (229 mm) CP Vacuum Breaker
11.	<b>0306102</b>	F-54-A	3/4" (19 mm) CP Spud Coupling Assembly
	<b>0306142</b>	F-55-A	1-1/4" (32 mm) CP Spud Coupling Assembly
	<b>0306145</b>	F-56-A	1-1/2" (38 mm) CP Spud Coupling Assembly
12.	<b>SEE SLIP JOINT GASKETS AND RINGS TABLE BELOW</b>		
13.	<b>0388065</b>	H-790-A	1" Screwdriver Stop Adjustable
	<b>0388064</b>	H-790-A	3/4" Screwdriver Stop Adjustable
	<b>0388029</b>	H-740-A	1" (25 mm) SD Bak-Chek® Stop CP – complete <b>DISCONTINUED</b>
	<b>0388031</b>	H-740-A	3/4" (19 mm) SD Bak-Chek® Stop CP – complete <b>DISCONTINUED</b>
14.	<b>0308612</b>	H-622	CP Bonnet (Current Regal®)
	<b>0308991</b>	H-639	CP Bonnet for use with 1" (25 mm) & 3/4" (19 mm) H-700-A and 1" (25 mm) H-540-A SD Stops – Pre 2010 Regal® Stops
	<b>0308601</b>	H-538	CP Bonnet for use with H-700-A 3/4" (19 mm) SD Stop – <b>DISCONTINUED</b>
15.	<b>5388001</b>	H-1012-A	CP Cap – 6 per package VP
16.	<b>5310034</b>	J-2/J-7	Bumper Assembly – 6 per package <b>DISCONTINUED</b>
17.	<b>3308866</b>	H-574	Stop Cap, chrome plated with Seat Bumper (-YO)
18.	<b>3308867</b>	H-576	Stop Cap, chrome plated with Extended Seat Bumper (-YG)
19.	<b>5388002</b>	H-528	Hole Plug
20.	<b>0301048</b>	A-143-A	CP Valve Body
	<b>0301050</b>	A-143-A	RB Valve Body
	<b>0301065PK</b>	A3SPL-1	CP Valve Body ONLY
	<b>3388015</b>	H-1015-A	Flow Control Kit (HEU Only) (not Shown)

NOTE: Also refer to the Royal®, Regal®, control stop and flush connection sections.

## ITEM 31A. SLIP JOINT GASKETS AND RINGS

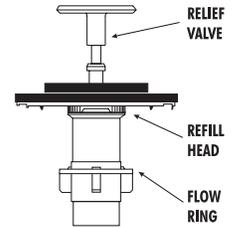
Size	Code No.	Part No.	Description
1-1/2"	<b>5306058</b>	F-3	Red Friction Ring
	<b>5322001</b>	VBF-5	Black Slip Joint Gasket
	<b>0319086/5319086</b>	S-30	Flexible Seat
	<b>0319079</b>	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	<b>0396062</b>	F-105	Slip Joint Gasket – Rigid
1-1/4"	<b>5306057</b>	F-3	Red Friction Ring
	<b>5322176</b>	VBF-5	Black Slip Joint Gasket
	<b>0307052/5307052</b>	G-21	Rigid Seat (rubber over brass)
1"	<b>5306056</b>	F-3	Red Friction Ring
	<b>5306115</b>	F-5	Black Slip Joint Gasket
3/4"	<b>5306055</b>	F-3	Red Friction Ring
	<b>5306113</b>	F-5	Black Slip Joint Gasket

# Optima® Flushometer

## ROYAL® ESS (ITEM 24) REPAIR KIT

Code No.	Part No.	Description	Relief Valve	Refill Head*	Flow Ring
3345014	EL-1102-A	Water Saver Water Closets-3.5 gpf (13.2 Lpf)	White	Gray	Smooth
3345015	EL-1103-A	9 Liter European Water Closets-2.4 gpf (9.0 Lpf)	Blue	Gray	Smooth
3345013	EL-1101-A	Low Consumption Water Closets-1.6 gpf (6.0 Lpf)	Green	Gray	Smooth
3345083	EL-1109-A	High Efficiency Urinals-1.28 gpf (4.8 Lpf)	Blue	Gray	Smooth
3345018	EL-1108-A	Water Saver Urinals-1.5 gpf (5.7 Lpf)	Black	Black	Smooth
3345017	EL-1107-A	Low Consumption Urinals-1.0 gpf (3.8 Lpf)	Green	Black	Slotted
3345016	EL-1106-A	Wash Down Urinals-0.5 gpf (1.9 Lpf)	Green	Black	Smooth
3345093	EL-1105-A	High Efficiency Urinals-0.125 gpf (0.5 Lpf)	Blue	HEU Black	Smooth

To identify the Flush Volume of a DUAL FILTERED DIAPHRAGM ASSEMBLY, look at the color of the relief valve, the refill head and the shape of flow ring.



\*NOTE: Water closet refill heads (gray) have larger slots than urinal refill heads (black).

## DIAPHRAGM ONLY KIT

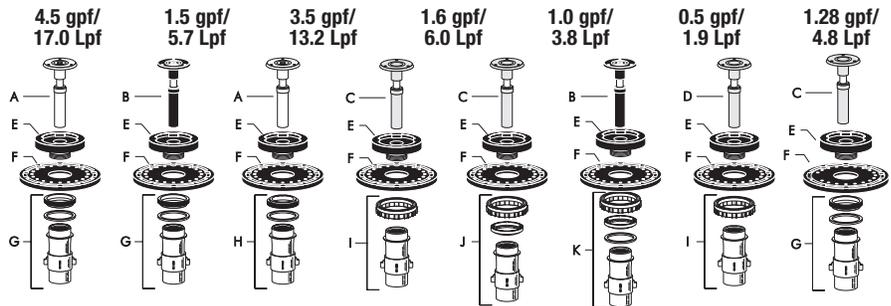
Code No.	Part No.	Description	Relief Valve	Refill Head*	Flow Ring
3301502	A-1041-A	Low Consumption Water Closets-1.6 gpf (6.0 Lpf)	Green	Gray	Smooth
3301501	A-1038-A	Water Saver Water Closets-3.5 gpf (13.2 Lpf)	White	Gray	Smooth
3301506	A-1045-A	High Efficiency Water Closets-1.28 gpf (4.8 Lpf)	Blue	Gray	Smooth
3301505	A-1044-A	9 Liter European Water Closets-2.4 gpf (9.0 Lpf)	Blue	Gray	Smooth
3301504	A-1043-A	Wash Down Urinals-0.5 gpf (1.9 Lpf)	Green	Black	Smooth
3321503	A-1042-A	Low Consumption Urinals-1.0 gpf (3.8 Lpf)	Green	Black	Slotted
3301500	A-1037-A	Water Saver Urinals-1.5 gpf (5.7 Lpf)	Black	Black	Smooth
3301142	A-1047-A	High Efficiency Urinals-0.25 gpf (1.0 Lpf) with White Inserts	White	HEU Black	Smooth
3301143	A-1050-A	High Efficiency Urinals-0.125 gpf (0.5 Lpf) with White Inserts	Blue	HEU Black	Smooth

\*NOTE: Water closet refill heads (gray) have larger slots than urinal refill heads (black).

## REGAL® ESS (ITEM 28) INSIDE PARTS KITS ASSEMBLY

NOTE: Also for use with Regal® XL (Since mid-2010)

Code No.	Part No.	Description
3301036	A-36-A	4.5 gpf/17.0 Lpf-Closet
3301037	A-37-A	1.5 gpf/5.7 Lpf-Urinal
3301038	A-38-A	3.5 gpf/13.2 Lpf-Closet
3301041	A-41-A	1.6 gpf/6.0 Lpf-Closet
3301044	A-42-A	1.0 gpf/3.8 Lpf-Urinal
3301081	A-43-A	0.5 gpf/1.9 Lpf-Urinal
3301024	A-44-A	2.4 gpf/9.0 Lpf-Closet
3301045	A-140-A	1.28 gpf/4.8 Lpf- Closet



- A-36-A  
Closet
- A-37-A  
Urinal
- A-38-A  
Closet
- A-41-A  
Closet
- A-42-A  
Urinal
- A-43-A  
Urinal
- A-44-A  
Closet
- A-140-A  
Closet

## REGAL® INSIDE PARTS LIST\*\*

NOTE: Also for use with Regal® XL (Since mid-2010)

Item No.	Code No.	Part No.	Description
A.	5301058	A-19-AC	Relief Valve, White (Closet)
B.	5301059	A-19-AU	Relief Valve, Black (Urinal)
C.	5301211	A-19-ALC	Relief Valve, Green (Closet/Urinal-Low Consumption)
D.	0301143	A-19-AL	Relief Valve, Blue (9 Liter Closet)
E.	5301111	A-15-A	Disc
F.	5301188	A-156-A	Diaphragm
G.	5301236	A-163-A	Guide Assembly 4.5 gpf/17.0 Lpf Closet and 1.5 gpf/5.7 Lpf Urinal
H.	5301032	A-152-A	Guide Assembly 3.5 gpf/13.2 Lpf Closet
I.	5301031	A-151-A	Guide Assembly 1.6 gpf/6.0 Lpf Closet
J.	5301155	A-155-A	Guide Assembly 1.0 gpf/3.8 Lpf Urinal
K.	5301157	A-157-A	Guide Assembly 0.5 gpf/1.9 Lpf Urinal

\*\*NOTE: All Regal® inside part items are supplied in 12 per package.

## Optima® Flushometer

### SOLENOID/SENSOR KITS LIST

Code No.	Part No.	Description
3305045	EL-124-2	CP 24 VAC Solenoid Assembly for exposed applications. Includes 24 VAC solenoid assembly and actuator cartridge assembly repair kit.
3305154	EL-1001-A	Closet flushometer Electronic Accessories Kit with Override. Includes screws, hex wrench, plate for 2-gang electrical box, mounting plate, override switch, yoke assembly, closet sensor replacement kit, an Optima® sticker and sensor Installation Instructions.
3305170	EL-1005-A	Exposed Urinal flushometer Electronic Accessories Kit. Includes plate for 2-gang electrical box, four screws, yoke, hex wrench, washer, urinal sensor replacement kit, an Optima® sticker and sensor Installation Instructions.
3305172	EL-1007-A	Concealed Urinal flushometer Accessories Kit. Includes screws, yoke, plate for 2-gang electrical box, hex wrench, washer, urinal sensor replacement kit, an Optima® sticker and sensor Installation Instructions.

### WALL BOX KITS CLOSET MODELS

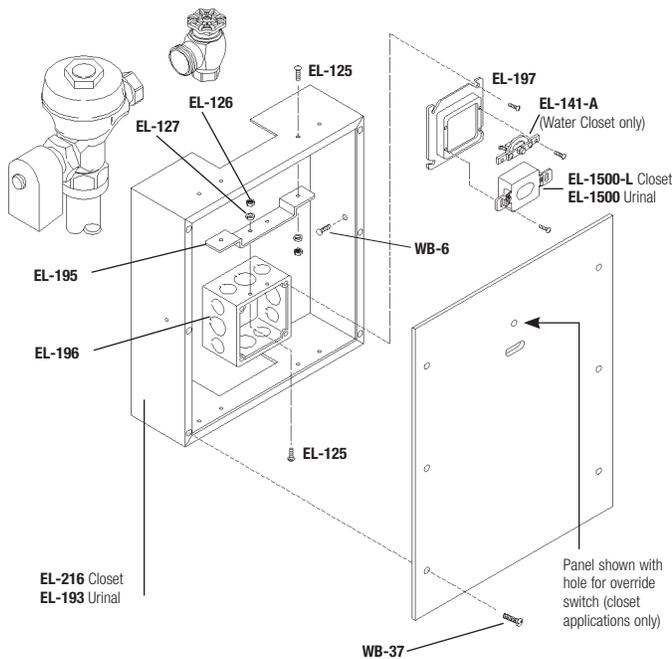
Code No.	Part No.	Description
3305180	EL-192-A	Closet Wall Box Kit – Stainless Steel. Includes four Mounting Screws, four Hex Nuts, four Lock Washers, Mounting Bracket, Electrical Box, Electrical Box Cover, Override Switch Subassembly, Wall Box 13" x 17" (330 mm x 432 mm) with 14.5" x 18.5" (368 mm x 470 mm) Stainless Steel Wall Box Cover with hole for override switch, Spanner Bit and Closet Sensor Replacement Kit.
3305160	EL-192-ALS	Same as EL-192-A. Sensor NOT included.

### WALL BOX KITS URINAL MODELS

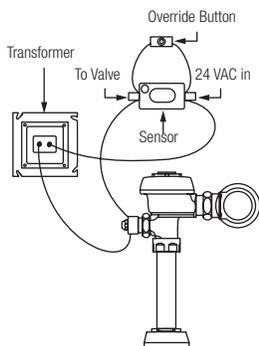
3305178	EL-191-A	Urinal Wall Box Kit – Stainless Steel. Includes Mounting Screws, Hex Nuts, Lock Washers, Wall Box 13" x 17" (330 mm x 432 mm) with 14.5" x 18.5" (368 mm x 470 mm) Stainless Steel Wall Box Cover, Mounting Bracket, Electrical Box, Electrical Box Cover, Spanner Bit, Urinal Sensor Replacement Kit.
3305158	EL-191-ALS	Same as EL-191-A. Sensor NOT included.

### WALL BOX PARTS

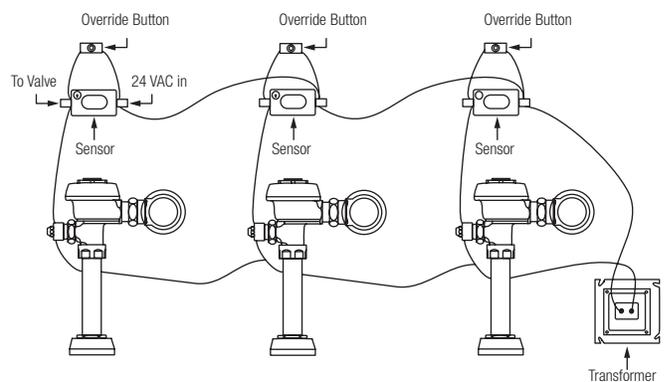
0305845	EL-318	#8 Spanner Bit for WB-37 Spanner Screws (#8)
0334021	WB-37	Spanner Head Screws for ESS WB
5334000	WB-1000-A	6 Pack of WB-37 Screws
—	EL-216	Wall Box Frame and Stainless Steel Wall Box Cover for Water Closet. Mounting Hardware and Sensor NOT Included.
—	EL-193	Wall Box Frame and Stainless Steel Wall Box Cover for Urinal. Mounting Hardware and Sensor NOT Included.



### TYPICAL WIRING DIAGRAM FOR ONE FLUSH VALVE



### TYPICAL WIRING DIAGRAM FOR ONE OR MORE FLUSH VALVE(S)



# Optima® Flushometer

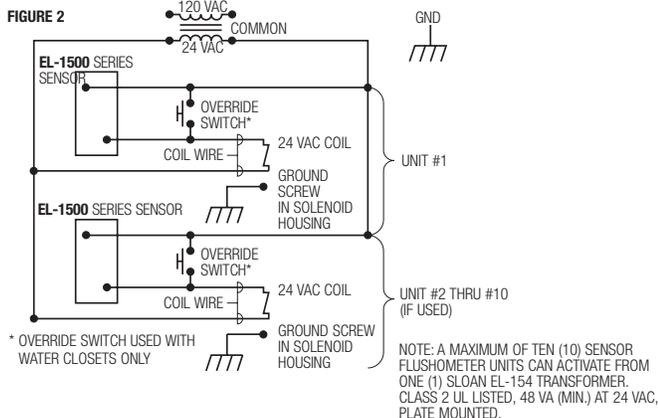
## SENSOR REPLACEMENT

NOTE: The EL-1500 series Optima sensor (a two-wire unit) replaces the older EL-150 series sensors (either three-wire or four-wire units). Refer to the wiring history shown below.

### IMPORTANT

- Be certain to disconnect the 24 VAC power supply either at the transformer or the fuse box. Failure to disable the power supply can result in damage to the EL-1500 series sensor.
  - The solenoid activated must be removed from the valve on exposed urinal installations. Do not damage the O-ring seal on the operator assembly.
1. Remove the cover plate (for wall box installation, remove cover panel) and old sensor from the wall installation. Use a 5/64" hex wrench to remove the cover plate screws (or #8 drilled spanner head screwdriver EL-318 to remove the vandal-resistant screws from the wall box cover panel.)
- FIGURE 1A
- 
- FIGURE 1B
- 
2. Connect one 24 VAC lead to the sensor terminal labeled "24 VAC IN" (see Figure 1B).
    - On an old three-wire series EL-150 sensor, this wire was connected to the BLACK sensor lead.
    - On an old four-wire series EL-150 sensor, this wire was connected to the BROWN sensor lead.
  3. Connect one solenoid lead to the sensor terminal labeled "TO VALVE" (see Figure 1B).
    - On an old three-wire or four-wire EL-150 series sensor, this wire was connected to the RED sensor lead.
  4. Connect the remaining 24 VAC lead to the remaining solenoid lead.
    - On an old three-wire series EL-150 sensor, these wires were connected to the WHITE sensor leads.
    - On an old four-wire EL-150 series sensor, these wires were connected to the YELLOW and BLUE (or in very early models, the inner BROWN) sensor leads.
  5. On Water Closet installations only, connect the override button (shown as the override switch in wiring diagram) parallel to the EL-1500-L sensor.
  6. Reinstall the sensor with the orientation arrow on the lens side of the sensor pointing UP (see Figure 1A). Replace the cover plate (or wall box panel) and tighten the cover plate (or wall box panel) screws.
  7. Reconnect the 24 VAC power supply at the transformer or the fuse box.

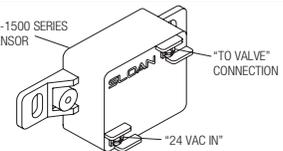
## WIRING DIAGRAM



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

## START-UP MODE

The self-adaptive sensor automatically adapts to the surrounding environment when 24 volt supply is activated. No manual adjustments are required. Start-up mode will take approximately one (1) minute to complete its cycle and is important that no non-permanent target is present at this time. A continuous red light visible in sensor window indicates sensor is in the start-up mode. If the red light is flashing, this indicates that the sensor is picking up a target. Unless this target is a permanent fixture in the sensor's environment (i.e., wall or stall door), it must be removed from the view of the sensor. Then, either disconnect the 24 volt supply for twenty (20) seconds, or push the manual override button for twenty (20) seconds in closet set-up. Reconnect the 24 VAC power supply at the transformer or the fuse box. When the start-up cycle is complete, there will be no light visible in the sensor window.



**NOTE: If the 24 volt power supply is ever interrupted for longer than twenty (20) seconds, the start-up mode automatically begins when power is restored.**

Incorrect wiring or a short in the 24 volt power supply is indicated by a continuous warning signal seen in the sensor window. The visible red light flashes an "SOS" signal: three (3) slow, three (3) fast, three (3) slow flashes.

## SENSOR RANGE

### Water Closets – EL-1500-L

Nominal: 15"-50" (381-1270 mm); Self-Adaptive Window: ± 17" (432 mm)

### Urinals – EL-1500

Nominal: 12"-32" (305-813 mm); Self-Adaptive Window: ± 10" (254 mm)

## START-UP MODE (FOR PREVIOUS SENSOR)

NOTE: It is important that only permanent targets are present at this time.

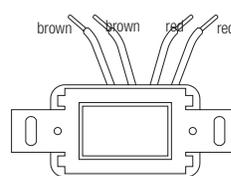
The self-adaptive sensor automatically adjusts to the surrounding environment when the 24 volt supply is activated. No manual adjustment is required. The start-up cycle completes in approximately five (5) minutes. A continuous red light visible in the sensor window indicates the start-up mode. If the red light flashes, the sensor detects a target. Unless this target is a permanent fixture in the sensor's environment (i.e., a wall or stall door), it must be removed from the view of the sensor. If a target is permanent, the sensor will adapt itself around this target. In this case, the start-up mode may take up to ten (10) minutes. When the start-up cycle is complete, there will be no light visible in the sensor window.

**NOTE: If the 24 volt power supply is ever interrupted for longer than fifteen (15) seconds, the start-up mode begins automatically when power is restored.**

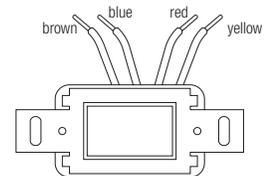
**Incorrect wiring or a short in the 24 volt power supply will initiate a warning signal in the sensor window. The visible light flashes a continuous "S-O-S" signal: three (3) fast, three (3) slow, and three (3) fast flashes.**

## EL-150 Wiring History for 4-wire and 3-wire sensors

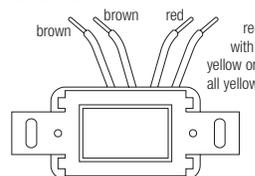
Release date 03/09/78



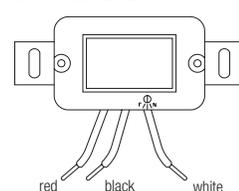
Release date 02/02/87



Release date 08/11/83



Release date 12/12/90



## Optima® Flushometer

### TROUBLESHOOTING GUIDE

**ATTENTION INSTALLERS:** With the exception of the control stop inlet, DO NOT USE pipe sealant or plumbing grease on any valve component or coupling! To protect the chrome or special finish of Sloan flushometers, DO NOT USE toothed tools to install or service these valves. Use our A-50 Super-Wrench™ or other smooth-jawed wrench to secure couplings. Regulations for low consumption fixtures (1.6 gpf/6.0 Lpf closets and 1.0 gpf/3.8 Lpf urinals) prohibit use of higher flush volumes.

#### Urinals (EL-1500 Sensor)

When the sensor detects a user, a slow flashing red light appears in the sensor window. After eight (8) to ten (10) seconds, the light flashes rapidly to indicate that the sensor is armed. When the sensor no longer detects a user, the sensor immediately activates the solenoid valve after a 0.5 second delay.

#### Water Closets (EL-1500-L Sensor)

When the sensor detects a user, a slow flashing red light appears in the sensor window. After approximately sixteen (16) seconds, the light will flash rapidly indicating sensor is armed. When the sensor no longer detects a user, the sensor immediately activates the solenoid after a 3 second delay.

#### 1. Valve does not function (red light does not flash when user steps in front of sensor).

- A. No power is being supplied to sensor. Ensure that the main power is turned "ON". Check transformer, leads and connections. Repair or replace as necessary.
- B. EL-1500/EL-1500-L sensor is not operating. Replace sensor.

#### 2. Valve does not function (red light flashes when user steps in front of sensor).

**INDICATOR: The red light stops flashing when user steps away and the valve makes a "clicking" sound but does not flush.**

- A. No water is being supplied to the valve. Make certain that water supply is turned "ON" and the control stop is open.
- B. EL-128-A cartridge is fouled or jammed. Turn electronic power to valve "OFF" (failure to do so could result in damage to the solenoid coil). Remove the solenoid operator from the valve and remove the EL-128-A cartridge. Clean and/or repair as necessary.

**INDICATOR: The red light stops flashing when user steps away but the valve does NOT make a "clicking" sound and does NOT flush.**

- A. EL-163-A solenoid shaft assembly is fouled or jammed. Turn electronic power to valve "OFF" (failure to do so could result in damage to the solenoid coil). Remove EL-101 or EL-166 nut from the solenoid operator. Remove the coil from the solenoid operator. Use a spanner wrench or pliers to remove the EL-163-A solenoid shaft assembly from valve. Clean and/or replace as necessary. Be sure to replace plunger spring when reassembling solenoid shaft assembly.

**INDICATOR: The red light flashes three (3) fast flashes, three (3) slow flashes then three (3) fast flashes ("S-O-S") and continues to repeat this cycle even when user steps out of the sensor's detection range.**

- A. EL-1500/EL-1500-L sensor wiring connections are incorrect. Rewire sensor to valve. One solenoid lead connects to the "TO VALVE" connection on sensor. One transformer lead connects to the "24 VAC IN" connection on sensor. Second solenoid lead and second transformer lead connect together.
- B. Wiring to sensor is ground shorted. Find short in wiring circuit and correct.
- C. EL-165-2 solenoid coil is burnt out or coil is not connected to solenoid plunger shaft. Reinstall or replace coil as necessary.

#### 3. Range too short.

- A. Power down unit for 30 seconds. Power up. Wait six (6) minutes for calibration.
- B. If reset does not work, replace.

#### 4. Volume of water is insufficient to adequately siphon fixture.

- A. Control stop is not open wide enough. Adjust control stop for desired water delivery.
- B. Low consumption unit is installed on water saver or conventional fixture. Replace diaphragm component parts of valve with kit that corresponds to appropriate flush volume of fixture.
- C. Inadequate water volume or pressure available from supply. Increase pressure or supply (flow rate) to the valve.

#### 5. Length of flush is too long (long flushing) or valve fails to shut off.

- A. Water saver valve is installed on low consumption fixture. Replace diaphragm component parts of valve with kit that corresponds to appropriate flush volume of fixture.
- B. Relief valve in diaphragm is not seated properly or the by-pass hole in diaphragm is clogged. Disassemble inside diaphragm component parts and wash parts thoroughly. Replace worn parts if necessary.

#### 6. Water splashes from fixture.

- A. Supply flow rate is more than necessary. Adjust control stop to meet flow rate required for proper cleansing of the fixture.
- B. Closet valve is installed on urinal fixture. Replace closet diaphragm component parts with proper urinal kit (inside diaphragm assembly or inside parts kit).

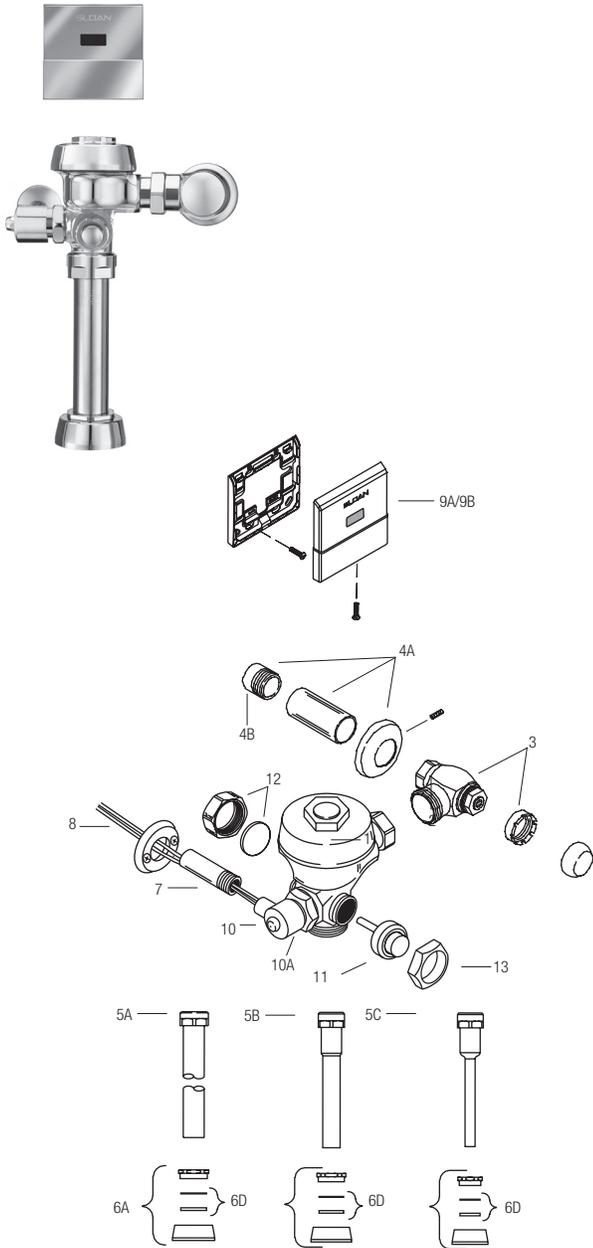
### CARE AND CLEANING INSTRUCTIONS

**DO NOT USE** abrasive or chemical cleaners to clean flushometers or sensor that may dull the luster and attack the chrome or special decorative finishes. Use **ONLY** mild soap and water, then wipe dry with a clean towel or cloth.

When cleaning the bathroom tile, protect the flushometer from any splattering of cleaner. Acids and cleaning fluids can discolor or remove chrome plating.

**When assistance is required, please contact  
Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

# Optima® Royal® ES-S TMO Exposed Flushometer



## ROYAL® OPTIMA® ES-S TMO EXPOSED FLUSHOMETER PARTS LIST

Item No.	Code No.	Part No.	Description
1.	‡		Solenoid Activated Valve Assembly
2.	‡	H-700-A	Bak-Chek® Control Stop
3.	<b>3308772</b>	H-1010-A	Vandal Resistant Stop Cap
4A.	<b>3308782</b>	H-633-AA	1" (25 mm) Sweat Solder Kit
4B.	<b>3308603</b>	H-532	Adapter, 1" NPT to 1" Tube
	<b>3308607</b>	H-535	Adapter, 3/4" NPT to 3/4" Tube
5A.	—	V-600-AA	1-1/2" (38 mm) Vacuum Breaker Assembly CP (Models 110/111, 115, and 116)
5B.	—	V-600-AA	1-1/4" (32 mm) x 9" (229 mm) Vacuum Breaker Assembly CP (Model 180 ES-S)
5C.	—	V-600-AA	3/4" (19 mm) x 9" (229 mm) Vacuum Breaker Assembly CP (Model 186 ES-S)
6A.	<b>0306146</b>	F-5-AT	1-1/2" (38 mm) Spud Coupling Assembly CP (Models 110/111, 115, and 116)
6B.	<b>0306140</b>	F-5-AU	1-1/4" (32 mm) Spud Coupling Assembly CP (Model 180)
6C.	<b>0306125</b>	F-5-AW	3/4" (19 mm) Spud Coupling Assembly CP (Model 186)
6D.	<b>SEE SLIP JOINT GASKETS AND RINGS ON TABLE BELOW</b>		
7.‡	F-15		Tail Assembly
8.	<b>0302323PK</b>	B-110-A	Flange Assembly
9A.	<b>3305107</b>	EL-635-A	CP Cover Plate with Sensor (Mounting Plate and Screws included) (Models 110/111, 115, and 116)
9B.	<b>3305101</b>	EL-645-A	CP Cover Plate with Sensor (Mounting Plate and Screws included) (Models 180 and 186)
10.	<b>0305329</b>	EL-124-2	CP 24V Solenoid Assembly Only
10A	<b>3305043</b>	EL-128-A	Actuator Cartridge Assembly (not shown detailed)
	<b>3305045</b>	EL-1028-A	Solenoid Assembly w/ Cartridge Assembly
11.	<b>0303009</b>	C-2-A	True Mechanical Override Button
12.	<b>3325814</b>	EBV-1017-A	CP Valve Handle Cap
13.	<b>0301082PK</b>	A-6	CP Nut
—	<b>3345080</b>	EL-1026-A	ES-S to ES-S-TMO Conversion Kit Exposed includes Body/Tail assembly (no inside parts or covers) #11, #12, #13, DO-22 and EL-110 o-rings
—	<b>3305043</b>	EL-128-A	Actuator Cartridge
14.	<b>3302306</b>	B-51-A	Triple Seal Handle Repair Kit
15.	<b>3345080</b>	EL-126-A	ESS to TMO Retrofit Conversion Kit (Exposed*)
	<b>3388015</b>	H-1015-A	Flow Control Kit (HEU Only) (not Shown)
16.			

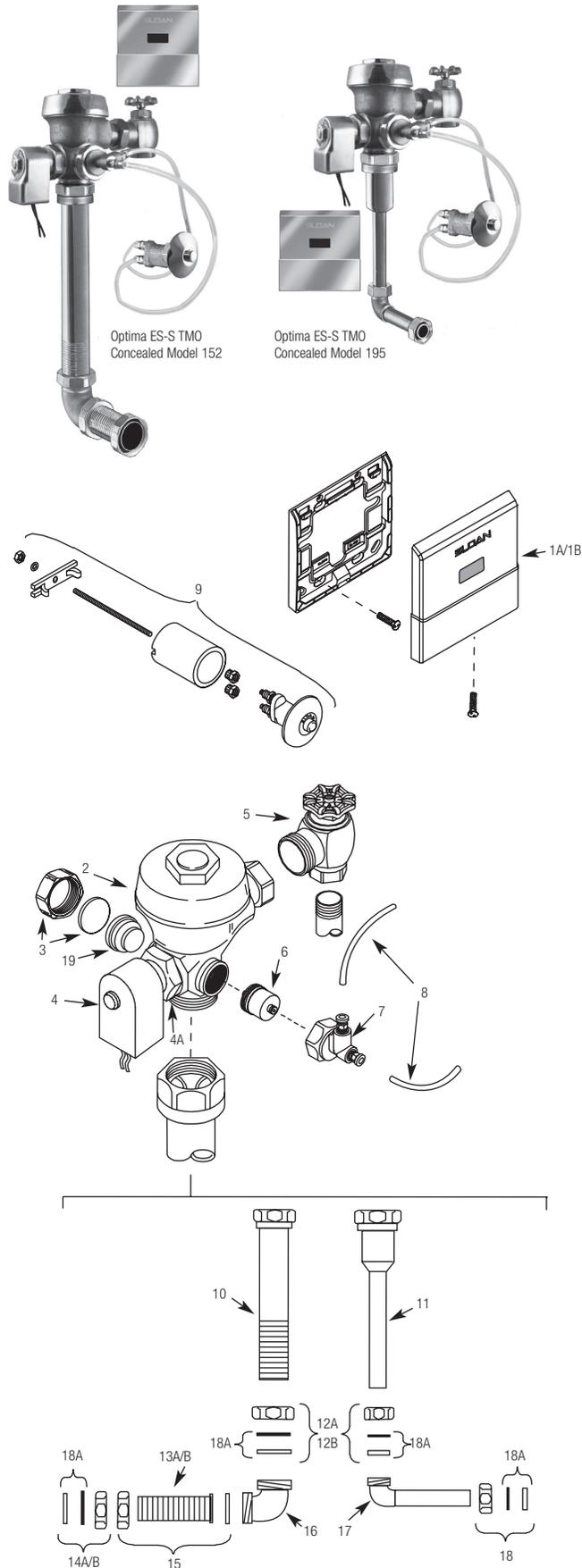
‡ Part number varies with valve model variation; consult factory.

\* Not shown

## ITEM 6D. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	<b>5306058</b>	F-3	Red Friction Ring
	<b>5322001</b>	VBF-5	Black Slip Joint Gasket
	<b>0319086/5319086</b>	S-30	Flexible Seat
	<b>0319079</b>	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	<b>0396062</b>	F-105	Slip Joint Gasket – Rigid
1-1/4"	<b>5306057</b>	F-3	Red Friction Ring
	<b>5322176</b>	VBF-5	Black Slip Joint Gasket
	<b>0307052/5307052</b>	G-21	Rigid Seat (rubber over brass)
1"	<b>5306056</b>	F-3	Red Friction Ring
	<b>5306115</b>	F-5	Black Slip Joint Gasket
3/4"	<b>5306055</b>	F-3	Red Friction Ring
	<b>5306113</b>	F-5	Black Slip Joint Gasket

## Optima® Royal® ES-S TMO Concealed Flushometer



### ROYAL® OPTIMA® ES-S TMO CONCEALED FLUSHOMETER PARTS LIST

Item No.	Code No.	Part No.	Description
1A.	<b>3305107</b>	EL-635-A	CP Cover Plate with Sensor (Mounting Screws included) (Model 152)
1B.	<b>3305101</b>	EL-645-A	CP Cover Plate with Sensor (Mounting Screws included) (Model 195)
2.	‡	—	Valve Assembly
3.	<b>3301093</b>	A-1013-A	Concealed Valve Handle Cap RB
4.	<b>0305331</b>	EL-138-2	RB Concealed 24V Solenoid Assembly
4A.	<b>3305043</b>	EL-128-A	Actuator Cartridge Assembly Only
5.	‡	H-730-A	RB Bak-Chek® Control Stop
6.	<b>3318001</b>	HY-83-A	Actuator Cartridge
7.	<b>3318005</b>	HY-109-A-1	Valve Actuator Assembly
8.	<b>0318093</b>	HY-30	1/4" (6 mm) x 48" (1219 mm) Connecting Tubes
9.	<b>0318117</b>	HY-100-A-1	Metal Push Button Assembly
10.	‡	V-500-AA	1-1/2" (38 mm) Vacuum Breaker Assembly RB (Model 152)
11.	‡	V-500-AA	3/4" (19 mm) Vacuum Breaker Assembly RB (Model 192)
12A.	<b>0306088</b>	F-2-AT	1-1/2" (38 mm) Slip Joint Coupling Assembly RB (Model 152)
12B.	<b>0306054</b>	F-2-AW	3/4" (19 mm) Slip Joint Coupling Assembly RB (Model 192)
13A.	‡	F-110	1-1/4" (32 mm) Outlet Tube with Flange and Scoring (Model 152)
13B.	‡	F-100	1-1/2" (38 mm) Outlet Tube with Flange and Scoring (Model 152)
14A.	<b>0306059</b>	F-2-AU	1-1/4" (32 mm) Slip Joint Coupling Assembly RB (Model 152)
14B.	<b>0306088</b>	F-2-AT	1-1/2" (38 mm) Slip Joint Coupling Assembly RB (Model 152)
15.	<b>0306091</b>	F-2-A	1-1/2" (38 mm) Coupling with S-21 Gasket (Model 152)
16.	<b>0206146PK</b>	F-21	1-1/2" (38 mm) Double Male Slip Joint Elbow
17.	‡	F-15-A	ELL with 3/4" (19 mm) Tail
18.	<b>0306054</b>	F-2-AW	3/4" (19 mm) Slip Joint Coupling
18A.	<b>SEE SLIP JOINT GASKETS AND RINGS TABLE BELOW</b>		
19.	<b>0305190</b>	EL-190-A	Handle Adapter Assembly
20.	<b>3345020</b>	EL-1033-A	ESS to TMO Retrofit Kit (Concealed)*
	<b>3388015</b>	H-1015-A	Flow Control Kit (HEU Only) (not Shown)

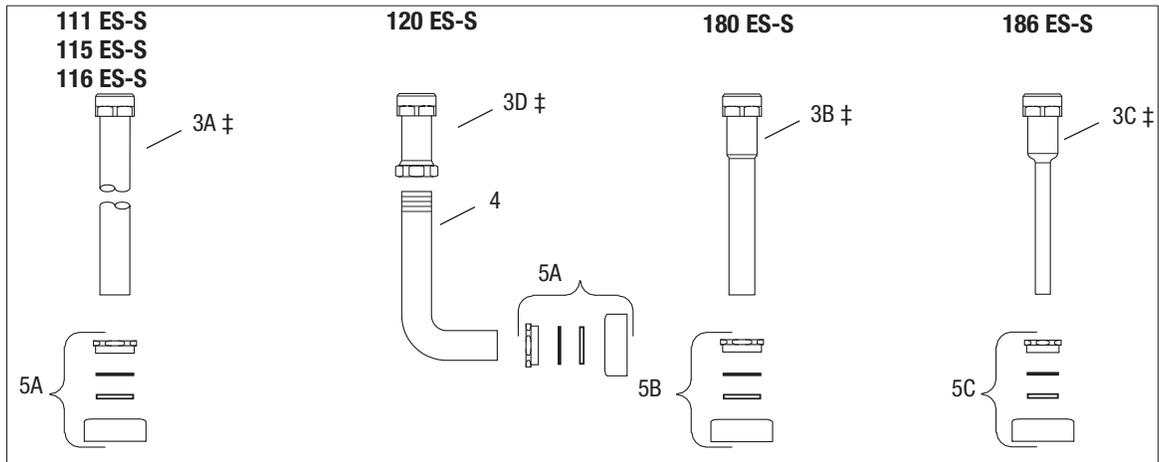
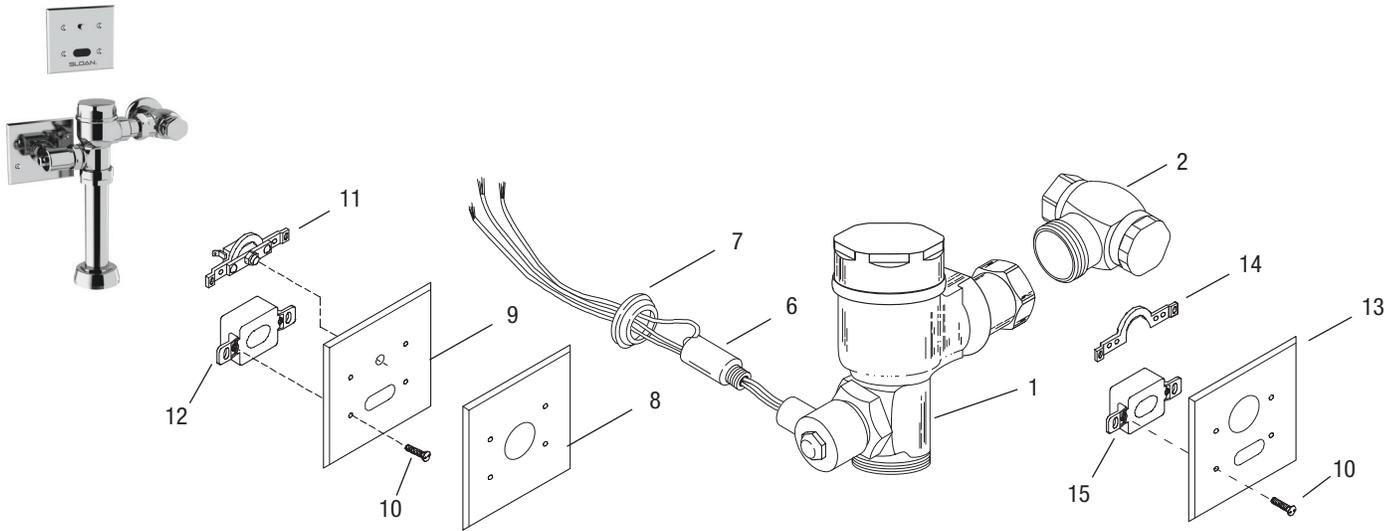
‡ Part number varies with valve model variation; consult factory.

\* Not Shown

### ITEM 18A. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	<b>5306058</b>	F-3	Red Friction Ring
	<b>5322001</b>	VBF-5	Black Slip Joint Gasket
	<b>0319086/5319086</b>	S-30	Flexible Seat
	<b>0319079</b>	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	<b>0396062</b>	F-105	Slip Joint Gasket – Rigid
1-1/4"	<b>5306057</b>	F-3	Red Friction Ring
	<b>5322176</b>	VBF-5	Black Slip Joint Gasket
	<b>0307052/5307052</b>	G-21	Rigid Seat (rubber over brass)
1"	<b>5306056</b>	F-3	Red Friction Ring
	<b>5306115</b>	F-5	Black Slip Joint Gasket
3/4"	<b>5306055</b>	F-3	Red Friction Ring
	<b>5306113</b>	F-5	Black Slip Joint Gasket

# Optima® CROWN® ES-S Exposed Flushometer



Item No.	Part No.	Description
1.	†	Solenoid Operated Valve Assembly
2.	H-700-A	Bak-Chek® Control Stop
3A.	V-600-AA	1-1/2" (38 mm) x 9" (229 mm) Vacuum Breaker Assembly CP (Model 111)‡
	V-600-AA	1-1/2" (38 mm) x 21" (533 mm) Vacuum Breaker Assembly CP (Model 115)‡
	V-600-AA	1-1/2" (38 mm) x 24" (610 mm) Vacuum Breaker Assembly CP (Model 116)‡
3B.	V-600-AA	1-1/4" (32 mm) x 9" (229 mm) Vacuum Breaker Assembly (Model 180)‡
3C.	V-600-AA	3/4" (19 mm) x 9" (229 mm) Vacuum Breaker Assembly CP (Model 186)‡
3D.	V-600-A	1-1/2" (38 mm) Vacuum Breaker Assembly (Model 120)‡
4.	F-109	1-1/2" (38 mm) Elbow Flush Connection (Model 120)
5A.	CR-1010-A	1-1/2" (38 mm) Spud Coupling Kit (Models 111, 115, 116 and 120)
5B.	CR-1009-A	1-1/4" (32 mm) Spud Coupling Assembly (Model 180 ES-S)
5C.	CR-1008-A	3/4" (19 mm) Spud Coupling Assembly (Model 186)
6.	EL-163-A	Nipple Assembly
7.	EL-431-A	Flange Assembly
8.	HY-66	Cover Plate (Closet)
9.	EL-201	Cover Plate (Closet)

Item No.	Part No.	Description
10.	EL-152	Screw (4 Required per Plate)
11.	EL-141-A	Yoke and Override Button Assembly (Closet)
12.	EL-1500-L	Sensor (Closet)
13.	EL-151	Cover Plate (Urinal)
14.	EL-168-A	Yoke Assembly (Urinal)
15.	EL-1500	Sensor (Urinal)

† Part number varies with valve model variation; consult factory.  
‡ If valve was specified less vacuum breaker (XYV Variation), a straight flush tube is supplied in place of the vacuum breaker assembly. Consult factory for part number.

**Piston Repair Kits**  
Part number varies with valve model variation; consult factory

**Installation Templates:**  
For Model 111 ES-S: Code #0816157  
For Models 180/186 ES-S: Code # 0816156

## Optima® CROWN® ES-S Exposed Flushometer

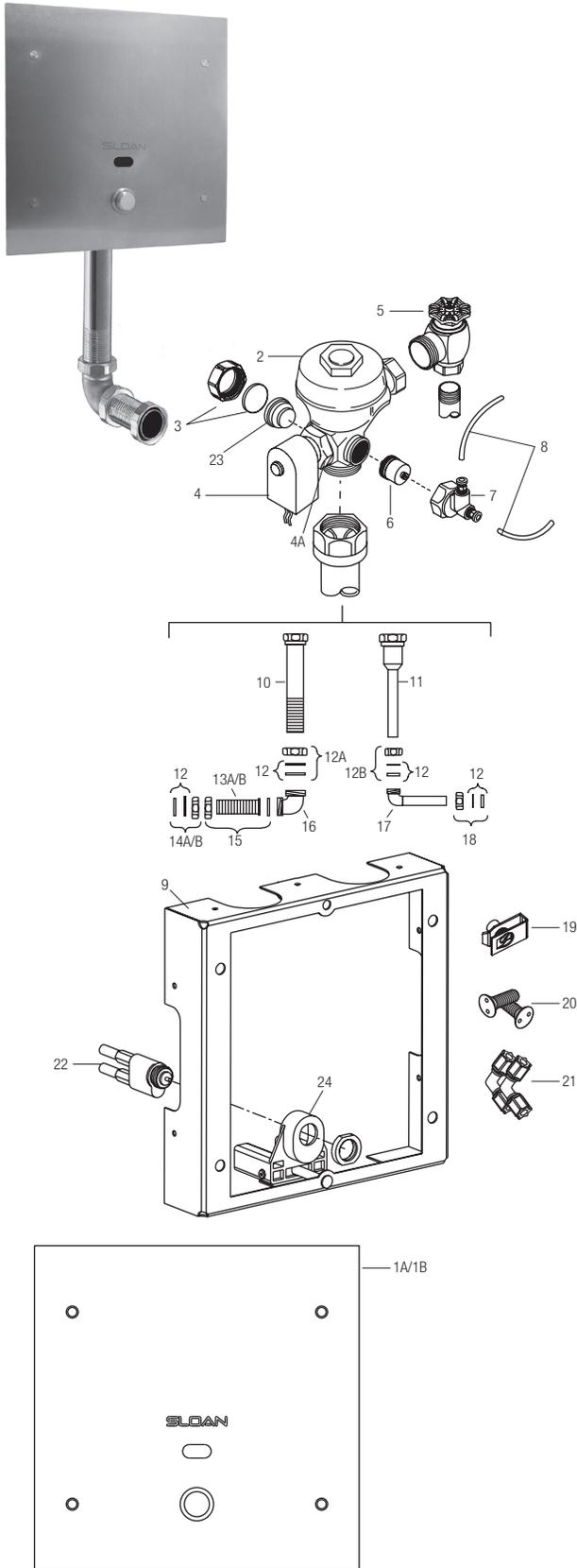
### TROUBLESHOOTING GUIDE

1. **PROBLEM:** Valve does not function — red light DOES NOT flash when user steps in front of sensor.  
**CAUSE:**
  - a. No power to sensor.
  - b. EL-1500 or EL-1500-L sensor not operating.**SOLUTION:**
  - a. Make certain that power is on. Check transformer, leads & connections. Repair or replace as necessary.
  - b. Replace EL-1500 or EL-1500-L sensor.
  
2. **PROBLEM:** Valve does not function — red light flashes when user steps in front of sensor.  
 Under normal operation, the red light should flash slowly for the first (8) eight seconds of user detection. Light should then flash rapidly which indicates that the sensor is armed & ready to flush the fixture when user leaves the field of view.  
**If red light stops flashing when user steps away & valve makes a “clicking” sound but DOES NOT flush:**  
**CAUSE:**
  - a. Control stop or main valve is closed.
  - b. Relief valve is worn and sticking in UP position.
  - c. EL-128-A cartridge is fouled or jammed.**SOLUTION:**
  - a. Open control stop or main valve.
  - b. Replace piston.
  - c. Turn off power to valve. Remove solenoid operator from valve & remove EL-128-A cartridge. Clean and/or replace as necessary.**If red light stops flashing when user steps away & valve does not make a “clicking” sound & DOES NOT flush:**  
**CAUSE:** EL-163-A solenoid shaft assembly is fouled or jammed.  
**SOLUTION:** Turn off power to valve. Remove coil from solenoid operator. Using a spanner wrench or pliers, remove EL-163-A solenoid shaft assembly from valve. Clean and/or replace as necessary.  
**If red light is flashing (3) short flashes, (3) long flashes then (3) short flashes (S-O-S) and continues to repeat this cycle even when the user steps away from the valve:**  
**CAUSE:**
  - a. EL-1500 or EL-1500-L sensor is wired incorrectly.
  - b. Wiring to sensor is ground shorted.
  - c. EL-165-2 solenoid coil burned out or coil is off solenoid plunger shaft.**SOLUTION:**
  - a. Rewire sensor and valve properly.
  - b. Find short in wiring and correct.
  - c. Reinstall or replace coil as necessary.
  
3. **PROBLEM:** Insufficient volume of water to adequately siphon fixture.  
**CAUSE:**
  - a. Control stop not open enough.
  - b. Urinal piston parts inside a closet valve.
  - c. Low consumption valve installed on a non-low consumption fixture.
  - d. Inadequate volume or pressure at supply.**SOLUTION:**
  - a. Adjust control stop for desired delivery of water.
  - b. Replace piston parts with proper closet piston.
  - c. Replace with proper flushometer. Crown & Crown II flushometers are not available with flush volume higher than 1.6 gpf/6.0 Lpf.
  - d. Increase water pressure or supply (flow) to valve.

### IMPORTANT - LAWS AND REGULATIONS PROHIBIT THE USE OF HIGHER FLUSHING VOLUMES THAN LISTED ON FIXTURE OR FLUSHOMETER.

4. **PROBLEM:** Length of flush too short (short flushing) or valve closes off immediately.  
**CAUSE:**
  - a. Piston assembly is not hand-tight.
  - b. Enlarged bypass orifice from corrosion or damage.
  - c. Urinal piston in closet flushometer.
  - d. Low consumption valve installed on a non-low consumption fixture.**SOLUTION:**
  - a. Screw the assembly hand-tight.
  - b. Install NEW piston assembly to correct problem & update flushometer.
  - c. Replace piston with proper closet piston.
  - d. Replace with proper flushometer. Crown & Crown II flushometers are not available with flush volume higher than 1.6 gpf/6.0 Lpf.
  
5. **PROBLEM:** Length of flush too long (long flushing) or fails to close off.  
**CAUSE:**
  - a. Piston is not seating properly or bypass orifice is clogged because of foreign material, or bypass orifice is clogged by an invisible gelatinous film from “over-treated” water.
  - b. Line pressure has dropped & is not sufficient to force relief valve to seat.
  - c. Main seat is fouled with debris or is worn.**SOLUTION:**
  - a. Disassemble the working parts and wash thoroughly. **NOTE:** Size of the orifice in the bypass is of utmost importance for the proper metering of water into the upper chamber of the valve. **DO NOT** enlarge or damage this orifice. Replace piston if cleaning does not correct problem.
  - b. Shut off all control stops until pressure has been restored, then open them again.
  - c. Clean or replace Main Seat.
  
6. **PROBLEM:** Water splashes from fixture.  
**CAUSE:** Supply volume is open more than necessary.  
**SOLUTION:** Adjust control stop to meet flow rate required for proper cleansing of the fixture.  
**If further assistance is required, please contact Sloan Technical Support at 1-888-SLOAN-14 (1-888-756-2614).**

# Optima® Royal® ES-S TMO (SWB) Flushometer



## ROYAL® OPTIMA® ES-S TMO WITH SWB PARTS LIST

Item No.	Code No.	Part No.	Description
1A.	—	WB-55-A	Wall Box Cover Plate Assembly (Model 152)
1B.	—	WB-60-A	Wall Box Cover Plate Assembly (Model 195)
2.	‡	—	Valve Assembly
3.	<b>3301093</b>	A-1013-A	Concealed Valve Handle Cap RB
4.	<b>0305331</b>	EL-138-2	RB Concealed 24V Solenoid Assembly
4A.	<b>3305043</b>	EL-128-A	Actuator Cartridge Assembly Only
5.	‡	H-730-A	RB Bak-Chek® Control Stop
6.	<b>3318001</b>	HY-83-A	Actuator Cartridge
7.	<b>3318005</b>	HY-109-A-1	Valve Actuator Assembly
8.	<b>0318117</b>	HY-30	1/4" (6 mm) x 48" (1219 mm) Connecting Tubes
9.	<b>3325215</b>	—	Wall Box Assembly
10.	‡	V-500-AA	1-1/2" (38 mm) Vacuum Breaker Assembly RB (Model 152)
11.	‡	V-500-AA	3/4" (19 mm) Vacuum Breaker Assembly RB (Model 192)
12.	<b>SEE SLIP JOINT GASKETS AND RINGS TABLE BELOW</b>		
12A.	<b>0306088</b>	F-2-AT	1-1/2" (38 mm) Slip Joint Coupling Assembly RB (Model 152)
12B.	<b>0306054</b>	F-2-AW	3/4" (19 mm) Slip Joint Coupling Assembly RB (Model 192)
13A.	‡	F-110	1-1/4" (32 mm) Outlet Tube Flanged and Scored (Model 152)
13B.	‡	F-100	1-1/2" (38 mm) Outlet Tube Flanged and Scored (Model 152)
14A.	<b>0306059</b>	F-2-AU	1-1/4" (32 mm) Slip Joint Coupling Assembly RB (Model 152)
14B.	<b>0306088</b>	F-2-AT	1-1/2" (38 mm) Slip Joint Coupling Assembly RB (Model 152)
15.	<b>0306091</b>	F-2-A	1-1/2" (38 mm) Coupling with S-21 Gasket (Model 152)†
16.	<b>0206146PK</b>	F-21	1-1/2" (38 mm) Double Male Slip Joint Elbow
17.	<b>0306366</b>	F-15-A	ELL with 3/4" (19 mm) Tail (Model 195)†
18.	<b>0306054</b>	F-2-AW	3/4" (19 mm) Slip Joint Coupling
19.	<b>0334017</b>	WB-18	U-Type Nuts (4) 1/4-20
20.	—	WB-49	Tamper Resistant Screws (4) 1/4-20 x 1-1/2
21.	—	HY-126	Elbow Fitting (2)
22.	<b>0318123</b>	HY-71-A	Hydraulic Actuator Assembly
23.	<b>0305190</b>	EL-190-A	Handle Adapter Assembly
	<b>3388015</b>	H-1015-A	Flow Control Kit (HEU Only) (not Shown)
	<b>3334001</b>	WB-1001-A	Override Button Repair Kit (not shown)
	<b>0334033</b>	WB-54-A	Small Wall Box Mntg Hardware Kit
24.	<b>33753009</b>	WB-1002-A	Override Holder Repair Kit

† "L" Dimension available between the lengths of 2" and 10¾"  
‡ Part number varies with valve model variation; consult factory.

## ITEM 12. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	<b>5306058</b>	F-3	Red Friction Ring
	<b>5322001</b>	VBF-5	Black Slip Joint Gasket
	<b>0319086/5319086</b>	S-30	Flexible Seat
1-1/2" x 1-1/4"	<b>0319079</b>	S-21	Rigid Seat (rubber over brass)
	<b>0396062</b>	F-105	Slip Joint Gasket – Rigid
1-1/4"	<b>5306057</b>	F-3	Red Friction Ring
	<b>5322176</b>	VBF-5	Black Slip Joint Gasket
	<b>0307052/5307052</b>	G-21	Rigid Seat (rubber over brass)
1"	<b>5306056</b>	F-3	Red Friction Ring
	<b>5306115</b>	F-5	Black Slip Joint Gasket
3/4"	<b>5306055</b>	F-3	Red Friction Ring
	<b>5306113</b>	F-5	Black Slip Joint Gasket

## Optima® Royal® ES-S TMO (SWB) Flushometer

### TROUBLESHOOTING GUIDE

#### Urinals (EL-1500 Sensor)

When the sensor detects a user, a slow flashing red light appears in the sensor window. After eight (8) to ten (10) seconds, the light flashes rapidly to indicate that the sensor is armed. When the sensor no longer detects a user, the sensor immediately activates the solenoid valve after a 0.5 second delay.

#### Water Closets (EL-1500-L Sensor)

Detection and activation are the same as for the urinal EL-1500 sensor (ABOVE) except when the sensor no longer detects an user, the sensor activates the solenoid valve after a three (3) second delay.

The EL-1500 urinal and EL-1500-L closet self-adaptive sensors are equipped with a "Sentinel Flush" feature. These units automatically activate the solenoid every twenty-four (24) hours after the last user.

#### 1. Valve does not function (red light does not flash when user steps in front of sensor).

- No power is being supplied to sensor. Ensure that the main power is turned "ON." Check transformer, leads and connections. Repair or replace as necessary.
- EL-1500-L Sensor is not operating. Replace the EL-1500-L Sensor.

#### 2. Valve does not function (red light flashes when user steps in front of sensor).

**INDICATOR: Red light stops flashing when user steps away and valve makes a "clicking" sound but does not flush.**

- No water is being supplied to the valve. Make certain that the water supply is turned "ON" and the Control Stop is open. No power is being supplied to sensor. Ensure that the main power is turned "ON." Check transformer, leads and connections. Repair or replace as necessary.
- EL-128-A cartridge is fouled or jammed. Turn electronic power to valve "OFF" (failure to do so could result in damage to the solenoid coil. Remove the solenoid operator from the valve and remove the EL-128-A cartridge. Clean and/or repair as necessary.

**INDICATOR: The red light stops flashing when user steps away but the valve does NOT make a "clicking" sound and does NOT flush.**

- EL-163-A solenoid shaft assembly is fouled or jammed. Turn electronic power to valve "OFF" (failure to do so could result in damage to the solenoid coil). Remove EL-101 or EL-166 nut from the solenoid operator. Remove the coil from the solenoid operator. Use a spanner wrench or pliers to remove the EL-163-A solenoid shaft assembly from valve. Clean and/or replace as necessary. Be sure to replace plunger spring when reassembling Solenoid Shaft Assembly.

**INDICATOR: The red light flashes three (3) short flashes, three (3) long flashes then three (3) short flashes ("S-O-S") and continues to repeat this cycle even when user steps out of the sensor's detection range.**

- EL-1500-L Sensor wiring connections are incorrect. Rewire Sensor to valve. One solenoid lead connects to the "TO VALVE" connection on Sensor. One transformer lead connects to the "24 VAC IN" connection on Sensor. Second solenoid lead and second transformer lead connect together.
- Wiring to Sensor is ground shorted. Find short in wiring circuit and correct.
- EL-165-2 solenoid coil is burnt out or coil is not connected to solenoid plunger shaft. Reinstall or replace coil as necessary.

#### 3. Volume of water is insufficient to adequately siphon fixture.

- Control Stop is not open wide enough. Adjust control stop for desired water delivery.
- Low Consumption unit is installed on Water Saver or Conventional fixture. Replace Diaphragm component parts of valve with kit that corresponds to appropriate flush volume of fixture.
- Inadequate water volume or pressure available from supply. Increase pressure or supply (flow rate) to the valve. Consult factory for assistance.

#### 4. Length of flush is too long (long flushing) or valve fails to shut off.

- Water Saver valve is installed on Low Consumption fixture. Replace Diaphragm component parts of valve with kit that corresponds to appropriate flush volume of fixture.
- Relief valve in diaphragm is not seated properly or bypass hole in diaphragm is clogged. Disassemble inside Diaphragm component parts and wash parts thoroughly. Replace worn parts if necessary.

#### 5. Water splashes from fixture.

- Supply flow rate is more than necessary. Adjust Control Stop to meet flow rate required for proper cleansing of the fixture.

#### 6. Leakage occurring at the Push Button (Concealed models only).

- Damaged or worn seals or lime build up in the actuator cartridge. Replace with new HY-32-A cartridge.

#### 7. The flushometer does not flush or flushes only once and will not flush a second time when the button is pushed (Concealed models only).

- 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.
  - Turn off water at the control stop.
  - Unscrew the housing coupling nut from the flushometer.
  - Remove the actuator housing from the flushometer. The tubing connections can be left intact.
  - 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.
  - Separate the actuator housing to reveal the spring and plunger.
- Plastic Tubing Installed Incorrectly. Install Plastic Tubing Correctly.

#### 8. The flushometer does not flush and a small amount of leakage is visible below the valve (Concealed models only).

- Foreign material lodged in the cartridge. Remove the cartridge and inspect for foreign material. Clean under running water.
- Damaged or worn seals or lime build up in the actuator cartridge. Replace with new HY-32-A cartridge.
  - Remove the button or actuator assembly from the wall or fixture.
  - Disassemble the flange or button assembly from the actuator body.
  - 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.
- Plastic Tubing installed incorrectly. Install Plastic Tubing Correctly.

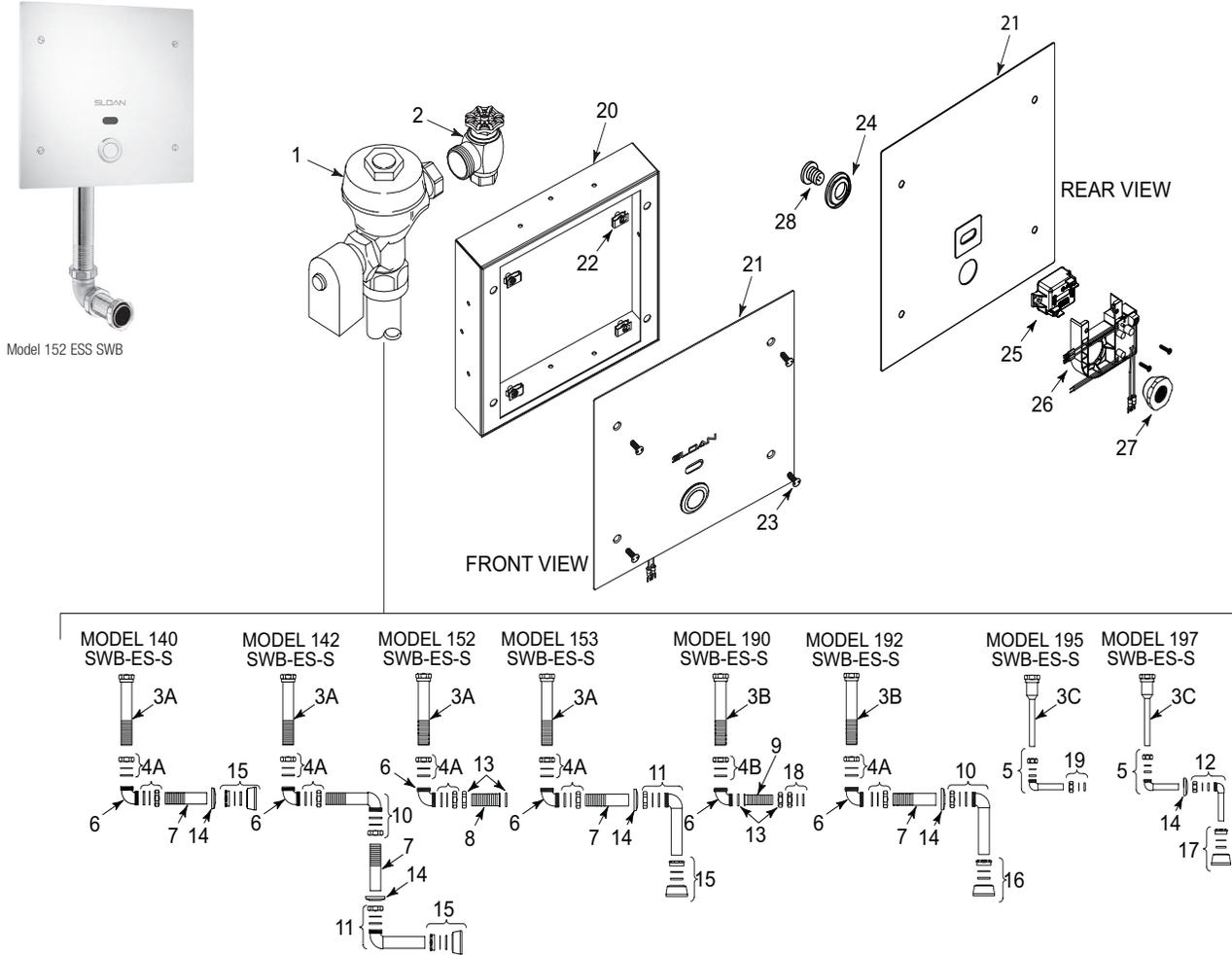
### CARE AND CLEANING INSTRUCTIONS

**DO NOT USE** abrasive or chemical cleaners to clean flushometers or sensor that may dull the luster and attack the chrome or special decorative finishes. Use **ONLY** mild soap and water, then wipe dry with a clean towel or cloth.

When cleaning the bathroom tile, protect the flushometer from any splattering of cleaner. Acids and cleaning fluids can discolor or remove chrome plating.

**When assistance is required, please contact  
Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

# Optima® Royal® ES-S SWB Flushometer



Item No.	Part No.	Description	Item No.	Part No.	Description
1.	‡	Valve Body – Solenoid Operated	19.	F-2-AW	3/4" (19 mm) Slip Joint Coupling RB
2.	H-730-A	Bak-Chek® Control Stop	20.	WB-3	Wall Box Frame
3A.	V-500-AA	1-1/2" (38 mm) x 11-1/2" (292 mm) Vacuum Breaker Assembly RB (Models 140 ES-S & 152 ES-S)	21.	WB-47	Access Panel
	V-500-AA	1-1/2" (38 mm) x 6" (152 mm) Vacuum Breaker Assembly RB (Model 142 ES-S)	22.	WB-18	U-Type Nuts (4)
	V-500-AA	1-1/2" (38 mm) x 7-1/2" (191 mm) Vacuum Breaker Assembly RB (Model 153 ES-S)	23.	WB-49	Tamper Resistant Screws (4)
3B.	V-500-AA	1-1/2" (32 mm) x 11-1/2" (292 mm) Vacuum Breaker Assembly RB (Models 190 ES-S & 192 ES-S)	24.	WB-52	Bezel
3C.	V-500-AA	3/4" (19 mm) x 10-1/2" (267 mm) Vacuum Breaker Assembly RB (Models 195 ES-S & 197 ES-S)	25.	EL-1500-L	Sensor (Water Closet)
4A.	F-2-AA	1-1/2" (38 mm) Slip Joint Coupling RB (Set of Two)		EL-1500	Sensor (Urinal)
4B.	F-2-A	1-1/2" (38 mm) Slip Joint Coupling RB	26.	EL-630-A	Sensor Retainer and Circuit Board Assembly
5.	F-15-A	ELL with 3/4" (19 mm) Tail RB (Models 195 ES-S & 197 ES-S)	27.	WB-53	Back Nut
6.	F-21	1-1/2" (38 mm) Double Slip Elbow	28.	EL-438	Override Button
7.	F-102	1-1/2" (38 mm) Outlet Tube CP†			
8.	F-100	1-1/2" (38 mm) Outlet Tube RB†			
9.	F-110	1-1/4" (32 mm) Outlet Tube RB†			
10.	F-25-A	1-1/4" (32 mm) Elbow Assembly†			
11.	F-25-A	1-1/2" (38 mm) Elbow Assembly CP (Model 153 ES-S)			
12.	F-15-A	ELL with 3/4" (19 mm) Tail CP (Model 197 ES-S)			
13.	F-2-A	1-1/2" (38 mm) Coupling with S-21 Gasket			
14.	F-7	Flange			
15.	F-5-A	1-1/2" (38 mm) Spud Coupling Assembly CP			
16.	F-5-A	1-1/4" (32 mm) Spud Coupling Assembly CP			
17.	F-5-A	3/4" (19 mm) Spud Coupling Assembly CP			
18.	F-2-A-U	1-1/4" (32 mm) Slip Joint Coupling RB			

† "L Dimension" only available between 2" & 10 3/4"  
‡ Part number varies with valve model variation; consult factory.

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

## Optima® Royal® ES-S SWB Flushometer

NOTE: Upon detection of the user, the red indicator light flashes slowly for a period of eight seconds. When the user leaves the detection range, the indicator light flashes rapidly and the Sensor initiates the flush sequence. Then the indicator light stops flashing and the valve flushes. The valve will flush after a three-second delay.

**1. PROBLEM: Valve does not function (red light does not flash when user steps in front of sensor).**

CAUSE: No power is being supplied to sensor.

SOLUTION: Ensure that the main power is turned "ON."

Check transformer, leads and connections.  
Repair or replace as necessary.

CAUSE: EL-1500 (Urinal installations) or EL-1500-L (Closet installations) Sensor is not operating.

SOLUTION: Replace EL-1500 or EL-1500-L Sensor.

**2. PROBLEM: Valve does not function (red light flashes when user steps in front of Sensor).**

INDICATOR: Red light stops flashing when user steps away and valve makes a "clicking" sound but does not flush.

CAUSE: No water is being supplied to the valve.

SOLUTION: Make certain that water supply is turned "ON" and the Control Stop is open.

CAUSE: EL-128-A cartridge is fouled or jammed.

SOLUTION: Turn electronic power to valve "OFF" (failure to do so could result in damage to the solenoid coil). Remove the solenoid operator from the valve and remove the EL-128-A cartridge. Clean and/or repair as necessary.

INDICATOR: The red light stops flashing when user steps away but the valve does NOT make a "clicking" sound and does NOT flush.

CAUSE: EL-163-A solenoid shaft assembly is fouled or jammed.

SOLUTION: Turn electronic power to valve "OFF" (failure to do so could result in damage to the solenoid coil). Remove EL-101 or EL-166 nut from the solenoid operator. Remove the coil from the solenoid operator. Use a spanner wrench or pliers to remove the EL-163-A solenoid shaft assembly from valve. Clean and/or replace as necessary. Be sure to replace plunger spring when reassembling Solenoid Shaft Assembly.

INDICATOR: The red light flashes three (3) short flashes, three (3) long flashes then three (3) short flashes ("S-O-S") and continues to repeat this cycle even when user steps out of the sensor's detection range.

CAUSE: Sensor wiring connections are incorrect.

SOLUTION: Refer to Step 10 of this Installation Instructions for proper wiring.

CAUSE: Wiring to Sensor is ground shorted.

SOLUTION: Find short in wiring circuit and correct.

CAUSE: EL-165-2 solenoid coil is burnt out or coil is not connected to solenoid plunger shaft.

SOLUTION: Reinstall or replace coil as necessary.

**3. PROBLEM: Volume of water is insufficient to adequately siphon fixture.**

CAUSE: Control Stop is not open wide enough.

SOLUTION: Adjust control stop for desired water delivery.

CAUSE: Low Consumption unit is installed on Water Saver or Conventional fixture.

SOLUTION: Replace Diaphragm component parts of valve with kit that corresponds to appropriate flush volume of fixture.

CAUSE: Inadequate water volume or pressure available from supply.

SOLUTION: Increase pressure or supply (flow rate) to the valve. Consult factory for assistance.

**4. PROBLEM: Length of flush is too long (long flushing) or valve fails to shut off.**

CAUSE: Water Saver valve is installed on Low Consumption fixture.

SOLUTION: Replace Diaphragm component parts of valve with kit that corresponds to appropriate flush volume of fixture.

CAUSE: Relief valve in diaphragm is not seated properly or bypass hole in diaphragm is clogged.

SOLUTION: Disassemble inside Diaphragm component parts and wash parts thoroughly. Replace worn parts if necessary.

**5. PROBLEM: Water splashes from fixture.**

CAUSE: Supply flow rate is more than necessary.

SOLUTION: Adjust Control Stop to meet flow rate required for proper cleansing of the fixture.

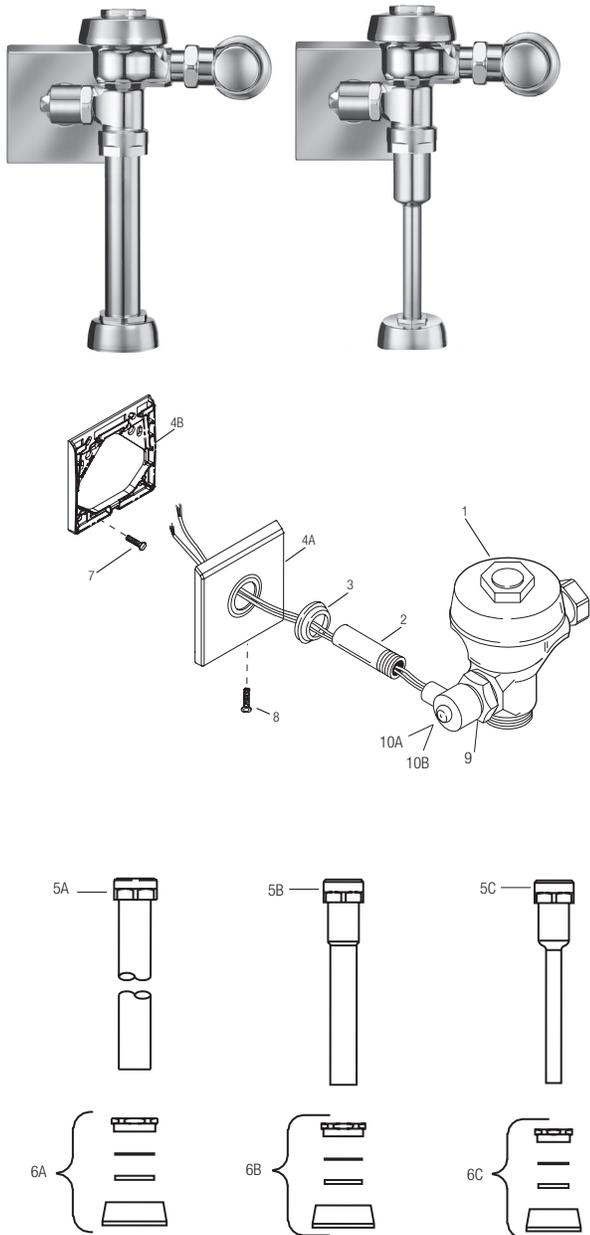
If further assistance is required, please contact Sloan Installation Engineering Department at:

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

**!!! IMPORTANT — Control Stop Setting !!!**

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.

# Optima® Royal® ES 24V/120V Exposed Flushometer



## ROYAL® OPTIMA® ES 24/120V EXPOSED FLUSHOMETER PARTS LIST

Item No.	Code No.	Part No.	Description
1.	‡		Solenoid Activated Valve Assembly
2.	<b>0306249PK</b>	F-15	Tail Assembly
3.	<b>0345150</b>	EL-431-A	Flange Assembly
4A.	<b>3305105</b>	EL-625-A	Cover Plate w/Mounting Hardware (Closet only) (Includes EL-549 Mounting Plastic plate)
4B.	<b>0305251PK</b>	EL-549	Exposed Closet Mounting Plate
5A.	—	V-600-AA	1-1/2" (38 mm) Vacuum Breaker Assembly CP (Models 110/111, 115, and 116)
5B.	—	V-600-AA	1-1/4" (32 mm) x 9" (229 mm) Vacuum Breaker Assembly CP (Model 180 ES-S)
5C.	—	V-600-AA	3/4" (19 mm) x 9" (229 mm) Vacuum Breaker Assembly CP (Model 186 ES-S)
6A.	<b>0306146</b>	F-5-AT	1-1/2" (38 mm) Spud Coupling Assembly CP (Models 110/111, 115, and 116)
6B.	<b>0306140</b>	F-5-AU	1-1/4" (32 mm) Spud Coupling Assembly CP (Model 180)
6C.	<b>0306125</b>	F-5-AW	3/4" (19 mm) Spud Coupling Assembly CP (Model 186)
6D.	<b>SEE SLIP JOINT GASKETS AND RINGS ON TABLE BELOW</b>		
7.	‡		Screws (Flat Head Slotted #6/32)
8.	<b>5305100</b>	EL-674	Wall Plate Screw Kit (#6/32 x 15.87 mm) (6 per kit)
9.	<b>3305043</b>	EL-128-A	Actuator Cartridge
10A.	<b>0305329</b>	EL-124-2	CP 24V Solenoid Assembly Only
10B.	<b>0305328</b>	EL-124-1	CP 120V Solenoid Assembly Only
	<b>3305045</b>	EL-1028-A	Solenoid Assembly (24V) w/ Cartridge Assembly
	<b>3305044</b>	EL-1029-A	Solenoid Assembly (120V) w/ Cartridge Assembly
12.	<b>3325814</b>	EBV-1017-A	CP Valve Handle Cap
14.	<b>3302306</b>	B-51-A	Triple Seal Handle Repair Kit
15.	<b>3345080</b>	EL-126-A	ESS to TMO Retrofit Conversion Kit (Exposed*)
*	<b>3388015</b>	H-1015-A	Flow Control Kit (HEU Only) (not Shown)
*	<b>0305163</b>	EL-172-A	Electric Push Button Assembly (Optional)

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

\* Not shown

### ITEM 6D. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	<b>5306058</b>	F-3	Red Friction Ring
	<b>5322001</b>	VBF-5	Black Slip Joint Gasket
	<b>0319086/5319086</b>	S-30	Flexible Seat
	<b>0319079</b>	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	<b>0396062</b>	F-105	Slip Joint Gasket – Rigid
1-1/4"	<b>5306057</b>	F-3	Red Friction Ring
	<b>5322176</b>	VBF-5	Black Slip Joint Gasket
	<b>0307052/5307052</b>	G-21	Rigid Seat (rubber over brass)
1"	<b>5306056</b>	F-3	Red Friction Ring
	<b>5306115</b>	F-5	Black Slip Joint Gasket
3/4"	<b>5306055</b>	F-3	Red Friction Ring
	<b>5306113</b>	F-5	Black Slip Joint Gasket

Solenoid Activated Royal® Model Flushometer for floor mounted or wall hung fixtures. Model "ES" Flushometers are activated remotely by an electric push button (**not included**). Royal "ES" Flushometers offer solutions for installations that require automatic, remote or other Flushometer control requirements.

## SMOOTH® Hardwired Flushometer Side-Mount-Operator-Over-The-Handle

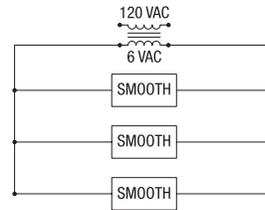
AC powered, sensor activated retrofit unit for exposed closet and urinal flushometers.

### PARTS LIST

Item No.	Code No.	Part No.	Description
1.	3305201	EL-600-A	Side Mount Operator for Water Closets (Toilets) and Urinals
2.	3345085	EL-612-A	Wall Flange Hardware Mounting Kit

### ACCESSORY TRANSFORMERS

—	0345095	EL-386	120 VAC/6 VAC, 50/60 Hz (3 VA) Plug-in (will operate 1 unit)
—	0345125	EL-451	120 VAC/6 VAC, 50/60 Hz (25 VA) Box Mount (will operate up to 8 units)



One EL-386 Transformer serves one (1) OPTIMA® Closet/Urinal flushometer.  
One EL-451 Transformer serves up to eight (8) OPTIMA® Closet/Urinal flushometers.

### ADJUSTMENT PROCEDURES

#### Mode A

The SMOOTH unit may be reset to normal range by fully pressing and holding in the Override Handle until the Red LED light in the Sensor Window illuminates. Then immediately release the Override Handle.

#### Mode B

The SMOOTH unit may be set to reduced range for closet applications by pressing and holding in the Override Handle until the Red LED light in the Sensor Window flashes a slow long blinking light. Then immediately release the Override Handle.

#### Mode C (Urinal Only)

The SMOOTH unit may be set to reduced range by pressing and holding in the Override Handle until the Red LED light in the Sensor Window displays a rapid on and off blinking light. Then immediately release the Override Handle.

### 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** mild 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.

**When assistance is required, please contact Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

## EL-750/EL-700 Hardwired Flushometers

**EL-750/Hardwired**  
Dual-flush Side Mount

**EL-700/Hardwired**  
Single-flush Side Mount



Hardwired, sensor-activated, retrofit unit for exposed, dual-flush and single-flush closet and single-flush urinal.

**VAC Power Requirement:** Transformer 6 VAC 0.5 mA per unit

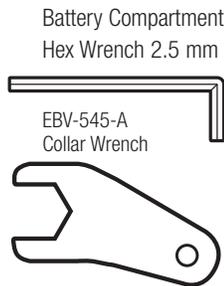
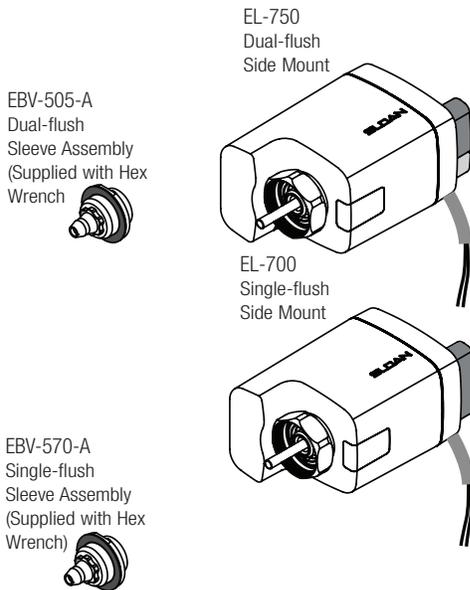
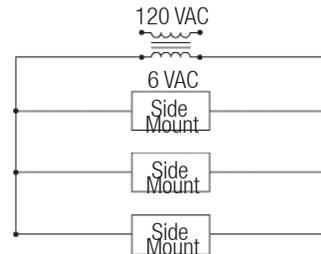
Sloan Transformers:

EL-386 – 120 VAC/ 6 VAC Plug-in Transformers

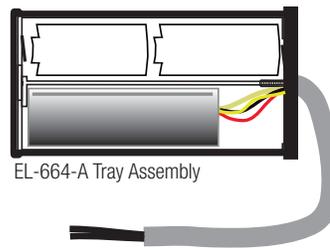
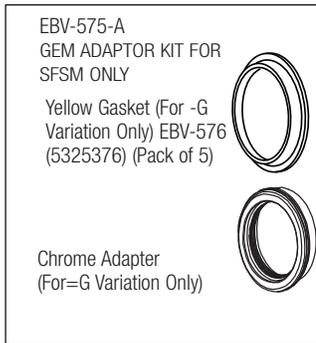
EL-451 – 120 VAC/6 VAC 25 VA Box Style Transformers

**NOTE:** One (1) Hardwire Flushometer per each EL-386 Transformer and six (6) Hardwire Flushometers per each EL-451 Transformer

### Wiring Diagram



WES-46 DFSM Wall Plate



## EL-750/EL-700 Hardwired Flushometers

### TROUBLESHOOTING GUIDE

#### 1. RED LED continuously flashes when target is present.

The battery is low. Refer to battery replacement instructions.

#### 2. RED LED flashes 4 times after a target has been present for 8 seconds. RED LED flashes once when a target is NOT present.

The battery is low. Refer to battery replacement instructions.

#### 3. RED LED flashes continuously after calibration.

The unit has failed to calibrate. The optics window is obscured. Remove power, clean window and remove any objects (barrels, toolboxes, etc.) within close proximity of unit. Repeat power-up sequence (See BATTERY REPLACEMENT for power-up sequence). If unit fails, consult Sloan Technical Support.

### CARE AND CLEANING OF CHROME AND SPECIAL FINISHES

**DO NOT USE** abrasive or chemical cleaners (including chlorine bleach) to clean side mount unit or flushometer that may dull the luster and attack the finish. Use **ONLY** mild soap and water, then wipe dry with clean cloth or towel.

While cleaning the bathroom tile, protect the side mount unit from any splattering of cleaner. Acids and cleaning fluids can discolor or remove chrome plating.

**DO NOT USE** abrasive or chemical cleaners (including chlorine bleach) to clean sensor window that may distort or ruin the sensor.

**When assistance is required, please contact  
Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

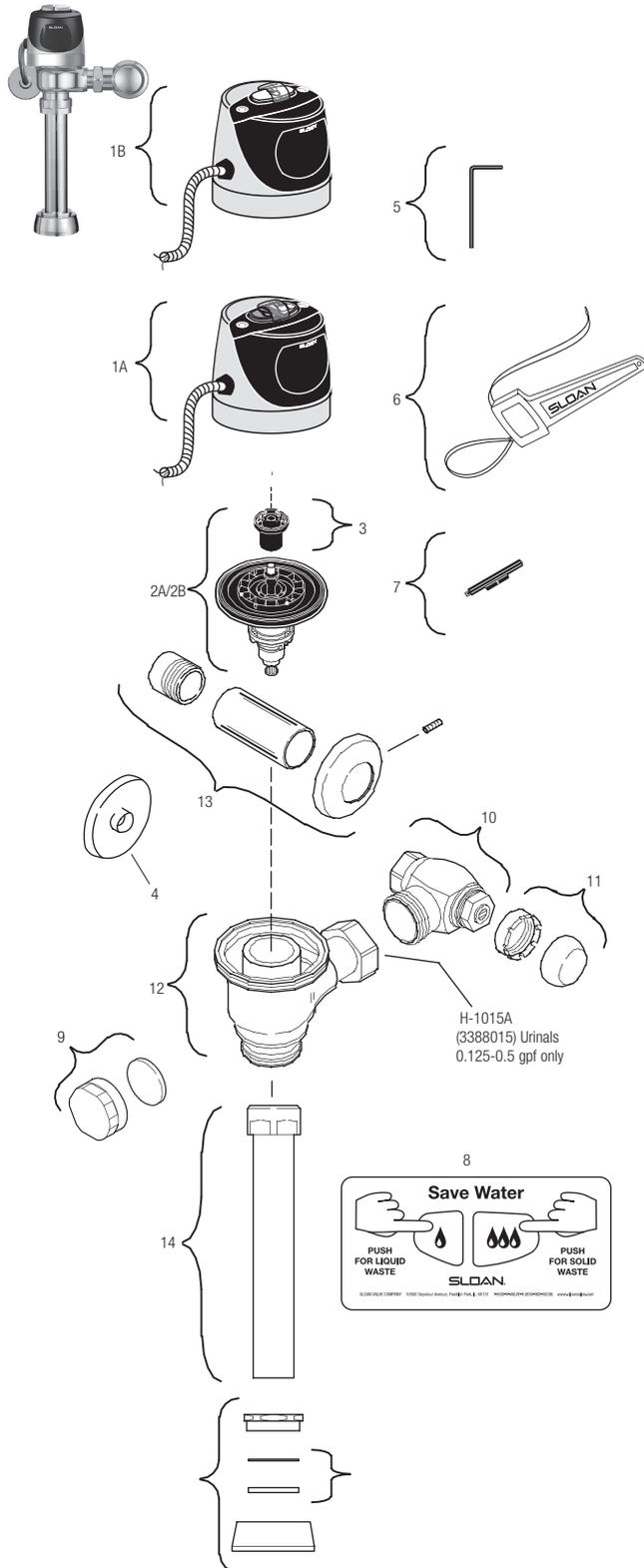
### TRANSFORMER START-UP ACTIVATION

Turn on transformer power and wait for 10 seconds. Remove sticker from sensor window. The Side Mount unit will “wake up” when sticker is removed from sensor window. Please ensure this is the last step in the installation process and unless the target is a permanent fixture in the sensor’s environment (i.e. a wall or stall door) it must be removed from the view of the sensor. There is a three minute delay to calibration to allow the installer to clear from the view of the sensor. The Side Mount unit calibrates to the surrounding environment once sticker is removed (with three minute delay to allow installer to clear from the view of the sensor). Remove all non-permanent articles and step away from the sensor view until the one (1) flush activation verifies calibration is complete. The unit will exhibit an LED flash pattern as follows:

- GREEN and RED LED flash once, GREEN LED flashes 5 times
- 150 seconds of slow GREEN double flashes
- 10 seconds of fast GREEN double flashes
- 12-15 seconds of fast GREEN flashes (calibration)
- 3 slow GREEN LED flashes indicates calibration is done
- Normal Operation with one flush activation

After power off, re-power up will need three (3) minute delay to allow installer to clear from the view of the sensor.

# SLOAN ECOS® Hardwired Flushometer



**URINAL FLEX TUBE DIAPHRAGM ASSEMBLY**



- 3325090** EBV-1024-A 0.125/0.25 gpf
- 3325003** EBV-1023-A 0.5 gpf

Sloan ECOS® Electronic Valve Models Feature Sloan's Exclusive Flex Tube Diaphragm for the ultimate in valve performance, reliability and chloramine resistance.

**PARTS LIST**

Item No.	Code No.	Part No.	Description
<b>Items Included with the RESS Retrofit and Complete Sloan ECOS® Hardwire Valves Only</b>			
1A.	<b>0325304</b>	WES-56A	Sloan ECOS® Electronic Hardwire Dual Flush Assembly CP
	<b>0325332</b>	EBV-332A	Sloan ECOS® Electronic Hardwire 1.28 gpf (4.8 Lpf) Single Flush Assembly
1B.	<b>0325344</b>	EBV-344A	Sloan ECOS® Electronic Single-Flush Assembly Urinal
1C.	<b>0325402</b>	EBV-393-A	Sloan ECOS® Electronic Single-Flush Assembly Urinal 0.125 gpf
2A.	<b>3325001</b>	EBV-1020-A	1.6 gpf/6.0 Lpf Closet Flex Tube Diaphragm Kit
2B.			See Chart Below
3.	<b>5325122</b>	EBV-95	Flush Volume Regulator (Green)
4.	—	EL-612-A	Solenoid Wall Flange
5.	<b>0325159</b>	EBV-137	7/64" Hex Wrench
6.	<b>0305823</b>	EBV-22	Strap Wrench
7.	<b>0325194</b>	EBV-91	Range Adjustment Tool
8.	<b>0372031</b>	WES-19	English Operation Instruction Plate
	<b>0372040</b>	WES-22	Spanish Operation Instruction Plate
9.	<b>3325814</b>	EBV-1017-A	Handle Cap (RESS-C Retrofit Models only)
<b>Items Included with the Complete Sloan ECOS® Hardwire Valves Only</b>			
10.	<b>3308386</b>	H-700-A	1" (25 mm) Bak-Chek® Control Stop
11.	<b>3308797</b>	H-1010-A	Vandal Resistant Stop Cap
12.	<b>0305381PK</b>	EBV-36-A	Valve Body
13.	<b>3308782</b>	H-633-AA	1" (25 mm) Sweat Solder Kit
14.	<b>3308782</b>	V-600-AA	1½" (38 mm) x 10 ½" (254 mm) Vacuum Breaker (Model 110) (10" Outlet Tube)
	—	V-600-AA	1½" (38 mm) x 23" (584 mm) Vacuum Breaker (Model 115)
	<b>0393049</b>	V-600-AA	1½" (38 mm) x 26" (660 mm) Vacuum Breaker (Model 116)
15.	<b>0306146</b>	F-5-AT	1½" Spud Coupling Assembly (Models 111, 115, and 116)
15A.	<b>SEE SLIP JOINT GASKETS AND RINGS TABLE BELOW</b>		
‡ Part number varies with valve model variation; consult factory. 18" Steel Cable included w/HW units. The EBV-1020-A Kit is supplied with multiple Flush Volume Regulators. The installer must use the correct Regulator when installing the kit. VAC Power Requirement: Transformer 6 VAC 0.5 mA per unit Sloan Transformers: EL-386 – 120 VAC/ 6 VAC Plug-in Transformers (not shown) EL-451 – 120 VAC/6 VAC 25 VA Box Style Transformers (not shown) Note: One (1) Sloan ECOS® Hardwire per each EL-386 Transformer and six (6) Sloan ECOS® Hardwire per each EL-451 Transformer. 18 gauge wire required.			
<b>ITEM 15A. SLIP JOINT GASKETS AND RINGS</b>			
Size	Code No.	Part No.	Description
1-1/2"	<b>5306058</b>	F-3	Red Friction Ring
	<b>5322001</b>	VBF-5	Black Slip Joint Gasket
	<b>0319086/5319086</b>	S-30	Flexible Seat
	<b>0319079</b>	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	<b>0396062</b>	F-105	Slip Joint Gasket – Rigid
1-1/4"	<b>5306057</b>	F-3	Red Friction Ring
	<b>5322176</b>	VBF-5	Black Slip Joint Gasket
	<b>0307052/5307052</b>	G-21	Rigid Seat (rubber over brass)
1"	<b>5306056</b>	F-3	Red Friction Ring
	<b>5306115</b>	F-5	Black Slip Joint Gasket
3/4"	<b>5306055</b>	F-3	Red Friction Ring
	<b>5306113</b>	F-5	Black Slip Joint Gasket

## SLOAN ECOS® Hardwired Flushometer

### RANGE ADJUSTMENT (ADJUST ONLY IF NECESSARY)

The Sloan ECOS® Hardwire flushometer has a factory set sensing range:

**Water Closet Models** – 22" (559 mm) to 42" (1067 mm)

**Urinals Models** – 15" (381 mm) to 30" (762 mm)

**The factory setting should be satisfactory for most installations.**

If the range is too short (i.e., not picking up the user) 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. Remove the override button assembly. Remove the rubber plug from top of electronic sensor module to uncover the potentiometer to adjust.

#### Range Adjustment Procedure

For the first ten (10) minutes of operation, a visible light flashes in the sensing window of the Sloan ECOS® Hardwire flushometer when a user is detected. The visible light feature can be reactivated after ten (10) minutes by turning the power off and on. 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 **COUNTER-CLOCKWISE** to decrease the range. Repeat this adjustment until the desired range is achieved.

**Always determine the sensing range with metal cover and lens window installed 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 override button and tighten the two screws on top of the unit.

### 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 does not picking up the user.

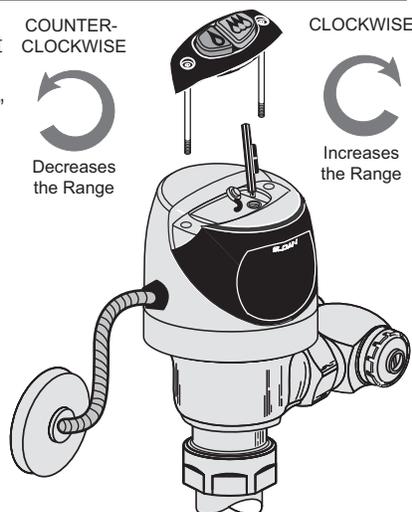
- A. Range too short; increase the range.

#### 3. 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 the 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. Electronic sensor module issue; replace the electronic sensor module.



### TROUBLESHOOTING GUIDE (CONTINUED)

#### 5. 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. Electronic sensor module issue; replace sensor module.

#### 6. Not enough water to the fixture to flush properly.

- A. The wrong flush volume regulator was installed in flex tube diaphragm kit. Install the correct regulator.  
B. Wrong Sloan ECOS Hardwire model installed; i.e., 1.6 gpf model installed on 3.5 gallon closet fixture.  
C. Enlarged bypass in diaphragm. Replace the 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.

#### 7. Too much water to fixture.

- A. The wrong flush volume regulator was installed in Flex Tube diaphragm kit. Install the correct regulator.  
B. Control stop not adjusted properly. Readjust the control stop.  
C. Wrong Sloan ECOS Hardwire model installed; i.e., 3.5 gpf. model installed on 1.6 gallon fixture. Replace with proper Sloan ECOS Hardwire model.  
D. Dirt in diaphragm bypass. Clean under running water or replace Flex Tube diaphragm.

### CARE AND CLEANING INSTRUCTIONS

**DO NOT USE** abrasive or chemical cleaners 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 a clean towel or cloth.

When cleaning the bathroom tile, protect the flushometer from any splattering of cleaner. Acids and cleaning fluids can discolor or remove chrome plating.

**When assistance is required, please contact Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

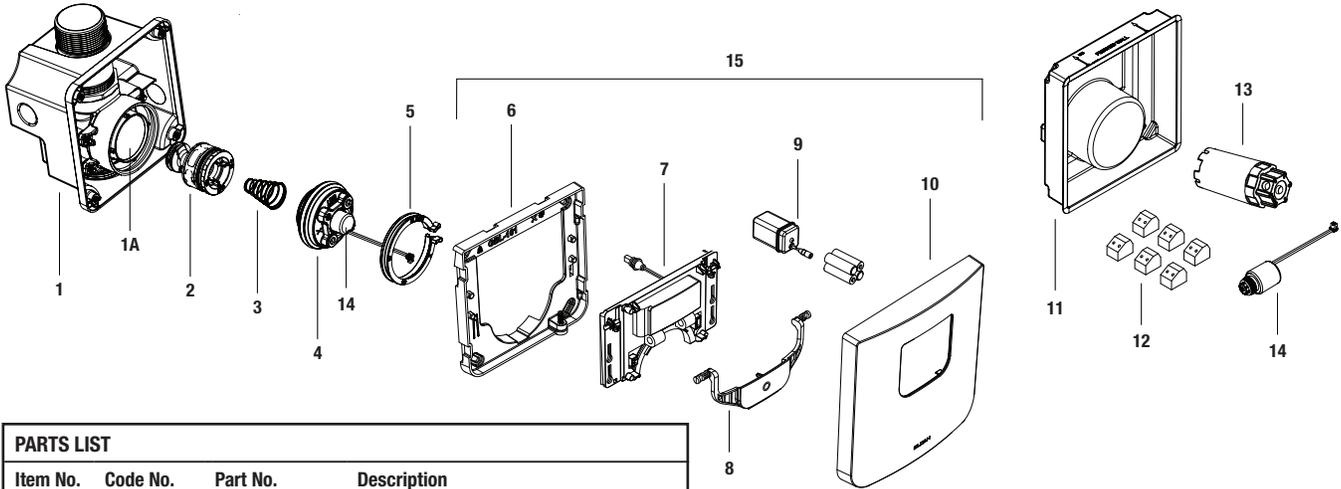
# TruFlush Hardwired/Battery Flushometer

### Sensor Closet Flushometers

- TRF 8156 - 1.6 gpf
- TRF 8156 - 1.28 gpf
- TRF 8156 - 1.1 gpf

### Sensor Urinal Flushometers

- TRF 8196 - 0.5 gpf
- TRF 8196 - 0.25 gpf
- TRF 8196 - 0.125 gpf

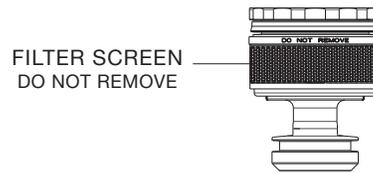


PARTS LIST			
Item No.	Code No.	Part No.	Description
1.	—	—	Valve Assembly with Box
1A.	<b>0340085</b>	GBL-66-A	Shut Off Sleeve (with O-Ring)
2.	<b>See table to the right</b>		Piston Assembly
3.	—	—	Conical Spring*
4.	<b>See table on next page</b>		Activation Assembly**
5.	<b>3340011</b>	GBL-1011-A	Safety Collar
6.	<b>0340101</b>	GBL-101	TRF Sensor Closet Wall Bracket
7.	—	—	TRF Sensor Assembly Repair Kit
8.	<b>See table on next page</b>		Override Button Only
9.	<b>9103681PK</b>	ELG-79	Battery Pack
10.	<b>0340142</b>	GBL-128	TRF Sensor Finished Wall Plate, CP †
11.	<b>33400036</b>	GBL-1036-A	Replacement Kit, Mud Guard Sensor (4 pack)
12.	<b>3340033</b>	GBL-88-A	Terminal Block Repair Kit (6)
13.	<b>3340012</b>	GBL-1012-A	Activation Assembly Tool
14.	<b>See table on next page</b>		Solenoid Repair Kit
15.	—	GBL-205-A	Finished Wall Plate and Sensor Assembly† (Includes items 6-10)

\* Included with Piston Assembly. † Consult factory for alternate finishes.  
 \*\* Includes Solenoid Repair Kit #14.

ITEM NO. 2 - SENSOR PISTON ASSEMBLY SELECTION GUIDE			
Code No.	Part No.	Description	Piston Color*
<b>3340024</b>	GBL-1024-A	1.6 gpf/6.0 Lpf Closet Piston Assembly (Washdown)	Orange
<b>3340005</b>	GBL-1005-A	1.6 gpf/6.0 Lpf Closet Piston Assembly	Green
<b>33400082</b>	GBL-1097-A	1.28 gpf/4.8 Lpf Closet Piston Assembly	Blue/Black
<b>33400065</b>	GBL-1090-A	1.1 gpf/4.2 Lpf Closet Piston Assembly	Burgundy/Black
<b>3340007</b>	GBL-1007-A	0.5 gpf/1.9 Lpf Urinal Piston Assembly	Red
<b>3340008</b>	GBL-1008-A	0.25 gpf/1.0 Lpf Urinal Piston Assembly	Burgundy
<b>33400001</b>	—	0.125 gpf/0.48 Lpf Urinal Piston Assembly	Red/Pink

\* Colors may differ. Consult factory to confirm you have the correct Piston Assembly.



TRUFLUSH SENSOR PISTON  
SEE CHART BELOW FOR MORE

### ITEM NO. 2 - SENSOR PISTON IDENTIFICATION CHART

<b>Flush Volume</b>	1.6 gpf WD (India) Water Closet	1.6 gpf Water Closet	1.28 gpf Water Closet	1.1 gpf Water Closet	0.5 gpf Urinal	0.25 gpf Urinal	0.125 gpf Urinal
<b>Piston Body</b>	Orange with Screen	Green with Screen	Light Blue with Screen	Burgundy with Screen	Red with Screen	Burgundy with Screen	Red with Screen
<b>Flow Control</b>	Orange	Green	Black Cage	Black Cage	Red	Burgundy	Pink
<b>Part Number</b>	GBL-1024-A	GBL-1005-A	GBL-1097-A	GBL-1090-A	GBL-1007-A	GBL-1008-A	—
<b>Code Number</b>	<b>3340024</b>	<b>3340005</b>	<b>33400082</b>	<b>33400065</b>	<b>3340007</b>	<b>3340008</b>	<b>33400001</b>

## TruFlush Hardwired/Battery Flushometer

ITEM NO. 4 - SENSOR ACTIVATION ASSEMBLY SELECTION GUIDE			
Code No.	Part No.	Description	Aspirator Retainer Color*
<b>LEGACY STYLE CONNECTION - PRIOR TO DECEMBER 2021</b>			
3340026	GBL-1026-A	1.6 gpf/6.0 Lpf Closet Activation Assembly (Washdown)	Orange
3340000	GBL-1000-A	1.6 gpf/6.0 Lpf Closet Activation Assembly	Green
3340001	GBL-1001-A	1.28 gpf/4.8 Lpf Closet Activation Assembly	Purple
3340002	GBL-1002-A	0.5 gpf/1.9 Lpf Urinal Activation Assembly	Red
3340003	GBL-1003-A	0.25 gpf/1.0 Lpf Urinal Activation Assembly	Burgundy
33400002	—	0.125 gpf/0.48 Lpf Urinal Activation Assembly†	Pink
<b>PIGTAIL STYLE CONNECTION - AFTER DECEMBER 2021</b>			
33400049	GBL-1071-A	1.6 gpf/6.0 Lpf Closet Activation Assembly (Washdown)	Orange
33400048	GBL-1072-A	1.6 gpf/6.0 Lpf Closet Activation Assembly	Green
33400047	GBL-1073-A	1.28 gpf/4.8 Lpf Closet Activation Assembly	Purple
33400066	GBL-1094-A	1.1 gpf/4.2 Lpf Closet Activation Assembly	Grey
33400046	GBL-1074-A	0.5 gpf/1.9 Lpf Urinal Activation Assembly	Red
33400045	GBL-1075-A	0.25 gpf/1.0 Lpf Urinal Activation Assembly	Burgundy
33400055	GBL-1076-A	0.125 gpf/0.48 Lpf Urinal Activation Assembly	Pink

\* Colors may differ. Consult factory to confirm you have the correct Activation Assembly.

† 0.125 gpf/0.48 Lpf Valve Components (Piston, Main Seat, and Activation Assembly) are NOT interchangeable with any other flush volume Valves.

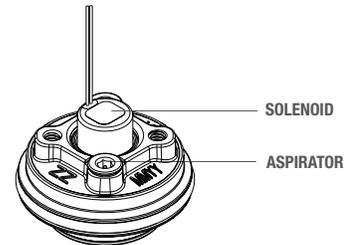
ADDITIONAL PARTS		
Code No.	Part No.	Description
3340022	GBL-1022-A	Sensor TRF Finished Wall Plate and Button Assembly, CP (Items 8 & 10 on previous page).
<p><b>IMPORTANT NOTE FOR 1.1 GPF FLUSHOMETERS &amp; REPLACEMENT KITS</b></p> <p>Sloan 1.1 gpf/4.2 Lpf ultra-high efficiency flushometers meets all applicable standards and requirements. However, with low flush volumes it is imperative that they only be used in conjunction with toilet fixtures and drain line systems designed to operate with adequate flow rates and volumes in order to effectively eliminate waste and move it out of the building. It is the responsibility of the user to ensure both of these conditions are met. Not doing so may void your warranty.</p> <p>Sloan 1.1 gpf diaphragm and piston kits are designed as a replacement part for Sloan 1.1 gpf/4.2 Lpf flushometers only. They are not intended to be used as a means to reduce water consumption in flushometers with higher flush volumes such as 1.28 gpf/4.8 Lpf or 1.6 gpf/6.0 Lpf or higher. Using this kit in any manner other than with a Sloan 1.1 gpf flushometer may void your warranty.</p>		

**NOTE:** After December 2021, the Activation, Sensor, and Solenoid Assembly connections were changed to a pigtail style connector.

**CONNECTION TYPES**



PIGTAIL



SOLENOID

ASPIRATOR

ITEM NO. 7 - SENSOR ASSEMBLY SELECTION GUIDE		
Code No.	Part No.	Description
<b>LEGACY STYLE CONNECTION - PRIOR TO DECEMBER 2021</b>		
0340130	GBL-123-AC	Closet Sensor Assembly Repair Kit, Legacy connection
0340136	GBL-123-AU	Urinal Sensor Assembly Repair Kit, Legacy connection
<b>PIGTAIL STYLE CONNECTION - AFTER DECEMBER 2021</b>		
33400067	GBL-217-A	Closet Sensor Assembly Repair Kit, Pigtail connection
33400068	GBL-218-A	Urinal Sensor Assembly Repair Kit, Pigtail connection
<b>ITEM NO. 14 - SENSOR SOLENOID REPAIR KIT SELECTION GUIDE</b>		
Code No.	Part No.	Description
<b>LEGACY STYLE CONNECTION - PRIOR TO DECEMBER 2021</b>		
3340025	GBL-1025-A	Solenoid Repair Kit, Legacy connection
<b>PIGTAIL STYLE CONNECTION - AFTER DECEMBER 2021</b>		
33400078	GBL-1096-A	Solenoid Repair Kit, Pigtail connection

## TruFlush Hardwired/Battery Flushometer

### TROUBLESHOOTING GUIDE

#### 1. Sensor LED Flashes Continuously Only When User Steps Within Range.

A. Unit is in start-up mode; no problem. This feature is active for the first ten (10) minutes of operation.

#### 2. Red Light Blinks Four (4) Times When User Steps Within Range.

A. "AA" Batteries depleted; replace batteries, lithium or alkaline. Ensure batteries are installed with proper polarity (+) and (-). **Do not mix** old and new batteries or different types.

B. (Hardwired) Battery Box not connected; connect Battery Box to Sensor Assembly.

#### 3. Valve Does Not Flush; Sensor Not Picking Up User.

A. Verify a urinal Sensor is not used on a closet Valve. Model is marked on rear of Sensor.

B. Range is too short; recalibrate range. Restart the Sensor by holding the Override Button in for 25 seconds, then release the Override Button and step away for one (1) minute; with power connected, this is considered a **Soft Reset**.

C. For **Hard Reset** of Sensor, remove all power connections (battery and hardwire) for one (1) minute. Reconnect power and step away from front of Sensor for 3½ minutes. Then test Sensor activation by standing in front of Sensor for ten (10) seconds, then step away and wait for flush. Test push button.

#### 4. Valve Does Not Flush; Sensor Picking Up Opposite Wall or Surface, or Only Flushes When Someone Walks By.

##### Red Light Flashes Continuously for First 10 Minutes Even with No One in Front of the Sensor.

A. Verify a closet Sensor is not used on a urinal Valve. Model is marked on rear of Sensor.

B. Range is too long; recalibrate range. Restart the Sensor by holding the Override Button in for 25 seconds, then release the Override Button and step away for one (1) minute; with power connected, this is considered a **Soft Reset**.

C. If range needs to be manually shortened, reset the Sensor (follow Step 3B) and stand in front of the Sensor at desired range distance for one (1) minute.

D. For **Hard Reset** of Sensor, remove all power connections (battery and hardwire) for one (1) minute. Reconnect power and step away from front of Sensor for 3½ minutes. Then test Sensor activation by standing in front of Sensor for ten (10) seconds, then step away and wait for flush. Test push button.

#### 5. Valve Does Not Flush Even After Sensor Recalibration.

A. Ensure water supply to Valve is turned on.

B. Activation Assembly sleeve is in closed position. Turn counter-clockwise to open water flow. **Note:** there is approximately 1/8-turn (45°) of free spinning as the Activation Assembly engages the Shut Off Sleeve between opening and closing the Valve.

C. Solenoid wire disconnected from Sensor. Ensure Solenoid wires are intact and Solenoid plug is connected properly.

D. "AA" Batteries depleted; replace batteries, lithium or alkaline. Ensure batteries are installed with proper polarity (+) and (-). **Do not mix** old and new batteries or different types.

E. Sensor Assembly malfunctioned. Disconnect power for one (1) minute, reconnect power, and check for start-up operation (flashing red LED). See Step 4D.

F. Check Solenoid for activation (clicking noise when pressing Sensor Override Button). If no clicks are heard, then contact Technical Support.

#### 6. Valve Does Not Shut Off.

A. Ensure Solenoid is connected to Sensor.

B. Supply line water pressure has dropped and is not sufficient to close the Valve. Close Activation Assembly until pressure is restored.

C. Piston Filter Screen is clogged, Piston is damaged, or large debris stuck behind Piston. Turn off water at Shut Off Sleeve, release pressure, remove Safety Collar and Activation Assembly. Remove Piston and check inside Valve for large debris. **Do not attempt to remove Piston filter screen.** Replace Piston if damaged or cleaning does not correct the problem.

#### 7. Too Much Water To Fixture.

A. Excessive flow pressure. Readjust Activation Assembly by turning clockwise to decrease flow pressure.

B. Long Flush. Worn Piston; replace with new proper gpf/Lpf Piston.

C. Wrong model installed; i.e., 1.6 gpf/6.0 Lpf model installed on 0.5 gpf/1.9 Lpf or 0.25 gpf/1.0 Lpf urinal fixture. Replace with proper model per guide.

#### 8. Not Enough Water To Fixture.

A. Insufficient flow pressure. Readjust Activation Assembly by turning counter-clockwise to increase flow pressure.

B. Water supply pressure is inadequate (low). Increase the water supply pressure. Contact the fixture manufacturer for minimum water supply requirements of the fixture.

C. Wrong model installed; i.e., 0.5 gpf/1.9 Lpf urinal installed on a 1.6 gpf/6.0 Lpf closet fixture. Replace with proper model.

D. Check lip seal for wear. Replace Piston if lip seal is worn or twisted.

#### 9. Chirping Noise Is Heard At Start Or End Of Flush.

A. Caused by air purging from the system inside the Valve Assembly. Noise will subside with several flushes or within a day.

#### 10. Valve Leaks Through Aspirator When Activated.

A. Debris between the umbrella Valve and the Retainer. Blow air on the Aspirator. If this does not correct the problem, remove Retainer with 5 mm Allen Key (not included) and wash it under clean running water. Replace Aspirator if cleaning does not correct the problem.

B. Loose Retainer. Hand tight Retainer with 5 mm Allen Key (not included). Do not overtighten. Replace Aspirator if this does not correct the problem.

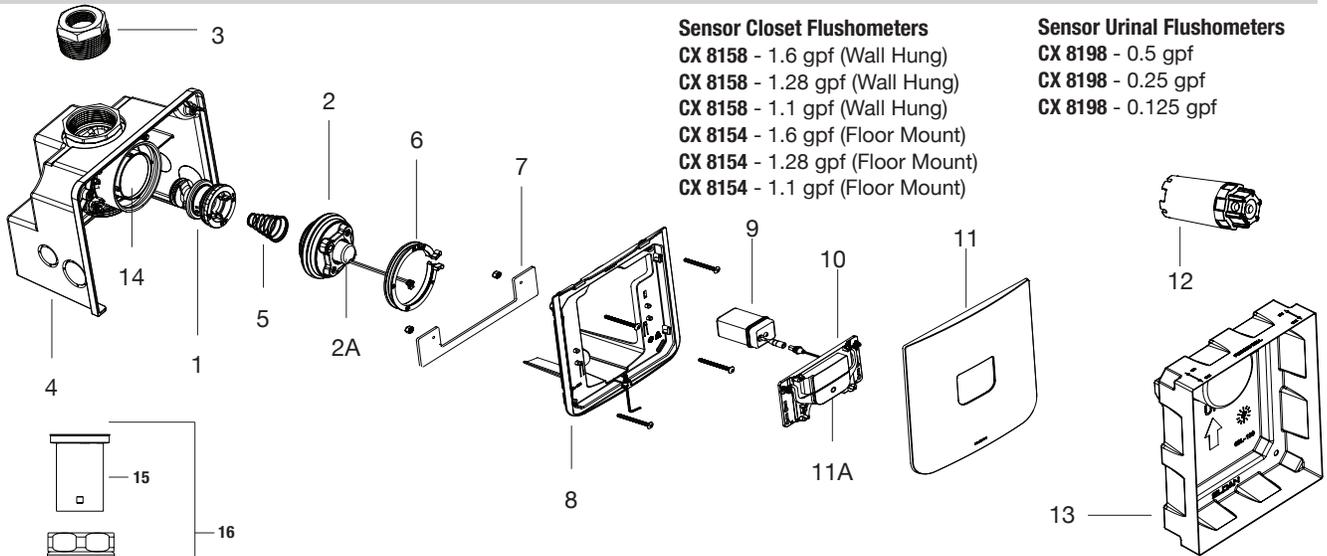
### CARE AND CLEANING

DO NOT USE abrasive or chemical cleaners (including chlorine bleach) to clean Flushometers that may dull the luster and attack the chrome or special decorative finishes. Use ONLY mild soap and water, then wipe dry with a clean cloth or towel. If using a cleaner in a spray bottle, DO NOT spray directly onto the Flushometer, instead spray cleaner into a clean cloth and then wipe down the Flushometer.

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

**When assistance is required, please contact Sloan Technical Support at 1.888.SLOAN.14 (1.888.756.2614).**

# CX Sensor Flushometer



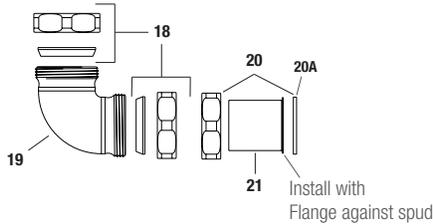
**Sensor Closet Flushometers**

- CX 8158 - 1.6 gpf (Wall Hung)
- CX 8158 - 1.28 gpf (Wall Hung)
- CX 8158 - 1.1 gpf (Wall Hung)
- CX 8154 - 1.6 gpf (Floor Mount)
- CX 8154 - 1.28 gpf (Floor Mount)
- CX 8154 - 1.1 gpf (Floor Mount)

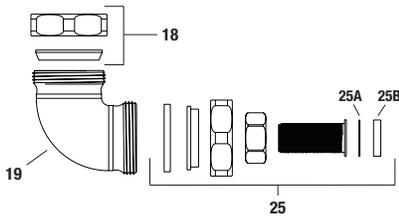
**Sensor Urinal Flushometers**

- CX 8198 - 0.5 gpf
- CX 8198 - 0.25 gpf
- CX 8198 - 0.125 gpf

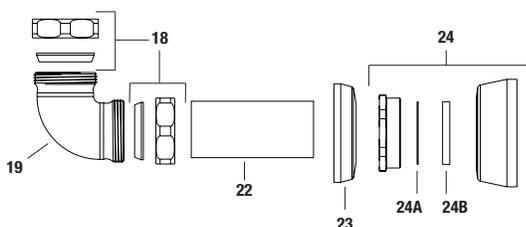
**For Model 8158, Wall Hung**



**For Model 8198, Urinals**



**For Model 8154, Floor Mount Exposed Rear Inlet**



PARTS LIST			
Item No.	Code No.	Part No.	Description
1.	See table on next page		Piston Assembly
2.	See table on next page		Activation Assembly (Includes Item 2A)
2A.	See table on next page		Solenoid Assembly
3.	0340062	GBL-56	Inlet Adapter 1-1/2" NPT x 1" NPT Closet
	0340063	GBL-171	Inlet Adapter 1-1/2" NPT x 3/4" NPT Urinal
4.	—	—	Sensor CX Valve Body and Box Assembly*
5.	—	—	Conical Spring**
6.	3340011	GBL-1011-A	Safety Collar (Collar for Bonnet)
7.	33400011	GBL-214-A	C-Bracket with (2) Lock Nuts and Screws
8.	—	—	Sensor CX Wall Bracket*
9.	9103681PK	ELG-79	Battery Pack
10.	See table on next page		Sensor Assembly Closet
	See table on next page		Sensor Assembly Urinal
11.	See table on next page		Finished Wall Plate
11A.	See table on next page		Override Button Only
12.	3340012	GBL-1012-A	Activation Assembly Tool
13.	33400035	GBL-1062-A	Replacement Mud Guard, Sensor (4 pack)
14.	0340085	GBL-66-A	Shut Off Sleeve (with O-Ring)
* Not sold separately. ** Included with Piston.			
FLUSH CONNECTION PARTS			
Item No.	Code No.	Part No.	Description
15.	3323183	V-651	Vacuum Breaker Repair Kit
16.	0323011	V-500-A	RB Vacuum Breaker Assembly
17.	33060011	F-227-A	Adjustable Tube 6.5" Replacement Kit, 8158, 8198
	33060012	F-228-A	Adjustable Tube 10.5" Replacement Kit, 8154
18.	0306395	F-211-A	CX Poly Washer and Coupling (set of 2)
19.	0306392PK	F-305	CX Elbow for CX Poly Washer
20.	0306091	F-2-A	1-1/2" Coupling Set with S-21 Gasket
20A.	0319079	S-21	1-1/2" Rigid Gasket

## CX Sensor Flushometer

FLUSH CONNECTION PARTS CONTINUED			
Item No.	Code No.	Part No.	Description
21.	0306031PK	F-1	1-1/2" x 6" Tube
22.	0396119PK	F-101	CP Tube Outlet 1-1/2" x 10-1/2"
23.	0306237PK	F-7	Tube Flange 1-1/2" x 2-3/4" with Prongs
24.	0306146	F-5-AT	1-1/2" Spud Coupling Assembly CP *
24A.	5306058	F-3	Friction Ring 1-1/2"
24B.	5322001	VBF-5	Slip Joint Gasket 1-1/2"
25.	0306396	—	Urinal Flush Connection Repair Kit
25A.	5306055	F-3	Red Friction Ring 3/4"
25B.	5306113	F-5	Gasket 3/4"

ADDITIONAL PARTS		
Code No.	Part No.	Description
—	F-304	Poly Washer 1-1/2" (Only available in F-211-A, Item 18)
33400019	GBL-1050-A	Sensor CX Finished Wall Plate and Button Assembly, SF†
33400021	GBL-1051-A	Sensor CX Finished Wall Plate and Button Assembly, CP†
33400022	GBL-1052-A	Sensor CX Finished Wall Plate and Button Assembly, BN†
33400023	GBL-1053-A	Sensor CX Finished Wall Plate and Button Assembly, PB†
33400024	GBL-1054-A	Sensor CX Finished Wall Plate and Button Assembly, GR†
33400025	GBL-1055-A	Sensor CX Button Only Replacement Kit, SF
33400026	GBL-1056-A	Sensor CX Button Only Replacement Kit, CP
33400027	GBL-1057-A	Sensor CX Button Only Replacement Kit, BN
33400028	GBL-1058-A	Sensor CX Button Only Replacement Kit, PB
33400029	GBL-1059-A	Sensor CX Button Only Replacement Kit, GR

† Includes mounting screws and wrench.

ITEM NO. 1 - SENSOR PISTON ASSEMBLY SELECTION GUIDE				
Code No.	Part No.	Description	Piston Color*	
3340053	GBL-1037-A	1.6 gpf/6.0 Lpf Closet Piston Assembly	Green	
33400079	GBL-1098-A	1.28 gpf/4.8 Lpf Closet Piston Assembly	Blue/Black	
33400061	GBL-1088-A	1.1 gpf/4.2 Lpf Closet Piston Assembly	Burgundy/Black	
3340055	GBL-1039-A	0.5 gpf/1.9 Lpf Urinal Piston Assembly	Red	
3340056	GBL-1040-A	0.25 gpf/1.0 Lpf Urinal Piston Assembly	Burgundy	
33400003	—	0.125 gpf/0.48 Lpf Urinal Piston Assembly†	Red/Pink	

**NOTE:** Item No. 1 includes Item No. 5 (Conical Spring). \* Colors may differ. Consult factory to confirm you have the correct Piston Assembly. † 0.125 gpf/0.48 Lpf Valve Components (Piston, Main Seat, and Activation Assembly) are NOT interchangeable with any other flush volume Valves.

### ITEM NO. 1 - SENSOR PISTON IDENTIFICATION CHART

<b>Flush Volume</b>	1.6 gpf Water Closet	1.28 gpf Water Closet	1.1 gpf Water Closet	0.5 gpf Urinal	0.25 gpf Urinal	0.125 gpf Urinal
<b>Piston Body</b>	Green	Light Blue	Burgundy	Red	Burgundy	Red
<b>Flow Control</b>	Green	Black Cage	Black Cage	Red	Burgundy	Pink
<b>Part Number</b>	GBL-1037-A	GBL-1098-A	GBL-1088-A	GBL-1039-A	GBL-1040-A	—
<b>Code Number</b>	3340053	33400079	33400061	3340055	3340056	33400003

ITEM NO. 2 - ACTIVATION ASSEMBLY SELECTION GUIDE			
LEGACY CONNECTION** - PRIOR TO DECEMBER 2021			
Code No.	Part No.	Description	Plug Color*
3340057	GBL-1041-A	1.6 gpf/6.0 Lpf Closet Activation Assembly, Legacy connection	Green
3340058	GBL-1042-A	1.28 gpf/4.8 Lpf Closet Activation Assembly, Legacy connection	Purple
3340059	GBL-1043-A	0.5 gpf/1.9 Lpf Urinal Activation Assembly, Legacy connection	Red
3340060	GBL-1044-A	0.25 gpf/1.0 Lpf Urinal Activation Assembly, Legacy connection	Burgundy
33400006	GBL-1070-A	0.125 gpf/0.48 Lpf Urinal Activation Assembly, Legacy connection	N/A; Nickel plated brass
PIGTAIL CONNECTION** - AFTER DECEMBER 2021			
Code No.	Part No.	Description	Plug Color*
33400051	GBL-1077-A	1.6 gpf/6.0 Lpf Closet Activation Assembly, Pigtail connection	Green
33400052	GBL-1078-A	1.28 gpf/4.8 Lpf Closet Activation Assembly, Pigtail connection	Purple
33400062	GBL-1092-A	1.1 gpf/4.2 Lpf Closet Activation Assembly	Grey
33400053	GBL-1079-A	0.5 gpf/1.9 Lpf Urinal Activation Assembly, Pigtail connection	Red
33400054	GBL-1080-A	0.25 gpf/1.0 Lpf Urinal Activation Assembly, Pigtail connection	Burgundy
33400056	GBL-1081-A	0.125 gpf/0.48 Lpf Urinal Activation Assembly, Pigtail connection	N/A; Nickel plated brass

\* Colors may differ. Consult factory to confirm you have the correct assembly.

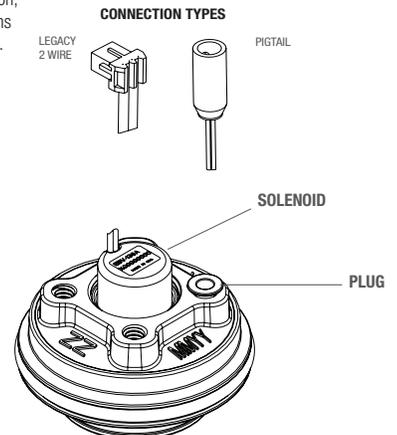
\*\* Includes Solenoid Repair Kit #2A.

ITEM NO. 2A - SOLENOID ASSEMBLY SELECTION GUIDE		
Code No.	Part No.	Description
33250013	EBV-415-A	Solenoid Assembly with Legacy connection
33400078	GBL-1096-A	Solenoid Assembly with Pigtail connection

ITEM NO. 10 - SENSOR ASSEMBLY SELECTION GUIDE		
Code No.	Part No.	Description
0340271	GBL-209-AC	CX Sensor Assembly for Closet with Legacy connection
0340272	GBL-210-AU	CX Sensor Assembly for Urinal with Legacy connection
33400069	GBL-219-A	CX Sensor Assembly for Closet with Pigtail connection
33400071	GBL-220-A	CX Sensor Assembly for Urinal with Pigtail connection

**NOTE:** After December 2021, the Activation, Solenoid, and Sensor Assembly connections were changed to a pigtail style connection.



## CX Sensor Flushometer

### TROUBLESHOOTING GUIDE

#### 1. Sensor LED Flashes Continuously Only When User Steps Within Range.

A. Unit is in start-up mode; no problem. This feature is active for the first ten (10) minutes of operation.

#### 2. Red Light Blinks Four (4) Times When User Steps Within Range.

A. "AA" Batteries depleted; replace batteries, lithium or alkaline. Ensure batteries are installed with proper polarity (+) and (-). **Do not mix** old and new batteries or different types.

B. (Hardwired) Battery Box not connected; connect Battery Box to Sensor Assembly.

#### 3. Valve Does Not Flush; Sensor Not Picking Up User.

A. Verify a urinal Sensor is not used on a closet Valve. Model is marked on rear of Sensor.

B. Range is too short; recalibrate range. Restart the Sensor by holding the Override Button in for 25 seconds, then release the Override Button and step away for one (1) minute; with power connected, this is considered a **Soft Reset**.

C. For **Hard Reset** of Sensor, remove all power connections (battery and hardwire) for one (1) minute. Reconnect power and step away from front of Sensor for 3½ minutes. Then test Sensor activation by standing in front of Sensor for ten (10) seconds, then step away and wait for flush. Test push button.

#### 4. Valve Does Not Flush; Sensor Picking Up Opposite Wall or Surface, or Only Flushes When Someone Walks By.

**Red Light Flashes Continuously for First 10 Minutes Even with No One in Front of the Sensor.**

A. Verify a closet Sensor is not used on a urinal Valve. Model is marked on rear of Sensor.

B. Range is too long; recalibrate range. Restart the Sensor by holding the Override Button in for 25 seconds, then release the Override Button and step away for one (1) minute; with power connected, this is considered a **Soft Reset**.

C. If range needs to be manually shortened, reset the Sensor (follow Step 3B) and stand in front of the Sensor at desired range distance for one (1) minute.

D. For **Hard Reset** of Sensor, remove all power connections (battery and hardwire) for one (1) minute. Reconnect power and step away from front of Sensor for 3½ minutes. Then test Sensor activation by standing in front of Sensor for ten (10) seconds, then step away and wait for flush. Test push button.

#### 5. Valve Does Not Flush Even After Sensor Recalibration.

A. Ensure water supply to Valve is turned on.

B. Activation Assembly sleeve is in closed position. Turn counter-clockwise to open water flow. **Note:** there is approximately 1/8-turn (45°) of free spinning as the Activation Assembly engages the Shut Off Sleeve between opening and closing the Valve.

C. Solenoid wire disconnected from Sensor. Ensure Solenoid wires are intact and Solenoid plug is connected properly.

D. "AA" Batteries depleted; replace batteries, lithium or alkaline. Ensure batteries are installed with proper polarity (+) and (-). **Do not mix** old and new batteries or different types.

E. Sensor Assembly malfunctioned. Disconnect power for one (1) minute, reconnect power, and check for start-up operation (flashing red LED). See Step 4D.

F. Check Solenoid for activation (clicking noise when pressing Sensor Override Button). If no clicks are heard, then contact Technical Support.

#### 6. Valve Does Not Shut Off.

A. Ensure Solenoid is connected to Sensor.

B. Supply line water pressure has dropped and is not sufficient to close the Valve. Close Activation Assembly until pressure is restored.

C. Piston Bypass is clogged, Piston is damaged, or large debris stuck behind Piston. Turn off water at Shut Off Sleeve, release pressure, remove Safety Collar and Activation Assembly. Remove Piston and check inside Valve for large debris. Replace Piston if damaged or cleaning does not correct the problem.

#### 7. Too Much Water to Fixture.

A. Excessive flow pressure. Readjust Activation Assembly by turning clockwise to decrease flow pressure.

B. Long Flush. Worn Piston; replace with new proper gpf/Lpf Piston.

C. Wrong model installed; i.e., 1.6 gpf model installed on 0.5 gpf/1.9 Lpf or 0.25 gpf/1.0 Lpf urinal fixture. Replace with proper model per guide.

#### 8. Not Enough Water to Fixture.

A. Insufficient flow pressure. Readjust Activation Assembly by turning counter-clockwise to increase flow pressure.

B. Water supply pressure is inadequate (low). Increase the water supply pressure. Contact the fixture manufacturer for minimum water supply requirements of the fixture.

C. Wrong model installed; i.e., 0.5 gpf/1.9 Lpf urinal installed on a 1.6 gpf/6.0 Lpf closet fixture. Replace with proper model.

D. Check lip seal for wear. Replace Piston if lip seal is worn or twisted.

#### 9. Chirping Noise is Heard at the Start or End of Flush.

A. Caused by air purging from the system inside the Valve Assembly. Noise will subside with several flushes or within a day.

### CARE AND CLEANING

**DO NOT USE** abrasive or chemical cleaners (including chlorine bleach) to clean Flushometers that may dull the luster and attack the chrome or special decorative finishes. Use mild soap and water, then wipe dry with a clean soft cloth or towel. If using a cleaner in a spray bottle, **DO NOT spray directly onto the Flushometer**, instead spray cleaner into a clean cloth and then wipe down the Flushometer.

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

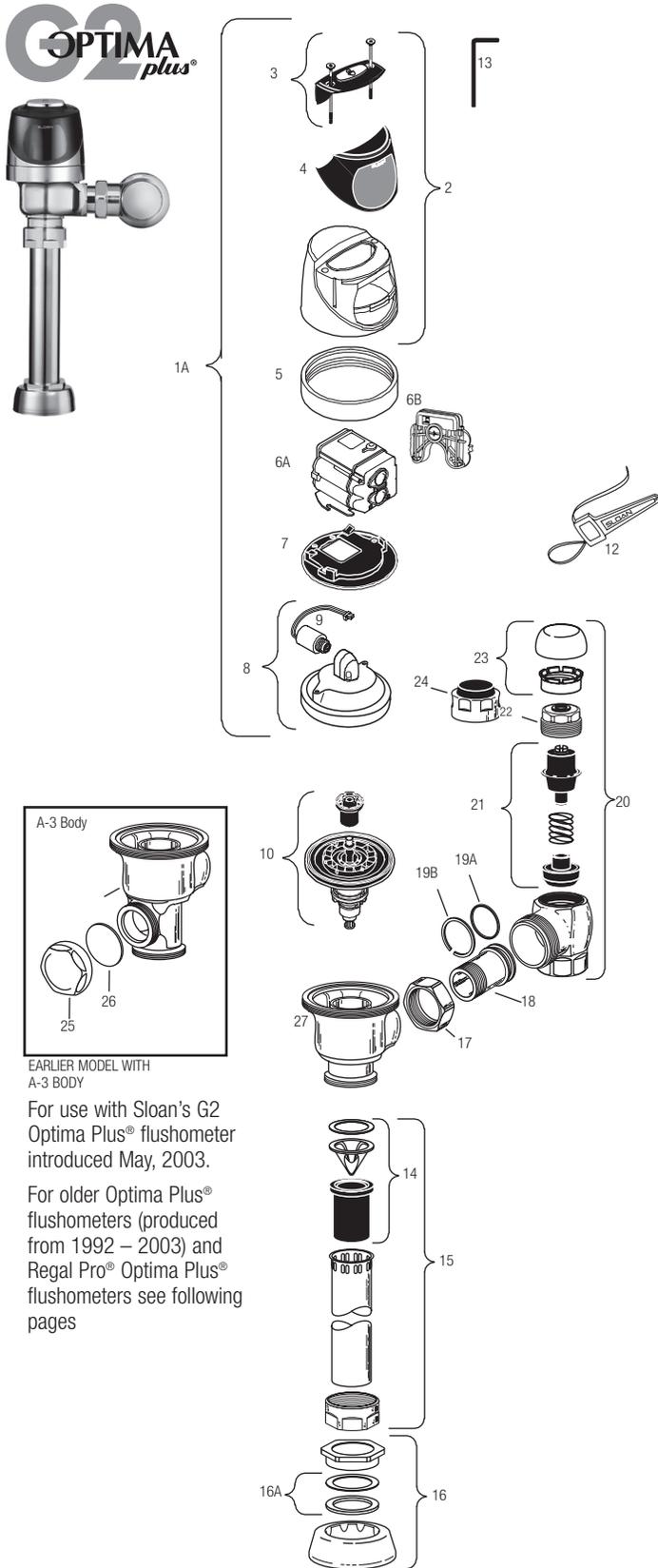
#### IMPORTANT NOTE FOR 1.1 GPF FLUSHOMETERS & REPLACEMENT KITS

Sloan 1.1 gpf/4.2 Lpf ultra-high efficiency flushometers meets all applicable standards and requirements. However, with low flush volumes it is imperative that they only be used in conjunction with toilet fixtures and drain line systems designed to operate with adequate flow rates and volumes in order to effectively eliminate waste and move it out of the building. It is the responsibility of the user to ensure both of these conditions are met. Not doing so may void your warranty.

Sloan 1.1 gpf diaphragm and piston kits are designed as a replacement part for Sloan 1.1 gpf/4.2 Lpf flushometers only. They are not intended to be used as a means to reduce water consumption in flushometers with higher flush volumes such as 1.28 gpf/4.8 Lpf or 1.6 gpf/6.0 Lpf or higher. Using this kit in any manner other than with a Sloan 1.1 gpf flushometer may void your warranty.

**When assistance is required, please contact Sloan Technical Support at 1.888.SLOAN.14 (1.888.756.2614).**

## G2 Flushometer



EARLIER MODEL WITH A-3 BODY

For use with Sloan's G2 Optima Plus® flushometer introduced May, 2003.

For older Optima Plus® flushometers (produced from 1992 – 2003) and Regal Pro® Optima Plus® flushometers see following pages

† For use with 1" and 3/4" H-700-A and 1" H-600-A Bak-Chek® screwdriver control stop  
 ‡ For use with H-600-A 3/4" screwdriver Bak-Chek® control stops  
 \* Refer to Page 58 for instructions regarding solenoid replacement.

‡ BlueTooth Enabled.

†The brands and/or products names referenced herein may be subject to trademark rights of their respective owners. Use of the brands and names is for identification purposes only and does not imply affiliation with or endorsement by Sloan.

### SENSOR MODULE COMPONENT PARTS

Item No.	Code No.	Part No.	Description
1A.	<b>0325160</b>	EBV-138-A	G2 Cover/Ring/Sensor Assembly – Water Closet
	<b>0325161</b>	EBV-139-A	G2 Cover/Ring/Sensor Assembly – Urinal
	<b>0325166</b>	EBV-149-A	G2 Cover/Ring/Sensor Assembly Water Closet - fits Zurn† valve bodies
	<b>0325167</b>	EBV-150-A	G2 Cover/Ring/Sensor Assembly Urinal fits Zurn† bodies
2.	<b>0325168</b>	EBV-142-A	Cover Assembly
3.	<b>0325172</b>	EBV-130-A	Override Button Assembly includes screws & wrench
	<b>0325170</b>	EBV-132-A	Screws (2) and Allen Wrench Only
4.	<b>0325169</b>	EBV-131	Lens Window Cover
5.	<b>0325804</b>	EBV-14	Locking Ring CP
	<b>0325210</b>	EBV-168	Locking Ring CP <b>DISCONTINUED</b>
	<b>3325524</b>	EBV-31-A	Locking Ring – fits Zurn† valve bodies
6A.	<b>3325450</b>	EBV-129A-C	G2 Electronic Module – Water Closet
	<b>3325451</b>	EBV-129A-U	G2 Electronic Module – Urinal
	<b>33250047</b>	EBV387A-BT‡	G2 Electronic Module Urinal 0.5 gpf
	<b>33250048</b>	EBV-129A-BT‡	G2 Electronic Module Urinal 1.0 gpf
	<b>33250051</b>	EBV-129AC-BT‡	G2 Electronic Module Water Closet 1.6 gpf
	<b>33250052</b>	EBV-129AC-BT‡	G2 Electronic Module Water Closet 1.28 gpf
6B.	<b>33250012</b>	—	Battery Door Replacement
7.	<b>0325171</b>	EBV-134	Cover Rest Plate
8.	<b>3325456</b>	EBV-145-A	Inside Cover Assembly (includes EBV-136-A)
	<b>3325089</b>	EBV-1010-A	Inside Cover Assembly (includes EBV-145-A & EBV-14)
9.	<b>3325453</b>	EBV-136-A	Solenoid (For G2 Modules only)*
10.	<b>SEE CHART NEXT PAGE</b>		Flex Tube Diaphragm Kit
<b>ACCESSORIES</b>			
†1.	<b>0325107</b>	EBV-91	Trimpot Adjustment Screwdriver <b>DISCONTINUED</b> not shown
12.	<b>0305823</b>	EBV-22	Strap Wrench
13.	<b>0325170</b>	EBV-132-A	Allen Wrench 7/64"
<b>VALVE COMPONENT PARTS</b>			
14.	<b>3323182</b>	V-651-A	Vacuum Breaker Repair Kit
15.	<b>0393046</b>	V-600-AA	3/4" x 10 1/2" CP Vacuum Breaker (10" Outlet Tube)
	<b>0393020</b>	V-600-AA	1-1/4" x 10 1/2" CP Vacuum Breaker (10" Outlet Tube)
	<b>0393021</b>	V-600-AA	1-1/2" x 10 1/2" CP Vacuum Breaker (10" Outlet Tube)
16.	<b>0306125</b>	F-5-AW	3/4" CP Spud Coupling
	<b>0306140</b>	F-5-AU	1-1/4" CP Spud Coupling
	<b>0306146</b>	F-5-AT	1-1/2" CP Spud Coupling
<b>16A.SEE SLIP JOINT GASKETS AND RINGS TABLE ON NEXT PAGE</b>			
17.	<b>0308676</b>	H-550	CP Stop Coupling
18.	<b>0308801</b>	H-551-A	CP Adjustable Tailpiece 2-1/16" long
19A.	<b>5308696</b>	H-553	O-ring – 24 per package
19B.	<b>5308381</b>	H-552	Locking ring – 12 per package
20.	<b>3308386</b>	H-700-A	1" Screwdriver Bak-Chek® Stop CP – complete
	<b>3308384</b>	H-700-A	3/4" Screwdriver Bak-Chek® Stop CP – complete
21.	<b>3308853</b>	H-541-A	Control Stop Repair Kit †
	<b>3308856</b>	H-543-A	Control Stop Repair Kit † 3/4" H-540/H-600 only
22.	<b>0308612</b>	H-622	CP Bonnet †
	<b>0308843</b>	H-577	CP Bonnet † – <b>DISCONTINUED</b>
23.	<b>3308772</b>	H-1010-A	Vandal Resistant Control Stop Cap Assembly †
	<b>3308790</b>	H-1009-A	Vandal Resistant Control Stop Cap Assembly †
24.	<b>3325816</b>	EBV-1019-A	3/4" Decorative Stop Cap
	<b>3308866</b>	H-574	1" Decorative Stop Cap
25.	<b>3325814</b>	EBV-1017-A	Handle Cap — Metal
26.	<b>0311042</b>	K-46	Blind Nut Gasket
27.	<b>0305381</b>	EBV-36-A	Squatty Valve Body
28.	<b>3388015</b>	H-1015	Flow Control Kit (HEU Only) (not Shown)

## G2 Flushometer

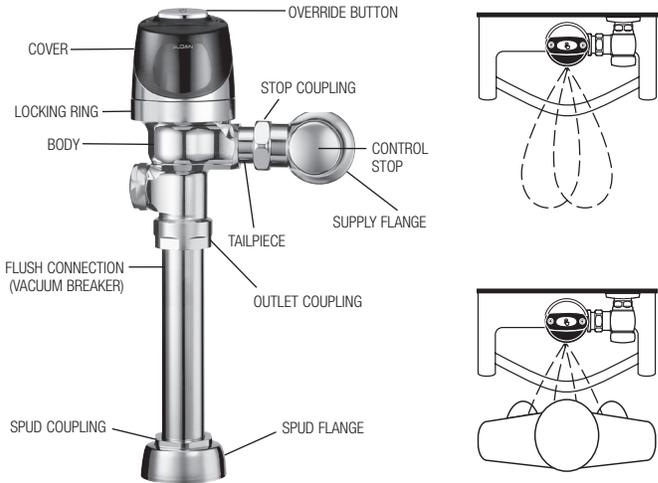
Sloan introduced its Optima Plus® battery powered sensor flushometer in 1992, revolutionizing the flushing of water closets and urinals. In both new construction and retrofit applications, the use of the Optima Plus has become the standard method for many facilities to improve restroom hygiene and ensure handicap accessibility compliance.

In May, 2003 Sloan introduced the G2 Optima Plus®.

The G2 Optima Plus® builds on the success of the original product and offers many technological advancements to further improve on performance and reliability expected of sensor activated plumbing. In addition to a new aesthetic design, the G2 Optima Plus® features a new state-of-the-art electronic and optical package and a solenoid operator. The G2 Optima Plus replaces the original Optima Plus® product, which was phased out of production in mid-2003.

The Sloan G2 Optima Plus® automatic battery powered flushometer relies on an infrared sensor to detect a user and activate a flushing cycle. No physical contact with the flushometer surface is necessary, assuring sanitary protection. G2 Optima Plus® flushometers are ADA compliant devices.

The flushometer is triggered by means of an active infrared sensor. The Optima Plus® sensor emits a continuous invisible light beam. When a user enters the beam's effective range, the beam is reflected into the Optima Plus scanner window. The user is now detected. After the user moves out of the effective range of the sensor, a signal is sent to the flushometer solenoid and, after appropriate arming and/or flush delays, the flush cycle is initiated.



### ITEM 10. FLEX TUBE DIAPHRAGM KIT

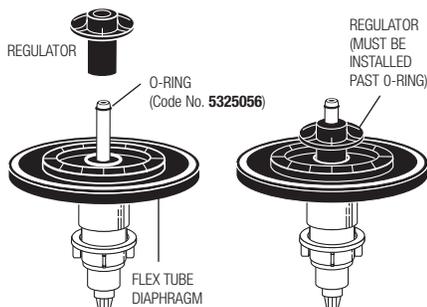
Code No.	Part No.	Description	Regulator Color *
3325090	EBV-1025-A	Urinal-0.125 gpf/0.25 gpf	GREEN
3325003	EBV-1023-A	Urinal-0.5 gpf/1.9 Lpf†	GREEN
3325000	EBV-1022-A	Urinal-1.0 gpf/3.8 Lpf	GREEN
3325000	EBV-1022-A	Urinal-1.5 gpf/5.7 Lpf †	BLACK
3325001	EBV-1020-A	Urinal-3.5 gpf/13.2 Lpf †	WHITE
3325031	EBV-1024-A	Closet-1.28 gpf/4.8 Lpf	GREEN
3325001	EBV-1020-A	Closet-1.6 gpf/6.0 Lpf †	GREEN
3325014	EBV-1021-A	Closet-2.4 gpf/9.0 Lpf	BLUE
3325001	EBV-1020-A	Closet-3.5 gpf/13.2 Lpf	WHITE
3325001	EBV-1020-A	Closet-4.5 gpf/17.0 Lpf §	WHITE

† EBV-1020-A and EBV-1022-A are supplied with multiple regulators.  
 ‡ 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.  
 § For a 4.5 gpf (17 Lpf) water closet flush use EBV-1020-A with the white regulator, and cut and remove the A-164 flow ring from the guide.  
 \* Color of regulator to be used with flex tube diaphragm to obtain the listed flush volume.

EBV-1025-A includes H-1015A Flow Control

### O-RING

Code No.	Part No.	Description
5325056	EBV-83	O-ring – 6 per package



### REGULATORS

The flush volume of the flex tube diaphragm kit is controlled by the regulator. Regulators are identified by color. Some flex tube diaphragm kits are supplied with multiple regulators. The installer must make sure the proper regulator is used when installing the flex tube diaphragm kit.

### REGULATOR (SOLD 6 PER PACKAGE)

Code No.	Part No.	Description	Regulator Color
5325122	EBV-95	Urinal-0.25 gpf/1.0 Lpf	GREEN
5325122	EBV-95	Urinal-0.5 gpf/1.9 Lpf	GREEN
5325122	EBV-95	Urinal-1.0 gpf/3.8 Lpf	GREEN
5325129	EBV-102-2	Urinal-1.5 gpf/5.7 Lpf	BLACK
5325130	EBV-102-1	Urinal-3.5 gpf/13.2 Lpf	WHITE
5325122	EBV-95	Closet-1.28 gpf/4.8 Lpf	GREEN
5325122	EBV-95	Closet-1.6 gpf/6.0 Lpf	GREEN
5325130	EBV-102-1	Closet-3.5 gpf/13.2 Lpf	WHITE
5325128	EBV-101	Closet-2.4 gpf/9.0 Lpf	BLUE

EBV-1020-A and EBV-1022-A are supplied with multiple flush volume regulators. The installer must use the correct regulator when installing the kit.

### ITEM 16A. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	5306058	F-3	Red Friction Ring
	5322001	VBF-5	Black Slip Joint Gasket
	0319086/5319086	S-30	Flexible Seat
	0319079	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	0396062	F-105	Slip Joint Gasket – Rigid
	5306057	F-3	Red Friction Ring
1-1/4"	5322176	VBF-5	Black Slip Joint Gasket
	0307052/5307052	G-21	Rigid Seat (rubber over brass)
	5306056	F-3	Red Friction Ring
1"	5306115	F-5	Black Slip Joint Gasket
	5306055	F-3	Red Friction Ring
3/4"	5306113	F-5	Black Slip Joint Gasket

## G2 Flushometer

### SOLENOID REPLACEMENT



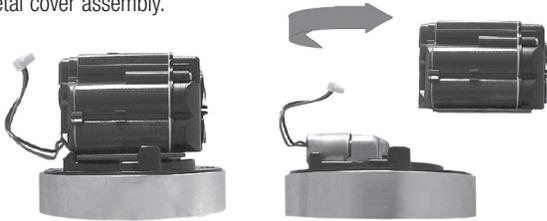
Code No.	Part No.	Description
3325453	EBV-136-A	Solenoid operator

For G2 Optima Plus® modules (identified by a blue module).

1. Turn off water and relieve pressure by loosening Tailpiece coupling and re-tighten. Loosen and remove top screws along with the outer cover assembly.



2. Disconnect wire clip from battery door and remove module from inner metal cover assembly.



3. Remove Solenoid by turning counter clockwise. Remove any remaining O-rings or parts in orifice.



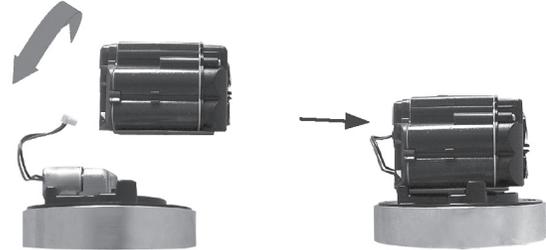
4. Remove black plastic Housing from the threaded end of new Solenoid Operator by unscrewing (counterclockwise). It is normal to find fluid inside this housing.



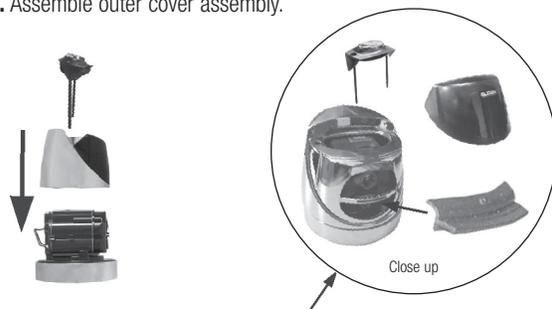
5. Make sure all O-rings (2) are installed on the grey End cap of the new Solenoid Operator. Install Solenoid Operator by threading it (clockwise) into the Housing. Tighten with fingers beyond just snug.



6. Mount module on inner cover assembly. Reconnect the plastic clip on the battery door.



7. Assemble outer cover assembly.



8. Turn on water at control stop. Installation complete.



## G2 Flushometer

### BATTERY REPLACEMENT

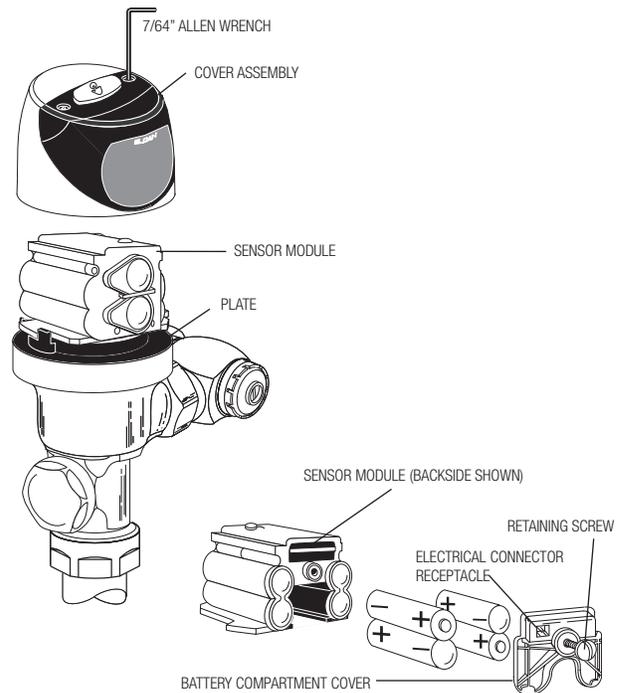
When G2 Optima Plus® has approximately 4,000 flushes left, the same red light that appears at start-up will flash four (4) times quickly whenever an object is detected. When this occurs, we recommend changing the batteries as follows:

When required, replace batteries with four (4) type AA 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 type AA batteries exactly as illustrated at right.

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.



### RANGE ADJUSTMENT (ADJUST ONLY IF NECESSARY)

The Optima Plus 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.**

Make sure to remove all the non-permanent targets in sensor view area. Push manual override button for 25 seconds. the Red LED in the G2 sensor starts slow blinking. Release the button during the LED blinking. The G2 will enter into distance setting mode. The setting mode will run for one (1) minute.

**!!! IMPORTANT !!!**  
**WHEN ADJUSTING RANGE FOR URINAL SENSOR, MAKE SURE TO SETUP A PROPER TARGET IN FRONT OF URINAL SENSOR.**

## G2 Flushometer

### TROUBLESHOOTING AND MAINTAINING THE SLOAN G2 OPTIMA PLUS® FLUSHOMETER

**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.

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.

**ATTENTION INSTALLERS:** With the exception of the control stop inlet, DO NOT USE pipe sealant or plumbing grease on any valve component or coupling! To protect the chrome or special finish of Sloan flushometers, DO NOT USE toothed tools to install or service these valves. Use our A-50 Super-Wrench™ or other smooth-jawed wrench to secure couplings. Regulations for low consumption fixtures (1.6 gpf/6.0 Lpf closets and 1.0 gpf/3.8 Lpf urinals) prohibit use of higher flush volumes.

#### 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.

#### 3. Valve does not flush; sensor picking up opposite wall or surface, or only flushes when someone walks by. Red light flashes continuously for first ten 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. By-pass orifice in diaphragm is clogged with dirt or debris, or by-pass 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 by-pass 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 solenoid. If cleaning does not correct problem, replace with new solenoid operator.

#### 7. Not enough water to fixture.

- A. Wrong flush volume regulator installed in flex tube diaphragm kit. Install the correct regulator.
- B. Wrong Optima Plus® model installed; i.e., 1.0 gpf urinal installed on 3.5 gpf closet fixture. Replace with proper Optima Plus model.
- C. Enlarged by-pass 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.
- B. Control stop not adjusted properly. Readjust control stop.
- C. Wrong Optima Plus model installed; i.e., 3 gpf model installed on 1.0 or 1.5 gpf urinal fixture.
- D. Dirt in diaphragm by-pass. Clean under running water or replace flex tube diaphragm.

Note: The EBV-46-A beam deflector is no longer required or available for the G2 Optima Plus.

### CARE AND CLEANING INSTRUCTIONS

**DO NOT USE** abrasive or chemical cleaners to clean the flushometer, they may dull the luster and attack the plastic cover and the chrome finish of the flushometer. Use **ONLY** mild soap and water, then wipe dry with clean cloth or towel.

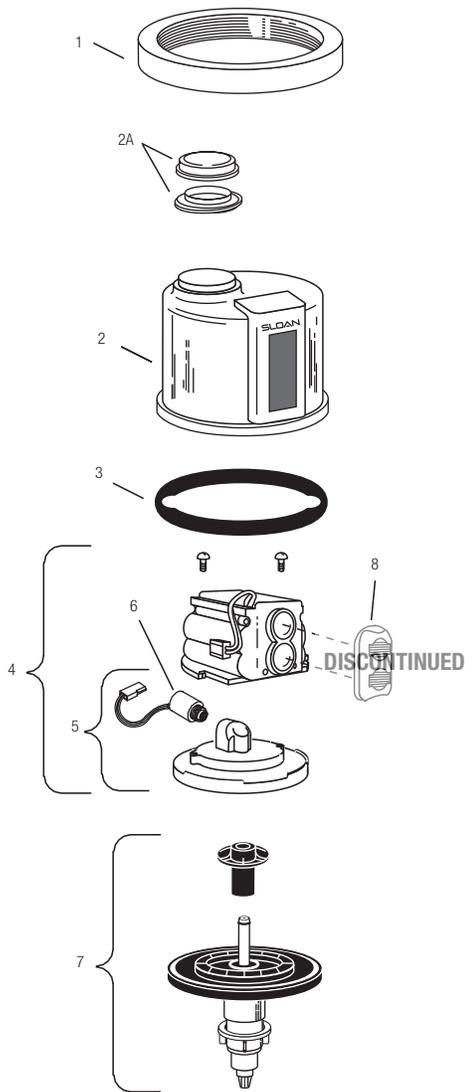
While cleaning the bathroom tile, the Optima Plus should be protected from any splattering of cleaner. Acids and cleaning fluids can discolor or remove chrome plating.

**When assistance is required, please contact Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

# Optima® Flushometer



## OPTIMA

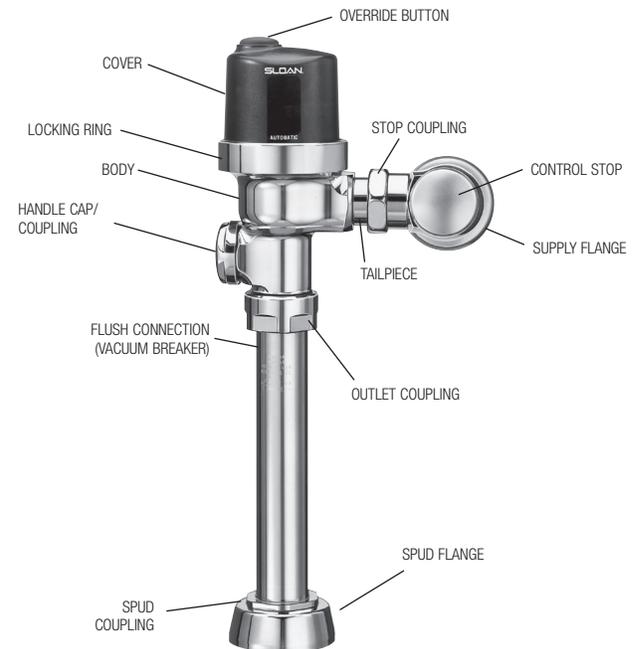


For all Optima Plus® produced from 1992 – 2003 and Regal Pro® Optima Plus® produced after May, 2003.  
**See the G2 Optima Plus® flushometer section for current parts.**

### SENSOR MODULE COMPONENT PARTS

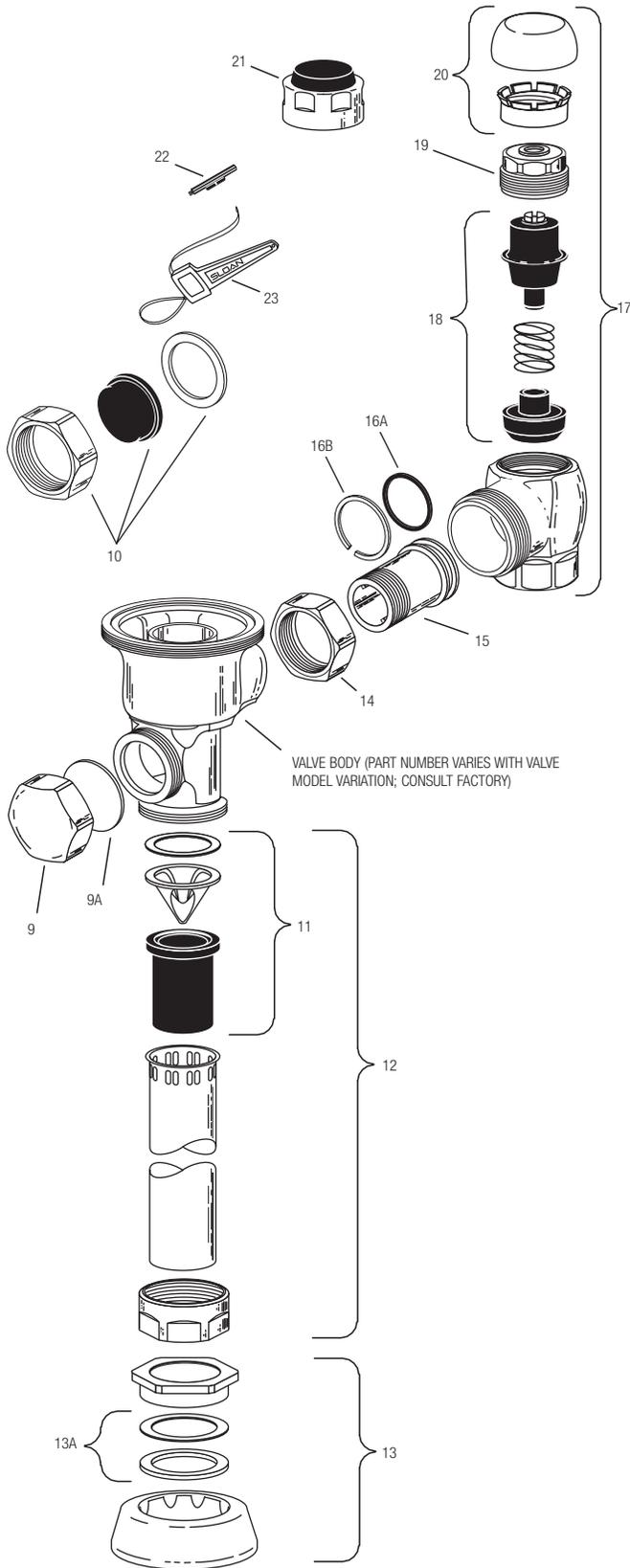
Item No.	Code No.	Part No.	Description
1.	<b>0325804</b>	EBV-14	Locking Ring
	<b>3325524</b>	EBV-31-A	Locking Ring fits Zurn† valve bodies
2.	<b>3325013</b>	EBV-60-A	Metal Cover Assembly with Override Button (Water Closet)
	<b>3325016</b>	EBV-1033-A	Metal Cover Assembly w/Override Button fits Zurn† valve bodies
2A.	<b>3325055</b>	EBV-1042-A	Replacement Override Button Kit for plastic covers (Old Style)
3.	<b>5325011</b>	EBV-67	Cover Gasket — 12 per package
4.	<b>SEE CHART PAGE 63 — ELECTRONIC MODULE</b>		
5.	<b>0325814</b>	EBV-21-A	Inside Cover Assembly (Includes Solenoid)
6.	<b>3325462</b>	EBV-144-A	Solenoid Operator †
7.	<b>SEE CHART PAGE 64 — Flex Tube Diaphragm Kit</b>		
8.	<b>3325537</b>	EBV-46-A	Beam Deflector † — <b>DISCONTINUED</b>

† The new EBV-144-A solenoid replaces the solenoid used with the old style black EBV-26-A modules only. For blue EBV-146-A-U or EBV-146-A-C G2 modules, use the EBV-136-A solenoid operator. Refer to module assembly chart for instructions regarding solenoid replacement.  
 ‡ Beam deflectors are for use on black, old style modules. They are not required (and will not work) on Blue G2 modules.



†The brands and/or products names referenced herein may be subject to trademark rights of their respective owners. Use of the brands and names is for identification purposes only and does not imply affiliation with or endorsement by Sloan.

# Optima® Flushometer



## OTHER VALVE COMPONENT PARTS

Item No.	Code No.	Part No.	Description
9.	<b>3325814</b>	EBV-1017-A	Handle Cap — Metal
9A.	<b>0311042</b>	K-46	Blind Nut Gasket
10.	<b>3325815</b>	EBV-1018-A	Handle Cap — Metal Coupling/Plastic Hole Cap — <b>DISCONTINUED</b>
11.	<b>3323182</b>	V-651-A	Vacuum Breaker Repair Kit
12.	<b>3393004</b>	V-600-AA	3/4" (19 mm) x 10 1/2" (254 mm) CP Vacuum Breaker (10" Outlet Tube)
	<b>3393006</b>	V-600-AA	1-1/4" (32 mm) x 10 1/2" (254 mm) CP Vacuum Breaker (10" Outlet Tube)
	<b>3393007</b>	V-600-AA	1-1/2" (38 mm) x 10 1/2" (254 mm) CP Vacuum Breaker (10" Outlet Tube)
13.	<b>0306125</b>	F-5-AW	3/4" (19 mm) CP Spud Coupling
	<b>0306140</b>	F-5-AU	1-1/4" (32 mm) CP Spud Coupling
	<b>0306146</b>	F-5-AT	1-1/2" (38 mm) CP Spud Coupling
13A.	<b>SEE SLIP JOINT GASKETS AND RINGS TABLE BELOW</b>		
14.	<b>0308676</b>	H-550	CP Stop Coupling
15.	<b>0308801</b>	H-551-A	CP Adjustable Tailpiece 2-1/16" (52 mm) long
16A.	<b>5308696</b>	H-553	O-ring — 24 per package
16B.	<b>5308381</b>	H-552	Locking ring — 12 per package
17.	<b>3308386</b>	H-700-A	1" (25 mm) Screwdriver Bak-Chek® Stop CP — complete
	<b>3308384</b>	H-700-A	3/4" (19 mm) Screwdriver Bak-Chek® Stop CP — complete
18.	<b>3308853</b>	H-541-A	Control Stop Repair Kit † 3/4" H-600/H-540 only
	<b>3308856</b>	H-543-A	Control Stop Repair Kit †
19.	<b>0308612</b>	H-622	CP Bonnet †
	<b>0308843</b>	H-577	CP Bonnet 3/4" H-600/H-540 only — <b>DISCONTINUED</b> †
20.	<b>3308772</b>	H-1010-A	Vandal Resistant Control Stop Cap Assembly†
	<b>3308790</b>	H-1009-A	Vandal Resistant Control Stop Cap Assembly†
21.	<b>3325816</b>	EBV-1019-A	3/4" (19 mm) Decorative Stop Cap
	<b>3308866</b>	H-574	1" (25 mm) Decorative Stop Cap

## ACCESSORIES

22.	<b>0325107</b>	EBV-91	Trimpot Adjustment Screwdriver
23.	<b>0305823</b>	EBV-22	Disposable Strap Wrench

† For use w/H-700-A 1" & 3/4" and H-600-A 1" screwdriver Bak-Chek® control stops, also marked with Quiet Stop II

‡ For use w/H-600-A 3/4" urinal screwdriver Bak-Chek® control stops, also marked with Quiet Stop II.

## ITEM 13A. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	<b>5306058</b>	F-3	Red Friction Ring
	<b>5322001</b>	VBF-5	Black Slip Joint Gasket
	<b>0319086/5319086</b>	S-30	Flexible Seat
	<b>0319079</b>	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	<b>0396062</b>	F-105	Slip Joint Gasket — Rigid
1-1/4"	<b>5306057</b>	F-3	Red Friction Ring
	<b>5322176</b>	VBF-5	Black Slip Joint Gasket
	<b>0307052/5307052</b>	G-21	Rigid Seat (rubber over brass)
1"	<b>5306056</b>	F-3	Red Friction Ring
	<b>5306115</b>	F-5	Black Slip Joint Gasket
3/4"	<b>5306055</b>	F-3	Red Friction Ring
	<b>5306113</b>	F-5	Black Slip Joint Gasket

## Optima® Flushometer

### ELECTRONIC MODULE ASSEMBLY CHART

The electronic and optical improvements of the G2 Optima Plus® have been incorporated into the electronic modules for use with older Optima Plus products.

Optima Plus® modules can be identified by color.

Old style modules are black and have a wire that runs along the side of the unit.

G2 modules are blue and have a wire only on the back of the unit.

There are now only two electronic module assembly variations for use with older Optima Plus valves:

EBV-146-A-U           Urinal  
EBV-146-A-C           Water closet

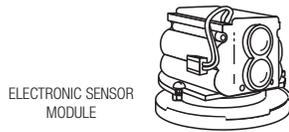
This chart cross references the part numbers and code numbers of our new electronic modules over from our old module numbers.

The modules include the solenoid, inner cover and electronic module.

These modules are for use with older Optima Plus and Regal Pro® Optima Plus® valves only.

Code No.	Use Part No.	Description	To Replace Old Part No.
0325177	EBV-146-A-U	Electronic — 0.5 gpf/1.9 Lpf Urinal Module	EBV-26-A-U-0.5
0325177	EBV-146-A-U	Electronic — 1.0 gpf/3.8 Lpf Urinal Module	EBV-26-A-U-1.0
0325177	EBV-146-A-U	Electronic — 1.5 gpf/5.7 Lpf Urinal Module	EBV-26-A-U-1.5
0325177	EBV-146-A-U	Electronic — 3.5 gpf/13.2 Lpf Urinal Module	EBV-26-A-U-3.5
0325176	EBV-146-A-C	Electronic — 1.6 gpf/6.0 Lpf Closet Module	EBV-26-A-C-1.6
0325176	EBV-146-A-C	Electronic — 2.4 gpf/9.0 Lpf Closet Module	EBV-26-A-C-2.4
0325176	EBV-146-A-C	Electronic — 3.5 gpf/13.2 Lpf Closet Module	EBV-26-A-C-3.5
0325176	EBV-146-A-C	Electronic — 4.5 gpf/17.0 Lpf Closet Module	EBV-26-A-C-4.5

Note: EBV-26-A modules are no longer available. Use the EBV-146-A-U or EBV-146-A-C module shown.

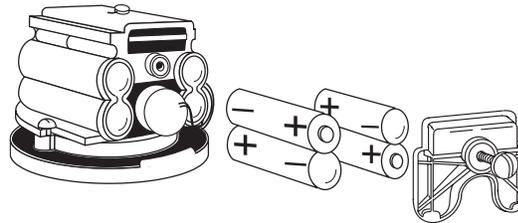


### BATTERY REPLACEMENT

When Optima Plus has approximately 4,000 flushes left, the same red light that appears at start-up will flash four (4) times quickly whenever an object is detected. When this occurs, we recommend changing the batteries. On Optima Plus, shut off water and relieve pressure.

Separate locking ring, cover and diaphragm from electronic sensor module.

Loosen retaining screw on battery compartment door and remove battery compartment door. Install four (4) AA batteries exactly as illustrated. Install battery compartment door and secure with retaining screw. Make certain that battery compartment door is fully compressed against gasket to provide a seal; do not overtighten.



### FLEX TUBE DIAPHRAGM ASSEMBLY

In early 2003 Sloan introduced the flex tube diaphragm kit into the Optima Plus. This design completely replaced the old Optima Plus diaphragm kit that featured the metal shaft with the quad Ring. This change further improved the reliability of the Optima Plus as it replaced a wearable dynamic seal (the Quad Ring) with a non-moving static O-ring seal.

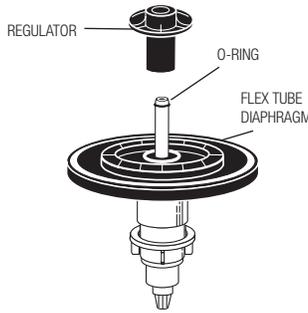
The flex tube diaphragm kit also features Sloan's exclusive dual-filter diaphragm. The dual-filter diaphragm helps to protect the valve from water-borne sediment that can cause the valve to stick open and run on. The dual-filter diaphragm is also made from Sloan's Permex® synthetic rubber material for resistance against chloramines and other water treatment chemicals.

**The flex tube diaphragm can be used to replace all generations of Sloan Optima Plus® diaphragm kits. The same flex tube diaphragm kits are used in the G2 Optima Plus® valve.**



# Optima® Flushometer

## FLEX TUBE DIAPHRAGM KITS

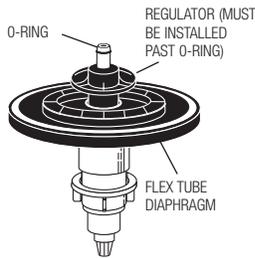


Code No.	Description
5325056	O-ring – 6 per package

Code No.	Use Part No.	Description	Color*	To Replace Old Part No.
3325090	EBV-1025-A	URINAL	GREEN	— 0.125 gpf/0.25 Lpf
3325003	EBV-1023-A	URINAL	GREEN	EBV-32-A-U-0.5 (0.5 gpf/1.9 Lpf <sup>†</sup> )
3325000	EBV-1022-A	URINAL	GREEN	EBV-32-A-U-1.0 (1.0 gpf/3.8 Lpf <sup>†</sup> )
3325000	EBV-1022-A	URINAL	BLACK	EBV-32-A-U-1.5 (1.5 gpf/5.7 Lpf <sup>†</sup> )
3325001	EBV-1020-A	URINAL	WHITE	EBV-20-A-U-3.5 (3.5 gpf/13.2 Lpf <sup>†</sup> )
3325031	EBV-1024-A	CLOSET	GREEN	— 1.28 gpf/4.8 Lpf
3325001	EBV-1020-A	CLOSET	GREEN	EBV-10-A-C-1.6 (1.6 gpf/6.0 Lpf <sup>†</sup> )
3325014	EBV-1021-A	CLOSET	BLUE	EBV-10-A-C-2.4 (2.4 gpf/9.0 Lpf)
3325001	EBV-1020-A	CLOSET	WHITE	EBV-10-A-C-3.5 (3.5 gpf/13.2 Lpf <sup>†</sup> )
3325001	EBV-1020-A	CLOSET	WHITE	EBV-10-A-C-4.5 (4.5 gpf/17.0 Lpf <sup>‡</sup> )

† The EBV-1020-A and EBV-1022-A kits are supplied with multiple regulators.  
 ‡ 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.  
 § For a 4.5 gpf (17.0 Lpf) water closet flush, use the EBV-1020-A kit with the white regulator, and cut and remove the A-164 flow ring from the guide.  
 \* Color of regulator to be used with flex tube diaphragm to obtain the listed flush volume.

## REGULATORS



The flush volume of the flex tube diaphragm kit is controlled by the regulator. Regulators are identified by color. Some flex tube diaphragm kits are supplied with multiple regulators. The installer must make sure the proper regulator is used when installing the flex tube diaphragm kit.

### REGULATOR (Sold 6 per package)

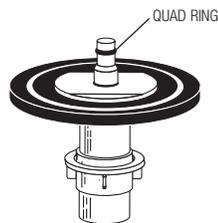
Code No.	Part No.	Description	Regulator Color
5325122	EBV-95	Urinal-0.5 gpf/1.9 Lpf	GREEN
5325122	EBV-95	Urinal-1.0 gpf/3.8 Lpf	GREEN
5325129	EBV-102-2	Urinal-1.5 gpf/5.7 Lpf	BLACK
5325130	EBV-102-1	Urinal-3.5 gpf/13.2 Lpf	WHITE
5325122	EBV-95	Closet-1.28 gpf/4.8 Lpf	GREEN
5325122	EBV-95	Closet-1.6 gpf/6.0 Lpf	GREEN
5325130	EBV-102-1	Closet-3.5 gpf/13.2 Lpf	WHITE
5325128	EBV-101	Closet-2.4 gpf/9.0 Lpf	BLUE

The EBV-1020-A and EBV-1022-A kits are supplied with multiple flush volume regulators. The installer must use the correct regulator when installing the kit.

## OLD STYLE DIAPHRAGM INSIDE PARTS



The 5325813 Quad Ring is still available.



Code No.	Part No.	Description
5325813	EBV-18	Quad Ring – 12 per package

**OLD STYLE KITS ABOVE ARE OBSOLETE. SEE CHART FOR REPLACEMENT.**

**Optima® Flushometer**

(All Optima products manufactured prior to May, 2003)

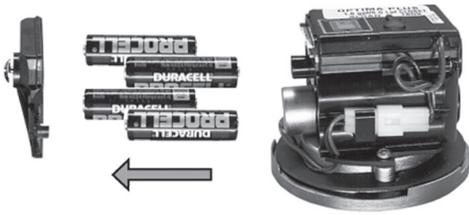
**SOLENOID REPLACEMENT**



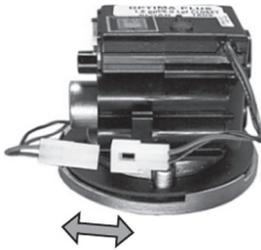
Code No.	Part No.	Description
3325462	EBV-144-A	Solenoid operator

For use with black Optima Plus® EBV-26-A modules only (produced 1992-2003). For G2 Optima Plus® modules (identified by a blue module) use the EBV-136-A solenoid.

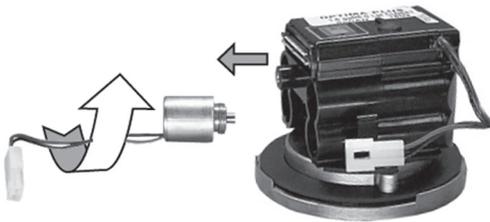
1. Remove battery cover and batteries from existing sensor module.



2. Disconnect the white plastic connector that connects the black and red wires on the side of the module.



3. Unscrew (counterclockwise) the existing solenoid valve from the base plate.



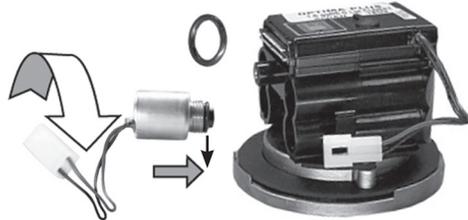
4. Remove white plastic seat and O-rings that are located inside the housing.



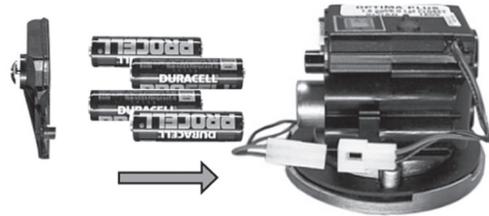
5. Remove clear plastic housing from the threaded end of new operator by unscrewing (counterclockwise). It is normal to find water inside this housing.



6. Make sure O-ring is installed on the gray housing of the new operator. Install solenoid operator by threading it (clockwise) into the housing. Tighten with fingers beyond just snug.



7. Reinstall batteries in the correct position and reattach battery door.



8. Reconnect the white plastic connectors on the side of the module. Slide the white connector into the clip to secure. Tuck wiring in close to module. If valve runs, tighten solenoid further.



## Optima® Flushometer

### TROUBLESHOOTING GUIDE

**IMPORTANT:** The OPTIMA PLUS® 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.

**ATTENTION INSTALLERS:** With the exception of the control stop inlet, DO NOT USE pipe sealant or plumbing grease on any valve component or coupling! To protect the chrome or special finish of Sloan flushometers, DO NOT USE toothed tools to install or service these valves. Use our A-50 Super-Wrench™ or other smooth-jawed wrench to secure couplings. Regulations for low consumption fixtures (1.6 gpf/6.0 Lpf closets and 1.0 gpf/3.8 Lpf urinals) prohibit use of higher flush volumes.

#### 1. Sensor flashes continuously only when user steps within range.

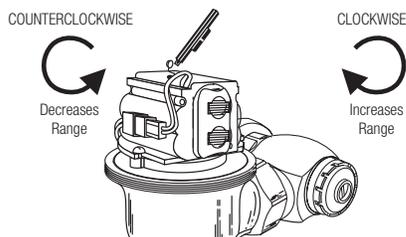
- A. Unit in start-up mode; no problem. This feature is active for the first ten (10) minutes of operation.

#### 2. Valve does not flush; sensor not picking up user.

- A. Range too short; increase the range.
- B. Optima Plus installed on a high rough-in fixture (beam is shooting over the user's head). Install the EBV-46-A beam deflector (black modules only).

#### 3. Valve does not flush; sensor picking up opposite wall or surface, or only flushes when someone walks by. Red light flashes continuously for first ten 10 minutes even with no one in front of the sensor.

- A. Range too long; shorten range.



- B. Sensor is picking up mirror or highly reflective wall or surface in front of fixture. Install Optima Plus® slightly "off-center" (2 to 5 degrees) to eliminate direct reflection off of mirror or opposite wall or surface.

#### 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. By-pass orifice in diaphragm is clogged with dirt or debris, or by-pass is clogged by an invisible gelatinous film due to "over-treated" water. Remove diaphragm and wash under running water. Replace with new 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. Solenoid problem. If cleaning does not correct the problem, replace with new solenoid operator.

#### 7. Not enough water to fixture.

- A. Wrong Optima Plus flex tube diaphragm installed; i.e., 1.0 gpf urinal installed on 3.5 gpf closet fixture. Replace with proper diaphragm assembly.
- B. Enlarged by-pass in diaphragm. Replace with flex tube diaphragm kit.
- C. Control stop not adjusted properly. Readjust control stop.
- D. 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. Control stop not adjusted properly. Readjust control stop.
- B. Wrong Optima Plus flex tube diaphragm installed; i.e., 3.0 gpf model installed on 1.0 or 1.5 gpf urinal fixture. Replace with proper Optima Plus diaphragm assembly.
- C. Dirt in diaphragm by-pass. Clean under running water or replace with new flex tube diaphragm.

#### 9. Men's room closet bowls unflushed.

- A. Closet being used as urinal. Angle sensor slightly off fixture centerline to detect standing person in front of fixture.

### BATTERIES

When required, replace batteries with four (4) alkaline type AA batteries.

### CARE AND CLEANING OF CHROME AND SPECIAL FINISHES

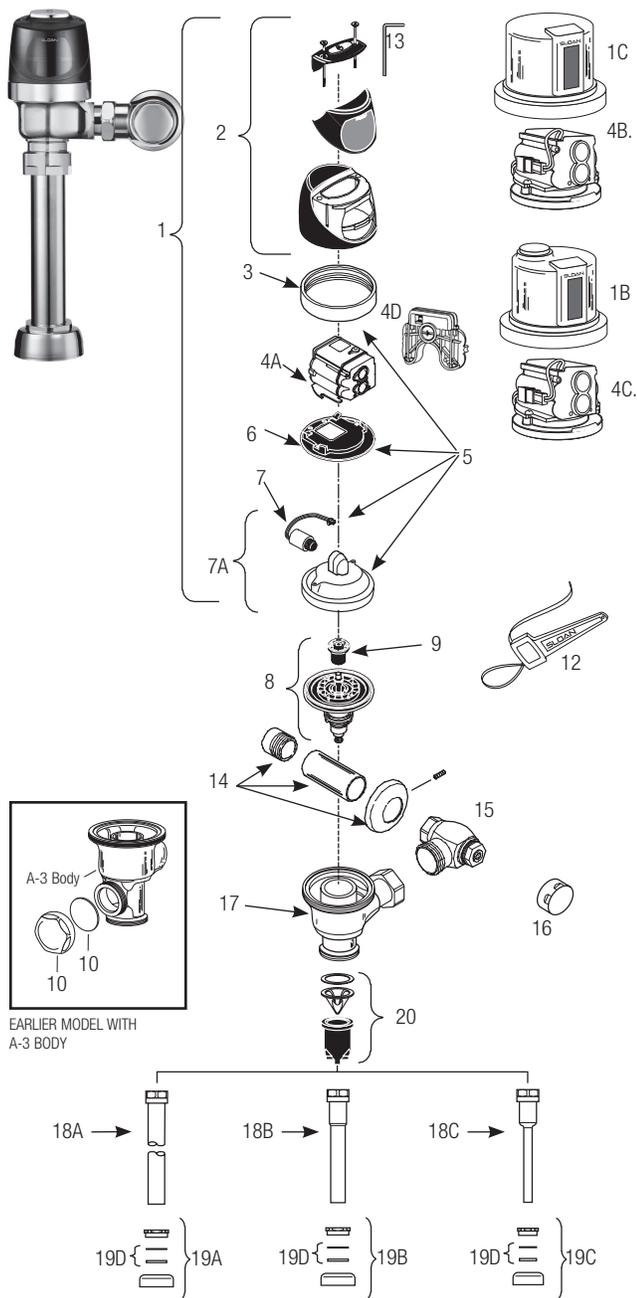
**DO NOT USE** abrasive or chemical cleaners to clean flushometers as they may dull the luster and attack the chrome or special decorative finishes. Use **ONLY** mild soap and water, then wipe dry with clean cloth or towel.

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.

**When assistance is required, please contact**

**Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

# Optima® Flushometer



EARLIER MODEL WITH A-3 BODY

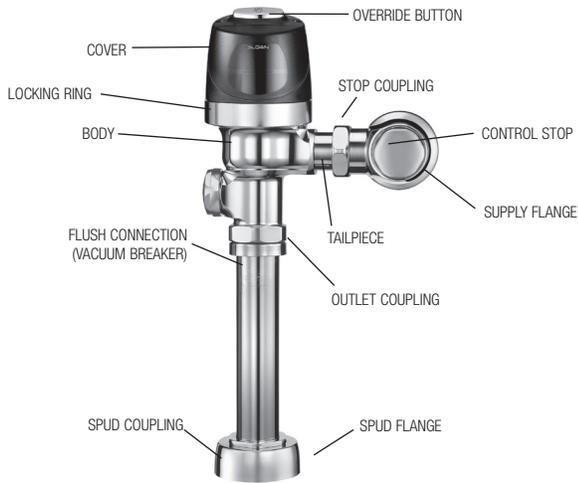
## PARTS LIST

Item No.	Code No.	Part No.	Description
1.	<b>0325298</b>	EBV-189-A	Cover/Ring/Sensor Assembly - Water Closet
	<b>0325299</b>	EBV-190-A	Cover/Ring/Sensor Assembly - Urinal
	<b>0325239</b>	EBV-198-A	Cover/Ring/Sensor Assembly - Water Closet fits Zurn† valve bodies
	<b>0325240</b>	EBV-199-A	Cover/Ring/Sensor Assembly - Urinal fits Zurn† valve bodies
1B.	<b>3325013</b>	EBV-60-A	Kit Metal Cover w/Override – Water Closet
1C.	<b>3325012</b>	EBV-55A	Kit Metal Cover Less Override- Urinal
2.	<b>0325241</b>	EBV-192-A	Cover Assembly
3.	<b>0325804PK</b>	EBV-14	Locking Ring
	<b>3325524</b>	EBV-31	Locking Ring - fits Zurn† valve bodies
4A.	<b>3325450</b>	EBV-129-A-C	Electronic Module - Water Closet
	<b>3325451</b>	EBV-129-A-U	Electronic Module - Urinal
4B.	<b>0325176</b>	EBV-146A-C	G2 Sensor Assembly-Closet
4C.	<b>0325177</b>	EBV-146A-U	G2 Sensor Assembly-Urinal
4D.	<b>33250012</b>	—	Battery Door Cover
5.	<b>3325089</b>	EBV-1010-A	Metal Inner Cover Repair Kit Includes Items Nos. 3, 5, 6 and 7
6.	<b>0325171</b>	EBV-134	Cover Rest Plate
7.	<b>3325453</b>	EBV-136-A	Solenoid
7A.	<b>3325456</b>	EBV-145-A	Inside Cover Assembly (includes solenoid EBV-136-A) Does not replace Plastic Inner Cover. Use Item No. 5
8.	<b>SEE CHART NEXT PAGE</b>		Flex Tube Diaphragm Assembly
9.	<b>SEE CHART NEXT PAGE</b>		Flush Volume Regulator
10.	<b>3325814</b>	EBV-1017	Handle Cap Kit
11.	<b>0325107</b>	EBV-91	Trimpot Adjustment Screwdriver <b>DISCONTINUED</b>
12.	<b>0305823</b>	EBV-22	Strap Wrench
13.	<b>0325159</b>	EBV-137	7/64" Hex Wrench
14.	<b>3308785</b>	H-634-AA	1" (25 mm) Sweat Solder Kit
	<b>3308788</b>	H-636-AA	3/4" (19 mm) Sweat Solder Kit
15.	<b>3308386</b>	H-700-A	1" (25 mm) Bak-Chek® Control Stop
	<b>3308384</b>	H-700-A	3/4" (19 mm) Bak-Chek® Control Stop
16.	<b>3308840</b>	H-573-A	Stop Cap
17.	<b>0305381PK</b>	EBV-36-A	Valve Body *
18A.	<b>5323007</b>	V-500-AA	1-1/2" (38 mm) x 10 1/2" (254 mm) Vacuum Breaker (Model 8110/8111) (6 pack)(10" Outlet Tube)
	<b>0323014</b>	V-500-AA	1-1/2" (38 mm) x 13 1/2" (343 mm) Vacuum Breaker (Model 8113)
	<b>0323019</b>	V-500-AA	1-1/2" (38 mm) x 23" (584 mm) Vacuum Breaker (Model 8115)
	<b>0323021</b>	V-500-AA	1-1/2" (38 mm) x 26" (660 mm) Vacuum Breaker (Model 8116)
18B.	<b>5323006</b>	V-500-AA	1-1/4" (32 mm) x 10 1/2" (254 mm) Vacuum Breaker (Model 8180) (10" Outlet Tube)
18C.	<b>5323005</b>	V-500-AA	3/4" (19 mm) x 10 1/2" (254 mm) Vacuum Breaker (Model 8186) (10" Outlet Tube)
19A.	<b>0306145</b>	F-56-A	1-1/2" Spud Coupling Assembly (Models 8110, 8115 & 8116)
19B.	<b>0306142</b>	F-55-A	1-1/4" Spud Coupling Assembly (Model 8180)
19C.	<b>0306102</b>	F-54-A	3/4" Spud Coupling Assembly (Model 8186)
19D.	<b>SEE SLIP JOINT GASKETS AND RINGS TABLE ON NEXT PAGE</b>		
20.	<b>3323192</b>	V-551-A	Vacuum Breaker Repair Kit

\* Part number varies with valve model variation; consult factory.

†The brands and/or products names referenced herein may be subject to trademark rights of their respective owners. Use of the brands and names is for identification purposes only and does not imply affiliation with or endorsement by Sloan.

## Optima® Flushometer

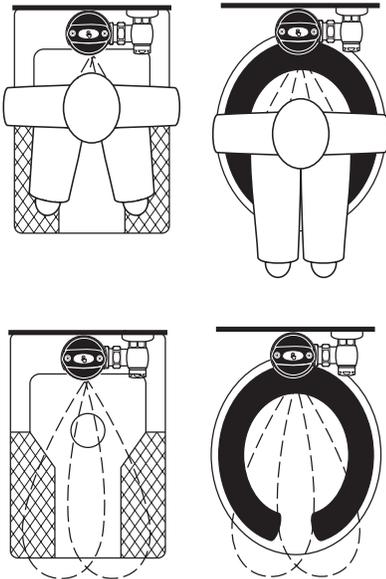


### OPERATION

A continuous, invisible light beam is emitted from the Optima Plus® Sensor.

As the user enters the beam's effective range, 22 to 42 inches (559 mm to 1067 mm) for closet installations and 15 to 30 inches (381 mm to 762 mm) for urinal installations, the beam is reflected into the Scanner Window to activate the Output Circuit. Once activated, the Output Circuit continues in a "hold" mode for as long as the user remains within the effective range of the sensor.

When the user steps away, the loss of reflected light initiates an electrical "one-time" signal that activates the flushing cycle to flush the fixture. The Circuit automatically resets and is ready for the next user.



### ITEM 8. FLEX TUBE DIAPHRAGM KIT

Code No.	Part No.	Description	Regulator Color *
3325090	EBV-1025-A	Urinal-0.125 gpf/0.25 Lpf	GREEN
3325150	EBV-1050-A	Urinal-0.5 gpf/1.9 Lpf	GREEN
3325151	EBV-1051-A	Urinal-1.0 gpf/3.8 Lpf †	GREEN
3325031	EBV-1024-A	Closet-1.28 gpf/4.8 Lpf	GREEN
3325153	EBV-1053-A	Closet-1.6 gpf/6.0 Lpf †	GREEN
3325152	EBV-1052-A	Closet-2.4 gpf/9.0 Lpf	BLUE

† The EBV-1051-A and EBV-1053-A Kits are supplied with multiple Regulators.

\* Color of regulator to be used with flex tube diaphragm to obtain the listed flush volume.

A 1.0 gpf (3.8 Lpf) Urinal kit can be converted to a 1.5 gpf (5.7 Lpf) Urinal by replacing the Green Regulator with the supplied Black Regulator.

A 1.6 gpf (6.0 Lpf) Closet kit can be converted to a 3.5 gpf (13.2 Lpf) Closet by replacing the Green Regulator with the supplied White Regulator.

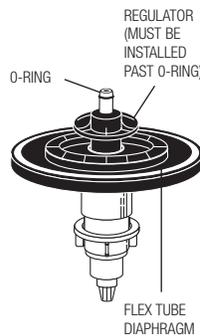
### ITEM 9. REGULATORS

The flush volume of the flex tube diaphragm kit is controlled by the regulator. Regulators are identified by color. Some flex tube diaphragm kits are supplied with multiple regulators. The installer must make sure the proper regulator is used when installing the flex tube diaphragm kit.

#### REGULATOR (SOLD 6 PER PACKAGE)

Code No.	Part No.	Description	Regulator Color
5325122	EBV-95	Urinal-0.5 gpf/1.9 Lpf	GREEN
5325122	EBV-95	Urinal-1.0 gpf/3.8 Lpf	GREEN
5325122	EBV-95	Closet-1.6 gpf/6.0 Lpf	GREEN
5325128	EBV-101	Closet-2.4 gpf/9.0 Lpf	BLUE

### FLEX TUBE DIAPHRAGM ASSEMBLY



Optima Plus Valve Models Feature Sloan's Exclusive Flex Tube Diaphragm™ for the ultimate in valve performance, reliability and Chloramine resistance.

### ITEM 19D. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	5306058	F-3	Red Friction Ring
	5322001	VBF-5	Black Slip Joint Gasket
	0319086/5319086	S-30	Flexible Seat
	0319079	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	0396062	F-105	Slip Joint Gasket – Rigid
1-1/4"	5306057	F-3	Red Friction Ring
	5322176	VBF-5	Black Slip Joint Gasket
	0307052/5307052	G-21	Rigid Seat (rubber over brass)
1"	5306056	F-3	Red Friction Ring
	5306115	F-5	Black Slip Joint Gasket
3/4"	5306055	F-3	Red Friction Ring
	5306113	F-5	Black Slip Joint Gasket

## Optima® Flushometer

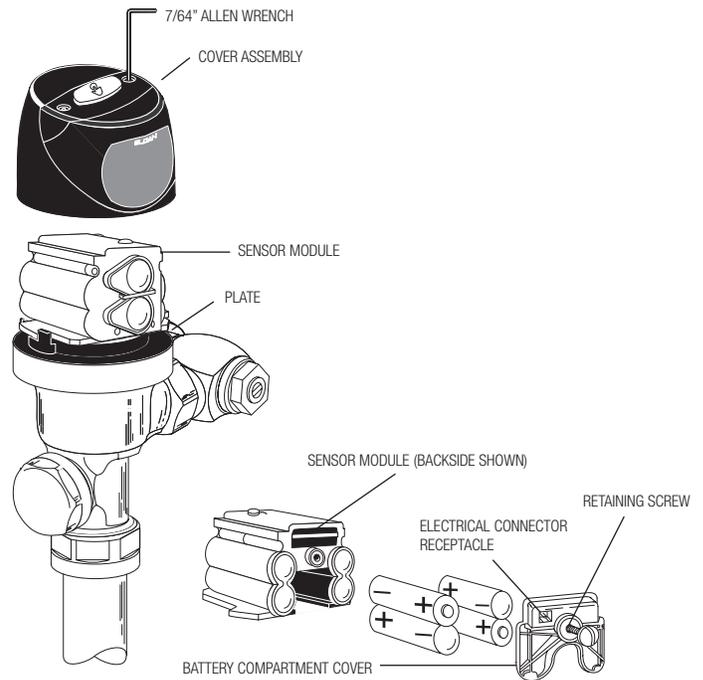
### BATTERY REPLACEMENT

When required, replace batteries with four (4) 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. Tighten the two (2) Screws on top of the unit.



### RANGE ADJUSTMENT (ADJUST ONLY IF NECESSARY)

The Optima Plus 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.**

Make sure to remove all the non-permanent targets in sensor view area. Push manual override button for 25 seconds. the Red LED in the G2 sensor starts slow blinking. Release the button during the LED blinking. The G2 will enter into distance setting mode. The setting mode will run for one (1) minute.

**!!! IMPORTANT !!!**  
**WHEN ADJUSTING RANGE FOR URINAL SENSOR, MAKE SURE TO SET-UP A PROPER TARGET IN FRONT OF URINAL SENSOR.**

## Optima® Flushometer

### TROUBLESHOOTING AND MAINTAINING THE SLOAN OPTIMA PLUS® FLUSHOMETER

**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.

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.

**ATTENTION INSTALLERS:** With the exception of the control stop inlet, DO NOT USE pipe sealant or plumbing grease on any valve component or coupling! To protect the chrome or special finish of Sloan flushometers, DO NOT USE toothed tools to install or service these valves. Use our A-50 Super-Wrench™ or other smooth-jawed wrench to secure couplings. Regulations for low consumption fixtures (1.6 gpf/6.0 Lpf closets and 1.0 gpf/3.8 Lpf urinals) prohibit use of higher flush volumes.

#### 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.

#### 3. Valve does not flush; sensor picking up opposite wall or surface, or only flushes when someone walks by. Red 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 four (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 by-pass 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 6 of these instructions).
- B. Wrong Optima Plus® Diaphragm kit installed; i.e., 1 gpf. urinal installed on 3.5 gal. closet fixture. Replace with proper Optima Plus diaphragm kit.
- 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 6 of these instructions).
- B. Control Stop not adjusted properly. Readjust Control Stop.
- C. Wrong Optima Plus Diaphragm kit installed; i.e., 3.5 gpf. closet installed on 0.5 gal. urinal fixture. Replace with proper Optima Plus Diaphragm kit.
- D. Dirt in Diaphragm Bypass. Clean under running water or replace Flex Tube Diaphragm.

### 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.

**When assistance is required, please contact Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**



## Optima® Side Mount Flushometers Dual Flush & Single Flush

### BATTERY REPLACEMENT

Using the supplied battery compartment hex wrench, remove battery compartment from Side Mount unit.

Remove batteries from compartment tray.

Install 4 new C-cell batteries into compartment tray (note the position of batteries in tray), and reinstall compartment tray into the Side Mount unit.

The Side Mount unit comes preset from the factory. If special circumstances require adjustment of the activation distance, please contact Sloan.

The Side Mount unit calibrates upon power up, GREEN and RED LEDs flash once. The unit will actuate a flush followed by 5 flashes of GREEN LED. The unit will then perform calibration, a 20 second sequence, where the GREEN LED flashes quickly. Finally the unit will start normal operation.

Manual flush button on Side Mount unit allows manual activation, when desired.

### MODE CHANGE (SINGLE-FLUSH UNITS ONLY)

Units are preset at factory in water closet mode.

To change unit from water closet to urinal mode, complete the following:

Press and hold the True Mechanical Override (TMO) button for 20-30 seconds.

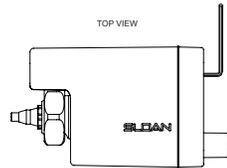
The unit will exhibit an LED flash pattern as follows:

- For approximately the first 10 seconds there will be no LED flashing
- For approximately 10-20 seconds, both the RED and GREEN LEDs will produce short simultaneous flashes
- For approximately 20-30 seconds, the GREEN LED will flash

Release the TMO button during the 20-30 seconds when both the RED and GREEN LEDs produce SHORT simultaneous flashes and remove non-permanent items from view of the sensor. The Side Mount unit will now be in urinal mode\* and begin calibration.

To change back to closet mode, press and hold the TMO button for 30-40 seconds. Release when RED and GREEN LEDs produce short simultaneous flashes. The Side Mount unit will now be in close mode and begin calibration.

\* Urinal mode provides a shorter sensor range and 1-2 second flush delay.



### TROUBLESHOOTING GUIDE

#### 1. RED LED continuously flashes when target is present.

The battery is low. Refer to battery replacement instructions.

#### 2. RED LED flashes 4 times after a target has been present for 8 seconds. RED LED flashes once when a target is NOT present.

The battery is low. Refer to battery replacement instructions.

#### 3. RED LED flashes continuously after calibration.

The unit has failed to calibrate. The optics window is obscured. Remove power, clean window and remove any objects (barrels, toolboxes, etc.) within close proximity of unit. Repeat power-up sequence (See BATTERY REPLACEMENT for power-up sequence). If unit fails, consult Sloan Technical Support.

### CARE AND CLEANING OF CHROME AND SPECIAL FINISHES

**DO NOT USE** abrasive or chemical cleaners (including chlorine bleach) to clean side mount unit or flushometer that may dull the luster and attack the finish. Use **ONLY** mild soap and water, then wipe dry with clean cloth or towel.

While cleaning the bathroom tile, protect the side mount unit from any splattering of cleaner. Acids and cleaning fluids can discolor or remove chrome plating.

**DO NOT USE** abrasive or chemical cleaners (including chlorine bleach) to clean sensor window that may distort or ruin the sensor.

**When assistance is required, please contact**

**Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

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## SMOOTH® Side-mount Flushometer

### Single-flush

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Battery powered, sensor activated retrofit unit for exposed closet and urinal flushometers.



1

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#### PARTS LIST

Item			
No.	Code No.	Part No.	Description
1.	3325201	EBV-200-A	Side Mount Operator for Water Closets (Toilets) and Urinals

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## SMOOTH® Side-mount Flushometer

### Single-flush

#### ADJUSTMENT PROCEDURES

**Note:** To make the adjustments indicated below, power to unit(s) must be turned off for ten (10) seconds. Mode selection is available within one (1) hour after every power up condition (reinstalling batteries).

##### Mode A

The SMOOTH unit may be reset to normal range by fully pressing and holding in the Override Handle until the Red LED light in the Sensor Window illuminates. Then immediately release the Override Handle.

##### Mode B

The SMOOTH unit may be set to reduced range for closet applications by pressing and holding in the Override Handle until the Red LED light in the Sensor Window flashes a slow long blinking light. Then immediately release the Override Handle.

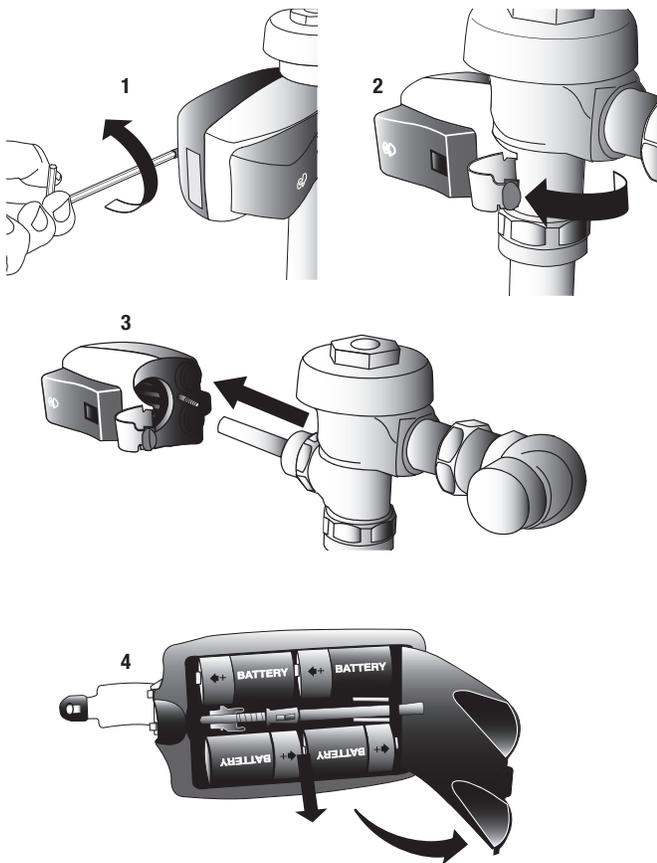
##### Mode C

The SMOOTH unit may be set to reduced range by pressing and holding in the Override Handle until the Red LED light in the Sensor Window displays a rapid on and off blinking light. Then immediately release the Override Handle.

#### BATTERIES

When required, replace batteries with four (4) type C batteries.

1. Release Mounting Clamp by turning the Mounting Screw counterclockwise with a 1/8" hex wrench.
2. Swing the Mounting Clamp into the open position.
3. Slide the unit from the flushometer body.
4. Open Battery Compartment Door and remove old batteries from unit. Replace batteries with 4 (four) new C-size batteries. Close Battery Compartment Door. Reinstall unit.



#### TROUBLESHOOTING GUIDE

##### 1. Red LED light in the sensor window flashes twice as fast as normal.

- A. When a user enters the sensor's effective range and the Red LED light in the sensor window flashes twice as fast as normal, the batteries need replacement. Refer to the Battery Replacement Instructions.

#### 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** mild 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.

**When assistance is required, please contact Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

## SMO Side Mount Flushometer Single-flush

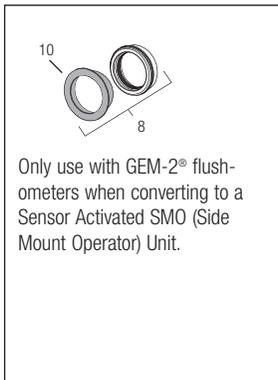
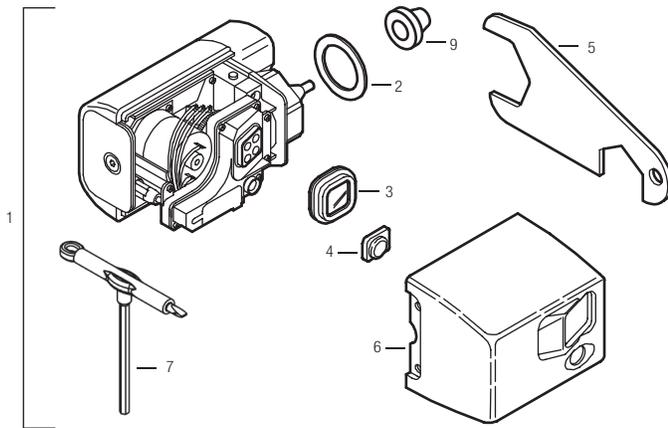
Battery powered, sensor activated retrofit unit for exposed closet and urinal flushometers.



### PARTS LIST

Item No.	Code No.	Part No.	Description
1.	<b>0325105</b>	EBV-89-A	Side Mount Operator for Water Closets (Toilets) and Urinals
2.	<b>0301139</b>	A-31	Gasket
3.	<b>0325148</b>	EBV-118	Lens
4.	<b>0325153</b>	EBV-123	Button repair kit
5.	<b>0325150</b>	EBV-120	Wrench
6.	<b>0325157</b>	EBV-127	Metal Cover Closet w/OR
7.	<b>0325149</b>	EBV-119	Allen Wrench 3mm security hex
8.	<b>0325192</b>	EBV-157-A	Handle Adapter Kit (Includes Green "L" Gasket) for GEM-2®
9.	<b>5302297</b>	B-39	Handle Seal (pack of 12)
10.	<b>5325428</b>	EBV-584	Gasket (Green) GEM SMO (pack of 5)

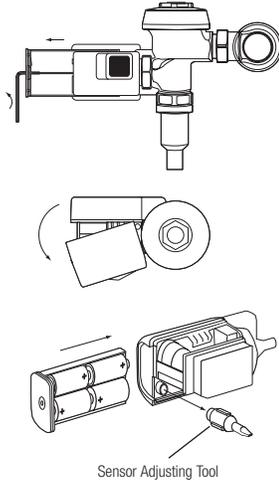
Note: Battery door screw is not an available part. Use M4-0.7 x 12 mm screw as suitable replacement.



# SMO Side Mount Flushometer Single-flush

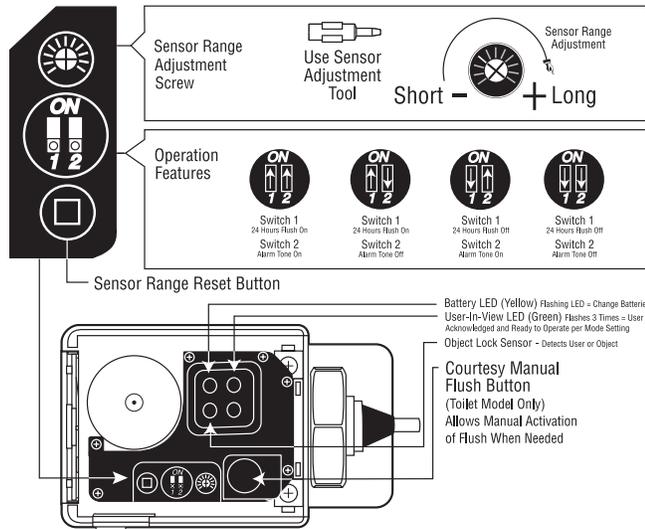
## TO CHANGE ACTIVATION DISTANCE FOR THE OBJECT LOCK SENSOR

1. Remove battery compartment tray as shown at left.
2. Remove cover as shown at left.
3. Remove sensor adjuster tool as shown at left. Replace battery compartment in Side Mount Operator to activate unit.
4. Press sensor range reset button as shown below (the green L.E.D. will flash continuously when it has an object in view for the seven minute reset period).
5. Stand at desired activation distance.
6. Use sensor adjuster tool (see below) and turn Distance Adjustment Screw all the way down and then turn slowly up until green L.E.D. begins to flash.
7. Ensure Object Lock Sensor is not detecting stall door or wall by closing door, stepping out of sensor path and making sure green L.E.D. is not flashing. If sensor locks onto door or wall, unit will not flush properly. Shorten activation distance.
8. Remove battery compartment, replace sensor adjuster tool and cover. Replace battery compartment tray to reactivate Side Mount Operator unit.
9. After 7 minute start-up sequence, the green L.E.D. will flash only 3 times when a user is in view (after a 5 second delay).



## TROUBLESHOOTING GUIDE

- 1. Green L.E.D. (light) flashes 3 times when there are no users**
  - A. Front of Object Lock Sensor is covered or Object Lock Sensor is set too far out, registering the opposite wall or door as a user. Remove item covering sensor or adjust Object Lock Sensor activation distance. (See section – Adjusting Your Side Mount Operator)
- 2. Green L.E.D. (light) flashes continuously when Object Lock Sensor is activated by a user**
  - A. Side Mount Operator unit is in 7 minute start up mode (when first activated) or Sensor Range Reset Button has been depressed. Green L.E.D. (light) will flash only 3 times acknowledging a user is in view after the 7 minute start up mode
- 3. Orange L.E.D. (light) flashes**
  - A. Batteries need replacing. Replace batteries.
- 4. Not enough water to fixture or too much water to fixture**
  - A. Diaphragm damaged or valve control stop improperly adjusted. Replace diaphragm and/or adjust valve control stop
- 5. Valve will not operate**
  - A. Object Lock Sensor range set too close to Side Mount Operator, batteries are dead, or water supply is turned off. Adjust Object Lock Sensor – Replace batteries – Turn water on.
- 6. Valve does not shut off**
  - A. Dirt or debris preventing diaphragm from functioning properly. Remove dirt or debris, consult valve manufacturer's directions.
- 7. Valve does not flush even after Object Lock Sensor has been adjusted**
  - A. Dead batteries. Replace batteries.



## 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** mild 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.

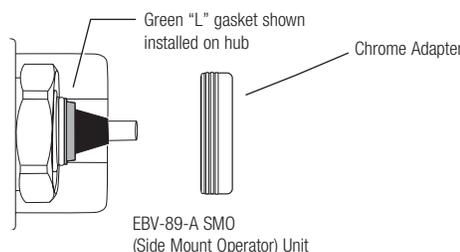
**When assistance is required, please contact Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

## Installation Instructions for GEM•2®

### EBV-157-A Handle Adapter Kit

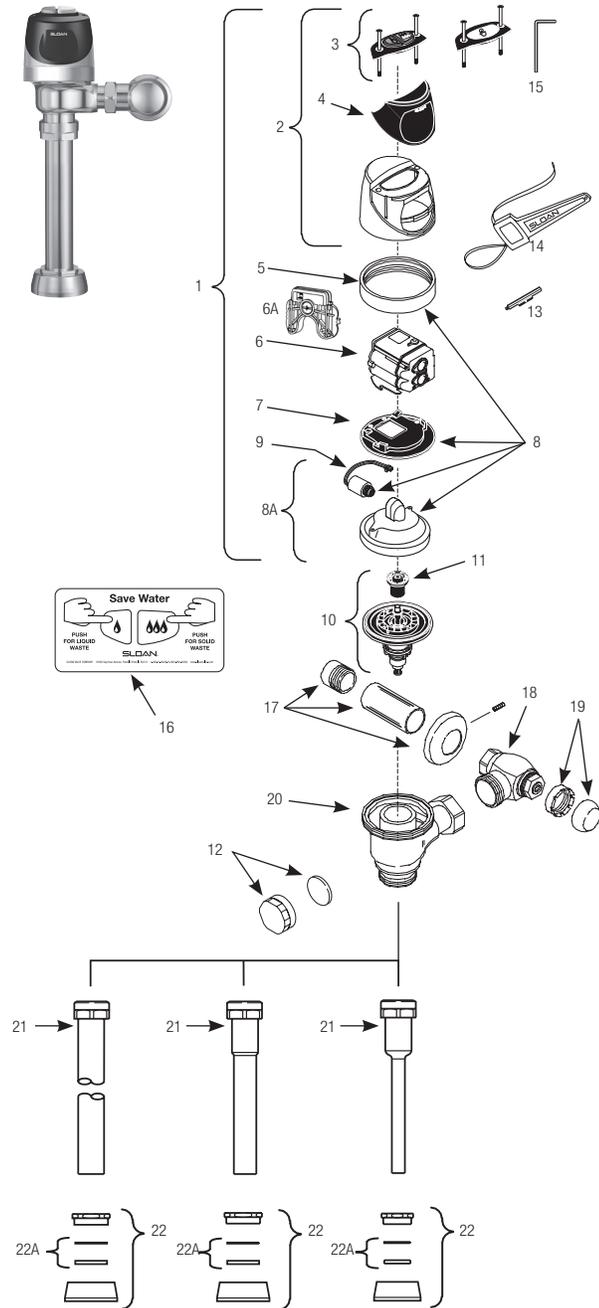
When converting a GEM•2® manual flushometer to a Sensor Activated flushometer with an SMO (Side Mount Operator), an EBV-157-A Handle Adapter kit must be used.

1. Remove handle assembly from flushometer.
2. Place Green "L" gasket over the hub in the SMO connection area.



# ECOS® Flushometers

## Single-flush and Dual-flush



### FLEX TUBE DIAPHRAGM ASSEMBLY



Sloan ECOS® Electronic Valve Models Feature Sloan's Exclusive flex tube diaphragm™ for the ultimate in valve performance, reliability and chloramine resistance.

#### Items Included with Complete Sloan ECOS Valves Only

21A.	<b>3393002</b>	V-600-AA	1½" (38 mm) x 10 ½" (254 mm)
			Vacuum Breaker (Model 8110) (10" Outlet Tube)
	<b>0323044</b>	V-600-AA	1½" (38 mm) x 23" (584 mm)
			Vacuum Breaker (Model 8115)
	<b>0393049</b>	V-600-AA	1½" (38 mm) x 26" (660 mm)
			Vacuum Breaker (Model 8116)
21B.	<b>0323117</b>	V-600-AA	¾" (20 mm) x 10 ½" (254 mm)
			Vac Breaker (Model 8186) (10" Outlet Tube)
	<b>0393039</b>	V-600-AA	1¼" (31 mm) x 13½" (342 mm) Vac Breaker
22A.	<b>0306146</b>	F-5-AT	1½" Spud Coupling Assembly (Water Closet Models)
22B.	<b>0306125PK</b>	F-5-AW	¾" Spud Coupling Assembly (Urinal Models)

Item.	Code.	Part #	Description
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#### Items Included with RESS Retrofit and Complete Sloan ECOS Flush Valves

1.	<b>0372055</b>	WES-55-A	Cover/Ring/Sensor Assembly - Dual Flush WC
	<b>0325160</b>	EBV-138-A	Cover/Ring/Sensor Assembly - 1.6 & 1.28 gpf Single Flush WC
	—	EBV-378-A	Cover/Ring/Sensor Assembly - 1.1 gpf Single Flush WC
	<b>0325161</b>	EBV-139-A	Cover/Ring/Sensor Assembly - 1.0 gpf Single Flush Urinal
	<b>0325341</b>	EBV-341-A	Cover/Ring/Sensor Assembly - 0.5 gpf Single Flush
	<b>0325329</b>	EBV-329-A	Cover/Ring/Sensor Assembly - 0.25 gpf Single Flush
	<b>0325273</b>	EBV-324-A	Cover/Ring/Sensor Assembly - 0.125 gpf Single Flush
	<b>0372060</b>	WES-60-A	Cover/Ring/Sensor Assembly Dual Flush WC-fits Zurn® valve bodies
	<b>0325166</b>	EBV-149-A	Cover/Ring/Sensor Assembly 1.6 & 1.28 gpf Single Flush Water Closet-fits Zurn® valve bodies
	<b>0325167</b>	EBV-150-A	Cover/Ring/Sensor Assembly Single Flush Urinal fits Zurn® valve bodies
	<b>33720003</b>	EBV196A-BT‡	Cover/Ring/Sensor Assembly - 1.6/1.1 gpf Dual Flush WC
	<b>33720002</b>	EBV1054A-BT‡	Cover/Ring/Sensor Assembly - 1.1/1.28 gpf Dual Flush WC
2.	<b>0325246</b>	EBV-191-A	Cover Assembly - Dual Flush
	<b>0325168</b>	EBV-142-A	Cover Assembly - Single Flush
3A.	<b>0372033</b>	WES-23-A	Button Cover Assembly with Screws - Dual Flush
	<b>0325172</b>	EBV-130-A	Button Cover Assembly with Screws - Single Flush
	<b>0325242</b>	EBV-182-A	Button Cover Assembly L/OR w/ Screws
3B.	<b>0325170</b>	EBV-132-A	Screws (2) and Hex Wrench Only
4.	<b>0325169</b>	EBV-131	Lens Window Cover
5.	<b>0325210PK</b>	EBV-168	Locking Ring
	<b>3325524</b>	EBV-31-A	Locking Ring - fits Zurn® valve bodies
6.	<b>0325247</b>	EBV-196-A	Module - ECOS Electronic 1.6/1.1 gpf Dual Flush
	—	EBV-383-A	Module - ECOS Electronic 1.1 gpf Single Flush
	<b>3325450</b>	EBV-129-AC	Module - ECOS Electronic 1.6 & 1.28 gpf Single Flush
	<b>0325395</b>	EBV-386 AU	Single Flush 0.125 gpf/0.5 Lpf
	<b>0325396</b>	EBV-387 AU	Single Flush 0.25 gpf/1.0 Lpf
	<b>3325451</b>	EBV-129-AU	Module - ECOS Electronic 0.5 & 1.0 gpf Single Flush
	<b>33250045</b>	EBV-386A-BT‡	Module -ECOS Electronic Urinal 0.125 gpf
	<b>33250046</b>	EBV-387A-BT‡	Module -ECOS Electronic Urinal 0.25 gpf
	<b>33250049</b>	EBV-383A-BT‡	Module -ECOS Electronic Water Closet 1.1 gpf
6A.	<b>33250011</b>	—	Battery Door Replacement
7	<b>0325171</b>	EBV-134	Cover Rest Plate
8.	<b>3325089</b>	EBV-1010-A	Inner Cover Repair Kit (Metal)
8A.	<b>3325456</b>	EBV-145-A	Inside Cover Assembly (includes solenoid)
9.	<b>3325453</b>	EBV-136-A	Solenoid
10A.	†		Flex Tube Diaphragm Assembly
10B.	†		Cartridge Assembly
11.	†		Flush Volume Regulator
12.	<b>3325814</b>	EBV-1017-A	Handle Cap (RESS Retrofit Models only)
13.	<b>0325194</b>	EBV-91	Range Adjustment Tool
14.	<b>0305823</b>	EBV-22	Strap Wrench
15.	<b>0325159</b>	EBV-137	7/64" Hex Wrench
16.	<b>0372031</b>	WES-19	English Operation Instruction Plate
	—	WES-22	Spanish Operation Instruction Plate
17.	<b>3388015</b>	H-1015	Flow Control Kit (HEU Only) (Not Shown)

#### Items Included with Complete Sloan ECOS Valves Only

17A.	<b>3308782</b>	H-633-AA	1" (25 mm) Sweat Solder Kit
17B.	<b>3308788</b>	H-636-AA	¾" (20 mm) Sweat Solder Kit
18A.	<b>0388000</b>	H-700-A	1" (25 mm) Bak-Chek® Control Stop
18B.	<b>0388001</b>	H-700-A	¾" (20 mm) Bak-Chek® Control Stop
19	<b>3308797</b>	H-1010-A	Vandal Resistant Stop Cap
20.	<b>0305381PK</b>	EBV-36-A	Valve Body

The EBV-1020-A Kit is supplied with multiple Flush Volume Regulators. The installer must use the correct Regulator when installing the kit. †The brands and/or products names referenced herein may be subject to trademark rights of their respective owners. Use of the brands and names is for identification purposes only and does not imply affiliation with or endorsement by Sloan.

† Part No. varies with valve model variation; consult factory.

## ECOS® Flushometers

### Single-flush and Dual-flush

#### ITEM 10. FLEX TUBE DIAPHRAGM KIT SELECTION GUIDE

Code No.	Part No.	Description	Regulator Color
3325003	EBV-1023-A	0.5 gpf/1.9 Lpf Urinal	GREEN
3325031	EBV-1024-A	1.28 gpf/4.8 Lpf Closet	GREEN
3325090	EBV-1025-A	0.125 gpf/0.5 Lpf or 0.25 gpf/ 1.0 Lpf Urinal	GREEN
3325121	EBV-1028-A	1.1 gpf/4.2 Lpf Closet	GRAY

EBV-1025-A includes H-1015A Flow Control

EBV-1020-A Kit is supplied with multiple Flush Volume Regulators. The installer must use the correct Regulator when installing the kit.

EBV-1020-A 1.6 gpf also for use for DF

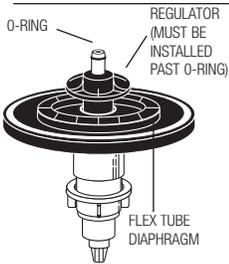
#### ITEM 11. REGULATORS

The flush volume of the flex tube diaphragm kit is controlled by the regulator. Regulators are identified by color. Some flex tube diaphragm kits are supplied with multiple regulators. The installer must make sure the proper regulator is used when installing the flex tube diaphragm kit.

#### REGULATOR (SOLD 6 PER PACKAGE)

Code No.	Part No.	Description	Regulator Color
5325122	EBV-95	Urinal-0.5 gpf/1.9 Lpf	GREEN
5325122	EBV-95	Closet-1.28 gpf/4.8 Lpf	GREEN

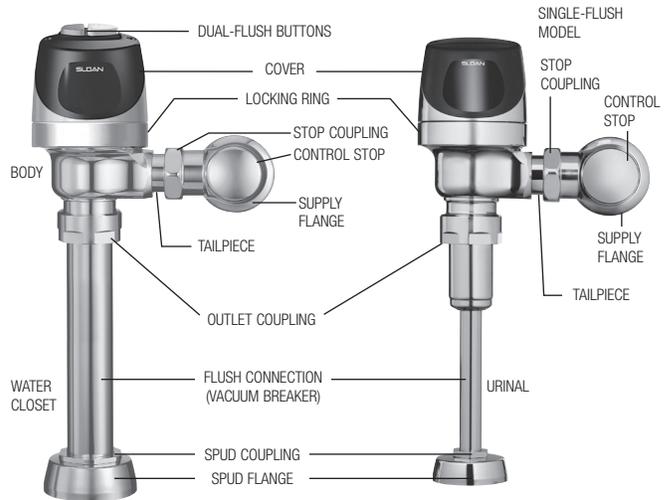
#### FLEX TUBE DIAPHRAGM ASSEMBLY



Sloan ECOS® models feature Sloan's exclusive flex tube diaphragm for the ultimate in valve performance, reliability and chloramine resistance.

#### ITEM 22A. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	5306058	F-3	Red Friction Ring
	5322001	VBF-5	Black Slip Joint Gasket
	0319086/5319086	S-30	Flexible Seat
	0319079	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	0396062	F-105	Slip Joint Gasket – Rigid
1-1/4"	5306057	F-3	Red Friction Ring
	5322176	VBF-5	Black Slip Joint Gasket
	0307052/5307052	G-21	Rigid Seat (rubber over brass)
1"	5306056	F-3	Red Friction Ring
	5306115	F-5	Black Slip Joint Gasket
3/4"	5306055	F-3	Red Friction Ring
	5306113	F-5	Black Slip Joint Gasket



#### OPERATION

##### Manual Operation

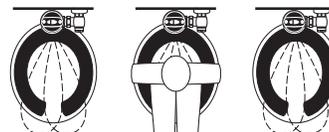
Sloan ECOS® electronic dual-flush flushometers incorporate intuitive split-button design for easy manual activation. The small button controls the reduced flush cycle (1.1 gpf/4.2 Lpf), the large button controls the full flush cycle (1.6 gpf/6.0 Lpf). Straightforward graphics alert user to proper activation. Reduced flush for liquid waste, full flush for solid waste. To further educate the user, two (2) instructional wall plates are included with each Sloan ECOS dual-flush flushometer. For single-flush operation a single button is available for user's discretion.

##### Automatic Operation

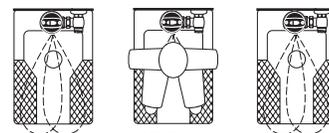
Sloan ECOS electronic flushometers can also be activated via multi-lobular infrared sensor. By detecting user presence and duration, the Sloan ECOS Smart Sense Technology™ will determine the proper flush volume for unequalled water efficiency.

1. A continuous, INVISIBLE light beam is emitted from the Sloan ECOS sensor.
2. As the user enters the beam's effective range, 22 to 42 inches (559 mm to 1067 mm) for closet installations and 15 to 30 inches (381 mm to 762 mm) for urinal installations, the beam is reflected into the scanner window to activate the output circuit. Once activated, the output circuit continues in a "hold" mode for as long as the user remains within the effective range of the sensor. For dual-flush models, if the user stays longer than 65 seconds, a full flush will automatically initiate when the user leaves. For single-flush models, once the user steps away, a full flush will automatically initiate.
3. For a dual-flush model, 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 model, when the user steps away, this initiates a full flush. The circuit automatically resets and is ready for the next user.

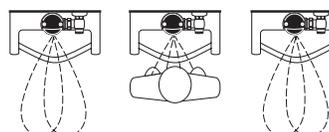
#### CLOSET



#### SQUAT TOILET



#### URINAL



## ECOS® Flushometers

### Single-flush and Dual-flush

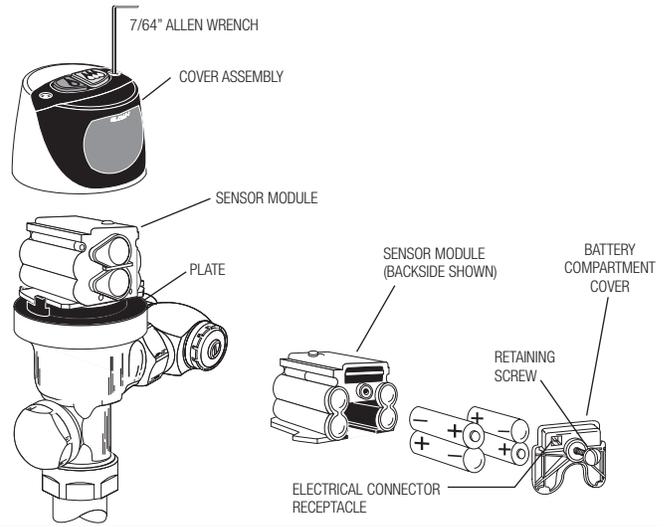
#### BATTERY REPLACEMENT

When required, replace batteries with four (4) 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 type AA batteries **exactly** as illustrated at right.

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.



#### RANGE ADJUSTMENT (ADJUST ONLY IF NECESSARY)

The Sloan ECOS® electronic flushometer has a factory set sensing range:

Water closet models – 22" to 42" (559 mm to 1067 mm)

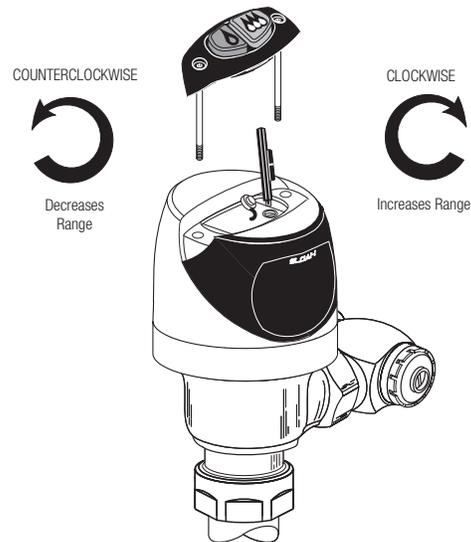
Urinal models – 15" to 30" (381 mm to 762 mm)

**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. Remove the override button. 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 ECOS electronic 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.

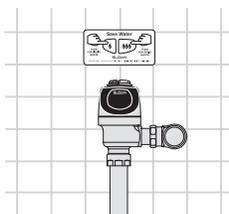
**Always determine the sensing range with metal cover and lens window on top of the unit.**

**IMPORTANT: Adjust in small increments only! Range potentiometer adjustment screw rotates only 3/4 of a turn; DO NOT over-tighten.**

When range adjustment is satisfactory, replace the rubber plug. Reinstall override button and tighten the two screws on top of the unit.

#### RECOMMENDED WALL PLATE LOCATIONS – FOR DUAL-FLUSH FLUSHOMETERS

Centered over flushometer



On stall door



## ECOS® Flushometers

### Single-flush and Dual-flush

#### TROUBLESHOOTING AND MAINTAINING THE SLOAN ECOS® FLUSHOMETER

##### 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.

##### 3. 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.
- B. Wrong Sloan ECOS electronic model installed; i.e., 1.6 gpf/1.1 gpf model installed on 3.5 gal. closet fixture.
- 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 ECOS model installed; i.e., 0.5 gpf model installed on 0.125 gal. fixture. Replace with proper Sloan ECOS electronic model.
- D. Dirt in diaphragm bypass. Clean under running water or replace flex tube diaphragm.

**Note: The EBV-46-A Beam Deflector is no longer required or available for the Sloan ECOS.**

#### CARE AND CLEANING INSTRUCTIONS

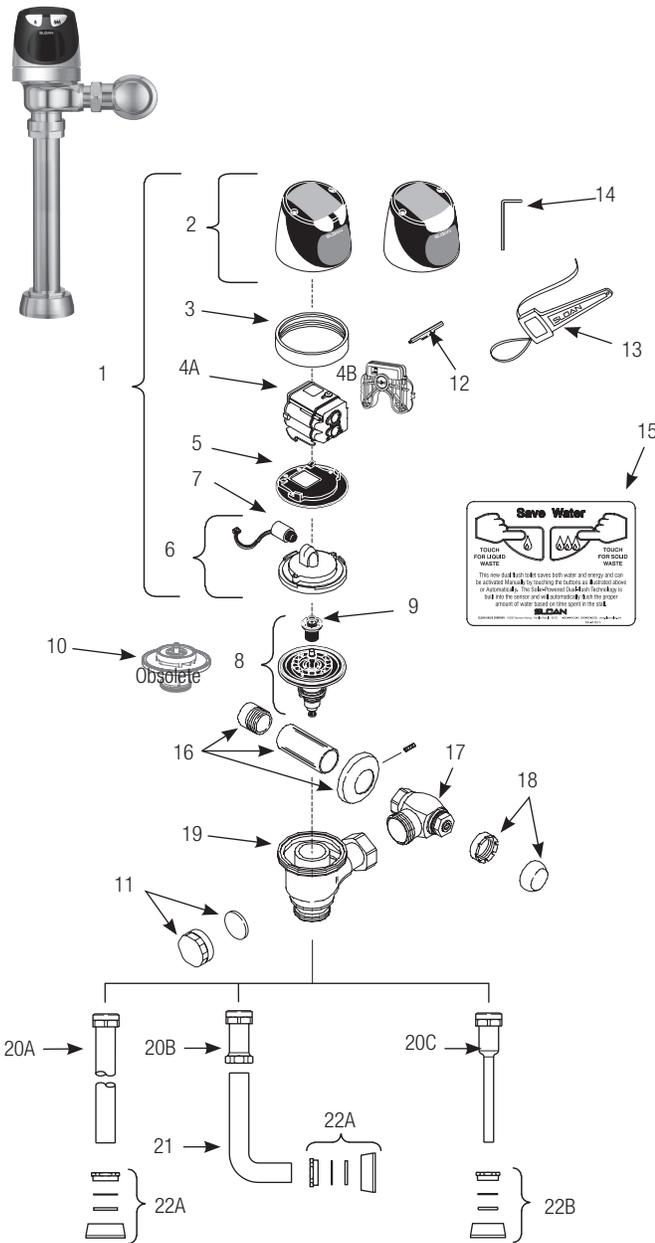
**DO NOT USE** abrasive or chemical cleaners to clean the flushometer as they may dull the luster and attack the plastic cover and the chrome finish of the flushometer. Use **ONLY** mild soap and water, then wipe dry with clean cloth or towel.

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.

**When assistance is required, please contact Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

## SOLIS® Flushometers

### Single-flush and Dual-flush



Item	Code	Part	Description
<b>Items Included with RESS Retrofit and Complete Sloan SOLIS® Valves</b>			
1.	<b>0325300</b>	EBV-304-A	Cover/Sensor/Assembly - Closet SOLIS 1.6 & 1.28 gpf Electronic Single Button Flush
		EBV-379-A	Cover/Sensor/Assembly - Closet SOLIS 1.1 gpf Electronic Single Button Flush
	<b>0372024</b>	WES-24-A	Cover/Sensor/Assembly Closet SOLIS Electronic Dual Flush
	<b>0325301</b>	EBV-306-A	Cover/Sensor/Assembly - Urinal 0.5 & 1.0 gpf SOLIS Electronic Single Button
	<b>0325328</b>	EBV-328-A	Cover/Sensor/Assembly - Urinal 0.25 gpf SOLIS Electronic Single Button
	<b>0325394</b>	EBV-385-A	Cover/Sensor/Assembly - Urinal 0.125 gpf SOLIS Electronic Single Button
	<b>0325320</b>	EBV-320-A	Cover/Sensor/Assembly - Closet 1.6 & 1.28 gpf SOLIS Electronic Single Button Flush fits Zurn® valve bodies
	<b>0372028</b>	WES-28-A	Cover/Sensor/Assembly- Closet SOLIS Electronic Dual Flush - fits Zurn® valve bodies
	<b>0325321</b>	EBV-321-A	Cover/Sensor/Assembly Urinal 0.25 gpf SOLIS Electronic Single Button - fits Zurn® valve bodies
2.	<b>0325311</b>	EBV-311-A	Cover Assembly - SOLIS Electronic Dual Flush Flush
	<b>0325309</b>	EBV-309-A	Cover Assembly - SOLIS Electronic Single Button Flush
3.	<b>0325804</b>	EBV-14	Locking Ring
	<b>0305843</b>	EBV-30	Locking Ring- fits Zurn® valve bodies
4A.	<b>0325312</b>	EBV-312-A-C	Module - SOLIS - Water Closet
	<b>0325313</b>	EBV-312-A-U	Module - SOLIS - Urinal
	<b>0325397</b>	EBV-388-A	Module - SOLIS - Urinal 0.125 gpf
	—	EBV-382-A	Module - SOLIS - 1.1 gpf Single Button Flush
	<b>0372038</b>	WES-33-A	Module - SOLIS - Water Closet (Dual Flush)
4B.	<b>33250011</b>	EBV Repair Kit	Battery Cover Door
5.	<b>0325171</b>	EBV-134	Cover Rest Plate
6.	<b>3325456</b>	EBV-145-A	Inside Cover Assembly (includes solenoid)
7.	<b>3325453</b>	EBV-136-A	Solenoid
8.	†		Flex Tube Diaphragm Assembly
9.	†		Flush Volume Regulator
10.	†		Cartridge Assembly DISCONTINUED
11.	<b>3325814</b>	EBV-1017-A	Handle Cap (RESS Retrofit Models Only)
12.	<b>0325107</b>	EBV-91	Range Adjustment Tool
13.	<b>0305823</b>	EBV-22	Strap Wrench
14.	<b>0325159</b>	EBV-137	7/64" Hex Wrench
15.	<b>0372029</b>	WES-27	English Plate (Dual Flush only)
	<b>0372025</b>	WES-29	Spanish Plate (Dual Flush only)
<b>Items Included with Complete Sloan SOLIS® Valves Only</b>			
16.	<b>3308782</b>	H-633-AA	1" (25 mm) Sweat Solder Kit
	<b>3308788</b>	H-636-AA	¾" (19 mm) Sweat Solder Kit
17.	<b>3308386</b>	H-700-A	1" (25 mm) Bak-Chek® Control Stop
	<b>3308384</b>	H-700-A	¾" (19 mm) Bak-Chek® Control Stop
18.	<b>3308772</b>	H-1010-A	Vandal Resistant Stop Cap
19.	<b>0305381</b>	EBV-36-A	Valve Body
20A.	—	V-600-AA	1½" (38 mm) x 10 ½" (229 mm) Vacuum Breaker (Model 8111) (10" Outlet Tube)
	—	V-600-AA	1½" (38 mm) x 15" (584 mm) Vacuum Breaker (Model 8113)
	—	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)
20B.	—	V-600-A	3" (76 mm) Vacuum Breaker Assembly
20C.	—	V-600-AA	¾" (19 mm) x 10 ½" (229 mm) Vacuum Breaker (Model 8186) (10" Outlet Tube)
21.	—	F-109	1½" (38 mm) Elbow Flush Connection
22A.	<b>0306146</b>	F-5-AT	1½" Spud Coupling Assembly (Models 8110, 8110 8115 & 8116)
22B.	<b>0306125</b>	F-5-AW	¾" Spud Coupling Assembly (Model 8186)

† Part No. varies depending on flushometer model.  
 Manufactured in the U.S.A. by Sloan Valve Company under one or more of the following patents: U.S. Patents: D598,975; D599,436; 7,124,997. Other Patents Pending.  
 BAK-CHEK®, PARA-FLO®, PERMEX®, TURBO-FLO®.

†The brands and/or products names referenced herein may be subject to trademark rights of their respective owners. Use of the brands and names is for identification purposes only and does not imply affiliation with or endorsement by Sloan.

# SOLIS® Flushometers

## Single-flush and Dual-flush

### ITEM 8. FLEX TUBE DIAPHRAGM KIT SELECTION GUIDE

Code No.	Part No.	Description	Regulator Color
3325001	EBV-1020-A	1.6 gpf/6.0 Lpf Closet	GREEN
3325031	EBV-1024-A	1.28 gpf/4.8 Lpf Closet	GREEN
—	EBV-1028-A	1.1 gpf/4.2 Lpf Closet	GRAY
3325003	EBV-1023-A	0.5 gpf/1.9 Lpf Urinal	GREEN
3325090	EBV-1025-A	0.25 gpf/1.0 Lpf Urinal	GREEN

The EBV-1020-A Kit is supplied with multiple Flush Volume Regulators. The installer must use the correct Regulator when installing the kit.

EBV-1025-A includes H-1015A Flow Control

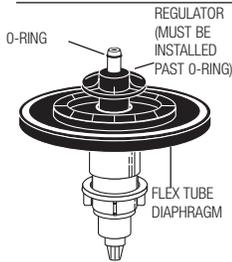
### ITEM 9. REGULATORS

The flush volume of the flex tube diaphragm kit is controlled by the regulator. Regulators are identified by color. Some flex tube diaphragm kits are supplied with multiple regulators. The installer must make sure the proper regulator is used when installing the flex tube diaphragm kit.

#### REGULATOR (SOLD 6 PER PACKAGE)

Code No.	Part No.	Description	Regulator Color
5325122	EBV-95	Urinal-0.5 gpf/1.9 Lpf	GREEN
5325122	EBV-95	Closet-1.6 gpf/6.0 Lpf	GREEN

### FLEX TUBE DIAPHRAGM ASSEMBLY



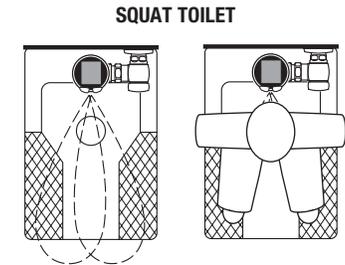
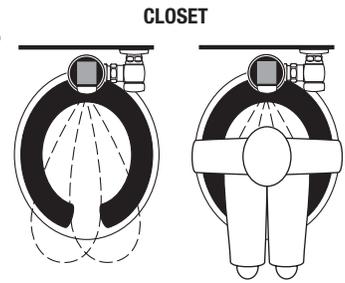
SOLIS models feature Sloan's exclusive flex tube diaphragm for the ultimate in valve performance, reliability and chloramine resistance.

### ITEM 19D. SLIP JOINT GASKETS AND RINGS

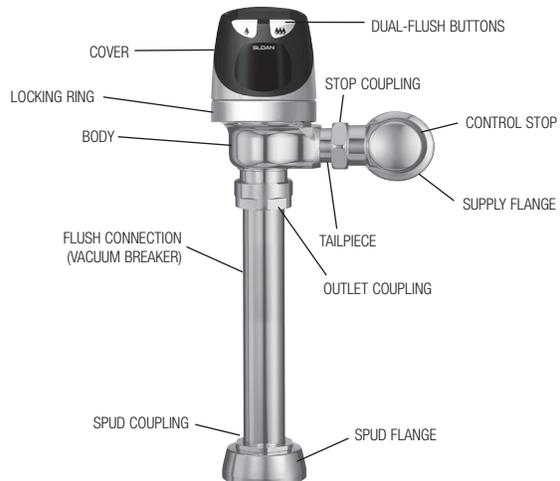
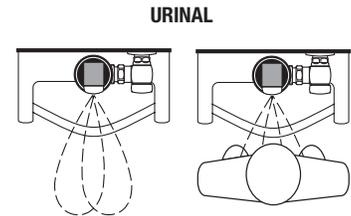
Size	Code No.	Part No.	Description
1-1/2"	5306058	F-3	Red Friction Ring
	5322001	VBF-5	Black Slip Joint Gasket
	0319086/5319086	S-30	Flexible Seat
	0319079	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	0396062	F-105	Slip Joint Gasket – Rigid
1-1/4"	5306057	F-3	Red Friction Ring
	5322176	VBF-5	Black Slip Joint Gasket
	0307052/5307052	G-21	Rigid Seat (rubber over brass)
1"	5306056	F-3	Red Friction Ring
	5306115	F-5	Black Slip Joint Gasket
3/4"	5306055	F-3	Red Friction Ring
	5306113	F-5	Black Slip Joint Gasket

### OPERATION

1. A continuous, invisible light beam is emitted from the SOLIS® sensor.
2. As the user enters the beam's effective range, 22 to 42 inches (559 mm to 1067 mm) for closet installations and 15 to 30 inches (381 mm to 762 mm) for urinal installations, the beam is reflected into the scanner window to activate the output circuit. Once activated, the output circuit continues in a "hold" mode for as long as the user remains within the effective range of the sensor. For dual-flush models, if the user stays longer than 65 seconds, a full flush will automatically initiate when the user leaves. For single-flush models, once the user steps away, a full flush will automatically initiate.



3. For 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 single-flush models, when the user steps away, this initiates a full flush. The circuit automatically resets and is ready for the next user.



## SOLIS® Flushometers

### Single-flush and Dual-flush

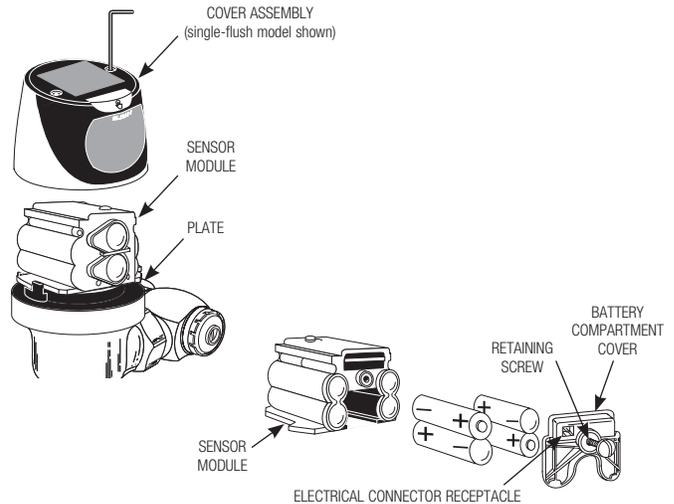
#### BATTERY REPLACEMENT

When required, replace batteries with four (4) 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) 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.



#### RANGE ADJUSTMENT (ADJUST ONLY IF NECESSARY)

The 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.**

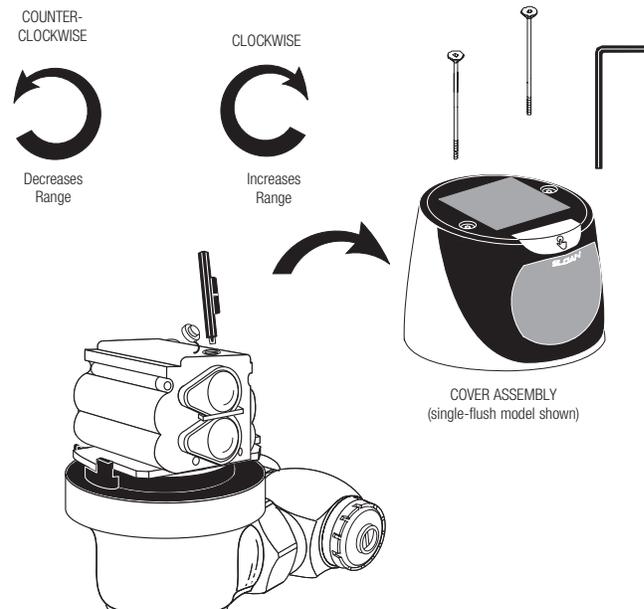
If the range is too short (i.e., not picking up users) or too long (i.e., picking up opposite wall or stall door) the range can be adjusted.

**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.

**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.



#### RANGE ADJUSTMENT PROCEDURE

For the first ten (10) minutes of operation, a visible light flashes in the sensing window of the 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.

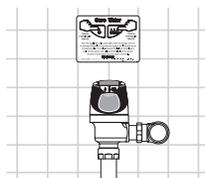
**Always determine the sensing range with metal cover and lens window on top of the unit.**

**IMPORTANT: Adjust in small increments only! Range potentiometer adjustment screw rotates only 3/4 of a turn; DO NOT over-tighten.**

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

#### RECOMMENDED WALL PLATE LOCATIONS

Centered over flushometer

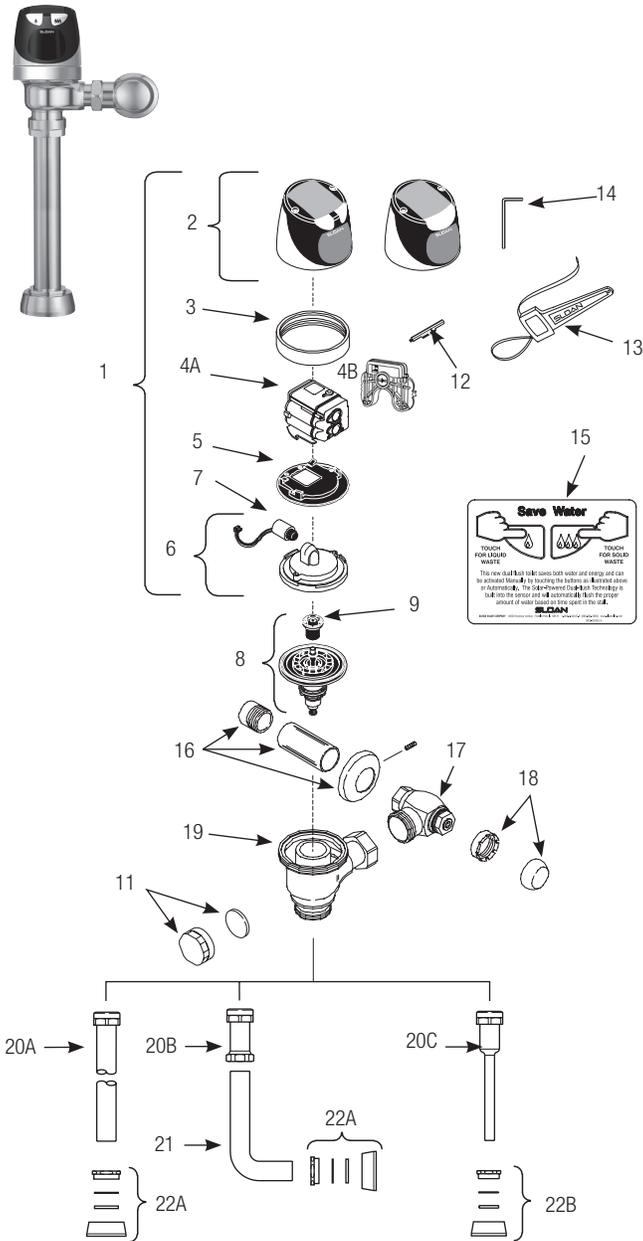


On stall door



# SOLIS® Bluetooth (BT) Flushometers

## Single-flush and Dual-flush



### Items Included with RESS Retrofit and Complete Sloan SOLIS® Valves

1.	<b>03250002</b>	EBV-304A-BT	Cover/Sensor/Assembly - Closet SOLIS 1.28 gpf Electronic Single Button Flush
	<b>03250001</b>	EBV-304A-BT	Cover/Sensor/Assembly - Closet SOLIS Electronic Single Button Flush 1.6 gpf
	<b>03250005</b>	EBV-306A-BT	Cover/Sensor/Assembly - Urinal 0.25 gpf SOLIS Electronic Single Button
	<b>03250006</b>	EBV-306A-BT	Cover/Sensor/Assembly - Urinal 0.5 gpf SOLIS Electronic Single Button
	<b>03250007</b>	EBV-306A-BT	Cover/Sensor/Assembly - Urinal 0.1 gpf SOLIS Electronic Single Button
	<b>03250003</b>	EBV-379A-BT	Cover/Sensor/Assembly - Closet SOLIS Electronic Single Button Flush 1.1 gpf
	<b>03250004</b>	EBV-385A-BT	Cover/Sensor/Assembly - Closet SOLIS Electronic Single Button Flush 0.125 gpf
2.	<b>0325311</b>	EBV-311-A	Cover Assembly - SOLIS Electronic Dual Flush Flush
	<b>0325309</b>	EBV-309-A	Cover Assembly - SOLIS Electronic Single Button Flush
3.	<b>0325804</b>	EBV-14	Locking Ring
	<b>0305843</b>	EBV-30	Locking Ring- fits Zurn® valve bodies
4A.	<b>33250006</b>	EBV-312A-BT	Module - SOLIS - Urinal 0.5 gpf
	<b>33250007</b>	EBV-312A-BT	Module - SOLIS - Urinal 1.0 gpf
	<b>33250002</b>	EBV-312A-BT	Module - SOLIS - Water Closet 1.28 gpf gpf
	<b>33250001</b>	EBV-312A-BT	Module - SOLIS - Water Closet 1.6 gpf gpf
	<b>33250003</b>	EBV-382A-BT	Module - SOLIS - Water Closet 1.1 gpf gpf
	<b>33250004</b>	EBV-388A-BT	Module - SOLIS - Urinal 0.125 gpf
	<b>33250005</b>	EBV-389A-BT	Module - SOLIS - Urinal 0.25 gpf gpf
4B.	<b>33250011</b>	EBV Repair Kit	Battery Cover Door
5.	<b>0325171</b>	EBV-134	Cover Rest Plate
6.	<b>3325456</b>	EBV-145-A	Inside Cover Assembly (includes solenoid)
7.	<b>3325453</b>	EBV-136-A	Solenoid
8.	†		Flex Tube Diaphragm Assembly
9.	†		Flush Volume Regulator
11.	<b>3325814</b>	EBV-1017-A	Handle Cap (RESS Retrofit Models Only)
12.	<b>0325107</b>	EBV-91	Range Adjustment Tool
13.	<b>0305823</b>	EBV-22	Strap Wrench
14.	<b>0325159</b>	EBV-137	7/64" Hex Wrench
15.	<b>0372029</b>	WES-27	English Plate (Dual Flush only)
	<b>0372025</b>	WES-29	Spanish Plate (Dual Flush only)

### Items Included with Complete Sloan SOLIS® Valves Only

16.	<b>3308782</b>	H-633-AA	1" (25 mm) Sweat Solder Kit
	<b>3308788</b>	H-636-AA	¾" (19 mm) Sweat Solder Kit
17.	<b>3308386</b>	H-700-A	1" (25 mm) Bak-Chek® Control Stop
	<b>3308384</b>	H-700-A	¾" (19 mm) Bak-Chek® Control Stop
18.	<b>3308772</b>	H-1010-A	Vandal Resistant Stop Cap
19.	<b>0305381</b>	EBV-36-A	Valve Body
20A.	—	V-600-AA	1½" (38 mm) x 10½" (229 mm) Vacuum Breaker (Model 8111)
	—	V-600-AA	1½" (38 mm) x 15" (584 mm) Vacuum Breaker (Model 8113)
	—	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)
20B.	—	V-600-A	3" (76 mm) Vacuum Breaker Assembly
20C.	—	V-600-AA	¾" (19 mm) x 10½" (229 mm) Vacuum Breaker (Model 8186)
21.	—	F-109	1½" (38 mm) Elbow Flush Connection
22A.	<b>0306146</b>	F-5-AT	1½" Spud Coupling Assembly (Models 8110, 8110 8115 & 8116)
22B.	<b>0306125</b>	F-5-AW	¾" Spud Coupling Assembly (Model 8186)

† Part No. varies depending on flushometer model.

Manufactured in the U.S.A. by Sloan Valve Company under one or more of the following patents: U.S. Patents: D598,975; D599,436; 7,124,997. Other Patents Pending. BAK-CHEK®, PARA-FLO®, PERMEX®, TURBO-FLO®.

\*Zurn® is a registered trademark of Zurnco, Inc. Use of "Zurn" is for identification purposes only and does not imply affiliation, endorsement, or association between Sloan and Zurnco, Inc.

## SOLIS® Bluetooth (BT) Flushometers

### Single-flush and Dual-flush

#### ITEM 8. FLEX TUBE DIAPHRAGM KIT SELECTION GUIDE

Code No.	Part No.	Description	Regulator Color
3325001	EBV-1020-A	1.6 gpf/6.0 Lpf Closet	GREEN
3325031	EBV-1024-A	1.28 gpf/4.8 Lpf Closet	GREEN
—	EBV-1028-A	1.1 gpf/4.2 Lpf Closet	GRAY
3325003	EBV-1023-A	0.5 gpf/1.9 Lpf Urinal	GREEN
3325090	EBV-1025-A	0.25 gpf/10 Lpf Urinal	GREEN

The EBV-1020-A Kit is supplied with multiple Flush Volume Regulators. The installer must use the correct Regulator when installing the kit.

EBV-1025-A includes H-1015A Flow Control

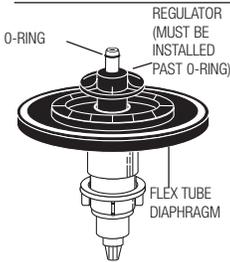
#### ITEM 9. REGULATORS

The flush volume of the flex tube diaphragm kit is controlled by the regulator. Regulators are identified by color. Some flex tube diaphragm kits are supplied with multiple regulators. The installer must make sure the proper regulator is used when installing the flex tube diaphragm kit.

#### REGULATOR (SOLD 6 PER PACKAGE)

Code No.	Part No.	Description	Regulator Color
5325122	EBV-95	Urinal-0.5 gpf/1.9 Lpf	GREEN
5325122	EBV-95	Closet-1.6 gpf/6.0 Lpf	GREEN

#### FLEX TUBE DIAPHRAGM ASSEMBLY



SOLIS models feature Sloan's exclusive flex tube diaphragm for the ultimate in valve performance, reliability and chloramine resistance.

#### ITEM 19D. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	5306058	F-3	Red Friction Ring
	5322001	VBF-5	Black Slip Joint Gasket
	0319086/5319086	S-30	Flexible Seat
	0319079	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	0396062	F-105	Slip Joint Gasket – Rigid
1-1/4"	5306057	F-3	Red Friction Ring
	5322176	VBF-5	Black Slip Joint Gasket
	0307052/5307052	G-21	Rigid Seat (rubber over brass)
1"	5306056	F-3	Red Friction Ring
	5306115	F-5	Black Slip Joint Gasket
3/4"	5306055	F-3	Red Friction Ring
	5306113	F-5	Black Slip Joint Gasket

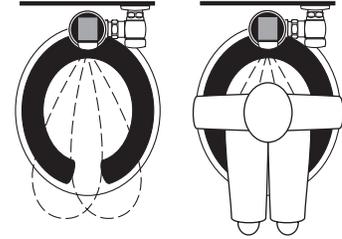
#### OPERATION

1. A continuous, INVISIBLE light beam is emitted from the SOLIS® sensor.

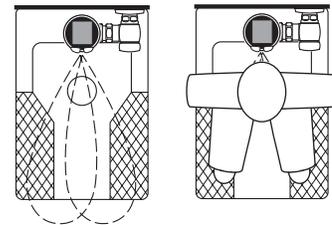
2. As the user enters the beam's effective range, 22 to 42 inches (559 mm to 1067 mm) for closet installations and 15 to 30 inches (381 mm to 762 mm) for urinal installations, the beam is reflected into the scanner window to activate the output circuit. Once activated, the output circuit continues in a "hold" mode for as long as the user remains within the effective range of the sensor. For dual-flush models, if the user stays longer than 65 seconds, a full flush will automatically initiate when the user leaves. For single-flush models, once the user steps away, a full flush will automatically initiate.

3. For 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 single-flush models, when the user steps away, this initiates a full flush. The circuit automatically resets and is ready for the next user.

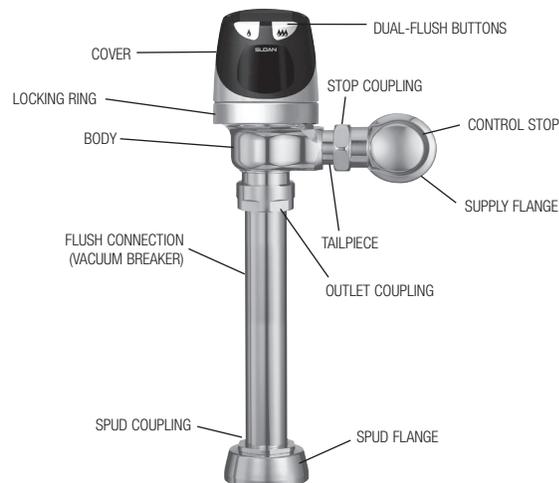
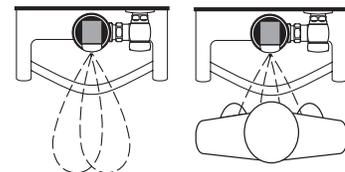
#### CLOSET



#### SQUAT TOILET



#### URINAL



## SOLIS® Flushometers

### Single-flush and Dual-flush

#### 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.

##### 3. 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.
- B. Wrong SOLIS® model installed; i.e., 1 gpf. Urinal installed on 3.5 gal. closet fixture. Replace with proper 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.
- B. Control stop not adjusted properly. Readjust control stop.
- C. Wrong SOLIS model installed; i.e., 3 gpf. model installed on 1.0 or 1.5 gal. Urinal fixture. Replace with proper 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 SOLIS®.**

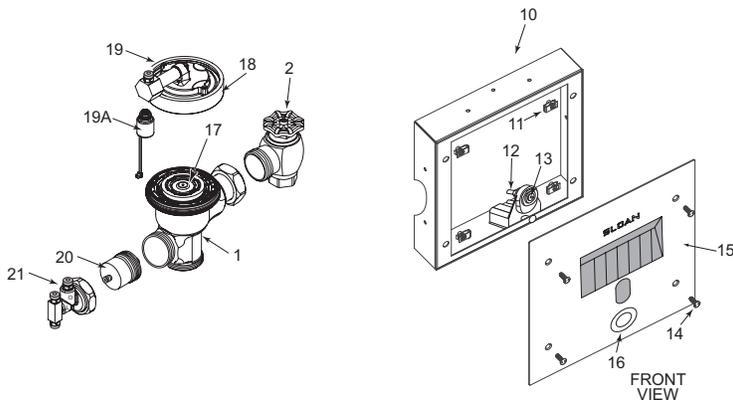
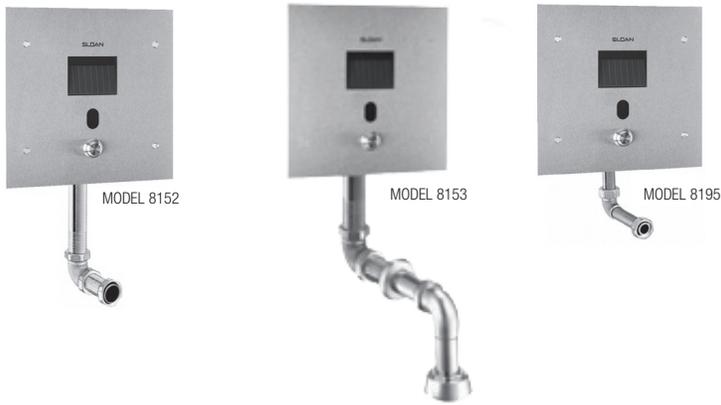
#### CARE AND CLEANING INSTRUCTIONS

**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.

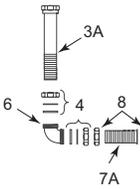
While cleaning the bathroom tile, the flushometer should be protected from any splattering of cleaner. Acids and cleaning fluids can discolor or remove chrome plating.

**When assistance is required, please contact Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

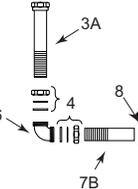
## Concealed SOLIS® Flushometer



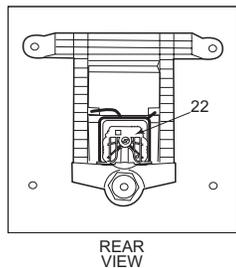
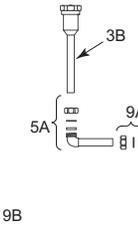
SOLIS 8152 SWB



SOLIS 8153 SWB



SOLIS 8195 SWB



### PARTS LIST

Item No.	Code No.	Part No.	Description
1.	<b>0301050</b>	A-143-A	RB Hydraulic Valve Body
2.	<b>0388010</b>	H-730-A	RB Bak-Chek® 1" Control Stop
	<b>0388011</b>	H-730-A	RB Bak-Chek® 3/4" Control Stop
3A.	‡	V-500-AA	1-1/2" (38 mm) Vacuum Breaker Assembly RB (Model 8152)
3B.	‡	V-500-AA	3/4" (19 mm) Vacuum Breaker Assembly RB (Model 8195)
4.	<b>0306619</b>	F-2-AA	1-1/2" (38 mm) Slip Joint Coupling RB (Set of Two)
5A.	‡	F-15-A	ELL with 3/4" (19 mm) Tail RB (Model 8195)
5B.		F-15-A	ELL with 1 1/2" (19 mm) Tail RB (Model 8153)
6.	<b>0206146PK</b>	F-21	1-1/2" (38 mm) Double Male Slip Elbow
7A.	‡	F-100	1-1/2" (38 mm) Outlet Tube RB
7B.	‡	F-102	1-1/2" (38 mm) Outlet Tube CP
8.	<b>0306091</b>	F-2-A	1-1/2" (38 mm) Coupling with S-21 Gasket
9A.	<b>0306054</b>	F-2-AW	3/4" (19 mm) Slip Joint Coupling RB
9B.	‡	F-5-A	1-1/2" (38 mm) Spud Coupling Assembly CP
10.	<b>3325215</b>	‡	Wall Box Frame Assembly (includes 11, 12 & 13)
11.	<b>0334017PK</b>	WB-18	U-Type Nuts (4)
12.	<b>33753009</b>	WB-1002A	Override Holder Repair Kit
13.	<b>0318123</b>	HY-71A	RB Hydraulic Override Button Assembly
14.	<b>0334024PK</b>	WB-49	¼-20 x 1½ Tamper Resistant Screws (1 each)
15.	‡	‡	Wall Plate Assembly
16.	<b>3334001</b>	WB-1001-A	SS Override Button Assembly
17.	‡	‡	Diaphragm† (refer to table & diaphragm on following page)
18.	<b>0325355</b>	EBV-355-A	Cover Assembly (includes item 19)
19.	<b>0325804PK</b>	EBV-14	Coupling
19A.	<b>0325356</b>	EBV-356-A	Solenoid
20.	<b>3318026</b>	HY-1005-A	Actuator Cartridge
21.	<b>0318195</b>	HY-128-A1	Actuator Assembly
	—	HY-30-84	¼" (6 mm) x 84" (2134 mm) Connecting Tubes (not shown)
	—	HY-30-24	¼" (6 mm) x 24" (610 mm) Connecting Tubes (not shown)
22.	<b>3325166</b>	EBV-366AU	0.5 gpf Sensor Assembly
	<b>3325167</b>	EBV-367AU	1.0 gpf Sensor Assembly
	<b>3325168</b>	EBV-368AC	1.28 gpf Sensor Assembly
	<b>3325169</b>	EBV-369 AC	1.6 gpf Sensor Assembly

† Flow volume varies with valve model and desired flush volume. Refer to table and diaphragm on following page.  
‡ Code and/or Part number varies with valve model variation; consult factory.

### ITEM 4A. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	<b>5306058</b>	F-3	Red Friction Ring
	<b>5322001</b>	VBF-5	Black Slip Joint Gasket
	<b>0319086/5319086</b>	S-30	Flexible Seat
	<b>0319079</b>	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	<b>0396062</b>	F-105	Slip Joint Gasket – Rigid
1-1/4"	<b>5306057</b>	F-3	Red Friction Ring
	<b>5322176</b>	VBF-5	Black Slip Joint Gasket
	<b>0307052/5307052</b>	G-21	Rigid Seat (rubber over brass)
1"	<b>5306056</b>	F-3	Red Friction Ring
	<b>5306115</b>	F-5	Black Slip Joint Gasket
3/4"	<b>5306055</b>	F-3	Red Friction Ring
	<b>5306113</b>	F-5	Black Slip Joint Gasket

## Concealed SOLIS® Flushometer



### DUAL-FILTERED DIAPHRAGM ASSEMBLY

Available in diaphragm only and Royal® Performance™ Kits.

Royal® Performance™ Kit includes dual-filtered diaphragm assembly (item 3), handle repair kit with triple seal packing (item 8), high back pressure vacuum breaker repair kit (item 11), and one tailpiece O-ring (item 15A). DIAPHRAGM ONLY KIT contains “drop-in” dual-filtered diaphragm assembly (item 3) ONLY.

The dual-filtered diaphragm can be used in Royal®, Regal®, and similar diaphragm-style valve bodies. For use in Sloan valve bodies with a bell-shaped cover (manufactured before 1964), replace the bottom filter ring in these kits with a blue A-108 filter ring (not shown Sloan Code No. **5301283**).

NOTE: In January 1998, the Royal® diaphragm design was upgraded to a preassembled unit with two (2) plastic filtering rings attached to the rubber diaphragm (one on top and one on bottom). If the flushometer you are servicing has our older, segmented diaphragm with brass by-pass hole, refer to our Regal section for additional troubleshooting information.

### ROYAL® HYDRAULIC PERFORMANCE KIT (Includes Dual-Filtered Diaphragm Assembly, HY83A Hydraulic Actuator Cartridge, H553 Tailpiece O-ring, and V651A High Back Pressure Vacuum Breaker Kit)

Code No.	Part No.	Description	Relief Valve†	Refill Head*	Flow Ring
<b>3318011</b>	HY-1101-A	Hydraulic Performance Kit Closet-1.6 gpf (6.0 Lpf)**	Green	Gray	Smooth
<b>3318012</b>	HY-1102-A	Hydraulic Performance Kit Closet-3.5 gpf (13.2 Lpf)**	White	Gray	Smooth
<b>3318013</b>	HY-1103-A	Hydraulic Performance Kit Closet-2.4 gpf (9.0 Lpf)	Blue	Gray	Smooth
<b>3318014</b>	HY-1106-A	Hydraulic Performance Kit Urinal-0.5 gpf (1.9 Lpf)	Green	Black	Slotted
<b>3318015</b>	HY-1107-A	Hydraulic Performance Kit Urinal -1.0 gpf (3.8 Lpf)**	Green	Black	Slotted
<b>3318016</b>	HY-1108-A	Hydraulic Performance Kit Urinal-1.5 gpf (5.7 Lpf)**	Black	Black	Smooth

\*CLOSET REFILL HEADS (GRAY) HAVE LARGER SLOTS THAN URINAL REFILL HEADS (BLACK).

### DIAPHRAGM ONLY KIT

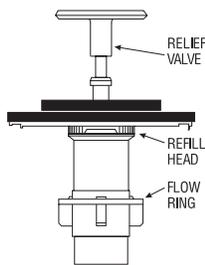
Code No.	Part No.	Description	Relief Valve†	Refill Head*	Flow Ring
<b>3301502</b>	A-1041-A	Low Consumption Water Closets-1.6 gpf (6.0 Lpf)**	Green	Gray	Smooth
<b>3301501</b>	A-1038-A	Water Saver Water Closets-3.5 gpf (13.2 Lpf)**	White	Gray	Smooth
<b>3301505</b>	A-1044-A	9 Liter European Water Closets-2.4 gpf (9.0 Lpf)	Blue	Gray	Smooth
<b>3301504</b>	A-1043-A	Wash Down Urinals-0.5 gpf (1.9 Lpf)	Green	Black	Slotted
<b>3301503</b>	A-1042-A	Low Consumption Urinals-1.0 gpf (3.8 Lpf)**	Green	Black	Slotted
<b>3301500</b>	A-1037-A	Water Saver Urinals-1.5 gpf (5.7 Lpf)**	Black	Black	Smooth
<b>3301506</b>	A-1045-A	High-Efficiency Water Closets-1.28 gpf (4.8 Lpf)	Blue	Gray	Smooth
<b>3301142</b>	A-1047-A	High-Efficiency Urinals-0.25 gpf (1.0 Lpf) with White Inserts	White	HEU Black	Smooth
<b>3301143</b>	A-1050-A	High-Efficiency Urinals-0.125 gpf (0.5 Lpf) with White Inserts	Blue	HEU Black	Smooth
<b>3301594</b>	A-1075-A-BX	High-Efficiency Water Closets-1.28 gpf (4.8 Lpf) RW	Blue	Black	Smooth
<b>3301592</b>	A-1073-A-BX	High-Efficiency Urinals-0.5 gpf (1.9 Lpf) RW + Slotted	Green	Black	Smooth
<b>3301591</b>	A-1077-A-BX	High-Efficiency Urinals-0.25 gpf (1.0 Lpf) RW	White	HEU Black	Smooth
<b>3301590</b>	A-1070-A-BX	High-Efficiency Urinals-0.125 gpf (0.5 Lpf) RW	Blue	HEU Black	Smooth

† Consult factory for availability of replacement plastic relief valves (green, black, blue, and white) and brass relief valves.

NOTE: For older water closets that require 4.5 gpf (17.0 Lpf), choose kits A-1102-A or A-1038-A, but remove the flow ring before use. For blowout-style urinals that require 3.5 gpf (13.2 Lpf), choose kits A-1102-A or A-1038-A. For service sinks that require 6.5 gpf (24.6 Lpf), order A-36-A diaphragm repair kit (not shown Sloan Code No. **3301036**) and remove the flow ring before use. Regulations for low consumption fixtures prohibit the use of higher flush volumes.

\*CLOSET REFILL HEADS (GRAY) HAVE LARGER SLOTS THAN URINAL REFILL HEADS (BLACK).

\*\* WATER SAVER (3.5 GPF CLOSET AND 1.5 GPF URINAL) AND LOW CONSUMPTION (1.6 GPF CLOSET AND 1.0 GPF URINAL) FIXTURES MUST USE MATCHING GPF (LPF) DIAPHRAGM KITS; USING A SMALLER GPF (LPF) KIT IN FIXTURES NOT INTENDED FOR LESS VOLUME WILL RESULT IN INADEQUATE DILUTION IN URINALS AND IMPROPER EVACUATION IN CLOSETS. RW for use with Reclaimed Water Flushometers.



THE COLORS OF THE RELIEF VALVE AND THE REFILL HEAD PLUS THE SHAPE OF FLOW RING IDENTIFY THE FLUSH VOLUME OF A DUAL-FILTERED DIAPHRAGM ASSEMBLY.

## Concealed SOLIS® Flushometer

### TROUBLESHOOTING GUIDE

**NOTE:** Upon detection of the user, the red indicator light flashes slowly, during start-up (first 10 minutes). After a period of eight seconds unit is ready to flush. When the user leaves the detection range, the sensor initiates the flush sequence. Then the indicator light stops flashing and the valve flushes. The valve will flush after a three-second (water closets) or one-second (urinals) delay.

#### 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 does not picking up user.

- A. Range too short; increase the range. Consult factory.

#### 3. 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. Consult factory.

#### 4. Valve DOES NOT flush even after adjustment.

- A. Batteries completely used up; replace batteries.
- B. Problem with electronic sensor module; replace electronic sensor module.
- C. Problem with solenoid; replace solenoid.

#### 5. Unit flashes a sequence of 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 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 diaphragm if cleaning does not correct the problem.
- B. Dirt or debris fouling relief valve or diaphragm. Remove diaphragm and wash under running water.
- C. Problem with electronic sensor module; replace sensor module.

#### 7. Not enough water to fixture.

- A. Wrong relief valve installed in diaphragm kit. Install the correct relief valve.
- B. Wrong SOLIS® model installed; i.e., 1.0 gpf urinal installed on 3.5 gpf closet fixture. Replace with proper SOLIS model.
- C. Enlarged bypass in diaphragm. Replace 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 relief valve installed in diaphragm kit. Install the correct relief valve.
- B. Control stop not adjusted properly. Readjust control stop.
- C. Wrong SOLIS model installed; i.e., 1.6 gpf model installed on 1.0 or 1.5 gpf urinal fixture. Replace with proper SOLIS model.
- D. Dirt in diaphragm bypass. Clean under running water or replace diaphragm.

### PUSH BUTTON ACTUATOR

#### 9. Leakage occurring at the push button.

- A. Damage or worn seals or lime build-up in the actuator cartridge. Replace with new cartridge.

#### 10. The flushometer DOES NOT flush and a small amount of leakage is visible below the valve.

- A. Foreign material lodged in the cartridge. Remove the cartridge and inspect for foreign material. Clean under running water.
- B. Damaged or worn seals or lime build-up in the actuator cartridge. Replace with new cartridge.
- C. Plastic tubing installed incorrectly. Match tubing ends from valve body actuator to button actuator, so that "L" to "L" and "O" to "O".

### FLUSHOMETER ACTUATOR ASSEMBLY

#### 11. The flushometer DOES NOT flush or flushes only once and will not flush a second time when the button is pushed.

- A. The plunger is lodged in the actuator cartridge or the plunger bypass hole is clogged. Remove the actuator housing & cartridge from the flushometer. Clean under running water. If cartridge parts are worn, deteriorated or limed up & problem persists after cleaning, replace with new cartridge.
- B. Plastic tubing installed incorrectly. Match tubing ends from valve body actuator to button actuator, so that "L" to "L" and "O" to "O".

### TO REMOVE THE ACTUATOR FROM THE FLUSHOMETER

- A. Turn off water from control stop.
- B. Unscrew the housing coupling nut from the flushometer.
- C. Remove the actuator housing from the flushometer. The tubing connections can be left intact.
- D. Remove the actuator cartridge from the flushometer body. Care should be taken so that upon removal the actuator and the o-ring do not 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.
- E. Separate the actuator housing to reveal the spring and plunger.

### !!! IMPORTANT — CONTROL STOP SETTING !!!

**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.**

**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.**

**LAWS AND REGULATIONS PROHIBIT THE USE OF HIGHER FLUSHING VOLUMES THAN LISTED ON FIXTURE OR FLUSHOMETER.**

**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 WRENCH TO SECURE ALL COUPLINGS.**

### CARE AND CLEANING INSTRUCTIONS

**DO NOT USE** abrasive or chemical cleaners to clean flushometers that may dull the luster and attack the finish. Use **ONLY** mild soap and water, then wipe dry with a clean towel or cloth. When cleaning the bathroom tile, protect the flushometer from any splattering of cleaner. Acids and cleaning fluids can discolor or remove finish.

**When assistance is required, please contact  
Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).**

## Control Stop

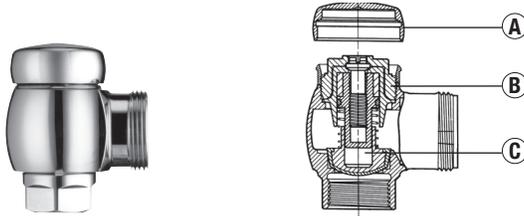


**CONTROL STOP AND REPLACEMENT PARTS**

H-700 Series Bak-Chek® control stops and replacement parts (available for 3/4" and 1" water supply inlet pipes)  
Replaces H-600 and H-540 Series control stops

**Code No. Part No. Description**

### H-700 Stop, chrome plated: Screwdriver Angle Stop with H-1010-A Vandal Resistant Cap



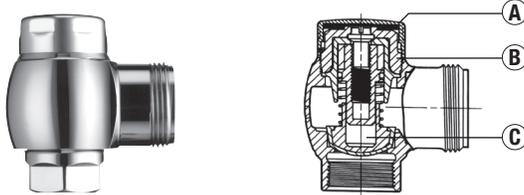
**Complete Stops**

<b>3308384</b>	H-700-A	3/4" NPTF inlet for adjustable tail
<b>3308386</b>	H-700-A	1" NPTF inlet for adjustable tail
<b>3308385</b>	H-700-AG	3/4" NPTF inlet for ground joint tail
<b>3308387</b>	H-700-AG	1" NPTF inlet for ground joint tail
<b>3308388</b>	H-700-AW	1" Whitworth inlet for adjustable tail

**Repair Parts**

<b>3308772</b>	H-1010-A	<b>A</b> Vandal Resistant Cap*, chrome plated
<b>0308612</b>	H-622	<b>B</b> Bonnet, chrome plated
<b>3308853</b>	H-541-ASD	<b>C</b> Control Stop Repair Kit*

### H-710 Stop, chrome plated: Screwdriver Angle Stop with H-573-A Locking Vandal Resistant Cap



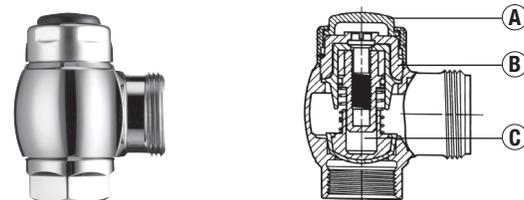
**Complete Stops**

<b>0388025</b>	H-710-A	3/4" NPTF inlet for adjustable tail
<b>0388022</b>	H-710-A	1" NPTF inlet for adjustable tail
<b>0388026</b>	H-710-AG	3/4" NPTF inlet for ground joint tail
<b>0388024</b>	H-710-AG	1" NPTF inlet for ground joint tail
<b>0388037</b>	H-710-AW	1" Whitworth inlet for adjustable tail
<b>0388062</b>	H-710-AAR	1" BSP British Standard Pipe inlet for adjustable tail
<b>0388043</b>	NH-710-A	1" NPTF inlet for adjustable tail (Naval brass)
<b>0388048</b>	NH-710-AG	3/4" NPTF inlet for ground joint tail (Naval brass)
<b>0388058</b>	NH-710-AG	1" NPTF inlet for ground joint tail (Naval brass)
<b>0388042</b>	NH-710-AW	1" Whitworth inlet for adjustable tail (Naval brass)
<b>0388045</b>	NH-710-AGW	1" Whitworth inlet for ground joint tail (Naval brass)
<b>0388044</b>	NH-710-AGS	1" NPSM inlet for ground joint tail (Naval brass)

**Repair Parts**

<b>3308840</b>	H-573-A	<b>A</b> Locking Vandal Resistant Cap*, chrome plated
<b>0308612</b>	H-622	<b>B</b> Bonnet, chrome plated
<b>3308853</b>	H-541-ASD	<b>C</b> Control Stop Repair Kit*

### H-720 Stop, chrome plated: Screwdriver Angle Stop with H-574 Short bumper Cap (-YO Variation)



**Complete Stops**

<b>0388034</b>	H-720-A	1" NPTF inlet for adjustable tail
<b>0388033</b>	H-720-AG	1" NPTF inlet for ground joint tail
<b>0388038</b>	H-720-AW	1" Whitworth inlet for adjustable tail

**Repair Parts**

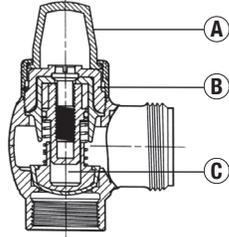
<b>3308866</b>	H-574	<b>A</b> Stop Cap with Seat Bumper*, chrome plated
<b>0308612</b>	H-622	<b>B</b> Bonnet, chrome plated
<b>3308853</b>	H-541-ASD	<b>C</b> Control Stop Repair Kit*

\*Refer to page 98 for diagrams of our Stop Caps and page 99 for the components supplied in our Control Stop Repair Kits.

## Control Stop

### CONTROL STOP AND REPLACEMENT PARTS

#### H-725 Stop, chrome plated: Screwdriver Angle Stop with H-576 Extended Bumper Cap (-YG Variation)



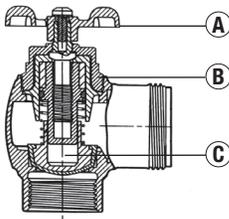
##### Complete Stops

<b>0388035</b>	H-725-A	1" NPTF inlet for adjustable tail
<b>0388057</b>	H-725-AG	1" NPTF inlet for ground joint tail
<b>0388039</b>	H-725-AW	1" Whitworth inlet for adjustable tail
<b>0388047</b>	NH-725-AGW	1" Whitworth inlet for ground joint tail (Naval brass)

##### Repair Parts

<b>3308867</b>	H-576	<b>A</b> Stop Cap with Extended Seat Bumper chrome plated
<b>0308612</b>	H-622	<b>B</b> Bonnet, chrome plated
<b>3308853</b>	H-541-ASD	<b>C</b> Control Stop Repair Kit*

#### H-730 Stop, rough brass: Concealed Wheel Handle Angle Stop



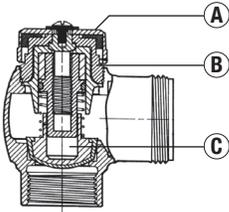
##### Complete Stops

<b>0388011</b>	H-730-A	3/4" NPTF inlet for adjustable tail
<b>0388010</b>	H-730-A	1" NPTF inlet for adjustable tail
<b>0388014</b>	H-730-AG	3/4" NPTF inlet for ground joint tail
<b>0388013</b>	H-730-AG	1" NPTF inlet for ground joint tail
<b>0388012</b>	H-730-AW	1" Whitworth inlet for adjustable tail
<b>0388056</b>	NH-730-AG	3/4" NPTF inlet for ground joint tail (Naval brass)
<b>0388017</b>	NH-730-AG	1" NPTF inlet for ground joint tail (Naval brass)
<b>0388041</b>	NH-730-AW	1" Whitworth inlet for adjustable tail (Naval brass)
<b>0388046</b>	NH-730-AGW	1" Whitworth inlet for ground joint tail (Naval brass)

##### Repair Parts

<b>3308872</b>	H-1011-A	<b>A</b> Concealed Wheel Handle Repair Kit*
<b>0208083</b>	H-623	<b>B</b> Bonnet, rough brass
<b>3308860</b>	H-1006-A	<b>C</b> Control Stop Repair Kit*

#### H-735 Stop, chrome plated: Exposed Wheel Handle Angle Stop



##### Complete Stops

<b>0388007</b>	H-735-A	3/4" NPTF inlet for adjustable tail
<b>0388006</b>	H-735-A	1" NPTF inlet for adjustable tail
<b>0388009</b>	H-735-AG	3/4" NPTF inlet for ground joint tail
<b>0388008</b>	H-735-AG	1" NPTF inlet for ground joint tail

##### Repair Parts

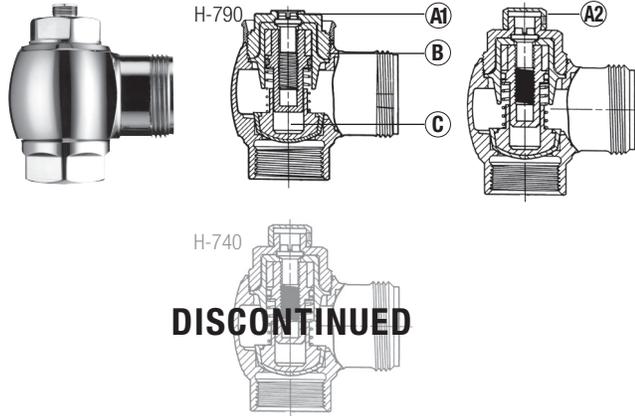
<b>3308060</b>	H-1002-A	<b>A</b> Exposed Wheel Handle Repair Kit*
<b>0308615</b>	H-623	<b>B</b> Bonnet, chrome plated
<b>3308855</b>	H-541-AWH	<b>C</b> Control Stop Repair Kit*

\*Refer to page 109 for diagrams of Stop Caps and page 110 for the components supplied in our Control Stop Repair Kits.

# Control Stop

## CONTROL STOP AND REPLACEMENT PARTS

**H-740 Stop, chrome plated: Screwdriver Angle Stop with H-37 Cap (Regal® Valve Stop) – DISCONTINUED**  
**H-790 Stop, chrome plated: Screwdriver Angle Stop with Vandal Resistant Cap (for Regal or Regal XL Valve Stop)**



Code No.	Part No.	Description
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**Complete Stops For Regal® flushometers**

0388031	H-740-A	3/4" NPTF inlet for adjustable tail – <b>DISCONTINUED</b>
0388029	H-740-A	1" NPTF inlet for adjustable tail – <b>DISCONTINUED</b>
0388040	H-740-AG	3/4" NPTF inlet for ground joint tail – <b>DISCONTINUED</b>
0388028	H-740-AG	1" NPTF inlet for ground joint tail – <b>DISCONTINUED</b>

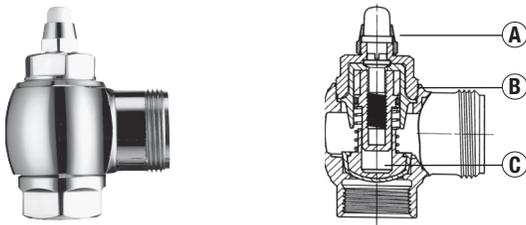
**Complete Stops For Regal® "XL" flushometers**

0388064	H-790-A	3/4" NPTF inlet for adjustable tail
0388065	H-790-A	1" NPTF inlet for adjustable tail
0388068	H-790-AG	3/4" NPTF inlet for ground joint tail
0388067	H-790-AG	1" NPTF inlet for ground joint tail

**Repair Parts**

5388002	H-528	Ⓐ Hole Plug
5388001	H-1012-A	Ⓐ Vandal Resistant Socket Cap*, chrome plated with set screw, for Regal "XL" flushometer – 6 per package
0308612	H-622	Ⓑ Bonnet, chrome plated
3308853	H-541-ASD	Ⓒ Control Stop Repair Kit*

**H-745 Stop, chrome plated: Screwdriver Angle Stop with J-2/J-7 Bumper (for Regal® Valve Stop) (-Y0/-YG Variations) – DISCONTINUED**



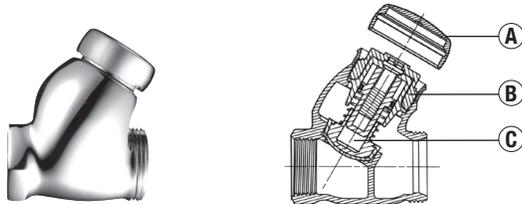
**Complete Stops**

0388035	H-725-A	1" NPTF inlet for adjustable tail
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**Repair Parts**

5310034	J-2/J-7	Ⓐ Cap*, chrome plated – 6 per package <b>DISCONTINUED</b>
0308991	H-639	Ⓑ Bonnet, chrome plated – <b>DISCONTINUED</b>
3308853	H-541-ASD	Ⓒ Control Stop Repair Kit* – <b>DISCONTINUED</b>

**H-750 Stop, chrome plated: Screwdriver Straight Stop with H-1010-A Vandal Resistant Cap**



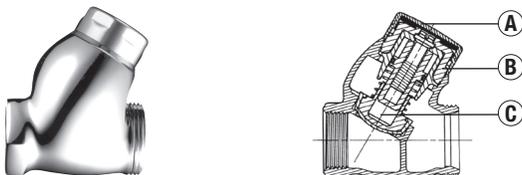
**Complete Stops**

3308389	H-750-AG	1" NPTF inlet for ground joint tail
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**Repair Parts**

3308772	H-1010-A	Ⓐ Vandal Resistant Cap*, chrome plated
0308612	H-622	Ⓑ Bonnet, chrome plated
3308853	H-541-ASD	Ⓒ Control Stop Repair Kit*

**H-760 Stop, chrome plated: Screwdriver Straight Stop with H-573-A Locking Vandal Resistant Cap**



**Complete Stops**

0388023	H-760-AG	1" NPTF inlet for ground joint tail
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**Repair Parts**

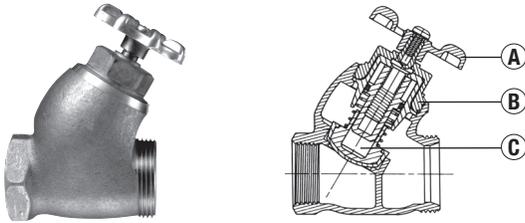
0308738	H-573-A	Ⓐ Locking Vandal Resistant Cap*, chrome plated
0308612	H-622	Ⓑ Bonnet, chrome plated
3308853	H-541-ASD	Ⓒ Control Stop Repair Kit*

\*Refer to page 109 for diagrams of our Stop Caps and page 110 for the components supplied in our Control Stop Repair Kits.

## Control Stop

### CONTROL STOP AND REPLACEMENT PARTS

#### H-770 Stop, rough brass: Concealed Wheel Handle Straight Stop



##### Complete Stops

**0388030** H-770-AG 1" NPTF inlet for ground joint tail

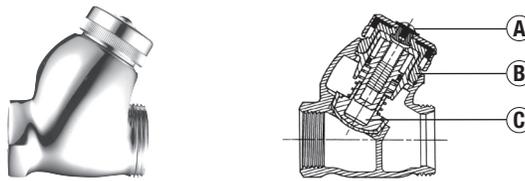
##### Repair Parts

**3308872** H-1011-A **A** Concealed Wheel Handle Repair Kit\*

**0208083** H-623 **B** Bonnet, rough brass

**3308860** H-1006-A **C** Control Stop Repair Kit\*

#### H-775 Stop, chrome plated: Exposed Wheel Handle Straight Stop



##### Complete Stops

**0388036** H-775-AG 1" NPTF inlet for ground joint tail

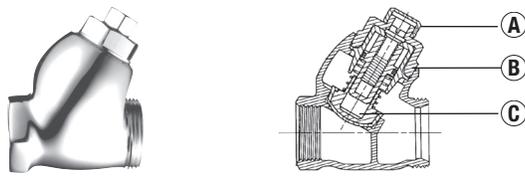
##### Repair Parts

**3308060** H-1002-A **A** Exposed Wheel Handle Repair Kit\*

**0308615** H-623 **B** Bonnet, chrome plated

**3308855** H-541-AWH **C** Control Stop Repair Kit\*

#### H-780 Stop, chrome plated: Screwdriver Straight Stop with H-37 Cap (Regal® Valve Stop) and H-795 Stop, chrome plated: Screwdriver Straight Stop with Vandal Resistant Cap (for Regal or Regal XL Valve Stop)



##### Complete Stops For Regal® flushometers

**0388027** H-780-AG 1" NPTF inlet for ground joint tail – **DISCONTINUED**

##### Complete Stops For Regal® "XL" flushometers

**0388079** H-795-AG 1" NPTF inlet for ground joint tail

##### Repair Parts

**5388001** H-1012-A **A** Vandal Resistant Socket Cap\*, chrome plated with set screw, for Regal "XL" flushometer – 6 per package

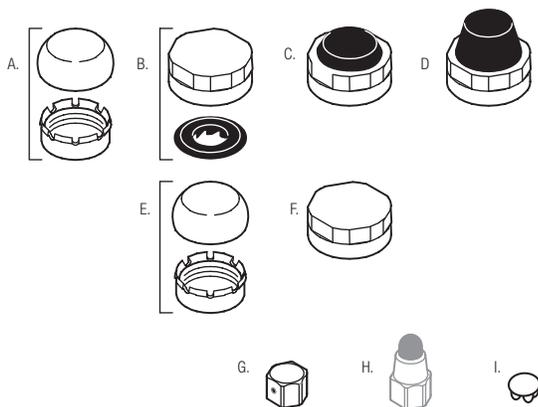
**0308991** H-639 **B** Bonnet, chrome plated

**3308853** H-541-ASD **C** Control Stop Repair Kit\*

For H-790 Stop, refer to information shown for H-740 and H-790 Stops  
For H-795 Stop, refer to information shown for H-780 and H-795 Stops

### CONTROL STOP AND REPLACEMENT PARTS FOR H-540, H-600 AND H-700 SERIES CONTROL STOPS

#### Replacement Stop Caps for Screwdriver Control Stops for H-540, H-600, and H-700 Series Control Stops



##### For 1" H-600 and H-700 Series Stops and 3/4" H-700 Series Stops

Item No.	Code No.	Part No.	Description
A.	<b>3308772</b>	H-1010-A	Vandal Resistant Stop Cap, chrome plated, with Sleeve
	<b>5308954</b>	H-628	Plastic Sleeve only – 6 per package
B.	<b>3308840</b>	H-573-A	Locking Vandal Resistant Stop Cap, chrome plated
C.	<b>3308866</b>	H-574	Stop Cap, chrome plated with Seat Bumper (-YO)
D.	<b>3308867</b>	H-576	Stop Cap, chrome plated with Extended Seat Bumper (-YG)

##### For 3/4" H-600 Series Stops

E.	<b>3308790</b>	H-1009-A	Vandal Resistant Stop Cap, chrome plated, with Sleeve and 3/4" Bonnet
	<b>5308952</b>	H-614	Plastic Sleeve only – 6 per package
F.	<b>0308848</b>	H-582	Stop Cap, chrome plated

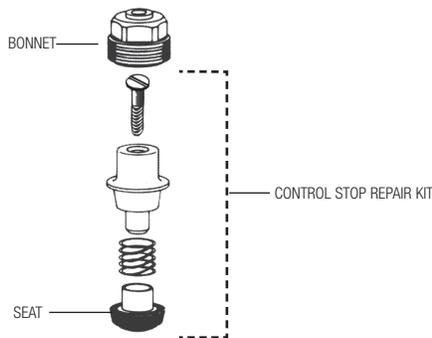
##### For all H-40, H-440, H-540 and H-740 Series Stops

G.	<b>5388001</b>	H-1012-A	Vandal Resistant Stop Cap with set screw, chrome plated – 6 per package
H.	<b>5310034</b>	J-2/J-7	Stop Cap, chrome plated with Seat Bumper – 6 per package – <b>DISCONTINUED</b>
I.	<b>5388002</b>	H-528	Hole Plug

## Control Stop

### CONTROL STOP AND REPLACEMENT PARTS FOR H-540, H-600 AND H-700 SERIES CONTROL STOPS

#### Screwdriver Control Stop Repair Kits



Code No.	Part No.	Description
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#### Complete Repair Kits

3308853	H-541-ASD	For 1" H-540, H-600 and H-700 Series Stops and 3/4" H-700 Series Stops
3308856	H-543-ASD	For 3/4" H-540 and H-600 Series Stops

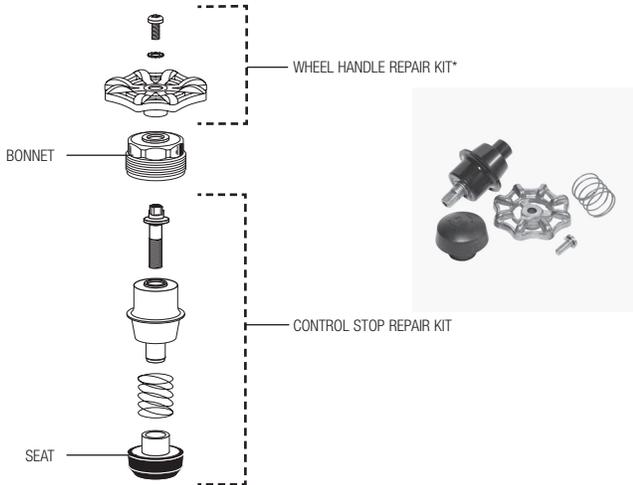
#### Bonnets

0308612	H-622	For 1" H-600 and H-700 Series Stops and 3/4" H-700 Series Stops
0308991	H-639	For 1" H-540 and H-740 Series Stops and 3/4" H-740 Series Stops
0308843	H-577	For 3/4" H-600 Series Stops – <b>DISCONTINUED</b>
0308601	H-538	For 3/4" H-540 Series Stops – <b>DISCONTINUED</b>

#### Seat only – 6 per package

5308850	H-584	For 1" H-540, H-600 and H-700 Series Stops and 3/4" H-700 Series Stops
5308836	H-569	For 3/4" H-540 and H-600 Series Stops

#### Concealed Wheel Handle Control Stop Repair Kits – Note: Repair Kit includes H-1011-A Wheel Handle Repair Kit



#### Complete Repair Kits

3308860	H-1006-A	For 1" H-540, H-600 and H-700 WH Series Stops and 3/4" H-700 WH Series Stops
3308859	H-1007-A	For 3/4" H-540 and H-600 Series Stops

#### Wheel Handle Repair Kit — Note: Repair Kit includes handle, screw and lockwasher

3308872	H-1011-A	For all Concealed Wheel Handle Stops
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#### Bonnets

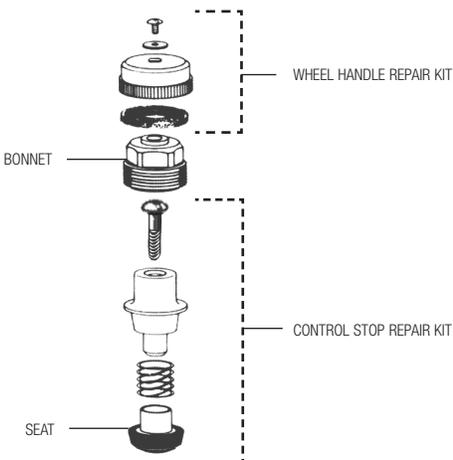
0208083	H-623	For 1" H-540, H-600 and H-700 WH Series Stops and 3/4" H-700 Series Stops
0308705	H-561	For 3/4" H-540, H-600 Series Stops – <b>DISCONTINUED</b>

#### Seat only – 6 per package

5308850	H-584	For 1" H-540, H-600 and H-700 WH Series Stops and 3/4" H-700 WH Series Stops
5308836	H-569	For 3/4" H-540 and H-600 Series Stops

NOTE: H-540 and H-600 Series concealed wheel handle stops made prior to 1993 featured a design identical to the exposed wheel handle design. These stops can be repaired using an exposed wheel handle repair kit or converted to the current design by using a concealed wheel handle repair kit.

#### Exposed Wheel Handle Control Stop Repair Kits



#### Complete Repair Kits

3308855	H-541-AWH	For 1" H-540, H-600 and H-700 WH Series Stops and 3/4" H-700 Series Stops
3308858	H-543-AWH	For 3/4" H-540 and H-600 Series Stops

#### Wheel Handle Repair Kit — Note: Repair Kit includes handle, washer, screw and lockwasher

3308060	H-1002-A	For all Exposed Wheel Handle Stops
5308059	H-1003-A	Screw and Lockwasher only – 12 per package

#### Bonnets

0308615	H-623	For 1" H-540, H-600 and H-700 WH Series Stops and 3/4" H-700 Series Stops
0308705	H-561	For 3/4" H-540 and H-600 Series Stops – <b>DISCONTINUED</b>

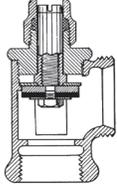
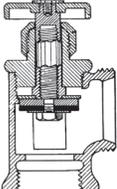
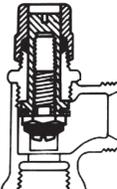
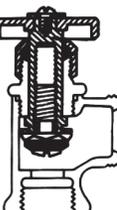
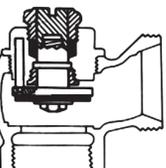
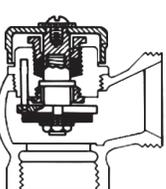
#### Seat only – 6 per package

5308850	H-584	For 1" H-540, H-600 and H-700 WH Series Stops and 3/4" H-700 WH Series Stops
5308836	H-569	For 3/4" H-540 and H-600 Series Stops

NOTE: 1" and 3/4" H-700 Series stops use "common stop" repair kits. 1" and 3/4" H-540 and H-600 Series stops use stop repair kits unique to each size. See the "common stop" on page 102 for more details.

## Control Stop

### CONTROL STOP AND REPLACEMENT PARTS FOR OLDER CONTROL STOPS

		Code No.	Part No.	Description
<b>H-10-A 1" Screwdriver Angle Stop, (also fits H-15-A 1" Screwdriver Straight Stop) — used from 1920's through 1940's</b>				
		5308077	H-12	Packing only – 12 per package
		—	—	Bonnet no longer available
<b>H-10-A 1" Wheel Handle Angle Stop (also fits H-15-A 1" Wheel Handle Straight Stop) — Used from 1920's through 1940's</b>				
		5308077	H-12	Packing only – 12 per package
		—	—	Bonnet no longer available
<b>H-20-A 1/2" and 3/4" Screwdriver Angle Stop (also fits H-30-A Screwdriver Straight Stop) — Used from 1920's through 1950's</b>				
		5308077	H-12	Packing only – 12 per package
		—	—	Bonnet no longer available
<b>H-20-A 1/2" and 3/4" Wheel Handle Angle Stop (also fits H-30-A Wheel Handle Straight Stop) — Used from 1920's through 1950's</b>				
		5308077	H-12	Packing only – 12 per package
		—	—	Bonnet no longer available
<b>H-40-A 3/4" and 1" Screwdriver Angle Stop (also fits H-45-A Screwdriver Straight Stop) — Used from 1930's through 1960's</b>				
		3308277	H-47-A-SD	Repair kit includes packing ring, key socket, lock shield, retaining ring, screw assembly, and packing
		0308176	H-39-A-SD	Bonnet assembly repair kit includes a bonnet assembled with packing ring, key socket, retaining ring, screw assembly, and packing plus our H-37 Vandal Resistant Stop Cap that replaces the lock shield
		5308077	H-12	Packing only – 12 per package
		0308167	H-39	Bonnet Only
<b>H-40-A 3/4" and 1" Wheel Handle Angle Stop (also fits H-45-A Wheel Handle Straight Stop) — Used from 1930's through 1960's</b>				
		3308278	H-47-A-WH	Repair kit includes packing ring, screw, wheel handle, key stem, gland for wheel handle, retaining gland, screw assembly, washer and packing
		0308175	H-39-A-WH	Bonnet assembly repair kit includes a bonnet assembled with packing ring, screw, wheel handle, key stem, gland for wheel handle, retaining gland, screw assembly, washer and packing
		5308077	H-12	Packing only – 12 per package
		0308170	H-39	Bonnet Only

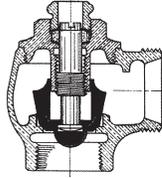
**NOTE: STOPS PRIOR TO 1964 WERE GROUND JOINT**

## Control Stop

### CONTROL STOP AND REPLACEMENT PARTS

Code No.	Part No.	Description
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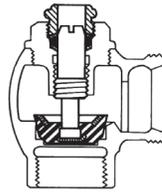
#### H-340-A 3/4" and 1" Screwdriver and Wheel Handle Angle Stops — Used from 1940's through 1950's



The only replacement part available for this stop is the rubber plug.

0308433	H-382-A	Rubber Plug
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#### H-440-A 3/4" Screwdriver Angle Stop — Used from 1950's through 1960's



3308442	H-484-A-SD	Repair kit includes lock shield, packing, key stem, rubber plug, and packing ring
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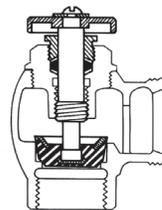
0308432	H-439-AU	Bonnet assembly repair kit includes a bonnet assembled with packing, key stem, rubber plug, and packing ring plus our H-37 Vandal Resistant Stop Cap that replaces the lock shield
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0308434	H-439	Bonnet
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0308490	H-484-A	Rubber Plug
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5308077	H-12	Packing only – 12 per package
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#### H-440-A 3/4" Wheel Handle Angle Stop — Used from 1950's through 1960's

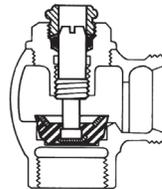


0308435	H-439	Bonnet
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0308490	H-484-A	Rubber Plug
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5308077	H-12	Packing only – 12 per package
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#### H-440-A 1" Screwdriver Angle Stop (also fits H-445-A Screwdriver Straight Stop) — Used from 1950's through 1960's



3308453	H-482-A-SD	Repair kit includes lock shield, packing, key stem, rubber plug, and packing ring
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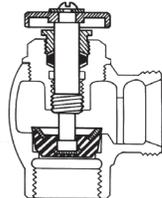
0308428	H-439-A	Bonnet assembly repair kit includes a bonnet assembled with packing ring, key socket, retaining ring, screw assembly, and packing plus our H-37 Vandal Resistant Stop Cap that replaces the lock shield
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0308434	H-439	Bonnet
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0308489	H-482-A	Rubber Plug
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5308077	H-12	Packing only – 12 per package
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#### H-440-A 1" Wheel Handle Angle Stop (also fits H-445-A Wheel Handle Straight Stop) — Used from 1950's through 1960's



0308435	H-439	Bonnet
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0308489	H-482-A	Rubber Plug
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5308077	H-12	Packing only – 12 per package
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NOTE: H-440 Series control stops were used with Sloan's "Quiet Flush" flushometer models.

NOTE: All obsolete control stops are for ground joint tailpiece connections.

NOTE: Sloan has made other stops up to 1964. If you have an older stop that is not listed on these two pages, the repair parts are obsolete. Prior to 1964, all stops were ground joint connections; the H-700-AG series stops, 3/4" and 1" angle stops, and 1" straight stops, are the current replacement.

## Control Stop

### THE "COMMON STOP"

In 1996, Sloan began using the H-700 series of control stops with all flushometers. This "common stop" offers 3/4" and 1" supply inlet size options, yet uses a single repair kit for both urinal and water closet stops. This change primarily affects the H-700 series 3/4" stops, which now use the same repair kit as 1" stops. Repair kits for the smaller H-540 and H-600 3/4" stops remain available and are included in this section.

The "common stop" body offers precise control over flow rates delivered through the valve. This feature is important, especially for 1-gallon urinal designs. This finite flow adjustment makes the difference between a proper flush and an ineffective flush that splashes and spills.

The "common stop" internal components are interchangeable with their counterparts in older H-600 and H-540 stops. The distinctively contoured seat plug in the "common stop" allows a finer flow rate adjustment similar to that of a needle valve. Unlike natural rubber components that can be destroyed by water treatment products, our synthetic Permex™ rubber seat plugs resist the effects of chloramines. Our stop spring, formerly brass, is now constructed of stainless steel. This helps prevent corrosion from the increasingly aggressive water supplies we see today.

All complete "common stops" now have bonnets stamped with an H-700 series number. Both exposed and concealed wheel handle stops are stamped H-700-WH series. The H-740 and H-780 stops that replace the H-540 series stops used with Regal valves are stamped H-740 series.

### CONTROL STOP DESIGNS

#### Supply Inlets

Sloan supplies control stops in two basic inlet sizes:

1. 3/4" NPTF — For most urinal flushometers
2. 1" NPTF — For all water closet flushometers and blow-out urinal flushometers

Control stops are also available in some models with the following inlets for specialized and export applications:

1. 1" Whitworth thread
2. 1" BSP British Standard Pipe inlet
3. 1" NSPM Straight thread — for use with shipboard Sil-Braz fittings

#### Tailpiece Connections

The majority of flushometers supplied by Sloan since 1964 feature an adjustable tailpiece. Connection of the valve tailpiece to the control stop is made with a sliding O-ring seal.

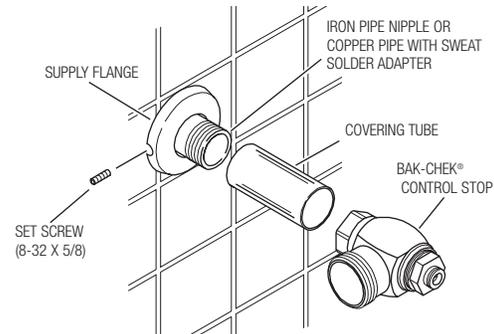
Older valves (produced before 1964), and valves furnished for salt-water installations, and all straight stops utilized a metal-to-metal ground joint (G.J) connection.

When replacing an older stop, it is important to note which type of stop connection is required.

Stops for use with salt water must be made from Naval brass.

### GENERAL INSTALLATION INSTRUCTIONS

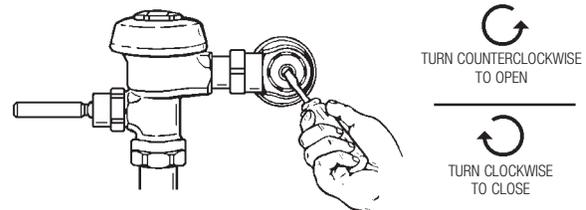
Install the Sloan Bak-Chek® control stop to water supply line with outlet positioned as required. Tighten the control stop coupling with a wrench.



### CONTROL STOP ADJUSTMENT

After installation or service, readjust the control stop to meet the flow rate required for the proper cleansing of the fixture. Open the control stop COUNTERCLOCKWISE one full turn from the closed position. Activate flushometer.

Adjust control stop after each flush until the rate of flow delivered properly cleanses the fixture. Turn the control stop adjustment screw (or wheel handle) COUNTERCLOCKWISE to increase the flow rate or CLOCKWISE to decrease the flow rate.



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

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.

### MAINTENANCE AND CLEANING

Control stops have moving parts that may wear over time. Deterioration of rubber parts may result in an incomplete seal. If you can not shut off the stop completely, or if leakage is visible at the adjustment screw, order one of our control stop repair kits and rebuild the control stop.

**DO NOT USE** abrasive or chemical cleaners to clean flushometers. These cleaners may dull the luster and attack the chrome or special decorative finishes. Use **ONLY** mild soap and water, and then wipe dry with a clean cloth or towel. While cleaning the bathroom tile, protect the flushometer from any splattering of cleaner. Acids and cleaning fluids can discolor or remove chrome plating.