# SLOAN
OPTIMA SYSTEMS

Maintenance Guide

OPTIMA® Sensor Activated Flushometers

The Sloan OPTIMA automatic electronic 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. OPTIMA Flushometers are ADA-compliant devices and are available in both Royal® and Regal® Flushometer models. These hardwire Flushometers require the use of 24 VAC Stepdown Transformers.
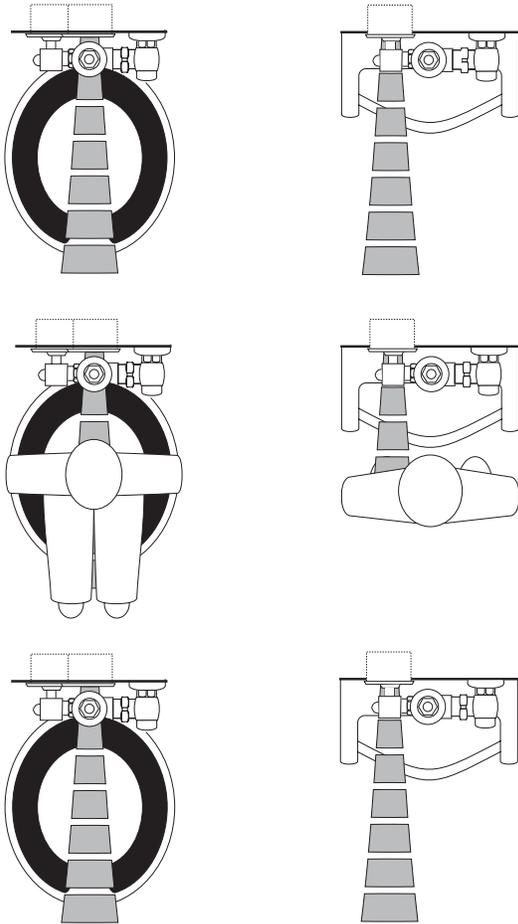
The Flushometer is triggered by means of a self-adaptive infrared sensor. A flashing red indicator light identifies the presence of a target. After a detected user moves out of the effective range of the sensor, a signal is sent to the Flushometer Solenoid and, after appropriate arming and/or flush delays, the flush cycle is initiated. When a unit is used intermittently, the Sentinel Flush feature ensures a cleansing cycle at least once in any 24-hour period.

NOTE: Sensor location and positioning is critical. Failure to properly position the electrical box to the recommended plumbing rough-in dimensions will result in improper installation and may impair product performance. All tradesmen (plumbers, electricians, tile setters, etc.) involved in the installation of this product must coordinate their work efforts to ensure proper product installation. Improper installation may nullify the manufacturer's warranty.

OPTIMA® Components:

EL-1500 Series Sensor
- Self-adaptive Sensor
- Flashing Red Light Indicator
- Replaceable Sensor Window
- Two-wire connection system
- Surface Mounted (optional)

Solenoid
- Non-Hold-Open integral Solenoid operator

Transformer
24 VAC Stepdown Transformer
- EL-154 for 120 VAC Electrical Supply (50/60 Hz)
- EL-342 for 220/240 VAC Electrical Supply (50/60 Hz)

Override Button
- Courtesy Flush
  (available only on Water Closet installations)
  (also available on Concealed Water Closet ES-SM)

Cover Plates
- Override Button Sensor Cover Plate
  (Exposed and Concealed Water Closet installations)
- Solenoid Cover Plate
  (Exposed Water Closet and Urinal installations)
- Urinal Sensor Cover Plate
 *(Concealed Urinal installations)*

Wall Box Option
- Stainless Steel or Polished Brass Surface Finish
- Concealed installation
- Vandal Resistant

OPTIMA® SYSTEMS

New Style Solenoid Parts and Assemblies

Repair Kits and Parts listed on these pages are designed to service all Sloan OPTIMA Diaphragm type Flushometers including those manufactured for Low Consumption (LC) usage.

Each item has been identified by a specific *Part Number* (in italics) with a corresponding **Code Number** (in bold). To expedite your replacement requirements, order by **Code Number**.

Exposed Urinal

Exposed or Concealed Water Closet

Concealed Urinal

Exposed or Concealed Water Closet

NOTE: Gang box is not supplied.

To Valve

Exposed Solenoid

To Valve

Concealed Solenoid

ABBREVIATIONS:
CP . . . . . . Chrome Plated
RB . . . . . . .Rough Brass
gpf . . . .gallons per flush
Lpf . . . . . .Liters per flush

Royal ES-EM Surface Mounted Sensor Components

Concealed Water Closet

Concealed Urinal

ES-SM Solenoid

NOTE: Royal ES-SM surface mounted sensor components are not compatible with ES-S flushometer components.
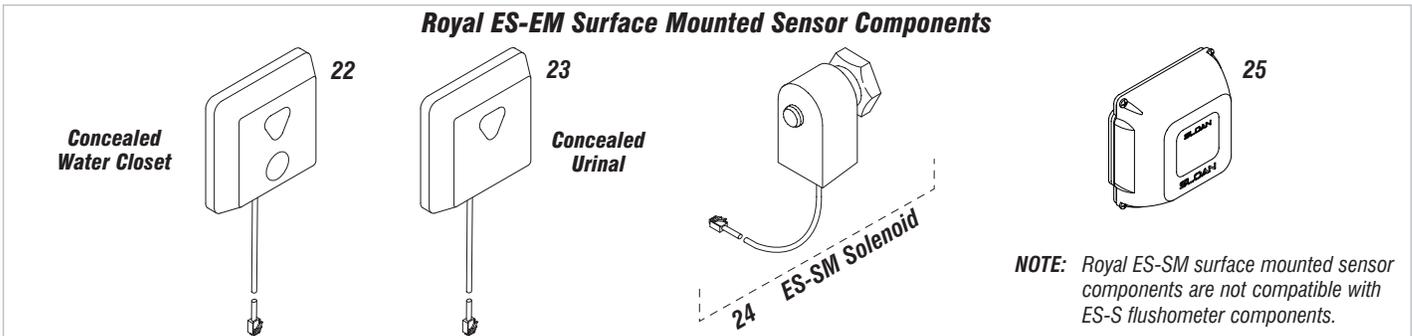
New Solenoid/Sensor Parts and Assemblies List

Item	Code No.	Part No.	Description
1A.	3305043	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.	0305135	EL-110	O-Ring
2A.	0305329	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
2B.	0305331	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.	0337086	DO-22	O-Ring
3B.	0305132	EL-104	RB Adapter for Solenoid
3C.	0305165	EL-163-A	Solenoid Shaft Assembly Includes Gasket, Plunger, Plunger Spring, and Solenoid Shaft
4.	0301082	A-6	CP Handle Coupling (exposed installation)
5A.	0305166	EL-164	Solenoid Flux Plate (exposed installation)
5B.	0305332	EL-542	Solenoid Base Plate (concealed installation)
6.	0305118	EL-165-2	24 VAC Coil
7A.	0305164	EL-162-2	CP Solenoid Housing (exposed installation)
7B.	0305336	EL-541-A	Solenoid Cover Assembly (Includes Flux Plate)
8.	0305127	EL-102-2	Face Plate for 24 VAC Solenoid (exposed installation)
9A.	0305125	EL-101	CP Nut for Solenoid (exposed installation)
9B.	0305167	EL-166	Housing Nut for Solenoid (concealed installation)
10.	0306249	F-15	Tail †
11.	0345150	EL-431-A	CP Flange Assembly (exposed installation)
12.	0305152	EL-152	CP Screws (requires four screws per cover plate)
13.	0305151	EL-151	CP Cover Plate for Sensor and Solenoid Operator (Urinal only)
14.	0305219	EL-201	CP Cover Plate for Sensor and Override Button (Closet only)
15.	0318066	HY-66	CP Cover Plate for Solenoid Operator (Closet only)
16.	0305161	EL-161	CP Cover Plate for Sensor
17.	0305323	EL-168-A	Yoke Assembly (Urinal only)
18.	0305324	EL-141-A	Override Switch and Yoke Assembly (Closet only)
19.	3305620	EL-1500	Urinal Sensor Replacement Kit (Urinal only)
20.	3305621	EL-1500-L	Closet Sensor Replacement Kit (Closet only)
21.	0345154	EL-154	Transformer (120 VAC) (also available for ES-SM Flushometers)
	0345999	EL-342	Transformer (240 VAC) (also available for ES-SM Flushometers)
22.	3345047	EL-461	Surface Mounted Sensor and Override Button Assembly (closet only)
23.	3345048	EL-497	Surface Mounted Sensor Assembly (urinal only)
24.	3345048	EL-297	Solenoid Assembly
25.	3365003	ETF-492-A	Control Module

† **NOTE:** For exposed & concealed solenoids manufactured before 2003 or not shown here, consult factory for individual part assembly.
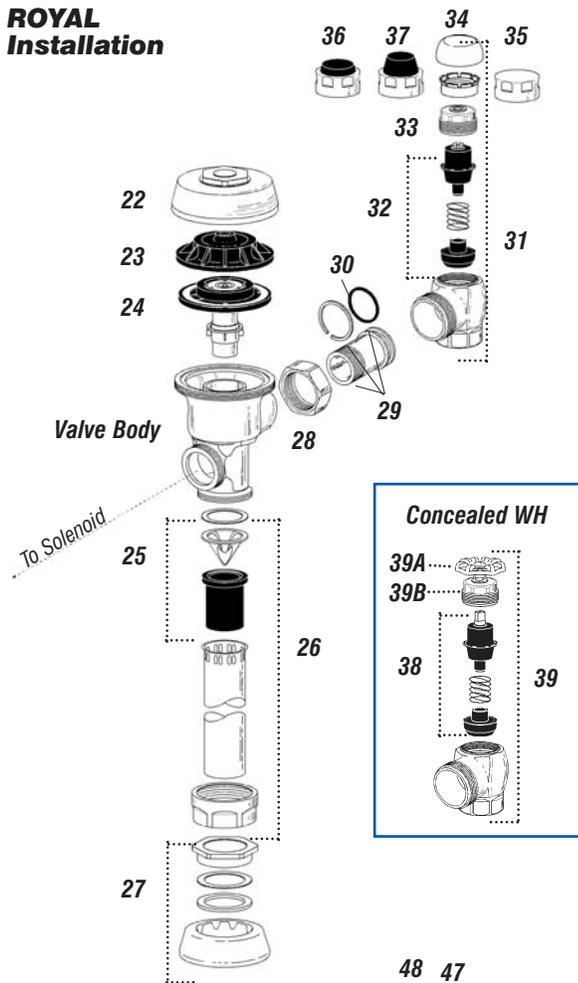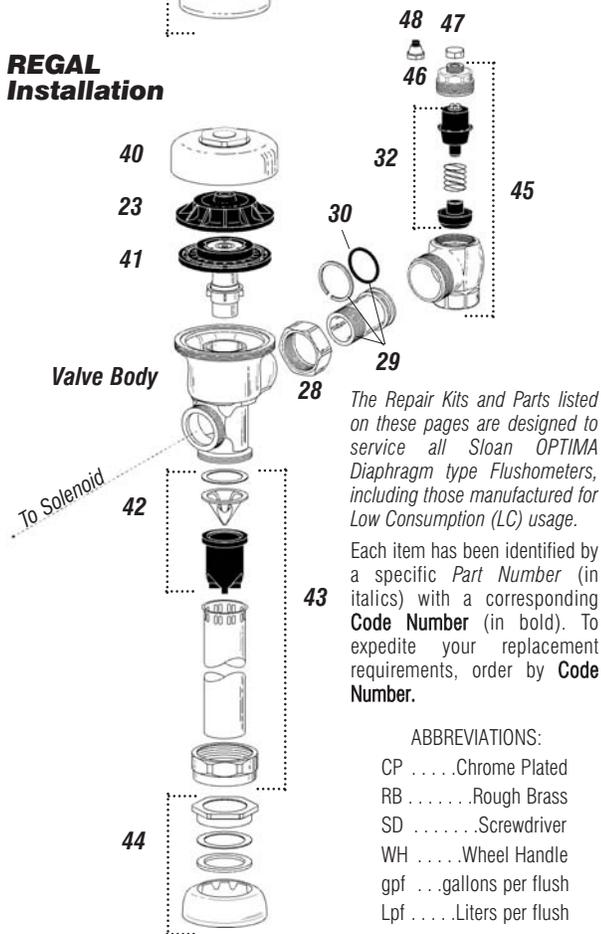
Valve Parts List

NOTE: *Also refer to the Royal, Regal, Control Stop and Flush Connection Maintenance Guides.*

Royal

Item	Code No.	Part No.	Description
22.	**0301172**	*A-72*	CP Cover
23.	**0301168**	*A-71*	Inside Cover
24.	SEE DIAPHRAGM ASSEMBLY CHART ON PAGE 4		
25.	**3323182**	*V-651-A*	Vacuum Breaker Repair Kit
26.	**0393004**	*V-600-AA*	3/4" (19 mm) x 9" (229 mm) CP Vacuum Breaker
	0393006	*V-600-AA*	1-1/4" (32 mm) x 9" (229 mm) CP Vacuum Breaker
	0393007	*V-600-AA*	1-1/2" (38 mm) x 9" (229 mm) CP Vacuum Breaker
27.	**0306125**	*F-5-AW*	3/4" (19 mm) CP Spud Coupling Assembly
	0306140	*F-5-AU*	1-1/4" (32 mm) CP Spud Coupling Assembly
	0306146	*F-5-AT*	1-1/2" (38 mm) CP Spud Coupling Assembly
28.	**0308676**	*H-550*	CP Stop Coupling
29.	**0308801**	*H-551-A*	CP Adjustable Tail 2-1/16" (52 mm) long
30.	**5308696**	*H-553*	O-ring - 24 per pkg.
31.	**3308386**	*H-700-A*	1" (25 mm) Screwdriver Bak-Chek® Angle Stop CP - complete
	3308384	*H-700-A*	3/4" (19 mm) Screwdriver Bak-Chek® Angle Stop CP - complete
32.	**3308853**	*H-541-A-SD*	Control Stop Repair Kit for use with 1" (25 mm) & 3/4" (19 mm) H-700-A, 1" (25 mm) H-600-A, 1" (25 mm) & 3/4" (19 mm) H-740-A and 1" (25 mm) H-540-A SD Stops
	3308856	*H-543-A-SD*	Control Stop Repair Kit for use with 3/4" (19 mm) H-600-A and H-540-A SD Stops
33.	**0308612**	*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
	0308843	*H-577*	CP Bonnet for use with 3/4" (19 mm) H-600-A SD Stops
34.	**3308791**	*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
	3308790	*H-1009-A*	3/4" (19 mm) Vandal Resistant Control Stop Cap Assembly for use with 3/4" (19 mm) H-600-A SD Stops
35.	**0308840**	*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
	0308848	*H-582*	3/4" (19 mm) Control Stop Cap CP for use with 3/4" (19 mm) H-600-A SD Stops
36.	**3308866**	*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
37.	**3308867**	*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
38.	**3308860**	*H-1006-A*	Repair Kit for 1" (25 mm) Stops with Concealed WH for use with 1" (25 mm) H-700, H-600, and H-540 WH Series Stops
	3308859	*H-1007-A*	Repair Kit 3/4" (19 mm) Stops with Concealed WH for use with 3/4" (19 mm) H-700 WH Series Stops
39.	**0388010**	*H-730-A*	1" (25 mm) Concealed WH Bak-Chek® Angle Stop RB
	0388011	*H-730-A*	3/4" (19 mm) Concealed WH Bak-Chek® Angle Stop RB
39A.	**3308872**	*H-1011-A*	Repair Kit (for Concealed WH only; does not include bonnet)
39B.	**0208083**	*H-623*	Bonnet
	0308705	*H-561*	Bonnet

Regal

Item	Code No.	Part No.	Description
23.	**0301168**	*A-71*	Inside Cover
28.	**0308676**	*H-550*	CP Stop Coupling
29.	**0308801**	*H-551-A*	CP Adjustable Tail 2-1/16" (52 mm) long
30.	**5308696**	*H-553*	O-ring - 24 per pkg.
32.	**3308853**	*H-541-A-SD*	Control Stop Repair Kit for use with 1" (25 mm) & 3/4" (19 mm) H-700-A ,1" (25 mm) H-600-A, 1" (25 mm) & 3/4" (19 mm) H-740-A and 1" (25 mm) H-540-A SD Stops
	3308856	*H-543-A-SD*	Control Stop Repair Kit for use with 3/4" (19 mm) H-600-A and H-540-A SD Stops
40.	**0317004**	*R-10*	CP Cover
41.	SEE INSIDE PARTS ASSEMBLY CHART ON PAGE 4		
42.	**3323192**	*V-551-A*	Vacuum Breaker Repair Kit
43.	**0323005**	*V-500-AA*	3/4" (19 mm) x 9" (229 mm) CP Vacuum Breaker
	0323006	*V-500-AA*	1-1/4" (32 mm) x 9" (229 mm) CP Vacuum Breaker
	0323007	*V-500-AA*	1-1/2" (38 mm) x 9" (229 mm) CP Vacuum Breaker
44.	**0306102**	*F-54-A*	3/4" (19 mm) CP Spud Coupling Assembly
	0306142	*F-55-A*	1-1/4" (32 mm) CP Spud Coupling Assembly
	0306145	*F-56-A*	1-1/2" (38 mm) CP Spud Coupling Assembly
45.	**0388029**	*H-740-A*	1" (25 mm) SD Bak-Chek® Stop CP - complete
	0388031	*H-740-A*	3/4" (19 mm) SD Bak-Chek® Stop CP - complete
46.	**0308991**	*H-639*	CP Bonnet for use with H-740-A 1" (25 mm) & 3/4" (19 mm) and H-540-A 1" (25 mm) SD Stops
	0308601	*H-538*	CP Bonnet for use with H-540-A 3/4" (19 mm) SD Stops
47.	**5308156**	*H-37*	CP Cap (package of 6)
48.	**5310034**	*J-2/J-7*	Bumper Assembly (package of 6)

Valve Body

To Solenoid

Concealed WH

39A
39B
38
39

**REGAL
Installation**

Valve Body

To Solenoid

The Repair Kits and Parts listed on these pages are designed to service all Sloan OPTIMA Diaphragm type Flushometers, including those manufactured for Low Consumption (LC) usage.

Each item has been identified by a specific *Part Number* (in italics) with a corresponding **Code Number** (in bold). To expedite your replacement requirements, order by **Code Number.**

ABBREVIATIONS:

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

Royal ES-S & ES-SM — item 24 — Dual Filtered Diaphragm™ Assembly
Sold ONLY in ROYAL Performance™ Kits

ES-S KIT includes: EL-128-A Actuator Cartridge Assembly (item 1A); Dual Filtered Diaphragm Assembly (item 24); High Back Pressure Vacuum Breaker Repair Kit (item 25); and one Tailpiece O-Ring (item 30)
Diaphragm Only KIT includes: Dual Filtered Diaphragm Assembly (item 24) ONLY

	ES-S KIT Code No.	ES-S KIT Kit No.	DIAPHRAGM ONLY KIT Code No.	DIAPHRAGM ONLY KIT Kit No.	Flush Volume	Use with	Relief Valve	Refill Head‡	Flow Ring
A	3345013	EL-1101-A	3301502	A-1041-A	1.6 gpf/6.0 Lpf	Low Consumption Water Closets	Green	Gray	Smooth
B	3345014	EL-1102-A	3301501	A-1038-A	3.5 gpf/13.2 Lpf	Water Saver Water Closets	White	Gray	Smooth
C	3345015	EL-1103-A	3301505	A-1044-A	2.4 gpf/9.0 Lpf	9 Liter European Water Closets	Blue	Gray	Smooth
D	3345016	EL-1106-A	3301504	A-1043-A	0.5 gpf/1.9 Lpf	Wash Down Urinals	Green	Black	Smooth & Slotted
E	3345017	EL-1107-A	3301503	A-1042-A	1.0 gpf/3.8 Lpf	Low Consumption Urinals	Green	Black	Slotted
F	3345018	EL-1108-A	3301500	A-1037-A	1.5 gpf/5.7 Lpf	Water Saver Urinals	Black	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**.
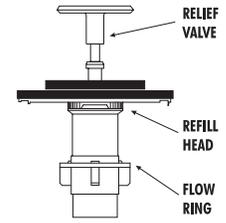
‡ *NOTE: Water Closet Refill Heads (Gray) have larger slots than Urinal Refill Heads (Black).*

Regal Inside Parts List †

Item	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	5301143	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

Regal ES-S — item 41 — Inside Part Kits Assembly

A-36-A	A-37-A	A-38-A	A-41-A	A-42-A	A-43-A	A-44-A
3301036	3301037	3301038	3301041	3301044	3301081	3301024
4.5 gpf/17.0 Lpf	1.5 gpf/5.7 Lpf	3.5 gpf/13.2 Lpf	1.6 gpf/6.0 Lpf	1.0 gpf/3.8 Lpf	0.5 gpf/1.9 Lpf	2.4 gpf/9.0 Lpf
CLOSET	URINAL	CLOSET	CLOSET	URINAL	URINAL	CLOSET

† *NOTE: All Regal inside part items are supplied in packages of 12.*

Wall Box Kits

Closet Models

Code No.	Part No.	Description
— 3305180	EL-192-A	Closet Wall Box Kit - Stainless Steel Includes four EL-125 Mounting Screws, four EL-126 Hex Nuts, four EL-127 Lock Washers, EL-195 Mounting Bracket, EL-196 Electrical Box, EL-197 Electrical Box Cover, EL-141-A Override Switch Subassembly, EL-216 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, EL-318 Spanner Bit, EL-1500-L Closet Sensor Replacement Kit, and four WB-6 Screws.
— 3305179	EL-192-A	Closet Wall Box Kit - Polished Brass Includes the same components as 3305180 listed above except unit is furnished with Polished Brass 14.5" x 18.5" (368 mm x 470 mm) Wall Box Cover (instead of Stainless Steel).

Urinal Models

| Code No.	Part No.	Description
— 3305178	EL-191-A	Urinal Wall Box Kit - Stainless Steel Includes four EL-125 Mounting Screws, four EL-126 Hex Nuts, four EL-127 Lock Washers, EL-193 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, EL-195 Mounting Bracket, EL-196 Electrical Box, EL-197 Electrical Box Cover, EL-318 Spanner Bit, EL-1500 Urinal Sensor Replacement Kit, and four WB-6 Screws.
— 3305177	EL-191-A	Urinal Wall Box Kit - Polished Brass Includes the same components as 3305178 listed above except unit is furnished with Polished Brass 14.5" x 18.5" (368 mm x 470 mm) Wall Box Cover (instead of Stainless Steel).

EL-125
EL-126
EL-127
EL-195
EL-196
EL-125
EL-197
EL-141
EL-1500-L Closet
EL-1500 Urinal
WB-6
EL-216 Closet
EL-193 Urinal

Panel Shown with hole for Override Switch (Closet applications only)
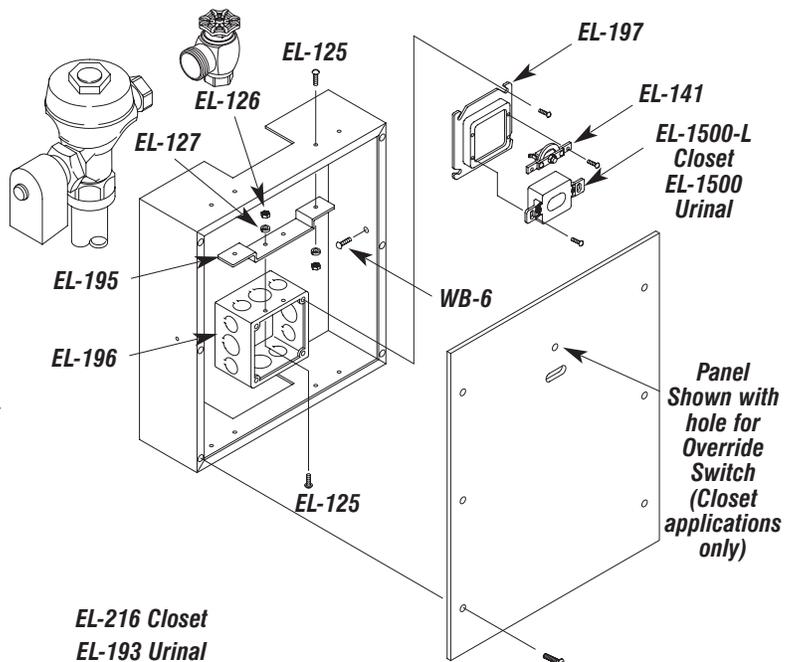
Sensor Replacement

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 Operator must be removed from the Valve on exposed urinal installations. Do not damage the O-ring seal on the operator assembly.

Figure 1A

ORIENTATION ARROW

Figure 1B

"TO VALVE" CONNECTION

"24 VAC IN" CONNECTION
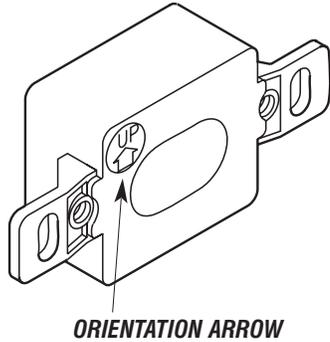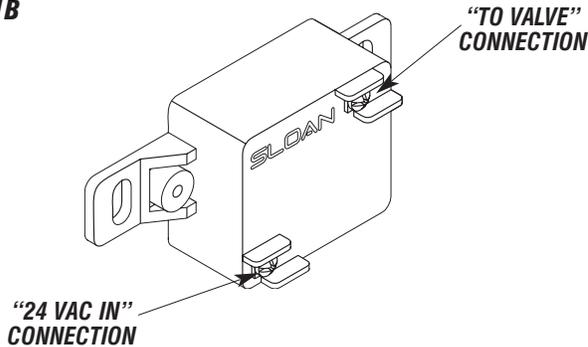
1. Remove the Cover Plate (for Wall Box Installation, remove Cover Panel) and old Sensor from the wall installation. Use a 5/64" hex wrench to remove the Cover Plate Screws (or #8 drilled spanner head screwdriver *EL-318* to remove the vandal-resistant screws from the Wall Box Cover Panel.)

2. Connect one 24 VAC lead to the Sensor terminal labeled "24 VAC IN" *(see Figure 1B)*.
   - On an old three-wire *EL-150* series Sensor, this wire was connected to the BLACK Sensor lead.
   - On an old four-wire *EL-150* series 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 *EL-150* series 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).

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

120 VAC

EL-1500 SERIES SENSOR — **24 VAC**

OVERRIDE SWITCH ‡

COIL WIRE — **24 VAC COIL**

UNIT #1

EL-1500 SERIES SENSOR

OVERRIDE SWITCH ‡

COIL WIRE — **24 VAC COIL**

UNIT #2 THRU #10 (IF USED)
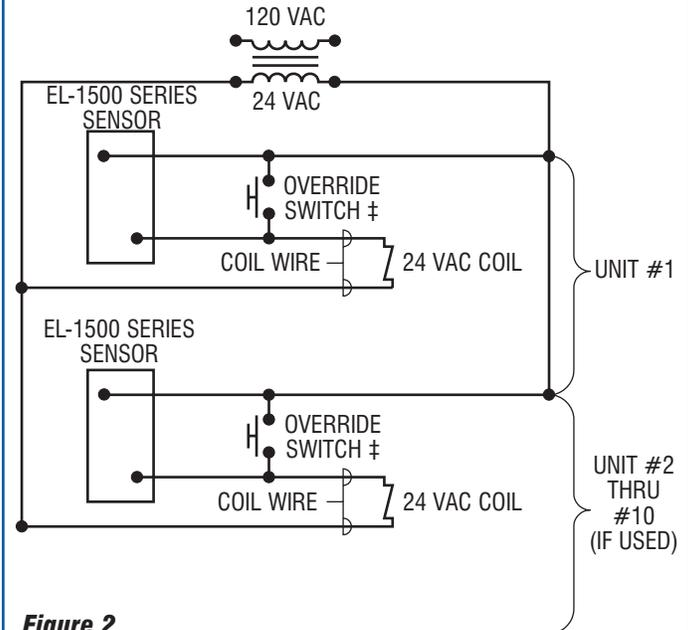
Figure 2

‡ *OVERRIDE SWITCH USED WITH WATER CLOSETS ONLY*

NOTE: *A MAXIMUM OF TEN (10) SENSOR FLUSHOMETER UNITS CAN OPERATE FROM ONE (1) SLOAN EL-154 TRANSFORMER. CLASS 2 UL LISTED, 48 VA (MIN.) AT 24 VAC, PLATE MOUNTED.*

Start-Up Mode

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 10 (ten) minutes. When the Start-Up cycle is complete, the red light will no longer be 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) slow, three (3) fast, and three (3) slow flashes.

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

Release date 03/09/78

Brown — Brown — Red — Red

Release date 08/11/83

Brown — Brown — Red — Red with Yellow or all Yellow

Release date 02/02/87

Brown — Blue — Red — Yellow
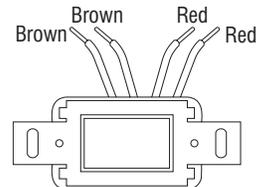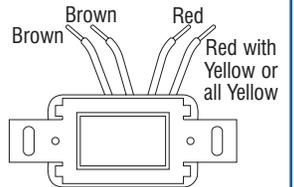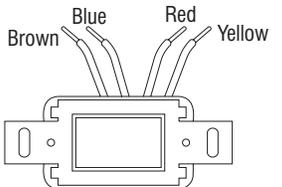
Release date 12/12/90

Brown — Black — White
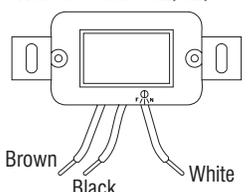
Troubleshooting Guide

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. (On water closet models, 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/EL-1500-L Sensor is not operating.*

SOLUTION: Replace EL-1500/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: *EL-1500/EL-1500-L Sensor wiring connections are incorrect.*

SOLUTION: 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.

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.

CAUSE: *Closet valve is installed on urinal fixture.*

SOLUTION: Replace closet Diaphragm component parts with proper urinal kit (Inside Diaphragm Assembly or Inside Parts Kit)

Control Stop Setting

IMPORTANT: Never open Control Stop to where the flow from the valve exceeds the flow capability of the fixture. In the event of a valve failure, the fixture must be able to accommodate a continuous flow from the valve.

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 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.

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

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