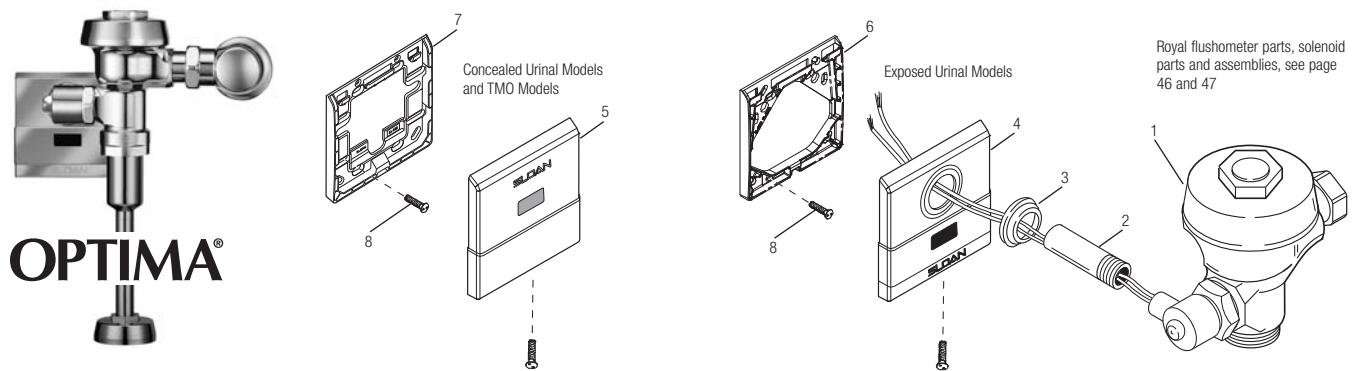


Optima® Flushometers

Current style Royal® (after 09/26/10)



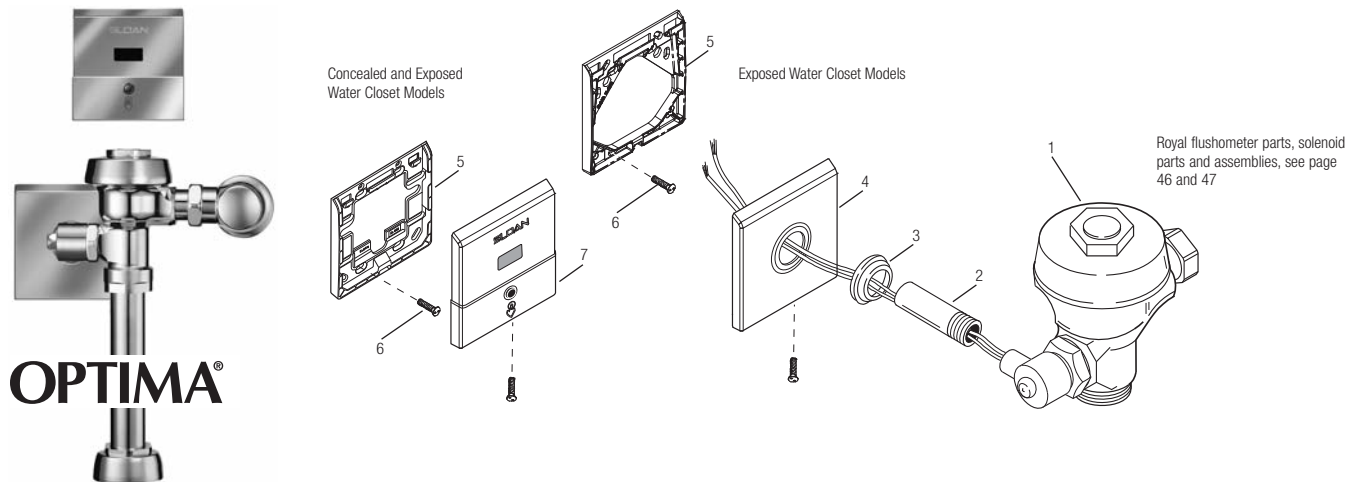
CURRENT COVER AND MOUNTING PLATE PARTS FOR ROYAL® URINAL FLUSHOMETER

Item No.	Code No.	Part No.	Description
1.	‡		Solenoid Activated Valve Assembly
2.	0306249	F-15	Tail Assembly†
3.	0345150	EL-431-A	Flange Assembly
4.	3305100	EL-640-A	CP Cover Plate with Sensor and Mounting Hardware Assembled (Exposed Models) (includes EL-549 mounting plate)

Item No.	Code No.	Part No.	Description
5.	3305101	EL-645-A	CP Cover Plate with Sensor Assembled (Concealed Models)
6.	—	EL-549	Mounting Plate (Exposed Models)
7.	—	EL-592	Mounting Plate
8.	—	EL-177	Screws (requires four (4) screws per mounting plate)
—	3305620	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.



CURRENT COVER AND MOUNTING PLATE PARTS FOR ROYAL® CLOSET FLUSHOMETER

Item No.	Code No.	Part No.	Description
1.	‡		Solenoid Activated Valve Assembly
2.	0306249	F-15	Tail Assembly†
3.	0345150	EL-431-A	Flange Assembly
4.	3305105	EL-625-A	CP Cover Plate with Mounting Hardware Assembled (Closet only) (includes EL-543 mounting plate)
5.	—	EL-549	Mounting Plate

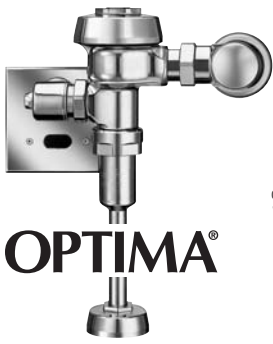
Item No.	Code No.	Part No.	Description
6.	—	EL-177	Screws (requires four screws per mounting bracket)
7.	3305104	EL-595-A	CP Cover Plate with Sensor and Override Switch Assembled (Closet only)
—	3305621	EL-1500-L	Closet Sensor Replacement Kit (Closet only, not shown)

† 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.

Optima® Flushometers

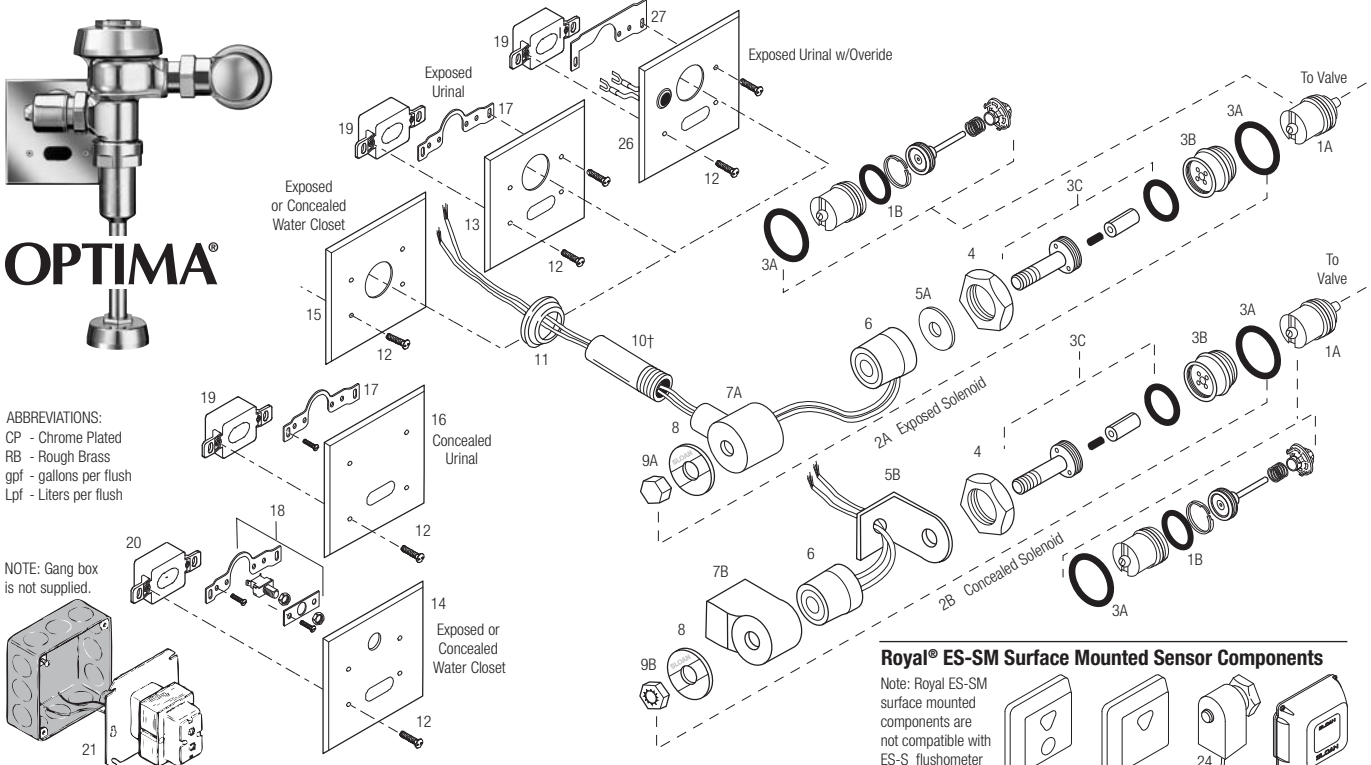
Old Royal® until 05/09, current Sloan/Regal®



OPTIMA®

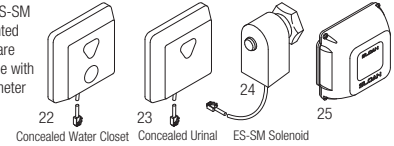
ABBREVIATIONS:
 CP - Chrome Plated
 RB - Rough Brass
 gpf - gallons per flush
 Lpf - Liters per flush

NOTE: Gang box is not supplied.



Royal® ES-SM Surface Mounted Sensor Components

Note: Royal ES-SM surface mounted components are not compatible with ES-S flushometer components.



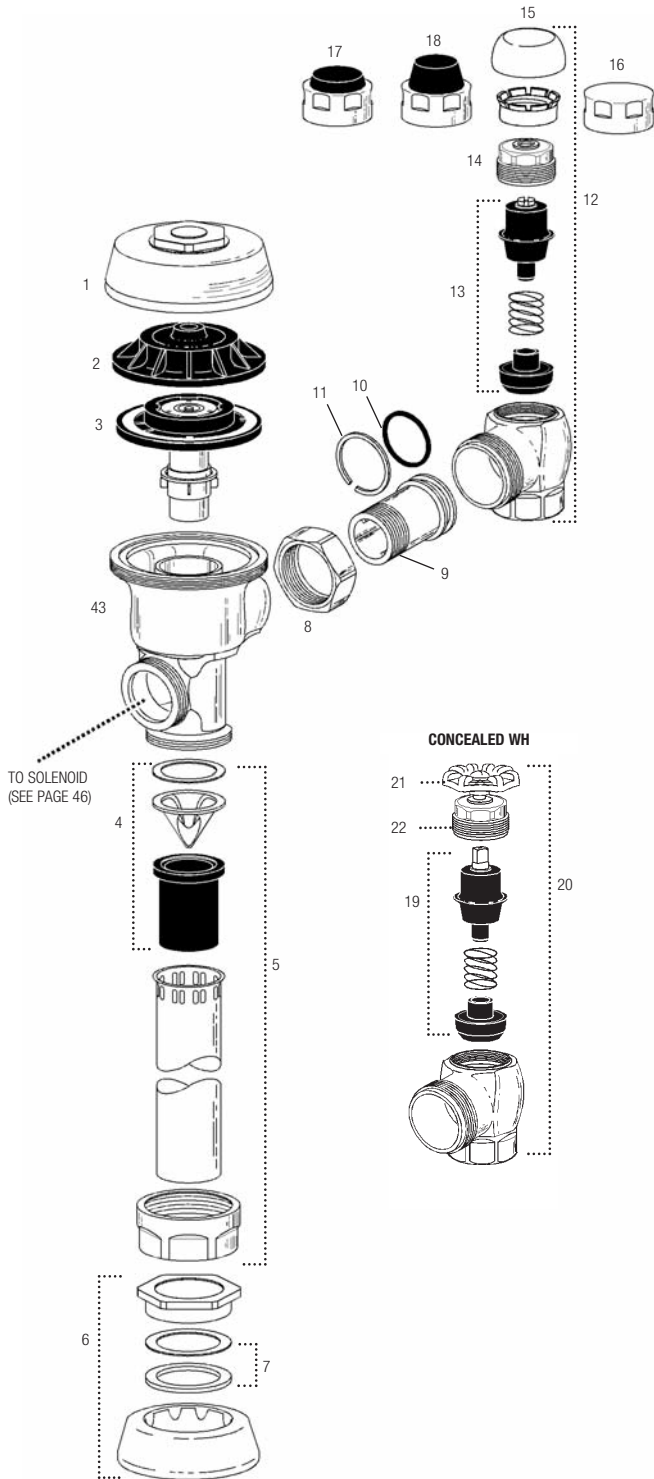
SOLENOID/SENSOR PARTS AND ASSEMBLIES LIST

Item No.	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.	0305328	EL-124-1	120V only (no sensor)
	3305044	EL-1029-A	CP Cartridge/Solenoid Kit EL-124-1 (120V) and EL128-A
	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
	3305045	EL-1028-A	CP Cartridge/Solenoid Kit EL-124-2 (24V) and EL128-A
2B.	0305330	EL-138-1	120V only (no sensor)
	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) fine thread
5B.	—	EL-542	N/A Separately
6.	0305119	EL-165-1	120 V Coil
	0305118	EL-165-2	24 VAC Coil
7A.	0345120	EL-162-2	CP Solenoid Housing (exposed installation) fine thread
	0305164	EL-162-1	CP Solenoid Housing (120V) course thread also used on pre-2001 24 V
7B.	0305336	EL-541-A	Solenoid Cover Assembly (Includes Flux Plate)
8.	0305127	EL-102-2	Face Plate for 24 VAC Solenoid (exposed installation)

Item No.	Code No.	Part No.	Description
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 †
	0305145	EL-123-A	Old Style ESS 24V course thread (120V also)
	0305337PK	EL-226	1-1/4" Extension for EL-123-A course thread
11.	0345150	EL-431-A	CP Flange Assembly (exposed installation)
	0305139	EL-176-A	Old Style ESS 24V course thread (120V also)
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) 50 VA plate mount
	0345999	EL-342	Transformer (240 VAC) (also available for ES-SM flushometers) 50 VA plate mount
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
26.	0345266	EL-566-A	Exposed Plate with Override Button (Urinal only)
27.	0345267	EL-567-A	Yoke Assembly for EL-566-A
—	0305148	EL-227	Repair Tool Kit for EL-163-A Repair Kit
—	0345016	EL-387-A	Override Button Replacement for EL-566-A

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

Optima® Royal® Flushometers



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

OPTIMA® ROYAL® FLUSHOMETER PARTS LIST

Item No.	Code No.	Part No.	Description
1.	0301172	A-72	CP Cover
2.	0301168	A-71	Inside Cover
3.	SEE DIAPHRAGM ASSEMBLY CHART ON PAGE 42		
4.	3323182	V-651-A	Vacuum Breaker Repair Kit
5.	3393004	V-600-AA	3/4" (19 mm) x 9" (229 mm) CP Vacuum Breaker
	3393006	V-600-AA	1-1/4" (32 mm) x 9" (229 mm) CP Vacuum Breaker
	3393007	V-600-AA	1-1/2" (38 mm) x 9" (229 mm) CP Vacuum Breaker
6.	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
7.	SEE SLIP JOINT GASKETS AND RINGS TABLE ON ITEM 31A ON NEXT PAGE		
8.	0308676	H-550	CP Stop Coupling
9.	0308801	H-551-A	CP Adjustable Tail 2-1/16" (52 mm) long
10.	5308696	H-553	O-Ring – 24 per package
11.	5308381	H-552	Locking ring – 12 per package
12.	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
13.	3308853	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
	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
14.	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 – OBSELETE
15.	3308772	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
16.	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
17.	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
18.	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
19.	3308860	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
	3308859	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.	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
21.	3308872	H-1011-A	Repair Kit (for Concealed WH only; does not include bonnet)
42.	0208083	H-623	Bonnet
	0308705	H-561	Bonnet – OBSELETE
43.	0301048	A-143-A	CP Valve Body
	0301050	A-143-A	RB Valve Body

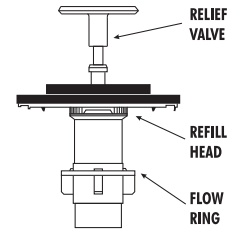
Sensor
Flushometers

Optima® Flushometers

ROYAL® ESS (ITEM 24) REPAIR KIT

Code No.	Part No.	Description	Relief Valve	Refill Head*	Flow Ring
3345013	EL-1101-A	Low Consumption Water Closets-1.6 gpf (6.0 Lpf)	Green	Gray	Smooth
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
3345016	EL-1106-A	Wash Down Urinals-0.5 gpf (1.9 Lpf)	Green	Black	Smooth
3345017	EL-1107-A	Low Consumption Urinals-1.0 gpf (3.8 Lpf)	Green	Black	Slotted
3345018	EL-1108-A	Water Saver Urinals-1.5 gpf (5.7 Lpf)	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).

DIAPHRAGM ONLY KIT

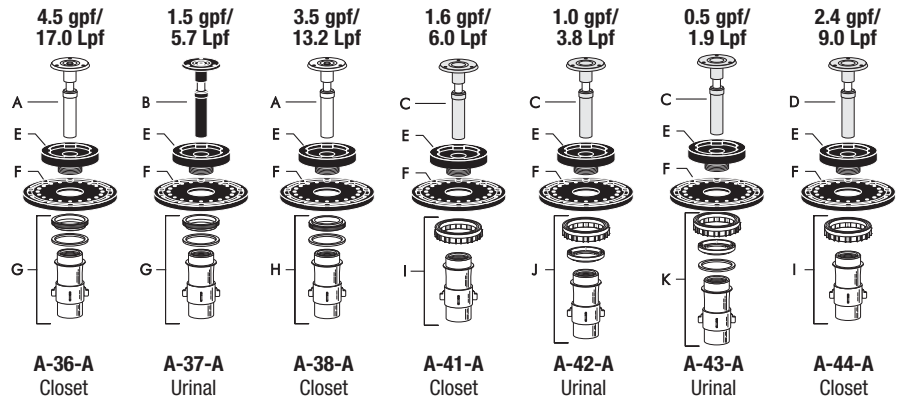
Code No.	Part No.	Description	Relief Valve	Refill Head*	Flow Ring
3301502	A-1041-A	Low Consumption Water Closets-1.6 gpf (6.0 Lpf)	Green	Gray	Smooth
3301501	A-1038-A	Water Saver Water Closets-3.5 gpf (13.2 Lpf)	White	Gray	Smooth
3301506	A-1045-A	High Efficiency Water Closets-1.28 gpf (4.8 Lpf)	Blue	Gray	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 Green Inserts	White	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



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® Flushometers

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.

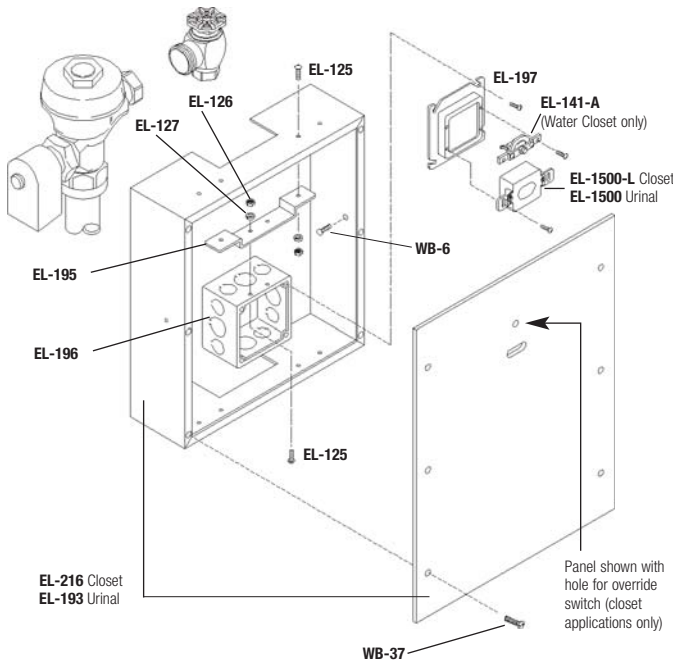
WALL BOX KITS URINAL MODELS

Code No.	Part No.	Description
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.

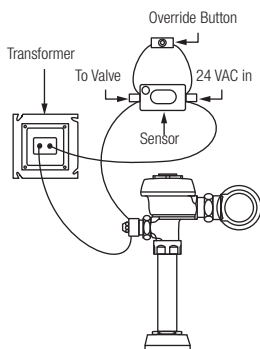
WALL BOX PARTS

Code No.	Part No.	Description
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.

Sensor Flushometers



TYPICAL WIRING DIAGRAM FOR ONE FLUSH VALVE



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

