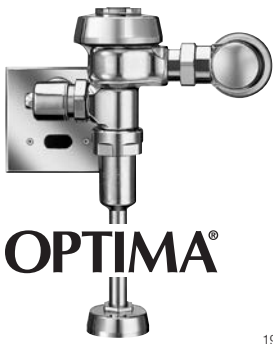


Optima® Flushometers

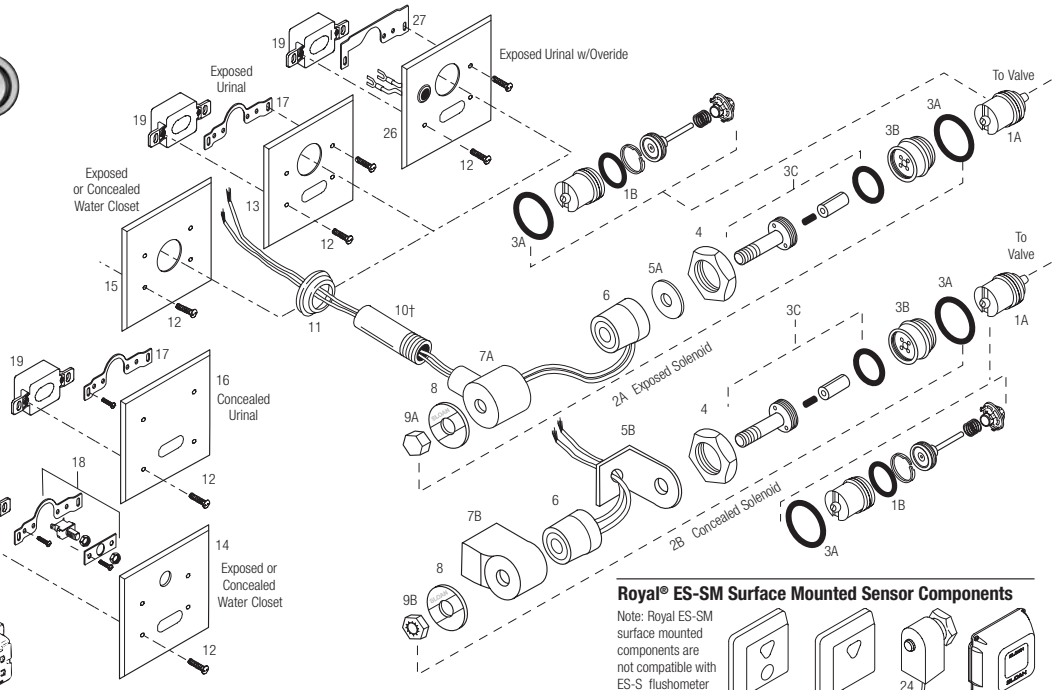
Old Royal® until 05/09, current Sloan/Regal®



OPTIMA®

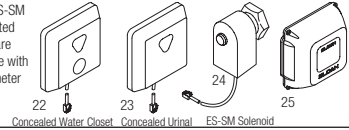
ABBREVIATIONS:
 CP - Chrome Plated
 RB - Rough Brass
 gpf - gallons per flush
 Lpf - Liters per flush

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)

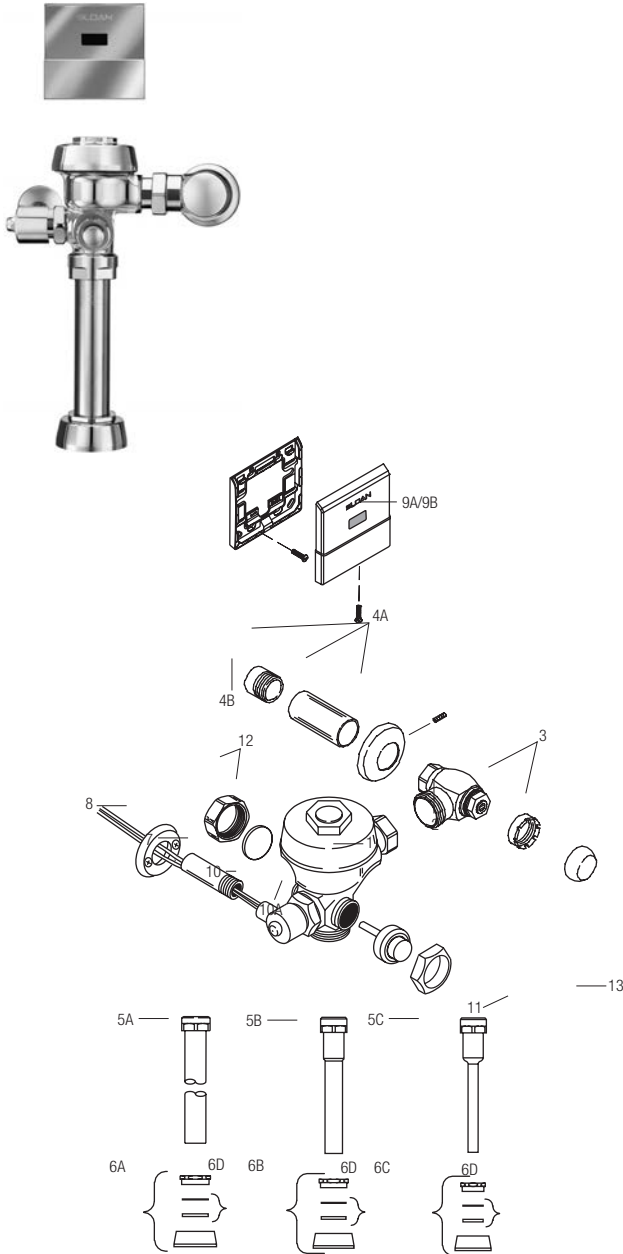
Item No.	Code No.	Part No.	Description
9A.	0305125	EL-101	CP Nut for Solenoid (exposed installation)
9B.	0305167	EL-166	Housing Nut for Solenoid (concealed installation)
10.	0306249	F-15	Tail †
	0305145	EL-123-A	Old Style ESS 24V course thread (120V also)
	0305337PK	EL-226	1-1/4" Extension for EL-123-A 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.	0305802	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
28.	3345080	EL-1026-A	ESS to TMO Retrofit Kit (Exposed)*
—	0305148	EL-227	Repair Tool Kit for EL-163-A Repair Kit
—	0345016	EL-387-A	Override Button Replacement for EL-566-A
—	3345021	EL-1010-A	O-ring Repair Kit*

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

* Not Shown

Sensor Flushometers

Optima® Royal® ES-S TMO Exposed Flushometers



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.	3308772	H-1010-A	Vandal Resistant Stop Cap
4A.	3308782	H-633-AA	1" (25 mm) Sweat Solder Kit
4B.	3308603	H-532	Adapter, 1" NPT to 1" Tube
	3308607	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.	0306146	F-5-AT	1-1/2" (38 mm) Spud Coupling Assembly CP (Models 110/111, 115, and 116)
6B.	0306140	F-5-AU	1-1/4" (32 mm) Spud Coupling Assembly CP (Model 180)
6C.	0306125	F-5-AW	3/4" (19 mm) Spud Coupling Assembly CP (Model 186)
6D.	SEE SLIP JOINT GASKETS AND RINGS ON TABLE BELOW		
7.	‡	F-15	Tail Assembly
8.	0302323PK	B-110-A	Flange Assembly
9A.	3305107	EL-635-A	CP Cover Plate with Sensor (Mounting Plate and Screws included) (Models 110/111, 115, and 116)
9B.	3305101	EL-645-A	CP Cover Plate with Sensor (Mounting Plate and Screws included) (Models 180 and 186)
10.	0305329	EL-124-2	CP 24V Solenoid Assembly Only
10A	3305043	EL-128-A	Actuator Cartridge Assembly Only
	3305045	EL-1028-A	Solenoid Assembly w/ Cartridge Assembly
11.	0303009	C-2-A	True Mechanical Override Button
12.	3325814	EBV-1017-A	CP Valve Handle Cap
13.	0301082PK	A-6	CP Nut
—	3345080	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
—	3305043	EL-128-A	Actuator Cartridge
14.	3302306	B-51-A	Triple Seal Handle Repair Kit
15.	3345080	EL-126-A	ESS to TMO Retrofit Conversion Kit (Exposed*)
	3388015	H-1015-A	Flow Control Kit (HEU Only (not Shown))

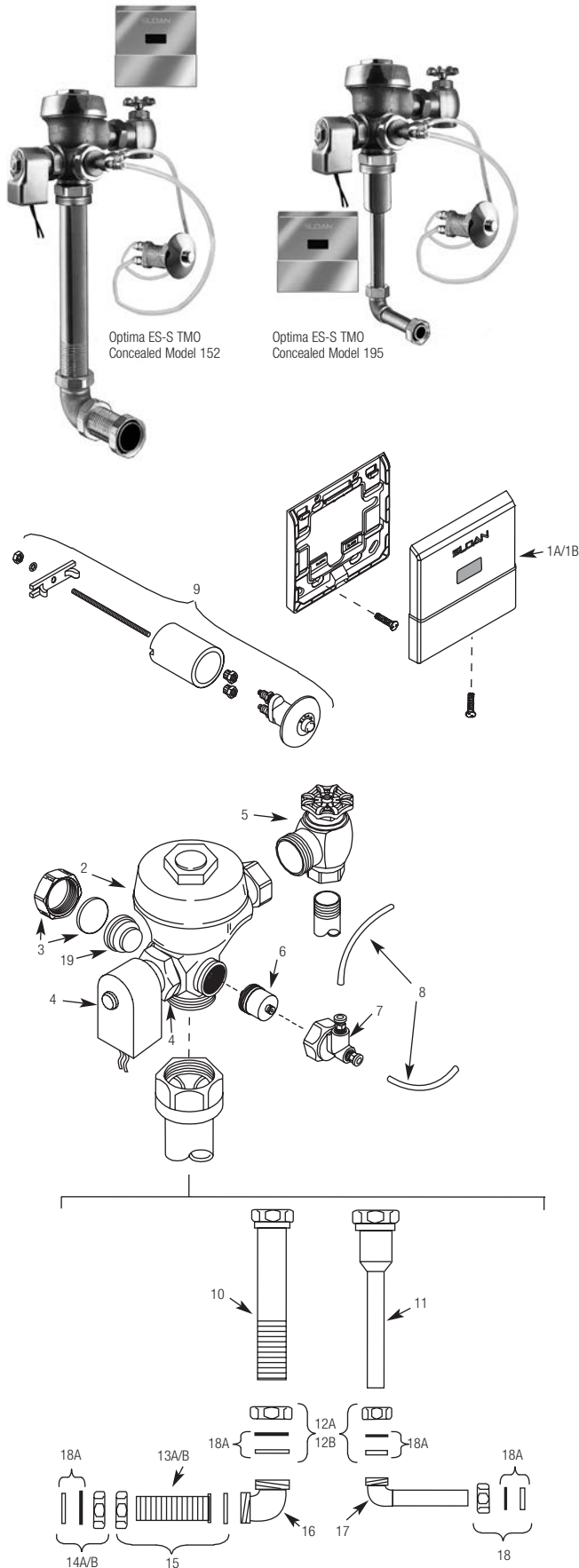
‡ Part number varies with valve model variation; consult factory.

* Not shown

ITEM 6D. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	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® Royal® ES-S TMO Concealed Flushometers



Sensor Flushometers

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

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

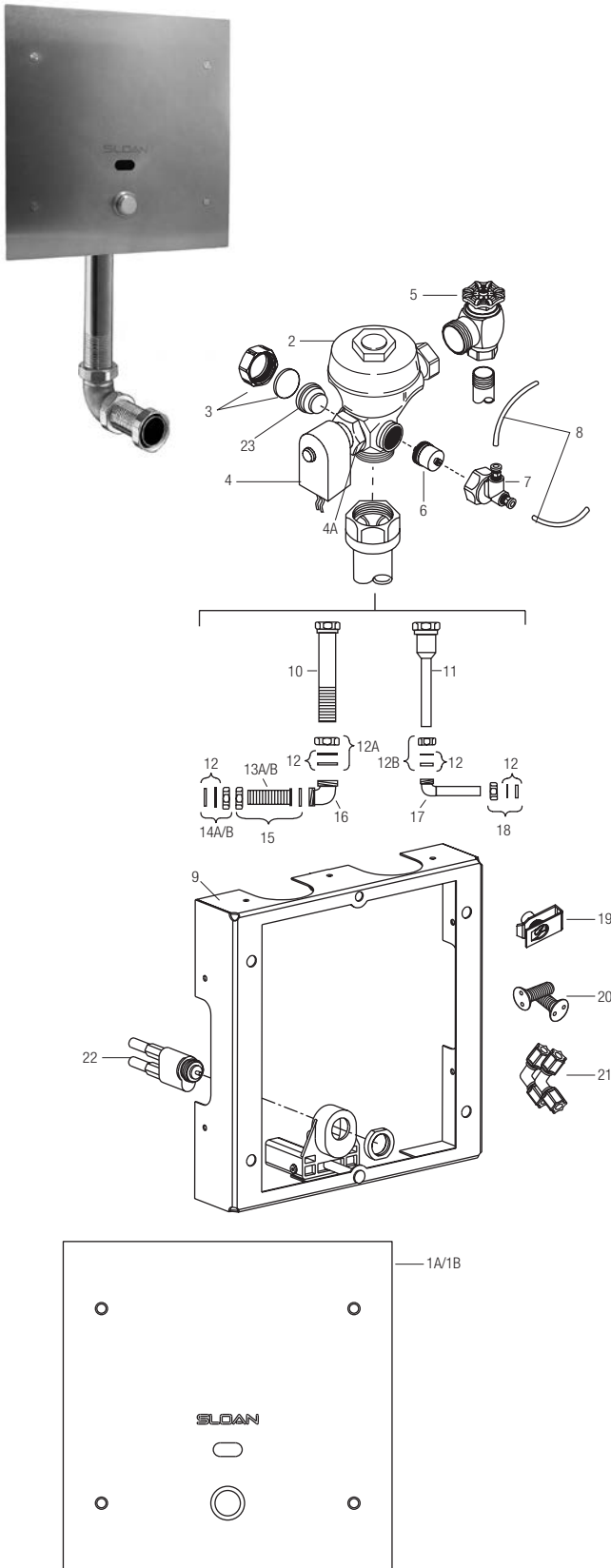
‡ Part number varies with valve model variation; consult factory.

* Not Shown

ITEM 18A. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	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® Royal® ES-S TMO with SWB Concealed Flushometers



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.	3301093	A-1013-A	Concealed Valve Handle Cap RB
4.	0305331	EL-138-2	RB Concealed 24V Solenoid Assembly
4A.	3305043	EL-128-A	Actuator Cartridge Assembly Only
5.	‡	H-730-A	RB Bak-Chek® Control Stop
6.	3318001	HY-83-A	Actuator Cartridge
7.	3318005	HY-109-A-1	Valve Actuator Assembly
8.	0318117	HY-30	1/4" (6 mm) x 48" (1219 mm) Connecting Tubes
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.	SEE SLIP JOINT GASKETS AND RINGS TABLE BELOW		
12A.	0306088	F-2-AT	1-1/2" (38 mm) Slip Joint Coupling Assembly RB (Model 152)
12B.	0306054	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.	0306059	F-2-AU	1-1/4" (32 mm) Slip Joint Coupling Assembly RB (Model 152)
14B.	0306088	F-2-AT	1-1/2" (38 mm) Slip Joint Coupling Assembly RB (Model 152)
15.	0306091	F-2-A	1-1/2" (38 mm) Coupling with S-21 Gasket (Model 152)†
16.	0206146PK	F-21	1-1/2" (38 mm) Double Male Slip Joint Elbow
17.	0306366	F-15-A	ELL with 3/4" (19 mm) Tail (Model 195)†
18.	0306054	F-2-AW	3/4" (19 mm) Slip Joint Coupling
19.	0334017	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.	0318123	HY-71-A	Hydraulic Actuator Assembly
23.	0305190	EL-190-A	Handle Adapter Assembly

† "L" Dimension available between the lengths of 2" and 10 3/4"
‡ 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"	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

Sensor Flushometers