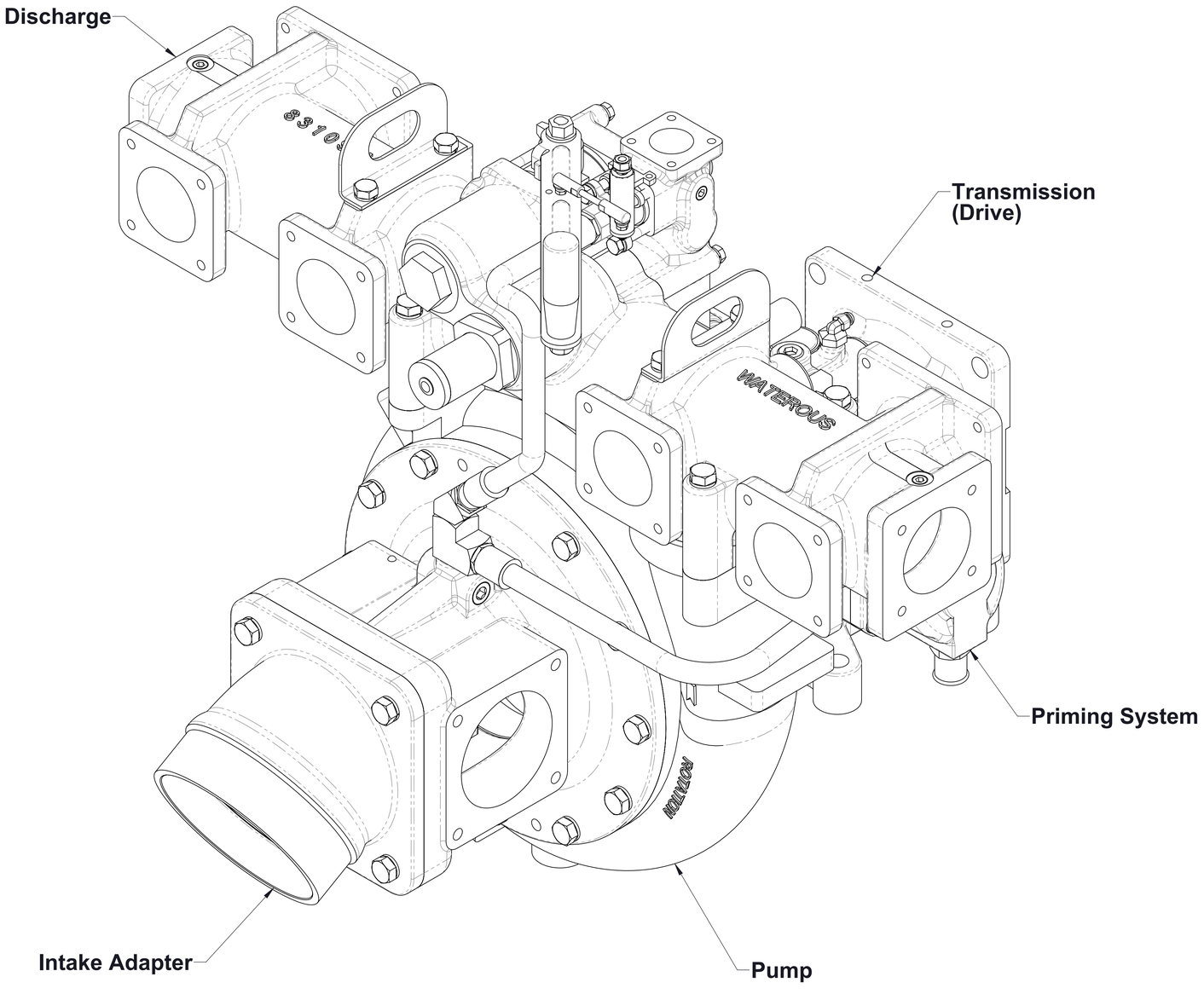
WATEROUS

Document Number	Issue Date	Rev. Date
SPL83155	09/27/11	04/16/24

HL400 Series Fire Pump
Service Parts List



Index:					
Component			See Pages		
			Complete Pump and Transmission Model (Located on pump serial plate)		
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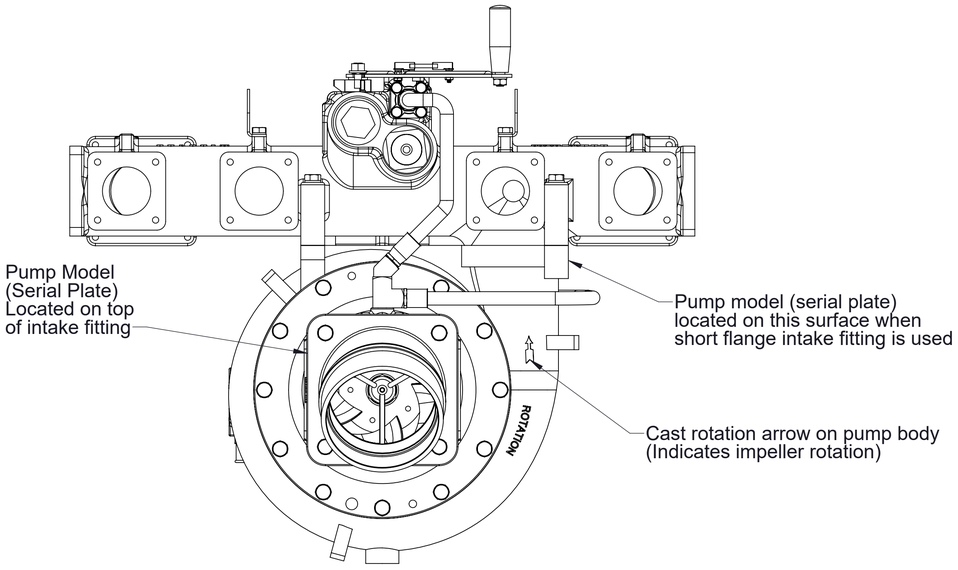
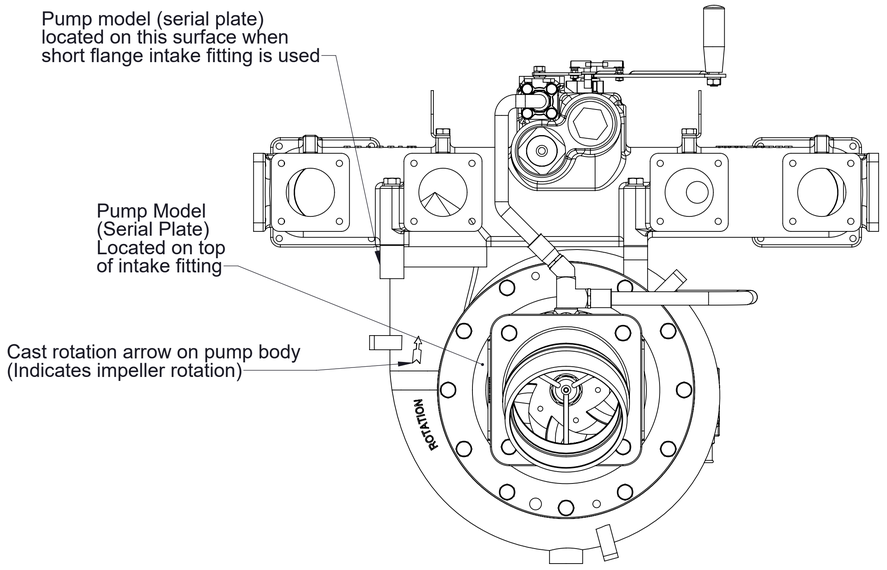
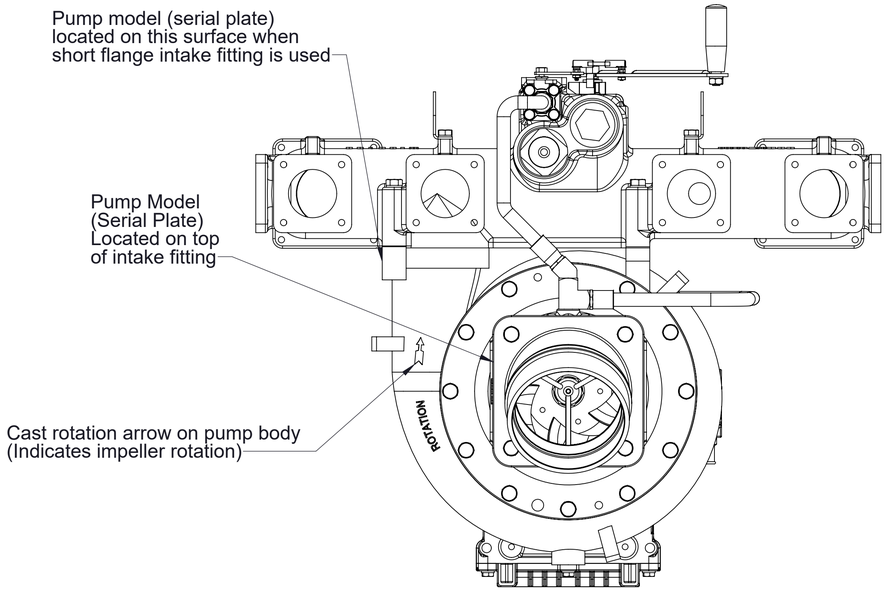


Clockwise (CW) Input Rotation
Counter-clockwise (CCW) impeller rotation

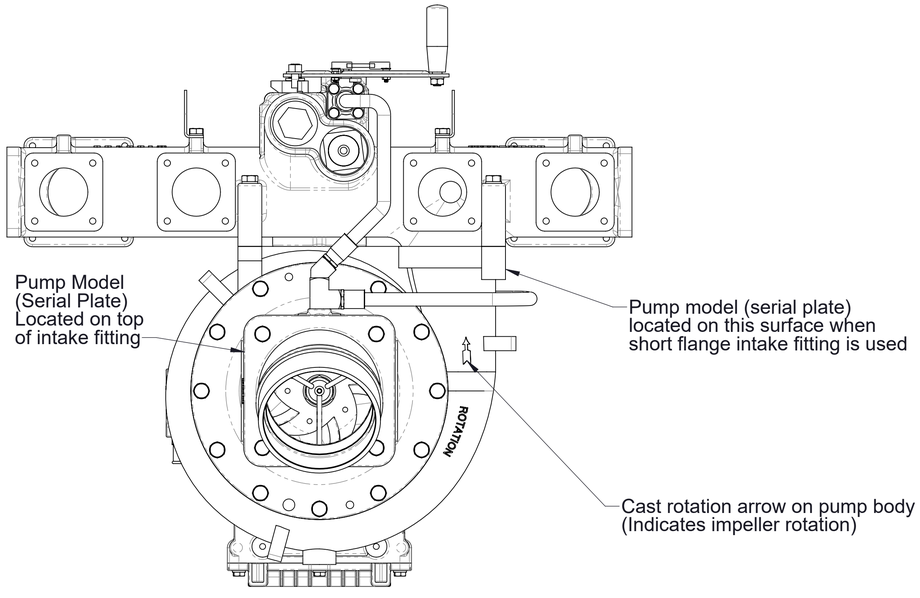


Counter-Clockwise (CCW) Input Rotation
Clockwise (CW) impeller rotation

Model HL400D



Clockwise (CW) Input Rotation
Clockwise (CW) impeller rotation



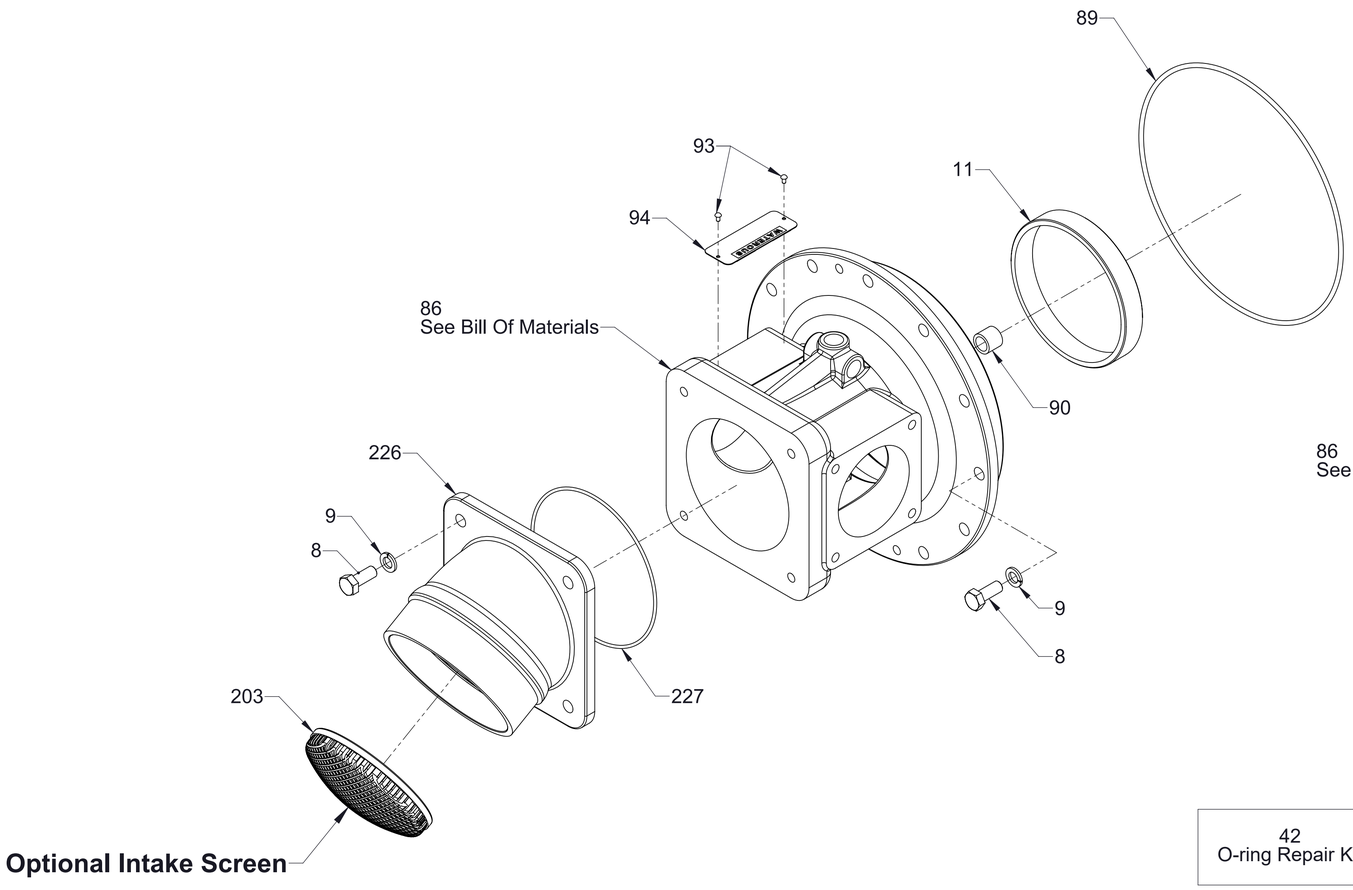
Counter-Clockwise (CCW) Input Rotation
Counter-clockwise (CCW) impeller rotation

Model HL400K

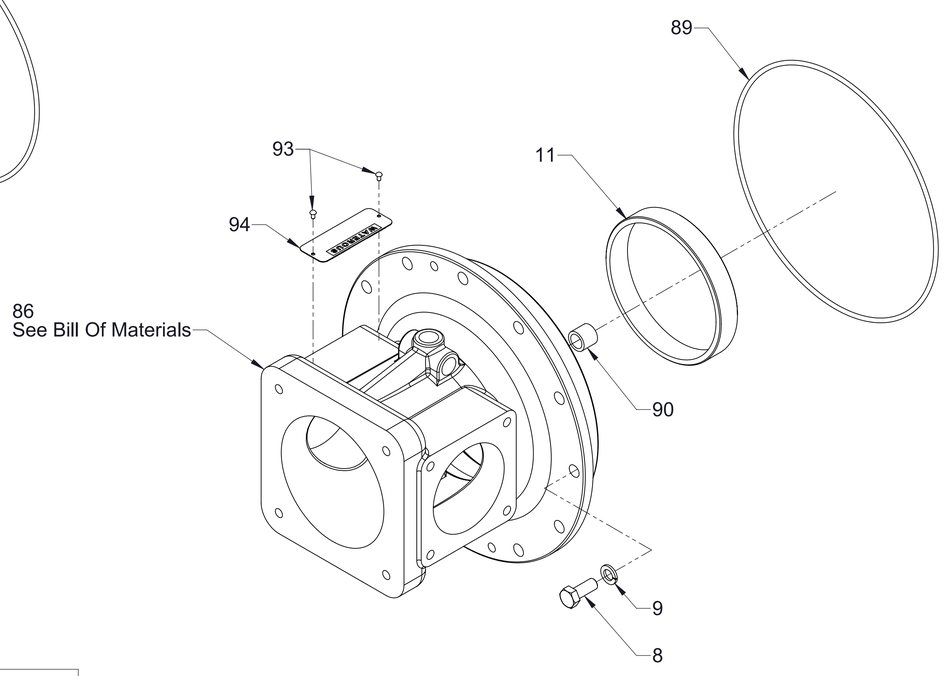
Determining Pump Model and Input Rotation

- The pump configuration and components vary for each pump model and input rotation.
- The input rotation of the drive end of the pump determines the direction the pump impeller rotates.
- Use the pump model and input rotation when referring to pages listed in the index.
- If you are unsure of the input rotation of your pump, the cast rotation arrow on the pump body can be used to determine which rotation configuration you have. The pump model can be obtained from the serial plate attached to the pump intake fitting.
- Compare your pump to the diagrams on this page.

Ref No.	Description
8	Screw-Hex Hd, M12-1.75 x 30 mm
9	Washer-Lock, 12 mm
11	Ring-Wear
42	O-Ring Repair Kit (Includes 44, 45, 81, 82, 89, 95, 119, 255 plus o-rings for intake and discharge fittings, see reference number 42 on SPL83156)
86	Intake Fitting Assembly (Includes 11, 90, 93, 94)
89	O-Ring, 11 x 11-3/8 in
90	Bearing-Out Board
93	Screw-Drive, #6 x 1/4 in
94	Plate-Serial
203	Screen-Intake
226	Fitting-Intake, 6 in, 30°
227	O-Ring, 6-3/4 x 7 in



Single Threaded Inlet

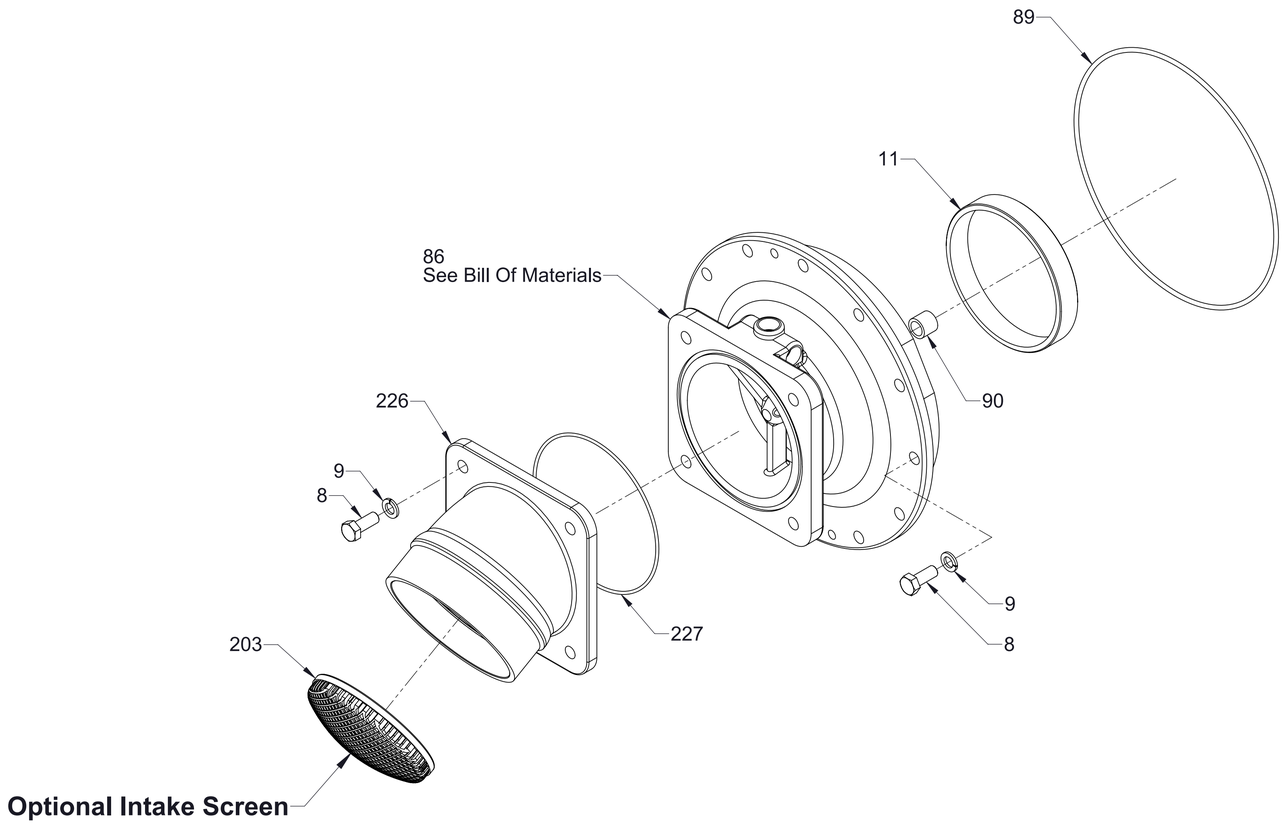


Single 4-Bolt Flanged Inlet

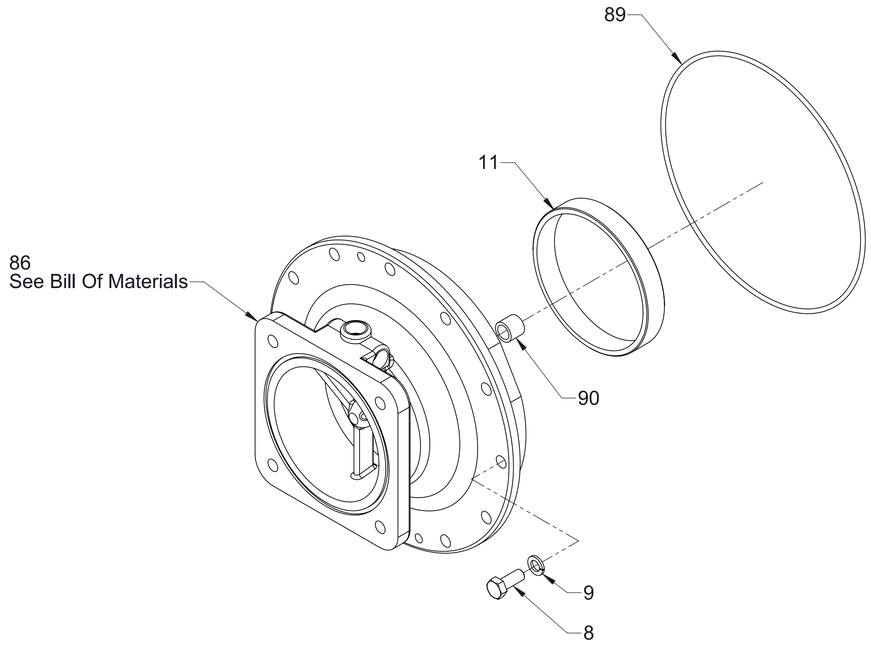
42
O-ring Repair Kit

Intake Adapter
All models

Ref No.	Description
8	Screw-Hex Hd, M12-1.75 x 30 mm
9	Washer-Lock, 12 mm
11	Ring-Wear
42	O-Ring Repair Kit (Includes 44, 45, 81, 82, 89, 95, 119, 255 plus o-rings for intake and discharge fittings, see reference number 42 on SPL83156)
86	Intake Fitting Assembly (Includes 11, 90, 93, 94)
89	O-Ring, 11 x 11-3/8 in
90	Bearing-Out Board
93	Screw-Drive, #6 x 1/4 in
94	Plate-Serial
203	Screen-Intake, 6 in
226	Fitting-Intake, 6 in, 30°
227	O-Ring, 6-3/4 x 7 in

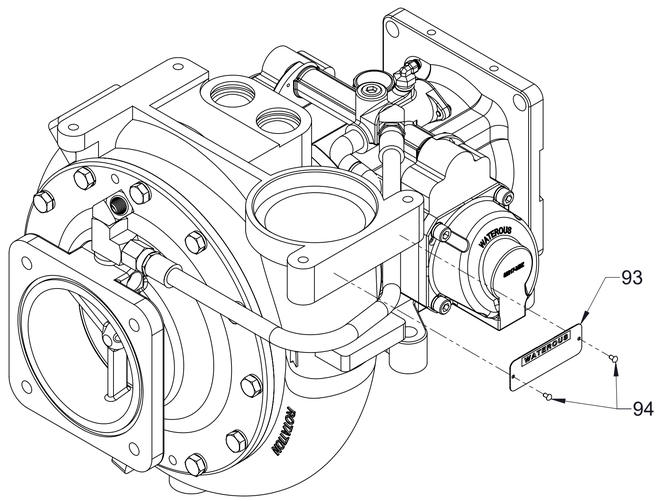


Single Threaded Inlet

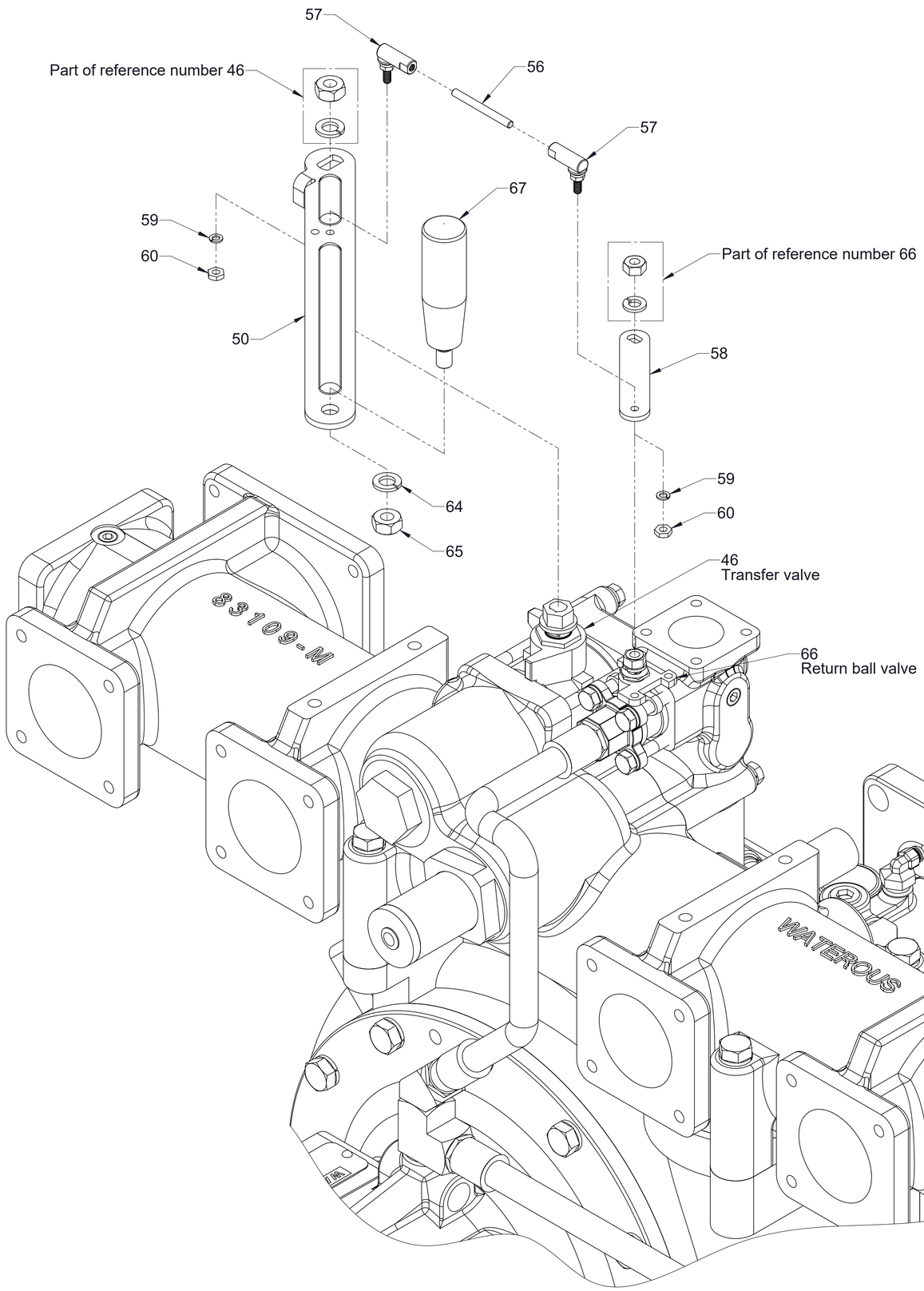


Single 4-Bolt Flanged Inlet

42
O-ring Repair Kit

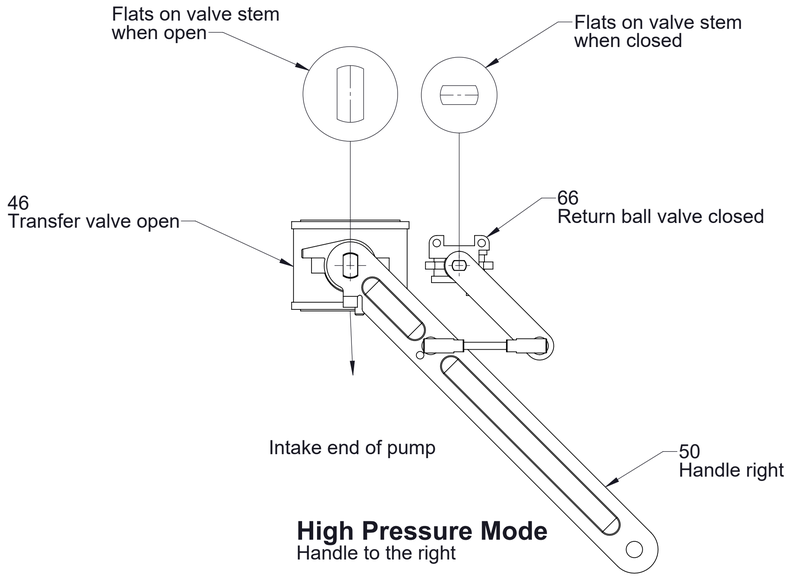


Intake Adapter
All models

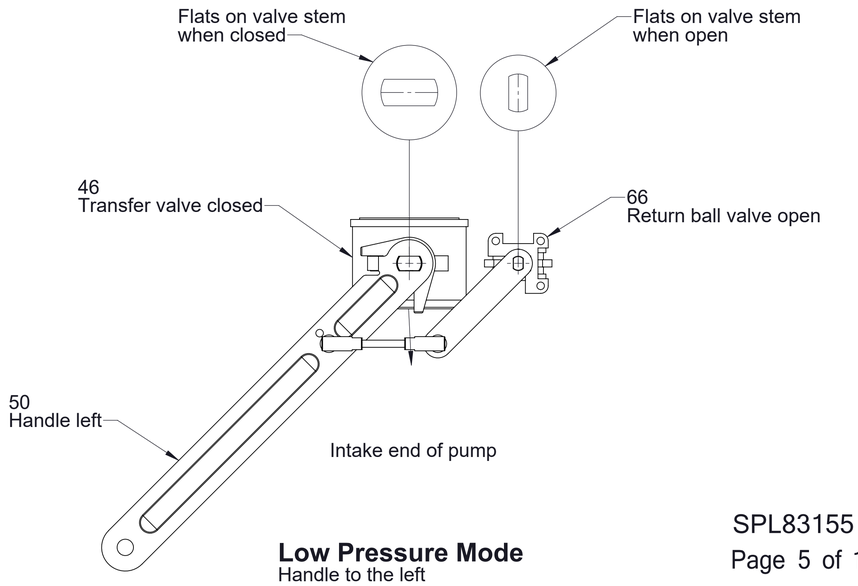


Discharge-Crossover Valve
HL400D - CW input rotation (CCW impeller rotation)
HL400K - CCW input rotation (CCW impeller rotation)

Ref No.	Description
46	Transfer Valve, 1-1/2 in (Includes 7/16-14 UNC Hex Nut and Lockwasher)
50	Handle-Crossover Valve
56	Stud-Fine, #10-32 x 2 in
57	Linkage-Ball Joint, Right Angle
58	Handle-Recirculation (CCW Rotation)
59	Washer-Lock, Med-Spring, #10
60	Nut-Hex, Machine, #10-32
64	Washer-Lock, 10 mm
65	Nut-Hex, M10-1.5
66	Ball Valve, 1/2 in NPT (Includes 3/8-16 UNC Hex Nut and Lockwasher)
67	Handle
144	Washer, 5 mm

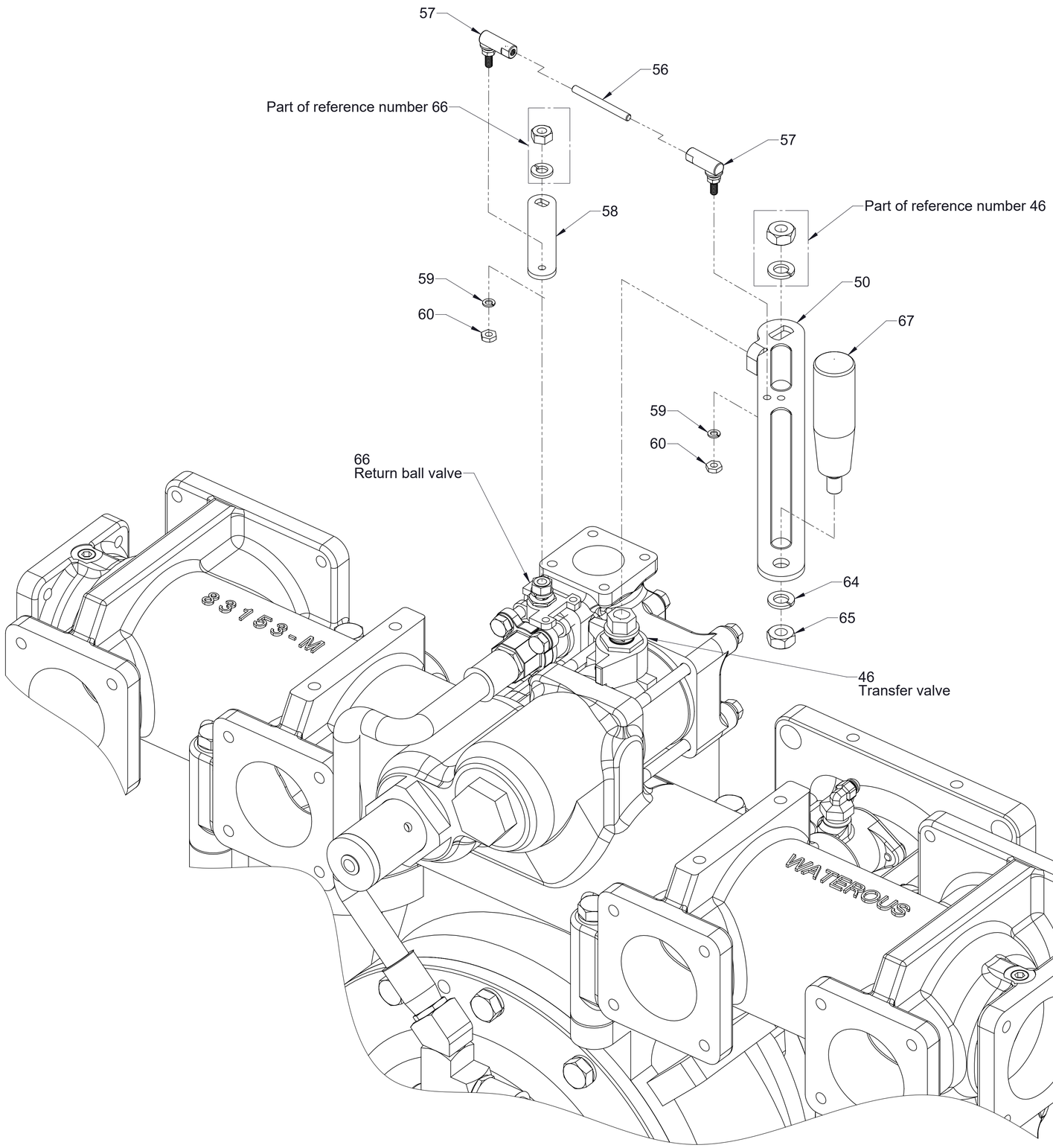


High Pressure Mode
Handle to the right

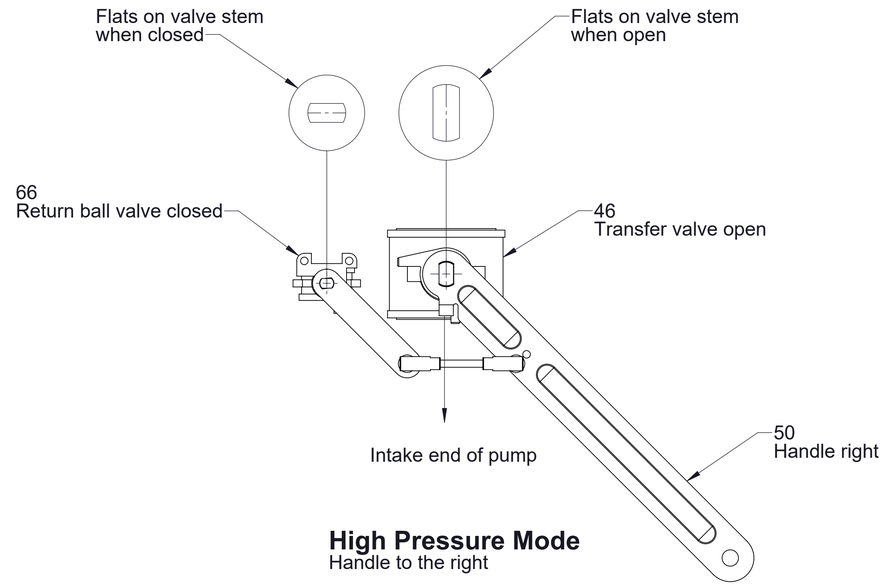


Low Pressure Mode
Handle to the left

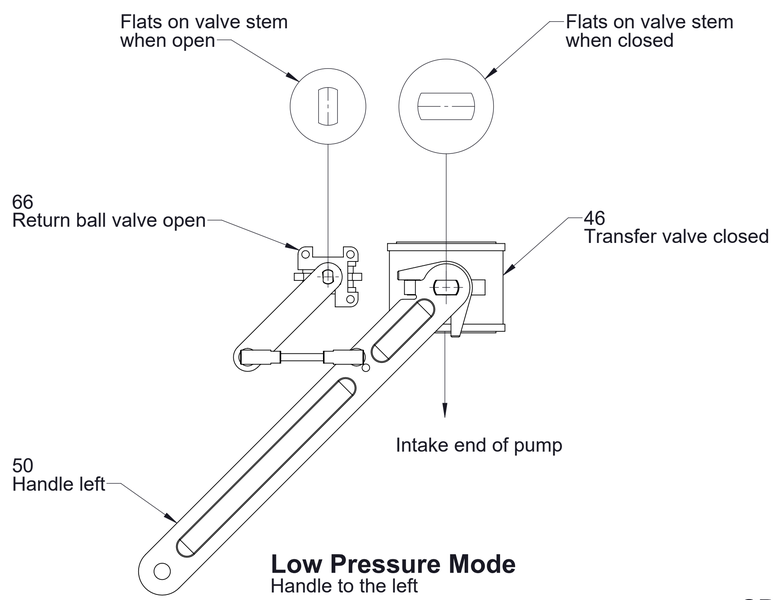
Ref No.	Description
46	Transfer Valve, 1-1/2 in (Includes 7/16-14 UNC Hex Nut and Lockwasher)
50	Handle-Crossover Valve
56	Stud-Fine, #10-32 x 2 in
57	Linkage-Ball Joint, Right Angle
58	Handle-Recirculation (CW Rotation)
59	Washer-Lock, Med-Spring, #10
60	Nut-Hex, Machine, #10-32
64	Washer-Lock, 10 mm
65	Nut-Hex, M10-1.5
66	Ball Valve, 1/2 in NPT (Includes 3/8-16 UNC Hex Nut and Lockwasher)
67	Handle
143	Washer, 5 mm
144	O-Ring, 3/4 x 1 in



Discharge-Crossover Valve
HL400D - CCW input rotation (CW impeller rotation)
HL400K - CW input rotation (CW impeller rotation)



High Pressure Mode
Handle to the right

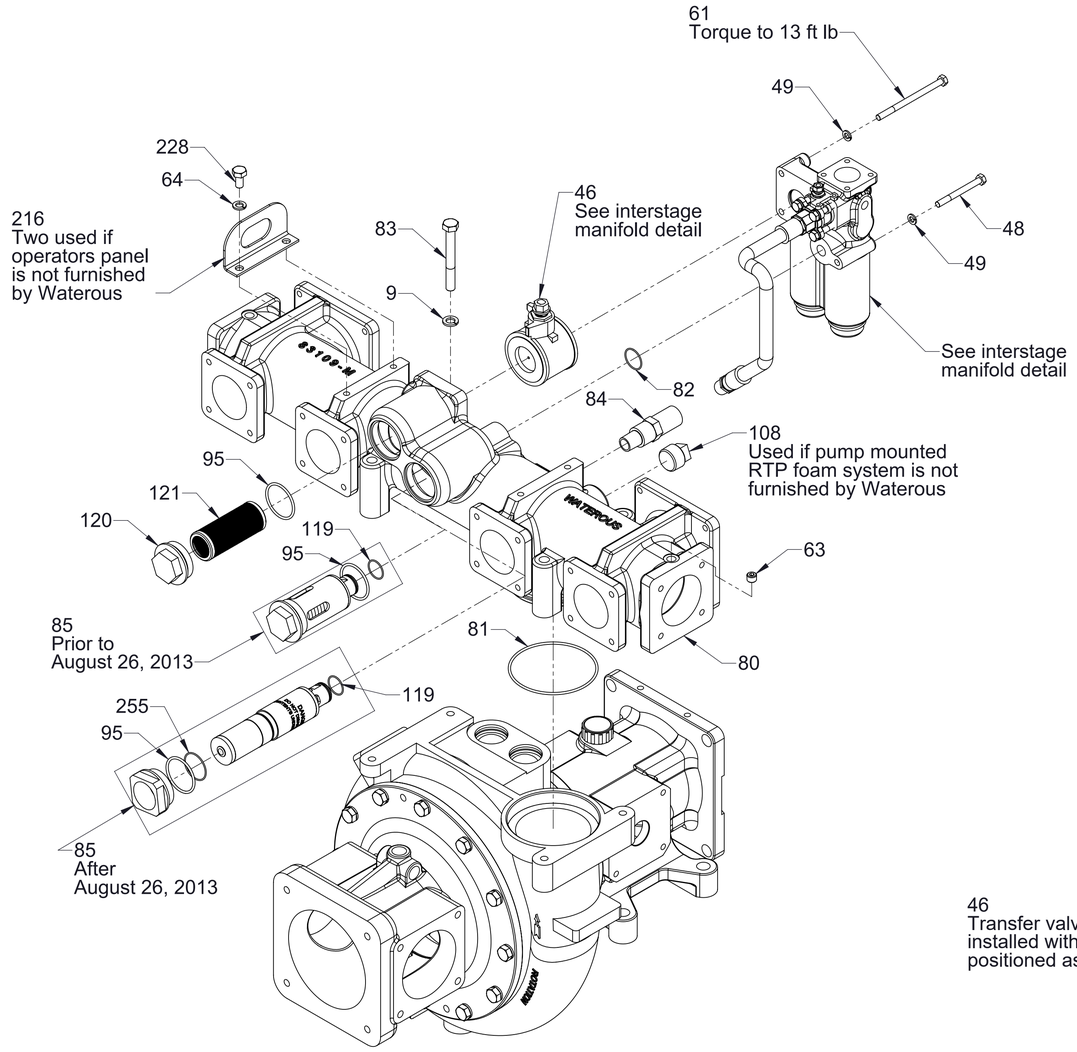


Low Pressure Mode
Handle to the left

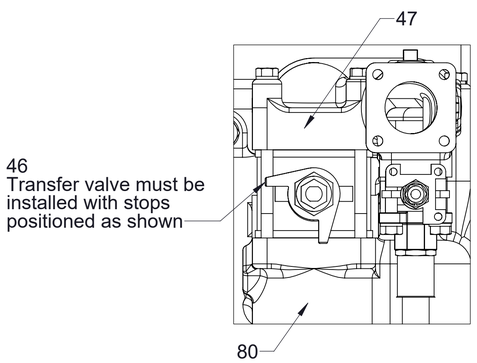
Ref No.	Description
9	Washer-Lock, 12 mm
42	O-Ring Repair Kit (Includes 44, 45, 81, 82, 89, 95, 119, 255 plus o-rings for intake and discharge fittings, see reference number 42 on SPL83156)
45	O-Ring, 1-3/4 x 2 in
46	Valve-Ball, 1-1/2 in (Includes 7/16-14 UNC Hex Nut and Lockwasher)
47	Manifold-Interstage
48	Screw-Hex Hd, M8-1.25 x 80 mm
49	Washer-Lock, 8 mm
53	Screw-Hex Hd, M8-1.25 x 45 mm
54	Hose Assembly
61	Screw-Hex Hd, M8-1.25 x 120 mm

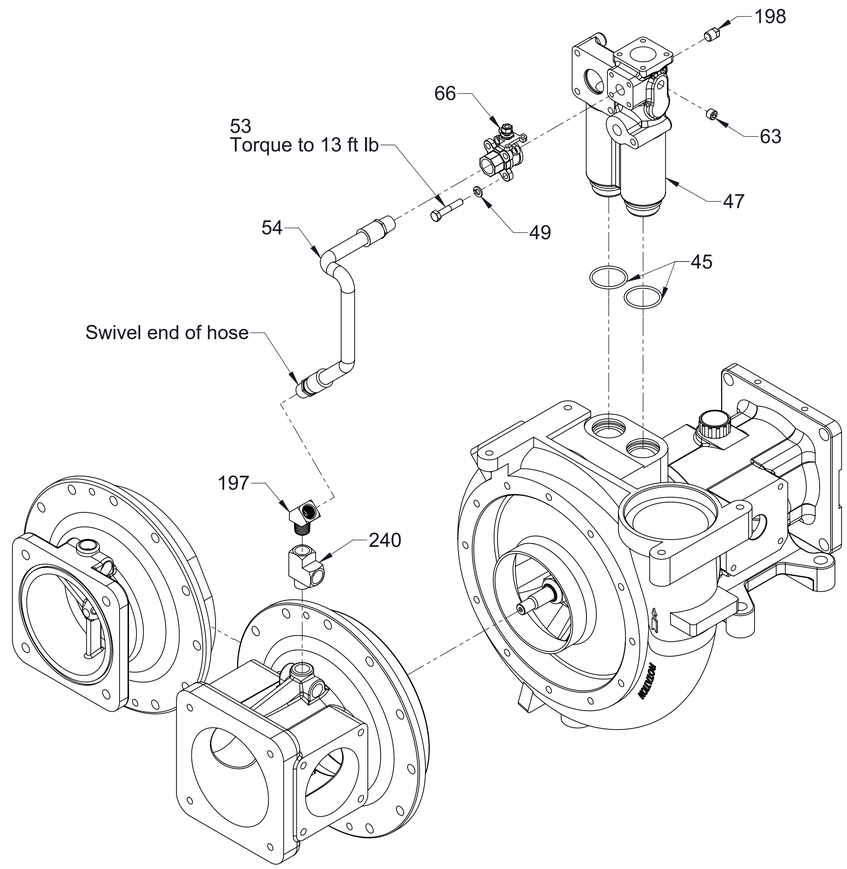
Ref No.	Description
63	Plug-Pipe, JIS, 1/4 BSPT
64	Washer-Lock, 10 mm
64	Valve-Ball, 1/2 NPT (Includes 3/8-16 UNC Hex Nut and Lockwasher)
80	Manifold-Discharge
81	O-Ring, 4-1/2 x 4-3/4 in
82	O-Ring, 1-1/8 x 1-1/4 in
83	Screw-Hex Hd, M12-1.75 x 100 mm
84	Valve-Thermal Relief
85	Discharge Relief Valve Assembly (Includes 95, 119)
95	O-Ring, 1-7/8 x 2-1/8 in

Ref No.	Description
108	Plug-Pipe, Square Hd, 1 NPT
119	O-Ring, 1 x 1-1/8 in
120	Cap-End, Strainer
121	Strainer
197	Elbow-Street, 45°, 1/2 NPT
198	Plug-Pipe, Square Hd, 1/4 NPT
216	Bracket-Lifting
228	Screw-Hex Hd, M10-1.5 x 20 mm
240	Tee-Street, 1/2 NPT
255	O-Ring, 1-1/2 x 1-5/8 in



42
O-ring Repair Kit





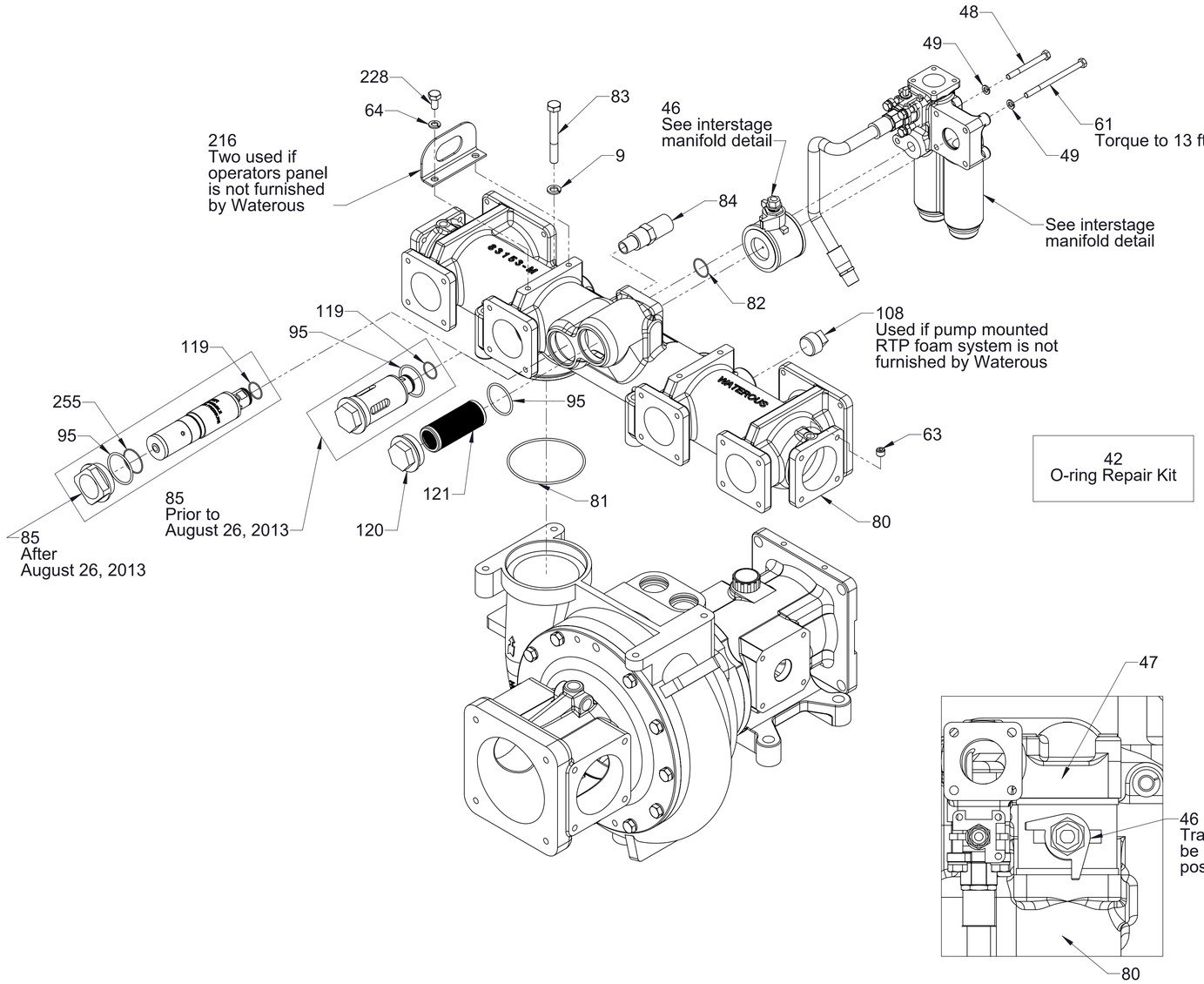
Interstage Manifold Detail

Discharge-Manifold
HL400D - CW input rotation (CCW impeller rotation)
HL400K - CCW input rotation (CCW impeller rotation)

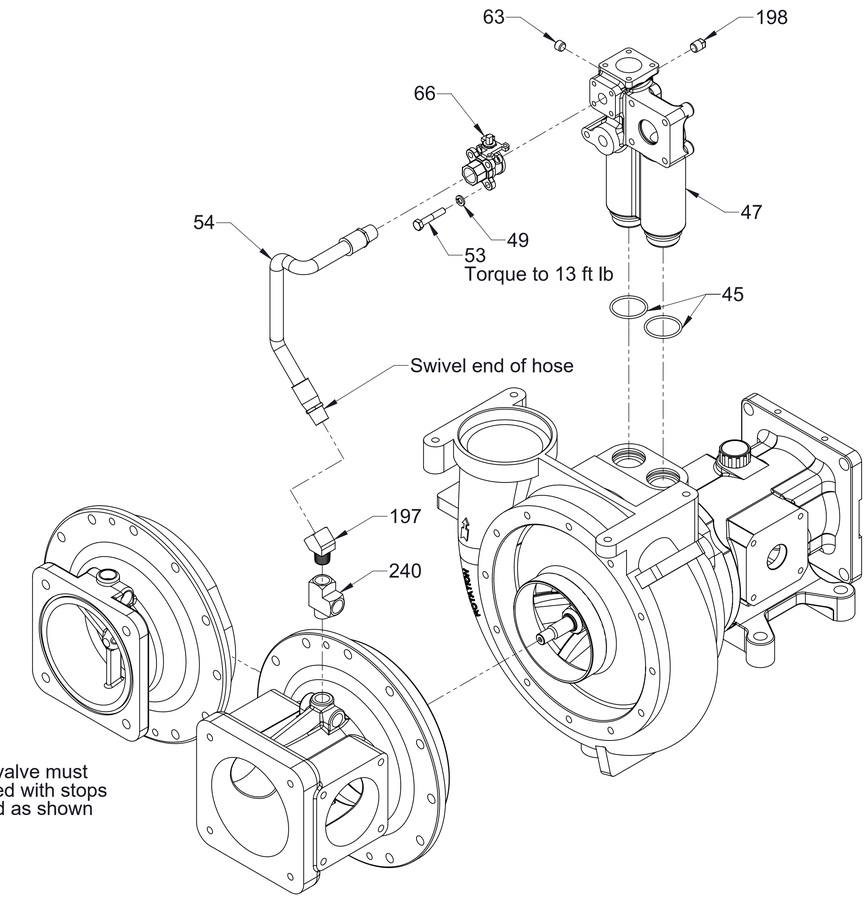
Ref No.	Description
9	Washer-Lock, 12 mm
42	O-Ring Repair Kit (Includes 44, 45, 81, 82, 89, 95, 119, 255 plus o-rings for intake and discharge fittings, see reference number 42 on SPL83156)
45	O-Ring, 1-3/4 x 2 in
46	Valve-Ball, 1-1/2 in (Includes 7/16-14 UNC Hex Nut and Lockwasher)
47	Manifold-Interstage (CW)
48	Screw-Hex Hd, M8-1.25 x 80 mm
49	Washer-Lock, 8 mm
53	Screw-Hex Hd, M8-1.25 x 45 mm
54	Hose Assembly
61	Screw-Hex Hd, M8-1.25 x 120 mm

Ref No.	Description
63	Plug-Pipe, JIS, 1/4 BSPT
64	Washer-Lock, 10 mm
66	Valve-Ball, 1/2 NPT (Includes 3/8-16 UNC Hex Nut and Lockwasher)
80	Manifold-Discharge (CW)
81	O-Ring, 4-1/2 x 4-3/4 in
82	O-Ring, 1-1/8 x 1-1/4 in
83	Screw-Hex Hd, M12-1.75 x 100 mm
84	Valve-Thermal Relief
85	Discharge Relief Valve Assembly (Includes 95, 119)
95	O-Ring, 1-7/8 x 2-1/8 in

Ref No.	Description
108	Plug-Pipe, Square Hd, 1 NPT
119	O-Ring, 1 x 1-1/8 in
120	Cap-End, Strainer
121	Strainer
197	Elbow-Street, 45°, 1/2 NPT
198	Plug-Pipe, Square Hd, 1/4 NPT
216	Bracket-Lifting
228	Screw-Hex Hd, M10-1.5 x 20 mm
240	Tee-Street, 1/2 NPT
255	O-Ring, 1-1/2 x 1-5/8 in



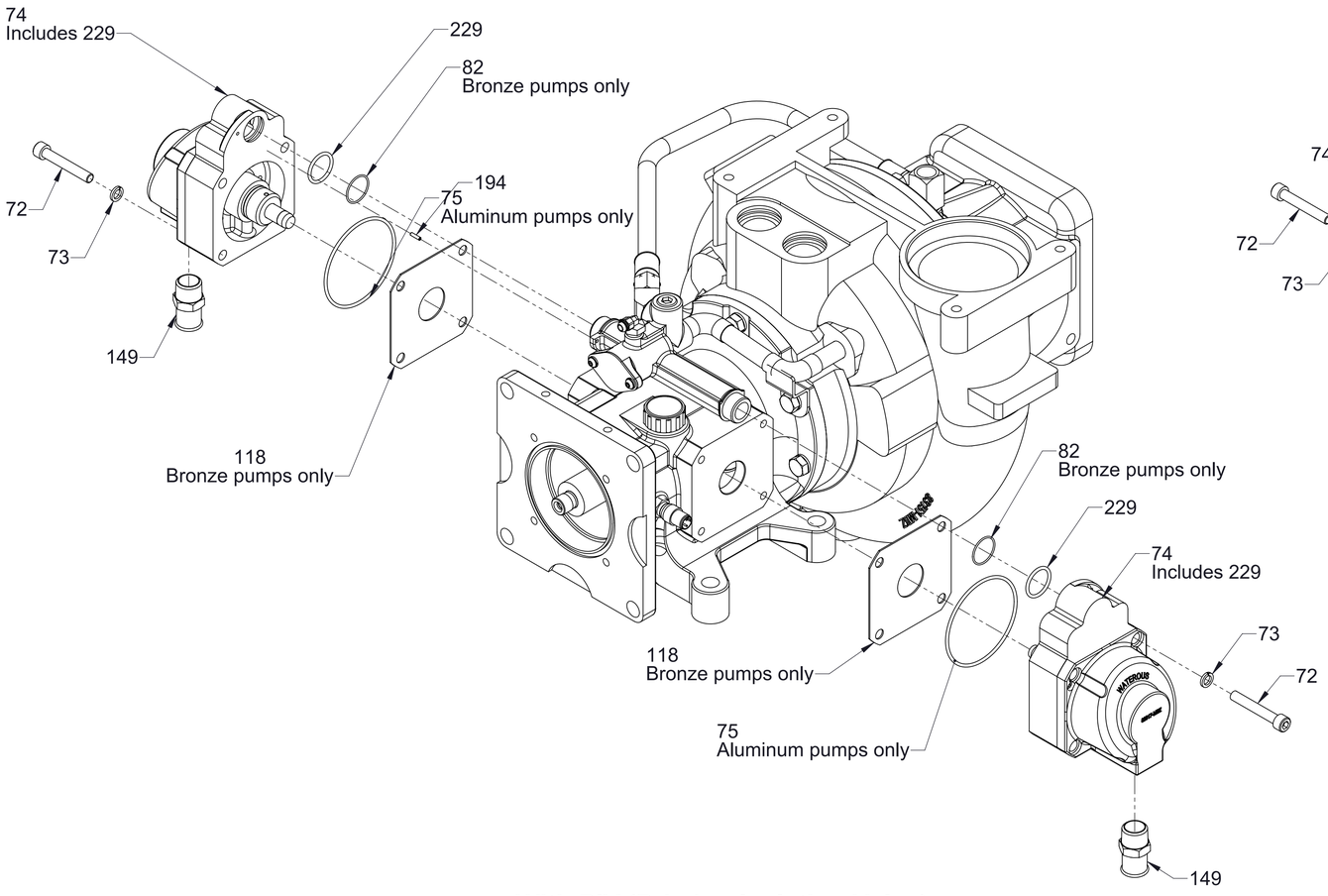
42
O-ring Repair Kit



Interstage Manifold Detail

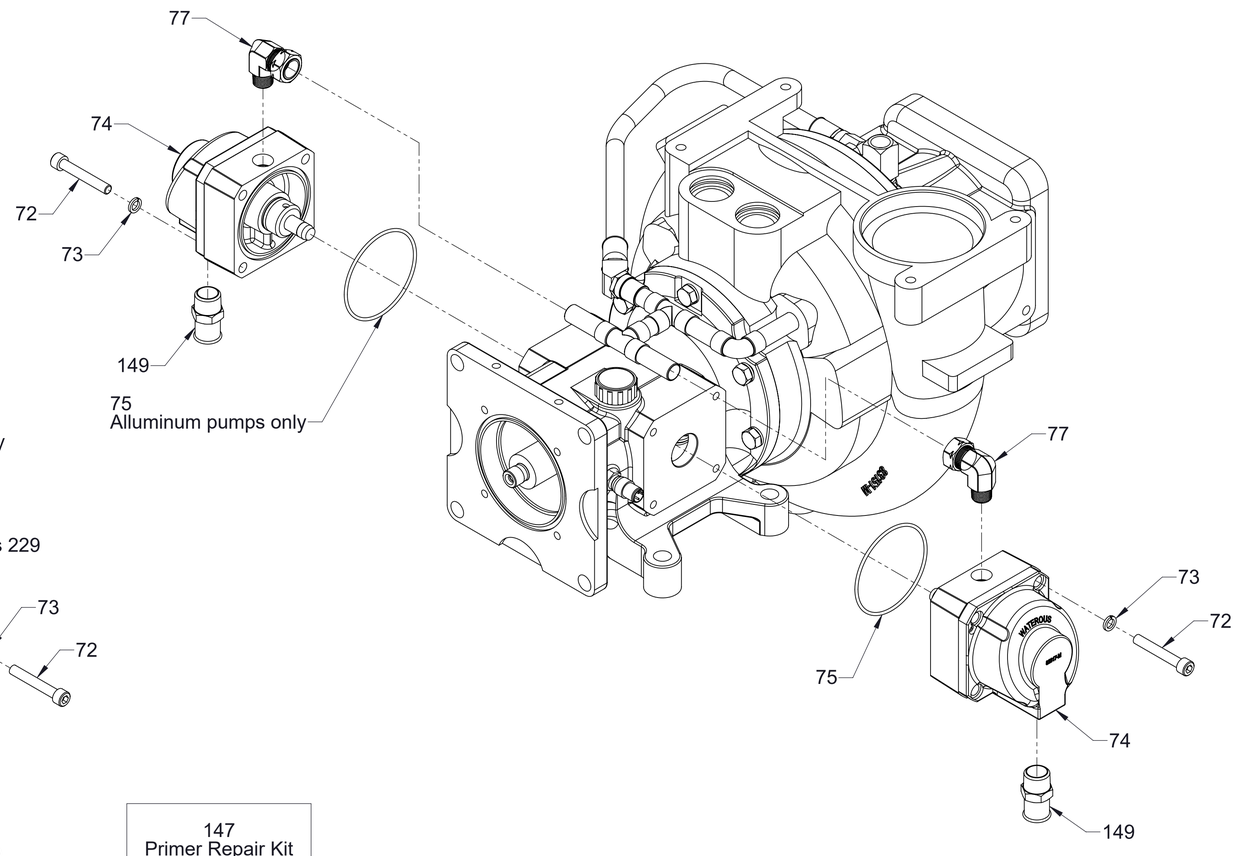
Discharge-Manifold
HL400D - CCW input rotation (CW impeller rotation)
HL400K - CW input rotation (CW impeller rotation)

Ref No.	Description
72	Screw-Soc Hd, M10-1.5 x 65 mm
73	Washer-Lock, High Collar, 10 mm
74	Piston Primer Assembly (Includes 229)
75	O-Ring, 3-3/4 X 4 in
77	Elbow-Male, 1/2 NPT X 3/4 Tube
82	O-Ring, 1-1/8 x 1-1/4 in
118	Gasket-Priming Module
147	Piston Primer Repair Kit
149	Fitting-Hose Barb, 3/4 NPT X 1 Hose
194	Pin-Spring, 1/8 x 5/8 in
229	O-Ring, 1-1/8 x 1-3/8 in



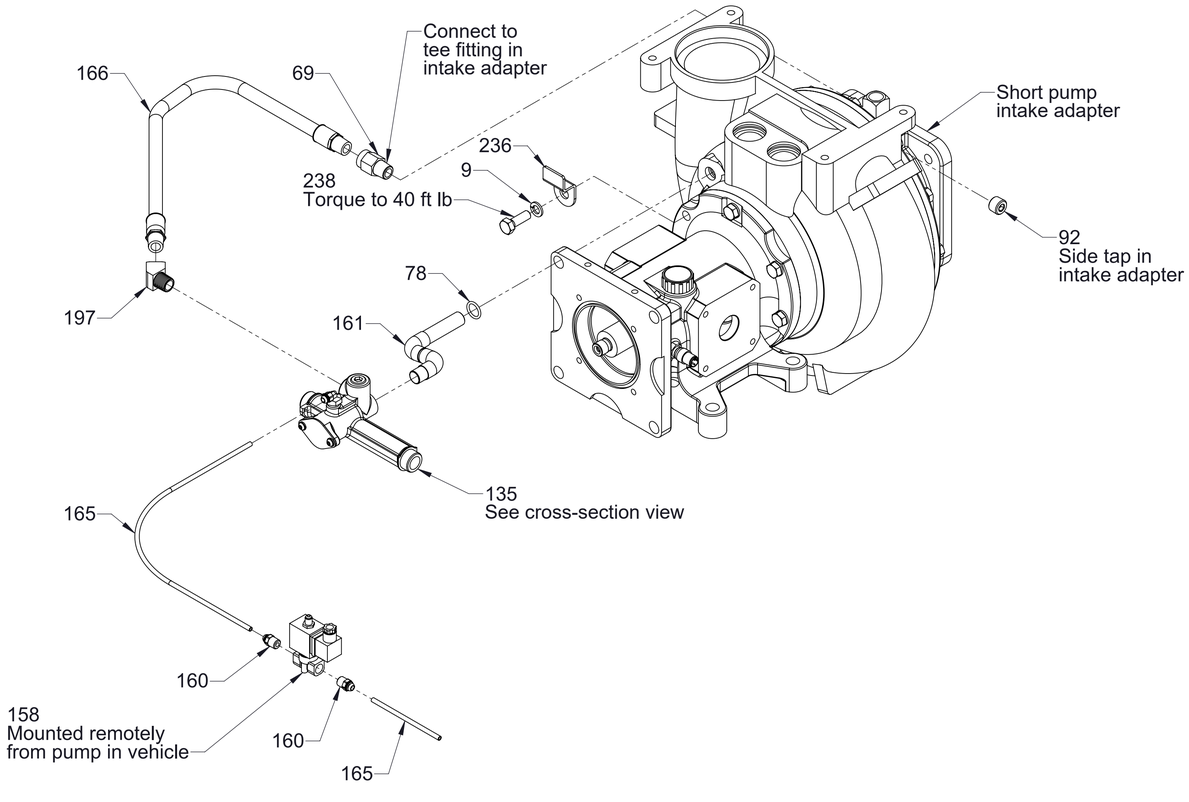
With PIV (Priming Isolation Valve)

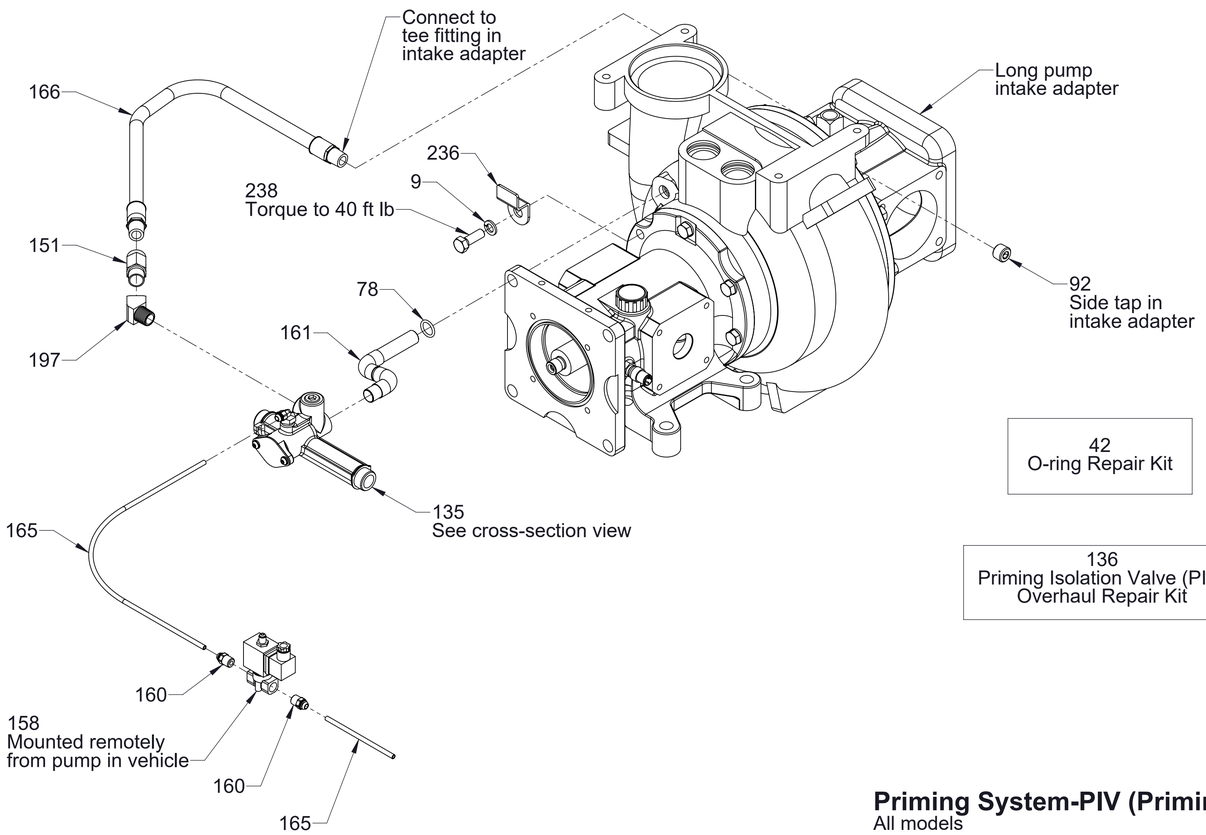
147
Primer Repair Kit



Without PIV (Priming Isolation Valve)

Priming System-Primers
All models

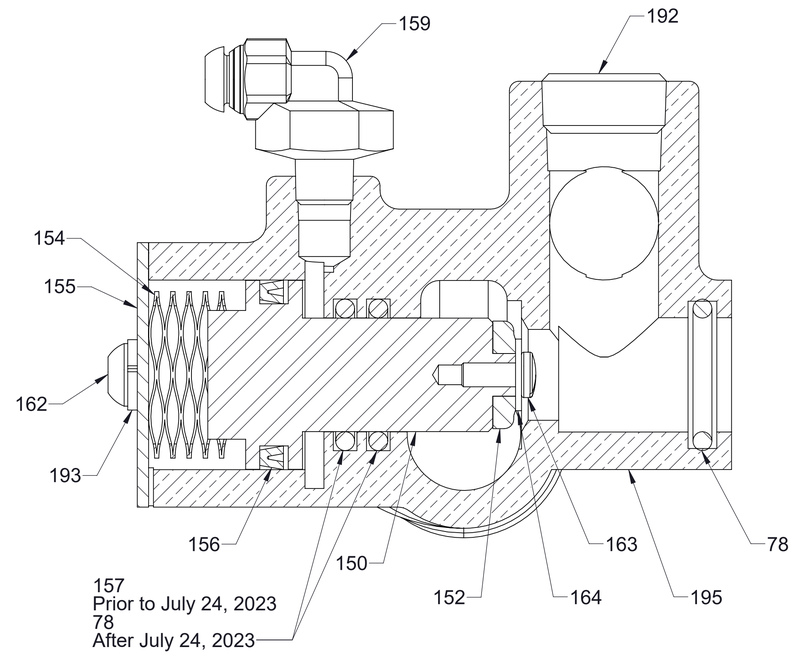




42
O-ring Repair Kit

136
Priming Isolation Valve (PIV)
Overhaul Repair Kit

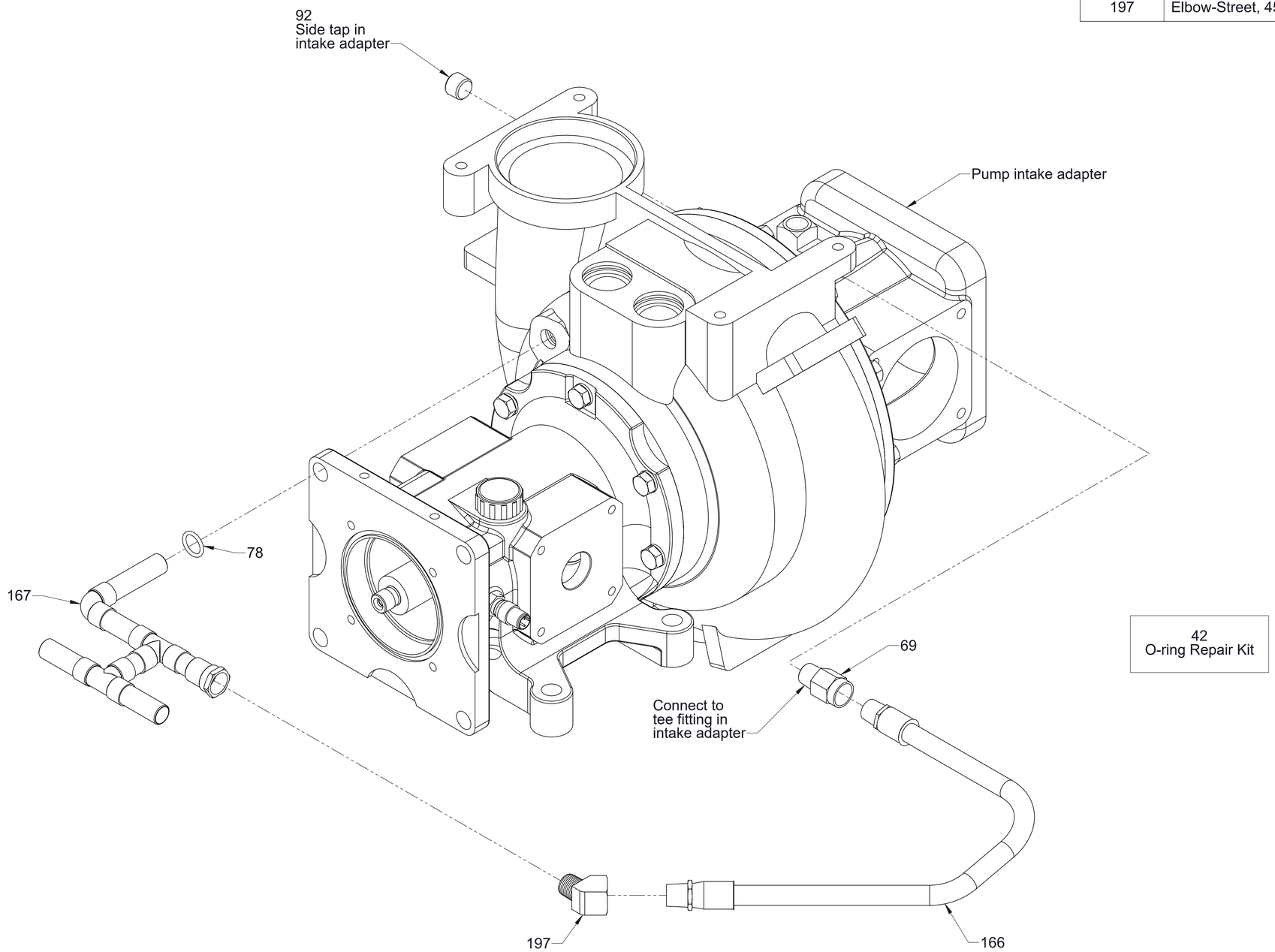
Ref No.	Description
9	Washer-Lock, 12 mm
42	O-Ring Repair Kit (Includes 44, 45, 81, 82, 89, 95, 119, 255 plus o-rings for intake and discharge fittings, see reference number 42 on SPL83156)
69	Valve-Check, Primer
78	O-Ring, 3/4 x 1 in
135	Priming Isolation Valve (PIV) Assembly (Includes 78, 150, 152, 154, 155, 156, 157, 159, 162, 163, 164, 192, 195)
136	Priming Isolation Valve (PIV) Overhaul Repair Kit (Includes 75, 78, 82, 118, 152, 154, 156, 163, 164, 229)
150	Piston-Priming Valve
151	Valve-Check, Primer
152	Seal-Priming Valve
154	Spring-Wave
155	Cover-Priming Valve
156	Seal-Piston
157	Seal-Rod
158	Valve-Solenoid, 3-Way, 1/4 NPT, 12V
159	Connector-Elbow, 90°, 6 mm Tube X 1/8 BSPT
160	Connector-Male, 6 mm Tube x 1/4 BSPT
161	Tube-Priming
162	Screw-Soc Button Hd, M6-1 x 12 mm
163	Screw-Pan Hd, M4-.7 x 10 mm
164	Washer, 4 mm
165	Tube-Nylon, Metric
166	Hose Assembly
192	Plug-Pipe, JIS, 1/2 BSPT
193	Washer-Lock, 6 mm
195	Valve-Priming, Body
197	Elbow-Street, 45°, 1/2 NPT
236	Clip-PIV Priming Tube
238	Screw-Hex Hd, M12-1.75 x 35 mm



Priming System-PIV (Priming Isolation Valve)-With
All models

Reference Number 135
Cross-Section View

Ref No.	Description
42	O-Ring Repair Kit (Includes 44, 45, 81, 82, 89, 95, 119, 255 plus o-rings for intake and discharge fittings, see reference number 42 on SPL83156)
69	Valve-Check, Primer
78	O-Ring, 3/4 x 1 in
166	Hose Assembly
167	Tube-Priming (Non-PIV)
197	Elbow-Street, 45°, 1/2 NPT



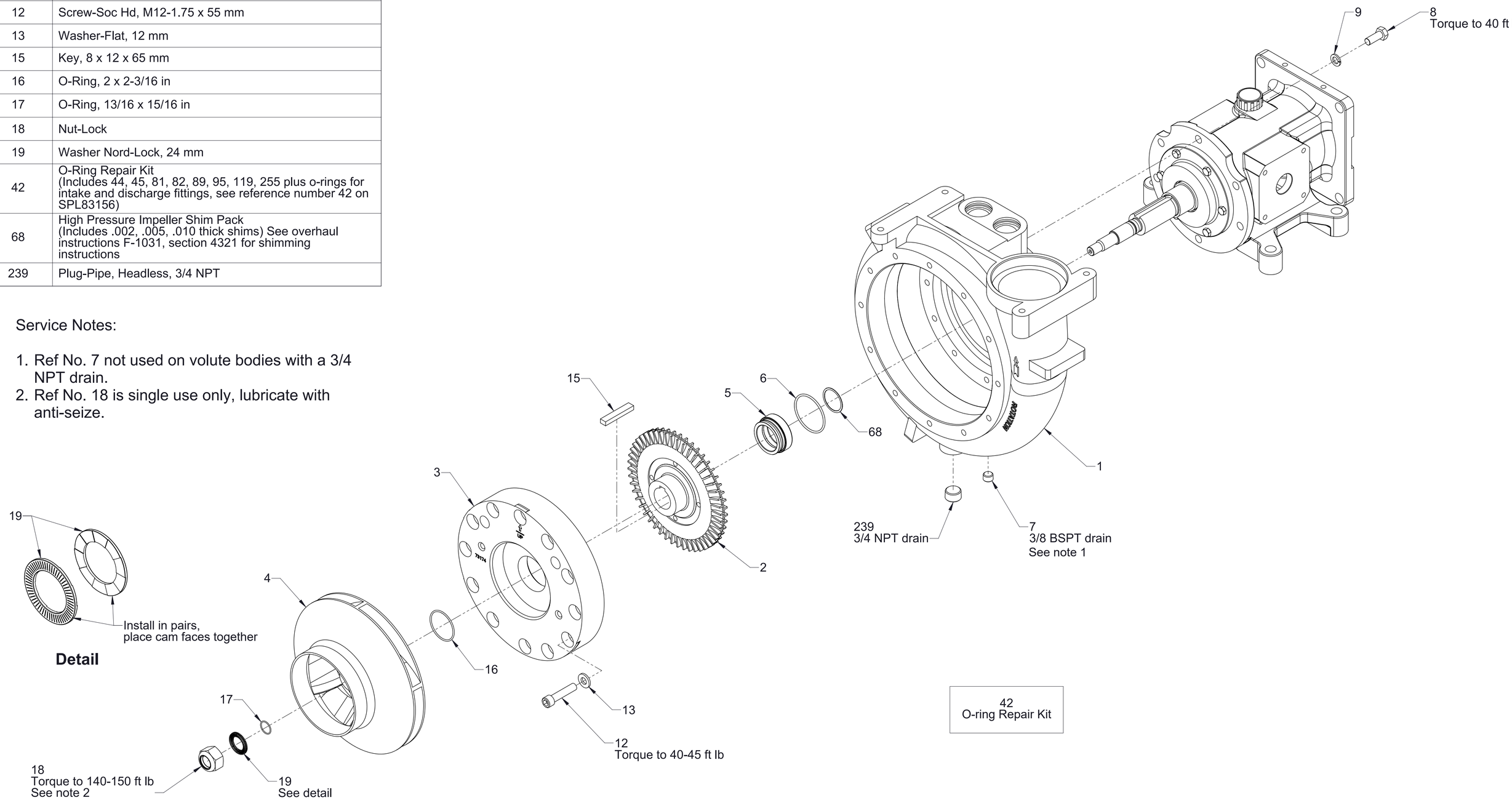
Priming System-PIV (Priming Isolation Valve)-Without
All models

Prior to April 15, 2022

Ref No.	Description
1	Body-Volute
2	Impeller-High Pressure
3	Plate-Separator (CW or CCW)
4	Impeller
5	Mechanical Seal Repair Kit (Includes 6, 16, 17, 18, 19, 68, 89)
6	O-Ring, 2-1/2 x 2-3/4 in
7	Plug-Pipe, JIS, 3/8 BSPT
8	Screw-Hex Hd, M12-1.75 x 30 mm
9	Washer-Lock, 12 mm
12	Screw-Soc Hd, M12-1.75 x 55 mm
13	Washer-Flat, 12 mm
15	Key, 8 x 12 x 65 mm
16	O-Ring, 2 x 2-3/16 in
17	O-Ring, 13/16 x 15/16 in
18	Nut-Lock
19	Washer Nord-Lock, 24 mm
42	O-Ring Repair Kit (Includes 44, 45, 81, 82, 89, 95, 119, 255 plus o-rings for intake and discharge fittings, see reference number 42 on SPL83156)
68	High Pressure Impeller Shim Pack (Includes .002, .005, .010 thick shims) See overhaul instructions F-1031, section 4321 for shimming instructions
239	Plug-Pipe, Headless, 3/4 NPT

Service Notes:

1. Ref No. 7 not used on volute bodies with a 3/4 NPT drain.
2. Ref No. 18 is single use only, lubricate with anti-seize.

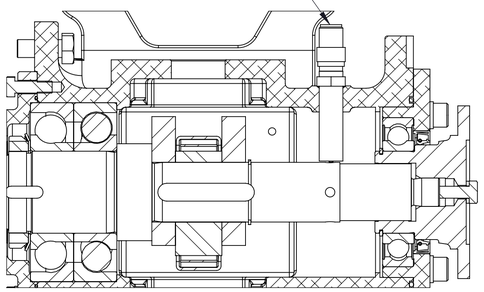


Pump-Body and Impeller
All models

Ref No.	Description
20	Housing-Oil Seal
21	Seal-Oil, 2 x 2-5/8 in
22	Nut-Lock, Bearing, N11
23	Washer-Lock, Bearing, W11
24	Bearing-Ball, Single Row
25	Shaft-Impeller
26	Counterweight-Primer
27	Key, 8 x 12 x 55 mm
28	Eccentric-Primer
30	Bearing, Ball, Single Row, 55 x 100 x 21 mm
31	Bearing - Roller, Needle
32	Pedestal
33	Plug-Straight Thread, Hex Hd, M16-1.5
34	Washer-Flat, 5/8 in
35	Seal-Oil, 2-1/2 x 3-1/4 in
36	Ring-Retaining, External, 1-9/16 in Shaft Dia

Ref No.	Description
38	Pick-Up-Magnetic, Tachometer
39	Dipstick-Oil
40	Connector-Cable Assembly
42	O-Ring Repair Kit (Includes 44, 45, 81, 82, 89, 95, 119, 255 plus o-rings for intake and discharge fittings, see reference number 42 on SPL83156)
43	Flange-Companion, 1410 Series
44	O-Ring, 124 x 128 mm
49	Washer-Lock, 8 mm
52	Screw-Hex Hd, M8-1.25 x 25 mm
64	Washer-Lock, 10 mm
225	O-Ring, 5/8 x 3/4 in
231	Screw-Soc Hd, M10-1.5 x 25 mm
232	Ring-Retaining, External, 2-5/32 in Shaft Dia
233	O-Ring, 4-3/4 x 5 in
234	Housing-Bearing
237	Screw-Hex Hd, M8-1.25 x 30 mm

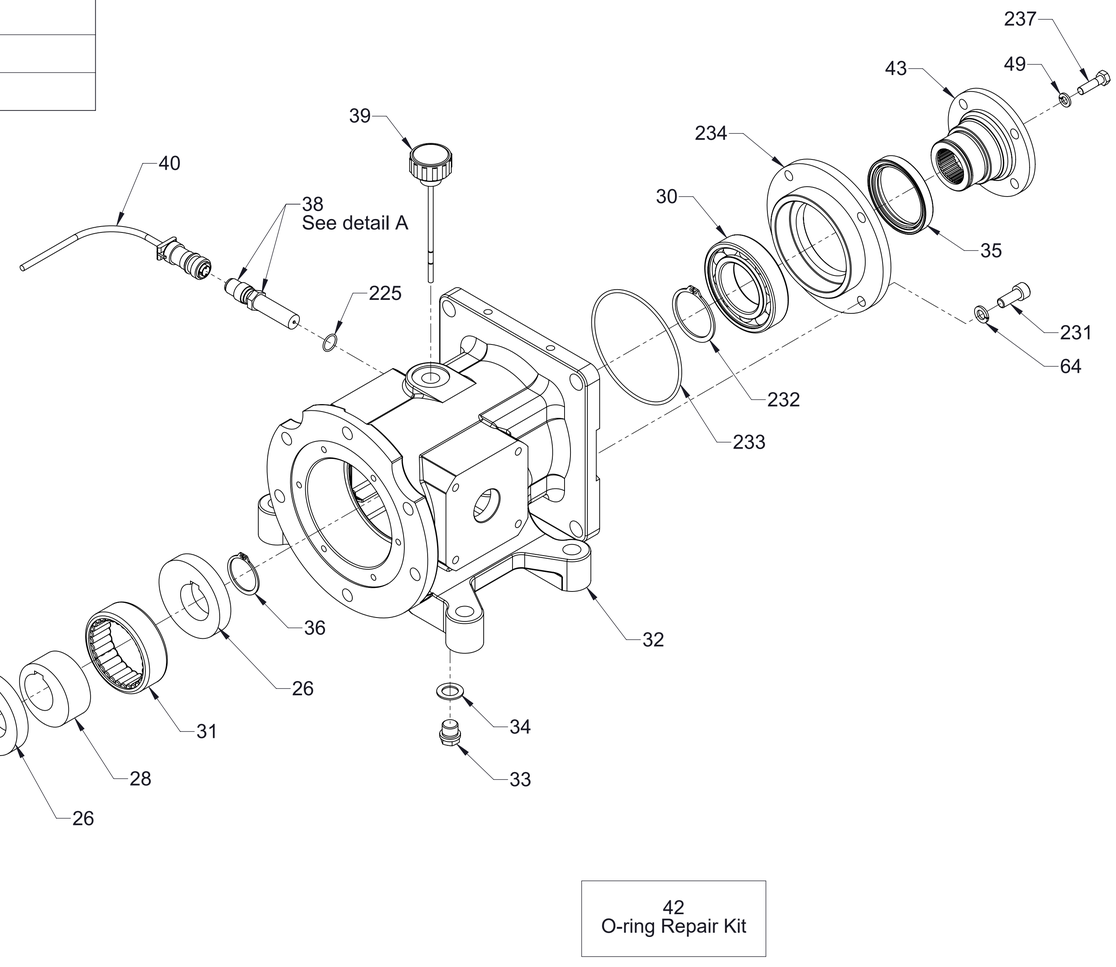
Thread into housing until contact with companion flange is made, back off 1/2 turn and tighten nut



Angular contact bearing installation

Tachometer pickup installation

Detail A

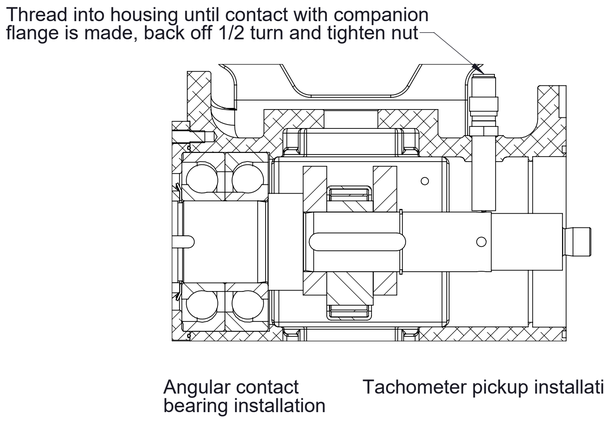


42
O-ring Repair Kit

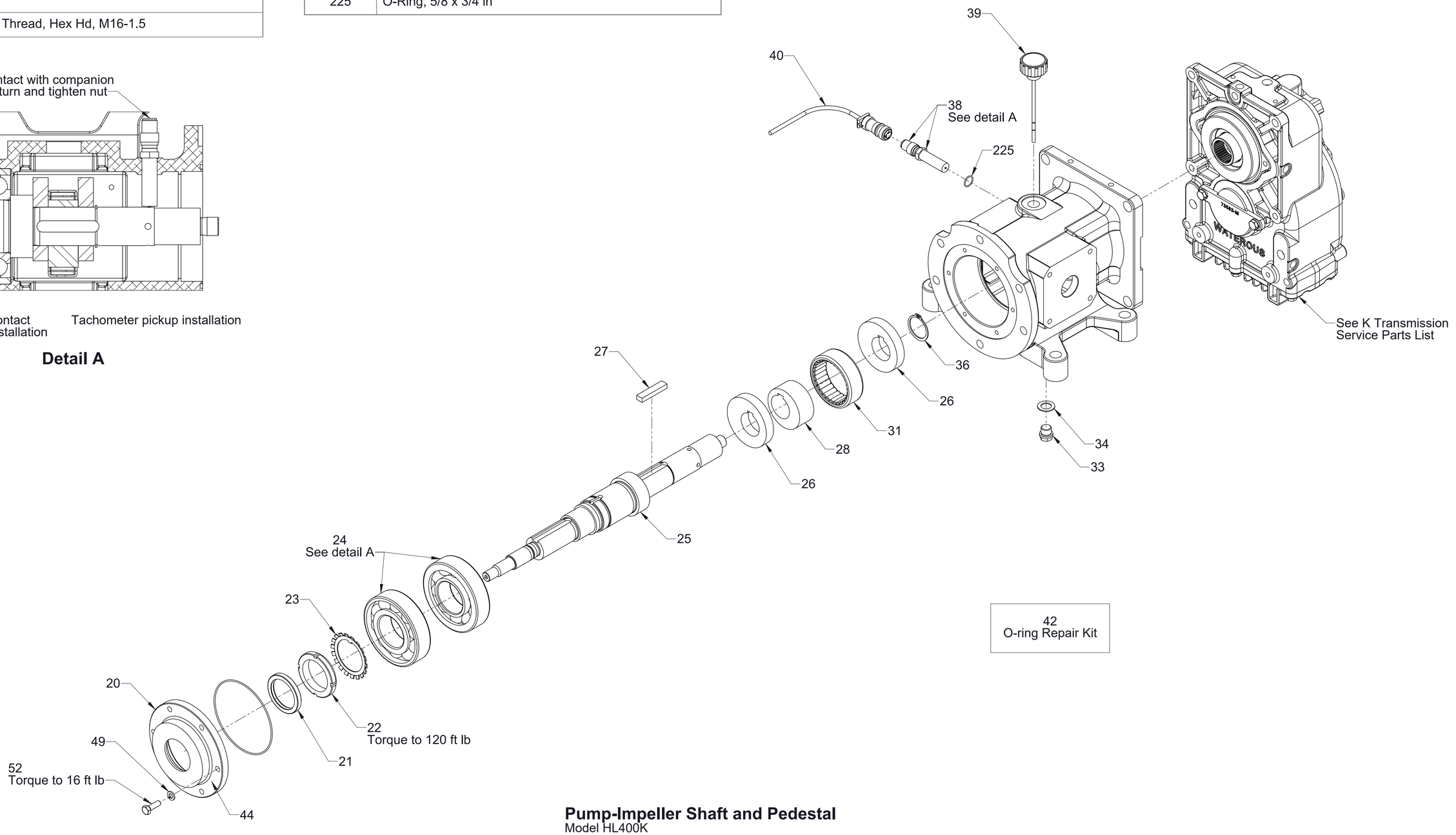
Pump-Impeller Shaft and Pedestal
Model HL400D

Ref No.	Description
20	Housing-Oil Seal
21	Seal-Oil, 2 x 2-5/8 in
22	Nut-Lock, Bearing, N11
23	Washer-Lock, Bearing, W11
24	Bearing-Ball, Single Row
25	Shaft-Impeller
26	Counterweight-Primer
27	Key, 8 x 12 x 55 mm
28	Eccentric-Primer
31	Bearing - Roller, Needle
32	Pedestal
33	Plug-Straight Thread, Hex Hd, M16-1.5

Ref No.	Description
34	Washer-Flat, 5/8 in
36	Ring-Retaining, External, 1-9/16 in Shaft Dia
38	Pick-Up-Magnetic, Tachometer
39	Dipstick-Oil
40	Connector-Cable Assembly
42	O-Ring Repair Kit (Includes 44, 45, 81, 82, 89, 95, 119, 255 plus o-rings for intake and discharge fittings, see reference number 42 on SPL83156)
44	O-Ring, 124 x 128 mm
49	Washer-Lock, 8 mm
52	Screw-Hex Hd, M8-1.25 x 25 mm
225	O-Ring, 5/8 x 3/4 in



Detail A

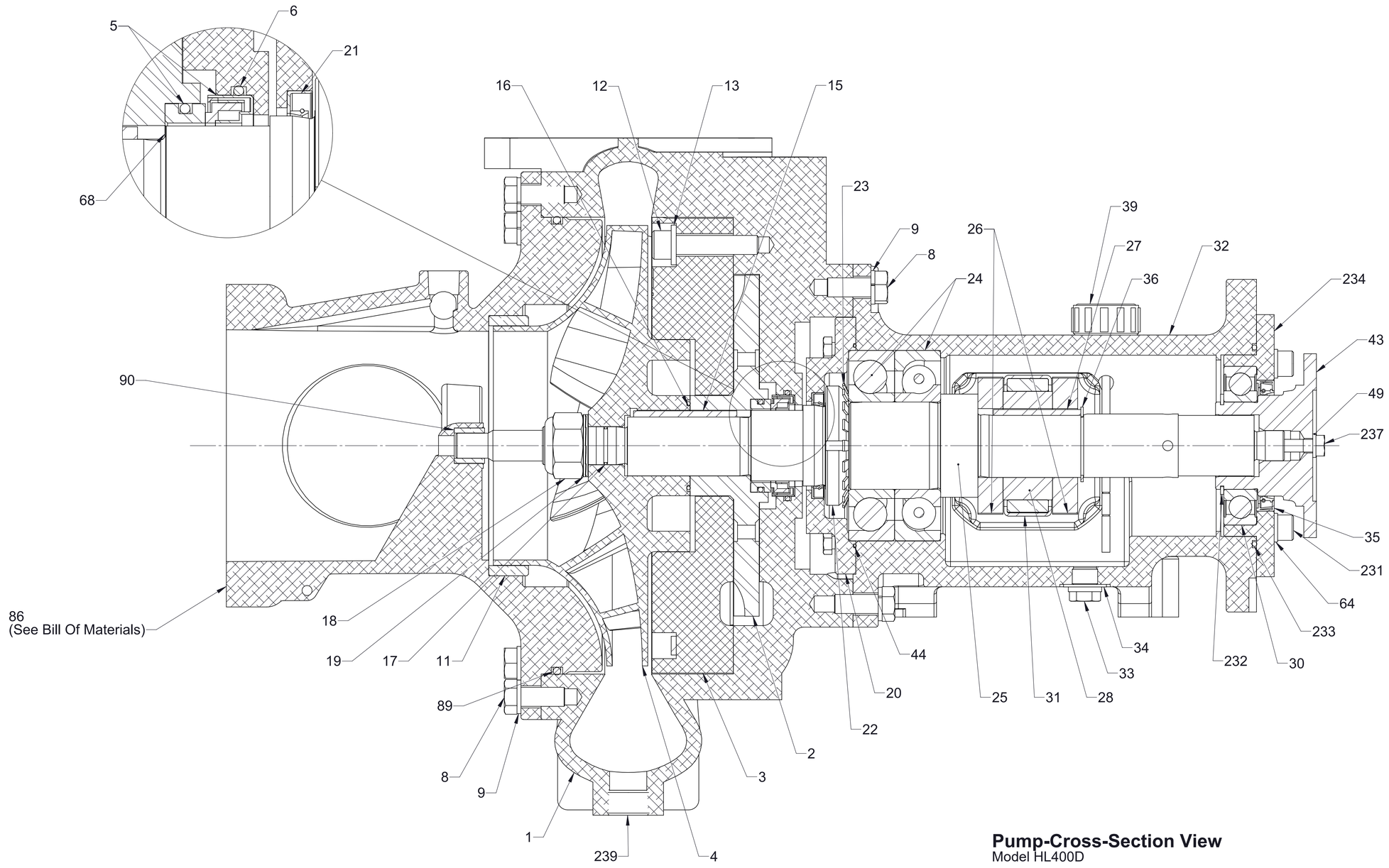


Pump-Impeller Shaft and Pedestal
Model HL400K

Ref No.	Description
1	Body-Volute
2	Impeller-High Pressure
3	Plate-Separator (CW or CCW)
4	Impeller
5	Mechanical Seal Repair Kit (Includes 6, 16, 17, 18, 19, 68, 89)
6	O-Ring, 2-1/2 x 2-3/4 in
8	Screw-Hex Hd, M12-1.75 x 30 mm
9	Washer-Lock, 12 mm
11	Ring-Wear
12	Screw-Soc Hd, M12-1.75 x 55 mm
13	Washer-Flat, 12 mm
15	Key, 8 x 12 x 65 mm
16	O-Ring, 2 x 2-3/16 in
17	O-Ring, 13/16 x 15/16 in
18	Nut-Lock
19	Washer Nord-Lock, 24 mm

Ref No.	Description
20	Housing-Oil Seal
21	Seal-Oil, 2 x 2-5/8 in
22	Nut-Lock, Bearing, N11
23	Washer-Lock, Bearing, W11
24	Bearing-Ball, Single Row
25	Shaft-Impeller
26	Counterweight-Primer
27	Key, 8 x 12 x 55 mm
28	Eccentric-Primer
30	Bearing, Ball, Single Row, 55 x 100 x 21 mm
31	Bearing - Roller, Needle
32	Pedestal
33	Plug-Straight Thread, Hex Hd, M16-1.5
34	Washer-Flat, 5/8 in
35	Seal-Oil, 2-1/2 x 3-1/4 in
36	Ring-Retaining, External, 1-9/16 in Shaft Dia

Ref No.	Description
39	Dipstick-Oil
43	Flange-Companion, 1410 Series
44	O-Ring, 124 x 128 mm
49	Washer-Lock, 8 mm
64	Washer-Lock, 10 mm
68	High Pressure Impeller Shim Pack (Includes .002, .005, .010 thick shims) See overhaul instructions F-1031, section 4321 for shimming instructions
86	Intake Fitting Assembly (Includes 11, 90, 93, 94)
89	O-Ring, 11 x 11-3/8 in
90	Bearing-Out Board
231	Screw-Soc Hd, M10-1.5 x 25 mm
232	Ring-Retaining, External, 2-5/32 in Shaft Dia
233	O-Ring, 4-3/4 x 5 in
234	Housing-Bearing
237	Screw-Hex Hd, M8-1.25 x 30 mm
239	Plug-Pipe, Headless, 3/4 NPT

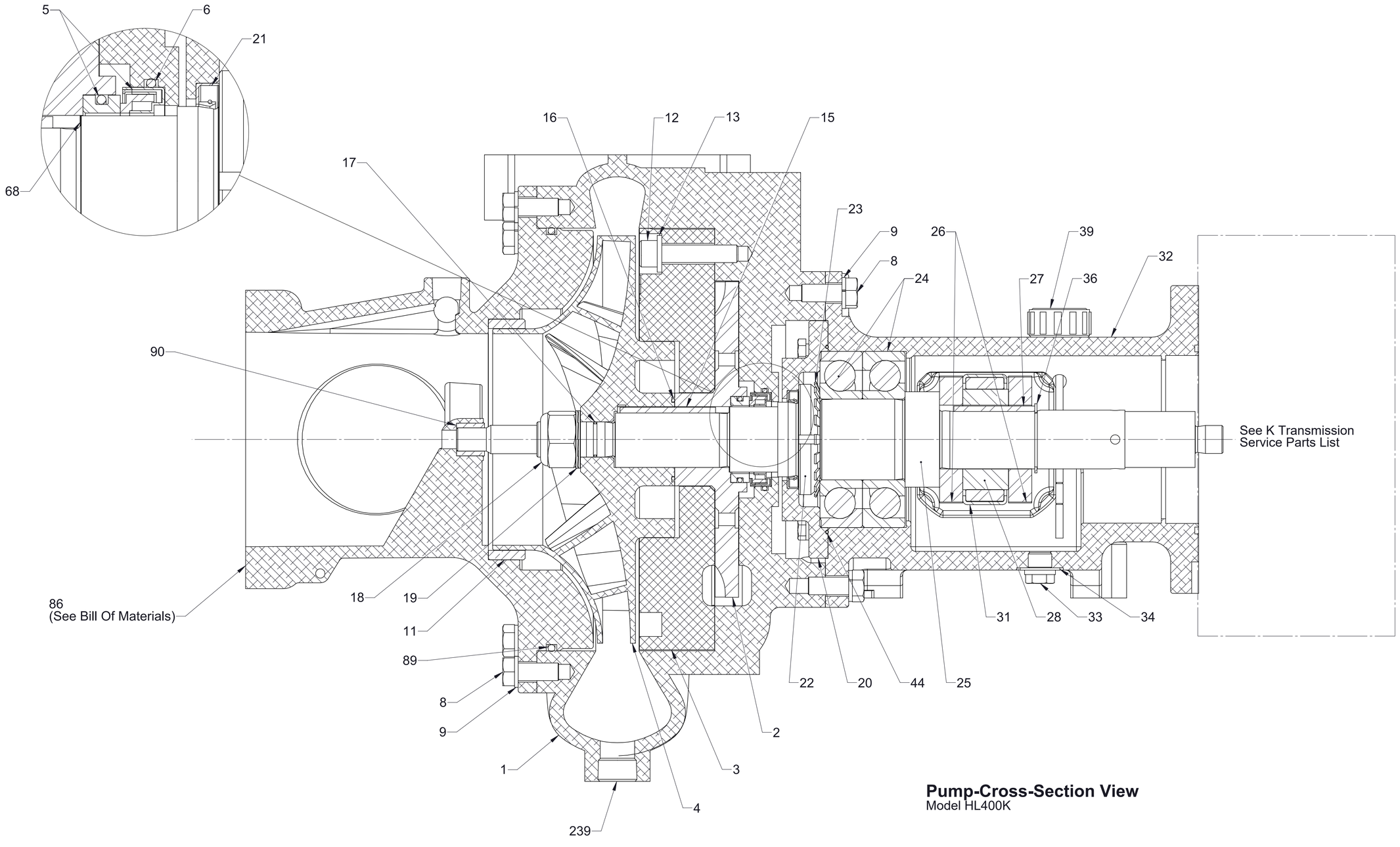


Pump-Cross-Section View
Model HL400D

Ref No.	Description
1	Body-Volute
2	Impeller-High Pressure
3	Plate-Separator (CW or CCW)
4	Impeller
5	Mechanical Seal Repair Kit (Includes 6, 16, 17, 18, 19, 68, 89)
6	O-Ring, 2-1/2 x 2-3/4 in
8	Screw-Hex Hd, M12-1.75 x 30 mm
9	Washer-Lock, 12 mm
11	Ring-Wear
12	Screw-Soc Hd, M12-1.75 x 55 mm
13	Washer-Flat, 12 mm
15	Key, 8 x 12 x 65 mm
16	O-Ring, 2 x 2-3/16 in

Ref No.	Description
17	O-Ring, 13/16 x 15/16 in
18	Nut-Lock
19	Washer Nord-Lock, 24 mm
20	Housing-Oil Seal
21	Seal-Oil, 2 x 2-5/8 in
22	Nut-Lock, Bearing, N11
23	Washer-Lock, Bearing, W11
24	Bearing-Ball, Single Row
25	Shaft-Impeller
26	Counterweight-Primer
27	Key, 8 x 12 x 55 mm
28	Eccentric-Primer
31	Bearing - Roller, Needle

Ref No.	Description
32	Pedestal
33	Plug-Straight Thread, Hex Hd, M16-1.5
34	Washer-Flat, 5/8 in
36	Ring-Retaining, External, 1-9/16 in Shaft Dia
39	Dipstick-Oil
44	O-Ring, 124 x 128 mm
68	High Pressure Impeller Shim Pack (Includes .002, .005, .010 thick shims) See overhaul instructions F-1031, section 4321 for shimming instructions
86	Intake Fitting Assembly (Includes 11, 90, 93, 94)
89	O-Ring, 11 x 11-3/8 in
90	Bearing-Out Board
239	Plug-Pipe, Headless, 3/4 NPT



Pump-Cross-Section View
Model HL400K