

## 67368 LOWER PUMP END

ALSO COVERS SERVICE KITS 637424

### SERVICE KITS

- Use only genuine ARO® replacement parts to assure compatible pressure rating and longest service life.
- **637424 for repair of lower pump section.**

### LOWER PUMP DISASSEMBLY

NOTE: All threads are right hand.

1. Unscrew four (4) bolts, releasing (34) inlet body, two (20) "O" rings, (32 and 39) lower seats, two (35) "O" rings and two (21) balls.
2. Unscrew four (4) bolts, releasing (6) ball cap, two (15) "O" rings, two (27) upper seats, two (28) "O" rings and two (14) balls.
3. Unscrew and remove (2) gland nut and (38) "O" ring.
4. Unscrew (47) gland plug, releasing (50) modular back-up, two (51) polypaks and (77) spacer ring.
5. Unscrew three (12) tie rod nuts and pull (11) upper body from pump.
6. Remove two (17) downtubes and four (16) seals.
7. Remove (9) tube and two (7) "O" rings.
8. Pull (26) pump rod assembly from (9) tube.
9. Remove (31) cotter pin and unscrew (30) nut, releasing two (29) followers, two (65) cup packings, two (83) gaskets, two (84) ball seats, (85) ball and (86) spacer.

### LOWER PUMP REASSEMBLY

NOTE: Inspect and replace old parts with new parts as necessary. Look for deep scratches on metallic surfaces. Replace all "O" rings upon reassembly. Lubricate all threads upon reassembly. Refer to sealant and torque notes on page 3.

1. Assemble (83) gaskets, (84) ball seats, (85) ball and (86) spacer into (29) followers and assemble (29) followers into (65) cup packings (refer to figure 2, page 3). Assemble to (26) pump rod, securing with (30) nut. NOTE: Assemble cup packings with lips facing away from each other. Torque (30) nut to 50 ft lbs (67.8 Nm).
2. Assemble (31) cotter pin, securing (30) nut.
3. Thoroughly lubricate the inside of (9) tube with a lubricant compatible with the application. Slide (26) pump rod and (65) cup packings into (9) tube, being careful not to damage the lips of cup packings.
4. Assemble two (16) seals to each (17) downtube, assembling with large i.d. onto downtube.
5. Assemble two (17) downtubes to (18) lower body.
6. Assemble (7) "O" ring and (9) tube to (18) lower body.
7. Screw three (12) nuts onto top end of (10) tie rods until they bottom out at end of threads. Screw tie rods into (11) upper body.
8. Assemble (51) polypak, (77) spacer ring, (51) polypak and (50) modular back-up into (2) gland nut. NOTE: Refer to figure 2, page 3 for lip direction of (51) polypaks.
9. Screw (47) gland plug into (2) gland nut and tighten to 100 ft lbs (135.6 Nm).
10. Assemble (38) "O" ring and (2) gland nut into (11) upper body. NOTE: Tighten (2) gland nut to 100 ft lbs (135.6 Nm).
11. Assemble (7) "O" ring into (11) upper body and assemble (11) upper body to (9) tube, aligning three (10) tie rods with (18) lower body.

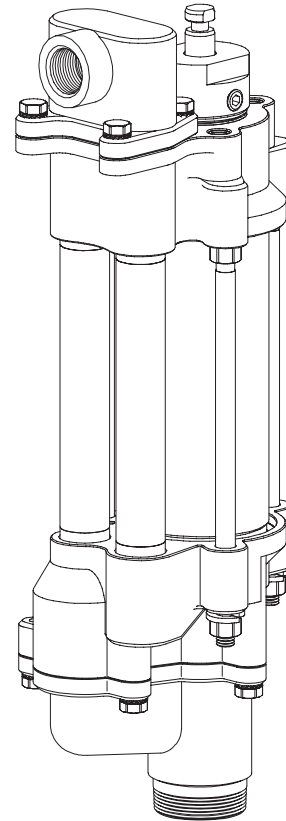


Figure 1

### LOWER PUMP END DESCRIPTION CHART

**CYLINDER SIZE**

3" i.d.

**PACKING MATERIAL**Polyurethane (upper)  
UHMW-PE (lower)**PLUNGER TYPE**

Hardened Stainless Steel with Hard Chrome Plating

## PARTS LIST

Item	Description (size)	Qty	Part No.	[Mtl]
2	Gland Nut	(1)	96403	[SS]
4	Hex Head Bolt (M10 x 1.5 - 6g x 25 mm)	(8)	96400	[SS]
5	Lock Washer (M10)	(8)	95026	[SS]
6	Ball Cap	(1)	96407	[SS]
✓ 7	"O" Ring (1/16" x 3-3/8" o.d.)	(2)	Y327-42	[V]
8	Lock Washer (1/2")	(3)	Y14-816-T	[SS]
9	Tube	(1)	96413	[CSS]
10	Tie Rod	(3)	96402	[SH]
11	Upper Body	(1)	96408	[SS]
12	Tie Rod Nut (M12 x 1.75)	(6)	96399	[SS]
14	Ball (15/16" o.d.)	(2)	96398	[SS]
✓ 15	"O" Ring (3/32" x 1-5/8" o.d.)	(2)	Y327-127	[V]
✓ 16	Seal	(4)	96415	[U]
17	Downtube	(2)	96401	[SS]
18	Lower Body	(1)	96409	[SS]
✓ 20	"O" Ring (3/32" x 2-1/8" o.d.)	(2)	Y327-135	[V]
21	Ball (1-1/4" o.d.)	(2)	96397	[SS]
26	Pump Rod	(1)	96411	[PSH]
27	Upper Seat	(2)	94609	[SH]
✓ 28	"O" Ring (1/16" x 1-5/8" o.d.)	(2)	Y327-29	[V]

### LOWER PUMP REASSEMBLY (continued)

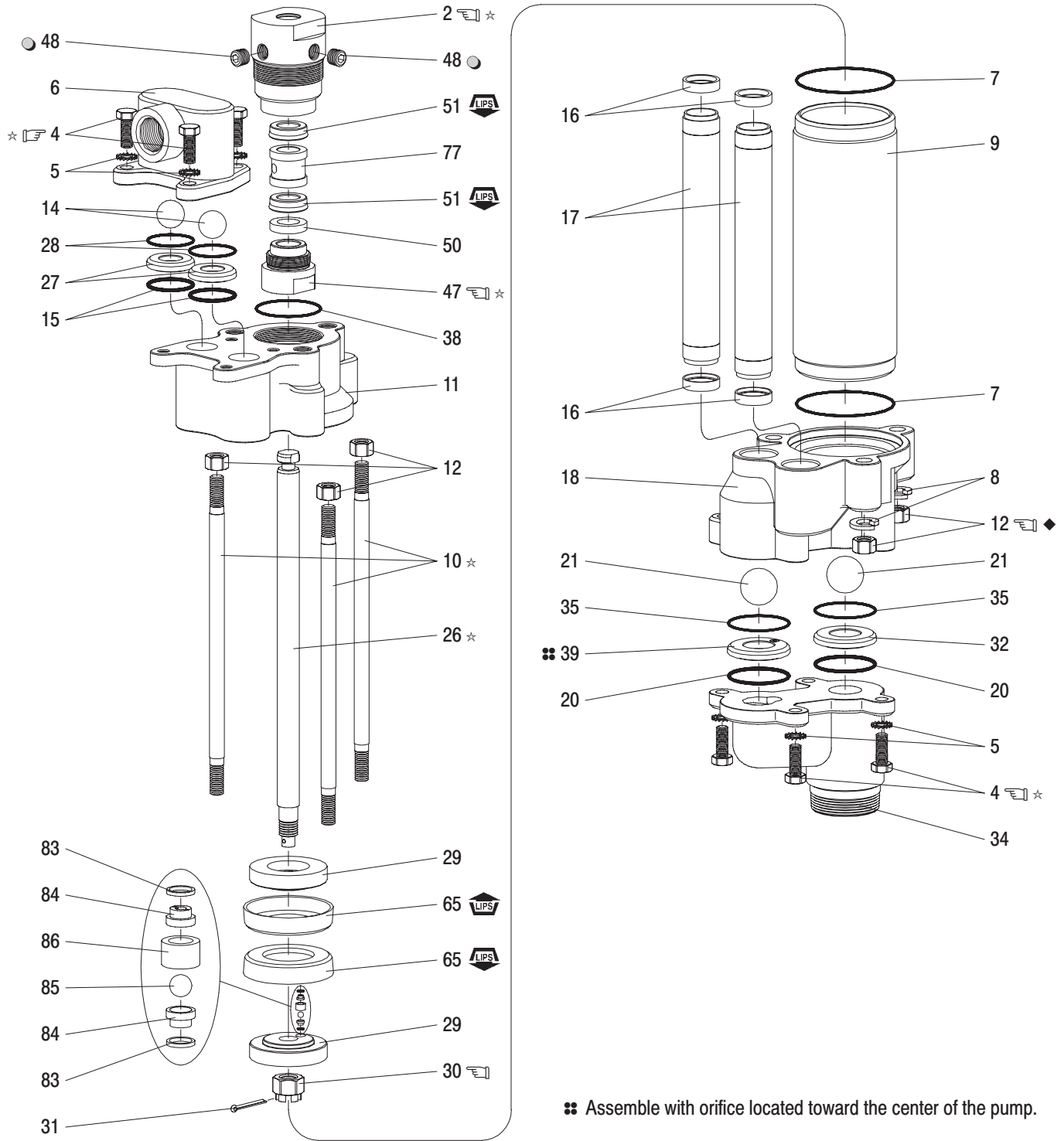
12. Assemble three (8) lock washers and three (12) tie rod nuts to (10) tie rods, tightening nuts to 60 ft lbs (81.3 Nm).
13. Turn pump assembly upside down and assemble two (21) balls, two (35) "O" rings, (32 and 39) seats (chamfered side into lower body first) and two (20) "O" rings into (18) lower body. Refer to figure 2, page 3, for the location of (39) seat (with orifice).
14. Assemble (34) inlet body to (18) lower body, securing with four (5) lock washers and four (4) bolts. NOTE: Torque (4) bolts to 45 ft lbs (61.0 Nm).
15. Assemble (15) "O" rings to groove in (27) upper seats and set upper seats on (11) upper body. NOTE: Assemble upper seats with chamfered side up. Set (14) balls on (27) upper seats.
16. Assemble two (28) "O" rings to (6) ball cap and assemble ball cap to (11) upper body, securing with four (5) lock washers and four (4) bolts. NOTE: Torque (4) bolts to 45 ft lbs (61.0 Nm).

Item	Description (size)	Qty	Part No.	[Mtl]
29	Follower	(2)	94664	[SS]
30	Hex Slotted Nut (M16 x 2)	(1)	96728779	[SS]
✓ 31	Cotter Pin (1/8" o.d. x 1-1/4" long)	(1)	96728761	[SS]
32	Lower Seat	(1)	94608	[SH]
34	Inlet Body	(1)	96410	[SS]
✓ 35	"O" Ring (1/16" x 2-1/8" o.d.)	(2)	Y327-33	[V]
✓ 38	"O" Ring (1/16" x 2-1/4" o.d.)	(1)	Y327-34	[V]
39	Seat	(1)	67181	[SH]
47	Gland Plug	(1)	96405	[SS]
48	Pipe Plug (1/4 - 18 N.P.T.)	(3)	Y17-51-S	[SS]
✓ 50	Modular Back-Up	(1)	96414	[U]
✓ 51	Polypak	(2)	96412	[U]
✓ 65	Cup Packing	(2)	93449-4	[UH]
✓ 77	Spacer Ring	(1)	96404	[PPS]
✓ 83	Gasket	(2)	92425	[Ny]
84	Ball Seat	(2)	92424	[TC]
85	Ball (0.1875" o.d.)	(1)	93508-1	[TC]
86	Spacer	(1)	94936	[SH]
✓	Service Kit		637424	

### TROUBLE SHOOTING

- **No material at outlet (pump continually cycles).** Check material supply, disconnect or shut off the air supply and replenish the material, reconnect.
- **Material on one stroke only (fast downstroke).** The (21) ball may not be seating in the (32) lower seat (see lower pump disassembly). Remove the ball from the lower seat, clean and inspect the ball and seat area. If ball or lower seat is damaged, replace.
- **Material on one stroke only (fast upstroke).** The (21) ball may not be seating in the (39) lower seat (see lower pump disassembly). Remove the ball from the lower seat, clean and inspect the ball and seat area. If ball or lower seat is damaged, replace. Check for worn or damaged seals. Replace the seals as necessary. Also, check for a damaged orifice in (39) seat.
- **Material appears on the pump plunger rod.** The upper packings may be worn (see lower pump disassembly). Replace the packings as necessary.

# PARTS LIST



⚙️ Assemble with orifice located toward the center of the pump.

MATERIAL CODE	
[CSS]	= Ceramic Coated Stainless Steel
[Ny]	= Nylon
[PPS]	= Polyphenylene Sulfide
[PSH]	= Hard Chrome Plated Hard Stainless Steel
[SH]	= Hard Stainless Steel
[SS]	= Stainless Steel
[TC]	= Tungsten Carbide
[U]	= Polyurethane
[UH]	= UHMW-PE
[V]	= Viton®

**TORQUE REQUIREMENTS**  
**NOTE: DO NOT OVERTIGHTEN COMPONENTS**  
 (2) gland nut, 100 ft lbs (135.6 Nm).  
 (4) bolts, 45 ft lbs (61.0 Nm).  
 (12) tie rod nut, 60 ft lbs (81.3 Nm).  
 (30) hex slotted nut, 50 ft lbs (67.8 Nm) minimum.  
 (47) gland plug, 100 ft lbs (135.6 Nm).

**LUBRICATION / SEALANTS**  
 ☆ Apply Loctite® Heavy Duty Anti-Seize compound to threads when assembling.  
 ◆ Apply Lubriplate® Super FML-2 grease to threads.  
 ● Apply Loctite® Vibra-Seal® 503 pipe sealant.

Figure 2

TYPICAL CROSS SECTION

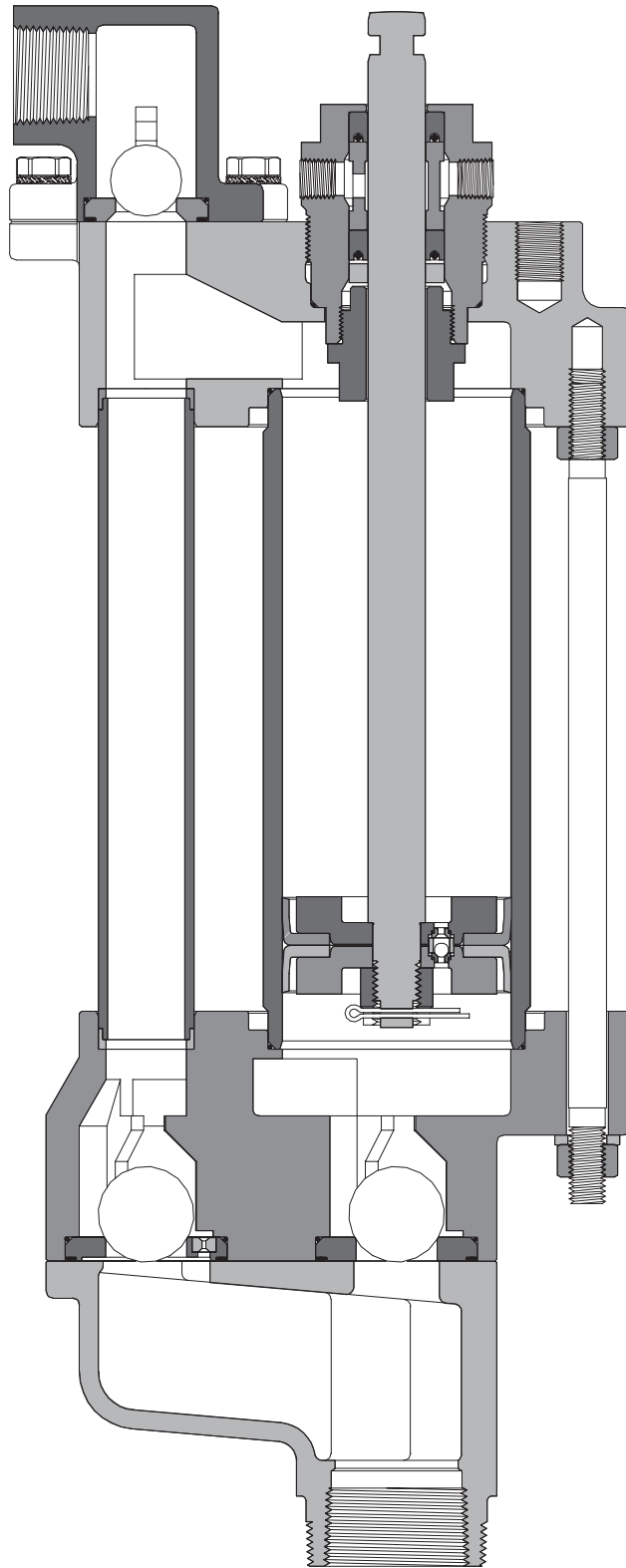


Figure 3