

67368 FOUR-BALL STYLE LOWER PUMP ENDS

Also covers 637424 service kits.



**READ THIS MANUAL CAREFULLY BEFORE INSTALLING,
OPERATING OR SERVICING THIS EQUIPMENT.**

It is the responsibility of the employer to place this information in the hands of the operator. Keep for future reference.
The original language of this manual is English.

SERVICE KITS

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

LOWER PUMP END DISASSEMBLY

NOTE: All threads are right hand.

CAUTION: Item (9) tube is ceramic coated. Handle with care so as not to damage in any way during disassembly or reassembly.

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 and two (65) cup packings.

LOWER PUMP END 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 (29) followers into (65) cup packings. 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.

(continued on page 2)

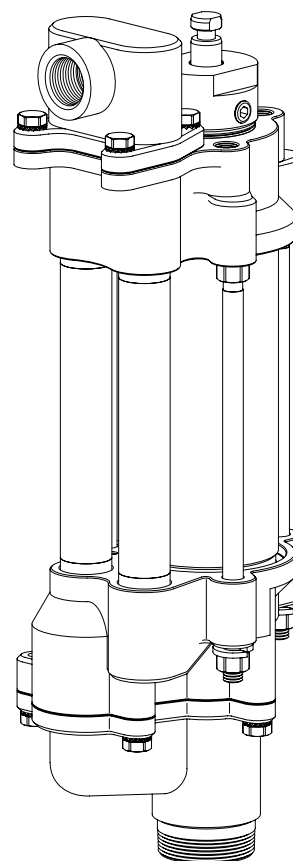


Figure 1

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 / 67368

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]
① 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]
① 15	"O" Ring (3/32" x 1-5/8" o.d.)	(2)	Y327-127	[V]
① 16	Seal	(4)	96415	[U]
17	Downtube	(2)	96401	[SS]
18	Lower Body	(1)	96409	[SS]
① 20	"O" Ring (3/32" x 2-1/8")	(2)	Y327-135	[V]
21	Ball (1-1/4" o.d.)	(2)	96397	[SS]
26	Pump Rod	(1)	96411	[PSH]

MATERIAL CODE

[CSS] = Ceramic coated stainless steel	[SS] = Stainless steel
[PPS] = Polyphenylene Sulfide	[U] = Polyurethane
[PSH] = Hard chrome plated hard stainless steel	[UH] = UHMW-PE
[SH] = Hard stainless steel	[V] = Viton

LOWER PUMP END REASSEMBLY (continued)

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 and 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 nut 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: Torque (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.
12. Assemble three (8) lock washers and three (12) tie rod nuts to (10) tie rods, tightening to 45 ft lbs (61.0 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 16 ft lbs (21.7 Nm).
15. Assemble (15) "O" rings to groove in (27) upper seats and

Item	Description (size)	Qty	Part No.	[Mtl]
27	Upper Seat	(2)	94609	[SH]
① 28	"O" Ring (1/16" x 1-5/8" o.d.)	(2)	Y327-29	[V]
29	Follower	(2)	96700	[SS]
30	Hex Slotted Nut (M16 x 2)	(1)	96728779	[SS]
① 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]
① 35	"O" Ring (1/16" x 2-1/8" o.d.)	(2)	Y327-33	[V]
① 38	"O" Ring (1/16" x 2-1/4" o.d.)	(1)	Y327-34	[V]
39	Lower Seat	(1)	67181	[SH]
47	Gland Plug	(1)	96405	[SS]
48	Pipe Plug (1/4 - 18 NPT)	(3)	Y17-51-S	[SS]
① 50	Modular Back-Up	(1)	96414	[U]
① 51	Polypak	(2)	96412	[U]
① 65	Cup Packing	(2)	93449-4	[UH]
① 77	Spacer Ring	(1)	96404	[PPS]
①	Items included in service kit		637424	

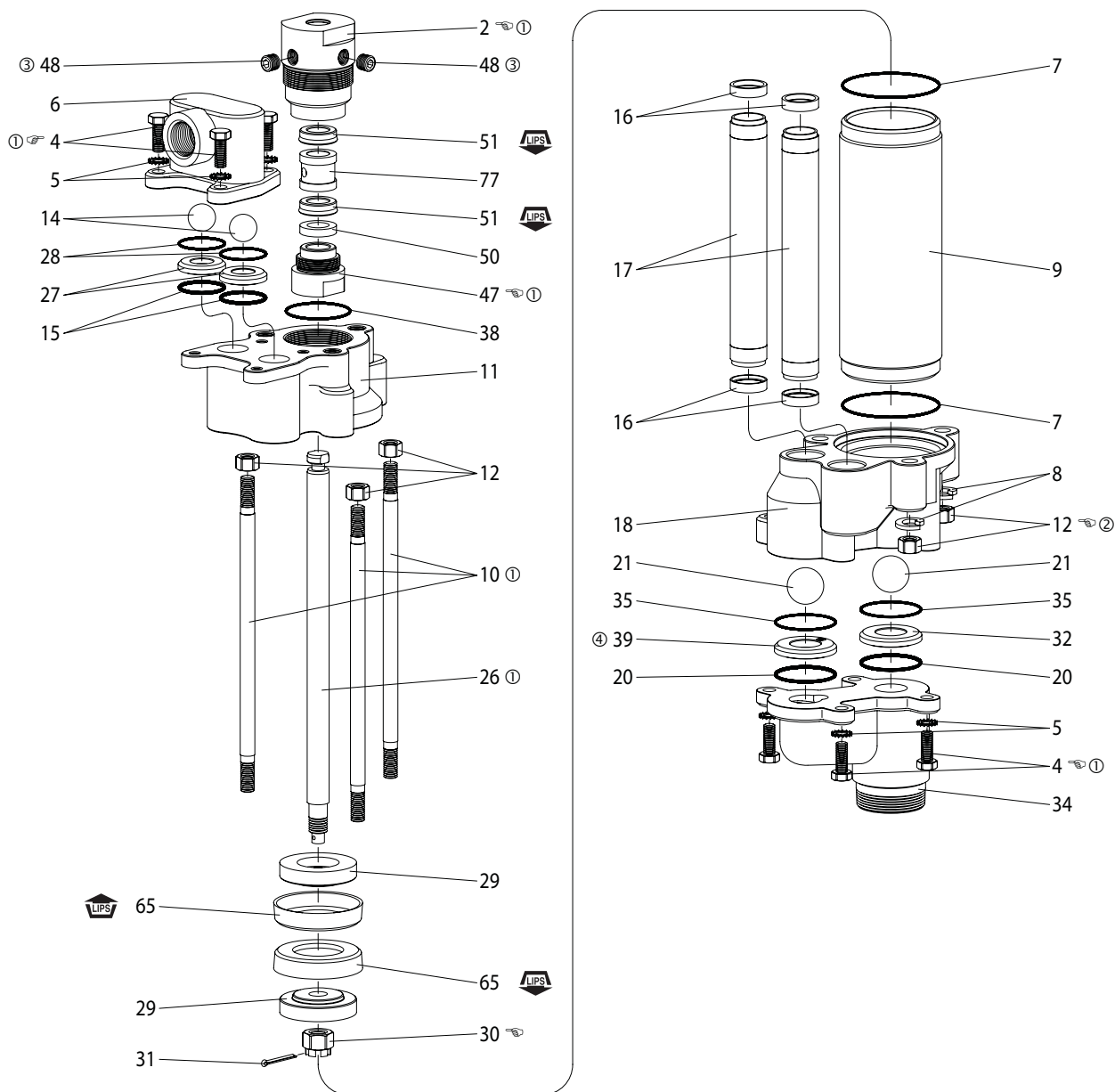
set upper seats on (11) upper body. Set (14) balls on (27) upper seats. NOTE: Assemble upper seats with chamfered side up.

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 16 ft lbs (21.7 Nm).

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.

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ASSEMBLY TORQUE REQUIREMENTS

NOTE: DO NOT OVERTIGHTEN COMPONENTS.

- (2) gland nut, 100 ft lbs (135.6 Nm).
- (4) bolts, 16 ft lbs (21.7 Nm).
- (12) tie rod nuts, 45 ft lbs (61.0 Nm).
- (30) hex slotted nut, 50 ft lbs (67.8 Nm) minimum.
- 47 gland plug, 100 ft lbs (135.6 Nm).

LUBRICATION / SEALANTS

- ① Apply Loctite® Heavy Duty Anti-Seize compound to threads when assembling.
- ② Apply Lubriplate® Super FML-2 grease to threads.
- ③ Apply Loctite 572™ pipe sealant.
- ④ Install with orifice toward the center of the pump.

Figure 2

TYPICAL CROSS SECTION

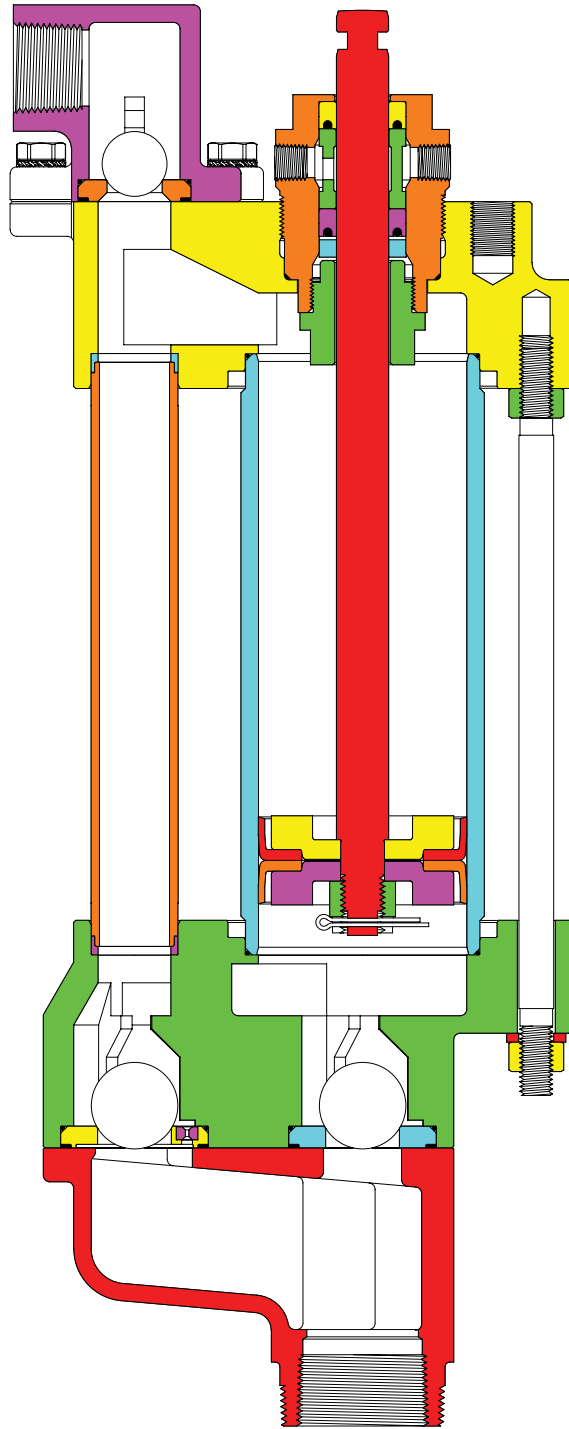


Figure 3