

# OPERATOR'S MANUAL

INCLUDING: SERVICE KIT, TROUBLESHOOTING, PARTS LIST, DISASSEMBLY & REASSEMBLY

# 66171-X

RELEASED: 4-1-92  
REVISED: 6-2-10  
(REV. D)

## TWO-BALL STYLE LOWER PUMP END

ALSO COVERS 637008, 637009, 637064 & 637279 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.

### SERVICE KITS

- Use only genuine ARO replacement parts to assure compatible pressure rating and longest service life.
- 637008 for general repair of 66171 lower pump end. (Leather)
- 637064 for general repair of 66171-1 lower pump end. (PTFE)
- 637279 for general repair of 66171-3 lower pump end. (UHMW-PE)
- 637009 for repair of lower ball and seat.

### GENERAL DESCRIPTION

**⚠ WARNING** DO NOT EXCEED MAXIMUM OPERATING PRESSURE AS INDICATED ON PUMP MODEL PLATE.

**⚠ WARNING** REFER TO GENERAL INFORMATION SHEET FOR ADDITIONAL SAFETY PRECAUTIONS AND IMPORTANT INFORMATION.

- This manual only covers the lower pump section, it is one of four documents which support an ARO pump. Replacement copies of these forms are available upon request.
  - ☐ 650XXX-XXX-X PUMP MODEL OPERATOR'S MANUAL.
  - ☐ GENERAL INFORMATION FOR AIR OPERATED OR HYDRAULICALLY OPERATED PUMPS.
  - ☒ LOWER PUMP END OPERATOR'S MANUAL.
  - ☐ AIR OR HYDRAULIC MOTOR OPERATOR'S MANUAL
- The two-ball design provides better priming of the lower foot valve. The double acting feature is standard in all ARO industrial pumps, material is delivered to the pump discharge outlet on both the up and down stroke.

### MAINTENANCE

The air / hydraulic motor is completely separate from the lower pump end. This helps to keep the motor from being contaminated by the material being pumped. Periodically, flush entire pump system with a solvent that is compatible with the material being pumped.

Keep solvent cup filled with this compatible solvent. This will keep material from drying on the piston rod, which would drag thru the packings, ruin them and eventually scour the piston rod.

Provide a clean work surface to protect sensitive internal moving parts from contamination from dirt and foreign matter during disassembly and reassembly.

Before reassembling, lubricate parts as required. When assembling "O" rings, or parts adjacent to "O" rings, exercise care to prevent damage to "O" rings and "O" ring groove surface.

### LOWER PUMP END DESCRIPTION CHART

**66171 - X**

#### PACKING MATERIAL

- |   |                                     |
|---|-------------------------------------|
| 0 | Thiokol Leather (upper and lower)   |
| 1 | Glass Filled PTFE (upper and lower) |
| 3 | UHMW-PE (upper & lower)             |

### 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 (19) lower ball may not be seating in the (20) foot valve (see lower pump disassembly). Remove the ball from the foot valve, clean and inspect the ball and valve seat area. If the ball or foot valve is damaged, replace.
- **Material on one stroke only (fast upstroke).** Check for worn or damaged packings and seals. Replace the packings and seals as necessary.
- **Material leakage out of the solvent cup or material appears on the pump plunger rod.** Relieve the pressure in the pump and tighten the solvent cup until leakage discontinues. If this procedure does not aid in stopping the leakage problem, the upper packings may be worn (see lower pump disassembly). Replace the packings as necessary.

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# ARO

**IR** Ingersoll Rand  
Industrial Technologies

## PARTS LIST

ITEM	DESCRIPTION (Size in Inches)	QTY	PART NO.	[MTL]
1	Plunger	(1)	91460-1	[SS]
2	Solvent Cup	(1)	65983	[C]
3	Female Washer	(1)	91101	[SS]
4	Washer, Male Backup	(1)	91100	[SS]
■ 5	Spring	(1)	91107	[SS]
6	Pump Body	(1)	91111	[C]
■ 7	Gasket	(3)	92840	[SS]
8	Locking Nut	(2)	90027	[SS]
9	Washer	(1)	91567	[C]
■ 10	Bowed Spring Washer	(2)	91568	[SS]
11	Washer, Male Backup	(2)	91593	[SS]
12	Washer, Female Backup	(2)	91592	[SS]
✓ 13	Ball (.3437" o.d.)	(1)	Y16-111	[SS]
✓ 14	Seat	(1)	91076	[Ca]
✓ 15	Inner Check Seat	(1)	91077	[SS]
✓ 16	Adapter	(1)	91078	[SS]

### LOWER PUMP DISASSEMBLY

Note: All threads are right hand.

1. Vise the 66171 Lower Pump assembly on (6) pump body.
2. Unscrew (2) packing nut and remove.
3. Loosen (8) top lock nut. (The one next to (6) pump body.)
4. Securely hold (17) suction tube with a strap wrench and loosen (8) lower lock nut. (The one next to (20) foot valve.)
5. Unscrew (20) foot valve assembly from the (17) suction tube.
6. Remove top (7) gasket, (18) ball stop and pin assembly, lower (7) gasket, and (19) ball from (20) foot valve assembly.
7. Unscrew and remove (17) suction tube from (6) pump body and off (1) plunger assembly. Now remove (7) gasket. NOTE: No need to remove either (8) lock nut off (17) suction tube.
8. Push (1) plunger assembly down and out the bottom of (6) pump body using caution not to mar or damage the finish on (1) plunger.
9. From the (6) pump body, remove (3) female washer, (22) vee packing, (4) male washer and (5) spring.
10. Remove (9) washer, (10) bowed spring washer, (11) male packing washer, (23) (set of 5) packing and (12) female packing washer.
11. Place a wrench on (15) check seat and remove from (16) adapter which is still being held by the vise.
12. Remove (13) ball and (14) seat. Remove (16) adapter from the vise.
13. Remove (12) female packing washer, (24) (set of 3) packing, (11) male packing washer and (10) bowed spring washer.

ITEM	DESCRIPTION (Size in Inches)	QTY	PART NO.	[MTL]
17	Tube	(1)	91461-1	[SS]
✓ 18	Ball Stop & Pin Assembly	(1)	65019	[C]
✓ 19	Ball (.8125" o.d.)	(1)	Y16-126	[SS]
✓ 20	Foot Valve	(1)	66103	[C]
■ 22	"V" Packing (66171)	(6)	93689-1	[L]
	(66171-1)	(6)	93689-2	[GFT]
	(66171-3)	(6)	93689-4	[UH]
■ 23	"V" Packing (66171)	(5)	93690-1	[L]
	(66171-1)	(5)	93690-2	[GFT]
	(66171-3)	(5)	93690-4	[UH]
■ 24	"V" Packing (66171)	(3)	93690-1	[L]
	(66171-1)	(3)	93690-2	[GFT]
	(66171-3)	(3)	93690-4	[UH]
■	Items included in Service Kit	637008, 637064, 637279		
✓	Items included in Service Kit	637009		

### LOWER PUMP REASSEMBLY

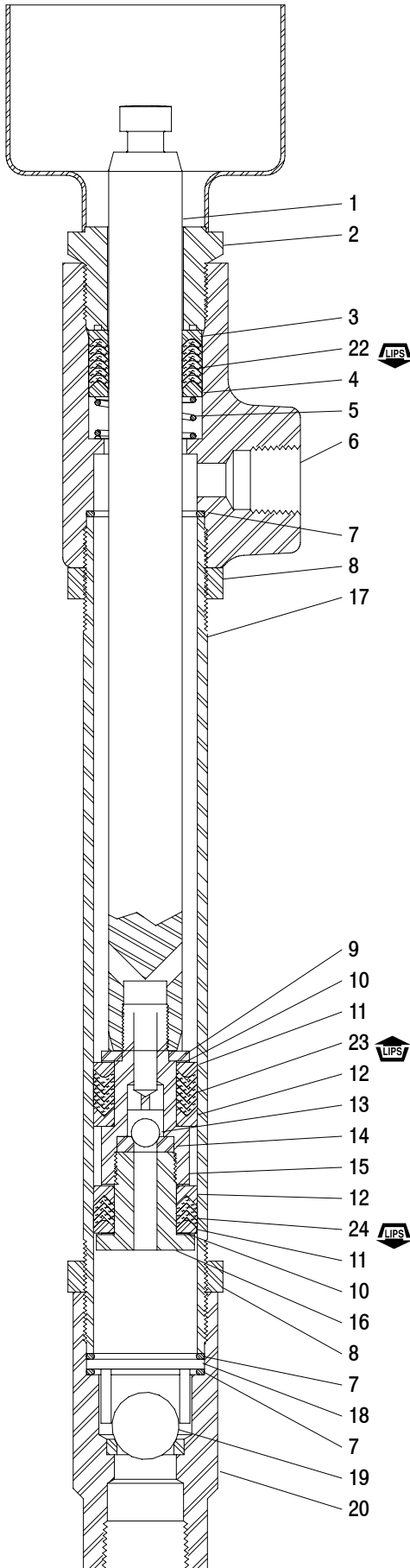
NOTE: All rubber goods and packings should be lubricated with a compatible lubricant prior to assembly.

1. Place (5) spring, (4) male packing washer, (22) vee packing and (3) female packing washer in (6) pump body.
2. Apply PTFE tape to the threads of (2) packing nut.
3. Screw (2) packing nut into (6) pump body. (Hand tight only.)
4. Assemble (10) bowed spring washer, (11) male backup washer (24) (set of 3) packing and (12) female backup washer to (16) adapter.

**CAUTION: When assembling packings and washers, be sure they are assembled correctly as shown in Figure.**

5. Assemble (12) female backup washer, (23) (set of 5) packing, (11) male backup washer, (10) bowed spring washer, and (9) washer to (15) inner check seat.
6. Apply Loctite 242 Removable Threadlocker to threads of (16) adapter, then place (13) ball and (14) seat (bevel up) into position in (15) inner check seat and screw (16) adapter into (15) inner check seat.
7. Grease (1) plunger, slowly and carefully slide (1) plunger (threaded end down) through (2) packing nut, (22) packing and (6) pump body.
8. Apply PTFE tape to threads of (15) inner check seat.
9. Screw (15) inner check seat into (1) plunger and tighten using the wrench flats on plunger and the hex on the inner check seat.
10. Clean the threads on both ends of (17) suction tube and apply PTFE tape to the threads.
11. Apply grease to inside of (17) suction tube and over both (23) and (24) packing assemblies.
12. Place (7) gasket with (6) pump body.
13. Slowly and carefully slide (17) suction tube (either end) over (23) and (24) packing and (1) plunger assembly.
14. Screw (17) suction tube into (6) pump body and tighten with strap wrench.
15. Place (19) ball, (7) gasket, (18) ball stop and pin assembly, and (7) gasket into (20) foot valve.
16. Screw (20) foot valve onto the end of (17) suction tube and tighten.
17. Tighten both (8) lock nuts.
18. Tighten (2) packing nut.

# PARTS LIST



## MATERIAL CODE

[Ca] = Carbide  
[C] = Carbon Steel  
[GFT] = Glass Filled PTFE  
[L] = Leather  
[SS] = Stainless Steel  
[UH] = UHMW-PE

