

# OPERATOR'S MANUAL

# 1875CXXXXXX

INCLUDING: SERVICE KITS, TROUBLESHOOTING, PARTS LIST,  
DISASSEMBLY AND REASSEMBLY.

RELEASED: 9-15-10  
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(REV: G)

## 1875CXXXXXX LOWER PUMP END

Also covers K1875CXXXXXX 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.

### 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 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.
  - ☐ Pump Model Operator's Manual.
  - ☐ General Information for Air / Hydraulically Operated Piston Pumps.
  - ☒ Lower Pump End Operator's Manual.
  - ☐ Air / Hydraulic Motor Operator's Manual.

### 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 a 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 the material from drying on the plunger, which would drag through the packings, ruin them and eventually scour the plunger. 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.

### 1875CXXXXXX

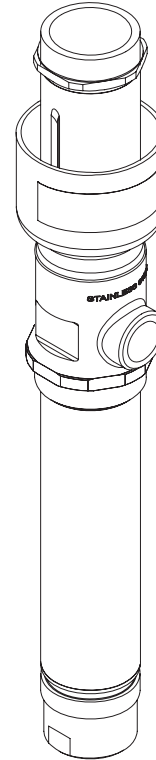


Figure 1

## MODEL DESCRIPTION CHART

**1875 C X X X X X X**

**Inside Diameter of Pump Cylinder**

1875 - 1.875" ID

**Check Type / Wetted Material**

C - Two Ball, 300 Series / CF8M Stainless Steel

**Container Suitability**

1 - Remote Mounting  
5 - 55 gallon  
8 - Remote Mounting with Optional Inlet  
9 - 5 gallon with Optional Piston

**Inlet / Outlet Tread Type**

1 - SAE

**Upper Packing**

A - Viton/Virgin PTFE Staggered  
B - Buna "N"  
E - EPR  
F - UHMW-PE  
H - UHMW-PE / Leather Staggered  
K - Filled PTFE  
L - Leather  
S - Virgin PTFE  
U - Filled PTFE / Leather Staggered  
V - Viton

**Lower Packing**

B - Buna "N"  
E - EPR  
F - UHMW-PE  
S - Virgin PTFE

**Spring Type / Solvent Cup**

1 - No Spring, Standard Solvent Cup  
2 - Coil Spring, Standard Solvent Cup  
L - Coil Spring, No Solvent Cup  
W - No Spring, No Solvent Cup

**Plunger Type**

2 - 316 Stainless Steel  
9 - 304 Stainless Steel, Ceramic coated  
E - 316 Stainless Steel Rod, Ceramic coated Tube  
F - 304 Stainless Steel, Ceramic coated, Plain Tube

## PARTS LIST

Item	Description (size)	Qty	Part No.	Mtl
1	Plunger (1875CXXXXX2, 1875CXXXXXE)	(1)	90615	[SS]
	(1875CXXXXX9, 1875CXXXXXF)	(1)	90615-2	[CSS]
2	Lock Nut	(1)	90606	[SS]
3	Spacer Tube (1875C1XXXXX, 1875C5XXXXX, 1875C9XXXXX)	(1)	90614	[SS]
	(1875C8XXXXX)	(1)	76048	[SS]
4	"O" Ring (1/16" x 2" OD) (1875CXXXX1X, 1875CXXXX2X)	(1)	Y325-32	[B]
5	Solvent Cup (1875CXXXX1X, 1875CXXXX2X)	(1)	93273	[SS]
❶ 6	Washer (all Models, excluding 1875CXXBXXX)	(1)	77432	[SS]
	(1875CXXBXXX)	(1)	77398	[D]
❶ 7	Female Packing Washer (all Models, excluding 1875CXXBXXX)	(1)	77327	[D]
❶ 8	"V" Packing (1875CXXAXXX)	(2)	90578-5	[V]
	(1875CXXEXXX)	(2)	90578-3	[T]
	(1875CXXUXXX)	(2)	90578-1	[L]
	(1875CXXHXXX)	(2)	90578-1	[L]
❶ 9	"V" Packing (1875CXXAXXX)	(2)	90578-3	[T]
	(1875CXXEXXX)	(3)	92482	[E]
	(1875CXXLXXX)	(4)	90578-1	[L]
	(1875CXXKXXX)	(4)	90578-2	[T]
	(1875CXXSXXX)	(4)	90578-3	[T]
	(1875CXXFXXX)	(4)	90578-4	[UH]
	(1875CXXVXXX)	(4)	90578-5	[V]
	(1875CXXUXXX)	(2)	90578-3	[T]
	(1875CXXHXXX)	(2)	90578-4	[UH]
	10	Spring (1875CXXXX2X, 1875CXXXXLX)	(1)	90602
❶ 11	Gasket	(1)	76748	[Ny]
12	Pump Body	(1)	65793-2	[SS]
13	Connector Rod (1875C8XXXXX, 1875C9XXXXX)	(1)	76045	[SS]
	(1875C5XXXXX)	(1)	93943	[SS]
	(1875C1XXXXX)	(1)	92874	[SS]
14	Cup Follower (1875C1XXXXX, 1875C5XXXXX)	(1)	90601	[SS]
❶ 15	Cup (1875CXXXXBXX, 1875CXXXXEXX)	(1)	77265	[T]
	(1875CXXXSXX)	(2)	73919	[T]
	(1875CXXXFXX)	(2)	92867-1	[UH]

Item	Description (size)	Qty	Part No.	Mtl
16	<b>Flat Washer</b> (1875C1XXXXX, 1875C5XXXXX)	(1)	90610	[SS]
17	<b>Ball</b> (1.0000" diameter) (1875C1XXXXX, 1875C5XXXXX)	(1)	90948	[SS]
18	<b>Inner Check Seat</b> (1875C1XXXXX, 1875C5XXXXX)	(1)	90600	[SS]
	(1875C8XXXXX, 1875C9XXXXX)	(1)	76046	[SS]
19	<b>"O" Ring</b> (0.070" x 2.129" OD) (1875C1XXXXX, 1875C5XXXXX, 1875C9XXXXX)	(1)	90607	[T]
	(1875C8XXXXX)	(1)	77361	[T]
20	<b>Lock Nut</b>	(1)	76248	[SS]
21	<b>Suction Tube</b> (1875C5XXXX2, 1875C5XXXXF)	(1)	90569	[SS]
	(1875C1XXXX2, 1875C8XXXX2, 1875C9XXXX2, 1875C1XXXXF, 1875C8XXXXF, 1875C9XXXXF)	(1)	90621	[SS]
	(1875C1XXXX9, 1875C8XXXX9, 1875C9XXXX9, 1875C1XXXXE, 1875C8XXXXE, 1875C9XXXXE)	(1)	90621-2	[CSS]
22	<b>Snap Ring</b> (1875C1XXXXX, 1875C5XXXXX, 1875C9XXXXX)	(1)	90616	[SS]
23	<b>"O" Ring</b> (0.070" x 1.879" OD) (1875C1XXXXX, 1875C5XXXXX, 1875C9XXXXX)	(1)	90617	[T]
	(1875C8XXXXX)	(1)	Y325-224	[B]
24	<b>Ball</b> (1.1875" diameter) (1875C1XXXXX, 1875C5XXXXX, 1875C9XXXXX)	(1)	90949	[SS]
	(1875C8XXXXX)	(1)	90948	[SS]
25	<b>Dowel Pin</b> (1/4" OD x 1.828")	(1)	90620	[SS]
26	<b>Foot Valve Seat</b> (1875C1XXXXX, 1875C5XXXXX, 1875C9XXXXX)	(1)	90619	[SS]
	(1875C8XXXXX)	(1)	76932	[SS]
27	<b>Male Packing Washer</b> (all Models, excluding 1875CXXBXXX)	(1)	91349	[D]
28	<b>Nut</b> (1875C8XXXXX, 1875C9XXXXX)	(1)	Y11-7-T	[SS]
29	<b>Lock Washer</b> (1875C8XXXXX, 1875C9XXXXX)	(1)	Y14-816-T	[SS]
30	<b>Adapter</b> (1875C8XXXXX)	(1)	Y45-308-T	[SS]
31	<b>"O" Ring</b> (0.210" x 1.895" OD) (1875CXXBXX)	(1)	Y325-325	[B]
	(1875CXXEXX)	(1)	92848	[E]
32	<b>Items included in Service Kit</b>	(1)	K1875CXXXXXX	

## MATERIAL CODE

[B] = Nitrile	[Ny] = Nylon
[CSS] = Ceramic coated Stainless Steel	[SS] = Stainless Steel
[D] = Acetal	[T] = PTFE
[E] = EPR	[U] = Filled PTFE/ Leather Staggered
[H] = UHMW-PE/ Leather Staggered	[UH] = UHMW-PE
[L] = Leather	[V] = Viton

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## LOWER PUMP DISASSEMBLY

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**NOTE:** All threads are right hand.

1. Secure the lower pump assembly in a vise, clamping on flats of (12) pump body.
2. Securely hold (21) suction tube with a strap wrench and unthread and remove (26) foot valve body.
3. Remove (25) dowel pin, (24) ball, (22) snap ring and (23) "O" ring.
4. Using a strap wrench, unthread and remove (21) suction tube and (19) "O" ring seal from (12) pump body.
5. Loosen (3) spacer tube and push (1) plunger and components out through the bottom end of (12) pump body.  
**NOTE:** Be careful not to damage the finish on (1) plunger.
6. Unthread and remove (18) inner check seat, releasing (17) ball, (16) flat washer and two (15) cups.
7. Unthread and remove (3) spacer tube and (5) solvent cup from (12) pump body, releasing (11) gasket, (10) spring, (9) male packing washer, (8) "V" packings, (7) female packing washer and (6) washer.
8. Unthread and remove (5) solvent cup from (3) spacer tube and remove (4) "O" ring.
9. Unthread and remove (13) connector rod from (1) plunger.
10. Unthread and remove (14) cup follower from (13) connector rod.

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## LOWER PUMP REASSEMBLY

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**NOTE:** Thoroughly clean and lubricate all seals. Replace all soft parts with new ones included in the repair kit. **NOTE:** Refer to the illustration (figure 2, page 5) for "V" packing lip direction.

1. Assemble (4) "O" ring to groove in (3) spacer tube and assemble (5) solvent cup to (3) spacer tube.
2. Assemble (6) washer, (7) female packing washer, (8) "V" packings, (9) male packing washer and (10) spring into (3) spacer tube.
3. Assemble (11) gasket and (3) spacer tube and components into (12) pump body. **NOTE:** Do not tighten at this time.
4. Slide (1) plunger into (3) spacer tube and (12) pump body, being careful not to damage (8) "V" packings.
5. Assemble (13) connector rod and (14) cup follower to (1) plunger. **NOTE:** Apply Loctite nickel anti-seize to threads of connector rod and tighten to 50 ft lbs (67.8 Nm).

6. Assemble (15) cup, (16) flat washer, (15) cup and (17) ball to (14) cup follower, securing with (18) inner check seat. **NOTE:** Apply Loctite nickel anti-seize to threads and tighten to 65 - 70 ft lbs (88.1 - 94.8 Nm).
7. Assemble (19) "O" ring seal onto (21) suction tube.
8. Apply Loctite nickel anti-seize to threads of (21) suction tube and assemble to (12) pump body, being careful not to damage (15) cups. **NOTE:** Tighten to 125 - 150 ft lbs (169.5 - 203.4 Nm). **NOTE:** (15) cups can be rolled on a clean flat surface or ARO tool #637403 is available for easier insertion into (21) suction tube.
9. Tighten (3) spacer tube to 125 - 150 ft lbs (169.5 - 203.4 Nm).
10. Assemble (24) ball, (23) "O" ring seal, (22) snap ring and (25) dowel pin to (26) foot valve body.
11. Apply Loctite nickel anti-seize to threads of (26) foot valve body and assemble body and components to (21) suction tube. **NOTE:** Tighten to 125 - 150 ft lbs (169.5 - 203.4 Nm).

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## TROUBLESHOOTING

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### Material leakage out of solvent cup.

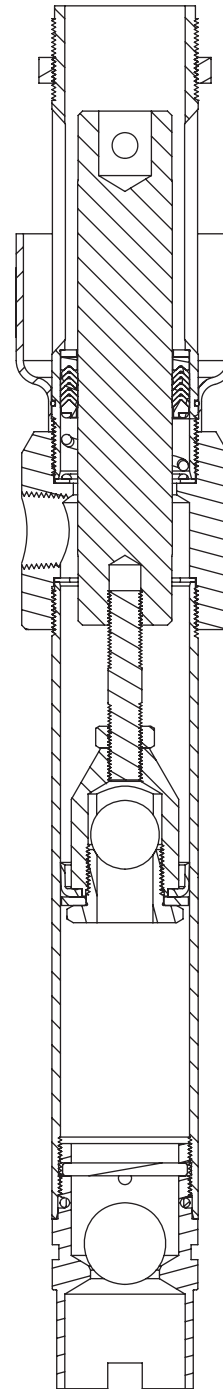
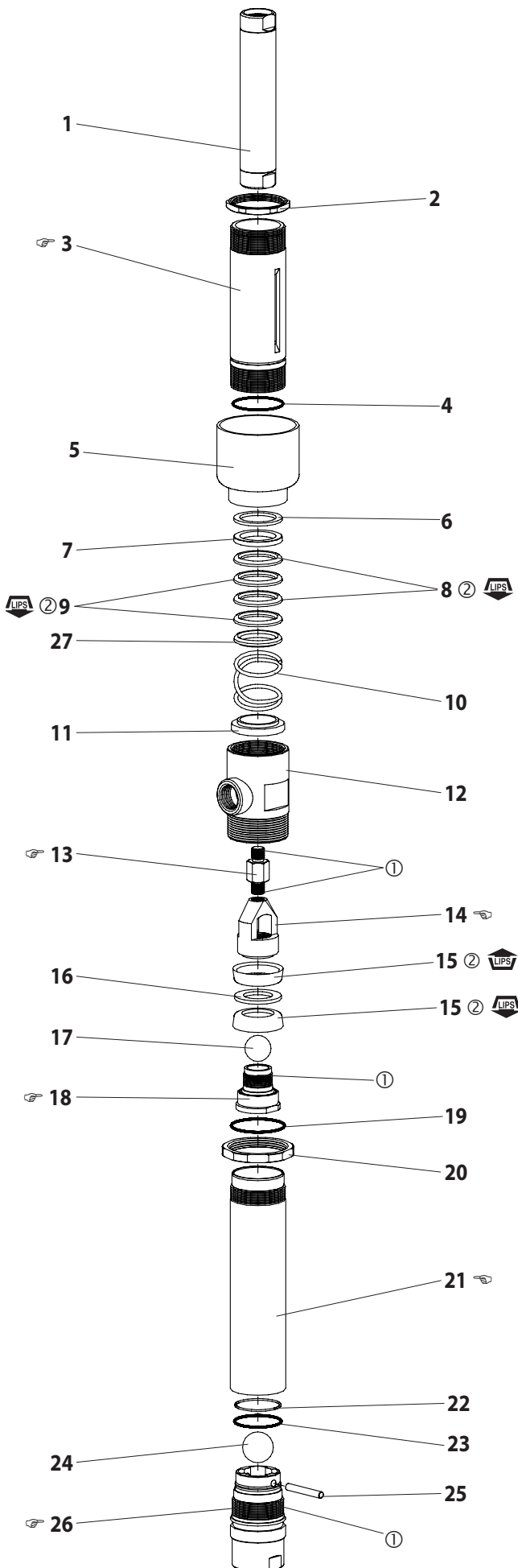
- Worn packings. Replace (8) packings.

### Material in one stroke only (fast upstroke).

- (17) Ball may not be seating on (18) inner check seat. Remove ball from assembly, clean and inspect the ball seat area. If either the ball or the inner check seat is damaged, replace.

### Material in one stroke only (fast down stroke).

- (24) ball may not be seating on (26) foot valve body. Remove ball from foot valve, clean and inspect the ball and seat area. If either the ball or the foot valve body is damaged, replace. Also, restriction on the suction inlet will cause fast down stroke (collapsed hose).



#### ASSEMBLY TORQUE REQUIREMENTS

NOTE: DO NOT OVER TIGHTEN FASTENERS.

(3) Spacer tube, (21) suction tube and (26) foot valve body  
125 - 150 ft lbs (165.5 - 203.4 Nm).

(13) Connector rod and (14) cup follower 50 ft lbs (67.8 Nm).  
(18) inner check seat 65 - 70 ft lbs (88.1 - 94.9 Nm)

#### LUBRICATION / SEALANTS

- ① Apply Loctite nickel anti-seize to threads.
- ② Lubricate packings with Wet Sol upon assembly.
- ③ Apply Loctite 242 or 243 removable Thread locker.

Figure 2

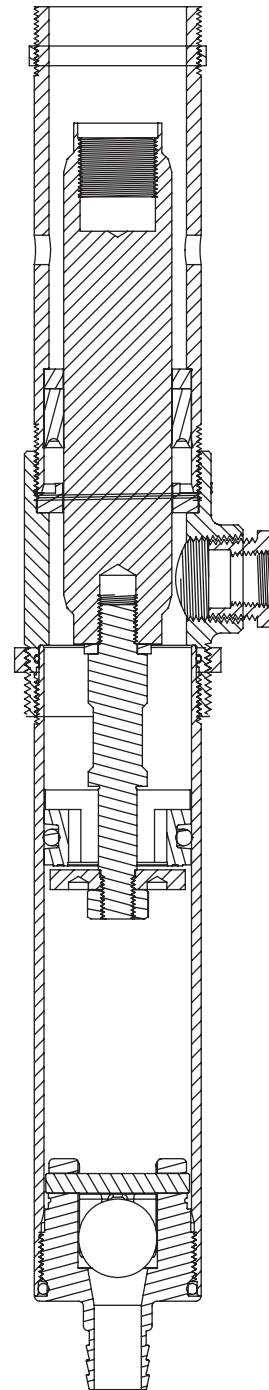
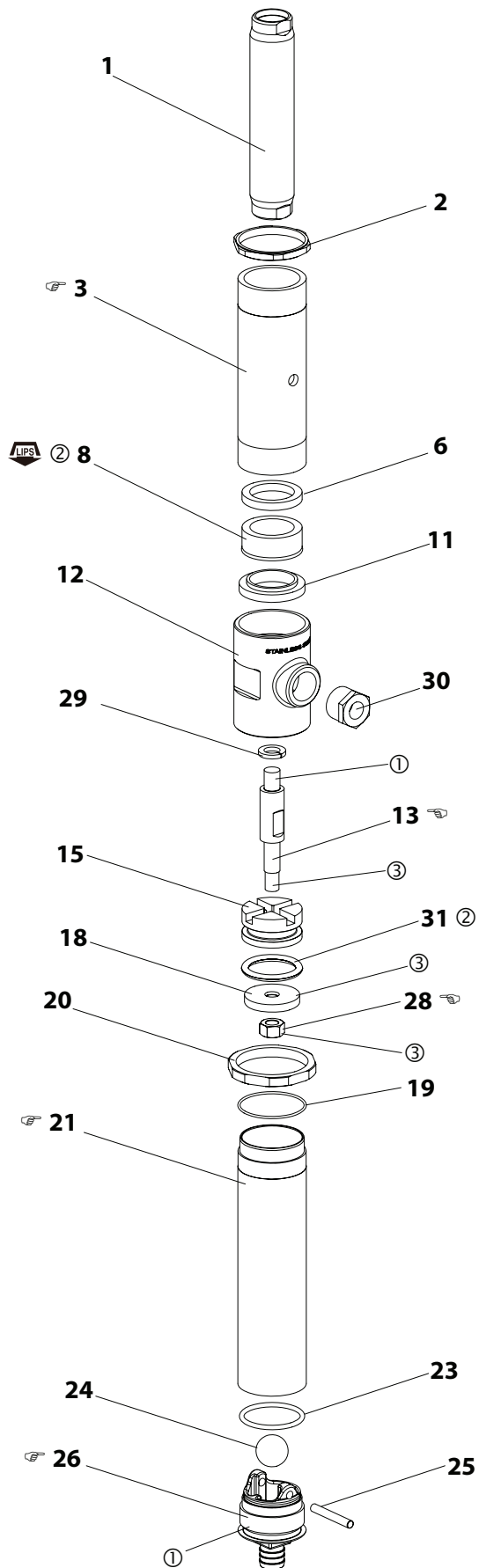


Figure 3

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## NOTES

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