

TWO-BALL STYLE LOWER PUMP END

ALSO COVERS 637353-X 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 Johnstone replacement parts to assure compatible pressure rating and longest service life.
- 637353-JAD for general repair of 66442-JA() lower pump ends.

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 a Johnstone pump. Replacement copies of these forms are available upon request.
 - 650XXX 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 for easy priming of the lower foot valve. The double acting feature is standard in all Johnstone 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 lubricant that is compatible with the material being pumped.

Keep lubricant cup filled with this compatible lubricant. 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.

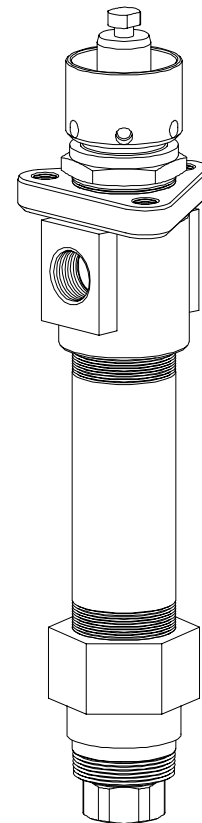


Figure 1

LOWER PUMP END DESCRIPTION CHART

66442 - X X X	
PACKING MATERIAL	
J - Polyurethane (upper)	
- UHMW-PE (lower)	
SPRING ARRANGEMENT	
A - No Spring w / Alternate Ball	
PLUNGER TYPE	
3 - Hardened Stainless Steel with Hard Chrome Plating	
B - Hardened Stainless Steel with Ceramic Coating	
D - Hardened Stainless Steel with Hard Chrome Plating (large motors)	
G - Hardened Stainless Steel with Ceramic Coating (large motors)	
SERVICE KIT SELECTION	66442 - X X X
EXAMPLE: Lower Pump End # 66442-JAG	637353 - <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> D
Service Kit # 637353-JAD	Packing <input type="checkbox"/> Spring <input type="checkbox"/>

PARTS LIST

ITEM	DESCRIPTION (Size in inches)	QTY	PART NO.	[MTL]	ITEM	DESCRIPTION (Size in inches)	QTY	PART NO.	[MTL]
1	Lubricant Cup	(1)	94172	[SS]	27	Ball (.8125" dia.)	(1)	Y16-126	[SH]
6	Outlet Body	(1)	94169	[SS]	28	Seat	(1)	91527	[TC]
✓ 8	"O" Ring (1/16" x 2-1/4" o.d.)	(3)	Y328-34	[T]	✓ 29	Gasket	(1)	94928	[D]
9	Tube (models 66442-JAD and -JA3)	(1)	94179	[PSS]	33	Piston	(1)	94929	[SH]
	(models 66442-JAB and -JAG)	(1)	94179-2	[CSS]	36	Adapter	(1)	94795	[SH]
15	Inlet Body	(1)	94204	[SS]	46	Washer	(1)	94228	[SS]
✓ 18	Truarc Ring (1.891" o.d.)	(1)	76243-3	[SS]	47	Wavy Washer	(1)	94234	[SH]
20	Pin (.187" o.d. x 1.218")	(1)	94230	[SS]	50	Female Packing Washer	(2)	94195-2	[PPS]
21	Ball (1.1875" dia.)	(1)	Y16-138	[SH]	53	Male Packing Washer	(2)	94194	[SS]
22	Seat	(1)	94170	[TC]	✓ 55	"V" Packing	(5)	93455-4	[UH]
✓ 23	"O" Ring (1/16" x 1-5/8" o.d.)	(1)	Y328-29	[T]	✓ 64	Seal	(3)	95343	[U]
26	Plunger (models 66442-JA3)	(1)	90298-1	[PSH]	70	Inlet Adapter	(1)	94236	[SS]
	(models 66442-JAB)	(1)	90298-2	[CSH]	74	Gland Nut	(1)	95342	[SS]
	(models 66442-JAD)	(1)	94922-1	[PSH]	77	Bushing	(1)	94182-2	[PPS]
	(models 66442-JAG)	(1)	94922-2	[CSH]	✓	Items included in Service Kit		637353-JAD	

MATERIAL CODE

[CSH] = Ceramic Coated Hard Stainless Steel	[PPS] = Polyphenylene Sulfide	[SH] = Hard Stainless Steel	[TC] = Tungsten Carbide
[CSS] = Ceramic Coated Stainless Steel	[PSH] = Hard Chrome Plated Hard Stainless Steel	[SS] = Stainless Steel	[U] = Polyurethane
[D] = Acetal	[PSS] = Hard Chrome Plated Stainless Steel	[T] = Teflon	[UH] = UHMW-PE

LOWER PUMP DISASSEMBLY

IMPORTANT: The lower pump is designed so that access to the packings can be accomplished without disassembly of the inlet / outlet bodies from the main pump tube. Complete lower pump disassembly should not be necessary, in most cases skip disassembly steps 3, 4 and 5 below. **NOTE: All threads are right hand.**

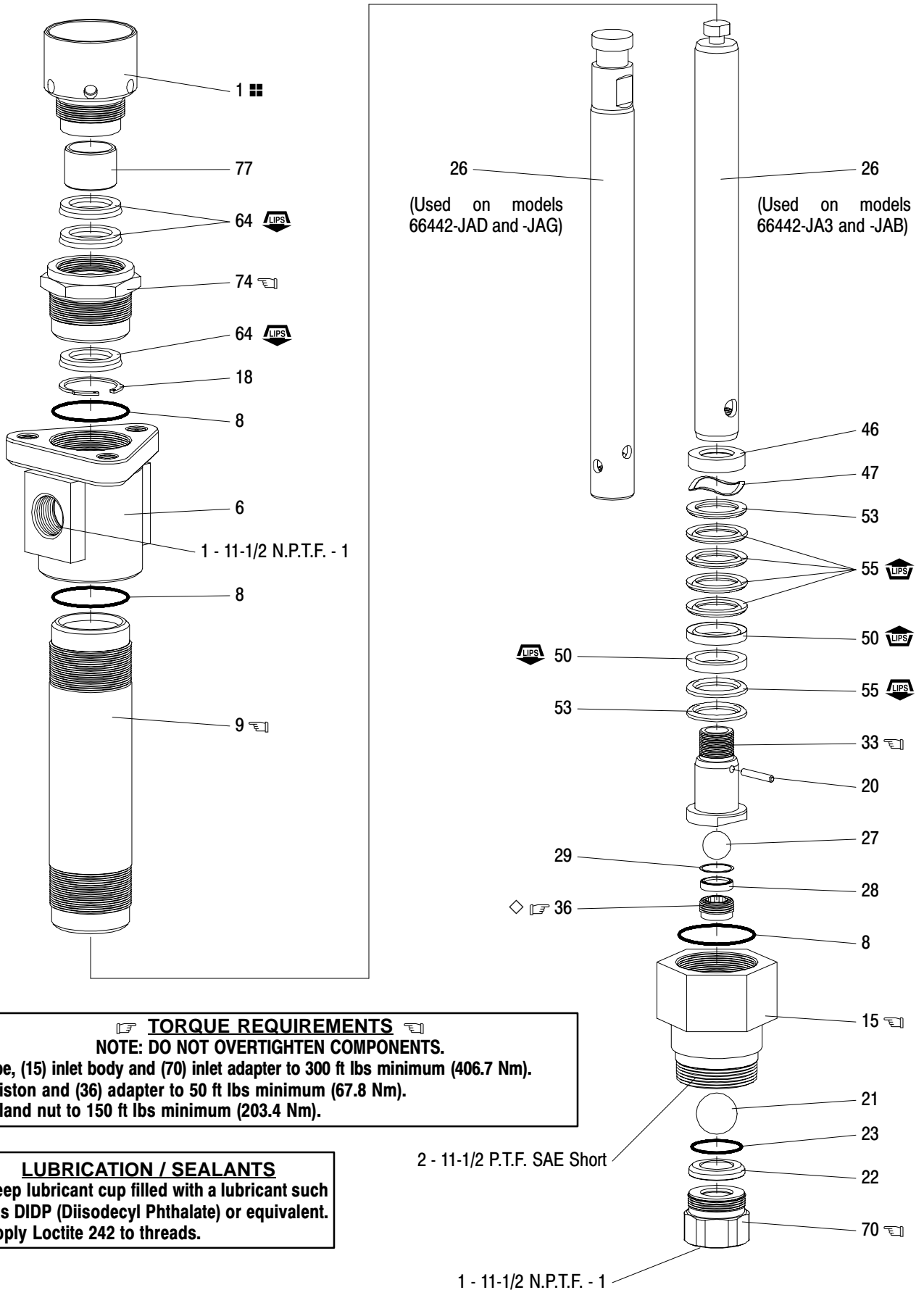
1. Secure the lower pump assembly in a vise, clamping on the (6) outlet body.
2. Loosen the (1) lubricant cup and unscrew the (74) gland nut and remove the assembly from the lower pump.
3. Remove the (8) "O" ring from the (6) outlet body. Set this assembly aside.
4. Unscrew the (15) inlet body and remove from the (9) tube.
5. Unscrew the (9) tube from the (6) outlet body and remove the two (8) "O" rings.
6. Remove the (26) plunger and components from the (9) tube. Remove the (6) outlet body from the vise.
7. Secure the (26) plunger and components in a vise and unscrew the (33) piston from the plunger.
8. Remove the (46) washer, (20) pin, (47) wavy washer, (53) male packing washers, (55) "V" packings and (50) female packing washers.
9. Unscrew the (36) adapter from the (33) piston, releasing the (28) seat, (29) gasket and (27) ball.
10. Secure the (74) gland nut in a vise and unscrew the (1) lubricant cup.
11. Remove the (77) bushing and two (64) seals.
12. Remove the (18) retaining ring, releasing the (64) seal.
13. Secure the (15) inlet body in a vise and unscrew the (70) adapter, releasing the (22) seat, (23) "O" ring and (21) ball.

LOWER PUMP REASSEMBLY

NOTE: Inspect and replace old parts with new parts as necessary. Look for deep scratches on metallic surfaces and nicks or cuts in "O" rings and packings. Refer to sealant and torque notes in figure 2.

1. Secure the (74) gland nut in a vise and insert one (64) seal, securing with the (18) retaining ring.
2. Insert two seals (64) into the top of (74) gland nut.
3. Place the (77) bushing into the (1) lubricant cup and screw the (1) lubricant cup into the (74) nut. **Do not tighten.**
4. Secure the (6) outlet body in a vise and place the (8) "O" ring at the bottom of the (74) gland nut and screw into the (6) outlet body. Tighten the (74) nut to 150 ft lbs (203.4 Nm).
5. Slide the (26) plunger rod into the (1) lubricant cup and through the upper packing. **Be careful not to damage the packings.**
6. Assemble the (33) piston by placing the (53) male packing washer, (55) "V" packing, two (50) female packing washers, four (55) "V" packings, (53) male packing washer, (20) pin, (47) wavy washer and (46) washer onto (33) piston.
7. Screw the (33) piston assembly into the (26) plunger rod and tighten to 50 ft lbs (67.8 Nm). Place the (27) ball, (29) gasket and (28) seat into the (33) piston and screw the (36) adapter into place and tighten to 50 ft lbs (67.8 Nm). **NOTE:** Apply Loctite 242 to threads of (36) before assembly.
8. Place the (8) "O" rings at each end of the (9) tube and slide the (9) tube over the lower piston assembly and screw into the (6) outlet body. Tighten to 300 ft lbs (406.8 Nm).
9. Screw the (15) inlet body onto the (9) tube and tighten to 300 ft lbs (406.8 Nm).
10. Place the (21) ball, (23) "O" ring and (22) seat into the (15) inlet body and screw the (70) adapter into the (15) inlet body and tighten to 300 ft lbs (406.8 Nm).
11. Tighten the (1) lubricant cup.

PARTS LIST



TORQUE REQUIREMENTS
NOTE: DO NOT OVERTIGHTEN COMPONENTS.
 (9) tube, (15) inlet body and (70) inlet adapter to 300 ft lbs minimum (406.7 Nm).
 (33) piston and (36) adapter to 50 ft lbs minimum (67.8 Nm).
 (74) gland nut to 150 ft lbs minimum (203.4 Nm).

LUBRICATION / SEALANTS
 ■ Keep lubricant cup filled with a lubricant such as DIDP (Diisodecyl Phthalate) or equivalent.
 ◇ Apply Loctite 242 to threads.

Figure 2

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 (22) seat (see lower pump disassembly). Remove the (21) ball from the (22) seat, clean and inspect the seat area. If the ball or seat is damaged, replace.
- **Material on one stroke only (fast upstroke).** The (27) ball may not be seating in the (28) seat (see lower pump disassembly). Remove (27) ball from (28) seat, clean and inspect. If the (27) ball is damaged, replace. Check for worn or damaged packings and seals. Replace the packings and seals as necessary.
- **Material leakage out of the lubricant cup or material appears on the pump plunger rod.** Relieve the pressure in the pump and tighten the lubricant 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.

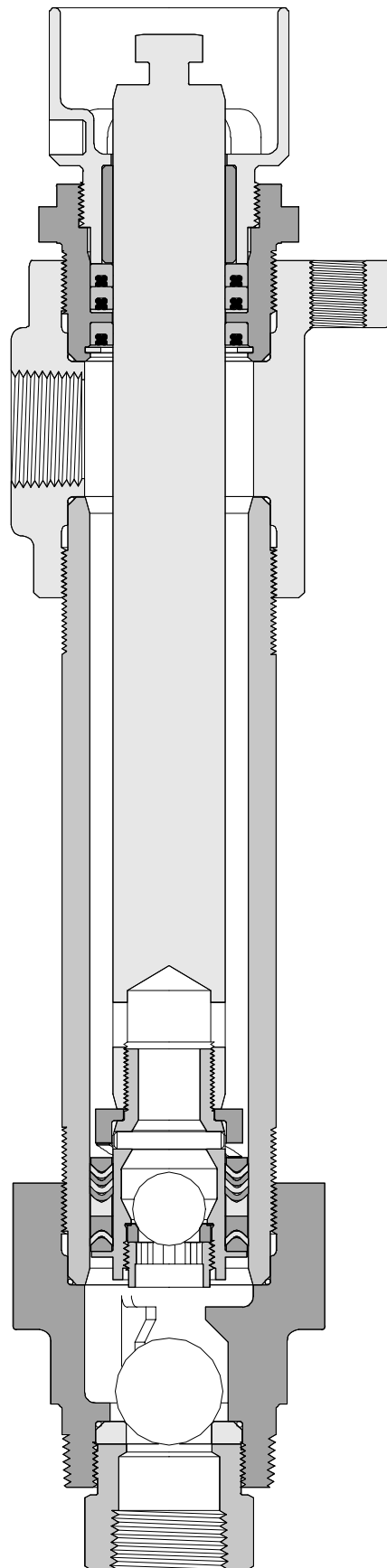


Figure 3