

300-701P DOUBLE BALL WITH POLYSEALS 300-701PS DOUBLE BALL WITH SLEEVE

IMPORTANT: READ THIS MANUAL CAREFULLY BEFORE INSTALLING, OPERATING, OR SERVICING THIS EQUIPMENT

WHEN REPAIRING THE AIR MOTOR TURN OFF THE AIR SUPPLY AND BLEED THE MATERIAL PRESSURE FROM THE PUMPING SYSTEM.

SERVICE KITS

Use only Johnstone replacement parts to insure compatibility and longest life.

- Foot Valve Repair Kit : 300-701PRK
- Foot Valve Seal Repair Kit: 300-701PSK

SPECIFICATIONS

Inlet Port Size	1 1/2" NPT
Outlet Port Size	1" NPT
Displacement = 13.3 Cubic inches per cycle.	
Static Pressure Ratio 10 in. Air Motor	45:1
Static Pressure Ratio 8 in. Air Motor	30:1
Static Pressure Ratio 6 in. Air Motor	16:1
Static Pressure Ratio 4 in. Air Motor	6:1
Material Pressure Operating Range 0 PSI to 5000 PSI (340 BAR)	

WARNING:

DO NOT OPERATE AIR MOTOR AT PRESSURES ABOVE 100PSI (6.8 BAR).

MAINTENANCE SCHEDULE

EVER BARREL CHANGE:

Add oil to the Packing Gland.

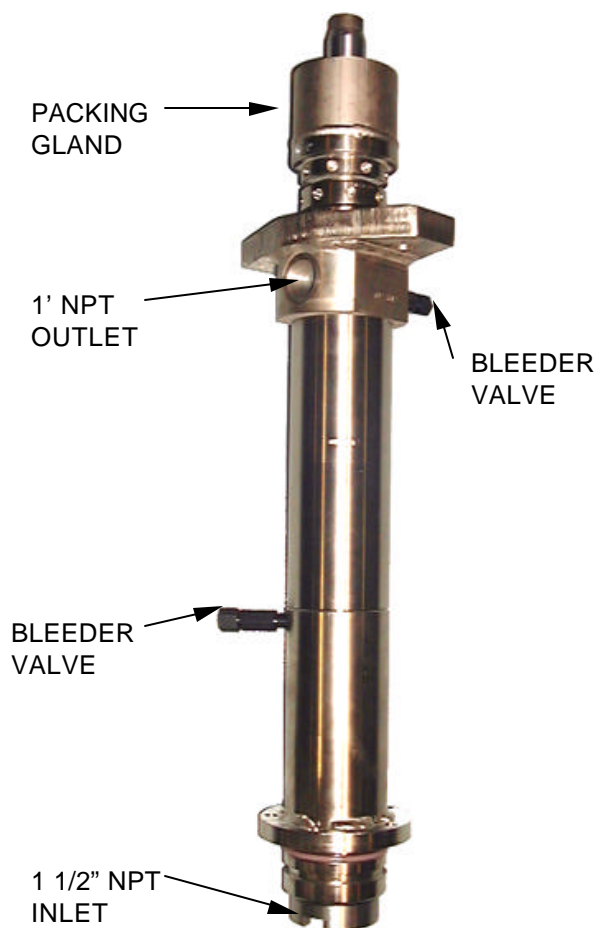
Bleed air from Foot Valve

Check for material Leakage (rebuild if leaking at the threads)

Check for pump signal stroking. (signal stroking is the displacement rod moving very quickly in a direction without a pump output).

If the pump is signal stroking- bleed air from bleeder valve opposite the outlet port.

If bleeding does not correct signal stroking rebuild foot valve.



OPERATION

The Pump is double acting (output in both directions). When the Pump is going in the up direction the upper ball closes and material is pumped out. The lower ball opens allowing the lower chamber to be filled. In the down direction the upper ball opens and the lower ball closes allowing material to be pumped out.



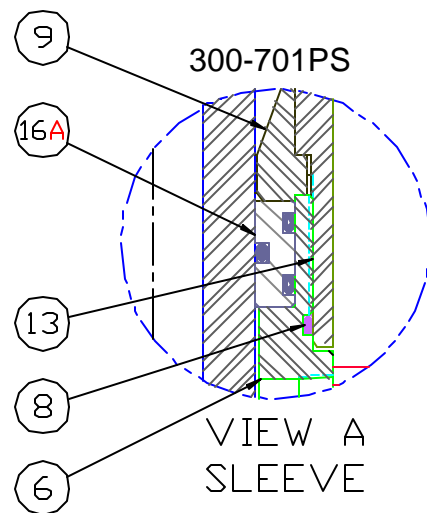
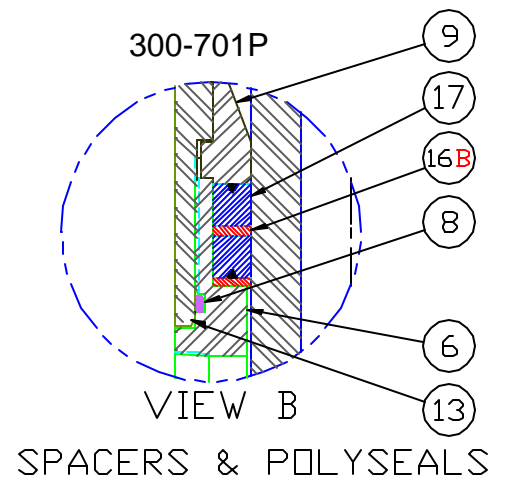
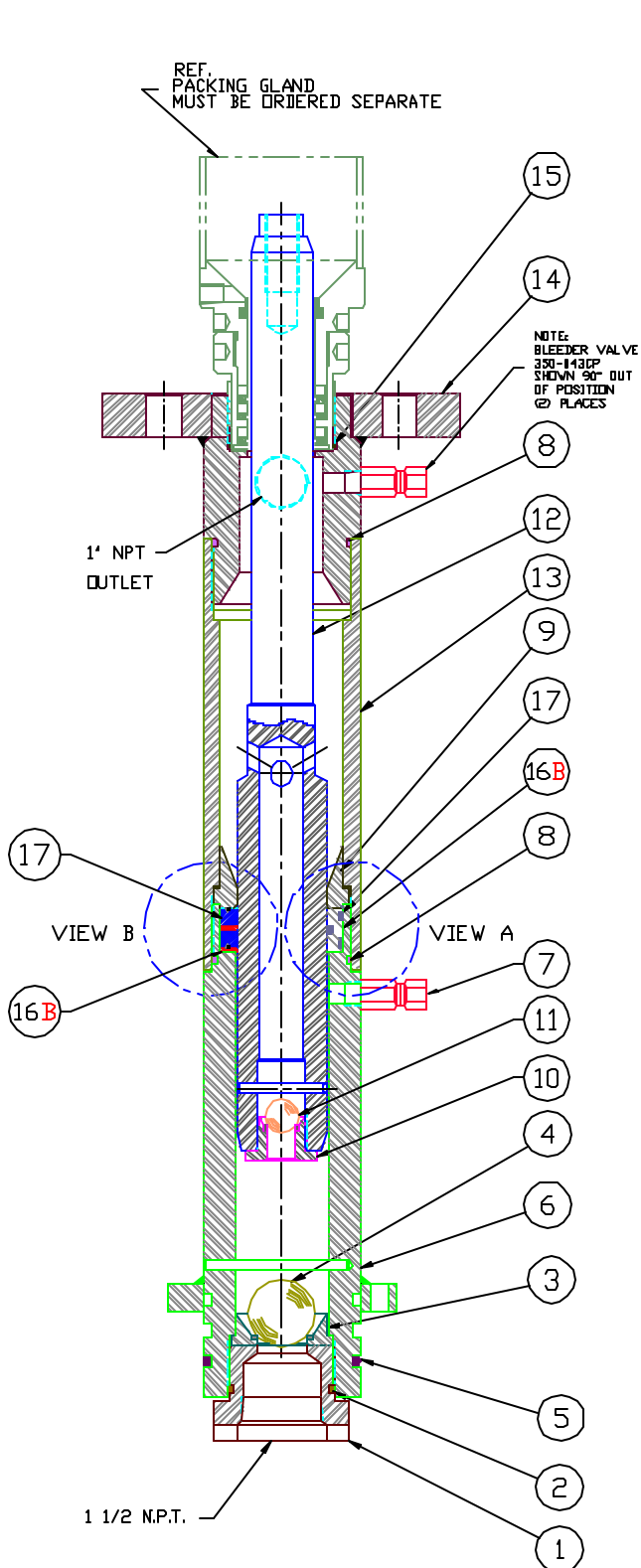
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INGERSOLL-RAND
FLUID PRODUCTS

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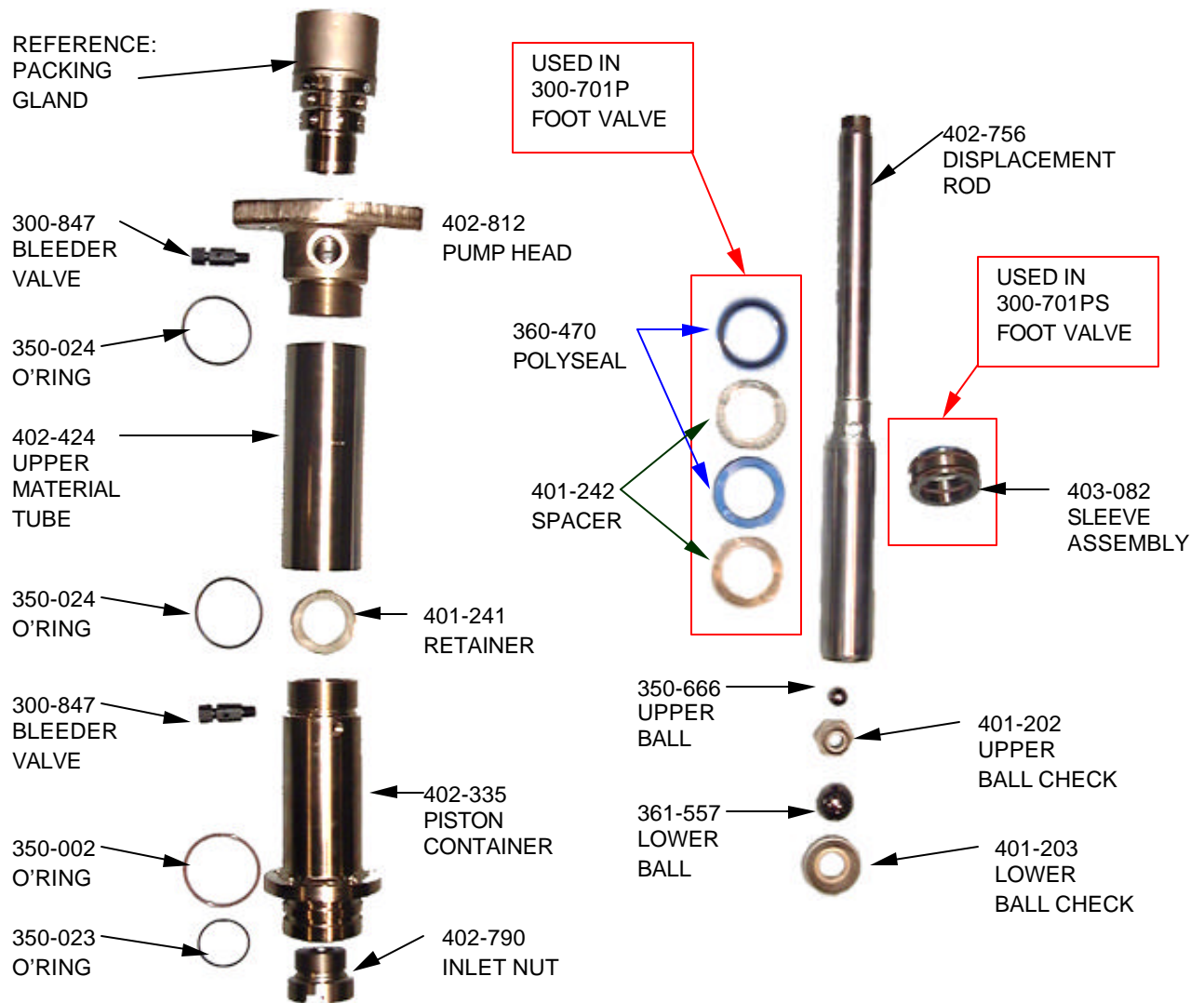
300-701P & 300-701PS DOUBLE BALL FOOT VALVE



@ INCLUDED IN 300-701PSK
* INCLUDED IN 300-701PRK

@*	17	2	360-470	POLYPACK SEAL FLURO 2 X 2 3/4 X 3/8
*	16B	2	401-242	SPACER
		2	350-412	O.D. O'RING FOR SLEEVE
		1	360-470	I.D. O'RING FOR SLEEVE
	16A	1	403-082	SLEEVE WITH O'RINGS
@*	15	1	350-411	O RING VITON 2 5/16 X 2 1/2 X 3/32
	14	1	402-812	PUMP HEAD WELDMENT
	13	1	402-424	UPPER MATERIAL TUBE PLATED
	12	1	402-756	PISTON ROD NITRALLOY
*	11	1	350-666	BALL 3/4 TC
*	10	1	401-202	UPPER BALL SEAT TC
	9	1	401-241	RETAINER RING
@*	8	2	350-024	O RING VITON 2 7/8 X 3 1/8 X 1/8
*	7	2	300-847	BLEED VALVE 1/4 NPT
	6	1	402-335	PISTON CONTAINER PLATED
@*	5	2	360-002	O RING VITON 3 1/8 X 3 1/2 X 3/16
*	4	1	361-557	1 1/2 DIA TUNGSTEN CARBIDE BALL
@*	3	1	401-203	LOWER BALL SEAT TC
@*	2	1	350-023	O RING VITON 2 1/8 X 2 3/8 X 1/8
	1	1	402-790	INLET NUT PLATED
DET#	QTY	PART NO	DESCRIPTION	

300-701P & 300-701PS DOUBLE BALL FOOT VALVE



FOOT VALVE REMOVAL AND INSTALLATION

WHEN REPAIRING THE AIR MOTOR TURN OFF THE AIR SUPPLY AND BLEED THE MATERIAL PRESSURE FROM THE PUMPING SYSTEM.

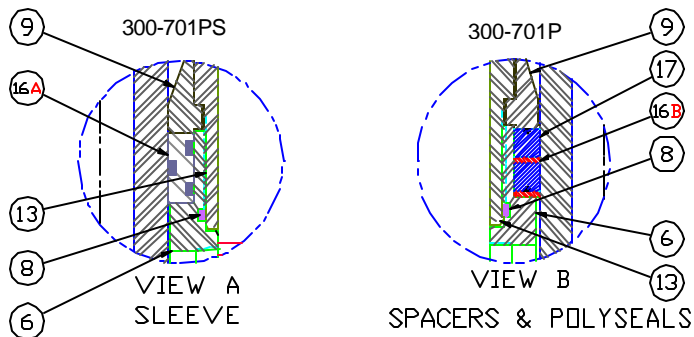
NOTE: THE AIR MOTOR AND FOOT VALVE ARE VERY HEAVY.

- 1) Remove the Air Motor from the Pump.
 - a) Remove the Air Supply hose to the Air Motor.
 - b) Unscrew the 400-112 Collar that is attached to the Air Motor Piston Rod.
 - c) Remove the $\frac{3}{4}$ -10 Hex bolts that attach the spacer rods to the Foot Valve Flange.
 - d) Lift the Air Motor off of the Foot Valve.
- 2) Remove the 5 or 6 Hex Screws that hold the Primer Housing to the Follower Plate.
- 3) Remove the Foot Valve from the Follower Plate by lifting it straight out.
- 4) To install reverse steps 1-3.

300-701xx FOOT VALVE REBUILDING INSTRUCTIONS

DISASSEMBLY PROCEDURE:

- 1) Clamp Pump Head (weldment) in vice.
- 2) Remove connector assembly from the Displacement Rod of the foot valve.
- 3) Remove Inlet Valve Nut from lower end of foot valve.
- 4) Remove O'ring from Inlet Valve Nut.
- 5) Remove the Lower Ball Seat and Lower Ball from the Piston Container.
- 6) Unscrew Piston Container from the material tube and pull it out from pump.
 - a) The Displacement Rod and Polyseals/Sleeve will stay in the Piston Container.
- 7) Remove the Displacement Rod from the Piston container.
 - a) 300-701P Remove the Polyseals and Spacers from the Piston Container.
 - b) 300-701PS Remove the Sleeve and O'rings from the Piston Container.
 - i) An internal Puller may be used to remove the Sleeve from the Piston Container.

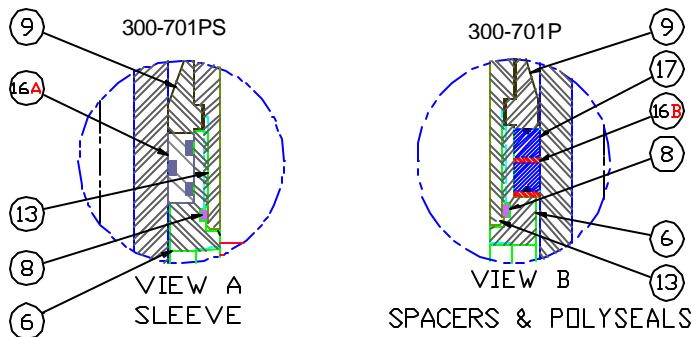


- 8) Remove the Retainer Ring from the Upper Material Tube.
- 9) Unscrew the Upper Material Tube from the Pump Head.
- 10) Unscrew the Packing Gland Assembly and O'rings from the Pump Head.
- 11) Remove the Bleeder Valve from the Pump Head.
- 12) Clamp the Displacement Rod in a Vice and unscrew the Upper Ball Seat.
- 13) Remove the Upper Ball from the Displacement Rod.
- 14) Clean and inspect all parts, replace if worn or damaged.

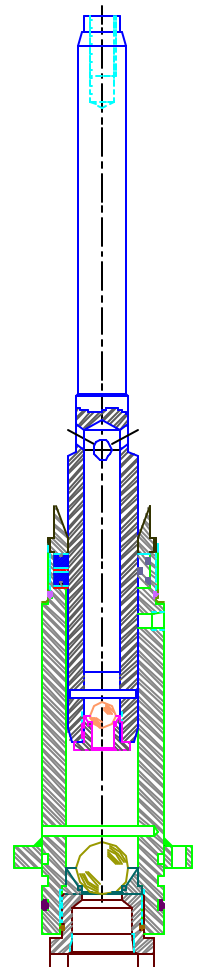
300-701xx FOOT VALVE REBUILDING INSTRUCTIONS

ASSEMBLY PROCEDURE

- 1) Clamp the Upper Ball Seat in a Vice.
- 2) Place the Upper Ball on the Upper Ball Seat.
- 3) Screw the Displacement Rod on the Upper Ball Seat and tighten to 50 Ft. Lbs.
 - a) The Upper Ball should move freely in the Displacement Rod.
- 4) Place Piston Container inlet side up on a bench.
 - a) Install the Lower Ball and Seat (carbide side facing ball).
 - b) Install the O'ring on the inlet nut and lubricate.
 - c) Screw the Inlet Nut into the Piston Container and tighten to 50 Ft. Lbs.
The Lower Ball should move freely.
- 5) Turn the Piston Container over and install the 350-024 O'ring and lubricate.
 - a) 300-701P Install the Spacer – Polyseal (lip down) – Spacer – Polyseal (lip up) into the Piston Container and lubricate.
 - b) 300-701PS Lubricate the Sleeve/with O'ings assembly and install into the Piston Container.



Piston Container and Displacement Rod Assembly



- 6) Install the Displacement Rod assembly into the Piston Container. Be very careful not to damage the Polyseals.
- 7) Install the Retainer Ring.
- 8) Install the O'rings (350-024 and 350-411) in the Pump Head and lubricate.
- 9) Place the Pump Head in a vice.
- 10) Thread the Upper Material Tube to the Pump Head and tighten to 100 Ft. Lbs.
- 11) Thread the Displacement Rod and Piston Container assembly to the Upper Material Tube and tighten to 100 Ft. Lbs.
- 12) Rebuild Packing Gland assembly. See Packing Gland sheet for proper replacement of parts.
- 13) Lubricate the Packing Gland and Displacement Rod and install the Packing Gland Assembly and tighten.
- 14) Install the Bleeder Valve in the Pump Head and Piston Container. The outlet hole should face down. Use pipe sealant on the threads.
- 15) Install the Air Motor Connector into the Displacement Rod. See 900-022 Drawing for proper settings.

**TROUBLE SHOOTING A SERIES #3
DOUBLE BALL FOOT VALVE**

- A) PUMP NOT DELIVERING MATERIAL ON THE UP STROKE
1. Air inside Foot Valve. Bleed Air.
 2. The upper ball not seating properly on the ball seat.
(located in the displacement rod)
 3. Cracked upper ball seat or ball held open with material.
 4. Internal polyseals are worn out.
 5. Damaged upper ball.
 6. Foreign material inside Foot Valve. Rebuild
- B) PUMP NOT DELIVERING MATERIAL ON THE DOWN STROKE
1. Air inside Foot Valve. Bleed Air
 2. The lower ball not seating properly on the ball seat.
(located on top of the inlet valve nut)
 3. Cracked lower ball seat or ball held open with material.
 4. Internal polyseals are worn out.
 5. Damaged lower ball.
 6. Foreign material inside Foot Valve. Rebuild
- C) PUMP COMPLETELY INOPERATIVE
1. Internal polyseals worn out.
 2. Lower ball not opening.
(Bent pin in the container)
 3. Elevator not applying enough down pressure.
 4. Air trapped inside pump. Bleed Air.