

Operating & Maintenance Manual for JRZA AccuLAB Pump



The Right Connection®

Dixon Sanitary

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Thank you for purchasing a Dixon Sanitary Product!

This manual contains installation, operation, disassembly and assembly instructions, maintenance procedures, troubleshooting and a complete parts list for JRZA AccuLAB Pump.


READ THIS MANUAL carefully to learn how to service these pumps. Failure to do so could result in bodily injury or equipment damage. 

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Safety Information

DO'S & DON'TS

- DO** read and understand these instructions before installing or using the pump.
- DO** use Dixon spare parts when replacing a component of the pump.
- DO NOT** service the pump while it is running.
- DO NOT** place the pump in an application where the service ratings are exceeded.
- DO NOT** modify the pump. Modifying the pump creates unsafe conditions and voids all warranties.

SAFETY PRECAUTIONS WHEN INSTALLING PUMP

- DO** use an authorized electrician when connecting the pump.
- DO** observe the mechanical limits of the pump (refer to the pump performance sheet).
- DO** install a throttling valve in the discharge line.
- DO NOT** install a throttling valve in the suction line.

SAFETY PRECAUTIONS WHEN OPERATING PUMP

- DO** allow only qualified personnel to operate this pump.
- DO NOT** start the pump until all personnel are clear.
- DO NOT** touch the pump or the lines when pumping hot fluids or when performing Clean In Place (CIP) procedures.
- DO NOT** run the pump with BOTH the suction inlet and discharge outlet blocked. Running the pump with the inlet blocked will cause serious damage to the pump.
- DO NOT** check pump rotation with liquid in the pump.
- DO NOT** run the pump with the front cover removed. The rotors and rotor case could be damaged or may cause severe injury.
- DO NOT** operate the pump with the safety guard removed.

SAFETY PRECAUTIONS WHEN SERVICING PUMP

- DO** ensure the pump is cool to touch before performing service.
- DO** relieve all pressure and drain all fluids from pump and connected piping before performing service.
- DO ENSURE POWER TO THE UNIT HAS BEEN DISCONNECTED PRIOR TO PERFORMING ANY PUMP MAINTENANCE OR CLEANING.**
- DO** exercise caution and wear protective clothing when using lye or acid for cleaning.

Care of Stainless Steel

The stainless steel components in Dixon Sanitary equipment are machined, welded and assembled by skilled craftsmen using manufacturing methods that preserve the corrosion-resistant quality of the stainless steel.

Retention of corrosion-resistant qualities under processing conditions requires regular attention to the precautions listed below.

1. Regularly check all electrical devices connected to the equipment for stray currents caused by improper grounding, damaged insulation or other defects. Corrosion: Pitting often occurs when stray currents come in contact with moist stainless steel.
2. Never leave rubber mats, fittings, wrenches, etc. in contact with stainless steel. Corrosion: Pitting or galvanic action. Objects retard complete drying, preventing air from reforming the protective oxide film. Galvanic corrosion occurs when two dissimilar metals touch when wet.
3. Immediately rinse equipment after use with warm water until the rinse water is clear. Clean the equipment (manual or CIP) as soon as possible after rinsing. Corrosion: discoloration, deposits, pitting. Product deposits often cause pitting beneath the particles.
4. Use only recommended cleaning compounds. Purchase chemicals from reputable and responsible chemical manufacturers familiar with stainless steel processing equipment, they continuously check the effects of their products on stainless steel.
5. Use cleaning chemicals exactly as specified by the manufacturer. Do not use excessive concentrations, temperatures or exposure times. Corrosion: Pitting, discoloration, stress cracks. Permanent damage often occurs from excessive chemical concentrations, temperatures or exposure times.
6. For manual cleaning, use only soft non-metallic brushes, sponges or pads. Brush with the grain on polished surfaces, avoid scratching the surface. Corrosion: Pitting, scratches. Metal brushes or sponges will scratch the surface and promote corrosion over a period of time. Metal particles allowed to remain on a stainless steel surface will cause pitting.
7. Use chemical bactericides exactly as prescribed by the chemical manufacturer in concurrence with local health authority. Use the lowest permissible concentration, temperature and exposure time possible. Flush immediately after bacterial treatment. In no case should the solution be in contact with stainless steel more than 20 minutes. Corrosion: Protective film destroyed. Chlorine and other halogen bactericides can destroy the protective film. A few degrees increase in temperature greatly increases chemical activity and accelerates corrosion.
8. Regularly inspect the joints in pipelines. Be sure all connections are tight fitting without binding. Corrosion: Crevice corrosion. Small crevices caused by improperly seated gaskets will promote crevice corrosion. Stainless steel under stress will develop stress cracking especially in the presence of bactericides containing chlorine.
9. Regularly inspect equipment for surface corrosion (i.e. pitting deposits, stress cracks, etc.). If deposit or color corrosion is detected, remove it immediately using mild scouring powder and detergents. Rinse thoroughly and allow to air dry. Review production and cleaning procedures to determine the cause. Note: If corrosion is not removed, the protective film cannot be restored and corrosion will continue at an accelerated rate.

JRZA-Series Technical Specifications

Specifications:

- Maximum Inlet Pressure: 14.5 PSI
- Maximum Differential Pressure: 58 PSI
- Maximum Flow Rate: 4.4 GPM
- Temperature Range: 14°F to 212°F
- Viscosity Range: Up to 100,000 cPs
- Noise Level: 60 ~ 80 dB

Materials:

- Product contact parts: AISI 316L Stainless Steel (standard)
- Product contact elastomers: EPDM
- Optional seals: FKM

Shaft Seals:

- Seal types: Single and Double Mechanical Seal
- Maximum flushing water pressure: 7 PSI (0.5 bar)
- Flushing water consumption: 0.25~0.5 liter/min (30~60 cubic inches/min)
- Stationary seal ring material: Tungsten Carbide
- Rotating seal ring material: Tungsten Carbide
- O-ring material: EPDM (standard)
- Optional O-ring material: FKM

Rotor Information:

- Multi-lobe rotor (standard)
- Optional rotors: spur gear

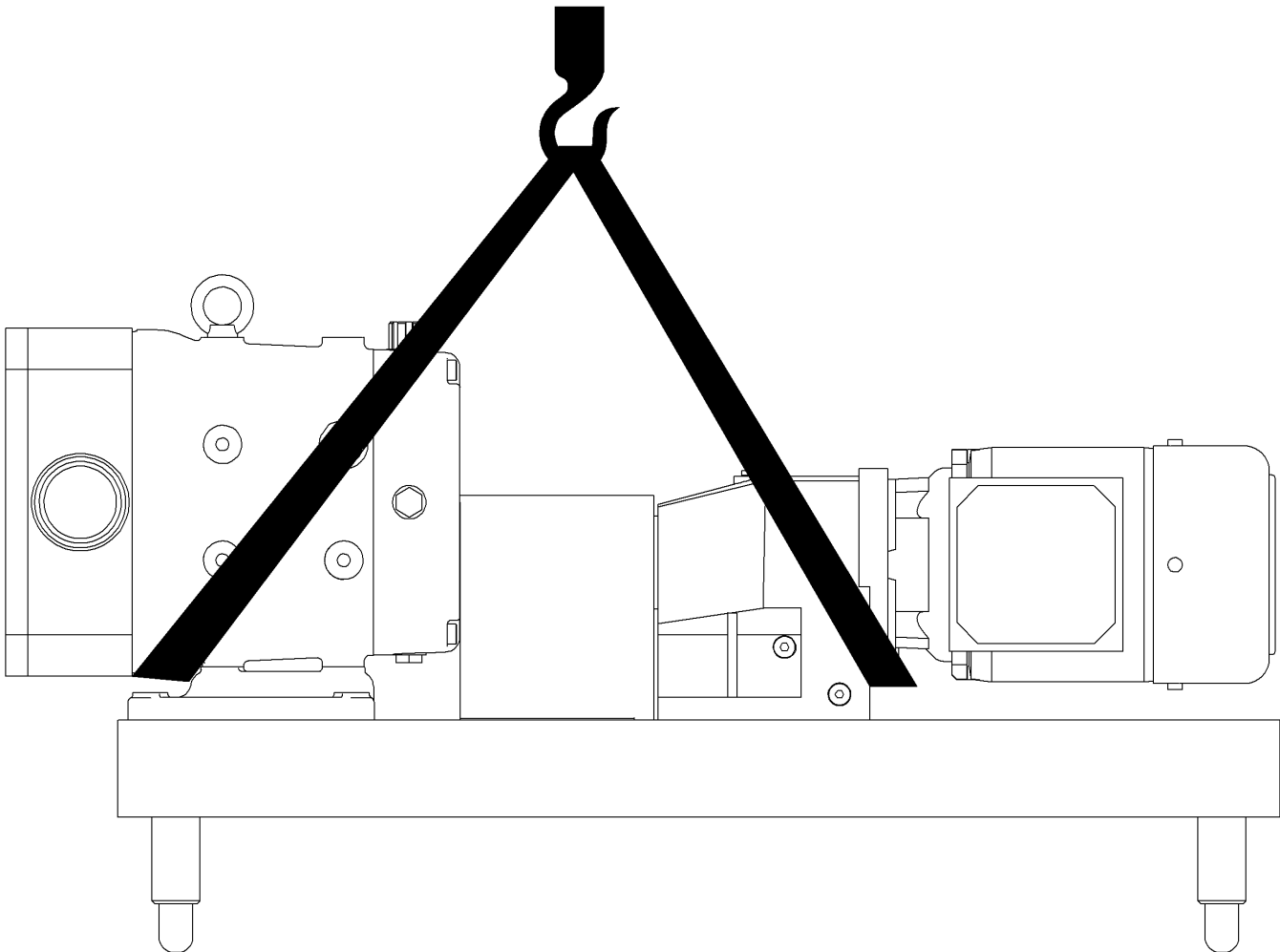
Unpacking

Carefully unpack all parts of the pump and inspect for damage that may have occurred during shipment. Report any damages to the carrier immediately.

The ports on the pump are protected with a plastic cover. If any covers are missing or damaged, inspect the ports on the pump thoroughly for any damage.

If you are receiving a complete base mounted unit, please check shaft alignment as it may have changed during shipment.

The drawing below shows how the pump should be lifted. Ensure that the lifting equipment is correctly rated.

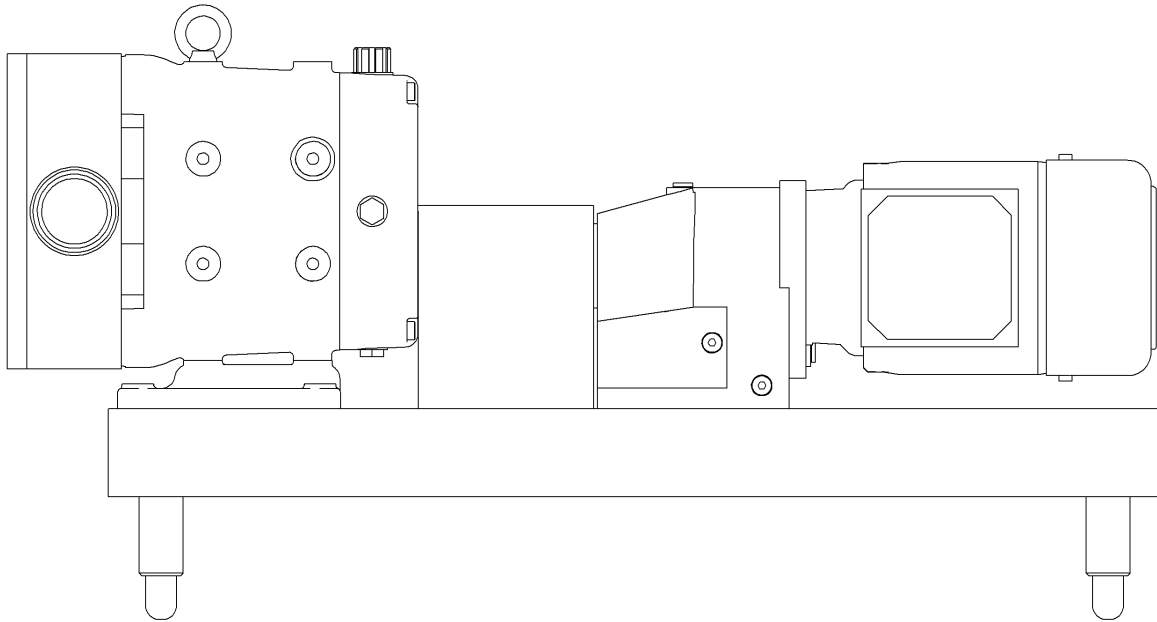


Installation & Start Up

Mounting Configurations

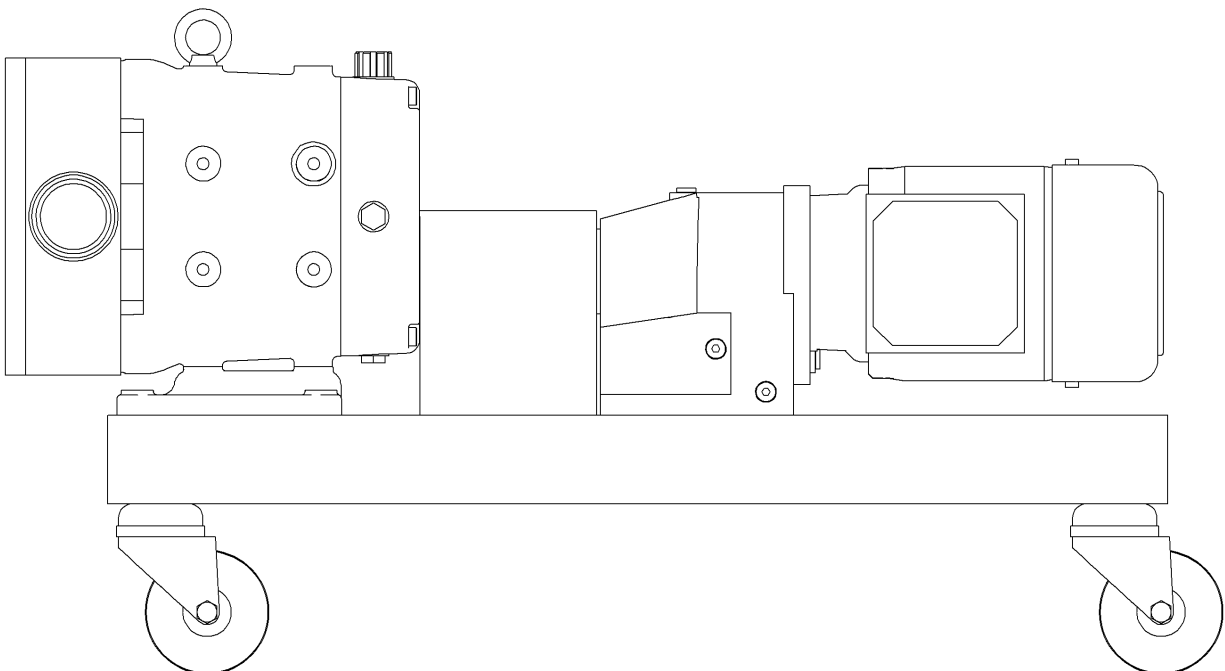
Pump Mounting Adjustable:

- Adjustable leg base, commonly used for sanitary pumps for wash down under base. Can be easily moved or repositioned.



Pump Mounting Casters:

- Portable bases – for movement to different locations. Can also be mounted on a cart with handles.

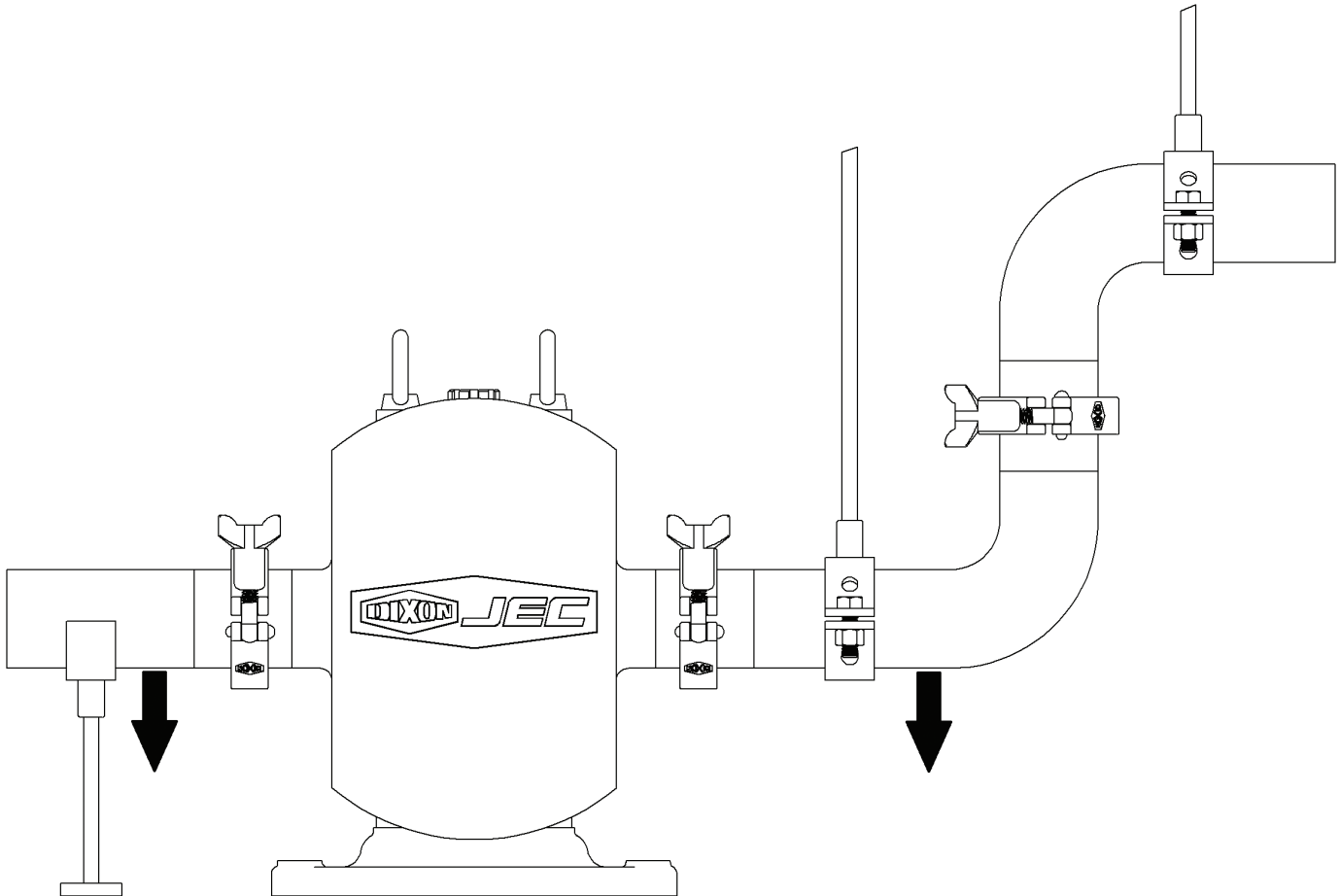


Installation & Start Up

Proper Installation

Piping Support:

- Weight of piping and fluid – support piping independently with hangers or pedestals. On rectangular inlet flange pumps, hopper should also be supported independently.

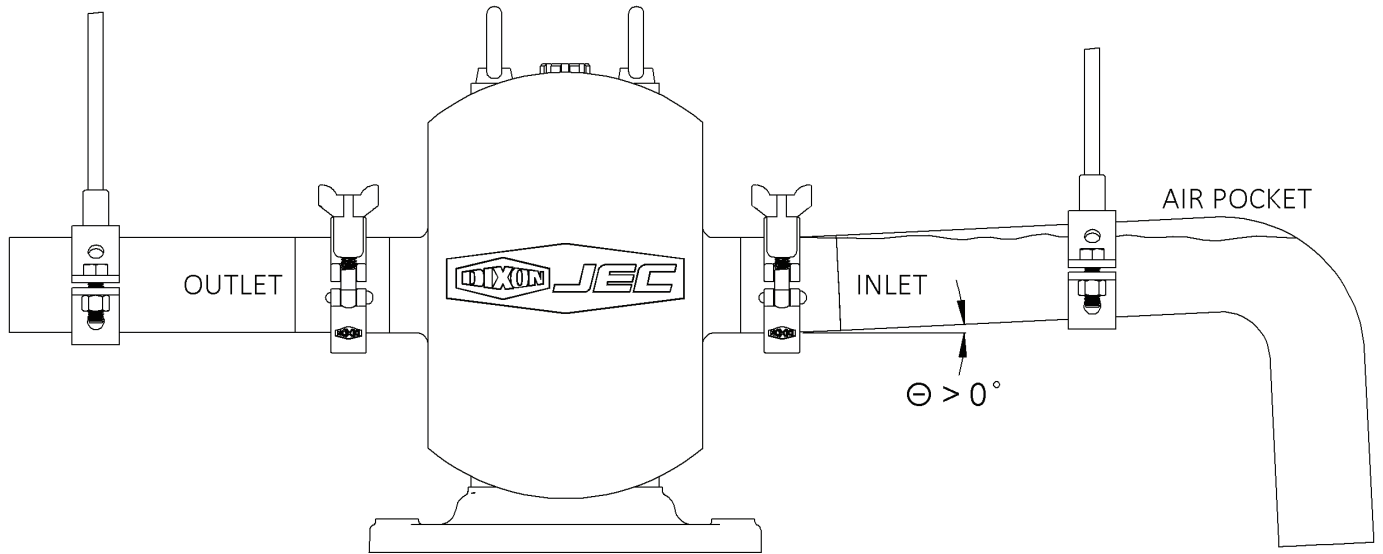


Installation & Start Up

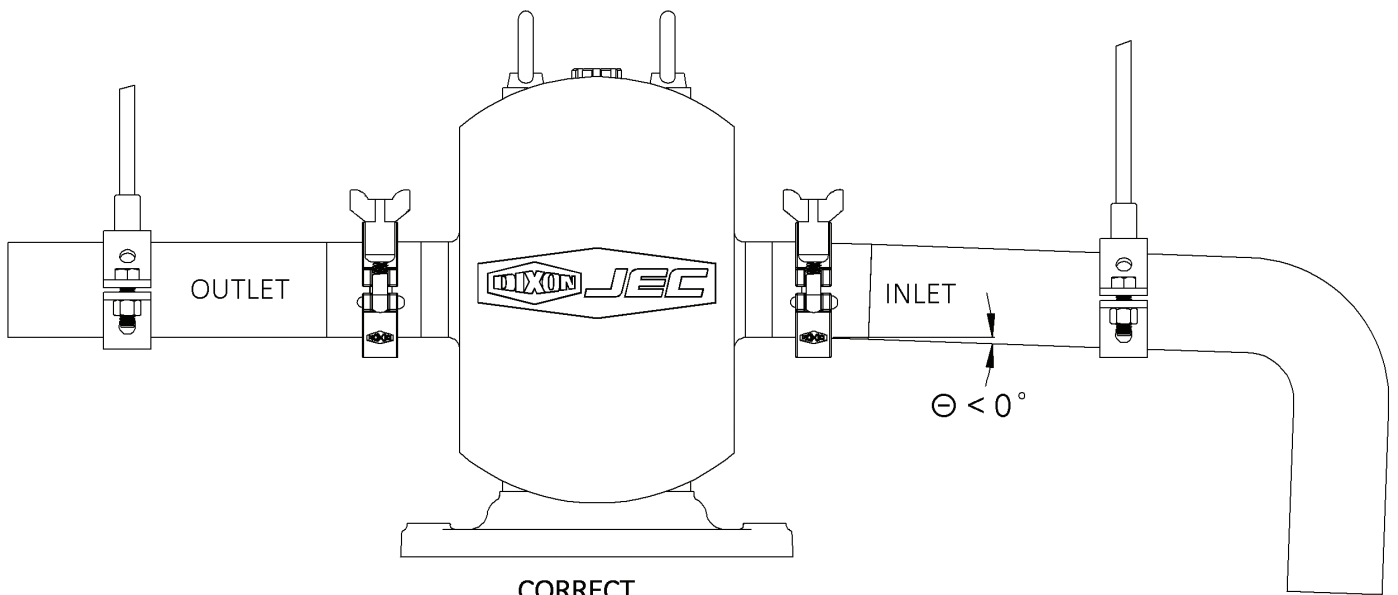
Proper Installation (continued)

Piping Slope:

- Inlet side – slope piping up to inlet to avoid air pocket.



INCORRECT



CORRECT

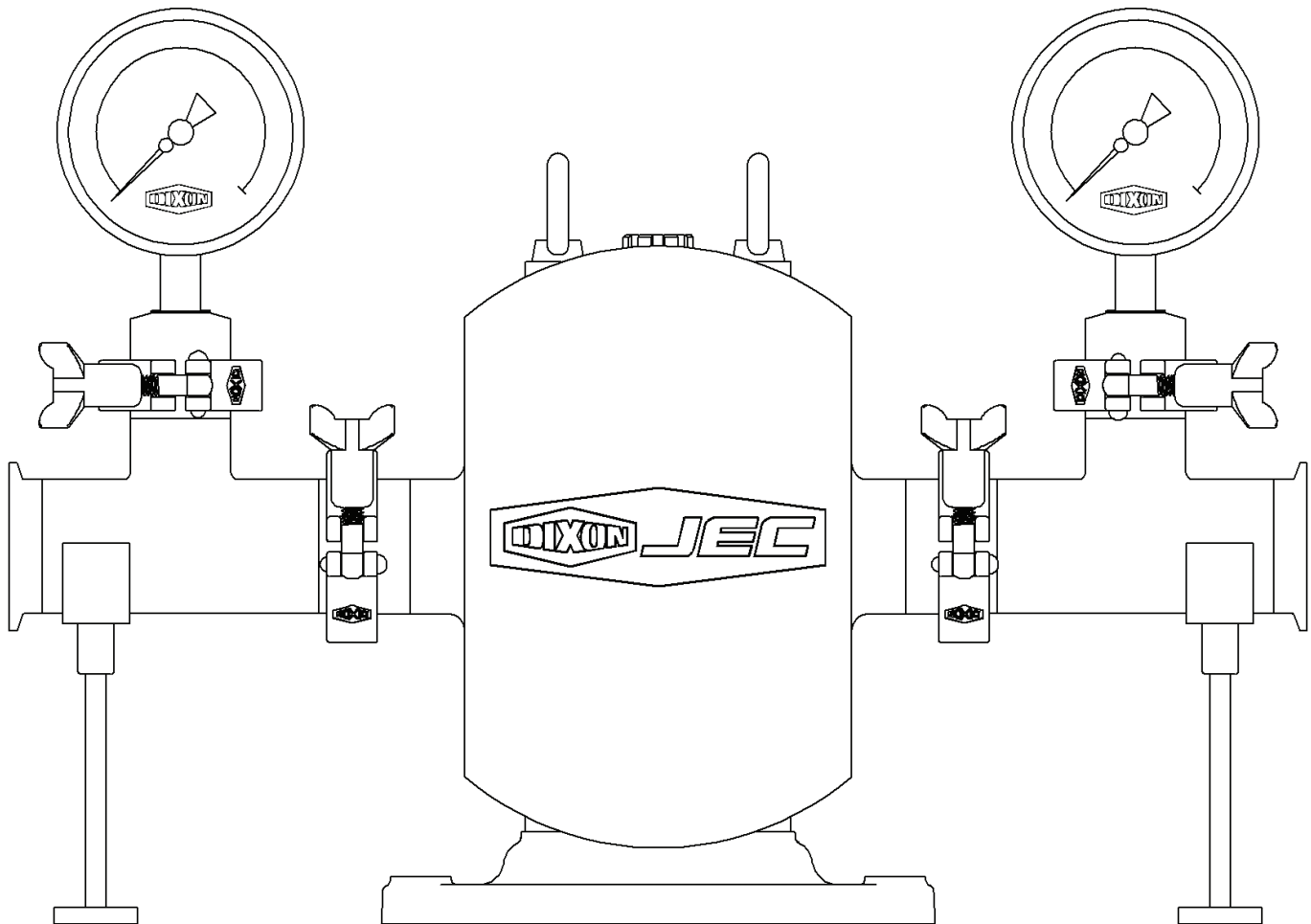
Installation & Start Up

Proper Installation (continued)

Pressure Gauges:

Pressure and vacuum gauges provide the easiest way to tell you something about the pump operation.

- Normal or abnormal pressures
- Overflow conditions
- Indication of flow
- Changes in pump condition
- Changes in system conditions
- Changes in fluid viscosity

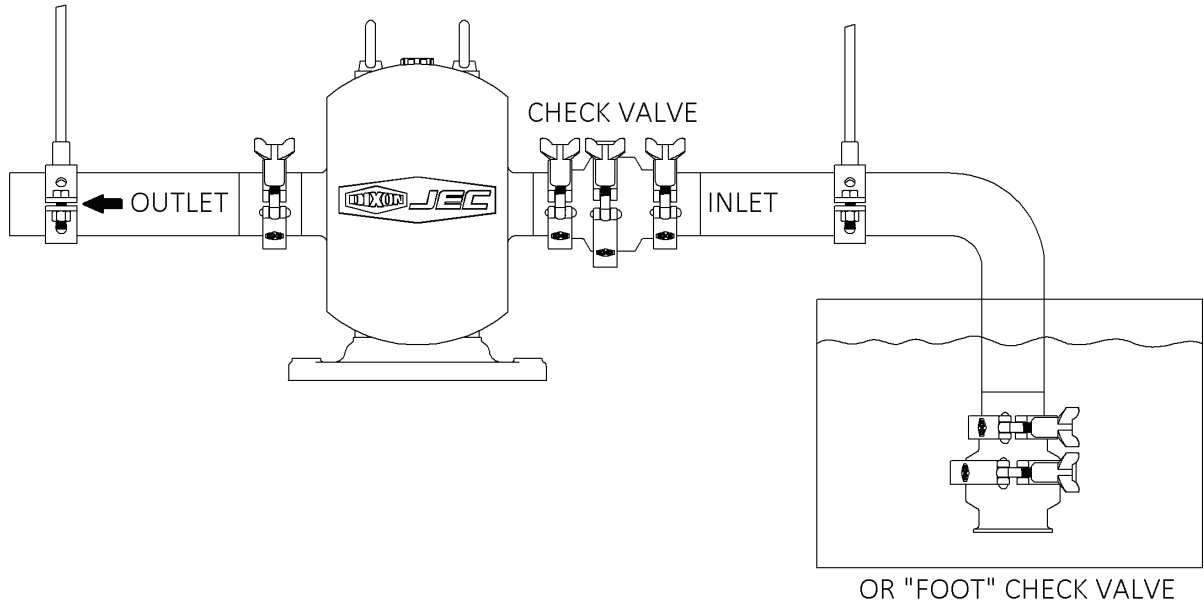


Installation & Start Up

Proper Installation (continued)

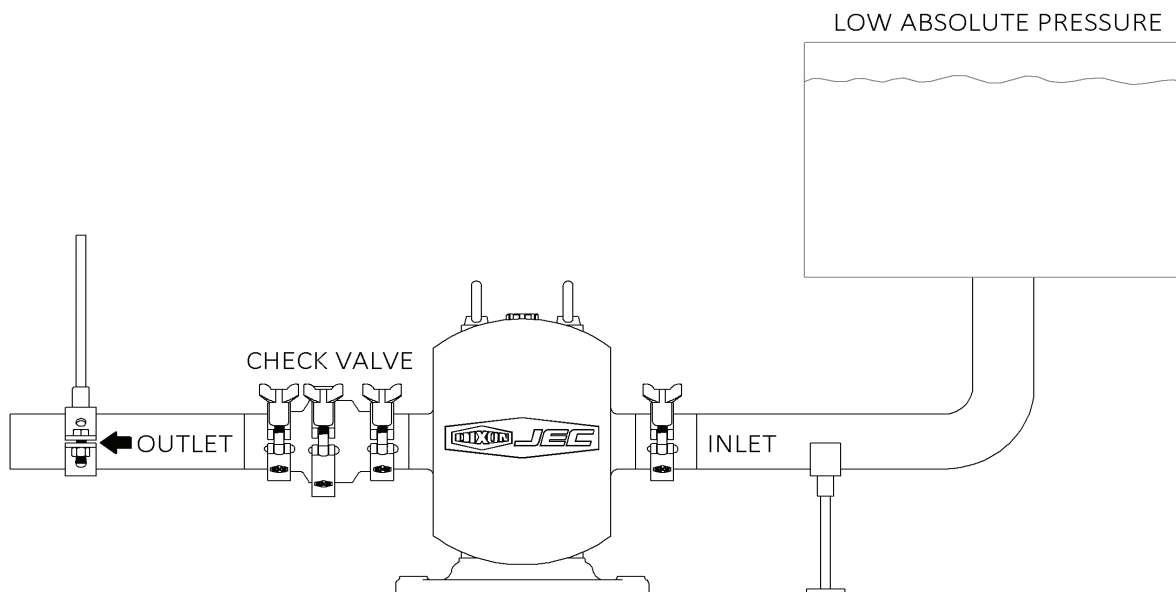
Inlet Check Valve:

- Inlet side – use check valves to keep inlet line full, particularly with low viscosity fluids, and in start-stop operation.



Outlet Check Valve:

- Inlet Vacuum Service – use check valve on outlet side.
- Prevents backflow (air or fluid)
- Facilitates initial start-up (minimizes differential pressure pump must supply to start flow)

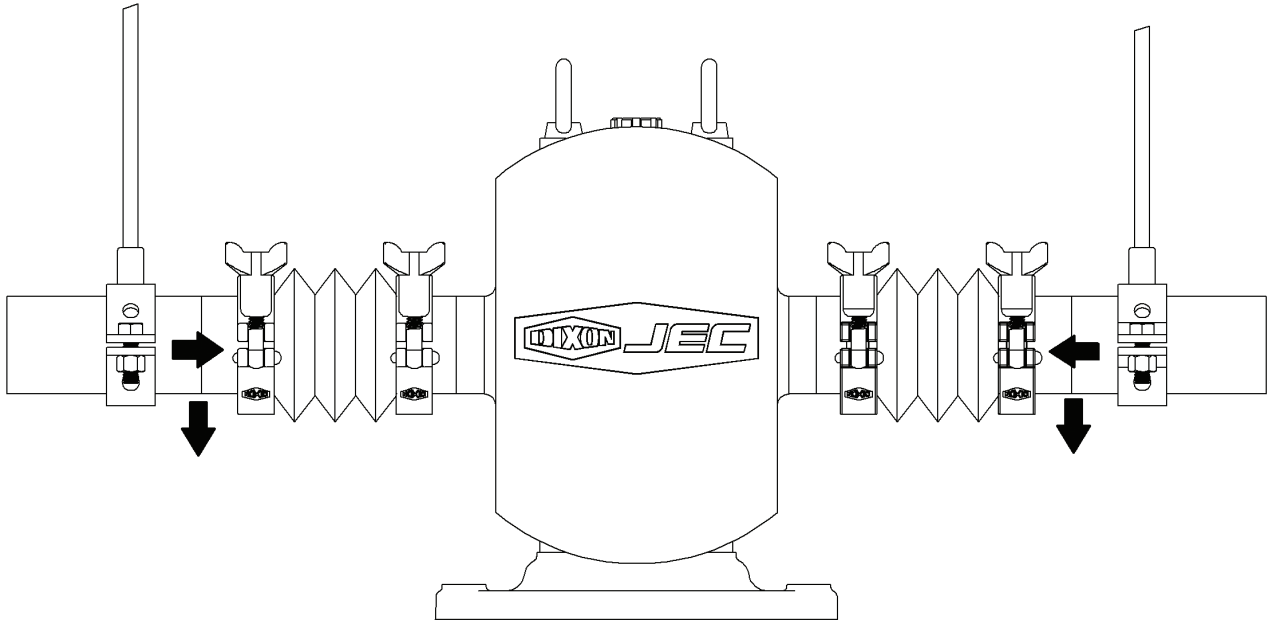


Installation & Start Up

Proper Installation (continued)

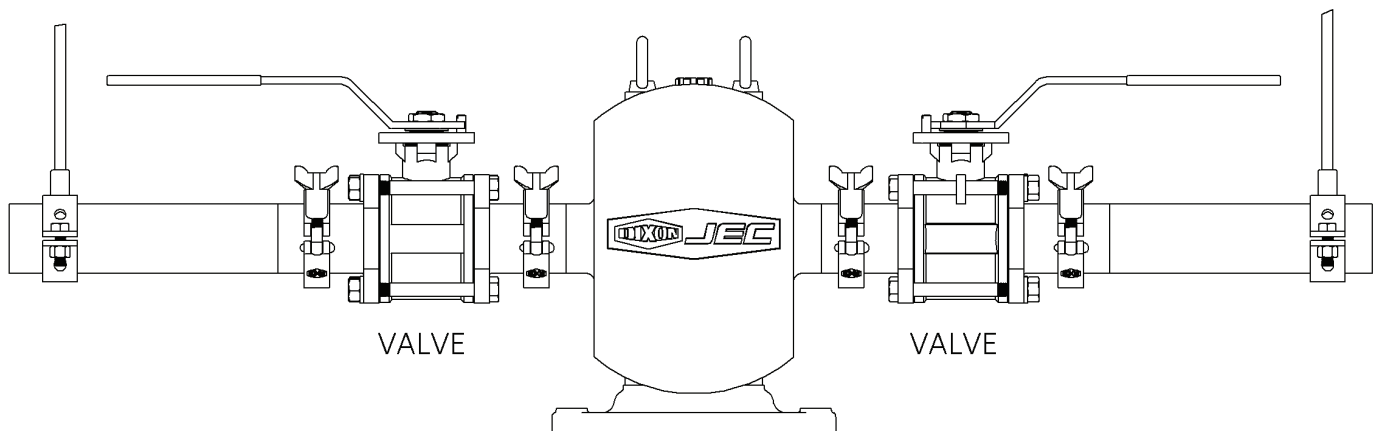
Thermal Expansion:

- Thermal expansion of piping can cause tremendous forces. Use thermal expansion joints to minimize forces on pump. Flexible joints can also be used to limit the transmission of mechanical vibration. Anchor free ends of any flexible hose in system.



Isolation Valves:

- Isolation Valves – permit pump maintenance and removal safely without emptying entire system.

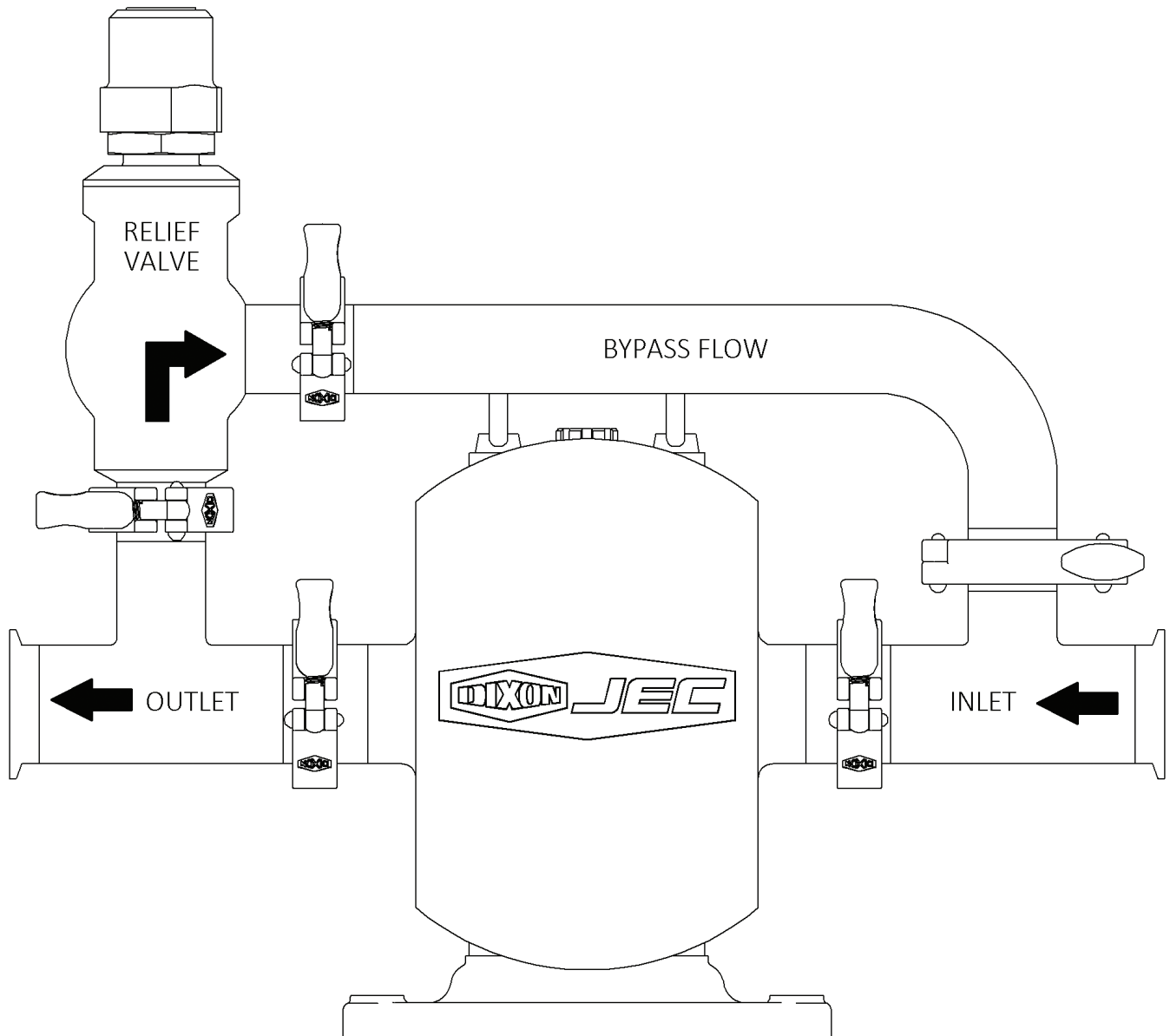


Installation & Start Up

Proper Installation (continued)

Relief Loop:

- Relief Valve – To protect the pump and piping system against excessive pressure, a relief valve should be installed. An integral relief valve, designed to bypass the fluid internally from the pump outlet to the inlet, should not be used on applications where the discharge must be closed for more than a few minutes. Prolonged operation of the pump with closed discharge will cause heating of the fluid circulating through the relief valve.

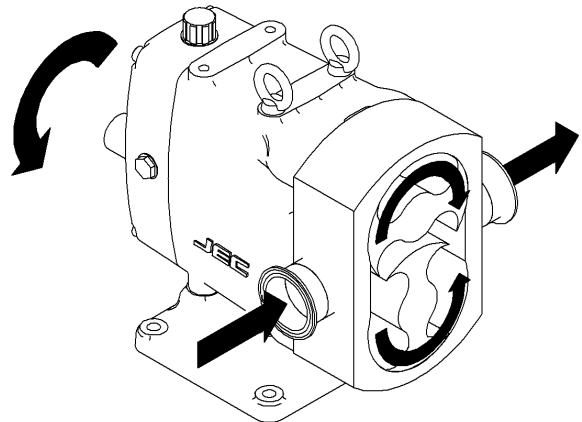
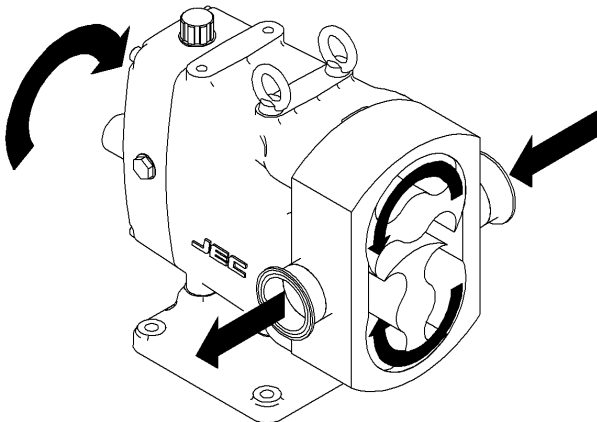
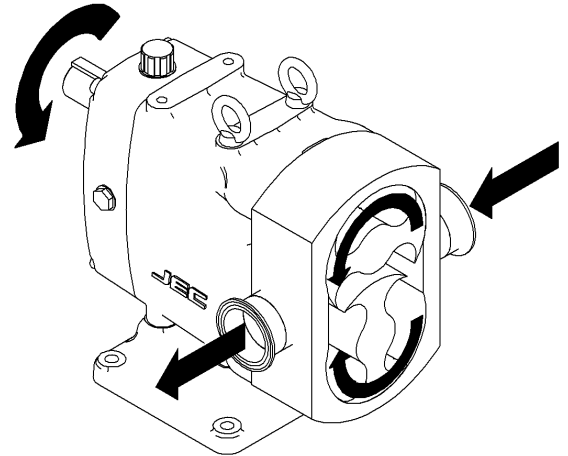
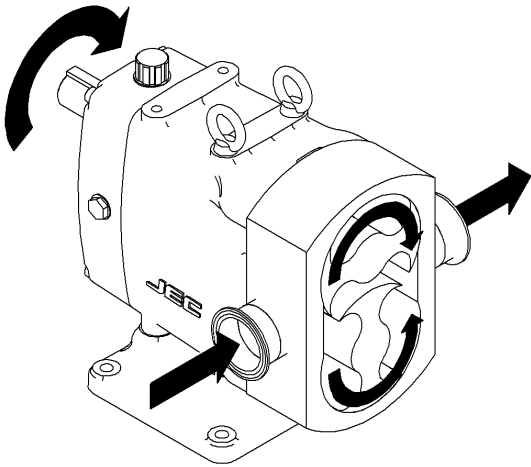


Installation & Start Up

At Start Up

Pump Flow:

- All pumps are labeled with flow direction based on motor being wired for clockwise rotation. If motor is wired for counterclockwise rotation, flow direction will be opposite of what is indicated on pump head.

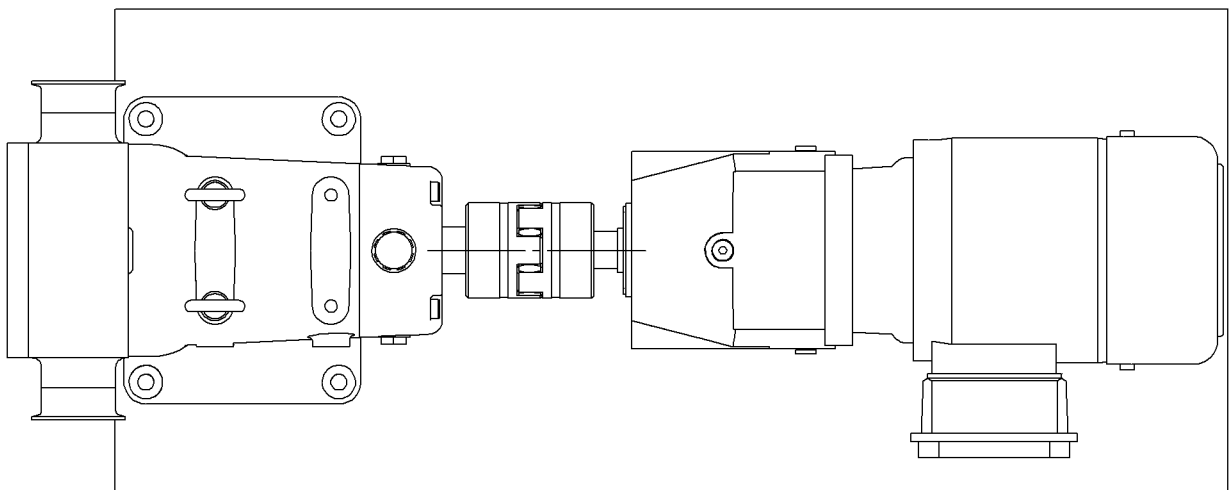
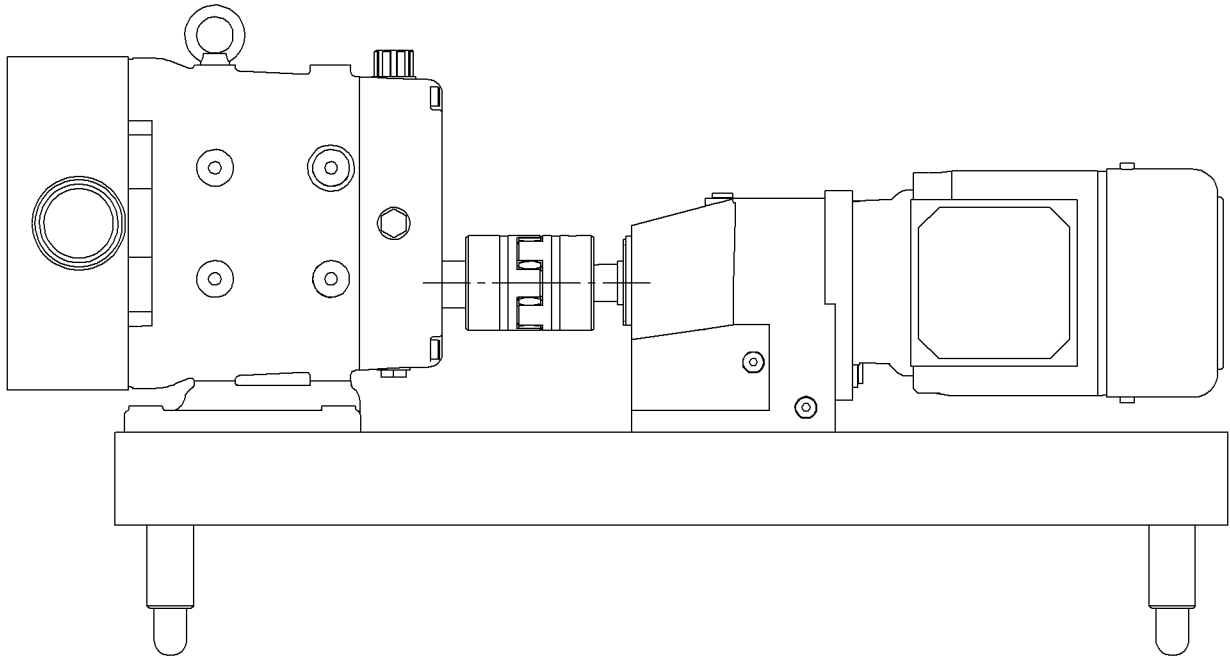


Installation & Start Up

At Start Up

Pump Alignment:

- A flexible coupling is used to compensate for end play and small differences in alignment. The pump and drive shaft should be aligned as closely as possible.
- Check angular alignment using feeler or taper gauge.
- Adjust to get equal dimension at all points – at the same time, set space between coupling halves to the coupling manufacturer's recommended distance.
- Note: Pump is aligned prior to shipping, after installation verify alignment as misalignment may have occurred during shipment.



Tools Needed


- Rotor tool
- Plastic dowel
- Open ended wrench set
- Rubber mallet
- Flat head screw driver
- Feeler gauges
- Hex keys
- O-ring pick
- Spanner wrench
- Rotor extraction tool (optional)

Additional tools needed when assembling or disassembling gear box

- Spanner wrench
- Arbor press or bearing puller

Maintenance

Pump Housing Disassembly

 Drain all product from the pump head prior to disassembly. The pump head may be isolated with inlet and outlet valves. Disconnect the suction and discharge piping from the pump.

Note: Reference numbers are listed in part list refer to section view on page 35.

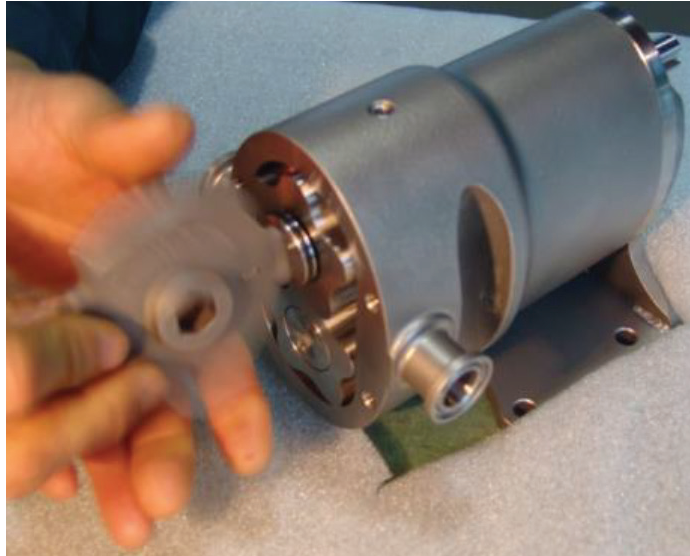
1. Loosen and remove the four-cover bolts from the cover. Remove the cover. If it is stuck, tap on the cover with a soft hammer. Remove the cover O-ring.



Maintenance

Pump Housing Disassembly (continued)

2. Remove rotor-retaining bolts. Use the special tool supplied with pump. To remove rotor-retaining bolts, place the plastic dowel between the rotors. Turn the first rotor bolt counter-clockwise.



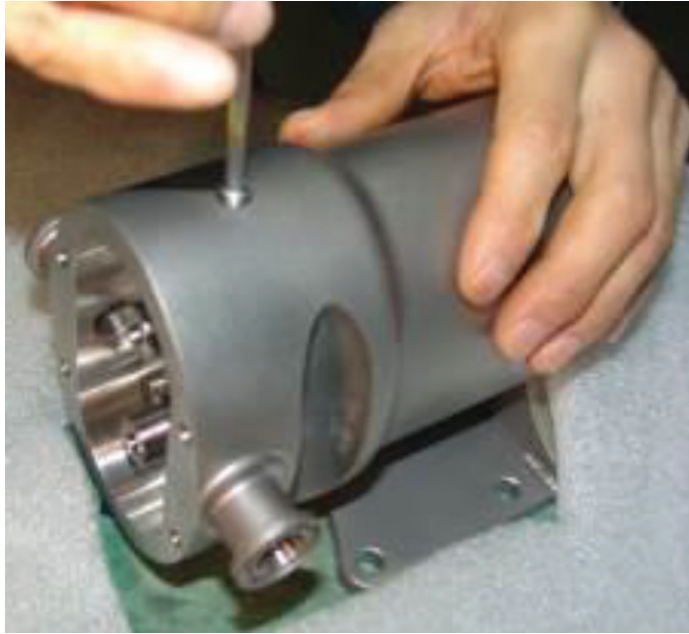
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3. The rotors can be removed from the pump housing by pulling straight. If it is stuck tight, alternately use special rotor extraction tool supplied with pump. Handle the rotors with care to avoid damage. The shims behind rotors should be carefully maintained not to be lost or damaged in order to use when assembling. Shims must be placed back on the same shaft from which they were removed.



Maintenance

Pump Housing Disassembly (continued)

4. In order to remove the stationary seals, both of the seal stopper/pins on the top and bottom should be loosened as shown.



5. Rotary seal rings are being installed into rotors with rotary seal ring rubber cup.



Maintenance

Pump Housing Disassembly (continued)

6. Remove seal bodies from housing. The seals can be easily moved forward by using standard flathead driver as shown.



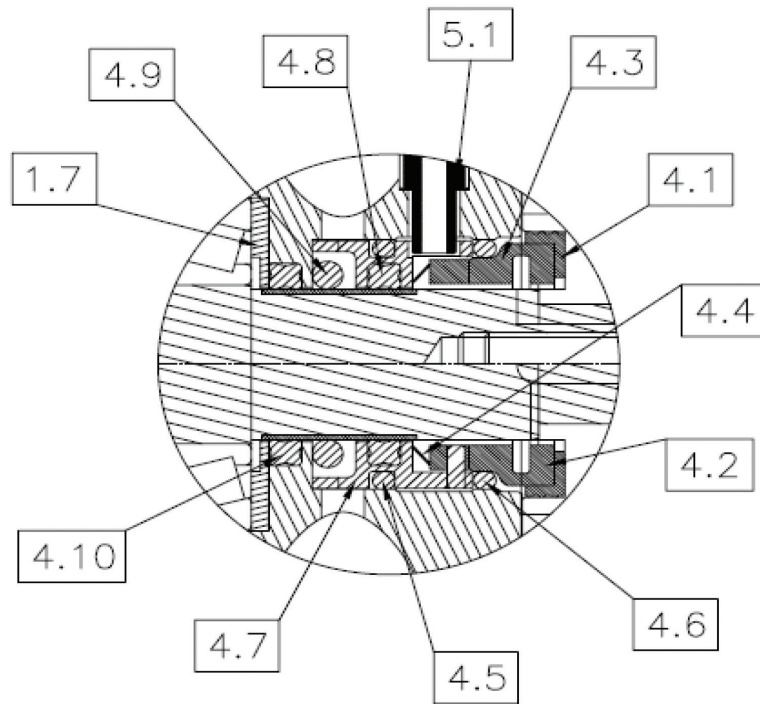
Maintenance

Inspection

1. Inspect O-rings and seals for wear and tear. Worn O-rings and seals should be replaced.
2. Inspect seal faces for scoring or cracks. Replace any seal faces that are damaged.
3. Inspect shafts, rotors and other metal parts for wear and tear.
4. Inspect for signs of rotor galling within the rotor casing, on the front cover and on the rotors.
5. Inspect for burrs in the rotor bolt groove. Burr must be removed or rotor bolt replaced.

Maintenance

Seal Assembly



Install Slinger O-Ring (4.9) onto the shaft ensuring the O-ring is all the way up the shaft and against the pump body bore face. This is also visible through the slots in the sides of the pump body.

- Install external O-rings (4.5) and internal Quad-ring (4.8) to the Seal body (4.5)
- Install the seal housing into the pump assembly. Aligning the flush holes with the tapping in the pump body.
- Install the flush locking adapter O-ring onto the adapter.
- Install the flush locking adapter (5.1) such that the end of the component is locking the seal body in position.
- Install the primary O-ring (4.6) onto the Static Seal (4.3)
- Install the static seal face (4.3) aligning the slots in the seal face with the anti-rotation pins in the seal body.
- Install the rotor and rotary seal face assembly.

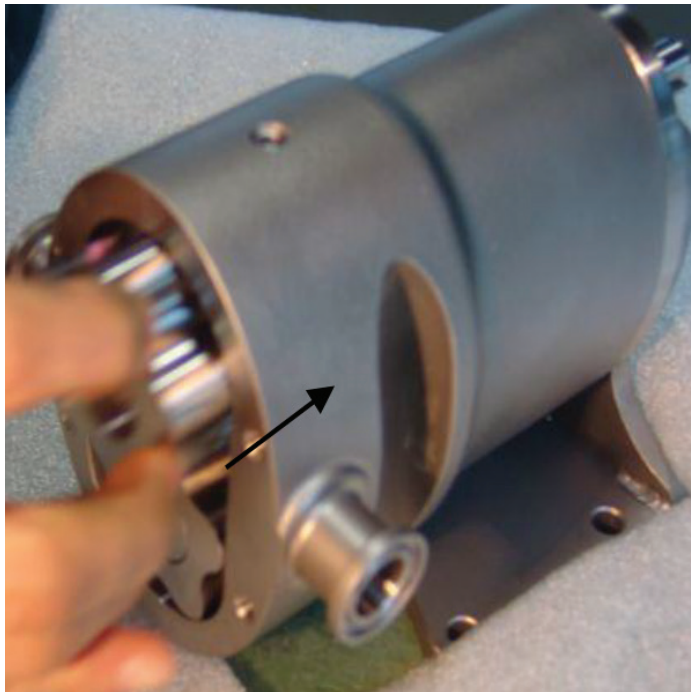
Maintenance

Pump Housing Assembly

1. After replacing the old seals with new seals, place the shims onto the shafts.



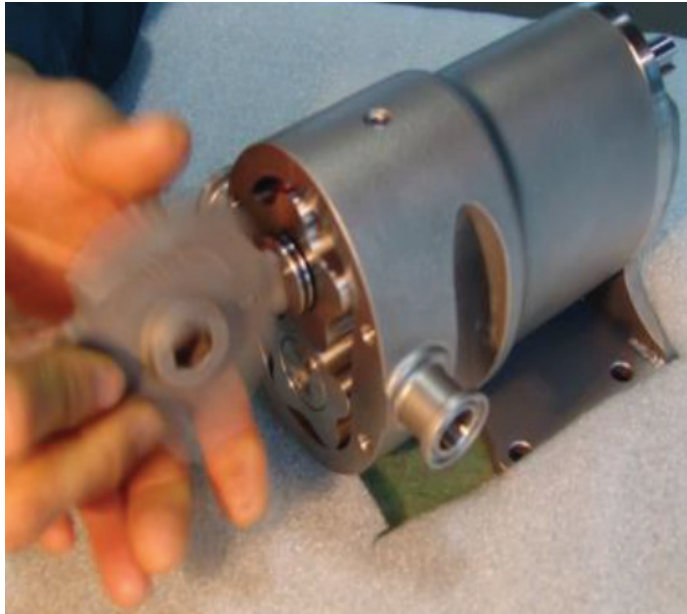
2. Assemble the rotors onto shafts. Make sure seal side of rotor is facing the back of the rotor casing before placing the rotors onto the shafts.



Maintenance

Pump Housing Assembly (continued)

3. Tighten the first rotor bolt with a special tool to the recommended torque. To tighten the second rotor bolt with a special tool to the recommended torque. To tighten the second rotor place the plastic dowel on the opposite side of the rotor and tighten the second rotor bolt to the proper torque 34 ft lb. Excessive torque could make rotor bolts damaged or its surface produced burr. If a burr is raised, it should be removed by sand paper smoothly.



4. Install the cover and tighten the front cover bolts.

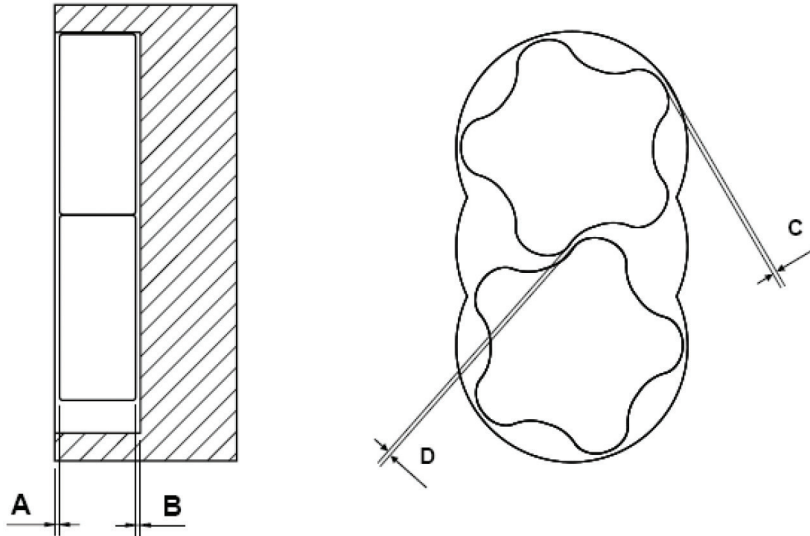


Use feeler gauges and depth micrometer to verify the back and radial clearances between the rotors and the housing. A depth gauge should be used to verify the front clearance.

Maintenance

Rotor Clearance

! Rotor clearance must be precisely maintained to provide maximum pumping efficiency, yet prevent contact between rotors, rotor housing, and front cover during operation. If pumping efficiency is below expectations, or if parts contact has occurred during operation (within rated differential pressure), check rotor clearances and adjust if incorrect.



Metric (mm)			
Front 'A'	Rear 'B'	Radials 'C'	Mesh 'D'
0.1	0.1	0.1	0.1

Imperial (inches)			
Front 'A'	Rear 'B'	Radials 'C'	Mesh 'D'
0.0039	0.0039	0.0039	0.0039

There are two areas of rotor clearances as illustrated following:

Rotor tip clearance - not adjustable and set by manufacturer

Front and back face clearance - adjustable by shim

Rotor width and body depth are fixed at manufacture. Therefore, with the correct rotor (1.1) size selected, the only maintenance adjustment that can be made is the proportion of front and rear clearance. Measure the front clearance as follows:

1. The rotor to rotor housing back face clearance is maintained by the shim plate ().
2. Check the rotor bolts (3.5) are tight.
3. Measure the clearance between the back face of the pump housing and the back of the rotor with a filler gauge. Check the reading with the recommended back face clearance.
4. If incorrect, adjust by adding or removing shim plates from behind the rotors.
5. Check each rotor and adjust as necessary.

Maintenance

Rotor Timing

Rotor timing must be precisely maintained to provide maximum pumping efficiency, yet prevent contact between rotors during operation. If pumping efficiency is below expectations or if rotors contact during operation (within rated differential pressure), check rotor timing and adjust if incorrect. Also check rotor timing after any gearbox dismantling when the gears are removed and/or replaced.

Check Rotor timing as follows:

1. Assemble each rotor (1.1) in its normal location on the drive shaft and the idle shaft. Assemble each rotor bolt (3.5) and tighten hand tight.
2. Rotate the shafts 30 degrees and measure gap as illustrated by arrows. Rotate the shafts 60 degrees the opposite direction and measure gap as illustrated.
3. The rotors are correctly timed when the gap measured at both locations are equal. If the gap is unequal, adjust the timing as follows.
4. Rotor timing is determined by the relative location of the two helical gears (3.2) on the shafts.
5. Place the wooden dowel between the rotors.
6. Bend away the tab of the lock washer (3.3) on one shaft. Loosen the lock nut and temporarily insert shim stock between the gear and gear spacer. Tighten the lock nut, reassemble the rotor in its correct location, and recheck rotor timing.
 - If rotor timing is correct, remove the gear and replace added other spacer or add a shim equal in thickness to the shim stock temporarily added. Reassemble the gear and gear nut, tighten to the correct torque, and check rotor timing again to confirm that it is correct.
 - If rotor timing is incorrect, but closer to equal than original measurement, repeat previous step adding additional shim stock.
 - If rotor timing is incorrect and more unequal than original measurement, remove temporary shim stock from one shaft and add instead to the other shaft.
7. Repeat above procedures until the timing gap is equal after gear spacers are in place and gear nuts are tightened to correct torque.
8. Reassemble pump.

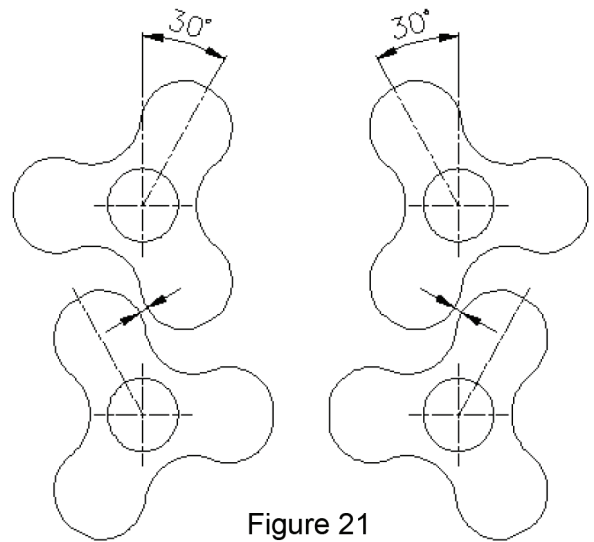



Figure 21

Maintenance

Gear Box Disassembly

The pump, when operating, can cause SEVERE INJURY to anyone in contact with the rotating parts. Turn off the energy source and LOCK OUT before dismantling pump. Use a locking device for which only the person doing the dismantling has the key.

 AccuLAB series has a single body combined pump housing with gear housing. Generally, gear housing is not needed for the maintenance for the gear. If gear housing is needed for the maintenance, experts with special care should do the work.

1. Dismantle pump bracket by removing the four bracket bolts.



2. Then, dismantle the gear box cover by removing four bolts.



Maintenance

Gear Box Disassembly (continued)

3. Remove the lock nut and washer from the drive shaft and idle shaft.



-
4. Pull the two gears off the pump shafts. Remove the gear keys.




Maintenance

Gear Box Disassembly (continued)

5. Remove two long bolts securing bearing cover.



6. Bearing is firmly secured and so, after hitting the shaft from the front with soft hammer and bearing can be easily dismantled by using two long bolts as shown. Be careful not to damage the shaft with excessive hitting. 



Maintenance

Gear Box Disassembly (continued)

7. Bearings on drive and idle shaft can be dismantled.



-
8. Shim should be carefully kept not to be lost for the assembly.



Maintenance

Gear Box Disassembly (continued)

9. Quad ring is protecting bearing when a leakage occurs.



Maintenance

Gearbox Assembly

Place the rotor (1.1) on a flat surface. Lubricate the front and rear bearing areas of the drive and idle shafts with grease. Insert the shafts into the rotor splines, for support. Heat the front bearing to 250°F. Place the bearing over the shaft, after the bearing cooled.

Place the gearbox over the shafts.

Position the gearbox with wet end up. Insert the front bearing with shaft perpendicular to the gearbox. There should be a tight sliding fit between the gearbox and the bearing outer rings. Press or soft hammer can be used.

Place the front bearing and tighten.

Rear bearing assemblies insert into the rear cover. There should be a tight sliding fit.

Heat the inner ring of the rear bearing to 250°F. Place the inner ring over the shafts with the flange end sliding over the shaft first.

Lubricate the gear area of the shaft and the face of the lock washer with grease.

Position both shaft gear keys to the 12:00 position.

Place the gear, lock washer (3.3) and lock nut (3.3) onto the shafts and hand tighten.

After the gears are installed, turn the shafts to make sure they turn freely and that the rotors (1.1) are timed correctly.

Use a spanner wrench to tighten the gear lock nut (3.3) on the drive shaft. You can install the rotors to hold the shafts in place while you tighten the nut.

Measure rolling torque with no load on bearing. Set the torque wrench to zero while rotating, this will remove the load caused by the lip seal.

The bearing locknut should be tightened until the rolling torque on the shaft measures the values in the following table.

Tighten the locknut (3.3) on the idle shaft, following the previous steps.

Measure the shaft endplay to be sure it is zero. If the endplay is not zero, repeat the tightening steps. To repeat these steps, the locknut (3.3) will have to be backed off and the bearing will have to be tapped to remove the loadings.

Install the liquid gasket to rear cover quad ring (4.12) and mount the rear cover (1.4) assembly over the drive shaft extension onto the gearbox.

Maintenance

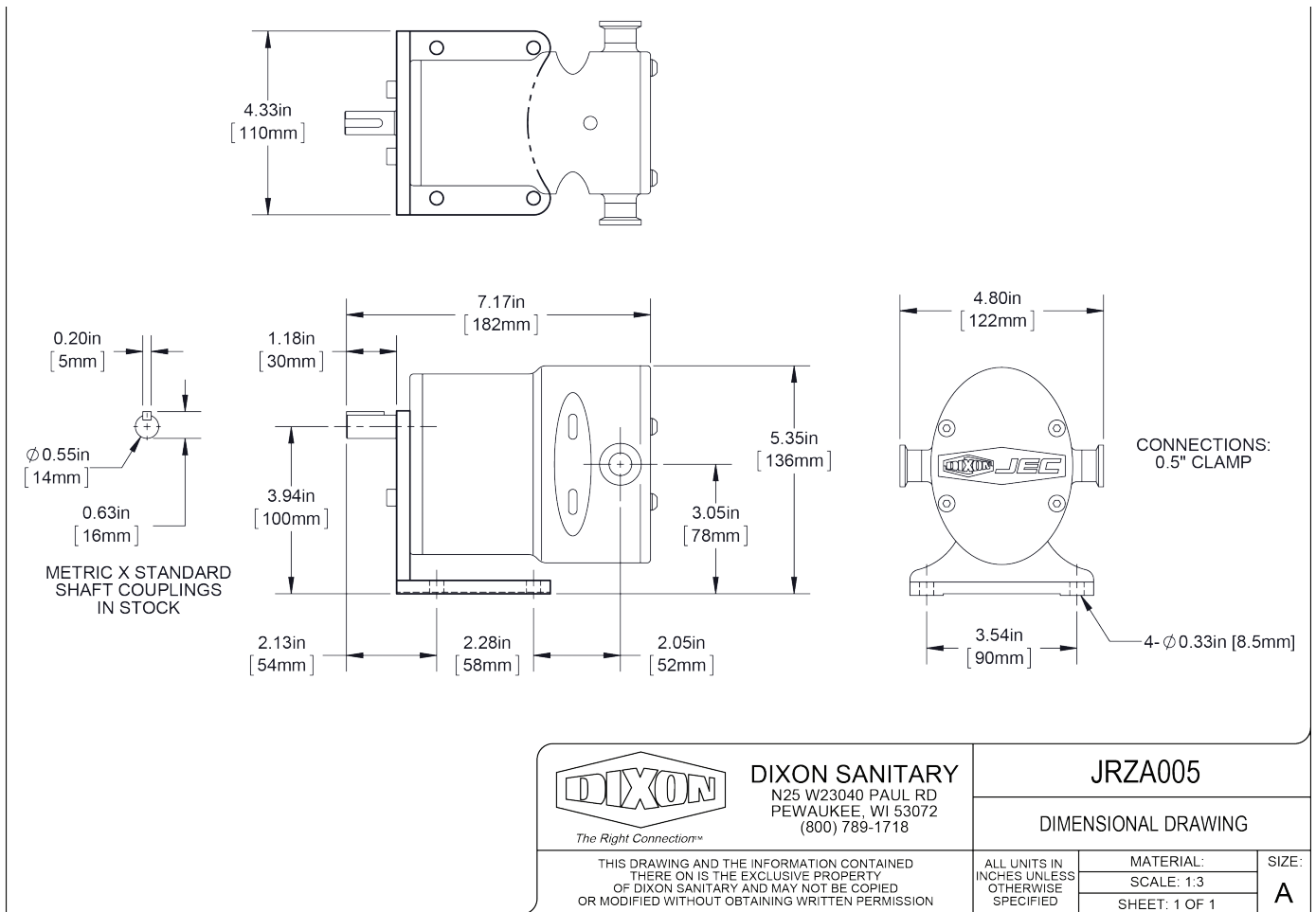
Scheduled Maintenance

- After initial startup – change oil after 4,000 hours.
- After, change oil annually based on 8 hrs a day, 5 days a week run time.
- Every two years, change oil seals

Recommended Spare Parts:

- 1 Year – (2) Seal sets and (1) O-ring set
- 2 Years – (4) Seal sets and (2) O-ring sets and (1) set rotors

Dimensions



Troubleshooting

Problem	Possible Cause	Suggested Action
No Flow, Pump Rotors Are Not Turning	Drive motor not running.	Check resets, fuses, circuit breakers.
	Key sheared or missing.	Replace.
	Drive belts, power transmission components slipping or broken.	Replace or adjust.
	Pump shaft, keys or gears sheared.	Inspect and replace parts as necessary.
No Flow, Pump Rotors Are Turning	Rotors turning in the wrong direction.	Check motor hookup to reverse motor rotation.
	Relief valve not properly adjusted or held open by foreign material.	Adjust or clear valve.
	Suction port is blocked, not allowing flow to the pump.	Check all inlet valves, strainers and tank outlet ports.
No Flow, Pump Not Priming	Valve closed in inlet line.	Open valve.
	Inlet line clogged or restricted.	Clear line, clean filters, etc.
	Air leaks due to bad gaskets or pipe connections.	Replace gaskets, check lines for leakage (can be done by air pressure or by filling with liquid and pressurizing with air.
	Pump speed too slow.	Increase pump speed.
	Pump speed too fast for high viscosity liquid.	Decrease pump speed.
	Liquid drains or siphons from system during off periods.	Use foot valve or check valves. Filling inlet lines with material before startup may solve startup priming problems due to no material in system.
	"Air" lock caused by fluids which "gas off" or vaporize or allow gas to come out of material during off periods.	Install and use a manual or automatic air bleed from pump or lines near pump.
	Extra clearance rotors, worn pump.	Increase pump speed within limits, use foot valve to improve priming. Replace worn rotors.
	NPSHA too low.	Check net inlet pressure available against net inlet pressure required. Change inlet system as needed.
Insufficient Flow	Speed too low or too high to obtain desired flow.	Check curve and adjust as necessary.
	Air leak due to bad seals, pipe connections or other equipment.	Replace seals, check inlet fittings.
Insufficient Flow – Flow Being Bypassed Somewhere	Flow diverted in branch line, open valve, etc.	Check system and controls.
	Relief valve not adjusted or jammed.	Clear or adjust valve.
Insufficient Flow – High Slip	Hot (HC) or extra clearance rotors being used on "cold" fluid and/or low viscosity fluid.	Replace with standard clearance rotors.
	Worn pump.	Increase pump speed (within limits). Replace rotors
	High pressure.	Reduce pressure by adjusting system settings or hardware.

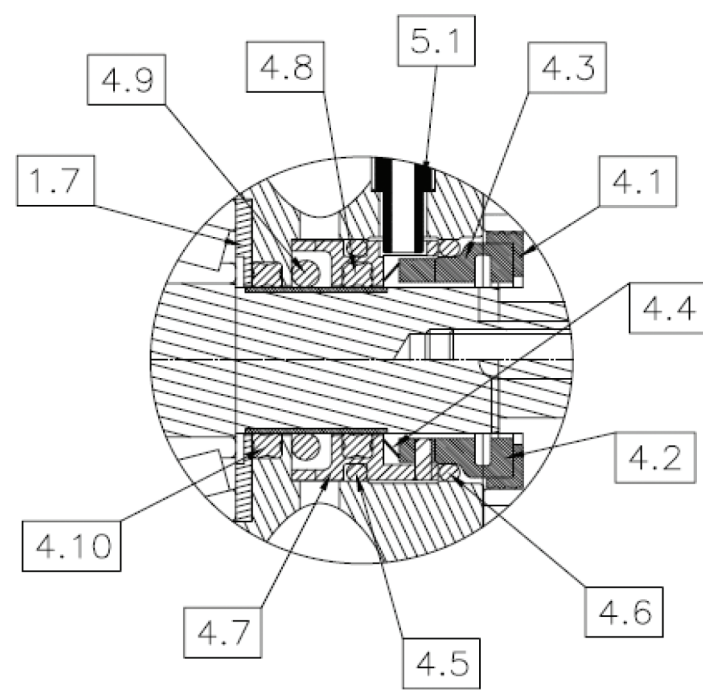
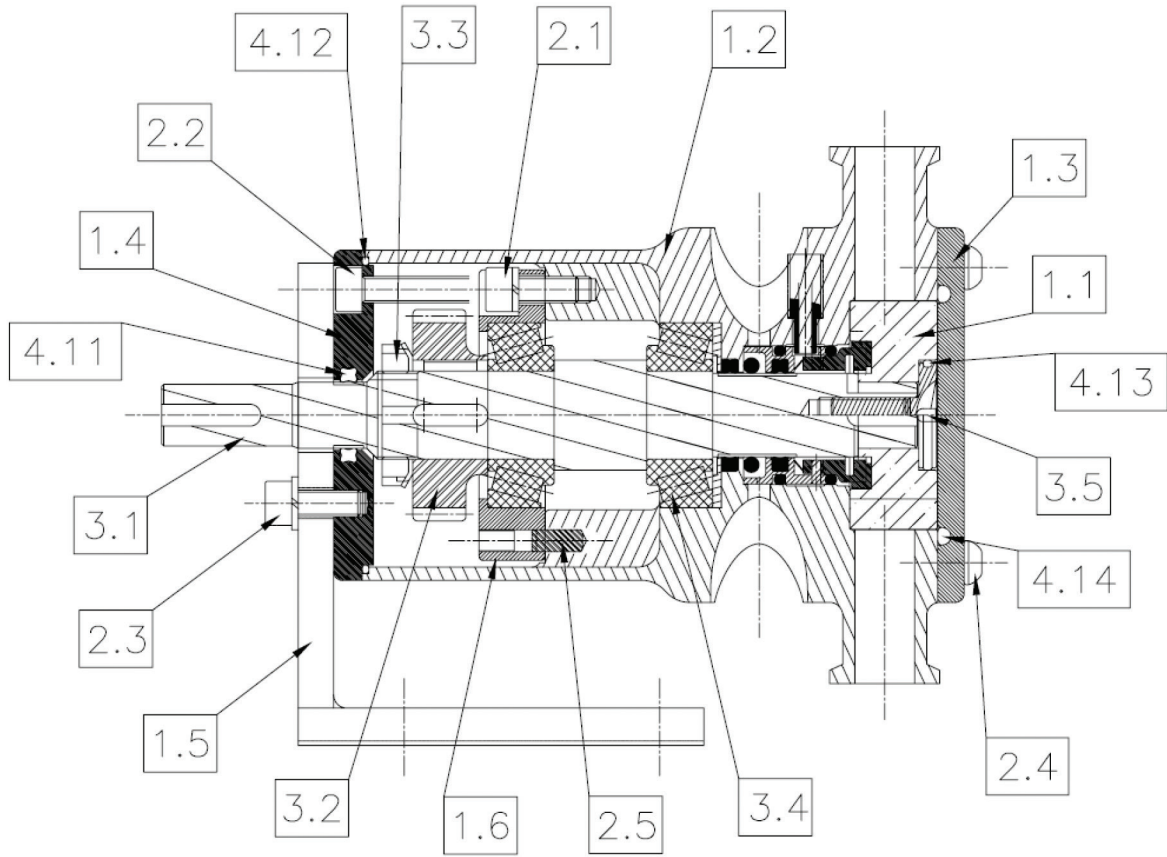
Troubleshooting

Problem	Possible Cause	Suggested Action
Cavitation	Strainers, foot valves, inlet fittings or lines clogged.	Clear lines. If problem continues, inlet system may require changing.
	Inlet line size too small, inlet line too long. Too many fittings or valves. Foot valve, strainers too small. NPSHA too low.	Increase inlet line size. Reduce length, minimize direction and size changes, reduce number of fittings.
		Raise liquid level in source tank to increase net inlet pressure.
		Increase net inlet pressure by raising or pressurizing source tank.
	Fluid viscosity greater than expected.	Select larger pump size with lower net inlet pressure required.
		Reduce pump speed and accept lower flow or change system to reduce line losses.
	Fluid temperature higher than expected (vapor pressure higher).	Change temperature of product to reduce viscosity.
Reduce temperature, reduce speed and accept lower flow or change system to increase net inlet pressure available.		
Noisy Operation	Cavitation	
	High fluid viscosity High vapor pressure fluid High temperature.	Slow down pump, reduce temperature, change system setup.
	NPSHA less than NPSHR.	Increase NPSHA or decrease NPSHR.
	Air or gas in fluid .	
	Leaks in the pump or piping.	Fix leaks.
	Dissolved gas or naturally aerated products.	Minimize discharge pressure (also see "Cavitation" above).
Noisy Operation Caused By Mechanical Problems	Rotor to Body Contact	
	Improper assembly of pump.	Check clearances and adjust shimming.
	Distortion of pump due to improper piping installation.	Change piping installation to eliminate piping stress and distortion on body.
	Pressures required higher than the pump is rated for.	Reduce discharge pressure required.
	Worn bearings.	Rebuild with new bearings and lubricate regularly.
	Rotor to Rotor Contact	
	Loose or incorrectly-timed gears.	Rebuild with new parts. Note: This will cause severe damage.
	Sheared keys.	Rebuild with new parts. Note: This will cause severe damage.
	Worn gear splines.	Rebuild with new parts. Note: This will cause severe damage.
	Drive noise caused by gear trains, chains, couplings or bearings.	Repair or replace drive parts. Check bearings for damage and replace as necessary.

Troubleshooting

Problem	Possible Cause	Suggested Action
Pump Requires Excessive Power (overheats, stalls, high current draw, breakers trip)	Higher than expected viscosity losses.	If within pump rating, increase drive size
	Higher than expected pressures.	Reduce pump speed. Increase line sizes.
	Fluid is colder with a higher viscosity than expected.	Heat fluid, insulate lines or heat trace lines.
	Fluid sets in line and pump during shutdown.	Increase line sizes.
		Insulate lines or heat trace lines.
		Install a "soft start" drive.
Install a recirculating bypass system.		
Flush system with a nonsetting fluid.		
Fluid builds up on pump surfaces.	Replace the pump with more running clearances.	
Short Pump Service Life	Pumping abrasives.	Larger pumps at slower speeds.
	Speeds and pressures higher than rated.	Reduce speeds and pressures by making changes in the system.
		Replace pump with a larger model with higher pressure ratings.
	Worn bearings and gears due to lack of lubrication.	Check and replace bearing and gears as necessary. Adjust lubrications schedule to decrease time between lubrication.
Modify external wash down method to reduce water entering into gear case.		
Misalignment of drive and piping. (Excessive overhung load or misaligned couplings.)	Check alignment of piping and drive. Adjust as necessary.	
Any Other Issue		Contact: Dixon Sanitary 800-789-1718

BOMs



Bill of Materials

Item No.	Description	Materials	Size	Qty per Pump
1.1	Rotor	SUS316		2
1.2	Casing	SUS316		1
1.3	Front Cover	SUS316		1
1.4	Rear Cover	SUS304		1
1.5	Bracket	SUS316		1
1.6	Bearing Cover	SUS316		1
1.7	Bearing Spacer	SUS304		2
2.1	Bearing Cover Bolt	SUS304	M6 x15	2
2.2	Rear Cover Bolt	SUS304	M6 x 50	2
2.3	Bracket Bolt	SUS304	M6 x 15	4
2.4	Front Cover Bolt	SUS304	M6 x 15	4
2.5	Bearing Cover Ass'y Pin	SUS304	Ø5 x 11.5	2
3.1	Drive Shaft	SUS304		2
3.2	Helical Gear	S45C		2
3.3	Lock Nut/ Washer	S45C	M20 x 1	2
3.4	Shaft Bearing	32004XJ		4
3.5	Rotor Bolt	SUS316		2
4.1	Rotary Seal Ring L-cub	EPDM		2
4.2	Rotating Seal Ring	TC or SiC		2
4.3	Stationary Seal Ring	TC or SiC		2
4.4	Wave Spring	SUS304		2
4.5	Case O-ring	EPDM		2
4.6	Rotor O-ring	EPDM		2
4.7	Seal Body	SUS304		2
4.8	Quad Ring for flushing	EPDM	AN210	2
4.9	O-ring for flushing	EPDM	AN210	2
4.10	Quad Ring for bearing	EPDM	AN210	2
4.11	Rear Cover Quad-ring	EPDM	AN114	1
4.12	Rear Cover O-ring	EPDM	AN042	1
4.13	Rotor Bolt O-ring	EPDM	AN019	2
4.14	Front Cover O-ring	EPDM	AN235	1
5.1	Seal Stopper/Seal flush port	SUS304	M6 x 23	2

Certificates



EC-Declaration of conformity (as per EC's Machinery Directive 2006/42/EC, Annex IIA)

Producer
JEC LTD
15-26, Beodeul-ro 1362, Hwasung-Shi,
Kyunggi-do, South Korea

We hereby guarantee that **Lotary lobe pump (Pump Head Only)**
Type: **AccuLAB**

are in conformity with the essential requirements of the EC's Machinery Directive 2006/42/CE (latest modifications included) and according to the following Council Directives and harmonized norms:


- 2006/95/EC Directive "low voltage"
- UNI EN ISO 12100-2:2005

Manufacturer Declaration (as per EC's Machinery Directive 2006/42/CE, Annex IIB)

We hereby declare that the above pumps,
Comply with the pertinent disposition, in the execution supplied by JEC LTD for the incorporation in a machine or installation, or for the assembly with other machines as a subunit of other higher order machine. Harmonized norms used, particularly:

UNI EN ISO 12100-2:2005

The machine above must not be put into service until the machinery into which it has been incorporated have been declared in conformity with the EC Machinery Directive. It must meet, particularly, the standards ISO 23857:2008, ISO 13732-1:2007 in its respective current editions.



James Song / President

JEC LTD. 15-26, Beodeul-ro, Paltan-myun, Hwaseong-si, Gyeonggi-do, 445-843, South Korea
Tel : 82-31-355-0316, Fax : 82-31-355-0319

Certificates



1935/2004 (EC) Declaration of conformity

Producer: JEC Ltd. (15-26, Beodeul-ro 1362, Hwaseong-Si, Gyeonggi-Do, South Korea)

Product: Rotary lobe pump, Circumferential piston pump and Centrifugal pump

Model: JRZL, JRZP, JTP, JRZW, and Centrifugal pump

We, JEC, hereby guarantee that the materials are in direct contact with food as below,

SS316L, SiC seal ring, PTFE Glass filler and EPDM O-ring

Complies with the following relevant regulations:

- 1935/2004 (EC)
- Annex IV of Regulation (EC) 10/2011
- BfR Recommendation XXI

This declaration of conformity has been established on the basis of the following:

No.	Parts	Test requested	Test done
1	Wetted parts (SS316L)	German Food, Articles of Daily use and Feed Code of September 1, 2005(LFGB),Section30	Extractable heavy metals
		German Food, Articles of Daily use and Feed Code of September 1, 2005(LFGB),Section31	Sensorial examination odor and taste
2	Seal ring (SiC)	German Food, Articles of Daily use and Feed Code of September 1, 2005(LFGB),Section30	Extractable heavy metals
		German Food, Articles of Daily use and Feed Code of September 1, 2005(LFGB),Section31	Sensorial examination odor and taste
3	Lip seal (PTFE With Glass Filler)	Commission Regulation(EC)No 10/2011 and Hence Article 3 of European Regulation No. 1935/2004	1.Overall Migration 2.Specific Migration of Heavy metal
		German Food, Articles of Daily use and Feed Code of September 1, 2005(LFGB),Section31	Sensorial examination odor and taste
4	O-ring (EPDM)	BfR Recommendation XXI	1.Overall Migration 2.Specific migration of Primary Aromatic Amine 3.Lead and Zinc content 4.Specific migration of Formaldehyde 5.Organotin content
		European Commission Directive 93/11EEC	Specific migration of Nitrosamines

James Song / President

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Limited Warranty

DIXON VALVE AND COUPLING COMPANY (herein called "Dixon") warrants the products described herein, and manufactured by Dixon to be free from defects in material and workmanship for a period of one (1) year from date of shipment by Dixon under normal use and service. It's sole obligation under this warranty being limited to repairing or replacing, as hereinafter provided, at its option any product found to Dixon's satisfaction to be defective upon examination by it, provided that such product shall be returned for inspection to Dixon's factory within three (3) months after discovery of the defect. The repair or replacement of defective products will be made without charge for parts or labor. This warranty shall not apply to: (a) parts or products not manufactured by Dixon, the warranty of such items being limited to the actual warranty extended to Dixon by its supplier; (b) any product that has been subject to abuse, negligence, accident, or misapplication; (c) any product altered or repaired by others than Dixon; and (d) to normal maintenance services and the replacement of service items (such as washers, gaskets and lubricants) made in connection with such services. To the extent permitted by law, this limited warranty shall extend only to the buyer and any other person reasonably expected to use or consume the goods who is injured in person by any breach of the warranty. No action may be brought against Dixon for an alleged breach of warranty unless such action is instituted within one (1) year from the date the cause of action accrues. This limited warranty shall be construed and enforced to the fullest extent allowable by applicable law.

Other than the obligation of Dixon set forth herein, Dixon disclaims all warranties, express or implied, including but not limited to any implied warranties of merchantability or fitness for a particular purpose, and any other obligation or liability. The foregoing constitutes Dixon's sole obligation with respect to damages, whether direct, incidental or consequential, resulting from the use or performance of the product.

Some products and sizes may be discontinued when stock is depleted, or may require a minimum quantity for ordering.

NOTE: Reasonable care has been taken in preparing this catalog. Dixon Sanitary, a division of Dixon Valve & Coupling Company, reserves the right to make corrections and any dimensional changes.

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