



MASPORT H and HXL -SERIES

Air & Liquid Cooled Pressure Vacuum Pumps

Field Service & Parts Kit Installation Manual

For Models:

HXL75V II, HXL75F II, HXL75WV II, HXL75WF II
HXL15V II, HXL15F II, HXL15WV II, HXL15WF II
HXL20WV II

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INTRODUCTION

The following instructions assume that the pump being serviced is off the truck. It is possible to carry out installation of the parts kit with the pump mounted, but it will be far more difficult and the results may not be as good.

I. DISASSEMBLY

A. TOOL REQUIREMENTS

The following tools are required to properly service the Masport H-Series pump.

1. 3/8" or 1/2" Ratchet
2. Sockets in sizes: 13mm, 16mm, 18mm
3. Torque Wrenches (up to 75 ft. lbs.)
4. Combination Wrenches 7/16", 9/16"
5. Allen Wrench 3/16" and 10mm
6. Bearing Puller (Approximate reach 7")
7. Rubber Headed Mallet
8. Ball Peen Hammer
9. Small Center Punch
10. Gasket Scraper or Putty Knife
11. Parts Washing Pan and Brush
12. Cleaning Solvent
13. Oil Seal Driver or Metal Disc 2" in Diameter
14. Flat Metal File
15. Wet-Dry Sand Paper
16. Bearing Press or 6" long 1 1/2" pipe nipple with cap
17. Valve Lapping Compound
18. Dial Indicator (approx. Travel .25" graduated in .0001")
19. Dial Indicator stand
20. Pin Type Spanner Wrench with 3/16" pins
21. Small container of grease
22. Vacuum Pump Lubricant

B. INTEGRAL VALVE OR PORTING PLATE REMOVAL

H75V and H75WV integral valves are held in place by four 12mm bolts. To free the valve from the gasket use a gasket scraper or putty knife. Remove the exhaust flap after the valve.

H75WV and H15WV vacuum pumps have a porting or manifold plate under the integral valve. The H75WV manifold plate is held down with the same bolts as the integral valve. The H15WV manifold plate is held down with ten 12mm socket head screws. Remove the exhaust flaps on H15WV and then the manifold plate.

C. MARKING PARTS (PRIOR TO DISASSEMBLY)

Prior to further disassembly, mark the pump parts. This will help ensure the correct assembly of the vacuum pump.

Two dowel pins in each of the endcovers set the internal pump clearances. It is critical that the endcovers be assembled back onto the slide they originally came from as the pins and endcovers are not the same.

If not assembled to their original position, the seal gap, clearance between the rotor and cylinder housing will not be correct and damage to the pump may occur. It is also important that the rotor be installed in the same direction as it was removed and not turned around in the cylinder.

Use a center punch and ball-peen hammer to place a mark on one of the endcovers, the corresponding side of the cylinder housing, and the end of the rotor shaft.

IMPORTANT: Before continuing disassembly of the vacuum pump, turn the pump upside down. This is to prevent the offset rotor from dropping or becoming stuck in the cylinder and causing damage to cylinder or rotor.

D. END THRUST NUT REMOVAL

Note: End Thrust Nut Removal for H-Series Pumps only. Not for HXL Series II.

Using a 3/16" Allen Wrench, loosen the Thrust Nut Locking Screws located in the holes on the side of the endcover bearing housing, one to two turns. Insert two 3/16" spanner wrench pins into the holes drilled in the End Thrust Nut, and turn the nut in a counter-clockwise direction until it can be removed by hand.

There is a red fiber pad installed between the end of the Thrust Nut Locking Screw and the threads on the End Thrust Nut. Take care not to lose or damage this pad. The pad protects the threads from damage when tightening the Thrust Nut Locking Screw during assembly.

E. ENDCOVER REMOVAL

Remove the eight 16mm hex head endcover bolts, from one end of the pump. Thread two of the endcover bolts into the Endcover Jacking Holes. These are the tapped holes located on the endcover at the 2 o'clock and 7 o'clock positions. Turn the two bolts in evenly 1/2 turns at a time. This will draw the endcover away from the cylinder housing. When they are all the way in, using a rubber mallet, drive the end of the rotor shaft back in toward the other endcover. This should free the bearing from the endcover and allow the removal of the endcover. Do **NOT** pry or hammer the endcover off the cylinder because the sealing surfaces may become damaged.

NOTE: The overall end clearance, (End Float), is set with color coded milar shim gaskets between the endcover and cylinder. Make note of the quantity and color of any gaskets when removing the endcover to allow replacement with the same color and quantity upon assembly.

F. VANE AND ROTOR REMOVAL

With one of the endcovers off, remove the rotor assembly and vanes from the cylinder by driving the rotor out with a rubber mallet. Striking the rotor shaft on the end still in the endcover will force the bearing out of the endcover and free the assembly. With the rotor and vanes removed, remove the second endcover using the same procedure used with the first one.

II. PARTS INSPECTION - CLEANING OR REPLACEMENT

A. VANES

If a Repair Parts Kit is being installed and the vanes being replaced, inspect the old vanes for damage due to improper operation. Correct this condition upon installation of the pump. The old vanes may be reused if they meet the following criteria.

1. Measure the vane to see that it is no less than the required width for that model pump. (2 1/4" in width for models 75 & 15; 2 5/8" in width for model HXL20WV.) Also measure to see that the working edge and the edge in the rotor parallel.
2. Inspect the sides of the vanes to see that they are not bent or worn to a concave shape on one side.
3. Check the edge of the vane that contacts the cylinder for signs of resin breakdown. This will appear as gaps in the resin between the weave of the vane fiber.
4. Inspect the sides of the vane for scratches or gouges. These would indicate foreign material caught alongside the vane, or a nick in the edge of the rotor vane slot.

B. BEARING AND BEARING SPACER INSPECTION

It is difficult to visually determine the condition of a bearing. If there is obvious damage such as discoloration, (bluing) of the bearing or the race, there is definite damage and the bearing and spacer should be replaced. If there is no discoloration and minimal amounts of carbon or oil sludge build-up on the bearing cage, it can probably be cleaned in solvent, blown out with an air hose, oiled and reused. There is no guarantee that the bearing is not damaged and with the pump disassembled to this point, it is advisable to replace them.

The outer circumference of the bearing spacer should be inspected for signs of contact with the bore of the endcover bearing housing. If there has been contact, it could be a sign that the bearing is worn and is allowing contact. The spacer and bearing should be replaced.

C. BEARING AND BEARING SPACER REMOVAL

Before attempting removal from the shaft, any burrs on the shaft, from pulley set screws or other damage, should be removed with a flat file. Once the shaft is free of burrs, remove the bearing and spacer with a bearing puller.

NOTE: The bearing spacer is not reusable and must be replaced when removed.

Do not install new bearings and spacers at this time. Follow the Rotor Inspection and Cleaning instructions first.

D. ROTOR INSPECTION AND CLEANING

Inspect the edges of the vane slot across the length of the rotor and on the ends next to the bearing fit. All of these edges should be lightly filed to remove any burrs or nicks that may have been caused by foreign material or rotor to endcover contact.

If either of the bearings had failed and spun on the shaft, the shaft should be built-up and machined by a qualified machine shop to ensure proper bearing fit. Remove any oil varnish or build-up with 400 grit wet/dry sandpaper. Clean the rotor with a solvent and dry it off.

Inspect the rotor carefully at this time for cracks, especially if tear down was due to pump seizure. Any cracks in the rotor will require replacement of the part.

E. BEARING AND BEARING SPACER INSTALLATION

NOTE: The bearing spacer only fits on the shaft one way.

Looking carefully at the spacer, note that the hole bored for the shaft is larger in diameter on one side than the other. The spacer is installed on the rotor shaft with the larger bore diameter side toward the rotor casting. Incorrect installation of the spacer will cause bearing failure and damage to the pump.

Press the bearing and bearing spacer on the shaft at the same time or separately. Apply pressure to the inner race of the bearing. Pressure on the outer race will cause damage to the bearing.

If a bearing press is not available, a 6" long pipe nipple and cap can be used to drive the bearing onto the shaft by placing the pipe over the shaft and against the bearing inner race and striking the pipe cap with a large hammer. If this method is used, be sure any dirt or pipe scale is removed from the nipple before use to prevent contaminating the bearing.

F. ENDCOVER INSPECTION AND CLEANING

Each of the endcovers should be inspected for surface damage from rotor to cover contact. The bearing housing should be inspected for signs of bearing spacer-to-bore contact or spinning of the bearing outer race in the bore.

If the bearing housing bore is damaged due to spacer contact, it can be easily cleaned up with a small file or wet/dry sandpaper to remove any burrs. If either of the bearings had seized and spun in the housing, the fit should be checked with a new bearing to ensure there is no excessive clearance. Burrs should be removed to allow the new bearing to slip snugly in the housing with only a hand press fit.

If the endcovers have been damaged by rotor-to-cover contact and there are grooves worn in the cover more than .005" deep, the face should be resurfaced. If there is no damage or the damage is minor, the face of the cover should be wiped clean with solvent and then lapped with lapping compound against the other endcover surface. After lapping, the covers should again be wiped clean and blown off with an air hose to remove any traces of lapping compound that could cause damage on assembly. Be sure to clean any compound or foreign material from the bearing housing oil passage.

G. CYLINDER HOUSING INSPECTION AND CLEANING

Prior to inspection, the cylinder housing should be cleaned inside and out to allow a more thorough inspection. Special attention should be given to the areas inside the intake and exhaust ports of the cylinder. If there is a sizable build-up of oil sludge in the exhaust port, the type of lubricant used in the unit should be reconsidered upon installation of the repaired pump. If foreign material is built-up in the intake porting, the primary and secondary scrubber system on the truck should be checked to ensure they are in proper working order and are sized properly for the pump being used.

Inspect the interior of the cylinder for cracks, deep gouges around the circumference, and corrugation across the length of the bore. Cracks in the housing qualify the part for replacement. Gouges or grooves around the entire circumference of the cylinder indicate foreign material contamination. Boring of the cylinder is required if they are more than .005" deep. If the grooves are shallow, new vanes will wear into them fairly quickly and provide reasonable results.

Corrugation across the length of the cylinder bore can be caused by several things; inadequate horsepower transfer, pump RPM is too slow, foreign material sticking the vanes in their slots causing hammering action on the cylinder, or operation of the pump beyond its limits. Each of these possible causes should be investigated and corrected before the pump is installed on the truck. If the corrugation is so slight as to be visible but not felt by running a finger over the bore, the cylinder can be cleaned and reused. If the corrugations are deep enough to be felt, the cylinder should be bored, honed, and the seal gap clearance reset.

Assuming the cylinder is reusable, it should be cleaned thoroughly with solvent and have any sharp edges or burrs removed using a file.

H. END THRUST NUT INSPECTION AND CLEANING

The end thrust nut is fitted with an O-ring around the outside and an oil seal on the inside. The O-ring is easily removed by hand. The oil seal is driven out of the bore using a small punch or screwdriver.

Examining the thrust nut, it will be noted that there are four raised surfaces on the bearing side of the nut that contact the bearing outer race. These four surfaces limit the travel of the rotor assembly and prevent the rotor and endcover surfaces from touching. If a bearing seized and the outer race spun in the endcover bore, there may be damage to the contact surfaces of the thrust nut and the thrust nut should be replaced. If the thrust nut is suitable for use, clean it in solvent and dry it off.

J. O-RING AND OIL SEAL REPLACEMENT

The O-ring can easily be stretched over the thrust nut and dropped into the groove. The oil seal should be pressed into the thrust nut bore using a seal press or a flat round disc approximately the same outside diameter as the oil seal. Care must be taken to press the seal into the bore evenly to prevent damage. The oil seal must be pressed into the thrust nut bore with the spring side of the seal toward the bearing. Incorrect installation of the oil seal will result in oil leaks around the shaft and possible bearing failure.

K. INTEGRAL VALVE SHAFT SEAL REPLACEMENT

If the pump is fitted with an Integral 4-Way Valve, it should be disassembled for cleaning and seal replacement. Prior to disassembly, the valve cap and valve body should be marked, to ensure assembly in the same position.

1. Remove the valve handle retaining bolt (13mm) and valve handle.
2. Removing the four valve cap retaining bolts will allow the Valve Cap to be removed. These four bolts should be removed evenly, alternating from one to another, to prevent binding between the oil seal in the valve cap and the valve spool stem.
3. Once the cap is removed, the valve spring and valve spool can be removed by turning it slightly in the valve bore and lifting it out.

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4. The valve cap oil seal can now be removed by driving it out of the bore from the inside of the cap out. Clean all the parts thoroughly and press the new seal into the valve cap from the top with the spring side of the oil seal toward the inside of the cap.
 5. Examining the inside of the valve spool cap will reveal a protruding valve spool-stop cast into the side of the cap. This spool-stop must be aligned with the slot cast into the top of the valve spool. If not aligned, the valve will not function properly.
 6. Grease the valve spool and place it back in the valve body.
 7. Place the valve spring over the valve spool shaft.
 8. Grease the inside of the valve cap oil seal and place the valve cap on the valve spool shaft, taking care to line it up with the valve spool.
 9. Replace the valve cap retaining bolts and lockwashers and tighten them down evenly, to prevent binding on the shaft seal.
 10. Replace the valve handle, bot, and retaining washer, and turn the valve handle to ensure proper function.

III. PUMP ASSEMBLY

A. INSTALLING FIRST ENDCOVER AND ENDCOVER GASKETS

Be sure all the parts are cleaned and ready for assembly. The area to be used for assembly should be thoroughly cleaned to prevent contamination during assembly.

1. Place cleaned cylinder housing upside down on the assembly table. Find the reference marks made before disassembly to determine the correct endcover for one end of the pump.
2. Spread a small amount of oil around the cylinder face to hold the endcover gaskets in place.
3. Place the new endcover gaskets over the dowel pins and onto the cylinder. Be sure to use the same size (color) and number of gaskets as were removed on disassembly of the pump.
4. Align the endcover dowel pin holes with the pins in the cylinder face. Drive the cover on evenly with a rubber mallet, working from side to side, to prevent bending the pins or distortion of the holes in the endcover.
5. Install the 8 endcover retaining bolts and torque them to 25 foot pounds. Do not tighten them in a circle around the endcover, work across the endcover, alternating from one side to the other to ensure even pressure on the gaskets.

B. INSTALLING ROTOR ASSEMBLY

When installing the rotor back into the pump, be sure the reference mark on the rotor is lined up with correct endcover. The rotor should slide into the pump freely. It may be necessary to tap the rotor to push the bearing into the endcover bearing housing.

C. INSTALLING VANES

The vanes have a 45 degree bevel on one edge and a radius on the other edge. The vanes are inserted with the 45 degree bevel going towards the center of the rotor. Be sure the vanes slide freely in the rotor.

D. INSTALLING SECOND ENDCOVER

Place the second endcover over the rotor shaft and start the bearing into the cover housing. It will be necessary to lift the cover and rotor slightly, in order to align the dowel pins and dowel pin holes. Once the pins are aligned, the endcover can be driven against the cylinder face with a rubber mallet. The endcover bolts can now be installed and torqued according to the procedure in "Installing First Endcover."

The rotor should turn freely in the cylinder. If it does not, either one of the vanes is in crooked and caught on a bearing spacer, or the rotor is jammed against one of the covers, due to a bearing sticking in the housing. Before disassembling to check for one of these problems, strike each end of the rotor shaft with a rubber mallet. If this does not cure the problem, disassemble the pump according to the "Endcover Removal" section and correct the problem.

CAUTION: Under no circumstances should the rotor be forced to turn with any type of tool, or damage will be done to the pump.

E. INSTALLING END THRUST NUTS (For H-Series and HXL-Series I)

1. Grease the inside of the oil seal where it will contact the pump shaft and the outside of the O-ring.
2. Place the thrust nut over the shaft, taking special care not to bend the lip of the seal when it goes over the end of the shaft or the groove in the shaft. Damage to the oil seal will cause oil leaks.
3. Screw the thrust nut into the threads in the endcover until the O-ring on the thrust nut does not show and is completely inside the housing. **DO NOT** tighten the thrust nut until it stops. Further adjustment will be done on the thrust nut in "Setting End Thrust".

F. CHECKING TOP SEAL GAP CLEARANCE

At this point, the lower pump assembly is complete and the seal gap clearance between the rotor and cylinder should be checked. Checking the seal gap will ensure that the dowel pins have not been damaged and the pump is correctly assembled to this point.

The seal gap is the distance between the top of the rotor and the top of the inside of the cylinder bore.

SEAL GAP SPECIFICATIONS

HXL75F and HXL75V	.005" plus .003" minus .000"
HXL75WF and HXL75WV	.008" plus .002" minus .000"
HXL15F and HXL15V	.008" plus .002" minus .000"
HXL15WF and HXL15WV	.008" plus .002" minus .000"
HXL20WV	.008" plus .002" minus .000"

This clearance can be checked by inserting the proper sized feeler gauge in the intake port of the pump across the top of the rotor to the exhaust side of the pump. The clearance should be checked at three points; in the center of the pump, and at each end of the rotor near the endcover, to ensure the rotor is parallel with the cylinder bore. The rotor should be turned so that the vane slots are not at the top of the cylinder. If the clearance is within specification, the dowel pins will not have to be replaced.

G. CHECKING ROTOR END FLOAT

The following operation will require the use of a dial indicator and either a magnetic stand or a stand that can be bolted to one of the endcover bolts. The indicator stand must be mounted directly to the pump itself or the readings will be inaccurate.

1. Bolt the pump to a table or to the mounting platform it will finally be installed on. Cover the top of the pump with masking tape, to prevent foreign material entering the pump.
2. Mount the dial indicator stand on the pump endcover and attach the dial indicator so that the end of the indicator is on the end of the pump shaft. The travel axis of the indicator must be on the same line as the axis of the pump shaft.
3. Turn one of the end thrust nuts in, until it becomes tight, indicating the rotor has been pushed up against one of the endcovers.
4. Make note of the dial indicator reading and back that thrust nut off one full turn.
5. Turn the other thrust nut until it is tight and make note of the indicator reading. Back this thrust nut off one full turn. The difference between the two readings is the total amount against the following table to see that it is within specification. If the clearance is too little, an endcover will have to be removed and endcover gaskets added to attain the proper travel. If the clearance is too much, gaskets will have to be removed.

TOTAL ROTOR END FLOAT

HXL75F and HXL75V	.008" to .010"
HXL75WF and HXL75WV	.012" to .014"
HXL15F and HXL15V	.020" to .022"
HXL15WF and HXL15WV	.024" to .026"
HXL20WV	.021" to .023"

GASKET THICKNESS COLOR CODE

RED (PINK)	.002"
YELLOW	.003"
BLUE	.002"
GREEN	.003"

6. If gaskets were added or subtracted, repeat steps 2 through 5 to ensure the changes made were correct and move on to the next section.

H. SETTING END THRUST WITH END THRUST NUTS

(Reference End Thrust Table at Bottom of Page)

Thrust nuts on Masport pumps limit the travel of the rotor between the endcovers. This allows the pump to be direct couple driven without damage to the rotor or covers from lateral thrust loads produced by the drive system. The following steps will set the end thrust nuts, to allow the rotor to come no closer than .002" to the endcover. It will be helpful to mark one thrust nut #1 and the other #2 with a felt tip marker, to avoid confusion through the following steps.

1. Snug up the end thrust nut locking screws. Not so tight that the thrust nut will no longer turn, but just enough to take the slack out of the end thrust nut threads.
2. With the dial indicator in place, as it was to check the total end float, turn one of the thrust nuts in, (#1 thrust nut) all the way, until the dial stops moving and write down the indicator reading.

NOTE: Do not over-tighten the thrust nuts. Turn them only until the dial indicator stops moving and the nut becomes snug. Over-tightening will cause error in the setting and possible damage to the pump.

3. Turn the other thrust nut in, (call this nut #2) until it is tight against the bearing.
4. Loosen nut #1, just enough to allow the dial indicator to move .002"
5. Tighten #2, so it is against the bearing again and lock the thrust nut locking screw.
6. Scribe a line across end thrust nut #2 and the endcover thrust nut housing for a reference mark.
7. Loosen end thrust nut #1 one full turn.
8. Loosen the locking screw on #2 and turn it all the way in, making note of the number of turns in relation to the reference mark.
9. Tighten nut #1, until it stops.
10. Loosen #2, until the dial indicator moves .002"
11. Tighten #1, until it stops and tighten the thrust nut locking screw.
12. Back of #2, until the scribed reference lines line up with each other and tighten the locking screw.

At this point the rotor will be limited to coming within no more than .002" to .003" of either endcover. The total remaining rotor end float should amount to the value of the total original end float minus the total of the two end thrust nut settings.

End Thrust from Cover

HXL75V	.002"
HXL75WV	.002"
HXL15V	.005"
HXL15WV	.005"
HXL20WV	.005"

I. SETTING END THRUST WITH SET SCREWS

Thrust screws on Masport pumps limit the travel of the rotor between the endcovers. This allows the pump to be direct couple driven without damage to the rotor or covers from lateral thrust loads produced by the drive system.

IMPORTANT: END THRUST MUST BE SET WITH ROTOR AND ENDCOVERS FREE OF ANY OIL OR SETTINGS WILL BE INCORRECT!

1. Loosen the three jam nuts on end thrust Allen screws on each end cover (A in Diagram 3).
2. Loosen end thrust Allen screws 3 full turns to insure they are away from bearing race (B in Diagram 3).
3. Invert pump so rotor shaft is in vertical position.
4. Mount dial indicator to end cover bolt (as shown Diagram 4) with dial in center of range.
5. Screw in bottom Allen screws until they just touch the race making sure dial remains at zero.
6. Tighten the bottom Allen screws moving from one to another 1/4 turn at a time until the rotor is pushed to the top end cover.
7. Read dial and confirm total travel is from .024" to .026". If not add or subtract cover gasket/shims to achieve proper total travel.
8. Loosen bottom thrust screw to allow rotor to move back to bottom cover face.
9. Tighten one of the bottom thrust screws until dial moves .001" to .0015" and lock jam nut in place.
10. Tighten second thrust screw until dial moves .001" to .0015" and lock jam nut in place.
11. Tighten third thrust screw until dial moves .0005" to .001" and lock jam nut in place.
12. Invert pump so bottom shaft is now top shaft. Remount dial indicator on what is now top cover and repeat steps 9 through 11.

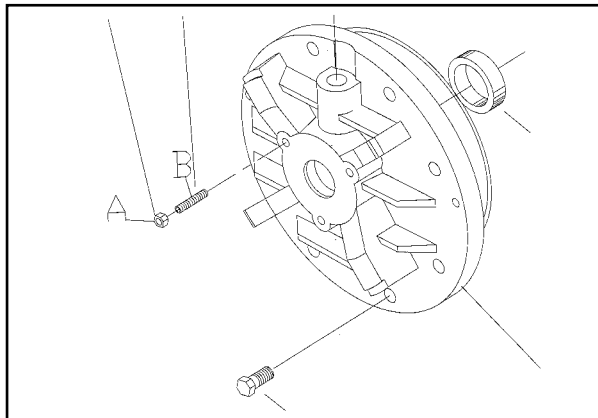


DIAGRAM 3

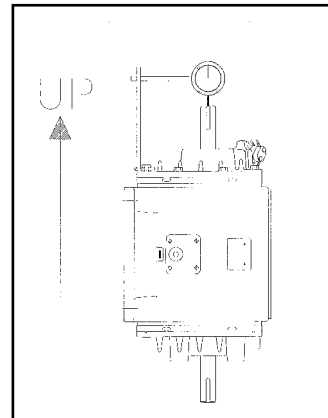


DIAGRAM 4

J. INSTALLING EXHAUST FLAP ASSEMBLY AND INTEGRAL VALVE

H75V FLAP INSTALLATION

1. Looking at the top surface of the cylinder housing, the exhaust port of the pump is the smaller square port. Next to the exhaust port, there is a milled slot for the hinge pin of the flap assembly to drop into. Place the flap hinge pin in the slot with the flap covering the exhaust port of the pump. The metal side of the flap is the top, and the side with the vane material riveted on, lays against the top of the cylinder.
2. Place the valve gasket #3 on the top of the cylinder housing.
3. Place the 4-way valve assembly on the pump so that the side of the valve with the 1/8" NPT threaded hole is on the exhaust side of the pump. The side of the valve with protrusion on the valve body, goes toward the intake side of the pump.
4. Install the 4-way valve retaining bolts and lockwashers and torque to 40 foot pounds.

H75WV FLAP INSTALLATION

1. Place gasket (#16 drawing 90043) on the top of the pump housing, as shown in the drawing. You will note that #16 has 3 rectangular holes, one for the intake, one for the exhaust and one for the water jacket.
2. Determine the top exhaust side of the flap adaptor plate #15 and place it top of the gasket as shown. The top exhaust side of the plate, can be determined by looking for the slot milled in the surface for the flap assembly hinge pin. The relationship of the slot to the cylinder housing can be seen by studying drawing 90043.

NOTE: Incorrect installation of the plate, and consequentially the flap and integral valve assembly, will result in damage to the pump on start-up, so take care at this point.

3. Place the flap assembly (#4 drawing 90043) onto the flap adaptor plate with the hinge pin in the milled slot. The metal side of the flap is the top, and the side with the vane material riveted to it, lays against the adaptor plate over the exhaust port.
4. Place gasket (#18 drawing 90043) on top of the adaptor plate.
5. Place the 4-way valve assembly on the pump, so that the side of the valve with the 1/8" NPT threaded hole for pressurizing the lubricator, is on the exhaust side of the pump. The side of the valve, with the protrusion on the valve body, goes towards the intake side of the pump.

NOTE: Make certain the hole in the valve body, for the liquid cooling lines, matches the hole in the adaptor plate and that all gaskets on the adaptor plate allow an open path for the coolant to flow from the cylinder water jacket through the 4-way valve.

6. Install the four valve retaining bolts and lockwashers (#13 and #14 drawing 90043) and torque to 40 foot pounds.

H15WV FLAP INSTALLATION

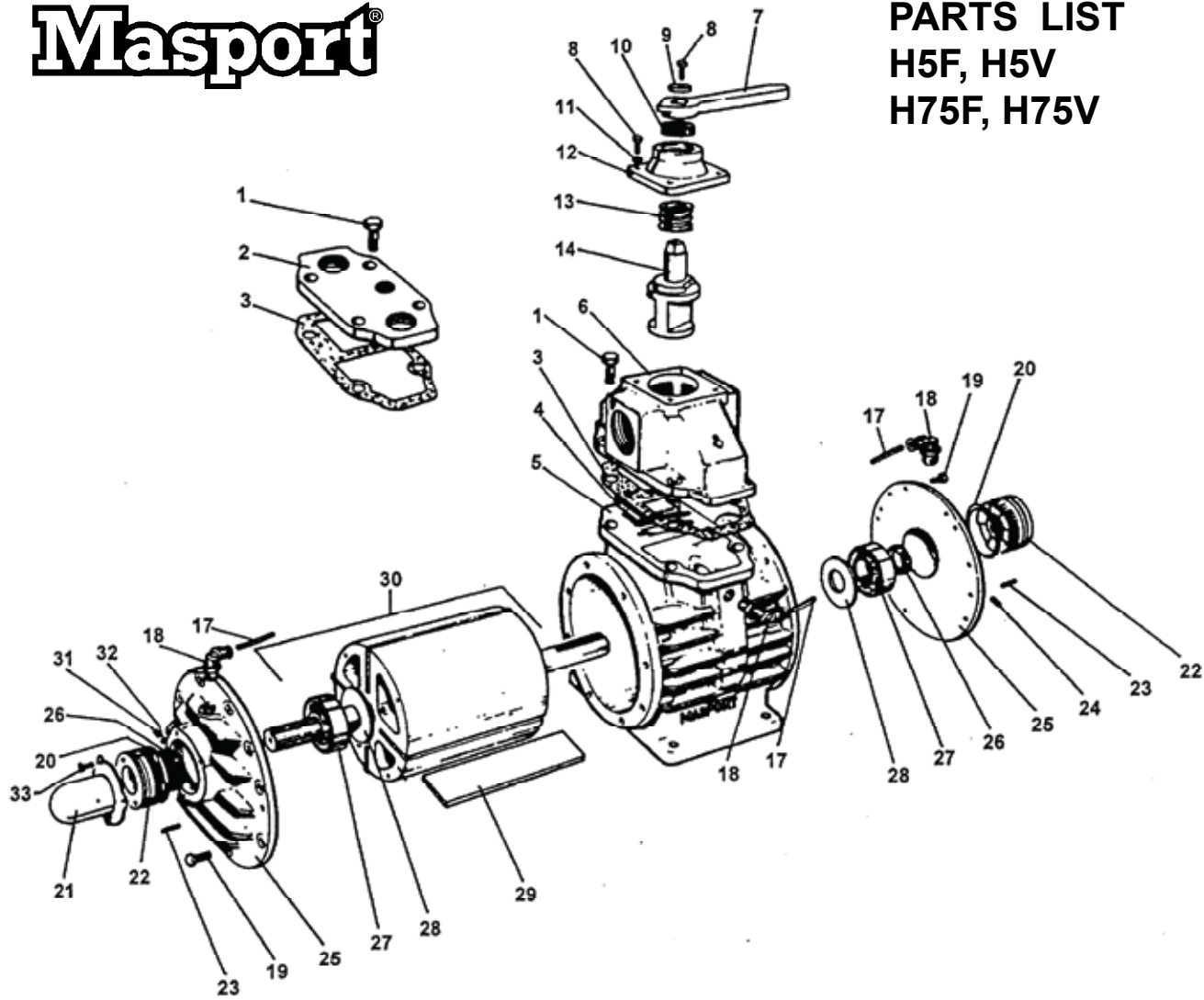
1. Install the two flap assemblies (#15 drawing 90025) in the milled hinge pin slots in the top of the cylinder housing. The side of the flap with the vane material riveted to it, contacts the top of the cylinder housing, to cover the two exhaust ports.
2. Place gasket (#14 drawing 90025) on the top of the cylinder.
3. Set the manifold plate (#13 drawing 90025) in place on top of the gasket, making sure the bolt holes in the cylinder, align with the holes in the manifold plate.
4. Install and tighten manifold retaining bolts to 40 foot pounds. Work from the center of the manifold to the outside, to ensure uniform pressure on the gasket.
5. Place gasket (#11 drawing 90025) on the manifold plate.
6. Install valve retaining bolts and lockwashers (#9, 16, and 17 drawing 90025) and torque them to 40 foot pounds.

K. PRE-INSTALLATION PUMP LUBRICATION

Up to this point, all work on the pump has been done without lubrication. To prevent damage to the pump on initial start-up, 1 ounce of pump lubricant should be poured down each of the bearing lubrication ports and into the center lubrication port on the pump cylinder. Following lubrication, the pump should be turned by hand, to distribute the oil evenly around the inside of the pump. The pump can now be installed and readied for service.

For further information regarding installation or operation of a Masport H-Series Pump, contact the Masport Sales Representative in your area or contact:

MASPORT INCORPORATED
6140 McCormick Drive
Lincoln, NE 68507
TEL. 402-466-8428
FAX: 402-466-8355
TOLL FREE: 800-228-4510



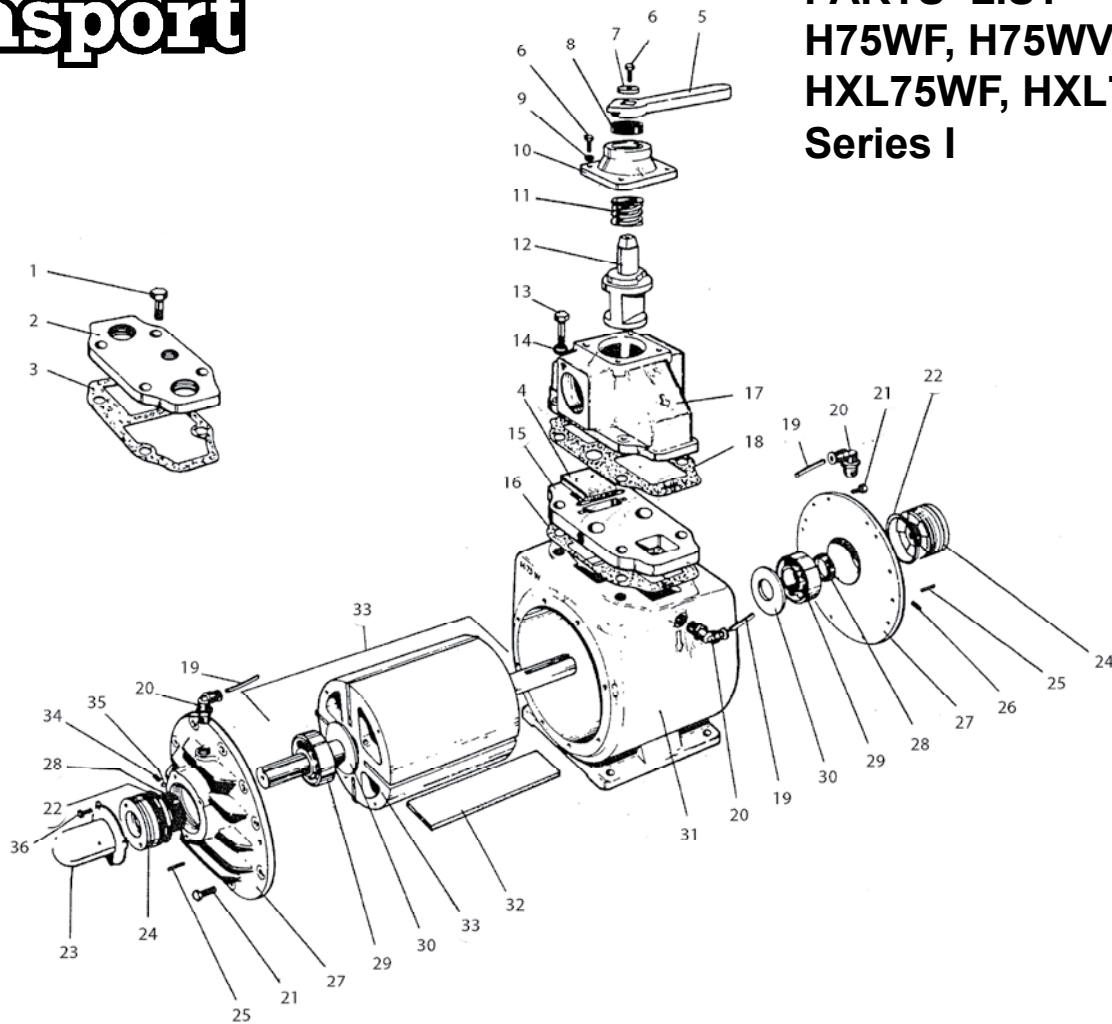
H5F, H5V, H75F, H75V AIR COOLED PRESSURE / VACUUM PUMP PARTS LIST

REF.	DESCRIPTION	H75	H5	Qty.	REF.	DESCRIPTION	H75	H5	Qty.
1.	8mm X 35mm Bolt	501666	501666	4	22.	Thrust Nut	968607	968607	2
2.	Flange Plat (Air Cooled)	968706	968706	1	23.	Dowel Pin (Older 7.8mm X 25mm)	942313	942313	4
3.	Gasket (H5, H75)	568610	568610	1		Dowel Pin (Newer 8mm X 30mm)	503258	503258	4
4.	Flap Assembly	968026	968026	1	24.	Allen Screw	501273	501273	2
5.	Cylinder (Air Cooled)	968401	975334	1	25.	Endcover	968603	968603	2
6.	Valve Body (Newer 2 1/2" NPT)	968010	968010	1	26.	(Same as #10)	-----	-----	--
	Valve Body (Older 2" NPT)	968711	968711	1	27.	Bearing	501669	501669	2
7.	Valve Handle	968037	968037	1	28.	Bearing Spacer	968611	968611	2
8.	8mm X 25mm Bolt	501617	501617	5	29.	Vane	975402	975306	4
9.	Washer (Handle Retainer)	501550	501550	1	30.	Rotor Assembly (Includes 27, 28)	968605	968655	1
10.	Oil Seal	501674	501674	3	31.	(Same as #24)	-----	-----	--
11.	8mm Lockwasher	501610	501610	4	32.	Fiber Pad	568072	568072	2
12.	Valve Cap	968035	968035	1	33.	8mm X 16mm Bolt	501571	501571	3
13.	Valve Spring	568038	568038	1	34.	Endcover O-Ring*	501673	501673	2
14.	Valve Spool	968094	968094	1	35.	2 1/2" Integral Valve Assembly*	968003	968003	1
15.	12mm X 55mm Bolt (Older 2" Valve)*	501880	501880	4	36.	2" Integral Valve Assembly*	942453	942453	1
16.	12mm Lockwasher*	500203	500203	4	37.	Endcover Shim Gasket *			
17.	4mm OD Nylon Tubing (HXL Only)	600293	600293	4		.002" Thickness	542011	542011	**
18.	Elbow (HXL Only)	568086	568086	3		.003" Thickness	542012	542012	**
19.	10mm X 25mm Bolt	501569	501569	16	38.	Valve Cap Gasket*	568044	568044	1
20.	O-Ring (H Thrust Nut)	501672	501672	2					
21.	Shaft Guard	668608	668608	1					

* Not Shown

** Quantity Varies

PARTS LIST H75WF, H75WV, HXL75WF, HXL75FV Series I

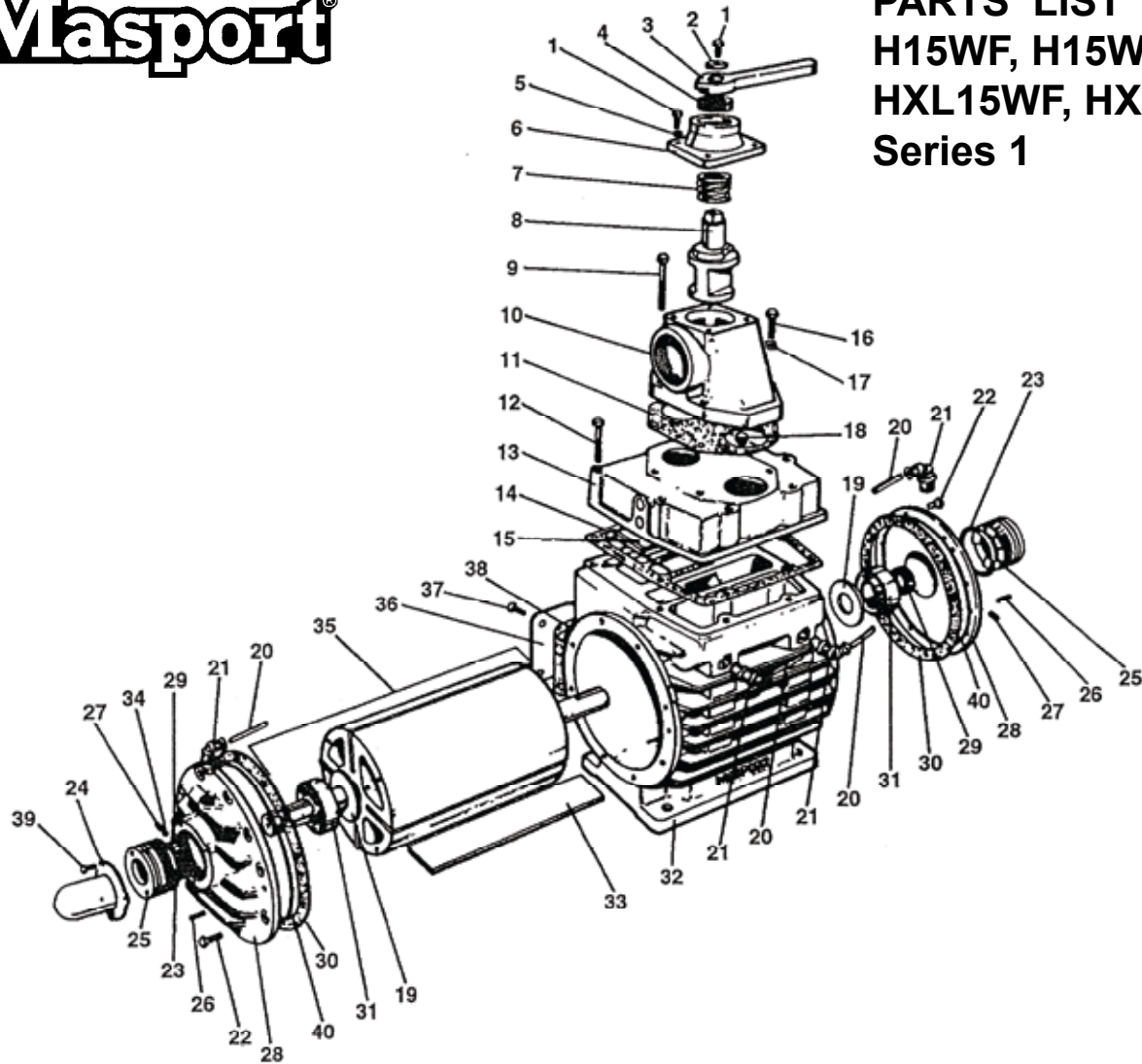


H75WF, H75WV, HXL75WF, HXL75WV LIQUID COOLED PRESSURE / VACUUM PUMP PARTS LIST

REF.	DESCRIPTION	Part No.	Qty.	REF.	DESCRIPTION	Part No.	Qty.
1.	12mm X 35mm Bolt	501666	4	23.	Shaft Guard	668608	1
2.	Flange Plate (Liquid Cooled)	968709	1	24.	Thrust Nut	968607	2
3.	Gasket (H75WF)	568703	1	25.	Dowel Pin (Older 7.8mm X 25mm)	942313	4
4.	Flap Assembly	968026	1		Dowel Pin (Newer 8mm X 30mm)	503258	4
5.	Valve Handle	968037	1	26.	Allen Screw	501273	2
6.	8mm X 25mm Bolt	501617	5	27.	Endcover	968603	2
7.	Washer (Handle Retainer)	501550	1	28.	(Same as #8)	-----	---
8.	Oil Seal	501674	3	29.	Bearing	501669	2
9.	8mm Lockwasher	501610	4	30.	Bearing Spacer	968611	2
10.	Valve Cap	968035	1	31.	Cylinder (H75W Liquid Cooled)	968712	1
11.	Valve Spring	568038	1	32.	Vane	975402	4
12.	Valve Spool	968094	1	33.	Rotor Assembly (Incl. 29, 30)	968605	1
13.	12mm X 70mm Bolt (Newer 2 1/2" Valve)	502024	4	34.	(Same as #26)	-----	---
	12mm X 55mm Bolt (Older 2" Valve)	501880	4	35.	Fiber Pad	568072	2
14.	12mm Lockwasher	500203	4	36.	8mm X 16mm Bolt	501571	3
15.	Flap Adaptor Plate (3/4" Old H75WV)	968615	1	37.	Endcover O-Ring*	501673	2
	Flap Adaptor Plate (1 1/4" New H75WV)	968011	1	38.	2 1/2" Integral Valve (Complete Assembly)*	968003	1
16.	Gasket (Flap Adaptor Plate)	568703	1	39.	2" Integral Valve (HW Complete Assembly)*	942453	1
17.	Valve Body (Newer 2 1/2" NPT)	968010	1	40.	Endcover Shim Gasket *		
	Valve Body (Older 2" NPT)	968711	1		.002" Thickness	542011	**
18.	Gasket (H75WV Valve)	568653	1		.003" Thickness	542012	**
19.	4mm OD Nylon Tubing (HXL Only per ft.)	600293	4	41.	Bottom Plate (H75W Cylinder)*	968707	1
20.	Elbow (HXL Only)	568086	3	42.	Bottom Plate Gasket (H75W)*	568708	1
21.	10mm X 25mm Bolt	501569	16	43.	8mm X 16mm Bolt*	501571	6
22.	O-Ring (H Thrust Nut)	501672	2	44.	Valve Cap Gasket*	568044	1

* Not Shown ** Quantity Varies

PARTS LIST H15WF, H15WV, HXL15WF, HXL15WV Series 1



H15WF, H15WV, HXL15WF, HXL15WV AIR COOLED PRESSURE / VACUUM PUMP PARTS LIST

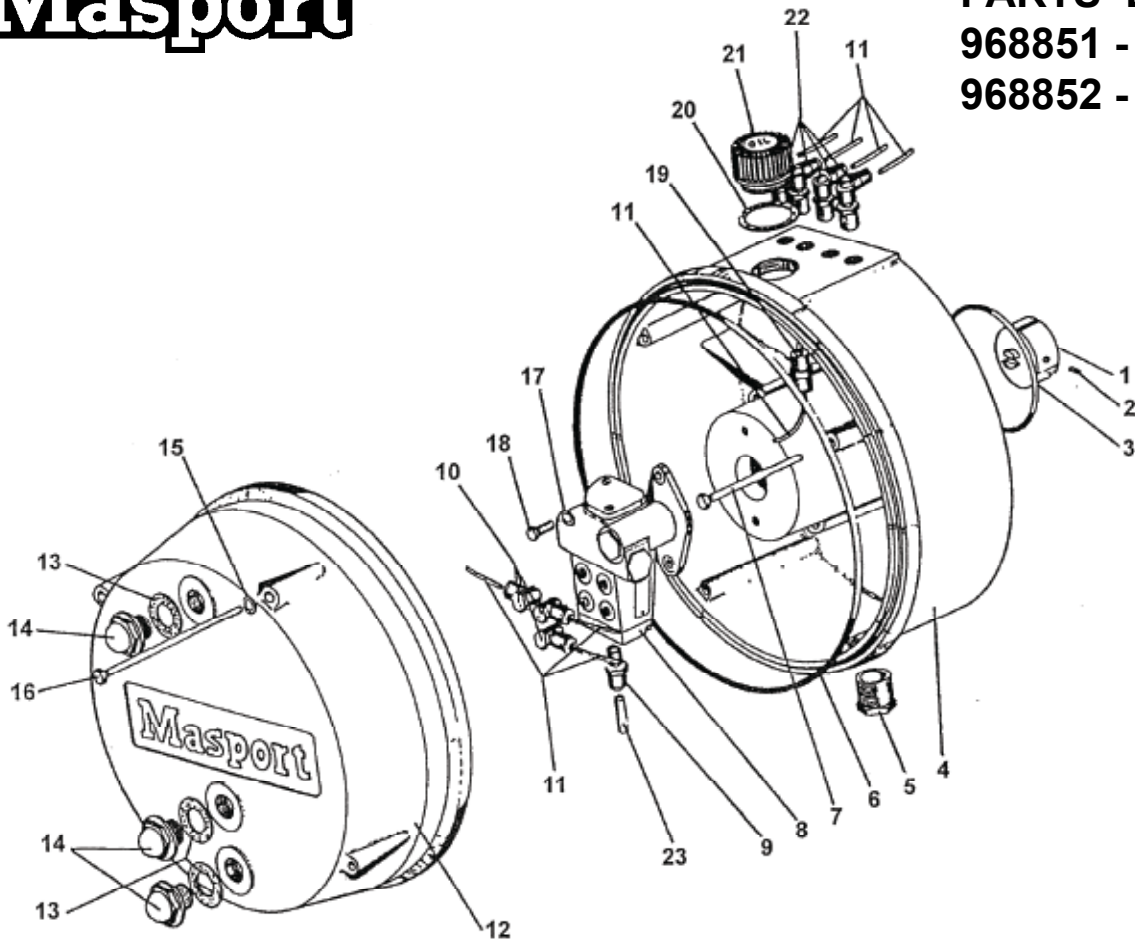
REF.	DESCRIPTION	Part No.	Qty.	REF.	DESCRIPTION	Part No.	Qty.
1.	8mm X 25mm Bolt	501617	5	23.	O-Ring (Thrust Nut)	501672	2
2.	Washer	501550	1	24.	Shaft Guard (H Only)	668608	1
3.	Valve Handle	968037	1	25.	Thrust Nut	968607	2
4.	Oil Seal	501674	3	26.	Dowel Pin (Older 7.8mm X 25mm)	942313	4
5.	8mm Lockwasher	501610	4		Dowel Pin (Newer 8mm X 30mm)	503258	4
6.	Valve Cap	968035	1	27.	Allen Screw	501273	2
7.	Valve Spring	568038	1	28.	Endcover	968603	2
8.	Valve Spool	968804	1	29.	(Same as #4)	-----	---
9.	12mm X 120mm Bolt	502061	1	30.	Endcover Shim Gasket *		
10.	Valve Body	968012	1		.002" Thickness	542011	**
11.	Gasket	568806	1		.003" Thickness	542012	**
12.	12mm X 80mm Allen Head Bolt	501965	10	31.	Roller Bearing	39028	2
13.	Manifold Plate (no threads)	968802	1	32.	Cylinder	968801	1
	Manifold Plate (threaded)	968802-1	1	33.	Vane	968811	4
14.	Gasket	568805	1	34.	Fiber Pad	568072	2
15.	Flap Assembly	968026	2	35.	Rotor Assembly (Includes 19, 31)	968810	1
16.	12mm X 35mm Bolt	501666	4	36.	Side Plat	968231	1
17.	12mm Lockwasher	500203	5	37.	8mm X 20mm Bolt	501597	4
18.	1/4" NPT Plug	500100	1	38.	Gasket	568232	1
19.	Bearing Spacer	968611	2	39.	8mm X 16mm Bolt	501571	3
20.	4mm OD Nylon Tubing (HXL Only)	600293	4	40.	O-Ring for Endcover	501673	2
21.	Elbow (HXL Only)	568086	4	41.	Valve Cap Gasket*	568044	1
22.	10mm X 25mm Bolt	501569	16				

* Not Shown

** Quantity Varies

Masport®

PARTS LIST
968851 - CW
968852 - CCW



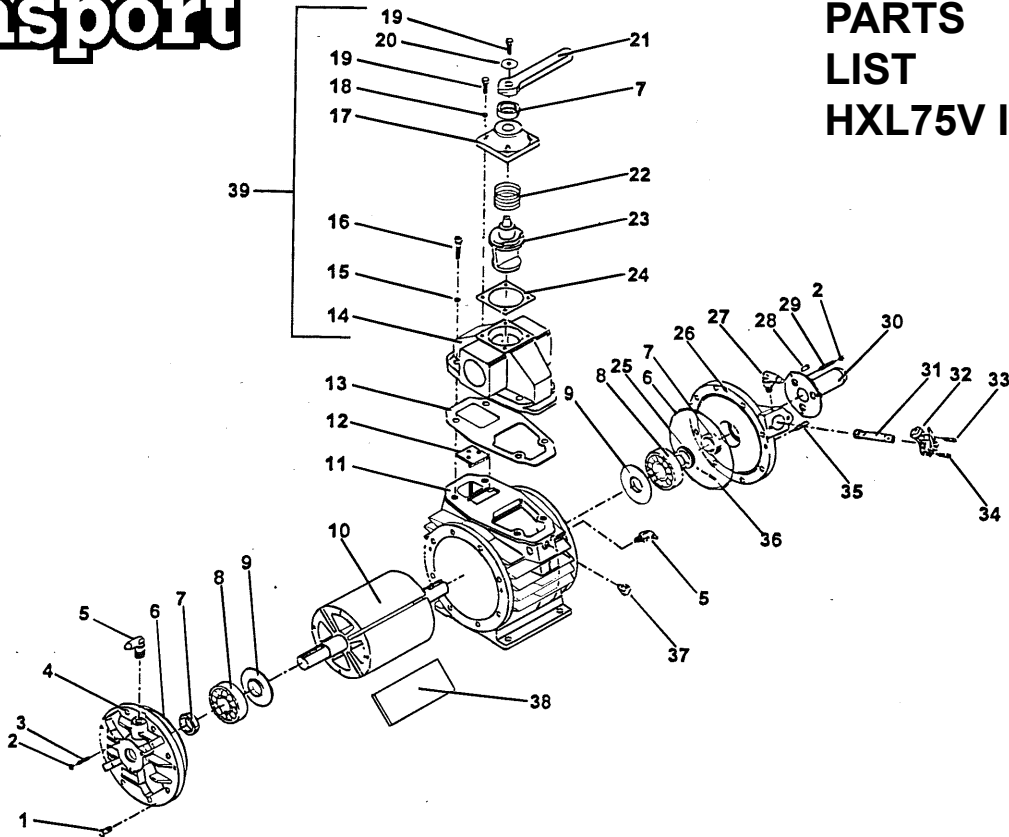
MASPORT
XL LUBRICATOR PARTS LIST - 968851 (Clockwise), 968852 (Counter-Clockwise)

<u>REF.</u>	<u>DESCRIPTION</u>	<u>Part No.</u>	<u>Qty.</u>	<u>REF.</u>	<u>DESCRIPTION</u>	<u>Part No.</u>	<u>Qty.</u>
1.	Drive Coupling	968015	1	13.	Gasket (Included with #14)	-----	---
2.	8mm x 12mm Screw	501831	1	14.	Sight Plug	568017	3
3.	O-Ring	501003	1	15.	Nylon Washer	501019	4
4.	Oil Reservoir (inner half)	968013	1	16.	6mm x 880mm Bolt	501010	4
5.	1/2" Plug	147621	1	17.	No Longer Used	-----	---
6.	O-Ring	501673	1	18.	6mm x 12mm Screw	501959	2
7.	8 mm x 80mm Screw	501014	3	19.	4 OD x 1/8 Connector	568083	4
8.	Oil Pump (Clockwise)	568018	1	20.	Gasket (Included with #21)	-----	---
	Oil Pump (Counter-Clockwise)	568019	1	21.	Oil Fill Plug	568016	1
9.	8 OD x 1/2 Connector	568084	1	22.	4 OD x 1/8 Swivel Elbow	568085	4
10.	Banjo Body Bolt	568082	4	23.	Oil Pickup Tubing (1")	600294	1
11.	4mm OD Nylon Tubing (ft.)	600293	1	24.	1/8" Plug*	143901	1
12.	Oil Reservoir (outer half)	968014	1	25.	4 OD x 1/4 Swivel Elbow*	568086	4

* Not Shown



PARTS LIST HXL75V II

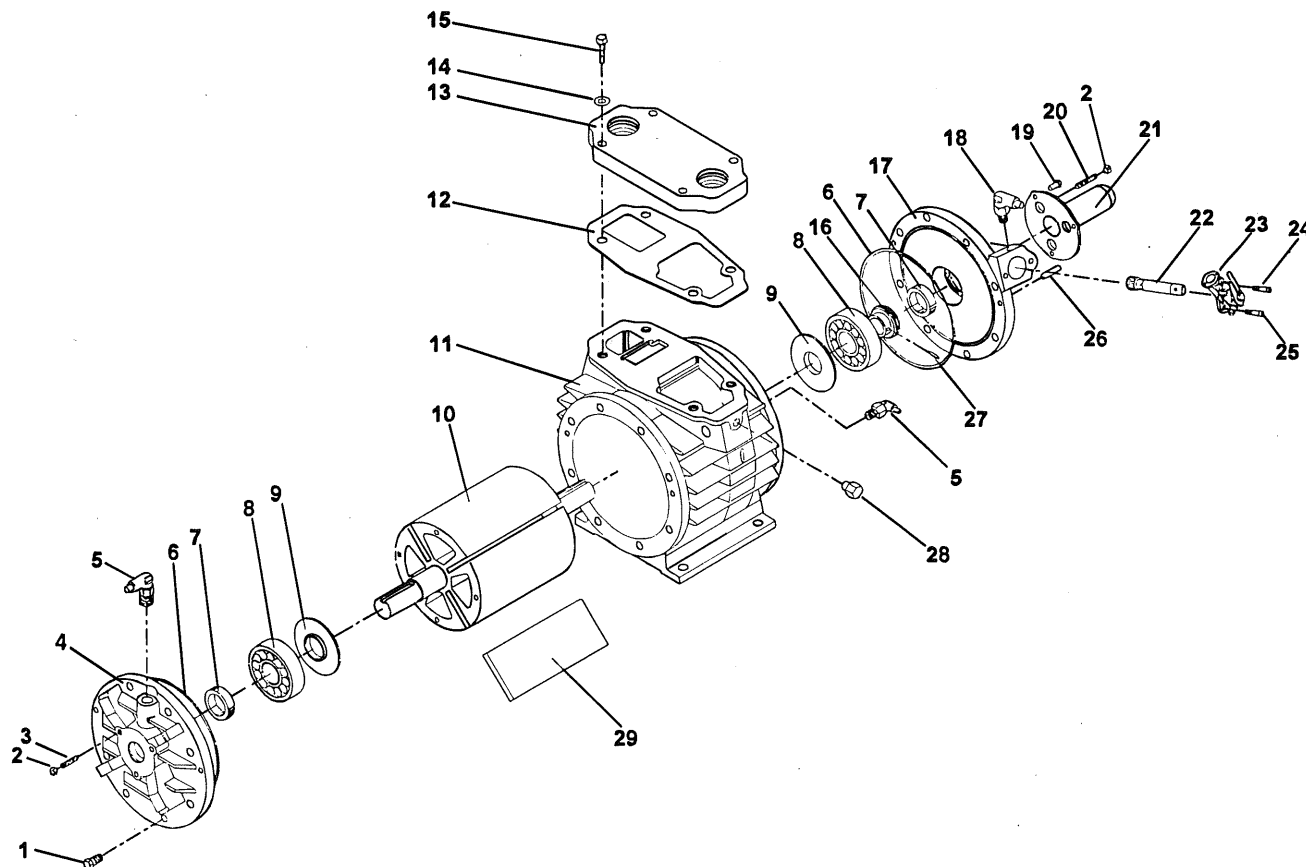


HXL75V SERIES II AIR COOLED PRESSURE / VACUUM PUMP PARTS LIST (968675)

Ref	Description	Part No.	Qty.	Ref	Description	Part No.	Qty.
1	Bolt	501569	16	24	Gasket	568044	1
2	Nut	504278	6	25	Gear	568158	1
3	Set Screw	504276	3	26	Endcover	968854	1
4	Endcover	968843	1	27	Swivel Elbow	568085	1
5	Swivel Elbow *	568086	3	28	Bolt	501571	3
6	O-Ring	501677	2	29	Set Screw	504277	3
7	Oil Seal	501015	3	30	Shaft Guard	568622	1
8	Bearing	503098	2	31	Drive Shaft Assembly	968045	1
9	Bearing Spacer	968611	2	32	Oil Pump	575437	1
10	Rotor Assembly (Incl. 8, 9)	968614	1	33	Cap Screw	504262	1
11	Cylinder	968401	1	34	Cap Screw	504261	1
12	Flap Assembly	968026	1	35	Dowel Pin	503258	4
13	Gasket	568610	1	36	Set Screw	504264	1
14	Valve Body	968010	1	37	Plug	27300	1
15	Washer	500203	4	38	Vane Pack (4)	975539	1
16	Bolt	501666	4	39	Integral Valve Assembly	968003	1
17	Cap	968035	1		(Incl. 7, 14, 17, 18, 19, 20, 21, 22, 23, 24)		
18	Washer	501610	4	40	Endcover Shim Gasket **		
19	Bolt	501617	5		.002" Thickness	542011	***
20	Washer	501550	1		.003" Thickness	542012	***
21	Handle	968037	1	41	Oil Line (ft.) **	600293	***
22	Spring	568038	1				
23	Spool	968094	1				

** NOT SHOWN.

*** QUANTITY VARIES.



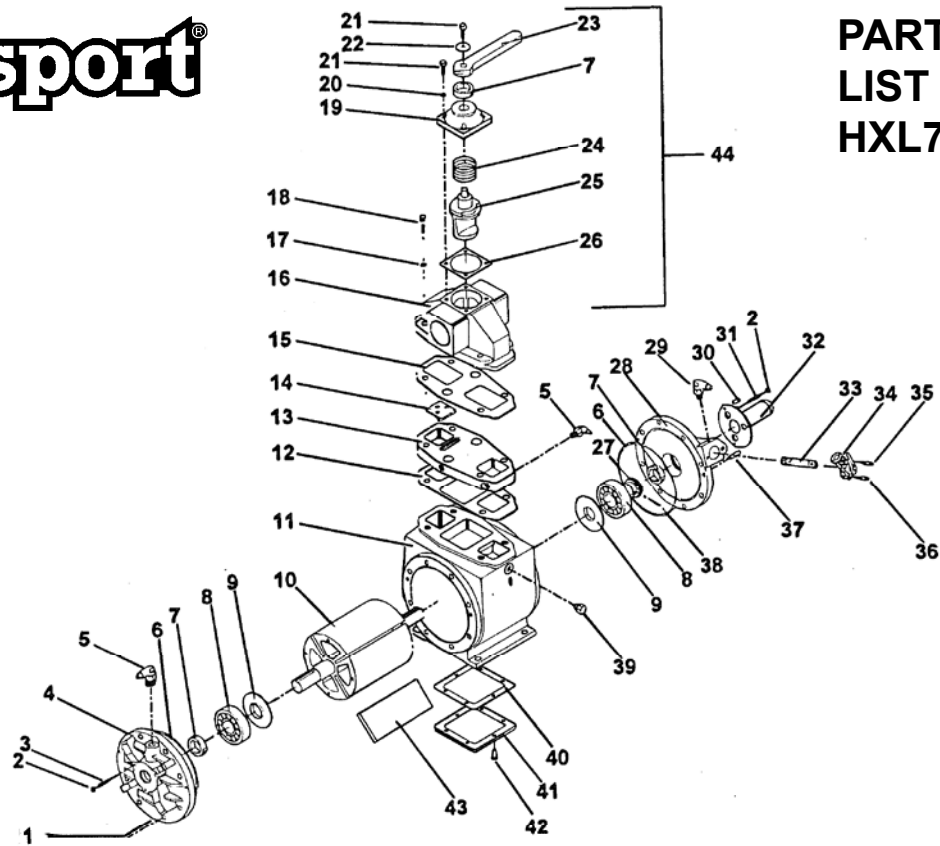
HXL75F SERIES II AIR COOLED PRESSURE / VACUUM PUMP PARTS LIST (968685)

Ref	Description	Part No.	Qty.	Ref	Description	Part No.	Qty.
1	Bolt	501569	16	17	Endcover 2-Start	968853	1
2	Nut	504278	6		6-Start	968854	1
3	Set Screw	504276	3	18	Swivel Elbow *	568085	1
4	Endcover	968843	1	19	Bolt	501571	3
5	Swivel Elbow *	568086	3	20	Set Screw	504277	3
6	O-Ring	501677	2	21	Shaft Guard	568622	1
7	Oil Seal	501015	2	22	Drive Shaft Assembly	968045	1
8	Bearing	503098	2	23	Oil Pump	575437	1
9	Bearing Spacer	968611	2	24	Cap Screw	504262	1
10	Rotor Assembly (Incl. 8, 9)			25	Cap Screw	504261	1
	2-Start (Serial # < 91062)	968668	1	26	Dowel Pin	503258	4
	6-Start (Serial # > 91061)	968614	1	27	Set Screw	504264	1
11	Cylinder	968401	1	28	Plug	503416	1
12	Gasket	568610	1	29	Vane Pack (4)	975539	1
13	Flange Plate	968706	1	30	Endcover Shim Gasket **		
14	Washer	500203	4		.002" Thickness	542011	***
15	Bolt	501666	4		.003" Thickness	542012	***
16	Gear 2-Start	575439	1	31	Oil Line (ft.) **	600293	***
	6-Start	568158	1				

** NOT SHOWN.

*** QUANTITY VARIES.

Masport®



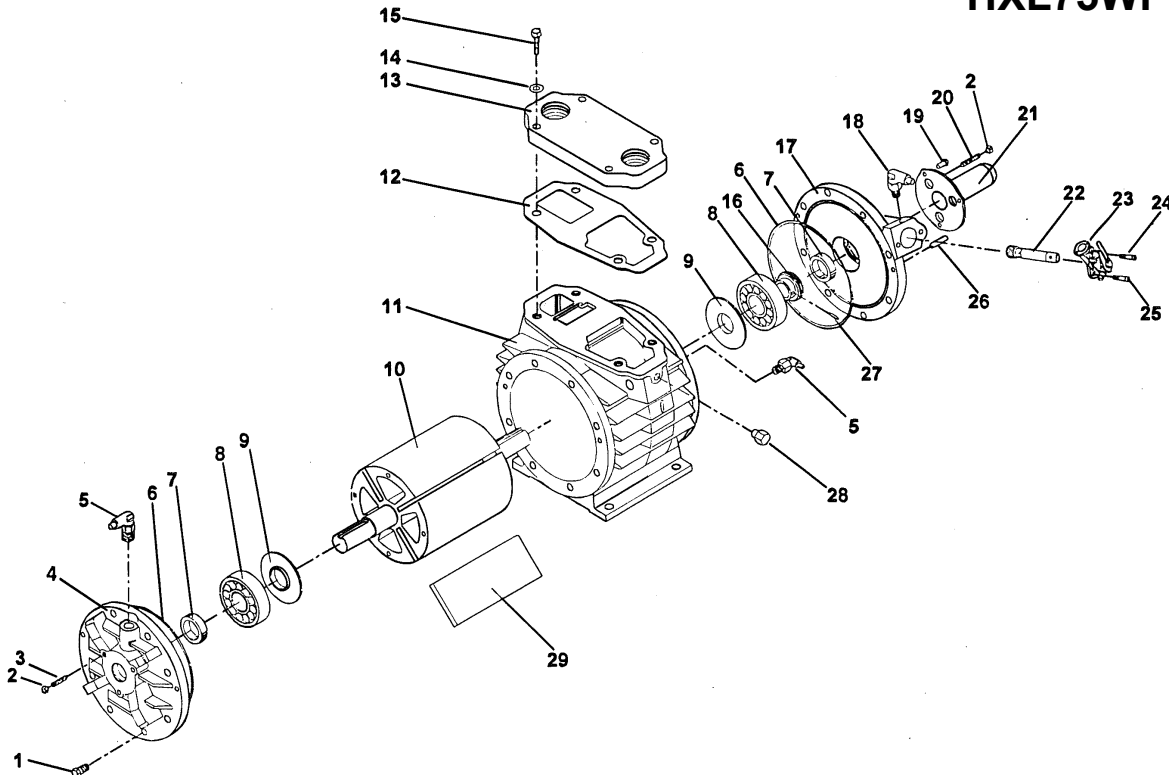
PARTS LIST HXL75WV II

HXL75WV SERIES II LIQUID COOLED PRESSURE / VACUUM PUMP PARTS LIST (968670)

Ref	Description	Part No.	Qty.	Ref	Description	Part No.	Qty.
1	Bolt Endcover	501569	16	26	Gasket	568044	1
2	Nut Lock	504278	6	27	Gear	568158	1
3	Set Screw (End Thrust)	504276	3	28	Endcover	968854	1
4	Endcover	968843	1	29	Swivel Elbow *	568085	1
5	Swivel Elbow *	568086	3	30	Bolt	501571	3
6	O-Ring	501677	2	31	Set Screw	504277	3
7	Oil Seal	501015	3	32	Shaft Guard	568622	1
8	Bearing	503098	2	33	Drive Shaft Assembly	968045	1
9	Bearing Spacer	968611	2	34	Oil Pump	575437	1
10	Rotor Assembly (Incl. 8, 9)	968614	1	35	Cap Screw	504262	1
11	Cylinder	968712	1	36	Cap Screw	504261	1
12	Gasket	568703	1	37	Dowel Pin	503258	4
13	Adaptor Plate	968011	1	38	Set Screw	504264	1
14	Flap Assembly	968026	1	39	Plug	27300	1
15	Gasket	568653	1	40	Gasket	568708	1
16	Valve Body	968010	1	41	Inspection Plate	968707	1
17	Washer	500203	4	42	Bolt (Inspection Plate)	501571	6
18	Bolt	502024	4	43	Vane Pack (4)	975539	1
19	Cap	968035	1	44	Integral Valve Assembly	968003	1
20	Washer	501610	4		(Incl. 7, 16, 19, 20, 21, 22, 23, 24, 25, 26)		
21	Bolt	501617	5	45	Endcover Shim Gasket **		
22	Washer	501550	1		.002" Thickness	542011	***
23	Handle	968037	1		.003" Thickness	542012	***
24	Spring	568038	1	46	Oil Line (ft.) **	600293	***
25	Spool	968094	1				

** NOT SHOWN.

*** QUANTITY VARIES.



HXL75WF SERIES II LIQUID COOLED PRESSURE / VACUUM PUMP PARTS LIST (968680)

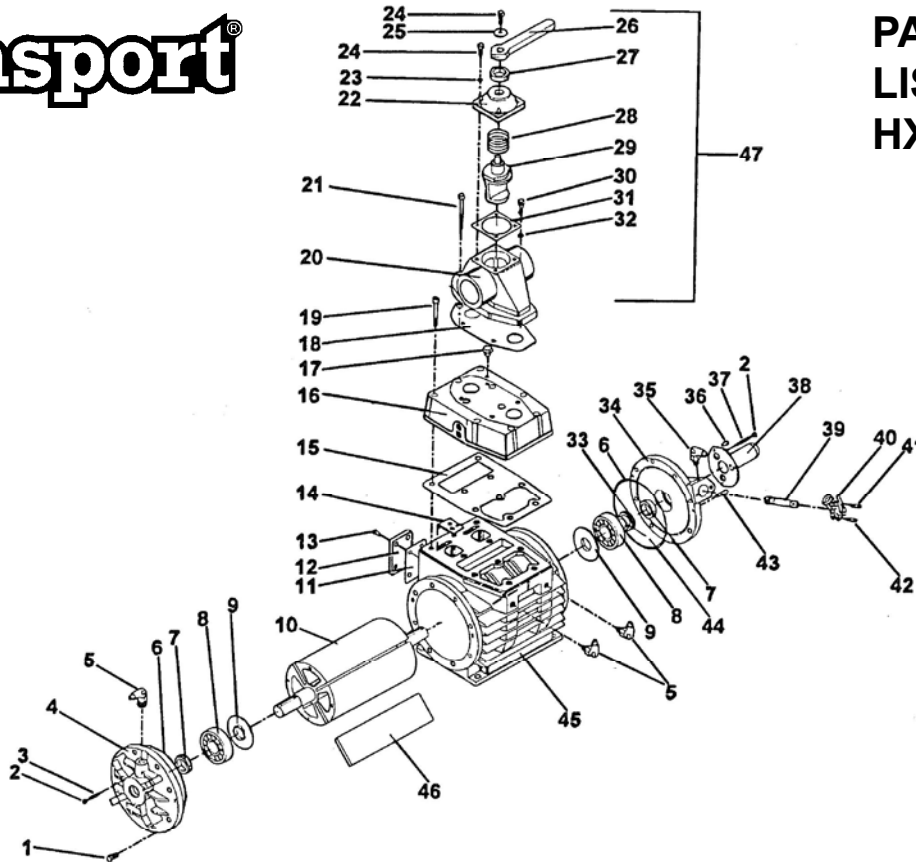
<u>Ref</u>	<u>Description</u>	<u>Part No.</u>	<u>Qty.</u>	<u>Ref</u>	<u>Description</u>	<u>Part No.</u>	<u>Qty.</u>
1	Bolt	501569	16	19	Endcover	968854	1
2	Nut	504278	6	20	Swivel Elbow	568085	1
3	Set Screw	504276	3	21	Bolt	501571	3
4	Endcover	968843	1	22	Set Screw	504277	3
5	Swivel Elbow	568086	3	23	Shaft Guard	568622	1
6	O-Ring	501677	2	24	Drive Shaft Assembly	968045	1
7	Oil Seal	501015	2	25	Oil Pump	575437	1
8	Bearing	503098	2	26	Cap Screw	504262	1
9	Bearing Spacer	968611	2	27	Cap Screw	504261	1
10	Rotor Assembly (Incl. 8, 9) 6-Start (Serial # > 91450)	968614	1	28	Dowel Pin	503258	4
11	Cylinder	968712	1	29	Set Screw	504264	1
12	Gasket	568703	1	30	Plug	503416	1
13	Adaptor Plate	968011	1	31	Gasket	568708	1
14	Gasket	568653	1	32	Inspection Plate	968707	1
15	Flange Plate	968706	1	33	Bolt (Inspection Plate)	501571	6
16	Washer	500203	4	34	Vane Pack (4)	975539	1
17	Bolt	502024		35	Endcover Shim Gasket **		
18	Gear	568158	1		.002" Thickness	542011	***
					.003" Thickness	542012	***
				36	Oil Line (ft.) **	600293	***

** NOT SHOWN.

*** QUANTITY VARIES.



PARTS LIST HXL15WV II



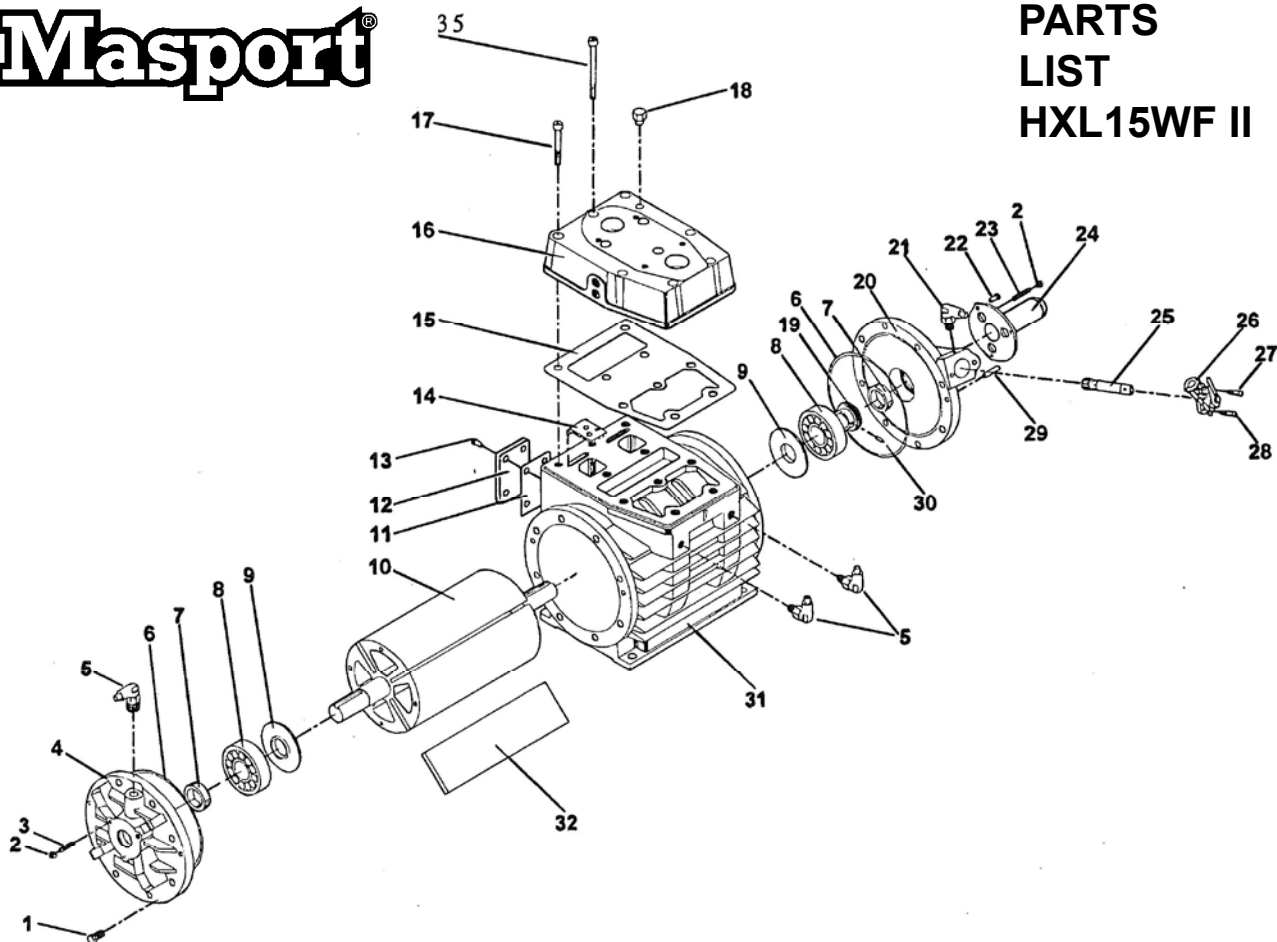
HXL15WV SERIES II LIQUID COOLED PRESSURE / VACUUM PUMP PARTS LIST (968840)

Ref	Description	Part No.	Qty.	Ref	Description	Part No.	Qty.
1	Bolt	501569	16	28	Spring	568038	1
2	Nut	504278	6	29	Spool	968804	1
3	Set Screw	504276	3	30	Bolt	501666	4
4	Endcover	968843	1	31	Gasket	568044	1
5	Swivel Elbow	568086	3	32	Washer	500203	5
6	O-Ring	501677	2	33	Gear	568158	1
7	Oil Seal	501015	2	34	Endcover	968854	1
8	Bearing	503098	2	35	Swivel Elbow	568085	1
9	Bearing Spacer	968611	2	36	Bolt	501571	3
10	Rotor Assembly (Incl. 8, 9)	968848	1	37	Set Screw	504277	3
11	Gasket	568232	1	38	Shaft Guard	568622	1
12	Side Plate	968231	1	39	Drive Shaft Assembly	968045	1
13	Bolt	501597	4	40	Oil Pump	568437	1
14	Flap Assembly	968026	2	41	Cap Screw	504262	1
15	Gasket	568805	1	42	Cap Screw	504261	1
16	Manifold	968802	1	43	Dowel Pin	503258	4
17	Plug	27300	1	44	Set Screw	504264	1
18	Gasket	568806	1	45	Cylinder	968801	1
19	Cap Screw	501965	10	46	Vane Pack (4)	968218	1
20	Valve Body	968012	1	47	Integral Valve Assembly (Incl. 20,21,22,23,24,25, 26,27,28,29,30,31,32)	968006	1
21	Bolt	502061	1	48	Endcover Shim Gasket **		
22	Cap	968035	1		.002" Thickness	542011	***
23	Washer	501610	4		.003" Thickness	542012	***
24	Bolt	501617	5	49	Oil Line (ft.) **	600293	***
25	Washer	501550	1				
26	Handle	968037	1				
27	Oil Seal	501674	1				

** NOT SHOWN *** QUANTITY VARIES

Masport®

PARTS LIST HXL15WF II



HXL15WF SERIES II LIQUID COOLED PRESSURE / VACUUM PUMP PARTS LIST

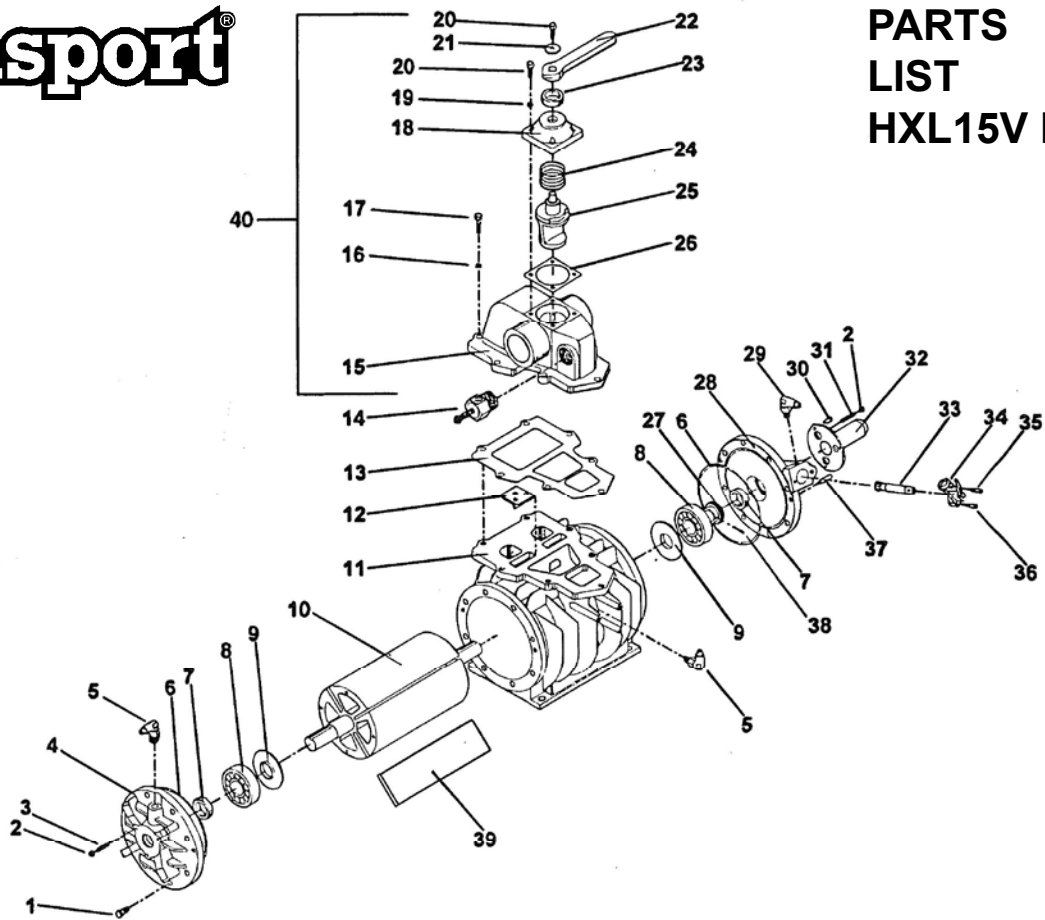
Ref	Description	Part No.	Qty.	Ref	Description	Part No.	Qty.
1	Bolt	501569	16	19	Gear	568158	1
2	Nut	504278	6	20	Endcover	968854	1
3	Set Screw	504276	3	21	Swivel Elbow*	568085	1
4	Endcover	968843	1	22	Bolt	501571	3
5	Swivel Elbow*	568086	3	23	Set Screw	504277	3
6	O-Ring	501677	2	24	Shaft Guard	568622	1
7	Oil Seal	501015	2	25	Drive Shaft Assembly	968045	1
8	Bearing	503098	2	26	Oil Pump	568437	1
9	Bearing Spacer	968611	2	27	Cap Screw	504262	1
10	Rotor Assembly (Includes 8, 9)	968848	1	28	Cap Screw	504261	1
11	Gasket	568232	1	29	Dowel Pin	503258	4
12	Side Plate	968231	1	30	Set Screw	504264	1
13	Bolt	501597	4	31	Cylinder	968801	1
14	Flap Assembly	968026	2	32	Vane Pack (4)	968218	1
15	Gasket	568805	1	33	Endcover Shim Gasket**		
16	Manifold, Threaded	968864	1		.002 Thickness	542011	***
17	Cap Screw	501965	10		.003 Thickness	542012	***
18	Plug	27300	1	34	Oil Line (ft)	600293	***
				35	Cap Screw	502061	1

* Not Pictured

** Quantity Varies

Masport®

PARTS LIST HXL15V II



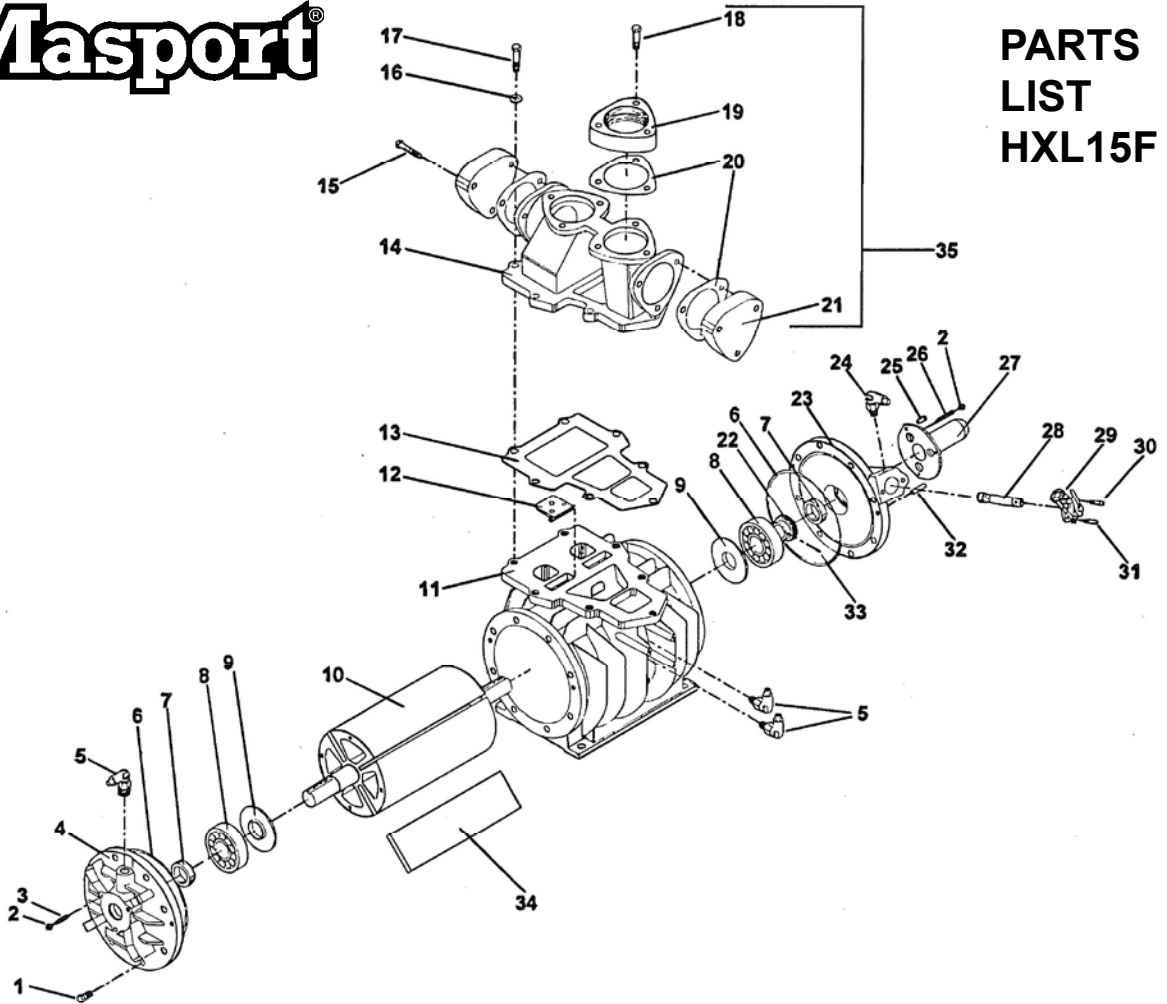
HXL15V SERIES II AIR COOLED PRESSURE / VACUUM PUMP PARTS LIST (968880)

Ref	Description	Part No.	Qty.	Ref	Description	Part No.	Qty.
1	Bolt	501569	16	24	Spring	568038	1
2	Nut	504278	6	25	Spool	968804	1
3	Set Screw	504276	3	26	Gasket	568044	1
4	Endcover	968843	1	27	Gear	568158	1
5	Swivel Elbow	568086	3	28	Endcover	968854	1
6	O-Ring	501677	2	29	Swivel Elbow	568085	1
7	Oil Seal	501015	2	30	Bolt	501571	3
8	Bearing	503098	2	31	Set Screw	504277	3
9	Bearing Spacer	968611	2	32	Shaft Guard	568622	1
10	Rotor Assembly (Incl. 8, 9)	968848	1	33	Drive Shaft Assembly	968045	1
11	Cylinder	968881	1	34	Oil Pump	568437	1
12	Flap Assembly	968026	2	35	Cap Screw	504262	1
13	Gasket	568884	1	36	Cap Screw	504261	1
14	Vacuum Relief Valve	25056	1	37	Dowel Pin	503258	4
15	Valve Body	968883	1	38	Set Screw	504264	1
16	Washer	500203	7	39	Vane Pack (4)	968218	1
17	Bolt	501666	7	40	Integral Valve Assembly	968887	1
18	Cap	968035	1		(Incl. 15,18,19,20,21, 22, 23, 24, 25, 26)		
19	Washer	501610	4	41	Endcover Shim Gasket *		
20	Bolt	501617	5		.002" Thickness	542011	**
21	Washer	501550	1		.003" Thickness	542012	**
22	Handle	968037	1	42	Oil Line (ft.) *	600293	**
23	Oil Seal	501674	1				

* NOT SHOWN. ** QUANTITY VARIES.

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PARTS LIST HXL15F II



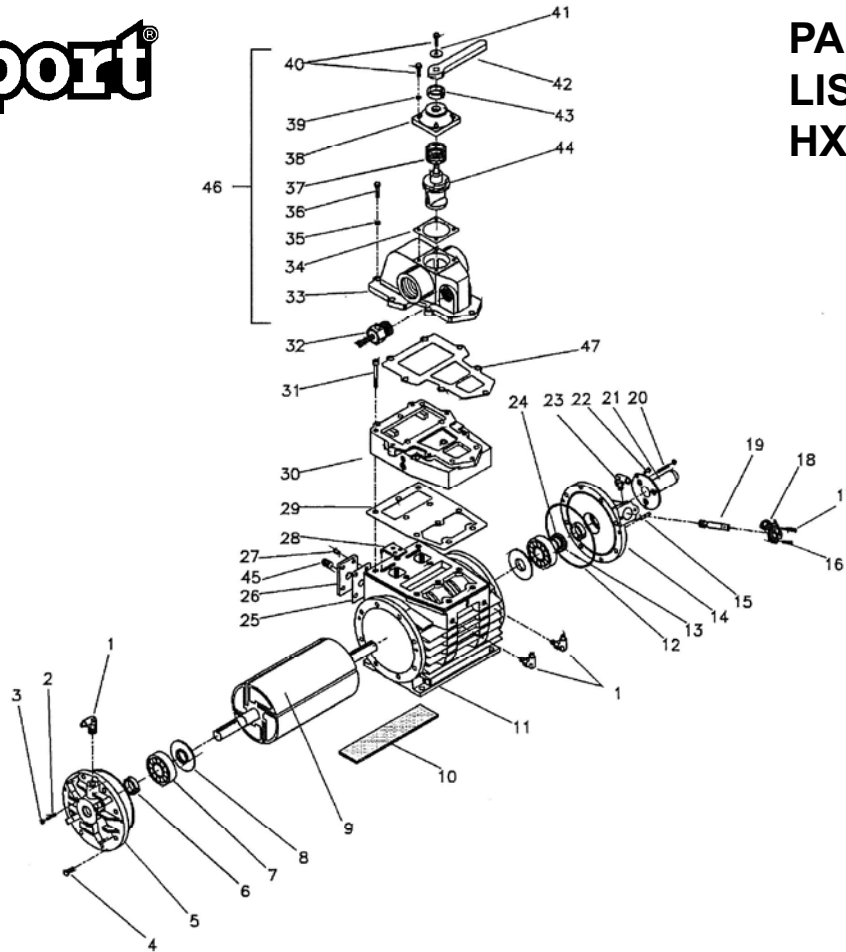
HXL15F SERIES II AIR COOLED VACUUM / PRESSURE PUMP PARTS LIST (968885)

Ref	Description	Part No.	Qty.	Ref	Description	Part No.	Qty.
1	Bolt	501569	16	21	Blank Flange Plate	975397	2
2	Nut	504278	6	22	Gear	568158	1
3	Set Screw	504276	3	23	Endcover	968854	1
4	Endcover	968843	1	24	Swivel Elbow	568085	1
5	Swivel Elbow	568086	3	25	Bolt	501571	3
6	O-Ring	501677	2	26	Set Screw	504277	3
7	Oil Seal	501015	2	27	Shaft Guard	568622	1
8	Bearing	503098	2	28	Drive Shaft Assembly	968045	1
9	Bearing Spacer	968611	2	29	Oil Pump	568437	1
10	Rotor Assembly (Incl. 8, 9)	968848	1	30	Cap Screw	504262	1
11	Cylinder	968881	1	31	Cap Screw	504261	1
12	Flap Assembly	968026	2	32	Dowel Pin	503258	4
13	Gasket	568884	1	33	Set Screw	504264	1
14	Valve Body	968883	1	34	Vane Pack (4)	968218	1
15	Bolt	501752	6	35	4-Port Flange Assembly (Incl. 14,15,18,19,20,21)	975382	1
16	Washer	500203	7	36	Endcover Shim Gasket *		
17	Bolt	501666	7		.002" Thickness	542011	**
18	Bolt	543627	6		.003" Thickness	542012	**
19	Flange	975396	2				
20	Gasket	575381	4				

* NOT SHOWN. ** QUANTITY VARIES.

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PARTS LIST HXL20WV II



HXL20WV II LIQUID COOLED PRESSURE / VACUUM PUMP PARTS LIST (968875)

Ref.	Description	Part No.	Qty.	Ref.	Description	Part No.	Qty.
1.	Elbow Swivel	568086	3	28.	Flap Assembly	968026	2
2.	End Thrust Screw	504276	3	29.	Gasket	568805	1
3.	Lock Nut	504278	6	30.	Manifold	968846	1
4.	Endcover Bolt	501569	16	31.	Cap Screw	501965	10
5.	Endcover	968843	1	32.	Vacuum Relief Valve	25056	1
6.	Seal	501015	2	33.	Body Valve	968883	1
7.	Bearing	503098	2	34.	Gasket, Valve Cap	568044	1
8.	Spacer	968611	2	35.	Washer	500203	7
9.	Rotor Assembly	968753	1	36.	Screw Set	501666	7
10.	Vane Pack (4)	968916	1	37.	Spring Valve	568038	1
11.	Cylinder	968834	1	38.	Valve Cap	968035	1
12.	O Ring	501677	2	39.	Washer	501610	3
13.	Set Screw, for worm gear	504264	1	40.	Screw Set	501617	5
14.	Endcover	968854	1	41.	Washer	501550	1
15.	Dowel Pin	503258	4	42.	Handle	968037	1
16.	Cap Screw	504261	1	43.	Seal	501674	1
17.	Cap Screw	504262	1	44.	Spool Valve	968804	1
18.	Oil Pump	568437	1	45.	Plug 1/2"	147621	1
19.	Drive Shaft Assembly	968045	1	46.	Integral Valve	968887	1
20.	Screw	504277	3	47.	Gasket	568884	1
21.	Guard (Shaft Cap)	568622	1	*	Gasket Cover .002" Blue	542011	-
22.	Screw Set (End Thrust)	501571	3	*	Gasket Cover .003" Green	542012	-
23.	Elbow Swivel	568085	1	*	Oil Line Tube	600293	-
24.	Worm Gear	568158	1	*	Oil Pump Guard	37702	1
25.	Gasket	568232	1				
26.	Side Plate	968231	1				
27.	Screw	501597	4				

* NOT SHOWN

MASPORT VACUUM PUMP OIL IS THE ONLY RECOMMENDED OIL FOR MASPORT PUMPS.

MASPORT VACUUM PUMP OIL

Masport Incorporated – Lincoln, NE

800-228-4510

	One Gallon	Case of 6 Gallons
Summer Blend	13996	13997
Winter Blend	13998	13999

OILS OR FLUIDS THAT SHOULD NOT BE USED IN MASPORT VACUUM PUMPS

Transmission Fluid	Automotive Motor Oil	Power Steering Fluid
Used Oil	Vegetable Oil	Brake Fluid
Hydraulic Fluid	Gear Oil	Scented Oil

SUBSTITUTE OILS RECOMMENDED FOR TEMPORARY USE IN MASPORT VACUUM / PRESSURE PUMPS

SHELL TURBO T OIL 32, 68, 100 Shell Oil Company – Houston, TX	800-231-6950
MONOLEC COMPRESSOR OIL* Lubrication Engineers – Fort Worth, TX	817-834-6321
MOBIL SHC 525 (Synthesized Hydrocarbon) Mobil Oil Company – Fairfax, VA	800-662-4525
ANDEROL 497 Anderol Inc – East Hanover, NJ	888-263-3765
CHEVRON GST 32, 68 ChevronTexaco Corporation – San Ramon, CA	800-822-5823
PENNZBELL TO OIL 32, 46, 68 Pennzoil Oil Company – Houston, TX	800-332-6457
REGAL OIL R & O 32, 68 ChevronTexaco Corporation – San Ramon, CA	800-822-5823

* Monolec Compressor Oil is colored red and should not be confused with transmission fluid.

These oils have been approved for use in Masport Vacuum/Pressure Pumps. Use of these oils will extend the life of the vacuum pump and insure proper performance and lubrication.

NOTE: Oils numbered 32 & 46 are for winter use**. Oils numbered 68 & 100 are for summer use.

**Check pour point to determine minimum temperature.

For more information call:

MASPORT INCORPORATED

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Phone: 402-466-8428 • FAX: 402-466-8355 • Toll Free 800-228-4510