

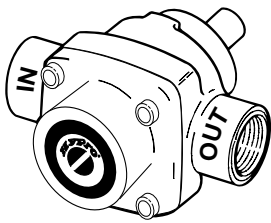
## Installation, Operation, Repair and Parts Manual

7-00

### Description

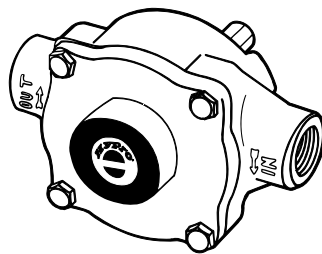
Hypro roller pumps are designed for agricultural and industrial spraying and transfer of a variety fluids. These include insecticides, herbicides, emulsives, aromatic solvents, liquid fertilizers and many other liquids. The economical rotary-action roller principle requires no check valves while providing positive displacement characteristics with less friction and lower starting torque than other pumps. Construction features include a cast-iron, Ni-Resist or the new

SilverCast™ body and rotor, 416 stainless steel shaft, sealed factory-lubricated ball bearings, cartridge-type lip seals of Viton, Buna-N or leather, and versatile Super Rollers. (Super Rollers feature the life of polypropylene and the chemical resistance of nylon.) Rotation for all models is counterclockwise for easy tractor PTO drive, except models 4001 and 4101 which are clockwise. Pumps are available in reverse rotation.



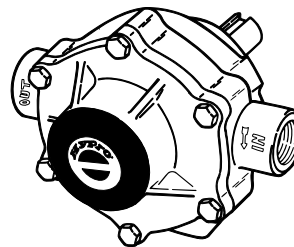
**SERIES 4001 & 4101**  
4-ROLLER PUMP

**Max. Flow Rate:** .... 9 gpm (4001)  
7 gpm (4101)  
**Max. Pressure:** ..... 150 psi  
**Max. RPM:** ..... 1800 rpm (4001)  
2600 rpm (4101)  
**Ports:** ..... 3/4" NPT Inlet & Outlet  
**Shaft:** ..... 5/8" Dia. (Solid)  
1/2" Dia. (Hollow)  
**Continuous Operation** ... 100 psi  
**Intermittent Operation** ... 150 psi



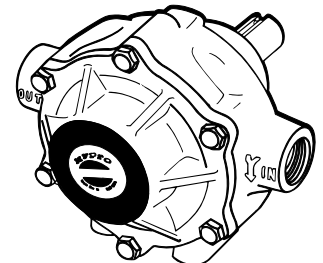
**SERIES 6500**  
6-ROLLER PUMP

**Max. Flow Rate:** ..... 22 gpm  
**Max. Pressure:** ..... 300 psi  
**Max. RPM:** ..... 1200 rpm  
**Ports:** ..... 3/4" NPT Inlet & Outlet  
1" Hose Barb Included  
**Shaft:** ..... 5/8" Dia. (Solid)  
**Continuous Op.** ..... 100-150 psi  
**Intermittent Operation** ... 300 psi



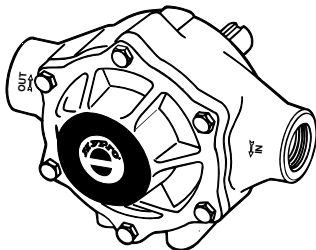
**SERIES 7560**  
8-ROLLER PUMP

**Max. Flow Rate:** ..... 22 gpm  
**Max. Pressure:** ..... 300 psi  
**Max. RPM:** ..... 1000 rpm  
**Ports:** ..... 3/4" NPT Inlet & Outlet  
1" Hose Barb Included  
**Shaft:** ..... 15/16" Dia. (Solid)  
**Continuous Operation** ... 100 psi  
**Intermittent Operation** ... 300 psi



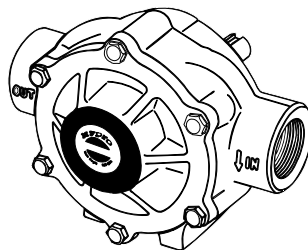
**SERIES 7700**  
7-ROLLER PUMP

**Max. Flow Rate:** ..... 22.4 gpm  
**Max. Pressure:** ..... 200 psi  
**Max. RPM:** ..... 800 rpm  
**Ports:** ..... 3/4" NPT Inlet & Outlet  
1" Hose Barb Included  
**Shaft:** ..... 15/16" Dia. (Solid)  
**Continuous Operation** ... 100 psi  
**Intermittent Operation** ... 200 psi



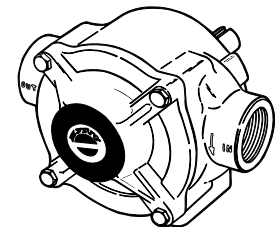
**SERIES 1700**  
5-ROLLER PUMP

**Max. Flow Rate:** ..... 45 gpm  
**Max. Pressure:** ..... 200 psi  
**Max. RPM:** ..... 1000 rpm  
**Ports:** ..... 1" NPT Inlet & Outlet  
1-1/4" Hose Barb Included  
**Shaft:** ..... 15/16" Dia. (Solid)  
**Continuous Operation** ... 100 psi  
**Intermittent Operation** ... 200 psi



**SERIES 1500**  
6-ROLLER PUMP

**Max. Flow Rate:** ..... 62 gpm  
**Max. Pressure:** ..... 150 psi  
**Max. RPM:** ..... 1000 rpm  
**Ports:** ... 1-1/2" NPT Inlet & Outlet  
**Shaft:** ..... 15/16" Dia. (Solid)  
**Continuous Operation** ... 100 psi  
**Intermittent Operation** ... 150 psi



**SERIES 1200**  
4-ROLLER PUMP

**Max. Flow Rate:** ..... 74 gpm  
**Max. Pressure:** ..... 150 psi  
**Max. RPM:** ..... 800 rpm  
**Ports:** ... 1-1/2" NPT Inlet & Outlet  
**Shaft:** ..... 1" Dia. (Solid)  
**Continuous Operation** ... 100 psi  
**Intermittent Operation** ... 150 psi

## General Safety Information

1. Use a Pressure Relief Device on the discharge side of the Pump to prevent damage from pressure buildup when the pump discharge is blocked or otherwise closed and the power source is still running.
2. **WARNING: Never pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. Never use in explosive atmospheres. The Pump should be used only with liquids compatible with the Pump component materials. Failure to follow this warning can result in personal injury and/or property damage and will void the product warranty.**
3. **Never pump acids (i.e. acid fertilizer) with Super Rollers!** When pumping acidic fertilizer, Hypro recommends only the Silver Series castings and Teflon rollers, or use one of Hypro's poly centrifugal pumps.
4. Never run the pump faster than maximum recommended speed.
5. Never pump at pressures higher than the maximum recommended pressure.
6. Never pump liquids at temperatures higher than the recommended maximum temperatures.
7. Make certain that the power source conforms to the requirements of your equipment.
8. Provide adequate protection in guarding around the moving parts such as the shaft and pulleys.
9. Disconnect power before servicing.
10. Release all pressure within the system before servicing any component.
11. Drain all liquids from the system before servicing any component.
12. Check all hoses for weak or worn condition before each use. Make certain that all connections are tight and secure.
13. Periodically inspect the pump and the system components. Perform routine maintenance as required (see Maintenance section).
14. Never operate a gasoline engine in an enclosed area. Be sure the area is well ventilated.
15. Use only pipe, hose and fittings rated for the maximum psi rating of the pump.
16. Never use these pumps for pumping water or other liquids for human or animal consumption.

## Drive Source Installation

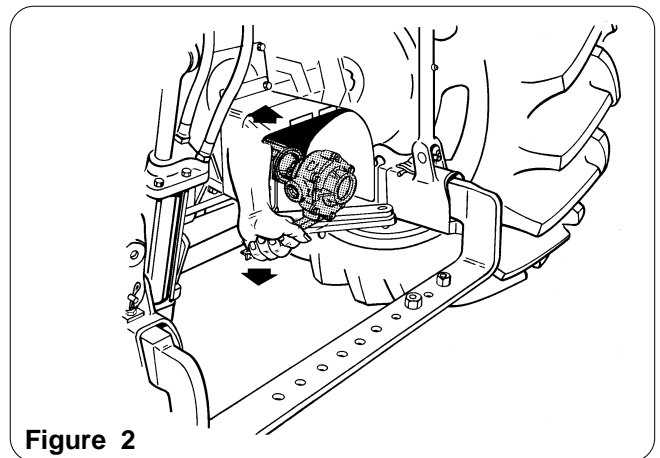
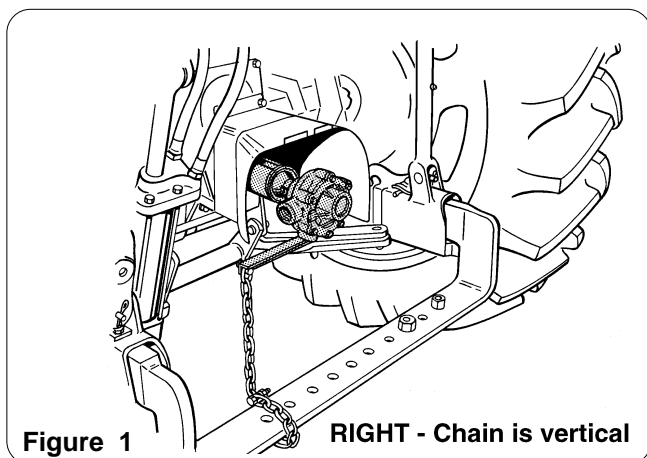
This manual will cover the installation of the basic drive configurations available for Hypro roller pumps. Consult the recommendations of the manufacturer of your motor

or engine for additional information. Read all safety information before attempting to install or operate the pump.

## Tractor PTO Installation

Mount pump with PTO adapter, torque arm and chain on the tractor as shown (Figure 1). The torque arm and chain (not included with pump) should be tied to a stationary part of the tractor to prevent rotation of the pump when the shaft is turned. Tie torque arm chain to a point on the tractor lower than the pump and directly below arm. Never tie the torque

arm to point either forward or backward from the pump. This creates a "bending" force on the pump. Before starting pump, grasp torque arm as shown in Figure 2 using it for leverage to rotate pump on PTO shaft. If pump can be turned easily, it is ready for use. Never apply power to a pump that does not turn freely. Reconnect the torque arm chain before starting the Pump.



# PTO Mounting Pump Clips

Model No. 1520-0043 — Series 1200 Pumps

The Hypro PTO Mounting Pump Clip is designed to accommodate most tractor PTO shields. When properly installed, the clip prevents the pump from rotating; relaxes the weight on the pump shaft which reduces excessive wear on the bearings; and in most cases, replaces the torque arm. It also covers the rotating PTO and pump shaft as an added safety precaution when pump is in operation.

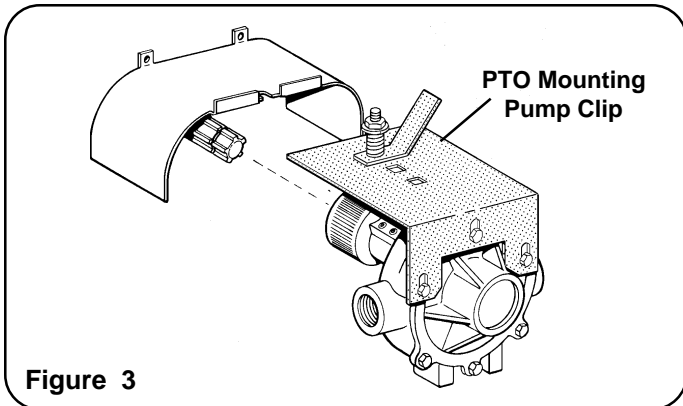


Figure 3

1. When mounting the pump clip to the PTO shield make sure the shield is not bent down. This will cause an additional burden on the pump bearings. It may be necessary to bend the shield back to its original position (or higher) to allow the clip to slide under the shield as shown.
2. Attach the clip to the pump by using the bolts in the pump housing — DO NOT TIGHTEN the bolts at this time. First align the pump on the PTO shaft to make the proper height and depth adjustments.
3. When the pump clip is firmly located on the PTO shield, then tighten down the bolts on the pump housing. **NOTE: See Figure 4 — it will be necessary to drill a 5/16" center hole in all flat surface shields to properly secure the clip to the PTO shield.**

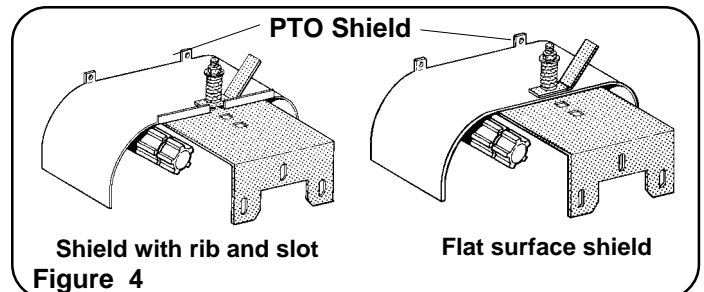


Figure 4

## Belt/Pulley Drive Installation

Belt and pulley drive systems are typically used to reduce pump speed. For determining proper pulley sizes, use the formula below as a guideline and use "A" or "B" section belts.

$$\frac{\text{MOTOR RPM}}{\text{PUMP RPM}} = \frac{\text{FLOW (@ RATED SPEED)}}{\text{FLOW (DESIRED)}} = \frac{\text{PUMP PULLEY DIA.}}{\text{MOTOR PULLEY DIA.}}$$

**EXAMPLE:** Use a 1725 RPM electric motor to drive a pump at 950 RPM.

Typically, a pulley diameter on the motor is 3.4 inches. The pump pulley diameter can be determined from the formula above:

$$\frac{1725}{950} = \frac{\text{PUMP PULLEY DIAMETER}}{3.4 \text{ INCHES}}$$

$$\frac{1725}{950} \times 3.4 \text{ INCHES} = 6.2 \text{ INCHES}$$

1. Install pulley or bushing/sheave combination (See Figure 5) onto pump and motor shaft. Mount pump next to the motor making sure pulleys are lined up properly (See Figure 6 for proper pump and motor orientation). Use a straight edge as shown. Rotate to check for run-out and bent shafts.
2. Make sure belts have proper tension—belts too tight will cause bearing wear and belts too loose will cause slipping. (See Figure 7).
3. The rotation on the 4000 series roller pump is gas-engine-rotation, opposite from the standard roller pump.

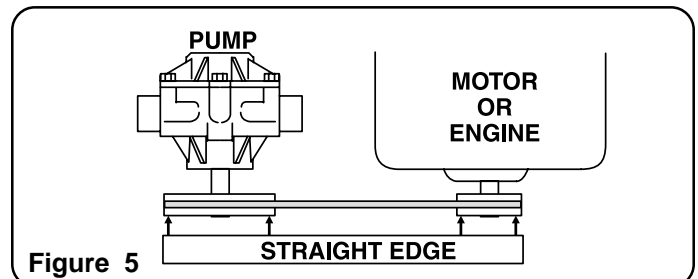


Figure 5

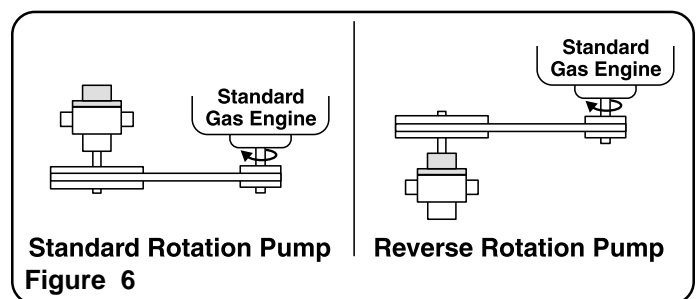


Figure 6

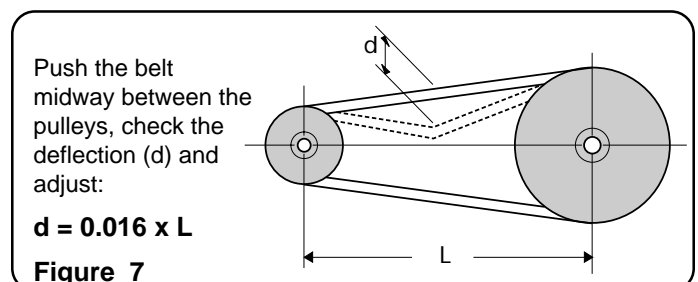


Figure 7

## Direct Drive — Flexible Coupling

When direct driving Hypro roller pumps with flexible couplings make sure that the speed (rpm) of the gas engine or electric motor is within the maximum rated rpm of your pump. Also make sure that shaft rotation is correct between the pump and the motor or gas engine (See Figure 8).

1. Mount motor or engine into position on base.
2. Lineup pump shaft with straight edge as shown in Figure 4 to assure they are aligned. Shim pump if necessary to match shaft height of engine or motor. Shaft ends should not touch.
3. Mark exact position of pump on base — remove and install coupling halves on both shafts. Place coupling center disc into one of the coupling halves.

4. Reposition pump, sliding coupling halves together.

**NOTE: No end thrust should be applied to pump when coupling is connected.**

5. Tighten pump mounting; then, tighten the set screws on each coupling.

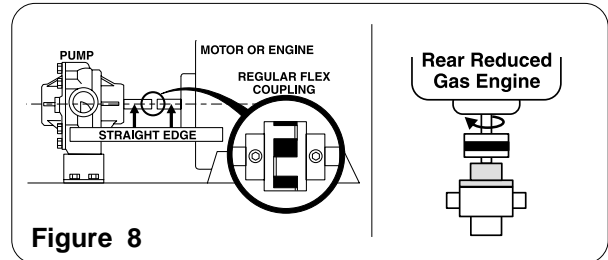


Figure 8

## System Installation

**NOTE: Use only pipe, fittings, accessories, hose, etc. rated for the maximum pressure rating of the pump.**

1. Select adequate size drive unit to avoid overloading. Avoid unnecessary restrictions in the line such as elbows, check valves, and all extraneous curves and bends.
2. Avoid using looped sections of tubing or pipe which might permit air to become trapped.
3. Use pipe joint sealant on pipe threads to assure water-tight connections.
4. Selection of the right type and size of hose is vital to good performance. Be sure to hook up the lines to the proper ports on the pump.
5. Always use a good quality suction hose (one or two braid reinforced hose to prevent collapse) of at least the same diameter as the inlet port of the pump. If the suction (inlet) hose is more than four feet long, then use the next larger size.

6. A strainer should be installed in the suction line. Clean the strainer as soon as it becomes clogged.

7. Never attach an agitator or any restriction to a bypass line of a pressure relief device because system damage may occur.

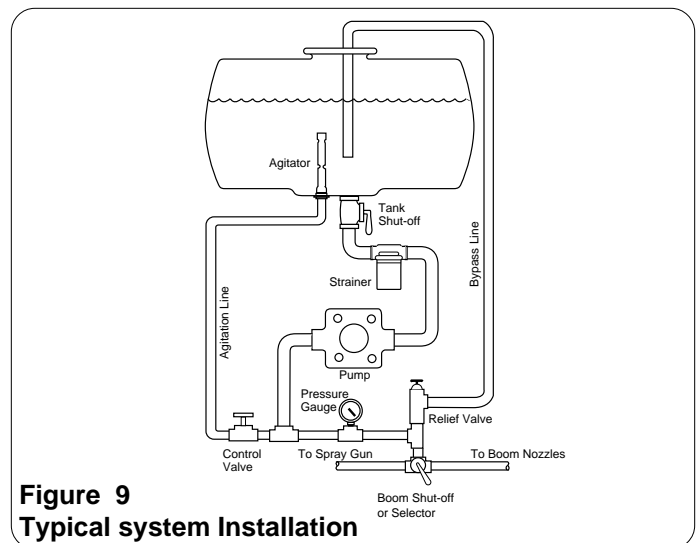


Figure 9  
Typical system Installation

## Operation and Maintenance

**WARNING: Never pump corrosive or abrasive liquids as these will cause rapid wear or deterioration of body, rotor, shaft and seals in the pump. The pump should be used only with liquids compatible with pump component materials. Never exceed maximum specified rpm and pressure. Never run pump dry. Failure to follow this warning will void the product warranty.**

### Priming the Pump

To help priming the pump keep the inlet or suction line as short as possible with a minimum of bends, elbows and kinks. Make sure all connections are tight and do not leak air.

Make sure line strainer is free of debris. If pump does not self-prime disconnect suction hose, fill with water and reconnect to liquid source. Often a squirt of oil into the ports of the pump will seal clearances and help priming.

### Care of the Pump

Hypro roller pumps are all carefully machined to close tolerance—high pressure operation depends on close-fitting parts. Proper care and maintenance will keep your pump wear at a minimum and will keep it running smoothly and trouble-free for a long time.

### Flush the Pump After Each Use

One of the common causes of faulty pump performance is “gumming” or corrosion inside the pump. This prevents the rollers from moving freely in their rotor slots. Flush the pump with a solution that will neutralize liquid pumped, mixed according to manufacturer's directions.

### To Prevent Corrosion

After cleaning pump as above, flush it with a 50-50 solution of permanent type automobile antifreeze (containing a rust inhibitor) and water. A rust inhibitor such as Fluid Film (Hypro Part No. 2160-0010 ) can also be squirted into the ports of the pump. Turn shaft several times to draw protec-

tive liquid through pump and coat entire inner surface. Drain pump and plug ports to keep out air during storage. For short periods of idleness noncorrosive liquids may be left in the pump, but **air must be kept out**. Plug ports or seal port connections.

### Rotation

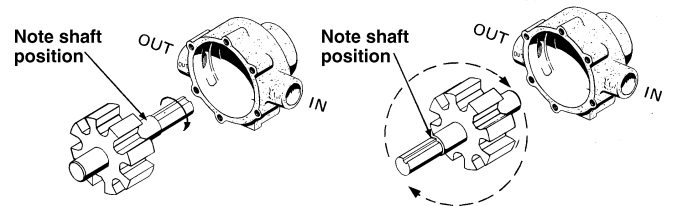
Pump rotation must be the same as shown by the arrows on the pump. Facing the shaft end of the pump, the suction port is on your left and the shaft must turn counterclockwise. If reverse rotation is desired, rotor and shaft assembly must be reversed so that the shaft extends through the endplate. See Reversing Rotation Section below for proper procedure.

**Note:** Configuration is opposite for 401 and 4101 series.

## Reversing Rotation

1. Determine the Rotor Type of your Pump by referring to exploded drawing on the parts list. The three types of Rotors are NON-SCOOP, SCOOPED, and SLANTED SLOT.
2. Follow the steps listed in Repair Instructions for disassembly of the Pump.
3. If your Pump has a NON-SCOOP Rotor it can be reversed merely by turning the Rotor/Shaft Assembly around intact (without changing the position of the Rotor on the Shaft). Reassemble the Pump with the driving end of Shaft out the Endplate Side of the Pump. (Standard Pump Rotors are driven from the Body Side.)
4. If your Pump has a SCOOPED Rotor or a SLANTED SLOT Rotor follow the following steps for reversing the Shaft in the Rotor.
  - a. Loosen and remove the Rotor Set Screw.
  - b. Press the Shaft out of the Rotor.
  - c. Reassemble the Shaft and Rotor with the driving end of Shaft on the opposite side of the Rotor from standard assembly.
  - d. Before installing the Rotor on the Shaft, be sure it is positioned in the correct location on the Shaft (diameter of Shaft is slightly larger at Rotor position). Center punch the Shaft through Rotor Set Screw hole. Then with a drill smaller than Set Screw — spot drill Shaft so that Set Screw will hold securely. (Don't drill too deep — just enough so Set Screw will bite into Shaft).
  - e. Reassemble the Pump with driving end of Shaft extending out of **endplate** side of Pump. (The standard Pump Rotor is driven from the **body** side.) Remember, the Rotor position remains the same — the Shaft only is reversed — “end for end”.

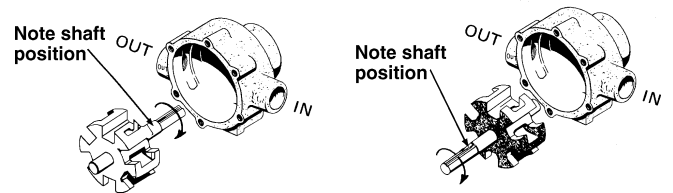
### Standard NON-SCOOP Rotor



Standard **CCW** rotation to **CW** rotation

Figure 10

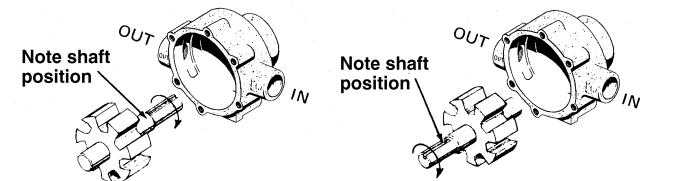
### SCOOPED Rotor



Standard **CCW** rotation to **CW** rotation

Figure 11

### SLANTED SLOT Rotor



Standard **CCW** rotation to **CW** rotation

Diagram of 7-roller rotor with special slanted, wide roller slots (Series 7700).



Note that slots should slant back from rotation direction.

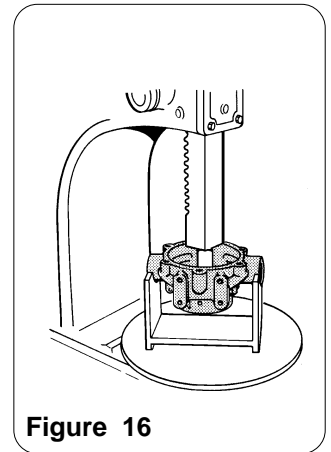
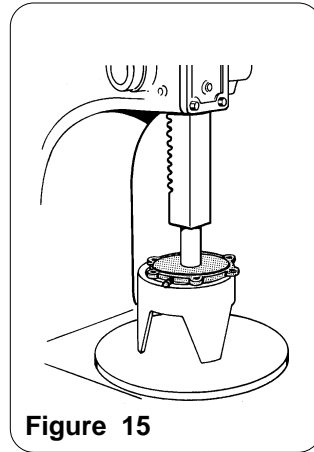
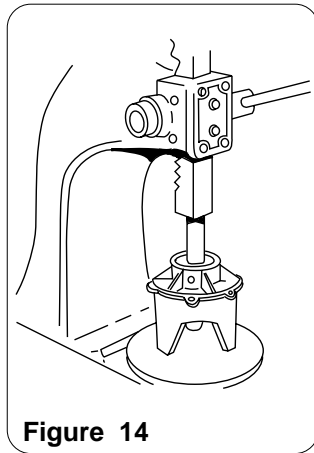
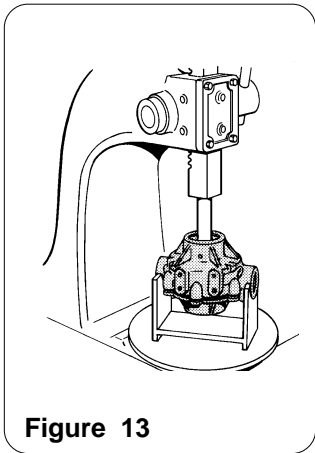
Figure 12

**Note:** Configuration is opposite from above for 4001 and 4101 series.

# Repair Instructions

## To Take the Pump Apart

1. Remove the Adapter from the Pump Shaft.
2. File off any burrs on the Pump Shaft.
3. Using a screwdriver, pry off the Bearing Cover on the End Plate and Pump Body
4. Remove the End Plate Bolts.
5. Support the Pump at its Ports in an Endplate Support Fixture with the End Plate down. Use wood blocks for Series 1500, 1700 and 4001/4101. Place on press bed. Center press on Pump Shaft and apply pressure to press the Pump apart. (See Figure 13).



6. With the Rollers exposed, remove them – examining each one carefully for excessive wear. When replacing damaged Rollers always replace the full set.
7. To remove the Rotor with Shaft from the End Plate – support the End Plate in an Endplate Support Fixture with the Rotor down. Center the Bearing Disassembly Tool or 3/8" bolt, on Pump Shaft. Apply pressure to press Shaft out of Ball Bearing (See Figure 14).
8. To remove the Ball Bearing – place the End Plate in a Endplate Support Fixture with the front of the End Plate down (See Figure 15). Center Bearing Support Tool and slowly press Bearing out of Casting. Repeat procedure to remove Bearing from Pump Body (See Figure 16) using Body Support Fixture.
9. After removing the Ball Bearing, check the Seals in both End Plate and Pump Body. If wear is evident or leakage has been noticed, punch the Seals out with a screwdriver and hammer. Seals cannot be removed without damaging them.
10. To press the Shaft out of the Rotor, first carefully wash the Rotor and Shaft with kerosene – removing all traces of rust and other foreign matter. Use steel wool or emery cloth, rinsing parts afterward to wash off all emery dust. Remove the Allen Set Screw. Support the Rotor in the press through the slot in the Base and press Shaft through.

## While the Pump is Apart

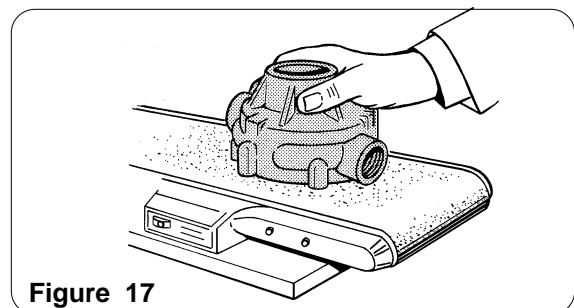
Carefully inspect all parts for wear, such as:

- Undersize or swollen Rollers in both length and diameter.
- Worn Seals.
- Worn Shaft at drive end, and pitted or grooved at the seal area.
- Rough Bearings and loss of grease from the Bearings.
- Undersize Rotor and/or worn Roller Slots.
- Excessive wear in Body – both on inside diameter and at back face.
- Body cracks at the bolt holes and at the O-ring sealing area.
- End wear (Body, Endplate, and Rotor).
- Proper size O-ring in the End Plate.

After the above parts have been checked and the various points have been considered, you can decide if the Pump is repairable. When worn parts have been replaced, always take up the end clearance by lightly sanding the End Plate and matching body surface (See Figure 17). **NOTE: End clearance should not be more than .004 inches.**

## Inspect Inside of End Plate

If a groove is noticeable, the End Plate should be resurfaced by rubbing it on a sheet of 80 grit emery paper (placed on flat surface) until all trace of wear has been removed. Rotate the End Plate frequently to remove evenly the same amount of metal over the entire surface. **NOTE: This surface of the End Plate must be perfectly flat. If attempt has been made to pry Pump apart with a screwdriver file off all nicks, burrs and other damage marks around the bolt holes.**



## Re-Assembly

### Replace Seals and Bearings

Carefully place the Seal in the Pump Body with crimped side down. Press the Seal to the bottom of the cavity, using the stepped end of the Bearing & Seal Assembly Tool (Figure 18). Then put the Bearing in position in the Pump Body and press into place with counter bored end of Bearing & Seal Assembly Tool (Figure 19). Repeat the above procedure with the End Plate. Seat the O-ring in the groove. If necessary, make sure the O-ring stays in place by stretching it.

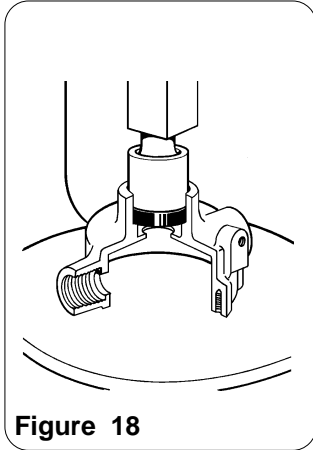


Figure 18

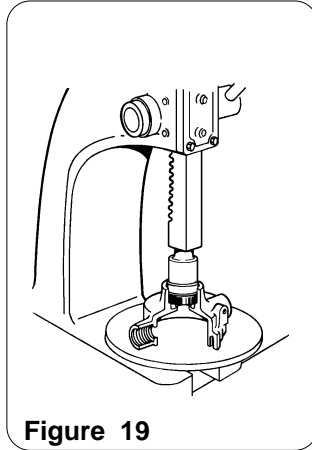


Figure 19

### Assemble Rotor & Shaft To Endplate

1. Install the Shaft Rotor Assembly by carefully pushing the short end of the Shaft Rotor Assembly through the Shaft Seal into the End Plate. Place in the arbor press with the drive end of the Shaft pointed down. Use the Bearing Support Tool on top of the Bearing and press the assembly together. (Figure 20). Leave just enough clearance between the Rotor and End Plate so that Rotor can be turned by hand. If it turns too freely, sand a little more off the Body end that faces the End Plate. You should notice a slight drag, but be able to turn Shaft with an adapter on it, by hand. The "slight drag" will wear off after the Pump has been used a short time. Installing new Rollers, Seals, Bearings, and Shafts will not prove entirely satisfactory for volume and pressure unless end clearance is taken up.

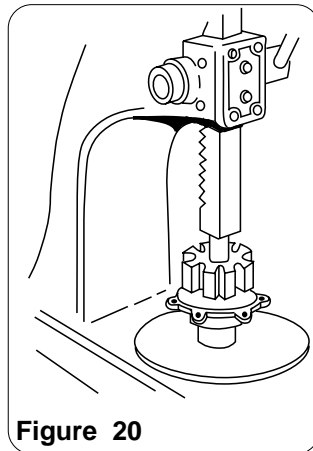


Figure 20

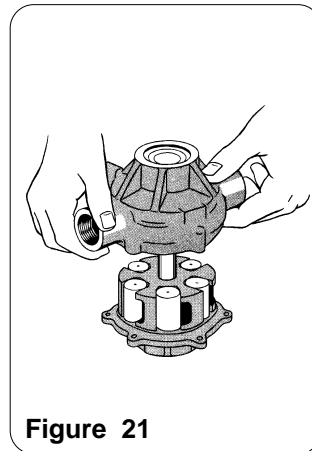


Figure 21

**NOTE:** If the End Plate has been resurfaced the Body face must also be resurfaced to allow for material taken off the End Plate. Follow same procedure as above with emery cloth. Before new parts are installed all burrs should be removed — particularly in the Rotor Slots and Body.

**Do not machine clean the Body Casting. A more satisfactory job can be done by hand cleaning with an emery cloth. Wetable talc powder mixture (5 lbs. powder to 5 gallons water) can be used for breaking in a repaired Pump if Pump appears to be binding. Run Pump for about 5 minutes. This will also serve to clean and remove corrosion from the Pump. Follow with a clear rinse and protect from rust. (See Maintenance.)**

2. Remove the assembled portion from the arbor press and invert it on the press table with the Bearing Support Tool under the Bearing. Then place Rollers in the Roller Slots as close to center of Rotor as possible. Place the Pump Body over Rotor and Shaft and carefully ease the end of the Shaft past the lips of the Seal in Pump Body (Figure 21). Center Bearing Support Tool with counter bored end down on inner race of Ball Bearing, and slowly press the Pump Body down to fit the End Plate (Figure 22).
3. Turn Pump over; line up bolt holes and replace Assembly Bolts. Alternately and evenly tighten the Bolts as shown (Figure 23). **NOTE: After Bolts have been tightened, check to see if Rotor is centered in Pump Case. Try to turn the Pump shaft, using a crescent wrench on the Shaft as a lever.**

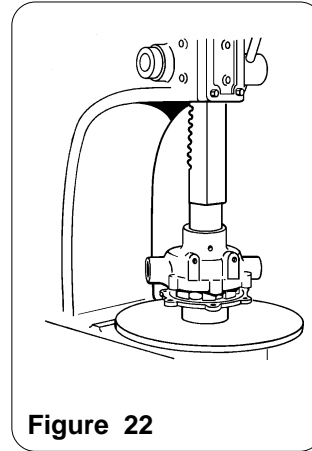


Figure 22

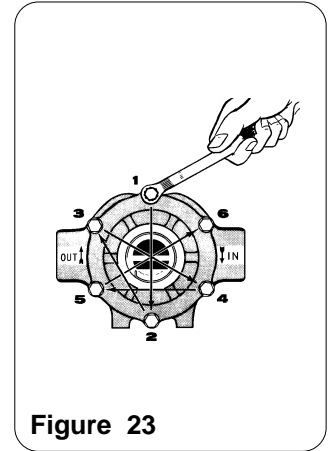


Figure 23

### Center Rotor in Pump Case

If pump turns hard:

1. Place short brass rod (or hardwood dowel) against end of Shaft (Figure 24). Center rod on Shaft (not on Bearing). Tap lightly with hammer. Try turning Shaft again.

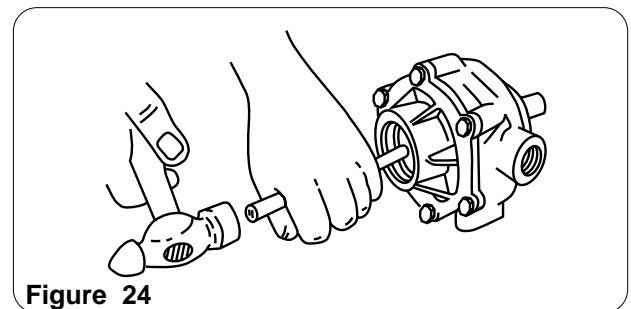
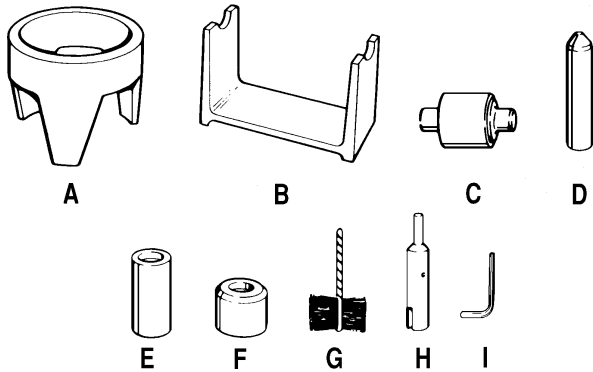


Figure 24

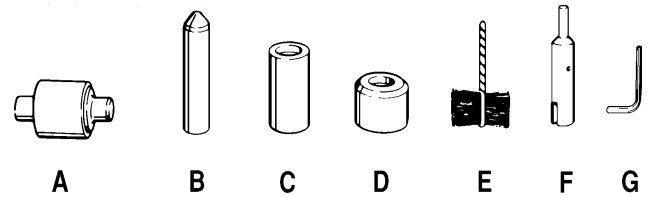
2. If this fails to center the Rotor to where it can be turned freely — tap other end of Shaft, protecting it as above. When the Shaft can be turned by hand — using wrench as above — it is not binding.
3. If the Pump binds within and tapping does not free it, it may be necessary to "run the Pump in" to wear off high spots. Use talc solution mentioned earlier. Check Pump frequently during run in.

## Repair Tool Kits



### Tool Kit No. 3011-0006 for Series 6500

Consists of: (A) Endplate Support Fixture; (B) Body Support Fixture; (C) Bearing & Seal Assembly Tool; (D) Bearing Disassembly Tool; (E) Bearing Support Tool; (F) Wire Brush; (G) Brush Holder; (H) 1/16" Allen Wrench; (I) Tool Box.



### Tool Kit No. 3011-0021 for Series 4001/4101

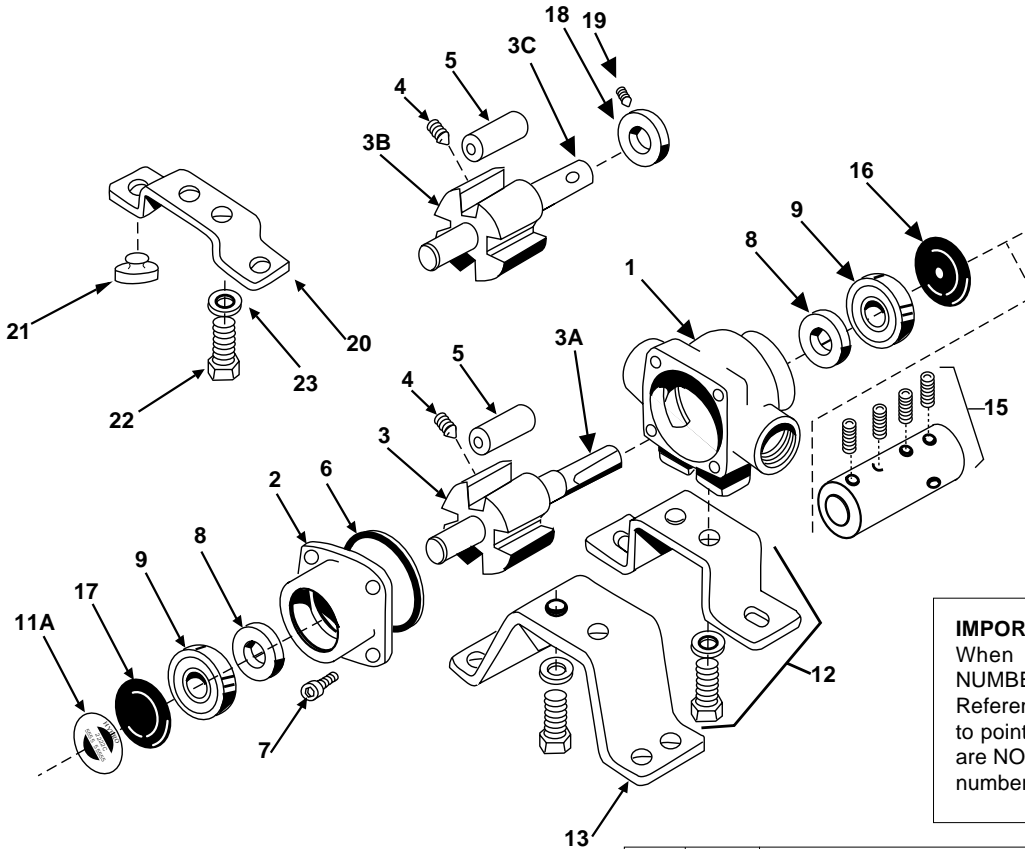
Consists of: (A) Bearing & Seal Assembly Tool; (B) Bearing Disassembly Tool; (C) Bearing Support Tool; (D) Bearing Race Support Tool; (E) Wire Brush; (F) Brush Holder; (G) 1/16" Allen Wrench; (I) Tool Box.

## Troubleshooting

Symptom	Probable Cause(s)	Corrective Action
Pump does not prime.	Leak in suction line.	Check hose and fittings for leaks and correct.
	Obstruction in suction line.	Inspect hose for obstruction such as debris or loose inner liner.
	Suction hose sucked to bottom or side of tank.	Cut a notch or "V" in end of suction hose.
	Rollers stuck in Pump.	Disassemble Pump and inspect Rollers.
	Pump Seals leaking air.	Replace Seals.
Loss of pressure	Pump turning in wrong direction.	Correct rotation of Pump (See Reversing Pump).
	Clogged suction strainer.	Check strainer and clean it regularly.
	Kinked or blocked suction hose.	Inspect suction hose and repair as necessary.
	Air leak in inlet side plumbing.	Chose hose and connections for leaks. Use pipe joint sealant and retighten connections.
	Relief valve setting too low or weakened spring.	Check relief valve and correct setting or replace weakened spring.
	Faulty gauge.	Replace gauge.
	Pump Seals leak air.	Replace Seals.
	Nozzle orifices worn.	Replace nozzles.
Pump worn.	Repair pump (See Repair Instructions).	
Pump will not turn	Corrosion (rust), scale or residue	Loosen Endplate Bolts. Squirt oil into ports to help free rotor. Retighten Bolts.
	Solid object lodged in Bump.	Disassemble Bump and remove objects.



## Hypro Models 4001C, 4101C, 4001N, 4101N and 4001XL, 4101XL 4001XL-H, 4101XL-H



**IMPORTANT:**  
When ordering parts, give PART NUMBER and PART DESCRIPTION. Reference Numbers are used ONLY to point out parts in the drawing and are NOT to be used as ordering numbers.

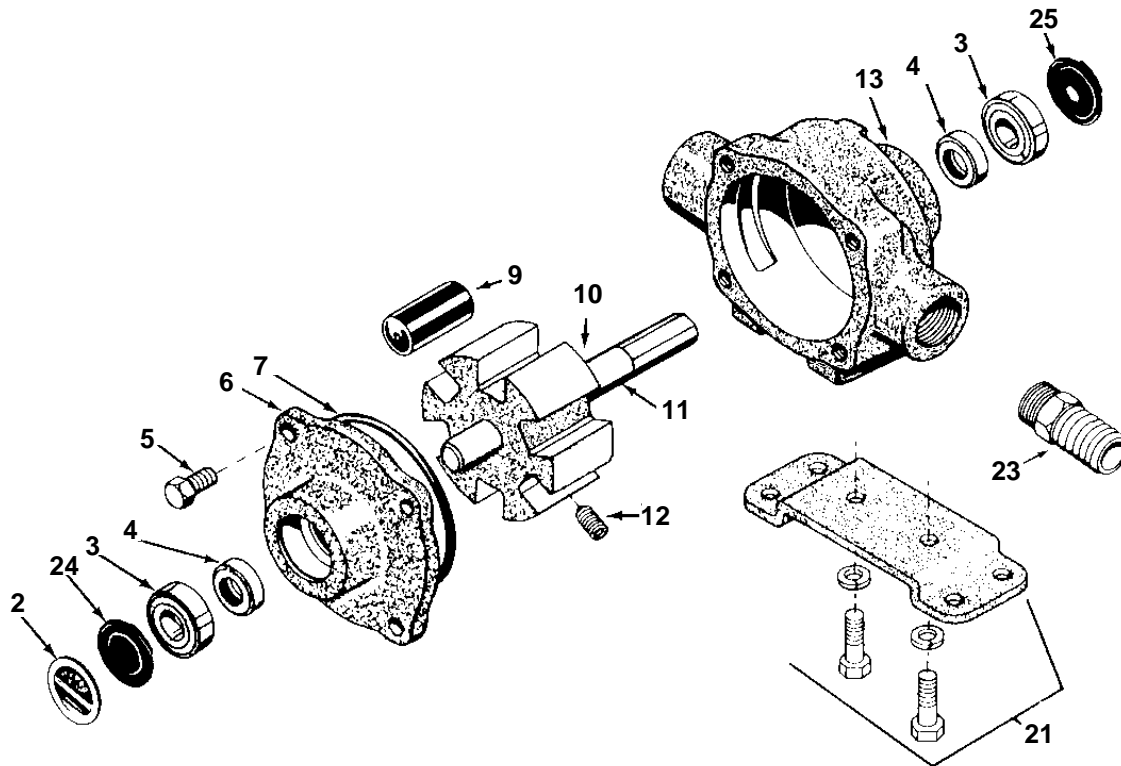
Ref. No.	Qty. Req'd.	Part Number	Description
1	1	0100-4001C	Body (Cast Iron) with Std. Seal (4001)
1	1	0100-4101C	Body (Cast Iron) with Std. Seal (4101)
1	1	0100-4001N	Body (Ni-Resist) with Std. Seal (4001)
1	1	0100-4101N	Body (Ni-Resist) with Std. Seal (4101)
1	1	0100-4001X	Body(SilverCast) with Std. Seal (4001)
1	1	0100-4101X	Body(SilverCast) with Std. Seal (4101)
2	1	0200-4001C	Endplate (Cast Iron) with Std. Seal (4001)
2	1	0200-4101C	Endplate (Cast Iron) with Std. Seal (4101)
2	1	0200-4001N	Endplate (Ni-Resist) with Std. Seal (4001)
2	1	0200-4101N	Endplate (Ni-Resist) with Std. Seal (4101)
2	1	0200-4001X	Endplate (SilverCast) with Std. Seal (4001)
2	1	0200-4101X	Endplate (SilverCast) with Std. Seal (4101)
3	1	0300-4001C	Rotor (Cast Iron) & Shaft Assembly (4001)
3	1	0300-4101C	Rotor (Cast Iron) & Shaft Assembly (4101)
3	1	0300-4001N	Rotor (Ni-Resist) & Shaft Assembly (4001)
3	1	0300-4101N	Rotor (Ni-Resist) & Shaft Assembly (4101)
3	1	0300-4001X	Rotor (SilverCast) & Shaft Assembly (4001)
3	1	0300-4101X	Rotor (SilverCast) & Shaft Assembly (4101)
3A	1	0500-6600	Shaft Only
3B	1	0301-4001N	Rotor (Ni-Resist) & Shaft Assembly (4001)
3B	1	0301-4101N	Rotor (Ni-Resist) & Shaft Assembly (4101)
3B	1	0301-4101X	Rotor (SilverCast) & Shaft Assembly (4101)
3B	1	0301-4001X	Rotor (SilverCast) & Shaft Assembly (4001)
3C	1	0550-4001	Shaft Only (Hollow Shaft)
4	1	2230-0002	Rotor Set Screw
4	1	2230-0016	Rotor Set Screw (SilverCast Only)
5	4	1005-0002	Super Rollers (Std.)
5	4	1002-0002	Polypropylene Rollers (Optional)
5	4	1001-0002	Buna-N Rollers (Optional)
5	4	1055-0002	Teflon Rollers (Optional)

Ref. No.	Qty. Req'd.	Part Number	Description
6	1	1720-0104	O-Ring Gasket for Endplate
7	4	2220-0018	Endplate Screw
8	2	2107-0002	Viton Seal (Std.)
8	2	2102-0001	Buna-N Seal (Optional)
8	2	2103-0001	Leather Seal (Optional)
9	2	2000-0010	Ball Bearing (High temp. grease)
11A	1		Name Plate (Specify pump model #)
12	1	3420-0024	Base Kit — Includes: 1 Base, 2 Bolts, and 2 Lock washers for mounting pump to electric motors with 3-1/2" shaft centerline
13	1	3420-0025	Base Kit — Includes: 1 Base, 2 Bolts, and 2 Lock Washers for mounting pump to electric motors/gas engines with 4-3/16" shaft centerlines
15	1 kit	1320-0016	Adapter with 4 setscrews for gas engine mount. (5/8" x 5/8")
15	1 kit	1320-0015	Adapter (5/8" x 3/4")
16	1	2300-0023	Shaft Bearing Cover
17	1	2300-0021	Bearing Cover
18	1	1420-0001	Locking Collar
19	1	2230-0001	Set Screw
20	1	1510-0054	Base
21	2	1450-0003	Bumper
22	2	2210-0003	Bolt
23	2	2260-0002	Lock Washer

**Repair Parts Kit No. 3430-0390** Consists of: (4) Ref. 5 Super Rollers, (1) Ref. 6 O-Ring Gasket, (2) Ref. 8 Viton Seals.

**Repair Parts Kit No. 3430-0158** Consists of: (4) Ref. 5 Polypropylene Rollers, (1) Ref. 6 O-Ring Gasket, (2) Ref. 8 Viton Seals.

## Hypro Models 6500C, 6500N and 6500XL



**IMPORTANT:**  
When ordering parts, give PART NUMBER and PART DESCRIPTION. Reference Numbers are used ONLY to point out parts in the drawing and are NOT to be used as ordering numbers.

Ref. No.	Qty. Req'd.	Part Number	Description
2	1		Name Plate (Specify Pump Model #)
3	2	2000-0010	Ball Bearing
4	2	2107-0002	Viton Seal (Standard)
4	2	2102-0001	Buna-N Seal (Optional)
4	2	2103-0001	Leather Seal (Optional)
5	4	2210-0004	Bolt for Endplate
6	1	0200-6600C	Endplate (Cast Iron) with Standard Seal
6	1	0200-6600N	Endplate (Ni-Resist) with Standard Seal
6	1	0200-6600X	Endplate (SilverCast) with Standard Seal
7	1	1720-0008	O-ring for Endplate
9	6	1005-0004	Super Roller (Standard)
9	6	1002-0004	Polypropylene Roller (Optional)
9	6	1055-0004	Teflon Roller (Optional)
9	6	1052-0004	Buna-N Roller (Optional)

Ref. No.	Qty. Req'd.	Part Number	Description
10	1	0300-6600C	Rotor (Cast Iron) with shaft
10	1	0300-6600N	Rotor (Ni-Resist) with shaft
10	1	0300-6600X	Rotor (SilverCast) with shaft
11	1	0500-6600	Shaft Only
12	1	2230-0003	Set Screw
12	1	2230-0007	Set Screw (SilverCast Only)
13	1	0100-6600C	Body (Cast Iron) with Seal
13	1	0100-6600N	Body (Ni-Resist) with Seal
13	1	0100-6600X	Body (SilverCast) with Seal
21	1	3420-0023	Base Kit — Includes: (1) Base, (2) Bolts, and (2) Lock Washers
23	1	2404-0052	1" Hose Barb
24	1	2300-0021	Bearing Cover
25	1	2300-0023	Shaft Bearing Cover

See Page 17 for the proper coupler or adapter.

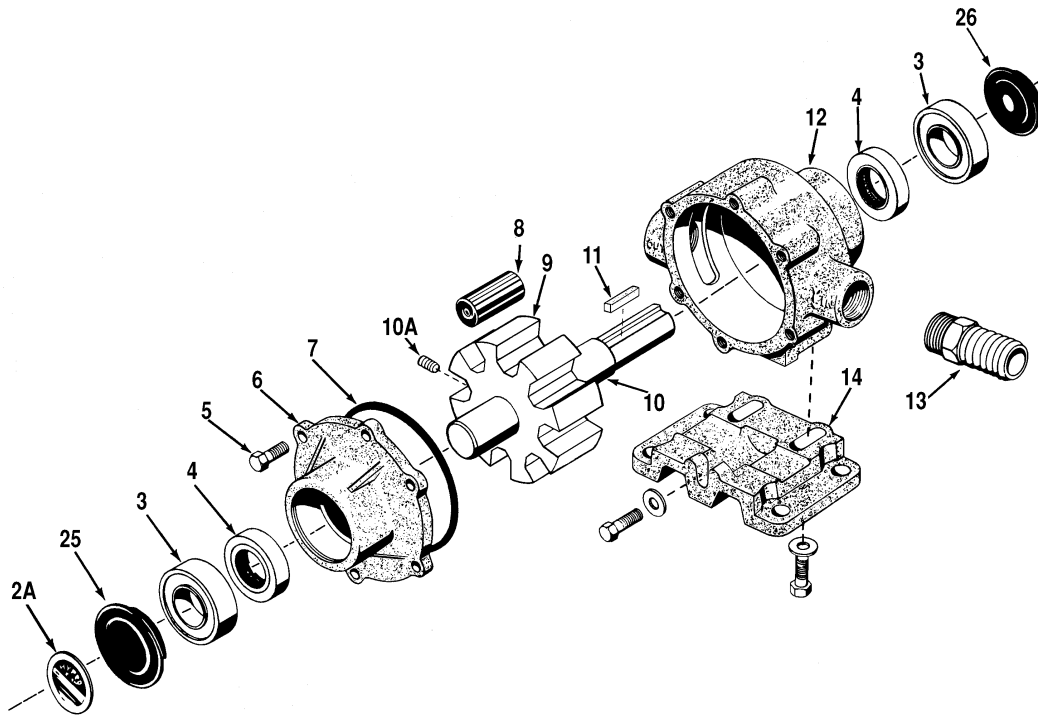
**Repair Parts Kit No. 3430-0343 (Universal)** Consists of: (8) Ref. 8 Super Rollers, (2) Ref. 7 O-rings and (4) Ref. 4 Viton Seals of two different sizes.

**Repair Parts Kit No. 3430-0380** Consists of: (6) Ref. 8 Super Rollers, (1) Ref. 7 O-rings and (2) Ref. 4 Viton Seals.

**Repair Parts Kit No. 3430-0174** Consists of: (6) Ref. 8 Polypropylene Rollers and (1) Ref. 7 O-Ring Gasket.

**Repair Parts Kit No. 3430-0175** Consists of: (6) Ref. 8 Polypropylene Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Viton Seals.

## Hypro Models 7560C, 7560N and 7560XL



**IMPORTANT:**  
When ordering parts, give PART NUMBER and PART DESCRIPTION. Reference Numbers are used ONLY to point out parts in the drawing and are NOT to be used as ordering numbers.

Ref. No.	Qty. Req'd.	Part Number	Description
2A	1	6031-0258	Name Plate (Specify Pump Model #)
3	2	2008-0001	Sealed Ball Bearing
4	2	2112-0003	Viton Seal (Standard)
4	2	2112-0001	Buna-N Seal (Optional)
4	2	2103-0002	Leather Seal (Optional)
5	6	2210-0004	Bolt
6	1	0204-7500C	Endplate (Cast-Iron) with seal
6	1	0204-7500N	Endplate (Ni-Resist) with seal
6	1	0204-7500X	Endplate (SilverCast) with seal
7	1	1720-0014	O-ring Gasket for Endplate
8	8	1005-0004	Super Roller (Standard)
8	8	1002-0004	Polypropylene Roller (Optional)
8	8	1052-0004	Buna-N Roller (Optional)
8	8	1055-0004	Teflon Roller (Optional)

Ref. No.	Qty. Req'd.	Part Number	Description
9	1	0308-7560C	Rotor (Cast Iron) with shaft
9	1	0308-7560N	Rotor (Ni-Resist) with shaft
9	1	0308-7560X	Rotor (SilverCast) with shaft
10	1	0500-7400	Shaft Only
10A	1	2230-0003	Set Screw
10A	1	2230-0007	Set Screw (SilverCast Only)
11	1	1610-0005	Key
12	1	0104-7500C	Body (Cast Iron) with seal
12	1	0104-7500N	Body (Ni-Resist) with seal
12	1	0104-7500X	Body (SilverCast) with seal
13	1	2404-0052	1" Hose Barb
14	1 kit	3420-0003	Base Kit — Includes: (1) Base, (3) Bolts and (3) Washers
25	1	2300-0020	Bearing Cover
26	1	2300-0022	Shaft Bearing Cover

See Page 17 for the proper coupler or adapter.

**Repair Parts Kit No. 3430-0343 (Universal)** Consists of: (8) Ref. 8 Super Rollers, (2) Ref. 7 O-rings and (4) Ref. 4 Viton Seals of two different sizes.

**Repair Parts Kit No. 3430-0376** Consists of: (8) Ref. 8 Super Rollers and (1) Ref. 7 O-Ring Gasket.

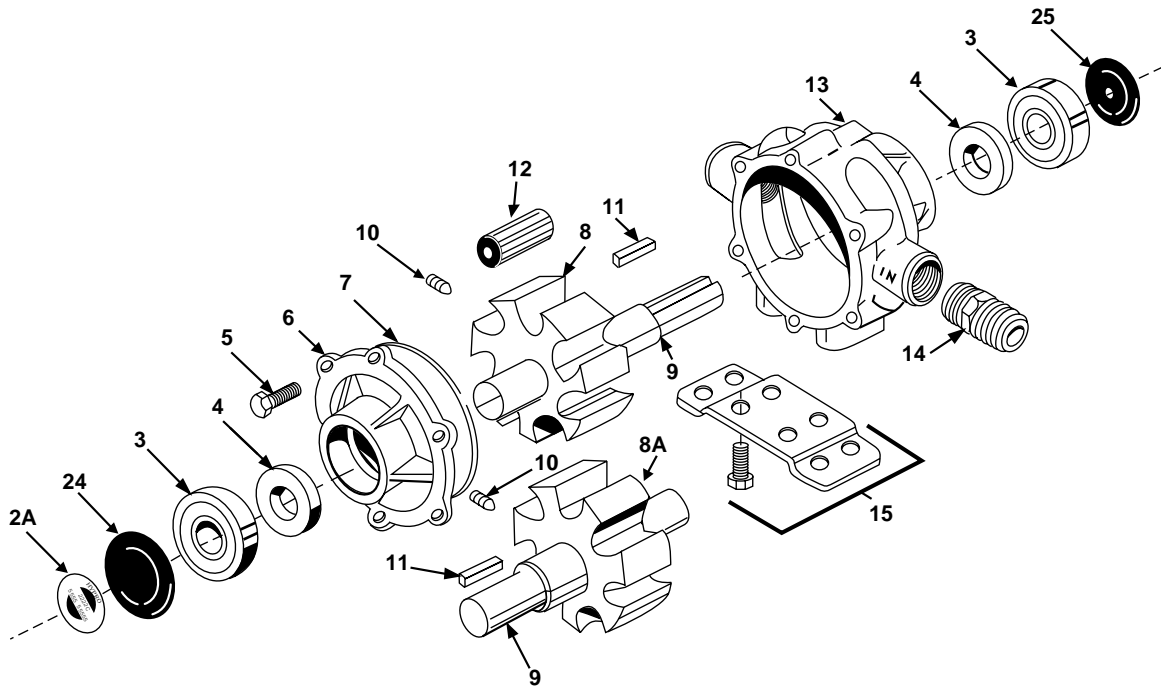
**Repair Parts Kit No. 3430-0377** Consists of: (8) Ref. 8 Super Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Buna Seals.

**Repair Parts Kit No. 3430-0381** Consists of: (8) Ref. 8 Super Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Viton Seals.

**Repair Parts Kit No. 3430-0154** Consists of: (8) Ref. 8 Polypropylene Rollers and (1) Ref. 7 O-Ring Gasket.

**Repair Parts Kit No. 3430-0167** Consists of: (8) Ref. 8 Polypropylene Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Viton Seals.

# Hypro Models 7700C, 7700N and 7700XL



**IMPORTANT:**  
When ordering parts, give PART NUMBER and PART DESCRIPTION. Reference Numbers are used ONLY to point out parts in the drawing and are NOT to be used as ordering numbers.

Ref. No.	Qty. Req'd.	Part Number	Description
2A	1	6031-0258	Name Plate (Specify Pump Model #)
3	2	2008-0001	Sealed Ball Bearing
4	2	2112-0003	Viton Seal (Standard)
4	2	2112-0001	Buna-N Seal (Optional)
4	2	2103-0002	Leather Seal (Optional)
5	6	2210-0004	Bolt
6	1	0200-7700C	Endplate (Cast-Iron) with seal
6	1	0200-7700N	Endplate (Ni-Resist) with seal
6	1	0200-7700X	Endplate (SilverCast) with seal
7	1	1720-0014	O-ring Gasket for Endplate
8	1	0300-7700C	Rotor (Cast Iron) with shaft (Standard Rot.)
8	1	0300-7700N	Rotor (Ni-Resist) with shaft (Standard Rot.)
8	1	0300-7700X	Rotor (SilverCast) with shaft (Standard Rot.)
8A	1	0301-7700C	Rotor (Cast Iron) with shaft (Reverse Rot.)
8A	1	0301-7700N	Rotor (Ni-Resist) with shaft (Reverse Rot.)
8A	1	0301-7700X	Rotor (SilverCast) with shaft (Reverse Rot.)
9	1	0500-7400	Shaft Only
10	1	2230-0003	Set Screw
10	1	2230-0007	Set Screw (SilverCast only)
11	1	1610-0005	Key

Ref. No.	Qty. Req'd.	Part Number	Description
12	7	1005-0004	Super Roller (Standard)
12	7	1002-0004	Polypropylene Roller (Optional)
12	7	1052-0004	Buna-N Roller (Optional)
12	7	1055-0004	Teflon Roller (Optional)
13	1	0100-7700C	Body (Cast Iron) with seal
13	1	0100-7700N	Body (Ni-Resist) with seal
13	1	0100-7700X	Body (SilverCast) with seal
14	1	2404-0052	1" Hose Barb
15	1 kit	3420-0010	Base Kit — Includes: (1) Base and (4) Bolts
16	1 kit	1320-0033	1-3/8" 6-spline 540 rpm PTO Adapter Includes Kit No. 3410-0003
18	1 kit	3410-0003	Set Screw Kit
24	1	2300-0020	Bearing Cover
25	1	2300-0022	Shaft Bearing Cover

See Page 17 for the proper coupler or adapter.

**Repair Parts Kit No. 3430-0343 (Universal)** Consists of: (8) Ref. 12 Super Rollers, (2) Ref. 7 O-rings and (4) Ref. 4 Viton Seals of two different sizes.

**Repair Parts Kit No. 3430-0384** Consists of: (7) Ref. 12 Super Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Viton Seals.

**Repair Parts Kit No. 3430-0385** Consists of: (7) Ref. 12 Super Rollers and (1) Ref. 7 O-Ring Gasket.

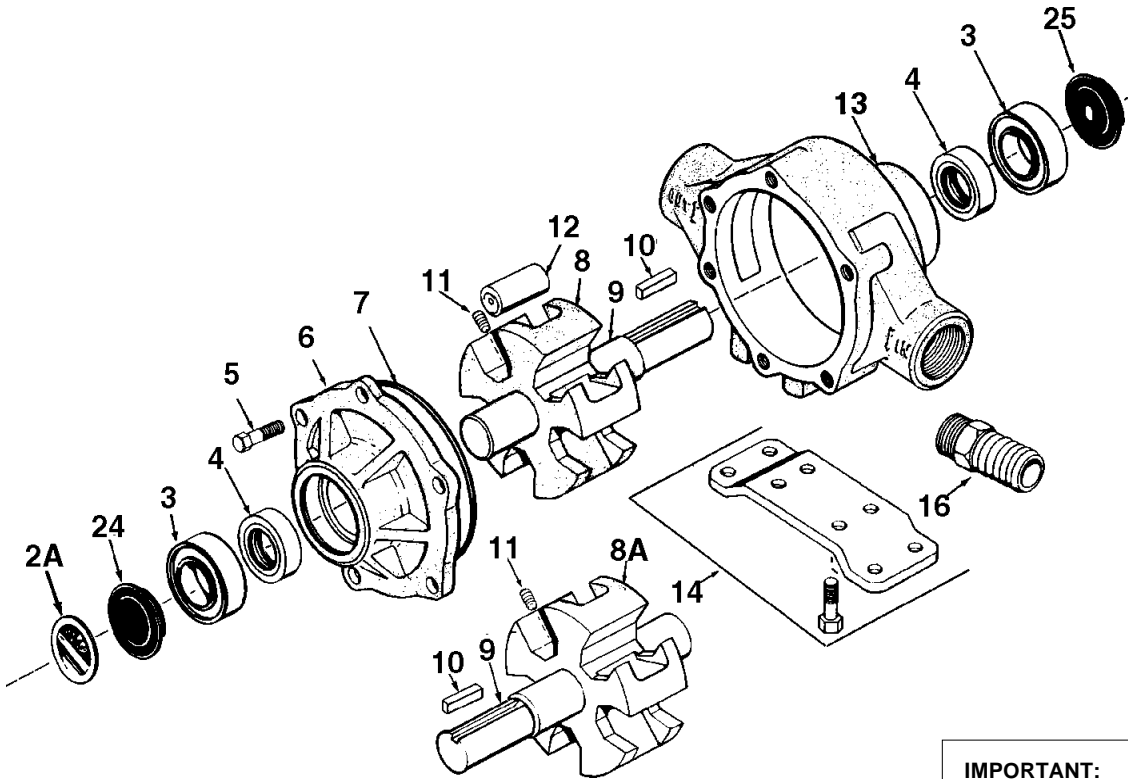
**Repair Parts Kit No. 3430-0389** Consists of: (7) Ref. 12 Super Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Buna-N Seals.

**Repair Parts Kit No. 3430-0155** Consists of: (7) Ref. 12 Polypropylene Rollers and (1) Ref. 7 O-Ring Gasket.

**Repair Parts Kit No. 3430-0169** Consists of: (7) Ref. 12 Polypropylene Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Buna-N Seals.

**Repair Parts Kit No. 3430-0219** Consists of: (7) Ref. 12 Polypropylene Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Viton Seals.

## Models 1700C, 1700N and 1700XL



**IMPORTANT:**  
When ordering parts, give PART NUMBER and PART DESCRIPTION. Reference Numbers are used ONLY to point out parts in the drawing and are NOT to be used as ordering numbers.

Ref. No.	Qty. Req'd.	Part Number	Description
2A	1	6031-0258	Name Plate (Specify Pump Model #)
3	2	2008-0001	Sealed Ball Bearing
4	2	2112-0003	Viton Seal (Standard)
4	2	2112-0001	Buna-N Seal (Optional)
4	2	2103-0002	Leather Seal (Optional)
5	6	2210-0005	Bolt
6	1	0200-1700C	Endplate (Cast-Iron) with seal
6	1	0200-1700N	Endplate (Ni-Resist) with seal
6	1	0200-1700X	Endplate (SilverCast) with seal
7	1	1720-0099	O-ring Gasket for Endplate
8	1	0300-1700C	Rotor (Cast Iron) with shaft (Std. Rotation)
8	1	0300-1700N	Rotor (Ni-Resist) with shaft (Std. Rotation)
8	1	0300-1700X	Rotor (SilverCast) with shaft (Std. Rotation)
8A	1	0301-1700C	Rotor (Cast Iron) w/shaft (Reverse Rotation)
8A	1	0301-1700N	Rotor (Ni-Resist) w/shaft (Reverse Rotation)
8A	1	0301-1700X	Rotor (SilverCast) w/shaft (Reverse Rot.)

Ref. No.	Qty. Req'd.	Part Number	Description
9	1	0500-1502	Shaft Only
10	1	1610-0005	Key
11	1	2230-0018	Set Screw
11	1	2230-0034	Set Screw (SilverCast Only)
12	5	1005-0005	Super Roller (Standard)
12	5	1002-0005	Polypropylene Roller (Optional)
12	5	1055-0005	Teflon Roller (Optional)
13	1	0100-1700C	Body (Cast Iron) with seal
13	1	0100-1700N	Body (Ni-Resist) with seal
13	1	0100-1700X	Body (SilverCast) with seal
14	1 kit	3420-0010	Base Kit — Includes: (1) Base and (4) Bolts
24	1	2300-0020	Bearing Cover
25	1	2300-0022	Shaft Bearing Cover

See Page 17 for the proper coupler or adapter.

**Repair Parts Kit No. 3430-0437** Consists of: (5) Ref. 12 Super Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Viton Seals.

**Repair Parts Kit No. 3430-0383 (Universal)** Consists of: (6) Ref. 12 Super Rollers, (2) Ref. 7 O-Ring Gaskets, and (2) Ref. 4 Viton Seals.

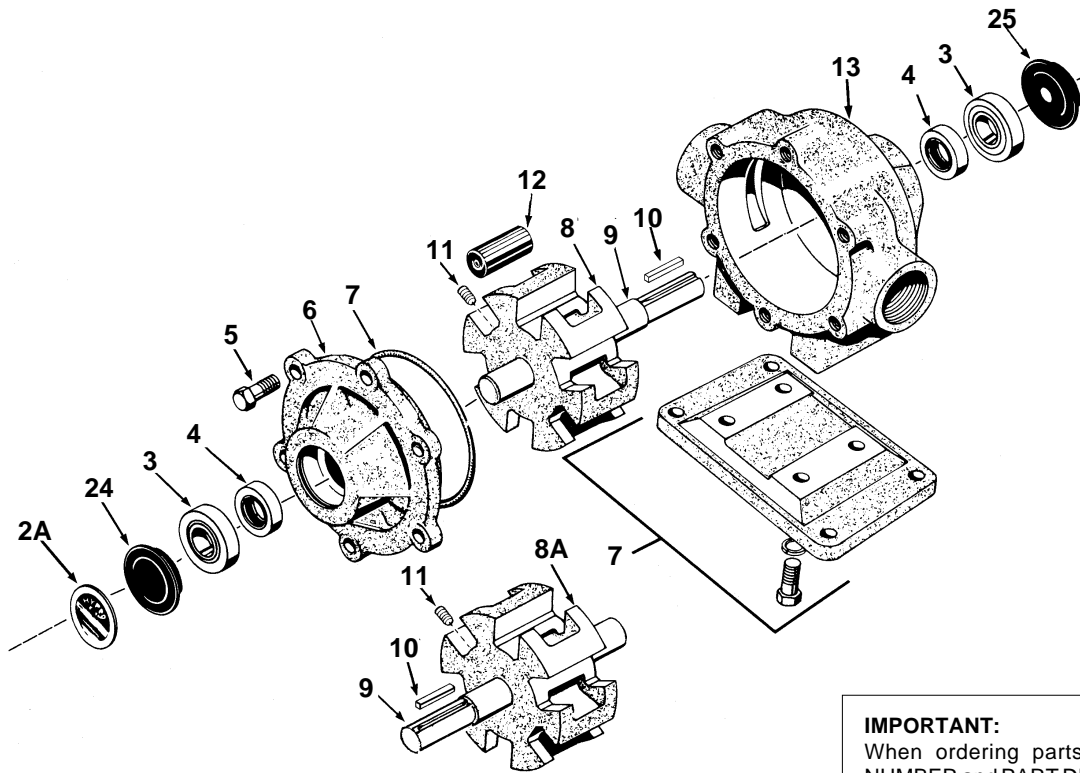
**Repair Parts Kit No. 3430-0160** Consists of: (5) Ref. 12 Polypropylene Rollers and (1) Ref. 7 O-Ring Gasket, and two Ref. 4 Buna-N Seals.

**Repair Parts Kit No. 3430-0159** Consists of: (5) Ref. 12 Polypropylene Rollers and (1) Ref. 7 O-Ring Gasket.

**Repair Parts Kit No. 3430-0161** Consists of: (5) Ref. 12 Polypropylene Rollers and (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Viton Seals.

**Repair Parts Kit No. 3430-0407** Consists of: (5) Ref. 12 Super Rollers, (1) Ref. 7 O-Ring Gasket, (2) Ref. 4 Viton Seals and (2) Ref. 3 Sealed Ball Bearings.

## Models 1500C, 1500N and 1500XL



**IMPORTANT:**  
When ordering parts, give PART NUMBER and PART DESCRIPTION. Reference Numbers are used ONLY to point out parts in the drawing and are NOT to be used as ordering numbers.

Ref. No.	Qty. Req'd.	Part Number	Description
2A	1	6031-0258	Name Plate (Specify Pump Model #)
3	2	2008-0001	Sealed Ball Bearing
4	2	2112-0001	Buna-N Seal (Standard)
4	2	2112-0003	Viton Seal (Optional) (Std. for SilverCast)
4	2	2103-0002	Leather Seal (Optional)
5	6	2210-0026	Bolt
6	1	0200-1500C	Endplate (Cast-Iron) with seal
6	1	0200-1500N	Endplate (Ni-Resist) with seal
6	1	0200-1500X	Endplate (SilverCast) with seal
7	1	1720-0003	O-ring Gasket for Endplate
8	1	0300-1502C	Rotor (Cast Iron) with shaft (Std. Rotation)
8	1	0300-1502N	Rotor (Ni-Resist) with shaft (Std. Rotation)
8	1	0300-1502X	Rotor (SilverCast) with shaft (Std. Rotation)
8A	1	0301-1502C	Rotor (Cast Iron) w/shaft (Reverse Rotation)
8A	1	0301-1502N	Rotor (Ni-Resist) w/shaft (Reverse Rotation)
8A	1	0301-1502X	Rotor (SilverCast) w/shaft (Reverse Rotat.)

Ref. No.	Qty. Req'd.	Part Number	Description
9	1	0500-1502	Shaft Only
10	1	1610-0005	Key
11	1	2230-0018	Set Screw
11	1	2230-0034	Set Screw (SilverCast Only)
12	6	1005-0005	Super Roller (Standard)
12	6	1002-0005	Polypropylene Roller (Optional)
12	6	1055-0005	Teflon Roller (Optional)
13	1	0100-1500C	Body (Cast Iron) with seal
13	1	0100-1500N	Body (Ni-Resist) with seal
13	1	0100-1500X	Body (SilverCast) with seal
14	1 kit	3420-0004	Base Kit — Includes: (1) Base and (4) Bolts
24	1	2300-0020	Bearing Cover
25	1	2300-0022	Shaft Bearing Cover

See Page 17 for the proper coupler or adapter.

**Repair Parts Kit No. 3430-0383 (Universal)** Consists of: (6) Ref. 12 Super Rollers, (2) Ref. 7 O-Ring Gaskets, and (2) Ref. 4 Viton Seals.

**Repair Parts Kit No. 3430-0388** Consists of: (6) Ref. 12 Super Rollers and (1) Ref. 7 O-Ring Gasket.

**Repair Parts Kit No. 3430-0386** Consists of: (6) Ref. 12 Super Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Viton Seals.

**Repair Parts Kit No. 3430-0387** Consists of: (6) Ref. 12 Super Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Buna-N Seals.

**Repair Parts Kit No. 3430-0162** Consists of: (6) Ref. 12 Polypropylene Rollers and (1) Ref. 7 O-Ring Gasket.

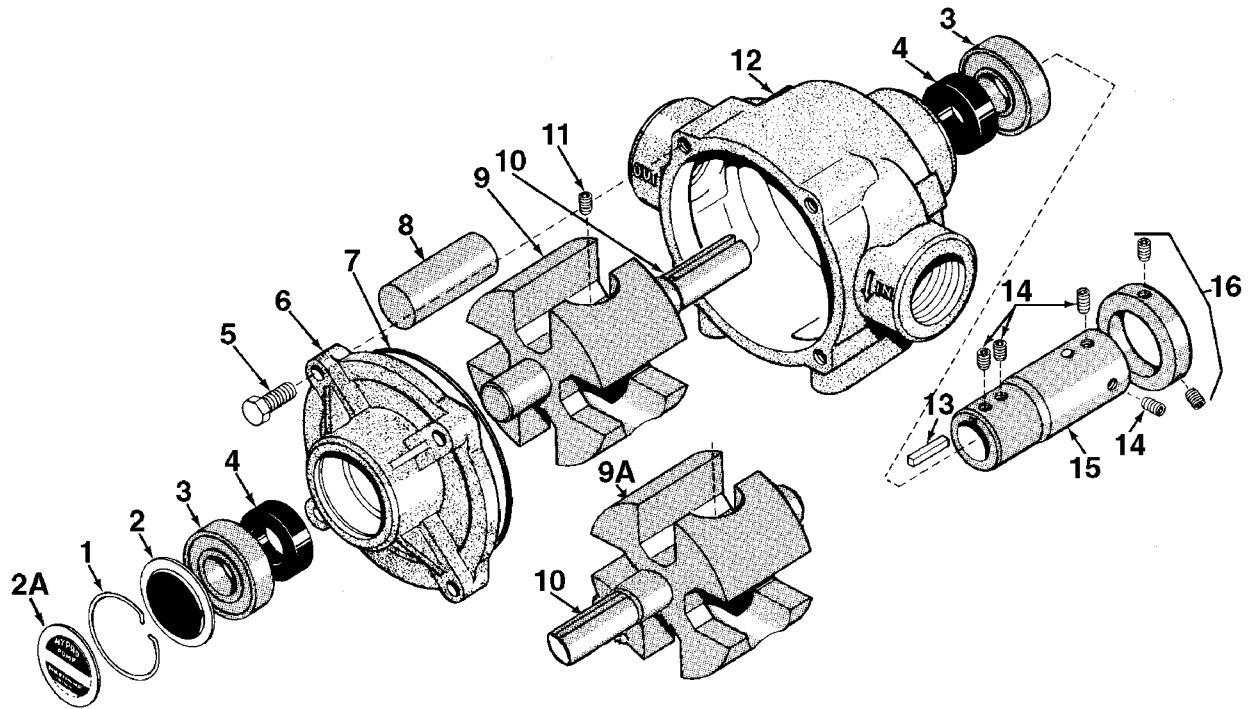
**Repair Parts Kit No. 3430-0204** Consists of: (6) Ref. 12 Teflon Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Buna-N Seals.

**Repair Parts Kit No. 3430-0164** Consists of: (6) Ref. 8 Polypropylene Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Viton Seals.

**Repair Parts Kit No. 3430-0163** Consists of: (6) Ref. 8 Polypropylene Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Buna-N Seals.

**Repair Parts Kit No. 3430-0406** Consists of: (6) Ref. 12 Super Rollers, (1) Ref. 7 O-Ring Gasket, (2) Ref. 4 Viton Seals and (2) Ref. 3 Sealed Ball Bearings.

## Model 1200



Ref. No.	Qty. Req'd.	Part Number	Description
1	1	1800-0013	Retainer Ring
2	1	2840-0049	Bearing Cover
2A	1	6031-0258	Name Plate (Specify Pump Model #)
3	2	2001-0006	Ball Bearing
4	2	2112-0008	Buna-N Seal (Standard)
4	2	2112-0009	Viton Seal (Optional)
5	4	2210-0019	Hex Head Bolt
6	1	0200-1200C	Endplate (Cast-Iron) with seal
7	1	1720-0127	O-ring Gasket for Endplate
8	4	1005-0006	Super Roller (Standard)
9	1	0300-1200C	Rotor (Cast Iron) with shaft (Std. Rotation)
9A	1	0301-1200C	Rotor (Cast Iron) w/shaft (Reverse Rotation)

Ref. No.	Qty. Req'd.	Part Number	Description
10	1	0500-1200	Shaft
11	1	2230-0018	Set Screw
12	1	0100-1200C	Body (Cast Iron) with seal
13	1	1610-0005	Key
14	1 kit	3410-0031	Set Screw Kit
15	1	1320-0067	1-3/8" 6-spline 540 rpm PTO Adapter (Forged Steel) Includes Kit No. 3410-0031
16	1 kit	3430-0207	Locking Collar Kit — Includes: (1) Collar and (2) Setscrews
17	1 kit	3420-0028 (not shown)	Base Kit — Includes: (1) Base, (4) Bolts and (4) Lock Washers

**Parts Kit No. 3430-0374** Consists of (4) Ref. 8 Super Rollers, (1) O-Ring, (2) Buna-N Seals

### Locking Collar Kit No. 3430-0207 For Series 1200 Roller Pumps

This locking collar kit holds the pump driver shaft securely on the tractor PTO shaft. It is designed to increase pump life by reducing pump and PTO shaft wear due to vibration. To install locking collar:

1. Slide collar onto pump driver shaft.
2. Thread the longer set screw through the locking collar and partially through the threaded hole in the pump driver shaft. **IMPORTANT:** It is necessary to allow a minimum of 1/8" clearance between the locking collar and the pump driver shaft at set screw.

### ORDER PARTS FROM YOUR SUPPLIER

3. Thread the shorter set screw into the other threaded hole in the locking collar.
4. Slide pump driver hub over PTO shaft. Be sure PTO groove is under set screw.
5. Tighten the longer screw very securely with a 3/16" allen wrench.
6. Tighten the shorter set screw very securely with the same wrench. This binds set screw which prevents it from coming loose.
7. **NOTE:** Locking collar is off-center on the pump driver shaft when properly installed.







## List of Dimensions — Hypro Adapters

### PTO Adapters (Female to Female)

Part Number	PTO (I.D.)	Pump End (I.D.)	Material	RPM	Pump Model
1320-0015	3/4"	5/8"	steel	*	4000, 6500
1320-0016	5/8"	5/8"	steel	*	4000, 6500
1320-0022	1 <sup>3</sup> / <sub>8</sub> " (6 spline)	5/8"	die cast	540	6500
1320-0033	1 <sup>3</sup> / <sub>8</sub> " (6 spline)	15/16"	die cast	540	1500, 1700, 7560, 7700
1320-0038	1 <sup>3</sup> / <sub>8</sub> " (21 spline)	15/16"	die cast	1000	1500, 1700, 7560
1320-0053	1 <sup>3</sup> / <sub>8</sub> " (21 spline)	5/8"	die cast	1000	4000, 6500
1320-0054	3/4"	15/16"	die cast	*	1500, 1700, 7560, 7700
1320-0059	1 <sup>3</sup> / <sub>8</sub> " (6 spline)	1"	die cast	540	1200/5200
1320-0076	1 <sup>3</sup> / <sub>8</sub> " (6 spline)	15/16"	forged steel	540	1500, 1700, 7560, 7700
1320-0077	1 <sup>3</sup> / <sub>8</sub> " (6 spline)	5/8"	forged steel	540	6500
1320-0078	1 <sup>3</sup> / <sub>8</sub> " (21 spline)	15/16"	forged steel	1000	1500, 1700, 7560
1320-0079	1 <sup>3</sup> / <sub>8</sub> " (21 spline)	5/8"	forged steel	1000	4000, 6500
1320-0080	1 <sup>3</sup> / <sub>4</sub> " (20 spline)	15/16"	forged steel	1000	1500, 1700, 7560
1320-0081	1 <sup>3</sup> / <sub>8</sub> " (6 spline)	1"	forged steel	540	1200/5200

\* Refer to the recommended pump rpm.

### Quick Couplers (Female to Female)

Part Number	PTO (I.D.)	Pump End (I.D.)	Material	RPM	Pump Model
1321-0006	1 <sup>3</sup> / <sub>8</sub> " (6 spline)	5/8"	die cast	540	6500
1321-0007	1 <sup>3</sup> / <sub>8</sub> " (6 spline)	15/16"	die cast	540	1500, 1700, 7560, 7700
1321-0008	1 <sup>3</sup> / <sub>8</sub> " (21 spline)	5/8"	die cast	1000	4000, 6500
1321-0009	1 <sup>3</sup> / <sub>8</sub> " (21 spline)	15/16"	die cast	1000	1500, 1700, 7560
1321-0012	1 <sup>3</sup> / <sub>8</sub> " (multi-speed)	5/8"	die cast	540/1000	4000, 6500
1321-0013	1 <sup>3</sup> / <sub>8</sub> " (multi-speed)	15/16"	die cast	540/1000	1500, 7560, 7700
1323-0072	1 <sup>3</sup> / <sub>8</sub> " (6 spline)	15/16"	forged steel	540	1500, 1700, 7560, 7700
1323-0073	1 <sup>3</sup> / <sub>8</sub> " (21 spline)	15/16"	forged steel	1000	1500, 1700, 7560
1323-0074	1 <sup>3</sup> / <sub>8</sub> " (6 spline)	5/8"	forged steel	540	6500
1323-0075	1 <sup>3</sup> / <sub>8</sub> " (21 spline)	5/8"	forged steel	1000	4000, 6500
1323-0076	1 <sup>3</sup> / <sub>8</sub> " (multi-speed)	15/16"	forged steel	540/1000	1500, 1700, 7560
1323-0077	1 <sup>3</sup> / <sub>8</sub> " (multi-speed)	5/8"	forged steel	540/1000	4000, 6500

# WHAT HYPRO®

## Roller Pump, Rollers and Seals

### SHOULD YOU USE?

Material options for rollers and seals are listed in the order of recommendations for usage. These recommendations are only a general guide. For suggestions on specific chemicals or applications, call Hypro's Technical/Applications Department at (800) 445-8360.

Application	Specific Chemicals	Suggested Pump, Rollers and Seals
WEED CONTROL CHEMICALS	Emulsions, soluble powders, sodium arsenate.	Use a SilverCast™, Ni-Resist, or cast iron pump, Super Rollers or Viton.  <i>NOTE: For weed control chemicals containing glyphosate (such as Roundup®) or other acidics, use only a SilverCast pump with Super or polypropylene rollers and Viton seals. Teflon rollers may be used up to 100 psi.</i>
INSECT CONTROL	Emulsions not containing aromatic solvents.	
BRUSH CONTROL	Heavy-duty sprays using diesel oil for carrier.	Use a SilverCast, Ni-Resist or cast iron pump with Super Rollers. Use Viton or leather seals.
PEST CONTROL CHEMICALS, FUMIGANTS, ETC.	This category or use includes mosquito sprays, termite control liquids, nematocides, soil and grain fumigants where any of the following chemicals with aromatic solvents are present:  Pentachlorophenol, xylene, xylol, benzene, high sulphur fuel or diesel oil. Fumigants containing: ethylene dichloride, ethylene dibromide, carbon tetrachloride, perchlorethylene, trighlorethylene, methyl bromide, and other aromatic solvents.	
LIQUID FERTILIZERS	Up to 32% nitrogen content, or others if the liquid is at atmospheric pressure and the temperature is handled.	Use a SilverCast or Ni-Resist pump with polypropylene rollers and Buna-N seals.
POWDERED FERTILIZERS	Fertilizers dissolved in water (greenhouse plant food).	Use a SilverCast, Ni-Resist or cast iron pump, Super, rubber or polypropylene rollers and Buna-N or Viton seals.  <i>NOTE: Limit pressure to 100 psi when using rubber rollers or wettable powders.</i>
PUMPING	Large quantities of plain water.	
SPRAYING	Wettable powder sprays.	
MATERIAL HANDLING	Heavy abrasive powders in suspension.	
ACIDS	Mild sulfuric acid for spraying. Mild muriatic acid, inhibited muriatic, etc.	Use SilverCast pump, Viton seals, polypropylene or Teflon rollers.  <i>NOTE: Limit pressure to 100 psi when using Teflon rollers.</i>

• ***NOTES*** •

## Limited Warranty on Hypro Roller Pumps

Hypro Corporation ("Hypro") warrants to the original purchaser of its products (the "Purchaser") that such products will be free from defects in material and workmanship under normal use for the period of one (1) year for all products except: oil crankcase plunger pumps will be free from defects in material and workmanship under normal use for the period of five (5) years, and accessories will be free from defects in material and workmanship under normal use for the period of ninety (90) days. In addition, Hypro warrants to the purchaser all forged brass pump manifolds will be free from defects in material and workmanship under normal use and from damage resulting from environmental conditions for the life of the pump.

"Normal use" does not include use in excess of recommended maximum speeds, pressures, vacuums and temperatures, or use requiring handling of fluids not compatible with component materials, as noted in Hypro product catalogs, technical literature, and instructions. This warranty does not cover freight damage, freezing damage, normal wear and tear, or damage caused by misapplication, fault, negligence, alterations, or repair that affects the performance or reliability of the product.

**THIS WARRANTY IS EXCLUSIVE. HYPRO MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

Hypro's obligation under this warranty is, at Hypro's option, to either repair or replace the product upon return of the entire product to the Hypro factory in accordance with the return procedures set forth below. **THIS IS THE EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY.**

**IN NO EVENT SHALL HYPRO BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, WHETHER FOR BREACH OF ANY WARRANTY, FOR NEGLIGENCE, ON THE BASIS OF STRICT LIABILITY, OR OTHERWISE.**

### Return Procedures

**All pumps or products *must* be flushed of *any* chemical (ref. OSHA Section 0910.1200 (d)(e)(f)(g)(h) and hazardous chemicals *must* be labeled before being shipped\* to Hypro for service or warranty consideration.** Hypro reserves the right to request a Material Safety Data sheet from the Purchaser for any pump or product Hypro deems necessary. Hypro reserves the right to "disposition as scrap" pumps or products returned which contain unknown substances, or to charge for any and all costs incurred for chemical testing and proper disposal of components containing unknown substances. Hypro requests this in order to protect the environment and personnel from the hazards of handling unknown substances.

For technical or application assistance, call the **Hypro Technical/Application number: 1-800-445-8360.**

**To obtain service or warranty assistance, call the Hypro Service and Warranty number: 1-800-468-3428; or call the Hypro Service and Warranty FAX: (651) 766-6618.**

Be prepared to give Hypro full details of the problem, including the following information:

1. Model number and the date and from whom you purchased your pump.
2. A brief description of the pump problem, including the following:
  - Liquid pumped. State the pH and any non-soluble materials, and give the generic or trade name.
  - Temperature of the liquid and ambient environment.
  - Suction lift or vacuum (measured at the pump).
  - Discharge pressure.
  - Size, type, and mesh of the suction strainer.
  - Drive type (gas engine/electric motor; direct/belt drive; tractor PTO) and rpm of pump.
  - Viscosity (of oil, or other than water weight liquid).
  - Elevation from the pump to the discharge point.
  - Size and material of suction and discharge line.
  - Type of spray gun, orifice size, unloader/relief valve.

Hypro may request additional information, and may require a sketch to illustrate the problem.

Contact the factory to receive a return material authorization before sending the product. All pumps returned for warranty work should be sent shipping charges prepaid to:

HYPRO CORPORATION  
Attention: Service Department  
375 Fifth Avenue NW  
New Brighton, Minnesota 55112-3288

\*Carriers, including U.S.P.S., airlines, UPS, ground freight, etc., require specific identification of any hazardous materials being shipped. Failure to do so may result in a substantial fine and/or prison term. Check with your shipping company for specific instructions.



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375 Fifth Avenue NW • New Brighton, MN 55112-3288 • (651) 766 6300  
www.hypropumps.com