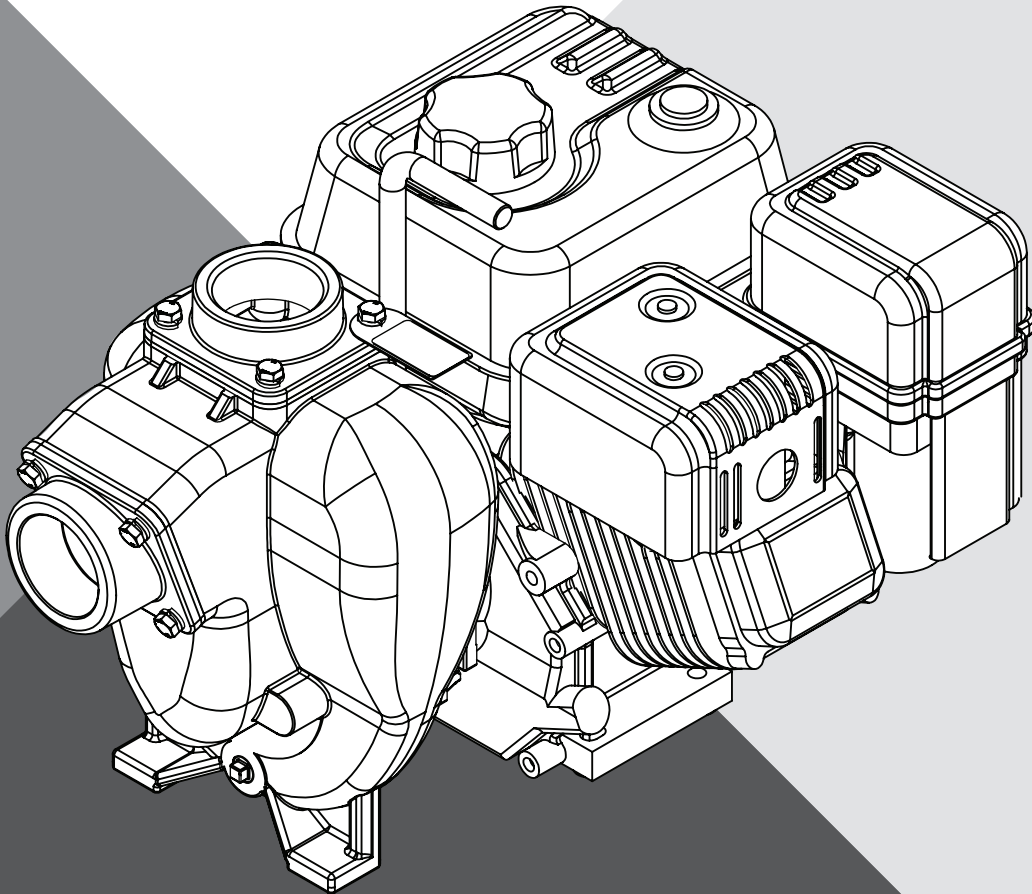




SELF PRIMING CAST IRON CENTRIFUGAL PUMPS

1532C DIESEL FUEL TRANSFER PUMP SERIES



OWNER'S MANUAL

pentair.com


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ENGINES COME FROM FACTORY WITHOUT OIL. FILL WITH OIL PRIOR TO STARTING!


SAFETY INFORMATION

SAFETY SYMBOLS

 This is the safety alert symbol. When you see this symbol on your pump or in this manual, look for one of the following signal words and be alert to the potential for personal injury:


 **DANGER** warns about hazards that will cause serious personal injury, death or major property damage if ignored.

 **WARNING** warns about hazards that can cause serious personal injury, death or major property damage if ignored.

 **CAUTION** warns about hazards that will or can cause minor personal injury or property damage if ignored.

The word **NOTE** indicates special instructions that are important but not related to hazards.

GENERAL SAFETY

 **WARNING** This pump has been specifically equipped to be compatible with the transfer of diesel fuel. Do not pump other flammable or explosive fluids such as gasoline. Do not use in explosive atmospheres.


For best possible performance and continuous, satisfactory operation, read these instructions before installing your new pump. Should service be required, this manual can be a valuable guide. It should be kept near the installation for ready reference.

The pump should be used only with liquids that are 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.

- ◆ **DO NOT EXCEED** recommended speed, pressure and temperature (120 degrees F) for pump and equipment being used.
- ◆ **BEFORE SERVICING**, drain all liquids from the system and flush. Remove the spark plug wire from the spark plug before servicing the pump or engine.

- ◆ Secure the discharge lines before starting the pump. An unsecured line may whip, causing personal injury and/or property damage.
- ◆ Check hose for weak or worn condition before each use. Make certain that all connections are tight and secure.
- ◆ Periodically inspect the pump and the system components. Perform routine maintenance as required (see Maintenance section).
- ◆ Protect pump from freezing conditions by draining liquid and pumping a permanent-type automobile antifreeze containing a rust inhibitor through the system, coating the pump interior. A 50% mixture with fluid is recommended.
- ◆ Do not operate a gasoline engine in an enclosed area. Be sure the area is well ventilated.
- ◆ Gasoline is a highly combustible fuel. The improper use, handling, or storage of Gasoline can be dangerous.
- ◆ Never touch or fill a hot engine.
- ◆ Use only pipe, hose and fittings rated for the maximum psi rating of the pump.
- ◆ Do not use these pumps for pumping fluid or other liquids for human or animal consumption.

CALIFORNIA PROPOSITION 65 WARNING

 **WARNING** This product and related accessories contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

INSTALLATION & OPERATION

INSTALLATION

PRELIMINARY TO MOUNTING

Before setting up the pump for operation, check to see that the motor and pump turn freely by hand. If it cannot be turned over by pulling on the recoil starter, open casing to check for obstructions lodged in pump.

BASKET STRAINER

⚠ WARNING Can trap persons against suction inlet. Always use strainer on suction hose to prevent entrapment.

A basket strainer is to be used when transferring solutions that may contain debris and solids which could become lodged in the pump or damage the impeller. Because of the high flow capacity of this pump, unknown debris could be siphoned off the bottom of the tank. Install the strainer on the suction side of the pump whenever possible to avoid pump damage.

LOCATION

Place unit as close to fluid source as possible to minimize suction lift, obtain the best pumping performance, and aid in priming.

For permanent installation, mount unit on a foundation that will support the weight of the pump and engine and also provide stability while the pump is running. For most permanent installations, it is advisable to bolt unit directly to foundation.

Settling and/or shifting during operation can cause piping to place excessive strain on the pump and may damage pump case. Set pump on hard level surface. Non-level surfaces may cause the oil sensor in the engine to shut down the unit.

SUCTION CONNECTION

Connect either rigid pipe or flexible suction hose to pump suction. If hose is selected, hose must be rated to hold the suction vacuum and prevent collapse while the pump is running.

Make the suction line a continuous rise from the fluid source to the pump. High spots can trap air and also make priming difficult. Make sure all connections are tight and free of air leaks.

Suction pipe or hose must be at least as large as the pump suction inlet in order for the pump to operate properly. If the inlet line is longer than approximately 6 feet, use the next size larger line. Minimum depth for the suction inlet is determined by the diameter of the suction line.

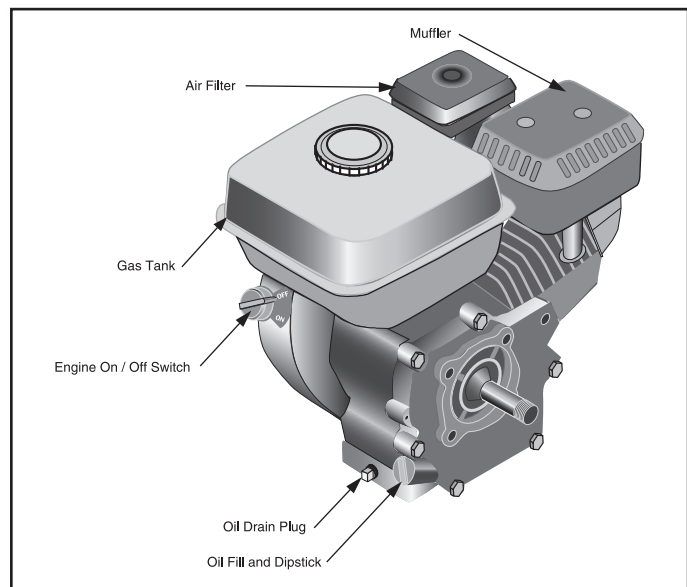
DISCHARGE CONNECTIONS

Your pump is equipped with a single port discharge. Select the appropriate size for the application. Install a "T" to allow easy priming of the pump without disconnecting the piping, or by using the priming plug on the housing.

1. Always drain and flush pumps before servicing or disassembling for any reason.
2. Before returning unit for repair, drain out all liquids and flush unit with neutralizing liquid. Then, drain the pump. Attach a tag or include a written notice certifying that this has been done.
3. Never store pumps containing hazardous chemicals.

OPERATIONS

For detailed PowerPro engine information, consult engine manual (Form L-1512).



BEFORE STARTING THE ENGINE

1. **ENGINE OIL:** Before checking/refilling engine oil, make sure the engine is stopped and placed on a stable, level surface.
2. Use oil recommended for ambient air temperatures that the engine will be running at. See chart below. Change oil after the first 20 hours and every 100 hours thereafter.

INSTALLATION & OPERATION

3. Remove the fill cap/dipstick. Add oil until the level reaches the bottom of the opening.
4. Check the oil level by pushing the cleaned dipstick into the oil-fill opening without screwing it in. Remove dipstick and inspect it. Add oil if needed. Reinstall the cap / dipstick.

The engine has a low-oil monitoring system. If the oil level drops too low, the system will automatically turn off the engine.

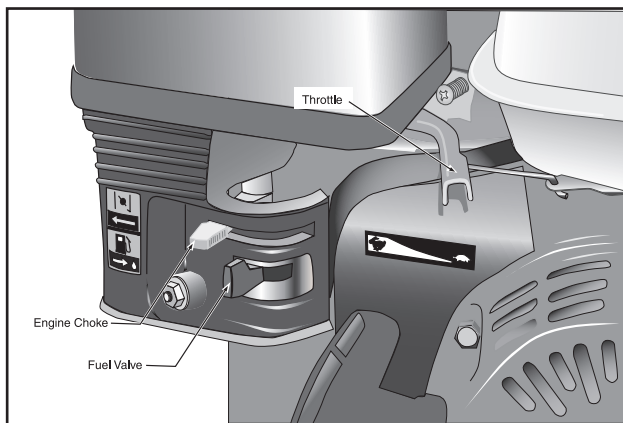
5. **FUEL:** DO NOT fill fuel tank when engine is running. Check fuel level in tank. Do not over fill. Use fresh, clean automotive fuel that has an octane rating of 86 or higher.
6. **PRIMING FLUID:** PUMP MUST NOT BE RUN DRY. On self-priming pumps, only the chamber needs to be filled with liquid. The pump must not run without the priming chamber completely filled with liquid as there is a danger of damaging the mechanical seal, which depends on the liquid for its lubrication.

Self-priming models can be primed by removing the filler cap located at the top of the pump where the discharge line is mounted to the pump, and filling the priming chamber with liquid.

After use, the priming chamber should be flushed and drained to avoid chemical corrosion and damage from freezing. Drain by removing the lower drain plug located at the bottom of the casing.

STARTING THE PUMP

1. Before starting engine, be sure the priming chamber is filled with liquid and the discharge hose is secure.



2. Open the Fuel Valve by moving to the right which allows fuel to the engine.
3. Move the Throttle (speed control) slightly to the left.

4. Choke: When starting a cold engine, move the choke control to the left (closed). As the engine warms up, move it towards the right (open). A warm engine should start with the choke open.
5. Engine Switch: The engine switch controls the ignition. Turn it to the "ON" position to start the engine.
6. Start engine by pulling recoil starter out quickly and forcefully. Repeat pulling until the engine starts.

PUMP OPERATION

1. Idle the engine for 3 to 5 minutes to warm it up.
2. Open the throttle lever to the upper zone after engine has warmed up.
3. Once the pump has primed, you will note a load on the engine; adjust rpm to proper speed for your pumping application.

STOPPING THE PUMP

1. Stop pump for a short time: Run engine throttled all the way down (fully to the right). Turn engine switch to OFF position.
2. Stopping pump for storage:
 - ◆ Turn fuel cock to OFF position instead of turning the engine switch off.
 - ◆ Let the engine idle for 2 to 3 minutes until fuel in carburetor is depleted and engine stops. If a valve is installed on the discharge hose, run pump with valve closed during this procedure.

PUMP STORAGE

1. Drain pump. Flush pump after use to avoid gumming or corrosion inside the pump.

Flush the pump and system with a solution that chemically neutralizes the liquid pumped. Mix according to manufacturer's directions to dissolve most residues remaining in the pump.
2. Drain all the fuel from the fuel tank, fuel lines, and filter.
3. Store pump in a clean, dry environment.

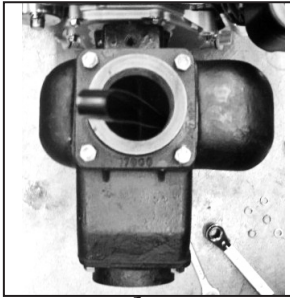
INSTALLATION & OPERATION

PUMP ASSEMBLY / DISASSEMBLY

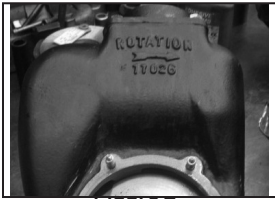
INITIAL ASSEMBLY: GAS ENGINE OR PEDESTAL MOUNT

1. Prior to assembly, visually inspect pump outlet for impeller spacer. Pump head kits are supplied with a metal shim inserted into the pump outlet and across the impeller face to ensure proper impeller spacing (Figure 1).

If the shim is in place, proceed to Step 11. If shim is missing, begin with Step 2.



2. Remove two-bolt clamp from pump shaft. (Figure 2)



3. Remove (6) nuts and lock washers holding the adapter to pump (Figure 3) being careful not to damage cork gasket between adapter and pump. Additionally, the mechanical seal is exposed after adapter is removed. Be careful not to damage seal faces.



Figure 3

4. Gently pry the adapter flange off using a pry bar against tabs on the adapter.
5. Leave cork gasket on pump over mounting studs. If gasket is damaged, replace with a new one. Gasket sealant is not required.

6. Remove impeller, drive sleeve, mechanical seal assembly.
7. Insert a shim between the impeller vanes and pump wear plate. A shim 1/2" wide and 0.040" to 0.050" thick is required. Verify thickness prior to use. Place shim material into the pump through the outlet port. Shim material must lie across the wear plate (Figure 4).



Figure 4

8. Reinstall impeller assembly ensuring the impeller vanes rest on the shim material.
9. Reinstall adapter flange over mounting studs and tighten (6) nuts and lock washers.
 - ◆ 2" pump – 5/16 x 18 nut – 11 ft.-lbs./ 14.9 Nm torque.
10. (Note: If impeller spacer was in place, start here.)

Install two-bolt clamp over drive sleeve. Be careful to ensure keyed portion of clamp sits in drive sleeve slot. Leave bolts and nuts finger tight. Some clamps may not have an integral key (Figure 5).

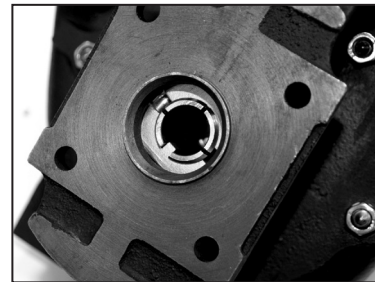


Figure 5

11. Install gas engine or pedestal into pump drive sleeve. Align keyway of drive source with slot in drive sleeve. Do not rotate the pump shaft during assembly. This may cause the shim to become dislodged.
12. Install (4) mounting bolts between pump adapter and gas engine, electric motor, or pedestal (Figure 6).
 - ◆ 2" pump – 5/16 x 24 screw – 11 ft.-lbs./ 14.9 Nm torque.



Figure 6

13. Apply medium strength threadlocker, and alternately tighten clamp bolts to ensure even torque and gap on either side of the clamp..
 - ◆ 2" pump - 5/16 x 18 screw - 13-15 ft-lbs./ 27.1 Nm torque.
14. Remove shim stock from pump outlet. Pump and drive source should rotate freely.

DISASSEMBLY: GAS ENGINE OR PEDESTAL MOUNT

1. Remove two-bolt clamp and bolts (Figure 7).

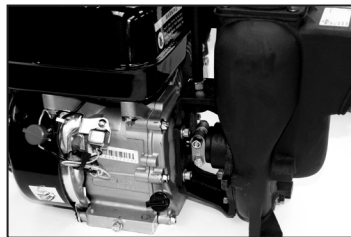


Figure 7

2. Remove (4) mounting bolts between pump adapter and engine, motor, or pedestal (Figure 8).



Figure 8

3. Remove engine or pedestal. Drive source may need to be pried off. Use caution not to damage drive source or pump.
4. Remove (6) nuts and lock washers holding adapter to pump. Mechanical seal is exposed after adapter is removed. Be careful not to damage seal faces.
5. Gently pry the adapter flange off using a pry bar against tabs on the adapter.

6. Remove impeller, drive sleeve, mechanical seal assembly.
7. Remove cork gasket and discard. Remove any gasket residue from adapter and pump faces.

SERVICE INSTRUCTIONS

1. Inspect wear plate for excessive wear, surface grooves or impeller contact. Replace if needed.
2. Remove two 3/8" stainless steel screws from wear plate (Figure 9).

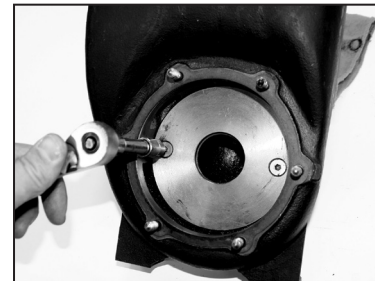


Figure 9

Note: Older models have acorn nuts and plastic washers on the front of the pump. If equipped, remove these first (Figure 10).



Figure 10

3. Install new wear plate, making sure pump surface and plate are clean and the plate sits flat against the pump.
4. Reinstall stainless steel screws.
5. Reinstall plastic washers, and acorn nuts on older models.

MAINTENANCE

MECHANICAL SEAL

1. Remove seal and spring from impeller/drive sleeve assembly (Figure 11).



Figure 11

2. Clean drive sleeve surface. Surface may be cleaned with 400 grit or higher sandpaper. If sleeve surface is worn, grooved or pitted, replace drive sleeve.
Note: Worn or damaged impeller/drive sleeve may cause the pump to under perform or become unbalanced, causing mechanical seal damage.
3. Install new seal half onto drive sleeve. Careful attention must be taken as to not scratch or damage the carbon face during installation.
4. Remove ceramic half from adapter flange.
5. Clean flange opening with a wire brush and/or sandpaper (Figure 12). Careful attention must be taken as to not scratch or damage the ceramic face during installation.



Figure 12

6. Apply light lubrication to the outer rubber cup of the ceramic seal.
7. Install new seal half. Use your thumbs to apply light even pressure to set the cup in the adapter pocket (Figure 13).

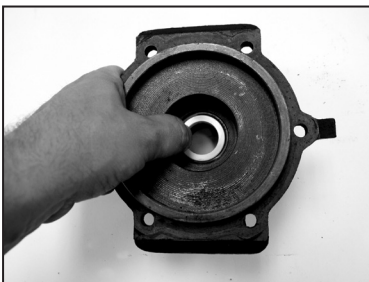


Figure 13

8. Clean rotating and stationary seal faces with alcohol wipe.

ENGINE MAINTENANCE

AIR FILTER

The air filter should be checked every month for dust and dirt accumulation. Every 6 months, the filter element should be removed and cleaned. Clean the foam element with detergent and warm water. Squeeze out excess water and let it dry. Before reinstalling the filter element, soak it with engine oil and squeeze out the excess. Reinstall the filter. The engine will smoke upon start-up if too much oil is left in the filter element.

OIL LEVEL

The oil level should be checked before each use.

OIL CHANGE

The oil should be changed in the first month, and then every 6 months (or 100 hours of operation). To drain the oil, run the engine until warm. Turn off the engine, remove the oil drain plug, and let the oil drain into a pan. Reinstall the plug and fill with oil. (Capacity: 20 ounces.)

Note: Dispose of used oil responsibly. DO NOT pour it down drains, onto the ground or put it in the trash. Most communities have collection points for used oil.

SPARK PLUG

The spark plug should be checked and cleaned every 6 months or 100 hours. The spark plug should be replaced if it is damaged or excessively worn.

RUNNING THE ENGINE

Refer to engine operation section of this manual for starting and operating instructions.

Pump performance varies depending on engine RPM. Refer to engine operation to adjust engine speed.

PUMP LUBRICATION

Pump liquid end does not require any grease or oil for lubrication. The mechanical seal is lubricated by fluid when the pump is operating..

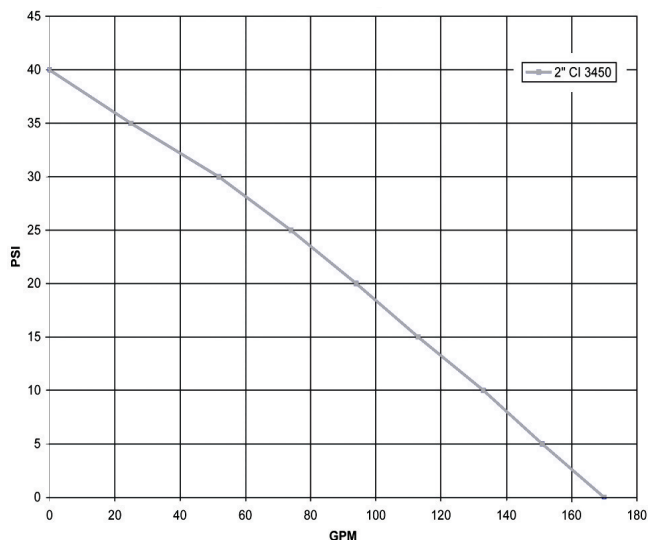
SPECIFICATIONS & PERFORMANCE

SPECIFICATIONS

Max Flow Rate:.....170 GPM
 Max. Pressure:..... 42 PSI
 Max. Total Head:.....97 FT
 Ports:.....2" NPT Inlet
 2" NPT Outlet
 Engine:PowerPro 6.5 HP

1532C DIESEL FUEL TRANSFER PUMP SERIES										English Units
PSI	0	5	10	15	20	25	30	35	40	42
GPM	170	155	140	123	106	87	65	42	14	0

PERFORMANCE IN FLUID



NOTE: Hypro pumps are not designed to be used as clean water pumps as defined in 10CFR parts 429 and 431.

TROUBLESHOOTING

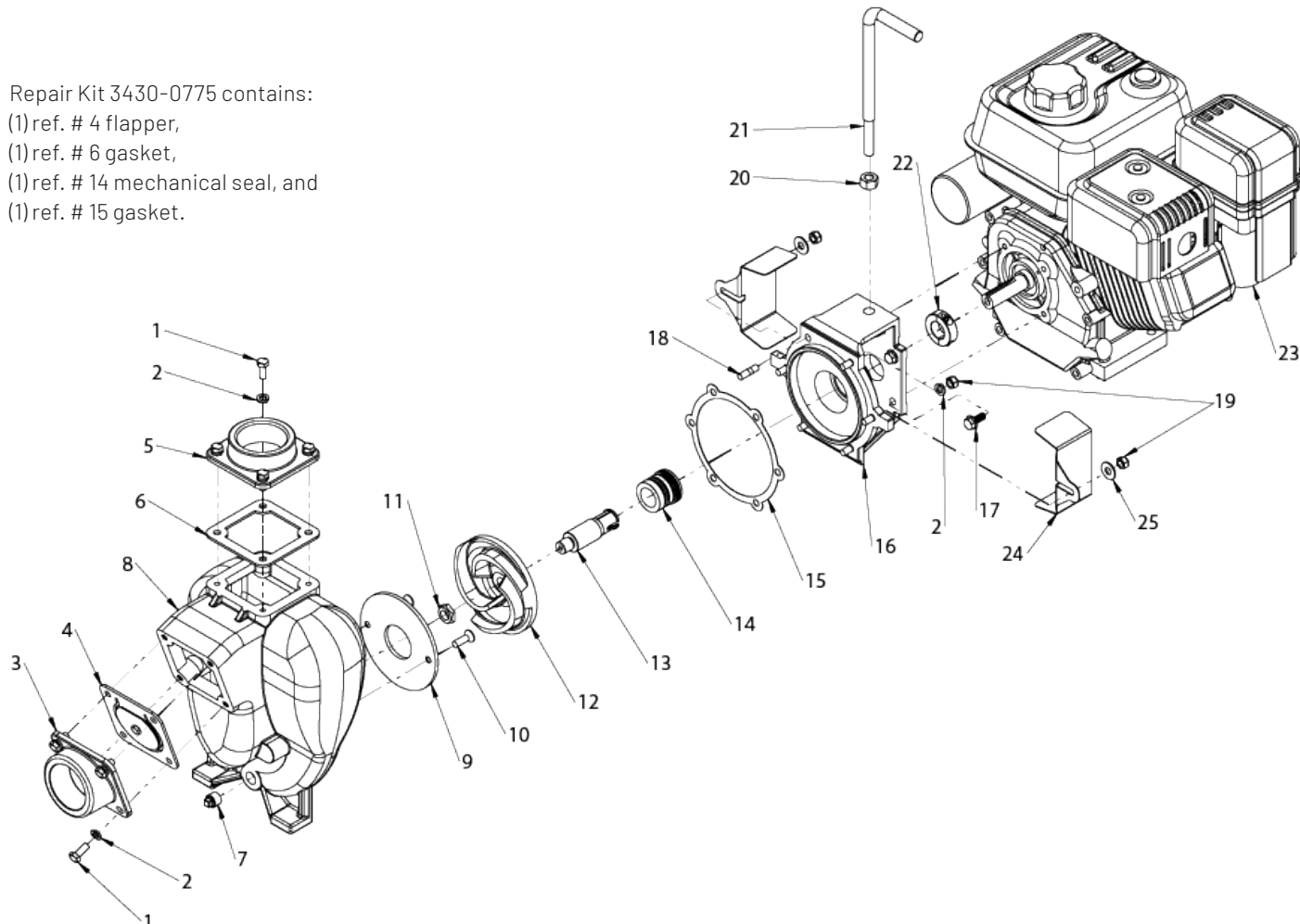
SYMPTOM	PROBABLE CAUSE															
	ENGINE				PUMP						SYSTEM					
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
No fluid delivered					X	X	X				X	X	X			X
Not enough fluid delivered	X						X	X			X	X	X			X
Not enough pressure	X						X	X			X	X	X			
Engine heats excessively		X	X					X	X	X		X		X		
Abnormal noise and/or vibration				X	X		X			X		X	X	X		
Pump works for a while, then stops				X			X			X			X		X	X

PROBLEM	POSSIBLE CAUSE(S)
ENGINE	
A. Speed too low.	Refer to engine section.
B. Rotating and/or reciprocating parts drag.	Refer to engine section
C. Speed too high.	Maximum engine speed not to exceed engine manufacturer's recommendation.
D. Loose or broken parts.	Refer to engine section.
PUMP	
E. Not primed.	Re-prime, inspect suction system for air leaks, and/or check assembly.
F. Pump take too long.	Check for air leaks or defective check valve.
G. Flow completely or partially blocked.	Locate and remove obstruction.
H. Internal leakage.	Check clearances between faces of vanes and case. Clearance should not exceed 1/32".
I. Rotating part(s) drag.	Inspect. Repair.
J. Loose or broken part(s).	Inspect. Repair.
SYSTEM	
K. Pressure required by system at design flow rate exceeds pump's pressure rating.	Compare pump pressure and flow rate against performance chart. Reduce system pressure requirement. Increase pump's pressure capability.
L. Obstruction in suction piping.	Locate and remove obstruction. Attach strainer.
M. Suction lift is too high.	Check with gauge or measure vertical distance between fluid surface and center line of pump, allowing for friction loss in suction pipe. Reduce flow rate to obtain desired lift. Refer to pump performance chart.
N. Discharge head is too low.	Decrease rate of flow.
O. Suction inlet not immersed deep enough.	Refer to Installation section.
P. Leaky suction line or connection admitting air.	Repair or replace suction line. Tighten connections.

PARTS LIST

Repair Kit 3430-0775 contains:

- (1) ref. # 4 flapper,
- (1) ref. # 6 gasket,
- (1) ref. # 14 mechanical seal, and
- (1) ref. # 15 gasket.



No.	Qty.	Part No.	Description
1	8	2210-0160	Cap Screw, 5/16-18
2	14	2260-0051	Lock Washer, 5/16
3	1	2404-0363	Inlet Flange (2" NPT)
4	1	1700-0239	Flapper Valve Assembly (buna)
5	1	2404-0362	Discharge Flange (2" NPT)
6	1	1700-0240	Discharge Flange Gasket (Buna)
7	1	2406-0041	External Square Drain Plug (3/8" NPT)
8	1	0150-9032C	Self-Priming Chamber
9	1	3210-0094	Wear Plate
10	2	2215-0004	Screw, 5/16-18
11	1	2250-0095	Impeller Nut, 9/16-18
12	1	0400-9032C	Impeller

No.	Qty.	Part No.	Description
13	1	0501-9032	Shaft Sleeve (3/4")
14	1	24607S-SHU	Mechanical Seal (Buna), 1"
15	1	1700-0241	Gasket
16	1	0750-9032C	Mounting Flange (Gas Engine)
17	4	2210-0143	Hex Head Bolt
18	6	2205-0021	Stud
19	6	18572-SHW	5/16-18 N.C. Zinc Locknut
20	1	2250-0093	Hex Nut, 7/16-20
21	1	2801-0007	Handle
22	1	1420-0032	Shaft Sleeve Clamp
23	1	2541-0053	6.5 HP PowerPro Engine (1532C-6SP)
	1	2541-0058	Honda GX160 (1532C-160HSP)
24	2	2810-0025	PTO Shield
25	2	2270-0040	Washer
N/S	38	1430-0043	Shim

LIMITED WARRANTY ON HYPRO/SHURFLO AGRICULTURAL PUMPS & ACCESSORIES

The Hypro/Shurflo agricultural products brought to you by Pentair Flow Technologies, LLC and its directly related affiliates (collectively, "Hypro") are warranted to be free of defects in material and workmanship under normal use for the time periods listed below, with proof of purchase.

- Pumps and Closed Transfer Systems: One (1) year from the date of purchase.
- Accessories: Ninety (90) days from the date of purchase.

This limited warranty will not apply to products that were improperly installed, misused, misapplied, damaged, altered, or incompatible with fluids or components not manufactured by Hypro. This limited warranty is the sole and exclusive warranty provided by Hypro for the products. HYPRO DISCLAIMS ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. HYPRO SHALL NOT BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES, INCLUDING BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFITS, GOODWILL, USE, DATA OR OTHER INTANGIBLE LOSSES (EVEN IF HYPRO HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES), WITH RESPECT TO THIS LIMITED WARRANTY OR ANY OTHER MATTER RELATING TO THE PRODUCTS. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF CERTAIN WARRANTIES OR THE LIMITATION OR LIMITATION OF LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CERTAIN CIRCUMSTANCES. ACCORDINGLY, SOME OF THE ABOVE LIMITATIONS MAY NOT APPLY.

Hypro's obligation under this limited warranty policy is limited to repair or replacement of the product, as determined by Hypro in its sole and absolute discretion. This limited warranty is in lieu of all other warranties, expressed or implied, and no other person is authorized to give any other warranty or assume obligation or liability on Hypro's behalf. Hypro shall not be liable for any labor, damage or other expense.

RETURN PROCEDURES

Buyer must give Hypro notice in writing of any alleged defect covered by this warranty within thirty (30) days of the discovery of such defect during the warranty period. Buyer should be prepared to give Hypro full details the defect, including the model number, date of purchase, and from whom you purchased your product. Hypro may request additional information, and may require a sketch to illustrate the problem.

Contact the appropriate Hypro Service Department to receive a Return Merchandise Authorization number (RMA#). Returns are to be shipped with the RMA number clearly marked on the outside of the package. Hypro shall not be liable for freight damage incurred during shipping. Please package all returns carefully. All products returned for warranty work should be sent shipping charges prepaid:

US/CANADA

Technical: 800-445-8360
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ALL OTHER REGIONS

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SHURflo Warranty: 800-854-3218
hypro.technical@pentair.com
rvreturns@pentair.com
marinereturns@pentair.com

All products must be flushed of any chemical (ref. OSHA section 1910.1200(d)(e)(f)(g)(h)) and hazardous chemicals must be labeled/ tagged before being shipped* to Hypro for service or warranty consideration. Hypro reserves the right to request a Material Safety Data Sheet from the returnee for any pump/product it deems necessary. Hypro reserves the right to "disposition as scrap" products returned which contain unknown fluids. Hypro reserves the right to charge the returnee for any and all costs incurred for chemical testing, and proper disposal of components containing unknown fluids. Hypro requests this in order to protect the environment and personnel from the hazards of handling unknown fluids. All returns will be tested per Hypro's factory criteria. Where products are found not to be defective (under the terms of this limited warranty), then the Buyer must pay return packing and freight charges. Where products are tested and found to be covered by this limited warranty, then Pentair will pay for return packing and freight charges. Hypro reserves the right to choose the method of transportation.

*Carriers, including U.S.P.S., airlines, UPS, ground freight, etc., require specific identification of any hazardous material 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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