

# HDI-SP/TP

SUBMERSIBLE HYDRAULIC PUMPS

## Operators' Guide



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# SAFETY PRECAUTIONS

## INTRODUCTION

Our hydraulically powered submersible dewatering and trash pumps have been engineered to provide long lasting pumping performance with economic advantages that no other pump can match. Yet, even a well-designed and well-built pump can malfunction or become hazardous in the hands of an experienced or untrained user. Anyone that operates or comes in contact with these products must thoroughly read and understand this manual and related equipment manuals prior to handling, operating or servicing these pumps.

## SAFETY RULES

1. Only use the pump in accordance with the manufacturer's specifications and limitations.
2. Only trained personnel shall operate the pump, conduct maintenance or repairs. A trained person has read and thoroughly understands this instruction manual and related equipment manuals and, through training and experience, has shown knowledge regarding safe operational procedures.
3. Always use appropriate personal protection equipment (PPE) including, but not limited to: eye and ear protection, safety shoes, hard hat and work gloves.
4. Safety goggles must be worn at all times by the operator and any persons or bystanders within 100 feet of the pump or its discharge point.
5. Never lift or lower the pump by its hydraulic hoses; use a cable and a lifting eye where applicable.
6. Do not use any hose showing signs of damage or wear, including both hydraulic and discharge hoses.
7. Secure the discharge hose before operating.
8. Do not allow the discharge hose to be kinked while in operation. If pumping in a shallow basin use a 90 degree elbow on the pump to prevent kinking.
9. Keep all body parts clear from discharge hose and pump inlet. Keep all body parts away from pressurized hydraulic hoses.
10. Always stop hydraulic power source and depressurize the hydraulic system before connecting or disconnecting hydraulic hoses.
11. Never try to adjust or service the pump while connected to a hydraulic power source.
12. Hydraulic hoses must be rated for 2500 PSI working pressure and hydraulic power source must not provide more than 2250 PSI at any time.

# OPERATION AND MAINTENANCE

## BEFORE OPERATION

1. Anyone that operates or comes in contact with these products must thoroughly read and understand this manual and related equipment manuals prior to handling, operating or servicing these pumps.
2. Check hydraulic flow and relief pressure at the power source. Never exceed the pumps maximum flow rate or pressure. The power source must be open center, single directional and have an unrestricted flow from the pump back to the reservoir.
3. Inspect all hoses for breaks, cracks, abrasions, kinks, bulges or erosion from chemical exposure before use. Replace damaged hoses before use. Inspect pump for damage and insure all decals and warning labels are intact and legible.

## SET UP AND WORK AREA

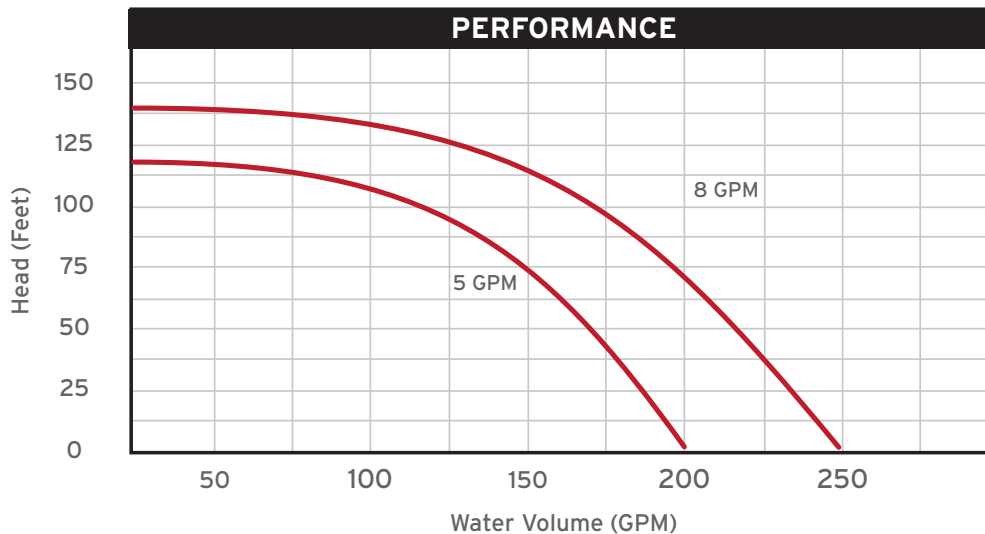
1. Do not allow the discharge hose to be kinked while in operation. If pumping in a shallow basin use a 90 degree elbow on the pump to prevent kinking.
2. Keep all body parts clear from discharge hose and pump inlet. Keep all body parts away from pressurized hydraulic hoses.
3. Ensure all coworkers and bystanders are kept at a safe distance from all mechanical equipment including the pump and its discharge point.
4. To start the pump, turn on the hydraulic flow making sure not to exceed the rated flows and pressures.
5. If the pump fails to perform, properly check the troubleshooting chart in the back of this manual for possible causes. Never attempt to service the pump while connected to a hydraulic power source.

## DAILY MAINTENANCE

1. Inspect hoses for breaks, cracks or abrasions. Never attempt to repair a hose; replace damaged hoses immediately.
2. Disconnect and clean hydraulic hoses and couplers after each use to prevent the introduction of foreign material into the hydraulic system.
3. Ensure all fasteners are tight.
4. Replace all parts that are broken or worn before each use.
5. Clean pump thoroughly before storage to prevent excessive build-up that could cause damage or restrict performance.

# SP20

## 2" DISCHARGE SUBMERSIBLE WATER PUMP

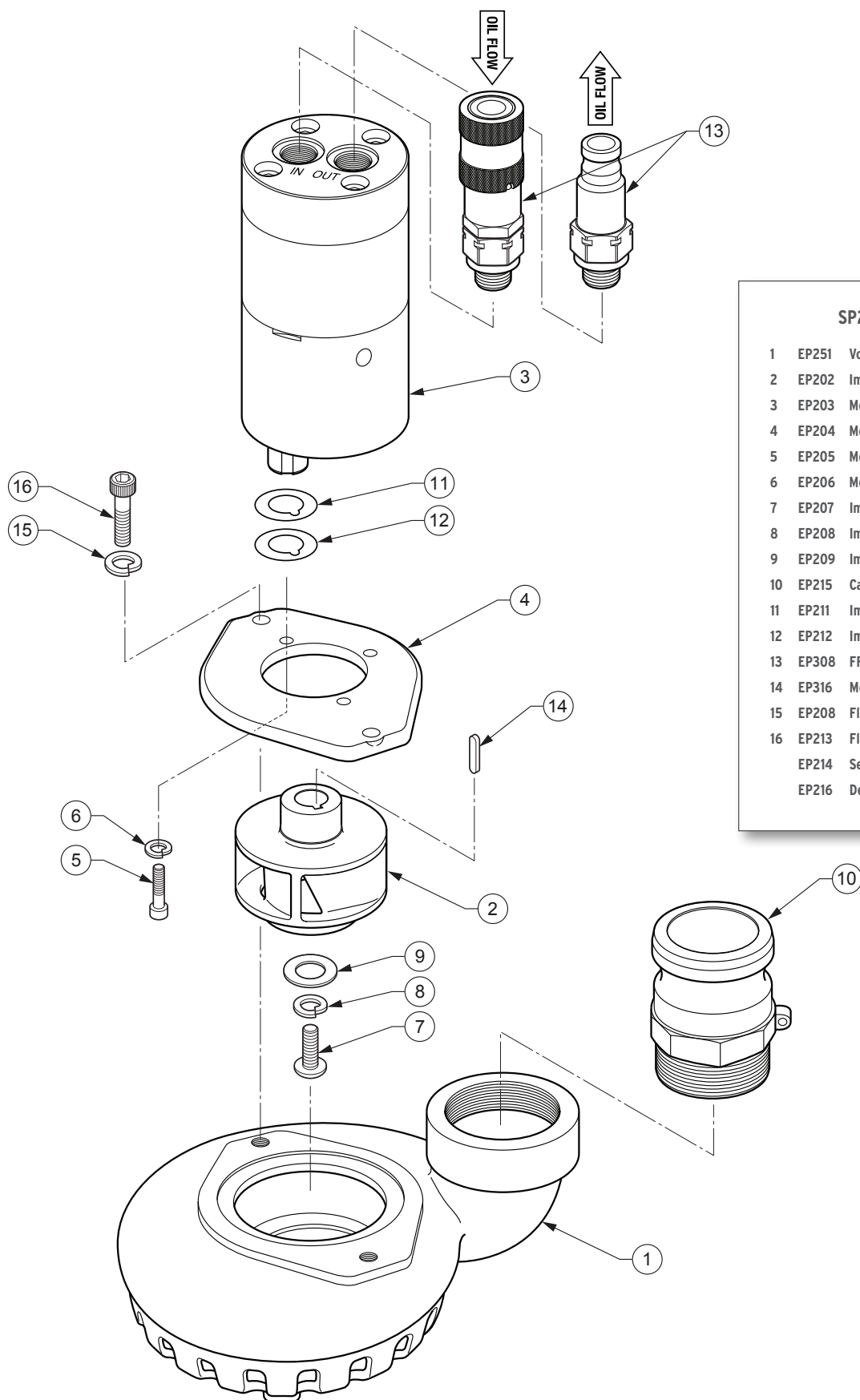


Testing was done in a controlled environment with a fixed discharge assembly using regulated pressures and flows. Results could vary in field conditions.

SP20 2.0" SUBMERSIBLE WATER PUMP SPECIFICATIONS	
PUMPING CAPACITY	250 gpm (946 lpm)
PUMP TYPE	Water
CONSTRUCTION	Aluminum Body/Stainless Impeller
DISCHARGE	2" Cam Loc - 2" NPT Female
WEIGHT	12 lbs. (5.5 kg)
LENGTH	9.5 inches (241 mm)
WIDTH	8 inches (203 mm)
HEIGHT	9 inches (229 mm)
HYDRAULIC FLOW RANGE	4-9 gpm (15-34 lpm)
MAXIMUM PRESSURE	2000 psi (138 bar)
MAXIMUM BACK PRESSURE	250 psi (17 bar)

**WARRANTY** - Submersible Pumps and their associated parts are warranted against defects in material and workmanship for a period of twelve months from the date of purchase. Repair or replacement of defective parts will be approved by manufacturer. This warranty becomes void if maximum pressures or flows are exceeded. Backpressure should be measured at the tool before being used. Excessive backpressure will damage shaft seal.



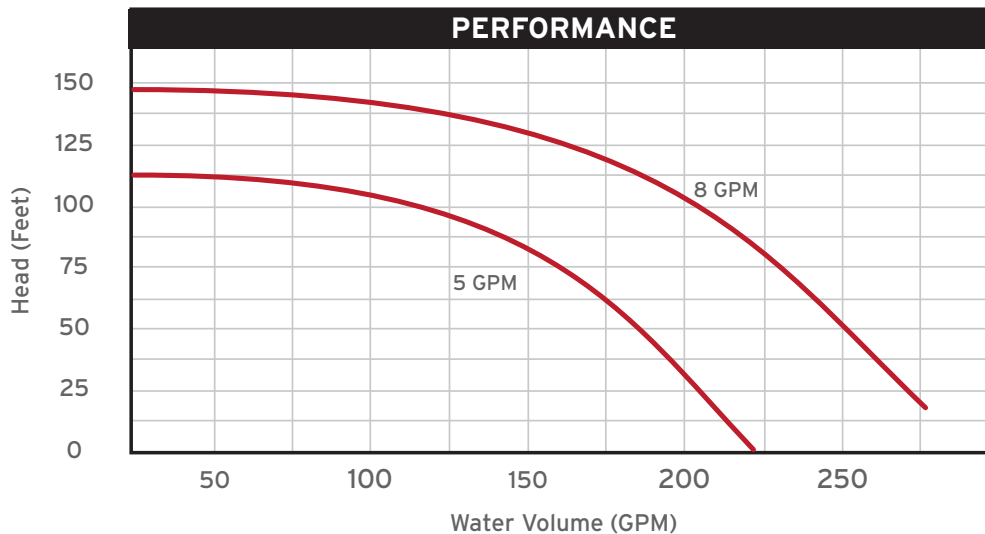


#### SP20 PARTS LIST

1	EP251	Volute 2-1/2 Inch	1
2	EP202	Impeller	1
3	EP203	Motor Assembly	1
4	EP204	Motor Mount	1
5	EP205	Motor Mount Bolts	3
6	EP206	Motor Mount Washers	3
7	EP207	Impeller Bolt	1
8	EP208	Impeller Lock Washer	1
9	EP209	Impeller Washer	1
10	EP215	Cam Loc 2-1/2"	1
11	EP211	Impeller Shim .010	1
12	EP212	Impeller Shim .020	1
13	EP308	FF Coupler Set	1
14	EP316	Motor Shaft Key	1
15	EP208	Flange Lock Washer	2
16	EP213	Flange Bolt	2
	EP214	Seal Kit	1
	EP216	Decal Kit	1

# SP25

## 2.5" DISCHARGE SUBMERSIBLE WATER PUMP



### SP25 2.5" SUBMERSIBLE WATER PUMP SPECIFICATIONS

PUMPING CAPACITY	275 gpm (1040 lpm)
PUMP TYPE	Water
CONSTRUCTION	Aluminum Body/Stainless Impeller
DISCHARGE	2-1/2" Cam Loc - 2-1/2" NPT Male
WEIGHT	12 lbs. (5.5 kg)
LENGTH	9.5 inches (241 mm)
WIDTH	8 inches (203 mm)
HEIGHT	9 inches (229 mm)
HYDRAULIC FLOW RANGE	4-8 gpm (15-30 lpm)
MAXIMUM PRESSURE	2000 psi (138 bar)
MAXIMUM BACK PRESSURE	250 psi (17 bar)

**WARRANTY** - Submersible Pumps and their associated parts are warranted against defects in material and workmanship for a period of twelve months from the date of purchase. Repair or replacement of defective parts will be approved by manufacturer. This warranty becomes void if maximum pressures or flows are exceeded. Backpressure should be measured at the tool before being used. Excessive backpressure will damage shaft seal.



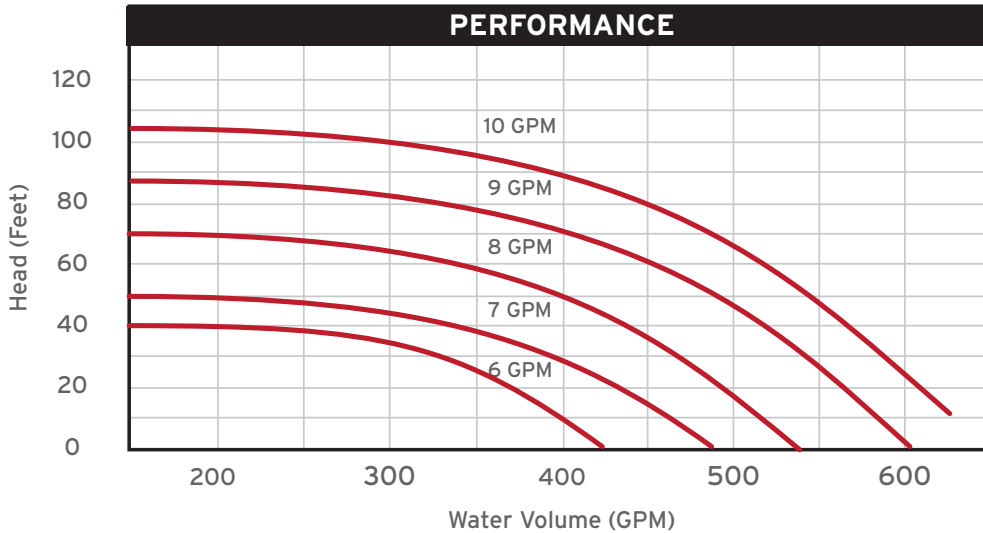
Testing was done in a controlled environment with a fixed discharge assembly using regulated pressures and flows. Results could vary in field conditions.





# SP30

## 3" DISCHARGE SUBMERSIBLE WATER PUMP

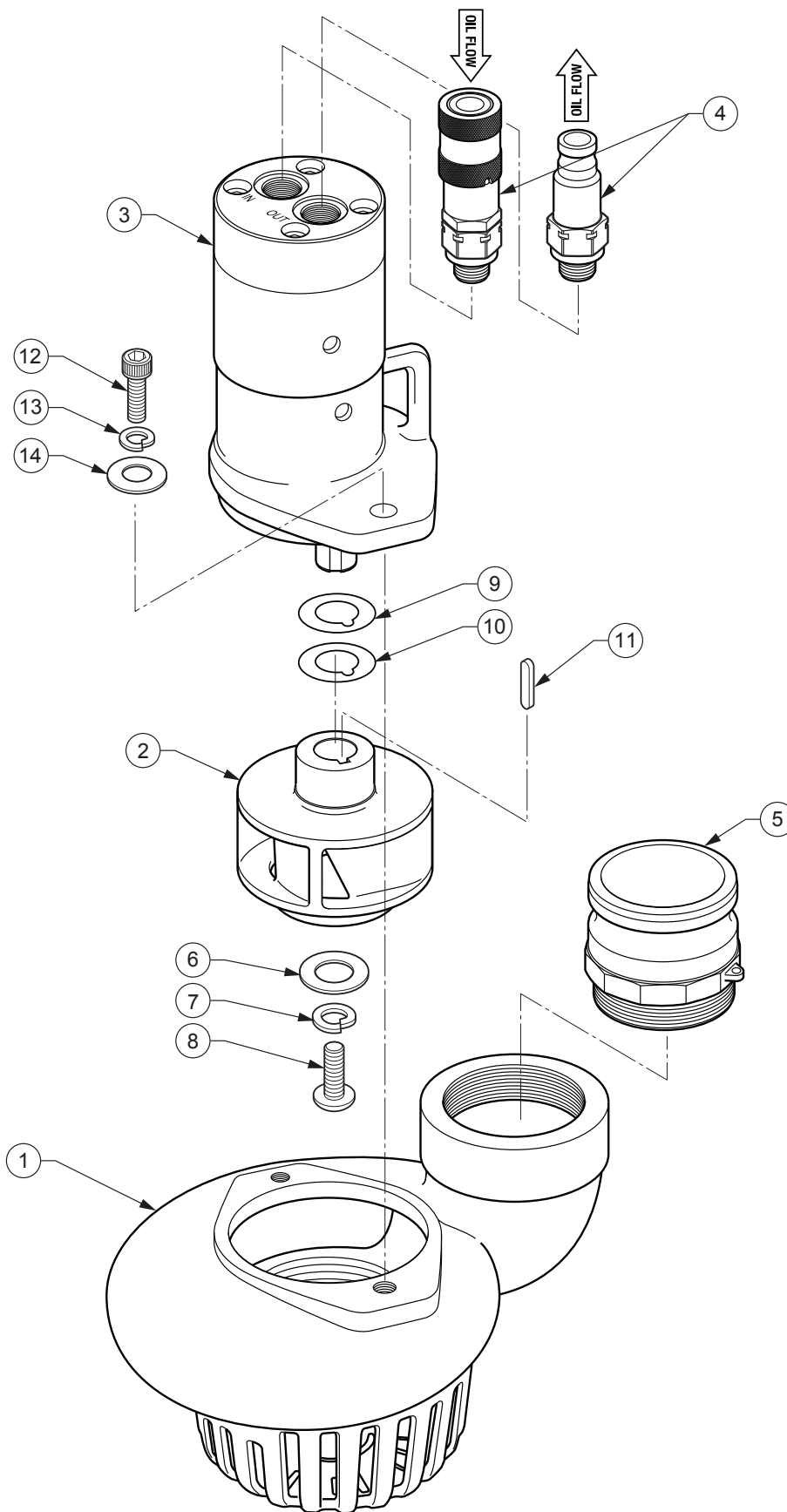


Testing was done in a controlled environment with a fixed discharge assembly using regulated pressures and flows. Results could vary in field conditions.

SP30 3" SUBMERSIBLE WATER PUMP SPECIFICATIONS	
PUMPING CAPACITY	500 gpm (1893 lpm)
PUMP TYPE	Water
CONSTRUCTION	Aluminum Body/Stainless Impeller
DISCHARGE	3" Cam Loc - 3" NPT Female
WEIGHT	21 lbs. (9.5 kg)
LENGTH	12 inches (305 mm)
WIDTH	10 inches (254 mm)
HEIGHT	12 inches (305 mm)
HYDRAULIC FLOW RANGE	7-11 gpm (26-42 lpm)
MAXIMUM PRESSURE	2000 psi (138 bar)
MAXIMUM BACK PRESSURE	250 psi (17 bar)

**WARRANTY** - Submersible Pumps and their associated parts are warranted against defects in material and workmanship for a period of twelve months from the date of purchase. Repair or replacement of defective parts will be approved by manufacturer. This warranty becomes void if maximum pressures or flows are exceeded. Backpressure should be measured at the tool before being used. Excessive backpressure will damage shaft seal.



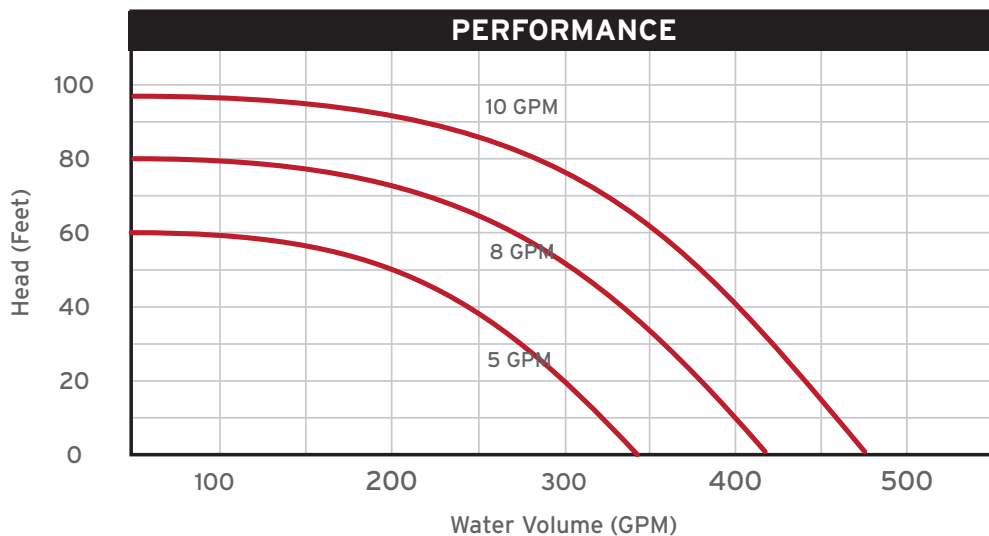


#### SP30 PARTS LIST

	P/N	DESCRIPTION	REQ
1	EP351	Volute 3"	1
2	EP352	Impeller	1
3	EP353	Motor Assembly	1
4	EP354	Motor Mount Bolts	2
5	EP355	Motor Mount Washers	2
6	EP356	Lock Washers	2
7	EP207	Impeller Bolt	1
8	EP208	Impeller Lock Washer	1
9	EP209	Impeller Washer	1
10	EP211	Impeller Shim .010	1
11	EP212	Impeller Shim .020	1
12	EP360	Cam Loc 3"	1
13	EP308	FF Coupler Set	1
14	EP316	Motor Shaft Key	1
	EP364	Seal Kit	1
	EP365	Decal Kit	1

# TP30

## 3" DISCHARGE SUBMERSIBLE TRASH PUMP



### TP30 3" SUBMERSIBLE TRASH PUMP SPECIFICATIONS

PUMPING CAPACITY	475 gpm (1800 lpm)
PUMP TYPE	Trash-Sludge-Slurry-Water
CONSTRUCTION	Urethane Volute and Impeller
DISCHARGE	3" Cam Loc - 3" NPT Female
WEIGHT	30 lbs. (13.6 kg)
LENGTH	14 inches (355 mm)
WIDTH	12 inches (305 mm)
HEIGHT	13 inches (330 mm)
HYDRAULIC FLOW RANGE	7-11 gpm (26-42 lpm)
MAXIMUM PRESSURE	2000 psi (138 bar)
MAXIMUM BACK PRESSURE	250 psi (17 bar)

**WARRANTY** - Submersible Pumps and their associated parts are warranted against defects in material and workmanship for a period of twelve months from the date of purchase. Repair or replacement of defective parts will be approved by manufacturer. This warranty becomes void if maximum pressures or flows are exceeded. Backpressure should be measured at the tool before being used. Excessive backpressure will damage shaft seal.



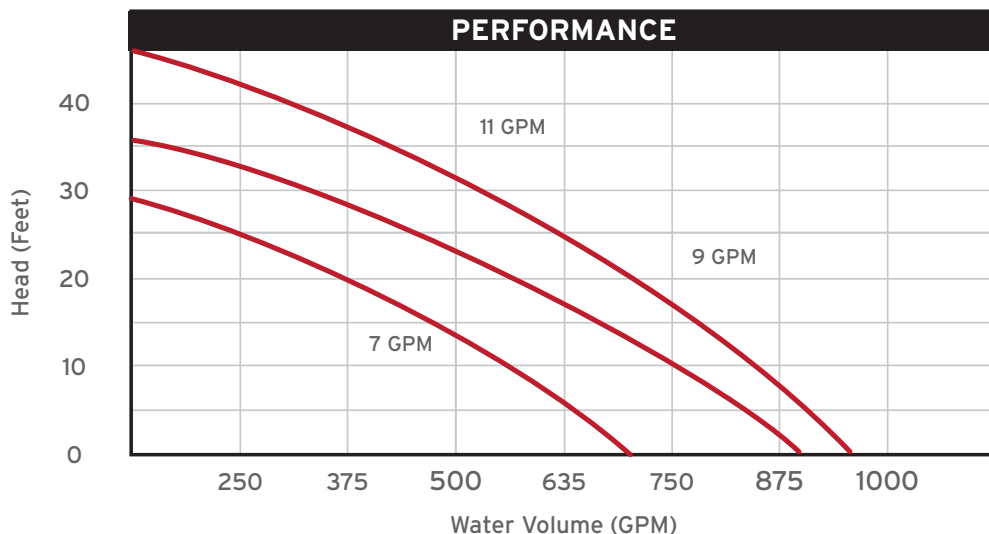
Testing was done in a controlled environment with a fixed discharge assembly using regulated pressures and flows. Results could vary in field conditions.





# TP40

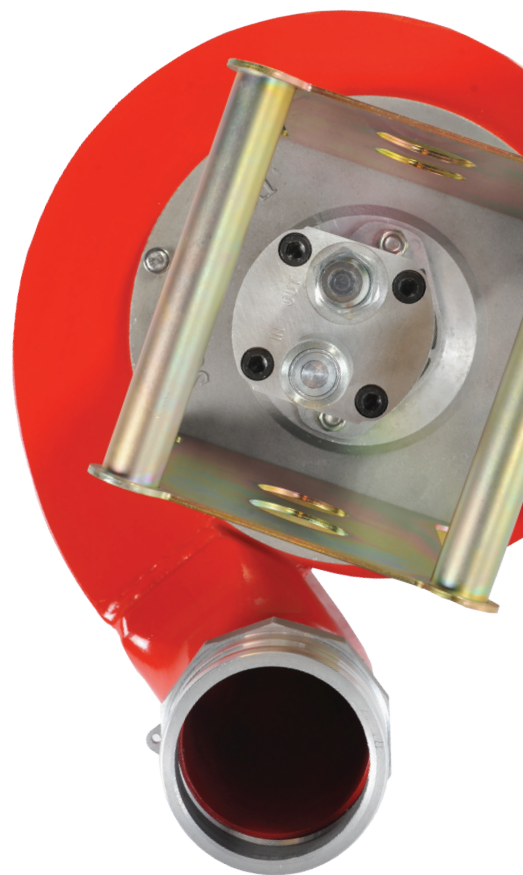
## 4" DISCHARGE SUBMERSIBLE TRASH PUMP

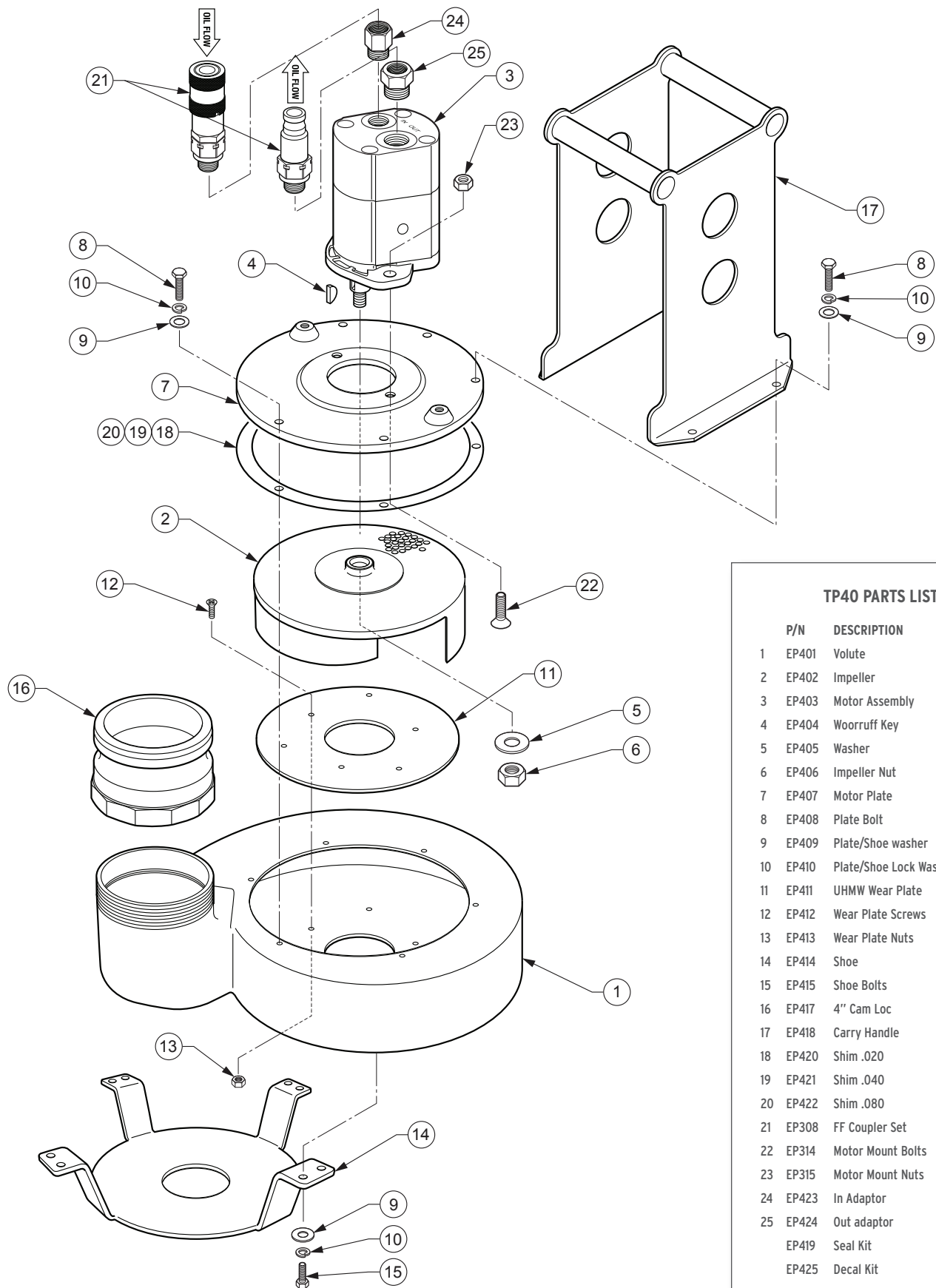


Testing was done in a controlled environment with a fixed discharge assembly using regulated pressures and flows. Results could vary in field conditions.

TP40 4" SUBMERSIBLE TRASH PUMP SPECIFICATIONS	
PUMPING CAPACITY	875 gpm (3312 lpm)
PUMP TYPE	Trash-Sludge-Slurry-Water
CONSTRUCTION	Steel Fabrication/Iron Impeller
DISCHARGE	4" Cam Loc - 3" NPT Male
WEIGHT	59 lbs. (26.8 kg)
LENGTH	19 inches (482 mm)
WIDTH	15 inches (381 mm)
HEIGHT	19 inches (482 mm)
HYDRAULIC FLOW RANGE	7-9 gpm (26-34 lpm)
MAXIMUM PRESSURE	2000 psi (138 bar)
MAXIMUM BACK PRESSURE	250 psi (17 bar)

**WARRANTY** - Submersible Pumps and their associated parts are warranted against defects in material and workmanship for a period of twelve months from the date of purchase. Repair or replacement of defective parts will be approved by manufacturer. This warranty becomes void if maximum pressures or flows are exceeded. Backpressure should be measured at the tool before being used. Excessive backpressure will damage shaft seal.





#### TP40 PARTS LIST

P/N	DESCRIPTION	REQ
1	EP401 Volute	1
2	EP402 Impeller	1
3	EP403 Motor Assembly	1
4	EP404 Wooruff Key	1
5	EP405 Washer	1
6	EP406 Impeller Nut	1
7	EP407 Motor Plate	1
8	EP408 Plate Bolt	6
9	EP409 Plate/Shoe washer	14
10	EP410 Plate/Shoe Lock Washer	14
11	EP411 UHMW Wear Plate	1
12	EP412 Wear Plate Screws	6
13	EP413 Wear Plate Nuts	6
14	EP414 Shoe	1
15	EP415 Shoe Bolts	8
16	EP417 4" Cam Loc	1
17	EP418 Carry Handle	1
18	EP420 Shim .020	1
19	EP421 Shim .040	1
20	EP422 Shim .080	1
21	EP308 FF Coupler Set	1
22	EP314 Motor Mount Bolts	2
23	EP315 Motor Mount Nuts	2
24	EP423 In Adaptor	1
25	EP424 Out adaptor	1
EP419	Seal Kit	
EP425	Decal Kit	

# WARRANTY

## LIMITED PRODUCT WARRANTY

Manufacturer warrants to the original purchaser that all products shall be free of defects in material and workmanship for a period of one year from the original date of sale. In no event shall the manufacturer be liable to the buyer or any other person or interest for any indirect, incidental or consequential damage or losses connected with the use or transportation of this product. Warranty is strictly limited to replacement or repair of the product only and is always at the sole discretion of the manufacturer.

## MANUFACTURER'S OBLIGATIONS

The manufacturer's sale obligation under this limited warranty is to repair and or replace parts deemed to be defective by the manufacturer. Parts and equipment cannot be returned without a returned goods authorization from the manufacturer. Shipping costs are not part of the warranty policy as most all warranty issues can be settled via electronic communications not limited to but including detailed photos.

## PARTS MANUFACTURED BY OTHERS

This warranty does not cover components manufactured by others. These parts are subject to the warranty of the specific manufacturer.

## WARRANTY EXCEPTIONS

The limited warranty does not include the following:

1. Equipment which has been abused, damaged, or used beyond its rated capacity or previously repaired by persons other than authorized service personnel.
2. Lost time or any other costs related directly or indirectly to the pumps performance or failure.
3. Any failure or performance deficiency attributed to misuse. Misuse is defined as any use of the product outside of its designed intent.
4. Costs of repairing damage caused by poor or improper maintenance.
5. Warranty of product that has been modified.
6. Transportation costs.
7. Any costs that exceed the value of a complete tool replacement.

# TROUBLESHOOTING

## TROUBLESHOOTING TIPS AND FIELD SOLUTIONS

If a performance problems occurs, consult the chart below for diagnoses and possible solutions. Before consulting the chart , ensure the pump is receiving the proper pressure and flow. Excessive back pressure directly effects pumps performance will prematurely wear out and destroy the shaft seal causing the pump to leak hydraulic fluid. Measure back pressure in hydraulic return line at power source during maximum recommended flow.

PROBLEM	CAUSE	SOLUTION
Pump will not pump water	No Hydraulic Flow or Pressure	Check hydraulic pressure supply with a flow and pressure meter
	Defective couplers or couplers hooked up backwards	Replace couplers or install in correct orientation
	Impeller jammed with debris	Take off cover, remove debris
	Pump Cavitates	Clean weep hole if applicable, remove restrictions obstructing inlet
Poor pump performance	Hydraulic flow reversed	Check and correct, these pumps can not work properly using as reversing valve
	Inadequate hydraulic fluid flow	Check hydraulic pressure supply with a flow and pressure meter
	Pump submerged in sediment	Remove from sediment
	Pump Inlet restricted	Inspect and clean
	Discharge hose kinked or restricted	Inspect and clean
	Excessive system back pressure	Inspect and reroute return line if necessary
	Water lift too high	Reduce lift to recommended height
	Impeller worn or damaged	Inspect adjust, shim or replace
Hydraulic Fluid in discharge	Motor shaft seal failure	Reseal hydraulic motor

Assembled and Tested in USA using Global Materials

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