

INSTRUCTION SHEET & PARTS LIST

TRASH PUMP

VTP-4

UT01605

SAFETY PRECAUTIONS

1. Before starting the pump, study all of the instructions in this booklet and the Briggs & Stratton engine manual supplied with this pump. Make sure you thoroughly understand how to operate the machine. Proper preparation, operation and maintenance will result in operator safety, optimum performance and long unit life.
2. Be sure each person who operates the machine is properly instructed as to its safe operation.
3. This pump is designed for pumping water. It may be used for pumping other liquids of non-hazardous type, but under no circumstances should it be used for pumping hazardous material.
4. Always keep the machine and associated equipment clean, properly serviced and maintained.
5. Always shut off the engine before fueling. Never add fuel to a machine with a running or hot engine. Move at least 10 feet (3m) from refueling site before starting engine. **DO NOT SMOKE.**
6. Never operate the machine in an explosive atmosphere, near combustible materials or where ventilation is not sufficient to carry away the exhaust fumes.
7. Always be sure that the machine is on secure footing and cannot shift around and injure someone. Remember that the suction hose on a pump tends to pull the pump down when it is filled with water.
8. Keep immediate working area free from all bystanders.
9. When starting the machine, be sure that nothing is in a position to be hit by the operator's hand or arm or starting rope.
10. Avoid contacting the hot exhaust manifold, muffler or cylinder. Keep clear of all rotating parts.
11. Before working on any part of the machine, shut off the engine and disconnect the spark plug wire to prevent accidental starting.
12. Do not attempt to trail this unit behind a vehicle. The mounting dolly may be moved by hand only; the wheels and axles are not designed for vehicle trailing.
13. Use only genuine HOMELITE® replacement parts. Failure to do so may cause poor fit and possible injury.

UNCRATING THE PUMP

Look carefully for shipping damage. If damage of any sort is detected, notify your dealer or the shipper. Remove all shipping blocks and clamps.

WARRANTY

The pump is warranted for the period and under the conditions stated on the warranty card packaged with the pump. Fill out the card and mail it.

FILL PUMP WITH WATER

Pump must be filled with clean water before starting, or damage to the seals may result. Use clean water for priming because contaminated water may contain soaps or detergents which can prevent priming at the higher lifts. Contaminated liquids containing solids of a size that will pass through the strainer, can be pumped satisfactorily provided clean water is used for priming. After filling the pump with clean water, be sure to put the filler cap on tightly.

SET UP THE PUMP

Because a high suction lift reduces pump volume much more than does an equally high discharge, always locate the pump as near the pumping surface as possible (see drawing). It is best to lay out the hose straight. If it is necessary to curve the hose, be sure there are no sharp bends or kinks in it, as such restrictions reduce the flow. Locate the suction strainer over as firm a bottom as can be found. When clogging of the strainer with muck, roots, debris or leaves is a constant problem, or when strainer keeps sinking into soft bottom, tie the strainer up off the bottom or lay it in a prepared bed of stones.

PROTECT PUMP FROM BEING DAMAGED

Whenever hose must be laid across a roadway, lay planking alongside of it so vehicles cannot cut off the flow as they cross the hose. A vehicle running over an unprotected discharge hose while pump is operating might damage hose.

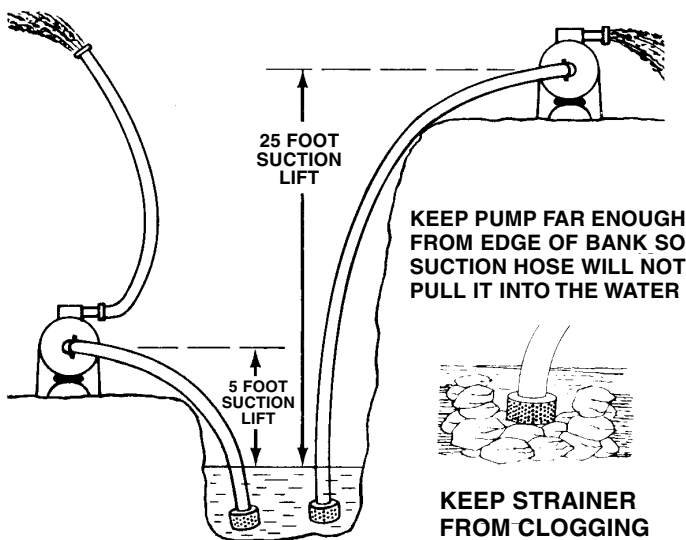
Before starting up the pump during freezing weather, turn the pump shaft a little way by hand. If the water is frozen, warm the pump slowly until the ice melts. As soon as the pump is shut down, drain out the water before it freezes.

When salt water or other corrosives have been pumped, drain the pump and flush it out with fresh water as soon after pumping as possible. Then, rinse down the exterior with fresh water and protect the finish with a coat of auto wax, or by wiping with an oily rag.

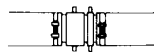
MAKE PUMP CONNECTIONS

All connections on the suction side of the pump must be air tight so that a vacuum can be created. In addition, the suction hose or pipe must be non-collapsible. Discharge hose, however, can be made of canvas or similar collapsible material. If pipes are to be used with an engine-driven pump always connect a short piece of flexible hose between pump and pipe so pump will be free to float on its mount.

Put the suction strainer onto the end of the suction hose and never pump without it.



MAKE ALL CONNECTIONS AIR-TIGHT



ENGINE MAINTENANCE

Follow the 4-cycle engine manual in all matters of preparation, operation, and maintenance.

NOTE: 4-cycle engines have an oil-filled crankcase, which was drained for shipment and must be refilled before operation of engine. Fill the fuel tank with regular gasoline.

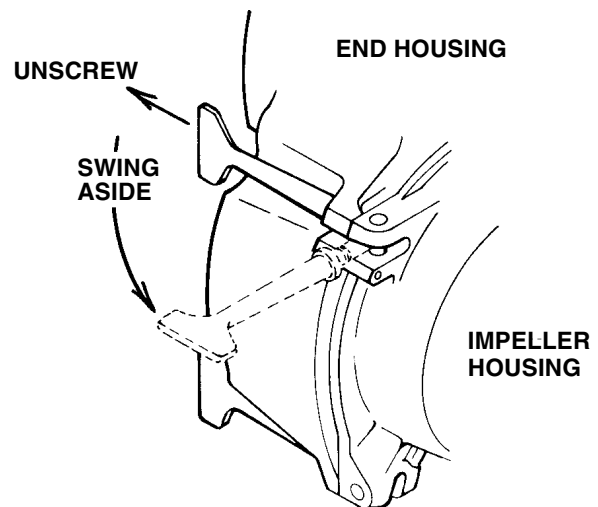
The crankcase must be filled with 3.5 pints of the proper weight oil before the engine is started. The crankcase should be drained and filled with clean oil every 40 operating hours.

PUMP MAINTENANCE

NOTE: Always shut off the engine and disconnect the spark plug wire before performing any maintenance or disassembly.

REMOVAL OF END HOUSING FOR SERVICE

The end housing can be lifted off after the four quick-release handles have been unscrewed and swung aside. This exposes the interior of the pump for cleaning, inspection and service.



CHECKING PUMPING EFFICIENCY

The ability of the pump to prime and pump depends on three things:

1. The sealing off of the pump from the outside atmosphere. This means that the gaskets and the main seal must be air tight.
2. The clearance maintained between the impeller and both the wear plate and the impeller housing.
3. Proper friction fit of the impeller on the bushing so that the impeller slips only when the pump is overloaded.

WEAR PLATE

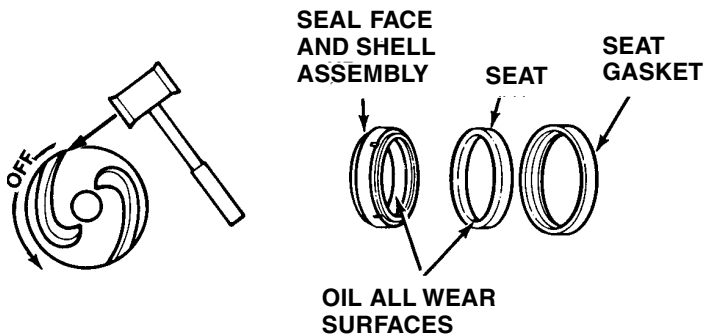
The wear plate is mounted with a gasket on the end housing inlet passage. It is a tight fit on the flange. If the wear plate is excessively worn, it requires replacement. To remove the wear plate, use a pair of pry bars to pry both sides evenly. To install the new wear plate, lubricate the small gasket lightly with oil, place it in the groove of the wear plate and position the locating notch opposite the locating boss on the end housing. Push the plate until it bottoms on the inlet passage.

IMPELLER AND SEAL SERVICING

If the impeller is severely worn, chipped or cracked, it must be replaced. To remove the impeller, do the following:

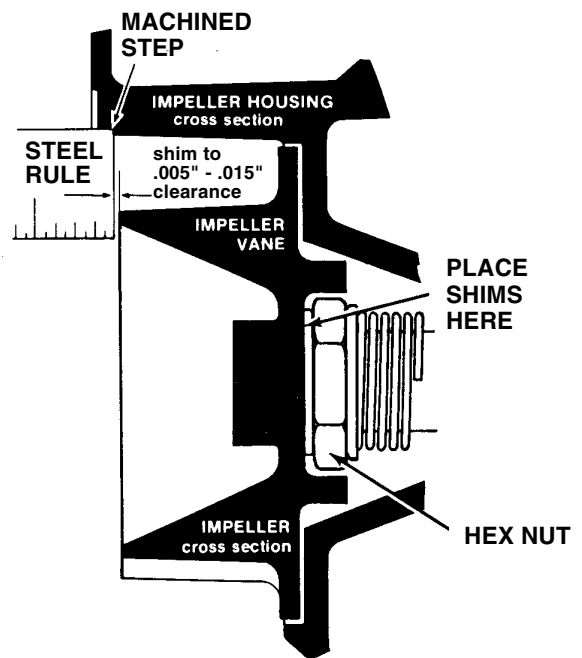
1. Turn the impeller counterclockwise to remove it.

NOTE: It may be necessary to strike the impeller with a lead hammer in the direction of removal, as shown, to shock it loose.



2. Remove the hex nut holding the spring and seal assembly on the shaft.
3. Remove the spring and slide off the seal assembly.
4. Inspect the seal assembly for wear or deterioration. Replace a worn seal with a new one.
5. Prior to reassembly, lubricate all wear surfaces of the seal (new or old) as shown.

6. Position the seal on the shaft as far back as it can go.
7. Place the spring and spring holder back on the shaft.
8. Tighten the hex head nut on the shaft to the end of the threads.
9. Use shims between the spring retaining nut and the impeller.
10. Screw the impeller onto the crankshaft.
11. Turn the impeller until the end of one vane is at the machined step in the wear plate opening of the impeller housing (see illustration).
12. Place the square end of a steel rule on the step to overhang the end of the vane. The vane should clear the rule within .005" to .015". (If not within these limits, remove impeller and adjust the clearance by adding or subtracting shims.)
13. Check both vanes to assure proper clearance between the impeller and wear plate.
14. Reassemble the pump then turn the engine over by hand and listen for scraping noises before running the unit. If scraping noises are heard, disassemble and determine what is rubbing. Correct the rubbing condition before restarting the unit.

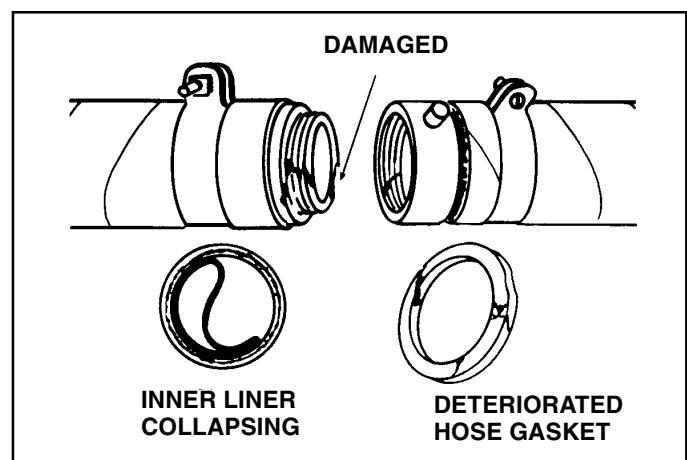


TESTS AND REMEDIES

CHECK SUCTION HOSE AND HOSE COUPLING

The most frequent pumping trouble is an air leak at the suction hose connection. All hose gaskets should be in perfect condition, as even a slight air leak may incapacitate the pump. If making all connections tighter has no effect, disconnect hoses and examine couplings and gaskets. When a connection leaks because of a damaged coupling, it may be possible to stop the leak by using two gaskets.

If the hose itself is faulty (it could either be leaking or blocking flow because of a collapsing inner liner), the only sure way to tell is to try another hose in its place. Before connecting the hose to the pump, however, test pump suction as described on the following page.

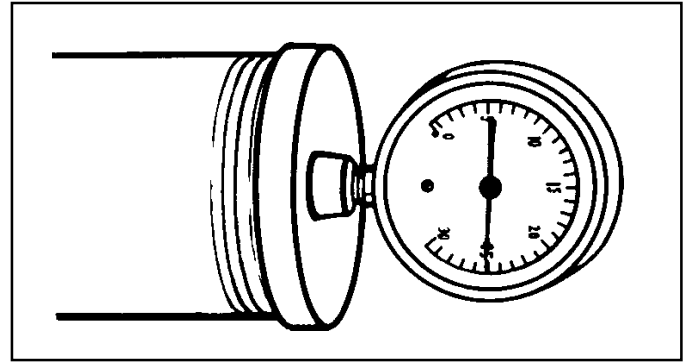


TEST PUMP

Cover the pump suction opening completely with a vacuum gauge. If pump and engine are in good operating condition, the suction will be very strong. With a vacuum gauge, a reading of 25" (1 bar) or more is obtainable (at sea level) and corresponds to a 28 foot (8.8 m) or higher suction lift. At high altitudes atmospheric pressure is lower than at sea level, and a correspondingly lower vacuum gauge reading will be obtainable.

As the pump's seals and impeller become worn, its priming and pumping ability will be impaired, but even so, pumping volume may be acceptable at low lifts. As wear progresses, flow may be scanty regardless of the lift.

*Although a worn pump may have less ability to perform than a vacuum gauge reading will indicate, the highest lift potential of any pump under prevailing atmospheric conditions may be computed in feet by multiplying the gauge reading by 1.13.



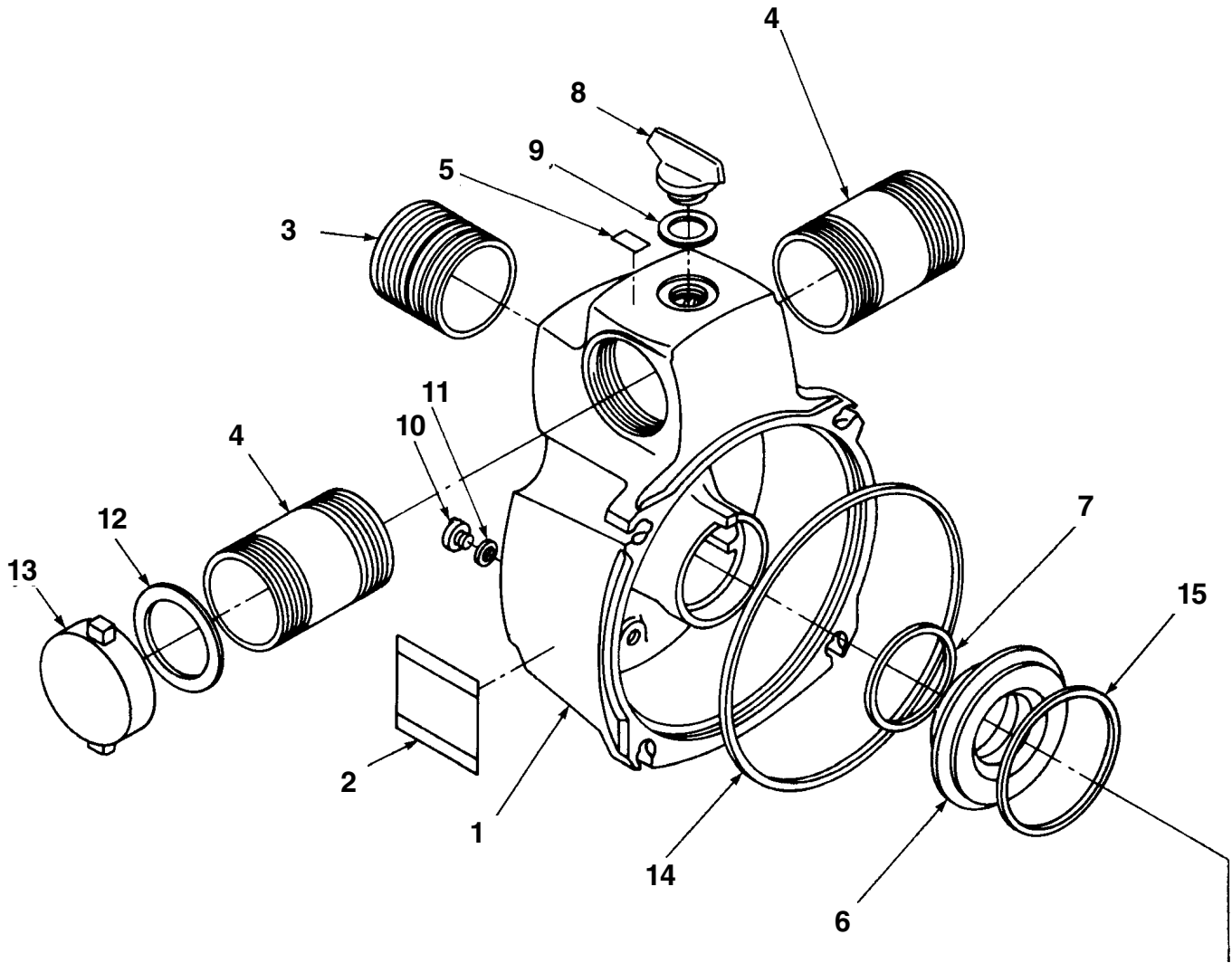
DOLLY MAINTENANCE

The wheels should be greased as required by usage. Apply standard wheel bearing grease to fitting at each wheel hub. Tire pressure should be kept at 15 psi.

PUMP TROUBLE-SHOOTING CHART

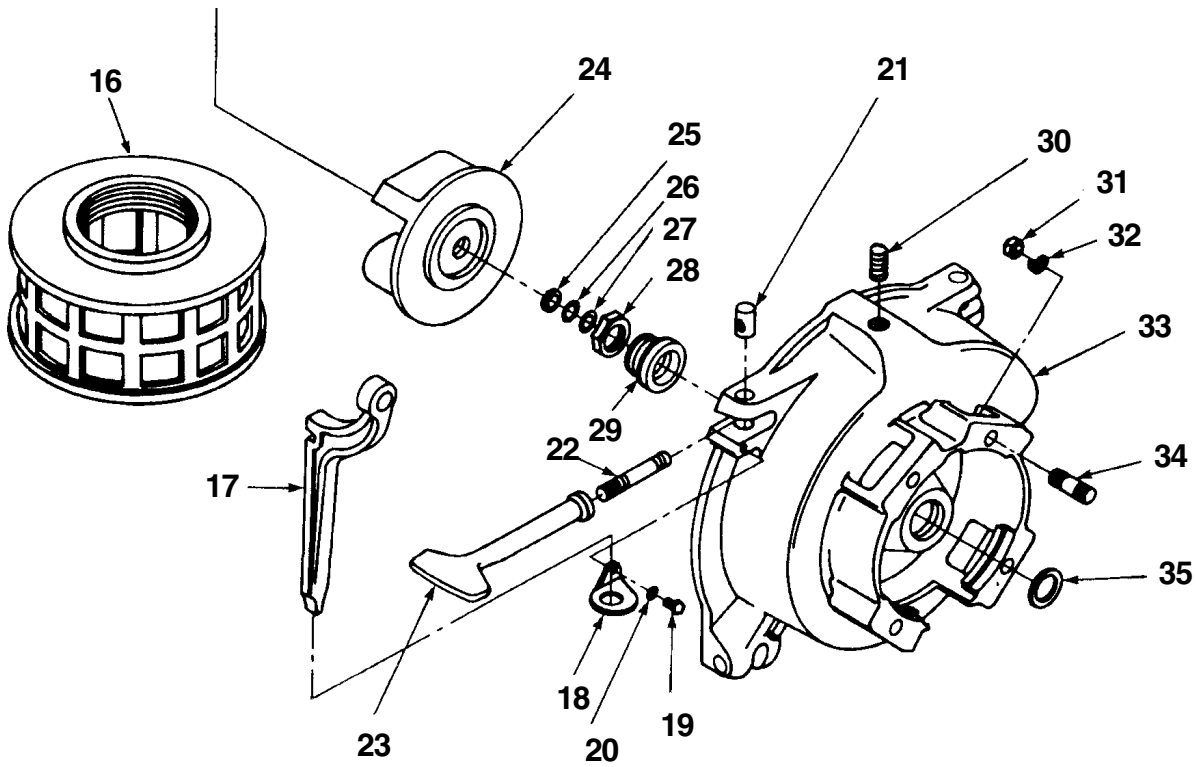
TROUBLE	CAUSE AND WHAT TO DO ABOUT IT
ENGINE WILL NOT START	FOLLOW INSTRUCTIONS IN ENGINE MANUAL.
PUMP CANNOT PRIME	<p>PUMP NEEDS WATER. Fill with clean water.</p> <p>WATER INSIDE PUMP CONTAMINATED OR WARM. Drain pump and fill with clean, cold water. Even though pump can pump dirty water, clean water may be needed for priming.</p> <p>LEAKING HOSE OR CONNECTIONS ON SUCTION SIDE OF PUMP. Make couplings tighter.</p> <p>WORN PUMP. If possible, reduce the suction lift distance. If pump cannot prime at a low lift it should be disassembled and overhauled.</p> <p>STRAINER CLOGGED. Clean the strainer. Use means of keeping strainer from clogging.</p> <p>SYSTEM CLOGGED. Clean the hoses. If necessary disassemble and clean out pump.</p>
INSUFFICIENT FLOW	<p>TOTAL HEAD INCLUDING FRICTION TOO GREAT. Do everything possible to decrease the head: eliminate unneeded elbows, adapters, and reducers. If possible, move pump closer to the water and shorten suction hoses.</p> <p>PUMP LEAKING OR WORN. Overhaul the pump. Have worn seals, gaskets, impellers or housing parts replaced as necessary; or shim to reduce clearance between impeller and the wear plate or the housing.</p> <p>STRAINER CLOGGED. Clean the strainer. Use means of keeping strainer from clogging.</p> <p>SYSTEM CLOGGED. Clean the hoses. If necessary disassemble and clean out pump.</p>
PUMP IS "FROZEN" FAST	<p>ICE INSIDE PUMP. Thaw out by warming pump gradually. See "Protect Pump."</p> <p>HARD OBJECT JAMMED BETWEEN IMPELLER AND HOUSING. Disassemble the pump and remove blockage.</p>

END HOUSING



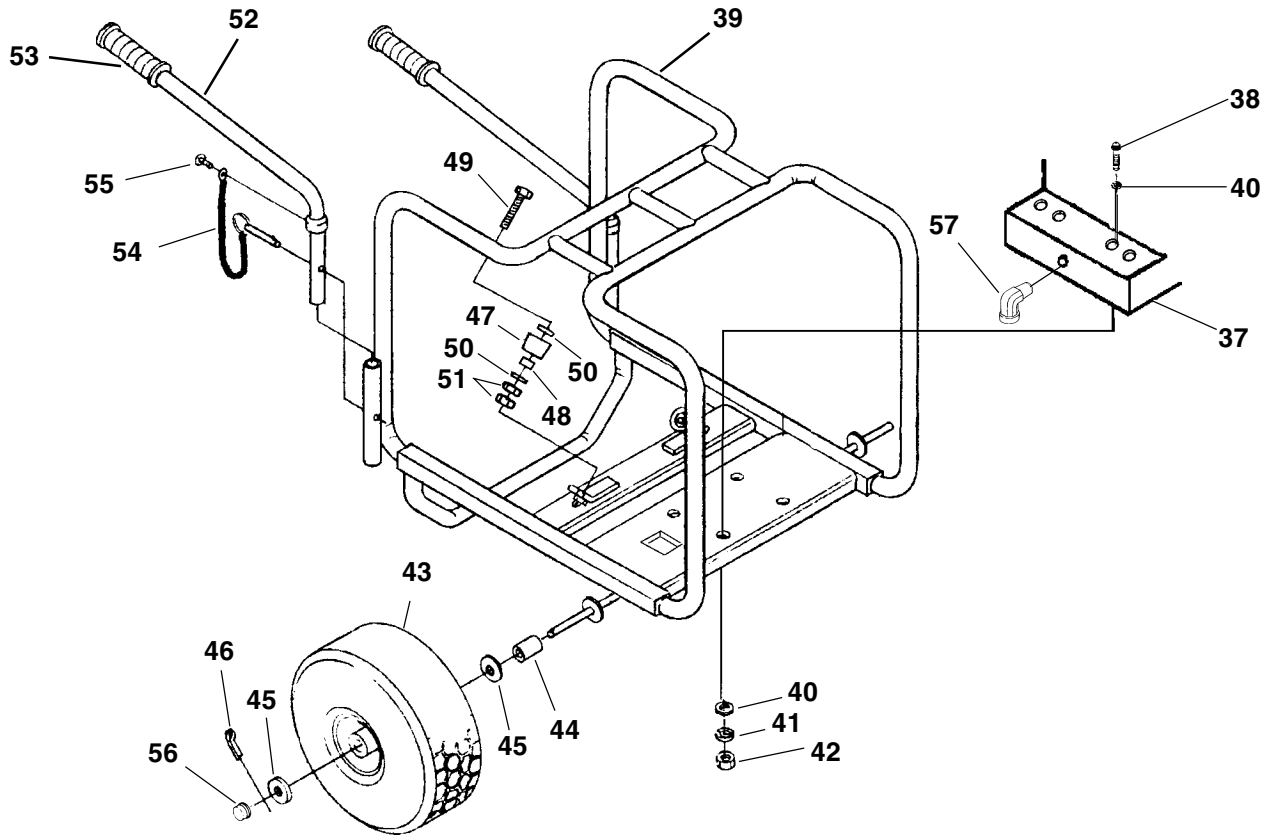
ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1.	• A 53742 A	END HOUSING	1
2.	47414 A	CLASS DECAL	2
3.	54957 1	SUCTION FITTING	1
4.	54958 1	DISCHARGE FITTING	2
5.	62315	FILL PUMP DECAL	1
6.	50679 1	WEAR PLATE	1
7.	54665	SMALL GASKET	1
8.	• A 43971	FILLER PLUG	1
9.	18108	GASKET- FILLER PLUG	1
10.	• A 43896	DRAIN CAP	1
11.	59910	GASKET	1
12.	25672	HOSE COUPLING GASKET	1
13.	53341 2A	DISCHARGE CAP	1
14.	54664	GASKET	1
15.	53189	WEAR PLATE GASKET	1

IMPELLER HOUSING



ITEM NO.	PART NUMBER	DESCRIPTION	QTY
16.	54956	STRAINER	1
17.	22148	SPANNER WRENCH	1
18.	62450 1	WRENCH HOLDER	1
19.	80044	HEX HD SCREW	1
20.	84020	FLAT WASHER (1/4)	1
21.	54570 1	HANDLE PIVOT	4
22.	54571	HANDLE STUD	4
23.	54572 2A	DISCONNECT HANDLE	4
24.	47920 3	IMPELLER	1
25.	43893	SHIM (.010)	A/R
26.	43894	SHIM (.015)	A/R
27.	43895	SHIM (.032)	A/R
28.	46151	HEX NUT	1
29.	46150	SHAFT SEAL	1
30.	82381	SET SCREW (5/8-11 X .75)	1
31.	81060	HEX NUT (7/16-14)	4
32.	83054	LOCKWASHER (7/16)	4
33.	54458 2B	IMPELLER HOUSING	1
34.	54963	STUD (7/16-14)	4
35.	62688	SLINGER	1

FRAME



ITEM NO.	PART NUMBER	DESCRIPTION	QTY
37.	*	ENGINE, V-TWIN, 16 HP	1
38.	80288	CAP HEX HD SCREW (5/16-18 X 2.75)	4
39.	A 08002 A	ROLL CAGE	1
40.	84001	FLAT WASHER (5/16)	8
41.	83030	LOCK WASHER (5/16)	4
42.	81018	HEX NUT (5/16-18)	4
43.	A 08255 A	WHEEL & TIRE	2
44.	08254	SPACER	2
45.	66628	FLAT WASHER	4
46.	86319	COTTER PIN (Ø.156 X 1.50)	2
47.	48789	RUBBER FOOT	2
48.	49733	SPACER	2
49.	08747	HEX HD SCREW (5/16-18 X 2.75)	2
50.	84046	FLAT WASHER (5/16)	4
51.	81162	HEX NUT (5/16-18)	4
52.	A 08745	HANDLE	2
53.	07452	GRIP, HANDLE	2
54.	08743 A	HITCH PIN & LANYARD	2
55.	82600	TRUSS HD SCREW (8-32 X .38)	2
56.	66608	HUB CAP	2
57.	49969	3/8 NPT STREET ELBOW	1

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