

Please read and save this Replacement Parts Manual. Read this manual and the General Operating Instructions carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. The Safety Instructions are contained in the General Operating Instructions. Failure to comply with the safety instructions accompanying this product could result in personal injury and/or property damage! Retain instructions for future reference.

3-Inch Premium Trash Pumps

Refer to form 1808-633-00 for General Operating and Safety Instructions.

Description

These trash pumps are high capacity, heavy duty, centrifugal, engine driven, self-priming (to 20 ft. lift), portable units. The pumps are equipped with a precision lapped mechanical seal to reduce leakage, carrying handle, and a clog-resistant impeller capable of handling solids up to 1½" diameter.

Engine shaft on all models is sealed from liquid and protected by a stainless steel shaft sleeve. 3" NPT suction strainer is included. Units are designed to handle water containing mud, sand, sludge, solids and sewage (up to 25% by volume). Handles liquids from 40° to 180° F (4° to 82° C). For use with nonflammable liquids compatible with pump component materials.

Specifications

Suction inlet	3" ‡
Discharge outlet	3" ‡
(‡) Standard NPT (female) pipe thread.	
Dimensions (overall)	27½" L x 21¼" W x 23⅜" H
Engine:	
3105-968 HP B&S
3100-968HP B&S I/P
3106-968 HP B&S I/P with electric start (12 V)
3107-969 HP B&S OHV Vanguard
3103-969 HP Honda OHV
3104-969 HP Honda OHV with electric start (12 V)
RPM	3600
Basic Construction	Aluminum with cast iron impeller and wear plates
Weight	
3105-96	146 lbs.
3100-96	151 lbs.
3106-96	169 lbs.
3107-96	161 lbs.
3103-96	169 lbs.
3104-96	179 lbs.

Performance Chart

(In GPH of water at total head in feet)

10'	20'	30'	40'
22,680	21,600	19,200	16,800
50'	60'	70'	80'
14,000	10,680	8,500	5,400

Max Head 89 ft. Shut-Off; to convert to psi, divide by 2.31.

Maintenance

▲ WARNING Always disconnect battery cables (where applicable) and spark plug wire from spark plug before performing any maintenance operation requiring disassembly of the pump.

CLEANING

This unit is designed so that for most cleanout or clogging problems, it should not be necessary to remove hoses or piping. The discharge area and manifold (Ref. No. 12) can be reached by opening top cleanout cover plate (Ref. No. 14). Clear all debris from inside manifold and from the strainer portion of the manifold gasket (Ref. No. 8). The suction area and impeller chamber can be reached by removing suction cleanout cover plate (Ref. No. 3). This plate is locked in position with four threaded handles. Next to two of the holes thru which these handle pass in

the locking position there are tapped holes. To remove coverplate, first remove the four threaded handles. Then thread two of the thread handles into an opposite pair of the tapped holes. This will serve as a jack to pull the cover out of the casing.

NOTE: When replacing either of the cleanout cover plates, be sure O-ring sealing gaskets are in position. Carefully wipe all surfaces on which the rings have contact. It will facilitate the removal and replacement of suction cover plate (Ref. No. 3) if a thin coating of grease is wiped over O-ring gasket (Ref. No. 7).

REPAIRS & REPLACEMENTS

NOTE: First examine exploded parts illustration which shows all parts and how they are related to one another. Different degrees of dismantling can be accomplished depending on what areas of the pump are to be reached. Note that engine front pump assembly can be removed by first removing (6) fasteners (Ref. No. 9) from the adapter (Ref. No. 35). The impeller and the cutwater/wearplates are subject to wear only by abrasive action of sandy or dirty fluid. If badly worn, all these parts can be replaced easily, and the pump thus restored to full efficiency.

IMPELLER (REF. NO. 23) AND WEARPLATE (REF. NO. 26) RENEWAL

When the clearance between the impeller and the cutwater/wearplate exceeds 1/16" at the face of the impeller or 1/8" on the outside diameter of the impeller, it may be necessary to take corrective action.

The increased clearance can cause lengthened priming times and reduced

For Replacement Parts, contact dealer where pump was purchased.

Please provide following information:

- Model number
- Serial number (if any)
- Part descriptions and number as shown in parts list

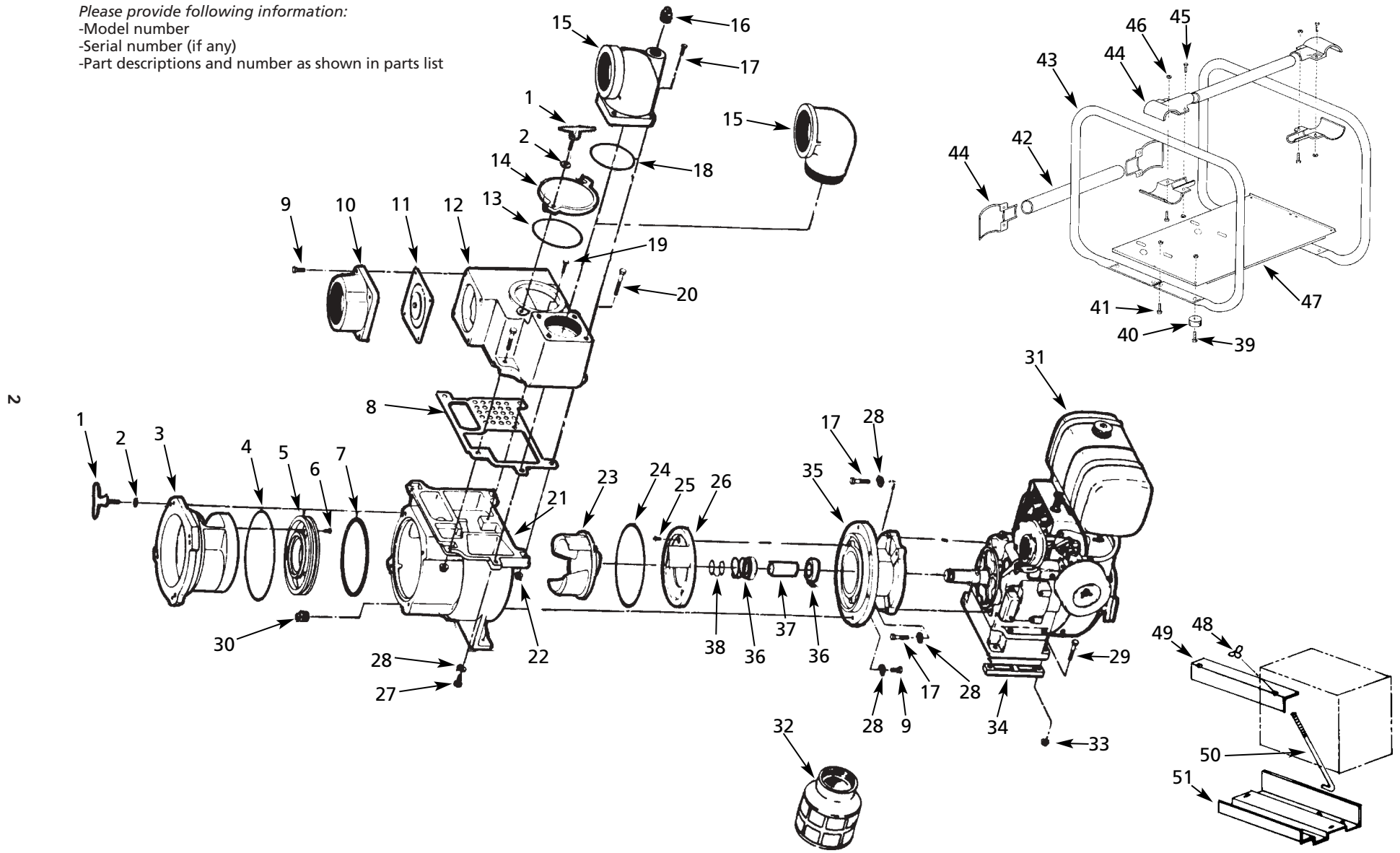


Figure 1 - Replacement Parts Illustration

Replacement Parts List

Ref. No.	Description	Model 3150-96, 3100-96	Qty.	3106-96, 3107-96, 3103-96, 3104-96	Qty.	Ref. No.	Description	Model 3150-96, 3100-96	Qty.	3106-96, 3107-96, 3103-96, 3104-96	Qty.
1	Tee handle	1601-000-00	6	1601-000-00	6	29	5/16"-18 UNC x 1/2" Hex head cap screw	*	4	*	4
2	3/8" Flat Washer	*	6	*	6	30	3/8" NPT Pipe plug	*	1	*	1
3	Suction cleanout	1596-000-01	1	1596-000-01	1	31	Engine (3100-96)	1639-021-00	1	-	-
4	O-ring (suction cleanout)	1598-000-00	1	1598-000-00	1		Engine (3103-96)	1639-026-00	1	-	-
5	Front wear plate	1597-000-01	1	1597-000-01	1		Engine (3104-96)	-	-	1639-028-00	1
6	5/16"-18 UNC x 3/4" Socket head cap screw SS	1742-000-00	3	1742-000-00	3		Engine (3105-96)	-	-	1632-000-00	1
7	O-ring (front wearplate)	1599-000-00	1	1599-000-00	1		Engine (3106-96)	-	-	1639-027-00	1
8	Manifold gasket	1600-000-00	1	1600-000-00	1		Engine (3107-96)	-	-	1639-029-00	1
9	3/8"-16 UNC x 1" Hex head cap screw	*	10	*	10	32	3" NPT Suction Strainer	1681-000-00	1	1681-000-00	1
10	Suction plate	1589-000-01	1	1589-000-01	1	33	5/16"-18 UNC Flange Nut	*	12	*	12
11	Flapper valve assembly	1694-000-90	1	1694-000-90	1	34	Raising Block	-	-	-	-
12	Manifold	1593-000-01	1	1593-000-02	1	35	Adapter	1588-000-01	1	1588-000-01	1
13	O-ring seal (manifold cleanout cover)	1582-000-00	1	1582-000-00	1	36	Shaft seal Buna-N/Silicon carbide	1640-163-00	1	1640-163-00	1
14	Manifold cleanout cover	1602-001-01	1	1602-001-01	1	37	Shaft sleeve	1555-000-00	1	1555-000-00	1
15	3" NPT 90° Street elbow	1602-000-00	1	-	-	38	Impeller shims, contains one each: 0.010", 0.020", 0.030"	1656-000-90	1	1656-000-90	1
15	Discharge manifold	-	-	2184-010-01	1	39	5/16"-18 UNC x 3/4" Hex flange screw	*	4	*	4
16	1" NPT Pipe plug	-	-	*	1	40	Rubber feet	1508-000-00	4	1508-000-00	4
17	3/8"-16 UNC x 1-1/4" Hex head cap screw	*	4	*	8	41	5/16"-18 UNC x 1/2" Hex flange screw	*	4	*	4
18	O-ring seal (discharge manifold)	-	-	2184-011-00	1	42	Pump frame brace	1696-088-00	2	1696-088-00	2
19	3/8"-16 UNC x 1-1/4" Hex head cap screw SS	1757-001-00	1	1757-001-00	1	43	Outside rails	1696-087-00	2	1696-087-00	2
20	3/8"-16 UNC x 2-1/4" Hex head cap screw	*	4	*	4	44	Pump frame clamp	1696-091-70	8	1696-091-70	8
21	Casing	1587-000-01	1	1587-000-01	1	45	1/4"-20 UNC x 3/4" Slotted hex flange screw	*	8	*	8
22	3/8"-16 UNC Hex flange nut	*	4	*	1	46	1/4"-20 UNC Hex nut	*	8	*	8
23	Impeller	1594-000-01	1	1594-000-01	1	47	Engine mount	1696-086-00	1	1696-086-00	1
24	O-ring seal (casing to adapter)	1592-000-00	1	1592-000-00	1	48 †	1/4"-20 UNC Wing nut	-	-	*	2
25	5/16"-18 UNC x 1/2" Socket flat head screw SS	1741-000-00	4	1741-000-00	4	49 †	Battery holddown	-	-	3102-102-00	1
26	Cut water/wear plate	1595-000-01	1	1595-000-01	1	50 †	Battery holddown rod	-	-	3102-103-00	2
27	3/8"-16 UNC x 1-1/2" Hex head cap screw	*	1	*	1	51 †	Battery base plate	-	-	3102-101-00	1
28	3/8" Split lockwasher	*	11	*	11	• †	13" Battery cable	-	-	3102-104-90	1
						• †	30" Battery cable	-	-	3102-105-90	1
						•	3" NPT Pipe nipple	1695-045-00	1	1695-045-00	1

(•) Not Shown; (*) Standard hardware item, available locally; (†) Electric start models only.

NOTE: Wheel kit available separately; order Model A735-90.

3-Inch Premium Trash Pumps

Maintenance (Continued)

pumping capacity. If both the priming and capacity of your unit are satisfactory for your application, it is recommended that no corrective maintenance be performed regardless of what clearances may have developed, since the increased clearances in themselves are not generally dangerous to your pump.

Normally, new pump face clearances can be restored by simply shimming behind the impeller. (Add shim washers Ref. No. 38.) If the diameter of the impeller is badly worn or if 1/16" shim washers do not restore clearances to less than 1/16" face dimension and/or the 1/8" diametral clearance, it is recommended that the impeller be replaced. This is usually all that is required since only on unusually abrasive surfaces do the cast iron wearplates show deterioration.

REMOVING THE FRONT WEARPLATE (REF. NO. 5)

Remove suction cleanout cover (Ref. No. 3) using handles (Ref. No. 1) as jackscrews as described under Cleaning. Front wearplate is attached to cover with three 5/16" socket head capscrews (Ref. No. 6). Remove these screws and replace wearplates. Be sure mating surfaces are wiped clean of all dirt.

TO REMOVE THE CUTWATER/WEARPLATE (REF. NO. 26)

Remove the front pump assembly by removing the six fasteners (Ref. No. 9) that hold the casing (Ref. No. 21) to the adapter (Ref. No. 35) and fasteners (Ref. Nos. 42 & 33). Remove the impeller (Ref. No. 23) by unscrewing (right hand thread) it from the shaft. The cutwater/wearplate can then be removed by removing the socket head screws (Ref. No. 25) that hold it to the adapter (Ref. No. 35).

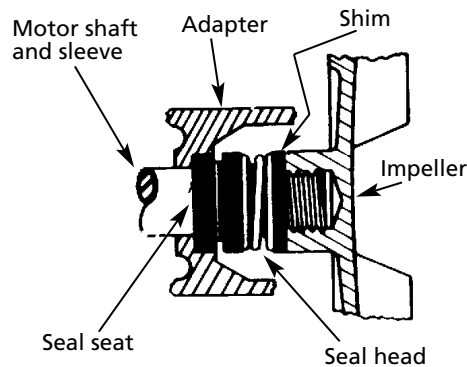


Figure 2 - Seal Replacement

REMOVING THE SEAL (REF. NO. 36)

1. Remove pump casing (Ref. No. 21) and impeller (Ref. No. 23) as described under "To Remove Cutwater/Wearplate" above.
2. Remove the shaft sleeve (Ref. No. 37) with the seal head assembly and spring on it. Remove the seal head assembly and spring from the sleeve.
3. Remove the seal seat using two screwdrivers or other suitable tools.

REPLACING THE SEAL (REF. NO. 36)

1. Thoroughly clean the shaft surface and all surfaces of the seal seat cavity.
2. Wet the rubber portion of the new seal with a light coating of soapy water. Press seal seat squarely into adapter (Ref. No. 35) recess. Avoid scratching the ceramic surface.

NOTE: When handling all seal parts, be careful to keep them clean. Do not touch seal faces (either ceramic or carbon) with your hands. Do not put lubricants on seal face. This would cause a leak.

3. Inspect the ceramic face of the seal seat and carbon face of the seal head to ensure they are clean and not marred.
4. Using a clean cloth, wipe the shaft

sleeve (Ref. No. 37) and make certain that it is perfectly clean.

5. Wet the inside rubber portion of the new seal head with a light coating of soapy water.
6. Put the seal head assembly on the shaft sleeve and slide the assembly on to the shaft. If it is not possible to slide the assembly into place with your fingers, use a sleeve of proper diameter so that pressure is applied to the rear of the drive ring. Ease the shaft sleeve and seal head assembly into place. DO NOT drive it with a hammer.
7. Replace the shims (Ref. No. 38) and impeller (Ref. No. 23).
8. Replace casing (Ref. No. 21) and the six fasteners (Ref. No. 9) that hold the casing to the adapter.
9. After assembly, remove wire from spark plug, turn engine shaft by hand slowly, using recoil starter, to check for striking of the impeller on the casing. If striking or rubbing occurs, adjust impeller shims as required, and reconnect spark plug wire.
10. A short "run-in" period may be necessary to provide a tight seal joint.

IMPORTANT: Never run seal dry for any length of time.

SHIM (REF. NO. 38) ADJUSTMENT

When installing a replacement impeller, it may be necessary to vary the number of shims that will be required. This is easily done by adding one shim more than was removed, and reassembling the pump as described.