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 Trash Pump

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 1-1/2" diameter (up to 25% by volume). Handles liquids from 40° to 180° F. For use with nonflammable liquids compatible with pump component materials.

NOTE: Electric-start models require a 12-volt, 32 amp hour battery (not included).

Specifications

Suction Inlet . . . . . 3" NPT

Discharge Outlet. . . . . 3" NPT

Dimensions (overall) . . . 27 3/4 L x 21 1/44 W x 23 1/2" H

Engine Speed . . . . . 3600 RPM

Basic Construction . . . . Aluminum with iron impeller and wear plates

Performance Chart

(In GPH of Water at Total Head in Feet)

10′	20′	30′	40′
20,880	18,960	16,800	14,000
50′	**60′**	**70′**	**80′**
12,000	8,800	5,700	2,400

Max Head 86 ft. Shut-Off; to convert to PSI, divide by 2.31.

Maintenance

⚠WARNING ***To prevent accidental starting always remove the spark plug, or disconnect and ground the spark plug wire before attempting to service or remove any component.***

CLEANING

These units are designed so that for most cleanout or clogging problems it should not be necessary to remove hoses or piping. The suction area and impeller chambers can be reached by removing (2) threaded handles (Ref. No. 22) and removing suction cleanout cover plate (Ref. No. 21) and gasket (Ref. No. 20).

NOTE: When replacing cleanout cover plate, carefully wipe clean all surfaces on which the gasket has contact. Also, make sure the gasket is in position.

MECHANICAL SEAL REPLACEMENT

Refer to figures 1 and 2.

NOTE: Always replace the seal seat (Ref. No. 8), seal cartridge (Ref. No. 9), and shaft sleeve (Ref. No. 10) to ensure proper mating of mechanical seal components!

1. Unthread cap screws (Ref. No. 24) and remove casing (Ref. No. 19) and casing seal (Ref. No. 7) from adapter (Ref. No. 9).
2. Unthread screws (Ref. No. 13) and remove volute (Ref. No. 14) from adapter.
3. Unscrew impeller (Ref. No. 12) from the engine shaft. Remove the impeller shims (Ref. No. 11), shaft sleeve and seal cartridge from engine shaft. Use a rubber mallet or soft block of wood to loosen impeller. Turn it counterclockwise.
4. Unthread cap screws (Ref. No. 3) and remove the adapter from the engine mounting face.
5. Push seal seat from the adapter recess with a screwdriver.
6. Clean the adapter recess before inserting a new seal seat.
7. Carefully wipe the polished surface of the new seal seat with a clean cloth.
8. Wet the rubber portion of the seal seat with a light coating of soapy water.
9. Press the new seal seat squarely into the cavity in the adapter. If the seal seat does not press squarely into the cavity, it can be adjusted in place by pushing on it with a piece of pipe. Always use a piece of cardboard between the pipe and the seal seat to avoid scratching the seal seat. (This is a lapped surface and must be handled very carefully.)
10. After the seal seat is in place, ensure that it is clean and has not been marred.
11. Using a clean cloth, wipe the shaft and make certain that it is perfectly clean.
12. Secure the adapter on the engine mounting face.

NOTE: Tighten cap screws EVENLY to avoid cracking rabbet on engine mounting face.

13. Apply a light coating of soapy water to the inside rubber portion of seal cartridge and slide onto the shaft sleeve. Slip the shaft sleeve with seal cartridge onto the engine shaft.
14. Replace any impeller shim removed in disassembly.

For Replacement Parts, contact dealer where pump was purchased.

Please provide following information:
-Model number
-Serial number (if any)
-Part description and number as shown in parts list

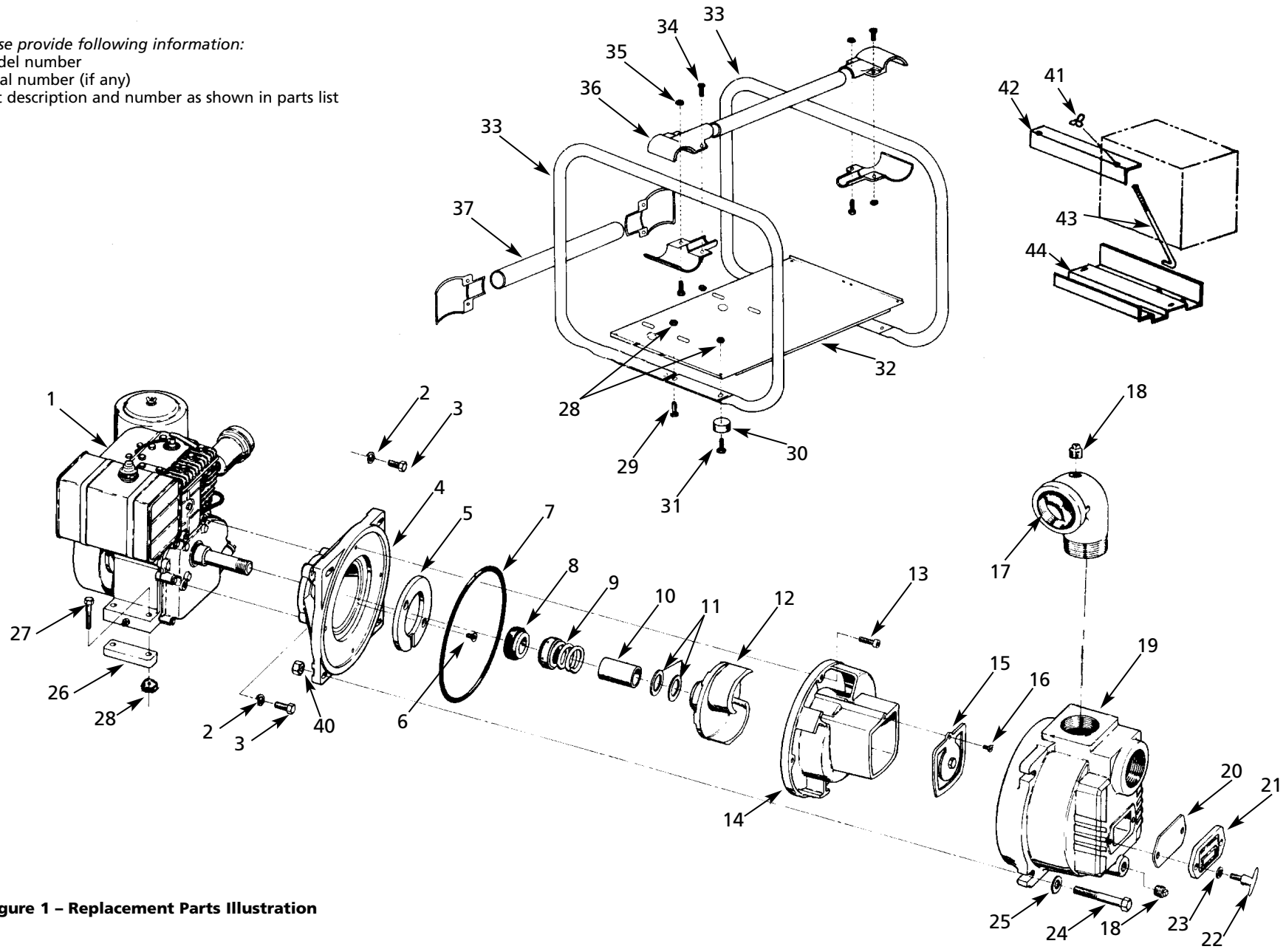

Figure 1 – Replacement Parts Illustration

Replacement Parts List

Ref. No.	Description	Part No.	Qty.
1	•Engine for model 3941-96	1639-021-00	1
	•Engine for model 3943-96	1639-026-00	1
	•Engine for model 3944-96	1639-028-00	1
	•Engine for model 3945-96	1632-000-00	1
	•Engine for model 3946-96	1639-027-00	1
	•Engine for model 3947-96	1639-029-00	1
2	3/8" Lock washer	*	4
3	3/8”-16 UNC x 1-1/4" Hex head screw	*	4
4	Adapter	2184-001-01	1
5	Wearplate	2182-004-01	1
6	5/16”-18 UNC x 1/2" Flat head screw, s.s.	1741-000-00	2
7	O-ring	2185-000-00	1
8 & 9	Seal seat and cartridge – Buna-N/Silicon carbide	1640-163-00	1
8 & 9	Seal seat and cartridge – (optional) Viton	1640-163-91	1
10	Shaft sleeve	1555-000-00	1
11	Impeller shims: contains one each .010, .020, .030	1656-000-90	1
12	Impeller	2184-004-01	1
13	1/4”-20 UNC x 3/4" s.s. Hex head screw	1719-000-00	2
14	Volute	2184-002-01	1
15	Flapper valve assembly	3590-070-90	1
16	#10-24 UNC x 3/8" Flat head screw, s.s.	1704-000-00	1
17	3" NPT 90° street elbow	1602-000-00	1
18	3/4" NPT pipe plug	1690-000-00	2
19	Casing	2109-001-01	1
20	Cleanout gasket	2115-003-00	1
21	Cleanout plate	2115-002-01	1

Ref. No.	Description	Part No.	Qty.
22	Cleanout handle	1601-000-00	2
23	3/8" Flat washer	*	2
24	1/2”-13 UNC x 4-1/2" Hex head screw	*	4
25	1/2" Flat washer	*	8
26	Raising block	1990-021-00	2
27	5/16”-18 UNC x 2-1/2" Hex head screw	*	4
28	5/16”-18 UNC Hex nut	*	12
29	5/16”-18 UNC x 1/2" Hex flange head screw	*	4
30	Rubber foot	1508-000-00	4
31	5/16”-18 UNC x 3/4" Hex flange head screw	*	4
32	Engine mount	1696-086-00	1
33	Frame outside rail	1696-087-00	2
34	1/4”-20 UNC x 3/4" Slotted hex head screw	*	8
35	1/4”-20 UNC Hex nut	*	8
36	Tube clamp	1696-091-70	8
37	Frame brace	1696-088-00	2
38	3" NPT hex nipples (not shown)	1696-045-00	2
39	3" NPT suction strainer (not shown)	1681-000-00	1
40	1/2”-13 UNC Hex nut	*	4
41	1/4”-20 UNC Wing nut	*	2
42	Battery hold-down	3102-102-00	1
43	Hold-down rod	3102-103-00	2
44	Battery base plate	3102-101-00	1
45	12” Battery cable (not shown)	3102-104-90	1
46	30” Battery cable (not shown)	3102-105-90	1

(*) Standard hardware item, available locally.

(•) For engine parts refer directly to engine manufacturer.

NOTE: Wheel kit available separately; order Model 2P515.

3-Inch Trash Pump

Maintenance (Continued)

15. Screw the impeller back in place tightening until it is seated against shims and shaft sleeve.
16. Remount volute with fasteners.
17. Refer to section entitled SHIM ADJUSTMENT at this time if shaft sleeve or any other parts listed therein have been replaced.
18. Inspect position of flapper valve assembly (Ref. No. 15) to insure proper movement and seating.
19. Replace O-ring seal on volute rabbet.

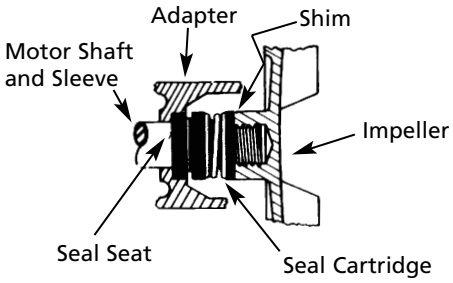

Figure 2 – Mechanical Seal

NOTE: Always inspect O-ring seals. Replace when cracked or worn. Wet O-ring with soapy water for ease of assembly.

20. Remount casing.
21. Remount any other parts and reconnect spark plug wire. Pump should now run with renewed original performance.

SHIM ADJUSTMENT

1. When installing a replacement impeller, engine, shaft sleeve, adapter, or volute, it may be necessary to vary the number of impeller shims (Ref. No. 11) that will be required. This is easily done by adding one 0.010” shim more than was removed, and reassembling the pump as described in Mechanical Seal Replacement section.
2. Insure that volute (Ref. No. 14) and adapter (Ref. No. 4) are fitted firmly (check fastener Ref. Nos. 3 & 13). Remove spark plug wire from engine and turn engine over by pulling the recoil starter. If engine does not run freely, disassemble pump and remove one shim.

NOTE: When adding or removing shims, it is best to proceed with an 0.010" increment each time. If engine does turn freely, add shims until it does strike, then remove a 0.010" shim. This should allow proper clearance.

3. Proper running clearance is 0.010".
4. Follow the above procedure until proper clearance is obtained. This will insure maximum performance.

IMPELLER AND WEARPLATE REPLACEMENT

Impeller (Ref. No. 12), volute/wearplate (Ref. No. 14), and rear wearplate (Ref. No. 5) are subject to wear only by abrasive sand or sediment laden liquids. If badly worn, all these parts can be replaced easily and the pump thus restored to full efficiency.

NOTE: When the clearance between the impeller and the volute/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 and decreased capacity to your unit. If performance is satisfactory for your application, it is recommended that no corrective maintenance be performed regardless of what clearances on your unit may have developed. This is because increased clearances in themselves are not generally harmful to your pump. Normally, new pump clearances can be restored by simply shimming behind the impeller. (Add shim washers Ref. No. 11). If the impeller is badly worn it is recommended that the impeller be replaced. This is usually all that is required since only on usually abrasive surfaces does the cast iron wearplate show deterioration. Occasionally a stone or hard object might get caught in the impeller and cause damage to the volute/cut-water. In these cases, follow the instructions below for replacement and refer to Figure 1.

1. Disassemble pump for access as described in Mechanical Seal Replacement, steps 1 and 2.
2. Replace parts as necessary.

NOTE: When replacing volute/wearplate, attach flapper valve assembly (Ref. No. 15) to the new volute with fastener (Ref. No. 16).

3. To replace rear wearplate (Ref. No. 5), remove fasteners (Ref. No. 6) after impeller has been removed.

NOTE: Before installing new parts, clean all mating surfaces thoroughly.