

Please read and save this Repair Part 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 Solids-Handling Pumps

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

Description

These centrifugal pumps are high capacity, engine driven, self-priming (to 20 ft. lift), portable units. Shipped completely assembled. Equipped with precision lapped mechanical seal to reduce the likelihood of leakage, and a clog resistant cast iron impeller and wear plate capable of handling solids up to 3/4" in diameter. Suction and discharge ports are 3" NPT female pipe thread.

Pumps are designed for operation involving irrigation and dewatering of excavations, basements, etc. Handle liquids from 40° to 180° F (4° to 82° C). For use with nonflammable, non-abrasive liquids compatible with pump component materials.

Model 327A-95 pump is constructed of cast iron with Viton mechanical seal components. Viton is recommended for pumping alachlor herbicides (e.g. Monsanto Lasso®) or other compatible liquids.

Maintenance

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

MECHANICAL SEAL REPLACEMENT

Refer to figures 1, 2A and 2B.

NOTE: Always replace seal assembly (Ref. No. 7) and shaft sleeve (Ref. No. 8)

to ensure proper mating of mechanical seal components (models 327A & 327B have no shaft sleeve).

1. Remove pump casing (Ref. No. 2), gasket (Ref. No. 9) and impeller (Ref. No. 5).
- 2A. Remove the shaft sleeve with the seal head on it.
- 2B. (327A & 327B) remove seal head from rear of impeller.

3. Remove the adapter (Ref. No. 10) and push seal seat from adapter recess with a screwdriver.
4. Thoroughly clean all surfaces of the adapter recess.
5. Using a clean cloth, wipe the polished surface of the seal head.
6. Wet the rubber portion of the new seal with a light coating of soapy water. Press seal seat squarely into adapter recess. Avoid scratching the white ceramic surface.

NOTE: Handle all seal parts with extreme care and attention to keeping them clean. Do not touch seal faces (either ceramic or carbon) with your hands. Do not put lubricants of any kind on seal faces. This can cause the seal to leak.

7. Inspect the ceramic face of the seal seat and carbon face of the seal head to ensure they are clean and not marred.

8A. Wet the inside rubber portion of the

Specifications (Inches)

Cast Iron Model No.	Wt. (lbs.)	Aluminum Model No.	Wt. (lbs.)	†Shaft seal	Engine	Dimensions		
						L	W	H
3270-95	109	3270-96	71	Buna N/Carbon & Ceramic	5½ HP B&S Intek	22"	17¾"	19⅞"
3272-95	114	3272-96	80	Buna N/Carbon & Ceramic	6½ HP B&S Intek Pro	22	17¾	19⅞
3274-95	109	3274-96	75	Buna N/Carbon & Ceramic	5½ HP Honda GX	22	17¾	19⅞
327A-95	109	—	—	Viton/Carbon & Ceramic	5 HP Honda GC	22	17¾	19⅞
327B-95	109	—	—	Buna N/Silicon Carbide	5 HP Honda GC	22	17¾	19⅞
3390-95	138	3390-96	110	Buna N/Carbon & Ceramic	8 HP B&S Intek	27½	21¼	23⅜
3391-95	170	3391-96	122	Buna N/Carbon & Ceramic	9 HP Honda GX (E-start)	27½	21¼	23⅜
3393-95	138	3393-96	104	Buna N/Carbon & Ceramic	9 HP Honda GX	27½	21¼	23⅜
3394-95	160	3394-96	126	Buna N/Carbon & Ceramic	8 HP B&S I/P (E-start)	27½	21¼	23⅜

(†) Casing/adapter seal is paper gasket.

Performance Chart

Model	GPH of Water at Total Head in Feet										*Max. Head
	10'	20'	30'	40'	50'	60'	70'	80'	90'		
3270, 3272, 3274, 327A, 327B	13,000	12,000	11,260	10,020	8,765	7,260	5,250	3,180	—	89 ft.	
3390, 3391, 3393, 3394	18,000	16,740	15,580	14,220	12,880	10,980	9,300	7,200	4,500	100	

(*) Shut-off; to convert to psi, divide by 2.31

For Repair 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

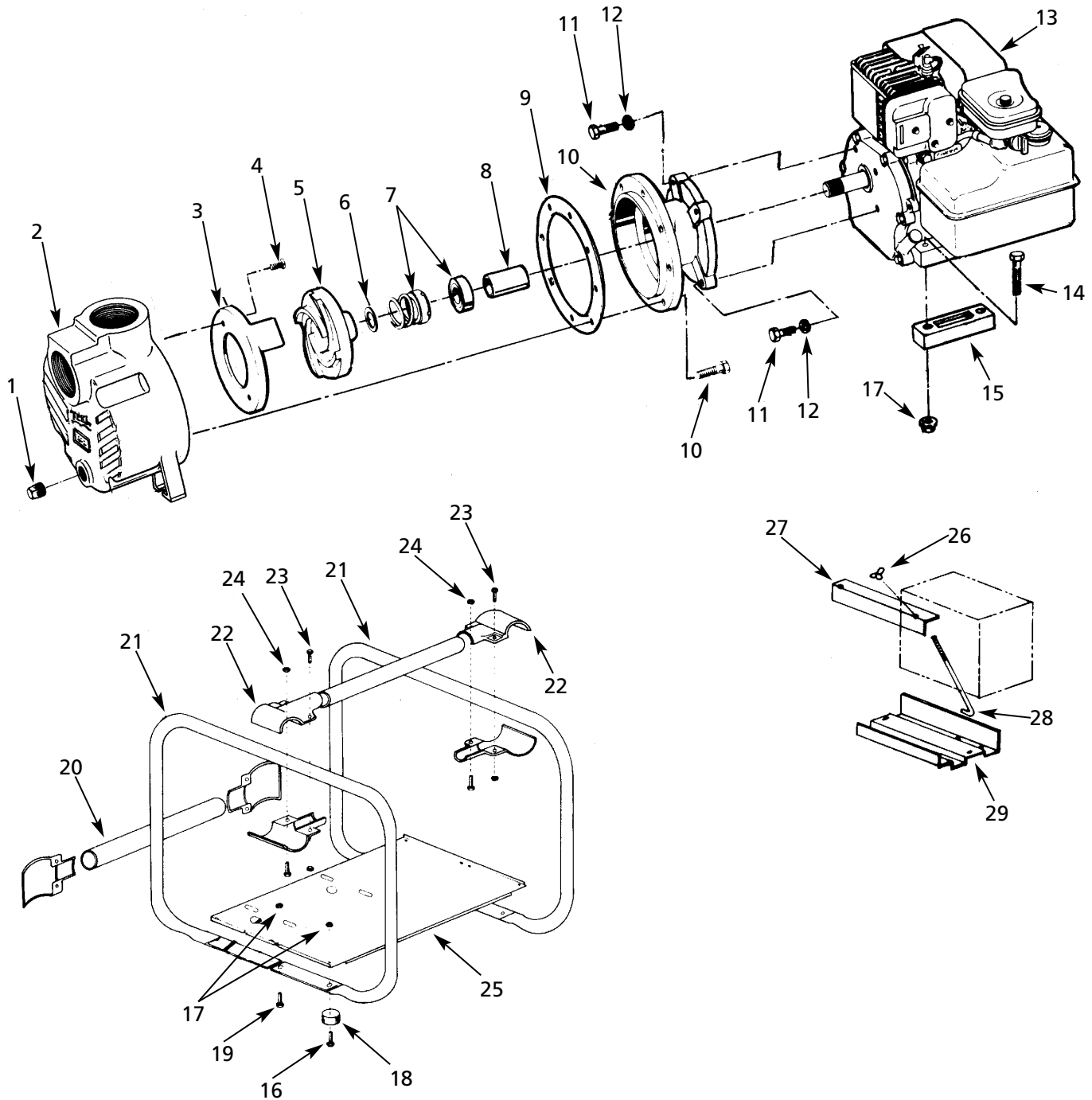


Figure 1 - Repair Parts Illustration

Models 3270, 3272, 3274, 327A, 327B, 3390, 3391, 3393 and 3394

Repair Parts List

Ref. No.	Description	Part Number for Model:			Qty.
		5HP 327A & 327B	5HP 327x	8HP 339x	
1	3/4" NPT Pipe plug	*	*	*	1
2	Casing (cast iron)	1990-007-09	1990-007-09	1990-007-09	1
	(aluminum)	—	1990-000-01	1990-000-0	1
3	Wearplate	1557-000-01	1557-000-01	1557-000-01	1
4	5/16"-18 UNC x 1/2" Flat socket head screw, stainless	1741-000-00	1741-000-00	1741-000-00	2
5	Impeller	1606-002-01	1606-001-01	1550-001-01	1
6	Impeller shims set contains I each: 0.010, 0.020, 0.030"	3827-172-90	1658-000-90	1656-000-90	1
7	Seal assembly, Buna-N	—	1640-162-90 (std.)	1640-163-90 (std.)	1
	Seal assembly, Buna-N/Silicon Carbide	1641-164-00	—	1640-163-00 (opt.)	1
	Seal assembly, Viton	1641-163-00	1640-162-91 (opt.)	1640-163-91 (opt.)	1
8	Shaft sleeve	—	1483-000-00	1555-000-00	1
9	Gasket	1546-000-00	1546-000-00	1546-000-00	1
10	Adapter	1604-030-01	1604-030-09	1545-030-09	4
11	3/8"-16 UNC x 1 1/4" Hex cap screw	—	—	*	4
	5/16"-24 UNF x 3/4" Flanged hex cap screw	*	*	—	4
12	3/8" Split lockwasher	—	—	*	4
13	Engine (327A & 327B)	1639-042-00	—	—	1
	(3270)	—	1639-019-00	—	1
	(3272)	—	1639-018-00	—	1
	(3274)	—	1639-036-00	—	1
	(3390)	—	—	1632-010-00	1
	(3391)	—	—	1639-028-00	1
	(3393)	—	—	1639-026-00	1
	(3394)	—	—	1639-027-00	1
14	5/16"-18 UNC x 2 1/2" Hex head cap screw	*	*	*	4
15	Engine raising block	1605-000-00	1605-000-00	1990-024-00	2
16	5/16"-18 UNC x 3/4" Flanged hex cap screw	*	*	*	12
17	5/16"-18 UNC Flanged hex nut	*	*	*	12
18	Rubber feet	1508-000-00	1508-000-00	1508-000-00	4
19	5/16"-18 UNC x 1" Hex flange screw	*	*	*	4
20	Pump frame brace	1696-092-00	1696-092-00	1696-088-00	2
21	Outside rails	1696-099-00	1696-099-00	1696-087-00	2
22	Pump frame clamp	1696-091-00	1696-091-70	1696-091-70	8
23	1/4"-20 UNC x 3/4" Slotted hex flange screw	*	*	*	8
24	1/4"-20 UNC Hex nut	*	*	*	8
25	Engine mount	1696-055-00	1696-055-00	1696-086-00	1
26	1/4"-20 UNC Wing nut	—	—	*	2
27	Battery holddown	—	—	3102-102-00	1
28	1/4"-20 UNC Holddown rod	—	—	3102-103-00	1
29	Battery base plate	—	—	3102-101-00	1
Δ	13" Battery cable	—	—	3102-104-90	1
Δ	30" Battery cable	—	—	3102-105-90	1
Δ	3" NPT Pipe nipple	1696-045-00	1696-045-00	1696-045-00	2
Δ	† Suction strainer	1680-000-00	1680-000-00	1680-000-00	1

(Δ) Not shown.

(*) Standard hardware item, available locally.

(†) Indicates optional equipment available.

(—) Not applicable.

NOTE: Wheel kits available separately. Order Model A735-90.

3-Inch Solids-Handling Pumps

Maintenance (Continued)

new seal head with a light coating of soapy water. Slide head onto shaft sleeve. Slip the shaft sleeve with seal head onto the engine shaft.

- 8B. (327A & 327B) Wet the inside rubber portion of the new seal head with a light coating of soapy water. Slide head onto the rear of impeller.

NOTE: Reinstall any shims or spacers that may have been removed onto engine shaft or into impeller before installing impeller.

- 9A. Screw impeller back in place, tightening until it is against the shaft shoulder.
- 9B. (327A & 327B) Screw impeller back in place until it is against the end of the engine shaft.
10. Replace adapter gasket and casing and fasten with eight capscrews (Ref. No. 16).
11. After assembly, 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 (see Shim Adjustment) as required, and reconnect spark plug wire and battery cables.
12. A short "run-in" period may be necessary to provide completely leak-free seal operation.

IMPELLER AND WEARPLATE REPLACEMENT

Impeller (Ref. No. 5) and cutwater/wearplate (Ref. No. 3) 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.

NOTE: 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 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 on your unit may have developed, since the 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. 6.) If the diameter of the impeller is badly worn or if 1/16" shim washers do not restore clearances to less than the 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 does the cast iron wearplate show deterioration. Occasionally a stone or hard object might get caught in the impeller and cause damage to the cutwater/wearplate. In these cases follow the instructions below for replacement and refer to Figure 1.

1. Detach pump casing (Ref. No. 2).
2. Remove the two flat head socket screws (Ref. No. 4) in face of the cutwater/wearplate (Ref. No. 3).
3. The cutwater/wearplate can now be removed from the casing.
4. Simply reverse the procedure to install the replacement.

NOTE: Ensure that all parts are clean

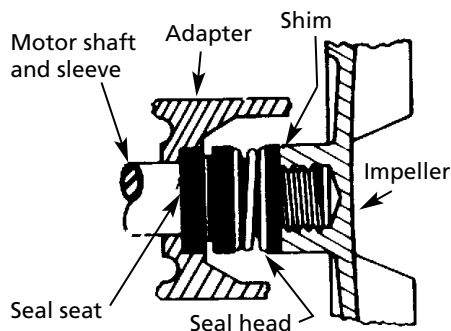


Figure 2A - Mechanical Seal Replacement

before installation so that the new cutwater/wearplate seats properly in the casing.

SHIM ADJUSTMENT

When installing a replacement impeller or mechanical seal, it may be necessary to vary the number of shims (Ref. No. 6) that will be required. This is easily done by adding one 0.010" shim more than was removed, and reassembling the pump as described.

Ensure that the casing is snugly in place and check the shaft to make sure it is turning freely. If it turns freely, check to ensure that the adapter (Ref. No. 10) and the casing (Ref. No. 2) are fitted tight together. If they are not, tighten the fasteners (Ref. No. 16) and recheck the shaft for free turning. Tighten carefully, turning shaft while tightening. If shaft seizes before fasteners (Ref. No. 16) are completely tight, disassemble pump and remove one shim and repeat reassembly.

If any time during the above operation the shaft does not turn free, or a metal to metal strike can be heard or felt when turning the shaft, follow the procedure indicated above and repeat the procedure.

The above procedure ensures that the pump will have the proper running clearance (less than 0.010") between the impeller and casing and perform like a new unit with the new impeller or motor.

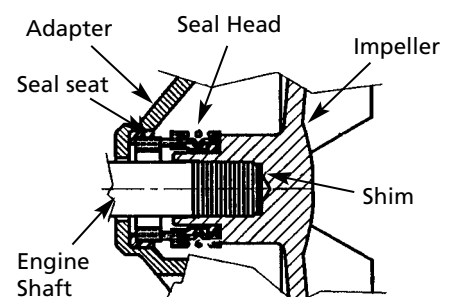


Figure 2B - Mechanical Seal Replacement