

Please read and save this Repair 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.

Small Straight Centrifugal Pumps

Cast Iron, Bronze, and Stainless Steel Models

Refer to form 1808-634-00 for General Operating and Safety Instructions.

Description

These pumps are non self-priming (gravity feed) units designed to handle liquid transfer, heating and cooling applications, where no suction lift is required. All models feature semi-open clog-resistant impellers and continuous duty, 3450 RPM, 56J frame motors. Discharge port can be rotated in 90° increments to accommodate specific applications. Casing working pressure to 75 psi (517 kPa). These are manual units, no controls are supplied. For use with nonflammable, non-abrasive liquids compatible with pump component materials.

CAST IRON UNITS

Pump construction is cast iron casing and adapter. Cast 316 stainless steel impeller. Buna N type 6 mechanical shaft seal with carbon and ceramic wear faces. O-ring casing seal. Handles liquids from 40° to 180° F (4° to 82° C).

BRONZE UNITS

Pump construction is cast bronze casing and adapter. Cast 316 stainless steel impeller. Viton type 6 mechanical shaft seal with carbon and ceramic wear faces. O-ring casing seal. Handles liquids from 40° to 200° F (4° to 93° C).

316 STAINLESS STEEL UNITS

Pump construction is cast 316 stainless steel casing, adapter, and impeller. Viton type 6 mechanical shaft seal with carbon and ceramic wear faces. O-ring casing seal. Handles liquids from 40° to 200° F (4° to 93° C).

Maintenance

⚠ WARNING Make certain that unit is disconnected from power source before attempting to service or remove any components!

MECHANICAL SEAL REPLACEMENT:

Refer to Figures 2 & 3.

IMPORTANT: Always replace both seal seat (Ref. No. 5) and seal head (Ref. No. 6) to insure proper mating of components! Also, impeller seal (Ref. No. 9) should be replaced anytime impeller fastener (Ref. No. 10) has been removed.

1. Remove fasteners (Ref. No. 13) connecting casing (Ref. No. 12) to adapter (Ref. No. 4).
2. Remove casing.

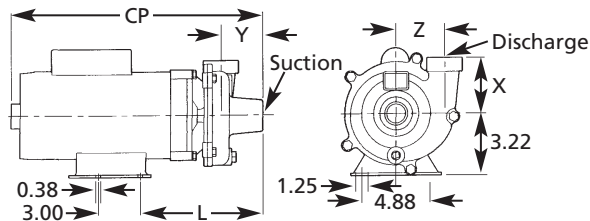


Figure 1 - Dimensions

Dimensions (Inches)

Model	Suc*	Dis*	CP†	L	X	Y	Z
3680 Series	3/4"	1/2"	12.00	6.25	1.88	1.44	1.88
3700 Series	1	3/4	12.00	6.31	2.38	1.41	2.09
3690 Series	1 1/4	1	14.00	6.31	2.50	1.28	2.03

NOTE: All dimensions have a tolerance of $\pm 1/8"$.

(*) Standard NPT (female) pipe thread.

(†) This dimension may vary due to motor manufacturers specifications.

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Specifications

Model	DRIVER		Power Supply @60 Hz	Suction x Discharge*	PUMP Weight (lbs.)		
	HP	Enclosure			Cast Iron	Bronze	SS
3680	1/3	ODP	115/230, 1 phase	3/4" x 1/2"	26	27	26
368A	1/3	TEFC	115/230, 1 phase	3/4 x 1/2	31	32	31
368B	1/2	TEFC	115/230, 1 phase	3/4 x 1/2	33	34	33
368C	1/2	TEFC	230/460, 3 phase	3/4 x 1/2	31	32	31
3701	1/2	ODP	115/230, 1 phase	1 x 3/4	31	32	31
370B	1/2	TEFC	115/230, 1 phase	1 x 3/4	33	34	33
370F	1/2	TEFC	208-230/460, 3 phase	1 x 3/4	34	35	34
3703	1/2	ODP	230/460, 3 phase	1 x 3/4	31	32	31
3700	3/4	ODP	115/230, 1 phase	1 x 3/4	34	35	34
370A	3/4	TEFC	115/230, 1 phase	1 x 3/4	37	38	37
3702	3/4	ODP	230/460, 3 phase	1 x 3/4	32	33	32
370C	3/4	TEFC	230/460, 3 phase	1 x 3/4	35	36	35
370E	1	TEFC	115/230, 1 phase	1 x 3/4	39	40	39
370D	1	TEFC	230/460, 3 phase	1 x 3/4	36	37	36
3691	1	ODP	115/230, 1 phase	1 1/4 x 1	36	37	36
369C	1	TEFC	115/230, 1 phase	1 1/4 x 1	40	41	40
3693	1	ODP	230/460, 3 phase	1 1/4 x 1	35	36	35
369F	1	TEFC	230/460, 3 phase	1 1/4 x 1	39	40	39
3690	1 1/2	ODP	115/230, 1 phase	1 1/4 x 1	40	41	40
369A	1 1/2	TEFC	115/230, 1 phase	1 1/4 x 1	48	49	48
3692	1 1/2	ODP	230/460, 3 phase	1 1/4 x 1	38	39	38
369B	1 1/2	TEFC	230/460, 3 phase	1 1/4 x 1	40	41	40
369D	2	TEFC	115/230, 1 phase	1 1/4 x 1	52	53	52
369E	2	TEFC	230/460, 3 phase	1 1/4 x 1	50	51	50

NOTE: Driver data is subject to change without notice, see label on driver for actual specifications.

(ODP) Open Drip Proof; (TEFC) Totally Enclosed Fan Cooled; (*) Standard NPT (female) pipe thread.

Performance Chart

Model (HP/Enclosure)	GPM of Water at Total Head in Feet						Max. Head**
	10'	20'	30'	40'	50'	60'	
368A (1/3 TEFC)	29	24	17	7	—	—	45 ft.
3680, 368B, 368C (1/3 ODP, 1/2 TEFC)	35	31	26	18	9	—	57
370B, 370F (1/2 TEFC)	42	35	25	9	—	—	45
3701, 3703, 370A, 370C (1/2 ODP, 3/4 TEFC)	46	40	31	16	—	—	48
3700, 3702, 370D, 370E (3/4 ODP, 1 TEFC)	58	52	44	32	16	—	58
369C, 369F (1 TEFC)	69	60	48	27	—	—	48
3691, 3693, 369A, 369B (1 ODP, 1 1/2 TEFC)	72	63	53	35	7	—	53
3690, 3692, 369D, 369E (1 1/2 ODP, 2 TEFC)	85	76	67	57	40	17	66

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

Models 3680, 3690 and 3700 Series

Maintenance (Continued)

CAUTION Care should be taken not to "pinch" or "shave" casing seal (Ref. No. 11) between adapter and casing.

- Use a box and/or socket wrench to remove impeller fastener. Remove impeller seal and impeller (Ref. No. 8).

IMPORTANT: Care should be taken to insure that the same number and thickness of shim washers (Ref. No. 7) are replaced behind impeller as was removed. Shim washers are located directly behind impeller and become loose as impeller is removed.

- Seal head can now be pulled from shaft.
- Pry seal seat from adapter (Ref. No. 4).

CAUTION The precision lapped faces on mechanical seal are easily damaged. Handle your replacement seal carefully. Do not touch polished seal faces.

IMPORTANT: Be sure that shaft shoulder does not damage polished face (see Figure 2).

- Thoroughly clean all surfaces of seal seat cavity in, adapter.
- Using a clean cloth, wipe shaft and shaft sleeve and make certain that they are perfectly clean.

- Wet the rubber portion of new seal seat with a light coating of soapy water. While wearing clean gloves or using a clean light rag, press seal seat squarely into adapter recess, use cardboard washer (usually supplied with new seal), place over polished surface and use a piece of pipe or dowel rod to press in firmly, but gently. Avoid scratching polished face.
- Dispose of cardboard washer. Check again to see that polished surface is free of dirt and all other foreign particles and that it has not been scratched or damaged.
- Wet inside rubber portion of new seal head with a light coating of soapy water. Slide head onto motor shaft with sealing surface facing seal seat. (See Figure 2).
- Replace any impeller shims (Ref. No. 7) which may have been removed in disassembly. (See "Shim Adjustment" below.)

- Screw impeller back into place, tightening until it is against shaft shoulder.
- Replace impeller seal and fastener, and tighten until snug.
- Remount casing and casing seal on adapter.

SHIM ADJUSTMENT

- When installing a replacement adapter (Ref. No.4), impeller (Ref. No. 8), or casing (Ref. No.2) it may be necessary to vary number of impeller shims (Ref. No. 7) that will be required. This is easily done by adding one shim more than was removed and reassembling pump as described in "Mechanical Seal Replacement" section.

NOTE: When adding or removing shims, it is best to proceed with a 0.010" increment each time. While tightening unit together turn shaft; feel for shaft seizing. If shaft begins to seize before fasteners are completely tight, disassemble pump and remove one shim and repeat assembly.

- Once having added one shim more than original, ensure that casing and adapter are firmly fitted (check fasteners Ref. No. 13). When pump shaft turns freely add shims until it does strike, then remove a 0.010"

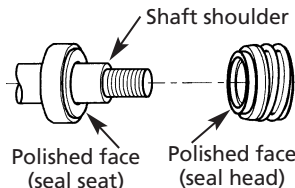


Figure 2 - Seal replacement

Small Straight Centrifugal Pumps

Cast Iron, Bronze, and Stainless Steel Models

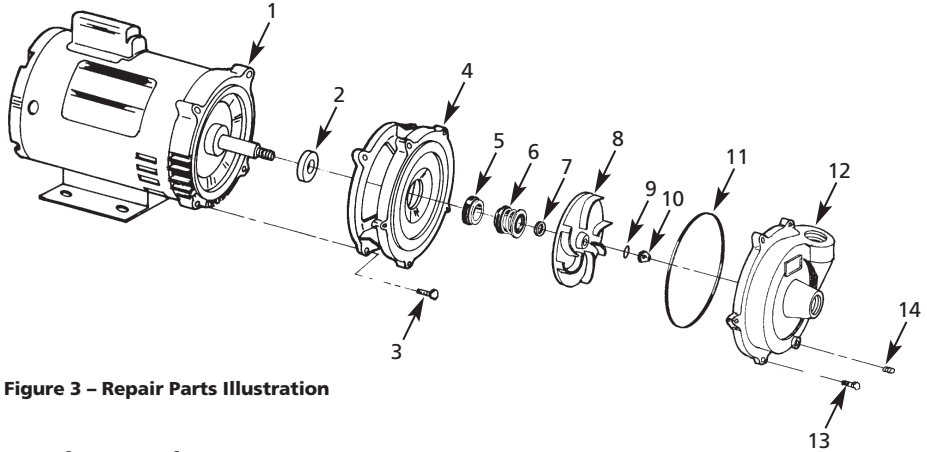
Maintenance (Continued)

- shim. This should allow proper clearance.
3. Proper running clearance for impeller should be as close as possible to volute without striking; maximum clearance is 1/32" (0.032").
 4. Follow above procedure until proper clearance is obtained. This will ensure maximum performance.

For Repair Parts, contact dealer where pump was purchased.

Please provide the following information:

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

**Figure 3 – Repair Parts Illustration****Repair Parts List**

Ref. No.	Description	Part Number for Models:					Qty.
		368A (1/3HP)	368B (1/2HP) 368C (1/2HP)	370B (1/2HP) 370F (1/2HP)	3701 (1/2HP) 3703 (1/2HP) 370A (3/4HP) 370C (3/4HP)		
1	Motor	-1 Phase ODP -3 Phase ODP -1 Phase TEFC -3 Phase TEFC	— — ◆ 1626-067-00 —	◆ 1626-068-00 — ◆ 1626-085-00	— — ◆ 1626-068-00 ◆ 1626-085-00	◆ 1626-009-00 ◆ 1626-013-00 ◆ 1626-051-00 ◆ 1626-052-00	1
2	Slinger washer		12-117-B	12-117-B	12-117-B	12-117-B	1
3	Fastener		*	*	*	*	4
4	Adapter	-Cast iron -Bronze -Stainless steel	3680-035-09 3680-036-09 3680-034-09	3680-035-09 3680-036-09 3680-034-09	3690-035-09 3690-036-09 3690-034-09	3690-035-09 3690-036-09 3690-034-09	1
5&6	‡ Shaft seal assembly	-Buna N -Viton	1640-161-90 1640-161-91	1640-161-90 1640-161-91	1640-161-90 1640-161-91	1640-161-90 1640-161-91	1
7	Impeller shim set (0.005", 0.020", 0.030"; one each)		1806-044-90	1806-044-90	1806-044-90	1806-044-90	1
8	Impeller		3680-015-01	3680-015-09	3700-013-02	3700-013-01	1
9	Impeller seal	-Buna N -Viton	2105-036-00 2105-037-00	2105-036-00 2105-037-00	2105-036-00 2105-037-00	2105-036-00 2105-037-00	1
10	Impeller fastener		1784-001-00	1784-001-00	1784-001-00	1784-001-00	1
11	Casing seal	-Buna N -Viton	1582-000-00 1532-000-00	1582-000-00 1532-000-00	1567-000-00 1567-001-00	1567-000-00 1567-001-00	1
12	Casing	-Cast iron -Bronze -Stainless steel	3680-002-09 3680-003-09 3680-001-09	3680-002-09 3680-003-09 3680-001-09	3700-002-09 3700-003-09 3700-001-09	3700-002-09 3700-003-09 3700-001-09	1
13	Fastener		*	*	*	*	5
14	1/8" NPT pipe plug		*	*	*	*	1

(*) Standard hardware item, available locally.

(‡) Seal head and seat available as set only.

(◆) Requires foot 1626-040-90.

For Repair Parts, contact dealer where pump was purchased.

Please provide the following information:

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

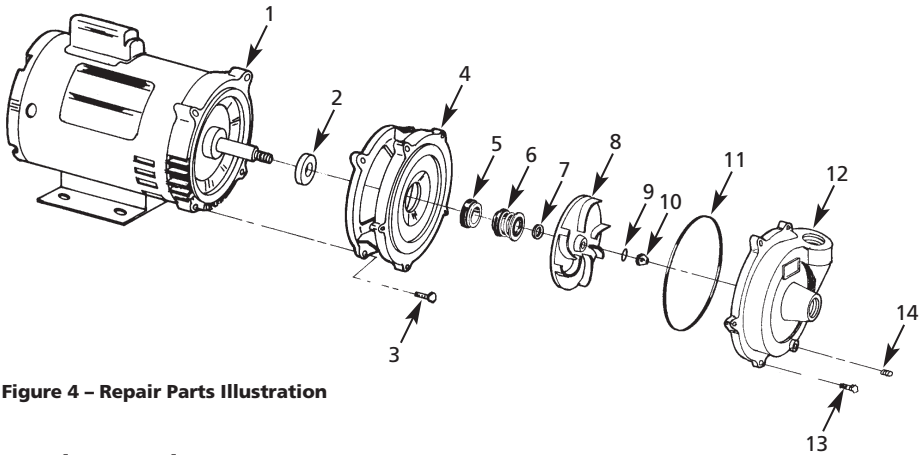


Figure 4 – Repair Parts Illustration

Repair Parts List

Ref. No.	Description	Part Number for Models:				Qty.					
		3700 (3/4HP)	3702 (3/4HP)	370D (1HP)	370E (1HP)		3691 (1HP)	3693 (1HP)	369A (11/2HP)	369B (11/2HP)	3690 (11/2HP)
1	Motor	-1 Phase ODP -3 Phase ODP	◆ 1626-010-00 ◆ 1626-014-00	—	◆ 1626-011-00 ◆ 1626-015-00	◆ 1626-012-00 ◆ 1626-016-00	1				
		-1 Phase TEFC -3 Phase TEFC	◆ 1626-069-00 ◆ 1626-077-00	◆ 1626-069-00 ◆ 1626-077-00	◆ 1626-050-00 ◆ 1626-053-00	◆ 1626-070-00 ◆ 1626-054-00					
2	Slinger washer		12-117-B	12-117-B	12-117-B	12-117-B	1				
3	Fastener		*	*	*	*	4				
4	Adapter	-Cast iron -Bronze -Stainless steel	3690-035-09 3690-036-09 3690-034-09	3690-035-09 3690-036-09 3690-034-09	3690-035-09 3690-036-09 3690-034-09	3690-035-09 3690-036-09 3690-034-09	1				
5&6	‡ Shaft seal assembly	-Buna N -Viton	1640-161-90 1640-161-91	1640-161-90 1640-161-91	1640-161-90 1640-161-91	1640-161-90 1640-161-91	1				
7	Impeller shim set (0.005", 0.020", 0.030"; one each)		1806-044-90	1806-044-90	1806-044-90	1806-044-90	1				
8	Impeller		3700-013-09	3690-013-02	3690-013-01	3690-013-09	1				
9	Impeller seal	-Buna N -Viton	2105-036-00 2105-037-00	2105-036-00 2105-037-00	2105-036-00 2105-037-00	2105-036-00 2105-037-00	1				
10	Impeller fastener		1784-001-00	1784-001-00	1784-001-00	1784-001-00	1				
11	Casing seal	-Buna N -Viton	1567-000-00 1567-001-00	1567-000-00 1567-001-00	1567-000-00 1567-001-00	1567-000-00 1567-001-00	1				
12	Casing	-Cast iron -Bronze -Stainless steel	3700-002-09 3700-003-09 3700-001-09	3690-002-09 3690-003-09 3690-001-09	3690-002-09 3690-003-09 3690-001-09	3690-002-09 3690-003-09 3690-001-09	1				
13	Fastener		*	*	*	*	5				
14	1/8" NPT pipe plug		*	*	*	*	1				

(* Standard hardware item, available locally.

(‡) Seal head and seat available as set only.

(◆) Requires foot 1626-040-90.

