

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.

# 1-Inch Self-Priming Centrifugal Pumps

## Low Volume Liquid Transfer Bronze

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

### Description

These self-priming (to 6 ft. lift) centrifugal pumps are designed for continuous duty, general purpose liquid transfer. Applications include livewell recirculation, marine air conditioning, and salt water aquaculture. Pumps feature bronze construction, Buna N seals, and a semi-open clog resistant impeller capable of handling solids to 1/8" diameter. Handle liquids from 40° F to 180° F (4° C to 82° C). Maximum working pressure 75 psi (517 kPa). Single phase motors have automatic reset thermal protection. All models are manual mode and require field wiring, no controls are supplied (see motor nameplate for specific wiring diagram). For use with nonflammable, non-abrasive liquids compatible with pump component materials.

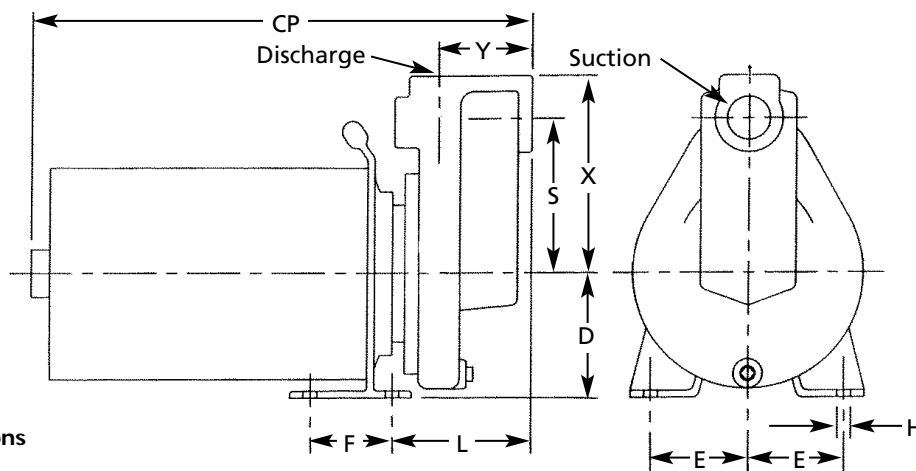


Figure 1 - Dimensions

### Dimensions (Inches)

Model	Suc.*	Dis.*	CP†	D	E	F	H	L	S	X	Y
5660-97	1"	1"	14.11	3.50	2.25	3.00	0.44	4.28	4.00	5.25	3.94
5661-97	1	1	14.61	3.50	2.25	3.00	0.44	4.28	4.00	5.25	3.94
5662-97	1	1	15.11	3.50	2.25	3.00	0.44	4.28	4.00	5.25	3.94
5664-97	1	1	16.09	3.50	2.25	3.00	0.44	4.28	4.00	5.25	3.94
5665-97	1	1	15.53	3.50	2.25	3.00	0.44	4.28	4.00	5.25	3.94
5666-97	1	1	16.03	3.50	2.25	3.00	0.44	4.28	4.00	5.25	3.94
5667-97	1	1	16.41	3.50	2.25	3.00	0.44	4.28	4.00	5.25	3.94
5669-97	1	1	17.66	3.50	2.25	3.00	0.44	4.28	4.00	5.25	3.94

(\*) Standard NPT (female) pipe thread.

(†) This dimension may vary due to motor manufacturer's specifications.

# 1-Inch Self-Priming Centrifugal Pumps

## Low Volume Liquid Transfer Bronze

### Specifications

DRIVER							PUMP					Ship Weight (Lbs.)
Model	HP	Phase	Enclosure	Power Supply	Hertz	NEMA Frame	RPM	Casing	Adapt.	Imp.	Seals‡	
5660-97	1/2	1	ODP	115/230 VAC	60	56J	3450	BR	BR	BR	Buna N	38
5661-97	3/4	1	ODP	115/230 VAC	60	56J	3450	BR	BR	BR	Buna N	39
5662-97	1	1	ODP	115/230 VAC	60	56J	3450	BR	BR	BR	Buna N	42
5664-97	2	1	ODP	115/230 VAC	60	56J	3450	BR	BR	BR	Buna N	60
5665-97	1/2	1	TEFC	115/230 VAC	60	56J	3450	BR	BR	BR	Buna N	41
5666-97	3/4	1	TEFC	115/230 VAC	60	56J	3450	BR	BR	BR	Buna N	43
5667-97	1	1	TEFC	115/230 VAC	60	56J	3450	BR	BR	BR	Buna N	46
5669-97	2	1	TEFC	115/230 VAC	60	56J	3450	BR	BR	BR	Buna N	65

(ODP) Open Drip Proof; (TEFC) Totally Enclosed Fan Cooled; (BR) Bronze

(‡) Shaft seal also contains carbon, ceramic, and stainless steel components.

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

### Performance

Model	HP	GPM of Water at Total Head in Feet							Max. Head**
		10'	20'	30'	40'	50'	60'		
5660-97, 5665-97	1/2	38	30	20	9	—	—	47 ft.	
5661-97, 5666-97	3/4	56	48	37	24	7	—	53	
5662-97, 5667-97	1	70	61	50	38	24	—	60	
5664-97, 5669-97	2	90	83	74	64	50	28	68	

(\*\*) Shutoff; to convert to PSI, multiply by SG (specific gravity of liquid), then divide by 2.31.

### Maintenance

**⚠ WARNING** *Make certain that power source is disconnected before attempting to service or disassemble any components! If power disconnect is out-of-sight, lock it in open position and tag it to prevent application of power.*

#### MECHANICAL SEAL REPLACEMENT

Refer to Figures 2 and 3.

**IMPORTANT:** Always replace both seal seat (Ref. No. 9) and seal head (Ref. No. 10) to insure proper mating of mechanical seal components!

**NOTE:** It is not necessary to remove

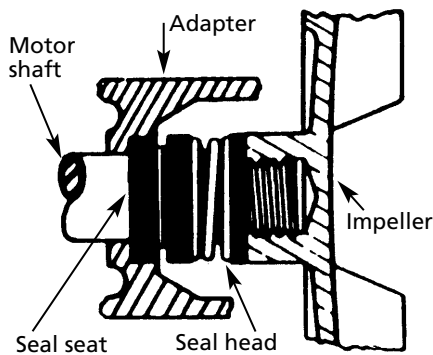


Figure 2 - Mechanical Seal Replacement

pipng from pump casing. Motor and impeller assembly is removed from back of casing.

1. Drain pump before disassembling  
Unscrew pipe plug (Ref. No. 14) to drain most of liquid; some will be left in bottom.
2. Unthread fasteners (Ref. No. 5) and remove pump casing (Ref. No. 13) and casing seal (Ref. No. 8) from casing cover (Ref. No. 7).
3. To unscrew impeller (Ref. No. 12), turn counterclockwise (CCW) facing impeller.

**NOTE:** A screwdriver slot or two flats for use with an open end 7/16" wrench, are provided at rear of motor shaft (remove bearing cap for access). To hold motor shaft from turning, either insert a large screwdriver blade into slot, or use a 7/16" wrench across flats.

4. Unthread fasteners (Ref. No. 6) and remove motor adapter (Ref. No. 4). Seal head and impeller shims (Ref. No. 11) will come loose at this time.

**NOTE:** Casing cover will still be attached to motor adapter.

**IMPORTANT:** Retain impeller shims for use when reassembling unit.

5. Push seal seat from casing cover with screwdriver.
6. Clean adapter recess before inserting a new seal seat.
7. Carefully wipe polished surface of new seal seat with a clean cloth.
8. Wet outside of rubber portion of seal seat with a light coating of soapy water.
9. Press new seal seat squarely into cavity in casing cover. If seal seat does not press squarely into cavity, it can be adjusted into place by pushing on it carefully with a piece of pipe or dowel. Always use a piece of cardboard between pipe and seal seat to avoid scratching seal seat. (This is a lapped surface and must be handled very carefully.)
10. After seal seat is in place, insure that it is clean and has not been marred.

## Models 5660-97 thru 5669-97

### Maintenance (Continued)

11. Using a clean cloth, wipe shaft and make certain that it is perfectly clean.

**NOTE:** If removed, slide slinger washer (Ref. No. 2) onto shaft until it is located approximately 1/8" from face of motor bearing hub.

12. Carefully guide motor shaft through seal seat. Secure motor adapter on motor mounting face.

13. Apply a light coating of soapy water to inside rubber portion of seal head and slide onto shaft (with sealing face first) so that rubber portion is just up over shaft shoulder.

**CAUTION** *Do not touch or wipe face of polished part of seal head.*

14. Replace any impeller shims which may have been removed in disassembly (see "Shim Adjustment").

15. Screw impeller back in place, tightening until it is against shaft shoulder.

16. Remount casing seal and pump casing on casing cover.

**IMPORTANT:** Always inspect casing seal for cracks or cuts when unit is disassembled. Replace if damaged.

### SHIM ADJUSTMENT

When installing a replacement impeller (Ref. No. 12) or motor (Ref. No. 1), it may be necessary to adjust number of shims (Ref. No. 11) to insure proper running clearance between impeller and casing (Ref. No. 13). Proceed as follows:

**NOTE:** A proper running clearance is less than 0.010".

1. For impeller replacement, add one 0.010" shim in addition to shims removed originally.

2. For motor replacement, add two 0.010" shims in addition to shims removed during disassembly.

3. Reassemble pump using "Mechanical Seal Replacement" for reference.

**IMPORTANT:** Insure that casing is in place and check shaft to make sure it is turning freely (use screwdriver slot or two flats at rear of motor to turn shaft). If it turns freely, check to insure that casing cover and casing are fitted "metal to metal" where they meet on

outside. If they are not "metal to metal" tighten fasteners (Ref. No. 5) and recheck shaft for free turning. Tighten carefully turning shaft while tightening so that motor bearings are not damaged in event that too many shims were installed. If shaft seizes before fasteners are completely tight, disassemble pump and remove one shim and repeat reassembly.

**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

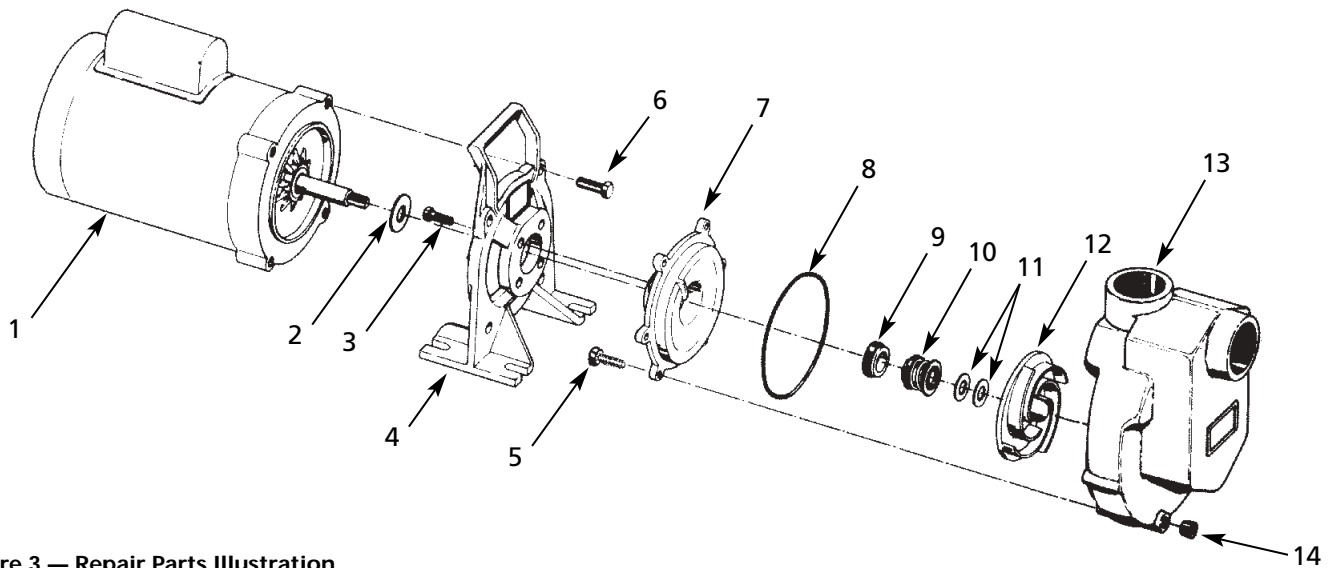


Figure 3 — Repair Parts Illustration

**Repair Parts List**

Ref. No.	Description	Part Number For Models:				Qty.
		5660-97 (1/2HP) 5665-97 (1/2HP)	5661-97 (3/4HP) 5666-97 (3/4HP)	5662-97 (1HP) 5667-97 (1HP)	5664-97 (2HP) 5669-97 (2HP)	
1	Motor	-1 Phase ODP 1626-009-00	-1 Phase TEFC 1626-010-00	1626-011-00	1626-024-00	1
2	Slinger washer	1534-000-00	1534-000-00	1534-000-00	1534-000-00	1
3	Fastener	*	*	*	*	4
4	Adapter	1993-000-01	1993-000-01	1993-000-01	1993-000-01	1
5	Fastener	*	*	*	*	6
6	Fastener	*	*	*	*	4
7	Casing cover	2104-003-02	2104-003-02	2104-003-02	2104-003-02	1
8	Casing seal	-Buna N 2104-004-00	2104-004-00	2104-004-00	2104-004-00	1
9	‡ Seal seat	-Buna N 1640-161-90	1640-161-90	1640-161-90	1640-161-90	1
10	‡ Seal head	-Buna N 1640-161-90	1640-161-90	1640-161-90	1640-161-90	1
11	Impeller shim (package of 3)	1657-000-90	1657-000-90	1657-000-90	1657-000-90	1 pkg
12	Impeller	2104-006-01	2104-006-02	2104-002-01	2104-015-02	1
13	Casing	2218-006-01	2218-006-01	2218-006-01	2218-006-01	1
14	Pipe plug	*	*	*	*	1

(‡) Seal Assembly (Ref. Nos. 9 & 10) includes Seal Head and Seal Seat and is available as a set only.

(\*) Standard hardware item, available locally.

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