

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. AMT reserves the right to discontinue any model or change specifications at any time without incurring any obligation.  
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Periodic maintenance and inspection is required on all pumps to ensure proper operation. Unit must be clear of debris and sediment. Inspect for leaks and loose bolts. Failure to do so voids warranty.

# CENTRIFUGAL PUMPS



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

## DESCRIPTION

These non self-priming centrifugal pumps are intended for liquid transfer, heating and cooling circulation, booster service and other industrial applications where no suction lift is required.

All models feature a semi-open clog resistant impeller and a pull-from-the-rear design for easy servicing. A dual volute casing is used on all models except 4240. A mechanical seal (comprised of carbon, ceramic and stainless steel components) isolates motor shaft from liquid being pumped. Discharge port on pump casing can be rotated in 90° increments with vent and drain plugs for all positions. Buna seals handle liquids from 40° to 180° F (4° to 82° C). Viton® seals handle liquids from 40° to 200° F (4° to 90° C) Maximum ambient temperature 104° F (40° C). Casing working pressure to 100 psi (689 kPa). These are manual units, no controls are supplied. For use with nonflammable, non-abrasive liquids compatible with pump component materials.

## INSTALLATION

Flooded Suction: Net Positive Suction Head Required (NPSHR). Curve with NPSHR available at [www.amtpump.com](http://www.amtpump.com).

1. Problems will arise in operation of this pump unless the recommended NPSHR is supplied to the pump (See "Troubleshooting" chart in 1808-634-00 manual).
2. Salt Water Usage: Because of crystallization and erosive material on the shaft seal (Ref. Nos. 9, 10), we recommend installation of seal-wash hose (Ref. No. 21). Using a wrench, remove the pipe plug (Ref. No. 20) from adapter (Ref. No. 18) and pipe plug (Ref. No. 15) from casing (Ref. No. 14) (remove pipe plug on the 3 o'clock position). Install optional seal wash hose.

**NOTE:** Applicable only with pumps having (A220-90) seal wash and hose installed or by ordering casing (Ref. #18) with optional seal wash and hose installation (A220-90).

## MAINTENANCE

### ▲ WARNING

**Make certain that unit is disconnected from power source before attempting to service or remove any component.**

### REMOVAL OF OLD SEAL

Refer to Figure 1 for seal location.

**IMPORTANT:** Always replace both seal seat (Ref. No. 9) and seal head (Ref. No. 10) to ensure proper mating of components! Also, impeller seal (Ref. No. 16) (where applicable) should be replaced any time impeller fastener (Ref. No. 13) has been removed.

1. Remove fasteners (Ref. No. 6) that connect adapter (Ref. No. 3) to casing (Ref. No. 14).
2. Remove casing and O-ring (Ref. No. 8).

### ▲ CAUTION

**Care should be taken not to pinch or "shave" o-ring between adapter and casing.**

3. Using a wrench, remove impeller fastener, impeller seal (where applicable) and impeller (Ref. No. 12).

**IMPORTANT:** Care should be taken to ensure that the same number of shim washers (Ref. No. 11) are replaced behind impeller as were removed. These shim washers are located directly behind impeller. These washers as well as impeller key (Ref. No. 19) (where applicable) become loose as impeller is removed.

4. Seal head and shaft sleeve (Ref. No. 17) (where applicable) can now be pulled from shaft.
5. Pry seal seat from adapter.
6. Push seal head from shaft sleeve (where applicable).

## INSTALLATION OF NEW SEAL

### ▲ CAUTION

**The precision lapped faces on shaft seal are easily damaged. Handle your replacement seal carefully.**

1. Thoroughly clean all surfaces of seal seat cavity.
2. Using a clean cloth, wipe shaft and shaft sleeve (where applicable) and make certain that they are perfectly clean.
3. Wet 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. Avoid scratching white ceramic surface. If seat will not position properly, place a cardboard washer over polished surface and use a piece of pipe to press in firmly, but gently.
4. 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.
5. Wet inside rubber portion of new seal head with a light coating of soapy water. Slide head onto shaft/shaft sleeve.

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Slide shaft sleeve with seal head onto motor shaft (where applicable). Seal head and seal seat will meet. Reinstall any shims that have been removed (See "Shim Adjustment" section).

**IMPORTANT:** Before installing new shaft sleeve, apply a bead of non-hardening, pliable sealant (such as Permatex® Form-A-Gasket® No. 2) to motor shaft shoulder.

6. Replace impeller key (where applicable) and impeller. Replace impeller seal (where applicable) before screwing impeller fastener in place.
7. Reassemble pump.
8. A short "run-in" period may be necessary to provide completely leak free seal operation.

## SHIM ADJUSTMENT

When installing a replacement impeller (Ref. No. 12) or motor (Ref. No. 1), it may be necessary to adjust the number of shims (Ref. No. 11) to ensure proper running clearance between impeller and casing (Ref. No. 14).

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 those removed originally.
2. For motor replacement, add two 0.010" shims in addition to shims removed during disassembly.
3. Reassemble pump as described in steps 6 and 7. (See "Installation of New Seal" section).

**IMPORTANT:** Ensure that casing is snugly in place and check shaft to make sure it is turning freely (rotate impeller by impeller fastener, Ref. No. 13 with a wrench). If it turns freely, check to ensure that adapter (Ref. No. 3) and casing are fitted metal-to-metal where they meet on outside. If they are not metal-to-metal, tighten fasteners (Ref. No. 6) and recheck shaft for free turning. Tighten carefully, turning shaft while tightening so that motor bearings are not damaged in the event that too many shims were installed. If shaft seizes before fasteners are completely tight, disassemble pump and remove one shim and repeat reassembly.

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***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*

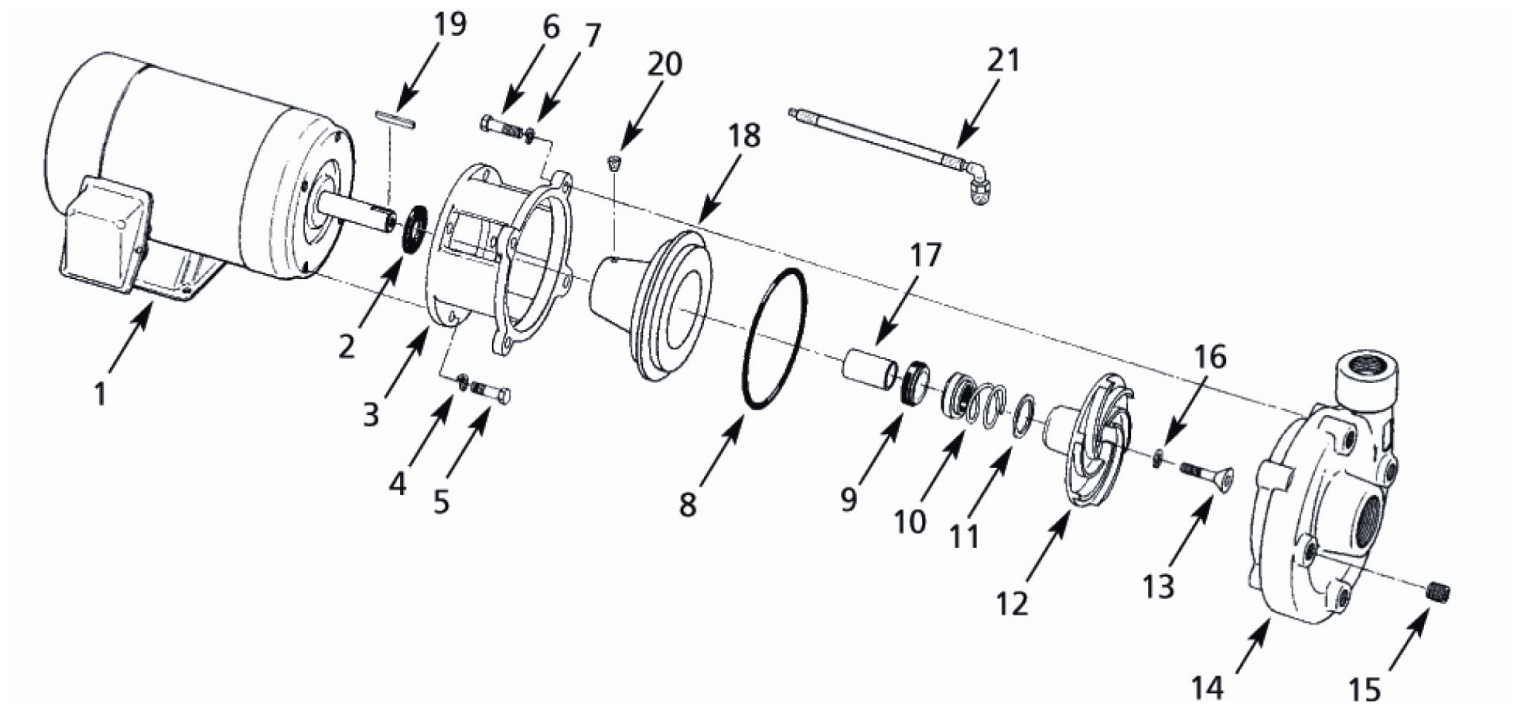


Figure 1 - Repair Parts Illustrations

Repair Parts List

Ref. No.	Description	Part Number for Models:					Qty.
		3158 3159 3156 3157 2HP	315C 315D 315A 315B 3HP	3150 2HP	3151 3HP	315E 3152 5HP	
1	Motor - 1 Phase ODP	1626-024-00	1626-026-00	-	-	-	1
	Motor - 3 Phase ODP	1626-025-00	1626-027-00	-	-	-	
	Motor - 1 Phase TEFC	1626-305-00	1626-306-00	-	-	1626-078-00	
	Motor - 3 Phase TEFC	1627-311-00	1627-312-00	1627-350-00	1627-351-00	1627-352-00	
2	Slinger Washer	N/A	N/A	1470-093-00	1470-093-00	1470-093-00	1
3	Adapter - Cast Iron	4890-030-01	4890-030-01	3150-033-09	3150-033-09	3150-033-09	1
	Adapter - Bronze	4890-030-97	4890-030-97	3150-033-09	3150-033-09	3150-033-09	
	Adapter - Stainless Steel	4890-031-98	4890-031-98	3150-033-09	3150-033-09	3150-033-09	
4	Washer	*	*	*	*	*	4
5	Fastener	*	*	*	*	*	4
6	Fastener	Incl. w/ Ref 14	Incl. w/ Ref 14	Incl. w/ Ref 14	Incl. w/ Ref 14	Incl. w/ Ref 14	4
7	Washer	Incl. w/ Ref 14	Incl. w/ Ref 14	Incl. w/ Ref 14	Incl. w/ Ref 14	Incl. w/ Ref 14	4
8	O-Ring	Incl. w/ Ref KIT	Incl. w/ Ref KIT	Incl. w/ Ref KIT	Incl. w/ Ref KIT	Incl. w/ Ref KIT	1
9,10	Shaft Seal Assembly	Incl. w/ Ref KIT	Incl. w/ Ref KIT	Incl. w/ Ref KIT	Incl. w/ Ref KIT	Incl. w/ Ref KIT	1
11	Impeller Shim Kit	1806-044-90	1806-044-90	1664-000-90	1664-000-90	1664-000-90	1
12	Impeller	3156-010-01	3156-010-02	3150-013-09	3151-013-09	3152-013-00	1
13	Impeller Fastener	1784-001-00	1784-001-00	1759-003-00	1759-003-00	1759-003-00	1
14	Casing - Cast Iron	3156-001-95	3156-001-95	3150-001-95	3150-001-95	3150-001-95	1
	Casing - Bronze	3156-001-94	3156-001-94	3150-004-94	3150-004-94	3150-004-94	
	Casing - Stainless Steel (includes Ref. Nos. 6, 7 14 and 15)	3156-001-98	3156-001-98	3150-003-98	3150-003-98	3150-003-98	
15	Pipe Plug	Incl. w/ Ref 14	Incl. w/ Ref 14	Incl. w/ Ref 14	Incl. w/ Ref 14	Incl. w/ Ref 14	4
16	O-Ring	Incl. w/ Ref KIT	Incl. w/ Ref KIT	Incl. w/ Ref KIT	Incl. w/ Ref KIT	Incl. w/ Ref KIT	4
17	Shaft Sleeve	-	-	1555-142-00	1555-142-00	1555-142-00	1
18	Casing Cover - Cast Iron	-	-	3150-025-09	3150-025-09	3150-025-09	1
	Casing Cover- Bronze	-	-	3150-023-09	3150-023-09	3150-023-09	
	Casing Cover - Stainless Steel	-	-	3150-023-09	3150-023-09	3150-023-09	
19	Impeller Key	-	-	1471-030-00	1471-030-00	1471-030-00	1
20	Pipe Plug (optional for seal wash)	*	*	*	*	*	1
21	Hose (optional for pumps w/ seal wash)	4261-170-00	4261-170-00	4261-170-00	4261-170-00	4261-170-00	1
KIT	Seal Kit - Buna N (standard Cast Iron)	3156-300-94	3156-300-94	3150-300-94	3150-300-94	3150-300-94	1
	Seal Kit - Buna N & Sil. Carb. (optional)	3156-300-93	3156-300-93	3150-300-93	3150-300-93	3150-300-93	1
	Seal Kit - Viton (standard Bronze & SS)	3156-300-91	3156-300-91	3150-300-91	3150-300-91	3150-300-91	1
	Seal Kit - Viton & Sil. Carb. (optional)	3156-300-92	3156-300-92	3150-300-92	3150-300-92	3150-300-92	1
	Seal Kit - EPR-EPDM (optional) (includes Ref. Nos. 8, 9 10 and 16)	-	-	3150-300-96	3150-300-96	3150-300-96	1

(\*) Standard hardware item, available locally.