



# TYPE "B" SINGLE STAGE CENTRIFUGAL PUMP Bearing Frame Mount

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Date	January 1, 2004
Supersedes 12/1/95	

**CAST IRON IMPELLER**

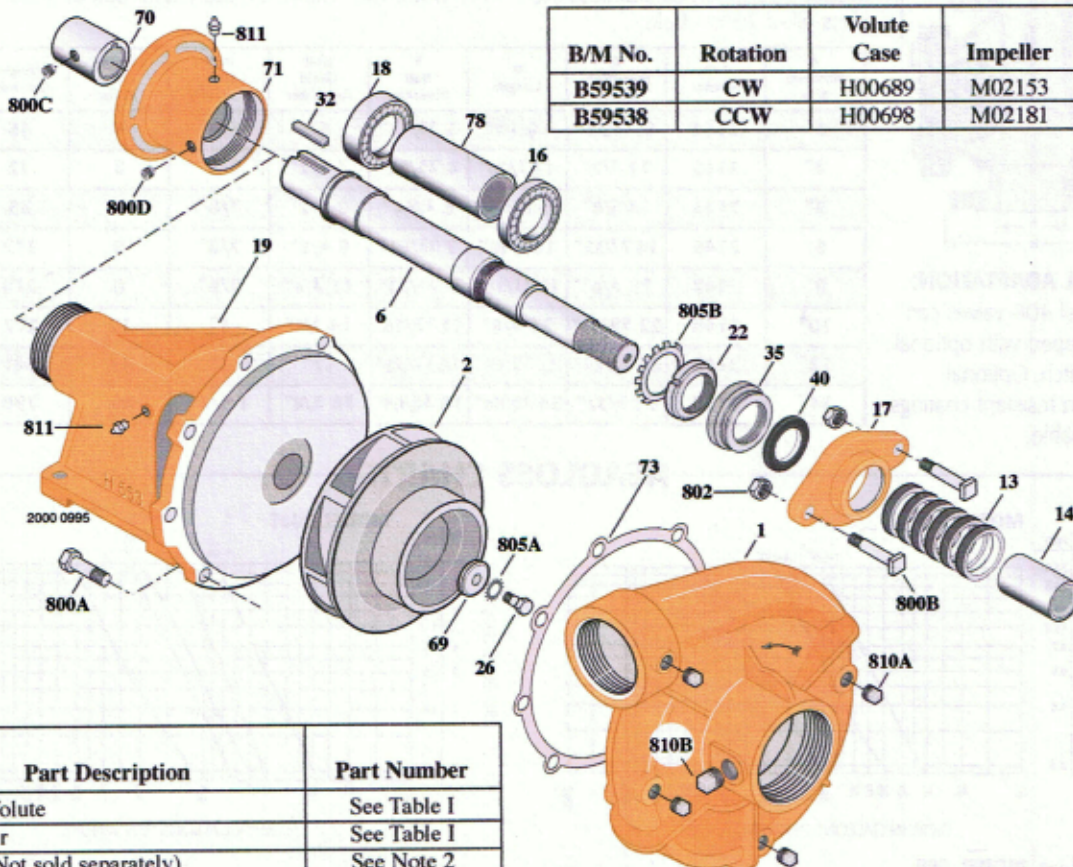
**B3ZRM**

**Threaded Case (NPT)**

**Packing Construction**

**TABLE I**

B/M No.	Rotation	Volute Case	Impeller	Impeller Diameter
B59539	CW	H00689	M02153	9.00"
B59538	CCW	H00698	M02181	9.00"



Item No.	Part Description	Part Number
1	Case, Volute	See Table I
2	Impeller	See Table I
6	Shaft (Not sold separately)	See Note 2
13	Ring, Packing (Set of 6)	S14022
14	Sleeve, Shaft	S05127
16	Bearing, Ball	S13270
17	Gland, Packing (See Note 1)	S04948
18	Bearing, Ball	S13271
19	Frame	H00553
22	Locknut	M10221
26	Screw, Impeller 3/8-16x1"	S23566
32	Key, 1/4x1"	S24168
35	Inner Bearing Cap	S19033
40	Slinger, Water	S12260
69	Washer, Impeller	S06314
70	Coupling, Shaft	S30636
71	Bracket	L05720
73	Gasket, Volute	S05126
78	Sleeve, Spacer	S08980
800A	Capscrew, Hex 3/8-16x7/8" (8 Req.)	S26825
800B	Bolt, Sq. Head 3/8-16x2-1/2" (2 Req.)	S23762
800C	Screw, Set	S23964

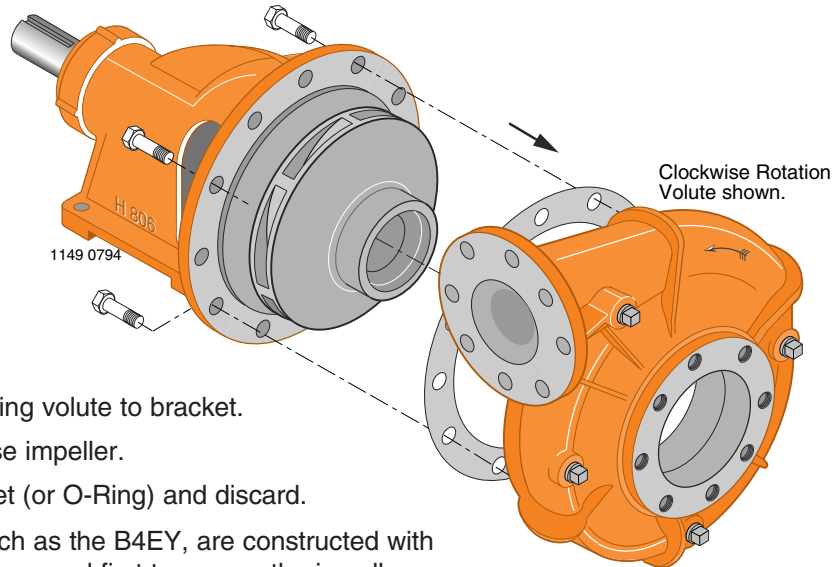
Item No.	Part Description	Part Number
800D	Screw, Set (2 Req.)	S23965
802	Nut, Hex 3/8-16 (2 Req.)	S23343
805A	Washer, Lock	S23036
805B	Washer, Bearing Lock	S16181
810A	Plug, Pipe 1/4 NPT (4 Req.)	S23715
810B	Plug, Pipe 1/2 NPT	S23717
811	Fitting, Grease (3 Req.)	S23670

1. A two piece (split) bronze packing gland is available for replacement, order part number **B82468**.
2. **Shaft Replacement Kit** available for this model. Berkeley part number B80702 for CW, B79126 for CCW. Pump Shaft sold in shaft replacement kit only.

## MAINTENANCE

# Impeller Replacement

## Threaded Shaft – Frame Mount

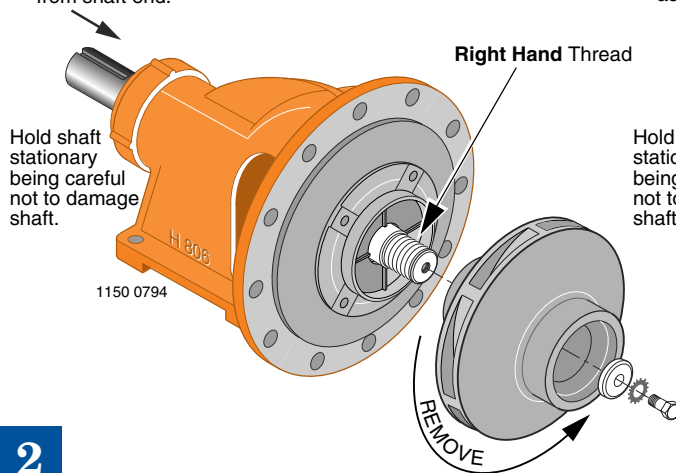


1

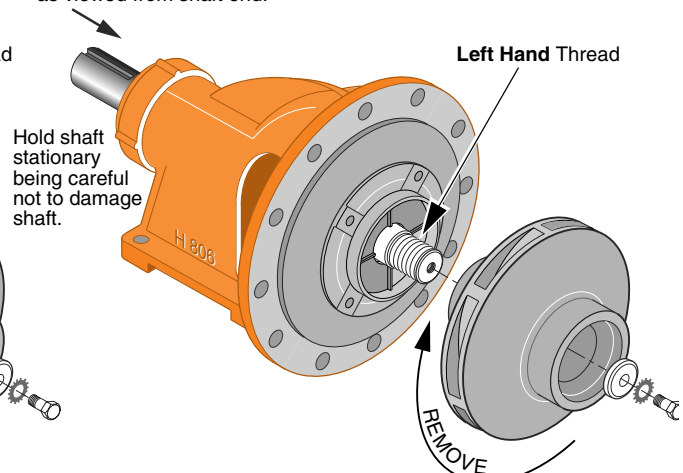
- Unfasten hardware holding volute to bracket.
- Remove volute to expose impeller.
- Peel off old volute gasket (or O-Ring) and discard.

**NOTE:** Certain models such as the B4EY, are constructed with a suction flange which is removed first to access the impeller.

Clockwise rotation as viewed from shaft end.



Counter-Clockwise rotation as viewed from shaft end.



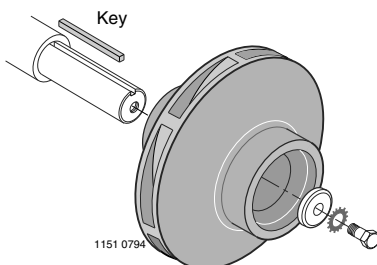
2

- Hold impeller stationary and remove impeller screw and associated hardware.
- Hold shaft stationary and remove impeller by turn-

ing in the direction shown for either clockwise or counter-clockwise pump rotation.

**NOTE:** Do not use impeller vanes for leverage.

## Keyed Shaft

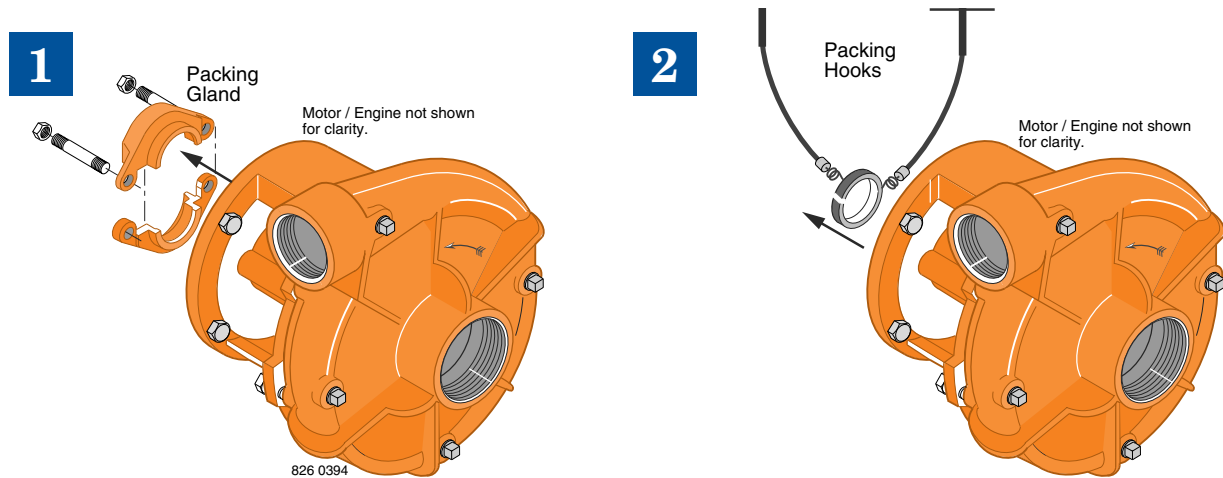


- If motor drive with keyed shaft, refer to mechanical seal disassembly drawing.
- For bearing frame pumps with keyed shaft, consult with factory for approved method of impeller removal.

## MAINTENANCE

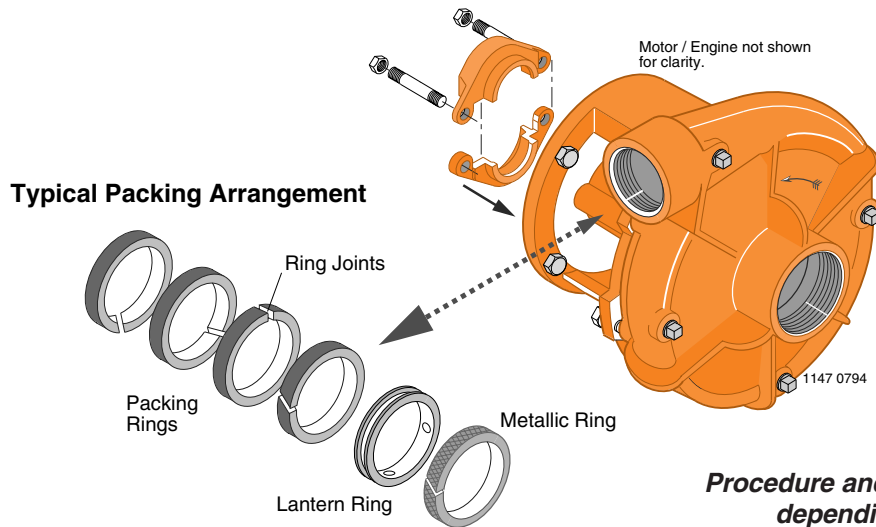
# Packing Ring Replacement

## Removal



- Unfasten hardware holding Packing Gland in place and slide back on shaft to expose packing rings. A split Packing Gland with threaded studs is shown.
- Remove packing rings from stuffing box using two commercially available Packing Hooks as shown.
- Slide Lantern Ring (if used) back to expose any remaining rings, including metallic. Remove them in the same manner.

## Installing New Rings



***Procedure and parts will vary slightly depending on pump style.***

- Clean shaft sleeve and Packing Gland.
- Inspect shaft sleeve for wear, replace if needed.
- Install new packing rings in stuffing box by placing over shaft sleeve and pushing them in as far as they will go.
- Rotate ring joint 90 degrees when installing each ring as shown.
- Slide packing gland into position, then gently and evenly tighten nuts to force rings into place and seat (do not overtighten). Loosen nuts again to hand tight.
- Start primed pump and allow packing to leak liberally.
- Evenly tighten gland nuts one complete turn at a time until leakage is reduced to 40 to 60 drops per minute.

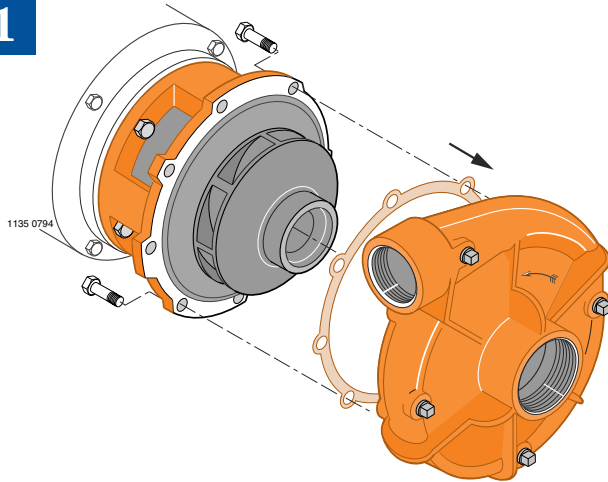
# MAINTENANCE

## Mechanical Seal Replacement

### Disassembly - Motor Drive

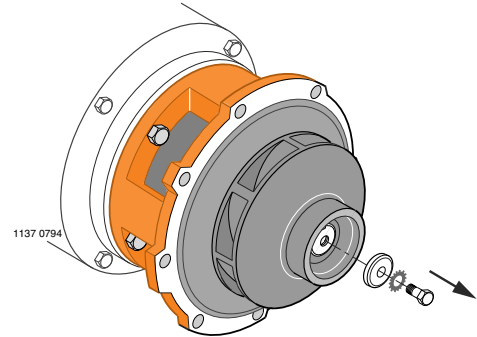


1



- Unfasten hardware holding volute to bracket.  
**NOTE:** For model B4EY, consult factory for special instructions.
- Remove volute case to expose impeller.

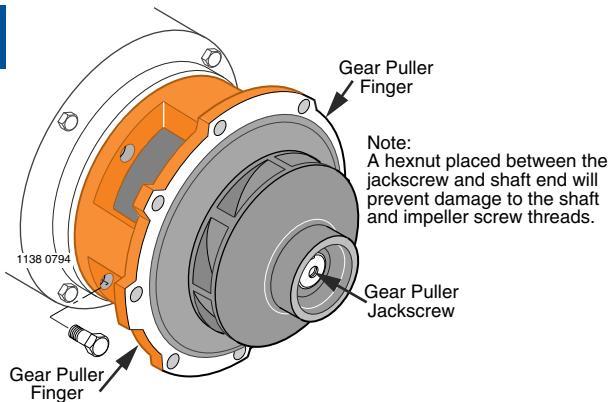
2



- Peel off old gasket or O-Ring and discard.
- Hold impeller stationary and remove impeller screw and associated hardware.

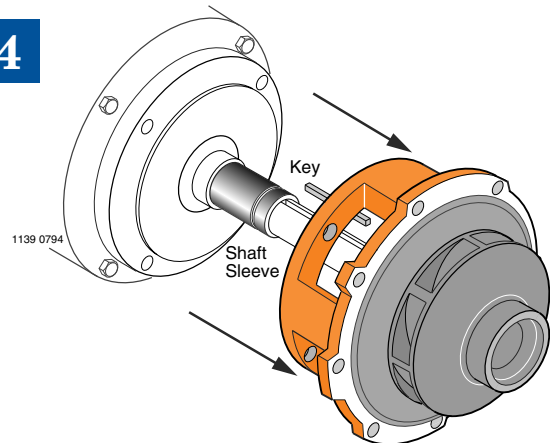
*Procedure and parts will vary slightly depending on pump style.*

3



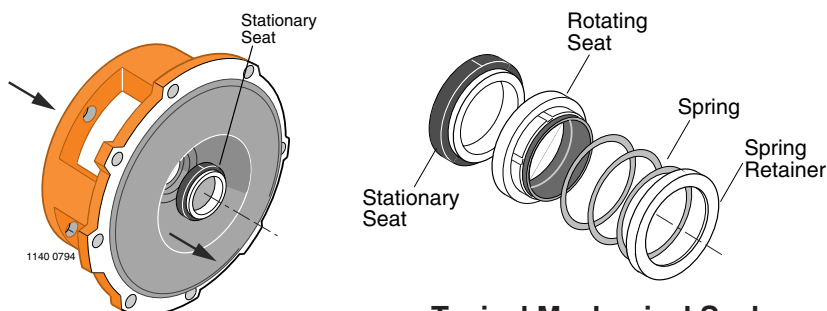
- Remove capscrews holding bracket to motor.
- Install a standard gear puller to shaft end and motor bracket placing puller fingers in the area shown.
- Rotate gear puller jackscrew until impeller clears

4



- shaft. Mechanical shaft seal will come off with motor bracket.
- If a seal retaining ring is part of the assembly, it will need to be replaced.

5



- Push stationary seat out of seal cavity from the back of bracket.
- Clean seal cavity in bracket thoroughly.

**Typical Mechanical Seal**

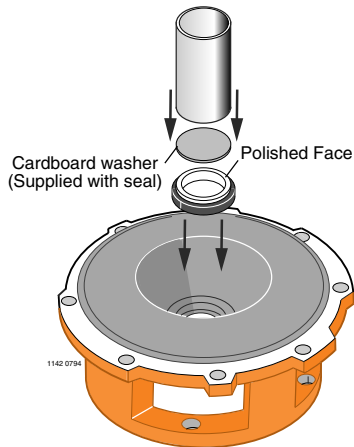
# MAINTENANCE

## Mechanical Seal Replacement

### Reassembly – Motor Drive

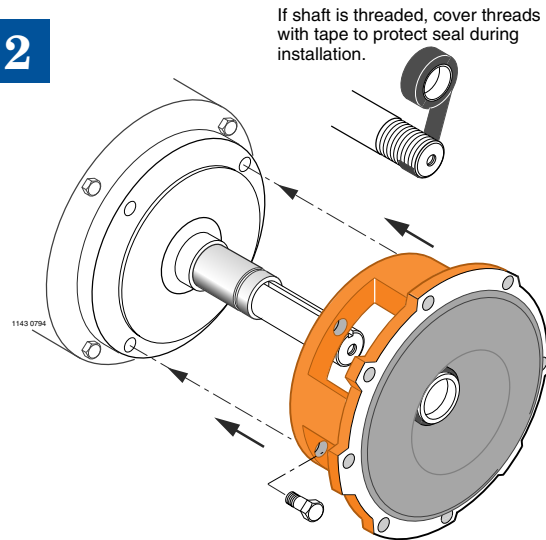


1



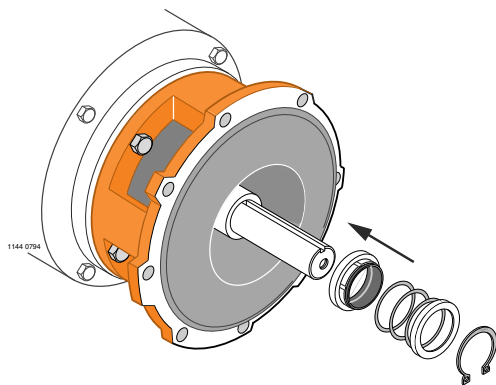
- Place bracket on a smooth, flat surface, pump side up.
- Apply a small amount of mineral oil to O-Ring on stationary seat and press into seal cavity. Cover ceramic face with cardboard washer and press

2



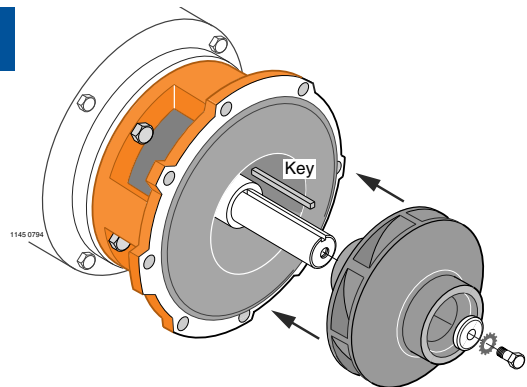
- straight in using a piece of pipe or tubing.
- Reinstall bracket on motor using extreme care not to scratch or chip ceramic face of seal with shaft.

3



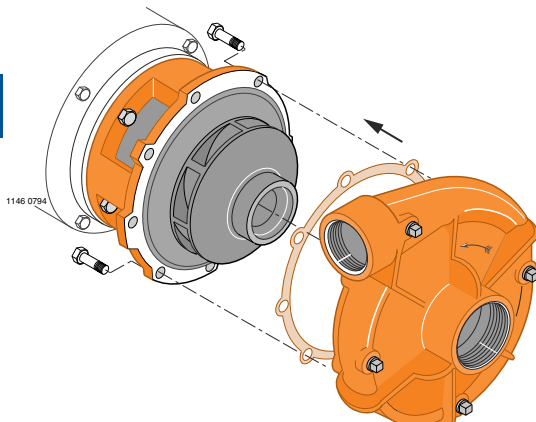
- Apply a small amount of mineral oil to inside diameter of rubber ring in rotating seat and outside of shaft sleeve. Slide rotating seat onto shaft, polished face first, until it is tight against ceramic face.
- Compress seal spring, and install retaining ring (if used) in shaft sleeve groove.

4



- Place impeller key in motor shaft keyway. Slide impeller on to shaft as far as possible.
- Apply non-permanent thread adhesive to impeller capscrew and shaft threads.
- Install impeller washer, shakeproof lockwasher, and capscrew.

5



- Install new gasket or O-Ring and volute case onto bracket.
- Install new O-Ring gasket and volute case on to bracket.
- Apply anti-seizing compound to capscrews and tighten securely.

**Procedure and parts will vary slightly depending on pump style.**