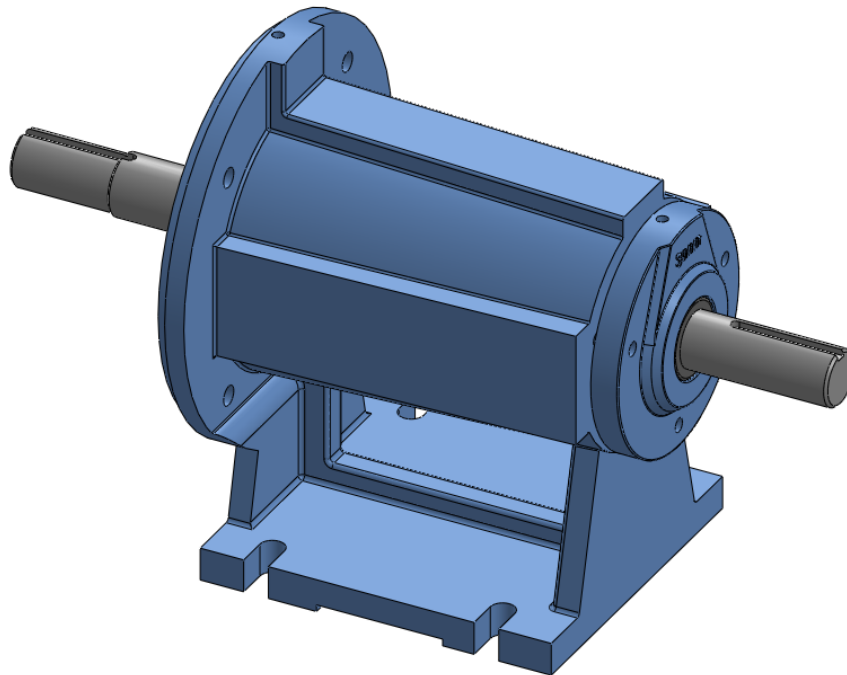


Ampco Pumps Company



PE-01 and PE-02 Bearing Frame Service Manual

Read and study this manual to insure you understand the correct procedures before you install, operate, or service the equipment.

PE-01 and PE-02 Bearing Frame

Safety Precautions

	<ul style="list-style-type: none"> • Warning: Some assembly requires use of heater, wear insulated gloves during use.
 <p>CAUTION Heavy</p>	<ul style="list-style-type: none"> • Warning: Some parts are heavy. Use proper lifting methods to avoid personal injury.
 <p>CAUTION WEAR EYE PROTECTION</p>	<ul style="list-style-type: none"> • Caution: Wear eye protection. Failure to do so can result in serious personal injury.

Liability:

Ampco Pumps Company does not assume any responsibility or liability for any personal physical injury, damage or delays caused by failure to follow the instructions and procedures for installation, operation and maintenance contained in this manual.

PE-01 and PE-02 Bearing Frame

The PE-01 and PE-02 bearing frames are available with two shaft styles. The PE-01 has a 215JM shaft and the PE-02 has a 250JM shaft.

Disassembly:

(Refer to Figure 1 for part references.)

- 1.) To disassemble the bearing frame (5) remove the bearing cover bolts and then slide the bearing end cover (3) off of the shaft (9). Remove the outboard lip seal (2) from the bearing end cover.
- 2.) Slide the inboard (6) and outboard (4) shaft bearings out of the bearing frame (5).
- 3.) Remove inboard lip seal (7) from the bearing frame (5).
- 4.) While holding the shaft assembly secure, remove the bearing locknut (1).
- 5.) Using an arbor press or bearing puller, remove the inboard (6) and outboard (4) bearings.
DO NOT use a hammer to remove bearings, it may cause damage to the shaft.
- 6.) Inspect for any parts that have cracks, erosion, pitting, or rusting. Replace all worn or damaged parts.
- 7.) Check for grooves worn into the shaft (9) and replace if necessary.
- 8.) If pump is iron, inspect casing rings and replace as necessary.

Lubrication:

(Refer to Table 1 for acceptable greases)

Before assembly or reassembly remember to properly lubricate the bearing frame with an acceptable grease. This includes the following:

1. Keep the lubricant clean.
2. Prior to re-lubricating, clean the grease fittings.
3. Use the correct amount of grease, too much can be as harmful as too little.
4. Use the correct grade grease for the operating conditions.
 - Use NLG1 No. 2 for pumpage temperatures below 350°F
 - Use NLG1 No. 3 for temperatures exceeding 350°F.

Table 1

Acceptable Greases	
Citgo	EP2
Citgo	SX6
Keystone	81EP2
Mobil	EP2
Mobil	EP2

PE-01 and PE-02 Bearing Frame

Assembly:

(Refer to Figure 1 for part references)

1. Clean the bearing frame (5).
2. Replace the grease fittings in the bearing frame (5) and bearing end cover (3).
3. Heat the inboard bearing (6) and install onto the shaft (9). Heat and install the outboard bearing (4) on the shaft (9). Be sure to install the bearings so that the shields are toward the ends of the shaft.
4. Tighten the bearing locknut (1) on the outboard end of the shaft (9).
5. Install the outboard lip seal (2) into the bearing end cover (3).
6. Apply a thin layer of grease to the outboard and inboard sides of the bearing frame (5).
7. Slide the shaft assembly, through the outboard end of the bearing frame until the snap ring on the outboard bearing (4) contacts the frame.
8. Slide the bearing end cover (3) over the end of the shaft and install bearing cap bolts.
9. On the impeller end of the shaft slide the inboard lip seal (7) into place.
10. Finally slide the deflector (8) into place.

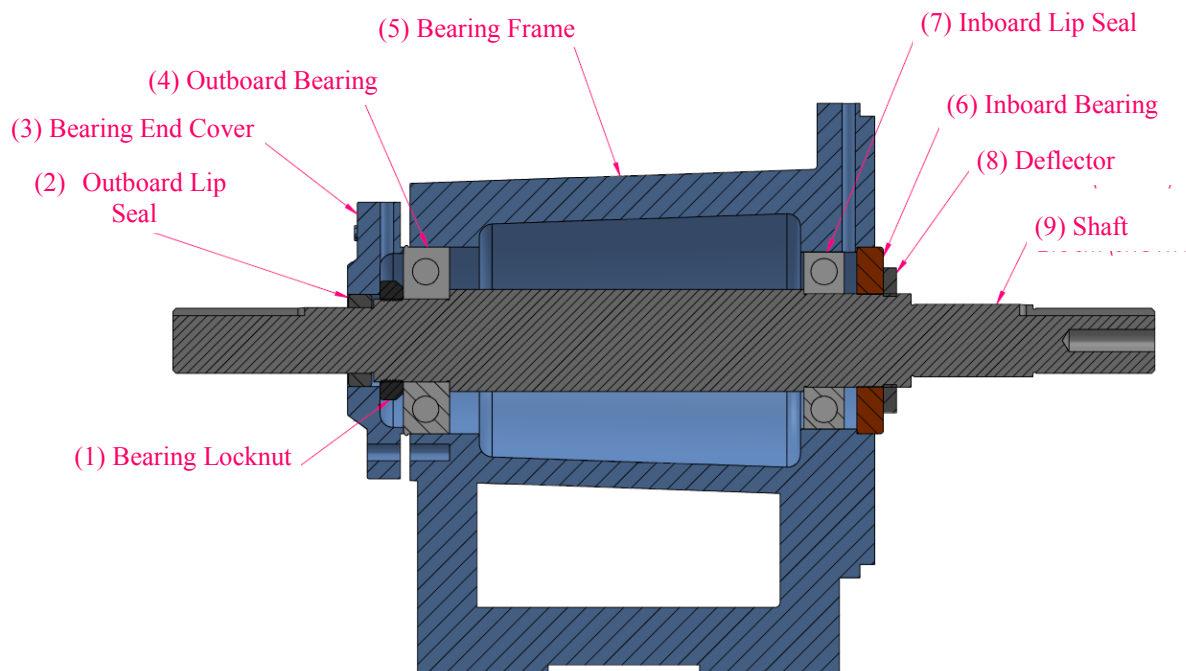


Figure 1: Bearing Frame Assembly

Number	Description	Part Number PE01	Part Number PE02	Quantity
1	Bearing Locknut	CC-LOCKNUT-07	CC-LOCKNUT-08	1
2	Outboard Lip Seal	CC-LIP-SEAL-02	CC-LIP-SEAL-04	1
3	Bearing End Cover	CC-COVER-01	CC-COVER-02	1
4	Outboard Bearing	CC-BEARING-02	CC-BEARING-04	1
5	Bearing Frame	CC-FRAME-01	CC-FRAME-02	1
6	Inboard Bearing	CC-BEARING-01	CC-BEARING-03	1
7	Inboard Lip Seal	CC-LIP-SEAL-01	CC-LIP-SEAL-03	1
8	Deflector	CC-DEFLECTOR-01	CC-DEFLECTOR-02	1
9	Shaft	CC-SHAFT-01	CC-SHAFT-02	1

PE-01 and PE-02 Bearing Frame

Coupling Alignment

Although the pump and motor were aligned before leaving Ampco Pumps Company, the handling during shipping can alter the alignment, so the alignment procedure must be done carefully. A properly aligned pump will result in a trouble-free installation and smooth pump operation.

Remove the coupling guard and use a small straight edge and feeler gauges or a dial indicator to check the horizontal, vertical, and angular alignment of the coupling hubs. Figure 1 and Figure 2 show a poorly aligned pump being examined. The coupling is properly aligned when a straight edge makes even contact with both coupling hubs in the horizontal and vertical position. If using a dial indicator, alignment is achieved when the dial indicator indicates 0.005" or less of run out in any direction. If adjustments need to be made loosen the motor so that it can be shifted or shimmed as necessary then retighten the bolts and re-check alignment. (**Note: If piping has already been set up only make adjustments to the motor. Do not shift the pump to adjust alignment, this will cause piping strain.**)

Once final piping connections have been made, motor wiring has been checked, correct shaft rotation has been established, and the piping has filled with liquid, re-check the coupling alignment. After the priming procedure has been completed perform a final coupling alignment check and replace the coupling guard before starting the pump.

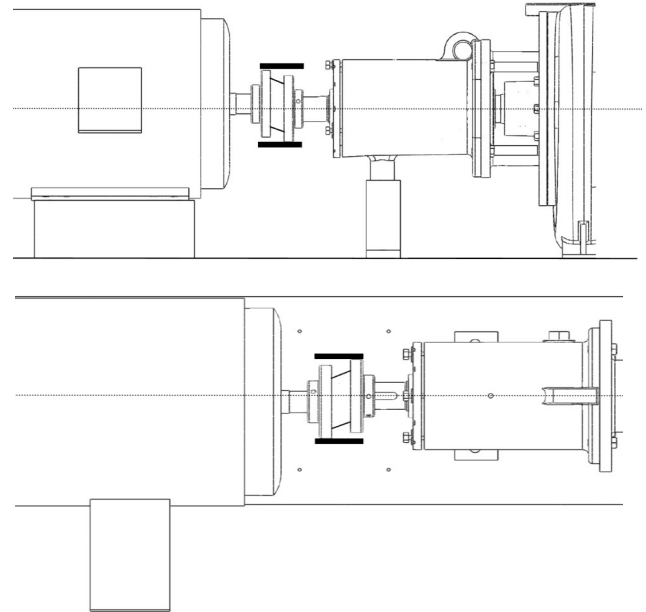


Figure 1: Determining parallel alignment

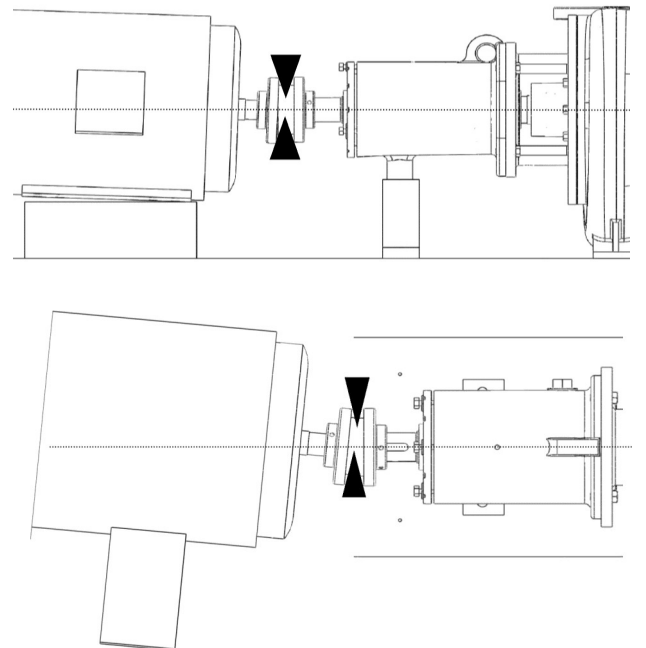


Figure 2: Determining angular alignment