

GM 4L80-E (Late Single Stator)

Repair Plate

Part No.

GM-WA-40

NOTE: Standard quantity: 5/bag

Associated Parts

- GM-N-20 Thrust Bearing
- GM-HR-10 Inner Stator Race
- GM-WA-38 Stator Cap

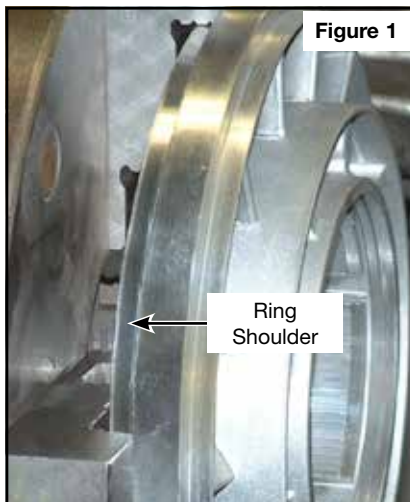


Figure 1

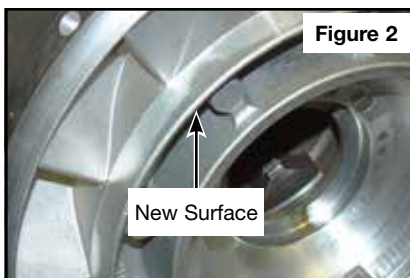


Figure 2

1. Disassembly

Remove the retaining ring, stator cap, nine springs, nine rollers and inner stator race. Removal of the outer stator race is not required.

2. Prepare Stator

- Chuck the stator in a lathe from the impeller side, holding onto the machined surface on the outer ring shoulder (**Figure 1**).
- Machine a new surface on the stator body casting forward of the inner blade mount points. Machine in far enough to be used as a new lathe chuck holding point, but avoid contacting the stator blades (**Figure 2**).

3. Machine Stator

- Verify the O.D. of the repair plate, which should measure about 3.975".
- Machine a bore to a snug fit no more than .001-.002" bigger than the plate O.D. A light press fit is acceptable. Machine deep enough to contact the outer stator race.
- Machine a chamfer (approximately 30°) at the top of the bore for a weld relief. The chamfer should be to depth of the oil groove (**Figure 3**).

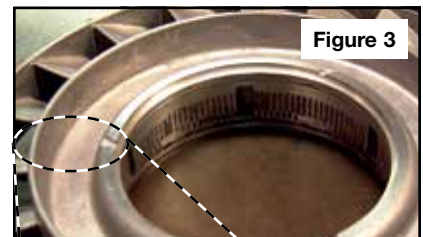
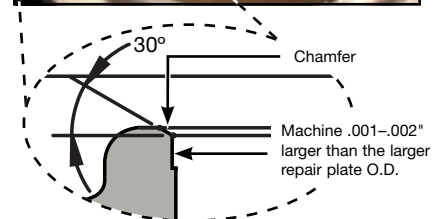


Figure 3



4. Reassemble Stator for Welding

- Tap and seat the outer race to ensure that it is bottomed out in the bore.
- Flip the stator over, place the repair plate into position and lightly tap it down until it rests squarely on the outer stator race.
- Reinstall the inner stator race, stator cap and retaining ring. If the ring cannot be installed, the outer race is not seated in the bore.
- Install a holding fixture to hold the repair plate. A 3/8" x 2-1/2" (9.53mm x 57.15mm) bolt and two oversized flat washers will work (**Figure 4**).

NOTE: The repair plate will rise up on the opposite side of the spot weld if the plate is not held. Do not overtighten the fixture.

- Apply three spot welds next to the oil grooves, then add three more spot welds between the oil grooves, alternating sides. Use a 1/16" (1.58mm) or 3/32" (2.38mm) 4043 aluminum filler rod, green tungsten and Argon gas.
- Heat the stator with an acetylene torch to remove any contamination. Keep the heat off of the plate as much as possible.
- Start the weld. Weld from one spot weld to the next, alternating sides.
- Allow to cool before removing the holding fixture, retaining ring and inner race.

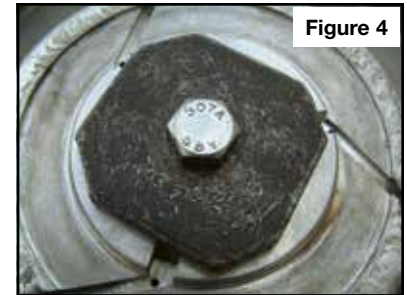


Figure 4

5. Verify Installation

It is likely the surface that the needle bearing rests on has distorted, so additional material, approximately .015", is left to true this surface with a lathe.

This surface must be held flat to .003" so as not to damage the bearing.

This surface must be located .085-.095" above the outer ring shoulder (**Figure 5**) to allow the correct stackup for the thicker **GM-N-20** bearing. This can be measured using a height gauge or with a straight edge and gauge blocks (**Figure 6**).

In addition, the bearing surface area must be held parallel within .004" to the stator outer ring shoulder. Maintaining parallelism will prevent stator wobble and interference with impeller and turbine. The best way to assure the bearing surface is machined parallel to the outer ring shoulder is to chuck the stator on the I.D. and check outer ring shoulder runout with a dial indicator.

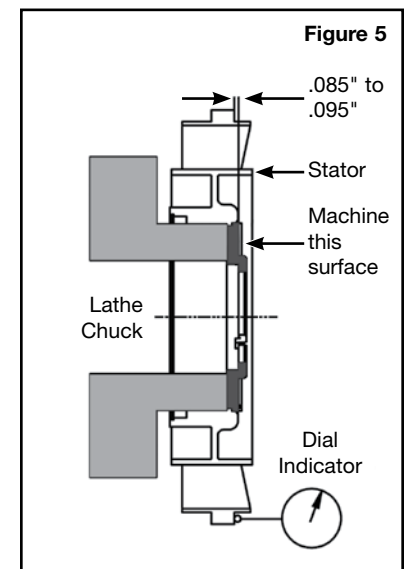


Figure 5

6. Optional Steps

- Add three 1/8" holes on the stator cap for improved oil flow (**Figure 7**). Some OE castings have this feature, some do not.
- When assembling the stator cap to the stator make sure the outer race or rollers are not lined up with the 1/8" holes.

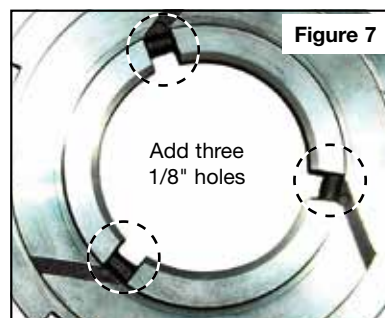


Figure 7

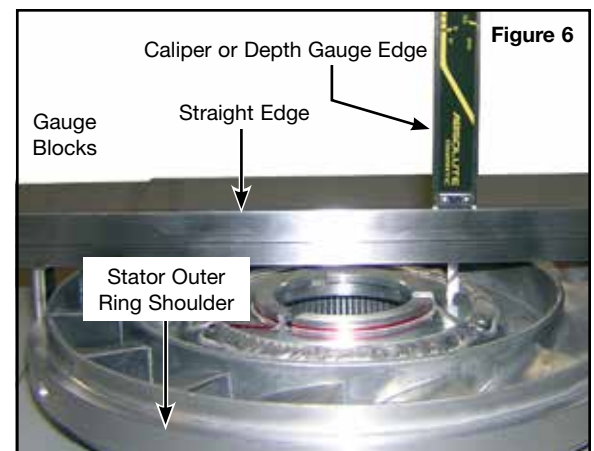


Figure 6