



TORQUE CONVERTER PARTS

GM-WA-40 STATOR REPAIR PLATE

Application:

- GM 4L80-E Late single stator

Details:

- Weld-in aluminum plate
- 3.977" (101.00mm) O.D.
- .417" (10.60mm) overall thickness
- Made for use with **GM-N-20** enhanced bearing

Associated Parts:

- **GM-N-20** Bearing
- **GM-HR-10** Inner stator race
- **GM-90-62G** Flanged impeller hub
- **GM-S-9** Accordion springs
- **GM-RO-837** Rollers
- **GM-WA-38** Aluminum stator cap
- **GM-N-18** Bearing stator side (or use **GM-N-20** with modifications)



Part No.

GM-WA-40

Stator Repair Plate

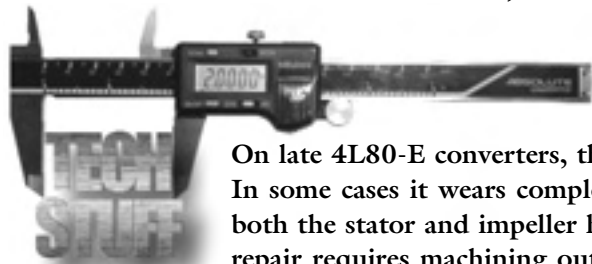
Sold in prepackaged quantities of 5 units

Please refer to our

TORQUE CONVERTER PARTS CATALOG VOLUME 6 & ONLINE CATALOG AT WWW.SONNAX.COM

GM-WA-40 is:

Item Number 5.1 for GM 4L80-E, Late single stator on page 34.



On late 4L80-E converters, the inner race sometimes produces excessive wear on the stator pilot. In some cases it wears completely through the stator, damaging the bearing back-up surface on both the stator and impeller hub side. Sonnax now offers a stator repair plate **GM-WA-40**. This repair requires machining out the damaged section, machining a precise hole for the plate, TIG welding the plate in place and machining the bearing back-up surface flat and to the correct depth on **GM-WA-40** (detailed instructions attached.) To repair a worn bearing back-up surface on the impeller hub side, use Sonnax's **GM-90-62G** flanged impeller hub.



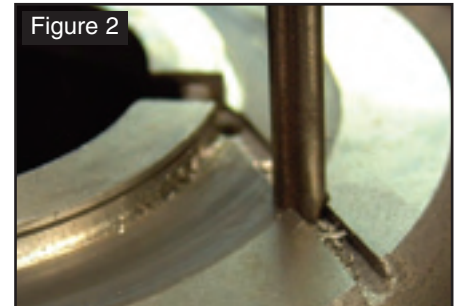
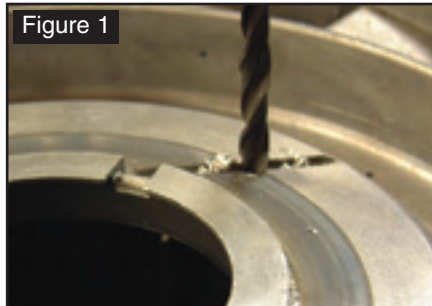
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INSTALLATION INSTRUCTIONS

1. Remove the roller clutch assembly:

- Remove the retaining ring, stator cap, 9 springs and 9 rollers.
- Turn the stator over.
- Using the intersection of the oil grooves and the O.D. of the witness mark of the bearing as a guide, drill 3 $\frac{3}{16}$ " holes into the stator to the depth of the roller clutch outer race (see Figure 1).
- Place the stator on a sturdy work area.
- Using a $\frac{3}{16}$ " punch, drive the roller clutch outer race out of the stator, by alternating hits through the 3 drilled holes (see Figure 2).

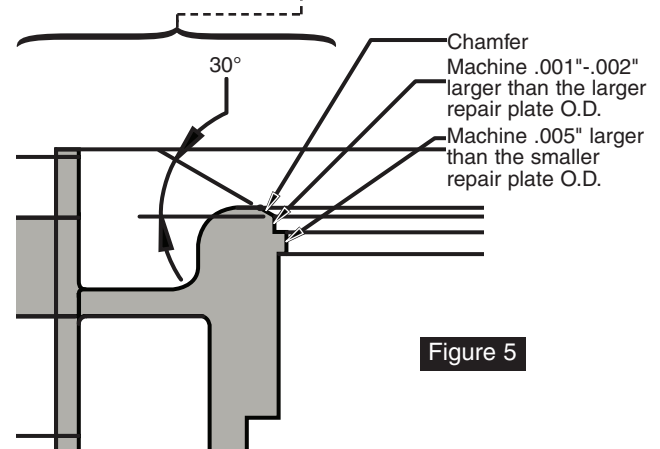
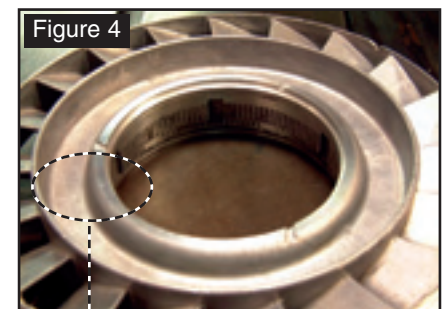


2. Measure both O.D.s of the repair plate. The smaller O.D. should measure about 3.855" and the larger O.D. should measure about 3.975" (see Figure 3).



3. Chuck the stator in a lathe (the bore that held the roller clutch outer race is a good place to hold the stator) and machine:

- With the stator running true, machine the I.D. of the stator to a bore that measures about .005" larger than the smaller O.D. of the repair plate. (This bore is for clearance, but is necessary to form the step that the repair plate will rest against. It also keeps the repair plate perpendicular to the bore.)
- Machine a second bore to a snug fit .001" to .002" bigger than the large O.D. of the repair plate. Leaving a step at the bottom of this bore that is the thickness of the step on the repair plate, about .118" (see Figure 4).
- Machine a chamfer at the top of the second bore for a weld relief. The chamfer should be to the depth of the oil groove (see Figure 5).



4. Clean the stator (stator should be free of oil and solvents).

5. Assemble for welding:

- Place the repair plate into the stator and lightly tap it down until it rests on the machined step.

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- b. Install the inner race, stator cap, and retaining ring.
- c. Install a holding fixture to hold the repair plate. (This is important. The repair plate will rise up on the opposite side of the spot weld, if the plate is not held. Do not overtighten.) A $\frac{3}{8}$ " x 2 $\frac{1}{2}$ " bolt and 2 oversized flat washers will work (see Figure 6).
- d. Apply 3 spot welds next to the oil grooves, then add 3 more spot welds between the oil grooves, alternating sides. Use a $\frac{1}{16}$ " or $\frac{3}{32}$ " 4043 aluminum filler rod, green tungsten and Argon gas.
- e. Heat the stator with an acetylene torch to remove any contamination. Keep the heat off of the plate as much as possible.
- f. Start the weld. Weld from one spot weld to the next, alternating sides.
- g. Allow to cool.

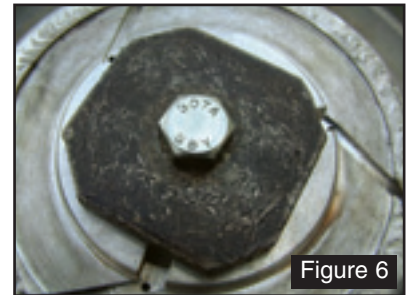


Figure 6

Note: 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" to .095" above the outer ring shoulder (see Figure 7) to allow the correct stack up for the thicker GM-N-20 bearing. This can be measured using a height gage or with a straight edge and gage blocks (see Figure 8). 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 ID and check outer ring shoulder runout with a dial indicator.

Optional:

- h. Add three $\frac{1}{8}$ " holes on the stator cap for improved oil flow (see Figure 9). Some OE castings have this feature, some do not.
- i. When assembling the stator cap to the stator make sure the outer race or rollers are not lined up with the $\frac{1}{8}$ " holes.

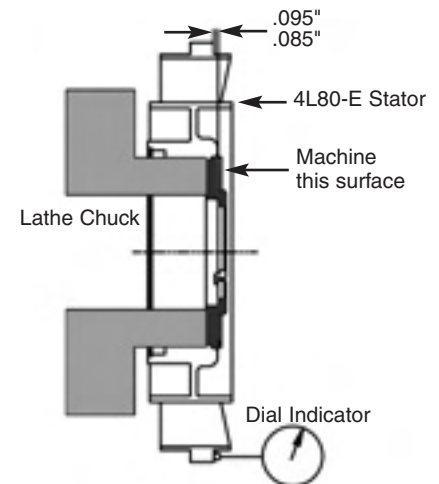


Figure 7

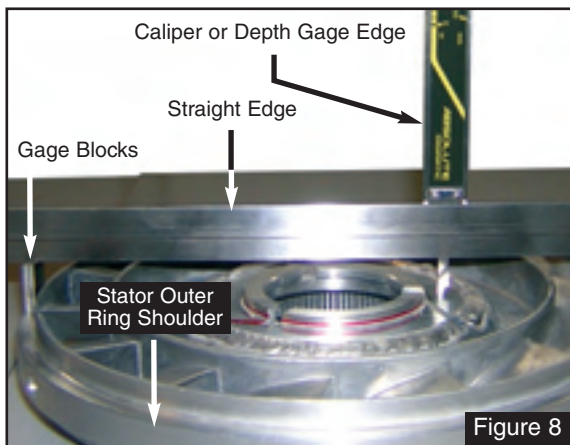


Figure 8

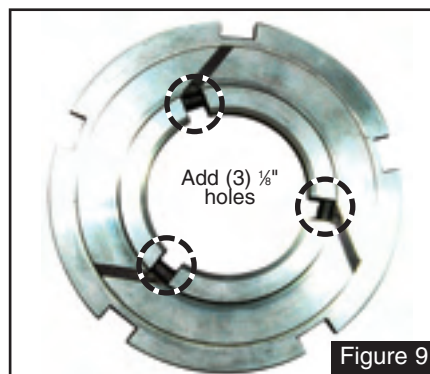


Figure 9