

# THE TORQUE CONVERTER JOURNAL

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## A New *MIX* of Parts

The array of new Ford parts is ever increasing as OEM improvements continue to be made to the torque converters used in late production 5R110W units. Sonnax is implementing changes to some of the E4OD, 4R100 and 5R110W torque converter parts in response to recent changes Ford has made to the impeller side needle bearing.

The new needle bearing assembly is a two-piece design; **FD-N-10** is enclosed on one side and used with **FD-N-11**, a thick hardened race. This new, more durable bearing assembly is thicker and has a larger inside diameter, which will affect the associated impeller and stator cap. As a result, the OEM impellers **FD-IM-1L**, **FD-IM-1**, and **FD-IM-5** and steel stator cap **FD-WS-27** previously offered will no longer be available. Replacing these impellers will be **FD-IM-7** (low stall) and **FD-IM-8** (extra low stall). These new impellers have a larger bearing pilot to accommodate the new needle bearing. A thinner steel stator cap, **FD-WS-32**, will replace the earlier **FD-WS-27**. Although not previously offered by Sonnax, the flat retaining ring has been changed to a

wave-style snap ring, **FD-SR-1**, which Sonnax will now supply.

### Important things to remember:

- At this point the new bearing, snap ring, and .397" thick steel stator cap should only be used in conjunction with the new impellers **FD-IM-7** and **FD-IM-8**. Sonnax has a new impeller hub in development for this application. The new impeller hub will have a larger base pilot to accommodate the new bearing assembly.
- The snap ring **FD-SR-1** must be installed on the impeller side of the stator only.
- The new thick bearing race **FD-N-11** must be assembled and piloted on the base of the impeller hub with the roller side of the bearing **FD-N-10** riding against it. The enclosed side of the bearing will run against the new steel stator cap **FD-WS-32**, which is held into the stator with the new wavy snap ring **FD-SR-1**.
- In the future, when the current production Ford converters are in for rebuilding,

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## A New Mix of Parts continued

it will be important not to mix the new and old bearings or their associated parts.

- The earlier style needle bearing **FD-N-9** is still available, but should only be used with the early-style .475" thick steel stator cap **FD-WS-27**, which is no longer available.
- The new, thinner steel stator cap **FD-WS-32** is .397" thick.
- The old, thicker steel stator cap **FD-WS-27** is .475" thick.
- The new impeller hubs found in the **FD-IM-7** and **FD-IM-8** impellers use needle bearing assembly **FD-N-10** and race **FD-N-11**. The pilot diameter on the hub is 1.930" (see Figure 1).
- The old impeller hub needle bearing **FD-N-9** pilot diameter is 1.860".



Figure 1: FD-IM-7 and FD-IM-8 style impeller with associated parts

What does this all mean to the rebuilder?

### Early - Type I

If you are using the old impeller with the slots at the base of the hub and the associated wear plate (**FD-WS-2/FD-WS-3**) and plastic stator cap (**FD-WP9-OE**), it will be business as usual. Sonnax will continue to offer these items.

If you are upgrading from a plastic stator cap to a

needle bearing, then the Sonnax **FD-WA-4** (aluminum stator cap) and **GM-N-8HLT** (enclosed needle bearing) can be used.

### Type II

If you are rebuilding the early 5R110W converter that has an impeller without slots, an enclosed needle bearing (with an I.D. of 1.860") and steel stator cap, then rebuilding will be the same as long as the steel stator cap is still usable. The replacement needle bearing **FD-N-9** is still available.

If you have a steel stator cap that is not usable, then you can use the **GM-N-8HLT** bearing adapter/stator cap **FD-WA-4**, along with wear plate **FD-WS-2**. Slots must be added to the base of the impeller hub to accept the two ID tangs of the wear plate.

### Type III

If you are buying a new impeller assembly **FD-IM-7** (low stall) or the **FD-IM-8** (extra low stall), or rebuilding a 2007 late model 5R110W, then the following parts will be required:

- 1 **FD-N-10**, Partially Enclosed Needle Bearing
  - 2 **FD-N-11**, Needle Bearing Race
  - 3 **FD-SR-1**, Wavy Retaining Ring
  - 4 **FD-WS-32**, Steel Stator Cap
- (see Figure 2)

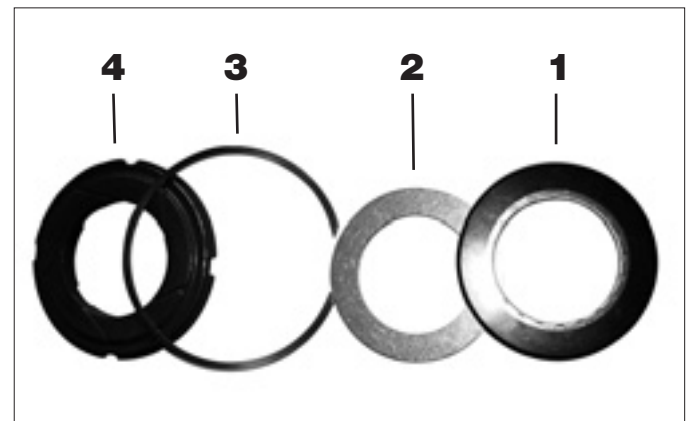


Figure 2