sonnax®
PERFORMANCE

HIGH PERFORMANCE **TRANSMISSION** PARTS

Instructions

GM Powerglide

Big Shaft Stator Support Tube Kit

Part No.
28154S-125

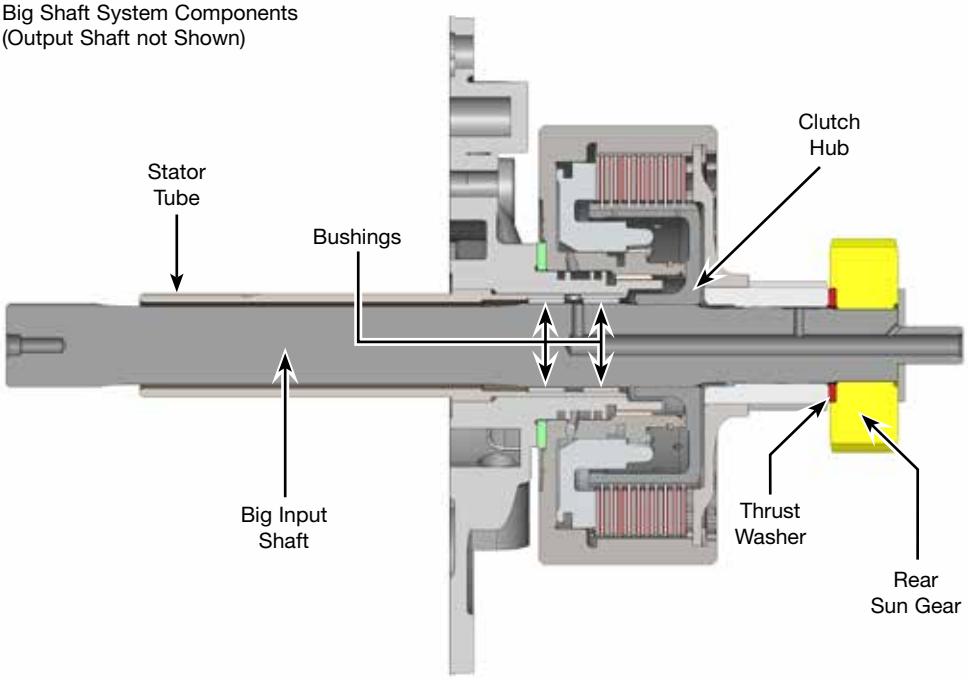
- Stator Tube
- Bushings (2)

NOTE: This kit is one of the essential components of the Sonnax Powerglide big shaft system. Using this system requires changing to a 35-spline turbine hub. For details, visit www.sonnax.com/powerglide.

NOTE: Stator tube has larger diameter and longer length anti-rotation serrations and will be more secure than any OE-style stator tubes. Pinning the stator tube to pump cover provides additional anti-rotation security. This procedure is not always required but is commonly done. For details, see "Anti-Rotation Pinning" (**Step 4, page 4**).

Cross Section of Sonnax
Big Shaft System Components
(Output Shaft not Shown)

Figure 1



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1. Pump Cover Machining

a. With original stator tube removed, drill converter feed passage to .250" (**Figure 2**). When machining pump cover for stator tube, it is normal to break into this converter feed passage.

b. Machine pump cover per dimensions (**Figure 3**).

Figure 2

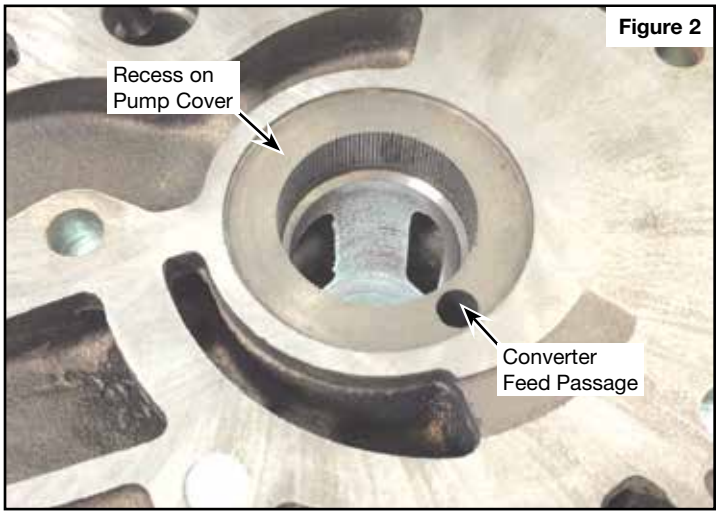
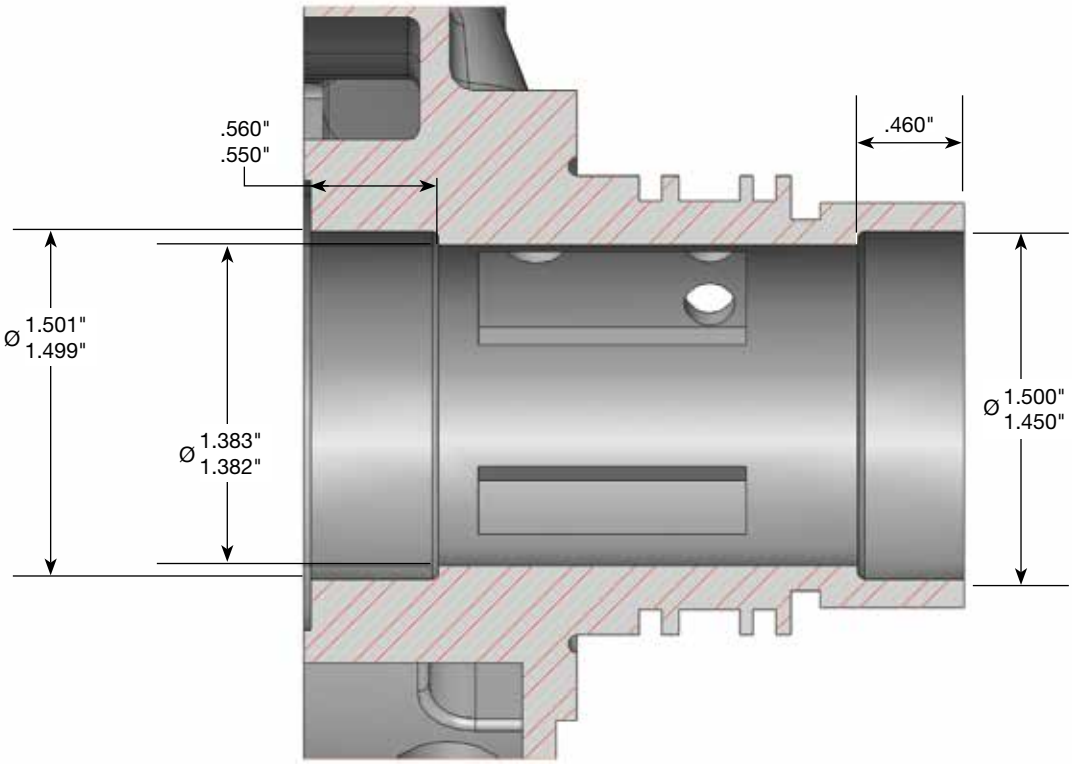


Figure 3



2. Stator Tube Installation

a. Inspect pump cover internal passages for high clutch feed, converter return and cooler return/lube. To ensure adequate oil flow it may be necessary to enlarge internal passages with a die grinder.

b. If pinning stator tube to pump cover, layout pinning locations before pressing stator tube into pump cover. For details see page 4.

c. Place two marks on pump cover that align with center of converter return passage and center of cooler return/lube passage (**Figure 4**).

d. Align two holes in stator tube with two marks on pump cover.

e. Press stator tube into pump cover so that front edge of serrations are just flush with recess on pump cover (**Figure 2**). The installed distance from the front edge of the stator tube to the recess on pump cover should be 4.180" +/- .015" (**Figure 5**).

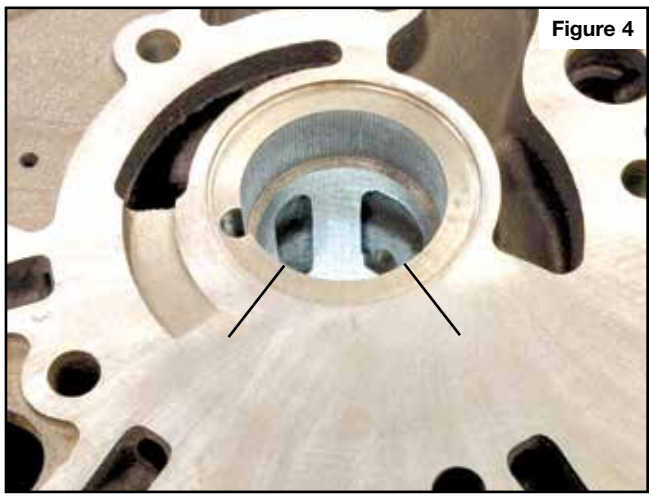


Figure 4

3. Bushing Installation

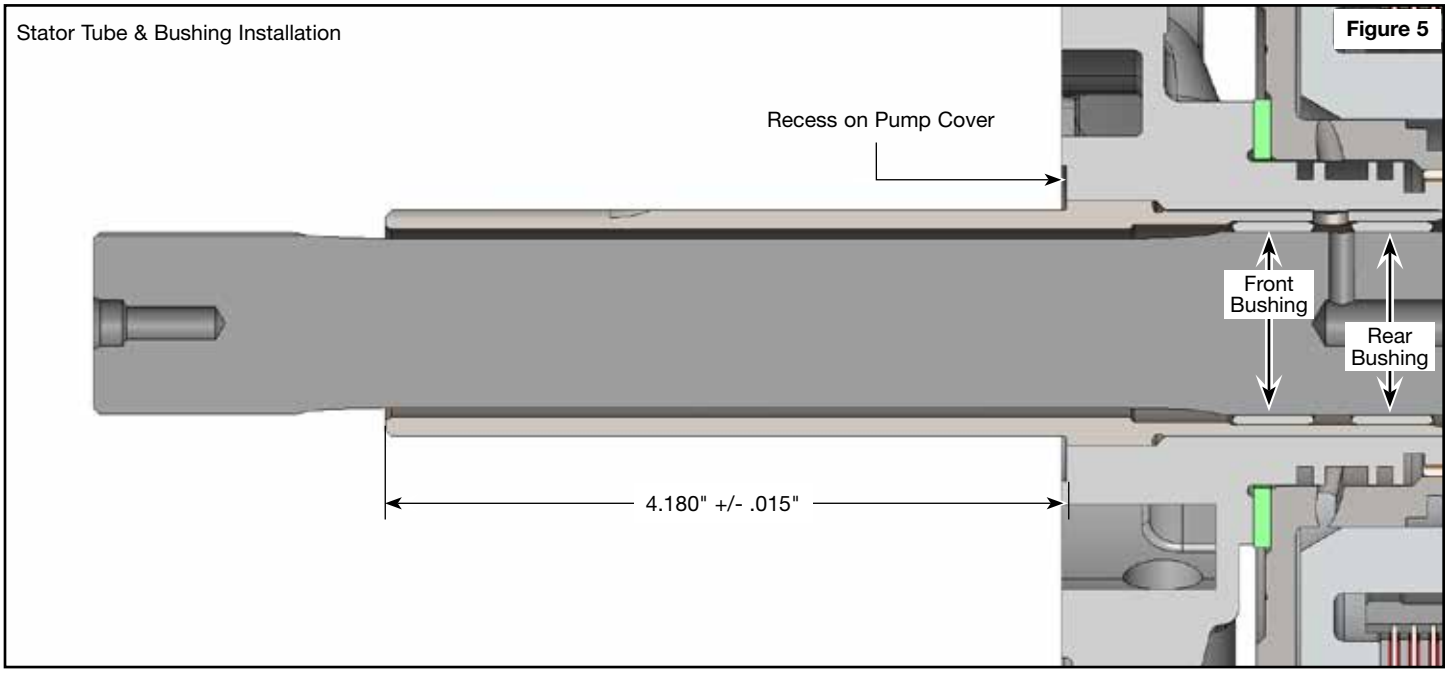
NOTE: Stator tube bushings are common 4L80-E front stator tube bushings (aftermarket part number 34036B). The bushings are .500" wide and, when installed, allow for about .120" front-to-rear movement of the input shaft without restricting lube flow to the input shaft cross hole. If additional allowance for front-to-rear movement of the input shaft is desired, the bushings can be machined to .425" width before installing.

a. Install front bushing into stator tube until lightly seated against shoulder in stator tube bore (**Figure 5**).

b. Install rear bushing to a depth of .025–.050" from rear of stator tube (**Figure 5**). Bushing will not be entirely past bore chamfer.

c. Check fit of bushings with shaft.

d. For final checks, refer to Sonnax big input shaft kit **353532-01K** instructions.



4. Anti-Rotation Pinning

NOTE: Use a 1/4 x 28 flat tip set screw when pinning the stator tube in cast iron pump covers.

a. To make sure the anti-rotation pin does not go into the internal oil passages, begin layout when stator tube is removed from pump cover. Pinning between the sealing ring grooves starts by orienting the pump as shown (**Figure 6**) and then locating the center of the cast material between the internal oil passages. Transfer this position to the outside of the drum support area between the sealing ring lands. Mark this location (**Figure 7**).

b. It is possible to add a second anti-rotation pin. Pinning at this location starts by orienting the pump as shown (**Figure 8**) and then locating the center of the cast material between the internal oil passages. Transfer this position to the outside of the drum support area 5/16" below the thrust washer surface of the pump cover. Mark this location (**Figure 9**).

1. Follow directions for installing stator tube (**Step 2, page 3**).
2. With stator tube installed, pre-drill pin location with a 3/16" (.187") drill bit through the casting and through the inside wall of the stator tube.
3. Follow up with final drill size of #3 (.213") through the casting and through the inside wall of the stator tube.
4. With a common 1/4 x 28 tapered tap, tap hole until the tip of the tap is seen inside the tube. Clean the chips and test fit the set screw. Re-tap and fit the set screw until the tip of screw is seen slightly entering the bore when tightened (**Figure 10**).
5. Install screw for final time with Loctite® or equivalent.
6. Grind set screw tip so it is just flush with inner bore of stator tube.

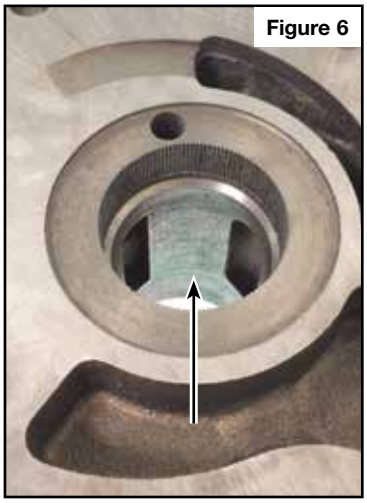


Figure 6


Figure 7

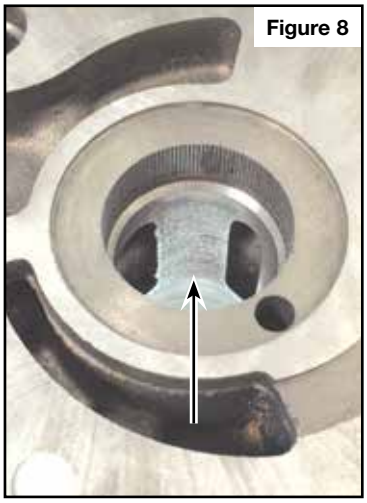


Figure 8


Figure 9

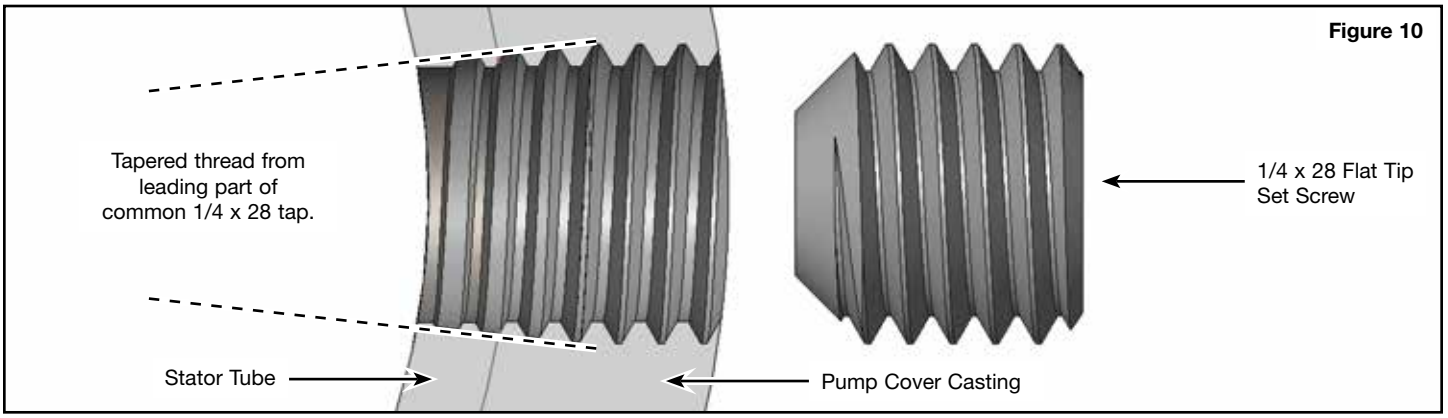


Figure 10