sonnax®

TRANSMISSION PARTS

Instructions

Toyota/Lexus A140, A540E

Oversized Pressure Regulator Valve

TOOL REQUIRED

Part No. 89010-03K

- Valve
- Spring
- Spacer — A140 Only

NOTE: Replaces .458" long OE large spool design.

Tool Kit

VALVE BODY FIXTURE REQUIRED

Part No. 89010-TL

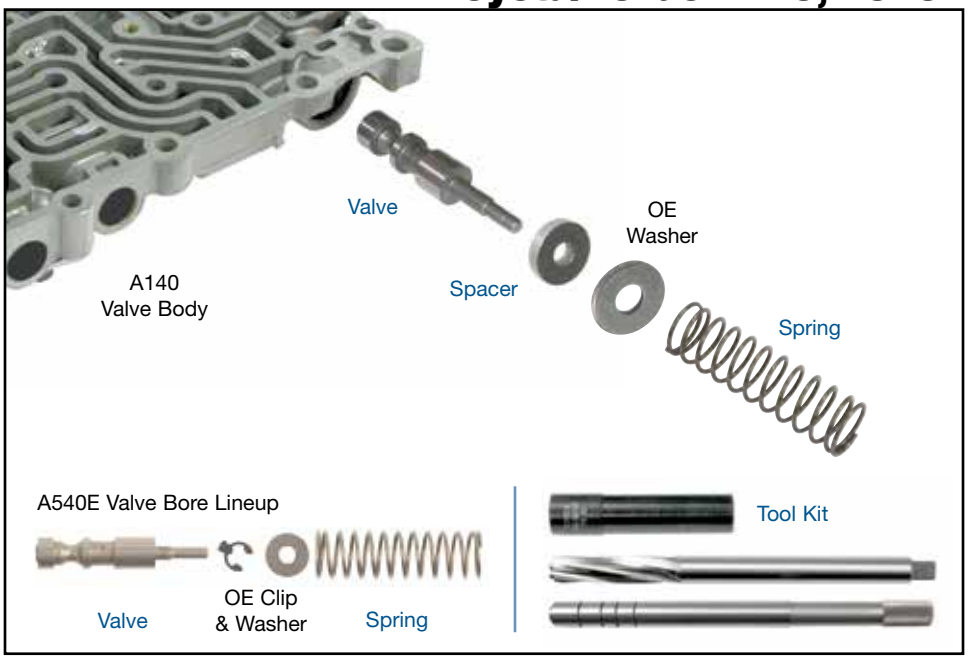
- Reamer
- Reamer Jig
- Bore Sizing Tool

NOTE: This tool kit, which can also be used to service 97855-24K valve kit, is out of production. Please check with distributor for availability.

Usage Chart **Figure 1**

Application	Valve Body Identificaiton	Sonnax Part No.
A140		**89010-03K**
A340/E/F/H	3-Spool pressure regulator valve, 3 or fewer solenoids (Early)	97855-24K
A540E	Not stamped A540Y	**89010-03K**
A540E	Stamped A540Y ('98-'00)	N/A

NOTE: Neither of the parts listed above work for the A340* 4-spool pressure regulator valve, 4 or fewer solenoids (late).



NOTE: Before removing bore components, take note of the position of the adjustable step on the OE boost sleeve. Ensure that the adjustable step on either a replacement sleeve or reused OE sleeve is in the same location when reassembled.

1. Disassembly

a. Remove all components from the bore.

b. Save OE washer for reuse, and discard all other parts.

2. Bore & Reaming Preparation

a. Clean the bore thoroughly in a solvent tank.

b. Securely clamp the housing to a bench or vise, making sure not to clamp directly over the bore to be reamed.

3. Reaming

CAUTIONS AND SUGGESTIONS:

- The reaming action must be clockwise in a smooth and continuous motion.
- Turning the reamer backward will dull it prematurely.
- Pushing on the reamer results in poor surface finish and inadequate and sporadic material removal.
- Never use a crescent wrench, ratchet or pliers to turn the reamer.
- A dull reamer will cut a smaller hole. Reamers can be sharpened, but this should only be done by a professional tool sharpener. Actual life of a Sonnax reamer before resharpening or replacing averages 50-70 bores.

3. Reaming (continued)

a. Insert the reamer jig into the bore.

b. Generously lubricate the bore and reamer with cutting fluid (i.e. Mobilmet S-122, Lubegard® Bio-Tap, Tap Magic™, etc.). For best results, provide a continuous flow of water-soluble cutting fluid (i.e. Mobilmet S-122) during the reaming process.

c. Gently insert the reamer through the jig and into the bore until the cutting tip contacts the first bore to be reamed.

d. Use a loose fitting reamer socket and a wobble adapter to ream the bore. The reamer can be turned by using a speed handle or with a low-RPM, high-torque air drill regulated to a maximum of 200 RPM. The reaming actions must be clockwise in smooth and continuous motion at 60-200 RPM. Continue reaming until the reamer stop is reached.

4. Finish & Clean Up

a. Using low air pressure, blow the chips free before removing the reamer.

b. To remove the reamer, turn clockwise while slowly pulling outward on the reamer.

c. Examine the bore after cleaning for surface finish, debris and burrs. Flashing and burrs on the exit side of land and in bores must be carefully removed. A small piece of Scotch-Brite® material attached to a wire and powered with a drill motor is ideal for the task. Scotch-Brite® is a very abrasive material and all residual debris must be cleaned to ensure particles do not migrate or remain imbedded into the surface. Post cleaning involves several progressive steps with solvent on a lint-free rag.

d. Clean the reamer after each use and store in its protective tube.

5a. Installation & Assembly: A140

a. Place OE washer and Sonnax spacer over Sonnax pressure regulator valve stem.

b. Place OE spring over Sonnax valve stem.

c. Push this assembly into the bore, stem end out, until the valve bottoms in the bore.

d. Return the boost valve assembly to the bore, open end first, and secure with OE retainer.

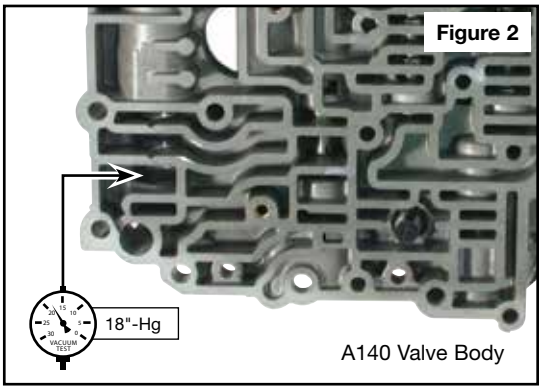


Figure 2
A140 Valve Body

5b. Installation & Assembly: A540E

IMPORTANT! Grind and/or cut .180" off of the Sonnax valve stem, making the length equal to the "V" notch. This is necessary to allow proper stroking of the valve in this application.

NOTE: The Sonnax spacer is NOT needed for A540E application.

a. Modify Sonnax valve stem (explained above) and place OE washer over Sonnax valve stem.

b. Place Sonnax spring over Sonnax valve stem.

c. Push this assembly into the bore, stem end out, until the valve bottoms in the bore.

d. Return the boost valve assembly to the bore, open end first, and secure with the OE retainer.

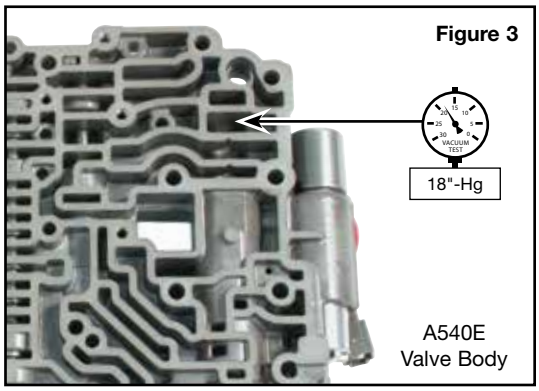


Figure 3
A540E
Valve Body

6. Final Testing

Vacuum testing at the port(s) indicated holds the recommended minimum 18 in-Hg (**Figures 2 & 3**).