

## Oversized Pressure Regulator Valve

A140 & A540E  
not A540Y stamped valve body

### 89010-03K

1 Oversized Pressure  
Regulator Valve  
1 Pressure Regulator Spring  
1 Spacer



### 89010-TL

1 Reamer  
1 Reamer Jig  
1 Bore Sizing Tool

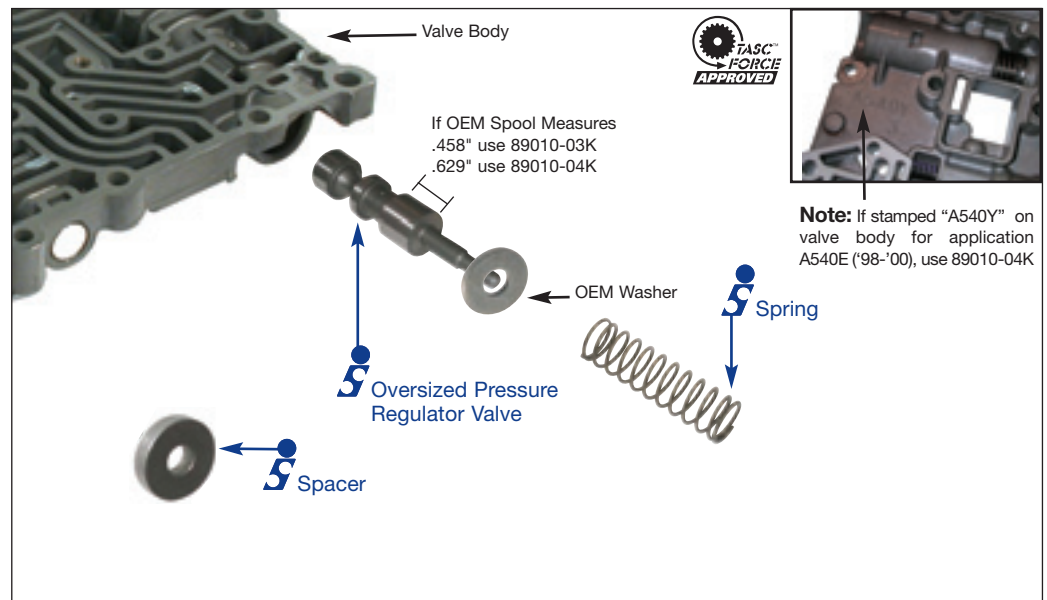
**Note:** 89010-TL can also be used to install 89010-04K and 97855-24K valve kits.

### Also Available

For application A540E (1998-2000)  
with "A540Y" stamped on valve body

### 89010-04K

1 Valve  
1 Spring  
1 Spacer



### Wear Test

Place a small amount of ATF into the balance line circuit. Follow with low air pressure while holding the valve inboard. There should be little or no leakage of air or oil past the valve spool and out the regulated line port.

### Reaming Instructions

#### Preparation and Set-up

1. Remove all components from the bore.
2. Clean the bore thoroughly in a solvent tank.
3. Securely clamp the housing to the bench, making sure not to clamp directly over the bore to be reamed.
4. Insert the reamer jig into the bore.
5. Soak the bore and reamer with cutting fluid (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.
6. Gently insert the reamer through the jig and into the bore until the cutting tip contacts the first bore to be reamed.
7. Select the correct sized socket to fit the square shank of the reamer, and attach it to a wobble such as Snap-On part number FXW-1 socket drive.

#### Reaming

1. The reamer should be turned either by hand using a speed handle or by a low rpm, high torque air drill regulated to a maximum of 200 rpm.
2. The reaming action should be clockwise in a smooth and continuous motion, at 60-200 rpm. The reamer should actually pull itself through the bore, so little or no forward force should be applied.
3. Continue reaming until the reamer stop is reached. The approximate reaming time is 2 minutes.

# A140, A540E

PART NUMBERS 89010-03K, 89010-TL

## Oversized Pressure Regulator Valve

### Finish and Clean-up

1. Using low air pressure, blow the chips free before removing the reamer.
2. To remove the reamer, turn clockwise while slowly pulling outward on the reamer.
3. Remove any remaining debris from the bore with low air pressure and clean in a solvent tank.
4. Examine the bore after cleaning for surface finish, debris and burrs. Flashing and burrs on the exit side of casting bores can be carefully removed with a small piece of Scotchbrite® on the end of a long wire with drill. If the valve goes in the bore with resistance, use the bore-sizing tool as a final step.
5. Clean the reamer after each use and store in its protective tube.

### Cautions and Suggestions

1. Turning the reamer backward will dull it prematurely.
2. Pushing on the reamer will result in poor surface finish, and inadequate and sporadic material removal.
3. Never use a crescent wrench, ratchet or pliers to turn the reamer.
4. A dull reamer will cut a smaller hole. Reamers can be sharpened, but should only be done by a professional tool sharpener. Actual life of a reamer before resharpening averages 50-70 bores.

### A140 and 89010-03K

1. Remove all components from valve body bore. Discard the OEM pressure regulator valve and spring.
2. Ream bore according to instructions.
3. **Important! Place the OEM washer and the enclosed .154" thick spacer over the replacement pressure regulator valve stem.**
4. Place the enclosed spring over the replacement pressure regulator valve stem.
5. Push the valve/washer/spring assembly into the bore, stem end out, until the valve bottoms in the bore.
6. Return the boost valve assembly to the bore, open end first, and secure with the OEM retainer.



### A540 and 89010-03K

1. Take note of the position of the adjustable step on the original boost sleeve. Ensure that the adjustable step on the replacement sleeve or reused OEM sleeve is in the same location when reassembled.
2. Remove all components from valve body bore. Discard the OEM pressure regulator valve and spring.
3. Ream bore according to instructions.
4. **Important! Grind/cut .180" off of the replacement valve stem, making the length equal to the "V" notch. This is necessary to allow proper stroking of the valve in this application.**
5. Place the OEM washer over the replacement pressure regulator valve stem. The enclosed .154" thick spacer is NOT NEEDED for this application. It is only used on the A140 applications.
6. Place the enclosed spring over the replacement pressure regulator valve stem.
7. Push the valve/washer/spring assembly into the bore, stem end out, until the valve bottoms in the bore.
8. Return the boost valve assembly to the bore, open end first, and secure with the OEM retainer.

