

TC Limit Valve & Sleeve Kit

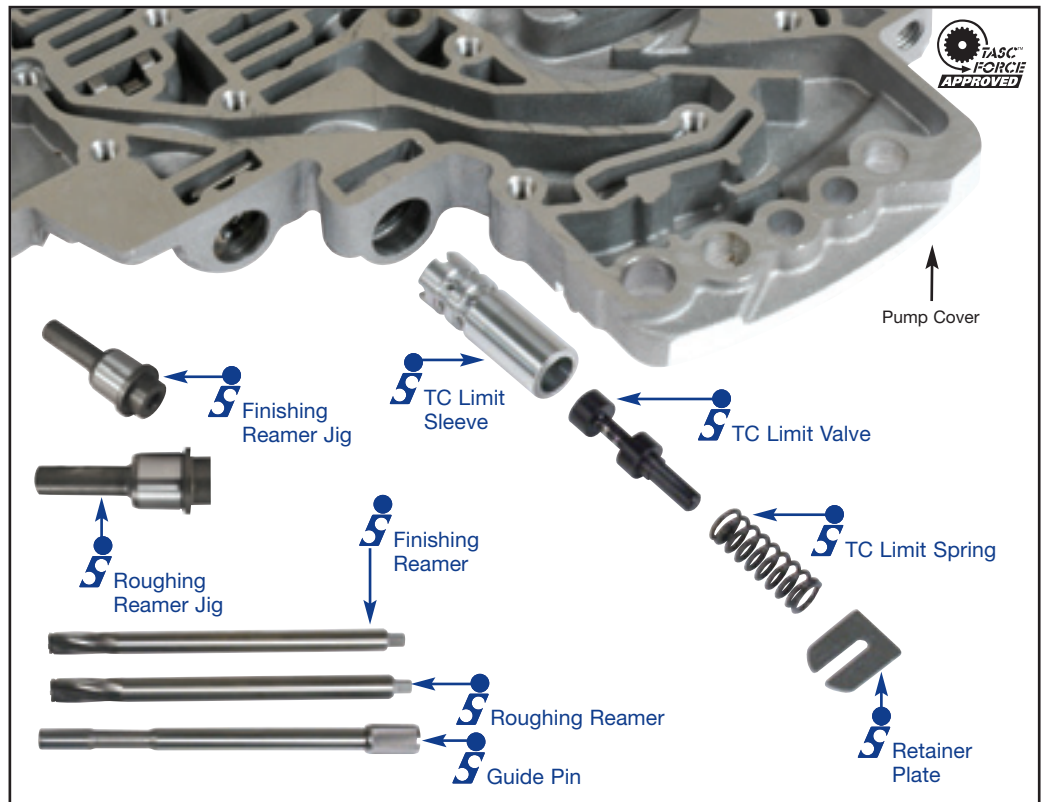
44912-03K

- 1 TC Limit Valve
- 1 TC Limit Sleeve
- 1 TC Limit Spring
- 1 Retainer Plate



F-44912-TL

- 1 Roughing Reamer
- 1 Finishing Reamer
- 2 Reamer Jigs
- 1 Guide Pin



INSPECTION

Remove the OEM retaining plate and spring. Move the valve just off the bottom of the bore. Using two small picks inserted on either side of the valve, check for side-to-side movement of the valve.

SET-UP

1. Remove all components from the bore.
2. Clean the bore thoroughly.
3. From tool kit **F-44912-TL**, select jig **F-44912-RJ**, guide pin **F-44912-GP** and roughing reamer **F-44912-RM**.
4. To align the TC limit valve bore in the fixture, follow the **VB-FIX** instructions.
5. Lubricate the bore and reamer with cutting fluid (Mobilmet S-122, Lubegard Bio-Tap™, Tap Magic™, etc.). For best results, provide a continuous flow of cutting fluid during the reaming process.
6. Gently insert roughing reamer **F-44912-RM** through jig **F-44912-RJ** and into the bore until the cutting tips contact the first wall to be reamed.
7. Select the correct size socket to fit the square shank of the reamer (Snap-On 11/32 square drive PP411A), and attach it to a wobble/swivel socket drive.
8. Ream the bore according to the reaming process outlined on page 2.

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9. Remove reamer **F-44912-RM** and guide **F-44912-RJ** from the bore. Clean bore per the finish and clean-up instructions below.

NOTE: Do not remove the pump cover or loosen any hardware on the **VB-FIX** at this time.

10. Use low pressure air to remove all debris from the reamed bore.

11. Repeat steps 5-9 above with reamer **F-44912-RM2** and reamer jig **F-44912-RJ2**.

REAMING

NOTE: Once pump body alignment has been established on the **VB-FIX**, do not disturb or loosen the pump body setting or guide setting in any way until the entire reaming process is complete. Be sure to use plenty of continuously supplied cutting fluid while reaming these bores.

1. The reamer should be turned 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. Allow the reamer to pull itself through the bore. Little or no forward force should be applied.
3. Continue reaming until the reamer bottoms in the bore.

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 flush 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.
5. Clean and lubricate the reamers after each use. Store them in the protective shipping tubes provided.

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 an undersized hole and produce a poor surface finish.

INSTALLATION

- 1) Insert the sleeve, slotted end first, into the reamed and cleaned bore. The sleeve should seat against the bottom of the bore.
- 2) Two checks must be made with the retaining plate.

In some installations it may be necessary to trim the sleeve to install the retaining plate. In such a case the minimum amount of material necessary to clear the plate may be removed from the non-slotted end of the sleeve.

Check that the retainer plate sits below flush of the machined flat surface of the stator body. Run a straight edge or scraper, etc., over the area to see if it catches the retainer plate. If needed, grind a few thousandths of an inch off the retainer plate so it sits just below flush.

- 3) Insert the new TC limit valve and spring into the installed sleeve as shown in Figure 1.
- 4) Compress and hold the spring while installing the retainer plate.