Instruction Data Sheet

4L80-E

PART NUMBERS **34200-16K, 77754-TL, F-34200-TL16**

Actuator Feed Limit Valve Kit

34200-16K

TOOL REQUIRED

1 Valve Sleeve Assembly
2 Springs
1 Retaining Clip

U.S. Patent No. 6,634,377

77754-TL

1 Core Drill (4L80-E only)
1 Reamer
3 Guides (1 for 4L60-E, 2 for 4L80-E)
1 Drill Bit (.051")

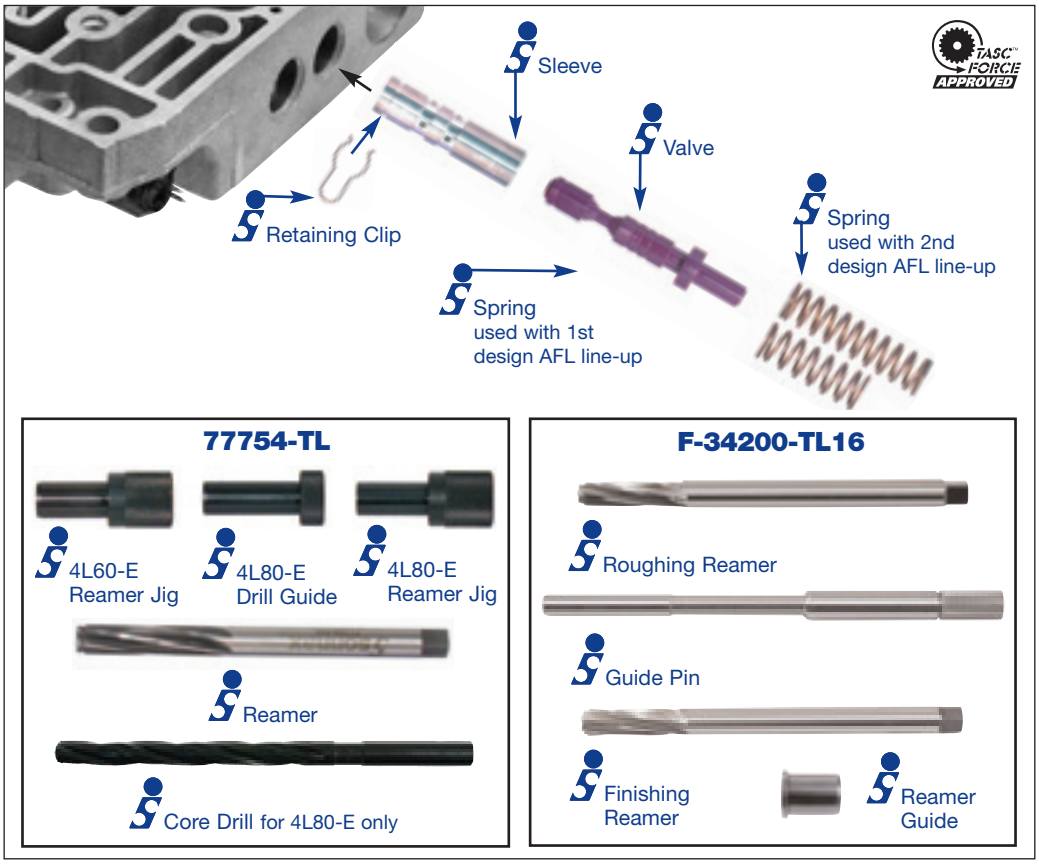
Note: This tool kit works for 4L80-E and 4L60-E AFL valve repairs.

F-34200-TL16

VALVE BODY FIXTURE REQUIRED

1 Roughing Reamer
1 Finishing Reamer
1 Guide Pin
1 Reamer Guide
1 Drill Bit, .051"

Note: This tool kit works for the 4L80-E AFL valve repair ONLY and requires use of valve body reaming fixture **VB-FIX**.

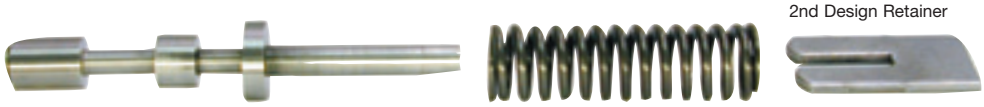


Inspect OEM valve line-up

4L80-E 1st Design AFL Line-Up

Important: Valve modification required

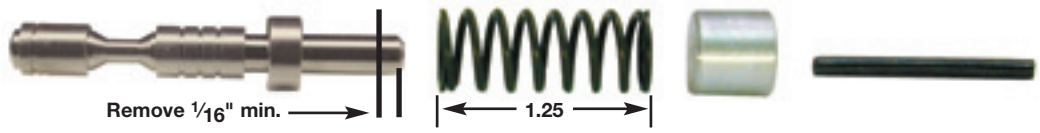
4L80-E 2nd Design AFL Line-Up



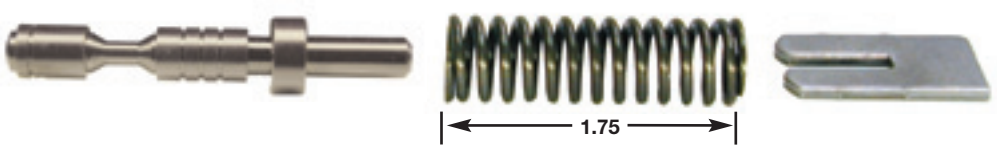
Sonnax replacement valve line-up

4L80-E 1st Design AFL Line-Up

Important: When replacing the first design valve line-up the Sonnax replacement valve stem must be shortened by a minimum of 1/16" (more is not a problem).



4L80-E 2nd Design AFL Line-Up



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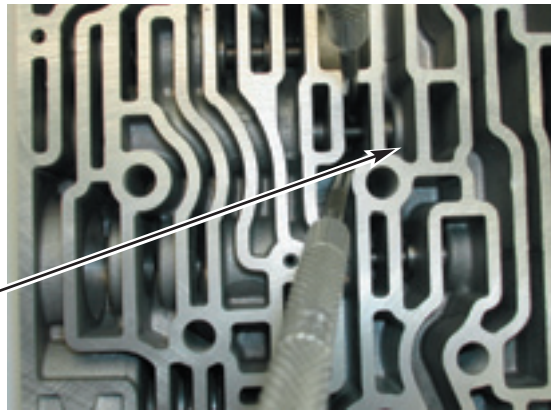
Wear Test:

Note: This is a difficult valve to inspect for wear.

1. Remove spring from valve, then prop the valve open to operating position.
2. Pry the valve side to side as pictured. Seeing valve movement or any oil being squeezed out indicates excessive clearance.
3. Remove the valve and visually inspect the bore for wear.



AFL valve should have no side-to-side movement.

Reaming Instructions for Reaming with F-34200-TL16:

1. Remove valves from the bore to be reamed. Clean bore thoroughly in a solvent tank.
2. Align valve body on fixture according to **VB-FIX** instructions, using jig **F-77754-RJ9** and guide pin **F-34200-GP16**.

   Note: Do not unclamp valve body from the fixture until you have finished both reaming operations.
3. Begin with **F-34200-RM16**.
4. With the reamer carefully and securely positioned, use a speed handle to ream the bore. The reaming action should be clockwise in a smooth and continuous motion, at approximately 1 to 1½ revolutions per second.
5. The reamer should pull itself through the bore, so little or no forward pressure should be applied to the reamer or speed handle.
6. Continue reaming until the tip of the reamer bottoms in the bore. Spin the reamer 5-10 more times after bore bottoming to allow for excess material removal and better surface finish.
7. Using low air pressure, blow the chips free before removing the reamer.
8. To remove the reamer, turn clockwise while slowly pulling outward on the reamer.
9. Repeat steps 4 - 8, using finishing reamer **F-34200-RM17**.

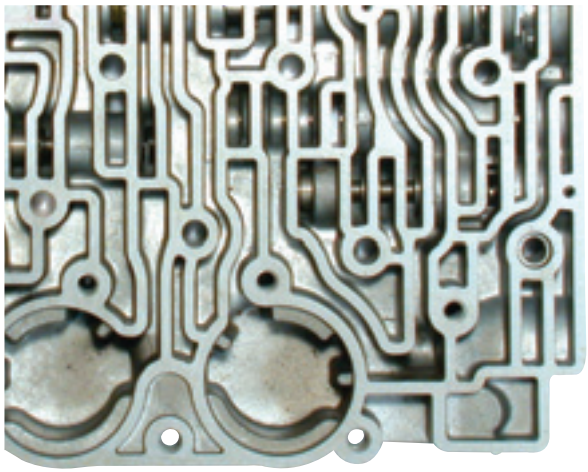
Cautions:

- Never turn the reamer backward.
- Pushing on the reamer will rest in poor surface finish, inadequate and sporadic material removal, and material being left unremoved as the reamer exits a bore.
- Blow free any chips from the reamer after each use.
- Never use a crescent wrench, t-handle or ratchet to turn the reamer.

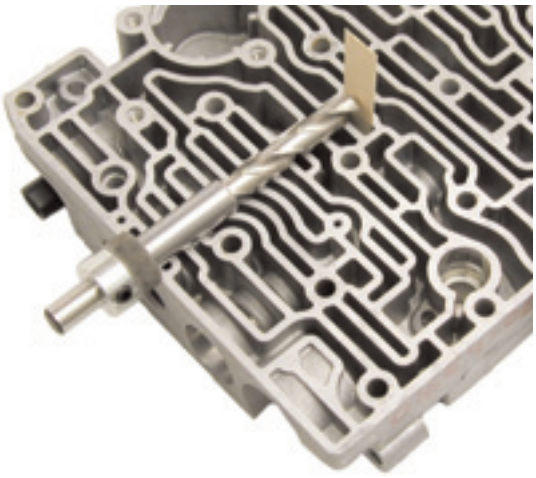
If reaming with 77754-TL:

Drilling Instructions 4L80-E only (must be done prior to reaming) for Late Tool Kit with 3-Fluted Core Drill:

1. Clamp the valve body to a bench with the open circuits up.
2. Insert the drill jig and fill the bore with cutting fluid.
3. Drill the bore at approximately 1000 rpm until the drill bottoms out. Take care not to force the drill or let it "grab" as you drill the bore.



Drilling Instructions for Early Tool Kits with 2-Fluted Drill:



1. Position the drill, drill collar and drill jig over the AFL bore.
2. Adjust the drill collar to prevent drilling past the bottom of the AFL bore. A shim positioned at he bottom of the bore will aid in the adjustment.
3. Clamp the valve body to a bench with the open circuits up.
4. Insert the drill jig and fill the bore with cutting fluid.
5. Drill the bore at approzimately 1000 rpm until the drill collar contacts the drill jig. Take care not to force the drill or let it "grab" as you drill the bore.

Reaming Instructions 4L60-E or 4L80-E after drilling:

1. Clamp the valve body to bench with open circuits up.
2. Fill bore with cutting fluid (kerosene, Tap Magic®, etc.).
3. Insert the correct reamer jig for the application into the bore. The reamer jigs are clearly marked as to which fits the 4L60-E or 4L80-E valve body.
4. Soak fluted end of reamer with cutting fluid.
5. Insert reamer into reamer jig until reamer tip contacts the first bore to be cut. Securely position the jig against the bore to remove any reamer wobble. The jig will help stabilize and center the reamer.
6. With the reamer carefully and securely positioned, use a speed handle to ream the bore. The reaming action should be clockwise in a smooth and continuous motion, at approximately 1 to 1½ revolutions per second.
7. The reamer should pull itself through the bore, so little or no forward pressure should be applied to the reamer or speed handle.
8. Continue reaming until the tip of the reamer bottoms in the bore. Spin the reamer 5-10 more times after bore bottoming to allow for excess material removal and better surface finish.

Reaming Instructions 4L60-E or 4L80-E after drilling (continued):

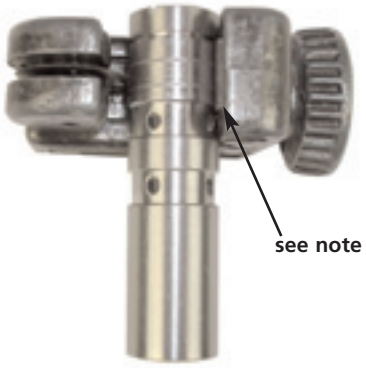
9. Using low air pressure, blow the chips free before removing the reamer.
10. To remove the reamer, turn clockwise while slowly pulling outward on the reamer.
11. Remove any remaining debris from the bore with low air pressure and mineral spirits/degreaser.

Cautions:

- Never turn the reamer backward.
- Pushing on the reamer will result in poor surface finish, inadequate and sporadic material removal, and material being left unremoved as the reamer exits a bore.
- Blow free any chips from the reamer after each use.
- Never use a crescent wrench, t-handle or ratchet to turn the reamer.

Installation Instructions

Important: The sleeve must fit the bore with a slight resistance! If the sleeve slides in easily or rotates in the bore, a tubing cutter may be used to raise a slight ridge around the sleeve lands (as pictured).



1. Discard the original valve and spring. Keep the OEM end plug and roll pin or retaining clip for reuse.
2. Remove the Sonnax valve from the sleeve and install the sleeve with the retaining clip groove inward.
3. Lightly tap the sleeve to the bottom of the bore (the old valve inserted backward may be used to drive the sleeve). Install the retaining clip on the sleeve in the groove nearest the bottom of the bore (see photo on Page 1 for clip location).
4. Install the Sonnax valve and spring with the OEM end plug and roll pin or retaining clip (as shown on Page 2 under Sonnax replacement valve line-up).

Separator Plate Modification

The indicated AFL balance orifice must be enlarged to .052" with the enclosed drill bit.