

## Smart-Tech<sup>®</sup> Input Housing Kit

**Part No.**  
**77733-06KA**

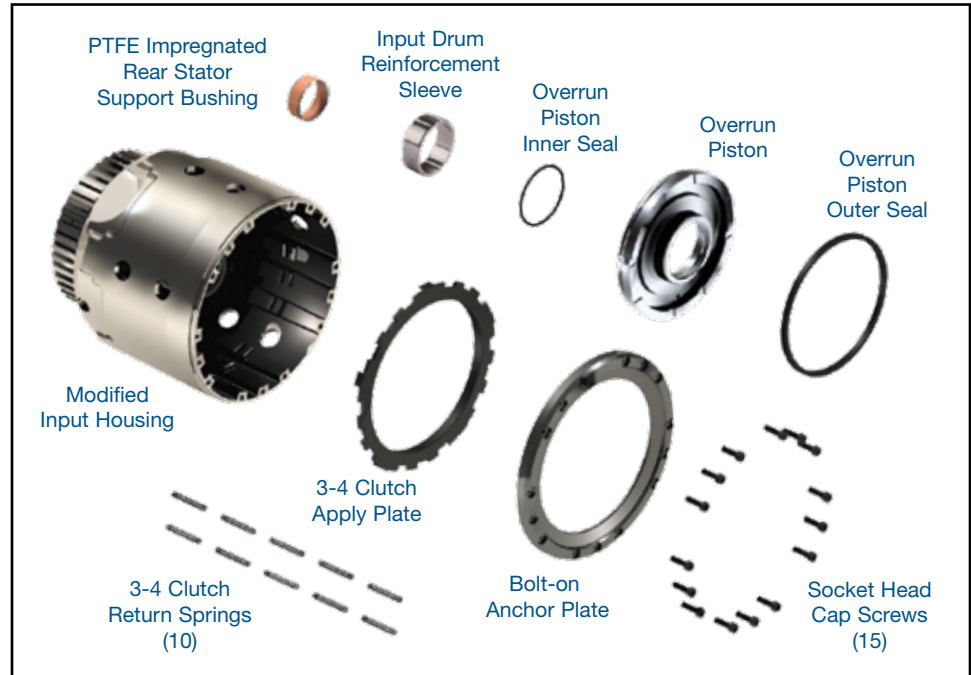
- PTFE Impregnated Rear Stator Support Bushing
- Modified Input Housing
- Input Drum Reinforcement Sleeve
- Overrun Piston Inner Seal
- Overrun Piston
- 3-4 Clutch Apply Plate
- 3-4 Clutch Return Springs (10)
- Bolt-on Anchor Plate
- Overrun Piston Outer Seal
- Socket Head Cap Screws (15)

Patent No. 8,857,592

Also Available

**Forward Piston Installation Tool**  
**77764-INSTL**

## GM 4L60, 4L60-E, 4L65-E, 4L70-E



### Use '91-Later Apply Ring

Requires '91-later 3-4 apply ring stamped "7" with dimension "A" of 3.671" to 3.682" (Figure 1).

### Use '87-Later Ring Gear

Requires '87-later ring gear. The correct spline length is 1.675" (Figure 2).

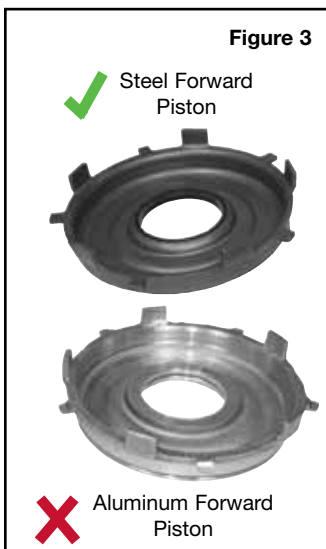
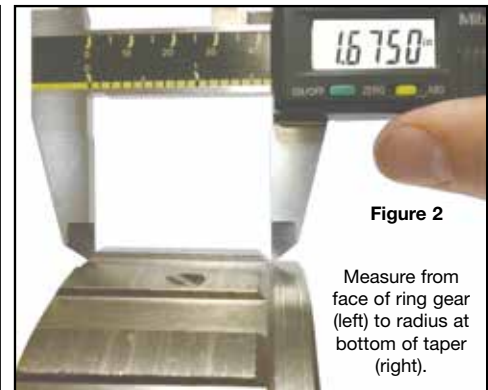


Figure 3



Figure 4

### Use Stamped Steel Forward Piston

This kit must be used with a '97-later stamped steel forward piston (Figure 3). It cannot be used with aluminum forward piston or Sonnax billet forward piston 77764-01.

### Use Dual-Cage Return Spring

This kit must be used with a '97-later dual-cage return spring (24206085), identified by stamped retainer on both ends of the springs (Figure 4). Although not required, the '96-earlier style return spring is about 10% stronger and preferred for high RPM applications. To use the early-style return spring, swap the bottom spring retainer from a '97-later spring onto the '96-earlier spring.

### Use '87-Later Forward Backing Plate

This kit must be used with an '87-later forward clutch backing plate. Use of an earlier design plate may cause stack-up issues during assembly.

## 1. Input Shaft Installation

**NOTE:** The input shaft must be installed before the reinforcement sleeve.

- Prepare shaft by lightly sanding leading edge to remove sharpness of chamfer (**Figures 6a & 6b**).
- Apply Loctite® sleeve retainer or similar product to the spline and bore of housing as well as to the splines and outer diameter of shaft.
- Support housing at the location indicated (**Figure 7**).

**CAUTION:** Failure to support the drum as indicated can result in damage to the housing.

- Line up the spline in the housing with spline on the shaft. Note the single double-wide spline and groove. Using a suitable press, install the shaft until seated. Do NOT hammer or pound the shaft into place.
- Verify input shaft is installed all the way by looking through the housing at the location shown (**Figure 8**). The oil passage within the shaft should be visible through the housing.
- Blow compressed air through all passages to remove excess Loctite®.

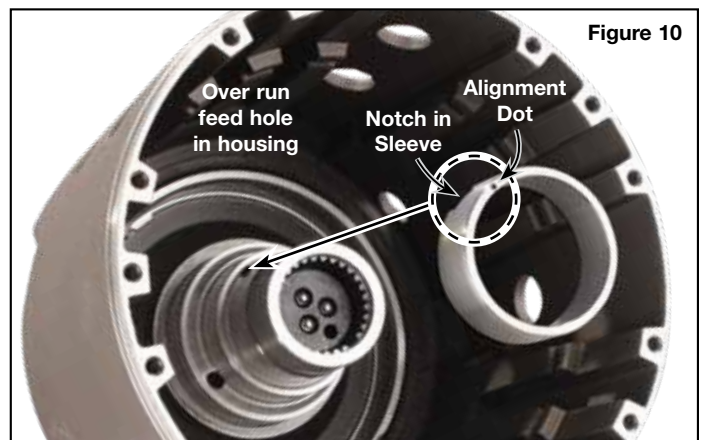
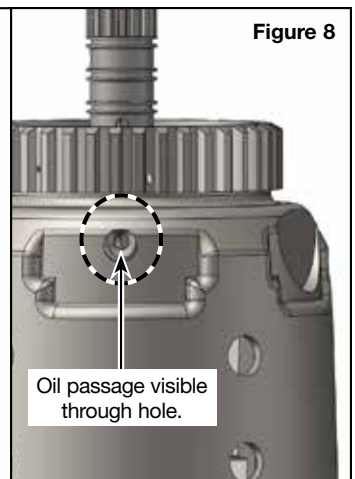
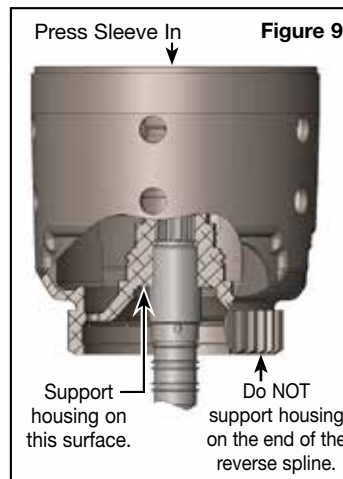
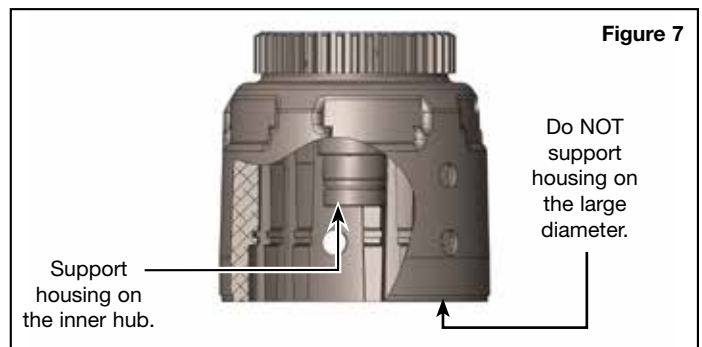
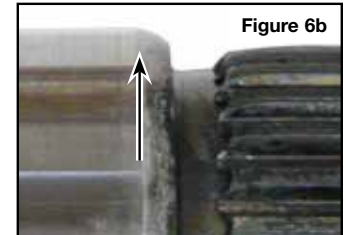
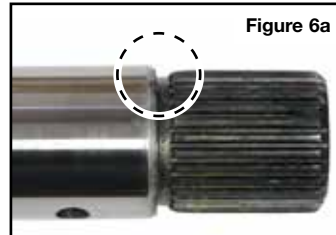
## 2. Reinforcement Sleeve Installation

**NOTE:** The input shaft must be installed before reinforcement sleeve.

- Set the input drum into a suitable press. Support the aluminum housing as indicated (**Figure 9**) using an appropriate sized tube or a spare (not to be reused) 4L60 stator shaft and selective spacer (with bearing left out).

**CAUTION:** Failure to support the drum as indicated can result in damage to the housing.

- Coat the inside of the sleeve with green Loctite® 609. Align the notch in the sleeve with the over run feed hole in the housing (**Figure 10**). Set the sleeve into position on the input drum, keeping the notch in the sleeve aligned with the over run feed hole in the housing.
- Using the press, install sleeve until just barely seated. Do not seat sleeve with the full force of the press since excessive pressure will ruin the housing. Do NOT hammer or pound the sleeve into place.
- Verify over run feed hole is not blocked by the sleeve.



### 3. Clutch Selection

This kit has approximately 5mm more room to allow for additional clutch combinations. The recommended combinations are:

- Eight .067" frictions with seven .095" steels
- Nine .062" frictions with eight .077" steels

### 4. 3-4 Clutch Pack Installation & Assembly

Use normal assembly procedures for pistons, overrun clutches, forward clutches and input sprag. Sonnax forward piston installation tool 77764-INSTL is available to assist installing forward piston over installed reinforcement sleeve.



**NOTE:** A lip seal is included for use with aftermarket gasket and seal kits that do not include this seal.

- Install the Sonnax apply plate, ensuring the five tabs securely fit over the OE 3-4 clutch apply ring.
- Install a friction plate against the face of the Sonnax apply plate.
- Install a steel plate against the friction plate. Continue alternating plates, ending with a friction plate on top.
- With the clutch pack installed, measure the clearance from the top friction to the end face of the housing. Measure in multiple locations to ensure an accurate reading. Clearance should be between .050" and .060" (**Figure 11**). Adjust clearance by substituting different thickness steel plates.
- Install the 10 Sonnax 3-4 clutch return springs into the five OE spring retainers. These are required to keep the apply plate released and minimize drag from the clutches.
- Slide the spring retainers into the housing, with springs and retainers oriented as shown (**Figure 12**).
- Install the Sonnax bolt-on anchor plate onto input housing, aligning the bolt holes with the threaded holes in the input housing.
- To ensure the correct torque spec and thread locking, all threads should be clean and dry prior to assembly. Apply a drop of Loctite® Threadlocker 262 or similar product to the threads of each socket head cap screw. Install all screws through the backing plate into the threaded housing and lightly tighten each screw.
- Torque each fastener to 51 in-lb. Work around the housing in a crisscross (star) pattern to ensure even pressure on the backing plate.

### 5. Final Verification Steps

Air test assembled housing (**Figure 13**).

### 6. PTFE Bushing Installation

- Remove rear stator bushing, taking care not to damage bushing bore.
- Install Sonnax PTFE-coated bushing using appropriate driver tool.

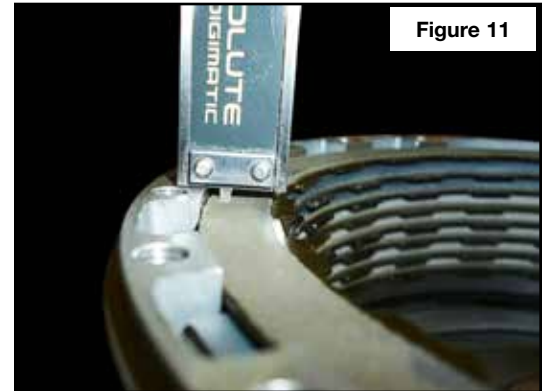


Figure 11

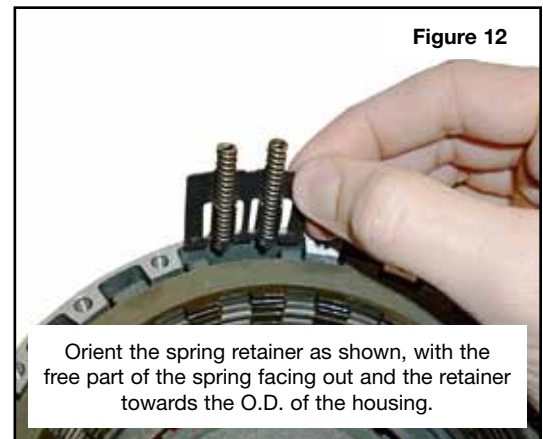


Figure 12

Orient the spring retainer as shown, with the free part of the spring facing out and the retainer towards the O.D. of the housing.

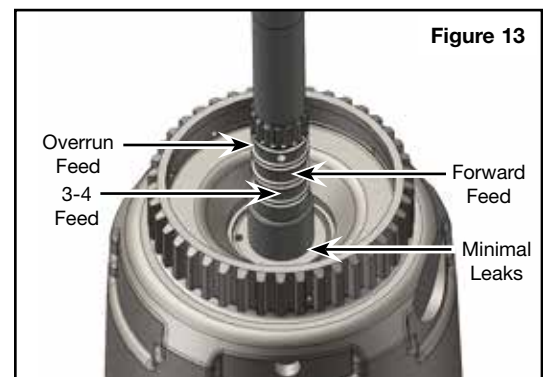


Figure 13