



## A4LD UPDATE HANDBOOK INDEX

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## **INTRODUCTION**

### **FORD A4LD**

### **"UPDATE HANDBOOK"**

Since the start of production in 1985, the FORD A4LD transmission has recieved many major engineering design changes. These design level changes have affected nearly every part used in the A4LD transmission.

This *"Update Handbook"* will explain the purpose of each change, the parts that are affected by the change, and any parts interchangeability problems created by the change.

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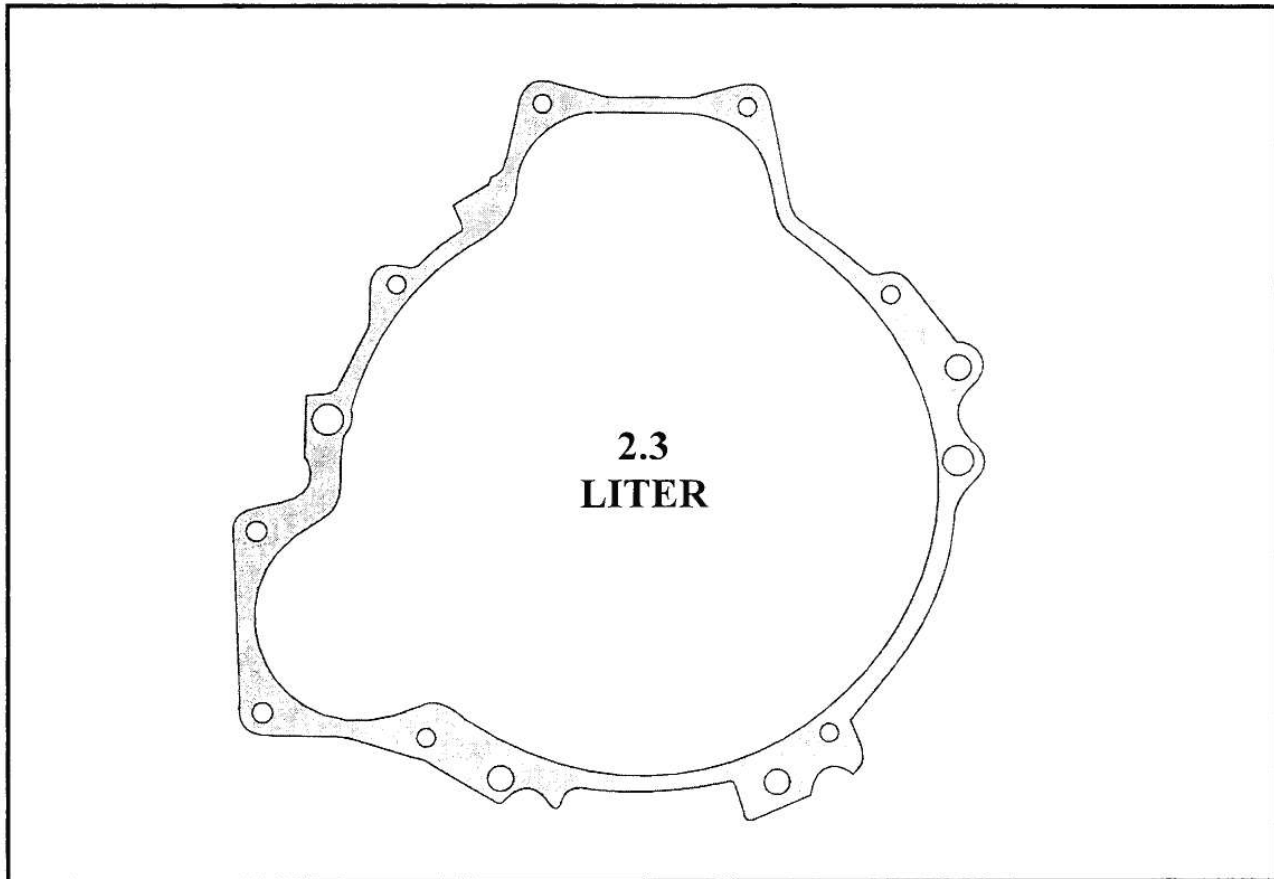
**Technical Service Information****A4LD BELL HOUSING IDENTIFICATION**

Figure 1

| <b>1 SOLENOID</b> | <b>2 SOLENOIDS</b> | <b>MODEL</b> |
|-------------------|--------------------|--------------|
| 1985 - 1987       | 1988 - UP          | MUSTANG      |
| 1985 - 1987       | 1988 - UP          | 2WD RANGER   |
| 1986 - 1987       | N/A                | AEROSTAR     |
| 1987 ONLY         | 1988 - 1989        | THUNDERBIRD  |

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### A4LD BELL HOUSING IDENTIFICATION

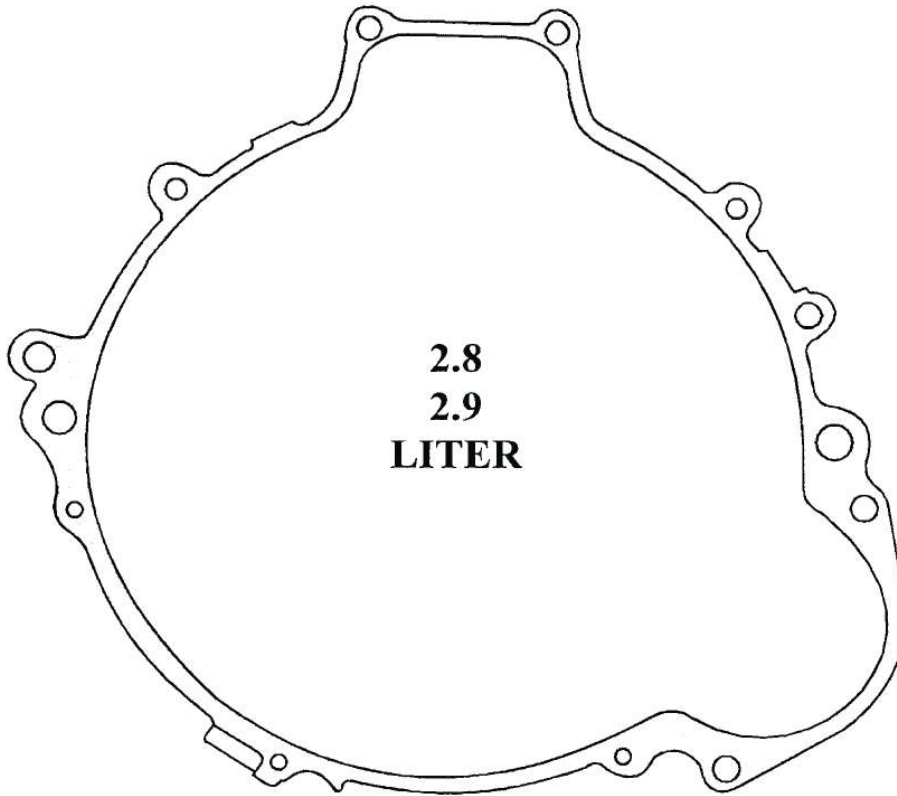


Figure 2

#### **2.8 LITER**

| <b>1 SOLENOID</b> | <b>2 SOLENOIDS</b> | <b>MODEL</b>     |
|-------------------|--------------------|------------------|
| 1985 - 1987       | N/A                | 2WD / 4WD RANGER |
| 1985 - 1987       | N/A                | BRONCO II        |
| 1985 - 1987       | N/A                | AEROSTAR         |

#### **2.9 LITER**

| <b>1 SOLENOID</b> | <b>2 SOLENOIDS</b> | <b>MODEL</b>        |
|-------------------|--------------------|---------------------|
| N/A               | 1988 - UP          | 2WD / 4WD RANGER    |
| N/A               | 1988 - 1990        | 2WD / 4WD BRONCO II |
| 1987 ONLY         | 1988 - 1990        | MERKUR SCORPIO      |

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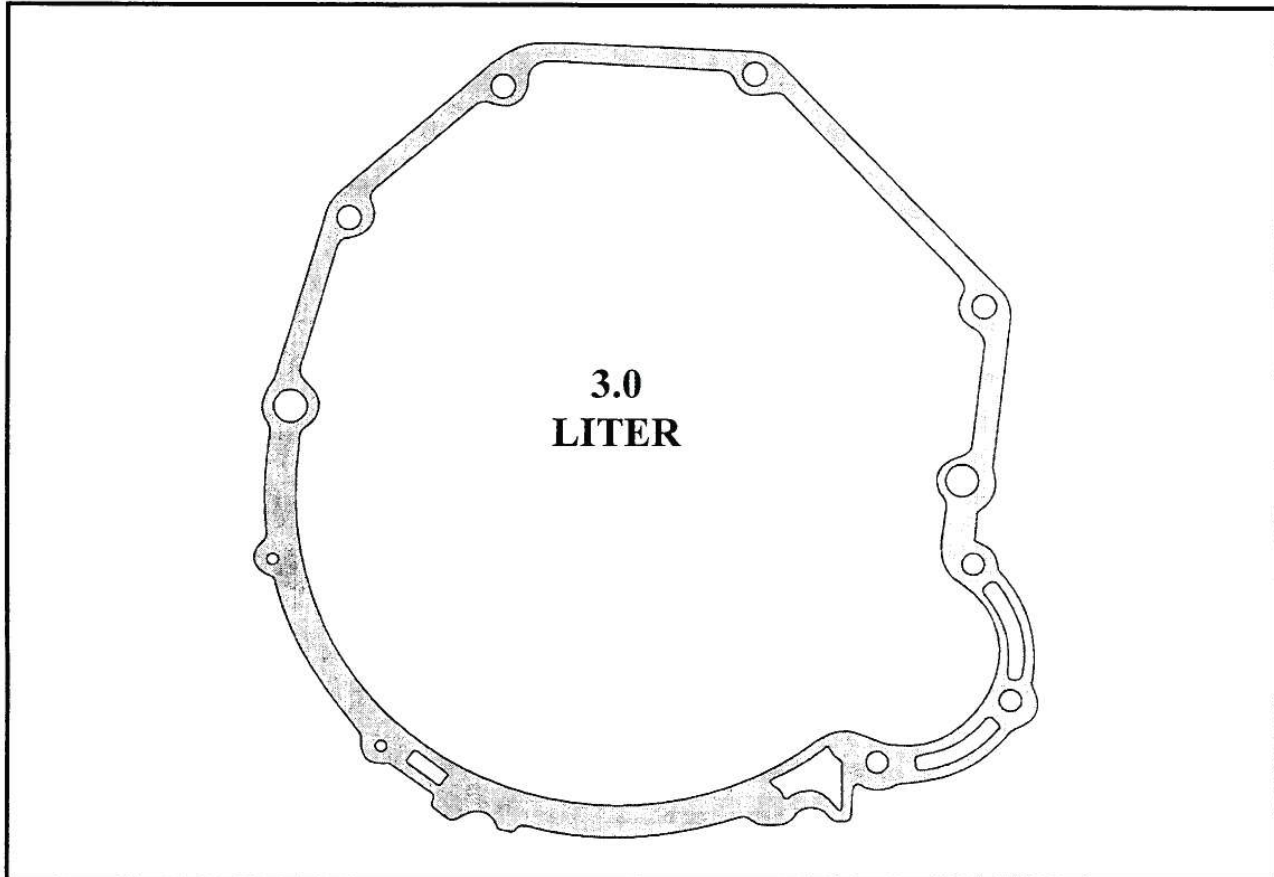


Figure 3

| <b>1 SOLENOID</b> | <b>2 SOLENOIDS</b> | <b>MODEL</b> |
|-------------------|--------------------|--------------|
| 1987 ONLY         | 1988 - UP          | AEROSTAR     |
| N/A               | 1991 - UP          | 2WD RANGER   |

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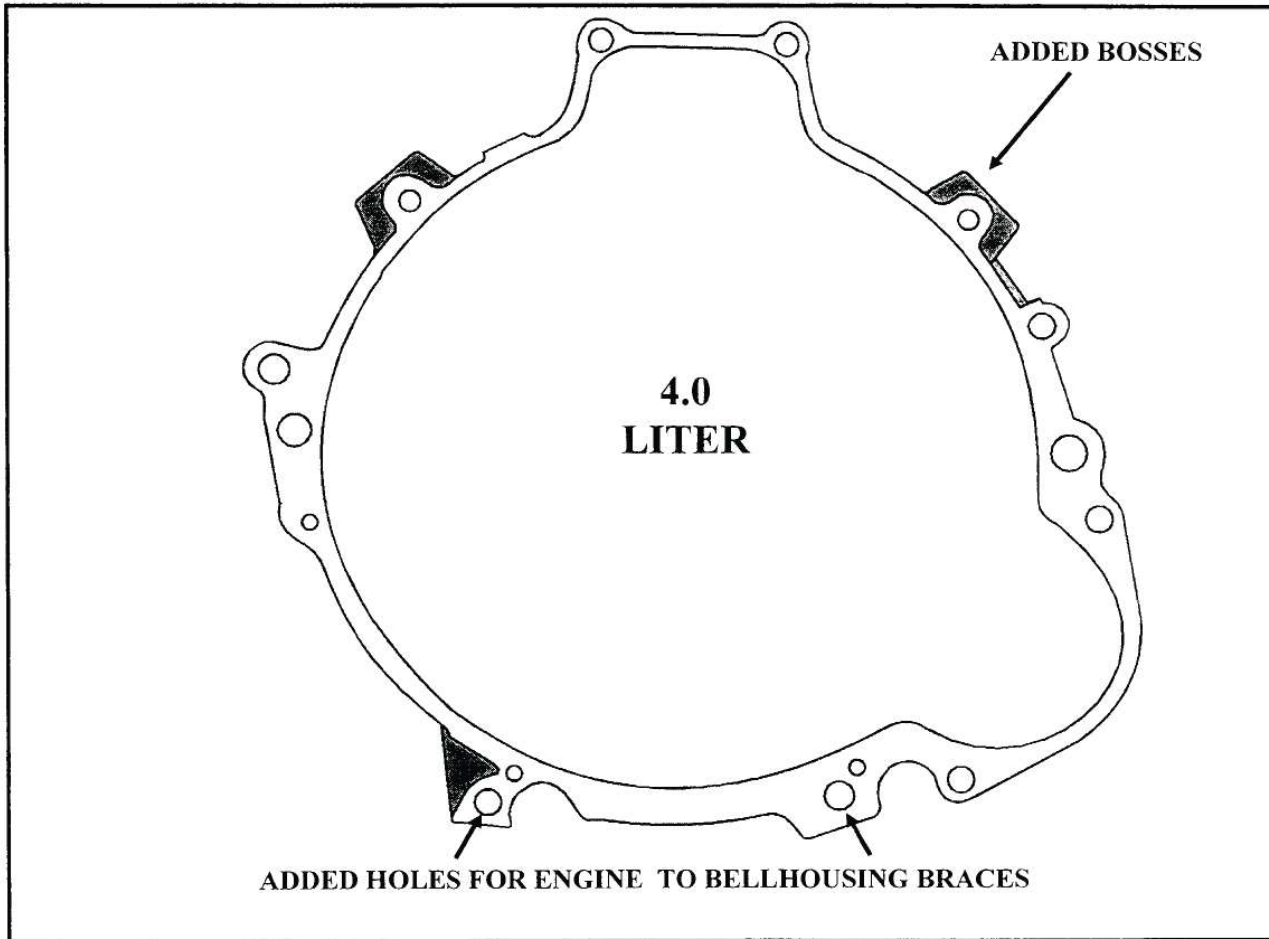


Figure 4

| <u>2 SOLENOIDS</u> | <u>MODEL</u>       |
|--------------------|--------------------|
| 1990 - UP          | AEROSTAR           |
| 1990 - UP          | 2WD / 4WD RANGER   |
| 1990 - UP          | 2WD / 4WD EXPLORER |

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## Technical Service Information

### BELL HOUSING CHANGES

**CHANGE #1:** A .105" machined lip was added at the front seal bore to allow the front seal to be staked into place.

**REASON:** To help prevent front seal blowout.

**PARTS AFFECTED:**

BELL HOUSING - A machined lip was added at the front seal bore to allow the front seal to be staked in place (Refer to Figures 5 & 6).

**INTERCHANGEABILITY:**

As long as the engine bolt pattern is the same (See Figures 1 thru 4), bell housings will interchange. However, using an early style bell housing without the lip is not recommended.

**NOTE:** Also see changes #2 and #3, On pages 8 & 9.

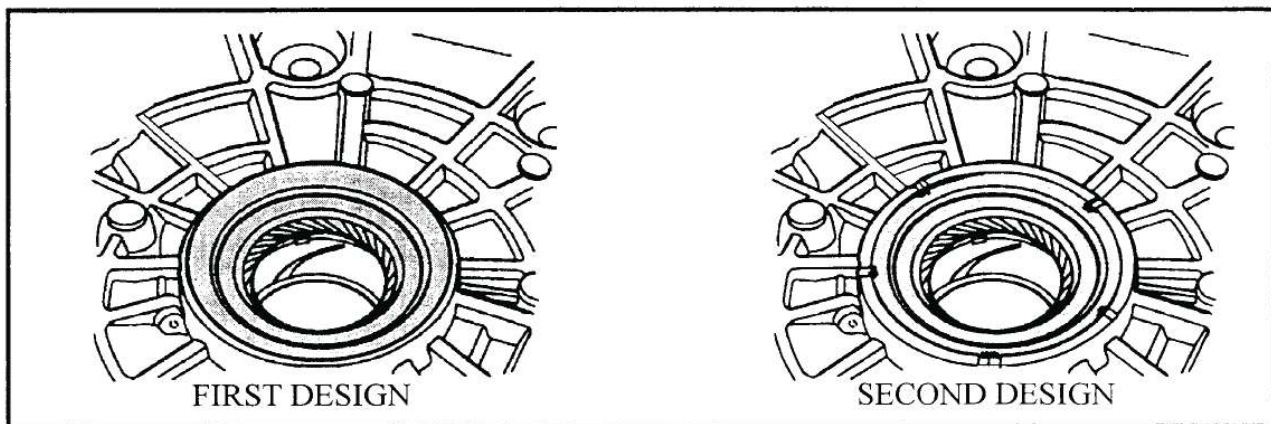


Figure 5

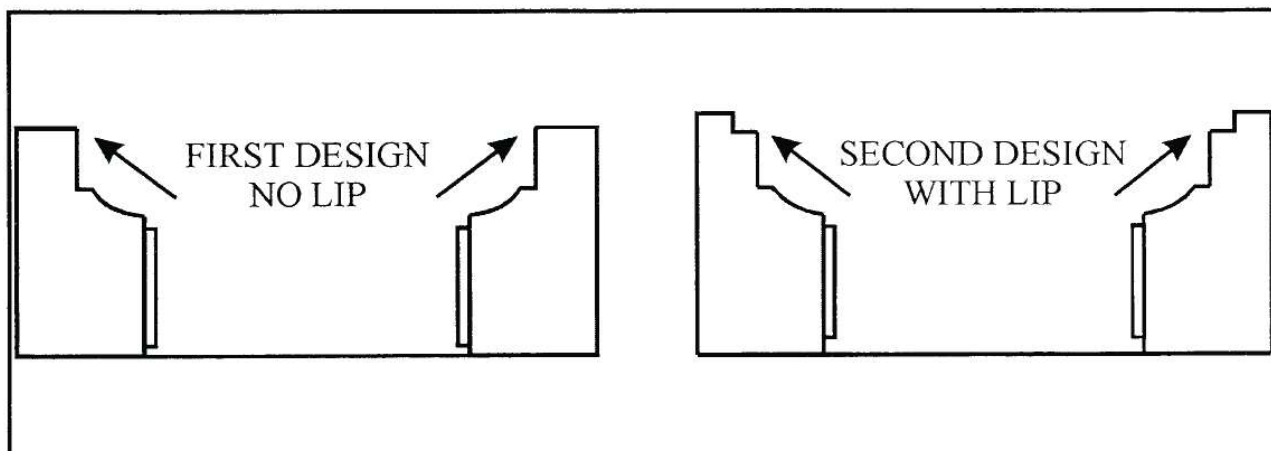


Figure 6

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## Technical Service Information

### BELL HOUSING CHANGES

**CHANGE #2:** Enlarged area in the converter drain back passage.

**REASON:** To help prevent front seal blow out.

**PARTS AFFECTED:**

**BELL HOUSING** - Converter drain back passage area was enlarged for better flow to the drain back hole in the pump body (Refer to Figure 7). It is not necessary to replace the bell housing to cure this problem. Using a rotary file, or die grinder, remove material to allow "full flow" to the drain back hole (Refer to Figure 7). Also enlarge the existing drain back hole in both the bell housing and the pump body to 1/4" (Refer to Figure 8).

**INTERCHANGEABILITY:**

As long as the engine bolt pattern is the same (See Figures 1 thru 4), all late model bell housings will retrofit to early models. Early model bell housings will interchange but the drain back modifications must be made.

**NOTE:** Also see changes #1 and #3, On pages 7 & 9.

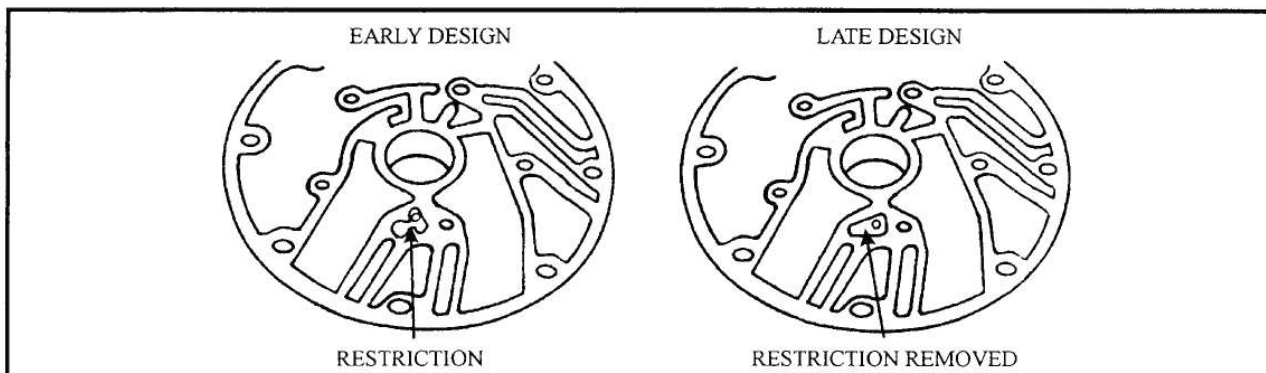


Figure 7

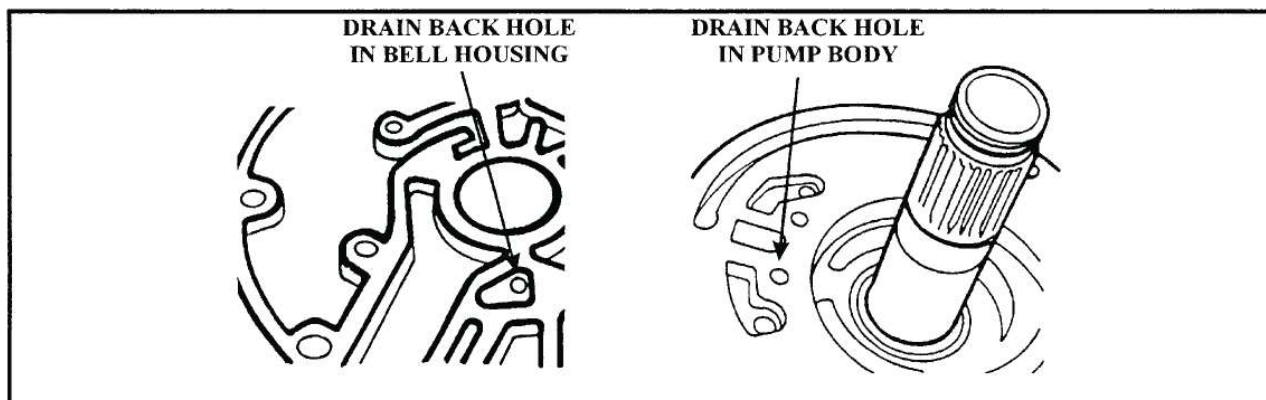


Figure 8

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## Technical Service Information

### BELL HOUSING CHANGES

**CHANGE #3:** Pump bolt diameter and bolt head configuration.

**REASON:** Improved structural stability.

**PARTS AFFECTED:**

- (1) PUMP BOLTS - Were enlarged from 6mm to 8mm and the bolt heads were changed from hex heads to allen heads and/or torx heads.
- (2) BELL HOUSING - Thread size was enlarged to accommodate the larger (8mm) bolts.
- (3) PUMP BODY - Bolt hole size was enlarged from 6mm to 8mm to accommodate the larger bolts.
- (4) WEAR PLATE - Bolt hole size was enlarged to accommodate the larger (8mm) bolts.

**INTERCHANGEABILITY:**

Bell housings, plates, and pumps are interchangeable as a matched set. A C-3 pump plate can be used in an A4LD pump if the 3 holes shown in Figure 9 are drilled. An A4LD pump plate must be used to locate the holes.

**NOTE:** Also see changes #1 and #2 On pages 7 & 8.

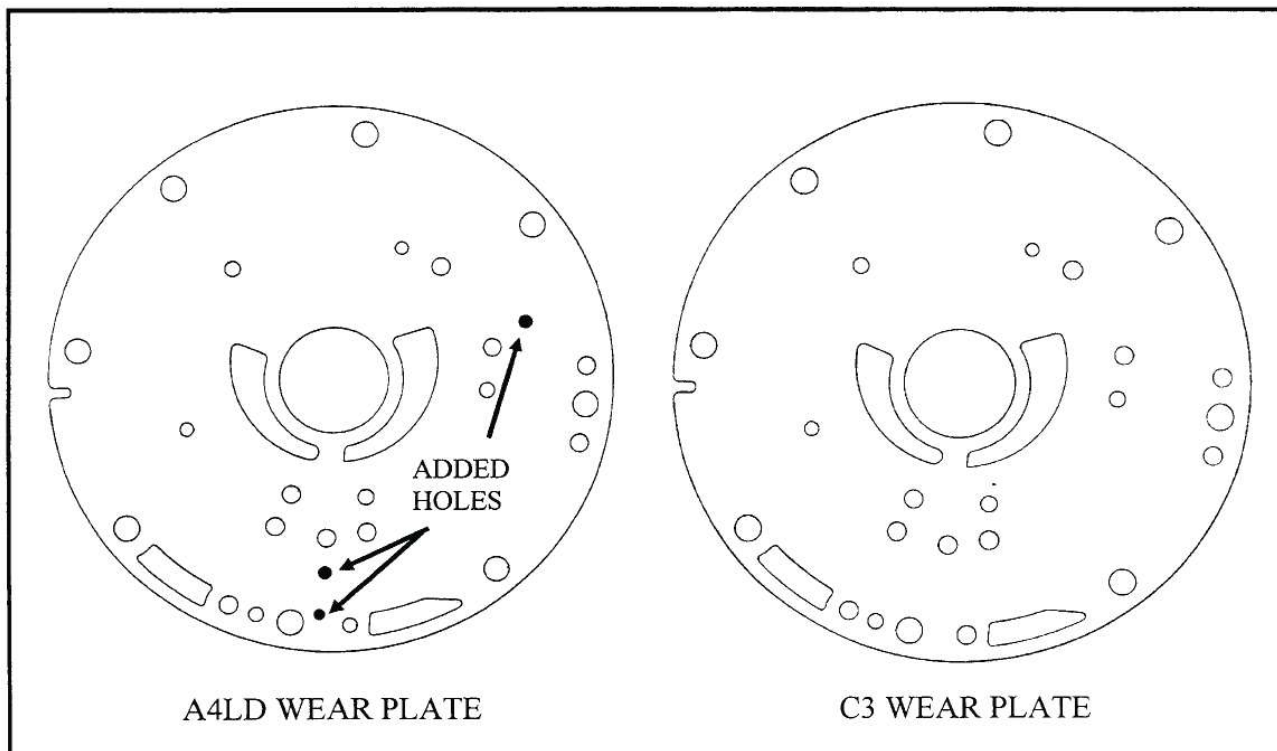


Figure 9

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## Technical Service Information

### BELL HOUSING / PUMP ALIGNMENT

When assembling the pump body to the bell housing, a pump alignment tool must be used (Refer to Figure 10). Using the torque converter, will not produce proper pump alignment. If an alignment tool is not used, several problems may occur, such as:

- (1) PUMP GEARS BREAKING
- (2) PUMP WHINE
- (3) IRREGULAR BUSHING WEAR
- (4) IRREGULAR CONVERTER HUB WEAR
- (5) FRONT SEAL LEAK OR BLOW OUT

Another concern that may be attributed to the above listed problems, is replacement of the front pump bushing in the bell housing. At the factory, Ford puts an oversized bushing in the bell housing and then bores the bushing to the proper size, and establish the centerline. When a new bushing is installed, (possibly off center) pump alignment may not be possible. Ford Motor Company recommends using a new bell housing if bushing replacement is necessary. Aftermarket exchange bell housings with line bored bushings are also available.

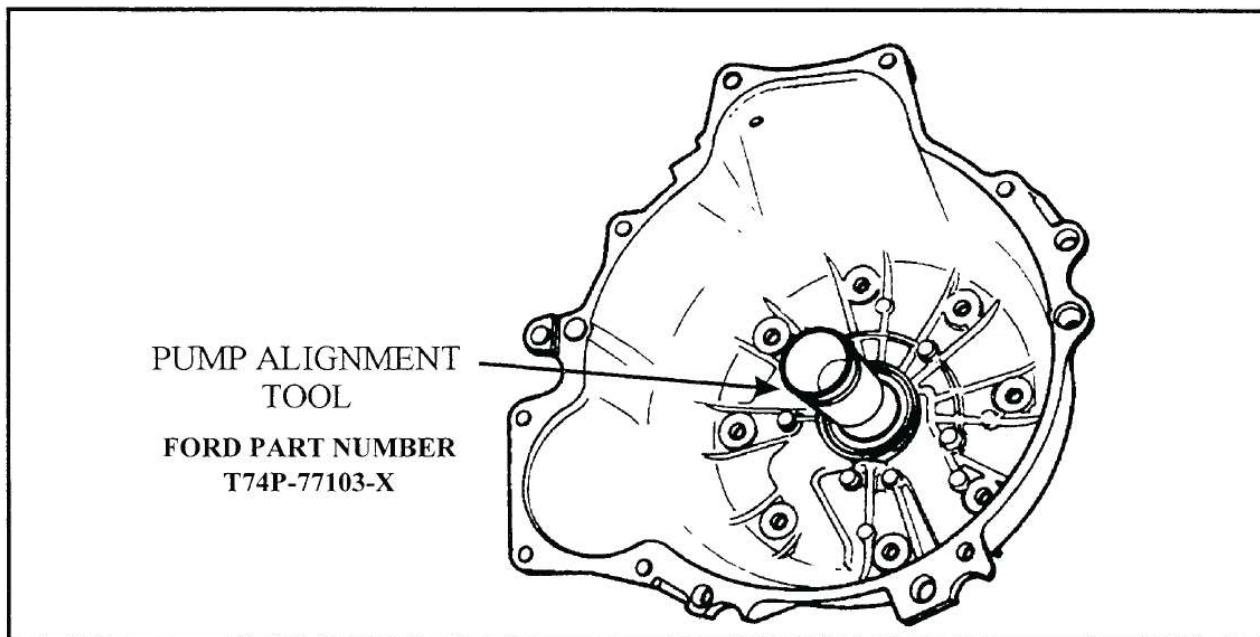


Figure 10

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## Technical Service Information

### CONTINUOUS FRONT SEAL LEAK, PREMATURE CONVERTER HUB WEAR, PREMATURE PUMP GEAR DAMAGE, ON 2.8L, 2.9L, AND 4.0L ENGINES ONLY

**COMPLAINT:** Continuous leaks from the front pump seal area, possibly premature bushing wear and/or wear on the torque converter hub seal area, and in extreme cases may exhibit premature front pump gear breakage. The complaint may be any or all of the above, depending on the extent of the wear.

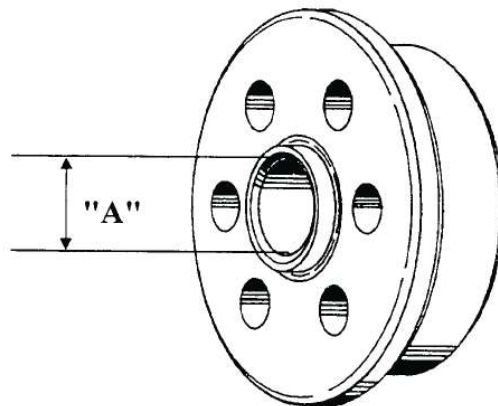
**CAUSE:** The cause may be a "Crankshaft to Flywheel Spacer" worn in the area that supports the converter pilot hub allowing a mis-alignment of the torque converter to the pump, on models equipped with 2.8, 2.9 and 4.0 liter engines.

**CORRECTION:** Inspect the "Crankshaft to Flywheel Spacer" for abnormal wear and replace as necessary. Refer to Dimension "A" in Figure 11 to measure the spacer. Dimension "A" on a new spacer is .750", and the OEM part number is D4ZZ-6434-A.

**SERVICE INFORMATION:**

Crankshaft to Flywheel spacer.....D4ZZ-6434-A

#### CRANKSHAFT TO FLYWHEEL SPACER OEM PART NUMBER D4ZZ-6434-A



**DIMENSION "A" SHOULD BE .750" ON NEW O.E. SPACER**

Figure 11

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## Technical Service Information

### STATOR CHANGES

**CHANGE:** The rear input shaft bushing location was moved closer to the top of the stator.

**REASON:** Improved support for the input shaft.

**PARTS AFFECTED:**

STATOR SUPPORT - The stator support wall was made thicker to accommodate the change in the bushing location (See Figures 12 and 13).

**INTERCHANGEABILITY:**

The early and late design pumps are interchangeable. However, all late design pumps will have the larger pump bolt holes. The late design pump bolt requires a late design pump plate and late design bellhousing.

#### EARLY DESIGN PUMP

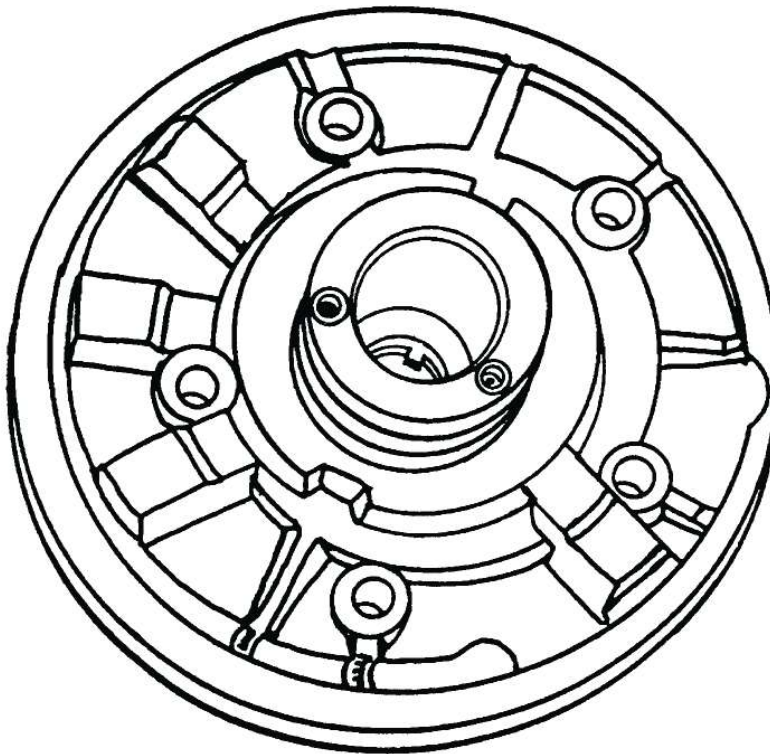


Figure 12

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## Technical Service Information

### LATE DESIGN PUMP

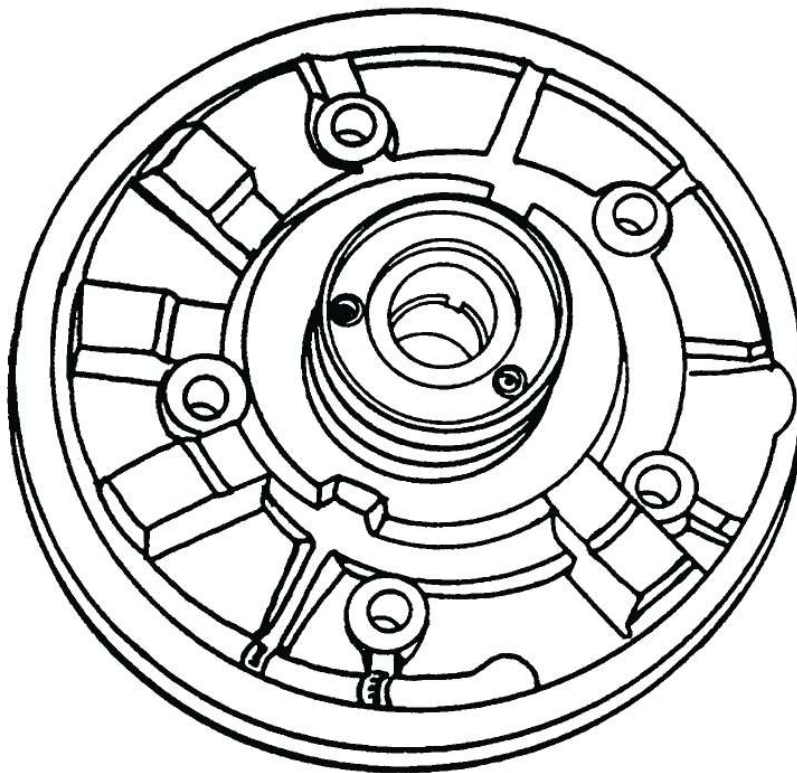


Figure 13

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## Technical Service Information

### OVERDRIVE BAND CHANGES

**CHANGE:** Beginning in model year 1990, on 4.0L models, a "double wrap" overdrive band was introduced.

**REASON:** Ease of installation on the assembly line.

**PARTS AFFECTED:**

(1) OVERDRIVE BAND - Was changed to a double wrap design band (See Figure 14).

(2) BAND APPLY STRUT - Was redesigned to accommodate the double wrap band (See Figure 14).

**INTERCHANGEABILITY:**

The previous design overdrive band will interchange provided both the previous design band & strut are used together (See Figure 15). Band adjustment must also be changed if the early design band is to be used.

DOUBLE WRAP BAND ADJUSTMENT 3.5 TURNS

EARLY DESIGN ADJUSTMENT 2.0 TURNS

**NOTE:** Sometime in 1992 the double wrap band was discontinued and the previous design band & strut are now used.

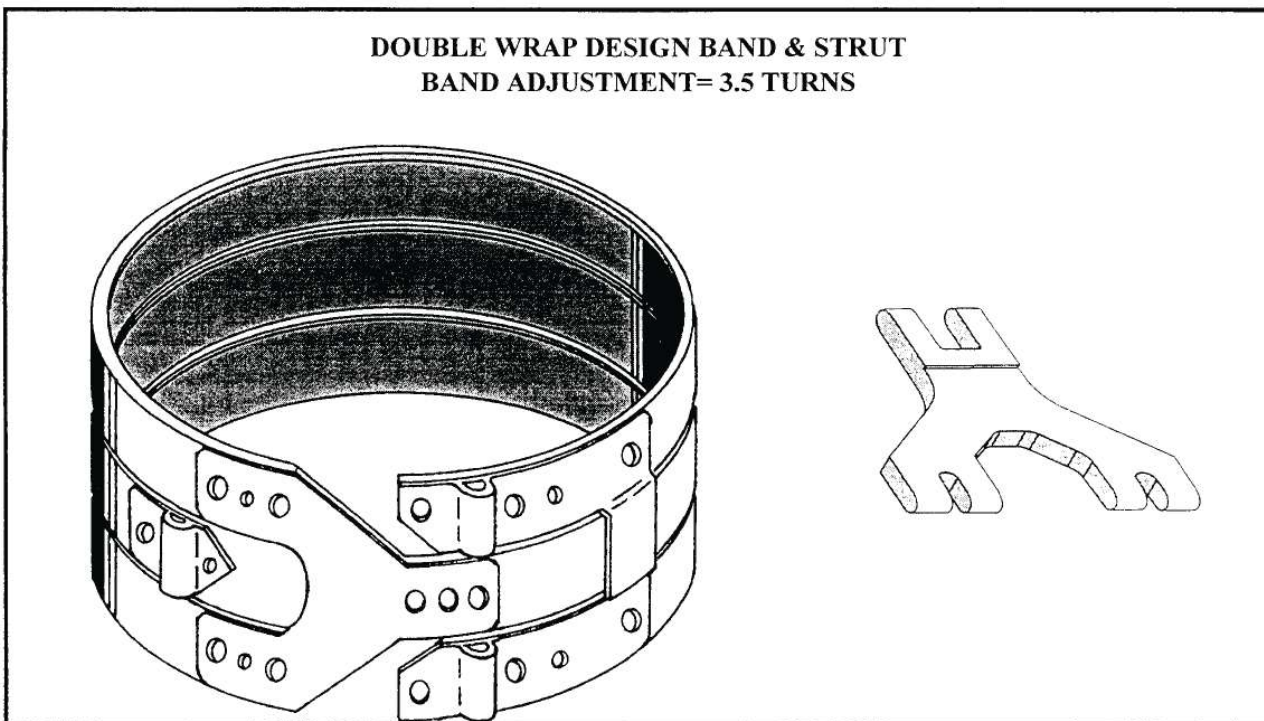


Figure 14

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## Technical Service Information

### PREVIOUS DESIGN BAND & STRUT BAND ADJUSTMENT= 2.0 TURNS

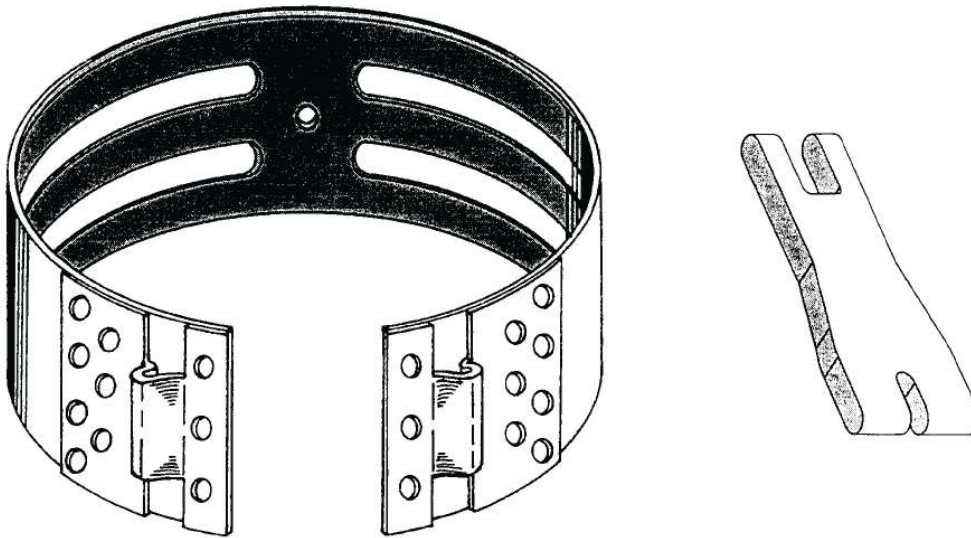


Figure 15

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## Technical Service Information

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### OVERRUN CLUTCH RETURN SPRINGS AND RETAINER DESTROYED

**COMPLAINT:** Before and/or after rebuild, the overrun clutch springs, and the overrun clutch spring retainer are destroyed, from what looks to be a twisting motion.

**CAUSE:** The cause may be:

- A. Poorly supported overdrive planetary carrier, allowing the inside diameter of the hub on the overdrive carrier to contact, and turn in a twisting motion, the overrun clutch spring retainer. This will destroy the retainer and return springs in a very short period of time (See Figure 16). **NOTE:** The dimension between the outside diameter of the overrun clutch spring retainer, and the inside diameter of the overdrive carrier hub, is critical. (See Figure 16).
- B. Bent or improperly installed overrun clutch spring retainer will also drastically affect the clearance between the retainer and the carrier hub.

- CORRECTION:**
- A. Inspect and replace the following, as necessary;
    - 1. Turbine shaft bushings in the pump stator for wear and/or damage.
    - 2. Turbine shaft splines (Overdrive Carrier End) for wear and/or damage.
    - 3. Turbine shaft splines in overdrive planetary carrier, for wear and/or damage.  
Ensure a "snug" fit when installing the turbine shaft into the overdrive carrier.
    - 4. Bushing in the front end of the output shaft for wear and/or damage. This will support the forward clutch drum and the overdrive center shaft. Replace this bushing on All units during rebuild (See Figure 17).  
**NOTE:** In later applications a caged needle bearing is used in this location.  
Inspect and replace as necessary (See Figure 17).
    - 5. Overrun clutch housing bushing for wear and/or damage (See Figure 18).
  - B. Ensure that the overrun clutch spring retainer is supported evenly, using an outer pump gear, when compressing the return springs to avoid ANY distortion. This is critical, and is easily distorted with any uneven pressure.





## Technical Service Information

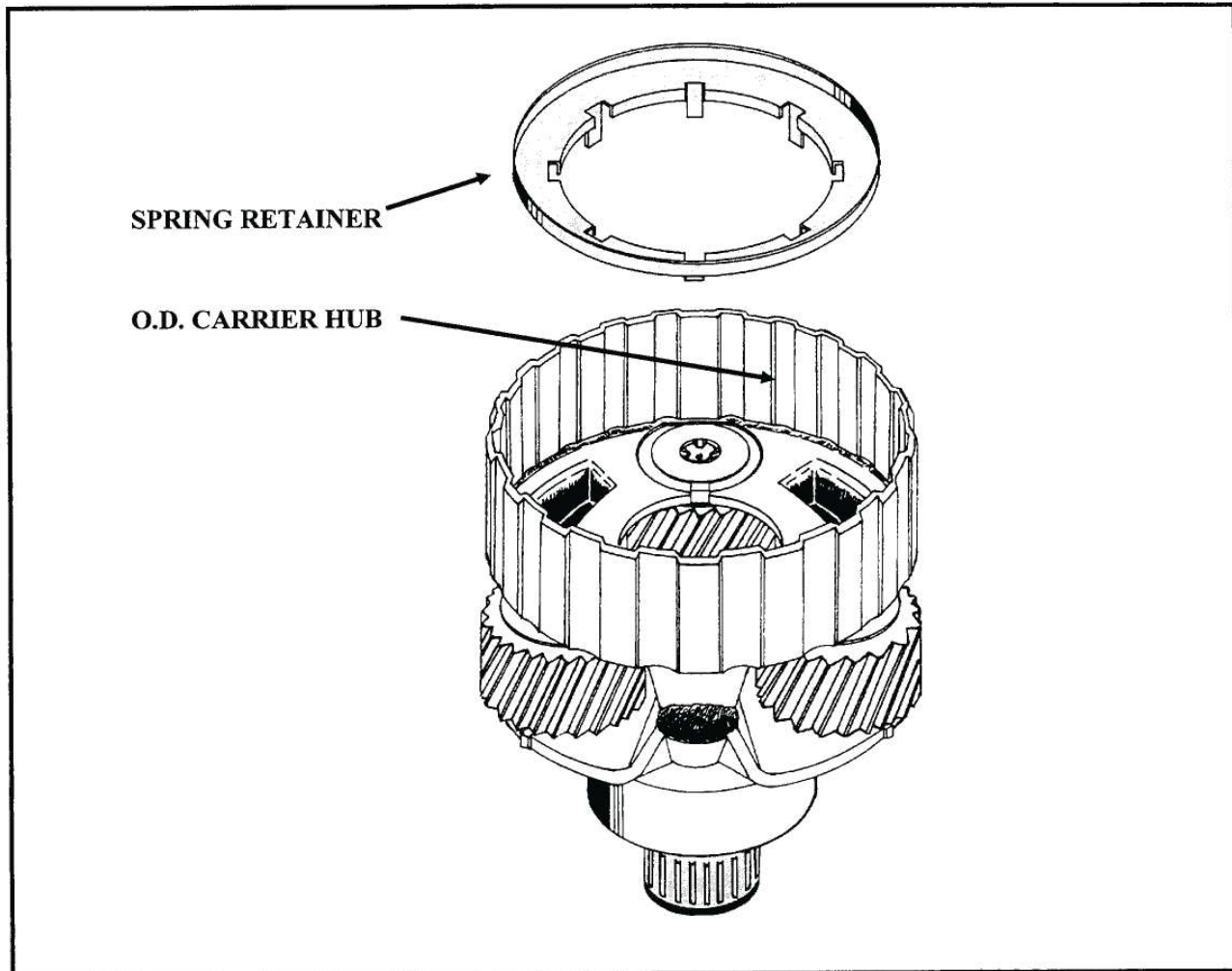


Figure 16

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## Technical Service Information

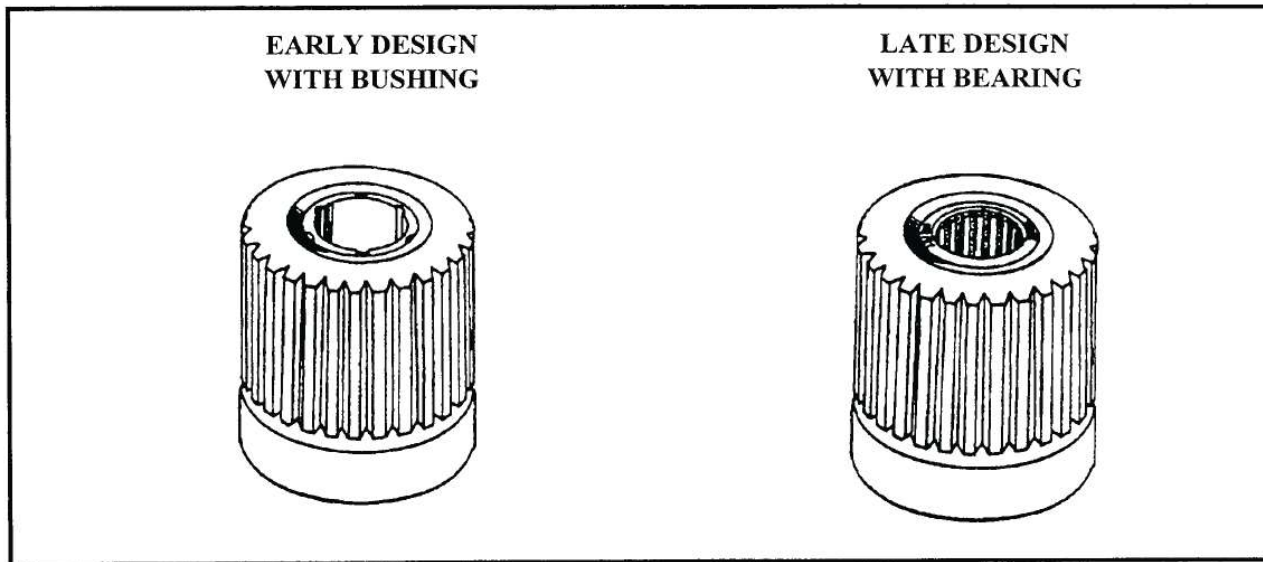


Figure 17

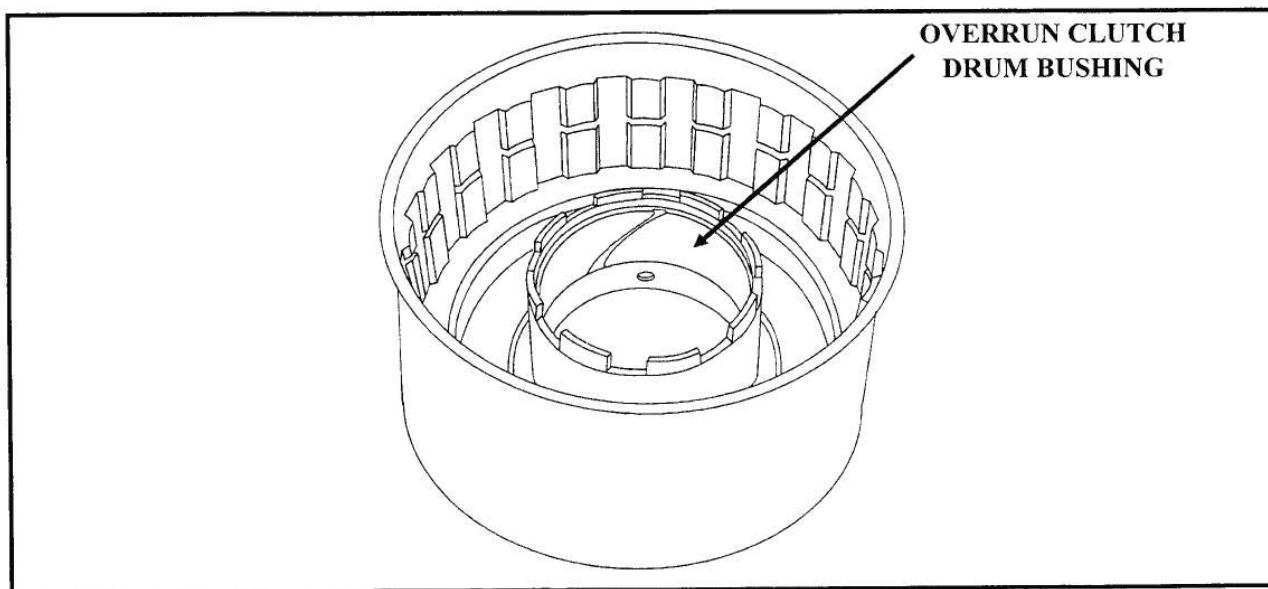


Figure 18

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## Technical Service Information

### NO FOURTH GEAR

**COMPLAINT:** No fourth gear.

**CAUSE:** The cause may be, the overdrive sprag inner race broken loose from the carrier (See Figure 19). The problem is not always detectable because the bearing inside the carrier hides the broken area of the carrier. The sprag inner race and splined area for the input shaft "MUST NOT" turn. Use a little force if necessary to check this.

**CORRECTION:** Replace the overdrive carrier. Remanufactured "HEAVY DUTY" planetary carriers are available from aftermarket suppliers (See Figure 20).

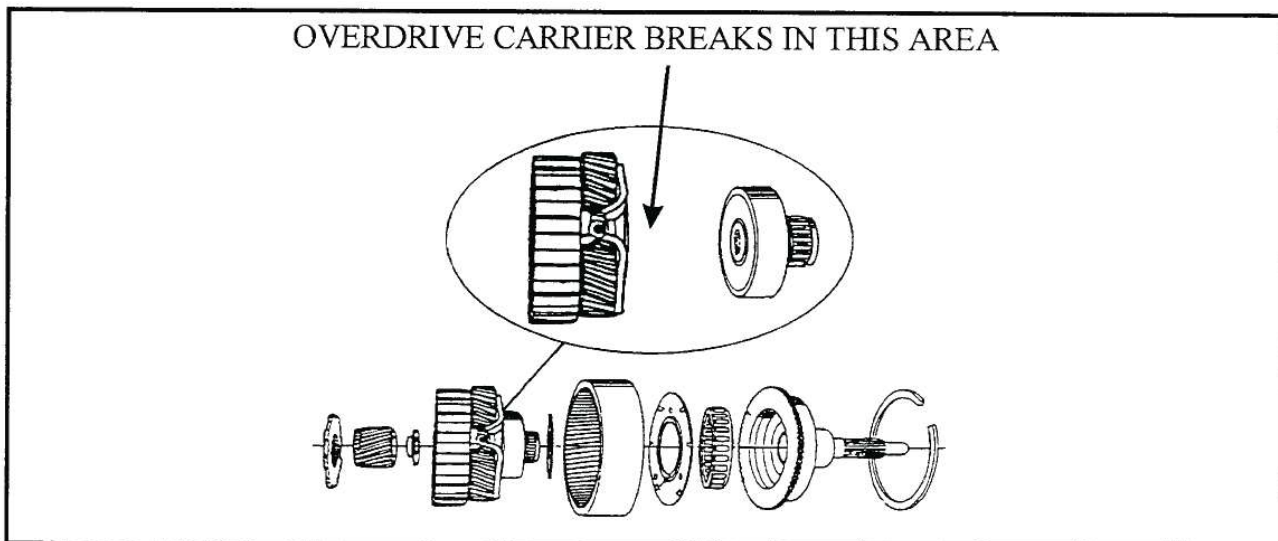


Figure 19

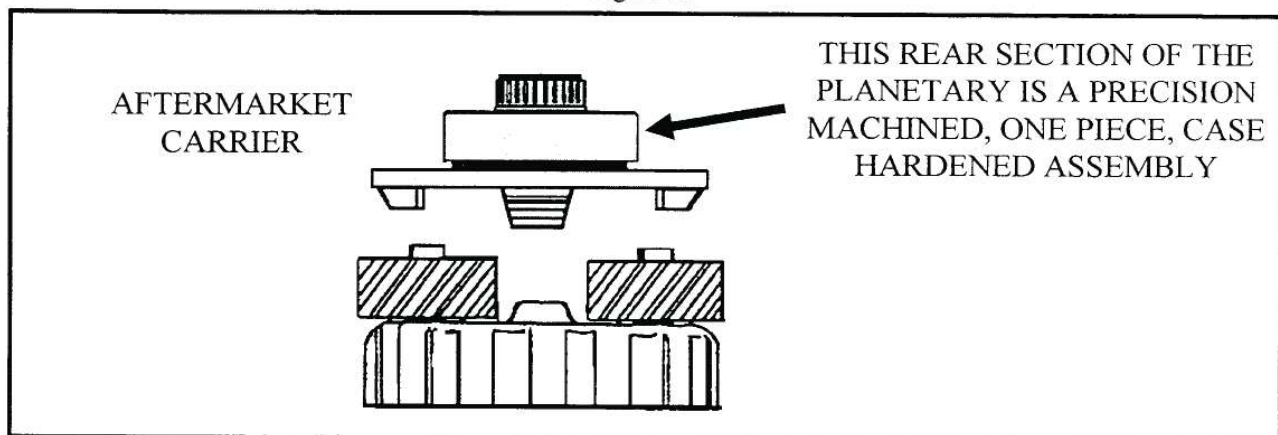


Figure 20

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## Technical Service Information

### NO MOVEMENT IN THE OVERDRIVE RANGE

**COMPLAINT:** Vehicle will not move in the overdrive range, but will move in D3, 2, and 1. Another common complaint is a flair-up on a 4-3 kick down.

**CAUSE:** The cause may be the overdrive sprag in backwards or not holding (See Figure 21).

**CORRECTION:** Replace the overdrive sprag, and inspect the inner and outer sprag races for wear or damage.

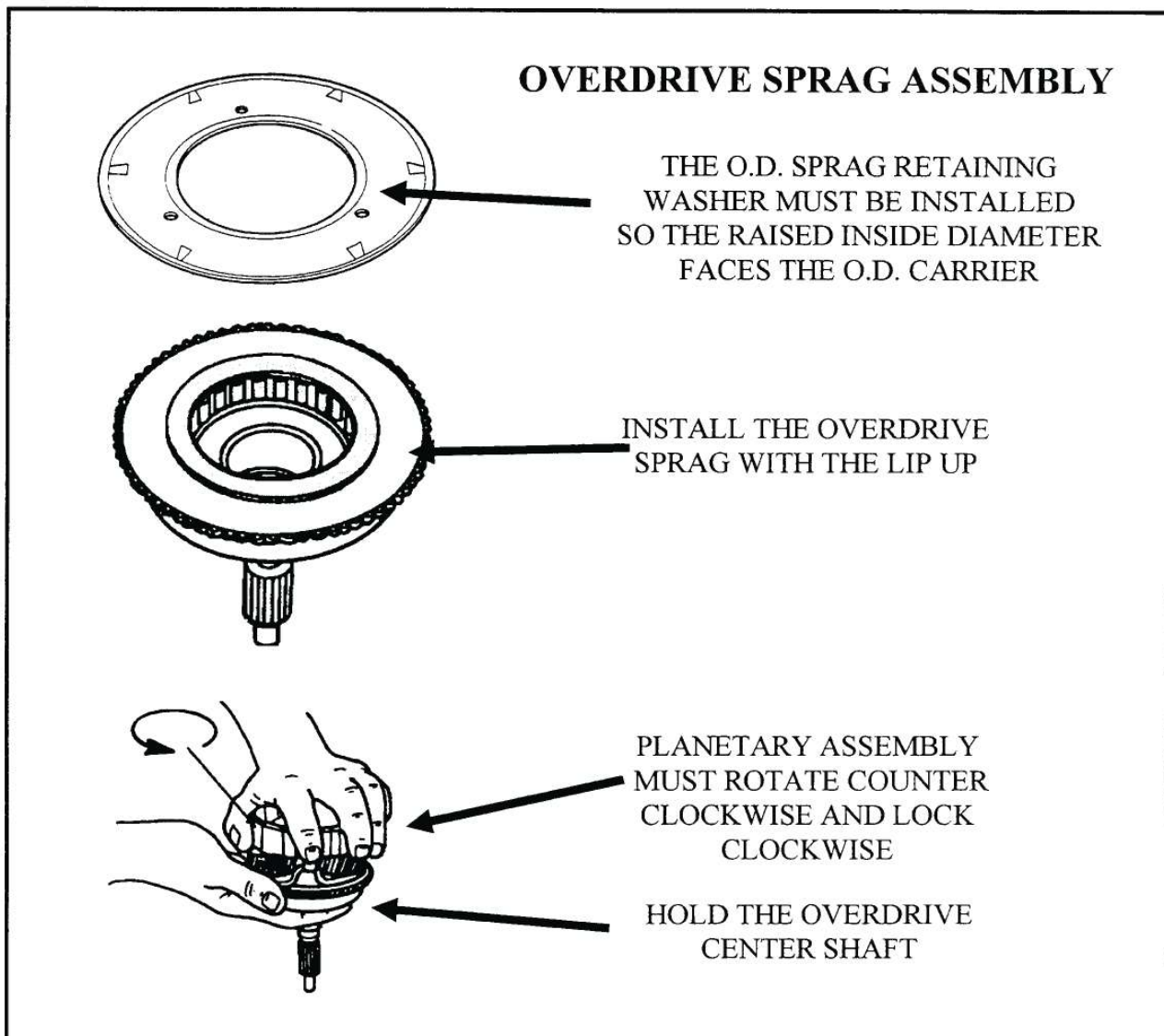


Figure 21

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## Technical Service Information

### OVERDRIVE SPRAG CHANGE

**CHANGE:** Vehicles equipped with A4LD transmissions built after June 9, 1992 contain a plastic caged overdrive sprag assembly that is no longer serviced. The previous design steel caged sprag and all related parts must be used for service (See Figure 24).

**REASON:** Ford Motor Co. felt that the plastic caged overdrive sprag assembly could be damaged upon disassembly from the overdrive center shaft.

**PARTS AFFECTED:**

- (1) **OVERDRIVE SPRAG ASSEMBLY** - Previous design steel caged sprag must be used, as the plastic caged sprag is no longer serviced, which requires the use of the previous design ring gear and the previous retaining washer (See Figure 22).
- (2) **OVERDRIVE RING GEAR** - Previous design ring gear must be used to accommodate the steel caged sprag and retaining washer that must be used. Measure the overdrive ring gear, as shown in Figure 23, to ensure you have the proper one.
- (3) **RETAINING WASHER** - Previous design retaining washer shown in Figure 22 must be used to accommodate the previous design overdrive ring gear.

**SERVICE INFORMATION:**

Overdrive Sprag Assembly (Previous Design) .....E5TZ-7A089-A  
 Overdrive Ring Gear (Previous Design) .....E5TZ-7A153-A  
 Retaining Washer (Previous Design) .....E7TZ-7L339-A

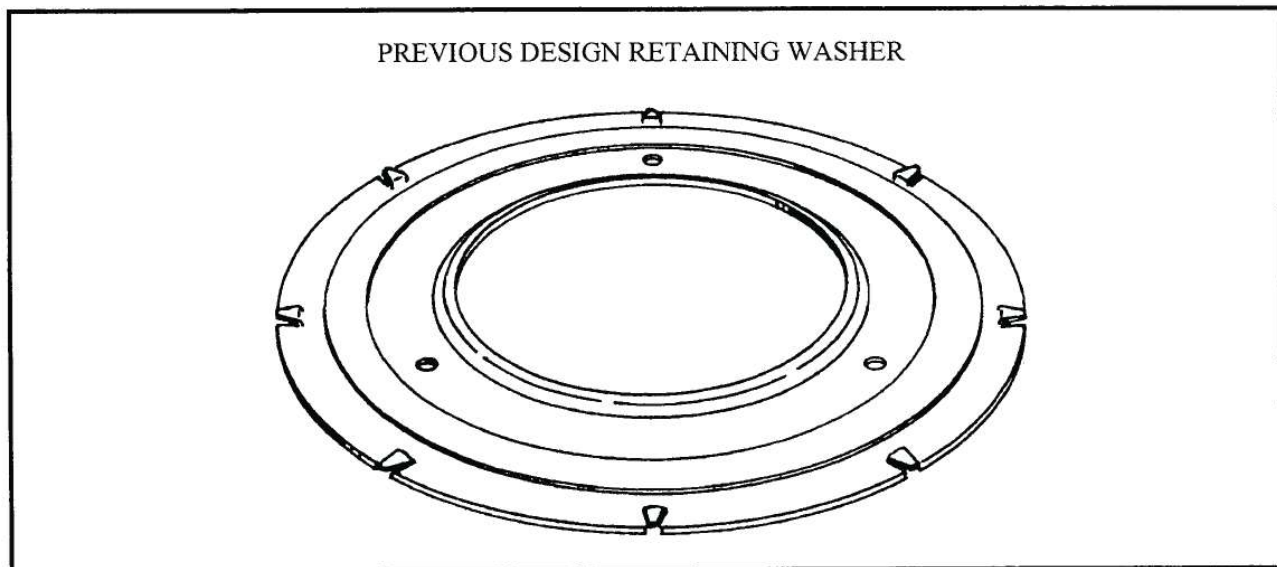


Figure 22

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## Technical Service Information

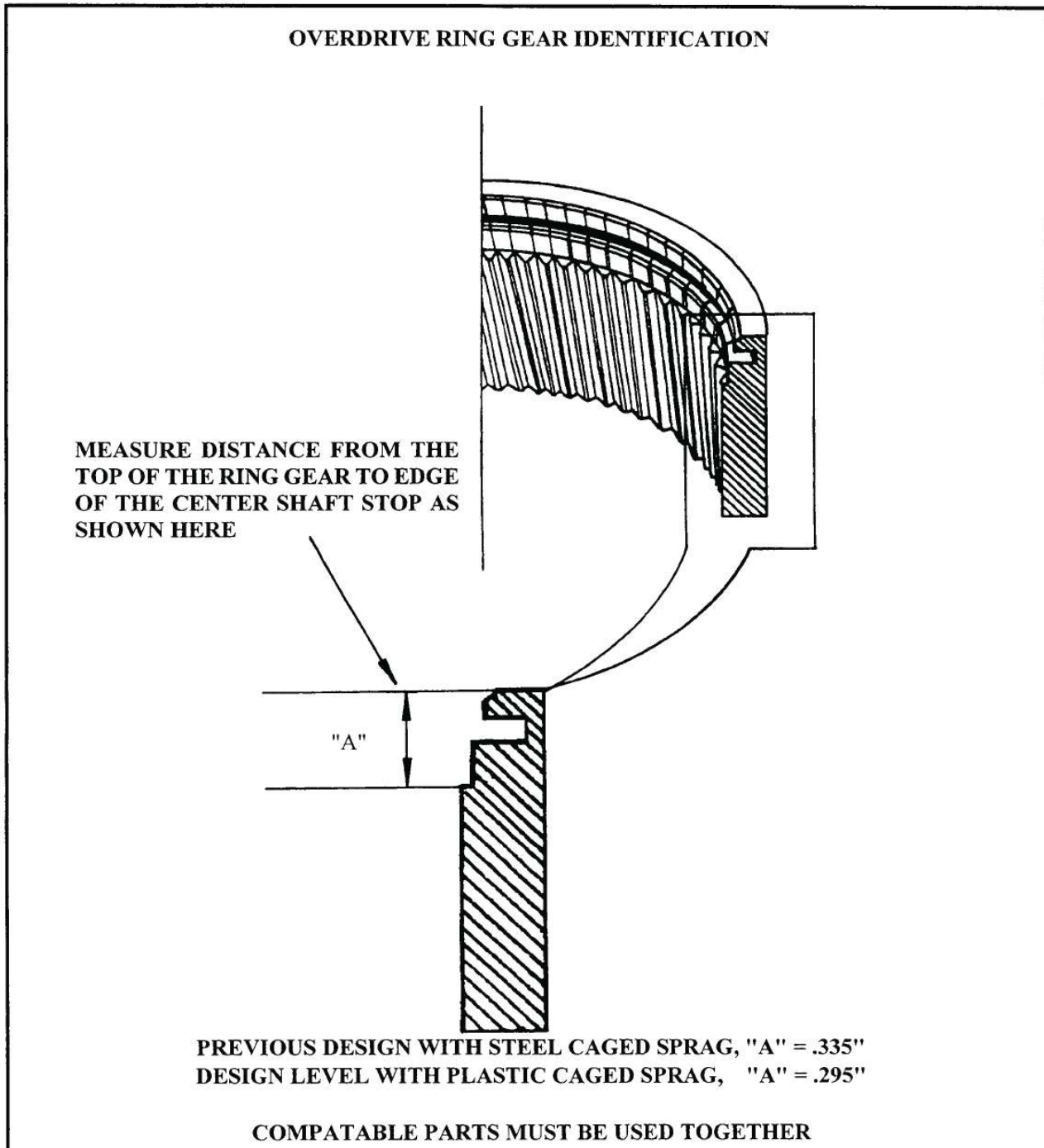


Figure 23

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## Technical Service Information

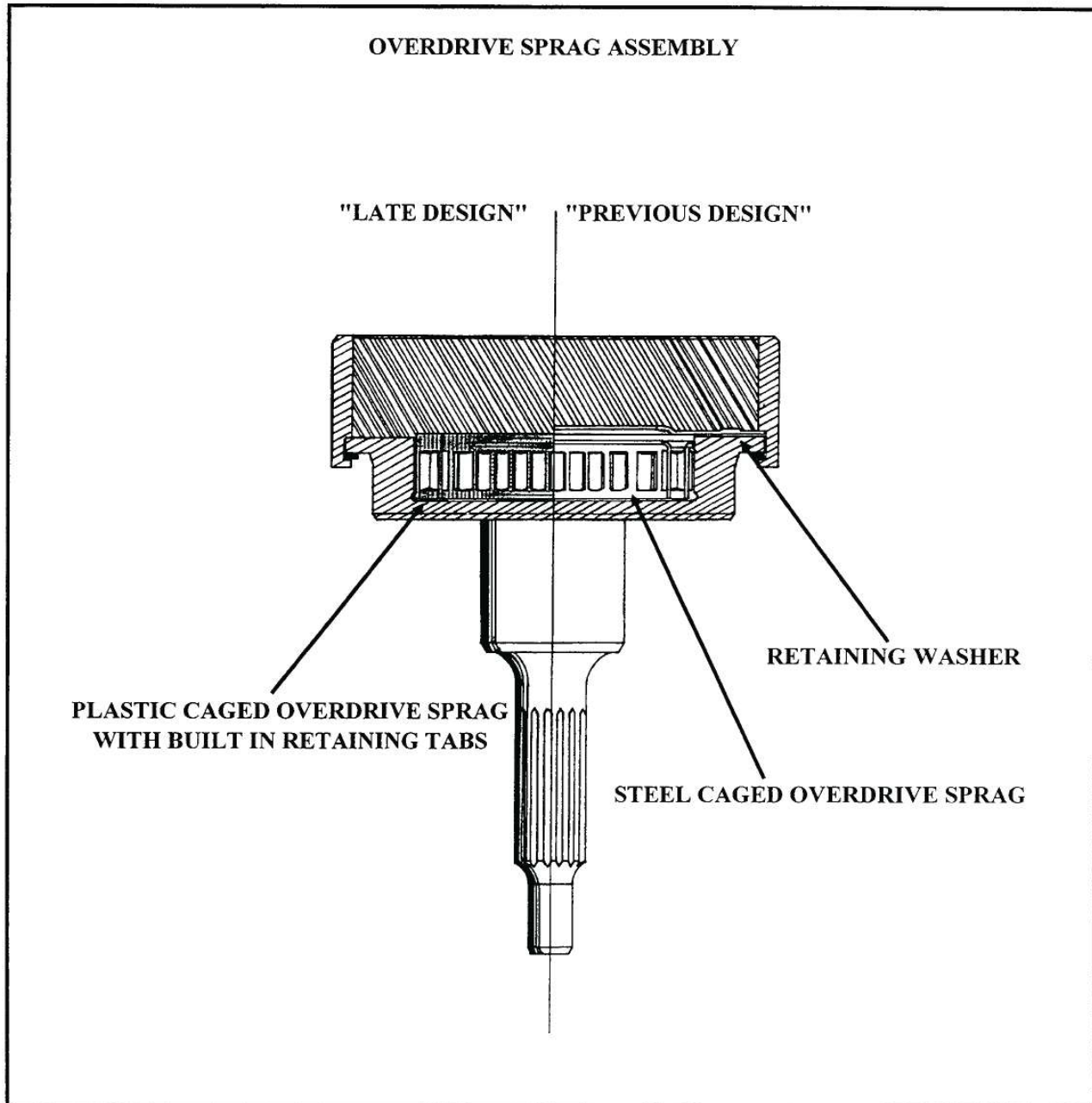


Figure 24

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## Technical Service Information

### CENTER SHAFT CHANGE

**CHANGE:** Beginning in model year 1990, on 4.0L models, the O.D. center shaft pilot was machined .048" smaller in diameter.

**REASON:** To accommodate a new caged needle bearing assembly in the output shaft for improved stability and durability.

**PARTS AFFECTED:**

- (1) O.D. CENTER SHAFT - The diameter of the pilot on the shaft was machined .048" smaller than the previous design, to accommodate the bearing added to the output shaft. The new design pilot diameter is .395", and the previous design pilot diameter is .443". (See Figure 25)
- (2) OUTPUT SHAFT - Previous design bushing was replaced by a caged needle bearing. (See Figure 26). The caged needle bearing is not serviced separately from Ford Motor Co.

**INTERCHANGEABILITY:**

The O.D. Center Shaft will retro fit backwards, as long as the caged needle bearing in the output shaft is used.

**SERVICE INFORMATION:**

Caged Needle Bearing.....INA-1010

NOTE: This bearing can be purchased at your local bearing distributor.

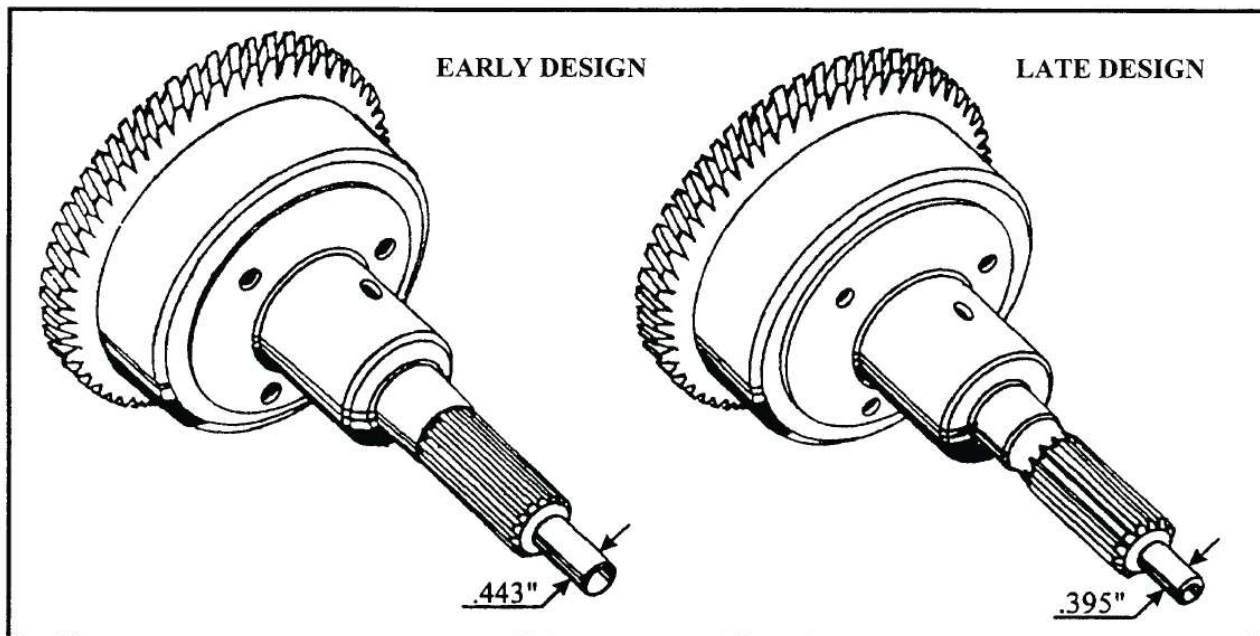


Figure 25

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## Technical Service Information

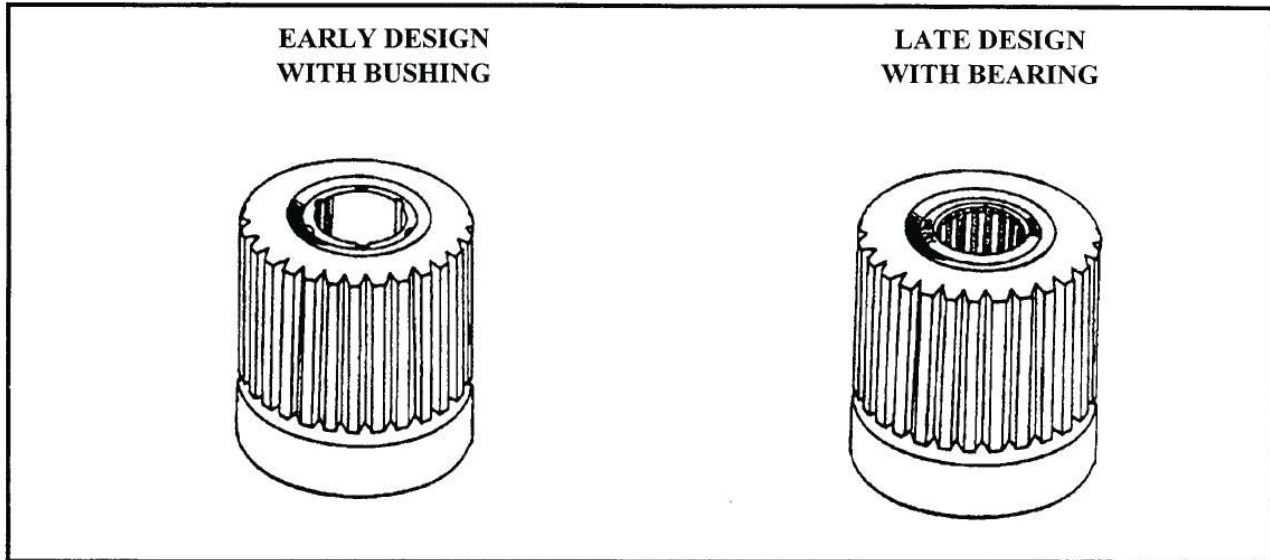


Figure 26



## Technical Service Information

### RETAINING WASHER CHANGE

**CHANGE:** The overdrive sprag retaining washer was changed, sometime in model year 1987, in vehicles equipped with A4LD transmissions.

**REASON:** Increased durability, as the new washer will not spin.

**PARTS AFFECTED:**

- (1) OVERDRIVE SPRAG RETAINING WASHER - The new design retaining washer increased in overall diameter and has retaining tabs stamped into it to prevent the washer from rotating in the overdrive ring gear. (See Figure 27).

**SERVICE INFORMATION:**

Retaining Washer (New Design).....E7TZ-7L339-A

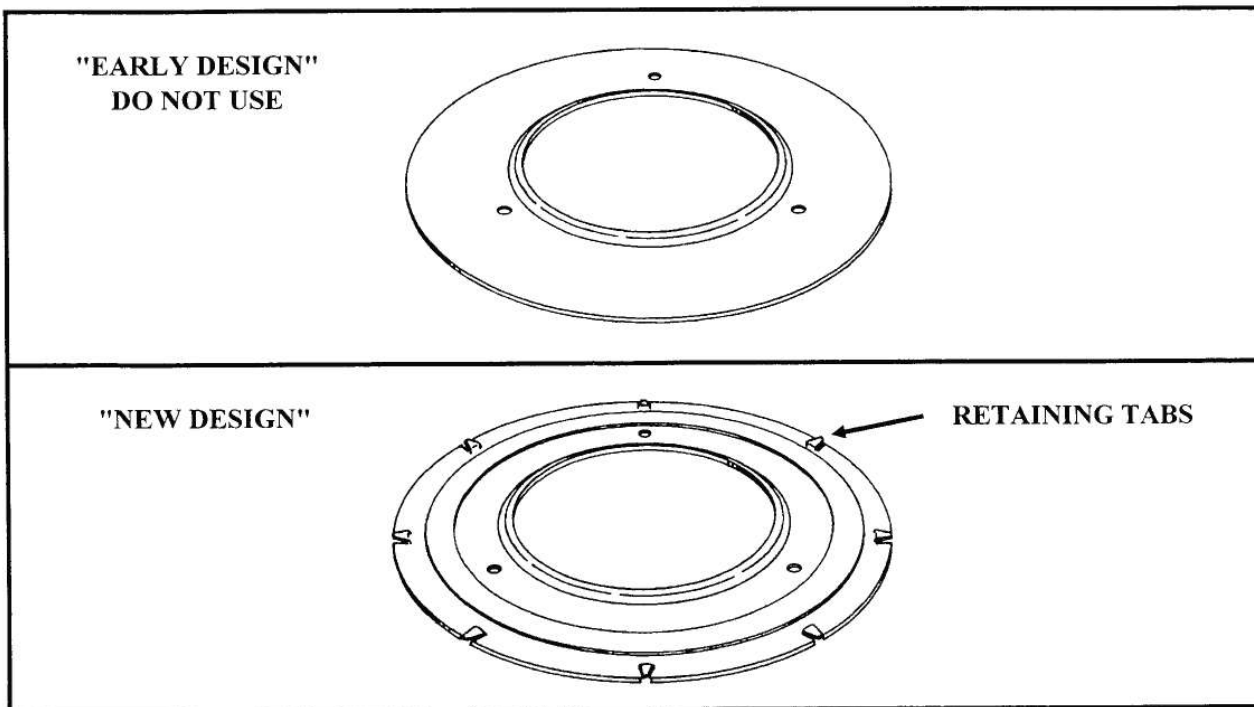


Figure 27

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## Technical Service Information

### CENTER SUPPORT THRUST WASHER FAILURE

**COMPLAINT:** Failure of the selective #4 thrust washer between the center support and the direct drum.

**CAUSE:** The cause may be lack of lubrication to the #4 thrust washer.

**CORRECTION:** Drill a new lube hole in the center support. Measure 0.500" up from the bottom of the existing hole, drill a 0.086" hole all the way through the center support (See Figure 28).

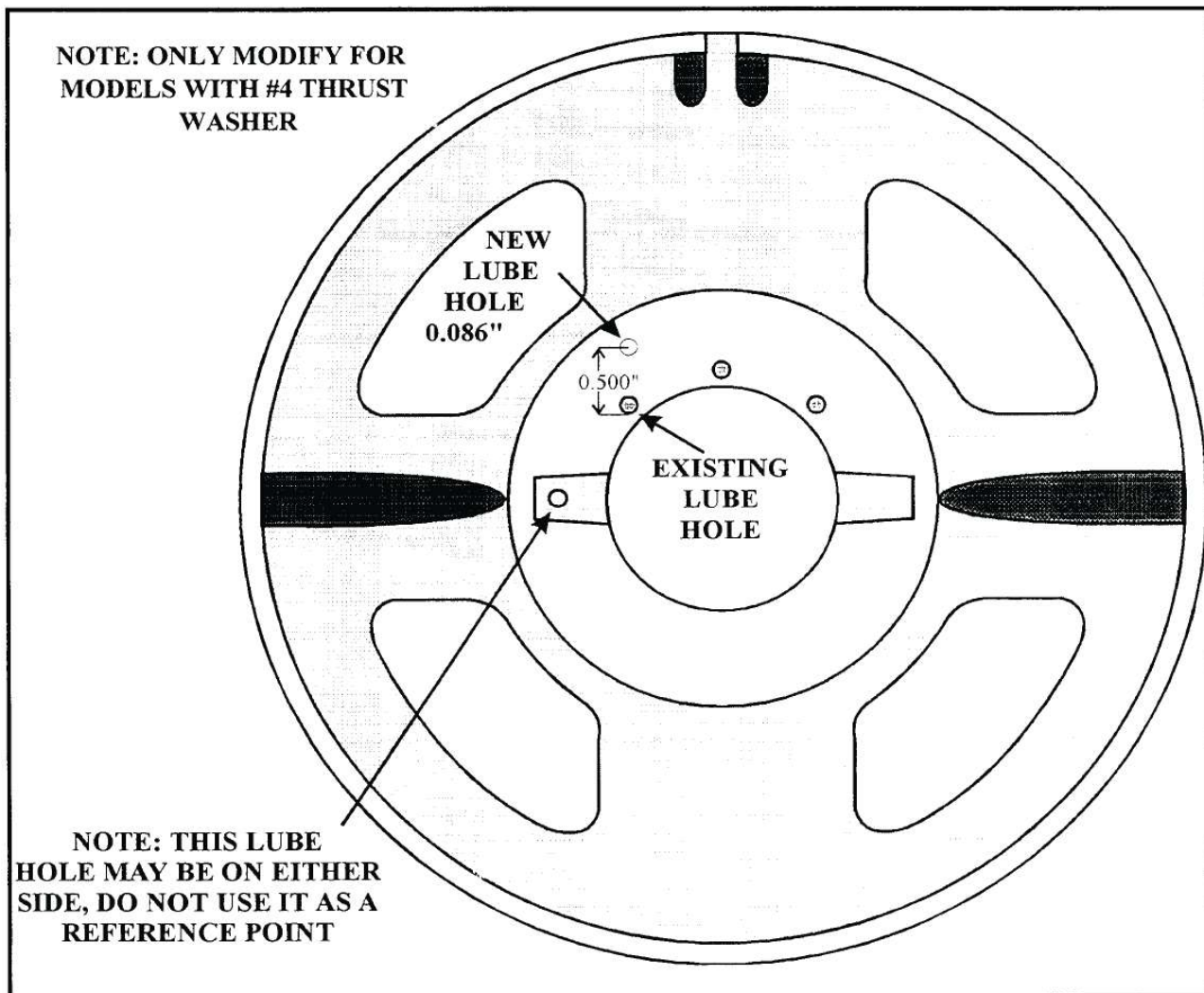


Figure 28

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## Technical Service Information

### CENTER SUPPORT CHANGES

**CHANGE:** Sealing ring grooves were widened from .104" to .120", and the OEM part number did not change.

**REASON:** Ease of installation on the assembly line.

**PARTS AFFECTED:**

- (1) CENTER SUPPORT - The sealing ring grooves were widened from .104" to .120" (See Figure 29).
- (2) SEALING RINGS - The sealing rings were widened to fit the larger ring grooves.

**INTERCHANGEABILITY:**

The center supports are interchangeable, however, you must use the correct size rings for the center support you are using.

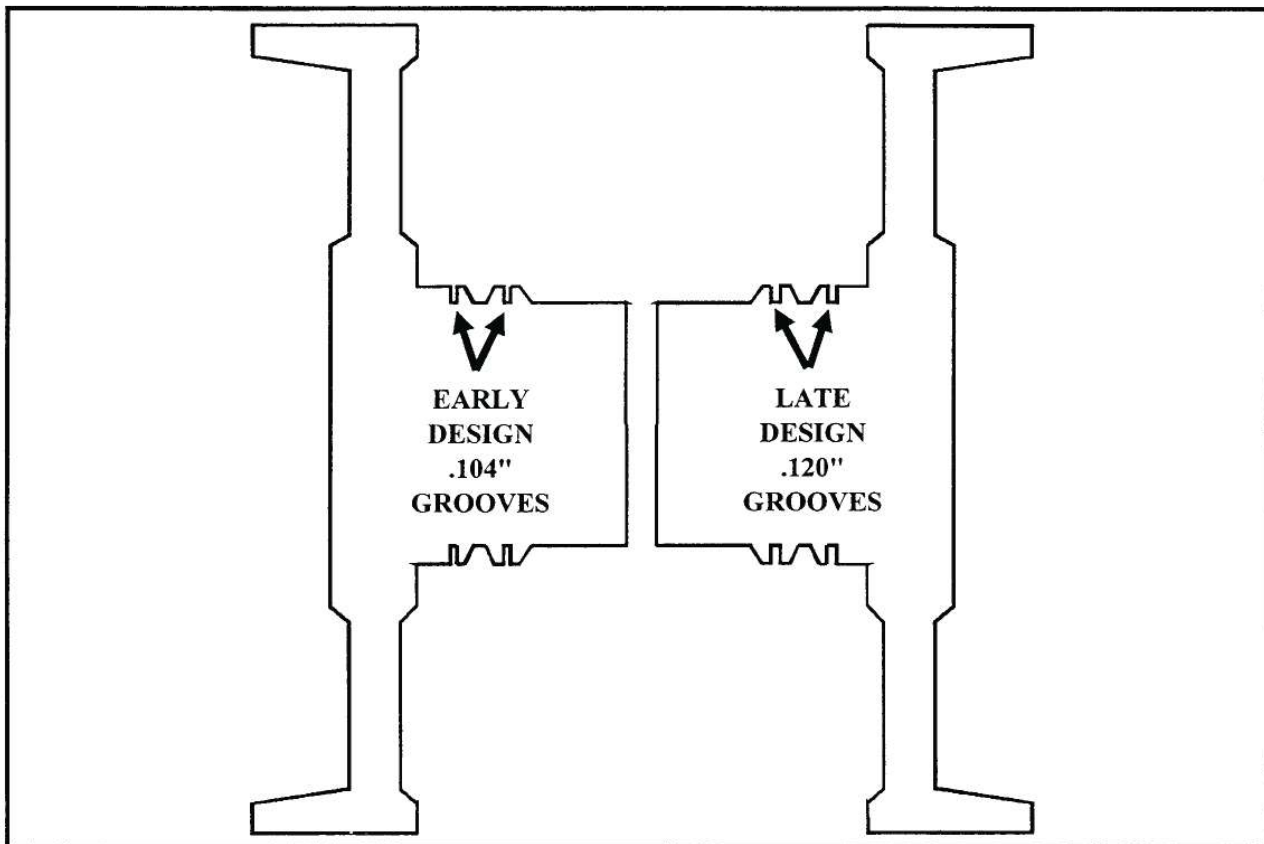


Figure 29

*AUTOMATIC TRANSMISSION SERVICE GROUP*





## Technical Service Information

### SUN GEAR, SUN GEAR SHELL, DIRECT CLUTCH DRUM, FORWARD CLUTCH DRUM, AND CENTER SUPPORT CHANGES

**CHANGE:** Beginning in model year 1990, and continuing through the 1993 model year on 4.0L models, many running changes have occurred to all of the parts listed above. These changes have created confusion in the aftermarket, and they do affect the interchangeability of all of the parts listed above.

**REASON:** Improved transmission lubrication, improved durability, and improved assembly line process.

#### PARTS AFFECTED:

- (1) **DIRECT CLUTCH DRUM - 1st Change:** Was changed from a stamped steel drum to a cast drum, and the sealing ring bore area was chamfered for ease of assembly (See Figure 30).  
**2nd Change:** The "Lug" area where the direct clutch drum engages the sun gear shell, was machined approximately .200" thinner, and a .050" deep groove was machined into the drum to accommodate the added retaining tabs on the "Snap Shell" (See Figure 31). This now allows the sun shell and the direct drum to "Snap" together for easier assembly (See Figure 32). This change also allows the elimination of the number 4 thrust washer, located between the direct clutch drum and center support.
- (2) **SUN GEAR** - Both bushings, inside the sun gear, were eliminated to allow full lubrication flow to the front planetary (See Figure 33).
- (3) **SUN GEAR SHELL** - "Snap Shell" was introduced in 1993 4.0L models, and has two retaining tabs stamped into the sides 180° apart, as shown in Figure 34. These tabs are used to retain the new direct clutch drum in the sun gear shell. The flat steel thrust washer (No. 14) on the back side of sun gear shell was eliminated when the sun gear bushings were eliminated.
- (4) **CENTER SUPPORT** - When the "Snap Shell" was introduced in 1993, the number 3 thrust washer was eliminated (See Figure 35), & number 3 thrust bearing was added (See Figure 36). The addition of the number 3 thrust bearing required machining the surface deeper to accommodate the bearings added thickness (See Figure 36).  
The new design center support also has a machined recess at the base of the sealing ring hub to accommodate the newly added number 5 thrust bearing (See Figure 38). Remember, the number 4 thrust washer was eliminated when this change occurred (See Figure 37).  
There are four easy ways to identify the new design center support:
  1. Machined recess for added number 3 thrust bearing (See Figure 36).
  2. Machined recess for added number 5 thrust bearing (See Figure 38).
  3. Machined hole for turbine speed sensor getting ready for 4R55E (See Figures 36 and 38).  
NOTE: Some new design center supports are cast for, but no hole has been machined.
  4. Casting number on new design center support is 92GT-7L328-AA.
- (5) **FORWARD CLUTCH DRUM** - Was machined at the base of the sealing ring hub to eliminate the chamfer, and provide a flat surface to accommodate the added number 5 thrust bearing, as shown in Figure 39.

**Continued on next Page**

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

### INTERCHANGEABILITY:

- (1) The new design sun gear **WITHOUT** bushings **WILL** retro-fit back to all previous models (See Figure 33).
- (2) The previous design sun gear **WITH** the bushings **CANNOT** be used forward into the 4.0L models (See Figure 33).
- (3) The new design "Snap Shell" must only be used with the direct clutch drum that is machined to accept the retaining tabs (See Figure 31 and 32).
- (4) The "3rd Design direct clutch drum **WITH** the machined groove for the "Snap Shell" **WILL** retro-fit back to **ALL** previous models that do not use "Snap Shell" (Figure 31). The "1st Design" stamped steel direct clutch drum is not recommended for use.
- (5) The new design level center support **CANNOT** be used in **ANY** previous models, unless updated with **ALL** of the parts listed above (See Figures 36 and 38).
- (6) The previous design center support **CANNOT** be used forward into **ANY** model that is using the "Snap Shell" (See Figure 35).
- (7) The new design forward clutch drum **WILL** retro-fit back on **ALL** previous models. (See Figure 39).
- (8) The previous design forward clutch drum **CANNOT** be used in 1993 and later models, as the chamfered area at the base of the hub will not let the number 5 bearing seat properly (See Figure 39).

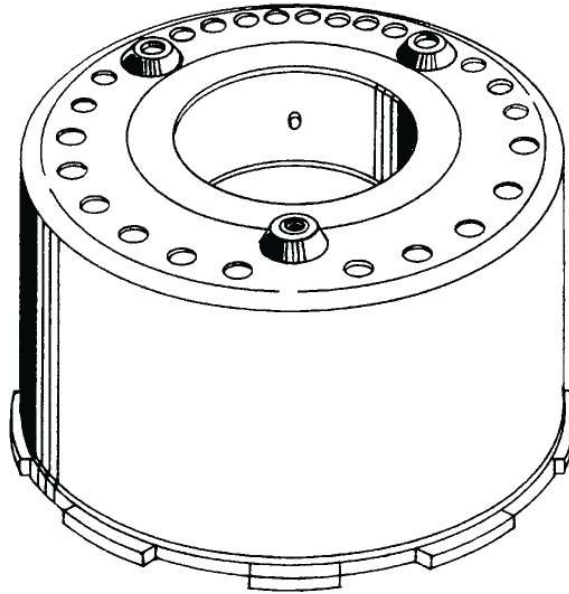
### SERVICE INFORMATION:

|                                                             |              |
|-------------------------------------------------------------|--------------|
| Sun Gear Shell ("Snap" Type - Includes Sun Gear) .....      | F3TZ-7D064-A |
| Direct Clutch Drum (For "Snap Shell") .....                 | F0TZ-7D044-A |
| Forward Clutch Drum (Late Design) .....                     | F0TZ-7A360-B |
| Center Support (Late Design - Includes No. 5 Bearing) ..... | F3TZ-7A130-A |
| Number 5 Thrust Bearing .....                               | F3TZ-7D234-A |
| Number 3 Thrust Bearing .....                               | F3TZ-7L326-A |



## Technical Service Information

### "1ST DESIGN" STAMPED STEEL DIRECT DRUM



### "2ND DESIGN" CAST IRON DIRECT DRUM

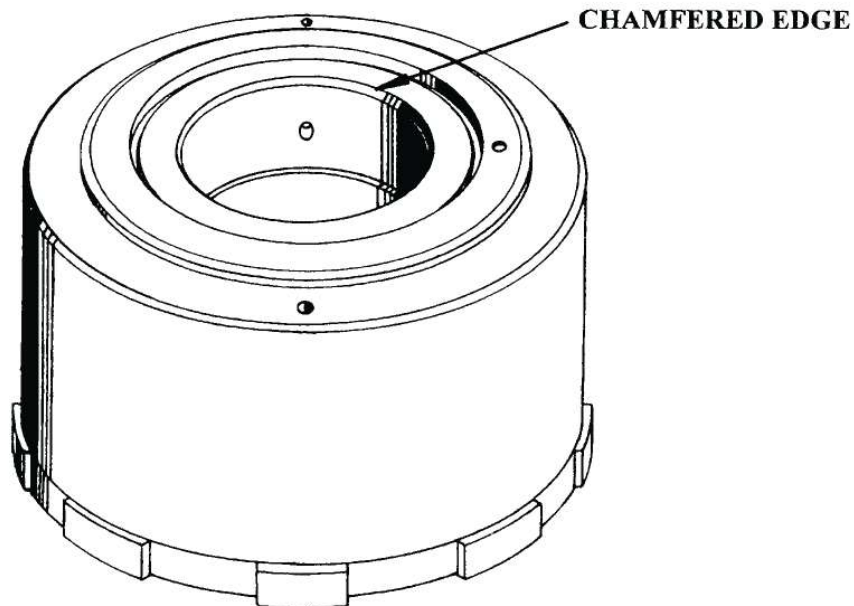


Figure 30

*AUTOMATIC TRANSMISSION SERVICE GROUP*





## Technical Service Information

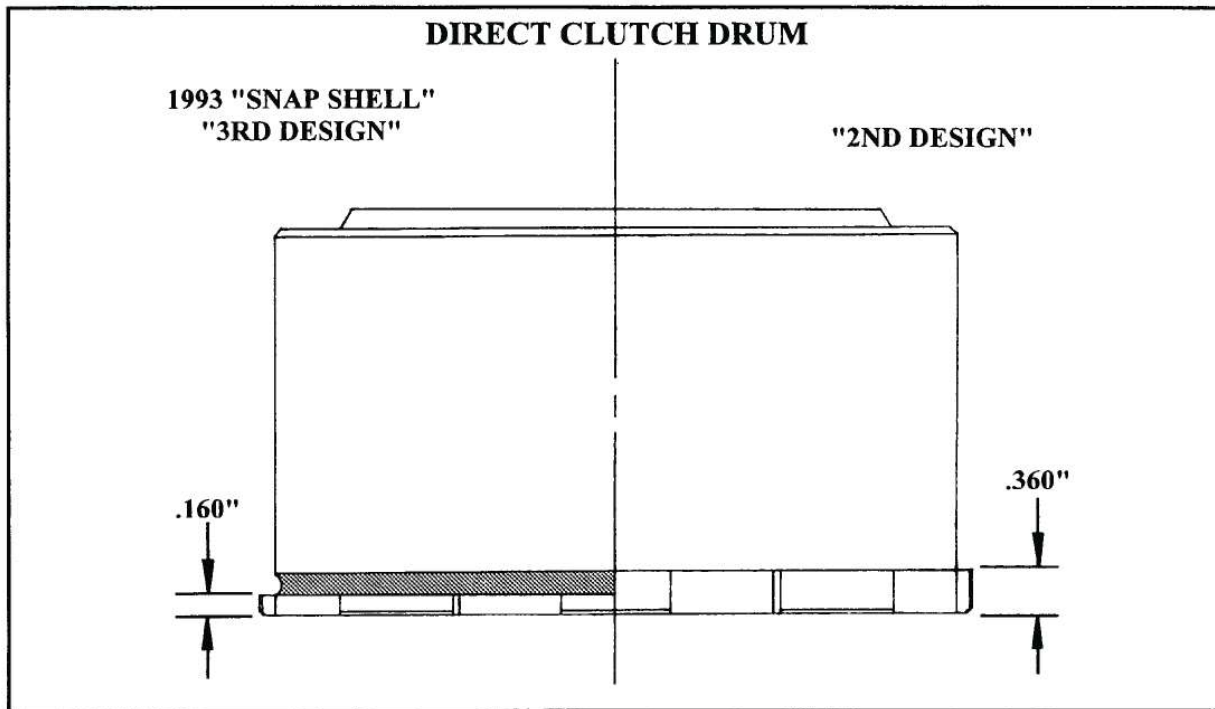


Figure 31

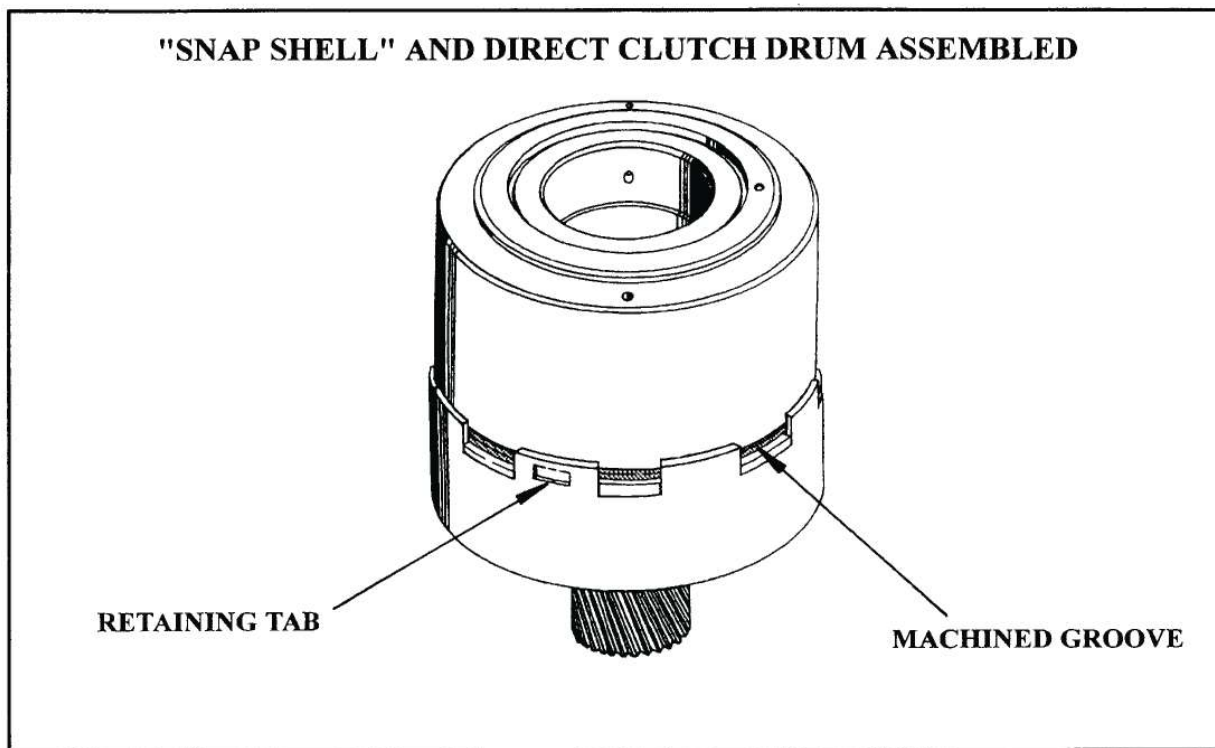


Figure 32

AUTOMATIC TRANSMISSION SERVICE GROUP





## Technical Service Information

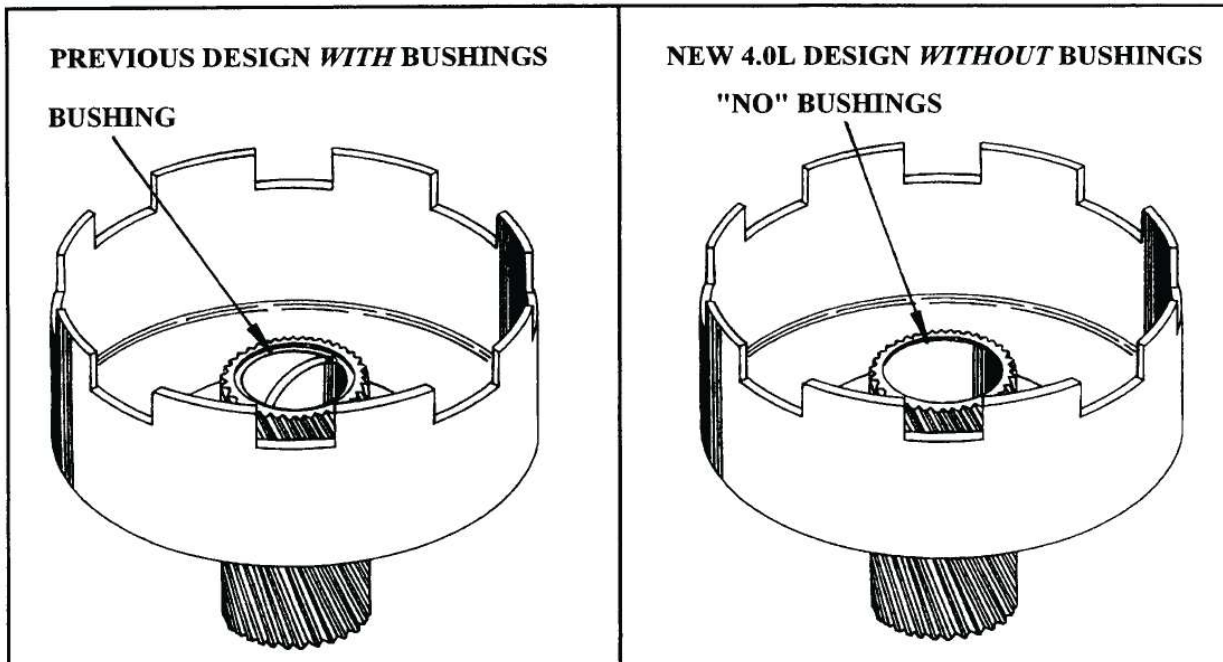


Figure 33

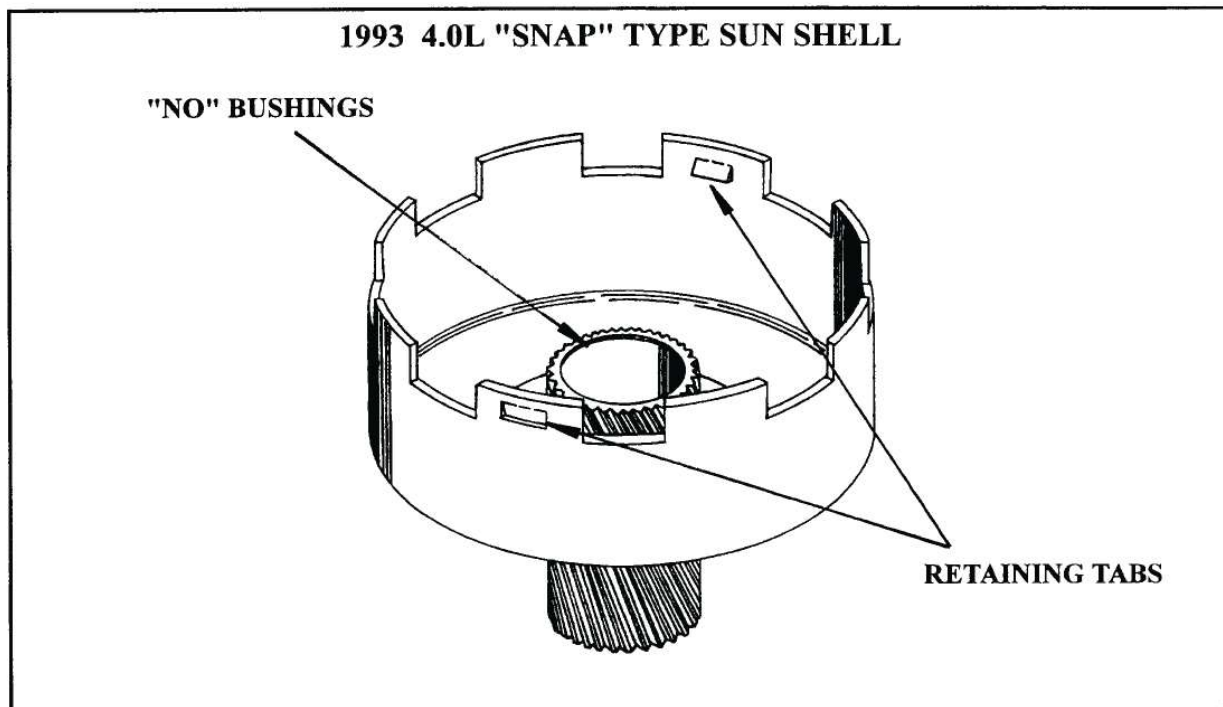


Figure 34

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

### PREVIOUS DESIGN CENTER SUPPORT

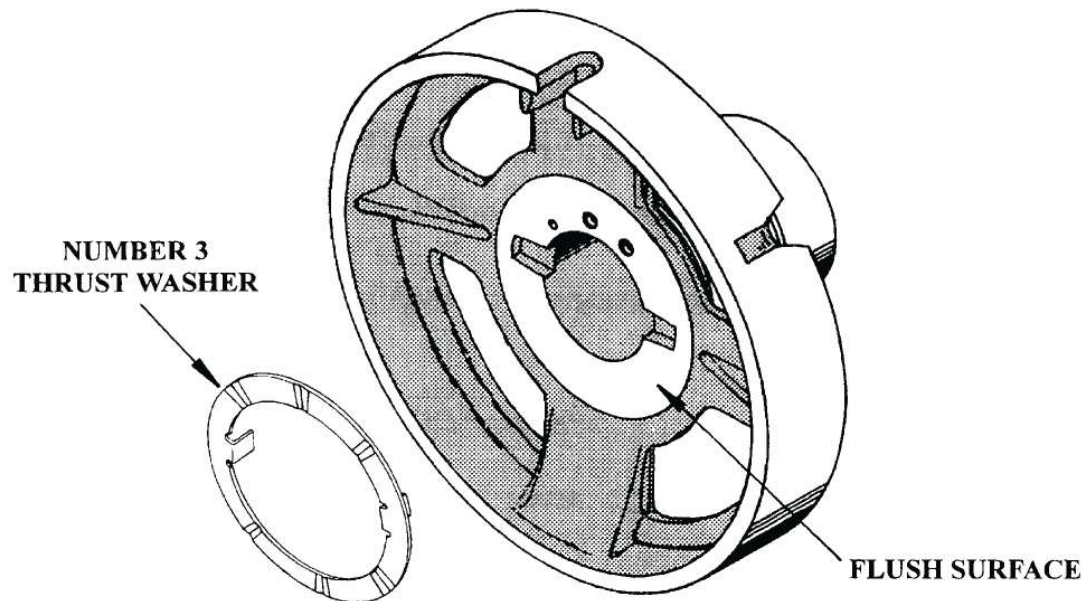


Figure 35

### NEW DESIGN "SNAP SHELL" CENTER SUPPORT

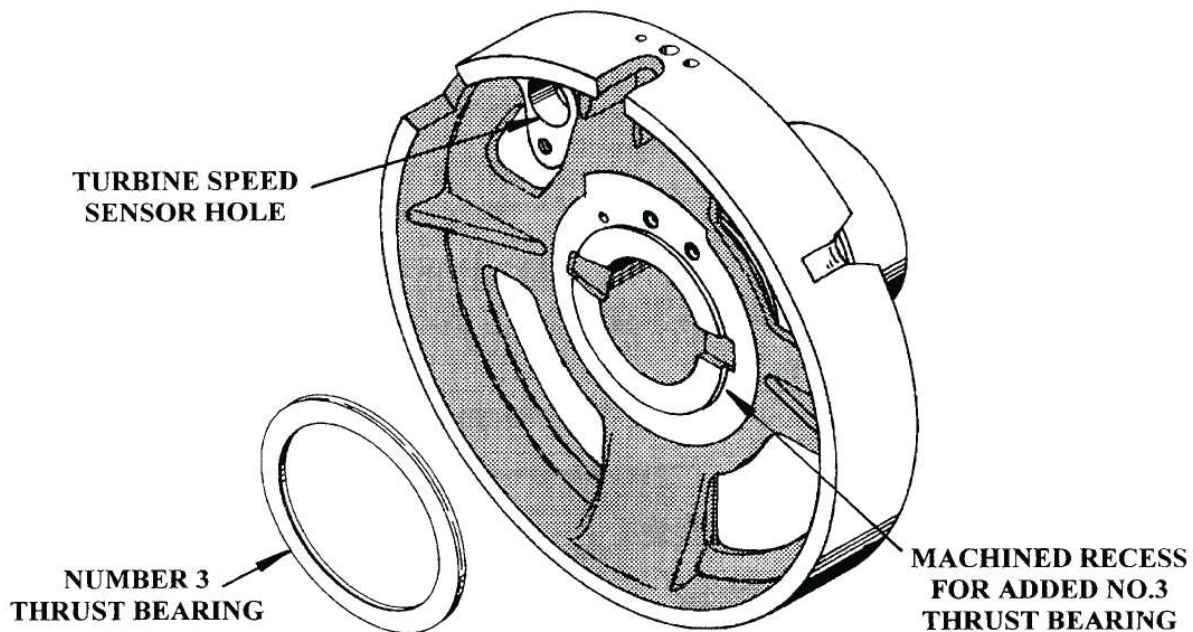


Figure 36

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## Technical Service Information

### PREVIOUS DESIGN CENTER SUPPORT

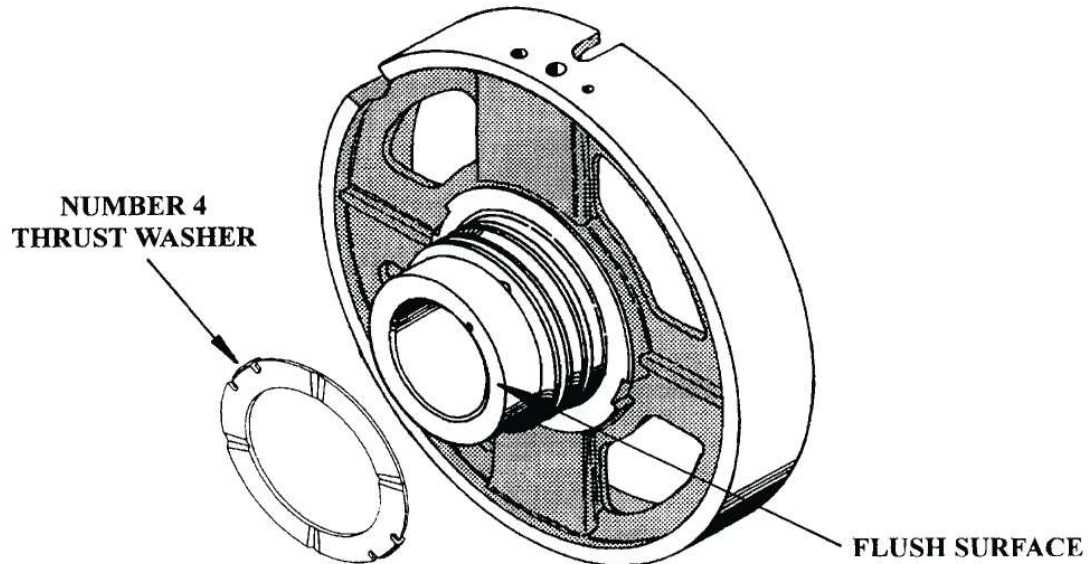


Figure 37

### NEW DESIGN "SNAP SHELL" CENTER SUPPORT

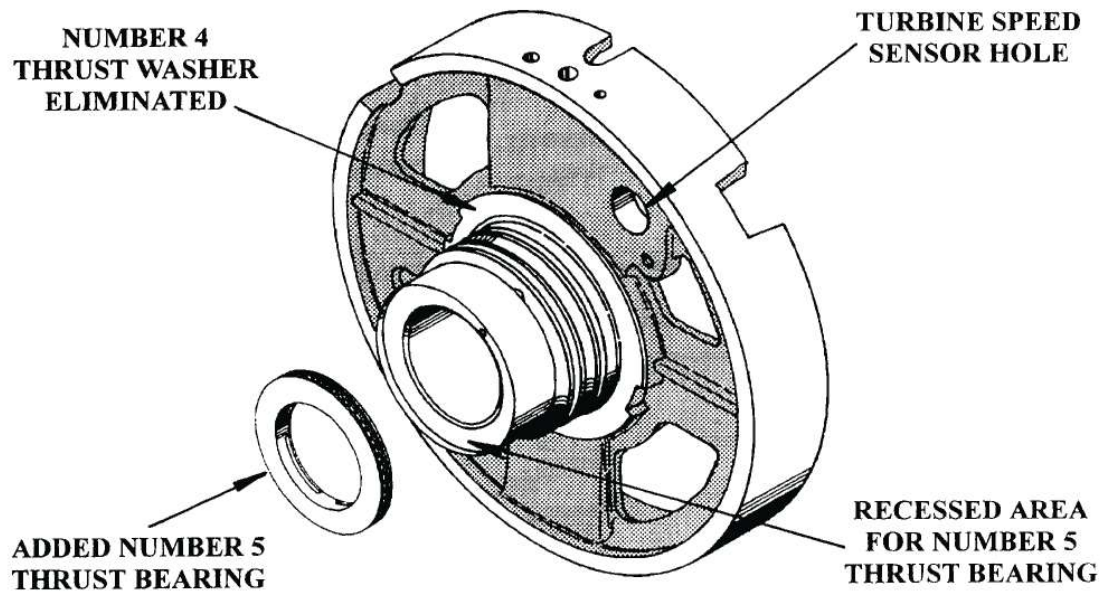


Figure 38

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## Technical Service Information

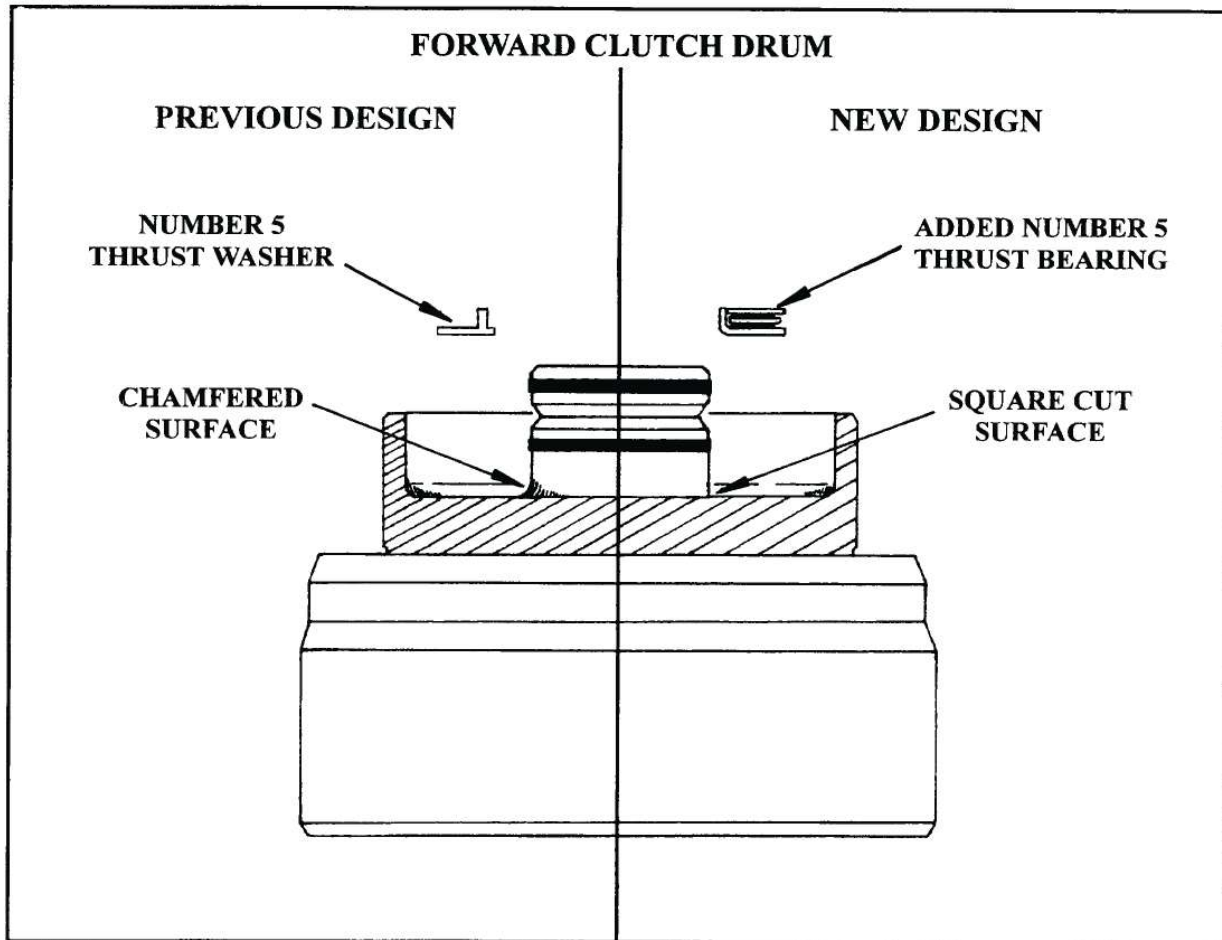


Figure 39

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## Technical Service Information

### DIRECT & OVERRUN PISTON SEAL CHANGE

**CHANGE:** Both the overrun clutch and direct clutch piston seals were changed in 1987 from "D"-ring seals to lip seals (See Figure 40).

**REASON:** For improved durability.

**PARTS AFFECTED:**

DIRECT & OVERRUN PISTON - Was machined to accept the new lip seal.

**INTERCHANGEABILITY:**

Although the early design "D"-ring & piston will interchange, we recommend using the later design lip seal, which requires changing the piston.

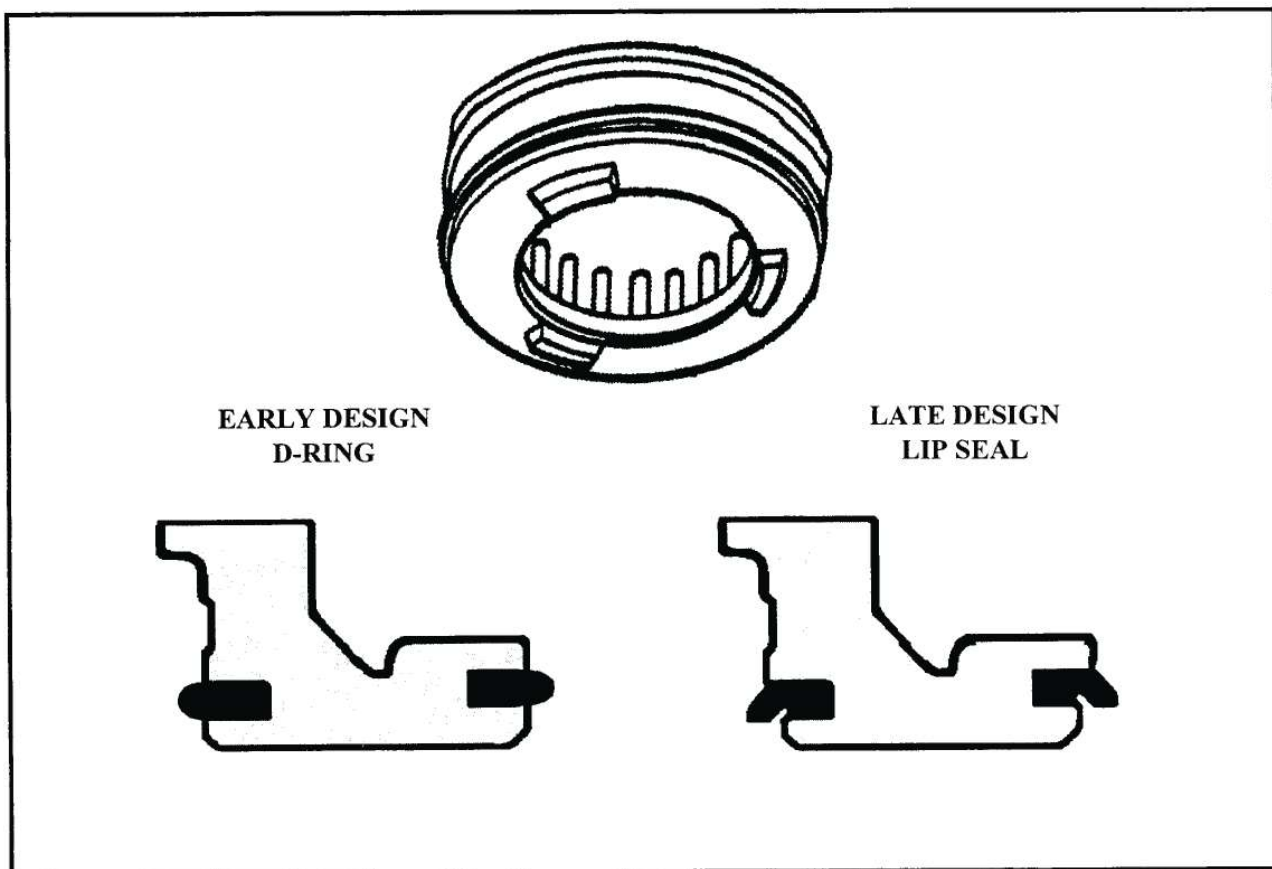


Figure 40

*AUTOMATIC TRANSMISSION SERVICE GROUP*



## Technical Service Information

### FRONT PLANETARY GEARSET CHANGES

**CHANGE:** Sometime in model year 1987, the 1st design **3 pinion aluminum** front planetary carrier was replaced with a revised **4 pinion steel** front planetary carrier (See Figures 41 and 43). In model year 1990, on 4.0L engine models only, the steel front planetary carrier was once again revised to a **6 pinion steel** carrier (See Figures 41 and 43). These changes have affected many of the related parts and created confusion for many rebuilders.

**REASON:** Greater torque carrying capacity because of increased horsepower demands.

#### PARTS AFFECTED:

- (1) **FRONT PLANETARY CARRIER** - The 1st design **3 pinion aluminum** carrier was eliminated and replaced with a revised **4 pinion steel** carrier. The snap ring groove and the snap ring that previously retained the carrier into the ring gear were eliminated (See Figure 41). In 1990 the steel carrier was once again upgraded with a **6 pinion steel** carrier, for 4.0L engine models only. The 6 pinion steel carrier was also shortened in overall height, by approximately .125", to accommodate a new design number 6 (3 piece) thrust bearing (See Figures 41 & 43). **NOTE:** The 1st Design 3 pinion aluminum and 2nd Design 4 pinion steel front carriers are no longer serviced by Ford Motor Co. They are now upgraded to the latest 3rd Design 6 pinion steel front planetary system, which comes as a service package and includes all necessary hubs and washers to make it compatible.
- (2) **FORWARD RING GEAR HUB** - The 1st Design forward ring gear hub uses a number 7 thrust washer as shown in Figure 43. On the 2nd Design ring gear hub, a recess was machined to accommodate an added number 7 thrust bearing, that replaced the number 7 thrust washer. Refer to Figures 42 and 43. Both 1st and 2nd design ring gear hubs inside diameter measure 1.500", as shown in Figure 42. On the 3rd Design ring gear hub the inside diameter was machined approximately .080" larger to accommodate a new design number 6 "Top Hat" thrust washer (See Figure 43). The inside diameter on the 3rd Design ring gear hub measures 1.580", as shown in Figure 42.
- (3) **NUMBER 6 THRUST WASHER** - Was changed from a 3 tab thrust washer to a "Top Hat" design thrust washer in 1987 (See Figure 43). This change is what required the larger inside diameter on the ring gear hub. Beginning in 1990, on 4.0L engine models, the number 6 "Top Hat" thrust washer was replaced with a new number 6 (3 Piece) thrust bearing, as shown in Figure 43. Notice also the added washer (7D090), that must be used with the 3 piece bearing design (See Figure 43). This is what required the carrier to be machined shorter. The 3 piece thrust bearing has now been changed to a normal "Torrington" (Snap Together) type bearing and replaces the 3 piece design without any other changes.
- (4) **NUMBER 7 THRUST WASHER** - Sometime in 1986, the number 7 thrust washer was eliminated, and replaced with a number 7 thrust bearing as shown in Figure 43. This change required the machined recess in the ring gear hub, to make room for the thrust bearing, as shown in Figure 42. The number 7 thrust bearing is still used through current production (See Figure 43).

Continued on next Page

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

### INTERCHANGEABILITY:

- (1) The **1st Design 3 pinion aluminum** front planetary carrier system, as shown in Figure 43, is recommended for nothing larger than 2.3L engine models. The 1st Design 3 pinion aluminum front planetary carrier is no longer serviced by Ford Motor Co. It now upgrades to the latest 3rd Design 6 pinion steel front planetary carrier system, which comes as a service package and includes all necessary hubs and washers to make it compatible, and is available under OEM part number F0TZ-7A398-E.
- (2) The **2nd Design 4 pinion steel** front planetary carrier system, as shown in Figure 43, with the 1.580" inside diameter ring gear hub, the number 7 thrust bearing, the number 6 "Top Hat" thrust washer **WILL** retro-fit back on all models, except 4.0L engine models, but all parts listed above must be used as an assembly (See Figure 43). The 2nd Design 4 pinion steel front planetary carrier is no longer serviced by Ford Motor Co. It now upgrades to the latest 3rd Design 6 pinion steel front planetary carrier system, which comes as a service package and includes all necessary hubs and washers to make it compatible, and is available under OEM part number F0TZ-7A398-E.
- (3) The **3rd Design 6 pinion steel**, 4.0L engine front planetary system, as shown in Figure 43, with the 1.580" inside diameter ring gear hub, the number 7 thrust bearing, number 6 (3 Piece) thrust bearing, and bushing (7D090) **WILL** retro-fit back on all previous models, but the parts listed above are **mandatory on 4.0L models** (See Figure 43).

### SERVICE INFORMATION:

|                                                                   |              |
|-------------------------------------------------------------------|--------------|
| <b>3 Piece Thrust Bearing, 6 Pinion Steel Front Carrier</b> ..... | F3TZ-7D234-A |
| <b>Washer (7D090), 6 Pinion Steel Front Carrier</b> .....         | F0TZ-7D090-A |
| <b>Service Package, 6 Pinion Steel Front Carrier</b>              |              |
| (Includes the following:)                                         |              |
| Front Planetary Assembly (7A398)                                  |              |
| Number 7 Thrust Bearing (7F374)                                   |              |
| Front Ring Gear Hub, 3rd Design (7B067)                           |              |
| Forward Clutch Thrust Washer (7D090)                              |              |
| 3 Piece Thrust Bearing Assembly (7D234) .....                     | F0TZ-7A398-E |





## Technical Service Information

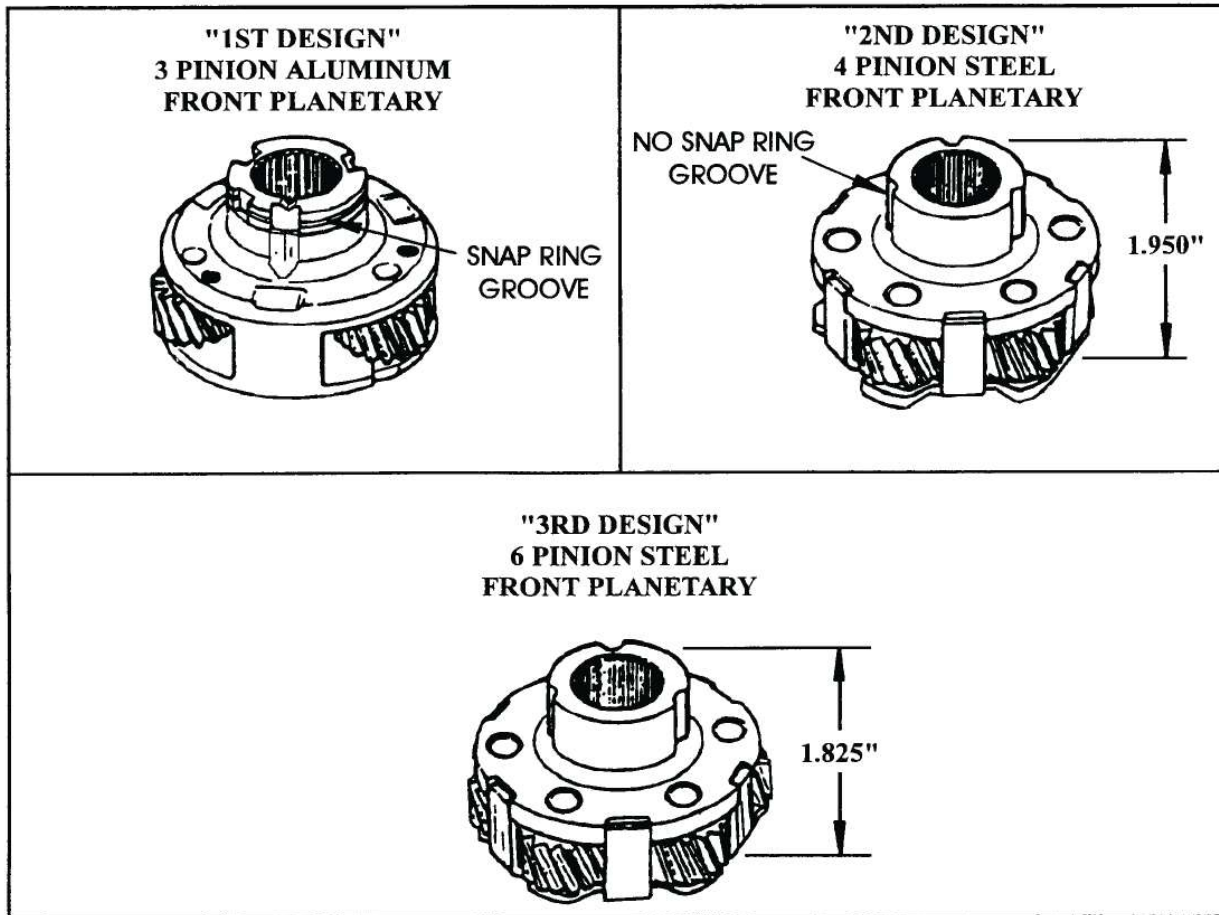


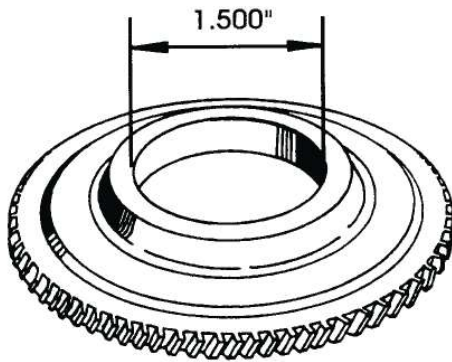
Figure 41



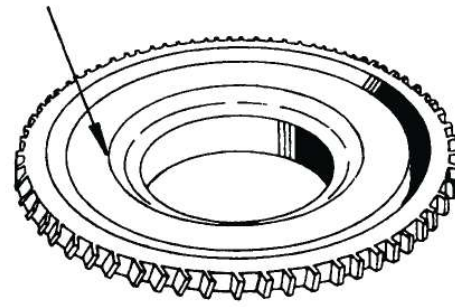


## Technical Service Information

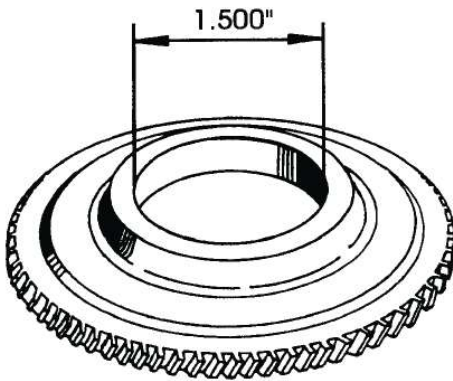
### "1ST DESIGN" FORWARD RING GEAR HUB



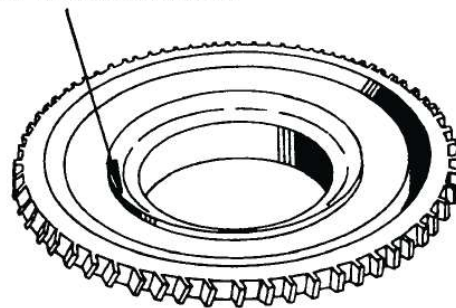
FLAT SURFACE FOR  
NO. 7 THRUST WASHER



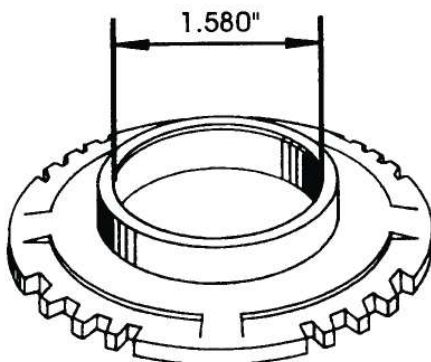
### "2ND DESIGN" FORWARD RING GEAR HUB



RECESSED SURFACE FOR  
NO. 7 THRUST BEARING



### "3RD DESIGN" FORWARD RING GEAR HUB



RECESS FOR  
NO. 7 BEARING

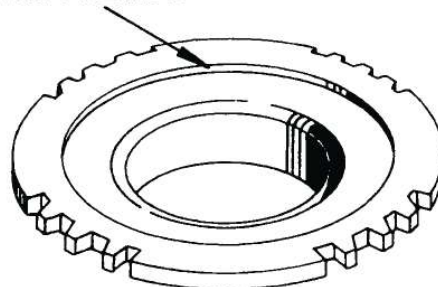
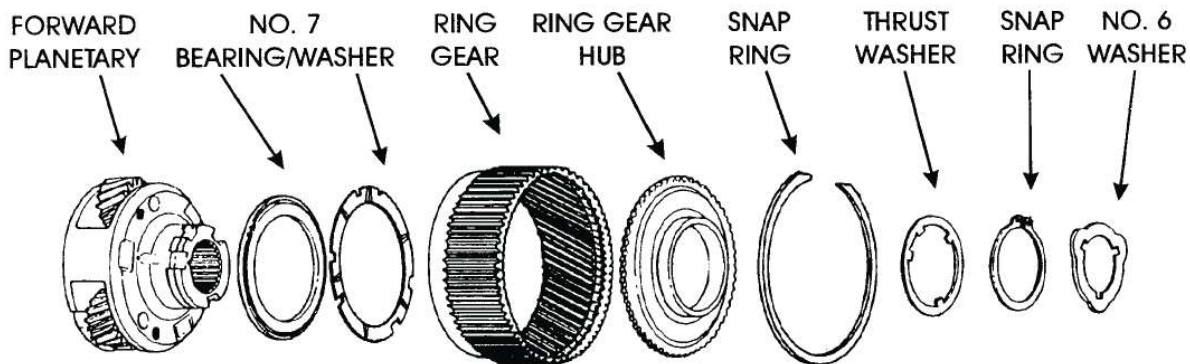


Figure 42  
AUTOMATIC TRANSMISSION SERVICE GROUP

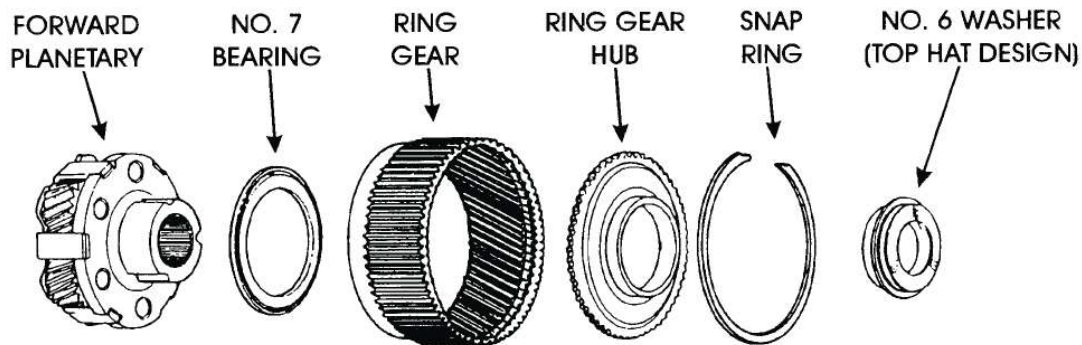


## Technical Service Information

### "1ST DESIGN" 3 PINION ALUMINUM FRONT CARRIER PARTS



### "2ND DESIGN" 4 PINION STEEL FRONT CARRIER PARTS



### "3RD DESIGN" 6 PINION STEEL FRONT CARRIER PARTS

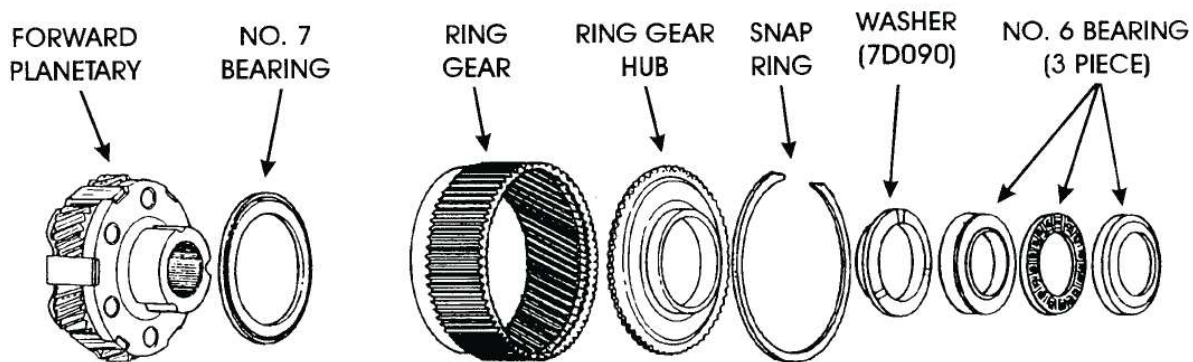


Figure 43

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## Technical Service Information

### FORD A4LD REAR PLANETARY CARRIER AND LUBE CIRCUIT CHANGES

**CHANGE:** Sometime in model year 1987, the 1st design **3 pinion aluminum** rear planetary carrier was replaced with a 2nd design **4 pinion steel** rear planetary carrier (See Figure 45). In model year 1990, on 4.0L engine models only, the 4 pinion steel carrier was once again revised to a **6 pinion steel** rear planetary carrier (See Figure 45). Included in this change were changes in the internal lubrication circuit. These changes have affected many of the related parts and created confusion for many rebuilders.

**REASON:** Greater torque carrying capacity to meet increased horsepower demands.

**PARTS AFFECTED:**

- (1) **REAR PLANETARY CARRIER** - The 1st design **3pinion aluminum** rear carrier was eliminated and replaced with a 2nd design **4 pinion steel** rear carrier, as shown in Figure 45. Both 1st and 2nd design rear carriers have 10 lugs where it lugs into the reverse drum, as shown in Figure 45. The 1st design 3 pinion aluminum rear carrier is no longer serviced by Ford Motor Co, and automatically supercedes to the 4 pinion steel rear carrier. It is available as a service package under OEM part number E7SZ-7D006-C, which includes the number 8 and number 9 thrust washers, to make it compatible. Beginning in 1990, on 4.0L engine models only, Ford introduced a 3rd design **6 pinion steel** rear carrier, which has multiple lugs where it lugs into the reverse drum (See Figure 45).
- (2) **REVERSE DRUM** - The 1st design Reverse Drum contains the **low roller clutch** and has the "Castles" on the front of the drum to accept the 10 lug, 4 pinion steel rear carrier, as shown in Figure 46. The 2nd design Reverse Drum contains the **low sprag clutch** and is machined to accept the multiple lug, 6 pinion steel rear carrier for the 4.0L models, as shown in Figure 46.
- (3) **REAR RING GEAR HUB** - The 1st design Rear Ring Gear Hub is identified with a "Stepped" washer surface as shown in Figure 47, and uses the 1st design number 9 thrust washer as shown in Figure 45. The 2nd design Rear Ring Gear Hub is identified with a "Flat" washer surface as shown in Figure 47, to accommodate the new 2nd design number 9 thrust washer (See Figure 45). The 3rd design Rear Ring Gear Hub is identified with a machined recess to accommodate the added oil sleeve and the thicker output shaft snap ring, and you can also see the added lube grooves in the spline area to accommodate the internal lube flow changes (See Figure 47). The 2nd & 3rd design Ring Gear Hub also has step removed out next to the ring gear teeth, to accommodate larger diameter of the 2nd design number 9 thrust washer (See Figure 47).
- (4) **NUMBER 8 THRUST WASHER** - Thrust washer tab locations and design changed, to accommodate the 2nd design 4 pinion steel rear carrier (See Figure 45). The 2nd design number 8 thrust washer was carried forward, and used also on the 6 pinion steel rear carrier for the 4.0L engine models (See Figure 45).

Continued on next Page

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## Technical Service Information

### PARTS AFFECTED: (Cont'd)

- (5) NUMBER 9 THRUST WASHER - Thrust washer tab locations, and thrust washer surface area changed, to accommodate the 2nd design 4 pinion steel rear planetary carrier (See Figure 45). The 2nd design number 9 thrust washer was carried forward, and used also on the 6 pinion steel rear carrier for the 4.0L engine models (See Figure 45)
- (6) NUMBER 10 THRUST WASHER - Received a change in outside diameter (See Figure 47), and is now used to retain the low sprag end bearing on 4.0L engine models. Refer to the cutaway illustrations in Figure 49.  
The outside diameter on the number 10 thrust washer for the 4 pinion carrier is 2.275", and the outside diameter on the number 10 thrust washer for the 6 pinion carrier is 3.205", as shown in Figure 47.
- (7) OIL SLEEVE - An added oil delivery sleeve, or lubrication guide, was added to the output shaft rear ring gear hub to direct lube oil from the added grooves in the hub, through the sun gear to the front planetary gear set (See Figures 44 and 47).
- (8) OUTPUT SHAFT - The Output Shaft was revised in three areas:
  - The front output shaft bushing was replaced with a caged needle bearing (See Figure 48).
  - The output shaft snap ring groove was machined approximately .030" wider to make room for a revised thickness snap ring (See Figure 48). The new snap ring thickness is .077", as shown in Figure 48.
  - The lube holes in the 1st design output shaft were eliminated entirely, to accommodate the revisions in the lube circuit on the 4.0L engine models (See Figure 48).
- (9) OUTPUT SHAFT SNAP RING - The snap ring that retains the rear ring gear and hub onto the output shaft on 4.0L models was increased in thickness, and now measures .077" thick. On all other applications the snap ring measures .046" thick (See Figure 48).
- (10) REVERSE DRUM SNAP RING - The snap ring that retains the 10 lug (4 Pinion) rear carrier in the Reverse Drum was eliminated on the "Multiple Lug" (6 Pinion) rear carrier for the 4.0L engine models (See Figure 49).

### INTERCHANGEABILITY:

- (1) 1ST DESIGN, 3 PINION ALUMINUM, REAR CARRIER - *Not recommended for use in any A4LD*, but if used, it must be used with all 1st design parts listed above.
- (2) 2ND DESIGN, 4 PINION STEEL, REAR CARRIER - Recommended for all 2.3L, 2.8L, 2.9L, 3.0L engines, and **mandatory** for all 2.3L Turbo models. Must be used with all 2nd design parts listed above, except output shaft which must be 1st design.
- (3) 3RD DESIGN, 6 PINION STEEL, REAR CARRIER - **Mandatory for all 4.0L models**, and must be used with all 3rd design parts listed above, and the 2nd design output shaft.





## Technical Service Information

### SERVICE INFORMATION:

|                                                                     |              |
|---------------------------------------------------------------------|--------------|
| Number 8 Thrust Washer (1st Design) .....                           | D4ZZ-7A166-A |
| Number 8 Thrust Washer (2nd Design) .....                           | FOTZ-7A166-A |
| Number 9 Thrust Washer (1st Design) .....                           | D4ZZ-7A166-A |
| Number 9 Thrust Washer (2nd Design) .....                           | FOTZ-7A166-B |
| Number 10 Thrust Washer (1st Design) .....                          | D4ZZ-7D422-B |
| Number 10 Thrust Washer (2nd Design) .....                          | FOTZ-7D422-A |
| Oil Sleeve, Output Shaft (4.0L Engine) .....                        | FOTZ-7B176-A |
| Snap Ring, Output Shaft (.046" Thick) .....                         | E661125-S    |
| Snap Ring, Output Shaft (.077" Thick) .....                         | E860527-S    |
| Rear Carrier, 4 Pinion Steel (Includes No. 8 & No. 9 Washers) ..... | E7SZ-7D006-C |
| Rear Ring Gear Hub, (4 Pinion Steel) .....                          | E7SZ-7D164-A |
| Rear Carrier, 6 Pinion Steel (4.0L Engine) .....                    | FOTZ-7D006-A |
| Rear Ring Gear Hub, (6 Pinion Steel) .....                          | FOTZ-7D164-C |

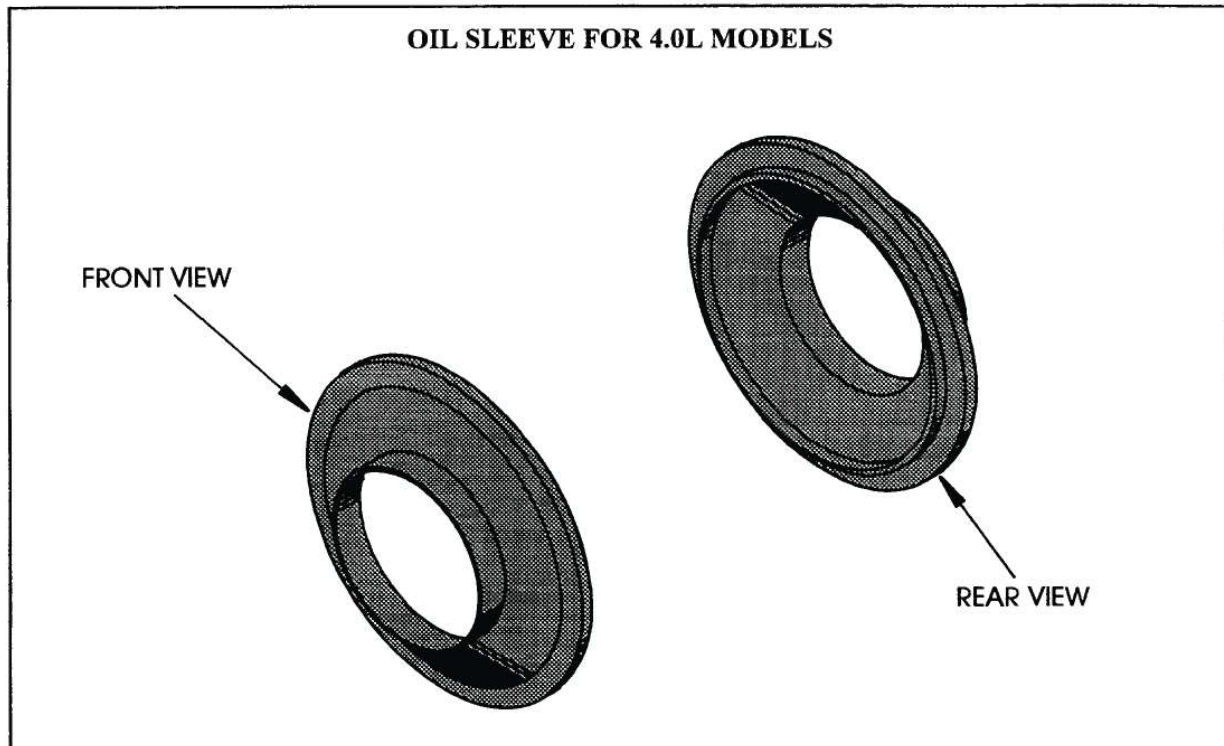


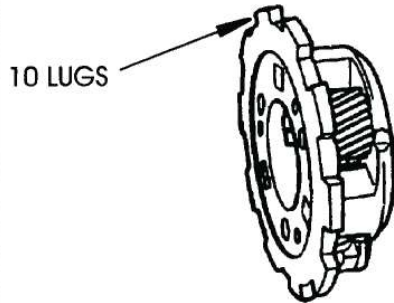
Figure 44

*AUTOMATIC TRANSMISSION SERVICE GROUP*

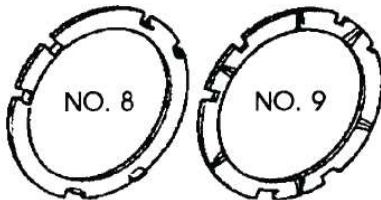


## Technical Service Information

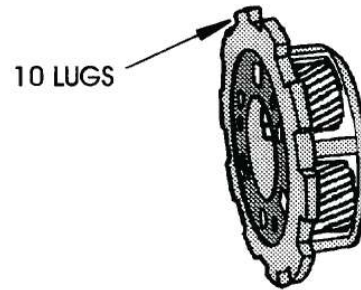
### "1ST DESIGN" 3 PINION ALUMINUM REAR PLANETARY CARRIER



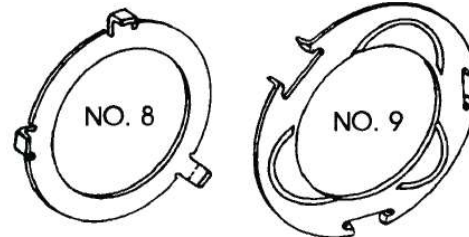
#### "1ST DESIGN" THRUST WASHERS



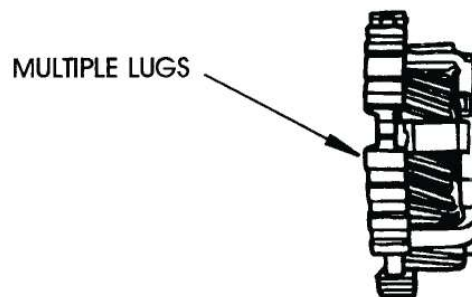
### "2ND DESIGN" 4 PINION STEEL REAR PLANETARY CARRIER



#### "2ND DESIGN" THRUST WASHERS



### "3RD DESIGN" 6 PINION STEEL (4.0L) REAR PLANETARY CARRIER



#### "2ND DESIGN" THRUST WASHERS

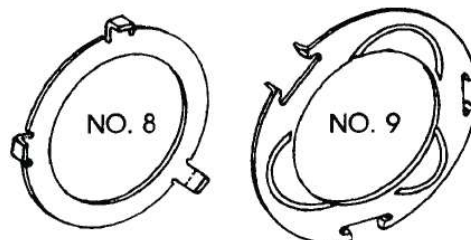
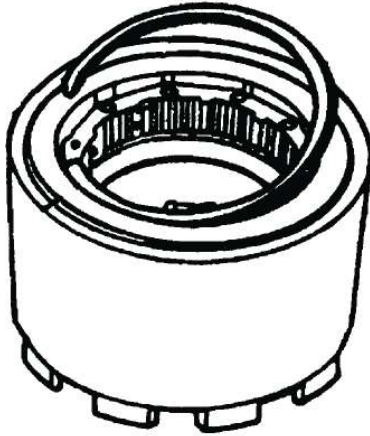


Figure 45  
AUTOMATIC TRANSMISSION SERVICE GROUP

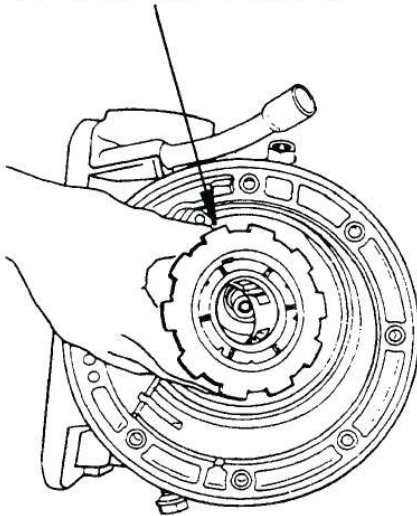


# Technical Service Information

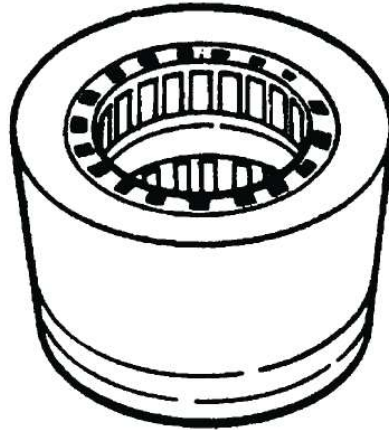
**"1ST DESIGN"  
REVERSE DRUM  
WITH ROLLER CLUTCH**



**REQUIRES THE "2ND DESIGN"  
10 LUG REAR CARRIER**



**"2ND DESIGN"  
REVERSE DRUM  
WITH SPRAG**



**REQUIRES THE "3RD DESIGN"  
MULTIPLE LUG REAR CARRIER**

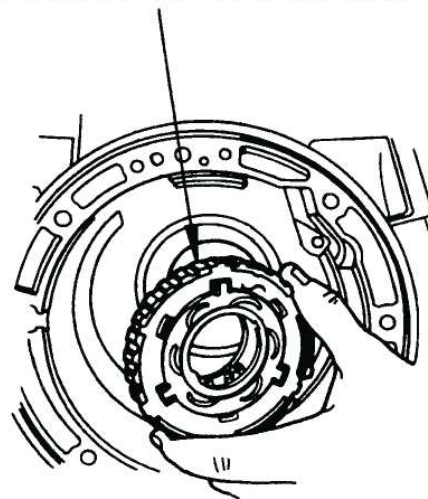


Figure 46  
AUTOMATIC TRANSMISSION SERVICE GROUP





# Technical Service Information

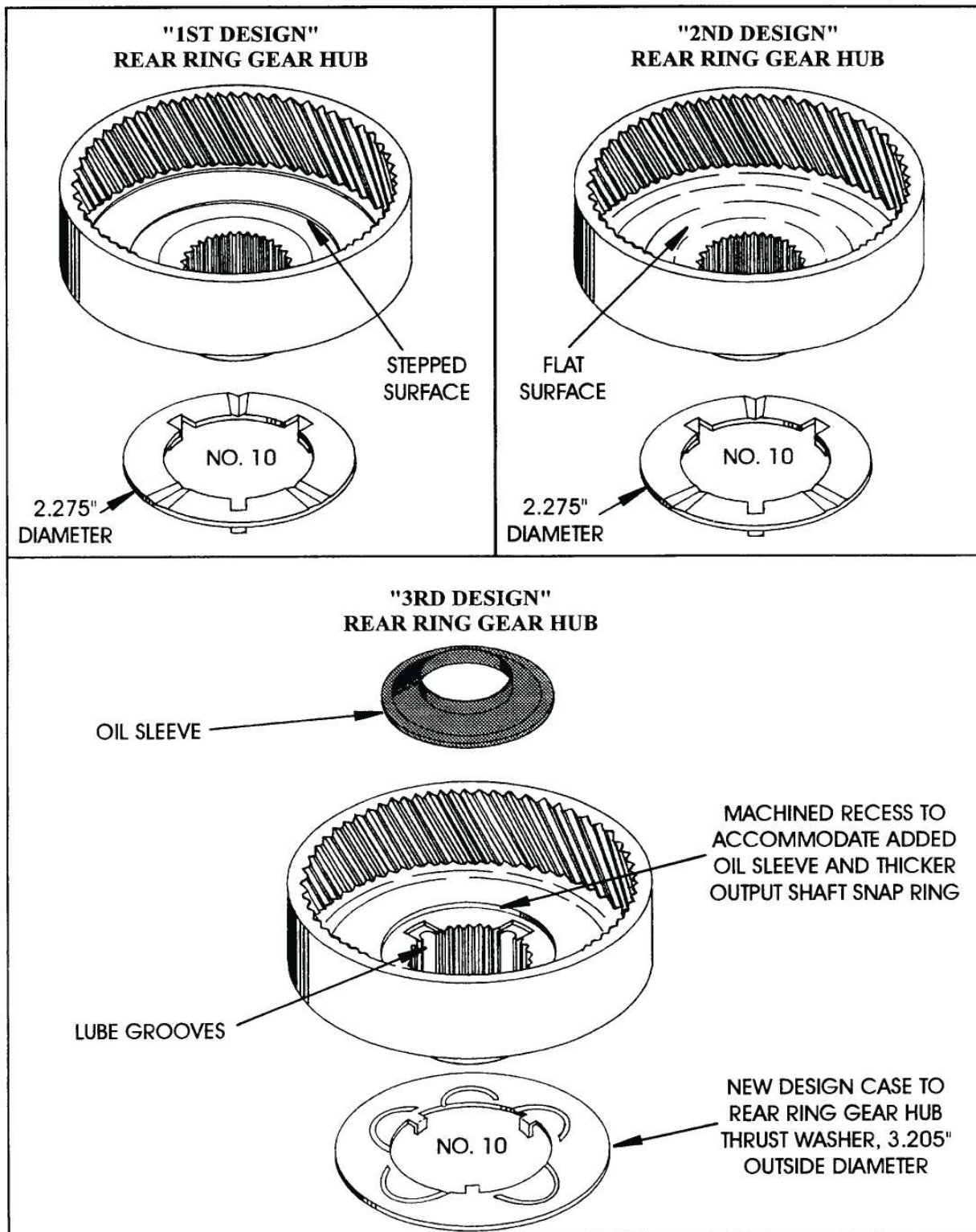


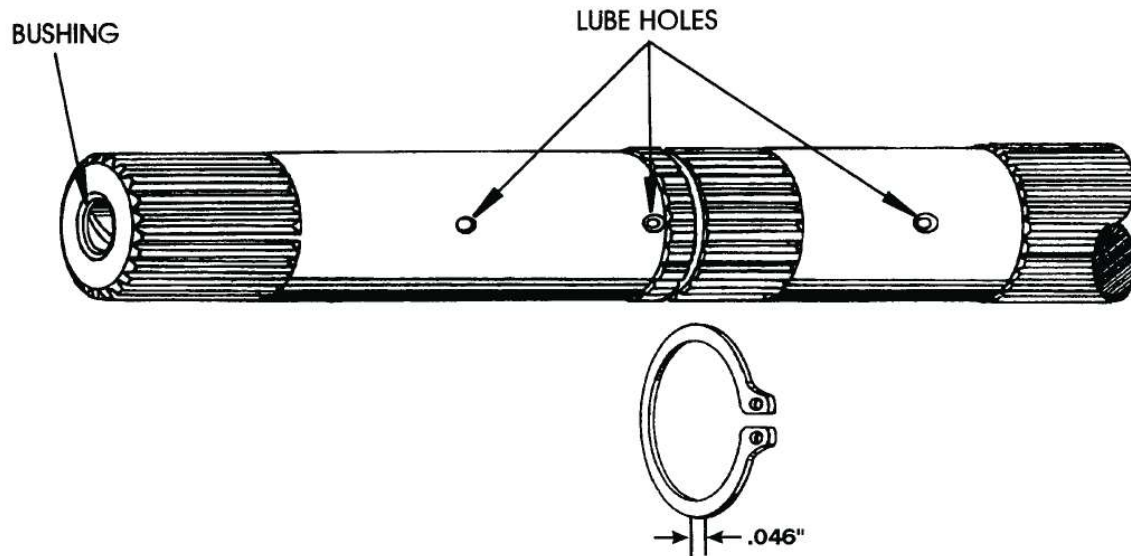
Figure 47  
AUTOMATIC TRANSMISSION SERVICE GROUP





## Technical Service Information

### "1ST DESIGN" OUTPUT SHAFT



### "2ND DESIGN" OUTPUT SHAFT (4.0L ENGINE MODELS)

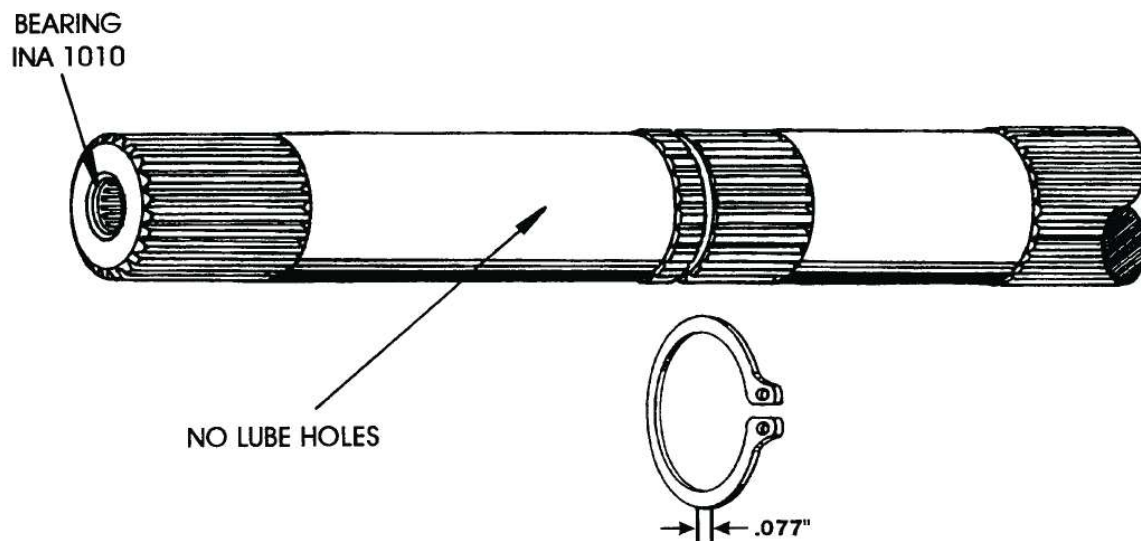


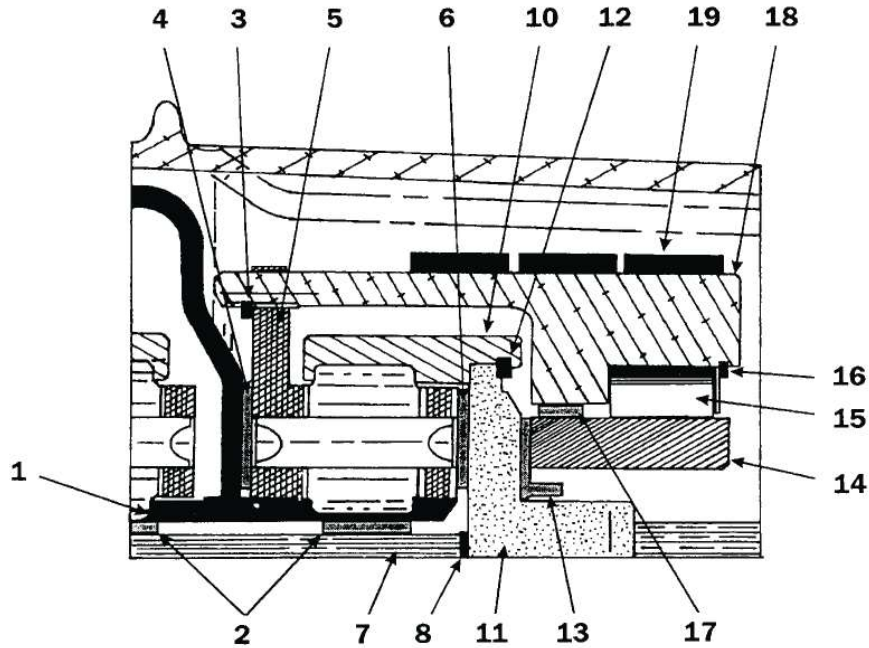
Figure 48

AUTOMATIC TRANSMISSION SERVICE GROUP



# Technical Service Information

## EARLY LOW ONE WAY CLUTCH ASSEMBLY



## LATE (4.0L) LOW ONE WAY CLUTCH ASSEMBLY

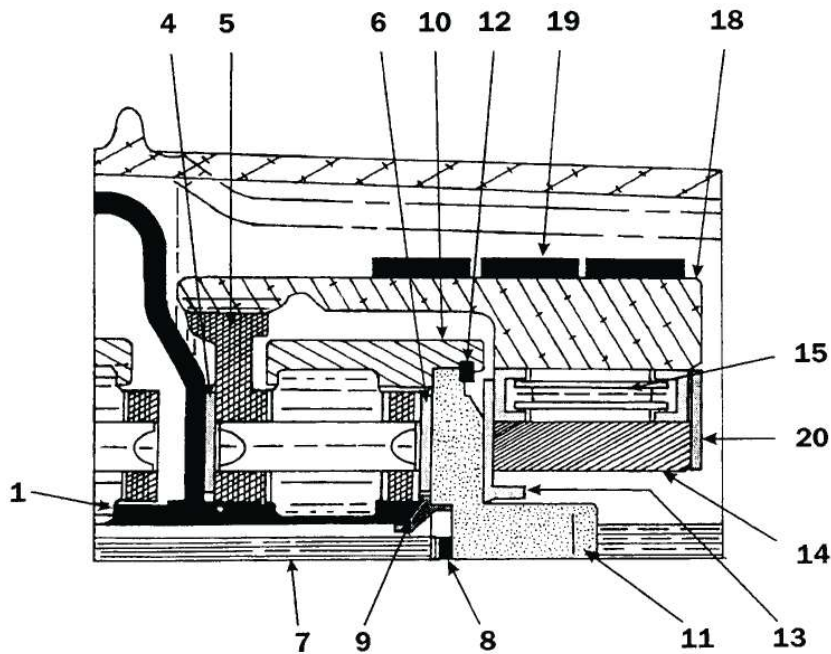


Figure 49

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

1. SUN GEAR.
2. SUN GEAR BUSHING.
3. REVERSE DRUM RETAINING SNAP RING.
4. NUMBER 8 THRUST WASHER.
5. REAR PLANETARY CARRIER.
6. NUMBER 9 THRUST WASHER.
7. OUTPUT SHAFT.
8. OUTPUT SHAFT TO REAR RING GEAR HUB  
RETAINING SNAP RING (.046" OR .077").
9. OIL SLEEVE, OUTPUT SHAFT (LUBE GUIDE).
10. REAR PLANETARY RING GEAR.
11. REAR RING GEAR HUB.
12. REAR RING GEAR TO RING GEAR HUB  
RETAINING SNAP RING.
13. NUMBER 10 THRUST WASHER.
14. LOW ROLLER / LOW SPRAG CLUTCH  
INNER RACE.
15. LOW ROLLER / LOW SPRAG ASSEMBLY.
16. LOW ROLLER CLUTCH TO REVERSE DRUM  
RETAINING SNAP RING.
17. REVERSE DRUM BUSHING.
18. REVERSE DRUM.
19. LOW & REVERSE BAND ASSEMBLY.
20. NUMBER 15 THRUST WASHER.  
(PART OF CASE)

Figure 49 Legend

*AUTOMATIC TRANSMISSION SERVICE GROUP*





## Technical Service Information

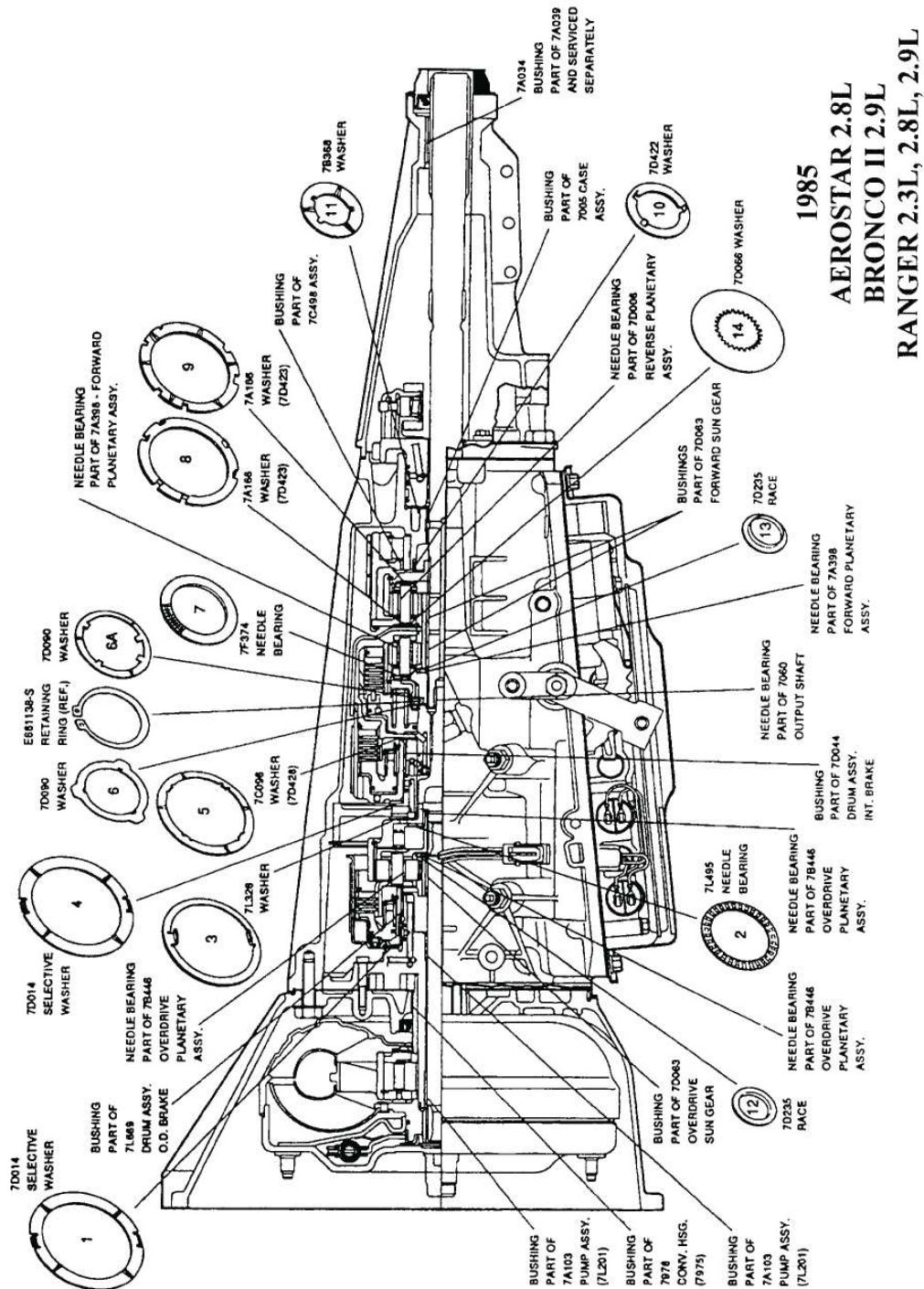


Figure 50

## AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

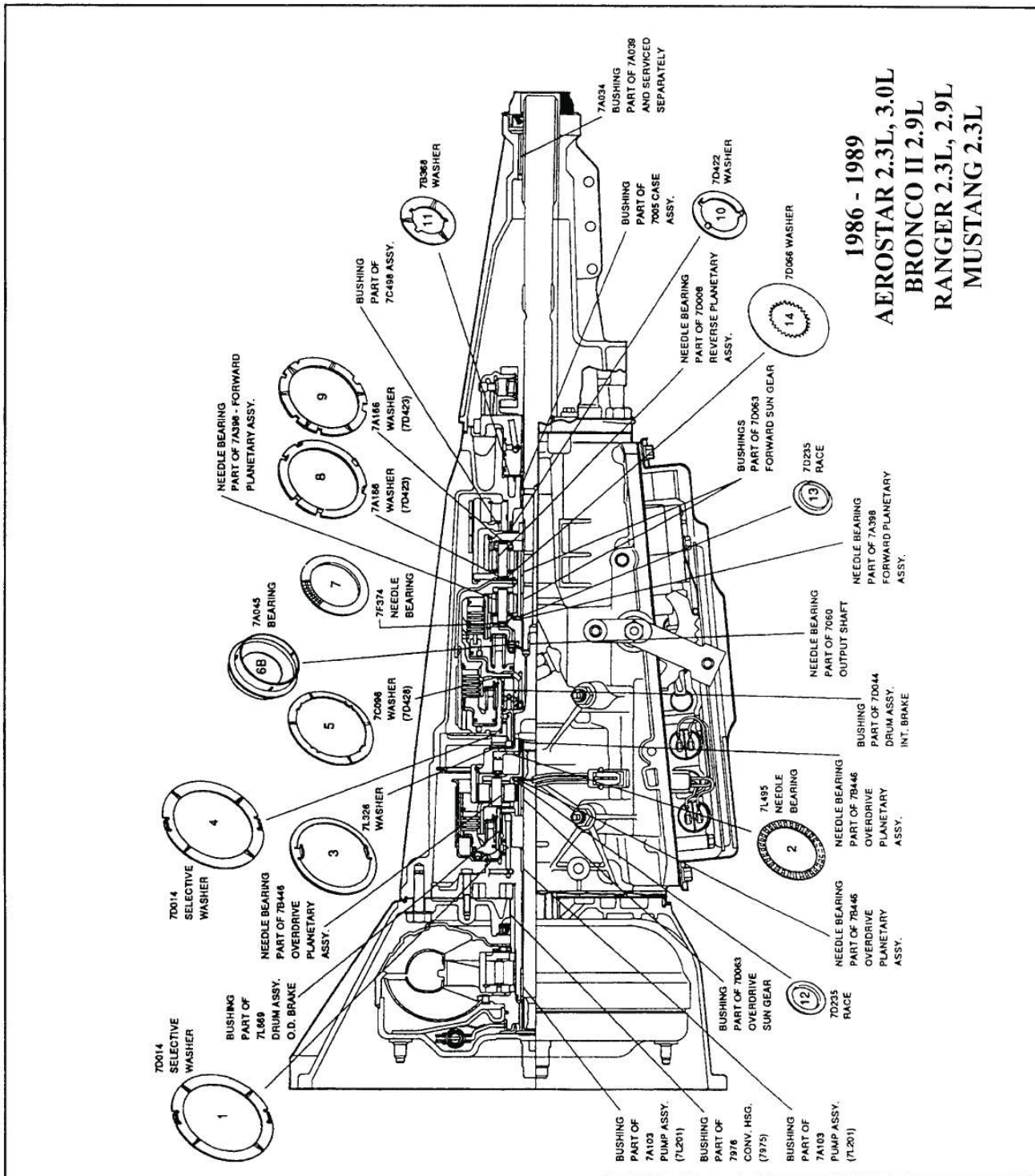


Figure 51

## AUTOMATIC TRANSMISSION SERVICE GROUP





# Technical Service Information

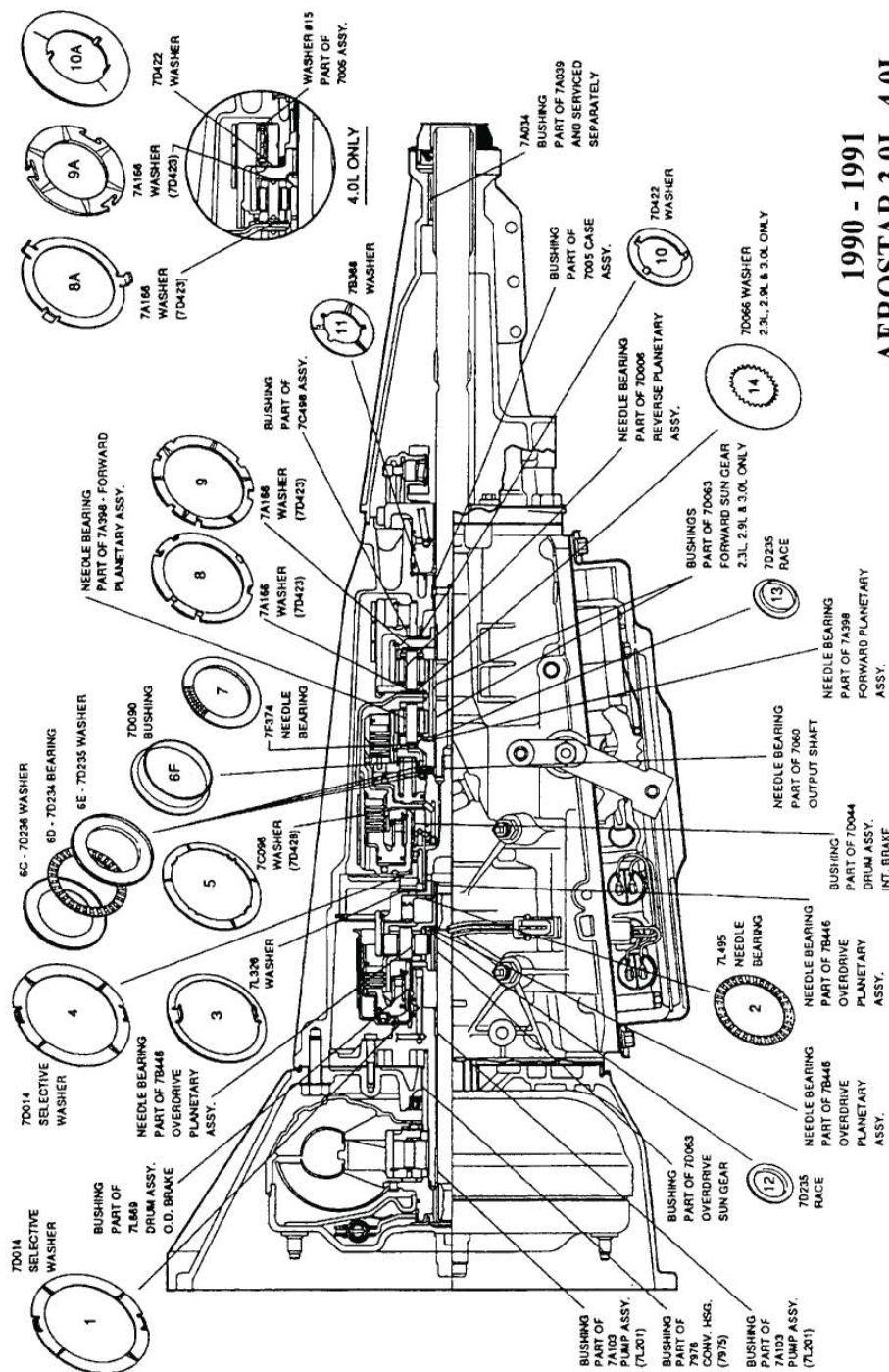


Figure 52

## AUTOMATIC TRANSMISSION SERVICE GROUP

54

1990 - 1991  
**AEROSTAR 3.0L, 4.0L**  
**BRONCO II 2.9L**  
**EXPLORER 4.0L**  
**RANGER 2.3L, 2.9L, 3.0L, 4.0L**  
**MUSTANG 2.3L**





## Technical Service Information

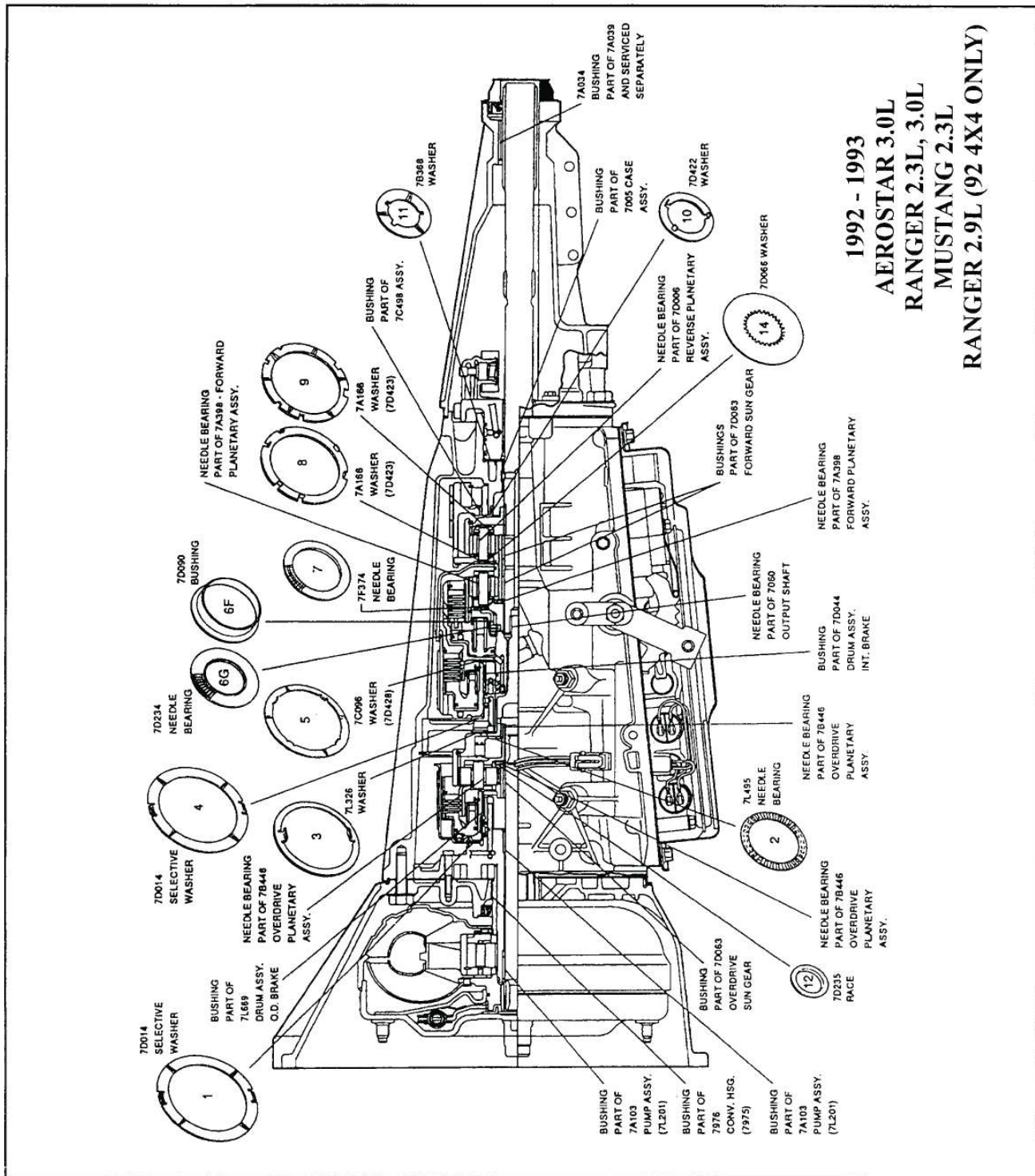


Figure 53

## AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

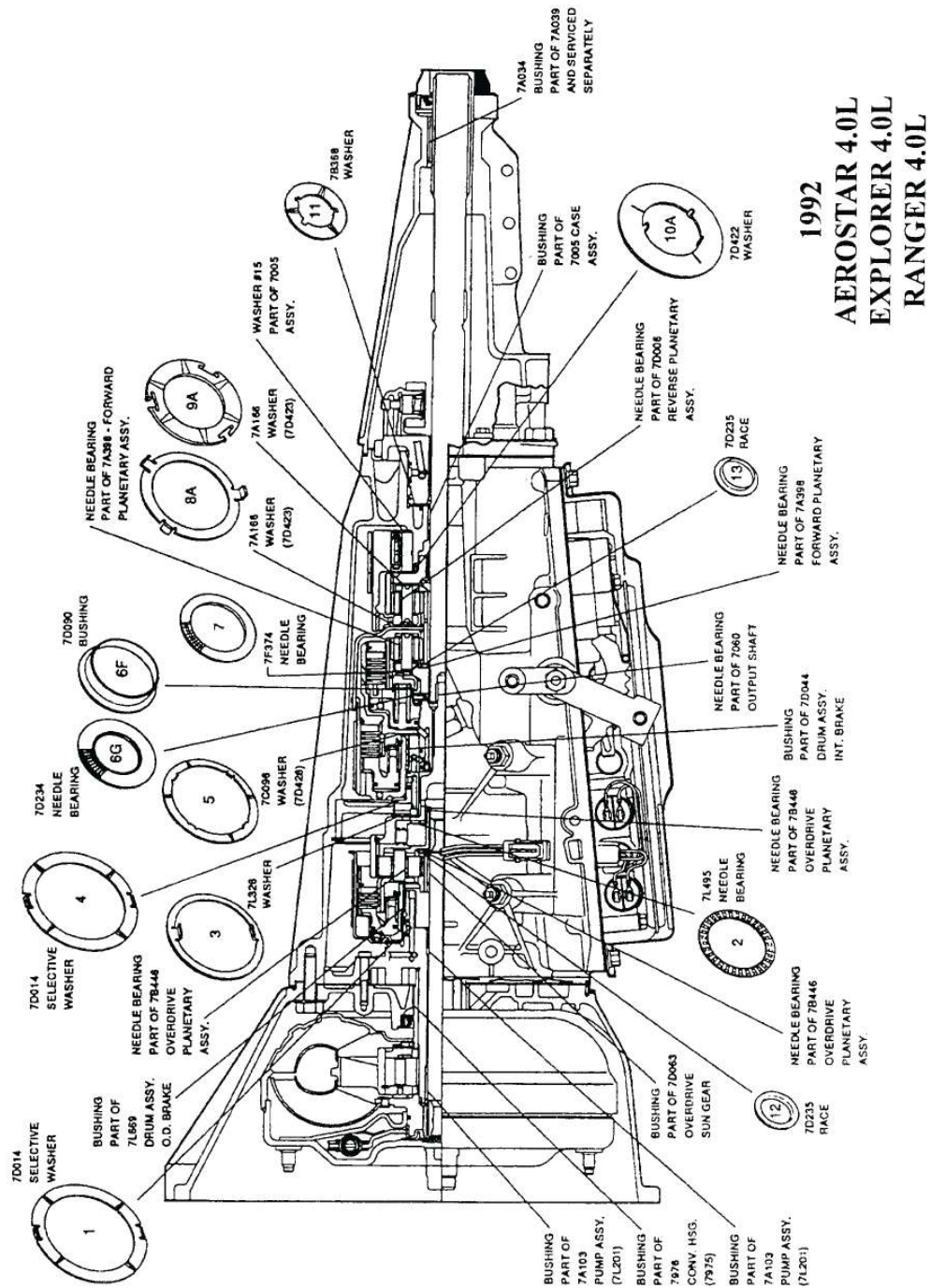


Figure 54

## AUTOMATIC TRANSMISSION SERVICE GROUP





## Technical Service Information

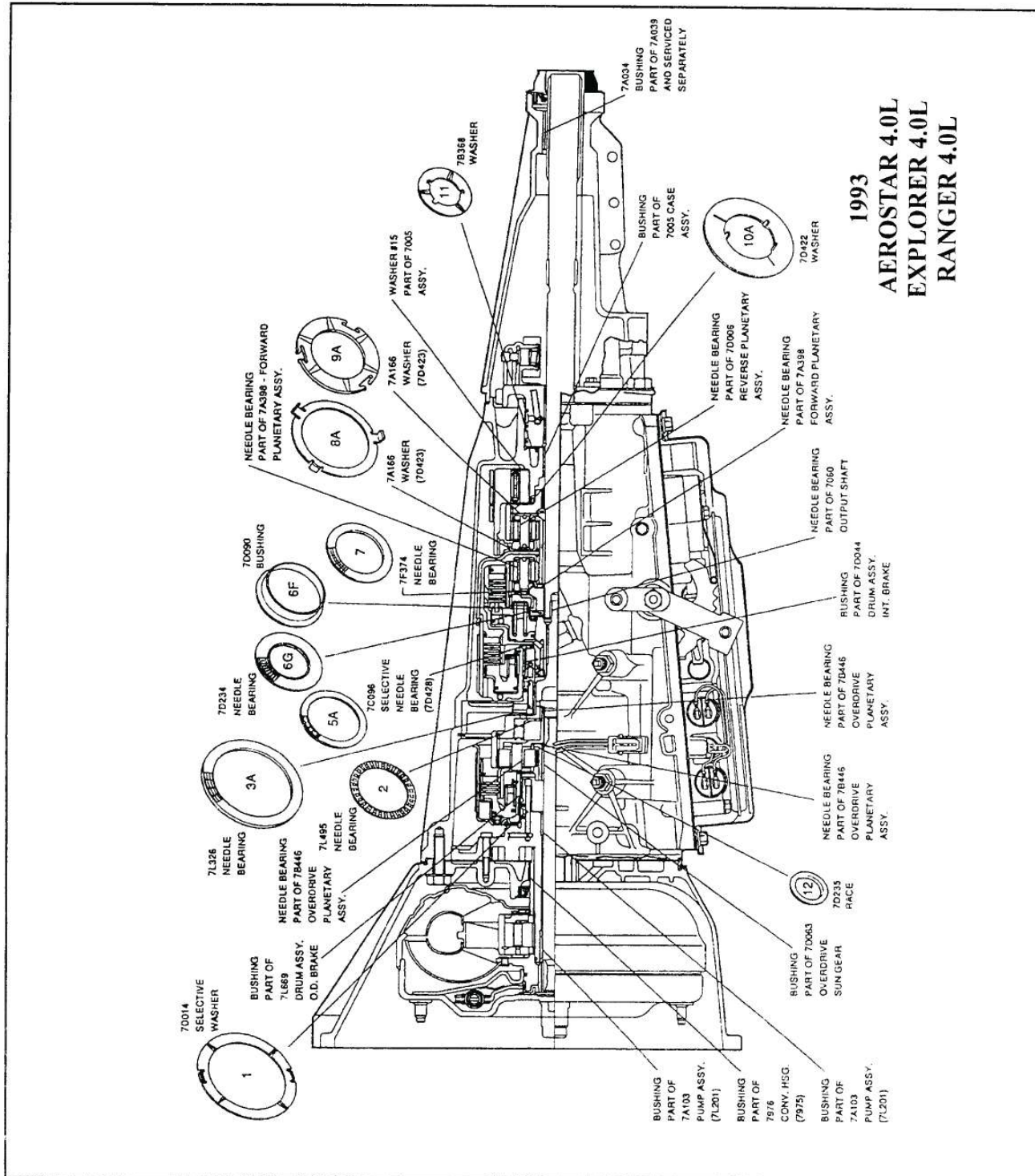


Figure 55

## AUTOMATIC TRANSMISSION SERVICE GROUP





## Technical Service Information

### REAR ENDPLAY CHECK PROCEDURE MODELS *WITHOUT* SNAP DESIGN SUNSHELL

To perform the endplay check, fabricate a depth gauge fixture from a spare center support. A 1/8" inch hole must be drilled through the thrust washer surface of the center support. See Figure 56 for proper drilling location. This allows the depth micrometer access to the area between the thrust washer surface and the intermediate brake drum. Remove the rubber sealing rings from the spare center support to allow easy insertion into the drum.

#### ENDPLAY CHECK PROCEDURE:

- (1) Place micrometer over drilled hole in the fabricated depth gauge fixture. Extend micrometer probe until it is flush with the thrust washer surface (See Figure 57). Record the measurement. This is reading A.
- (2) Install the depth gauge and center support fixture into the direct clutch drum and make sure it is fully seated in the transmission case. Gently wiggle the input shaft to allow the center support fixture to slide into the direct clutch drum using its own weight.
- (3) Place the micrometer over the drilled hole in the fixture. Extend the probe until it contacts the thrust washer surface of the direct clutch drum (See Figure 58). This is reading B.
- (4) Subtract reading A from reading B. The difference between readings is dimension C
- (5) Remove and rotate the fixture 180° and repeat steps 2 - 4.
- (6) Average the two dimension C readings to obtain the final dimension C. Locate the final dimension C reading in the following chart and select the proper thrust washer to obtain the proper end play (.012" - .022").

| DIMENSION<br>C | I.D. NUMBER<br>ON WASHER | PART<br>NUMBER | WASHER<br>THICKNESS |
|----------------|--------------------------|----------------|---------------------|
| .065" - .073"  | 1                        | FOTZ-7D014-A   | .053" - .055"       |
| .074" - .077"  | 2                        | FOTZ-7D014-B   | .061" - .063"       |
| .078" - .081"  | 3                        | FOTZ-7D014-C   | .065" - .067"       |
| .082" - .085"  | 4                        | FOTZ-7D014-D   | .069" - .071"       |
| .086" - .089"  | 5                        | FOTZ-7D014-E   | .073" - .075"       |
| .090" - .093"  | 6                        | FOTZ-7D014-F   | .077" - .079"       |
| .094" - .100"  | 7                        | FOTZ-7D014-G   | .081" - .083"       |

AUTOMATIC TRANSMISSION SERVICE GROUP



# Technical Service Information

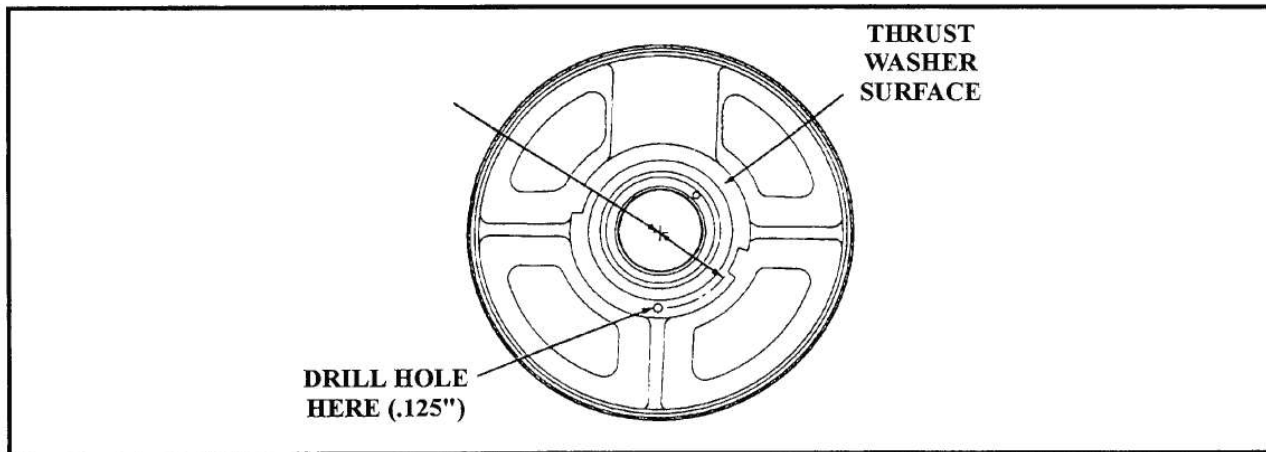


Figure 56

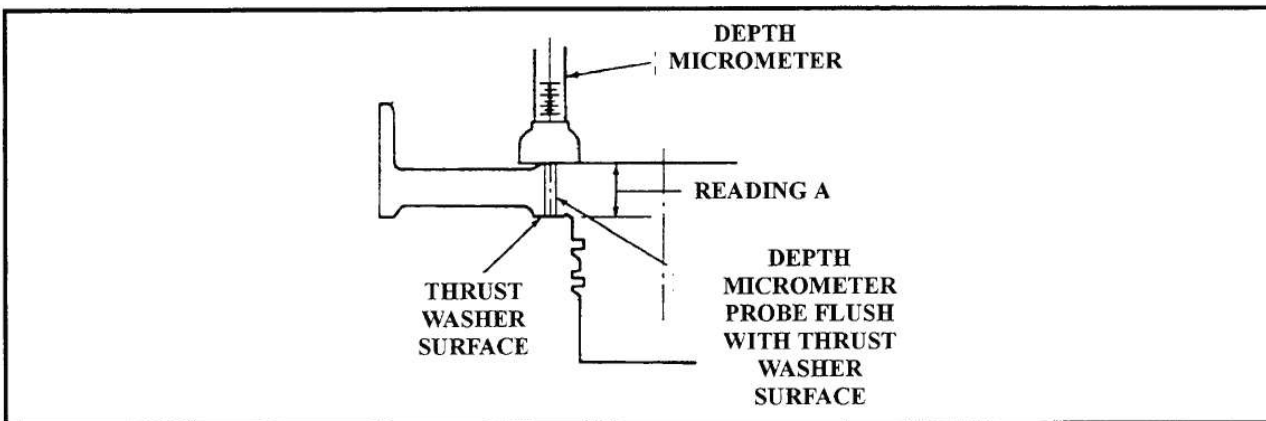


Figure 57

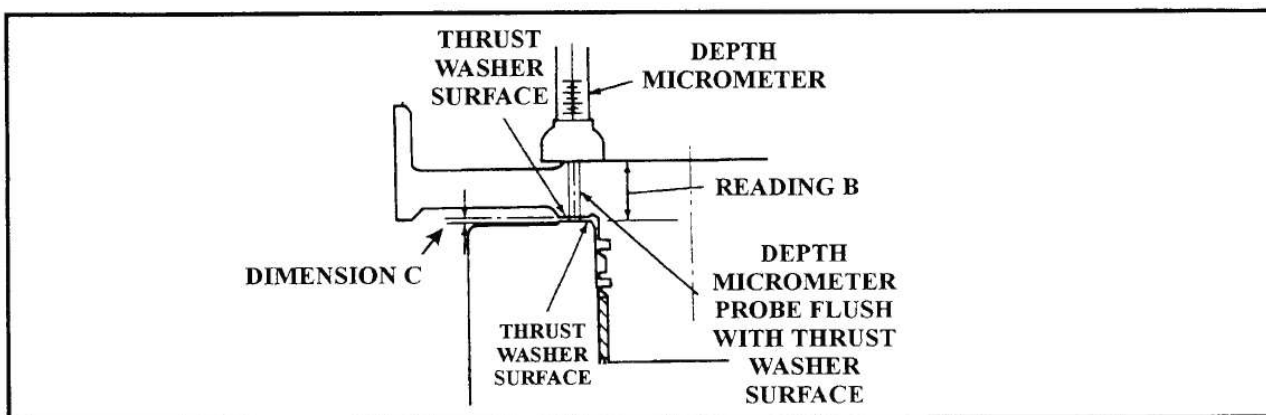


Figure 58

*AUTOMATIC TRANSMISSION SERVICE GROUP*



## Technical Service Information

### REAR ENDPLAY CHECK PROCEDURE FOR MODELS WITH "SNAP" DESIGN SUNSHELL

*The center support fixture used on previous models, will not work on "Snap" shell design models. To perform the rear endplay check on these models you **must** use a gauging bar (T93T-77003-AH), as shown in Figure 59, and using the following procedure:*

#### REAR ENDPLAY CHECK

- (1) Place Gauging Bar (T93T-77003-AH) on case shoulder, as shown in Figure 59, and set the depth micrometer on top of gauging bar as shown in Figure 59.
- (2) Extend gauging bar probe until it contacts number 5 thrust bearing surface of the forward clutch drum, as shown in Figure 59. ***Number 5 (Selective) thrust bearing is removed for this check.***
- (3) Remove the depth micrometer and record this reading as Dimension "A".
- (4) Move the depth micrometer to the opposite side of the gauging bar (180 degrees). Extend gauging bar probe until it contacts number 5 thrust bearing surface of the forward clutch drum, as shown in Figure 59.
- (5) Remove the depth micrometer and record this reading as Dimension "B".
- (6) Add Dimension "A" and "B" together, and divide by 2, to determine an average reading. Subtract the thickness of Gauging Bar (T93T-77003-AH) which is 0.700" (17.78mm). ***This is Dimension "C".***
- (7) Using Dimension "C" in the chart provided below, choose the proper selective number 5 thrust bearing, which will now provide you with the proper end play of .004"-.024".

| 4.0L "SNAP SHELL" ONLY<br>DIMENSION "C" | BEARING I.D.<br>(NOTCHES) | SERVICE<br>PART NUMBER | SELECTIVE NUMBER 5<br>BEARING THICKNESS |
|-----------------------------------------|---------------------------|------------------------|-----------------------------------------|
| 1.773" - 1.780" (45.04-45.22mm)         | 4                         | F3PZ-7C096-D           | .131" - .135" (3.33-3.44mm)             |
| 1.781" - 1.788" (45.23-45.41mm)         | 3                         | F3PZ-7C096-C           | .138" - .143" (3.51-3.62mm)             |
| 1.789" - 1.796" (45.42-45.61mm)         | 2                         | F3PZ-7C096-B           | .146" - .150" (3.70-3.81mm)             |
| 1.796" - 1.804" (45.62-45.81mm)         | 1                         | F3PZ-7C096-A           | .154" - .158" (3.90-4.01mm)             |

AUTOMATIC TRANSMISSION SERVICE GROUP





## Technical Service Information

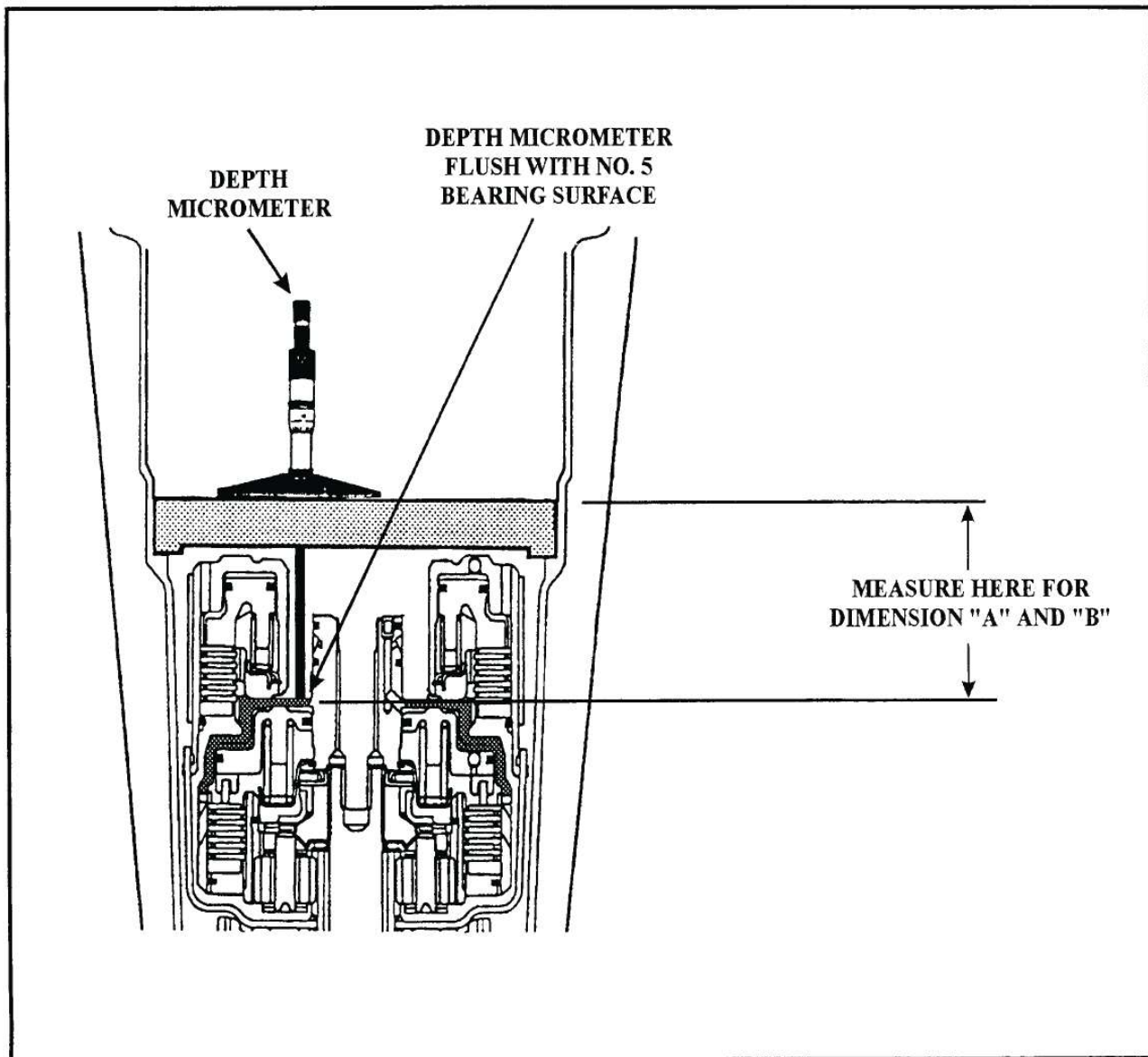


Figure 59

*AUTOMATIC TRANSMISSION SERVICE GROUP*



## Technical Service Information

### BLOWING FLUID OUT THE BREATHER

**COMPLAINT:** Fluid leaking out of the case air vent..

**CAUSE:** One possible cause may be governor rings leaking, causing pressure to build up in the case and blowing fluid out the vent.

**CORRECTION:** Check governor bore in case for ring grooves as shown in Figure 60. If ring grooves are present, replace the case, or install a sleeve kit. Also check governor rings for wear and/or damage as shown in Figure 60. Replace as necessary. It is recommended that the Tin-Nickel coated rings be used.

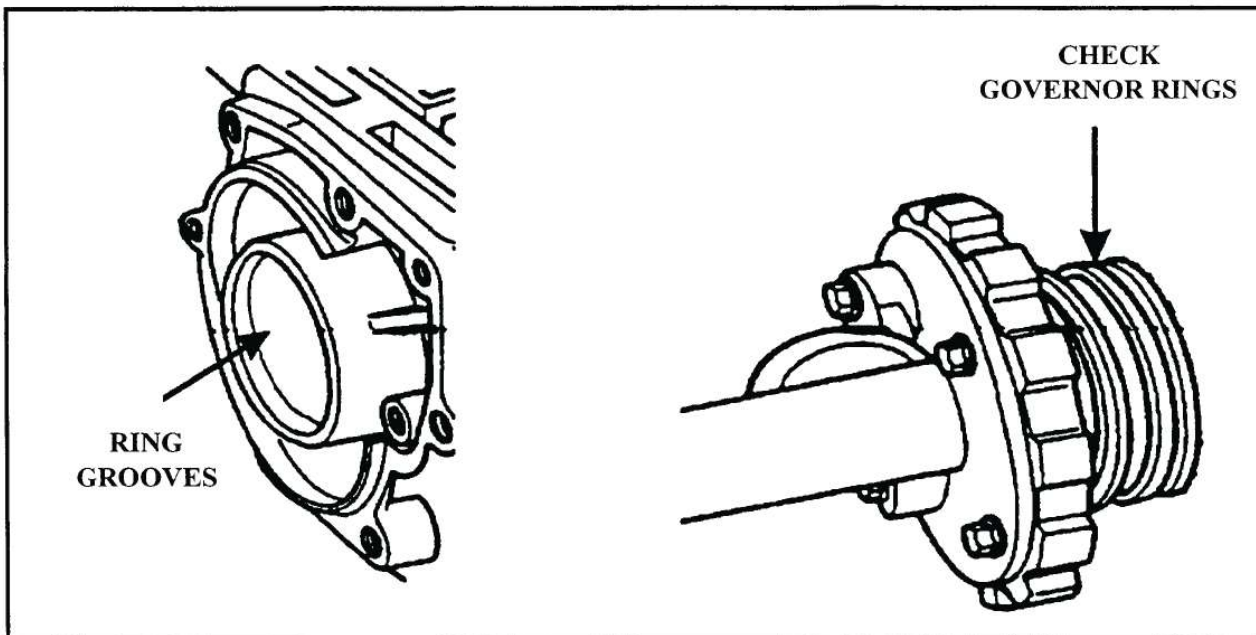


Figure 60



## Technical Service Information

### CONVERTER CLUTCH SOLENOID CASE FILTER

A spring was installed in the transmission case worm track to trap large machining chips and reduce engine stall complaints created by a stuck converter lock up valve in the valve body (See Figure 61).

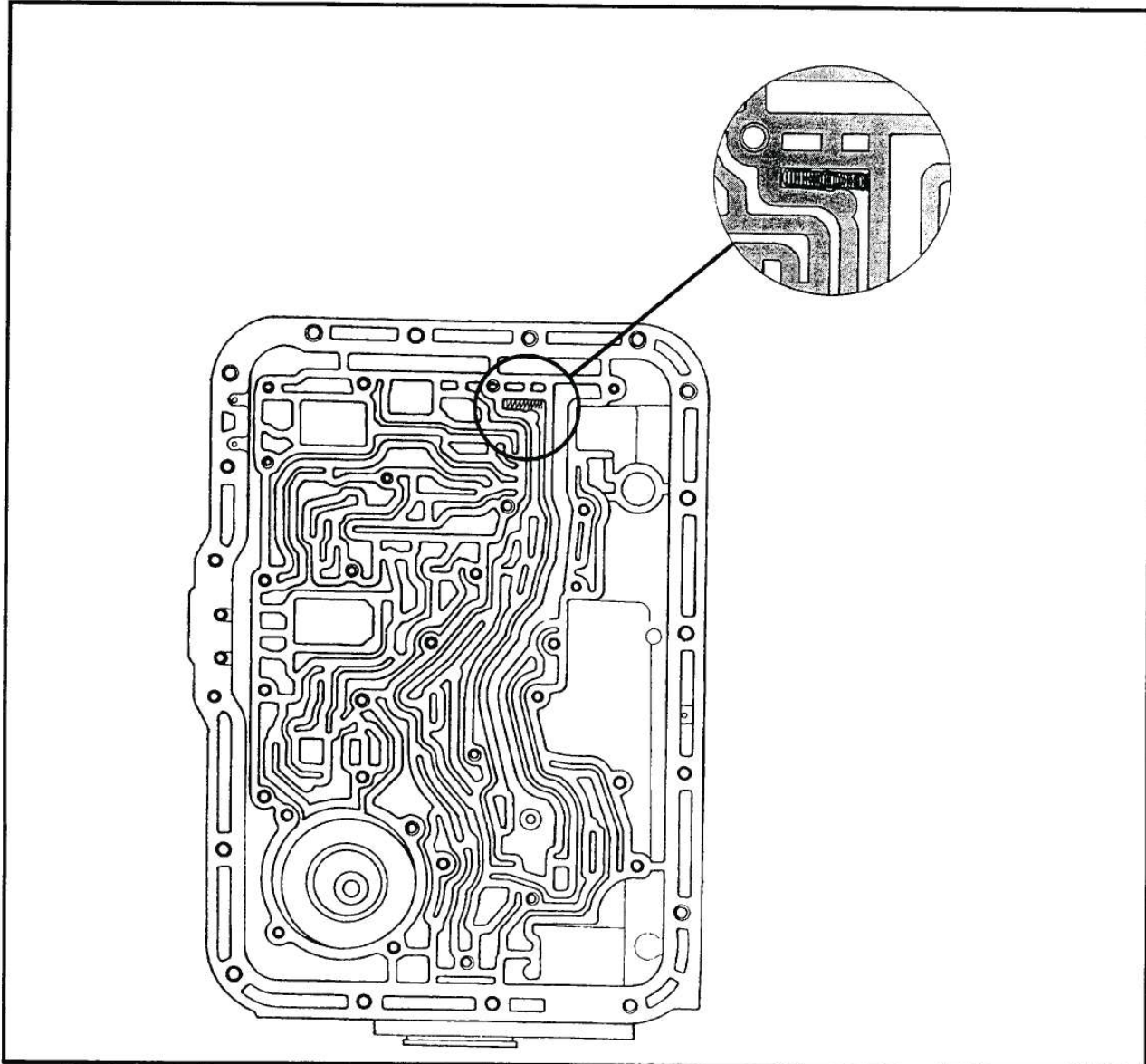


Figure 61

*AUTOMATIC TRANSMISSION SERVICE GROUP*





## Technical Service Information

### CHECK BALL LOCATION SINGLE SOLENOID VALVE BODY ALL EXCEPT SCORPIO/MERCUR

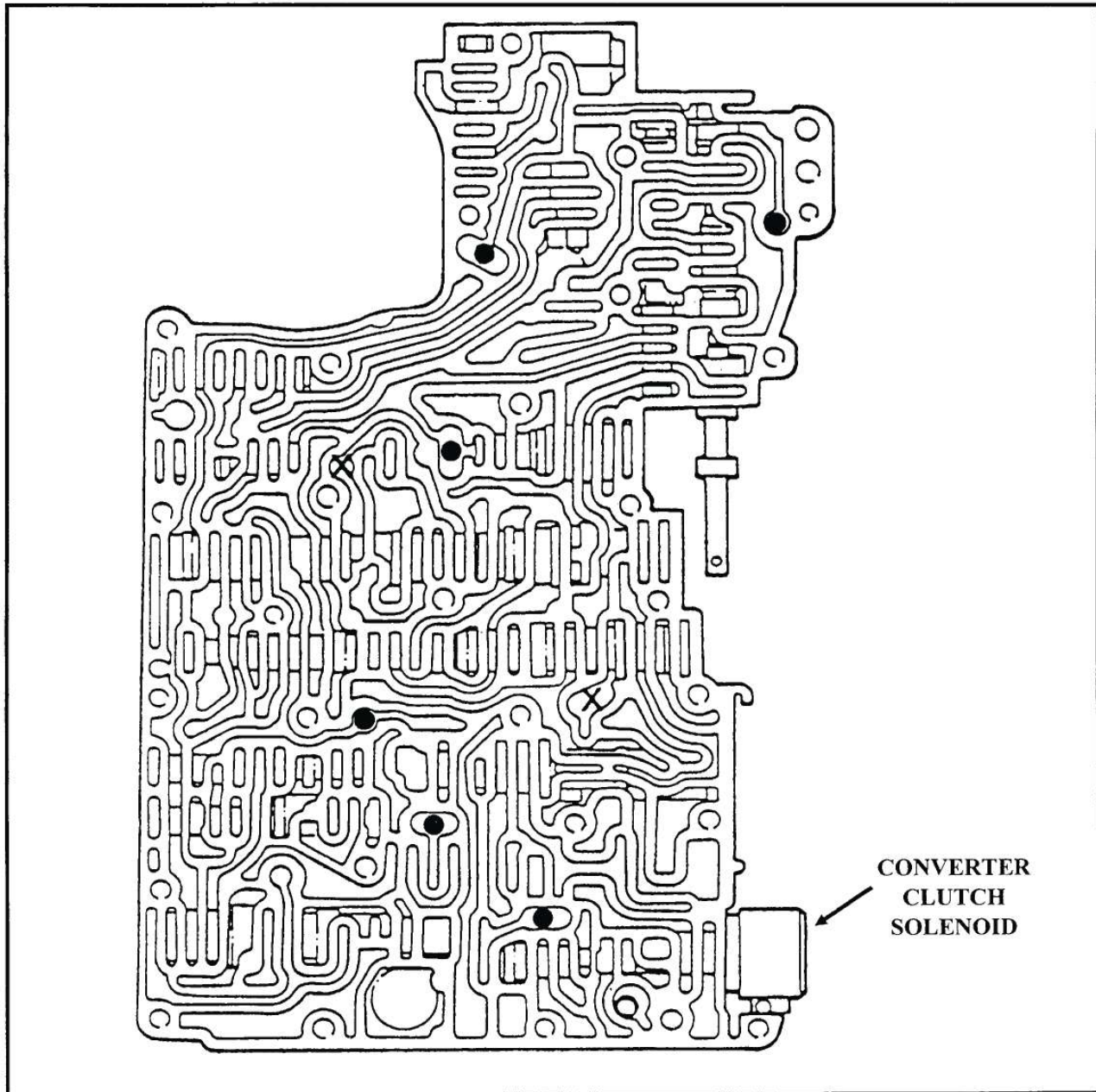


Figure 62

*AUTOMATIC TRANSMISSION SERVICE GROUP*



## Technical Service Information

### CHECK BALL LOCATION SINGLE SOLENOID VALVE BODY SCORPIO / MERCUR ONLY

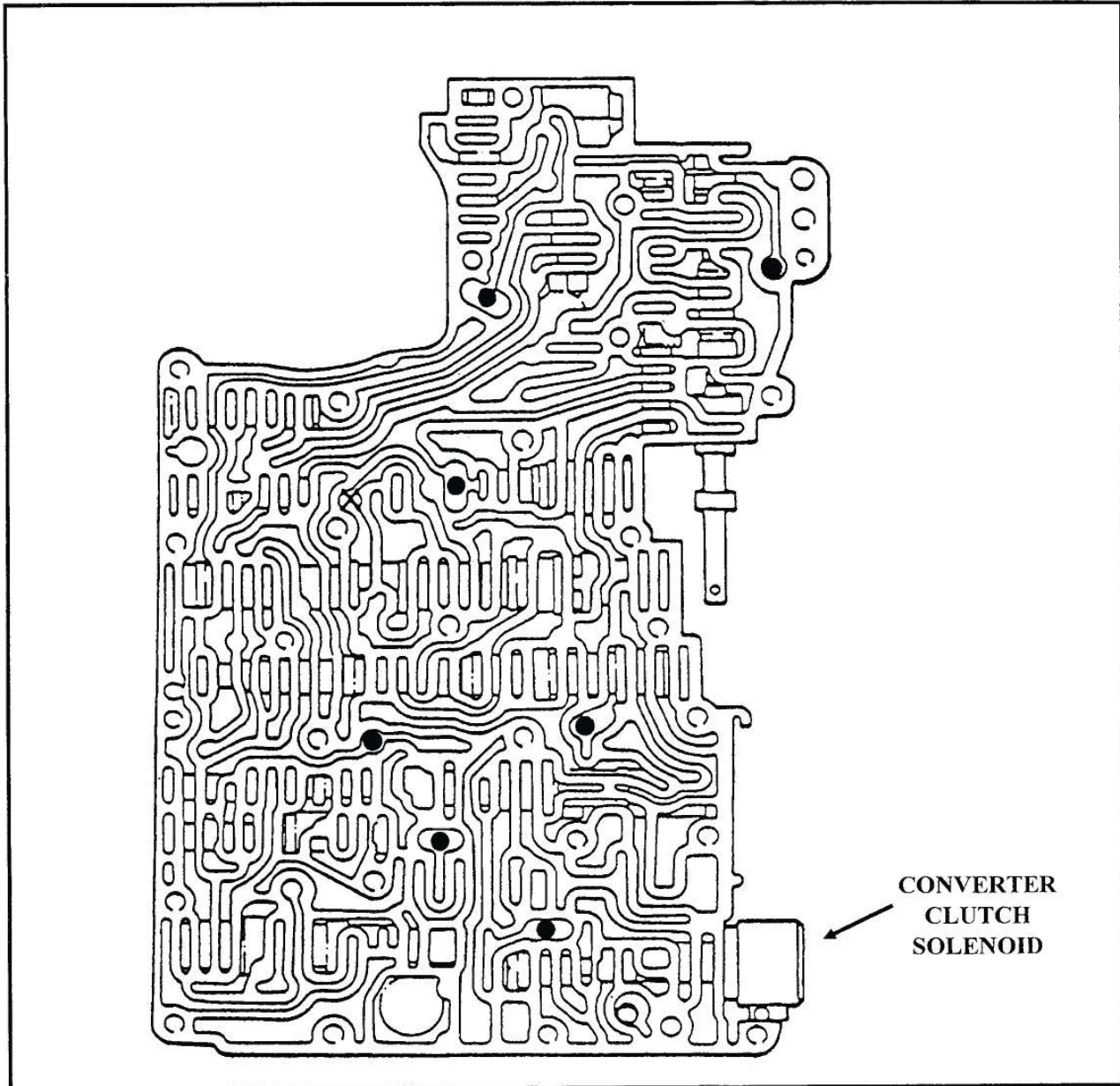


Figure 63

*AUTOMATIC TRANSMISSION SERVICE GROUP*





## Technical Service Information

### CHECK BALL LOCATION DOUBLE SOLENOID VALVE BODY

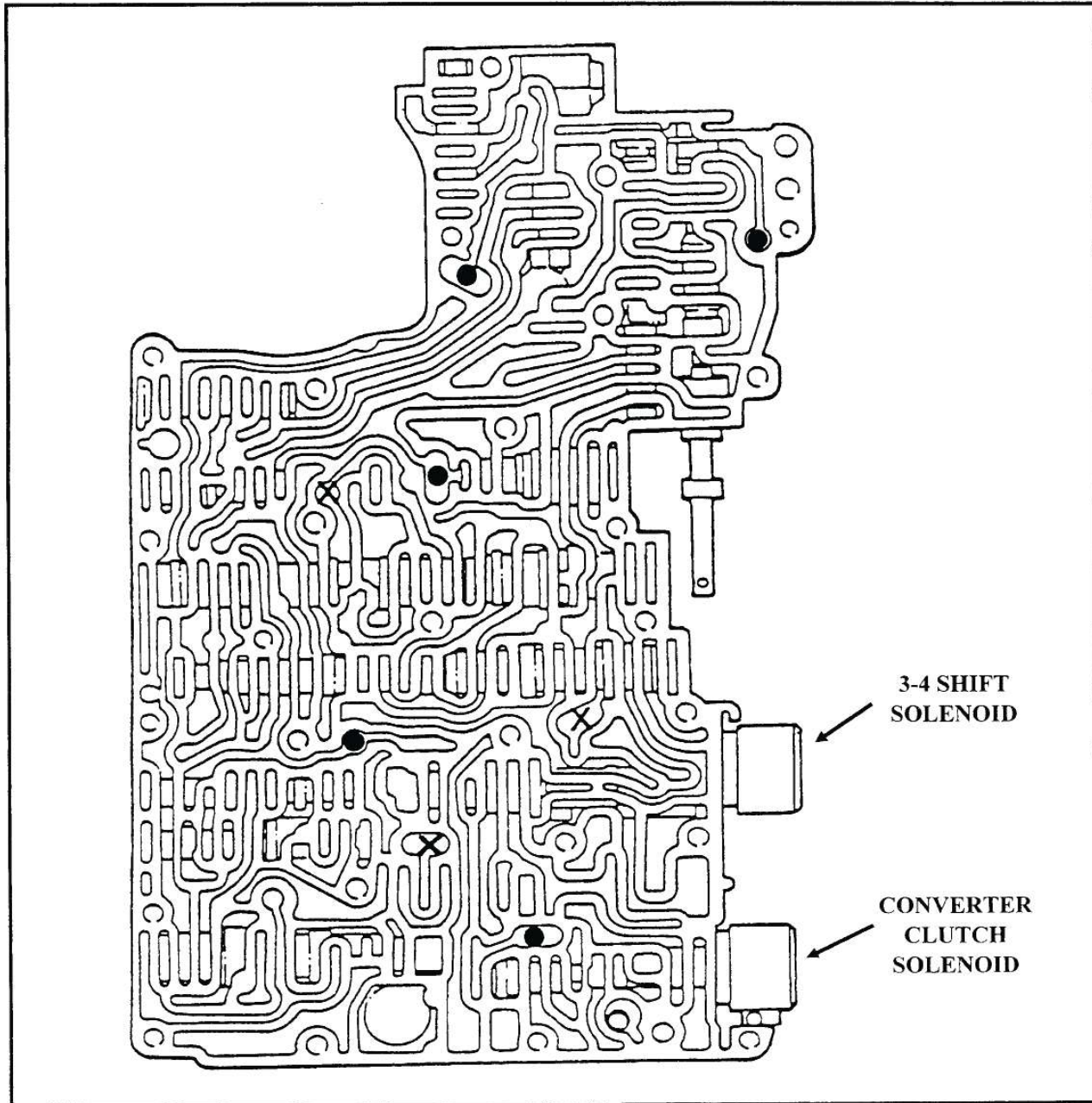


Figure 64

*AUTOMATIC TRANSMISSION SERVICE GROUP*





## Technical Service Information

### CHECK BALL LOCATION DOUBLE SOLENOID VALVE BODY WITH REVERSE ENGAGEMENT CONTROL VALVE

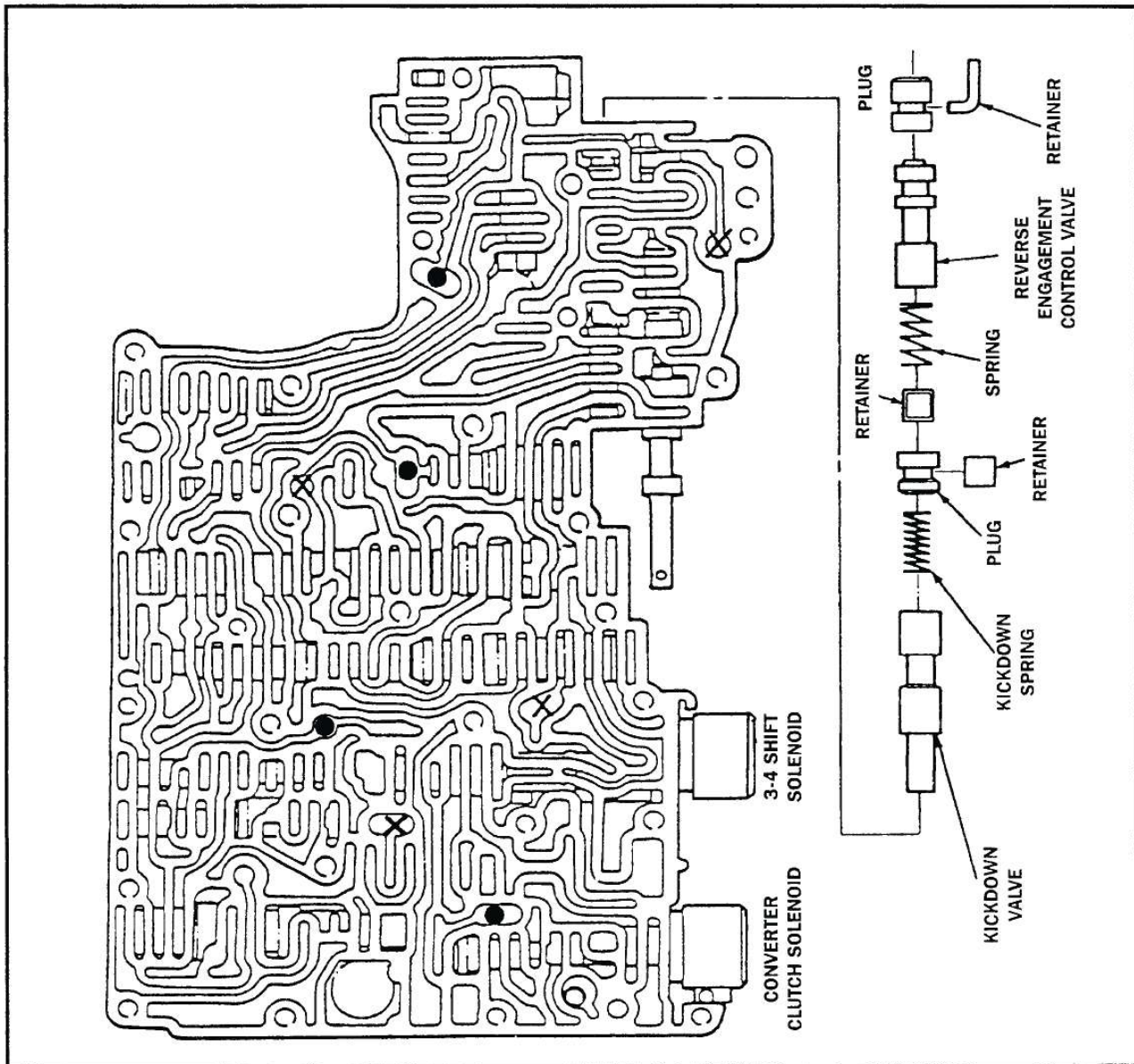


Figure 65

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

### UPDATED 3-4 SHIFT SOLENOID

**CHANGE:** 3-4 shift solenoid was redesigned.

**REASON:** For improved solenoid durability.

**PARTS AFFECTED:**

3-4 SHIFT SOLENOID - The 2nd design 3-4 shift solenoid eliminates the screen, has dimensional changes on the solenoid itself, and includes a new plug with a boss machined on one end. The plug must be installed with the machined boss facing the solenoid as shown in Figure 66.

**INTERCHANGEABILITY:**

The 2nd design solenoid will retro-fit back to all previous models.

**SERVICE INFORMATION:**

2nd Design Solenoid.....E8TZ-7M107-A

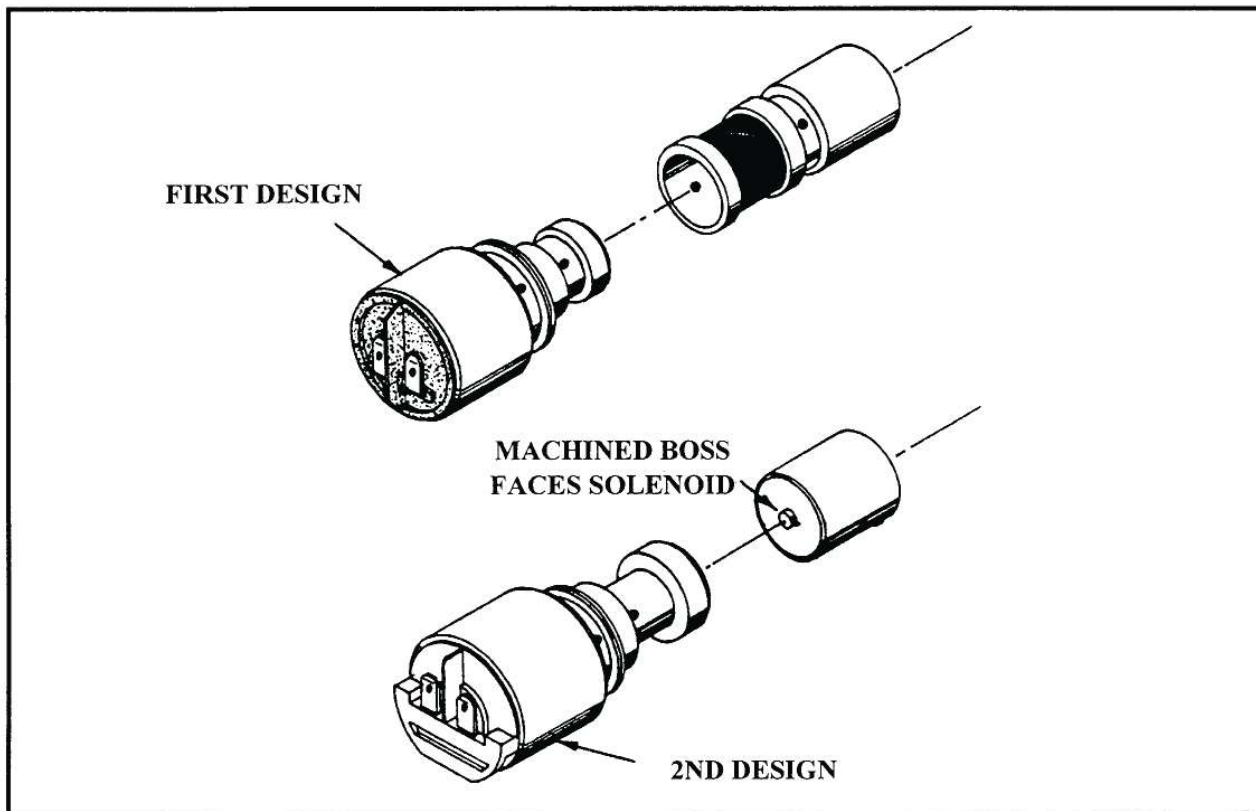


Figure 66

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

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### FORD A4LD

#### VALVE BODY AND SPACER PLATE IDENTIFICATION

**COMPLAINT:** There have been many minor changes in several of the valve trains in the valve bodies on the A4LD transmission over the years, which also affects the compatability of the spacer plate for the valve body you are using. Mis-matching these parts will create a wide variety of different complaints, depending on how they have been mis-matched.

**CAUSE:** Mis-matching of the valve body and spacer plates. Not all will interchange.

**CORRECTION: BORE 211, 1ST DESIGN: (1-2 TRANSITION VALVE)**

This bore contains the 1-2 Transition Valve and is located as shown in Figure 67. Notice the location of the No. 2 retainer in valve body is also shown in Figure 67. Figure 68 shows the "Large Hole" spacer plate that is required on the valve body with the 1st design bore 211. Figure 68 also identifies the holes that were eliminated on the two solenoid valve bodies.

**BORE 211, 2ND DESIGN: (1-2 TRANSITION VALVE)**

The 2nd design valve train has eliminated two springs and incorporated two spool valves into one, as shown in Figure 69. Figure 70 shows the "Small Hole" spacer plate that is required with the 2nd design line-up in bore 211.

**Note:** The 1st design bore 211 parts are not compatible with the 2nd design valve body casting, because the orifice control valve and the 1st design valve body bore are smaller in diameter

**BORE 207, 1ST DESIGN: ("WITHOUT" REVERSE ENGAGEMENT VALVE)**

Figure 71 shows the correct line-up for this bore, and the No. 2 retainer location in the valve body casting. Figure 72 shows the "Slot" in the spacer plate that is required for the 1st design bore 207, "Without" reverse engagement valve.

**BORE 207, 2ND DESIGN: ("WITH" REVERSE ENGAGEMENT VALVE)**

This is when the reverse engagement control valve was added to bore 207, as shown in Figure 73, and also shows the location of the No. 2 retainer in the valve body casting and the direction of the bore plugs. Figure 74 shows the "3 Hole" spacer plate that is required on valve bodies containing the reverse engagement control valve.

**Note:** Valve body castings are also different in the worm track area, when it comes to bore 207. Compare the inset in Figure 71 to the inset in Figure 73, and you will see the difference in the passages, which **will not** allow you to install reverse engagement valve into a 1st design valve body casting.

AUTOMATIC TRANSMISSION SERVICE GROUP





# Technical Service Information

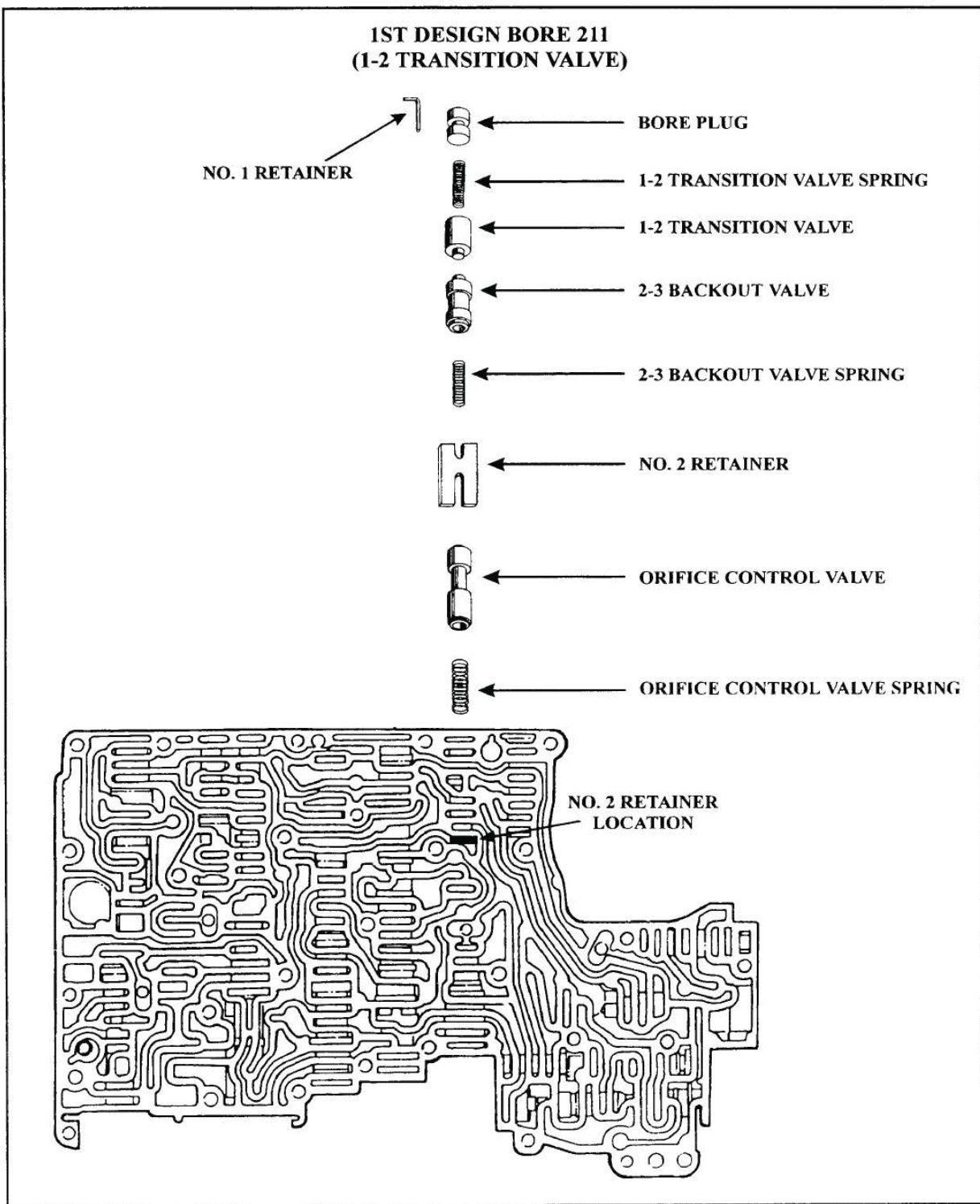


Figure 67

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

### "LARGE HOLE" SPACER PLATE REQUIRED WITH 1ST DESIGN BORE 211 (1-2 TRANSITION VALVE)

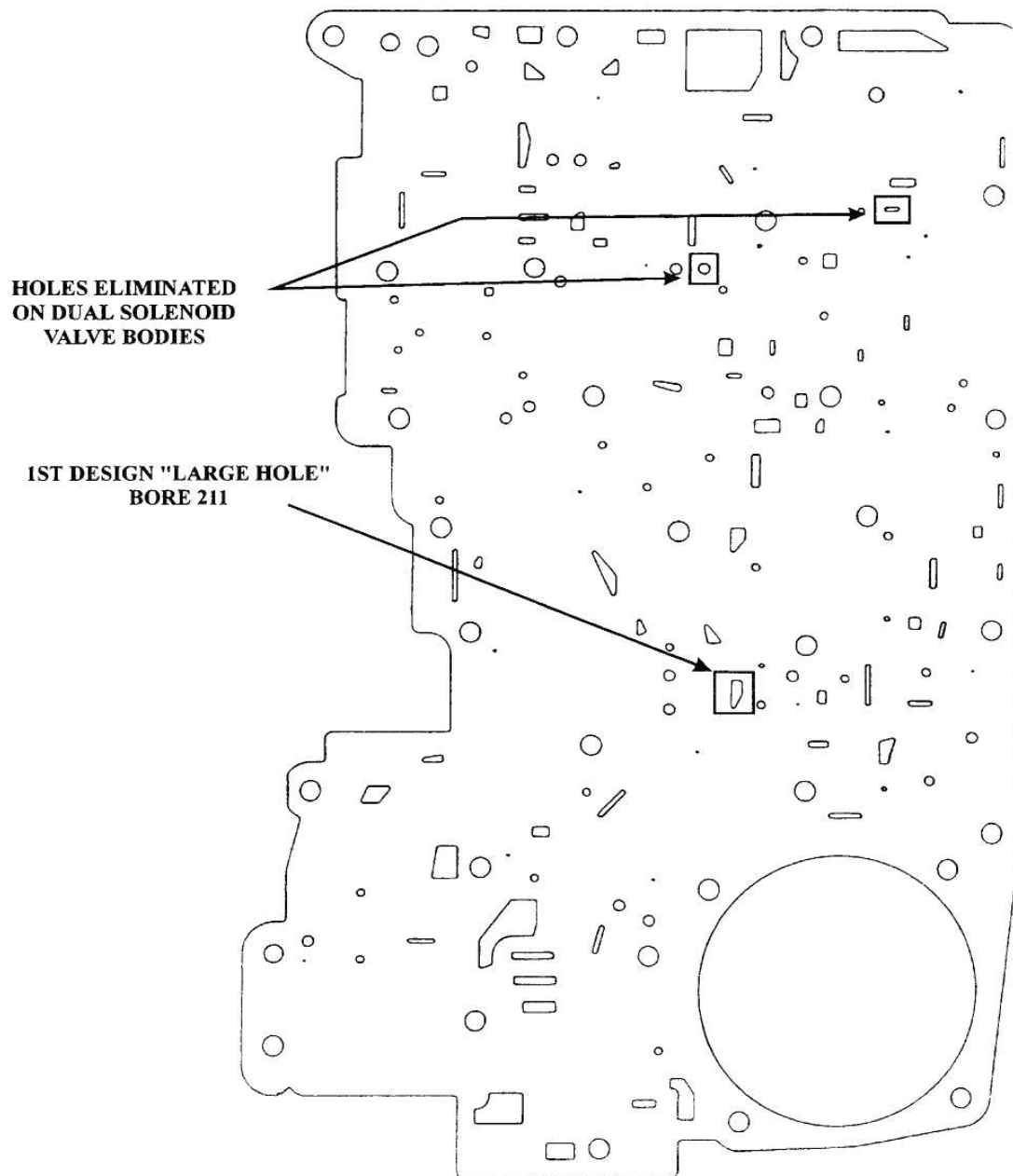


Figure 68

*AUTOMATIC TRANSMISSION SERVICE GROUP*



## Technical Service Information

### 2ND DESIGN BORE 211 (1-2 TRANSITION VALVE)

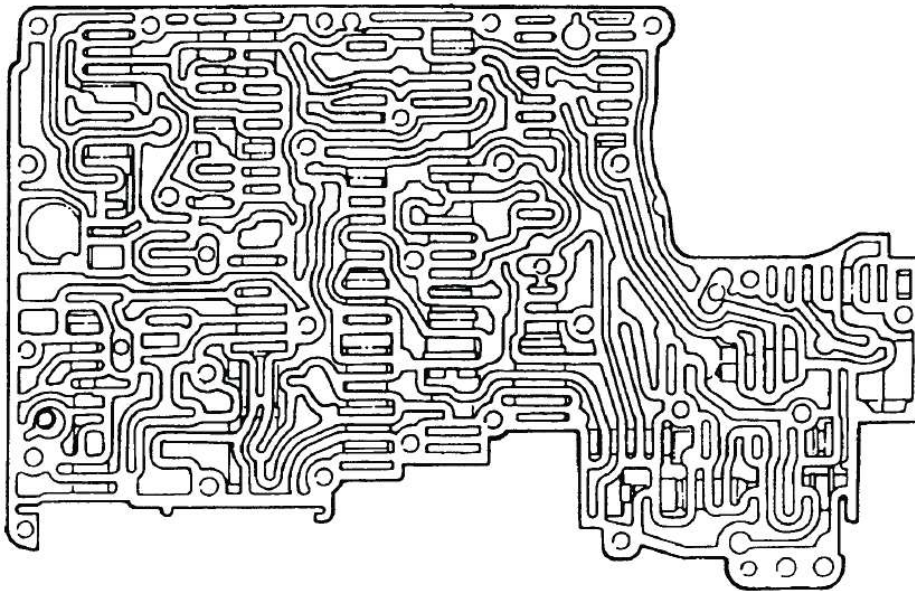
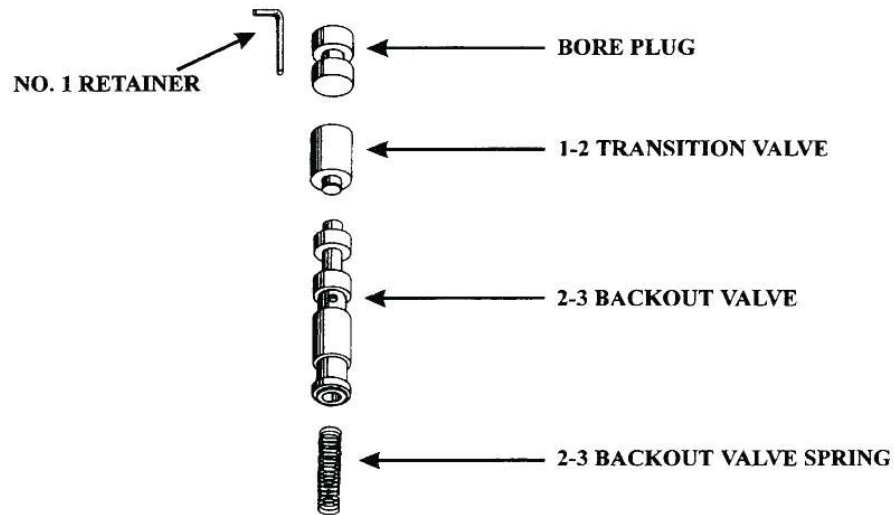


Figure 69

AUTOMATIC TRANSMISSION SERVICE GROUP





## Technical Service Information

### "SMALL HOLE" SPACER PLATE REQUIRED WITH 2ND DESIGN BORE 211 (1-2 TRANSITION VALVE)

2ND DESIGN "SMALL HOLE"  
BORE 211

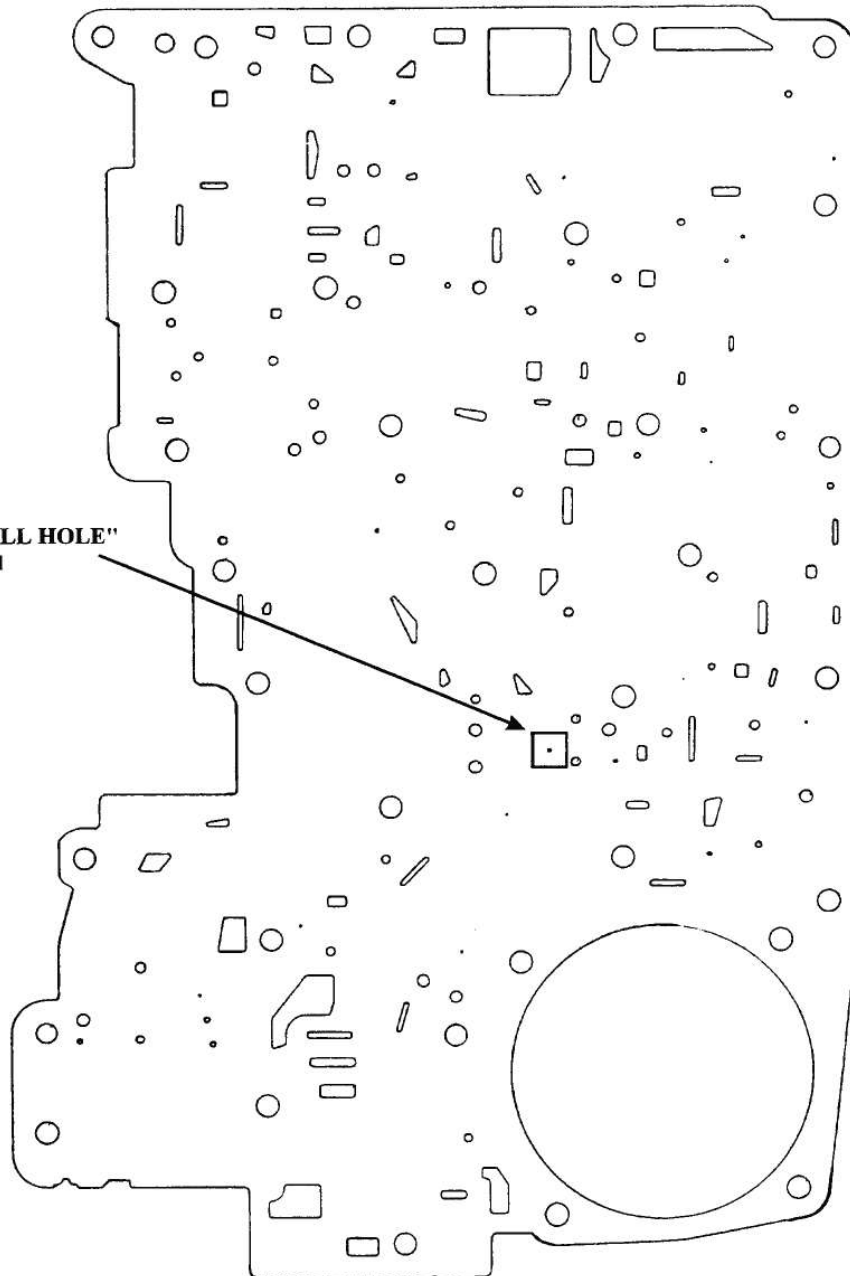


Figure 70

*AUTOMATIC TRANSMISSION SERVICE GROUP*



# Technical Service Information

## 1ST DESIGN BORE 207 "WITHOUT" REVERSE ENGAGEMENT CONTROL VALVE

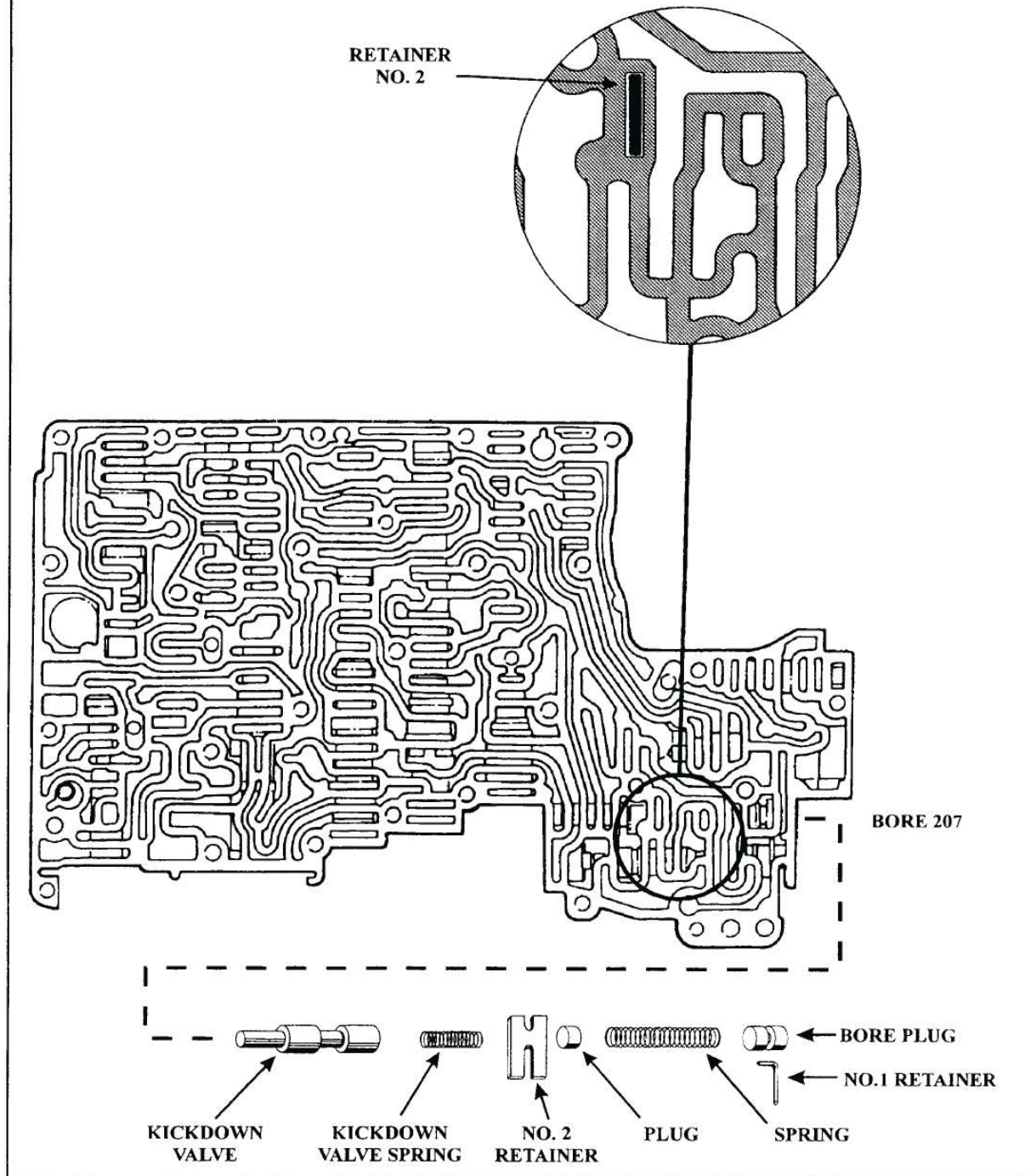


Figure 71

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

**"SLOT" IN SPACER PLATE  
REQUIRED WITH 1ST DESIGN BORE 207  
"WITHOUT" REVERSE ENGAGEMENT CONTROL VALVE**

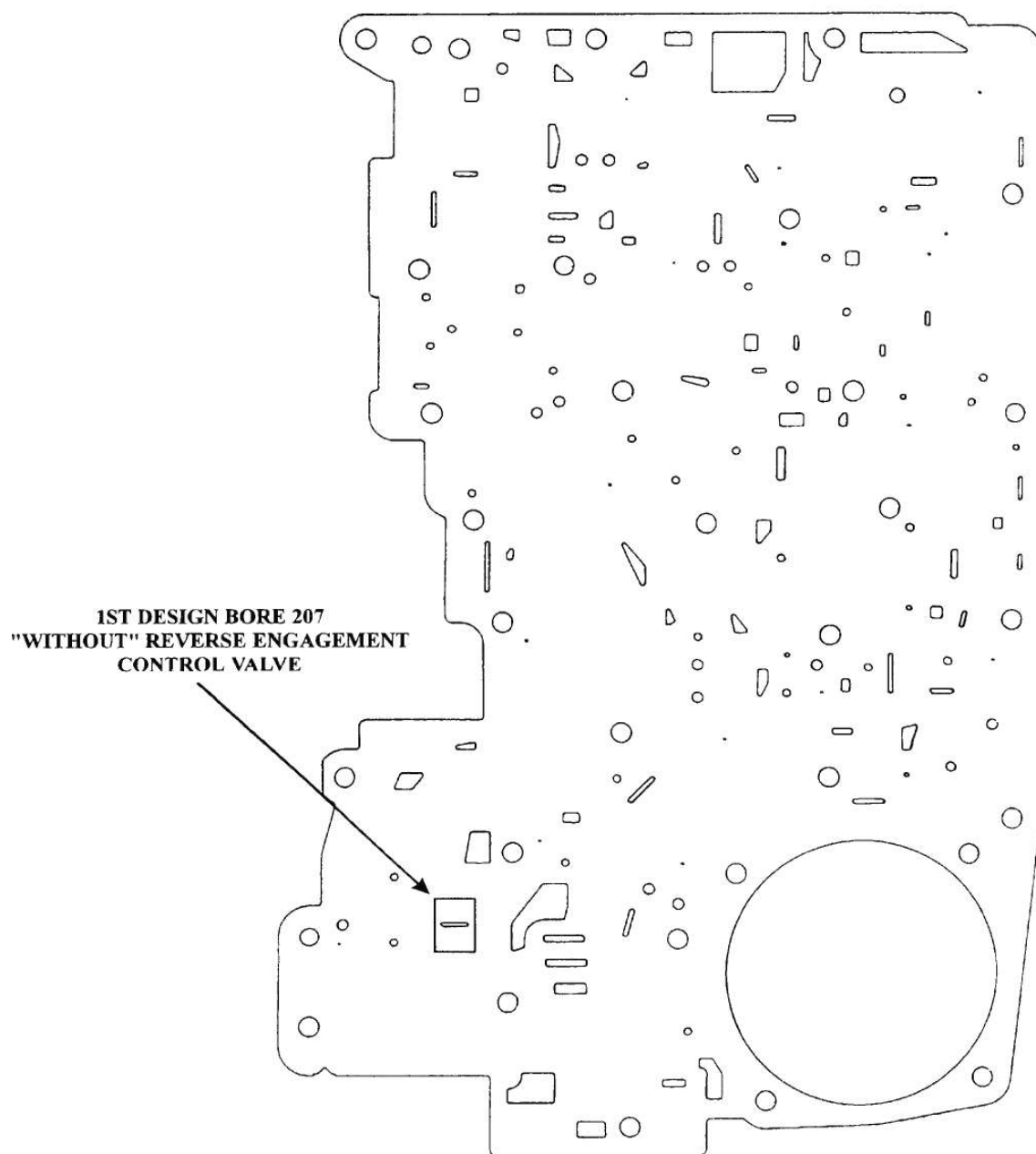


Figure 72

*AUTOMATIC TRANSMISSION SERVICE GROUP*





# Technical Service Information

## 2ND DESIGN BORE 207 "WITH" REVERSE ENGAGEMENT CONTROL VALVE

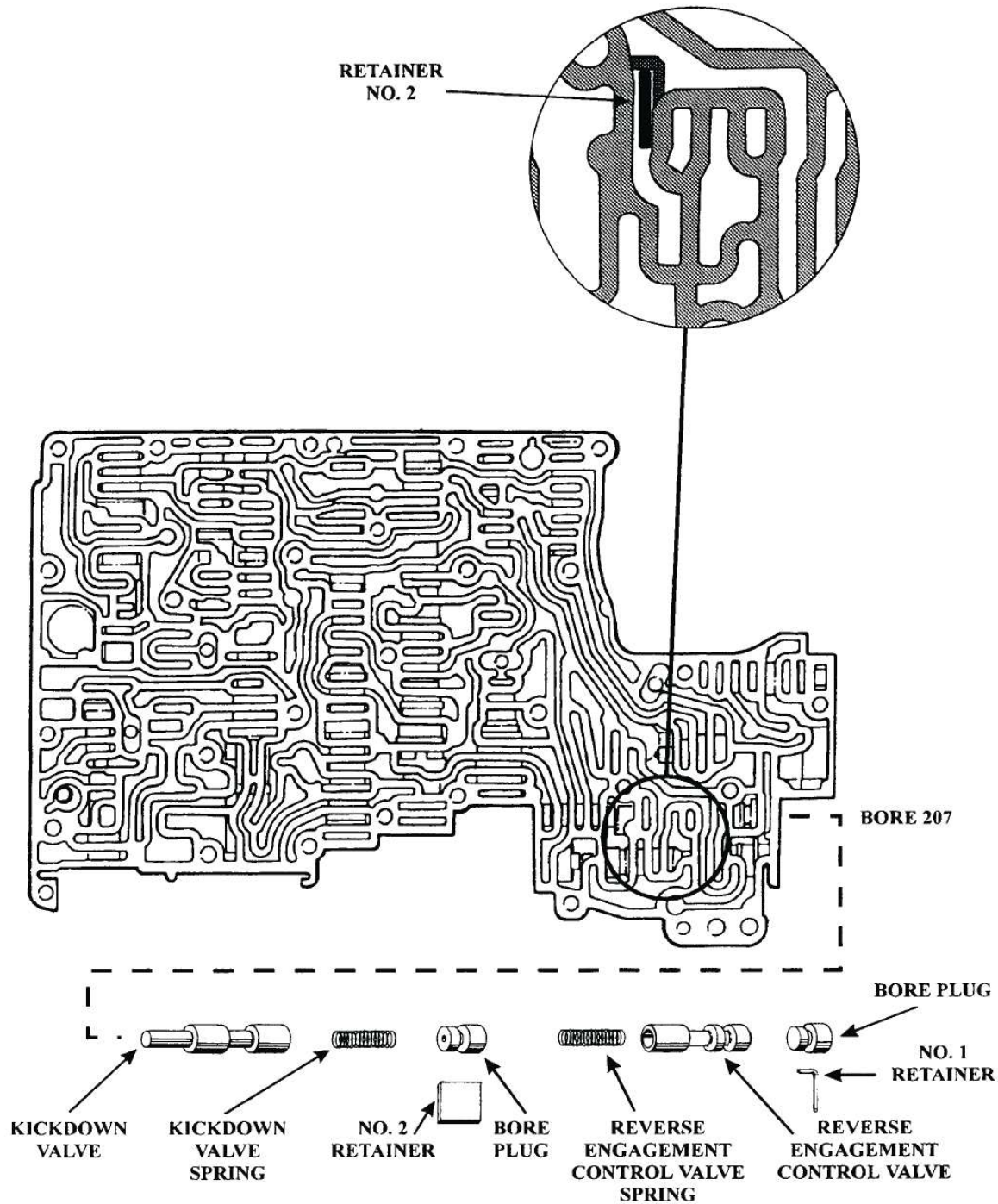


Figure 73

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

### "3 HOLE" SPACER PLATE REQUIRED WITH 2ND DESIGN BORE 207 "WITH" REVERSE ENGAGEMENT CONTROL VALVE

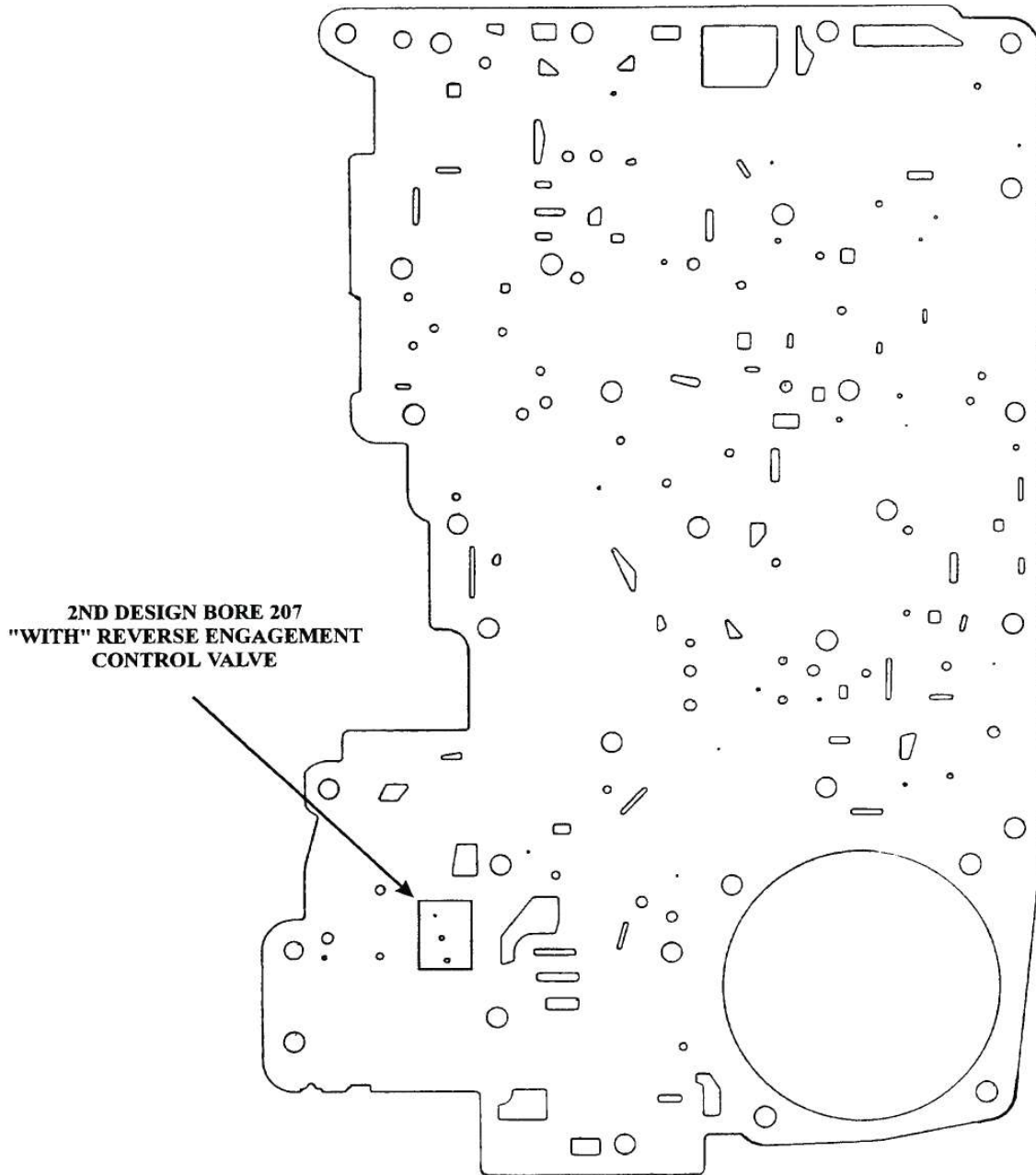


Figure 74

*AUTOMATIC TRANSMISSION SERVICE GROUP*  
77



## Technical Service Information

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### TIE UP IN THE PARK POSITION

**COMPLAINT:** After overhaul, your A4LD transmission exhibits a "Tie-Up" condition, when the selector lever is placed into the park position.

**CAUSE:** The cause may be, an improperly adjusted manual valve. The .075" puck supplied in some gasket sets & some valve body kits WILL NOT WORK ON ALL MODELS. On SOME valve bodies, using the "Puck" to adjust the manual valve, will allow the manual valve to move past the Park position and apply the forward clutch.

**CORRECTION:** Check the manual valve adjustment as follows:

- (1) Measure the link hole in the manual valve to ensure that it is .157" in diameter, and has not elongated due to wear. It is also recommended to use the latest manual valve, with the I.D. groove near the hole, OEM #E8TZ-7C389-A (See Figure 75).
- (2) With the valve body installed on the transmission, place the manual lever in the "D2" position.
- (3) With the selector in the "D2" position, the first land on the manual valve should be flush with the valve body casting, as shown in Figure 75. However .010" below flush to .020" above flush with the valve body casting is totally acceptable.
- (4) Bend the manual valve link as necessary to achieve the dimensions listed above.





## Technical Service Information

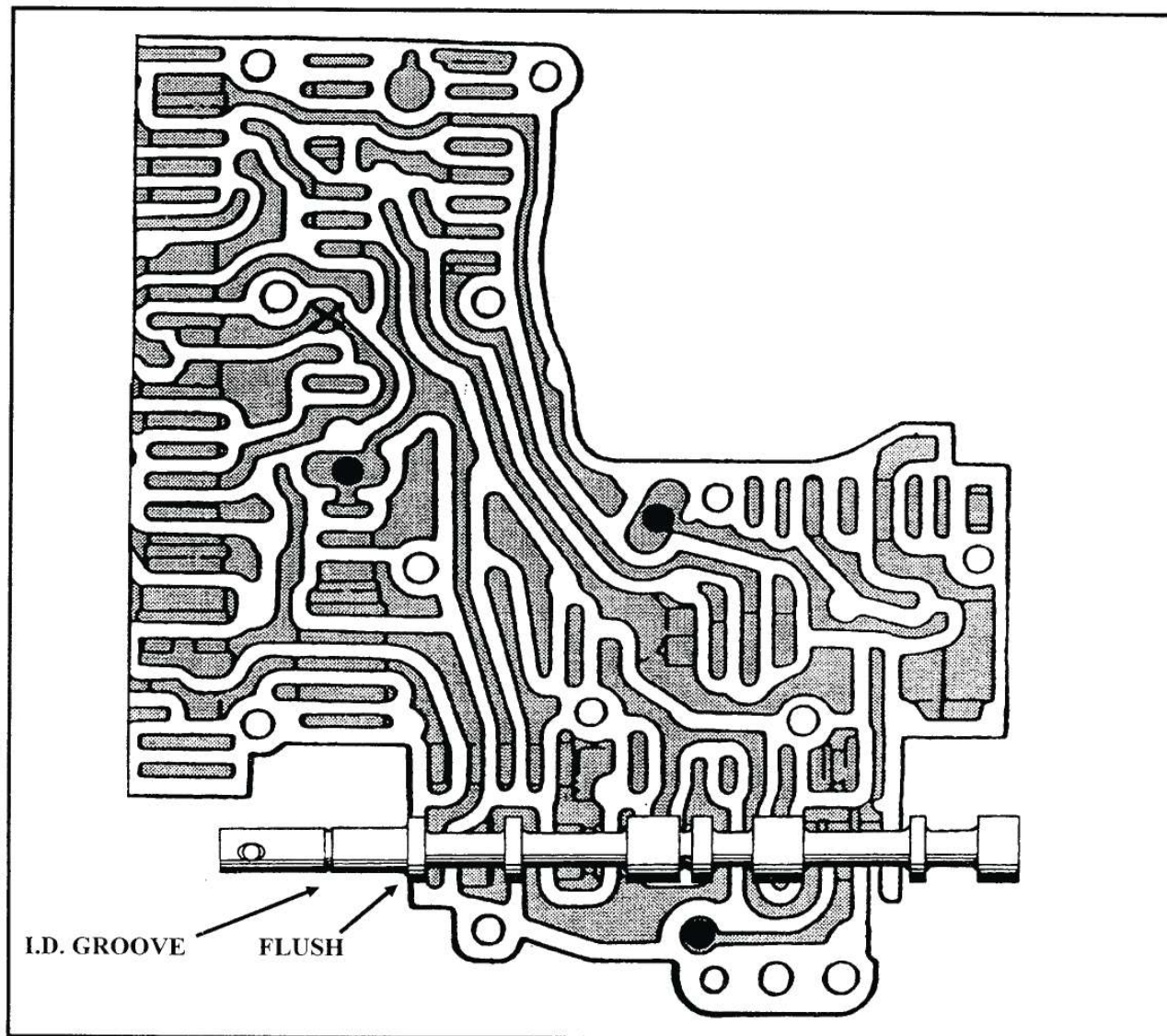


Figure 75

*AUTOMATIC TRANSMISSION SERVICE GROUP*



## Technical Service Information

### UPDATED MANUAL VALVE

**CHANGE:** In model year 1988 the manual valve was redesigned.

**REASON:** For improved direct clutch durability.

**PARTS AFFECTED:**

**MANUAL VALVE** - The 2nd design manual valve has a thinner land on it as shown in Figure 76, and is identified by a groove just behind the manual valve link hole.

**INTERCHANGEABILITY:**

The 2nd design manual valve will retro fit to all models and is highly recommended.

**SERVICE INFORMATION**

Manual Valve (2nd Design)..... E8TZ-7C389-A

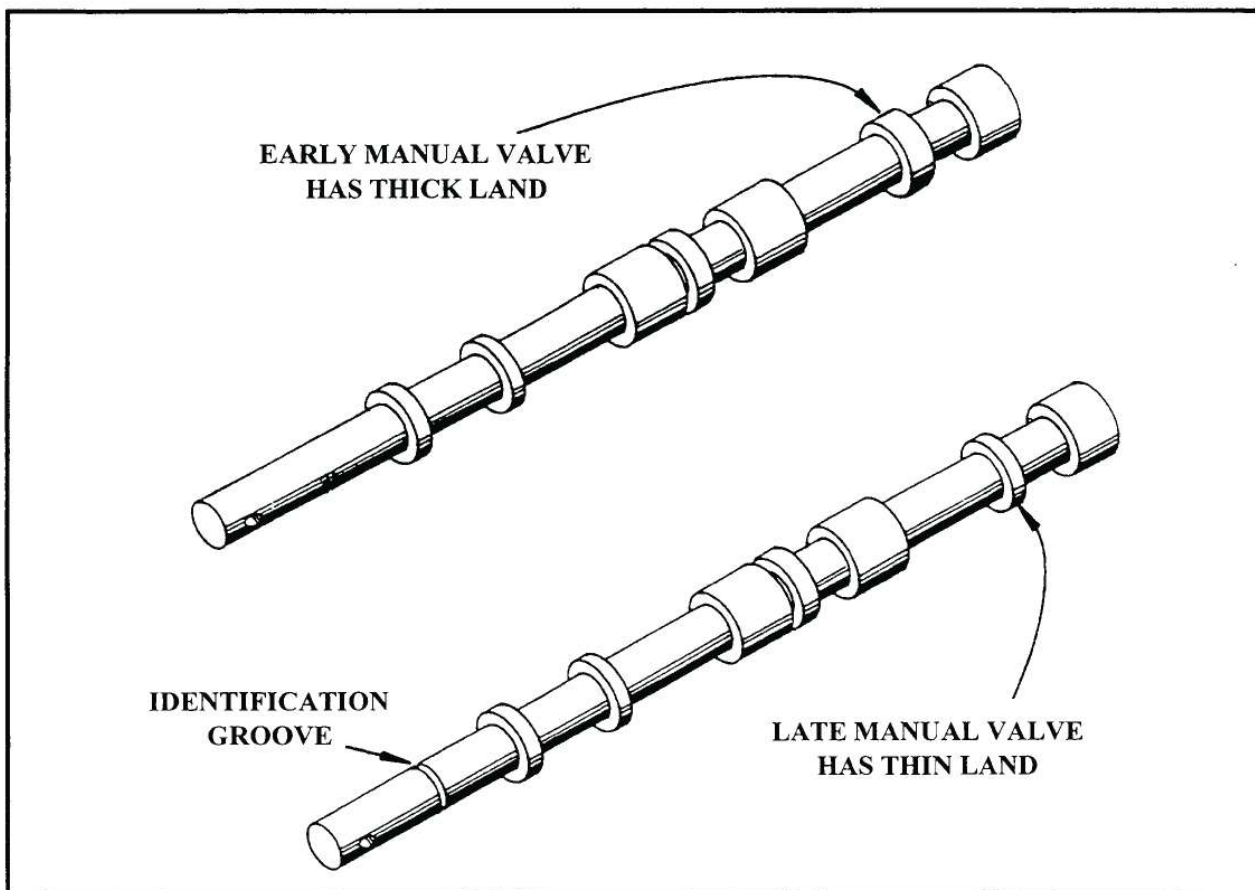


Figure 76

*AUTOMATIC TRANSMISSION SERVICE GROUP*



## Technical Service Information

### HARSH 2-3 BACKOUT UPSHIFT

**COMPLAINT:** Some 1990-92 transmissions may exhibit a harsh 2-3 backout upshift under certain conditions. This may be better described as being harsh when releasing the accelerator pedal during the 2-3 upshift. This condition is most evident when operating the vehicle at high altitudes.

**CAUSE:** This is caused by the incorrect calibration of the 2-3 backout valve spring in the valve body.

**CORRECTION:** A new 2-3 backout valve spring is available from Ford that has a revised calibration. It is light blue in color. See Figure 77 for proper bore identification and spring location.

**SERVICE INFORMATION:**

2-3 Backout Valve Spring..... F3TZ-7D230-B

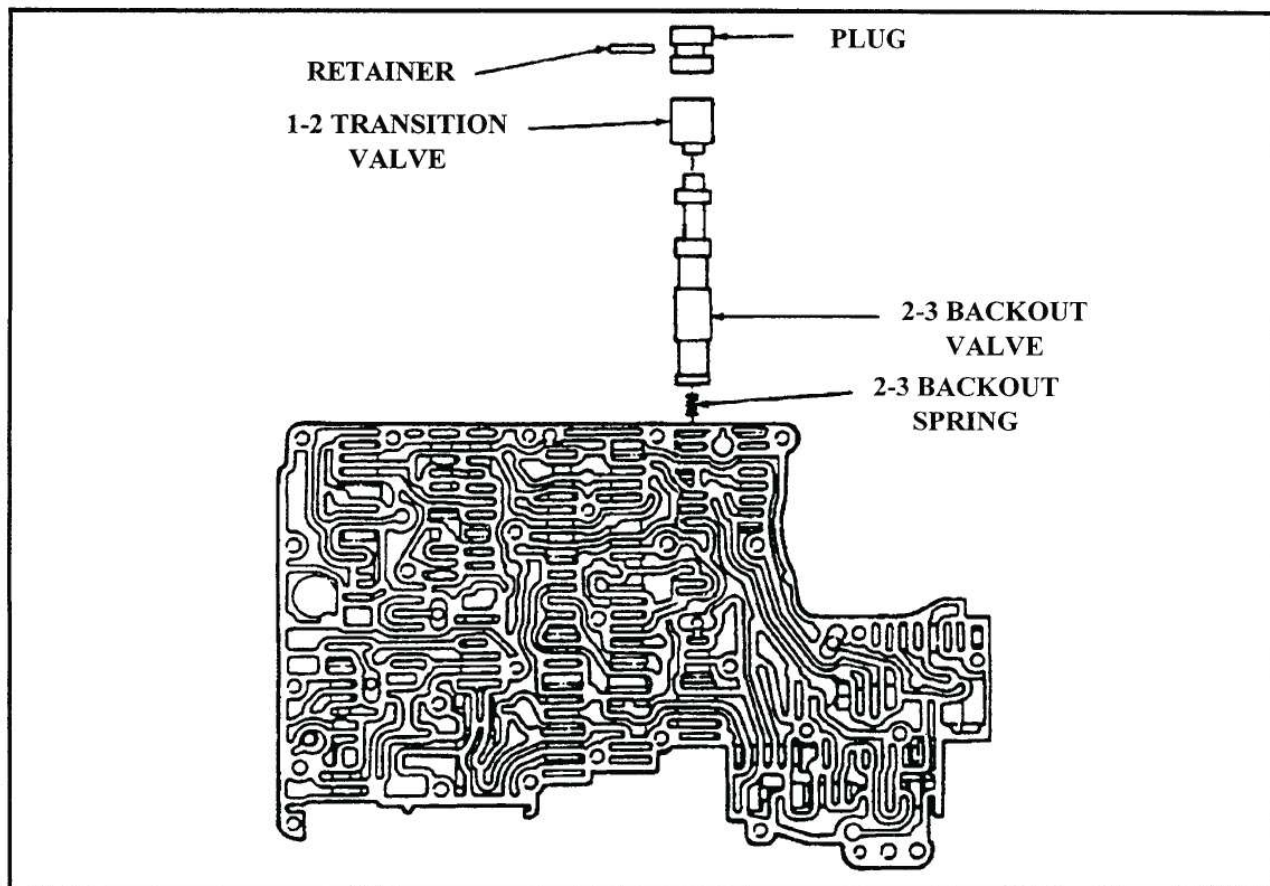


Figure 77

AUTOMATIC TRANSMISSION SERVICE GROUP





## Technical Service Information

### CONVERTER CLUTCH STAYS ON

**COMPLAINT:** Engine shudder during coastdown due to late disengagement of the torque converter clutch.

- CAUSE:**
- (1) The lock-up solenoid may not have been correctly bench checked during overhaul or when failure is suspected. This is due to confusion in printed material regarding air test procedures and ohms check procedures.
  - (2) The converter clutch shuttle spring is broken or collapsed
  - (3) The converter clutch TV modulator spring is not strong enough to shut off line pressure to the converter clutch shuttle valve during coastdown.

**CORRECTION:**

- (1) The proper air test procedure is shown in Figure 78. You must use no more than 70psi. when checking the lock-up solenoid or else the results will not be valid. Ohms check the solenoid across the two terminals. There should be 25 - 40 ohms of resistance across both terminals but no continuity to the solenoid body.
- (2) Remove the converter clutch shuttle valve and spring from the valve body. Inspect and replace as necessary, (See Figure 79). the converter clutch shuttle valve spring should be 1.10 inches in length and should weigh about 2 lbs. before coil bind.
- (3) Replace the converter clutch shift valve spring with a stronger spring. This spring weighs about 5 lbs. in single solenoid valve bodies, and about 2 lbs in double solenoid valve bodies. (See Figure 80). Increase the tension in double solenoid valve bodies by 2 - 2 1/2 lbs. to about 4 1/2 - 5 1/2 lbs. maximum total weight.

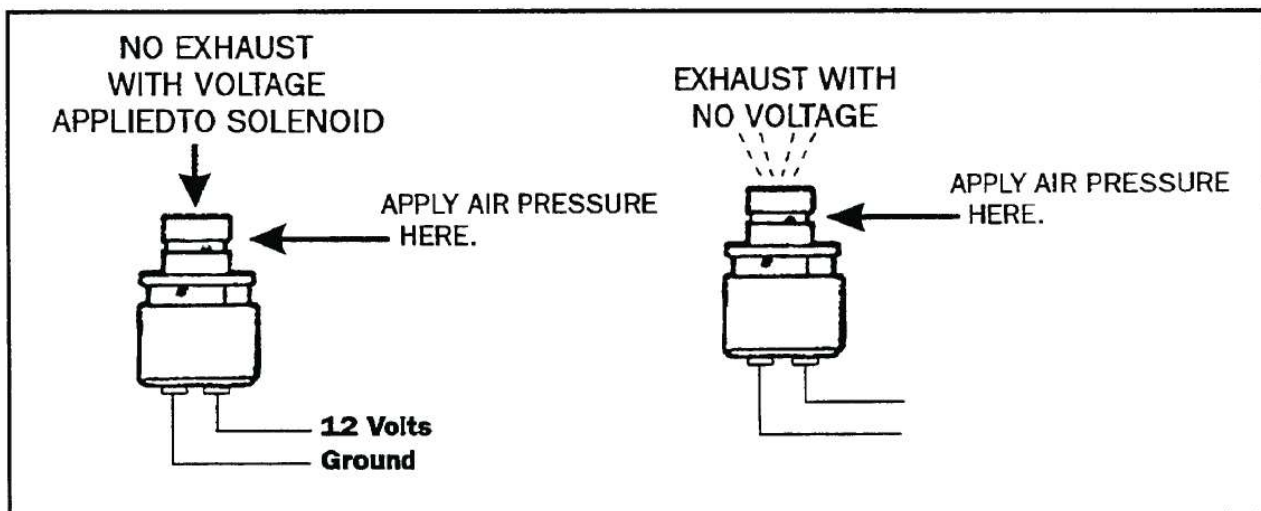


Figure 78

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

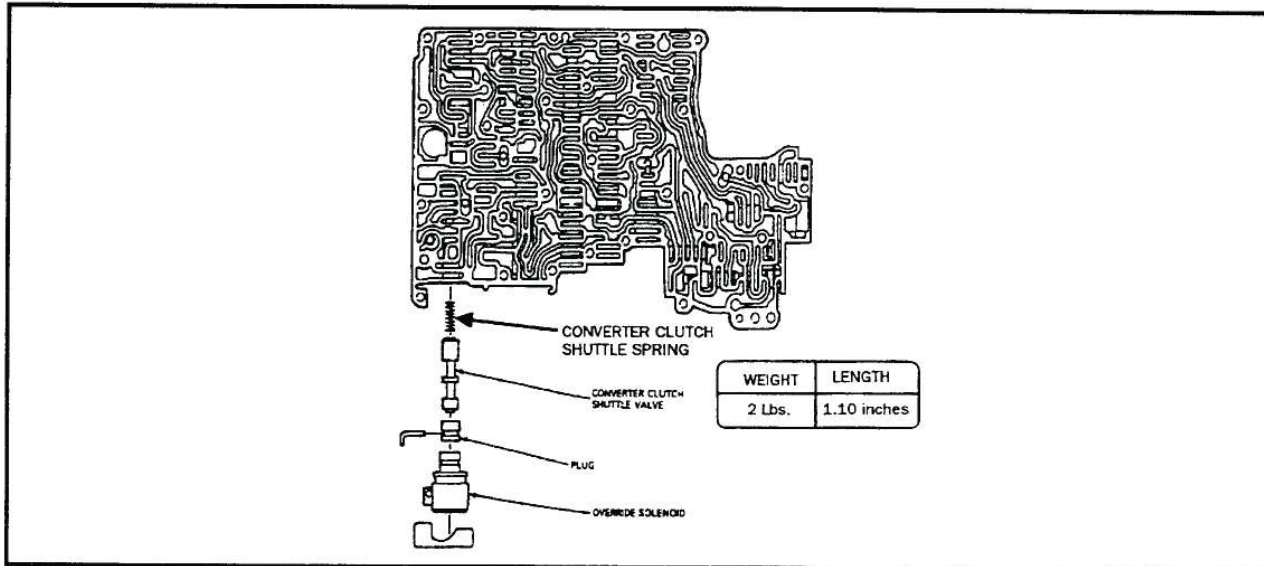


Figure 79

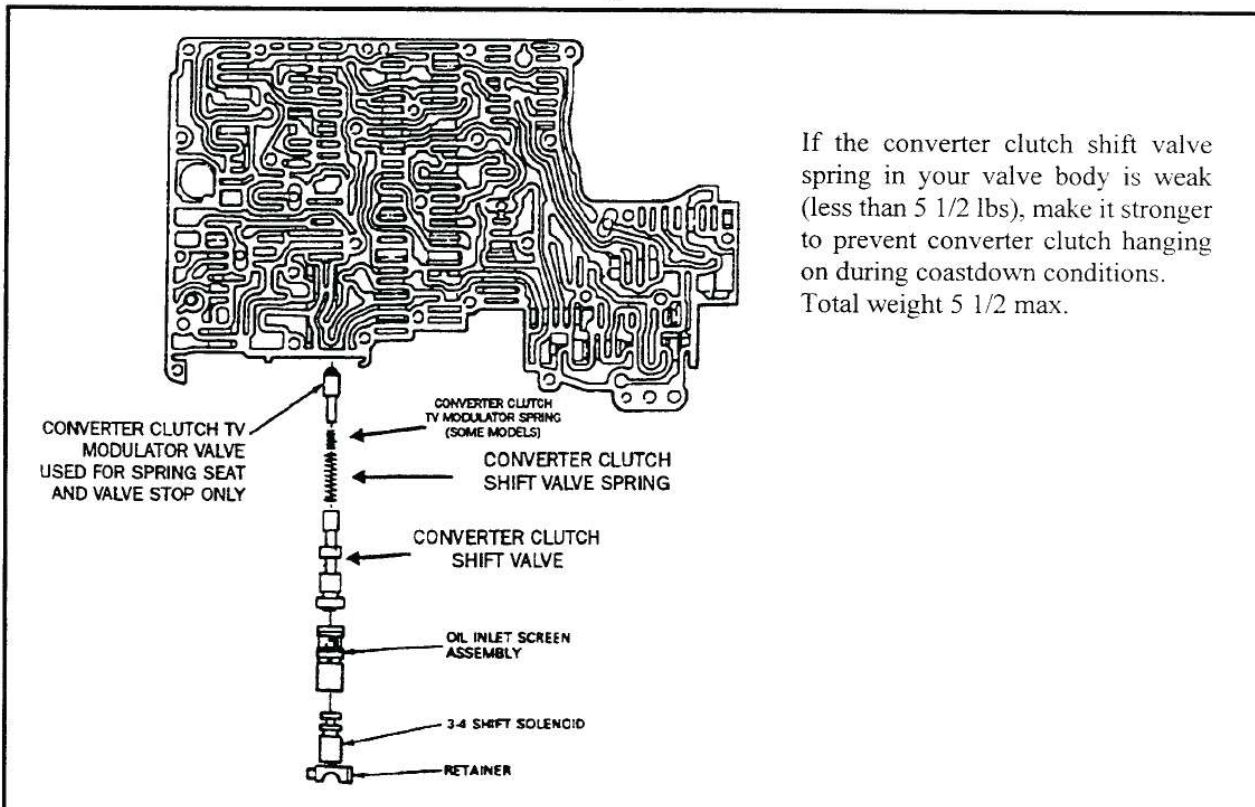


Figure 80

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

### ENGINE STALLS ON FORWARD OR REVERSE ENGAGEMENT

**COMPLAINT:** Engine stalls when the selector is placed into forward or reverse.

**CAUSE:** The cause may be a broken converter clutch shuttle valve spring.

**CORRECTION:** Replace the broken converter clutch shuttle valve spring with updated spring (See Figure 81).

**SERVICE INFORMATION:**

Shuttle Valve Spring.....E5TZ-7L490-A

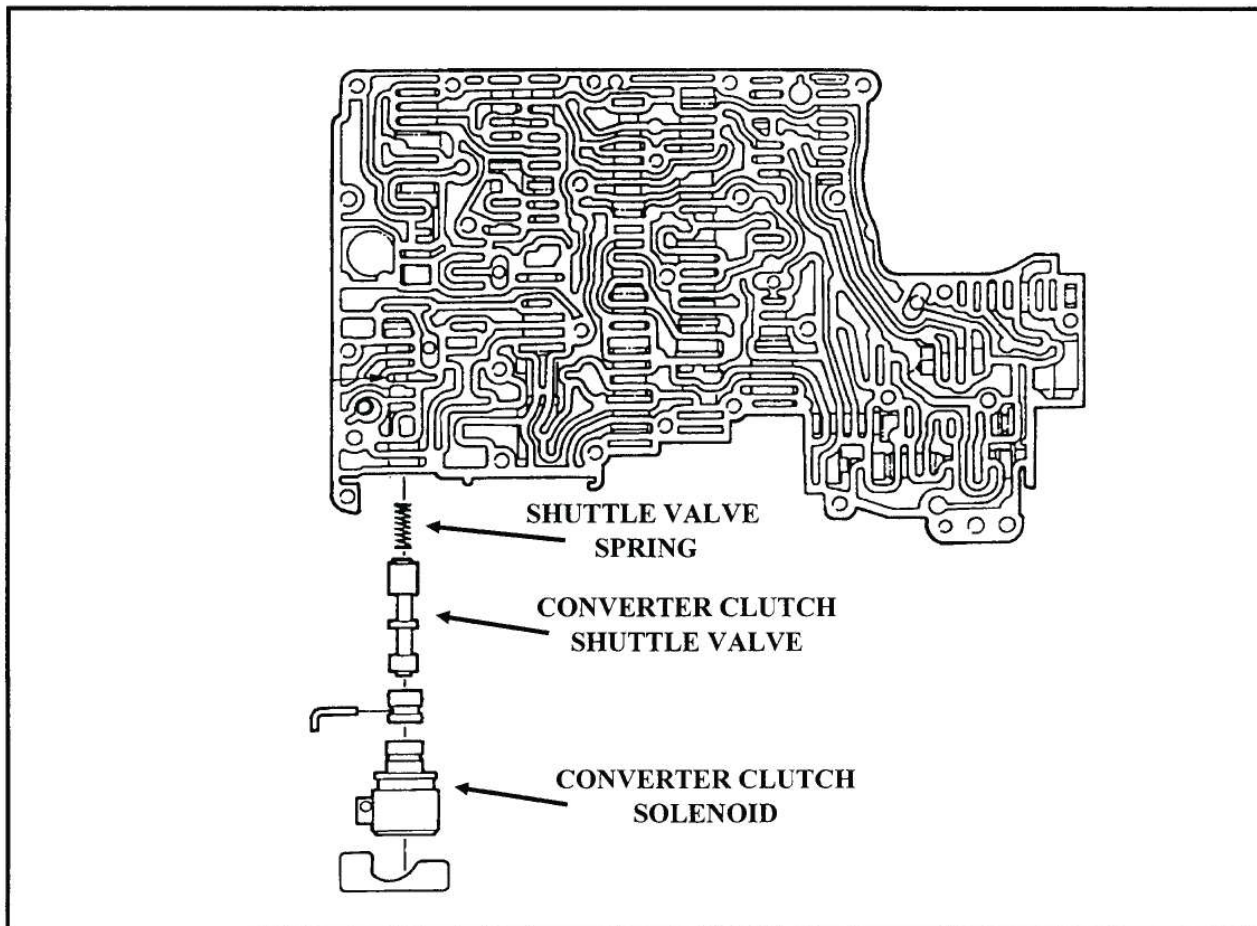


Figure 81





## Technical Service Information

### SENSITIVE 4-3 DOWNSHIFT (1985 MODELS ONLY)

**COMPLAINT:** Sensitive 4-3 downshift on 1985 models built between 05/85 thru 10/85.

**CAUSE:** The cause may be an incorrectly calibrated throttle pressure boost spring and 4-3 torque demand control valve spring (See Figure 82).

**CORRECTION:** Replace both the throttle pressure boost spring and 4-3 torque demand control valve spring

**SERVICE INFORMATION:**

Service Kit..... E5TZ-7E479-A

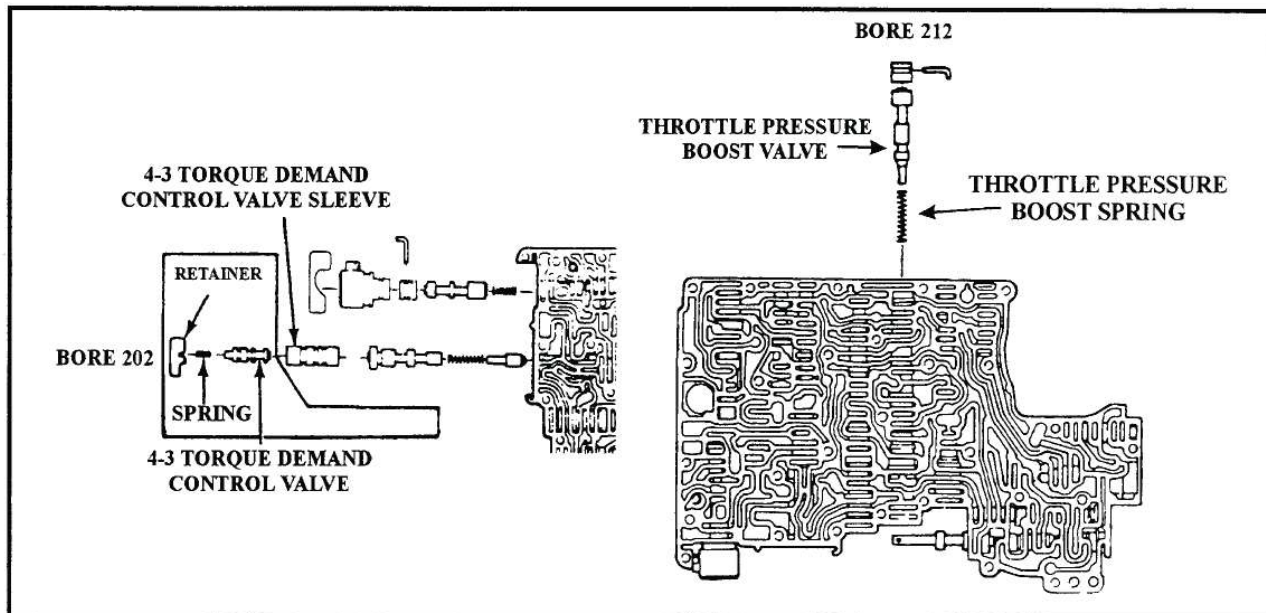


Figure 82

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

### FLARE ON 4-2 OR 3-2 KICKDOWN

**COMPLAINT:** Flare up on 4-2 or 3-2 kickdown, on models built 7/86 thru 10/86.

**CAUSE:** The cause may be a casting flaw with a mispositioned channel in bore # 214, which is the 3-2 kickdown timing valve bore.

**CORRECTION:** To compensate for the casting flaw, replace the 3-2 kickdown timing valve with an updated valve (See Figure 83).

**SERVICE INFORMATION:**

3-2 Kickdown Timing Valve.....E7TZ-7D045-A

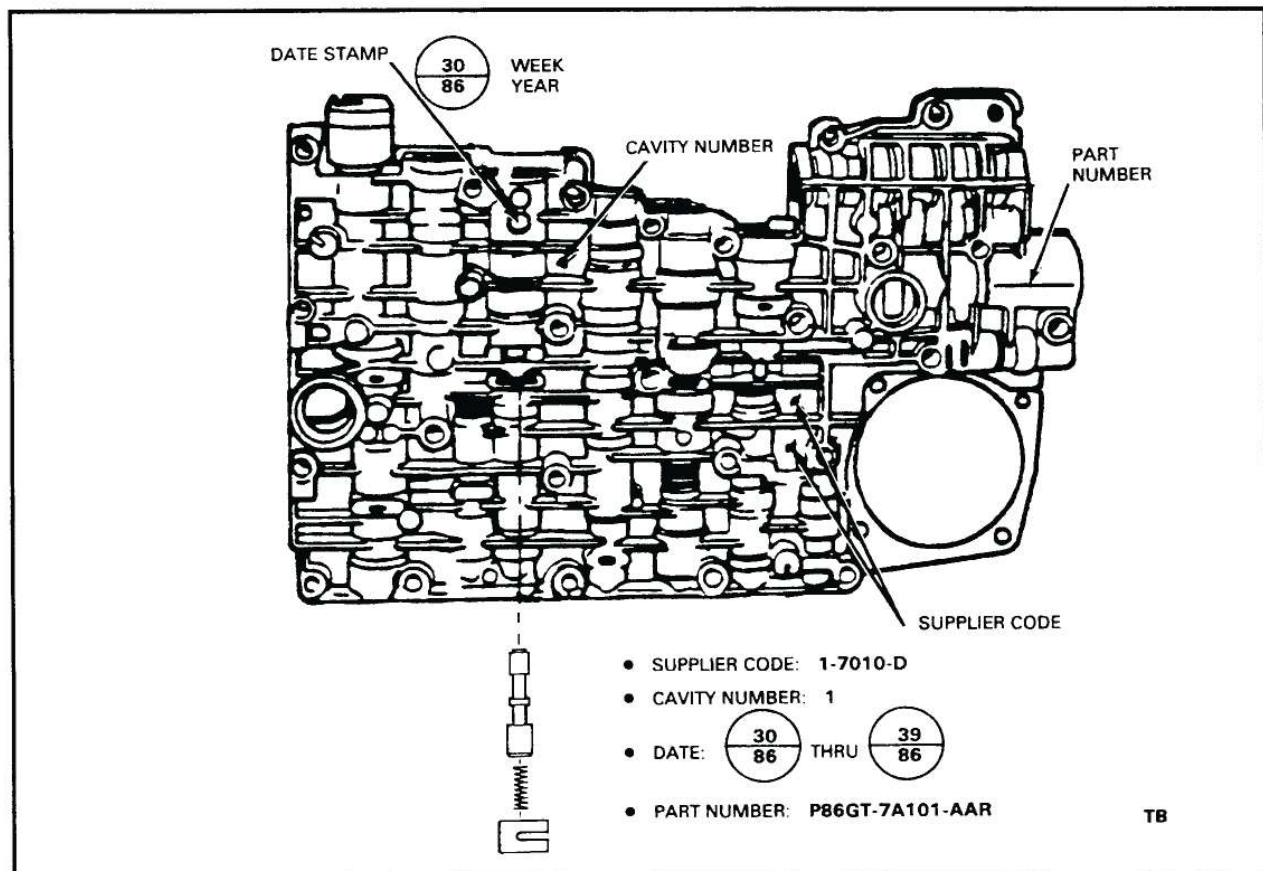


Figure 83

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

### DELAYED REVERSE ENGAGEMENT

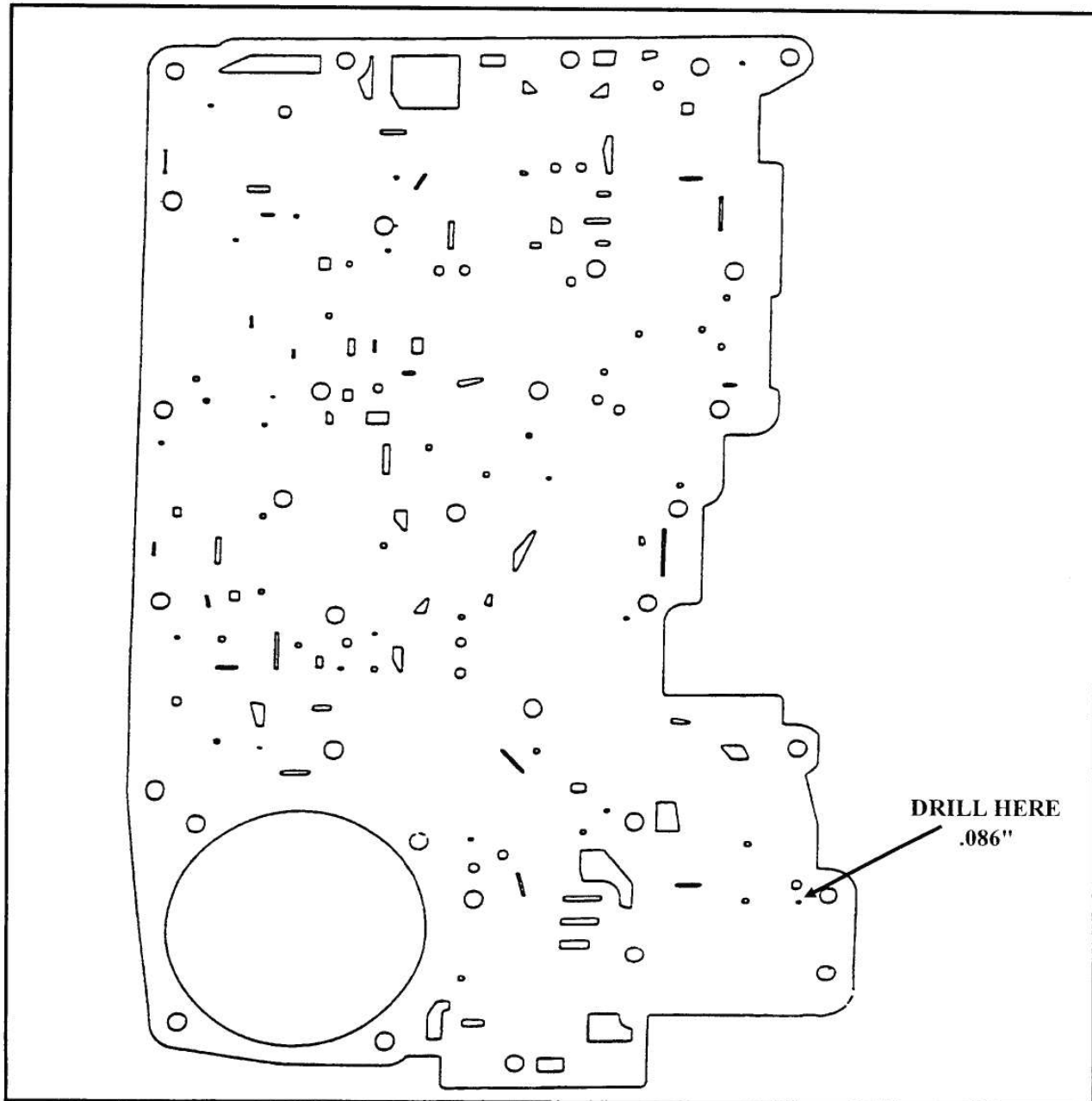


Figure 84

*AUTOMATIC TRANSMISSION SERVICE GROUP*



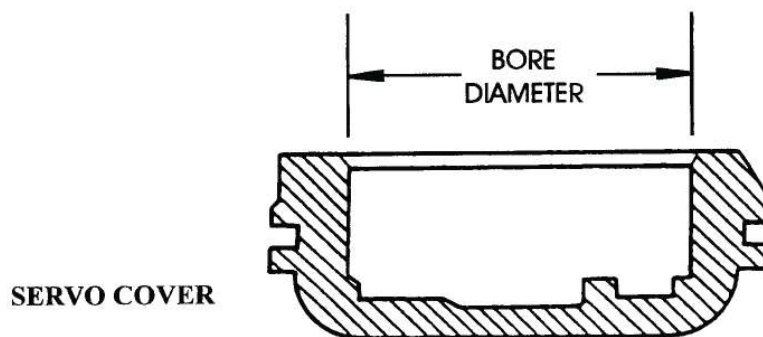


## Technical Service Information

### INTERMEDIATE SERVO PISTON CHART

| APPROXIMATE SERVO COVER BORE DIAMETER | ENGINEERING NUMBER CAST INTO SERVO PISTON | SERVO PISTON PART NUMBER |
|---------------------------------------|-------------------------------------------|--------------------------|
| 1.625" (41.275mm)                     | 90GT-7E221-F1A                            | FOTZ-7D021-B             |
| 1.695" (43.053mm)                     | 90GT-7E221-E1A                            | FOZZ-7D021-A             |
| 1.805" (45.847mm)                     | 83DT-7E221-C1A, C2B                       | E3ZZ-7D021-A             |
| 1.920" (48.768mm)                     | 78DT-7E221-B2A                            | D8DZ-7D021-A             |
|                                       |                                           |                          |

On the following pages, in Figures 85 thru 93, we have provided you with charts to identify transmission model, engine size, intermediate servo piston, return spring color, and the intermediate servo lever required.



### OVERDRIVE SERVO PISTON CHART

| APPROXIMATE SERVO COVER BORE DIAMETER | ENGINEERING NUMBER CAST INTO SERVO PISTON | SERVO PISTON PART NUMBER |
|---------------------------------------|-------------------------------------------|--------------------------|
| 2.075" (52.705mm)                     | 78DT-7E221-A2A                            | D4ZZ-7D021-A             |
|                                       |                                           |                          |
|                                       |                                           |                          |

Beginning on Page 93, in Figures 94 thru 102, we have provided you with charts to identify transmission model, engine size, overdrive servo piston, return spring color, and the overdrive servo lever required.



## Technical Service Information

### INTERMEDIATE BAND STRUT IDENTIFICATION

#### 1985 MODEL YEAR

| MODEL APPLICATION                     | ENGINE  | SERVO COVER   | PISTON & ROD ASSEMBLY | SERVO SPRING         | SERVO LEVER   | LEVER I.D. |
|---------------------------------------|---------|---------------|-----------------------|----------------------|---------------|------------|
| 85GT-ABA, ACA                         | 2.3L-1V | 84DT-7L439-CA | 83DT-7E221-C1A        | 80DT-7D028-AA (BLUE) | 74DT-7D396-GB | G          |
| 85GT-AEA, AGA<br>ALA, AMA, BAA<br>BCA | 2.3L-2V | 84DT-7L439-CA | 83DT-7E221-C1A        | 80DT-7D028-AA (BLUE) | 74DT-7D396-GB | G          |

Figure 85

#### 1986 MODEL YEAR

| MODEL APPLICATION                     | ENGINE               | SERVO COVER   | PISTON & ROD ASSEMBLY | SERVO SPRING           | SERVO LEVER   | LEVER I.D. |
|---------------------------------------|----------------------|---------------|-----------------------|------------------------|---------------|------------|
| 85GT-ACA<br>86GT-AAA<br>85GT-AMA, BCA | 2.3L(EFI)<br>2.8L-2V | 84DT-7L439-CB | 83DT-7E221-C1A        | 80DT-7D028-AA (BLUE)   | 74DT-7D396-GB | G          |
| 86GT-ABA, ACA<br>BAA, CAA, DAA<br>EAA | 2.9L(EFI)            | 84DT-7L439-BB | 78DT-7E221-B2A        | 74DT-7D028-AB (ORANGE) | 74DT-7D396-EB | E          |
| 86GT-KAA, LAA                         | 3.0L(EFI)            | 84DT-7L439-BB | 78DT-7E221-B2A        | 74DT-7D028-AB (ORANGE) | 74DT-7D396-EB | E          |

Figure 86

#### 1987 MODEL YEAR

| MODEL APPLICATION                               | ENGINE             | SERVO COVER   | PISTON & ROD ASSEMBLY | SERVO SPRING           | SERVO LEVER   | LEVER I.D. |
|-------------------------------------------------|--------------------|---------------|-----------------------|------------------------|---------------|------------|
| 87GT-ABA, CAA<br>CAB                            | 2.3L(EFI)          | 84DT-7L439-CB | 83DT-7E221-C1A        | 80DT-7D028-AA (BLUE)   | 74DT-7D396-GB | G          |
| 87GT-AAA, BAA                                   | 2.3L(EFI)<br>TURBO | 84DT-7L439-BB | 83DT-7E221-B2A        | 80DT-7D028-AA (BLUE)   | 74DT-7D396-EB | E          |
| 87GT-DAA, FAA<br>HAA, KAA, DAC<br>FAD, HAE, KAG | 2.9L(EFI)          | 84GT-7L439-BB | 78DT-7E221-B2A        | 74DT-7D028-AB (ORANGE) | 74DT-7D396-EB | E          |
| 87GT-MAA, NAA                                   | 3.0L(EFI)          | 84GT-7L439-BB | 78DT-7E221-B2A        | 74DF-7D028-AB (ORANGE) | 74DT-7D396-EB | E          |

Figure 87

*AUTOMATIC TRANSMISSION SERVICE GROUP*



## Technical Service Information

### INTERMEDIATE BAND STRUT IDENTIFICATION

#### 1988 MODEL YEAR

| MODEL APPLICATION                          | ENGINE                 | SERVO COVER   | PISTON & ROD ASSEMBLY | SERVO SPRING              | SERVO LEVER   | LEVER I.D. |
|--------------------------------------------|------------------------|---------------|-----------------------|---------------------------|---------------|------------|
| 88GT-GAA, KAA                              | 2.3L(EFI)<br>TURBO     | 84DT-7L439-BB | 78DT-7E221-B2A        | 80DT-7D028-AA<br>(BLUE)   | 74DT-7D396-EB | E          |
| 88GT-ABB, HAA<br>NAA                       | 2.3L(EFI)              | 84DT-7L439-CB | 83DT-7E221-C1A        | 80DT-7D028-AA<br>(BLUE)   | 74DT-7D396-GB | G          |
| 88GT-BAA, CAA<br>DAA, EAA<br>88GT-LAA, MAA | 2.9L(EFI)<br>3.0L(EFI) | 84GT-7L439-BB | 78DT-7E221-B2A        | 74DT-7D028-AB<br>(ORANGE) | 74DT-7D396-EB | E          |

Figure 88

#### 1989 MODEL YEAR

| MODEL APPLICATION                          | ENGINE                 | SERVO COVER   | PISTON & ROD ASSEMBLY | SERVO SPRING              | SERVO LEVER   | LEVER I.D. |
|--------------------------------------------|------------------------|---------------|-----------------------|---------------------------|---------------|------------|
| 89GT-RAA, SAA                              | 2.3L(EFI)              | 84DT-7L439-CB | 83DT-7E221-C1A        | 84GT-7D028-AA<br>(YELLOW) | 74DT-7D396-GB | G          |
| 89GT-AAB, BBB                              | 2.3L(EFI)              | 84DT-7L439-CB | 83DT-7E221-C1A        | 74DT-7D028-AB<br>(ORANGE) | 74DT-7D396-GB | G          |
| 89GT-AAA, BAA<br>CAA, DAA<br>89GT-EAA, GAA | 2.9L(EFI)<br>3.0L(EFI) | 84DT-7L439-BB | 83DT-7E221-B1A        | 74DT-7D028-AB<br>(ORANGE) | 74DT-7D396-EB | E          |

Figure 89

*AUTOMATIC TRANSMISSION SERVICE GROUP*





## Technical Service Information

### INTERMEDIATE BAND STRUT IDENTIFICATION

#### 1990 MODEL YEAR

| MODEL APPLICATION                 | ENGINE     | SERVO COVER | PISTON & ROD ASSEMBLY | SERVO SPRING     | SERVO LEVER | LEVER I.D. |
|-----------------------------------|------------|-------------|-----------------------|------------------|-------------|------------|
| 90GT-TAA, TBA                     | 2.3L-(EFI) | 90GT-EB     | 90GT-E1A              | 83DT-AA (GREEN)  | 84GT-EB     | E          |
| 90GT-TCA                          | 2.3L-(EFI) | 90GT-FB     | 90GT-F1A              | 80DT-AA (BLUE)   | 90GT-DB     | D          |
| 90GT-GAA, GBA, GCA                | 2.3L-(EFI) | 90GT-FB     | 90GT-F1A              | 84DT-AA (YELLOW) | 90GT-DB     | D          |
| 90GT-KAA, LAA, LCA, MAA, NAA      | 2.9L-(EFI) | 90GT-DB     | 90GT-D1A              | 74DT-AB (ORANGE) | 84GT-AB     | A          |
| 90GT-RAA, SAA RBA, SBA            | 3.0L-(EFI) | 90GT-FB     | 90GT-F1A              | 83DT-AA (GREEN)  | 84GT-AB     | A          |
| 90GT-EAA, FAA, CAA, EBA, FBA, DAA | 4.0L-(EFI) | 84DT-BB     | 83GT-B1A              | 74DT-AB (ORANGE) | 84GT-AB     | A          |
| 90GT-ADA, ADD AAA,AEA,AEE,BAA     | 4.0L-(EFI) | 84DT-BB     | 83GT-B1A              | 74DT-AB (ORANGE) | 84GT-AB     | A          |

Figure 90

#### 1991 MODEL YEAR

| MODEL APPLICATION                                          | ENGINE     | SERVO COVER | PISTON & ROD ASSEMBLY | SERVO SPRING     | SERVO LEVER | LEVER I.D. |
|------------------------------------------------------------|------------|-------------|-----------------------|------------------|-------------|------------|
| 91GT-MUA, MUB                                              | 2.3L-(EFI) | 90GT-FB     | 90GT-F1A              | 80DT-AA (BLUE)   | 80GT-DB     | D          |
| 91GT-TPA, TPB                                              | 2.3L-(EFI) | 90GT-FB     | 90GT-F1A              | 84GT-AA (YELLOW) | 90GT-DB     | D          |
| 91GT-RAA, RBA                                              | 2.9L-(EFI) | 90GT-DB     | 90GT-D1A              | 74DT-AB (ORANGE) | 84GT-AB     | A          |
| 91GT-AEA, AEB, AEC, AED, RCA, RDA                          | 2.9L-(EFI) | 90GT-FB     | 90GT-F1A              | 83DT-AA (GREEN)  | 84GT-AB     | A          |
| 91GT-GAA,HAA, KAA,LAA,MAA,NAA SAA, SBA, SCA, SDA, SEA, SFA | 4.0L-(EFI) | 84DT-BB     | 83DT-B1A              | 74DT-AB (ORANGE) | 84GT-AB     | A          |
| 91GT-AAA, BAA, DAA, EAA                                    | 4.0L-(EFI) | 84DT-BB     | 83DT-B1A              | 84GT-AA (YELLOW) | 84GT-AB     | A          |

Figure 91

*AUTOMATIC TRANSMISSION SERVICE GROUP*



## Technical Service Information

### INTERMEDIATE BAND STRUT IDENTIFICATION

#### 1992 MODEL YEAR

| MODEL APPLICATION                                               | ENGINE     | SERVO COVER | PISTON & ROD ASSEMBLY | SERVO SPRING     | SERVO LEVER | LEVER I.D. |
|-----------------------------------------------------------------|------------|-------------|-----------------------|------------------|-------------|------------|
| 91GT-MUA, MUB                                                   | 2.3L-(EFI) | 90GT-FB     | 90GT-F1A              | 80DT-AA (BLUE)   | 80GT-DB     | D          |
| 92GT-BDB, BGB                                                   | 2.3L-(EFI) | 90GT-FB     | 90GT-F1A              | 80DT-AA (BLUE)   | 90GT-DB     | D          |
| 91GT-RAA, RBA                                                   | 2.9L-(EFI) | 90GT-DB     | 90GT-D1A              | 74DT-AB (ORANGE) | 84GT-AB     | A          |
| 92GT-ABA, ACA, ADA, AEA, AFA, AGA                               | 3.0L-(EFI) | 90GT-FB     | 90GT-F1A              | 83DT-AA (GREEN)  | 84GT-AB     | A          |
| 92GT-DBA, DCA, DDA, DEA, AHA, AKA, ALA, AMA, ANA, ARA, ASA, ATA | 4.0L-(EFI) | 84DT-BB     | 83DT-B1A              | 74DT-AB (ORANGE) | 84GT-AB     | A          |
| 92GT-CBA, CDA, CEA, CFA                                         | 4.0L-(EFI) | 84DT-BB     | 83DT-B1A              | 84GT-AA (YELLOW) | 84GT-AB     | A          |

Figure 92

#### 1993 MODEL YEAR

| MODEL APPLICATION                                                                   | ENGINE     | SERVO COVER | PISTON & ROD ASSEMBLY | SERVO SPRING       | SERVO LEVER | LEVER I.D. |
|-------------------------------------------------------------------------------------|------------|-------------|-----------------------|--------------------|-------------|------------|
| 93GT-RBA, SBA                                                                       | 2.3L-(EFI) | 90GT-FB     | 90GT-F1A              | 80DT-AA (BLUE)     | 80GT-DB     | D          |
| 93GT-AAA, BAA                                                                       | 2.3L-(EFI) | 90GT-EB     | 90GT-E1A              | 84GT-AA (YELLOW)   | 90GT-EB     | D          |
| 93GT-CAA, DAA, TAA, UAA, FBA, GBA                                                   | 3.0L-(EFI) | 90GT-FB     | 90GT-F1A              | 83DT-AA (GREEN)    | 84GT-AB     | A          |
| 93GT-EAA, FAA                                                                       | 3.0L-(EFI) | 90GT-DB     | 90GT-D1A              | 74DT-AB (ORANGE)   | 84GT-AB     | A          |
| 93GT-BBA, CBA, HBA, KBA, DBA, EBA, MBA, NBA, GAA, HAA, MAA, NAA, RAA, SAA, KAA, LAA | 4.0L-(EFI) | 84DT-BB     | 78DT-B2A              | 74DT-AB (ORANGE)   | 84GT-AB     | A          |
| 93GT-LBA, SBB                                                                       | 4.0L-(EFI) | 84DT-BB     | 78DT-B2A              | 90GT-AA (LT. BLUE) | 84GT-AB     | A          |

Figure 93

*AUTOMATIC TRANSMISSION SERVICE GROUP*



## Technical Service Information

### OVERDRIVE BAND STRUT IDENTIFICATION

#### 1985 MODEL YEAR

| MODEL APPLICATION                 | ENGINE  | SERVO COVER   | PISTON & ROD ASSEMBLY | SERVO SPRING         | SERVO LEVER   | LEVER I.D. |
|-----------------------------------|---------|---------------|-----------------------|----------------------|---------------|------------|
| 85GT-ABA, ACA                     | 2.3L-1V | 84DT-7D027-AA | 78DT-7E221-A2A        | 80DT-7D028-AA (BLUE) | 84GT-7D396-GA | G          |
| 85GT-AEA, AGA, ALA, AMA, BAA, BCA | 2.8L-2V | 84DT-7D027-AA | 78DT-7E221-A2A        | 80DT-7D028-AA (BLUE) | 84GT-7D396-GA | G          |

Figure 94

#### 1986 MODEL YEAR

| MODEL APPLICATION                  | ENGINE     | SERVO COVER   | PISTON & ROD ASSEMBLY | SERVO SPRING          | SERVO LEVER   | LEVER I.D. |
|------------------------------------|------------|---------------|-----------------------|-----------------------|---------------|------------|
| 85GT- ACA, 86GT- AAA               | 2.3L-(EFI) | 84DT-7L439-AB | 74DT-7E221-A2A        | 80DT-7D028-AA (BLUE)  | 84GT-7D396-GA | G          |
| 85GT- AMA, BCA                     | 2.8L-2V    |               |                       | 80DT-7D028-AA (BLUE)  | 84GT-7D396-GA | E          |
| 86GT- ABA, ACA, BAA, CAA, DAA, EAA | 2.9L-(EFI) | 84DT-7L439-AB | 78DT-7E221-A2A        | 83DT-7D028-AA (GREEN) | 84GT-7D396-EA | E          |
| 86GT- KAA, LAA                     | 3.0L-(EFI) | 84DT-7L439-AB | 78DT-7E221-A2A        | 83DT-7D028-AA (GREEN) | 84GT-7D396-EA | E          |

Figure 95

#### 1987 MODEL YEAR

| MODEL APPLICATION                            | ENGINE       | SERVO COVER   | PISTON & ROD ASSEMBLY | SERVO SPRING          | SERVO LEVER   | LEVER I.D. |
|----------------------------------------------|--------------|---------------|-----------------------|-----------------------|---------------|------------|
| 87GT- ABA, CAA, CAB                          | 2.3L-(EFI)   | 84DT-7L439-AB | 78DT-7E221-A2A        | 80DT-7D028-AA (BLUE)  | 84GT-7D396-GA | G          |
| 87GT- AAA, BAA                               | 2.3L-(TURBO) | 84DT-7L439-AB | 78DT-7E221-A2A        | 80DT-7D028-AA (BLUE)  | 84GT-7D396-GA | E          |
| 87GT- DAA, FAA, HAA, KAA, DAC, FAD, HAE, KAG | 2.9L-(EFI)   | 84DT-7L439-AB | 78DT-7E221-A2A        | 83DT-7D028-AA (GREEN) | 84GT-7D396-EA | E          |
| 87GT- MAA, NAA                               | 3.0L-(EFI)   | 84DT-7L439-AB | 78DT-7E221-A2A        | 83DT-7D028-AA (GREEN) | 84GT-7D396-EA | E          |

Figure 96

*AUTOMATIC TRANSMISSION SERVICE GROUP*





## Technical Service Information

### OVERDRIVE BAND STRUT IDENTIFICATION

#### 1988 MODEL YEAR

| MODEL APPLICATION       | ENGINE             | SERVO COVER   | PISTON & ROD ASSEMBLY | SERVO SPRING          | SERVO LEVER   | LEVER I.D. |
|-------------------------|--------------------|---------------|-----------------------|-----------------------|---------------|------------|
| 88GT-ABB                | 2.3L-(EFI)         | 84GT-7L439-AB | 74DT-7E221-A2A        | 80DT-7D028-AA (BLUE)  | 84GT-7D396-GA | G          |
| 88GT-HAA, NAA           | 2.3L-(EFI)         | 84GT-7L439-AB | 74DT-7E221-A2A        | 80DT-7D028-AA (BLUE)  | 84GT-7D396-GB | G          |
| 88GT-GAA, KAA           | 2.3L-(EFI) (TURBO) | 84GT-7L439-AB | 78DT-7E221-A2A        | 83DT-7D028-AA (GREEN) | 84GT-7D396-AB | A          |
| 88GT-LAA, MAA           | 3.0L-(EFI)         | 84GT-7L439-AB | 78DT-7E221-A2A        | 83DT-7D028-AA (GREEN) | 84GT-7D396-AB | A          |
| 88GT-BAA, CAA, DAA, EAA | 3.0L-(EFI)         | 84GT-7L439-AB | 78DT-7E221-A2A        | 83DT-7D028-AA (GREEN) | 84GT-7D396-AB | C          |

Figure 97

#### 1989 MODEL YEAR

| MODEL APPLICATION       | ENGINE     | SERVO COVER   | PISTON & ROD ASSEMBLY | SERVO SPRING          | SERVO LEVER   | LEVER I.D. |
|-------------------------|------------|---------------|-----------------------|-----------------------|---------------|------------|
| 89GT-AAB, BBB           | 2.3L-(EFI) | 84GT-7L439-AB | 74DT-7E221-A2A        | 80DT-7D028-AA (BLUE)  | 84GT-7D396-EB | E          |
| 89GT-RAA, SAA           | 2.3L-(EFI) | 84GT-7L439-AB | 74DT-7E221-A2A        | 80DT-7D028-AA (BLUE)  | 84GT-7D396-GB | G          |
| 89GT-EAA, GAA           | 3.0L-(EFI) | 84GT-7L439-AB | 78DT-7E221-A2A        | 83DT-7D028-AA (GREEN) | 84GT-7D396-CB | C          |
| 89GT-AAA, BAA, CAA, DAA | 3.0L-(EFI) | 84GT-7L439-AB | 78DT-7E221-A2A        | 83DT-7D028-AA (GREEN) | 84GT-7D396-AB | A          |

Figure 98

*AUTOMATIC TRANSMISSION SERVICE GROUP*



## Technical Service Information

### OVERDRIVE BAND STRUT IDENTIFICATION

#### 1990 MODEL YEAR

| MODEL APPLICATION                                               | ENGINE     | SERVO COVER | PISTON & ROD ASSEMBLY | SERVO SPRING    | SERVO LEVER | LEVER I.D. |
|-----------------------------------------------------------------|------------|-------------|-----------------------|-----------------|-------------|------------|
| 90GT-TAA, TBA                                                   | 2.3L-(EFI) | 84GT-AB     | 78DT-A2A              | 80DT-AA (BLUE)  | 84GT-GB     | G          |
| 90GT-TCA                                                        | 2.3L-(EFI) | 84GT-AB     | 78DT-A2A              | 80DT-AA (BLUE)  | 84GT-EB     | E          |
| 90GT-GAA, GBA, GCA                                              | 2.3L-(EFI) | 84GT-AB     | 83DT-A1A<br>78DT-A2A  | 80DT-AA (BLUE)  | 84GT-EB     | E          |
| 90GT-KAA, LAA, LCA, MAA, NAA                                    | 2.9L-(EFI) | 84GT-AB     | 83DT-A1A<br>78DT-A2A  | 83DT-AA (GREEN) | 88GT-CB     | C          |
| 90GT-RAA, SAA, RBA, SBA                                         | 3.0L-(EFI) | 84GT-AB     | 83DT-A1A<br>78DT-A2A  | 83DT-AA (GREEN) | 84GT-EB     | A          |
| 90GT-EAA, FAA, CAA, EBA, FBA, DAA, ADA, ADD, AAA, AEA, AEE, BAA | 4.0L-(EFI) | 84GT-AB     | 83DT-A1A<br>78DT-A1A  | 83DT-AA (GREEN) | 88GT-CB     | C          |

Figure 99

#### 1991 MODEL YEAR

| MODEL APPLICATION                                                                   | ENGINE     | SERVO COVER | PISTON & ROD ASSEMBLY | SERVO SPRING    | SERVO LEVER | LEVER I.D. |
|-------------------------------------------------------------------------------------|------------|-------------|-----------------------|-----------------|-------------|------------|
| 91GT-MUA, MUB, TPA, TPB                                                             | 2.3L-(EFI) | 84DT-AB     | 78DT-A2A              | 80DT-AA (BLUE)  | 84GT-EB     | E          |
| 91GT-RAA, RBA                                                                       | 2.9L-(EFI) | 84DT-AB     | 78DT-A2A              | 83DT-AA (GREEN) | 88GT-CB     | C          |
| 91GT-AEA, AEB, AEC, AED, RCA, RDA                                                   | 3.0L-(EFI) | 84GT-AB     | 78DT-A2A              | 83DT-AA (GREEN) | 84GT-AB     | A          |
| 91GT-AAA, BAA, DAA, EAA, GAA, HAA, KAA, LAA, MAA, NAA, SAA, SBA, SCA, SDA, SEA, SFA | 4.0L-(EFI) | 84GT-AB     | 78DT-A2A              | 83DT-AA (GREEN) | 88GT-CB     | C          |

Figure 100

*AUTOMATIC TRANSMISSION SERVICE GROUP*



## Technical Service Information

### OVERDRIVE BAND STRUT IDENTIFICATION

#### 1992 MODEL YEAR

| MODEL APPLICATION                                                         | ENGINE     | SERVO COVER | PISTON & ROD ASSEMBLY | SERVO SPRING     | SERVO LEVER | LEVER I.D. |
|---------------------------------------------------------------------------|------------|-------------|-----------------------|------------------|-------------|------------|
| 91GT-MUA, MUB,                                                            | 2.3L-(EFI) | 84DT-BB     | 78DT-B2A              | 80DT-AA (BLUE)   | 84GT-EB     | E          |
| 92GT-BDB, BGB                                                             | 2.3L-(EFI) | 84DT-AB     | 78DT-A2A              | 84GT-AA (YELLOW) | 84GT-EB     | E          |
| 91GT-RAA, RBA                                                             | 2.9L-(EFI) | 84DT-AB     | 78DT-A2A              | 83DT-AA (GREEN)  | 88GT-CB     | C          |
| 92GT-ABA, ACA, ADA, AEA, AFA, AGA                                         | 3.0L-(EFI) | 84DT-AB     | 78DT-A2A              | 83DT-AA (GREEN)  | 84GT-AB     | A          |
| 92GT-DBA, DCA, AHA, AKA, ALA, AMA, ANA, ARA, ASA, ATA, CBA, CDA, CEA, CFA | 4.0L-(EFI) | 84DT-AB     | 78DT-A2A              | 83DT-AA (GREEN)  | 84GT-AB     | A          |

Figure 101

#### 1993 MODEL YEAR

| MODEL APPLICATION                                                                   | ENGINE     | SERVO COVER | PISTON & ROD ASSEMBLY | SERVO SPRING     | SERVO LEVER | LEVER I.D. |
|-------------------------------------------------------------------------------------|------------|-------------|-----------------------|------------------|-------------|------------|
| 93GT-RBA, SBA                                                                       | 2.3L-(EFI) | 84DT-BB     | 83DT-B1A              | 80DT-AA (BLUE)   | 84GT-EB     | E          |
| 93GT-AAA, BAA                                                                       | 2.3L-(EFI) | 84DT-AB     | 78DT-A2A              | 84GT-AA (YELLOW) | 84GT-EB     | D          |
| 93GT-CAA, DAA, TAA, UAA, FBA, GBA                                                   | 3.0L-(EFI) | 84DT-AB     | 78DT-A2A              | 83DT-AA (GREEN)  | 84GT-AB     | A          |
| 93GT-EAA, FAA                                                                       | 3.0L-(EFI) | 84DT-AB     | 78DT-A2A              | 83DT-AA (GREEN)  | 84GT-CB     | C          |
| 93GT-BAA, CBA, HBA, KBA, MBA, NBA, GAA, HAA, MAA, NAA, RAA, SAA, KAA, LAA, LBA, SBA | 4.0L-(EFI) | 84DT-AB     | 78DT-A2A              | 83DT-AA (GREEN)  | 84GT-AB     | A          |

Figure 102

*AUTOMATIC TRANSMISSION SERVICE GROUP*





## Technical Service Information

### COOLER LINE FITTINGS

There are currently two different size cooler line fittings for the A4LD case. The cases for the small fittings (1/8" Pipe Thread) are no longer serviced by Ford Motor Co. There are adapters available from Ford, for installing the small cooler line fittings into a large thread case, and are available under OEM part number E7TZ-7D273-B.

However, the large black cooler line fitting from the THM 440-T4 transaxle will also fit in the A4LD large thread case, **but you must remove and discard the ball and spring from the 440 fitting.** (See Figure 103).

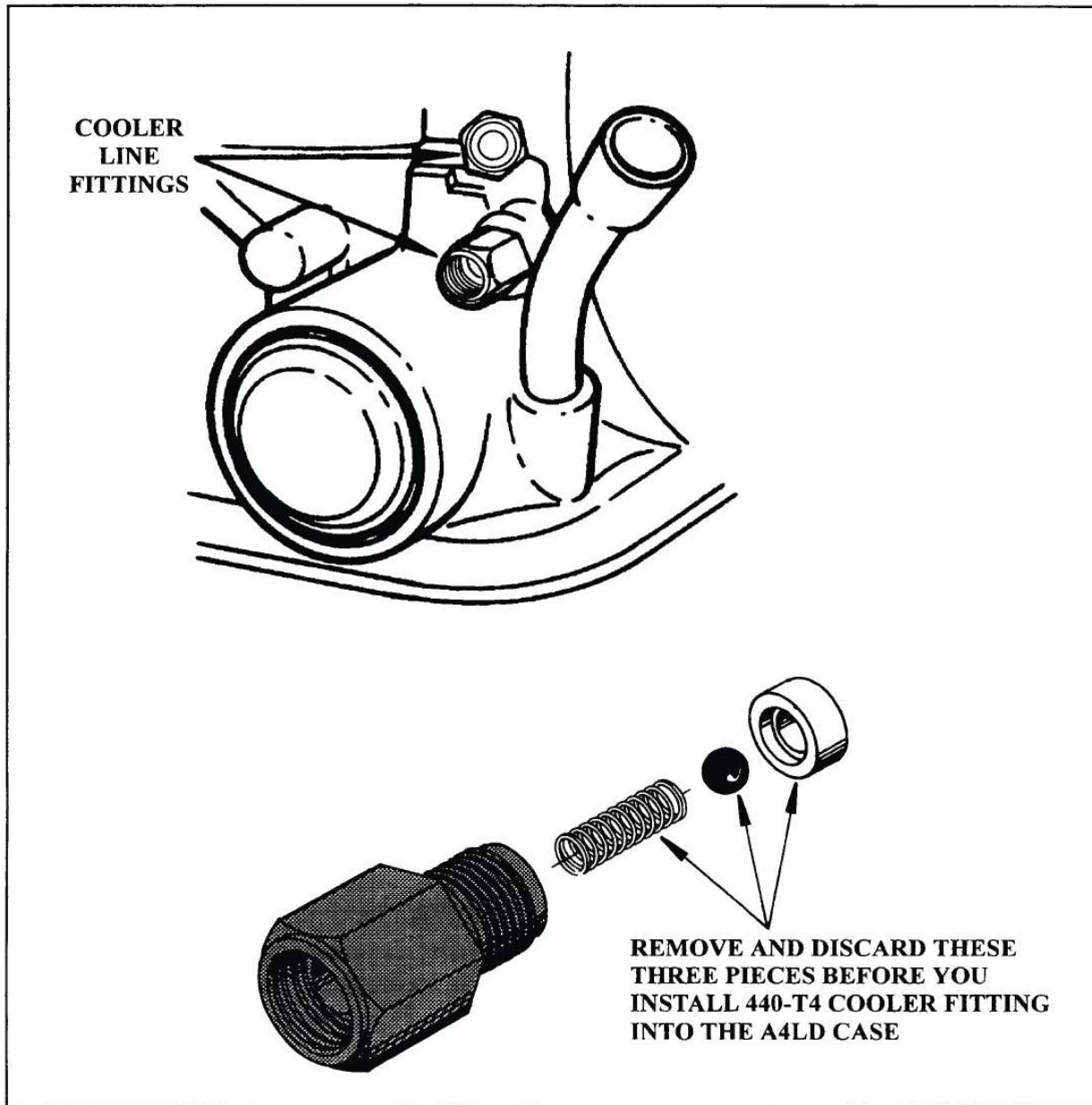


Figure 103

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

### GOVERNOR APPLICATION AND IDENTIFICATION CHARTS

When identifying governor primary valves for model years 85 thru 89, the charts in Figures 106 thru 109 on Page 99, will refer you to "Valve 1" or "Valve 2". Identification for these primary valves are found in Figure 104 below.

When identifying governor primary valves for model years 90 thru 93, the charts in Figures 110 thru 113, will give you a position of an I.D. ring for positive identification. The I.D. ring positions for these valves are shown in Figure 105 below.

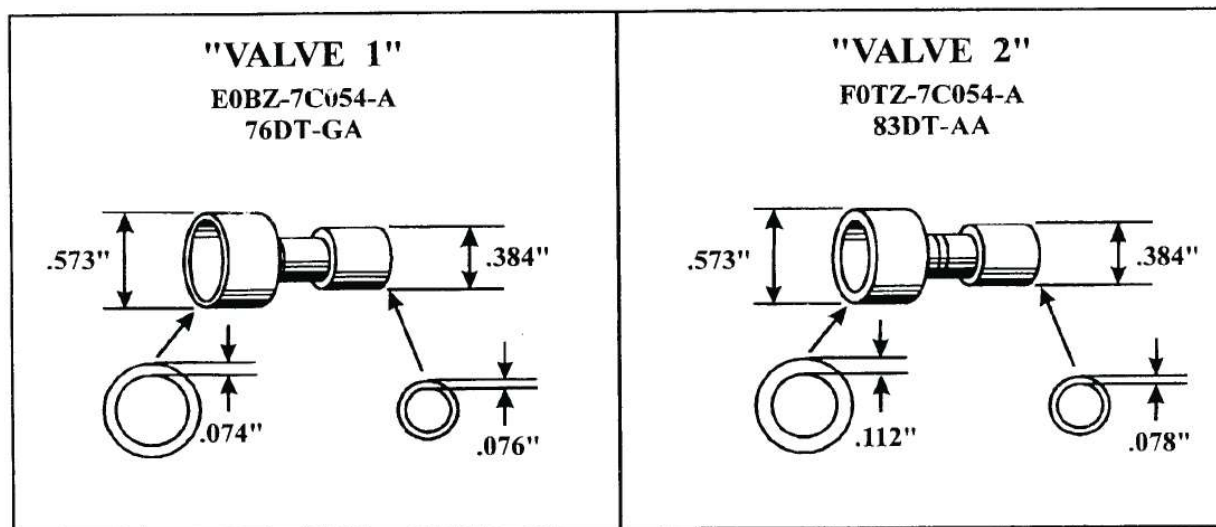


Figure 104

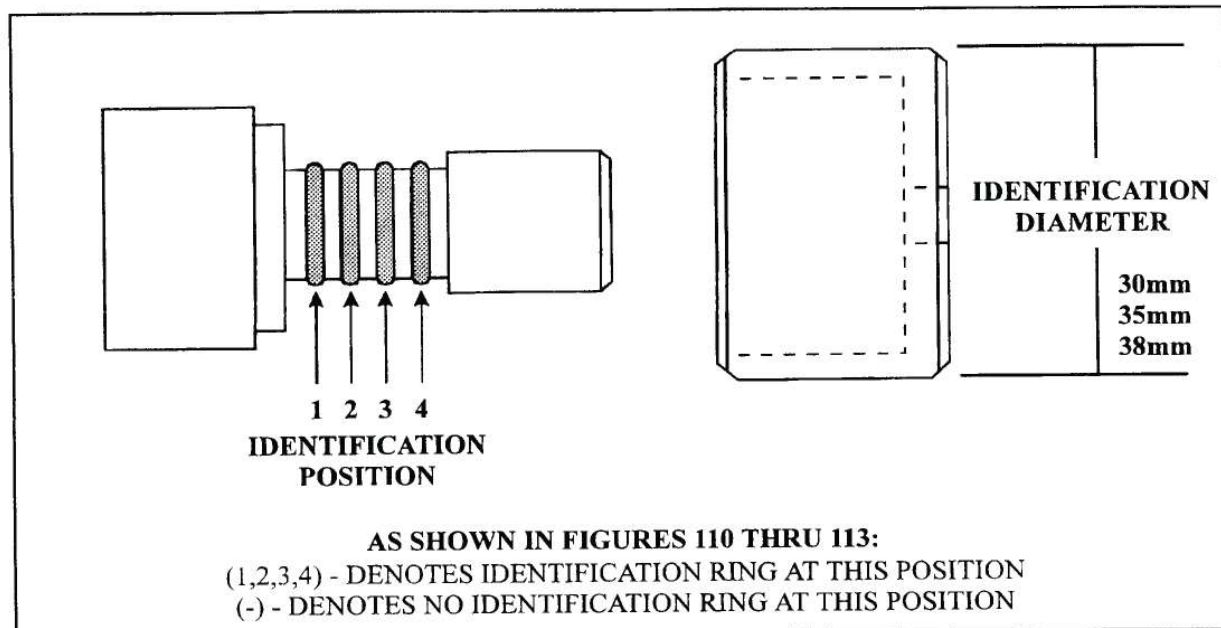


Figure 105

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

### 1985

| -7A300-<br>GOVERNOR BODY | -7A302-<br>SPRING | -7D324-<br>INNER WEIGHT | -7C054-<br>PRIMARY VALVE | MODELS                              |
|--------------------------|-------------------|-------------------------|--------------------------|-------------------------------------|
| 84GT-BA                  | 78DT-DA (BROWN)   | 83DT-AA (30mm)          | 77DT-AA ( N/A )          | 85GT-ABA, ACA                       |
| 84GT-BA                  | 78DT-DA (BROWN)   | 76DT-CA (35mm)          | 76DT-GA (VALVE 1)        | 85GT-AEA, AGA, ALA<br>AMA, BAA, BCA |

Figure 106

### 1986

| -7A300-<br>GOVERNOR BODY | -7A302-<br>SPRING | -7D324-<br>INNER WEIGHT | -7C054-<br>PRIMARY VALVE | MODELS                                               |
|--------------------------|-------------------|-------------------------|--------------------------|------------------------------------------------------|
| 84GT-BA                  | 78DT-DA (BROWN)   | 83DT-AA (30mm)          | 77DT-AA ( N/A )          | 85GT-ACA<br>86GT-AAA                                 |
| 84GT-BA                  | 78DT-DA (BROWN)   | 76DT-CA (35mm)          | 76DT-GA (VALVE 1)        | 85GT-AMA, BCA<br>86GT-ABA, ACA, BAA<br>CAA, DAA, EAA |
| 84GT-BA                  | 86DT-AA (GREEN)   | 76DT-CA (35mm)          | 77DT-AA ( N/A )          | 86GT-KAA, LAA                                        |

Figure 107

### 1987

| -7A300-<br>GOVERNOR BODY | -7A302-<br>SPRING | -7D324-<br>INNER WEIGHT | -7C054-<br>PRIMARY VALVE | MODELS                                            |
|--------------------------|-------------------|-------------------------|--------------------------|---------------------------------------------------|
| 84GT-BA                  | 78DT-DA (BROWN)   | 76DT-CA (35mm)          | 77DT-AA ( N/A )          | 87GT-AAA, BAA                                     |
| 84GT-BA                  | 78DT-DA (BROWN)   | 83DT-AA (30mm)          | 83DT-AA (VALVE 2)        | 87GT-ABA, CAA, CAB                                |
| 84GT-BA                  | 78DT-DA (BROWN)   | 76DT-CA (35mm)          | 76DT-GA (VALVE 1)        | 87GT-DAA, FAA, HAA,<br>KAA, DAC, FAD, HAE,<br>KAG |
| 84GT-BA                  | 86DT-AA (GREEN)   | 76DT-CA (35mm)          | 77DT-AA ( N/A )          | 87GT-MAA, NAA                                     |

Figure 108

### 1988-1989

| -7A300-<br>GOVERNOR BODY | -7A302-<br>SPRING | -7D324-<br>INNER WEIGHT | -7C054-<br>PRIMARY VALVE | MODELS                     |
|--------------------------|-------------------|-------------------------|--------------------------|----------------------------|
| 84GT-BA                  | 78DT-DA (BROWN)   | 83DT-AA (30mm)          | 83DT-AA (VALVE 2)        | 88GT-ABB, HAA, NAA         |
| 84GT-BA                  | 78DT-DA (BROWN)   | 76DT-CA (35mm)          | 76DT-GA (VALVE 1)        | 88GT-BAA, CAA, DAA,<br>EAA |
| 84GT-BA                  | 86DT-AA (GREEN)   | 76DT-CA (35mm)          | 77DT-AA ( N/A )          | 88GT-LAA, MAA              |
| 84GT-BA                  | 78DT-CA (N/A)     | 76DT-CA (35mm)          | 77DT-AA ( N/A )          | 88GT-GAA, KAA              |

Figure 109

AUTOMATIC TRANSMISSION SERVICE GROUP





## Technical Service Information

### 1990

| -7A300-<br>GOVERNOR BODY | -7A302-<br>SPRING  | -7D324-<br>INNER WEIGHT | -7C054-<br>PRIMARY VALVE | MODELS                                                                    |
|--------------------------|--------------------|-------------------------|--------------------------|---------------------------------------------------------------------------|
| 84GT-BA                  | 78DT-DA (BROWN)    | 83DT-AA (30mm)          | 83DT-AA 1,-,3,4,         | 90GT-TAA, TBA, EAE, FAA, EBA, FBA, ADA, AEA, BAA, ADD, AEE, CAA, DAA, AAA |
| 84GT-BA                  | 78DT-DA (BROWN)    | 83DT-AA (30mm)          | 76DT-GA 1,-,-,-,         | 90GT-TCA                                                                  |
| 84GT-BA                  | 78DT-DA (BROWN)    | 83DT-AA (30mm)          | 77DT-AA 1,2,-,-,         | 90GT-GAA, GCA, GBA                                                        |
| 84GT-BA                  | 78DT-DA (BROWN)    | 76DT-CA (35mm)          | 76DT-GA 1,-,-,-,         | 90GT- KAA, LAA, LCA<br>MAA, NAA                                           |
| 88GT-AA                  | 88GT-BA (DK. BLUE) | 76DT-DA (38mm)          | 88GT-AA -,2,-,-,         | 90GT-RAA, SAA, RBA<br>SBA                                                 |

Figure 110

### 1991

| -7A300-<br>GOVERNOR BODY | -7A302-<br>SPRING  | -7D324-<br>INNER WEIGHT | -7C054-<br>PRIMARY VALVE | MODELS                                                                              |
|--------------------------|--------------------|-------------------------|--------------------------|-------------------------------------------------------------------------------------|
| 84GT-BA                  | 78DT-DA (BROWN)    | 83DT-AA (30mm)          | 77DT-AA 1,2,-,-,         | 91GT-MUA, MUB, TPA<br>TPB                                                           |
| 84GT-BA                  | 78DT-DA (BROWN)    | 76DT-CA (35mm)          | 76DT-GA 1,-,-,-,         | 91GT- RAA, RBA                                                                      |
| 84GT-BA                  | 78DT-DA (BROWN)    | 83DT-AA (30mm)          | 83DT-AA 1,-,3,4,         | 91GT-AAA, BAA, DAA, EAA, GAA, HAA, KAA, LAA, MAA, NAA, SAA, SBA, SCA, SDA, SEA, SFA |
| 88GT-AA                  | 88GT-BA (DK. BLUE) | 76DT-DA (38mm)          | 88GT-AA -,2,-,-,         | 91GT-AEA, AEB, AEC, AED, RCA, RDA                                                   |

Figure 111



## Technical Service Information

### 1992

| -7A300-<br>GOVERNOR BODY | -7A302-<br>SPRING  | -7D324-<br>INNER WEIGHT | -7C054-<br>PRIMARY VALVE | MODELS                                                                                      |
|--------------------------|--------------------|-------------------------|--------------------------|---------------------------------------------------------------------------------------------|
| 84GT-BA                  | 78DT-DA (BROWN)    | 83DT-AA (30mm)          | 77DT-AB 1,2,-,-,         | 91GT-MUA, MUB<br>92GT-BDB, BGB                                                              |
| 84GT-BA                  | 78DT-DA (BROWN)    | 76DT-CA (35mm)          | 76DT-GB 1,-,-,-,         | 91GT-RAA, RBA                                                                               |
| 84GT-BA                  | 78DT-DA (BROWN)    | 83DT-AA (30mm)          | 90GT-AB 1,-,3,4,         | 92GT-DBA, DCA, DDA<br>DEA, CBA, CDA, CEA<br>CFA, AHA, AKA, ALA<br>AMA, ANA, ARA, ASA<br>ATA |
| 88GT-AA                  | 88GT-BA (DK. BLUE) | 76DT-DA (38mm)          | 88GT-AB -,2,-,-,         | 92GT-ABA, ACA, ADA<br>AEA, AFA, AGA                                                         |

Figure 112

### 1993

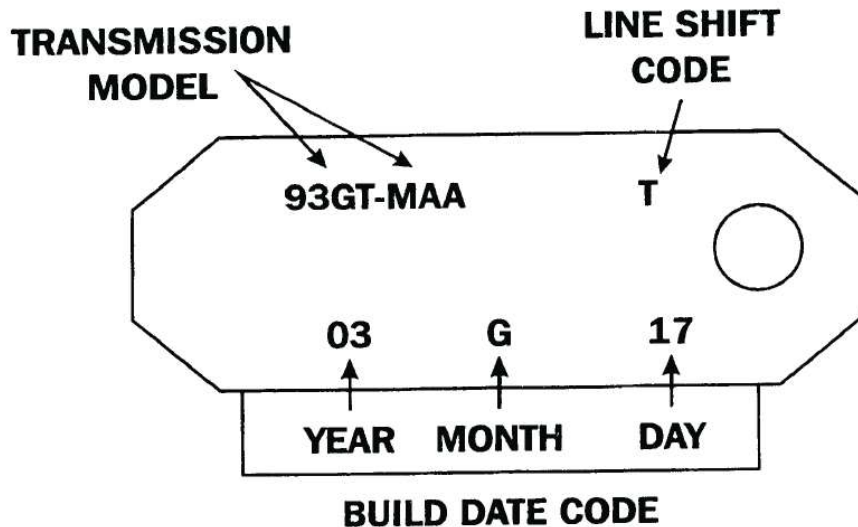
| -7A300-<br>GOVERNOR BODY | -7A302-<br>SPRING  | -7D324-<br>INNER WEIGHT | -7C054-<br>PRIMARY VALVE | MODELS                                                                                           |
|--------------------------|--------------------|-------------------------|--------------------------|--------------------------------------------------------------------------------------------------|
| 84GT-BA                  | 78DT-DA (BROWN)    | 83DT-AA (30mm)          | 77DT-AB 1,2,-,-,         | 93GT-AAA, BAA, RBA<br>SBA,                                                                       |
| 84GT-BA                  | 78DT-DA (BROWN)    | 76DT-CA (35mm)          | 76DT-GB 1,-,-,-,         | 93GT-EAA, FAA                                                                                    |
| 84GT-BA                  | 78DT-DA (BROWN)    | 83DT-AA (30mm)          | 90GT-AB 1,-,3,4,         | 92GT-BBA, CBA, HBA<br>KBA, HAA, KAA, LAA<br>LBA, DBA, EBA, MBA<br>NBA, MAA, NAA, RAA<br>SAA, SBB |
| 88GT-AA                  | 88GT-BA (DK. BLUE) | 76DT-DA (38mm)          | 88GT-AB -,2,-,-,         | 93GT-CAA, DAA, FBA<br>GBA, TAA, UAA                                                              |

Figure 113

*AUTOMATIC TRANSMISSION SERVICE GROUP*



## Technical Service Information



A = JANUARY  
 B = FEBRUARY  
 C = MARCH  
 D = APRIL  
 E = MAY  
 F = JUNE  
 G = JULY  
 H = AUGUST  
 J = SEPTEMBER  
 K = OCTOBER  
 L = NOVEMBER  
 M = DECEMBER

*The Identification Tag, located on extension housing bolt, will give us the transmission model code and the exact date that it was manufactured. At times, this is important information to order parts, because of the many running engineering changes.*

*In the example listed above we can see that it was built for a 1993 vehicle, because the first two digits in the transmission model code are 93 (93GT-MAA). We can also see that it was manufactured on July (G) the 17th (17) of 1993 (03).*

*On the following pages, in Figures 115 thru 122, we have provided you with charts to identify the application and engine size for which it was originally produced, using the transmission model code. In the example above, using the transmission model code (93GT-MAA), turn to the 1993 chart in Figure 122, and you can see that it fits a 1993 Explorer, 4X4, with a 4.0L engine.*

Figure 114

AUTOMATIC TRANSMISSION SERVICE GROUP





# Technical Service Information

## 1985-1986 MODELS

| TRANSMISSION<br>ASSEMBLY PART<br>NUMBER | VEHICLE                     | ENGINE | 3-4 SHIFT |       | 49<br>STATES<br>AND<br>CANADA | CALIF. | MOUNTAIN<br>REGIONS | MAIN<br>CONTROL<br>7A100 | 1985                     | 1986 |
|-----------------------------------------|-----------------------------|--------|-----------|-------|-------------------------------|--------|---------------------|--------------------------|--------------------------|------|
|                                         |                             |        | VAC.      | ELEC. |                               |        |                     |                          | NUMBER OF<br>CHECK BALLS |      |
| 85GT-AEA                                | RANGER 4x2                  | 2.9L   | X         |       | X                             | X      |                     | 88-BAA                   | 6                        |      |
| 85GT-BCA                                | AEROSTAR 4x2                | 2.8L   | X         |       | X                             | X      |                     | 88-AAA                   |                          | 6    |
| 85GT-ACA                                | AEROSTAR 4x2                | 2.3L   | X         |       | X                             | X      |                     | 88-CAA                   |                          | 6    |
| 85GT-ABA                                | RANGER 4x2                  | 2.3L   | X         |       | X                             | X      |                     | 88-HAA                   | 6                        |      |
| 85GT-AGA                                | RANGER 4x2                  | 2.8L   | X         |       | X                             | X      |                     | 88-BAA                   | 6                        |      |
| 85GT-ALA                                | RANGER 4x2<br>BRONCO II 4x2 | 2.8L   | X         |       |                               |        | X                   | 88-BAA                   | 6                        |      |
| 85GT-AMA                                | AEROSTAR<br>VAN/BUS 4x2     | 2.8L   | X         |       |                               |        | X                   | 88-BAA                   |                          | 6    |
| 85GT-BAA                                | RANGER 4x2<br>BRONCO II 4x2 | 2.8L   | X         |       |                               |        | X                   | 88-BAA                   | 6                        |      |
| 85GT-ACA                                | EFI AEROSTAR<br>VAN/BUS 4x2 | 2.3L   | X         |       | X                             | X      |                     | 88-CAA                   |                          | 6    |
|                                         |                             |        |           |       |                               |        |                     |                          |                          |      |
| 86GT-AAA                                | RANGER 4x2                  | 2.3L   | X         |       | X                             | X      |                     | 88-HAA                   | 6                        | 6    |
| 86GT-BAA                                | RANGER 4x2                  | 2.9L   | X         |       | X                             | X      |                     | 88-DAA                   | 6                        | 6    |
| 86GT-GAA                                | RANGER 4x2                  | 2.9L   | X         |       |                               |        | X                   | 88-JAA                   | 6                        | 6    |
| 86GT-EAA                                | BRONCO II 4x4               | 2.9L   | X         |       |                               |        | X                   | 88-JAA                   | 6                        | 6    |
| 86GT-DAA                                | RANGER 4x4<br>BRONCO II 4x4 | 2.9L   | X         |       | X                             | X      |                     | 88-DAA                   | 6                        | 6    |
| 86GT-ABA                                | BRONCO II 4x2               | 2.9L   | X         |       | X                             | X      |                     | 88-DAA                   | 6                        | 6    |
| 86GT-KAA                                | AEROSTAR 4x2                | 3.0L   | X         |       | X                             | X      |                     | 88-KAA                   |                          | 6    |
| 86GT-CAA                                | RANGER 4x2                  | 2.9L   | X         |       |                               |        | X                   | 88-JAA                   | 6                        | 6    |
| 86GT-ACA                                | BRONCO II 4x2               | 2.9L   | X         |       |                               |        | X                   | 88-JAA                   | 6                        | 6    |
| 86GT-LAA                                | EFI AEROSTAR 4x2            | 3.0L   | X         |       |                               |        | X                   | 88-KAA                   |                          | 6    |

Figure 115

AUTOMATIC TRANSMISSION SERVICE GROUP



# Technical Service Information

## 1987-1988 MODELS

| TRANSMISSION<br>ASSEMBLY PART<br>NUMBER | VEHICLE                                 | ENGINE | 3-4 SHIFT |       | 49<br>STATES<br>AND<br>CANADA | CALIF. | MOUNTAIN<br>REGIONS | MAIN<br>CONTROL<br>7A100 | '85                      | '86 | '87 | '88 |
|-----------------------------------------|-----------------------------------------|--------|-----------|-------|-------------------------------|--------|---------------------|--------------------------|--------------------------|-----|-----|-----|
|                                         |                                         |        | VAC.      | ELEC. |                               |        |                     |                          | NUMBER OF<br>CHECK BALLS |     |     |     |
| 87GT-AAA                                | TC T-BIRD 4x2                           | 2.3L   |           | X     | X                             | X      |                     | 88-FAA                   |                          |     | 5   |     |
| 87GT-ABA                                | EFI MUSTANG 4x2                         | 2.3L   | X         |       | X                             | X      |                     | 88-GAA                   | 6                        | 6   | 6   |     |
| 87GT-BAA                                | TC T-BIRD 4x2                           | 2.3L   |           | X     |                               |        | X                   | 88-FAA                   |                          |     | 5   |     |
| 87GT-CAB                                | RANGER 4x2                              | 2.3L   | X         |       | X                             | X      |                     | 88-HAA                   | 6                        | 6   | 6   |     |
| 87GT-DAA                                | RANGER 4x2                              | 2.9L   | X         |       | X                             | X      |                     | 88-JAA                   | 6                        | 6   | 6   |     |
| 87GT-DAC                                | RANGER 4x2                              | 2.9L   | X         |       | X                             | X      |                     | 88-JAA                   | 6                        | 6   | 6   |     |
| 87GT-HAA                                | RANGER<br>BRONCO II<br>4x2 / 4x4        | 2.9L   | X         |       | X                             | X      |                     | 88-JAA                   | 6                        | 6   | 6   |     |
| 87GT-HAE                                | RANGER<br>BRONCO II<br>4x2 / 4x4        | 2.9L   | X         |       | X                             | X      |                     |                          | 6                        | 6   | 6   |     |
| 87GT-HAG                                | RANGER<br>BRONCO II<br>4x2 / 4x4        | 2.9L   | X         |       |                               |        | X                   | 88-JAA                   | 6                        | 6   | 6   |     |
| 87GT-MAA                                | AEROSTAR 4x2                            | 3.0L   | X         |       | X                             | X      |                     | 88-KAA                   |                          | 6   | 6   |     |
| 87GT-NAA                                | AEROSTAR 4x2                            | 3.0L   | X         |       |                               |        | X                   | 88-KAA                   |                          | 6   | 6   |     |
| 87GT-KAG                                | RANGER 4x4 3/8"<br>BRONCO II 4x2<br>4x4 | 2.9L   | X         |       |                               |        | X                   | 88-JAA                   | 6                        | 6   | 6   |     |
| 87GT-CAA                                | EFI RANGER 4x2                          | 2.3L   | X         |       | X                             | X      |                     | 88-HAA                   | 6                        | 6   | 6   |     |
| 87GT-KAA                                | RANGER 4x4<br>BRONCO II 4x4             | 2.9L   | X         |       |                               |        | X                   | 88-JAA                   | 6                        | 6   | 6   |     |
| 87GT-FAA                                | EFI RANGER 4x2                          | 2.9L   | X         |       |                               |        | X                   | 88-JAA                   | 6                        | 6   | 6   |     |
| 87GT-LAA                                | EFI RANGER 4x2                          | 2.3L   | X         |       | X                             | X      |                     | 88-CAA                   |                          | 6   | 6   |     |
|                                         |                                         |        |           |       |                               |        |                     |                          |                          |     |     |     |
| 88GT-MAA                                | AEROSTAR 4x2                            | 3.0L   |           | X     |                               |        | X                   | 88-RAA                   |                          |     |     | 5   |
| 88GT-CAA                                | EFI RANGER 4x2                          | 2.9L   |           | X     |                               |        | X                   | 88-NAA                   |                          |     |     | 5   |
| 88GT-ABB                                | EFI RANGER 4x2                          | 2.3L   | X         |       | X                             | X      |                     | 88-TAA                   | 6                        | 6   | 6   | 6   |
| 88GT-BAA                                | EFI RANGER 4x2                          | 2.9L   |           | X     | X                             | X      |                     | 88-NAA                   |                          |     |     | 5   |
| 88GT-DAA                                | EFI RANGER<br>BRONCO II<br>4x2 / 4x4    | 2.9L   |           | X     | X                             | X      |                     | 88-SAA                   |                          |     |     | 5   |
| 88GT-EAA                                | EFI RANGER<br>BRONCO II<br>4x2 / 4x4    | 2.9L   |           | X     |                               |        | X                   | 88-SAA                   |                          |     |     | 5   |
| 88GT-GAA                                | TC T-BIRD 4x2                           | 2.3L   |           | X     | X                             | X      |                     | 88-MAA                   |                          |     | 6   | 5   |
| 88GT-LAB                                | AEROSTAR 4x2                            | 3.0L   |           | X     | X                             | X      |                     | 88-RAA                   |                          |     |     | 5   |
|                                         | AEROSTAR 4x2                            | 3.0L   |           | X     |                               |        | X                   | 88-RAA                   |                          |     |     | 5   |
|                                         | MUSTANG 4x2                             | 2.3L   | X         |       | X                             | X      |                     | 88-LAA                   |                          |     | 6   | 5   |
|                                         | EFI AEROSTAR 4x2                        | 3.0L   |           | X     | X                             | X      |                     | 88-RAA                   |                          |     |     | 5   |
|                                         | TC T-BIRD 4x2                           | 2.3L   |           | X     |                               |        | X                   | 88-MAA                   |                          |     | 6   | 5   |
|                                         | MUSTANG 4x2                             | 2.3L   | X         |       |                               |        | X                   | 88-LAA                   |                          |     |     | 5   |

Figure 116

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

### 1989 MODELS

| TRANSMISSION<br>ASSEMBLY PART<br>NUMBER | VEHICLE                         | ENGINE | 3-4 SHIFT |       | 49<br>STATES<br>AND<br>CANADA | CALIF. | MOUNTAIN<br>REGIONS | MAIN<br>CONTROL<br>7A100 | '87                      | '88 | '89 |
|-----------------------------------------|---------------------------------|--------|-----------|-------|-------------------------------|--------|---------------------|--------------------------|--------------------------|-----|-----|
|                                         |                                 |        | VAC.      | ELEC. |                               |        |                     |                          | NUMBER OF<br>CHECK BALLS |     |     |
| 89GT-GAA                                | AEROSTAR 4x2                    | 3.0L   |           | X     |                               |        |                     | 89-EAA                   |                          | 4   | 4   |
| 89GT-GAB                                | AEROSTAR 4x2                    | 3.0L   |           | X     |                               |        | X                   | 89-EAA                   |                          | 4   | 4   |
| 89GT-BAA                                | BRONCO II 4x2                   | 2.9L   |           | X     |                               |        | X                   | 89-DAA                   |                          |     | 4   |
| 89GT-TBB                                | AEROSTAR 4x2                    | 3.0L   |           | X     | X                             | X      | X                   | 89-EAA                   |                          | 4   | 4   |
| 89GT-TBA                                | AEROSTAR 4x2                    | 3.0L   |           | X     |                               |        | X                   | 89-EAA                   |                          | 4   | 4   |
| 89GT-AAA                                | EFI RANGER 4x2                  | 2.9L   |           | X     | X                             |        |                     | 89-CAA                   |                          |     | 4   |
| 89GT-BBB                                | EFI TWIN PLUG HE<br>RANGER 4x2  | 2.3L   |           | X     | X                             |        |                     | 89-FAA                   |                          |     | 4   |
| 89GT-CAA                                | EFI RANGER 4x4<br>BRONCO II 4x2 | 2.9L   |           | X     | X                             |        |                     | 89-CAA                   |                          |     | 4   |
| 89GT-DAA                                | EFI RANGER<br>BRONCO II 4x4     | 2.9L   |           | X     |                               |        | X                   | 89-DAA                   |                          |     | 4   |
| 89GT-EAA                                | EFI AEROSTAR 4x2                | 3.0L   |           | X     | X                             |        |                     | 89-EAA                   |                          | 4   | 4   |
| 89GT-RAA                                | EFI MUSTANG 4x2                 | 2.3L   | X         |       | X                             |        |                     | 89-BAA                   | 5                        | 5   | 5   |
| 89GT-SAA                                | EFI MUSTANG 4x2                 | 2.3L   | X         |       |                               |        | X                   | 89-BAA                   | 5                        | 5   | 5   |
| 89GT-TAA                                | EFI AEROSTAR 4x2<br>WAGON       | 3.0L   |           | X     | X                             |        |                     | 89-EAA                   |                          | 4   | 4   |
| 89GT-BBA                                | EFI BRONCO II 4x2               | 2.9L   |           | X     | X                             |        |                     | 89-CAA                   |                          |     | 4   |
| 89GT-EAB                                | EFI AEROSTAR 4x2                | 3.0L   |           | X     | X                             |        |                     | 89-EAA                   |                          | 4   | 4   |
| 89GT-TAB                                | EFI EXT. AEROSTAR<br>4x2        | 3.0L   |           | X     | X                             |        |                     | 89-EAA                   |                          | 4   | 4   |
| 89GT-AAB                                | RANGER 4x2                      | 2.3L   |           | X     | X                             |        | X                   | 89-FAA                   |                          |     | 4   |

Figure 117

AUTOMATIC TRANSMISSION SERVICE GROUP





# Technical Service Information

## 1990 MODELS

| TRANSMISSION<br>ASSEMBLY PART<br>NUMBER | VEHICLE                     | ENGINE | 3-4 SHIFT |       | 49<br>STATES<br>AND<br>CANADA | CALIF. | MOUNTAIN<br>REGIONS | MAIN<br>CONTROL<br>7A100 | '87                      | '88 | '89 | '90 |
|-----------------------------------------|-----------------------------|--------|-----------|-------|-------------------------------|--------|---------------------|--------------------------|--------------------------|-----|-----|-----|
|                                         |                             |        | VAC.      | ELEC. |                               |        |                     |                          | NUMBER OF<br>CHECK BALLS |     |     |     |
| 90GT-GAA                                | RANGER 4x2                  | 2.3L   |           | X     | X                             |        |                     | 90-GAA                   |                          |     | 4   | 4   |
| 90GT-GBA                                | RANGER 4x2                  | 2.3L   |           | X     |                               |        | X                   | 90-GAA                   |                          |     | 4   | 4   |
| 90GT-GCA                                | RANGER 4x2                  | 2.3L   |           | X     |                               | X      |                     | 90-GBA                   |                          |     | 4   | 4   |
| 90GT-KAA                                | RANGER 4x2                  | 2.9L   |           | X     | X                             |        |                     | 90-BAA                   |                          |     | 4   | 4   |
| 90GT-LAA                                | RANGER 4x2<br>BRONCO II 4x2 | 2.9L   |           | X     |                               | X      | X                   | 90-BAA                   |                          |     | 4   | 4   |
| 90GT-LCA                                | BRONCO II 4x2               | 2.9L   |           | X     |                               | X      |                     | 90-BAA                   |                          |     |     | 4   |
| 90GT-MAA                                | RANGER 4x4<br>BRONCO II 4x4 | 2.9L   |           | X     | X                             |        |                     | 90-BAA                   |                          |     | 4   | 4   |
| 90GT-NAA                                | RANGER 4x4<br>BRONCO II 4x4 | 2.9L   |           | X     |                               | X      | X                   | 90-BAA                   |                          |     | 4   | 4   |
| 90GT-RAA                                | AEROSTAR 4x2                | 3.0L   |           | X     | X                             |        |                     | 90-DAA                   |                          |     | 4   | 4   |
| 90GT-RBA                                | AEROSTAR 4x2                | 3.0L   |           | X     | X                             |        |                     | 90-DAA                   |                          |     | 4   | 4   |
| 90GT-SAA                                | AEROSTAR 4x2                | 3.0L   |           | X     |                               |        | X                   | 90-DAA                   |                          |     | 4   | 4   |
| 90GT-SBA                                | AEROSTAR 4x2                | 3.0L   |           | X     |                               |        | X                   | 90-DAA                   | 5                        | 5   | 5   | 5   |
| 90GT-TAA                                | MUSTANG 4x2                 | 2.3L   | X         |       | X                             |        |                     | 90-EAA                   | 5                        | 5   | 5   | 5   |
| 90GT-TBA                                | MUSTANG 4x2                 | 2.3L   | X         |       |                               |        | X                   | 90-EAA                   |                          |     |     | 4   |
| 90GT-TCA                                | MUSTANG 4x2                 | 2.3L   |           | X     |                               | X      |                     | 90-FAA                   |                          |     |     | 4   |
| 90GT-AAA                                | RANGER<br>750 N•m 4x4       | 4.0L   |           | X     | X                             |        |                     | 90-MAA                   |                          |     |     | 4   |
| 90GT-ADA                                | AEROSTAR<br>750 N•m 4x4     | 4.0L   |           | X     | X                             |        |                     | 90-MAA                   |                          |     |     | 4   |
| 90GT-ADD                                | AEROSTAR<br>750 N•m 4x4     | 4.0L   |           | X     | X                             |        |                     | 90-MAA                   |                          |     |     | 4   |
| 90GT-AEA                                | AEROSTAR<br>750 N•m 4x4     | 4.0L   |           | X     |                               |        | X                   | 90-MAA                   |                          |     |     | 4   |
| 90GT-AEE                                | AEROSTAR<br>750 N•m 4x4     | 4.0L   |           | X     |                               |        | X                   | 90-MAA                   |                          |     |     | 4   |
| 90GT-CAA                                | RANGER<br>750 N•m 4x2       | 4.0L   |           | X     | X                             |        |                     | 90-AAA                   |                          |     |     | 4   |
| 90GT-DAA                                | RANGER<br>750 N•m 4x2       | 4.0L   |           | X     |                               |        | X                   | 90-AAA                   |                          |     |     | 4   |
| 90GT-EAA                                | AEROSTAR<br>750 N•m 4x2     | 4.0L   |           | X     | X                             |        |                     | 90-AAA                   |                          |     |     | 4   |
| 90GT-EBA                                | AEROSTAR<br>750 N•m 4x2     | 4.0L   |           | X     | X                             |        |                     | 90-AAA                   |                          |     |     | 4   |
| 90GT-FAA                                | AEROSTAR<br>750 N•m 4x2     | 4.0L   |           | X     |                               |        | X                   | 90-AAA                   |                          |     |     | 4   |
| 90GT-FBA                                | AEROSTAR<br>750 N•m 4x2     | 4.0L   |           | X     |                               |        | X                   | 90-AAA                   |                          |     |     | 4   |
| 90GT-BAA                                | RANGER<br>750 N•m 4x4       | 4.0L   |           | X     |                               |        | X                   | 90-MAA                   |                          |     |     | 4   |

Figure 118

*AUTOMATIC TRANSMISSION SERVICE GROUP*



# Technical Service Information

## 1991 MODELS

| TRANSMISSION<br>ASSEMBLY PART<br>NUMBER | VEHICLE                       | ENGINE | 3-4 SHIFT |       | 49<br>STATES<br>AND<br>CANADA | CALIF. | MOUNTAIN<br>REGIONS | MAIN<br>CONTROL<br>7A100 | 1991                     |
|-----------------------------------------|-------------------------------|--------|-----------|-------|-------------------------------|--------|---------------------|--------------------------|--------------------------|
|                                         |                               |        | VAC.      | ELEC. |                               |        |                     |                          | NUMBER OF<br>CHECK BALLS |
| 91GT-TPA                                | RANGER 4x2                    | 2.3L   |           | X     | X                             |        |                     | 90-GBA                   | 4                        |
| 91GT-TPB                                | RANGER 4x2                    | 2.3L   |           | X     |                               | X      | X                   | 90-GBA                   | 4                        |
| 91GT-RCA                                | RANGER 4x2                    | 3.0L   |           | X     | X                             |        |                     | 90-DAA                   | 4                        |
| 91GT-RDA                                | RANGER 4x2                    | 3.0L   |           | X     |                               | X      | X                   | 90-DAA                   | 4                        |
| 91GT-KAA                                | RANGER 750 N•m 4x2            | 4.0L   |           | X     | X                             |        |                     | 91-CAA                   | 4                        |
| 91GT-LAA                                | RANGER 750 N•m 4x2            | 4.0L   |           | X     |                               | X      | X                   | 91-CAA                   | 4                        |
| 91GT-RAA                                | RANGER 750 N•m 4x4            | 2.9L   |           | X     | X                             |        |                     | 90-BAA                   | 4                        |
| 91GT-RBA                                | RANGER 750 N•m 4x4            | 2.9L   |           | X     |                               | X      | X                   | 90-BAA                   | 4                        |
| 91GT-MAA                                | RANGER 750 N•m 4x4            | 4.0L   |           | X     | X                             |        |                     | 91-KAA                   | 4                        |
| 91GT-NAA                                | RANGER 750 N•m 4x4            | 4.0L   |           | X     |                               | X      | X                   | 91-KAA                   | 4                        |
| 91GT-AAB                                | EXPLORER 750 N•m 4x2          | 4.0L   |           | X     | X                             |        |                     | 91-AAB                   | 4                        |
| 91GT-BAB                                | EXPLORER 750 N•m 4x2          | 4.0L   |           | X     |                               | X      | X                   | 91-AAB                   | 4                        |
| 91GT-DAB                                | EXPLORER 750 N•m 4x2          | 4.0L   |           | X     | X                             |        |                     | 91-AAB                   | 4                        |
| 91GT-EAB                                | EXPLORER 750 N•m 4x4          | 4.0L   |           | X     |                               | X      | X                   | 91-AAB                   | 4                        |
| 91GT-AEA                                | AEROSTAR VAN 4x2              | 3.0L   |           | X     | X                             |        |                     | 90-DAA                   | 4                        |
| 91GT-AEB                                | AEROSTAR VAN 4x2              | 3.0L   |           | X     |                               | X      | X                   | 90-DAA                   | 4                        |
| 91GT-AEC                                | AEROSTAR WAGON 4x2            | 3.0L   |           | X     | X                             |        |                     | 90-DAA                   | 4                        |
| 91GT-AED                                | AEROSTAR WAGON 4x2            | 3.0L   |           | X     |                               | X      | X                   | 90-DAA                   | 4                        |
| 91GT-GAA                                | AEROSTAR VAN<br>750 N•m 4x2   | 4.0L   |           | X     | X                             |        |                     | 91-CAA                   | 4                        |
| 91GT-HAA                                | AEROSTAR VAN<br>750 N•m 4x2   | 4.0L   |           | X     |                               | X      | X                   | 91-CAA                   | 4                        |
| 91GT-SAA                                | AEROSTAR WAGON<br>750 N•m 4x2 | 4.0L   |           | X     | X                             |        |                     | 91-CAA                   | 4                        |
| 91GT-SBA                                | AEROSTAR WAGON<br>750 N•m 4x2 | 4.0L   |           | X     |                               | X      | X                   | 91-CAA                   | 4                        |
| 91GT-SCA                                | AEROSTAR VAN<br>750 N•m 4x4   | 4.0L   |           | X     | X                             |        |                     | 91-KAA                   | 4                        |
| 91GT-SDA                                | AEROSTAR VAN<br>750 N•m 4x4   | 4.0L   |           | X     |                               | X      | X                   | 91-KAA                   | 4                        |
| 91GT-SEA                                | AEROSTAR WAGON<br>750 N•m 4x4 | 4.0L   |           | X     | X                             |        |                     | 91-KAA                   | 4                        |
| 91GT-SFA                                | AEROSTAR WAGON<br>750 N•m 4x4 | 4.0L   |           | X     |                               | X      | X                   | 91-KAA                   | 4                        |
| 91GT-MUA                                | MUSTANG TWIN PLUG             | 2.3L   |           | X     | X                             |        |                     | 91-BBA                   | 4                        |
| 91GT-MUB                                | MUSTANG TWIN PLUG             | 2.3L   |           | X     |                               | X      | X                   | 91-BBA                   | 4                        |

Figure 119

*AUTOMATIC TRANSMISSION SERVICE GROUP*



## Technical Service Information

### 1992 MODELS

| TRANSMISSION<br>ASSEMBLY PART<br>NUMBER | VEHICLE                       | ENGINE | 3-4 SHIFT |       | 49<br>STATES<br>AND<br>CANADA | CALIF. | MOUNTAIN<br>REGIONS | MAIN<br>CONTROL<br>7A100 | 1991                     | 1992 |
|-----------------------------------------|-------------------------------|--------|-----------|-------|-------------------------------|--------|---------------------|--------------------------|--------------------------|------|
|                                         |                               |        | VAC.      | ELEC. |                               |        |                     |                          | NUMBER OF<br>CHECK BALLS |      |
| 92GT-CBB                                | EXPLORER 750 N•m 4x2          | 4.0L   |           | X     | X                             |        |                     | 92-ABB                   |                          | 4    |
| 92GT-CDB                                | EXPLORER 750 N•m 4x2          | 4.0L   |           | X     |                               | X      | X                   | 92-ABB                   |                          | 4    |
| 92GT-CEB                                | EXPLORER 750 N•m 4x4          | 4.0L   |           | X     | X                             |        |                     | 92-ABB                   |                          | 4    |
| 92GT-CFB                                | EXPLORER 750 N•m 4x4          | 4.0L   |           | X     |                               | X      | X                   | 92-ABB                   |                          | 4    |
| 92GT-MUA                                | MUSTANG TWIN PLUG             | 2.3L   |           | X     | X                             |        |                     | 92-BBA                   | 4                        | 4    |
| 92GT-MUB                                | MUSTANG TWIN PLUG             | 2.3L   |           | X     |                               | X      | X                   | 92-BBA                   | 4                        | 4    |
| 92GT-ADA                                | AEROSTAR VAN 4x2              | 3.0L   |           | X     | X                             |        |                     | 92-DAB                   |                          | 4    |
| 92GT-AEA                                | AEROSTAR VAN 4x2              | 3.0L   |           | X     |                               | X      | X                   | 92-DAB                   |                          | 4    |
| 92GT-AFA                                | AEROSTAR WAGON 4x2            | 3.0L   |           | X     | X                             |        |                     | 92-DAB                   |                          | 4    |
| 92GT-AGA                                | AEROSTAR WAGON 4x2            | 3.0L   |           | X     |                               | X      | X                   | 92-DAB                   |                          | 4    |
| 92GT-AHA                                | AEROSTAR VAN<br>750 N•m 4x2   | 4.0L   |           | X     | X                             |        |                     | 92-CAB                   |                          | 4    |
| 92GT-AKA                                | AEROSTAR VAN<br>750 N•m 4x2   | 4.0L   |           | X     |                               | X      | X                   | 92-CAB                   |                          | 4    |
| 92GT-ALA                                | AEROSTAR WAGON<br>750 N•m 4x2 | 4.0L   |           | X     | X                             |        |                     | 92-CAB                   |                          | 4    |
| 92GT-AMA                                | AEROSTAR WAGON<br>750 N•m 4x2 | 4.0L   |           | X     |                               | X      | X                   | 92-CAB                   |                          | 4    |
| 92GT-ANA                                | AEROSTAR VAN<br>750 N•m 4x4   | 4.0L   |           | X     | X                             |        |                     | 92-KAB                   |                          | 4    |
| 92GT-ARA                                | AEROSTAR VAN<br>750 N•m 4x4   | 4.0L   |           | X     |                               | X      | X                   | 92-KAB                   |                          | 4    |
| 92GT-ASA                                | AEROSTAR WAGON<br>750 N•m 4x4 | 4.0L   |           | X     | X                             |        |                     | 92-KAB                   |                          | 4    |
| 92GT-ATA                                | AEROSTAR WAGON<br>750 N•m 4x4 | 4.0L   |           | X     |                               | X      | X                   | 92-KAB                   |                          | 4    |
| 92GT-BDB                                | RANGER 4x2                    | 2.3L   |           | X     | X                             |        |                     | 92-GBB                   |                          | 4    |
| 92GT-BGB                                | RANGER 4x2                    | 2.3L   |           | X     |                               | X      | X                   | 92-GBB                   |                          | 4    |
| 92GT-RAA                                | RANGER 4x4                    | 2.9L   |           | X     | X                             |        |                     | 92-BAA                   | 4                        | 4    |
| 92GT-RBA                                | RANGER 4x4                    | 2.9L   |           | X     |                               | X      | X                   | 92-BAA                   | 4                        | 4    |
| 92GT-ABA                                | RANGER 4x2                    | 3.0L   |           | X     | X                             |        |                     | 92-DAC                   |                          | 4    |
| 92GT-ACA                                | RANGER 4x2                    | 3.0L   |           | X     |                               | X      | X                   | 92-DAC                   |                          | 4    |
| 92GT-DBA                                | RANGER 750 N•m 4x2            | 4.0L   |           | X     | X                             |        |                     | 92-CAB                   |                          | 4    |
| 92GT-DCA                                | RANGER 750 N•m 4x2            | 4.0L   |           | X     |                               | X      | X                   | 92-CAB                   |                          | 4    |
| 92GT-DDA                                | RANGER 750 N•m 4x4            | 4.0L   |           | X     | X                             |        |                     | 92-KAB                   |                          | 4    |
| 92GT-DEA                                | RANGER 750 N•m 4x4            | 4.0L   |           | X     |                               | X      | X                   | 92-KAB                   |                          | 4    |

Figure 120

*AUTOMATIC TRANSMISSION SERVICE GROUP*





# Technical Service Information

## 1993 MODELS

| TRANSMISSION<br>ASSEMBLY PART<br>NUMBER | VEHICLE                       | ENGINE | 3-4 SHIFT |       | 49<br>STATES<br>AND<br>CANADA | CALIF. | MOUNTAIN<br>REGIONS | MAIN<br>CONTROL<br>7A100 | 1993                     | 11/3<br>1993 |
|-----------------------------------------|-------------------------------|--------|-----------|-------|-------------------------------|--------|---------------------|--------------------------|--------------------------|--------------|
|                                         |                               |        | VAC.      | ELEC. |                               |        |                     |                          | NUMBER OF<br>CHECK BALLS |              |
| 93GT-GAB                                | EXPLORER 750 N•m 4x2          | 4.0L   |           | X     | X                             |        |                     | 93-EAA                   | 4                        |              |
| 93GT-HAB                                | EXPLORER 750 N•m 4x2          | 4.0L   |           | X     |                               | X      | X                   | 93-EAA                   | 4                        |              |
| 93GT-MAB                                | EXPLORER 750 N•m 4x4          | 4.0L   |           | X     | X                             |        |                     | 93-EAA                   | 4                        |              |
| 93GT-NAB                                | EXPLORER 750 N•m 4x4          | 4.0L   |           | X     |                               | X      | X                   | 93-EAA                   | 4                        |              |
| 93GT-RBA                                | MUSTANG TWIN PLUG             | 2.3L   |           | X     | X                             |        |                     | 91-BBA                   | 4                        | 4            |
| 93GT-SBA                                | MUSTANG TWIN PLUG             | 2.3L   |           | X     |                               | X      | X                   | 91-BBA                   | 4                        | 4            |
| 93GT-TAA                                | AEROSTAR VAN 4x2              | 3.0L   |           | X     | X                             |        |                     | 92-DAB                   | 4                        | 4            |
| 93GT-UAA                                | AEROSTAR VAN 4x2              | 3.0L   |           | X     |                               | X      | X                   | 92-DAB                   | 4                        | 4            |
| 93GT-FBA                                | AEROSTAR WAGON 4x2            | 3.0L   |           | X     | X                             |        |                     | 92-DAB                   | 4                        | 4            |
| 93GT-GBA                                | AEROSTAR WAGON 4x2            | 3.0L   |           | X     |                               | X      | X                   | 92-DAB                   | 4                        | 4            |
| 93GT-BBB                                | AEROSTAR VAN<br>750 N•m 4x2   | 4.0L   |           | X     | X                             |        |                     | 93-FAA                   | 4                        |              |
| 93GT-CBB                                | AEROSTAR VAN<br>750 N•m 4x2   | 4.0L   |           | X     |                               | X      | X                   | 93-FAA                   | 4                        |              |
| 93GT-HBC                                | AEROSTAR WAGON<br>750 N•m 4x2 | 4.0L   |           | X     | X                             |        |                     | 93-FAA                   | 4                        |              |
| 93GT-KBB                                | AEROSTAR WAGON<br>750 N•m 4x2 | 4.0L   |           | X     |                               | X      | X                   | 93-FAA                   | 4                        |              |
| 93GT-DBB                                | AEROSTAR VAN<br>750 N•m 4x4   | 4.0L   |           | X     | X                             |        |                     | 93-GAA                   | 4                        |              |
| 93GT-EBB                                | AEROSTAR VAN<br>750 N•m 4x4   | 4.0L   |           | X     |                               | X      | X                   | 93-GAA                   | 4                        |              |
| 93GT-MBB                                | AEROSTAR WAGON<br>750 N•m 4x4 | 4.0L   |           | X     | X                             |        |                     | 93-GAA                   | 4                        |              |
| 93GT-NBC                                | AEROSTAR WAGON<br>750 N•m 4x4 | 4.0L   |           | X     |                               | X      | X                   | 93-GAA                   | 4                        |              |
| 93GT-AAA                                | RANGER 4x2                    | 2.3L   |           | X     | X                             |        |                     | 93-AAA                   | 4                        | 4            |
| 93GT-BAA                                | RANGER 4x2                    | 2.3L   |           | X     |                               | X      | X                   | 93-AAA                   | 4                        | 4            |
| 93GT-EAA                                | RANGER 4x4                    | 2.9L   |           | X     | X                             |        |                     | 93-BAA                   | 4                        | 4            |
| 93GT-FAA                                | RANGER 4x4                    | 2.9L   |           | X     |                               | X      | X                   | 93-BAA                   | 4                        | 4            |
| 93GT-CAA                                | RANGER 4x2                    | 3.0L   |           | X     | X                             |        |                     | 93-BAA                   | 4                        | 4            |
| 93GT-DAA                                | RANGER 4x2                    | 3.0L   |           | X     |                               | X      | X                   | 93-BAA                   | 4                        | 4            |
| 93GT-KAB                                | RANGER 750 N•m 4x2            | 4.0L   |           | X     | X                             |        |                     | 93-CAA                   | 4                        |              |
| 93GT-LAB                                | RANGER 750 N•m 4x2            | 4.0L   |           | X     |                               | X      | X                   | 93-CAA                   | 4                        |              |
| 93GT-RAB                                | RANGER 750 N•m 4x4            | 4.0L   |           | X     | X                             |        |                     | 93-CAA                   | 4                        |              |
| 93GT-SAB                                | RANGER 750 N•m 4x4            | 4.0L   |           | X     |                               | X      | X                   | 93-CAA                   | 4                        |              |
| 93GT-LBB                                | RANGER 750 N•m 4x2            | 4.0L   |           | X     | X                             |        |                     | 93-DAA                   | 4                        |              |
| 93GT-SBC                                | RANGER 750 N•m 4x4            | 4.0L   |           | X     | X                             |        |                     | 93-DAA                   | 4                        |              |

Figure 121

AUTOMATIC TRANSMISSION SERVICE GROUP



## Technical Service Information

### 1993 MODELS (Cont'd)

| TRANSMISSION<br>ASSEMBLY PART<br>NUMBER | VEHICLE                       | ENGINE | 3-4 SHIFT |       | 49<br>STATES<br>AND<br>CANADA | CALIF. | MOUNTAIN<br>REGIONS | MAIN<br>CONTROL<br>7A100 | 11/3<br>1993             |
|-----------------------------------------|-------------------------------|--------|-----------|-------|-------------------------------|--------|---------------------|--------------------------|--------------------------|
|                                         |                               |        | VAC.      | ELEC. |                               |        |                     |                          | NUMBER OF<br>CHECK BALLS |
| 93GT-GAA                                | EXPLORER 750 N•m 4x2          | 4.0L   |           | X     | X                             |        |                     | 93-EAA                   | 4                        |
| 93GT-HAA                                | EXPLORER 750 N•m 4x2          | 4.0L   |           | X     |                               | X      | X                   | 93-EAA                   | 4                        |
| 93GT-MAA                                | EXPLORER 750 N•m 4x4          | 4.0L   |           | X     | X                             |        |                     | 93-EAA                   | 4                        |
| 93GT-NAA                                | EXPLORER 750 N•m 4x4          | 4.0L   |           | X     |                               | X      | X                   | 93-EAA                   | 4                        |
| 93GT-BBA                                | AEROSTAR VAN<br>750 N•m 4x2   | 4.0L   |           | X     | X                             |        |                     | 93-FAA                   | 4                        |
| 93GT-CBA                                | AEROSTAR VAN<br>750 N•m 4x2   | 4.0L   |           | X     |                               | X      | X                   | 93-FAA                   | 4                        |
| 93GT-HBA                                | AEROSTAR WAGON<br>750 N•m 4x2 | 4.0L   |           | X     | X                             |        |                     | 93-FAA                   | 4                        |
| 93GT-KBA                                | AEROSTAR WAGON<br>750 N•m 4x2 | 4.0L   |           | X     |                               | X      | X                   | 93-FAA                   | 4                        |
| 93GT-DBA                                | AEROSTAR VAN<br>750 N•m 4x4   | 4.0L   |           | X     | X                             |        |                     | 93-GAA                   | 4                        |
| 93GT-EBA                                | AEROSTAR VAN<br>750 N•m 4x4   | 4.0L   |           | X     |                               | X      | X                   | 93-GAA                   | 4                        |
| 93GT-MBA                                | AEROSTAR WAGON<br>750 N•m 4x4 | 4.0L   |           | X     | X                             |        |                     | 93-GAA                   | 4                        |
| 93GT-NBA                                | AEROSTAR WAGON<br>750 N•m 4x4 | 4.0L   |           | X     |                               | X      | X                   | 93-GAA                   | 4                        |
| 93GT-KAA                                | RANGER 4x2                    | 2.3L   |           | X     | X                             |        |                     | 93-CAA                   | 4                        |
| 93GT-LAA                                | RANGER 4x2                    | 2.3L   |           | X     |                               | X      | X                   | 93-CAA                   | 4                        |
| 93GT-RAA                                | RANGER 4x4                    | 2.9L   |           | X     | X                             |        |                     | 93-CAA                   | 4                        |
| 93GT-SAA                                | RANGER 4x4                    | 2.9L   |           | X     |                               | X      | X                   | 93-CAA                   | 4                        |
| 93GT-LBA                                | RANGER 4x2                    | 3.0L   |           | X     | X                             |        |                     | 93-DAA                   | 4                        |
| 93GT-SBB                                | RANGER 4x2                    | 3.0L   |           | X     |                               | X      | X                   | 93-DAA                   | 4                        |

Figure 122

*AUTOMATIC TRANSMISSION SERVICE GROUP*