A4LD UPDATE HANDBOOK

INDEX

AUTOMATIC TRANSMISSION SERVICE GROUP
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A4LD BELL HOUSING IDENTIFICATION

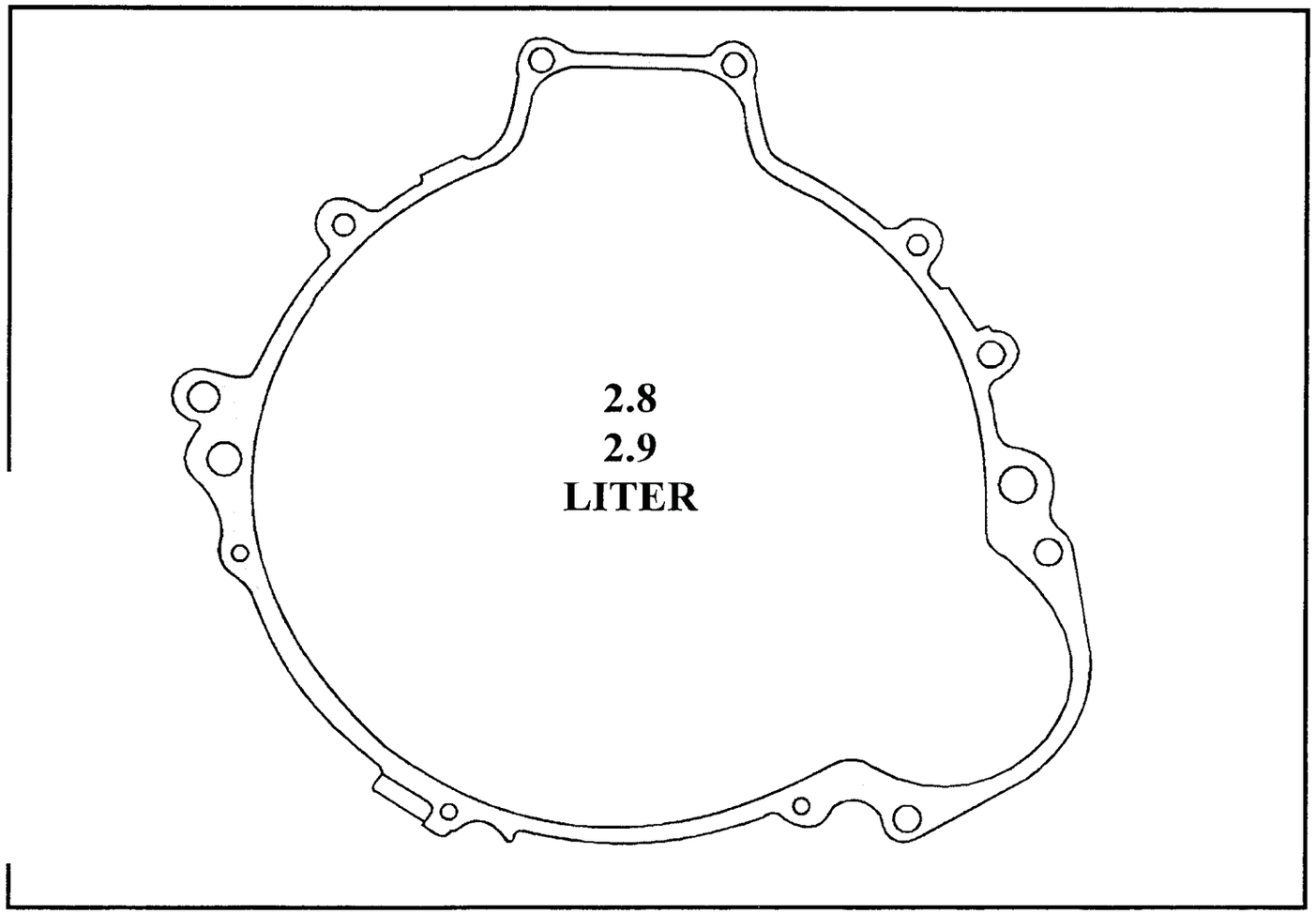


Figure 2

2.8 LITER

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

2.9 LITER

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

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.

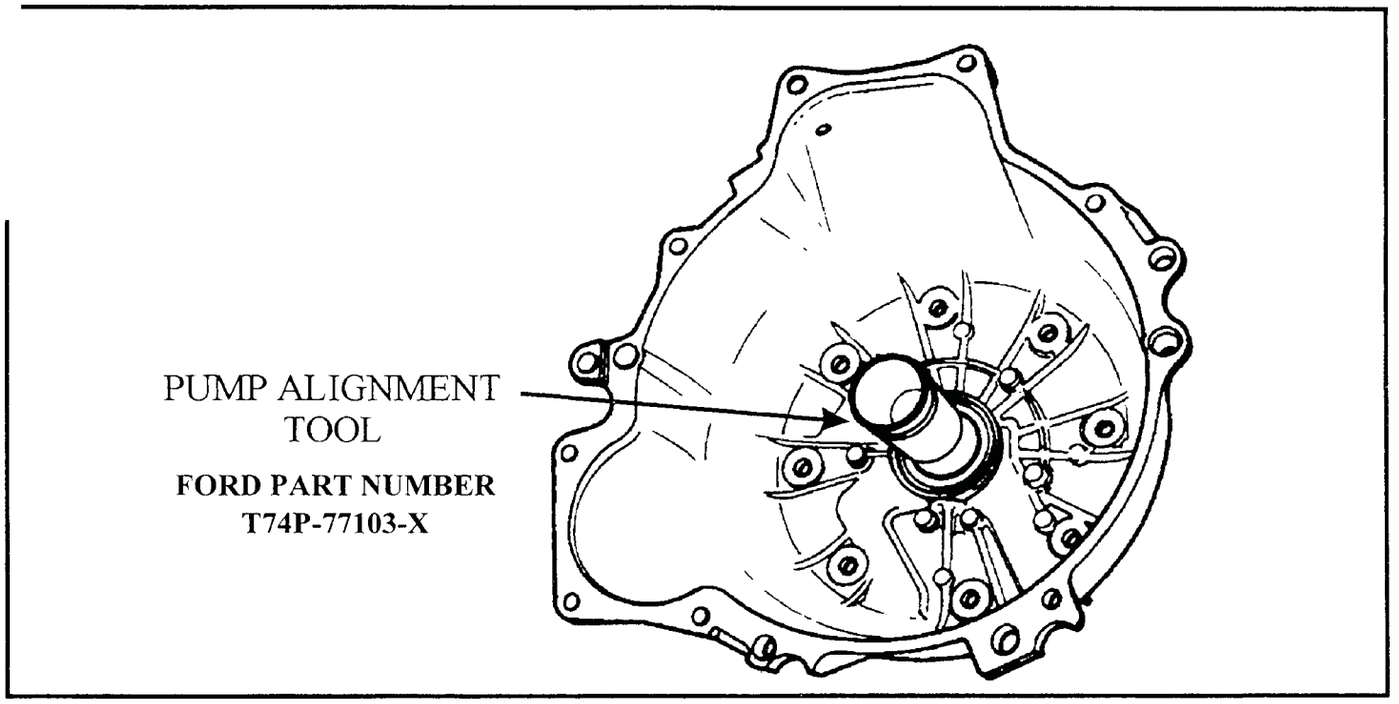
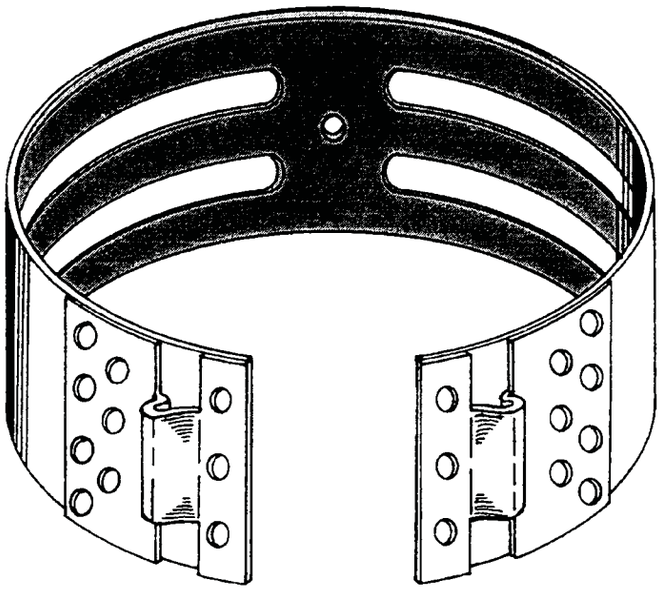


Figure 10

PREVIOUS DESIGN BAND & STRUT
BAND ADJUSTMENT= 2.0 TURNS



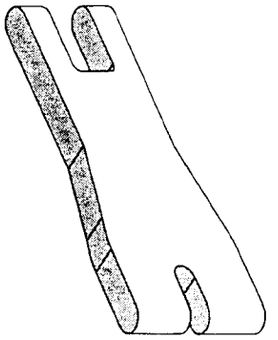


Figure 15

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.

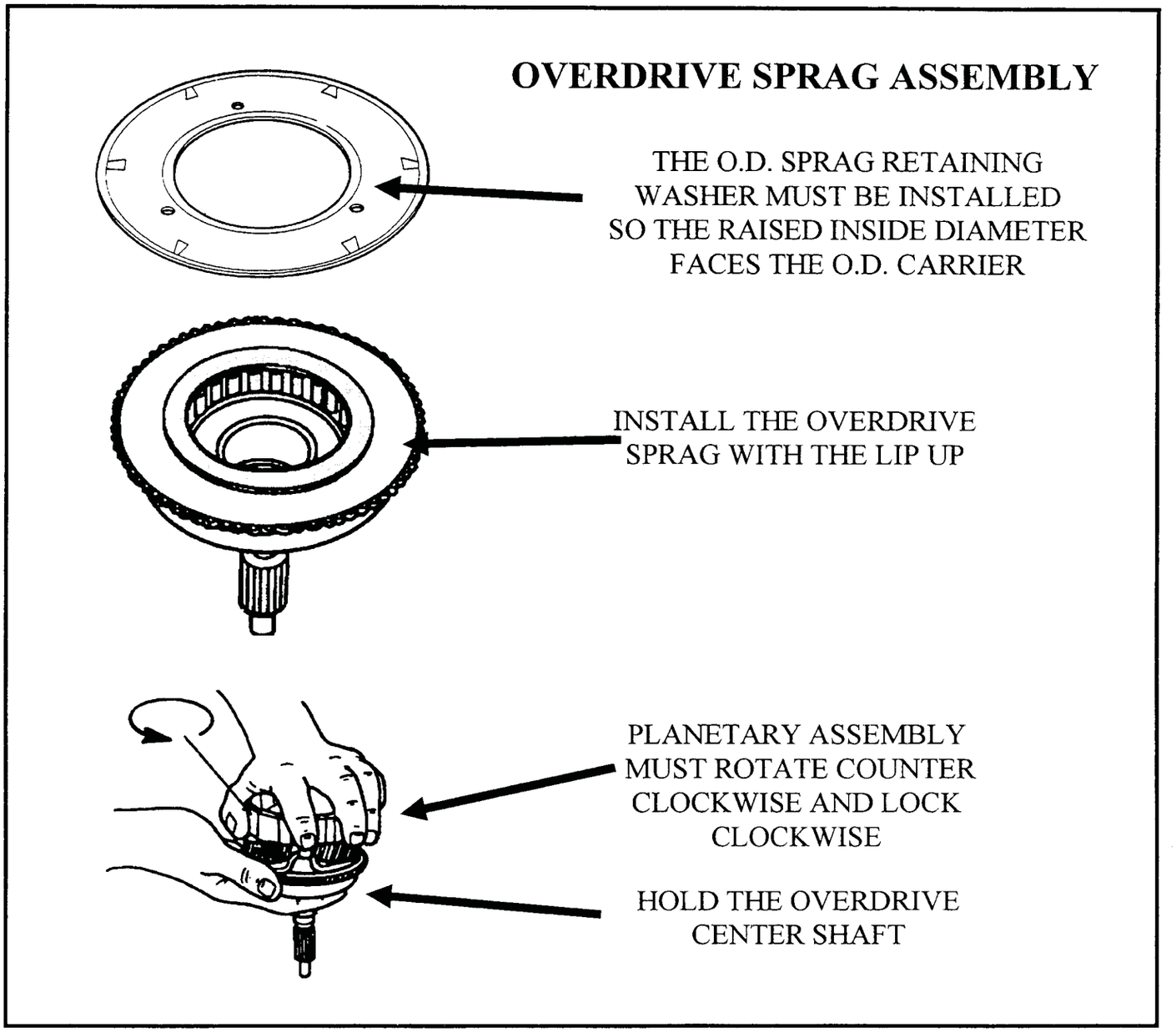


Figure 21

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).

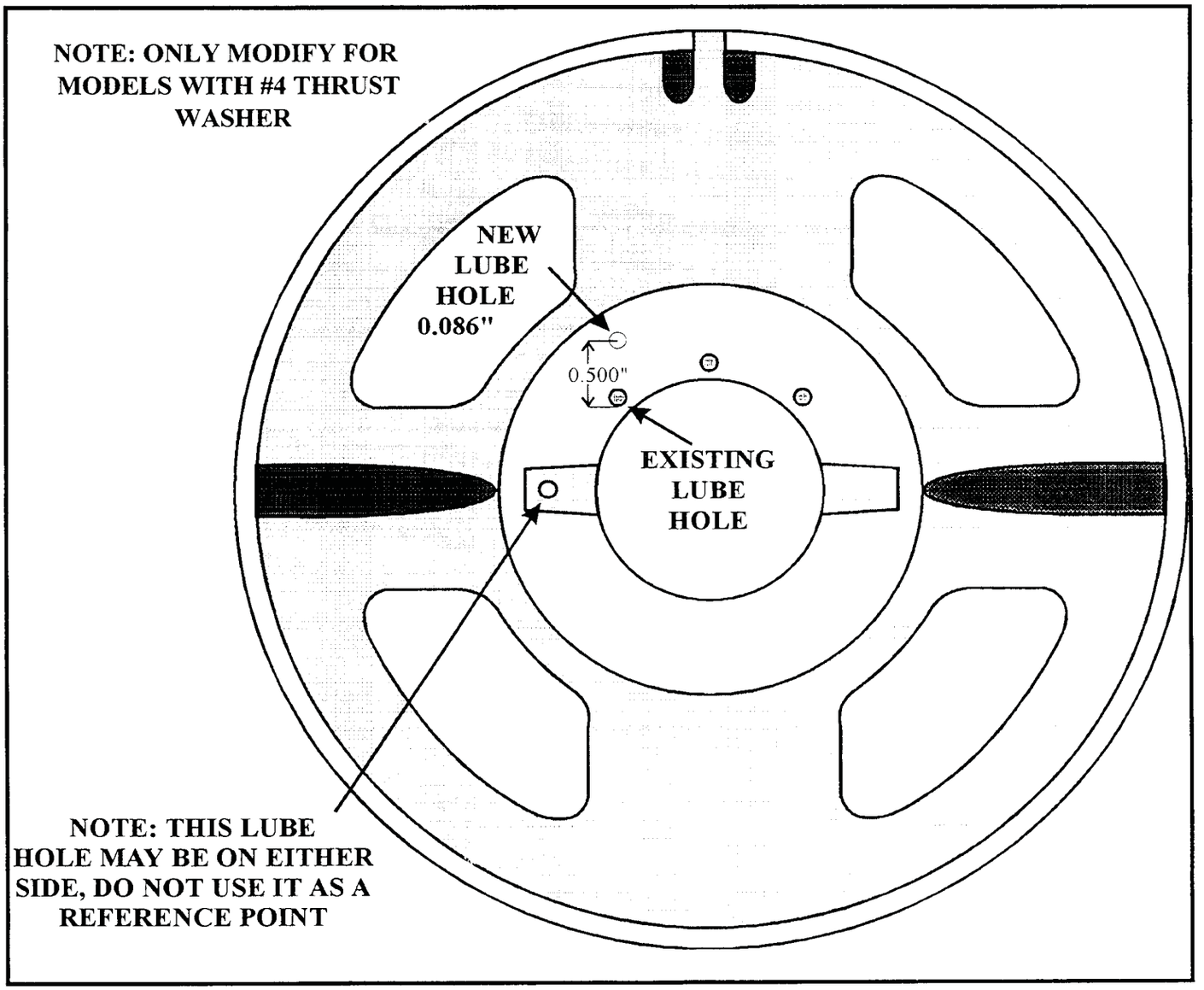


Figure 28

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 compatable, and is available under OEM part number F0TZ-7A398-E.

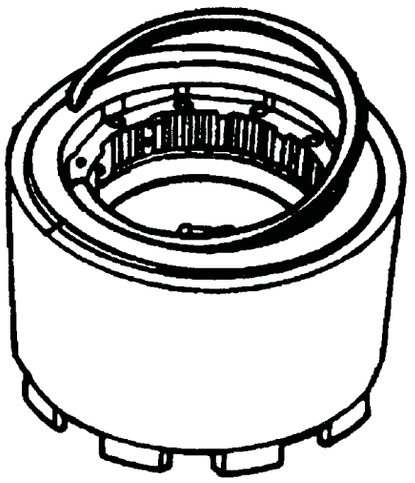
(2) The ***2nd Design 4 pinion steel*** front planetary carrier system, as shown in Figure 43, with the 1.580" inside diameter ring gear hub, the number 7 thrust bearing, the number 6 "Top Hat" thrust washer ***WILL*** retro-fit back on all models, except 4.0L engine models, but all parts listed above 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 compatable, 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).

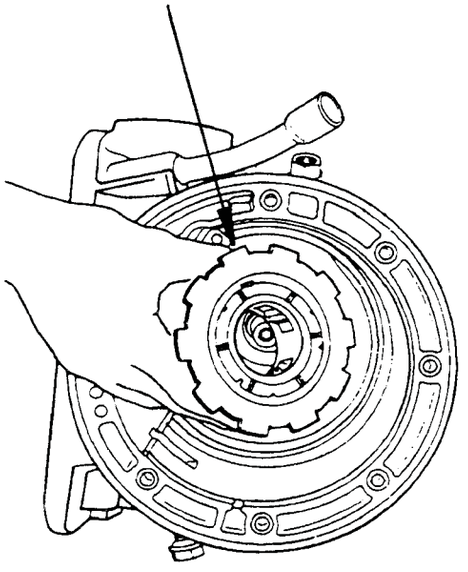
SERVICE INFORMATION:

3 Piece Thrust Bearing, 6 Pinion Steel Front Carrier F3TZ-7D234-A
Washer (7D090), 6 Pinion Steel Front Carrier F0TZ-7D090-A
Service Package, 6 Pinion Steel Front Carrier
(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

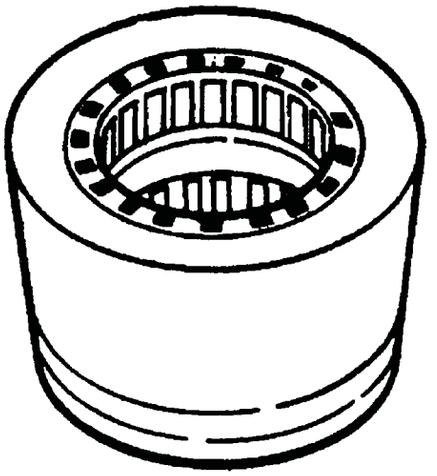
"1ST DESIGN"
REVERSE DRUM
WITH ROLLER CLUTCH



REQUIRES THE "2ND DESIGN"
10 LUG REAR CARRIER



"2ND DESIGN"
REVERSE DRUM
WITH SPRAG



REQUIRES THE "3RD DESIGN"
MULTIPLE LUG REAR CARRIER

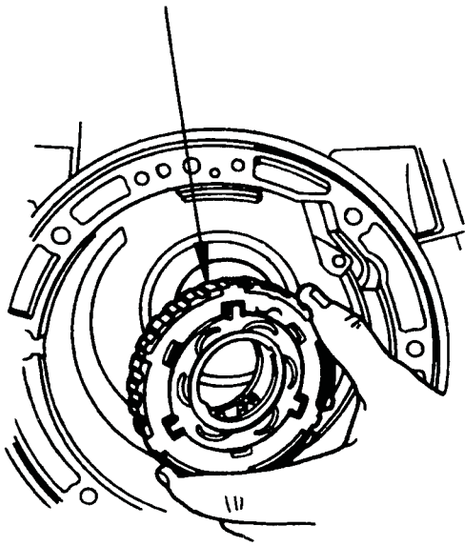


Figure 46

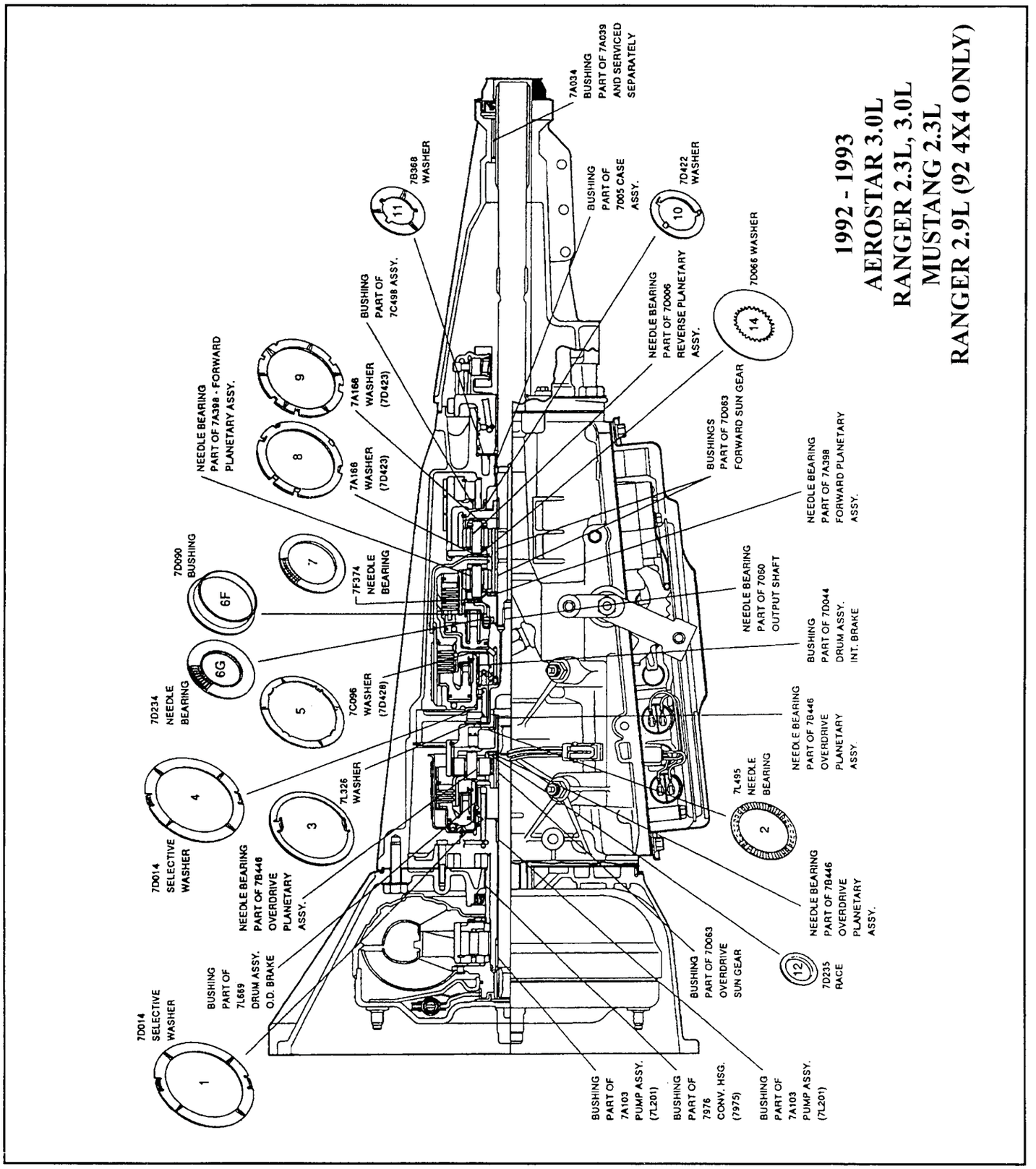

1992 - 1993
AEROSTAR 3.0L
RANGER 2.3L, 3.0L
MUSTANG 2.3L
RANGER 2.9L (92 4X4 ONLY)
7D014 SELECTIVE WASHER
BUSHING PART OF 7L689 DRUM ASSY. O.D. BRAKE
BUSHING PART OF 7A103 PUMP ASSY. (7L201)
BUSHING PART OF 7976 CONV. HSG. (7975)
BUSHING PART OF 7A103 PUMP ASSY. (7L201)
BUSHING PART OF 7D063 OVERDRIVE SUN GEAR
NEEDLE BEARING PART OF 7B446 OVERDRIVE PLANETARY ASSY.
7D014 SELECTIVE WASHER
7L326 WASHER
7D234 NEEDLE BEARING
7C096 WASHER (7D428)
7D090 BUSHING
7F374 NEEDLE BEARING
NEEDLE BEARING PART OF 7A398 - FORWARD PLANETARY ASSY.
7A168 WASHER (7D423)
7A168 WASHER (7D423)
BUSHING PART OF 7C498 ASSY.
7B368 WASHER
7A034 BUSHING PART OF 7A039 AND SERVICED SEPARATELY
BUSHING PART OF 7005 CASE ASSY.
7D422 WASHER
NEEDLE BEARING PART OF 7D006 REVERSE PLANETARY ASSY.
7D066 WASHER
BUSHINGS PART OF 7D063 FORWARD SUN GEAR
NEEDLE BEARING PART OF 7A398 FORWARD PLANETARY ASSY.
NEEDLE BEARING PART OF 7060 OUTPUT SHAFT
BUSHING PART OF 7D044 DRUM ASSY. INT. BRAKE
NEEDLE BEARING PART OF 7B446 OVERDRIVE PLANETARY ASSY.
7L495 NEEDLE BEARING
7D235 RACE
NEEDLE BEARING PART OF 7B446 OVERDRIVE PLANETARY ASSY.

Figure 53

CHECK BALL LOCATION
SINGLE SOLENOID VALVE BODY
SCORPIO / MERCUR ONLY

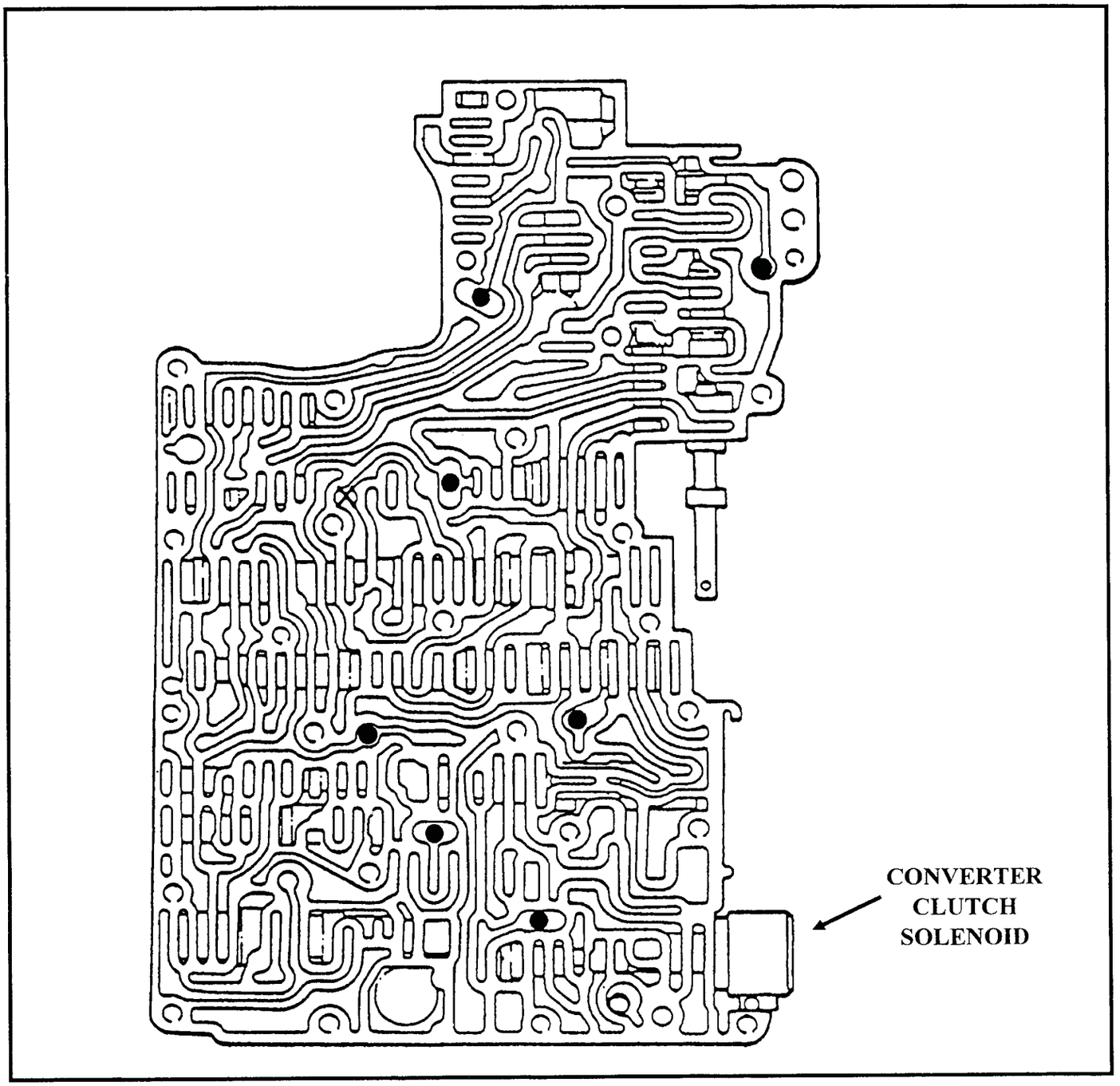


Figure 63

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 compatable 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.

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

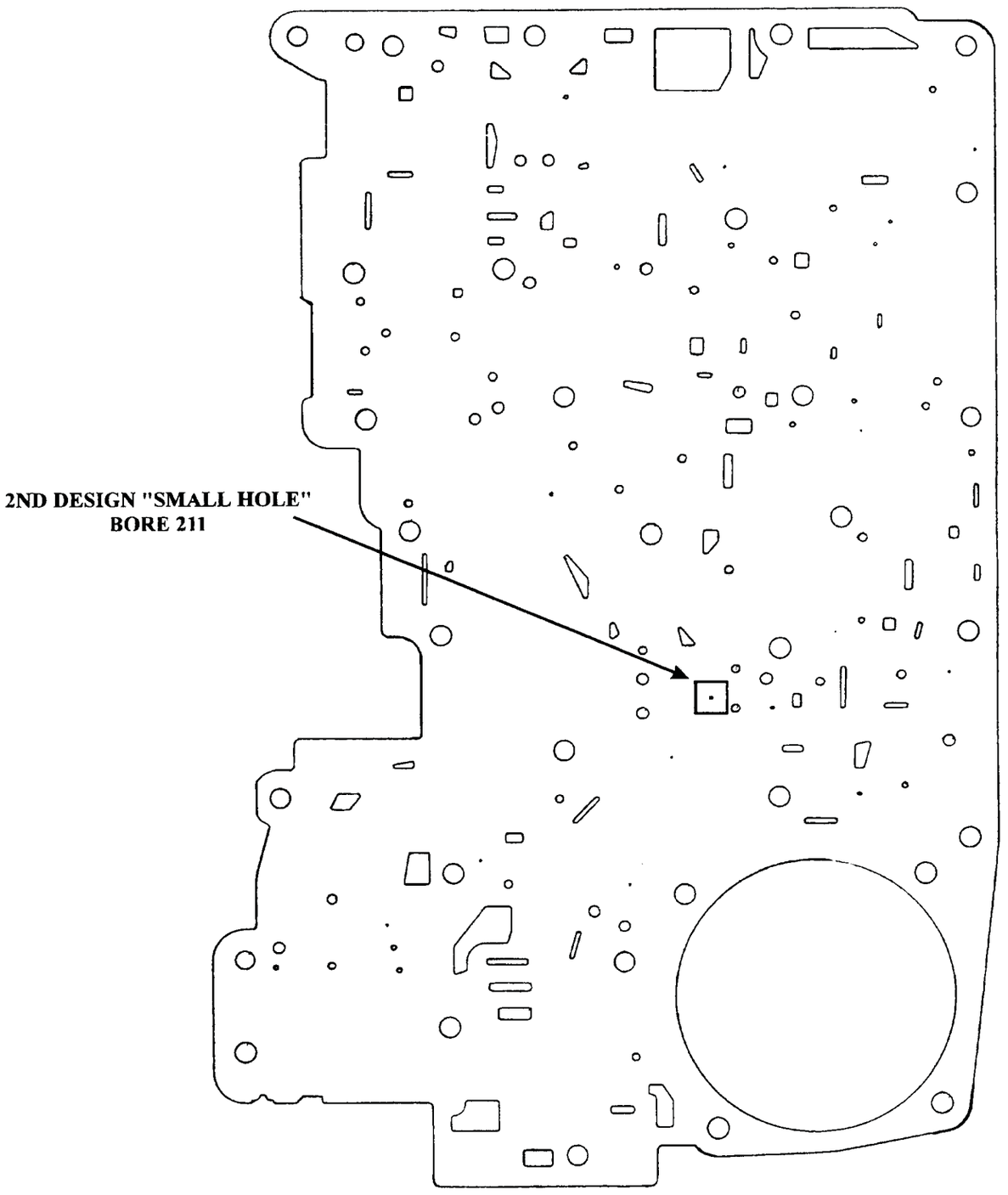


Figure 70

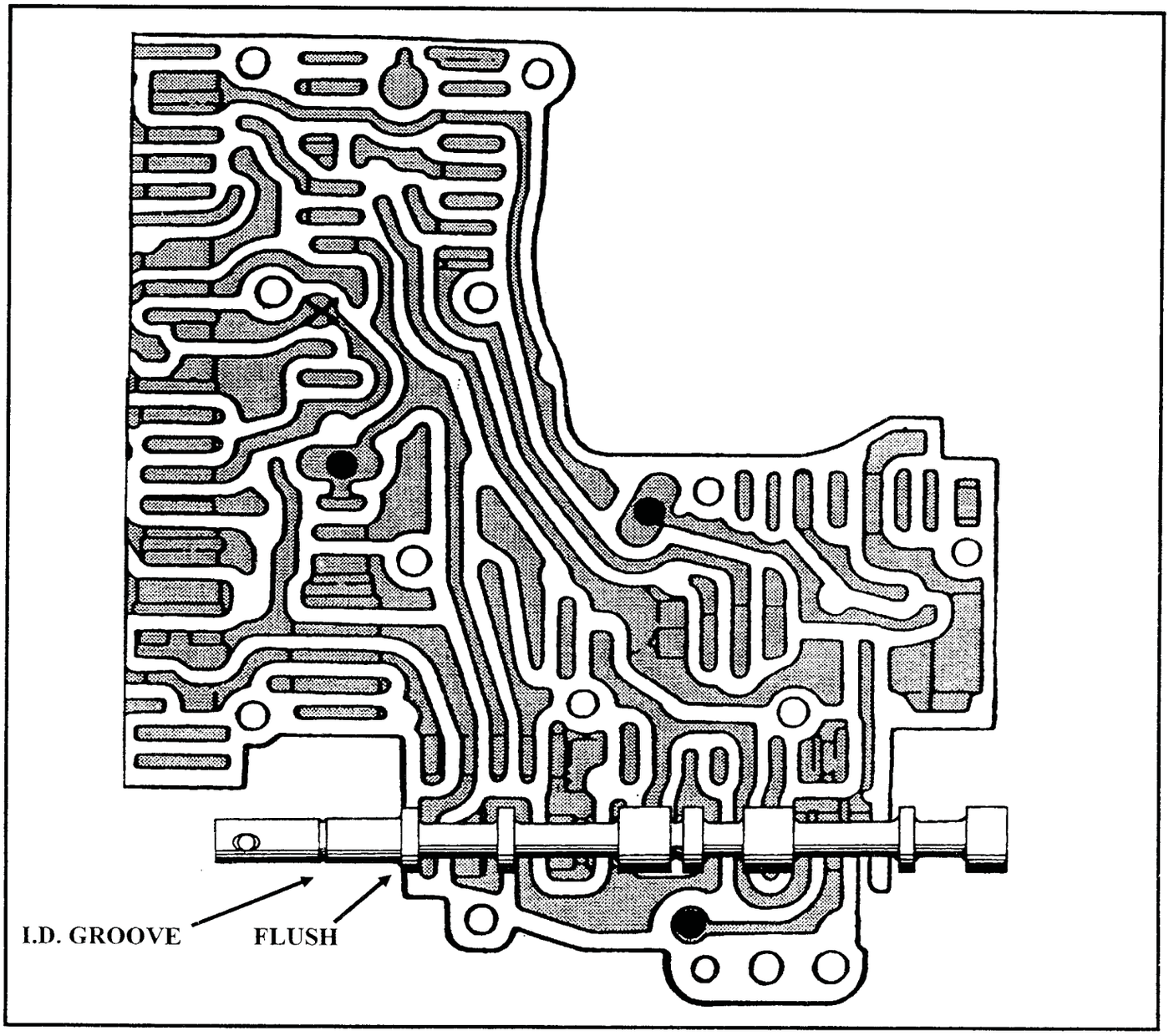


Figure 75

ENGINE STALLS ON FORWARD OR REVERSE ENGAGEMENT

COMPLAINT: Engine stalls when the selector is placed into froward 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

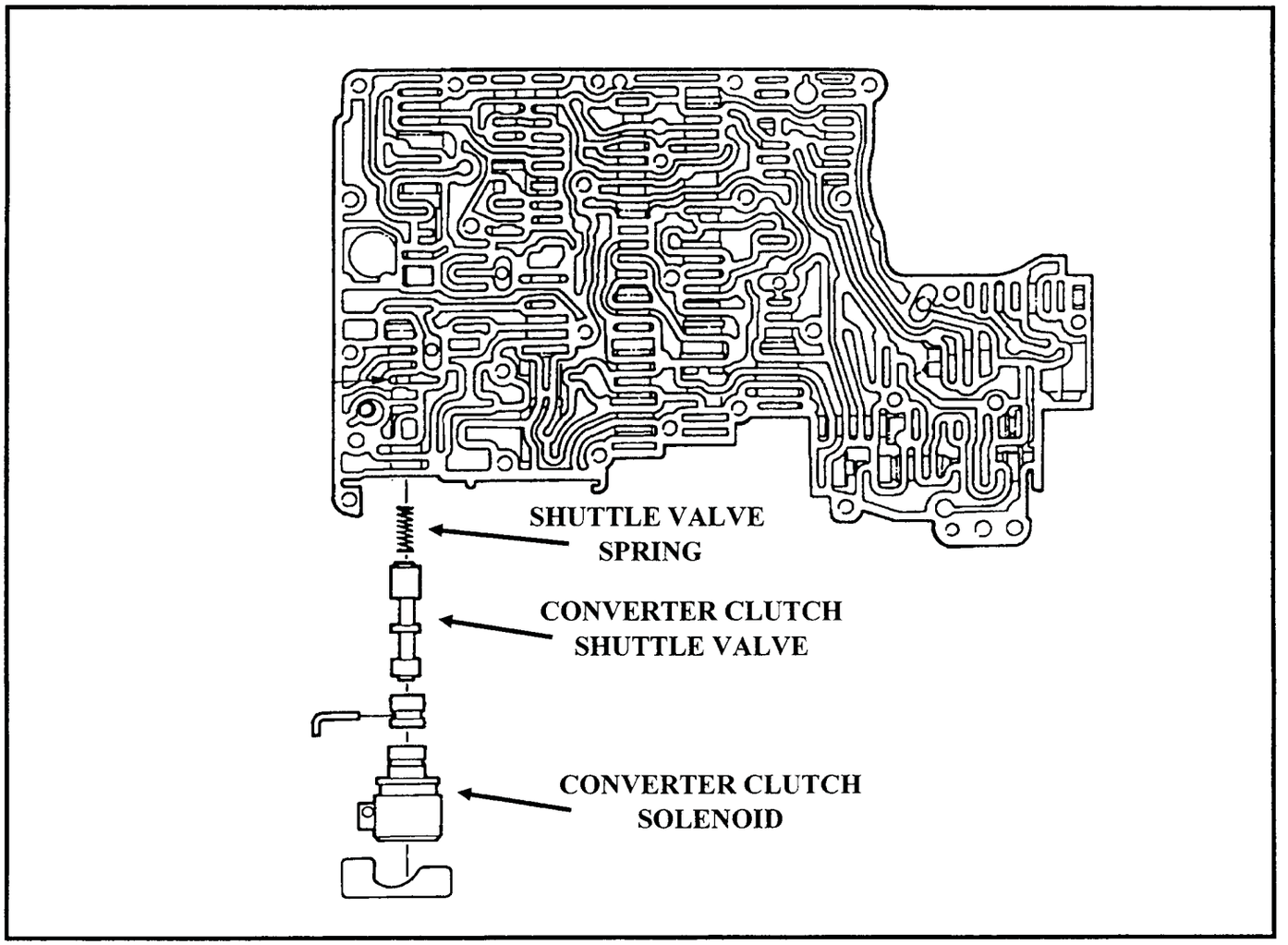


Figure 81

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