

REASSEMBLY

NOTE: See Fig. 52 and Fig. 53 for exploded view of internal parts, thrust washer and needle bearing locations. Lubricate all parts with ATF. Use petroleum jelly on gaskets, thrust washers, and needle bearings to retain in place. Use **NEW** gaskets and seals.

TRANSMISSION

Initial Reassembly

1. Install No. 9 output shaft needle bearing in transmission case. Install bearing support, No. 7 needle bearing and direct clutch hub in direct clutch assembly. Assemble output shaft hub to output shaft and install retaining snap ring.
2. Place No. 8 needle bearing on rear of direct clutch drum. Slide output shaft into direct clutch drum. Attach output shaft hub to ring gear with retaining ring. Install output shaft, ring gear, and direct clutch assembly into transmission case. See Fig. 46 .
3. Position governor drive ball in pocket on output shaft. Slide governor assembly onto output shaft with cover and attaching screws facing toward front of case. Ensure governor body is flush with counterweight. Install governor retaining snap ring.
4. Install low-reverse band into transmission case and ensure band is seated on anchor pins. When properly installed, center of band actuating rod seat can be seen through servo piston bore.
5. Install center support and planetary assembly into case. See Fig. 47 . If necessary, rotate output shaft to align planet carrier splines with direct clutch hub splines. Install center support anti-clunk spring using a hammer handle or wooden dowel. Spring tabs must face out.

NOTE: Center support and planet carrier cannot be installed unless notch cut in center support is aligned with overdrive band anchor pin. See Fig. 47 .

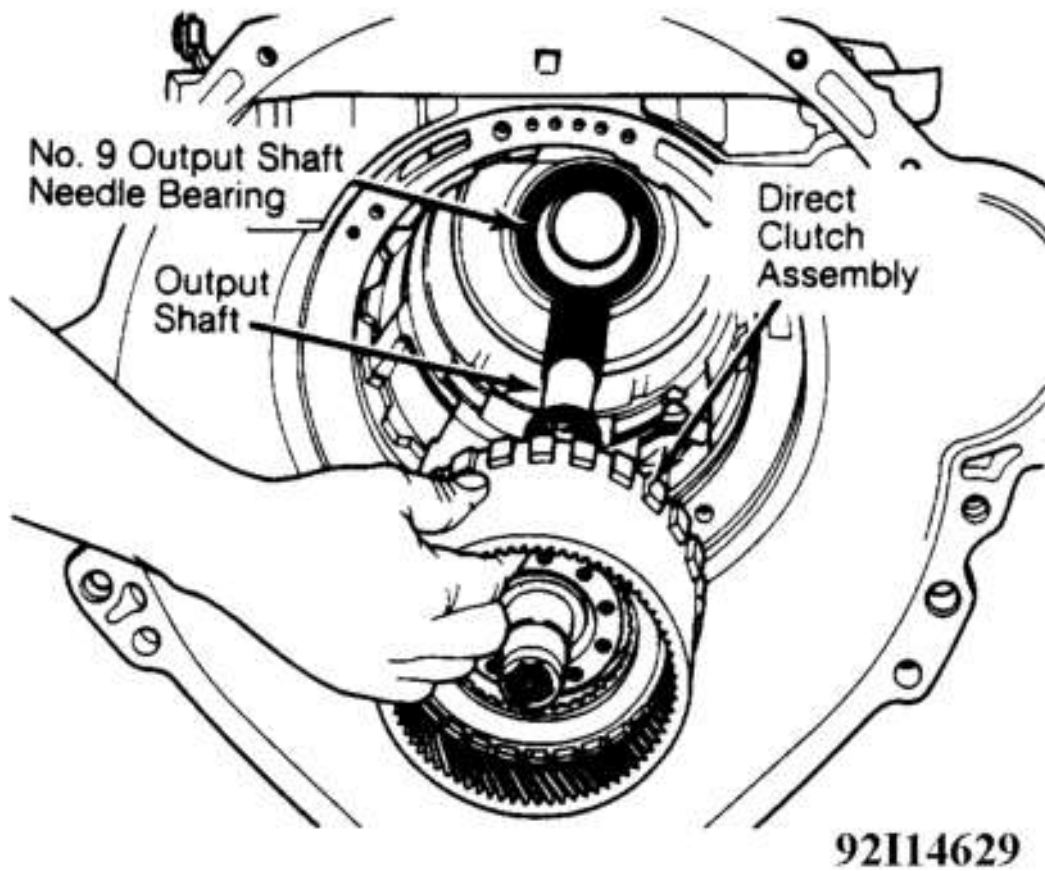


Fig. 46: Installing Direct Clutch Assembly
Courtesy of FORD MOTOR CO.

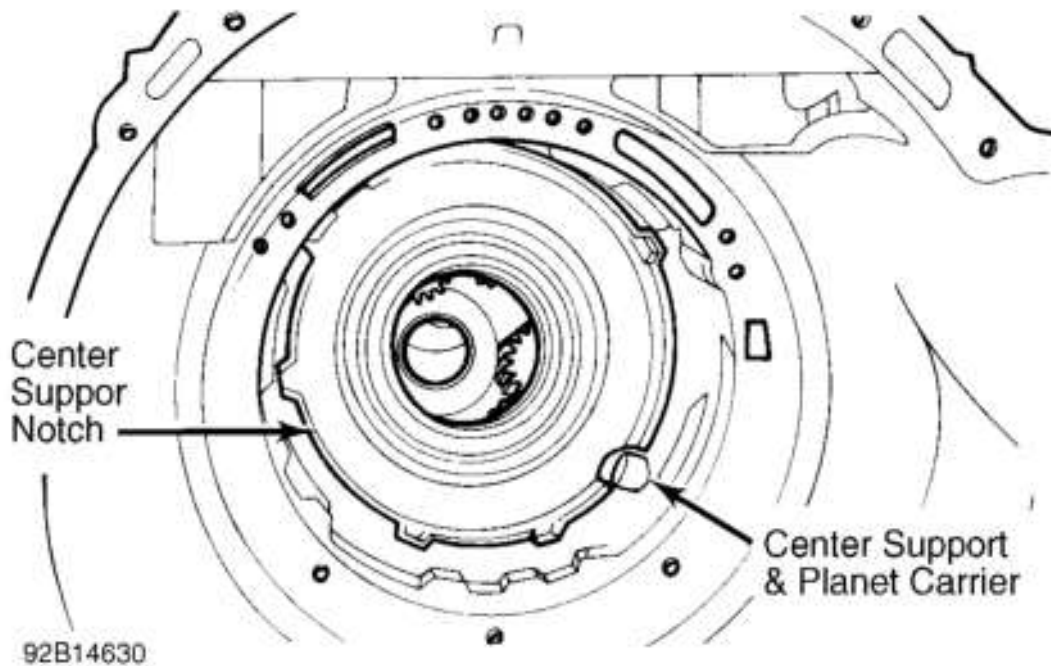


Fig. 47: Aligning Center Support Notch
 Courtesy of FORD MOTOR CO.

Low-Reverse Servo Pin Selection

1. Install center support retaining ring. Determine correct length of low-reverse servo pin to use. Lubricate and install servo piston and return spring. **DO NOT** install cover or retaining ring. Install Servo Selector Gauge (T80L-77030-A) into servo bore.
2. Tighten band apply bolt on tool to 50 INCH lbs. (5.6 N.m). Attach dial indicator. Position indicator stem on flat portion of servo piston. Zero dial indicator. See **Fig. 48** .
3. Thread bolt out of selector tool until piston stops against bottom of tool. Read amount of piston travel on dial indicator. If travel is .112-.237" (2.845-6.020 mm), correct servo pin is installed. If travel is not within specification, selective pistons are available. See **LOW-REVERSE SERVO PISTONS** .

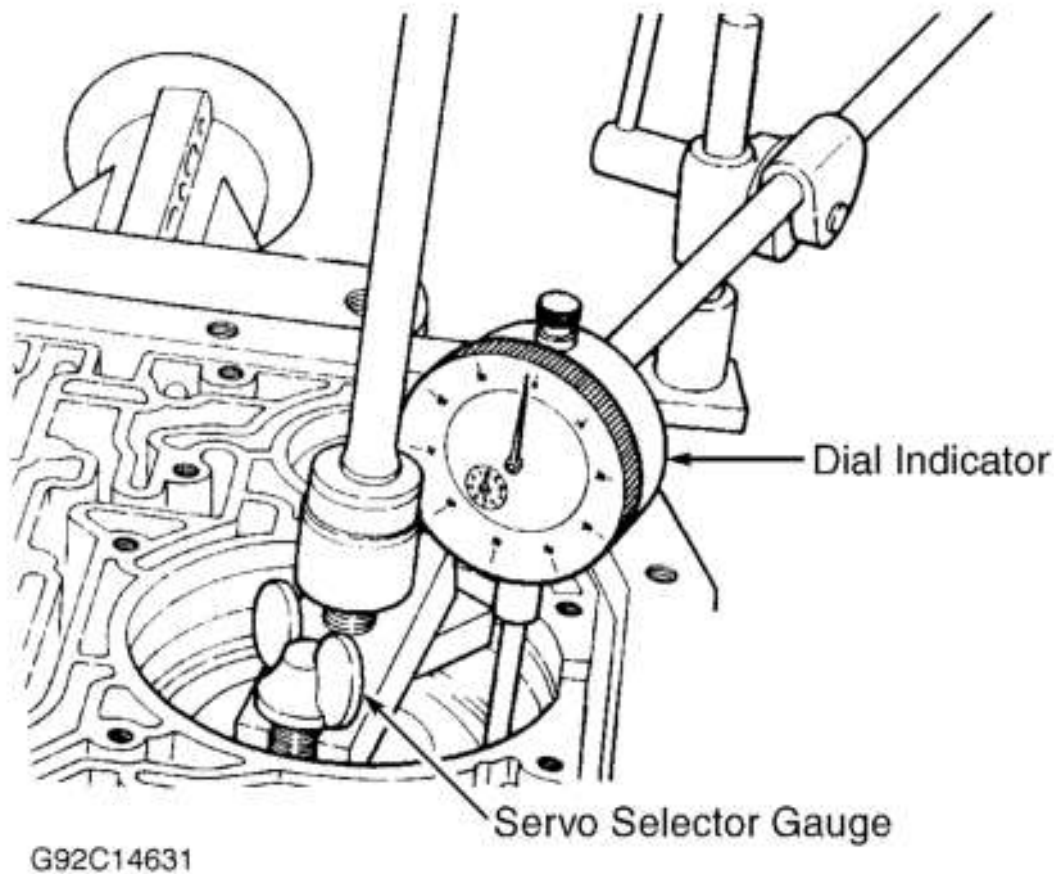


Fig. 48: Measuring Low-Reverse Servo Pin Travel
 Courtesy of FORD MOTOR CO.

LOW-REVERSE SERVO PISTONS

Part No.	Assembly Length	No. of Grooves
E0AZ7D189-A	2.936" (74.57 mm)	1
E0AZ7D189-B	2.989" (75.92 mm)	2
E0AZ7D189-C	3.043" (77.29 mm)	3

4. Length is measured from base of piston to end of rod. Select servo rod to bring servo travel within specification. Remove selector tool and dial indicator.
5. Install selected low-reverse servo piston. Install servo cover and cover retaining snap ring.

Final Reassembly

1. Install reverse clutch on forward clutch. See **Fig. 29** . Ensure No. 2 needle bearing is in position in reverse clutch. Install No. 3 needle bearing and forward clutch hub in forward clutch. Position No. 4 needle bearing on forward clutch hub.
2. Install drive shell over clutch assemblies. Install No. 5 needle bearing and forward sun gear on drive shell. Install complete assembly into case, rotating output shaft to aid in engaging sun gear with

planetary gears. See **Fig. 49** .

3. Install overdrive band into case and around drive shell assembly. Ensure band anchor is properly positioned on anchor pin. Using a screwdriver to hold overdrive band in position, lubricate and install overdrive servo.
4. With overdrive servo installed, inspect band and apply pin for proper position and engagement. If band anchor and apply pin are not properly engaged, remove servo and re-position band as necessary.
5. Install intermediate clutch pack pressure plate, clutch pack (starting with a friction plate and alternating steel and friction plates) and selective steel plate in this order. Measure intermediate clutch clearance.
6. Intermediate clutch clearance is measured using a depth micrometer and End Play Checking Bar (T80L-77003-A). Set end play tool across pump case mounting surface. Locate micrometer end play bar and read depth. See **Fig. 50** .

NOTE: A downward pressure must be applied to clutch pack while measuring intermediate clutch clearance.

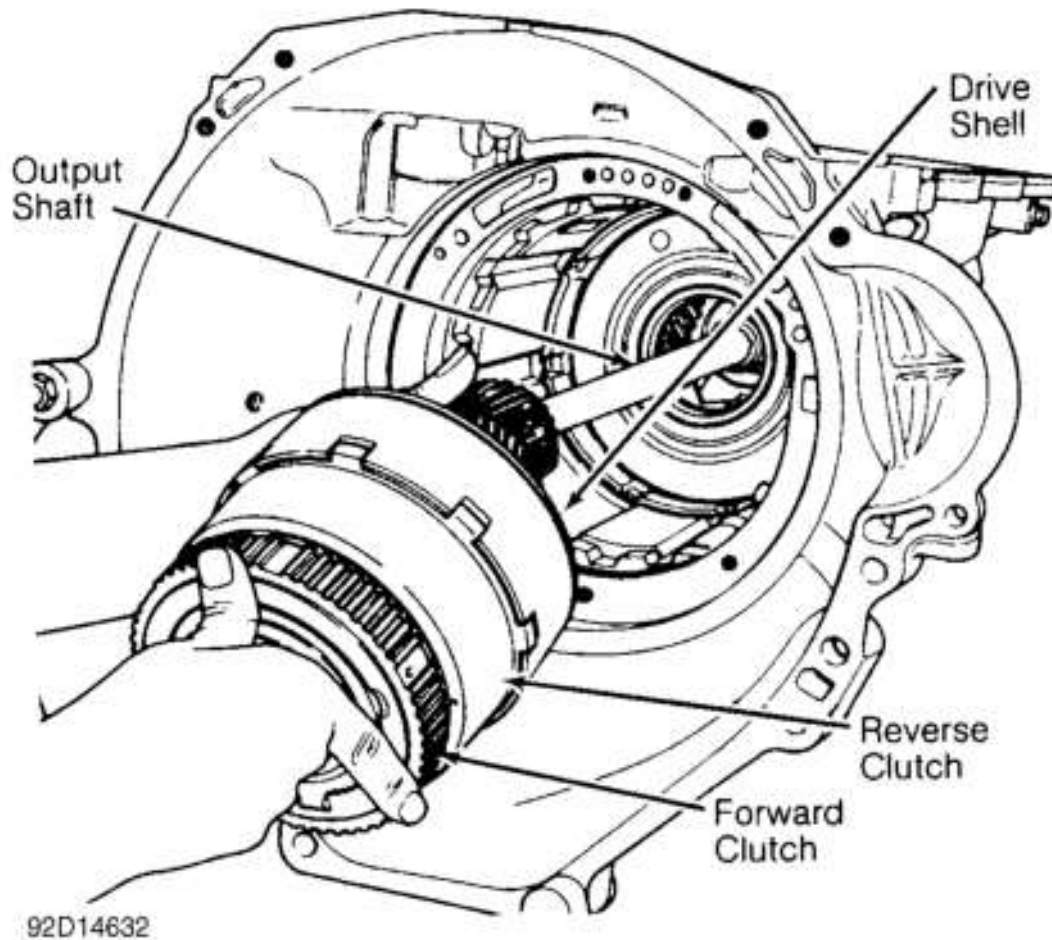
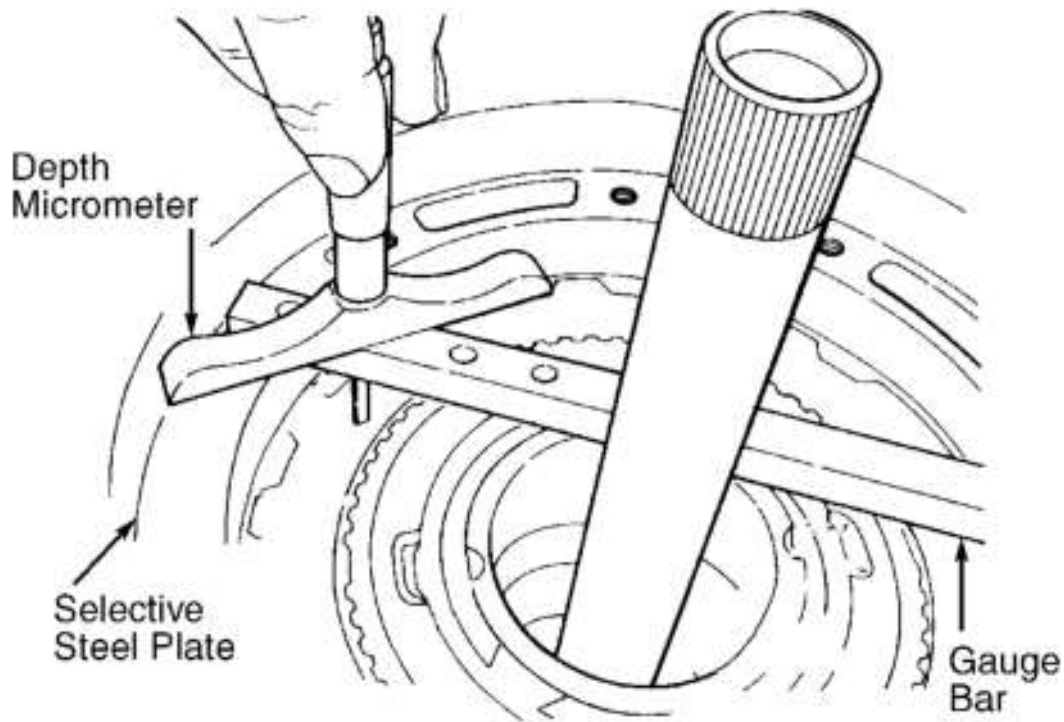


Fig. 49: Installing Drive Shell & Clutch Assemblies
Courtesy of FORD MOTOR CO.



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Fig. 50: Measuring Intermediate Clutch Clearance
 Courtesy of FORD MOTOR CO.

7. Check depth again with micrometer 180 degrees opposite from previous measurement. Ensure depth at intermediate clutch selective steel plate is 1.634-1.646" (41.504-41.808 mm). Ensure average of the 2 measurements is within this range.
8. If intermediate clutch clearance (depth) is not within tolerance, see **INTERMEDIATE CLUTCH SELECTIVE STEEL PLATES** . Install correct size plate and recheck clearance.

INTERMEDIATE CLUTCH PLATE USAGE

Application	Steel Plates	Friction Plates
All	3	3

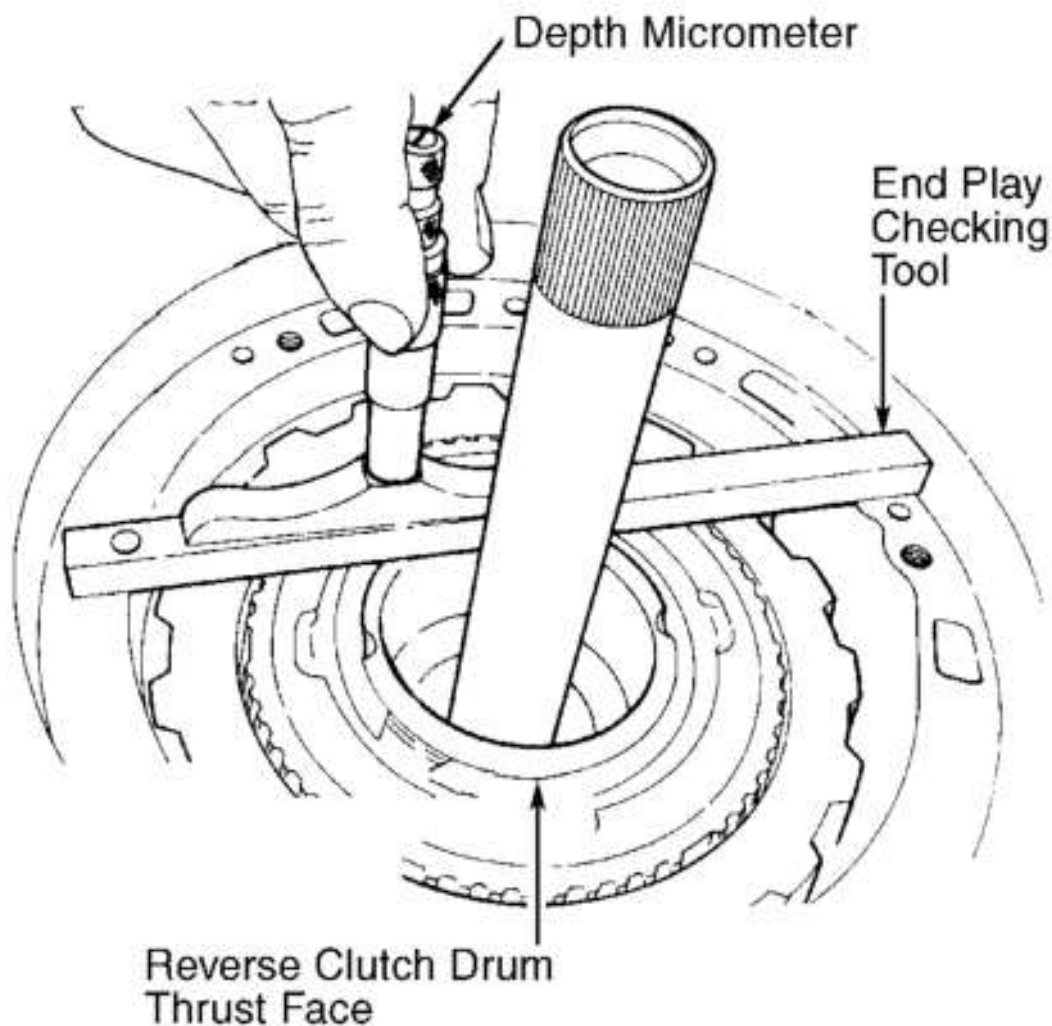
INTERMEDIATE CLUTCH SELECTIVE STEEL PLATES

Part No.	(1) Thickness
E0AP7F220-A1A	.069 (1.75 mm)
E0AP7F220-A2A	.079 (2.01 mm)
E0AP7F220-A3A	.089 (2.26 mm)
E0AP7F220-A4A	.099 (2.51 mm)
(1) Snap ring thicknesses have .002" (.05 mm) tolerance.	

9. Check transmission end play by locating depth micrometer on End Play Checking Bar (T80L-77003-A). Ensure depth is measured at reverse clutch drum thrust face. See **Fig. 51** . Standard end play

is .004-.044" (.101-1.11 mm).

10. Check end play 180 degrees opposite end of reverse clutch drum thrust face to determine average depth. Thrust washer controlling transmission end play is located on stator support which is attached to back of pump housing.
11. Transmission end play can be adjusted using one of selective thrust washers available for service. After measuring depth, select required thrust washer. See **END PLAY THRUST WASHER SELECTION** .



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Fig. 51: Measuring Transmission End Play
Courtesy of FORD MOTOR CO.

END PLAY THRUST WASHER SELECTION

Measured Depth In. (mm)	Washer Thickness In. (mm)	Color Code
1.483-1.500 (37.67-	.050-.054 (1.27-1.37)	Green

38.10)		
1.501-1.517 (38.13-38.53)	.068-.072 (1.73-1.83)	Yellow
1.518-1.534 (38.56-38.96)	.085-.089 (2.16-2.26)	Natural
1.535-1.551 (38.99-39.40)	.102-.106 (2.59-2.69)	Red
1.552-1.568 (39.42-39.83)	.119-.123 (3.02-3.12)	Blue

12. Install selected transmission end play thrust washer on stator support. Use petroleum jelly to hold it in place. Install pump alignment dowel, made by cutting the head from a M8 x 1.25 bolt, into pump mounting bolt hole at 6 o'clock position.
13. Install new pump gasket into case. Install pump assembly into case using 2 slide hammers to lower pump into position. Remove alignment dowel. Coat all pump-to-case bolts with Loctite and install in case.
14. Alternately tighten bolts a few turns at a time to draw pump into case. Tighten bolts to specification. See **TORQUE SPECIFICATIONS** . Install 2-3 accumulator assembly. Install 2 valve body Alignment Pins (T8OL-77100-A) into valve body.
15. Install valve body gasket and valve body assembly over pins. Ensure manual and throttle levers are properly positioned before installing valve body retaining bolts.

NOTE: Two different length valve body retaining bolts are used. Longer bolts are used at 4 front, 1 center and 3 rear locations.

16. Loosely install valve body retaining bolts. Starting at center and working outward, tighten bolts. Remove alignment pins and install bolts. Install detent spring and roller assembly and tighten bolts to specification. See **TORQUE SPECIFICATIONS** .
17. Position T.V. lever torsion spring against separator plate "V" notch. This spring pushes the throttle lever in direction of wide open throttle.
18. Install filter grommet, new filter gasket, and filter on valve body. Install filter attaching bolts and tighten. Position new pan gasket on case and install oil pan. Clean mating surface on transmission and extension housing. Position new gasket on transmission. Slide extension housing into place.
19. Clean bolts and case holes for 2 bottom bolts and lower right hand corner bolt (as viewed from rear of extension housing). Coat bolts with Teflon tape and install. Install remaining bolts and tighten to specification.
20. Slide direct drive shaft into turbine input shaft. Install torque converter. Ensure pump is fully seated.

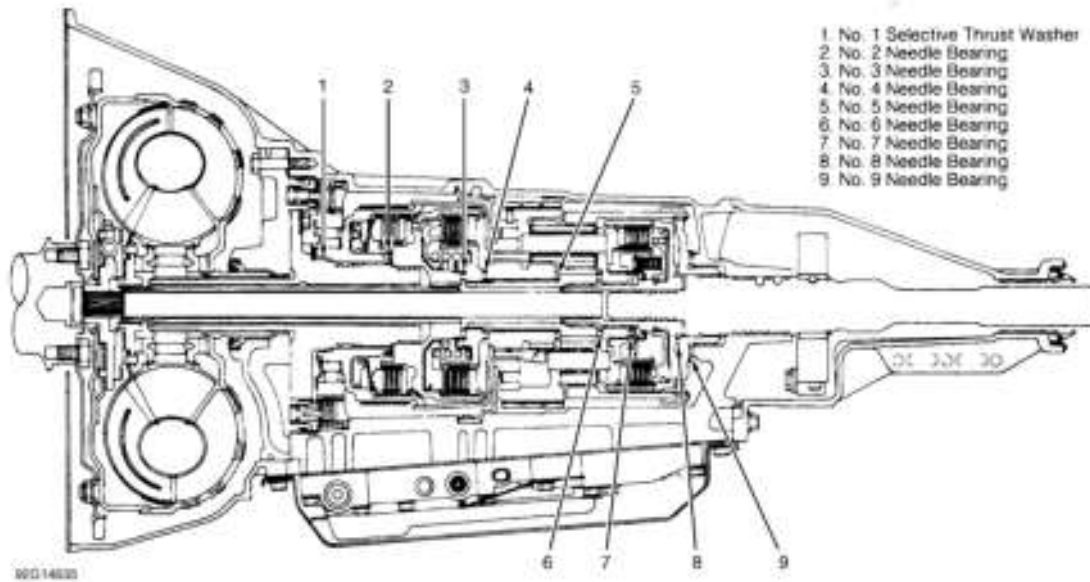


Fig. 52: Locating Needle & Thrust Bearings
 Courtesy of FORD MOTOR CO.

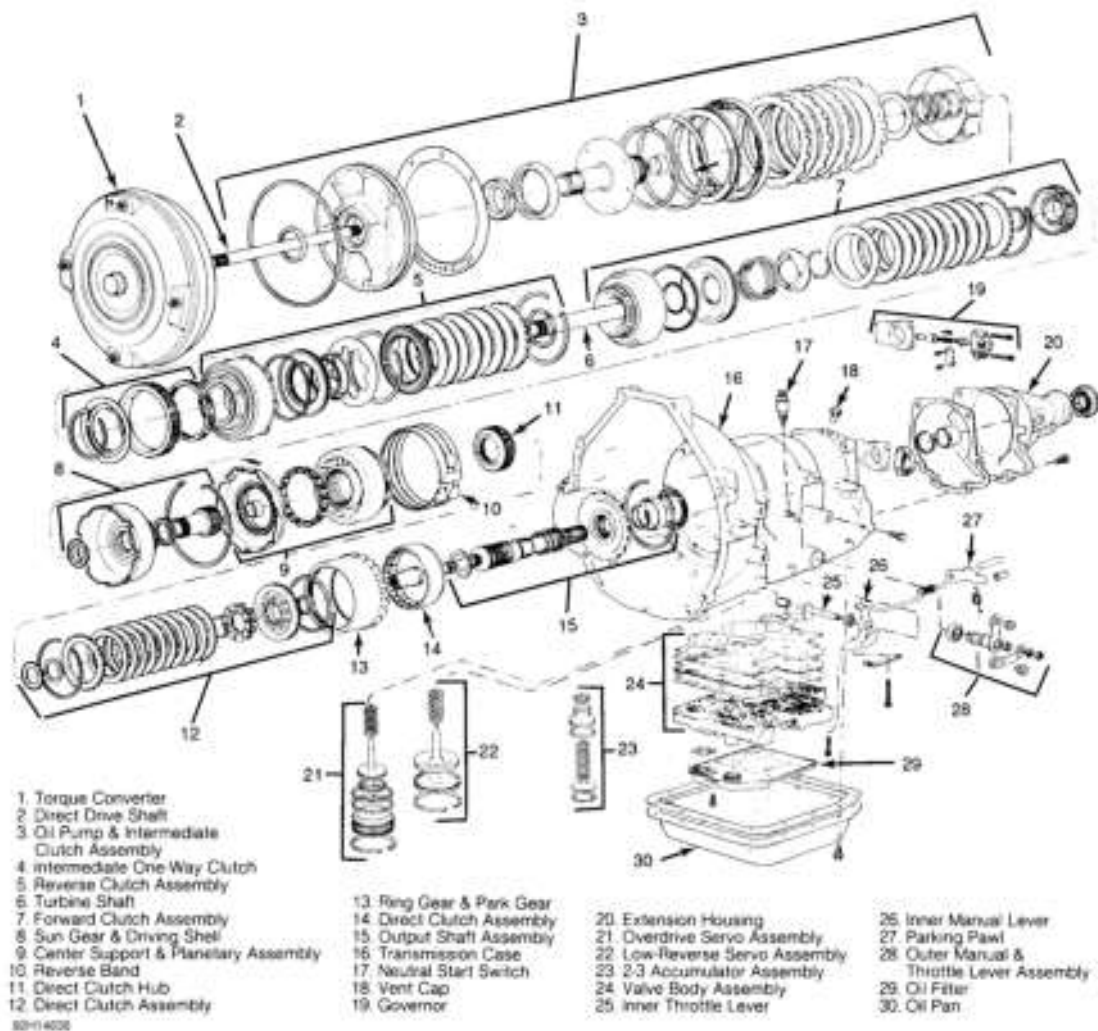


Fig. 53: Exploded View of AOD Transmission
 Courtesy of FORD MOTOR CO.