

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES

FORWARD/OVERDRIVE CLUTCH ASSEMBLY - DISASSEMBLY

DISASSEMBLY

1. Remove the direct clutch outer shell retaining ring.

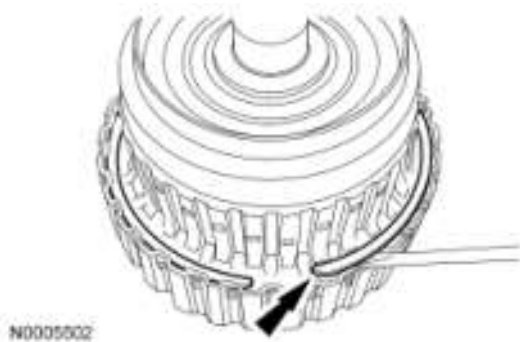


Fig. 213: Locating Direct Clutch Outer Shell Retaining Ring
Courtesy of FORD MOTOR CO.

2. Remove the direct clutch hub.

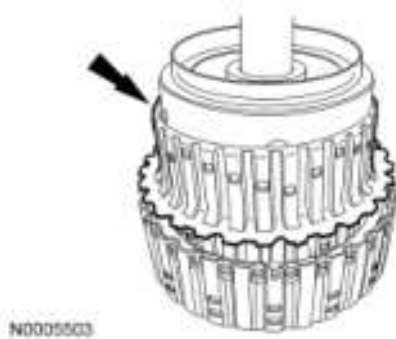


Fig. 214: Locating Direct Clutch Hub
Courtesy of FORD MOTOR CO.

3. Remove the forward clutch and sun shaft assembly.

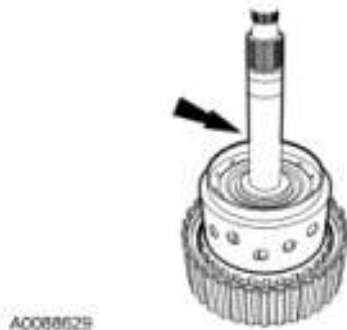


Fig. 215: Locating Forward Clutch And Sun Shaft Assembly
Courtesy of FORD MOTOR CO.

NOTE: The bearing may stick in the forward clutch drum.

4. Remove the intermediate shaft bearing.

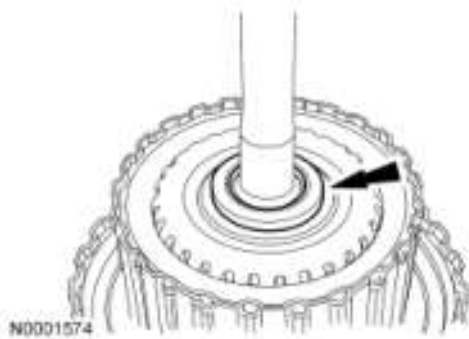


Fig. 216: Locating Intermediate Shaft Bearing
Courtesy of FORD MOTOR CO.

5. Remove the intermediate shaft assembly.

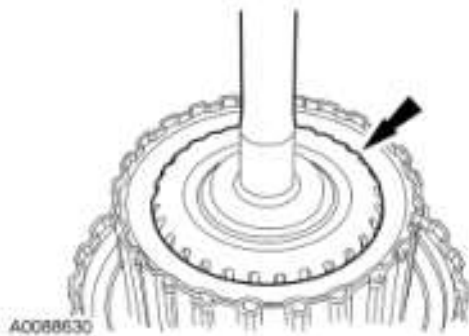


Fig. 217: Locating Intermediate Shaft Assembly
Courtesy of FORD MOTOR CO.

6. Remove the overdrive clutch pack from the forward clutch pack.

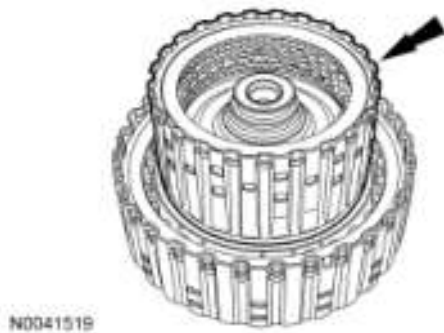





Fig. 218: Locating Overdrive Clutch Pack
Courtesy of FORD MOTOR CO.

FORWARD CLUTCH ASSEMBLY

Special Tools

Illustration	Tool Name	Tool Number
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 <p>ST1214-A</p>	Dial Indicator Gauge with Holding Fixture	100-002 (TOOL-4201-C) or equivalent
 <p>ST2881-A</p>	Piston Spring Compressor	307-525
 <p>ST2882-A</p>	Clutch Pack End Play Gauge	307-555

Material

Item	Specification
MERCON® SP Automatic Transmission Fluid XT-6-QSP (US); CXT-6-LSP12 (Canada)	MERCON® SP

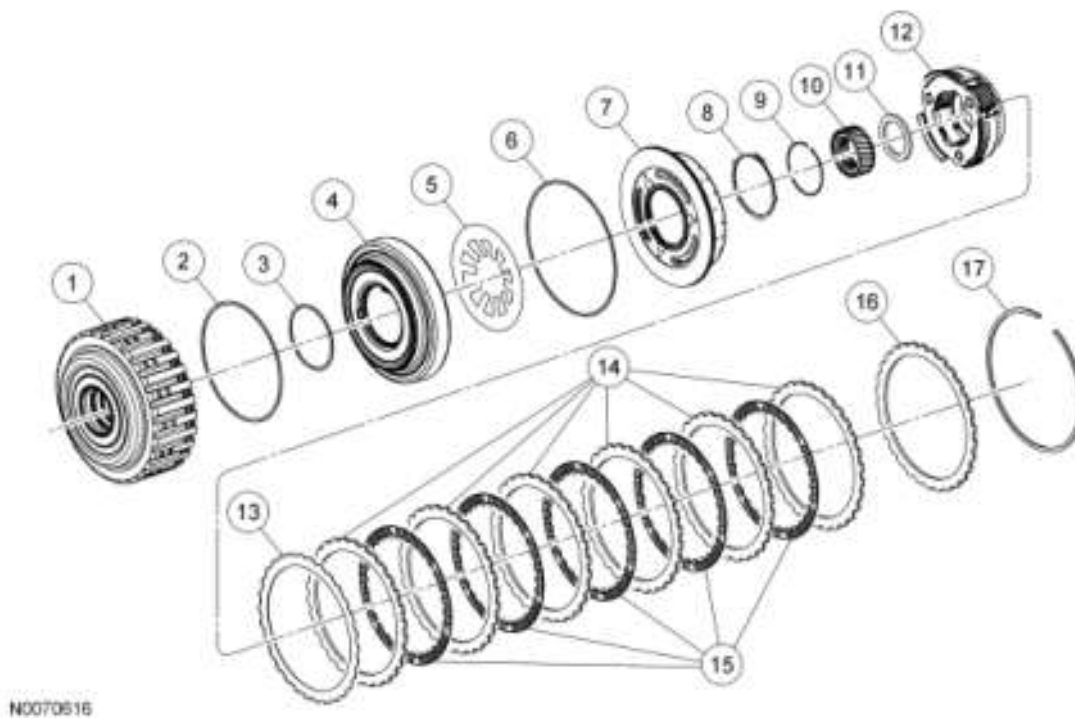


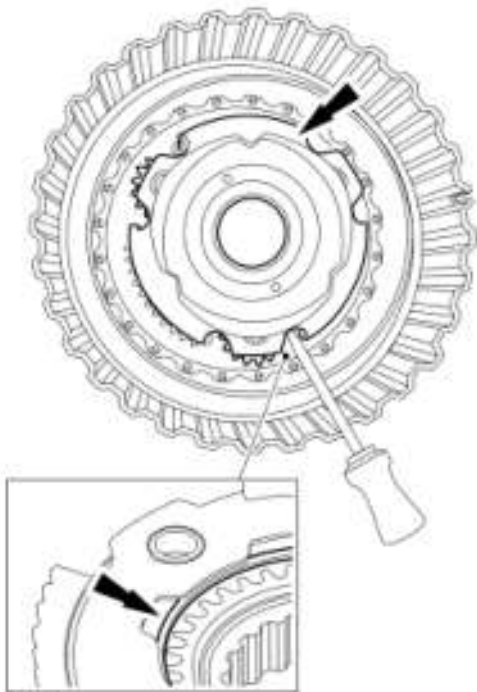
Fig. 219: Exploded View Of Forward Clutch Assembly (A Clutch)
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	7J011	Forward clutch drum
2	7F227	Forward clutch piston outer O-ring seal

3	7G242	Forward clutch piston inner O-ring seal
4	7L140	Forward clutch piston
5	7F230	Forward clutch piston return spring
6	7F227	Forward clutch balance dam O-ring seal
7	7J032	Forward clutch balance dam
8	7H365	Forward clutch balance dam retaining ring
9	7H579	Sun gear retaining ring
10	7G231	Sun gear
11	7H375	Bearing T1
12	7G218	Planetary gear
13	7N572	Forward clutch wave spring
14	7E314	Forward clutch external splined steel plates (quantity model dependent)
15	7B164	Forward clutch internal splined friction plates (quantity model dependent)
16	-	Forward clutch pressure plate
17	7B421	Forward clutch plate retaining ring

DISASSEMBLY

1. Remove the sun gear from the forward clutch assembly.
 - With a small screwdriver or a suitable pick inserted into the sun, gear push on the retaining ring in 3 places while lifting up on the sun gear to remove.



N0041511

Fig. 220: Locating Sun Gear
 Courtesy of FORD MOTOR CO.

2. Remove the forward clutch pack snap ring.



Fig. 221: Locating Forward Clutch Pack Snap Ring
Courtesy of FORD MOTOR CO.

NOTE: Inspect the forward clutch drum and the friction and steel plates for damage. Install new components as necessary. If no damage is indicated, the friction and steel plates can be reused.

3. Remove and inspect the forward clutch steel and friction plates.

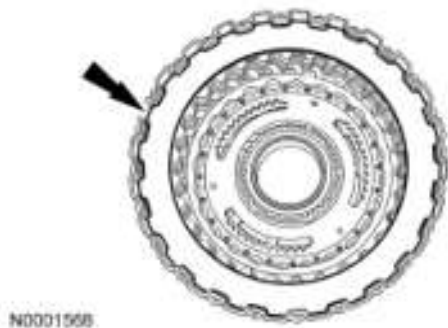


Fig. 222: Locating Forward Clutch Steel And Friction Plates
Courtesy of FORD MOTOR CO.

NOTE: The bottom of the special tool will need to be installed from the back side of the forward clutch assembly.

4. Install the special tool under the forward clutch drum.

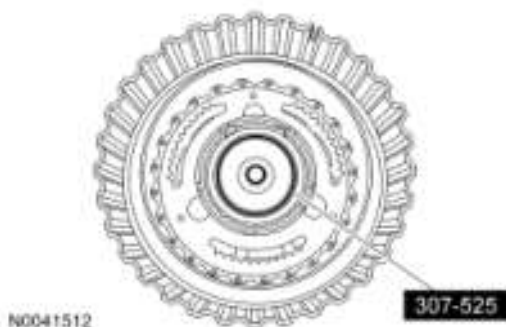


Fig. 223: Installing Under Forward Clutch Drum

Courtesy of FORD MOTOR CO.

NOTE: The bottom of the special tool will need to be installed from the back side of the forward clutch assembly.

- Using the special tool, slightly collapse the balance dam to gain access to the retaining ring. Remove the retaining ring.

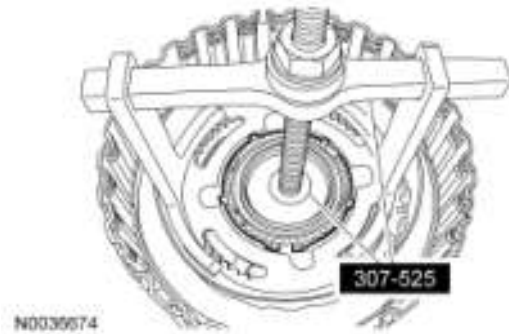


Fig. 224: Balance Dam Retaining Ring
Courtesy of FORD MOTOR CO.

- Prior to removing the balance dam, make an identifying mark on the balance dam and the center part of the housing. This is for correct alignment during the assembly.

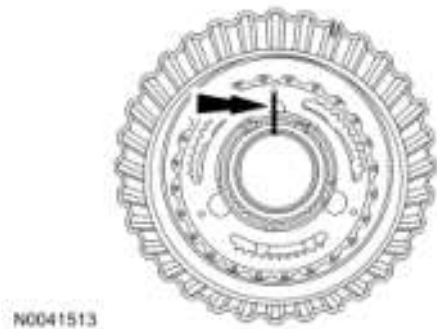


Fig. 225: Locating Identifying Mark On Balance Dam
Courtesy of FORD MOTOR CO.

- Remove the balance dam.

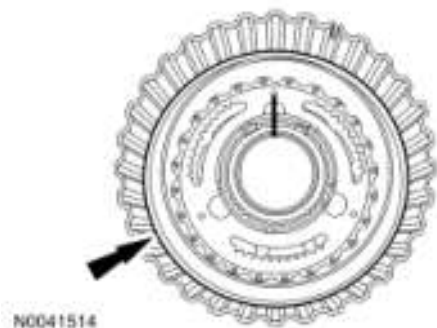
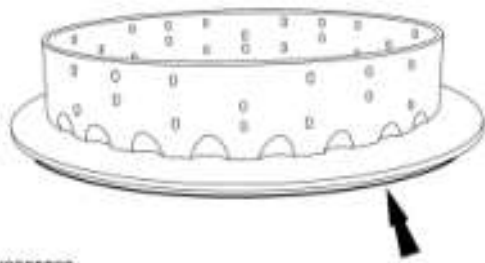


Fig. 226: Locating Balance Dam
Courtesy of FORD MOTOR CO.

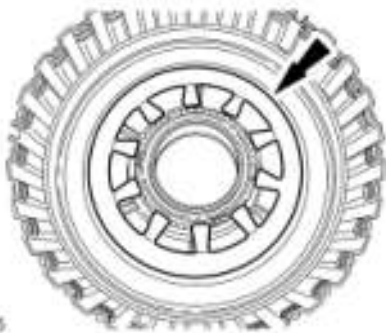
- Remove and discard the O-ring seal from the balance dam.



N0005009

Fig. 227: Locating O-Ring Seal Onto Forward Clutch Balance Dam
Courtesy of FORD MOTOR CO.

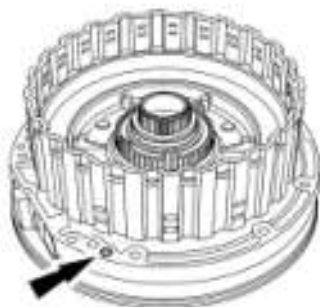
- Remove the forward clutch return spring.



N0005035

Fig. 228: Locating Forward Clutch Return Spring
Courtesy of FORD MOTOR CO.

- Install the forward clutch into the front pump to remove the forward clutch piston. Apply a small amount of shop air to remove the piston.



N0018975

Fig. 229: Locating Forward Clutch Into Front Pump
Courtesy of FORD MOTOR CO.

- Remove and discard the inner and outer piston O-ring seals.

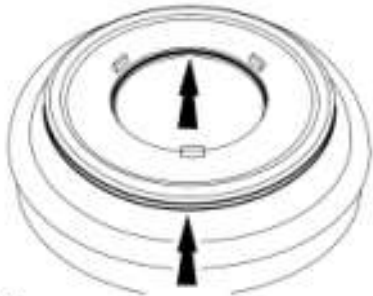


Fig. 230: Locating Inner And Outer Piston O-Ring Seals
Courtesy of FORD MOTOR CO.

12. Remove the sun gear from the planet assembly.

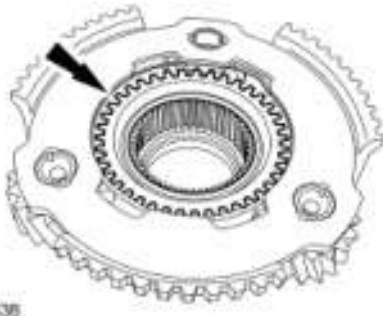


Fig. 231: Locating Sun Gear Into Planet Assembly
Courtesy of FORD MOTOR CO.

13. Remove the bearing from the sun gear.

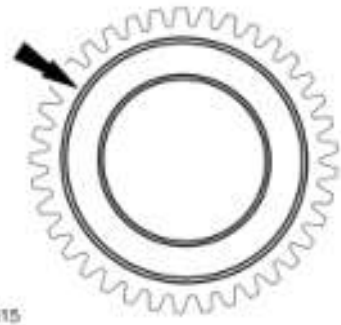


Fig. 232: Locating Bearing From Sun Gear
Courtesy of FORD MOTOR CO.

14. Inspect the sun gear and bearing for damage. Install new components as necessary.

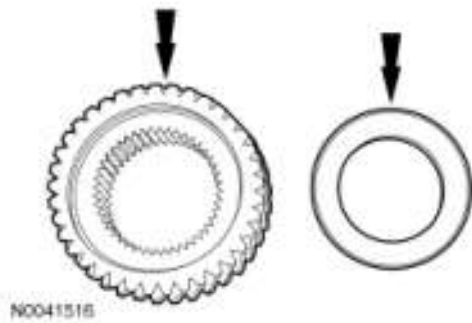


Fig. 233: Locating Sun Gear And Bearing
Courtesy of FORD MOTOR CO.

ASSEMBLY

NOTE: If a new planetary assembly is being installed, the new planetary assembly may not come with the snap ring installed.

1. Install the planetary assembly snap ring, if necessary.

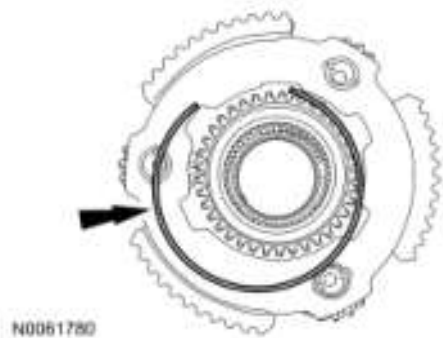
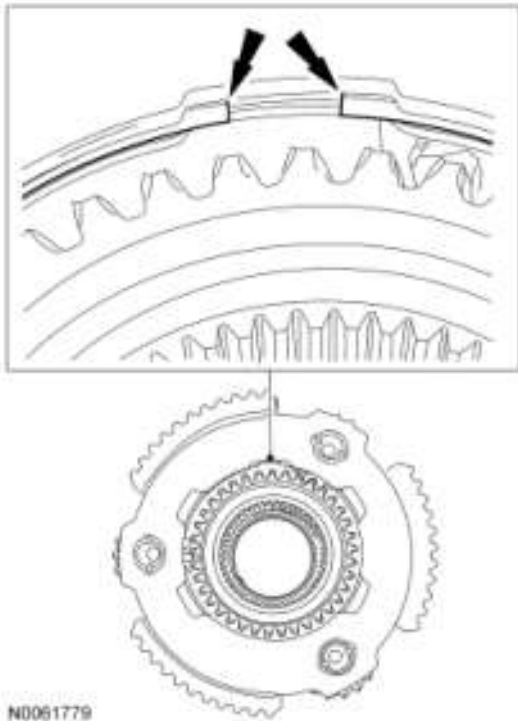


Fig. 234: Locating Planetary Assembly Snap Ring
Courtesy of FORD MOTOR CO.

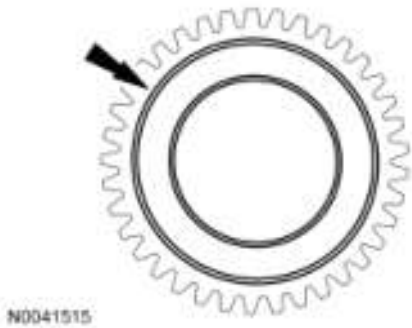
2. Make sure the planetary snap ring is oriented as shown.



N0061779

Fig. 235: Locating Planetary Snap Ring
Courtesy of FORD MOTOR CO.

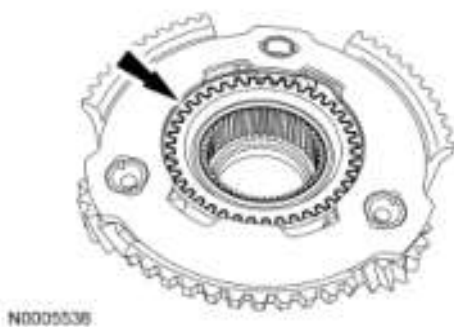
3. Install the bearing onto the sun gear.



N0041515

Fig. 236: Locating Bearing From Sun Gear
Courtesy of FORD MOTOR CO.

4. Install the sun gear into the planet assembly with the bearing facing down and the recess part of the gear up.



N0005536

Fig. 237: Locating Sun Gear Into Planet Assembly
Courtesy of FORD MOTOR CO.

5. Install new O-ring seals onto the forward clutch piston.

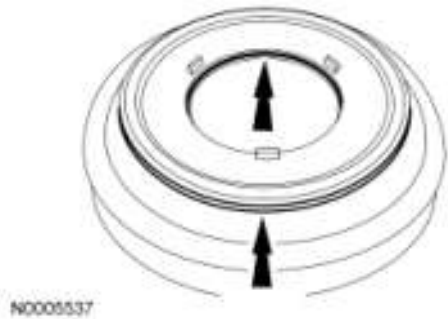


Fig. 238: Locating Inner And Outer Piston O-Ring Seals
Courtesy of FORD MOTOR CO.

6. Lightly coat the O-ring seals with clean transmission fluid and install the forward clutch piston into the forward clutch drum.

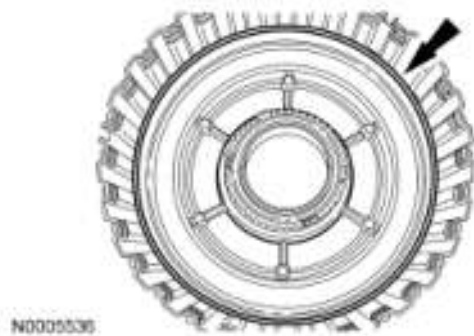


Fig. 239: Locating Forward Clutch Piston Into Forward Clutch Drum
Courtesy of FORD MOTOR CO.

7. Install the forward clutch return spring.

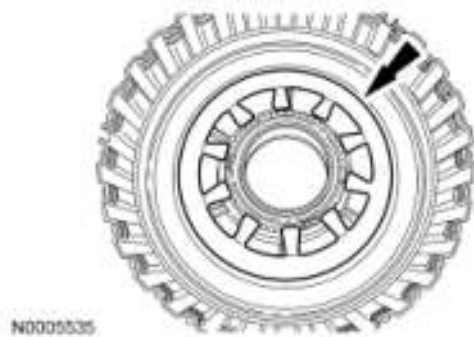


Fig. 240: Locating Forward Clutch Return Spring
Courtesy of FORD MOTOR CO.

8. Install a new O-ring seal onto the forward clutch balance dam. Lightly coat the O-ring seal with clean transmission fluid.

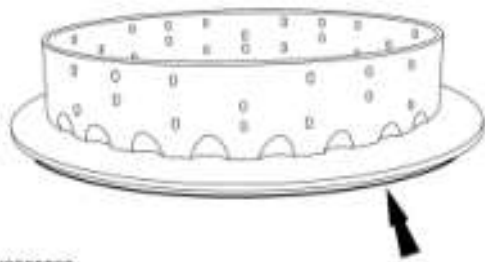


Fig. 241: Locating O-Ring Seal Onto Forward Clutch Balance Dam
Courtesy of FORD MOTOR CO.

9. Align the marks made during disassembly and install the balance dam into the forward clutch drum.

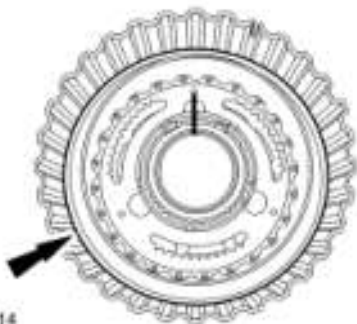


Fig. 242: Locating Balance Dam
Courtesy of FORD MOTOR CO.

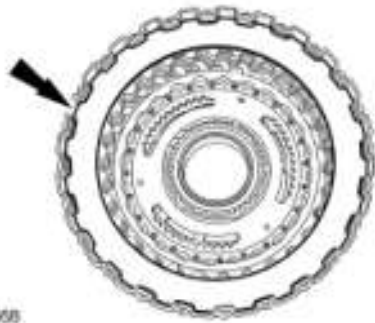
NOTE: Prior to releasing the special tool, make sure that the snap ring is fully seated.

10. Using the special tool, slightly collapse the balance dam to install the retaining ring. Install the retaining ring.



Fig. 243: Balance Dam Retaining Ring
Courtesy of FORD MOTOR CO.

11. If required, install new forward clutch plates, starting with the wave spring then a steel plate and alternating between friction and steel plates, and ending up with the pressure plate.



N0001566

Fig. 244: Locating Forward Clutch Steel And Friction Plates
 Courtesy of FORD MOTOR CO.

12. Install the forward clutch plate snap ring.



N0001567

Fig. 245: Locating Forward Clutch Pack Snap Ring
 Courtesy of FORD MOTOR CO.

NOTE: All forward clutch plates friction and steel are of a wave-type design.

13. Install the forward clutch assembly into the special tool so the dial indicator fits into the opening of the snap ring.



N0039680

Fig. 246: Installing Forward Clutch Assembly Into Special Tool (307-555)
 Courtesy of FORD MOTOR CO.

14. With the dial indicator set at zero, lift up on the steel pressure plate so it is against the select fit snap ring. Record this reading as reading A.
15. Rotate the forward clutch assembly 180 degrees from the opening of the snap ring, take a second reading and record this reading as reading B.

Description	Reading
Reading A	
Reading B	
Add reading A to reading B for a total end clearance	
Divide the total reading by 2 for an average end clearance	

NOTE: If the final measurement is not within specification, install a new snap ring until the correct specification is achieved.

- 4.6L 3V engine - 0.5-0.9 mm (0.019-0.035 in)

16. If the free pack end clearance between the bottom of the snap ring and the top of the pressure plate is high, re-measure using a thicker select fit snap ring. If the free pack end clearance between the bottom of the snap ring and the top of the pressure plate is low, re-measure using a thinner select fit snap ring.
17. Install the sun gear and planetary gearset into the forward clutch drum. Make sure it snaps and locks in place.





Fig. 247: Locating Sun Gear Into Forward Clutch Drum
 Courtesy of FORD MOTOR CO.

OVERDRIVE CLUTCH ASSEMBLY

Special Tools

Illustration	Tool Name	Tool Number
	Dial Indicator Gauge with Holding Fixture	100-002 (TOOL-4201-C) or equivalent

 <p>ST2497-A</p>	Compressor, Spring Washer	307-209
 <p>ST2892-A</p>	Clutch Pack End Play Gauge	307-555

Material

Item	Specification
MERCON® SP Automatic Transmission Fluid XT-6-QSP (US); CXT-6-LSP12 (Canada)	MERCON® SP

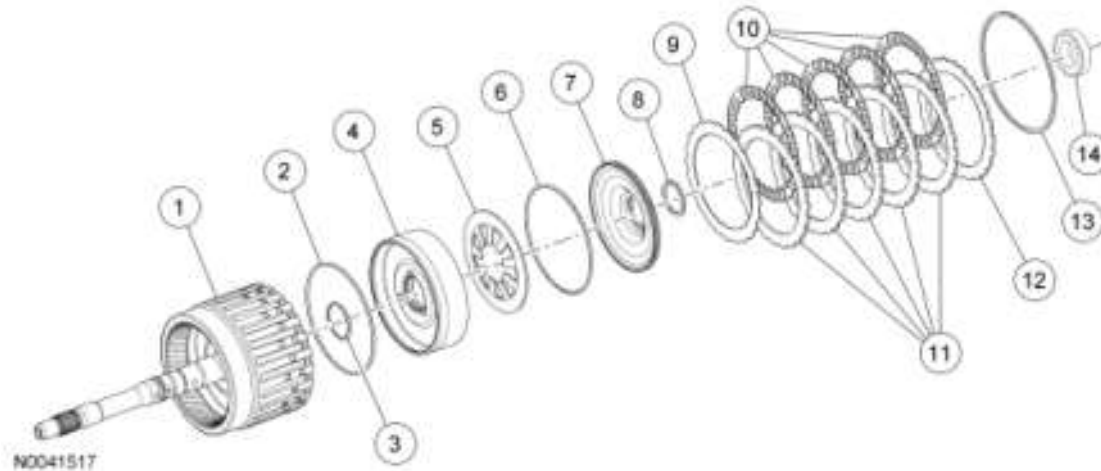


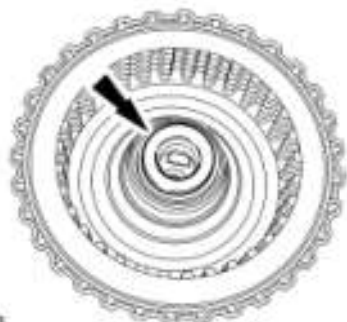
Fig. 248: Exploded View Of Overdrive Clutch Assembly
 Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	7J006	Input shaft
2	7J008	Overdrive clutch piston outer seal
3	7G007	Overdrive clutch piston inner seal
4	7G418	Overdrive clutch piston
5	7N529	Overdrive clutch piston spring
6	7J009	Overdrive balance piston outer seal
7	7J029	Overdrive balance piston
8	7J010	Overdrive balance piston snap ring
9	7N572	Overdrive clutch cushion plate
10	7B164	Overdrive clutch internal splined clutch plates (friction)
11	7B442	Overdrive clutch external splined clutch plates (steel)

12	7C576	Overdrive pressure plate
13	7M157	Overdrive clutch retaining ring
14	7A453	Bearing T3

DISASSEMBLY

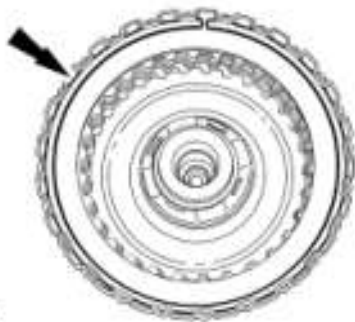
1. Remove the thrust bearing (T3).



N0041518

Fig. 249: Locating Thrust Bearing (T3)
 Courtesy of FORD MOTOR CO.

2. Remove the overdrive clutch pack snap ring.



N0001561

Fig. 250: Locating Overdrive Clutch Pack Snap Ring
 Courtesy of FORD MOTOR CO.

NOTE: **Inspect the friction and steel plates for damage. If damaged, install new components as necessary. If no damage is indicated the friction and steel plates can be reused.**

3. Remove the overdrive clutch pack.

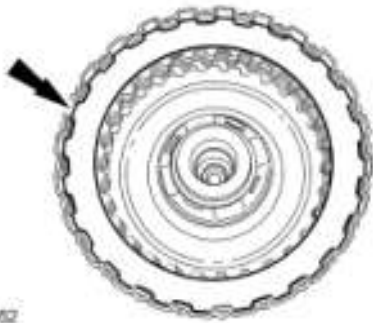


Fig. 251: Locating Overdrive Clutch Plates
Courtesy of FORD MOTOR CO.

4. Using the special tool and a press, remove and discard the overdrive clutch balance piston retaining ring.

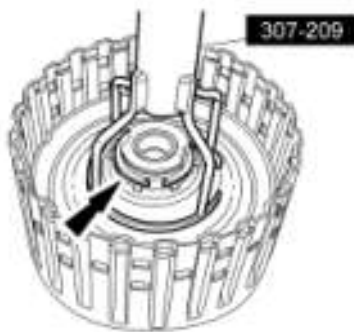


Fig. 252: Removing Overdrive Clutch Balance Piston Retaining Ring Using Special Tool (307-209) & A Press
Courtesy of FORD MOTOR CO.

5. Remove the overdrive clutch balance piston.

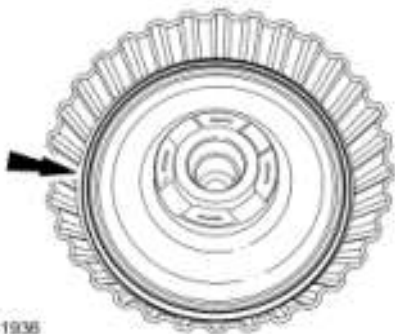


Fig. 253: Locating Overdrive Clutch Balance Piston
Courtesy of FORD MOTOR CO.

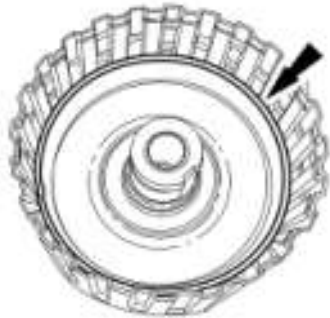
6. Remove the overdrive clutch return spring.



N0000354

Fig. 254: Locating Overdrive Clutch Return Spring
Courtesy of FORD MOTOR CO.

7. Remove the overdrive clutch apply piston.



N0000355

Fig. 255: Locating Overdrive Clutch Apply Piston
Courtesy of FORD MOTOR CO.

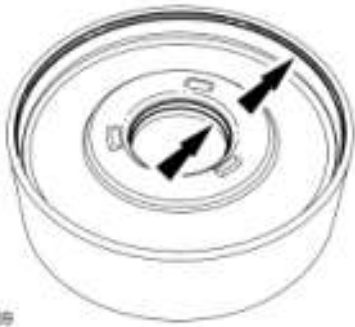
8. Remove and discard the outer O-ring seal on the overdrive clutch balance piston.



N0000356

Fig. 256: Overdrive Clutch Balance Piston O-Ring Seal
Courtesy of FORD MOTOR CO.

9. Remove and discard both the inner (one large and one small) O-ring seals on the overdrive clutch apply piston.

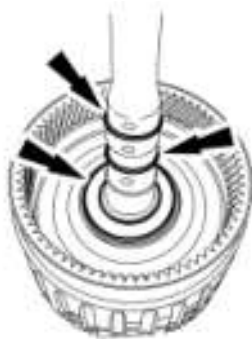


N0003355

Fig. 257: Locating O-Ring Seals On Overdrive Clutch Apply Piston
Courtesy of FORD MOTOR CO.

NOTE: The roller bearing may stick to the forward clutch assembly.

10. Remove and discard the 2 scarf cut seals and the roller bearing.

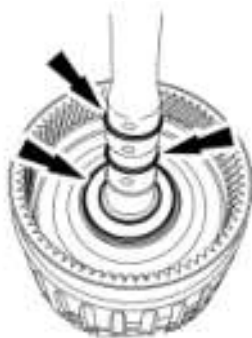


N0041937

Fig. 258: Locating Scarf Cut Seals And Roller Bearing
Courtesy of FORD MOTOR CO.

ASSEMBLY

1. Install 2 new scarf cut seals and a new roller bearing.



N0041937

Fig. 259: Locating Scarf Cut Seals And Roller Bearing
Courtesy of FORD MOTOR CO.

2. Install a new outer O-ring seal on the overdrive clutch balance piston.



Fig. 260: Overdrive Clutch Balance Piston O-Ring Seal
Courtesy of FORD MOTOR CO.

3. Install 2 new inner O-ring seals on the overdrive clutch apply piston.



Fig. 261: Locating O-Ring Seals On Overdrive Clutch Apply Piston
Courtesy of FORD MOTOR CO.

4. Lubricate all the O-ring seals with clean automatic transmission fluid. Install the overdrive clutch apply piston into the drum with the O-ring seals and the 3 pads facing down toward the drum.

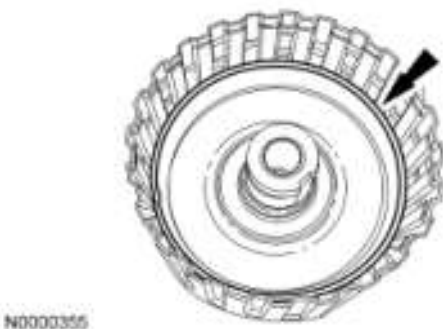


Fig. 262: Locating Overdrive Clutch Apply Piston
Courtesy of FORD MOTOR CO.

NOTE: The fingers on the return spring are facing down toward the piston.

5. Install the overdrive clutch return spring.

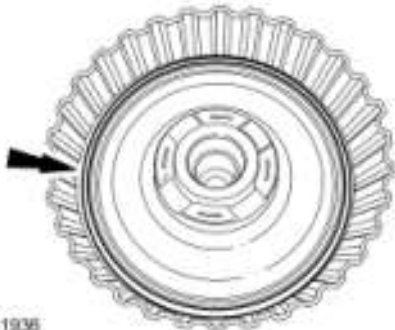


N000354

Fig. 263: Locating Overdrive Clutch Return Spring
Courtesy of FORD MOTOR CO.

NOTE: The cone shape of the balance piston must face up when installed correctly.

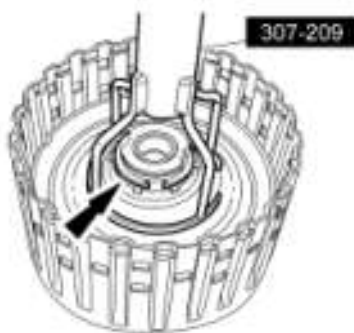
6. Lubricate all the O-ring seals with clean automatic transmission fluid. Install the overdrive clutch balance piston.



N0041935

Fig. 264: Locating Overdrive Clutch Balance Piston
Courtesy of FORD MOTOR CO.

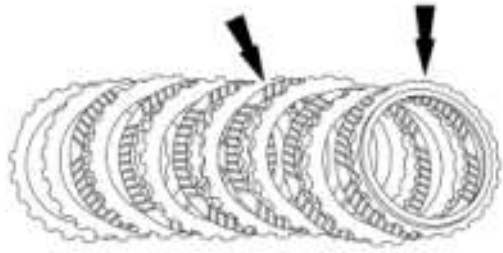
7. Using the special tool, install a new overdrive clutch balance piston retaining ring.



N0035675

Fig. 265: Installing Overdrive Clutch Balance Piston Retaining Ring Using Special Tool (307-209)
Courtesy of FORD MOTOR CO.

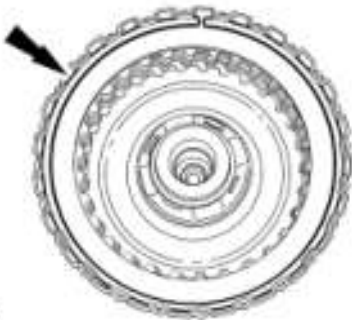
8. If required, install new overdrive clutch plates, starting with the wave spring then a steel plate and alternating between friction and steel plates, and ending with the pressure plate on the top.



N0041938

Fig. 266: Locating Overdrive Clutch Plates
 Courtesy of FORD MOTOR CO.

9. Install the overdrive clutch pack snap ring.

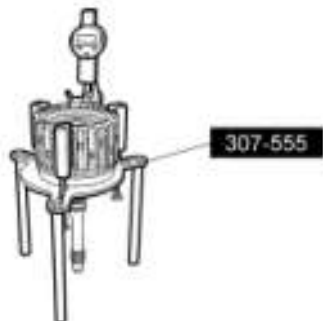


N0001501

Fig. 267: Locating Overdrive Clutch Pack Snap Ring
 Courtesy of FORD MOTOR CO.

NOTE: All overdrive clutch plates friction and steel are of a wave-type design.

10. Install the overdrive clutch assembly into the special tool so the dial indicator fits into the opening of the snap ring.



N0039577

Fig. 268: Installing Overdrive Clutch Assembly Into Special Tool (307-555)
 Courtesy of FORD MOTOR CO.

11. With the dial indicator set at zero, lift up on the steel pressure plate so it is against the select fit snap ring. Record this reading as reading A.
12. Rotate the overdrive clutch assembly 180 degrees from the opening of the snap ring, take a second reading and record this reading as reading B.

Description	Reading
Reading A	
Reading B	
Add reading A to reading B for a total end clearance	
Divide the total reading by 2 for an average end clearance	

NOTE: If the final measurement is not within specification, install a new snap ring until the correct specification is achieved.

- 4.6L 3V engine - 0.3-0.7 mm (0.011-0.027 in).

13. If the free pack end clearance between the bottom of the snap ring and the top of the pressure plate is high, re-measure using a thicker select fit snap ring. If the free pack end clearance between the bottom of the snap ring and the top of the pressure plate is low, re-measure using a thinner select fit snap ring.

NOTE: Inspect and install new thrust bearing as required.

14. Install a new thrust bearing (T3).

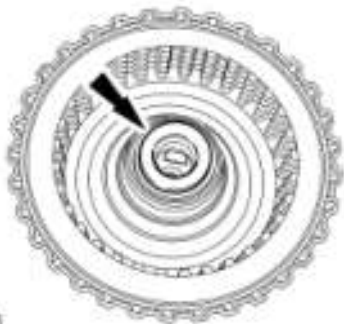


Fig. 269: Locating Thrust Bearing (T3)
Courtesy of FORD MOTOR CO.

FORWARD/OVERDRIVE CLUTCH ASSEMBLY - ASSEMBLY

Material

Item	Specification
MERCON® SP Automatic Transmission Fluid XT-6-QSP (US); CXT-6-LSP12 (Canada)	MERCON® SP

ASSEMBLY

1. Install the overdrive clutch pack onto the forward clutch and planetary gear set.

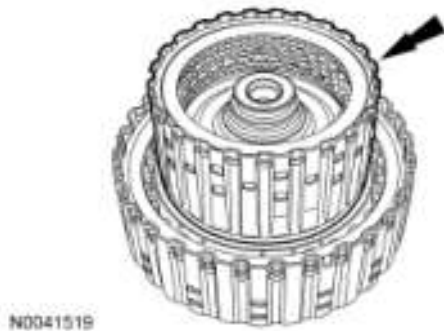


Fig. 270: Locating Overdrive Clutch Pack
Courtesy of FORD MOTOR CO.

2. Install the intermediate shaft assembly.

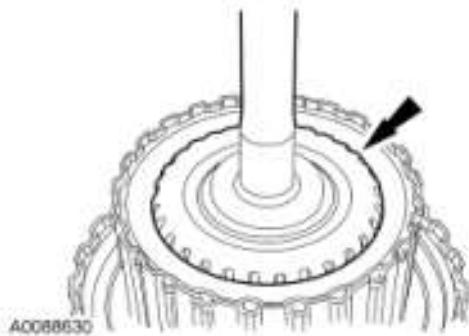


Fig. 271: Locating Intermediate Shaft Assembly
Courtesy of FORD MOTOR CO.

NOTE: **Inspect and install new thrust bearings as required.**

3. Install the intermediate shaft bearing (T4).

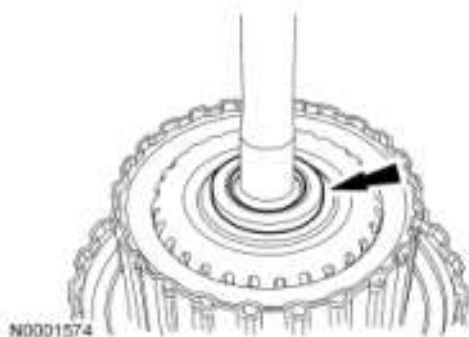


Fig. 272: Locating Intermediate Shaft Bearing
Courtesy of FORD MOTOR CO.

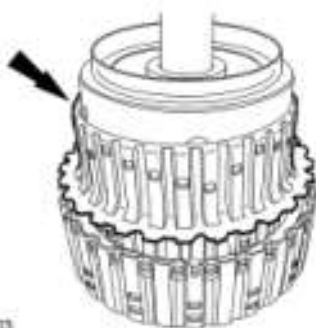
4. Install the forward clutch and sun shaft assembly.



AC088625

Fig. 273: Locating Forward Clutch And Sun Shaft Assembly
 Courtesy of FORD MOTOR CO.

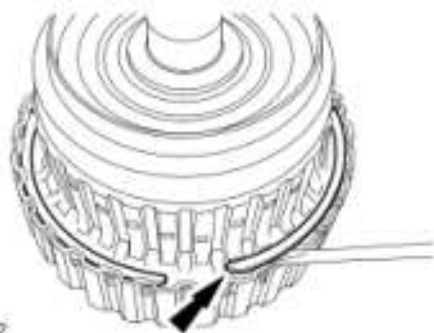
5. Install the direct clutch hub.



N0005503

Fig. 274: Locating Direct Clutch Hub
 Courtesy of FORD MOTOR CO.

6. Install the direct clutch outer shell retaining ring.




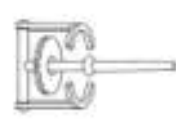


N0005502

Fig. 275: Locating Direct Clutch Outer Shell Retaining Ring
 Courtesy of FORD MOTOR CO.

DIRECT CLUTCH ASSEMBLY

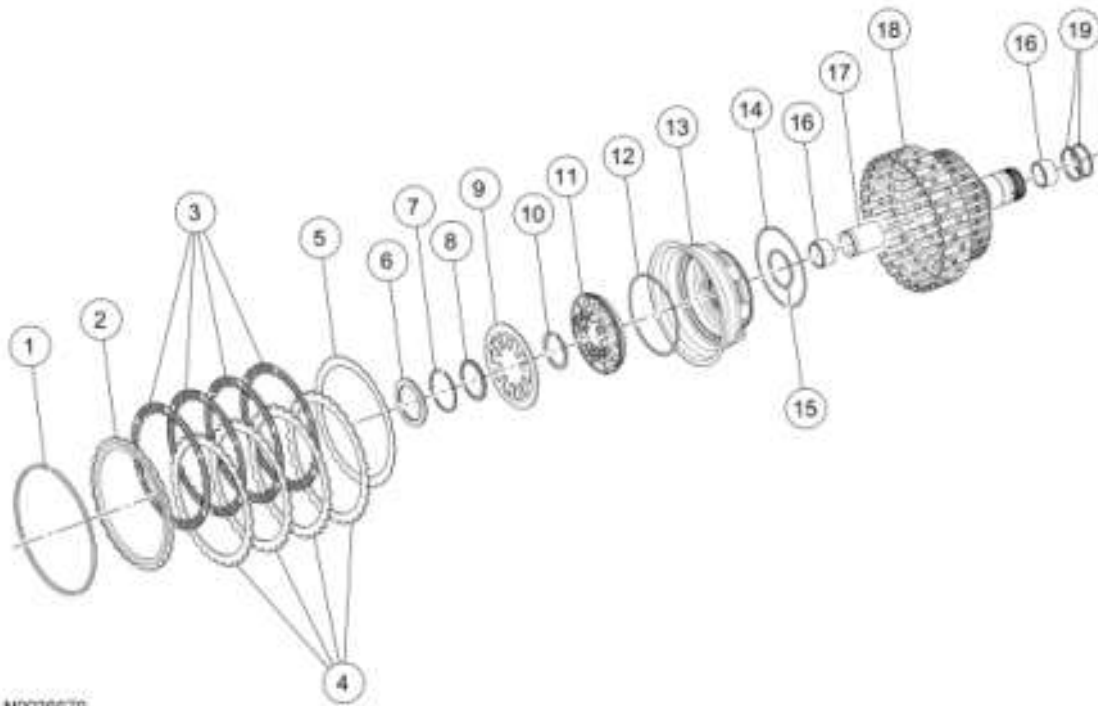
Special Tools

Illustration	Tool Name	Tool Number
	Dial Indicator Gauge with Holding Fixture	100-002 (TOOL-4201-C) or equivalent

 <p>ST1214-A</p>		
 <p>ST1190-A</p>	Compressor, Clutch Spring	307-015 (T65L-77515-A)
 <p>ST2850-A</p>	Clutch Pack End Play Gauge	307-555
 <p>ST2850-A</p>	Direct Clutch Pack Service Fixture	307-552

Material

Item	Specification
MERCON® SP Automatic Transmission Fluid XT-6-QSP (US); CXT-6-LSP12 (Canada)	MERCON® SP



N0036679

Fig. 276: Exploded View Of Direct Clutch Assembly

Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	7B421	Direct clutch pressure plate retaining ring
2	7B447	Direct clutch pressure plate
3	7B164	Direct clutch internal splined friction plates
4	7E314	Direct clutch external splined steel plates
5	-	Direct clutch cushion plate (wave spring)
6	7D283	Bearing (T5)
7	7H363	Direct clutch balance piston snap ring
8	7D427	Direct clutch piston spring retaining ring
9	7B488	Return spring
10	7B488	Piston retaining ring
11	7H359	Direct clutch balance piston
12	7C000	Direct clutch balance piston seal
13	7F254	Direct clutch apply piston
14	7C000	Direct clutch apply piston outer seal
15	7F234	Direct clutch apply piston inner seal
16	7F240	Direct clutch bushing hubs (2 required) (part of 7F281)
17	7C486	Gear shaft tube sleeve
18	7F281	Direct clutch cylinder
19	7B399	Seal shell cylinders

DISASSEMBLY

1. Remove and discard the 2 scarf cut seals and the roller bearing.

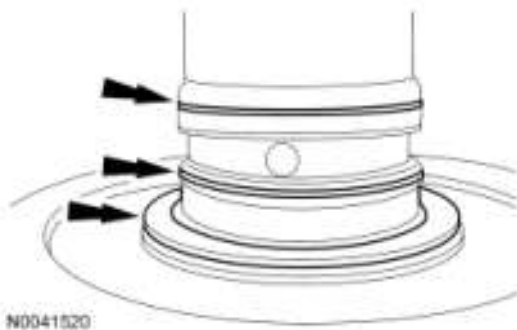


Fig. 277: Locating Scarf Cut Seals And Roller Bearing
 Courtesy of FORD MOTOR CO.

2. Remove the thrust bearing (T5).

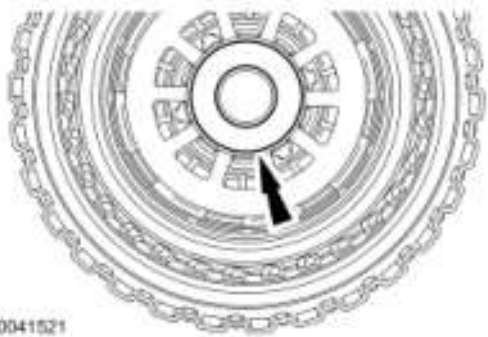


Fig. 278: Locating Thrust Bearing (T5)
Courtesy of FORD MOTOR CO.

3. Remove the direct clutch snap ring.



Fig. 279: Locating Direct Clutch Snap Ring
Courtesy of FORD MOTOR CO.

NOTE: **Inspect the friction and steel plates for damage. If damaged, install new components as necessary. If no damage is indicated the friction and steel plates can be reused.**

4. Remove the direct clutch steel and friction plates.



Fig. 280: Locating Direct Clutch Steel And Friction Plates
Courtesy of FORD MOTOR CO.

5. Install the special tools onto the direct clutch assembly.

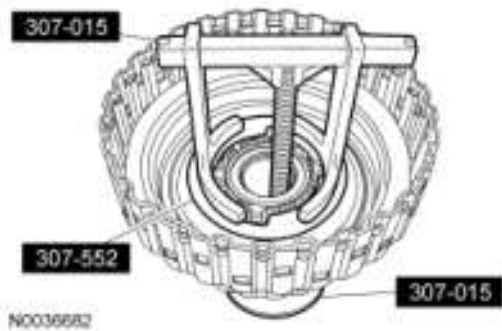


Fig. 281: Installing Special Tools (307-015, 307-552) Onto Direct Clutch Assembly
 Courtesy of FORD MOTOR CO.

6. Using the special tool, remove the direct clutch return spring retainer.

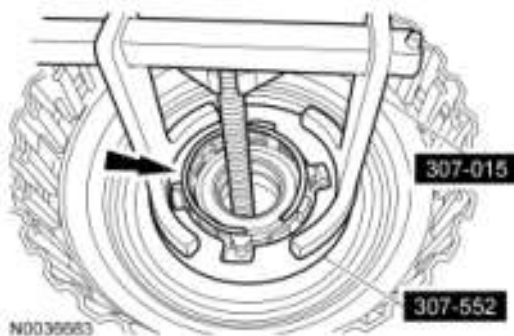


Fig. 282: Removing Direct Clutch Return Spring Retainer Using Special Tools (307-015, 307-552)
 Courtesy of FORD MOTOR CO.

7. Remove the special tool.

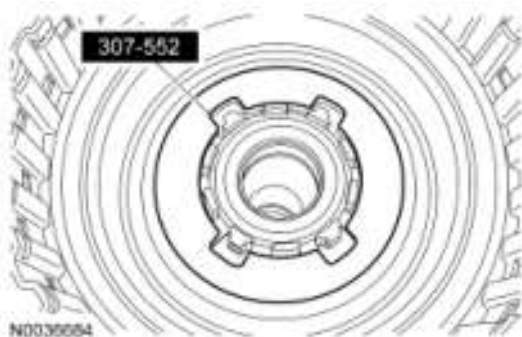


Fig. 283: Removing Special Tool (307-552)
 Courtesy of FORD MOTOR CO.

8. Remove the direct clutch return spring washer.

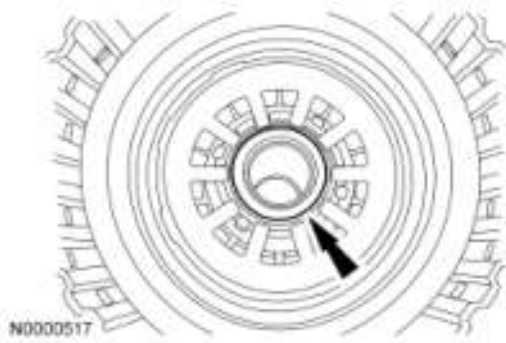


Fig. 284: Locating Direct Clutch Return Spring Washer
Courtesy of FORD MOTOR CO.

9. Remove the direct clutch return spring.

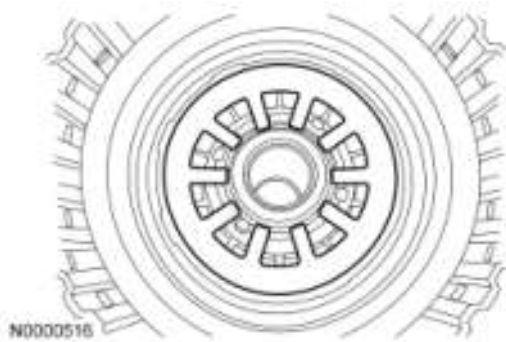


Fig. 285: Identifying Direct Clutch Return Spring
Courtesy of FORD MOTOR CO.

10. Slightly press down on the balance piston and remove and discard the snap ring.

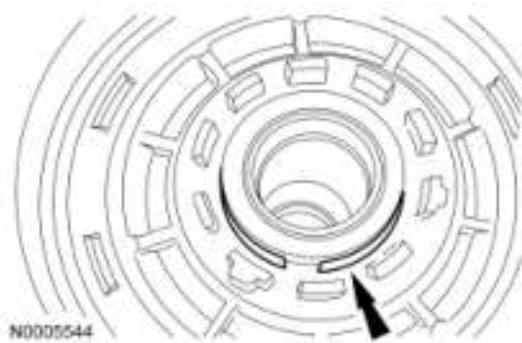


Fig. 286: Locating Snap Ring
Courtesy of FORD MOTOR CO.

11. Remove the baffle plate from the direct clutch piston.

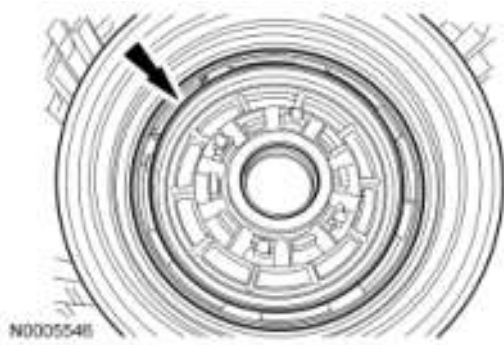


Fig. 287: Locating Baffle Plate
Courtesy of FORD MOTOR CO.

12. Remove the direct clutch piston.

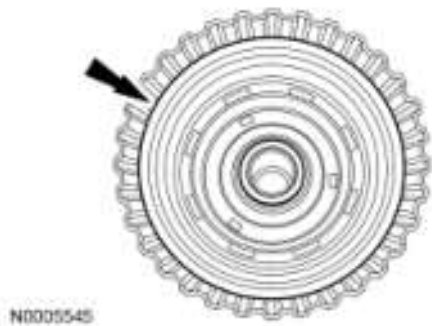


Fig. 288: Locating Direct Clutch Piston
Courtesy of FORD MOTOR CO.

13. Remove and discard the outer O-ring seal from the balance piston.

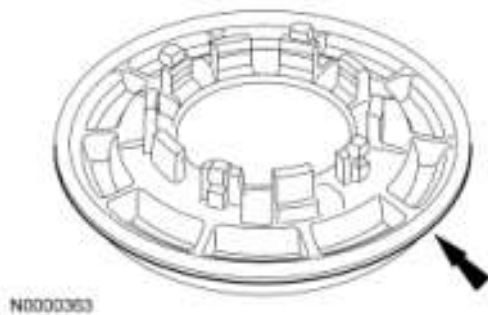
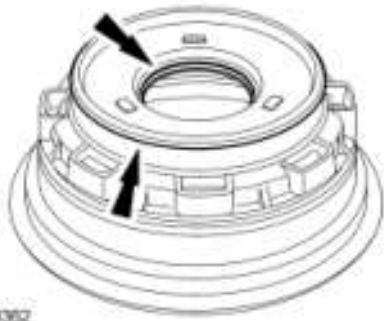


Fig. 289: Locating Outer O-Ring Seal
Courtesy of FORD MOTOR CO.

14. Remove and discard the outer and inner O-ring seals from the apply piston.



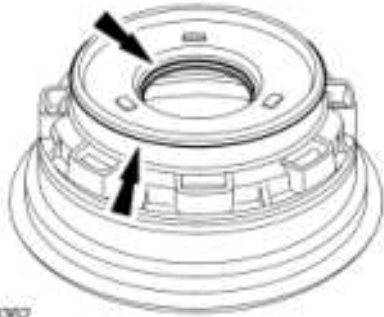
N0000362

Fig. 290: Locating Outer And Inner O-Ring Seal
Courtesy of FORD MOTOR CO.

15. Inspect the direct clutch drum for damage. If damage is indicated, install a new direct clutch drum.

ASSEMBLY

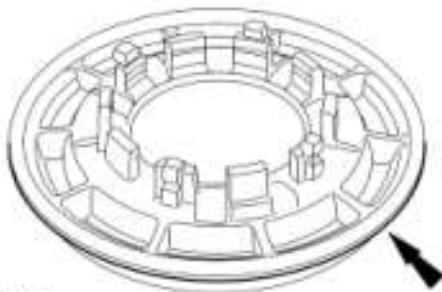
1. Install a new inner and outer O-ring seals on the apply piston.



N0000362

Fig. 291: Locating Outer And Inner O-Ring Seal
Courtesy of FORD MOTOR CO.

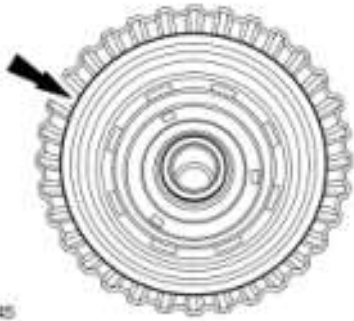
2. Install a new outer O-ring seal on the balance piston.



N0000363

Fig. 292: Locating Outer O-Ring Seal
Courtesy of FORD MOTOR CO.

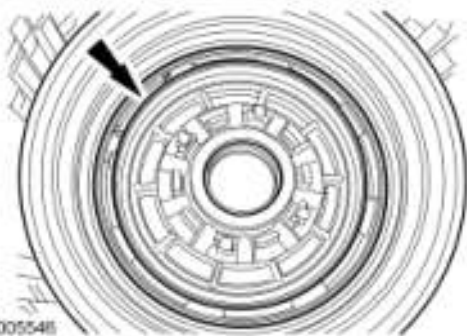
3. Lightly coat the O-ring seals in clean transmission fluid and install the direct clutch piston.



N0005545

Fig. 293: Locating Direct Clutch Piston
Courtesy of FORD MOTOR CO.

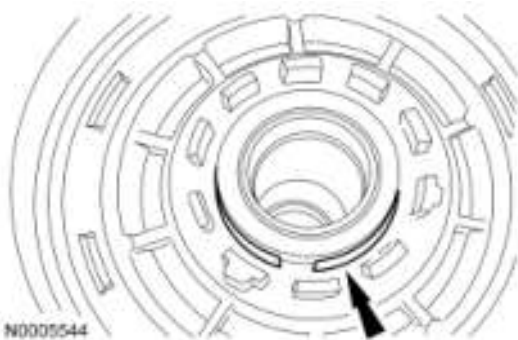
4. Lightly coat the O-ring seals in clean transmission fluid and install the apply piston into the direct clutch balance piston.



N0005546

Fig. 294: Locating Baffle Plate
Courtesy of FORD MOTOR CO.

5. Slightly press down on the balance piston and install a new snap ring.



N0005544

Fig. 295: Locating Snap Ring
Courtesy of FORD MOTOR CO.

6. Install the direct clutch return spring.

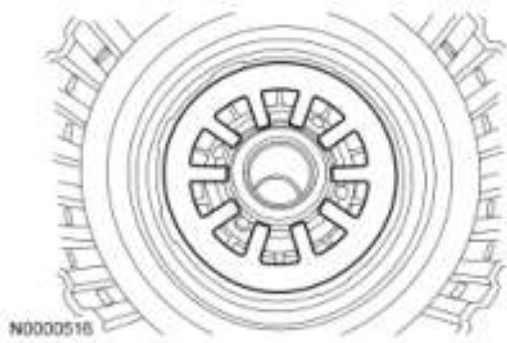


Fig. 296: Identifying Direct Clutch Return Spring
Courtesy of FORD MOTOR CO.

NOTE: When installing the washer, the stepped edge must face upward.

7. Install the direct clutch return spring washer.

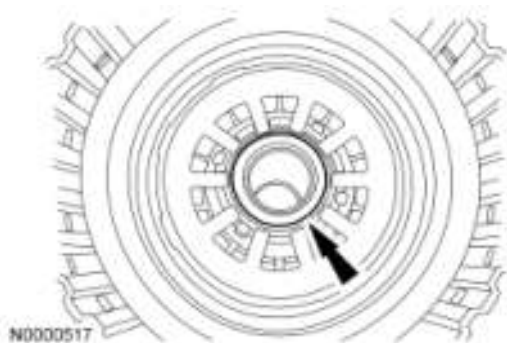


Fig. 297: Locating Direct Clutch Return Spring Washer
Courtesy of FORD MOTOR CO.

8. Install the special tool.

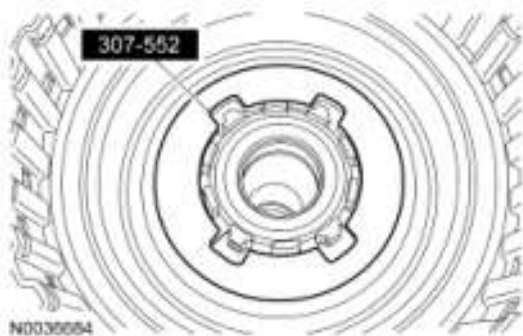


Fig. 298: Installing Special Tool (307-552)
Courtesy of FORD MOTOR CO.

9. Using the special tool, install the direct clutch return spring retainer.

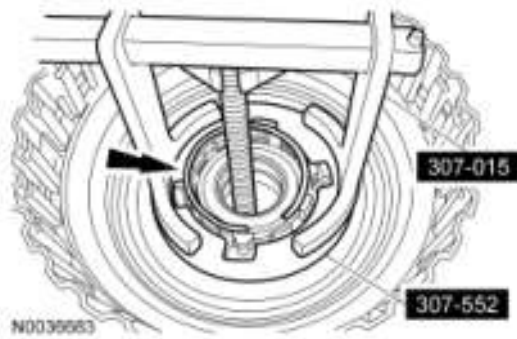


Fig. 299: Installing Direct Clutch Return Spring Retainer Using Special Tools (307-015, 307-552)

Courtesy of FORD MOTOR CO.

10. If required, install new direct clutch plates, starting with the wave spring then a steel plate and alternating between steel and friction plates, and ending with the pressure plate on the top.

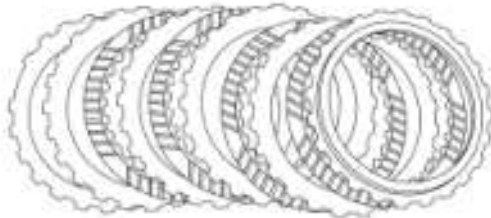


Fig. 300: Identifying Direct Clutch Plates
Courtesy of FORD MOTOR CO.

11. Install the direct clutch snap ring.



Fig. 301: Locating Direct Clutch Snap Ring
Courtesy of FORD MOTOR CO.

NOTE: **Inspect and install new thrust bearing as required.**

12. Install a new thrust bearing (T5).

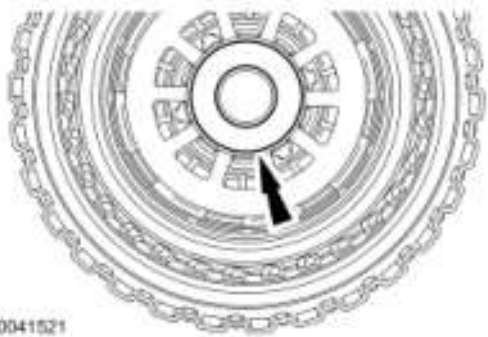


Fig. 302: Locating Thrust Bearing (T5)
 Courtesy of FORD MOTOR CO.

NOTE: All direct clutch plates friction and steel are of a wave-type design.

13. Install the direct clutch assembly into the special tool so the dial indicator fits into the opening of the snap ring.

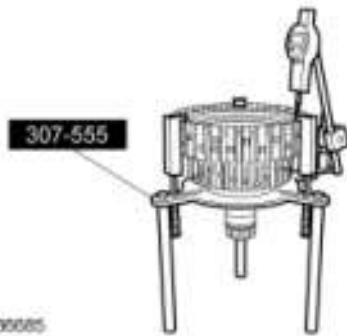


Fig. 303: Installing Direct Clutch Assembly Into Special Tool (307-555)
 Courtesy of FORD MOTOR CO.

14. With the dial indicator set at zero, lift up on the steel pressure plate so it is against the select fit snap ring. Record this reading as reading A.
15. Rotate the direct clutch assembly 180 degrees from the opening of the snap ring, take a second reading and record this reading as reading B.

Description	Reading
Reading A	
Reading B	
Add reading A to reading B for a total end clearance	
Divide the total reading by 2 for an average end	

clearance	
-----------	--

NOTE: If the final measurement is not within specification, install a new snap ring until the correct specification is achieved.

- 4.6L 3V engine - 0.3-1.1 mm (0.011-0.043 in)

- If the free pack end clearance between the bottom of the snap ring and the top of the pressure plate is high, re-measure using a thicker select fit snap ring. If the free pack end clearance between the bottom of the snap ring and the top of the pressure plate is low, re-measure using a thinner select fit snap ring.
- Install 2 new scarf cut seals and the roller bearing.

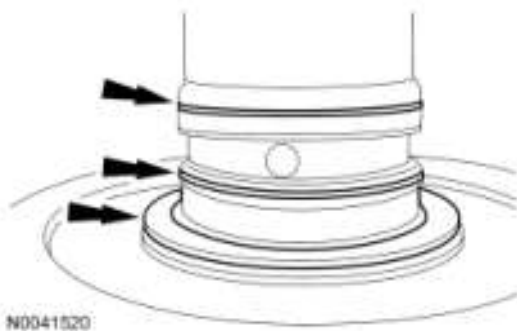


Fig. 304: Locating Scarf Cut Seals And Roller Bearing
Courtesy of FORD MOTOR CO.

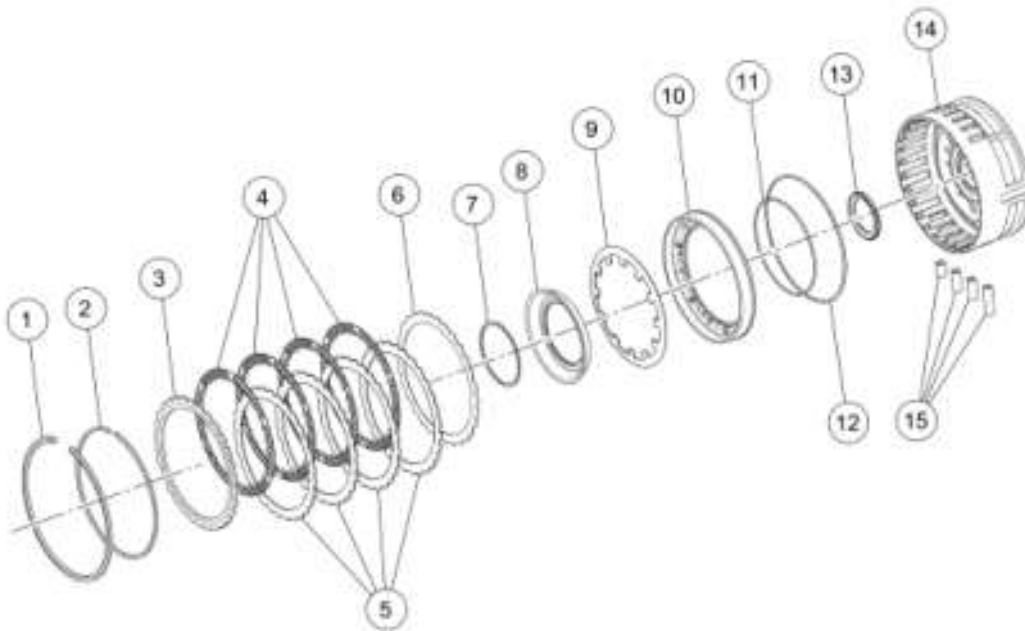
INTERMEDIATE CLUTCH ASSEMBLY

Special Tools

Illustration	Tool Name	Tool Number
<p>ST1214-A</p>	Dial Indicator Gauge with Holding Fixture	100-002 (TOOL-4201-C) or equivalent
<p>ST2881-A</p>	Piston Spring Compressor	307-525
<p>ST2880-A</p>	Clutch Pack End Play Gauge	307-555

Material

Item	Specification



N0056193

Fig. 305: Exploded View Of Intermediate Clutch Assembly
 Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	7L327	Center support retaining ring
2	7B421	Intermediate clutch pack retaining ring
3	7N566	Intermediate clutch pressure plate
4	7B164	Intermediate clutch internal splined friction plates
5	7E314	Intermediate clutch external splined steel plates
6	7H136	Intermediate clutch cushion spring
7	7N169	Intermediate clutch snap ring
8	7B043	Intermediate clutch return spring retaining ring
9	7C151	Intermediate clutch piston return spring
10	7J015	Intermediate clutch piston
11	7F225	Intermediate clutch piston inner seal
12	7F224	Intermediate clutch piston outer seal
13	7F373	Bearing (T6)
14	7G033	Intermediate/low/reverse clutch center support
15	7J135	Center support seals (4 required)

DISASSEMBLY

1. Remove the thrust bearing (T6).

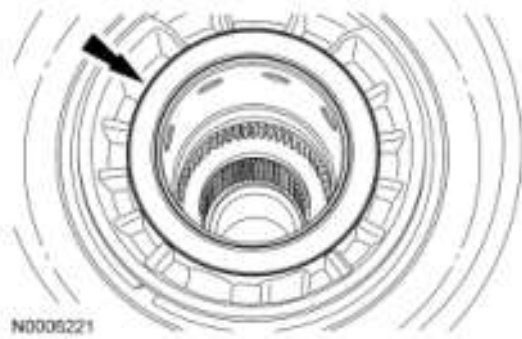


Fig. 306: Locating Thrust Bearing (T6)
Courtesy of FORD MOTOR CO.

2. Remove the intermediate clutch plate snap ring.



Fig. 307: Locating Intermediate Clutch Plate Snap Ring
Courtesy of FORD MOTOR CO.

NOTE: Inspect the friction and steel plates for damage. If damaged, install new components as necessary. If no damage is indicated, the friction and steel plates can be reused.

3. Remove the intermediate clutch plates.



Fig. 308: Locating Intermediate Clutch Plates
Courtesy of FORD MOTOR CO.

4. Using the special tool, remove and discard the intermediate clutch return spring retainer.

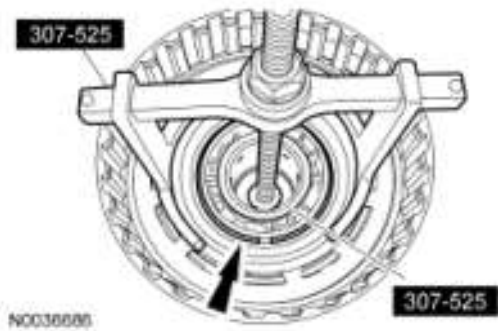


Fig. 309: Removing Intermediate Clutch Return Spring Retainer Using Special Tool (307-525)
 Courtesy of FORD MOTOR CO.

5. Remove the intermediate clutch return spring top plate.

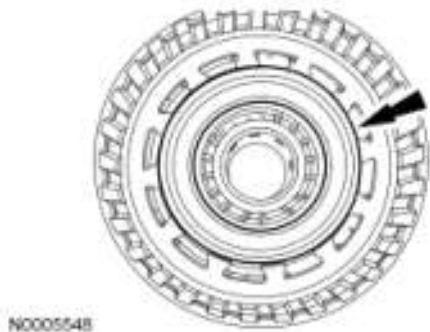


Fig. 310: Locating Intermediate Clutch Return Spring Top Plate
 Courtesy of FORD MOTOR CO.

6. Remove the intermediate clutch return spring.

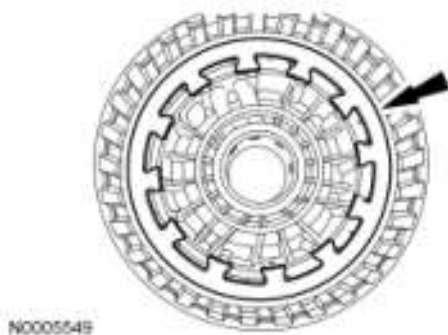
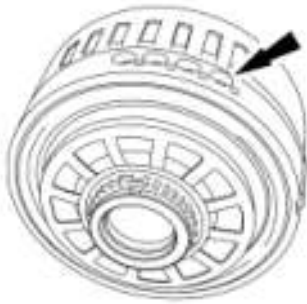


Fig. 311: Locating Intermediate Clutch Return Spring
 Courtesy of FORD MOTOR CO.

7. Applying a slight amount of air to the port, remove the intermediate clutch piston.



N0018977

Fig. 312: Locating Intermediate Clutch Piston
Courtesy of FORD MOTOR CO.

8. Remove and discard the inner and outer intermediate clutch piston O-ring seals.



N0008538

Fig. 313: Locating Inner And Outer Intermediate Clutch Piston O-Ring Seals
Courtesy of FORD MOTOR CO.

ASSEMBLY

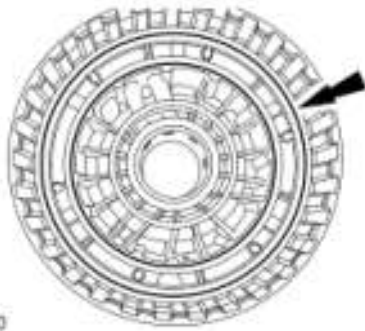
1. Install new inner and outer intermediate clutch piston O-ring seals.



N0008538

Fig. 314: Locating Inner And Outer Intermediate Clutch Piston O-Ring Seals
Courtesy of FORD MOTOR CO.

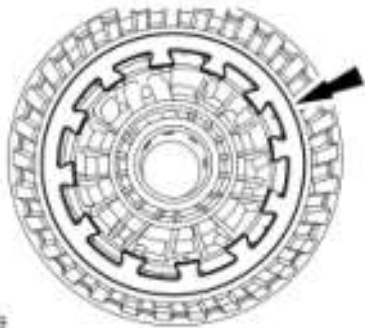
2. Lightly coat the O-ring seals in clean transmission fluid and install the intermediate clutch piston.



N0005550

Fig. 315: Locating O-Ring Seals
Courtesy of FORD MOTOR CO.

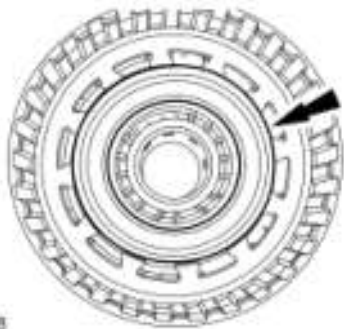
3. Install the intermediate clutch return spring.



N0005549

Fig. 316: Locating Intermediate Clutch Return Spring
Courtesy of FORD MOTOR CO.

4. Install the intermediate clutch return spring top plate.



N0005548

Fig. 317: Locating Intermediate Clutch Return Spring Top Plate
Courtesy of FORD MOTOR CO.

5. Using the special tool, install a new intermediate clutch return spring retainer.

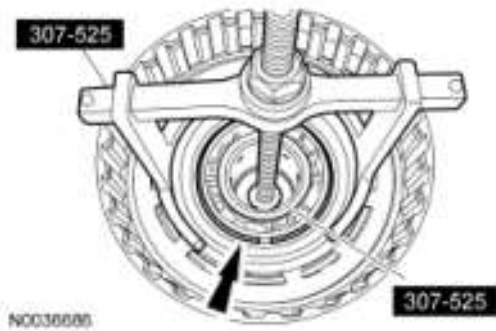


Fig. 318: Installing Intermediate Clutch Return Spring Retainer Using Special Tool (307-525)
 Courtesy of FORD MOTOR CO.

6. If required, install new intermediate clutch plates, starting with the wave spring then a steel plate and alternating between friction and steel plates, and ending with the pressure plate.

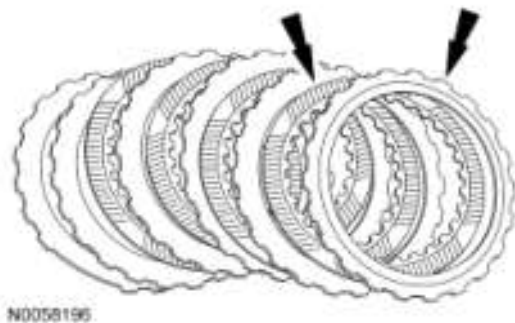


Fig. 319: Locating Intermediate Clutch Plates
 Courtesy of FORD MOTOR CO.

7. Install the intermediate clutch plate snap ring.

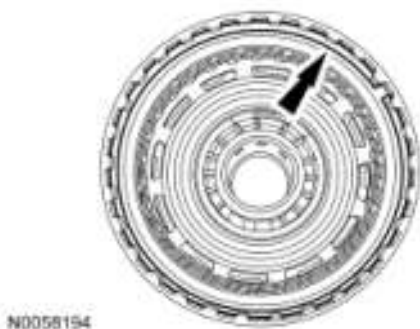


Fig. 320: Locating Intermediate Clutch Plate Snap Ring
 Courtesy of FORD MOTOR CO.

NOTE: All intermediate clutch plates friction and steel are of a wave-type design.

8. Install the intermediate clutch assembly into the special tool so the dial indicator fits into the opening of the snap ring.

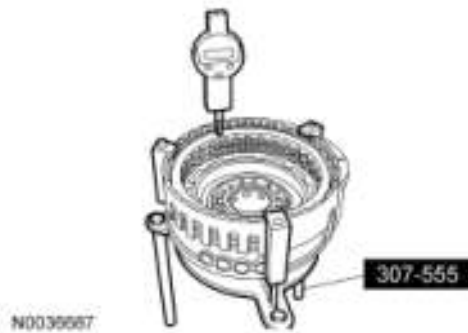


Fig. 321: Installing Intermediate Clutch Assembly Into Special Tool (307-555)
Courtesy of FORD MOTOR CO.

9. With the dial indicator set at zero, lift up on the steel pressure plate so it is against the select fit snap ring. Record this reading as reading A.
10. Rotate the intermediate clutch assembly 180 degrees from the opening of the snap ring, take a second reading and record this reading as reading B.

Description	Reading
Reading A	
Reading B	
Add reading A to reading B for a total end clearance	
Divide the total reading by 2 for an average end clearance	

NOTE: If the final measurement is not within specification, install a new snap ring until the correct specification is achieved.

- **4.6L 3V engine - 0.5-0.9 mm (0.019-0.035 in)**

11. If the free pack end clearance between the bottom of the snap ring and the top of the pressure plate is high, re-measure using a thicker select fit snap ring. If the free pack end clearance between the bottom of the snap ring and the top of the pressure plate is low, re-measure using a thinner select fit snap ring.
12. Install the thrust bearing (T6).

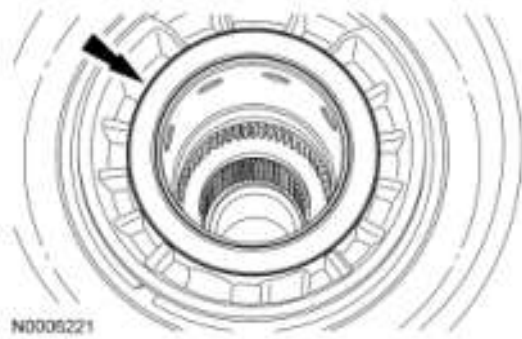






Fig. 322: Locating Thrust Bearing (T6)
 Courtesy of FORD MOTOR CO.

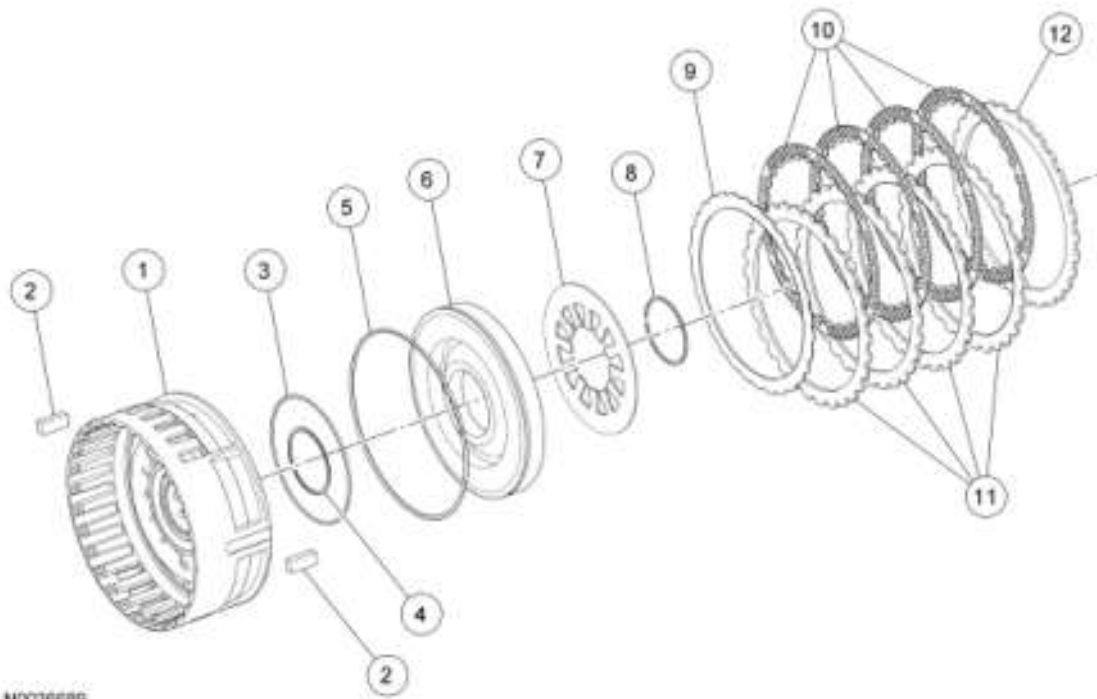
LOW/REVERSE CLUTCH ASSEMBLY

Special Tools

Illustration	Tool Name	Tool Number
	Dial Indicator Gauge with Holding Fixture	100-002 (TOOL-4201-C) or equivalent
	Compressor, Clutch Spring	307-525
	Gauge, D-Clutch Measurement	307-554
	Depth Micrometer	303-D075 (D92P-4201-A) or equivalent

Material

Item	Specification
MERCON® SP Automatic Transmission Fluid XT-6-QSP (US); CXT-6-LSP12 (Canada)	MERCON® SP



N003668F

Fig. 323: Exploded View Of Low/Reverse Clutch Assembly
 Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	7G033	Intermediate/low/reverse clutch center support
2	7J135	Center support keys (2 required)
3	7G446	Low/reverse clutch piston center seal
4	7G444	Low/reverse clutch cylinder inner seal
5	7F227	Low/reverse clutch cylinder outer seal
6	7D343	Low/reverse clutch piston
7	7D405	Low/reverse clutch return spring
8	7G494	Low/reverse clutch return spring retainer
9	7N572	Low/reverse clutch cushion spring
10	7B164	Low/reverse clutch internal splined friction plates (internal to case)
11	7E314	Low/reverse clutch external splined steel plates (internal to case)
12	7E314	Low/reverse clutch pressure plate (internal to case) (select fit)

DISASSEMBLY

NOTE: The low/reverse clutch plates are installed in the case during the assembly procedure.

1. Remove and discard thrust bearing on the center support.

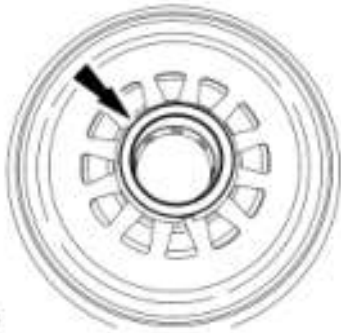


Fig. 324: Locating Thrust Bearing On Center Support
Courtesy of FORD MOTOR CO.

2. Using the special tool, remove the retaining ring.



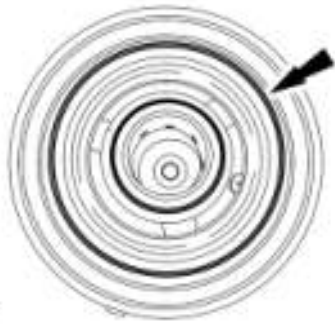
Fig. 325: Removing Retaining Ring Using Special Tool (307-525)
Courtesy of FORD MOTOR CO.

3. Remove the low/reverse clutch return spring.



Fig. 326: Locating Low/Reverse Clutch Return Spring
Courtesy of FORD MOTOR CO.

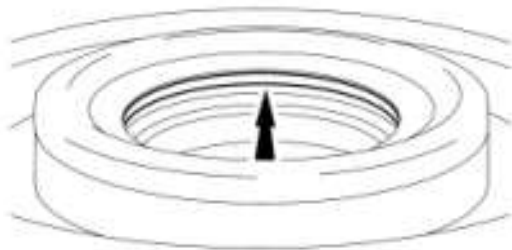
4. Remove the low/reverse clutch piston from the low/reverse clutch drum.



N0041542

Fig. 327: Locating Low/Reverse Clutch Piston
Courtesy of FORD MOTOR CO.

5. Remove and discard the low/reverse clutch piston O-ring seals.



N0005556

Fig. 328: Locating Low/Reverse Outer Piston O-Ring Seals
Courtesy of FORD MOTOR CO.

6. Remove and discard the low/reverse drum O-ring seals.



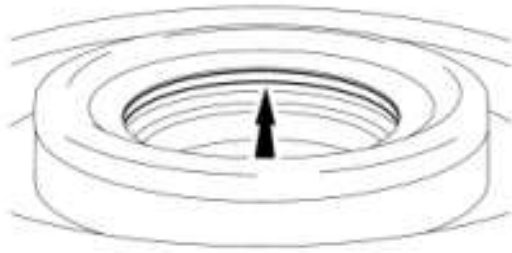
N0005555

Fig. 329: Locating Low/Reverse Drum O-Ring Seals
Courtesy of FORD MOTOR CO.

ASSEMBLY

Low/reverse piston

1. Install new low/reverse clutch piston O-ring seals.



N0005555

Fig. 330: Locating Low/Reverse Outer Piston O-Ring Seals
Courtesy of FORD MOTOR CO.

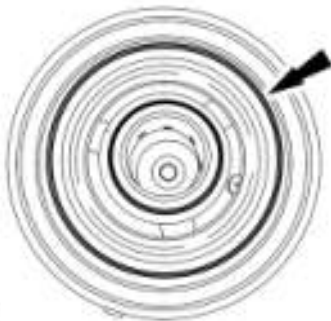
2. Install new low/reverse drum O-ring seals.



N0005555

Fig. 331: Locating Low/Reverse Drum O-Ring Seals
Courtesy of FORD MOTOR CO.

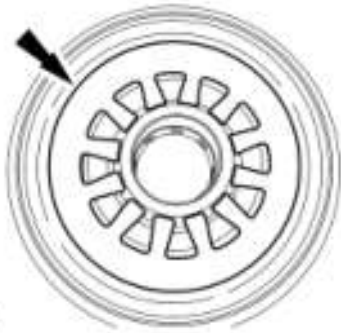
3. Lubricate the O-ring seal with clean transmission fluid and install the low/reverse piston.



N0041542

Fig. 332: Locating Low/Reverse Clutch Piston
Courtesy of FORD MOTOR CO.

4. Install the low/reverse clutch return spring.



N0041541

Fig. 333: Locating Low/Reverse Clutch Return Spring
 Courtesy of FORD MOTOR CO.

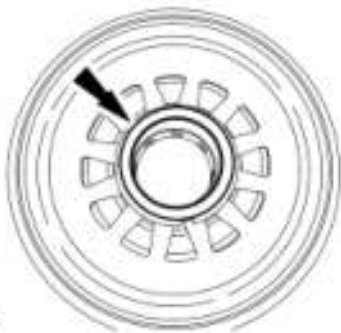
- Using the special tool, install the retaining ring.



N0041540

Fig. 334: Installing Retaining Ring Using Special Tool (307-525)
 Courtesy of FORD MOTOR CO.

- Install a new roller bearing on the center support.



N0041935

Fig. 335: Locating Thrust Bearing On Center Support
 Courtesy of FORD MOTOR CO.

Low/reverse clutch stack up

NOTE: All intermediate clutch plates friction and steel are of a wave-type design.

- Install the special tool into the case.

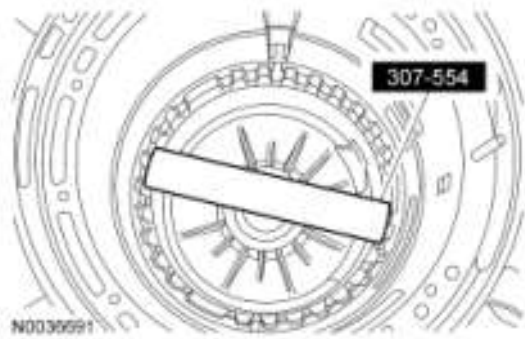


Fig. 336: Installing Special Tool (307-554) Into Case
 Courtesy of FORD MOTOR CO.

8. Install the special tool into the case as shown.



Fig. 337: Installing Special Tool (307-554) Into Case
 Courtesy of FORD MOTOR CO.

9. Measure case stop depth.

Description	Reading
Measure the distance from the top of the upper gauge bar to the top of the lower gauge bar. Record this reading as the case measurement. Record as reading A	

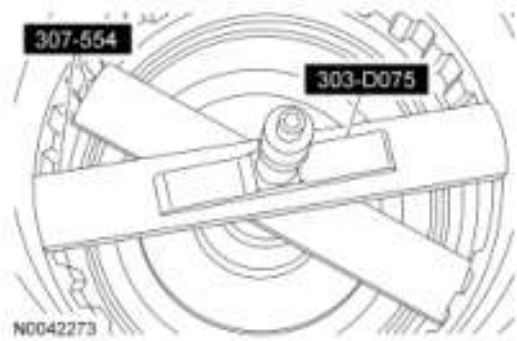


Fig. 338: Measuring Case Stop Depth
Courtesy of FORD MOTOR CO.

10. Measure the clutch pack height.

	Description	Reading
A.	Place the clutch pack with the pressure plate on to the special tool with the wave spring down. Slide the clutch off to the side so the probe of the dial indicator is touching the gauge plate of the special. Zero out the dial indicator. Carefully lift the probe up enough to slide the clutch pack under the probe to take a reading. Record this reading.	

B. Rotate the clutch pack 180 degrees and take a second reading. Add the first and second readings together and divide the total by 2. Record this reading as B.

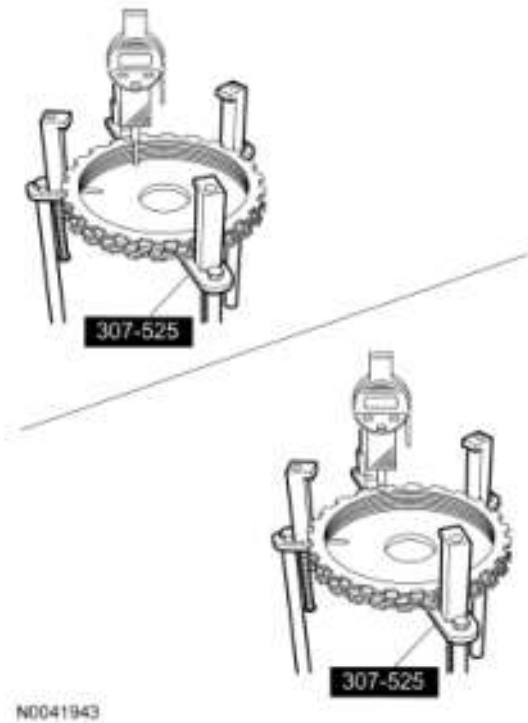


Fig. 339: Measuring Clutch Pack Height
 Courtesy of FORD MOTOR CO.

11. Measure the piston to center support shoulder height.

Description	Reading
Measure the piston to center support shoulder height. Record this measurement.	

<p>Rotate the center support 180 degrees and record this measurement. Add the first and the second measurements, then divide by 2. Record this as reading C.</p>	
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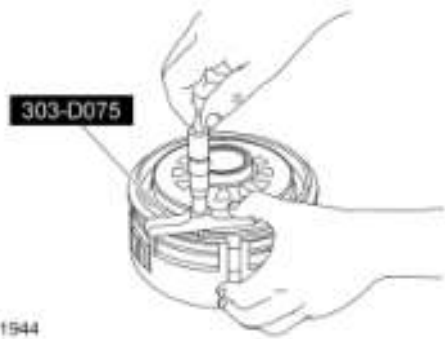


Fig. 340: Measuring Piston To Center Support Shoulder Height
 Courtesy of FORD MOTOR CO.

12. Calculate the end clearance

Description	Reading
Total C measurement	
Subtract B and C from A to determine end clearance	
End clearance specification	0.8-1.4 mm (0.031-0.055 in)

Compare the end clearance to the specification. If the end clearance is out of specification, select the next thinner or thicker plate as required and repeat Steps 10, 11 and 12.

MECHATRONIC ASSEMBLY

Material

Item	Specification
MERCON® SP Automatic Transmission Fluid	

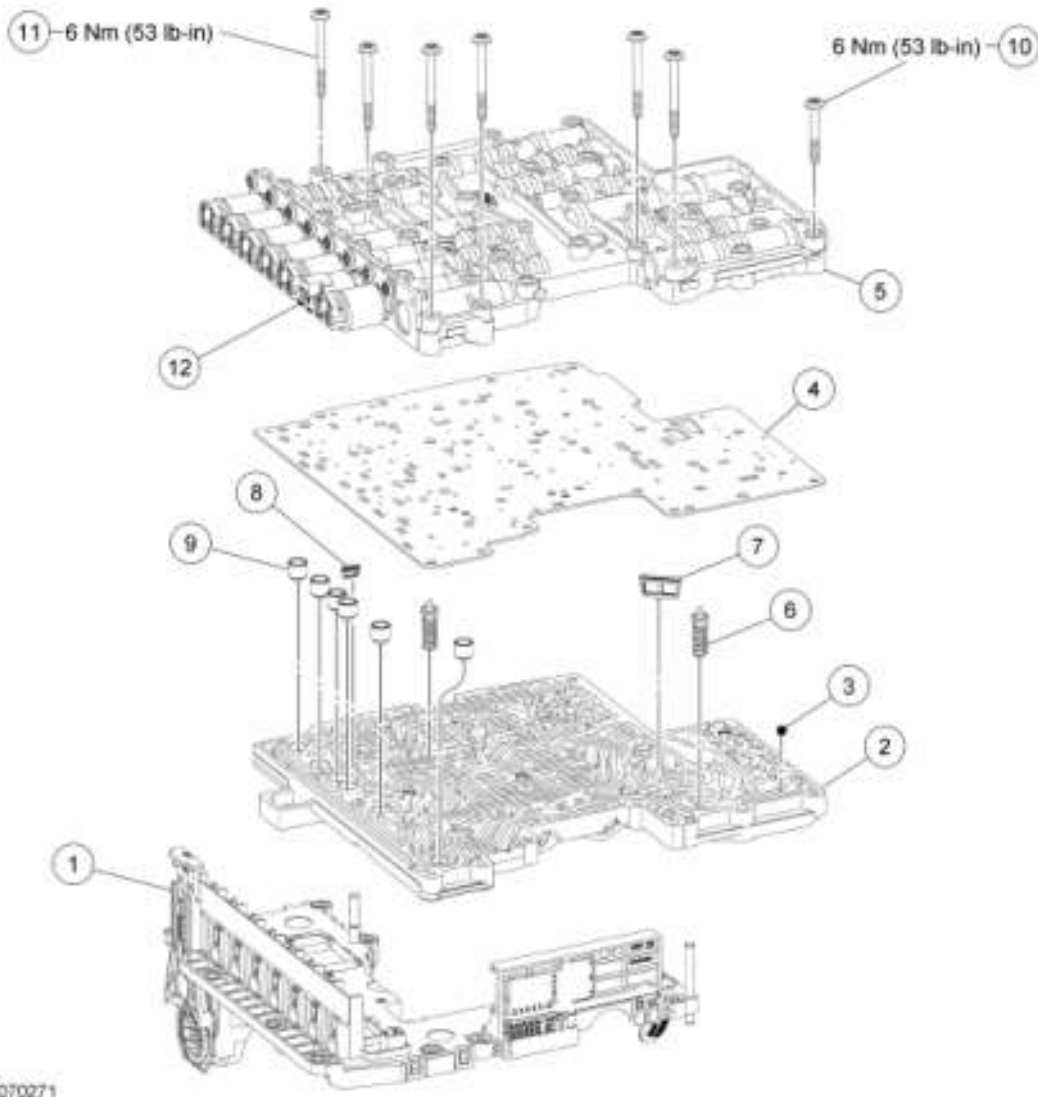
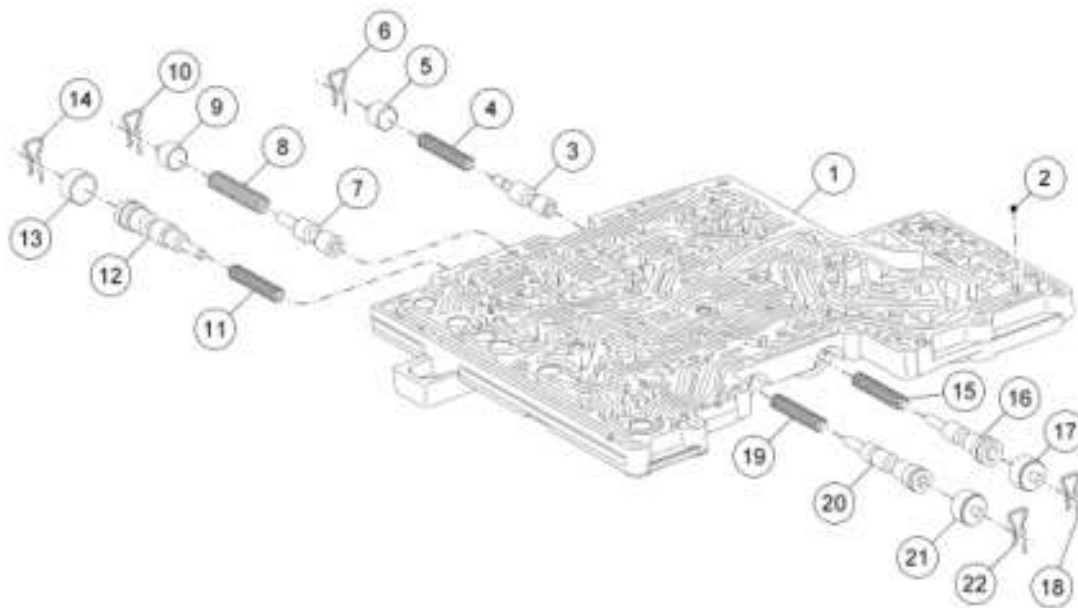


Fig. 341: Exploded View Of Mechatronic Assembly With Torque Specifications
 Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	7Z369	Transmission control module (TCM)
2	7A092	Transmission control valve body (upper)
3	7E195	Transmission control valve check ball (8 required)
4	7Z490	Transmission control valve body separator plate
5	7A101	Transmission control valve body (lower)
6	7D142	Transmission control valve assembly
7	7K221	Transmission control filter assembly
8	7K172	Transmission fluid filter

9	7J191	Transmission solenoid damper valve assembly
10	W707886	Bolt - connects upper and lower half together (19 required)
11	W707884	Bolt - connects TCM to transmission control valve assembly (6 required)
12	7G484	Transmission shift control solenoid (SS1)



N0044830

Fig. 342: Exploded View Of Mechatronic Upper Half
 Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	7A092	Transmission control valve assembly (ditch plate) (upper half)
2	7E395	Transmission control valve check ball (8 required)
3	7J186	Transmission clutch valve
4	7L389	Transmission clutch valve spring
5	7F187	Transmission clutch valve spring plug
6	7J199	Transmission clutch valve spring plug retainer clip
7	7J183	Transmission clutch valve
8	7J196	Transmission clutch valve spring
9	7F187	Transmission clutch valve spring plug
10	7J199	Transmission clutch valve spring plug retainer clip
11	7L389	Transmission clutch valve spring

12	7J181	Transmission clutch valve
13	7F187	Transmission clutch valve spring plug
14	7J199	Transmission clutch valve spring plug retainer clip
15	7L389	Transmission clutch valve spring
16	7D102	Transmission clutch valve
17	7F187	Transmission clutch valve spring plug
18	7J199	Transmission clutch valve spring plug retainer clip
19	7L389	Transmission clutch valve spring
20	7J182	Transmission clutch valve
21	7F187	Transmission clutch valve spring plug
22	7J199	Transmission clutch valve spring plug retainer clip

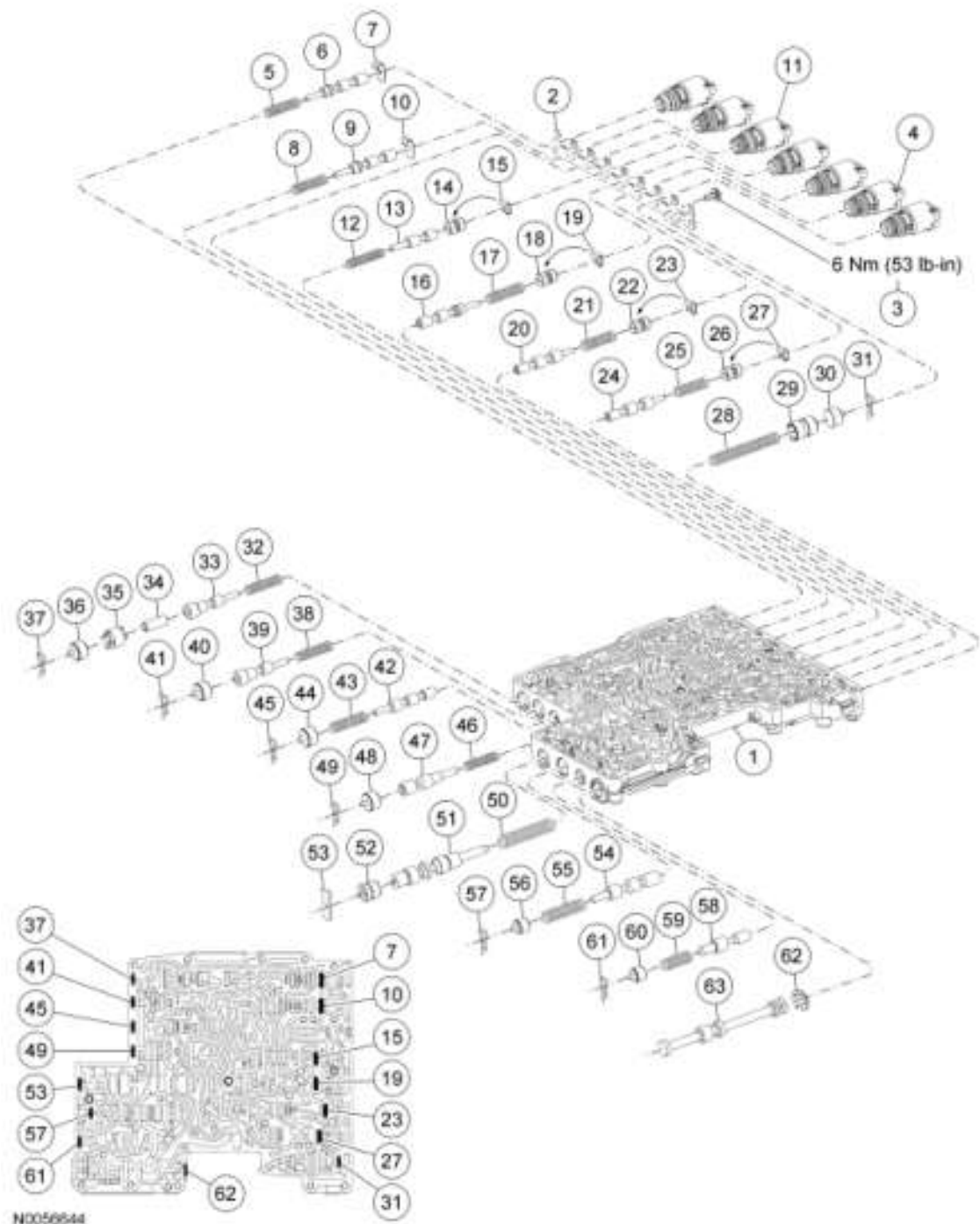
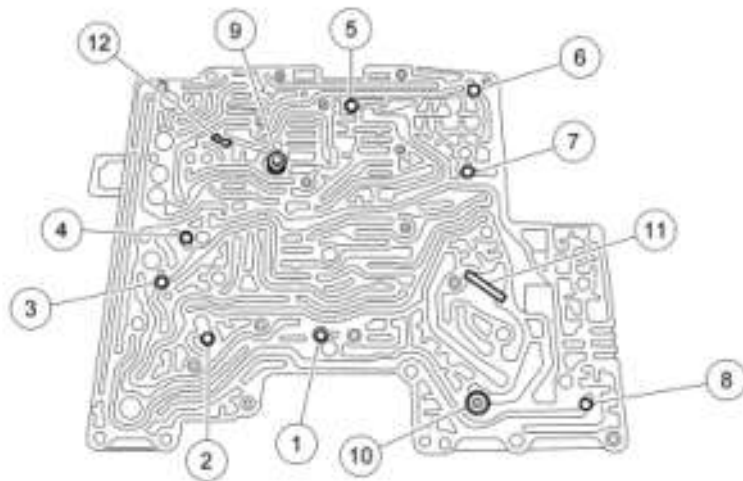


Fig. 343: Exploded View Of Mechatronic Lower Half With Torque Specification
 Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	7A101	Transmission control valve assembly (lower half)
2	7H186	Transmission shift control solenoid hold-down bracket
3	W707885-S	Transmission shift control solenoid hold-down bracket bolt M5 x 0.80 x 12
4	7G484	Transmission shift control solenoid

5	7J197	Transmission clutch valve spring
6	7J187	Transmission clutch valve
7	7F194	Transmission spring retainer plate
8	7J197	Transmission clutch valve spring
9	7J187	Transmission clutch valve
10	7F194	Transmission spring retainer plate
11	7G383	Electronic pressure control (EPC) solenoid
12	7G411	Transmission solenoid regulator valve spring
13	7G473	Transmission solenoid pressure regulator valve
14	7J185	Transmission solenoid plug
15	7G007	Transmission valve plug retainer
16	7J187	Transmission clutch valve
17	7J197	Transmission clutch valve spring
18	7J185	Transmission solenoid plug
19	7G007	Transmission valve plug retainer
20	7H392	Transmission solenoid valve
21	7H258	Transmission solenoid valve spring
22	7J185	Transmission solenoid plug
23	7G007	Transmission valve plug retainer
24	7H392	Transmission solenoid valve
25	7H258	Transmission solenoid valve spring
26	7J185	Transmission solenoid plug
27	7G007	Transmission valve plug retainer
28	7L389	Transmission accumulator valve spring
29	7H022	Transmission manual control oil accumulator
30	7F187	Transmission valve oil return plug
31	7J199	Transmission valve plug return clip
32	7L389	Transmission clutch valve spring
33	7D102	Transmission clutch control pressure regulator valve
34	7H571	Transmission clutch regulator valve sleeve
35	7J184	Transmission valve oil return plug
36	7F187	Transmission valve return plug
37	7J199	Transmission valve plug return clip
38	7L389	Transmission clutch valve spring
39	7D102	Transmission control pressure regulator valve
40	7F187	Transmission valve return plug
41	7J199	Transmission valve plug return clip
42	7J194	Transmission clutch valve

43	7J196	Transmission clutch control valve spring
44	7F187	Transmission valve return plug
45	7J199	Transmission valve plug return clip
46	7H140	Transmission bypass clutch control valve spring
47	7H019	Transmission bypass clutch control valve
48	7F187	Transmission valve return plug
49	7J199	Transmission valve plug return clip
50	7A270	Transmission manual oil pressure regulator valve spring
51	7C388	Transmission manual oil pressure regulator valve
52	7D002	Transmission manual oil pressure regulator valve sleeve
53	7J199	Transmission valve plug return clip
54	7G307	Transmission converter regulator valve
55	7G316	Transmission converter regulator valve spring
56	7F187	Transmission valve return plug
57	7J199	Transmission valve plug return clip
58	7G413	Transmission lube control valve
59	7H143	Transmission lube control valve spring
60	7F187	Transmission valve return plug
61	7J199	Transmission valve plug return clip
62	W527007-S	Retaining ring
63	7C389	Transmission control manual valve



N0042162

Fig. 344: Exploded View Of Check Ball Location
 Courtesy of FORD MOTOR CO.

Item	Part Number	Description

1	-	Reverse/drive control check ball
2	-	Shift solenoid control check ball
3	-	Intermediate clutch exhaust control check ball
4	-	Direct clutch exhaust control check ball
5	-	Low/reverse clutch (clutch D) drive exhaust control check ball
6	-	Forward clutch exhaust control check ball
7	-	Overdrive clutch exhaust control check ball
8	-	Reverse exhaust control check ball
9	-	Clutch exhaust valve
10	-	Converter drain back valve
11	-	Large screen
12	-	Small screen

DISASSEMBLY

CAUTION: Do not touch the electrical connector pins or the exposed solenoid tabs on the transmission control module (TCM). An electrostatic discharge may occur and may cause damage to the TCM/mechatronic assembly.

NOTE: Make an identifying mark on each solenoid and the corresponding bore for correct assembly.

NOTE: Solenoids may visually appear the same but their designs/functions are different. Caution must be taken not to assemble the mechatronics assembly incorrectly. Incorrect solenoid installation will result in poor transmission shift quality.

NOTE: Note where the 8 check balls, 6 solenoid dampers, 2 internal valves and springs and 2 internal filters are located for reassembly.

Mechatronic assembly upper half

1. Make an identifying mark on each solenoid and the corresponding bore for correct assembly.

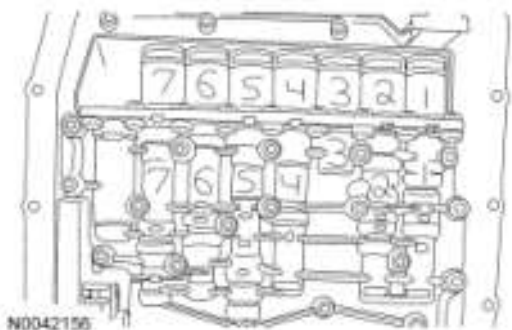


Fig. 345: Identifying Mark On Each Solenoid And Corresponding Bore
Courtesy of FORD MOTOR CO.

2. Remove the 6 long bolts from the transmission control unit (TCM) unit.

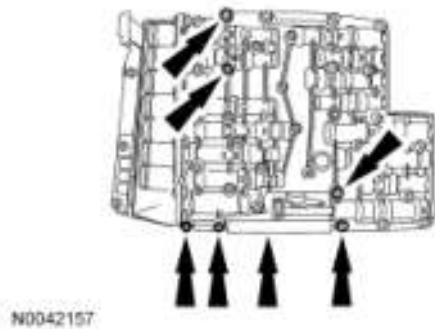


Fig. 346: Locating Long Bolts From TCM Unit
Courtesy of FORD MOTOR CO.

3. Carefully separate the TCM from the mechatronic assembly.
4. Remove 19 short bolts from the mechatronic assembly.

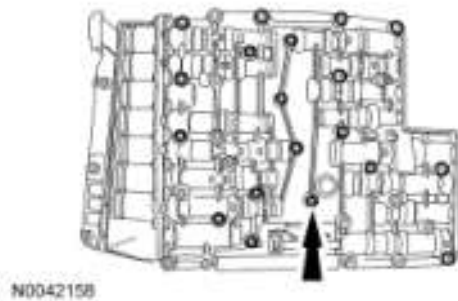


Fig. 347: Locating Short Bolts From Mechatronic Assembly
Courtesy of FORD MOTOR CO.

5. Separate the lower half of the mechatronic assembly from the upper half of the mechatronic assembly.
6. Remove and discard the separator plate.

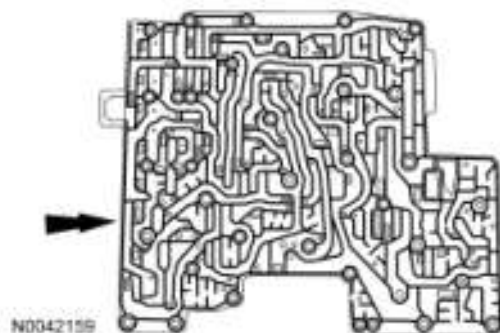


Fig. 348: Locating Separator Plate
Courtesy of FORD MOTOR CO.

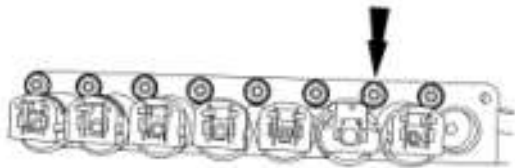
7. Remove the clips, caps, valves and spring from each bore in the mechatronic assembly. Note the

location and order for reassembly. Refer to the preceding exploded views.

8. Remove the transmission control valves, check balls and filter screens from the mechatronic assembly. Note the location and order for reassembly. Refer to the preceding exploded views.
9. Using clean mineral spirits, clean the upper half of the mechatronic assembly.

Mechatronic assembly lower half

10. Remove the 8 solenoid bracket bolts and the solenoid bracket.



N0042160

Fig. 349: Locating Solenoid Bracket Bolts
Courtesy of FORD MOTOR CO.

11. Remove the solenoids.

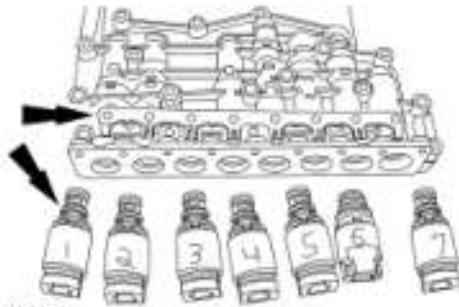


Fig. 350: Locating Solenoids
Courtesy of FORD MOTOR CO.

12. Remove the clips, caps, valves and spring from each bore in the mechatronic assembly. Note the location and order for reassembly. Refer to the preceding exploded views.
13. Using clean mineral spirits, clean the lower half of the mechatronic assembly.

ASSEMBLY

CAUTION: Do not touch the electrical connector pins or the exposed solenoid tabs on the transmission control module (TCM). An electrostatic discharge may occur and may cause damage to the TCM/mechatronic assembly.

Mechatronic assembly upper half

NOTE: Many components and surfaces in the mechatronic valve body are

precision machined. Careful handling during disassembly, cleaning, inspection and assembly will prevent unnecessary damage to machined surfaces.

1. Install the clips, caps, valves and spring into each bore. Refer to the preceding exploded views.

Mechatronic assembly lower half

NOTE: Many components and surfaces in the mechatronic valve body are precision machined. Careful handling during disassembly, cleaning, inspection and assembly will prevent unnecessary damage to machined surfaces.

2. Install the clips, caps, valves and spring into each bore.

NOTE: Lubricate the O-ring seals of the solenoids with clean transmission fluid when installing them into the valve body.

3. Install the solenoids into their correct bores as indicated during disassembly.

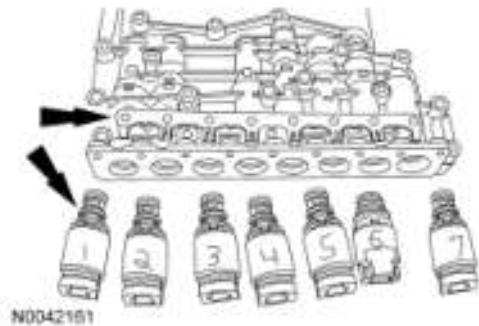


Fig. 351: Locating Solenoids
Courtesy of FORD MOTOR CO.

4. Install the solenoid bracket and the 8 bolts.
 - Tighten to 6 Nm (53 lb-in).

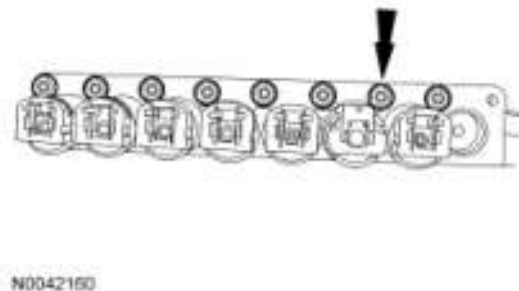


Fig. 352: Locating Solenoid Bracket Bolts
Courtesy of FORD MOTOR CO.

5. Install the transmission control valves, check balls and filter screens into the mechatronic assembly.

Refer to the preceding exploded views.

6. Install a new separator plate.

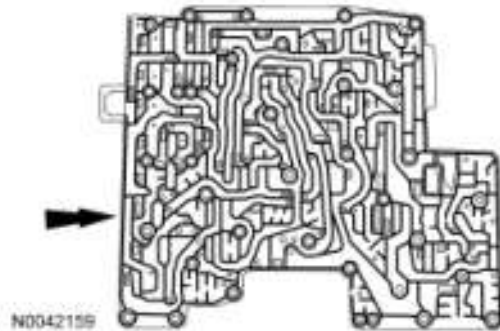


Fig. 353: Locating Separator Plate
Courtesy of FORD MOTOR CO.

7. Assemble the lower half and the upper half of the mechatronic assembly.
8. Install the 19 short bolts into the mechatronic assembly. Tighten the bolts in the sequence shown.
 - Tighten to 6 Nm (53 lb-in).

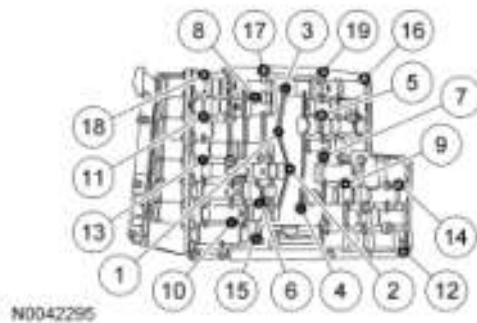


Fig. 354: Tightening Sequence Of Short Bolts
Courtesy of FORD MOTOR CO.

9. Carefully install the TCM onto the mechatronic assembly.
10. Install the 6 long bolts into the TCM unit. Tighten the bolts in the sequence shown.
 - Tighten to 6 Nm (53 lb-in).

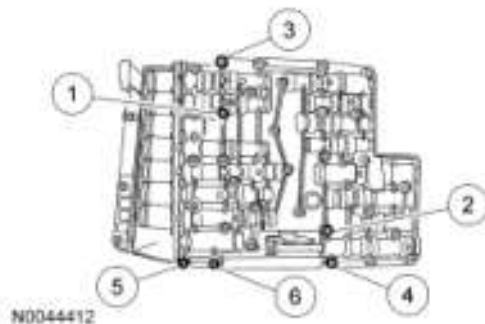



Fig. 355: Tightening Sequence Of Long Bolts
Courtesy of FORD MOTOR CO.

PUMP ASSEMBLY

Special Tools

Illustration	Tool Name	Tool Number
	Installer, Fluid Pump Seal	307-556

Material

Item	Specification
MERCON® SP Automatic Transmission Fluid XT-6-QSP (US); CXT-6-LSP12 (Canada)	MERCON® SP

DISASSEMBLY

1. Remove the front pump washer.



Fig. 356: Locating Front Pump Washer
Courtesy of FORD MOTOR CO.

2. Remove and discard the front pump O-ring seal from the plate assembly.



Fig. 357: Locating Pump Outer Diameter Front Pump O-Ring Seal
Courtesy of FORD MOTOR CO.

3. Remove and discard the front pump seal rings from the stator support.



Fig. 358: Locating Front Pump Seal Rings
 Courtesy of FORD MOTOR CO.

4. Remove the 11 bolts and separate the pump plate assembly from the pump body.

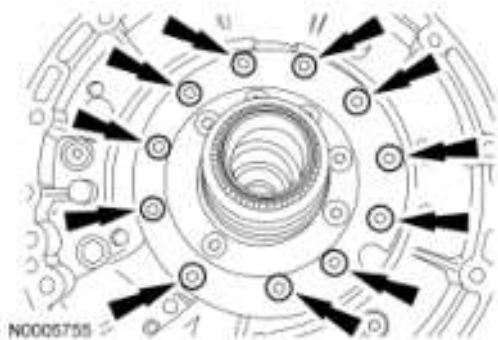


Fig. 359: Locating Plate Assembly To Pump Body Bolts
 Courtesy of FORD MOTOR CO.

5. Remove and discard the pump body outer seal.



Fig. 360: Locating Pump Body Outer Seal
 Courtesy of FORD MOTOR CO.

6. Remove and inspect the inner and the outer pump gears.
 - Clean all pump components in solvent.
 - Dry the parts with compressed air.
 - Inspect the pump gears, faces, gear teeth, pump housing and mating surfaces for damage or scoring.
 - Install a new pump as necessary.

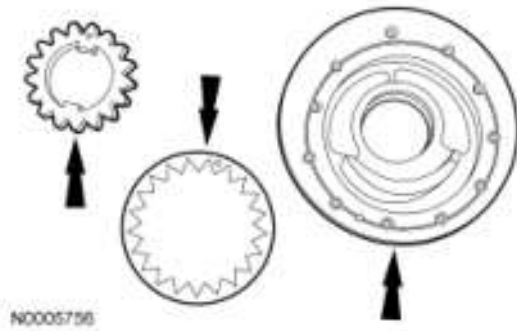


Fig. 361: Locating Inner & Outer Pump Gears
 Courtesy of FORD MOTOR CO.

ASSEMBLY

NOTE: Prior to installation, lightly lubricate the pump gears with clean transmission fluid.

1. Install the pump gears with the dot facing the pump plate assembly.

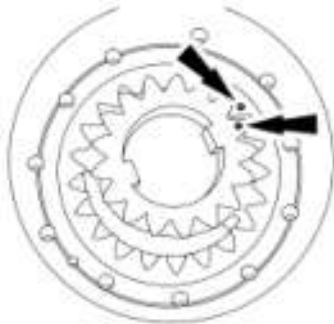


Fig. 362: Locating Pump Gears With Dots
 Courtesy of FORD MOTOR CO.

2. Install a new pump body outer seal.



Fig. 363: Locating Pump Body Outer Seal
 Courtesy of FORD MOTOR CO.

3. Assemble the plate assembly and the pump body assembly.
 - Tighten to 15 Nm (11 lb-ft).

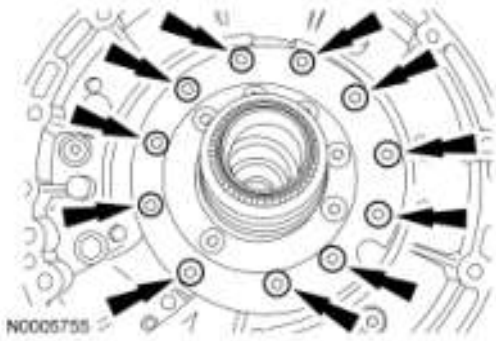


Fig. 364: Locating Plate Assembly To Pump Body Bolts
 Courtesy of FORD MOTOR CO.

CAUTION: Make sure the seal ends are correctly positioned together and not separated.

4. Install the 2 front pump seal rings onto the stator support. Make sure the seals are fully seated in the stator support seal grooves and the seal ends are oriented 180 degrees apart.



Fig. 365: Locating Front Pump Seal Rings
 Courtesy of FORD MOTOR CO.

5. Install a new pump outer diameter front pump O-ring seal.



Fig. 366: Locating Pump Outer Diameter Front Pump O-Ring Seal
 Courtesy of FORD MOTOR CO.

6. Using the special tool, install the front pump seal.

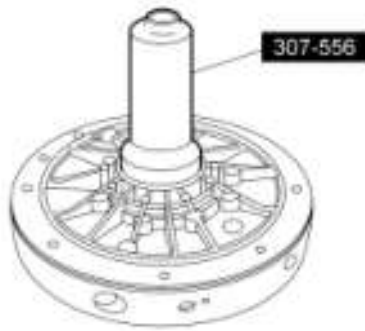


Fig. 367: Installing Front Pump Seal Using Special Tool (307-556)
Courtesy of FORD MOTOR CO.

NOTE: Lightly lubricate the thrust washer with petroleum jelly to hold it in place during assembly.

7. Install the pump thrust washer.



Fig. 368: Locating Front Pump Washer
Courtesy of FORD MOTOR CO.