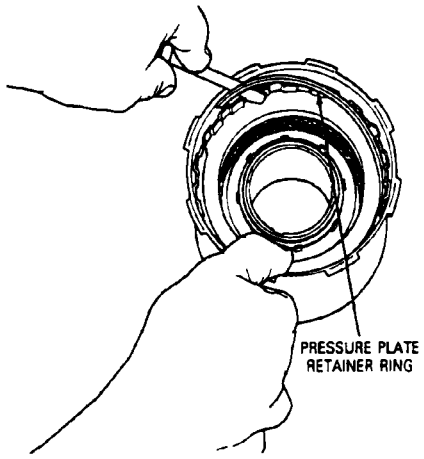
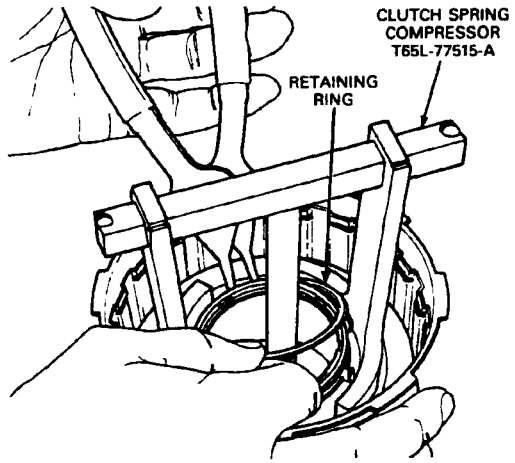
Reverse-High Clutch

Disassembly

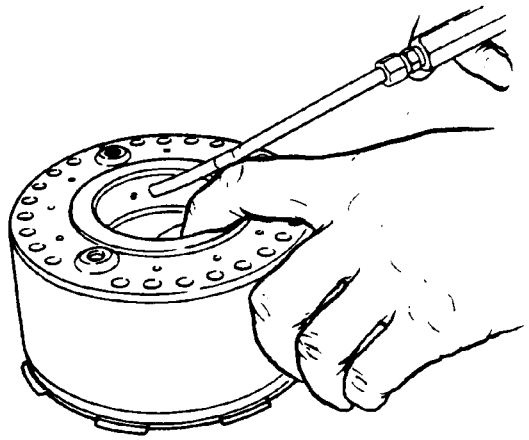
1. Remove the pressure plate retaining ring. Remove the plate pack.
2. Inspect steel clutch plates and clutch lining plates for wear, damage or effects of overheating.
3. Replace the entire set if necessary.
4. If new plates are to be used, immerse them in transmission fluid for 30 minutes before assembly.



5. Compress the compression springs using Clutch Spring Compressor T65L-77515-A or equivalent. Remove retaining ring and carefully release pressure on the spring.
6. Remove the spring and compression spring retainer.

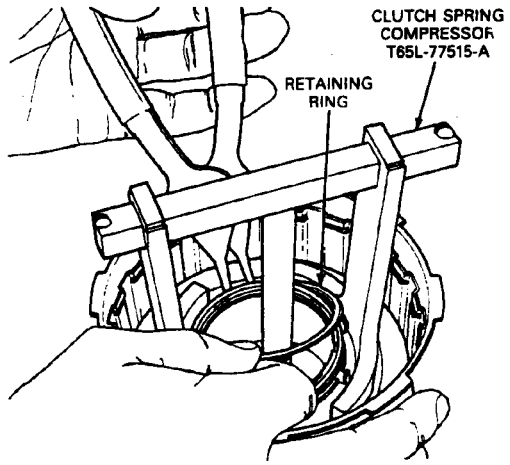


7. The piston is removed by air pressure as shown. Use finger to close off opposite hole.
8. Apply air pressure to blow out clutch piston.
   CAUTION: Do not exceed 137 kPa (20 psi).

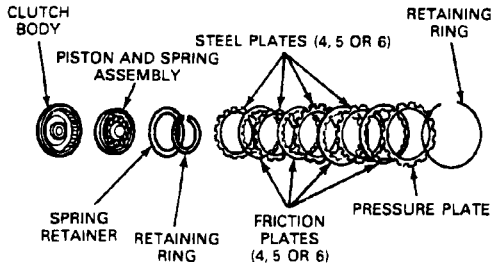


Assembly

1. Install new seal rings on clutch piston.
2. Carefully install clutch piston into clutch body.
3. Install compression spring and spring retainer.
4. Compress springs using Clutch Spring Compressor T65L-77515-A or equivalent. Install the retaining ring.
5. Release load on the springs and remove tool.

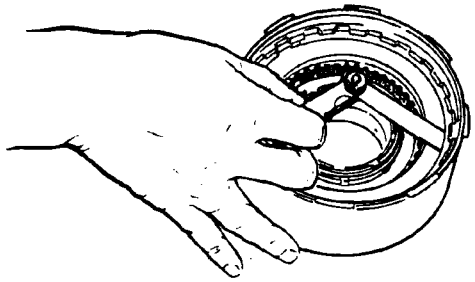


6. Install clutch plates beginning with a steel plate, then a friction plate / steel plate alternately, then the pressure plate. Secure with the retaining ring.

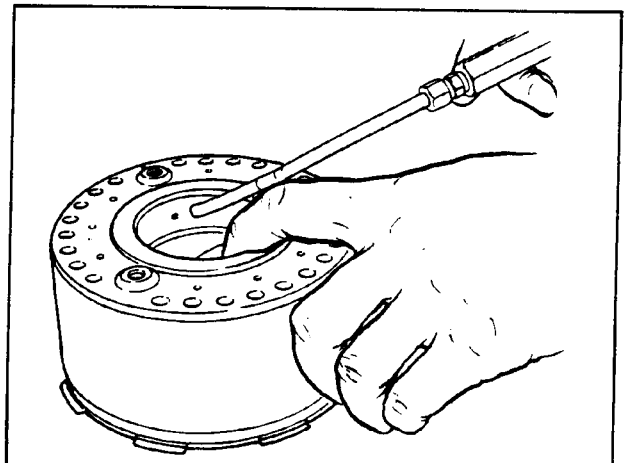


7. Use a feeler gauge to check the clearance between the retaining ring and pressure plate.
8. Push downward on the plates while making this check. The clearance should be to specification.
9. If clearance is not between 1.3 and 2.0mm (.051 and .079 inch), install a different suitable retaining ring.
10. Available retaining ring thicknesses are:

    1.37mm (.0539 inch)
    1.73mm (.0681 inch)
    2.08mm (.0819 inch)
    2.44mm (.0961 inch)



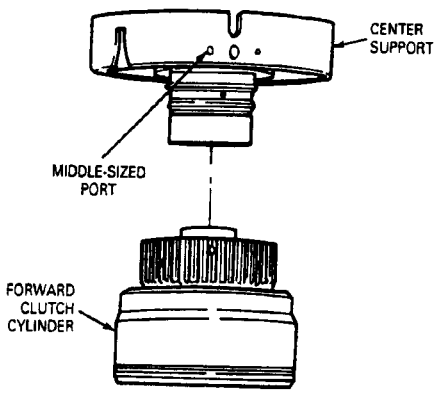
11. Perform the air test by blocking hole with finger to prevent air leakage.
12. Piston must apply when pressurized and release when air is removed.



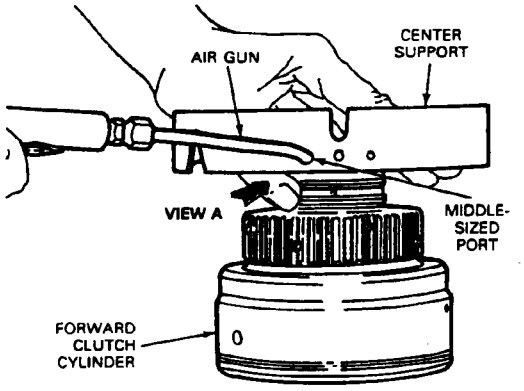
Forward Clutch

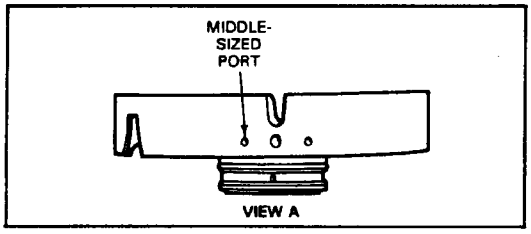
Disassembly

1. Disassembly of the forward clutch is the same as the disassembly of the reverse and high clutch that has been previously covered with one exception—removing the clutch piston.
2. The forward clutch piston is removed from the forward clutch cylinder with air pressure.
    a. Install the center support on the forward clutch cylinder.



b. Apply air pressure to the left (middle-sized) port in the center support as shown to force the piston assembly from the forward clutch cylinder.





Assembly

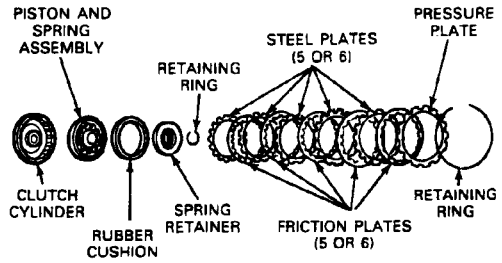
1. Reassembly of the forward clutch is the same as previously covered for the reverse and high clutch with the exception of the following:
   - A rubber forward clutch cushion spring between piston and steel plate.
   - Number of clutch plates: five steel and five friction.
2. Install clutch plates beginning with a steel plate, then alternate friction, steel, friction and so on. Install pressure plate and retaining ring.
3. Use a feeler gauge to check clearance between the retaining ring and pressure plate.
4. Push downward on the plates while making this check. The clearance should be to specification.
5. If clearance is not between 1.4 and 2.1mm (.055 and .083 inch), install a different suitable retaining ring.
6. Available retaining ring thicknesses are:

   1.37mm (.0539 inch)

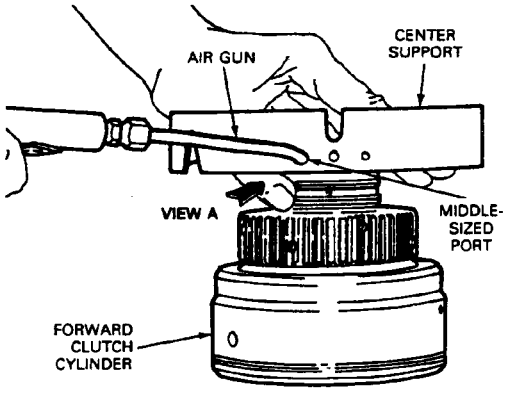
   1.73mm (.0681 inch)

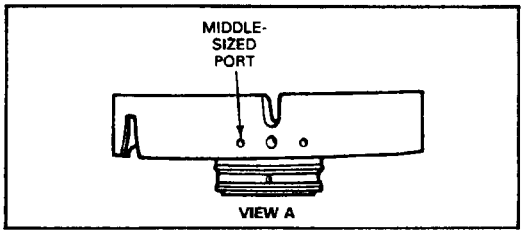
   2.08mm (.0819 inch)

   2.44mm (.0961 inch)



7. Perform the air test by installing the center support on the forward clutch cylinder. Apply air pressure to the left (middle-sized) port, as shown, to check piston application.
8. Piston must apply when pressurized and release when air is removed.



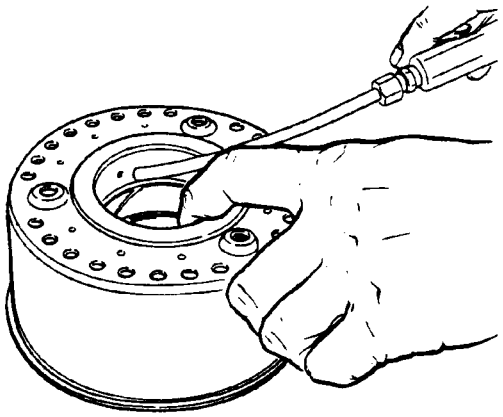


Overdrive Clutch

Disassembly

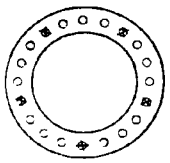
1. Disassembly of the overdrive clutch is the same as disassembly of the reverse and high clutch with the exception of removing the clutch piston.

2. The piston is removed by air pressure as shown. Use finger to close off air leak.



Assembly

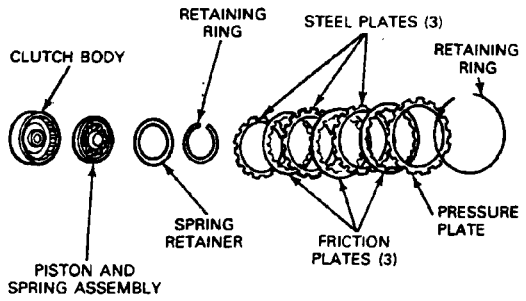
1. Reassembly of the overdrive clutch is the same as previously covered for the reverse and high clutch with the exception of the following:
   - Place return springs around the assembly in groups of three.
   - Number of clutch plates: three steel and three friction.



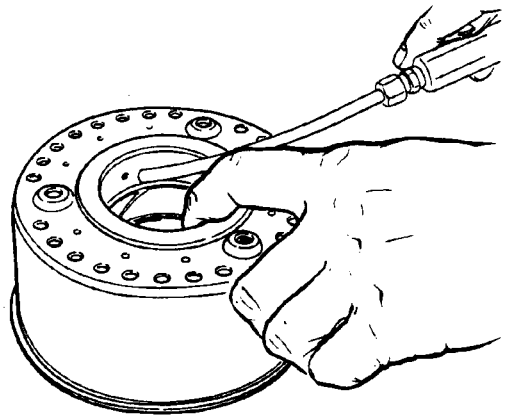
DO NOT PLACE RETURN SPRINGS AT X LOCATIONS

2. Install clutch plates beginning with a steel plate, then alternate friction, steel, friction. Then, install the pressure plate and retaining clip.
3. Use a feeler gauge to check clearance between the retaining ring and pressure plate.
4. Push downward on the plates while making this check. The clearance should be to specification.
5. If clearance is not between 1.4 and 2.1mm (.055 and .083 inch), install a different suitable retaining ring.

6. Available retaining ring thicknesses are:
   1.37mm (.0539 inch)
   1.73mm (.0681 inch)
   2.08mm (.0819 inch)
   2.44mm (.0961 inch)



7. Perform the air test by blocking the hole with a finger to prevent air leakage.
8. Piston must apply when pressurized and release when air is removed.

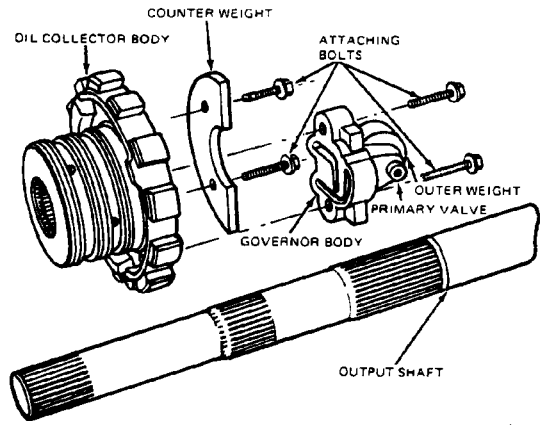


Governor

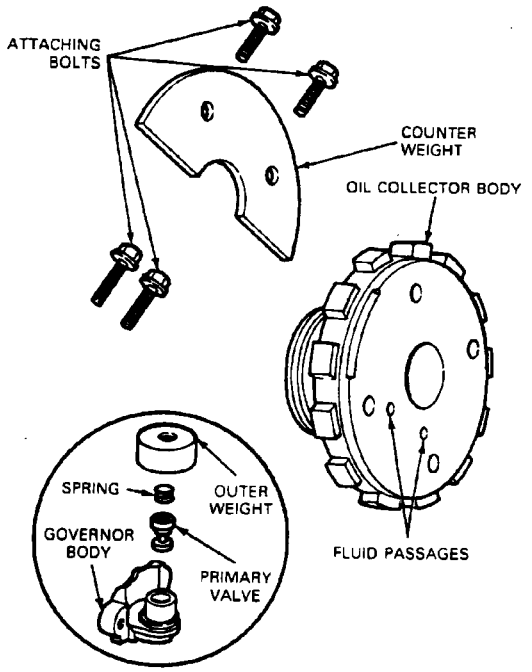
Disassembly and Assembly

1. Remove governor body to oil collector body attaching bolts.

NOTE: When the governor body attaching bolts are removed governor components are no longer retained in position to the governor body. Care must be taken not to drop the governor body and components when the attaching bolts are removed.



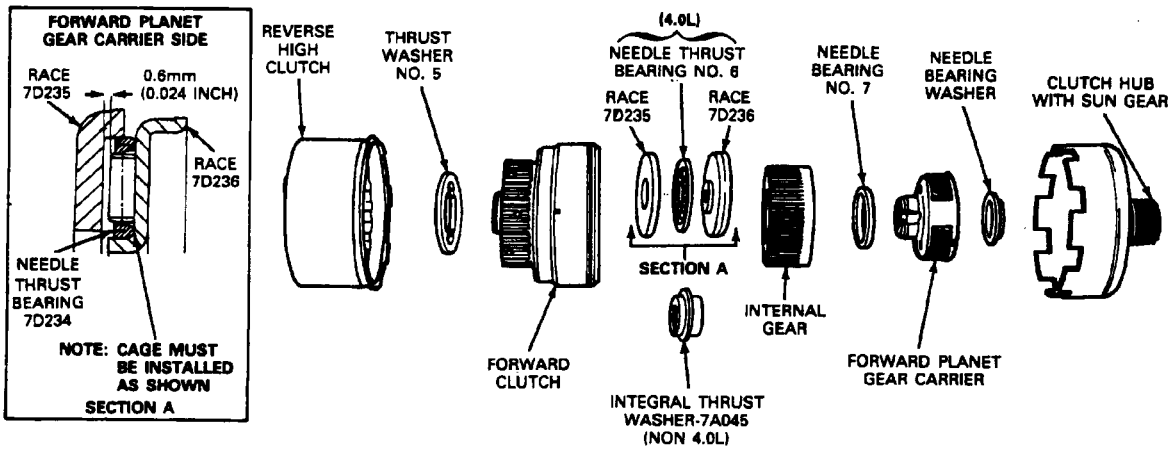
2. Remove governor components from the governor body.
3. Remove the counterweight.
4. Clean all parts. Replace parts that are worn or damaged.
5. Assemble the outer weight spring and primary valve in the governor body.
6. Assemble governor body and counterweight to the oil collector body.



Forward Geartrain Assembly

1. Assemble the forward clutch to the reverse and high clutch, positioning No. 5 (70428) thrust washer between them.
2. Assemble the forward planet gear carrier to the internal gear, with needle bearing thrust washer No. 7 (7F374) in between them.
3. On vehicles with 4.0L engines, position the No. 6 thrust bearing assembly on the gear carrier.

   NOTE: To prevent damage to the bearing needle cage, it must be installed as shown.
4. On 2.3L, 2.9L and 3.0L vehicles, position No. 6 integral thrust washer (7A045) on forward planet carrier hub.
5. Install the front planet assembly into the forward clutch.
6. Position needle bearing washer into forward planet gear carrier. Install clutch hub and sun gear.

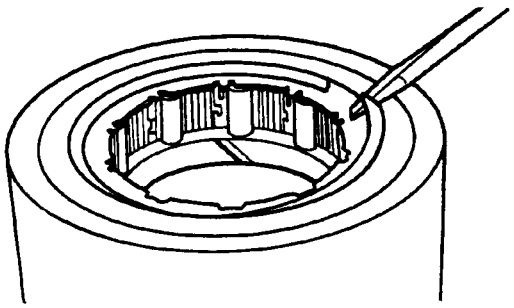


One-Way Clutch

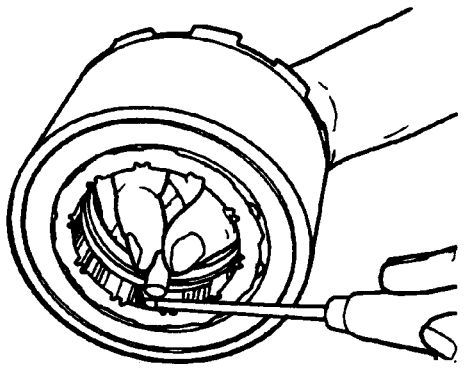
Disassembly and Assembly

NOTE: 4.0L applications use a sprag type one-way clutch that is not to be disassembled.

1. Remove the snap ring using a screwdriver.
2. Lift out the cage with the springs and bearing rollers as a unit.



3. Install the cage with springs.
4. Insert bearing rollers one by one, using a suitable screwdriver and install snap ring.



1989 LINE PRESSURE SPECIFICATIONS

Trans.	Transmission Model/Application	Range	Idle		
			15" & Above	10"	WOT Stall Thru Detent
A4LD	2.3L TPH Ranger	D, D, 2, 1 R P, N	57-109 67-151 57-109	114-134 157-177	205-235 278-314
A4LD	2.9/3.0L Ranger/Br II/ Aerostar	D, D, 2, 1 R P, N	57-78 67-105 57-78	114-134 157-177	205-235 282-316
A4LD	2.3L Mustang	D, D, 2, 1 R P, N	57-67 67-77 57-67	90-110 124-144	180-210 247-280

A4LD TORQUE SPECIFICATIONS

Description	N-m	Ft-Lbs
Transmission to Engine	38.0-51.5	28-38
Converter Housing Lower Cover to Converter Housing	16.3-21.7	12-16
Converter Housing Access Cover (at Oil Pan on 2.3L)	2.5-3.6	*22-32
Converter Housing and Pump to Case	36.6-52.9	27-39
Oil Pump to Converter Housing	22-28	16-21
Center Support (O/D) to Case	9-13	*80-115
Extension Housing to Case	36.6-52.9	27-39
Oil Pan to Case	11-13.5	8-10
Main Control to Case	8.0-11.0	*71-97
Separator Plate to Valve Body	6.1-8.1	*54-72
Detent Spring to Valve Body	9.0-12.1	*80-107
Reverse Servo to Case	9.0-13.0	*80-115
Vacuum Diaphragm Retainer Clip to Case	9.0-12.0	*80-106
Governor Assembly to Oil Collector Body	9.5-13.6	*84-120
Outer Downshift Lever to Inner Lever Shaft Nut	9.5-15.0	7-11
Manual Lever Nut	40.7-54.2	30-40
Overdrive Band Adjusting Screw Locknut to Case	47.5-61.0	35-45
Intermediate Band Adjusting Screw Locknut to Case	47.5-61.0	35-45
Converter to Flywheel Attaching Nut	27.1-46.1	20-34
Cooler Line to Case Connector	24.4-31.2	18-23
Cooler Line to Connector — Tube Nut (5/16 Inch). (Torque Tube Nuts to Spec. While Holding the Transmission Fitting.)	16.3-24.4	12-18
Pressure Plug to Case	9.5-14.9	7-11

*In-Lbs

AUTOMATIC TRANSMISSION REFILL CAPACITY A4LD**

Vehicle	Engine	Approximate Refill Capacity*	
		U.S. Quarts	Liters
Aerostar	3.0L/4.0L	9.7	9.2
Ranger 4x2	2.3L, 2.9L	9.7	9.2
Bronco II 4x2	2.9L	9.7	9.2
Ranger 4x4, Bronco II 4x4, Aerostar E4WD	2.9L/4.0L	10.0	9.5

*Approximate dry capacity, includes cooler and lines. Fluid level indicator should be used to determine **actual** fluid requirements and fluid specifications. Check level at normal operating temperature. **DO NOT OVERFILL.**

If it is necessary to add or replace fluids, use only fluids which have been certified by the supplier as meeting one of the Ford Motor Company specifications shown below:

**A4LD transmission — Use fluids meeting specification Motorcraft MERCON® WSP-M2C185-A.

STALL SPEED SPECIFICATIONS

Vehicle Application	Engine Disp.	Transmission Type	Converter Size	Stall Speed RPM	
				Min.	Max.
Aerostar	3.0L	A4LD	10-1/4 Inches	2720	3165
Aerostar	4.0L	A4LD	10-1/4 Inches		
Ranger	4.0L	A4LD	10-1/4 Inches		
Ranger, Bronco II	2.9L	A4LD	10-1/4 Inches	2781	3288
	2.3L	A4LD	10-1/4 Inches	2437	2833