

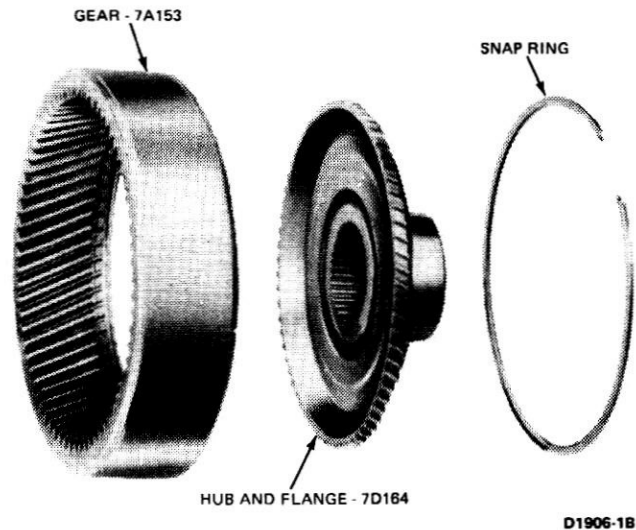


FIG. 84 Reverse Ring Gear and Hub Disassembled

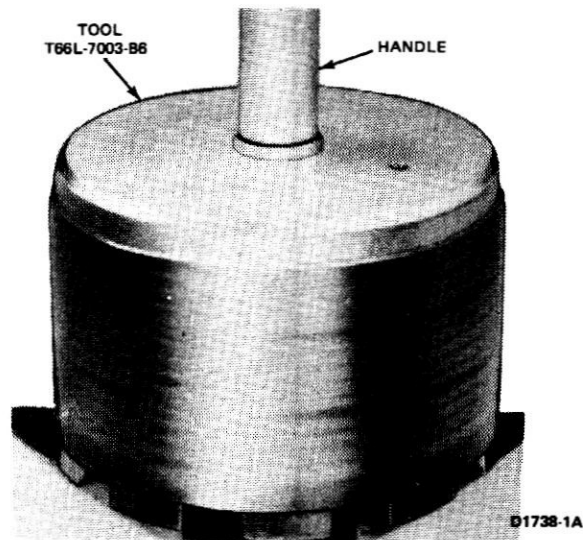


FIG. 85 Installing Low and Reverse Brake Drum Bushing

SPECIFICATIONS

APPROXIMATE REFILL CAPACITIES C4 TRANSMISSION

Vehicle	U.S. Measure	IMP. Measure
Fairmont/Zephyr 3.3L (200 CID) I-6	7½ qt.	6 qt.
Granada/Monarch Fairmont/Zephyr 4.1L (250 CID) I-6	8½ qt.	6½ qt.
Granada/Monarch Fairmont/Zephyr LTD II/Cougar/ Thunderbird/Ford 5.0L (302 CID) V8 5.8L (351 CID) V8	10½ qt.	8½ qt.
Mustang II/Pinto/Bobcat 2.3L I-4, 2.8L V6 — Mustang II 5.0L (302 CID) V8	7 qt.	5½ qt.

SELECTIVE THRUST WASHERS C4 TRANSMISSION

THRUST WASHER NO. 1	
Nylon Thrust Washer W/ Tangs	Color of Washer
0.053-0.0575	Red
0.070-0.0745	Green
0.087-0.0915	Natural (White)

THRUST WASHER NO. 2	
No. Stamped on Washer	Metal Thrust Washer
2	0.056-0.058
3	0.073-0.075
Spacer	0.032-0.036 ①
① This is a selective spacer. The spacer must be installed next to the stator support to obtain correct end play.	

CLUTCH PLATES—C4 TRANSMISSION

Model	Forward Clutch			Reverse Clutch		
	External Spline (Steel)	Internal Spline (Comp.)	Free Pack Clear (Inches)	External Spline (Steel)	Internal Spline (Comp.)	Free Pack Clear (Inches)
PEB	3	4	0.025-0.050	3	3	0.050-0.071
PEA, PEE, PEF	4	5		4	4	
PEJ	2	3		3	3	

CHECKS AND ADJUSTMENTS—C4 TRANSMISSION

Operation	Specification
Transmission End Play	0.008-0.042 inch (Selective Thrust Washers Available)
Turbine and Stator End Play	New or Rebuilt 0.023 max. Used 0.050 max.
Intermediate Band Adjustment	Remove and discard lock nut. Install new nut. Adjust screw to 10 ft.-lbs. torque, then back off 1-3/4 turns. Hold screw and tighten lock nut to 40 ft.-lb.
Low-Reverse Band Adjustment	Remove and discard lock nut. Adjust screw to 10 ft.-lbs. torque, then back off 3 turns. Install new lock nut and torque to 40 ft.-lb.
Selective Snap Ring Thickness	0.050-0.054, 0.064-0.068, 0.078-0.082, 0.092-0.096

SPECIAL TOOLS—C4 TRANSMISSION

Ford Tool No.	Description	Ford Tool No.	Description
T50T-100-A	Impact Slide Hammer	T52L-7000-GAE	Transmission Extension Housing Bushing Remover
T57L-500-B	Bench Mounted Holding Fixture	T52L-7000-HAE	Transmission Extension Housing Bushing Replacer
Tool-1175-AC	Grease Seal Remover (Head Only)	T71P-77370-B	Band Adjustment Socket 1/2" Long
T50T-100-A and Tool-1175-AC	Seal Remover	T71P-77370-C	Band Adjustment Socket 1" Long
Tool-4201-C	Dial Indicator and Bracket	T71P-77370-D	Band Adjustment Socket 2" Long
Tool-7000-DD	Air Nozzle Rubber Tip Assembly	T71P-77370-H	Band Adjustment Torque Wrench
T66L-7003-B	Automatic Transmission Bushing Kit Remover and Replacer	T65L-77515-A	Rear Clutch Spring Compressor
T70P-7D043-A	Stator Support Bushing Installer	T63L-77837-A	Front Pump Seal Replacer
T64P-7B456-A and T65P-7B456-B	Clutch Race to Case Bolt Socket	T73P-77060-A	Wire Snap Ring Remover
T58L-101-A and T59L-100B	Seal Remover (Head and Hammer)	T78P-77548-A	Installer — Forward Clutch Piston Lip Seal
T61L-7657-A	Transmission Extension Housing Oil Seal Replacer		

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TORQUE LIMITS C4 TRANSMISSION

Item	In-Lbs	Item	Ft-Lbs
End Plates To Body	25-40	Rear Servo Cover To Case	12-20
Separator Plate To Lower Body	40-55	Intermediate Servo Cover To Case	16-22
Lower To Upper Body	40-60	Oil Distributor Sleeve To Case	12-20
Screen To Upper Body	40-60	Extension Housing To Case	28-40
Governor To Oil Collector	80-120	Front Pump To Case	28-38
Pump Assembly To Case	20-35	Engine To Transmission (Pinto, Mustang Only)	28-38
Main Control To Case	80-120	Transmission To Engine (Passenger Cars)	40-50
Neutral Switch To Case	55-75	Engine Separator Plate To Converter Housing	5-9
Upper Body To Lower Body	80-120	Downshift Lever To Shaft	12-16
5/16" Fitting - Cooler Line To Transmission Case	80-120	Flywheel To Converter	20-30
Item	Ft-Lbs	Band Adjusting Screws To Case	35-45
Overrunning Clutch Race To Case	13-20	Manual Valve Inner Lever To Shaft	30-40
Oil Pan To Case	12-16	Pipe Plug - Case Front Pump Or Line Pressure	6-12
Stator Support To Pump	12-20	5/16" Tube Nut - Cooler Line To Transmission Case	12-18
Converter Housing Cover To Converter Housing	12-16	Filler Tube To Oil Pan	32-42

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JATCO Automatic Transmission

PART
17-06

Applies To Granada/Monarch

SUBJECT	PAGE	SUBJECT	PAGE
ADJUSTMENTS		DISASSEMBLY AND ASSEMBLY (Cont'd.)	
Intermediate Band	06-4	Reverse Ring Gear and Hub	06-11
		Transmission	06-6
DESCRIPTION	06-1	REMOVAL AND INSTALLATION	
DISASSEMBLY AND ASSEMBLY		Control Valve Body	06-5
Control Valve Body	06-9	Extension Housing	06-5
Forward Clutch	06-11	Extension Housing	
Governor	06-10	Rear Seal	06-5
Input Shell and Sun Gear	06-11	Governor	06-6
Intermediate Servo	06-10	Intermediate Servo	06-5
Oil Pump	06-10	Transmission	06-4
One-Way Clutch	06-11	SPECIFICATIONS AND	
Reverse-High Clutch	06-10	SPECIAL SERVICE TOOLS	06-25

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DESCRIPTION

Fig. 1 shows the location of the converter, oil pump, clutches, gear train and most of the internal parts used in the JATCO automatic transmission.

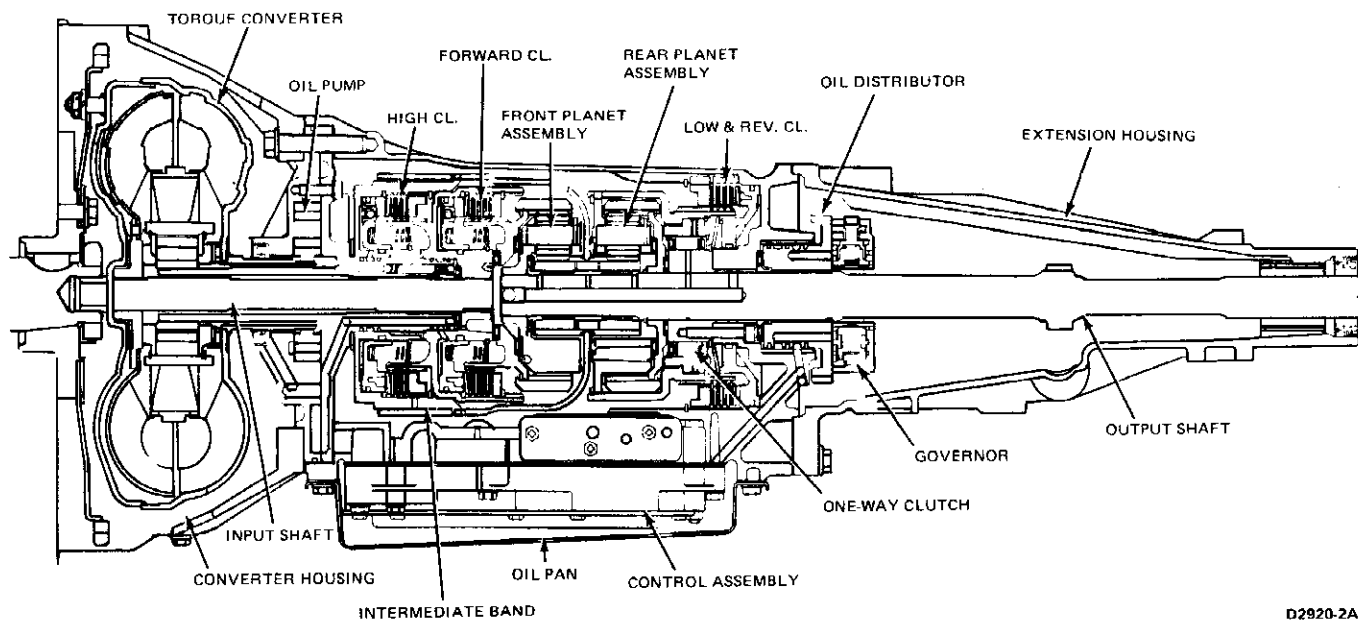
The JATCO automatic transmission is a three speed unit capable of providing automatic upshifts and downshifts through the three forward gear ratios and also capable of providing manual selection of first and second gears.

The transmission consists essentially of a torque converter, planetary gear train, three multiple disc

clutches, a one-way clutch, one band and a hydraulic control system (Fig. 3).

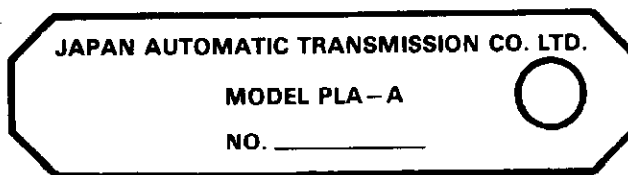
MODEL IDENTIFICATION

The JATCO automatic transmission has a service identification tag (Fig. 2) to identify assemblies for service purposes. The tag is attached to the left side of the transmission case above the manual control lever. The JATCO transmission is identified by the code letter "S" on the Vehicle Certification Label.



D2920-2A

FIG. 1 Sectional View—JATCO Automatic Transmission



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FIG. 2 Service Identification Tag—JATCO Transmission

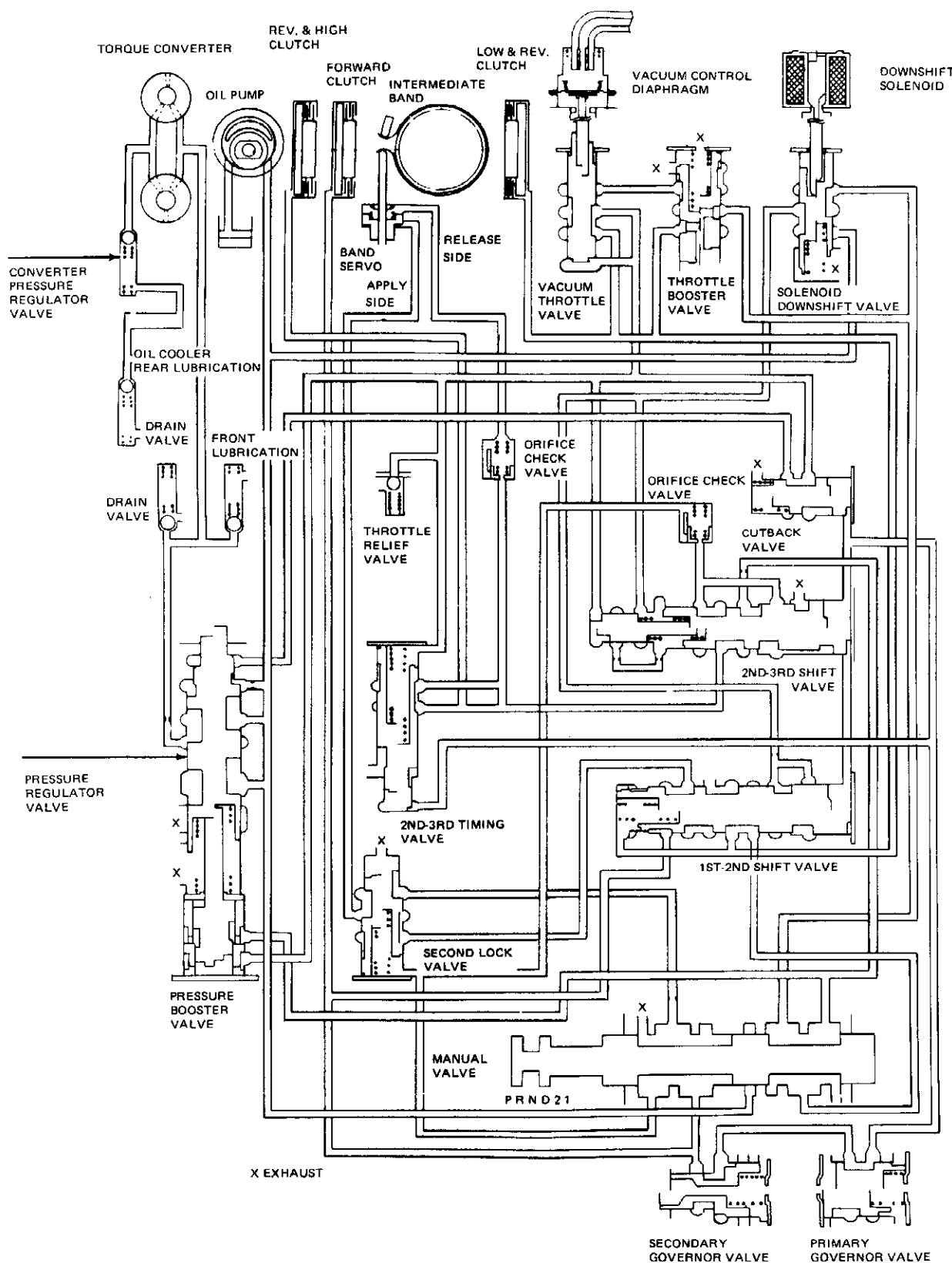


FIG. 3 Hydraulic Control System

ADJUSTMENTS

INTERMEDIATE BAND

1. Raise the vehicle on hoist or jack stands.
2. Loosen the servo cover attaching bolts and remove cover.
3. Loosen the intermediate band adjusting screw lock nut and tighten the adjusting screw to 10 ft-lb torque (Fig. 4).

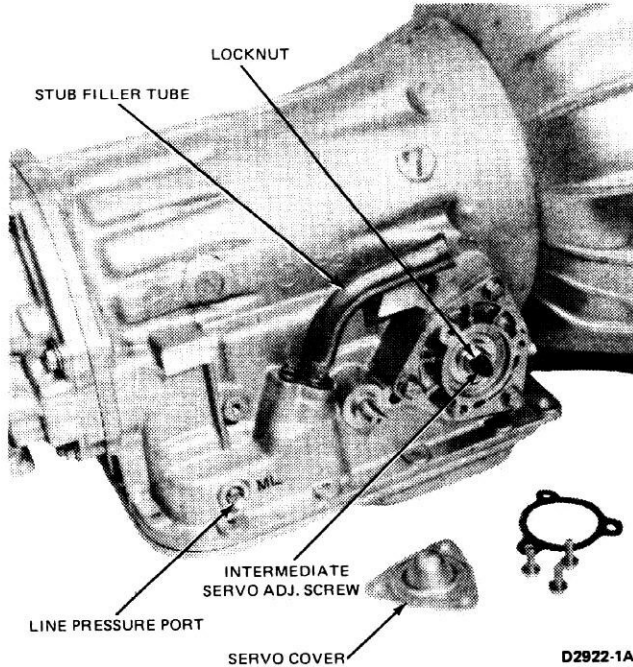


FIG. 4 Adjusting Intermediate Band

4. Back off the adjusting screw two turns. Hold the adjusting screw stationary and tighten the adjusting screw lock nut to 22-29 ft-lb torque.
5. Place a new gasket on the servo cover and install the cover on the transmission and torque bolts to specification.
6. Lower the vehicle and check the transmission fluid level.

REMOVAL AND INSTALLATION

TRANSMISSION

Removal

1. Disconnect the negative battery cable from the terminal.
2. Raise the vehicle on a hoist or jack stands.
3. Place a drain pan under the transmission. Starting at the rear of the transmission oil pan and working toward the front, loosen the attaching bolts and allow the fluid to drain. Finally remove all of the pan attaching bolts except two at the front to allow the fluid to further drain. After the fluid has drained, install two bolts on the rear side of the pan to temporarily hold it in place.
4. Disconnect the drive shaft at the rear axle.
5. Lower the drive shaft assembly and withdraw it from the transmission.

6. Disconnect the speedometer cable from the extension housing.
7. Disconnect the shift cable from the manual lever at the transmission.
8. Remove the vacuum hose from the vacuum diaphragm. Disconnect the wire connections of the downshift solenoid and remove the wire from the clip.
9. Disconnect the oil cooler lines at the transmission.
10. Remove the access cover from the lower end of the converter to the flywheel.
11. Remove the four nuts that attach the torque converter to the flywheel.
12. Remove the transmission rear support to crossmember nuts.
13. Support the transmission with a transmission jack, then remove the crossmember-to-frame attaching bolts and remove the crossmember.
14. Secure the transmission to the jack with safety chain.
15. Lower the transmission enough to remove the starter motor. Then, remove the converter housing-to-engine attaching bolts. Remove the transmission fluid filler tube.
16. With a pry bar, exert pressure between the flex plate and converter to prevent the converter from disengaging from the transmission as the assembly is moved.
17. Lower the transmission and converter as an assembly and remove it from under the vehicle.

Installation

1. With the converter properly installed, place the transmission on the jack. Secure the transmission to the jack with safety chain.
2. Raise the transmission into position and install the converter housing-to-engine attaching bolts. Torque the bolts to specification.
3. Lower the transmission and install the starter motor.
4. Install the fluid filler tube and O-ring in the transmission case and secure it to the cylinder block with the attaching bolt.
5. Remove the safety chain from around the transmission.
6. Raise the transmission. Position the crossmember to the frame and install the attaching bolts.
7. Lower the transmission and install the rear support to crossmember nuts.
8. Install the four converter-to-flywheel attaching nuts and torque to specification.
9. Install the converter housing access cover.
10. Remove the transmission jack.
11. Connect the oil cooler lines to the transmission.
12. Install the wire from the downshift solenoid. Connect the vacuum hose to the vacuum diaphragm.
13. Connect the shift cable to the manual lever on the transmission.

14. Connect the speedometer cable to the extension housing.
15. Position the drive shaft to the rear axle. Secure it with the attaching nuts.
16. Lower the vehicle and connect the battery. Pour in five quarts of fluid then run the engine and add fluid as required. Raise vehicle and check transmission for fluid leakage.

CONTROL VALVE BODY

Removal

1. Raise the vehicle so the transmission oil pan is accessible.
2. Drain the transmission fluid by loosening the pan attaching bolts and allowing the fluid to drain.
3. Remove the transmission pan attaching bolts, pan and gasket.
4. Remove the downshift solenoid, vacuum diaphragm, vacuum diaphragm rod and O-rings.
5. Remove the valve body-to-case attaching bolts. Hold the manual valve to keep it from sliding out of the valve body and remove the valve body from the case. Failure to hold the manual valve while removing the control assembly, could cause the manual valve to become bent or damaged.
6. Refer to the Disassembly and Assembly section of this Part for control valve body repair operations.

Installation

1. Thoroughly clean and remove all gasket material from the pan and pan mounting face of the case.
2. Position the valve body to the case and install the attaching bolts. Torque the bolts to specification.
3. Using a new pan gasket, secure the pan to the transmission case and torque the attaching bolts to specifications.
4. Lower the vehicle and fill the transmission to the correct level with the specified fluid.

SERVO

Removal

1. Raise the vehicle.
2. Drain the transmission fluid by loosening the pan attaching bolts and allowing the fluid to drain.
3. Remove the transmission pan attaching bolts, pan and gasket.
4. Remove control valve body from the transmission assembly.
5. Remove bolts attaching the servo cover to the retainer and remove the cover.
6. Remove the three bolts securing the servo retainer to the transmission case and remove the retainer and servo piston as an assembly. Remove the return spring from the case.
7. Through the bottom of the case remove the intermediate band, apply strut.

Installation

1. Install the piston return spring in the case.
2. Install intermediate band, apply strut in band end.
3. Install the piston and servo retainer into the transmission case and align piston rod with the

band strut. While holding the retainer in place, install the three attaching bolts. Torque the bolts to specification.

4. Adjust the band as follows:

Tighten adjusting screw to 10 ft-lb torque, then back off two turns. Hold adjusting screw stationary and tighten locknut to 22-29 ft-lb.

5. Install control valve body assembly and torque to specification.
6. Using a new pan gasket, secure the pan to the transmission case and torque the attaching bolts to specification.
7. Using a new servo cover gasket, secure servo cover to the retainer and torque attaching bolts to specification.
8. Lower the vehicle and fill the transmission to the correct level with the specified fluid.

EXTENSION HOUSING REAR SEAL

Removal

1. Raise the vehicle and disconnect the drive shaft.
2. With a sharp chisel, remove the seal from the extension housing.

Installation

1. Using a Tool (T61L-7657-A), install a new seal in the extension housing.
2. Connect the drive shaft and lower the vehicle, check fluid level and add fluid as required.

EXTENSION HOUSING

Removal

1. Raise the vehicle on a hoist or jack stands.
2. Disconnect the drive shaft at the rear axle.
3. Lower the drive shaft assembly and withdraw it from the transmission.
4. Disconnect the speedometer cable from the extension housing.
5. Remove the transmission rear support to crossmember bolts and nuts.
6. Place a jack under the transmission and raise it just enough to remove the rear support from the transmission.
7. Loosen the extension housing attaching bolts to drain the transmission fluid.
8. Remove the eight extension housing-to-case attaching bolts and remove the extension housing.

Installation

1. Clean the mounting surface on the transmission and on the extension housing. Position a new gasket on the transmission.
2. Position the extension housing to the case and install the attaching bolts. Torque the bolts to specification.
3. Lower the transmission and install the rear support to the extension crossmember install bolts and nuts. Remove the transmission jack.
4. Connect the speedometer cable to the extension housing.
5. Insert the drive shaft into the transmission extension housing.

6. Position the drive shaft to the rear axle and secure it with the attaching nuts.
7. Lower the vehicle and fill the transmission to the proper level with the specified fluids.
8. Check the extension housing area for fluid leakage.

GOVERNOR

Removal

1. Remove the extension housing as outlined in this section.
2. Remove the four governor housing to oil distributor attaching bolts. Remove the governor housing from the distributor.
3. Refer to Disassembly and Assembly Section of this Part for governor repair operations.

Installation

1. Install the governor housing on the oil distributor. Install the attaching bolts and torque the bolts to specifications.
2. Reinstall the extension housing.

DISASSEMBLY AND ASSEMBLY TRANSMISSION

Before removing any of the subassemblies, thoroughly clean the outside of the transmission to prevent dirt from entering the mechanical parts during the repair operation.

During the repair of the subassemblies, certain general instructions which apply to all units of the transmissions must be followed. These instructions are given here to avoid unnecessary repetition.

Handle all transmission parts carefully to avoid nicking or burring the bearing or mating surfaces.

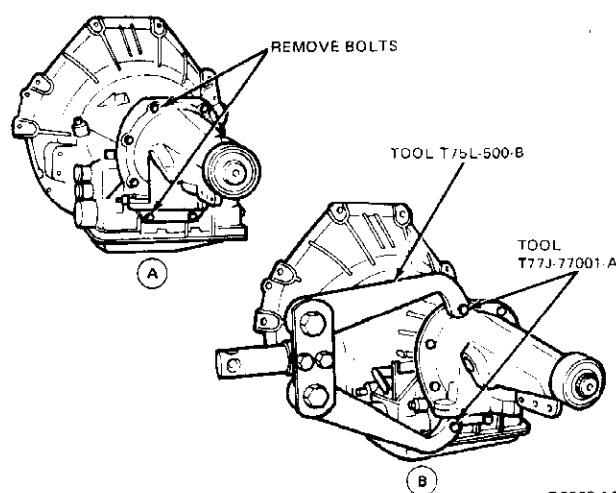
Lubricate all internal parts of the transmission before assembly with clean automatic transmission fluid. Do not use any other lubricants except on gaskets and thrust washers which may be coated with petroleum jelly to facilitate assembly. Always install new gaskets when assembling the transmission.

Tighten all bolts and screws to the recommended torque as outlined in the Specification Section.

Disassembly

1. Mount the transmission in holding fixture T57L-500-B using Metric mounting Adapters, T77J-77001-A (Fig. 5).
2. Remove the converter from the transmission front pump and converter housing.
3. Remove the converter housing attaching bolts and remove the converter housing.
4. Remove the transmission pan attaching bolts, pan and gasket.
5. Unscrew the downshift solenoid (Fig. 6) and vacuum diaphragm unit and remove the vacuum diaphragm rod from the case.
6. Remove the control valve body attaching bolts (Fig. 7). Remove the control valve body from the case.
7. Loosen the intermediate band adjusting screw lock nut and tighten the adjusting screw to prevent the reverse and high clutch drum from falling when the oil pump is removed.

8. Remove the input shaft from the front pump.
9. Remove the oil pump (Fig. 8) using Tools T73J-77103 and Slide Hammers T59L-100-B.
10. Loosen the intermediate band adjusting screw and remove the band strut.
11. Remove the band and forward part of the gear train as an assembly (Fig. 9).
12. Remove the large snap ring that secures the rear planet carrier to the connecting drum. Remove the planet carrier from the drum.
13. Remove the output shaft snap ring (Fig. 10) and remove the internal drive flange.
14. Turn the connecting drum counterclockwise as far as it will go. Then, turn the connecting drum clockwise and remove the drum and one-way clutch from the case as an assembly.
15. Remove the eight extension housing-to-case attaching bolts. Remove the extension housing and gasket from the case.
16. Slide the output shaft assembly from the transmission case.
17. Remove the governor and oil distributor from the case.
18. Remove the oil distributor needle bearing and race from inside the transmission case.
19. Remove the retaining ring from the park rod actuating lever. Then remove the lever and park pawl actuating rod.
20. Remove the manual shaft attaching nut and remove the manual plate and spacer. Remove the manual shaft from the case.
21. Remove the snap ring securing the low and reverse clutch assembly to the case. Then remove the retaining plate, steel and friction plates and dished plate from the case (Fig. 11).
22. Remove the eight one-way clutch inner race attaching bolts and washers from the rear of the case. Remove the inner race, snap ring, piston return spring and support ring from inside the case (Fig. 10).



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FIG. 5 Mounting Transmission in Holding Fixture

23. Remove the low and reverse clutch piston from the case as shown in Fig. 11.

TRANSMISSION

Assembly

When assembling the transmission sub-assemblies (Fig. 13), make sure that the correct thrust washer or needle bearing is used between certain sub assemblies (Fig. 14). Lubricate surfaces with transmission fluid. Petroleum jelly should be used to hold the thrust washers and needle bearings, in their proper location. If the end play is not within specifications after the transmission is assembled, either the wrong selective thrust washers

and races were used, or a thrust washer or needle bearing came out of position during the transmission assembly operation.

1. Install reverse clutch inner and outer piston seals on piston. Lubricate the low and reverse clutch piston and seals with transmission fluid and install into the transmission case.
2. Install the low and reverse clutch support ring, piston return spring, snap ring and one-way clutch inner race in the case.
3. Hold the one-way clutch inner race in position and install and torque the attaching bolts and washers to specification (Fig. 15).

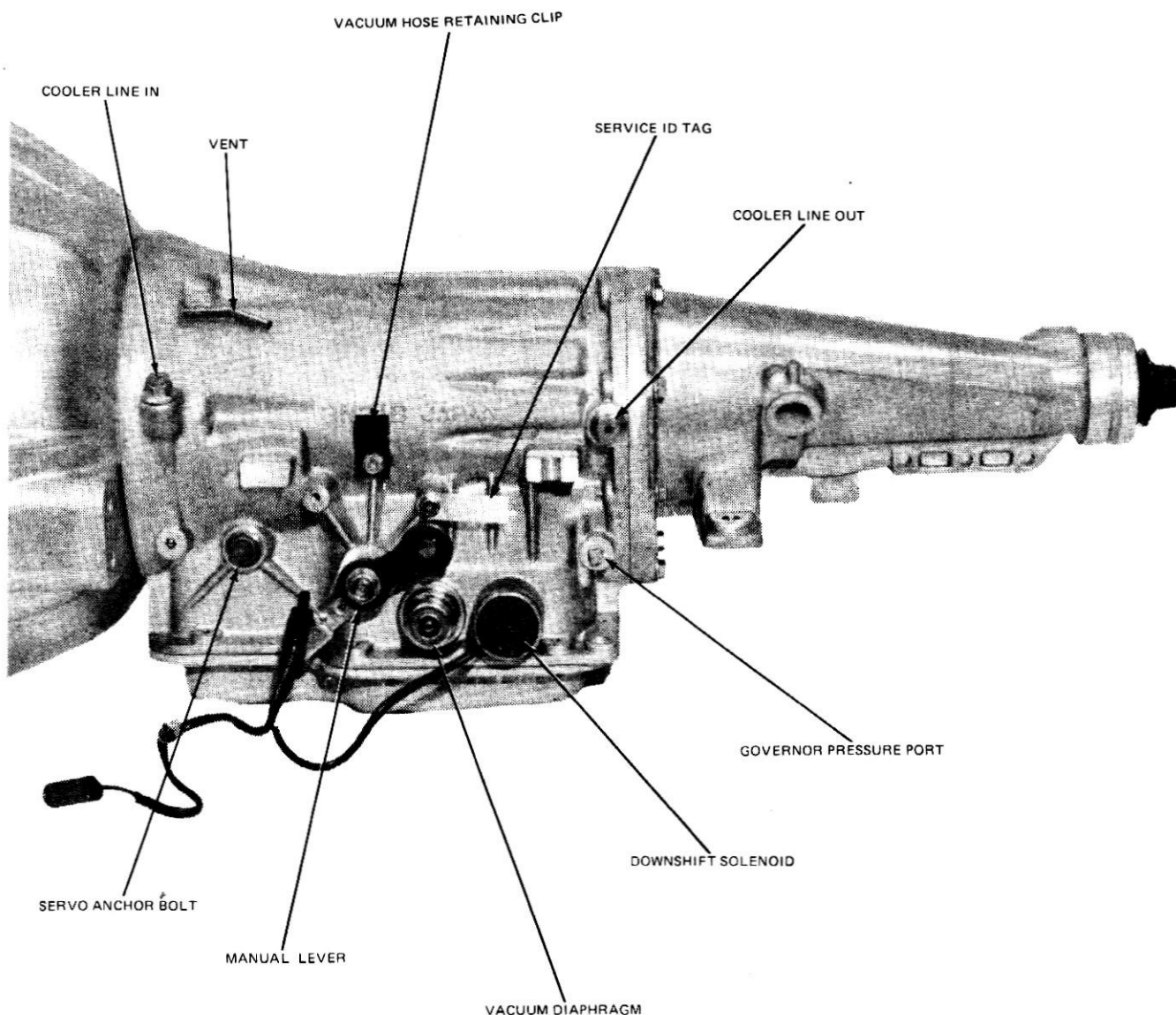


FIG. 6 L.H. Exterior View—JATCO Transmission

4. Position the low and reverse clutch dished plate in the case. Dip the steel and friction plates in clean transmission fluid and install the plates alternately starting with a steel plate (Fig. 11).
5. After all the plates have been installed, position the retaining plate in the case. Install the pressure plate snap ring.
6. With a feeler gauge, check the clearance between the pressure plate and snap ring (Fig. 16). The clearance should be 0.032-0.041 inch. If the clearance is not within the specified range, selective pressure plates are available in the following thicknesses: 0.307, 0.315, 0.323, 0.331, 0.339 and 0.346 inch. Insert the correct pressure plate and recheck the clearance.
7. While applying pressure, rotate the connecting drum clockwise to mesh the low and reverse clutch plates with the splines of the drum.
8. Install the oil distributor needle bearing and race in the case. Then install the governor and oil distributor in the case taking care not to damage the seal rings.
9. Install the output shaft.
10. Position the needle bearings on the front and rear sides of the internal drive flange. Retain the bearings with petroleum jelly. Install the flange on the output shaft. Install the snap ring (Fig. 10).
11. Position the needle bearing race on the rear side of the rear planet carrier and the needle bearing on the front side of the carrier; retain with petroleum jelly. Insert the assembly into the internal drive flange and install the snap ring.
12. Install the manual shaft in the case. Install the manual plate, spacer and attaching nut. Torque the nut to specification.
13. Install the park actuating lever and rod into the case and secure with the retaining ring.
14. Install the servo return spring, piston and servo retainer into the case. While holding the retainer in place, install the three attaching bolts. Torque the bolts to specification.
15. Place a new gasket on the rear of the transmission case. Position the extension housing on the case and install the attaching bolts. Torque the bolts to specification.
16. Position the needle bearing on the rear end of the forward clutch hub and the bearing race on the front end of the front planet carrier. Assemble the forward clutch hub and planet carrier and install the assembly into the input shell and sun gear drum.
17. Set the input shell and sun gear assembly on a bench with the forward clutch hub facing upward (Fig. 15). Position the needle bearing on the front end of the forward clutch hub. Install the needle bearing race. Install the forward clutch assembly on the forward clutch hub by rotating the units to mesh the forward clutch plates with the splines of the forward clutch hub (Fig. 17).
18. Install the reverse and high clutch assembly on the forward clutch assembly by rotating the units to mesh the reverse and high clutch plates with the splines of the forward clutch (Fig. 18).
19. Install the reverse and high clutch, forward clutch front planet carrier and input shell and sun gear as an assembly into the transmission case (Fig. 9).
20. Insert the intermediate band into the case around the reverse and high clutch drum. Install the strut and tighten the band adjusting screw sufficiently to retain the band.
21. Place a selective thickness thrust washer and bearing race on the rear end of the oil pump cover and retain them with petroleum jelly.
22. Position the oil pump in the transmission case.
23. Place the converter housing on the case and install the six converter housing-to-case attaching bolts using Motorcraft Sealing Compound or equivalent beneath the bolt heads. Torque the bolts to specification.
24. Install the input shaft.
25. To check the oil pump cover-to-front clutch drum end play, use a feeler gauge and check the clearance between the front clutch drum and input shell and sun gear assembly. The end play should be 0.020-0.032 inch. If the end play is not within the specified range, selective thrust washers are available in the following thicknesses: 0.059, 0.067, 0.075, 0.083, 0.091, 0.098 and 0.106 inch. Insert the correct thrust washer and recheck the end play.
26. Using the tools shown in Fig. 19, check the transmission total end play.
27. With the dial indicator contacting the end of the input shaft, set the indicator at zero.
28. Insert a screwdriver behind the input shell (Fig. 17). Move the input shell and the front part of the gear train forward.
29. Record the dial indicator reading. The end play should be 0.010-0.020 inch. If the end play is not within the specified range, selective races are available in the following thicknesses: 0.047, 0.055, 0.063, 0.071, 0.079 and 0.087 inch (see Fig. 14). Insert the correct race and recheck the end play.
30. Adjust the band. Refer to the Adjustment Section of this part for the band adjustment procedures and install servo cover.
31. Install the control valve assembly (Fig. 7). Refer to the Removal and Installation Section of this Part for the control valve assembly installation procedures.
32. Install the vacuum diaphragm rod into the transmission case. If the valve body, transmission case or vacuum diaphragm unit was replaced, a new length vacuum throttle valve rod may be required. With the throttle valve fully depressed, measure the depth of the throttle valve bore as shown in Fig. 20. This dimension will determine which selective throttle valve rod to use. The rod length for the various depths is given below:

Depth of 1.071 inch, use the 1.140 inch rod.
Depth of 1.075-1.091 inch, use the 1.160 inch rod.
Depth of 1.095-1.110 inch, use the 1.180 inch rod.
Depth of 1.114-1.130 inch, use the 1.200 inch rod.
Depth of 1.134 inch, use the 1.220 inch rod.