

2. Position the converter on the transmission, making sure the converter drive flats are fully engaged in the pump gear by rotating the converter.
3. With the converter properly installed, place the transmission on the jack. Secure the transmission to the jack with a chain.
4. Rotate the converter until the studs and drain plug are in alignment with the holes in the flywheel.
5. Move the converter and transmission assembly forward into position, using care not to damage the flywheel and the converter pilot. **The converter must rest squarely against the flywheel. This indicates that the converter pilot is not binding in the engine crankshaft.**
6. Install and torque the converter housing-to-engine attaching bolts to specification. Make sure that the vacuum tube retaining clips are properly positioned.
7. Remove the safety chain from around the transmission.
8. Install a new O-ring on the lower end of the transmission filler tube. Insert the tube in the transmission case and secure the tube to the engine with the attaching bolt.
9. Connect the speedometer cable to the extension housing.
10. Connect the oil cooler lines to the right side of transmission case.
11. Connect the vacuum lines to the vacuum diaphragm making sure that the metal tubes are secured in the retaining clip.
12. Position the crossmember on the side supports. Position the rear mount on the crossmember and install the attaching bolt and nut.
13. Secure the engine rear support to the extension housing and torque the bolts to specification.
14. Lower the transmission and remove the jack.
15. Secure the crossmember to the side supports with the attaching bolts and torque them to specification.
16. Position the bellcrank bracket to the converter housing and install the two attaching bolts.
17. Connect the downshift rod to the transmission downshift lever. Connect the selector rod to the manual lever at the transmission.
18. Secure the converter-to-flywheel attaching nuts and torque them to specification.
19. Install the converter housing access cover and secure it with the attaching bolts.
20. Secure the starter motor in place with the attaching bolts. Connect the cable to the terminal on the starter.
21. Connect the drive shaft to the rear axle.
22. Adjust the shift linkage as required. Refer to Part 17-02.
23. Lower the vehicle.
24. Fill the transmission to the correct level with the specified fluid. Refer to Part 17-01. Start the engine and shift the transmission to all ranges, then recheck the fluid level.

LTD II, Cougar, Thunderbird and Continental Mark V

Removal

1. Working from the engine compartment, remove the two bolts retaining the fan shroud to the radiator.
2. Disconnect the battery.
3. Raise the vehicle on a hoist or stands.
4. Place the drain pan under the transmission fluid pan. Starting at the rear of the 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. With fluid drained, install two bolts on the rear side of the pan to temporarily hold it in place.
5. Remove the converter drain plug access cover and adapter plate bolts from the lower end of the converter housing.
6. Remove the converter-to-flywheel attaching nuts. Place a wrench on the crankshaft pulley attaching bolt to turn the converter to gain access to the nuts.
7. Turn the converter to gain access to the converter drain plug. Then, remove the plug and place a drain pan under the converter to catch the fluid. After fluid has drained, reinstall the plug.
8. Disconnect the drive shaft from the rear axle and slide the shaft rearward from the transmission. Install a seal installation tool in the extension housing to prevent fluid leakage.
9. Disconnect the speedometer cable from the extension housing.
10. Disconnect the downshift rod from the transmission downshift lever.
11. Disconnect the shift cable from the manual lever at the transmission.
12. Remove the two bolts that secure the shift cable bracket to the converter housing and position the cable and bracket out of the way.
13. Remove the starter motor attaching bolts and position the starter out of the way.
14. Disconnect the rubber hose(s) from the vacuum diaphragm at rear of transmission. Remove the vacuum tube(s) from the retaining clip at the transmission.
15. Disconnect the muffler inlet pipe at the exhaust manifolds and allow the pipe to hang.
16. Remove the crossmember-to-frame side support bolts and nuts. Remove the nuts securing the rear engine supports to the crossmember. Position a jack under the transmission and raise it slightly. Remove the bolts securing the rear engine supports to the extension housing and remove the crossmember and rear supports from the vehicle.
17. Loosen the parking brake adjusting nut at the equalizer and remove the cable from the idler hook attached to the floor pan.
18. Lower the transmission, then disconnect the oil cooler lines from the transmission case.
19. Secure the transmission to the jack with a chain.
20. Remove the six bolts that attach the converter housing to the cylinder block.

21. Remove the bolt that secures the transmission filler tube to the cylinder block. Lift the filler tube and dipstick from the transmission.
22. Move the transmission away from the cylinder block.
23. Lower and remove the transmission and converter assembly from under the vehicle.
24. Remove the converter and mount the transmission in a holding fixture.

Installation

1. Torque the converter drain plug to specification as listed at the end of this Part.
2. Position the converter on the transmission making sure the converter drive flats are fully engaged in the pump gear by rotating the converter.
3. With the converter properly installed, place the transmission on the jack. Secure the transmission to the jack with the safety chain.
4. Rotate the converter until the studs and drain plug are in alignment with their holes in the flywheel.

NOTE: On Continental Mark V, to maintain initial engine/transmission balance, assemble the converter to the flywheel so that the orange-dyed converter drive stud is installed through the orange painted hole in the flywheel.

5. Move the converter and transmission assembly forward into position using care not to damage the flywheel and converter pilot. **The converter must rest squarely against the flywheel. This indicates that the converter pilot is not binding in the engine crankshaft.**
6. Install a new O-ring on the lower end of the transmission filler tube. Insert the tube in the transmission case and secure the tube to the engine with the attaching bolt.
7. Install the converter housing-to-engine attaching bolts. Torque the bolts to specification. Remove the safety chain from around the transmission.
8. Connect the oil cooler lines to the transmission case.
9. Raise the transmission slightly and position the parking brake cable in the idler hook. Tighten the adjusting nut at the equalizer.
10. Place the rear engine supports on the crossmember and position the crossmember on the frame side supports.
11. Secure the engine rear supports to the extension housing with the attaching bolts. Torque the bolts to specification.
12. Remove the transmission jack from under the vehicle and install the crossmember-to-frame side support bolts and nuts. Torque the bolts and nuts to specification.
13. Install the engine rear support-to-crossmember attaching nuts, and torque to specification.
14. Connect the muffler inlet pipe to the exhaust manifolds.

15. Connect the vacuum lines to the vacuum diaphragm making sure that the metal tube is secured in the retaining clip.
16. Position the starter motor to the converter housing and secure it with the attaching bolts.
17. Install torque converter-to-flywheel attaching nuts. Torque nuts to specification.
18. Position the shift cable bracket to the converter housing and install the two attaching bolts.
19. Connect the shift cable to the manual lever at the transmission.
20. Connect the downshift rod to the lever on the transmission.
21. Connect the speedometer cable to the extension housing.
22. Remove the tool from the extension housing, and install the drive shaft.
23. Install the converter drain plug access cover and adapter plate bolts. Torque the bolts to specification.
24. Adjust the manual and downshift linkage as required. Refer to Part 17-02.
25. Lower the vehicle.
26. Working from the engine compartment, position the fan shroud to the radiator and secure with the two attaching bolts.
27. Connect the battery.
28. Fill the transmission to the proper level with the specified fluid. Refer to Part 17-01.
29. Check the transmission, converter assembly and oil cooler lines for leaks.

Lincoln Continental

Removal

1. Raise the hood and remove the transmission dipstick.
2. Raise the vehicle on a hoist. Remove the bolt that secures the transmission filler tube to the cylinder head.
3. Remove the bolts that attach the reinforcement plate at the rear of the transmission oil pan and remove the plate.
4. Remove the three bolts that attach the manual and downshift control rod splash shield to the side rail and remove the shield.
5. Place the drain pan under the transmission fluid pan. Starting at the rear of the 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. With fluid drained, install two bolts on the rear side of the pan to temporarily hold it in place.
6. Remove the converter drain plug access cover from the lower end of the converter housing.
7. Remove the converter-to-flywheel attaching nuts. Place a wrench on the crankshaft pulley attaching bolt to turn the converter to gain access to the nuts.
8. With the wrench on the crankshaft pulley attaching bolt, turn the converter to gain access to the converter drain plug and remove the plug. Place a

- drain pan under the converter to catch the fluid. With fluid drained, reinstall the plug.
9. Remove the two front support bracket bolts at the converter housing.
 10. Lift the fluid filler tube from the transmission case.
 11. Remove the two idler arm bracket bolts from the frame side rail and allow the idler arm to hang free.
 12. Disconnect the starter cable from the starter. Remove the starter attaching bolts and remove the starter.
 13. Disconnect the oil cooler lines from the transmission.
 14. Disconnect the vacuum hoses from the diaphragm.
 15. Loosen the parking brake adjusting nut at the equalizer and remove the retracting spring. Disconnect the rear brake cables and remove the equalizer from the bracket.
 16. Disconnect the speedometer cable from the extension housing.
 17. Disconnect the drive shaft from the transmission flange and position the shaft out of the way.
 18. Disconnect the downshift rod from the transmission downshift lever.
 19. Remove the manual selector rod from the manual lever.
 20. Remove the lower bellcrank attaching bolts and remove the bellcrank.
 21. Pry the upper bellcrank out of the converter housing and allow it to hang free.
 22. Remove the cooler lines from the clip at the cylinder head.
 23. Remove the lower converter housing-to-cylinder block attaching bolts.
 24. Remove the two nuts that attach the engine rear mounts to the crossmember.
 25. Place a transmission jack under the transmission and raise it just high enough to remove the weight from the crossmember.
 26. Remove the engine rear support-to-extension housing attaching bolts and remove the supports.
 27. Remove the crossmember-to-frame attaching nuts and remove the crossmember.
 28. Secure the transmission to the jack with safety chain. Lower the transmission and remove the upper converter housing-to-cylinder block attaching bolts.
 29. Move the transmission away from the cylinder block.
 30. Carefully lower the jack and remove the transmission and converter assembly from under the vehicle.
 31. Remove the converter and mount the transmission in a holding fixture.
- Installation**
1. Torque the converter drain plug to specification as listed at the end of this Part.
 2. Position the converter to the transmission making sure the converter drive flats are fully engaged in the pump gear.
 3. Rotate the converter until the studs and drain plug are in alignment with their holes in the flywheel.
- To maintain initial engine/transmission balance, assemble the converter to the flywheel so that the orange-dyed converter drive stud is installed through the orange-painted hole in the flywheel.
4. Move the converter and transmission assembly forward into position, using care not to damage the flywheel and the converter pilot. **The converter must rest squarely against the flywheel. This indicates that the converter pilot is not binding in the engine crankshaft.**
 5. Install the converter housing-to-engine attaching bolts, and torque to specification. Remove the safety chain from around the transmission.
 6. Secure the converter to the flywheel with the four attaching nuts. Torque the nuts to specification.
 7. Secure the converter access cover to the converter housing with the attaching bolts.
 8. Secure the two front support brackets to the converter housing with the attaching bolts.
 9. Raise the transmission high enough to position the crossmember. Install the bolts, but do not tighten at this time.
 10. Secure the engine rear support to the extension housing and torque the bolts to specification. At this time, install the crossmember-to-frame attaching nuts. Torque nuts to specification as listed at the end of this Part.
 11. Lower the transmission and install the engine rear support-to-crossmember attaching nuts and plates. Torque the nuts to specification. Remove the transmission jack.
 12. Install the upper bellcrank in the left side of the converter housing.
 13. Position the lower bellcrank to the transmission and floor pan and secure it with the two attaching bolts.
 14. Connect the downshift rod to transmission downshift lever.
 15. Connect the manual selector rod to the manual lever.
 16. Position the manual and downshift control rod splash shield to the frame side rail and secure it with the attaching bolts.
 17. Connect the speedometer cable to the extension housing.
 18. Connect the vacuum hoses to the vacuum diaphragm and secure with a clamp.
 19. Connect the two oil cooler lines to the fittings on the right side of the case.
 20. Install the cooler lines under the clip at the cylinder head.
 21. Position the reinforcement plate and torque the attaching bolts to specification.
 22. Install the equalizer and parking brake cables. Install the equalizer lever retracting spring.
 23. Connect the drive shaft to the transmission flange.
 24. Install a new seal on the filler tube and install it in the transmission case. Secure the filler tube to the cylinder head.
 25. Install the starting motor and connect the cable.
 26. Install the idler arm bracket-to-frame side rail.

27. Lower the vehicle.
28. Fill the transmission to the correct level with the specified fluid. Refer to Part 17-01.
29. Adjust the manual and throttle linkage as required. Refer to Part 17-02.

CONTROL VALVE BODY

Removal

1. Raise the vehicle on a hoist or jack stands.
2. Place a drain pan under the transmission and loosen the bolts to drain the fluid from the transmission.
3. Remove the transmission pan attaching bolts from both sides and the rear to allow the fluid to drain further. Finally, remove the remainder of the attaching bolts. Remove the pan and gasket. Remove and discard the nylon shipping plug from the filler tube hole. This plug is used to retain transmission fluid within the transmission during shipment and should be discarded when the oil pan is removed.
4. Remove the valve body attaching bolts and remove the valve body from the case.

Installation

1. Position the valve body to the case making sure that the selector and downshift levers are engaged. Install and torque the attaching bolts to specification.
2. Clean the transmission pan and gasket surfaces thoroughly.
3. Using a new pan gasket, secure the pan to the transmission case. Torque the attaching bolts to specification.
4. Lower the vehicle and fill the transmission to the correct level with the specified fluid. Refer to Part 17-01.

INTERMEDIATE SERVO

All Vehicles Except Lincoln Continental

Removal

1. Raise the vehicle on a hoist or stands.
2. Remove the engine rear support-to-extension housing attaching bolts.
3. Raise the transmission high enough to remove the weight from the engine rear support.
4. Remove the bolt that secures the engine rear support to the crossmember. Remove the support.
5. Lower the transmission and remove the jack.
6. Place a drain pan under the servo. Remove the bolts that attach the servo cover to the transmission case.
7. Remove the cover, piston, spring and gasket from the case, screwing the band adjusting screw inward as the piston is removed. This places enough tension on the band to keep the struts properly engaged in the band end notches while the piston is removed.
8. Apply air pressure to the port in the servo rod to remove the piston and rod.
9. Replace the complete piston and rod assembly if the piston or piston sealing lips are damaged (Fig. 5).

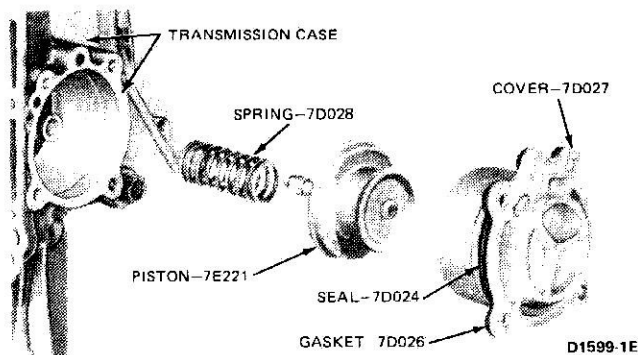


FIG. 5 Servo Disassembled—Typical

10. Remove the seal from the cover.

Installation

1. Dip the new seals in transmission fluid.
2. Install a new seal on the cover.
3. Coat a new gasket with petroleum jelly and position it on the servo cover.
4. Dip the piston in transmission fluid and install it in the cover.
5. Position the servo spring on the piston rod.
6. Insert the servo piston rod in the case. Secure the cover with the attaching bolts, taking care to back off the band adjusting screw as the cover bolts are tightened. Make sure that the service identification tag is in place.
7. Raise the transmission high enough to install the engine rear support. Secure the support to the extension housing with the attaching bolts. Lower the transmission as required to install the support-to-crossmember attaching bolt. Torque the attaching bolts to specification as listed at the end of this Part.
8. Remove the jack from the transmission.
9. Adjust the band as detailed in the Adjustment Section of this Part.
10. Lower the vehicle and replenish the fluid as required. Refer to Part 17-01.

Lincoln Continental

Removal

1. Raise the vehicle on a hoist.
2. Place a drain pan under the servo. Remove the bolts that attach the servo cover to the transmission case.
3. Remove the three bolts that attach the manual and downshift control rod splash shield to the frame side rail and remove the shield. Remove the reinforcement plate from under the transmission oil pan.
4. Loosen the band adjusting screw lock nut.
5. Remove the two nuts that attach the engine rear mounts to the crossmember.
6. Place a transmission jack under the transmission and raise it just high enough to remove the weight from the crossmember.
7. Remove the engine rear support-to-extension housing attaching bolts and remove the supports.

8. Remove the servo cover, piston, spring and gasket from the case, turning the band adjusting screw inward as the piston is removed. This places enough tension on the band to keep the struts properly engaged in the band end notches while the piston is removed.
9. Apply air pressure to the port in the servo cover to remove the piston and rod assembly. If the piston or piston sealing lips are damaged, the complete piston and rod assembly must be replaced.
10. Remove the seal from the cover (Fig. 5).

Installation

1. Dip the new seals in transmission fluid.
2. Install a new seal on the cover.
3. Dip the piston and rod assembly in transmission fluid and install it in the cover.
4. Coat a new gasket with petroleum jelly and position it on the servo cover.
5. Position the servo spring on the piston rod.
6. Insert the servo piston rod in the case. Secure the cover with the attaching bolts taking care to back off the band adjusting screw as the cover bolts are tightened. Make sure that the transmission identification tag is installed under the lower front cover bolt.
7. Adjust the band as detailed in the Adjustment Section of this part.
8. Raise the transmission high enough to install the engine rear supports. Secure the supports to the extension housing with the attaching bolts. Lower the transmission as required to install the two support-to- crossmember nuts. Torque bolts and nuts to limits as given in the Specifications at the end of this Part.
9. Position the manual and downshift control rod splash shield to the frame side rail and secure it with the attaching bolts.
10. Remove the jack from the transmission.
11. Install the reinforcement plate and secure it with the attaching bolts.

12. Lower the vehicle and replenish the fluid as required.

EXTENSION HOUSING BUSHING AND REAR SEAL

Removal

1. Raise the vehicle and disconnect the drive shaft at the transmission.
2. On a Lincoln Continental, remove the parking brake equalizer. Position the equalizer and cables out of the way to obtain free access to the transmission extension housing.
3. When only the rear seal needs replacing, carefully remove it with a tapered chisel or the tools shown in Fig. 6. Remove the bushing as shown in Fig. 7. **Use the bushing remover carefully so that the spline seal is not damaged.**

Installation

1. When installing a new bushing use the special tool shown in Fig. 8.
2. Before installing a new seal, inspect the sealing surface of the universal joint yoke for scores. If scores are found, replace the yoke.
3. Inspect the counterbore of the housing for burrs. Remove burrs with crocus cloth.
4. Install the seal into the housing with the tool shown in Fig. 9. The seal should be firmly seated in the bore. Coat the inside diameter of the rubber portion of the seal with C1AZ-19590-B lubricant.
5. Coat the front universal joint spline with C1AZ-19590-B lubricant and install the drive shaft.
6. On a Lincoln Continental, connect the parking brake equalizer.

EXTENSION HOUSING

Removal

1. Raise the vehicle on a hoist or stands.
2. Disconnect the parking brake cable from the equalizer. On a Lincoln Continental remove the equalizer.

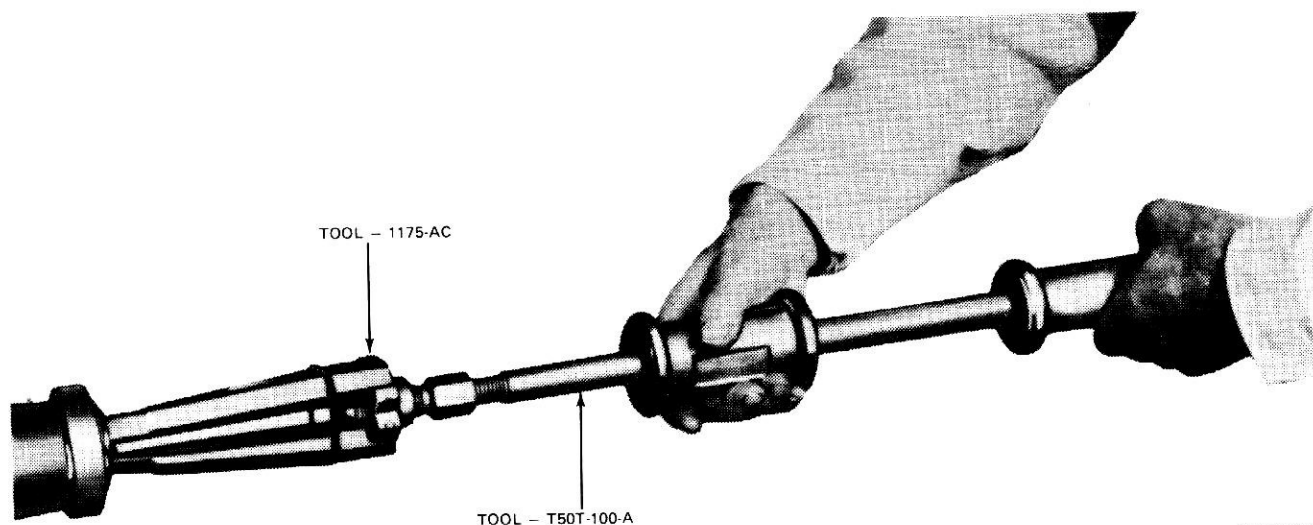


FIG. 6 Removing Extension Housing Seal