

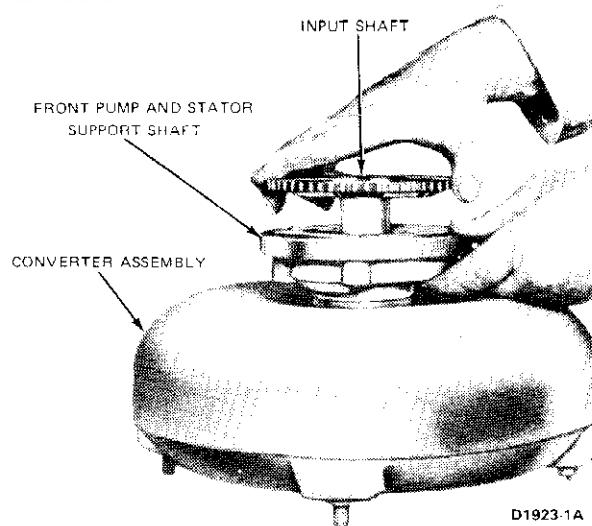


FIG. 36 Stator to Turbine Interference Check

crankshaft. Check the converter front pump drive hub for nicks or sharp edges that would damage the pump seal.

OUTPUT SHAFT (FMX TRANSMISSION)

1. Inspect the thrust surfaces and journals for scores. Inspect the internal gear for broken or worn teeth.
2. Inspect the ring grooves for burrs.
3. Inspect the keyway and drive ball pocket for wear, and inspect the splines for burrs, twist or wear.
4. Inspect the external parking gear teeth for damage and the speedometer drive gear teeth for burrs.
5. If either the output shaft or ring gear has been replaced, place the assembled unit with the gear face down on the bench, push the shaft downward, and check the clearance between the top of the snap ring and its groove (Fig. 37). If this clearance exceeds 0.002 inch, replace the snap ring with a thicker ring to reduce the clearance to less than 0.002 inch. Selective snap rings are available in several thicknesses for this purpose.

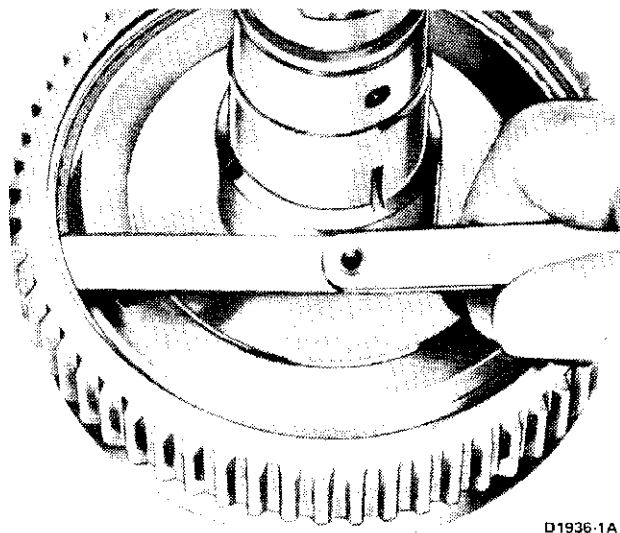


FIG. 37 Checking Output Shaft Snap Ring Clearance

PLANET CARRIER AND CENTER SUPPORT (FMX TRANSMISSION)

1. Inspect the clutch outer race, inner race, band surface, pinion gears, bearings, and thrust washer (Fig. 38) for roughness.
2. Inspect the center support bushing for roughness.

PINION CARRIERS (C3, C4 AND C6 TRANSMISSIONS)

Individual parts of the planet carriers are not serviceable.

1. The pins and shafts in the planet assemblies should be checked for loose fit and/or complete disengagement. Use a new planet assembly if either condition exists. Before installing a planet assembly, the shaft retaining pins should be checked for adequate staking. If staking does not appear adequate, the pins should be restaked before installation. When restaking, the retaining pins must not be driven into the carrier any further than 0.040 inch below the surface of the carrier.
2. Inspect the pinion gears for damaged or excessively worn teeth.
3. Check for free rotation of the pinion gears.

STATOR SUPPORT

1. Inspect the stator support splines for burrs and wear.
2. On a C3, C4 or C6 Automatic transmission, check the oil ring grooves in the stator support for nicks, burrs or damaged edges.

REAR SUPPORT (FMX TRANSMISSION)

1. Inspect the gasket mating surfaces for damage.
2. Inspect the support bushing for scores.
3. Inspect the rear support fluid passages for obstructions.
4. Check the fit of the fluid tubes in the support (FMX only).

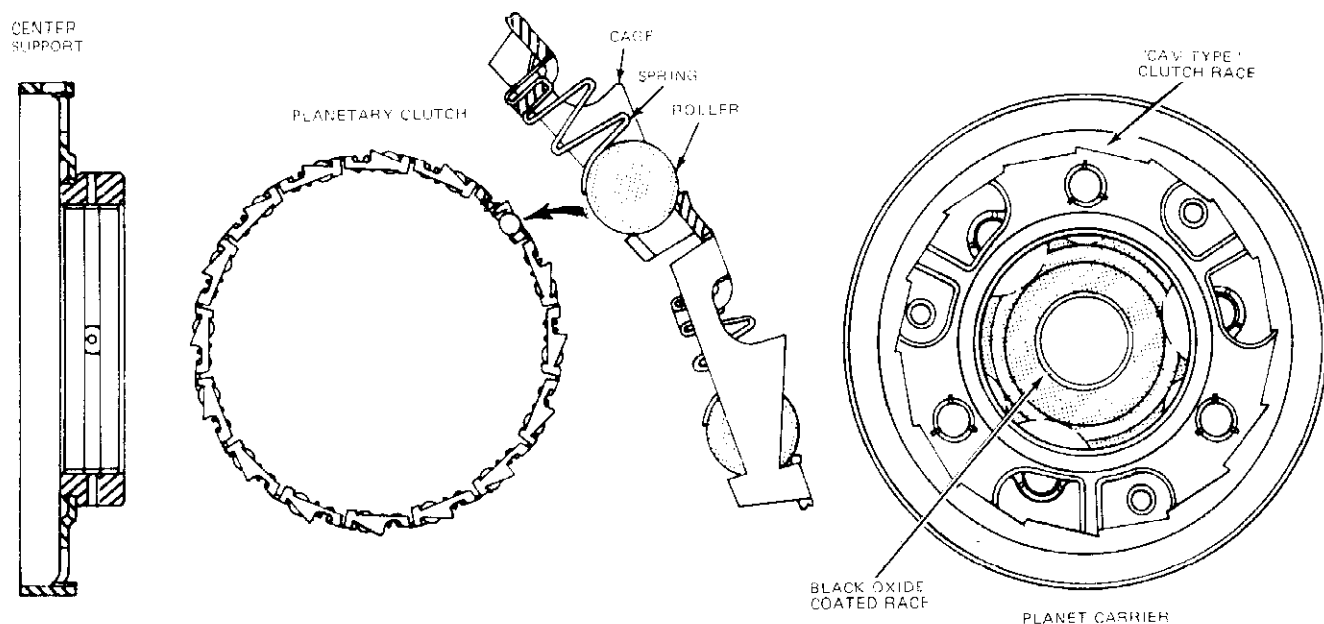
CASE

Inspect the case for cracks and stripped threads. Inspect the gasket surfaces and mating surfaces for burrs. Check the vent for obstructions, and check all fluid passages for obstructions and leakage (Figs. 13, 14, 15, 16 and 17).

Inspect the case bushing for scores. Check all parking linkage parts for wear or damage.

If a transmission case thread is damaged, service kits may be purchased from local jobbers. To repair a damaged thread, the following procedures should be carefully followed.

1. Drill out the damaged threads, **using the same drill size as the thread OD**. For example, use a 5/16 inch drill for a 5/16-18 thread.
2. Select the proper special tap and tap the drilled hole. The tap is marked for the size of the thread being repaired. Thus, the special tap marked 5/16-18 will not cut the same thread as a standard 5/16-



D1938 2C

FIG. 38 Roller Type Planetary Clutch, Carrier and Center Support (FMX)

18 tap. It does cut a thread large enough to accommodate the insert, and after the insert is installed the original thread size (5/16-18) is restored.

3. Select the proper coil inserting tool. These tools are marked with the thread size being repaired. Place the insert on the tool and adjust the sleeve to the length of the insert being used. Press the insert against the face of the tapped hole. Turn the tool clockwise and wind the insert into the hole until the insert is 1/2 turn below the face.
4. Working through the insert, bend the insert tang straight up and down until it breaks off at the notch.
5. Improperly installed inserts can be removed with the extractor tool. Place the extractor tool in the

insert so that the blade rests against the top coil 1/4 to 1/2 turn away from the end of the coil. Tap the tool sharply with a hammer so that the blade cuts into the insert. Exert downward pressure on the tool and turn it counterclockwise until the insert is removed.

These tools are marked with the thread size being repaired. Place the insert on the tool and adjust the sleeve to the length of the insert being used. Press the insert against the face of the tapped hole. Turn the tool clockwise and wind the insert into the hole until the insert is 1/2 turn below the face.

SPECIFICATIONS

SPECIAL SERVICE TOOLS

Tool No.	Description	Tool No.	Description
TOOL S8696-A	Vacuum Diaphragm Wrench	T76L-7902-D	Converter Turbine and Stator End Play Checking Tool
LRE-60081	Torque Converter and Cooler Cleaner	T77L-7902-A	Universal Converter One-Way Clutch Torquing Tool
TOOL-4201-C	Differential Backlash and Runout Gauge, with Universal Bracket, Dial Indicator and Bracket	T77L-7902-B	C3 Converter One-Way Clutch Torquing Tool
TOOL-7003	Bench Test Turning Tool	T59P-7902-C	Welded Converter Sprag Driver and Gauge - C4 and C6 Transmissions
T76L-7902-C	C4, C6, FMX Converter One-Way Clutch Torquing Tool	T57L-77820-L	400 Lb. Pressure Gauge

VACUUM DIAPHRAGM ASSEMBLY SPECIFICATIONS – 1978 AUTOMATIC TRANSMISSION (EXCEPT JATCO)

Transmission Type	Transmission Models	Single or Dual Area	Diaphragm Part No.	Identification	Throttle Valve Rod
C4	①	SAD	D3FP-7A377-BA	1 Yellow Stripe	② D3AP-7A380-JA: 1.5925 – 1.5875 Green Daub
	①	S-HAD	D70P-7A377-AA	None	② D3AP-7A380-HA: 1.6075 – 1.6025 Blue Daub
	①	HAD	D78P-7A377-AA	Rear Cover Blue	② D3AP-7A380-KA: 1.6225 – 1.6175 Orange Daub
	①	S-SAD	D6AP-7A377-AA	1 Green Stripe	② D3AP-7A380-LA: 1.6375 – 1.6325 Black Daub
C6	①	HAD	D6AP-7A377-BA	Part No. Stamped	② D3AP-7A380-DA: 1.611 – 1.601 Yellow Daub
	①	SAD	D70P-7A377-BA	1 Green Stripe	② D3AP-7A380-EA: 1.644 – 1.634 Blue Daub
	①	SAD	D4TP-7A377-BA	1 Black Stripe	② D3AP-7A380-FA: 1.660 – 1.650 Green Daub
	①	SAD	D5AP-7A377-AA	1 Purple Stripe	② D3AP-7A380-GA: 1.710 – 1.700 White Daub
C3	①	SAD	74DT-7A377-0A	None	② C4AP-7A380-A: 1.677 – 1.667 No Color Code
FMX	①	SAD	*C1AP-7A377-B	1 Yellow Stripe	74DT-7A380-AB
	①	S-SAD	D5AP-7A377-BA	1 Lt. Green Stripe	C2AP-7A380-A

Production Only -- For Service Use C4VP-7A377-A, Identified With (1) Lt. Blue Stripe.

SAD -- Single Area Diaphragm

S-SAD -- Super Single Area Diaphragm

HAD -- High Altitude Diaphragm

S-HAD -- Super High Altitude Diaphragm

① For Current Transmission Model and Vehicle Application, See Master Parts List.

② Selective

CD2120-2K

Shift Control Linkage

**PART
17-02**

Applies To All Cars With Automatic Transmission

SUBJECT	PAGE	SUBJECT	PAGE
ADJUSTMENTS		REMOVAL AND INSTALLATION (Cont'd.)	
Throttle and Downshift Linkage Adjustments . . .	02-3	Selector Lever (Console or Floor Shift Vehicles Only)	02-7
Manual Linkage Adjustments	02-1	Shift Control Cable	02-7
Neutral Start Switch Adjustment (Console or Floor Shift Vehicles Only)	02-3	Shift Linkage Grammet	02-5
REMOVAL AND INSTALLATION		SPECIFICATIONS AND	
Neutral Start Switch (Console or Floor Shift Vehicles Only)	02-5	SPECIAL TOOLS	02-8

ADJUSTMENTS

The transmission control linkage adjustments should be performed in the order in which they appear in this section of the manual.

MANUAL LINKAGE ADJUSTMENTS

Column Shift

1. Place the selector lever in the D (DRIVE) position tight against the D stop. A 10-15 lb. weight should be hung on the shift lever to be sure that the lever remains against the Drive stop during the linkage adjustment.

2. Loosen the shift rod adjusting nut at point A (Figs. 1, 3 and 4).

On vehicles equipped with a shift cable, remove the nut at point A (Fig. 2), and remove the cable from the transmission manual lever stud.

3. Shift the transmission manual lever into the D position, second detent position from the full counterclockwise position.
4. On vehicles equipped with a shift cable, place the cable end on the transmission manual lever stud,

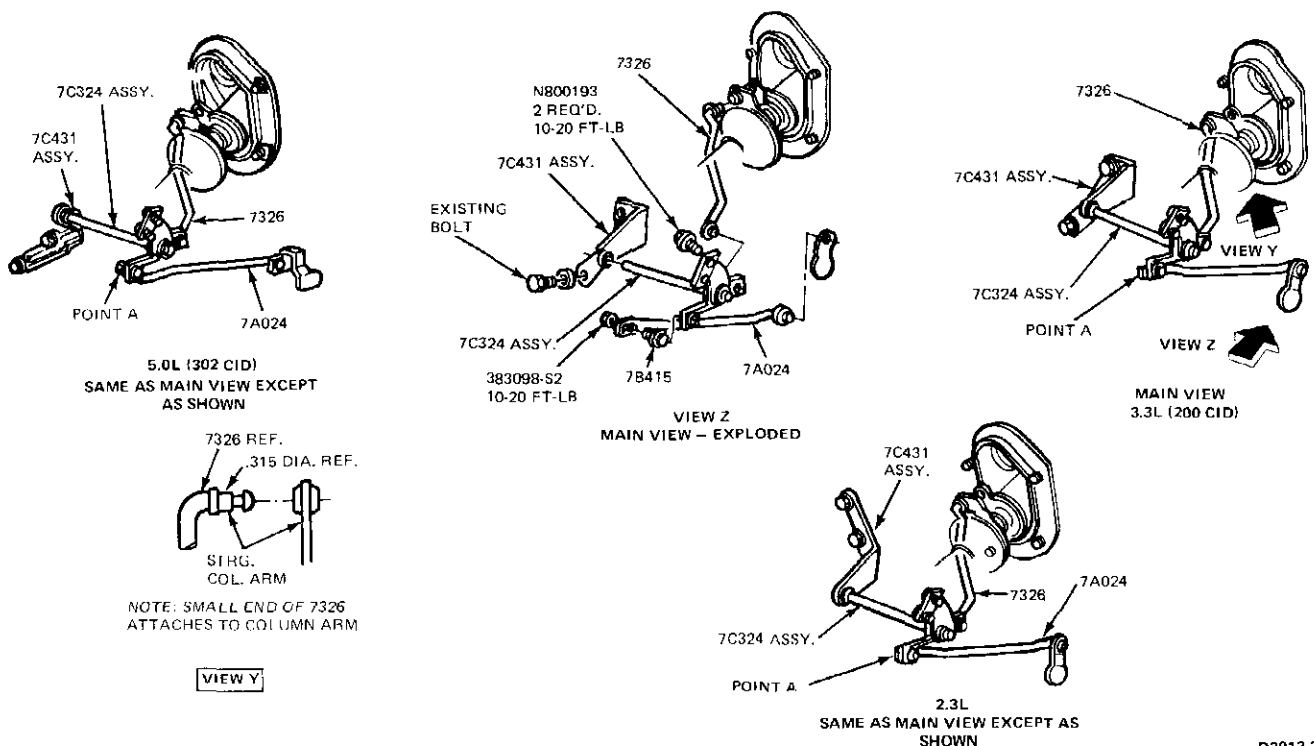
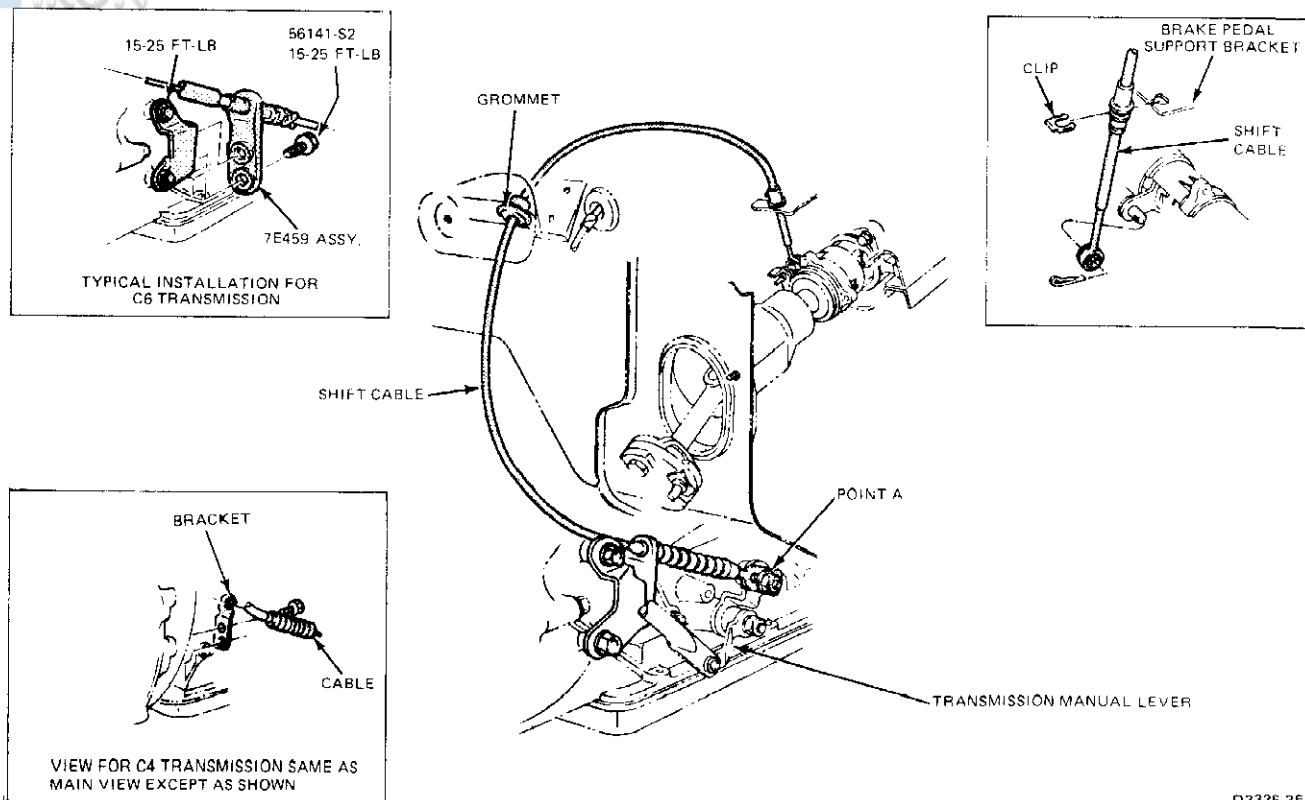
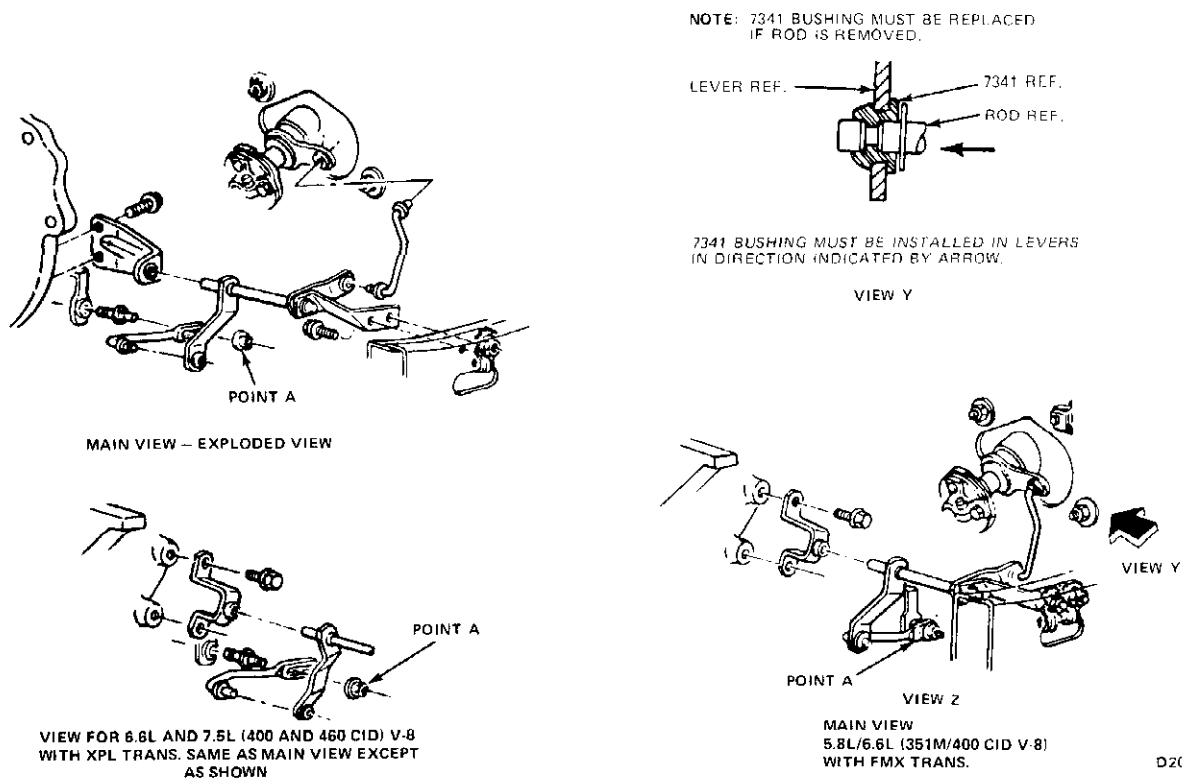


FIG. 1 Manual Linkage—Column Shift—Fairmont and Zephyr



D2326-2E

FIG. 2 Manual Linkage—Column Shift—LTD II, Cougar, Thunderbird, Continental Mark V, Granada, Monarch and Versailles



D2023-2J

FIG. 3 Manual Linkage—Column Shift—Ford/Mercury

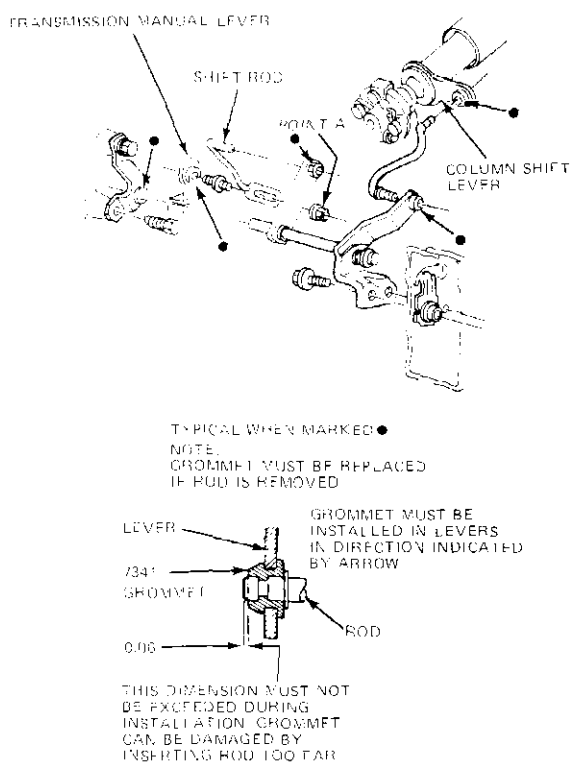


FIG. 4 Manual Linkage—Column Shift—Lincoln Continental

using care to align the flats on the stud with flats on the cable. Start the adjustment nut.

5. Make sure that the selector lever has not moved from the D stop. Torque the nut at point A, as indicated in Specifications at end of this Part.

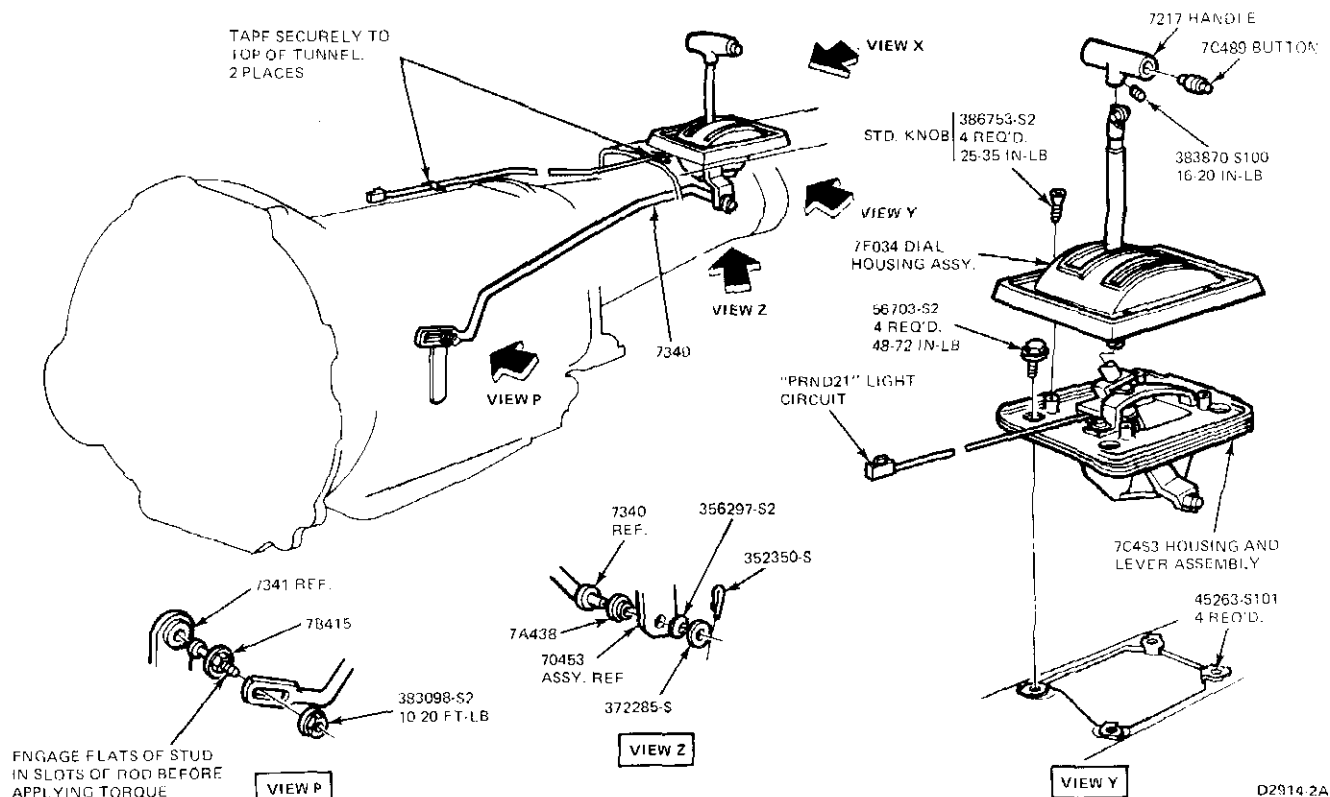


FIG. 5 Manual Linkage—Floor Shift—Fairmont and Zephyr

6. Check the transmission operation for all selector lever detent positions.

Console or Floor Shift

1. Position the transmission selector lever in D (DRIVE) position against the rearward D stop. **NOTE:** The shift lever should be held against the rearward D stop when the linkage is adjusted.
2. Raise the vehicle and loosen the manual lever shift rod retaining nut (Figs. 5 through 7). Move the transmission manual lever to the D position, second detent position from the back of the transmission.
3. With the transmission selector lever and manual lever in the D positions, torque the attaching nut to 10 to 15 ft.-lbs.
4. Check the operation of the transmission in each selector lever position.

THROTTLE AND DOWNSHIFT LINKAGE ADJUSTMENTS

Adjusting the throttle linkage is important to be certain the throttle and downshift systems are properly adjusted. The downshift system should come in when the accelerator is pressed through detent, and not before detent. Refer to Group 24 for detailed throttle and downshift linkage adjustment procedures.

NEUTRAL START SWITCH ADJUSTMENT (CONSOLE OR FLOOR SHIFT VEHICLES ONLY)

Pinto, Bobcat, Granada, Monarch, Fairmont, Zephyr and Mustang II (C4 Transmission)

1. With the manual lever properly adjusted, loosen the two switch attaching bolts (Fig. 8).

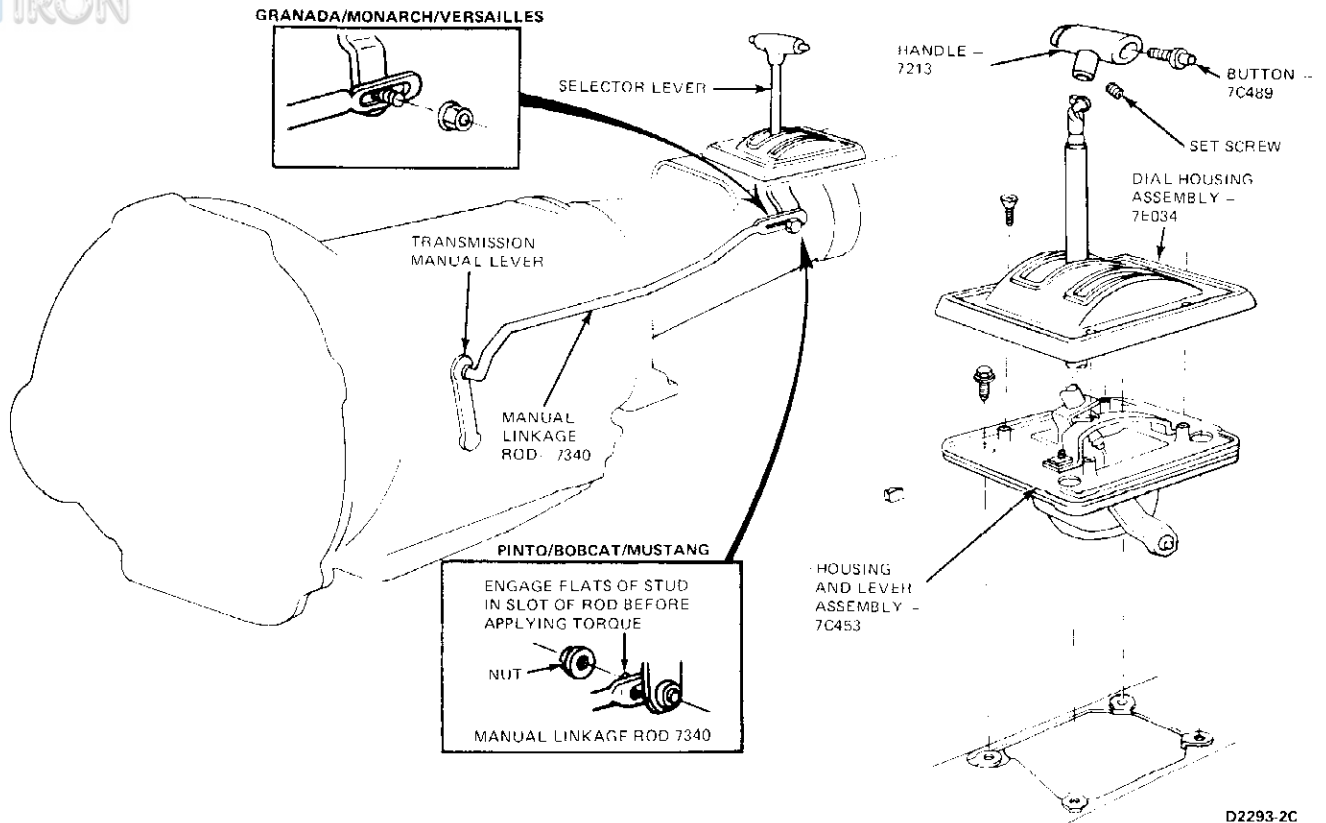


FIG. 6 Manual Linkage—Floor Shift—Pinto, Bobcat, Mustang II, Granada, Monarch and Versailles

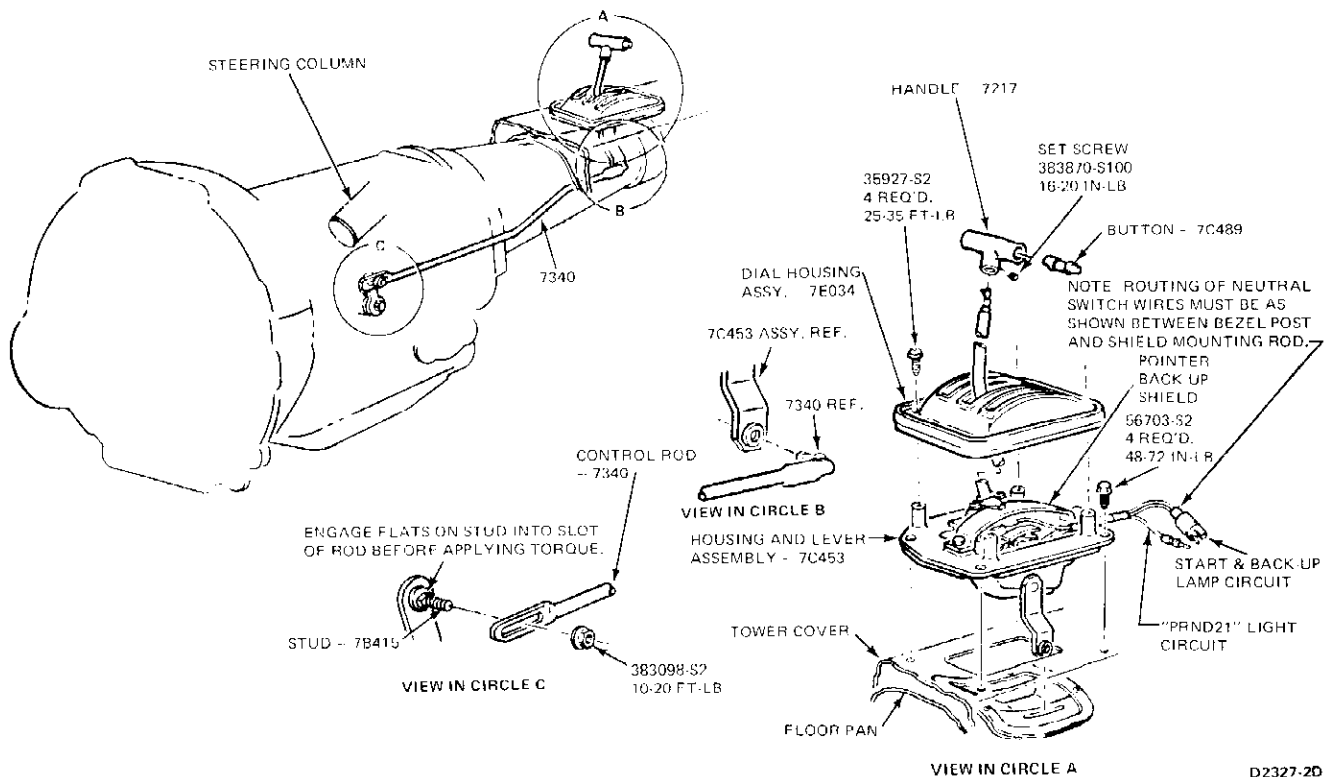
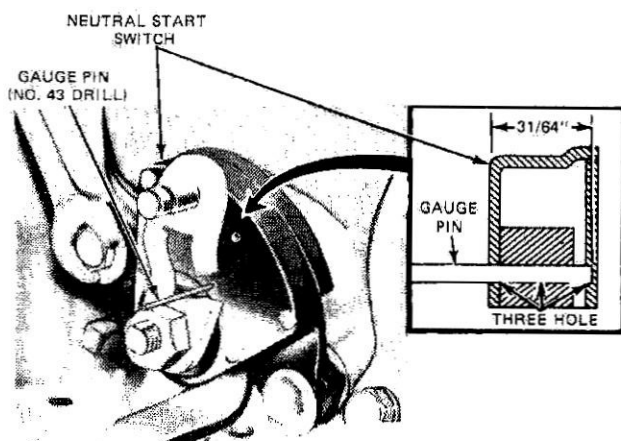
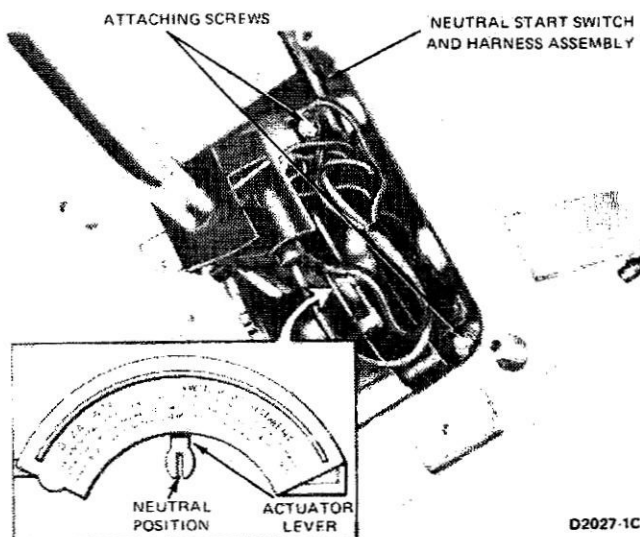


FIG. 7 Typical Manual Linkage—Console or Floor Shift—LTD II and Cougar



D1459-1A

FIG. 8 Neutral Start Switch Adjustment—Pinto, Bobcat, Fairmont, Zephyr, Granada, Monarch, Mustang II, Versailles and Cougar With C4 Transmission



D2027-1C

FIG. 9 Typical Neutral Start Switch Adjustment—LTD II and Cougar With C4 or C6 Transmission

2. With the transmission manual lever in neutral, rotate the switch and insert the gauge pin (No. 43 drill shank end) into the gauge pin holes of the switch. **The gauge pin has to be inserted to a full 31/64 inch into the three holes of the switch (Fig. 9).**
3. Torque the two switch attaching bolts as indicated in Specifications at end of this Part. Remove the gauge pin from the switch.
4. Check the operation of the switch. The engine should start only with the transmission selector lever in Neutral and Park.

LTD II and Cougar (C6 or C4 Transmission)

1. With the manual linkage properly adjusted and the engine turned off, place the selector lever in the N (NEUTRAL) position.
2. Remove the selector lever handle attaching screw and remove the handle (Fig. 7).
3. Remove the dial housing attaching screws and remove the housing.
4. Remove the two pointer backup shield attaching screws and remove the shield.
5. Loosen the two screws securing the neutral start switch to the selector lever housing (Fig. 9).
6. Place the selector lever in the P (PARK) position and hold it against the forward stop.
7. Move the neutral switch rearward to the end of its travel.
8. Hold the switch in the rearward position and tighten the two attaching screws.
9. With the selector lever in the P (PARK) position, check the operation of the switch. The engine should start with the selector lever in the park position. If the engine does not start, replace the switch. Refer to the Neutral Start Switch Removal and Installation procedures in this Part.
10. Install pointer back-up shield dial housing, and selector lever handle by reversing the above Steps.

REMOVAL AND INSTALLATION

SHIFT LINKAGE GROMMET

The automatic transmission linkage systems make use of an oil impregnated plastic grommet to connect the various rods and levers. **Whenever a rod is disconnected from a grommet-type connector, the old grommet must be removed and a new one installed.** Remove and install the grommet as follows:

1. Place the lower jaw of the tool between the lever and the rod (Fig. 10). Position the stop pin against the end of the rod (Fig. 10) and force the rod out of the grommet. Remove the grommet from the lever by cutting off the large shoulder with a sharp knife.
2. Adjust the stop pin to 1/2 inch and coat the outside of the grommet with lubricant. Place a new grommet on the stop pin and force it into the lever

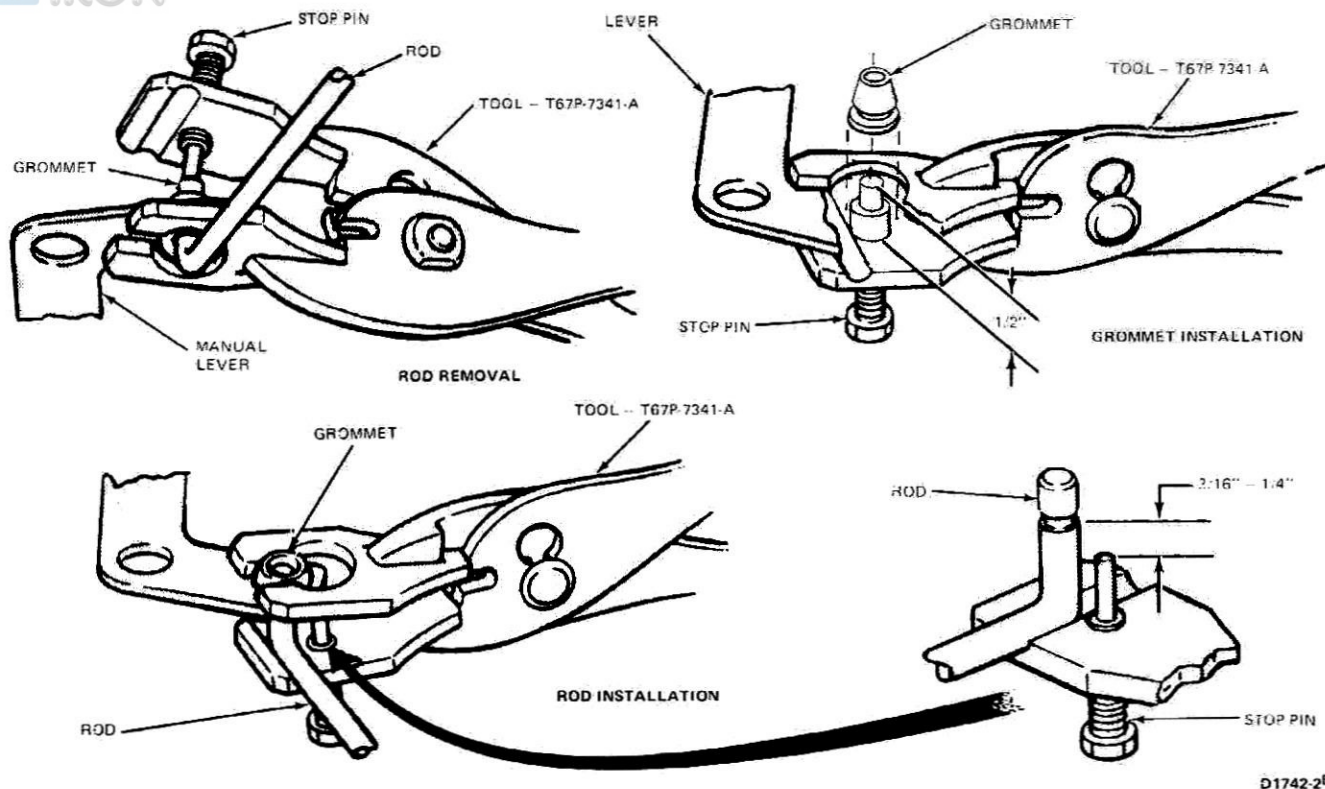
hole. Turn the grommet several times to be sure it is properly seated.

3. Squeeze the rod into the bushing until the stop washer seats against the grommet.

NEUTRAL START SWITCH (CONSOLE OR FLOOR SHIFT VEHICLES ONLY)

PINTO, BOBCAT, FAIRMONT, ZEPHYR, GRANADA, MONARCH, VERSAILLES AND MUSTANG II (C4 TRANSMISSION)

1. Remove the downshift linkage rod from the transmission downshift lever.
2. Apply penetrating oil to the downshift lever shaft and nut. Remove the transmission downshift outer lever retaining nut and lever (Fig. 8).



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FIG. 10 Removing or Installing Shift Linkage Grommet

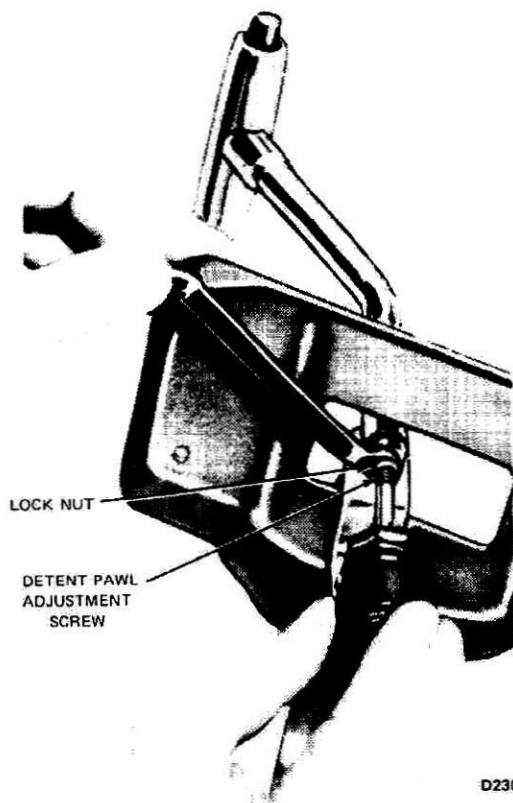


FIG. 11 Typical Selector Lever Detent Pawl Adjustment

3. Remove the two neutral start switch attaching bolts.
4. Disconnect the multiple wire connector. Remove the neutral switch from the transmission.
5. Install the neutral start switch on the transmission. Install the two attaching bolts.
6. With the transmission manual lever in neutral, rotate the switch and install gauge pin (No. 43 drill) into the gauge pin hole (Fig. 8).
7. Torque the switch attaching bolts as indicated in Specifications at end of this Part, and remove the gauge pin.
8. Install the outer downshift lever and attaching nut, and torque the nut as indicated in Specifications at end of this Part. Install the downshift linkage rod to the downshift lever.
9. Install the switch wires. Connect the wire multiple connector. Check the operation of the switch in each detent position. The engine should start only with the transmission selector lever in N (NEUTRAL) and P (PARK).

LTD II AND COUGAR

1. Place the transmission selector lever in the N (NEUTRAL) position.
2. Raise the vehicle and remove the nut that secures the shift rod to the transmission manual lever; let rod swing free on selector lever grommet (Fig. 7).
3. Lower the vehicle and remove the selector lever handle attaching screw and the handle.
4. Remove the dial housing attaching screws and the housing.
5. Disconnect the dial indicator light.

6. Disconnect the neutral start switch and dial indicator light wires from their connectors at the dash panel. On vehicles equipped with an FMX transmission, disconnect the seat belt warning circuit connector.
7. Remove the four selector housing and lever assembly attaching bolts. Remove the selector lever and housing assembly.
8. Remove the two pointer back-up shield attaching screws and remove the shield.
9. Remove the two screws, securing the neutral start switch to the selector lever housing, and remove the switch. Push the neutral start switch harness plug inward and remove the switch and harness assembly (Fig. 9).
10. Before installing the new switch, be sure the selector lever is against the neutral detent stop and the actuator lever (Fig. 9) is properly aligned in the neutral position.
11. Position the harness and neutral switch assembly in the selector lever housing (Fig. 7). Install but do not tighten the two attaching screws.
12. Place the selector lever in the P (PARK) position and hold it against the forward stop.
13. Move the neutral switch rearward to the end of its travel.
14. Hold the switch in the rearward position and tighten the two attaching screws.
15. Install the pointer back-up shield on the housing and lever assembly.
16. Position the selector lever and housing assembly on the console and install the attaching bolts.
17. Connect the dial indicator light.
18. Connect the neutral start switch and dial indicator light wires to their respective connectors at the dash panel. On vehicles equipped with an FMX transmission, connect the seat belt warning circuit wire to its connectors.
19. Install the dial housing on the selector lever housing assembly.
20. Install the selector lever handle and place the selector lever in the D (DRIVE) position.
21. Raise the vehicle and secure the shift rod to the transmission manual lever.
22. Adjust the linkage as required. Lower the vehicle.
23. Check the operation of the switch. The engine should start only with the transmission selector lever in N (NEUTRAL) and P (PARK).
4. Remove the two pointer backup shield attaching screws and remove the shield.
5. Disconnect the dial indicator light. On a LTD II and Cougar, disconnect the neutral start switch and dial indicator light wires from their connectors at the dash panel.
6. Remove the selector housing and lever assembly attaching bolts. Remove the selector lever and housing.
7. Remove the neutral start switch on a LTD II or Cougar.
8. Remove the selector lever to housing attaching nut. Remove the lever from the housing.
9. Install the selector lever in the housing and install the attaching nut. Torque the nut to 20 to 25 ft-lb.
10. Install the selector lever handle.
11. Check the clearance between the detent pawl and plate. The detent pawl, if properly adjusted, should clear the highest point on the detent plate. To adjust the pawl height, hold the adjusting screw stationary and turn the lock nut until the proper clearance is obtained (Fig. 11).
12. Remove the handle from the selector lever.
13. Connect the dial indicator light. Install the neutral start switch on a LTD II or Cougar. Connect the neutral start switch and dial indicator light wires to their respective connectors at the dash panel. Adjust the neutral switch.
14. Install the pointer back-up shield on the housing and lever assembly.
15. Install the selector housing and lever assembly as shown in Figs. 5, 6 and 7. Torque the attaching bolts 4 to 6 ft-lb.
16. Install the dial housing and tighten the attaching screws.
17. Install the selector lever handle and tighten the attaching screw.
18. Position the selector lever in the D (DRIVE) position against the D stop.
19. Raise the vehicle. Install the shift rod to the selector lever. Adjust the manual linkage.
20. Lower the vehicle and check the transmission operation in each selector lever detent position.

SHIFT CONTROL CABLE

LTD II, Cougar, Thunderbird, Granada, Monarch, Versailles and Continental Mark V Only

Removal

1. From inside the vehicle, remove the clip securing the control cable to the brake support bracket (Fig. 2).
2. Remove the cable retaining clip, at the steering column shift lever, and slide the cable and bushing from the lever.
3. Disengage the rubber grommet from the dash panel.
4. Raise the vehicle and remove the bolts securing the cable bracket assembly to the transmission housing.
5. Remove the nut at point A (Fig. 2) and remove the cable from the transmission manual lever stud. Pull the cable through the dash panel and remove it from the vehicle.

SELECTOR LEVER (CONSOLE OR FLOOR SHIFT VEHICLES ONLY)

1. Raise the vehicle and remove the nut securing the shift rod to the transmission manual lever (Figs. 5, 6 and 7). LTD II and Cougar floor shift rod must be removed from the shifter arm using Tool T67P-7341-A (Fig. 10).
2. Lower the vehicle and remove the selector lever handle attaching screw.
3. Remove the dial housing attaching screws and the housing.

Installation

1. Feed the round end of the cable through the dash panel and install the rubber grommet in the dash panel opening.
2. Position the control cable to the brake pedal support bracket and secure with the retaining clip.
3. Position the bushing and cable on the steering column shift lever and secure with the retaining clip.
4. Place the selector lever in the D (DRIVE) position tight against the D stop.
5. Raise the vehicle. Position the cable and bracket assembly on the transmission housing and secure with the retaining two bolts.
6. Shift the manual lever at the transmission into the D position, second detent from the full counterclockwise position.
7. Place the cable end on the transmission manual lever stud, using care to align the flats on the stud with the flats on the cable. Start the attaching nut.
8. Make sure the selector lever has not moved from the D stop; then, tighten the nut at point A to 10-14 ft-lbs torque.
9. Lower the vehicle and check the transmission operation in each selector lever detent position.

SPECIFICATIONS

TORQUE LIMITS – SHIFT CONTROL LINKAGE

Item	Torque	Item	Torque
Selector Lever Shift Rod Retaining Nut	10-20 Ft.-Lbs.	Selector Lever to housing attaching Nut	20-25 Ft.-Lbs.
Selector Lever Shift Cable Retaining Nut	10-15 Ft.-Lbs.		
Steering Column Lock Rod Retaining Nut	10-20 Ft.-Lbs.	Neutral Start Switch to Case	55-75 In.-Lbs.

SPECIAL TOOLS

Ford Tool No.	Description
T67P-7341-A	Remover-Replacer Trans. Shift Linkage Insulators.

CD2306-2B

C3 Automatic Transmission

**PART
17-03**

Applies to Mustang II, Pinto, Bobcat, Fairmont and Zephyr with 2.3 Litre, 2.8 Litre or 3.3 Litre (200 C.I.D. 6) Engines

SUBJECT	PAGE	SUBJECT	PAGE
ADJUSTMENTS	03-4	REMOVAL AND INSTALLATION (Cont.'d)	
DESCRIPTION	03-1	Governor	03-9
DISASSEMBLY AND ASSEMBLY	03-9	Rear Servo	03-7
REMOVAL AND INSTALLATION		Transmission	03-4
Control Valve Body	03-6	SPECIFICATIONS AND	
Extension Housing	03-8	SPECIAL TOOLS	03-23
Extension Housing Rear Seal	03-8		

CD2883-2B

DESCRIPTION

The C-3 Automatic Transmission is a three speed unit capable of providing automatic upshifts and downshifts through three forward gear ratios. It also provides *manual selection of first and second gears.*

The transmission consists of a torque converter, planetary gear train, two multiple disc clutches, a one-

way clutch and a hydraulic control system. Fig. 1 shows the various parts of the transmission. Fig. 2 shows the identification tag and its interpretation. Fig. 3 shows the *hydraulic control system.*

The only adjustment required on the C-3 transmission is on the front band.

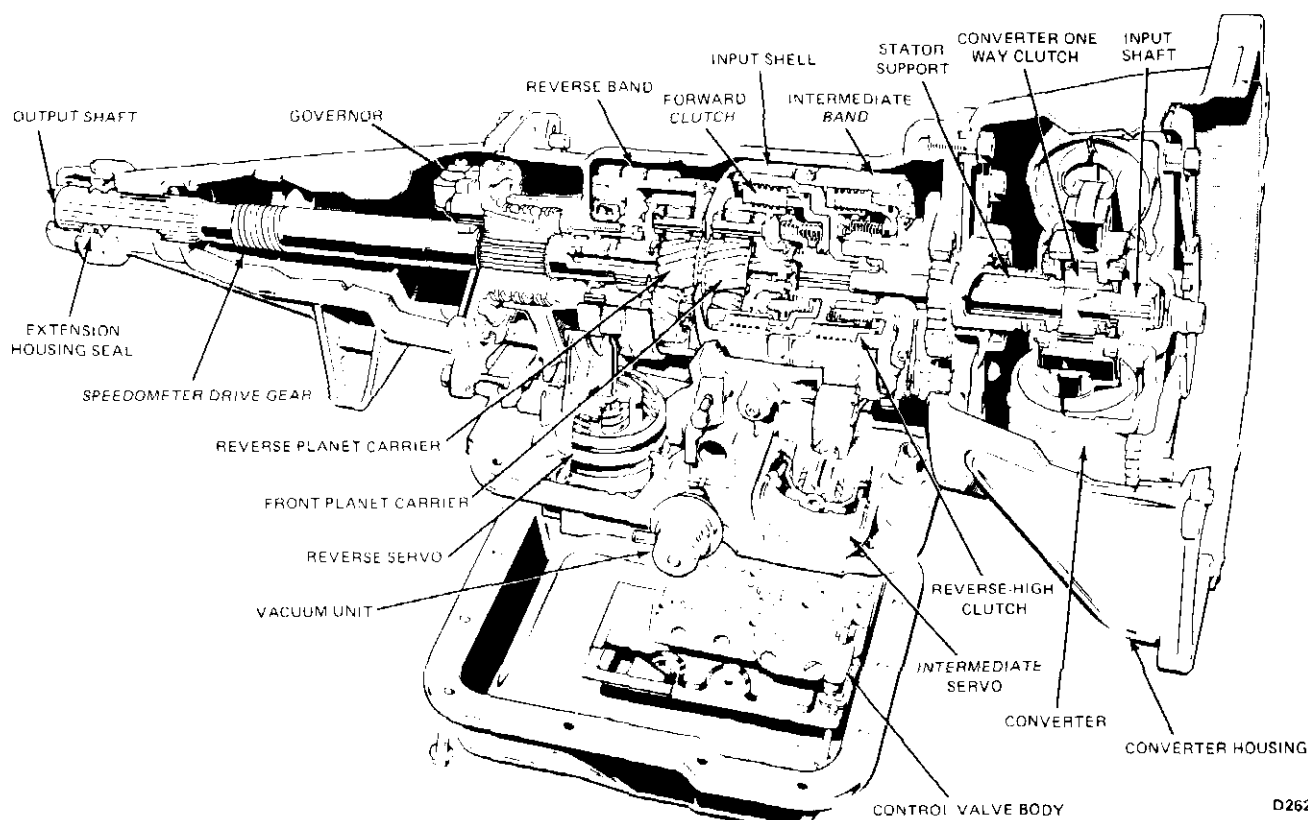
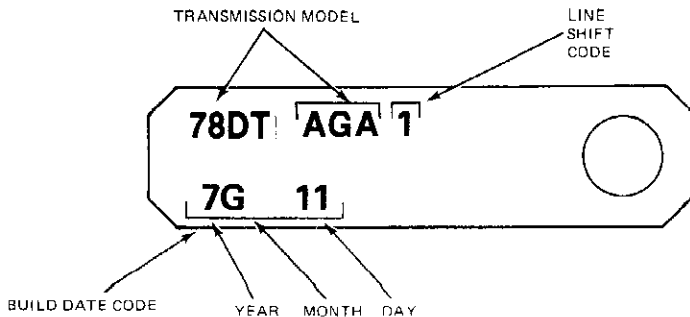


FIG. 1 C-3 Automatic Transmission

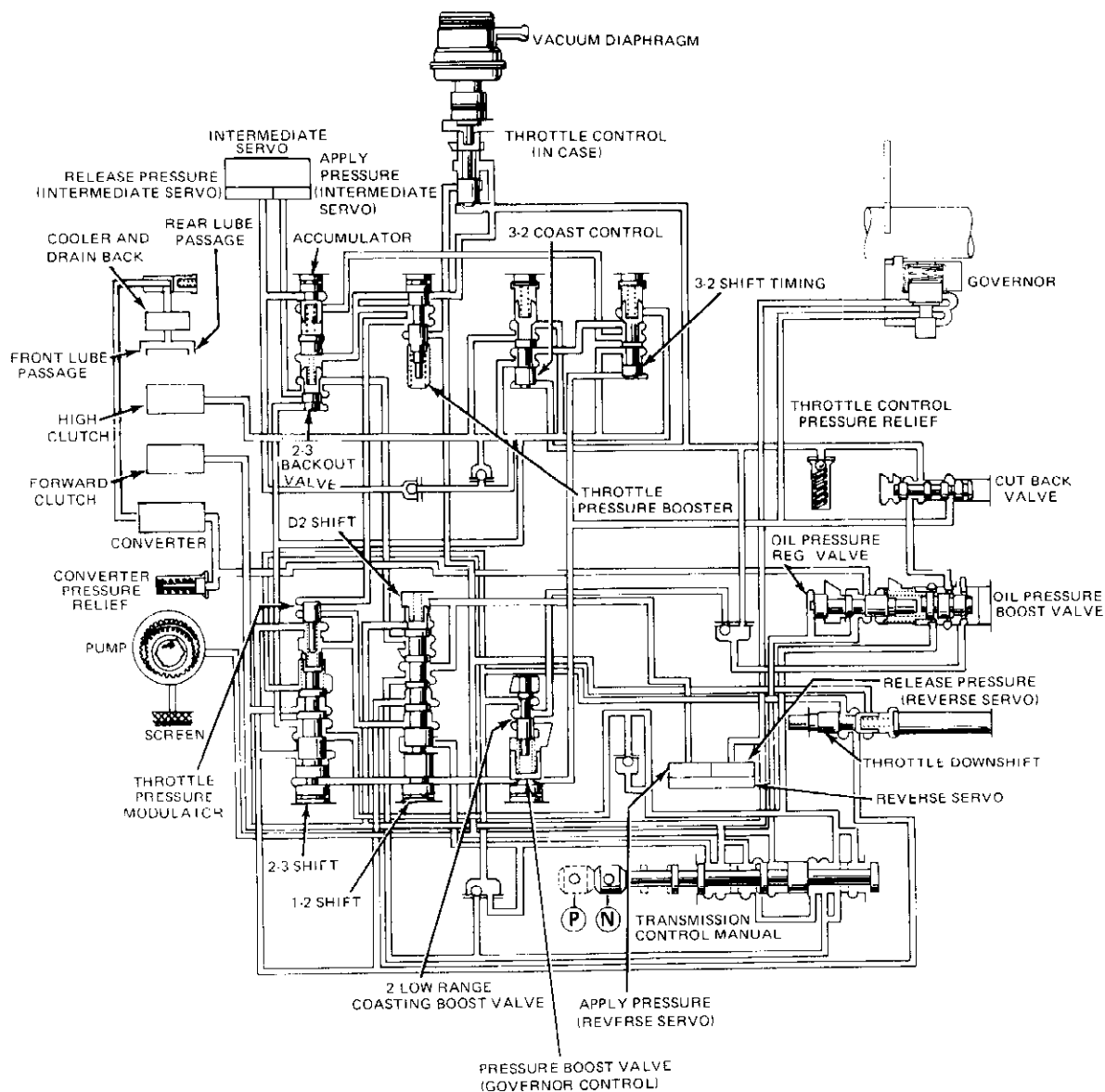
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ON LOWER LEFT EXTENSION ATTACHING BOLT

D2628 1D

FIG. 2 Identification Tag—C-3 Transmission



02629-2E

FIG. 3 Hydraulic Control System