

AUTOMATIC TRANSMISSIONS

Automatic Transmission External Controls - Excursion & F250-F550 Super Duty Pickups

SPECIFICATIONS

Torque Specifications

Description	Nm	lb-ft	lb-in
Shift lock actuator bolts	9	-	80
Transmission column shift selector tube bracket bolts	14	10	-
Shift cable bracket bolts	40	30	-

DESCRIPTION AND OPERATION

EXTERNAL CONTROLS

The transmission shift cable transfers the transmission operating mode from the gearshift lever to the automatic transmission. The indicated position of the transmission control selector lever is transferred to the transmission through the steering column shift selector tube, then to the cable, and down to the manual control lever on the transmission.

Shift Interlock System


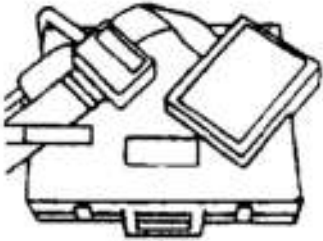
The shift interlock system prevents the shifting from PARK unless the brake pedal is depressed. The shift interlock system consists of a shift lock actuator mounted at the base of the steering column tube. If the ignition switch is in the RUN position, the shift lock actuator is continually on unless the brake pedal is depressed.

Transmission Control Switch (TCS)

The Transmission Control Switch (TCS) is a momentary contact switch that is located on the end of the transmission control selector lever. Pushing the TCS will either disengage or engage the overdrive function of the transmission. If the OVERDRIVE is disengaged, the word OFF will illuminate on the transmission control selector lever.

DIAGNOSIS AND TESTING

EXTERNAL CONTROLS

	<p>73 Digital Multimeter 105-R0051 or equivalent</p>
	<p>Breakout Box, EEC-V Control System 418-049 (T94L-50-EEC-V) or equivalent</p>

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Fig. 1: Identifying Special Tools
Courtesy of FORD MOTOR CO.

Inspection and Verification

1. Verify the customer concern by operating the transmission external control.
2. Visually inspect for obvious signs of mechanical and electrical damage; refer to the following chart. See [Fig. 2](#).

Mechanical	Electrical
<ul style="list-style-type: none"> • Damaged brake shift interlock actuator • Damaged transmission control switch (TCS) 	<ul style="list-style-type: none"> • Failed fuse(s) • Damaged wiring harness • Loose or corroded connections

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Fig. 2: Visual Inspection Chart
 Courtesy of FORD MOTOR CO.

3. If the fault is not visually evident, determine the symptom and GO to **SYMPTOM CHART**.

Symptom Chart

Condition	Possible Sources	Action
<ul style="list-style-type: none"> • The shift interlock system does not release/lock correctly 	<ul style="list-style-type: none"> • Circuitry. • Fuse(s). • Shift lock actuator. • Brake pedal position switch. 	<ul style="list-style-type: none"> • GO to Pinpoint Test A.
<ul style="list-style-type: none"> • The shift control is out of correct gear relationship 	<ul style="list-style-type: none"> • Transmission shift cable and bracket. • Cable retention to steering column bracket. • Shift indicator. 	<ul style="list-style-type: none"> • GO to Pinpoint Test B.
<ul style="list-style-type: none"> • The transmission range indicator does not correspond to the gear 	<ul style="list-style-type: none"> • Transmission shift cable bracket. • Shift control indicator linkage. • Transmission shift cable loose from the transmission bracket. • Shift cable adjustment incorrect. 	<ul style="list-style-type: none"> • TIGHTEN bolts holding transmission shift cable bracket. • ADJUST PRNDL indicator at steering housing. • VERIFY the shift cable is seated in the transmission shift cable bracket. • VERIFY the transmission shift cable adjustment. REFER to Cable and Bracket Adjustment in the General Procedure section. ADJUST transmission shift cable if necessary. VERIFY digital transmission range (TR) sensor for correct adjustment. REFER to TRANSMISSION RANGE SENSOR.

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Fig. 3: Symptom Chart (1 Of 2)
 Courtesy of FORD MOTOR CO.

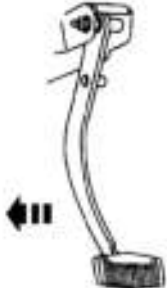
Condition	Possible Sources	Action
<ul style="list-style-type: none"> The transmission range indicator lamp does not illuminate 	<ul style="list-style-type: none"> Bulb. Circuitry. 	<ul style="list-style-type: none"> REFER to appropriate INTERIOR/ILLUMINATION LIGHTING article.
<ul style="list-style-type: none"> The transmission control switch/indicator lamp not operating correctly 	<ul style="list-style-type: none"> Fuse. TCS. TCS not cycled during self test. Powertrain control module. Circuitry. 	<ul style="list-style-type: none"> GO to Pinpoint Test C.
<ul style="list-style-type: none"> Rattle, noise, buzz, or other noise 	<ul style="list-style-type: none"> Selector lever knob. Shift control selector lever. Shift interlock spring. 	<ul style="list-style-type: none"> INSTALL a new selector lever knob. TIGHTEN the housing bolts. ATTACH the shift interlock spring correctly.
<ul style="list-style-type: none"> Water enters inside the vehicle 	<ul style="list-style-type: none"> Cable assembly grommet. Torn cable assembly grommet. 	<ul style="list-style-type: none"> SECURE the grommet to dash panel. INSTALL new transmission shift cable.
<ul style="list-style-type: none"> Excessive shift effort 	<ul style="list-style-type: none"> Transmission shift cable. Cable bracket. 	<ul style="list-style-type: none"> INSTALL a new transmission shift cable. ADJUST the cable. TIGHTEN the cable bracket screws.
<ul style="list-style-type: none"> The transmission range selector lever will not shift from range 	<ul style="list-style-type: none"> Transmission shift cable disconnected. Broken transmission shift cable. 	<ul style="list-style-type: none"> REINSTALL the transmission shift cable. INSTALL a new transmission shift cable.

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Fig. 4: Symptom Chart (2 Of 2)
 Courtesy of FORD MOTOR CO.

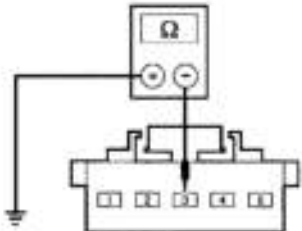
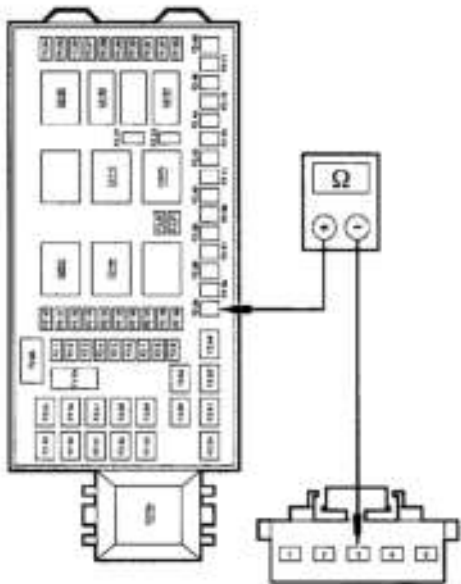
Pinpoint Tests

Pinpoint Test A: The Shift Interlock System Does Not Release/Lock Correctly

Test Step		Result / Action to Take
A1	TEST BRAKE LIGHTS <ul style="list-style-type: none"> Apply the brake pedal and view the brake lights.  <ul style="list-style-type: none"> Do the brake lights illuminate? 	Yes GO to A7. No GO to A2.

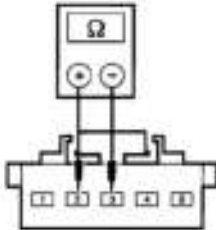
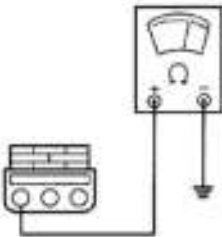
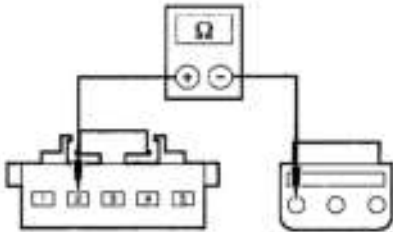
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Fig. 5: Pinpoint Test A: The Shift Interlock System Does Not Release/Lock Correctly (Step A1)
 Courtesy of FORD MOTOR CO.

Test Step		Result / Action to Take
A2	TEST FUSE F2.34 (10A) <ul style="list-style-type: none"> Key in OFF position. Check fuse. Fuse F2.34 (10A). Is the resistance 5 ohms or less? 	Yes GO to A4. No GO to A3.
A3	TEST CIRCUIT 22 (LB/BK) FOR SHORT TO GROUND <ul style="list-style-type: none"> Measure the resistance of circuit 22 (LB/BK) at C278 pin 3.  <ul style="list-style-type: none"> Is the resistance 10,000 ohms or less? 	Yes SERVICE circuit 22 (LB/BK) for short to ground. TEST the system for normal operation. No GO to A4.
A4	TEST CIRCUIT 22 (LB/BK) FOR OPEN <ul style="list-style-type: none"> Measure the resistance between the output side of fuse F2.34 (10A) and the brake pedal position switch connector C278 pin 3, circuit 22 (LB/BK).  <ul style="list-style-type: none"> Is the resistance 5 ohms or less? 	Yes GO to A5. No SERVICE circuit 22 (LB/BK) for open. TEST the system for normal operation.

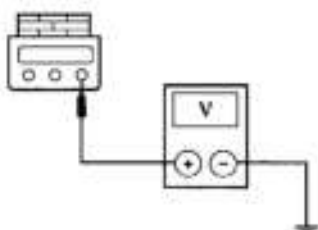
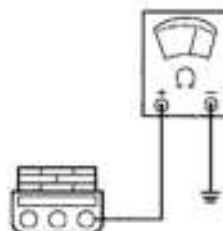
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Fig. 6: Pinpoint Test A: The Shift Interlock System Does Not Release/Lock Correctly (Steps A2-A4)
Courtesy of FORD MOTOR CO.

Test Step		Result / Action to Take
A5	TEST BRAKE PEDAL POSITION SWITCH <ul style="list-style-type: none"> Measure the resistance of the brake pedal position switch while open (OFF) and closed (ON).  <ul style="list-style-type: none"> Is the resistance of switch greater than 10,000 ohms while OFF and 5 ohms or less while ON? 	Yes GO to A6. No INSTALL a new brake pedal position switch. TEST the system for normal operation.
A6	TEST CIRCUIT 810 (RD/LG) FOR SHORT TO GROUND <ul style="list-style-type: none"> Disconnect: Brake Pedal Position Switch C278. Measure the resistance of circuit 810 (RD/LG), C2008 pin 3.  <ul style="list-style-type: none"> Is the resistance 10,000 ohms or less? 	Yes SERVICE circuit 810 (RD/LG) for short to ground. TEST the system for normal operation. No GO to A7.
A7	TEST CIRCUIT 810 (RD/LG) FOR OPEN <ul style="list-style-type: none"> Measure the resistance of circuit 810 (RD/LG) between the shift lock actuator C2008 pin 3 and the brake pedal position switch connector C278 pin 2.  <ul style="list-style-type: none"> Is the resistance 5 ohms or less? 	Yes GO to A6. No SERVICE circuit 810 (RD/LG) for open. TEST the system for normal operation.

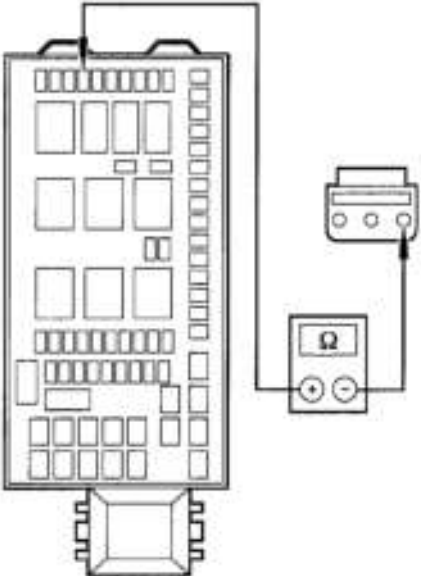
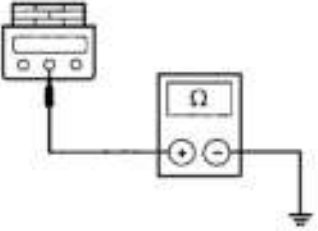
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Fig. 7: Pinpoint Test A: The Shift Interlock System Does Not Release/Lock Correctly (Steps A5-A7)
Courtesy of FORD MOTOR CO.

Test Step		Result / Action to Take
A8	TEST FOR B+ ON CIRCUIT 295 (LG/PK) <ul style="list-style-type: none"> • Key in ON position. • Measure the voltage at shift lock actuator C2008 pin 1, circuit 295 (LG/PK).  <ul style="list-style-type: none"> • Is B+ present? 	Yes GO to A12. No GO to A9.
A9	TEST FUSE F2.27 (15A) <ul style="list-style-type: none"> • Key in OFF position. • Check fuse: Fuse F2.27 (15A). • Is the resistance of fuse 5 ohms or less? 	Yes GO to A11. No GO to A10.
A10	TEST CIRCUIT 295 (LB/PK) FOR SHORT TO GROUND <ul style="list-style-type: none"> • Measure the resistance at C2008 pin 1, circuit 295 (LB/PK).  <ul style="list-style-type: none"> • Is the resistance 10,000 ohms or less? 	Yes SERVICE circuit 295 (LB/PK) for short to ground. TEST the system for normal operation. No GO to A11.

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Fig. 8: Pinpoint Test A: The Shift Interlock System Does Not Release/Lock Correctly (Steps A8-A10)
Courtesy of FORD MOTOR CO.

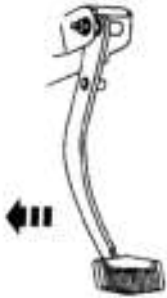

Test Step		Result / Action to Take
A11	TEST CIRCUIT 295 (LB/PK) FOR OPEN <ul style="list-style-type: none"> Measure the resistance of circuit 295 (LB/PK) between the output side of fuse F2.27 (15A) and the shift lock actuator C2008 pin 1.  <ul style="list-style-type: none"> Is the resistance 5 ohms or less? 	<p>Yes GO to A12.</p> <p>No SERVICE circuit 295 (LB/PK) for open. TEST the system for normal operation.</p>
A12	TEST CIRCUIT 57 (BK) FOR OPEN <ul style="list-style-type: none"> Measure the resistance of shift lock actuator C2008 pin 2, circuit 57 (BK).  <ul style="list-style-type: none"> Is the resistance 5 ohms or less? 	<p>Yes INSTALL a new shift lock actuator. TEST the system for normal operation.</p> <p>No SERVICE circuit 57 (BK) for open. TEST the system for normal operation.</p>

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Fig. 9: Pinpoint Test A: The Shift Interlock System Does Not Release/Lock Correctly (Steps A11 & A12)

Courtesy of FORD MOTOR CO.

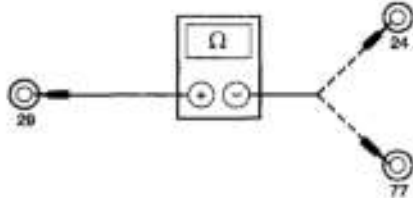
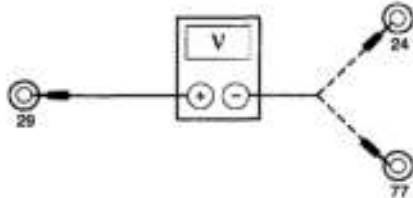
Pinpoint Test B: Pinpoint Test B: The Shift Control Is Out Of Proper Gear Relationship

Test Step		Result / Action to Take
B1	<p>CHECK SHIFT CONTROL LINKAGE</p> <ul style="list-style-type: none"> • Key in ON position. • Apply the brake pedal.  <ul style="list-style-type: none"> • Gain access to the shift control linkage. • Actuate the transmission range selector lever in all ranges. • Observe all linkages during operation. • Is the linkage damaged? 	<p>Yes INSTALL new shift control linkage. TEST the system for normal operation.</p> <p>No GO to B2.</p>
B2	<p>CHECK TRANSMISSION SHIFT CABLE</p> <ul style="list-style-type: none"> • Check transmission shift cable and bracket installation and tightness. • Is the transmission shift cable correctly installed and adjusted? 	<p>Yes VERIFY the transmission shift cable adjustment. REFER to Cable and Bracket Adjustment in this section. ADJUST the transmission shift cable if necessary. VERIFY the digital transmission range (TR) sensor for correct adjustment. REFER to TRANSMISSION RANGE SELECTOR. ADJUST digital TR sensor if necessary. GO to B3.</p> <p>No REPAIR as necessary. TEST the system for normal operation.</p>
B3	<p>CHECK LINKAGE/CABLE FOR PROPER GEAR RELATIONSHIP</p> <ul style="list-style-type: none"> • Apply the brake pedal.  <ul style="list-style-type: none"> • Actuate the transmission range selector lever in all ranges. • Does the indicator match the gear selection? 	<p>Yes System OK. TEST the system for normal operation.</p> <p>No REFER to Cable Adjustment—Shift Indicator. TEST the system for normal operation.</p>

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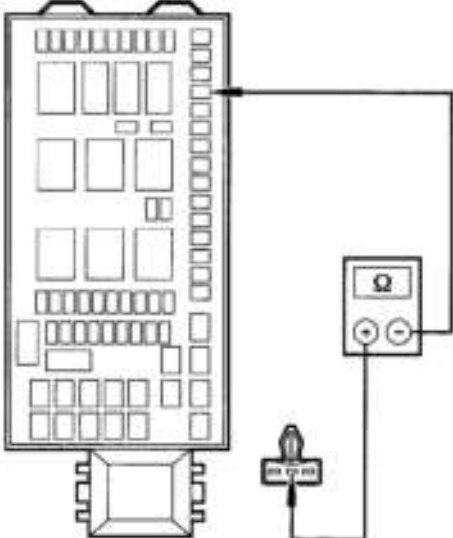
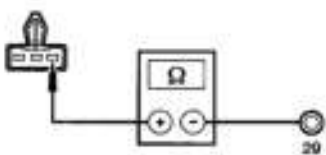
Fig. 10: Pinpoint Test B: Pinpoint Test B: The Shift Control Is Out Of Proper Gear Relationship
Courtesy of FORD MOTOR CO.

Pinpoint Test C: Pinpoint Test C: The Transmission Control Switch/Indicator Lamp Not Operating Properly

Test Step		Result / Action to Take
C1	CHECK FUSE F2.45 (10A) <ul style="list-style-type: none"> • Key in OFF position. • Check fuse: Central Junction Box Fuse F2.45 (10A). • Is the resistance less than 5 ohms? 	Yes REINSTALL the fuse. GO to C3 . No INSTALL a new fuse. TEST the system for normal operation. If the fuse fails again, GO to C2 .
C2	CHECK CIRCUIT 224 (TN/WH) FOR SHORT TO GROUND <ul style="list-style-type: none"> • Disconnect: Powertrain Control Module (PCM). Inspect for damaged or pushed out pins, corrosion, loose wires, etc. Repair as necessary. • Connect breakout box. • Measure the resistance between test pin 29 and test pins 24 and 77 at the 104-Pin Breakout Box.  <ul style="list-style-type: none"> • Is the resistance greater than 10,000 ohms? 	Yes CHECK circuit 640 (RD/YE) and related components for short to ground. TEST the system for normal operation. No REPAIR circuit 224 (TN/WH). TEST the system for normal operation.
C3	CHECK TRANSMISSION CONTROL SWITCH (TCS) CIRCUIT FOR VOLTAGE <ul style="list-style-type: none"> • Disconnect: Powertrain Control Module (PCM) C174. Inspect for damaged or pushed out pins, corrosion, loose wires, etc. Repair as necessary. • Connect breakout box. • Key in ON position. • Measure the voltage between test pin 29 and test pins 24 and 77 at the 104-Pin Breakout Box while cycling the TCS several times.  <ul style="list-style-type: none"> • Does the voltage cycle? 	Yes INSTALL a new PCM. REMOVE the 104-Pin Breakout Box. TEST the system for normal operation. No GO to C4 .

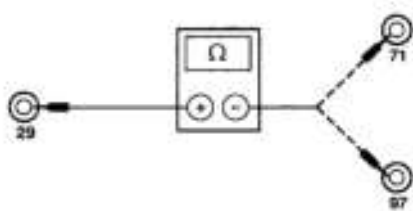
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Fig. 11: Pinpoint Test C: Pinpoint Test C: The Transmission Control Switch/Indicator Lamp Not Operating Properly (Steps C1-C3)
Courtesy of FORD MOTOR CO.

C4	Test Step	Result / Action to Take
	<p>CHECK CIRCUIT 640 (RD/YE) AND CIRCUIT 224 (TN/WH) FOR OPEN</p> <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: Central Junction Box F2.45 (10A). • Disconnect: Transmission Control Switch (TCS) C2135. <p>Inspect both ends for damaged or pushed out pins, moisture, corrosion, loose wires, etc. Repair as necessary.</p> <ul style="list-style-type: none"> • Measure the resistance between central junction box fuse F2.45, circuit 640 (RD/YE), and the power side of the TCS vehicle harness C2135 pin 2, circuit 640 (RD/YE).  <ul style="list-style-type: none"> • Measure the resistance between test pin 29 at the 104-Pin Breakout Box and signal side of the transmission control switch vehicle harness C251 pin 3, circuit 224 (TN/WH).  <ul style="list-style-type: none"> • Is the resistance less than 5 ohms for both circuits? 	<p>Yes GO to C5.</p> <p>No REPAIR open circuit. REMOVE 104-Pin Breakout Box. RECONNECT all components. TEST the system for normal operation.</p>

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Fig. 12: Pinpoint Test C: Pinpoint Test C: The Transmission Control Switch/Indicator Lamp Not Operating Properly (Step C4)
 Courtesy of FORD MOTOR CO.

Test Step		Result / Action to Take
C5	CHECK CIRCUIT 224 (TN/WH) FOR SHORT TO POWER <ul style="list-style-type: none"> Measure the resistance between test pin 29 and test pins 71 and 97 at the 104-Pin Breakout Box.  <p>The diagram shows a multimeter with a resistance symbol (Ω) and a '+' sign on the left, and a '-' sign on the right. A solid line connects the multimeter to test pin 29. Two dashed lines branch out from the multimeter to test pins 71 and 97.</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? 	<p>Yes INSTALL a new transmission control switch. REMOVE the 104-Pin Breakout Box. RECONNECT all components. TEST the system for normal operation.</p> <p>No REPAIR circuit 224 (TN/WH). REMOVE the 104-Pin Breakout Box. RECONNECT all components. TEST the system for normal operation.</p>

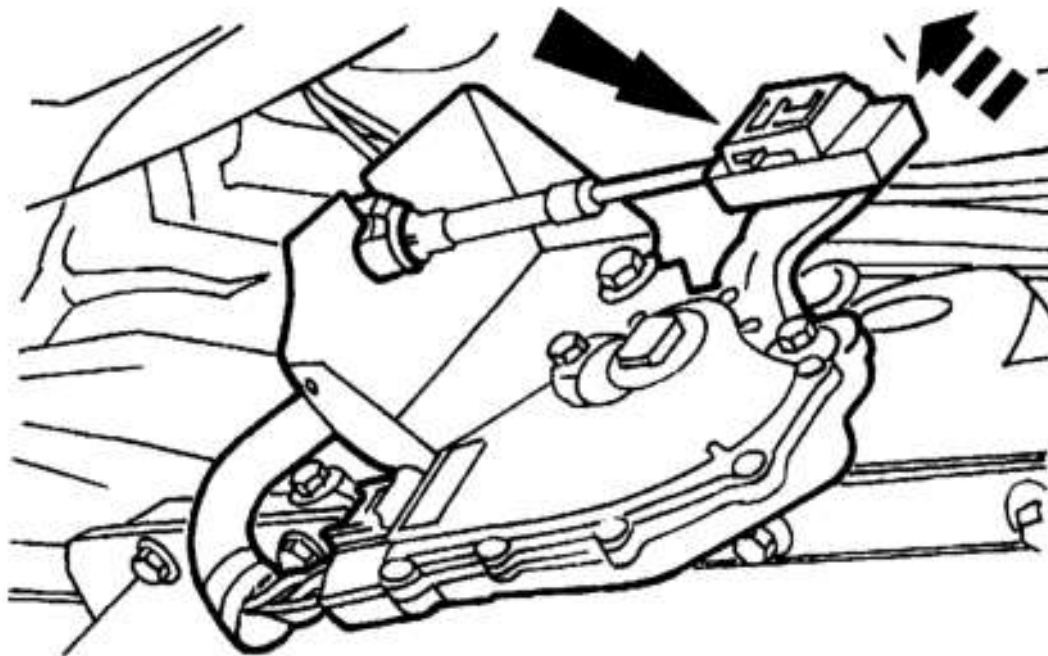
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Fig. 13: Pinpoint Test C: Pinpoint Test C: The Transmission Control Switch/Indicator Lamp Not Operating Properly (Step C5)
 Courtesy of FORD MOTOR CO.

GENERAL PROCEDURES

CABLE & BRACKET ADJUSTMENT

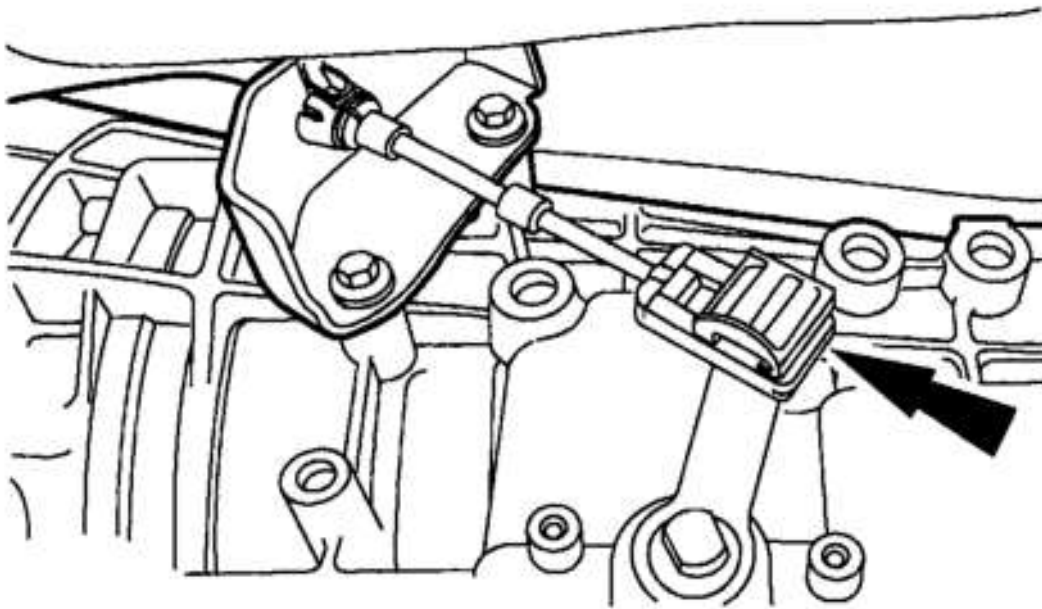
1. Place the gearshift lever in the (D) position.
 - Place a three pound weight on the gearshift lever.
2. Position the vehicle on a hoist.
3. For vehicles equipped with the 4R100 transmission, disconnect the transmission shift cable from the manual lever.



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Fig. 14: Disconnecting Transmission Shift Cable From Manual Lever (4R100)
Courtesy of FORD MOTOR CO.

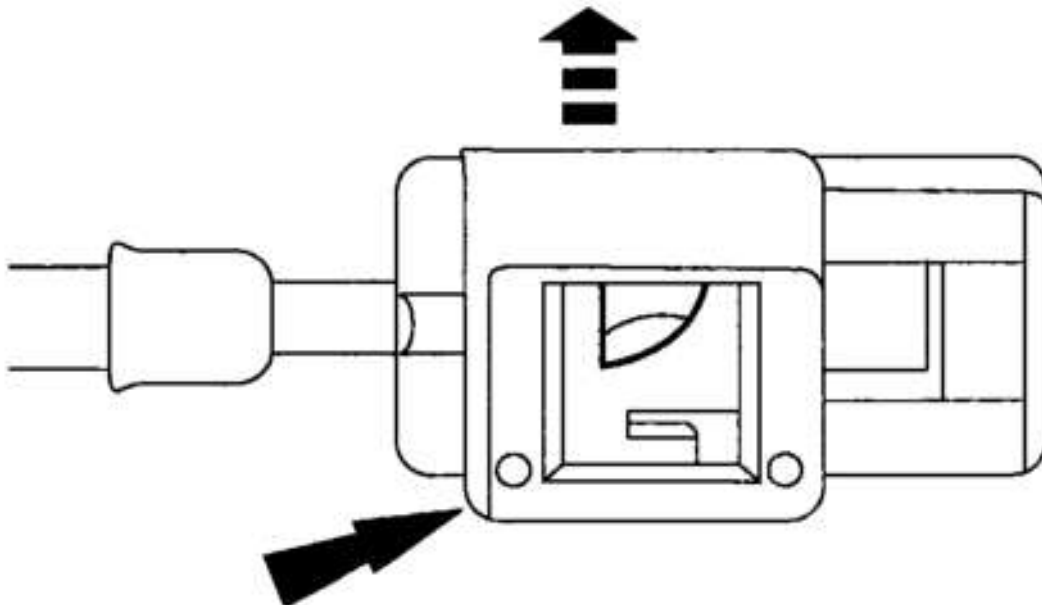
4. For vehicles equipped with the TorqShift transmission, disconnect the transmission shift cable from the manual lever.



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Fig. 15: Disconnecting Transmission Shift Cable From Manual Lever (TorqShift)
Courtesy of FORD MOTOR CO.

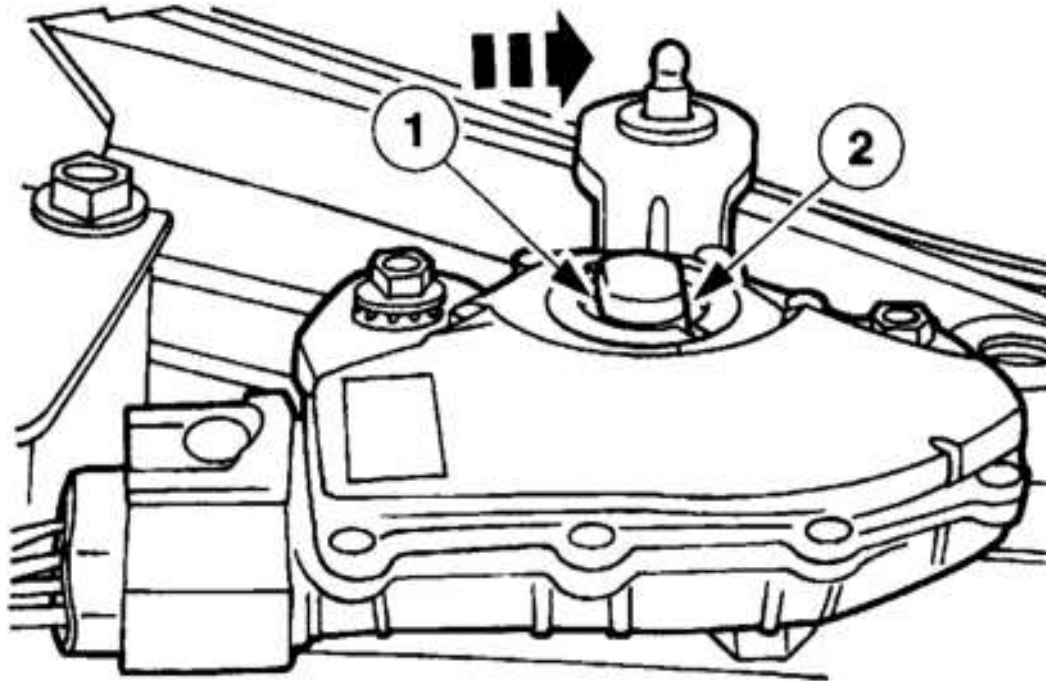
5. Unlock the lock tab on the transmission shift cable.



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Fig. 16: Unlocking Transmission Shift Cable Lock Tab
Courtesy of FORD MOTOR CO.

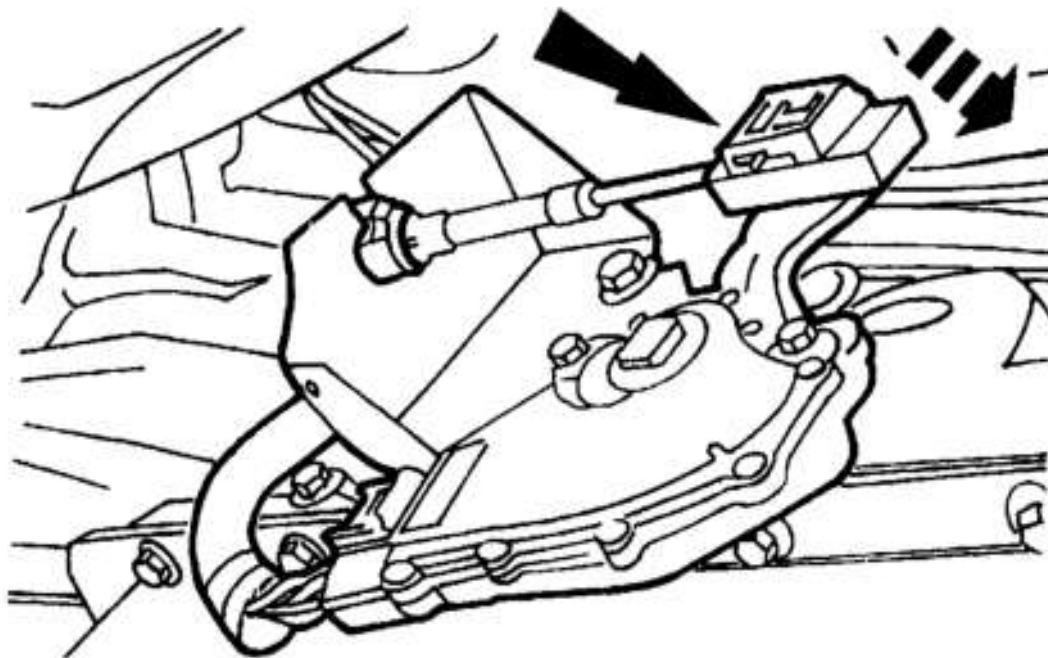
6. For either automatic transmission, place the manual control lever in the (D) position 4R100 shown).
 1. Place the manual control lever in the first gear position.
 2. Move the manual control lever two detents to the (D) position for the 4R100 transmission.
Move the manual control lever three detents to the (D) position for the TorqShift transmission.



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Fig. 17: Identifying Manual Control Lever In First Gear Position
Courtesy of FORD MOTOR CO.

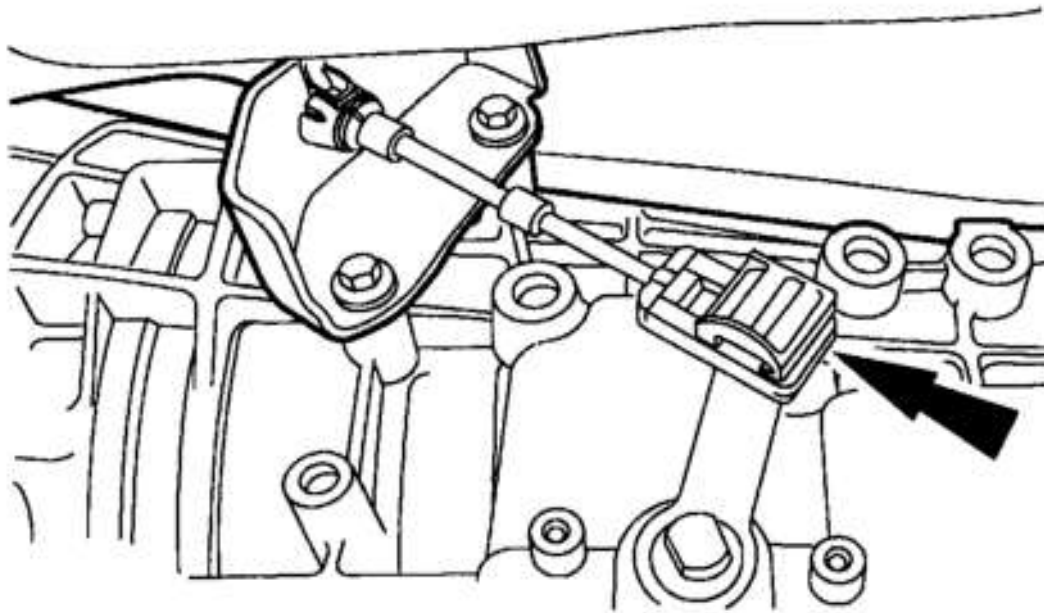
7. For vehicles equipped with the 4R100 transmission, connect the transmission shift cable to the manual control lever.



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Fig. 18: Connecting Transmission Shift Cable To Manual Control Lever (4R100)
Courtesy of FORD MOTOR CO.

8. For vehicles equipped with the TorqShift transmission, connect the transmission shift cable to the manual control lever.



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Fig. 19: Connecting Transmission Shift Cable To Manual Control Lever (TorqShift)
Courtesy of FORD MOTOR CO.

9. Lock the transmission shift cable lock tab.

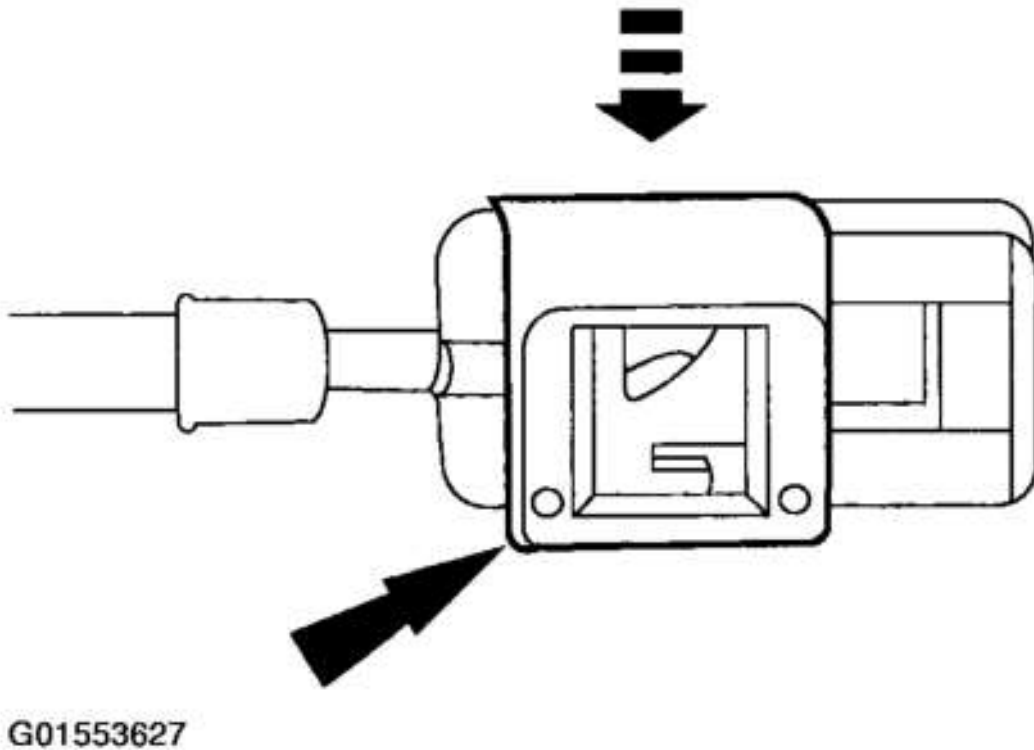
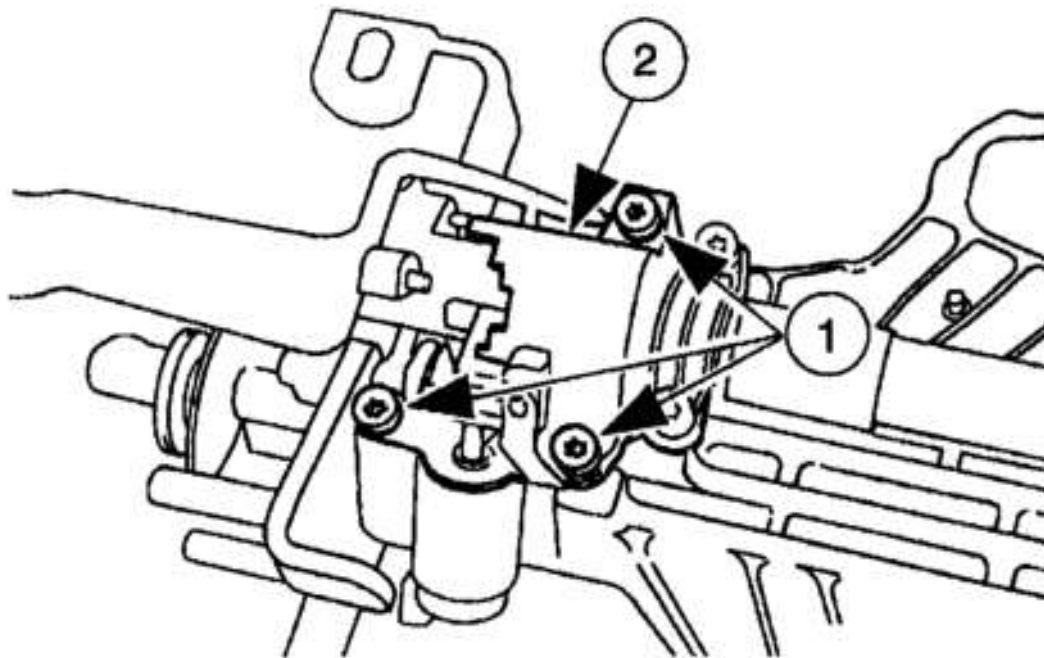


Fig. 20: Locking Transmission Shift Cable Lock Tab
 Courtesy of FORD MOTOR CO.

10. Lower the vehicle.
11. Remove the three pound weight.
12. Carefully move the gearshift lever from detent to detent and compare with transmission settings. Verify that the vehicle will start in PARK or NEUTRAL and backup lamps illuminate in REVERSE. If not, Steps 1-5 must be repeated and include digital TR or TR sensor adjustment in NEUTRAL. Readjust if necessary.

CABLE ADJUSTMENT - SHIFT INDICATOR

1. Remove the upper instrument panel steering column cover.
2. Place the gearshift lever in the (D) position.
 - Rotate the gearshift lever clockwise until it bottoms out (first gear), then rotate two detents counterclockwise ((D) position for the 4R100 transmission). Rotate the lever three indents counterclockwise (D) for the TorqShift transmission.
3. Hang an three pound weight on the gearshift lever.
4. Center the pointer in the middle of the (D) position.
 - Rotate the thumbwheel located on the bottom of the steering column to adjust the pointer.



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Fig. 21: Locating Thumbwheel
Courtesy of FORD MOTOR CO.

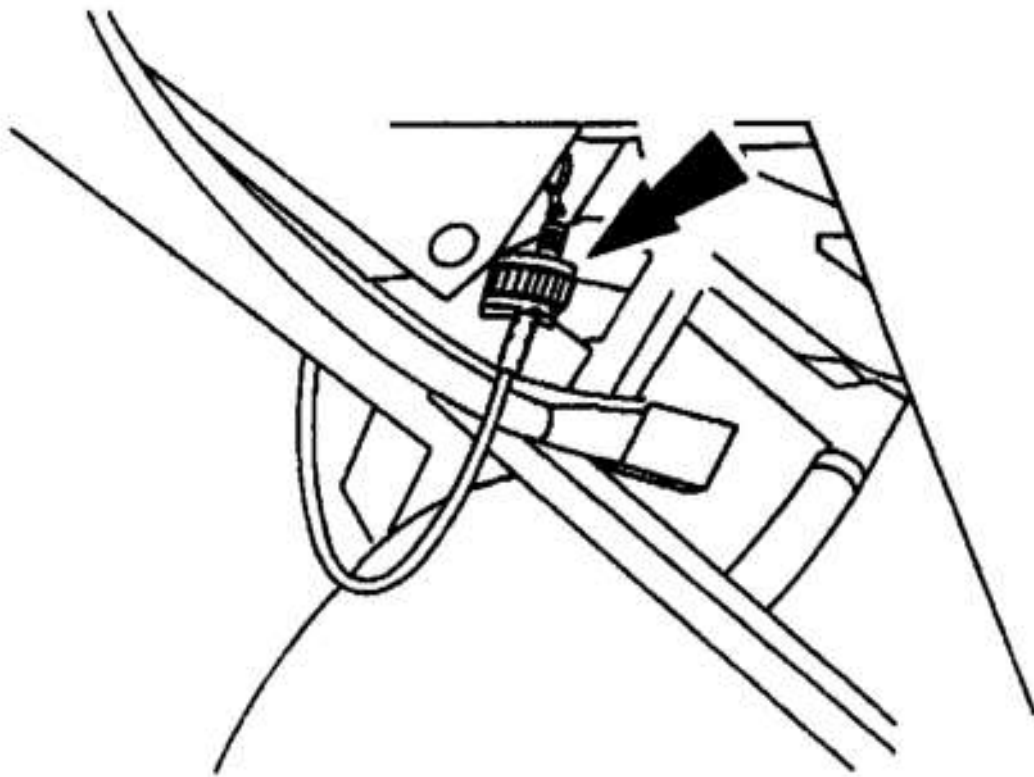
5. Remove the three pound weight.
6. Carefully move the gearshift lever from detent to detent and compare with transmission settings. Readjust if necessary.
7. Install the upper instrument panel steering column cover.

REMOVAL AND INSTALLATION

BRAKE SHIFT INTERLOCK ACTUATOR

Removal & Installation

1. Remove the steering column assembly. For additional information, refer to STEERING COLUMN .
2. Remove the insert plate and shift lock actuator.
 1. Remove the bolts.
 2. Remove the insert plate and shift lock actuator.



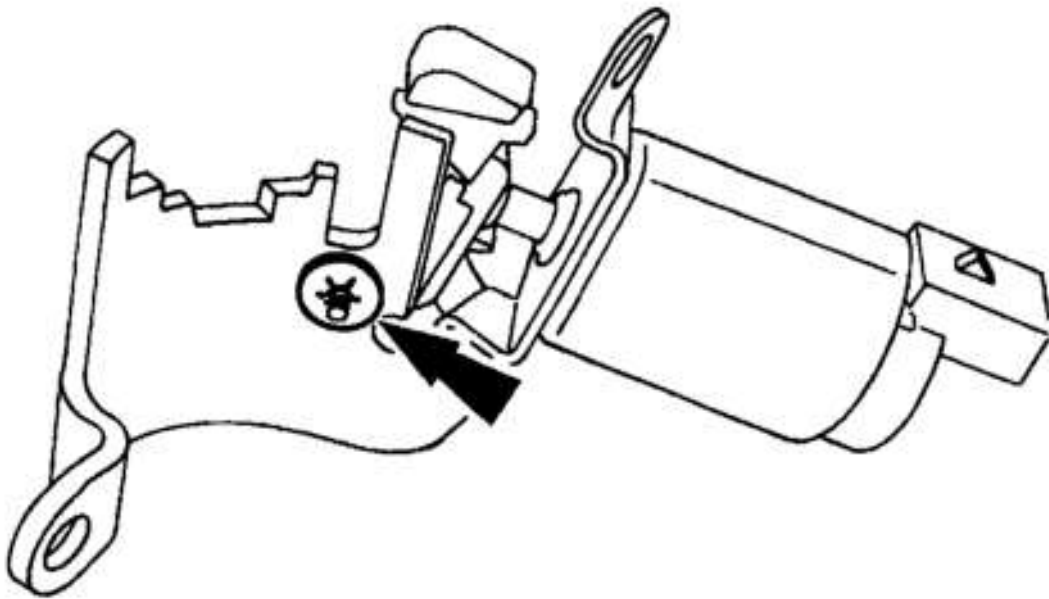
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Fig. 22: Removing Insert Plate & Shift Lock Actuator

Courtesy of FORD MOTOR CO.

NOTE: The shift lock actuator clip is an assembly aid for the assembly plant and does not need to be replaced in the field.

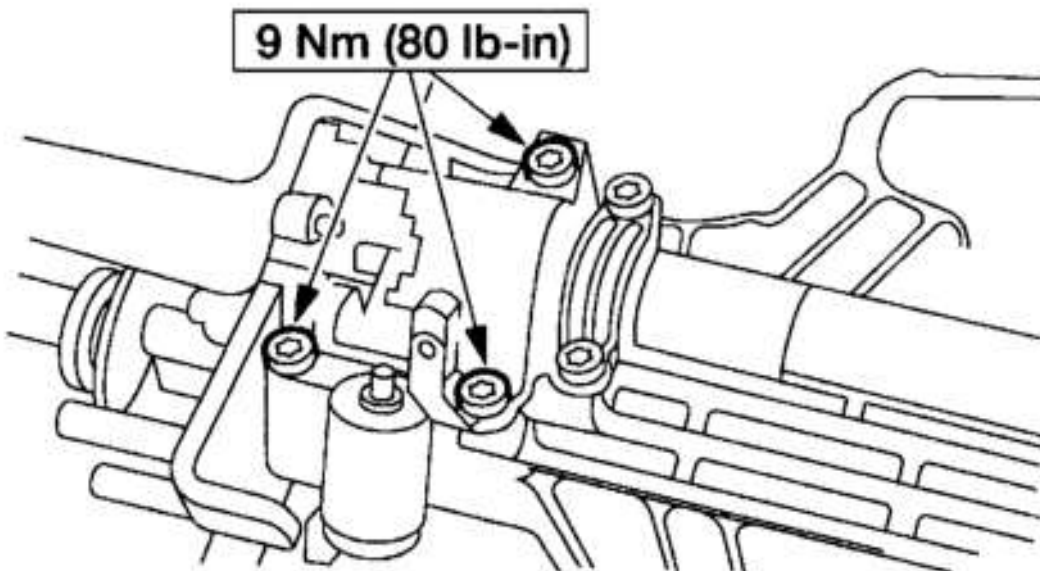
3. Remove the insert plate from the shift lock actuator.
 - Remove and discard the shift lock actuator clip.



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Fig. 23: Removing Shift Lock Actuator Clip
Courtesy of FORD MOTOR CO.

4. To install, reverse the removal procedure.



G01553631

Fig. 24: Installing Insert Plate & Shift Lock Actuator

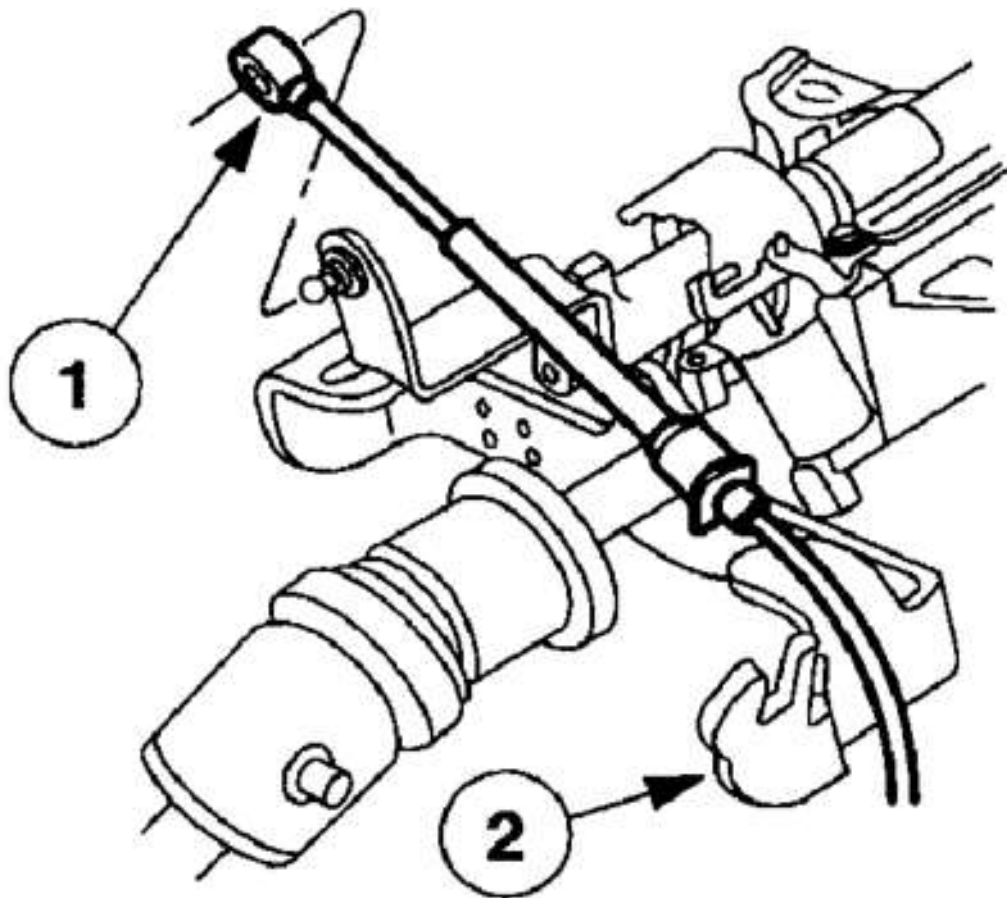
Courtesy of FORD MOTOR CO.

CABLE & BRACKET

Removal and Installation

All vehicles

NOTE: To prevent cable damage, do not apply force to the transmission shift cable assembly between the steering column shift tube bracket and the steering column bracket.



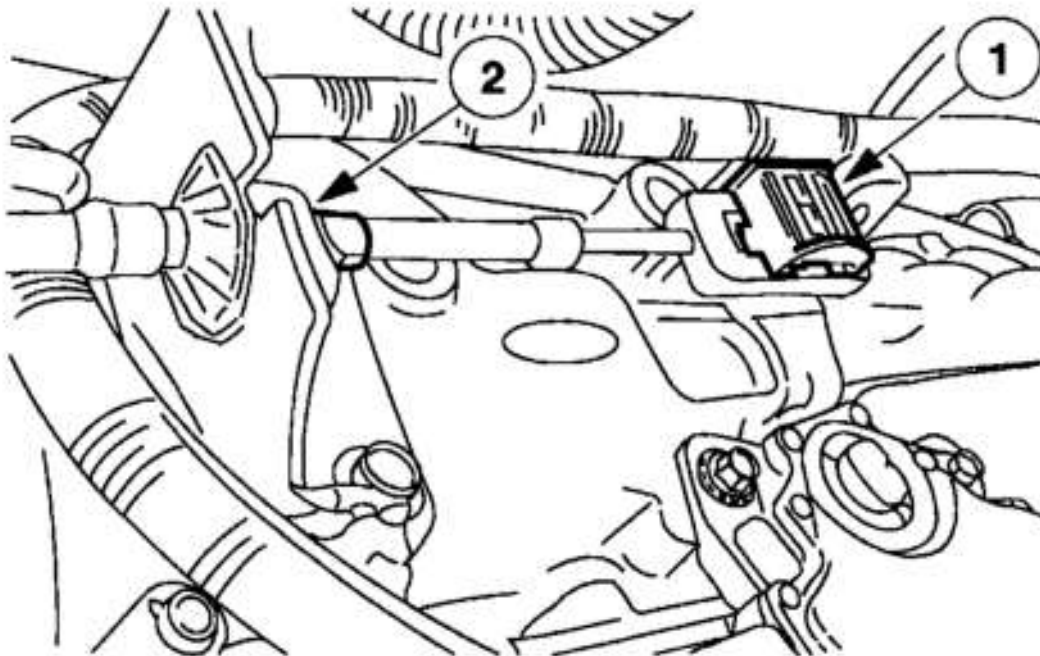
G01553632

Fig. 25: Disconnecting Transmission Shift Cable
Courtesy of FORD MOTOR CO.

1. Disconnect the transmission shift cable from the steering column.
 1. Disconnect the transmission shift cable from the steering column shift tube lever.

2. Carefully lift the locking tab and disconnect the transmission shift cable from the steering column bracket.
2. Disconnect the cable push pin from the stud in the bulkhead.
3. Push the rubber grommet and transmission shift cable through the bulkhead.
4. Raise and support the vehicle.

NOTE: To prevent shift cable assembly damage, do not apply force to the transmission shift cable between the manual control lever and the transmission shift cable bracket.



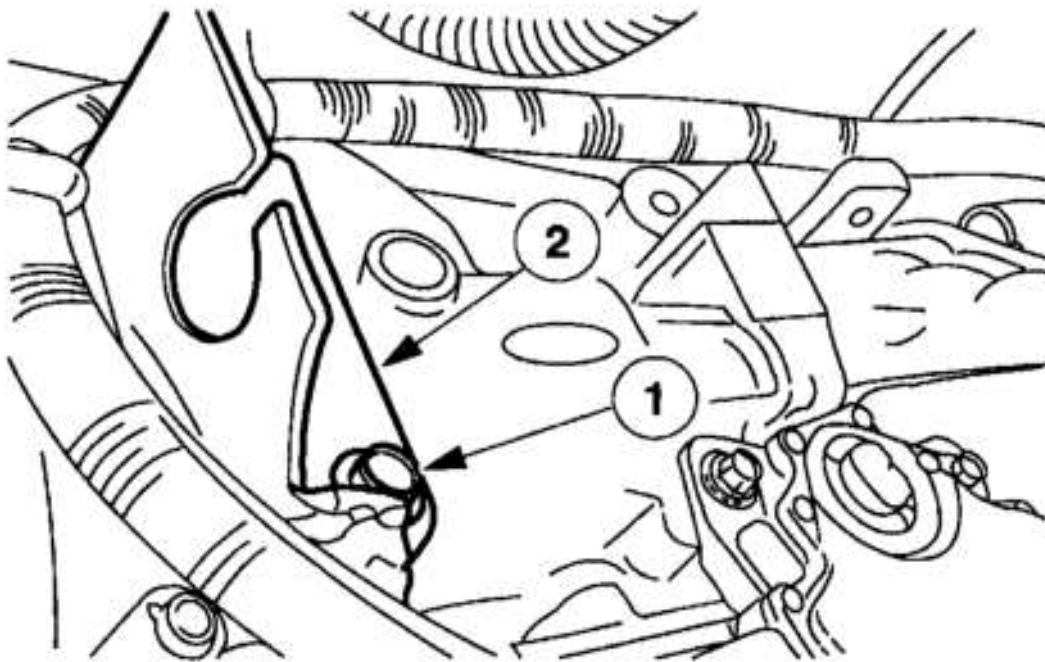
G01553633

Fig. 26: Removing Transmission Shift Cable From Transmission
Courtesy of FORD MOTOR CO.

5. **4R100 Transmission**

Remove the transmission shift cable from the transmission.

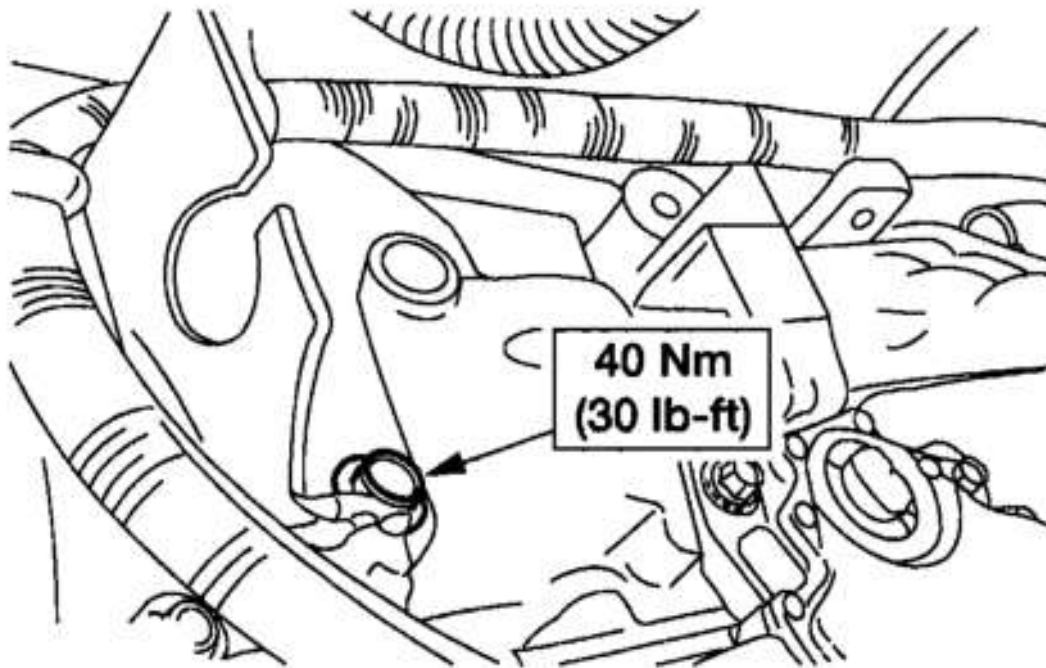
1. Disconnect the transmission shift cable from the manual control lever.
 2. Depress the lock tabs to release the transmission shift cable and disconnect the transmission shift cable from the transmission shift cable bracket.
6. Remove the shift cable bracket from the transmission.
 1. Remove the bolts.
 2. Remove the shift cable bracket.



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Fig. 27: Removing Shift Cable Bracket From Transmission
Courtesy of FORD MOTOR CO.

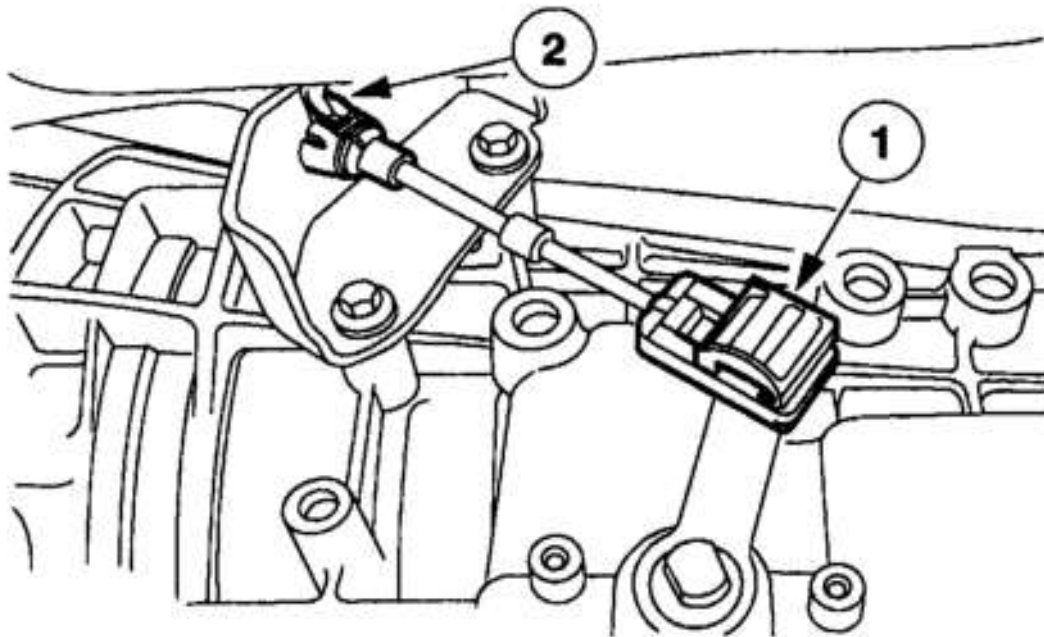
7. To install, reverse the removal procedure.
 - Adjust the shift cable. For additional information, refer to **CABLE AND BRACKET ADJUSTMENT**.



G01553635

Fig. 28: Installing Shift Cable Bracket
Courtesy of FORD MOTOR CO.

NOTE: To prevent shift cable assembly damage, do not apply force to the transmission shift cable between the manual control lever and the transmission shift cable bracket.



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Fig. 29: Removing Transmission Shift Cable From Transmission
Courtesy of FORD MOTOR CO.

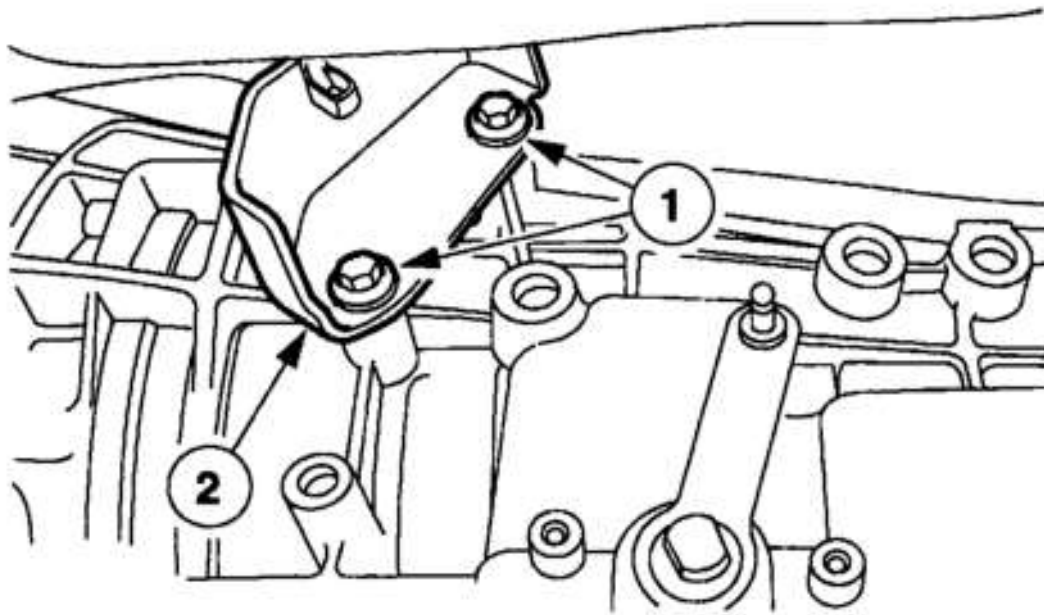
8. TorqShift Transmission

Remove the transmission shift cable from the transmission.

1. Disconnect the transmission shift cable from the manual control lever.
2. Depress the lock tabs to release the transmission shift cable and disconnect the transmission shift cable from the transmission shift cable bracket.

9. Remove the shift cable bracket from the transmission.

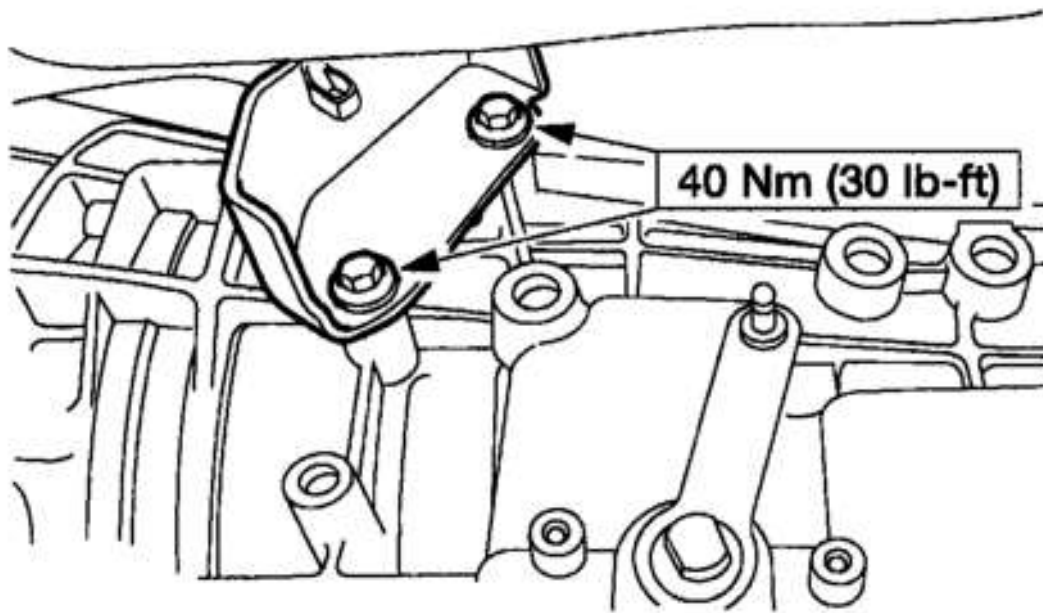
1. Remove the bolts.
2. Remove the shift cable bracket.



G01553637

Fig. 30: Removing Shift Cable Bracket From Transmission
Courtesy of FORD MOTOR CO.

10. To install, reverse the removal procedure.
 - Adjust the shift cable. For additional information, refer to Cable and Bracket Adjustment in this section.



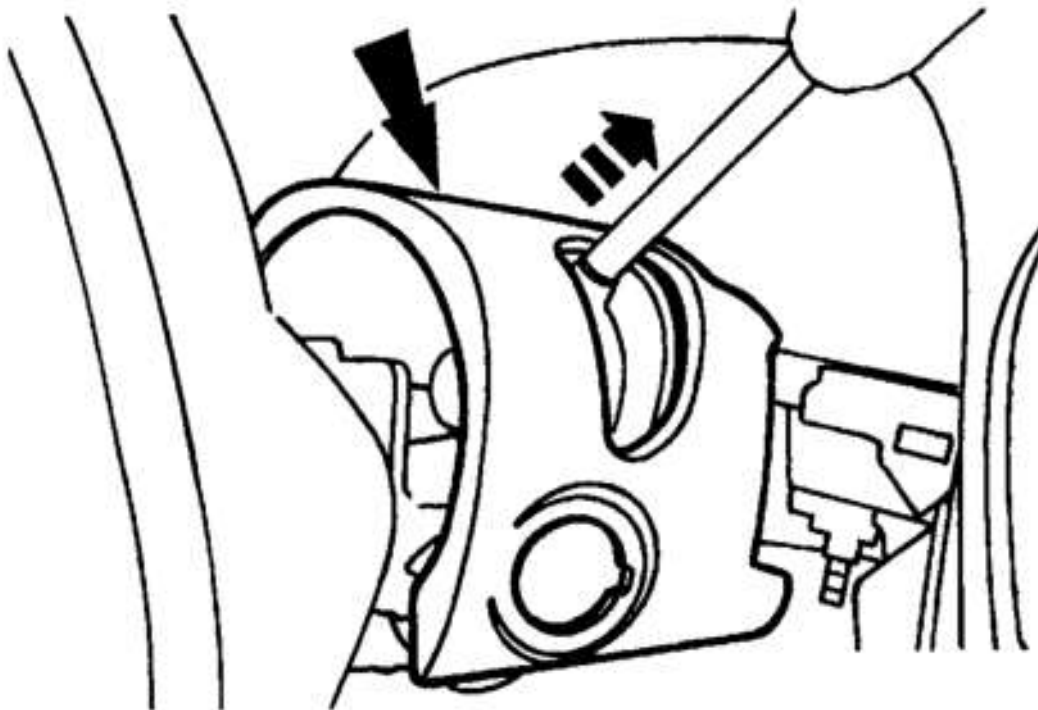
G01553638

Fig. 31: Installing Shift Cable Bracket
Courtesy of FORD MOTOR CO.

SELECTOR LEVER

Removal & Installation

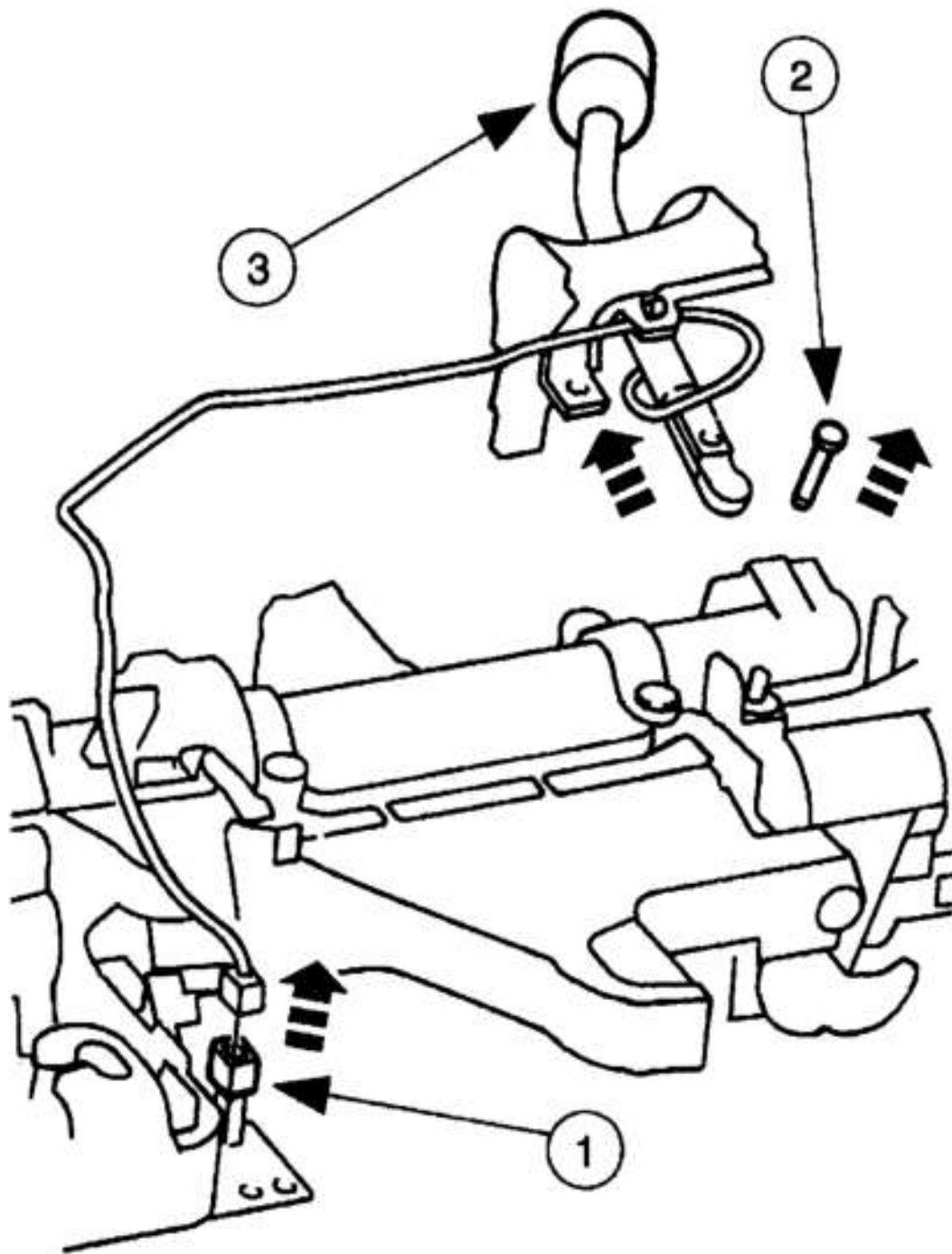
1. Remove the ignition switch lock cylinder. For additional information, refer to STEERING COLUMN SWITCHES .
2. Remove the upper steering column shroud.



G01553639

Fig. 32: Removing Upper Steering Column Shroud
Courtesy of FORD MOTOR CO.

3. Remove the gearshift lever.
 1. Disconnect the electrical connector.
 2. Remove and discard the gearshift lever pin.
 3. Remove the gearshift lever.



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Fig. 33: Removing Gearshift Lever
Courtesy of FORD MOTOR CO.

NOTE: The gearshift lever pin must be replaced whenever removed.

4. To install, reverse the removal procedure.

TRANSMISSION CONTROL (TC) SWITCH

Removal & Installation

1. Remove the Transmission Switch (TCS).
 1. Remove the TCS cover.
 2. Remove the TCS.

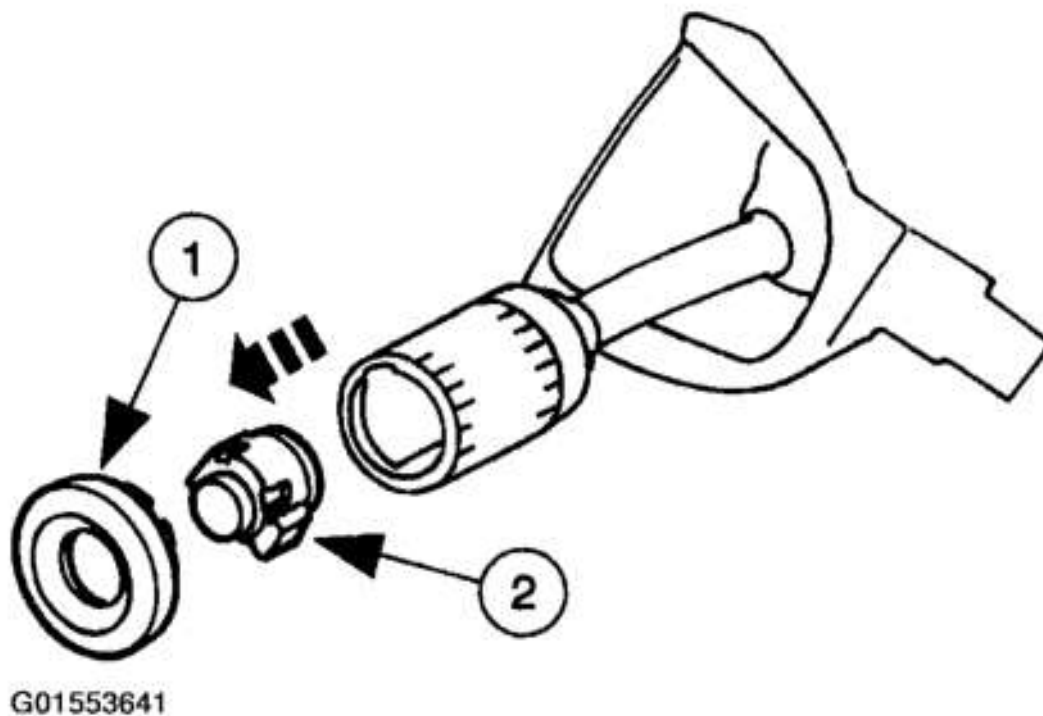


Fig. 34: Removing TCS
Courtesy of FORD MOTOR CO.

2. To install, reverse the removal procedure.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Shift Cable Bracket Bolt	30 (40)
	INCH Lbs. (N.m)
Insert Plate & Shift Lock Actuator Bolt	80 (9)