

TRANSAXLE

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DESCRIPTION AND OPERATION

BRAKE TRANSMISSION SHIFT INTERLOCK (BTSI) SYSTEM

The Brake Transmission Shift Interlock (BTSI) System, is a cable and solenoid operated system. It interconnects the automatic transmission floor mounted shifter to the steering column ignition switch. The BTSI system locks the shifter into the PARK position. The BTSI system is engaged whenever the ignition switch is in the LOCK or ACCESSORY position.

An additional electrically activated feature will prevent shifting out of the PARK position unless the brake pedal is depressed at least one-half an inch. A solenoid integrated with the BTSI cable assembly (Fig. 1) is energized when the ignition switch is in the RUN position. When the key is in the RUN position and the brake pedal is depressed, the shifter is unlocked and will move into any position. The BTSI system also prevents the ignition switch from being turned to the LOCK or ACCESSORY position, unless the shifter is fully locked into the PARK position.

DIAGNOSIS AND TESTING

BRAKE TRANSMISSION SHIFT INTERLOCK (BTSI) SYSTEM

If the ignition switch cannot be turned to the LOCK position, with the shifter in PARK and the brake pedal depressed, an adjustment of the Brake Transmission Shift Interlock (BTSI) System may be required. To adjust the Brake Transmission Shift Interlock (BTSI) System, follow the procedure in the Adjustment section of this group.

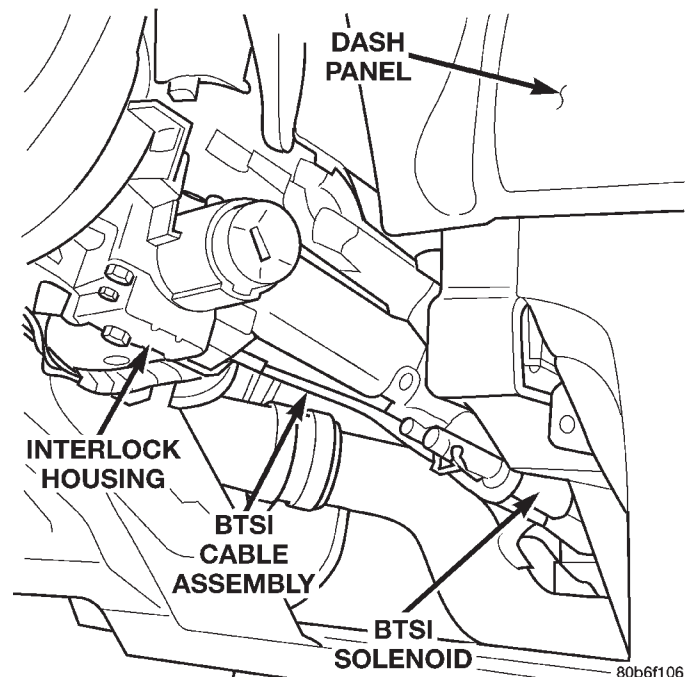


Fig. 1 BTSI Cable Assembly

REMOVAL AND INSTALLATION

BRAKE TRANSMISSION SHIFT INTERLOCK (BTSI) CABLE ASSEMBLY

REMOVAL

- (1) Disconnect and isolate, the battery negative (-) cable from the vehicle battery.
- (2) Remove the gearshift knob set screw and knob.
- (3) Remove console assembly. Refer to Group 23, Body for procedure.
- (4) Pry up the adjuster lock on the BTSI cable assembly. Unsnap the BTSI cable assembly end fitting from the groove in the gearshift mechanism.
- (5) Remove the cable core end from the plastic cam of the shifter mechanism and pull the BTSI cable out of the gear shift mechanism.

REMOVAL AND INSTALLATION (Continued)

(6) Remove the steering column cover. Refer to Group 8E, Instrument Panels and Systems for Removal and Installation procedures.

(7) Remove the steering column cover liner. Refer to Group 8E, Instrument Panel and Systems for Removal and Installation Procedures.

(8) Remove the three lower-to-upper shroud attaching screws through the bottom of the lower shroud and remove the lower shroud (Fig. 2).

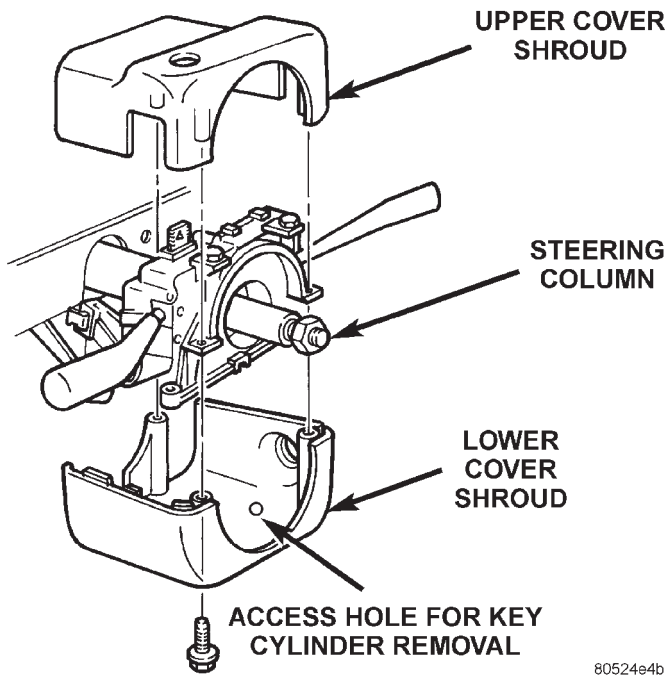


Fig. 2 Upper/Lower Shroud

(9) Turn the ignition to the RUN position.

(10) Grasp the BTSI cable assembly clip and connector. Remove the connector from the interlock housing (Fig. 3).

(11) Disconnect the BTSI solenoid electrical connector (Fig. 4).

(12) Disengage BTSI cable assembly routing clip from the steering column mounting stud.

(13) Unclip the BTSI cable assembly from the retaining clip located within the wiring harness.

(14) Remove BTSI cable assembly from the dash panel.

INSTALLATION

CAUTION: When installing BTSI cable assembly, care must be taken not to bend exposed cable wire and slug at shifter end of cable.

(1) Route BTSI cable assembly into lower dash panel.

(2) Install the BTSI cable assembly connector into the interlock housing at the steering column (Fig. 5). Verify the cable snaps into the housing.

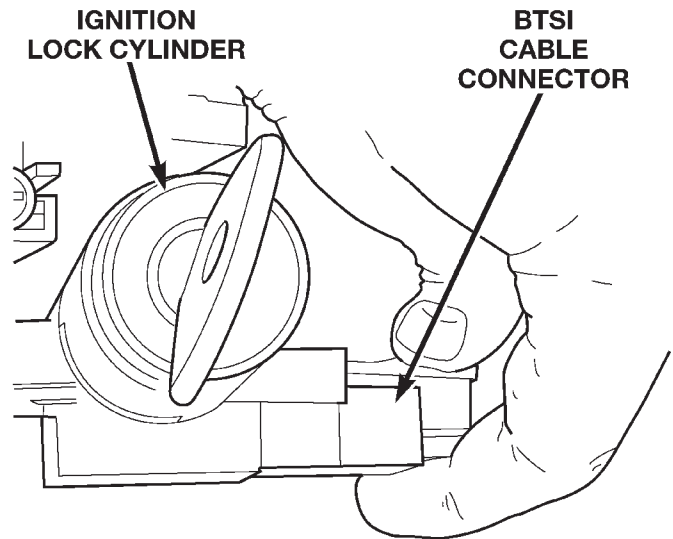


Fig. 3 BTSI Cable Assembly Connector

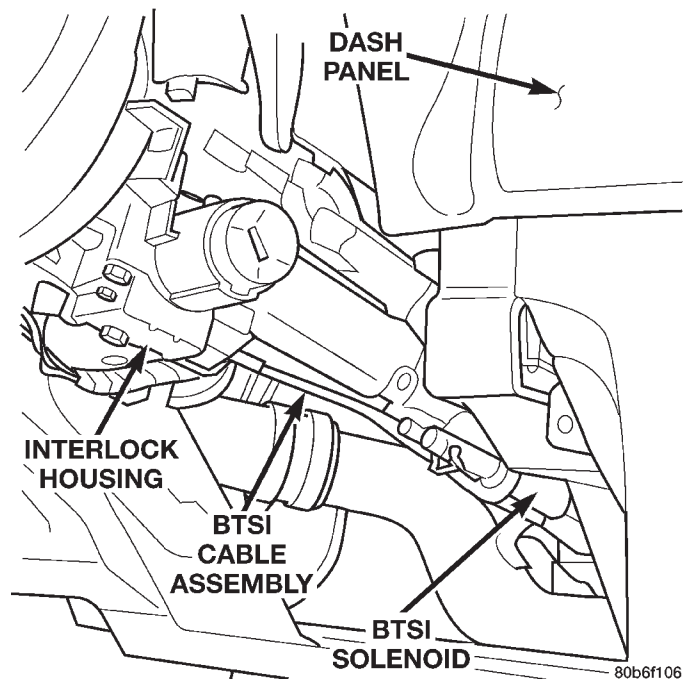


Fig. 4 BTSI Solenoid

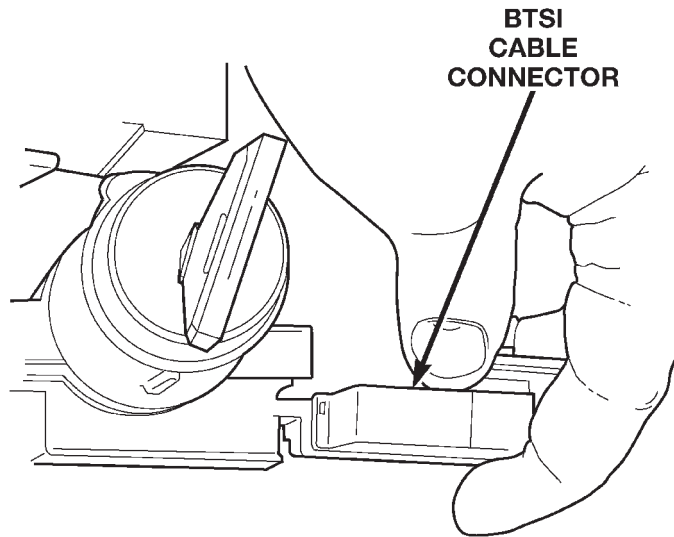
(3) Install BTSI cable assembly into routing clip located within the wiring harness.

(4) Route BTSI cable assembly to the console.

(5) Secure the BTSI cable assembly routing clip to the steering column mounting stud.

(6) Install the cable core end to the plastic cam of the shifter mechanism. Snap the BTSI cable assembly end fitting into the groove in the gearshift mechanism.

REMOVAL AND INSTALLATION (Continued)



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Fig. 5 BTSI Cable at Interlock Housing

(7) Adjust the Brake Transmission Shift Interlock (BTSI) System. See Brake Transmission Shift Interlock (BTSI) System Adjustment, in this section.

(8) Check operation of the Brake Transmission Shift Interlock (BTSI) System, as described in the beginning of this section.

(9) Install console assembly. Refer to Group 23, Body.

(10) Install screws retaining the gearshift indicator bezel and install bezel and indicator lamp.

(11) Install the gearshift knob set screw and knob.

(12) Install two screws at the upper area of the column liner and lower left corner.

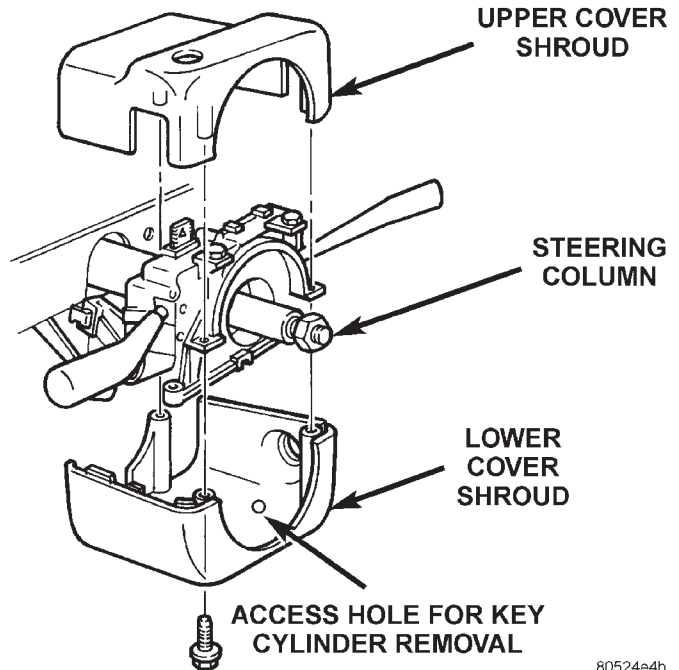
(13) Position the lower shroud in place. Install the three lower-to-upper shroud attaching screws through the bottom of the lower shroud (Fig. 6).

(14) Reconnect the battery negative (-) cable to the vehicle battery.

ADJUSTMENTS

BRAKE TRANSMISSION SHIFT INTERLOCK (BTSI) SYSTEM ADJUSTMENT

If ignition switch cannot be turned to the LOCK position, an adjustment of the Interlock System may be required. To adjust the Brake Transmission Shift Interlock (BTSI) System, follow procedure listed below.



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Fig. 6 Upper/Lower Shroud

(1) Disconnect and isolate, the battery negative (-) cable from the vehicle battery.

(2) Remove console assembly. Refer to Group 23, Body.

(3) Remove the gearshift knob set screw and knob.

(4) Reinstall the gearshift knob.

(5) Place shifter in PARK.

(6) Turn ignition switch to the LOCK or ACCESSORY position. If cable has lost its adjustment, manually position cable to get key into LOCK or ACCESSORY position. Grasp slug on interlock cable with needle nose pliers and pull back on cable. This will allow the ignition switch to be turned to the LOCK or ACCESSORY position.

(7) Check that the interlock cable slug is completely seated into the shifter interlock lever.

(8) Check that the ignition switch is still in the LOCK or ACCESSORY position.

(9) Pry up the adjuster lock on the BTSI cable.

(10) The spring on the BTSI cable should automatically compensate for the slack in the adjuster.

(11) Snap down the interlock adjuster lock onto the cable.

(12) After adjusting the BTSI system, check operation of the Brake Transmission Shift Interlock (BTSI) System, as described in the beginning of this section.

