

TURN SIGNAL AND HAZARD WARNING SYSTEMS

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GENERAL INFORMATION

INTRODUCTION

Following are general descriptions of the major components in the turn signal and hazard warning systems. Refer to 8W-52 - Turn Signals in Group 8W - Wiring Diagrams for complete circuit descriptions and diagrams.

DESCRIPTION AND OPERATION

TURN SIGNAL SYSTEM

With the ignition switch in the On or Accessory position, and the multi-function switch control lever moved up (right turn) or down (left turn), the turn signal system is activated. The switch has a detent position in each direction that provides turn signals with automatic cancellation, and an intermediate momentary position that provides turn signals only until the multi-function switch lever is released.

When the turn signal switch is in a detent position, it is turned off by one of two cancelling cam lobes molded into the hub of the clockspring mechanism. When turning the steering wheel causes one of the cam lobes to contact a cancel actuator in the multi-function switch, the turn signal switch automatically returns to the off position.

When the turn signal system is activated, the selected (right or left) turn signal indicator lamp, front park/turn signal lamp and rear tail/stop/turn signal lamp bulbs will flash. With the headlamp switch in the Off position, the front turn signal and front side marker lamps flash in unison. With the headlamp switch in the On position, the front turn signal and front side marker lamps flash alternately.

HAZARD WARNING SYSTEM

The hazard warning system is activated by a switch button in the multi-function switch. The button is located on the top of the steering column between the steering wheel and the instrument panel. The hazard warning switch button is identified with a double triangle.

The hazard warning system is connected to an unswitched battery feed so that the system remains functional, regardless of the ignition switch position. Push the switch button in to activate the hazard warning system, and push in on the button again to turn the system off. When the hazard warning system is activated, the right and left turn signal indicators, front park/turn signal lamps, front side marker lamps, and rear tail/stop/turn signal lamps will flash.

COMBINATION FLASHER

The combination flasher is a smart relay that functions as both the turn signal system and hazard warning system flasher. The combination flasher is designed to handle the current flow requirements of the factory installed lighting.

If supplemental lighting is added to the turn signal lamp circuits, such as when towing a trailer with lights, the combination flasher will automatically compensate. This allows the flash rate to remain the same, regardless of electrical load increases. However, if a bulb fails in the turn signal lamp circuits, the flash rate of the remaining bulbs in that circuit will increase to 120 flashes per minute, or higher.

While the combination flasher shares the terminal orientation (footprint) of a International Standards Organization (ISO)-type relay, the internal circuitry is much different. The combination flasher contains active electronic integrated circuitry elements. Do not substitute any other relay for the combination flasher.

DESCRIPTION AND OPERATION (Continued)

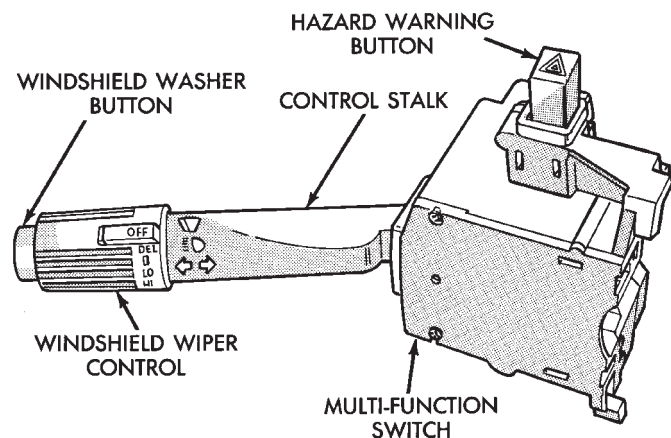
The combination flasher cannot be repaired and, if faulty, it must be replaced. Also, because of the combination flasher's active elements, it cannot be tested with conventional automotive electrical test equipment. If the flasher is believed to be faulty, test the turn signal and hazard warning system circuits as described in this group. Then, replace the combination flasher with a known good unit to confirm system operation.

MULTI-FUNCTION SWITCH

The multi-function switch assembly is mounted to the left side of the steering column (Fig. 1). This switch contains circuitry for the following functions:

- Turn signals
- Hazard warning
- Headlamp beam selection
- Headlamp optical horn
- Windshield wipers
- Windshield washers.

The information contained in this group addresses only the switch functions for the turn signal and hazard warning circuits. For information relative to the other switch functions, refer to the appropriate group. However, the multi-function switch cannot be repaired. If any function of the switch is faulty, the entire switch assembly must be replaced.



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Fig. 1 Multi-Function Switch

TURN SIGNAL INDICATOR LAMPS

The turn signal indicator lamps are located in the instrument cluster. They flash with the exterior turn signal lamps to give the driver a visual indication that a turn signal or the hazard warning system is operating. For diagnosis and service of this component, refer to Group 8E - Instrument Panel Systems.

VEHICLE INFORMATION CENTER

Models equipped with an optional Vehicle Information Center (VIC) have a "turn signal on" warning feature. The VIC module monitors the combination

flasher's turn signal circuit. The VIC module will display the message, Turn Signal On, and send a chime request signal to the Body Control Module (BCM) on the Chrysler Collision Detection (CCD) data bus for a single chime tone, if a turn signal remains activated for more than approximately one-half mile of driving.

Refer to Group 8E - Instrument Panel Systems for diagnosis and service of the VIC module. Refer to the appropriate Body Diagnostic Procedures Manual for diagnosis and service of the BCM or the CCD bus.

TURN SIGNAL LAMPS

The exterior lamps in the turn signal and hazard warning circuits include the front park/turn signal, the front side marker, and the rear tail/stop/turn signal. For diagnosis and service of these lamps, refer to Group 8L - Lamps.

DIAGNOSIS AND TESTING**INTRODUCTION**

When diagnosing the turn signal or hazard warning circuits, remember that high generator output can burn out bulbs rapidly and repeatedly. If this is a problem on the vehicle being diagnosed, refer to Group 8C - Charging System for further diagnosis.

WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

TURN SIGNAL/HAZARD WARNING SYSTEM

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(1) Turn the ignition switch to the On position. Actuate the turn signal lever or hazard warning button. Observe the turn indicator lamp(s) in the instrument cluster. If the flash rate is very high, check for a turn signal bulb that is not lit. Replace that bulb or repair the circuits to that lamp, as required. Test the operation of the system again. If the turn indicator(s) fail to light, go to Step 2.

DIAGNOSIS AND TESTING (Continued)

(2) Remove and inspect the turn signal fuse in the junction block, or the hazard warning fuse in the Power Distribution Center (PDC). Replace the faulty fuse(s), if required, and go to Step 3.

(3) Remove the combination flasher from the junction block and replace it with a known good unit. Test the operation of the turn signal and hazard warning systems. If OK, discard the faulty combination flasher. If not OK, remove the test flasher and go to Step 4.

(4) With the ignition switch in the On position, check for battery voltage at the fused ignition switch output circuit cavity for the flasher in the junction block. If OK, go to Step 5. If not OK, repair the open circuit to the ignition switch as required.

(5) With the ignition switch in the Off position, check for battery voltage at the fused B(+) circuit cavity for the flasher in the junction block. If OK, go to Step 6. If not OK, repair the open circuit to the PDC as required.

(6) With the ignition switch in the Off position, check for continuity between the ground circuit cavity for the flasher in the junction block and a good ground. There should be continuity. If OK, go to Step 7. If not OK, repair the circuit to ground as required.

(7) Disconnect the multi-function switch connector as described in this group. Check for continuity between the hazard signal circuit cavities of the junction block and the multi-function switch connector.

There should be continuity. If OK, go to Step 8. If not OK, repair the open circuit as required.

(8) Check for continuity between the turn signal cavities of the junction block and the multi-function switch connector. There should be continuity. If OK, test the multi-function switch as described in this group. If not OK, repair the open circuit as required.

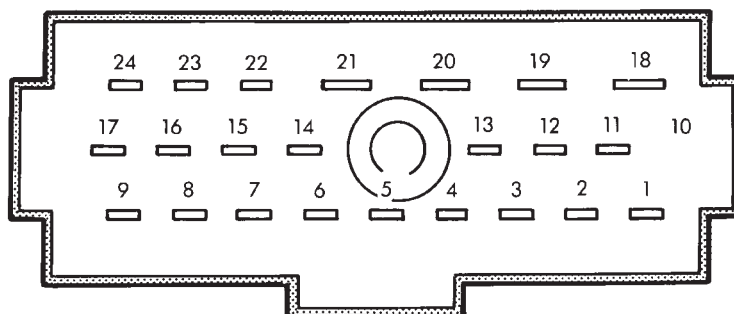
MULTI-FUNCTION SWITCH

Perform the diagnosis of the hazard warning and/or turn signal systems as described in this group before testing the multi-function switch. For circuit descriptions and diagrams, see 8W-52 - Turn Signals in Group 8W - Wiring Diagrams.

WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

(1) Disconnect the multi-function switch connector as described in this group.

(2) Using an ohmmeter, perform the switch continuity checks at the switch terminals as shown in the chart (Fig. 2).



VIEW FROM TERMINAL CASE

SWITCH POSITIONS		CONTINUITY BETWEEN
TURN SIGNAL	HAZARD WARNING	
NEUTRAL	OFF	12 AND 14 AND 15
LEFT	OFF	15 AND 16 AND 17
LEFT	OFF	12 AND 14
LEFT	OFF	22 AND 23 WITH OPTIONAL CORNER LAMPS
RIGHT	OFF	11 AND 12 AND 17
RIGHT	OFF	14 AND 15
RIGHT	OFF	23 AND 24 WITH OPTIONAL CORNER LAMPS
NEUTRAL	ON	11 AND 12 AND 13 AND 15 AND 16

Fig. 2 Multi-Function Switch Continuity

DIAGNOSIS AND TESTING (Continued)

(3) If the switch fails any of the continuity checks, replace the faulty switch. If the switch is OK, repair the lighting circuits as required.

REMOVAL AND INSTALLATION

COMBINATION FLASHER

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- (1) Disconnect and isolate the battery negative cable.
- (2) Remove the fuse access panel by unsnapping it from the right cowl side trim panel.
- (3) Remove the nut securing the right cowl side trim to the junction block stud (Fig. 3).

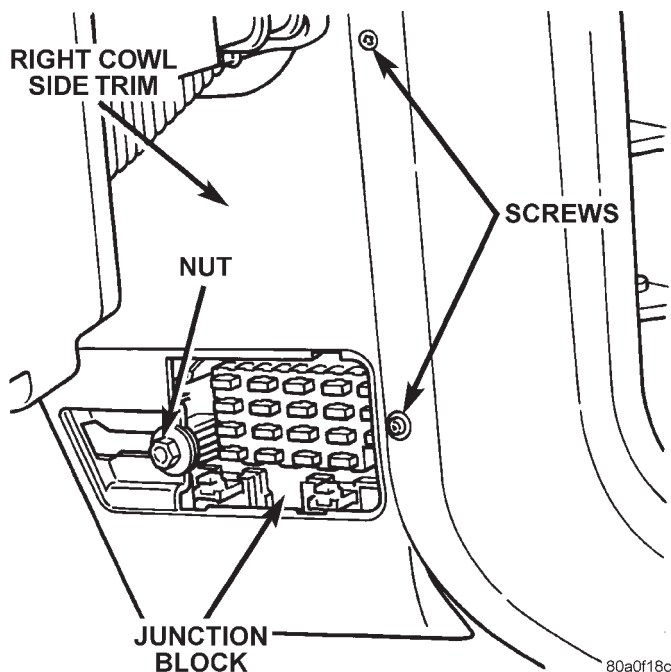


Fig. 3 Right Cowl Side Trim Remove/Install

- (4) Remove the two screws securing the right cowl side trim to the right front door opening trim.
- (5) Remove the right cowl side trim panel.
- (6) Unplug the combination flasher from the junction block.
- (7) To install the flasher, align the terminals with the cavities in the junction block and push the flasher firmly into place.

- (8) Connect the battery negative cable.
- (9) Test the combination flasher operation.
- (10) Install the right cowl side trim panel and the fuse access panel.

MULTI-FUNCTION SWITCH

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- (1) Disconnect and isolate the battery negative cable.
- (2) Remove the tilt steering column lever, if equipped.
- (3) Using a trim stick or other suitable wide flat-bladed tool, pry gently around the edges of the switch pod bezels and remove both bezels.
- (4) Remove one screw on each side of the steering column on the upper edge of the knee blocker/steering column cover (Fig. 4).

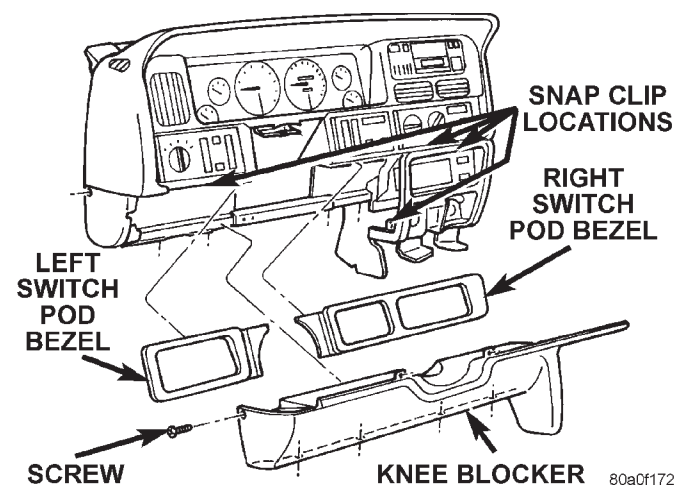


Fig. 4 Knee Blocker Remove/Install

- (5) Remove one screw securing the left end of the knee blocker to the instrument panel.
- (6) Remove the four screws securing the lower edge of the knee blocker to the lower instrument panel reinforcement.
- (7) Using a trim stick or other suitable wide flat-bladed tool, gently pry the edges of the knee blocker away from the instrument panel at the locations shown (Fig. 4).
- (8) Remove the knee blocker/steering column cover from the vehicle.

REMOVAL AND INSTALLATION (Continued)

(9) Remove both the upper and lower shrouds from the steering column (Fig. 5).

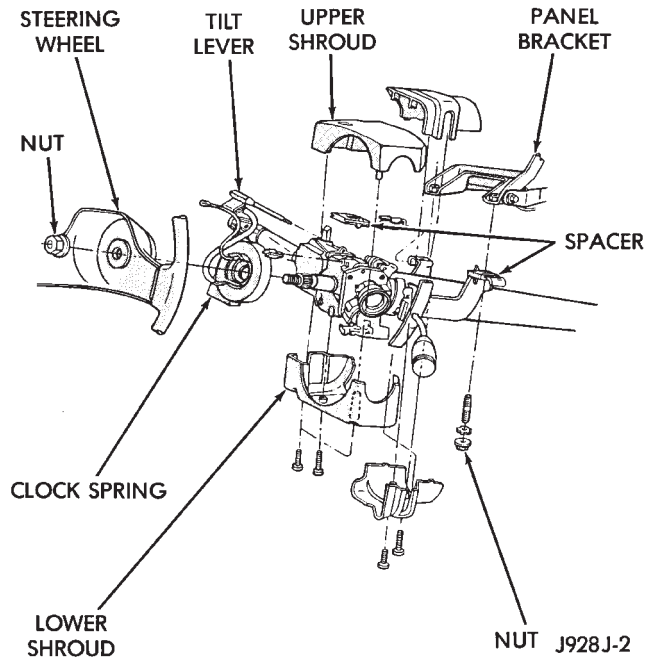


Fig. 5 Steering Column Shrouds Remove/Install

(10) Remove the lower fixed column shroud.

(11) Loosen the steering column upper bracket nuts. Do not remove the nuts.

(12) Move the upper fixed column shroud to gain access to the rear of the multi-function switch (Fig. 6).

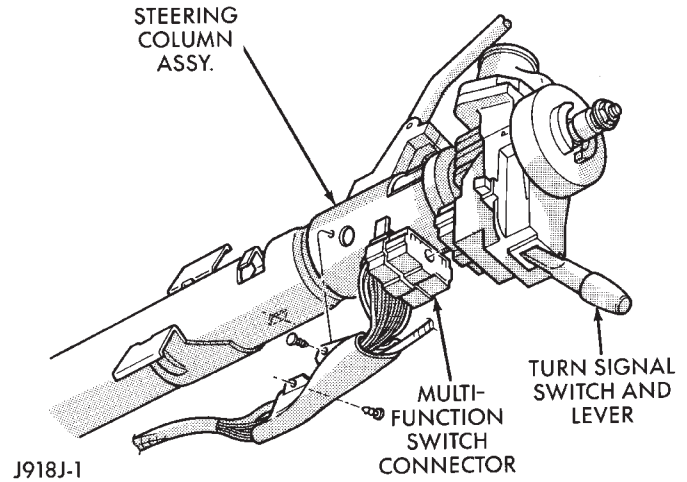


Fig. 6 Multi-Function Switch Connector

(13) Remove the multi-function switch tamper proof mounting screws (a Snap On tamper proof torx bit TTXR20B2 or equivalent is required).

(14) Gently pull the switch away from the column. Loosen the connector screw. The screw will remain in the connector.

(15) Remove the wiring connector from the multi-function switch.

(16) Reverse the removal procedures to install. Tighten the fasteners as follows:

- Multi-function switch connector screw - 1.9 N·m (17 in. lbs.)
- Multi-function switch retaining screws - 1.9 N·m (17 in. lbs.)
- Steering column upper bracket nuts - 12 N·m (110 in. lbs.).