

# TURN SIGNAL and HAZARD WARNING SYSTEMS

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### GENERAL INFORMATION

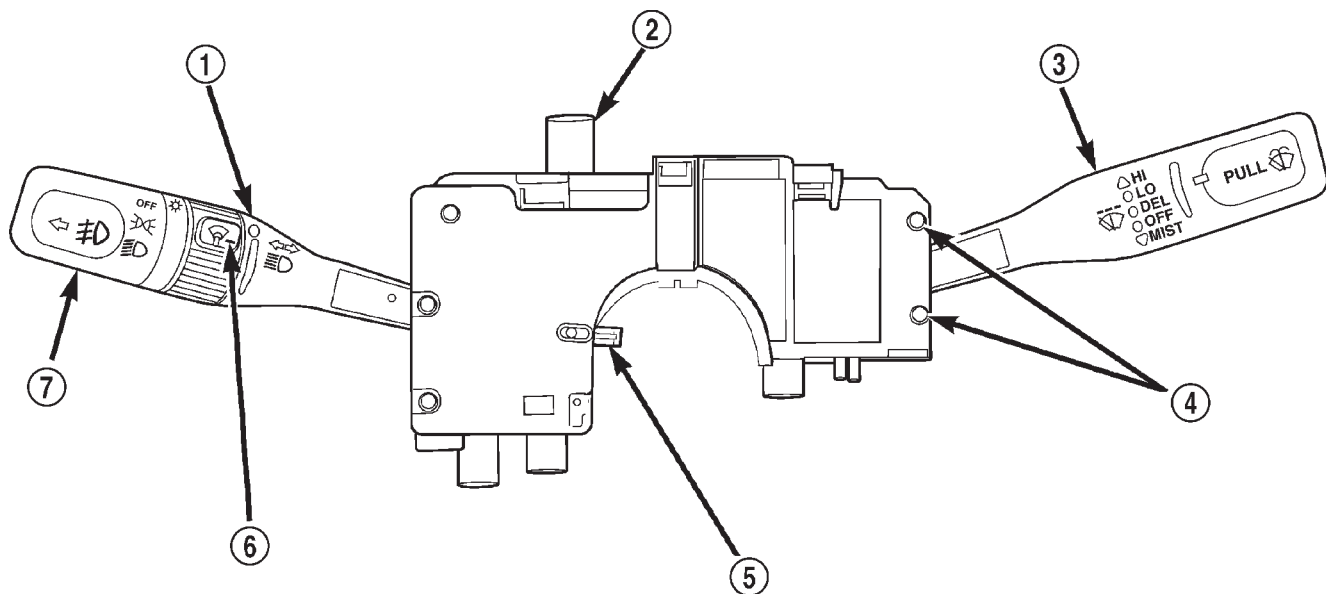
#### INTRODUCTION

**WARNING: ON VEHICLES EQUIPPED WITH AIR-BAG, SEE GROUP 8M, PASSIVE RESTRAINT SYSTEMS FOR AIRBAG REMOVAL.**

The turn signals are part of the multi-function switch (Fig. 1), which contains:

- Electrical circuitry for turn signals
- Hazard warning switch

- Headlamp switch
- Fog Lamp Switch
- Headlamp beam select switch
- Optical Horn
- Instrument Panel Lamp Dimmer/Interior Lamp Switch
- Combination Flasher



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**Fig. 1 Mutli-Function Switch**

- |   |  |
|---|--|
| 1 – TURN SIGNAL CONTROL STALK                       | 5 – CANCELLING CAM                     |
| 2 – HAZARD WARNING SWITCH                           | 6 – PANEL DIMMER/INTERIOR LIGHT SWITCH |
| 3 – WINDSHIELD WIPER/WASHER CONTROL                 | 7 – EXTERIOR LIGHTING CONTROL/FOG LAMP |
| 4 – WINDSHIELD WIPER/WASHER SWITCH RETAINING SCREWS |  |

## GENERAL INFORMATION (Continued)

The integrated switch assembly is mounted to the left hand side of the steering column. When the driver wishes to signal his intentions to change direction of travel, he moves the lever upward to cause the right signals to flash and downward to cause the left signals to flash. After completion of a turn the system is deactivated automatically. As the steering wheel returns to the straight ahead position, a canceling cam molded to the clockspring mechanism comes in contact with the cancel actuator on the turn signal multi-function switch assembly. The cam lobe, pushing on the cancel actuator, returns the switch to the off position.

If only momentary signaling such as indication of a lane change is desired, the switch is actuated to a left or right intermediate detent position. In this position the signal lamps flash as described above, but the switch returns to the OFF position as soon as the lever is released.

When the system is activated, one of two indicator lamps mounted in the instrument cluster flashes in unison with the turn signal lamps, indicating to the driver that the system is operating.

## DESCRIPTION AND OPERATION

## HAZARD WARNING SYSTEM

The hazard warning system is actuated by a push button located in the multi-function switch (Fig. 1) on the top of the steering column between the steering wheel and the instrument panel. The hazard switch is identified with a double triangle on front of the button.

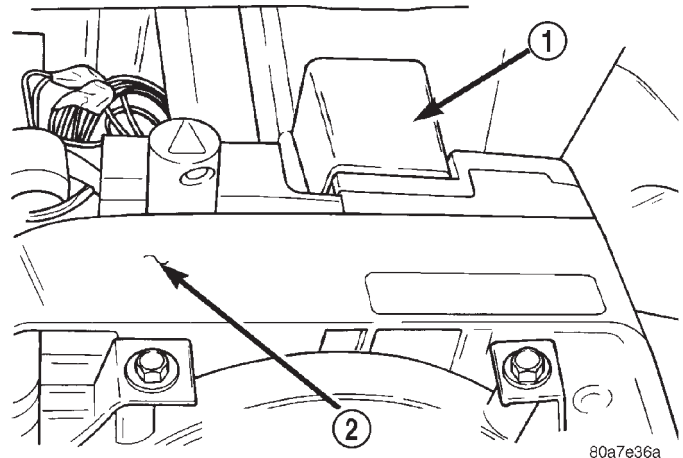
## HEADLAMP SWITCH

The headlamp switch is part of the Multi-Function Switch (Fig. 1). Refer to Multi-Function Switch Diagnosis and Testing, Turn Signal and Hazard Warning Flasher Diagnosis table in this section.

## COMBINATION FLASHER

The turn signal flasher and the hazard warning flasher are combined into one unit called a combination flasher (combo-flasher). The combo-flasher controls the flashing of the hazard warning system and the turn signal system. An inoperative bulb or incomplete turn signal circuit will cause the flasher rate to double.

The combo-flasher is located on the back of the multi-function switch (Fig. 2). The combo-flasher is black in color and has a dampener material wrapped on it.



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**Fig. 2 Combination-Flasher**

- 1 - COMBINATION FLASHER
- 2 - MULTI-FUNCTION SWITCH

## DIAGNOSIS AND TESTING

### MULTI-FUNCTION SWITCH

Should any function of the multi-function switch fail, the entire switch assembly must be replaced. Refer to Turn Signal and Hazard Warning Flasher Diagnosis table.

#### TURN SIGNAL AND HAZARD WARNING FLASHER DIAGNOSIS

CONDITION	POSSIBLE CAUSES	CORRECTION
TURN SIGNAL FLASHES AT TWICE THE NORMAL RATE.	(1) FAULTY EXTERNAL LAMP. (2) POOR GROUND AT LAMP. (3) OPEN CIRCUIT IN WIRING TO EXTERNAL LAMP. (4) FAULTY CONTACT IN SWITCH.	(1) REPLACE LAMP. (2) CHECK AND/OR REPAIR WIRING (3) REPAIR WIRING HARNESS. CHECK CONNECTORS. (4) REPLACE MULTI FUNCTION SWITCH.
INDICATOR LAMP ILLUMINATED BRIGHTLY, EXTERNAL LAMP GLOWS DIMLY AT A RAPID RATE.	(1) LOOSE OR CORRODED EXTERNAL LAMP CONNECTION. (2) POOR GROUND CIRCUIT AT EXTERNAL LAMP. (3) OPEN INSTRUMENT CLUSTER.	(1) REPLACE SOCKET CONNECTION. (2) REPAIR WIRING HARNESS. CHECK CONNECTORS. (3) REPLACE INSTRUMENT CLUSTER.
HAZARD WARNING SYSTEM DOES NOT FLASH.	(1) FAULTY FUSE. (2) FAULTY FLASHER. (3) OPEN CIRCUIT IN FEED WIRE TO SWITCH. (4) FAULTY CONTACT IN SWITCH. (5) OPEN OR GROUNDED CIRCUIT IN WIRING TO EXTERNAL LAMPS.	(1) REPLACE FUSE. (2) REPLACE FLASHER. (3) REPAIR WIRING HARNESS, CHECK CONNECTORS. (4) REPLACE MULTI FUNCTION SWITCH. (5) REPAIR WIRING HARNESS.
INDICATOR LAMP ILLUMINATES BRIGHTLY, EXTERNAL LAMP DOES NOT LIGHT.	(1) OPEN CIRCUIT IN WIRE TO EXTERNAL LAMP. (2) BURNED OUT LAMP.	(1) REPAIR WIRING HARNESS. (2) REPLACE LAMP.
SYSTEM DOES NOT FLASH ON EITHER SIDE.	(1) FAULTY FUSE. (2) FAULTY FLASHER UNIT. (3) LOOSE BULKHEAD CONNECTOR. (4) LOOSE OR FAULTY REAR WIRING HARNESS OR TERMINALS. (5) OPEN CIRCUIT TO FLASHER UNIT. (6) OPEN CIRCUIT IN FEED WIRE TO TURN SIGNAL SWITCH. (7) FAULTY SWITCH CONNECTION IN SWITCH. (8) OPEN OR GROUNDED CIRCUIT IN WIRING TO EXTERNAL LAMPS.	(1) REPLACE FUSE. (2) REPLACE FLASHER. (3) TIGHTEN CONNECTOR. (4) REPAIR WIRING HARNESS (5) CHECK CONNECTORS, REPAIR WIRING HARNESS. (6) CHECK CONNECTORS, REPAIR WIRING HARNESS. (7) REPLACE MULTI FUNCTION SWITCH. (8) REPAIR WIRING HARNESS.
SYSTEM DOES NOT CANCEL AFTER COMPLETION OF THE TURN.	(1) BROKEN CANCELLING FINGER ON SWITCH. (2) BROKEN OR MISSING CANCELLING CAM ON CLOCKSPRING.	(1) REPLACE MULTI FUNCTION SWITCH. (2) REPLACE CLOCKSPRING.
EXTERNAL LAMPS OPERATE PROPERLY, NO INDICATOR LAMP OPERATION.	(1) FAULTY INDICATOR LAMP IN INSTRUMENT CLUSTER. (2) OPEN CIRCUIT OR WIRING.	(1) REPLACE LAMP. (2) REPAIR WIRING HARNESS.

DIAGNOSIS AND TESTING (Continued)

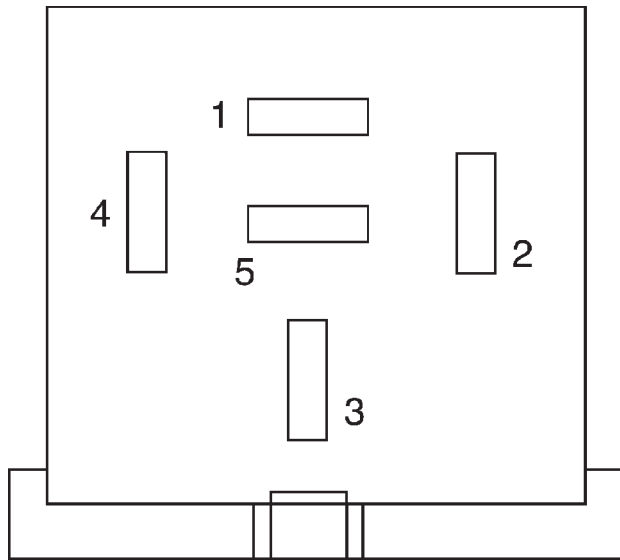
To test the switch, first disconnect the negative battery cable, then remove the upper and lower column shrouds to gain access to the switch connector. Remove switch connector. Using an ohmmeter, test

for continuity (no resistance) between the terminals of the switch as shown in the Multi-Function Switch Continuity Test Chart for diagnosis. Refer to (Fig. 3), (Fig. 4), and (Fig. 5) for connector terminal locations.

MULTI-FUNCTION SWITCH CONTINUITY TEST

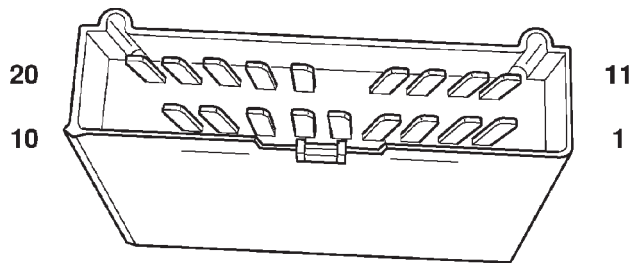
SWITCH POSITION	MODE	CONTINUITY BETWEEN
TURN SIGNAL IN NEUTRAL HAZARD WARNING SWITCH OFF	NEUTRAL	B-1 AND B-4 B-1 AND B-5
	LEFT TURN	A-2 AND B-2 A-2 AND B-4 B-1 AND B-5
TURN SIGNAL ON HAZARD WARNING SWITCH OFF	RIGHT TURN	A-2 AND B-5 A-2 AND B-6 B-1 AND B-4
	NEUTRAL	A-2 AND B-2 A-2 AND B-4 A-2 AND B-5 A-2 AND B-6 A-3 AND A-5 A-3 AND B-7
HEADLAMP BEAM ON	PARK	B-9 AND B-20
	LOW	B-16 AND B-18 B-16 AND B-19
	HIGH	B-17 AND B-18 B-17 AND B-19
OPTICAL HORN	ON	B-17 AND B-18 B-17 AND B-19
FRONT FOG	ON	B-13 AND B-14
INSTRUMENT PANEL DIMMER DETENT	6 DIMMEST	B-7 AND B-8 3181 OHMS
	5	B-7 AND B-8 1851 OHMS
	4	B-7 AND B-8 1202 OHMS
	3	B-7 AND B-8 598 OHMS
	2 BRIGHTEST	B-7 AND B-8 250 OHMS
	1 PARADE	B-7 AND B-8 100 OHMS
	0 DOME LAMP ON	B-7 AND B-8 LESS THAN 1 OHM
WIPER	OFF	PIN C-1 AND C-6
	LOW/ MIST	PIN C-4 AND C-6
	HIGH	PIN C-4 AND C-5
	WASH	PIN C-4 AND C-3
	INTERMITTENT	CANNOT BE CHECKED

DIAGNOSIS AND TESTING (Continued)



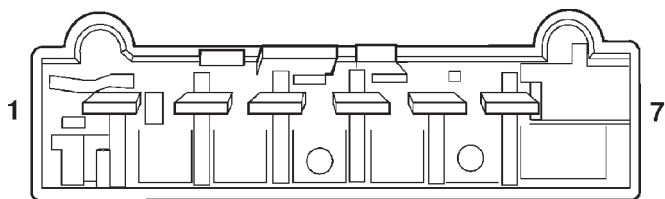
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**Fig. 3 Combination Flasher Connector (A)**



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**Fig. 4 Multi-Function Switch Connector (B)**



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**Fig. 5 Windshield Wiper/Washer Switch Connector (C)**

REMOVAL AND INSTALLATION

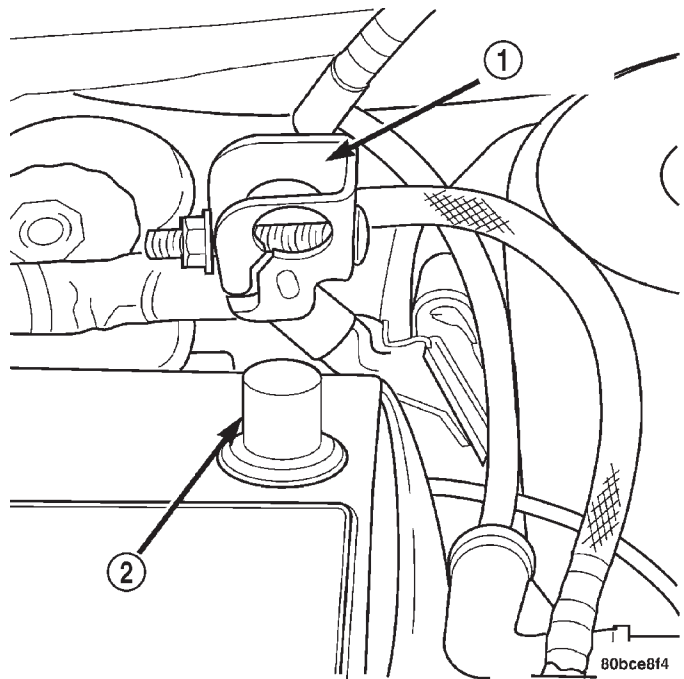
COMBINATION FLASHER

The flasher is mounted to the back side of the multi-function switch (Fig. 2). To gain access the upper steering column shroud must be removed. Refer to Group 8E Instrument Panel Systems, Steering Column Shroud Removal and Installation. The flasher can be removed by pulling it toward the instrument cluster (forward). The flasher is serviced separately from the multi-function switch.

MULTI-FUNCTION SWITCH

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).



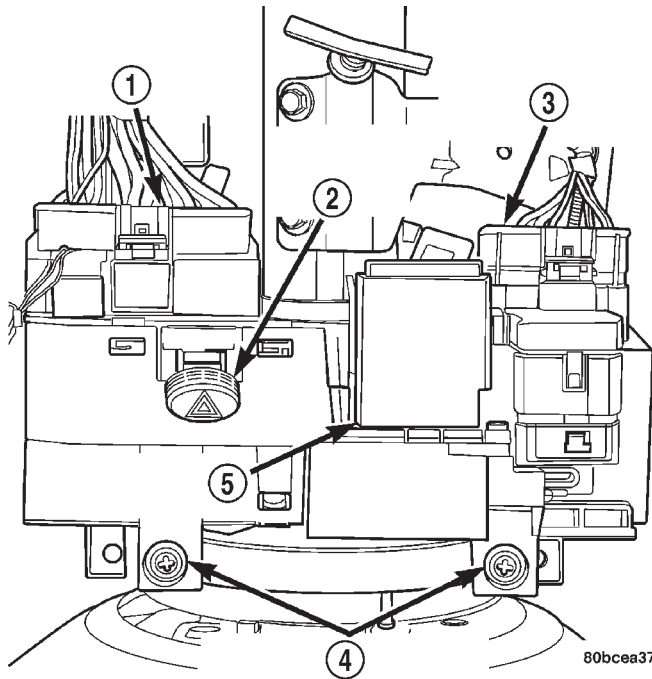
**Fig. 6 Battery Negative Cable Remove/Install**

- 1 - NEGATIVE CABLE
- 2 - NEGATIVE BATTERY POST

(2) Remove both upper and lower steering column shrouds. Refer to Group 8E Instrument Panel Systems, Steering Column Shroud Removal and Installation.

## REMOVAL AND INSTALLATION (Continued)

(3) Disconnect both posi-lock harness connectors at the rear of the multi-function switch (Fig. 7)



(4) Remove multi-function switch mounting screws (Fig. 7).

(5) The combination flasher must be transferred to new multi-function switch if replacing.

(6) The windshield wiper/washer switch must be transferred to the new multi-function switch. Refer to Group 8K Windshield Wiper and Washer Systems, Windshield Wiper/Washer Switch Removal and Installation.

**INSTALLATION**

For installation, reverse the above procedures.

- Tighten multi-function switch to column retaining screws to 3 N-m (27 in. lbs.) torque.
- Tighten steering column shroud retaining screws to 2 N-m (18 in. lbs.) torque.

**Fig. 7 Multi-Function Switch Remove/Install**

- 1 - MULTI-FUNCTION SWITCH CONNECTOR
- 2 - HAZARD/WARNING SWITCH
- 3 - WINDSHIELD WIPER/WASHER SWITCH CONNECTOR
- 4 - MOUNTING SCREWS
- 5 - COMBINATION FLASHER