

TURN SIGNAL AND HAZARD WARNING SYSTEMS

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DESCRIPTION AND OPERATION

COMBINATION FLASHER

DESCRIPTION

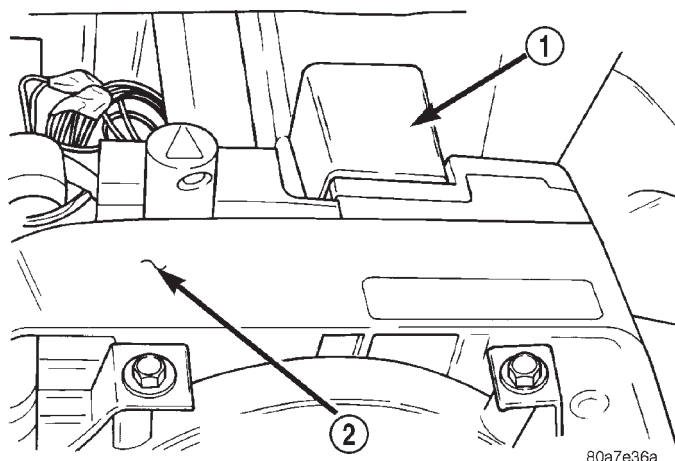


Fig. 1 Combination Flasher Location

- 1 - COMBINATION FLASHER
2 - MULTI-FUNCTION SWITCH

The turn signal flasher and the hazard warning flasher are combined into one unit called a combination flasher (combo-flasher).

OPERATION

An inoperative or incomplete turn signal circuit will result in an increase in flasher speed.

The flasher is mounted to the back side of the multi-function switch.

EXTERIOR LAMPS

DESCRIPTION

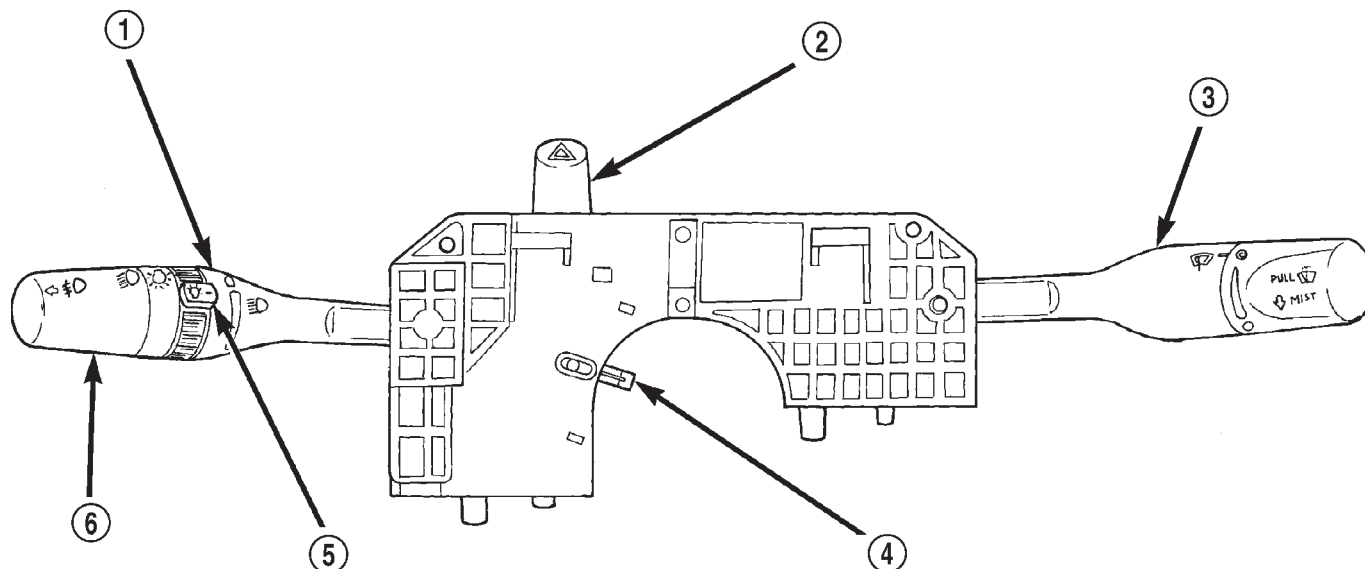
The exterior lamps are controlled by a rotary switch located on the left stalk of the multi-function switch on the steering column.

OPERATION

To turn lamps ON:

- Parking lamps, using left stalk turn headlamp switch to the first detent
- Headlamps, turn switch to second detent
- Headlamp beam select, from low beam to high beam or high to low, pull left stalk towards steering wheel. The ignition switch must be in the RUN position for the instrument panel high beam indicator to light.
- Headlamp optical horn, pull left stalk towards steering wheel, headlamps will stay ON as long as stalk is held.
- Fog lamps, pull switch outward with headlamps on low beam
- Panel dimmer, rotating dimmer switch regulates intensity of the instrument panel illumination. There are nine detents (steps) of intensity. Detent #1 is full brightness and each detent thereafter is lower. Testing the dimmer switch using the continuity test, the resistance value is measured for each detent. Detents #3 through #8 are measured in equal graduations, up or down and referred to as linear. Example: if detent #3 was #5 ohms and detent #4 was 7 ohms detent #5 should be 9 ohms.

DESCRIPTION AND OPERATION (Continued)



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Fig. 2 Multi-Function/Exterior Lamp Switch

- | | |
|-------------------------------------|-------------------------------|
| 1 – TURN SIGNAL CONTROL STALK | 4 – CANCELING ACTUATOR |
| 2 – HAZARD WARNING BUTTON | 5 – PANEL DIMMER SWITCH |
| 3 – WINDSHIELD WIPER/WASHER CONTROL | 6 – EXTERIOR LIGHTING CONTROL |

HAZARD WARNING SYSTEM**DESCRIPTION**

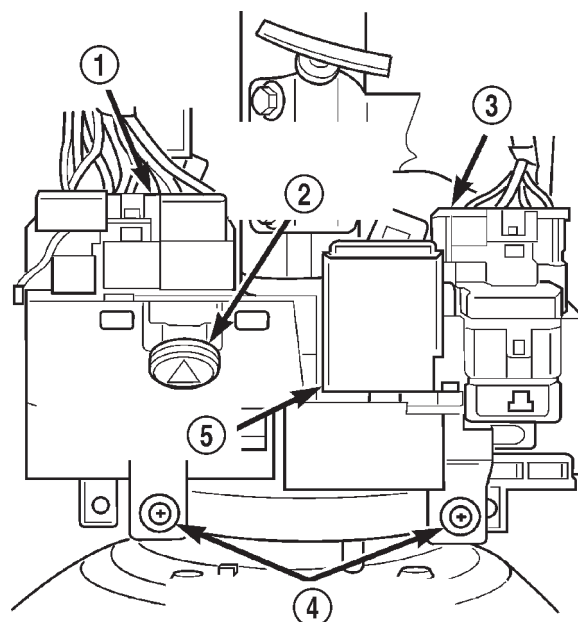
The hazard warning switch push button protrudes from the top of the steering column. The hazard warning switch push button is identified with a double triangle, which is the international control symbol for hazard warning.

OPERATION

The hazard warning system is actuated by a push button located 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 top of the button. Push and release the button to turn the hazard function ON or OFF. The button will move out from the steering column in the ON position and will remain in toward the column in the OFF position.

MULTI-FUNCTION SWITCH

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



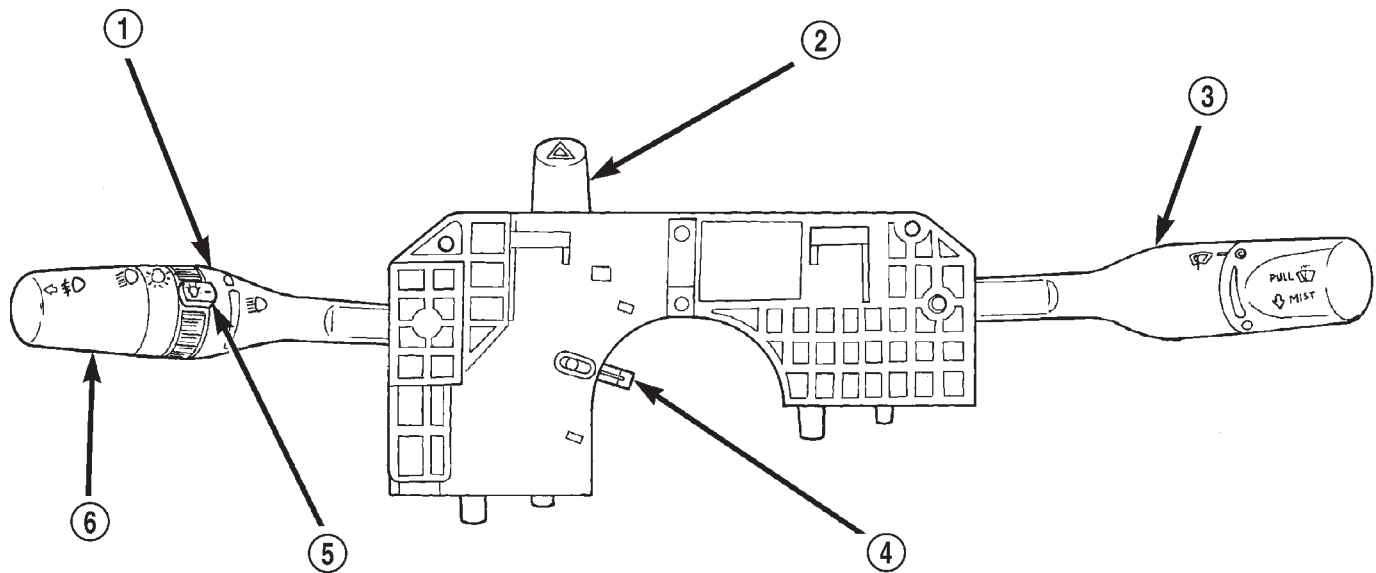
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Fig. 3 Hazard Warning Switch

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

DESCRIPTION AND OPERATION (Continued)

DESCRIPTION



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Fig. 4 Multi-Function Switch

- | | |
|-------------------------------------|-------------------------------|
| 1 – TURN SIGNAL CONTROL STALK | 4 – CANCELING ACTUATOR |
| 2 – HAZARD WARNING BUTTON | 5 – PANEL DIMMER SWITCH |
| 3 – WINDSHIELD WIPER/WASHER CONTROL | 6 – EXTERIOR LIGHTING CONTROL |

The multi-function switch contains:

- Turn signals
- Hazard warning
- Headlamps
- Headlamp beam select
- Parking lamps
- Panel dimmer
- Fog Lamp
- Headlamp optical horn
- Windshield wiper
- Pulse wipe
- Mist wipe
- Windshield washer switches.

The multi-function switch is mounted center of the steering column. There are two levers, one on each side of the steering column.

OPERATION

The left side controls the signaling and lighting. The right side controls the windshield wiper and washer system. When the driver wishes to signal his intentions to change direction of travel, he moves the left 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 the turn signals are canceled. A canceling cam is molded to the clockspring mechanism which comes in contact with the cancel actuator on the multi-function switch. The canceling cam lobe pushes on the cancel actuator and 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. The windshield wiper and wash system is covered in Group 8K, Windshield Wipers and Washers.

DIAGNOSIS AND TESTING**COMBINATION FLASHER**

For combination flasher Diagnosis and Testing, refer to the Combination Flasher Diagnosis table.

DIAGNOSIS AND TESTING (Continued)

COMBINATION FLASHER DIAGNOSIS

CONDITION	POSSIBLE CAUSES	CORRECTION
SYSTEM DOES NOT FLASH ON ONE SIDE, INDICATOR LAMP FLASHES AT DOUBLE NORMAL RATE.	1) FAULTY EXTERNAL LAMP. 2) POOR GROUND AT LAMP. 3) OPEN CIRCUIT IN WIRING TO EXTERNAL LAMP. 4) FAULTY CONTACT ON SWITCH.	1) REPLACE LAMP. 2) CHECK AND/OR REPLACE WIRING. 3) REPLACE WIRING HARNESS. CHECK CONNECTORS. 4) REPLACE MULTIFUNCTION SWITCH.
INDICATOR LAMP FLASHES AT DOUBLE THE NORMAL RATE. EXTERNAL LAMP-DIM AND FLASHES RAPIDLY OR NO FLASH	1) LOOSE OR CORRODED EXTERNAL LAMP CONNECTION. 2) POOR GROUND CIRCUIT OR EXTERNAL LAMP.	1) REPLACE SOCKET/HARNESS. 2) REPLACE WIRING/HARNESS. CHECK CONNECTORS.
HAZARD WARNING MALFUNCTION/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) REPLACE WIRING/HARNESS. CHECK CONNECTORS. 4) REPLACE MULTIFUNCTION SWITCH. 5) REPLACE WIRING/HARNESS.
INDICATOR LAMP FLASHES AT DOUBLE NORMAL RATE, EXTERNAL LAMP DOES NOT LIGHT	1) OPEN CIRCUIT IN WIRE TO EXTERNAL LAMP. 2) BURNED OUT LAMP.	1) REPLACE 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. 8) OPEN OR GROUNDED CIRCUIT IN WIRING TO EXTERNAL LAMPS. 9) BURNED OUT LAMPS.	1) REPLACE FUSE. 2) REPLACE FLASHER. 3) TIGHTEN CONNECTOR. 4) REPLACE WIRING/HARNESS. 5) CHECK CONNECTORS, REPLACE WIRING/HARNESS. 6) CHECK CONNECTORS, REPLACE WIRING/HARNESS. 7) REPLACE SWITCH. 8) REPLACE WIRING/HARNESS. 9) REPLACE LAMPS.
SYSTEM DOES NOT CANCEL AFTER COMPLETION OF TURN	1) BROKEN CANCELLING FINGER ON SWITCH. 2) BROKEN OR MISSING CANCELLING CAM ON CLOCKSPring. 3) STICKING CANCELLING FINGER ON MULTIFUNCTION SWITCH.	1) REPLACE MULTIFUNCTION SWITCH. 2) REPLACE CLOCKSPring. 3) REPLACE MULTIFUNCTION SWITCH.

DIAGNOSIS AND TESTING (Continued)

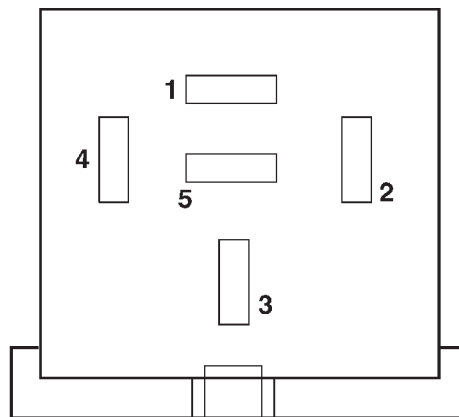
CONDITION	POSSIBLE CAUSES	CORRECTION
EXTERNAL LAMPS OPERATE PROPERLY, NO INDICATOR LAMP OPERATION	1) FAULTY INDICATOR LAMP IN INSTRUMENT CLUSTER.	1) REPLACE LAMP.

MULTI-FUNCTION SWITCH

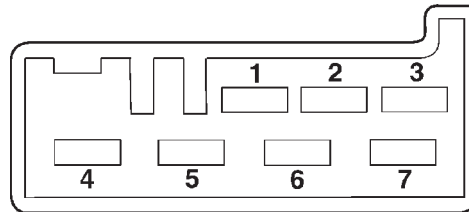
(1) Remove multi-function switch, refer to Multi-function Switch Removal and Installation in this section.

(2) Using an ohmmeter, test for continuity (no resistance) between the terminals of the switch as shown in the Multi-Function Switch Continuity Test table and (Fig. 5).

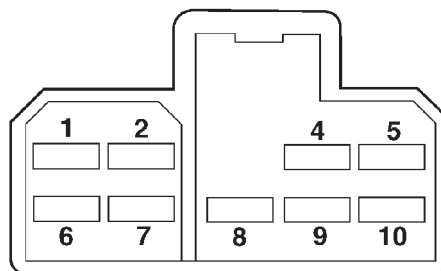
The switch assembly is mounted over the center of the steering column. Should any function of the switch fail, the entire switch assembly must be replaced.



COMBO-FLASHER-A



7-WAY CONNECTOR-B



10—WAY CONNECTOR-C

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Fig. 5 Multi-Function Switch Connectors

DIAGNOSIS AND TESTING (Continued)

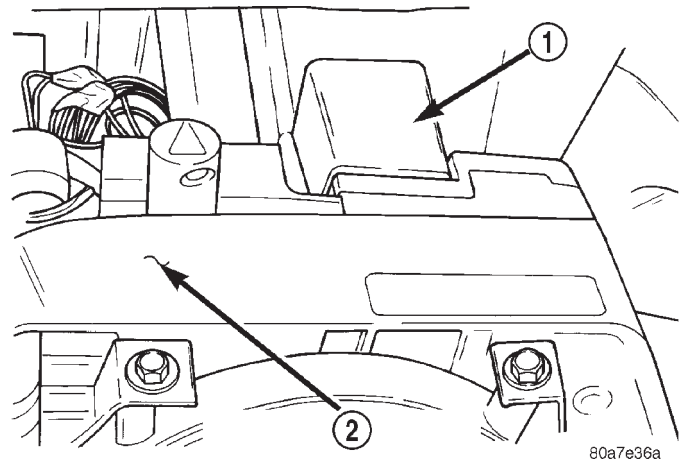
MULTI-FUNCTION SWITCH CONTINUITY TEST

SWITCH POSITION	MODE	CONTINUITY BETWEEN
TURN SIGNAL WITH HAZARD SWITCH OFF	RIGHT	A-1 AND B-6
	LEFT	A-1 AND B-7
TURN SIGNAL WITH HAZARD WARNING SWITCH ON	RIGHT, OFF, OR LEFT	A-1 AND B-6 A-2 AND A-5 A-1 AND B-7 B-6 AND B-7
HEADLAMP BEAM ON	PARK	C-2 AND C-1
	LOW	C-2 AND C-1 C-4 AND C-7
	HIGH	C-2 AND C-1 C-4 AND C-8
PANEL DIMMER DETENT	1	A-2 AND C-6
	2	<100Ω
	3 TO 8	300 TO 2630 Ω
	9	LINEAR 4.99K TO 10.5K Ω
OPTICAL HORN	ON	C-4 AND C-8
FRONT FOG	ON	C-9 AND C-10
WIPER	INT. DETENT	B-3 AND B-2 11.87K Ω
	1	9.87K Ω
	2	7.87K Ω
	3	5.87K Ω
	4	3.87K Ω
	5	1.87K Ω
	6	
	LOW	B-3 AND B-2 1.25K Ω
	HIGH	B-3 AND B-2 0.82K Ω
MIST	ON	B-3 AND B-2 1.25K Ω
WASHER	ON	B-3 AND B-1

REMOVAL AND INSTALLATION

COMBINATION FLASHER

The flasher is mounted to the back side of the multi-function switch. To gain access, the upper steering column cover must be removed. Refer to Steering Column Cover Removal and Installation in this section. The flasher can be removed by pulling it forward. The flasher is serviced separately from the multi-function switch. The flasher is black in color for ease of identification (Fig. 6).

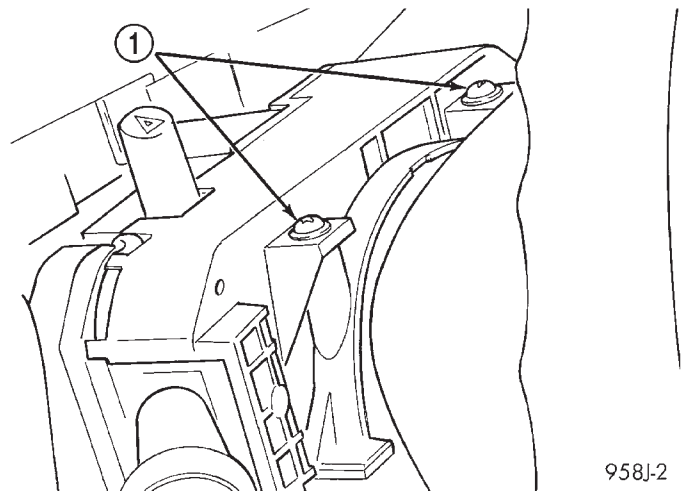
**Fig. 6 Combination Flasher Location**

- 1 – COMBINATION FLASHER
2 – MULTI-FUNCTION SWITCH

MULTI-FUNCTION SWITCH

REMOVAL

- (1) Disconnect and isolate the battery negative remote cable.
- (2) Remove the upper steering column shroud. Refer to Steering Column Shroud Removal and Installation in this section.
- (3) Remove multi-function switch mounting screws (Fig. 7).

**Fig. 7 Multi-Function Switch Mounting**

- 1 – MOUNTING SCREWS

- (4) Disconnect wire connectors. Lift the switch straight up to remove.

INSTALLATION

For installation, reverse the above procedures.

- (1) Tighten multi-function switch to column retaining screws to 2.3 N·m (20 in. lbs.) torque.

REMOVAL AND INSTALLATION (Continued)

(2) Tighten steering column cover retaining screws to 2 N·m (17 in. lbs.) torque.

STEERING COLUMN SHROUDS**REMOVAL**

- (1) Remove three lower shroud attaching screws.
- (2) Remove five knee bolster mounting screws and remove bolster.
- (3) Remove upper and lower shroud.
- (4) If removing the upper half only:

- (a) Remove lower shroud attaching screws.
- (b) Loosen the lower part of instrument cluster hood for clearance as necessary.
- (c) Remove upper shroud.

INSTALLATION

- (1) For installation, reverse the above procedures.
- (2) Tighten steering column shroud retaining screws to 2 N·m (17 in. lbs.) torque.

