

# CHIME/BUZZER

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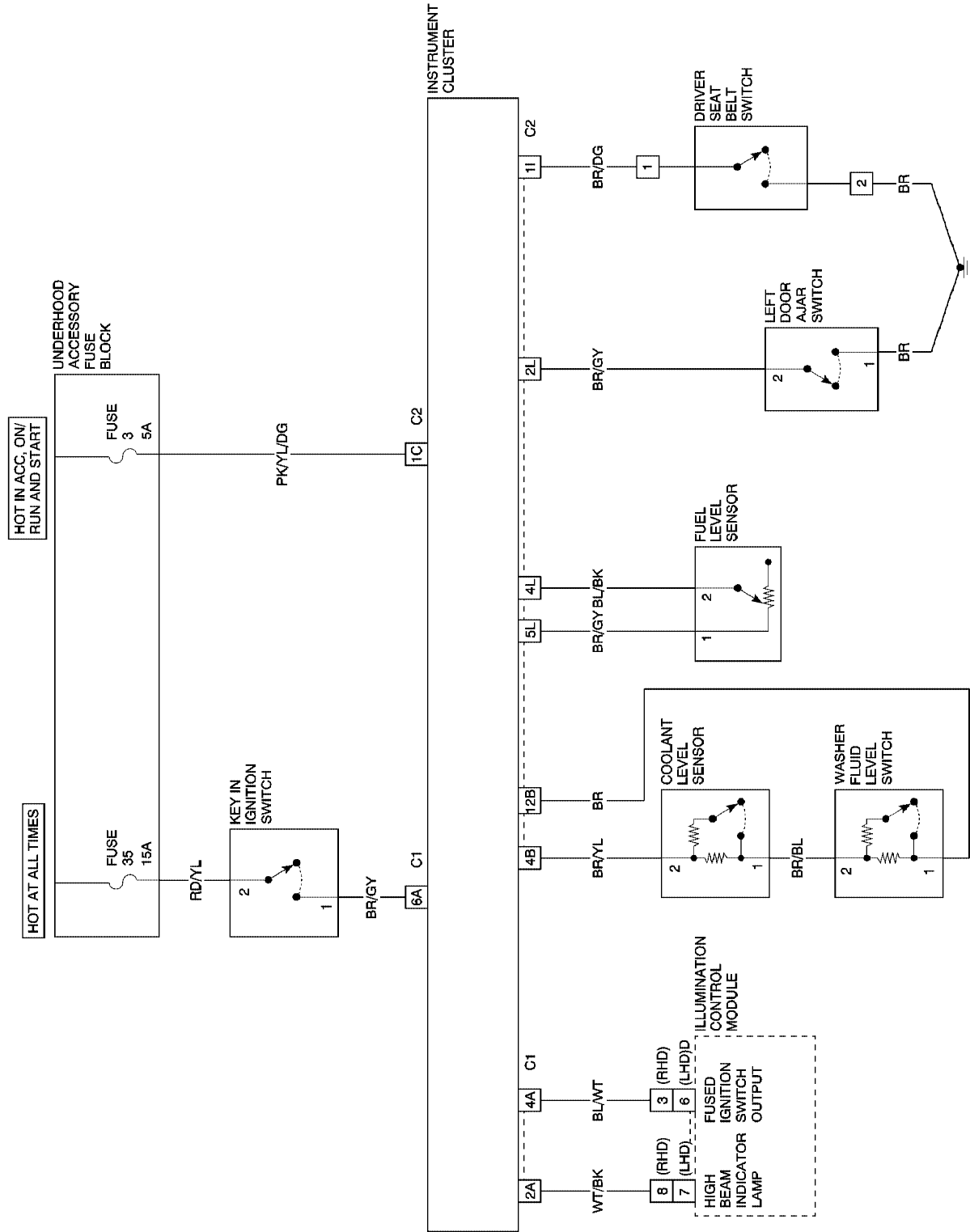
## CHIME/BUZZER - ELECTRICAL DIAGNOSTICS

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# CHIME/BUZZER - ELECTRICAL DIAGNOSTICS

## SCHEMATICS AND DIAGRAMS



8115f11e

WARNING CHIME CIRCUIT DIAGRAM

# CHIME/BUZZER - SERVICE INFORMATION

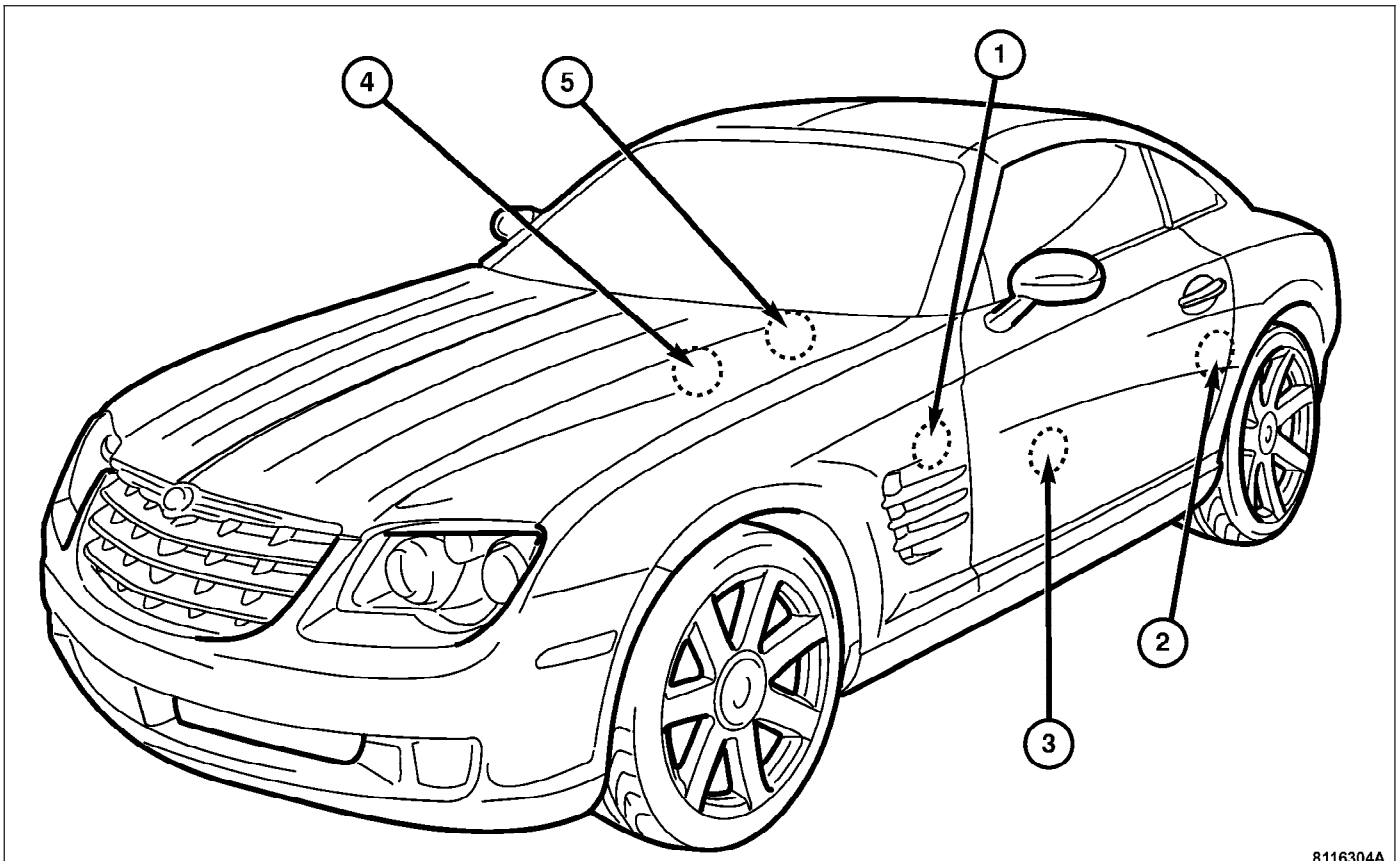
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## CHIME TONE GENERATOR

### DESCRIPTION

### DESCRIPTION



8116304A

- 1 - HEADLAMP SWITCH
- 2 - DOOR AJAR SWITCH
- 3 - SEAT BELT SWITCH

- 4 - ILLUMINATION CONTROL MODULE
- 5 - INSTRUMENT CLUSTER

The chime warning system uses a single chime tone generator that is integral to the Instrument Cluster to provide an audible indication of vehicle conditions that may require the attention of the vehicle operator. The chime warning system includes the following major components:

- Headlamp Switch
- Door Ajar Switch
- Seat Belt Switch

- Ignition Switch
- Instrument Cluster
- Coolant Level Sensor
- Fuel Level Sensor
- Washer Fluid Level Sensor

Hard wired circuitry connects many of the chime warning system components to each other through the electrical system of the vehicle.

If the Instrument Cluster or the chime tone generator are damaged or faulty, the Instrument Cluster assembly must be replaced.

## DIAGNOSIS AND TESTING - CHIME WARNING SYSTEM

Refer to the appropriate wiring information. Conventional diagnostic methods may not prove conclusive in the diagnosis of the Instrument Cluster. The most reliable, efficient and accurate means to diagnose the Instrument Cluster and the Controller Area Network (CAN) data bus network inputs for the chime warning system requires the use of a DRB III® scan tool and the appropriate diagnostic information.

**WARNING: DISABLE THE AIRBAG SYSTEM BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. DISCONNECT AND ISOLATE THE BATTERY NEGATIVE (GROUND) CABLE, THEN WAIT TWO MINUTES FOR THE AIRBAG SYSTEM CAPACITOR TO DISCHARGE BEFORE PERFORMING FURTHER DIAGNOSIS OR SERVICE. THIS IS THE ONLY SURE WAY TO DISABLE THE AIRBAG SYSTEM. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.**

### CHIME WARNING SYSTEM DIAGNOSIS

CONDITION	POSSIBLE CAUSES	CORRECTION
NO SEAT BELT WARNING CHIME WITH SEAT BELT UNBUCKLED, BUT OTHER CHIME FEATURES OK	<ol style="list-style-type: none"> <li>1. Seat belt switch ground circuit open.</li> <li>2. Seat belt switch sense circuit open.</li> <li>3. Faulty seat belt switch.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check for continuity between the ground circuit of the wire harness connector for the seat belt switch and a good ground. Repair the ground circuit, if required.</li> <li>2. Check for continuity between the seat belt switch sense circuit of the wire harness connector for the seat belt switch and the instrument cluster wire harness connector. Repair the seat belt switch sense circuit, if required.</li> <li>3. Check for continuity between the ground circuit and the seat belt switch sense circuit of the seat belt switch pigtail wire connector. There should be continuity with the seat belt unbuckled. Replace the faulty seat belt, if required.</li> </ol>
SEAT BELT WARNING CHIME SOUNDS WITH SEAT BELT BUCKLED	<ol style="list-style-type: none"> <li>1. Seat belt switch sense circuit shorted.</li> <li>2. Faulty seat belt switch.</li> </ol>	<ol style="list-style-type: none"> <li>1. With the wire harness connector for the seat belt switch and the instrument cluster wire harness connector disconnected, there should be no continuity between the seat belt switch sense circuit and a good ground. Repair the seat belt switch sense circuit, if required.</li> <li>2. Check for continuity between the ground circuit and the seat belt switch sense circuit of the seat belt switch pigtail wire connector. There should be no continuity with the seat belt buckled. Replace the faulty seat belt, if required.</li> </ol>

CONDITION	POSSIBLE CAUSES	CORRECTION
NO KEY IN IGNITION OR HEADLAMPS-ON WARNING CHIME WITH DRIVER SIDE DOOR OPEN	<ol style="list-style-type: none"> <li>1. Faulty door ajar switch or circuits.</li> <li>2. Faulty headlamp switch (illumination control module) or circuits.</li> <li>3. Key in ignition switch sense circuit open.</li> <li>4. Faulty ignition switch.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check that interior lights illuminate with the driver door open. If not OK, repair the interior lighting system as required.</li> <li>2. Check for proper exterior lighting operation. If not OK, repair the exterior lighting system as required.</li> <li>2. Check for continuity between the key in ignition switch sense circuit of the instrument panel wire harness connector for the ignition switch and the body wire harness connector for the underhood accessory fuse block. Repair the key in ignition switch sense circuit, if required.</li> <li>3. Check for continuity between the two terminals in the ignition switch connector. There should be continuity with a key in the ignition lock cylinder. Replace the faulty ignition switch, if required.</li> </ol>
CHIME SOUNDS WITH DRIVER SIDE FRONT DOOR OPEN	<ol style="list-style-type: none"> <li>1. Key in ignition switch sense circuit shorted.</li> <li>2. Faulty ignition switch.</li> </ol>	<ol style="list-style-type: none"> <li>1. Disconnect the instrument panel wire harness connector for the ignition switch and the body wire harness connector for the underhood accessory fuse block. There should be no continuity between the key in ignition switch sense circuit of the instrument panel wire harness connector for the ignition switch and a good ground. Repair the key in ignition switch sense circuit, if required.</li> <li>2. Check for continuity between the two terminals in the ignition switch connector. There should be no continuity with the key removed from the ignition lock cylinder. Replace the faulty ignition switch, if required.</li> </ol>
NO CHIMES AT ALL TIMES	<ol style="list-style-type: none"> <li>1. Faulty Instrument Cluster.</li> </ol>	<ol style="list-style-type: none"> <li>1. Use a DRB III® scan tool and refer to the appropriate diagnostic information. Replace the faulty Instrument Cluster, if required</li> </ol>

## OPERATION

The chime warning system components operate on battery voltage received through fuse 35 in the Underhood Accessory Fuse Block on a non-switched B(+) circuit so that the system may operate regardless of the ignition switch position.

The chime warning system provides an audible indication to the vehicle operator under the following conditions:

- **Fasten Seat Belt Warning** - The Instrument Cluster chime tone generator will generate repetitive chimes to announce that an input from the seat belt switch indicates the driver side seat belt is not fastened. Unless the driver side seat belt is fastened, the chimes will continue to sound for a short duration each time the ignition switch is turned to the On position or until the driver side seat belt is fastened.
- **Head/Park Lights-On Warning** - The Instrument Cluster chime tone generator will generate repetitive chimes to indicate that the exterior lamps are turned On with the driver side door opened. The chime will continue to sound until the exterior lamps are turned Off, the driver side door is closed, or the ignition switch is turned to the On position.

- **Key-In-Ignition Warning** - The Instrument Cluster chime tone generator will generate repetitive chimes at a fast rate to indicate that the key is in the ignition cylinder with the driver side door opened and the ignition switch in the Off position. The chime will continue to sound until the key is removed from the ignition lock cylinder, the driver side door is closed, or the ignition switch is turned to the On position.
- **Warning Beep Support** - The Instrument Cluster chime tone generator will generate a short series of beeps to provide an audible alert to the vehicle operator of certain visual warning indications displayed by the Instrument Cluster.

The Instrument Cluster provides chime tones for all available features in the chime warning system. The Instrument Cluster relies upon message inputs received from other modules over the Controller Area Network (CAN) data bus network to provide chime tones for all of the remaining chime warning system features.

The internal programming of the Instrument Cluster determines the priority of each chime tone request input that is received, as well as the rate and duration of each chime tone that is to be generated.