DESCRIPTION

WARNING: Deactivate air bag system before performing any service operation. See AIR BAG RESTRAINT SYSTEM article. Do not apply electrical power to any component on steering column without first deactivating air bag system. Air bag may deploy.

All vehicles are equipped with tilt columns. Multifunction switch (on left side of column) controls turn signals, headlight flash-to-pass and cruise control functions. Switch on right side of column controls headlight low/high beams and wiper/washer functions.

COMPONENT LOCATIONS

COMPONENT LOCATIONS

Component	Location
Body Control Module (BCM)	In Right Side Footwell, Mounted To Toe Board Under Carpet
Fuse Block	Right Side Footwell, Mounted To Toe Board Under Carpet
Horns	Outboard Of Right Side Front Skid Plate
Horn Relay	Inside Underhood Electrical Center
Underhood Electrical Center	In Front Of Battery

COMPONENT TESTING

NOTE: For cruise control switch testing, see CRUISE CONTROL SYSTEM article. For wiper/washer switch testing, see WIPER/WASHER SYSTEM article.

NOTE: Connector Test Adaptor Kit (J 35616-A) must be used whenever a diagnostic procedure requires checking or probing a terminal to prevent damage to terminal. To locate and identify terminals, see WIRING DIAGRAMS .

HEADLIGHT SWITCH

Turn ignition off. Disconnect connector C209 located at base of steering column. Using DVOM, check for continuity between specified terminals with headlight switch in specified position. See **HEADLIGHT SWITCH CONTINUITY TEST** table. If continuity does not exist as indicated, repair as necessary.

HEADLIGHT SWITCH CONTINUITY TEST

Switch Position	Continuity Between Terminals (Wire Color)
Flash-To-Pass On	X (RED) & K (LT GRN)

Headlight Switch Off	T (DK GRN) & Ground
Headlight Switch On	
At All Times	S (YEL) & Ground
High Beams On	W (RED) & K (LT GRN)
Low Beams On	W (RED) & L (TAN)

IGNITION SWITCH

Turn ignition off. Disconnect connector C1 or C2 located in steering column. Using DVOM, check for continuity between specified terminals with ignition switch in specified position. See **IGNITION SWITCH CONTINUITY TEST** table. If continuity does not exist as indicated, repair as necessary.

IGNITION SWITCH CONTINUITY TEST

Switch Position	Continuity Between Connector/Terminals (Wire Color)
ACC	C1/A (RED) & C2/C (BRN)
OFF	N/A
RUN	C2/A (RED) & C1/C (ORG); C1/A (RED) & C2/B (PNK); C1/A (RED) & C2/C (BRN)
START	C2/A (RED) & C1/B (YEL); C1/A (RED) & C2/B (PNK)

TURN SIGNAL/HAZARD SWITCH

Turn ignition off. Disconnect connector C209 located at base of steering column. Using DVOM, check for continuity between specified terminals with turn signal switch in specified position. See **TURN SIGNAL SWITCH CONTINUITY TEST** table. If continuity does not exist as indicated, repair as necessary.

TURN SIGNAL SWITCH CONTINUITY TEST

Switch Position	Continuity Between Terminals (Wire Color)
Left Turn On	A (BRN) & C (YEL); A (BRN) & B (DK GRN); D (PPL) & B (DK GRN); D (PPL) & F (DK BLU)
Right Turn On	A (BRN) & C (YEL); D (PPL) & C (YEL); D (PPL) & B (DK GRN); D (PPL) & G (LT BLU)

SYSTEM TESTING

HORN SYSTEM

NOTE: To locate and identify terminals, see WIRING DIAGRAMS .

NOTE: Connector Test Adaptor Kit (J 35616-A) must be used whenever a diagnostic procedure requires checking or probing a terminal to prevent damage to

terminal. To locate and identify terminals referenced in testing, see WIRING DIAGRAMS .

System Check

1. Depress horn switch. If horns are on continuously, go to **HORN IS ON AT ALL TIMES** . If horns are not on continuously, go to next step.
2. If horns are inoperative, go to **HORNS INOPERATIVE** . If horns are not inoperative, go to next step.
3. If one horn switch is inoperative, go to next step. If neither horn switch is inoperative, go to step 1).
4. Check for open wire in steering wheel assembly to inoperative switch. If circuit is open, go to next step. If circuit is okay, go tostep 6).
5. Repair open in circuit to inoperative switch. Recheck system operation.
6. Repair or replace horn switch. Recheck system operation.

Horn Is On At All Times

1. If system check was performed, go to next step. If system check was not performed, go to **SYSTEM CHECK** .
2. Disconnect negative battery cable. Disconnect Body Control Module (BCM) connector C1. Using DVOM, check resistance between ground and BCM harness connector C1 terminal B10 (Black wire). If resistance is about zero ohms, go to next step. If resistance is not about zero ohms, go to step 5).
3. Disconnect connector C221 located at horn switch. Check resistance between ground and BCM harness connector C1 terminal B10 (Black wire). If resistance is about zero ohms, go to next step. If resistance is not about zero ohms, go to step 9).
4. Disconnect relay connector C2. Check resistance between ground and BCM harness connector C1 terminal B10 (Black wire). If resistance is about zero ohms, go to step 10). If resistance is not about zero ohms, go to step 11).
5. Reconnect BCM connector C1. Disconnect relay connector C2. Using DVOM, check resistance between ground and BCM side of relay connector C2 terminal C8 (Black wire). If resistance is about zero ohms, go to step 12). If resistance is not about zero ohms, go to next step.
6. Disconnect horn connector. Reconnect negative battery cable. Turn ignition switch to RUN position. If horns sound continuously, go to step 13). If horns do not sound continuously, go to next step.
7. Using DVOM, check voltage between ground and horn harness connector terminal "B" (Dark Green wire). If reading is zero volts, go to **SYSTEM CHECK** . If reading is not zero volts, go to next step.
8. Remove HORN fuse No. 11 (20-amp) located in underhood electrical center. Using DVOM, check voltage between ground and horn harness connector terminal "B" (Dark Green wire). If reading is zero volts, go to step 11). If reading is not zero volts, go to next step 14).
9. Replace horn switch assembly. Recheck system operation.
10. Repair short to ground in Black wire between BCM and horn relay. Recheck system operation.
11. Replace horn relay. Recheck system operation.
12. Replace BCM. See BODY CONTROL MODULE article. Recheck system operation.
13. Replace horn assembly. Recheck system operation.

14. Repair short to voltage in Dark Green wire between horn and horn relay. Recheck system operation.

Horns Inoperative

1. If system check was performed, go to next step. If system check was not performed, go to **SYSTEM CHECK** .
2. Remove HORN relay No. 36 located in underhood electrical center. Underhood electrical center is located in right side of engine compartment, above battery. Using DVOM, check voltage between ground and horn relay terminal No. 30 at underhood electrical center. If battery voltage exists, go to next step. If battery voltage does not exist, check circuits between battery and underhood electrical center. Repair as necessary.
3. Check voltage between ground and horn relay terminal No. 85 at underhood electrical center. If battery voltage exists, go to next step. If battery voltage does not exist, go to step 6).
4. Reinstall HORN relay No. 36. Check HORN fuse No. 11 (20-amp) located in underhood electrical center. If fuse is blown, go to next step. If fuse is not blown, go to step 6).
5. Disconnect horn connector. Using DVOM, check resistance between ground and horn harness connector terminal "B" (Dark Green wire). If resistance is about zero ohms, go to step 15). If resistance is not about zero ohms, go to next step.
6. Reinstall fuse No. 11 (replace as necessary). Disconnect underhood electrical center connector C3. Disconnect horn connector. Using DVOM, check resistance between underhood electrical center harness connector C3 terminal A9 (Dark Green wire) and horn harness connector terminal "B" (Dark Green wire). If resistance is about zero ohms, go to next step. If resistance is not about zero ohms, go to step 16).
7. Disconnect splice pack No. 100 terminal "A" (Black wire). Splice pack No. 100 is located at forward lamp harness. Check resistance between horn harness connector terminal "A" (Black wire) and splice pack No. 100 harness connector terminal "A" (Black wire). If resistance is about zero ohms, go to next step. If resistance is not about zero ohms, go to step 17).
8. Check resistance between ground and splice pack No. 100 ground terminal "A". If resistance is about zero ohms, go to next step. If resistance is not about zero ohms, go to **SYSTEM CHECK** .
9. Reconnect horn connector. Reconnect splice pack No. 100 connector. Disconnect underhood electrical connector C2. Using jumper wire, ground underhood electrical center connector C2 terminal C8 (Black wire) at relay side. Using DVOM, check voltage between ground and underhood electrical center connector C3 terminal A9 (Dark Green wire) at relay side. If battery voltage exists, go to next step. If battery voltage does not exist, go to step 18).
10. Remove jumper wire. Reconnect underhood electrical center connector C3. Using jumper wire, ground relay side of underhood electrical center connector C2 terminal C8 (Black wire). If horn works, go to next step. If horn does not work, go to step 19).
11. Disconnect connector C209 located at horn switch. Using DVOM, check resistance between underhood electrical center harness connector C2 terminal C8 (Black wire) and harness connector C209 terminal "V" (Black wire). If resistance is about zero ohms, go to next step. If resistance is not about zero ohms, go to step 20).
12. While pressing horn switch, check resistance between harness connector C209 terminals "V" (Black wire) and "N" (Black wire). If resistance is about zero ohms, go to next step. If resistance is not about zero ohms, go to step 21).
13. Disconnect splice pack No. 201 terminal "H" (Black wire). Splice pack No. 201 is located at rear of right

wheelhouse. Check resistance between harness connector C209 terminal "H" (Black wire) and splice pack No. 201 terminal "H" (Black wire). If resistance is about zero ohms, go to next step. If measured resistance is not about zero ohms, go to step 17).

14. Check resistance between ground and splice pack No. 201 ground terminal "H". If resistance is about zero ohms, go to **SYSTEM CHECK** . If resistance is not about zero ohms, go to step 17).
15. Repair short to ground in Dark Green wire between horn and horn relay. Recheck system operation.
16. Repair open in Dark Green wire between horn and horn relay. Recheck system operation.
17. Repair open in Black wire between Black wire between horn and splice pack No. 100. Recheck system operation.
18. Replace horn relay. Recheck system operation.
19. Replace horn. Recheck system operation.
20. Repair open in Black wire between horn switch and horn relay. Recheck system operation.
21. Replace horn switch. Recheck system operation.

REMOVAL & INSTALLATION

WARNING: Deactivate air bag system before performing any service operation. See AIR BAG RESTRAINT SYSTEM article. DO NOT apply electrical power to any component on steering column without first deactivating air bag system. Air bag may deploy.

CAUTION: When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See COMPUTER RELEARN PROCEDURES article in GENERAL INFORMATION section before disconnecting battery.

STEERING WHEEL

Removal & Installation

Turn ignition switch to OFF-LOCK position. Remove air bag module. See **AIR BAG RESTRAINT SYSTEM** article. Mark steering wheel hub in relation to slash mark on steering shaft for installation reference. Remove steering wheel nut. Using Steering Wheel Puller (J-1859-A) and Steering Wheel Puller Legs (J-42120), remove steering wheel. To install, reverse removal procedure. Tighten NEW steering wheel nut to specification. See **TORQUE SPECIFICATIONS** .

STEERING COLUMN

Removal

1. Disconnect negative battery cable. Remove air bag module. See **AIR BAG RESTRAINT SYSTEM** article. Remove steering wheel. See **STEERING WHEEL** . Using a small screwdriver, release locking tab from tilt lever handle. Pull tilt lever handle straight out from steering column.

2. Turn steering column far enough to left to gain access to upper coupling bolt. Remove upper coupling bolt. Turn steering column to right until wheels are in straight-ahead position, and lock steering column.
3. Remove left side knee bolster trim panel. Remove left side knee bolster. Disconnect steering column electrical connectors. Remove lower steering column support plate nuts. Remove upper steering column bracket nuts from upper reinforcement assembly.
4. Slide steering column off of intermediate shaft. Remove steering column from vehicle. While removing column, rotate steering column clockwise as bottom of column reaches reinforcement assembly, so that steering wheel position sensor will clear instrument panel brace.

Installation

To install, reverse removal procedure. Tighten all nuts and bolts to specification. See **TORQUE SPECIFICATIONS** .

WIPER/WASHER SWITCH

Removal & Installation

Using a small screwdriver, release locking tab from tilt lever handle. Pull tilt lever handle straight out from steering column. Remove left side knee bolster trim panel. Remove upper and lower steering column covers. Disconnect switch electrical connector. Release upper and lower retaining clips, and slide wiper/washer switch from column. To install, reverse removal procedure.

IGNITION SWITCH ASSEMBLY

Removal & Installation

Removal and installation procedures not available at time of publication

MULTIFUNCTION SWITCH

Removal & Installation

1. Using a small screwdriver, release locking tab from tilt lever handle. Pull tilt lever handle straight out from steering column. Remove steering wheel. See **STEERING WHEEL** . Remove left side knee bolster trim panel. Remove upper and lower steering column covers. Disconnect electrical connectors. Remove Torx screws, and remove multifunction switch.
2. To install, reverse removal procedure. Tighten multifunction switch screws to specification. See TORQUE SPECIFICATIONS.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Lower Steering Column Support Plate Nuts	17 (24)

Steering Wheel Nut	(1) 30 (41)
Upper Intermediate Shaft Coupling Bolt	35 (47)
Upper Steering Column Bracket Nuts	17 (24)
	INCH Lbs. (N.m)
Air Bag (Inflator) Module Nut/Screw	53 (6)
Lower Shroud Screws	53 (6)
Lower Steering Coupling Shield Clamp Screw	30 (3.4)
Multifunction Switch Screws	53 (6)
Upper Shroud Screws	12 (1.4)
(1) Use a NEW steering wheel nut.	

WIRING DIAGRAMS

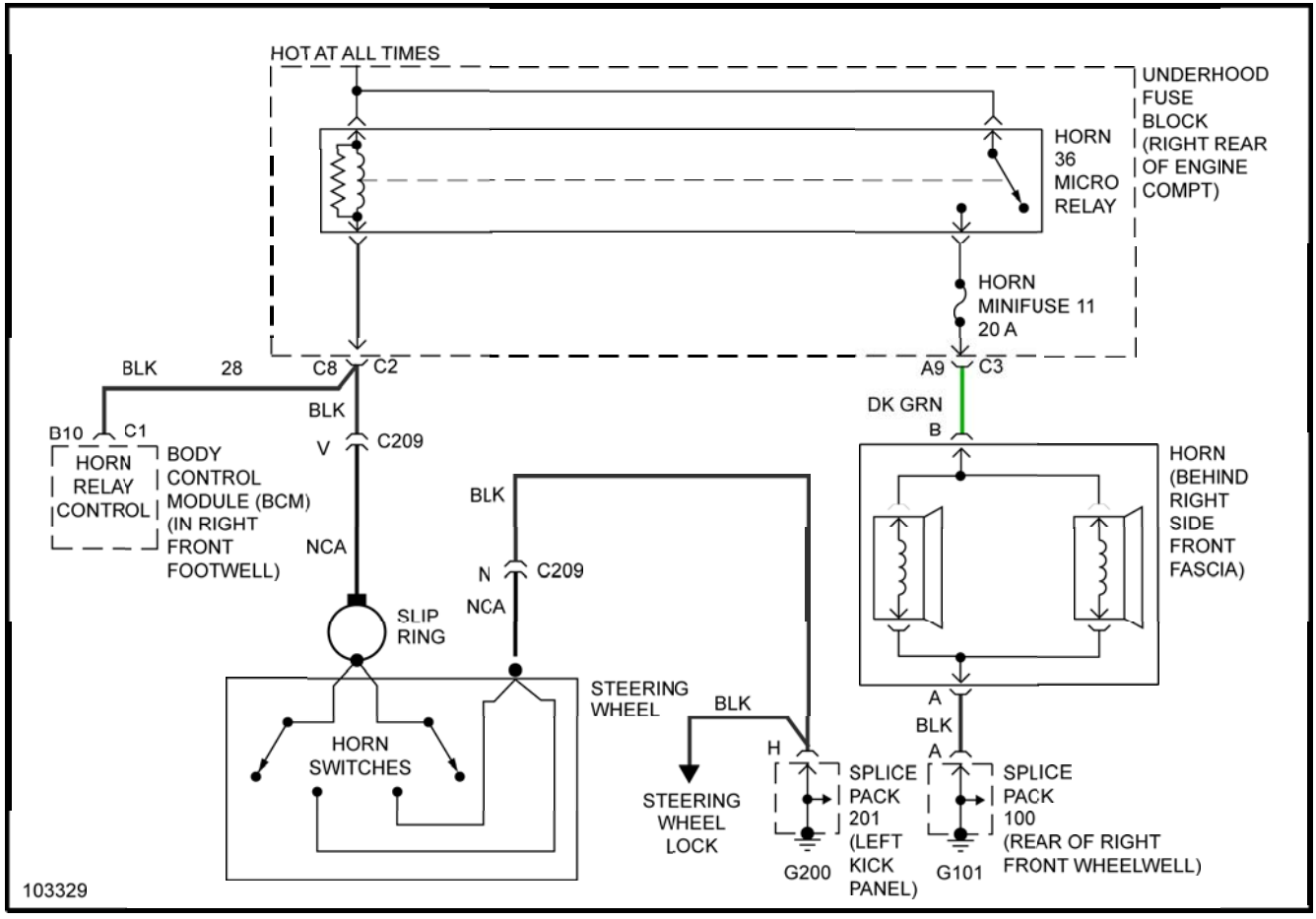
HOT AT ALL TIMES
UNDERHOOD FUSE BLOCK (RIGHT REAR OF ENGINE COMPT)
HORN 36 MICRO RELAY
HORN MINIFUSE 11 20 A
BLK
28
C8
C2
A9
C3
DK GRN
B
BLK
V
C209
B10
C1
HORN RELAY CONTROL
BODY CONTROL MODULE (BCM) (IN RIGHT FRONT FOOTWELL)
NCA
BLK
N
C209
NCA
SLIP RING
HORN (BEHIND RIGHT SIDE FRONT FASCIA)
STEERING WHEEL
BLK
A
BLK
A
HORN SWITCHES
H
STEERING WHEEL LOCK
SPLICE PACK 201 (LEFT KICK PANEL)
G200
SPLICE PACK 100 (REAR OF RIGHT FRONT WHEELWELL)
G101
103329

Fig. 1: Horn System Wiring Diagram