SPECIFICATIONS

FASTENER SPECIFICATIONS

Reusable Threaded Fastener Tightening Specifications

NOTE:

All fasteners listed in this table can be reused after removal.

Application	Specification
	Metric (English)
Communication Interface Module Bracket Bolt	2.5 N.m (22 lb in)
High Frequency Antenna Nut	9 N.m (80 lb in)
Radio Control Bolt	2.5 N.m (22 lb in)
Radio Control Switch Bolt	2.5 N.m (22 lb in)
Radio Front Center Speaker Bolt	2.5 N.m (22 lb in)
Radio Front Side Door Speaker Fastener	2.5 N.m (22 lb in)
Radio Front Speaker Bolt	2.5 N.m (22 lb in)
Radio Rear Compartment Speaker Fastener	6 N.m (53 lb in)
Radio Rear Side Door Speaker Fastener	2.5 N.m (22 lb in)
Radio Speaker Amplifier Bracket Bolt	9 N.m (80 lb in)

SCHEMATIC WIRING DIAGRAMS

RADIO/NAVIGATION SYSTEM WIRING SCHEMATICS

Power, Ground, Antenna and Data Communication

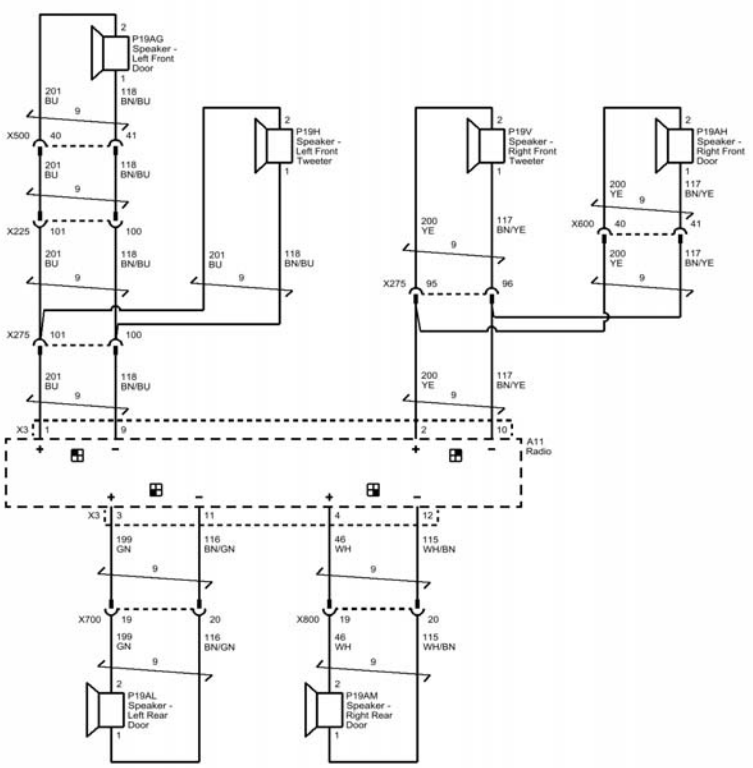


Fig. 6: Speakers (UZ6)
Courtesy of GENERAL MOTORS COMPANY

ONSTAR/TELEMATICS WIRING SCHEMATICS

OnStar Schematics

Data Link Communications Description and Operation

Electrical Information Reference

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions

Scan Tool References

Control Module References for scan tool information

Circuit/System Verification

WARNING: Always perform the High Voltage Disabling procedure prior to servicing any High Voltage component or connection. Personal Protection Equipment (PPE) and proper procedures must be followed.

The High Voltage Disabling procedure includes the following steps:

- **Identify how to disable high voltage.**
- **Identify how to test for the presence of high voltage.**
- **Identify condition under which high voltage is always present and personal protection equipment (PPE) and proper procedures must be followed.**

Before working on any high voltage system, be sure to wear the following Personal Protection Equipment:

- **Safety glasses with appropriate side shields when within 15 meters (50 feet) of the vehicle, either indoors or outdoors.**
- **Certified and up-to-date Class "0" Insulation gloves rated at 1000V with leather protectors.**
  - **Visually and functionally inspect the gloves before use.**
  - **Wear the Insulation gloves with leather protectors at all times when working with the high voltage battery assembly, whether the system is energized or not.**

Failure to follow the procedures may result in serious injury or death.

1. Vehicle in Service Mode.
2. Verify DTC P1EB2, P1EB3, P1EB4, P1EB5, P1FA6, P1FA7, P1FA8, P1FA9, P1FAA, P1FAB, P3030, or P303B is not set.

Electrical Information Reference

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

1. Perform the Vehicle Key Relearn procedure. Refer to **Key with Integrated Transmitter Programming**.
2. Verify the scan tool Key Part Number parameter reads a Key Part Number when turning the vehicle ON with each key.
   - **If a Key Part Number is not read**

     Replace the appropriate key.

   - **If a Key Part Number is read with each key**
3. All OK.

Repair Instructions

Perform the **Diagnostic Repair Verification** after completing the repair.

Refer to **Key with Integrated Transmitter Programming**

DTC B3899: INCORRECT IMMOBILIZER IDENTIFIER RECEIVED

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- Refer to **Diagnostic Procedure Instructions** to provide an overview of each diagnostic category.

DTC Descriptor

DTC B3899

Incorrect Immobilizer Identifier Received

For symptom byte information, refer to **Symptom Byte List** .

Circuit/System Description

When certain modules are programmed and configured during installation, the module learns a specific environment identifier which is unique to the vehicle. The environment identifier is used to prevent the swapping modules between vehicles. The body control module (BCM) is the keeper of the environment

SCHEMATIC WIRING DIAGRAMS

THEFT DETERRENT SYSTEM WIRING SCHEMATICS

Theft Deterrent System

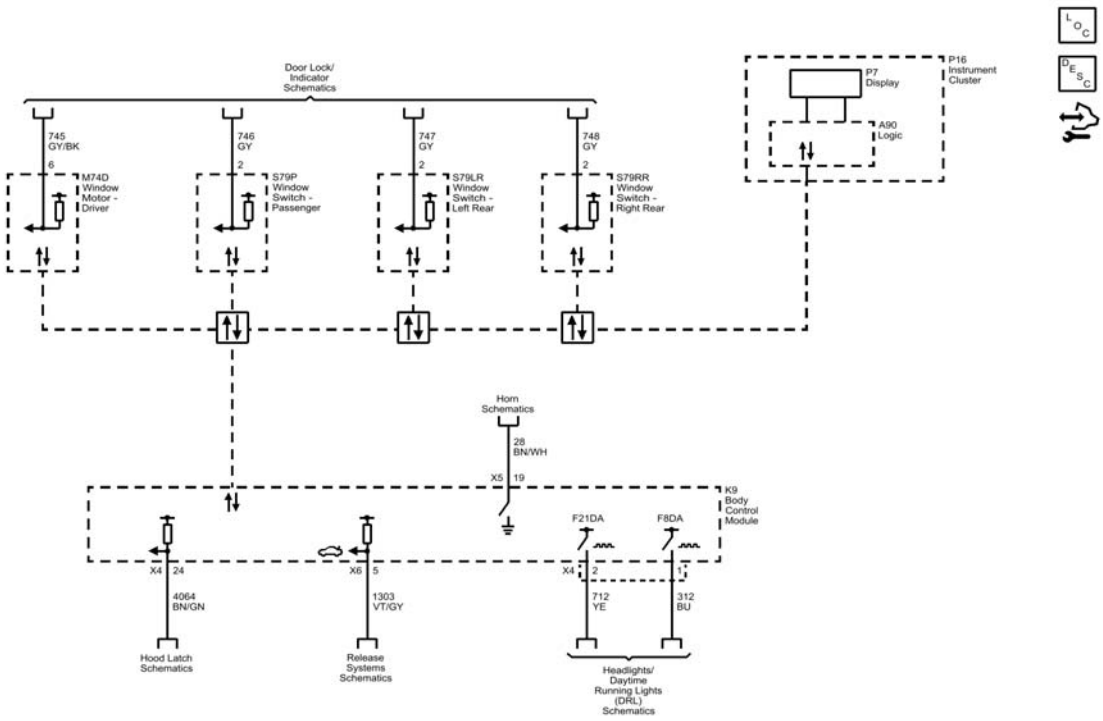


Fig. 1: Theft Deterrent System
Courtesy of GENERAL MOTORS COMPANY

DIAGNOSTIC INFORMATION AND PROCEDURES

DTC B291A: CONTENT THEFT DETERRENT ASSEMBLY INTERNAL MALFUNCTION

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- Refer to **Diagnostic Procedure Instructions** to provide an overview of each diagnostic category.

DTC Descriptor

Conditions for Setting the DTC

The redundant torque calculation does not match the primary calculation.

Action Taken When the DTC Sets

- DTCs P1E0A and P1E0B are Type A DTCs.
- The hybrid/EV powertrain control module 1 requests the hybrid/EV powertrain control module 2 to open the high voltage contactor relays.

Conditions for Clearing the DTC

DTCs P1E0A and P1E0B are Type A DTCs.

Reference Information

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions

Circuit/System Verification

1. Vehicle ON.
2. Verify no transmission or motor control module DTCs are set.
   - **If any of the DTCs are set**

     Refer to **Diagnostic Trouble Code (DTC) List - Vehicle** .

   - **If none of the DTCs are set**
3. Verify DTC P1E0A or P1E0B is not set.
   - **If any of the DTCs are set**
   1. Verify the T6 Power Inverter Module has the latest calibration in Calibration Information.
      - If the T6 Power Inverter Module does not have the latest calibration, program the T6 power inverter module.
      - If the T6 Power Inverter Module has the latest calibration, replace the T6 Power Inverter Module.
   2. Operate the vehicle within the Conditions for Running the DTC. You may also operate the vehicle within the conditions that you observed from the Freeze Frame/Failure Records data.
   3. Verify the DTC does not set.
      - If the DTC sets, replace the T6 Power Inverter Module.
      - If the DTC does not set.
   4. All OK
   - **If none of the DTCs are set**
4. All OK

Repair Instructions

Perform the **Diagnostic Repair Verification** after completing the repair.

Refer to **Control Module References** for T6 Power Inverter Module, often referred to as the Drive Motor Generator Power Inverter Module, replacement, programming, and setup

DTC P1E1B-P1E1F: AUXILIARY TRANSMISSION FLUID PUMP CONTROL MODULE HYBRID/EV

Personal Protection Equipment:

- **Safety glasses with appropriate side shields when within 15 meters (50 feet) of the vehicle, either indoors or outdoors.**
- **Certified and up-to-date Class "0" Insulation gloves rated at 1000V with leather protectors.**
  - **Visually and functionally inspect the gloves before use.**
  - **Wear the Insulation gloves with leather protectors at all times when working with the high voltage battery assembly, whether the system is energized or not.**

Failure to follow the procedures may result in serious injury or death.

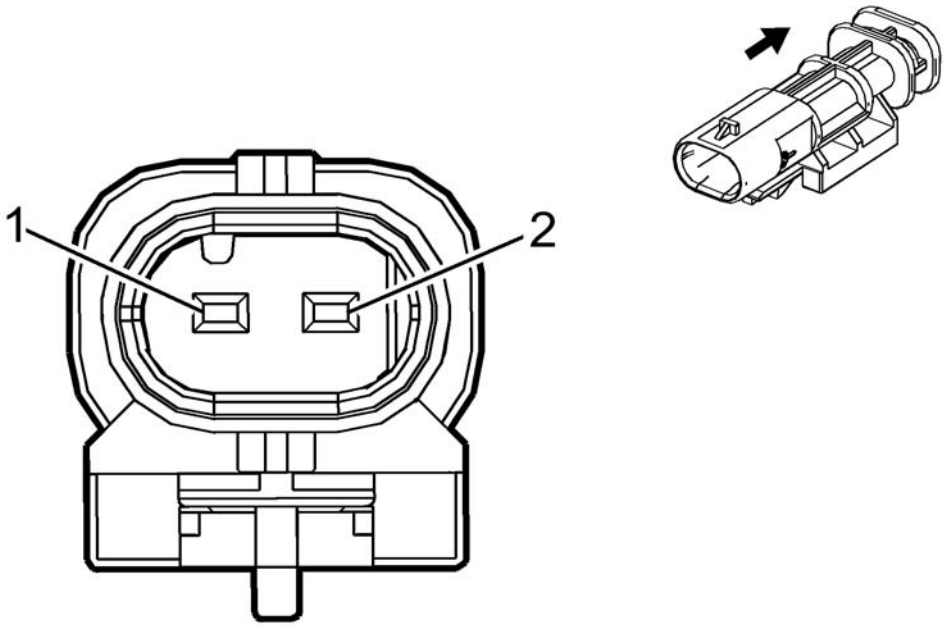
1. Vehicle OFF, disable the high voltage at the A4 Hybrid/EV Battery Pack. Refer to **High Voltage Disabling** . Remove the A4 Hybrid/EV Battery Pack cover. Refer to **High Voltage Battery Cover Replacement** . Disconnect the harness connector at the B204A Hybrid/EV Battery Pack Coolant Temperature Sensor.
2. Test for less than 10 Ω between the low reference circuit terminal 2 and ground.
   - **If 10 Ω or greater**
   1. Test for less than 2 Ω in the low reference circuit end to end.
      - If 2 Ω or greater, repair the open/high resistance in the circuit.
      - If less than 2 Ω, replace the K16 Battery Energy Control Module.
   - **If less than 10 Ω**

NOTE: **With the S15 Manual Service Disconnect removed, the 12 V battery connected, and the Vehicle in Service Mode, may cause additional DTCs to set. Continue with diagnostics and clear any additional DTCs when repairs are complete.**

3. Connect the **EL-50211** Low Voltage Jumper Harness Extension. Connect the 12 V battery. Vehicle in Service Mode.
4. Verify the scan tool Hybrid/EV Battery Pack Coolant Temperature Sensor is less than -35Â°C (-38.2Â°F).
   - **If greater than -35Â°C (-38.2Â°F)**
   1. Vehicle OFF, test for infinite resistance between the signal circuit terminal 1 and ground.
      - If less than infinite resistance, repair the short to ground on the circuit.
      - If infinite resistance, replace the K16 Battery Energy Control Module.
   - **If less than -35Â°C (-38.2Â°F)**
5. Install a 3 A fused jumper wire between the signal circuit terminal 1 and the low reference circuit terminal 2.
6. Verify the scan tool Hybrid/EV Battery Pack Coolant Temperature Sensor is greater than 87.5Â°C (189.5Â°F).
   - **If less than 87.5Â°C (189.5Â°F)**
   1. Test for less than 1 V between the signal circuit and ground.
      - If 1 V or greater, repair the short to voltage on the circuit.

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
A	0.35	BK	1650	Ground	I	-

S46 LIFTGATE HANDLE SWITCH



Connector Part Information

- Harness Type: Liftgate
- OEM Connector: 1-1703498-3
- Service Connector: Service by Harness - See Part Catalog
- Description: 2-Way M 1.2 Multilock Series, Sealed (BK)

Terminal Part Information

Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool	Service Terminal	Tray Name	Core Crimp	Insulation Crimp
I	Not Required	J-35616-13 (BU)	No Tool Required	Not Required	Not Required	Not Required	Not Required

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
1	0.5	YE/BU	5797	Rear Closure Handle Switch Open Signal	I	-
2	0.5	BK	850	Ground	I	-

S48B MULTIFUNCTION SWITCH - OVERHEAD CONSOLE

The battery current sensor is a 3-wire hall effect current sensor. The body control module (BCM) supplies 5 V and ground to the battery current sensor. The battery current sensor measures the amount of current flowing to or from the battery, and supplies a pulse width modulation (PWM) signal to the BCM.

Conditions for Running the DTC

B1516 08

The BCM is awake.

B1516 66

- The BCM is awake.
- The engine is OFF.

Conditions for Setting the DTC

B1516 08

The battery current signal is less than 4 percent or greater than 96 percent duty cycle for 2 minutes.

B1516 66

The battery current polarity is positive for 2 minutes.

Action Taken When the DTC Sets

The regulated voltage control (RVC) is disabled.

Conditions for Clearing the DTC

The DTC passes when the battery current returns to the normal range for 15 seconds.

Diagnostic Aids

DTC B1516 08 could be set by overcharging with a battery charger or jump starting.

Reference Information

Schematic Reference

Starting and Charging Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Charging System Description and Operation

Electrical Information Reference

- **Circuit Testing**
- **Connector Repairs**

P0121, P0178, P0179, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0261, P0262, P0264, P0265, P0267, P0268, P0270, P0271, P0273, P0274, P0276, P0277, P0279, P0280, P0282, P0283, P0300, P0301, P0302, P0303, P0304, P0335, P0336, P0403, P0404, P0405, P0406, P042E, P0489, P0490, P0502, P0503, P0506, P0507, P0604, P0641, P0651, P0722, P0723, P1104, P1248, P1249, P124A, P124B, P124C, P124D, P124E, P124F, P1258, P1426, P1437, P2100, P2101, P2102, P2103, P2147, P2148, P2150, P2151, P2153, P2154, P2156, P2157, P216B, P216C, P216E, P216F, P217B, P217C, P217E, P217F, or P2269 is not set.

- Battery voltage is greater than 11 V.
- Barometric pressure (BARO) is greater than 70 kPa (10 PSI).
- Decel fuel cut-off state does not change for 250 ms.
- Mass air pressure (MAP) change is less than 1 kPa (0.15 PSI).
- MAP is between 20 - 50 kPa (3 - 7 PSI).
- The DTCs run continuously when the above conditions are met for 7 s.

Conditions for Setting the DTC

P0401

The ECM detects the EGR flow is below a calibrated amount when the EGR is commanded ON.

Action Taken When the DTC Sets

DTCs P0401, is a Type A DTC.

Conditions for Clearing the DTC

DTCs P0401 is a Type A DTC.

Diagnostic Aids

A stuck EGR valve or a restriction anywhere in the exhaust gas recirculation system due to excessive coking or debris may cause this DTC to set.

Reference Information

Schematic Reference

Engine Controls Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Electrical Information Reference

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

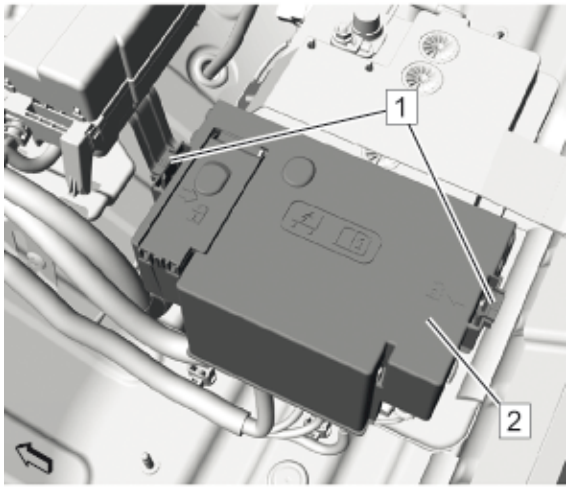


Fig. 42: Battery Fuse Block Cover And Retaining Tabs
Courtesy of GENERAL MOTORS COMPANY

5. Remove Release the retaining tabs.(1)
6. Remove Battery Fuse Block Cover (2)

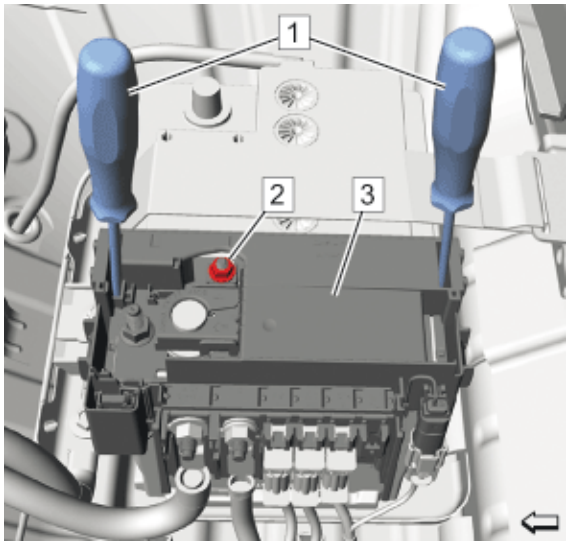


Fig. 43: Battery Positive Pole Clamp Nut
Courtesy of GENERAL MOTORS COMPANY

7. Loosen the battery positive pole clamp nut (2).
8. Use a screwdriver (1) to unclip the 2 battery fuse block retainer tabs from the battery and remove the battery fuse block (3) along with the battery positive cables.

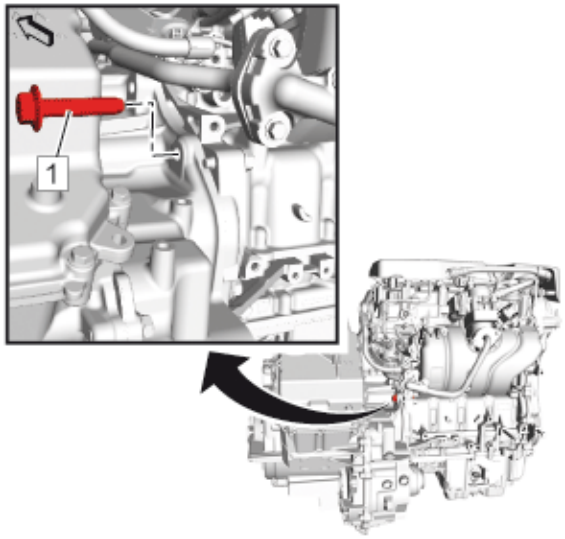


Fig. 323: Transmission Bolt
Courtesy of GENERAL MOTORS COMPANY

111. Remove Transmission Bolt (1)

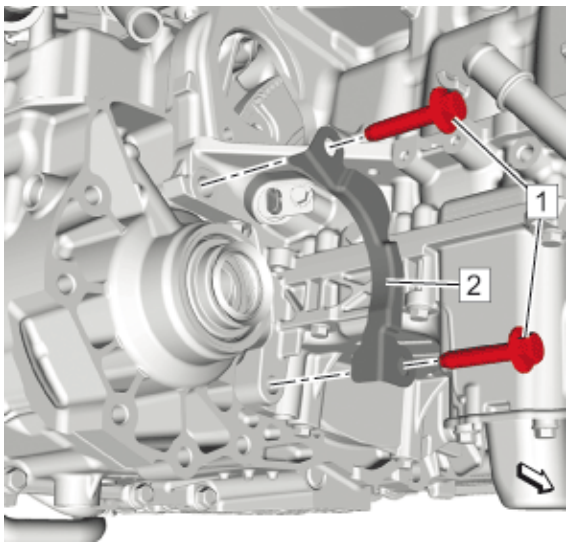


Fig. 324: Transmission Cover And Bolts
Courtesy of GENERAL MOTORS COMPANY

112. Remove Transmission Bolts (1) (Qty: 2)
113. Remove Transmission Cover (2)
114. Properly support engine and transmission as necessary.

EAGLE

NOTE: **All information in this product, unless otherwise noted, is written specifically for vehicles built for the United States market and may or may not apply to vehicles built for the Canadian market. The purpose of this article is to show the relationships between Canadian and U.S. vehicles and should not be used to determine which repair information applies to vehicles built for the Canadian market.**

EAGLE MODEL CROSS-REFERENCE

Canadian Model	US Model
1991-93 2000 GTX	1989-93 Mitsubishi Galant
1989-91 Vista (Sedan/Notchback)	1989-91 Dodge Colt
1992 Vista	1992 Plymouth Colt
1989-91 Vista Wagon	1989-91 Dodge Colt Vista

PLYMOUTH

NOTE: **All information in this product, unless otherwise noted, is written specifically for vehicles built for the United States market and may or may not apply to vehicles built for the Canadian market. The purpose of this article is to show the relationships between Canadian and U.S. vehicles and should not be used to determine which repair information applies to vehicles built for the Canadian market.**

PLYMOUTH MODEL CROSS-REFERENCE

Canadian Model	US Model
1978-81 Caravelle	1978-87 Dodge Diplomat
1982-84 Caravelle	1982-84 Gran Fury Also: Dodge 600
1990-92 Colt 100/200	1990-92 Colt
1995-96 Colt	1995-96 Eagle Summit 1995-96 Mitsubishi Mirage
1992-94 Colt Wagon	1992-94 Mitsubishi Expo (LRV)
1987-89 Expo	1987-89 Colt Vista

GENERAL MOTORS

BUICK

NOTE: **All information in this product, unless otherwise noted, is written specifically for vehicles built for the United States market and may or may not apply to vehicles built for the Canadian market. The purpose of this article is to show the relationships between Canadian and U.S. vehicles and should not be used to determine which repair information applies to vehicles built for the Canadian market.**

Test Weight	ASM5015		ASM2525	
	HC ppm (CO %)	NOx ppm	HC ppm (CO %)	NOx ppm
3500	573 (4.17)	3669	563 (5.92)	3418
3625	554 (4.04)	3544	544 (5.73)	3302
3750	537 (3.91)	3429	527 (5.55)	3195
3875	521 (3.80)	3323	512 (5.39)	3096
4000	506 (3.70)	3224	497 (5.24)	3003
4125	492 (3.60)	3131	484 (5.09)	2917
4250	479 (3.51)	3044	471 (4.96)	2836
4375	467 (3.42)	2961	459 (4.83)	2759
4500	455 (3.34)	2883	447 (4.71)	2686
4625	444 (3.26)	2807	436 (4.60)	2616
4750	433 (3.18)	2735	425 (4.49)	2549
4875	423 (3.11)	2665	415 (4.38)	2483
5000	412 (3.03)	2597	405 (4.28)	2420
5125	402 (2.97)	2530	395 (4.18)	2359
5250	393 (2.90)	2466	386 (4.08)	2298
5375	383 (2.83)	2403	376 (3.98)	2240
5500	374 (2.77)	2341	367 (3.89)	2183
5625	365 (2.70)	2282	359 (3.80)	2127
5750	357 (2.64)	2224	350 (3.71)	2074
5875	348 (2.59)	2168	342 (3.62)	2022
6000	341 (2.53)	2116	334 (3.54)	1973
6125	333 (2.48)	2066	327 (3.47)	1927
6250	326 (2.43)	2020	320 (3.40)	1884
6375	320 (2.39)	1979	314 (3.34)	1846
6500	315 (2.35)	1943	309 (3.28)	1813
6625	310 (2.32)	1913	304 (3.23)	1785
6750	307 (2.29)	1890	301 (3.20)	1764
6875	305 (2.28)	1875	299 (3.17)	1750
7000	304 (2.27)	1870	298 (3.17)	1745
7125 Or More	304 (2.27)	1874	298 (3.17)	1745

U.S. EPA ASM EMISSION STANDARDS - 1975-78 LIGHT DUTY TRUCKS (6001 GVWR OR MORE)

Test Weight	ASM5015		ASM2525	
	HC ppm (CO %)	NOx ppm	HC ppm (CO %)	NOx ppm
1750	843 (5.07)	4990	828 (7.26)	4980
1875	794 (4.78)	4990	780 (6.84)	4906
2000	749 (4.51)	4919	736 (6.45)	4838
2125	707 (4.26)	4853	695 (6.10)	4776

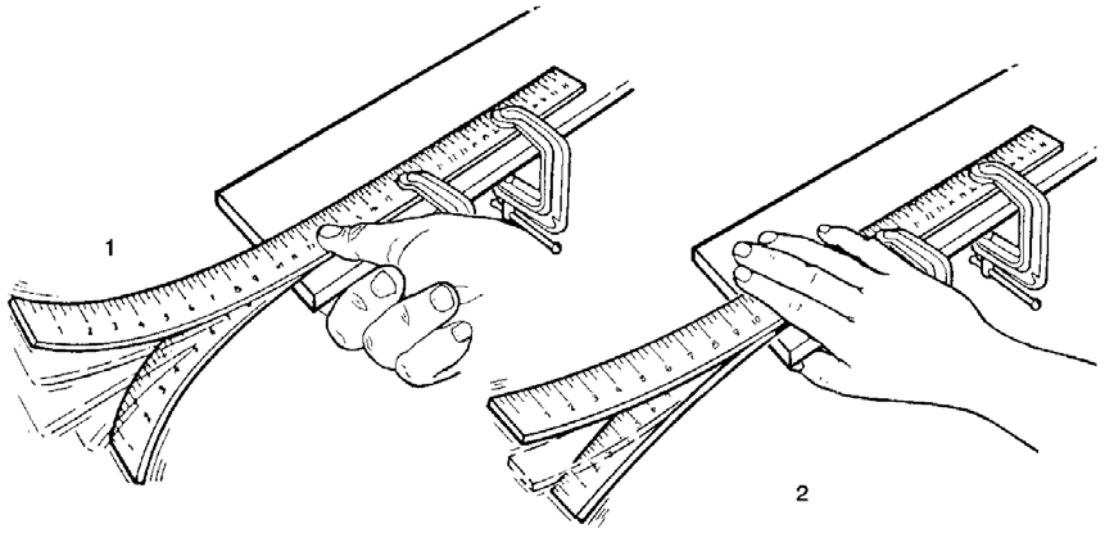


Fig. 36: Identifying Low & High Damping
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Low Damping
2	High Damping

Damping is the ability of an object or material to dissipate or absorb vibration. The automotive shock absorber is a good example. The function of the shock absorber is to absorb or dampen the oscillations of the suspension system.

Beating (Phasing)