



Section 1 General Information, Lubrication and Maintenance

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SAFETY SUMMARY

Individuals who decide to perform their own repairs should have proper training and limit repairs to components which will not affect the safety of the vehicle or its occupants.

When replacement parts are required, it is strongly recommended that they are purchased through an authorized HUMMER dealer. It is essential that replacement parts meet or exceed manufacturer's specifications. Vehicle performance and personal safety may be impaired if other than original factory components are installed.

The installation of nonapproved accessories or conversions is not recommended as they could affect the vehicle's driving characteristics and personal safety. AM General LLC will not be liable for personal injury or damage to property resulting from the installation of nonapproved accessories or conversions to the HUMMER H1.

Following the safety precautions as prescribed throughout this manual may greatly reduce the risks of personal injury and damage to the vehicle. However, it is unlikely that AM General LLC will account for all possibilities.

Warnings, cautions, and notes are used throughout this service manual to assist service personnel in the performance of maintenance actions. These statements are designed as reminders for trained and experienced service personnel.

WARNINGS — Indicate potential safety hazards and must be followed to avoid personal injury. Warnings appear as follows:

WARNING: *To avoid injury, do not remove surge tank filler cap before depressurizing cooling system when engine temperature is above 190° F (88° C).*

CAUTIONS — Indicate potential equipment damage, and must be followed to avoid damage to components or systems. An example of a caution is shown below:

CAUTION: To avoid starter damage, do not operate starter continuously for more than 15 seconds. Wait 10 to 15 seconds between periods of operation.

NOTES — Indicate methods or actions that may simplify vehicle maintenance or help maintain vehicle performance. An example of a note is shown below:

NOTE: Clean all components, examine for wear or damage, and replace if necessary.

CARBON MONOXIDE

WARNING: *Engine exhaust and a wide variety of automobile components and parts, including components found interior furnishings in a vehicle, contain or emit chemicals known to the State of California to cause cancer and birth defects and reproductive harm. In addition, certain fluids contained in vehicles and certain products of component wear contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.*

WARNING: *Brain damage or death can result from heavy exposure to carbon monoxide. The following precautions must be followed to ensure personal safety.*

1. Do not operate vehicle engine in enclosed areas. Do not idle the vehicle engine with vehicle windows closed. Be alert at all times for exhaust odors. Be alert for exhaust poisoning symptoms. They are:
 - Headache
 - Dizziness
 - Sleepiness
 - Loss of muscular control



2. If you see another person with exhaust poisoning symptoms:
 - Remove person from area
 - Expose to open air
 - Keep person warm
 - Do not permit physical exercise
 - Administer artificial respiration, if necessary
 - Notify medical personnel

THE BEST DEFENSE AGAINST EXHAUST POISONING IS ADEQUATE VENTILATION.

This service manual contains instructions for maintaining the 2006 commercial HUMMER H1. Spend some time looking through this manual. Features to improve the usefulness of this manual and increase your efficiency are:

Accessing Information - These include: tabulated sections for quick reference, extensive troubleshooting guides for specific systems, and step-by-step directions for service repairs.

Illustrations - A variety of methods are used to make locating and repairing components easy. Locator illustrations, exploded views, and cut-away diagrams make the information in this manual easy to understand.

The service manual is the best source available for providing information and data critical to vehicle operation and maintenance. In this manual you will find the following information:

- Safety Summary
- General Information
- General Service Procedures
- Detailed Service Procedures
- Torque Ranges
- Wiring Diagrams and Schematics

HUMMER H1 owners and dealership service personnel can submit service manual suggestions and comments in writing to:

AM General
Commercial Publications Department
408 S. Byrkit St.
P.O. Box 728
Mishawaka, IN 46546-0728

Forms are furnished at the end of this manual.

Service Manual Revisions

In order to receive future revisions to this service manual, please write to:

AM General
Service Parts Logistics Operations
Commercial Publications/Customer Service
408 South Byrkit Avenue
P.O. Box 728
Mishawaka, Indiana 46546-0728

Be sure to specify publication number.

HUMMER H1 SERVICE HOTLINE

On occasion, an unusual service problem can arise that is not covered in the manual. For this reason, AM General has established a service hotline for dealership assistance. The hotline number is: **1-800-638-8303**

Transfer Case Hotline

If you have questions that are not answered in Section 5 of this Service Manual, you can call the Transfer Case Hotline at **1-800-945-4327** (in the U.S.) for more information. International and Canadian customers and dealers should call **1-315-432-4110**.




EMISSION CONTROL INFORMATION LABEL

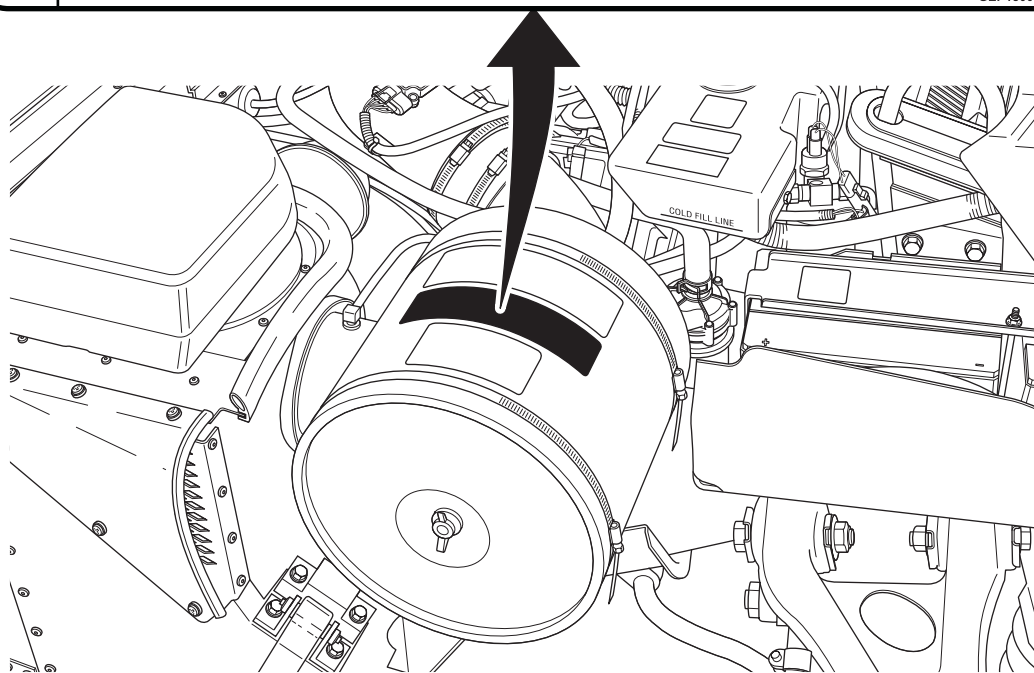
The vehicle emission control label contains engine information such as curb idle rpm, engine displacement, catalytic converter type, fuel rate, and vacuum hose routing.

This label is affixed to the air cleaner housing (Figure-1-1).

The California Air Resources Board (CARB) label (Figure-1-2) is also affixed to the air cleaner housing and certifies that the vehicle conforms to EPA and California emission standards.

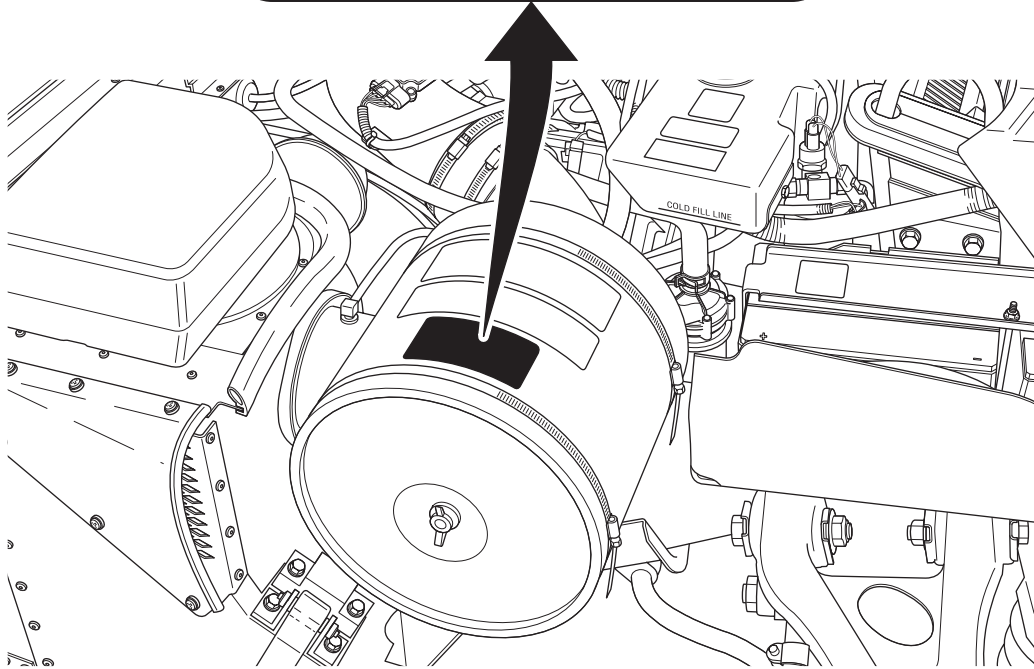
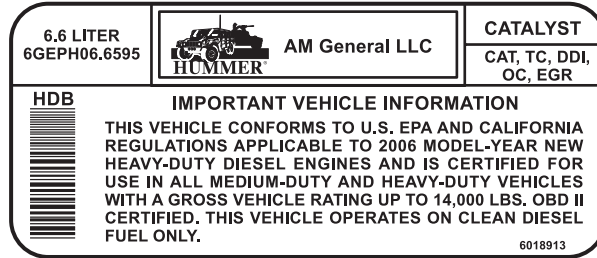
| | | |
|---|---|--|
| HDB  | 2006 MODEL YEAR IMPORTANT ENGINE INFORMATION <i>General Engine Products,</i> A Subsidiary of AM General LLC | CATALYST CAC/TC/DDI/OC/EGR 6.6 LITER 6GEPH06,6595 ADVERTISED HP 300 @ 3000 RPM FUEL RATE @ ADVERTISED HP 91.0 MM3/STROKE |
| | NO ADJUSTMENTS NEEDED. SEE SERVICE MANUAL OR OWNERS MANUAL FOR MORE INFORMATION. | |
| | THIS ENGINE CONFORMS TO U.S. EPA REGULATIONS APPLICABLE TO NEW HEAVY-DUTY ENGINES AND CALIFORNIA REGULATIONS APPLICABLE TO NEW ULEV MEDIUM-DUTY ENGINES. THIS ENGINE IS CERTIFIED TO OPERATE ON DIESEL FUEL. THIS ENGINE HAS A PRIMARY INTENDED SERVICE APPLICATION AS A LIGHT HEAVY-DUTY ENGINE. NMHC+NOX FEL: 2.4 G/BHP-HR. PM FEL: 0.09 G/BHP-HR. OBD II CERTIFIED. THIS ENGINE IS NOT CERTIFIED FOR USE IN AN URBAN BUS AS DEFINED IN 40 CFR 86.093-02. SALES OF THIS ENGINE FOR USE IN AN URBAN BUS IS A VIOLATION OF FEDERAL LAW. | |

GEP18000607



05-OM2-015

Figure 1-1: Emission Control Information Label



05-OM2-016

Figure 1-2: California Air Resources Board Label

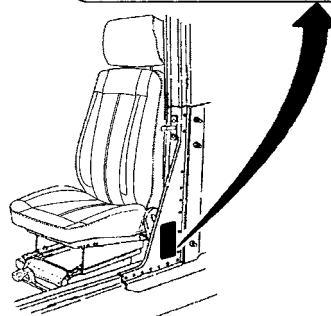
SAFETY CERTIFICATION LABEL

The safety certification label is located on the driver side B-pillar (door latch post) (Figures 1-3, and 1-4). The label is required by the National Highway Traffic Safety Administration and includes a tamper-proof feature. If the label is tampered with, a void pattern will appear across the label.

The label contains the name of the manufacturer, the month and year the vehicle was manufactured, the certification statement, the vehicle identification number (VIN), and the vehicle model type. It also contains the Gross Vehicle Weight Rating (GVWR), Gross Axle Weight Ratings (GAWR), and wheel and tire information. For more information on the GVWR and GAWR, refer to “VEHICLE LOADING INFORMATION” in the HUMMER H1 Owner’s Manual.



| | |
|---|---------|
| MFD BY: AM GENERAL LLC | DATE: |
| GVWR: 4,672 KG (10,300 LB) WITH 37 X 12.50R-17LT LOAD RANGE "E" TIRES | |
| GAWR FRONT: 1,860 KG (4,100 LB) WITH 37 X 12.50R-17LT (E) TIRES, 17 X 8.50 RIMS AT 240 KPA (35 PSI) COLD | |
| GAWR REAR: 3,084 KG (6,800 LB) WITH 37 X 12.50R-17LT (E) TIRES, 17 X 8.50 RIMS AT 276 KPA (40 PSI) COLD | |
| THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE. | |
| V.I.N.: | |
| TYPE: TRUCK | |
| OPTIONAL TIRE AND RIM INFORMATION | |
| 37 X 12.50R-16.5LT LOAD RANGE "D" TIRES, WITH 16.5 X 8.25 RIMS AT 240 KPA (35 PSI) COLD FRONT AND 276 KPA (40 PSI) COLD REAR. | |
| PAINT CODE: | 6015258 |

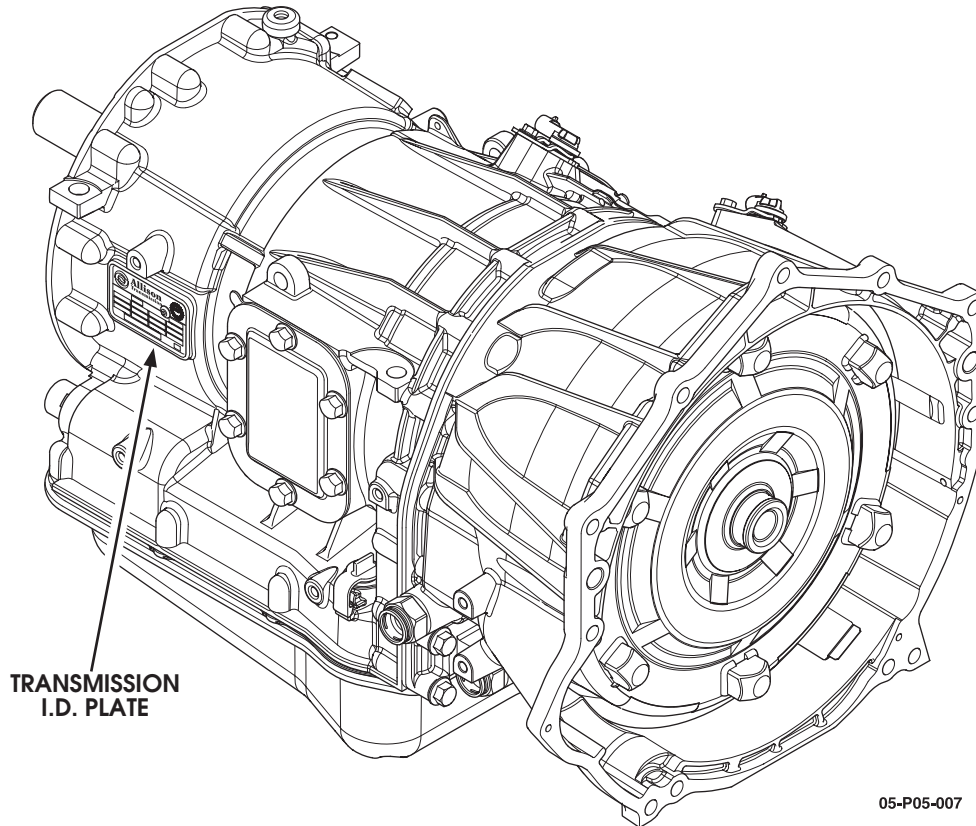


04-OM1-001

Figure 1-3: Safety Certification Label

TRANSMISSION IDENTIFICATION

An I.D. plate is attached to the passenger side of each Allison Transmission (Figure-1-4). The plate contains the model, date of manufacture, serial number, engineering feature configuration, transmission identification, and the engineering group.



TRANSMISSION I.D. PLATE

05-P05-007

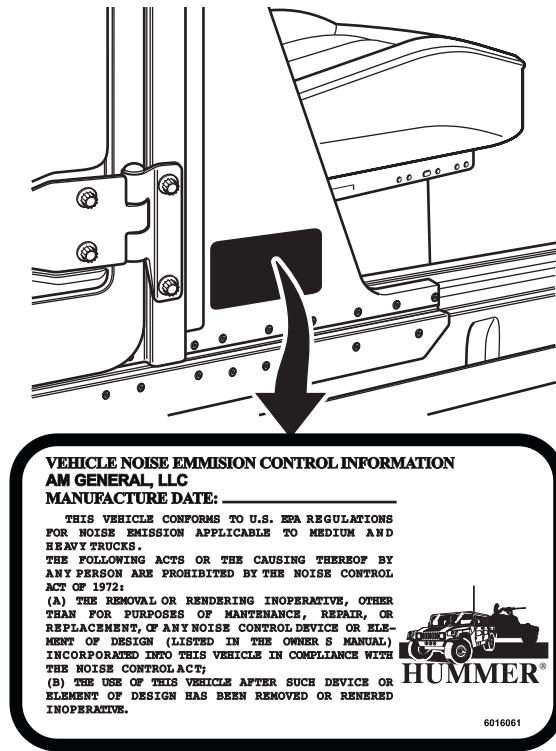
Figure 1-4: Transmission I.D. Plate Location



EPA NOISE EMISSION CONTROL INFORMATION LABEL

The EPA noise emission control information label is located on the passenger side B-pillar (door latch post). The label is required by the EPA and includes a tamper-proof feature. If the label is tampered with, a void pattern will appear across the label. Notify the dealer or the manufacturer if the label is missing or displays a void pattern (Figure-1-5).

The label contains the name of the manufacturer, the month and year the vehicle was manufactured, a statement regarding vehicle conformance to applicable U.S. EPA regulations, and a description of acts prohibited by the Noise Control Act of 1972.



05-OM2-021

Figure 1-5: EPA Noise Emission Control Information Label Location

TRANSFER CASE IDENTIFICATION

The transfer case serial and assembly numbers are located on a tag attached to the rear case (Figure-1-6).

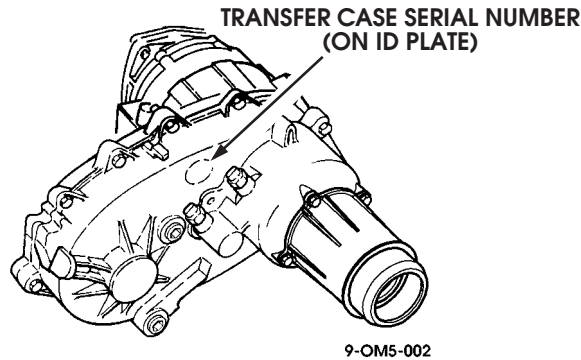
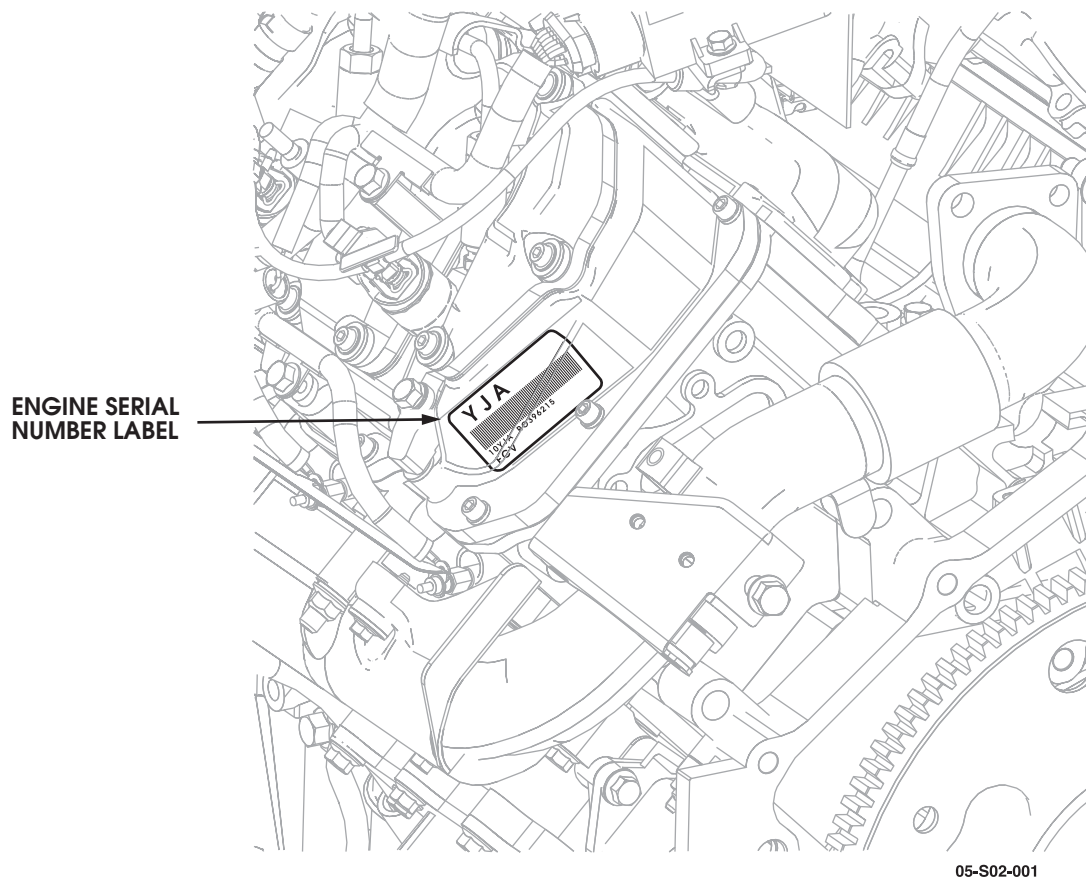


Figure 1-6: Transfer Case I.D. Plate Location



ENGINE IDENTIFICATION

The engine serial number label is located at the rear of the left cylinder head (Figure-1-7).

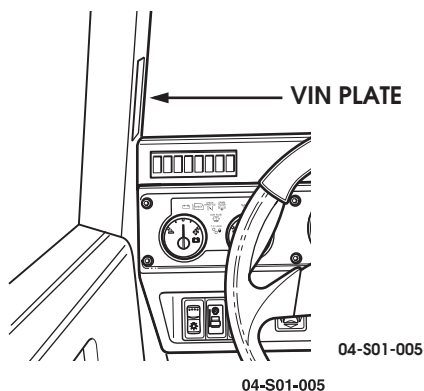


05-S02-001

Figure 1-7: Engine I.D. Label Location

VEHICLE IDENTIFICATION NUMBER (VIN)

The VIN plate is located on the driver's side A-pillar. (Figure-1-8).

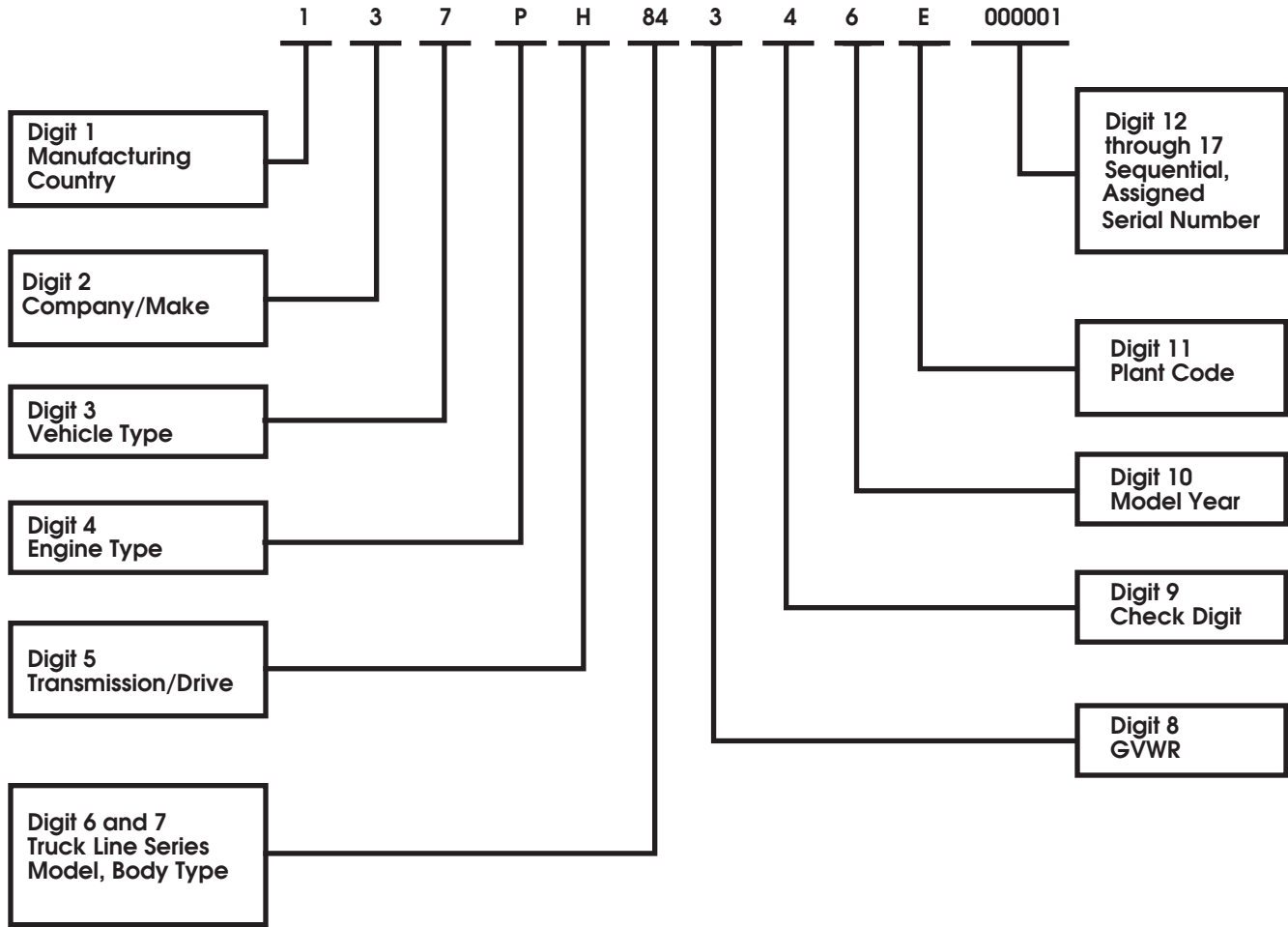


04-S01-005

04-S01-005

Figure 1-8: VIN Plate Location

The first twelve digits of the seventeen digit VIN are explained in the chart on the following page.



Vehicle Identification Number Decoding Chart

| Digit | Code | Code Definition |
|-------|------|---|
| 1 | 1 | United States |
| 2 | 3 | AM General LLC |
| 3 | 7 | Commercial Vehicles |
| 4 | P | 6.6L Turbocharged Diesel, GM-Isuzu, 8 cyl., 300 hp |
| 5 | H | 5-Speed, Automatic/LHD |
| 6 & 7 | 84 | 1-1/4 ton Station wagon Truck, utility - HMDS |
| | 90 | 1-1/4 ton Open body w/full hard doors Truck, utility - HMDO |
| 8 | 3 | Class 3, 10,001 lb - 14,000 lb (4,541 kg - 6,356 kg) |
| 9 | — | Check Digit |
| 10 | 6 | 2006 |
| 11 | E | Mishawaka, Indiana |
| 12-17 | — | Sequential Serial Number |



COMPONENT DATA

Engine:)

| | |
|-------------------|--|
| Manufacturer: | Duramax Inc (GM/ Isuzu) |
| Model: | 6.6 L Turbo Diesel |
| Type: | Four Cycle, Turbocharged Diesel, with cooled EGR |
| Configuration: | V8 |
| Turbo Charging: | Variable Nozzel Turbo Charger with Intercooling |
| Exhaust: | Exhaust Gas Recirculation with Intercooling |
| Power Output: | 300 hp @ 3000 rpm/520 ft lb. Torque @ 1600 rpm |
| Fuel System: | Common Rail High Presure Direct Injection |
| Engine control: | Delphi Electronic Control Module |
| Throttle Control: | Electronic Potentiometer Throttle Pedal |
| Net Weight: | With fluids 880 lb (400 kg) |

Governed Speed:

| | |
|-------------|-----------|
| Full Load: | 3,250 RPM |
| No Load: | 3,400 RPM |
| Idle Speed: | 650 RPM |

Cylinders:

| | |
|--------------------|-----------------------------|
| Number: | 8 |
| Arrangement: | 90° V |
| Firing Order: | 1-2-7-8-4-5-6-3 (Clockwise) |
| Bore: | 4.055 in. (103. mm) |
| Stroke: | 3.897 in. (9.9 cm) |
| Displacement: | 395 cu. in. (6.6 L) |
| Compression Ratio: | 17:1 |

Lubricating System:

| | |
|-----------------------|--------------------------|
| Type: | Pressure Feed Gear Pump |
| Operating Pressure: | 55 - 60 Psi @ 3250 RPM |
| (Idle Minimum): | 14 psi |
| System Capacity: | |
| Crankcase only | 10.5 qt |
| Filter Included | 12.25 qt |
| Filter Capacity: | 1.75 qt |
| Operating Temperature | |
| (Normal) | 180°-250° F (82°-121° C) |
| Oil Pump | High Output |
| Filter | Paper Element, Spin On |

Fuel System:

| | |
|----------------------|--------------------------|
| Fuel Injection Pump: | Bosch Common Rail |
| Fuel Filter: | Full Flow, paper element |
| Glow Plug Type | Fast Start |



Starter:

Type: Torque Reduction
Manufacturer: Hitachi
Voltage: 12 V

Cooling System:

Type: Liquid w/Fan and Radiator
Max Operating Temp: 250° F
Min Operating Temp: -34° F
Filler Cap Pressure: 15 psi (103 kPa)
Radiator Type: 4 Row Core Downflow
Fan Type: Fan with viscous drive, 23" diameter, Geared Fan Drive 1-1 ratio
Thermostat:
 Starts to Open: 190° F (88° C)
 Fully Open: 212° F (100° C)

Generator:

Manufacturer: Delphi
Output: 145 AMP
Rated Voltage: 13.2 -15.75 V

Batteries:

Manufacturer: AC Delco
Type: Low Maintenance
Number: 2
Voltage: 12 V
Amperage:
 @ 0° F 800 Cold Cranking amps Each Battery
 32° F 1000 Cold Cranking amps Each Battery
 80° F 110 Reserve Capacity (Minutes)

Transmission:

Manufacturer: Allison Transmission
Mode: M74 1000 Series
Type: 5-Speed, Automatic
Converter Torque Ratio: 2.0:1
Gear Ratios:
 First: 3.10:1
 Second: 1.81:1
 Third: 1.41:1
 Fourth: 1.00:1
 Fifth: 0.71:1
 Reverse: 4.49:1
Oil Type: Dexron® III
Oil Pressure: 130-300 psi



Transfer Case:

Manufacturer: New Venture Gear
Model: 242
Type: Full Time Four-Wheel Drive
Gear Ratios:
 High and High Lock: 1:1
 Low Range: 2.72:1
Oil Type: Dexron® III

Geared Hub:

Manufacturer: AM General design, made by Tremec
Type: Helical Cut
Gear Ratio: 1.92:1
Oil Type: SAE 80W-90

Axle/Differential:

Manufacturer: AM General design, made by Dana
Type:
Axle: Fixed Mounted Differential W/ Independent Half Shafts
Differential: Hypoid Torque Biasing (Paired Worm Gears) (Electronic Locking Optional)
Gear Ratio: 2.56:1

Service Brake Caliper (Front):

Manufacturer: Kelsey-Hayes
Piston Diameter: 2.6 in. (6.6 cm)

Service/Parking Brake Caliper (Rear):

Manufacturer: Kelsey-Hayes
Piston Diameter: 2.6 in. (6.6 cm)

Service/Parking Brake Rotor:

Manufacturer: Kelsey-Hayes
Diameter: 12 in. (304.8 mm)
Thickness: 0.87 in. (22 mm)
Minimum Thickness: 0.81 in. (20.7 mm)

Steering System:

Steering Gear
 Manufacturer: Sheppard
 Type: Recirculating Ball, Worm and Nut
 Ratio: 18.3:1
Power Steering Pump
 Manufacturer: Delphi
 Output Pressure: (Max): 1,450
 Flow Rate: (Max): 1.7 gpm



Reservoir: Integral Pump Mounted Tank
Fluid Cooling: Remote Cooler air to fluid

Frame:

Manufacturer: AM General design, made by Dana
Type: Welded Steel Box
No. of Crossmembers: 5

Air Conditioner:

Manufacturer (Compressor): GM-Harrison
Model: HD-6
Field (Coil): 12 V
Oil Capacity (PAG)
Main and Auxiliary: 8 fl oz (237 ml)
Refrigerant: R-134a
Capacity (system + 2 oz. of oil)
Main and Auxiliary: 2lb 4oz (1.0 kg)

Winch:

Manufacturer: Warn
Model: 12,000 lb., 12VDC HUMMER
Type: Electric Drive
Capacity: 12,000 lb (5,448 kg)

Wheels and Tires:

Manufacturer: Goodyear Tire Size 37 in. X 12.5R-17
Wheel Type:
Standard: One-Piece Aluminum
Size: 17 x 8.25 in.
Off-Road Adventure
Package Option: Two-Piece Aluminum
Size: 17 x 8.25 in.



FLUID CAPACITIES

| | |
|--------------------------|-----------------------------------|
| Cooling System | 33 qt (31.2 L) |
| Engine: | |
| Crankcase (oil pan) only | 10.5 qt (9.9 L) |
| Crankcase and Filter | 12.25 qt (11.6 L) |
| Fuel Tank | 27 gal. (102.1 L) |
| Auxiliary Fuel Tank | 24.5 gal. (92.7 L) |
| Axle (front/rear) | 2 qt (1.9 L) |
| Transmission: | |
| Drain and Refill: | (with Pan Removed) 8.2 qt (7.7 L) |
| W/Dry Converter: | 14 qt (13.3 L) |
| Transfer Case: | 2.5 qt (2.4 L) |
| Geared Hub: | 1 pt (0.47 L) |
| Steering System | 1.75 qt (1.66 L) |
| Brake Hydraulic System: | (DOT 3) |
| Master Cylinder: | 1.64 pt (0.78 L) |
| Total System: | 3.12 pt. (1.5 L) |
| Windshield Washer | |
| Reservoir: | 2.5 gal. (9.5 L) |
| Geared Fan Drive | 1.2 pt. (0.6 L) |

VEHICLE WEIGHTS

| | |
|---|----------------------|
| Curb Weight*: | |
| Four Door Open Top (w/ full doors) (HMDO) | 7,847 lb (3,563 kg) |
| Four-Door Station Wagon (HMDS) | 8,114 lb (3,684 kg) |
| Payload*: | |
| Four-Door Open Top (w/ full doors) (HMDO) | 2,453 lb (1,114 kg) |
| Four-Door Station Wagon (HMDS) | 2,186 lb (992 kg) |
| Gross Vehicle Weight (GVW) | 10,300 lb (4,676 kg) |
| Gross Axle Weight Rating (GAWR): | |
| Front | 4,100 lb (1,861 kg) |
| Rear | 6,800 lb (3,087 kg) |
| Gross Combination Weight (GCW) | 17,300 lb (7,854 kg) |
| Maximum Towed Load**: | |
| Four-Door Open Top (w/full doors) | 9,303 lb (4,224 kg) |
| Four-Door Station Wagon (HMDS) | 9,036 lb (4,102 kg) |

*For vehicles equipped with a winch, increase curb weight and reduce payload by 137 lbs (62 kg).

**Maximum trailer ratings are calculated assuming a base vehicle, except for any option(s) necessary to achieve the rating, plus driver (rating is calculated assuming a 150 lb. driver). The weight of other optional equipment, passengers and cargo will reduce the maximum trailer weight the vehicle can tow.



VEHICLE DIMENSIONS

| | |
|--------------------------|-------------------------------|
| Length: | 184.5 in. (468.6 cm) See Note |
| Height: | 77 in. (195.5 cm) |
| Width (without mirrors): | 86.50 in. (219.7 cm) |
| Ground Clearance: | 16 in. (41 cm) (at GVW) |
| Wheelbase: | 130 in (330 cm) |
| Track Width: | 72 in. (183 m) |

NOTE: The vehicle weight and dimensions data applies to models without a winch.

ABBREVIATIONS

| | |
|------------------|---|
| ABS | Antilock Brake System |
| A/C | Air Conditioning |
| a.c | Alternating Current |
| AMP | Ampere |
| CO | Carbon Monoxide |
| C | Celsius (centigrade) |
| cm | Centimeter |
| CTIS | Central Tire Inflation System |
| CDR | Crankcase Depression Regulator |
| cm ³ | Cubic Centimeter |
| in. ³ | Cubic Inch |
| cyl | Cylinder |
| ° | Degree (angle or temperature) |
| DTC | Diagnostic Trouble Code |
| dia | Diameter |
| d.c. | Direct Current |
| EPA | Environmental Protection Agency |
| F | Fahrenheit |
| ft | Feet |
| ft/min | Feet Per Minute |
| fl oz | Fluid Ounce |
| gal | Gallon |
| g | Gram |
| GAWR | Gross Axle Weight Rating |
| GVW | Gross Vehicle Weight |
| GVWR | Gross Vehicle Weight Rating |
| hp | Horsepower |
| HVAC | Heat, Ventilation, and Air Conditioning |
| in | Inch |
| INC | Include |
| ID | Identification |
| I.D | Internal Diameter |
| kg | Kilograms |
| km | Kilometer |
| km/h | Kilometers Per Hour |
| kPa | Kilopascals |



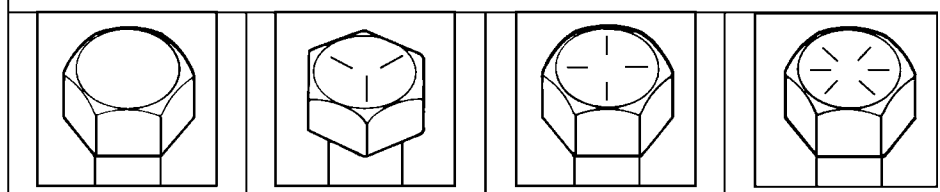
| | |
|-----------------|-------------------------------|
| lh | Left Hand |
| L | Liter |
| max | Maximum |
| m | Meter |
| mpg | Miles Per Gallon |
| mph | Miles Per Hour |
| mm | Millimeter |
| min | Minimum |
| - | Minus |
| - | Negative |
| No | Number |
| Ohm | Ohms |
| oz | Ounce |
| O.D | Outside Diameter |
| P/N | Part Number |
| % | Percentage |
| pt | Pint |
| + | Plus |
| + | Positive |
| lb | Pound |
| lb-ft | Pound-feet |
| lb-in | Pound-inch |
| psi | Pounds Per Square Inch |
| qt | Quart |
| : | Ratio |
| ref. | Reference |
| RPM | Revolutions Per Minute |
| rh | Right-Hand |
| cm ² | Square Centimeters |
| in ² | Square Inches |
| TT4 | Torque Trac 4 |
| VIN | Vehicle Identification Number |
| V | Volts |
| W | Watts |
| UNC | Unified Coarse |
| UNF | Unified Fine |



BOLT IDENTIFICATION AND TORQUE LIMITS (DRY*)

* A phosphate and oil bolt is considered dry

Bolt Head ID Marks and SAE GRADE



| BOLT SIZE | | | SAE GRADE NO. 1 OR 2 | SAE GRADE NO. 5 | SAE GRADE NO. 6 OR 7 | SAE GRADE NO. 8 |
|-------------|--------------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| DIA. INCHES | MILLI-METERS | THREADS PER INCH | POUND FEET (NEWTON-METERS) | POUND FEET (NEWTON-METERS) | POUND FEET (NEWTON-METERS) | POUND FEET (NEWTON-METERS) |
| 1/4 | 6 | 20 | 5(7) | 8(11) | 10(14) | 12(16) |
| 1/4 | 6 | 28 | 6(8) | 10(14) | — | 14(19) |
| 5/16 | 8 | 18 | 11(15) | 17(23) | 19(26) | 24(33) |
| 5/16 | 8 | 24 | 13(18) | 19(26) | — | 27(37) |
| 3/8 | 10 | 16 | 18(24) | 31(42) | 34(46) | 44(60) |
| 3/8 | 10 | 24 | 20(27) | 35(47) | — | 49(66) |
| 7/16 | 11 | 14 | 28(38) | 49(66) | 55(75) | 70(95) |
| 7/16 | 11 | 20 | 30(41) | 55(75) | — | 78(106) |
| 1/2 | 13 | 13 | 39(53) | 75(102) | 85(115) | 105(142) |
| 1/2 | 13 | 20 | 41(56) | 85(115) | — | 120(163) |
| 9/16 | 14 | 12 | 51(69) | 110(149) | 120(163) | 155(210) |
| 9/16 | 14 | 18 | 55(75) | 120(163) | — | 170(231) |
| 5/8 | 16 | 11 | 63(85) | 150(203) | 167(226) | 210(285) |
| 5/8 | 16 | 18 | 95(129) | 170(231) | — | 240(325) |
| 3/4 | 19 | 10 | 105(142) | 270(366) | 280(380) | 375(509) |
| 3/4 | 19 | 16 | 115(156) | 295(400) | — | 420(570) |
| 7/8 | 22 | 9 | 160(217) | 395(536) | 440(597) | 605(820) |
| 7/8 | 22 | 14 | 175(237) | 435(590) | — | 675(915) |
| 1 | 25 | 8 | 235(319) | 590(800) | 660(895) | 910(1234) |
| 1 | 25 | 14 | 250(339) | 660(895) | — | 990(1342) |
| 1-1/8 | 29 | — | — | 800 - 880 (1085 - 1193) | — | 1280 - 1440 (1736 - 1953) |
| 1-1/4 | 32 | — | — | — | — | 1820 - 2000 (2468 - 2712) |
| 1-3/8 | 35 | — | — | 1460 - 1680 (1980 - 2278) | — | 2380 - 2720 (3227 - 3688) |
| 1-1/2 | 38 | — | — | 1940 - 2200 (2631 - 2983) | — | 3160 - 3560 (4285 - 4827) |

Bolt Identification and Torque Limits (Wet*)

*A cadmium plated bolt is considered wet.



Bolt Head ID Marks and SAE Grade

| BOLT SIZE | | | SAE GRADE NO. 1 OR 2 | SAE GRADE NO. 5 | SAE GRADE NO. 6 OR 7 | SAE GRADE NO. 8 |
|-------------|--------------|------------------|----------------------------|------------------------------|----------------------------|------------------------------|
| DIA. INCHES | MILLI-METERS | THREADS PER INCH | POUND FEET (NEWTON-METERS) | POUND FEET (NEWTON-METERS) | POUND FEET (NEWTON-METERS) | POUND FEET (NEWTON-METERS) |
| 1/4 | 6 | 20 | 4(5) | 7(10) | 9(12) | 11(15) |
| 1/4 | 6 | 28 | 5(7) | 9(12) | — | 13(17) |
| 5/16 | 8 | 18 | 10(14) | 15(20) | 17(23) | 22(30) |
| 5/16 | 8 | 24 | 12(16) | 17(23) | — | 24(33) |
| 3/8 | 10 | 16 | 16(22) | 28(38) | 31(42) | 40(54) |
| 3/8 | 10 | 24 | 18(24) | 32(43) | — | 44(60) |
| 7/16 | 11 | 14 | 25(34) | 44(60) | 50(68) | 63(85) |
| 7/16 | 11 | 20 | 27(37) | 50(68) | — | 70(95) |
| 1/2 | 13 | 13 | 35(48) | 68(92) | 77(104) | 95(129) |
| 1/2 | 13 | 20 | 37(50) | 77(104) | — | 108(146) |
| 9/16 | 14 | 12 | 46(62) | 99(134) | 108(146) | 140(190) |
| 9/16 | 14 | 18 | 50(67) | 108(146) | — | 153(207) |
| 5/8 | 16 | 11 | 57(77) | 135(183) | 150(203) | 189(256) |
| 5/8 | 16 | 18 | 85(115) | 153(207) | — | 216(293) |
| 3/4 | 19 | 10 | 95(129) | 243(330) | 252(342) | 338(458) |
| 3/4 | 19 | 16 | 104(141) | 266(361) | — | 378(513) |
| 7/8 | 22 | 9 | 144(195) | 356(483) | 396(537) | 545(739) |
| 7/8 | 22 | 14 | 158(214) | 392(532) | — | 608(824) |
| 1 | 25 | 8 | 212(287) | 531(720) | 594(805) | 819(1111) |
| 1 | 25 | 14 | 225(305) | 594(805) | — | 891(1208) |
| 1-1/8 | 29 | — | — | 720 - 792 (976 - 1074) | — | 1152 - 1296 (1562 - 1757) |
| 1-1/4 | 32 | — | — | — | — | 1638 - 1800 (2221 - 2441) |
| 1-3/8 | 35 | — | — | 1314 - 1512 (1782 - 2050) | — | — |
| 1-1/2 | 39 | — | — | 1746 - 1980 (2368 - 2685) | — | 2844 - 3204 (3857 - 4345) |



U.S./METRIC CONVERSIONS AND EQUIVALENTS

Metric Conversions

| MULTIPLY | BY | TO GET |
|------------------------|--------|----------------------|
| INCHES | 2.54 | CENTIMETERS |
| FEET | 0.3048 | METERS |
| MILES | 1.6093 | KILOMETERS |
| SQUARE INCHES | 6.451 | SQUARE CENTIMETERS |
| CUBIC INCHES | 16.39 | CUBIC CENTIMETERS |
| FLUID OUNCES | 29.573 | MILLILITERS |
| PINTS | 0.473 | LITERS |
| QUARTS | 0.946 | LITERS |
| GALLON | 3.785 | LITERS |
| POUNDS | 0.454 | KILOGRAMS |
| SHORT TONS | 0.907 | METRIC TONS |
| POUND-INCHES | 0.113 | NEWTON-METERS |
| POUND-FEET | 1.356 | NEWTON-METERS |
| POUNDS PER SQUARE INCH | 6.895 | KILOPASCALS |
| MILES PER GALLON | 0.425 | KILOMETERS PER LITER |
| MILES PER HOUR | 1.609 | KILOMETERS PER HOUR |

U.S. Standard Conversions

| MULTIPLY | BY | TO GET |
|----------------------|---------|------------------------|
| MILLIMETERS | 0.03937 | INCHES |
| CENTIMETERS | 0.3937 | INCHES |
| METERS | 3.2808 | FEET |
| KILOMETERS | 0.6214 | MILES |
| SQUARE CENTIMETERS | 0.155 | SQUARE INCHES |
| CUBIC CENTIMETERS | 0.061 | CUBIC INCHES |
| MILLILITERS | 0.034 | FLUID OUNCES |
| LITERS | 2.113 | PINTS |
| LITERS | 1.057 | QUARTS |
| LITERS | 0.264 | GALLONS |
| KILOGRAMS | 2.205 | POUNDS |
| METRIC TONS | 1.102 | SHORT TONS |
| NEWTON-METERS | 0.738 | POUND-FEET |
| NEWTON-METERS | 8.851 | POUND-INCHES |
| KILOPASCALS | 0.145 | POUNDS PER SQUARE INCH |
| KILOMETERS PER LITER | 2.352 | MILES PER GALLON |
| KILOMETERS PER HOUR | 0.621 | MILES PER HOUR |

Temperature

32° FAHRENHEIT = 0° CELSIUS 212° FAHRENHEIT = 100° CELSIUS

CELSIUS = 0.556 X (F° -32) FAHRENHEIT = (1.8 X C°) +32



PAINT AND TRIM COLORS

Interior trim colors are tan and gray. Seating materials are available in cloth, vinyl and leather.

Soft top colors and codes are: Tan (T) and Black (B).

Exterior paint colors and codes are outlined in the following chart.

| Top Coat Description | AM General Code |
|------------------------|-----------------|
| Black Gloss | B25 |
| Bright White | W26 |
| Competition Yellow | Y27 |
| Firehouse Red | R28 |
| Metallic Black | B34 |
| Metallic Diamond Black | B30 |
| Metallic Pewter | P33 |
| Metallic Sand | T32 |
| Summit Silver | S31 |

REPLACEMENT KEYS

Replacement keys can be cut using Briggs and Stratton or Curtis key cutting tools. Key codes are provided on an identification tag included with each key set (Figure-1-9).



Figure 1-9: Key Code Location

TOWING, LIFTING, JUMP STARTING

Vehicle Lifting/Jacking Points

Vehicle jacking points are shown in Figure 1-10. The vehicle can be raised with a floor jack at any of the indicated positions. Jacking can be performed at the front, rear, or at any one wheel.

In cases where the entire vehicle must be raised, use jack stands at equidistant points on the frame rails. Use a minimum of four stands to support the vehicle. Suggested capacity for individual jack stands is 3 ton, with a vertical reach of 19 in. (49 cm).

Typical jack stand placement for raising one side of the vehicle is shown in Figure 1-11. Always be sure the jack stand saddle is securely engaged and the stand is level.

Vehicle Hoisting

HUMMER H1 vehicles can be raised on a hoist for service access. Drive-on and swivel arm hoists are both acceptable. Hoist capacity and width are important. The greater width and weight of HUMMER H1 vehicles require a larger hoisting platform. Do not use an under capacity hoist, or modify an existing hoist for use; this practice is neither safe nor recommended.

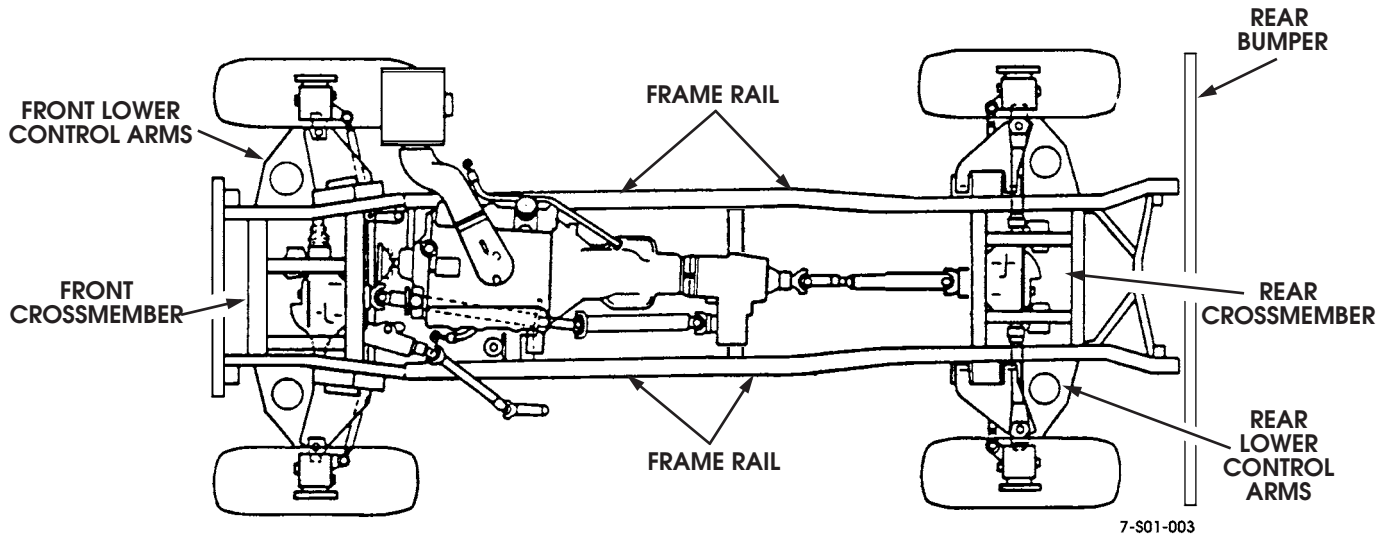


Figure 1-10: Vehicle Jacking Points

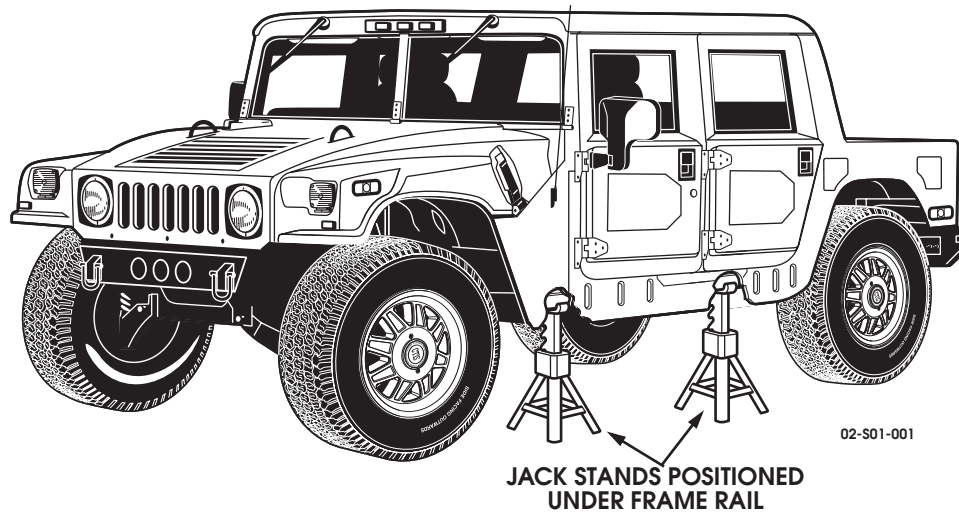


Figure 1-11: Typical Jack Stand Placement

Towing Recommendations

HUMMER H1 vehicles can be towed with wheel lift, sling-type, or flat bed tow equipment.

Flat bed and wheel lift equipment is recommended over sling type or A-frame equipment.

Towing Cautions:

- Remove or secure loads in the towed vehicle
- Never use the shackles on the front bumpers as tie down points
- Always use safety chains on sling towed vehicles
- Always follow the transmission/transfer case shift position recommendations (Transfer Case in N (Neutral); Transmission in P (Park)).
- Use a low vehicle trailer for recreational towing (behind an RV or other vehicle) when possible.
- Never put chains, cables or straps on any steering components.



Flat Bed/Wheel Lift Towing Procedures

Flat bed/wheel lift tow vehicles are highly recommended. They keep all of the towed vehicle wheels off the pavement. This is important with full time four wheel drive vehicles.

Loading only requires that the towed vehicle be raised or winched onto the towing platform. A further advantage of this type equipment is that tow speed and distance are not limited. Once the towed vehicle is loaded, set the parking brake, shift the transmission into Park and install the vehicle tie downs. Tie down attachment points are shown in Figure 1-12.

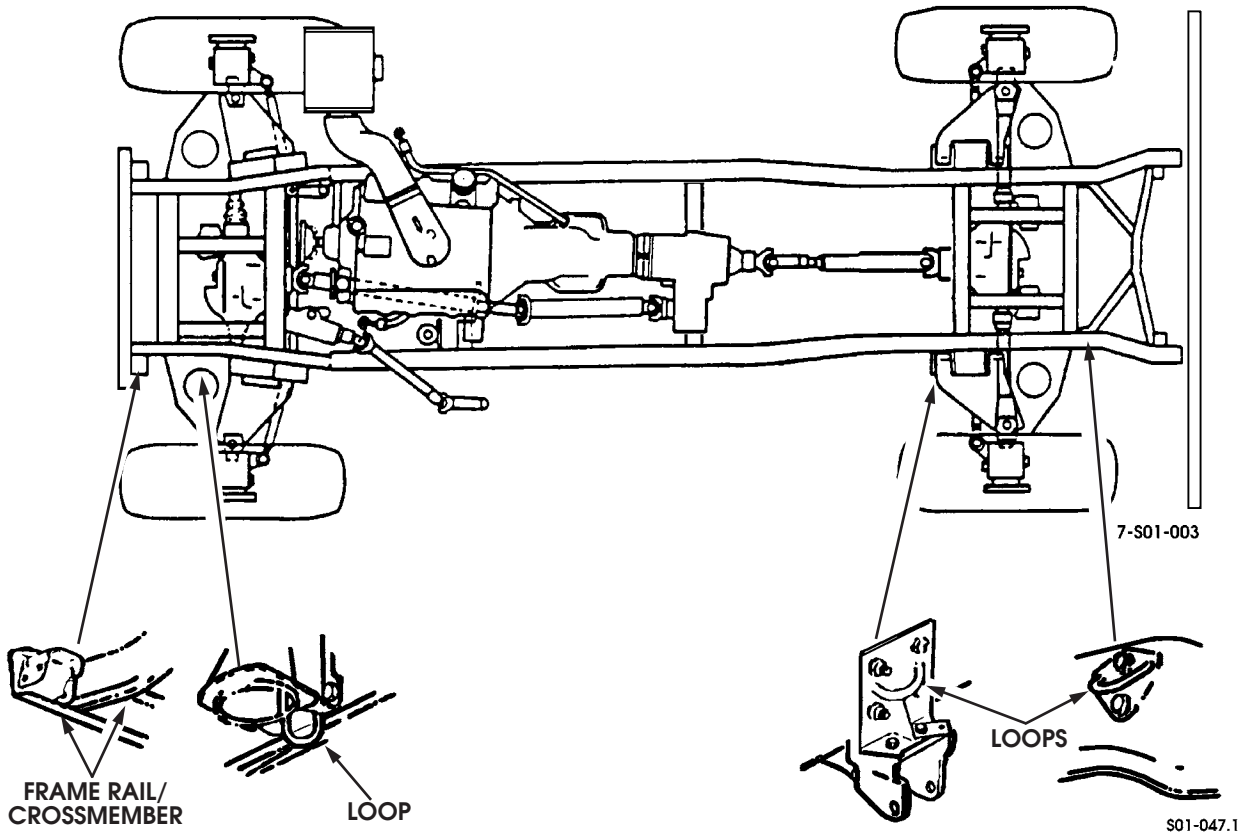


Figure 1-12: Vehicle Tie-Down Points

Conventional Towing Procedures

Front Towing

1. Loop chains around lower control arms and secure to tow sling (Figure-1-13).
2. Insert 4" x 4" x 48" length of wood between bumper and sling chains (Figure-1-13).
3. Raise front end and verify that sling is firmly positioned against front bumper.
4. Release parking brakes.
5. Shift transmission into Park and transfer case into Neutral.
6. Position tow dollies under rear wheels. Proceed with towing operations.

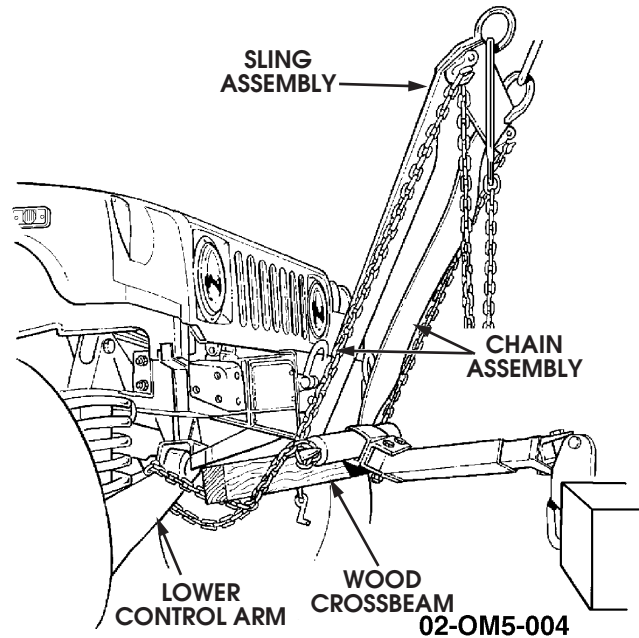


Figure 1-13: Front Towing With Conventional Equipment

Rear Towing

1. Loop sling chain around frame rails adjacent to rear crossmember and secure to tow sling (Figure-1-14).
2. Insert 4" x 4" x 48" length of wood between bumper and sling chains (Figure-1-14).
3. Raise rear end and verify that sling is firmly positioned against rear bumper.
4. Release parking brakes.
5. Shift transmission into Park and transfer case into Neutral.
6. Position tow dollies under front wheels. Proceed with towing operations.

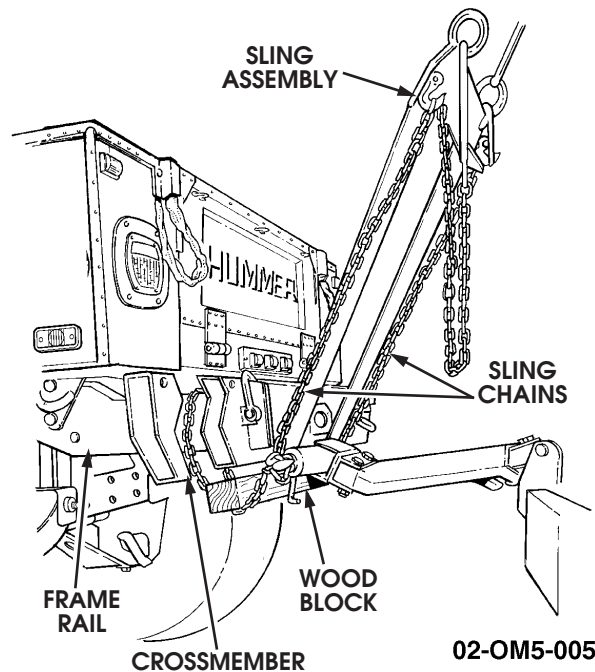


Figure 1-14: Rear Towing with Conventional Equipment



Conventional Towing When Keys are not Available

If the vehicle doors are locked and the keys are not available you cannot determine that the transmission is in Park and the transfer case is in “N” (Neutral). In these situations, you must use one of the following towing methods:

- a. Use tow dollies at all wheels and flat tow,
- or**
- b. Raise the vehicle front or rear and use tow dollies under the wheels not raised.

Recreational Towing

HUMMER H1 vehicles can be towed behind an RV if desired. A low-boy style vehicle trailer is best for this purpose. Flat towing is not recommended.

JUMP STARTING

Preparation for Jump Starting

CAUTION: NEVER allow the two vehicles to touch each other when jump starting.

1. Park the vehicle with the booster battery close to the passenger door of your vehicle. Ensure that the vehicles do not touch each other. Place the transmissions of both vehicles in “P” (Park), if applicable, and set all parking brakes.
2. Clean all battery terminals of excess corrosion before connecting jumper cables.

WARNING: ALWAYS remove ALL jewelry BEFORE handling batteries.

CAUTION: NEVER disconnect a vehicle’s batteries to jump start.

3. Turn off all electrical switches in both vehicles to prevent possible electrical damage to either vehicle’s electrical system.

Jumper Cable Connections

WARNING: NEVER lean over the batteries when connecting the jumper cables or allow the jumper cable clamps to touch each other.

1. Connect one end of the positive jumper cable to the positive (+) terminal on the dead battery. It is best to connect to the positive terminal of the battery closest to the windshield (Figure-1-15).

WARNING: ALWAYS make sure that the positive cable is hooked only to positive terminals and the negative to negative terminals or to a good ground.

2. Connect the other end of the positive cable to the positive (+) terminal on the booster battery.

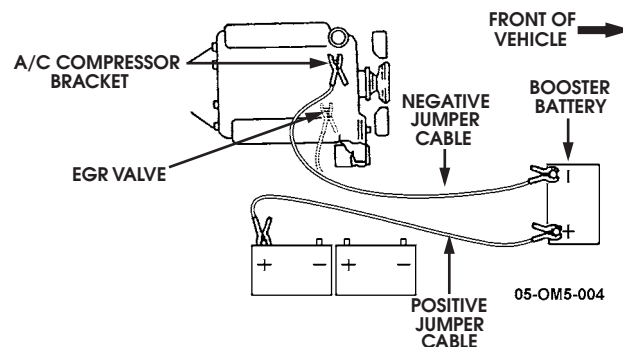


Figure 1-15: Jumper Cable Connections

3. Connect one end of the negative jumper cable to the negative (-) terminal on the booster battery.



WARNING: NEVER connect the other end of the negative jumper cable to the negative (-) terminal on the dead battery.

4. Start the booster vehicle.
5. Connect the other end of the negative cable to a good metallic ground surface on the engine of your vehicle. The best ground point is the A/C compressor bracket on the driver's side of the engine (Figure-1-16).

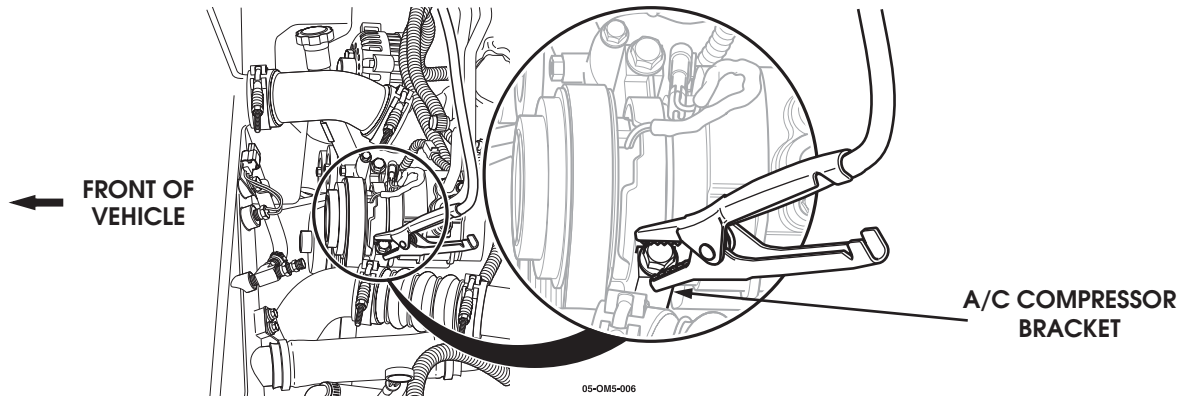


Figure 1-16: A/C Compressor Bracket Ground Point

An alternate ground point is the exhaust gas recirculation (EGR) valve on the passenger side of the engine (Figure-1-17).

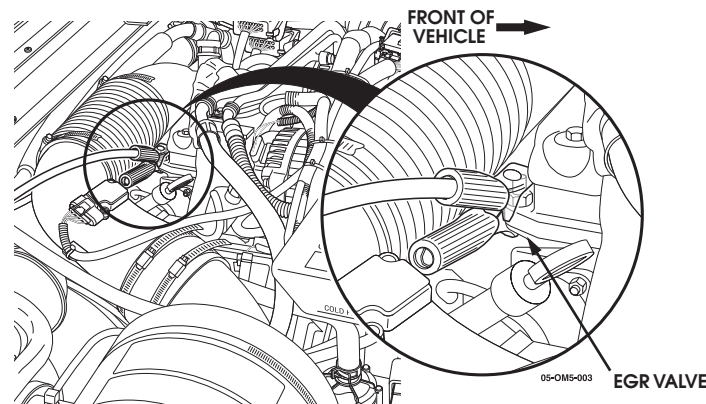


Figure 1-17: EGR Valve Ground Point

Starting the Vehicle

NOTE: Make sure the jumper cables are clear of any moving parts in the engine compartment.

1. With the booster vehicle running with a slightly increased engine speed, allow the dead battery to charge for a few minutes and then start your vehicle. It may take a few tries before your vehicle starts. If your vehicle does not start after cranking for fifteen seconds, stop the procedure. Cranking for more than fifteen seconds at a time seldom starts the engine and could cause damage.
2. Once your vehicle starts, disconnect jumper cables.
3. If the engine stalls, repeat above procedure once, allowing battery to charge for approximately ten minutes. If the engine stalls a second time, have the vehicle transported to an authorized service center.

NOTE: To ensure that the batteries are fully charged, have the batteries charged with proper battery charging equipment.

Disconnecting the Jumper Cables

WARNING: ALWAYS keep your hands away from moving parts in the engine compartment when disconnecting the jumper cables.

1. Remove the negative (-) cable connected to the engine of your vehicle.
2. Remove the other end of the negative (-) cable from the booster battery.



3. Remove the positive (+) cable from the booster battery.
4. Remove the other end of the positive (+) cable from the battery on your vehicle.

After starting, turn off any electrical accessories that were accidentally left on, and allow the engine to run at a high idle speed to recharge the batteries. For a “complete” charge, it may be necessary to use a battery charger to recharge the batteries.

MAINTENANCE SCHEDULE

Recommended Maintenance

Items described in Maintenance Inspection Groups A, B, and C are important to the proper operation, performance, and safety of your vehicle.

It is important that maintenance items outlined in the schedules be performed at suggested intervals. Regular maintenance will greatly improve vehicle reliability and longevity.

Normal Maintenance

The vehicle maintenance schedules reflect services required for normal operation. Normal operation includes city/highway driving on hard surface roads with only minimal operation on unpaved road surfaces.

Maintenance After Severe Operation

Severe operation includes extensive off-road driving, salt water fording, commercial use, sustained operation in high ambient temperatures, and trailer towing. This type of vehicle operation requires additional and more frequent service. If the vehicle is going to be used frequently in severe operating situations, maintenance should be done on an hourly rather than a mileage schedule, as shown in the Scheduled Maintenance Chart on page 1–27 . To keep track of the hours of severe operation, an optional hourmeter can be installed at your HUMMER dealer.

Commercial use involves regular operation as a delivery or service type vehicle. Severe off-road use involves extended operation on rough terrain, stream fording, salt water fording, or sustained operation in sand, mud, snow, or dirt surfaces. Severe operation also includes prolonged daily operation in heavy traffic when ambient temperatures are high.

The additional maintenance required immediately after severe off-road operation is as follows:

- Wash the vehicle underbody, driveline and brake components, and all steering linkage and suspension parts with a low pressure fresh water spray.
- If vehicle was driven over rough terrain, examine the underbody and driveline components for impact damage. Also check for leaks and loose parts.
- If the vehicle was driven through deep water, examine geared hub, axle and vent lines for water contamination. If the lines have become disconnected, these components may become water contaminated. Also inspect the axle and hub vents if required.
- Check the front/rear brake pads for contamination by dirt, mud, sand, etc. Replace the pads if foreign material has become embedded in the lining. However, if the pads are only wet from water, allow them to air dry, or drive the vehicle about a block with the brakes lightly applied to heat and dry the pads.
- Check transmission and transfer case fluid levels and condition. Drain and replace the fluid in either assembly if water contamination is evident. If water contamination proves extensive, it will also be necessary to replace the transmission fluid filter, and flush the transmission fluid cooler and lines.
- Lubricate the steering linkage, ball joints, propeller shaft, and body lubrication points.
- Check the brake and power steering fluid levels and top off as needed.
- Examine the engine air filter. Replace the filter element if necessary and clean the air filter housing and dust unloader.
- Change engine oil and replace engine oil filter.

Maintenance Inspection Groups A-B-C

The inspection groups outline additional components to be checked at stated mileage intervals. The intervals are described in your maintenance booklet. Perform necessary service repair, replacement, or adjustments as each inspection item is checked.

Maintenance Inspection Group A:

- Check fluid levels and condition for power steering pump, cooling system (reservoir and surge tank), brakes, transmission, transfer case, geared hubs, and axles.



- Inspect condition of control arms, springs, and shock absorbers.
- Check tire wear and condition.
- Lubricate all grease fittings and body lubrication points.
- Inspect geared hubs for leaking seals or damage.
- Inspect service brakes and parking brake.
- Check axles for leaks or damage.
- Check torque of wheel lug nuts.
- Inspect condition of geared hub and axle vent lines.
- Inspect condition of transmission and transfer case vent lines.
- Inspect U-joints for wear or missing/damaged grease fittings.
- Inspect condition of engine mounts and insulators.
- Inspect transmission/transfer case shift cables for wear, binding, distortion.
- Check fuel filter and drain/clean if necessary.
- Check CTIS operation. Verify that system inflates/deflates tires.
- Check winch operation and cable condition (if equipped). Free-spool out and pay-in at least 30 feet of cable.
- Check ball joints for wear.
- Test drive vehicle and complete a functional check of all systems.
- Check air cleaner.

Maintenance Inspection Group B:

- Inspect fuel injection pump, lines, and fittings for leaks or damage.
- Check battery voltage and condition.
- Inspect serpentine belt condition.
- Inspect exhaust system and shields.
- Inspect and rotate tires.
- Inspect halfshaft boots and ball joint seals.
- Inspect condition of steering column, U-joints, tie rods, steering arm, center link, and idler arm.
- Check fuel tank vent line filter.
- Inspect condition of frame rails and crossmembers.
- Check A/C system operation.
- Check wheel alignment.

Maintenance Inspection Group C:

- Inspect surge tank, radiator and shroud, A/C condenser, power steering and transmission coolers, charge air cooler, and all hoses and fittings for security of mounting, leaks, obstructions, or damage.
- Inspect fuel tank, lines, and cap.
- Inspect all wiring harnesses for frays, splits, missing insulation, poor connections.
- Inspect power steering pump, power steering gear, hoses, lines, and fittings for leaks or damage.

NOTE: Clean all dirt from caps and surrounding areas before opening to check fluids.

SCHEDULED MAINTENANCE CHART

6,000 Miles (9,700 km) – 200 hrs normal use or 100 hrs severe operation

- Change engine oil and replace filter.
- Check items in Maintenance Groups A and B.

12,000 Miles (19,300 km) – 400 hrs normal use or 200 hrs severe operation

- Change engine oil and replace filter.



- Clean or replace air filter.
- Replace fuel filter element.
- Change geared hub oil.
- Change axle oil.
- Change transmission and transfer case fluid.
- Change transmission filter.
- Check items in Maintenance Groups A, B, and C.

18,000 Miles (29,000 km) – 600 hrs normal use or 300 hrs severe operation

- Change engine oil and replace filter.
- Check items in Maintenance Groups A and B.

24,000 Miles (38,600 km) – 800 hrs normal use or 400 hrs severe operation

- Change engine oil and replace filter.
- Clean or replace air filter.
- Replace fuel filter element.
- Change transmission and transfer case fluid.
- Change transmission filter.
- Check items in Maintenance Groups A, B, and C.
- Change geared hub oil.
- Change axle oil.
- Inspect brake fluid for moisture contamination.

30,000 Miles (48,300 km) – 1,000 hrs normal use or 500 hrs severe operation

- Change engine oil and replace filter.
- Check items in Maintenance Groups A and B.

36,000 Miles (58,000 km) – 1,200 hrs normal use or 600 hrs severe operation

- Change engine oil and replace filter.
- Clean or replace air filter.
- Replace fuel filter element.
- Change transmission and transfer case fluid.
- Change transmission filter.
- Check items in Maintenance Groups A, B, and C.
- Change geared hub oil.
- Change axle oil.

42,000 Miles (67,600 km) – 1,400 hrs normal use or 700 hrs severe operation

- Change engine oil and replace filter.
- Check items in Maintenance Groups A and B.

48,000 Miles (77,200 km) – 1,600 hrs normal use or 800 hrs severe operation

- Change engine oil and replace filter.
- Clean or replace air filter.
- Replace fuel filter element.
- Change transmission and transfer case fluid.
- Change transmission filter.
- Check items in Maintenance Groups A, B, and C.
- Change geared hub oil.
- Change axle oil.
- Inspect brake fluid for moisture contamination.

54,000 Miles (86,900 km) - 1,800 hrs normal use or 900 hrs severe operation

- Change engine oil and replace filter.



☐ Check items in maintenance Groups A and B.

60,000 Miles (96,500 km) - 2,000 hrs normal use or 1,000 hrs severe operation

- ☐ Change engine oil and replace filter.
- ☐ Clean or replace air filters.
- ☐ Replace fuel filter element.
- ☐ Change engine coolant.
- ☐ Change transmission and transfer case fluid.
- ☐ Inspect fuel tank, fuel cap and fuel lines.
- ☐ Change transmission filter.
- ☐ Check items in Maintenance Groups A, B, and C.
- ☐ Change geared hub oil.
- ☐ Change axle oil.
- ☐ Drain & replace brake fluid.

NOTE: Some maintenance requires specialized knowledge or equipment and may be best handled by qualified service technicians at your nearest HUMMER dealer.

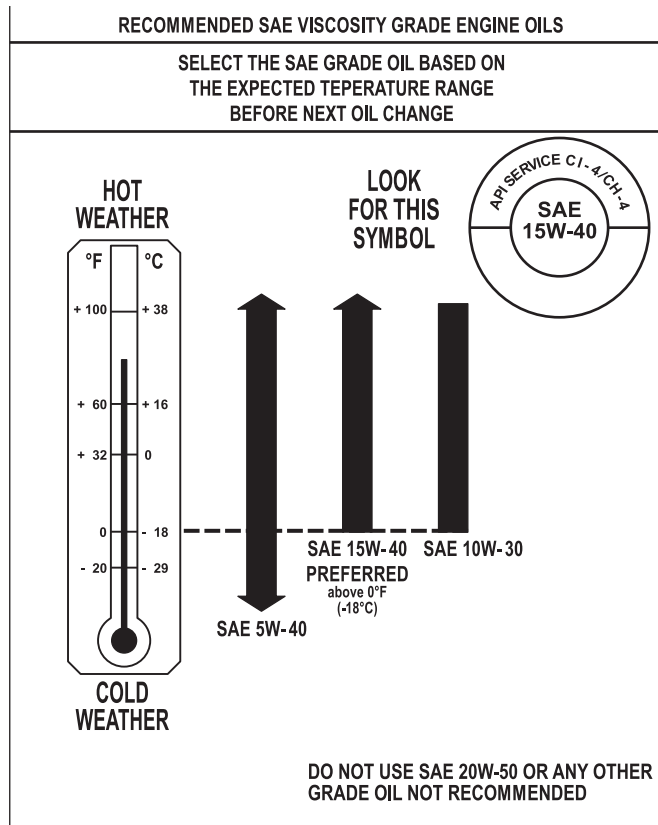
NOTE: After your vehicle has been driven for 66,000 miles (106,200 km) repeat the schedule indicated in this section, starting at 6,000 mi (9,700 km).

RECOMMENDED FUEL/FLUIDS/LUBRICANTS/CAPACITIES

Recommended Fuel

Recommended fuel for 6.6L diesel engines is #2 diesel. Do not use any other type fuel.

Engine Oil



05-OM1-006

Figure 1-18: Oil Viscosity Chart



Diesel engine oil capacities are:

- 10.5 qts (9.9L) without filter change
- 12.25 qts (11.6L) with filter change
- 2.0 qts (1.9L) for engine oil cooler

Refer to Section 2 for more information regarding engine oil.

Engine Coolant

Recommended engine coolant is a mixture of ethylene glycol antifreeze and water.

Use a mixture containing 50% DEX-COOL and 50% water.

Radiator capacity is 7 qts (6.6L). System capacity is approximately 33 qts (31.2L).

Transmission/Transfer Case/Steering Gear and Pump Fluid

Recommended lubricant for the transmission, transfer case, and steering system is Dexron III automatic transmission fluid.

Approximate fluid capacities are:

- 1 qt (0.95L) for the steering gear and pump
- 3.5 qts (3.3L) for the transfer case
- 14 qts (13.3L) for the transmission, converter, and cooler
- 8.2 qts (7.7L) for the transmission (during fluid drain/refill)

Brake Fluid

Recommended brake fluid for all HUMMER H1 vehicles is DOT 3 brake fluid. Master cylinder approximate capacity is 1.64 pints (0.78L). Brake system approximate capacity is 3.12 pints (1.5L).

Front and Rear Axle Lubricant

Recommended lubricant for axles is HUMMER H1 Synthetic Gear Lube 75W-90 with friction modifier. The approximate capacity for one axle is 2 qts (1.9L).

Geared Fan Drive

Recommended lubricant for the GFD is HUMMER H1 Synthetic Gear Lube 75W-90 with friction modifier. The approximate capacity is 1.2 pt (0.6L).

Geared Hub Lubricant

Recommended lubricant for hubs is a heavy duty, multipurpose, API GL-5 gear lubricant, with viscosity ratings of 80W-90 or 75W-90.

The 80W-90 is an all purpose lubricant. The 75W-90 lubricant is suggested for use in areas where winter temperatures are consistently below freezing.

Steering Linkage and Suspension Lubricant

Recommended lubricant for steering and driveline components is an NLGI LB, or GC-LB grade multipurpose chassis grease. Use only those lubricants that display the NLGI certification symbol.



Body Lubrication

Door hinges, linkage parts, cables, and other body components can be lubricated with a number of different lubricants. Suggested lubricants and applications are:

- Window regulator mechanisms – spray white grease
- Window slides – silicone spray lube
- Door hinges – engine oil, ATF, or LPS brand spray lube
- Linkage/cables – LPS brand silicone spray lube
- Lock strikers – chassis grease, white grease, or LPS #3.
- Seat track – multipurpose chassis grease (NLGI-LB)
- Lock mechanisms –ATF, silicone spray lube, graphite lube

A/C Refrigerant and Compressor Oil

The only refrigerant that can be used is R-134a. No other refrigerant is recommended.

The only compressor oil recommended is PAG (polyalkylene glycol). It is the only oil compatible with refrigerant R-134a. No other oil is recommended. Any PAG oil used should be compatible with General Motors specifications.

A/C system capacities are:

- 11 fluid ounces (325 ml) of PAG oil
- 3 lb 3 oz (1.45 kg) refrigerant

LUBRICATION AND MAINTENANCE ITEMS

Engine Oil Level

The engine oil dipstick is at the driver side of the engine (Figure-1-19). Correct oil level is to the “F” mark.

Check oil level only when the engine is shut down and the vehicle is on a level surface. Wait one minute after shut down to check. Never overfill the engine. The excess oil will be churned into foam causing oil film breakdown and consequent engine damage.

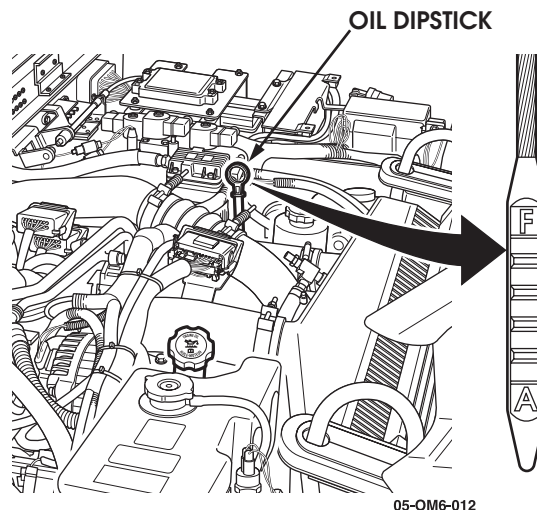


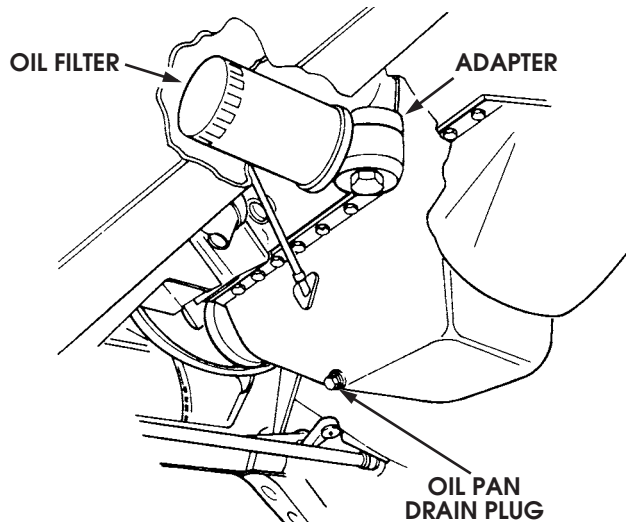
Figure 1-19: Oil Dipstick Location

Engine Oil and Filter Change

The oil filter is located on the driver side of the engine (Figure-1-20). A front mounted fill tube is used.

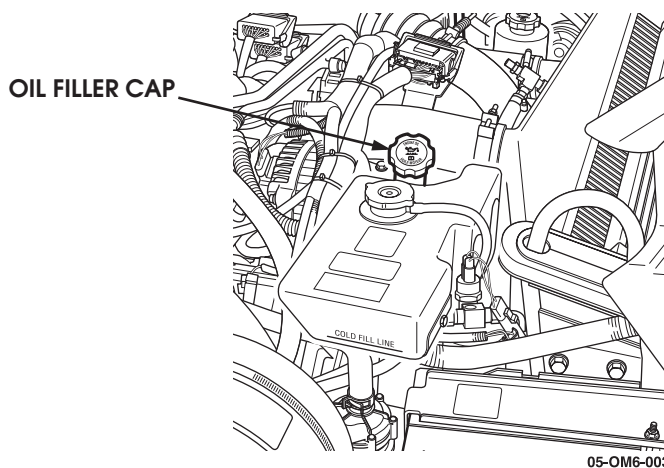
The spin-on oil filter is only removed with a standard band-type tool. Coat the seal on a new filter with oil and clean the adapter surface before installation. Tighten the filter by hand. Replace filter every 6,000 mi (9,700 km).

The oil pan drain plug has a gasket that should be replaced if cut, cracked, or distorted. Check the gasket seating surface on the oil pan. Burrs or nicks can be smoothed with a fine tooth file. Also replace the drain plug if the threads are worn or damaged. Be sure the plug is tightened to required torque of 16 lb-ft (22 N•m).



6-S01-026

Figure 1-20: Oil Filter/Drain Plug Location

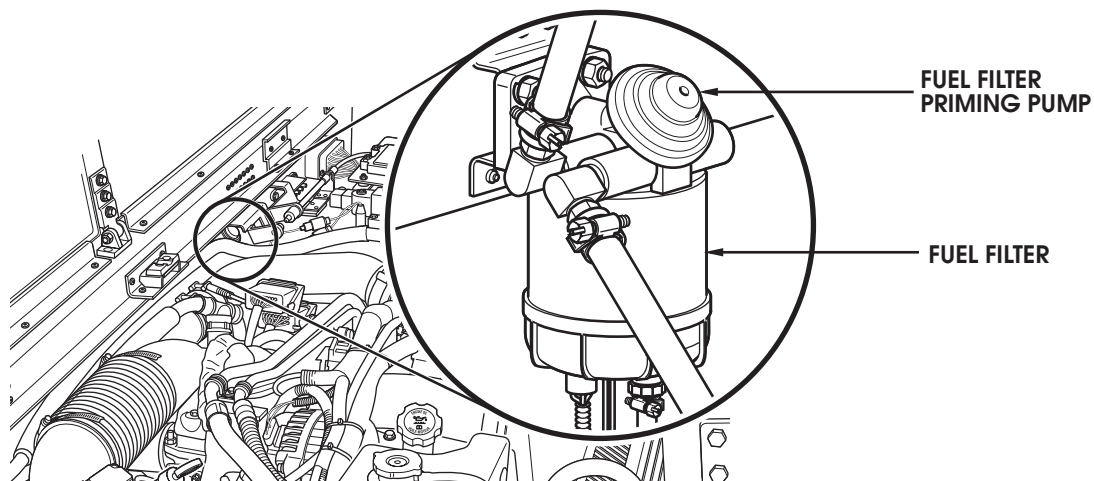


05-OM6-003

Figure 1-21: Engine Oil Fill Location

Fuel Filter Service

Replace the filter element every 6,000 mi (9,600 km), or annually, whichever occurs first (Figure-1-22). See “Purging Air From Diesel Filter” (Section 3).



05-OM6-013

Figure 1-22: Fuel Filter Location



Transmission Fluid

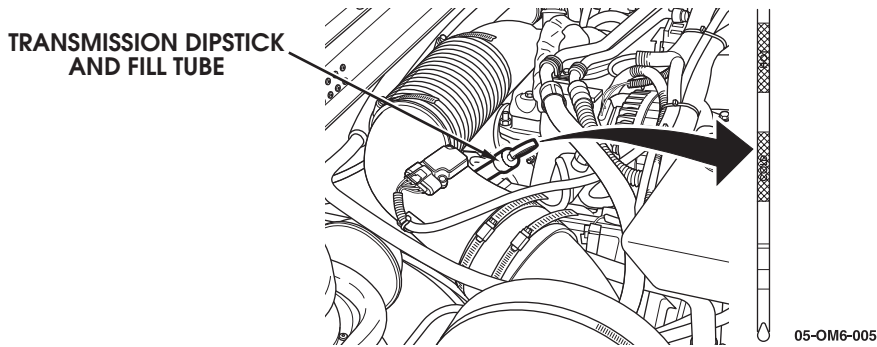


Figure 1-23: Transmission Dipstick Location

Replace the transmission fluid filter each time the fluid is changed. Refill the transmission with Dexron® III afterward.

Check transmission fluid level at least once each month. Procedure is as follows:

1. Drive the vehicle until the transmission fluid is at normal operating temperature. Fluid must be hot to obtain accurate reading.
2. Position the vehicle on a level surface.
3. Shift the transmission into Park.
4. Operate the engine at curb idle speed.
5. Remove the transmission dipstick and check the level (Figure-1-23). Correct level is within the crosshatch marks on the dipstick.
6. If the fluid level is too high, remove the excess through the fill tube using a suction gun and 3/16-in. teflon tubing. If level is low, check for leaks and, if OK, add fluid in 1-2 ounce increments until level is correct.

CAUTION: Do not overfill the transmission. The excess fluid will be churned into foam resulting in overflow from the fill and vent tubes, slip and flare during upshifts, fluid breakdown and eventual clutch failure.

7. Check the fluid color and the condition. Normal color ranges from dark red to light pink. Fluid that is dark brown, black, or orange and full of bubbles indicates a problem that may require overhaul.

Transfer Case Fluid

Check transfer case fluid level every 6,000 mi (9 700 km), or semiannually, whichever comes first. Remove fill plug and gasket. Level should be within 1/2 in. (12.7 mm) of fill plug opening when transfer case is level. Install fill plug and gasket, and tighten to 15-25 lb-ft (20-33 N•m). Change fluid every 12,000 mi (19 000 km) or annually, whichever occurs first (Figure-1-24).

Inspect rubber plug in the shift rail roll pin access passage located near the shift lever for leakage. Replace plug if leakage is present.

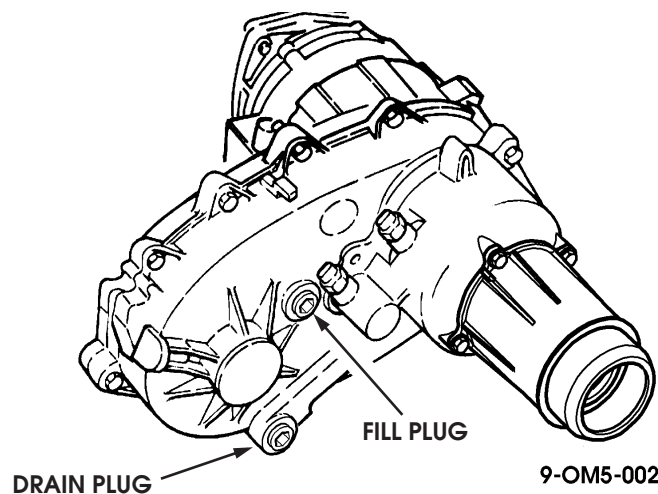


Figure 1-24: Transfer Case Fill/Drain Plug Location



Axle and Geared Hub

- Check axle and hub lubricant condition and level every 6,000 mi (9,700 km) or semiannually, whichever occurs first. Geared hub level should be within 1/2 in. (12.7 mm) of fill plug opening when lubricant is cold, or to plug level when hot. Axle level should be within 1/4 in. (6.4 mm) of fill plug opening when lubricant is cold, or to plug level when hot (Figures 1-25 and 1-26).
- Change axle and hub lubricant when contaminated by water or foreign material.
- The geared hubs use GL-5, SAE 80W-90 or 75W-90 gear lubricant only.
- For the axles, use only HUMMER H1 Synthetic Gear Lube 75W-90 with friction modifier.

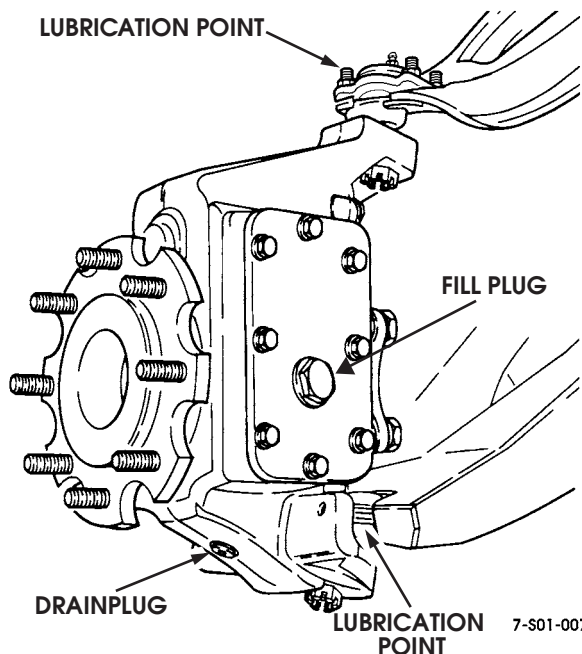


Figure 1-25: Geared Hub Fill/Drain Plug Locations

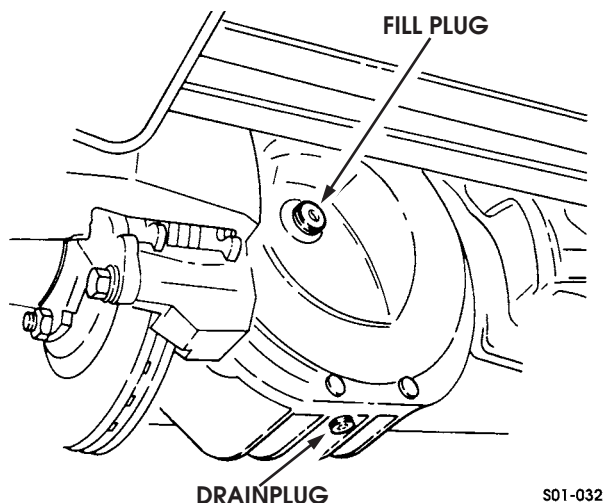


Figure 1-26: Axle Fill/Drain Plug Locations

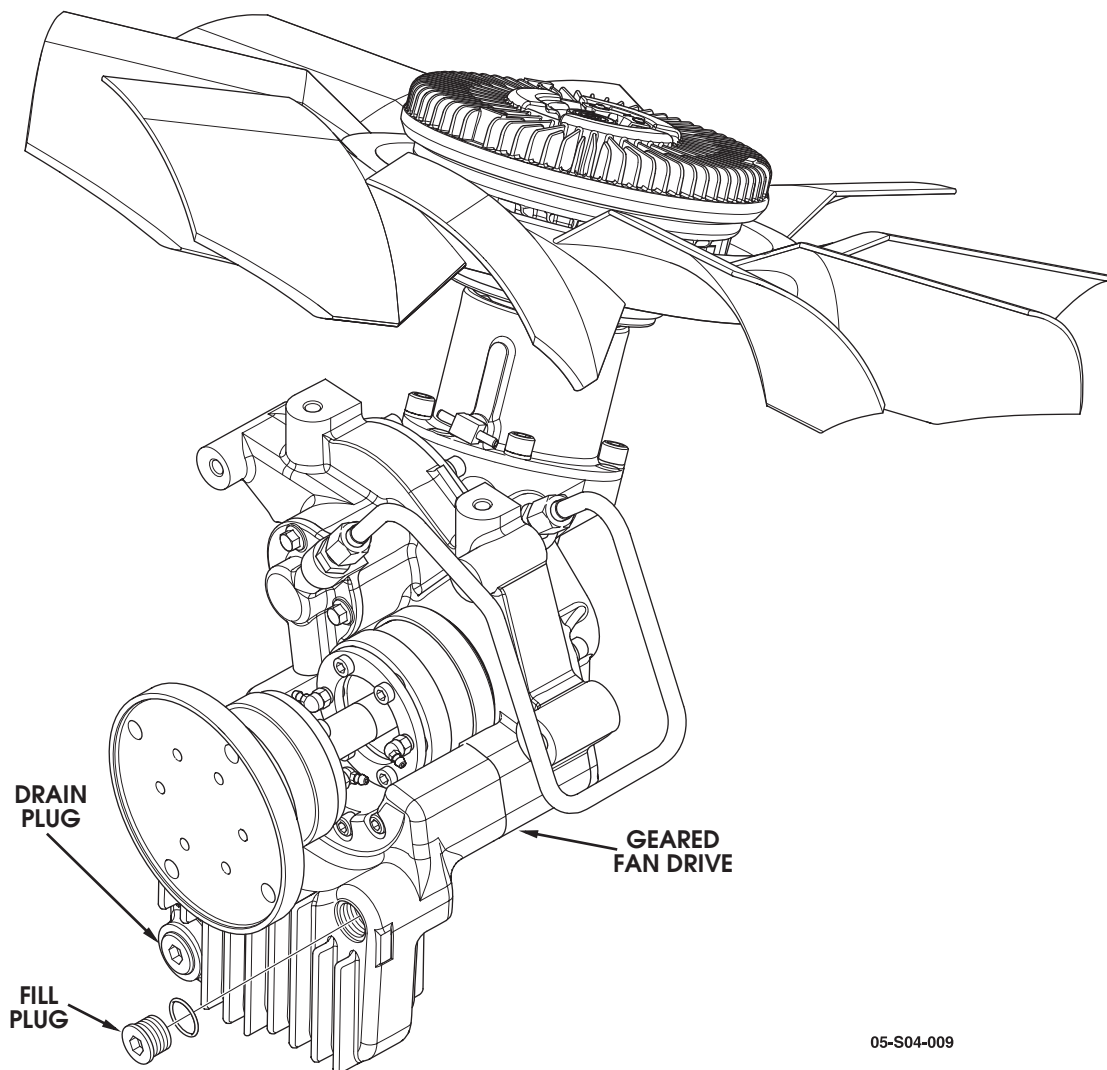


Geared Fan Drive

CAUTION: If the fluid level is checked when the unit is hot, some of the expanded fluid will run out and create a low fluid condition.

The fluid level in the reservoir must be checked every 6,000 mi (9,700 km) or semiannually, whichever occurs first and topped off using HUMMER H1 Synthetic Gear Lube 75W-90 with friction modifier. Remove the fill plug when the unit is cold and ensure that the fluid is even with the bottom of the fill plug hole (Figure-1-27). The coupler shaft CV joints must be greased every 6,000 mi (9,700 km) or semiannually, whichever occurs first with a multipurpose, NLGI-LB grade chassis grease. The coupler shaft has a CV joint at the GFD end and one at the engine crankshaft end. Each CV joint contains two grease zerks, although only one zerk needs to be greased per joint. The second zerk is used to give an optional location depending on the position of the shaft when the engine stopped. This should lessen the need to bar the engine over to gain access to the zerks. Grease should be applied, using a low pressure grease gun, to the joint until old grease can be seen exiting around the sleeve on the shaft. Wipe the excess grease from the shaft when finished (Figure-1-28).

NOTE: It will be normal for some grease to exit the CV joint seals during engine operation, DO NOT replace the CV joints for this condition.



05-S04-009

Figure 1-27: GFD Fill and Drain Plug

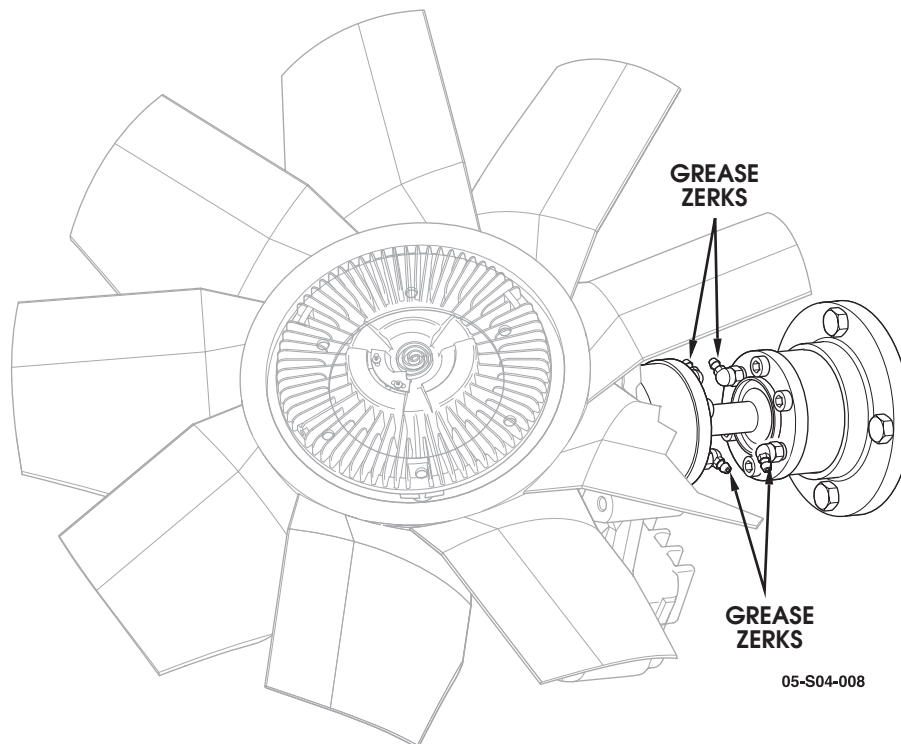


Figure 1-28: Coupler Shaft Grease Points

Universal and Slip Joint Lubrication

Lubricate U-joints with a multipurpose, NLGI-LB grade chassis grease.

Lubricate propeller shaft universal and slip joints every 6,000 mi (9,700 km), or semiannually, whichever occurs first. Use a hand operated or low-pressure air powered lubrication gun. If operating conditions are severe service at 1,000 mi. (1,600 km) intervals.

The rear propeller shaft U-joints have two grease fitting locations (Figure-1-29). The front shaft has four fitting locations (Figure-1-30)

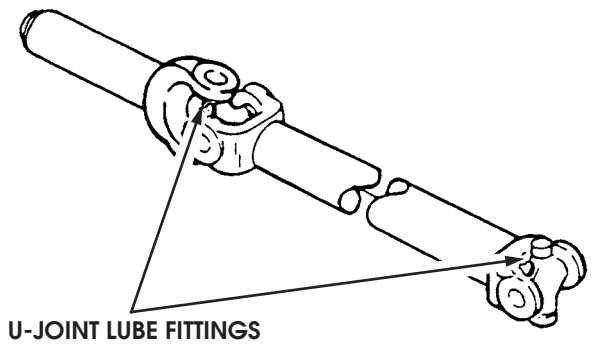
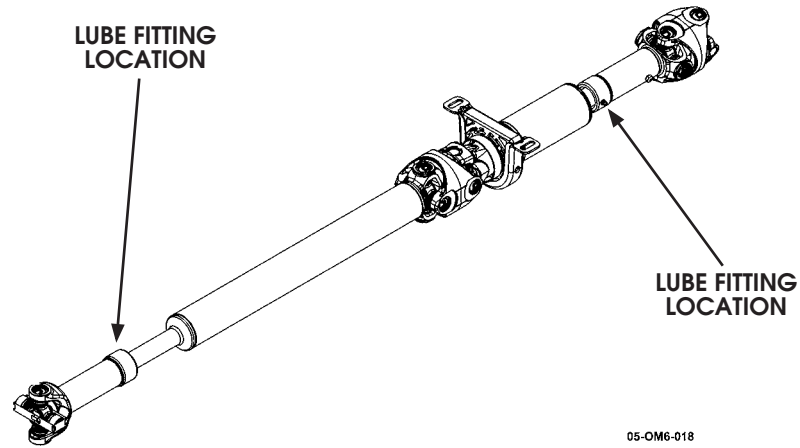


Figure 1-29: Propeller Shaft Lube Points



05-OM6-018

Figure 1-30: Front Propeller Shaft Lube Points

Steering and Suspension Lubrication Points

Lubricate steering and suspension components every 6,000 mi. (9 700 km), or semiannually, whichever occurs first. If operating conditions are severe, service at 1,000 mi. (1 600 km) intervals.

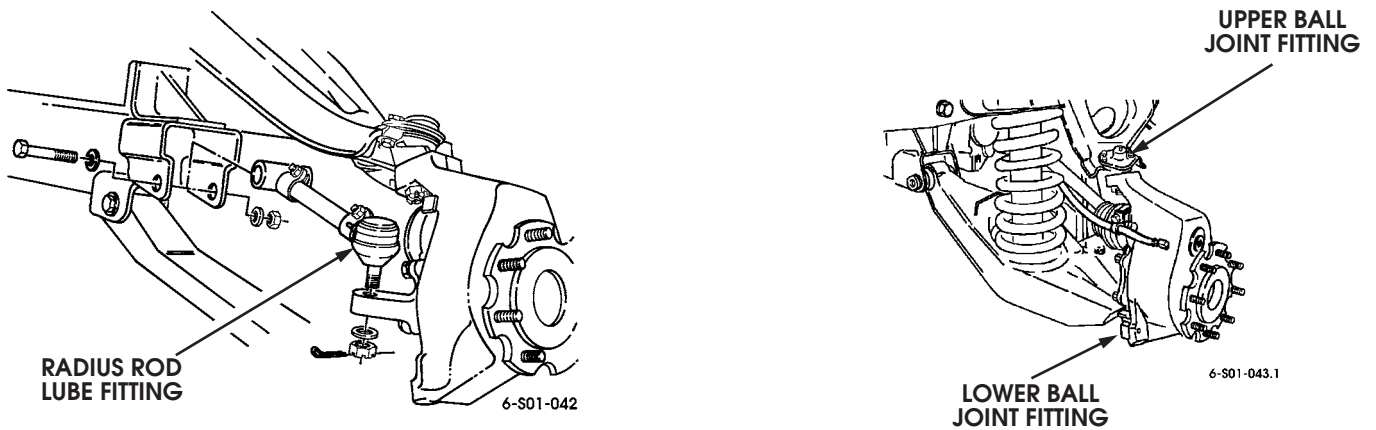
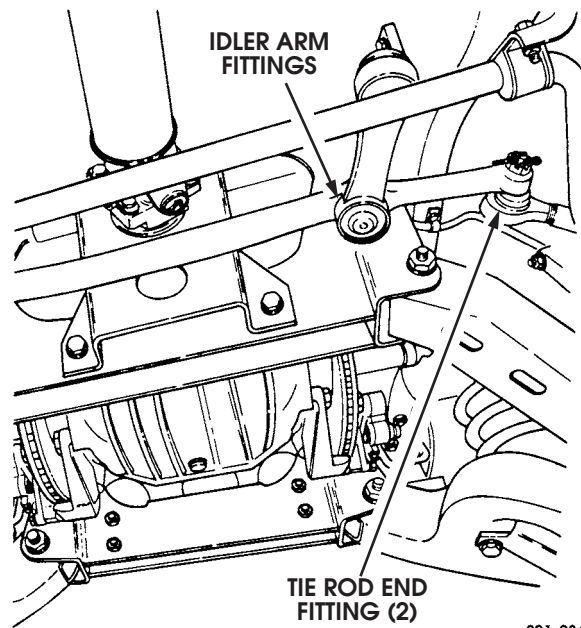


Figure 1-31: Ball Joint/Radius Rod Lube Points

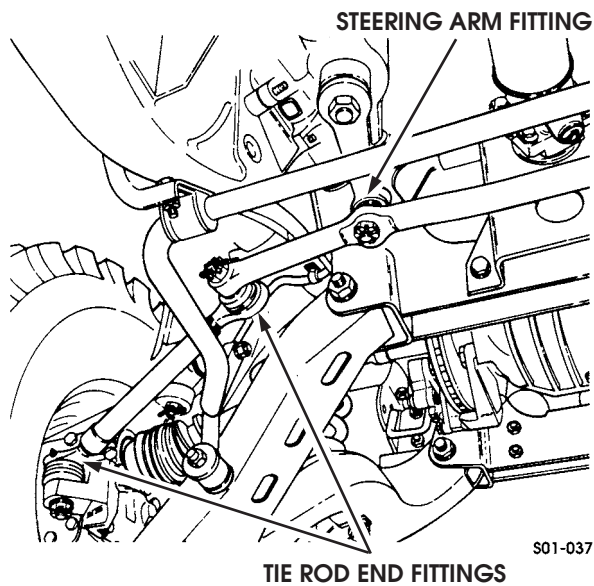
Suspension lube points include the upper and lower ball joints and the rear suspension radius rods (Figure-1-31). Steering lube points include the tie rod ends, idler arm, steering arm, and intermediate steering shaft (Figure 1-32 through Figure 1-34).

Use a hand operated or low pressure air powered lube gun filled with a multipurpose chassis grease. NLGI-LB classification lubricating grease is recommended.



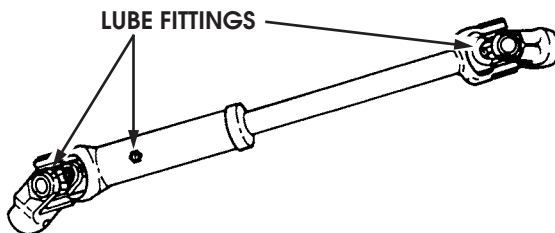
S01-036

Figure 1-32: Idler Arm and Tie Rod Lube Points



S01-037

Figure 1-33: Tie Rod and Steering Arm Lube Points



S01-038

Figure 1-34: Intermediate Steering Shaft Lube Points



Power Steering Fluid

Check the fluid level in the power steering reservoir monthly and adjust level as necessary. If fluid is hot, level should be between “HOT” and “COLD” marks on the cap indicator. If fluid is cool, level should be between “ADD” and “COLD” marks. In either condition, level must be above “ADD” mark.

NOTE: Power steering fluid does not require periodic replacement.

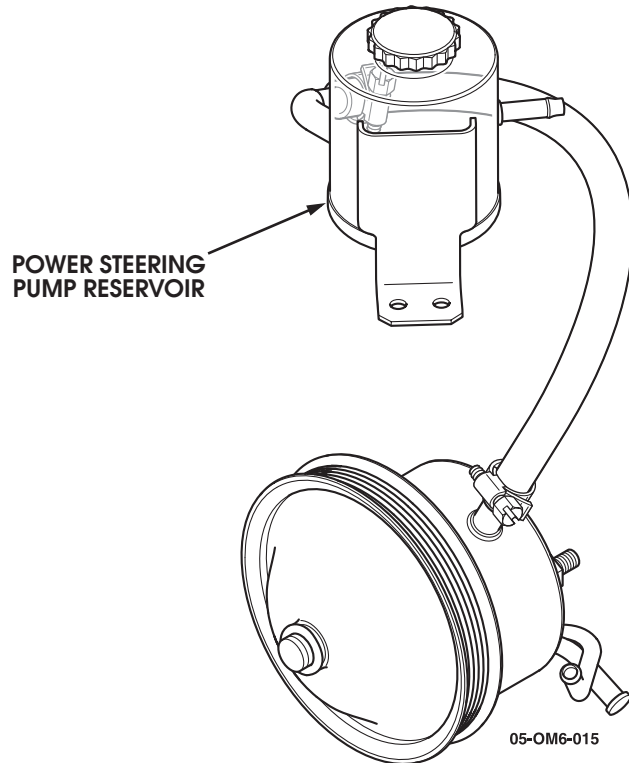


Figure 1-35: Power Steering Pump Reservoir

Cooling System Fluid Level Check

Check coolant level at the surge tank monthly and adjust level as necessary. Level should be at, or above, the cold fill line (Figure-1-36).

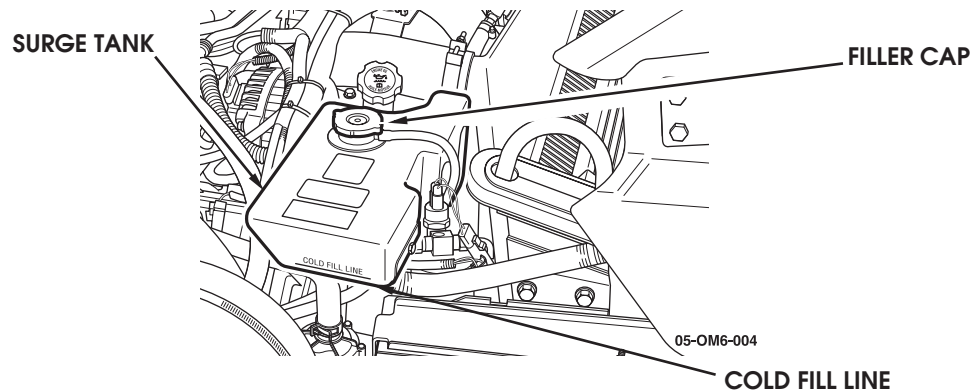


Figure 1-36: Surge Tank Coolant Level Indicator Location



Master Cylinder Fluid Level Check

CAUTION: Use DOT 3 brake fluid only. Failure to use the proper fluid may affect brake performance or damage brake components.

Check master cylinder fluid level monthly. Correct fluid level is to within 1/2 in. (13 mm) from the “MAX” indicator.

Clean the master cylinder cap and exterior before checking fluid level. Dirt on the cap must not be allowed to enter the reservoirs.

Add DOT 3 fluid if necessary and reinstall the cap (Figure-1-37).

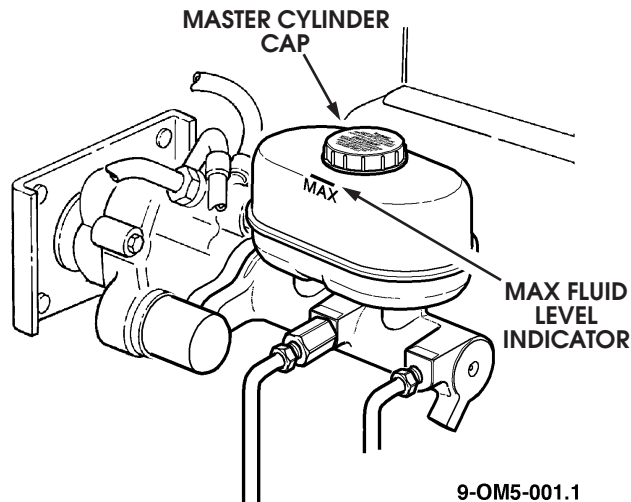


Figure 1-37: Master Cylinder Cap Location

Wheels/Tires/CTIS

Inspect tire and wheel condition. Look for loose wheel nuts and rim stud nuts, or dented, deformed wheel rims. Note tire tread wear and sidewall condition. If the vehicle is used for extensive off road operation, check the sidewalls for bulges, bead damage, cuts, fabric breaks.

If the tire treads are worn, note type of wear. If wear is only on one shoulder, toe setting or camber may be incorrect. If tires are scalloped or worn at crown only, or both shoulders, inflation pressures are probably incorrect.

If the vehicle is equipped with CTIS, cycle the system and check operation. Verify tire inflation pressures with an accurate gauge.

Serpentine Belt

Replace the belt if frayed, cut, or torn. Minor, small surface cracks within the belt grooves are normal. Do not replace the belt unless cracks extend all the way through or across the belt face.

Body Lubrication Points

Every 6 months or 6,000 mi (9,700 km), whichever occurs first, lubricate the: hood hinge, hood stops, tailgate hinges, door hinges, door handles, parking brake lever and service brake pedal push rod stud (Figure-1-38). Suggested lubricants include engine oil or ATF for hinges; LPS silicone lube for linkages, handles, and brake push rod; white grease for seat tracks, window regulators and park brake lever. Door locks should use a graphite based lubricant such as Lock-Eze. Refer to the Recommended Fuel/Fluids/Lubricants/Capacities section for more detailed lube information.

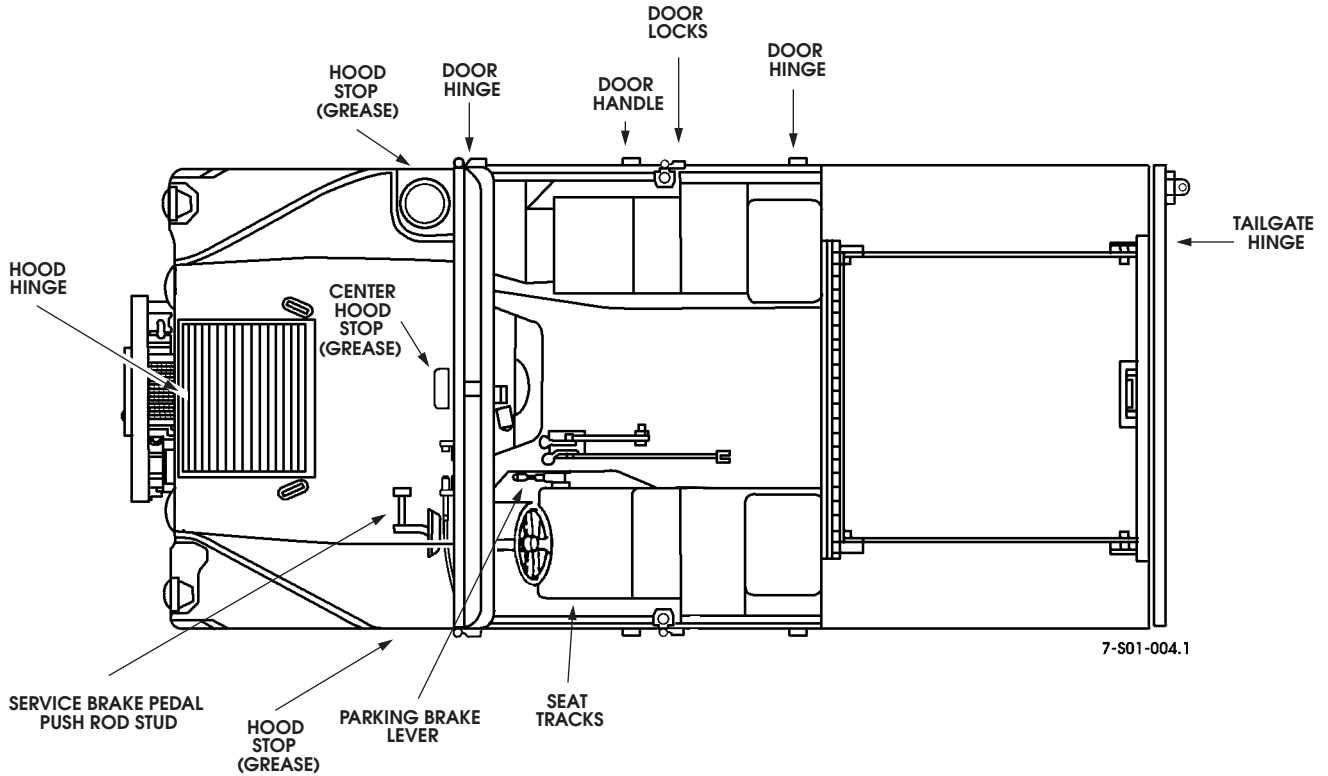


Figure 1-38: Body Lubrication Points

ESSENTIAL TOOLS

NOTE: See page 1-1 of the 2006 Service Parts Catalog for information on ordering Kent-Moore tools.

Engine

| Tool No. | Description |
|------------|---|
| EN-47913 | Wrench, Belt Tensioner |
| J-23523-F | Harmonic Balancer Remover/Installer Set |
| J-23951 | Water Manometer |
| J-26999-10 | Compression Gauge Adapter |
| J-26999-20 | Adapter, Compression Gauge |
| J-26999-30 | Compression Gauge Adapter |
| J-34826 | Socket, 36mm 12 Point |
| J-42000-EU | Digital Battery Tester |
| J-44640 | Installer, Valve Stem Seal |
| J-44641 | Remover, Rear Crankshaft Seal |
| J-44642 | Installer, Rear Crankshaft Seal |
| J-44643 | Flywheel Holder |
| J-44644 | Remover, Front Crankshaft Seal |
| J-44645 | Installer, Front Crankshaft Seal |
| J-44646 | Compressor, Valve Spring (On-Vehicle) |
| J-44648-A | Storage Case - Duramax 6.6L Tools |
| J-45059 | Angle Meter |
| J-46594 | Tool, Injector Removal |



Fuel, Emissions and Exhaust

| Tool No. | Description |
|-------------|--|
| EN-47589 | Test Adapter, Fuel Pressure |
| J-28552-A | Gauge, Fuel Pressure |
| J-28552-100 | Fuel Pressure/Return Adapter Set |
| J-29658-D | Fuel Pressure Gauge & Adapter Set |
| J-29698-A | Injection Line (flare nut) Wrench, 3/4 |
| J-38641-B | Hydrometer, Diesel Fuel |
| J-44638 | Gauge, Vacuum/Pressure |
| J-45773 | Adapters, Fuel Pressure Gauge |
| J-45873 | Test Kit, Fuel Return Volume |
| J-45873-30 | Test Adapters, Fuel Return Volume |

Transmission/Transfer Case

| Tool No. | Description |
|-------------|--|
| DT-47502 | Front Output Seal Installer |
| J-21366 | Torque Converter Retaining Strap |
| J-25025-B | Oil Pump and Valve Body Pin Set |
| J-33831-A | Input Gear Seal Installer |
| J-33835 | Pump Housing Seal Installer |
| J-39700 | Break-Out Box |
| J-41364-A | NSBU Switch Aligner |
| J-41623-B | Trans Oil Cooler Line Disconnect Tool |
| J-42497 | Extension Housing Seal Installer |
| J-42543 | Selector Shaft Seal Remover/Installer |
| J-43773 | Valve Spring Compressor |
| J-43799 | Break-Out Box Adapter |
| J-43909 | Selector Shaft Seal Installer |
| J-43911 | Selector Shaft Seal Remover |
| J-44152 | Jumper Harness (20 pins) |
| J-44247 | Internal Wiring Harness Installer |
| J-44257 | Wiring Harness Connector Remover |
| J-44835 | Allison Transmission Oil Cooler Flush Adapters |
| J-44924-A | Storage Case - Allison LCT Tools |
| J-45053 | Pump Remover |
| J-45056 | Oil Pressure Adapter |
| J-45096 | TransFlow Transmission Cooling System Service Tool |
| J-45096-500 | Oil Flush Kit Adapters |
| J-46409 | Torque Converter Alignment Handles |



Wheels, Tires and CTIS

| Tool No. | Description |
|----------|----------------------------|
| CH-47503 | Runflat Tire Pry Bar |
| J-39522 | ENG Kit, Socket (5-Point) |
| J-42452 | Runflat Compressor |
| J-42557 | Socket, Cam |
| J-45760 | Rim Separating Jack-Screws |
| J-45769 | Runflat Ratchet Wrench |
| J-45770 | Hutchinson Rim Separator |

Brakes

| Tool No. | Description |
|----------|-----------------------------------|
| J-35592 | ABS Pinout Box |
| J-42553 | Disc Brake Piston Retraction Tool |
| J-42883 | Wheel Speed Sensor Test Cable |
| J-44237 | ABS Blink Code Jumper |
| J-44238 | Master Cylinder Bleed Adapter |
| J-45405 | Brake Line Flaring Kit |
| J-45761 | T-Handle Ratchet Wrench (9/16") |

Steering

| Tool No. | Description |
|----------|--------------------------------------|
| J-33141 | Adapter Fittings (used with J-25323) |
| J-42548 | Puller, Pitman Arm |
| J-44721 | Power Steering System Analyzer |
| J-8092 | Universal Driver Handle |

Axles/Suspension and Frame

| Tool No. | Description |
|-----------|---------------------------------------|
| CH-47505 | Shock Mounting Pin Socket |
| DT-47845 | Installer, Input Seal |
| DT-47846 | Installer, Spindle Seal |
| J-08614-A | Pinion Flange Holder |
| J-08614-5 | Bolt Kit Yoke Holding Tool |
| J-22610 | Axle Boot Pliers, Eared Clamp |
| J-24398-A | Driveshaft Inclinator |
| J-35566 | Clamp Tool, Axle Boot |
| J-35910 | Axle Boot Crimping Tool |
| J-38792-A | Electronic Vibration Analyzer (EVA) 2 |
| J-38869 | Installer, Pinion Seal |
| J-42183 | Handle, Seal Driver |
| J-42546 | 1/4 in. Drive Torque Wrench (Preset) |
| J-42547 | 1/2 in. Drive Torque Wrench (Preset) |
| J-43218 | Clamp Plier |
| J-45762 | T-Handle Ratchet Wrench (15mm) |
| J-8092 | Universal Driver Handle |



HVAC

| Tool No. | Description |
|----------|----------------------------------|
| J-46053 | R-134a Refrigerant Leak Detector |

Electrical

| Tool No. | Description |
|-----------|----------------------------------|
| J-24538-B | Tester, Gauge |
| J-34513 | Terminal Remover |
| J-35616-B | Connector Test Adapter Set |
| J-41712 | Oil pressure Sending Unit Socket |
| J-42541 | Crimper, 4 pt (field grade) |
| J-45763 | AMP Terminal Release Tool |

Electrical Troubleshooting

| Tool No. | Description |
|-----------|-------------------------|
| J-35689-A | Micro-Pack Extract Tool |
| J-39200-A | Digital Multimeter |

SPECIAL TOOLS

Engine

| Tool No. | Description |
|-----------|--|
| J-02619-A | Slide Hammer |
| J-05902-A | Cylinder Hone |
| J-24270 | Ridge Reamer |
| J-24460-A | Cooling System and Cap Pressure Tester |
| J-26999 | Compression Gauge |
| J-38606 | Valve Spring Compressor |
| J-8037 | Ring Compressor |
| J-8087 | Cylinder Bore Gauge |
| J-9666 | Valve Spring Tester |

Fuel, Emissions and Exhaust

| Tool No. | Description |
|----------|-------------------------------|
| J-35555 | Vacuum Pump (MITY-VAC) |
| J-42520 | Fuel Line Disconnect Tool Set |



Transmission/Transfer Case

| Tool No. | Description |
|------------|--------------------------------------|
| J-03289-20 | Bench-mounted Base |
| J-21359-A | Oil Pump to Converter Seal Installer |
| J-21366 | Converter Holding Strap |
| J-21867-A | Pressure and Hose Assembly Kit |
| J-23456 | Clutch Spring Compressor Press |
| J-36850-A | Transmission Assembly Lubricant |
| J-6125-1B | Slide Hammer |
| J-8059 | Parallel Jaw Snap Ring Pliers |

Wheels, Tires and CTIS

| Tool No. | Description |
|-------------|---------------------------------|
| J-39544-18A | Torque Stick (7/8" x 120 lb-ft) |

Steering

| Tool No. | Description |
|-----------|-----------------------------------|
| J-24319-B | Universal Steering Linkage Puller |
| J-25033-C | Pump Pulley Installer |
| J-25034-C | Pump Pulley Remover |

Brakes

| Tool No. | Description |
|-----------|-------------------------|
| J-29532-A | Diaphragm Brake Bleeder |

**Axles/Suspension and Frame**

| Tool No. | Description |
|-----------------|--------------------------|
| J-21465-13 | Driver Handle Extension |
| J-23409 | Dial Indicator Extension |
| J-26900-13 | Magnetic Indicator Base |
| J-39570 | Chassis Ear |
| J-8001 | Dial Indicator Set |

Body

| Tool No. | Description |
|-----------------|----------------------|
| J-25070 | Heat Gun |
| J-34940 | Heavy Duty Rivet Gun |

Electrical

| Tool No. | Description |
|-----------------|--------------------------------------|
| J-25300-D | Headlight Aimer |
| J-39916-A | CD and Cassette Audio Diagnostic Kit |



Section 1

General Information, Lubrication and Maintenance

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SAFETY SUMMARY

Individuals who decide to perform their own repairs should have proper training and limit repairs to components which will not affect the safety of the vehicle or its occupants.

When replacement parts are required, it is strongly recommended that they are purchased through an authorized HUMMER dealer. It is essential that replacement parts meet or exceed manufacturer's specifications. Vehicle performance and personal safety may be impaired if other than original factory components are installed.

The installation of nonapproved accessories or conversions is not recommended as they could affect the vehicle's driving characteristics and personal safety. AM General LLC will not be liable for personal injury or damage to property resulting from the installation of nonapproved accessories or conversions to the HUMMER H1.

Following the safety precautions as prescribed throughout this manual may greatly reduce the risks of personal injury and damage to the vehicle. However, it is unlikely that AM General LLC will account for all possibilities.

Warnings, cautions, and notes are used throughout this service manual to assist service personnel in the performance of maintenance actions. These statements are designed as reminders for trained and experienced service personnel.

WARNINGS — Indicate potential safety hazards and must be followed to avoid personal injury. Warnings appear as follows:

WARNING: *To avoid injury, do not remove surge tank filler cap before depressurizing cooling system when engine temperature is above 190° F (88° C).*

CAUTIONS — Indicate potential equipment damage, and must be followed to avoid damage to components or systems. An example of a caution is shown below:

CAUTION: To avoid starter damage, do not operate starter continuously for more than 15 seconds. Wait 10 to 15 seconds between periods of operation.

NOTES — Indicate methods or actions that may simplify vehicle maintenance or help maintain vehicle performance. An example of a note is shown below:

NOTE: Clean all components, examine for wear or damage, and replace if necessary.

CARBON MONOXIDE

WARNING: *Engine exhaust and a wide variety of automobile components and parts, including components found interior furnishings in a vehicle, contain or emit chemicals known to the State of California to cause cancer and birth defects and reproductive harm. In addition, certain fluids contained in vehicles and certain products of component wear contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.*

WARNING: *Brain damage or death can result from heavy exposure to carbon monoxide. The following precautions must be followed to ensure personal safety.*

1. Do not operate vehicle engine in enclosed areas. Do not idle the vehicle engine with vehicle windows closed. Be alert at all times for exhaust odors. Be alert for exhaust poisoning symptoms. They are:
 - Headache
 - Dizziness
 - Sleepiness
 - Loss of muscular control



2. If you see another person with exhaust poisoning symptoms:
 - Remove person from area
 - Expose to open air
 - Keep person warm
 - Do not permit physical exercise
 - Administer artificial respiration, if necessary
 - Notify medical personnel

THE BEST DEFENSE AGAINST EXHAUST POISONING IS ADEQUATE VENTILATION.

This service manual contains instructions for maintaining the 2006 commercial HUMMER H1. Spend some time looking through this manual. Features to improve the usefulness of this manual and increase your efficiency are:

Accessing Information - These include: tabulated sections for quick reference, extensive troubleshooting guides for specific systems, and step-by-step directions for service repairs.

Illustrations - A variety of methods are used to make locating and repairing components easy. Locator illustrations, exploded views, and cut-away diagrams make the information in this manual easy to understand.

The service manual is the best source available for providing information and data critical to vehicle operation and maintenance. In this manual you will find the following information:

- Safety Summary
- General Information
- General Service Procedures
- Detailed Service Procedures
- Torque Ranges
- Wiring Diagrams and Schematics

HUMMER H1 owners and dealership service personnel can submit service manual suggestions and comments in writing to:

AM General
Commercial Publications Department
408 S. Byrkit St.
P.O. Box 728
Mishawaka, IN 46546-0728

Forms are furnished at the end of this manual.

Service Manual Revisions

In order to receive future revisions to this service manual, please write to:

AM General
Service Parts Logistics Operations
Commercial Publications/Customer Service
408 South Byrkit Avenue
P.O. Box 728
Mishawaka, Indiana 46546-0728

Be sure to specify publication number.

HUMMER H1 SERVICE HOTLINE

On occasion, an unusual service problem can arise that is not covered in the manual. For this reason, AM General has established a service hotline for dealership assistance. The hotline number is: **1-800-638-8303**

Transfer Case Hotline

If you have questions that are not answered in Section 5 of this Service Manual, you can call the Transfer Case Hotline at **1-800-945-4327** (in the U.S.) for more information. International and Canadian customers and dealers should call **1-315-432-4110**.




EMISSION CONTROL INFORMATION LABEL

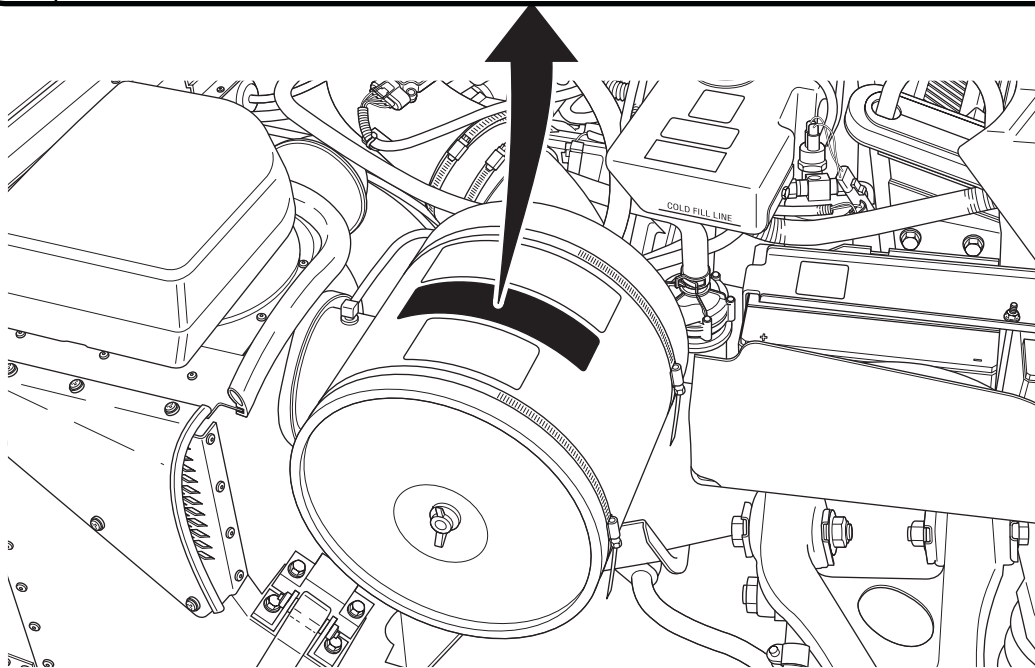
The vehicle emission control label contains engine information such as curb idle rpm, engine displacement, catalytic converter type, fuel rate, and vacuum hose routing.

This label is affixed to the air cleaner housing (Figure-1-1).

The California Air Resources Board (CARB) label (Figure-1-2) is also affixed to the air cleaner housing and certifies that the vehicle conforms to EPA and California emission standards.

| | | |
|---|---|--|
| HDB  | 2006 MODEL YEAR IMPORTANT ENGINE INFORMATION <i>General Engine Products,</i> A Subsidiary of AM General LLC | CATALYST CAC/TC/DDI/OC/EGR 6.6 LITER 6GEPH06,6595 ADVERTISED HP 300 @ 3000 RPM FUEL RATE @ ADVERTISED HP 91.0 MM3/STROKE |
| | NO ADJUSTMENTS NEEDED. SEE SERVICE MANUAL OR OWNERS MANUAL FOR MORE INFORMATION. | |
| | THIS ENGINE CONFORMS TO U.S. EPA REGULATIONS APPLICABLE TO NEW HEAVY-DUTY ENGINES AND CALIFORNIA REGULATIONS APPLICABLE TO NEW ULEV MEDIUM-DUTY ENGINES. THIS ENGINE IS CERTIFIED TO OPERATE ON DIESEL FUEL. THIS ENGINE HAS A PRIMARY INTENDED SERVICE APPLICATION AS A LIGHT HEAVY-DUTY ENGINE. NMHC+NOX FEL: 2.4 G/BHP-HR. PM FEL: 0.09 G/BHP-HR. OBD II CERTIFIED. THIS ENGINE IS NOT CERTIFIED FOR USE IN AN URBAN BUS AS DEFINED IN 40 CFR 86.093-02. SALES OF THIS ENGINE FOR USE IN AN URBAN BUS IS A VIOLATION OF FEDERAL LAW. | |



GEP18000607

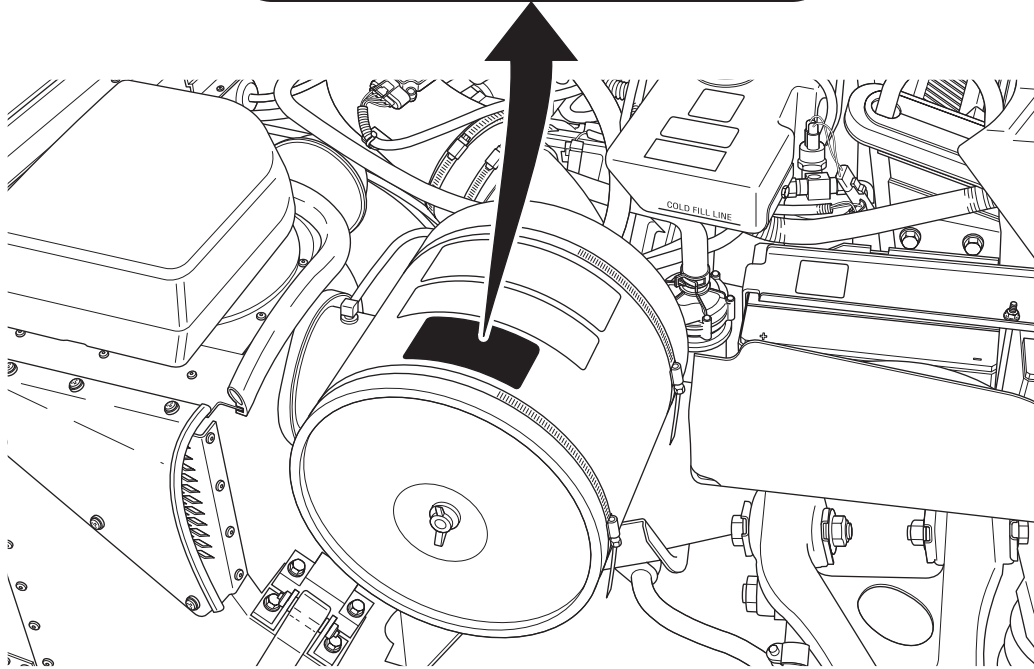


05-OM2-015

Figure 1-1: Emission Control Information Label



| | | |
|--|---|--------------------------------------|
| 6.6 LITER 6GEPH06.6595 |  AM General LLC | CATALYST CAT, TC, DDI, OC, EGR |
| HDB  | IMPORTANT VEHICLE INFORMATION THIS VEHICLE CONFORMS TO U.S. EPA AND CALIFORNIA REGULATIONS APPLICABLE TO 2006 MODEL-YEAR NEW HEAVY-DUTY DIESEL ENGINES AND IS CERTIFIED FOR USE IN ALL MEDIUM-DUTY AND HEAVY-DUTY VEHICLES WITH A GROSS VEHICLE RATING UP TO 14,000 LBS. OBD II CERTIFIED. THIS VEHICLE OPERATES ON CLEAN DIESEL FUEL ONLY. | |
| | | 6018913 |



05-OM2-016

Figure 1-2: California Air Resources Board Label

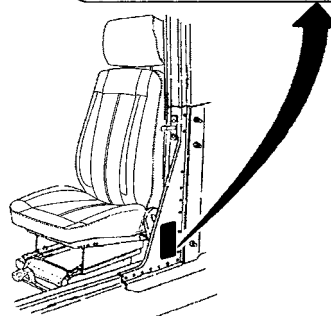
SAFETY CERTIFICATION LABEL

The safety certification label is located on the driver side B-pillar (door latch post) (Figures 1-3, and 1-4). The label is required by the National Highway Traffic Safety Administration and includes a tamper-proof feature. If the label is tampered with, a void pattern will appear across the label.

The label contains the name of the manufacturer, the month and year the vehicle was manufactured, the certification statement, the vehicle identification number (VIN), and the vehicle model type. It also contains the Gross Vehicle Weight Rating (GVWR), Gross Axle Weight Ratings (GAWR), and wheel and tire information. For more information on the GVWR and GAWR, refer to “VEHICLE LOADING INFORMATION” in the HUMMER H1 Owner’s Manual.



| | |
|---|---------|
| MFD BY: AM GENERAL LLC | DATE: |
| GVWR: 4,672 KG (10,300 LB) WITH 37 X 12.50R-17LT LOAD RANGE "E" TIRES | |
| GAWR FRONT: 1,860 KG (4,100 LB) WITH 37 X 12.50R-17LT (E) TIRES, 17 X 8.50 RIMS AT 240 KPA (35 PSI) COLD | |
| GAWR REAR: 3,084 KG (6,800 LB) WITH 37 X 12.50R-17LT (E) TIRES, 17 X 8.50 RIMS AT 276 KPA (40 PSI) COLD | |
| THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE. | |
| V.I.N.: | |
| TYPE: TRUCK | |
| OPTIONAL TIRE AND RIM INFORMATION | |
| 37 X 12.50R-16.5LT LOAD RANGE "D" TIRES, WITH 16.5 X 8.25 RIMS AT 240 KPA (35 PSI) COLD FRONT AND 276 KPA (40 PSI) COLD REAR. | |
| PAINT CODE: | 6015258 |

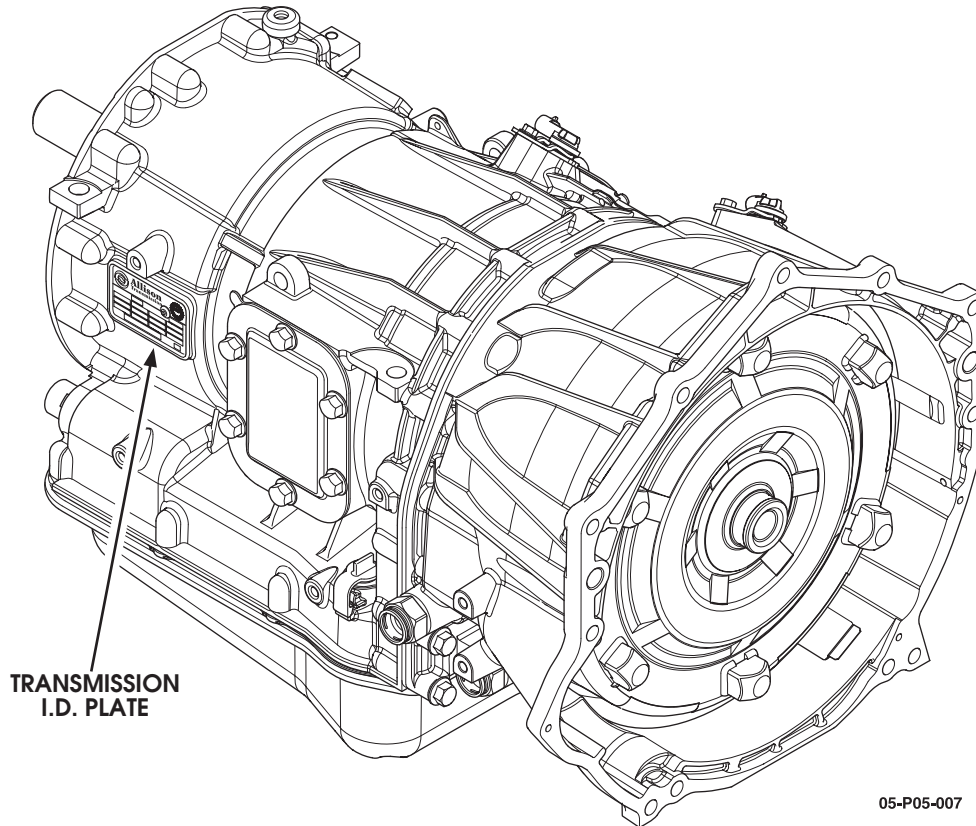


04-OM1-001

Figure 1-3: Safety Certification Label

TRANSMISSION IDENTIFICATION

An I.D. plate is attached to the passenger side of each Allison Transmission (Figure-1-4). The plate contains the model, date of manufacture, serial number, engineering feature configuration, transmission identification, and the engineering group.



TRANSMISSION I.D. PLATE

05-P05-007

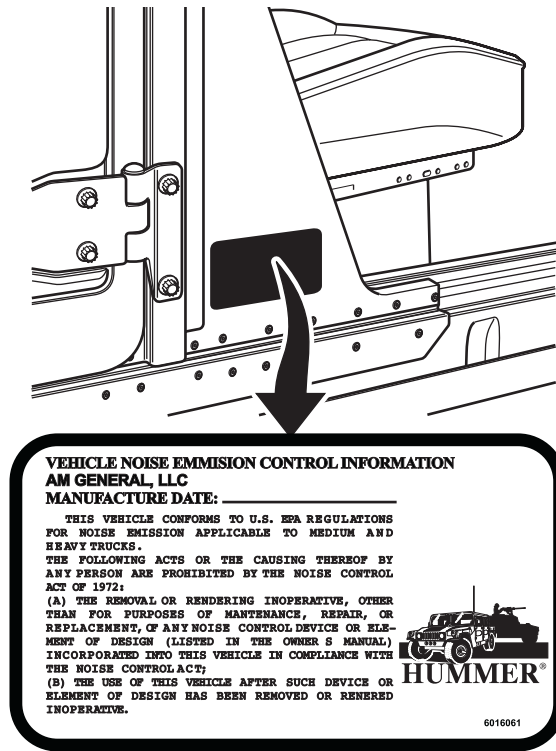
Figure 1-4: Transmission I.D. Plate Location



EPA NOISE EMISSION CONTROL INFORMATION LABEL

The EPA noise emission control information label is located on the passenger side B-pillar (door latch post). The label is required by the EPA and includes a tamper-proof feature. If the label is tampered with, a void pattern will appear across the label. Notify the dealer or the manufacturer if the label is missing or displays a void pattern (Figure-1-5).

The label contains the name of the manufacturer, the month and year the vehicle was manufactured, a statement regarding vehicle conformance to applicable U.S. EPA regulations, and a description of acts prohibited by the Noise Control Act of 1972.



05-OM2-021

Figure 1-5: EPA Noise Emission Control Information Label Location

TRANSFER CASE IDENTIFICATION

The transfer case serial and assembly numbers are located on a tag attached to the rear case (Figure-1-6).

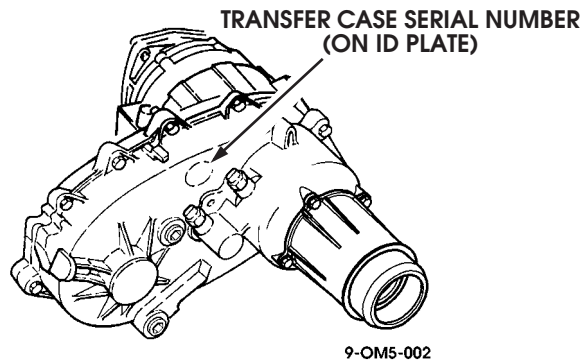
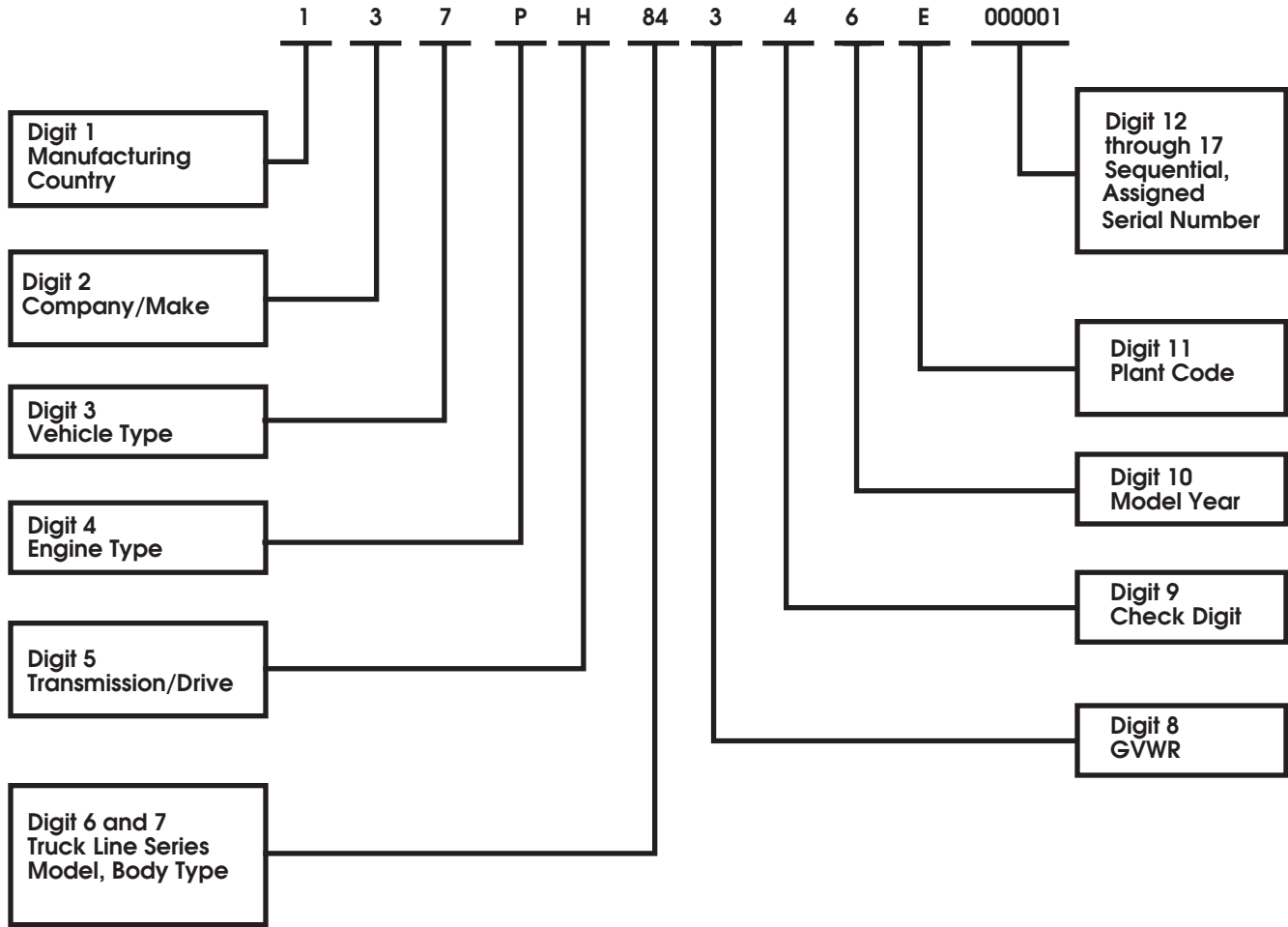


Figure 1-6: Transfer Case I.D. Plate Location



Vehicle Identification Number Decoding Chart

| Digit | Code | Code Definition |
|-------|------|---|
| 1 | 1 | United States |
| 2 | 3 | AM General LLC |
| 3 | 7 | Commercial Vehicles |
| 4 | P | 6.6L Turbocharged Diesel, GM-Isuzu, 8 cyl., 300 hp |
| 5 | H | 5-Speed, Automatic/LHD |
| 6 & 7 | 84 | 1-1/4 ton Station wagon Truck, utility - HMDS |
| | 90 | 1-1/4 ton Open body w/full hard doors Truck, utility - HMDO |
| 8 | 3 | Class 3, 10,001 lb - 14,000 lb (4,541 kg - 6,356 kg) |
| 9 | — | Check Digit |
| 10 | 6 | 2006 |
| 11 | E | Mishawaka, Indiana |
| 12-17 | — | Sequential Serial Number |



COMPONENT DATA

Engine:)

| | |
|-------------------|--|
| Manufacturer: | Duramax Inc (GM/ Isuzu) |
| Model: | 6.6 L Turbo Diesel |
| Type: | Four Cycle, Turbocharged Diesel, with cooled EGR |
| Configuration: | V8 |
| Turbo Charging: | Variable Nozzel Turbo Charger with Intercooling |
| Exhaust: | Exhaust Gas Recirculation with Intercooling |
| Power Output: | 300 hp @ 3000 rpm/520 ft lb. Torque @ 1600 rpm |
| Fuel System: | Common Rail High Presure Direct Injection |
| Engine control: | Delphi Electronic Control Module |
| Throttle Control: | Electronic Potentiometer Throttle Pedal |
| Net Weight: | With fluids 880 lb (400 kg) |

Governed Speed:

| | |
|-------------|-----------|
| Full Load: | 3,250 RPM |
| No Load: | 3,400 RPM |
| Idle Speed: | 650 RPM |

Cylinders:

| | |
|--------------------|-----------------------------|
| Number: | 8 |
| Arrangement: | 90° V |
| Firing Order: | 1-2-7-8-4-5-6-3 (Clockwise) |
| Bore: | 4.055 in. (103. mm) |
| Stroke: | 3.897 in. (9.9 cm) |
| Displacement: | 395 cu. in. (6.6 L) |
| Compression Ratio: | 17:1 |

Lubricating System:

| | |
|-----------------------|--------------------------|
| Type: | Pressure Feed Gear Pump |
| Operating Pressure: | 55 - 60 Psi @ 3250 RPM |
| (Idle Minimum): | 14 psi |
| System Capacity: | |
| Crankcase only | 10.5 qt |
| Filter Included | 12.25 qt |
| Filter Capacity: | 1.75 qt |
| Operating Temperature | |
| (Normal) | 180°-250° F (82°-121° C) |
| Oil Pump | High Output |
| Filter | Paper Element, Spin On |

Fuel System:

| | |
|----------------------|--------------------------|
| Fuel Injection Pump: | Bosch Common Rail |
| Fuel Filter: | Full Flow, paper element |
| Glow Plug Type | Fast Start |



Starter:

Type: Torque Reduction
Manufacturer: Hitachi
Voltage: 12 V

Cooling System:

Type: Liquid w/Fan and Radiator
Max Operating Temp: 250° F
Min Operating Temp: -34° F
Filler Cap Pressure: 15 psi (103 kPa)
Radiator Type: 4 Row Core Downflow
Fan Type: Fan with viscous drive, 23" diameter, Geared Fan Drive 1-1 ratio
Thermostat:
Starts to Open: 190° F (88° C)
Fully Open: 212° F (100° C)

Generator:

Manufacturer: Delphi
Output: 145 AMP
Rated Voltage: 13.2 -15.75 V

Batteries:

Manufacturer: AC Delco
Type: Low Maintenance
Number: 2
Voltage: 12 V
Amperage:
@ 0° F 800 Cold Cranking amps Each Battery
32° F 1000 Cold Cranking amps Each Battery
80° F 110 Reserve Capacity (Minutes)

Transmission:

Manufacturer: Allison Transmission
Mode: M74 1000 Series
Type: 5-Speed, Automatic
Converter Torque Ratio: 2.0:1
Gear Ratios:
First: 3.10:1
Second: 1.81:1
Third: 1.41:1
Fourth: 1.00:1
Fifth: 0.71:1
Reverse: 4.49:1
Oil Type: Dexron® III
Oil Pressure: 130-300 psi



Transfer Case:

Manufacturer: New Venture Gear
Model: 242
Type: Full Time Four-Wheel Drive
Gear Ratios:
 High and High Lock: 1:1
 Low Range: 2.72:1
Oil Type: Dexron® III

Geared Hub:

Manufacturer: AM General design, made by Tremec
Type: Helical Cut
Gear Ratio: 1.92:1
Oil Type: SAE 80W-90

Axle/Differential:

Manufacturer: AM General design, made by Dana
Type:
Axle: Fixed Mounted Differential W/ Independent Half Shafts
Differential: Hypoid Torque Biasing (Paired Worm Gears) (Electronic Locking Optional)
Gear Ratio: 2.56:1

Service Brake Caliper (Front):

Manufacturer: Kelsey-Hayes
Piston Diameter: 2.6 in. (6.6 cm)

Service/Parking Brake Caliper (Rear):

Manufacturer: Kelsey-Hayes
Piston Diameter: 2.6 in. (6.6 cm)

Service/Parking Brake Rotor:

Manufacturer: Kelsey-Hayes
Diameter: 12 in. (304.8 mm)
Thickness: 0.87 in. (22 mm)
Minimum Thickness: 0.81 in. (20.7 mm)

Steering System:

Steering Gear
 Manufacturer: Sheppard
 Type: Recirculating Ball, Worm and Nut
 Ratio: 18.3:1
Power Steering Pump
 Manufacturer: Delphi
 Output Pressure: (Max): 1,450
 Flow Rate: (Max): 1.7 gpm



Reservoir: Integral Pump Mounted Tank
Fluid Cooling: Remote Cooler air to fluid

Frame:

Manufacturer: AM General design, made by Dana
Type: Welded Steel Box
No. of Crossmembers: 5

Air Conditioner:

Manufacturer (Compressor): GM-Harrison
Model: HD-6
Field (Coil): 12 V
Oil Capacity (PAG)
Main and Auxiliary: 8 fl oz (237 ml)
Refrigerant: R-134a
Capacity (system + 2 oz. of oil)
Main and Auxiliary: 2lb 4oz (1.0 kg)

Winch:

Manufacturer: Warn
Model: 12,000 lb., 12VDC HUMMER
Type: Electric Drive
Capacity: 12,000 lb (5,448 kg)

Wheels and Tires:

Manufacturer: Goodyear Tire Size 37 in. X 12.5R-17
Wheel Type:
Standard: One-Piece Aluminum
Size: 17 x 8.25 in.
Off-Road Adventure
Package Option: Two-Piece Aluminum
Size: 17 x 8.25 in.



FLUID CAPACITIES

| | |
|--------------------------|-----------------------------------|
| Cooling System | 33 qt (31.2 L) |
| Engine: | |
| Crankcase (oil pan) only | 10.5 qt (9.9 L) |
| Crankcase and Filter | 12.25 qt (11.6 L) |
| Fuel Tank | 27 gal. (102.1 L) |
| Auxiliary Fuel Tank | 24.5 gal. (92.7 L) |
| Axle (front/rear) | 2 qt (1.9 L) |
| Transmission: | |
| Drain and Refill: | (with Pan Removed) 8.2 qt (7.7 L) |
| W/Dry Converter: | 14 qt (13.3 L) |
| Transfer Case: | 2.5 qt (2.4 L) |
| Geared Hub: | 1 pt (0.47 L) |
| Steering System | 1.75 qt (1.66 L) |
| Brake Hydraulic System: | (DOT 3) |
| Master Cylinder: | 1.64 pt (0.78 L) |
| Total System: | 3.12 pt. (1.5 L) |
| Windshield Washer | |
| Reservoir: | 2.5 gal. (9.5 L) |
| Geared Fan Drive | 1.2 pt. (0.6 L) |

VEHICLE WEIGHTS

| | |
|---|----------------------|
| Curb Weight*: | |
| Four Door Open Top (w/ full doors) (HMDO) | 7,847 lb (3,563 kg) |
| Four-Door Station Wagon (HMDS) | 8,114 lb (3,684 kg) |
| Payload*: | |
| Four-Door Open Top (w/ full doors) (HMDO) | 2,453 lb (1,114 kg) |
| Four-Door Station Wagon (HMDS) | 2,186 lb (992 kg) |
| Gross Vehicle Weight (GVW) | 10,300 lb (4,676 kg) |
| Gross Axle Weight Rating (GAWR): | |
| Front | 4,100 lb (1,861 kg) |
| Rear | 6,800 lb (3,087 kg) |
| Gross Combination Weight (GCW) | 17,300 lb (7,854 kg) |
| Maximum Towed Load**: | |
| Four-Door Open Top (w/full doors) | 9,303 lb (4,224 kg) |
| Four-Door Station Wagon (HMDS) | 9,036 lb (4,102 kg) |

*For vehicles equipped with a winch, increase curb weight and reduce payload by 137 lbs (62 kg).

**Maximum trailer ratings are calculated assuming a base vehicle, except for any option(s) necessary to achieve the rating, plus driver (rating is calculated assuming a 150 lb. driver). The weight of other optional equipment, passengers and cargo will reduce the maximum trailer weight the vehicle can tow.



VEHICLE DIMENSIONS

| | |
|--------------------------|-------------------------------|
| Length: | 184.5 in. (468.6 cm) See Note |
| Height: | 77 in. (195.5 cm) |
| Width (without mirrors): | 86.50 in. (219.7 cm) |
| Ground Clearance: | 16 in. (41 cm) (at GVW) |
| Wheelbase: | 130 in (330 cm) |
| Track Width: | 72 in. (183 m) |

NOTE: The vehicle weight and dimensions data applies to models without a winch.

ABBREVIATIONS

| | |
|------------------|---|
| ABS | Antilock Brake System |
| A/C | Air Conditioning |
| a.c | Alternating Current |
| AMP | Ampere |
| CO | Carbon Monoxide |
| C | Celsius (centigrade) |
| cm | Centimeter |
| CTIS | Central Tire Inflation System |
| CDR | Crankcase Depression Regulator |
| cm ³ | Cubic Centimeter |
| in. ³ | Cubic Inch |
| cyl | Cylinder |
| ° | Degree (angle or temperature) |
| DTC | Diagnostic Trouble Code |
| dia | Diameter |
| d.c. | Direct Current |
| EPA | Environmental Protection Agency |
| F | Fahrenheit |
| ft | Feet |
| ft/min | Feet Per Minute |
| fl oz | Fluid Ounce |
| gal | Gallon |
| g | Gram |
| GAWR | Gross Axle Weight Rating |
| GVW | Gross Vehicle Weight |
| GVWR | Gross Vehicle Weight Rating |
| hp | Horsepower |
| HVAC | Heat, Ventilation, and Air Conditioning |
| in | Inch |
| INC | Include |
| ID | Identification |
| I.D | Internal Diameter |
| kg | Kilograms |
| km | Kilometer |
| km/h | Kilometers Per Hour |
| kPa | Kilopascals |



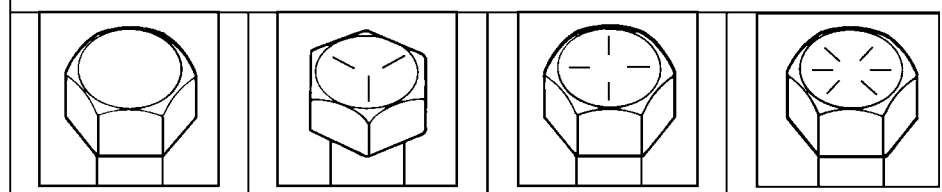
| | |
|-----------------|-------------------------------|
| lh | Left Hand |
| L | Liter |
| max | Maximum |
| m | Meter |
| mpg | Miles Per Gallon |
| mph | Miles Per Hour |
| mm | Millimeter |
| min | Minimum |
| - | Minus |
| - | Negative |
| No | Number |
| Ohm | Ohms |
| oz | Ounce |
| O.D | Outside Diameter |
| P/N | Part Number |
| % | Percentage |
| pt | Pint |
| + | Plus |
| + | Positive |
| lb | Pound |
| lb-ft | Pound-feet |
| lb-in | Pound-inch |
| psi | Pounds Per Square Inch |
| qt | Quart |
| : | Ratio |
| ref. | Reference |
| RPM | Revolutions Per Minute |
| rh | Right-Hand |
| cm ² | Square Centimeters |
| in ² | Square Inches |
| TT4 | Torque Trac 4 |
| VIN | Vehicle Identification Number |
| V | Volts |
| W | Watts |
| UNC | Unified Coarse |
| UNF | Unified Fine |



BOLT IDENTIFICATION AND TORQUE LIMITS (DRY*)

* A phosphate and oil bolt is considered dry

Bolt Head ID Marks and SAE GRADE



| BOLT SIZE | | | SAE GRADE NO. 1 OR 2 | SAE GRADE NO. 5 | SAE GRADE NO. 6 OR 7 | SAE GRADE NO. 8 |
|-------------|--------------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| DIA. INCHES | MILLI-METERS | THREADS PER INCH | POUND FEET (NEWTON-METERS) | POUND FEET (NEWTON-METERS) | POUND FEET (NEWTON-METERS) | POUND FEET (NEWTON-METERS) |
| 1/4 | 6 | 20 | 5(7) | 8(11) | 10(14) | 12(16) |
| 1/4 | 6 | 28 | 6(8) | 10(14) | — | 14(19) |
| 5/16 | 8 | 18 | 11(15) | 17(23) | 19(26) | 24(33) |
| 5/16 | 8 | 24 | 13(18) | 19(26) | — | 27(37) |
| 3/8 | 10 | 16 | 18(24) | 31(42) | 34(46) | 44(60) |
| 3/8 | 10 | 24 | 20(27) | 35(47) | — | 49(66) |
| 7/16 | 11 | 14 | 28(38) | 49(66) | 55(75) | 70(95) |
| 7/16 | 11 | 20 | 30(41) | 55(75) | — | 78(106) |
| 1/2 | 13 | 13 | 39(53) | 75(102) | 85(115) | 105(142) |
| 1/2 | 13 | 20 | 41(56) | 85(115) | — | 120(163) |
| 9/16 | 14 | 12 | 51(69) | 110(149) | 120(163) | 155(210) |
| 9/16 | 14 | 18 | 55(75) | 120(163) | — | 170(231) |
| 5/8 | 16 | 11 | 63(85) | 150(203) | 167(226) | 210(285) |
| 5/8 | 16 | 18 | 95(129) | 170(231) | — | 240(325) |
| 3/4 | 19 | 10 | 105(142) | 270(366) | 280(380) | 375(509) |
| 3/4 | 19 | 16 | 115(156) | 295(400) | — | 420(570) |
| 7/8 | 22 | 9 | 160(217) | 395(536) | 440(597) | 605(820) |
| 7/8 | 22 | 14 | 175(237) | 435(590) | — | 675(915) |
| 1 | 25 | 8 | 235(319) | 590(800) | 660(895) | 910(1234) |
| 1 | 25 | 14 | 250(339) | 660(895) | — | 990(1342) |
| 1-1/8 | 29 | — | — | 800 - 880 (1085 - 1193) | — | 1280 - 1440 (1736 - 1953) |
| 1-1/4 | 32 | — | — | — | — | 1820 - 2000 (2468 - 2712) |
| 1-3/8 | 35 | — | — | 1460 - 1680 (1980 - 2278) | — | 2380 - 2720 (3227 - 3688) |
| 1-1/2 | 38 | — | — | 1940 - 2200 (2631 - 2983) | — | 3160 - 3560 (4285 - 4827) |

Bolt Identification and Torque Limits (Wet*)

*A cadmium plated bolt is considered wet.



Bolt Head ID Marks and SAE Grade

| BOLT SIZE | | | SAE GRADE NO. 1 OR 2 | SAE GRADE NO. 5 | SAE GRADE NO. 6 OR 7 | SAE GRADE NO. 8 |
|-------------|--------------|------------------|----------------------------|------------------------------|----------------------------|------------------------------|
| DIA. INCHES | MILLI-METERS | THREADS PER INCH | POUND FEET (NEWTON-METERS) | POUND FEET (NEWTON-METERS) | POUND FEET (NEWTON-METERS) | POUND FEET (NEWTON-METERS) |
| 1/4 | 6 | 20 | 4(5) | 7(10) | 9(12) | 11(15) |
| 1/4 | 6 | 28 | 5(7) | 9(12) | — | 13(17) |
| 5/16 | 8 | 18 | 10(14) | 15(20) | 17(23) | 22(30) |
| 5/16 | 8 | 24 | 12(16) | 17(23) | — | 24(33) |
| 3/8 | 10 | 16 | 16(22) | 28(38) | 31(42) | 40(54) |
| 3/8 | 10 | 24 | 18(24) | 32(43) | — | 44(60) |
| 7/16 | 11 | 14 | 25(34) | 44(60) | 50(68) | 63(85) |
| 7/16 | 11 | 20 | 27(37) | 50(68) | — | 70(95) |
| 1/2 | 13 | 13 | 35(48) | 68(92) | 77(104) | 95(129) |
| 1/2 | 13 | 20 | 37(50) | 77(104) | — | 108(146) |
| 9/16 | 14 | 12 | 46(62) | 99(134) | 108(146) | 140(190) |
| 9/16 | 14 | 18 | 50(67) | 108(146) | — | 153(207) |
| 5/8 | 16 | 11 | 57(77) | 135(183) | 150(203) | 189(256) |
| 5/8 | 16 | 18 | 85(115) | 153(207) | — | 216(293) |
| 3/4 | 19 | 10 | 95(129) | 243(330) | 252(342) | 338(458) |
| 3/4 | 19 | 16 | 104(141) | 266(361) | — | 378(513) |
| 7/8 | 22 | 9 | 144(195) | 356(483) | 396(537) | 545(739) |
| 7/8 | 22 | 14 | 158(214) | 392(532) | — | 608(824) |
| 1 | 25 | 8 | 212(287) | 531(720) | 594(805) | 819(1111) |
| 1 | 25 | 14 | 225(305) | 594(805) | — | 891(1208) |
| 1-1/8 | 29 | — | — | 720 - 792 (976 - 1074) | — | 1152 - 1296 (1562 - 1757) |
| 1-1/4 | 32 | — | — | — | — | 1638 - 1800 (2221 - 2441) |
| 1-3/8 | 35 | — | — | 1314 - 1512 (1782 - 2050) | — | — |
| 1-1/2 | 39 | — | — | 1746 - 1980 (2368 - 2685) | — | 2844 - 3204 (3857 - 4345) |



U.S./METRIC CONVERSIONS AND EQUIVALENTS

Metric Conversions

| MULTIPLY | BY | TO GET |
|------------------------|--------|----------------------|
| INCHES | 2.54 | CENTIMETERS |
| FEET | 0.3048 | METERS |
| MILES | 1.6093 | KILOMETERS |
| SQUARE INCHES | 6.451 | SQUARE CENTIMETERS |
| CUBIC INCHES | 16.39 | CUBIC CENTIMETERS |
| FLUID OUNCES | 29.573 | MILLILITERS |
| PINTS | 0.473 | LITERS |
| QUARTS | 0.946 | LITERS |
| GALLON | 3.785 | LITERS |
| POUNDS | 0.454 | KILOGRAMS |
| SHORT TONS | 0.907 | METRIC TONS |
| POUND-INCHES | 0.113 | NEWTON-METERS |
| POUND-FEET | 1.356 | NEWTON-METERS |
| POUNDS PER SQUARE INCH | 6.895 | KILOPASCALS |
| MILES PER GALLON | 0.425 | KILOMETERS PER LITER |
| MILES PER HOUR | 1.609 | KILOMETERS PER HOUR |

U.S. Standard Conversions

| MULTIPLY | BY | TO GET |
|----------------------|---------|------------------------|
| MILLIMETERS | 0.03937 | INCHES |
| CENTIMETERS | 0.3937 | INCHES |
| METERS | 3.2808 | FEET |
| KILOMETERS | 0.6214 | MILES |
| SQUARE CENTIMETERS | 0.155 | SQUARE INCHES |
| CUBIC CENTIMETERS | 0.061 | CUBIC INCHES |
| MILLILITERS | 0.034 | FLUID OUNCES |
| LITERS | 2.113 | PINTS |
| LITERS | 1.057 | QUARTS |
| LITERS | 0.264 | GALLONS |
| KILOGRAMS | 2.205 | POUNDS |
| METRIC TONS | 1.102 | SHORT TONS |
| NEWTON-METERS | 0.738 | POUND-FEET |
| NEWTON-METERS | 8.851 | POUND-INCHES |
| KILOPASCALS | 0.145 | POUNDS PER SQUARE INCH |
| KILOMETERS PER LITER | 2.352 | MILES PER GALLON |
| KILOMETERS PER HOUR | 0.621 | MILES PER HOUR |

Temperature

32° FAHRENHEIT = 0° CELSIUS 212° FAHRENHEIT = 100° CELSIUS

CELSIUS = 0.556 X (F° -32) FAHRENHEIT = (1.8 X C°) +32



PAINT AND TRIM COLORS

Interior trim colors are tan and gray. Seating materials are available in cloth, vinyl and leather.

Soft top colors and codes are: Tan (T) and Black (B).

Exterior paint colors and codes are outlined in the following chart.

| Top Coat Description | AM General Code |
|------------------------|-----------------|
| Black Gloss | B25 |
| Bright White | W26 |
| Competition Yellow | Y27 |
| Firehouse Red | R28 |
| Metallic Black | B34 |
| Metallic Diamond Black | B30 |
| Metallic Pewter | P33 |
| Metallic Sand | T32 |
| Summit Silver | S31 |

REPLACEMENT KEYS

Replacement keys can be cut using Briggs and Stratton or Curtis key cutting tools. Key codes are provided on an identification tag included with each key set (Figure-1-9).

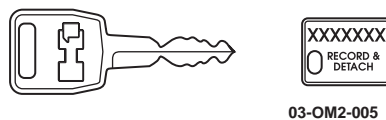


Figure 1-9: Key Code Location

TOWING, LIFTING, JUMP STARTING

Vehicle Lifting/Jacking Points

Vehicle jacking points are shown in Figure 1-10. The vehicle can be raised with a floor jack at any of the indicated positions. Jacking can be performed at the front, rear, or at any one wheel.

In cases where the entire vehicle must be raised, use jack stands at equidistant points on the frame rails. Use a minimum of four stands to support the vehicle. Suggested capacity for individual jack stands is 3 ton, with a vertical reach of 19 in. (49 cm).

Typical jack stand placement for raising one side of the vehicle is shown in Figure 1-11. Always be sure the jack stand saddle is securely engaged and the stand is level.

Vehicle Hoisting

HUMMER H1 vehicles can be raised on a hoist for service access. Drive-on and swivel arm hoists are both acceptable. Hoist capacity and width are important. The greater width and weight of HUMMER H1 vehicles require a larger hoisting platform. Do not use an under capacity hoist, or modify an existing hoist for use; this practice is neither safe nor recommended.

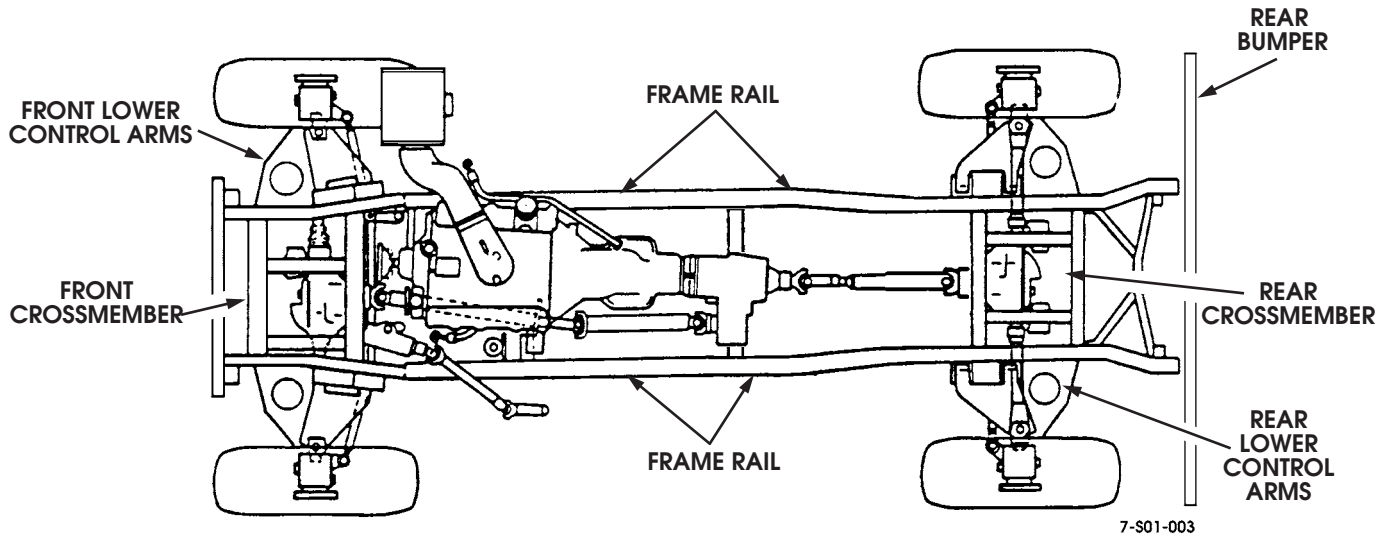


Figure 1-10: Vehicle Jacking Points

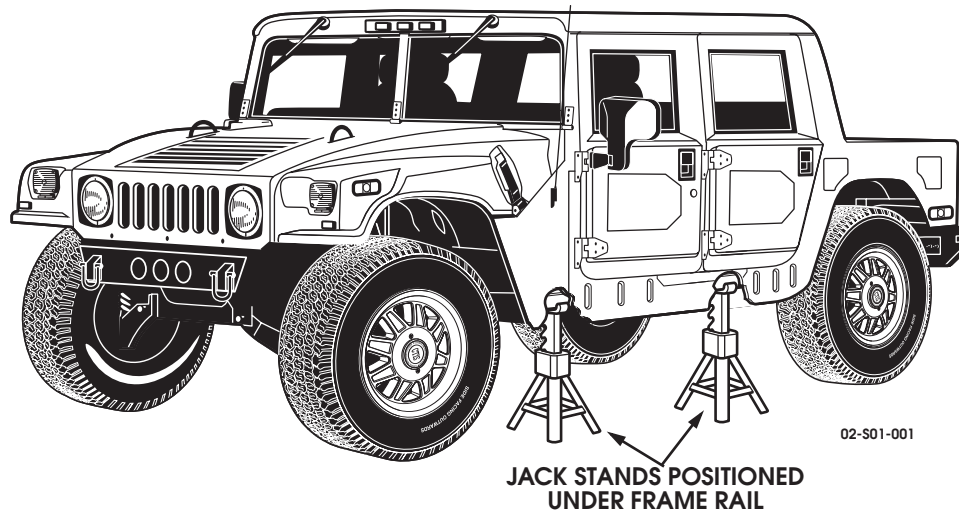


Figure 1-11: Typical Jack Stand Placement

Towing Recommendations

HUMMER H1 vehicles can be towed with wheel lift, sling-type, or flat bed tow equipment.

Flat bed and wheel lift equipment is recommended over sling type or A-frame equipment.

Towing Cautions:

- Remove or secure loads in the towed vehicle
- Never use the shackles on the front bumpers as tie down points
- Always use safety chains on sling towed vehicles
- Always follow the transmission/transfer case shift position recommendations (Transfer Case in N (Neutral); Transmission in P (Park)).
- Use a low vehicle trailer for recreational towing (behind an RV or other vehicle) when possible.
- Never put chains, cables or straps on any steering components.



Flat Bed/Wheel Lift Towing Procedures

Flat bed/wheel lift tow vehicles are highly recommended. They keep all of the towed vehicle wheels off the pavement. This is important with full time four wheel drive vehicles.

Loading only requires that the towed vehicle be raised or winched onto the towing platform. A further advantage of this type equipment is that tow speed and distance are not limited. Once the towed vehicle is loaded, set the parking brake, shift the transmission into Park and install the vehicle tie downs. Tie down attachment points are shown in Figure 1-12.

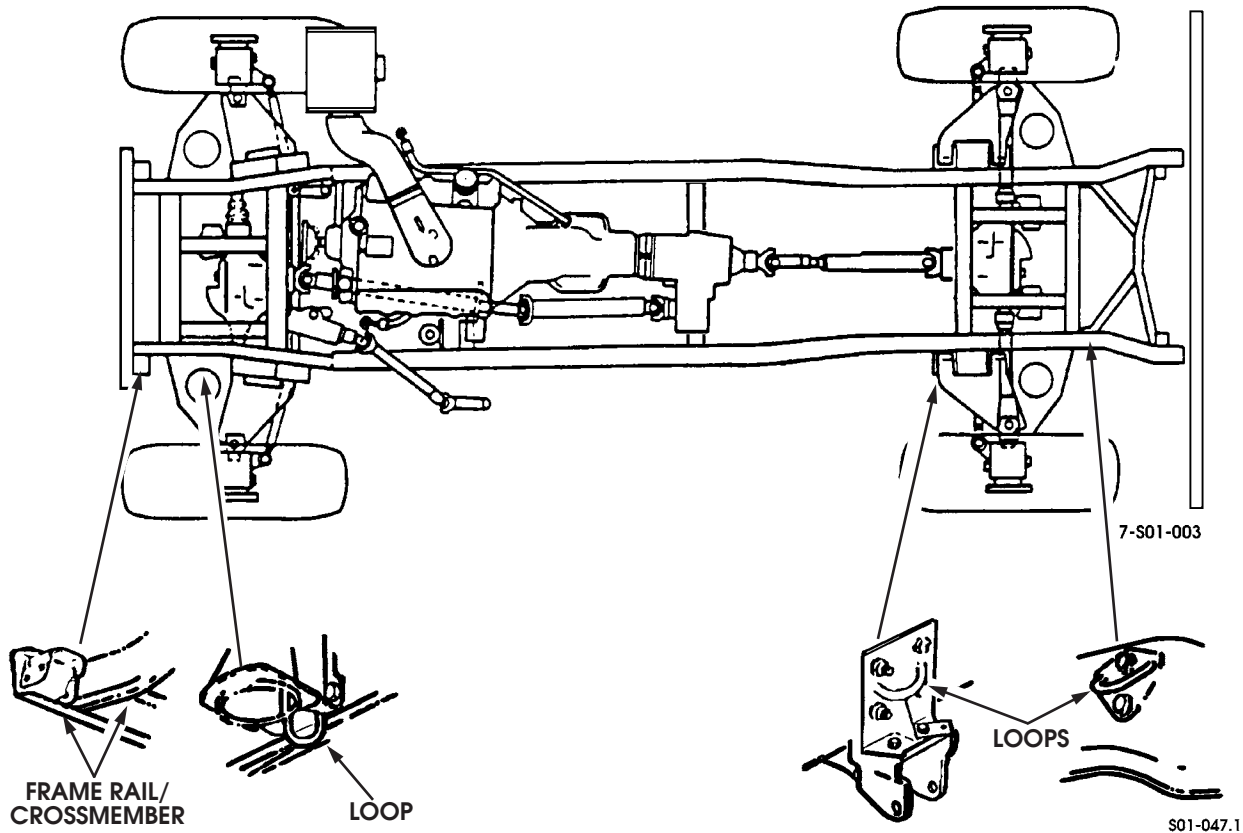


Figure 1-12: Vehicle Tie-Down Points

Conventional Towing Procedures

Front Towing

1. Loop chains around lower control arms and secure to tow sling (Figure-1-13).
2. Insert 4" x 4" x 48" length of wood between bumper and sling chains (Figure-1-13).
3. Raise front end and verify that sling is firmly positioned against front bumper.
4. Release parking brakes.
5. Shift transmission into Park and transfer case into Neutral.
6. Position tow dollies under rear wheels. Proceed with towing operations.

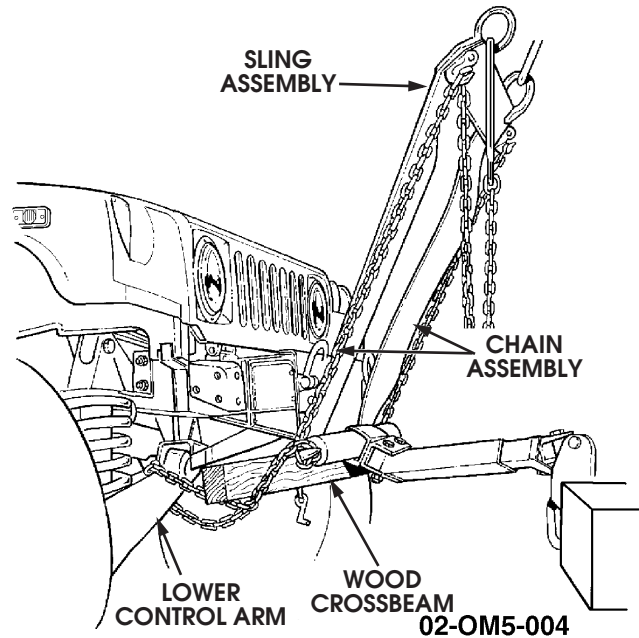


Figure 1-13: Front Towing With Conventional Equipment

Rear Towing

1. Loop sling chain around frame rails adjacent to rear crossmember and secure to tow sling (Figure-1-14).
2. Insert 4" x 4" x 48" length of wood between bumper and sling chains (Figure-1-14).
3. Raise rear end and verify that sling is firmly positioned against rear bumper.
4. Release parking brakes.
5. Shift transmission into Park and transfer case into Neutral.
6. Position tow dollies under front wheels. Proceed with towing operations.

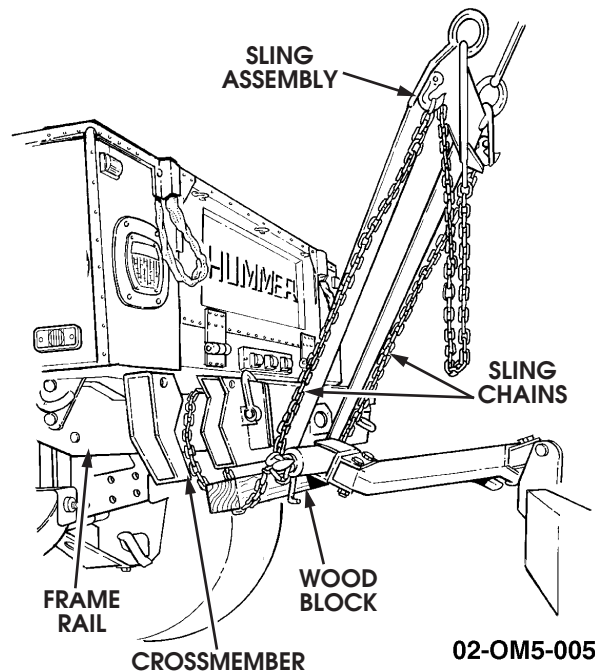


Figure 1-14: Rear Towing with Conventional Equipment



Conventional Towing When Keys are not Available

If the vehicle doors are locked and the keys are not available you cannot determine that the transmission is in Park and the transfer case is in “N” (Neutral). In these situations, you must use one of the following towing methods:

- a. Use tow dollies at all wheels and flat tow,
or
- b. Raise the vehicle front or rear and use tow dollies under the wheels not raised.

Recreational Towing

HUMMER H1 vehicles can be towed behind an RV if desired. A low-boy style vehicle trailer is best for this purpose. Flat towing is not recommended.

JUMP STARTING

Preparation for Jump Starting

CAUTION: NEVER allow the two vehicles to touch each other when jump starting.

1. Park the vehicle with the booster battery close to the passenger door of your vehicle. Ensure that the vehicles do not touch each other. Place the transmissions of both vehicles in “P” (Park), if applicable, and set all parking brakes.
2. Clean all battery terminals of excess corrosion before connecting jumper cables.

WARNING: ALWAYS remove ALL jewelry BEFORE handling batteries.

CAUTION: NEVER disconnect a vehicle’s batteries to jump start.

3. Turn off all electrical switches in both vehicles to prevent possible electrical damage to either vehicle’s electrical system.

Jumper Cable Connections

WARNING: NEVER lean over the batteries when connecting the jumper cables or allow the jumper cable clamps to touch each other.

1. Connect one end of the positive jumper cable to the positive (+) terminal on the dead battery. It is best to connect to the positive terminal of the battery closest to the windshield (Figure-1-15).

WARNING: ALWAYS make sure that the positive cable is hooked only to positive terminals and the negative to negative terminals or to a good ground.

2. Connect the other end of the positive cable to the positive (+) terminal on the booster battery.

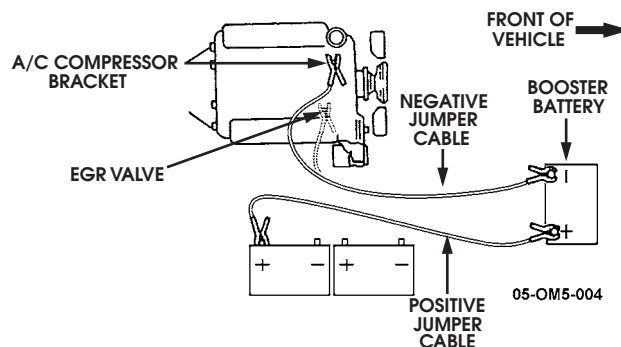


Figure 1-15: Jumper Cable Connections

3. Connect one end of the negative jumper cable to the negative (-) terminal on the booster battery.



WARNING: NEVER connect the other end of the negative jumper cable to the negative (-) terminal on the dead battery.

4. Start the booster vehicle.
5. Connect the other end of the negative cable to a good metallic ground surface on the engine of your vehicle. The best ground point is the A/C compressor bracket on the driver's side of the engine (Figure-1-16).

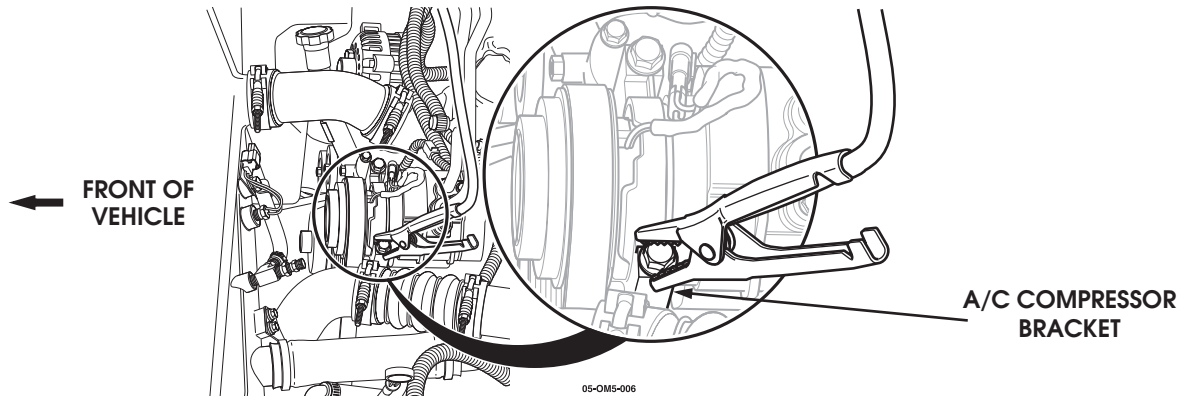


Figure 1-16: A/C Compressor Bracket Ground Point

An alternate ground point is the exhaust gas recirculation (EGR) valve on the passenger side of the engine (Figure-1-17).

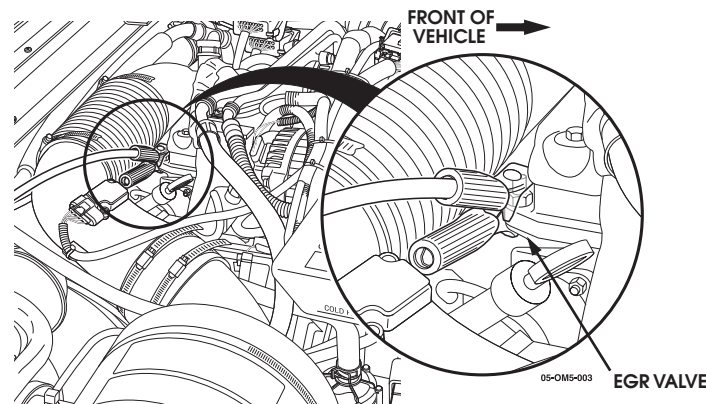


Figure 1-17: EGR Valve Ground Point

Starting the Vehicle

NOTE: Make sure the jumper cables are clear of any moving parts in the engine compartment.

1. With the booster vehicle running with a slightly increased engine speed, allow the dead battery to charge for a few minutes and then start your vehicle. It may take a few tries before your vehicle starts. If your vehicle does not start after cranking for fifteen seconds, stop the procedure. Cranking for more than fifteen seconds at a time seldom starts the engine and could cause damage.
2. Once your vehicle starts, disconnect jumper cables.
3. If the engine stalls, repeat above procedure once, allowing battery to charge for approximately ten minutes. If the engine stalls a second time, have the vehicle transported to an authorized service center.

NOTE: To ensure that the batteries are fully charged, have the batteries charged with proper battery charging equipment.

Disconnecting the Jumper Cables

WARNING: ALWAYS keep your hands away from moving parts in the engine compartment when disconnecting the jumper cables.

1. Remove the negative (-) cable connected to the engine of your vehicle.
2. Remove the other end of the negative (-) cable from the booster battery.



3. Remove the positive (+) cable from the booster battery.
4. Remove the other end of the positive (+) cable from the battery on your vehicle.

After starting, turn off any electrical accessories that were accidentally left on, and allow the engine to run at a high idle speed to recharge the batteries. For a “complete” charge, it may be necessary to use a battery charger to recharge the batteries.

MAINTENANCE SCHEDULE

Recommended Maintenance

Items described in Maintenance Inspection Groups A, B, and C are important to the proper operation, performance, and safety of your vehicle.

It is important that maintenance items outlined in the schedules be performed at suggested intervals. Regular maintenance will greatly improve vehicle reliability and longevity.

Normal Maintenance

The vehicle maintenance schedules reflect services required for normal operation. Normal operation includes city/highway driving on hard surface roads with only minimal operation on unpaved road surfaces.

Maintenance After Severe Operation

Severe operation includes extensive off-road driving, salt water fording, commercial use, sustained operation in high ambient temperatures, and trailer towing. This type of vehicle operation requires additional and more frequent service. If the vehicle is going to be used frequently in severe operating situations, maintenance should be done on an hourly rather than a mileage schedule, as shown in the Scheduled Maintenance Chart on page 1–27 . To keep track of the hours of severe operation, an optional hourmeter can be installed at your HUMMER dealer.

Commercial use involves regular operation as a delivery or service type vehicle. Severe off-road use involves extended operation on rough terrain, stream fording, salt water fording, or sustained operation in sand, mud, snow, or dirt surfaces. Severe operation also includes prolonged daily operation in heavy traffic when ambient temperatures are high.

The additional maintenance required immediately after severe off-road operation is as follows:

- Wash the vehicle underbody, driveline and brake components, and all steering linkage and suspension parts with a low pressure fresh water spray.
- If vehicle was driven over rough terrain, examine the underbody and driveline components for impact damage. Also check for leaks and loose parts.
- If the vehicle was driven through deep water, examine geared hub, axle and vent lines for water contamination. If the lines have become disconnected, these components may become water contaminated. Also inspect the axle and hub vents if required.
- Check the front/rear brake pads for contamination by dirt, mud, sand, etc. Replace the pads if foreign material has become embedded in the lining. However, if the pads are only wet from water, allow them to air dry, or drive the vehicle about a block with the brakes lightly applied to heat and dry the pads.
- Check transmission and transfer case fluid levels and condition. Drain and replace the fluid in either assembly if water contamination is evident. If water contamination proves extensive, it will also be necessary to replace the transmission fluid filter, and flush the transmission fluid cooler and lines.
- Lubricate the steering linkage, ball joints, propeller shaft, and body lubrication points.
- Check the brake and power steering fluid levels and top off as needed.
- Examine the engine air filter. Replace the filter element if necessary and clean the air filter housing and dust unloader.
- Change engine oil and replace engine oil filter.

Maintenance Inspection Groups A-B-C

The inspection groups outline additional components to be checked at stated mileage intervals. The intervals are described in your maintenance booklet. Perform necessary service repair, replacement, or adjustments as each inspection item is checked.

Maintenance Inspection Group A:

- Check fluid levels and condition for power steering pump, cooling system (reservoir and surge tank), brakes, transmission, transfer case, geared hubs, and axles.



- Inspect condition of control arms, springs, and shock absorbers.
- Check tire wear and condition.
- Lubricate all grease fittings and body lubrication points.
- Inspect geared hubs for leaking seals or damage.
- Inspect service brakes and parking brake.
- Check axles for leaks or damage.
- Check torque of wheel lug nuts.
- Inspect condition of geared hub and axle vent lines.
- Inspect condition of transmission and transfer case vent lines.
- Inspect U-joints for wear or missing/damaged grease fittings.
- Inspect condition of engine mounts and insulators.
- Inspect transmission/transfer case shift cables for wear, binding, distortion.
- Check fuel filter and drain/clean if necessary.
- Check CTIS operation. Verify that system inflates/deflates tires.
- Check winch operation and cable condition (if equipped). Free-spool out and pay-in at least 30 feet of cable.
- Check ball joints for wear.
- Test drive vehicle and complete a functional check of all systems.
- Check air cleaner.

Maintenance Inspection Group B:

- Inspect fuel injection pump, lines, and fittings for leaks or damage.
- Check battery voltage and condition.
- Inspect serpentine belt condition.
- Inspect exhaust system and shields.
- Inspect and rotate tires.
- Inspect halfshaft boots and ball joint seals.
- Inspect condition of steering column, U-joints, tie rods, steering arm, center link, and idler arm.
- Check fuel tank vent line filter.
- Inspect condition of frame rails and crossmembers.
- Check A/C system operation.
- Check wheel alignment.

Maintenance Inspection Group C:

- Inspect surge tank, radiator and shroud, A/C condenser, power steering and transmission coolers, charge air cooler, and all hoses and fittings for security of mounting, leaks, obstructions, or damage.
- Inspect fuel tank, lines, and cap.
- Inspect all wiring harnesses for frays, splits, missing insulation, poor connections.
- Inspect power steering pump, power steering gear, hoses, lines, and fittings for leaks or damage.

NOTE: Clean all dirt from caps and surrounding areas before opening to check fluids.

SCHEDULED MAINTENANCE CHART

6,000 Miles (9,700 km) – 200 hrs normal use or 100 hrs severe operation

- Change engine oil and replace filter.
- Check items in Maintenance Groups A and B.

12,000 Miles (19,300 km) – 400 hrs normal use or 200 hrs severe operation

- Change engine oil and replace filter.



- Clean or replace air filter.
- Replace fuel filter element.
- Change geared hub oil.
- Change axle oil.
- Change transmission and transfer case fluid.
- Change transmission filter.
- Check items in Maintenance Groups A, B, and C.

18,000 Miles (29,000 km) – 600 hrs normal use or 300 hrs severe operation

- Change engine oil and replace filter.
- Check items in Maintenance Groups A and B.

24,000 Miles (38,600 km) – 800 hrs normal use or 400 hrs severe operation

- Change engine oil and replace filter.
- Clean or replace air filter.
- Replace fuel filter element.
- Change transmission and transfer case fluid.
- Change transmission filter.
- Check items in Maintenance Groups A, B, and C.
- Change geared hub oil.
- Change axle oil.
- Inspect brake fluid for moisture contamination.

30,000 Miles (48,300 km) – 1,000 hrs normal use or 500 hrs severe operation

- Change engine oil and replace filter.
- Check items in Maintenance Groups A and B.

36,000 Miles (58,000 km) – 1,200 hrs normal use or 600 hrs severe operation

- Change engine oil and replace filter.
- Clean or replace air filter.
- Replace fuel filter element.
- Change transmission and transfer case fluid.
- Change transmission filter.
- Check items in Maintenance Groups A, B, and C.
- Change geared hub oil.
- Change axle oil.

42,000 Miles (67,600 km) – 1,400 hrs normal use or 700 hrs severe operation

- Change engine oil and replace filter.
- Check items in Maintenance Groups A and B.

48,000 Miles (77,200 km) – 1,600 hrs normal use or 800 hrs severe operation

- Change engine oil and replace filter.
- Clean or replace air filter.
- Replace fuel filter element.
- Change transmission and transfer case fluid.
- Change transmission filter.
- Check items in Maintenance Groups A, B, and C.
- Change geared hub oil.
- Change axle oil.
- Inspect brake fluid for moisture contamination.

54,000 Miles (86,900 km) - 1,800 hrs normal use or 900 hrs severe operation

- Change engine oil and replace filter.



☐ Check items in maintenance Groups A and B.

60,000 Miles (96,500 km) - 2,000 hrs normal use or 1,000 hrs severe operation

- ☐ Change engine oil and replace filter.
- ☐ Clean or replace air filters.
- ☐ Replace fuel filter element.
- ☐ Change engine coolant.
- ☐ Change transmission and transfer case fluid.
- ☐ Inspect fuel tank, fuel cap and fuel lines.
- ☐ Change transmission filter.
- ☐ Check items in Maintenance Groups A, B, and C.
- ☐ Change geared hub oil.
- ☐ Change axle oil.
- ☐ Drain & replace brake fluid.

NOTE: Some maintenance requires specialized knowledge or equipment and may be best handled by qualified service technicians at your nearest HUMMER dealer.

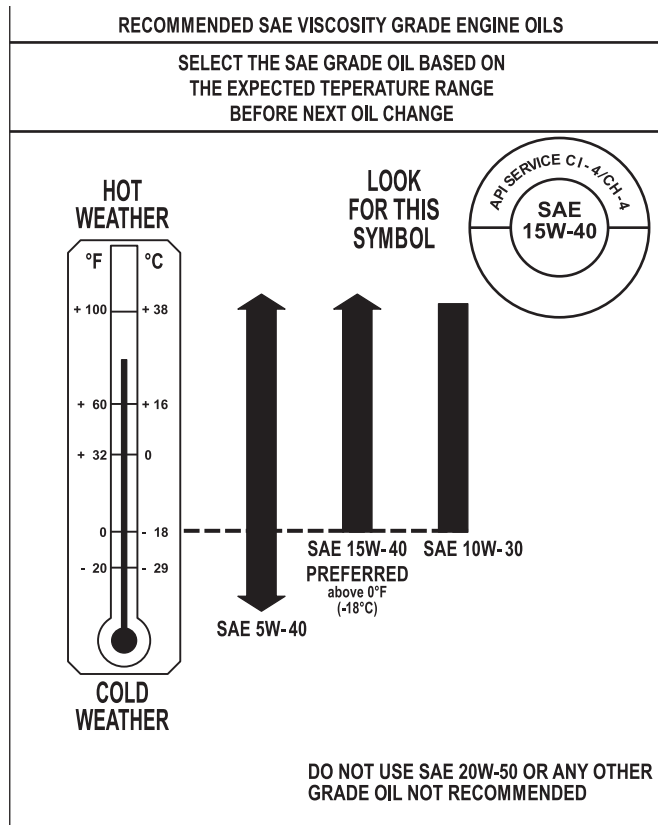
NOTE: After your vehicle has been driven for 66,000 miles (106,200 km) repeat the schedule indicated in this section, starting at 6,000 mi (9,700 km).

RECOMMENDED FUEL/FLUIDS/LUBRICANTS/CAPACITIES

Recommended Fuel

Recommended fuel for 6.6L diesel engines is #2 diesel. Do not use any other type fuel.

Engine Oil



05-OM1-006

Figure 1-18: Oil Viscosity Chart



Diesel engine oil capacities are:

- 10.5 qts (9.9L) without filter change
- 12.25 qts (11.6L) with filter change
- 2.0 qts (1.9L) for engine oil cooler

Refer to Section 2 for more information regarding engine oil.

Engine Coolant

Recommended engine coolant is a mixture of ethylene glycol antifreeze and water.

Use a mixture containing 50% DEX-COOL and 50% water.

Radiator capacity is 7 qts (6.6L). System capacity is approximately 33 qts (31.2L).

Transmission/Transfer Case/Steering Gear and Pump Fluid

Recommended lubricant for the transmission, transfer case, and steering system is Dexron III automatic transmission fluid.

Approximate fluid capacities are:

- 1 qt (0.95L) for the steering gear and pump
- 3.5 qts (3.3L) for the transfer case
- 14 qts (13.3L) for the transmission, converter, and cooler
- 8.2 qts (7.7L) for the transmission (during fluid drain/refill)

Brake Fluid

Recommended brake fluid for all HUMMER H1 vehicles is DOT 3 brake fluid. Master cylinder approximate capacity is 1.64 pints (0.78L). Brake system approximate capacity is 3.12 pints (1.5L).

Front and Rear Axle Lubricant

Recommended lubricant for axles is HUMMER H1 Synthetic Gear Lube 75W-90 with friction modifier. The approximate capacity for one axle is 2 qts (1.9L).

Geared Fan Drive

Recommended lubricant for the GFD is HUMMER H1 Synthetic Gear Lube 75W-90 with friction modifier. The approximate capacity is 1.2 pt (0.6L).

Geared Hub Lubricant

Recommended lubricant for hubs is a heavy duty, multipurpose, API GL-5 gear lubricant, with viscosity ratings of 80W-90 or 75W-90.

The 80W-90 is an all purpose lubricant. The 75W-90 lubricant is suggested for use in areas where winter temperatures are consistently below freezing.

Steering Linkage and Suspension Lubricant

Recommended lubricant for steering and driveline components is an NLGI LB, or GC-LB grade multipurpose chassis grease. Use only those lubricants that display the NLGI certification symbol.



Body Lubrication

Door hinges, linkage parts, cables, and other body components can be lubricated with a number of different lubricants. Suggested lubricants and applications are:

- Window regulator mechanisms – spray white grease
- Window slides – silicone spray lube
- Door hinges – engine oil, ATF, or LPS brand spray lube
- Linkage/cables – LPS brand silicone spray lube
- Lock strikers – chassis grease, white grease, or LPS #3.
- Seat track – multipurpose chassis grease (NLGI-LB)
- Lock mechanisms –ATF, silicone spray lube, graphite lube

A/C Refrigerant and Compressor Oil

The only refrigerant that can be used is R-134a. No other refrigerant is recommended.

The only compressor oil recommended is PAG (polyalkylene glycol). It is the only oil compatible with refrigerant R-134a. No other oil is recommended. Any PAG oil used should be compatible with General Motors specifications.

A/C system capacities are:

- 11 fluid ounces (325 ml) of PAG oil
- 3 lb 3 oz (1.45 kg) refrigerant

LUBRICATION AND MAINTENANCE ITEMS

Engine Oil Level

The engine oil dipstick is at the driver side of the engine (Figure-1-19). Correct oil level is to the “F” mark.

Check oil level only when the engine is shut down and the vehicle is on a level surface. Wait one minute after shut down to check. Never overfill the engine. The excess oil will be churned into foam causing oil film breakdown and consequent engine damage.

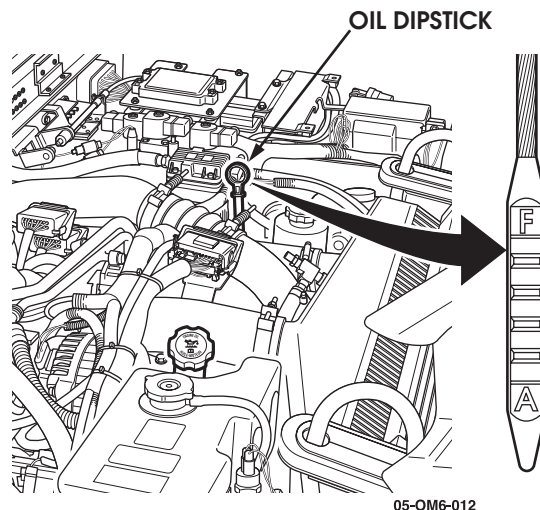


Figure 1-19: Oil Dipstick Location

Engine Oil and Filter Change

The oil filter is located on the driver side of the engine (Figure-1-20). A front mounted fill tube is used.

The spin-on oil filter is only removed with a standard band-type tool. Coat the seal on a new filter with oil and clean the adapter surface before installation. Tighten the filter by hand. Replace filter every 6,000 mi (9,700 km).

The oil pan drain plug has a gasket that should be replaced if cut, cracked, or distorted. Check the gasket seating surface on the oil pan. Burrs or nicks can be smoothed with a fine tooth file. Also replace the drain plug if the threads are worn or damaged. Be sure the plug is tightened to required torque of 16 lb-ft (22 N•m).

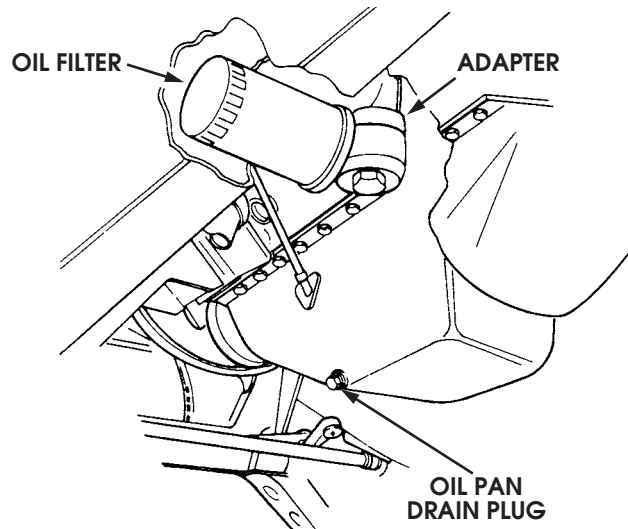


Figure 1-20: Oil Filter/Drain Plug Location

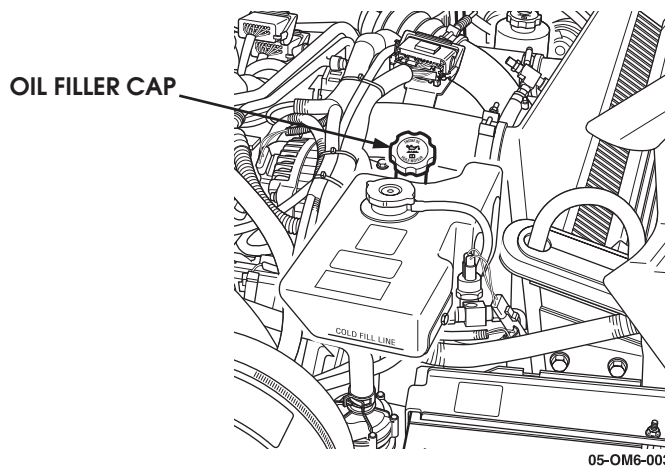


Figure 1-21: Engine Oil Fill Location

Fuel Filter Service

Replace the filter element every 6,000 mi (9,600 km), or annually, whichever occurs first (Figure-1-22). See “Purging Air From Diesel Filter” (Section 3).

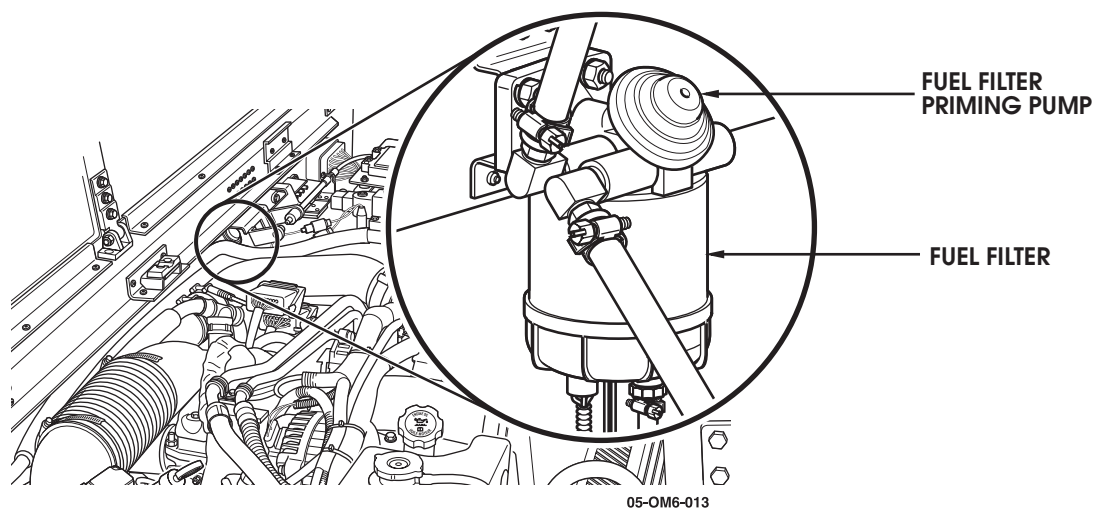


Figure 1-22: Fuel Filter Location



Transmission Fluid

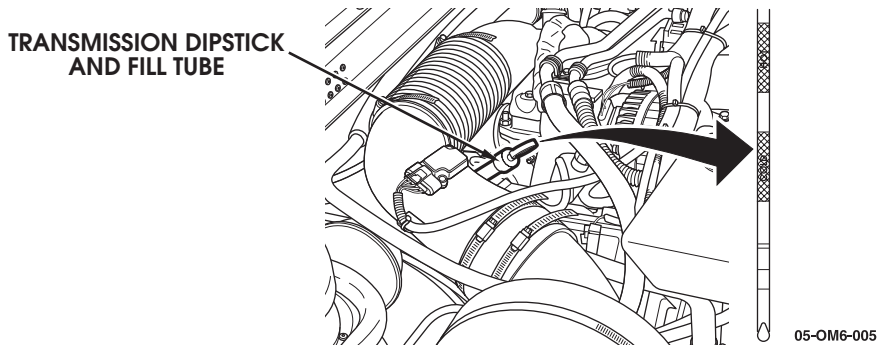


Figure 1-23: Transmission Dipstick Location

Replace the transmission fluid filter each time the fluid is changed. Refill the transmission with Dexron[®] III afterward.

Check transmission fluid level at least once each month. Procedure is as follows:

1. Drive the vehicle until the transmission fluid is at normal operating temperature. Fluid must be hot to obtain accurate reading.
2. Position the vehicle on a level surface.
3. Shift the transmission into Park.
4. Operate the engine at curb idle speed.
5. Remove the transmission dipstick and check the level (Figure-1-23). Correct level is within the crosshatch marks on the dipstick.
6. If the fluid level is too high, remove the excess through the fill tube using a suction gun and 3/16-in. teflon tubing. If level is low, check for leaks and, if OK, add fluid in 1-2 ounce increments until level is correct.

CAUTION: Do not overfill the transmission. The excess fluid will be churned into foam resulting in overflow from the fill and vent tubes, slip and flare during upshifts, fluid breakdown and eventual clutch failure.

7. Check the fluid color and the condition. Normal color ranges from dark red to light pink. Fluid that is dark brown, black, or orange and full of bubbles indicates a problem that may require overhaul.

Transfer Case Fluid

Check transfer case fluid level every 6,000 mi (9 700 km), or semiannually, whichever comes first. Remove fill plug and gasket. Level should be within 1/2 in. (12.7 mm) of fill plug opening when transfer case is level. Install fill plug and gasket, and tighten to 15-25 lb-ft (20-33 N•m). Change fluid every 12,000 mi (19 000 km) or annually, whichever occurs first (Figure-1-24).

Inspect rubber plug in the shift rail roll pin access passage located near the shift lever for leakage. Replace plug if leakage is present.

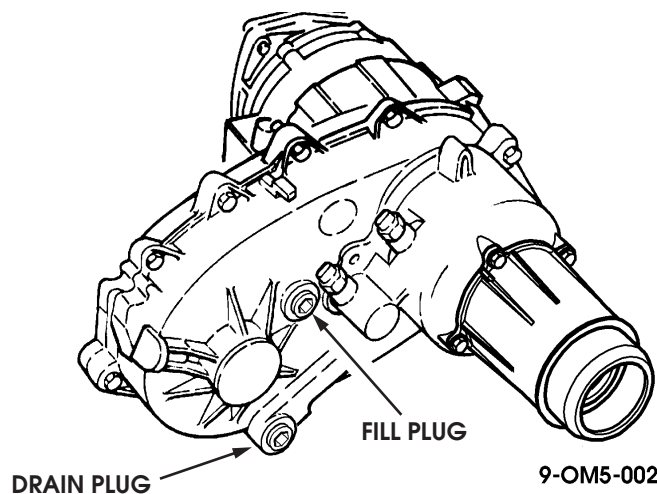


Figure 1-24: Transfer Case Fill/Drain Plug Location



Axle and Geared Hub

- Check axle and hub lubricant condition and level every 6,000 mi (9,700 km) or semiannually, whichever occurs first. Geared hub level should be within 1/2 in. (12.7 mm) of fill plug opening when lubricant is cold, or to plug level when hot. Axle level should be within 1/4 in. (6.4 mm) of fill plug opening when lubricant is cold, or to plug level when hot (Figures 1-25 and 1-26).
- Change axle and hub lubricant when contaminated by water or foreign material.
- The geared hubs use GL-5, SAE 80W-90 or 75W-90 gear lubricant only.
- For the axles, use only HUMMER H1 Synthetic Gear Lube 75W-90 with friction modifier.

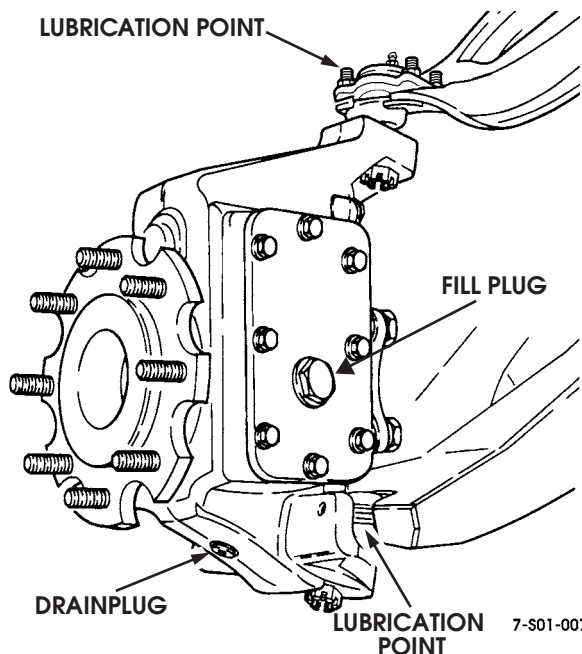


Figure 1-25: Geared Hub Fill/Drain Plug Locations

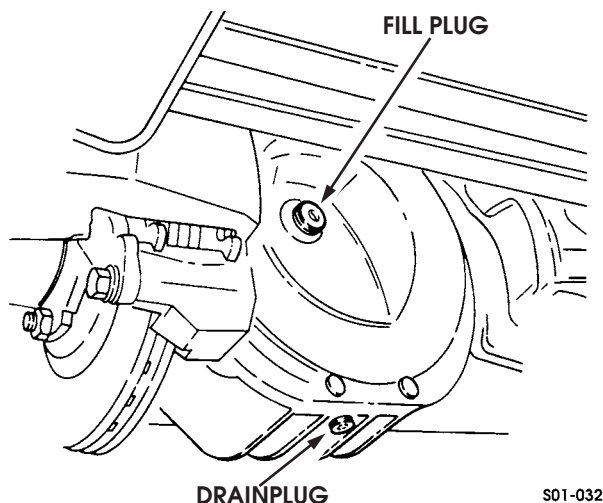


Figure 1-26: Axle Fill/Drain Plug Locations

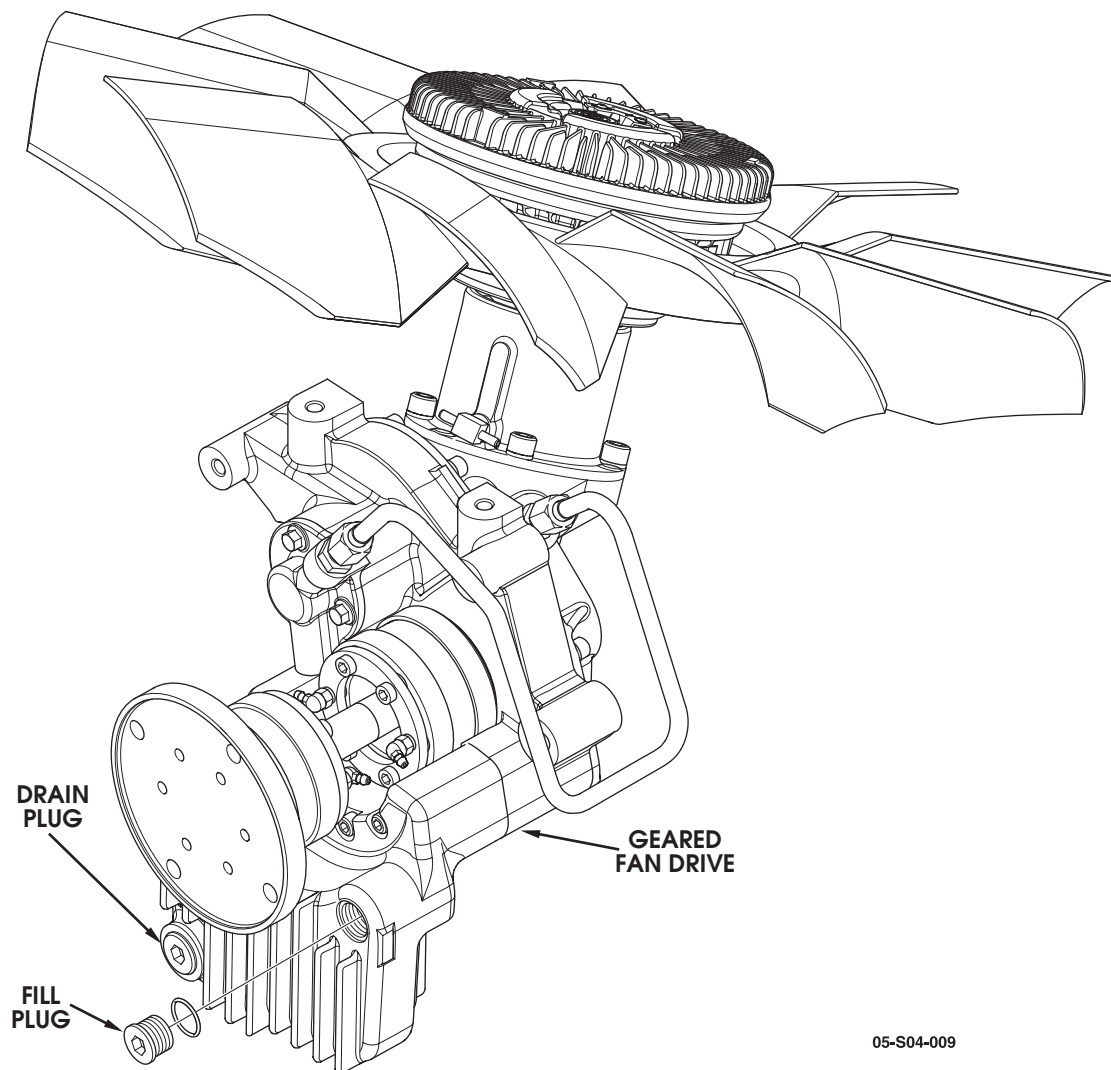


Geared Fan Drive

CAUTION: If the fluid level is checked when the unit is hot, some of the expanded fluid will run out and create a low fluid condition.

The fluid level in the reservoir must be checked every 6,000 mi (9,700 km) or semiannually, whichever occurs first and topped off using HUMMER H1 Synthetic Gear Lube 75W-90 with friction modifier. Remove the fill plug when the unit is cold and ensure that the fluid is even with the bottom of the fill plug hole (Figure-1-27). The coupler shaft CV joints must be greased every 6,000 mi (9,700 km) or semiannually, whichever occurs first with a multipurpose, NLGI-LB grade chassis grease. The coupler shaft has a CV joint at the GFD end and one at the engine crankshaft end. Each CV joint contains two grease zerks, although only one zerk needs to be greased per joint. The second zerk is used to give an optional location depending on the position of the shaft when the engine stopped. This should lessen the need to bar the engine over to gain access to the zerks. Grease should be applied, using a low pressure grease gun, to the joint until old grease can be seen exiting around the sleeve on the shaft. Wipe the excess grease from the shaft when finished (Figure-1-28).

NOTE: It will be normal for some grease to exit the CV joint seals during engine operation, DO NOT replace the CV joints for this condition.



05-S04-009

Figure 1-27: GFD Fill and Drain Plug

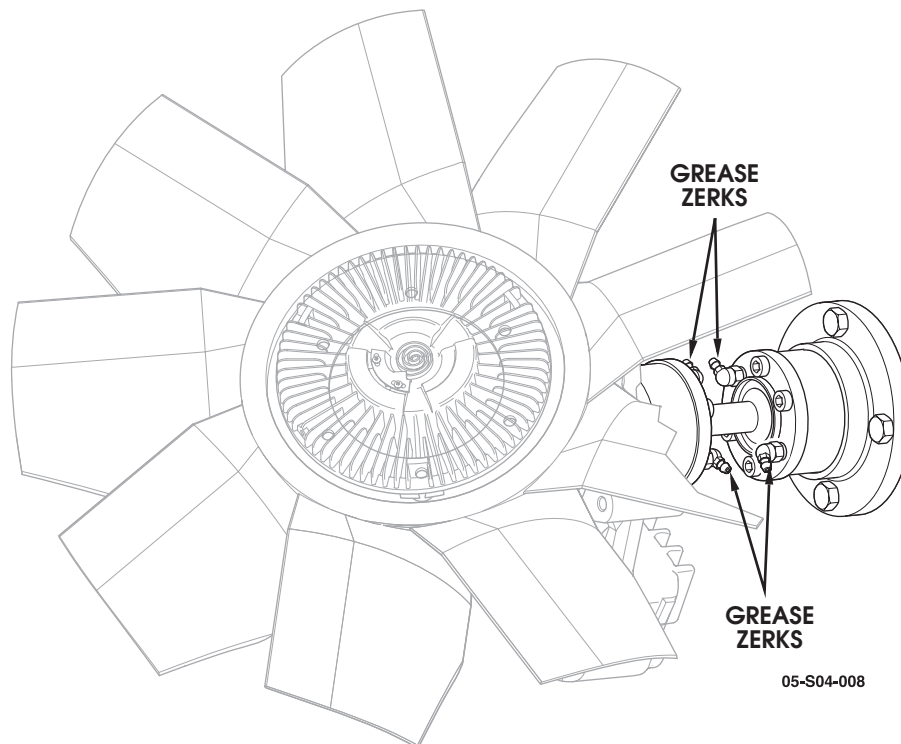


Figure 1-28: Coupler Shaft Grease Points

Universal and Slip Joint Lubrication

Lubricate U-joints with a multipurpose, NLGI-LB grade chassis grease.

Lubricate propeller shaft universal and slip joints every 6,000 mi (9,700 km), or semiannually, whichever occurs first. Use a hand operated or low-pressure air powered lubrication gun. If operating conditions are severe service at 1,000 mi. (1,600 km) intervals.

The rear propeller shaft U-joints have two grease fitting locations (Figure-1-29). The front shaft has four fitting locations (Figure-1-30)

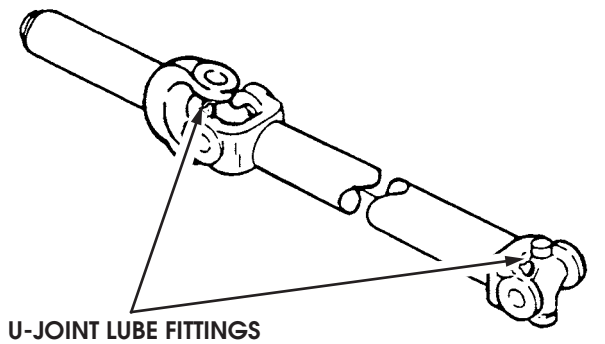
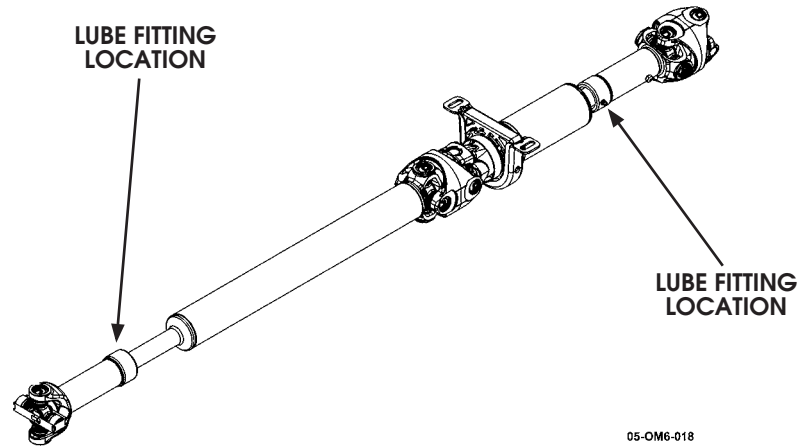


Figure 1-29: Propeller Shaft Lube Points



05-OM6-018

Figure 1-30: Front Propeller Shaft Lube Points

Steering and Suspension Lubrication Points

Lubricate steering and suspension components every 6,000 mi. (9 700 km), or semiannually, whichever occurs first. If operating conditions are severe, service at 1,000 mi. (1 600 km) intervals.

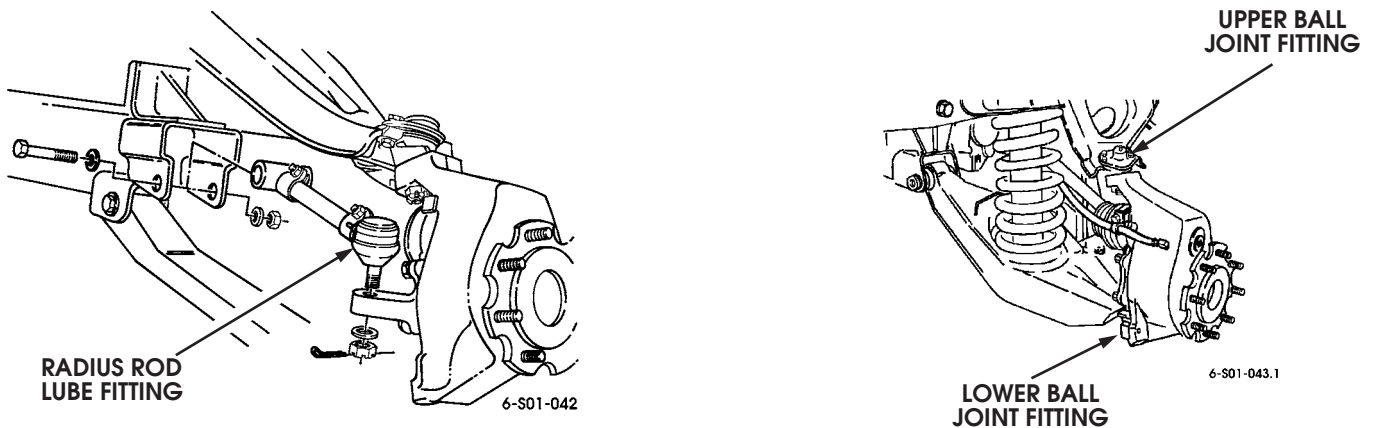
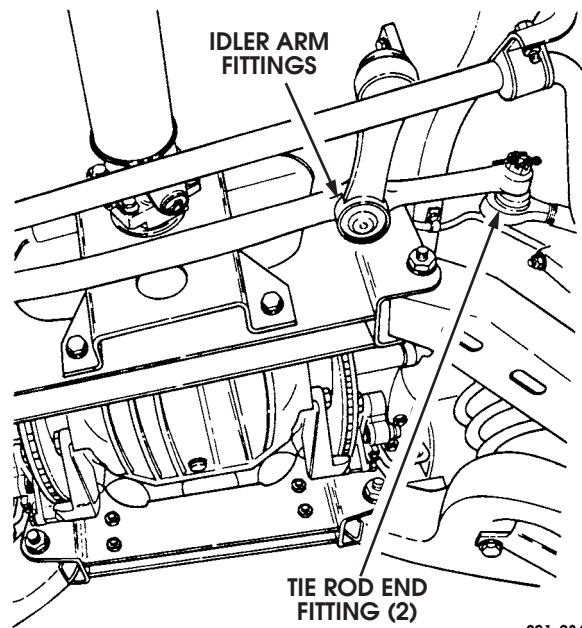


Figure 1-31: Ball Joint/Radius Rod Lube Points

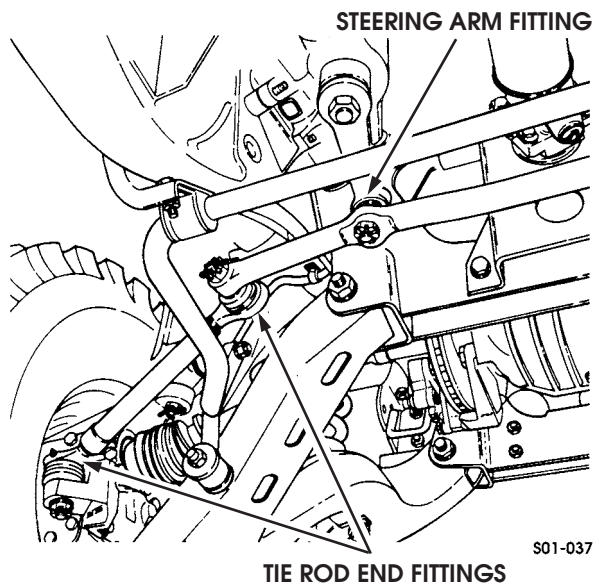
Suspension lube points include the upper and lower ball joints and the rear suspension radius rods (Figure-1-31). Steering lube points include the tie rod ends, idler arm, steering arm, and intermediate steering shaft (Figure 1-32 through Figure 1-34).

Use a hand operated or low pressure air powered lube gun filled with a multipurpose chassis grease. NLGI-LB classification lubricating grease is recommended.



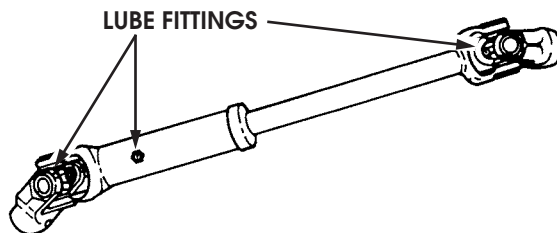
S01-036

Figure 1-32: Idler Arm and Tie Rod Lube Points



S01-037

Figure 1-33: Tie Rod and Steering Arm Lube Points



S01-038

Figure 1-34: Intermediate Steering Shaft Lube Points



Power Steering Fluid

Check the fluid level in the power steering reservoir monthly and adjust level as necessary. If fluid is hot, level should be between “HOT” and “COLD” marks on the cap indicator. If fluid is cool, level should be between “ADD” and “COLD” marks. In either condition, level must be above “ADD” mark.

NOTE: Power steering fluid does not require periodic replacement.

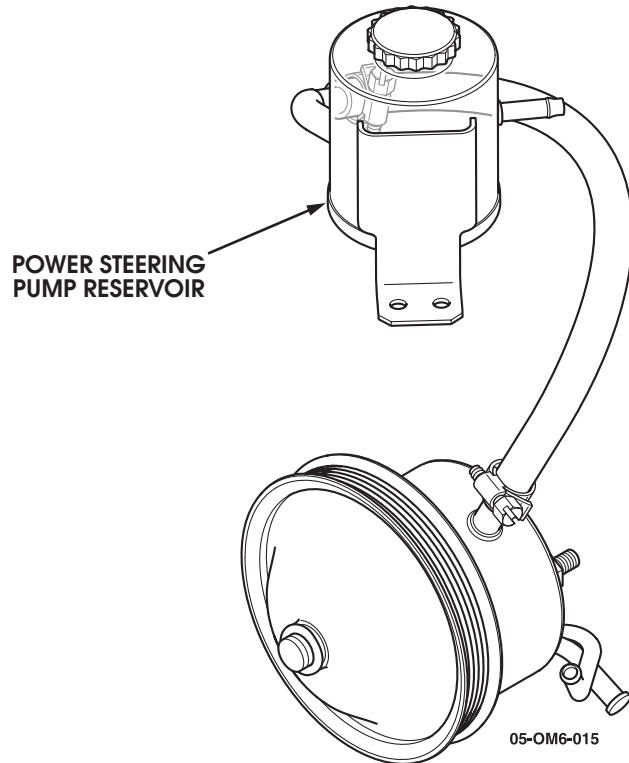


Figure 1-35: Power Steering Pump Reservoir

Cooling System Fluid Level Check

Check coolant level at the surge tank monthly and adjust level as necessary. Level should be at, or above, the cold fill line (Figure-1-36).

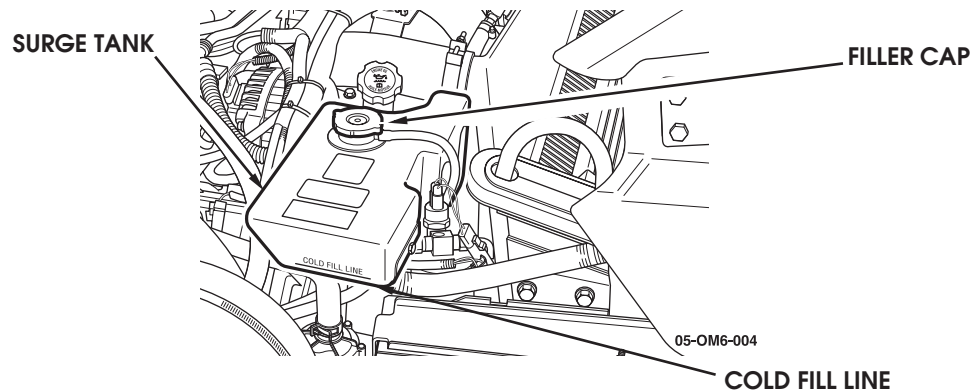


Figure 1-36: Surge Tank Coolant Level Indicator Location



Master Cylinder Fluid Level Check

CAUTION: Use DOT 3 brake fluid only. Failure to use the proper fluid may affect brake performance or damage brake components.

Check master cylinder fluid level monthly. Correct fluid level is to within 1/2 in. (13 mm) from the “MAX” indicator.

Clean the master cylinder cap and exterior before checking fluid level. Dirt on the cap must not be allowed to enter the reservoirs.

Add DOT 3 fluid if necessary and reinstall the cap (Figure-1-37).

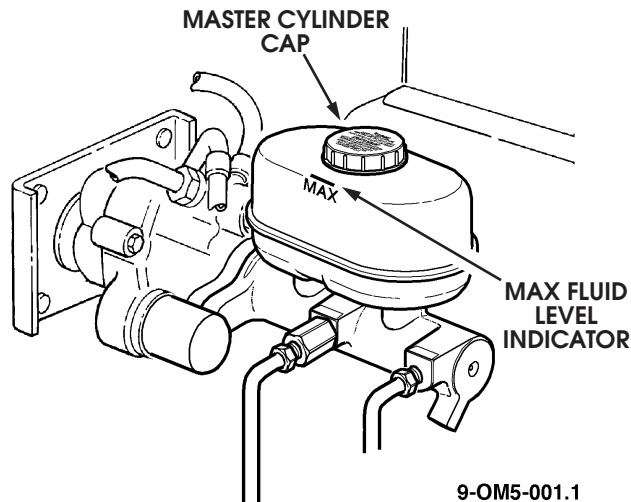


Figure 1-37: Master Cylinder Cap Location

Wheels/Tires/CTIS

Inspect tire and wheel condition. Look for loose wheel nuts and rim stud nuts, or dented, deformed wheel rims. Note tire tread wear and sidewall condition. If the vehicle is used for extensive off road operation, check the sidewalls for bulges, bead damage, cuts, fabric breaks.

If the tire treads are worn, note type of wear. If wear is only on one shoulder, toe setting or camber may be incorrect. If tires are scalloped or worn at crown only, or both shoulders, inflation pressures are probably incorrect.

If the vehicle is equipped with CTIS, cycle the system and check operation. Verify tire inflation pressures with an accurate gauge.

Serpentine Belt

Replace the belt if frayed, cut, or torn. Minor, small surface cracks within the belt grooves are normal. Do not replace the belt unless cracks extend all the way through or across the belt face.

Body Lubrication Points

Every 6 months or 6,000 mi (9,700 km), whichever occurs first, lubricate the: hood hinge, hood stops, tailgate hinges, door hinges, door handles, parking brake lever and service brake pedal push rod stud (Figure-1-38). Suggested lubricants include engine oil or ATF for hinges; LPS silicone lube for linkages, handles, and brake push rod; white grease for seat tracks, window regulators and park brake lever. Door locks should use a graphite based lubricant such as Lock-Eze. Refer to the Recommended Fuel/Fluids/Lubricants/Capacities section for more detailed lube information.

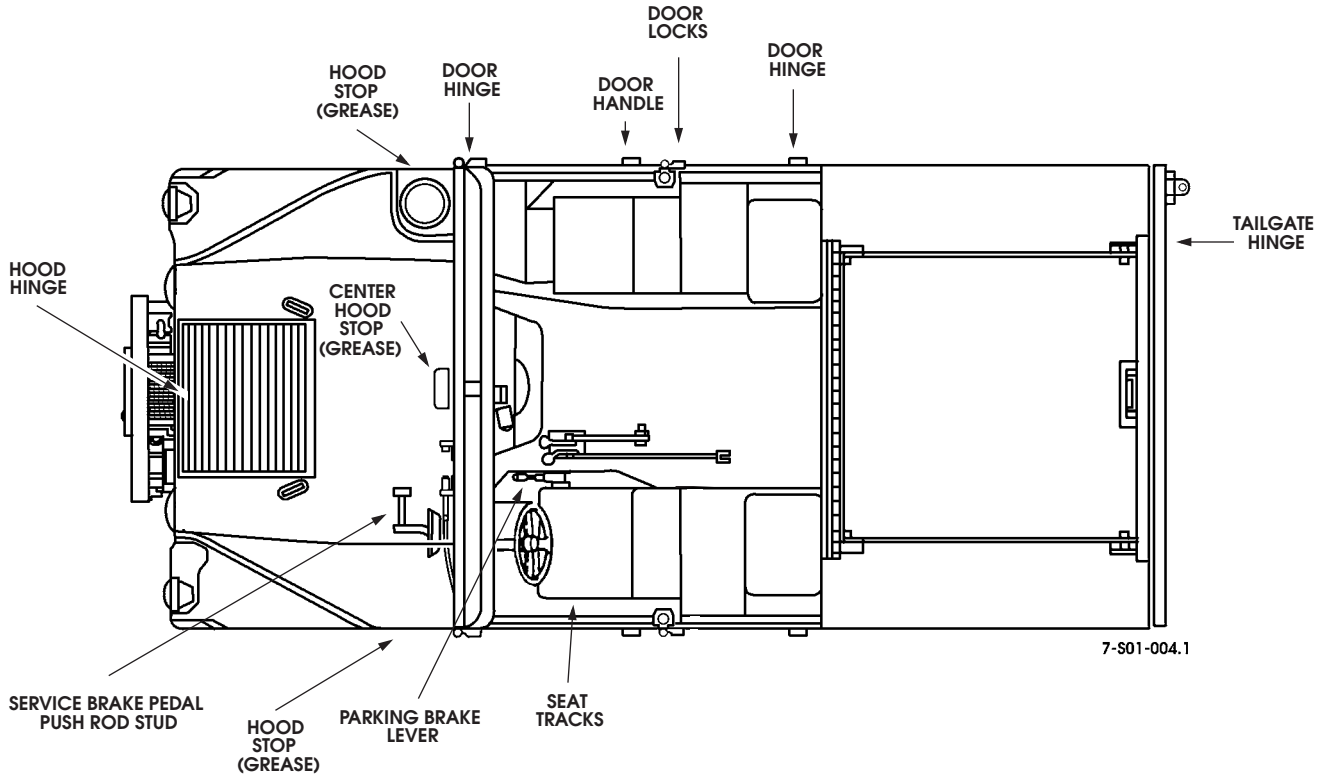


Figure 1-38: Body Lubrication Points

ESSENTIAL TOOLS

NOTE: See page 1-1 of the 2006 Service Parts Catalog for information on ordering Kent-Moore tools.

Engine

| Tool No. | Description |
|------------|---|
| EN-47913 | Wrench, Belt Tensioner |
| J-23523-F | Harmonic Balancer Remover/Installer Set |
| J-23951 | Water Manometer |
| J-26999-10 | Compression Gauge Adapter |
| J-26999-20 | Adapter, Compression Gauge |
| J-26999-30 | Compression Gauge Adapter |
| J-34826 | Socket, 36mm 12 Point |
| J-42000-EU | Digital Battery Tester |
| J-44640 | Installer, Valve Stem Seal |
| J-44641 | Remover, Rear Crankshaft Seal |
| J-44642 | Installer, Rear Crankshaft Seal |
| J-44643 | Flywheel Holder |
| J-44644 | Remover, Front Crankshaft Seal |
| J-44645 | Installer, Front Crankshaft Seal |
| J-44646 | Compressor, Valve Spring (On-Vehicle) |
| J-44648-A | Storage Case - Duramax 6.6L Tools |
| J-45059 | Angle Meter |
| J-46594 | Tool, Injector Removal |



Fuel, Emissions and Exhaust

| Tool No. | Description |
|-----------------|--|
| EN-47589 | Test Adapter, Fuel Pressure |
| J-28552-A | Gauge, Fuel Pressure |
| J-28552-100 | Fuel Pressure/Return Adapter Set |
| J-29658-D | Fuel Pressure Gauge & Adapter Set |
| J-29698-A | Injection Line (flare nut) Wrench, 3/4 |
| J-38641-B | Hydrometer, Diesel Fuel |
| J-44638 | Gauge, Vacuum/Pressure |
| J-45773 | Adapters, Fuel Pressure Gauge |
| J-45873 | Test Kit, Fuel Return Volume |
| J-45873-30 | Test Adapters, Fuel Return Volume |

Transmission/Transfer Case

| Tool No. | Description |
|-----------------|--|
| DT-47502 | Front Output Seal Installer |
| J-21366 | Torque Converter Retaining Strap |
| J-25025-B | Oil Pump and Valve Body Pin Set |
| J-33831-A | Input Gear Seal Installer |
| J-33835 | Pump Housing Seal Installer |
| J-39700 | Break-Out Box |
| J-41364-A | NSBU Switch Aligner |
| J-41623-B | Trans Oil Cooler Line Disconnect Tool |
| J-42497 | Extension Housing Seal Installer |
| J-42543 | Selector Shaft Seal Remover/Installer |
| J-43773 | Valve Spring Compressor |
| J-43799 | Break-Out Box Adapter |
| J-43909 | Selector Shaft Seal Installer |
| J-43911 | Selector Shaft Seal Remover |
| J-44152 | Jumper Harness (20 pins) |
| J-44247 | Internal Wiring Harness Installer |
| J-44257 | Wiring Harness Connector Remover |
| J-44835 | Allison Transmission Oil Cooler Flush Adapters |
| J-44924-A | Storage Case - Allison LCT Tools |
| J-45053 | Pump Remover |
| J-45056 | Oil Pressure Adapter |
| J-45096 | TransFlow Transmission Cooling System Service Tool |
| J-45096-500 | Oil Flush Kit Adapters |
| J-46409 | Torque Converter Alignment Handles |



Wheels, Tires and CTIS

| Tool No. | Description |
|----------|----------------------------|
| CH-47503 | Runflat Tire Pry Bar |
| J-39522 | ENG Kit, Socket (5-Point) |
| J-42452 | Runflat Compressor |
| J-42557 | Socket, Cam |
| J-45760 | Rim Separating Jack-Screws |
| J-45769 | Runflat Ratchet Wrench |
| J-45770 | Hutchinson Rim Separator |

Brakes

| Tool No. | Description |
|----------|-----------------------------------|
| J-35592 | ABS Pinout Box |
| J-42553 | Disc Brake Piston Retraction Tool |
| J-42883 | Wheel Speed Sensor Test Cable |
| J-44237 | ABS Blink Code Jumper |
| J-44238 | Master Cylinder Bleed Adapter |
| J-45405 | Brake Line Flaring Kit |
| J-45761 | T-Handle Ratchet Wrench (9/16") |

Steering

| Tool No. | Description |
|----------|--------------------------------------|
| J-33141 | Adapter Fittings (used with J-25323) |
| J-42548 | Puller, Pitman Arm |
| J-44721 | Power Steering System Analyzer |
| J-8092 | Universal Driver Handle |

Axles/Suspension and Frame

| Tool No. | Description |
|-----------|---------------------------------------|
| CH-47505 | Shock Mounting Pin Socket |
| DT-47845 | Installer, Input Seal |
| DT-47846 | Installer, Spindle Seal |
| J-08614-A | Pinion Flange Holder |
| J-08614-5 | Bolt Kit Yoke Holding Tool |
| J-22610 | Axle Boot Pliers, Eared Clamp |
| J-24398-A | Driveshaft Inclinator |
| J-35566 | Clamp Tool, Axle Boot |
| J-35910 | Axle Boot Crimping Tool |
| J-38792-A | Electronic Vibration Analyzer (EVA) 2 |
| J-38869 | Installer, Pinion Seal |
| J-42183 | Handle, Seal Driver |
| J-42546 | 1/4 in. Drive Torque Wrench (Preset) |
| J-42547 | 1/2 in. Drive Torque Wrench (Preset) |
| J-43218 | Clamp Plier |
| J-45762 | T-Handle Ratchet Wrench (15mm) |
| J-8092 | Universal Driver Handle |



HVAC

| Tool No. | Description |
|----------|----------------------------------|
| J-46053 | R-134a Refrigerant Leak Detector |

Electrical

| Tool No. | Description |
|-----------|----------------------------------|
| J-24538-B | Tester, Gauge |
| J-34513 | Terminal Remover |
| J-35616-B | Connector Test Adapter Set |
| J-41712 | Oil pressure Sending Unit Socket |
| J-42541 | Crimper, 4 pt (field grade) |
| J-45763 | AMP Terminal Release Tool |

Electrical Troubleshooting

| Tool No. | Description |
|-----------|-------------------------|
| J-35689-A | Micro-Pack Extract Tool |
| J-39200-A | Digital Multimeter |

SPECIAL TOOLS

Engine

| Tool No. | Description |
|-----------|--|
| J-02619-A | Slide Hammer |
| J-05902-A | Cylinder Hone |
| J-24270 | Ridge Reamer |
| J-24460-A | Cooling System and Cap Pressure Tester |
| J-26999 | Compression Gauge |
| J-38606 | Valve Spring Compressor |
| J-8037 | Ring Compressor |
| J-8087 | Cylinder Bore Gauge |
| J-9666 | Valve Spring Tester |

Fuel, Emissions and Exhaust

| Tool No. | Description |
|----------|-------------------------------|
| J-35555 | Vacuum Pump (MITY-VAC) |
| J-42520 | Fuel Line Disconnect Tool Set |



Transmission/Transfer Case

| Tool No. | Description |
|------------|--------------------------------------|
| J-03289-20 | Bench-mounted Base |
| J-21359-A | Oil Pump to Converter Seal Installer |
| J-21366 | Converter Holding Strap |
| J-21867-A | Pressure and Hose Assembly Kit |
| J-23456 | Clutch Spring Compressor Press |
| J-36850-A | Transmission Assembly Lubricant |
| J-6125-1B | Slide Hammer |
| J-8059 | Parallel Jaw Snap Ring Pliers |

Wheels, Tires and CTIS

| Tool No. | Description |
|-------------|---------------------------------|
| J-39544-18A | Torque Stick (7/8" x 120 lb-ft) |

Steering

| Tool No. | Description |
|-----------|-----------------------------------|
| J-24319-B | Universal Steering Linkage Puller |
| J-25033-C | Pump Pulley Installer |
| J-25034-C | Pump Pulley Remover |

Brakes

| Tool No. | Description |
|-----------|-------------------------|
| J-29532-A | Diaphragm Brake Bleeder |

**Axles/Suspension and Frame**

| Tool No. | Description |
|-----------------|--------------------------|
| J-21465-13 | Driver Handle Extension |
| J-23409 | Dial Indicator Extension |
| J-26900-13 | Magnetic Indicator Base |
| J-39570 | Chassis Ear |
| J-8001 | Dial Indicator Set |

Body

| Tool No. | Description |
|-----------------|----------------------|
| J-25070 | Heat Gun |
| J-34940 | Heavy Duty Rivet Gun |

Electrical

| Tool No. | Description |
|-----------------|--------------------------------------|
| J-25300-D | Headlight Aimer |
| J-39916-A | CD and Cassette Audio Diagnostic Kit |