

GROUP TAB LOCATOR

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INTRODUCTION

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VEHICLE IDENTIFICATION NUMBER

DESCRIPTION

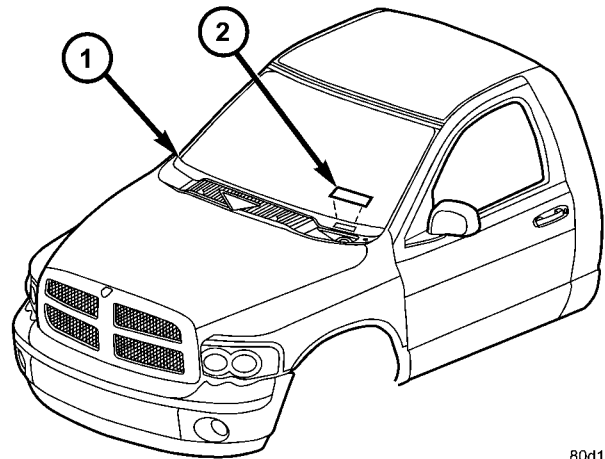
VIN CODING/LOCATIONS

The Vehicle Identification Number (VIN) plate is located on the lower windshield fence near the left a-pillar (Fig. 1). The VIN contains 17 characters that provide data concerning the vehicle. Refer to the VIN decoding chart to determine the identification of a vehicle.

The VIN is also imprinted on the:

- Body Code Plate.
- Equipment Identification Plate.
- Vehicle Safety Certification Label.
- Frame rail.

To protect the consumer from theft and possible fraud the manufacturer is required to include a Check Digit at the ninth position of the VIN. The check digit is used by the manufacturer and government agencies to verify the authenticity of the vehi-



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Fig. 1 VIN LOCATION

- 1 - DASH PANEL
- 2 - VIN CODE PLATE

cle and official documentation. The formula to use the check digit is not released to the general public.

POSITION	INTERPRETATION	CODE = DESCRIPTION
1	Country of Origin	1 = Manufactured By DaimlerChrysler Corporation 3 = Manufactured By DaimlerChrysler De Mexico
2	Make	D = Dodge
3	Vehicle Type	2 = Incomplete with Side Airbag 3 = Truck with Side Airbag 6 = Incomplete Less Side Airbag 7 = Truck Less Side Airbag

VEHICLE IDENTIFICATION NUMBER (Continued)

POSITION	INTERPRETATION	CODE = DESCRIPTION
4	Gross Vehicle Weight Rating	G = 5,001-6000 lbs. H = 6,001-7,000 lbs. J = 7,001-8,000 lbs. K = 8,001-9,000 lbs. L = 9,001-10,000 lbs. M = 10,001-14,000 lbs. W = Buses/Incomplete Vehicles with Hydraulic Brakes
5	Vehicle Line	A = Ram Pickup 4X2 U = Ram Pickup 4X4 N = Ram Pickup 4X2 DX Family
6	Series	1 = 1500 2 = 2500 3 = 3500 Less Dual Rear Wheels 4 = 3500 With Dual Rear Wheels 5 = 4000 DX Family
7	Body Style	6 = Conventional Cab/Cab Chassis 8 = Quad Cab Full Rear Doors
8	Engine	K = 3.7L 6 cyl. MPI Gasoline N = 4.7L 8 cyl. MPI Gasoline D = 5.7L 8 cyl. SMPI Gasoline 6 = 5.9L 6 cyl. Turbo Diesel 24v C = 5.9L 6 cyl. Turbo Diesel High Output
9	Check Digit	0 through 9 or X
10	Model Year	4 = 2004
11	Plant Location	S = Dodge City G = Saltillo J = St. Louis (North)
12 thru 17	Vehicle Build Sequence	

VEHICLE EMISSION CONTROL INFORMATION (VECI)

DESCRIPTION

All models have a Vehicle Emission Control Information (VECI) Label. DaimlerChrysler permanently attaches the label in the engine compartment (Fig. 2). The label cannot be removed without defacing label information and destroying label.

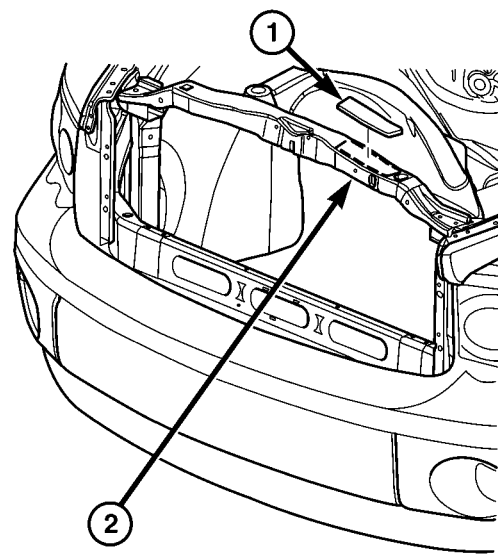
The label contains the vehicle's emission specifications and vacuum hose routings. All hoses must be connected and routed according to the label.

The label also contains an engine vacuum schematic. There are unique labels for vehicles built for sale in the state of California and the country of Canada. Canadian labels are written in both the English and French languages.

The VECI label contains the following:

- Engine family and displacement
- Evaporative family
- Emission control system schematic
- Certification application
- Engine timing specifications (if adjustable)

- Idle speeds (if adjustable)
- Spark plug and gap



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Fig. 2 VEHICLE EMISSIONS CERTIFICATION INFORMATION LABEL

- 1 - VECI LABEL LOCATION
- 2 - RADIATOR SUPPORT

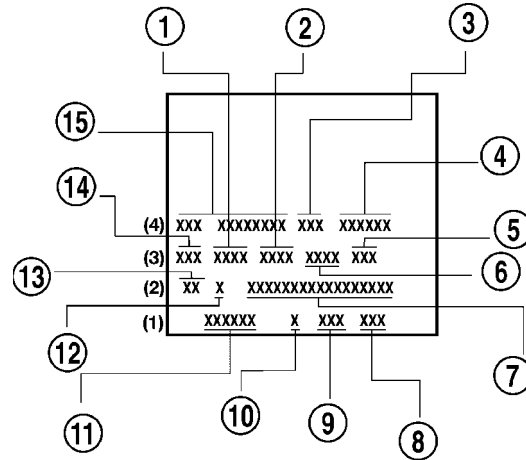
BODY CODE PLATE

DESCRIPTION

The Body Code Plate (Fig. 4) is located on the right front hydroform fender rail just behind the headlight assembly (Fig. 3). There are seven lines of information on the body code plate. Lines 5, 6, and 7 are not used to define service information. Information reads from left to right, starting with line 4 in the center of the plate to line 1 at the bottom of the plate.

The last code imprinted on a vehicle code plate will be followed by the imprinted word END. When two vehicle code plates are required, the last available spaces on the first plate will be imprinted with the letters CTD (for continued).

When a second vehicle code plate is necessary, the first four spaces on each row will not be used because of the plate overlap.



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Fig. 4 BODY CODE PLATE

- 1 - PRIMARY PAINT
- 2 - SECONDARY PAINT
- 3 - TRANSMISSION CODE
- 4 - VEHICLE MODEL NUMBER
- 5 - ENGINE CODE
- 6 - INTERIOR TRIM CODE
- 7 - VEHICLE IDENTIFICATION NUMBER
- 8 - TAILGATE CODE
- 9 - CARGO BOX CODE
- 10 - TAILGATE TRIM CODE
- 11 - BODY-IN-WHITE SEQUENCE
- 12 - MARKET CODE
- 13 - SPECIES CODE
- 14 - PAINT PROCEDURE
- 15 - VEHICLE ORDER NUMBER

- DDC = 5-speed Manual (NV3500)
- DDP = 5-speed Manual (NV4500)
- DEC = 6-speed Manual (NV5600)
- DEE = 6-speed Manual Tremec (T-56)

DIGITS 16, 17, AND 18

Car Line Shell

- DR1 = 1500 4 X 2
- DR6 = 1500 4 X 4
- DR2 = 2500 4 X 2
- DR7 = 2500 4 X 4
- DR3 = 3500 4 X 2
- DR8 = 3500 4 X 4

DIGIT 19

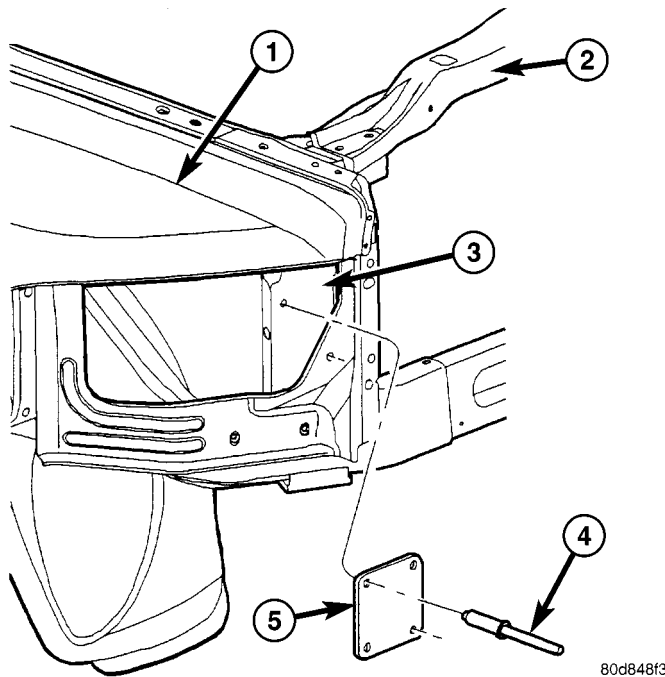
Price Class

- L = Low
- H = Highline

DIGITS 20 AND 21

Body Type

- 41 = Ram Truck Quad Cab, Short Box
- 42 = Ram Truck Quad Cab, Long Box
- 61 = Ram Truck Standard Cab, Short Box
- 62 = Ram Truck Standard Cab, Long Box



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Fig. 3 BODY CODE PLATE LOCATION

- 1 - FENDER
- 2 - RADIATOR CROSSMEMBER
- 3 - HYDROFORM FENDER RAIL
- 4 - RIVOT (2)
- 5 - BODY CODE PLATE

BODY CODE PLATE—LINE 4

DIGITS 1 THROUGH 12

Vehicle Order Number

DIGITS 13, 14, AND 15

Transmission Codes

- DG4 = 4-speed Automatic (45RFE)
- DG8 = 4-speed Automatic (48RE)

BODY CODE PLATE (Continued)

BODY CODE PLATE—LINE 3

DIGITS 1,2, AND 3

Paint Procedure

- APA = Monotone
- AP9 = Special
- APD = Two-tone (Lower break)

DIGIT 4

Open Space

DIGITS 5 THROUGH 8

Primary Paint

(Refer to 23 - BODY/PAINT - SPECIFICATIONS)
for color codes.

DIGIT 9

Open Space

DIGITS 10 THROUGH 13

Secondary Paint

DIGIT 14

Open Space

DIGITS 15 THROUGH 18

Interior Trim Code

DIGIT 19

Open Space

DIGITS 20, 21, AND 22

Engine Code

- EKG = 3.7 L 6 cyl. MPI Gasoline
- EVA = 4.7 L 8 cyl. MPI Gasoline
- EZA = 5.7 L 8 cyl. SMPI Gasoline
- ETC = 5.9 L 6 cyl. Cummins Turbo Diesel
- ETH = 5.9 L 6 cyl. Cummins Turbo Diesel High Output

BODY CODE PLATE—LINE 2

DIGIT 1 Open Space

DIGITS 2 AND 3 Species Code. (Used for Manufacturing)

DIGIT 4

Open Space

DIGIT 5

Market Code

- B = International
- C = Canada
- M = Mexico
- U = United States

DIGIT 6

Open Space

DIGITS 7 THROUGH 23

Vehicle Identification Number (VIN)

(Refer to VEHICLE DATA/VEHICLE INFORMATION/VEHICLE IDENTIFICATION NUMBER - DESCRIPTION) for proper breakdown of VIN code.

BODY CODE PLATE—LINE 1

DIGITS 1 THROUGH 6 Body-in-white assembly sequence.

DIGIT 7

Open Space

DIGIT 8 Tailgate trim code.

DIGIT 9

Open Space

DIGITS 10 THROUGH 12 Cargo box code

DIGIT 13

Open Space

DIGITS 14 THROUGH 16 Tailgate code

INTERNATIONAL VEHICLE CONTROL & DISPLAY SYMBOLS

























DESCRIPTION - INTERNATIONAL SYMBOLS

The graphic symbols illustrated in the following International Control and Display Symbols Chart are used to identify various instrument controls. The symbols correspond to the controls and displays that are located on the instrument panel.

FASTENER IDENTIFICATION

DESCRIPTION

The SAE bolt strength grades range from grade 2 to grade 8. The higher the grade number, the greater the bolt strength. Identification is determined by the line marks on the top of each bolt head. The actual bolt strength grade corresponds to the number of line marks plus 2. The most commonly used metric bolt strength classes are 9.8 and 10.9. The metric strength class identification number is imprinted on the head of the bolt. The higher the class number, the greater the bolt strength. Some metric nuts are imprinted with a single-digit strength class on the nut face. Refer to the Fastener Identification and Fastener Strength Charts (Fig. 5) and (Fig. 6).

 1	 2	 3	 4	 5	 6
 7	 8	 9	 10	 11	 12
 13	 14	 15	 16	 17	 18
 19	 20	 21	 22	 23	 24

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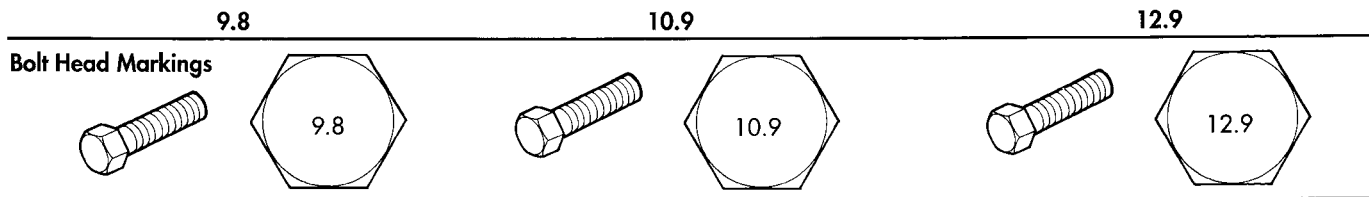
INTERNATIONAL SYMBOLS

- | | | | |
|----|--------------------------------------|----|----------------------------|
| 1 | High Beam | 13 | Rear Window Washer |
| 2 | Fog Lamps | 14 | Fuel |
| 3 | Headlamp, Parking Lamps, Panel Lamps | 15 | Engine Coolant Temperature |
| 4 | Turn Warning | 16 | Battery Charging Condition |
| 5 | Hazard Warning | 17 | Engine Oil |
| 6 | Windshield Washer | 18 | Seat Belt |
| 7 | Windshield Wiper | 19 | Brake Failure |
| 8 | Windshield Wiper and Washer | 20 | Parking Brake |
| 9 | Windscreen Demisting and Defrosting | 21 | Front Hood |
| 10 | Ventilating Fan | 22 | Rear hood (Decklid) |
| 11 | Rear Window Defogger | 23 | Horn |
| 12 | Rear Window Wiper | 24 | Lighter |

FASTENER IDENTIFICATION (Continued)

Bolt Markings and Torque - Metric

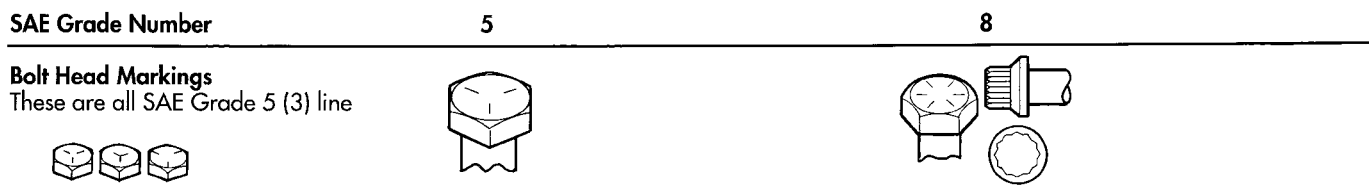
Commercial Steel Class



Body Size	9.8				10.9				12.9			
	Torque		Torque		Torque		Torque		Torque		Torque	
	Diam.	Cast Iron	Aluminum	Cast Iron	Aluminum	Cast Iron	Aluminum	Cast Iron	Aluminum	Cast Iron	Aluminum	
mm	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb
6	9	5	7	4	14	9	11	7	14	9	11	7
7	14	9	11	7	18	14	14	11	23	18	18	14
8	25	18	18	14	32	23	25	18	36	27	28	21
10	40	30	30	25	60	45	45	35	70	50	55	40
12	70	55	55	40	105	75	80	60	125	95	100	75
14	115	85	90	65	160	120	125	95	195	145	150	110
16	180	130	140	100	240	175	190	135	290	210	220	165
18	230	170	180	135	320	240	250	185	400	290	310	230

Bolt Markings and Torque Values - U.S. Customary

SAE Grade Number


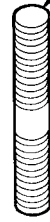


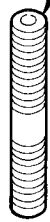


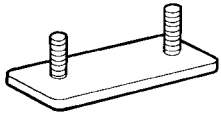




Body Size	Bolt Torque - Grade 5 Bolt				Bolt Torque - Grade 8 Bolt			
	Cast Iron		Aluminum		Cast Iron		Aluminum	
	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb
1/4 - 20	9	7	8	6	15	11	12	9
- 28	12	9	9	7	18	13	14	10
5/16 - 18	20	15	16	12	30	22	24	18
- 24	23	17	19	14	33	24	25	19
3/8 - 16	40	30	25	20	55	40	40	30
- 24	40	30	35	25	60	45	45	35
7/16 - 14	60	45	45	35	90	65	65	50
- 20	65	50	55	40	95	70	75	55
1/2 - 13	95	70	75	55	130	95	100	75
- 20	100	75	80	60	150	110	120	90
9/16 - 12	135	100	110	80	190	140	150	110
- 18	150	110	115	85	210	155	170	125
5/8 - 11	180	135	150	110	255	190	205	150
- 18	210	155	160	120	290	215	230	170
3/4 - 10	325	240	255	190	460	340	365	270
- 16	365	270	285	210	515	380	410	300
7/8 - 9	490	360	380	280	745	550	600	440
- 14	530	390	420	310	825	610	660	490
1 - 8	720	530	570	420	1100	820	890	660
- 14	800	590	650	480	1200	890	960	710

Fig. 5 FASTENER IDENTIFICATION

FASTENER IDENTIFICATION (Continued)

HOW TO DETERMINE BOLT STRENGTH

	Mark	Class		Mark	Class
Hexagon head bolt	 <p>Bolt head No.</p> <p>4 — 4T 5 — 5T 6 — 6T 7 — 7T 8 — 8T 9 — 9T 10 — 10T 11 — 11T</p>		Stud bolt	 <p>No mark</p>	4T
	 <p>No mark</p>	4T			
Hexagon flange bolt w/washer hexagon bolt	 <p>No mark</p>	4T		 <p>Grooved</p>	6T
Hexagon head bolt	 <p>Two protruding lines</p>	5T			
Hexagon flange bolt w/washer hexagon bolt	 <p>Two protruding lines</p>	6T	Welded bolt		4T
Hexagon head bolt	 <p>Three protruding lines</p>	7T			
Hexagon head bolt	 <p>Four protruding lines</p>	8T			

95IN-4

Fig. 6 FASTENER STRENGTH

FASTENER USAGE

DESCRIPTION - FASTENER USAGE

WARNING: USE OF AN INCORRECT FASTENER MAY RESULT IN COMPONENT DAMAGE OR PERSONAL INJURY.

Fasteners and torque specifications references in this Service Manual are identified in metric and SAE format.

During any maintenance or repair procedures, it is important to salvage all fasteners (nuts, bolts, etc.) for reassembly. If the fastener is not salvageable, a fastener of equivalent specification must be used.

THREADED HOLE REPAIR

DESCRIPTION - THREADED HOLE REPAIR

Most stripped threaded holes can be repaired using a Helicoil®. Follow the vehicle or Helicoil® recommendations for application and repair procedures.

METRIC SYSTEM

DESCRIPTION

The metric system is based on quantities of one, ten, one hundred, one thousand and one million.

The following chart will assist in converting metric units to equivalent English and SAE units, or vice versa.

CONVERSION FORMULAS AND EQUIVALENT VALUES

MULTIPLY	BY	TO GET	MULTIPLY	BY	TO GET
in-lbs	x 0.11298	= Newton Meters (N·m)	N·m	x 8.851	= in-lbs
ft-lbs	x 1.3558	= Newton Meters (N·m)	N·m	x 0.7376	= ft-lbs
Inches Hg (60° F)	x 3.377	= Kilopascals (kPa)	kPa	x 0.2961	= Inches Hg
psi	x 6.895	= Kilopascals (kPa)	kPa	x 0.145	= psi
Inches	x 25.4	= Millimeters (mm)	mm	x 0.03937	= Inches
Feet	x 0.3048	= Meters (M)	M	x 3.281	= Feet
Yards	x 0.9144	= Meters	M	x 1.0936	= Yards
mph	x 1.6093	= Kilometers/Hr. (Km/h)	Km/h	x 0.6214	= mph
Feet/Sec	x 0.3048	= Meters/Sec (M/S)	M/S	x 3.281	= Feet/Sec
mph	x 0.4470	= Meters/Sec (M/S)	M/S	x 2.237	= mph
Kilometers/Hr. (Km/h)	x 0.27778	= Meters/Sec (M/S)	M/S	x 3.600	Kilometers/Hr. (Km/h)

COMMON METRIC EQUIVALENTS

1 inch = 25 Millimeters	1 Cubic Inch = 16 Cubic Centimeters
1 Foot = 0.3 Meter	1 Cubic Foot = 0.03 Cubic Meter
1 Yard = 0.9 Meter	1 Cubic Yard = 0.8 Cubic Meter
1 Mile = 1.6 Kilometers	

Refer to the Metric Conversion Chart to convert torque values listed in metric Newton- meters (N·m). Also, use the chart to convert between millimeters (mm) and inches (in.) (Fig. 7).

METRIC SYSTEM (Continued)

in-lbs to N•m

N•m to in-lbs

Table with 20 columns and 20 rows showing conversion factors between in-lb and N•m. The table is split into two halves: in-lbs to N•m and N•m to in-lbs.

ft-lbs to N•m

N•m to ft-lbs

Table with 20 columns and 20 rows showing conversion factors between ft-lb and N•m. The table is split into two halves: ft-lbs to N•m and N•m to ft-lbs.

in. to mm

mm to in.

Table with 20 columns and 20 rows showing conversion factors between inches and millimeters. The table is split into two halves: in. to mm and mm to in.

Fig. 7 METRIC CONVERSION CHART

TORQUE REFERENCES

tions Chart for torque references not listed in the individual torque charts (Fig. 8).

DESCRIPTION

Individual Torque Charts appear within many of the Groups. Refer to the Standard Torque Specifica-

SPECIFIED TORQUE FOR STANDARD BOLTS

Class	Diameter mm	Pitch mm	Specified torque					
			Hexagon head bolt			Hexagon flange bolt		
			N•m	kgf-cm	ft-lbf	N•m	kgf-cm	ft-lbf
4T	6	1	5	55	48 in.-lbf	6	60	52 in.-lbf
	8	1.25	12.5	130	9	14	145	10
	10	1.25	26	260	19	29	290	21
	12	1.25	47	480	35	53	540	39
	14	1.5	74	760	55	84	850	61
16	1.5	115	1,150	83	—	—	—	
5T	6	1	6.5	65	56 in.-lbf	7.5	75	65 in.-lbf
	8	1.25	15.5	160	12	17.5	175	13
	10	1.25	32	330	24	36	360	26
	12	1.25	59	600	43	65	670	48
	14	1.5	91	930	67	100	1,050	76
16	1.5	140	1,400	101	—	—	—	
6T	6	1	8	80	69 in.-lbf	9	90	78 in.-lbf
	8	1.25	19	195	14	21	210	15
	10	1.25	39	400	29	44	440	32
	12	1.25	71	730	53	80	810	59
	14	1.5	110	1,100	80	125	1,250	90
16	1.5	170	1,750	127	—	—	—	
7T	6	1	10.5	110	8	12	120	9
	8	1.25	25	260	19	28	290	21
	10	1.25	52	530	38	58	590	43
	12	1.25	95	970	70	105	1,050	76
	14	1.5	145	1,500	108	165	1,700	123
16	1.5	230	2,300	166	—	—	—	
8T	8	1.25	29	300	22	33	330	24
	10	1.25	61	620	45	68	690	50
	12	1.25	110	1,100	80	120	1,250	90
9T	8	1.25	34	340	25	37	380	27
	10	1.25	70	710	51	78	790	57
	12	1.25	125	1,300	94	140	1,450	105
10T	8	1.25	38	390	28	42	430	31
	10	1.25	78	800	58	88	890	64
	12	1.25	140	1,450	105	155	1,600	116
11T	8	1.25	42	430	31	47	480	35
	10	1.25	87	890	64	97	990	72
	12	1.25	155	1,600	116	175	1,800	130

Fig. 8 TORQUE SPECIFICATIONS

VEHICLE CERTIFICATION LABEL

DESCRIPTION

A vehicle certification label (Fig. 9) is attached to every DaimlerChrysler Corporation vehicle. The label certifies that the vehicle conforms to all applicable Federal Motor Vehicle Standards. The label also lists:

- Month and year of vehicle manufacture.
- Gross Vehicle Weight Rating (GVWR). The gross front and rear axle weight ratings (GAWR's) are based on a minimum rim size and maximum cold tire inflation pressure.
- Vehicle Identification Number (VIN).
- Type of vehicle.
- Type of rear wheels.
- Bar code.
- Month, Day and Hour (MDH) of final assembly.
- Paint and Trim codes.
- Country of origin.

The label is located on the driver-side door shut-face.

MFD BY	DAIMLER CHRYSLER CORPORATION	DATE OF MFR	1-96 C	GVWR	2268 KG (05000 LB)
GAWR FRONT	1203 KG (2650 LB)	WITH TIRES	P195/75R14	RIMS AT	14 X 5.5
GAWR REAR	1225 KG (2700 LB)	WITH TIRES	P195/75R14	RIMS AT	14 X 5.5
				COLD	380 KPA(35 PSI)
				COLD	380 KPA(35 PSI)

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

VIN: XXXXXXXXXXXXXXXXXX TYPE: SINGLE X DUAL



MDH: 010615 021 PAINT:POP VEHICLE MADE IN CANADA TRIM:C5C3 4048505

8086d7b

Fig. 9 VEHICLE CERTIFICATION LABEL - TYPICAL

LUBRICATION & MAINTENANCE

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FLUID TYPES

DESCRIPTION

DESCRIPTION - FUEL REQUIREMENTS - DIESEL ENGINE

DESCRIPTION

WARNING: Do not use alcohol or gasoline as a fuel blending agent. They can be unstable under certain conditions and hazardous or explosive when mixed with diesel fuel.

Use good quality diesel fuel from a reputable supplier in your Dodge truck. For most year-round service, number 2 diesel fuel meeting ASTM specification D-975 will provide good performance. If the vehicle is exposed to extreme cold (below 0°F/-18°C), or is required to operate at colder-than-normal conditions for prolonged periods, use climatized No. 2 diesel fuel or dilute the No. 2 diesel fuel with 50% No. 1 diesel fuel. This will provide better protection from fuel gelling or wax-plugging of the fuel filters.

Diesel fuel is seldom completely free of water. To prevent fuel system trouble, including fuel line freezing in winter, drain the accumulated water from the fuel/water separator using the fuel/water separator drain provided. If you buy good-quality fuel and fol-

low the cold-weather advice above, fuel conditioners should not be required in your vehicle. If available in your area, a high cetane “premium” diesel fuel may offer improved cold starting and warm-up performance.

DESCRIPTION - ENGINE OIL AND LUBRICANTS

WARNING: NEW OR USED ENGINE OIL CAN BE IRRITATING TO THE SKIN. AVOID PROLONGED OR REPEATED SKIN CONTACT WITH ENGINE OIL. CONTAMINANTS IN USED ENGINE OIL, CAUSED BY INTERNAL COMBUSTION, CAN BE HAZARDOUS TO YOUR HEALTH. THOROUGHLY WASH EXPOSED SKIN WITH SOAP AND WATER. DO NOT WASH SKIN WITH GASOLINE, DIESEL FUEL, THINNER, OR SOLVENTS, HEALTH PROBLEMS CAN RESULT. DO NOT POLLUTE, DISPOSE OF USED ENGINE OIL PROPERLY. CONTACT YOUR DEALER OR GOVERNMENT AGENCY FOR LOCATION OF COLLECTION CENTER IN YOUR AREA.

When service is required, DaimlerChrysler Corporation recommends that only Mopar® brand parts, lubricants and chemicals be used. Mopar® provides the best engineered products for servicing DaimlerChrysler Corporation vehicles.

Only lubricants bearing designations defined by the following organization should be used.

- Society of Automotive Engineers (SAE)
- American Petroleum Institute (API)

FLUID TYPES (Continued)

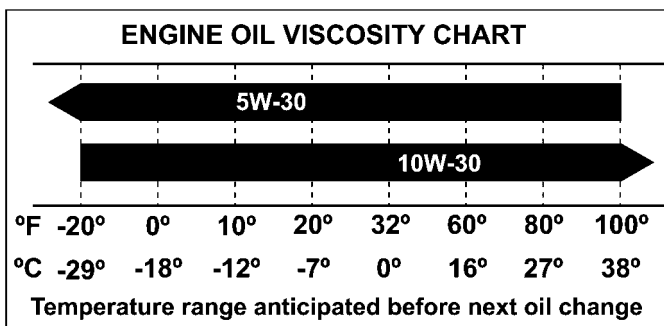
- National Lubricating Grease Institute (NLGI)

API SERVICE GRADE CERTIFIED

Use an engine oil that is API Certified. MOPAR® provides engine oils, that meet or exceed this requirement.

SAE VISCOSITY

An SAE viscosity grade is used to specify the viscosity of engine oil. Use only engine oils with multiple viscosities such as 5W-30 or 10W-30. These are specified with a dual SAE viscosity grade which indicates the cold-to-hot temperature viscosity range. Select an engine oil that is best suited to your particular temperature range and variation (Fig. 1).



80990199

Fig. 1 TEMPERATURE/ENGINE OIL VISCOSITY

ENERGY CONSERVING OIL

An Energy Conserving type oil is recommended for gasoline engines. The designation of ENERGY CONSERVING is located on the label of an engine oil container.

CONTAINER IDENTIFICATION

Standard engine oil identification notations have been adopted to aid in the proper selection of engine oil. The identifying notations are located on the front label of engine oil plastic bottles and the top of engine oil cans (Fig. 2).

This symbol means that the oil has been certified by the American Petroleum Institute (API). Daimler-Chrysler only recommend API Certified engine oils. Use Mopar® engine oil or equivalent.

GEAR LUBRICANTS

SAE ratings also apply to multigrade gear lubricants. In addition, API classification defines the lubricants usage. Such as API GL-5 and SAE 75W-90.

LUBRICANTS AND GREASES

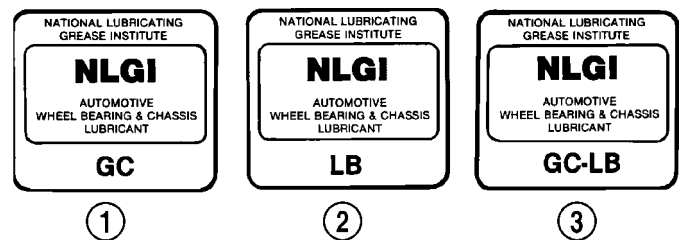
Lubricating grease is rated for quality and usage by the NLGI. All approved products have the NLGI



9400-9

Fig. 2 API SYMBOL

symbol (Fig. 3) on the label. At the bottom of the NLGI symbol is the usage and quality identification letters. Wheel bearing lubricant is identified by the letter “G”. Chassis lubricant is identified by the letter “L”. The letter following the usage letter indicates the quality of the lubricant. The following symbols indicate the highest quality.



9200-7

Fig. 3 NLGI SYMBOL

- 1 - WHEEL BEARINGS
- 2 - CHASSIS LUBRICATION
- 3 - CHASSIS AND WHEEL BEARINGS

SPECIALIZED LUBRICANTS AND OILS

Some maintenance or repair procedures may require the use of specialized lubricants or oils. Consult the appropriate sections in this manual for the correct application of these lubricants.

DESCRIPTION - ENGINE OIL - DIESEL ENGINES

Use only Diesel Engine Oil meeting standard **MIL-2104C** or API Classification **CD or higher** or **CCML D4, D5**.

SAE VISCOSITY GRADE

CAUTION: Low viscosity oils must have the proper API quality or the CCMC G5 designation. (Fig. 4)

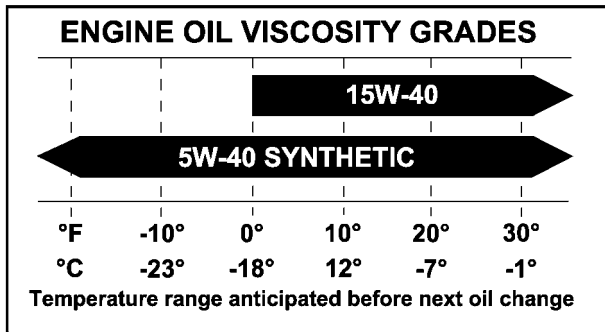
To assure of properly formulated engine oils, it is recommended that SAE Grade 10W-40 engine oils that meet Chrysler material standard MS-6395, be used in accordance to ACEA B3, B4 specification. European Grade 10W-40 oils are also acceptable.

FLUID TYPES (Continued)



Fig. 4 API RATING WRAP FIGURE

Oils of the SAE 5W-40 grade number are preferred when minimum temperatures consistently fall below -15°C. (Fig. 5)



80f2247d

Fig. 5 DIESEL OIL VISCOSITY CHART

DESCRIPTION - POWER STEERING FLUID

Mopar® ATF +4, Automatic Transmission Fluid is required in the power steering system. Substitute fluids can induce power steering system failure.

Mopar® ATF +4, Automatic Transmission Fluid when new is red in color. The ATF is dyed red so it can be identified from other fluids used in the vehicle such as engine oil or antifreeze. The red color is not permanent and is not an indicator of fluid condition. As the vehicle is driven, the ATF will begin to look darker in color and may eventually become brown. **This is normal.** ATF+4 also has a unique odor that may change with age. Consequently, odor and color cannot be used to indicate the fluid condition or the need for a fluid change.

DESCRIPTION - ENGINE COOLANT

WARNING: ANTIFREEZE IS AN ETHYLENE GLYCOL BASE COOLANT AND IS HARMFUL IF SWALLOWED OR INHALED. IF SWALLOWED, DRINK TWO GLASSES OF WATER AND INDUCE VOMITING. IF INHALED, MOVE TO FRESH AIR AREA. SEEK MEDICAL ATTENTION IMMEDIATELY. DO NOT STORE IN OPEN OR UNMARKED CONTAINERS. WASH SKIN AND CLOTHING THOROUGHLY AFTER COMING IN CONTACT WITH ETHYLENE GLYCOL. KEEP OUT OF REACH OF CHILDREN. DISPOSE OF GLYCOL BASE COOLANT PROPERLY, CONTACT

YOUR DEALER OR GOVERNMENT AGENCY FOR LOCATION OF COLLECTION CENTER IN YOUR AREA. DO NOT OPEN A COOLING SYSTEM WHEN THE ENGINE IS AT OPERATING TEMPERATURE OR HOT UNDER PRESSURE, PERSONAL INJURY CAN RESULT. AVOID RADIATOR COOLING FAN WHEN ENGINE COMPARTMENT RELATED SERVICE IS PERFORMED, PERSONAL INJURY CAN RESULT.

CAUTION: Use of Propylene Glycol based coolants is not recommended, as they provide less freeze protection and less corrosion protection.

The cooling system is designed around the coolant. The coolant must accept heat from engine metal, in the cylinder head area near the exhaust valves and engine block. Then coolant carries the heat to the radiator where the tube/fin radiator can transfer the heat to the air.

The use of aluminum cylinder blocks, cylinder heads, and water pumps requires special corrosion protection. Mopar® Antifreeze/Coolant, 5 Year/100,000 Mile Formula (MS-9769), or the equivalent ethylene glycol base coolant with organic corrosion inhibitors (called HOAT, for Hybrid Organic Additive Technology) is recommended. This coolant offers the best engine cooling without corrosion when mixed with 50% Ethylene Glycol and 50% distilled water to obtain a freeze point of -37°C (-35°F). If it loses color or becomes contaminated, drain, flush, and replace with fresh properly mixed coolant solution.

CAUTION: Mopar® Antifreeze/Coolant, 5 Year/100,000 Mile Formula (MS-9769) may not be mixed with any other type of antifreeze. Mixing of coolants other than specified (non-HOAT or other HOAT), may result in engine damage that may not be covered under the new vehicle warranty, and decreased corrosion protection.

COOLANT PERFORMANCE

The required ethylene-glycol (antifreeze) and water mixture depends upon climate and vehicle operating conditions. The coolant performance of various mixtures follows:

Pure Water-Water can absorb more heat than a mixture of water and ethylene-glycol. This is for purpose of heat transfer only. Water also freezes at a higher temperature and allows corrosion.

100 percent Ethylene-Glycol-The corrosion inhibiting additives in ethylene-glycol need the presence of water to dissolve. Without water, additives form deposits in system. These act as insulation causing temperature to rise to as high as 149°C (300°F). This temperature is hot enough to melt plas-

FLUID TYPES (Continued)

tic and soften solder. The increased temperature can result in engine detonation. In addition, 100 percent ethylene-glycol freezes at -22°C (-8°F).

50/50 Ethylene-Glycol and Water-Is the recommended mixture, it provides protection against freezing to -37°C (-34°F). The antifreeze concentration **must always** be a minimum of 44 percent, year-round in all climates. If percentage is lower, engine parts may be eroded by cavitation. Maximum protection against freezing is provided with a 68 percent antifreeze concentration, which prevents freezing down to -67.7°C (-90°F). A higher percentage will freeze at a warmer temperature. Also, a higher percentage of antifreeze can cause the engine to over-heat because specific heat of antifreeze is lower than that of water.

CAUTION: Richer antifreeze mixtures cannot be measured with normal field equipment and can cause problems associated with 100 percent ethylene-glycol.

COOLANT SELECTION AND ADDITIVES

NOTE: Refer to the vehicle's coolant bottle to identify HOAT or Non-HOAT coolant. Non-HOAT coolant is green in color.

The use of aluminum cylinder blocks, cylinder heads and water pumps requires special corrosion protection. Only Mopar® Antifreeze/Coolant, 5 Year/100,000 Mile Formula (glycol base coolant with corrosion inhibitors called HOAT, for Hybrid Organic Additive Technology) is recommended. This coolant offers the best engine cooling without corrosion when mixed with 50% distilled water to obtain a freeze point of -37°C (-35°F). If it loses color or becomes contaminated, drain, flush, and replace with fresh properly mixed coolant solution.

CAUTION: Do not use coolant additives that are claimed to improve engine cooling.

DESCRIPTION - TRANSFER CASE

Recommended lubricant for the NV241 GENII, NV271, NV243, NV244 GENII, and NV273 transfer cases is Mopar® ATF +4, Automatic Transmission Fluid.

DESCRIPTION - AXLE

NOTE: DaimlerChrysler recommends using Mopar® lubricants or lubricants of equal quality.

FRONT AXLE

- C205F - Mopar® Gear Lubricant 75W-90
- 9 1/4 AA - Mopar® Synthetic Gear Lubricant 75W-90

REAR AXLE

- 9 1/4 - Mopar® Synthetic Gear Lubricant 75W-140
- 10 1/2 AA - Mopar® Synthetic Gear Lubricant 75W-90
- 11 1/2 AA - Mopar® Synthetic Gear Lubricant 75W-90

NOTE: Trac-Lok® differentials require Limited Slip Additive in the lubricant. Trac-Rite™ differentials DO NOT require Limited Slip Additive.

DESCRIPTION - MANUAL TRANSMISSION

NOTE: DaimlerChrysler recommends using Mopar® lubricants or lubricants of equal quality.

- NV3500 - Mopar® Manual Transmission Lubricant
- NV4500 - Mopar® Synthetic 75W85 Manual Transmission Lubricant
- NV5600 - Mopar® Manual Transmission Lubricant

DESCRIPTION - AUTOMATIC TRANSMISSION FLUID

NOTE: Refer to Service Procedures in this group for fluid level checking procedures.

Mopar® ATF +4, Automatic Transmission Fluid is the recommended fluid for DaimlerChrysler automatic transmissions.

Dexron II fluid IS NOT recommended. Clutch chatter can result from the use of improper fluid.

Mopar® ATF +4, Automatic Transmission Fluid when new is red in color. The ATF is dyed red so it can be identified from other fluids used in the vehicle such as engine oil or antifreeze. The red color is not permanent and is not an indicator of fluid condition. As the vehicle is driven, the ATF will begin to look darker in color and may eventually become brown. **This is normal.** ATF+4 also has a unique odor that may change with age. Consequently, odor and color cannot be used to indicate the fluid condition or the need for a fluid change.

FLUID TYPES (Continued)

FLUID ADDITIVES

DaimlerChrysler strongly recommends against the addition of any fluids to the transmission, other than those automatic transmission fluids listed above. Exceptions to this policy are the use of special dyes to aid in detecting fluid leaks.

Various "special" additives and supplements exist that claim to improve shift feel and/or quality. These additives and others also claim to improve converter clutch operation and inhibit overheating, oxidation, varnish, and sludge. These claims have not been supported to the satisfaction of DaimlerChrysler and these additives **must not be used**. The use of transmission "sealers" should also be avoided, since they may adversely affect the integrity of transmission seals.

OPERATION - AUTOMATIC TRANSMISSION FLUID

The automatic transmission fluid is selected based upon several qualities. The fluid must provide a high level of protection for the internal components by providing a lubricating film between adjacent metal components. The fluid must also be thermally stable so that it can maintain a consistent viscosity through a large temperature range. If the viscosity stays constant through the temperature range of operation, transmission operation and shift feel will remain consistent. Transmission fluid must also be a good conductor of heat. The fluid must absorb heat from the internal transmission components and transfer that heat to the transmission case.

FLUID CAPACITIES

SPECIFICATIONS

FLUID CAPACITIES

DESCRIPTION	SPECIFICATION
FUEL TANK	
Short Box (Lt. Duty)	98 L (26 gal.)*
Long Box (Lt. Duty)	132 L (35 gal.)*
ENGINE OIL WITH FILTER	
3.7L	4.7 L (5.0 qts.)
4.7L	5.6 L (6.0 qts.)
5.7L	6.6 L (7.0 qts.)
5.9L DIESEL	11.4 L (12.0 qts.)

DESCRIPTION	SPECIFICATION
COOLING SYSTEM	
3.7L	15.4 L (16.2 qts.)**
4.7L	15.4 L (16.2 qts.)**
5.7L	15.4L (16.2 qts.)**
5.9L Diesel Engine	28L (29.5 qts.)**
POWER STEERING	
Power steering fluid capacities are dependent on engine/chassis options as well as steering gear/cooler options. Depending on type and size of internal cooler, length and inside diameter of cooler lines, or use of an auxiliary cooler, these capacities may vary. Refer to 19, Steering for proper fill and bleed procedures.	
AUTOMATIC TRANSMISSION	
Service Fill - 48RE	3.8 L (4.0 qts.)
O-haul - 48RE	14-16L (29-33 pts.) ◇
Service Fill - 45RFE/ 545RFE	4X2 - 5.2 L (11.0 pts.)
	4X4 - 6.2 L (13.0 pts.)
O-haul - 45RFE/545RFE	14-16 L (29-33 pts.) ◇
◇ Dry fill capacity Depending on type and size of internal cooler, length and inside diameter of cooler lines, or use of an auxiliary cooler, these figures may vary. (Refer to 21 - TRANSMISSION/AUTOMATIC/FLUID - STANDARD PROCEDURE)	
MANUAL TRANSMISSION	
NV3500 4X2	2.27 L (4.8 pts.)
NV3500 4X4	1.99 L (4.2 pts.)
NV4500	3.79 L (8.0 pts.)
NV5600	4.50 L (9.5 pts.)
TRANSFER CASE	
NV241 GENII	1.6 L (3.4 pts.)
NV243	1.6 L (3.4 pts.)
NV244 GENII	1.6 L (3.4 pts.)
NV271	1.89 L (4.0 pts.)
NV273	1.89 L (4.0 pts.)
FRONT AXLE ± .03 L (1 oz)	
C205F	1.66 L (3.5 pts.)
9 1/4 AA	2.25 L (4.75 pts.)

FLUID CAPACITIES (Continued)

DESCRIPTION	SPECIFICATION
REAR AXLE ± .03 L (1 oz)	
9 1/4	2.32 L (4.9 pts.)***
10 1/2 AA	2.25 L (4.75 pts.)
11 1/2 AA	3.62 L (7.65 pts)
*** With Trac-Lok add 118 ml (4 oz.) of Limited Slip Additive.	
** Includes 0.9L (1.0 qts.) for coolant reservoir.	
*Nominal refill capacities are shown. A variation may be observed from vehicle to vehicle due to manufacturing tolerance and refill procedure.	

MAINTENANCE SCHEDULES

DESCRIPTION

DESCRIPTION

Maintenance Schedule Information not included in this section, is located in the appropriate Owner's Manual.

There are two maintenance schedules that show the **required** service for your vehicle.

First is Schedule "B". It is for vehicles that are operated under the conditions that are listed below and at the beginning of the schedule.

- Day or night temperatures are below 0° C (32° F).
- Stop and go driving.
- Extensive engine idling.
- Driving in dusty conditions.
- Short trips of less than 16 km (10 miles).
- More than 50% of your driving is at sustained high speeds during hot weather, above 32° C (90° F).
- Trailer towing.
- Taxi, police, or delivery service (commercial service).
- Off-road or desert operation.
- **If equipped for and operating with E-85 (ethanol) fuel.**

NOTE: If ANY of these apply to the vehicle then change the engine oil every 3,000 miles (5 000 km) or 3 months, whichever comes first and follow schedule "B" of the "Maintenance Schedules" section of this manual.

NOTE: Most vehicles are operated under the conditions listed for Schedule "B".

Second is Schedule "A". It is for vehicles that are not operated under any of the conditions listed under Schedule "B".

Use the schedule that best describes the driving conditions. Where time and mileage are listed, follow the interval that occurs first.

CAUTION: Failure to perform the required maintenance items may result in damage to the vehicle.

At Each Stop for Fuel

- Check the engine oil level about 5 minutes after a fully warmed engine is shut off. Checking the oil level while the vehicle is on level ground will improve the accuracy of the oil level reading. Add oil only when the level is at or below the ADD or MIN mark.

- Check the windshield washer solvent and add if required.

Once a Month

- Check tire pressure and look for unusual wear or damage.

- Inspect the battery and clean and tighten the terminals as required.

- Check the fluid levels of coolant reservoir, brake master cylinder, power steering and transmission and add as needed.

- Check all lights and all other electrical items for correct operation.

At Each Oil Change

- Change the engine oil filter.

- Inspect the exhaust system.

- Inspect the brake hoses.

- Inspect the CV joints (if equipped) and front suspension components.

- Check the automatic transmission fluid level.

- Check the manual transmission fluid level.

- Check the coolant level, hoses, and clamps.

- Rotate the tires at each oil change interval shown on Schedule "A" 10 000 km (6,000 miles) or every other interval shown on Schedule "B" 10 000 km (6,000 miles).

Tire Rotation

- Rotate the tires at 6,000 miles (10 000 km).

Schedule "B"

Follow schedule "B" if you usually operate your vehicle under one or more of the following conditions.

- Day or night temperatures are below 0° C (32° F).

- Stop and go driving.

- Extensive engine idling.

- Driving in dusty conditions.

- Short trips of less than 16 km (10 miles).

- More than 50% of your driving is at sustained high speeds during hot weather, above 32° C (90° F).

MAINTENANCE SCHEDULES (Continued)

- Trailer towing.
- Snowplowing.
- Heavy Loading.
- Taxi, police, or delivery service (commercial service).
- Off-road or desert operation.
- **If equipped for and operating with E-85 (ethanol) fuel.**

NOTE: If ANY of these apply to the vehicle then change the engine oil every 3,000 miles (5 000 km) or 3 months, whichever comes first and follow schedule "B" of the "Maintenance Schedules" section of this manual.

If none of these apply to the vehicle, then change the engine oil at every interval shown on schedule "A" of the "Maintenance Schedules" section of this manual.

Miles (Kilometers)	3,000 (5 000)	6,000 (10 000)	9,000 (14 000)	12,000 (19 000)	15,000 (24 000)
Change engine oil and engine oil filter.	X	X	X	X	X
Lubricate outer tie rod ends 2500/3500 (4X4) models only.		X		X	
Change rear axle fluid.					X
Change front axle fluid (4X4).					X
Inspect brake linings.				X	
Inspect engine air cleaner filter, replace if necessary.					X

Miles (Kilometers)	18,000 (29 000)	21,000 (34 000)	24,000 (38 000)	27,000 (43 000)	30,000 (48 000)
Change engine oil and engine oil filter.	X	X	X	X	X
Lubricate outer tie rod ends 2500/3500 (4X4) models only.	X		X		X
Change rear axle fluid.					X
Change front axle fluid (4X4).					X
Check transfer case fluid level (4X4).					X
Inspect brake linings.			X		
Inspect engine air cleaner filter, replace if necessary.					X
Replace spark plugs.					X
Inspect PCV valve, replace as necessary.					X*
Drain and refill automatic transmission fluid and change main sump filter (45RFE/545RFE only).					X