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# INTRODUCTION

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## BODY CODE PLATE

### DESCRIPTION

The Body Code Plate (Fig. 1) is located in the engine compartment on the radiator closure panel crossmember. There are seven lines of information on the body code plate. Lines 4, 5, 6, and 7 are not used to define service information. Information reads from left to right, starting with line 3 in the center of the plate to line 1 at the bottom of the plate.

### BODY CODE PLATE – LINE 3

#### DIGITS 1 THROUGH 12

Vehicle Order Number

#### DIGITS 13 THROUGH 17

Open Space

#### DIGITS 18 AND 19

Vehicle Shell Line

- RS

#### DIGIT 20

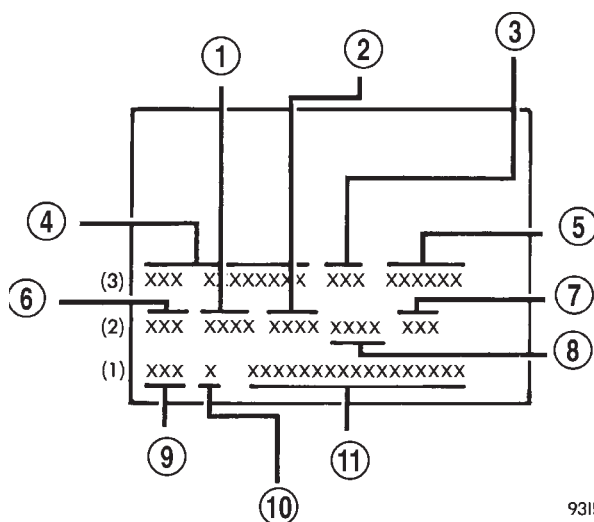
Carline

#### FWD

- K = Dodge
- Y = Chrysler

#### AWD

- C = Chrysler
- D = Dodge



93IN-8

**Fig. 1 BODY CODE PLATE**

- 1 - PRIMARY PAINT
- 2 - SECONDARY PAINT
- 3 - VINYL ROOF
- 4 - VEHICLE ORDER NUMBER
- 5 - CAR LINE SHELL
- 6 - PAINT PROCEDURE
- 7 - ENGINE
- 8 - TRIM
- 9 - TRANSMISSION
- 10 - MARKET
- 11 - VIN

## BODY CODE PLATE (Continued)

## DIGIT 21

## Price Class

- H = Highline
- L = Lowline
- P = Premium
- S = Luxury
- X = Premium

## DIGITS 22 AND 23

## Body Type

- 52 = Short Wheel Base
- 53 = Long Wheel Base

## BODY CODE PLATE LINE 2

## DIGITS 1, 2 AND 3

## Paint Procedure

## DIGIT 4

## Open Space

## DIGITS 5 THROUGH 7

Primary Paint (Refer to 23 - BODY/PAINT - SPECIFICATIONS).

## DIGIT 8 AND 9

## Open Space

## DIGITS 10 THROUGH 12

## Secondary Paint

## DIGIT 13 AND 14

## Open Space

## DIGITS 15 THROUGH 18

## Interior Trim Code

## DIGIT 19

## Open Space

## DIGITS 20, 21, AND 22

## Engine Code

- EDZ = 2.4L 4 cyl. 16-Valve DOHC Gasoline (MPI)
- EGA = 3.3L 6 cyl. Gasoline (SMPI)
- EGH = 3.8L 6 cyl. Gasoline (SMPI)
- EGM = 3.3L 6 cyl. Ethanol Flexible Fuel
- ENJ = 2.5L 4 cyl. 16-Valve Turbo Diesel

## DIGIT 23

## Open Space

## BODY CODE PLATE LINE 1

## DIGITS 1, 2, AND 3

## Transaxle Codes

- DGC = 31TH 3-Speed Automatic Transaxle
- DGL = 41AE/TE 4-Speed Electronic Automatic
- DDR = T850 5-Speed Manual Transaxle

## DIGIT 4

## Open Space

## DIGIT 5

## Market Code

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

## DIGIT 6

## Open Space

## DIGITS 7 THROUGH 23

## Vehicle Identification Number

• Refer to Vehicle Identification Number (VIN) paragraph for proper breakdown of VIN code.

## IF TWO BODY CODE PLATES ARE REQUIRED

The last code shown on either plate will be followed by END. When two plates are required, the last code space on the first plate will indicate (CTD)

When a second plate is required, the first four spaces of each line will not be used due to overlap of the plates.

## 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. 2) and (Fig. 3).



FASTENER IDENTIFICATION (Continued)

HOW TO DETERMINE BOLT STRENGTH


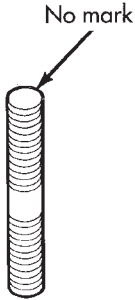


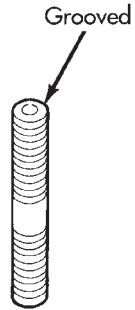


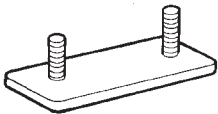


	Mark	Class		Mark	Class
Hexagon head bolt	 <p>Bolt head No.</p> <p>4 — 4T 5 — 5T 6 — 6T 7 — 7T 8 — 8T 9 — 9T 10 — 10T 11 — 11T</p>		Stud bolt	 <p>No mark</p>	4T
	 <p>No mark</p>	4T			
Hexagon flange bolt w/washer hexagon bolt	 <p>No mark</p>	4T	Welded bolt	 <p>Grooved</p>	6T
Hexagon head bolt	 <p>Two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

Fig. 3 FASTENER STRENGTH

## FASTENER USAGE

### DESCRIPTION

### 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.

























## 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.

## INTERNATIONAL SYMBOLS

### DESCRIPTION

The graphic symbols illustrated in the following International Control and Display Symbols Chart (Fig. 4) are used to identify various instrument controls. The symbols correspond to the controls and displays that are located on the instrument panel.

 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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**Fig. 4 INTERNATIONAL CONTROL AND DISPLAY 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                    |

## METRIC SYSTEM

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

### DESCRIPTION

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

#### 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. 5).





## TORQUE REFERENCES

tions Chart for torque references not listed in the individual torque charts (Fig. 6).

## 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

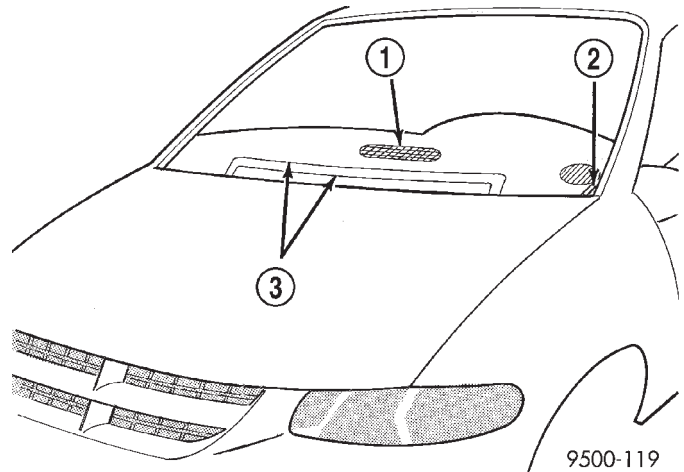
Fig. 6 TORQUE SPECIFICATIONS

# VEHICLE IDENTIFICATION NUMBER

## DESCRIPTION

The Vehicle Identification Number (VIN) can be viewed through the windshield at the upper left corner of the instrument panel, near the left windshield pillar (Fig. 7). The VIN consists of 17 characters in a combination of letters and numbers that provide specific information about the vehicle. Refer to VIN Code Breakdown Chart for decoding information.

To protect the consumer from theft and possible fraud the manufacturer is required to include a Check Digit at the ninth position of the vehicle identification number. The check digit is used by the manufacturer and government agencies to verify the authenticity of the vehicle and official documentation. The formula to use the check digit is not released to the general public.



**Fig. 7 VEHICLE IDENTIFICATION NUMBER (VIN)**

- 1 - DEFROSTER OUTLET
- 2 - VEHICLE IDENTIFICATION NUMBER
- 3 - HEATED WINDSHIELD GRID

### VIN CODE BREAKDOWN CHART

POSITION	INTERPRETATION	CODE = DESCRIPTION
1	Country of Origin	1 = Built in the United States by DaimlerChrysler 2 = Built in Canada by DaimlerChrysler Canada Inc.
2	Make	B = Dodge C = Chrysler
3	Vehicle Type	4 = Multipurpose Pass. Vehicle Less Side Air Bags 8 = Multipurpose Pass. Vehicle With Side Air Bags
4	Gross Vehicle Weight Rating	G = 2268 - 2721 kg. (5001 - 6000 lbs.)
5	Car Line	P = Chrysler, Town & Country - FWD P = Dodge, Caravan/Grand Caravan - FWD T = Chrysler, Town & Country - AWD T = Dodge, Grand Caravan - AWD J = Chrysler, Voyager/Grand Voyager - FWD Y = Voyager/Grand Voyager - FWD Left Hand Drive C = Voyager/Grand Voyager - AWD Left Hand Drive H = Voyager/Grand Voyager - FWD Right Hand Drive K = Voyager/Grand Voyager - AWD Left Hand Drive

## VEHICLE IDENTIFICATION NUMBER (Continued)

POSITION	INTERPRETATION	CODE = DESCRIPTION
6	Series	2 = Low Line 4 = High Line 5 = Premium 6 = Sport 7 = Special
6 - Export	Series	B = 4-Speed Automatic Transaxle N = 5-Speed Manual Transaxle
7	Body Style	4 = Long Wheel Base 5 = Short Wheel Base
7 - Export	Body Style	1 = EURO Wagon-Long Wheelbase RG-53-S Series 2 = EURO Wagon-Short Wheelbase RG-52-H Series 3 = EURO Wagon-Short Wheelbase RG-52-P Series 4 = EURO Wagon-Long Wheelbase RG-53-P Series 5 = EURO Wagon-Long Wheelbase RG-53-H Series 6 = Comercial Van-Short Wheelbase with-CYX Less AS8 7 = Comercial Van-Short Wheelbase with AS8 8 = Comercial Van-Long Wheelbase Highline with-CYX 9 = Comercial Van-Long Wheelbase Premium Line with-CYX CYX = No Rear Seat Package AS8 = Interior Delete Group
8	Engine	B = 2.4L 4 cyl. 16-Valve Gasoline DOHC (MPI) L = 3.8L 6 cyl. Gasoline (SMPI) R = 3.3L 6 cyl. Gasoline (SMPI) 3 = 3.3L 6 cyl. Enthanol Flex Fuel 7 = 2.5L 4 cyl. 16 Valve Turbo Diesel
9	Check Digit	See explanation in this section.
10	Model Year	2= 2002
11	Assembly Plant	B = St. Louis Assembly South R = Windsor Assembly U = Graz Assembly
12 through 17	Sequence Number	A six digit number assigned by assembly plant.

# VEHICLE SAFETY CERTIFICATION LABEL

## DESCRIPTION

A vehicle safety certification label is attached to the rear shutface of the driver's door (Fig. 8). This label indicates date of manufacture (month and year), Gross Vehicle Weight Rating (GVWR), Gross Axle Weight Rating (GAWR) front, Gross Axle Weight Rating (GAWR) rear and the Vehicle Identification Number (VIN). The Month, Day and Hour of manufacture is also included.

All communications or inquiries regarding the vehicle should include the Month-Day-Hour and Vehicle Identification Number.

MFD BY	DAIMLER CHRYSLER CORPORATION	DATE OF MFR	1-96 C	GVWR	2288 KG (05000 LB)
GAWR FRONT	WITH TIRES	RIMS AT	COLD		
1203 KG (2650 LB)	P195/75R14	14 X 5.5	380 KPA(35 PSI)		
GAWR REAR	WITH TIRES	RIMS AT	COLD		
1225 KG (2700 LB)	P195/75R14	14 X 5.5	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: XXXXXXXXXXXXXXXX TYPE: SINGLE X DUAL



MDH: 010615 021 PAINT:POP VEHICLE MADE IN CANADA TRIM:C5C3 4648505

Fig. 8 VEHICLE SAFETY CERTIFICATION LABEL - TYPICAL

## E-MARK LABEL

### DESCRIPTION

An E-mark Label (Fig. 9) is located on the rear shut face of the driver's door. The label contains the following information:

- Date of Manufacture
- Month-Day-Hour (MDH)
- Vehicle Identification Number (VIN)
- Country Codes
- Regulation Number
- Regulation Amendment Number
- Approval Number

Date of Manufacture: 05-95 MDH: 052915  
VIN: XXXXXXXXXXXXXXXX

E4	21	0195002	E11	13	063098
	26	0195001		14	030169
E5	10	010035	E11	17	040212
	11	020011		39	00155
	18	010010		44	0244038
	28	010016		51	011082
	46	010019		79	00155
	85	000044			
E11	12	030263	E11	48	005003

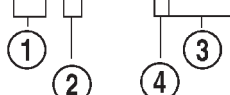


Fig. 9 E-Mark Label

- 1 - COUNTRY CODE
- 2 - REGULATION NUMBER
- 3 - APPROVAL NUMBER
- 4 - AMENDMENT NUMBER

## VECI LABEL

### DESCRIPTION

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

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

## MANUFACTURER PLATE

### DESCRIPTION

The Manufacturer Plate (Fig. 10) is located in the engine compartment on the passenger side rear corner of the hood. The plate contains five lines of information:

1. Vehicle Identification Number (VIN)
2. Gross Vehicle Mass (GVM)
3. Gross Train Mass (GTM)
4. Gross Front Axle Rating (GFAR)
5. Gross Rear Axle Rating (GRAR)

DAIMLERCHRYSLER CORPORATION

XXXXXXXXXXXXXXXXXXXX

XXXX KG

XXXX KG

1 XXXX KG

2 XXXX KG

Fig. 10 MANUFACTURER PLATE



# LUBRICATION & MAINTENANCE

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DESCRIPTION - FLEXIBLE FUEL ENGINE OIL	3	STANDARD PROCEDURE - HOISTING	6
DESCRIPTION - AUTOMATIC TRANSMISSION FLUID	4	<b>JUMP STARTING</b>	
DESCRIPTION - FUEL REQUIREMENTS	4	STANDARD PROCEDURE - JUMP STARTING	7
DESCRIPTION - FUEL REQUIREMENTS - DIESEL ENGINE	6	<b>TOWING</b>	
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## LUBRICATION & MAINTENANCE

### SPECIFICATIONS - FLUID CAPACITIES







DESCRIPTION	SPECIFICATION
Fuel Tank (Gas)	75 L (20 gal.)
Fuel Tank (Diesel)	75 L (20 gal.)
Engine Oil* - 2.4 L	4.7 L (5.0 qts.)
Engine Oil* - 3.3/3.8 L	4.0 L (4.5 qts.)
Engine Oil* - 2.5 L (Diesel)	6.0 L (6.3 qts.)
Cooling System** - 2.4 L	10.7 L (11.4 qts.)
Cooling System** - 2.5 L Turbo Diesel with Auxiliary Heater	13.8 L (14.6 qts.)
Cooling System** - 3.3/3.8 L without Auxiliary Heater	12.6 L (13.4 qts.)

DESCRIPTION	SPECIFICATION
Cooling System** - 3.3/3.8 L with Auxiliary Heater	15.4 L (16.3 qts.)
Automatic Transaxle - Service Fill	3.8 L (4.0 qts.)
Automatic Transaxle - 31TH Overhaul Fill	8.6 L (9.1 qts.)
Automatic Transaxle - 41TE Overhaul Fill	9.2 L (9.7 qts.)
Manual Transaxle (T850 5-Speed)	2.4-2.7 L (2.5-2.9 qts.)
AWD Power Transfer Unit	1.15 L (2.4 pts.)
Power Steering	1.2 L (2.5 pts.)
AWD Bi-directional Overrunning Clutch	0.575 L (1.22 pts.)
AWD Rear Carrier	0.7 L (1.48 pts.)
* (includes oil filter)	
** (includes heater and recovery/reserve bottle)	

## INTERNATIONAL SYMBOLS

### DESCRIPTION

DaimlerChrysler Corporation uses international symbols to identify engine compartment lubricant and fluid inspection and fill locations (Fig. 1).

	ENGINE OIL		BRAKE FLUID
	AUTOMATIC TRANSMISSION FLUID		POWER STEERING FLUID
	ENGINE COOLANT		WINDSHIELD WASHER FLUID

8097dbcd

Fig. 1 INTERNATIONAL SYMBOLS

## FLUID TYPES

### DESCRIPTION

#### 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.

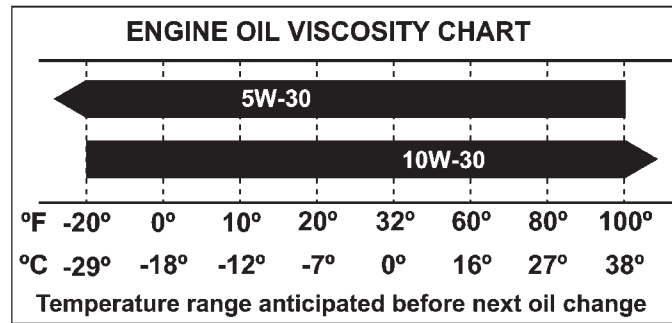
- Society of Automotive Engineers (SAE)
- American Petroleum Institute (API)
- National Lubricating Grease Institute (NLGI)

### 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. 2).



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Fig. 2 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. 3).

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



9400-9

Fig. 3 API SYMBOL



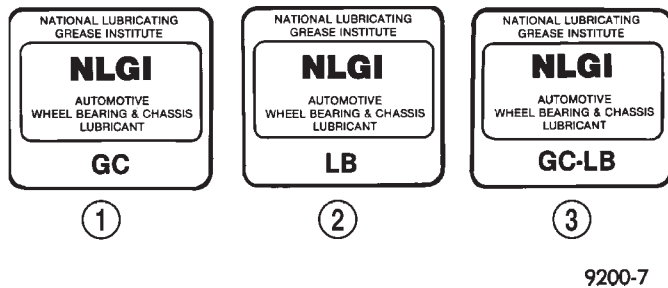
FLUID TYPES (Continued)

**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 symbol (Fig. 4) 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.



**Fig. 4 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 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 boiling 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 hybrid 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.

The green coolant **MUST NOT BE MIXED** with the orange or magenta coolants. When replacing coolant the complete system flush must be performed before using the replacement coolant.

**CAUTION: Mopar® Antifreeze/Coolant, 5 Year/100,000 Mile Formula (MS-9769) may not be mixed with any other type of antifreeze. Doing so will reduce the corrosion protection and may result in premature water pump seal failure. If non-HOAT coolant is introduced into the cooling system in an emergency, it should be replaced with the specified coolant as soon as possible.**

**DESCRIPTION - FLEXIBLE FUEL ENGINE OIL**

The information in this section is for Flexible Fuel Vehicles (FFV) only. These vehicles can be identified by the unique Fuel Filler Door Label that states Ethanol (E-85) or Unleaded Gasoline Only. This section only covers those subjects that are unique to these vehicles. Please refer to the other sections of this manual for information on features that are common between Flexible Fuel and gasoline only powered vehicles.

**ETHANOL FUEL (E-85)**

E-85 is a mixture of approximately 85% fuel ethanol and 15% unleaded gasoline.



## FLUID TYPES (Continued)

**WARNING:** Ethanol vapors are extremely flammable and could cause serious personal injury. Never have any smoking materials lit in or near the vehicle when removing the fuel filler tube cap (gas cap) or filling the tank. Do not use E-85 as a cleaning agent and never use it near an open flame.

## FUEL REQUIREMENTS

The vehicle will operate on both unleaded gasoline with an octane rating of 87, or E-85 fuel, or any mixture of these two.

For best results, a refueling pattern that alternates between E-85 and unleaded gasoline should be avoided. When you do switch fuels, it is recommended that

- you do not switch when the fuel gauge indicates less than 1/4 full
- you do not add less than 5 gallons when refueling
- you operate the vehicle immediately after refueling for a period of at least 5 minutes

Observing these precautions will avoid possible hard starting and/or significant deterioration in driveability during warm up.

## FFV STARTING

The characteristics of E-85 fuel make it unsuitable for use when ambient temperatures fall below 0°F. In the range of 0°F to 32°F, you may experience an increase in the time it takes for your engine to start, and a deterioration in driveability (sags and/or hesitations) until the engine is fully warmed up.

## Engine Operating on E-85 Fuel

If vehicle operates on E-85 fuel either full or part-time, use only Mopar® Flexible Fuel 5W-30 engine oil or an equivalent that meets DaimlerChrysler Standard MS-9214. Equivalent commercial Flexible Fuel engine oils may be labeled as Multi-Fuel, Variable Fuel, Flexible Fuel, etc. These engine oils may be satisfactory if they meet the DaimlerChrysler Standard.

SAE 5W-30 engine oil is preferred for use in Flexible Fuel engines.

**CAUTION:** If Flexible Fuel engine oil is not used when using E-85 fuel, engine wear or damage may result.

## CRUISING RANGE

Because E-85 fuel contains less energy per gallon than gasoline, you will experience an increase in fuel consumption. You can expect your MPG and your driving range to decrease by about 30% compared to gasoline operation.

## DESCRIPTION - AUTOMATIC TRANSMISSION FLUID

**NOTE:** Refer to the maintenance schedules for the recommended maintenance (fluid/filter change) intervals for this transaxle.

**NOTE:** All transaxles have a common transmission and differential sump. Filling the transaxle accommodates the differential as well.

## TRANSMISSION FLUID

Mopar® ATF+4 (Automatic Transmission Fluid-Type 9602) is required in the 41TE automatic and T850 manual transaxles. Substitute fluids can induce torque converter clutch shudder.

Mopar® ATF+4 (Automatic Transmission Fluid-Type 9602) 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 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.

## DESCRIPTION - FUEL REQUIREMENTS

Your engine is designed to meet all emissions regulations and provide excellent fuel economy and performance when using high quality unleaded gasoline having an octane rating of 87. The use of premium gasoline is not recommended. The use of premium gasoline will provide no benefit over high quality regular gasoline, and in some circumstances may result in poorer performance.

## FLUID TYPES (Continued)

Light spark knock at low engine speeds is not harmful to your engine. However, continued heavy spark knock at high speeds can cause damage and immediate service is required. Engine damage resulting from operation with a heavy spark knock may not be covered by the new vehicle warranty.

Poor quality gasoline can cause problems such as hard starting, stalling and hesitations. If you experience these symptoms, try another brand of gasoline before considering service for the vehicle.

Over 40 auto manufacturers world-wide have issued and endorsed consistent gasoline specifications (the Worldwide Fuel Charter, WWFC) to define fuel properties necessary to deliver enhanced emissions, performance and durability for your vehicle. We recommend the use of gasolines that meet the WWFC specifications if they are available.

### REFORMULATED GASOLINE

Many areas of the country require the use of cleaner burning gasoline referred to as "reformulated" gasoline. Reformulated gasoline contain oxygenates, and are specifically blended to reduce vehicle emissions and improve air quality.

We strongly support the use of reformulated gasoline. Properly blended reformulated gasoline will provide excellent performance and durability for the engine and fuel system components.

### GASOLINE/OXYGENATE BLENDS

Some fuel suppliers blend unleaded gasoline with oxygenates such as 10% ethanol, MTBE, and ETBE. Oxygenates are required in some areas of the country during the winter months to reduce carbon monoxide emissions. Fuels blended with these oxygenates may be used in your vehicle.

**CAUTION: DO NOT use gasoline containing METHANOL. Gasoline containing methanol may damage critical fuel system components.**

### MMT IN GASOLINE

MMT is a manganese-containing metallic additive that is blended into some gasoline to increase octane. Gasoline blended with MMT provide no performance advantage beyond gasoline of the same octane number without MMT. Gasoline blended with MMT reduce spark plug life and reduce emission system performance in some vehicles. We recommend that gasoline free of MMT be used in your vehicle. The MMT content of gasoline may not be indicated on the gasoline pump; therefore, you should ask your gasoline retailer whether or not his/her gasoline contains MMT.

It is even more important to look for gasoline without MMT in Canada because MMT can be used at

levels higher than allowed in the United States. MMT is prohibited in Federal and California reformulated gasoline.

### SULFUR IN GASOLINE

If you live in the northeast United States, your vehicle may have been designed to meet California low emission standards with Cleaner-Burning California reformulated gasoline with low sulfur. If such fuels are not available in states adopting California emission standards, your vehicles will operate satisfactorily on fuels meeting federal specifications, but emission control system performance may be adversely affected. Gasoline sold outside of California is permitted to have higher sulfur levels which may affect the performance of the vehicle's catalytic converter. This may cause the Malfunction Indicator Lamp (MIL), Check Engine or Service Engine Soon light to illuminate. We recommend that you try a different brand of unleaded gasoline having lower sulfur to determine if the problem is fuel related prior to returning your vehicle to an authorized dealer for service.

**CAUTION: If the Malfunction Indicator Lamp (MIL), Check Engine or Service Engine Soon light is flashing, immediate service is required; see on-board diagnostics system section.**

### MATERIALS ADDED TO FUEL

All gasoline sold in the United States and Canada are required to contain effective detergent additives. Use of additional detergents or other additives is not needed under normal conditions.

### FUEL SYSTEM CAUTIONS

**CAUTION: Follow these guidelines to maintain your vehicle's performance:**

- The use of leaded gas is prohibited by Federal law. Using leaded gasoline can impair engine performance, damage the emission control system, and could result in loss of warranty coverage.
- An out-of-tune engine, or certain fuel or ignition malfunctions, can cause the catalytic converter to overheat. If you notice a pungent burning odor or some light smoke, your engine may be out of tune or malfunctioning and may require immediate service. Contact your dealer for service assistance.
- When pulling a heavy load or driving a fully loaded vehicle when the humidity is low and the temperature is high, use a premium unleaded fuel to help prevent spark knock. If spark knock persists, lighten the load, or engine piston damage may result.

## FLUID TYPES (Continued)

- The use of fuel additives which are now being sold as octane enhancers is not recommended. Most of these products contain high concentrations of methanol. Fuel system damage or vehicle performance problems resulting from the use of such fuels or additives is not the responsibility of DaimlerChrysler Corporation and may not be covered under the new vehicle warranty.

**NOTE: Intentional tampering with emissions control systems can result in civil penalties being assessed against you.**

### DESCRIPTION - FUEL REQUIREMENTS - DIESEL ENGINE

**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. 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 -18°C/0°F) or is required to operate at colder than normal conditions for prolonged periods, use climatize 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 follow 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 - 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.**

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. European Grade 10W-40 oils are also acceptable.

Oils of the SAE 5W-40 or 8W-80 grade number are preferred when minimum temperatures consistently fall below -12°C.

## FLUID FILL/CHECK LOCATIONS

### DESCRIPTION

The fluid check/fill point locations are located in each applicable service manual section.

## LUBRICATION POINTS

### DESCRIPTION

Lubrication point locations are located in each applicable Sections.

## MAINTENANCE SCHEDULES

### DESCRIPTION

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

## HOISTING

### STANDARD PROCEDURE - HOISTING

Refer to Owner's Manual provided with vehicle for proper emergency jacking procedures.

**WARNING: THE HOISTING AND JACK LIFTING POINTS PROVIDED ARE FOR A COMPLETE VEHICLE. WHEN THE ENGINE OR REAR SUSPENSION IS REMOVED FROM A VEHICLE, THE CENTER OF GRAVITY IS ALTERED MAKING SOME HOISTING CONDITIONS UNSTABLE. PROPERLY SUPPORT OR SECURE VEHICLE TO HOISTING DEVICE WHEN THESE CONDITIONS EXIST.**

**CAUTION: Do not position hoisting device on any suspension component, including the front suspension crossmember, the rear leaf springs, and the rear axle. Do not hoist on the front and rear bumpers, the lower liftgate crossmember, the lower radiator crossmember, the down standing flanges on the sill or the front engine mount.**

**FOR PROPER HOIST PLACEMENT REFER TO (Fig. 5).**

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