

INTRODUCTION

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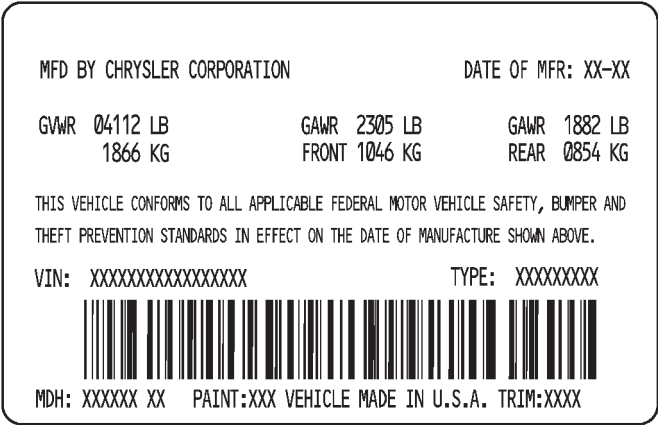
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GENERAL INFORMATION

VEHICLE SAFETY CERTIFICATION LABEL

A vehicle safety certification label (Fig. 1) is attached to the rear facing of the driver's door. 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.



800dfad9

Fig. 1 Vehicle Safety Certification Label

VEHICLE IDENTIFICATION NUMBER

The Vehicle Identification Number (VIN) is located on the upper left corner of the instrument panel, near the left windshield pillar (Fig. 2). 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 table for decoding information.

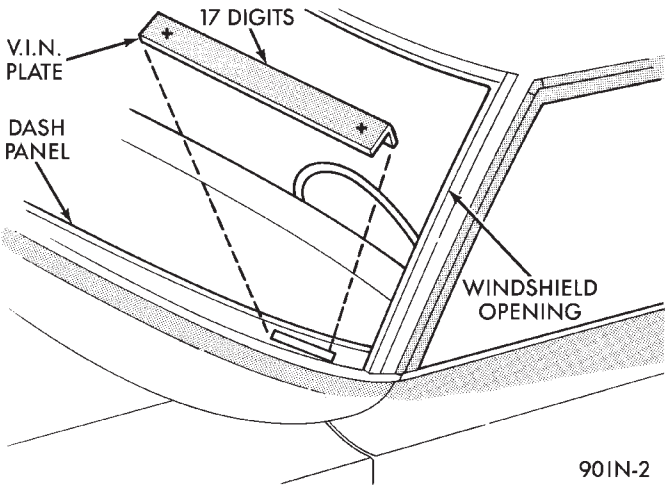


Fig. 2 Vehicle Identification Number (VINPlate)

VIN CHECK DIGIT

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.

BODY CODE PLATE

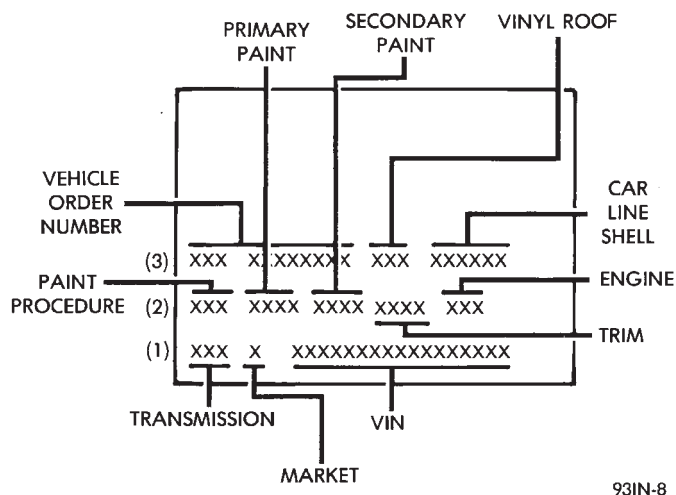
LOCATION AND DECODING

The Body Code Plate (Fig. 3) is located in the engine compartment on the driver side strut tower. 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.

## GENERAL INFORMATION (Continued)

## VIN CODE BREAKDOWN

| POSITION   | INTERPRETATION    | CODE=DESCRIPTION                                                                                                                                |
|------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| 1          | Country of Origin | 1=United States                                                                                                                                 |
| 2          | Make              | B=Dodge<br>C=Chrysler<br>P=Plymouth                                                                                                             |
| 3          | Vehicle Type      | 3=Passenger Car                                                                                                                                 |
| 4          | Passenger Safety  | E=Active Driver and Passenger Air Bags                                                                                                          |
| 5          | Car Line          | J=Chrysler,Cirrus<br>J=Dodge,Stratus<br>J=Plymouth,Breeze<br>2=Chrysler,Stratus (sold in Mexico)                                                |
| 6          | Series            | 4=High Line<br>5=Premium<br>6=Sport                                                                                                             |
| 7          | Body Style        | 6=4 Door Sedan                                                                                                                                  |
| 8          | Engine            | C=2.0L 4 Cyl 16V Gasoline SOHC<br>X=2.4L 4 Cyl 16V Gasoline SOHC<br>H=2.5L 6 Cyl Gasoline SOHC<br>S=2.4L 4 Cyl 16 V DOHC Turbo (sold in Mexico) |
| 9          | Check Digit       | See explanation in this section.                                                                                                                |
| 10         | Model Year        | V=1997                                                                                                                                          |
| 11         | Assembly Plant    | N=Sterling Heights Assembly                                                                                                                     |
| 12 thru 17 | Sequence Number   | 6 digit number assigned by assembly plant.                                                                                                      |

**Fig. 3 Body Code Plate**

## BODY CODE PLATE—LINE 3

## DIGITS 1 THROUGH 12

Vehicle Order Number

## DIGITS 13, 14, AND 15

Vinyl Roof Code

## DIGITS 16, 17, AND 18

Vehicle Shell Line

- JACP= Chrysler, Cirrus
- JADH= Dodge, Stratus
- JADP=Dodge, Stratus ES
- JAPH=Plymouth, Breeze

## DIGIT 19

Price Class

- E = Economy
- H = High Line
- L = Low Line
- M = Mid Line
- P = Premium
- S = Special/Sport
- X = Performance Image

## DIGITS 20 AND 21

Body Type

- 41=Four Door Sedan

## BODY CODE PLATE LINE 2

## DIGITS 1, 2, AND 3—

Paint procedure

## GENERAL INFORMATION (Continued)

**DIGIT 4—**

Open Space

**DIGITS 5 THROUGH 8—**

Primary paint

See Group 23, Body 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

- ECB = 2.0L Four Cylinder SOHC Gasoline
- EEB = 2.5L Six Cylinder SOHC Gasoline
- EDZ = 2.4L Four Cylinder DOHC Gasoline

**BODY CODE PLATE LINE 1****DIGITS 1, 2, AND 3—**

Transaxle Codes

- DGL = 41TE 4-speed Electronic Automatic Transaxle
- DD5 = NV T350 5-Speed Manual Transaxle

**DIGIT 4—**

Open Space

**DIGIT 5—**

Market Code

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

**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.

## GENERAL INFORMATION (Continued)

## STANDARD VEHICLE DIMENSIONS

*INTERIOR DIMENSIONS*

| BODY<br>STYLE | HEAD ROOM |          | LEG ROOM |          | SHOULDER ROOM |          | HIP ROOM |          |
|---------------|-----------|----------|----------|----------|---------------|----------|----------|----------|
|               | FRONT     | REAR     | FRONT    | REAR     | FRONT         | REAR     | FRONT    | REAR     |
| CP-41         | 38.1 in.  | 36.8 in. | 42.3 in. | 38.1 in. | 55.2 in.      | 54.7 in. | 52.8 in. | 52.7 in. |
|               | 967 mm    | 935 mm   | 1075 mm  | 968 mm   | 1403 mm       | 1390 mm  | 1341 mm  | 1338 mm  |
| DP-41         | 38.1 in.  | 36.8 in. | 42.3 in. | 38.1 in. | 55.2 in.      | 54.7 in. | 52.8 in. | 52.7 in. |
|               | 967 mm    | 935 mm   | 1075 mm  | 968 mm   | 1403 mm       | 1390 mm  | 1341 mm  | 1338 mm  |
| DH-41         | 38.1 in.  | 36.8 in. | 42.3 in. | 38.1 in. | 55.2 in.      | 54.7 in. | 52.8 in. | 52.7 in. |
|               | 967 mm    | 935 mm   | 1075 mm  | 968 mm   | 1403 mm       | 1390 mm  | 1341 mm  | 1338 mm  |
| PH-41         | 38.1 in.  | 36.8 in. | 42.3 in. | 38.1 in. | 55.2 in.      | 54.7 in. | 52.8 in. | 52.7 in. |
|               | 967 mm    | 935 mm   | 1075 mm  | 968 mm   | 1403 mm       | 1390 mm  | 1341 mm  | 1338 mm  |

*EXTERIOR DIMENSIONS*

| BODY<br>STYLE | WHEEL<br>BASE | FRONT<br>TRACK | REAR<br>TRACK | OVERALL<br>LENGTH | OVERALL<br>WIDTH | OVERALL<br>HEIGHT |
|---------------|---------------|----------------|---------------|-------------------|------------------|-------------------|
|               | MM-IN.        | MM-IN.         | MM-IN.        | MM-IN.            | MM-IN.           | MM-IN.            |
| CP-41         | 2743-108.0    | 1528-60.2      | 1528-60.2     | 4750-187.0        | 1804-71.0        | 1384-54.5         |
| DP-41         | 2743-108.0    | 1528-60.2      | 1528-60.2     | 4725-186.0        | 1804-71.0        | 1374-54.5         |
| DH-41         | 2743-108.0    | 1528-60.2      | 1528-60.2     | 4725-186.0        | 1804-71.0        | 1374-54.1         |
| PH-41         | 2743-108.0    | 1528-60.2      | 1528-60.2     | 4742-186.0        | 1804-71.0        | 1374-54.1         |

## GENERAL INFORMATION (Continued)

### INTERNATIONAL VEHICLE CONTROL AND DISPLAY SYMBOLS

#### INTERNATIONAL VEHICLE CONTROL AND DISPLAY SYMBOLS

The graphic symbols illustrated in the following 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.

### FASTENER IDENTIFICATION

#### FASTENER IDENTIFICATION

##### THREAD IDENTIFICATION

SAE and metric bolt/nut threads are not the same. The difference is described in the Thread Notation chart (Fig. 5).

##### GRADE/CLASS IDENTIFICATION

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

| INCH                                     |                                     | METRIC                                        |                                                  |
|------------------------------------------|-------------------------------------|-----------------------------------------------|--------------------------------------------------|
| 5/16-18                                  |                                     | M8 X 1.25                                     |                                                  |
| THREAD<br>MAJOR<br>DIAMETER<br>IN INCHES | NUMBER<br>OF<br>THREADS<br>PER INCH | THREAD<br>MAJOR<br>DIAMETER IN<br>MILLIMETERS | DISTANCE<br>BETWEEN<br>THREADS IN<br>MILLIMETERS |

PR606B

*Fig. 5 Thread Notation—SAE and Metric*

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 12.9. 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.

INTERNATIONAL CONTROL AND DISPLAY SYMBOLS

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |  |  |
| HIGH BEAM                                                                           | FOG LIGHTS                                                                          | HEADLIGHTS,<br>PARKING LIGHTS,<br>PANEL LIGHTS                                      | TURN SIGNAL                                                                         | HAZARD WARNING                                                                        | WINDSHIELD<br>WASHER                                                                  |
|  |  |  |  |  |  |
| WINDSHIELD<br>WIPER                                                                 | WINDSHIELD WIPER<br>AND WASHER                                                      | WINDSCREEN<br>DEMISTING AND<br>DEFROSTING                                           | VENTILATING FAN                                                                     | REAR WINDOW<br>DEFOGGER                                                               | REAR WINDOW<br>WIPER                                                                  |
|  |  |  |  |  |  |
| REAR WINDOW<br>WASHER                                                               | FUEL                                                                                | ENGINE COOLANT<br>TEMPERATURE                                                       | BATTERY CHARGING<br>CONDITION                                                       | ENGINE OIL                                                                            | SEAT BELT                                                                             |
|  |  |  |  |  |  |
| BRAKE FAILURE                                                                       | PARKING BRAKE                                                                       | FRONT HOOD                                                                          | REAR HOOD (TRUNK)                                                                   | HORN                                                                                  | LIGHTER                                                                               |

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*Fig. 4*

## GENERAL INFORMATION (Continued)

## FASTENER IDENTIFICATION

## Bolt Markings and Torque - Metric

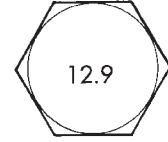
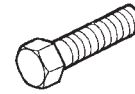
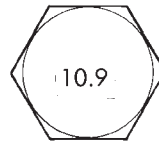
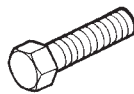
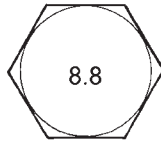
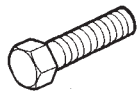
## Commercial Steel Class

8.8

10.9

12.9

## Bolt Head Markings



| Body<br>Size | Torque      |     |          |     | Torque    |     |          |     | Torque    |     |          |     |       |
|--------------|-------------|-----|----------|-----|-----------|-----|----------|-----|-----------|-----|----------|-----|-------|
|              | Cast Iron   |     | Aluminum |     | Cast Iron |     | Aluminum |     | Cast Iron |     | Aluminum |     |       |
|              | Diam.<br>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

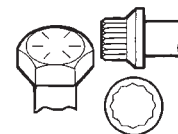
## SAE Grade Number

5

8

## Bolt Head Markings

These are all SAE Grade 5 (3) line



## Bolt Torque - Grade 5 Bolt

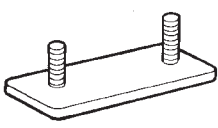
## Bolt Torque - Grade 8 Bolt

| Body Size | 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   |

## GENERAL INFORMATION (Continued)

## FASTENER STRENGTH

## HOW TO DETERMINE BOLT STRENGTH

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

## GENERAL INFORMATION (Continued)

## CONVERSION FORMULAS AND EQUIVALENT VALUES

| <b>Multiply</b>  | <b>By</b> | <b>To Get</b>           | <b>Multiply</b> | <b>By</b> | <b>To Get</b>    |
|------------------|-----------|-------------------------|-----------------|-----------|------------------|
| 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)            | M               | x 1.0936  | = Yards          |
| Miles            | x 1.6093  | = Kilometers (Km)       | Km              | x 0.6214  | = Miles          |
| 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.      |
| Kilometers/Hr.   | x 0.27778 | = Meters/Sec. (M/S)     | M/S             | x 3.600   | = Kilometers/Hr. |
| mph              | x 0.4470  | = Meters/Sec. (M/S)     | M/S             | x 2.237   | = mph            |

| <b>COMMON METRIC EQUIVALENTS</b> |   |                      |  |
|----------------------------------|---|----------------------|--|
| 1 Inch                           | = | 25 Millimeters       |  |
| 1 Foot                           | = | 0.3 Meter            |  |
| 1 Yard                           | = | 0.9 Meter            |  |
| 1 Mile                           | = | 1.6 Kilometers       |  |
| 1 Cubic Inch                     | = | 16 Cubic Centimeters |  |
| 1 Cubic Foot                     | = | 0.03 Cubic Meter     |  |
| 1 Cubic Yard                     | = | 0.8 Cubic Meter      |  |

J911N-1

## METRIC SYSTEM

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

Figure art, specifications and torque references in this Service Manual are identified in metric and SAE format.

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

The metric system is based on quantities of one, ten, one hundred, one thousand and one million (Fig. 6).

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

|      |   |              |       |                |              |
|------|---|--------------|-------|----------------|--------------|
| Mega | - | (M) Million  | Deci  | -              | (D) Tenth    |
| Kilo | - | (K) Thousand | Centi | -              | (C) Hundreth |
|      |   | Milli        | -     | (m) Thousandth |              |

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**Fig. 6 Metric Prefixes**

Refer to the 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.)

## GENERAL INFORMATION (Continued)

## METRIC CONVERSION

## in-lbs to N•m

## N•m to in-lbs

| in-lb | N•m    | in-lb | N•m    | in-lb | N•m     | in-lb | N•m     | in-lb | N•m     | in-lb | N•m     | in-lb | N•m     | in-lb | N•m      | in-lb | N•m      |
|-------|--------|-------|--------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|----------|-------|----------|
| 2     | .2260  | 42    | 4.7453 | 82    | 9.2646  | 122   | 13.7839 | 162   | 18.3032 | .2    | 1.7702  | 4.2   | 37.1747 | 8.2   | 72.5792  | 12.2  | 107.9837 |
| 4     | .4519  | 44    | 4.9713 | 84    | 9.4906  | 124   | 14.0099 | 164   | 18.5292 | .4    | 3.5404  | 4.4   | 38.9449 | 8.4   | 74.3494  | 12.4  | 109.7539 |
| 6     | .6779  | 46    | 5.1972 | 86    | 9.7165  | 126   | 14.2359 | 166   | 18.7552 | .6    | 5.3107  | 4.6   | 40.7152 | 8.6   | 76.1197  | 12.6  | 111.5242 |
| 8     | .9039  | 48    | 5.4232 | 88    | 9.9425  | 128   | 14.4618 | 168   | 18.9811 | .8    | 7.0809  | 4.8   | 42.4854 | 8.8   | 77.8899  | 12.8  | 113.2944 |
| 10    | 1.1298 | 50    | 5.6492 | 90    | 10.1685 | 130   | 14.6878 | 170   | 19.2071 | 1     | 8.8511  | 5     | 44.2556 | 9     | 79.6601  | 13    | 115.0646 |
| 12    | 1.3558 | 52    | 5.8751 | 92    | 10.3944 | 132   | 14.9138 | 172   | 19.4331 | 1.2   | 10.6213 | 5.2   | 46.0258 | 9.2   | 81.4303  | 13.2  | 116.8348 |
| 14    | 1.5818 | 54    | 6.1011 | 94    | 10.6204 | 134   | 15.1397 | 174   | 19.6590 | 1.4   | 12.3916 | 5.4   | 47.7961 | 9.4   | 83.2006  | 13.4  | 118.6051 |
| 16    | 1.8077 | 56    | 6.3270 | 96    | 10.8464 | 136   | 15.3657 | 176   | 19.8850 | 1.6   | 14.1618 | 5.6   | 49.5663 | 9.6   | 84.9708  | 13.6  | 120.3753 |
| 18    | 2.0337 | 58    | 6.5530 | 98    | 11.0723 | 138   | 15.5917 | 178   | 20.1110 | 1.8   | 15.9320 | 5.8   | 51.3365 | 9.8   | 86.7410  | 13.8  | 122.1455 |
| 20    | 2.2597 | 60    | 6.7790 | 100   | 11.2983 | 140   | 15.8176 | 180   | 20.3369 | 2     | 17.7022 | 6     | 53.1067 | 10    | 88.5112  | 14    | 123.9157 |
| 22    | 2.4856 | 62    | 7.0049 | 102   | 11.5243 | 142   | 16.0436 | 182   | 20.5629 | 2.2   | 19.4725 | 6.2   | 54.8770 | 10.2  | 90.2815  | 14.2  | 125.6860 |
| 24    | 2.7116 | 64    | 7.2309 | 104   | 11.7502 | 144   | 16.2696 | 184   | 20.7889 | 2.4   | 21.2427 | 6.4   | 56.6472 | 10.4  | 92.0517  | 14.4  | 127.4562 |
| 26    | 2.9376 | 66    | 7.4569 | 106   | 11.9762 | 146   | 16.4955 | 186   | 21.0148 | 2.6   | 23.0129 | 6.6   | 58.4174 | 10.6  | 93.8219  | 14.6  | 129.2264 |
| 28    | 3.1635 | 68    | 7.6828 | 108   | 12.2022 | 148   | 16.7215 | 188   | 21.2408 | 2.8   | 24.7831 | 6.8   | 60.1876 | 10.8  | 95.5921  | 14.8  | 130.9966 |
| 30    | 3.3895 | 70    | 7.9088 | 110   | 12.4281 | 150   | 16.9475 | 190   | 21.4668 | 3     | 26.5534 | 7     | 61.9579 | 11    | 97.3624  | 15    | 132.7669 |
| 32    | 3.6155 | 72    | 8.1348 | 112   | 12.6541 | 152   | 17.1734 | 192   | 21.6927 | 3.2   | 28.3236 | 7.2   | 63.7281 | 11.2  | 99.1326  | 15.2  | 134.5371 |
| 34    | 3.8414 | 74    | 8.3607 | 114   | 12.8801 | 154   | 17.3994 | 194   | 21.9187 | 3.4   | 30.0938 | 7.4   | 65.4983 | 11.4  | 100.9028 | 15.4  | 136.3073 |
| 36    | 4.0674 | 76    | 8.5867 | 116   | 13.1060 | 156   | 17.6253 | 196   | 22.1447 | 3.6   | 31.8640 | 7.6   | 67.2685 | 11.6  | 102.6730 | 15.6  | 138.0775 |
| 38    | 4.2934 | 78    | 8.8127 | 118   | 13.3320 | 158   | 17.8513 | 198   | 22.3706 | 3.8   | 33.6342 | 7.8   | 69.0388 | 11.8  | 104.4433 | 15.8  | 139.8478 |
| 40    | 4.5193 | 80    | 9.0386 | 120   | 13.5580 | 160   | 18.0773 | 200   | 22.5966 | 4     | 35.4045 | 8     | 70.8090 | 12    | 106.2135 | 16    | 141.6180 |

## ft-lbs to N•m

## N•m to ft-lbs

| ft-lb | N•m     | ft-lb | N•m     | ft-lb | N•m     | ft-lb | N•m      | ft-lb | N•m      | ft-lb | N•m     | ft-lb | N•m     | ft-lb | N•m     | ft-lb | N•m     |
|-------|---------|-------|---------|-------|---------|-------|----------|-------|----------|-------|---------|-------|---------|-------|---------|-------|---------|
| 1     | 1.3558  | 21    | 28.4722 | 41    | 55.5885 | 61    | 82.7049  | 81    | 109.8212 | 1     | .7376   | 21    | 15.9888 | 41    | 30.2400 | 61    | 44.9913 |
| 2     | 2.7116  | 22    | 29.8280 | 42    | 56.9444 | 62    | 84.0607  | 82    | 111.1770 | 2     | 1.4751  | 22    | 16.2264 | 42    | 30.9776 | 62    | 45.7289 |
| 3     | 4.0675  | 23    | 31.1838 | 43    | 58.3002 | 63    | 85.4165  | 83    | 112.5328 | 3     | 2.2127  | 23    | 16.9639 | 43    | 31.7152 | 63    | 46.4664 |
| 4     | 5.4233  | 24    | 32.5396 | 44    | 59.6560 | 64    | 86.7723  | 84    | 113.8884 | 4     | 2.9502  | 24    | 17.7015 | 44    | 32.4527 | 64    | 47.2040 |
| 5     | 6.7791  | 25    | 33.8954 | 45    | 61.0118 | 65    | 88.1281  | 85    | 115.2446 | 5     | 3.6878  | 25    | 18.4391 | 45    | 33.1903 | 65    | 47.9415 |
| 6     | 8.1349  | 26    | 35.2513 | 46    | 62.3676 | 66    | 89.4840  | 86    | 116.6004 | 6     | 4.4254  | 26    | 19.1766 | 46    | 33.9279 | 66    | 48.6791 |
| 7     | 9.4907  | 27    | 36.6071 | 47    | 63.7234 | 67    | 90.8398  | 87    | 117.9562 | 7     | 5.1629  | 27    | 19.9142 | 47    | 34.6654 | 67    | 49.4167 |
| 8     | 10.8465 | 28    | 37.9629 | 48    | 65.0793 | 68    | 92.1956  | 88    | 119.3120 | 8     | 5.9005  | 28    | 20.6517 | 48    | 35.4030 | 68    | 50.1542 |
| 9     | 12.2024 | 29    | 39.3187 | 49    | 66.4351 | 69    | 93.5514  | 89    | 120.6678 | 9     | 6.6381  | 29    | 21.3893 | 49    | 36.1405 | 69    | 50.8918 |
| 10    | 13.5582 | 30    | 40.6745 | 50    | 67.7909 | 70    | 94.9073  | 90    | 122.0236 | 10    | 7.3756  | 30    | 22.1269 | 50    | 36.8781 | 70    | 51.6293 |
| 11    | 14.9140 | 31    | 42.0304 | 51    | 69.1467 | 71    | 96.2631  | 91    | 123.3794 | 11    | 8.1132  | 31    | 22.8644 | 51    | 37.6157 | 71    | 52.3669 |
| 12    | 16.2698 | 32    | 43.3862 | 52    | 70.5025 | 72    | 97.6189  | 92    | 124.7352 | 12    | 8.8507  | 32    | 23.6020 | 52    | 38.3532 | 72    | 53.1045 |
| 13    | 17.6256 | 33    | 44.7420 | 53    | 71.8583 | 73    | 98.9747  | 93    | 126.0910 | 13    | 9.5883  | 33    | 24.3395 | 53    | 39.0908 | 73    | 53.8420 |
| 14    | 18.9815 | 34    | 46.0978 | 54    | 73.2142 | 74    | 100.3316 | 94    | 127.4468 | 14    | 10.3259 | 34    | 25.0771 | 54    | 39.8284 | 74    | 54.5720 |
| 15    | 20.3373 | 35    | 47.4536 | 55    | 74.5700 | 75    | 101.6862 | 95    | 128.8026 | 15    | 11.0634 | 35    | 25.8147 | 55    | 40.5659 | 75    | 55.3172 |
| 16    | 21.6931 | 36    | 48.8094 | 56    | 75.9258 | 76    | 103.0422 | 96    | 130.1586 | 16    | 11.8010 | 36    | 26.5522 | 56    | 41.3035 | 76    | 56.0547 |
| 17    | 23.0489 | 37    | 50.1653 | 57    | 77.2816 | 77    | 104.3980 | 97    | 131.5144 | 17    | 12.5386 | 37    | 27.2898 | 57    | 42.0410 | 77    | 56.7923 |
| 18    | 24.4047 | 38    | 51.5211 | 58    | 78.6374 | 78    | 105.7538 | 98    | 132.8702 | 18    | 13.2761 | 38    | 28.0274 | 58    | 42.7786 | 78    | 57.5298 |
| 19    | 25.7605 | 39    | 52.8769 | 59    | 79.9933 | 79    | 107.1196 | 99    | 134.2260 | 19    | 14.0137 | 39    | 28.7649 | 59    | 43.5162 | 79    | 58.2674 |
| 20    | 27.1164 | 40    | 54.2327 | 60    | 81.3491 | 80    | 108.4654 | 100   | 135.5820 | 20    | 14.7512 | 40    | 29.5025 | 60    | 44.2537 | 80    | 59.0050 |

## in. to mm

## mm to in.

| in. | mm    | in. | mm     | in. | mm     | in. | mm     | in.  | mm     | in. | mm     | in. | mm     | in. | mm     | in. | mm     |
|-----|-------|-----|--------|-----|--------|-----|--------|------|--------|-----|--------|-----|--------|-----|--------|-----|--------|
| .01 | .254  | .21 | 5.334  | .41 | 10.414 | .61 | 15.494 | .81  | 20.574 | .01 | .00039 | .21 | .00827 | .41 | .01614 | .61 | .02402 |
| .02 | .508  | .22 | 5.588  | .42 | 10.668 | .62 | 15.748 | .82  | 20.828 | .02 | .00079 | .22 | .00866 | .42 | .01654 | .62 | .02441 |
| .03 | .762  | .23 | 5.842  | .43 | 10.922 | .63 | 16.002 | .83  | 21.082 | .03 | .00118 | .23 | .00906 | .43 | .01693 | .63 | .02480 |
| .04 | 1.016 | .24 | 6.096  | .44 | 11.176 | .64 | 16.256 | .84  | 21.336 | .04 | .00157 | .24 | .00945 | .44 | .01732 | .64 | .02520 |
| .05 | 1.270 | .25 | 6.350  | .45 | 11.430 | .65 | 16.510 | .85  | 21.590 | .05 | .00197 | .25 | .00984 | .45 | .01772 | .65 | .02559 |
| .06 | 1.524 | .26 | 6.604  | .46 | 11.684 | .66 | 16.764 | .86  | 21.844 | .06 | .00236 | .26 | .01024 | .46 | .01811 | .66 | .02598 |
| .07 | 1.778 | .27 | 6.858  | .47 | 11.938 | .67 | 17.018 | .87  | 22.098 | .07 | .00276 | .27 | .01063 | .47 | .01850 | .67 | .02638 |
| .08 | 2.032 | .28 | 7.112  | .48 | 12.192 | .68 | 17.272 | .88  | 22.352 | .08 | .00315 | .28 | .01102 | .48 | .01890 | .68 | .02677 |
| .09 | 2.286 | .29 | 7.366  | .49 | 12.446 | .69 | 17.526 | .89  | 22.606 | .09 | .00354 | .29 | .01142 | .49 | .01929 | .69 | .02717 |
| .10 | 2.540 | .30 | 7.620  | .50 | 12.700 | .70 | 17.780 | .90  | 22.860 | .10 | .00394 | .30 | .01181 | .50 | .01969 | .70 | .02756 |
| .11 | 2.794 | .31 | 7.874  | .51 | 12.954 | .71 | 18.034 | .91  | 23.114 | .11 | .00433 | .31 | .01220 | .51 | .02008 | .71 | .02795 |
| .12 | 3.048 | .32 | 8.128  | .52 | 13.208 | .72 | 18.288 | .92  | 23.368 | .12 | .00472 | .32 | .01260 | .52 | .02047 | .72 | .02835 |
| .13 | 3.302 | .33 | 8.382  | .53 | 13.462 | .73 | 18.542 | .93  | 23.622 | .13 | .00512 | .33 | .01299 | .53 | .02087 | .73 | .02874 |
| .14 | 3.556 | .34 | 8.636  | .54 | 13.716 | .74 | 18.796 | .94  | 23.876 | .14 | .00551 | .34 | .01339 | .54 | .02126 | .74 | .02913 |
| .15 | 3.810 | .35 | 8.890  | .55 | 13.970 | .75 | 19.050 | .95  | 24.130 | .15 | .00591 | .35 | .01378 | .55 | .02165 | .75 | .02953 |
| .16 | 4.064 | .36 | 9.144  | .56 | 14.224 | .76 | 19.304 | .96  | 24.384 | .16 | .00630 | .36 | .01417 | .56 | .02205 | .76 | .02992 |
| .17 | 4.318 | .37 | 9.398  | .57 | 14.478 | .77 | 19.558 | .97  | 24.638 | .17 | .00669 | .37 | .01457 | .57 | .02244 | .77 | .03032 |
| .18 | 4.572 | .38 | 9.652  | .58 | 14.732 | .78 | 19.812 | .98  | 24.892 | .18 | .00709 | .38 | .01496 | .58 | .02283 | .78 | .03071 |
| .19 | 4.826 | .39 | 9.906  | .59 | 14.986 | .79 | 20.066 | .99  | 25.146 | .19 | .00748 | .39 | .01535 | .59 | .02323 | .79 | .03110 |
| .20 | 5.080 | .40 | 10.160 | .60 | 15.240 | .80 | 20.320 | 1.00 | 25.400 | .20 | .00787 | .40 | .01575 | .60 | .02362 | .80 | .03150 |

## GENERAL INFORMATION (Continued)

## TORQUE REFERENCES

Individual Torque Charts appear at the end of many Groups. Refer to the Standard Torque Specifi-

cations Chart for torque references not listed in the individual torque charts.

## TORQUE SPECIFICATIONS

## SPECIFIED TORQUE FOR STANDARD BOLTS

| Class | Diameter<br>mm | Pitch<br>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        |