#### - INTRODUCTION 1

# INTRODUCTION

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## **GENERAL INFORMATION**

## VEHICLE IDENTIFICATION NUMBER

The Vehicle Identification Number (VIN) plate is located on the lower windshield fence near the left A-pillar. 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 Vehicle Identification Number is also imprinted on the:

- METRIC SYSTEM7THREADED HOLE REPAIR7TORQUE REFERENCES9VEHICLE IDENTIFICATION NUMBER1VEHICLE SAFETY CERTIFICATION LABEL2
- Body Code 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 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.

#### VEHICLE IDENTIFICATION NUMBER DECODING CHART

POSITION	INTERPRETATION	CODE = DESCRIPTION
1	Country of Origin	1 = United States
2	Make	J = Jeep
3	Vehicle Type	4 = MPV
4	Gross Vehicle Weight Rating	F = 4001-5000 lbs.
5	Vehicle Line	F= Cherokee 4X4 (LHD) N = Cherokee 4X4 (RHD) B = Cherokee 4X2 (RHD) T = Cherokee 4X2 (LHD)
6	Series	2 = SE 6 = Sport/Classic 7 = Limited
7	Body Style	7 = 2dr Sport Utility 8 = 4dr Sport Utility
8	Engine	P = 2.5L Gasoline S = 4.0L Gasoline
9	Check Digit	
10	Model Year	X = 1999
11	Assembly Plant	L = Toledo #1
12 thru 17	Vehicle Build Sequence	

## VEHICLE SAFETY CERTIFICATION LABEL

A vehicle safety certification label (Fig. 1) is attached to every Chrysler Corporation vehicle. The label certifies that the vehicle conforms to all applicable Federal Motor Vehicle Safety 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 shutface.



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Fig. 1 Vehicle Safety Certification Label—Typical BODY CODE PLATE

#### LOCATION AND DECODING

A metal body code plate is attached to the left (driver's side) of the dash panel in the engine compartment. 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 (Fig. 2).

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.





DIGITS 1 THROUGH 12 Vehicle Order Number

DIGITS 13, 14, AND 15 Open Space

DIGITS 16, 17, AND 18

Car Line Shell

- XJT = Cherokee 2WD (LHD)
- XJJ = Cherokee 4WD (LHD)
- XJB = Cherokee 2WD (RHD)
- XJU = Cherokee 4WD (RHD)

#### DIGIT 19

- Price Class
- L = Cherokee (All)

#### DIGITS 20 AND 21

- Body Type
- 72 = 2 Door
- 74 = 4 Door

#### BODY CODE PLATE—LINE 2

DIGITS 1,2, AND 3

Paint Procedure

#### DIGIT 4

Open Space

**DIGITS 5 THROUGH 8** 

Primary Paint Refer to 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

- EPE = 2.5 L 4 cyl. MPI Gasoline
- ERH = 4.0L 6 cyl. MPI Gasoline

## BODY CODE PLATE—LINE 1

#### DIGITS 1, 2, AND 3

- **Transmission Codes**
- DDQ = AX5 5-speed Manual
- DGS = AW4 4-speed Automatic

#### **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 Identification Number (VIN) paragraph for proper breakdown of VIN code.

# INTERNATIONAL VEHICLE CONTROL AND DISPLAY SYMBOLS

# INTERNATIONAL VEHICLE CONTROL AND DISPLAY 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.

ED	<b>≢</b> 0	- 2	令令		
HIGH BEAM	FOG LIGHTS	PARKING LIGHTS, PARKING LIGHTS, PANEL LIGHTS	TURN SIGNAL	HAZARD WARNING	WINDSHIELD WASHER
WINDSHIELD		WINDSCREEN DEMISTING AND	<b>\$</b>		
WIPER	AND WASHER	DEFROSTING	VENTILATING FAN	DEFOGGER	WIPER
Ω			<u>-</u>		Ä
REAR WINDOW WASHER	FUEL	ENGINE COOLANT TEMPERATURE	BATTERY CHARGING CONDITION	ENGINE OIL	SEAT BELT
((!))		$\sim$			٩

## INTERNATIONAL CONTROL AND DISPLAY SYMBOLS

## 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. 4).

INCH	l .	METR	
5/16-1	8	M8 X	1.25
THREAD		THREAD MAJOR	DISTANCE
DIAMETER IN INCHES	THREADS PER INCH	DIAMETER IN MILLIMETERS	THREADS IN MILLIMETERS

PR606B

Fig. 4 Thread Notation Chart – SAE and Metric

#### **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 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.

#### **FASTENER IDENTIFICATION**

# **Bolt Markings and Torque - Metric**



Diam.	Cas	t Iron	Alumi	num	Cas	Cast Iron		ninum	Cas	st 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

Bolt Head Markings These are all SAE Grade 5 (3) line



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		Bolt Torque	e - Grade 5 B	olt	Bol	Bolt Torque - Grade 8 Bolt					
Body Size	Cas	st Iron	Alun	ninum	Cast	Iron	Alum	inum	_		
	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	1.50	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			
1-+	000	0/0	000	-00	1200	0/0					

## FASTENER STRENGTH

#### HOW TO DETERMINE BOLT STRENGTH

	Mark	Class Mark						
Hexagon head bolt	4	4T 5T 6T 7T 8T 9T 10T 11T	Stud bolt	No mark	4Τ			
	No mark	4T						
Hexagon flange bolt w/washer hexagon bolt	No mark	4T		Grooved	6Т			
Hexagon head bolt	Two protruding lines	51						
Hexagon flange bolt w/washer hexagon bolt	Two protruding lines	6Т	Welded bolt					
Hexagon head bolt	Three protruding lines	71			<b>4</b> T			
Hexagon head bolt	Four protruding lines	81						

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## FASTENER USAGE

#### WARNING: USE OF AN INCORRECT FASTENER MAY RESULT IN COMPONENT DAMAGE OR PER-SONAL 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 all fasteners (nuts, bolts, etc.) for reassembly. If the fastener is not salvageable, a fastener of equivalent specification must be used.

## THREADED HOLE REPAIR

Most stripped threaded holes can be repaired using a Helicoil<sup>®</sup>. Follow the manufactures recommendations for application and repair procedures.

## **METRIC SYSTEM**

WARNING: USE OF AN INCORRECT FASTENER MAY RESULT IN COMPONENT DAMAGE OR PER-SONAL IJURY. 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. 5).

Mega	-	(M) Million	Deci	-	(D) Tenth
Kilo	-	(K) Thousand	Centi	-	(C) Hundreth
		Milli - (n	n) Thousa	ndth	

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#### Fig. 5 Metric Prefixes

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

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

<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	× 8.851	= in-lbs
ft-lbs	x 1.3558	= Newton-Meters (N•m)	N•m	× 0.7376	= ft-lbs
Inches Hg (60°F)	x 3.377	= Kilopascals (kPa)	kPa	x 0.2961	<ul> <li>Inches Hg</li> <li>psi</li> </ul>
psi	x 6.895	= Kilopascals (kPa)	kPa	x 0.145	
Inches	x 25.4	<ul> <li>Millimeters (mm)</li> <li>Meters (M)</li> <li>Meters (M)</li> <li>Kilometers (Km)</li> </ul>	mm	x 0.03937	= Inches
Feet	x 0.3048		M	x 3.281	= Feet
Yards	x 0.9144		M	x 1.0936	= Yards
Miles	x 1.6093		Km	x 0.6214	= Miles
mph	x 1.6093	<ul> <li>Kilometers/Hr. (Km/h)</li> <li>Meters/Sec. (M/S)</li> <li>Meters/Sec. (M/S)</li> <li>Meters/Sec. (M/S)</li> </ul>	Km/h	x 0.6214	= mph
Feet/Sec.	x 0.3048		M/S	x 3.281	= Feet/Sec.
Kilometers/Hr.	x 0.27778		M/S	x 3.600	= Kilometers/Hr.
mph	x 0.4470		M/S	x 2.237	= mph
· · · · · · · · · · · · · · · · · · ·		COMMON METRI	C EQUIVALENTS		
1 Inch = 25 Milli 1 Foot = 0.3 Me 1 Yard = 0.9 Me 1 Mile = 1.6 Kilor	meters ter ter neters		1 Cubic Inch 1 Cubic Foot 1 Cubic Yard	= 16 Cul = 0.03 C = 0.8 Cu	oic Centimeters ubic Meter bic Meter

#### **CONVERSION FORMULAS AND EQUIVALENT VALUES**

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#### **METRIC CONVERSION**

#### in-lbs to N•m

#### N•m to in-lbs

in- Ib	N∙m	in-Ib	N∙m	in-Ib	N∙m	in-lb	N∙m	in-lb	N∙m	N∙m	in-lb	N∙m	in-lb	N∙m	in-Ib	N•m	in-Ib	N∙m	in-lb
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40	.2260 .4519 .6779 .9039 1.13558 1.3558 1.3558 1.8077 2.2597 2.4856 2.7116 2.9376 3.1635 3.8455 3.3895 3.3895 3.3895 3.38414 4.0674 4.2934 4.2934	42 44 46 50 52 54 55 58 60 62 64 66 870 72 74 78 80	4.7453 4.9713 5.1972 5.4232 5.6492 5.8751 6.1011 6.3270 6.5530 6.7790 7.0249 7.2309 7.4569 7.9088 8.1348 8.3607 8.1348 8.3607 8.8127	82 84 86 88 90 92 94 96 98 100 102 104 106 108 110 112 114 116 118 120	9.2646 9.4906 9.7165 9.9425 10.3944 10.6204 11.0723 11.2983 11.5243 11.7502 11.9762 12.2022 12.4281 12.6541 12.48801 13.3200 13.3580	122 124 126 128 130 132 134 136 138 140 142 144 146 148 150 152 154 158 160	13.7839 14.0099 14.2359 14.4618 14.6878 14.9138 15.3657 15.5917 15.8176 16.0436 16.2696 16.4955 16.7215 16.9475 17.1734 17.3994 17.6513 18.0773	162 164 166 168 170 172 174 176 178 180 182 184 186 188 190 192 194 196 198 200	18.3032 18.5292 18.7552 18.9811 19.2071 19.4331 19.6590 19.8850 20.1110 20.3669 20.5629 20.7889 21.0148 21.2408 21.4668 21.6927 21.9187 22.1447 22.3706 22.5966	.2 .4 .6 .8 1 1.2 1.4 1.6 1.8 2 2.2 2.4 2.6 2.8 3.2 3.2 3.4 3.6 3.8 4	1.7702 3.5404 5.3107 7.0809 8.8511 10.6213 12.3916 14.1618 15.9320 17.7022 19.4725 21.2427 23.0129 24.7831 26.5534 28.3236 30.0938 31.8640 33.6342 35.4045	4.2 4.4 4.6 5.2 5.2 5.4 5.6 5.8 6.2 6.4 6.6 6.8 7 7.2 7.6 7.8 8	37.1747 38.9449 40.7152 42.4854 44.0256 45.0258 47.7961 49.5663 51.3365 53.1067 55.48770 56.6472 58.4174 60.1876 61.9579 63.7281 65.4983 67.2685 67.2685 70.8090	8.2 8.4 8.6 8.8 9 9.2 9.4 9.6 9.8 10 10.2 10.4 10.6 10.8 11 11.2 11.4 11.6 11.8	72.5792 74.3494 76.1197 77.8899 79.6601 81.4303 83.2006 84.9708 85.512 90.2815 92.0517 93.8219 95.5921 95.5921 95.5921 97.3624 99.1326 100.9028 100.9028 100.62135	12.2 12.4 12.6 12.8 13 13.2 13.4 13.6 13.8 14 14.2 14.4 14.6 14.8 15 15.2 15.4 15.6 15.8 16	107.9837 109.7539 111.5242 113.2944 115.0646 118.8048 118.6051 120.3753 122.1455 123.9157 125.6860 127.4562 129.9264 130.9966 132.7669 134.5371 136.3073 138.0775 138.0775 139.8478 141.6180	16.2 16.4 16.6 16.8 17 17.2 17.4 17.6 17.8 18.5 19 19.5 20 5 21 22 23 24 25	143.3882 145.1584 146.9287 148.6989 150.4691 152.2393 154.0096 155.7798 157.5500 159.3202 163.7458 168.1714 172.5970 177.0225 181.4480 185.8736 194.7247 203.5759 212.4270 221.2781

## 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	N∙m	ft-lb	N∙m	ft-lb	N∙m	ft-Ib	N∙m	ft-Ib	N∙m	ft-lb
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	81	59.7425
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	82	60.4801
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	83	61.2177
4	5.4233	24	32.5396	44	59.6560	64	86.7723	84	113.8888	4	2.9502	24	17.7015	44	32.4527	64	47.2040	84	61.9552
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	85	62.6928
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	86	63.4303
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	87	64.1679
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	88	64.9545
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	89	65.6430
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	90	66.3806
11	14.9140	31	42.0304	51	69.1467	71	96.2631	91	123.3794	11	8.1132	31	22.8644	51	37.6157		52.3009	91	67.1181
12	16.2698	32	43.3862	52	70.5025	72	97.6189	92	124.7352	12	8.8507	32	23.6020	52	38.3532	/2	53.1045	92	67.8557
13	17.6256	33	44.7420	53	71.8583	73	98.9747	93	126.0910	.13	9.5883	33	24.3395	53	39.0908	/3	53.8420	93	68.5933
14	18.9815	34	46.0978	54	73.2142	74	100.3316	94	127.4468	14	10.3259	34	25.0771	54	39.8284	/4	54.5/20	94	69.3308
15	20.33/3	35	47.4536	55	74.5700	75	101.6862	95	128.8026	15	11.0634	35	25.8147	55	40.5659	/3	54.0547	95	/0.0684
	21.0931	36	48.8094	56	/5.9258	1/2	103.0422	96	130.1586	16	11.8010	36	26.5522	56	41.3035	1/2	56, 7002	90	70.8060
	23.0489	37	50.1653	57	77.2816	77	104.3980	97	131.5144	17	12.5386	37	27.2898	57	42.0410	//	50.7923	97	71.5435
18	24.404/	38	51.5211	58	/8.6374	/8	105.7538	98	132.8702	18	13.2761	38	28.0274	58	42.//86	78	50 0474	98	72.2811
12	23.7005	39	52.8/69	59	79.9933	19	107.1196	. 99	134.2260	19	14.0137	39	28.7649	59	43.5162	1 66	50,20/4	1.22	/3.018/
20	27.1104	40	54.2327	00	81.3491	80	108.4654		135.5820	20	14.7512	40	29.5025	00	44.2537	00	57.0050	100	/3./562

in. to mm

mm to in.

in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
.01	.254	.21	5.334	.41	10.414	.61	15.494	.81	20.574	.01	.00039	.21	.00827	.41	.01614	.61	.02402	.81	.03189
.02	.508	.22	5.588	.42	10.668	.62	15.748	.82	20.828	.02	.00079	.22	.00866	.42	.01654	.62	.02441	.82	.03228
.03	.762	.23	5.842	.43	10.922	.63	16.002	.83	21.082	.03	.00118	.23	.00906	.43	.01693	.63	.02480	.83	.03268
.04	1.016	.24	6.096	.44	11,176	.64	16.256	.84	21.336	.04	.00157	.24	.00945	.44	.01732	.64	.02520	.84	.03307
.05	1.270	.25	6.350	.45	11.430	.65	16.510	.85	21.590	.05	.00197	.25	.00984	.45	.01772	.65	.02559	.85	.03346
.06	1.524	.26	6.604	.46	11.684	.66	16.764	.86	21.844	.06	.00236	.26	.01024	.46	.01811	.66	.02598	.86	.03386
.07	1.778	.27	6.858	.47	11.938	.67	17.018	.87	22.098	.07	.00276	.27	.01063	.47	.01850	.67	.02638	.87	.03425
.08	2.032	.28	7.112	.48	12.192	.68	17.272	.88	22.352	.08	.00315	.28	.01102	.48	.01890	.68	.02677	.88	.03465
.09	2.286	.29	7.366	.49	12.446	.69	17.526	.89	22.606	.09	.00354	.29	.01142	.49	.01929	.69	.02717	.89	.03504
.10	2.540	.30	7.620	.50	12.700	.70	17.780	.90	22.860	.10	.00394	.30	.01181	.50	.01969	.70	.02756	.90	.03543
.11	2.794	.31	7.874	.51	12.954	.71	18.034	.91	23.114	.11	.00433	.31	.01220	.51	.02008	.71	.02795	.91	.03583
.12	3.048	.32	8,128	.52	13.208	.72	18.288	.92	23.368	.12	.00472	.32	.01260	.52	.02047	.72	.02835	.92	.03622
.13	3.302	.33	8.382	.53	13.462	.73	18.542	.93	23.622	.13	.00512	.33	.01299	.53	.02087	.73	.02874	.93	.03661
.14	3.556	.34	8.636	.54	13.716	.74	18.796	.94	23.876	.14	.00551	.34	.01339	.54	.02126	.74	.02913	.94	.03701
.15	3.810	.35	8.890	.55	13.970	.75	19.050	.95	24.130	.15	.00591	.35	.01378	.55	.02165	.75	.02953	.95	.03740
.16	4.064	.36	9.144	.56	14.224	.76	19.304	.96	24.384	.16	.00630	.36	.01417	.56	.02205	.76	.02992	.96	.03780
.17	3.318	.37	9.398	.57	14.478	.77	19.558	.97	24.638	.17	.00669	.37	.01457	.57	.02244	.77	.03032	.97	.03819
.18	4.572	.38	9.652	.58	14.732	.78	19.812	.98	24.892	.18	.00709	.38	.01496	.58	.02283	.78	· .03071	.98	.03858
.19	4.826	.39	9.906	.59	14.986	.79	20.066	.99	25.146	.19	.00748	.39	.01535	.59	.02323	.79	.03110	.99	.03898
.20	5.080	.40	10.160	.60	15.240	.80	20.320	1.00	25.400	.20	.00787	.40	.01575	.60	.02362	.80	.03150	1.00	.03937
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## **TORQUE REFERENCES**

SPECIFIED TORQUE FOR STANDARD BOLTS

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								
Class	Diameter	Pitch		Hexagon head l	polt	H	lexagon flange	bolt			
	mm	mm	N•m	kgf-cm	ft-lbf	N•m	kgf-cm	ft-lbf			
	6	1	5	55	48 inlbf	6	60	52 inlbf			
	8	1.25	12.5	130	9	14	145	10			
4T	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						
	6	1	6.5	65	56 inlbf	7.5	75	65 inlbf			
	8	1.25	15.5	160	12	17.5	175	13			
5T	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						
	6	1	8	80	69 inIbf	9	90	78 inlbf			
	8	1.25	19	195	14	21	210	15			
6T	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	1 <i>7</i> 0	1,750	127	—					
	6	1	10.5	110	8	12	120	9			
	8	1.25	25	260	19	28	290	21			
71	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	— ·					
	8	1.25	29	300	22	33	330	24			
8T	10	1.25	61	620	45	68	690	50			
	12	1.25	110	1,100	80	120	1,250	90			
	8	1 25	34	340	25	37	380	27			
9T	10	1.25	70	710	51	78	790	57			
	12	1.25	125	1,300	94	140	1,450	105			
	8	1 25	38	390	28	42	430	31			
10T	10	1.25	78	800	58	88	890	64			
	12	1.25	140	1,450	105	155	1,600	116			
	<u> </u>	1.25	12	130	31	<u>۸</u> 7	480	35			
117	10	1.25	87	890	64	97	990	72			
. , ,	12	1.25	155	1,600	116	175	1,800	130			