

# TORQUE SPECIFICATIONS

## STANDARD BOLTS AND NUTS



# DATSUN

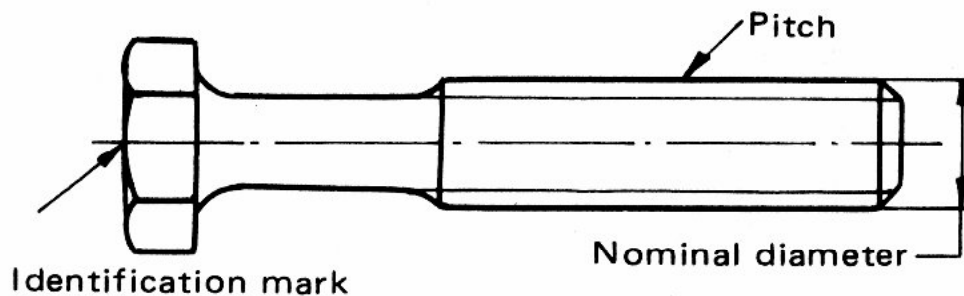
TECHNICAL ENGINEERING  
NISSAN MOTOR CORPORATION IN U.S.A.

# TIGHTENING TORQUE OF STANDARD BOLTS AND NUTS

Some of the fasteners used in our vehicles have been increased in strength resulting in some confusion in the tightening torque of new parts. Therefore, the standard bolt and nut tightening torque values are arranged in tables here for reference in service work.

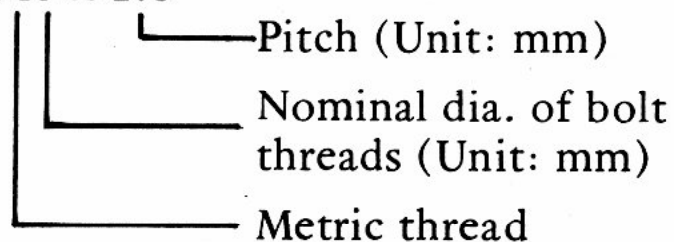
## Classification of Bolts.

Bolt tightening torque changes according to the material, thread, nominal diameter and pitch of the bolt, and to the condition of the object to be bolted (e.g., made of aluminum, or of plastics, or using a packing, or having an extremely uneven surface).






## Metric Thread Identification Codes:

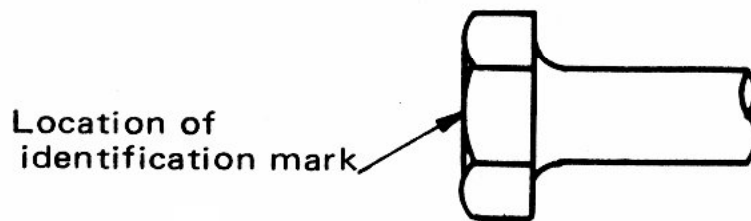
Example . . . .M6 x 1.0



## Materials.

The bolts are classified into three types by tensile strength and identified by the code “4T”, “7T” and “9T”. They are identified by a figure on the head as follows:

	<i>(Tensile strength)</i>	<i>Id mark</i>
4T	More than 40 kg/mm <sup>2</sup> (57,000 lb/in <sup>2</sup> )	
7T	More than 70 kg/mm <sup>2</sup> (100,000 lb/in <sup>2</sup> )	
9T	More than 90 kg/mm <sup>2</sup> (128,000 lb/in <sup>2</sup> )	



## Nominal Diameter.

Nominal diameters of bolts are identified by “M6”, “M10”, “M12”, etc.

Example . . . . M6

└── Basic major diameter of the thread

└── Metric thread

## Pitch.

The distance, measured parallel to the thread axis, between corresponding points on adjacent thread

forms in the same axial plane and on the same side of the axis. Identified by the code 1.0, 1.25, 1.5, etc. in millimeters.

**Notes:** The tables given herein indicate exclusively the bolt torque settings under standard conditions.

1. Torque settings designated in Service Manuals or Data and Specifications should be utilized.

2. Torque settings indicated on the tables herein can not be used directly on objects made of aluminum and plastics.

3. These tables are applicable only when *Nissan Standard Parts* are used in tightening.

4. The bolts to which these tables are applicable have embossed mark on the head as follows:

4T . . . 4 (Embossed number)

7T . . . 7 (Embossed number)

9T . . . 9 (Embossed number)

**Table 1 – Tightening Torque of Class 4T Bolts**

Identification mark:



Nominal diameter	Pitch mm	Tightening torque, kg-m (ft-lb)		
		Standard	Applicable range	Max. allowable torque
M3	0.5	0.05 (0.36)	0.043 to 0.057 (0.31 to 0.41)	0.07 (0.51)
M3.5	0.6	0.07 (0.51)	0.060 to 0.080 (0.43 to 0.58)	0.10 (0.72)
M4	0.7	0.12 (0.87)	0.10 to 0.14 (0.72 to 1.01)	0.16 (1.16)
M5	0.8	0.23 (1.66)	0.20 to 0.26 (1.45 to 1.88)	0.31 (2.24)
M6	1.0	0.38 (2.75)	0.33 to 0.44 (2.4 to 3.2)	0.51 (3.69)
M8	1.25	0.93 (6.73)	0.8 to 1.1 (5.8 to 8.0)	1.2 (8.7)
	1.0	0.98 (7.09)	0.8 to 1.1 (5.8 to 8.0)	1.3 (9.4)
M10	1.5	1.9 (13.7)	1.6 to 2.2 (12 to 16)	2.5 (18.1)
	1.25	1.9 (13.7)	1.6 to 2.2 (12 to 16)	2.6 (18.8)
M12	1.75	3.2 (23.1)	2.7 to 3.7 (20 to 27)	4.3 (31.1)
	1.25	3.6 (26.0)	3.1 to 4.1 (22 to 30)	4.8 (34.7)
M14	1.5	5.5 (39.8)	4.7 to 6.3 (34 to 46)	7.3 (52.8)
M16	1.5	8.5 (61.5)	7.2 to 9.8 (52 to 71)	11 (80)
M18	1.5	12.(87)	10 to 14 (72 to 101)	16 (116)
M20	1.5	17 (123)	14.5 to 19.5 (105 to 141)	23 (166)
M22	1.5	23 (166)	19.5 to 26.5 (141 to 192)	31 (224)

- (1) Except in a specific case, the maximum allowable tightening torque should not be exceeded.
- (2) In the case of the hex. self-locking nut, screw-in torque should be added.
- (3) When tightening bolts and nuts with packing in place, the packing characteristics should be taken into consideration; that is, from the normal face pressure of that packing, tightening torque should be computed so that an appropriate bolt is selected and that tightening torque is determined.
- (4) The torque settings indicated on the table are for those in the case where bolt and nut lubrication, surface treatments and joining seat faces are under the ordinary condition. Therefore, in case the frictional resistance of screws or seating surfaces is considered extremely abnormal, making an appropriate compensation is desirable.
- (5) The bolt classification used herein is the indicator of tensile strength and is denoted by .

**Table 2 – Tightening Torque of Class 7T Bolts**

Identification mark:

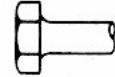


Nominal diameter	Pitch mm	Tightening torque, kg-m (ft-lb)		
		Standard	Applicable range	Max. allowable torque
M3	0.5	0.08 (0.58)	0.068 to 0.092 (0.49 to 0.67)	0.11 (0.80)
M3.5	0.6	0.12 (0.87)	0.102 to 0.138 (0.74 to 1.00)	0.16 (1.16)
M4	0.7	0.20 (1.45)	0.17 to 0.23 (1.23 to 1.66)	0.26 (1.88)
M5	0.8	0.39 (2.82)	0.33 to 0.45 (2.4 to 3.3)	0.52 (3.76)
M6	1.0	0.64 (4.63)	0.54 to 0.74 (3.4 to 5.4)	0.85 (6.15)
M8	1.25	1.6 (11.6)	1.4 to 1.8 (10.1 to 13.0)	2.1 (15.2)
	1.0	1.6 (11.6)	1.4 to 1.8 (10.1 to 13.0)	2.2 (15.9)
M10	1.5	3.1 (22.4)	2.6 to 3.6 (19 to 26)	4.1 (29.7)
	1.25	3.2 (23.1)	2.7 to 3.7 (20 to 27)	4.3 (31.1)
M12	1.75	5.4 (39.1)	4.6 to 6.2 (33 to 45)	7.2 (52.1)
	1.25	6.0 (43.4)	5.1 to 6.9 (37 to 50)	8.0 (57.9)
M14	1.5	9.1 (65.8)	7.7 to 10.5 (56 to 76)	12 (87)
M16	1.5	14 (101)	12 to 16 (87 to 116)	19 (137)
M18	1.5	21 (152)	18 to 24 (130 to 174)	27 (195)
M20	1.5	29 (210)	24.5 to 33.5 (177 to 242)	38 (275)
M22	1.5	39 (282)	33 to 34 (239 to 235)	52 (376)

- (1) Except in a specific case, the maximum allowable tightening torque should not be exceeded.
- (2) In the case of the hex. self-locking nut, screw-in torque should be added.
- (3) When tightening bolts and nuts with packing in place, the packing characteristic should be taken into consideration; that is, from the normal face pressure of that packing, tightening torque should be computed so that an appropriate bolt is selected and that tightening torque is determined.
- (4) The torque settings indicated on the table are for those in the case where bolt and nut lubrication, surface treatments and joining seat faces are under the ordinary condition. Therefore, in case the frictional resistance of screws or seating surfaces is considered extremely abnormal, making an appropriate compensation is desirable.
- (5) The bolt classification used herein is the indicator of tensile strength and is denoted by .

**Table 3 – Tightening Torque of Class 9T Bolts**

Identification mark:



Nominal diameter	Pitch mm	Tightening torque, kg-m (ft-lb)		
		Standard	Applicable range	Max. allowable torque
M3	0.5	0.12 (0.87)	0.102 to 0.138 (0.74 to 1.00)	0.16 (1.16)
M3.5	0.6	0.18 (1.30)	0.153 to 0.207 (1.11 to 1.50)	0.24 (1.74)
M4	0.7	0.28 (2.03)	0.24 to 0.32 (1.74 to 2.31)	0.38 (2.75)
M5	0.8	0.56 (4.06)	0.48 to 0.64 (3.5 to 4.6)	0.75 (5.42)
M6	1.0	0.92 (6.65)	0.8 to 1.1 (5.8 to 8.0)	1.2 (8.7)
M8	1.25	2.2 (15.9)	1.9 to 2.5 (14 to 18)	3.0 (21.7)
	1.0	2.4 (17.4)	2.0 to 2.8 (15 to 20)	3.1 (22.4)
M10	1.5	4.4 (31.8)	3.7 to 5.1 (27 to 37)	5.9 (42.7)
	1.25	4.6 (33.3)	3.9 to 5.3 (28 to 38)	6.1 (44.1)
112	1.75	7.8 (56.4)	6.6 to 9.0 (48 to 65)	10 (72)
	1.25	8.6 (62.2)	7.3 to 10 (53 to 72)	11 (80)
M14	1.5	13 (94)	11 to 15 (80 to 108)	18 (130)
M16	1.5	20 (145)	17 to 23 (123 to 166)	27 (195)
M18	1.5	30 (217)	25.5 to 34.5 (184 to 250)	39 (282)
M20	1.5	41 (297)	35 to 47 (253 to 340)	55 (398)
M22	1.5	56 (405)	47.5 to 64.5 (344 to 467)	75 (542)

- (1) Except in a specific case, the maximum allowable tightening torque should not be exceeded.
- (2) In the case of the hex. self-locking nut, screw-in torque should be added.
- (3) When tightening bolts and nuts with packing in place, the packing characteristic should be taken into consideration; that is, from the normal face pressure of that packing, tightening torque should be computed so that an appropriate bolt is selected and that tightening torque is determined.
- (4) The torque settings indicated on the table are for those in the case where bolt and nut lubrication, surface treatments and joining seat faces are under the ordinary condition. Therefore, in case the frictional resistance of screws or seating surfaces is considered extremely abnormal, making an appropriate compensation is desirable.
- (5) The bolt classification used herein is the indicator of tensile strength and is denoted by