1.5 TORQUE SPECIFICATIONS

Screws, bolts and nuts must be tightened to the specified torque using a torque wrench. Several screws, bolts and nuts such as those used on the cylinder head must be tightened in the proper sequence and at the proper torque.

1.5.1 Torque Specifications For Special Use Screws, Bolts and Nuts

In removing and applying the screws, bolts and nuts marked with "*", a pneumatic wrench or similar tool, if employed, must be used with care. Failure to do so may result in stripped or seized screws, bolts and nuts.

When replacing "*" marked screws, bolt and nuts, apply engine oil to their threads and seats before reassembly.

The letter "M" in size and pitch means that the screw, bolt or nut dimension is metric. The size is the nominal outside diameter in mm of the threads. The pitch is the nominal distance in mm between two threads.

Item	Size x Pitch	N.m	kgf.m	ft-lbs
Cylinder Head Cover Bolt	M6 x 1.0	6.9 to 11.3	0.7 to 1.15	5.1 to 8.32
*Cylinder Head Bolt	M11 x 1.25	93.1 to 98.0	9.5 to 10.0	68.7 to 72.3
*Main Bearing Case Bolt 1	M9 x 1.25	46.1 to 50.9	4.7 to 5.2	34.0 to 37.6
*Main Bearing Case Bolt 2	M10 x 1.25	68.6 to 73.5	7.0 to 7.5	50.6 to 54.2
*Flywheel Bolt	M12 x 1.25	98.09 to 107.8	10.0 to 11.0	72.3 to 79.5
*Connecting Rod Bolt	M8 x 1.0	44.1 to 49.0	4.5 to 5.0	32.5 to 36.2
*Rocker Arm Bracket Bolt	M8 x 1.25	23.5 to 27.5	2.4 to 2.8	17.4 to 20.3
*Idle Gear Shaft Bolt	M8 x 1.25	23.5 to 27.5	2.4 to 2.8	17.4 to 20.3
Crank Pulley Mounting Nut	-	137.3 to 156.9	14.0 to 16.0	101.3 to 115.7
*Bearing Case Cover Bolt	M8 x 1.25	23.5 to 27.5	2.4 to 2.8	17.4 to 20.3
Glow Plug	M10 x 1.25	19.6 to 24.5	2.0 to 2.5	14.5 to 18.1
Nozzle Holder Clamp Bolt	-	25.5 to 29.4	2.6 to 3.0	18.8 to 21.7
Oil Switch Taper Bolt	PT1/8	14.7 to 19.6	1.5 to 2.0	10.8 to 14.5
Injection Pipe Retaining Nut	M12 x 1.5	14.7 to 24.5	1.5 to 2.5	10.8 to 18.1
Overflow Pipe Assembly Retaining Bolt	-	9.8 to 11.3	1.0 to 1.15	7.2 to 8.3
Camshaft Retaining Bolt	M8 x 1.25	23.5 to 27.5	2.4 to 2.8	17.4 to 20.3
Hi-idling Body	-	44.1 to 49.0	4.5 to 5.0	32.6 to 36.3

1.5.2 Torque Specifications For General Use Screws, Bolts and Nuts

	Standard Screw and Bolt Grade 4			Special Screw and Bolt Grade 7		
	N.m	kgf.m	ft-lbs	N.m	kgf.m	ft-lbs
M6	7.9 to 9.3	0.80 to 0.95	5.8 to 6.9	9.8 to 11.3	1.00 to 1.15	7.23 to 8.32
M8	17.7 to 20.6	1.8 to 2.1	13.0 to 15.2	23.5 to 27.5	2.4 to 2.8	17.4 to 20.3
M10	39.2 to 45.1	4.0 to 4.6	28.9 to 33.3	48.1 to 55.9	4.9 to 5.7	35.4 to 41.2
M12	62.8 to 72.6	6.4 to 7.4	46.3 to 53.5	77.5 to 90.2	7.9 to 9.2	57.1 to 66.5

Screw and bolt material grades are shown by numbers punched on the screw and bolt heads. Prior to tightening, be sure to check out the numbers as shown below

Punched Number	Screw And Bolt Material Grade
None or 4	Standard Screw And Bolt SS400, S20C
7	Special Screw And Bolt S43C, S48C (Refined)