



Tightening Torques

Engine Control System

Item	kgf·m	N·m	lb·ft
ECM installation nut/screw	1.0 - 1.2	9.8 - 11.8	7.2 - 8.7
ECM bracket installation bolt / nut	1.0 - 1.2	9.8 - 11.8	7.2 - 8.7
Manifold Absolute Pressure Sensor (MAPS) & Intake Air Temperature Sensor (IATS) mounting bolt	0.9 - 1.1	8.8 - 10.8	6.5 - 8.0
Crankshaft position sensor installation bolt	1.0 - 1.2	9.8 - 11.8	7.2 - 8.7
Camshaft position sensor (Bank 1/Intake) installation bolt	0.7 -1.0	6.8 - 9.8	5.0 - 7.2
Camshaft position sensor (Bank 1/Exhaust) installation bolt	0.7 -1.0	6.8 - 9.8	5.0 - 7.2
Camshaft position sensor (Bank 2/Intake) installation bolt	0.7 -1.0	6.8 - 9.8	5.0 - 7.2
Camshaft position sensor (Bank 2/Exhaust) installation bolt	0.7 -1.0	6.8 - 9.8	5.0 - 7.2
Knock sensor #1 (Bank 1) installation bolt	1.6 - 2.4	15.7 - 23.5	11.6 - 17.4
Knock sensor #2 (Bank 2) installation bolt	1.6 - 2.4	15.7 - 23.5	11.6 - 17.4
Heated oxygen sensor (Bank 1 / sensor 1)	3.6 - 4.6	35.3 - 45.1	26.0 - 33.3
Heated oxygen sensor (Bank 1 / sensor 2)	3.6 - 4.6	35.3 - 45.1	26.0 - 33.3
Heated oxygen sensor (Bank 2 / sensor 1)	3.6 - 4.6	35.3 - 45.1	26.0 - 33.3
Heated oxygen sensor (Bank 2 / sensor 2)	3.6 - 4.6	35.3 - 45.1	26.0 - 33.3
Rail pressure sensor	3.0 - 3.5	29.4 - 34.3	21.7 - 25.3
CVVT oil temperature sensor & oil pressure sensor	1.5 - 2.2	14.7 - 21.6	10.8 - 15.9
Electronic throttle body installation bolt	1.0 - 1.2	9.8 - 11.8	7.2 - 8.7
Purge control solenoid valve bracket installation bolt	0.8 - 1.2	7.8 - 11.8	5.8 - 8.7
Variable force solenoid (Bank 1 / Intake) installation bolt	1.0 - 1.2	9.8 - 11.7	7.3 - 8.6
CVVT oil control valve (Bank 1 / Exhaust) installation bolt	1.0 - 1.2	9.8 - 11.7	7.3 - 8.6
Variable force solenoid (Bank 2 / Intake) installation bolt	1.0 - 1.2	9.8 - 11.7	7.3 - 8.6
CVVT oil control valve (Bank 2 / Exhaust) installation bolt	1.0 - 1.2	9.8 - 11.7	7.3 - 8.6
Variable intake solenoid valve installation nut	0.8 - 1.2	7.8 - 11.8	5.8 - 8.7

Fuel Delivery System

Item	kgf·m	N·m	lb·ft
Fuel tank band installation nut	4.5 - 5.5	44.1 - 53.9	32.5 - 39.8
Fuel pump installation bolt	0.2 - 0.3	2.0 - 2.9	1.4 - 2.2
Filler-neck assembly installation nut	0.4 - 0.6	3.9 - 5.9	2.9 - 4.3
Accelerator pedal module installation bolt	0.9 - 1.4	8.8 - 13.7	6.5 - 10.1
Delivery pipe installation bolt	1.9 - 2.4	18.6 - 23.5	13.7 - 17.4
High pressure fuel pipe bracket installation bolt	1.0 - 1.2	9.8 - 11.8	7.2 - 8.7
High pressure fuel pump installation bolt	1.3 - 1.5	12.8 - 14.7	9.4 - 10.9
High pressure fuel pipe flange nut	3.0 - 3.6	29.4 - 35.3	21.7 - 26.0