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## 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 - 11.7  | 7.3 - 8.6   |
| 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 |

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