# Fastener Specifications

**Fastener Specifications**

| Application | Specification | |
|---|---|---|
| | Metric | English |
| Camshaft Position Sensor Bolt | 10 N•m | 89 lb in |
| Camshaft Sprocket Bolt | 140 N•m | 103 lb ft |
| Camshaft Thrust Plate Screw | 10 N•m | 89 lb in |
| Connecting Rod Bearing Cap Bolt | | |
| • First Pass | 25 N•m | 18 lb ft |
| • Final Pass | 110 degrees | |
| Coolant Drain Plug | 19 N•m | 14 lb ft |
| Coolant Temperature Sensor | 23 N•m | 17 lb ft |
| Crankshaft Balancer Bolt | 160 N•m | 118 lb ft |
| Crankshaft Main Bearing Cap Bolt/Stud | | |
| • First Pass | 50 N•m | 37 lb ft |
| • Final Pass | 77 degrees | |
| Crankshaft Oil Deflector Nut | 25 N•m | 18 lb ft |
| Crankshaft Position Sensor Shield Nut | 11 N•m | 97 lb in |
| Crankshaft Position Sensor Stud – Side of Engine Block | 11 N•m | 97 lb in |

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|---|---|---|
| Cylinder Head Bolt | | |
| First Pass | 60 N•m | 44 lb ft |
| Final Pass | 95 degrees | |
| Cylinder Head Plug | 20 N•m | 15 lb ft |
| Drive Belt Idler Pulley Bolts | 50 N•m | 37 lb ft |
| Drive Belt Tensioner Bolt | 50 N•m | 37 lb ft |
| EGR Valve Assembly Bolt | 30 N•m | 22 lb ft |
| EGR Valve Pipe Bolt – EGR | 25 N•m | 18 lb ft |
| Engine Block Plug | 60 N•m | 44 lb ft |
| Engine Block Heater | 60 N•m | 44 lb ft |
| Engine Front Cover Bolt | | |
| • Large Bolt | 55 N•m | 41 lb ft |
| • Medium Bolt | 55 N•m | 41 lb ft |
| • Small Bolt | 27 N•m | 20 lb ft |
| Engine Mount Bracket to Engine Mount Bolts | 50 N•m | 37 lb ft |
| Engine Mount Bracket to Oil Pan Bolts | 58 N•m | 43 lb ft |
| Engine Mount to Frame | 47 N•m | 35 lb ft |
| Engine Mount Strut and A/C Compressor Bracket Bolt | 50 N•m | 37 lb ft |
| Engine Mount Strut Bracket to Body Bolts | 50 N•m | 37 lb ft |
| Engine Mount Strut Bracket Through Bolt | 48 N•m | 36 lb ft |
| Engine Mount Strut to Engine Bolts | 50 N•m | 37 lb ft |

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|---|---|---|
| Engine Mount Strut and Lift Bracket Bolt – Engine Lift Rear | 70 N•m | 52 lb ft |
| Engine Mount Strut and Generator Bracket Bolt | 50 N•m | 37 lb ft |
| Engine Mount Strut and Support Bracket Bolt | 25 N•m | 18 lb ft |
| Engine Oil Pressure Indicator Switch | 16 N•m | 12 lb ft |
| Engine Wiring Harness Bracket Bolt | 13 N•m | 115 lb in |
| EVAP Purge Valve Bolt | 16 N•m | 12 lb ft |
| Exhaust Crossover Pipe Heat Shield Bolt | 10 N•m | 89 lb in |
| Exhaust Crossover Pipe Stud/Nut | 25 N•m | 18 lb ft |
| Exhaust Manifold Heat Shield Bolt | 10 N•m | 89 lb in |
| Exhaust Manifold Nut | 16 N•m | 12 lb ft |
| Exhaust Manifold Stud | 18 N•m | 13 lb ft |
| Flywheel Bolt | 70 N•m | 52 lb ft |
| Front Oil Gallery Plug – Small | 19 N•m | 14 lb ft |
| Front Oil Gallery Plug – Large | 33 N•m | 24 lb ft |
| Fuel Feed Pipe to Fuel Injector Rail Bolt | 10 N•m | 89 lb in |
| Fuel Injector Rail Bolt | 10 N•m | 89 lb in |
| Heated Oxygen Sensor | 42 N•m | 31 lb ft |
| Heater Inlet Pipe Nut | 25 N•m | 18 lb ft |
| Heater Inlet Pipe Stud | 35 N•m | 26 lb ft |
| Ignition Coil Bracket Bolt/Nut/Stud | 25 N•m | 18 lb ft |
| Intake Manifold Coolant Pipe Bolt | 10 N•m | 89 lb in |

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|---|---|---|
| Knock Sensor | 25 N•m | 18 lb ft |
| Lower Intake Manifold Bolt – Center | 20 N•m | 15 lb ft |
| Lower Intake Manifold Bolt – Corner | 25 N•m | 18 lb ft |
| MAP Sensor Bolt | 10 N•m | 89 lb in |
| Oil Cooler Connector | 50 N•m | 37 lb ft |
| Oil Cooler Fitting | 19 N•m | 14 lb ft |
| Oil Cooler Pipe Bolt | 10 N•m | 89 lb in |
| Oil Filter Adapter Bolt | 25 N•m | 18 lb ft |
| Oil Filter | 30 N•m | 22 lb ft |
| Oil Filter Bypass Hole Plug | 19 N•m | 14 lb ft |
| Oil Filter Fitting | 39 N•m | 29 lb ft |
| Oil Level Indicator Tube Bolt | 25 N•m | 18 lb ft |
| Oil Pan Bolt | 25 N•m | 18 lb ft |
| Oil Pan Drain Plug | 25 N•m | 18 lb ft |
| Oil Pan Side Bolt | | |
| • First Pass | 50 N•m | 37 lb ft |
| • Final Pass | 50 degrees | |
| Oil Pump Cover Bolt | 10 N•m | 89 lb in |
| Oil Pump Drive Gear Clamp Bolt | 36 N•m | 27 lb ft |
| Oil Pump Mounting Bolt | 41 N•m | 30 lb ft |
| PCV Tube Clip Bolt – Foul Air | 10 N•m | 89 lb in |

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|---|---|---|
| Piston Oil Nozzle Bolt | 10 N•m | 89 lb in |
| Rear Oil Gallery Plug – 1/4 inch | 19 N•m | 14 lb ft |
| Rear Oil Gallery Plug – 3/8 inch | 33 N•m | 24 lb ft |
| Spark Plug | 15 N•m | 11 lb ft |
| Thermostat Bypass Pipe to Engine Front Cover Bolt | 10 N•m | 89 lb in |
| Thermostat Bypass Pipe to Throttle Body Nut/Bolt | 10 N•m | 89 lb in |
| Throttle Body Bolt | 10 N•m | 89 lb in |
| Throttle Body Stud | 6 N•m | 53 lb in |
| Timing Chain Dampener Bolt | 21 N•m | 15 lb ft |
| Transmission to Engine Bolts | 75 N•m | 55 lb ft |
| Transmission to Engine Brace Bolts | 43 N•m | 32 lb ft |
| Transmission Torque Converter Cover Bolts | 10 N•m | 89 lb in |
| Transmission Torque Converter to Flex Plate Bolts | 63 N•m | 47 lb ft |
| Upper Intake Manifold Bolt/Stud | 25 N•m | 18 lb ft |
| Valve Lifter Guide Bolt | 10 N•m | 89 lb in |
| Valve Rocker Arm Bolt | 32 N•m | 24 lb ft |
| Valve Rocker Arm Cover Bolt | 10 N•m | 89 lb in |
| Water Outlet Bolt | 25 N•m | 18 lb ft |
| Water Pump Bolt | 10 N•m | 89 lb in |
| Water Pump Pulley Bolt | 25 N•m | 18 lb ft |
| Wiring Harness Clamp Bolt | 20 N•m | 15 lb ft |