

Application	Specification	
	Metric	English
• First Pass	30 N.m ¹	22 lb ft ¹
• Final Pass	100 Degrees ¹	
Camshaft Position Actuator Solenoid Valve Bolt	10 N.m	89 lb in
Camshaft Position Sensor Bolt	10 N.m	89 lb in
Catalytic Converter Brace Bolt	22 N.m	16 lb ft
Catalytic Converter Brace Bracket Bolt	22 N.m	16 lb ft
Catalytic Converter Nut - Exhaust Manifold ¹	50 N.m ¹	37 lb ft ¹
Connecting Rod Bolt ¹		
• First Pass	25 N.m ¹	18 lb ft ¹
• Final Pass	110 Degrees ¹	
Crankshaft Balancer Bolt ¹		
• First Pass	150 N.m ¹	111 lb ft ¹
• Final Pass	140 Degrees ¹	
Crankshaft Position Sensor Bolt	10 N.m	89 lb in
Cylinder Head Bolt ¹		
• First Pass	30 N.m ¹	22 lb ft ¹
• Final Pass	190 Degrees ¹	
Cylinder Head Core Hole Plug	50 N.m	37 lb ft
Cylinder Head Oil Gallery Plug	40 N.m	30 lb ft
Drive Belt Tensioner Bolt	58 N.m	43 lb ft
Engine Block Oil Gallery Plug - Large, Left Side and Rear Engine Block	65 N.m	48 lb ft
Engine Block Oil Gallery Plug - Large, Left Side Lower Crankcase	65 N.m	48 lb ft
Engine Block Oil Gallery Plug - Small, Rear Engine Block	40 N.m	30 lb ft
Engine Coolant Air Bleed Pipe Bolt	10 N.m	89 lb in
Engine Coolant Heater Hole Plug	60 N.m	44 lb ft
Engine Coolant Thermostat Housing Bolt	10 N.m	89 lb in
Engine Front Cover Bolt - M6	10 N.m	89 lb in
Engine Front Cover Bolt - M8	25 N.m	18 lb ft
Engine Front Cover Bolt - M10 ¹		
• First Pass	15 N.m ¹	11 lb ft ¹
• Final Pass	130 Degrees ¹	
Engine Lift Bracket Bolt - Front	25 N.m	18 lb ft

Application	Specification	
	Metric	English
Engine Lift Bracket Bolt - Rear	25 N.m	18 lb ft
Engine Oil Cooler Bolt	10 N.m	89 lb in
Engine Oil Cooler Connector	50 N.m	37 lb ft
Engine Oil Level Indicator Switch Bolt	10 N.m	89 lb in
Engine Oil Pressure Sensor	35 N.m	26 lb ft
Engine Mount Bolt ¹	62 N.m	46 lb ft
Exhaust Manifold Bolt ¹	20 N.m ¹	21 lb ft ¹
Exhaust Manifold Brace Bolt	25 N.m	18 lb ft
Exhaust Manifold Brace Nut ¹	25 N.m ¹	18 lb ft ¹
Exhaust Manifold Heat Shield Bolt	14 N.m	124 lb in
Exhaust Manifold Stud	20 N.m	21 lb ft
Flywheel Bolt ¹		
<ul style="list-style-type: none"> • First Pass 	30 N.m ¹	22 lb ft ¹
<ul style="list-style-type: none"> • Final Pass 	80 Degrees ¹	
Fuel Feed Intermediate Pipe Nut		
<ul style="list-style-type: none"> • First Pass - Fuel Feed Intermediate Pipe Nut to Fuel Rail 	15 N.m	11 lb ft
<ul style="list-style-type: none"> • Second Pass - Fuel Feed Intermediate Pipe Nut to Fuel Pump 	15 N.m	11 lb ft
<ul style="list-style-type: none"> • Third Pass - Fuel Feed Intermediate Pipe Nut to Fuel Rail 	30 N.m	22 lb ft
<ul style="list-style-type: none"> • Final Pass - Fuel Feed Intermediate Pipe Nut to Fuel Pump 	30 N.m	22 lb ft
Fuel Feed Pipe	30 N.m	22 lb ft
Fuel Feed Pipe Clip Stud	10 N.m	89 lb in
Fuel Injection Fuel Rail Bolt	25 N.m	18 lb ft
Fuel Injection Fuel Rail Fuel Pressure Sensor	33 N.m	24 lb ft
Fuel Pump Bolt		
<ul style="list-style-type: none"> • First Pass 	8 N.m	71 lb in
<ul style="list-style-type: none"> • Final Pass 	50 Degrees	
Fuel Pump Shield Bolt	10 N.m	89 lb in
Ignition Coil Bolt	10 N.m	89 lb in
Intake Manifold Bolt	12 N.m	106 lb in
Intake Manifold Cover Bolt	9 N.m	80 lb in
Knock Sensor Bolt	25 N.m	18 lb ft
Lower Crankcase Bolt - Crankshaft Bearing ¹		
<ul style="list-style-type: none"> • First Pass 	20 N.m ¹	15 lb ft ¹

Application	Specification	
	Metric	English
• Final Pass	140 Degrees ¹	
Lower Crankcase Bolt - Perimeter ¹	25 N.m ¹	18 lb ft ¹
Manifold Absolute Pressure (MAP) Sensor Bolt	5 N.m	44 lb in
Oil Pan Baffle Bolt	10 N.m	89 lb in
Oil Pan Bolt, Long	10 N.m	89 lb in
Oil Pan Bolt, Perimeter	25 N.m	18 lb ft
Oil Pan Bolt, Lower	10 N.m	89 lb in
Oil Pan Drain Plug	25 N.m	18 lb ft
Oil Pump Suction Pipe Bolt	10 N.m	89 lb in
Oil Pump Flow Control Valve Bolt	10 N.m	89 lb in
Oil Filter	3/4 to 1 full turn after gasket makes contact with the sealing surface on the filter mounting flange	
Oxygen Sensor	42 N.m	31 lb ft
PCV Valve Bolt	10 N.m	89 lb in
Piston Oil Nozzle Bolt	10 N.m	89 lb in
Spark Plug	20 N.m	15 lb ft
Thermal Bypass Pipe Bolt	10 N.m	89 lb in
Throttle Body Bolt	10 N.m	89 lb in
Timing Chain Cover Bolt - Engine Front Cover	5 N.m	44 lb in
Timing Chain Guide Bolt	25 N.m	18 lb ft
Timing Chain Tensioner Pivot Arm Bolt	25 N.m	18 lb ft
Timing Chain Tensioner Shoe Bolt	25 N.m	18 lb ft
Turbocharger Coolant Feed and Return Pipe Bolt	35 N.m	26 lb ft
Turbocharger Coolant Feed Pipe Bolt	10 N.m	89 lb in
Turbocharger Coolant Return Pipe to Camshaft Cover Heat Shield Bolt	14 N.m	124 lb in
Turbocharger Exhaust Pipe Stud	25 N.m	18 lb ft
Turbocharger Nut ¹		
• First Pass	30 N.m ¹	22 lb ft ¹
• Final Pass	90 Degrees ¹	
Turbocharger Oil Feed Pipe Bolt	35 N.m	26 lb ft
Turbocharger Oil Feed and Return Pipe Bolt	10 N.m	89 lb in
Vacuum Pump Bolt	10 N.m	89 lb in
Water Outlet Bolt	10 N.m	89 lb in
Water Pump Bolt	25 N.m	18 lb ft
Water Pump Housing Bolt	10 N.m	89 lb in
¹ Use NEW fastener.		

APPROXIMATE FLUID CAPACITIES

Application	Specification	
	Metric	English
LCV, LTG		
Oil Capacity - 2WD	4.7L	5.0 quarts
Oil Capacity - AWD	5.7L	6.0 quarts