Fastener Specifications

Fastener Tightening Specifications

	Specification	
Application	Metric	English
Accessory Drive Belt Idler Pulley Bolt	50 Y	37 lb ft
Accessory Drive Belt Tensioner Bolt	50 Y	37 lb ft
Air Conditioning (A/C) Compressor and Condenser Hose Bolt	27 Y	20 lb ft
A/C Drive Belt Idler Pulley Bolt	50 Y	37 lb ft
A/C Drive Belt Tensioner Bolt	25 Y	18 lb ft
Air Injection Reaction (AIR) Pipe-to-Exhaust Manifold Bolts	20 Y	15 lb ft
AIR Right Side Pipe Bracket-to-Cylinder Head Bolt	20 Y	15 lb ft
Automatic Transmission Fluid Cooler Line Clamp Bolt – at Oil Pan	12 Y	106 lb in
Automatic Transmission Fluid Cooler Line Clamp Bolt – at Right Transmission Cover	2.2 Y	19 lb in
Automatic Transmission Fluid Cooler Pipe	25 Y	18 lb ft
Camshaft Retainer Bolts	25 Y	18 lb ft
Camshaft Sensor Bolt	25 Y	18 lb ft
Camshaft Sprocket Bolts	35 Y	26 lb ft
Connecting Rod Bolts – First Pass	20 Y	15 lb ft
Connecting Rod Bolts – Final Pass	85 degrees	
Coolant Temperature Gauge Sensor	20 Y	15 lb ft
Crankshaft Balancer Bolt – Installation Pass-to Ensure the Balancer is Completely Installed	330 Y	240 lb ft
© 2017 General Motors. All	50 Y rights reserved.	37 lb ft

	Specification	
Application	Metric	English
Crankshaft Balancer Bolt – First Pass – Install a NEW Bolt After the Installation Pass and Tighten as Described in the First and Final Passes		
Crankshaft Balancer Bolt – Final Pass	140 degrees	
Crankshaft Bearing Cap Bolts – Inner Bolts – First Pass in Sequence	20 Y	15 lb ft
Crankshaft Bearing Cap Bolts – Inner Bolts – Final Pass in Sequence	80 degrees	
Crankshaft Bearing Cap Side Bolts	25 Y	18 lb ft
Crankshaft Bearing Cap Studs – Outer Studs – First Pass in Sequence	20 Y	15 lb ft
Crankshaft Bearing Cap Studs – Outer Studs – Final Pass in Sequence	53 degrees	
Crankshaft Oil Deflector Nuts	25 Y	18 lb ft
Crankshaft Position Sensor Bolt	25 Y	18 lb ft
Crossmember Nut	110 Y	81 lb ft
Cylinder Head Bolts – First Design – First Pass all M11 Bolts in Sequence	30 Y	22 lb ft
Cylinder Head Bolts – First Design – Second Pass all M11 Bolts in Sequence	90 degrees	
Cylinder Head Bolts – First Design – Final Pass all M11 Bolts in Sequence – Excluding the Medium Length Bolts at the Front and Rear of Each Cylinder Head	90 degrees	
Cylinder Head Bolts – First Design – Final Pass M11 Medium Length Bolts at the Front and Rear of Each Cylinder Head	50 degrees	
Cylinder Head Bolts – Second Design – First Pass all M11 Bolts in Sequence	30 Y	22 lb ft
Cylinder Head Bolts – Second Design – Second Pass all M11 Bolts in Sequence	90 degrees	
Cylinder Head Bolts – Second Design – Final Pass all M11 Bolts in Sequence	70 degrees	

	Specification	
Application	Metric	English
Cylinder Head Bolts – M8 Inner Bolts in Sequence	30 Y	22 lb ft
Cylinder Head Coolant Plug	20 Y	15 lb ft
Cylinder Head Core Hole Plug	20 Y	15 lb ft
Driveline Close-Out Panel Bolt	12 Y	106 lb in
Driveline Support Bolt	50 Y	37 lb ft
Driveline Support Plug	50 Y	37 lb ft
Engine Block Coolant Drain Plugs	60 Y	44 lb ft
Engine Block Heater	40 Y	30 lb ft
Engine Block Oil Gallery Plugs	60 Y	44 lb ft
Engine Coolant Air Bleed Pipe and Cover Bolts and Studs	12 Y	106 lb in
Engine Flywheel Bolts – First Pass	20 Y	15 lb ft
Engine Flywheel Bolts – Second Pass	50 Y	37 lb ft
Engine Flywheel Bolts – Final Pass	100 Y	74 lb ft
Engine Flywheel Hub Collar Bolt – Automatic Transmission	130 Y	96 lb ft
Engine Front Cover Bolts	25 Y	18 lb ft
Engine Mount Bracket Bolt	50 Y	37 lb ft
Engine Mount Nut	65 Y	48 lb ft
Engine Mount-to-Engine Mount Bracket Nut	65 Y	48 lb ft
Engine Oil Filter	30 Y	22 lb ft
Engine Rear Cover Bolts	30 Y	22 lb ft
Engine Service Lift Bracket M8 Bolt	25 Y	18 lb ft
Engine Service Lift Bracket M10 Bolts	50 Y	37 lb ft

	Specification	
Application	Metric	English
Engine Valley Cover Baffle Cover Bolts – LS6	5 Y	44 lb in
Engine Valley Cover Bolts	25 Y	18 lb ft
Engine Wiring Harness Generator Lead Nut	13 Y	115 lb in
Engine Wiring Harness Ground Strap Bolt	32 Y	24 lb ft
Exhaust Manifold Bolts – First Pass	15 Y	11 lb ft
Exhaust Manifold Bolts – Final Pass	25 Y	18 lb ft
Exhaust Manifold Heat Shield Bolts	9 Y	80 lb in
Flywheel Housing Bolt	50 Y	37 lb ft
Fuel Injection Fuel Rail Bolts	10 Y	89 lb in
Generator Bracket Bolt	50 Y	37 lb ft
Ignition Coil Bracket-to-Valve Rocker Arm Cover Bolts	12 Y	106 lb in
Ignition Coil-to-Bracket Bolts	12 Y	106 lb in
Intake Manifold Bolts – First Pass in Sequence	5 Y	44 lb in
Intake Manifold Bolts – Final Pass in Sequence	10 Y	89 lb in
Intermediate Steering Shaft Bolt	48 Y	35 lb ft
Knock Sensors	20 Y	15 lb ft
Oil Filter	30 Y	22 lb ft
Oil Filter Fitting	55 Y	40 lb ft
Oil Level Indicator Tube Bolt	16 Y	12 lb ft
Oil Level Sensor	13 Y	115 lb in
Oil Pan Closeout Cover Bolt – Left Side	12 Y	106 lb in
Oil Pan Closeout Cover Bolt – Right Side	12 Y	106 lb in

	Specification	
Application	Metric	English
Oil Pan Cover Bolts	12 Y	106 lb in
Oil Pan Drain Plug	25 Y	18 lb ft
Oil Pan – Lower – Bolts	12 Y	106 lb in
Oil Pan M8 Bolts – Oil Pan-to-Engine Block and Oil Pan -to-Front Cover	25 Y	18 lb ft
Oil Pan M6 Bolts – Oil Pan-to-Rear Cover	12 Y	106 lb in
Oil Pressure Sensor	35 Y	26 lb ft
Oil Pump Cover Bolts	12 Y	106 lb in
Oil Pump Relief Valve Plug	12 Y	106 lb in
Oil Pump Screen Nuts	25 Y	18 lb ft
Oil Pump Screen-to-Oil Pump Bolt	12 Y	106 lb in
Oil Pump-to-Engine Block Bolts	25 Y	18 lb ft
Oil Temperature Sensor	20 Y	15 lb ft
Power Steering Pump Bolt	25 Y	18 lb ft
Propeller Shaft Hub Collar Bolt	125 Y	92 lb ft
Spark Plugs – Cylinder Heads – New	20 Y	15 lb ft
Spark Plugs – all Subsequent Installations	15 Y	11 lb ft
Steering Knuckle Nut – First Pass	20 Y	15 lb ft
Steering Knuckle Nut – Second Pass	50 degrees	
Steering Knuckle Nut – Final Pass	55 Y	41 lb ft
Throttle Body Bolts	12 Y	106 lb in
Timing Chain Guide Bolts	35 Y	26 lb ft
Transmission Cover Bolt	12 Y	106 lb in

	Specification	
Application	Metric	English
Transmission Wiring Harness Bracket Bolt	50 Y	37 lb ft
Transmission Wiring Harness Clip Bolt – near the Harness Ground	32 Y	23 lb ft
Transmission Wiring Harness Clip Bolt – near the Oil Pan	25 Y	18 lb ft
Valve Lifter Guide Bolts	12 Y	106 lb in
Valve Rocker Arm Bolts	30 Y	22 lb ft
Valve Rocker Arm Cover Bolts	12 Y	106 lb in
Water Inlet Housing Bolts	15 Y	11 lb ft
Water Pump Bolts – First Pass	15 Y	11 lb ft
Water Pump Bolts – Final Pass	30 Y	22 lb ft
Water Pump Cover Bolts	15 Y	11 lb ft