

2018 ENGINE PERFORMANCE**Engine Controls And Fuel - 1.5L (LYX) - Specifications - Equinox & Terrain****SPECIFICATIONS****TEMPERATURE VERSUS RESISTANCE - INTAKE AIR TEMPERATURE SENSOR (HITACHI SENSOR)**

Temperature C°/F°	Resistance Minimum Ohms	Resistance Maximum Ohms
Hitachi Intake Air Temperature (IAT) Sensor		
-40/-40	37, 527	49, 882
-20/-4	13, 110	16, 329
-10/14	8, 145	9, 851
0/32	5, 205	6, 122
20/68	2, 298	2, 570
25/77	1, 900	2, 100
40/104	1, 073	1, 226
60/140	537	639
80/176	289	356
100/212	165	210
120/248	99	129
140/284	62	83
150/302	49	67

TEMPERATURE VERSUS RESISTANCE - INTAKE AIR TEMPERATURE SENSOR (DELCO SENSOR)

Temperature C°/F°	Resistance Minimum Ohms	Resistance Maximum Ohms
Delco Intake Air Temperature (IAT) Sensor		
-40/-40	42, 661	54, 224
-20/-4	14, 039	17, 333
-10/14	8, 529	10, 399
0/32	5, 358	6, 458
20/68	2, 308	2, 727
25/77	1, 904	2, 236
40/104	1, 113	1, 292
60/140	571	655
80/176	309	351
100/212	175	197
120/248	103	116
140/284	67	73
150/302	54	59

TEMPERATURE VERSUS RESISTANCE - ENGINE COOLANT TEMPERATURE SENSOR

Temperature	Resistance
150° C (302° F)	47 to 49 ohms
140° C (284° F)	58 to 62 ohms
130° C (266° F)	76 to 80 ohms

Temperature	Resistance
120Å°C (248Å°F)	98 to 104 ohms
110Å°C (230Å°F)	130 to 136 ohms
100Å°C (212Å°F)	174 to 182 ohms
90Å°C (194Å°F)	237 to 247 ohms
80Å°C (176Å°F)	327 to 341 ohms
70Å°C (158Å°F)	459 to 479 ohms
60Å°C (140Å°F)	656 to 686 ohms
50Å°C (122Å°F)	958 to 1002 ohms
45Å°C (113Å°F)	1167 to 1223 ohms
40Å°C (104Å°F)	1430 to 1500 ohms
35Å°C (95Å°F)	1763 to 1849 ohms
30Å°C (86Å°F)	2185 to 2295 ohms
25Å°C (77Å°F)	2725 to 2865 ohms
20Å°C (68Å°F)	3418 to 3604 ohms
15Å°C (59Å°F)	4318 to 4564 ohms
10Å°C (50Å°F)	5493 to 5823 ohms
5Å°C (41Å°F)	7041 to 7485 ohms
0Å°C (32Å°F)	9097 to 9701 ohms
-5Å°C (23Å°F)	11844 to 12678 ohms
-10Å°C (14Å°F)	15540 to 16700 ohms
-15Å°C (5Å°F)	20559 to 22183 ohms
-20Å°C (-4Å°F)	27439 to 29725 ohms
-30Å°C (-22Å°F)	50264 to 54924 ohms
-40Å°C (-40Å°F)	95953 to 105777 ohms

ALTITUDE VERSUS BAROMETRIC PRESSURE

Altitude Measured in Meters (m)	Altitude Measured in Feet (ft)	Barometric Pressure Measured in Kilopascals (kPa)	Barometric Pressure Measured in Pounds Per Square Inch (PSI)
Determine your altitude by contacting a local weather station or by using another reference source.			
4, 267	14, 000	56 - 64	8.1 - 9.3
3, 962	13, 000	58 - 66	8.4 - 9.6
3, 658	12, 000	61 - 69	8.8 - 10.0
3, 353	11, 000	64 - 72	9.3 - 10.4
3, 048	10, 000	66 - 74	9.6 - 10.7
2, 743	9, 000	69 - 77	10.0 - 11.2
2, 438	8, 000	71 - 79	10.3 - 11.5
2, 134	7, 000	74 - 82	10.7 - 11.9
1, 829	6, 000	77 - 85	11.2 - 12.3
1, 524	5, 000	80 - 88	11.6 - 12.8
1, 219	4, 000	83 - 91	12.0 - 13.2
914	3, 000	87 - 95	12.6 - 13.8
610	2, 000	90 - 98	13.1 - 14.2
305	1, 000	94 - 102	13.6 - 14.8
0	0 Sea Level	96 - 104	13.9 - 15.1
-305	-1, 000	101 - 105	14.6 - 15.2

IGNITION SYSTEM SPECIFICATIONS

Application	Specification
Ignition Type	Individual Ignition Coils

Application	Specification
Firing Order	1 - 3 - 4 - 2
Spark Plug Torque	Refer to Fastener Specifications
Spark Plug Gap	Refer to Engine Mechanical Specifications
Spark Plug Type	Refer to Electronic Parts Catalog

FASTENER SPECIFICATIONS

Single Use Non-Threaded Fasteners/Components

NOTE:

All fasteners/components listed in this table MUST BE DISCARDED and replaced with NEW after removal.

Application
Camshaft Position Actuator Locating Pin Control Valve Seal
Camshaft Position Actuator Solenoid Valve Seal
Camshaft Position Sensor Seal
Combustion Fuel Injector Seal
Engine Coolant Temperature Sensor Seal
Evaporative Emission Canister Vent Hose Tie Strap
Fuel Injector Seal
Fuel Injector Wiring Harness Tie Strap
Fuel Pump Housing Seal
Fuel Tank Fuel Pump Module O-ring
Throttle Body Seal
Turbocharger Air Pressure Sensor Seal
Vacuum Pump Gasket

Single Use Threaded Fastener/Component Tightening Specifications

NOTE:

All fasteners/components listed in this table MUST BE DISCARDED and replaced with NEW after removal.

Application	Specification
	Metric (English)
Fuel Feed Intermediate Pipe/Fitting	30 N.m (22 lb ft)
Fuel Injection Fuel Rail Fuel Pressure Sensor (In Sequence)	33 N.m (24 lb ft)
Fuel Injector Bolt - Inner (In Sequence)	5 N.m (44 lb in)
Fuel Injector Bolt - Outer (In Sequence)	5 N.m (44 lb in)
Fuel Pump Bolt (In Sequence)	25 N.m (18 lb ft)

Reusable Threaded Fastener Tightening Specifications

NOTE:

All fasteners listed in this table can be reused after removal.

Application	Specification
	Metric (English)
Accelerator Pedal Position Sensor Bolt	9 N.m (80 lb in)
Air Cleaner Bolt	9 N.m (80 lb in)
Air Cleaner Outlet Duct Clamp	3.5 N.m (31 lb in)
Air Cleaner Upper Housing Bolt	4 N.m (35 lb in)

NOTE:

All fasteners listed in this table can be reused after removal.

Application	Specification
	Metric (English)
Camshaft Position Actuator Locating Pin Control Valve Bolt	10 N.m (89 lb in)
Camshaft Position Actuator Solenoid Valve Bolt	10 N.m (89 lb in)
Camshaft Position Sensor Bolt	10 N.m (89 lb in)
Charge Air Cooler Bolt	9 N.m (80 lb in)
Charge Air Cooler Bracket Bolt	9 N.m (80 lb in)
Crankshaft Position Sensor Bolt	10 N.m (89 lb in)
Engine Oil Pressure Sensor	35 N.m (26 lb ft)
Engine Wiring Harness Bracket Bolt	9 N.m (80 lb in)
Evaporative Emission Canister Nut	9 N.m (80 lb in)
Front Intake Air Duct Nut	9 N.m (80 lb in)
Fuel Feed Front Pipe Bracket Bolt	9 N.m (80 lb in)
Fuel Feed Intermediate Pipe Bracket Bolt	10 N.m (89 lb in)
Fuel Pump Power Control Module Bolt	9 N.m (80 lb in)
Fuel Pump Power Control Module Nut	9 N.m (80 lb in)
Fuel Tank Filler Hose Clamp	4 N.m (35 lb in)
Fuel Tank Filler Pipe Ground Bolt	9 N.m (80 lb in)
Fuel Tank Strap Bolt	22 N.m (16 lb ft)
Heated Oxygen Sensor	42 N.m (31 lb ft)
Ignition Coil Bolt	10 N.m (89 lb in)
Intake Air Pressure and Temperature Sensor Bolt	5 N.m (44 lb in)
Knock Sensor Bolt	25 N.m (18 lb ft)
Mass Airflow Sensor Bolt	4 N.m (35 lb in)
Spark Plug	17 N.m (13 lb ft)
Throttle Body Bolt	10 N.m (89 lb in)
Turbocharger Air Pressure Sensor Bolt	3.8 N.m (34 lb in)
Turbocharger Bypass Valve Solenoid Bolt	9 N.m (80 lb in)
Turbocharger Wastegate Actuator Nut	10 N.m (89 lb in)
Turbocharger Wastegate Regulator Solenoid Valve Bolt	8 N.m (71 lb in)
Vacuum Pump Bolt	
First Pass:	12 N.m (106 lb in)
Final Pass:	25 N.m (18 lb ft)

APPROXIMATE FLUID CAPACITIES

Application	Specification	
	Metric	English
Fuel Tank Capacity - AWD	59.0 liters	15.6 gallons
Fuel Tank Capacity - FWD	56.0 liters	14.8 gallons

ADHESIVES, FLUIDS, LUBRICANTS, AND SEALERS

Application	Type of Material	GM Part Number

Application	Type of Material	GM Part Number
Anti-Seize Compound	Lubricant	GM P/N 88862477 (Canadian P/N 88862478)
Camshaft Gear Access Hole Plug	Sealant	GM P/N 12346004 (Canadian P/N 10953480)
Coolant Temperature Sensor Threads	Sealant	GM P/N 12346004 (Canadian P/N 10953480)
Dielectric Grease for Spark Plug Wires	Lubricant	GM P/N 19260901 (Canadian P/N 19260902)
Fuel Injection Fuel Rail Bolt	Threadlocker	GM P/N 12345382 (Canadian P/N 10953489)
High Pressure Fuel Pump Bolt	Threadlocker	GM P/N 12345382 (Canadian P/N 10953489)
Silicon Free Engine Oil	5W-30	GM P/N 19293000 (Canadian P/N 19386321)
Top Engine Cleaner	Cleaner	GM P/N 1052626 (Canadian P/N 993026)