

2018 ENGINE PERFORMANCE**Engine Controls And Fuel - 3.6L (LFY) - Specifications - Traverse****SPECIFICATIONS****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
120°C (248°F)	98 to 104 ohms
110°C (230°F)	130 to 136 ohms
100°C (212°F)	174 to 182 ohms
90°C (194°F)	237 to 247 ohms
80°C (176°F)	327 to 341 ohms
70°C (158°F)	459 to 479 ohms
60°C (140°F)	656 to 686 ohms
50°C (122°F)	958 to 1002 ohms
45°C (113°F)	1167 to 1223 ohms
40°C (104°F)	1430 to 1500 ohms
35°C (95°F)	1763 to 1849 ohms
30°C (86°F)	2185 to 2295 ohms
25°C (77°F)	2725 to 2865 ohms
20°C (68°F)	3418 to 3604 ohms
15°C (59°F)	4318 to 4564 ohms
10°C (50°F)	5493 to 5823 ohms
5°C (41°F)	7041 to 7485 ohms
0°C (32°F)	9097 to 9701 ohms
-5°C (23°F)	11844 to 12678 ohms
-10°C (14°F)	15540 to 16700 ohms
-15°C (5°F)	20559 to 22183 ohms
-20°C (-4°F)	27439 to 29725 ohms
-30°C (-22°F)	50264 to 54924 ohms
-40°C (-40°F)	95953 to 105777 ohms

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

Temperature C°/F°	Resistance Minimum Ohms	Resistance Maximum Ohms
Hitachi Intake Air Temperature (IAT) Sensor		
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

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

Application	Specification
Firing Order	1 - 2 - 3 - 4 - 5 - 6
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: <i>All fasteners/components listed in this table MUST BE DISCARDED and replaced with NEW after removal.</i>
Application
Camshaft Position Sensor Seal
Evaporative Emission Canister Filter Hose Tie Strap
Fuel Pump Bracket Gasket
Fuel Pump Housing Seal
Fuel Pump Seal
Fuel Tank Filler Pipe Tie Strap
Fuel Tank Fuel Pump Module O-Ring
Manifold Absolute Pressure Sensor Seal
Throttle Body 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@Engine	28 N.m (21 lb ft)
Fuel Feed Pipe@Engine	28 N.m (21 lb ft)
Fuel Injection Fuel Rail Fuel Pressure Sensor	33 N.m (24 lb ft)
Fuel Pump Bolt@Engine	15 N.m (11 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 Fastener	2.5 N.m (22 lb in)
Air Cleaner Outlet Duct Clamp	4 N.m (35 lb in)
Air Cleaner Outlet Duct Fastener	9 N.m (80 lb in)
Air Cleaner Upper Housing Bolt	4 N.m (35 lb in)
Camshaft Position Actuator Solenoid Valve Bolt	10 N.m (89 lb in)
Camshaft Position Sensor Bolt	10 N.m (89 lb in)
Crankshaft Position Sensor Bolt	10 N.m (89 lb in)
Engine Control Module Bracket Nut	9 N.m (80 lb in)
Engine Coolant Temperature Sensor	22 N.m (16 lb ft)
Engine Rear Noise Shield Bolt	9 N.m (80 lb in)
Evaporative Emission Canister Fastener	9 N.m (80 lb in)

NOTE:

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

Application	Specification
	Metric (English)
Evaporative Emission Canister Purge Solenoid Valve Bolt	10 N.m (89 lb in)
Fuel Injection Fuel Feed and Return Pipe Retainer Bolt	50 N.m (37 lb ft)
Fuel Injection Fuel Rail Bolt	
First Pass:	Start ALL bolts by hand, but do NOT tighten.
Second Pass:	Tighten the outer two bolts by hand to seat the fuel injectors.
Third Pass:	Tighten the remaining bolts by hand.
Final Pass:	25 N.m (18 lb ft)
Fuel Pump Power Control Module Fastener	9 N.m (80 lb in)
Fuel Tank Filler Hose Clamp	4 N.m (35 lb in)
Fuel Tank Filler Pipe Bolt @ Fuel Filler Door	2.5 N.m (22 lb in)
Fuel Tank Filler Pipe Bolt @ Lower Wheel Well	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 Duct Bolt	9 N.m (80 lb in)
Knock Sensor Bolt	25 N.m (18 lb ft)
Manifold Absolute Pressure Sensor Bolt	4 N.m (35 lb in)
Mass Airflow Sensor Bolt	4 N.m (35 lb in)
Spark Plug	18 N.m (13 lb ft)
Throttle Body Bolt	10 N.m (89 lb in)

APPROXIMATE FLUID CAPACITIES

Application	Specification	
	Metric	English
Fuel Tank Capacity		
All-Wheel Drive	82.1 liters	21.7 gallons
Front-Wheel Drive	73.4 liters	19.4 gallons

ADHESIVES, FLUIDS, LUBRICANTS, AND SEALERS

Application	Type of Material	GM Part Number
Anti-Seize Compound	Lubricant	GM P/N 88862477 (Canadian P/N 88862478)

Application	Type of Material	GM Part Number
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)