

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Adhesives, Fluids, Lubricants, and Sealers		
Application	Type of Material	GM Part Number
GM Vehicle Care Odor Eliminator	Fluids	Refer to Electronic Parts Catalog.

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Adhesives, Fluids, Lubricants, and Sealers

Application	Type of Material
Power Steering Fluid	GM DEXRON®-VI Automatic Transmission Fluid

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Application	Type of Material	GM Part Number	
All Purpose Parts Cleaner	Cleaner	Refer to the electronic parts catalog	
Anti-Seize Compound	Lubricant		
Coolant Temperature Sensor Threads	Sealant		
Engine Oil	5W-30 Oil– Synthetic		
Fuel Injection Fuel Rail Bolts	Threadlock		
Intake Air Temperature Sensor Threads	Sealant		

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Anti-Seize Compound	Lubricant		
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Engine Oil	5W-30 Oil – Synthetic		
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Coolant Temperature Sensor Threads	Sealant		
Engine Oil	5W-30 Oil– Synthetic	Refer to the electronic parts catalog	
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		GM Part Number		
Application		Type of Material	United States	Canada
All Fasteners		Threadlocker	12345382	10953489
Transmission Fluid		Manual Transmission Fluid	88861800	88861801

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			GM Part Number	
			United States	Canada
Application	Type of Material			
Automatic Transmission Fluid	DEXRON®VI		88861037	19264717
Front Prop Shaft Flange Nut	Threadlock		89021297	10953488

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Adhesives, Fluids, Lubricants, and Sealers

Application	Type of Material	GM Part Number	
		United States	Canada
Case Half Sealing Surfaces	Sealant	12346286	10953472
Front Output Shaft Flange Nut	Threadlock	89021297	10953488
Input Shaft Pilot Bearing— OD Surface	Threadlock	89021297	10953488
Oil Drain Plug Threads	Sealant	12346004	10953480
Oil Fill Plug Threads	Sealant	12346004	10953480
Transfer Case Oil— Dexron VI	Lubricant	88861003	88861004
Transfer Case Stud Threads	Sealant	12346004	10953480
Vent Hose Connector	Sealant	12346004	10953480

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		GM Part Number		
	Application	Type of Material	United States	Canada
	All Fasteners	Threadlocker	12345382	10953489
	Transmission Fluid	Manual Transmission Fluid	88861800	88861801

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Application	Type of Material	GM Part Number
Wheel	Mounting Lubricant	Refer to Electronic Parts Catalog
Wheel to Hub	Lubricant	Refer to Electronic Parts Catalog

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		United States	Canada
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Application

Type of Material

Front Drive Axle

Lubricant

SAE 75W90

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Adhesives, Fluids, Lubricants, and Sealers	
Application	Type of Material
Crankshaft Journals and Shells	Engine Oil
Crankshaft Rear Bearing-to-Cylinder Block Junction	Sealing Compound
Engine Flywheel Attaching Bolts	Chemical Thread Locking – Loctite
Engine Cylinders and Rings	Engine Oil
Hydraulic Lifters	Molybdenum Disulfide Paste
Oil Pump Gear Assembly	Engine Oil
Oil Pump Housing-to-Cylinder Block Junction	Sealing Compound
Oil Pump Relief Valve System	Engine Oil
Oil Pump Seal	No. 2 Lithium Soap Based Grease
Rocker Arm	Molybdenum Disulfide Paste
Transmission Side Seals	No. 2 Lithium Soap Based Grease
Valve Camshaft	Molybdenum Disulfide Paste
Valve Camshaft Housing-to-Cylinder Head Junction	Sealing Compound
Water Pump Seal Ring	Silicone Grease

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Application	Type of Material	GM Part Number	
		United States	Canada
Camshaft Bearing Front Cap	Sealant	1052943	—
Connecting Rod Bearing	Engine Oil	—	—
Cylinder Head Plug	Sealant	12345382	10953489
Fuel Injection Pump O-ring	Engine Oil	—	—
Fuel Injector	Cleaner	1052626	—
Parts Immersion Solvent	Cleaner	12345368	10953514
Piston	Engine Oil	—	—
Piston Ring	Engine Oil	—	—
Upper Oil Pan to Front and Rear Covers	Sealant	12378521	88901148
Valve Rocker Arm Cover	Sealant	12378521	88901148
Water Pump Drain Plug	Sealant	12346004	10953480

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Adhesives, Fluids, Lubricants, and Sealers			
Application	Type of Material	GM Part Number	
		United States	Canada
Block Pan Rail	Sealant	12378521	88901148
Camshaft Prelube	Engine Oil	19293000	19286321
Coolant Drain Threaded Plug	Sealant	12346004	10953480
Coolant Expansion Plugs	Sealant	12345382	10953489
Coolant and Oil Plug Threads	Sealant	12346004	10953480
Crankshaft Bearing Surfaces	Lubricant	88862586	88862827
Crankshaft Connecting Rod Bearing Journal	Lubricant	88862586	88862827
Crankshaft Prelube	Lubricant	88862586	88862827
Crankshaft Rear Oil Seal Housing	Sealant	12378521	88901148
Engine Front Cover/Split Lines	Sealant	12378521	88901148
Engine Oil	5W-30 SAE Engine Oil	12345610	00993193
Fuel Injection Fuel Rail Fuel Pressure Sensor Sealing Cone/Threads	Engine Oil	19293000	19286321
Fuel Rail Sealing Cone/Threads	Engine Oil	19293000	19286321
Oil Gallery Threaded Plug	Sealant	12346004	10953480
Oil Pan, Engine Front Cover, Crankshaft Rear Oil Seal Housing	Sealant	12378521 (150g cartridge)	88901148
		88861417 (75 gram squeeze tube)	88861418
Piston Pin Bores	Lubricant	88862586	88862827
Positive Crankcase Ventilation (PCV) Orifice	Sealant	12378521	88901148
Stationary Hydraulic Lash Adjuster (SHLA)	Engine Oil	19293000	19286321
SHLA Bores in Cylinder Head	Engine Oil	19293000	19286321
SHLA Pivot Spheres	Lubricant	88862586	88862827
Thread Repair	Cutting Fluid	1052864	992881
	Cleaner	12346139 or 12377981	88901247
	Sealant	89021297	10953488
Valve Stem/Guide ID	Lubricant	88862586	88862827

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Application

Type of Material

Hydraulic Brake Fluid

DOT 4

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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

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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

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Ambient Air Temperature Sensor Resistance

Temperature		Ambient Air Temp Sensor	Ambient Air Temp Sensor (Min)	Ambient Air Temp Sensor (Max)
°C	°F	(kΩ)	(kΩ)	(kΩ)
-40	-40	169.4	158.46	181.19
-30	-22	88.74	83.39	94.47
-20	-4	48.58	47.19	50.02
-10	14	27.67	26.93	28.44
0	32	16.33	15.92	16.75
10	50	9.95	9.71	10.19
20	68	6.24	6.1	6.38
30	86	4.02	3.94	4.11
40	104	2.66	2.61	2.71
50	122	1.8	1.73	1.87
60	140	1.24	1.2	1.29

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Temperature		Ambient Air Temp Sensor	Ambient Air Temp Sensor (Min)	Ambient Air Temp Sensor (Max)
°C	°F	(kΩ)	(kΩ)	(kΩ)
-40	-40	169.4	158.46	181.19
-30	-22	88.74	83.39	94.47
-20	-4	48.58	47.19	50.02
-10	14	27.67	26.93	28.44
0	32	16.33	15.92	16.75
10	50	9.95	9.71	10.19
20	68	6.24	6.1	6.38
30	86	4.02	3.94	4.11
40	104	2.66	2.61	2.71
50	122	1.8	1.73	1.87
60	140	1.24	1.2	1.29

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The following approximate capacities are given in US English and metric conversions. See Fluid and Lubricant Recommendations for more information. All capacities are approximate. When adding, be sure to fill to the approximate level, as recommended in this manual. Recheck fluid level after filling.

Approximate Fluid Capacities

Application	Specification	
	Metric	US English
Engine Oil with Filter		
• 2.5L Engine (RPO LVN) 4X2	7.6 liters	8 quarts
• 2.8L Engine (RPO LWH) 4X2	6.7 liters	7 quarts
• 2.8L Engine (RPO LWH) 4X4	6.4 liters	6.7 quarts
Automatic Transmission 6L45/6L50/6L90		
• Pan Removal and Filter Replacement - Approximate Capacity (6L50/6L80)	6.3 liters	6.7 quarts
• Overhaul - Approximate Capacity (6L50)	9.3 liters	9.8 quarts
• Complete Trans System - Capacity (6L50)	10.6 liters	11.2 quarts
• Manual Transmission Eaton 5-Speed	3.0 liters	3.17 quarts
Transfer Case - AAM NQV	1.5 liters	1.6 quarts
Front Axle	.90 liters	.95 quarts
Rear Axle	2.30 liters	2.43 quarts

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Approximate Fluid Capacities

Application	Specification	
	Metric	US English
Engine Oil with Filter		
2.4L Engine (RPO LE6/LP8) 2.5L Engine (RPO LVN) 2.8L Engine (RPO LWH) 3.6L Engine (RPO LY7)	4.85 liters	5.12 quarts
	Low Stance 7.6 liters	Low Stance 8.03 quarts
	High Stance 7.3 liters	High Stance 7.71 quarts
	Low Stance 6.7 liters	Low Stance 7.08 quarts
	High Stance 6.4 liters	High Stance 6.76 quarts
	5.2 liters	5.49 quarts
Engine Oil without Filter		
2.4L Engine (RPO LE6/LP8) 3.6L Engine (RPO LY7)	4.6 liters	4.86 quarts
	5.2 liters	5.5 quarts
Automatic Transmission 6L45/6L50/6L90		
- Pan Removal and Filter Replacement - Approximate Capacity (6L50/6L80) - Overhaul - Approximate Capacity (6L50) - Complete Trans System - Capacity (6L50) - Manual Transmission Eaton 5-Speed	6.3 liters	6.7 quarts
	9.3 liters	9.8 quarts
	10.6 liters	11.2 quarts
	3.0 liters	3.17 quarts
Transfer Case - AAM NQV	1.5 liters	1.6 quarts
Front Axle	.90 liters	.95 quarts
Rear Axle	2.30 liters	2.43 quarts

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Approximate Fluid Capacities			
	Application	Specification	
		Metric	English
DEXRON®VI		1.5 liters	1.6 quarts

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Approximate Fluid Capacities			
	Application	Specification	
		Metric	English
DEXRON®VI		1.5 liters	1.6 quarts

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Axle Spacer and Shim Specifications

Part Number	Specification		Color and Number of Stripes
	Metric	US English	
Refer to Electronic Parts Catalog	5.639 - 5.652 mm	.2220 - .2225 in	2 Orange
	5.664 - 5.678 mm	.2230 - .2235 in	2 Orange, 1 Black
	5.690 - 5.702 mm	.2240 - .2245 in	3 Orange
	5.715 - 5.728 mm	.2250 - .2255 in	3 Orange, 1 Black
	5.740 - 5.753 mm	.2260 - .2265 in	4 Orange
	5.766 - 5.779 mm	.2270 - .2275 in	4 Orange, 1 Black
	5.791 - 5.804 mm	.2280 - .2285 in	5 Orange
	5.817 - 5.829 mm	.2290 - .2295 in	5 Orange, 1 Black
	5.842 - 5.854 mm	.2300 - .2305 in	1 Yellow
	5.867 - 5.880 mm	.2310 - .2315 in	1 Yellow, 1 Black
	5.893 - 5.906 mm	.2320 - .2325 in	2 Yellow
	5.918 - 5.931 mm	.2330 - .2335 in	2 Yellow, 1 Black
	5.944 - 5.956 mm	.2340 - .2345 in	3 Yellow
	5.969 - 5.982 mm	.2350 - .2355 in	3 Yellow, 1 Black
	5.994 - 6.007 mm	.2360 - .2365 in	4 Yellow
	6.020 - 6.033 mm	.2370 - .2375 in	4 Yellow, 1 Black
	6.045 - 6.058 mm	.2380 - .2385 in	5 Yellow
	6.071 - 6.083 mm	.2390 - .2395 in	5 Yellow, 1 Black
	6.096 - 6.109 mm	.2400 - .2405 in	1 White
	6.121 - 6.134 mm	.2410 - .2415 in	1 White, 1 Black
	6.147 - 6.160 mm	.2420 - .2425 in	2 White
	6.172 - 6.185 mm	.2430 - .2435 in	2 White, 1 Black
	6.197 - 6.210 mm	.2440 - .2445 in	3 White
	6.223 - 6.236 mm	.2450 - .2455 in	3 White, 1 Black
	6.249 - 6.261 mm	.2460 - .2465 in	4 White
	6.274 - 6.287 mm	.2470 - .2475 in	4 White, 1 Black
	6.299 - 6.312 mm	.2480 - .2485 in	5 White
	6.325 - 6.338 mm	.2490 - .2495 in	5 White, 1 Black
	6.350 - 6.363 mm	.2500 - .2505 in	1 Green
	6.374 - 6.388 mm	.2510 - .2515 in	1 Green, 1 Black
	6.401 - 6.414 mm	.2520 - .2525 in	2 Green
	6.426 - 6.439 mm	.2530 - .2535 in	2 Green, 1 Black
	6.452 - 6.464 mm	.2540 - .2545 in	3 Green
	6.477 - 6.490 mm	.2550 - .2555 in	3 Green, 1 Black
	6.502 - 6.515 mm	.2560 - .2565 in	4 Green
	6.528 - 6.541 mm	.2570 - .2575 in	4 Green, 1 Black
	6.553 - 6.566 mm	.2580 - .2585 in	5 Green
	6.579 - 6.591 mm	.2590 - .2595 in	5 Green, 1 Black
	5.334 - 5.347 mm	.2100 - .2105 in	1 Pink

5.359 - 5.372 mm	.2110 -.2115 in	1 Pink, 1 Black
5.385 - 5.398 mm	.2120 -.2125 in	2 Pink
5.410 - 5.423 mm	.2130 -.2135 in	2 Pink, 1 Black
5.436 - 5.448 mm	.2140 -.2145 in	3 Pink
5.461 - 5.474 mm	.2150 -.2155 in	3 Pink, 1 Black
5.486 - 5.499 mm	.2160 -.2165 in	4 Pink
5.512 - 5.525 mm	.2170 -.2175 in	4 Pink, 1 Black
5.537 - 5.550 mm	.2180 -.2185 in	5 Pink
5.563 - 5.575 mm	.2190-.2195 in	5 Pink, 1 Black
5.585 - 5.601 mm	.2200-.2205 in	1 Orange
5.613 - 5.626 mm	.2210-.2215 in	1 Orange, 1 Black
6.604 - 6.617 mm	.2600-.2605 in	1 Light Blue
6.639 - 6.642 mm	.2610-.2615 in	1 Light Blue, 1 Black
6.655 - 6.668 mm	.2620-.2625 in	2 Light Blue
6.680 - 6.693 mm	.2630-.2635 in	2 Light Blue, 1 Black
6.706 - 6.718 mm	.2640-.2645 in	3 Light Blue
6.731 - 6.744 mm	.2650 -.2655 in	3 Light Blue, 1 Black
6.756 - 6.769 mm	.2660 -.2665 in	4 Light Blue
6.782 - 6.795 mm	.2670 -.2675 in	4 Light Blue, 1 Black
6.807 - 6.820 mm	.2680 -.2685 in	5 Light Blue
6.833 - 6.845 mm	.2690 -.2695 in	5 Light Blue, 1 Black
6.858 - 6.871 mm	.2700 -.2705 in	1 Black
6.883 - 6.896 mm	.2710 -.2715 in	3 Black
6.909 - 6.922 mm	.2720 -.2725 in	2 Black

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Table 1: [Body Control Module Scan Tool Data Parameters](#)

Table 2: [Body Control Module Scan Tool Output Controls](#)

Body Control Module Scan Tool Data Parameters

Parameter	System State	Expected Value	Definition
<i>Operating Conditions:</i> Ignition ON, Vehicle in Park, All Doors Closed			
5 V Ignition Switch	—	Accessory / Key Out	The scan tool displays Off, Accessory, Run, or Crank. This parameter displays the ignition switch mode.
Accent Lighting 1 Command	—	Varies	This parameter displays the interior lighting ambient 1 command as a percentage.
Accent Lighting 2 Command	—	Varies	This parameter displays the interior lighting ambient 2 command as a percentage.
Accessory	—	Active	The scan tool displays Active or Inactive.
Accessory Power Mode Indicator Command	—	Varies	This parameter displays ignition switch accessory LED PWM command as a percentage.
Accessory Relay Command	—	Active	The scan tool displays Active or Inactive.
Accessory/Retained Accessory Power Relay Command	—	Active	The scan tool displays Active or Inactive. This parameter displays the retained accessory power relay status.
All Doors Lock Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the door lock status.
Ambient Light Sensor	—	Varies	The scan tool displays volts. This parameter displays the ambient light sensor signal voltage.
Ambient Light Status	—	Night	The scan tool displays Unknown, Night, or Day. This parameter displays the ambient light level status.
Automatic Headlamps Disable Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the headlamp disable switch status.
Automatic Transmission Manual Shift Switch	—	Off	The scan tool displays Off or On. This parameter displays the transmission tap up tap down switch status.
Backup Lamps Relay Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the backup lamps relay status.
Battery Current Sensor	—	Varies	The scan tool displays the battery current in amperes.
Battery Low at Start	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the battery level is low when the vehicle starts.
Battery Reconnect Detected	—	No	The scan tool displays No or Yes when a battery disconnect/reconnect event has been detected.
Battery Voltage	—	Varies	The scan tool displays the current battery voltage.
BCM-Controlled Charging Voltage	—	Active	The scan tool displays Active or Inactive.
BCM-Requested Charging Voltage Reduction	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the BCM has detected a low battery voltage condition.
Boot Software Part Number	—	Varies	The scan tool displays the boot software part number.
Brake Lamp Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the brake lamp command status.
Brake Pedal Applied	—	Inactive	The scan tool displays Active or Inactive.
Brake Pedal Initial Travel Position Achieved	—	No	The scan tool displays No or Yes.
Brake Pedal Position Sensor	—	Varies	This displays Counts. This numeric value is the current brake pedal position.
Brake Pedal Position Sensor High Voltage During Learn	—	No	The scan tool displays No or Yes.
Brake Pedal Position Sensor Learn	—	No	The scan tool displays No or Yes. This parameter displays Yes when the brake pedal position sensor has learned.
Brake Pedal Position Sensor Learned Home Position	—	Yes	The scan tool displays No or Yes. This parameter displays Yes when the brake pedal position sensor has learned the home position.
Brake Pedal Position Sensor Learned Released Position	—	Yes	The scan tool displays No or Yes. This parameter displays Yes when the brake pedal position sensor has learned the released position.

Brake Pedal Position Sensor Learned Released Position	—	Varies	The scan tool displays volts.
Brake Pedal Position Sensor Learned Released Position	—	Varies	The scan tool displays percentage.
Brake Pedal Position Sensor Low Voltage During Learn	—	No	The scan tool displays No or Yes.
Brake Pedal Position Sensor Move During Learn	—	No	The scan tool displays No or Yes. This parameter displays the brake pedal sensor learn status.
Brake Pedal Position Sensor Pulled Up from Home Position	—	No	The scan tool displays No or Yes.
Brake Pedal Position Sensor Reference	—	Varies	The scan tool displays the brake pedal position as voltage value. This parameter displays the current brake pedal position sensor reference.
Brake Pedal Pulled Up from Home Position	—	No	The scan tool displays No or Yes.
Brake Pedal Pulled Up from Released Position	—	No	The scan tool displays No or Yes.
Brake Transmission Shift Interlock Solenoid Actuator	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the remote start diagnostic status history.
Brake Transmission Shift Interlock Solenoid Actuator Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the last remote start diagnostic status history.
Calculated Brake Pedal Position	—	Varies	The scan tool displays volts.
Calculated Brake Pedal Position	—	Varies	The scan tool displays percentage.
Calibration Part Number 1-20	—	Varies	The scan tool displays the software module calibration part number.
Center Brake Lamp Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the center brake lamp status.
Center Stop Lamp Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the center stop lamp status.
Central Door Lock Switch on Center Console/Passenger Door Lock Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver door lock switch status.
Child Security Lock Indicator Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the child security lock indicator command status.
Child Security Lock Motors Command	—	Inactive	The scan tool displays Active or Inactive.
Child Security Lock/Window Lockout Switch	—	Inactive	The scan tool displays Active or Inactive.
Child Security Lock/Window Lockout Switch Indicator Command	—	Inactive	The scan tool displays Active or Inactive.
Content Theft Deterrent Alarm Status	—	Disarmed	The scan tool displays Off, Armed, or Disarmed. This parameter displays the content theft alarm status.
Content Theft Deterrent Disarmed Until Vehicle Closed	—	No	The scan tool displays No or Yes. This parameter displays the content theft deterrent system status.
Content Theft Deterrent Mode	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Content Theft Deterrent Trigger History 1-3	—	None	The scan tool displays None, Driver door, Passenger door, Left rear door, Right rear door, Rear closure, Midgate, Tonneau Cover, Hood, Ignition Voltage, Intrusion, Inclination, Telematics enhanced service alarm, Battery reconnect detected, Unauthorized PWM change, Security Indicates Tamper, or Glass Breakage. This parameter displays the content theft deterrent trigger history status.
Courtesy Lamps Duty Cycle Command	—	Varies	This parameter displays the interior lights dimming command as a percentage.
Crank Abort	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Cruise Charging Set Level	—	Varies	This parameter displays cruise charging set level.
Cruise Control Switch Status	—	OFF	The scan tool displays CANCEL, OFF, ON, RESUME, SET or ERROR. This parameter displays the cruise control switch status.
Current Content Theft Deterrent Trigger	—	None	The scan tool displays None, Driver door, Passenger door, Left rear door, Right rear door, Rear closure, Midgate, Tonneau Cover, Hood, Ignition Voltage, Intrusion, Inclination, Telematics enhanced service alarm, Battery reconnect detected, Unauthorized PWM change, Security Indicates Tamper, Glass Breakage. This parameter displays the content theft deterrent current alarm trigger.
Current Driver	—	1-8	This parameter displays the current driver in vehicle.
Disable Battery Saver Relay Command	—	Inactive	The scan tool displays Active or Inactive.

Dome Lamp Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the dome lamp switch status.
Door Lock Switch	—	Inactive	The scan tool displays Active or Inactive.
Driver Door Ajar Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver door Ajar switch status.
Driver Door Key Unlock Switch	—	Inactive	The scan tool displays Active or Inactive.
Driver Door Lock Switch	—	Inactive	The scan tool displays Active or Inactive.
Driver Door Unlatch Command	—	Inactive	The scan tool displays Active or Inactive.
Driver Door Unlock Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver door unlock command status.
Driver Seat Heating Switch	—	Inactive	The scan tool displays Active or Inactive.
Driver Seat Heating/Venting/Cooling Mode	—	Off	The scan tool displays On or Off.
Driver Seat Ventilation Switch	—	Inactive	The scan tool displays Active or Inactive.
Driver Window Learned	—	Yes	The scan tool displays No or Yes.
Driver Window Main Control Down Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver window main control down switch input status.
Driver Window Main Control Express Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver window switch express input status.
Driver Window Main Control Up Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver window switch UP input status.
Driver Window Motor Mode	—	Local Switch Overridden	The scan tool displays Down, Express Down, Express, Up, Error, Inhibit, or Local Switch Overridden. This parameter displays the driver window motor mode status.
Driver Window Motor Reversing Status	—	No	The scan tool displays No or Yes.
Driver Window Motor Sensing System Fault Status	—	No	The scan tool displays No or Yes.
Driver Window Motor Undervoltage Status	—	No	The scan tool displays No or Yes.
Enable Battery Saver Relay Command	—	Inactive	The scan tool displays Active or Inactive.
End Model Part Number	—	Varies	This parameter displays the end model part number.
Engine Stalled	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Environment Identification	—	Unknown	The parameter displays the vehicle environment identification successful status.
Front Fog Lamps Relay Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the front fog lamp relay status.
Front Fog Lamps Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the front fog lamp switch status.
Front Passenger Window Main Control Down Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the front passenger window down switch status.
Front Passenger Window Main Control Express Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger window switch express input status.
Front Passenger Window Main Control Up Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger window switch UP input status.
Front Tire Pressure on Placard	—	Varies	The scan tool displays kPa or PSI. This parameter displays the specified tire pressure placard information programmed in the BCM for tire pressure monitoring.
Fuel Economy Mode Inhibited - Low Charging Voltage	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the fuel economy mode status.
Generator Regulator Setpoint	—	Varies	The scan tool displays percentage.
Glove Box Unlatch Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the instrument panel compartment release switch status.
Hazard Lamps Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the hazard lamps switch status.
Hazard Lamps Switch Backlight Command	—	Varies	The scan tool displays percentage. This parameter displays hazard switch backlight level PWM command status.
Headlamps On Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the headlamp on switch status.
Headlamps Flash Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the headlamps flash to pass switch status.

Headlamp Washer Relay Command	—	Inactive	The scan tool displays Active or Inactive.
High Beam Select Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the high beam switch status.
High Beam Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the high beam command status.
Hood Ajar Switch	—	Inactive	This parameter display the remote start diagnostic status history or the last remote start diagnostic status history.
Hood Ajar Switch Signal 1	—	Inactive	This parameter display the remote start diagnostic status history or the last remote start diagnostic status history.
Hood Position	—	CLOSED	The scan tool displays CLOSED, AJAR, or OPENED. This parameter displays the hood position.
Horn Relay Command	—	Inactive	The scan tool displays Active or Inactive.
Horn Switch	—	Inactive	The scan tool displays Active or Inactive.
Idle Boost Level 2-3 Counter	—	Varies	This parameter displays the state of the idle boost level as counts.
Idle Charging Set Level	—	Varies	This parameter displays idle charging set level.
Ignition Mode Switch Dimming Command	—	Varies	The scan tool displays percentage.
Ignition Switch Reference	—	Varies	This parameter displays the ignition switch voltage reference.
Ignition Switch Signal Voltage	—	Varies	This parameter displays the ignition switch signal voltage.
Ignition Switch Status	—	Inactive	This parameter displays the ignition switch status.
Immobilizer Allows Engine To Start	—	Unknown	The scan tool displays Unknown, Incorrect, Not Allowed, or Valid. This parameter displays the immobilizer status.
Immobilizer Automatic Learn Timer	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the automatic learn timer status.
Immobilizer Environment Device 1-4	—	Unknown	The scan tool displays Incorrect, Correct, Not Received, Not Programmed or Unknown. This parameter displays the immobilizer source status.
Immobilizer Password Learn	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the password learn status.
Immobilizer Password Learn Scan Tool Delay	—	Varies	This parameter displays the auto learn timer status.
Immobilizer Security Code Accepted	—	No	The scan tool displays No or Yes.
Immobilizer Security Code Lockout	—	No	The scan tool displays No or Yes.
Immobilizer Security Code Programmed	—	Yes	The scan tool displays No or Yes.
In Park Switch Status	—	On	The scan tool displays On or Off. This parameter displays the park switch status.
Inadvertent Load Command	—	Active	The scan tool displays Active or Inactive.
Indicator Dimming Duty Cycle Command	—	Varies	The scan tool displays percentage. This parameter displays indicator lighting PWM command status.
Interior/Courtesy Lighting Master Switch	—	Door	The scan tool displays Door or other lighting switch status.
Interior Trunk Lid/Liftgate Window Unlatch Switch	—	Inactive	The scan tool displays Active or Inactive.
Key Capture Solenoid Actuator	—	Active	The scan tool display Active or Inactive. This parameter displays column lock input status.
Key Fob 1-4 Battery Status	—	OK	The scan tool displays OK or other key fob battery status. This parameter displays the key fob battery status.
Key Fob 1-4 Function	—	Undefined	The scan tool displays Inactive, Lock, Unlock Driver Door, All Door Unlock, Release Rear Closure, Actuate Left Sliding Door, Actuate Right Sliding door, Panic Alarm, Release Fuel door, Actuate Power Windows, Actuate Folding Top, Start Engine, Stop Engine, Programmed, Locator Alarm, Close Liftgate, Open Liftgate, Stop Liftgate While Closing, Stop Liftgate While opening, Deadlock All Doors, Stop Liftgate Motion, Start Liftgate Motion, Stop Left Sliding Door Motion, Stop Right Sliding Door Motion, Comfort open, or Comfort close. This parameter displays the key fob function status.
Key Fob in Vehicle	—	Inactive	This parameter displays the current key fob in the vehicle.
Key In Cylinder Switch	—	Active	The scan tool displays Active or Inactive.
Key In Cylinder Switch/Key Fob in Vehicle	—	Yes	The scan tool displays No or Yes.
			The scan tool displays Key Out/Key In. This parameter displays the

Key in Ignition Status	—	Inactive	The scan tool displays Key Out or Key In. This parameter displays the key in ignition status.
Key Part Number	—	Varies	This parameter displays the key part number.
Key Type	—	Master Key	The scan tool displays Unknown, Master Key, Valet Key, Fleet Key, or Unconfigured. This parameter displays the key type.
Last Door Lock Function	—	All Doors Lock	The scan tool displays NO Action, PC UNDB Lock, PC Unlock, Unlock, Unlock Driver, Unlock Passenger, Unlock Left Rear, Unlock Right Rear, Unlock Cargo Liftgate, Unlock Driver Side, Unlock Passenger Side, Unlock Non Driver, Unlock All, Lock All, DBL Lock, or UNDBL Lock.
LED Backlight Dimming Command	—	Varies	The scan tool displays as a percentage. This parameter displays LED backlight dimming PWM command status.
Left Brake Lamp Command	—	Varies	The scan tool displays percentage. This parameter displays left brake lamp command status.
Left Dedicated Daytime Running Lamp Command	—	Varies	The scan tool displays percentage. This parameter displays left dedicated daytime running lamp command status.
Left Front Tire Pressure	—	Varies	This parameter displays left front tire pressure in PSI.
Left Front Tire Pressure Sensor Identification	—	Varies	This parameter displays left front tire pressure sensor ID.
Left Front Tire Pressure Sensor Location Learned	—	Yes	The scan tool displays No or Yes. This parameter displays tire pressure monitor system learned status.
Left Front Tire Pressure Sensor Mode	—	Learn Mode — Pressure Triggered	The scan tool parameter displays Learn Mode, Undefined, Remeasure Data Mode, Rolling Mode, Enter Off Mode, Exit Off Mode, or Learn Mode Pressure Triggered.
Left Front Tire Pressure Status	—	Normal	The scan tool displays Unknown, Normal, Very Low Pressure, Low, Weak Signal, or High.
Left Front Turn Signal Bulb Out Feedback	—	Inactive	The scan tool displays Active or Inactive.
Left Front Turn Signal/Hazard Lamp Command	—	Inactive	The scan tool displays Active or Inactive.
Left Low Beam/Daytime Running Lamp Command	—	Varies	The scan tool displays percentage. This parameter displays left low beam/daytime running lamp status.
Left Park Lamps Command	—	Varies	The scan tool displays percentage. This parameter displays rear exterior lighting status.
Left Rear Child Security Lock Switch	—	Inactive	This parameter displays Active or Inactive.
Left Rear Door Ajar Switch	—	Inactive	This parameter displays Active or Inactive. This parameter displays the left rear door ajar switch status.
Left Rear Tire Pressure	—	Varies	This parameter displays left rear tire pressure in PSI.
Left Rear Tire Pressure Sensor Identification	—	Varies	This parameter displays left rear tire pressure sensor ID.
Left Rear Tire Pressure Sensor Location Learned	—	Yes	The scan tool displays No or Yes. This parameter displays tire pressure monitor system learned status.
Left Rear Tire Pressure Sensor Mode	—	Stationary	The scan tool displays Learn Mode, Undefined, Remeasure Data Mode, Rolling Mode, Enter Off Mode, Exit Off Mode, or Learn Mode Pressure Triggered.
Left Rear Tire Pressure Status	—	Normal	The scan tool displays Unknown, Normal, Very Low Pressure, Low, Weak Signal, or High.
Left Rear Turn Signal Bulb Out Feedback	—	Inactive	The scan tool displays Active or Inactive. The parameter displays turn lamp outage status.
Left Rear Turn Signal/Hazard Lamp Command	—	Inactive	The scan tool displays Active or Inactive.
Left Rear Window Learned	—	Yes	The scan tool displays No or Yes.
Left Rear Window Main Control Down Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays driver window switch inputs.
Left Rear Window Main Control Express Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays driver window switch inputs.
Left Rear Window Main Control Up Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays driver window switch inputs.
Left Rear Window Motor Mode	—	Local Switch Overridden	The scan tool displays Down, Express, Up, Inhibit, or Local Switch Overridden.
Left Rear Window Switch at Door	—	Inactive	The scan tool displays Active or Inactive.
Left Stop Lamp Command	—	Varies	The scan tool displays percentage.
Left Turn Signal Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the left turn signal switch status.

License Plate Lamps Command	—	Inactive	The scan tool displays Active or Inactive.
Load Reduction Level 2-3 Counter	—	Varies	The scan tool display as counts.
Low Beam Relay Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the headlamp low beam relay status.
Manufacturers Enable Counter	—	Varies	This parameter tool displays various counter values.
Master Keys Learned	—	Varies	This parameter displays the total number of master keys learned.
Module Diagnostic Address	—	Varies	This parameter displays module diagnostic address.
Number of Key Fobs In Vehicle	—	1	This parameter displays the number of fobs located in the vehicle.
Odometer	—	Varies	This parameter displays the vehicle mileage.
Outside Rear View Mirror Courtesy Lamp Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays front exterior lighting status.
Park Brake Switch	—	Active	The scan tool displays Active or Inactive. This parameter displays front exterior lighting status.
Park Lamps Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the parklamp switch is activated.
Passenger Door Ajar Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger door ajar switch status.
Passenger Door Lock Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger door lock switch status.
Passenger Door Unlock Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger door unlock switch status.
Passenger Door(s) Unlatch Command	—	Inactive	The scan tool displays Active or Inactive.
Passenger Door(s) Unlock Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger door unlock status.
Passenger Seat Heating Switch	—	Inactive	The scan tool displays Active or Inactive.
Passenger Seat Heating/Venting/Cooling Mode	—	Off	The scan tool displays On or Off.
Passenger Seat Ventilation Switch	—	Inactive	The scan tool displays Active or Inactive.
Passenger Window Learned	—	Yes	The scan tool displays No or Yes. This parameter displays the passenger window learned status.
Passenger Window Motor Mode	—	Local Switch Overridden	The scan tool displays Down, Express, Up, Inhibit, or Local Switch Overridden.
Passenger Window Switch at Door	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger window switch status.
Pickup Bed Cargo Lamp Command	—	Varies	The scan tool displays percentage. This parameter displays pickup bed cargo lamp command status.
Previous Key Type	—	Unknown	This parameter displays previous driver identification device type.
Primary Key Status	—	Yes	The scan tool displays No or Yes.
Push Button Ignition Switch	—	Inactive	The scan tool displays Active or Inactive.
Push Button Ignition Switch Voltage	—	Varies	This parameter displays the push button ignition switch voltage.
Rain Sensor	—	Inactive	The scan tool displays Active or Inactive.
Rear Closure Ajar Switch	—	Active	The scan tool displays Active or Inactive.
Rear Closure Cylinder Lock Switch	—	Inactive	The scan tool displays Active or Inactive.
Rear Closure Cylinder Unlock Switch	—	Inactive	The scan tool displays Active or Inactive.
Rear Tire Pressure on Placard	—	Varies	This parameter displays the rear tire pressure in kPa or PSI. This parameter displays the specified tire pressure placard information programmed in the BCM for tire pressure monitoring.
Regulated Voltage Control Mode	—	Voltage	The scan tool displays voltage.
Remote Vehicle Start Attempts Exhausted	—	Varies	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history or remaining start attempts.
Remote Vehicle Start Crank Time	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Remote Vehicle Start Disabled by Driver	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Remote Vehicle Start Source	—	Ignition Switch Start	The scan tool displays Ignition Switch Start or Remote Vehicle Start.

Remote Vehicle Starts Exhausted	—	Varies	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history or remaining remote starts.
Right Brake Lamp Command	—	Varies	The scan tool display percentage. This parameter displays right brake lamp PWM command status.
Right Dedicated Daytime Running Lamp Command	—	Varies	The scan tool display percentage. This parameter displays right dedicated DRL PWM command status.
Right Front Tire Pressure	—	Varies	This parameter displays right front tire pressure in PSI.
Right Front Tire Pressure Sensor Identification	—	Varies	This parameter displays right front tire pressure sensor ID.
Right Front Tire Pressure Sensor Location Learned	—	Yes	The scan tool displays No or Yes.
Right Front Tire Pressure Sensor Mode	—	Stationary	The scan tool displays Learn Mode, Undefined, Remeasure Data Mode, Rolling Mode, Enter Off Mode, Exit Off Mode or Learn Mode Pressure Triggered.
Right Front Tire Pressure Status	—	Normal	The scan tool displays Unknown, Normal, Very Low Pressure, Low, Weak Signal, or High.
Right Front Turn Signal Bulb Out Feedback	—	Inactive	The scan tool displays Active or Inactive.
Right Front Turn Signal/Hazard Lamp Command	—	Inactive	The scan tool displays Active or Inactive.
Right Low Beam/Daytime Running Lamp Command	—	Varies	The scan tool displays percentage. This parameter displays right low beam/daytime running lamp status.
Right Park Lamps Command	—	Varies	The scan tool displays percentage. This parameter displays rear exterior lighting status.
Right Rear Child Security Lock Switch	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Door Ajar Switch	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Tire Pressure	—	Varies	This parameter displays right rear tire pressure in PSI.
Right Rear Tire Pressure Sensor Identification	—	Varies	This parameter displays right rear tire pressure sensor ID.
Right Rear Tire Pressure Sensor Location Learned	—	Yes	The scan tool displays No or Yes.
Right Rear Tire Pressure Sensor Mode	—	Learn Mode — Pressure Triggered	The scan tool displays Learn Mode, Undefined, Remeasure Data Mode, Rolling Mode, Enter Off Mode, Exit Off Mode, or Learn Mode Pressure Triggered. This parameter displays the pressure sensor mode status.
Right Rear Tire Pressure Status	—	Normal	The scan tool displays Unknown, Normal, Very Low Pressure, Low, Weak Signal or High. This parameter displays the right rear tire pressure status.
Right Rear Turn Signal Bulb Out Feedback	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Turn Signal/Hazard Lamp Command	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Window Main Control Down Switch	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Window Main Control Express Switch	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Window Main Control Up Switch	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Window Motor Mode	—	Local Switch Overridden	The scan tool displays Down, Express, Up, Inhibit, or Local Switch Overridden.
Right Rear Window Switch at Door	—	Inactive	The scan tool displays Active or Inactive.
Right Stop Lamp Command	—	Varies	The scan tool displays percentage.
Right Turn Signal Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the right turn signal switch status.
Run Abort	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Run Relay Command	—	Active	The scan tool displays Active or Inactive.
Run/Crank	—	Inactive	The scan tool displays Active or Inactive.
Run/Crank Relay Command	—	Active	The scan tool displays Active or Inactive.
Run/Crank Power Mode Indicator Command	—	Varies	The scan tool displays percentage. This parameter displays ignition switch run LED PWM command status.
Secondary Key Status	—	No	The scan tool displays No or Yes.

Security Indicator Command	—	Varies	The scan tool displays percentage. This parameter displays security LED PWM command status.
Selected Front Tire Type	—	Standard Load	The scan tool displays No Tire Type, Metric Standard Load, Metric Extra Load, Load Range C, Load Range D, or Load Range E. This parameter displays the front tire type.
Selected Rear Tire Type	—	Standard Load	The scan tool displays No Tire Type, Metric Standard Load, Metric Extra Load, Load Range C, Load Range D, or Load Range E. This parameter displays the rear tire type.
Start-Up State of Charge	—	Varies	The scan tool displays percentage. This parameter displays startup state of charge status.
State of Charge	—	Varies	The scan tool displays percentage. This parameter displays state of charge status.
Sunroof Enabled	—	Active	The scan tool displays Active or Inactive.
Sunroof Motor Overtemperature	—	Inactive	The scan tool displays Active or Inactive.
Sunroof Not Learned	—	Inactive	The scan tool displays Active or Inactive.
Sunroof Position	—	Closed	The scan tool displays Closed, Open, Venting, Comfort Open, Closing, Opening. This parameter displays the current sunroof position.
Sunroof Remote Command	—	Inactive	The scan tool displays Sunroof Secure Close, Venting, Close, or Open. This parameter displays the last sunroof remote command.
Sunroof Slide Switch	—	Inactive	The scan tool displays Inactive, Express Open, Open, Express Close, Close, Short to Ground, Short to Battery, or Stuck. This parameter displays the sunroof slide switch status.
Sunroof Tilt Switch	—	Inactive	The scan tool displays Inactive, Open, Close, Short to Ground, Short to Battery or Stuck. This parameter displays the sunroof tilt switch status. When the switch experiences a malfunction Short to Ground, Short to Battery or Stuck will be displayed.
Sunroof/Sunshade Motor Overtemperature	—	Inactive	The scan tool displays Active or Inactive.
Sunroof/Sunshade Switch	—	Inactive	The scan tool displays Inactive, Express Open, Open, Express Close, Close, Short to Ground, Short to Battery, or Stuck. This parameter displays the sunroof or sunshade switch status.
Sunshade Enabled	—	Active	The scan tool displays Active or Inactive.
Sunshade Not Learned	—	Inactive	The scan tool displays Active or Inactive.
Sunshade Position	—	Closed	The scan tool displays Ajar, Closed, Opened, Closing, or Opening. This parameter displays the sunshade position status.
Sunshade Remote Command	—	Inactive	The scan tool displays Close or Open. This parameter displays the last sunshade remote command.
Tamper Status	—	No	The scan tool displays No or Yes.
Telematics Enhanced Service Override Active	—	No	The scan tool displays No or Yes. This parameter displays vehicle theft deterrent system status.
Total Keys Learned	—	Varies	This parameter displays the number of keys learned.
Traction Control Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the traction control switch is active.
Transponder Authentication	—	Initializing	The scan tool displays Inactive, Initializing, ID Received, Password Received, Data Reception Complete, or Data Transmission Complete. This parameter displays the transponder key communication status.
Transponder Key Status	—	OK	The scan tool displays OK, LIN Bus Initialization Malfunction, Antenna Initialization Malfunction, Password Error, No Valid Key Detected, LIN Bus Communication Malfunction, or Antenna Malfunction. This parameter displays the transponder key communication error status.
Trunk Lamp Command	—	Varies	The scan tool displays as percentage.
Trunk Lid/Liftgate Window Exterior Unlatch Switch	—	Inactive	The scan tool displays Active or Inactive.
Trunk Lid/Liftgate Window Unlatch Command	—	Inactive	The scan tool displays Active or Inactive.
Valet Keys Learned	—	Varies	This parameter displays the number of valet keys learned.
Valet Mode Status	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Valet switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the valet switch is on.
Vehicle Identification Number (VIN)	—	Varies	This parameter displays the vehicle identification number.
Window Lockout Switch	—	Inactive	The scan tool displays Active or Inactive.
Window Lockout Switch Indicator	—	Inactive	The scan tool displays Active or Inactive.

Command	—	Inactive	The scan tool displays Active or Inactive.
Windshield Washer Relay Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the windshield washer relay status.
Windshield Washer Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the windshield washer switch status.
Windshield Wiper Park Switch	—	Active	The scan tool displays Active or Inactive.
Windshield Wiper High Speed Relay Command	—	Inactive	The scan tool displays Active or Inactive.
Windshield Wiper High Speed Switch	—	Inactive	The scan tool displays Active or Inactive.
Windshield Wiper Motor Relay Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the windshield wiper relay status.
Windshield Wiper Stalled During Sweep	—	Inactive	The scan tool displays Active or Inactive.
Windshield Wiper Stalled in Park Position	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the windshield wiper stalled status.
Windshield Wiper Switch	—	Off	The scan tool displays Off, Delay 1, Delay 2, Delay 3, Delay 4, Delay 5, or Low. This parameter displays the windshield wiper switch status.

Body Control Module Scan Tool Output Controls

Scan Tool Output Control	Description
Accent Lighting 1	The BCM activates the accent lighting when you select On. The value should be 100%. All accent lighting should illuminate until commanded Off.
Accent Lighting 2	The BCM activates the accent lighting when you select On. The value should be 100%. All accent lighting should illuminate until commanded Off.
Accessory Power Mode Indicator	The BCM activates the accessory indicator when you select On. The value should be 100%. The yellow LED accessory indicator on start button should illuminate until commanded Off.
Accessory Power Relay	The BCM actuates the accessory power relay when you select On. The accessory power relay should turn on allowing specific vehicle functions to operate.
Accessory/Retained Accessory Power Relay	The BCM actuates the retained accessory power relay when you select On. The retained accessory power relay should turn on allowing specific vehicle functions to operate.
All Doors Lock	The BCM activates all doors lock when you select Lock. All doors should lock.
All Doors Lock/Unlock	The BCM activates all doors lock/unlock when you select Lock/Unlock.
Auxiliary Ignition Run Relay	The BCM controls the Ignition Run Coil Control circuit to turn it On and Off.
Backup Lamps	The BCM actuates the backup lamps relay when you select On. The backup lamps should illuminate until commanded Off. Engine must be running.
Battery Saver Relay	The BCM activates the battery saver relay when you select Enable. This command sets the low power mode relay in the state in which it does not supply power to the non-essential parts of the vehicle. This is used to prevent the battery from being depleted when the vehicle is not used for a long period of time.
Brake Pedal Position Sensor Learn	The BCM activates the brake pedal position sensor learn when you select Learn. The brake pedal position sensor learn procedure should start.
Brake Transmission Shift Interlock Solenoid Actuator	The BCM activates the transmission shift interlock solenoid actuator when you select On.
Brake Transmission Shift Interlock Indicator	The BCM activates the transmission range indicator when you select On. The transmission range indicator at the shifter should illuminate until commanded Off.
Center Brake Lamp	The BCM activates the center brake lamp when you select On. The center brake lamp should illuminate until commanded Off.
Center Stop Lamp	The BCM activates the center stop lamp when you select On. The center stop lamp should illuminate until commanded Off.
Child Security Lock Indicator	The BCM activates the child security lock indicator when you select On. The child security lock indicator should illuminate until commanded Off.
Child Security Lock Motors	The BCM actuates the child security door motor when you select Lock. The child security doors should lock.
Child Security Lock/Window Lockout Switch Indicator	The BCM activates the child security lock/window lockout switch indicator when you select On. The child security lock/window lockout switch indicator should illuminate until commanded Off.
Clear Driver Window Learned Values	When you select Clear the clear driver window learn procedure should start.
Clear Passenger Window Learned Values	When you select Clear the clear left rear window learn procedure should start.
Courtesy Lamps	The BCM activates the courtesy lamps when you select On. The value should be 100%. The courtesy lamps should illuminate until commanded Off.
Driver Door Unlatch	The BCM activates the output circuit to unlatch the driver door with a passive entry passive start when you select Unlatch. There is NO door handle on this type of vehicle to open the door. Instead, there is a pad that you press to unlatch the door.
Driver Door Unlock	The BCM pulses the driver door unlock motor when you select Unlock. The driver door should unlock.

Driver Window Motor	The BCM activates the driver window motor when you select Up/Down/Stop/Express Up/Express Down. The driver window should follow the appropriate command.
Driver Window Motor Mode	The BCM activates the driver window motor when you select Up/Down/Stop/Express Up/Express Down. The driver window should follow the appropriate command.
Front Fog Lamps	The BCM actuates the front fog lamps relay when you select On. The front fog lamps relay should turn on.
Generator Regulator Setpoint	The BCM changes the output of the generator.
Hazard Lamps Switch Backlight	The BCM activates the hazard lamps switch when you select On. The value should be 100%. The hazard lamps switch backlight should illuminate until commanded Off.
High Beams	The BCM activates the high beam command when you select On. The high beam lights should illuminate. The headlamps have to be on.
Horn Relay	The BCM activates the horn when you select On. The horn should sound.
Inadvertent Load	The BCM activates the inadvertent load command when you select On. (It is an electronic request to shut down an electrical or electronic device that is drawing power from the battery at a time when there should be no activity, usually after the key has been removed from the ignition for a period of time.)
Incandescent Dimming	The BCM activates the incandescent light dimming when you select On. The values should be 100%. The incandescent light dimming should illuminate until commanded Off.
Indicator Dimming	The BCM activates the indicator dimming when you select On. The values should be 100%. The indicator should illuminate until commanded Off.
LED Backlight Dimming	The BCM activates the LED backlight dimming when you select On. The values should be 100%. The LED backlight dimming for control switches should illuminate until commanded Off.
Left Brake Lamp	The BCM activates the left brake lamp when you select On. The values should be 100%. The left brake lamp should illuminate until commanded Off.
Left Dedicated Daytime Running Lamp	The BCM activates the left dedicated daytime running lamp when you select ON. The value changes to 100%. The left daytime running lamp should illuminate.
Left Front Park Lamp	The BCM activates the left front park lamp when you select ON with a value of 100%. The left front park lamp should illuminate.
Left Front Park Lamp/Daytime Running Lamp	The BCM activates the left front park lamp/daytime running lamp when you select ON with a value of 100%. The left front park lamp/daytime running lamp should illuminate.
Left Front Turn Signal Lamp	The BCM activates the left front turn signal lamp when you select On. The left front turn signal lamp should illuminate until commanded Off.
Left Headlamp Lamp Low Beam	The BCM activates the left headlamp low beam when you select On. The values should be 100%. The left headlamp low beam should illuminate until commanded Off.
Left Park Lamps	The BCM activates the left park lamps when you select ON with a value of 100%. The left park lamps should illuminate.
Left Rear Park Lamp	The BCM activates the left rear park lamp when you select ON with a value of 100%. The left rear park lamp should illuminate.
Left Rear Stop/Park Lamp	The BCM activates the left rear stop/park lamp when you select ON with a value of 100%. The left rear stop/park lamp should illuminate.
Left Rear Turn Signal Lamp	The BCM activates the left rear turn signal lamp when you select On. The left rear turn signal lamp should illuminate until commanded Off.
Left Rear Turn Signal/Stop Lamp	The BCM activates the left rear turn signal/stop lamp when you select On. The left rear turn signal/stop lamp should illuminate until commanded Off.
Left Rear Window Motor	The BCM activates the left rear window motor when you select Up/Down/Stop/Express Down. The left rear window should follow the appropriate command.
Left Stop Lamp	The BCM activates the left stop lamp when you select ON with a value of 100%. The left stop lamp should illuminate.
Left Trailer Turn Signal Lamp	The BCM activates the left trailer turn signal lamp when you select ON with a value of 100%. The left trailer turn signal lamp should illuminate.
License Plate Lamps	The BCM activates the license plate lamps when you select On. The license plate lights should turn on until commanded Off.
Liftgate Unlatch	The BCM actuates the rear compartment lid release actuator when you select Unlatch. The trunk or liftgate should open.
LIN Bus Device Identification Data	When you select Update the LIN Bus Device part number and calibration part number should be updated.
Low Beam Lamps	The BCM activates the low beam lamps when you select On. The low beam lamps should turn on.
Low Beam Relay	The BCM activates the low beams when you select On. The low beam lights should turn on.
Outside Rear View Mirror Courtesy Lamp	The BCM activates the outside rear view mirror courtesy lamp when you select On. The outside rear view mirror courtesy lamp (at the bottom) should illuminate.
Passenger Door(s) Unlatch	The BCM activates the output circuit to unlatch the passenger door with a passive entry passive start when you select Unlatch. There is NO door handle on this type of vehicle to open the door. Instead, there is a pad that you press to unlatch the door.
Passenger Door(s) Unlock	The BCM pulses the passenger door unlock motor when you select Unlock. The passenger door should unlock.
Passenger Window Motor	The BCM activates the passenger window motor when you select Up/Down/Stop/Express Up/Express Down. The passenger window should follow the appropriate command.
Pickup Bed Cargo Lamp	The BCM activates the pickup bed cargo lamp when you select On. The values should be 100%. The pickup bed cargo lamp should illuminate until commanded Off.
Rear Fog Lamp(s) Relay	The BCM activates the rear fog lamps when you select On. The rear fog lamps should turn on.

Right Brake Lamp	The BCM activates the right brake lamp when you select On. The value should be 100%. The right brake lamp should illuminate until commanded Off.
Right Dedicated Daytime Running Lamp	The BCM activates the right dedicated daytime running lamp when you select On. The value should be 100%. The right daytime running lamp should illuminate.
Right Front Park Lamp	The BCM activates the right front park lamp when you select ON with a value of 100%. The right front park lamp should illuminate.
Right Front Park Lamp/Daytime Running Lamp	The BCM activates the right front park lamp/daytime running lamp when you select ON with a value of 100%. The right front park lamp/daytime running lamp should illuminate.
Right Front Turn Signal Lamp	The BCM activates the right front turn signal lamp when you select On. The right front turn signal/hazard lamp should illuminate.
Right Headlamp Low Beam	The BCM activates the right headlamp low beam when you select On. The right headlamp low beam should illuminate.
Right Park Lamps	The BCM activates the right park lamps when you select ON with a value of 100%. The right park lamps should illuminate.
Right Rear Park Lamp	The BCM activates the right rear park lamp when you select ON with a value of 100%. The right rear park lamp should illuminate.
Right Rear Stop/Park Lamp	The BCM activates the right rear stop/park lamp when you select ON with a value of 100%. The right rear stop/park lamp should illuminate.
Right Rear Turn Signal Lamp	The BCM activates the right rear turn signal/hazard lamp when you select On. The right rear turn signal lamp should illuminate until commanded Off.
Right Rear Turn Signal/Stop Lamp	The BCM activates the right rear turn signal/stop lamp when you select On. The right rear turn signal/stop lamp should illuminate until commanded Off.
Right Rear Window Motor	The BCM activates the right rear window motor when you select Up/Down/Stop/Express Down. The right rear window should follow the appropriate command.
Right Stop Lamp	The BCM activates the right stop lamp when you select ON with a value of 100%. The right stop lamp should illuminate.
Right Trailer Turn Signal Lamp	The BCM activates the right trailer turn signal lamp when you select ON with a value of 100%. The right trailer turn signal lamp should illuminate.
Run Relay	The BCM actuates the run relay when you select On. The run relay should turn on.
Run/Crank Relay	The BCM actuates the run/crank relay when you select On. The run/crank relay should turn on.
Run/Start Power Mode Indicator	The BCM activates the run/start lamp when you select On. The value should be 100%. The green LED on engine start/stop button should illuminate until commanded Off.
Security Indicator	The BCM activates the security indicator command when you select On. The security indicator at center of dash (or at DRL sensor) should illuminate until commanded Off.
Stop Lamps	The BCM activates the stop lamps when you select ON with a value of 100%. The stop lamps should illuminate.
Tire Pressure Sensors Learn	The BCM activates the tire pressure sensor learn procedure when you select Learn.
Tire Type/Pressure Selection	When you select OK, you can change tire type and load range.
Trailer Backup Lamps	The BCM activates the trailer backup lamps when you select ON with a value of 100%. The trailer backup lamps should illuminate.
Trailer Park Lamps	The BCM activates the trailer park lamps when you select ON with a value of 100%. The trailer park lamps should illuminate.
Transmission Range Indicator	The BCM activates the transmission range indicator when you select On. The transmission range indicator at the shifter should illuminate until commanded Off.
Trunk Lamp	The BCM activates the trunk lamp when you select On. The value should be 100%. The trunk lamp should illuminate until commanded Off.
Trunk Lid Unlatch	The BCM activates the trunk lid unlatch when you select On. The trunk lid should unlatch.
Window Lockout Switch Indicator	The BCM activates the window lockout switch indicator when you select On. The window lockout switch indicator should illuminate until commanded Off.
Windshield Washer Relay	The BCM actuates the windshield washer relay when you select On. The windshield washer relay should turn on.
Windshield Wiper High Speed Relay	The BCM actuates the windshield wiper high speed relay when you select On. The windshield wiper high speed relay should turn on.
Windshield Wiper Motor Relay	The BCM actuates the windshield wiper motor relay when you select On. The windshield wiper motor relay should turn on.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Table 1: [Body Control Module Scan Tool Data Parameters](#)

Table 2: [Body Control Module Scan Tool Output Controls](#)

Body Control Module Scan Tool Data Parameters

Parameter	System State	Expected Value	Definition
<i>Operating Conditions:</i> Ignition ON, Vehicle in Park, All Doors Closed			
5 V Ignition Switch	—	Accessory / Key Out	The scan tool displays Off, Accessory, Run, or Crank. This parameter displays the ignition switch mode.
Accent Lighting 1 Command	—	Varies	This parameter displays the interior lighting ambient 1 command as a percentage.
Accent Lighting 2 Command	—	Varies	This parameter displays the interior lighting ambient 2 command as a percentage.
Accessory	—	Active	The scan tool displays Active or Inactive.
Accessory Power Mode Indicator Command	—	Varies	This parameter displays ignition switch accessory LED PWM command as a percentage.
Accessory Relay Command	—	Active	The scan tool displays Active or Inactive.
Accessory/Retained Accessory Power Relay Command	—	Active	The scan tool displays Active or Inactive. This parameter displays the retained accessory power relay status.
All Doors Lock Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the door lock status.
Ambient Light Sensor	—	Varies	The scan tool displays volts. This parameter displays the ambient light sensor signal voltage.
Ambient Light Status	—	Night	The scan tool displays Unknown, Night, or Day. This parameter displays the ambient light level status.
Automatic Headlamps Disable Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the headlamp disable switch status.
Automatic Transmission Manual Shift Switch	—	Off	The scan tool displays Off or On. This parameter displays the transmission tap up tap down switch status.
Backup Lamps Relay Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the backup lamps relay status.
Battery Current Sensor	—	Varies	The scan tool displays the battery current in amperes.
Battery Low at Start	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the battery level is low when the vehicle starts.
Battery Reconnect Detected	—	No	The scan tool displays No or Yes when a battery disconnect/reconnect event has been detected.
Battery Voltage	—	Varies	The scan tool displays the current battery voltage.
BCM-Controlled Charging Voltage	—	Active	The scan tool displays Active or Inactive.
BCM-Requested Charging Voltage Reduction	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the BCM has detected a low battery voltage condition.
Boot Software Part Number	—	Varies	The scan tool displays the boot software part number.
Brake Lamp Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the brake lamp command status.
Brake Pedal Applied	—	Inactive	The scan tool displays Active or Inactive.
Brake Pedal Initial Travel Position Achieved	—	No	The scan tool displays No or Yes.
Brake Pedal Position Sensor	—	Varies	This displays Counts. This numeric value is the current brake pedal position.
Brake Pedal Position Sensor High Voltage During Learn	—	No	The scan tool displays No or Yes.
Brake Pedal Position Sensor Learn	—	No	The scan tool displays No or Yes. This parameter displays Yes when the brake pedal position sensor has learned.
Brake Pedal Position Sensor Learned Home Position	—	Yes	The scan tool displays No or Yes. This parameter displays Yes when the brake pedal position sensor has learned the home position.
Brake Pedal Position Sensor Learned Released Position	—	Yes	The scan tool displays No or Yes. This parameter displays Yes when the brake pedal position sensor has learned the released position.

Brake Pedal Position Sensor Learned Released Position	—	Varies	The scan tool displays volts.
Brake Pedal Position Sensor Learned Released Position	—	Varies	The scan tool displays percentage.
Brake Pedal Position Sensor Low Voltage During Learn	—	No	The scan tool displays No or Yes.
Brake Pedal Position Sensor Move During Learn	—	No	The scan tool displays No or Yes. This parameter displays the brake pedal sensor learn status.
Brake Pedal Position Sensor Pulled Up from Home Position	—	No	The scan tool displays No or Yes.
Brake Pedal Position Sensor Reference	—	Varies	The scan tool displays the brake pedal position as voltage value. This parameter displays the current brake pedal position sensor reference.
Brake Pedal Pulled Up from Home Position	—	No	The scan tool displays No or Yes.
Brake Pedal Pulled Up from Released Position	—	No	The scan tool displays No or Yes.
Brake Transmission Shift Interlock Solenoid Actuator	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the remote start diagnostic status history.
Brake Transmission Shift Interlock Solenoid Actuator Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the last remote start diagnostic status history.
Calculated Brake Pedal Position	—	Varies	The scan tool displays volts.
Calculated Brake Pedal Position	—	Varies	The scan tool displays percentage.
Calibration Part Number 1-20	—	Varies	The scan tool displays the software module calibration part number.
Center Brake Lamp Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the center brake lamp status.
Center Stop Lamp Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the center stop lamp status.
Central Door Lock Switch on Center Console/Passenger Door Lock Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver door lock switch status.
Child Security Lock Indicator Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the child security lock indicator command status.
Child Security Lock Motors Command	—	Inactive	The scan tool displays Active or Inactive.
Child Security Lock/Window Lockout Switch	—	Inactive	The scan tool displays Active or Inactive.
Child Security Lock/Window Lockout Switch Indicator Command	—	Inactive	The scan tool displays Active or Inactive.
Content Theft Deterrent Alarm Status	—	Disarmed	The scan tool displays Off, Armed, or Disarmed. This parameter displays the content theft alarm status.
Content Theft Deterrent Disarmed Until Vehicle Closed	—	No	The scan tool displays No or Yes. This parameter displays the content theft deterrent system status.
Content Theft Deterrent Mode	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Content Theft Deterrent Trigger History 1-3	—	None	The scan tool displays None, Driver door, Passenger door, Left rear door, Right rear door, Rear closure, Midgate, Tonneau Cover, Hood, Ignition Voltage, Intrusion, Inclination, Telematics enhanced service alarm, Battery reconnect detected, Unauthorized PWM change, Security Indicates Tamper, or Glass Breakage. This parameter displays the content theft deterrent trigger history status.
Courtesy Lamps Duty Cycle Command	—	Varies	This parameter displays the interior lights dimming command as a percentage.
Crank Abort	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Cruise Charging Set Level	—	Varies	This parameter displays cruise charging set level.
Cruise Control Switch Status	—	OFF	The scan tool displays CANCEL, OFF, ON, RESUME, SET or ERROR. This parameter displays the cruise control switch status.
Current Content Theft Deterrent Trigger	—	None	The scan tool displays None, Driver door, Passenger door, Left rear door, Right rear door, Rear closure, Midgate, Tonneau Cover, Hood, Ignition Voltage, Intrusion, Inclination, Telematics enhanced service alarm, Battery reconnect detected, Unauthorized PWM change, Security Indicates Tamper, Glass Breakage. This parameter displays the content theft deterrent current alarm trigger.
Current Driver	—	1-8	This parameter displays the current driver in vehicle.
Disable Battery Saver Relay Command	—	Inactive	The scan tool displays Active or Inactive.

Dome Lamp Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the dome lamp switch status.
Door Lock Switch	—	Inactive	The scan tool displays Active or Inactive.
Driver Door Ajar Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver door Ajar switch status.
Driver Door Key Unlock Switch	—	Inactive	The scan tool displays Active or Inactive.
Driver Door Lock Switch	—	Inactive	The scan tool displays Active or Inactive.
Driver Door Unlatch Command	—	Inactive	The scan tool displays Active or Inactive.
Driver Door Unlock Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver door unlock command status.
Driver Seat Heating Switch	—	Inactive	The scan tool displays Active or Inactive.
Driver Seat Heating/Venting/Cooling Mode	—	Off	The scan tool displays On or Off.
Driver Seat Ventilation Switch	—	Inactive	The scan tool displays Active or Inactive.
Driver Window Learned	—	Yes	The scan tool displays No or Yes.
Driver Window Main Control Down Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver window main control down switch input status.
Driver Window Main Control Express Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver window switch express input status.
Driver Window Main Control Up Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver window switch UP input status.
Driver Window Motor Mode	—	Local Switch Overridden	The scan tool displays Down, Express Down, Express, Up, Error, Inhibit, or Local Switch Overridden. This parameter displays the driver window motor mode status.
Driver Window Motor Reversing Status	—	No	The scan tool displays No or Yes.
Driver Window Motor Sensing System Fault Status	—	No	The scan tool displays No or Yes.
Driver Window Motor Undervoltage Status	—	No	The scan tool displays No or Yes.
Enable Battery Saver Relay Command	—	Inactive	The scan tool displays Active or Inactive.
End Model Part Number	—	Varies	This parameter displays the end model part number.
Engine Stalled	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Environment Identification	—	Unknown	The parameter displays the vehicle environment identification successful status.
Front Fog Lamps Relay Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the front fog lamp relay status.
Front Fog Lamps Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the front fog lamp switch status.
Front Passenger Window Main Control Down Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the front passenger window down switch status.
Front Passenger Window Main Control Express Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger window switch express input status.
Front Passenger Window Main Control Up Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger window switch UP input status.
Front Tire Pressure on Placard	—	Varies	The scan tool displays kPa or PSI. This parameter displays the specified tire pressure placard information programmed in the BCM for tire pressure monitoring.
Fuel Economy Mode Inhibited - Low Charging Voltage	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the fuel economy mode status.
Generator Regulator Setpoint	—	Varies	The scan tool displays percentage.
Glove Box Unlatch Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the instrument panel compartment release switch status.
Hazard Lamps Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the hazard lamps switch status.
Hazard Lamps Switch Backlight Command	—	Varies	The scan tool displays percentage. This parameter displays hazard switch backlight level PWM command status.
Headlamps On Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the headlamp on switch status.
Headlamps Flash Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the headlamps flash to pass switch status.

Headlamp Washer Relay Command	—	Inactive	The scan tool displays Active or Inactive.
High Beam Select Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the high beam switch status.
High Beam Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the high beam command status.
Hood Ajar Switch	—	Inactive	This parameter display the remote start diagnostic status history or the last remote start diagnostic status history.
Hood Ajar Switch Signal 1	—	Inactive	This parameter display the remote start diagnostic status history or the last remote start diagnostic status history.
Hood Position	—	CLOSED	The scan tool displays CLOSED, AJAR, or OPENED. This parameter displays the hood position.
Horn Relay Command	—	Inactive	The scan tool displays Active or Inactive.
Horn Switch	—	Inactive	The scan tool displays Active or Inactive.
Idle Boost Level 2-3 Counter	—	Varies	This parameter displays the state of the idle boost level as counts.
Idle Charging Set Level	—	Varies	This parameter displays idle charging set level.
Ignition Mode Switch Dimming Command	—	Varies	The scan tool displays percentage.
Ignition Switch Reference	—	Varies	This parameter displays the ignition switch voltage reference.
Ignition Switch Signal Voltage	—	Varies	This parameter displays the ignition switch signal voltage.
Ignition Switch Status	—	Inactive	This parameter displays the ignition switch status.
Immobilizer Allows Engine To Start	—	Unknown	The scan tool displays Unknown, Incorrect, Not Allowed, or Valid. This parameter displays the immobilizer status.
Immobilizer Automatic Learn Timer	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the automatic learn timer status.
Immobilizer Environment Device 1-4	—	Unknown	The scan tool displays Incorrect, Correct, Not Received, Not Programmed or Unknown. This parameter displays the immobilizer source status.
Immobilizer Password Learn	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the password learn status.
Immobilizer Password Learn Scan Tool Delay	—	Varies	This parameter displays the auto learn timer status.
Immobilizer Security Code Accepted	—	No	The scan tool displays No or Yes.
Immobilizer Security Code Lockout	—	No	The scan tool displays No or Yes.
Immobilizer Security Code Programmed	—	Yes	The scan tool displays No or Yes.
In Park Switch Status	—	On	The scan tool displays On or Off. This parameter displays the park switch status.
Inadvertent Load Command	—	Active	The scan tool displays Active or Inactive.
Indicator Dimming Duty Cycle Command	—	Varies	The scan tool displays percentage. This parameter displays indicator lighting PWM command status.
Interior/Courtesy Lighting Master Switch	—	Door	The scan tool displays Door or other lighting switch status.
Interior Trunk Lid/Liftgate Window Unlatch Switch	—	Inactive	The scan tool displays Active or Inactive.
Key Capture Solenoid Actuator	—	Active	The scan tool display Active or Inactive. This parameter displays column lock input status.
Key Fob 1-4 Battery Status	—	OK	The scan tool displays OK or other key fob battery status. This parameter displays the key fob battery status.
Key Fob 1-4 Function	—	Undefined	The scan tool displays Inactive, Lock, Unlock Driver Door, All Door Unlock, Release Rear Closure, Actuate Left Sliding Door, Actuate Right Sliding door, Panic Alarm, Release Fuel door, Actuate Power Windows, Actuate Folding Top, Start Engine, Stop Engine, Programmed, Locator Alarm, Close Liftgate, Open Liftgate, Stop Liftgate While Closing, Stop Liftgate While opening, Deadlock All Doors, Stop Liftgate Motion, Start Liftgate Motion, Stop Left Sliding Door Motion, Stop Right Sliding Door Motion, Comfort open, or Comfort close. This parameter displays the key fob function status.
Key Fob in Vehicle	—	Inactive	This parameter displays the current key fob in the vehicle.
Key In Cylinder Switch	—	Active	The scan tool displays Active or Inactive.
Key In Cylinder Switch/Key Fob in Vehicle	—	Yes	The scan tool displays No or Yes.
			The scan tool displays Key Out/Key In. This parameter displays the

Key in Ignition Status	—	Inactive	The scan tool displays Key Out or Key In. This parameter displays the key in ignition status.
Key Part Number	—	Varies	This parameter displays the key part number.
Key Type	—	Master Key	The scan tool displays Unknown, Master Key, Valet Key, Fleet Key, or Unconfigured. This parameter displays the key type.
Last Door Lock Function	—	All Doors Lock	The scan tool displays NO Action, PC UNDB Lock, PC Unlock, Unlock, Unlock Driver, Unlock Passenger, Unlock Left Rear, Unlock Right Rear, Unlock Cargo Liftgate, Unlock Driver Side, Unlock Passenger Side, Unlock Non Driver, Unlock All, Lock All, DBL Lock, or UNDBL Lock.
LED Backlight Dimming Command	—	Varies	The scan tool displays as a percentage. This parameter displays LED backlight dimming PWM command status.
Left Brake Lamp Command	—	Varies	The scan tool displays percentage. This parameter displays left brake lamp command status.
Left Dedicated Daytime Running Lamp Command	—	Varies	The scan tool displays percentage. This parameter displays left dedicated daytime running lamp command status.
Left Front Tire Pressure	—	Varies	This parameter displays left front tire pressure in PSI.
Left Front Tire Pressure Sensor Identification	—	Varies	This parameter displays left front tire pressure sensor ID.
Left Front Tire Pressure Sensor Location Learned	—	Yes	The scan tool displays No or Yes. This parameter displays tire pressure monitor system learned status.
Left Front Tire Pressure Sensor Mode	—	Learn Mode — Pressure Triggered	The scan tool parameter displays Learn Mode, Undefined, Remeasure Data Mode, Rolling Mode, Enter Off Mode, Exit Off Mode, or Learn Mode Pressure Triggered.
Left Front Tire Pressure Status	—	Normal	The scan tool displays Unknown, Normal, Very Low Pressure, Low, Weak Signal, or High.
Left Front Turn Signal Bulb Out Feedback	—	Inactive	The scan tool displays Active or Inactive.
Left Front Turn Signal/Hazard Lamp Command	—	Inactive	The scan tool displays Active or Inactive.
Left Low Beam/Daytime Running Lamp Command	—	Varies	The scan tool displays percentage. This parameter displays left low beam/daytime running lamp status.
Left Park Lamps Command	—	Varies	The scan tool displays percentage. This parameter displays rear exterior lighting status.
Left Rear Child Security Lock Switch	—	Inactive	This parameter displays Active or Inactive.
Left Rear Door Ajar Switch	—	Inactive	This parameter displays Active or Inactive. This parameter displays the left rear door ajar switch status.
Left Rear Tire Pressure	—	Varies	This parameter displays left rear tire pressure in PSI.
Left Rear Tire Pressure Sensor Identification	—	Varies	This parameter displays left rear tire pressure sensor ID.
Left Rear Tire Pressure Sensor Location Learned	—	Yes	The scan tool displays No or Yes. This parameter displays tire pressure monitor system learned status.
Left Rear Tire Pressure Sensor Mode	—	Stationary	The scan tool displays Learn Mode, Undefined, Remeasure Data Mode, Rolling Mode, Enter Off Mode, Exit Off Mode, or Learn Mode Pressure Triggered.
Left Rear Tire Pressure Status	—	Normal	The scan tool displays Unknown, Normal, Very Low Pressure, Low, Weak Signal, or High.
Left Rear Turn Signal Bulb Out Feedback	—	Inactive	The scan tool displays Active or Inactive. The parameter displays turn lamp outage status.
Left Rear Turn Signal/Hazard Lamp Command	—	Inactive	The scan tool displays Active or Inactive.
Left Rear Window Learned	—	Yes	The scan tool displays No or Yes.
Left Rear Window Main Control Down Switch	—	Inactive	The scan tool display Active or Inactive. This parameter displays driver window switch inputs.
Left Rear Window Main Control Express Switch	—	Inactive	The scan tool display Active or Inactive. This parameter displays driver window switch inputs.
Left Rear Window Main Control Up Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays driver window switch inputs.
Left Rear Window Motor Mode	—	Local Switch Overridden	The scan tool displays Down, Express, Up, Inhibit, or Local Switch Overridden.
Left Rear Window Switch at Door	—	Inactive	The scan tool displays Active or Inactive.
Left Stop Lamp Command	—	Varies	The scan tool display percentage.
Left Turn Signal Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the left turn signal switch status.

License Plate Lamps Command	—	Inactive	The scan tool displays Active or Inactive.
Load Reduction Level 2-3 Counter	—	Varies	The scan tool display as counts.
Low Beam Relay Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the headlamp low beam relay status.
Manufacturers Enable Counter	—	Varies	This parameter tool displays various counter values.
Master Keys Learned	—	Varies	This parameter displays the total number of master keys learned.
Module Diagnostic Address	—	Varies	This parameter displays module diagnostic address.
Number of Key Fobs In Vehicle	—	1	This parameter displays the number of fobs located in the vehicle.
Odometer	—	Varies	This parameter displays the vehicle mileage.
Outside Rear View Mirror Courtesy Lamp Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays front exterior lighting status.
Park Brake Switch	—	Active	The scan tool displays Active or Inactive. This parameter displays front exterior lighting status.
Park Lamps Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the parklamp switch is activated.
Passenger Door Ajar Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger door ajar switch status.
Passenger Door Lock Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger door lock switch status.
Passenger Door Unlock Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger door unlock switch status.
Passenger Door(s) Unlatch Command	—	Inactive	The scan tool displays Active or Inactive.
Passenger Door(s) Unlock Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger door unlock status.
Passenger Seat Heating Switch	—	Inactive	The scan tool displays Active or Inactive.
Passenger Seat Heating/Venting/Cooling Mode	—	Off	The scan tool displays On or Off.
Passenger Seat Ventilation Switch	—	Inactive	The scan tool displays Active or Inactive.
Passenger Window Learned	—	Yes	The scan tool displays No or Yes. This parameter displays the passenger window learned status.
Passenger Window Motor Mode	—	Local Switch Overridden	The scan tool displays Down, Express, Up, Inhibit, or Local Switch Overridden.
Passenger Window Switch at Door	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger window switch status.
Pickup Bed Cargo Lamp Command	—	Varies	The scan tool displays percentage. This parameter displays pickup bed cargo lamp command status.
Previous Key Type	—	Unknown	This parameter displays previous driver identification device type.
Primary Key Status	—	Yes	The scan tool displays No or Yes.
Push Button Ignition Switch	—	Inactive	The scan tool displays Active or Inactive.
Push Button Ignition Switch Voltage	—	Varies	This parameter displays the push button ignition switch voltage.
Rain Sensor	—	Inactive	The scan tool displays Active or Inactive.
Rear Closure Ajar Switch	—	Active	The scan tool displays Active or Inactive.
Rear Closure Cylinder Lock Switch	—	Inactive	The scan tool displays Active or Inactive.
Rear Closure Cylinder Unlock Switch	—	Inactive	The scan tool displays Active or Inactive.
Rear Tire Pressure on Placard	—	Varies	This parameter displays the rear tire pressure in kPa or PSI. This parameter displays the specified tire pressure placard information programmed in the BCM for tire pressure monitoring.
Regulated Voltage Control Mode	—	Voltage	The scan tool displays voltage.
Remote Vehicle Start Attempts Exhausted	—	Varies	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history or remaining start attempts.
Remote Vehicle Start Crank Time	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Remote Vehicle Start Disabled by Driver	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Remote Vehicle Start Source	—	Ignition Switch Start	The scan tool displays Ignition Switch Start or Remote Vehicle Start.

Remote Vehicle Starts Exhausted	—	Varies	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history or remaining remote starts.
Right Brake Lamp Command	—	Varies	The scan tool display percentage. This parameter displays right brake lamp PWM command status.
Right Dedicated Daytime Running Lamp Command	—	Varies	The scan tool display percentage. This parameter displays right dedicated DRL PWM command status.
Right Front Tire Pressure	—	Varies	This parameter displays right front tire pressure in PSI.
Right Front Tire Pressure Sensor Identification	—	Varies	This parameter displays right front tire pressure sensor ID.
Right Front Tire Pressure Sensor Location Learned	—	Yes	The scan tool displays No or Yes.
Right Front Tire Pressure Sensor Mode	—	Stationary	The scan tool displays Learn Mode, Undefined, Remeasure Data Mode, Rolling Mode, Enter Off Mode, Exit Off Mode or Learn Mode Pressure Triggered.
Right Front Tire Pressure Status	—	Normal	The scan tool displays Unknown, Normal, Very Low Pressure, Low, Weak Signal, or High.
Right Front Turn Signal Bulb Out Feedback	—	Inactive	The scan tool displays Active or Inactive.
Right Front Turn Signal/Hazard Lamp Command	—	Inactive	The scan tool displays Active or Inactive.
Right Low Beam/Daytime Running Lamp Command	—	Varies	The scan tool displays percentage. This parameter displays right low beam/daytime running lamp status.
Right Park Lamps Command	—	Varies	The scan tool displays percentage. This parameter displays rear exterior lighting status.
Right Rear Child Security Lock Switch	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Door Ajar Switch	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Tire Pressure	—	Varies	This parameter displays right rear tire pressure in PSI.
Right Rear Tire Pressure Sensor Identification	—	Varies	This parameter displays right rear tire pressure sensor ID.
Right Rear Tire Pressure Sensor Location Learned	—	Yes	The scan tool displays No or Yes.
Right Rear Tire Pressure Sensor Mode	—	Learn Mode — Pressure Triggered	The scan tool displays Learn Mode, Undefined, Remeasure Data Mode, Rolling Mode, Enter Off Mode, Exit Off Mode, or Learn Mode Pressure Triggered. This parameter displays the pressure sensor mode status.
Right Rear Tire Pressure Status	—	Normal	The scan tool displays Unknown, Normal, Very Low Pressure, Low, Weak Signal or High. This parameter displays the right rear tire pressure status.
Right Rear Turn Signal Bulb Out Feedback	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Turn Signal/Hazard Lamp Command	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Window Main Control Down Switch	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Window Main Control Express Switch	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Window Main Control Up Switch	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Window Motor Mode	—	Local Switch Overridden	The scan tool displays Down, Express, Up, Inhibit, or Local Switch Overridden.
Right Rear Window Switch at Door	—	Inactive	The scan tool displays Active or Inactive.
Right Stop Lamp Command	—	Varies	The scan tool displays percentage.
Right Turn Signal Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the right turn signal switch status.
Run Abort	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Run Relay Command	—	Active	The scan tool displays Active or Inactive.
Run/Crank	—	Inactive	The scan tool displays Active or Inactive.
Run/Crank Relay Command	—	Active	The scan tool displays Active or Inactive.
Run/Crank Power Mode Indicator Command	—	Varies	The scan tool displays percentage. This parameter displays ignition switch run LED PWM command status.
Secondary Key Status	—	No	The scan tool displays No or Yes.

Security Indicator Command	—	Varies	The scan tool displays percentage. This parameter displays security LED PWM command status.
Selected Front Tire Type	—	Standard Load	The scan tool displays No Tire Type, Metric Standard Load, Metric Extra Load, Load Range C, Load Range D, or Load Range E. This parameter displays the front tire type.
Selected Rear Tire Type	—	Standard Load	The scan tool displays No Tire Type, Metric Standard Load, Metric Extra Load, Load Range C, Load Range D, or Load Range E. This parameter displays the rear tire type.
Start-Up State of Charge	—	Varies	The scan tool displays percentage. This parameter displays startup state of charge status.
State of Charge	—	Varies	The scan tool displays percentage. This parameter displays state of charge status.
Sunroof Enabled	—	Active	The scan tool displays Active or Inactive.
Sunroof Motor Overtemperature	—	Inactive	The scan tool displays Active or Inactive.
Sunroof Not Learned	—	Inactive	The scan tool displays Active or Inactive.
Sunroof Position	—	Closed	The scan tool displays Closed, Open, Venting, Comfort Open, Closing, Opening. This parameter displays the current sunroof position.
Sunroof Remote Command	—	Inactive	The scan tool displays Sunroof Secure Close, Venting, Close, or Open. This parameter displays the last sunroof remote command.
Sunroof Slide Switch	—	Inactive	The scan tool displays Inactive, Express Open, Open, Express Close, Close, Short to Ground, Short to Battery, or Stuck. This parameter displays the sunroof slide switch status.
Sunroof Tilt Switch	—	Inactive	The scan tool displays Inactive, Open, Close, Short to Ground, Short to Battery or Stuck. This parameter displays the sunroof tilt switch status. When the switch experiences a malfunction Short to Ground, Short to Battery or Stuck will be displayed.
Sunroof/Sunshade Motor Overtemperature	—	Inactive	The scan tool displays Active or Inactive.
Sunroof/Sunshade Switch	—	Inactive	The scan tool displays Inactive, Express Open, Open, Express Close, Close, Short to Ground, Short to Battery, or Stuck. This parameter displays the sunroof or sunshade switch status.
Sunshade Enabled	—	Active	The scan tool displays Active or Inactive.
Sunshade Not Learned	—	Inactive	The scan tool displays Active or Inactive.
Sunshade Position	—	Closed	The scan tool displays Ajar, Closed, Opened, Closing, or Opening. This parameter displays the sunshade position status.
Sunshade Remote Command	—	Inactive	The scan tool displays Close or Open. This parameter displays the last sunshade remote command.
Tamper Status	—	No	The scan tool displays No or Yes.
Telematics Enhanced Service Override Active	—	No	The scan tool displays No or Yes. This parameter displays vehicle theft deterrent system status.
Total Keys Learned	—	Varies	This parameter displays the number of keys learned.
Traction Control Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the traction control switch is active.
Transponder Authentication	—	Initializing	The scan tool displays Inactive, Initializing, ID Received, Password Received, Data Reception Complete, or Data Transmission Complete. This parameter displays the transponder key communication status.
Transponder Key Status	—	OK	The scan tool displays OK, LIN Bus Initialization Malfunction, Antenna Initialization Malfunction, Password Error, No Valid Key Detected, LIN Bus Communication Malfunction, or Antenna Malfunction. This parameter displays the transponder key communication error status.
Trunk Lamp Command	—	Varies	The scan tool displays as percentage.
Trunk Lid/Liftgate Window Exterior Unlatch Switch	—	Inactive	The scan tool displays Active or Inactive.
Trunk Lid/Liftgate Window Unlatch Command	—	Inactive	The scan tool displays Active or Inactive.
Valet Keys Learned	—	Varies	This parameter displays the number of valet keys learned.
Valet Mode Status	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Valet switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the valet switch is on.
Vehicle Identification Number (VIN)	—	Varies	This parameter displays the vehicle identification number.
Window Lockout Switch	—	Inactive	The scan tool displays Active or Inactive.
Window Lockout Switch Indicator	—	Inactive	The scan tool displays Active or Inactive.

Command	—	Inactive	The scan tool displays Active or Inactive.
Windshield Washer Relay Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the windshield washer relay status.
Windshield Washer Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the windshield washer switch status.
Windshield Wiper Park Switch	—	Active	The scan tool displays Active or Inactive.
Windshield Wiper High Speed Relay Command	—	Inactive	The scan tool displays Active or Inactive.
Windshield Wiper High Speed Switch	—	Inactive	The scan tool displays Active or Inactive.
Windshield Wiper Motor Relay Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the windshield wiper relay status.
Windshield Wiper Stalled During Sweep	—	Inactive	The scan tool displays Active or Inactive.
Windshield Wiper Stalled in Park Position	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the windshield wiper stalled status.
Windshield Wiper Switch	—	Off	The scan tool displays Off, Delay 1, Delay 2, Delay 3, Delay 4, Delay 5, or Low. This parameter displays the windshield wiper switch status.

Body Control Module Scan Tool Output Controls

Scan Tool Output Control	Description
Accent Lighting 1	The BCM activates the accent lighting when you select On. The value should be 100%. All accent lighting should illuminate until commanded Off.
Accent Lighting 2	The BCM activates the accent lighting when you select On. The value should be 100%. All accent lighting should illuminate until commanded Off.
Accessory Power Mode Indicator	The BCM activates the accessory indicator when you select On. The value should be 100%. The yellow LED accessory indicator on start button should illuminate until commanded Off.
Accessory Power Relay	The BCM actuates the accessory power relay when you select On. The accessory power relay should turn on allowing specific vehicle functions to operate.
Accessory/Retained Accessory Power Relay	The BCM actuates the retained accessory power relay when you select On. The retained accessory power relay should turn on allowing specific vehicle functions to operate.
All Doors Lock	The BCM activates all doors lock when you select Lock. All doors should lock.
All Doors Lock/Unlock	The BCM activates all doors lock/unlock when you select Lock/Unlock.
Auxiliary Ignition Run Relay	The BCM controls the Ignition Run Coil Control circuit to turn it On and Off.
Backup Lamps	The BCM actuates the backup lamps relay when you select On. The backup lamps should illuminate until commanded Off. Engine must be running.
Battery Saver Relay	The BCM activates the battery saver relay when you select Enable. This command sets the low power mode relay in the state in which it does not supply power to the non-essential parts of the vehicle. This is used to prevent the battery from being depleted when the vehicle is not used for a long period of time.
Brake Pedal Position Sensor Learn	The BCM activates the brake pedal position sensor learn when you select Learn. The brake pedal position sensor learn procedure should start.
Brake Transmission Shift Interlock Solenoid Actuator	The BCM activates the transmission shift interlock solenoid actuator when you select On.
Brake Transmission Shift Interlock Indicator	The BCM activates the transmission range indicator when you select On. The transmission range indicator at the shifter should illuminate until commanded Off.
Center Brake Lamp	The BCM activates the center brake lamp when you select On. The center brake lamp should illuminate until commanded Off.
Center Stop Lamp	The BCM activates the center stop lamp when you select On. The center stop lamp should illuminate until commanded Off.
Child Security Lock Indicator	The BCM activates the child security lock indicator when you select On. The child security lock indicator should illuminate until commanded Off.
Child Security Lock Motors	The BCM actuates the child security door motor when you select Lock. The child security doors should lock.
Child Security Lock/Window Lockout Switch Indicator	The BCM activates the child security lock/window lockout switch indicator when you select On. The child security lock/window lockout switch indicator should illuminate until commanded Off.
Clear Driver Window Learned Values	When you select Clear the clear driver window learn procedure should start.
Clear Passenger Window Learned Values	When you select Clear the clear left rear window learn procedure should start.
Courtesy Lamps	The BCM activates the courtesy lamps when you select On. The value should be 100%. The courtesy lamps should illuminate until commanded Off.
Driver Door Unlatch	The BCM activates the output circuit to unlatch the driver door with a passive entry passive start when you select Unlatch. There is NO door handle on this type of vehicle to open the door. Instead, there is a pad that you press to unlatch the door.
Driver Door Unlock	The BCM pulses the driver door unlock motor when you select Unlock. The driver door should unlock.

Driver Window Motor	The BCM activates the driver window motor when you select Up/Down/Stop/Express Up/Express Down. The driver window should follow the appropriate command.
Driver Window Motor Mode	The BCM activates the driver window motor when you select Up/Down/Stop/Express Up/Express Down. The driver window should follow the appropriate command.
Front Fog Lamps	The BCM actuates the front fog lamps relay when you select On. The front fog lamps relay should turn on.
Generator Regulator Setpoint	The BCM changes the output of the generator.
Hazard Lamps Switch Backlight	The BCM activates the hazard lamps switch when you select On. The value should be 100%. The hazard lamps switch backlight should illuminate until commanded Off.
High Beams	The BCM activates the high beam command when you select On. The high beam lights should illuminate. The headlamps have to be on.
Horn Relay	The BCM activates the horn when you select On. The horn should sound.
Inadvertent Load	The BCM activates the inadvertent load command when you select On. (It is an electronic request to shut down an electrical or electronic device that is drawing power from the battery at a time when there should be no activity, usually after the key has been removed from the ignition for a period of time.)
Incandescent Dimming	The BCM activates the incandescent light dimming when you select On. The values should be 100%. The incandescent light dimming should illuminate until commanded Off.
Indicator Dimming	The BCM activates the indicator dimming when you select On. The values should be 100%. The indicator should illuminate until commanded Off.
LED Backlight Dimming	The BCM activates the LED backlight dimming when you select On. The values should be 100%. The LED backlight dimming for control switches should illuminate until commanded Off.
Left Brake Lamp	The BCM activates the left brake lamp when you select On. The values should be 100%. The left brake lamp should illuminate until commanded Off.
Left Dedicated Daytime Running Lamp	The BCM activates the left dedicated daytime running lamp when you select ON. The value changes to 100%. The left daytime running lamp should illuminate.
Left Front Park Lamp	The BCM activates the left front park lamp when you select ON with a value of 100%. The left front park lamp should illuminate.
Left Front Park Lamp/Daytime Running Lamp	The BCM activates the left front park lamp/daytime running lamp when you select ON with a value of 100%. The left front park lamp/daytime running lamp should illuminate.
Left Front Turn Signal Lamp	The BCM activates the left front turn signal lamp when you select On. The left front turn signal lamp should illuminate until commanded Off.
Left Headlamp Lamp Low Beam	The BCM activates the left headlamp low beam when you select On. The values should be 100%. The left headlamp low beam should illuminate until commanded Off.
Left Park Lamps	The BCM activates the left park lamps when you select ON with a value of 100%. The left park lamps should illuminate.
Left Rear Park Lamp	The BCM activates the left rear park lamp when you select ON with a value of 100%. The left rear park lamp should illuminate.
Left Rear Stop/Park Lamp	The BCM activates the left rear stop/park lamp when you select ON with a value of 100%. The left rear stop/park lamp should illuminate.
Left Rear Turn Signal Lamp	The BCM activates the left rear turn signal lamp when you select On. The left rear turn signal lamp should illuminate until commanded Off.
Left Rear Turn Signal/Stop Lamp	The BCM activates the left rear turn signal/stop lamp when you select On. The left rear turn signal/stop lamp should illuminate until commanded Off.
Left Rear Window Motor	The BCM activates the left rear window motor when you select Up/Down/Stop/Express Down. The left rear window should follow the appropriate command.
Left Stop Lamp	The BCM activates the left stop lamp when you select ON with a value of 100%. The left stop lamp should illuminate.
Left Trailer Turn Signal Lamp	The BCM activates the left trailer turn signal lamp when you select ON with a value of 100%. The left trailer turn signal lamp should illuminate.
License Plate Lamps	The BCM activates the license plate lamps when you select On. The license plate lights should turn on until commanded Off.
Liftgate Unlatch	The BCM actuates the rear compartment lid release actuator when you select Unlatch. The trunk or liftgate should open.
LIN Bus Device Identification Data	When you select Update the LIN Bus Device part number and calibration part number should be updated.
Low Beam Lamps	The BCM activates the low beam lamps when you select On. The low beam lamps should turn on.
Low Beam Relay	The BCM activates the low beams when you select On. The low beam lights should turn on.
Outside Rear View Mirror Courtesy Lamp	The BCM activates the outside rear view mirror courtesy lamp when you select On. The outside rear view mirror courtesy lamp (at the bottom) should illuminate.
Passenger Door(s) Unlatch	The BCM activates the output circuit to unlatch the passenger door with a passive entry passive start when you select Unlatch. There is NO door handle on this type of vehicle to open the door. Instead, there is a pad that you press to unlatch the door.
Passenger Door(s) Unlock	The BCM pulses the passenger door unlock motor when you select Unlock. The passenger door should unlock.
Passenger Window Motor	The BCM activates the passenger window motor when you select Up/Down/Stop/Express Up/Express Down. The passenger window should follow the appropriate command.
Pickup Bed Cargo Lamp	The BCM activates the pickup bed cargo lamp when you select On. The values should be 100%. The pickup bed cargo lamp should illuminate until commanded Off.
Rear Fog Lamp(s) Relay	The BCM activates the rear fog lamps when you select On. The rear fog lamps should turn on.

Right Brake Lamp	The BCM activates the right brake lamp when you select On. The value should be 100%. The right brake lamp should illuminate until commanded Off.
Right Dedicated Daytime Running Lamp	The BCM activates the right dedicated daytime running lamp when you select On. The value should be 100%. The right daytime running lamp should illuminate.
Right Front Park Lamp	The BCM activates the right front park lamp when you select ON with a value of 100%. The right front park lamp should illuminate.
Right Front Park Lamp/Daytime Running Lamp	The BCM activates the right front park lamp/daytime running lamp when you select ON with a value of 100%. The right front park lamp/daytime running lamp should illuminate.
Right Front Turn Signal Lamp	The BCM activates the right front turn signal lamp when you select On. The right front turn signal/hazard lamp should illuminate.
Right Headlamp Low Beam	The BCM activates the right headlamp low beam when you select On. The right headlamp low beam should illuminate.
Right Park Lamps	The BCM activates the right park lamps when you select ON with a value of 100%. The right park lamps should illuminate.
Right Rear Park Lamp	The BCM activates the right rear park lamp when you select ON with a value of 100%. The right rear park lamp should illuminate.
Right Rear Stop/Park Lamp	The BCM activates the right rear stop/park lamp when you select ON with a value of 100%. The right rear stop/park lamp should illuminate.
Right Rear Turn Signal Lamp	The BCM activates the right rear turn signal/hazard lamp when you select On. The right rear turn signal lamp should illuminate until commanded Off.
Right Rear Turn Signal/Stop Lamp	The BCM activates the right rear turn signal/stop lamp when you select On. The right rear turn signal/stop lamp should illuminate until commanded Off.
Right Rear Window Motor	The BCM activates the right rear window motor when you select Up/Down/Stop/Express Down. The right rear window should follow the appropriate command.
Right Stop Lamp	The BCM activates the right stop lamp when you select ON with a value of 100%. The right stop lamp should illuminate.
Right Trailer Turn Signal Lamp	The BCM activates the right trailer turn signal lamp when you select ON with a value of 100%. The right trailer turn signal lamp should illuminate.
Run Relay	The BCM actuates the run relay when you select On. The run relay should turn on.
Run/Crank Relay	The BCM actuates the run/crank relay when you select On. The run/crank relay should turn on.
Run/Start Power Mode Indicator	The BCM activates the run/start lamp when you select On. The value should be 100%. The green LED on engine start/stop button should illuminate until commanded Off.
Security Indicator	The BCM activates the security indicator command when you select On. The security indicator at center of dash (or at DRL sensor) should illuminate until commanded Off.
Stop Lamps	The BCM activates the stop lamps when you select ON with a value of 100%. The stop lamps should illuminate.
Tire Pressure Sensors Learn	The BCM activates the tire pressure sensor learn procedure when you select Learn.
Tire Type/Pressure Selection	When you select OK, you can change tire type and load range.
Trailer Backup Lamps	The BCM activates the trailer backup lamps when you select ON with a value of 100%. The trailer backup lamps should illuminate.
Trailer Park Lamps	The BCM activates the trailer park lamps when you select ON with a value of 100%. The trailer park lamps should illuminate.
Transmission Range Indicator	The BCM activates the transmission range indicator when you select On. The transmission range indicator at the shifter should illuminate until commanded Off.
Trunk Lamp	The BCM activates the trunk lamp when you select On. The value should be 100%. The trunk lamp should illuminate until commanded Off.
Trunk Lid Unlatch	The BCM activates the trunk lid unlatch when you select On. The trunk lid should unlatch.
Window Lockout Switch Indicator	The BCM activates the window lockout switch indicator when you select On. The window lockout switch indicator should illuminate until commanded Off.
Windshield Washer Relay	The BCM actuates the windshield washer relay when you select On. The windshield washer relay should turn on.
Windshield Wiper High Speed Relay	The BCM actuates the windshield wiper high speed relay when you select On. The windshield wiper high speed relay should turn on.
Windshield Wiper Motor Relay	The BCM actuates the windshield wiper motor relay when you select On. The windshield wiper motor relay should turn on.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Brake Component Specifications			
	Application	Specification	
		Metric	English
	Brake Caliper Bleeder Valve	12 Y	106 lb in
	Rear Brake Cylinder Bleeder Valve	7 Y	62 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Brake System Specifications			
Application		Specification	
	Metric	English	
Brake Pedal Maximum Travel*			
• Vacuum Power Assist	49 mm	1.9 in	
* Specification with 445 N (100 lbs) of force applied to the brake pedal, the ignition OFF, and the brake booster power reserve depleted.			

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Bulb Usage Chart

Bulb	Type
Auxiliary Side Front Turn Signal Lamp	W5W
Back Up Bulb	P21W
Front Fog Lamp	HB4-51W
Front Position Lamp Bulb	W5W
Front Turn Signal Lamp Bulb	PY21W
Headlamp High Beam Bulb– All	55W
Headlamp Low Beam Bulb– Dual Beam	H7-55W
Headlamp Low Beam Bulb– Projector	H1-55W
High Mounted Stop Lamp	W5W (4X)
License Lamp Bulb	W5W
Rear Fog Lamp	P21W
Stop Lamp Bulb	P21W
Tail Position Bulb– Controlled by the Vehicle PWM	P21W
Turn Signal Bulb	PY21W

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

- Table 1: [3-5 Reverse Clutch](#)
- Table 2: [1-2-3-4 Clutch](#)
- Table 3: [4-5-6 Clutch](#)
- Table 4: [2-6 Clutch](#)
- Table 5: [Low/Reverse Clutch](#)

3-5 Reverse Clutch

Clutch Pack Travel Specification – 1.20–1.74 mm (0.047–0.069 in)

Retaining Ring Thickness

Metric	English	O.D. Color
Note: After measuring clutch pack travel, determine if the measurement is within the specification. If the measurement is not within the specification, measure the thickness of the existing retaining ring, and then choose a thicker or thinner retaining ring that will bring the measurement within specification.		
2.24–2.34 mm	0.088–0.092 in	Purple – Purple
2.25–2.35 mm	0.089–0.093 in	Light Green – Light Green
2.47–2.57 mm	0.097–0.101 in	Gray – Gray
2.69–2.79 mm	0.106–0.110 in	Yellow – Yellow
2.91–3.01 mm	0.115–0.119 in	Orange – Orange
3.13–3.23 mm	0.123–0.127 in	Light Blue – Light Blue
3.35–3.45 mm	0.132–0.136 in	White – White
3.57–3.67 mm	0.141–0.144 in	Yellow – Purple
3.79–3.89 mm	0.149–0.153 in	Light Blue – Purple

1-2-3-4 Clutch

Clutch Pack Travel Specification – 1.50–1.98 mm (0.059–0.078 in)

Retaining Ring Thickness

Metric	English	O.D. Color
Note: After measuring clutch pack travel, determine if the measurement is within the specification. If the measurement is not within the specification, measure the thickness of the existing retaining ring, and then choose a thicker or thinner retaining ring that will bring the measurement within specification.		
2.25–2.35 mm	0.089–0.093 in	Light Green – Light Green
2.47–2.57 mm	0.097–0.101 in	Gray – Gray
2.69–2.79 mm	0.106–0.110 in	Yellow – Yellow
2.91–3.01 mm	0.115–0.119 in	Orange – Orange
3.13–3.23 mm	0.123–0.127 in	Light Blue – Light Blue
3.35–3.45 mm	0.132–0.136 in	White – White
3.57–3.67 mm	0.141–0.144 in	Yellow – Purple
3.79–3.89 mm	0.149–0.153 in	Light Blue – Purple

4-5-6 Clutch

Clutch Pack Travel Specification – 1.17–1.76 mm (0.046–0.069 in)

Retaining Ring Thickness

Metric	English	O.D. Color
Note: After measuring clutch pack travel, determine if the measurement is within the specification. If the measurement is not within the specification, measure the thickness of the existing retaining ring, and then choose a thicker or thinner retaining ring that will bring the measurement within specification.		
2.24–2.34 mm	0.088–0.092 in	Purple – Purple
2.52–2.62 mm	0.099–0.103 in	Light Green – Light Green
2.80–2.90 mm	0.110–0.114 in	Gray – Gray
3.08–3.18 mm	0.121–0.125 in	Yellow – Yellow
3.36–3.46 mm	0.132–0.136 in	Orange – Orange

3.64–3.74 mm	0.143–0.147 in	Light Blue – Light Blue
3.92–4.02 mm	0.154–0.158 in	White – White
4.20–4.30 mm	0.165–0.169 in	Yellow – Purple

2-6 Clutch

Clutch Pack Travel Specification – 1.20–1.96 mm (0.047–0.077 in)

Retaining Ring Thickness

Metric	English	O.D. Color
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Note: After measuring clutch pack travel, determine if the measurement is within the specification. If the measurement is not within the specification, measure the thickness of the existing retaining ring, and then choose a thicker or thinner retaining ring that will bring the measurement within specification.

1.64–1.74 mm	0.065–0.069 in	Orange
1.92–2.02 mm	0.076–0.080 in	Yellow Stripe
2.20–2.30 mm	0.087–0.091 in	Light Blue Stripe
2.48–2.58 mm	0.098–0.102 in	Purple Stripe
2.76–2.86 mm	0.109–0.113 in	Green

Low/Reverse Clutch

Clutch Pack Travel Specification – 1.65–2.33 mm (0.065–0.092 in)

Retaining Ring Thickness

Metric	English	O.D. Color
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Note: After measuring clutch pack travel, determine if the measurement is within the specification. If the measurement is not within the specification, measure the thickness of the existing retaining ring, and then choose a thicker or thinner retaining ring that will bring the measurement within specification.

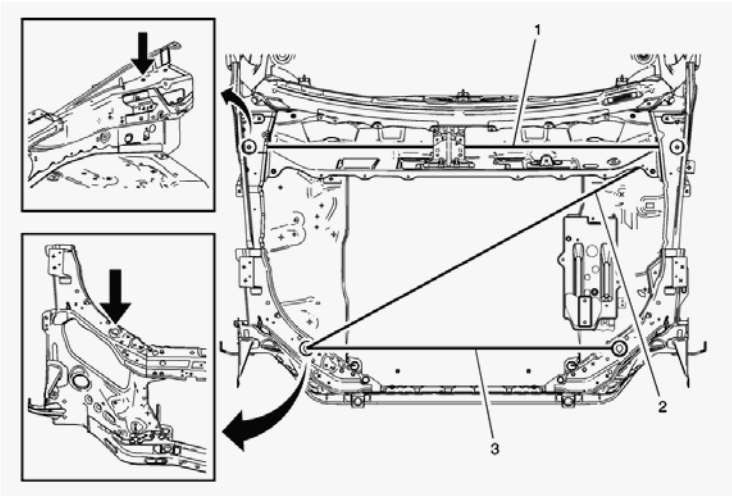
1.98–2.08 mm	0.078–0.082 in	Orange
2.28–2.38 mm	0.090–0.094 in	Yellow Stripe
2.58–2.68 mm	0.102–0.106 in	Light Blue Stripe
2.88–2.98 mm	0.113–0.117 in	Purple Stripe
3.18–3.28 mm	0.125–0.129 in	Green

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Table 1: [Dimensions - Body](#)
Table 2: [Dimensions - Body](#)

[Engine Compartment Point to Point Measurements](#)

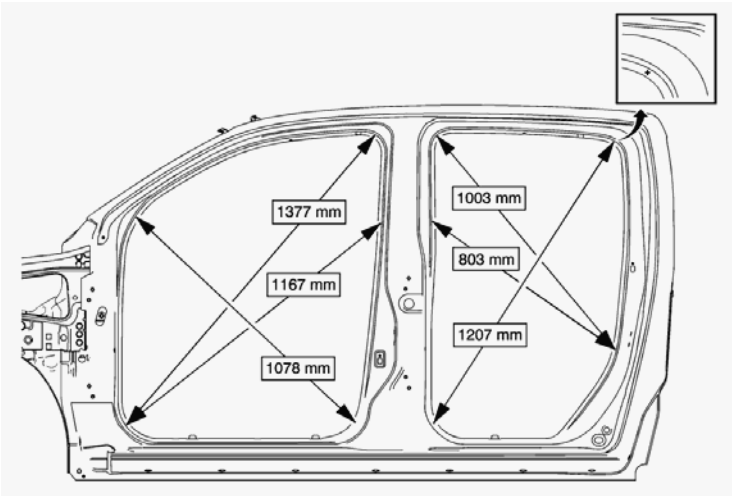


Dimensions - Body

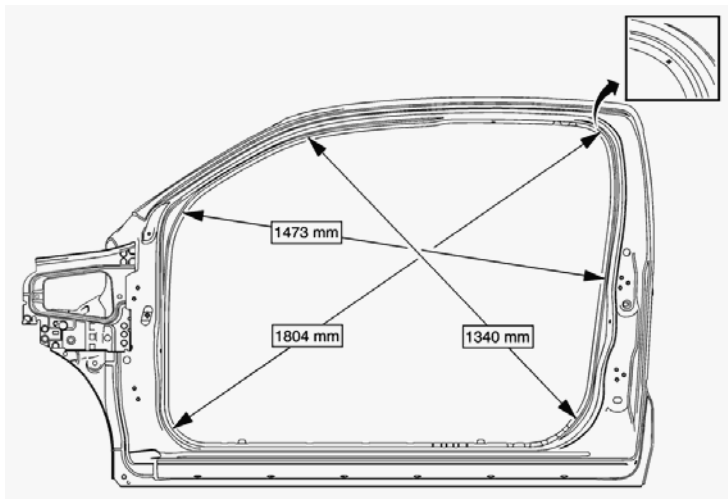
Location	Length
1	1498 mm
2	1472 mm
3	1093 mm

All dimensions are measured from a zero line, a center line, and a common datum. All dimensions are symmetrical unless otherwise specified.

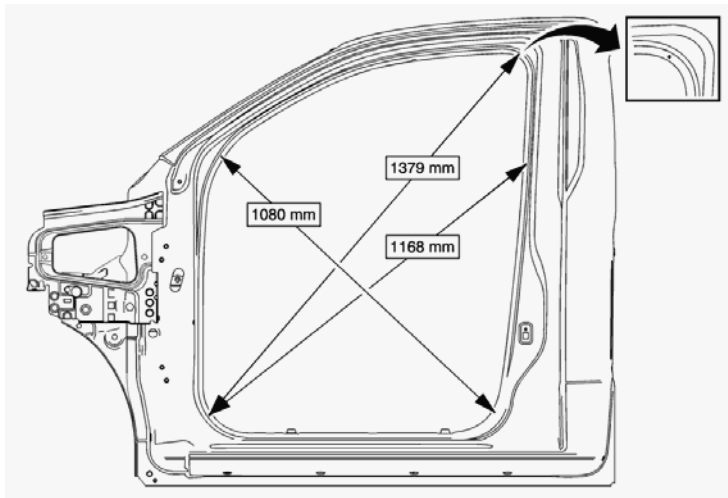
[Body Side Dimensions \(Crew Cab\)](#)



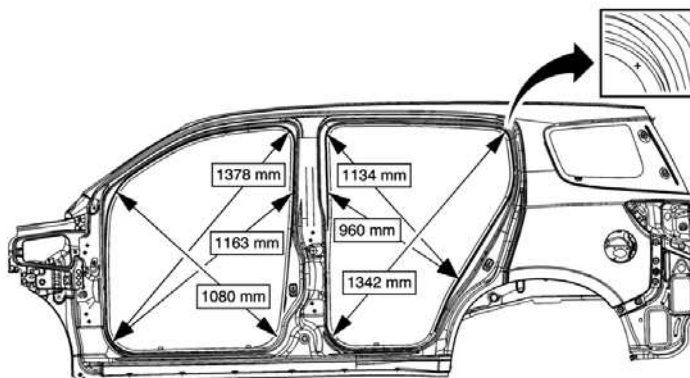
[Body Side Dimensions \(Extended Cab\)](#)



[Body Side Dimensions \(Regular Cab\)](#)



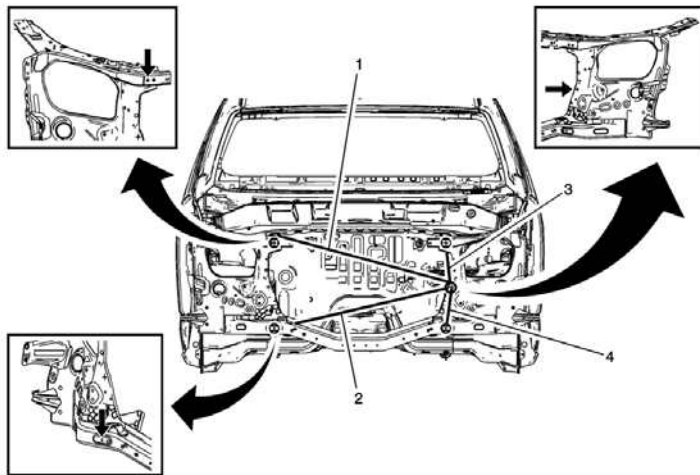
[Body Side Dimensions \(SUV\)](#)



[Point to Point Measurements](#)

Point-to-point measurements are for reference only. All measurements are given in millimeters. Use these measurements for diagnosing and estimating. Point-to-point measurements are duplicated with tram bar pointers set at equal lengths. All die marks, holes, slots, and fasteners are measured to the center. All dimensions are symmetrical unless otherwise specified.

[Front End](#)



Dimensions - Body

Location

Length

1

865.11 mm

2

862.10 mm

3

205 mm

4

198.01 mm

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Disc Brake Component Specifications

Application	Specification	
	Metric	English
Rotor Diameter- Front (With TNB)	300.0 mm	11.81 in
Rotor Diameter- Front (Without TNB)	280.0 mm	11.02 in
Rotor Diameter - Rear	318.0 mm	12.52 in
Rotor Maximum Allowable Assembled Lateral Runout	0.075 mm	0.003 in
Rotor Maximum Allowable Scoring	1.50 mm	0.059 in
Rotor Maximum Allowable Thickness Variation	0.025 mm	0.001 in
Rotor Minimum Allowable Thickness After Refinish - Front	25.5 mm	1.004 in
Rotor Minimum Allowable Thickness After Refinish - Rear	17.1 mm	0.673 in
Rotor Minimum Thickness* - Front	25.0 mm	0.984 in
Rotor Minimum Thickness* - Rear	16.6 mm	0.654 in

*All brake rotors have a minimum thickness dimension cast into them. Replace any rotor that is worn or machined below this specification.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Driveline Runout Specifications

Application	Specification	
	Metric	English
Differential Pinion Input Shaft or Flange Pilot	0.05 mm	0.002 in
Torque Tube Input Flange	0.20 mm	0.008 in
Transmission or Transfer Case Output Flange	0.20 mm	0.008 in
These guidelines apply only to propeller shaft systems with a constant velocity (CV) joint, rubber coupling, or bolt-on U-joint yoke.		

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Drum Brake Component Specifications

	Application	Specification	
		Metric	English
	Brake Drum Diameter- New	295.0 mm	11.614 in
	Brake Drum Discard Diameter	297.0 mm	11.693 in
	Brake Drum Maximum Allowable Diameter After Refinish	296.5 mm	11.673 in
	Brake Shoe Lining Minimum Thickness	0.72 mm	0.03 in

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Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Table 1: [Electronic Brake Control Module Scan Tool Data Parameter](#)

Table 2: [Electronic Brake Control Module Scan Tool Output Controls](#)

The electronic brake control module (EBCM) scan tool data parameters list contains all ABS related parameters that are available on the scan tool. The list is arranged in alphabetical order. A given parameter may appear in any one of the data lists.

Electronic Brake Control Module Scan Tool Data Parameter

Parameter	System State	Expected Value	Description
Operating Conditions: Ignition ON			
ABS Pump Motor Voltage	—	0–14 V	The scan tool displays the pump motor voltage.
Antilock Braking System	—	OK	The scan tool displays OK or Malfunction. Malfunction is displayed when the ABS is defective.
Brake Pressure Sensor	Brake pedal released	0–1 V	The scan tool displays 0–5 V depending on the applied hydraulic brake pressure.
	Brake pedal applied	1–5 V	
Dynamic Rear Proportioning Status	—	OK	The scan tool displays OK or Malfunction. Malfunction is displayed when the dynamic rear proportioning system is defective.
Front Isolation Solenoid Valve	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the front isolation solenoid valve is commanded ON.
Lateral Acceleration Signal	—	Varies	The scan tool displays the current lateral acceleration in m/s ² .
Left Front Inlet Solenoid Valve Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the left front inlet solenoid valve is commanded ON.
Left Front Outlet Solenoid Valve Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the left front outlet solenoid valve is commanded ON.
Left Front Wheel Speed Sensor	—	0 km/h	The scan tool displays km/h depending on the current speed of the left front wheel speed sensor.
Left Rear Inlet Solenoid Valve Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the left rear inlet solenoid valve is commanded ON.
Left Rear Outlet Solenoid Valve Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the left rear outlet solenoid valve is commanded ON.
Left Rear Wheel Speed Sensor	—	0 km/h	The scan tool displays km/h depending on the current speed of the left rear wheel speed sensor.
Longitudinal Acceleration	—	Varies	The scan tool displays the current longitudinal acceleration in m/s ² .
Pump Motor Relay Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the pump motor is commanded ON.
Rear Isolation Solenoid Valve	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the rear isolation solenoid valve is commanded ON.
Right Front Inlet Solenoid Valve Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the right front inlet solenoid valve is commanded ON.
Right Front Outlet Solenoid Valve Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the right front outlet solenoid valve is commanded ON.
Right Front Wheel Speed Sensor	—	0 km/h	The scan tool displays km/h depending on the current speed of the right front wheel speed sensor.
Right Rear Inlet Solenoid Valve Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the right rear inlet solenoid valve is commanded ON.
Right Rear Outlet Solenoid Valve Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the right rear outlet solenoid valve is commanded ON.
Right Rear Wheel Speed Sensor	—	0 km/h	The scan tool displays km/h depending on the current speed of the right rear wheel speed sensor.
Steering Wheel Angle	—	Varies	The scan tool displays the steering wheel angle position.
Steering Wheel Angle Sensor	—	OK	The scan tool displays OK or Malfunction. Malfunction is displayed when the system is defective.
Steering Wheel Angle Sensor Centering	—	OK	The scan tool displays OK or Not OK. The Scan tool displays the steering angle sensor centered status.
System Voltage	—	11–14 V	The scan tool displays V. This is the current battery voltage.

The scan tool displays Active or Inactive. The scan tool displays

Vehicle Stability Control Left Front/Right Rear Solenoid Valves	—	Inactive	The scan tool displays Active or Inactive. The scan tool displays the commanded state of the vehicle stability control solenoid valve.
Vehicle Stability Control Right Front/Left Rear Solenoid Valves	—	Inactive	The scan tool displays Active or Inactive. The scan tool displays the commanded state of the vehicle stability control solenoid valve.
Yaw Rate Signal	—	Varies	The scan tool displays the current yaw rate in °/s.

Electronic Brake Control Module Scan Tool Output Controls

Output Control	Description
ABS Pump Motor	Commands the ABS pump motor Increase or Decrease.
ABS Left Front Solenoid Valves	Commands the solenoid valves ON or OFF.
ABS Left Rear Solenoid Valves	Commands the solenoid valves ON or OFF.
ABS Right Front Solenoid Valves	Commands the solenoid valves ON or OFF.
ABS Right Rear Solenoid Valves	Commands the solenoid valves ON or OFF.
Front Isolation Solenoid Valve	Commands the solenoid valve ON or OFF.
Rear Isolation Solenoid Valve	Commands the solenoid valve ON or OFF.
Traction Control Left Front Solenoid Valves	Commands the solenoid valve ON or OFF.
Traction Control Left Rear Solenoid Valves	Commands the solenoid valve ON or OFF.
Traction Control Right Front Solenoid Valves	Commands the solenoid valves ON or OFF.
Traction Control Right Rear Solenoid Valves	Commands the solenoid valves ON or OFF.

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Submodel: | Engine Type: | Liters:

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Table 1: [Electronic Brake Control Module Scan Tool Data Parameter](#)

Table 2: [Electronic Brake Control Module Scan Tool Output Controls](#)

The electronic brake control module (EBCM) scan tool data parameters list contains all ABS related parameters that are available on the scan tool. The list is arranged in alphabetical order. A given parameter may appear in any one of the data lists.

Electronic Brake Control Module Scan Tool Data Parameter

Parameter	System State	Expected Value	Description
Operating Conditions: Ignition ON			
ABS Pump Motor Voltage	—	0–14 V	The scan tool displays the pump motor voltage.
Antilock Braking System	—	OK	The scan tool displays OK or Malfunction. Malfunction is displayed when the ABS is defective.
Brake Pressure Sensor	Brake pedal released	0–1 V	The scan tool displays 0–5 V depending on the applied hydraulic brake pressure.
	Brake pedal applied	1–5 V	
Dynamic Rear Proportioning Status	—	OK	The scan tool displays OK or Malfunction. Malfunction is displayed when the dynamic rear proportioning system is defective.
Front Isolation Solenoid Valve	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the front isolation solenoid valve is commanded ON.
Lateral Acceleration Signal	—	Varies	The scan tool displays the current lateral acceleration in m/s ² .
Left Front Inlet Solenoid Valve Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the left front inlet solenoid valve is commanded ON.
Left Front Outlet Solenoid Valve Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the left front outlet solenoid valve is commanded ON.
Left Front Wheel Speed Sensor	—	0 km/h	The scan tool displays km/h depending on the current speed of the left front wheel speed sensor.
Left Rear Inlet Solenoid Valve Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the left rear inlet solenoid valve is commanded ON.
Left Rear Outlet Solenoid Valve Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the left rear outlet solenoid valve is commanded ON.
Left Rear Wheel Speed Sensor	—	0 km/h	The scan tool displays km/h depending on the current speed of the left rear wheel speed sensor.
Longitudinal Acceleration	—	Varies	The scan tool displays the current longitudinal acceleration in m/s ² .
Pump Motor Relay Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the pump motor is commanded ON.
Rear Isolation Solenoid Valve	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the rear isolation solenoid valve is commanded ON.
Right Front Inlet Solenoid Valve Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the right front inlet solenoid valve is commanded ON.
Right Front Outlet Solenoid Valve Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the right front outlet solenoid valve is commanded ON.
Right Front Wheel Speed Sensor	—	0 km/h	The scan tool displays km/h depending on the current speed of the right front wheel speed sensor.
Right Rear Inlet Solenoid Valve Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the right rear inlet solenoid valve is commanded ON.
Right Rear Outlet Solenoid Valve Feedback	—	Inactive	The scan tool displays Inactive or Active. Active is displayed when the right rear outlet solenoid valve is commanded ON.
Right Rear Wheel Speed Sensor	—	0 km/h	The scan tool displays km/h depending on the current speed of the right rear wheel speed sensor.
Steering Wheel Angle	—	Varies	The scan tool displays the steering wheel angle position.
Steering Wheel Angle Sensor	—	OK	The scan tool displays OK or Malfunction. Malfunction is displayed when the system is defective.
Steering Wheel Angle Sensor Centering	—	OK	The scan tool displays OK or Not OK. The Scan tool displays the steering angle sensor centered status.
System Voltage	—	11–14 V	The scan tool displays V. This is the current battery voltage.

The scan tool displays Active or Inactive. The scan tool displays

Vehicle Stability Control Left Front/Right Rear Solenoid Valves	—	Inactive	The scan tool displays Active or Inactive. The scan tool displays the commanded state of the vehicle stability control solenoid valve.
Vehicle Stability Control Right Front/Left Rear Solenoid Valves	—	Inactive	The scan tool displays Active or Inactive. The scan tool displays the commanded state of the vehicle stability control solenoid valve.
Yaw Rate Signal	—	Varies	The scan tool displays the current yaw rate in °/s.

Electronic Brake Control Module Scan Tool Output Controls

Output Control	Description
ABS Pump Motor	Commands the ABS pump motor Increase or Decrease.
ABS Left Front Solenoid Valves	Commands the solenoid valves ON or OFF.
ABS Left Rear Solenoid Valves	Commands the solenoid valves ON or OFF.
ABS Right Front Solenoid Valves	Commands the solenoid valves ON or OFF.
ABS Right Rear Solenoid Valves	Commands the solenoid valves ON or OFF.
Front Isolation Solenoid Valve	Commands the solenoid valve ON or OFF.
Rear Isolation Solenoid Valve	Commands the solenoid valve ON or OFF.
Traction Control Left Front Solenoid Valves	Commands the solenoid valve ON or OFF.
Traction Control Left Rear Solenoid Valves	Commands the solenoid valve ON or OFF.
Traction Control Right Front Solenoid Valves	Commands the solenoid valves ON or OFF.
Traction Control Right Rear Solenoid Valves	Commands the solenoid valves ON or OFF.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Engine Mechanical Specifications

Application	Specification	
	Metric	English
Engine Basic Data		
• Manufacturer	GMB	
• Position of Installation	Longitudinal, in front of front axle	
• Cylinder Arrangement	In-Line	
• Number of Cylinders	4	
• Cylinder Diameter X Stroke	87.5 x 100 mm	3.44 x 3.94 in
• Displacement	2.4 L	146.5 cu in
• Maximum Power in CV @ min – 1 (kw), as per ABNT – NBR ISO 1585	152 @ 5200 Gasoline	
• Maximum Torque in Y@ rpm (mkgf), as per ABNT – NBR ISO 1585	229 @ 4000 Gasoline	
• Compression Ratio	10.0:1 rpm	
• Idle Speed	800 rpm	
• Engine Weight	148 kg (326 lbs)	
• Cylinder-to-Cylinder Distance – Center-to-Center	93 mm (3.66 in)	
• Firing Order	1-3-4-2	
• Cylinder Head Material	Aluminum Alloy	
• Cylinder Block Material	Grey Cast Iron	
• Supporting Points (Mounts) – Number (Including Transmission)	3	
• Supporting Points (Mounts) – Type (Including Transmission)	Rubber – Metal	
• Engine Installation Angle (MT)	4.12°-7.83°	
Crankshaft		
• Crankshaft Maximum Runout	0.015 mm	0.00059 in
• Main Bearing Journal Diameter – Standard – Green	57.9810–57.9880 mm	2.2827–2.2829 in
• Main Bearing Journal Diameter – Standard – Brown	57.9880–57.9950 mm	2.2829–2.2832 in

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• Main Bearing Journal Diameter – Oversized – 0.2 5 – Green/Blue	57.7320–57.7385 mm	2.2729–2.2732 in
• Main Bearing Journal Diameter – Oversized – 0.2 5 – Brown/Blue	57.7385–57.7450 mm	2.2732–2.2734 in
• Main Bearing Journal Diameter – Oversized – 0.5 0 – Green/White	54.4820–54.4885 mm	2.1449–2.1452 in
• Main Bearing Journal Diameter – Oversized – 0.5 0 – Brown/White	57.4885–57.4950 mm	2.2633–2.2636 in
• Journal-to-Shell Clearance – Main Bearing – Brown	0.0150–0.0405 mm	0.00059–0.00159 in
• Journal-to-Shell Clearance – Main Bearing – Green	0.0165–0.0420 mm	0.00064–0.00165 in
• Connecting Rod Axial Play At Crank Pin	0.242 mm	0.0095 in
• Crankshaft Axial Play	0.302 mm	0.0119 in
• Number of Permitted Grinding	2 mm	0.079 in
• Crankshaft Bearing Upper and Lower Shell 1-2-4 e 5 (Journal) – Standard – Brown	1.989–1.995 mm mm	0.078–0.079 in
• Crankshaft Bearing Upper and Lower Shell 1-2-4 e 5 (Journal) – Standard – Green	1.995–2.001 mm	0.0785–0.0787 in
• Crankshaft Bearing Upper and Lower Shell 1-2-4 e 5 (Journal) – Oversized – 0.2 5 – Brown/Blue	2.114–2.120 mm	0.0832–0.08325 in
• Crankshaft Bearing Upper and Lower Shell 1-2-4 e 5 (Journal) – Oversized – 0.2 5 – Green/Blue	2.120–2.126 mm	0.08325–0.0837 in
• Crankshaft Bearing Upper and Lower Shell 1-2-4 e 5 (Journal) – Oversized – 0.5 0 – Brown/White	2.239–2.245 mm	0.0882–0.0884 in
• Crankshaft Bearing Upper and Lower Shell 1-2-4 e 5 (Journal) – Oversized – 0.5 0 – Green/White	2.245–2.251 mm	0.0884–0.0886 in
• Crankshaft Bearing Upper and lower Shell (3) – Standard – Brown	1.989–1.995 mm	0.0783–0.0785 in
• Crankshaft Bearing Upper and lower Shell (3) – Standard – Green	1.995–2.001 mm	0.0785–0.0787 in
• Crankshaft Bearing Upper and lower Shell (3) – Oversized – 0.2 5 – Brown/Blue	2.114–2.120 mm	0.0832–0.0834 in
• Crankshaft Bearing Upper and lower Shell (3) – Oversized – 0.2 5 – Green/Blue	2.120–2.126 mm	0.0834–0.0837 in
• Crankshaft Bearing Upper and lower Shell (3) – Oversized – 0.5 0 – Brown/White	2.239–2.245 mm	0.0881–0.0883 in
• Crankshaft Bearing Upper and lower Shell (3) – Oversized – 0.5 0 – Green/White	2.245–2.251 mm	0.0883–0.0886 in
• Connecting Rod Bearing Upper and Lower Shell – Standard	1.490–1.500 mm	0.0587–0.0590 in
• Connecting Rod Bearing Upper and Lower Shell – Oversized – 0.2 5 – Blue	1.615–1.625 mm	0.0636–0.0639 in
• Connecting Rod Bearing Upper and Lower Shell – Oversized – 0.5 0 – White	1.740–1.750 mm	0.0685–0.0689 in

Cylinders and Pistons

• Cylinder-to-Piston Clearance – Piston Skirt Lower Portion	0.010–0.030 mm	0.00039–0.00118 in
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•	Cylinder Bore Maximum Out-of-Round	0.013 mm	0.00039 in
•	Piston Stroke	100 mm	3.94 in
•	Piston Head – at TDC-to-Cylinder Block Surface Distance	0 ±.1 mm	0 ±0.004 in
•	Piston Diameter	87.465–87.475 mm	3.443–3.444 in
•	Compression Ring Ends Gap	0.25–0.45 mm	0.00984–0.0177 in
•	Compression Rings-to-Upper Groove Clearance	0.075 mm	0.00295 in
•	Compression Rings-to-Lower Groove Clearance	0.070 mm	0.00275 in
•	Cylinder Compression	190–230 Psi	
Cylinder Head			
•	Valve Seat and Guide Concentricity	0.05 mm	0.0020 in
•	Cylinder Head Height	134 ±0.1 mm	134 ±0.004 in
•	Cylinder Head Flatness – Camshaft Housing Mounting Surface	0.05 mm	0.002 in
•	Valve Number	16	
Camshaft			
•	Axial Play	0.040–0.144 mm	0.00157–0.0057 in
•	Camshaft Maximum Runout	0.04 mm	0.0015 in
Engine Valves – Intake			
•	Intake Valve Length	100.5–100.7 mm	3.956–3.964 in
•	Intake Valve Face Diameter	31 mm	1.22 in
•	Intake Valve Lift @ Zero Gap	8.5 mm	0.335 in
•	Valve Stem Clearance at Intake Valve Guides	0.030–0.057 mm	0.0012–0.0022 in
Engine Valves – Exhaust			
•	Exhaust Valve Length	90.5–90.7 mm	3.563–3.570 in
•	Exhaust Valve Face Diameter	28 mm	1.102 in
•	Exhaust Valve Lift @ Zero Play	8.5 mm	0.335 in
•	Valve Stem Clearance at Exhaust Valve Guides	0.055–0.067 mm	0.0022–0.0026 in
Lubrication System			
•	Type of Oil Pump	Duocentric Pump	
•	Oil Regulator Pressure	250 kPa	36.26 PSI
Observation: At Idle and Operating Temperature			

• Recommended Oil Rating	API - SL or Better and SAE 5W30	
• System Capacity, Between Dipstick "MIN" and "MAX" Marks	1.00 L (1.06 qt)	
• System Capacity with Oil Filter	4.85 L (5.12 qt)	
• System Capacity Without Oil Filter	4.60 L (4.86 qt)	
• Oil Pressure at 1,400 rpm – Minimum	250 kPa	36.26 PSI
• Oil Pressure at 3,000 rpm – Minimum	250 kPa	36.26 PSI
Engine Cooling System		
• Type of Cooling System	Liquid Coolant, Closed-System	
• Radiator Cover Pressure Relief	105–125 kPa	15–18 PSI
• Type of Thermostat	Bypass	
• Start of Thermostat Opening	82° C	179.6° F
• Type of Water Pump	Centrifugal – Rotating Pump	
• Water Pump Flow Rate	150 @ 6000 1/min @ rpm	
Observation: At 20° C Cooled Temperature		

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Engine Mechanical Specifications

Application	Specification	
	Metric	English
General		
• Engine Type	Inline 4 Cylinder	
• Displacement	2.5 Liter	153 cu in
• RPO	LVN	
• Bore	92 mm	3.6220 in
• Stroke	100.05 mm	3.9390 in
• Compression Ratio	17.0:1	
• Maximum compression pressure variation between 2 cylinders	500 KPa	72.5 psi
• Idle Speed	760 RPM (ATX) 875 RPM (MTX)	
• Firing Order	1-3-4-2	
Block		
• Cylinder Bore Internal Diameter	92 mm	3.6220 in
• Cylinder Bore Out-of-Round	0.007 mm	0.0003 in
• Cylinder Head Deck Surface Flatness – Flatness/Span	0.02 mm/75 mm 0.03 mm/106 mm 0.1 mm/400 mm	0.0008 in/2.95 in 0.0012 in/4.17 in 0.0039 in/15.75 in
Camshaft		
• Camshaft End Play – Maximum	0.350 mm	0.013 in
• Camshaft End Play – Minimum	0.150 mm	0.006 in
• Camshaft Inner Journal Diameter – at Cylinder Head	26.000–26.015 mm	1.027–1.033 in
• Camshaft Journal Clearance	0.03–0.075 mm	0.001–0.003 in
• Camshaft Lobe Lift – Exhaust - Production	4.5 mm	0.177 in
• Camshaft Lobe Lift – Intake - Production	4.5 mm	0.177 in
• Camshaft Outer Journal Diameter – at Crankshaft	25.95 mm	1.021 in
Connecting Rod		
• Connecting Rod Diameter – Large End	57.563 mm	2.266 in

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• Connecting Rod Diameter – Small End	32 mm	1.26 in
Cooling System		
• Thermostat Opening Temperature	80°C	176°F
Crankshaft		
• Crankshaft End Play	0.10–0.33 mm	0.004–0.013 in
• Crankshaft Journal Clearance – Maximum	0.075 mm	0.003 in
• Crankshaft Journal Clearance – Minimum	0.030 mm	0.0012 in
• Crankshaft Main Journal Diameter – Production	65 mm	2.559 in
Cylinder Head		
• Cylinder Head Height	135.5 mm	5.334 in
• Surface Flatness – Deformation Tolerance – Flatness/Span	0.05 mm/15 mm Total	0.0019 in/0.59 in Total
Exhaust Manifold		
• Surface Flatness – Deformation Tolerance	0.075 mm	0.0030 in
Intake Manifold		
• Surface Flatness – Deformation Tolerance	0.075 mm	0.0030 in
Lubrication System		
• Oil Capacity – with Filter	Low Stance 6.6 qt High Stance 6.8 qt	Low Stance 6.2 L High Stance 6.4 L
• Oil Pressure – Minimum – Warm – at idle	70 KPa	10 psi
• Oil Pressure – Minimum – 3800 RPM	250 KPa	36 psi
• Oil Relief Valve Opening Pressure	500 KPa	72.5 psi
Oil Pump		
• Oil Pump Inner Rotor End Play – Maximum	0.01 mm	0.0004 in
• Oil Pump Inner Rotor End Play – Minimum	0.09 mm	0.0036 in
• Oil Pump Outer Rotor End Play – Maximum	0.09 mm	0.0036 in
• Oil Pump Outer Rotor End Play – Minimum	0.01 mm	0.0004 in
• Oil Pump Outer Rotor to Body Diameter Clearance – Maximum	0.130 mm	0.0051 in
• Oil Pump Outer Rotor to Body Diameter Clearance – Minimum	0.230 mm	0.0091 in
Piston Rings		
• Piston Ring End Gap – First Compression Ring	0.30–0.45 mm	0.0118–0.0177 in
• Piston Ring End Gap – Second Compression Ring	0.30–0.45 mm	0.0118–0.0177 in

• Piston Ring End Gap – Oil Control Ring	0.25–0.50 mm	0.0098–0.0196 in
• Piston Ring to Groove Clearance – First Compression Ring	0.080–0.13 mm	0.0031–0.0051 in
• Piston Ring to Groove Clearance – Second Compression Ring	0.070–0.110 mm	0.0027–0.0043 in
• Piston Ring to Groove Clearance – Oil Control Ring	0.040–0.080 mm	0.0015–0.0031 in

Pistons and Pins

• Oversized Piston	+0.40 mm	+0.015 in
• Piston Diameter	91.912–91.928 mm	3.6185–3.6190 in
• Piston Pin to Bore Clearance – Production	0.015 mm	0.0006 in
• Piston Pin Diameter	32 mm	1.26 in
• Piston Pin Length	70.7–71.0 mm	2.78–2.79 in

Valve System

• Valve Face Angle	45 degrees 30'	
• Valve Head Diameter – Exhaust	29.4 mm	1.15 in
• Valve Head Diameter – Intake	32.0 mm	1.25 in
• Valve Lifters Diameter	11.994 mm	0.472 in
• Valve Seat Angle	45 degrees	
• Valve Seat Runout	0.6 mm	0.024 in
• Valve Seat Width – Exhaust	1.5–1.75mm	0.059–0.069 in
• Valve Seat Width – Intake	1.5–1.75mm	0.059–0.069 in
• Valve Spring Free Length	50.8 mm	2.00 in
• Valve Spring Installed Height – Closed Valve	38 mm	1.49 in
• Valve Spring Installed Height – Open Valve	29 mm	1.14 in
• Valve Stem Diameter – Exhaust	5.96 mm	0.235 in
• Valve Stem Diameter – Intake	5.97 mm	0.235 in
• Valve Stem-to-Guide Clearance – Exhaust	0.040–0.070 mm	0.0016–0.0028 in
• Valve Stem-to-Guide Clearance – Intake	0.030–0.060 mm	0.0012–0.0024 in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Engine Mechanical Specifications

Application	Specification	
	Metric	English
General		
• Engine Type	Inline 4 Cylinder	
• Displacement	2.8 Liter	171 cu in
• RPO	LWH	
• Bore	94 mm	3.7008 in
• Stroke	100.05 mm	3.9390 in
• Compression Ratio	17.0:1	
• Maximum compression pressure variation between 2 cylinders	500 KPa	72.5 psi
• Idle Speed	760 RPM (ATX) 875 RPM (MTX)	
• Firing Order	1-3-4-2	
Block		
• Cylinder Bore Internal Diameter	94 mm	3.700 in
• Cylinder Bore Out-of-Round	0.007 mm	0.0003 in
• Cylinder Head Deck Surface Flatness – Flatness/Span	0.02 mm/75 mm 0.03 mm/106 mm 0.1 mm/400 mm	0.0008 in/2.95 in 0.0012 in/4.17 in 0.0039 in/15.75 in
Camshaft		
• Camshaft End Play – Maximum	0.350 mm	0.013 in
• Camshaft End Play – Minimum	0.150 mm	0.006 in
• Camshaft Inner Journal Diameter – at Cylinder Head	26.000–26.015 mm	1.027–1.033 in
• Camshaft Journal Clearance	0.03–0.075 mm	0.001–0.003 in
• Camshaft Lobe Lift – Exhaust - Production	4.5 mm	0.177 in
• Camshaft Lobe Lift – Intake - Production	4.5 mm	0.177 in
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Connecting Rod		
• Connecting Rod Diameter – Large End	57.563 mm	2.266 in

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Cooling System		
• Thermostat Opening Temperature	80°C	176°F
Crankshaft		
• Crankshaft End Play	0.10–0.33 mm	0.004–0.013 in
• Crankshaft Journal Clearance – Maximum	0.075 mm	0.003 in
• Crankshaft Journal Clearance – Minimum	0.030 mm	0.0012 in
• Crankshaft Main Journal Diameter – Production	65 mm	2.559 in
Cylinder Head		
• Cylinder Head Height	135.5 mm	5.334 in
• Surface Flatness – Deformation Tolerance – Flatness/Span	0.05 mm/15 mm Total	0.0019 in/0.59 in Total
Exhaust Manifold		
• Surface Flatness – Deformation Tolerance	0.075 mm	0.0030 in
Intake Manifold		
• Surface Flatness – Deformation Tolerance	0.075 mm	0.0030 in
Lubrication System		
• Oil Capacity – with Filter	Low Stance 6.1 qt High Stance 6.0 qt	Low Stance 5.8 L High Stance 5.7 L
• Oil Pressure – Minimum – Warm – at idle	70 KPa	10 psi
• Oil Pressure – Minimum – 3800 RPM	250 KPa	36 psi
• Oil Relief Valve Opening Pressure	500 KPa	72.5 psi
Oil Pump		
• Oil Pump Inner Rotor End Play – Maximum	0.01 mm	0.0004 in
• Oil Pump Inner Rotor End Play – Minimum	0.09 mm	0.0036 in
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• Oil Pump Outer Rotor to Body Diameter Clearance – Maximum	0.130 mm	0.0051 in
• Oil Pump Outer Rotor to Body Diameter Clearance – Minimum	0.230 mm	0.0091 in
Piston Rings		
• Piston Ring End Gap – First Compression Ring	0.30–0.45 mm	0.0118–0.0177 in
• Piston Ring End Gap – Second Compression Ring	0.30–0.45 mm	0.0118–0.0177 in

• Piston Ring End Gap – Oil Control Ring	0.25–0.50 mm	0.0098–0.0196 in
• Piston Ring to Groove Clearance – First Compression Ring	0.080–0.13 mm	0.0031–0.0051 in
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Pistons and Pins

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• Piston Pin Diameter	32 mm	1.26 in
• Piston Pin Length	70.7–71.0 mm	2.78–2.79 in

Valve System

• Valve Face Angle	45 degrees 30'	
• Valve Head Diameter – Exhaust	29.4 mm	1.15 in
• Valve Head Diameter – Intake	32.0 mm	1.25 in
• Valve Lifters Diameter	11.994 mm	0.472 in
• Valve Seat Angle	45 degrees	
• Valve Seat Runout	0.6 mm	0.024 in
• Valve Seat Width – Exhaust	1.5–1.75mm	0.059–0.069 in
• Valve Seat Width – Intake	1.5–1.75mm	0.059–0.069 in
• Valve Spring Free Length	50.8 mm	2.00 in
• Valve Spring Installed Height – Closed Valve	38 mm	1.49 in
• Valve Spring Installed Height – Open Valve	29 mm	1.14 in
• Valve Stem Diameter – Exhaust	5.96 mm	0.235 in
• Valve Stem Diameter – Intake	5.97 mm	0.235 in
• Valve Stem-to-Guide Clearance – Exhaust	0.040–0.070 mm	0.0016–0.0028 in
• Valve Stem-to-Guide Clearance – Intake	0.030–0.060 mm	0.0012–0.0024 in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Engine Mechanical Specifications

Application	Specification	
	Metric	English
General		
• Engine Type		V-6
• Displacement	3.6 Liter	217 cu in
• RPO		LY7
• VIN		7
• Bore	94 mm	3.7008 in
• Stroke	85.6 mm	3.37 in
• Compression Ratio		10.2:1
• Firing Order		1-2-3-4-5-6
• Spark Plug Gap	0.95–1.10 mm	0.0375–0.0433 in
Block		
• Crankshaft Main Bearing Bore Diameter	72.867–72.881 mm	2.8688–2.8693 in
• Cylinder Bore Diameter	93.992–94.008 mm	3.7005–3.7011 in
• Cylinder Bore Out-of-Round – Production Max.	0.026 mm	0.001 in
• Cylinder Bore Taper	0.020 mm	0.0008 in
Camshaft		
• Camshaft Bearing Inside Diameter – Front Number 1	35.000–35.020 mm	1.3779–1.3787 in
• Camshaft Bearing Inside Diameter – Middle and Rear Number 2–4	27.000–27.020 mm	1.0630–1.0638 in
• Camshaft End Play	0.045–0.215 mm	0.0018–0.0085 in
• Camshaft Journal Diameter – Front Number 1	34.936–34.960 mm	1.3754–1.3764 in
• Camshaft Journal Diameter – Middle and Rear Number 2–4	26.936–26.960 mm	1.0605–1.0614 in
• Camshaft Journal Out-of-Round	0.006 mm	0.0002 in
• Camshaft Journal to Bore Clearance	0.040–0.084 mm	0.0016–0.0033 in
• Camshaft Lobe Lift – Exhaust	42.425–42.725 mm	1.6703–1.6821 in

• Camshaft Lobe Lift – Intake	42.385–42.685 mm	1.6687–1.6805 in
• Camshaft Runout – Front and Rear Number 1 and 4	0.025 mm	0.0010 in
• Camshaft Runout – Middle 2 and 3	0.050 mm	0.0020 in
• Valve Lift – Exhaust	10.8 mm	0.4252 in
• Valve Lift – Intake	10.8 mm	0.4252 in

Connecting Rod

• Connecting Rod Bearing Clearance	0.010–0.070 mm	0.0004–0.0028 in
• Connecting Rod Bore Diameter – Bearing End	59.620–59.636 mm	2.3472–2.3479 in
• Connecting Rod Bore Diameter – Pin End – Production	24.009–24.019 mm	0.9452–0.9456 in
• Connecting Rod Bore Diameter – Pin End – Service Maximum	24.021 mm	0.9457 in
• Connecting Rod Length – Center to Center	150.400 mm	5.9212 in
• Connecting Rod Side Clearance	0.095–0.355 mm	0.0374–0.0140 in
• Connecting Rod Width – Bearing End		
• Production	21.775 mm	0.8573 in
• Service	21.725–21.825 mm	0.8553–0.8593 in
• Connecting Rod Width – Pin End		
• Production	21.775 mm	0.8573 in
• Service	21.725–21.825 mm	0.8553–0.8593 in

Crankshaft

• Connecting Rod Journal Diameter	55.992–56.008 mm	2.2044–2.2050 in
• Connecting Rod Journal Out-of-Round	0.005 mm	0.0002 in
• Connecting Rod Journal Taper	0.005 mm	0.0002 in
• Connecting Rod Journal Width		
• Production	22.000 mm	0.8661 in
• Service	21.920–22.080 mm	0.8630–0.8693 in
• Crankshaft End Play	0.100–0.330 mm	0.0039–0.0130 in
• Crankshaft Main Bearing Clearance	0.031–0.069 mm	0.0012–0.0027 in

• Crankshaft Main Journal Diameter	67.992–68.008 mm	2.6768–2.6775 in
• Crankshaft Main Journal Out-of-Round	0.005 mm	0.0002 in
• Crankshaft Main Journal Taper	0.005 mm	0.0002 in
• Crankshaft Main Journal Thrust Wall		
• Runout	0.000–0.040 mm	0.0000–0.0016 in
• Square	0.000–0.010 mm	0.0000–0.0004 in
• Crankshaft Main Journal Width, #2, 4		
• Production	24.000 mm	0.9449 in
• Service	23.900–24.100 mm	0.9409–0.9488 in
• Crankshaft Main Journal Width, #3		
• Production	24.400 mm	0.9606 in
• Service	24.360–24.440 mm	0.9591–0.9622 in
• Crankshaft Pilot Bearing Bore Diameter	20.965–20.995 mm	0.8254–0.8266 in
• Crankshaft Rear Flange Runout	0.025 mm	0.0010 in
• Crankshaft Reluctor Ring Runout – Maximum	1.500 mm	0.0591 in
• Crankshaft Runout	0.030 mm	0.0012 in
• Crankshaft Thrust Bearing Clearance	0.076–0.305 mm	0.0030–0.0120 in
• Crankshaft Thrust Surface – Height Diameter	95.000 mm	3.7401 in
• Crankshaft Thrust Surface Runout	0.040 mm	0.0016 in
Cylinder Head		
• Valve Guide Bore – Exhaust	6.000–6.020 mm	0.2362–0.2370 in
• Valve Guide Bore – Intake	6.000–6.020 mm	0.2362–0.2370 in
• Valve Guide Installed Height	14.050–14.550 mm	0.5531–0.5728 in
• Valve Lifter Bore Diameter	12.008–12.030 mm	0.4728–0.4736 in
Lubrication System		
• Oil Capacity – with Filter	5.7 Liters	6 Quarts
• Oil Capacity – without Filter	5.2 Liters	5.5 Quarts
• Oil Pressure – Minimum @ Idle	69 kPa	10 psi

• Oil Pressure – Minimum @ 2,000 RPM	138 kPa	20 psi
• Piston Cooling Jet Valve Opening Pressure	1.7–2.3 bar	25–33 psi
Piston Rings		
• Piston Ring End Gap		
• First Compression Ring – Nominal	0.150–0.300 mm	0.0059–0.0118 in
• First Compression Ring – Maximum, Ring in Bore	0.390 mm	0.1535 in
• Second Compression Ring – Nominal	0.280–0.480 mm	0.0110–0.0189 in
• Second Compression Ring – Maximum, Ring in Bore	0.560 mm	0.0220 in
• Oil Control Ring	0.150–0.600 mm	0.0059–0.0236 in
• Piston Ring to Groove Clearance		
• First Compression Ring	0.030–0.065 mm	0.0012–0.0026 in
• Second Compression Ring	0.015–0.060 mm	0.0006–0.0024 in
• Oil Control Ring	0.030–0.170 mm	0.0012–0.0067 in
• Piston Ring Thickness		
• First Compression Ring	1.175–1.190 mm	0.0463–0.0469 in
• Second Compression Ring	1.470–1.495 mm	0.0579–0.0589 in
• Oil Control Ring	2.360–2.480 mm	0.0929–0.0976 in
Pistons and Pins		
• Piston		
• Piston Diameter – Measured Over Skirt Coating	93.976–94.014 mm	3.6998–3.7013 in
• Piston Diameter – Service Limit Minimum w/more than 10K miles	93.926 mm	3.6979 in
• Piston Pin Bore Diameter	24.004–24.009 mm	0.9450–0.9452 in
• Piston Ring Groove Width – First Compression Ring	1.220–1.240 mm	0.0480–0.0488 in
• Piston Ring Groove Width – Second Compression Ring	1.510–1.530 mm	0.0595–0.0602 in
• Piston Ring Groove Width – Oil Control Ring	2.510–2.530 mm	0.0988–0.0996 in
• Piston to Bore Clearance – Production; Measured at Skirt Coating	0.022–0.032 mm	0.0008–0.0013 in
• Piston to Bore Clearance – Service Limit Maximum, w/more than 10k miles	0.650 mm	0.0256 in

• Pin		
• Piston Pin Clearance to Connecting Rod Bore – Production	0.007–0.024 mm	0.0003–0.0010 in
• Piston Pin Clearance to Connecting Rod Bore – Service Maximum	0.030 mm	0.0012 in
• Piston Pin Clearance to Piston Pin Bore – Production	0.004–0.012 mm	0.0002–0.0005 in
• Piston Pin Clearance to Piston Pin Bore – Service Maximum	0.015 mm	0.0006 in
• Piston Pin Diameter	23.997–24.000 mm	0.9448–0.9449 in
• Piston Pin Length	60.600–61.100 mm	2.3858–2.4055 in
Valve System		
• Valves		
• Valve Face Angle	44.25 degrees	
• Valve Face Runout	0.050 mm	0.0020 in
• Valve Face Width – Exhaust	2.750 mm	0.1083 in
• Valve Face Width – Intake	2.180 mm	0.0858 in
• Valve Head Diameter – Exhaust	30.470–30.730 mm	1.1996–1.2098 in
• Valve Head Diameter – Intake	36.830–37.090 mm	1.4500–1.4602 in
• Valve Installed Height	35.23–36.69 mm	1.3870–1.4445 in
• Valve Length – Exhaust	97.110 mm	3.8232 in
• Valve Length – Intake	101.230 mm	3.9854 in
• Valve Seat Angle – Seating Surface	45 degrees	
• Valve Seat Angle – Relief Surface	30 degrees	
• Valve Seat Angle – Undercut Surface	60 degrees	
• Valve Seat Roundness– Maximum	0.025 mm	0.0010 in
• Valve Seat Runout – Maximum	0.080 mm	0.0032 in
• Valve Seat Width – Exhaust Seating Surface	1.400–1.800 mm	0.0551–0.0709 in
• Valve Seat Width – Exhaust Relief Surface	0.700–0.900 mm	0.0276–0.0354 in
• Valve Seat Width – Intake Seating Surface	1.000–1.400 mm	0.0394–0.0551 in
• Valve Seat Width – Intake Relief Surface	0.500–0.700 mm	0.0197–0.0276 in
	5.045–5.085 mm	0.2211–0.2248 in

• Valve Stem Diameter – Exhaust	5.943–5.965 mm	0.2341–0.2348 in
• Valve Stem Diameter – Intake	5.955–5.975 mm	0.2344–0.2352 in
• Valve Stem-to-Guide Clearance – Exhaust	0.035–0.075 mm	0.0014–0.0030 in
• Valve Stem-to-Guide Clearance – Intake	0.025–0.065 mm	0.0010–0.0026 in
• Valve Lifters – Stationary Hydraulic Lash Adjuster (SHLA)		
• Valve Lifter (SHLA) Diameter	11.989–12.000 mm	0.4720–0.4724 in
• Valve Lifter (SHLA)-to-Bore Clearance	0.008–0.041 mm	0.0003–0.0016 in
• Rocker Arms		
• Valve Rocker Arm Ratio		1.68 to 1
• Valve Rocker Arm Roller Diameter	17.750–17.800 mm	0.6988–0.7008 in
• Valve Springs		
• Valve Spring Coil Thickness	3.250 x 3.900 mm	0.1280 x 0.1535 in
• Valve Spring Diameter – Inside Top	12.200–12.700 mm	0.4803–0.4999 in
• Valve Spring Diameter – Outside Top	20.250 mm	0.7972 in
• Valve Spring Diameter – Inside Bottom	17.950–18.450 mm	0.7067–0.7264 in
• Valve Spring Diameter – Outside Bottom	26.000 mm	1.0236 in
• Valve Spring Free Length	42.500–45.500 mm	1.6732–1.7913 in
• Valve Spring Installed Height – Closed	35.000 mm	1.3779 in
• Valve Spring Installed Height – Open	24.000 mm	0.9449 in
• Valve Spring Load – Closed	247–273 N	56–61 lb
• Valve Spring Load – Open	598–662 N	134–149 lb

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
	Application	Specification	
		Metric	English
	Radio Antenna Fastener	9 Y	80 lb in
	Radio Bracket Fastener	8 Y	71 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
Application	Specification		
	Metric	English	
Pickup Box Cargo Tie Down Bar Bolts	13 Y	10 lb ft	
Pickup Box Endgate Latch Cover Screws	2 Y	18 lb in	
Rear Wheelhouse Panel Liner Screws	2.5 Y	22 lb in	

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
Application	Specification		
	Metric	English	
Front End Upper Tie Bar Fasteners	6.5 Y	4.8 lb ft	
I/P Bracket	22.5 Y	16.6 lb ft	
Cowl Panel	9 Y	6.6 lb ft	
Pickup Box Fasteners	13 Y	9.6 lb ft	

2013 Chevrolet Colorado

Submodel: | **Engine Type:** | **Liters:**
Fuel Delivery: | **Fuel:**

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Front Bumper Fascia Bolt	3 Y	26 lb in
Front Bumper Fascia Brace Bolt– Lower	5 Y	44 lb in
Front Bumper Fascia Brace Bolt– Top	10 Y	89 lb in
Front Bumper Fascia Lower Bolt	25 Y	18 lb ft
Front Bumper Fascia Top Screw	3.5 Y	30 lb in
Front Bumper Lower Fascia Trim Insert Bolt	9 Y	80 lb in
Front Bumper Lower Fascia Trim Insert Screw	3 Y	27 lb in
Front Bumper Lower Impact Bar Bolt	58 Y	43 lb ft
Front Bumper Upper Impact Bar Nuts	9 Y	80 lb in
Radiator Grille Support Reinforcement Bolt	5 Y	44 lb in
Radiator Grille Support Reinforcement Screw	5 Y	44 lb in
Rear Bumper Center Step Pad Bolt	2.5 Y	22 lb in
Rear Bumper Fascia Reinforcement Bolt	9 Y	80 lb in
Rear Bumper Impact Bar Bracket Bolt	9 Y	80 lb in
Rear Bumper Impact Bar Bracket Side Bolt	58 Y	43 lb ft
Rear Bumper Impact Bar Lower Bolt	58 Y	43 lb ft
Rear Bumper Impact Bar Upper Bolt	58 Y	43 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
	Application	Specification	
		Metric	English
Horn Bolt		8 Y	71 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
	Application	Specification	
		Metric	English
	Front Fog Lamp Nut	3 Y	26 lb in
	Headlamp Screw	2.5 Y	22 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications		
Application	Specification	
	Metric	English
Assist Handle Bracket Bolts	8 Y	70 lb in
Endgate Bolt	30 Y	22 lb ft
Front Fender Bolt	9 Y	80 lb in
Front Side Door Check Link Bolt to Pillar	25 Y	18 lb ft
Front Side Door Check Link Nut to Door	10 Y	89 lb in
Front Side Door Lower Hinge to Body Regular/Crew Cab Bolt	34 Y	25 lb ft
Front Side Door Lower Hinge to Door Regular/Crew Cab Bolt	34 Y	25 lb ft
Front Side Door Upper Hinge to Body Regular/Crew Cab Bolt	34 Y	25 lb ft
Front Side Door Upper Hinge to Door Regular/Crew Cab Bolt	34 Y	25 lb ft
Fuel Tank Filler Door Screw	6 Y	53 lb in
Hood Hinge Bolt	22 Y	16 lb ft
Liftgate Hinge Bolt	25 Y	18 lb ft
Liftgate Hinge Nut	22 Y	16 lb ft
Liftgate Wedge Fasteners	6.5 Y	57 lb in
Liftgate Wedge Fasteners – Body Side	10 Y	89 lb in
Pickup Box Bolt	116 Y	86 lb ft
Pickup Box Endgate Hinge Bolt	30 Y	22 lb ft
Pickup Box Endgate Link Bolt	25 Y	18 lb ft
Pickup Box Outer Side Panel Front Step Brace Bolt	15 Y	11 lb ft
Pickup Box Outer Side Panel Front Step Brace Nut	15 Y	11 lb ft
Rear Side Door Check Link Bolt to Pillar	25 Y	18 lb ft
Rear Side Door Check Link Nut to Door	10 Y	89 lb in
Rear Side Door Lower Hinge to Body Regular/Crew Cab Bolts	34 Y	25 lb ft
Rear Side Door Lower Hinge to Body Extended Cab Bolt	34 Y	25 lb ft
Rear Side Door Upper Hinge to Door Regular/Crew Cab Bolt	34 Y	25 lb ft
Rear Side Door Upper Hinge to Door Extended Cab Bolt	34 Y	25 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
		Specification	
Application		Metric	English
Junction Block Base Bolts		9 Y	79 lb in
Junction Block Bolts		9 Y	79 lb in
Ignition and Start Switch Housing Bolt		11 Y	97 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
		Specification	
Application	Metric	English	
Front Side Door Window Rear Guide Bolt	10 Y	89 lb in	
Front Side Door Window Regulator to Window Bolts	10 Y	89 lb in	
Front Side Door Window to Power Regulator Lower Guide Nut	10 Y	89 lb in	
Front Side Door Window Regulator Power Bolt	10 Y	89 lb in	
Front Side Door Window Regulator Manual Bolt	10 Y	89 lb in	
Front Side Door Window Regulator Motor Screw	5 Y	44 lb in	
Rear Side Door Window Rear Channel Bolt (Pickup)	10 Y	89 lb in	
Rear Side Door Window Rear Guide Bolt (SUV)	10 Y	89 lb in	
Rear Side Door Window Lower Guide Nut	10 Y	89 lb in	
Rear Side Door Window Regulator Manual Bolt	10 Y	89 lb in	
Rear Side Door Window Regulator Power Bolt	10 Y	89 lb in	
Rear Side Door Window Regulator Motor Screw	5 Y	44 lb in	
Rear Side Door Window Regulator to Window Bolts	10 Y	89 lb in	
Rear Side Door Stationary Window Screw	5 Y	44 lb in	
Rear Side Door Stationary Window Hinge to Inner Frame Screw	5 Y	44 lb in	

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Brake Caliper Bracket Bolt	225 Y	166 lb ft
Brake Pipe Fitting	16 Y	12 lb ft
Brake Pipe Fitting- Master Cylinder With NW9	20 Y	15 lb ft
Brake Pipe Fitting- Master Cylinder Without NW9	16 Y	12 lb ft
Brake Pressure Modulator Valve Bolt	5 Y	44 lb in
Brake Pressure Modulator Valve Bracket Bolt	9 Y	80 lb in
Front Wheel Speed Sensor Bolt	8 Y	70 lb in
Front Wheel Speed Sensor Harness Bracket Bolt	8 Y	70 lb in
Front Wheel Speed Sensor Harness Bracket Nut	19 Y	14 lb ft
Rear Wheel Speed Sensor Bolt	11 Y	97 lb in
Rear Wheel Speed Sensor Harness Bracket Bolt	11 Y	97 lb in
Vehicle Yaw Sensor Nut	9 Y	80 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Brake Caliper Bracket Bolt	225 Y	166 lb ft
Brake Pipe Fitting	16 Y	12 lb ft
Brake Pipe Fitting- Master Cylinder With NW9	20 Y	15 lb ft
Brake Pipe Fitting- Master Cylinder Without NW9	16 Y	12 lb ft
Brake Pressure Modulator Valve Bolt	5 Y	44 lb in
Brake Pressure Modulator Valve Bracket Bolt	9 Y	80 lb in
Front Wheel Speed Sensor Bolt	8 Y	70 lb in
Front Wheel Speed Sensor Harness Bracket Bolt	8 Y	70 lb in
Front Wheel Speed Sensor Harness Bracket Nut	19 Y	14 lb ft
Rear Wheel Speed Sensor Bolt	11 Y	97 lb in
Rear Wheel Speed Sensor Harness Bracket Bolt	11 Y	97 lb in
Vehicle Yaw Sensor Nut	9 Y	80 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
	Application	Specification	
		Metric	English
	Clutch Actuator Cylinder Bolt	10 Y	89 lb in
	Clutch Master Cylinder	23 Y	17 lb ft
	Clutch Pedal Assembly Nut	23 Y	17 lb ft
	Clutch Pressure Plate Bolt		
•	2.5L/2.8L Diesel Engines	40 Y	30 lb ft
•	2.4L Gasoline Engine	20 Y	15 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

	Application	Specification	
		Metric	English
	Brake Hose Bracket Nut	21 Y	15 lb ft
	Brake Hose Fitting Bolt	34 Y	25 lb ft
	Brake Pedal Bracket Bolt	22 Y	16 lb ft
	Brake Pedal Bracket Nut	21 Y	15 lb ft
	Brake Pipe Fitting	16 Y	12 lb ft
	Brake Pipe Fitting - Rear Brake Rear Pipe	18 Y	13 lb ft
	Brake Proportion Valve Bolt	20 Y	15 lb ft
	Brake Proportion Valve Bracket Bolt	8 Y	7 1 lb in
	Master Cylinder Brake Pipe Fitting- With NW9	20 Y	15 lb ft
	Master Cylinder Brake Pipe Fitting- Without NW9	16 Y	12 lb ft
	Master Cylinder Nut	19 Y	14 lb ft
	Rear Brake Hose Bolt	20 Y	15 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Blower Bolt	6.6 Y	58 lb in
Front Floor Console Bolt	4 Y	35 lb in
Front Floor Console Rear Bracket Bolt	8 Y	71 lb in
Heater Bolt	6.6 Y	58 lb in
Instrument Panel Cluster Bolt	2.3 Y	20 lb in
Instrument Panel Nut	8 Y	71 lb in
Instrument Panel Tie Bar Bolt	19 Y	14 lb ft
Instrument Panel Tie Bar Brace Bolt	8 Y	71 lb in
Radio Bracket Bolt	8 Y	71 lb in
Radio Opening Cover Bolt	2 Y	18 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Blower Bolt	6.6 Y	58 lb in
Front Floor Console Bolt	4 Y	35 lb in
Front Floor Console Rear Bracket Bolt	8 Y	71 lb in
Heater Bolt	6.6 Y	58 lb in
Instrument Panel Cluster Bolt	2.3 Y	20 lb in
Instrument Panel Nut	8 Y	71 lb in
Instrument Panel Tie Bar Bolt	19 Y	14 lb ft
Instrument Panel Tie Bar Brace Bolt	8 Y	71 lb in
Radio Bracket Bolt	8 Y	71 lb in
Radio Opening Cover Bolt	2 Y	18 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Air Conditioning Compressor Bracket Bolt (LVH, LWH)	22 Y	16 lb ft
Air Conditioning Compressor Bracket Bolt (LE6, LP8)	45 Y	33 lb ft
Air Conditioning Compressor Clutch Bolt (LE6, LP8, LY7, LVH, LWH)	14 Y	124 lb in
Air Conditioning Compressor and Condenser Hose Fastener (LVH, LWH)	20 Y	15 lb ft
Air Conditioning Compressor and Condenser Hose Fastener (LVH, LWH) SUV	22 Y	16 lb ft
Air Conditioning Compressor and Condenser Hose Fastener (LY7, LE6)	20 Y	15 lb ft
Air Conditioning Compressor and Condenser Hose Retainer (LE6)	15 Y	11 lb in
Air Conditioning Compressor and Condenser Hose to Fan Shroud Bolt (LY7, LP8)	9 Y	80 lb in
Air Conditioning Compressor and Condenser Hose to Condenser Bolt	9 Y	80 lb in
Air Conditioning Compressor and Condenser Hose Bolt (LP8)	22 Y	16 lb ft
Air Conditioning Compressor Hose Bracket Fastener (LVH, LWH)	20 Y	15 lb ft
Air Conditioning Compressor Hose Bracket Fastener (LVH, LWH)	15 Y	11 lb in
Air Conditioning Compressor Hose to Compressor Bolt	22 Y	16 lb ft
Air Conditioning Compressor Hose to Compressor Hose Fastener (LE6, LY7, LP8)	20 Y	15 lb ft
Air Conditioning Compressor Hose to Compressor Bolt (LP8)	7 Y	62 lb in
Air Conditioning Compressor Hose to Cowl Nut (LP8)	9 Y	80 lb in
Air Conditioning Compressor Hose Fastener	20 Y	15 lb ft
Air Conditioning Compressor Hose Retainer Fastener (LE6, LY7)	15 Y	11 lb in
Air Conditioning Compressor Mounting Bolt (LVH, LWH, LY7)	22 Y	16 lb ft
Air Conditioning Compressor Mounting Bolt (LE6, LP8)	50 Y	37 lb ft
Air Conditioning Compressor to Thermal Expansion Valve Bolt	7 Y	62 lb in
Air Conditioning Condenser and Air Conditioning Evaporator Tube Fastener (LE6, LY7)	20 Y	15 lb ft
Air Conditioning Condenser and Air Conditioning Evaporator Tube Nuts (with C69) SUV	22 Y	16 lb ft
Air Conditioning Condenser Evaporator Front Tube Nut to Cowl Panel	8 Y	70 lb in
Air Conditioning Refrigerant Pressure Sensor	6 Y	53 lb in
Auxiliary Air Conditioning Evaporator and Blower Module Bolt (with C69) SUV	10 Y	89 lb in
Auxiliary Heater Bolts (with C69) SUV	45 Y	33 lb ft
Auxiliary Thermal Expansion Valve Bolt	7 Y	62 lb in
Blower Motor Assembly Fasteners	7 Y	62 lb in
Heater Bracket Bolts (with C69) SUV	25 Y	18 lb ft
HVAC Module Assembly Fastener	5 Y	44 lb in

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Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Brake Caliper Bleeder Valve	12 Y	106 lb in
Brake Caliper Bracket Bolt - Front	225 Y	166 lb ft
Brake Caliper Bracket Bolt - Rear	120 Y	89 lb ft
Brake Caliper Guide Pin Bolt - Front	36 Y	27 lb ft
Brake Caliper Guide Pin Bolt - Rear	31 Y	23 lb ft
Brake Hose Fitting Bolt	34 Y	25 lb ft
Brake Rotor Bolt - Front	103 Y	76 lb ft
Brake Rotor Bolt - Rear	9 Y	80 lb in
Brake Shield Bolt	13 Y	115 lb in

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Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

	Application	Specification	
		Metric	English
	Brake Drum Bolt	9 Y	80 lb in
	Brake Pipe Fitting - Rear Brake Cylinder	18 Y	13 lb ft
	Rear Brake Backing Plate Nut	84 Y	62 lb ft
	Rear Brake Cylinder Bolt	20 Y	15 lb ft

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Submodel: | Engine Type: | Liters:
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Fastener Tightening Specifications			
Application	Specification		English
	Metric		
Accelerator Pedal Position Sensor Fastener	9 Y		80 lb in
Air Cleaner Assembly Fastener	10 Y		89 lb in
Air Cleaner Element Assembly Fastener	4 Y		35 lb in
Camshaft Position Sensor Fastener	10 Y		89 lb in
Charge Air Cooler Bracket Fastener	9 Y		80 lb in
Charge Air Cooler Inlet Air Hose Bracket Fastener	9 Y		80 lb ft
Charge Air Cooler Outlet Air Hose Bracket Fastener	9 Y		80 lb in
Crankshaft Position Sensor Fastener	10 Y		89 lb in
Engine Coolant Temperature Sensor	20 Y		15 lb in
Exhaust Gas Recirculation Cooler Fastener	15 Y		11 lb ft
Exhaust Gas Recirculation Fastener	10 Y		89 lb ft
Exhaust Gas Recirculation Vacuum Regulator Valve Solenoid Fastener	10 Y		89 lb in
Exhaust Pressure Differential Sensor Fastener	9 Y		80 lb in
Exhaust Differential Pressure Sensor Pipe	45 Y		33 lb ft
Exhaust Pressure Differential Sensor Pipe Fastener	9 Y		80 lb in
Filler Housing Fasteners	10 Y		80 lb ft
Flywheel and Crankshaft Position Sensor Access Cover Fastener	10 Y		89 lb ft
Fuel Feed Pipe Fitting	25 Y		18 lb in
Fuel Filter Fasteners	25 Y		18 lb ft
Fuel Injection Fuel Feed Pipe Fastener	10 Y		89 lb ft
Fuel Injection Fuel Feed Pipe - Fittings at the Fuel Rail	24 Y		18 lb ft
Fuel Injection Fuel Feed Pipe - Fittings at the Injectors	28 Y		20 lb ft
Fuel Injection Fuel Feed Pipe to Fuel Injection Pump Fitting	28 Y		20 lb ft
Fuel Injection Fuel Feed Pipe to Fuel Rail Fitting	24 Y		18 lb ft
Fuel Injection Fuel Rail Assembly Fastener	25 Y		18 lb ft
Fuel Injection Fuel Return Pipe Fastener	10 Y		89 lb in
Fuel Injection Nuts	28 Y		20 lb ft
Fuel Injection Pump Drive Pulley Nut	88 Y		65 lb ft
Fuel Injector Fastener	32 Y		24 lb ft
Fuel Pressure Sensor	35 Y		26 lb ft
Fuel Tank Filler Pipe Assembly Hose Clamps	6 Y		53 lb in
Fuel Tank Strap Bolts	32 Y		24 lb ft
Glow Plug	14 Y		10 lb ft
Intake Manifold Tuning Valve Fastener	10 Y		89 lb in
Mass Airflow Sensor Fastener	8 Y		70 lb in
Throttle Body Adapter Fastener	10 Y		89 lb in
Throttle Body Assembly Fastener	10 Y		89 lb in
Throttle Inlet Pressure Sensor Fasteners	10 Y		89 lb in

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Submodel: | Engine Type: | Liters:
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Fastener Tightening Specifications

Application	Specification	
	Metric	English
Accelerator Pedal Position (APP) Sensor Mounting Nut	9 Y	80 lb in
Air Cleaner Assembly Fastener	10 Y	89 lb in
Air Cleaner Bolt	9 Y	80 lb in
Air Cleaner Cover Screw	4 Y	35 lb in
Air Cleaner Duct Clamps	4 Y	35 lb in
Air Cleaner Inlet Duct Fastener	10 Y	89 lb in
Barometric Pressure Sensor Bolt	10 Y	89 lb in
Camshaft Position Actuator Solenoid Valve	10 Y	89 lb in
Camshaft Position (CMP) Sensor Bolt	10 Y	89 lb in
Crankshaft Position (CKP) Sensor Bolt	10 Y	89 lb in
Engine Control Module (ECM) and Bracket Bolt	10 Y	89 lb in
Engine Control Module (ECM) Electrical Connector Bracket Bolt	10 Y	89 lb in
Engine Control Module (ECM) Redundant Ground Bolt	10 Y	89 lb in
Engine Control Module (ECM) Wiring Harness Ground Bolt	5 Y	44 lb in
Engine Control Module (ECM) Wiring Harness Retaining Bolt	23 Y	17 lb ft
Engine Coolant Temperature (ECT) Sensor	30 Y	22 lb ft
Evaporative Emission (EVAP) Canister Nut	6 Y	53 lb in
Evaporative Emission (EVAP) Purge Bolt	10 Y	89 lb in
Fuel Feed Pipe Bolt	50 Y	28 lb ft
Fuel Filler Tube Bolt	3.5 Y	31 lb in
Fuel Filler Tube Brace Bolt	9 Y	80 lb in
Fuel Filler Tube Hose Clamp	3.5 Y	31 lb in
Fuel Filter Bracket Bolt	9 Y	80 lb in
Fuel Filter Outlet Fitting	30 Y	22 lb ft
Fuel Pipe Shield to Cylinder Head Bolt	10 Y	89 lb in
Fuel Pipe Shield to Intake Manifold Bolt	23 Y	17 lb ft
Fuel Pressure Sensor	33 Y	28 lb ft
Fuel Pump Bolts	15 Y	11 lb ft
Fuel Rail Bolt	10 Y	89 lb in
Fuel Tank Strap Bolt	50 Y	37 lb ft
Heated Oxygen Sensor (HO2S)	42 Y	31 lb ft
Ignition Coil Bolt	10 Y	89 lb in
Intake Manifold Runner Control Solenoid Bolt	10 Y	89 lb in
Knock Sensor Bolt	25 Y	18 lb ft
MAF Sensor Screw	3 Y	279 lb in
Manifold Absolute Pressure (MAP) Sensor Bolt	10 Y	89 lb in
Rear Frame Bolt	200 Y	148 lb ft
Shock Bolt – Lower	90 Y	66 lb ft
Spark Plug	20 Y	15 lb ft

Throttle Body Bolt	10 Y	89 lb in
Throttle Inlet Absolute Pressure Sensor Bolt	3 Y	27 lb in

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Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
Application	Specification		English
	Metric		
Accelerator Pedal Position Sensor Fastener	9 Y		80 lb in
Air Cleaner Assembly Fastener	10 Y		89 lb in
Air Cleaner Element Assembly Fastener	4 Y		35 lb in
Camshaft Position Sensor Fastener	10 Y		89 lb in
Charge Air Cooler Bracket Fastener	9 Y		80 lb in
Charge Air Cooler Inlet Air Hose Bracket Fastener	9 Y		80 lb ft
Charge Air Cooler Outlet Air Hose Bracket Fastener	9 Y		80 lb in
Crankshaft Position Sensor Fastener	10 Y		89 lb in
Engine Coolant Temperature Sensor	20 Y		15 lb in
Exhaust Gas Recirculation Cooler Fastener	15 Y		11 lb ft
Exhaust Gas Recirculation Fastener	10 Y		89 lb ft
Exhaust Gas Recirculation Vacuum Regulator Valve Solenoid Fastener	10 Y		89 lb in
Exhaust Pressure Differential Sensor Fastener	9 Y		80 lb in
Exhaust Differential Pressure Sensor Pipe	45 Y		33 lb ft
Exhaust Pressure Differential Sensor Pipe Fastener	9 Y		80 lb in
Filler Housing Fasteners	10 Y		80 lb ft
Flywheel and Crankshaft Position Sensor Access Cover Fastener	10 Y		89 lb ft
Fuel Feed Pipe Fitting	25 Y		18 lb in
Fuel Filter Fasteners	25 Y		18 lb ft
Fuel Injection Fuel Feed Pipe Fastener	10 Y		89 lb ft
Fuel Injection Fuel Feed Pipe - Fittings at the Fuel Rail	24 Y		18 lb ft
Fuel Injection Fuel Feed Pipe - Fittings at the Injectors	28 Y		20 lb ft
Fuel Injection Fuel Feed Pipe to Fuel Injection Pump Fitting	28 Y		20 lb ft
Fuel Injection Fuel Feed Pipe to Fuel Rail Fitting	24 Y		18 lb ft
Fuel Injection Fuel Rail Assembly Fastener	25 Y		18 lb ft
Fuel Injection Fuel Return Pipe Fastener	10 Y		89 lb in
Fuel Injection Nuts	28 Y		20 lb ft
Fuel Injection Pump Drive Pulley Nut	88 Y		65 lb ft
Fuel Injector Fastener	32 Y		24 lb ft
Fuel Pressure Sensor	35 Y		26 lb ft
Fuel Tank Filler Pipe Assembly Hose Clamps	6 Y		53 lb in
Fuel Tank Strap Bolts	32 Y		24 lb ft
Glow Plug	14 Y		10 lb ft
Intake Manifold Tuning Valve Fastener	10 Y		89 lb in
Mass Airflow Sensor Fastener	8 Y		70 lb in
Throttle Body Adapter Fastener	10 Y		89 lb in
Throttle Body Assembly Fastener	10 Y		89 lb in
Throttle Inlet Pressure Sensor Fasteners	10 Y		89 lb in

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Submodel: | Engine Type: | Liters:
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Fastener Tightening Specifications

Application	Specification	
	Metric	English
Catalytic Converter Brace Fasteners	28 Y	21 lb ft
Catalytic Converter Support Fasteners (LWH)	25 Y	18 lb ft
Catalytic Converter Heat Shield Fasteners (Diesel)	10 Y	89 lb in
Catalytic Converter Heat Shield Fasteners (LE6,LP8)	8 Y	71 lb in
Catalytic Converter Support Fasteners (Diesel)	28 Y	21 lb ft
Catalytic Converter Clamp Support Fastener (LE6)	20 Y	15 lb ft
Catalytic Converter to Exhaust Pipe Fasteners	28 Y	21 lb ft
Catalytic Converter to Turbocharger Fasteners	25 Y	18 lb ft
Exhaust Front Pipe to Catalytic Converter (LE6)	28 Y	21 lb ft
Exhaust Front Pipe to Exhaust Manifold (LP8)	22 Y	16 lb ft
Exhaust Front Hanger Bracket Fasteners	45 Y	33 lb ft
Exhaust Front Heat Shield Fasteners	28 Y	21 lb ft
Exhaust Heat Shield Fasteners - Body Panel	9 Y	81 lb in
Exhaust Heat Shield Fasteners - Frame	9 Y	81 lb in
Exhaust Isolator Front Pipe Bracket Fasteners (LE6)	50 Y	37 lb ft
Exhaust Manifold Fasteners (Diesel)	36 Y	27 lb ft
Exhaust Manifold Fasteners (LE6,LP8)	24 Y	18 lb ft
Exhaust Manifold Fasteners (LY7)	20 Y	15 lb ft
Exhaust Manifold Heat Shield Fasteners (Diesel)	10 Y	89 lb in
Exhaust Manifold Heat Shield Fasteners (LE6,LP8)	8 Y	71 lb in
Exhaust Manifold to Turbocharger Fasteners (Diesel)	32 Y	24 lb ft
Exhaust Pipe to Catalytic Converter Fasteners	28 Y	21 lb ft
Exhaust Pipe to Exhaust Front Pipe Fasteners	28 Y	21 lb ft
Exhaust Pipe to Muffler Fasteners	28 Y	21 lb ft
Exhaust Muffler Heat Shield	28 Y	21 lb ft
Turbocharger Brace Fasteners (Diesel)	32 Y	24 lb ft
Turbocharger Oil Feed Pipe Fasteners (Diesel)	54 Y	40 lb ft
Turbocharger Oil Return Pipe Fasteners (Diesel)	36 Y	27 lb ft

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Submodel: | Engine Type: | Liters:
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Fastener Tightening Specifications			
Application	Specification		English
	Metric		
Air Conditioning (A/C) Compressor Bolt	32 Y		24 lb ft
Air Conditioning (A/C) Compressor Bracket Bolt	45 Y		33 lb ft
Automatic Transmission Flex Plate Bolt			
• First Pass	50 Y (1)		36 lb ft (1)
• Second Pass		Loosen 90 degrees	
• Third Pass	25 Y		18 lb ft
• Final Pass		Tighten 60 degrees	
Auxiliary Heater Bolt	32 Y		24 lb ft
Balance Shaft Assembly	32 Y		24 lb ft
Belt Idler Pulley Bracket Bolt	64 Y		47 lb ft
Camshaft Bearing Cap Bolt	11 Y		97 lb in
Camshaft Bearing Front Cap Bolt	11 Y		97 lb in
Camshaft Position (CMP) Sensor	11 Y		97 lb in
Camshaft Timing Pulley Bolt			
• First Pass	20 Y		15 lb ft
• Final Pass		60 degrees	
CKP Cover Plate Bolt	15 Y		10 lb ft
Connecting Rod Bolt			
• First Pass	30 Y (1)		22 lb ft (1)
• Final Pass		40 degrees	
Crankshaft Balancer Bolt	32 Y		23 lb ft
Crankshaft Bearing Cap Bolt			
• First Pass	50 Y (1)		36 lb ft (1)
• Final Pass		90 degrees	
Crankshaft Position Sensor Bolt	5 Y		44 lb in
Crankshaft Position Sensor Bracket Bolt	15 Y		11 lb ft
Crankshaft Rear Oil Seal Housing Bolt	15 Y		11 lb ft
Crankshaft Timing Pulley			
• First Pass	100 Y (1)		74 lb ft (1)
• Final Pass	120 degrees		120 degrees

Cylinder Head Bolt

• First Pass	30 Y (1)	22 lb ft (1)
• Second, Third, and Final Pass	85 degrees each pass, 255 degrees total	
Cylinder Head Core Hole Plug	60 Y	44 lb ft
Direct Fuel Injection Fuel Rail Bolts	25 Y	18 lb ft
Drive Belt Idler Pulley	45 Y	33 lb ft
Drive Belt Tensioner	45 Y	33 lb ft
Engine Block Core Hole Plug – M10	10 Y	89 lb in
Engine Block Core Plug – 12625406	80 Y	59 lb ft
Engine Block Core Plug – 12625407	30 Y	22 lb ft
Engine Block Core Plug – 12625590	12 Y	106 lb in
Engine Block Oil Gallery Plug	50 Y	36 lb ft
Engine Coolant Fan Bracket Bolt	45 Y	33 lb ft
Engine Coolant Temperature Sensor	15 Y	11 lb ft
Engine Flywheel Bolt		
• First Pass	50 Y (1)	36 lb ft (1)
• Second Pass	Loosen 90 degrees	
• Third Pass	25 Y	18 lb ft
• Final Pass	Tighten 60 degrees	
Engine Front Cover – Engine Front Cover to Engine Block	32 Y	24 lb ft
Engine Front Cover – Upper Oil Pan to Engine Front Cover	15 Y	11 lb ft
Engine Front Lift Bracket Bolt	58 Y	43 lb ft
Engine Mount Bolts	54 Y	40 lb ft
Engine Oil Cooler Inlet Pipe Bolt	12 Y	106 lb in
Engine Oil Pressure Switch	55 Y	41 lb ft
Engine Rear Lift Bracket Bolt	58 Y	43 lb ft
Engine Water Outlet Adapter	20 Y	15 lb ft
Exhaust Gas Recirculation (EGR) Bracket Nut	10 Y	89 lb in
Exhaust Gas Recirculation (EGR) Cooler Bypass Valve Actuator Bolt	9 Y	80 lb in
Exhaust Gas Recirculation (EGR) Valve Adapter Nut	25 Y	18 lb ft
Exhaust Gas Recirculation (EGR) Valve Bolt	9 Y	80 lb in
Exhaust Manifold Heat Shield Bolt	32 Y	24 lb ft
Exhaust Manifold Nut	36 Y	27 lb ft
Exhaust Manifold Stud	32 Y	24 lb ft
Fuel Feed and Return Pipe Clip Bracket Bolt	12 Y	106 lb in
Fuel Feed Pipe	30 Y	22 lb ft
Fuel Return Pipe Bolt	5 Y	44 lb in
Fuel Injection Pump Drive Pulley Nut	88 Y	65 lb ft
Fuel Injection Pump Nut	25 Y	18 lb ft
Fuel Injector Bracket Bolt	32 Y	24 lb ft
Fuel Injector Fuel Feed Pipes	30 Y	22 lb ft
Fuel Quantity Solenoid	11 Y	97 lb in
Fuel Rail Sensor	35 Y	26 lb ft

Generator Bolt	33 Y	24 lb ft
Generator Bracket Bolt	45 Y	33 lb ft
Glow Plugs	14 Y	124 lb in
Heater Bracket Bolt	25 Y	18 lb ft
Intake Manifold Nut	12 Y	106 lb in
Intake Manifold Tuning Valve Vacuum Control Valve Bolt	7 Y	62 lb in
Lower Oil Pan Bolt		
• First Pass	13 Y	115 lb in
• Second Pass	Loosen 90 degrees	
• Final Pass	13 Y	115 lb in
Map Sensor Bolt	9 Y	80 lb in
Oil Cooler Feed Line	11 Y	97 lb in
Oil Cooler Housing Bolt	32 Y	24 lb ft
Oil Filter Cap	25 Y	18 lb ft
Oil Level Indicator Tube Bolt – Block	11 Y	97 lb in
Oil Level Indicator Tube Bolt – Sump	11 Y	97 lb in
Oil Pan Baffle	32 Y	23 lb ft
Oil Pan Drain Plug	25 Y	18 lb ft
Oil Pressure Relief Valve	40 Y	30 lb ft
Oil Pump Pressure Relief Valve Housing Bolt	15 Y	11 lb ft
Oil Pump Cover Bolt	6 Y	53 lb in
Oil Pump Housing Plug	35 Y	26 lb ft
Oil Pump Suction Pipe Bolt	15 Y	11 lb ft
Piston Oil Nozzle Bolt	11 Y	97 lb in
Power Steering Pump Bolt	25 Y	18 lb ft
Power Steering Pump Pulley	33 Y	24 lb ft
Throttle Body Bolt	11 Y	97 lb in
Timing Belt Rear Cover Bolt	11 Y	97 lb in
Timing Belt Upper and Lower Cover Bolt	8 Y	71 lb in
Timing Belt Tensioner Bolt	28 Y	21 lb ft
Transmission Adapter Bolt — Allen	69 Y	51 lb ft
Transmission Adapter Bolt — Hex	15 Y	12 lb ft
Transmission Adapter Plate Bolt — Allen	79 Y	58 lb ft
Transmission Adapter Plate Bolt — Hex	45 Y	33 lb ft
Turbocharger Brace Bolt	32 Y	24 lb ft
Turbocharger Nut	24 Y	18 lb ft
Turbocharger Oil Feed Pipe — at Engine Block	25 Y	18 lb ft
Turbocharger Oil Feed Line Pipe— at Turbocharger	25 Y	18 lb ft
Turbocharger Oil Feed Pipe Fitting Adapter	54 Y	40 lb ft
Turbocharger Oil Return Pipe Bolt	15 Y	11 lb ft
Upper Oil Pan Bolt — M6		
• First Pass	15 Y	12 lb ft
• Second Pass	Loosen 90 degrees	

• Final Pass	15 Y	12 lb ft
Upper Oil Pan Bolt — M8		
• First Pass	32 Y	23 lb ft
• Second Pass	Loosen 90 degrees	
• Final Pass	32 Y	23 lb ft
Upper Oil Pan Hde Plug	40 Y	30 lb ft
Vacuum Pump Cover Bolt	6 Y	53 lb in
Vacuum Pump Hose Connector	13 Y	115 lb in
Vacuum Pump Nut	11 Y	97 lb in
Valve Rocker Arm Cover Bolt	11 Y	97 lb in
Water Pump Bolt	32 Y	24 lb ft
Water Pump Drain Plug	20 Y	15 lb ft
Water Pump Inlet Pipe Bolt	25 Y	18 lb ft
Water Return Pipe Bolt	15 Y	11 lb ft
1. Use NEW fastener.		

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Fastener Tightening Specifications

Application	Specification	
	Metric	English
Accelerator Pedal Position (APP) Sensor Mounting Nut	9 Y	80 lb in
Air Cleaner Assembly Fastener	10 Y	89 lb in
Air Cleaner Bolt	9 Y	80 lb in
Air Cleaner Cover Screw	4 Y	35 lb in
Air Cleaner Duct Clamps	4 Y	35 lb in
Air Cleaner Inlet Duct Fastener	10 Y	89 lb in
Barometric Pressure Sensor Bolt	10 Y	89 lb in
Camshaft Position Actuator Solenoid Valve	10 Y	89 lb in
Camshaft Position (CMP) Sensor Bolt	10 Y	89 lb in
Crankshaft Position (CKP) Sensor Bolt	10 Y	89 lb in
Engine Control Module (ECM) and Bracket Bolt	10 Y	89 lb in
Engine Control Module (ECM) Electrical Connector Bracket Bolt	10 Y	89 lb in
Engine Control Module (ECM) Redundant Ground Bolt	10 Y	89 lb in
Engine Control Module (ECM) Wiring Harness Ground Bolt	5 Y	44 lb in
Engine Control Module (ECM) Wiring Harness Retaining Bolt	23 Y	17 lb ft
Engine Coolant Temperature (ECT) Sensor	30 Y	22 lb ft
Evaporative Emission (EVAP) Canister Nut	6 Y	53 lb in
Evaporative Emission (EVAP) Purge Bolt	10 Y	89 lb in
Fuel Feed Pipe Bolt	50 Y	28 lb ft
Fuel Filler Tube Bolt	3.5 Y	31 lb in
Fuel Filler Tube Brace Bolt	9 Y	80 lb in
Fuel Filler Tube Hose Clamp	3.5 Y	31 lb in
Fuel Filter Bracket Bolt	9 Y	80 lb in
Fuel Filter Outlet Fitting	30 Y	22 lb ft
Fuel Pipe Shield to Cylinder Head Bolt	10 Y	89 lb in
Fuel Pipe Shield to Intake Manifold Bolt	23 Y	17 lb ft
Fuel Pressure Sensor	33 Y	28 lb ft
Fuel Pump Bolts	15 Y	11 lb ft
Fuel Rail Bolt	10 Y	89 lb in
Fuel Tank Strap Bolt	50 Y	37 lb ft
Heated Oxygen Sensor (HO2S)	42 Y	31 lb ft
Ignition Coil Bolt	10 Y	89 lb in
Intake Manifold Runner Control Solenoid Bolt	10 Y	89 lb in
Knock Sensor Bolt	25 Y	18 lb ft
MAF Sensor Screw	3 Y	279 lb in
Manifold Absolute Pressure (MAP) Sensor Bolt	10 Y	89 lb in
Rear Frame Bolt	200 Y	148 lb ft
Shock Bolt – Lower	90 Y	66 lb ft
Spark Plug	20 Y	15 lb ft

Throttle Body Bolt	10 Y	89 lb in
Throttle Inlet Absolute Pressure Sensor Bolt	3 Y	27 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications		
Application	Specification	
	Metric	English
Accelerator Pedal Position (APP) Sensor Mounting Fastener	9 Y	80 lb in
Air Cleaner Fasteners	10 Y	89 lb in
Air Cleaner Cover Fasteners	7 Y	62 lb in
Air Cleaner Outlet Duct Clamps	7 Y	62 lb in
Air Cleaner Outlet Resonator Clamps	7 Y	62 lb in
Camshaft Position (CMP) Sensor Fastener	10 Y	89 lb in
Cold Start Fuel Reservoir Bolt	10 Y	89 lb in
Cold Start Fuel Reservoir Nut	10 Y	89 lb in
Cold Start Fuel Feed Valve Fastener	2 Y	18 lb in
Crankshaft Position (CKP) Sensor Fastener	9 Y	80 lb in
Crankshaft Position (CKP) Sensor Housing Fastener	9 Y	80 lb in
Engine Coolant Temperature (ECT) Sensor	20 Y	15 lb ft
Evaporative Emission (EVAP) Canister Fastener	17 Y	13 lb ft
Fuel Feed and Evaporative Emission Pipe Bolt	25 Y	18 lb ft
Fuel Feed and Evaporative Emission Pipe Nut	25 Y	18 lb ft
Fuel Tank Filler Pipe Housing Fasteners	10 Y	89 lb in
Fuel Filler Tube Hose Clamp	6 Y	53 lb in
Fuel Injection Fuel Rail Assembly Fastener	8 Y	71 lb in
Fuel Tank Strap Fasteners	32 Y	24 lb ft
Heated Oxygen Sensor (HO2S)	42 Y	31 lb ft
Ignition Coil Fastener	9 Y	80 lb in
Knock Sensor Fastener	15 Y	11 lb ft
Manifold Absolute Pressure (MAP) Sensor Fastener	5 Y	44 lb in
Throttle Body Fastener	10 Y	89 lb in
Throttle Body Bracket Fastener	10 Y	89 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
Application	Specification		English
	Metric		
A/C			
• Compressor Bolt – Rear	50 Y		37 lb ft
• Compressor Bolt – Front	23 Y		17 lb ft
• Compressor Bracket Bolt – Front	50 Y		37 lb ft
• Compressor Hose Assembly Bolt	9 Y		80 lb in
Automatic Transmission Flex Plate Bolt			
• First Pass	30 Y (1)		22 lb ft (1)
• Final Pass		45 Degrees	
Camshaft Cap Bolt	10 Y		89 lb in
Camshaft Cover Bolt	10 Y		89 lb in
Camshaft Intermediate Drive Sprocket Bolt – Idler Sprocket	58 Y		43 lb ft
Camshaft Position Actuator			
• Camshaft Bolt	58 Y		43 lb ft
• Oil Control Valve Bolt	10 Y		89 lb in
Camshaft Position Sensor Bolt	10 Y		89 lb in
Catalytic Converter Exhaust Manifold Nut			
• First Pass	20 Y		15 lb ft
• Final Pass	45 Y		33 lb ft
Close Out Cover Bolt	10 Y		89 lb in
Clutch Pressure Plate Bolts	23 Y		17 lb ft
Connecting Rod Bolt			
• First Pass	25 Y (1)		18 lb ft (1)
• Final Pass		110 Degrees	
Coolant Drain Plug – M14	50 Y		37 lb in
Coolant Drain Plug – M20	75 Y		55 lb in
Coolant Outlet Bolt	10 Y		89 lb in
Crankshaft Balancer Bolt			
• First Pass	100 Y (1)		74 lb ft (1)
• Final Pass		150 Degrees	

Crankshaft Main Bearing Bolt – Inner

- First Pass 20 Y (1) 15 lb ft (1)
- Final Pass 80 degrees

Crankshaft Main Bearing Bolt – Outer

- First Pass 15 Y (1) 10 lb ft (1)
- Final Pass 110 Degrees

Crankshaft Main Bearing Bolt – Side

- First Pass 30 Y (1) 22 lb ft (1)
- Final Pass 60 Degrees

Crankshaft Position Sensor Bolt

10 Y 89 lb in

Crankshaft Rear Oil Seal Housing Bolt

10 Y 89 lb in

Cylinder Head Bolt – M8

- First Pass 15 Y (1) 11 lb ft (1)
- Final Pass 75 Degrees

Cylinder Head Bolt – M11

- First Pass 30 Y (1) 22 lb ft (1)
- Final Pass 150 degrees

Cylinder Head Core Hole Plug

75 Y 55 lb ft

Drive Belt

- Idler Pulley Bolt 58 Y 43 lb ft
- Tensioner Bolt 58 Y 43 lb ft

ECM

- Bolt 10 Y 89 lb in
- Bracket Bolt – Front 23 Y 17 lb ft
- Bracket Bolt – Side 10 Y 89 lb in
- Grounding Bolt 4.5 Y 40 lb in

ECT Sensor

30 Y 22 lb ft

Engine Flywheel Bolt

- First Pass 30 Y (1) 22 lb ft (1)
- Final Pass 90 Degrees

Engine Front Cover Bolt – M8

- First Pass 20 Y 14 lb ft

Final Pass		60 Degrees
Engine Front Cover Bolt – M12		
First Pass	65 Y	48 lb ft
Final Pass		60 Degrees
Engine Mount		
Engine Mount to Frame Bolt	22 Y	16 lb ft
Engine Mount to Engine Bolt	60 Y	45 lb ft
Engine Wiring Harness Bracket		
Bolt – Cylinder Head Rear	40 Y	30 lb ft
Bolt – ECM Bracket Side	23 Y	17 lb ft
Bolt – ECM Bracket Top	10 Y	89 lb in
Bolt – Left Side Oil Filter Adapter	10 Y	89 lb in
Bolt – Left Side Oil Pan	10 Y	89 lb in
Bolt – Near Crankshaft Position Sensor	50 Y	37 lb ft
Bolt – Right Side Block Front	23 Y	17 lb ft
Bolt – Right Side Head Front	10 Y	89 lb in
Engine Wiring Harness Ground		
Bolt – ECM Bracket Top	10 Y	89 lb in
Bolt – Left Cylinder Head Side	10 Y	89 lb in
Bolt – Right Cylinder Head Rear	10 Y	89 lb in
EVAP Purge Valve Bolt	10 Y	89 lb in
Exhaust Manifold		
Bolt	20 Y	15 lb ft
Heat Shield Bolt	10 Y	89 lb in
Lower Heat Shield Bolt	10 Y	89 lb in
Fuel Rail Bolt	10 Y	89 lb in
Generator		
Bolt	50 Y	37 lb ft
Bracket Bolt – Front	50 Y	37 lb ft
Bracket Bolt – Side	22 Y	16 lb ft
Bolt	40 Y	44 lb ft

• Cable Nut	13 Y	115 lb in
Ground Cable Bolt	50 Y	37 lb ft
Heater Inlet/Outlet Pipe Assembly Bolt	10 Y	89 lb in
Ignition Coil Bolt	10 Y	89 lb in
Intake Manifold		
• Brace Bolt – Engine Front Cover M12	65 Y	48 lb ft
• Brace Bolt/Ball Stud – Intake Manifold M6	10 Y	89 lb in
• Sight Shield Ball Stud	9 Y	80 lb in
• Tuning Valve Bolt	10 Y	89 lb in
• Upper-to-Cylinder Head Bolt – Long	23 Y	17 lb ft
• Upper-to-Cylinder Head Bolt – Short	23 Y	17 lb ft
• Upper-to-Lower Intake Manifold Bolt	23 Y	17 lb ft
Knock Sensor Bolt	23 Y	17 lb ft
MAP Sensor Bolt	10 Y	89 lb in
Oil Drain Plug	25 Y	18 lb ft
Oil Filter Cap	25 Y	18 lb ft
Oil Filter Housing Adapter		
• Bolt – Cylinder Head M10	65 Y	48 lb ft
• Bolt – Engine Block M8	23 Y	17 lb ft
Oil Gallery Plug – M14	50 Y	37 lb ft
Oil Gallery Plug – M20	75 Y	55 lb ft
Oil Level Indicator Tube Bolt	10 Y	89 lb in
Oil Pan		
• Bolt – Block M8	23 Y	17 lb ft
• Bolt – Crankshaft Rear Oil Seal Housing M6	10 Y	89 lb in
• Windage Tray Bolt	10 Y	89 lb in
Oil Pressure Sender	20 Y	15 lb ft
Oil Pump		
• Bolt	23 Y	17 lb ft
• Cover Bolt	13 Y	115 lb in
Oxygen Sensor		
• Pump Converter Pipe	42 Y	31 lb ft
PCV Tube Bracket Bolt	10 Y	89 lb in
Piston Oil Cooling Nozzle Bolt	10 Y	89 lb in
Power Steering Pump		

• Bracket to Engine Bolt	50 Y	37 lb ft
• Pump to Bracket Bolt	22 Y	16 lb ft
• Reservoir Bolt – Lower	25 Y	18 lb ft
• Reservoir Bolt – Upper	9 Y	80 lb in
Primary Camshaft Drive Chain		
• Left Lower Guide Bolt – Oil Pump – Second Design	23 Y	17 lb ft
• Tensioner Bolt	23 Y	17 lb ft
• Upper Guide Bolt	23 Y	17 lb ft
Radiator Outlet Pipe		
• Bolt – Generator Bracket	23 Y	17 lb ft
• Bolt – Right Cylinder Head Rear	50 Y	37 lb ft
• Bolt – Thermostat Housing	23 Y	17 lb ft
Secondary Camshaft Drive Chain		
• Guide Bolt	23 Y	17 lb ft
• Shoe Bolt	23 Y	17 lb ft
• Tensioner Bolt	23 Y	17 lb ft
Spark Plug	18 Y	13 lb ft
Starter Motor		
• Bolt	50 Y	37 lb ft
• Cable Nut	13 Y	115 lb in
Suction Tube Bolt	10 Y	89 lb in
Suction Screen Bolt	10 Y	89 lb in
Thermostat Housing Bolt	10 Y	89 lb in
Throttle Body Bolt	10 Y	89 lb in
Torque Converter Bolt	60 Y	44 lb ft
Transmission		
• Mount Bolt to Transmission – RPO M82	60 Y	45 lb ft
• Range Selector Lever Nut	9.5 Y	84 lb in
• To Engine Bolt	50 Y	37 lb ft
Water Pump Bolt		
• First Pass	10 Y (1)	89 lb in (1)
• Second Pass	10 Y	89 lb in

- Final Pass

45 Degrees

Water Pump Pulley Bolt

10 Y

89 lb in

1. Use NEW fastener.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
		Specification	
Application	Metric	English	
Camshaft Housing Cover Bolts	8 Y	71 lb in	
Camshaft Position Sensor Bolt	10 Y	89 lb in	
Camshaft Position Actuator Bolt			
• First Pass	10 Y	89 lb in	
• Final Pass	30 to 45 degrees	30 to 45 degrees	
Camshaft Bearing Cap Bolt	9 Y	80 lb in	
Camshaft Retainer Bolts	8.5 Y	75 lb in	
Camshaft Sprocket Bolts			
• First Pass	50 Y	37 lb ft	
• Second Pass	60 degrees	60 degrees	
• Final Pass	15 degrees	15 degrees	
Clutch Pressure Plate Bolts	40 Y	30 lb ft	
Connecting Rod Bolts (1)			
• First Pass	35 Y (1)	26 lb ft (1)	
• Second Pass	45 degrees (1)	45 degrees (1)	
• Final Pass	15 degrees (1)	15 degrees (1)	
Crankshaft Bearing Cap Bolts (1)			
• First Pass	50 Y (1)	37 lb ft (1)	
• Second Pass	45 degrees (1)	45 degrees (1)	
• Final Pass	15 degrees (1)	15 degrees (1)	
Crankshaft Position Sensor Bolt	9 Y	80 lb in	
Crankshaft Position Sensor Bracket Bolt	9 Y	80 lb in	
Crankshaft Sprocket Bolt			
• First Pass	135 Y	99 lb ft	
• Second Pass	30 degrees	30 degrees	
• Final Pass	15 degrees	15 degrees	
Cylinder Head Bolts (1)			
• First Pass in Sequence	25 Y (1)	18 lb ft (1)	

• Second Pass in Sequence	90° degrees (1)	90° degrees (1)
• Third Pass in Sequence	90° degrees (1)	90° degrees (1)
• Final Pass in Sequence	90° degrees (1)	90° degrees (1)
Cylinder Head Oil Gallery Air Bleed Orifices	20 Y	15 lb ft
Engine Block Oil Gallery Plugs	20 Y	15 lb ft
Engine Bridge Cap Bolts		
• First Pass	20 Y	15 lb ft
• Second Pass	43 degrees	43 degrees
• Final Pass	4 degrees	4 degrees
Engine Flywheel Bolts (1)		
• First Pass	35 Y (1)	26 lb ft (1)
• Second Pass	30 degrees (1)	30 degrees (1)
• Final Pass	15 degrees (1)	15 degrees (1)
Engine Lift Bracket Bolt	21 Y	15 lb ft
Engine Lift Bracket Bolt - Camshaft Housing	68 Y	50 lb ft
Engine Mount Fastener (LE6-Left Side)	60 Y	44 lb ft
Engine Mount Fastener (LE6-Right Side)	70 Y	52 lb ft
Engine Mount Fastener (LE6-Right Side)	60 Y	44 lb ft
Engine Water Outlet Adapter Bolts	15 Y	11 lb ft
Exhaust Gas Recirculation Valve Adapter Bolt (long)	20 Y	15 lb ft
Exhaust Gas Recirculation Valve Adapter Bolts (short)	30 Y	22 lb ft
Exhaust Manifold Brace Bolts	24 Y	18 lb ft
Exhaust Manifold Brace-to-Exhaust Manifold Assembly Bolt	20 Y	15 lb ft
Exhaust Manifold Nut		
• First Pass	10 Y	89 lb in
• Final Pass	170 to 185 degrees	170 to 185 degrees
Exhaust Manifold Heat Shield Bolts	8 Y	71 lb in
Fuel Injector Fuel Meter Body Bolt	10 Y	89 lb in
Fuel Rail Bolt	8 Y	71 lb in
Heated Oxygen Sensor	42 Y	31 lb ft
Intake Manifold Bolt	24 Y	18 lb ft
Intake Manifold Nuts	24 Y	18 lb ft
Intake Manifold Bracket Spacer	10 Y	89 lb in
Intake Manifold Vacuum Fitting	23 Y	17 lb ft
Knock Sensor Bolt	20 Y	15 lb ft
MAP Sensor Bolt	8 Y	71 lb in
Oil Cooler Bolt	79 Y	58 lb ft
Oil Filter	12 Y	106 lb in
Oil Level Indicator Tube Bolt	15 Y	11 lb ft

Oil Pan Bolts (upper)		
• First Pass	20 Y	15 lb ft
• Final Pass	45 degrees	45 degrees
Oil Pan Bolts (lower)		
• First Pass	8 Y	71 lb in
• Second Pass	30 degrees	30 degrees
• Final Pass	15 degrees	15 degrees
Oil Pan Baffle Bolts		
• First Pass	20 Y	15 lb ft
• Second Pass	43 degrees	43 degrees
• Final Pass	4 degrees	4 degrees
Oil Pan Drain Plug	12 Y	9 lb ft
Oil Pressure Indicator Switch	35 Y	25 lb ft
Oil Pressure Relief Valve Plug	30 Y	22 lb ft
Oil Pump Bolts		
• First Pass	5 Y	44 lb in
• Second Pass	60 degrees	60 degrees
• Final Pass	15 degrees	15 degrees
Oil Pump Cover Bolts	7 Y	62 lb in
Oil Pump Housing Plug	37 Y	27 lb ft
Oil Pump Suction Pipe Bolt	6 Y	53 lb in
Oil Pump Suction Pipe Bracket Bolt	6 Y	53 lb in
Spark Plugs	25 Y	18 lb ft
Starter Bolts	45 Y	33 lb ft
Thermostat Housing Bolts	15 Y	11 lb ft
Throttle Body Bolts	10 Y	89 lb in
Throttle Body Heater Hose Fitting	35 Y	26 lb ft
Timing Belt Front Upper and Lower Cover Bolts	6 Y	53 lb in
Timing Belt Idler Pulley Bolts	32 Y	24 lb ft
Timing Belt Rear Cover Bolts (upper)	6 Y	53 lb in
Timing Belt Rear Cover Bolts (lower)	8 Y	71 lb in
Timing Belt Tensioner Bolt	22 Y	16 lb ft
Water Pump Cover Bolts	25 Y	18 lb ft
1. Use NEW fastener.		

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Battery Hold Down Retainer Fastener	20 Y	15 lb ft
Battery Negative Cable Engine Ground (LP8)	40 Y	29 lb ft
Battery Negative Cable Engine Block Stud Fastener	60 Y	44 lb ft
Battery Negative Cable Battery Tray Ground Fastener (LVN)	10 Y	89 lb in
Battery Negative Cable Frame Ground (LWH)	22 Y	16 lb ft
Battery Positive Cable to Underhood Fuse Block Fastener	10 Y	89 lb in
Battery Positive Cable Starter Solenoid Fastener	10 Y	89 lb in
Battery Retainer Bracket to Battery Tray Fasteners	5 Y	44 lb in
Battery Retainer Bracket to Upper Tie Bar Fastener	20 Y	15 lb ft
Engine Harness Ground Fastener	10 Y	89 lb in
Fuel Feed and Return Bracket Fasteners	17 Y	12 lb ft
Fuel Injector Harness Ground Fastener (LWH)	22 Y	16 lb ft
Generator Adjust Bracket Brace Fasteners (Diesel)	20 Y	15 lb ft
Generator and Power Steering Pump Lower Bracket Fasteners (LP8)	45 Y	33 lb ft
Generator and Power Steering Pump Upper Bracket Fasteners (LP8)	25 Y	18 lb ft
Generator Battery Positive Fastener	14 Y	124 lb in
Generator Bracket Fasteners (Diesel)	45 Y	33 lb ft
Generator Bracket Front Fasteners (LY7)	58 Y	43 lb ft
Generator Bracket Side Engine Block Fastener (LY7)	22 Y	16 lb ft
Generator Cover Fastener	22 Y	16 lb ft
Generator Mounting Fasteners (Diesel)	45 Y	33 lb ft
Generator Pulley Fastener	75 Y	55 lb ft
Intake Manifold Bracket Fasteners (LP8)	10 Y	89 lb in
Intake Manifold Lower Brace Fasteners	24 Y	18 lb ft
Starter Mounting Stud/Fasteners (Transmission Side - LE6/LP8)	50 Y	37 lb ft
Starter Mounting Fasteners (LE6, LP8)	45 Y	33 lb ft
Starter Mounting Fasteners (Diesel)	50 Y	37 lb ft
Starter Mounting Fasteners (LY7)	58 Y	43 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Accelerator Pedal Position (APP) Sensor Mounting Fastener	9 Y	80 lb in
Air Cleaner Fasteners	10 Y	89 lb in
Air Cleaner Cover Fasteners	7 Y	62 lb in
Air Cleaner Outlet Duct Clamps	7 Y	62 lb in
Air Cleaner Outlet Resonator Clamps	7 Y	62 lb in
Camshaft Position (CMP) Sensor Fastener	10 Y	89 lb in
Cold Start Fuel Reservoir Bolt	10 Y	89 lb in
Cold Start Fuel Reservoir Nut	10 Y	89 lb in
Cold Start Fuel Feed Valve Fastener	2 Y	18 lb in
Crankshaft Position (CKP) Sensor Fastener	9 Y	80 lb in
Crankshaft Position (CKP) Sensor Housing Fastener	9 Y	80 lb in
Engine Coolant Temperature (ECT) Sensor	20 Y	15 lb ft
Evaporative Emission (EVAP) Canister Fastener	17 Y	13 lb ft
Fuel Feed and Evaporative Emission Pipe Bolt	25 Y	18 lb ft
Fuel Feed and Evaporative Emission Pipe Nut	25 Y	18 lb ft
Fuel Tank Filler Pipe Housing Fasteners	10 Y	89 lb in
Fuel Filler Tube Hose Clamp	6 Y	53 lb in
Fuel Injection Fuel Rail Assembly Fastener	8 Y	71 lb in
Fuel Tank Strap Fasteners	32 Y	24 lb ft
Heated Oxygen Sensor (HO2S)	42 Y	31 lb ft
Ignition Coil Fastener	9 Y	80 lb in
Knock Sensor Fastener	15 Y	11 lb ft
Manifold Absolute Pressure (MAP) Sensor Fastener	5 Y	44 lb in
Throttle Body Fastener	10 Y	89 lb in
Throttle Body Bracket Fastener	10 Y	89 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Battery Hold Down Retainer Fastener	20 Y	15 lb ft
Battery Negative Cable Engine Ground (LP8)	40 Y	29 lb ft
Battery Negative Cable Engine Block Stud Fastener	60 Y	44 lb ft
Battery Negative Cable Battery Tray Ground Fastener (LVN)	10 Y	89 lb in
Battery Negative Cable Frame Ground (LWH)	22 Y	16 lb ft
Battery Positive Cable to Underhood Fuse Block Fastener	10 Y	89 lb in
Battery Positive Cable Starter Solenoid Fastener	10 Y	89 lb in
Battery Retainer Bracket to Battery Tray Fasteners	5 Y	44 lb in
Battery Retainer Bracket to Upper Tie Bar Fastener	20 Y	15 lb ft
Engine Harness Ground Fastener	10 Y	89 lb in
Fuel Feed and Return Bracket Fasteners	17 Y	12 lb ft
Fuel Injector Harness Ground Fastener (LWH)	22 Y	16 lb ft
Generator Adjust Bracket Brace Fasteners (Diesel)	20 Y	15 lb ft
Generator and Power Steering Pump Lower Bracket Fasteners (LP8)	45 Y	33 lb ft
Generator and Power Steering Pump Upper Bracket Fasteners (LP8)	25 Y	18 lb ft
Generator Battery Positive Fastener	14 Y	124 lb in
Generator Bracket Fasteners (Diesel)	45 Y	33 lb ft
Generator Bracket Front Fasteners (LY7)	58 Y	43 lb ft
Generator Bracket Side Engine Block Fastener (LY7)	22 Y	16 lb ft
Generator Cover Fastener	22 Y	16 lb ft
Generator Mounting Fasteners (Diesel)	45 Y	33 lb ft
Generator Pulley Fastener	75 Y	55 lb ft
Intake Manifold Bracket Fasteners (LP8)	10 Y	89 lb in
Intake Manifold Lower Brace Fasteners	24 Y	18 lb ft
Starter Mounting Stud/Fasteners (Transmission Side - LE6/LP8)	50 Y	37 lb ft
Starter Mounting Fasteners (LE6, LP8)	45 Y	33 lb ft
Starter Mounting Fasteners (Diesel)	50 Y	37 lb ft
Starter Mounting Fasteners (LY7)	58 Y	43 lb ft

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Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Cooling Fan Clutch	59 Y	44 lb ft
Engine Coolant Thermostat Housing Fasteners (Diesel)	24 Y	18 lb ft
Engine Coolant Thermostat Housing Fasteners (LE6)	15 Y	11 lb ft
Engine Coolant Thermostat Housing Fasteners (LP8)	20 Y	15 lb ft
Engine Oil Cooler Pipe Fasteners (LP8)	15 Y	11 lb ft
Exhaust Gas Recirculation Valve Cooler Fastener	15 Y	11 lb ft
Fan Motor Fastener (LY7)	10 Y	89 lb in
Power Steering Pump Support Fastener (LE6)	25 Y	18 lb ft
Radiator Outlet Pipe Support Bracket Fasteners (LY7)	58 Y	43 lb ft
Radiator Outlet Pipe Fastener	22 Y	16 lb ft
Radiator Upper Bracket Support Fastener	9 Y	80 lb in
Water Outlet Adapter Fastener (LE6)	15 Y	11 lb ft
Water Pump Fasteners (Diesel)	32 Y	24 lb ft
Water Pump Fasteners (LE6, LP8)	8 Y	71 lb in
Water Pump Inlet Pipe Fasteners	25 Y	18 lb ft
Water Pump Inlet Pipe Fasteners (LY7)	22 Y	16 lb ft
Water Pump Inlet Pipe to Lower Thermostat Housing Fasteners (LY7)	10 Y	89 lb in
Water Pump Outlet to Engine Block Fasteners (LY7)	10 Y	89 lb in

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Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications		
Application	Specification	
	Metric	US English
Bearing Caps	98 Y	72 lb ft
Carrier Bracket Bolt	130 Y	96 lb ft
Differential Carrier Cover Bolt	30 Y	22 lb ft
Drain Plug	32 Y	24 lb ft
Fill Plug	32 Y	24 lb ft
Front Drive Axle Actuator	30 Y	22 lb ft
Front Drive Axle Clutch Housing Bolt	47 Y	35 lb ft
Front Drive Axle Mounting Bolt	160 Y	118 lb ft
Pinion Gear Shaft Lock Bolt	25 Y	18 lb ft
Ring Gear Bolt	108 Y	80 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
Application	Specification		English
	Metric		
Ignition Coil Bracket Bolt	16 Y		12 lb ft
Power Steering Fluid Reservoir Bracket Bolt	9 Y		80 lb in
Power Steering Fluid Reservoir Hose Bolt	9 Y		80 lb in
Power Steering Fluid Reservoir Hose Fitting	25 Y		18 lb ft
Power Steering Gear Inlet Hose Bolt	9 Y		80 lb in
Power Steering Gear Inlet Hose to Power Steering Gear Fitting	25 Y		18 lb ft
Power Steering Gear Inlet Hose to Power Steering Pump Banjo Bolt — LVN or LWH	28 Y		21 lb ft
Power Steering Gear Inlet Hose to Power Steering Pump Fitting — LE6, LP8, LY7	34 Y		25 lb ft
Power Steering Pump Bolt — LE6, LP8, LVN, or LWH	25 Y		18 lb ft
Power Steering Pump Bolt — LY7	22 Y		16 lb ft
Steering Gear Bolt on the Passenger's Side	116 Y		86 lb ft
Steering Gear Nut on the Driver's Side	220 Y		162 lb ft
Steering Gear Pipe to Steering Gear Cylinder Fitting	24 Y		18 lb ft
Steering Gear Pipe to Steering Gear Pinion Housing Fitting	20 Y		15 lb ft
Steering Linkage Inner Tie Rod	108 Y		80 lb ft
Steering Linkage Outer Tie Rod Nut			
- First Pass - Second Pass - Third Pass (LOOSEN) - Final Pass	98 Y		72 lb ft
	29 Y		21 lb ft
	10 Y		89 lb in
	Up to 30 degrees		

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Main Detent Plug	13 Y	115 lb in
Main Shaft Nut	243.5 Y	179.6 lb ft
M/Trans Control Lever Housing Bolt (Qty: 4)	18 Y	13.28 lb ft
Park/Neutral Position and Backup Lamp Switch Assembly	17 Y	12.5 lb ft
Reverse Idler Shaft Bolt	22.5 Y	16.6 lb ft
Shift Fork Bolt (Qty: 2)	22.5 Y	16.6 lb ft
Shift Shaft Detent Plug	13 Y	115 lb in
Speed Sensor Bolt – 2WD	12 Y	106 lb in
Transmission Case Bolt (Qty: 23)	22.5 Y	16.6 lb ft
Transmission Intermediate Case Bolt (Qty: 3)	22.5 Y	16.6 lb ft
Transmission Oil Drain Plug	44 Y	32 lb ft
Transmission Oil Fill Plug	44 Y	32 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Main Detent Plug	13 Y	115 lb in
Main Shaft Nut	243.5 Y	179.6 lb ft
M/Trans Control Lever Housing Bolt (Qty: 4)	18 Y	13.28 lb ft
Park/Neutral Position and Backup Lamp Switch Assembly	17 Y	12.5 lb ft
Reverse Idler Shaft Bolt	22.5 Y	16.6 lb ft
Shift Fork Bolt (Qty: 2)	22.5 Y	16.6 lb ft
Shift Shaft Detent Plug	13 Y	115 lb in
Speed Sensor Bolt – 2WD	12 Y	106 lb in
Transmission Case Bolt (Qty: 23)	22.5 Y	16.6 lb ft
Transmission Intermediate Case Bolt (Qty: 3)	22.5 Y	16.6 lb ft
Transmission Oil Drain Plug	44 Y	32 lb ft
Transmission Oil Fill Plug	44 Y	32 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

	Application	Specification	
		Metric	English
	Inside Rearview Mirror Screw	2 Y	18 lb in
	Outside Rearview Mirror Motor Screws	5 Y	44 lb in
	Outside Rearview Mirror Bolts	6 Y	53 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Fastener Tightening Specifications

				Specification	
Application	*Ref No.	Quantity	Size	Metric	English
Case Extension					
• Case Extension to Case Assembly	16	6	M10x1.5x40	55 Y	41 lb ft
• Transfer Case Adapter	16	7	M10x1.5x40	55 Y	41 lb ft
Control Solenoid Valve Assembly and Control Valve Lower Body Assembly to Control Valve Upper Body Assembly	310	6	M5x0.8x55	8 Y	71 lb in
Control Solenoid Valve Assembly and Control Valve Lower Body Assembly to Control Valve Upper Body Assembly	309	10	M5x0.8x45	8 Y	71 lb in
Control Solenoid Valve Heat Sink to Valve Body	312	2	M5x0.8x53	8 Y	71 lb in
Control Valve Upper Body Assembly to Control Valve Lower Body Assembly	301	12	M5x0.8x36	8 Y	71 lb in
Control (with Body and Valve) Valve Assembly to Case Assembly	22	6	M5x0.8x73	8 Y	71 lb in
Fluid Pan Assembly to Case Assembly (6L80)	30	18	M6x1.0x20	9 Y	80 lb in
Fluid Pan Assembly to Case Assembly (6L50)	30	17	M6x1.0x20	9 Y	80 lb in
Fluid Pump Cover Assembly to Torque Converter Housing	231	13	M6 1.0x40	11 Y	97 lb in
Front Prop Shaft Flange Nut to Output Shaft	39	1	M22x1.5x14	55 Y	41 lb ft
Input and Output Speed Sensor Assembly to Control Valve Upper Body Assembly	302	2	M6x1.0x20	12 Y	106 lb in
Line Pressure Test Hole Plug to Torque Converter Housing	202	1	1/8–27 NPTF	11 Y	97 lb in
Manual Shaft Detent Assembly to Valve Body	23	1	M6x1.0x14.5	12 Y	106 lb in
Torque Converter Housing Assembly to Case Assembly (6L50)	3	8	M8x1.25x50	31 Y	23 lb ft
Torque Converter Housing Assembly to Case Assembly (6L80)	3	9	M10x1.5x50	72 Y	53 lb ft
Transmission Cover Bolt	42	2	—	12 Y	106 lb in
Trans Oil Level Check Plug to Fluid Pan Assembly	31	1	M12x1.75	25 Y	18 lb ft
*Reference number refers to the component callout number in Disassembled Views					

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Auxiliary Transmission Oil Cooler Quick Connect Fittings	25 Y	18 lb ft
Auxiliary Transmission Oil Cooler Brace to Skid Bar Bolt	25 Y	18 lb ft
Auxiliary Transmission Oil Cooler Bracket to Body Nuts	8 Y	71 lb in
Auxiliary Transmission Oil Cooler to Bracket Mounting Bolts	22 Y	16 lb ft
Shift Control Assembly to Body Nuts	9 Y	80 lb in
Shift Control Knob Screw	2 Y	18 lb in
Shift Control Linkage to Manual Shift Shaft Nut (AWD)	20 Y	15 lb ft
Shift Control Linkage to Manual Shift Shaft Nut (RWD)	15 Y	11 lb ft
Shift Control Linkage to Shift Control Assembly Nut	9 Y	80 lb in
Torque Converter to Flywheel Bolts	63 Y	46 lb ft
Transmission Oil Cooler Pipe Clip to Oil Pan Nuts	10 Y	89 lb in
Transmission Oil Cooler Pipe Clip to Torque Tube Bolts	12 Y	106 lb in
Transmission Oil Cooler Pipes to Transmission Bolt	16 Y	12 lb ft
Transmission to Engine Block Bolts	50 Y	37 lb ft
Transmission Support Assembly to Body Bolts	60 Y	44 lb ft
Transmission Support Assembly to Transmission Bolts – RWD	60 Y	44 lb ft
Transmission Support Assembly to Transmission Bolts – AWD	110 Y	81 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

	Application	Specification	
		Metric	English
	Brake Drum Bolt	9 Y	80 lb in
	Parking Brake Cable Bracket Bolt	22 Y	16 lb ft
	Parking Brake Cable Retaining Plate Bolt	22 Y	16 lb ft
	Parking Brake Cable Retaining Plate Nut	25 Y	18 lb ft
	Parking Brake Front Cable Bolt	25 Y	18 lb ft
	Parking Brake Lever Bolt	15 Y	11 lb ft
	Parking Brake Rear Cable Bolt	7 Y	62 lb in

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2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Front Axle Propeller Shaft Bolts	28 Y	21 lb ft
Front Crossmember Brace Bolts	70 Y	52 lb ft
Front Propeller Shaft at Transfer Case Bolts	61 Y	45 lb ft
Propeller Shaft Bracket Bolts	17 Y	23 lb ft
Propeller Shaft Center Support Bearing Bolts	70 Y	52 lb ft
Propeller Shaft at the Rear Axle Bolt	28 Y	21 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Front Axle Propeller Shaft Bolts	28 Y	21 lb ft
Front Crossmember Brace Bolts	70 Y	52 lb ft
Front Propeller Shaft at Transfer Case Bolts	61 Y	45 lb ft
Propeller Shaft Bracket Bolts	17 Y	23 lb ft
Propeller Shaft Center Support Bearing Bolts	70 Y	52 lb ft
Propeller Shaft at the Rear Axle Bolt	28 Y	21 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	US English
Differential Carrier Nuts (194 mm axle)	37 Y	27 lb ft
Differential Carrier Nuts (220 mm axle)	44 Y	33 lb ft
Differential Carrier Studs (194 mm axle)	25 Y	16 lb ft
Differential Carrier Studs (220 mm axle)	65 Y	47 lb ft
Differential Case Bearing Cap Bolts (194 mm axle)	98 Y	72 lb ft
Differential Case Bearing Cap Bolts (220 mm axle)	108 Y	80 lb ft
Differential Pinion Gear Lock Bolt (194/220 mm axle)	50 Y	37 lb ft
Differential Pinion Gear Lock Bolt (Locking)	37 Y	27 lb ft
Differential Pinion Gear Flange Nut (194 mm axle)	177–275 Y	130–203 lb ft
Differential Pinion Gear Flange Nut (220 mm axle)	245–294 Y	181–217 lb ft
Rear Axle Housing Drain Plug (194/220 mm axle)	32 Y	24 lb ft
Rear Axle Housing Fill Plug (194/220 mm axle)	32 Y	24 lb ft
Rear Axle Shaft Nut	84 Y	62 lb ft
Rear Differential Ring Gear Bolts (194/220 mm axle)	108 Y	80 lb ft
Rotational Torque of the Pinion Gear	0.7 - 1.1 Y	6 - 10 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Driver or Passenger Seat Adjuster Vertical Actuator Fastener	20 Y	15 lb ft
Driver or Passenger Seat Recliner Actuator Motor Fastener	6 Y	53 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
Application	Specification		
	Metric	English	
Front Seat Front Fastener – Bench	40 Y	30 lb ft	
Front Seat Front Fastener – Bucket	46 Y	34 lb ft	
Front Seat Rear Fastener – Bench	40 Y	30 lb ft	
Front Seat Rear Fastener – Bucket	46 Y	34 lb ft	
Front Seat Adjuster Track Finish Cover Fastener (Outboard)	8 Y	71 lb in	
Driver or Passenger Seat Cushion Frame Bolt	45 Y	33 lb ft	
Driver or Passenger Seat Back Cushion Frame Bolt	45 Y	33 lb ft	
Rear Seat Bolt	46 Y	34 lb ft	
Rear Seat Nut	46 Y	34 lb ft	
Rear Seat Armrest Fastener	20 Y	15 lb ft	
Rear Seat Armrest Support Fastener	9 Y	80 lb in	
Rear Seat Cushion Fastener	46 Y	34 lb ft	
Rear Seat Cushion Frame Bolt	9 Y	80 lb in	
Rear Seat Cushion Frame Nut	9 Y	80 lb in	
Rear Seat Back Cushion Frame Bolt	9 Y	80 lb in	
Rear Back Seat Cushion Frame Nut	9 Y	80 lb in	
Rear Seat Back Cushion Frame Bolt (SUV)	45 Y	33 lb ft	
3rd Row Seat Front Bolt	45 Y	33 lb ft	
3rd Row Seat Rear Bolt	45 Y	33 lb ft	

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Intermediate Steering Shaft Boot Nut	7 Y	62 lb in
Intermediate Steering Shaft Clamp Lower Bolt	31 Y	23 lb ft
Intermediate Steering Shaft Clamp Upper Bolt	31 Y	23 lb ft
Intermediate Steering Shaft Lower Bolt	31 Y	23 lb ft
Intermediate Steering Shaft Upper Bolt	31 Y	23 lb ft
Steering Column Lower Bolt	22 Y	16 lb ft
Steering Column Upper Bolt	22 Y	16 lb ft
Steering Wheel Bolt	35 Y	26 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	US English
Rear Axle Bumper Bolt (Qty: 2)	56 Y	41 lb ft
Rear Axle Lower Tie Rod Nut (Qty: 2)	137 Y	101 lb ft
Rear Axle Upper Tie Rod Nut (Qty: 2)	137 Y	101 lb ft
Rear Spring Anchor Plate Nut (Low/High Boy built at the RYG Plant)	78 Y	56 lb ft
Rear Spring Anchor Plate Nut (Low/High built at the SJC Plant)	120 Y	89 lb ft
Rear Spring Front Nut		
• First Pass	115 Y	85 lb ft
• Final Pass		plus 90 degrees
Rear Spring Front Protector Bolt	25 Y	18 lb ft
Rear Spring Shackle Nut	98 Y	72 lb ft
Rear Spring Travel Limiting Link Bolt	137 Y	101 lb ft
Rear Spring Travel Limiting Link Nut	137 Y	101 lb ft
Shock Absorber Nut	39 Y	29 lb ft
Stabilizer Shaft Link Nuts (Qty: 4)	61 Y	45 lb ft
Stabilizer Shaft Bolts (Qty: 4)	28 Y	21 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

	Application	Specification	
		Metric	English
	Spare Wheel Carrier Hanger Bolts	22 Y	16 lb ft
	Wheel Nut	118 Y	87 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
	Application	Specification	
		Metric	English
	Front Tie Rod Nut	70Y	52lb ft
	Lower Control Arm Nuts	186 Y	137 ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

	Application	Specification	
		Metric	English
	Spare Wheel Carrier Hanger Bolts	22 Y	16 lb ft
	Wheel Nut	118 Y	87 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

	Application	Specification	
		Metric	English
	Spare Wheel Carrier Hanger Bolts	22 Y	16 lb ft
	Wheel Nut	118 Y	87 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
	Application	Specification	
		Metric	English
	Front Tie Rod Nut	70Y	52lb ft
	Lower Control Arm Nuts	186 Y	137 ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications		
Application	Specification	
	Metric	US English
Ball Stud Mounting Nut - Lower		
• First Pass:	60 Y	44 lb ft
• Final Pass:		plus 45 degrees
Ball Stud Mounting Nut - Upper		
• First Pass:	15 Y	11 lb ft
• Final Pass:		plus 45 degrees
Lower Control Arm Adjusting Nut	186 Y	137 lb ft
Lower Control Arm Ball Stud Nut		
• First Pass:	100 Y	74 lb ft
• Final Pass:		plus 45 degrees
Lower Control Arm Bumper - 4 Wheel Drive	106 Y	78 lb ft
Lower Control Arm Bumper Bolt - 2 Wheel Drive	51 Y	38 lb ft
Shock Absorber Lower Bracket Nut	152 Y	112 lb ft
Shock Absorber Mounting Nut	55 Y	41 lb ft
Shock Absorber Nut	25 Y	18 lb ft
Stabilizer Shaft Insulator Clamp Bolt	28 Y	21 lb ft
Stabilizer Shaft Link Nut	61 Y	45 lb ft
Upper Control Arm Ball Stud Nut		
• First Pass:	80 Y	59 lb ft
• Final Pass:		plus 45 degrees
Upper Control Arm Bolt	137 Y	112 lb ft
Wheel Bearing Hub Nut - 4 Wheel Drive		
• First Pass:	29 Y	21 lb ft
• Final Pass:		Loosen 1 full turn
Wheel Bearing Hub Nut - 2 Wheel Drive	29 Y	21 lb ft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Actuator Motor Bracket Bolts	12 Y	106 lb in
Actuator Motor Bracket Nuts	8 Y	70 lb in
Case Half Bolts	37 Y	27 lb ft
Vibration Dampener Bolts	25 Y	18 lb ft
Drive Clutch Coil Nuts	12 Y	106 lb in
Front Output Shaft Flange Nut	145 Y	107 lb ft
Oil Drain Plug	30 Y	22 lb ft
Oil Fill Plug	12 Y	106 lb in
Shield Bolts	25 Y	18 lb ft
Speed Sensor Bolt	12 Y	106 lb in
Transfer Case Studs	12 Y	106 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Actuator Motor Bracket Bolts	12 Y	106 lb in
Actuator Motor Bracket Nuts	8 Y	70 lb in
Case Half Bolts	37 Y	27 lb ft
Vibration Dampener Bolts	25 Y	18 lb ft
Drive Clutch Coil Nuts	12 Y	106 lb in
Front Output Shaft Flange Nut	145 Y	107 lb ft
Oil Drain Plug	30 Y	22 lb ft
Oil Fill Plug	12 Y	106 lb in
Shield Bolts	25 Y	18 lb ft
Speed Sensor Bolt	12 Y	106 lb in
Transfer Case Studs	12 Y	106 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
	Application	Specification	
		Metric	English
	Fire Extinguisher Bracket Fastener	11 Y	97 lb in
	Windshield Pillar Assist Handle Fastener	6 Y	53 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Cowl Front Panel Bolt	9 Y	80 lb in
Rear Window Wiper Arm Bolt	9 Y	80 lb in
Rear Window Wiper Motor Bolts	3.5 Y	31 lb in
Windshield Wiper Arm Nut- Left Hand Drive	25 Y	18 lb ft
Windshield Wiper Arm Nut- Right Hand Drive	25 Y	18 lb ft
Windshield Wiper Crank Arm Nut	32 Y	24 lb ft
Windshield Wiper Motor Bolt	8.5 Y	75 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fluid and Lubricant Recommendations	
Application	Fluid/Lubricant
Brake Fluid	DOT-4
Clutch Fluid	DOT-4
Engine Coolant	DEX-COOL®
Engine Oil	Dexos2 – 5W30
Manual Transaxle	DEXRON® III
Automatic Transaxle	DEXRON® VI
Power Steering Fluid	DEXRON® VI
Front and Rear Axle Lubricant	AC Delco 75W90

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fluid and Lubricant Recommendations	
Application	Fluid/Lubricant
Brake Fluid	DOT-4
Engine Coolant	DEX-COOL®
Engine Oil (NLEV)	- SAE 5W/30 - API SL
Engine Oil (Euro 3)	- SAE 5W/30,10W/30, 15W40, 20W40 or 20W50 - API SJ
Manual Transaxle	SAE 75W/85
Power Steering System	DEXRON® II ACDelco
Refrigerant Fluid	R134A
Front and Rear Axle Lubricant	AC Delco 75W90

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Application	Specification	
	Metric	English
Pan Removal and Filter Replacement – Approximate Capacity (6L50)	6.3 liters	6.7 quarts
Overhaul – Approximate Capacity (6L50)	9.3 liters	9.8 quarts
Complete Trans System – Capacity (6L50)	10.6 liters	11.2 quarts

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fluid Pump Selective Specifications

Size Classification	Thickness (mm)	Thickness (in)
Note:		
- Rotor and slide must be chosen from the same size classification as the oil pump body. - Allowable rotor and slide to fluid pump body end play is as follows: Specification - Slide to Fluid Pump Body End Play — 0.020–0.051 mm (0.0008–0.0020 in) - Rotor to Fluid Pump Body End Play — 0.020–0.051 mm (0.0008–0.0020 in)		
The fluid pump assembly has selective rotor and slide components. These components are chosen based on pump body dimensions. Fluid pump rotor and slide components are available in three size classifications (1, 2, 3) with the following tolerances:		
Rotor Selection		
1	17.948–17.961	0.7066–0.7071
2	17.961–17.974	0.7071–0.7076
3	17.974–17.987	0.7076–0.7081
Slide Selection		
1	17.948–17.961	0.7066–0.7071
2	17.961–17.974	0.7071–0.7076
3	17.974–17.987	0.7076–0.7081

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Table 1: [Initial Fuel Injector Return Flow Values](#)
Table 2: [Retesting Fuel Injector Return Flow Values](#)

For best results use Euro-3, 4, or 5 diesel fuel year-round. Diesel fuel may foam when filling the tank. This can cause the automatic pump nozzle to shut OFF, even though the tank is not full. If this happens, just wait for the foaming to stop and then continue to fill the tank.

[Very Cold Weather Operation](#)

If the vehicle is driven in very cold temperatures and can not get a winterized diesel fuel that has been adapted to cold weather or use one gallon of kerosene for every 2 gallons of diesel fuel. Once you add kerosene, run the engine for several minutes to mix the fuels. Only add kerosene when the temperature falls below -18°C (0°F), because the fuel economy and lubricating qualities of kerosene is not as good as that of diesel fuel.

In cold weather , the fuel filter may become clogged (waxed). To unclog the filter, move the vehicle to a warm garage area and warm the filter to a temperature between 0-10°C (32 -50°F). Replacing the filter is not necessary.

[Fuel Specific Gravity Testing](#)

Use a J-38641-B diesel fuel quality tester to measure the fuel specific gravity (ASTM Rating). Follow the instructions on the tool to obtain the proper temperature adjusted value. This information must be accurate for the proper diagnosis of the fuel system.

[Fuel Injector Return Flow and Fuel Pressures](#)

The fuel return from the fuel injectors to the tank will vary based on the API value of the fuel. Measure the Fuel specific gravity with the Diesel Fuel Quality Tester. For this reason the Fuel System Diagnosis – High Pressure Side values will vary for identifying a fuel injector or fuel pump concern. Use the following tables when referred to by the diagnostic. The first table is to be used during the initial diagnosis to identify the worst fuel injectors. After the fuel injectors that fail the first part of the test are capped off, the return flow from each uncapped fuel injector must be measured again. This is because the fuel system is returning less fuel to the tank, and thus the fuel pressure is higher during the retest. Failure to use the correct table may result in the replacement of good fuel injectors.

Initial Fuel Injector Return Flow Values

ASTM Rating	Maximum Single Fuel Injector Return Flow
855-876	3 ml
830-850	4 ml
806-825	5 ml

Retesting Fuel Injector Return Flow Values

ASTM Rating	Maximum Single Fuel Injector Return Flow
855-876	4 ml
830-850	5 ml
806-825	5 ml

[Water in Fuel](#)

Sometimes, water can be pumped into the fuel tank along with diesel fuel. This can happen if the service station does not regularly inspect and clean their fuel tanks, or the fuel gets contaminated for the service stations suppliers.

If water is pumped into the fuel tank, a water in fuel light will illuminate. If the water in fuel light illuminates, the excess water must be drained from the fuel system on the vehicle.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

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Table 2: [Retesting Fuel Injector Return Flow Values](#)

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2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Ignition System Specifications	
Application	Specification
Firing Order	1-2-3-4-5-6
Spark Plug Torque	Refer to Fastener Tightening Specifications
Spark Plug Gap	Refer to Engine Mechanical Specifications
Spark Plug Type	Refer to Electronic Parts Catalog

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Ignition System Specifications

Application	Specification
Ignition Type	Ignition Coil Module
Firing Order	1-3-4-2
Spark Plug Wire Resistance	170-220 Ω per 25.4 mm (1.0 in)
Spark Plug Torque	Refer to Fastener Tightening Specifications
Spark Plug Gap	0.8-0.9 mm (0.032-0.035 in)
Spark Plug Type	Refer to Electronic Parts Catalog

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Ignition System Specifications	
Application	Specification
Firing Order	1-2-3-4-5-6
Spark Plug Torque	Refer to Fastener Tightening Specifications
Spark Plug Gap	Refer to Engine Mechanical Specifications
Spark Plug Type	Refer to Electronic Parts Catalog

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Ignition System Specifications

Application	Specification
Ignition Type	Ignition Coil Module
Firing Order	1-3-4-2
Spark Plug Wire Resistance	170-220 Ω per 25.4 mm (1.0 in)
Spark Plug Torque	Refer to Fastener Tightening Specifications
Spark Plug Gap	0.8-0.9 mm (0.032-0.035 in)
Spark Plug Type	Refer to Electronic Parts Catalog

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2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Table 1: [Supplemental Inflatable Restraint Scan Tool Data Parameters](#)

Table 2: [Supplemental Inflatable Restraint Scan Tool Output Controls](#)

Supplemental Inflatable Restraint Scan Tool Data Parameters

Parameter	Expected Value	Definition
<i>Operating Conditions:</i> Ignition ON		
Active Switch	Enabled	The scan tool displays Enabled or Disabled. This is the state of the SIR active switch.
Active Switch	Learned	The scan tool displays Learned or Unlearned. Learned is displayed if the SIR learned the active switch.
Battery Voltage Signal	Varies	This displays volts. This is the voltage input supplied to the SDM.
Driver Seat Belt Switch	Unbuckled	The scan tool displays Buckled or Unbuckled. This is the state of the driver seat belt.
Driver Seat Belt Type	Varies	The scan tool displays Switch or Sensor. This is the type of driver seat belt.
Driver Seat Position Sensor	Enabled	The scan tool displays Enabled or Disabled. This is the state of the driver seat position sensor.
Driver Seat Position Sensor	Learned	The scan tool displays Learned or Unlearned. Learned is displayed if the SIR learned the driver seat position sensor.
Driver Seat Position Sensor	Varies	The scan tool displays Rearward or Forward. This is the positional state of the drive seat.
Loop 1–12	Enabled	The scan tool displays Enabled or Disabled. This is the state of the SIR loop.
Loop 1–12	Learned	The scan tool displays Learned or Unlearned. Learned is displayed if the SIR has that number loop learned.
Loop 1–12 Type	Varies	The scan tool displays Not Used, LF Stage 1, RF Stage 1, LF Stage 2, RF Stage 2, LF Preten., RF Preten., LF Side Bag, RF Side Bag, Lt. Roof Stage1, Rt. Roof Stage1, Lt. Roof Stage2, Rt. Roof Stage2, Lt. Roof Stage3 or Rt. Roof Stage3. This is the type of loop.
Passenger Seat Belt Switch	Unbuckled	The scan tool displays Buckled or Unbuckled. This is the state of the passenger seat belt.
PPS Options	Varies	The scan tool displays Not Present, Manual, Auto or Auto. + Man. This is the current enabled option of the passenger presence system.
PPS Status	Enabled	The scan tool displays Enabled or Disabled. This is the state of the passenger presence system.
PPS Status	Learned	The scan tool displays Learned or Unlearned. Learned is displayed if the SIR has learned the passenger presence system.
Primary Key Status	Valid	The scan tool displays Unknown, Valid or Invalid. This is the state of the primary key of the SDM.
Psgr. Seat Belt Sensor	Enabled	The scan tool displays Enabled or Disabled. This is the state of the passenger seat belt sensor.
Psgr. Seat Belt Sensor	Learned	The scan tool displays Learned or Unlearned. Learned is displayed if the SIR learned the passenger seat belt sensor.
Psgr. Seat Belt Sensor	Varies	This displays mA. This is the amount of current supplied to the passenger seat belt sensor.
Psgr. Seat Belt Type	Varies	The scan tool displays Switch or Sensor. This is the type of passenger seat belt.
Psgr. Seat Position Sensor	Enabled	The scan tool displays Enabled or Disabled. This is the state of the passenger seat position sensor.
Psgr. Seat Position Sensor	Learned	The scan tool displays Learned or Unlearned. Learned is displayed if the SIR learned the passenger seat position sensor.
Psgr. Seat Position Sensor	Inactive	The scan tool displays Rearward or Forward. This is the positional state of the passenger seat.
Received Primary Key	Valid	The scan tool displays Unknown, Valid or Invalid. Valid is shown if the primary key received from the BCM matches the SDM primary key.
Received VIN Digits 2–5	Varies	The scan tool displays the Secondary Key which includes digits 2 though 5 of the VIN that the BCM sends to the SDM.
Received VIN Digits 6–7	Varies	The scan tool displays the Secondary Key which includes digits 6 and 7 of the VIN that the BCM sends to the SDM.
Rollover Sensor	Enabled	The scan tool displays Enabled or Disabled. This is the state of the rollover sensor.
Rollover Sensor	Learned	The scan tool displays Learned or Unlearned. Learned is displayed if the SIR learned the rollover sensor.
Run/Crank	Active	This displays volts. This is the current power mode of the SDM.

Sensor 1–6	Enabled	The scan tool displays Enabled or Disabled. This is the state of the sensor.
Sensor 1–6	Learned	The scan tool displays Learned or Unlearned. Learned is displayed if the SIR has that sensor learned.
Sensor 1–6 Type	Learned	The scan tool displays Not Used, EFS LF, EFS Center, EFS RF, SIS Left Row 1, SIS Right Row 1, SIS Left Row 2 or SIS Right Row 2. This is the type of SIR sensor.
SDM Primary Key	Varies	The scan tool displays the primary key that the SDM has stored to memory.
SIR Warning Indicator	Inactive	The scan tool displays On or Off. This is the status of the SIR warning indicator.

Supplemental Inflatable Restraint Scan Tool Output Controls

Scan Tool Output Control	Description
Setup New SDM	This output control is used to set up a new SDM.
Setup SDM Primary Key in BCM	This output control is used to set up a new SDM primary key in the BCM.

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Table 1: [Supplemental Inflatable Restraint Scan Tool Data Parameters](#)

Table 2: [Supplemental Inflatable Restraint Scan Tool Output Controls](#)

Supplemental Inflatable Restraint Scan Tool Data Parameters

Parameter	Expected Value	Definition
<i>Operating Conditions:</i> Ignition ON		
Active Switch	Enabled	The scan tool displays Enabled or Disabled. This is the state of the SIR active switch.
Active Switch	Learned	The scan tool displays Learned or Unlearned. Learned is displayed if the SIR learned the active switch.
Battery Voltage Signal	Varies	This displays volts. This is the voltage input supplied to the SDM.
Driver Seat Belt Switch	Unbuckled	The scan tool displays Buckled or Unbuckled. This is the state of the driver seat belt.
Driver Seat Belt Type	Varies	The scan tool displays Switch or Sensor. This is the type of driver seat belt.
Driver Seat Position Sensor	Enabled	The scan tool displays Enabled or Disabled. This is the state of the driver seat position sensor.
Driver Seat Position Sensor	Learned	The scan tool displays Learned or Unlearned. Learned is displayed if the SIR learned the driver seat position sensor.
Driver Seat Position Sensor	Varies	The scan tool displays Rearward or Forward. This is the positional state of the drive seat.
Loop 1–12	Enabled	The scan tool displays Enabled or Disabled. This is the state of the SIR loop.
Loop 1–12	Learned	The scan tool displays Learned or Unlearned. Learned is displayed if the SIR has that number loop learned.
Loop 1–12 Type	Varies	The scan tool displays Not Used, LF Stage 1, RF Stage 1, LF Stage 2, RF Stage 2, LF Preten., RF Preten., LF Side Bag, RF Side Bag, Lt. Roof Stage1, Rt. Roof Stage1, Lt. Roof Stage2, Rt. Roof Stage2, Lt. Roof Stage3 or Rt. Roof Stage3. This is the type of loop.
Passenger Seat Belt Switch	Unbuckled	The scan tool displays Buckled or Unbuckled. This is the state of the passenger seat belt.
PPS Options	Varies	The scan tool displays Not Present, Manual, Auto or Auto. + Man. This is the current enabled option of the passenger presence system.
PPS Status	Enabled	The scan tool displays Enabled or Disabled. This is the state of the passenger presence system.
PPS Status	Learned	The scan tool displays Learned or Unlearned. Learned is displayed if the SIR has learned the passenger presence system.
Primary Key Status	Valid	The scan tool displays Unknown, Valid or Invalid. This is the state of the primary key of the SDM.
Psgr. Seat Belt Sensor	Enabled	The scan tool displays Enabled or Disabled. This is the state of the passenger seat belt sensor.
Psgr. Seat Belt Sensor	Learned	The scan tool displays Learned or Unlearned. Learned is displayed if the SIR learned the passenger seat belt sensor.
Psgr. Seat Belt Sensor	Varies	This displays mA. This is the amount of current supplied to the passenger seat belt sensor.
Psgr. Seat Belt Type	Varies	The scan tool displays Switch or Sensor. This is the type of passenger seat belt.
Psgr. Seat Position Sensor	Enabled	The scan tool displays Enabled or Disabled. This is the state of the passenger seat position sensor.
Psgr. Seat Position Sensor	Learned	The scan tool displays Learned or Unlearned. Learned is displayed if the SIR learned the passenger seat position sensor.
Psgr. Seat Position Sensor	Inactive	The scan tool displays Rearward or Forward. This is the positional state of the passenger seat.
Received Primary Key	Valid	The scan tool displays Unknown, Valid or Invalid. Valid is shown if the primary key received from the BCM matches the SDM primary key.
Received VIN Digits 2–5	Varies	The scan tool displays the Secondary Key which includes digits 2 though 5 of the VIN that the BCM sends to the SDM.
Received VIN Digits 6–7	Varies	The scan tool displays the Secondary Key which includes digits 6 and 7 of the VIN that the BCM sends to the SDM.
Rollover Sensor	Enabled	The scan tool displays Enabled or Disabled. This is the state of the rollover sensor.
Rollover Sensor	Learned	The scan tool displays Learned or Unlearned. Learned is displayed if the SIR learned the rollover sensor.
Run/Crank	Active	This displays volts. This is the current power mode of the SDM.

Sensor 1–6	Enabled	The scan tool displays Enabled or Disabled. This is the state of the sensor.
Sensor 1–6	Learned	The scan tool displays Learned or Unlearned. Learned is displayed if the SIR has that sensor learned.
Sensor 1–6 Type	Learned	The scan tool displays Not Used, EFS LF, EFS Center, EFS RF, SIS Left Row 1, SIS Right Row 1, SIS Left Row 2 or SIS Right Row 2. This is the type of SIR sensor.
SDM Primary Key	Varies	The scan tool displays the primary key that the SDM has stored to memory.
SIR Warning Indicator	Inactive	The scan tool displays On or Off. This is the status of the SIR warning indicator.

Supplemental Inflatable Restraint Scan Tool Output Controls

Scan Tool Output Control

Description

Setup New SDM	This output control is used to set up a new SDM.
Setup SDM Primary Key in BCM	This output control is used to set up a new SDM primary key in the BCM.

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Table 1: [Instrument Cluster Scan Tool Data Parameters](#)

Table 2: [Instrument Cluster Scan Tool Output Controls](#)

Instrument Cluster Scan Tool Data Parameters		
Parameter	Expected Value	Description
<i>Operating Conditions:</i> Ignition ON		
Battery Voltage	12–14 V	The scan tool displays Volts. This is the current battery voltage signal.
Key in Ignition Status	Active/Inactive	The scan tool displays Active or Inactive. This is the state of the key in ignition switch.
Driver Information Center Switch	Varies	The scan tool displays Volts. This is the current driver information center switch input voltage.
Driver Information Center Switch	Inactive	The scan tool displays either Inactive, Up, Down, or Menu. This is the state of the driver information center switch.
Reset Switch	Active/Inactive	The scan tool displays Active or Inactive. This is the state of the reset switch.
Ambient Air Temperature	15°C	The scan tool displays outside temperature in °C.
Washer Fluid Level Switch	Open	The scan tool displays either Open, Closed, or Not Available.
Odometer Lock Status	Active/Inactive	The scan tool displays Active or Inactive depending on the state of the odometer.
Engine Speed	0 RPM	The scan tool displays the filtered value of engine speed.
Vehicle Speed	0 km/h	The scan tool displays the filtered vehicle speed value.
Fuel Level Sensor	—	The scan tool displays the filtered value of the fuel level.
Engine Coolant Temperature	—	The scan tool displays the filtered value of the engine coolant temperature.
Engine Oil Pressure	—	The scan tool displays the filtered value of the engine oil pressure.

Instrument Cluster Scan Tool Output Controls	
Output Control	Description
Instrument Cluster Gauge Sweep	This function is used to command the gauges to sweep from minimum to maximum.
Driver Information Center Dimming	This function is used to command the dimming of the driver information display to Increase or Decrease by 10%.
Instrument Panel Dimmer Switch	This function is used to command the dimming of the instrument cluster to Increase or Decrease by 10%.
Driver Information Center Segments	This function is used to command the driver information center segments ON and OFF.
All Indicators	This function is used to command all the indicators ON or OFF.
Driver Information Center Options	This function is used to command the driver information center buttons using the scan tool.
Odometer Programming	This function is used to command the odometer to reset.
CAN Bus Configuration Learn	This function is used to Reset the source ID for low speed CAN Bus communications.

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Table 1: [Instrument Cluster Scan Tool Data Parameters.](#)

Table 2: [Instrument Cluster Scan Tool Output Controls.](#)

Instrument Cluster Scan Tool Data Parameters		
Parameter	Expected Value	Description
Operating Conditions: Ignition ON		
Battery Voltage	12–14 V	The scan tool displays Volts. This is the current battery voltage signal.
Key in Ignition Status	Active/Inactive	The scan tool displays Active or Inactive. This is the state of the key in ignition switch.
Driver Information Center Switch	Varies	The scan tool displays Volts. This is the current driver information center switch input voltage.
Driver Information Center Switch	Inactive	The scan tool displays either Inactive, Up, Down, or Menu. This is the state of the driver information center switch.
Reset Switch	Active/Inactive	The scan tool displays Active or Inactive. This is the state of the reset switch.
Ambient Air Temperature	15°C	The scan tool displays outside temperature in °C.
Washer Fluid Level Switch	Open	The scan tool displays either Open, Closed, or Not Available.
Odometer Lock Status	Active/Inactive	The scan tool displays Active or Inactive depending on the state of the odometer.
Engine Speed	0 RPM	The scan tool displays the filtered value of engine speed.
Vehicle Speed	0 km/h	The scan tool displays the filtered vehicle speed value.
Fuel Level Sensor	—	The scan tool displays the filtered value of the fuel level.
Engine Coolant Temperature	—	The scan tool displays the filtered value of the engine coolant temperature.
Engine Oil Pressure	—	The scan tool displays the filtered value of the engine oil pressure.
Instrument Cluster Scan Tool Output Controls		
Output Control	Description	
Instrument Cluster Gauge Sweep	This function is used to command the gauges to sweep from minimum to maximum.	
Driver Information Center Dimming	This function is used to command the dimming of the driver information display to Increase or Decrease by 10%.	
Instrument Panel Dimmer Switch	This function is used to command the dimming of the instrument cluster to Increase or Decrease by 10%.	
Driver Information Center Segments	This function is used to command the driver information center segments ON and OFF.	
All Indicators	This function is used to command all the indicators ON or OFF.	
Driver Information Center Options	This function is used to command the driver information center buttons using the scan tool.	
Odometer Programming	This function is used to command the odometer to reset.	
CAN Bus Configuration Learn	This function is used to Reset the source ID for low speed CAN Bus communications.	

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Table 1: [Engine Control Module Scan Tool Data Parameters](#)

Table 2: [Engine Control Module \(ECM\) Scan Tool Output Controls](#)

The engine control module scan tool data list contains all engine related parameters that are available on the scan tool. The list is arranged in alphabetical order. A given parameter may appear in any one of the data lists, and in some cases may appear more than once, or in more than one data list in order to group certain related parameters together.

Use the engine scan tool data list only after the following is determined:

- The Diagnostic System Check - Vehicle is completed.
- No diagnostic trouble codes (DTCs)
- On-board diagnostics are functioning properly.

The scan tool values from a properly running engine may be used for comparison with the engine you are diagnosing. The engine scan tool data list represents values that may be seen on a normally running engine.

Note: A scan tool that displays faulty data should not be used. The scan tool concern should be reported to the manufacturer. Use of a faulty scan tool can result in misdiagnosis and unnecessary parts replacement.

Only the parameters listed below are referenced in this service manual for use in diagnosis. If all values are within the typical range described below, refer to Symptoms - Engine Controls for engine diagnosis.

Engine Control Module Scan Tool Data Parameters

Parameter	System State	Expected Value	Description
<i>Operating Conditions:</i> Engine Idling/Radiator Hose Hot/Closed Throttle/Park or Neutral/Closed Loop/Accessories Off/Brake Pedal Released			
5 V Reference 1, 2, 3, or 4	Ignition ON	5 V	This parameter displays the voltage sensed on the 5 V reference circuits at the control module. The scan tool will display a higher value at higher voltage. The scan tool will display a lower value at lower voltage.
5 V Reference 1, 2, 3, or 4 Circuit Status	Ignition ON	OK	This parameter displays OK if there is no 5 V reference circuit condition. If the circuit is shorted to ground or shorted to B+, Fault is displayed.
A/C Disengage 1–8 History	A/C ON	Reason for A/C Disengagement	The parameter indicates the reason the air conditioning (A/C) compressor was disengaged. The scan tool displays None, A/C Pressure, Engine Speed, Battery Voltage, Anti Stall, RPM Unstable, wide open throttle (WOT), Launch Performance, Coolant Hot, Accelerator Pedal Position (APP), Air Bag Deploy, or A/C Relay DTC.
A/C High Side Pressure Sensor	A/C OFF	0.75–1.5 V*	This parameter displays the voltage from the A/C high side pressure sensor signal circuit to the control module.
	A/C ON	1.3–2.5 V*	*Varies with temperature and relative humidity.
A/C High Side Pressure Sensor	A/C OFF	450–650 kPa* (65–95 PSI)*	This parameter displays the pressure from the A/C high side pressure sensor signal circuit to the control module.
	Engine Speed at 2,000 RPM	1.117–2.350 kPa* (162–341 PSI)*	*Varies with temperature and relative humidity.
A/C Off for WOT	A/C ON	No	This parameter displays whether the control module is commanding the A/C compressor clutch relay OFF for WOT.
A/C Disable – A/C Pressure Out of Range	A/C ON	No	This parameter displays whether the A/C pressure is out of range for normal operation as determined by the control module.
A/C Compressor Clutch Relay Control Circuit Open Test Status	A/C ON or Off	OK/Not Run	This parameter displays the state of the air conditioning (A/C) clutch relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
A/C Compressor Clutch Relay Control Circuit Low Voltage Test Status	A/C ON or Off	OK/Not Run	This parameter displays the state of the air conditioning (A/C) clutch relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
A/C Compressor Clutch Relay Control Circuit High Voltage Test Status	A/C ON or Off	OK/Not Run	This parameter displays the state of the air conditioning (A/C) clutch relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
A/C Compressor Clutch Relay Command	A/C ON	On	This parameter displays the state of the air conditioning (A/C) clutch relay control circuit as commanded by the control module.
A/C Request Signal	A/C ON	Yes	This parameter displays the state of the A/C request input to the control module from the heating, ventilation, and air conditioning (HVAC) controls.
Accelerator Pedal Position	Accelerator pedal not actuated	0%	This parameter displays the angle of the APP as calculated by the control module using the signals from the APP sensors.
	Accelerator pedal fully	100%	

	actuated		
Air/Fuel Equivalence Ratio Command	—	Varies	This parameter displays the ratio of air to fuel as calculated by the control module based on various sensor inputs. The scan tool will display a lower air fuel ratio when a richer air to fuel mixture is commanded. The scan tool will display a higher air fuel ratio when a leaner air to fuel mixture is commanded. In closed loop operation the air fuel ratio should normally be approximately 14.7:1.
Ambient Air Temperature	—	°C (°F) Varies	This parameter displays the surrounding air temperature, at any given altitude.
Ambient Air Temperature When Recommended Maximum Fuel Alcohol Content Exceeded	Ignition ON	0°C (32°F) or less	This parameter displays Ambient Air temperature when recommended Ethanol concentration exceeded.
APP Sensor 1	Accelerator pedal not actuated	0.88–1.08 V	This parameter displays the actual voltage on the accelerator pedal position (APP) Sensor 1 signal circuit as measured by the control module.
	Accelerator pedal fully actuated	4.17–4.37 V	
APP Sensor 1 Circuit Status	Ignition ON	OK Fault	APP Sensor 1 Out of Range indicates that the sensed accelerator pedal position 1 sensor value is currently out of range or that a Malfunction has been detected based upon the sensed accelerator pedal position 1 sensor value being out of range.
APP Sensor 1 Learned Released Position	Ignition ON	Varies	This Parameter indicates the accelerator pedal sensor 1 signal at its minimum learned position (pedal released) as a percentage of its reference voltage. (The minimum learned position is automatically updated periodically as determined by the calibration.)
APP Sensor 2	Accelerator pedal not actuated	0.39–0.59 V	This parameter displays the actual voltage on the accelerator pedal position (APP) Sensor 2 signal circuit as measured by the control module.
	Accelerator pedal fully actuated	2.02–2.22 V	
APP Sensor 2 Circuit Status	Ignition ON	OK Fault	APP Sensor 2 Out of Range indicates that the sensed accelerator pedal position 2 sensor value is currently out of range or that a Malfunction has been detected based upon the sensed accelerator pedal position 1 sensor value being out of range.
APP Sensor 2 Learned Released Position	Ignition ON	Varies	This Parameter indicates the accelerator pedal sensor 2 signal at its minimum learned position (pedal released) as a percentage of its reference voltage. (The minimum learned position is automatically updated periodically as determined by the calibration.)
APP Sensor 1 and 2	—	Agree	This parameter displays the results of a control module test that compares the signals from the APP sensors 1 and 2. The scan tool will display Agree or Disagree. Agree indicates that APP sensor 1 and APP sensor 2 voltages correspond to the same accelerator pedal position. Disagree indicates that APP sensor 1 and APP sensor 2 voltages correspond to different accelerator pedal positions.
APP Sensors	—	0%	This parameter displays the average of the APP sensors as calculated by the throttle actuator control (TAC) module. The APP average is a range of values indicating a low percentage when the accelerator pedal is not depressed to a high percentage when the accelerator pedal is fully depressed.
APP Sensor 1 Position	Accelerator pedal not actuated	0%	This parameter displays the angle of the APP sensor 1 as calculated by the control module using the signal from the APP sensor 1. APP sensor 1 is a range of values indicating a low percentage when the accelerator pedal is not depressed to a high percentage when the accelerator pedal is fully depressed.
	Accelerator pedal fully actuated	100%	
APP Sensor 2 Position	Accelerator pedal not actuated	0%	This parameter displays the angle of the APP sensor 2 as calculated by the control module using the signal from the APP sensor 2. APP sensor 2 is a range of values indicating a low percentage when the accelerator pedal is not depressed to a high percentage when the accelerator pedal is fully depressed.
	Accelerator pedal fully actuated	100%	
BARO	—	65–104 kPa (8–16 PSI) – Varies with altitude	This parameter displays the barometric pressure (BARO). The control module uses the barometric pressure sensor input for fuel control to compensate for altitude differences.
Brake Pedal Position	The brake pedal is applied	Applied	This parameter displays the status of the brake pedal switch.
	The brake pedal is released	Released	

Calculated Air Flow	—	g/s Varies	This parameter displays the air flow of the engine as calculated by the control module.
Calculated Catalyst Temperature	—	°C (°F) Varies	This parameter displays the catalyst temperature as calculated by the control module.
Calculated Engine Oil Temperature	—	°C (°F) Varies	This parameter displays the temperature of the engine oil as calculated by the control module using various sensor inputs. The engine oil temperature calculated has a range of values indicating a low value when the oil temperature is low to a high value when the oil temperature is high.
Camshaft Position Active Counter	—	0–255 Counts	This parameter displays an incrementing counter when the control module receives a signal from the camshaft position sensors.
Camshaft Position Sensor	—	Engine Speed	This parameter displays the speed of the engine as calculated by the signal from the camshaft position sensor, shown in RPM.
Catalyst Monitor Complete	—	Yes or No	This parameter displays the monitor completion status.
Catalyst Monitor Complete This Ignition Cycle	—	Yes or No	This parameter displays the monitor completion status during the current driving/monitoring cycle.
Catalyst Monitor Enabled	—	Yes or No	This parameter displays the monitor enable status.
Catalyst Monitor Enabled This Ignition Cycle	—	Yes or No	This parameter displays the monitor enable status during the current driving/monitoring cycle.
Catalyst Monitor Not At Idle Test Conditions Met	—	Yes or No	This parameter displays the status of the catalyst monitor diagnostic. Off Idle Conditions Met indicates if the off idle conditions for the catalyst monitor diagnostic have been met. Once the Off Idle Conditions are met the vehicle can return to idle and allow the catalyst monitor diagnostic test to run.
Catalyst Monitor Test Counter	—	Counts	This parameter displays the number of catalyst monitor diagnostics that have passed.
Catalyst Monitor Test Result	—	Varies	This parameter displays the status of the catalyst monitor diagnostic.
Catalyst Monitor Test State	—	Varies	This parameter displays when the catalyst monitor diagnostic is actively running a test. This condition will only be true when the vehicle is at idle.
Change Engine Oil Indicator Command	—	On/Off	This parameter displays the state of the change engine oil lamp commanded by the engine control module.
Cold Start Fuel Injector Command	Engine Cranking	%	This Parameter displays the commanded duty cycle for the cold start fuel injector.
Cold Start Fuel Injector Control Circuit High Voltage Test Status	Engine Cranking	OK/Malfunction/Not Run	This parameter displays the state of the cold start fuel injector control circuit. The parameter displays Malfunction if the cold start fuel injector control circuit is shorted to voltage.
Cold Start Fuel Injector Control Circuit Low Voltage Test Status	Engine Cranking	OK/Malfunction/Not Run	This parameter displays the state of the cold start fuel injector control circuit. The parameter displays Malfunction if the cold start fuel injector control circuit is shorted to ground.
Cold Start Fuel Injector Control Circuit Open Test Status	Engine Cranking	OK/Malfunction/Not Run	This parameter displays the state of the cold start fuel injector control circuit. The parameter displays Malfunction if the cold start fuel injector control circuit is open.
Cold Start Fuel Pump Relay Command	Engine Cranking	ON	This parameter displays the engine control modules commanded state of the cold start fuel pump relay command control circuit.
Cold Start Fuel Pump Relay Control Circuit High Voltage Test Status	Engine Cranking	OK/Malfunction/Not Run	This parameter displays the state of the cold start fuel relay control circuit. The parameter displays Malfunction if the cold start fuel relay control circuit is shorted to voltage.
Cold Start Fuel Pump Relay Control Circuit Low Voltage Test Status	Engine Cranking	OK/Malfunction/Not Run	This parameter displays the state of the cold start fuel relay control circuit. The parameter displays Malfunction if the cold start fuel relay control circuit is shorted to ground.
Cold Start Fuel Pump Relay Control Circuit Open Test Status	Engine Cranking	OK/Malfunction/Not Run	This parameter displays the state of the cold start fuel relay control circuit. The parameter displays Malfunction if the cold start fuel relay control circuit is open.
Cold Start Up	—	Varies	This parameter displays whether the engine meets the conditions for a cold startup during the present ignition cycle. The scan tool displays Yes when the conditions for a cold startup are met during this ignition cycle. The scan tool displays No when the conditions for a cold startup are not met during the present ignition cycle. Conditions for a cold startup require the coolant temperature and the intake air temperature to be below a predetermined temperature and within a certain range of each other. These conditions must occur after the engine was warmed up to a specific temperature during the previous ignition cycle.
Component Monitor Complete	—	Yes/No	This parameter displays the component monitor completion status during the current driving/monitoring cycle.
Component Monitor Enabled	—	Yes/No	This parameter displays the component monitor enable status during the current driving/monitoring cycle.
			This parameter displays the status of the fan relay control

Cooling Fan Relay 1 Control Circuit Open Test Status	—	OK or Not Run	circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Cooling Fan Relay 1 Control Circuit Low Voltage Test Status	—	OK or Not Run	This parameter displays the status of the fan relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Cooling Fan Relay 1 Control Circuit High Voltage Test Status	—	OK or Not Run	This parameter displays the status of the fan relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Cooling Fan Relay 1 Command	—	Varies	This parameter displays the commanded state of the cooling fan relay 1 control circuit. The cooling fan relay 1 should be ON when the scan tool indicates the fan control relay 1 command is ON. The cooling fan relay 1 should be OFF when the scan tool indicates the fan control Relay 1 Command is OFF.
Cooling Fan Relay 2 Control Circuit Open Test Status	—	OK or Not Run	This parameter displays the state of the fan relay control circuit. The parameter displays Fault if the fan relay control circuit is open.
Cooling Fan Relay 2 Control Circuit Low Voltage Test Status	—	OK or Not Run	This parameter displays the status of the fan relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Cooling Fan Relay 2 Control Circuit High Voltage Test Status	—	OK or Not Run	This parameter displays the status of the fan relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Cooling Fan Relay 2 Command	—	Varies	This parameter displays the commanded state of the cooling fan relay 2 control circuit. The cooling fan relay 2 should be ON when the scan tool indicates the fan control Relay 2 command is ON. The cooling fan relay 2 should be OFF when the scan tool indicates the fan control Relay 2 command is OFF.
CPP Learned Apply Position	—	V	This parameter displays the position learned for the clutch pedal position (CPP) sensor when the clutch pedal is fully applied during the associated learn procedure.
CPP Learned Release Position	—	Varies	This parameter displays the position learned for the clutch pedal position sensor when the clutch pedal is released.
CPP Sensor	—	%	This parameter displays the displacement of the clutch pedal (corrected and normalized based upon its learned released and fully applied positions), where 0% corresponds to the clutch pedal being released and 100% corresponds to the clutch pedal being fully applied.
CPP Sensor	—	Varies	This parameter displays the clutch pedal position sensor analog input as a percentage of its reference voltage.
Crankshaft Position Active Counter	—	0–255 Counts	This parameter displays an incrementing counter when the control module receives a signal from the crankshaft position sensor.
Crankshaft Position Resynchronization Counter	—	0 Counts	This parameter displays the number of counts the control module resynchronizes with the crankshaft position sensor.
Crankshaft Position Sensor	—	Engine Speed	This parameter displays the engine speed as calculated by the control module using the signal from the crankshaft position sensor.
Crank Request Signal	Ignition switch not in the crank position	No	This parameter displays whether the ignition switch has been cycled to the crank position requesting the control module to activate the starter relay.
	Ignition switch in the crank position	Yes	
Cruise Control	Cruise Control ON	Active/Inactive	This parameter displays the status of the cruise control system as determined by the control module.
Cruise Control Accelerate Switch	Cruise Control ON	Active/Inactive/Invalid	The scan tool displays ON, when the cruise ON/OFF switch is ON and the accelerate switch is pressed, the ECM detects a predetermined voltage value for this switch.
Cruise Control Cancel Switch	Cruise Control ON	Active/Inactive/Invalid	This parameter displays the status of the cruise control cancel switch.
Cruise Control Coast Switch	Cruise Control ON	Active/Inactive/Invalid	The scan tool displays ON, when the cruise ON/OFF switch is ON and the ECM detects a predetermined voltage value for the coast switch.
Cruise Control Disengage History 1–8	Cruise Control ON	Reason for Cruise Disengagement	The parameter displays the last 8 cruise control disengages in order from 1–8, with 8 being the most recent. There are approximately 40 possible causes for the cruise control to disengage.
Cruise Control Inhibit Reason	Cruise Control ON	Varies	The parameter displays the reason why the cruise control system is inhibited. There are approximately 40 possible causes for the cruise control to be inhibited.

The engine control module (ECM) monitors the signal circuit

Cruise Control On/Off Switch	Cruise Control ON	ON/OFF	The engine control module (ECM) monitors the signal circuit of the cruise control switch. A closed switch is displayed as ON.
Cruise Control Resume Switch	Cruise Control ON	Active/Inactive/Invalid	The scan tool displays ON, when the cruise ON/OFF switch is ON and the resume switch is pressed, the ECM detects a predetermined voltage value for the resume switch.
Cruise Control Set Switch	Cruise Control ON	Active/Inactive/Invalid	The scan tool displays ON, when the cruise ON/OFF switch is ON and the ECM detects a predetermined voltage value for the set switch.
Current Gear	Transmission in Park/Neutral	P/N	This parameter displays the transmission gear commanded by the transmission control module.
	Transmission not in Park/Neutral	Reverse/1st–5th	
Cycles of Misfire Data	—	Incrementing 0–100 Counts	This parameter displays the number of cylinder firing events recorded by the control module.
Cylinder 1–4 Current Misfire Counter	—	0 Counts	The scan tool displays 0–255 counts. This parameter displays the number of misfires that have been detected during the last 200 cylinder firing events. The counters may normally display some activity, but the activity should be nearly equal for all of the cylinders, and in low numbers.
Cylinder 1–4 History Misfire Counter	—	0 Counts	The scan tool displays 0–255 counts. The misfire history counters display the total level of misfire that has been detected on each cylinder. The misfire history counters will not update or show any activity until a misfire DTC P0300 has become active. The misfire history counters will update every 200 cylinder firing events.
Cylinder 1–4 Injector Control Circuit Open Test Status	—	OK	This parameter displays the state of the injector control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Cylinder 1–4 Injector Disabled – Misfire Detected	—	No	This parameter displays the status of the fuel injector driver by the control module. The scan tool will display YES if the fuel injector is being disabled due to a misfire detection. The scan tool will display NO if the fuel injector is not being disabled by the control module due to a misfire.
Cylinder 1–4 Injector Control Circuit Low Voltage Test Status	—	OK	This parameter displays the state of the injector control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Cylinder 1–4 Injector Control Circuit High Voltage Test Status	—	OK	This parameter displays the state of the injector control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Cylinder 1–4 Knock Detected	—	NO	This parameter displays the status of each cylinder for knock detection by the control module. The scan tool will display YES if a knock condition has been detected related to that cylinder combustion event. The scan tool will display NO if there is no knock condition detected related to that cylinder combustion event.
Deceleration Fuel Cut-Off	—	Inactive	This parameter displays the status of the operating mode used to turn off the fuel injectors during certain deceleration conditions. When the scan tool displays Active, the control module has turned off the fuel injectors. When the scan tool displays Inactive, the fuel system is operating normally.
Desired ECT	—	°C (°F) Varies	This parameter displays the desired engine coolant temperature (ECT) in °C (°F) .
Desired Idle Speed	—	600–950 RPM	This parameter displays the desired engine idle speed as commanded by the control module.
Desired Throttle Position	—	2–6%	This parameter displays the desired throttle position angle commanded by the control module.
Distance Since DTC Cleared	—	Varies	This parameter displays the distance accumulated since an emission diagnostic trouble code was cleared. The scan tool will display increasing distance as the vehicle is driven.
Distance Since First Malfunction	Ignition ON	0 km/h (0 MPH)	This parameter displays in kilometers or miles the distance traveled since a Malfunction occurred.
Distance Since Last Malfunction	—	Varies	This parameter displays the distance accumulated when the emission diagnostic trouble code last failed.
Distance Since Last Oil Pressure Warning	Ignition ON	0 km/h (0 MPH)	This parameter displays in kilometers or miles the distance traveled since the last oil pressure warning Malfunction occurred.
Distance Since Recommended Maximum Fuel Alcohol Content Exceeded	Ignition ON	0 km/h (0 MPH)	This parameter displays in kilometers or miles the distance driven since the most recent time that the Recommended Ethanol Concentration Exceeded occurred.
Distance This Driving Cycle	Ignition ON	0 km/h (0 MPH)	This parameter displays in kilometers or miles the distance driven during this ignition cycle.
Driver Requested Axle Torque	—	Y	This parameter displays the driver intended axle torque.

ECM Authentication Status	Ignition ON	Unknown/Incorrect/Negative Response/Valid	ECM Authentication Status indicates the result of the comparison between the last received immobilizer response and the expected response calculated into the ECM.
ECM Challenge Status	Ignition ON	Valid/Invalid	ECM Challenge Status indicates the challenge between ECM and the immobilizer.
ECM Response Source	Ignition ON	Ignition Switch Start/Remote Vehicle Start/Exterior PTO Vehicle Start	ECM Response Source indicates the source used to calculate the ECM response.
ECT Sensor	—	–39 to +140°C (–38 to +284°F) Varies	This parameter displays the temperature of the engine coolant based on input to the control module from the engine coolant temperature (ECT) sensor.
Electric Power Management Inhibit Reason	—	Varies	The scan tool displays the reason why the regulated voltage control is inhibit.
Engine Calibration Monitoring	—	Present/Not Present	This parameter indicates if the Engine Upgrade Protection are supported by ECM.
Engine Calibration Monitoring Identifier	v	Programmed/Not Programmed	This parameter indicates the status if the Engine Performance Identifier has been programmed
Engine Controls Ignition Relay Control Circuit Open Test Status	—	Not Run	This parameter displays the state of the engine control ignition relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Engine Controls Ignition Relay Control Circuit Low Voltage Test Status	—	OK	This parameter displays the state of the engine control ignition relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Engine Controls Ignition Relay Control Circuit High Voltage Test Status	—	Not Run	This parameter displays the state of the engine control ignition relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Engine Controls Ignition Relay Command	—	ON	This parameter displays the commanded state of the engine control ignition relay control circuit. The scan tool will display ON or OFF. ON indicates the engine control ignition relay control circuit is being grounded by the control module, allowing voltage to other control module circuits and systems. OFF indicates the engine control ignition relay is not being commanded ON by the control module.
Engine Controls Ignition Relay Feedback Signal	—	B+	This parameter displays the voltage available at the engine control ignition relay pin of the control module.
Engine Load	Engine Idling	11–30% Varies	This parameter displays the calculated engine load in percent based on inputs to the control module from various engine sensors.
	Engine speed at 2500 RPM	25–40%	
Engine Off Time	Ignition Switch in the OFF Position	Varies	This parameter displays the amount of time that has elapsed since the engine was last cycled OFF. The scan tool displays the time in hours, minutes, and seconds. The engine OFF time will reset to zero when the engine starts.
Engine Oil Life Remaining	Ignition ON	0–100%	This parameter displays the percent of engine oil life remaining. The controller calculates the engine oil life by monitoring engine load, coolant temperature, and engine speed.
Engine Oil Pressure Switch	—	OK	This parameter displays the state of the engine oil pressure as determined by the control module. The control module monitors the engine oil pressure switch to determine if the engine oil pressure is sufficient. The scan tool displays Low when the engine oil pressure is below a predetermined value.
Engine Oil Temperature When Engine Overspeed Is Detected	—	Varies	This parameter displays the temperature of the engine oil if overspeed detected.
Engine Overspeed	—	Not Present	This parameter displays the status if overspeed detected.
Engine Overspeed Counter	—	Varies	This parameter displays the status if overspeed detected.
Engine Run Time	Engine Operating	Varies	This parameter displays the time elapsed since the engine was started. The scan tool will display the time in hours, minutes and seconds. The engine run time will reset to zero when the engine stops running.
Engine Speed	Engine Cranking	Greater than 60 RPM	This parameter displays the speed of the engine crankshaft rotation from information received from the crankshaft position sensor.
	Engine Idling	Approximately 650–950 RPM	
Engine Speed When Engine Overspeed Detected	—	Varies	This parameter displays the speed of the engine crankshaft rotation stored if an engine overspeed is detected.
Engine Torque Command	—	Y	This parameter displays the estimated amount of torque that is delivered from the engine. The scan tool displays engine torque in Y (lb ft).

EVAP Purge Solenoid Valve Control Circuit Open Test Status	—	OK	This parameter displays the status of the evaporative emission (EVAP) purge solenoid control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
EVAP Purge Solenoid Valve Control Circuit Low Voltage Test Status	—	OK	This parameter displays the status of the evaporative emission (EVAP) purge solenoid control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
EVAP Purge Solenoid Valve Control Circuit High Voltage Test Status	—	OK	This parameter displays the status of the evaporative emission (EVAP) purge solenoid control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
EVAP Purge Solenoid Valve Command	—	10–20%	This parameter displays the on-time or duty cycle of the EVAP canister purge solenoid commanded by the control module. Zero percent indicates no purge. One hundred percent indicates full purge.
Fuel Control Loop Status	—	Closed Loop	This parameter displays the state of the fuel control system as commanded by the control module. Closed loop operation indicates that the control module is controlling the fuel delivery based off the oxygen sensors input signal. In open loop operation the control module ignores the oxygen sensor input signal and bases the amount of fuel to be delivered on other sensor inputs.
Fuel Economy	Engine Idling	Liters per Hour	This Parameter displays the instant fuel consumption rate of the engine in liters per hour.
Fuel Enrichment – Hot Catalyst	—	No	This parameter displays if the control module is commanding catalyst protection.
Fuel Enrichment – Hot Coolant	—	Inactive	This parameter displays the status of the fuel delivery system. The scan tool will display Active if the fuel system is running in open loop due to a temperature condition. The scan tool will display Inactive if the fuel system is operating normally.
Fuel Level Sensor	—	Varies	This parameter displays the approximate fuel level in the fuel tank as a voltage. The control module calculates this level using the signal from the sensor used to monitor the fuel in the tank. The scan tool will display a low reading when the fuel level in the tank is near empty. The scan tool will display a high reading when the fuel level in the tank is high or near full.
Fuel Level Sensor Reference Command	—	Varies	This parameter displays the approximate fuel level in the fuel tank as a percentage.
Fuel Pump Relay Control Circuit Open Test Status	—	Not Run	This parameter displays the status of the fuel pump relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Fuel Pump Relay Control Circuit Low Voltage Test Status	—	OK	This parameter displays the status of the fuel pump relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Fuel Pump Relay Control Circuit High Voltage Test Status	—	Not Run	This parameter displays the status of the fuel pump relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Fuel Pump Relay Command	Ignition ON, engine OFF	Fuel pump on for 2 s	This parameter displays the control modules commanded state of the fuel pump relay control circuit.
	Engine idling	On	
Fuel System Monitor Complete	—	Yes/No	This parameter indicates the status of the fuel system monitoring.
Fuel System Monitor Enabled	—	Yes/No	
Fuel Tank Rated Capacity	—	70 L (18.4 Gal)	This parameter displays the rated maximum quantity of fuel the fuel tank will hold. This is calibrated in the control module to match the vehicle.
Fuel Trim Memory Cell	—	Varies	This parameter displays the fuel trim cell number as calculated by the control module based on engine speed and load inputs. The scan tool will display a lower number as conditions are closer to idle, and a higher number as conditions approach maximum engine speed and maximum load.
Fuel Trim Learn	—	Enabled	This parameter displays Enabled when conditions are appropriate for enabling long term fuel trim corrections. This indicates that the long term fuel trim is adapting continuing amounts of short term fuel trim. If the scan tool displays Disabled, then long term fuel trim will not respond to changes in short term fuel trim.
Fuel Trim System Test State	—	Monitoring	This parameter indicates the status of the Fuel Trim System Test. The scan tool will display Disabled, Enabled, Monitoring, or Run Purge Test.
Generator F-Terminal Signal	—	Varies	This parameter indicates the generator field duty cycle as commanded by the voltage regulator or control module. The scan tool will display a higher value for a higher commanded generator output, and a lower value for a lower commanded

			generator output.
Generator L-Terminal Circuit Open Test Status	—	Not Run	This parameter displays the status of the generator L-terminal circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Generator L-Terminal Circuit Low Voltage Test Status	—	OK	This parameter displays the status of the generator L-terminal circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Generator L-Terminal Circuit High Voltage Test Status	—	OK	This parameter displays the status of the generator L-terminal circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Generator L-Terminal Signal Command	—	ON	This parameter displays the commanded state of the generator L-terminal output.
HO2S 1 or HO2S 2	Ignition ON, Engine OFF	mV	This parameter indicates the heated oxygen sensor (HO2S) sensor 1 or 2, output voltage as measured by the control module. The scan tool will display a higher value during a rich condition, and a lower value during a lean condition.
	Engine Operating	Varies	
HO2S 1 or HO2S 2 Heater	—	A	This parameter displays the amperage of the HO2S heater commanded by the control module.
HO2S 1 or HO2S 2 Heater Command	—	ON	This parameter displays the commanded state of the HO2S 1 or HO2S 2 heater circuit by the control module. The scan tool will display ON when the heater is commanded ON. The scan tool will display OFF when the heater is commanded OFF.
HO2S 1 or HO2S 2 Heater Command	—	0–99%	This parameter displays the commanded state of the HO2S 1 or HO2S 2 heater by the control module. The scan tool will display a higher value as the heater command is increased, and a lower value if the heater is not commanded ON.
HO2S 1 or HO2S 2 Heater Control Circuit Open Test Status	—	OK	This parameter displays the status of the control circuit for the HO2S 1 or HO2S 2. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
HO2S 1 or HO2S 2 Heater Control Circuit Low Voltage Test Status	—	OK	This parameter displays the status of the control circuit for the HO2S 1 or HO2S 2. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
HO2S 1 or HO2S 2 Heater Control Circuit High Voltage Test Status	—	OK	This parameter displays the status of the control circuit for the HO2S 1 or HO2S 2. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
HO2S Heater Monitor Complete	Engine Idling	Yes/No	This parameter displays the diagnostic monitor completion status during the current driving/monitoring cycle.
HO2S Heater Monitor Complete This Ignition Cycle	—	Yes or No	This parameter displays the diagnostic monitor completion status during the current driving/monitoring cycle.
HO2S Heater Monitor Enabled	Engine Idling	Yes/No	This parameter displays the diagnostic monitor enable status during the current driving/monitoring cycle.
HO2S Heater Monitor Enabled This Ignition Cycle	—	Yes or No	This parameter displays the diagnostic monitor enable status during the current driving/monitoring cycle.
IAT Sensor	—	–39 to +140°C (–38 to +284°F)	This parameter displays the temperature of the air entering the air induction system based on input to the control module from the intake air temperature (IAT) sensor.
Idle Speed Correction	—	Varies	This parameter indicates the idle speed correction.
Ignition 1 Signal	—	B+	This parameter displays B+ when the control module detects a voltage at the ignition 1 input terminal.
Ignition Accessory Signal	—	ON	This parameter displays the state of the ignition accessory position input to the control module from the ignition switch.
Ignition Timing	—	–4 to +15°	This parameter displays the amount of spark advance the control module is commanding. The control module determines the desired advance.
Ignition Coil 1 and 4 Control Circuit Open Test Status	—	OK	This parameter displays the state of the Ignition control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Ignition Coil 1 and 4 Control Circuit Low Voltage Test Status	—	OK	This parameter displays the state of the Ignition control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Ignition Coil 1 and 4 Control Circuit High Voltage Test Status	—	OK	This parameter displays the state of the Ignition control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Ignition Coil 2 and 3 Control Circuit	—	OK	This parameter displays the state of the Ignition control circuit. The scan tool displays OK, Fault, or Not Run. OK

Open Test Status	—	OK	indicates that no circuit faults are detected during the current test.
Ignition Coil 2 and 3 Control Circuit Low Voltage Test Status	—	OK	This parameter displays the state of the Ignition control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Ignition Coil 2 and 3 Control Circuit High Voltage Test Status	—	OK	This parameter displays the state of the Ignition control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Ignition Cycles with Malfunction Since 1st Malfunction	Ignition ON	Counts	This Parameter contains the number of ignition cycles with a failure reported since the first ignition cycle with a failure reported.
Ignition Cycles without Completed Test Since 1st Malfunction	Ignition ON	Counts	This Parameter contains the number of ignition cycles without a completed test since the first ignition cycle with a failure reported.
Ignition Cycles without Malfunction Since Last Malfunction	Ignition ON	Counts	This Parameter contains the number of ignition cycles with a pass reported and no failures reported since the first ignition cycle with a failure reported.
Immobilizer Auto Learn Counter	Ignition ON	Counts	This Parameter displays the number of times the immobilizer auto learn function was activated.
Immobilizer Automatic Learn Timer	Ignition ON	hh:mm:ss	The scan tool displays the automatic learn timer.
Immobilizer ECM Identifier	—	OK/Incorrect	This parameter displays the state of the immobilizer ECM identifier.
Immobilizer Environment Device 1–4	—	OK/Unknown	The scan tool displays Incorrect, Correct, Not Received, Not Programmed or Unknown. This parameter displays the immobilizer source status.
Immobilizer Fuel Disable	—	Active/Inactive	This parameter displays the state of the immobilizer fuel disabling.
Immobilizer Module Environment Identification	—	Active/Inactive	This parameter displays the state of the environment identification.
Immobilizer Module Fuel Disable	—	Active/Inactive	This parameter displays the immobilizer module state of the immobilizer fuel disabling.
Immobilizer Module Identification	—	Complete/Incomplete	This parameter displays the activation state of the immobilizer module.
Immobilizer Security Code Programmed	—	Yes/No	This parameter displays the programmed state of the security code.
Immobilizer Password Learn	Ignition ON	Enabled/Disabled	Learning Enabled indicates that learning of immobilizer code information is enabled.
Immobilizer Password Learn Scan Tool Delay	—	Active/Inactive	This parameter displays the auto learn timer status.
Immobilizer Password Programmed	—	Yes/No	The parameter displays No or Yes.
Immobilizer Post-Release Passive State	—	Active/Inactive	The parameter displays active or inactive.
Immobilizer Post-Release State	—	Active/Inactive	The parameter displays active or inactive.
Immobilizer Pre-Release State	—	Active/Inactive	The parameter displays active or inactive.
Immobilizer Release State	—	Active/Inactive	The parameter displays active or inactive.
Immobilizer Security Code Accepted	—	Yes/No	The parameter displays Yes or No.
Immobilizer Security Code Function	—	Present/Not Present	This parameter displays the presence of the security code information.
Immobilizer Security Code Lockout	—	Active/Inactive	The parameter displays active or inactive.
Immobilizer Security Code Programmed	—	Yes/No	The parameter displays Yes or No.
Immobilizer Security Code Programming Counter	—	Counts	This parameter displays the counts of the security code programming.
Immobilizer Security Code Reset Counter	—	Counts	This parameter displays the counts of the security code resets.
Immobilizer Security Code Lockout Active Timer	Ignition ON	ms	This Parameter displays the time elapsed since the immobilizer security code lockout has been activated either due to a battery disconnect or an incorrect immobilizer security code being entered.
Immobilizer Security Code Programming Counter	Ignition ON	Counts	This Parameter displays the number of times a new immobilizer security code has been programmed through secure access. This counter can only be incremented.
Immobilizer Security Code Reset Counter	Ignition ON	Counts	This Parameter displays the number of times the immobilizer security code has been reset to the default value through secure access. This counter can only be incremented.

Immobilizer Security Information Programmed	Ignition ON	Yes/No	This Parameter displays the status of the immobilizer system.
Immobilizer System Status	Ignition ON	Standby / Immobilized at Startup / Immobilized No Response / Immobilized Negative Response / Immobilized Incorrect Response / Post-Release State / Pre-Release State / Release State	This Parameter displays the status of the immobilizer system.
Immobilizer Transponder Identification	—	Active/Inactive	This parameter displays the state of the transponder identification
Immobilizer Transponder Key	—	OK/Incorrect	This parameter displays when the transponder is incorrect.
Immobilizer Transponder Key Identification	—	OK/Unknown	This parameter displays when the transponder is unknown.
Immobilizer Transponder Valid Response Received Time	—	ms	This parameter displays the time elapsed until the transponder valid response is received.
Injector Duty Cycle	—	2–3 ms	This parameter displays the average pulse width of the fuel injectors as determined by the control module.
Intake Manifold Pressure	—	32–53 kPa (4.6–7.6 PSI)	This parameter displays the pressure difference between the MAP and the barometric pressure (BARO) as calculated by the control module.
Knock Retard	—	0°	This parameter displays the amount of spark advance the control module removes from the ignition control spark advance in response to the signal from the knock sensors.
Long Term Fuel Trim	—	–10 to +10%	The scan tool range is –99 to +99%. This parameter indicates the Long Term fuel trim correction as commanded by the ECM. A change made to the fuel delivery will be indicated by the Long and Short Term values. The Short Term values change rapidly in response to the HO2S signal voltages. These changes fine tune the engine fueling. The Long Term values change in response to the changes in the Short Term. The Long Term makes coarse adjustments to the fueling in order to recenter and restore control to the Short Term. The Short Term and the Long Term can be monitored with a scan tool. A positive fuel trim value indicates that the ECM is adding fuel in order to compensate for a lean condition. A negative fuel trim value indicates that the ECM is reducing the amount of fuel in order to compensate for a rich condition.
Long Term Fuel Trim Test Average	—	0.98% Varies	This parameter is the average long term fuel trim for this bank as calculated by the control module. The scan tool will display a value more than 0% indicating that time is being added to the injector pulse width, increasing the amount of fuel to this bank of the engine. The scan tool will display a value of less than 0, indicating time is being subtracted from the injector pulse width, reducing the amount of fuel to this bank of the engine. A value of 0% indicates no compensation is required to operate the engine at the desired air/fuel ratio.
Long Term Fuel Trim Test Average without Purge	—	1.02% Varies	This parameter is calculated by the control module based on the Short Term Fuel Trim value. The Long Term Fuel Trim is used for the long term correction of the fuel delivery. The scan tool will display a high value for a large amount of long term fuel correction, and 0% for no long term fuel trim correction. The scan tool will display a negative value when fuel system is running too rich and fuel is being removed from the combustion event. The scan tool will display a positive value if the fuel system is running lean and fuel is being added to the combustion event.
Low Engine Oil Pressure Indicator Command	Ignition ON	On/Off	This parameter displays the output state.
MAF Performance Test	—	OK	This parameter displays the status of the mass air flow (MAF) performance test by the control module. The scan tool will display OK if no condition is detected. The scan tool will display Fault if the control module detects a condition during the test.
MAF Sensor	Engine Idling	1.7–3.7 g/s	This parameter indicates the quantity calculated by the control module based on a signal from the MAF sensor. The scan tool will display a high value at high engine speeds, and a low value at low engine speeds.
	Engine speed at 2500 RPM	5.5–7.5 g/s	
MAF Sensor	—	1.700–2.100 Hz	This parameter indicates the frequency signal received from the MAF sensor by the control module. The scan tool will display a high value at high engine speeds, and a low value at low engine speeds.
MAF When Engine Overspeed Detected	—	g/s	This parameter displays the intake mass air flow at overspeed condition detection.
MAP Performance Test 1	—	OK	This parameter displays the status of the MAP performance test 1 by the control module. The scan tool will display OK if no fault is found. The scan tool will display Fault if the control module detects a fault during the test.
MAP Performance Test 2	—	OK	This parameter displays the status of the MAP performance test 2 by the control module. The scan tool will display OK if no fault is found. The scan tool will display Fault if the control

			module detects a fault during the test.
MAP Sensor	—	26–52 kPa (3.7–7.6 PSI)	This parameter displays the pressure from the MAP sensor to the control module.
MAP Sensor	—	0.98–1.42 V	This parameter displays the signal voltage from the MAP sensor to the control module.
Maximum Engine Speed When Engine Overspeed Detected	—	RPM	This parameter displays the engine speed peak value at overspeed condition.
MIL Command	Ignition ON	ON/OFF	This parameter displays the commanded state of the malfunction indicator lamp (MIL) control circuit by the engine control module (ECM).
MIL Control Circuit Open Test Status	—	OK	This parameter displays the status of the control circuit for the malfunction indicator lamp control (MIL). The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
MIL Control Circuit Low Voltage Test Status	—	OK	This parameter displays the status of the control circuit for the malfunction indicator lamp control (MIL). The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
MIL Control Circuit High Voltage Test Status	—	OK	This parameter displays the status of the control circuit for the malfunction indicator lamp control (MIL). The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
MIL Requested by DTC	—	Yes/No	This parameter indicates the reason the control module illuminated the MIL. The scan tool will display YES when the MIL is requested as a result of an A or B type DTC. The scan tool will display NO if the MIL is illuminated for another reason, such as transmission DTCs.
MIL Requested	Ignition ON	Yes/No	This parameter displays the state of the MIL request.
Misfire Diagnostic Engine Load	—	%	This parameter displays the misfire diagnostic engine load.
Misfire Diagnostic Engine Speed	—	RPM	This parameter displays the misfire diagnostic engine speed.
Misfire Monitor Complete	—	Yes/No	This parameter displays the misfire monitor status.
Misfire Monitor Enabled	—	Yes/No	This parameter displays the misfire monitor enabling state.
Number of DTC(s)	—	0	This parameter indicates the number of diagnostic trouble codes (DTCs).
O2S/HO2S Monitor Complete	Engine Idling	Yes/No	This Parameter displays the enable and completion status during the current driving/monitoring cycle of each continuous legislated emission related monitor and non continuous legislated emission related monitor.
O2S/HO2S Monitor Complete This Ignition Cycle	—	Yes/No	This parameter displays the diagnostic monitor completion status during the current driving/monitoring cycle.
O2S/HO2S Monitor Enabled	Engine Idling	Yes/No	This Parameter displays the enable and completion status during the current driving/monitoring cycle of each continuous legislated emission related monitor and non continuous legislated emission related monitor.
O2S/HO2S Monitor Enabled This Ignition Cycle	—	Yes/No	This parameter displays the diagnostic monitor enable status during the current driving/monitoring cycle.
Output Shaft Speed Sensor	Vehicle needs to be moving	RPM	This Parameter displays the transmission output speed (the speed at the output of the gear box) determined from the speed measured by the transmission output speed sensor.
Odometer When Engine Overspeed Detected	—	km/miles	This parameter displays the absolute vehicle odometer reading at overspeed condition detection.
Power Enrichment	—	Inactive	This parameter displays the status of the operating mode of the control module used to increase fuel delivery during certain acceleration conditions.
Power Mode	Ignition ON	OFF / Accessory / Run / Crank Request	This Parameter displays the state of the System Power Mode. This signal is based upon the state of the system power mode received over serial communication from the vehicle electronics. If the serial data signal not received, the Parameter will display OFF.
Reduced Engine Power	—	Inactive	This parameter displays the status of the operating mode of the control module used to reduce engine power to prevent catalyst or engine damage or due to a Throttle Actuator Control (TAC) system condition.
Reduced Engine Power History	—	OK	This parameter displays the last reason that ECM has Commanded Reduced Engine Power. The scan tool displays one of the following when Reduced Engine Power is commanded: • TAC DTC • Fan Control DTC • ECT Overtemperature • Engine Oil Overtemperature
			This parameter displays the amount of fuel remaining in the

Remaining Fuel in Tank	—	Liters (Gallons) Varies	fuel tank as measured in liters (gallons). The control module determines the amount of fuel remaining in the tank by using information from the fuel level sensor. The scan tool will display a higher value with a full fuel tank, and a lower value with an empty fuel tank.
Remaining Fuel in Tank	—	0–100% Varies	This parameter displays the amount of fuel remaining in the fuel tank as measured in percentage. The control module determines the amount of fuel remaining in the tank by using information from the fuel level sensors. The scan tool will display a higher value with a full fuel tank, and a lower value with an empty fuel tank.
Reverse Position Switch	—	On/Off	This parameter displays the reverse gear switch state.
Short Term Fuel Trim	—	–10 to +10%	The Short Term values change rapidly in response to the HO2S signal voltages. These changes fine tune the engine fueling. The Long Term values change in response to the changes in the Short Term. The Long Term makes coarse adjustments to the fueling in order to recenter and restore control to the Short Term. The Short Term and the Long Term can be monitored with a scan tool. A positive fuel trim value indicates that the ECM is adding fuel in order to compensate for a lean condition. A negative fuel trim value indicates that the ECM is reducing the amount of fuel in order to compensate for a rich condition.
Short Term Fuel Trim Test Average	—	–3 to +99% Varies	This parameter displays the short term closed loop fuel correction. This value is compared to predetermined thresholds to determine if the fuel trim diagnostic is passing or failing.
Start Up ECT	—	–39 to +140°C (–38 to +284°F)	This parameter displays the temperature of the engine coolant on start up based on input to the control module from the ECT sensor 1.
Start Up IAT	—	–39 to +140°C (–38 to +284°F)	This parameter displays the temperature of the intake air at start in the air induction system based on input to the control module from the IAT sensor.
Starter Relay Control Circuit Open Test Status	—	OK	This parameter displays the status of the control circuit for the starter relay. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Starter Relay Control Circuit Low Voltage Test Status	—	Not Run	This parameter displays the status of the control circuit for the starter relay. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Starter Relay Control Circuit High Voltage Test Status	—	OK	This parameter displays the status of the control circuit for the starter relay. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Starter Relay Command	—	OFF	The scan tool displays ON or OFF. The scan tool displays OFF until the ignition is placed into the CRANK position.
SVS Indicator Command	—	On/Off	This parameter displays the service engine non emission related indication state.
TAC Forced Engine Shutdown	—	NO	This parameter indicates the status of TAC control by the control module. The scan tool will display YES if the engine has been shut down due to a throttle control fault. The scan tool will display NO if the engine has not been shut down by a throttle control fault.
TAC Motor	—	Disabled	This parameter indicates the status of the TAC motor driver by the ECM. The scan tool will display Enabled if TAC motor operation is allowed. The scan tool will display disabled if the TAC motor is disabled.
TAC Motor Command	—	0–100% Varies	This parameter displays the percentage of the commanded state of the TAC motor by the control module.
Throttle Body Idle Air Flow Compensation	—	0–100% Varies	This parameter displays the amount of airflow compensation in response to engine intake air flow restrictions. For example, throttle plate coking.
Throttle Position	—	2–6%	This parameter displays the actual throttle position angle indicated by the control module using information from the two Throttle Body sensors.
Throttle Position Performance Test	—	OK	This parameter displays the status of the throttle position performance test by the control module. The scan tool will display OK if no fault is found. The scan tool will display Fault if the control module detects a fault during the test.
Throttle Position Sensor 1	Accelerator pedal not actuated	4.14–4.34 V	This parameter displays the voltage signal sent to the control module from throttle position sensor 1 of the throttle assembly. The throttle position sensor 1 is a range of values indicating a high voltage when the throttle is closed to a low voltage when the throttle plate is fully open.
	Accelerator pedal fully actuated	3.50–3.37 V	
Throttle Position Sensor 1 Position	—	2–6%	This parameter displays the angle of the throttle position sensor 1 as calculated by the control module using the signal from the throttle position sensor 1. The throttle position sensor 1 is a range of values indicating a low percentage when the throttle is closed to a high percentage when the throttle is fully

			open.
Throttle Position Sensor 1 Learned Minimum	—	0.5–0.71 V	This parameter displays the learned minimum voltage for throttle position sensor 1 as determined by the control module this ignition cycle.
Throttle Position Sensor 2	Accelerator pedal not actuated	0.68–0.88 V	This parameter displays the voltage signal sent to the control module from throttle position sensor 2 of the throttle assembly. The throttle position sensor 2 is a range of values indicating a low voltage when the throttle is closed to a high voltage when the throttle plate is fully open.
	Accelerator pedal fully actuated	1.35–1.55 V	
Throttle Position Sensor 2 Position	—	2–6%	This parameter displays the angle of the throttle position sensor 2 as calculated by the control module using the signal from the throttle position sensor 2. The throttle position sensor 2 is a range of values indicating a low percentage when the throttle is closed to a high percentage when the throttle is fully open.
Throttle Position Sensor 2 Learned Minimum	—	0.55–0.75 V	This parameter displays the learned minimum voltage for throttle position sensor 2 as determined by the control module this ignition cycle.
Throttle Position Sensors 1 and 2	—	Agree	This parameter displays the results of a control module test that compares the signals from the Throttle Body sensors 1 and 2. The scan tool will display Agree or Disagree. Agree indicates that throttle position sensor 1 and throttle position sensor 2 voltages correspond to the same throttle position. Disagree indicates that throttle position sensor 1 and throttle position sensor 2 voltages correspond to different throttle positions.
Torque Delivered Signal	—	Y	This parameter displays the torque delivered from the engine to the transmission.
Torque Management Ignition Timing Retard	—	15–25°	This parameter displays how much the ignition spark timing is being retarded to control torque by the control module. The scan tool will display a higher value under extreme torque control conditions such as spinning wheels. The scan tool will display a lower value under low torque control conditions such as light driving.
Torque Request Inhibit – Fuel	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit – Ignition Timing	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit – Ignition Timing Advance	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit – Minimum Idle	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit – Minimum Torque	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit – TAC	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit – TAC Limit	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Total Knock Retard	—	0°	This parameter displays how much ignition spark timing is being retarded due to all control systems monitored by the control module. The scan tool will display a high value during extreme conditions such as high temperatures and antilock braking. The scan tool will display a lower value during lighter driving conditions.
Total Misfire	—	0 Counts	This parameter displays the total number of cylinder firing events that the control module detected as misfires for the last 200 crankshaft revolution sample period.
Vehicle Speed Sensor	—	0 km/h (0 MPH)	This parameter displays the speed of the vehicle as calculated by the transmission control module (TCM) from information received from the vehicle speed sensor.
Vehicle Speed When Engine Overspeed Detected	—	0 km/h (0 MPH)	This parameter displays the vehicle speed at overspeed condition detection.
VIN Programming Counter	Ignition ON	Counts	This Parameter displays the number of times the VIN has been programmed. This counter can only be incremented.
Warm-ups Since DTC Cleared	—	Varies	This parameter displays the number of warm-ups since the DTC was cleared in counts.
Warm-Ups without Emission Malfunctions	—	Varies	This parameter displays the number of warm up cycles that have occurred without an emission fault present. The scan tool will display a 0 if a fault has occurred. The scan tool will display a higher count if a number of warm up cycles have occurred without an emission fault.
Warm-Ups without Non Emission Malfunctions	—	Varies	This parameter displays the number of warm up cycles that have occurred without a non emission fault present. The scan tool will display a 0 if a fault has occurred. The scan tool will display a higher count if a number of warm up cycles have occurred without a non emission fault.

Wide Open Throttle	—	Yes/No	This parameter displays the throttle status commanded by the control module. The scan tool will display YES if the vehicle throttle is commanded to wide open. The scan tool will display NO if the vehicle throttle is commanded to an amount less than 100%.
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Engine Control Module (ECM) Scan Tool Output Controls

Output Control	Description
A/C Compressor Clutch Relay	This function activates the A/C compressor relay. The normal commanded state of the A/C relay is None. The A/C compressor will turn ON or OFF when commanded ON or OFF. The system remains in the commanded state until cancelled by the scan tool. The scan tool initiates the test when the following conditions are met: • In the correct power mode • A/C high side pressure is in range • Engine speed is in range • Ignition voltage is in range. • There are no A/C pressure sensor DTCs set.
Brake Pedal Position Sensor Learned	This device control is used to reset the brake pedal fully released learned position to its initialized value after a brake system repair.
Compression Test	This device control is used to set up the internal combustion engine for a compression test. The fuel pump, fuel injectors, and spark are all disabled. The throttle is opened to a WOT position. For conventional engine vehicles, the extended crank feature is not active. Engine cranking is completely controlled by the technician either through the ignition key or through a remote starter switch as applicable. The device control limits and rejects will apply normally upon entry to the device control. Once the device control is active, the limits will be monitored (to prevent unwanted starter operation, for example), but in the case of a limit exceeded or a tester disconnect, device control of the fuel and spark will not be released until the Power Mode switches to Accessory or OFF. This will prevent unexpected fuel and spark operation in the case of a device control abort. This function controls the cooling fan relay 1. The normal commanded state of the fan relay is None. The scan tool initiates the test when the following conditions are met: • Engine coolant temperature is not out of range • In the correct power mode
Cooling Fan Relay 1	
Cooling Fan Relay 2	This function controls the cooling fan relay 2. The normal commanded state of the fan relay is OFF. The scan tool initiates the test when the following conditions are met: • Engine coolant temperature is not out of range. • In the correct power mode
Crankshaft Position Variation Learn	This device control is used to activate the crankshaft position variation learn algorithm which calculates the reference pulse correction factors for the misfire diagnostic. This function disables the selected fuel injector. The normal commanded state is None. The scan tool initiates the test when the following conditions are met:
Cylinder Power Balance	• The engine is operating and the engine idle is stable. • The vehicle speed is 0 km/h (0 MPH). • There are no vehicle speed sensor DTCs set. If the fuel injector is disabled after 30 s, fuel injector control is not allowed again on the same fuel injector for 60 s. This function controls the engine control ignition relay or main relay. The normal commanded state is None. When commanded ON or OFF, the engine control module (ECM) turns the relay ON or OFF. The system remains in the commanded state until cancelled by the scan tool. The scan tool initiates the test when the following conditions are met:
Engine Controls Ignition Relay	• The ignition is ON with the engine OFF. • There are no crankshaft position or VSS sensor DTCs set. • The vehicle speed is 0 km/h (0 MPH). • In the correct power mode
Engine Oil Life Reset	This function is used to reset the engine oil life. The engine oil remaining life is determined from engine revolutions and the distance driven since the last oil change. This function controls the idle speed override in 25 RPM, 100 RPM, and 500 RPM increments, from the base idle speed to 1,950 RPM. The scan tool initiates the test when the following conditions are met:
Engine Speed	• The vehicle speed is 0 km/h (0 MPH). • There are no VSS sensor DTCs set. This function controls the EVAP purge solenoid valve. The normal commanded state is None. The system will increase or decrease the amount of purge by changing the duty cycle of the purge valve in 10% increments within a range of 0 –100%. The scan tool initiates the test when the following conditions are met:
EVAP Purge Solenoid Valve	• The vacuum level in the EVAP purge system is within range. • There are no EVAP DTCs set. • The EVAP system test is not in progress. • In the correct power mode
Fuel Control Loop Status	This device control is used to enable or disable closed loop fuel control. This function enables the fuel injector in order to verify proper fuel injector flow. The ECM will pulse the selected injector

when the following conditions are met:

Fuel Injector Balance

- All instruction on the scan tool completed.
- Fuel injector selected.
- Key ON, engine OFF.

The selected fuel injector can only be flowed or pulsed once per ignition cycle.

This function controls the fuel pump relay. The normal commanded state is None. When commanded ON or OFF, the ECM turns the fuel pump ON or OFF. The scan tool initiates the test when the following conditions are met:

Fuel Pump Relay

- The engine speed is 0 RPM.
- In the correct power mode.
- The output control timer has not expired.
- The ignition voltage is within range.

Fuel Trim Enable

This function enables or disables the ECM fuel trim learning. The normal commanded state is None.

Fuel Trim Reset

This function is used to reset the learned fuel trim values to their initial values.

This function is used to override the state of the generator L-terminal output. The commanded states are ON and OFF. Selecting OFF commands the ECM to turn OFF the generator and stop generating an output voltage. The scan tool initiates the test when the following conditions are met:

Generator L-Terminal

- The engine is operating to turn OFF the component.
- The vehicle speed is 0 km/h (0 MPH).
- In the correct power mode.
- The output control timer has not expired.

HO2S Heater Learn

This function is used to trigger the reset of the learned resistances for the oxygen sensor heaters following a replacement. The learned resistances are reset to a calibration used to prevent overheating of the sensors until more accurate resistances may be learned following an extended engine OFF time.

This function controls the selected HO2S heater. The normal commanded state is None, on, and off. Commanding the HO2S heater ON turns on the heater driver. The scan tool initiates the test when the following conditions are met:

HO2S Heater Sensor 1 or 2

- The engine is operating.
- The exhaust temperature is within range.
- In the correct power mode.
- The HO2S heaters are not over temperature.
- The ignition voltage is not out of range while commanding the heaters ON.

Idle Ignition Timing

Disables and enables idle spark advance with the engine running.

This function is used to reset the learned airflow adaptive values to the initial values. The scan tool initiates the test when the following conditions are met:

Idle Learn

- The vehicle speed is 0 km/h (0 MPH).
- In the correct power mode
- There are no throttle actuator control system DTCs set.

Idle Speed Adjustment

This device control allows a service technician to add an offset to the engine idle speed within a restricted range to address customer complaints for vehicle vibration.

Malfunction Indicator Lamp (MIL)

This function controls the malfunction indicator lamp (MIL). The normal commanded state is None. When commanded ON or OFF, the ECM turns the malfunction indicator lamp (MIL) ON or OFF. This output can also be monitored on the scan tool data parameter MIL Command. The system remains in the commanded state until cancelled by the scan tool.

Misfire Graphic

This function is used to graph the accumulated misfires occurring in each cylinder. The scan tool allows for a reset of the misfire graph.

Programming History

This function displays the history buffer entries for the primary calibration part in the engine controller.

This function is used to override the state of the Starter Relay output. Fuel and spark are disabled to prevent the engine from starting if the starter relay output is commanded ON. The scan tool initiates the test when the following conditions are met:

Starter Relay

- The engine speed is 0 RPM.
- There are no crankshaft position sensor DTCs set.
- The vehicle speed is 0 km/h (0 MPH)
- There are no VSS sensor DTCs set.
- There are no theft deterrent DTCs set.
- There are no TAC system DTCs set.
- The ignition voltage is within range.
- In the correct power mode.
- Not enough time has elapsed since the last time the starter has been enabled with a scan tool.

This function controls the throttle valve in 10% increments. The scan tool initiates the test when the following conditions are met:

Throttle Position

- The engine speed is 0 RPM.
- The vehicle speed is 0 km/h (0 MPH).

The system remains in the commanded state until cancelled by the scan tool.

Throttle Sweep

This device control is used to automatically command the throttle blade from 0% to 100% and then back to 0%.

Tire Size

This function is used for correcting vehicle speed and odometer calculations when tire size is changed.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Table 1: [Engine Control Module Scan Tool Data Parameters](#)

Table 2: [Engine Control Module \(ECM\) Scan Tool Output Controls](#)

The engine control module scan tool data list contains all engine related parameters that are available on the scan tool. The list is arranged in alphabetical order. A given parameter may appear in any one of the data lists, and in some cases may appear more than once, or in more than one data list in order to group certain related parameters together.

Use the engine scan tool data list only after the following is determined:

- The Diagnostic System Check - Vehicle is completed.
- No diagnostic trouble codes (DTCs)
- On-board diagnostics are functioning properly.

The scan tool values from a properly running engine may be used for comparison with the engine you are diagnosing. The engine scan tool data list represents values that may be seen on a normally running engine.

Note: A scan tool that displays faulty data should not be used. The scan tool concern should be reported to the manufacturer. Use of a faulty scan tool can result in misdiagnosis and unnecessary parts replacement.

Only the parameters listed below are referenced in this service manual for use in diagnosis. If all values are within the typical range described below, refer to Symptoms - Engine Controls for engine diagnosis.

Engine Control Module Scan Tool Data Parameters

Parameter	System State	Expected Value	Description
<i>Operating Conditions:</i> Engine Idling/Radiator Hose Hot/Closed Throttle/Park or Neutral/Closed Loop/Accessories Off/Brake Pedal Released			
5 V Reference 1, 2, 3, or 4	Ignition ON	5 V	This parameter displays the voltage sensed on the 5 V reference circuits at the control module. The scan tool will display a higher value at higher voltage. The scan tool will display a lower value at lower voltage.
5 V Reference 1, 2, 3, or 4 Circuit Status	Ignition ON	OK	This parameter displays OK if there is no 5 V reference circuit condition. If the circuit is shorted to ground or shorted to B+, Fault is displayed.
A/C Disengage 1–8 History	A/C ON	Reason for A/C Disengagement	The parameter indicates the reason the air conditioning (A/C) compressor was disengaged. The scan tool displays None, A/C Pressure, Engine Speed, Battery Voltage, Anti Stall, RPM Unstable, wide open throttle (WOT), Launch Performance, Coolant Hot, Accelerator Pedal Position (APP), Air Bag Deploy, or A/C Relay DTC.
A/C High Side Pressure Sensor	A/C OFF	0.75–1.5 V*	This parameter displays the voltage from the A/C high side pressure sensor signal circuit to the control module.
	A/C ON	1.3–2.5 V*	*Varies with temperature and relative humidity.
A/C High Side Pressure Sensor	A/C OFF	450–650 kPa* (65–95 PSI)*	This parameter displays the pressure from the A/C high side pressure sensor signal circuit to the control module.
	Engine Speed at 2,000 RPM	1.117–2.350 kPa* (162–341 PSI)*	*Varies with temperature and relative humidity.
A/C Off for WOT	A/C ON	No	This parameter displays whether the control module is commanding the A/C compressor clutch relay OFF for WOT.
A/C Disable – A/C Pressure Out of Range	A/C ON	No	This parameter displays whether the A/C pressure is out of range for normal operation as determined by the control module.
A/C Compressor Clutch Relay Control Circuit Open Test Status	A/C ON or Off	OK/Not Run	This parameter displays the state of the air conditioning (A/C) clutch relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
A/C Compressor Clutch Relay Control Circuit Low Voltage Test Status	A/C ON or Off	OK/Not Run	This parameter displays the state of the air conditioning (A/C) clutch relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
A/C Compressor Clutch Relay Control Circuit High Voltage Test Status	A/C ON or Off	OK/Not Run	This parameter displays the state of the air conditioning (A/C) clutch relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
A/C Compressor Clutch Relay Command	A/C ON	On	This parameter displays the state of the air conditioning (A/C) clutch relay control circuit as commanded by the control module.
A/C Request Signal	A/C ON	Yes	This parameter displays the state of the A/C request input to the control module from the heating, ventilation, and air conditioning (HVAC) controls.
Accelerator Pedal Position	Accelerator pedal not actuated	0%	This parameter displays the angle of the APP as calculated by the control module using the signals from the APP sensors.
	Accelerator pedal fully	100%	

	actuated		
Air/Fuel Equivalence Ratio Command	—	Varies	This parameter displays the ratio of air to fuel as calculated by the control module based on various sensor inputs. The scan tool will display a lower air fuel ratio when a richer air to fuel mixture is commanded. The scan tool will display a higher air fuel ratio when a leaner air to fuel mixture is commanded. In closed loop operation the air fuel ratio should normally be approximately 14.7:1.
Ambient Air Temperature	—	°C (°F) Varies	This parameter displays the surrounding air temperature, at any given altitude.
Ambient Air Temperature When Recommended Maximum Fuel Alcohol Content Exceeded	Ignition ON	0°C (32°F) or less	This parameter displays Ambient Air temperature when recommended Ethanol concentration exceeded.
APP Sensor 1	Accelerator pedal not actuated	0.88–1.08 V	This parameter displays the actual voltage on the accelerator pedal position (APP) Sensor 1 signal circuit as measured by the control module.
	Accelerator pedal fully actuated	4.17–4.37 V	
APP Sensor 1 Circuit Status	Ignition ON	OK Fault	APP Sensor 1 Out of Range indicates that the sensed accelerator pedal position 1 sensor value is currently out of range or that a Malfunction has been detected based upon the sensed accelerator pedal position 1 sensor value being out of range.
APP Sensor 1 Learned Released Position	Ignition ON	Varies	This Parameter indicates the accelerator pedal sensor 1 signal at its minimum learned position (pedal released) as a percentage of its reference voltage. (The minimum learned position is automatically updated periodically as determined by the calibration.)
APP Sensor 2	Accelerator pedal not actuated	0.39–0.59 V	This parameter displays the actual voltage on the accelerator pedal position (APP) Sensor 2 signal circuit as measured by the control module.
	Accelerator pedal fully actuated	2.02–2.22 V	
APP Sensor 2 Circuit Status	Ignition ON	OK Fault	APP Sensor 2 Out of Range indicates that the sensed accelerator pedal position 2 sensor value is currently out of range or that a Malfunction has been detected based upon the sensed accelerator pedal position 1 sensor value being out of range.
APP Sensor 2 Learned Released Position	Ignition ON	Varies	This Parameter indicates the accelerator pedal sensor 2 signal at its minimum learned position (pedal released) as a percentage of its reference voltage. (The minimum learned position is automatically updated periodically as determined by the calibration.)
APP Sensor 1 and 2	—	Agree	This parameter displays the results of a control module test that compares the signals from the APP sensors 1 and 2. The scan tool will display Agree or Disagree. Agree indicates that APP sensor 1 and APP sensor 2 voltages correspond to the same accelerator pedal position. Disagree indicates that APP sensor 1 and APP sensor 2 voltages correspond to different accelerator pedal positions.
APP Sensors	—	0%	This parameter displays the average of the APP sensors as calculated by the throttle actuator control (TAC) module. The APP average is a range of values indicating a low percentage when the accelerator pedal is not depressed to a high percentage when the accelerator pedal is fully depressed.
APP Sensor 1 Position	Accelerator pedal not actuated	0%	This parameter displays the angle of the APP sensor 1 as calculated by the control module using the signal from the APP sensor 1. APP sensor 1 is a range of values indicating a low percentage when the accelerator pedal is not depressed to a high percentage when the accelerator pedal is fully depressed.
	Accelerator pedal fully actuated	100%	
APP Sensor 2 Position	Accelerator pedal not actuated	0%	This parameter displays the angle of the APP sensor 2 as calculated by the control module using the signal from the APP sensor 2. APP sensor 2 is a range of values indicating a low percentage when the accelerator pedal is not depressed to a high percentage when the accelerator pedal is fully depressed.
	Accelerator pedal fully actuated	100%	
BARO	—	65–104 kPa (8–16 PSI) – Varies with altitude	This parameter displays the barometric pressure (BARO). The control module uses the barometric pressure sensor input for fuel control to compensate for altitude differences.
Brake Pedal Position	The brake pedal is applied	Applied	This parameter displays the status of the brake pedal switch.
	The brake pedal is released	Released	

Calculated Air Flow	—	g/s Varies	This parameter displays the air flow of the engine as calculated by the control module.
Calculated Catalyst Temperature	—	°C (°F) Varies	This parameter displays the catalyst temperature as calculated by the control module.
Calculated Engine Oil Temperature	—	°C (°F) Varies	This parameter displays the temperature of the engine oil as calculated by the control module using various sensor inputs. The engine oil temperature calculated has a range of values indicating a low value when the oil temperature is low to a high value when the oil temperature is high.
Camshaft Position Active Counter	—	0–255 Counts	This parameter displays an incrementing counter when the control module receives a signal from the camshaft position sensors.
Camshaft Position Sensor	—	Engine Speed	This parameter displays the speed of the engine as calculated by the signal from the camshaft position sensor, shown in RPM.
Catalyst Monitor Complete	—	Yes or No	This parameter displays the monitor completion status.
Catalyst Monitor Complete This Ignition Cycle	—	Yes or No	This parameter displays the monitor completion status during the current driving/monitoring cycle.
Catalyst Monitor Enabled	—	Yes or No	This parameter displays the monitor enable status.
Catalyst Monitor Enabled This Ignition Cycle	—	Yes or No	This parameter displays the monitor enable status during the current driving/monitoring cycle.
Catalyst Monitor Not At Idle Test Conditions Met	—	Yes or No	This parameter displays the status of the catalyst monitor diagnostic. Off Idle Conditions Met indicates if the off idle conditions for the catalyst monitor diagnostic have been met. Once the Off Idle Conditions are met the vehicle can return to idle and allow the catalyst monitor diagnostic test to run.
Catalyst Monitor Test Counter	—	Counts	This parameter displays the number of catalyst monitor diagnostics that have passed.
Catalyst Monitor Test Result	—	Varies	This parameter displays the status of the catalyst monitor diagnostic.
Catalyst Monitor Test State	—	Varies	This parameter displays when the catalyst monitor diagnostic is actively running a test. This condition will only be true when the vehicle is at idle.
Change Engine Oil Indicator Command	—	On/Off	This parameter displays the state of the change engine oil lamp commanded by the engine control module.
Cold Start Fuel Injector Command	Engine Cranking	%	This Parameter displays the commanded duty cycle for the cold start fuel injector.
Cold Start Fuel Injector Control Circuit High Voltage Test Status	Engine Cranking	OK/Malfunction/Not Run	This parameter displays the state of the cold start fuel injector control circuit. The parameter displays Malfunction if the cold start fuel injector control circuit is shorted to voltage.
Cold Start Fuel Injector Control Circuit Low Voltage Test Status	Engine Cranking	OK/Malfunction/Not Run	This parameter displays the state of the cold start fuel injector control circuit. The parameter displays Malfunction if the cold start fuel injector control circuit is shorted to ground.
Cold Start Fuel Injector Control Circuit Open Test Status	Engine Cranking	OK/Malfunction/Not Run	This parameter displays the state of the cold start fuel injector control circuit. The parameter displays Malfunction if the cold start fuel injector control circuit is open.
Cold Start Fuel Pump Relay Command	Engine Cranking	ON	This parameter displays the engine control modules commanded state of the cold start fuel pump relay command control circuit.
Cold Start Fuel Pump Relay Control Circuit High Voltage Test Status	Engine Cranking	OK/Malfunction/Not Run	This parameter displays the state of the cold start fuel relay control circuit. The parameter displays Malfunction if the cold start fuel relay control circuit is shorted to voltage.
Cold Start Fuel Pump Relay Control Circuit Low Voltage Test Status	Engine Cranking	OK/Malfunction/Not Run	This parameter displays the state of the cold start fuel relay control circuit. The parameter displays Malfunction if the cold start fuel relay control circuit is shorted to ground.
Cold Start Fuel Pump Relay Control Circuit Open Test Status	Engine Cranking	OK/Malfunction/Not Run	This parameter displays the state of the cold start fuel relay control circuit. The parameter displays Malfunction if the cold start fuel relay control circuit is open.
Cold Start Up	—	Varies	This parameter displays whether the engine meets the conditions for a cold startup during the present ignition cycle. The scan tool displays Yes when the conditions for a cold startup are met during this ignition cycle. The scan tool displays No when the conditions for a cold startup are not met during the present ignition cycle. Conditions for a cold startup require the coolant temperature and the intake air temperature to be below a predetermined temperature and within a certain range of each other. These conditions must occur after the engine was warmed up to a specific temperature during the previous ignition cycle.
Component Monitor Complete	—	Yes/No	This parameter displays the component monitor completion status during the current driving/monitoring cycle.
Component Monitor Enabled	—	Yes/No	This parameter displays the component monitor enable status during the current driving/monitoring cycle.
			This parameter displays the status of the fan relay control

Cooling Fan Relay 1 Control Circuit Open Test Status	—	OK or Not Run	circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Cooling Fan Relay 1 Control Circuit Low Voltage Test Status	—	OK or Not Run	This parameter displays the status of the fan relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Cooling Fan Relay 1 Control Circuit High Voltage Test Status	—	OK or Not Run	This parameter displays the status of the fan relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Cooling Fan Relay 1 Command	—	Varies	This parameter displays the commanded state of the cooling fan relay 1 control circuit. The cooling fan relay 1 should be ON when the scan tool indicates the fan control relay 1 command is ON. The cooling fan relay 1 should be OFF when the scan tool indicates the fan control Relay 1 Command is OFF.
Cooling Fan Relay 2 Control Circuit Open Test Status	—	OK or Not Run	This parameter displays the state of the fan relay control circuit. The parameter displays Fault if the fan relay control circuit is open.
Cooling Fan Relay 2 Control Circuit Low Voltage Test Status	—	OK or Not Run	This parameter displays the status of the fan relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Cooling Fan Relay 2 Control Circuit High Voltage Test Status	—	OK or Not Run	This parameter displays the status of the fan relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Cooling Fan Relay 2 Command	—	Varies	This parameter displays the commanded state of the cooling fan relay 2 control circuit. The cooling fan relay 2 should be ON when the scan tool indicates the fan control Relay 2 command is ON. The cooling fan relay 2 should be OFF when the scan tool indicates the fan control Relay 2 command is OFF.
CPP Learned Apply Position	—	V	This parameter displays the position learned for the clutch pedal position (CPP) sensor when the clutch pedal is fully applied during the associated learn procedure.
CPP Learned Release Position	—	Varies	This parameter displays the position learned for the clutch pedal position sensor when the clutch pedal is released.
CPP Sensor	—	%	This parameter displays the displacement of the clutch pedal (corrected and normalized based upon its learned released and fully applied positions), where 0% corresponds to the clutch pedal being released and 100% corresponds to the clutch pedal being fully applied.
CPP Sensor	—	Varies	This parameter displays the clutch pedal position sensor analog input as a percentage of its reference voltage.
Crankshaft Position Active Counter	—	0–255 Counts	This parameter displays an incrementing counter when the control module receives a signal from the crankshaft position sensor.
Crankshaft Position Resynchronization Counter	—	0 Counts	This parameter displays the number of counts the control module resynchronizes with the crankshaft position sensor.
Crankshaft Position Sensor	—	Engine Speed	This parameter displays the engine speed as calculated by the control module using the signal from the crankshaft position sensor.
Crank Request Signal	Ignition switch not in the crank position	No	This parameter displays whether the ignition switch has been cycled to the crank position requesting the control module to activate the starter relay.
	Ignition switch in the crank position	Yes	
Cruise Control	Cruise Control ON	Active/Inactive	This parameter displays the status of the cruise control system as determined by the control module.
Cruise Control Accelerate Switch	Cruise Control ON	Active/Inactive/Invalid	The scan tool displays ON, when the cruise ON/OFF switch is ON and the accelerate switch is pressed, the ECM detects a predetermined voltage value for this switch.
Cruise Control Cancel Switch	Cruise Control ON	Active/Inactive/Invalid	This parameter displays the status of the cruise control cancel switch.
Cruise Control Coast Switch	Cruise Control ON	Active/Inactive/Invalid	The scan tool displays ON, when the cruise ON/OFF switch is ON and the ECM detects a predetermined voltage value for the coast switch.
Cruise Control Disengage History 1–8	Cruise Control ON	Reason for Cruise Disengagement	The parameter displays the last 8 cruise control disengages in order from 1–8, with 8 being the most recent. There are approximately 40 possible causes for the cruise control to disengage.
Cruise Control Inhibit Reason	Cruise Control ON	Varies	The parameter displays the reason why the cruise control system is inhibited. There are approximately 40 possible causes for the cruise control to be inhibited.

The engine control module (ECM) monitors the signal circuit

Cruise Control On/Off Switch	Cruise Control ON	ON/OFF	The engine control module (ECM) monitors the signal circuit of the cruise control switch. A closed switch is displayed as ON.
Cruise Control Resume Switch	Cruise Control ON	Active/Inactive/Invalid	The scan tool displays ON, when the cruise ON/OFF switch is ON and the resume switch is pressed, the ECM detects a predetermined voltage value for the resume switch.
Cruise Control Set Switch	Cruise Control ON	Active/Inactive/Invalid	The scan tool displays ON, when the cruise ON/OFF switch is ON and the ECM detects a predetermined voltage value for the set switch.
Current Gear	Transmission in Park/Neutral	P/N	This parameter displays the transmission gear commanded by the transmission control module.
	Transmission not in Park/Neutral	Reverse/1st–5th	
Cycles of Misfire Data	—	Incrementing 0–100 Counts	This parameter displays the number of cylinder firing events recorded by the control module.
Cylinder 1–4 Current Misfire Counter	—	0 Counts	The scan tool displays 0–255 counts. This parameter displays the number of misfires that have been detected during the last 200 cylinder firing events. The counters may normally display some activity, but the activity should be nearly equal for all of the cylinders, and in low numbers.
Cylinder 1–4 History Misfire Counter	—	0 Counts	The scan tool displays 0–255 counts. The misfire history counters display the total level of misfire that has been detected on each cylinder. The misfire history counters will not update or show any activity until a misfire DTC P0300 has become active. The misfire history counters will update every 200 cylinder firing events.
Cylinder 1–4 Injector Control Circuit Open Test Status	—	OK	This parameter displays the state of the injector control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Cylinder 1–4 Injector Disabled – Misfire Detected	—	No	This parameter displays the status of the fuel injector driver by the control module. The scan tool will display YES if the fuel injector is being disabled due to a misfire detection. The scan tool will display NO if the fuel injector is not being disabled by the control module due to a misfire.
Cylinder 1–4 Injector Control Circuit Low Voltage Test Status	—	OK	This parameter displays the state of the injector control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Cylinder 1–4 Injector Control Circuit High Voltage Test Status	—	OK	This parameter displays the state of the injector control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Cylinder 1–4 Knock Detected	—	NO	This parameter displays the status of each cylinder for knock detection by the control module. The scan tool will display YES if a knock condition has been detected related to that cylinder combustion event. The scan tool will display NO if there is no knock condition detected related to that cylinder combustion event.
Deceleration Fuel Cut-Off	—	Inactive	This parameter displays the status of the operating mode used to turn off the fuel injectors during certain deceleration conditions. When the scan tool displays Active, the control module has turned off the fuel injectors. When the scan tool displays Inactive, the fuel system is operating normally.
Desired ECT	—	°C (°F) Varies	This parameter displays the desired engine coolant temperature (ECT) in °C (°F) .
Desired Idle Speed	—	600–950 RPM	This parameter displays the desired engine idle speed as commanded by the control module.
Desired Throttle Position	—	2–6%	This parameter displays the desired throttle position angle commanded by the control module.
Distance Since DTC Cleared	—	Varies	This parameter displays the distance accumulated since an emission diagnostic trouble code was cleared. The scan tool will display increasing distance as the vehicle is driven.
Distance Since First Malfunction	Ignition ON	0 km/h (0 MPH)	This parameter displays in kilometers or miles the distance traveled since a Malfunction occurred.
Distance Since Last Malfunction	—	Varies	This parameter displays the distance accumulated when the emission diagnostic trouble code last failed.
Distance Since Last Oil Pressure Warning	Ignition ON	0 km/h (0 MPH)	This parameter displays in kilometers or miles the distance traveled since the last oil pressure warning Malfunction occurred.
Distance Since Recommended Maximum Fuel Alcohol Content Exceeded	Ignition ON	0 km/h (0 MPH)	This parameter displays in kilometers or miles the distance driven since the most recent time that the Recommended Ethanol Concentration Exceeded occurred.
Distance This Driving Cycle	Ignition ON	0 km/h (0 MPH)	This parameter displays in kilometers or miles the distance driven during this ignition cycle.
Driver Requested Axle Torque	—	Y	This parameter displays the driver intended axle torque.

ECM Authentication Status	Ignition ON	Unknown/Incorrect/Negative Response/Valid	ECM Authentication Status indicates the result of the comparison between the last received immobilizer response and the expected response calculated into the ECM.
ECM Challenge Status	Ignition ON	Valid/Invalid	ECM Challenge Status indicates the challenge between ECM and the immobilizer.
ECM Response Source	Ignition ON	Ignition Switch Start/Remote Vehicle Start/Exterior PTO Vehicle Start	ECM Response Source indicates the source used to calculate the ECM response.
ECT Sensor	—	–39 to +140°C (–38 to +284°F) Varies	This parameter displays the temperature of the engine coolant based on input to the control module from the engine coolant temperature (ECT) sensor.
Electric Power Management Inhibit Reason	—	Varies	The scan tool displays the reason why the regulated voltage control is inhibit.
Engine Calibration Monitoring	—	Present/Not Present	This parameter indicates if the Engine Upgrade Protection are supported by ECM.
Engine Calibration Monitoring Identifier	v	Programmed/Not Programmed	This parameter indicates the status if the Engine Performance Identifier has been programmed
Engine Controls Ignition Relay Control Circuit Open Test Status	—	Not Run	This parameter displays the state of the engine control ignition relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Engine Controls Ignition Relay Control Circuit Low Voltage Test Status	—	OK	This parameter displays the state of the engine control ignition relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Engine Controls Ignition Relay Control Circuit High Voltage Test Status	—	Not Run	This parameter displays the state of the engine control ignition relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Engine Controls Ignition Relay Command	—	ON	This parameter displays the commanded state of the engine control ignition relay control circuit. The scan tool will display ON or OFF. ON indicates the engine control ignition relay control circuit is being grounded by the control module, allowing voltage to other control module circuits and systems. OFF indicates the engine control ignition relay is not being commanded ON by the control module.
Engine Controls Ignition Relay Feedback Signal	—	B+	This parameter displays the voltage available at the engine control ignition relay pin of the control module.
Engine Load	Engine Idling	11–30% Varies	This parameter displays the calculated engine load in percent based on inputs to the control module from various engine sensors.
	Engine speed at 2500 RPM	25–40%	
Engine Off Time	Ignition Switch in the OFF Position	Varies	This parameter displays the amount of time that has elapsed since the engine was last cycled OFF. The scan tool displays the time in hours, minutes, and seconds. The engine OFF time will reset to zero when the engine starts.
Engine Oil Life Remaining	Ignition ON	0–100%	This parameter displays the percent of engine oil life remaining. The controller calculates the engine oil life by monitoring engine load, coolant temperature, and engine speed.
Engine Oil Pressure Switch	—	OK	This parameter displays the state of the engine oil pressure as determined by the control module. The control module monitors the engine oil pressure switch to determine if the engine oil pressure is sufficient. The scan tool displays Low when the engine oil pressure is below a predetermined value.
Engine Oil Temperature When Engine Overspeed Is Detected	—	Varies	This parameter displays the temperature of the engine oil if overspeed detected.
Engine Overspeed	—	Not Present	This parameter displays the status if overspeed detected.
Engine Overspeed Counter	—	Varies	This parameter displays the status if overspeed detected.
Engine Run Time	Engine Operating	Varies	This parameter displays the time elapsed since the engine was started. The scan tool will display the time in hours, minutes and seconds. The engine run time will reset to zero when the engine stops running.
Engine Speed	Engine Cranking	Greater than 60 RPM	This parameter displays the speed of the engine crankshaft rotation from information received from the crankshaft position sensor.
	Engine Idling	Approximately 650–950 RPM	
Engine Speed When Engine Overspeed Detected	—	Varies	This parameter displays the speed of the engine crankshaft rotation stored if an engine overspeed is detected.
Engine Torque Command	—	Y	This parameter displays the estimated amount of torque that is delivered from the engine. The scan tool displays engine torque in Y (lb ft).

EVAP Purge Solenoid Valve Control Circuit Open Test Status	—	OK	This parameter displays the status of the evaporative emission (EVAP) purge solenoid control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
EVAP Purge Solenoid Valve Control Circuit Low Voltage Test Status	—	OK	This parameter displays the status of the evaporative emission (EVAP) purge solenoid control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
EVAP Purge Solenoid Valve Control Circuit High Voltage Test Status	—	OK	This parameter displays the status of the evaporative emission (EVAP) purge solenoid control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
EVAP Purge Solenoid Valve Command	—	10–20%	This parameter displays the on-time or duty cycle of the EVAP canister purge solenoid commanded by the control module. Zero percent indicates no purge. One hundred percent indicates full purge.
Fuel Control Loop Status	—	Closed Loop	This parameter displays the state of the fuel control system as commanded by the control module. Closed loop operation indicates that the control module is controlling the fuel delivery based off the oxygen sensors input signal. In open loop operation the control module ignores the oxygen sensor input signal and bases the amount of fuel to be delivered on other sensor inputs.
Fuel Economy	Engine Idling	Liters per Hour	This Parameter displays the instant fuel consumption rate of the engine in liters per hour.
Fuel Enrichment – Hot Catalyst	—	No	This parameter displays if the control module is commanding catalyst protection.
Fuel Enrichment – Hot Coolant	—	Inactive	This parameter displays the status of the fuel delivery system. The scan tool will display Active if the fuel system is running in open loop due to a temperature condition. The scan tool will display Inactive if the fuel system is operating normally.
Fuel Level Sensor	—	Varies	This parameter displays the approximate fuel level in the fuel tank as a voltage. The control module calculates this level using the signal from the sensor used to monitor the fuel in the tank. The scan tool will display a low reading when the fuel level in the tank is near empty. The scan tool will display a high reading when the fuel level in the tank is high or near full.
Fuel Level Sensor Reference Command	—	Varies	This parameter displays the approximate fuel level in the fuel tank as a percentage.
Fuel Pump Relay Control Circuit Open Test Status	—	Not Run	This parameter displays the status of the fuel pump relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Fuel Pump Relay Control Circuit Low Voltage Test Status	—	OK	This parameter displays the status of the fuel pump relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Fuel Pump Relay Control Circuit High Voltage Test Status	—	Not Run	This parameter displays the status of the fuel pump relay control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Fuel Pump Relay Command	Ignition ON, engine OFF	Fuel pump on for 2 s	This parameter displays the control modules commanded state of the fuel pump relay control circuit.
	Engine idling	On	
Fuel System Monitor Complete	—	Yes/No	This parameter indicates the status of the fuel system monitoring.
Fuel System Monitor Enabled	—	Yes/No	
Fuel Tank Rated Capacity	—	70 L (18.4 Gal)	This parameter displays the rated maximum quantity of fuel the fuel tank will hold. This is calibrated in the control module to match the vehicle.
Fuel Trim Memory Cell	—	Varies	This parameter displays the fuel trim cell number as calculated by the control module based on engine speed and load inputs. The scan tool will display a lower number as conditions are closer to idle, and a higher number as conditions approach maximum engine speed and maximum load.
Fuel Trim Learn	—	Enabled	This parameter displays Enabled when conditions are appropriate for enabling long term fuel trim corrections. This indicates that the long term fuel trim is adapting continuing amounts of short term fuel trim. If the scan tool displays Disabled, then long term fuel trim will not respond to changes in short term fuel trim.
Fuel Trim System Test State	—	Monitoring	This parameter indicates the status of the Fuel Trim System Test. The scan tool will display Disabled, Enabled, Monitoring, or Run Purge Test.
Generator F-Terminal Signal	—	Varies	This parameter indicates the generator field duty cycle as commanded by the voltage regulator or control module. The scan tool will display a higher value for a higher commanded generator output, and a lower value for a lower commanded

			generator output.
Generator L-Terminal Circuit Open Test Status	—	Not Run	This parameter displays the status of the generator L-terminal circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Generator L-Terminal Circuit Low Voltage Test Status	—	OK	This parameter displays the status of the generator L-terminal circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Generator L-Terminal Circuit High Voltage Test Status	—	OK	This parameter displays the status of the generator L-terminal circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Generator L-Terminal Signal Command	—	ON	This parameter displays the commanded state of the generator L-terminal output.
HO2S 1 or HO2S 2	Ignition ON, Engine OFF	mV	This parameter indicates the heated oxygen sensor (HO2S) sensor 1 or 2, output voltage as measured by the control module. The scan tool will display a higher value during a rich condition, and a lower value during a lean condition.
	Engine Operating	Varies	
HO2S 1 or HO2S 2 Heater	—	A	This parameter displays the amperage of the HO2S heater commanded by the control module.
HO2S 1 or HO2S 2 Heater Command	—	ON	This parameter displays the commanded state of the HO2S 1 or HO2S 2 heater circuit by the control module. The scan tool will display ON when the heater is commanded ON. The scan tool will display OFF when the heater is commanded OFF.
HO2S 1 or HO2S 2 Heater Command	—	0–99%	This parameter displays the commanded state of the HO2S 1 or HO2S 2 heater by the control module. The scan tool will display a higher value as the heater command is increased, and a lower value if the heater is not commanded ON.
HO2S 1 or HO2S 2 Heater Control Circuit Open Test Status	—	OK	This parameter displays the status of the control circuit for the HO2S 1 or HO2S 2. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
HO2S 1 or HO2S 2 Heater Control Circuit Low Voltage Test Status	—	OK	This parameter displays the status of the control circuit for the HO2S 1 or HO2S 2. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
HO2S 1 or HO2S 2 Heater Control Circuit High Voltage Test Status	—	OK	This parameter displays the status of the control circuit for the HO2S 1 or HO2S 2. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
HO2S Heater Monitor Complete	Engine Idling	Yes/No	This parameter displays the diagnostic monitor completion status during the current driving/monitoring cycle.
HO2S Heater Monitor Complete This Ignition Cycle	—	Yes or No	This parameter displays the diagnostic monitor completion status during the current driving/monitoring cycle.
HO2S Heater Monitor Enabled	Engine Idling	Yes/No	This parameter displays the diagnostic monitor enable status during the current driving/monitoring cycle.
HO2S Heater Monitor Enabled This Ignition Cycle	—	Yes or No	This parameter displays the diagnostic monitor enable status during the current driving/monitoring cycle.
IAT Sensor	—	–39 to +140°C (–38 to +284°F)	This parameter displays the temperature of the air entering the air induction system based on input to the control module from the intake air temperature (IAT) sensor.
Idle Speed Correction	—	Varies	This parameter indicates the idle speed correction.
Ignition 1 Signal	—	B+	This parameter displays B+ when the control module detects a voltage at the ignition 1 input terminal.
Ignition Accessory Signal	—	ON	This parameter displays the state of the ignition accessory position input to the control module from the ignition switch.
Ignition Timing	—	–4 to +15°	This parameter displays the amount of spark advance the control module is commanding. The control module determines the desired advance.
Ignition Coil 1 and 4 Control Circuit Open Test Status	—	OK	This parameter displays the state of the Ignition control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Ignition Coil 1 and 4 Control Circuit Low Voltage Test Status	—	OK	This parameter displays the state of the Ignition control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Ignition Coil 1 and 4 Control Circuit High Voltage Test Status	—	OK	This parameter displays the state of the Ignition control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Ignition Coil 2 and 3 Control Circuit	—	OK	This parameter displays the state of the Ignition control circuit. The scan tool displays OK, Fault, or Not Run. OK

Open Test Status	—	OK	indicates that no circuit faults are detected during the current test.
Ignition Coil 2 and 3 Control Circuit Low Voltage Test Status	—	OK	This parameter displays the state of the Ignition control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Ignition Coil 2 and 3 Control Circuit High Voltage Test Status	—	OK	This parameter displays the state of the Ignition control circuit. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Ignition Cycles with Malfunction Since 1st Malfunction	Ignition ON	Counts	This Parameter contains the number of ignition cycles with a failure reported since the first ignition cycle with a failure reported.
Ignition Cycles without Completed Test Since 1st Malfunction	Ignition ON	Counts	This Parameter contains the number of ignition cycles without a completed test since the first ignition cycle with a failure reported.
Ignition Cycles without Malfunction Since Last Malfunction	Ignition ON	Counts	This Parameter contains the number of ignition cycles with a pass reported and no failures reported since the first ignition cycle with a failure reported.
Immobilizer Auto Learn Counter	Ignition ON	Counts	This Parameter displays the number of times the immobilizer auto learn function was activated.
Immobilizer Automatic Learn Timer	Ignition ON	hh:mm:ss	The scan tool displays the automatic learn timer.
Immobilizer ECM Identifier	—	OK/Incorrect	This parameter displays the state of the immobilizer ECM identifier.
Immobilizer Environment Device 1–4	—	OK/Unknown	The scan tool displays Incorrect, Correct, Not Received, Not Programmed or Unknown. This parameter displays the immobilizer source status.
Immobilizer Fuel Disable	—	Active/Inactive	This parameter displays the state of the immobilizer fuel disabling.
Immobilizer Module Environment Identification	—	Active/Inactive	This parameter displays the state of the environment identification.
Immobilizer Module Fuel Disable	—	Active/Inactive	This parameter displays the immobilizer module state of the immobilizer fuel disabling.
Immobilizer Module Identification	—	Complete/Incomplete	This parameter displays the activation state of the immobilizer module.
Immobilizer Security Code Programmed	—	Yes/No	This parameter displays the programmed state of the security code.
Immobilizer Password Learn	Ignition ON	Enabled/Disabled	Learning Enabled indicates that learning of immobilizer code information is enabled.
Immobilizer Password Learn Scan Tool Delay	—	Active/Inactive	This parameter displays the auto learn timer status.
Immobilizer Password Programmed	—	Yes/No	The parameter displays No or Yes.
Immobilizer Post-Release Passive State	—	Active/Inactive	The parameter displays active or inactive.
Immobilizer Post-Release State	—	Active/Inactive	The parameter displays active or inactive.
Immobilizer Pre-Release State	—	Active/Inactive	The parameter displays active or inactive.
Immobilizer Release State	—	Active/Inactive	The parameter displays active or inactive.
Immobilizer Security Code Accepted	—	Yes/No	The parameter displays Yes or No.
Immobilizer Security Code Function	—	Present/Not Present	This parameter displays the presence of the security code information.
Immobilizer Security Code Lockout	—	Active/Inactive	The parameter displays active or inactive.
Immobilizer Security Code Programmed	—	Yes/No	The parameter displays Yes or No.
Immobilizer Security Code Programming Counter	—	Counts	This parameter displays the counts of the security code programming.
Immobilizer Security Code Reset Counter	—	Counts	This parameter displays the counts of the security code resets.
Immobilizer Security Code Lockout Active Timer	Ignition ON	ms	This Parameter displays the time elapsed since the immobilizer security code lockout has been activated either due to a battery disconnect or an incorrect immobilizer security code being entered.
Immobilizer Security Code Programming Counter	Ignition ON	Counts	This Parameter displays the number of times a new immobilizer security code has been programmed through secure access. This counter can only be incremented.
Immobilizer Security Code Reset Counter	Ignition ON	Counts	This Parameter displays the number of times the immobilizer security code has been reset to the default value through secure access. This counter can only be incremented.

Immobilizer Security Information Programmed	Ignition ON	Yes/No	This Parameter displays the status of the immobilizer system.
Immobilizer System Status	Ignition ON	Standby / Immobilized at Startup / Immobilized No Response / Immobilized Negative Response / Immobilized Incorrect Response / Post-Release State / Pre-Release State / Release State	This Parameter displays the status of the immobilizer system.
Immobilizer Transponder Identification	—	Active/Inactive	This parameter displays the state of the transponder identification
Immobilizer Transponder Key	—	OK/Incorrect	This parameter displays when the transponder is incorrect.
Immobilizer Transponder Key Identification	—	OK/Unknown	This parameter displays when the transponder is unknown.
Immobilizer Transponder Valid Response Received Time	—	ms	This parameter displays the time elapsed until the transponder valid response is received.
Injector Duty Cycle	—	2–3 ms	This parameter displays the average pulse width of the fuel injectors as determined by the control module.
Intake Manifold Pressure	—	32–53 kPa (4.6–7.6 PSI)	This parameter displays the pressure difference between the MAP and the barometric pressure (BARO) as calculated by the control module.
Knock Retard	—	0°	This parameter displays the amount of spark advance the control module removes from the ignition control spark advance in response to the signal from the knock sensors.
Long Term Fuel Trim	—	–10 to +10%	The scan tool range is –99 to +99%. This parameter indicates the Long Term fuel trim correction as commanded by the ECM. A change made to the fuel delivery will be indicated by the Long and Short Term values. The Short Term values change rapidly in response to the HO2S signal voltages. These changes fine tune the engine fueling. The Long Term values change in response to the changes in the Short Term. The Long Term makes coarse adjustments to the fueling in order to recenter and restore control to the Short Term. The Short Term and the Long Term can be monitored with a scan tool. A positive fuel trim value indicates that the ECM is adding fuel in order to compensate for a lean condition. A negative fuel trim value indicates that the ECM is reducing the amount of fuel in order to compensate for a rich condition.
Long Term Fuel Trim Test Average	—	0.98% Varies	This parameter is the average long term fuel trim for this bank as calculated by the control module. The scan tool will display a value more than 0% indicating that time is being added to the injector pulse width, increasing the amount of fuel to this bank of the engine. The scan tool will display a value of less than 0, indicating time is being subtracted from the injector pulse width, reducing the amount of fuel to this bank of the engine. A value of 0% indicates no compensation is required to operate the engine at the desired air/fuel ratio.
Long Term Fuel Trim Test Average without Purge	—	1.02% Varies	This parameter is calculated by the control module based on the Short Term Fuel Trim value. The Long Term Fuel Trim is used for the long term correction of the fuel delivery. The scan tool will display a high value for a large amount of long term fuel correction, and 0% for no long term fuel trim correction. The scan tool will display a negative value when fuel system is running too rich and fuel is being removed from the combustion event. The scan tool will display a positive value if the fuel system is running lean and fuel is being added to the combustion event.
Low Engine Oil Pressure Indicator Command	Ignition ON	On/Off	This parameter displays the output state.
MAF Performance Test	—	OK	This parameter displays the status of the mass air flow (MAF) performance test by the control module. The scan tool will display OK if no condition is detected. The scan tool will display Fault if the control module detects a condition during the test.
MAF Sensor	Engine Idling	1.7–3.7 g/s	This parameter indicates the quantity calculated by the control module based on a signal from the MAF sensor. The scan tool will display a high value at high engine speeds, and a low value at low engine speeds.
	Engine speed at 2500 RPM	5.5–7.5 g/s	
MAF Sensor	—	1.700–2.100 Hz	This parameter indicates the frequency signal received from the MAF sensor by the control module. The scan tool will display a high value at high engine speeds, and a low value at low engine speeds.
MAF When Engine Overspeed Detected	—	g/s	This parameter displays the intake mass air flow at overspeed condition detection.
MAP Performance Test 1	—	OK	This parameter displays the status of the MAP performance test 1 by the control module. The scan tool will display OK if no fault is found. The scan tool will display Fault if the control module detects a fault during the test.
MAP Performance Test 2	—	OK	This parameter displays the status of the MAP performance test 2 by the control module. The scan tool will display OK if no fault is found. The scan tool will display Fault if the control

			module detects a fault during the test.
MAP Sensor	—	26–52 kPa (3.7–7.6 PSI)	This parameter displays the pressure from the MAP sensor to the control module.
MAP Sensor	—	0.98–1.42 V	This parameter displays the signal voltage from the MAP sensor to the control module.
Maximum Engine Speed When Engine Overspeed Detected	—	RPM	This parameter displays the engine speed peak value at overspeed condition.
MIL Command	Ignition ON	ON/OFF	This parameter displays the commanded state of the malfunction indicator lamp (MIL) control circuit by the engine control module (ECM).
MIL Control Circuit Open Test Status	—	OK	This parameter displays the status of the control circuit for the malfunction indicator lamp control (MIL). The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
MIL Control Circuit Low Voltage Test Status	—	OK	This parameter displays the status of the control circuit for the malfunction indicator lamp control (MIL). The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
MIL Control Circuit High Voltage Test Status	—	OK	This parameter displays the status of the control circuit for the malfunction indicator lamp control (MIL). The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
MIL Requested by DTC	—	Yes/No	This parameter indicates the reason the control module illuminated the MIL. The scan tool will display YES when the MIL is requested as a result of an A or B type DTC. The scan tool will display NO if the MIL is illuminated for another reason, such as transmission DTCs.
MIL Requested	Ignition ON	Yes/No	This parameter displays the state of the MIL request.
Misfire Diagnostic Engine Load	—	%	This parameter displays the misfire diagnostic engine load.
Misfire Diagnostic Engine Speed	—	RPM	This parameter displays the misfire diagnostic engine speed.
Misfire Monitor Complete	—	Yes/No	This parameter displays the misfire monitor status.
Misfire Monitor Enabled	—	Yes/No	This parameter displays the misfire monitor enabling state.
Number of DTC(s)	—	0	This parameter indicates the number of diagnostic trouble codes (DTCs).
O2S/HO2S Monitor Complete	Engine Idling	Yes/No	This Parameter displays the enable and completion status during the current driving/monitoring cycle of each continuous legislated emission related monitor and non continuous legislated emission related monitor.
O2S/HO2S Monitor Complete This Ignition Cycle	—	Yes/No	This parameter displays the diagnostic monitor completion status during the current driving/monitoring cycle.
O2S/HO2S Monitor Enabled	Engine Idling	Yes/No	This Parameter displays the enable and completion status during the current driving/monitoring cycle of each continuous legislated emission related monitor and non continuous legislated emission related monitor.
O2S/HO2S Monitor Enabled This Ignition Cycle	—	Yes/No	This parameter displays the diagnostic monitor enable status during the current driving/monitoring cycle.
Output Shaft Speed Sensor	Vehicle needs to be moving	RPM	This Parameter displays the transmission output speed (the speed at the output of the gear box) determined from the speed measured by the transmission output speed sensor.
Odometer When Engine Overspeed Detected	—	km/miles	This parameter displays the absolute vehicle odometer reading at overspeed condition detection.
Power Enrichment	—	Inactive	This parameter displays the status of the operating mode of the control module used to increase fuel delivery during certain acceleration conditions.
Power Mode	Ignition ON	OFF / Accessory / Run / Crank Request	This Parameter displays the state of the System Power Mode. This signal is based upon the state of the system power mode received over serial communication from the vehicle electronics. If the serial data signal not received, the Parameter will display OFF.
Reduced Engine Power	—	Inactive	This parameter displays the status of the operating mode of the control module used to reduce engine power to prevent catalyst or engine damage or due to a Throttle Actuator Control (TAC) system condition.
Reduced Engine Power History	—	OK	This parameter displays the last reason that ECM has Commanded Reduced Engine Power. The scan tool displays one of the following when Reduced Engine Power is commanded: • TAC DTC • Fan Control DTC • ECT Overtemperature • Engine Oil Overtemperature
			This parameter displays the amount of fuel remaining in the

Remaining Fuel in Tank	—	Liters (Gallons) Varies	fuel tank as measured in liters (gallons). The control module determines the amount of fuel remaining in the tank by using information from the fuel level sensor. The scan tool will display a higher value with a full fuel tank, and a lower value with an empty fuel tank.
Remaining Fuel in Tank	—	0–100% Varies	This parameter displays the amount of fuel remaining in the fuel tank as measured in percentage. The control module determines the amount of fuel remaining in the tank by using information from the fuel level sensors. The scan tool will display a higher value with a full fuel tank, and a lower value with an empty fuel tank.
Reverse Position Switch	—	On/Off	This parameter displays the reverse gear switch state.
Short Term Fuel Trim	—	–10 to +10%	The Short Term values change rapidly in response to the HO2S signal voltages. These changes fine tune the engine fueling. The Long Term values change in response to the changes in the Short Term. The Long Term makes coarse adjustments to the fueling in order to recenter and restore control to the Short Term. The Short Term and the Long Term can be monitored with a scan tool. A positive fuel trim value indicates that the ECM is adding fuel in order to compensate for a lean condition. A negative fuel trim value indicates that the ECM is reducing the amount of fuel in order to compensate for a rich condition.
Short Term Fuel Trim Test Average	—	–3 to +99% Varies	This parameter displays the short term closed loop fuel correction. This value is compared to predetermined thresholds to determine if the fuel trim diagnostic is passing or failing.
Start Up ECT	—	–39 to +140°C (–38 to +284°F)	This parameter displays the temperature of the engine coolant on start up based on input to the control module from the ECT sensor 1.
Start Up IAT	—	–39 to +140°C (–38 to +284°F)	This parameter displays the temperature of the intake air at start in the air induction system based on input to the control module from the IAT sensor.
Starter Relay Control Circuit Open Test Status	—	OK	This parameter displays the status of the control circuit for the starter relay. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Starter Relay Control Circuit Low Voltage Test Status	—	Not Run	This parameter displays the status of the control circuit for the starter relay. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Starter Relay Control Circuit High Voltage Test Status	—	OK	This parameter displays the status of the control circuit for the starter relay. The scan tool displays OK, Fault, or Not Run. OK indicates that no circuit faults are detected during the current test.
Starter Relay Command	—	OFF	The scan tool displays ON or OFF. The scan tool displays OFF until the ignition is placed into the CRANK position.
SVS Indicator Command	—	On/Off	This parameter displays the service engine non emission related indication state.
TAC Forced Engine Shutdown	—	NO	This parameter indicates the status of TAC control by the control module. The scan tool will display YES if the engine has been shut down due to a throttle control fault. The scan tool will display NO if the engine has not been shut down by a throttle control fault.
TAC Motor	—	Disabled	This parameter indicates the status of the TAC motor driver by the ECM. The scan tool will display Enabled if TAC motor operation is allowed. The scan tool will display disabled if the TAC motor is disabled.
TAC Motor Command	—	0–100% Varies	This parameter displays the percentage of the commanded state of the TAC motor by the control module.
Throttle Body Idle Air Flow Compensation	—	0–100% Varies	This parameter displays the amount of airflow compensation in response to engine intake air flow restrictions. For example, throttle plate coking.
Throttle Position	—	2–6%	This parameter displays the actual throttle position angle indicated by the control module using information from the two Throttle Body sensors.
Throttle Position Performance Test	—	OK	This parameter displays the status of the throttle position performance test by the control module. The scan tool will display OK if no fault is found. The scan tool will display Fault if the control module detects a fault during the test.
Throttle Position Sensor 1	Accelerator pedal not actuated	4.14–4.34 V	This parameter displays the voltage signal sent to the control module from throttle position sensor 1 of the throttle assembly. The throttle position sensor 1 is a range of values indicating a high voltage when the throttle is closed to a low voltage when the throttle plate is fully open.
	Accelerator pedal fully actuated	3.50–3.37 V	
Throttle Position Sensor 1 Position	—	2–6%	This parameter displays the angle of the throttle position sensor 1 as calculated by the control module using the signal from the throttle position sensor 1. The throttle position sensor 1 is a range of values indicating a low percentage when the throttle is closed to a high percentage when the throttle is fully

			open.
Throttle Position Sensor 1 Learned Minimum	—	0.5–0.71 V	This parameter displays the learned minimum voltage for throttle position sensor 1 as determined by the control module this ignition cycle.
Throttle Position Sensor 2	Accelerator pedal not actuated	0.68–0.88 V	This parameter displays the voltage signal sent to the control module from throttle position sensor 2 of the throttle assembly. The throttle position sensor 2 is a range of values indicating a low voltage when the throttle is closed to a high voltage when the throttle plate is fully open.
	Accelerator pedal fully actuated	1.35–1.55 V	
Throttle Position Sensor 2 Position	—	2–6%	This parameter displays the angle of the throttle position sensor 2 as calculated by the control module using the signal from the throttle position sensor 2. The throttle position sensor 2 is a range of values indicating a low percentage when the throttle is closed to a high percentage when the throttle is fully open.
Throttle Position Sensor 2 Learned Minimum	—	0.55–0.75 V	This parameter displays the learned minimum voltage for throttle position sensor 2 as determined by the control module this ignition cycle.
Throttle Position Sensors 1 and 2	—	Agree	This parameter displays the results of a control module test that compares the signals from the Throttle Body sensors 1 and 2. The scan tool will display Agree or Disagree. Agree indicates that throttle position sensor 1 and throttle position sensor 2 voltages correspond to the same throttle position. Disagree indicates that throttle position sensor 1 and throttle position sensor 2 voltages correspond to different throttle positions.
Torque Delivered Signal	—	Y	This parameter displays the torque delivered from the engine to the transmission.
Torque Management Ignition Timing Retard	—	15–25°	This parameter displays how much the ignition spark timing is being retarded to control torque by the control module. The scan tool will display a higher value under extreme torque control conditions such as spinning wheels. The scan tool will display a lower value under low torque control conditions such as light driving.
Torque Request Inhibit – Fuel	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit – Ignition Timing	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit – Ignition Timing Advance	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit – Minimum Idle	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit – Minimum Torque	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit – TAC	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit – TAC Limit	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Total Knock Retard	—	0°	This parameter displays how much ignition spark timing is being retarded due to all control systems monitored by the control module. The scan tool will display a high value during extreme conditions such as high temperatures and antilock braking. The scan tool will display a lower value during lighter driving conditions.
Total Misfire	—	0 Counts	This parameter displays the total number of cylinder firing events that the control module detected as misfires for the last 200 crankshaft revolution sample period.
Vehicle Speed Sensor	—	0 km/h (0 MPH)	This parameter displays the speed of the vehicle as calculated by the transmission control module (TCM) from information received from the vehicle speed sensor.
Vehicle Speed When Engine Overspeed Detected	—	0 km/h (0 MPH)	This parameter displays the vehicle speed at overspeed condition detection.
VIN Programming Counter	Ignition ON	Counts	This Parameter displays the number of times the VIN has been programmed. This counter can only be incremented.
Warm-ups Since DTC Cleared	—	Varies	This parameter displays the number of warm-ups since the DTC was cleared in counts.
Warm-Ups without Emission Malfunctions	—	Varies	This parameter displays the number of warm up cycles that have occurred without an emission fault present. The scan tool will display a 0 if a fault has occurred. The scan tool will display a higher count if a number of warm up cycles have occurred without an emission fault.
Warm-Ups without Non Emission Malfunctions	—	Varies	This parameter displays the number of warm up cycles that have occurred without a non emission fault present. The scan tool will display a 0 if a fault has occurred. The scan tool will display a higher count if a number of warm up cycles have occurred without a non emission fault.

Wide Open Throttle	—	Yes/No	This parameter displays the throttle status commanded by the control module. The scan tool will display YES if the vehicle throttle is commanded to wide open. The scan tool will display NO if the vehicle throttle is commanded to an amount less than 100%.
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Engine Control Module (ECM) Scan Tool Output Controls

Output Control	Description
A/C Compressor Clutch Relay	This function activates the A/C compressor relay. The normal commanded state of the A/C relay is None. The A/C compressor will turn ON or OFF when commanded ON or OFF. The system remains in the commanded state until cancelled by the scan tool. The scan tool initiates the test when the following conditions are met: • In the correct power mode • A/C high side pressure is in range • Engine speed is in range • Ignition voltage is in range. • There are no A/C pressure sensor DTCs set.
Brake Pedal Position Sensor Learned	This device control is used to reset the brake pedal fully released learned position to its initialized value after a brake system repair.
Compression Test	This device control is used to set up the internal combustion engine for a compression test. The fuel pump, fuel injectors, and spark are all disabled. The throttle is opened to a WOT position. For conventional engine vehicles, the extended crank feature is not active. Engine cranking is completely controlled by the technician either through the ignition key or through a remote starter switch as applicable. The device control limits and rejects will apply normally upon entry to the device control. Once the device control is active, the limits will be monitored (to prevent unwanted starter operation, for example), but in the case of a limit exceeded or a tester disconnect, device control of the fuel and spark will not be released until the Power Mode switches to Accessory or OFF. This will prevent unexpected fuel and spark operation in the case of a device control abort. This function controls the cooling fan relay 1. The normal commanded state of the fan relay is None. The scan tool initiates the test when the following conditions are met: • Engine coolant temperature is not out of range • In the correct power mode
Cooling Fan Relay 1	
Cooling Fan Relay 2	This function controls the cooling fan relay 2. The normal commanded state of the fan relay is OFF. The scan tool initiates the test when the following conditions are met: • Engine coolant temperature is not out of range. • In the correct power mode
Crankshaft Position Variation Learn	This device control is used to activate the crankshaft position variation learn algorithm which calculates the reference pulse correction factors for the misfire diagnostic. This function disables the selected fuel injector. The normal commanded state is None. The scan tool initiates the test when the following conditions are met:
Cylinder Power Balance	• The engine is operating and the engine idle is stable. • The vehicle speed is 0 km/h (0 MPH). • There are no vehicle speed sensor DTCs set. If the fuel injector is disabled after 30 s, fuel injector control is not allowed again on the same fuel injector for 60 s. This function controls the engine control ignition relay or main relay. The normal commanded state is None. When commanded ON or OFF, the engine control module (ECM) turns the relay ON or OFF. The system remains in the commanded state until cancelled by the scan tool. The scan tool initiates the test when the following conditions are met:
Engine Controls Ignition Relay	• The ignition is ON with the engine OFF. • There are no crankshaft position or VSS sensor DTCs set. • The vehicle speed is 0 km/h (0 MPH). • In the correct power mode
Engine Oil Life Reset	This function is used to reset the engine oil life. The engine oil remaining life is determined from engine revolutions and the distance driven since the last oil change. This function controls the idle speed override in 25 RPM, 100 RPM, and 500 RPM increments, from the base idle speed to 1.950 RPM. The scan tool initiates the test when the following conditions are met:
Engine Speed	• The vehicle speed is 0 km/h (0 MPH). • There are no VSS sensor DTCs set. This function controls the EVAP purge solenoid valve. The normal commanded state is None. The system will increase or decrease the amount of purge by changing the duty cycle of the purge valve in 10% increments within a range of 0 –100%. The scan tool initiates the test when the following conditions are met:
EVAP Purge Solenoid Valve	• The vacuum level in the EVAP purge system is within range. • There are no EVAP DTCs set. • The EVAP system test is not in progress. • In the correct power mode
Fuel Control Loop Status	This device control is used to enable or disable closed loop fuel control. This function enables the fuel injector in order to verify proper fuel injector flow. The ECM will pulse the selected injector

when the following conditions are met:

Fuel Injector Balance

- All instruction on the scan tool completed.
- Fuel injector selected.
- Key ON, engine OFF.

The selected fuel injector can only be flowed or pulsed once per ignition cycle.

This function controls the fuel pump relay. The normal commanded state is None. When commanded ON or OFF, the ECM turns the fuel pump ON or OFF. The scan tool initiates the test when the following conditions are met:

Fuel Pump Relay

- The engine speed is 0 RPM.
- In the correct power mode.
- The output control timer has not expired.
- The ignition voltage is within range.

Fuel Trim Enable

This function enables or disables the ECM fuel trim learning. The normal commanded state is None.

Fuel Trim Reset

This function is used to reset the learned fuel trim values to their initial values.

This function is used to override the state of the generator L-terminal output. The commanded states are ON and OFF. Selecting OFF commands the ECM to turn OFF the generator and stop generating an output voltage. The scan tool initiates the test when the following conditions are met:

Generator L-Terminal

- The engine is operating to turn OFF the component.
- The vehicle speed is 0 km/h (0 MPH).
- In the correct power mode.
- The output control timer has not expired.

HO2S Heater Learn

This function is used to trigger the reset of the learned resistances for the oxygen sensor heaters following a replacement. The learned resistances are reset to a calibration used to prevent overheating of the sensors until more accurate resistances may be learned following an extended engine OFF time.

This function controls the selected HO2S heater. The normal commanded state is None, on, and off. Commanding the HO2S heater ON turns on the heater driver. The scan tool initiates the test when the following conditions are met:

HO2S Heater Sensor 1 or 2

- The engine is operating.
- The exhaust temperature is within range.
- In the correct power mode.
- The HO2S heaters are not over temperature.
- The ignition voltage is not out of range while commanding the heaters ON.

Idle Ignition Timing

Disables and enables idle spark advance with the engine running.

This function is used to reset the learned airflow adaptive values to the initial values. The scan tool initiates the test when the following conditions are met:

Idle Learn

- The vehicle speed is 0 km/h (0 MPH).
- In the correct power mode
- There are no throttle actuator control system DTCs set.

Idle Speed Adjustment

This device control allows a service technician to add an offset to the engine idle speed within a restricted range to address customer complaints for vehicle vibration.

Malfunction Indicator Lamp (MIL)

This function controls the malfunction indicator lamp (MIL). The normal commanded state is None. When commanded ON or OFF, the ECM turns the malfunction indicator lamp (MIL) ON or OFF. This output can also be monitored on the scan tool data parameter MIL Command. The system remains in the commanded state until cancelled by the scan tool.

Misfire Graphic

This function is used to graph the accumulated misfires occurring in each cylinder. The scan tool allows for a reset of the misfire graph.

Programming History

This function displays the history buffer entries for the primary calibration part in the engine controller.

This function is used to override the state of the Starter Relay output. Fuel and spark are disabled to prevent the engine from starting if the starter relay output is commanded ON. The scan tool initiates the test when the following conditions are met:

Starter Relay

- The engine speed is 0 RPM.
- There are no crankshaft position sensor DTCs set.
- The vehicle speed is 0 km/h (0 MPH)
- There are no VSS sensor DTCs set.
- There are no theft deterrent DTCs set.
- There are no TAC system DTCs set.
- The ignition voltage is within range.
- In the correct power mode.
- Not enough time has elapsed since the last time the starter has been enabled with a scan tool.

This function controls the throttle valve in 10% increments. The scan tool initiates the test when the following conditions are met:

Throttle Position

- The engine speed is 0 RPM.
- The vehicle speed is 0 km/h (0 MPH).

The system remains in the commanded state until cancelled by the scan tool.

Throttle Sweep

This device control is used to automatically command the throttle blade from 0% to 100% and then back to 0%.

Tire Size

This function is used for correcting vehicle speed and odometer calculations when tire size is changed.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Table 1: [Engine Control Module Scan Tool Data](#)
Table 2: [Engine Control Module \(ECM\) Scan Tool Output Controls](#)

The Engine Control Module Scan Tool Data List contains all engine-related parameters that are available on the scan tool. This is a master list arranged in alphabetical order and not all the parameters listed are in every engine platform.

Use the Engine Scan Tool Data List only after the following is determined:

- The Diagnostic System Check - Vehicle is completed.
- No diagnostic trouble codes (DTCs)
- On-board diagnostics are functioning properly

The scan tool values from a properly running engine may be used for comparison with the engine you are diagnosing. The Engine Scan Tool Data List represents values that would be seen on a normally running engine.

Note: A scan tool that displays faulty data should not be used. The scan tool concern should be reported to the manufacturer. Use of a faulty scan tool can result in misdiagnosis and unnecessary parts replacement.

Only the parameters listed below are referenced in this service manual for use in diagnosis.

Engine Control Module Scan Tool Data

Parameter	System State	Expected Value	Description
Base Operating Conditions: Engine Idling/Radiator Hose Hot/Park or Neutral/Closed Loop			
A/C Disengage Reason	A/C OFF	Invalid	This parameter displays the A/C compressor disengage reason. There are 8 different possible faults for the A/C compressor to disengage.
A/C High Side Pressure Sensor	A/C OFF	0–5 Volts	This parameter displays the voltage from the A/C high side pressure sensor signal circuit to the control module.
	A/C ON	0–5 Volts	
A/C High Side Pressure Sensor	A/C OFF	700–900 kPa (101–130 psi)	This parameter displays the pressure from the A/C high side pressure sensor signal circuit to the control module.
	A/C ON	900–1300 kPa (130–174 psi)	
APP Sensor 1	—	0%	This parameter displays the angle of accelerator pedal position as calculated by the control module using the signals from the APP sensors.
APP Sensor 1	—	Volts	This parameter displays the voltage signal sent to the control module from APP sensor 1 of the APP sensor assembly. APP sensor 1 is a range of values indicating a low voltage when the accelerator pedal is not depressed to a high voltage when the accelerator pedal is fully depressed.
			This parameter displays the angle of the APP sensor 2 as calculated by the control module using the signal from the APP sensor 2. APP sensor 2 is a range of values indicating a low percentage when the accelerator pedal is not depressed to a high percentage when the accelerator pedal is fully depressed.
APP Sensor 2	—	Volts	This parameter displays the voltage signal sent to the control module from APP sensor 2 of the APP sensor assembly. APP sensor 2 is a range of values indicating a low voltage when the accelerator pedal is not depressed to a high voltage when the accelerator pedal is fully depressed.
			This parameter displays the angle of the APP sensor 2 as calculated by the control module using the signal from the APP sensor 2. APP sensor 2 is a range of values indicating a low percentage when the accelerator pedal is not depressed to a high percentage when the accelerator pedal is fully depressed.
APP Sensors	—	0%	This Parameter contains the accelerator pedal position resulting directly from the settling of differences of the accelerator pedal position sensors (prior to any compensation to determine driver intent).
Balancing Rate Cyl. 1–4	—	mm3	These parameters display the adjustment in fuel volume for each cylinder as calculated by the control module. The scan tool will display a negative balancing rate if the fuel volume is lowered. The scan tool will display a positive balancing rate if the fuel volume is increased.
BARO Sensor	—	kPa	This parameter displays the barometric pressure as calculated by the control module using the signal from the MAP sensor measured when the ignition is turned on with the engine not running. The control module will update the barometric pressure during wide-open throttle (WOT) conditions.
Boost Pressure Sensor	—	kPa	This parameter shows the turbocharger boost pressure in kPa.
BPP Circuit Signal	—	Released	This parameter displays the status of the brake pedal as determined by the stop lamp pedal switch.

Cruise Control ON/OFF Switch	Cruise Control ON	Yes	This parameter displays the state of the cruise ON/OFF switch input to the control module.
Cruise Resume Switch	Cruise Resume Switch ON	Active	This parameter displays the state of the cruise Resume switch input to the control module from the cruise control system.
Cruise Set Switch	Cruise Set Switch ON	Active	This parameter displays the state of the cruise Set/Coast switch input to the control module from the cruise control system.
Desired Air Mass Per Cylinder	—	mg/stroke	The parameter displays the amount of air (on a per cylinder event) that is being requested.
Desired EGR Position	—	%	This parameter displays the EGR commanded percentage from the engine control module.
Desired Fuel Rail Pressure	—	42500.0–44500.0 kPa 6215.0–6265.0 psi	This parameter displays the desired fuel rail pressure as calculated by the control module. This value is calculated based on engine speed, engine load, and sensor inputs.
Desired PressureBoost	—	98 kPa	This parameter displays the desired turbocharger boost pressure inside the engine as calculated by the control module based on the signal from the Boost pressure sensor.
Distance Since DTC Cleared	—	km/miles	This parameter displays the distance accumulated since an emission diagnostic trouble code was cleared. The scan tool will display increasing distance as the vehicle is driven.
Desired Idle Speed	—	700–800 RPM	This parameter displays the desired engine idle speed as commanded by the control module.
ECT Sensor	—	–39 to +140°C (–38 to +284°F)	This parameter displays the temperature of the engine coolant based on input to the control module from the engine coolant temperature (ECT) sensor.
EGR Command	—	%	This parameter displays the duty cycle commanded by the control module for the EGR valve. The scan tool will display a high percentage when the EGR valve is commanded open. The scan tool will display a low percentage when the EGR valve is commanded closed.
Engine Load	Engine Idling	20–35%	This parameter displays the percent of the calculated engine load based on inputs to the control module from various engine sensors.
	Engine speed at 2,500 RPM	15–25%	
Engine Oil Pressure Switch	—	OK	This parameter displays the pressure of the engine oil calculated by the control module using a signal from the engine oil pressure (EOP) sensor.
Engine Run Time	Engine Operating	0:00:00 Increments when the engine is operating	This parameter displays the time elapsed since the engine was started.
	Engine Cranking	Greater than 60 RPM	This parameter displays the speed of the engine crankshaft rotation from information received from the crankshaft position (CKP) sensor. If there is a CKP sensor DTC, the ECM calculates the engine speed from one of the camshaft position (CMP) sensors.
Engine Speed	Engine Idling	Approximately 750–850 RPM	
	—	—	—
Fuel Heater Command	—	OFF	This parameter displays the control module commanded state of the fuel heater control circuit.
Fuel Level Sensor	—	Volts	This parameter displays the voltage of fuel in the fuel tank calculated by the engine control module.
Fuel Level Sensor	—	0–100%	This parameter displays the percent of fuel in the fuel tank calculated by the engine control module.
Fuel Pressure Regulator 1	—	1300–1400 mA	This parameter displays the engine control modules commanded state of the fuel rail pressure regulator 1.
Fuel Pump Relay Command	Ignition ON, engine OFF	Fuel pump on for 2 seconds	This parameter displays the control modules commanded state of the fuel pump relay control circuit.
	Engine idling	On	
Fuel Rail Pressure Sensor	—	42.8–43.8 MPa (6207–6352 psi)	This parameter displays the fuel rail pressure calculated by the control module using the signal from the fuel rail pressure (FRP) sensor.
Fuel Rail Pressure Sensor	—	1.40–1.50 Volts	This parameter displays the voltage of the fuel rail pressure calculated by the control module using the signal from the fuel rail pressure (FRP) sensor.
Fuel Tank Level Remaining	—	Varies	This parameter displays the amount of fuel remaining in the fuel tank as measured in a percentage. The control module determines the amount of fuel remaining in the tank by using information from the fuel level sensor(s). The scan tool will display a higher value with a full fuel tank, and a lower value with an empty fuel tank.
Fuel Temperature Sensor	—	25 to 40°C (77 to 104°F)	This parameter displays the fuel temperature calculated by the control module based on input from the fuel temperature sensor.
Fuel Temperature Sensor	—	2.80 Volts	This parameter displays the voltage calculated by the control module based on input from the fuel temperature

Generator F Terminal Signal	—	25–35%	sensor. This parameter displays the commanded state of the generator by the control module.
Glow Plug Command	—	OFF	This parameter displays the control module commanded state of the glow plug.
Glow Plug Feedback Signal	—	OK	This parameter displays the state of the Glow Plug Feedback Signal circuit.
Intake Air Flow Valve Motor Command	—	55–65%	This parameter displays the percent of the control modules commanded state of the intake air flow valve.
IAT Sensor 2	—	–39 to +140°C (–38 to +284°F)	This parameter displays the temperature of the air entering the engine air duct calculated by the control module based on the input from the intake air temperature sensors.
Ignition 1 Signal	Ignition ON	ON	This parameter displays the voltage measured at the ignition 1 circuit of the control module. Voltage is applied to the control module when the ignition switch is in the ignition 1 position.
MAF Sensor	—	g/s	This parameter indicates the quantity calculated by the control module based on a signal from the mass air flow (MAF) Sensor.
MAP Sensor	—	95–104 kPa	This parameter indicates the manifold absolute pressure inside the engine as calculated by the control module based on the signal from the manifold absolute pressure (MAP) sensor.
MAP Sensor	—	0.95-1.06 Volts	This parameter indicates the voltage signal received by the control module from the MAP sensor. The scan tool displays a low voltage at idle, and a high voltage at wide open throttle. Barometric pressure and altitude can effect these values.
MIL Command	—	OFF	This parameter displays the commanded state of the malfunction indicator lamp (MIL) control circuit by the control module.
Starter Relay Command	—	OFF	This parameter displays the commanded state of the starter relay.
TAC Motor Command	—	%	This parameter displays the percentage of the throttle plate opening.
Vehicle Speed Sensor	—	0 Km/h 0 mph	This parameter displays the speed of the vehicle as calculated by the transmission control module (TCM) from information received from the vehicle speed sensor (VSS).
Warm ups Since DTC cleared	—	Varies	This parameter indicates the number of warm up cycles that have occurred Since DTCs were cleared. The scan tool will display a higher counts as more warm up cycles have occurred since the DTCs were cleared.

Engine Control Module (ECM) Scan Tool Output Controls

Output Control	Description
Compression Test	This function activates the starter motor but without starting the engine. All Fuel Injectors are shut off in order to allow the compression test.
Coolant Temperature Gauge	This function sweeps the coolant temperature gauge from 0% to 100%.
EGR Solenoid	This function opens or closes the exhaust gas recirculation (EGR) solenoid. The EGR solenoid increases or decreases in 10 percent increments. The device control will not change unless changed or cancelled by the scan tool.
Engine High Temp. Lamp	This function activates On or Off the high coolant temp lamp.
Engine Speed Control	This function is used to override the Idle engine speed.
Fuel Filter Heater	This function activates the fuel heater relay ON or OFF. The Device Control will not change unless changed or cancelled by the scan tool.
Fuel Pump Relay	Note: This function is only allowed with the ignition ON, engine OFF. This function activates the fuel transfer pump or prime pump (depending on application) ON or OFF. The Device Control will not change unless changed or cancelled by the scan tool.
Generator L-Terminal	Note: This function is only allowed with the engine idling. This function controls the system voltage. When commanded ON, normal system voltage output is present. When commanded OFF, system voltage output is no longer present. Ignition 1 signal continues to drop, Gen L-Terminal goes to OFF and Gen F-Terminal continues to drop.
Glow Plugs	This function activates the Glow Plug Controller ON or OFF. The Device Control will be aborted after 12 seconds for the first activation, and after 5 seconds for every other activation. The Device Control is inhibited if the engine is running.
Glow Plug Lamp	This function activates the glow plug indicator lamp. The glow plug indicator lamp will remain illuminated until cancelled by the scan tool.
IAF Valve Motor	This function controls the opening and closing of the Intake Air Flow valve.
IMT Valve	This function controls the opening or closing of the Intake Manifold Tuning Valve

Injector Flow Rate Programming	This function will essentially erase the stored Zero Fuel Control (ZFC) for a given injector(s). The ECM will relearn these values over time in situations where the pulse width is very small (i.e., over run mode - going down a hill where very little fuel is injected).
Intake Manifold Runner Control	This function activates the Intake manifold runner control output by opening or closing the valve.
Malfunction Indicator Lamp (MIL)	This function activates the malfunction indicator lamp (MIL). The MIL will remain illuminated until cancelled by the scan tool.
Oil Life Reset	This device control displays the engine oil life remaining determined by the engine control module (ECM). Also this device control can be used to reset engine oil remaining life to 100% after an oil change.
TC Vane Position Ctrl Solenoid	Note: This function is only allowed with the engine idling. Cycles the turbocharger vane position solenoid to 95 percent boost and back to 0 percent boost. The device control is limited to engine speeds less than 2,000 RPM .

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Table 1: [Engine Control Module Scan Tool Data](#)
Table 2: [Engine Control Module \(ECM\) Scan Tool Output Controls](#)

The Engine Control Module Scan Tool Data List contains all engine-related parameters that are available on the scan tool. This is a master list arranged in alphabetical order and not all the parameters listed are in every engine platform.

Use the Engine Scan Tool Data List only after the following is determined:

- The Diagnostic System Check - Vehicle is completed.
- No diagnostic trouble codes (DTCs)
- On-board diagnostics are functioning properly

The scan tool values from a properly running engine may be used for comparison with the engine you are diagnosing. The Engine Scan Tool Data List represents values that would be seen on a normally running engine.

Note: A scan tool that displays faulty data should not be used. The scan tool concern should be reported to the manufacturer. Use of a faulty scan tool can result in misdiagnosis and unnecessary parts replacement.

Only the parameters listed below are referenced in this service manual for use in diagnosis.

Engine Control Module Scan Tool Data

Parameter	System State	Expected Value	Description
Base Operating Conditions: Engine Idling/Radiator Hose Hot/Park or Neutral/Closed Loop			
A/C Disengage Reason	A/C OFF	Invalid	This parameter displays the A/C compressor disengage reason. There are 8 different possible faults for the A/C compressor to disengage.
A/C High Side Pressure Sensor	A/C OFF	0–5 Volts	This parameter displays the voltage from the A/C high side pressure sensor signal circuit to the control module.
	A/C ON	0–5 Volts	
A/C High Side Pressure Sensor	A/C OFF	700–900 kPa (101–130 psi)	This parameter displays the pressure from the A/C high side pressure sensor signal circuit to the control module.
	A/C ON	900–1300 kPa (130–174 psi)	
APP Sensor 1	—	0%	This parameter displays the angle of accelerator pedal position as calculated by the control module using the signals from the APP sensors.
APP Sensor 1	—	Volts	This parameter displays the voltage signal sent to the control module from APP sensor 1 of the APP sensor assembly. APP sensor 1 is a range of values indicating a low voltage when the accelerator pedal is not depressed to a high voltage when the accelerator pedal is fully depressed.
			This parameter displays the angle of the APP sensor 2 as calculated by the control module using the signal from the APP sensor 2. APP sensor 2 is a range of values indicating a low percentage when the accelerator pedal is not depressed to a high percentage when the accelerator pedal is fully depressed.
APP Sensor 2	—	Volts	This parameter displays the voltage signal sent to the control module from APP sensor 2 of the APP sensor assembly. APP sensor 2 is a range of values indicating a low voltage when the accelerator pedal is not depressed to a high voltage when the accelerator pedal is fully depressed.
			This parameter displays the angle of the APP sensor 2 as calculated by the control module using the signal from the APP sensor 2. APP sensor 2 is a range of values indicating a low percentage when the accelerator pedal is not depressed to a high percentage when the accelerator pedal is fully depressed.
APP Sensors	—	0%	This Parameter contains the accelerator pedal position resulting directly from the settling of differences of the accelerator pedal position sensors (prior to any compensation to determine driver intent).
Balancing Rate Cyl. 1–4	—	mm3	These parameters display the adjustment in fuel volume for each cylinder as calculated by the control module. The scan tool will display a negative balancing rate if the fuel volume is lowered. The scan tool will display a positive balancing rate if the fuel volume is increased.
BARO Sensor	—	kPa	This parameter displays the barometric pressure as calculated by the control module using the signal from the MAP sensor measured when the ignition is turned on with the engine not running. The control module will update the barometric pressure during wide-open throttle (WOT) conditions.
Boost Pressure Sensor	—	kPa	This parameter shows the turbocharger boost pressure in kPa.
BPP Circuit Signal	—	Released	This parameter displays the status of the brake pedal as determined by the stop lamp pedal switch.

Cruise Control ON/OFF Switch	Cruise Control ON	Yes	This parameter displays the state of the cruise ON/OFF switch input to the control module.
Cruise Resume Switch	Cruise Resume Switch ON	Active	This parameter displays the state of the cruise Resume switch input to the control module from the cruise control system.
Cruise Set Switch	Cruise Set Switch ON	Active	This parameter displays the state of the cruise Set/Coast switch input to the control module from the cruise control system.
Desired Air Mass Per Cylinder	—	mg/stroke	The parameter displays the amount of air (on a per cylinder event) that is being requested.
Desired EGR Position	—	%	This parameter displays the EGR commanded percentage from the engine control module.
Desired Fuel Rail Pressure	—	42500.0–44500.0 kPa 6215.0–6265.0 psi	This parameter displays the desired fuel rail pressure as calculated by the control module. This value is calculated based on engine speed, engine load, and sensor inputs.
Desired PressureBoost	—	98 kPa	This parameter displays the desired turbocharger boost pressure inside the engine as calculated by the control module based on the signal from the Boost pressure sensor.
Distance Since DTC Cleared	—	km/miles	This parameter displays the distance accumulated since an emission diagnostic trouble code was cleared. The scan tool will display increasing distance as the vehicle is driven.
Desired Idle Speed	—	700–800 RPM	This parameter displays the desired engine idle speed as commanded by the control module.
ECT Sensor	—	–39 to +140°C (–38 to +284°F)	This parameter displays the temperature of the engine coolant based on input to the control module from the engine coolant temperature (ECT) sensor.
EGR Command	—	%	This parameter displays the duty cycle commanded by the control module for the EGR valve. The scan tool will display a high percentage when the EGR valve is commanded open. The scan tool will display a low percentage when the EGR valve is commanded closed.
Engine Load	Engine Idling	20–35%	This parameter displays the percent of the calculated engine load based on inputs to the control module from various engine sensors.
	Engine speed at 2,500 RPM	15–25%	
Engine Oil Pressure Switch	—	OK	This parameter displays the pressure of the engine oil calculated by the control module using a signal from the engine oil pressure (EOP) sensor.
Engine Run Time	Engine Operating	0:00:00 Increments when the engine is operating	This parameter displays the time elapsed since the engine was started.
	Engine Cranking	Greater than 60 RPM	This parameter displays the speed of the engine crankshaft rotation from information received from the crankshaft position (CKP) sensor. If there is a CKP sensor DTC, the ECM calculates the engine speed from one of the camshaft position (CMP) sensors.
Engine Speed	Engine Idling	Approximately 750–850 RPM	
	—	—	—
Fuel Heater Command	—	OFF	This parameter displays the control module commanded state of the fuel heater control circuit.
Fuel Level Sensor	—	Volts	This parameter displays the voltage of fuel in the fuel tank calculated by the engine control module.
Fuel Level Sensor	—	0–100%	This parameter displays the percent of fuel in the fuel tank calculated by the engine control module.
Fuel Pressure Regulator 1	—	1300–1400 mA	This parameter displays the engine control modules commanded state of the fuel rail pressure regulator 1.
Fuel Pump Relay Command	Ignition ON, engine OFF	Fuel pump on for 2 seconds	This parameter displays the control modules commanded state of the fuel pump relay control circuit.
	Engine idling	On	
Fuel Rail Pressure Sensor	—	42.8–43.8 MPa (6207–6352 psi)	This parameter displays the fuel rail pressure calculated by the control module using the signal from the fuel rail pressure (FRP) sensor.
Fuel Rail Pressure Sensor	—	1.40–1.50 Volts	This parameter displays the voltage of the fuel rail pressure calculated by the control module using the signal from the fuel rail pressure (FRP) sensor.
Fuel Tank Level Remaining	—	Varies	This parameter displays the amount of fuel remaining in the fuel tank as measured in a percentage. The control module determines the amount of fuel remaining in the tank by using information from the fuel level sensor(s). The scan tool will display a higher value with a full fuel tank, and a lower value with an empty fuel tank.
Fuel Temperature Sensor	—	25 to 40°C (77 to 104°F)	This parameter displays the fuel temperature calculated by the control module based on input from the fuel temperature sensor.
Fuel Temperature Sensor	—	2.80 Volts	This parameter displays the voltage calculated by the control module based on input from the fuel temperature

			sensor.
Generator F Terminal Signal	—	25–35%	This parameter displays the commanded state of the generator by the control module.
Glow Plug Command	—	OFF	This parameter displays the control module commanded state of the glow plug.
Glow Plug Feedback Signal	—	OK	This parameter displays the state of the Glow Plug Feedback Signal circuit.
Intake Air Flow Valve Motor Command	—	55–65%	This parameter displays the percent of the control modules commanded state of the intake air flow valve.
IAT Sensor 2	—	–39 to +140°C (–38 to +284°F)	This parameter displays the temperature of the air entering the engine air duct calculated by the control module based on the input from the intake air temperature sensors.
Ignition 1 Signal	Ignition ON	ON	This parameter displays the voltage measured at the ignition 1 circuit of the control module. Voltage is applied to the control module when the ignition switch is in the ignition 1 position.
MAF Sensor	—	g/s	This parameter indicates the quantity calculated by the control module based on a signal from the mass air flow (MAF) Sensor.
MAP Sensor	—	95–104 kPa	This parameter indicates the manifold absolute pressure inside the engine as calculated by the control module based on the signal from the manifold absolute pressure (MAP) sensor.
MAP Sensor	—	0.95-1.06 Volts	This parameter indicates the voltage signal received by the control module from the MAP sensor. The scan tool displays a low voltage at idle, and a high voltage at wide open throttle. Barometric pressure and altitude can effect these values.
MIL Command	—	OFF	This parameter displays the commanded state of the malfunction indicator lamp (MIL) control circuit by the control module.
Starter Relay Command	—	OFF	This parameter displays the commanded state of the starter relay.
TAC Motor Command	—	%	This parameter displays the percentage of the throttle plate opening.
Vehicle Speed Sensor	—	0 Km/h 0 mph	This parameter displays the speed of the vehicle as calculated by the transmission control module (TCM) from information received from the vehicle speed sensor (VSS).
Warm ups Since DTC cleared	—	Varies	This parameter indicates the number of warm up cycles that have occurred Since DTCs were cleared. The scan tool will display a higher counts as more warm up cycles have occurred since the DTCs were cleared.

Engine Control Module (ECM) Scan Tool Output Controls

Output Control	Description
Compression Test	This function activates the starter motor but without starting the engine. All Fuel Injectors are shut off in order to allow the compression test.
Coolant Temperature Gauge	This function sweeps the coolant temperature gauge from 0% to 100%.
EGR Solenoid	This function opens or closes the exhaust gas recirculation (EGR) solenoid. The EGR solenoid increases or decreases in 10 percent increments. The device control will not change unless changed or cancelled by the scan tool.
Engine High Temp. Lamp	This function activates On or Off the high coolant temp lamp.
Engine Speed Control	This function is used to override the Idle engine speed.
Fuel Filter Heater	This function activates the fuel heater relay ON or OFF. The Device Control will not change unless changed or cancelled by the scan tool.
Fuel Pump Relay	Note: This function is only allowed with the ignition ON, engine OFF. This function activates the fuel transfer pump or prime pump (depending on application) ON or OFF. The Device Control will not change unless changed or cancelled by the scan tool.
Generator L-Terminal	Note: This function is only allowed with the engine idling. This function controls the system voltage. When commanded ON, normal system voltage output is present. When commanded OFF, system voltage output is no longer present. Ignition 1 signal continues to drop, Gen L-Terminal goes to OFF and Gen F-Terminal continues to drop.
Glow Plugs	This function activates the Glow Plug Controller ON or OFF. The Device Control will be aborted after 12 seconds for the first activation, and after 5 seconds for every other activation. The Device Control is inhibited if the engine is running.
Glow Plug Lamp	This function activates the glow plug indicator lamp. The glow plug indicator lamp will remain illuminated until cancelled by the scan tool.
IAF Valve Motor	This function controls the opening and closing of the Intake Air Flow valve.
IMT Valve	This function controls the opening or closing of the Intake Manifold Tuning Valve

Injector Flow Rate Programming	This function will essentially erase the stored Zero Fuel Control (ZFC) for a given injector(s). The ECM will relearn these values over time in situations where the pulse width is very small (i.e., over run mode - going down a hill where very little fuel is injected).
Intake Manifold Runner Control	This function activates the Intake manifold runner control output by opening or closing the valve.
Malfunction Indicator Lamp (MIL)	This function activates the malfunction indicator lamp (MIL). The MIL will remain illuminated until cancelled by the scan tool.
Oil Life Reset	This device control displays the engine oil life remaining determined by the engine control module (ECM). Also this device control can be used to reset engine oil remaining life to 100% after an oil change.
TC Vane Position Ctrl Solenoid	Note: This function is only allowed with the engine idling. Cycles the turbocharger vane position solenoid to 95 percent boost and back to 0 percent boost. The device control is limited to engine speeds less than 2,000 RPM .

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Table 1: [Engine Control Module Scan Tool Data](#)
Table 2: [Engine Control Module \(ECM\) Scan Tool Output Controls](#)

The Engine Control Module Scan Tool Data List contains all engine-related parameters that are available on the scan tool. The list is arranged in alphabetical order. A given parameter may appear in any one of the data lists, and in some cases may appear more than once, or in more than one data list in order to group certain related parameters together.

Use the Engine Scan Tool Data List only after the following is determined:

- The Diagnostic System Check - Vehicle is completed.
- No diagnostic trouble codes (DTCs)
- On-board diagnostics are functioning properly

The scan tool values from a properly running engine may be used for comparison with the engine you are diagnosing. The Engine Scan Tool Data List represents values that would be seen on a normally running engine.

Note: A scan tool that displays faulty data should not be used. The scan tool concern should be reported to the manufacturer. Use of a faulty scan tool can result in misdiagnosis and unnecessary parts replacement.

Only the parameters listed below are referenced in this service manual for use in diagnosis.

Engine Control Module Scan Tool Data

Parameter	System State	Expected Value	Description
Base Operating Conditions: Engine Idling/Radiator Hose Hot/Park or Neutral/Closed Loop			
5 V Reference 1, 2, 3 or 4 Circuit Status	Engine Idling	OK-Malfunction	This parameter will display OK if the circuit is good or Malfunction if a short to ground, short to B+ is present.
5 V Reference 1, 2, 3 or 4	Engine Idling	5 V	This parameter displays the voltage sensed on the 5 V reference circuits at the control module. The scan tool will display a higher value at higher voltage. The scan tool will display a lower value at lower voltage.
A/C Compressor Operation	A/C ON	Allowed/Not Allowed	This parameter displays if the A/C compressor is allowed or not allowed to operate.
A/C Disengage 1–8 History	A/C ON	Reason for A/C Disengagement	The parameter displays reason for the last 8 air conditioning (A/C) compressor disengagements in order from 1 to 8 with 8 being the most recent. There are 8 possible causes for the A/C compressor to disengage.
A/C High Side Pressure Sensor	A/C OFF	0.75–1.5 V*	This parameter displays the voltage signal from the A/C high side pressure sensor input to the control module.
	A/C ON	1.3–2.5 V*	* Varies with temperature, humidity, and altitude.
A/C High Side Pressure Sensor	A/C OFF	450–827 kPa (65–120 psi)*	This parameter displays the pressure from the A/C high side pressure sensor signal circuit to the control module.
	A/C ON	827–2,350 kPa (120–341 psi)*	* Varies with temperature, humidity, and altitude.
A/C OFF for WOT	A/C ON	Yes-No	This parameter displays whether the control module is commanding the A/C compressor clutch relay OFF for wide open throttle (WOT).
A/C Pressure Out of Range	A/C ON	Yes-No	This parameter displays whether the A/C pressure is out of range for normal operation as determined by the control module.
A/C Request Signal	A/C ON	Yes-No	This parameter displays the state of the A/C request input to the control module from the heating, ventilation, and air conditioning (HVAC) controls.
Accelerator Pedal Position	Engine Idling	0–100 %	This parameter displays the angle of the accelerator pedal position (APP) as calculated by the control module using the signals from the APP sensors.
Accelerator Pedal Position When Engine Overspeed Detected	Engine Idling	%	This parameter displays the accelerator pedal position (APP) observed upon initial detection of an overspeed condition. This value will be updated upon each overspeed condition.
Ambient Air Temperature	Engine Idling	Varies	This parameter displays temperature from the input of the Intake Air Temperature Sensor.
APP Sensor 1 Circuit Status	Engine Idling	OK/Malfunction	APP Sensor 1 Out of Range indicates that the sensed accelerator pedal position 1 sensor value is currently out of range or that a Malfunction has been detected based upon the sensed accelerator pedal position 1 sensor value being out of range
APP Sensor 1 Learned Applied Position	Ignition ON	78 %	This parameter contains the learned maximum (fully applied) accelerator pedal position relating to absolute accelerator pedal position (no correction or normalization based upon learned minimum or maximum positions) from accelerator pedal position sensor 1.
This Parameter indicates the accelerator pedal sensor 1			

APP Sensor 1 Learned Released Position	Ignition ON	0.98 V	signal at its minimum learned position (pedal released) as a percentage of its reference voltage. (The minimum learned position is automatically updated periodically as determined by the calibration).
APP Sensor 1 Position	Pedal Released	0 %	This Parameter contains the displacement determined from accelerator pedal position sensor 1 (corrected and normalized based upon its learned minimum and maximum positions).
	Pedal Fully Applied	99 %	
APP Sensor 2	Ignition ON	V	This Parameter contains the accelerator pedal position sensor 2 analog input as a percentage of its reference voltage
APP Sensor 2 Circuit Status	Ignition ON	OK/Malfunction	APP Sensor 2 Out of Range indicates that the sensed accelerator pedal position 2 sensor value is currently out of range or that a malfunction has been detected (and latched) based upon the sensed accelerator pedal position 2 sensor value being out of range
APP Sensor 2 Learned Applied Position	Ignition ON	78 %	This Parameter contains the learned maximum (fully applied) accelerator pedal position relating to absolute accelerator pedal position (no correction or normalization based upon learned minimum or maximum positions) from accelerator pedal position sensor 2.
APP Sensor 2 Learned Released Position	Ignition ON	0.49 V	This Parameter indicates the accelerator pedal sensor 2 signal at its minimum learned position (pedal released) as a percentage of its reference voltage. (The minimum learned position is automatically updated periodically as determined by an algorithm).
APP Sensor 2 Position	Pedal Released	0 %	This Parameter contains the displacement determined from accelerator pedal position sensor 2 (corrected and normalized based upon its learned minimum and maximum positions).
	Pedal Fully Applied	100 %	
APP Sensors	Pedal Released	0 %	This Parameter contains the accelerator pedal position resulting directly from the settling of differences of the accelerator pedal position sensors (prior to any compensation to determine driver intent).
	Pedal Fully Applied	99 %	
Ambient Air Temperature	Ignition ON	°C °F Varies	This parameter displays the outside air temperature as calculated by the control module.
APP Sensor 1	Accelerator pedal not actuated	0.98 V	This parameter displays the actual voltage on the accelerator pedal position (APP) sensor 1 signal circuit as measured by the control module.
	Accelerator pedal fully actuated	4.25 V	
APP Sensor 2	Accelerator pedal not actuated	0.49 V	This parameter displays the actual voltage on the accelerator pedal position (APP) sensor 2 signal circuit as measured by the control module.
	Accelerator pedal fully actuated	2.14 V	
APP Sensor 1 and 2	Ignition ON	Agree/Disagree	This parameter displays Disagree if the control module detects the signal voltage from APP sensor 1 is not in correct relationship to APP sensor 2. The scan tool displays Agree under the normal operating conditions.
BARO	Engine Idling	65–104 kPa (8–16 psi)	This parameter displays the barometric pressure. The control module uses the barometric pressure sensor input for fuel control to compensate for altitude differences.
BARO Sensor	Engine Idling	2.5–4.0 V	This parameter displays the barometric pressure sensor voltage.
Brake Pedal Position Circuit Signal	Ignition ON	Open/Closed	This parameter displays the serial data message of the brake signal from the electronic brake and traction control module (EBTCM).
Brake Pedal Position Sensor Signal	Ignition ON	Applied/Released/Invalid	This parameter displays the serial data message of the brake position sensor signal from the electronic brake and traction control module (EBTCM).
Calculated Air Flow	Engine Idling	G/S	This Parameter contains the mass airflow determined from the speed density (MAP based) calculation of air mass per cylinder.
Calculated Catalyst Temperature Bank 1 or Bank 2	Engine Idling	Approximately 552°C (1026°F)	This Parameter contains the estimated catalyst temperature for bank 1 sensor 1 (as a function of engine speed, engine airflow, and fuel ethanol percentage) for use in the oxygen sensor and catalyst monitor diagnostic algorithms.
Calculated Engine Oil Temperature	Engine Idling	105°C (221°F)	This Parameter displays the estimated engine oil temperature (as a function of engine coolant temperature and other parameters).
Camshaft Position Sensor	Engine Idling	0 RPM	This parameter displays the speed of the engine as calculated by the signal from a camshaft position (CMP) sensor. This parameter will always display 0 unless a condition with the CKP sensor or CKP retractor exists. If a CKP condition exists the control module will use a valid CMP sensor signal to determine engine speed and crank/camshaft position.
Camshaft Position Signal			This Parameter displays the state of the Camshaft

Camshaft Position Signal Output Circuit High Voltage Test Status	Engine Idling	OK	Position Signal Output Circuit. The parameter displays Malfunction if the Camshaft Position Signal Output Circuit is shorted to voltage.
Camshaft Position Signal Output Circuit Low Voltage Test Status	Engine Idling	OK	This Parameter displays the state of the Camshaft Position Signal Output Circuit. The parameter displays Malfunction if the Camshaft Position Signal Output Circuit is shorted to ground.
Camshaft Position Signal Output Circuit Open Test Status	Engine Idling	OK	This Parameter displays the state of the Camshaft Position Signal Output Circuit. The parameter displays Malfunction if the Camshaft Position Signal Output Circuit is open.
Catalyst Monitor Complete This Ignition Cycle	Engine Idling	Yes/No	This Parameter indicates the status of the catalyst monitor diagnostic. Catalyst Monitor Test Running indicates yes or no when the catalyst monitor diagnostic is actively running a test
Catalyst Monitor Enabled This Ignition Cycle	Engine Idling	Yes/No	This Parameter indicates the status of the catalyst monitor diagnostic. Catalyst Monitor Test Running indicates yes or no when the catalyst monitor diagnostic is actively running a test
Catalyst Monitor Not At Idle Test Conditions Met	Engine Idling	Yes/No	This Parameter indicates the status of the catalyst monitor diagnostic. Catalyst Monitor Test Running indicates yes or no when the catalyst monitor diagnostic is actively running a test
Catalyst Monitor Test Counter Bank 1 or 2	Engine Idling	Counts	This Parameter contains the number of repeated results of the catalyst monitor diagnostic test that have been performed since a code clear for bank 1 or bank 2 (used to determine if a sufficient number of tests have run to report a passing condition).
Catalyst Monitor Test Result Bank 1 or 2	Engine Idling	No Decision/Failed/Passed	This Parameter indicates the status of the catalyst monitor diagnostic for bank 1 or bank 2. Multiple tests may run before the diagnostic reports a "Pass" or "Fail" and will be tracked by Catalyst Monitor Diagnostic Test Counter Bank 1 or bank 2. When this Parameter reports a "Pass" or "Fail", the diagnostic is complete for the current trip and will not attempt any further tests on bank 1 or bank 2.
Catalyst Monitor Test State	Engine Idling	Active/Inactive	This Parameter indicates the status of the catalyst monitor diagnostic by displaying active or inactive. This test will only run with the engine at idle.
Change Engine Oil Indicator Command	Ignition ON	ON/OFF	This Parameter sends a signal through the serial communication to inform the driver to change the engine oil. It is based on a calibrated amount of time.
Catalyst Monitor Enabled this Ignition Cycle	Engine Idling	Yes-No	This parameter displays the monitor enable status during the current driving/monitoring cycle.
Crankshaft Position Active Counter	Engine Idling	0–255 Counts	This parameter displays an incrementing counter when the control module receives a signal from the crankshaft position sensor (CKP).
Crankshaft Position Resync Counter	Engine Idling	0 Counts	This parameter displays the number of times the control module has to resynchronize with the CKP sensor. The parameter will begin to increment if the control module does not detect a CKP reference pulse. The parameter will reset to 0 after the ignition is switched OFF.
Cold Startup	Ignition ON	Yes/No	This parameter displays whether the engine meets the conditions for a cold startup during the present ignition cycle. The scan tool displays Yes when the conditions for a cold startup are met during the ignition cycle. The scan tool displays No when the conditions for a cold startup are not met during the present ignition cycle. Conditions for a cold startup require the coolant temperature and the intake air temperature to be below a predetermined temperature and within a certain range of each other. These conditions must occur after the engine was warmed up to a specific temperature during the previous ignition cycle.
Cooling Fan Relay 1 Command	Ignition ON	ON/OFF	This parameter displays the commanded state of the fan relay 1 control circuit. The cooling fan relay 1 should be ON when the scan tool indicates the FC Relay 1 Command is ON. The cooling fan relay 1 should be OFF when the scan tool indicates the FC Relay 1 Command is OFF.
Cooling Fan Relay 1 Control Circuit High Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the fan relay control circuit. The parameter displays Malfunction if the fan relay control circuit is shorted to voltage.
Cooling Fan Relay 1 Control Circuit Low Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the fan relay control circuit. The parameter displays Malfunction if the fan relay control circuit is shorted to ground.
Cooling Fan Relay 1 Control Circuit Open Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the fan relay control circuit. The parameter displays Malfunction if the fan relay control circuit is open.
Cooling Fan Relays 2 Command	Ignition ON	ON/OFF	This Parameter displays the commanded state of the fan relay 2 output.
Cooling Fan Relays 2 Control Circuit High Voltage Test	Ignition ON	OK or Not Run	This parameter displays the state of the fan relay control circuit. The parameter displays Malfunction if the fan

Status			relay control circuit is shorted to voltage.
Cooling Fan Relays 2 Control Circuit Low Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the fan relay control circuit. The parameter displays Malfunction if the fan relay control circuit is shorted to ground.
Cooling Fan Relays 2 Control Circuit Open Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the fan relay control circuit. The parameter displays Malfunction if the fan relay control circuit is open.
Crankshaft Position Sensor	Engine Idling	RPM	This Parameter displays engine speed.
Crank Request Signal	Ignition switch not in the crank position	No	This parameter displays whether the ignition switch has been cycled to the crank position requesting the control module to activate the starter relay.
	Ignition switch in the crank position	Yes	
Cruise Control	Cruise ON	Active/Inactive	This parameter displays the status of the cruise control system as determined by the control module.
Cruise Control Cancel Switch	Cruise ON	Active/Inactive/Invalid	This parameter displays the status of the cruise control cancel switch
Cruise Control Disengage 1-8 History	Cruise ON	Reason for Cruise Disengagement	The parameter displays the last 8 cruise control disengages in order from 1 to 8, with 8 being the most recent. There are approximately 30 possible causes for the cruise control to disengage
Cruise Control Inhibit Reason	Cruise OFF	OFF	The parameter displays the reason the cruise control system cannot engage.
	Cruise ON	Park/Neutral	
Cruise Control ON/OFF Switch	Cruise ON	ON/OFF	The engine control module (ECM) monitors the signal circuit of the cruise control switch. A closed switch is displayed as ON.
Cruise Control Resume/Accelerator Switch	Cruise ON	ON/OFF	The scan tool displays ON, when the cruise ON/OFF switch is ON and the resume/accel (+) button is pressed, the ECM detects a predetermined voltage value for the resume/accel. switch.
Cruise Control Set/Coast Switch	Cruise ON	ON/OFF	The scan tool displays ON, when the cruise ON/OFF switch is ON and the ECM detects a predetermined voltage value for the set/coast (-) switch.
Current Gear	Transmission in Park/Neutral	P/N	This parameter displays the transmission gear commanded by the transmission control module.
	Transmission not in Park/Neutral	Reverse/1st-5th	
Current Gear When Engine Overspeed Detected	Engine Idling	Varies	This parameter displays the transmission actual gear observed upon initial detection of an overspeed condition.
Cylinder 1-6 Current Misfire Counter	Engine Idling	Counts	The scan tool displays a range of 0-255 counts. This parameter displays the number of misfires that have been detected during the last 255 cylinder firing events. The counters may normally display some activity, but the activity should be nearly equal for all of the cylinders, and in low numbers.
Cylinder 1-6 History Misfire Counter	Engine Running	Counts	The scan tool displays a range of 0-65,535 counts. The misfire history counters display the total level of misfire that has been detected on each cylinder. The misfire history counters will not update or show any activity until a misfire DTC P0300 has become active. The misfire history counters will update every 255 cylinder firing events.
Cycles of Misfire Data	Engine Running	0-3,000 counts	This parameter displays the number of cylinder firing events recorded by the control module.
Ignition Coil 1-6 Control Circuit High Voltage Test Status	Engine Running	OK or Not Run	This parameter displays the state of the Ignition control circuit. The parameter displays Malfunction if the Ignition control circuit is shorted to voltage.
Ignition Coil 1-6 Control Circuit Low Voltage Test Status	Engine Idling	OK or Not Run	This parameter displays the state of the Ignition control circuit. The parameter display Malfunctions if the Ignition control circuit is shorted to ground.
Ignition Coil 1-6 Control Circuit Open Test Status	Engine Idling	OK or Not Run	This parameter displays the state of the Ignition control circuit. The parameter displays if Malfunction the Ignition control circuit is open.
Ignition Coil Supply Voltage Bank 1 or 2	Engine Idling	ON/OFF	This parameter displays ON when voltage is supplied to the Ignition coil bank 1 or bank 2.
Ignition Cycles Since Recommended Maximum Fuel Alcohol Content Exceeded	Engine Idling	Counts	This Parameter displays the number of Ignition Cycles since Recommended Maximum Fuel Alcohol Content Exceeded.
Ignition Cycles Without Malfunction Since Last Malfunction	Engine Idling	Counts	This Parameter displays the number of ignition cycles with a pass reported and no malfunctions reported since the first ignition cycle with a malfunction reported.
Inspection/Maintenance Drive Cycle Complete	Engine Idling	Yes/No	Inspection/Maintenance Drive Cycle Complete means that all required components of the standard drive cycle have completed.

Inspection/Maintenance Drive Cycle Idle Time Complete	Engine Idling	Yes/No	Inspection/Maintenance Drive Cycle Idle Time Complete indicates that the engine idle time requirement is complete.
Inspection/Maintenance Drive Cycle Idle Timer	Engine Idling	hh:mm:ss	This parameter displays the Inspection/Maintenance Drive Cycle Idle Timer.
Inspection/Maintenance Drive Cycle Propulsion System Active Time Complete	Engine Idling	No	This parameter displays the Inspection/Maintenance Drive Cycle Propulsion System Active Time Complete. The parameter displays Yes when the Inspection/Maintenance Drive Cycle Propulsion System Active Time is Complete.
Inspection/Maintenance Drive Cycle Propulsion System Active Timer	Engine Idling	hh:mm:ss	This parameter displays the total accumulated time in which the propulsion system has been active after the 1st time the engine is started.
Inspection/Maintenance Drive Cycle Vehicle Speed Time Complete	Engine Idling	No	This parameter displays Yes when the Vehicle Speed Time Complete indicates that the vehicle has been above 25 mph for five minutes.
Inspection/Maintenance Drive Cycle Vehicle Speed Timer	Engine Idling	hh:mm:ss	This parameter displays the total accumulated time in which the vehicle speed has been greater than 25 mph after the 1st time the engine is started.
Intake Air Humidity Sensor	Engine Idling	%	This Parameter displays the signal from the Intake Air Humidity sensor, which represents the relative humidity of the intake air.
Cylinder 1-6 Injector Control Circuit Status	Engine Idling	OK or Not Run	This parameter displays the state of the fuel injector control circuit.
Cylinder 1-6 Injector Disabled Misfire Detected	Engine Idling	Yes/No	This parameter displays the injector that has been disabled by the misfire catalyst converter protection calibration.
Cylinder 1-6 Knock Detected	Engine Idling	Yes/No	This parameter displays yes if a knock has been detected in an individual cylinder.
Decel. Fuel Cutoff	Engine Idling	Active/Inactive	This parameter displays the status of the operating mode of the control module used to turn OFF the fuel injectors and the EVAP canister purge valve during certain deceleration conditions.
Desired Exhaust Camshaft Position (If Equipped)	Engine Idling	0 Degrees	This parameter displays the desired exhaust camshaft angle as commanded by the control module.
Desired Exhaust Camshaft Position Bank 1 or 2	Engine Idling	0 Degrees	This parameter displays the desired exhaust camshaft angle as commanded by the control module.
	Engine speed at 2000 RPM	10 Degrees	
Desired Idle Speed	Engine Idling	Approximately 650 RPM	This parameter displays the desired engine idle speed as commanded by the control module. The desired idle speed varies depending on engine load.
Desired Intake Camshaft Position Bank 1 or 2	Engine Idling	0 Degrees	This parameter displays the desired intake camshaft angle as commanded by the control module.
	Engine speed at 2000 RPM	10 Degrees	
Desired Throttle Position	Engine Idling	%	Commanded Throttle Actuator Control
Distance Since DTC Cleared	Engine Idling	0 Km/mi	This parameter displays in kilometers or miles the distance traveled since a DTC was cleared.
Distance Since First Malfunction	Engine Idling	0 Km/mi	This parameter displays in kilometers or miles the distance traveled since a Malfunction occurred.
Distance Since Last Malfunction	Engine Idling	0 Km/mi	This parameter displays the distance accumulated since last malfunction was captured. This parameter is only meaningful within the context of a failure record or freeze frame.
Distance Since Last Oil Level Warning	Engine Idling	0 Km/mi	This parameter displays in kilometers or miles the distance traveled since the last oil level warning Malfunction occurred.
Distance Since Last Oil Pressure Warning	Engine Idling	0 Km/mi	This parameter displays in kilometers or miles the distance traveled since the last oil pressure warning Malfunction occurred.
Distance Since Recommended Maximum Fuel Alcohol Content Exceeded	Engine Idling	0 Km/mi	This Parameter displays in kilometers or miles the distance Since Recommended Maximum Fuel Alcohol Content Exceeded.
Drag Control Status	Engine Idling	Inactive	EDC Active (Drag Active) control mode is indicated when the requested torque signal is above the driver requested value while the traction control system signal input is active.
Engine Drag Control Status	Vehicle Moving	Active/Inactive	EDC Active (Drag Active) control mode is indicated when the requested torque signal is above the driver requested value while the traction control system signal input is active.
ECM Authentication Status	Ignition ON	Unknown/Incorrect/Negative Response/Valid	ECM Authentication Status indicates the result of the comparison between the last received immobilizer response and the expected response calculated into the ECM.

ECM Response Source	Ignition ON	Ignition Switch Start/Remote Vehicle Start/Exterior PTO Vehicle Start	ECM Response Source indicates the source used to calculate the ECM response
Engine Controls Ignition Relay Command	Ignition ON	ON/OFF	This parameter displays the state of the control circuit for control module power relay as commanded by the control module.
Engine Controls Ignition Relay Control Circuit High Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the Engine Controls Ignition Relay control circuit. The parameter displays Malfunction if the Engine Controls Ignition Relay control circuit is shorted to voltage.
Engine Controls Ignition Relay Controls Circuit Low Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the Engine Controls Ignition Relay control circuit. The parameter displays Malfunction if the Engine Controls Ignition Relay control circuit is shorted to ground.
Engine Controls Ignition Relay Controls Circuit Open Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the Engine Controls Ignition Relay control circuit. The parameter displays Malfunction if the Engine Controls Ignition Relay control circuit is open.
Engine Controls Ignition Relay Feedback Signal	Ignition ON	12.0–14.9 V	This parameter displays the voltage available at the EC ignition relay pin of the control module.
ECT Sensor	Ignition ON	88 to 105° C (190 to 221°F)	This parameter displays the temperature of the engine coolant based on input to the control module from the engine coolant temperature (ECT) sensor.
EGR/Camshaft Position Monitor Complete This Ignition Cycle	Engine Idling	Yes/No	This Parameter displays Yes or No of the completion status during the current driving / monitoring cycle of emission related monitors.
EGR/Camshaft Position Monitor Enabled This Ignition Cycle	Engine Idling	Yes/No	This Parameter displays Yes or No of the completion status during the current driving / monitoring cycle of emission related monitors.
Electric Power Management Inhibit Reason	Engine Idling	None	This Parameter displays the reason for the source of the Regulated Voltage Control (RVC) override command. RVC lowers system operating voltage to reduce system electrical load and improve fuel economy performance. The following is a list of possible reasons. None, Control Function, Active/Fuel System, On-board Diagnostic System, Air Flow Measurement System, Cylinder Deactivation System, System Transmission Control Module.
Engine Load	Engine Idling	25–45 %	This parameter displays the calculated engine load in percent based on inputs to the control module from various engine sensors.
	Engine speed at 2,500 RPM	40–60 %	
Engine OFF Time	Engine Idling	0:00:00 Seconds - Varies	This parameter displays the amount of time that has elapsed since the engine was last cycled OFF.
Engine Oil Life Remaining	Engine Idling	0–100 %	This parameter displays the percent of engine oil life remaining. The controller calculates the engine oil life by monitoring engine load, coolant temperature, and engine speed.
Engine Oil Pressure Switch	Engine Idling	OK	This parameter displays the status of the engine oil level switch as determined by the control module. The control module uses this information to turn on the low engine oil lamp if the engine oil level remains approximately 1 quart low for a sufficient amount of time. The scan tool will display Low when the engine oil level is low. The scan tool will display OK when the engine oil level is correct.
Engine Oil Temperature When Engine Overspeed Detected	Engine Idling	Temperature	This parameter displays the temperature of the engine oil as determined by the control module.
Engine Overspeed	Engine Idling	Not Present	This Parameter displays if an Engine Overspeed is Present or Not Present.
Engine Run Time	Engine Idling	0:00:00	This parameter displays the time elapsed since the engine was started.
		Increments when the engine is operating	
Engine Speed	Engine Cranking	Greater than 60 RPM	This parameter displays the speed of the engine crankshaft rotation from information received from the crankshaft position (CKP) sensor. If there is a CKP sensor DTC, the ECM calculates the engine speed from one of the camshaft position (CMP) sensors.
	Engine Idling	550–700 RPM	
Engine Speed When Engine Overspeed Detected	Engine Idling	RPM	This parameter displays the engine speed observed upon initial detection of an overspeed condition. This value will be updated after each overspeed condition.
EVAP Malfunction History	Engine Running	None	This parameter displays the result of the evaporative emission (EVAP) system as determined by the control module. The scan tool will display the following:
			• None • Excess Vacuum • Purge Valve Leak • Small Leak

			- Weak Vacuum - No Test Result
EVAP Monitor Complete This Ignition Cycle	Engine Running	Yes/No	This parameter displays the diagnostic monitor completion status during the current driving/monitoring cycle.
EVAP Monitor Enabled This Ignition Cycle	Engine Running	Yes/No	This parameter displays the diagnostic monitor enable status during the current driving/monitoring cycle.
EVAP Purge Solenoid Valve Command	Engine Idling	%	This Parameter displays the commanded duty cycle for the canister purge output.
EVAP Purge Solenoid Valve Control Circuit Low Voltage Test Status	Ignition ON	OK	This parameter displays the state of the evaporative emission (EVAP) purge solenoid control circuit. The parameter displays Malfunction if the EVAP purge solenoid control circuit is shorted to ground.
EVAP Purge Solenoid Valve Control Circuit Open Test Status	Ignition ON	OK	This parameter displays the state of the evaporative emission (EVAP) purge solenoid control circuit. The parameter displays Malfunction if the EVAP purge solenoid control circuit is open.
EVAP Purge Solenoid Valve Control Circuit High Voltage Test Status	Ignition ON	OK	This parameter displays the state of the evaporative emission (EVAP) purge solenoid control circuit. The parameter displays Malfunction if the EVAP purge solenoid control circuit is shorted to voltage.
EVAP Vent Solenoid Valve Control Circuit Low Voltage Test Status	Ignition ON	OK	This parameter displays the state of the EVAP vent solenoid control circuit. The parameter displays Malfunction if the EVAP vent solenoid control circuit is shorted to ground. This parameter may not change if the scan tool is used to command the EVAP vent solenoid ON.
EVAP Vent Solenoid Valve Control Circuit Open Test Status	Ignition ON	OK	This parameter displays the state of the EVAP vent solenoid control circuit. The parameter displays Malfunction if the EVAP vent solenoid control circuit is open. This parameter may not change if the scan tool is used to command the EVAP vent solenoid ON.
EVAP Vent Solenoid Valve Control Circuit High Voltage Test Status	Ignition ON	OK	This parameter displays the state of the EVAP vent solenoid control circuit. The parameter displays Malfunction if the EVAP vent solenoid control circuit is shorted to voltage. This parameter may not change if the scan tool is used to command the EVAP vent solenoid ON.
EVAP Vent Solenoid Command	Engine Idling	Venting/Not Venting	This parameter displays the state of the control circuit for evaporative emission (EVAP) vent solenoid as commanded by the control module.
Exhaust Camshaft position Bank 1 or 2	Engine Idling	0 Degrees	This parameter displays the actual exhaust camshaft position in degrees.
	Engine speed at 2000 RPM	10 Degrees	
Exhaust Camshaft Position Variance	Engine Idling	0 Degrees	This parameter displays in degrees, the difference between the desired exhaust camshaft position and the actual exhaust camshaft position.
Exhaust Camshaft Position Variance Bank 1 or 2.	Engine Idling	0 Degrees	This parameter displays in degrees, the difference between the desired exhaust camshaft position and the actual exhaust camshaft position.
	Engine speed at 2000 RPM	0 Degrees	
Exhaust Camshaft Position Active Counter (If Equipped)	Engine Idling	0–255	This parameter displays an incrementing counter when the control module receives a signal from the exhaust camshaft position (CMP) sensor.
Exhaust Camshaft Position Active Counter Bank 1 or 2	Engine Idling	0–255	This parameter displays an incrementing counter when the control module receives a signal from the exhaust camshaft position (CMP) sensor.
Exhaust Camshaft Position Command	Engine Idling	0 %	This parameter displays the on-time or duty cycle of the exhaust camshaft position (CMP) actuator solenoid valve as commanded by the control module.
Exhaust Camshaft Position Command Bank 1 or 2.	Engine Idling	20 %	This parameter displays the on-time or duty cycle of the exhaust camshaft position (CMP) actuator solenoid valve as commanded by the control module.
	Engine speed at 2000 RPM	50 %	
Exhaust Camshaft Position Actuator Solenoid Valve Control Circuit Low Voltage Test Status Bank 1 or 2.	Engine Idling	OK	This parameter displays the state of the exhaust camshaft actuator solenoid control circuit. The parameter displays Malfunction if the camshaft actuator solenoid control circuit is shorted to ground.
Exhaust Camshaft Position Actuator Solenoid Valve Control Circuit Open Test Status Bank 1 or 2.	Engine Idling	OK	This parameter displays the state of the exhaust camshaft actuator solenoid control circuit. The parameter displays Malfunction if the camshaft actuator solenoid control circuit is open.
Exhaust Camshaft Position Actuator Solenoid Valve Control Circuit High Voltage Test Status Bank 1 or 2.	Engine Idling	OK	This parameter displays the state of the exhaust camshaft actuator solenoid control circuit. The parameter displays Malfunction if the camshaft actuator solenoid control circuit is shorted to voltage.
Extended Travel Brake Pedal Position Signal	Engine Idling	Released	This parameter displays the status of the Extended Travel Brake Pedal Position sensor.

This Parameter displays the percentage of time that the

Fuel Level Sensor Reference Command	Engine Idling	%	power supply for the fuel level sensor is on. This percentage is minimized when the fuel has high ethanol content and is maximized when the fuel has low ethanol content.
Fuel Control Loop Status	Engine Idling	Open/Closed	Fuel Closed Loop Active indicates that oxygen sensor 1 of each bank is being used as feedback to adjust the amount of fuel delivered to the engine.
Fuel Economy	Engine Idling	Liters per Hour	This Parameter displays the instant fuel consumption rate of the engine in liters per hour.
Fuel Enrichment-Hot Catalyst	Engine Running	Active/Inactive	Fuel Enrichment Catalyst Protection Active indicates fuel is being added to cool the catalytic converter.
Fuel Enrichment-Hot Coolant	Engine Running	Active/Inactive	Hot Coolant Enrichment Active indicates that the conditions to enable hot coolant enrichment are active and that a richer than stoichiometric air/fuel ratio is being commanded in order to help cool the engine when a system malfunction is causing the engine to run at extreme temperatures.
Fuel Level Sensor	Ignition ON	0–5 V	This parameter displays the voltage signal received by the control module from the fuel level sensor.
Fuel Pump Relay Control Circuit High Voltage Test Status	Ignition ON	OK	This parameter displays the status of the output driver for the fuel pump control circuit. The scan tool will display OK if the circuit is operating correctly or Not Run if a diagnosis has not been made. The scan tool will display Malfunction if there is an short to voltage in the circuit.
Fuel Pump Relay Control Circuit Low Voltage Test Status	Ignition ON	OK	This parameter displays the status of the output driver for the fuel pump control circuit. The scan tool will display OK if the circuit is operating correctly or Not Run if a diagnosis has not been made. The scan tool will display Malfunction if there is an short to ground in the circuit.
Fuel Pump Relay Control Circuit Open Test Status	Ignition ON	OK	This parameter displays the status of the output driver for the fuel pump control circuit. The scan tool will display OK if the circuit is operating correctly or Not Run if a diagnosis has not been made. The scan tool will display Malfunction if there is an open in the circuit.
Fuel Pump Enable Command	Ignition ON	ON/OFF	This Parameter displays the commanded state of the fuel pump output (the output is considered to be commanded ON if its duty cycle is not zero)
Fuel Tank Rated Capacity	Ignition ON	Varies	This parameter displays the capacity of the fuel tank in liters or gallons. The rated capacity displayed by the scan tool will varies with vehicle type.
Fuel Trim Learn	Engine Idling	Enabled/Disabled	This parameter displays Enabled when conditions are appropriate for enabling long term fuel trim corrections. This indicates that the long term fuel trim is adapting continuing amounts of short term fuel trim. If the scan tool displays Disabled, then long term fuel trim will not respond to changes in short term fuel trim.
Fuel Trim Memory Cell	Engine Idling	Counts 0 250	This Parameter displays long term fuel corrections that is active based upon the current operating conditions (MAP, engine speed, purge duty cycle, A/C compressor state, and transmission range).
Fuel Trim System Test State	Engine Idling	Disabled/Running/EVAP Purge Test Running/Complete	This Parameter displays the current state of the fuel adjustment system diagnostic.
Fuel Volatility	Engine Idling	Varies	This parameter indicates the rate the fuel can be vaporized in the cylinder as calculated by the control module. The scan tool will display HIGH when the fuel volatility is high. The scan tool will display LOW when the fuel volatility is low.
Generator F Terminal Signal	Engine Idling	0–100 %	This parameter displays the amount of generator ON-time as commanded by the control module. The higher the percentage the greater the generator output.
Generator Indicator Command	Engine Idling	ON/OFF	This Parameter displays ON or OFF associated with the status of the generator
Generator L Terminal Circuit High Voltage Test Status	Engine Idling	OK	This parameter displays the state of the generator L circuit terminal. The parameter displays Malfunction if the generator L circuit is shorted to voltage.
Generator L Terminal Circuit Low Voltage Test Status	Engine Idling	OK	This parameter displays the state of the generator L circuit terminal. The parameter displays Malfunction if the generator L circuit is shorted to ground.
Generator L Terminal Circuit Open Test Status	Engine Idling	OK	This parameter displays the state of the generator L circuit terminal. The parameter displays Malfunction if the generator L circuit is open.
Generator L-Terminal Command	Engine Idling	0–100 %	This parameter displays the control modules commanded state of the voltage regulator on the generator.
HO2S Bank 1 Sensor 1 or Bank 2 Sensor 1	Engine Idling	0.00–1.00 V - Varies	This parameter displays the voltage output from the HO2S to the control module. A lower voltage indicates a lean exhaust, while a higher voltage indicates a rich exhaust.

HO2S Bank 1 Sensor 2 or Bank 2 Sensor 2	Engine Idling	0.00–1.00 V - Varies	This parameter displays the voltage output from the HO2S to the control module. A lower voltage indicates a lean exhaust, while a higher voltage indicates a rich exhaust.
HO2S Heater Bank 1 Sensor 1 or Bank 2 Sensor 1	Engine Idling	mA	This Parameter display the current feedback for the oxygen sensor heater output for bank 1 sensor 1 or bank 2 sensor 1.
HO2S Heater Bank 1 Sensor 2 or Bank 2 Sensor 2	Engine Idling	mA	This Parameter display the current feedback for the oxygen sensor heater output for bank 1 sensor 2 or bank 2 sensor 2.
HO2S Heater Control Circuit High Voltage Test Status Bank 1 Sensor 1 or Bank 2 Sensor 1	Engine Idling	OK	This parameter displays the state of the oxygen sensor heater control circuit. The parameter displays Malfunction if the oxygen sensor heater control circuit is shorted to voltage.
HO2S Heater Control Circuit High Voltage Test Status Bank 1 Sensor 2 or Bank 2 Sensor 2	Engine Idling	OK	This parameter displays the state of the oxygen sensor heater control circuit. The parameter displays Malfunction if the oxygen sensor heater control circuit is shorted to voltage.
HO2S Heater Control Circuit Low Voltage Test Status Bank 1 Sensor 1 or Bank 2 Sensor 1	Engine Idling	OK	This parameter displays the state of the oxygen sensor heater control circuit. The parameter displays Malfunction if the oxygen sensor heater control circuit is shorted to ground.
HO2S Heater Control Circuit Low Voltage Test Status Bank 1 Sensor 2 or Bank 2 Sensor 2	Engine Idling	OK	This parameter displays the state of the oxygen sensor heater control circuit. The parameter displays Malfunction if the oxygen sensor heater control circuit is shorted to ground.
HO2S Heater Control Circuit Open Test Status Bank 1 Sensor 1 or Bank 2 Sensor 1	Engine Idling	OK	This parameter displays the state of the oxygen sensor heater control circuit. The parameter displays Malfunction if the oxygen sensor heater control circuit is open.
HO2S Heater Control Circuit Open Test Status Bank 1 Sensor 2 or Bank 2 Sensor 2	Engine Idling	OK	This parameter displays the state of the oxygen sensor heater control circuit. The parameter displays Malfunction if the oxygen sensor heater control circuit is open.
HO2S Heater Command Bank 1 or 2 Sensor 1 or 2 Heater Command	Engine Idling	0–100 %	This parameter displays the HO2S heater ON time in percentage, as commanded by the control module.
HO2S Heater Command Bank 1 or 2 Sensor 1 or 2	Engine Idling	ON/OFF	This parameter display the state of the HO2S heater control circuit as commanded by the control module.
HO2S/Heater Monitor Complete This Ignition Cycle	Engine Idling	Yes/No	This parameter displays the diagnostic monitor completion status during the current driving/monitoring cycle.
HO2S/Heater Monitor Enabled This Ignition Cycle	Engine Idling	Yes/No	This parameter displays the diagnostic monitor enable status during the current driving/monitoring cycle.
IAT Sensor	Ignition ON	–39° to +140°C (–38° to +284°F)	This parameter displays the temperature of the air entering the air induction system based on input to the control module from the intake air temperature (IAT) sensor.
Ignition Accessory Signal	Ignition ON	ON/OFF	This parameter displays ON when the control module detects a voltage at the ignition accessory input terminal.
Ignition 1 Signal	Ignition ON	B+	This parameter displays B+ when the control module detects a voltage at the ignition 1 input terminal.
Injector Duty Cycle Bank 1 or 2	Engine idling	0.82–1.50 ms	This parameter displays the amount of fuel injector ON time or pulse width as commanded by the control module.
Ignition Cycles with Malfunction Since 1st Malfunction	Ignition ON	Counts	This Parameter contains the number of ignition cycles with a failure reported since the first ignition cycle with a failure reported.
Ignition Cycles without Malfunction Since Last Malfunction	Ignition ON	Counts	This Parameter contains the number of ignition cycles with a pass reported and no failures reported since the first ignition cycle with a failure reported.
Ignition Timing	Engine Idling	Degrees	This Parameter displays the final spark advance in terms of a crankshaft angle
Immobilizer Auto Learn Counter	Ignition ON	Counts	This Parameter displays the number of auto-learn cycles that have been successfully completed within the immobilizer system.
Immobilizer Automatic Learn Timer	Ignition ON	h/m/s	This Parameter displays the time elapsed within the current auto-learn cycle within the immobilizer system.
Immobilizer Password Learn	Ignition ON	Active/Inactive	Learning Enabled indicates that learning of immobilizer code information is enabled.
Immobilizer Password Learn Scan Tool Delay	Engine Idling	Active/Inactive	Scan tool Learn Delay Active indicates that the security code has been accepted but the scan tool learn delay is active and will not allow learning enabled, programming security code, or resetting security code.
Immobilizer Security Code Accepted	Engine Idling	Yes/No	Security Code Accepted displaying Yes indicates that the received security code is correct

Immobilizer Security Code Lockout	Engine Idling	Yes/No	Security Code Lockout Active indicates that the security code has not passed and lockout is active.
Immobilizer Security Code Lockout Active Timer	Engine Idling	ms	This Parameter displays the time elapsed since the immobilizer security code lockout has been activated either due to a battery disconnect or an incorrect immobilizer security code being entered
Immobilizer Security Code Programmed	Ignition ON	Yes/No	Security Code Programmed indicates that the security code has been programmed.
Immobilizer Security Code Programming Counter	Ignition ON	Counts	This Parameter displays the number of times a new immobilizer security code has been programmed through secure access. This counter can only be incremented.
Immobilizer Security Code Reset Counter	Ignition ON	Counts	This Parameter displays the number of times the immobilizer security code has been reset to the default value through secure access. This counter can only be incremented.
Immobilizer Security Information Programmed	Ignition ON	Yes/No	This Parameter displays the status of the immobilizer system
Immobilizer System Status	Ignition ON	Varies	This Parameter displays the status of the immobilizer system, the following maybe displayed. Standby, Immobilized at Startup, Immobilized, No Response, Immobilized Negative Response, Immobilized, Incorrect Response, Post-Release State, Pre-Release State, Release State
Immobilizer Valid Response Received Time	Ignition ON	ms	This Parameter displays the actual time observed for a valid immobilizer response.
Intake Camshaft Position Bank 1 or 2	Engine Idling	0 Degrees	This parameter displays the actual intake camshaft position in degrees.
	Engine speed at 2000 RPM	10 Degrees	
Intake Camshaft position Variance Bank 1 or 2.	Engine Idling	0 Degrees	This parameter displays in degrees, the difference between the desired intake camshaft position and the actual intake camshaft position.
	Engine speed at 2000 RPM	0 Degrees	
Intake Camshaft Position Active Counter Bank 1 or 2	Engine Idling	0–255	This parameter displays an incrementing counter when the control module receives a signal from the intake camshaft position (CMP) sensor.
Intake Camshaft Position Commanded Bank 1 or 2	Engine Idling	20 %	This parameter displays the ON-time or duty cycle of the intake camshaft position (CMP) actuator solenoid valve as commanded by the control module.
	Engine speed at 2000 RPM	50 %	
Intake Camshaft Position Actuator Solenoid Valve Control Circuit Low Voltage Test Status Bank 1 or 2.	Engine Idling	OK or Not Run	This parameter displays the state of the intake camshaft actuator solenoid control circuit. The parameter displays Malfunction if the camshaft actuator solenoid control circuit is shorted to ground.
Intake Camshaft Position Actuator Solenoid Valve Control Circuit Open Test Status Bank 1 or 2.	Engine Idling	OK or Not Run	This parameter displays the state of the intake camshaft actuator solenoid control circuit. The parameter displays Malfunction if the camshaft actuator solenoid control circuit is open.
Intake Camshaft Position Actuator Solenoid Valve Control Circuit High Voltage Test Status Bank 1 or 2.	Engine Idling	OK or Not Run	This parameter displays the state of the intake camshaft actuator solenoid control circuit. The parameter displays Malfunction if the camshaft actuator solenoid control circuit is shorted to voltage.
Intake Manifold Pressure	Engine Idling	kPa/psi	This Parameter displays the engine intake manifold vacuum pressure calculated as the difference between ambient air pressure (barometric pressure) and intake manifold absolute pressure (MAP).
Knock Retard	Engine Idling	0 Degrees	This parameter indicates the amount of spark advance the control module removes from the ignition control (IC) spark advance in response to the signal from the knock sensors.
Long Term Fuel Trim Bank 1 or 2	Engine Idling	0 %	This parameter displays the commanded Long Term Fuel Trim correction by the control module for bank 1 or bank 2 for cruise and acceleration conditions.
Long Term Fuel Trim Test Average Bank 1 or 2	Engine Idling	0 %	This Parameter displays the filtered long term closed loop fuel correction for bank 1 or 2. This value is compared to thresholds to determine if the fuel adjustment system diagnostic is passing or failing or if an excess purge vapor test should be executed.
Long Term Fuel Trim Test Average without Purge	Engine Idling	0 %	This Parameter displays the filtered non purge long term closed loop fuel correction for bank 1 or 2. This value is compared to thresholds to determine if the fuel adjustment system diagnostic is passing, failing, or indeterminate during normal purge-OFF operation as well as during the intrusive excess purge vapor test.
Long Term Fuel Trim Test Average without Purge Bank 1 or 2	Engine Idling	0 %	This Parameter displays the filtered non purge long term closed loop fuel correction for bank 1 or 2. This value is compared to thresholds to determine if the fuel adjustment system diagnostic is passing, failing, or indeterminate during normal purge-OFF operation as well as during the intrusive excess purge vapor test.
Low Engine Oil Level Indicator Command	Engine Idling	OFF	The scan tool displays ON or OFF. This is the state of the low engine oil level indicator as monitored by the

Indicator Command

Low Engine Oil Pressure Indicator Command	Engine Idling	ON/OFF	ECM. This parameter displays the commanded state of the low EOP lamp control circuit by the control module.
MAP Performance Test 1	Engine Idling	OK	MAP Test 1 Residual Out of Tolerance indicates that the filtered MAP Test 1 residual (the difference between the measured intake manifold pressure and the intake manifold pressure predicted from the intake manifold model using the mass airflow predicted from the throttle model) exceeds a failure threshold.
MAP Performance Test 2	Engine Idling	OK	MAP Test 2 Residual Out of Tolerance indicates that the filtered MAP Test 2 residual (the difference between the measured intake manifold pressure and the intake manifold pressure predicted from the intake manifold model using the measured mass airflow) exceeds a failure threshold
MAP Sensor	Engine Idling	kPa/psi	This Parameter displays the actual engine intake manifold absolute pressure (MAP).
MAP Sensor	Engine Idling	0.4–2.0V	The Parameter displays The MAP sensor voltage as it measures the change in the intake manifold pressure which results from engine load and speed changes. As the intake manifold pressure increases, the air density in the intake also increases and additional fuel is required.
Maximum Engine Speed When Engine Overspeed Detected	Engine Idling	RPM	This Parameter displays the Maximum Engine Speed When Engine Overspeed Detected
MAF Sensor	Engine Idling	3.0–8.3 g/s	This parameter displays in grams per second, the measured quantity of air flowing into the engine during all operating conditions.
	Engine speed at 2,500 RPM	11.88 g/s	
MAF Sensor	Engine Idling	2,000–2,500 Hz	The scan tool displays a range of 0-65,555 hertz. This parameter displays the frequency signal input to the control module, and represents measured quantity of air flowing into the engine during all operating conditions.
MIL Control Circuit Low Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the MIL control circuit. The parameter displays Malfunction if the MIL control circuit is shorted to ground.
MIL Control Circuit Open Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the MIL control circuit. The parameter displays Malfunction if the MIL control circuit is open.
MIL Control Circuit High Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the MIL control circuit. The parameter displays Malfunction if the MIL control circuit is shorted to voltage.
MIL Command	Engine Idling	ON/OFF	This parameter displays the commanded state of the malfunction indicator lamp (MIL) control circuit by the control module.
Mil Requested by DTC	Engine Idling	Yes/No	This parameter indicates the reason the control module illuminated the MIL. The scan tool will display YES when the MIL is requested as a result of an A or B type DTC. The scan tool will display NO if the MIL is illuminated for another reason, such as transmission DTCs.
Misfire Diagnostic Engine Load	Engine Idling	%	This Parameter displays the engine load used within the misfire diagnostic (calculated as the ratio of the mass of air predicted to be in the cylinder two firing events into the future to the maximum possible mass of air in the cylinder based on the current ambient air pressure and charge temperature).
O2S/HO2S Monitor Complete This Ignition Cycle	Engine Idling	Yes/No	This Parameter displays the enable and completion status during the current driving / monitoring cycle of each continuous legislated emission related monitor and non continuous legislated emission related monitor.
O2S/HO2S Monitor Enabled This Ignition Cycle	Engine Idling	Yes/No	This Parameter displays the enable and completion status during the current driving / monitoring cycle of each continuous legislated emission related monitor and non continuous legislated emission related monitor.
Odometer When Engine Overspeed Detected	Engine Idling	km/miles	This Parameter displays the kilometers or miles of the Odometer When Engine Overspeed Detected.
Park/Neutral Position Switch (If Equipped)	Engine Idling	Park/Neutral	This parameter indicates the range selection of the automatic transmission as calculated by the control module based on input from the PNP switch. The scan tool will display, In Gear, Park, or Neutral depending on the PNP switch position.
Power Enrichment	Engine Idling	Inactive	This parameter indicates if the control module has detected conditions appropriate to operate in Power Enrichment mode. The scan tool will display Active if the mode is in operation, and Inactive if the mode is not in operation. The control module enters Open Loop operation and increases injector pulse width when in power enrichment mode.
Power Mode	Engine Idling	OFF/Accessory/Run/Crank Request	This Parameter displays the state of the System Power Mode. This signal is based upon the state of the system power mode received over serial communication from the vehicle electronics. If the serial data signal not received,

			the Parameter will display OFF.
Reduced Engine Power	Engine Idling	Active/Inactive	This parameter displays Active if the control module is commanding reduced engine power due to a throttle actuator control (TAC) system condition.
Remote Vehicle Start Disable History 1–8	Engine Cranking	Reason for RVS Disable	These parameters displays the last eight reasons the control module disabled remote vehicle start (RVS).
		Throttle Malfunction, Cooling Fan Malfunction, Engine Over-temperature Protection Active, Engine Oil Temperature Too High, Remote Vehicle Speed Limiting, Engine Calibration Malfunction, Engine Oil Life, High Pressure Fuel System Malfunction	
Reduced Engine Power History	Engine Idling		This Parameter Displays the last reason that Powertrain Module has illuminated the Reduced Engine Power (REP) indication.
Redundant Odometer Memory	Engine Idling	Present/Not Present	ECU Odometer Programmed indicates if the ECU odometer value has been programmed
Remaining Fuel in Tank	Engine Idling	%	This Parameter displays the total fuel level as a percentage of the rated capacity of the fuel tank.
Remaining Fuel in Tank	Engine Idling	Liters/Gallons	This Parameter displays the actual total fuel volume contained in the fuel tank.
Remote Vehicle Start Request Signal	Ignition OFF	ON/OFF	Remote Vehicle Start Request indicates the state of the request received over serial communication from the remote vehicle start (RVS) system to start the vehicle in remote mode.
			This parameter displays the short-term correction to the fuel delivery by the control module in response to oxygen sensor 1 or 2. If the oxygen sensor indicates a lean air/fuel mixture, the control module will add fuel increasing the short term fuel trim above 0. If the oxygen sensor indicates a rich air/fuel mixture, the control module will reduce fuel decreasing the short term fuel trim below 0.
Short Term Fuel Trim Bank 1 or Bank 2	Engine Idling	–5 % to +5 %	
Short Term Fuel Trim Test Average Bank 1 or Bank 2	Engine Idling	%	This Parameter display's the filtered short term closed loop fuel correction for bank 1 or 2. This value is compared to thresholds to determine if the fuel adjustment system diagnostic is passing or failing or if an excess purge vapor test should be executed.
Starter Relay Control Circuit Low Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the starter relay control circuit. The parameter displays Malfunction if the starter relay control circuit is shorted to ground. This parameter may not change if the scan tool is used to command the relay control circuit ON.
Starter Relay Control Circuit Open Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the starter relay control circuit. The parameter displays Malfunction if the starter relay control circuit is open. This parameter may not change if the scan tool is used to command the relay control circuit ON.
Starter Relay Control Circuit High Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the starter relay control circuit. The parameter displays Malfunction if the starter relay control circuit is shorted to voltage. This parameter may not change if the scan tool is used to command the relay control circuit ON.
Starter Relay Command	Ignition switch not in the crank position Ignition switch in the crank position	ON/OFF ON	This parameter indicates whether the control module is commanding the starter relay to go ON or OFF.
Start Up ECT	Ignition ON	–39° to +140°C (–38° to +284°F)	This parameter displays the temperature of the engine coolant on start-up based on input to the control module from the ECT sensor.
Start Up IAT	Ignition ON	–39° to +140°C (–38° to +284°F)	This parameter displays the temperature of the intake air at start in the air induction system based on input to the control module from the IAT sensor.
SVS Indicator Command	—	Off	This parameter displays ON when a Service Engine System Non Emission Related Indication is detected.
TAC Forced Engine Shutdown	Ignition ON	Yes/No	This parameter indicates the status of the TAC motor by the control module. The scan tool will display Yes if the engine has been shut down due to a throttle control fault.
TAC Motor	Ignition ON	Enabled/Disabled	This parameter indicates the status of the throttle actuator control (TAC) motor driver in the control module. The scan tool will display Enabled if TAC motor operation is allowed. The scan tool will display Disabled if the control module detects a condition that affects TAC motor operation.
TAC Motor Command	Ignition ON	%	This Parameter displays the commanded duty cycle for the throttle actuator output.
			Throttle Position Residual Out of Tolerance indicates that

Throttle Position Performance Test	Engine Idling	OK/Malfunction	the filtered throttle position residual (the product of the MAF residual and the MAP Test 1 residual) exceeds a failure threshold.
Total Knock Retard	Engine Idling	0°	This parameter displays how much ignition spark timing is being retarded due to all control systems monitored by the control module.
Total Misfire	Engine Idling	0	This parameter displays the total number of cylinder firing events that the control module detected as misfires for the last 200 crankshaft revolution sample period.
Throttle Position	Ignition ON	0–100 %	This parameter displays the desired TP angle commanded by the control module.
Throttle Position Sensor 1	Ignition ON	3.7–4.3 V	This parameter displays the actual voltage on the TP sensor 1 signal circuit as measured by the control module.
Throttle Position Sensor 1 Learned Minimum	Ignition ON	4.1–4.7 V	This parameter displays the learned minimum value of throttle position (TP) sensor 1 as recorded by the control module during the last learn procedure.
Throttle Position Sensor 1 or 2 Position	Ignition ON	%	This parameter displays the actual voltage on the TP sensor 2 signal circuit as measured by the control module.
Throttle Position Sensor 2 Learned Minimum	Ignition ON	0.5–0.9 V	This parameter displays the learned minimum value of TP sensor 2 as recorded by the control module during the last learn procedure.
Throttle Position Sensors 1 and 2	Ignition ON	Agree/Disagree	This parameter displays Disagree when the control module detects that TP sensor 1 voltage signal is not within the correct relationship to TP sensor 2. The scan tool displays Agree under the normal operating conditions.
Traction Control Status	Ignition ON	Active/Inactive	This parameter displays Active if the electronic brake and traction control module (EBTCM) is commanding traction control.
Torque Delivered Signal	Vehicle Moving	Y/Lb Ft	This Parameter displays the engine torque based upon the airflow through the engine and the torque losses due to spark retard and fuel shutoff. Since this is a steady state engine torque, it does not include the inertial component of engine torque.
Torque Management Ignition Timing Retard	Engine Idling	Degrees	This Parameter displays the total spark retard (in terms of a crankshaft angle).
Torque Request Inhibit-Fuel	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit-Ignition Timing	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit-Ignition Timing Advance	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit-Minimum Idle	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit-Minimum Torque	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit-TAC	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit-TAC Limit	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Total Engine Overspeed Time	Engine Idling	ms	This Parameter displays the Total Engine Overspeed Time.
VIN Programming Counter	Ignition ON	Counts	This Parameter displays the number of times the VIN has been programmed. This counter can only be incremented.
Vehicle Speed Sensor	Vehicle Moving	Km/h mph	This parameter displays the speed of the vehicle as calculated by the transmission control module (TCM) from information received from the vehicle speed sensor (VSS).
Vehicle Speed When Engine Overspeed Detected	Engine Idling	Km/h mph	This Parameter displays the Vehicle Speed When Engine Overspeed Detected.
Warm Ups Since DTC Cleared	Engine Idling	Counts	This parameter indicates the number of warm up cycles that have occurred Since DTCs were cleared. The scan tool will display a higher counts as more warm up cycles have occurred since the DTCs were cleared.

This Parameter displays the number of OBD defined warm up cycles since the last emissions related fault

Warm Ups without Emission Malfunctions	Engine Idling	Counts	warm up cycles since the last emissions related (fault type A or B) fail report or MIL request. Emissions related DTCs are cleared from memory when this counter reaches 40.
Warm Ups without Non Emission Malfunctions	Engine Idling	Counts	This Parameter displays the number of OBD defined warm up cycles since the last non emissions related (fault type C) fail report. Non emissions related DTCs are cleared from memory when this counter reaches 40.
Wide Open Throttle	Engine Idling	Yes/NO	This parameter displays the throttle status commanded by the control module. The scan tool will display YES if the vehicle throttle is commanded to 100 percent.

Engine Control Module (ECM) Scan Tool Output Controls

Output Control	Description
Compression Test	This device control is used to set up the internal combustion engine for a compression test. The fuel pump, fuel injectors, and spark are all disabled. The throttle is opened to a Wide Open Throttle (WOT) position. For conventional engine vehicles, the extended crank feature is not active, and for strong hybrid vehicles, the Hybrid Powertrain Control Module is configured to crank at the speed specified in the device control command. Engine cranking is completely controlled by the technician either through the ignition key or through a remote starter switch as applicable. The device control limits and rejects will apply normally upon entry to the device control. Once the device control is active, the limits will be monitored (to prevent unwanted starter operation, for example), but in the case of a limit exceeded or a tester disconnect, device control of the fuel and spark will not be released until the Power Mode switches to Accessory or OFF. This will prevent unexpected fuel and spark operation in the case of a device control abort. This function activates the cooling fan relay 1. The normal commanded state of the fan relay is NONE. The relay command status can also be monitored on the scan tool data parameter Cooling Fan Relay 1 Command. The control module allows cooling fan relay control when the following conditions are met: - The Ignition is ON or the engine is running. - A/C compressor operation is not requested. - The engine coolant temperature is less than 106°C (224°F)
Cooling Fan Relay 1	
Cooling Fan Relay 1,2 and 3	This function activates the cooling fan relay 1, 2 and 3. The normal commanded state of the fan relays is NONE. The relay command status can also be monitored on the scan tool data parameters Cooling Fan Relay 1 Command and Cooling Fan Relays 2 and 3 Command. The control module allows cooling fan relay control when the following conditions are met: - The Ignition is ON or the engine is running. - A/C compressor operation is not requested. - The engine coolant temperature is less than 106°C (224°F) This function activates the cooling fan relay 2. The normal commanded state of the fan relays is NONE. The relay command status can also be monitored on the scan tool data parameter 2 Command. The control module allows cooling fan relay control when the following conditions are met: - The Ignition is ON or the engine is running. - A/C compressor operation is not requested. - The engine coolant temperature is less than 106°C (224°F)
Cooling Fan 2	
Crankshaft Position Variation Learn	This device control is used to activate the crankshaft position variation learn algorithm which calculates the reference pulse correction factors for the misfire diagnostic.
Engine Controls Ignition Relay	This device control is used to override the state of the Powertrain Relay.
Engine Oil Life Reset	This device control contains the engine oil remaining life determined from a calculation based upon the effective engine revolutions and the distance driven since the last oil change. This device control may be used to reset the engine oil remaining life to 100 % after an oil change or to any other value when replacing a control module Note: The Misfire Current and Misfire History parameters may not increment when using this function. This function disables the selected fuel injector. The normal commanded state is None. The scan tool initiates the test when the following conditions are met:
Cylinder Power Balance	- The engine is operating and the engine idle is stable. - The vehicle speed is 0 km/h (0 mph). - There are no DTCs set for the vehicle speed sensor. If the fuel injector was disabled for 30 seconds, fuel injector control is not allowed again on the same fuel injector for 60 seconds. This function controls the idle speed override in 25 RPM, 100 RPM, and 500 RPM increments, from the base idle speed to 1,400 RPM. The scan tool initiates the test when the following conditions are met:
Engine Speed	- The transmission is in park or neutral. - The engine speed is less than 1,000 RPM. The engine speed will remain in the commanded state until cancelled by the scan tool.
EVAP Test	This device control is used to activate the evaporative emissions service bay test. Note: The EVAP Purge Solenoid Command parameter may not change states when using this output control.
EVAP Purge Solenoid Valve	This function controls the evaporative emission (EVAP) purge solenoid valve. The normal commanded state is NONE. The system will increase or decrease the amount of purge by changing the duty cycle of the purge valve in 10 percent increments within a range of 0–100 percent. The system remains in the commanded state until cancelled by the scan tool or the fuel tank pressure (FTP) sensor exceeds –24 mm Hg (–12 inch H20). Note: The EVAP Purge and Vent Solenoid Command parameters may not change states when using this output control.
EVAP Purge/Vent Solenoid Valve	This function activates both the EVAP purge solenoid valve and EVAP vent solenoid to seal the EVAP system. When

EVAP Purge/Seal	activated, the purge valve is commanded to 0 percent and the vent valve is commanded ON, Not-venting. The normal commanded state for both solenoids is None. Both of the solenoids remain in the commanded state until cancelled by the scan tool or the FTP sensor exceeds -24 mm Hg (-12 inch H2O). Note: The EVAP Vent Solenoid Command parameter may not change states when using this output control. This function controls the EVAP vent solenoid. The normal commanded state is NONE. When commanded ON, the vent valve switches to Not-venting. The system remains in the commanded state unless one of the following conditions occur:
EVAP Vent Solenoid Valve	- Cancelled by the scan tool - The EVAP canister purge solenoid is more than 0 percent, and the FTP sensor exceeds -24 mm Hg (-12 inch H2O).
Exhaust Camshaft Position Actuator Bank 1	This device control is used to override the state of the exhaust cam phase output for bank 1. The commanded camshaft position is expressed in terms of degrees of camshaft rotation (retard for exhaust camshaft) from the park position (a camshaft position of zero represents the park position).
Exhaust Camshaft Position Actuator Bank 2	This device control is used to override the state of the exhaust cam phase output for bank 2. The commanded camshaft position is expressed in terms of degrees of camshaft rotation (retard for exhaust camshaft) from the park position (a camshaft position of zero represents the park position).
Exhaust Camshaft Position Actuator Solenoid Valve Bank 1	This device control is used to override the state of the exhaust cam phase solenoid output for bank 1.
Exhaust Camshaft Position Actuator Solenoid Valve Bank 2	This device control is used to override the state of the exhaust cam phase solenoid output for bank 2.
Fuel Control Loop Status	This function controls the heated oxygen sensor (HO2S) loop status. The commanded states include NONE, OPEN, and CLOSED. The normal commanded state is NONE. The loop status changes as commanded, OPEN or CLOSED. The system remains in the commanded state until cancelled by the scan tool. This function enables the fuel injector in order to verify the correct fuel injector flow. The ECM will pulse the selected fuel injector when the following conditions are met:
Fuel Injector Balance (If Available)	- All instruction on the scan tool is complete. - A fuel injector is selected. - The ignition is ON with the engine OFF. The selected fuel injector can only be flowed/pulsed once per ignition cycle. This function controls the fuel pump. The normal commanded state is NONE. The scan tool initiates the test when the following conditions are met:
Fuel Pump Relay	- There are no vehicle speed sensor DTCs set. - The vehicle speed is 0 km/h (0 mph). When commanded ON/OFF, the engine control module (ECM) turns the fuel pump ON/OFF. If the engine is running and the fuel pump is commanded OFF, the engine will stall. The system remains in the commanded state for about 2 seconds or until cancelled by the scan tool or the ECM detects a vehicle speed.
Fuel Trim Enable	This function disables the control modules ability to learn new fuel trim parameters. The commanded states are NONE, ENABLED, DISABLED. The normal commanded state is NONE. The system remains in the commanded state until cancelled by the scan tool.
Fuel Trim Reset	This function is used to reset the learned fuel trim values to their initial values.
Generator L-Terminal	Commands the generator L terminal ON and OFF.
HO2S Heater Bank 1 Sensor 1	This device control is used to override the duty cycle of the oxygen sensor heaters. With the engine OFF, this device control is intended to be used as a discrete control for circuit diagnosis. With the engine OFF, none of the oxygen sensor heaters can be commanded ON for more than 3.0 seconds, after which the selected oxygen sensor heater must be disabled for a limited duration (typically 60 seconds) before it may be enabled again. With the engine running, this device control is used to operate the oxygen sensor heaters at the various duty cycles available to the engine controller.
HO2S Heater Bank 1 Sensor 2	This device control is used to override the duty cycle of the oxygen sensor heaters. With the engine OFF, this device control is intended to be used as a discrete control for circuit diagnosis. With the engine OFF, none of the oxygen sensor heaters can be commanded ON for more than 3.0 seconds, after which the selected oxygen sensor heater must be disabled for a limited duration (typically 60 seconds) before it may be enabled again. With the engine running, this device control is used to operate the oxygen sensor heaters at the various duty cycles available to the engine controller.
HO2S Heater Bank 2 Sensor 1	This device control is used to override the duty cycle of the oxygen sensor heaters. With the engine OFF, this device control is intended to be used as a discrete control for circuit diagnosis. With the engine OFF, none of the oxygen sensor heaters can be commanded ON for more than 3.0 seconds, after which the selected oxygen sensor heater must be disabled for a limited duration (typically 60 seconds) before it may be enabled again. With the engine running, this device control is used to operate the oxygen sensor heaters at the various duty cycles available to the engine controller.
HO2S Heater Bank 2 Sensor 2	This device control is used to override the duty cycle of the oxygen sensor heaters. With the engine OFF, this device control is intended to be used as a discrete control for circuit diagnosis. With the engine OFF, none of the oxygen sensor heaters can be commanded ON for more than 3.0 seconds, after which the selected oxygen sensor heater must be disabled for a limited duration (typically 60 seconds) before it may be enabled again. With the engine running, this device control is used to operate the oxygen sensor heaters at the various duty cycles available to the engine controller.
HO2S Heater Learn	This device control is used to trigger the reset of the learned resistances for the oxygen sensor heaters following a replacement in service. The learned resistances are reset to a calibration used to prevent overheating of the sensors until more accurate resistances may be learned following an extended engine OFF time (typically 12 or more hours). This function allows the throttle position and the idle speed to be relearned by the ECM, once the following conditions have been met:
Idle Learn	- The ignition is ON with the engine OFF. - The ECT is between 5-85°C (41-185°F). - No throttle actuator control (TAC) system DTCs are set.
Idle Ignition Timing	Disables and enables idle spark advance with the engine running.

Ignition Timing Retard	This device control is used to retard the spark angle from the software calculated spark angle. For example, if the software calculated spark angle was 15 degrees advanced and this device control requested a 3 degree retard, the commanded spark angle that would be delivered would be 12 degrees advanced.
Intake Camshaft Position Actuator Bank 1	This device control is used to override the state of the intake cam phase output for bank 1. The commanded camshaft position is expressed in terms of degrees of camshaft rotation (advance for intake camshafts) from the park position (a camshaft position of zero represents the park position).
Intake Camshaft Position Actuator Bank 2	This device control is used to override the state of the intake cam phase output for bank 2. The commanded camshaft position is expressed in terms of degrees of camshaft rotation (advance for intake camshafts) from the park position (a camshaft position of zero represents the park position)
Intake Camshaft Position Actuator Solenoid Valve Bank 1	This device control is used to override the state of the intake cam phase solenoid output for bank 1.
Intake Camshaft Position Actuator Solenoid Valve Bank 2	This device control is used to override the state of the intake cam phase solenoid output for bank 2.
Malfunction Indicator Lamp (MIL)	This function controls the malfunction indicator lamp (MIL). The normal commanded state is NONE. When commanded ON/OFF, the ECM turns the MIL ON/OFF. The system remains in the commanded state until cancelled by the scan tool.
Misfire Graphic	This function clears the misfire graphics from the scan tool.
Remote Vehicle Start Disable History Reset	This function clears the remote vehicle start (RVS) disable history. When RESET is selected the reason the control module did not allow RVS in the last 8 attempts is cleared.
Starter Relay (If Available)	Commands the starter relay ON and OFF.
Throttle Position	This device control is used to override the commanded throttle position.
Throttle Sweep	This function moves the Throttle plate slowly from a closed position to wide open position, aiding diagnosis of TAC motor.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Table 1: [Engine Control Module Scan Tool Data](#)
Table 2: [Engine Control Module \(ECM\) Scan Tool Output Controls](#)

The Engine Control Module Scan Tool Data List contains all engine-related parameters that are available on the scan tool. The list is arranged in alphabetical order. A given parameter may appear in any one of the data lists, and in some cases may appear more than once, or in more than one data list in order to group certain related parameters together.

Use the Engine Scan Tool Data List only after the following is determined:

- The Diagnostic System Check - Vehicle is completed.
- No diagnostic trouble codes (DTCs)
- On-board diagnostics are functioning properly

The scan tool values from a properly running engine may be used for comparison with the engine you are diagnosing. The Engine Scan Tool Data List represents values that would be seen on a normally running engine.

Note: A scan tool that displays faulty data should not be used. The scan tool concern should be reported to the manufacturer. Use of a faulty scan tool can result in misdiagnosis and unnecessary parts replacement.

Only the parameters listed below are referenced in this service manual for use in diagnosis.

Engine Control Module Scan Tool Data

Parameter	System State	Expected Value	Description
Base Operating Conditions: Engine Idling/Radiator Hose Hot/Park or Neutral/Closed Loop			
5 V Reference 1, 2, 3 or 4 Circuit Status	Engine Idling	OK-Malfunction	This parameter will display OK if the circuit is good or Malfunction if a short to ground, short to B+ is present.
5 V Reference 1, 2, 3 or 4	Engine Idling	5 V	This parameter displays the voltage sensed on the 5 V reference circuits at the control module. The scan tool will display a higher value at higher voltage. The scan tool will display a lower value at lower voltage.
A/C Compressor Operation	A/C ON	Allowed/Not Allowed	This parameter displays if the A/C compressor is allowed or not allowed to operate.
A/C Disengage 1–8 History	A/C ON	Reason for A/C Disengagement	The parameter displays reason for the last 8 air conditioning (A/C) compressor disengagements in order from 1 to 8 with 8 being the most recent. There are 8 possible causes for the A/C compressor to disengage.
A/C High Side Pressure Sensor	A/C OFF	0.75–1.5 V*	This parameter displays the voltage signal from the A/C high side pressure sensor input to the control module.
	A/C ON	1.3–2.5 V*	* Varies with temperature, humidity, and altitude.
A/C High Side Pressure Sensor	A/C OFF	450–827 kPa (65–120 psi)*	This parameter displays the pressure from the A/C high side pressure sensor signal circuit to the control module.
	A/C ON	827–2,350 kPa (120–341 psi)*	* Varies with temperature, humidity, and altitude.
A/C OFF for WOT	A/C ON	Yes-No	This parameter displays whether the control module is commanding the A/C compressor clutch relay OFF for wide open throttle (WOT).
A/C Pressure Out of Range	A/C ON	Yes-No	This parameter displays whether the A/C pressure is out of range for normal operation as determined by the control module.
A/C Request Signal	A/C ON	Yes-No	This parameter displays the state of the A/C request input to the control module from the heating, ventilation, and air conditioning (HVAC) controls.
Accelerator Pedal Position	Engine Idling	0–100 %	This parameter displays the angle of the accelerator pedal position (APP) as calculated by the control module using the signals from the APP sensors.
Accelerator Pedal Position When Engine Overspeed Detected	Engine Idling	%	This parameter displays the accelerator pedal position (APP) observed upon initial detection of an overspeed condition. This value will be updated upon each overspeed condition.
Ambient Air Temperature	Engine Idling	Varies	This parameter displays temperature from the input of the Intake Air Temperature Sensor.
APP Sensor 1 Circuit Status	Engine Idling	OK/Malfunction	APP Sensor 1 Out of Range indicates that the sensed accelerator pedal position 1 sensor value is currently out of range or that a Malfunction has been detected based upon the sensed accelerator pedal position 1 sensor value being out of range
APP Sensor 1 Learned Applied Position	Ignition ON	78 %	This parameter contains the learned maximum (fully applied) accelerator pedal position relating to absolute accelerator pedal position (no correction or normalization based upon learned minimum or maximum positions) from accelerator pedal position sensor 1.
This Parameter indicates the accelerator pedal sensor 1			

APP Sensor 1 Learned Released Position	Ignition ON	0.98 V	signal at its minimum learned position (pedal released) as a percentage of its reference voltage. (The minimum learned position is automatically updated periodically as determined by the calibration).
APP Sensor 1 Position	Pedal Released	0 %	This Parameter contains the displacement determined from accelerator pedal position sensor 1 (corrected and normalized based upon its learned minimum and maximum positions).
	Pedal Fully Applied	99 %	
APP Sensor 2	Ignition ON	V	This Parameter contains the accelerator pedal position sensor 2 analog input as a percentage of its reference voltage
APP Sensor 2 Circuit Status	Ignition ON	OK/Malfunction	APP Sensor 2 Out of Range indicates that the sensed accelerator pedal position 2 sensor value is currently out of range or that a malfunction has been detected (and latched) based upon the sensed accelerator pedal position 2 sensor value being out of range
APP Sensor 2 Learned Applied Position	Ignition ON	78 %	This Parameter contains the learned maximum (fully applied) accelerator pedal position relating to absolute accelerator pedal position (no correction or normalization based upon learned minimum or maximum positions) from accelerator pedal position sensor 2.
APP Sensor 2 Learned Released Position	Ignition ON	0.49 V	This Parameter indicates the accelerator pedal sensor 2 signal at its minimum learned position (pedal released) as a percentage of its reference voltage. (The minimum learned position is automatically updated periodically as determined by an algorithm).
APP Sensor 2 Position	Pedal Released	0 %	This Parameter contains the displacement determined from accelerator pedal position sensor 2 (corrected and normalized based upon its learned minimum and maximum positions).
	Pedal Fully Applied	100 %	
APP Sensors	Pedal Released	0 %	This Parameter contains the accelerator pedal position resulting directly from the settling of differences of the accelerator pedal position sensors (prior to any compensation to determine driver intent).
	Pedal Fully Applied	99 %	
Ambient Air Temperature	Ignition ON	°C °F Varies	This parameter displays the outside air temperature as calculated by the control module.
APP Sensor 1	Accelerator pedal not actuated	0.98 V	This parameter displays the actual voltage on the accelerator pedal position (APP) sensor 1 signal circuit as measured by the control module.
	Accelerator pedal fully actuated	4.25 V	
APP Sensor 2	Accelerator pedal not actuated	0.49 V	This parameter displays the actual voltage on the accelerator pedal position (APP) sensor 2 signal circuit as measured by the control module.
	Accelerator pedal fully actuated	2.14 V	
APP Sensor 1 and 2	Ignition ON	Agree/Disagree	This parameter displays Disagree if the control module detects the signal voltage from APP sensor 1 is not in correct relationship to APP sensor 2. The scan tool displays Agree under the normal operating conditions.
BARO	Engine Idling	65–104 kPa (8–16 psi)	This parameter displays the barometric pressure. The control module uses the barometric pressure sensor input for fuel control to compensate for altitude differences.
BARO Sensor	Engine Idling	2.5–4.0 V	This parameter displays the barometric pressure sensor voltage.
Brake Pedal Position Circuit Signal	Ignition ON	Open/Closed	This parameter displays the serial data message of the brake signal from the electronic brake and traction control module (EBTCM).
Brake Pedal Position Sensor Signal	Ignition ON	Applied/Released/Invalid	This parameter displays the serial data message of the brake position sensor signal from the electronic brake and traction control module (EBTCM).
Calculated Air Flow	Engine Idling	G/S	This Parameter contains the mass airflow determined from the speed density (MAP based) calculation of air mass per cylinder.
Calculated Catalyst Temperature Bank 1 or Bank 2	Engine Idling	Approximately 552°C (1026°F)	This Parameter contains the estimated catalyst temperature for bank 1 sensor 1 (as a function of engine speed, engine airflow, and fuel ethanol percentage) for use in the oxygen sensor and catalyst monitor diagnostic algorithms.
Calculated Engine Oil Temperature	Engine Idling	105°C (221°F)	This Parameter displays the estimated engine oil temperature (as a function of engine coolant temperature and other parameters).
Camshaft Position Sensor	Engine Idling	0 RPM	This parameter displays the speed of the engine as calculated by the signal from a camshaft position (CMP) sensor. This parameter will always display 0 unless a condition with the CKP sensor or CKP retractor exists. If a CKP condition exists the control module will use a valid CMP sensor signal to determine engine speed and crank/camshaft position.
Camshaft Position Signal			This Parameter displays the state of the Camshaft

Camshaft Position Signal Output Circuit High Voltage Test Status	Engine Idling	OK	Position Signal Output Circuit. The parameter displays Malfunction if the Camshaft Position Signal Output Circuit is shorted to voltage.
Camshaft Position Signal Output Circuit Low Voltage Test Status	Engine Idling	OK	This Parameter displays the state of the Camshaft Position Signal Output Circuit. The parameter displays Malfunction if the Camshaft Position Signal Output Circuit is shorted to ground.
Camshaft Position Signal Output Circuit Open Test Status	Engine Idling	OK	This Parameter displays the state of the Camshaft Position Signal Output Circuit. The parameter displays Malfunction if the Camshaft Position Signal Output Circuit is open.
Catalyst Monitor Complete This Ignition Cycle	Engine Idling	Yes/No	This Parameter indicates the status of the catalyst monitor diagnostic. Catalyst Monitor Test Running indicates yes or no when the catalyst monitor diagnostic is actively running a test
Catalyst Monitor Enabled This Ignition Cycle	Engine Idling	Yes/No	This Parameter indicates the status of the catalyst monitor diagnostic. Catalyst Monitor Test Running indicates yes or no when the catalyst monitor diagnostic is actively running a test
Catalyst Monitor Not At Idle Test Conditions Met	Engine Idling	Yes/No	This Parameter indicates the status of the catalyst monitor diagnostic. Catalyst Monitor Test Running indicates yes or no when the catalyst monitor diagnostic is actively running a test
Catalyst Monitor Test Counter Bank 1 or 2	Engine Idling	Counts	This Parameter contains the number of repeated results of the catalyst monitor diagnostic test that have been performed since a code clear for bank 1 or bank 2 (used to determine if a sufficient number of tests have run to report a passing condition).
Catalyst Monitor Test Result Bank 1 or 2	Engine Idling	No Decision/Failed/Passed	This Parameter indicates the status of the catalyst monitor diagnostic for bank 1 or bank 2. Multiple tests may run before the diagnostic reports a "Pass" or "Fail" and will be tracked by Catalyst Monitor Diagnostic Test Counter Bank 1 or bank 2. When this Parameter reports a "Pass" or "Fail", the diagnostic is complete for the current trip and will not attempt any further tests on bank 1 or bank 2.
Catalyst Monitor Test State	Engine Idling	Active/Inactive	This Parameter indicates the status of the catalyst monitor diagnostic by displaying active or inactive. This test will only run with the engine at idle.
Change Engine Oil Indicator Command	Ignition ON	ON/OFF	This Parameter sends a signal through the serial communication to inform the driver to change the engine oil. It is based on a calibrated amount of time.
Catalyst Monitor Enabled this Ignition Cycle	Engine Idling	Yes-No	This parameter displays the monitor enable status during the current driving/monitoring cycle.
Crankshaft Position Active Counter	Engine Idling	0–255 Counts	This parameter displays an incrementing counter when the control module receives a signal from the crankshaft position sensor (CKP).
Crankshaft Position Resync Counter	Engine Idling	0 Counts	This parameter displays the number of times the control module has to resynchronize with the CKP sensor. The parameter will begin to increment if the control module does not detect a CKP reference pulse. The parameter will reset to 0 after the ignition is switched OFF.
Cold Startup	Ignition ON	Yes/No	This parameter displays whether the engine meets the conditions for a cold startup during the present ignition cycle. The scan tool displays Yes when the conditions for a cold startup are met during the ignition cycle. The scan tool displays No when the conditions for a cold startup are not met during the present ignition cycle. Conditions for a cold startup require the coolant temperature and the intake air temperature to be below a predetermined temperature and within a certain range of each other. These conditions must occur after the engine was warmed up to a specific temperature during the previous ignition cycle.
Cooling Fan Relay 1 Command	Ignition ON	ON/OFF	This parameter displays the commanded state of the fan relay 1 control circuit. The cooling fan relay 1 should be ON when the scan tool indicates the FC Relay 1 Command is ON. The cooling fan relay 1 should be OFF when the scan tool indicates the FC Relay 1 Command is OFF.
Cooling Fan Relay 1 Control Circuit High Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the fan relay control circuit. The parameter displays Malfunction if the fan relay control circuit is shorted to voltage.
Cooling Fan Relay 1 Control Circuit Low Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the fan relay control circuit. The parameter displays Malfunction if the fan relay control circuit is shorted to ground.
Cooling Fan Relay 1 Control Circuit Open Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the fan relay control circuit. The parameter displays Malfunction if the fan relay control circuit is open.
Cooling Fan Relays 2 Command	Ignition ON	ON/OFF	This Parameter displays the commanded state of the fan relay 2 output.
Cooling Fan Relays 2 Control Circuit High Voltage Test	Ignition ON	OK or Not Run	This parameter displays the state of the fan relay control circuit. The parameter displays Malfunction if the fan

Status			relay control circuit is shorted to voltage.
Cooling Fan Relays 2 Control Circuit Low Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the fan relay control circuit. The parameter displays Malfunction if the fan relay control circuit is shorted to ground.
Cooling Fan Relays 2 Control Circuit Open Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the fan relay control circuit. The parameter displays Malfunction if the fan relay control circuit is open.
Crankshaft Position Sensor	Engine Idling	RPM	This Parameter displays engine speed.
Crank Request Signal	Ignition switch not in the crank position	No	This parameter displays whether the ignition switch has been cycled to the crank position requesting the control module to activate the starter relay.
	Ignition switch in the crank position	Yes	
Cruise Control	Cruise ON	Active/Inactive	This parameter displays the status of the cruise control system as determined by the control module.
Cruise Control Cancel Switch	Cruise ON	Active/Inactive/Invalid	This parameter displays the status of the cruise control cancel switch
Cruise Control Disengage 1-8 History	Cruise ON	Reason for Cruise Disengagement	The parameter displays the last 8 cruise control disengages in order from 1 to 8, with 8 being the most recent. There are approximately 30 possible causes for the cruise control to disengage
Cruise Control Inhibit Reason	Cruise OFF	OFF	The parameter displays the reason the cruise control system cannot engage.
	Cruise ON	Park/Neutral	
Cruise Control ON/OFF Switch	Cruise ON	ON/OFF	The engine control module (ECM) monitors the signal circuit of the cruise control switch. A closed switch is displayed as ON.
Cruise Control Resume/Accelerator Switch	Cruise ON	ON/OFF	The scan tool displays ON, when the cruise ON/OFF switch is ON and the resume/accel (+) button is pressed, the ECM detects a predetermined voltage value for the resume/accel. switch.
Cruise Control Set/Coast Switch	Cruise ON	ON/OFF	The scan tool displays ON, when the cruise ON/OFF switch is ON and the ECM detects a predetermined voltage value for the set/coast (-) switch.
Current Gear	Transmission in Park/Neutral	P/N	This parameter displays the transmission gear commanded by the transmission control module.
	Transmission not in Park/Neutral	Reverse/1st-5th	
Current Gear When Engine Overspeed Detected	Engine Idling	Varies	This parameter displays the transmission actual gear observed upon initial detection of an overspeed condition.
Cylinder 1-6 Current Misfire Counter	Engine Idling	Counts	The scan tool displays a range of 0-255 counts. This parameter displays the number of misfires that have been detected during the last 255 cylinder firing events. The counters may normally display some activity, but the activity should be nearly equal for all of the cylinders, and in low numbers.
Cylinder 1-6 History Misfire Counter	Engine Running	Counts	The scan tool displays a range of 0-65,535 counts. The misfire history counters display the total level of misfire that has been detected on each cylinder. The misfire history counters will not update or show any activity until a misfire DTC P0300 has become active. The misfire history counters will update every 255 cylinder firing events.
Cycles of Misfire Data	Engine Running	0-3,000 counts	This parameter displays the number of cylinder firing events recorded by the control module.
Ignition Coil 1-6 Control Circuit High Voltage Test Status	Engine Running	OK or Not Run	This parameter displays the state of the Ignition control circuit. The parameter displays Malfunction if the Ignition control circuit is shorted to voltage.
Ignition Coil 1-6 Control Circuit Low Voltage Test Status	Engine Idling	OK or Not Run	This parameter displays the state of the Ignition control circuit. The parameter display Malfunctions if the Ignition control circuit is shorted to ground.
Ignition Coil 1-6 Control Circuit Open Test Status	Engine Idling	OK or Not Run	This parameter displays the state of the Ignition control circuit. The parameter displays if Malfunction the Ignition control circuit is open.
Ignition Coil Supply Voltage Bank 1 or 2	Engine Idling	ON/OFF	This parameter displays ON when voltage is supplied to the Ignition coil bank 1 or bank 2.
Ignition Cycles Since Recommended Maximum Fuel Alcohol Content Exceeded	Engine Idling	Counts	This Parameter displays the number of Ignition Cycles since Recommended Maximum Fuel Alcohol Content Exceeded.
Ignition Cycles Without Malfunction Since Last Malfunction	Engine Idling	Counts	This Parameter displays the number of ignition cycles with a pass reported and no malfunctions reported since the first ignition cycle with a malfunction reported.
Inspection/Maintenance Drive Cycle Complete	Engine Idling	Yes/No	Inspection/Maintenance Drive Cycle Complete means that all required components of the standard drive cycle have completed.

Inspection/Maintenance Drive Cycle Idle Time Complete	Engine Idling	Yes/No	Inspection/Maintenance Drive Cycle Idle Time Complete indicates that the engine idle time requirement is complete.
Inspection/Maintenance Drive Cycle Idle Timer	Engine Idling	hh:mm:ss	This parameter displays the Inspection/Maintenance Drive Cycle Idle Timer.
Inspection/Maintenance Drive Cycle Propulsion System Active Time Complete	Engine Idling	No	This parameter displays the Inspection/Maintenance Drive Cycle Propulsion System Active Time Complete. The parameter displays Yes when the Inspection/Maintenance Drive Cycle Propulsion System Active Time is Complete.
Inspection/Maintenance Drive Cycle Propulsion System Active Timer	Engine Idling	hh:mm:ss	This parameter displays the total accumulated time in which the propulsion system has been active after the 1st time the engine is started.
Inspection/Maintenance Drive Cycle Vehicle Speed Time Complete	Engine Idling	No	This parameter displays Yes when the Vehicle Speed Time Complete indicates that the vehicle has been above 25 mph for five minutes.
Inspection/Maintenance Drive Cycle Vehicle Speed Timer	Engine Idling	hh:mm:ss	This parameter displays the total accumulated time in which the vehicle speed has been greater than 25 mph after the 1st time the engine is started.
Intake Air Humidity Sensor	Engine Idling	%	This Parameter displays the signal from the Intake Air Humidity sensor, which represents the relative humidity of the intake air.
Cylinder 1-6 Injector Control Circuit Status	Engine Idling	OK or Not Run	This parameter displays the state of the fuel injector control circuit.
Cylinder 1-6 Injector Disabled Misfire Detected	Engine Idling	Yes/No	This parameter displays the injector that has been disabled by the misfire catalyst converter protection calibration.
Cylinder 1-6 Knock Detected	Engine Idling	Yes/No	This parameter displays yes if a knock has been detected in an individual cylinder.
Decel. Fuel Cutoff	Engine Idling	Active/Inactive	This parameter displays the status of the operating mode of the control module used to turn OFF the fuel injectors and the EVAP canister purge valve during certain deceleration conditions.
Desired Exhaust Camshaft Position (If Equipped)	Engine Idling	0 Degrees	This parameter displays the desired exhaust camshaft angle as commanded by the control module.
Desired Exhaust Camshaft Position Bank 1 or 2	Engine Idling	0 Degrees	This parameter displays the desired exhaust camshaft angle as commanded by the control module.
	Engine speed at 2000 RPM	10 Degrees	
Desired Idle Speed	Engine Idling	Approximately 650 RPM	This parameter displays the desired engine idle speed as commanded by the control module. The desired idle speed varies depending on engine load.
Desired Intake Camshaft Position Bank 1 or 2	Engine Idling	0 Degrees	This parameter displays the desired intake camshaft angle as commanded by the control module.
	Engine speed at 2000 RPM	10 Degrees	
Desired Throttle Position	Engine Idling	%	Commanded Throttle Actuator Control
Distance Since DTC Cleared	Engine Idling	0 Km/mi	This parameter displays in kilometers or miles the distance traveled since a DTC was cleared.
Distance Since First Malfunction	Engine Idling	0 Km/mi	This parameter displays in kilometers or miles the distance traveled since a Malfunction occurred.
Distance Since Last Malfunction	Engine Idling	0 Km/mi	This parameter displays the distance accumulated since last malfunction was captured. This parameter is only meaningful within the context of a failure record or freeze frame.
Distance Since Last Oil Level Warning	Engine Idling	0 Km/mi	This parameter displays in kilometers or miles the distance traveled since the last oil level warning Malfunction occurred.
Distance Since Last Oil Pressure Warning	Engine Idling	0 Km/mi	This parameter displays in kilometers or miles the distance traveled since the last oil pressure warning Malfunction occurred.
Distance Since Recommended Maximum Fuel Alcohol Content Exceeded	Engine Idling	0 Km/mi	This Parameter displays in kilometers or miles the distance Since Recommended Maximum Fuel Alcohol Content Exceeded.
Drag Control Status	Engine Idling	Inactive	EDC Active (Drag Active) control mode is indicated when the requested torque signal is above the driver requested value while the traction control system signal input is active.
Engine Drag Control Status	Vehicle Moving	Active/Inactive	EDC Active (Drag Active) control mode is indicated when the requested torque signal is above the driver requested value while the traction control system signal input is active.
ECM Authentication Status	Ignition ON	Unknown/Incorrect/Negative Response/Valid	ECM Authentication Status indicates the result of the comparison between the last received immobilizer response and the expected response calculated into the ECM.

ECM Response Source	Ignition ON	Ignition Switch Start/Remote Vehicle Start/Exterior PTO Vehicle Start	ECM Response Source indicates the source used to calculate the ECM response
Engine Controls Ignition Relay Command	Ignition ON	ON/OFF	This parameter displays the state of the control circuit for control module power relay as commanded by the control module.
Engine Controls Ignition Relay Control Circuit High Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the Engine Controls Ignition Relay control circuit. The parameter displays Malfunction if the Engine Controls Ignition Relay control circuit is shorted to voltage.
Engine Controls Ignition Relay Controls Circuit Low Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the Engine Controls Ignition Relay control circuit. The parameter displays Malfunction if the Engine Controls Ignition Relay control circuit is shorted to ground.
Engine Controls Ignition Relay Controls Circuit Open Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the Engine Controls Ignition Relay control circuit. The parameter displays Malfunction if the Engine Controls Ignition Relay control circuit is open.
Engine Controls Ignition Relay Feedback Signal	Ignition ON	12.0–14.9 V	This parameter displays the voltage available at the EC ignition relay pin of the control module.
ECT Sensor	Ignition ON	88 to 105° C (190 to 221°F)	This parameter displays the temperature of the engine coolant based on input to the control module from the engine coolant temperature (ECT) sensor.
EGR/Camshaft Position Monitor Complete This Ignition Cycle	Engine Idling	Yes/No	This Parameter displays Yes or No of the completion status during the current driving / monitoring cycle of emission related monitors.
EGR/Camshaft Position Monitor Enabled This Ignition Cycle	Engine Idling	Yes/No	This Parameter displays Yes or No of the completion status during the current driving / monitoring cycle of emission related monitors.
Electric Power Management Inhibit Reason	Engine Idling	None	This Parameter displays the reason for the source of the Regulated Voltage Control (RVC) override command. RVC lowers system operating voltage to reduce system electrical load and improve fuel economy performance. The following is a list of possible reasons. None, Control Function, Active/Fuel System, On-board Diagnostic System, Air Flow Measurement System, Cylinder Deactivation System, System Transmission Control Module.
Engine Load	Engine Idling	25–45 %	This parameter displays the calculated engine load in percent based on inputs to the control module from various engine sensors.
	Engine speed at 2,500 RPM	40–60 %	
Engine OFF Time	Engine Idling	0:00:00 Seconds - Varies	This parameter displays the amount of time that has elapsed since the engine was last cycled OFF.
Engine Oil Life Remaining	Engine Idling	0–100 %	This parameter displays the percent of engine oil life remaining. The controller calculates the engine oil life by monitoring engine load, coolant temperature, and engine speed.
Engine Oil Pressure Switch	Engine Idling	OK	This parameter displays the status of the engine oil level switch as determined by the control module. The control module uses this information to turn on the low engine oil lamp if the engine oil level remains approximately 1 quart low for a sufficient amount of time. The scan tool will display Low when the engine oil level is low. The scan tool will display OK when the engine oil level is correct.
Engine Oil Temperature When Engine Overspeed Detected	Engine Idling	Temperature	This parameter displays the temperature of the engine oil as determined by the control module.
Engine Overspeed	Engine Idling	Not Present	This Parameter displays if an Engine Overspeed is Present or Not Present.
Engine Run Time	Engine Idling	0:00:00	This parameter displays the time elapsed since the engine was started.
		Increments when the engine is operating	
Engine Speed	Engine Cranking	Greater than 60 RPM	This parameter displays the speed of the engine crankshaft rotation from information received from the crankshaft position (CKP) sensor. If there is a CKP sensor DTC, the ECM calculates the engine speed from one of the camshaft position (CMP) sensors.
	Engine Idling	550–700 RPM	
Engine Speed When Engine Overspeed Detected	Engine Idling	RPM	This parameter displays the engine speed observed upon initial detection of an overspeed condition. This value will be updated after each overspeed condition.
EVAP Malfunction History	Engine Running	None	This parameter displays the result of the evaporative emission (EVAP) system as determined by the control module. The scan tool will display the following:
			• None • Excess Vacuum • Purge Valve Leak • Small Leak

			- Weak Vacuum - No Test Result
EVAP Monitor Complete This Ignition Cycle	Engine Running	Yes/No	This parameter displays the diagnostic monitor completion status during the current driving/monitoring cycle.
EVAP Monitor Enabled This Ignition Cycle	Engine Running	Yes/No	This parameter displays the diagnostic monitor enable status during the current driving/monitoring cycle.
EVAP Purge Solenoid Valve Command	Engine Idling	%	This Parameter displays the commanded duty cycle for the canister purge output.
EVAP Purge Solenoid Valve Control Circuit Low Voltage Test Status	Ignition ON	OK	This parameter displays the state of the evaporative emission (EVAP) purge solenoid control circuit. The parameter displays Malfunction if the EVAP purge solenoid control circuit is shorted to ground.
EVAP Purge Solenoid Valve Control Circuit Open Test Status	Ignition ON	OK	This parameter displays the state of the evaporative emission (EVAP) purge solenoid control circuit. The parameter displays Malfunction if the EVAP purge solenoid control circuit is open.
EVAP Purge Solenoid Valve Control Circuit High Voltage Test Status	Ignition ON	OK	This parameter displays the state of the evaporative emission (EVAP) purge solenoid control circuit. The parameter displays Malfunction if the EVAP purge solenoid control circuit is shorted to voltage.
EVAP Vent Solenoid Valve Control Circuit Low Voltage Test Status	Ignition ON	OK	This parameter displays the state of the EVAP vent solenoid control circuit. The parameter displays Malfunction if the EVAP vent solenoid control circuit is shorted to ground. This parameter may not change if the scan tool is used to command the EVAP vent solenoid ON.
EVAP Vent Solenoid Valve Control Circuit Open Test Status	Ignition ON	OK	This parameter displays the state of the EVAP vent solenoid control circuit. The parameter displays Malfunction if the EVAP vent solenoid control circuit is open. This parameter may not change if the scan tool is used to command the EVAP vent solenoid ON.
EVAP Vent Solenoid Valve Control Circuit High Voltage Test Status	Ignition ON	OK	This parameter displays the state of the EVAP vent solenoid control circuit. The parameter displays Malfunction if the EVAP vent solenoid control circuit is shorted to voltage. This parameter may not change if the scan tool is used to command the EVAP vent solenoid ON.
EVAP Vent Solenoid Command	Engine Idling	Venting/Not Venting	This parameter displays the state of the control circuit for evaporative emission (EVAP) vent solenoid as commanded by the control module.
Exhaust Camshaft position Bank 1 or 2	Engine Idling	0 Degrees	This parameter displays the actual exhaust camshaft position in degrees.
	Engine speed at 2000 RPM	10 Degrees	
Exhaust Camshaft Position Variance	Engine Idling	0 Degrees	This parameter displays in degrees, the difference between the desired exhaust camshaft position and the actual exhaust camshaft position.
Exhaust Camshaft Position Variance Bank 1 or 2.	Engine Idling	0 Degrees	This parameter displays in degrees, the difference between the desired exhaust camshaft position and the actual exhaust camshaft position.
	Engine speed at 2000 RPM	0 Degrees	
Exhaust Camshaft Position Active Counter (If Equipped)	Engine Idling	0–255	This parameter displays an incrementing counter when the control module receives a signal from the exhaust camshaft position (CMP) sensor.
Exhaust Camshaft Position Active Counter Bank 1 or 2	Engine Idling	0–255	This parameter displays an incrementing counter when the control module receives a signal from the exhaust camshaft position (CMP) sensor.
Exhaust Camshaft Position Command Bank 1 or 2.	Engine Idling	0 %	This parameter displays the on-time or duty cycle of the exhaust camshaft position (CMP) actuator solenoid valve as commanded by the control module.
	Engine speed at 2000 RPM	50 %	
Exhaust Camshaft Position Actuator Solenoid Valve Control Circuit Low Voltage Test Status Bank 1 or 2.	Engine Idling	OK	This parameter displays the state of the exhaust camshaft actuator solenoid control circuit. The parameter displays Malfunction if the camshaft actuator solenoid control circuit is shorted to ground.
Exhaust Camshaft Position Actuator Solenoid Valve Control Circuit Open Test Status Bank 1 or 2.	Engine Idling	OK	This parameter displays the state of the exhaust camshaft actuator solenoid control circuit. The parameter displays Malfunction if the camshaft actuator solenoid control circuit is open.
Exhaust Camshaft Position Actuator Solenoid Valve Control Circuit High Voltage Test Status Bank 1 or 2.	Engine Idling	OK	This parameter displays the state of the exhaust camshaft actuator solenoid control circuit. The parameter displays Malfunction if the camshaft actuator solenoid control circuit is shorted to voltage.
Extended Travel Brake Pedal Position Signal	Engine Idling	Released	This parameter displays the status of the Extended Travel Brake Pedal Position sensor.

This Parameter displays the percentage of time that the

Fuel Level Sensor Reference Command	Engine Idling	%	power supply for the fuel level sensor is on. This percentage is minimized when the fuel has high ethanol content and is maximized when the fuel has low ethanol content.
Fuel Control Loop Status	Engine Idling	Open/Closed	Fuel Closed Loop Active indicates that oxygen sensor 1 of each bank is being used as feedback to adjust the amount of fuel delivered to the engine.
Fuel Economy	Engine Idling	Liters per Hour	This Parameter displays the instant fuel consumption rate of the engine in liters per hour.
Fuel Enrichment-Hot Catalyst	Engine Running	Active/Inactive	Fuel Enrichment Catalyst Protection Active indicates fuel is being added to cool the catalytic converter.
Fuel Enrichment-Hot Coolant	Engine Running	Active/Inactive	Hot Coolant Enrichment Active indicates that the conditions to enable hot coolant enrichment are active and that a richer than stoichiometric air/fuel ratio is being commanded in order to help cool the engine when a system malfunction is causing the engine to run at extreme temperatures.
Fuel Level Sensor	Ignition ON	0–5 V	This parameter displays the voltage signal received by the control module from the fuel level sensor.
Fuel Pump Relay Control Circuit High Voltage Test Status	Ignition ON	OK	This parameter displays the status of the output driver for the fuel pump control circuit. The scan tool will display OK if the circuit is operating correctly or Not Run if a diagnosis has not been made. The scan tool will display Malfunction if there is an short to voltage in the circuit.
Fuel Pump Relay Control Circuit Low Voltage Test Status	Ignition ON	OK	This parameter displays the status of the output driver for the fuel pump control circuit. The scan tool will display OK if the circuit is operating correctly or Not Run if a diagnosis has not been made. The scan tool will display Malfunction if there is an short to ground in the circuit.
Fuel Pump Relay Control Circuit Open Test Status	Ignition ON	OK	This parameter displays the status of the output driver for the fuel pump control circuit. The scan tool will display OK if the circuit is operating correctly or Not Run if a diagnosis has not been made. The scan tool will display Malfunction if there is an open in the circuit.
Fuel Pump Enable Command	Ignition ON	ON/OFF	This Parameter displays the commanded state of the fuel pump output (the output is considered to be commanded ON if its duty cycle is not zero)
Fuel Tank Rated Capacity	Ignition ON	Varies	This parameter displays the capacity of the fuel tank in liters or gallons. The rated capacity displayed by the scan tool will varies with vehicle type.
Fuel Trim Learn	Engine Idling	Enabled/Disabled	This parameter displays Enabled when conditions are appropriate for enabling long term fuel trim corrections. This indicates that the long term fuel trim is adapting continuing amounts of short term fuel trim. If the scan tool displays Disabled, then long term fuel trim will not respond to changes in short term fuel trim.
Fuel Trim Memory Cell	Engine Idling	Counts 0 250	This Parameter displays long term fuel corrections that is active based upon the current operating conditions (MAP, engine speed, purge duty cycle, A/C compressor state, and transmission range).
Fuel Trim System Test State	Engine Idling	Disabled/Running/EVAP Purge Test Running/Complete	This Parameter displays the current state of the fuel adjustment system diagnostic.
Fuel Volatility	Engine Idling	Varies	This parameter indicates the rate the fuel can be vaporized in the cylinder as calculated by the control module. The scan tool will display HIGH when the fuel volatility is high. The scan tool will display LOW when the fuel volatility is low.
Generator F Terminal Signal	Engine Idling	0–100 %	This parameter displays the amount of generator ON-time as commanded by the control module. The higher the percentage the greater the generator output.
Generator Indicator Command	Engine Idling	ON/OFF	This Parameter displays ON or OFF associated with the status of the generator
Generator L Terminal Circuit High Voltage Test Status	Engine Idling	OK	This parameter displays the state of the generator L circuit terminal. The parameter displays Malfunction if the generator L circuit is shorted to voltage.
Generator L Terminal Circuit Low Voltage Test Status	Engine Idling	OK	This parameter displays the state of the generator L circuit terminal. The parameter displays Malfunction if the generator L circuit is shorted to ground.
Generator L Terminal Circuit Open Test Status	Engine Idling	OK	This parameter displays the state of the generator L circuit terminal. The parameter displays Malfunction if the generator L circuit is open.
Generator L-Terminal Command	Engine Idling	0–100 %	This parameter displays the control modules commanded state of the voltage regulator on the generator.
HO2S Bank 1 Sensor 1 or Bank 2 Sensor 1	Engine Idling	0.00–1.00 V - Varies	This parameter displays the voltage output from the HO2S to the control module. A lower voltage indicates a lean exhaust, while a higher voltage indicates a rich exhaust.

HO2S Bank 1 Sensor 2 or Bank 2 Sensor 2	Engine Idling	0.00–1.00 V - Varies	This parameter displays the voltage output from the HO2S to the control module. A lower voltage indicates a lean exhaust, while a higher voltage indicates a rich exhaust.
HO2S Heater Bank 1 Sensor 1 or Bank 2 Sensor 1	Engine Idling	mA	This Parameter display the current feedback for the oxygen sensor heater output for bank 1 sensor 1 or bank 2 sensor 1.
HO2S Heater Bank 1 Sensor 2 or Bank 2 Sensor 2	Engine Idling	mA	This Parameter display the current feedback for the oxygen sensor heater output for bank 1 sensor 2 or bank 2 sensor 2.
HO2S Heater Control Circuit High Voltage Test Status Bank 1 Sensor 1 or Bank 2 Sensor 1	Engine Idling	OK	This parameter displays the state of the oxygen sensor heater control circuit. The parameter displays Malfunction if the oxygen sensor heater control circuit is shorted to voltage.
HO2S Heater Control Circuit High Voltage Test Status Bank 1 Sensor 2 or Bank 2 Sensor 2	Engine Idling	OK	This parameter displays the state of the oxygen sensor heater control circuit. The parameter displays Malfunction if the oxygen sensor heater control circuit is shorted to voltage.
HO2S Heater Control Circuit Low Voltage Test Status Bank 1 Sensor 1 or Bank 2 Sensor 1	Engine Idling	OK	This parameter displays the state of the oxygen sensor heater control circuit. The parameter displays Malfunction if the oxygen sensor heater control circuit is shorted to ground.
HO2S Heater Control Circuit Low Voltage Test Status Bank 1 Sensor 2 or Bank 2 Sensor 2	Engine Idling	OK	This parameter displays the state of the oxygen sensor heater control circuit. The parameter displays Malfunction if the oxygen sensor heater control circuit is shorted to ground.
HO2S Heater Control Circuit Open Test Status Bank 1 Sensor 1 or Bank 2 Sensor 1	Engine Idling	OK	This parameter displays the state of the oxygen sensor heater control circuit. The parameter displays Malfunction if the oxygen sensor heater control circuit is open.
HO2S Heater Control Circuit Open Test Status Bank 1 Sensor 2 or Bank 2 Sensor 2	Engine Idling	OK	This parameter displays the state of the oxygen sensor heater control circuit. The parameter displays Malfunction if the oxygen sensor heater control circuit is open.
HO2S Heater Command Bank 1 or 2 Sensor 1 or 2 Heater Command	Engine Idling	0–100 %	This parameter displays the HO2S heater ON time in percentage, as commanded by the control module.
HO2S Heater Command Bank 1 or 2 Sensor 1 or 2	Engine Idling	ON/OFF	This parameter display the state of the HO2S heater control circuit as commanded by the control module.
HO2S/Heater Monitor Complete This Ignition Cycle	Engine Idling	Yes/No	This parameter displays the diagnostic monitor completion status during the current driving/monitoring cycle.
HO2S/Heater Monitor Enabled This Ignition Cycle	Engine Idling	Yes/No	This parameter displays the diagnostic monitor enable status during the current driving/monitoring cycle.
IAT Sensor	Ignition ON	–39° to +140°C (–38° to +284°F)	This parameter displays the temperature of the air entering the air induction system based on input to the control module from the intake air temperature (IAT) sensor.
Ignition Accessory Signal	Ignition ON	ON/OFF	This parameter displays ON when the control module detects a voltage at the ignition accessory input terminal.
Ignition 1 Signal	Ignition ON	B+	This parameter displays B+ when the control module detects a voltage at the ignition 1 input terminal.
Injector Duty Cycle Bank 1 or 2	Engine idling	0.82–1.50 ms	This parameter displays the amount of fuel injector ON time or pulse width as commanded by the control module.
Ignition Cycles with Malfunction Since 1st Malfunction	Ignition ON	Counts	This Parameter contains the number of ignition cycles with a failure reported since the first ignition cycle with a failure reported.
Ignition Cycles without Malfunction Since Last Malfunction	Ignition ON	Counts	This Parameter contains the number of ignition cycles with a pass reported and no failures reported since the first ignition cycle with a failure reported.
Ignition Timing	Engine Idling	Degrees	This Parameter displays the final spark advance in terms of a crankshaft angle
Immobilizer Auto Learn Counter	Ignition ON	Counts	This Parameter displays the number of auto-learn cycles that have been successfully completed within the immobilizer system.
Immobilizer Automatic Learn Timer	Ignition ON	h/m/s	This Parameter displays the time elapsed within the current auto-learn cycle within the immobilizer system.
Immobilizer Password Learn	Ignition ON	Active/Inactive	Learning Enabled indicates that learning of immobilizer code information is enabled.
Immobilizer Password Learn Scan Tool Delay	Engine Idling	Active/Inactive	Scan tool Learn Delay Active indicates that the security code has been accepted but the scan tool learn delay is active and will not allow learning enabled, programming security code, or resetting security code.
Immobilizer Security Code Accepted	Engine Idling	Yes/No	Security Code Accepted displaying Yes indicates that the received security code is correct

Immobilizer Security Code Lockout	Engine Idling	Yes/No	Security Code Lockout Active indicates that the security code has not passed and lockout is active.
Immobilizer Security Code Lockout Active Timer	Engine Idling	ms	This Parameter displays the time elapsed since the immobilizer security code lockout has been activated either due to a battery disconnect or an incorrect immobilizer security code being entered
Immobilizer Security Code Programmed	Ignition ON	Yes/No	Security Code Programmed indicates that the security code has been programmed.
Immobilizer Security Code Programming Counter	Ignition ON	Counts	This Parameter displays the number of times a new immobilizer security code has been programmed through secure access. This counter can only be incremented.
Immobilizer Security Code Reset Counter	Ignition ON	Counts	This Parameter displays the number of times the immobilizer security code has been reset to the default value through secure access. This counter can only be incremented.
Immobilizer Security Information Programmed	Ignition ON	Yes/No	This Parameter displays the status of the immobilizer system
Immobilizer System Status	Ignition ON	Varies	This Parameter displays the status of the immobilizer system, the following maybe displayed. Standby, Immobilized at Startup, Immobilized, No Response, Immobilized Negative Response, Immobilized, Incorrect Response, Post-Release State, Pre-Release State, Release State
Immobilizer Valid Response Received Time	Ignition ON	ms	This Parameter displays the actual time observed for a valid immobilizer response.
Intake Camshaft Position Bank 1 or 2	Engine Idling	0 Degrees	This parameter displays the actual intake camshaft position in degrees.
	Engine speed at 2000 RPM	10 Degrees	
Intake Camshaft position Variance Bank 1 or 2.	Engine Idling	0 Degrees	This parameter displays in degrees, the difference between the desired intake camshaft position and the actual intake camshaft position.
	Engine speed at 2000 RPM	0 Degrees	
Intake Camshaft Position Active Counter Bank 1 or 2	Engine Idling	0–255	This parameter displays an incrementing counter when the control module receives a signal from the intake camshaft position (CMP) sensor.
Intake Camshaft Position Commanded Bank 1 or 2	Engine Idling	20 %	This parameter displays the ON-time or duty cycle of the intake camshaft position (CMP) actuator solenoid valve as commanded by the control module.
	Engine speed at 2000 RPM	50 %	
Intake Camshaft Position Actuator Solenoid Valve Control Circuit Low Voltage Test Status Bank 1 or 2.	Engine Idling	OK or Not Run	This parameter displays the state of the intake camshaft actuator solenoid control circuit. The parameter displays Malfunction if the camshaft actuator solenoid control circuit is shorted to ground.
Intake Camshaft Position Actuator Solenoid Valve Control Circuit Open Test Status Bank 1 or 2.	Engine Idling	OK or Not Run	This parameter displays the state of the intake camshaft actuator solenoid control circuit. The parameter displays Malfunction if the camshaft actuator solenoid control circuit is open.
Intake Camshaft Position Actuator Solenoid Valve Control Circuit High Voltage Test Status Bank 1 or 2.	Engine Idling	OK or Not Run	This parameter displays the state of the intake camshaft actuator solenoid control circuit. The parameter displays Malfunction if the camshaft actuator solenoid control circuit is shorted to voltage.
Intake Manifold Pressure	Engine Idling	kPa/psi	This Parameter displays the engine intake manifold vacuum pressure calculated as the difference between ambient air pressure (barometric pressure) and intake manifold absolute pressure (MAP).
Knock Retard	Engine Idling	0 Degrees	This parameter indicates the amount of spark advance the control module removes from the ignition control (IC) spark advance in response to the signal from the knock sensors.
Long Term Fuel Trim Bank 1 or 2	Engine Idling	0 %	This parameter displays the commanded Long Term Fuel Trim correction by the control module for bank 1 or bank 2 for cruise and acceleration conditions.
Long Term Fuel Trim Test Average Bank 1 or 2	Engine Idling	0 %	This Parameter displays the filtered long term closed loop fuel correction for bank 1 or 2. This value is compared to thresholds to determine if the fuel adjustment system diagnostic is passing or failing or if an excess purge vapor test should be executed.
Long Term Fuel Trim Test Average without Purge	Engine Idling	0 %	This Parameter displays the filtered non purge long term closed loop fuel correction for bank 1 or 2. This value is compared to thresholds to determine if the fuel adjustment system diagnostic is passing, failing, or indeterminate during normal purge-OFF operation as well as during the intrusive excess purge vapor test.
Long Term Fuel Trim Test Average without Purge Bank 1 or 2	Engine Idling	0 %	This Parameter displays the filtered non purge long term closed loop fuel correction for bank 1 or 2. This value is compared to thresholds to determine if the fuel adjustment system diagnostic is passing, failing, or indeterminate during normal purge-OFF operation as well as during the intrusive excess purge vapor test.
Low Engine Oil Level Indicator Command	Engine Idling	OFF	The scan tool displays ON or OFF. This is the state of the low engine oil level indicator as monitored by the

Indicator Command

Low Engine Oil Pressure Indicator Command	Engine Idling	ON/OFF	ECM. This parameter displays the commanded state of the low EOP lamp control circuit by the control module.
MAP Performance Test 1	Engine Idling	OK	MAP Test 1 Residual Out of Tolerance indicates that the filtered MAP Test 1 residual (the difference between the measured intake manifold pressure and the intake manifold pressure predicted from the intake manifold model using the mass airflow predicted from the throttle model) exceeds a failure threshold.
MAP Performance Test 2	Engine Idling	OK	MAP Test 2 Residual Out of Tolerance indicates that the filtered MAP Test 2 residual (the difference between the measured intake manifold pressure and the intake manifold pressure predicted from the intake manifold model using the measured mass airflow) exceeds a failure threshold
MAP Sensor	Engine Idling	kPa/psi	This Parameter displays the actual engine intake manifold absolute pressure (MAP).
MAP Sensor	Engine Idling	0.4–2.0V	The Parameter displays The MAP sensor voltage as it measures the change in the intake manifold pressure which results from engine load and speed changes. As the intake manifold pressure increases, the air density in the intake also increases and additional fuel is required.
Maximum Engine Speed When Engine Overspeed Detected	Engine Idling	RPM	This Parameter displays the Maximum Engine Speed When Engine Overspeed Detected
MAF Sensor	Engine Idling	3.0–8.3 g/s	This parameter displays in grams per second, the measured quantity of air flowing into the engine during all operating conditions.
	Engine speed at 2,500 RPM	11.88 g/s	
MAF Sensor	Engine Idling	2,000–2,500 Hz	The scan tool displays a range of 0-65,555 hertz. This parameter displays the frequency signal input to the control module, and represents measured quantity of air flowing into the engine during all operating conditions.
MIL Control Circuit Low Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the MIL control circuit. The parameter displays Malfunction if the MIL control circuit is shorted to ground.
MIL Control Circuit Open Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the MIL control circuit. The parameter displays Malfunction if the MIL control circuit is open.
MIL Control Circuit High Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the MIL control circuit. The parameter displays Malfunction if the MIL control circuit is shorted to voltage.
MIL Command	Engine Idling	ON/OFF	This parameter displays the commanded state of the malfunction indicator lamp (MIL) control circuit by the control module.
Mil Requested by DTC	Engine Idling	Yes/No	This parameter indicates the reason the control module illuminated the MIL. The scan tool will display YES when the MIL is requested as a result of an A or B type DTC. The scan tool will display NO if the MIL is illuminated for another reason, such as transmission DTCs.
Misfire Diagnostic Engine Load	Engine Idling	%	This Parameter displays the engine load used within the misfire diagnostic (calculated as the ratio of the mass of air predicted to be in the cylinder two firing events into the future to the maximum possible mass of air in the cylinder based on the current ambient air pressure and charge temperature).
O2S/HO2S Monitor Complete This Ignition Cycle	Engine Idling	Yes/No	This Parameter displays the enable and completion status during the current driving / monitoring cycle of each continuous legislated emission related monitor and non continuous legislated emission related monitor.
O2S/HO2S Monitor Enabled This Ignition Cycle	Engine Idling	Yes/No	This Parameter displays the enable and completion status during the current driving / monitoring cycle of each continuous legislated emission related monitor and non continuous legislated emission related monitor.
Odometer When Engine Overspeed Detected	Engine Idling	km/miles	This Parameter displays the kilometers or miles of the Odometer When Engine Overspeed Detected.
Park/Neutral Position Switch (If Equipped)	Engine Idling	Park/Neutral	This parameter indicates the range selection of the automatic transmission as calculated by the control module based on input from the PNP switch. The scan tool will display, In Gear, Park, or Neutral depending on the PNP switch position.
Power Enrichment	Engine Idling	Inactive	This parameter indicates if the control module has detected conditions appropriate to operate in Power Enrichment mode. The scan tool will display Active if the mode is in operation, and Inactive if the mode is not in operation. The control module enters Open Loop operation and increases injector pulse width when in power enrichment mode.
Power Mode	Engine Idling	OFF/Accessory/Run/Crank Request	This Parameter displays the state of the System Power Mode. This signal is based upon the state of the system power mode received over serial communication from the vehicle electronics. If the serial data signal not received,

			the Parameter will display OFF.
Reduced Engine Power	Engine Idling	Active/Inactive	This parameter displays Active if the control module is commanding reduced engine power due to a throttle actuator control (TAC) system condition.
Remote Vehicle Start Disable History 1–8	Engine Cranking	Reason for RVS Disable	These parameters displays the last eight reasons the control module disabled remote vehicle start (RVS).
		Throttle Malfunction, Cooling Fan Malfunction, Engine Over-temperature Protection Active, Engine Oil Temperature Too High, Remote Vehicle Speed Limiting, Engine Calibration Malfunction, Engine Oil Life, High Pressure Fuel System Malfunction	
Reduced Engine Power History	Engine Idling		This Parameter Displays the last reason that Powertrain Module has illuminated the Reduced Engine Power (REP) indication.
Redundant Odometer Memory	Engine Idling	Present/Not Present	ECU Odometer Programmed indicates if the ECU odometer value has been programmed
Remaining Fuel in Tank	Engine Idling	%	This Parameter displays the total fuel level as a percentage of the rated capacity of the fuel tank.
Remaining Fuel in Tank	Engine Idling	Liters/Gallons	This Parameter displays the actual total fuel volume contained in the fuel tank.
Remote Vehicle Start Request Signal	Ignition OFF	ON/OFF	Remote Vehicle Start Request indicates the state of the request received over serial communication from the remote vehicle start (RVS) system to start the vehicle in remote mode.
			This parameter displays the short-term correction to the fuel delivery by the control module in response to oxygen sensor 1 or 2. If the oxygen sensor indicates a lean air/fuel mixture, the control module will add fuel increasing the short term fuel trim above 0. If the oxygen sensor indicates a rich air/fuel mixture, the control module will reduce fuel decreasing the short term fuel trim below 0.
Short Term Fuel Trim Bank 1 or Bank 2	Engine Idling	–5 % to +5 %	
Short Term Fuel Trim Test Average Bank 1 or Bank 2	Engine Idling	%	This Parameter display's the filtered short term closed loop fuel correction for bank 1 or 2. This value is compared to thresholds to determine if the fuel adjustment system diagnostic is passing or failing or if an excess purge vapor test should be executed.
Starter Relay Control Circuit Low Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the starter relay control circuit. The parameter displays Malfunction if the starter relay control circuit is shorted to ground. This parameter may not change if the scan tool is used to command the relay control circuit ON.
Starter Relay Control Circuit Open Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the starter relay control circuit. The parameter displays Malfunction if the starter relay control circuit is open. This parameter may not change if the scan tool is used to command the relay control circuit ON.
Starter Relay Control Circuit High Voltage Test Status	Ignition ON	OK or Not Run	This parameter displays the state of the starter relay control circuit. The parameter displays Malfunction if the starter relay control circuit is shorted to voltage. This parameter may not change if the scan tool is used to command the relay control circuit ON.
	Ignition switch not in the crank position	ON/OFF	
Starter Relay Command	Ignition switch in the crank position	ON	This parameter indicates whether the control module is commanding the starter relay to go ON or OFF.
Start Up ECT	Ignition ON	–39° to +140°C (–38° to +284°F)	This parameter displays the temperature of the engine coolant on start-up based on input to the control module from the ECT sensor.
Start Up IAT	Ignition ON	–39° to +140°C (–38° to +284°F)	This parameter displays the temperature of the intake air at start in the air induction system based on input to the control module from the IAT sensor.
SVS Indicator Command	—	Off	This parameter displays ON when a Service Engine System Non Emission Related Indication is detected.
TAC Forced Engine Shutdown	Ignition ON	Yes/No	This parameter indicates the status of the TAC motor by the control module. The scan tool will display Yes if the engine has been shut down due to a throttle control fault.
TAC Motor	Ignition ON	Enabled/Disabled	This parameter indicates the status of the throttle actuator control (TAC) motor driver in the control module. The scan tool will display Enabled if TAC motor operation is allowed. The scan tool will display Disabled if the control module detects a condition that affects TAC motor operation.
TAC Motor Command	Ignition ON	%	This Parameter displays the commanded duty cycle for the throttle actuator output.
			Throttle Position Residual Out of Tolerance indicates that

Throttle Position Performance Test	Engine Idling	OK/Malfunction	the filtered throttle position residual (the product of the MAF residual and the MAP Test 1 residual) exceeds a failure threshold.
Total Knock Retard	Engine Idling	0°	This parameter displays how much ignition spark timing is being retarded due to all control systems monitored by the control module.
Total Misfire	Engine Idling	0	This parameter displays the total number of cylinder firing events that the control module detected as misfires for the last 200 crankshaft revolution sample period.
Throttle Position	Ignition ON	0–100 %	This parameter displays the desired TP angle commanded by the control module.
Throttle Position Sensor 1	Ignition ON	3.7–4.3 V	This parameter displays the actual voltage on the TP sensor 1 signal circuit as measured by the control module.
Throttle Position Sensor 1 Learned Minimum	Ignition ON	4.1–4.7 V	This parameter displays the learned minimum value of throttle position (TP) sensor 1 as recorded by the control module during the last learn procedure.
Throttle Position Sensor 1 or 2 Position	Ignition ON	%	This parameter displays the actual voltage on the TP sensor 2 signal circuit as measured by the control module.
Throttle Position Sensor 2 Learned Minimum	Ignition ON	0.5–0.9 V	This parameter displays the learned minimum value of TP sensor 2 as recorded by the control module during the last learn procedure.
Throttle Position Sensors 1 and 2	Ignition ON	Agree/Disagree	This parameter displays Disagree when the control module detects that TP sensor 1 voltage signal is not within the correct relationship to TP sensor 2. The scan tool displays Agree under the normal operating conditions.
Traction Control Status	Ignition ON	Active/Inactive	This parameter displays Active if the electronic brake and traction control module (EBTCM) is commanding traction control.
Torque Delivered Signal	Vehicle Moving	Y/Lb Ft	This Parameter displays the engine torque based upon the airflow through the engine and the torque losses due to spark retard and fuel shutoff. Since this is a steady state engine torque, it does not include the inertial component of engine torque.
Torque Management Ignition Timing Retard	Engine Idling	Degrees	This Parameter displays the total spark retard (in terms of a crankshaft angle).
Torque Request Inhibit-Fuel	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit-Ignition Timing	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit-Ignition Timing Advance	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit-Minimum Idle	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit-Minimum Torque	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit-TAC	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Torque Request Inhibit-TAC Limit	Engine Idling	Yes/No	This Parameter displays the existing condition in the ECM causing the transmission torque request to be limited.
Total Engine Overspeed Time	Engine Idling	ms	This Parameter displays the Total Engine Overspeed Time.
VIN Programming Counter	Ignition ON	Counts	This Parameter displays the number of times the VIN has been programmed. This counter can only be incremented.
Vehicle Speed Sensor	Vehicle Moving	Km/h mph	This parameter displays the speed of the vehicle as calculated by the transmission control module (TCM) from information received from the vehicle speed sensor (VSS).
Vehicle Speed When Engine Overspeed Detected	Engine Idling	Km/h mph	This Parameter displays the Vehicle Speed When Engine Overspeed Detected.
Warm Ups Since DTC Cleared	Engine Idling	Counts	This parameter indicates the number of warm up cycles that have occurred Since DTCs were cleared. The scan tool will display a higher counts as more warm up cycles have occurred since the DTCs were cleared.

This Parameter displays the number of OBD defined warm up cycles since the last emissions related fault

Warm Ups without Emission Malfunctions	Engine Idling	Counts	warm up cycles since the last emissions related (fault type A or B) fail report or MIL request. Emissions related DTCs are cleared from memory when this counter reaches 40.
Warm Ups without Non Emission Malfunctions	Engine Idling	Counts	This Parameter displays the number of OBD defined warm up cycles since the last non emissions related (fault type C) fail report. Non emissions related DTCs are cleared from memory when this counter reaches 40.
Wide Open Throttle	Engine Idling	Yes/NO	This parameter displays the throttle status commanded by the control module. The scan tool will display YES if the vehicle throttle is commanded to 100 percent.

Engine Control Module (ECM) Scan Tool Output Controls

Output Control	Description
Compression Test	This device control is used to set up the internal combustion engine for a compression test. The fuel pump, fuel injectors, and spark are all disabled. The throttle is opened to a Wide Open Throttle (WOT) position. For conventional engine vehicles, the extended crank feature is not active, and for strong hybrid vehicles, the Hybrid Powertrain Control Module is configured to crank at the speed specified in the device control command. Engine cranking is completely controlled by the technician either through the ignition key or through a remote starter switch as applicable. The device control limits and rejects will apply normally upon entry to the device control. Once the device control is active, the limits will be monitored (to prevent unwanted starter operation, for example), but in the case of a limit exceeded or a tester disconnect, device control of the fuel and spark will not be released until the Power Mode switches to Accessory or OFF. This will prevent unexpected fuel and spark operation in the case of a device control abort. This function activates the cooling fan relay 1. The normal commanded state of the fan relay is NONE. The relay command status can also be monitored on the scan tool data parameter Cooling Fan Relay 1 Command. The control module allows cooling fan relay control when the following conditions are met: - The Ignition is ON or the engine is running. - A/C compressor operation is not requested. - The engine coolant temperature is less than 106°C (224°F)
Cooling Fan Relay 1	
Cooling Fan Relay 1,2 and 3	This function activates the cooling fan relay 1, 2 and 3. The normal commanded state of the fan relays is NONE. The relay command status can also be monitored on the scan tool data parameters Cooling Fan Relay 1 Command and Cooling Fan Relays 2 and 3 Command. The control module allows cooling fan relay control when the following conditions are met: - The Ignition is ON or the engine is running. - A/C compressor operation is not requested. - The engine coolant temperature is less than 106°C (224°F) This function activates the cooling fan relay 2. The normal commanded state of the fan relays is NONE. The relay command status can also be monitored on the scan tool data parameter 2 Command. The control module allows cooling fan relay control when the following conditions are met: - The Ignition is ON or the engine is running. - A/C compressor operation is not requested. - The engine coolant temperature is less than 106°C (224°F)
Cooling Fan 2	
Crankshaft Position Variation Learn	This device control is used to activate the crankshaft position variation learn algorithm which calculates the reference pulse correction factors for the misfire diagnostic.
Engine Controls Ignition Relay	This device control is used to override the state of the Powertrain Relay.
Engine Oil Life Reset	This device control contains the engine oil remaining life determined from a calculation based upon the effective engine revolutions and the distance driven since the last oil change. This device control may be used to reset the engine oil remaining life to 100 % after an oil change or to any other value when replacing a control module Note: The Misfire Current and Misfire History parameters may not increment when using this function. This function disables the selected fuel injector. The normal commanded state is None. The scan tool initiates the test when the following conditions are met:
Cylinder Power Balance	- The engine is operating and the engine idle is stable. - The vehicle speed is 0 km/h (0 mph). - There are no DTCs set for the vehicle speed sensor. If the fuel injector was disabled for 30 seconds, fuel injector control is not allowed again on the same fuel injector for 60 seconds. This function controls the idle speed override in 25 RPM, 100 RPM, and 500 RPM increments, from the base idle speed to 1,400 RPM. The scan tool initiates the test when the following conditions are met:
Engine Speed	- The transmission is in park or neutral. - The engine speed is less than 1,000 RPM. The engine speed will remain in the commanded state until cancelled by the scan tool.
EVAP Test	This device control is used to activate the evaporative emissions service bay test. Note: The EVAP Purge Solenoid Command parameter may not change states when using this output control.
EVAP Purge Solenoid Valve	This function controls the evaporative emission (EVAP) purge solenoid valve. The normal commanded state is NONE. The system will increase or decrease the amount of purge by changing the duty cycle of the purge valve in 10 percent increments within a range of 0–100 percent. The system remains in the commanded state until cancelled by the scan tool or the fuel tank pressure (FTP) sensor exceeds –24 mm Hg (–12 inch H20). Note: The EVAP Purge and Vent Solenoid Command parameters may not change states when using this output control.
EVAP Purge/Vent Solenoid Valve	This function activates both the EVAP purge solenoid valve and EVAP vent solenoid to seal the EVAP system. When

EVAP Purge/Seal	activated, the purge valve is commanded to 0 percent and the vent valve is commanded ON, Not-venting. The normal commanded state for both solenoids is None. Both of the solenoids remain in the commanded state until cancelled by the scan tool or the FTP sensor exceeds -24 mm Hg (-12 inch H2O). Note: The EVAP Vent Solenoid Command parameter may not change states when using this output control. This function controls the EVAP vent solenoid. The normal commanded state is NONE. When commanded ON, the vent valve switches to Not-venting. The system remains in the commanded state unless one of the following conditions occur:
EVAP Vent Solenoid Valve	- Cancelled by the scan tool - The EVAP canister purge solenoid is more than 0 percent, and the FTP sensor exceeds -24 mm Hg (-12 inch H2O).
Exhaust Camshaft Position Actuator Bank 1	This device control is used to override the state of the exhaust cam phase output for bank 1. The commanded camshaft position is expressed in terms of degrees of camshaft rotation (retard for exhaust camshaft) from the park position (a camshaft position of zero represents the park position).
Exhaust Camshaft Position Actuator Bank 2	This device control is used to override the state of the exhaust cam phase output for bank 2. The commanded camshaft position is expressed in terms of degrees of camshaft rotation (retard for exhaust camshaft) from the park position (a camshaft position of zero represents the park position).
Exhaust Camshaft Position Actuator Solenoid Valve Bank 1	This device control is used to override the state of the exhaust cam phase solenoid output for bank 1.
Exhaust Camshaft Position Actuator Solenoid Valve Bank 2	This device control is used to override the state of the exhaust cam phase solenoid output for bank 2.
Fuel Control Loop Status	This function controls the heated oxygen sensor (HO2S) loop status. The commanded states include NONE, OPEN, and CLOSED. The normal commanded state is NONE. The loop status changes as commanded, OPEN or CLOSED. The system remains in the commanded state until cancelled by the scan tool. This function enables the fuel injector in order to verify the correct fuel injector flow. The ECM will pulse the selected fuel injector when the following conditions are met:
Fuel Injector Balance (If Available)	- All instruction on the scan tool is complete. - A fuel injector is selected. - The ignition is ON with the engine OFF. The selected fuel injector can only be flowed/pulsed once per ignition cycle. This function controls the fuel pump. The normal commanded state is NONE. The scan tool initiates the test when the following conditions are met:
Fuel Pump Relay	- There are no vehicle speed sensor DTCs set. - The vehicle speed is 0 km/h (0 mph). When commanded ON/OFF, the engine control module (ECM) turns the fuel pump ON/OFF. If the engine is running and the fuel pump is commanded OFF, the engine will stall. The system remains in the commanded state for about 2 seconds or until cancelled by the scan tool or the ECM detects a vehicle speed.
Fuel Trim Enable	This function disables the control modules ability to learn new fuel trim parameters. The commanded states are NONE, ENABLED, DISABLED. The normal commanded state is NONE. The system remains in the commanded state until cancelled by the scan tool.
Fuel Trim Reset	This function is used to reset the learned fuel trim values to their initial values.
Generator L-Terminal	Commands the generator L terminal ON and OFF.
HO2S Heater Bank 1 Sensor 1	This device control is used to override the duty cycle of the oxygen sensor heaters. With the engine OFF, this device control is intended to be used as a discrete control for circuit diagnosis. With the engine OFF, none of the oxygen sensor heaters can be commanded ON for more than 3.0 seconds, after which the selected oxygen sensor heater must be disabled for a limited duration (typically 60 seconds) before it may be enabled again. With the engine running, this device control is used to operate the oxygen sensor heaters at the various duty cycles available to the engine controller.
HO2S Heater Bank 1 Sensor 2	This device control is used to override the duty cycle of the oxygen sensor heaters. With the engine OFF, this device control is intended to be used as a discrete control for circuit diagnosis. With the engine OFF, none of the oxygen sensor heaters can be commanded ON for more than 3.0 seconds, after which the selected oxygen sensor heater must be disabled for a limited duration (typically 60 seconds) before it may be enabled again. With the engine running, this device control is used to operate the oxygen sensor heaters at the various duty cycles available to the engine controller.
HO2S Heater Bank 2 Sensor 1	This device control is used to override the duty cycle of the oxygen sensor heaters. With the engine OFF, this device control is intended to be used as a discrete control for circuit diagnosis. With the engine OFF, none of the oxygen sensor heaters can be commanded ON for more than 3.0 seconds, after which the selected oxygen sensor heater must be disabled for a limited duration (typically 60 seconds) before it may be enabled again. With the engine running, this device control is used to operate the oxygen sensor heaters at the various duty cycles available to the engine controller.
HO2S Heater Bank 2 Sensor 2	This device control is used to override the duty cycle of the oxygen sensor heaters. With the engine OFF, this device control is intended to be used as a discrete control for circuit diagnosis. With the engine OFF, none of the oxygen sensor heaters can be commanded ON for more than 3.0 seconds, after which the selected oxygen sensor heater must be disabled for a limited duration (typically 60 seconds) before it may be enabled again. With the engine running, this device control is used to operate the oxygen sensor heaters at the various duty cycles available to the engine controller.
HO2S Heater Learn	This device control is used to trigger the reset of the learned resistances for the oxygen sensor heaters following a replacement in service. The learned resistances are reset to a calibration used to prevent overheating of the sensors until more accurate resistances may be learned following an extended engine OFF time (typically 12 or more hours). This function allows the throttle position and the idle speed to be relearned by the ECM, once the following conditions have been met:
Idle Learn	- The ignition is ON with the engine OFF. - The ECT is between 5-85°C (41-185°F). - No throttle actuator control (TAC) system DTCs are set.
Idle Ignition Timing	Disables and enables idle spark advance with the engine running.

Ignition Timing Retard	This device control is used to retard the spark angle from the software calculated spark angle. For example, if the software calculated spark angle was 15 degrees advanced and this device control requested a 3 degree retard, the commanded spark angle that would be delivered would be 12 degrees advanced.
Intake Camshaft Position Actuator Bank 1	This device control is used to override the state of the intake cam phase output for bank 1. The commanded camshaft position is expressed in terms of degrees of camshaft rotation (advance for intake camshafts) from the park position (a camshaft position of zero represents the park position).
Intake Camshaft Position Actuator Bank 2	This device control is used to override the state of the intake cam phase output for bank 2. The commanded camshaft position is expressed in terms of degrees of camshaft rotation (advance for intake camshafts) from the park position (a camshaft position of zero represents the park position)
Intake Camshaft Position Actuator Solenoid Valve Bank 1	This device control is used to override the state of the intake cam phase solenoid output for bank 1.
Intake Camshaft Position Actuator Solenoid Valve Bank 2	This device control is used to override the state of the intake cam phase solenoid output for bank 2.
Malfunction Indicator Lamp (MIL)	This function controls the malfunction indicator lamp (MIL). The normal commanded state is NONE. When commanded ON/OFF, the ECM turns the MIL ON/OFF. The system remains in the commanded state until cancelled by the scan tool.
Misfire Graphic	This function clears the misfire graphics from the scan tool.
Remote Vehicle Start Disable History Reset	This function clears the remote vehicle start (RVS) disable history. When RESET is selected the reason the control module did not allow RVS in the last 8 attempts is cleared.
Starter Relay (If Available)	Commands the starter relay ON and OFF.
Throttle Position	This device control is used to override the commanded throttle position.
Throttle Sweep	This function moves the Throttle plate slowly from a closed position to wide open position, aiding diagnosis of TAC motor.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Lubrication Specifications

	Specification	
	Metric	English
Application		
Manual Transmission Fluid	3.0 liters	3.17 quarts
When filled, fluid level should be at the bottom of the fluid check plug hole.		

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
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	Application	Specification	
		Metric	English
Manual Transmission Fluid		3.0 liters	3.17 quarts
	When filled, fluid level should be at the bottom of the fluid check plug hole.		

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Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Table 1: [Parking Assist Control Module Scan Tool Data Parameters](#)
Table 2: [Parking Assist Control Module Scan Tool Output Controls](#)

Parking Assist Control Module Scan Tool Data Parameters			
Parameter	System State	Expected Value	Description
Operating Conditions: Ignition ON/Engine OFF/Parking Assist ON			
Battery Voltage	—	11–14 V	The scan tool displays V. This is the current battery voltage.
Calculated Transmission Range	Transmission in reverse	Reverse	The scan tool displays Park, Reverse, Neutral, Drive or Unknown depending on the state of the commanded gear.
Obstacle Detected	—	No	The scan tool displays Yes or No. Yes is displayed if there is an object within the measuring range of the object sensors.
Park Assist Chime	—	Varies	The scan tool displays On or Off. On is displayed if there is an object within the measuring range of the object sensors.
Park Assist Disable History 1	—	Varies	The scan tool displays None, Manual Disable, Park Brake Applied, Trailer or Other Attached Object, Excessive Speed in Reverse, No or Invalid Sensor Signals, Sensor Disturbance, Sensors Dirty, Sound Signal Return Time Not Plausible. This is the state of the park assist disable history.
Park Assist Disable History 2	—	Varies	The scan tool displays None, Manual Disable, Park Brake Applied, Trailer or Other Attached Object, Excessive Speed in Reverse, No or Invalid Sensor Signals, Sensor Disturbance, Sensors Dirty, Sound Signal Return Time Not Plausible. This is the state of the park assist disable history.
Park Assist Disable History 3	—	Varies	The scan tool displays None, Manual Disable, Park Brake Applied, Trailer or Other Attached Object, Excessive Speed in Reverse, No or Invalid Sensor Signals, Sensor Disturbance, Sensors Dirty, Sound Signal Return Time Not Plausible. This is the state of the park assist disable history.
Park Assist Disable History 4	—	Varies	The scan tool displays None, Manual Disable, Park Brake Applied, Trailer or Other Attached Object, Excessive Speed in Reverse, No or Invalid Sensor Signals, Sensor Disturbance, Sensors Dirty, Sound Signal Return Time Not Plausible. This is the state of the park assist disable history.
Park Assist Disable History 5	—	Varies	The scan tool displays None, Manual Disable, Park Brake Applied, Trailer or Other Attached Object, Excessive Speed in Reverse, No or Invalid Sensor Signals, Sensor Disturbance, Sensors Dirty, Sound Signal Return Time Not Plausible. This is the state of the park assist disable history.
Park Assist Disable History 6	—	Varies	The scan tool displays None, Manual Disable, Park Brake Applied, Trailer or Other Attached Object, Excessive Speed in Reverse, No or Invalid Sensor Signals, Sensor Disturbance, Sensors Dirty, Sound Signal Return Time Not Plausible. This is the state of the park assist disable history.
Park Assist Disable History 7	—	Varies	The scan tool displays None, Manual Disable, Park Brake Applied, Trailer or Other Attached Object, Excessive Speed in Reverse, No or Invalid Sensor Signals, Sensor Disturbance, Sensors Dirty, Sound Signal Return Time Not Plausible. This is the state of the park assist disable history.
Park Assist Sensor	—	On	The scan tool displays On or Off.
Park Assist Sensor Reference Voltage	—	7.3–9.1 V	The scan tool displays V. This is the amount of voltage being sent to the object sensors.
Park Assist System Status	—	Enable	The scan tool displays Disable, Enable, Inhibited or Failed. This is the state of the parking assist system.
Power Mode	—	Run	The scan tool displays Off, Accessory, Run or Crank. This is the state of the ignition switch.
Rear Red LED	Parking assist Active, No object behind the vehicle	Off	The scan tool displays On and Off.
	Parking assist Active, Object between 0.3–0.6 m (1–1.9 ft) behind the vehicle	On	
	Parking assist Active, No object behind	Off	

	the vehicle		
Rear Yellow 1 LED	Parking assist Active, Object between 1–2.5 m (3.3–8.2 ft) behind the vehicle	On	The scan tool displays On and Off.
	Parking assist Active, No object behind the vehicle	Off	
Rear Yellow 2 LED	Parking assist Active, Object between 0.6–1 m (1.9–3.3 ft) behind the vehicle	On	The scan tool displays On and Off.

Parking Assist Control Module Scan Tool Output Controls

Output Control	Description
Rear Red LED	The parking assist control module illuminates the red LED of the parking assist indicator when commanded from the scan tool.
Rear Yellow 1 LED	The parking assist control module illuminates the 1st yellow LED of the parking assist indicator when commanded from the scan tool.
Rear Yellow 2 LED	The parking assist control module illuminates the 2nd yellow LED of the parking assist indicator when commanded from the scan tool.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Power Steering Pump Specifications

High Flow		Pressure Relief	
LPM	GPM	kPa	PSI
5.75/7.25	1.52/1.92	9600/10400	1392/1508

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Propeller Shaft Runout Specifications								
Application	Front Runout		Center Runout		Rear Runout		Stub Shaft Runout	
	Metric	English	Metric	English	Metric	English	Metric	English
1 Piece Propeller Shaft – Guideline	1.17 mm	0.046 in	1.27 mm	0.050 in	1.40 mm	0.055 in	—	—
1 Piece Aluminum Graphite Propeller Shaft – Guideline	1.17 mm	0.046 in	—	—	1.40 mm	0.055 in	—	—
2 Piece System Front Propeller Shaft with Slip Yoke – Guideline	0.76 mm	0.030 in	0.76 mm	0.030 in	0.71 mm	0.028 in	—	—
2 Piece System Front Propeller Shaft with Stub Shaft – Guideline	0.76 mm	0.030 in	0.76 mm	0.030 in	—	—	0.13 mm	0.005 in
2 Piece System Rear Propeller Shaft with Slip Yoke – Guideline	0.71 mm	0.028 in	0.76 mm	0.030 in	0.89 mm	0.035 in	—	—
2 Piece System Rear Propeller Shaft with Stub Shaft – Guideline	—	—	0.76 mm	0.030 in	0.89 mm	0.035 in	0.13 mm	0.005 in

These guidelines apply only to propeller systems with 2 or 3 U-joints.

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Range Reference Table

					Drive					
Range	Park	Reverse	Neutral	1st Braking	1st	2nd	3rd	4th	5th	6th
1–2–3 –4 Clutch	—	—	—	Applied	Applied	Applied	Applied	Applied	—	—
3–5 Reverse Clutch	—	Applied	—	—	—	—	Applied	—	Applied	—
4–5–6 Clutch	—	—	—	—	—	—	—	Applied	Applied	Applied
2–6 Clutch	—	—	—	—	—	Applied	—	—	—	Applied
Low and Reverse Clutch	Applied*	Applied	Applied*	Applied	—	—	—	—	—	—
Low Clutch Sprag	—	—	—	Holding	Holding	—	—	—	—	—

* = Applied with NO load

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Refrigerant System Capacities

Application	Specification	
	Metric	English
Abrupt Refrigerant Loss	60 ml ¹	2.0 oz ¹
PAG Oil		
Compressor Replacement		
Note: Compressor failure can occur if the oil removed during refrigerant recovery is not replaced. The service compressor is shipped with 40 ml ² (1.4 oz ²) of PAG oil.		
Condenser Replacement	30 ml ²	1.0 oz ²
Evaporator Replacement	90 ml ²	3.0 oz ²
Any Line Set (Hose/Tube or Tube Assembly) Replacement	30 ml ²	1.0 oz ²
Total System PAG Oil Capacity	110.0 ml	3.7 oz
R-134a		
Refrigerant Charge-Pickup	0.6 kg	1.32 lb
Refrigerant Charge-SUV	0.775 kg	1.71 lb

¹ Abrupt refrigerant loss due to large leak, hose rupture, collision, or pressure relief valve opening. Conditions that allow the refrigerant to seep or bleed off over time do not cause this oil loss. Upon replacement of a component that caused a large refrigerant loss, also add the required amount of oil for the particular component.

² If more than the specified amount of PAG oil was drained from a component, add the amount drained.

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Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Fastener Tightening Specifications			
	Application	Specification	
		Metric	English
	Radio Antenna Fastener	9 Y	80 lb in
	Radio Bracket Fastener	8 Y	71 lb in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Sealers and Lubricants

			GM Part Number	
			United States	Canada
Clutch Hydraulic Fluid		DOT 4 Hydraulic Fluid	12345347	992667

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Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Shift Solenoid Valve State and Gear Ratio

Gear	Shift SOL 1	Shift SOL 2	1-2-3-4 CL PC SOL 5 N.L.	2-6 CL PC SOL 4 N.L.	3-5 REV CL PC SOL 2 N.H.	LOW REV 4-5 -6 CL PC SOL 3 N.H.	6L45 6L50 Gear Ratio	6L80 6L90 Gear Ratio
Park	ON	ON	OFF	OFF	OFF	ON	—	—
Reverse	ON	OFF	OFF	OFF	ON	ON	3.200	3.064
Neutral	ON	ON	OFF	OFF	OFF	ON	—	—
1st Braking	ON	ON	ON	OFF	OFF	ON	4.065	4.027
1st	OFF	ON	ON	OFF	OFF	OFF	4.065	4.027
2nd	OFF	ON	ON	ON	OFF	OFF	2.371	2.364
3rd	OFF	ON	ON	OFF	ON	OFF	1.551	1.532
4th	OFF	ON	ON	OFF	OFF	ON	1.157	1.152
5th	OFF	ON	OFF	OFF	ON	ON	0.853	0.852
6th	OFF	ON	OFF	ON	OFF	ON	0.674	0.667

For shift solenoids 1 and 2, "ON" = Solenoid Energized (Pressurized) "OFF" = Solenoid De-energized (No Pressure).

For pressure control solenoids, "ON" = Pressurized, "OFF" = No Pressure

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Shim Size Specifications

Application	Specification	
	Metric	English
Counter Gear Rear Bearing Shim Measurement	0.06–0.110 mm	0.0024–0.0043 in
Mainshaft Bearing Shim Measurement	0.06–0.110 mm	0.0024–0.0043 in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Shim Size Specifications

Application	Specification	
	Metric	English
Counter Gear Rear Bearing Shim Measurement	0.06–0.110 mm	0.0024–0.0043 in
Mainshaft Bearing Shim Measurement	0.06–0.110 mm	0.0024–0.0043 in

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Spacer and Shim Specifications

Part Number	Specification		Color and Number of Stripes
	Metric	US English	
Refer to Electronic Parts Catalog	5.334 - 5.347 mm	.2100 -.2105 in	1 Pink
	5.359 - 5.372 mm	.2110 -.2115 in	1 Pink, 1 Black
	5.385 - 5.398 mm	.2120 -.2125 in	2 Pink
	5.410 - 5.423 mm	.2130 -.2135 in	2 Pink, 1 Black
	5.436 - 5.448 mm	.2140 -.2145 in	3 Pink
	5.461 - 5.474 mm	.2150 -.2155 in	3 Pink, 1 Black
	5.486 - 5.499 mm	.2160 -.2165 in	4 Pink
	5.512 - 5.525 mm	.2170 -.2175 in	4 Pink, 1 Black
	5.537 - 5.550 mm	.2180 -.2185 in	5 Pink
	5.563 - 5.575 mm	.2190-.2195 in	5 Pink, 1 Black
	5.585 - 5.601 mm	.2200-.2205 in	1 Orange
	5.613 - 5.626 mm	.2210-.2215 in	1 Orange, 1 Black
	5.639 - 5.652 mm	.2220 -.2225 in	2 Orange
	5.664 - 5.678 mm	.2230 -.2235 in	2 Orange, 1 Black
	5.690 - 5.702 mm	.2240 -.2245 in	3 Orange
	5.715 - 5.728 mm	.2250 -.2255 in	3 Orange, 1 Black
	5.740 - 5.753 mm	.2260 -.2265 in	4 Orange
	5.766 - 5.779 mm	.2270 -.2275 in	4 Orange, 1 Black
	5.791 - 5.804 mm	.2280 -.2285 in	5 Orange
	5.817 - 5.829 mm	.2290 -.2295 in	5 Orange, 1 Black
	5.842 - 5.854 mm	.2300 -.2305 in	1 Yellow
	5.867 - 5.880 mm	.2310 -.2315 in	1 Yellow, 1 Black
	5.893 - 5.906 mm	.2320 -.2325 in	2 Yellow
	5.918 - 5.931 mm	.2330 -.2335 in	2 Yellow, 1 Black
	5.944 - 5.956 mm	.2340 -.2345 in	3 Yellow
	5.969 - 5.982 mm	.2350 -.2355 in	3 Yellow, 1 Black
	5.994 - 6.007 mm	.2360 -.2365 in	4 Yellow
	6.020 - 6.033 mm	.2370 -.2375 in	4 Yellow, 1 Black
	6.045 - 6.058 mm	.2380 -.2385 in	5 Yellow
	6.071 - 6.083 mm	.2390 -.2395 in	5 Yellow, 1 Black
	6.096 - 6.109 mm	.2400 -.2405 in	1 White
	6.121 - 6.134 mm	.2410 -.2415 in	1 White, 1 Black
	6.147 - 6.160 mm	.2420 -.2425 in	2 White
	6.172 - 6.185 mm	.2430 -.2435 in	2 White, 1 Black
	6.197 - 6.210 mm	.2440 -.2445 in	3 White
	6.223 - 6.236 mm	.2450 -.2455 in	3 White, 1 Black
	6.249 - 6.261 mm	.2460 -.2465 in	4 White
	6.274 - 6.287 mm	.2470 -.2475 in	4 White, 1 Black
	6.299 - 6.312 mm	.2480 -.2485 in	5 White

6.325 - 6.338 mm	.2490 -.2495 in	5 White, 1 Black
6.350 - 6.363 mm	.2500 -.2505 in	1 Green
6.374 - 6.388 mm	.2510 -.2515 in	1 Green, 1 Black
6.401 - 6.414 mm	.2520 -.2525 in	2 Green
6.426 - 6.439 mm	.2530 -.2535 in	2 Green, 1 Black
6.452 - 6.464 mm	.2540 -.2545 in	3 Green
6.477 - 6.490 mm	.2550 -.2555 in	3 Green, 1 Black
6.502 - 6.515 mm	.2560 -.2565 in	4 Green
6.528 - 6.541 mm	.2570 -.2575 in	4 Green, 1 Black
6.553 - 6.566 mm	.2580 -.2585 in	5 Green
6.579 - 6.591 mm	.2590 -.2595 in	5 Green, 1 Black
6.604 - 6.617 mm	.2600-.2605 in	1 Light Blue
6.639 - 6.642 mm	.2610-.2615 in	1 Light Blue, 1 Black
6.655 - 6.668 mm	.2620-.2625 in	2 Light Blue
6.680 - 6.693 mm	.2630-.2635 in	2 Light Blue, 1 Black
6.706 - 6.718 mm	.2640-.2645 in	3 Light Blue
6.731 - 6.744 mm	.2650 -.2655 in	3 Light Blue, 1 Black
6.756 - 6.769 mm	.2660 -.2665 in	4 Light Blue
6.782 - 6.795 mm	.2670 -.2675 in	4 Light Blue, 1 Black
6.807 - 6.820 mm	.2680 -.2685 in	5 Light Blue
6.833 - 6.845 mm	.2690 -.2695 in	5 Light Blue, 1 Black
6.858 - 6.871 mm	.2700 -.2705 in	1 Black
6.883 - 6.896 mm	.2710 -.2715 in	3 Black
6.909 - 6.922 mm	.2720 -.2725 in	2 Black

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Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Important: Use the symptom tables only if the following conditions are met:

- Refer to Diagnostic Starting Point - Vehicle.
- There are no DTCs set.
- The control modules can communicate via the serial data link.
- Review the system operation in order to familiarize yourself with the system functions. Refer to Transmission General Description and Transmission Component and System Description.

[Visual/Physical Inspection](#)

Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.

[Intermittent](#)

Faulty electrical connections or wiring may be the cause of intermittent conditions. Refer to Testing for Intermittent Conditions and Poor Connections.

[Symptom List](#)

Refer to a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- Fluid Diagnosis
 - Transmission Fluid Level and Condition Check
 - Fluid Pressure High or Low
 - Automatic Transmission Fluid Leaks
 - Fluid Leak Diagnosis
- Noise and Vibration Diagnosis
 - Whine/Growl Noise That Changes with Vehicle Speed
 - Noise in First or Reverse Gear
 - Noise in First, Second, Third, Fourth, Fifth, or Reverse Gear
 - Noise in First, Second, Sixth, or Reverse Gear
 - Noise in Second or Sixth Gear
 - Noise During 3-4 or 4-3 Shifts
 - Noise in Fourth, Fifth, or Sixth Gear
 - Vibration
 - Flex Plate/Torque Converter Vibration Test
 - Noise and Vibration Analysis
- Range Performance Diagnosis
 - No Park or Drive
 - No Drive in All Ranges
 - No Reverse Gear
- Shift Quality Feel Diagnosis
 - Harsh Garage Shift
 - Harsh, Soft, Delayed or Slipping First or Reverse Gear
 - Harsh, Soft, Delayed or Slipping 1-2-3-4 Shift
 - Harsh, Soft, Delayed or Slipping 4-5-6 Shift
 - Harsh, Soft, Delayed or Slipping Third, Fifth, or Reverse Gear
 - Harsh, Soft, Delayed or Slipping Second or Sixth Gear
- Shift Pattern
 - No First Gear
 - No First and Reverse Gears
 - No First, Second, Third, and Fourth Gear
 - No Second and Sixth Gear
 - No Fourth, Fifth, and Sixth Gear
 - No Third, Fifth, and Reverse Gear
- Torque Converter Diagnosis
 - Torque Converter Diagnosis
 - No Torque Converter Clutch Apply
 - No Torque Converter Clutch Release
- Symptom Not Found or No Symptom Detected
 - Transmission Fluid Level and Condition Check
 - Road Test
 - Line Pressure Check

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Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Note:

- Perform the Diagnostic System Check - Vehicle before using the symptom tables, in order to verify the following conditions are true:
 - There are no diagnostic trouble codes (DTCs) set.
 - The control modules can communicate via the serial data link.
- Review the system operation in order to familiarize yourself with the system functions. Refer to Transfer Case Description and Operation.

[Visual/Physical Inspection](#)

- Inspect for aftermarket devices which could affect the operation of the automatic transfer case system. Refer to Checking Aftermarket Accessories.
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.
- Inspect the automatic transfer case for the proper fluid level.

[Intermittent](#)

Faulty electrical connections or wiring may be the cause of intermittent conditions. Refer to Testing for Intermittent Conditions and Poor Connections.

[Symptom List](#)

Refer to a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- Transfer Case Popping Noise
- Transfer Case Banging Noise
- Transfer Case Whine or Rumble Noise
- Transfer Case Growl or Grinding Noise
- Transfer Case Clunk in 2HI Only
- Transfer Case Clunk in 4HI
- Transfer Case Clunk in 4LO
- Transfer Case Will Not Shift
- Transfer Case Jumps Out of Gear
- Transfer Case Leak Diagnosis

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Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Temperature Versus Resistance – Engine Coolant Temperature Sensor		
Temperature	Resistance Minimum	Resistance Maximum
°C/°F	Ohm	Ohm
Engine Coolant Temperature (ECT)		
-40/-40	95953	105777
-30/-22	50264	54924
-20/-4	27448	29736
-10/14	15540	16700
0/32	9097	9701
10/50	5493	5823
20/68	3418	3604
25/77	2725	2865
30/86	2185	2295
40/104	1430	1500
50/122	958	1002
60/140	656	686
70/158	459	479
80/176	327	341
90/194	237	247
100/212	174	182
110/230	130	136
120/248	98	104
130/266	75	80
140/284	59	62
150/302	46	49

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Temperature Versus Resistance – Engine Coolant Temperature Sensor		
Temperature	Resistance Minimum	Resistance Maximum
°C/°F	Ohm	Ohm
Engine Coolant Temperature (ECT)		
-40/-40	95953	105777
-30/-22	50264	54924
-20/-4	27448	29736
-10/14	15540	16700
0/32	9097	9701
10/50	5493	5823
20/68	3418	3604
25/77	2725	2865
30/86	2185	2295
40/104	1430	1500
50/122	958	1002
60/140	656	686
70/158	459	479
80/176	327	341
90/194	237	247
100/212	174	182
110/230	130	136
120/248	98	104
130/266	75	80
140/284	59	62
150/302	46	49

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Temperature Versus Resistance		
°C	°F	OHMS
Temperature vs Resistance Values (Approximate)		
140	284	71
120	248	109
100	212	182
80	176	323
60	140	596
40	104	1175
25	77	2057
20	68	2500
0	32	5896
63	145	500
-10	14	9397
-20	-4	15462
47	116	900
39	102	1200
33	91	1500
-30	-22	26114
-40	-40	93000

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Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Temperature Versus Resistance		
°C	°F	OHMS
Temperature vs Resistance Values (Approximate)		
140	284	71
120	248	109
100	212	182
80	176	323
60	140	596
40	104	1175
25	77	2057
20	68	2500
0	32	5896
63	145	500
-10	14	9397
-20	-4	15462
47	116	900
39	102	1200
33	91	1500
-30	-22	26114
-40	-40	93000

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Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Temperature Versus Resistance - Engine Coolant Temperature Sensor		
Temperature	Resistance Minimum	Resistance Maximum
C°/F°	Ohms	Ohms
Engine Coolant Temperature (ECT)		
-40/-40	40,490	50,136
-20/-4	14,096	16,827
-10/14	8,642	10,152
0/32	5,466	6,326
20/68	2,351	2,649
25/77	1,941	2,173
40/104	1,118	1,231
60/140	573	618
80/176	313	332
100/212	182	191
120/248	109	116
140/284	068	074

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Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Temperature Versus Resistance - Engine Coolant Temperature Sensor		
Temperature	Resistance Minimum	Resistance Maximum
C°/F°	Ohms	Ohms
Engine Coolant Temperature (ECT)		
-40/-40	40,490	50,136
-20/-4	14,096	16,827
-10/14	8,642	10,152
0/32	5,466	6,326
20/68	2,351	2,649
25/77	1,941	2,173
40/104	1,118	1,231
60/140	573	618
80/176	313	332
100/212	182	191
120/248	109	116
140/284	068	074

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Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Temperature Versus Resistance - Intake Air Temperature 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

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Temperature Versus Resistance - Intake Air Temperature Sensor

Temperature	Resistance Minimum	Resistance Maximum
C°/F°	Ohms	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

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Tire and Wheel Runout Specifications			
Application	Specification		
	Metric	English	
Tire and Wheel Assembly— Lateral and Radial			
• Off-Vehicle	1.27 mm	0.050 in	
• On-Vehicle	1.52 mm	0.060 in	
Wheel, Aluminum			
• Lateral	0.762 mm	0.030 in	
• Radial	0.762 mm	0.030 in	
Wheel, Steel			
• Lateral	1.143 mm	0.045 in	
• Radial	1.015 mm	0.040 in	
Wheel Hub/Axle Flange— Guideline	0.132 mm	0.0052 in	
Wheel Stud— Guideline	0.25 mm	0.010 in	

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2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Table 1: [Trailer Interface Control Module Scan Tool Data Parameters](#)

Table 2: [Trailer Interface Control Module Scan Tool Output Controls](#)

Trailer Interface Control Module Scan Tool Data Parameters			
Parameter	System State	Expected Value	Description
Operating Conditions: Ignition ON			
Battery Voltage	—	Varies 12–14 V	The scan tool displays volts. This is the voltage of the trailer lighting converter.
Brake Pedal Switch Status	—	Inactive	The scan tool displays Active when the brake pedal is pressed. The scan tool displays Inactive when the brake pedal is released.
Rear Multifunction Carrier Connection Detected	—	No	The scan tool displays Yes if a multifunction carrier is connected to the vehicle.
Rear Multifunction Carrier Detection	—	Disabled	The scan tool displays Enabled if a multifunction carrier is connected to the vehicle.
Run/Crank Terminal Status	—	Inactive	The scan tool displays Active when the engine runs/cranks.
Trailer Connection Detected	—	No	The scan tool displays Yes if a trailer is connected to the vehicle.
Trailer Detection	—	Disabled	The scan tool displays Enabled if a trailer is connected to the vehicle.

Trailer Interface Control Module Scan Tool Output Controls	
Output Control	Description
Left Trailer Tail Lamp	Commands the left trailer tail lamp ON and OFF
Left Trailer Turn Signal Lamp	Commands the left trailer turn signal lamp ON and OFF
Left Auxiliary Tail and Brake Lamp	Commands the left auxiliary tail and brake lamp ON and OFF
Left Rear Auxiliary Turn Signal Lamp	Commands the left rear auxiliary turn signal lamp ON and OFF
Left Tail Lamp	Commands the left tail lamp ON and OFF
Right Trailer Tail Lamp	Commands the right trailer tail lamp ON and OFF
Right Trailer Turn Signal Lamp	Commands the right trailer turn signal lamp ON and OFF
Right Auxiliary Tail and Brake Lamp	Commands the right auxiliary tail and brake lamp ON and OFF
Right Rear Auxiliary Turn Signal Lamp	Commands the right rear auxiliary turn signal lamp ON and OFF
Right Tail Lamp	Commands the right tail lamp ON and OFF
Trailer Brake Lamps	Commands the trailer brake lamps ON and OFF
Trailer Backup Lamps	Commands the trailer backup lamps ON and OFF
Trailer Fog Lamp(s)	Commands the trailer fog lamp(s) ON and OFF

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Table 1: [Trailer Interface Control Module Scan Tool Data Parameters](#)
Table 2: [Trailer Interface Control Module Scan Tool Output Controls](#)

Trailer Interface Control Module Scan Tool Data Parameters

Parameter	System State	Expected Value	Description
Operating Conditions: Ignition ON			
Battery Voltage	—	Varies 12–14 V	The scan tool displays volts. This is the voltage of the trailer lighting converter.
Brake Pedal Switch Status	—	Inactive	The scan tool displays Active when the brake pedal is pressed. The scan tool displays Inactive when the brake pedal is released.
Rear Multifunction Carrier Connection Detected	—	No	The scan tool displays Yes if a multifunction carrier is connected to the vehicle.
Rear Multifunction Carrier Detection	—	Disabled	The scan tool displays Enabled if a multifunction carrier is connected to the vehicle.
Run/Crank Terminal Status	—	Inactive	The scan tool displays Active when the engine runs/cranks.
Trailer Connection Detected	—	No	The scan tool displays Yes if a trailer is connected to the vehicle.
Trailer Detection	—	Disabled	The scan tool displays Enabled if a trailer is connected to the vehicle.

Trailer Interface Control Module Scan Tool Output Controls

Output Control	Description
Left Trailer Tail Lamp	Commands the left trailer tail lamp ON and OFF
Left Trailer Turn Signal Lamp	Commands the left trailer turn signal lamp ON and OFF
Left Auxiliary Tail and Brake Lamp	Commands the left auxiliary tail and brake lamp ON and OFF
Left Rear Auxiliary Turn Signal Lamp	Commands the left rear auxiliary turn signal lamp ON and OFF
Left Tail Lamp	Commands the left tail lamp ON and OFF
Right Trailer Tail Lamp	Commands the right trailer tail lamp ON and OFF
Right Trailer Turn Signal Lamp	Commands the right trailer turn signal lamp ON and OFF
Right Auxiliary Tail and Brake Lamp	Commands the right auxiliary tail and brake lamp ON and OFF
Right Rear Auxiliary Turn Signal Lamp	Commands the right rear auxiliary turn signal lamp ON and OFF
Right Tail Lamp	Commands the right tail lamp ON and OFF
Trailer Brake Lamps	Commands the trailer brake lamps ON and OFF
Trailer Backup Lamps	Commands the trailer backup lamps ON and OFF
Trailer Fog Lamp(s)	Commands the trailer fog lamp(s) ON and OFF

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Fuel Delivery: | Fuel:

Table 1: [Scan Tool Data Parameters](#)
Table 2: [Scan Tool Output Controls](#)

The Transmission Control Module Scan Tool Data List contains all transfer case related parameters that are available on the scan tool. The list is arranged in alphabetical order. A given parameter may appear in any one of the data lists, and in some cases may appear more than once, or in more than one data list in order to group certain related parameters together.

The values below represent a typical display recorded from a properly functioning system.

Only the parameters listed below are used/referenced in this manual for diagnosis. If a scan tool displays other parameters, those values are not recommended by General Motors for use in diagnosis.

If all values are within the expected value described below, refer to Symptoms - Transfer Case for diagnosis.

The scan tool values from a properly functioning transfer case may be used for comparison with the transfer case you are diagnosing. The values below represent a typical display recorded from a properly functioning system.

Scan Tool Data Parameters			
Parameter	System State	Expected Value	Description
Operating Conditions: Ignition ON, engine OFF, Park or Neutral and transfer case in 2WD, unless otherwise noted.			
2WD High Range Indicator Command	ON or OFF	ON	This parameter displays ON when the transfer case shift control module commands the 2WD High indicator light ON.
2WD/4WD Synchronizer Clutch Command	0 to 100%	0%	This parameter displays the pulse width modulated voltage signal being supplied by the transfer case shift control module to the 2WD/4WD synchronizer clutch on the low reference circuit. This parameter will display 0% after a range shift.
2WD/4WD Synchronizer Clutch Current	0.00 to 5.00 A	0.00 A	This parameter displays the current drawn by the 2WD/4WD synchronizer clutch from the transfer case shift control module. This parameter will display 0.00 A after shifting ranges.
2WD/4WD Synchronizer Clutch High Control Circuit High Voltage Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the 2WD/4WD synchronizer clutch control circuit. The 2WD/4WD synchronizer clutch control circuit is made up of the transfer case position switch channel 2 encoder signal circuit and the low reference circuit. A short to battery on the 2WD/4WD synchronizer clutch high control circuit will cause this parameter to display Malfunction. When Malfunction is set on the 2WD/4WD Synchronizer Clutch High Control Circuit High Voltage Test Status parameter it also sets on the 2WD/4WD Synchronizer Clutch Low Control Circuit High Voltage Test Status parameter.
2WD/4WD Synchronizer Clutch High Control Circuit Low Voltage Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the 2WD/4WD synchronizer clutch control circuit. The 2WD/4WD synchronizer clutch control circuit is made up of the transfer case position switch channel 2 encoder signal circuit and the low reference circuit. A short to ground on the 2WD/4WD synchronizer clutch high control circuit will cause this parameter to display Malfunction. When Malfunction is set on the 2WD/4WD Synchronizer Clutch High Control Circuit Low Voltage Test Status parameter it also sets on the 2WD/4WD Synchronizer Clutch Low Control Circuit Low Voltage Test Status parameter.
2WD/4WD Synchronizer Clutch High Control Circuit Open Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the 2WD/4WD synchronizer clutch control circuit. The 2WD/4WD synchronizer clutch control circuit is made up of the transfer case position switch channel 2 encoder signal circuit and the low reference circuit. An open/high resistance condition on the 2WD/4WD synchronizer clutch high control circuit will cause this parameter to display Malfunction. When Malfunction is set on the 2WD/4WD Synchronizer Clutch High Control Circuit Open Test Status parameter it also sets on the 2WD/4WD Synchronizer Clutch Low Control Circuit Open Test Status parameter.
2WD/4WD Synchronizer Clutch Low Control Circuit High Voltage Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the 2WD/4WD synchronizer clutch control circuit. The 2WD/4WD synchronizer clutch control circuit is made up of the transfer case position switch channel 2 encoder signal circuit and the low reference circuit. A short to battery on the 2WD/4WD synchronizer clutch low control circuit will cause this parameter to display Malfunction. When Malfunction is set on the 2WD/4WD Synchronizer

2WD/4WD Synchronizer Clutch Low Control Circuit Low Voltage Test Status	Not Run, OK or Malfunction	OK	Clutch Low Control Circuit High Voltage Test Status parameter it also sets on the 2WD/4WD Synchronizer Clutch High Control Circuit High Voltage Test Status parameter. This parameter monitors the status of the 2WD/4WD synchronizer clutch control circuit. The 2WD/4WD synchronizer clutch control circuit is made up of the transfer case position switch channel 2 encoder signal circuit and the low reference circuit. A short to ground on the 2WD/4WD synchronizer clutch low control circuit will cause this parameter to display Malfunction. When Malfunction is set on the 2WD/4WD Synchronizer Clutch Low Control Circuit Low Voltage Test Status parameter it also sets on the 2WD/4WD Synchronizer Clutch High Control Circuit Low Voltage Test Status parameter. This parameter monitors the status of the 2WD/4WD synchronizer clutch control circuit. The 2WD/4WD synchronizer clutch control circuit is made up of the transfer case position switch channel 2 encoder signal circuit and the low reference circuit. An open/high resistance condition on the 2WD/4WD synchronizer clutch low control circuit will cause this parameter to display Malfunction. When Malfunction is set on the 2WD/4WD Synchronizer Clutch Low Control Circuit Open Test Status parameter it also sets on the 2WD/4WD Synchronizer Clutch High Control Circuit Open Test Status parameter.
2WD/4WD Synchronizer Clutch Low Control Circuit Open Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the 2WD/4WD synchronizer clutch control circuit. The 2WD/4WD synchronizer clutch control circuit is made up of the transfer case position switch channel 2 encoder signal circuit and the low reference circuit. An open/high resistance condition on the 2WD/4WD synchronizer clutch low control circuit will cause this parameter to display Malfunction. When Malfunction is set on the 2WD/4WD Synchronizer Clutch Low Control Circuit Open Test Status parameter it also sets on the 2WD/4WD Synchronizer Clutch High Control Circuit Open Test Status parameter.
2WD/4WD Synchronizer Clutch Low Control Command	ON or OFF	OFF	This parameter displays the status of the 2WD/4WD synchronizer clutch high control circuit. The 2WD/4WD synchronizer clutch control circuit is made up of the transfer case position switch channel 2 encoder signal circuit and the low reference circuit. This parameter displays OFF after a Range Shift.
4WD High Range Indicator Command	ON or OFF	OFF	This parameter displays ON when the transfer case shift control module commands the 4WD High indicator light ON.
4WD Low Range Indicator Command	ON or OFF	OFF	This parameter displays ON when the transfer case shift control module commands the 4WD Low indicator light ON.
Control Module Voltage Signal	0.0 to 25.5 V	Battery Voltage	This parameter displays the voltage measured by the transfer case shift control module at the battery positive voltage circuit.
Display Dimming	0 to 100%	Varies	This parameter displays the current being supplied by the transfer case shift control module to the transfer case 2WD/4WD indicator switch.
Front Axle Engagement Actuator Command	Engaged or Disengaged	Disengaged	This parameter displays either Engaged or Disengaged. Engaged when the body control module is commanding Auto4WD, 4WD, or 4WD Low ranges, and Disengaged when the body control module is commanding Neutral, or 2WD ranges.
Front Axle Engagement Actuator Control Circuit High Voltage Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the front axle engagement actuator control circuit. A short to battery on the front axle engagement actuator control circuit will cause this parameter to display Malfunction.
Front Axle Engagement Actuator Control Circuit Low Voltage Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the front axle engagement actuator control circuit. A short to ground on the front axle engagement actuator control circuit will cause this parameter to display Malfunction.
Front Axle Engagement Actuator Control Circuit Open Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the front axle engagement actuator control circuit. An open/high resistance condition on the front axle engagement actuator control circuit will cause this parameter to display Malfunction.
Front Axle Feedback Switch	Engaged or Disengaged	Disengaged	This parameter displays the actual status of the front axle.
Ignition 1 Signal	ON or OFF	ON	This parameter displays the status of the run/crank ignition 1 voltage circuit to the transfer case shift control module. The scan tool displays OFF at ignition OFF.
Ignition Accessory Signal	ON or OFF	ON	This parameter displays the status of the ignition accessory signal circuit to the transfer case shift control module. The scan tool displays OFF when interior lights turn OFF.
Non-Driven Wheel Speed	Varies	km/h/MPH	This parameter displays the non-drive wheel speed in kilometers or miles per hour.

Range Actuator Command	-100 to +100%	0%	This parameter displays the pulse width modulated voltage signal being supplied by the transfer case shift control module to the transfer case encoder motor on circuit A or circuit B. The scan tool displays negative values when turning counterclockwise or positive values when turning clockwise. This parameter will display 0% after a range shift.
Range Actuator Control Circuit A Command	OFF, High or Low	OFF	This parameter displays the direction of the voltage flow of the range actuator control circuit. The scan tool displays Low-High-Off when turning counterclockwise or High-Low-Off when turning clockwise while shifting. This parameter will display OFF after shifting ranges. Opposite of Range Actuator Control Circuit B.
Range Actuator Control Circuit B Command	OFF, High or Low	OFF	This parameter displays the direction of the voltage flow of the range actuator control circuit. The scan tool displays High-Low-Off when turning clockwise or Low-High-Off when turning counterclockwise while shifting ranges. This parameter will display OFF after shifting ranges. Opposite of Range Actuator Control Circuit A.
Range Actuator Control Circuit High Voltage Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the range actuator control circuit. The range actuator control circuit is made up of the range actuator control circuit A and the range actuator control circuit B. A short to battery on the range actuator control circuit A or the range actuator control circuit B will cause this parameter to display Malfunction.
Range Actuator Control Circuit Low Voltage Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the range actuator control circuit. The range actuator control circuit is made up of the range actuator control circuit A and the range actuator control circuit B. A short to ground on the range actuator control circuit A or the range actuator control circuit B will cause this parameter to display Malfunction.
Range Actuator Control Circuit Open Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the range actuator control circuit. The range actuator control circuit is made up of the range actuator control circuit A and the range actuator control circuit B. An open on the range actuator control circuit A or the range actuator control circuit B will cause this parameter to display Malfunction.
Range Actuator Control Circuit Shorted Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the range actuator control circuit. The range actuator control circuit is made up of the range actuator control circuit A and the range actuator control circuit B. A short to ground, short to battery or short together on the range actuator control circuit A and/or the range actuator control circuit B will cause this parameter to display Malfunction.
Range Actuator Current	-15.0 to +36.0 A	0.0 A	This parameter displays the current drawn by the range actuator from the transfer case shift control module on either the range actuator control circuit A or the range actuator control circuit B. Typical values display 0.0 to 12.0 A. This parameter will display 0.0 A after shifting ranges.
Range Actuator Direction Command	Stationary, Clockwise or Counterclockwise	Stationary	This parameter displays what direction the transfer case shift control module is commanding the range actuator to turn. This parameter will display Stationary after a range change.
Range Actuator Position	2WD, 4WD High-2WD 4WD High/Locked, 4WD High-Neutral, Neutral, Neutral-4WD Low, or 4WD Low	2WD	This parameter displays the actual position of the transfer case according to the range actuator position sensor.
Range Actuator Position Sensor	0 to 360°	99°	This parameter displays the position of the range actuator position sensor in degrees. Typical scan tool displays: • 2WD = 85-115° • 4WD High/Locked = 5-35° • 4WD Low = 315-345° • Neutral = 190-200°
Range Actuator Position Sensor	190 to 210 Hz	199 Hz	This parameter displays the frequency of the current being supplied to the range actuator position sensor.
Range Actuator Position Sensor	0 to 100%	24% (±5%)	This parameter displays the position of the range actuator position sensor in percent. Typical scan tool values: • 2WD = 24%

			4WD High = 5% 4WD Low = 95% - Neutral = 5%
Range Actuator Position Sensor Supply Voltage	4.8 to 5.2 V	5.0 V	This parameter displays the voltage being supplied by the transfer case shift control module to the range actuator position sensor.
Service 4WD Indicator Command	ON or OFF	OFF	This parameter displays ON anytime a DTC sets.
Transfer Case Commanded Position	2WD, 4WD High/Locked, 4WD Low, Neutral or None	2WD	This parameter displays the current range commanded by the driver.
Transfer Case Neutral Range Indicator Command	ON or OFF	OFF	This parameter displays ON when the transfer case shift control module commands the Neutral indicator light ON.
Transfer Case Output Shafts Slip Speed	Varies	RPM	This parameter displays the difference between the rotational speeds of the transfer case output shafts. This parameter displays the voltage being returned from the transfer case range selection switch. Typical scan tool displays:
Transfer Case Range Selection Switch	0.0 to 7.5 V	2.0 V (±0.2 V)	2WD = 2.0 V 4WD High/Locked = 3.0 V 4WD Low = 1.5 V - Neutral = 2.5 V
Transfer Case Range Selection Switch Reference	0.0 to 7.5 V	5.0 V	This parameter displays the voltage being supplied by the transfer case shift control module to the transfer case range selection switch.
Transfer Case Range Selection Switch State	2WD, 4WD High/Locked, 4WD Low, Neutral or None	2WD	This parameter displays the current range commanded by the transfer case range selection switch.
Transmission Fluid Temperature	Varies	°C (°F)	This parameter displays the transmission fluid temperature in degrees Celsius or Fahrenheit. This parameter displays the current gear the transmission is in.
Transmission Gear	Park, Reverse, Neutral, 1, 2, 3, 4, 5, and 6	Park or Neutral	The scan tool displays Park, Reverse and Neutral when ignition ON and engine OFF. The scan tool displays Park, Reverse, Neutral, 1, 2, 3, 4, 5, and 6 when engine ON.
Transmission OSS	Varies	RPM	This parameter displays transmission output shaft speed in revolutions per minute. This parameter displays the current gear the transmission is in.
Transmission Range	Park, Reverse, Neutral, 1, 2, 3, 4, 5, and 6	Park or Neutral	The scan tool displays Park, Reverse and Neutral when ignition ON and engine OFF. The scan tool displays Park, Reverse, Neutral, 1, 2, 3, 4, 5, and 6 when engine ON.
Vehicle Speed	Varies	km/h/MPH	This parameter displays vehicle speed in kilometers or miles per hour.

Scan Tool Output Controls

Output Control	Description
Note: Refer to the scan tool manual for complete scan tool operating instructions.	
2WD High Range Indicator	This function allows the technician to command the 2WD High indicator light, within the transfer case shift control switch, ON or OFF.
2WD/4WD Synchronizer Clutch	This function allows the technician to increase the current supplied to the 2WD/4WD synchronizer clutch from 0% to 100% in 10% increments. Current will be held until released.
2WD/4WD Synchronizer Clutch Test	Note: Transmission must be in transmission Neutral for this output control to operate. This function allows the technician to command full current to the 2WD/4WD synchronizer clutch. Current will be held for 2–3 seconds.
4WD High Range Indicator	This function allows the technician to command the 4WD High indicator light, within the transfer case shift control switch, ON or OFF.
4WD Low Range Indicator	This function allows the technician to command the 4WD Low indicator light, within the transfer case shift control switch, ON or OFF.
Front Axle Engagement Actuator	Note: Transmission must be in transmission Neutral for this output control to operate. This function allows the technician to command the front axle to engage.
Range Actuator Learn	This function allows the technician to command the transfer case shift control module to relearn the range actuator position sensor after the encoder motor, module, or transfer case is replaced.
Transfer Case Neutral Range Indicator	This function allows the technician to command the Neutral indicator light, within the transfer case shift control switch, ON or OFF.
Transfer Case Range	Note: Transmission must be in transmission Neutral for this output control to operate.

This function allows the technician to command range changes.

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Table 1: [Scan Tool Data Parameters](#)
Table 2: [Scan Tool Output Controls](#)

The Transmission Control Module Scan Tool Data List contains all transfer case related parameters that are available on the scan tool. The list is arranged in alphabetical order. A given parameter may appear in any one of the data lists, and in some cases may appear more than once, or in more than one data list in order to group certain related parameters together.

The values below represent a typical display recorded from a properly functioning system.

Only the parameters listed below are used/referenced in this manual for diagnosis. If a scan tool displays other parameters, those values are not recommended by General Motors for use in diagnosis.

If all values are within the expected value described below, refer to Symptoms - Transfer Case for diagnosis.

The scan tool values from a properly functioning transfer case may be used for comparison with the transfer case you are diagnosing. The values below represent a typical display recorded from a properly functioning system.

Scan Tool Data Parameters			
Parameter	System State	Expected Value	Description
Operating Conditions: Ignition ON, engine OFF, Park or Neutral and transfer case in 2WD, unless otherwise noted.			
2WD High Range Indicator Command	ON or OFF	ON	This parameter displays ON when the transfer case shift control module commands the 2WD High indicator light ON.
2WD/4WD Synchronizer Clutch Command	0 to 100%	0%	This parameter displays the pulse width modulated voltage signal being supplied by the transfer case shift control module to the 2WD/4WD synchronizer clutch on the low reference circuit. This parameter will display 0% after a range shift.
2WD/4WD Synchronizer Clutch Current	0.00 to 5.00 A	0.00 A	This parameter displays the current drawn by the 2WD/4WD synchronizer clutch from the transfer case shift control module. This parameter will display 0.00 A after shifting ranges.
2WD/4WD Synchronizer Clutch High Control Circuit High Voltage Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the 2WD/4WD synchronizer clutch control circuit. The 2WD/4WD synchronizer clutch control circuit is made up of the transfer case position switch channel 2 encoder signal circuit and the low reference circuit. A short to battery on the 2WD/4WD synchronizer clutch high control circuit will cause this parameter to display Malfunction. When Malfunction is set on the 2WD/4WD Synchronizer Clutch High Control Circuit High Voltage Test Status parameter it also sets on the 2WD/4WD Synchronizer Clutch Low Control Circuit High Voltage Test Status parameter.
2WD/4WD Synchronizer Clutch High Control Circuit Low Voltage Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the 2WD/4WD synchronizer clutch control circuit. The 2WD/4WD synchronizer clutch control circuit is made up of the transfer case position switch channel 2 encoder signal circuit and the low reference circuit. A short to ground on the 2WD/4WD synchronizer clutch high control circuit will cause this parameter to display Malfunction. When Malfunction is set on the 2WD/4WD Synchronizer Clutch High Control Circuit Low Voltage Test Status parameter it also sets on the 2WD/4WD Synchronizer Clutch Low Control Circuit Low Voltage Test Status parameter.
2WD/4WD Synchronizer Clutch High Control Circuit Open Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the 2WD/4WD synchronizer clutch control circuit. The 2WD/4WD synchronizer clutch control circuit is made up of the transfer case position switch channel 2 encoder signal circuit and the low reference circuit. An open/high resistance condition on the 2WD/4WD synchronizer clutch high control circuit will cause this parameter to display Malfunction. When Malfunction is set on the 2WD/4WD Synchronizer Clutch High Control Circuit Open Test Status parameter it also sets on the 2WD/4WD Synchronizer Clutch Low Control Circuit Open Test Status parameter.
2WD/4WD Synchronizer Clutch Low Control Circuit High Voltage Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the 2WD/4WD synchronizer clutch control circuit. The 2WD/4WD synchronizer clutch control circuit is made up of the transfer case position switch channel 2 encoder signal circuit and the low reference circuit. A short to battery on the 2WD/4WD synchronizer clutch low control circuit will cause this parameter to display Malfunction. When Malfunction is set on the 2WD/4WD Synchronizer

2WD/4WD Synchronizer Clutch Low Control Circuit Low Voltage Test Status	Not Run, OK or Malfunction	OK	Clutch Low Control Circuit High Voltage Test Status parameter it also sets on the 2WD/4WD Synchronizer Clutch High Control Circuit High Voltage Test Status parameter. This parameter monitors the status of the 2WD/4WD synchronizer clutch control circuit. The 2WD/4WD synchronizer clutch control circuit is made up of the transfer case position switch channel 2 encoder signal circuit and the low reference circuit. A short to ground on the 2WD/4WD synchronizer clutch low control circuit will cause this parameter to display Malfunction. When Malfunction is set on the 2WD/4WD Synchronizer Clutch Low Control Circuit Low Voltage Test Status parameter it also sets on the 2WD/4WD Synchronizer Clutch High Control Circuit Low Voltage Test Status parameter. This parameter monitors the status of the 2WD/4WD synchronizer clutch control circuit. The 2WD/4WD synchronizer clutch control circuit is made up of the transfer case position switch channel 2 encoder signal circuit and the low reference circuit. An open/high resistance condition on the 2WD/4WD synchronizer clutch low control circuit will cause this parameter to display Malfunction. When Malfunction is set on the 2WD/4WD Synchronizer Clutch Low Control Circuit Open Test Status parameter it also sets on the 2WD/4WD Synchronizer Clutch High Control Circuit Open Test Status parameter.
2WD/4WD Synchronizer Clutch Low Control Circuit Open Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the 2WD/4WD synchronizer clutch control circuit. The 2WD/4WD synchronizer clutch control circuit is made up of the transfer case position switch channel 2 encoder signal circuit and the low reference circuit. An open/high resistance condition on the 2WD/4WD synchronizer clutch low control circuit will cause this parameter to display Malfunction. When Malfunction is set on the 2WD/4WD Synchronizer Clutch Low Control Circuit Open Test Status parameter it also sets on the 2WD/4WD Synchronizer Clutch High Control Circuit Open Test Status parameter.
2WD/4WD Synchronizer Clutch Low Control Command	ON or OFF	OFF	This parameter displays the status of the 2WD/4WD synchronizer clutch high control circuit. The 2WD/4WD synchronizer clutch control circuit is made up of the transfer case position switch channel 2 encoder signal circuit and the low reference circuit. This parameter displays OFF after a Range Shift.
4WD High Range Indicator Command	ON or OFF	OFF	This parameter displays ON when the transfer case shift control module commands the 4WD High indicator light ON.
4WD Low Range Indicator Command	ON or OFF	OFF	This parameter displays ON when the transfer case shift control module commands the 4WD Low indicator light ON.
Control Module Voltage Signal	0.0 to 25.5 V	Battery Voltage	This parameter displays the voltage measured by the transfer case shift control module at the battery positive voltage circuit.
Display Dimming	0 to 100%	Varies	This parameter displays the current being supplied by the transfer case shift control module to the transfer case 2WD/4WD indicator switch.
Front Axle Engagement Actuator Command	Engaged or Disengaged	Disengaged	This parameter displays either Engaged or Disengaged. Engaged when the body control module is commanding Auto4WD, 4WD, or 4WD Low ranges, and Disengaged when the body control module is commanding Neutral, or 2WD ranges.
Front Axle Engagement Actuator Control Circuit High Voltage Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the front axle engagement actuator control circuit. A short to battery on the front axle engagement actuator control circuit will cause this parameter to display Malfunction.
Front Axle Engagement Actuator Control Circuit Low Voltage Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the front axle engagement actuator control circuit. A short to ground on the front axle engagement actuator control circuit will cause this parameter to display Malfunction.
Front Axle Engagement Actuator Control Circuit Open Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the front axle engagement actuator control circuit. An open/high resistance condition on the front axle engagement actuator control circuit will cause this parameter to display Malfunction.
Front Axle Feedback Switch	Engaged or Disengaged	Disengaged	This parameter displays the actual status of the front axle.
Ignition 1 Signal	ON or OFF	ON	This parameter displays the status of the run/crank ignition 1 voltage circuit to the transfer case shift control module. The scan tool displays OFF at ignition OFF.
Ignition Accessory Signal	ON or OFF	ON	This parameter displays the status of the ignition accessory signal circuit to the transfer case shift control module. The scan tool displays OFF when interior lights turn OFF.
Non-Driven Wheel Speed	Varies	km/h/MPH	This parameter displays the non-drive wheel speed in kilometers or miles per hour.

Range Actuator Command	-100 to +100%	0%	This parameter displays the pulse width modulated voltage signal being supplied by the transfer case shift control module to the transfer case encoder motor on circuit A or circuit B. The scan tool displays negative values when turning counterclockwise or positive values when turning clockwise. This parameter will display 0% after a range shift.
Range Actuator Control Circuit A Command	OFF, High or Low	OFF	This parameter displays the direction of the voltage flow of the range actuator control circuit. The scan tool displays Low-High-Off when turning counterclockwise or High-Low-Off when turning clockwise while shifting. This parameter will display OFF after shifting ranges. Opposite of Range Actuator Control Circuit B.
Range Actuator Control Circuit B Command	OFF, High or Low	OFF	This parameter displays the direction of the voltage flow of the range actuator control circuit. The scan tool displays High-Low-Off when turning clockwise or Low-High-Off when turning counterclockwise while shifting ranges. This parameter will display OFF after shifting ranges. Opposite of Range Actuator Control Circuit A.
Range Actuator Control Circuit High Voltage Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the range actuator control circuit. The range actuator control circuit is made up of the range actuator control circuit A and the range actuator control circuit B. A short to battery on the range actuator control circuit A or the range actuator control circuit B will cause this parameter to display Malfunction.
Range Actuator Control Circuit Low Voltage Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the range actuator control circuit. The range actuator control circuit is made up of the range actuator control circuit A and the range actuator control circuit B. A short to ground on the range actuator control circuit A or the range actuator control circuit B will cause this parameter to display Malfunction.
Range Actuator Control Circuit Open Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the range actuator control circuit. The range actuator control circuit is made up of the range actuator control circuit A and the range actuator control circuit B. An open on the range actuator control circuit A or the range actuator control circuit B will cause this parameter to display Malfunction.
Range Actuator Control Circuit Shorted Test Status	Not Run, OK or Malfunction	OK	This parameter monitors the status of the range actuator control circuit. The range actuator control circuit is made up of the range actuator control circuit A and the range actuator control circuit B. A short to ground, short to battery or short together on the range actuator control circuit A and/or the range actuator control circuit B will cause this parameter to display Malfunction.
Range Actuator Current	-15.0 to +36.0 A	0.0 A	This parameter displays the current drawn by the range actuator from the transfer case shift control module on either the range actuator control circuit A or the range actuator control circuit B. Typical values display 0.0 to 12.0 A. This parameter will display 0.0 A after shifting ranges.
Range Actuator Direction Command	Stationary, Clockwise or Counterclockwise	Stationary	This parameter displays what direction the transfer case shift control module is commanding the range actuator to turn. This parameter will display Stationary after a range change.
Range Actuator Position	2WD, 4WD High-2WD 4WD High/Locked, 4WD High-Neutral, Neutral, Neutral-4WD Low, or 4WD Low	2WD	This parameter displays the actual position of the transfer case according to the range actuator position sensor.
Range Actuator Position Sensor	0 to 360°	99°	This parameter displays the position of the range actuator position sensor in degrees. Typical scan tool displays: • 2WD = 85-115° • 4WD High/Locked = 5-35° • 4WD Low = 315-345° • Neutral = 190-200°
Range Actuator Position Sensor	190 to 210 Hz	199 Hz	This parameter displays the frequency of the current being supplied to the range actuator position sensor.
Range Actuator Position Sensor	0 to 100%	24% (±5%)	This parameter displays the position of the range actuator position sensor in percent. Typical scan tool values: • 2WD = 24%

			4WD High = 5% 4WD Low = 95% - Neutral = 5%
Range Actuator Position Sensor Supply Voltage	4.8 to 5.2 V	5.0 V	This parameter displays the voltage being supplied by the transfer case shift control module to the range actuator position sensor.
Service 4WD Indicator Command	ON or OFF	OFF	This parameter displays ON anytime a DTC sets.
Transfer Case Commanded Position	2WD, 4WD High/Locked, 4WD Low, Neutral or None	2WD	This parameter displays the current range commanded by the driver.
Transfer Case Neutral Range Indicator Command	ON or OFF	OFF	This parameter displays ON when the transfer case shift control module commands the Neutral indicator light ON.
Transfer Case Output Shafts Slip Speed	Varies	RPM	This parameter displays the difference between the rotational speeds of the transfer case output shafts. This parameter displays the voltage being returned from the transfer case range selection switch. Typical scan tool displays:
Transfer Case Range Selection Switch	0.0 to 7.5 V	2.0 V (±0.2 V)	2WD = 2.0 V 4WD High/Locked = 3.0 V 4WD Low = 1.5 V - Neutral = 2.5 V
Transfer Case Range Selection Switch Reference	0.0 to 7.5 V	5.0 V	This parameter displays the voltage being supplied by the transfer case shift control module to the transfer case range selection switch.
Transfer Case Range Selection Switch State	2WD, 4WD High/Locked, 4WD Low, Neutral or None	2WD	This parameter displays the current range commanded by the transfer case range selection switch.
Transmission Fluid Temperature	Varies	°C (°F)	This parameter displays the transmission fluid temperature in degrees Celsius or Fahrenheit. This parameter displays the current gear the transmission is in.
Transmission Gear	Park, Reverse, Neutral, 1, 2, 3, 4, 5, and 6	Park or Neutral	The scan tool displays Park, Reverse and Neutral when ignition ON and engine OFF. The scan tool displays Park, Reverse, Neutral, 1, 2, 3, 4, 5, and 6 when engine ON.
Transmission OSS	Varies	RPM	This parameter displays transmission output shaft speed in revolutions per minute. This parameter displays the current gear the transmission is in.
Transmission Range	Park, Reverse, Neutral, 1, 2, 3, 4, 5, and 6	Park or Neutral	The scan tool displays Park, Reverse and Neutral when ignition ON and engine OFF. The scan tool displays Park, Reverse, Neutral, 1, 2, 3, 4, 5, and 6 when engine ON.
Vehicle Speed	Varies	km/h/MPH	This parameter displays vehicle speed in kilometers or miles per hour.

Scan Tool Output Controls

Output Control	Description
Note: Refer to the scan tool manual for complete scan tool operating instructions.	
2WD High Range Indicator	This function allows the technician to command the 2WD High indicator light, within the transfer case shift control switch, ON or OFF.
2WD/4WD Synchronizer Clutch	This function allows the technician to increase the current supplied to the 2WD/4WD synchronizer clutch from 0% to 100% in 10% increments. Current will be held until released.
2WD/4WD Synchronizer Clutch Test	Note: Transmission must be in transmission Neutral for this output control to operate. This function allows the technician to command full current to the 2WD/4WD synchronizer clutch. Current will be held for 2–3 seconds.
4WD High Range Indicator	This function allows the technician to command the 4WD High indicator light, within the transfer case shift control switch, ON or OFF.
4WD Low Range Indicator	This function allows the technician to command the 4WD Low indicator light, within the transfer case shift control switch, ON or OFF.
Front Axle Engagement Actuator	Note: Transmission must be in transmission Neutral for this output control to operate. This function allows the technician to command the front axle to engage.
Range Actuator Learn	This function allows the technician to command the transfer case shift control module to relearn the range actuator position sensor after the encoder motor, module, or transfer case is replaced.
Transfer Case Neutral Range Indicator	This function allows the technician to command the Neutral indicator light, within the transfer case shift control switch, ON or OFF.
Transfer Case Range	Note: Transmission must be in transmission Neutral for this output control to operate.

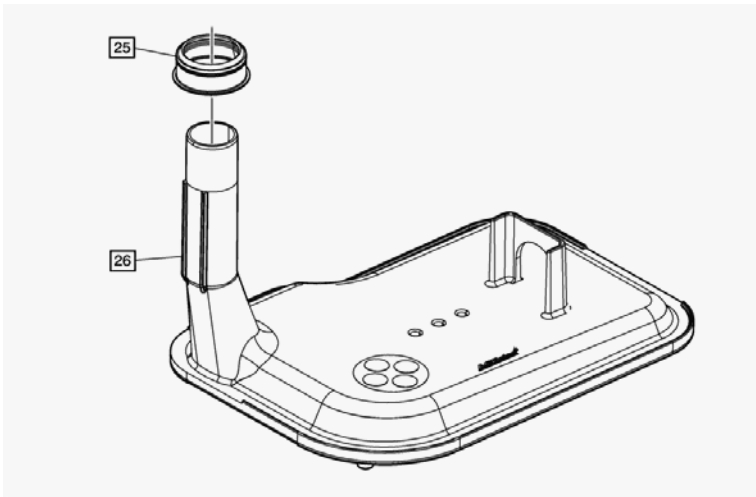
This function allows the technician to command range changes.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Table 1:	A/Trans Fluid Filter Kit
Table 2:	A/Trans Fluid Pump Rotor Package
Table 3:	A/Trans Service Seal Kit
Table 4:	Clutch Plate Package
Table 5:	A/Trans Electrical Connector Passage Sleeve Seal Kit
Table 6:	A/Trans Control Solenoid Valve Assembly Seal Kit
Table 7:	A/Trans Clutches Seal Kit
Table 8:	A/Trans Fluid Pump Cover Package
Table 9:	Low Clutch Sprag Kit
Table 10:	Control Solenoid Valve Filter Plate Kit
Table 11:	Retaining Ring Package
Table 12:	1-2-3-4& 3-5 Reverse Clutch Fluid Seal Ring Kit
Table 13:	1-2-3-4& 3-5 Reverse Clutch Kit
Table 14:	Manual Shift Shaft Hole Plug

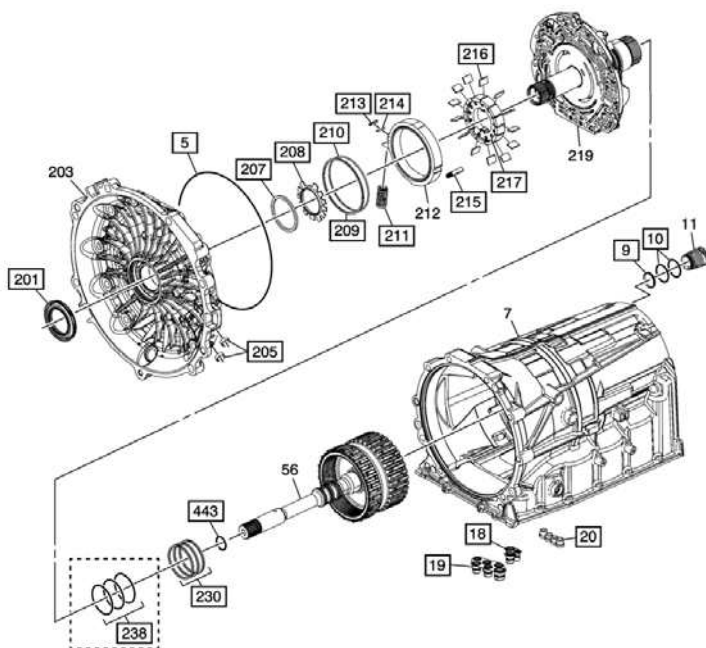
[A/Trans Fluid Filter Kit](#)



A/Trans Fluid Filter Kit

Callout	Quantity	Component Name
25	1	A/Trans Fluid Filter Seal Assembly
26	1	A/Trans Fluid Filter Assembly

[A/Trans Fluid Pump Rotor Package](#)



Note: Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

A/Trans Fluid Pump Rotor Package

Callout	Quantity	Component Name
5	1	A/Trans Fluid Pump Seal
9	1	A/Trans Connector Seal
10	2	A/Trans Connector (O-Ring) Seal
18	1	A/Trans Fluid Pump Seal Assembly
19	1	A/Trans Fluid Pump Seal Assembly
20	1	Center Support Fluid Passage Seal Assembly
201	1	Torque Converter Fluid Seal Assembly
205	2	A/Trans Fluid Cooler Pipe Fitting
207	1	A/Trans Fluid Pump Vane Ring
208	1	A/Trans Fluid Pump Rotor Guide
209	1	A/Trans Fluid Pump Slide Fluid Seal Ring
210	1	A/Trans Fluid Pump Slide (O-Ring) Seal
211	1	A/Trans Fluid Pump Slide Outer Spring
213	1	A/Trans Fluid Pump Slide Seal
214	1	A/Trans Fluid Pump Slide Seal Support
215	1	A/Trans Fluid Pump Slide Pivot Pin
216	13	A/Trans Fluid Pump Vane
217	1	A/Trans Fluid Pump Rotor
230	3	1-2-3-4 and 3-5 Reverse Clutch Fluid Seal Ring
238	3	1-2-3-4 and 3-5 Reverse Clutch Fluid Seal Ring
443	1	Turbine Shaft (O-Ring) Seal

[A/Trans Service Seal Kit](#)

A/Trans Service Seal Kit

Callout	Quantity	Component Name
5	1	A/Trans Fluid Pump Seal
9	1	A/Trans Connector Seal
10	2	A/Trans Connector (O-Ring) Seal
18	1	A/Trans Fluid Pump Seal Assembly
19	1	A/Trans Fluid Pump Seal Assembly
20	1	Center Support Fluid Passage Seal Assembly
33	1	A/Trans Case Extension Seal
36	1	Prop Shaft Front Slip Yoke Oil Seal
201	1	Torque Converter Fluid Seal Assembly
205	2	A/Trans Fluid Cooler Pipe Fitting Seal
209	1	A/Trans Fluid Pump Slide Fluid Seal Ring
210	1	A/Trans Fluid Pump Slide (O-Ring) Seal
213	1	A/Trans Fluid Pump Slide Seal
214	1	A/Trans Fluid Pump Slide Seal Support
230	3	1-2-3-4 and 3-5 Reverse Clutch Fluid Seal Ring
306	7	Control Valve Body Ball Check Valve
311	1	Control Solenoid Valve Filter Plate Assembly
411	1	1-2-3-4 Clutch Piston Dam Retaining Ring
415	1	1-2-3-4 Clutch Piston Housing Retaining Ring
418	1	3-5 Reverse Clutch Piston Dam (O-Ring) Seal
419	1	3-5 Reverse Clutch Piston Inner Seal
423	1	1-2-3-4 Clutch Piston Inner Seal
424	1	1-2-3-4 Clutch Piston Housing Seal
425	1	1-2-3-4 Clutch Piston Housing Seal
442	3	Turbine Shaft Fluid Seal Ring

Callout	Quantity	Component Name
443	1	Turbine Shaft (O-Ring) Seal
468	1	Low Clutch Sprag Seal
478	1	4-5-6 Clutch Dampener Retaining Ring
507	1	Manual Shift Shaft Seal
510	2	Park Pawl Actuator Guide (O-Ring) Seal

[Clutch Plate Package](#)

Note: Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.
Clutch Plate Package

Callout	Quantity	Component Name
402	4	3-5 Reverse Clutch Plate Assembly
408	5	1-2-3-4 Clutch Plate Assembly
433	6	4-5-6 Clutch Plate Assembly
434	6	4-5-6 Clutch Plate
452	5	2-6 Clutch Plate Assembly
453	5	2-6 Clutch Plate
463	5	Low and Reverse Clutch Plate Assembly

[A/Trans Electrical Connector Passage Sleeve Seal Kit](#)

Note: Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

A/Trans Electrical Connector Passage Sleeve Seal Kit

Callout	Quantity	Component Name
9	1	A/Trans Connector Seal
10	2	A/Trans Connector (O-Ring) Seal

[A/Trans Control Solenoid Valve Assembly Seal Kit](#)

Note: Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

A/Trans Control Solenoid Valve Assembly Seal Kit

Callout	Quantity	Component Name
9	1	A/Trans Connector Seal
10	2	A/Trans Connector (O-Ring) Seal
18	1	A/Trans Fluid Pump Seal Assembly
19	1	A/Trans Fluid Pump Seal Assembly
20	1	Center Support Fluid Passage Seal Assembly

[A/Trans Clutches Seal Kit](#)

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Note: Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

A/Trans Clutches Seal Kit

Callout	Quantity	Component Name
418	2	3-5 Reverse Clutch Piston Dam (O-Ring) Seal
419	2	3-5-Reverse Clutch Piston Inner Seal
423	1	1-2-3-4 Clutch Piston Inner Seal
424	1	1-2-3-4 Clutch Piston Housing Seal
425	1	1-2-3-4 Clutch Piston Housing Seal
468	1	Low Clutch Sprag Seal

[A/Trans Fluid Pump Cover Package](#)

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Note: Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

A/Trans Fluid Pump Cover Package

Callout	Quantity	Component Name
5	1	A/Trans Fluid Pump Seal
9	1	A/Trans Connector Seal
10	2	A/Trans Connector (O-Ring) Seal

Callout	Quantity	Component Name
18	1	A/Trans Fluid Pump Seal Assembly
19	1	A/Trans Fluid Pump Seal Assembly
20	1	Center Support Fluid Passage Seal Assembly
201	1	Torque Converter Fluid Seal Assembly
205	2	A/Trans Fluid Cooler Pipe Fitting
219	1	A/Trans Fluid Pump Cover Assembly
229	1	1-2-3-4 and 3-5 Reverse Clutch Housing Thrust Washer
230	3	1-2-3-4 and 3-5 Reverse Clutch Fluid Seal Ring
443	1	Turbine Shaft (O-Ring) Seal

[Low Clutch Sprag Kit](#)

Note: Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

Low Clutch Sprag Kit

Callout	Quantity	Component Name
466	1	Low Clutch Sprag Seal
467	1	Low Clutch Sprag Assembly
468	1	Low Clutch Sprag Seal

[Control Solenoid Valve Filter Plate Kit](#)

Note: Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

Control Solenoid Valve Filter Plate Kit

Callout	Quantity	Component Name
9	1	A/Trans Connector Seal
10	2	A/Trans Connector (O-Ring) Seal
18	1	A/Trans Fluid Pump Seal Assembly
19	1	A/Trans Fluid Pump Seal Assembly
20	1	Center Support Fluid Passage Seal Assembly
306	7	Control Valve Body Ball Check Valve
311	1	Filter Plate Assembly

[Retaining Ring Package](#)

Note: Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

Retaining Ring Package

Callout	Quantity	Component Name
411	1	1-2-3-4 Clutch Piston Dam Retaining Ring
415	1	1-2-3-4 Clutch Piston Housing Retaining Ring

Callout	Quantity	Component Name
478	1	4-5-6 Clutch Dampener Retaining Ring

[1-2-3-4& 3-5 Reverse Clutch Fluid Seal Ring Kit](#)

Note: Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

1-2-3-4& 3-5 Reverse Clutch Fluid Seal Ring Kit

Callout	Quantity	Component Name
230	3	1-2-3-4 and 3-5 Reverse Clutch Fluid Seal Ring
238	3	1-2-3-4 and 3-5 Reverse Clutch Fluid Seal Ring

[1-2-3-4& 3-5 Reverse Clutch Kit](#)

1-2-3-4& 3-5 Reverse Clutch Kit

Callout	Quantity	Component Name
427	1	1-2-3-4 and 3-5 Reverse Clutch Housing Assembly
428	1	1-2-3-4 and 3-5 Reverse Clutch Bearing Assembly

[Manual Shift Shaft Hole Plug](#)

Note: Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

Manual Shift Shaft Hole Plug

Callout	Quantity	Component Name
11	1	Manual Shift Shaft Hole Plug

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Table 1: [Scan Tool Data Parameters](#)
Table 2: [Scan Tool Output Controls](#)

The Transmission Control Module Scan Tool Data List contains all transmission related parameters that are available on the scan tool. The list is arranged in alphabetical order. A given parameter may appear in any one of the data lists, and in some cases may appear more than once, or in more than one data list in order to group certain related parameters together.

The values below represent a typical display recorded from a properly functioning system.

Only the parameters listed below are used/referenced in this manual for diagnosis. If a scan tool displays other parameters, those values are not recommended by General Motors for use in diagnosis.

If all values are within the expected value described below, refer to Symptoms - Automatic Transmission for diagnosis.

The scan tool values from a properly functioning transmission may be used for comparison with the transmission you are diagnosing. The values below represent a typical display recorded from a properly functioning system.

Scan Tool Data Parameters			
Parameter	System State	Expected Value	Description
<i>Operating Conditions:</i> Engine at idle with the upper radiator hose hot and in closed loop operation, closed throttle, transmission in Park, accessories OFF, brake pedal not applied.			
1–2 Shift Time	Varies	Seconds	This parameter displays the actual time of the last adaptable 1–2 shift. The shift time is based on the gear ratio change after the commanded 1–2 shift.
2–3 Shift Time	Varies	Seconds	This parameter displays the actual time of the last adaptable 2–3 shift. The shift time is based on the gear ratio change after the commanded 2–3 shift.
3–4 Shift Time	Varies	Seconds	This parameter displays the actual time of the last adaptable 3–4 shift. The shift time is based on the gear ratio change after the commanded 3–4 shift.
4–5 Shift Time	Varies	Seconds	This parameter displays the actual time of the last adaptable 4–5 shift. The actual shift time is obtained by measuring the time required for the input shaft to decelerate from the previous ratio to the current ratio.
5–6 Shift Time	Varies	Seconds	This parameter displays the actual time of the last 5–6 shift. The shift time is base on the gear ratio change after the commanded 5–6 shift.
Brake Switch	Released	Applied/Released	This parameter displays the status of the brake switch circuit input. Applied indicates a zero voltage input, brake pedal applied. Released indicates a voltage input, brake pedal released. The scan tool displays Applied or Released.
Calc. Throttle Position	Varies	%	This parameter displays a calculated value, which is determined by the accelerator pedal position and the actual throttle position, used to optimize transmission controls. It represents the driver's intended request for torque or acceleration. The range is 0–100 percent, where 0 percent represents an idle or coast request and 100 percent represents a request for wide open throttle (WOT).
Commanded Gear	1	1, 2, 3, 4 or 1, 2, 3, 4, 5 or Park/Neutral, Reverse, 1, 2, 3, 4, 5	This parameter displays the current commanded state of the shift solenoid valves. The scan tool displays 1, 2, 3, 4 or 5
Driver Shift Control	Inactive	Active/Inactive	This parameter displays Active or Inactive. The scan tool displays Active when the gear selector is in the sport (S) position, which enables TAP shift. The scan tool displays Inactive when the gear selector is not in the S position, TAP shift disabled.
Driver Shift Request	None	Upshift/ Downshift/ None/ Invalid	This parameter displays the current request from the TAP Shift System. This parameter will display up shift, downshift or invalid depending on the amount of voltage measured at the remote shift selector input and also will display none when there is no request.
ECT	Varies	°C (°F)	This parameter displays the input signal from the engine coolant temperature (ECT) sensor. ECT is high at 151°C (304°F) when the signal voltage is low (0 V). ECT is low at –40°C (–40°F) when the signal voltage is high (5 V).
Engine Speed	Varies	RPM	This parameter displays the rotational speed of the engine expressed as revolutions per minute.
Engine Torque	Varies	Y (lb ft)	This parameter displays a calculated value based on engine load, throttle position, mass air flow, and other engine inputs. This parameter is accurate to within 20 Y 15 lb ft of actual measured engine torque.
Gear Ratio	Varies	Ratio	This parameter displays the actual transmission gear ratio. The scan tool displays the gear ratio calculated from the automatic transmission input shaft speed sensor (AT

			ISS) and the automatic transmission output shaft speed sensor (AT OSS) inputs.
High Side Driver 1	Enabled	Enabled/Disabled	This parameter displays the High Side Driver 1 status on the scan tool. When the High Side Driver 1 is commanded OFF this displays Disabled, when the High Side Driver 1 is commanded ON this displays Enabled.
High Side Driver 1 CKT Status	OK or Indeterminate	OK, Open/Short to Volts, Short to GND, Indeterminate	This parameter displays the High Side Driver 1 circuit status on the scan tool. If the voltage is low when the solenoid is commanded OFF, the scan tool will display Open/Short to GND. If the voltage is high when the solenoid is commanded ON, the scan tool will display Short to Volts. If no circuit fault is present the scan tool will display OK.
Ignition Voltage	12 to 14 volts	Volts	This parameter displays the system voltage measured at the ignition feed.
IMS	Park	Park-Drive 1, Open, Invalid	This parameter displays PARK, PARK/REVERSE, REVERSE, REVERSE/NEUTRAL, NEUTRAL, NEUTRAL/DRIVE 4, DRIVE 4, DRIVE 4/DRIVE 3, DRIVE 3, DRIVE 3/DRIVE 2, DRIVE 2, DRIVE 2/DRIVE 1, DRIVE 1 or INVALID. The IMS Range display represents a decoded status of the four inputs from the IMS. The combination of IMS inputs are used to determine what position the manual valve is in at any time.
IMS A/B/C/P	LOW/HI/HI/LOW	HI or LOW	This parameter displays the status of the four A/B/C/P inputs from the automatic transmission internal mode switch. HI indicates an ignition voltage signal and LOW indicates a 0 voltage signal. The scan tool will display HI/LOW, HI/LOW, HI/LOW, HI/LOW.
ISS/OSS Supply Voltage	OK	OK, Out of Range	This parameter displays OK, Out of Range.
Last Shift Time	Varies	Seconds	This parameter displays the actual time of the last up shift. This value is only accurate if the shift was adaptable.
PC Sol. 2 CKT Status	OK or Indeterminate	OK, Open/Short to GND, Short to Volts, Indeterminate	This parameter displays OK, Open/Short to GND, Short to Volts.
PC Sol. 2 Pressure Comm	No	Yes/No	This parameter displays Yes or No. Yes, solenoid pressure is commanded. No, solenoid pressure is not commanded.
PC Sol. 3 CKT Status	OK or Indeterminate	OK, Open/Short to GND, Short to Volts, Indeterminate	This parameter displays OK, Open/Short to GND, Short to Volts.
PC Sol. 3 Pressure Comm	Yes	Yes/No	This parameter displays Yes or No. Yes, solenoid pressure is commanded. No, solenoid pressure is not commanded.
PC Sol. 4 CKT Status	OK or Indeterminate	OK, Open/Short to GND, Short to Volts, Indeterminate	This parameter displays OK, Open/Short to GND, Short to Volts.
PC Sol. 4 Pressure Comm	No	Yes/No	This parameter displays Yes or No. Yes, solenoid pressure is commanded. No, solenoid pressure is not commanded.
PC Sol. 5 CKT Status	OK or Indeterminate	OK, Open/Short to GND, Short to Volts, Indeterminate	This parameter displays OK, Open/Short to GND, Short to Volts.
PC Sol. 5 Pressure Comm	No	Yes/No	This parameter displays Yes or No. Yes, solenoid pressure is commanded. No, solenoid pressure is not commanded.
Shift Sol. 1 CKT Status	OK or Indeterminate	OK, Open/Short to GND, Short to Volts, Indeterminate	This parameter displays OK, Open/Short to GND, Short to Volts, or Indeterminate.
Shift Solenoid 1	ON	On/Off	This parameter displays the commanded state of the reverse, 1st shift solenoid valve (S1). The scan tool displays On/Off.
Shift Sol. 2 CKT Status	OK or Indeterminate	OK, Open/Short to GND, Short to Volts, Indeterminate	This parameter displays OK, Open/Short to GND, Short to Volts, or Indeterminate.
Shift Solenoid 2	ON	On/Off	This parameter displays the commanded state of the 2-3, 3-4 shift solenoid valve (S2). The scan tool displays On/Off.
TCC PC Sol. Pressure Comm	No	Yes/No	This parameter displays Yes or No. Yes, solenoid pressure is commanded. No, solenoid pressure is not commanded.
TCC Slip Speed	Varies	RPM	This parameter displays the difference between transmission input speed and engine speed. A negative value indicates that the engine speed is less than the input speed, deceleration. A positive value indicates that the engine speed is greater than the input speed, acceleration. A value of zero indicates that the engine speed is equal to the input speed, TCC applied.
TCM Temperature	Varies	°C (°F)	This parameter displays results in °C (°F).
TFP Switch 1	HI	HI/LOW	This parameter displays the state of the first clutch oil pressure switch. The scan tool displays HI/LOW.

TFP Switch 3	LOW	HI/LOW	This parameter displays state of the 3rd clutch oil pressure switch. The scan tool displays HI/LOW.
TFP Switch 4	LOW	HI/LOW	This parameter displays state of the 4th clutch oil pressure switch. The scan tool displays HI/LOW.
TFP Switch 5	LOW	HI/LOW	This parameter displays state of the fifth clutch oil pressure switch. The scan tool displays HI/LOW.
Tow/Haul Mode (If equipped)	Inactive	Active/Inactive	This parameter displays ACTIVE when the transmission is operating in the tow/haul mode. In this mode the transmission control module (TCM) extends the length of time between upshifts and elevates transmission line pressure. Shift quality and TCC scheduling are also affected during tow/haul mode operation. The scan tool displays ACTIVE or INACTIVE.
Trans. Fluid Temp.	Varies	°C (°F)	This parameter displays the input signal of the transmission fluid temperature sensor. Transmission fluid temperature is high 151°C (304°F) when signal voltage is low, 0 V, and transmission fluid temperature is low -40°C (-40°F) when signal voltage is high, 5 V.
Transmission ISS	Varies	RPM	This parameter displays the rotational speed of the transmission input shaft. The scan tool displays input shaft speed is revolutions per minute.
Transmission OSS	0	RPM	This parameter displays the rotational speed of the transmission output shaft expressed as revolutions per minute.

Scan Tool Output Controls

Output Control	Description
High Side Driver 1	- The TCM commands the driver for the solenoid voltage supply ON and OFF. - When the ignition is ON, and the engine is OFF, there are no limits to this control. - High side drivers may not be commanded ON and OFF with the scan tool if the engine is running.
Line PC Solenoid	- The scan tool is used to request pressure in increments of 200 kPa (30 psi) from 200–2000 kPa (30–290 psi). The TCM will then command the line PC solenoid to achieve the requested increment. - When the ignition is ON, and the engine is OFF, the pressure request may be controlled within calibrated limits. There is a limit to the output control of 200 kPa (290 psi) when the engine is OFF. If the request is above specified amount, the message "Request override current out of range" will display. - When the engine is running, the following control limits apply: - When the transmission range is Park or Neutral, the pressure request may be controlled within calibrated limits. The engine speed must be less than 1,500 RPM. If the engine speed is greater than 1,500 RPM, the message "TR in park/neutral and engine speed over 1,500 RPM" appears on the scan tool display. - When the transmission range is not Park or Neutral, the requested pressure can only be controlled equal to or greater than the pressure determined by the TCM. The TCM does not allow a pressure to be selected that may cause damage to the transmission. If the requested pressure is less than allowed by the TCM, the message "Requested pressure for the Line PC Solenoid is too low" appears on the scan tool display. - Transmission range DTCs must not be active. If a transmission range DTC is active, the message "Engine running with transmission DTC present" appears on the scan tool display.
PC Solenoid 2 Command	The TCM commands the pressure control solenoid in order to apply or release the clutches.
PC Solenoid 3 Command	When the ignition is ON, and the engine is OFF, there are no limits to this control. The solenoid remains ON until commanded OFF, and vice versa. When the output control is exited, the solenoid state is determined by the TCM.
PC Solenoid 4 Command	- When the engine is running, the following control limits apply: - The transmission range must be in Park or Neutral. If the transmission range is not Park or Neutral, the message "Engine running and transmission range is not Park/Neutral" appears on the scan tool display.
PC Solenoid 5 Command	- The solenoid remains ON until commanded OFF, and vice versa. When the output control is exited, the solenoid state is determined by the TCM. - Transmission range DTCs must not be active. If a transmission range DTC is active, the message "Engine running with transmission DTC present" appears on the scan tool display.
Service Clean Procedure	- The scan tool is used to start and stop the transmission cleaning procedure algorithm. - The following control limits apply: - The engine must be running. The message "Engine not Running" will appear on the scan tool if this control is attempted without the engine running. - There cannot be active transmission DTCs. The message "Transmission Fault present" will appear on the scan tool if this control is attempted with transmission DTCs active. - The transmission range must be Park or Neutral. The message "Transmission not in PARK or NEUTRAL" will appear on the scan tool if this control is attempted with the transmission in any range other than Park or Neutral. - The vehicle speed cannot exceed 8 km/h (5 mph). The message "Vehicle Speed too high" will appear on the scan tool if this control is attempted with a vehicle speed greater than 8 km/h (5 mph). - The engine speed cannot exceed 2500 RPM. The message "Engine Speed too high" will appear on the scan tool if this control is attempted with an engine speed greater than 2500 RPM. - The transmission oil temperature must be at a normal operating temperature. The message "Transmission oil temperature out of range" will appear on the scan tool if this control is attempted without a transmission oil temperature between 70–110°C (158–230°F).

	• The scan tool is used to start and stop the transmission Fast Learn Adapt algorithm. • The following control limits apply: ◦ The engine must be running. The message "Engine not Running" will appear on the scan tool if this control is attempted without the engine running. ◦ There cannot be active transmission DTCs. The message "Transmission Fault present" will appear on the scan tool if this control is attempted with transmission DTCs active.
Reset Transmission Adapts	
Shift Solenoid 1	• The TCM commands Shift Solenoid 1 and Shift Solenoid 2 ON and OFF. • When the ignition is ON, and the engine is OFF, there are no limits to this control. The solenoid remains ON until commanded OFF, and vice versa. When the output control is exited, the solenoid state is determined by the TCM. • When the engine is running, the following control limits apply:
Shift Solenoid 2	◦ The transmission range must be in Park or Neutral. If the transmission range is not Park or Neutral, the message "Engine running and transmission range is not Park/Neutral" appears on the scan tool display. ◦ The solenoid remains ON until commanded OFF, and vice versa. When the output control is exited, the solenoid state is determined by the TCM. ◦ Transmission range DTCs must not be active. If a transmission range DTC is active, the message "Engine running with transmission DTC present" appears on the scan tool display.
	• The transmission control module (TCM) commands the torque converter clutch pressure control (TCC PC) solenoid pressure in order to apply and release the TCC. • When the ignition is ON, and the engine is OFF, there are no limits to this control. The solenoid remains ON until commanded OFF and vice versa. • When the engine is running, the following control limits apply:
TCC PC Solenoid Command	◦ If the transmission range is Park, and the transmission is in hot mode, the TCC PC solenoid may not be commanded OFF. If the solenoid is requested OFF, the message "TCC OFF command disabled in Hot Mode" appears on the scan tool display. ◦ The TCC PC solenoid may not be commanded OFF for more than a calibrated amount of time. If the solenoid is commanded OFF, for a certain amount of time, the message "TCC OFF time has been exceeded" appears on the scan tool display.

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Table 1: [Scan Tool Data Parameters](#)
Table 2: [Scan Tool Output Controls](#)

The Transmission Control Module Scan Tool Data List contains all transmission related parameters that are available on the scan tool. The list is arranged in alphabetical order. A given parameter may appear in any one of the data lists, and in some cases may appear more than once, or in more than one data list in order to group certain related parameters together.

The values below represent a typical display recorded from a properly functioning system.

Only the parameters listed below are used/referenced in this manual for diagnosis. If a scan tool displays other parameters, those values are not recommended by General Motors for use in diagnosis.

If all values are within the expected value described below, refer to Symptoms - Automatic Transmission for diagnosis.

The scan tool values from a properly functioning transmission may be used for comparison with the transmission you are diagnosing. The values below represent a typical display recorded from a properly functioning system.

Scan Tool Data Parameters			
Parameter	System State	Expected Value	Description
<i>Operating Conditions:</i> Engine at idle with the upper radiator hose hot and in closed loop operation, closed throttle, transmission in Park, accessories OFF, brake pedal not applied.			
1–2 Shift Time	Varies	Seconds	This parameter displays the actual time of the last adaptable 1–2 shift. The shift time is based on the gear ratio change after the commanded 1–2 shift.
2–3 Shift Time	Varies	Seconds	This parameter displays the actual time of the last adaptable 2–3 shift. The shift time is based on the gear ratio change after the commanded 2–3 shift.
3–4 Shift Time	Varies	Seconds	This parameter displays the actual time of the last adaptable 3–4 shift. The shift time is based on the gear ratio change after the commanded 3–4 shift.
4–5 Shift Time	Varies	Seconds	This parameter displays the actual time of the last adaptable 4–5 shift. The actual shift time is obtained by measuring the time required for the input shaft to decelerate from the previous ratio to the current ratio.
5–6 Shift Time	Varies	Seconds	This parameter displays the actual time of the last 5–6 shift. The shift time is base on the gear ratio change after the commanded 5–6 shift.
Brake Switch	Released	Applied/Released	This parameter displays the status of the brake switch circuit input. Applied indicates a zero voltage input, brake pedal applied. Released indicates a voltage input, brake pedal released. The scan tool displays Applied or Released.
Calc. Throttle Position	Varies	%	This parameter displays a calculated value, which is determined by the accelerator pedal position and the actual throttle position, used to optimize transmission controls. It represents the driver's intended request for torque or acceleration. The range is 0–100 percent, where 0 percent represents an idle or coast request and 100 percent represents a request for wide open throttle (WOT).
Commanded Gear	1	1, 2, 3, 4 or 1, 2, 3, 4, 5 or Park/Neutral, Reverse, 1, 2, 3, 4, 5	This parameter displays the current commanded state of the shift solenoid valves. The scan tool displays 1, 2, 3, 4 or 5
Driver Shift Control	Inactive	Active/Inactive	This parameter displays Active or Inactive. The scan tool displays Active when the gear selector is in the sport (S) position, which enables TAP shift. The scan tool displays Inactive when the gear selector is not in the S position, TAP shift disabled.
Driver Shift Request	None	Upshift/ Downshift/ None/ Invalid	This parameter displays the current request from the TAP Shift System. This parameter will display up shift, downshift or invalid depending on the amount of voltage measured at the remote shift selector input and also will display none when there is no request.
ECT	Varies	°C (°F)	This parameter displays the input signal from the engine coolant temperature (ECT) sensor. ECT is high at 151°C (304°F) when the signal voltage is low (0 V). ECT is low at –40°C (–40°F) when the signal voltage is high (5 V).
Engine Speed	Varies	RPM	This parameter displays the rotational speed of the engine expressed as revolutions per minute.
Engine Torque	Varies	Y (lb ft)	This parameter displays a calculated value based on engine load, throttle position, mass air flow, and other engine inputs. This parameter is accurate to within 20 Y 15 lb ft of actual measured engine torque.
Gear Ratio	Varies	Ratio	This parameter displays the actual transmission gear ratio. The scan tool displays the gear ratio calculated from the automatic transmission input shaft speed sensor (AT

			ISS) and the automatic transmission output shaft speed sensor (AT OSS) inputs.
High Side Driver 1	Enabled	Enabled/Disabled	This parameter displays the High Side Driver 1 status on the scan tool. When the High Side Driver 1 is commanded OFF this displays Disabled, when the High Side Driver 1 is commanded ON this displays Enabled.
High Side Driver 1 CKT Status	OK or Indeterminate	OK, Open/Short to Volts, Short to GND, Indeterminate	This parameter displays the High Side Driver 1 circuit status on the scan tool. If the voltage is low when the solenoid is commanded OFF, the scan tool will display Open/Short to GND. If the voltage is high when the solenoid is commanded ON, the scan tool will display Short to Volts. If no circuit fault is present the scan tool will display OK.
Ignition Voltage	12 to 14 volts	Volts	This parameter displays the system voltage measured at the ignition feed.
IMS	Park	Park-Drive 1, Open, Invalid	This parameter displays PARK, PARK/REVERSE, REVERSE, REVERSE/NEUTRAL, NEUTRAL, NEUTRAL/DRIVE 4, DRIVE 4, DRIVE 4/DRIVE 3, DRIVE 3, DRIVE 3/DRIVE 2, DRIVE 2, DRIVE 2/DRIVE 1, DRIVE 1 or INVALID. The IMS Range display represents a decoded status of the four inputs from the IMS. The combination of IMS inputs are used to determine what position the manual valve is in at any time.
IMS A/B/C/P	LOW/HI/HI/LOW	HI or LOW	This parameter displays the status of the four A/B/C/P inputs from the automatic transmission internal mode switch. HI indicates an ignition voltage signal and LOW indicates a 0 voltage signal. The scan tool will display HI/LOW, HI/LOW, HI/LOW, HI/LOW.
ISS/OSS Supply Voltage	OK	OK, Out of Range	This parameter displays OK, Out of Range.
Last Shift Time	Varies	Seconds	This parameter displays the actual time of the last up shift. This value is only accurate if the shift was adaptable.
PC Sol. 2 CKT Status	OK or Indeterminate	OK, Open/Short to GND, Short to Volts, Indeterminate	This parameter displays OK, Open/Short to GND, Short to Volts.
PC Sol. 2 Pressure Comm	No	Yes/No	This parameter displays Yes or No. Yes, solenoid pressure is commanded. No, solenoid pressure is not commanded.
PC Sol. 3 CKT Status	OK or Indeterminate	OK, Open/Short to GND, Short to Volts, Indeterminate	This parameter displays OK, Open/Short to GND, Short to Volts.
PC Sol. 3 Pressure Comm	Yes	Yes/No	This parameter displays Yes or No. Yes, solenoid pressure is commanded. No, solenoid pressure is not commanded.
PC Sol. 4 CKT Status	OK or Indeterminate	OK, Open/Short to GND, Short to Volts, Indeterminate	This parameter displays OK, Open/Short to GND, Short to Volts.
PC Sol. 4 Pressure Comm	No	Yes/No	This parameter displays Yes or No. Yes, solenoid pressure is commanded. No, solenoid pressure is not commanded.
PC Sol. 5 CKT Status	OK or Indeterminate	OK, Open/Short to GND, Short to Volts, Indeterminate	This parameter displays OK, Open/Short to GND, Short to Volts.
PC Sol. 5 Pressure Comm	No	Yes/No	This parameter displays Yes or No. Yes, solenoid pressure is commanded. No, solenoid pressure is not commanded.
Shift Sol. 1 CKT Status	OK or Indeterminate	OK, Open/Short to GND, Short to Volts, Indeterminate	This parameter displays OK, Open/Short to GND, Short to Volts, or Indeterminate.
Shift Solenoid 1	ON	On/Off	This parameter displays the commanded state of the reverse, 1st shift solenoid valve (S1). The scan tool displays On/Off.
Shift Sol. 2 CKT Status	OK or Indeterminate	OK, Open/Short to GND, Short to Volts, Indeterminate	This parameter displays OK, Open/Short to GND, Short to Volts, or Indeterminate.
Shift Solenoid 2	ON	On/Off	This parameter displays the commanded state of the 2-3, 3-4 shift solenoid valve (S2). The scan tool displays On/Off.
TCC PC Sol. Pressure Comm	No	Yes/No	This parameter displays Yes or No. Yes, solenoid pressure is commanded. No, solenoid pressure is not commanded.
TCC Slip Speed	Varies	RPM	This parameter displays the difference between transmission input speed and engine speed. A negative value indicates that the engine speed is less than the input speed, deceleration. A positive value indicates that the engine speed is greater than the input speed, acceleration. A value of zero indicates that the engine speed is equal to the input speed, TCC applied.
TCM Temperature	Varies	°C (°F)	This parameter displays results in °C (°F).
TFP Switch 1	HI	HI/LOW	This parameter displays the state of the first clutch oil pressure switch. The scan tool displays HI/LOW.

TFP Switch 3	LOW	HI/LOW	This parameter displays state of the 3rd clutch oil pressure switch. The scan tool displays HI/LOW.
TFP Switch 4	LOW	HI/LOW	This parameter displays state of the 4th clutch oil pressure switch. The scan tool displays HI/LOW.
TFP Switch 5	LOW	HI/LOW	This parameter displays state of the fifth clutch oil pressure switch. The scan tool displays HI/LOW.
Tow/Haul Mode (If equipped)	Inactive	Active/Inactive	This parameter displays ACTIVE when the transmission is operating in the tow/haul mode. In this mode the transmission control module (TCM) extends the length of time between upshifts and elevates transmission line pressure. Shift quality and TCC scheduling are also affected during tow/haul mode operation. The scan tool displays ACTIVE or INACTIVE.
Trans. Fluid Temp.	Varies	°C (°F)	This parameter displays the input signal of the transmission fluid temperature sensor. Transmission fluid temperature is high 151°C (304°F) when signal voltage is low, 0 V, and transmission fluid temperature is low -40°C (-40°F) when signal voltage is high, 5 V.
Transmission ISS	Varies	RPM	This parameter displays the rotational speed of the transmission input shaft. The scan tool displays input shaft speed is revolutions per minute.
Transmission OSS	0	RPM	This parameter displays the rotational speed of the transmission output shaft expressed as revolutions per minute.

Scan Tool Output Controls

Output Control	Description
High Side Driver 1	- The TCM commands the driver for the solenoid voltage supply ON and OFF. - When the ignition is ON, and the engine is OFF, there are no limits to this control. - High side drivers may not be commanded ON and OFF with the scan tool if the engine is running.
Line PC Solenoid	- The scan tool is used to request pressure in increments of 200 kPa (30 psi) from 200–2000 kPa (30–290 psi). The TCM will then command the line PC solenoid to achieve the requested increment. - When the ignition is ON, and the engine is OFF, the pressure request may be controlled within calibrated limits. There is a limit to the output control of 200 kPa (290 psi) when the engine is OFF. If the request is above specified amount, the message "Request override current out of range" will display. - When the engine is running, the following control limits apply: - When the transmission range is Park or Neutral, the pressure request may be controlled within calibrated limits. The engine speed must be less than 1,500 RPM. If the engine speed is greater than 1,500 RPM, the message "TR in park/neutral and engine speed over 1,500 RPM" appears on the scan tool display. - When the transmission range is not Park or Neutral, the requested pressure can only be controlled equal to or greater than the pressure determined by the TCM. The TCM does not allow a pressure to be selected that may cause damage to the transmission. If the requested pressure is less than allowed by the TCM, the message "Requested pressure for the Line PC Solenoid is too low" appears on the scan tool display. - Transmission range DTCs must not be active. If a transmission range DTC is active, the message "Engine running with transmission DTC present" appears on the scan tool display.
PC Solenoid 2 Command	The TCM commands the pressure control solenoid in order to apply or release the clutches.
PC Solenoid 3 Command	When the ignition is ON, and the engine is OFF, there are no limits to this control. The solenoid remains ON until commanded OFF, and vice versa. When the output control is exited, the solenoid state is determined by the TCM.
PC Solenoid 4 Command	- When the engine is running, the following control limits apply: - The transmission range must be in Park or Neutral. If the transmission range is not Park or Neutral, the message "Engine running and transmission range is not Park/Neutral" appears on the scan tool display.
PC Solenoid 5 Command	- The solenoid remains ON until commanded OFF, and vice versa. When the output control is exited, the solenoid state is determined by the TCM. - Transmission range DTCs must not be active. If a transmission range DTC is active, the message "Engine running with transmission DTC present" appears on the scan tool display.
Service Clean Procedure	- The scan tool is used to start and stop the transmission cleaning procedure algorithm. - The following control limits apply: - The engine must be running. The message "Engine not Running" will appear on the scan tool if this control is attempted without the engine running. - There cannot be active transmission DTCs. The message "Transmission Fault present" will appear on the scan tool if this control is attempted with transmission DTCs active. - The transmission range must be Park or Neutral. The message "Transmission not in PARK or NEUTRAL" will appear on the scan tool if this control is attempted with the transmission in any range other than Park or Neutral. - The vehicle speed cannot exceed 8 km/h (5 mph). The message "Vehicle Speed too high" will appear on the scan tool if this control is attempted with a vehicle speed greater than 8 km/h (5 mph). - The engine speed cannot exceed 2500 RPM. The message "Engine Speed too high" will appear on the scan tool if this control is attempted with an engine speed greater than 2500 RPM. - The transmission oil temperature must be at a normal operating temperature. The message "Transmission oil temperature out of range" will appear on the scan tool if this control is attempted without a transmission oil temperature between 70–110°C (158–230°F).

Reset Transmission Adapts	• The scan tool is used to start and stop the transmission Fast Learn Adapt algorithm. • The following control limits apply: ◦ The engine must be running. The message "Engine not Running" will appear on the scan tool if this control is attempted without the engine running. ◦ There cannot be active transmission DTCs. The message "Transmission Fault present" will appear on the scan tool if this control is attempted with transmission DTCs active.
Shift Solenoid 1	• The TCM commands Shift Solenoid 1 and Shift Solenoid 2 ON and OFF. • When the ignition is ON, and the engine is OFF, there are no limits to this control. The solenoid remains ON until commanded OFF, and vice versa. When the output control is exited, the solenoid state is determined by the TCM. • When the engine is running, the following control limits apply:
Shift Solenoid 2	◦ The transmission range must be in Park or Neutral. If the transmission range is not Park or Neutral, the message "Engine running and transmission range is not Park/Neutral" appears on the scan tool display. ◦ The solenoid remains ON until commanded OFF, and vice versa. When the output control is exited, the solenoid state is determined by the TCM. ◦ Transmission range DTCs must not be active. If a transmission range DTC is active, the message "Engine running with transmission DTC present" appears on the scan tool display.
TCC PC Solenoid Command	• The transmission control module (TCM) commands the torque converter clutch pressure control (TCC PC) solenoid pressure in order to apply and release the TCC. • When the ignition is ON, and the engine is OFF, there are no limits to this control. The solenoid remains ON until commanded OFF and vice versa. • When the engine is running, the following control limits apply: ◦ If the transmission range is Park, and the transmission is in hot mode, the TCC PC solenoid may not be commanded OFF. If the solenoid is requested OFF, the message "TCC OFF command disabled in Hot Mode" appears on the scan tool display. ◦ The TCC PC solenoid may not be commanded OFF for more than a calibrated amount of time. If the solenoid is commanded OFF, for a certain amount of time, the message "TCC OFF time has been exceeded" appears on the scan tool display.

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Transmission Fluid Pressure (TFP) Switch Logic

Gear	TFP Switch States			
	TFP SW1	*TFP SW3	TFP SW4	TFP SW5
Park	High	Low	Low	Low
Reverse	Low	Low	Low	Low
Neutral	High	Low	Low	Low
Drive 1st – Engine Braking	High	High	Low	Low
Drive 1st	High	High	Low	High
Drive 2nd	High	Low	Low	High
Drive 3rd	Low	High	Low	High
Drive 4th	High	High	Low	Low
Drive 5th	Low	High	High	Low
Drive 6th	High	High	High	Low
Drive 6th (Possible additional gear state)	High	Low	High	Low

High = 12V (Switch Open or Pressurized)
Low = 0V (Switch Closed or No Pressure)
Note: All TFP switches are normally closed (NC)
*TFP switch 2 does not exist

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Transmission General Specifications				
Name	6L45	6L50	6L80	6L90
RPO Codes	MYA	MYB	MYC	MYD
Production Location	Silao, Mexico; Strasbourg, France; Toledo, OH (USA)	Silao, Mexico; Strasbourg, France; Toledo, OH (USA)	Silao, Mexico; Strasbourg, France; Toledo, OH (USA)	Silao, Mexico; Strasbourg, France; Toledo, OH (USA)
Transmission Drive	Rear Wheel Drive	Rear Wheel Drive	Rear Wheel Drive	Rear Wheel Drive
1st Gear Ratio	4.065	4.065	4.027	4.027
2nd Gear Ratio	2.371	2.371	2.364	2.364
3rd Gear Ratio	1.551	1.551	1.532	1.532
4th Gear Ratio	1.157	1.157	1.152	1.152
5th Gear Ratio	0.853	0.853	0.852	0.852
6th Gear Ratio	0.674	0.674	0.667	0.667
Reverse	3.200	3.200	3.064	3.064
Torque Converter Size – Diameter of Torque Converter Turbine	240/258 mm	245/258 mm	258/300 mm	300 mm
Pressure Taps	Line Pressure	Line Pressure	Line Pressure	Line Pressure
Transmission Fluid Type	DEXRON VI®	DEXRON VI®	DEXRON VI®	DEXRON VI®
Transmission Type: 6	Six Forward Gears	Six Forward Gears	Six Forward Gears	Six Forward Gears
Transmission Type: L	Longitude Mount	Longitude Mount	Longitude Mount	Longitude Mount
Transmission Type: 50	Product Series	Product Series	Product Series	Product Series
Position Quadrant	P, R, N, D, M	P, R, N, D, M	P, R, N, D, S	P, R, N, D, M
Case Material	Die Cast Aluminum	Die Cast Aluminum	Die Cast Aluminum	Die Cast Aluminum
Transmission Net Weight (Approximate)	75–78 kg (165–172 lb)	90 kg (198 lb)	95.1–103.7 kg (209.7–228.6 lb)	110 kg (243 lb)
Maximum Trailer Towing Capacity	Refer to applicable owner's manual	Refer to applicable owner's manual	N/A	Refer to applicable owner's manual

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Transmission Internal Mode Switch Logic

Gear Selector Position	Signal A	Signal B	Signal C	Signal P
Park	LOW	HI	HI	LOW
Park/Reverse	LOW	LOW	HI	LOW
Reverse	LOW	LOW	HI	HI
Reverse/Neutral	HI	LOW	HI	HI
Neutral	HI	LOW	HI	LOW
Neutral/Drive 6	HI	LOW	LOW	LOW
Drive 6	HI	LOW	LOW	HI
Drive 6/Drive 4	LOW	LOW	LOW	HI
Drive 4	LOW	LOW	LOW	LOW
Drive 4/Drive 3	LOW	HI	LOW	LOW
Drive 3	LOW	HI	LOW	HI
Drive 3/Drive 2	HI	HI	LOW	HI
Drive 2	HI	HI	LOW	LOW
Open	HI	HI	HI	HI
Invalid	HI	HI	HI	LOW
Invalid	LOW	HI	HI	HI

HI = Ignition voltage
LOW = 0 volts

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Transmission Internal Mode Switch Logic

Gear Selector Position	Signal A	Signal B	Signal C	Signal P
Park	LOW	HI	HI	LOW
Park/Reverse	LOW	LOW	HI	LOW
Reverse	LOW	LOW	HI	HI
Reverse/Neutral	HI	LOW	HI	HI
Neutral	HI	LOW	HI	LOW
Neutral/Drive 6	HI	LOW	LOW	LOW
Drive 6	HI	LOW	LOW	HI
Drive 6/Drive 4	LOW	LOW	LOW	HI
Drive 4	LOW	LOW	LOW	LOW
Drive 4/Drive 3	LOW	HI	LOW	LOW
Drive 3	LOW	HI	LOW	HI
Drive 3/Drive 2	HI	HI	LOW	HI
Drive 2	HI	HI	LOW	LOW
Open	HI	HI	HI	HI
Invalid	HI	HI	HI	LOW
Invalid	LOW	HI	HI	HI

HI = Ignition voltage
LOW = 0 volts

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Trim Height Specifications		
Suspension	Z Height	D Height
Trim Height must be verified and adjusted before aligning the vehicle.		
Low Boy	114 mm (4.48 in) ± 12 mm (0.50 in)	92 mm (3.6 in) ± 12 mm (0.50 in)
High Boy	140 mm (5.51 in) ± 12 mm (0.50 in)	83 mm (3.6 in) ± 12 mm (0.50 in)

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Submodel: | Engine Type: | Liters:
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Alignment Condition: Full tank of fuel, no passengers and placed on flat level surface.

Wheel Alignment Specifications

Front Suspension Wheel Alignment Service at Curb

RPO	Wheels	Caster		Cross Caster	Camber		Cross Camber	Total Toe	Steering Wheel Angle	Thrust Angle
		Left	Right	(Left – Right)	Left	Right	(Left – Right)	(Left + Right)		(Left – Right)
F88	Front Dim. nominal	3°35' ± 45	3°35' ± 45	—	0'± 30'	0'± 30'	—	0± 2 (mm)	—	—
	Front Production	2,83° to 4,33°	2,83° to 4,33°	30' or less	–0,5° to 0,5°	–0,5° to 0,5°	30' or less	–2 to 2 (mm)	—	—
	Front Service	2,83° to 4,33°	2,83° to 4,33°	30' or less	–0,5° to 0,5°	–0,5° to 0,5°	30' or less	–2 to 2 (mm)	—	—
F89	Front Dim. nominal	3°20' ± 45	3°20' ± 45	—	0'± 30'	0'± 30'	—	0± 2 (mm)	—	—
	Front Production	2,58° to 4,08°	2,58° to 4,08°	30' or less	–0,5° to 0,5°	–0,5° to 0,5°	30' or less	–2 to 2 (mm)	—	—
	Front Service	2,58° to 4,08°	2,58° to 4,08°	30' or less	–0,5° to 0,5°	–0,5° to 0,5°	30' or less	–2 to 2 (mm)	—	—

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Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Alignment Condition: Full tank of fuel, no passengers and placed on flat level surface.
Wheel Alignment Specifications

Front Suspension Wheel Alignment										
Service at Curb										
RPO	Wheels	Caster		Cross Caster	Camber		Cross Camber	Total Toe	Steering Wheel Angle	Thrust Angle
		Left	Right	(Left – Right)	Left	Right	(Left – Right)	(Left + Right)		(Left – Right)
F88	Front Dim. nominal	3°35' ± 45	3°35' ± 45	—	0'± 30'	0'± 30'	—	0± 2 (mm)	—	—
	Front Production	2,83° to 4,33°	2,83° to 4,33°	30' or less	–0,5° to 0,5°	–0,5° to 0,5°	30' or less	–2 to 2 (mm)	—	—
	Front Service	2,83° to 4,33°	2,83° to 4,33°	30' or less	–0,5° to 0,5°	–0,5° to 0,5°	30' or less	–2 to 2 (mm)	—	—
F89	Front Dim. nominal	3°20' ± 45	3°20' ± 45	—	0'± 30'	0'± 30'	—	0± 2 (mm)	—	—
	Front Production	2,58° to 4,08°	2,58° to 4,08°	30' or less	–0,5° to 0,5°	–0,5° to 0,5°	30' or less	–2 to 2 (mm)	—	—
	Front Service	2,58° to 4,08°	2,58° to 4,08°	30' or less	–0,5° to 0,5°	–0,5° to 0,5°	30' or less	–2 to 2 (mm)	—	—