Chevrolet

TrailBlazer

2007

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Product Information

Trailblazer SS Headlines Chevy's '07 Midsize SUV Lineup

TrailBlazer SS returns to lead Chevy's midsize SUV lineup for 2007, delivering sports car performance combined with the functionality expected of a utility vehicle. For '07, the SS becomes a distinct model and is available in two equipment packages: 1SS and 3SS.

TrailBlazer SS has unique exterior styling and specific interior appointments, including prominent 20-inch flangeless wheels. Power comes from a Corvette-derived LS2 6.0L V-8, which produces 395 horsepower (295 kW) and 400 lb.-ft. of torque (542 Nm) – enabling the powerful SUV to reach 60 mph in 5.7 seconds. A performance suspension with lowered ride height also is part of the package. The TrailBlazer SS is available in two-wheel drive and all-wheel drive configurations.

The rest of the TrailBlazer lineup for 2007 is marked by these updates:

- Tire pressure monitoring system standard on all models
- Regulated voltage control, which enhances fuel economy
- OnStar Gen 7
- Three new exterior colors: Moondust Metallic, Imperial Blue and Graphite Metallic

GM's tire pressure monitoring system was previously available only on the TrailBlazer SS; its inclusion as standard equipment in all models enhances TrailBlazer's safety story. TrailBlazer also is an efficient midsize SUV: GM's fuel-saving Active Fuel Management technology is standard with the available Vortec 5.3L V-8 engine. It is rated at 302 horsepower (225 kW) and 330 lb.-ft. of torque (447 Nm)**; Active Fuel Management regulates between eight- and four-cylinder power to produce up to 5 percent improved fuel economy in certain light-load driving conditions.

The class-leading standard engine in TrailBlazer continues to be the award-winning Vortec 4.2L I-6, which produces 291 horsepower (217 kW) and 277 lb.-ft. of torque (375 Nm).* The Hydra-Matic 4L60 electronically controlled four-speed automatic transmission is matched with both the Vortec 4.2L and Vortec 5.3L engines. The TrailBlazer SS's transmission is the new, heavy-duty Hydra-Matic 4L70 four-speed automatic.

Regulated voltage control is new for the Vortec 4.2L and Vortec 5.3L engines. It enhances fuel economy by reducing the load on the engine generated by the alternator.

Safety details

StabiliTrak is standard on all models. StabiliTrak helps drivers maintain control during sudden maneuvers or in low traction conditions by using a comprehensive series of sensors to measure acceleration, deceleration, steering angle and yaw rate. By monitoring these inputs, the system automatically controls the vehicle to help maintain the driver's intended path when a measurable deviation from the intended course is detected. The system maintains control by regulating vehicle acceleration or applying the brakes at any wheel. For example, if the vehicle begins to understeer, StabiliTrak applies the inside rear brake to help turn the vehicle. If the vehicle begins to oversteer, StabiliTrak applies the outside front brake to straighten the vehicle. All models feature low-drag brake caliper design.

The TrailBlazer has GM's Passenger Sensing System (PSS). PSS uses the latest sensing technology to turn the front passenger air bag on or off. If the sensor system detects an unoccupied front passenger seat or the presence of a smaller occupant, the front passenger air bag is designed to automatically turn off so it will not deploy in the event of a frontal collision. A status indicator on the instrument panel alerts occupants that the passenger air bag is on or off. Even with this system, GM strongly recommends to restrain child passengers in an appropriate child seat placed in the second or third row of the vehicle. Never install a rear-facing infant seat in front of an active air bag. GM also recommends that all children 12 and under ride in the rear seat when possible.

TrailBlazer also has standard pretensioners in the outboard front safety belt system that deploy at the same time as the frontal air bags to take up slack in the safety belt webbing. Pretensioners also help reduce the amount of occupant movement in the event of a crash to help reduce the risk of injury.

Available head curtain side air bags act like a protective curtain when deployed, unfolding from the roof rail between the A-pillar and side window header. When the bag deploys in a moderate to severe side impact, it is angled somewhat toward the window to help provide protection for front- and second-row outboard passengers. In vehicles equipped with head curtain side air bags, a new rollover protection sensing system helps protect occupants in a rollover event by triggering both the side curtain air bags and safety belt pretensioners. The rollover-sensing module, located on the center tunnel under the rear seat, uses a complex algorithm based on lateral and vertical accelerations, roll rate and vehicle speed to determine whether to deploy the safety systems.

TrailBlazers are equipped with LATCH (Lower Anchors and Tethers for CHildren) system for child safety seats in all second-row seats. The LATCH system provides two lower anchors and a top tether anchor to be used to secure a child seat to the vehicle seat structure. These anchorages are designed to make it easier to properly install compatible child safety seats. An enhanced front passenger safety belt reminder system also is standard.

All TrailBlazer models come with OnStar Generation 7 (with one-year Safe and Sound service). The service includes the General Motors Advanced Automatic Crash Notification (AACN) system, making crash data available to the participating 911 centers to help them dispatch the appropriate live-saving personnel and equipment to crash scenes faster.

Refinement and convenience

TrailBlazer uses hydroformed steel frame side rails, which form a strong foundation for the trucks' overall strength and solid feel, even on unpaved surfaces. A five-link rear suspension and independent, double-A-arms up front work with a system of 12 specially tuned body mounts using hydraulics and rubber pads to dramatically reduce vibration and harshness on any kind of road or trail. Four-wheel ventilated anti-lock disc brakes are standard. An Autotrac four-wheel drive system is standard on 4WD models.
Available options on TrailBlazer include the Sun, Sound and Entertainment package, which combines a power sunroof, rear-seat DVD entertainment system, Bose premium speaker system, XM Satellite Radio and an ETR AM/FM stereo with six-disc CD changer. Also available are adjustable brake and accelerator pedals, head side-curtain air bags, inside rearview mirror with temperature gauge and compass, leather seating surfaces with eight-way-power driver and passenger seats, sunroof, and both factory- and dealer-installed running boards.

Available entertainment and information features include XM Satellite Radio and Navigation Radio. XM (continental U.S. only) provides more than 120 coast-to-coast, digital-quality channels of original commercial-free music and premier news, sports and talk as well as advanced traffic and weather information for select major metropolitan areas nationwide. Navigation Radio incorporates a dash-mounted GPS system and display with the vehicle's sound system.

TrailBlazer also offers generous cargo room. Cargo volume is 43.7 cubic feet (1,237.5 L) behind the rear seat and 80 cubic feet (2,265 L) with the rear seat folded.

TrailBlazer SS details

TrailBlazer SS is a serious performer and a capable midsize SUV. Riding on a 1-inch-lower suspension, the TrailBlazer SS's suspension was tuned and tested on the racetrack to deliver responsive, balanced handling. The lower ride height reduces the vehicle's center of gravity, improving overall handling. This was accomplished with new springs at all four corners. The springs are up to 25 percent stiffer, which complements the lowered ride height with a firmer feel and reduced body roll. Corner control and body roll control also are improved with front stabilizer bars that are approximately 10 percent larger in diameter than other TrailBlazer models. StabiliTrak electronic stability control is standard.

The four-wheel disc braking system of the TrailBlazer SS is enhanced with larger, 12.8-inch front disc brake rotors and iron twin-piston calipers. The heavy-duty iron calipers are stiff and retain their shape under high pressure/high heat braking conditions, providing a more linear feel and reduced pedal travel in high-energy stops. The brake pads use the same high-performance linings as the Corvette for strong fade resistance. ABS is standard. There also is an accessory front brake cooling package available for optimized track performance. With TrailBlazer SS's brakes, tires and revised ABS algorithm, 62 mph to 0 (100 kph to 0) stopping distance is approximately 135 feet.

Under the hood of the TrailBlazer SS is the LS2 6.0L V-8. It is rated at 395 horsepower (295 kW) and 400 lb.-ft. of torque (542 Nm). The LS2 6.0L is based on the Gen IV small-block V-8 architecture and delivers satisfying down-low torque for strong off-the-line performance. Torque is inherent to the engine's cam-in-block design, large 4.00-inch-diameter (101.6 mm) bores and 3.62-inch (92 mm) stroke. Response is crisp and immediate, thanks to the electronically controlled throttle.

Unique to the TrailBlazer SS's version of the engine is a composite intake manifold used in other midsize trucks and adapted to the LS2 to help produce balanced torque and horsepower within packaging parameters. The engine also has the TrailBlazer's trademark pass-through oil pan. The pan's cast-in passage allows the front differential's half-shaft to run through the pan instead of under it. This helps keep the engine mounted lower in the chassis for better balance and a lower center of gravity. There also is a stylish SS-specific engine cover, radiator support cover and coordinated air induction box.

Backing the 6.0L V-8 is a new Hydra-Matic 4L70 electronically controlled four-speed automatic transmission. It debuts in the TrailBlazer SS and was developed to handle the high horsepower and high torque loads of performance-oriented light-duty vehicles. Special high-strength and heat-treated materials are used in the 4L70 to ensure it delivers smooth, dependable shifting. A performance-oriented all-wheel drive system is available, giving the TrailBlazer SS impressive on-road grip and enhanced "launch" feel. The always-engaged system uses a Torsen center differential to split torque between the front and rear wheels. It is a torque-bias system that detects low traction at one axle and directs more torque to the other when needed – it is capable of changing the normal 67-percent rear-axle torque bias up to 45/55 (front/rear) or 25/75 (front/rear), depending on the road conditions.

As with all Chevy models wearing the SS badge, the promise of the TrailBlazer SS's performance specifications is reinforced by authentic design cues. For this midsize SUV, that means a tight, sleek look and a monochromatic color scheme, with sporty front and rear fascias, a racing-style black mesh grille and large, bright exhaust outlet exiting beneath the rear bumper. The TrailBlazer SS also has been stripped of body side moldings, the roof rack and other cladding that adds visual weight to the vehicle. The rear pillars are blacked-out, blending with the tinted glass for a more integrated, wraparound style. The mirrors, door handles and grille cross bar are painted body color, too. Four exterior colors are available: black, white, silver and blue.

Inside, a driver-oriented "cockpit" features a SS-signature instrument cluster, including a prominent tachometer. The silver-face tachometer has black numerals, a signature SS item. Other SS-specific cues include embroidered seat backs and the leather-wrapped steering wheel. Performance-style front bucket seats are standard and feature firm "wing" bolsters to help keep the driver and front passenger planted during spirited driving. Cloth seating is standard and leather-appointed seating is available. And because SS means style as much as performance, the TrailBlazer SS's refinements include a French seam stitching on the console armrests, aluminum sill plates and numerous chrome accents. A T-shape shifter with a satin nickel accent also distinguishes the vehicle's cabin.

TrailBlazer SS also delivers the capability expected of an SUV: The towing capacity is up to 6,700 pounds with the two-wheel drive model and up to 6,500 pounds with the available all-wheel drive model.

* *Horsepower and torque SAE certified. A new voluntary power and torque certification procedure developed by the SAE Engine Test Code committee was approved March 31, 2005. This procedure (J2723) ensures fair, accurate ratings for horsepower and torque by allowing manufacturers to certify their engines through third-party witness testing. GM was the first auto manufacturer to begin using the procedure and expects to use it for all newly rated engines in the future.*

** *Preliminary, pending SAE certification.*

New For 2007

- Three new exterior colors: Moondust Metallic, Imperial Blue and Graphite Metallic
- Tire pressure monitor standard on all models
- OnStar Gen 7
- Regulated voltage control
- TrailBlazer SS becomes separate model; available in 1SS and 3SS equipment packages

Model Lineup

	Engines			Transmissions	
	Vortec 4.2L I-6	Vortec 5.3L V-8	LS2 6.0L V-8	4-spd auto (Hydra-Matic 4L60)	4-spd auto (Hydra-Matic 4L70)
TrailBlazer					
LS	s	o	—	s	—
LT	s	o	—	s	—
TrailBlazer SS	—	—	s	—	s

tandard s
Not available –
Optional o

Specifications

Overview			
Models:	Chevrolet TrailBlazer LS, LT and SS;		
Body style / driveline:	4-door, 5- and 7-passenger, front-engine, 2- and 4-wheel-drive midsize sport utilities		
Construction:	body on frame		
EPA vehicle class:	midsize sport utility		
Manufacturing location:	Moraine, OH		
Key competitors:	Ford Explorer, Jeep Grand Cherokee, Dodge Durango , Toyota 4-Runner		
Engines	**Vortec 4200 4.2L I-6 (LL8)**	**Vortec 5300 5.3L V-8 (LH6)**	**6.0L V-8 (LS2)**
Type:	4.2L I-6	5.3L V-	6.0-liter V-8
Displacement (cu in / cc):	256 / 4195	325 / 5328	366 / 6000
Bore & stroke (in / mm):	3.66 x 4.01 / 93 x 102	3.78 x 3.27 / 96.01 x 92	4.00 x 3.62 / 101.6 x 92
Block material:	cast aluminum	cast aluminum	cast aluminum
Cylinder head material:	cast aluminum	cast aluminum	cast aluminum
Valvetrain:	dual overhead camshafts, continuously variable valve timing, 4 valves per cylinder	overhead valve, 2 valves per cylinder, hydraulic roller lifters	overhead valve, 2 valves per cylinder, hydraulic roller lifters
Ignition system:	coil-on-plug, platinum-tipped spark plugs	coil near plug	coil near plug
Fuel delivery:	sequential fuel injection	sequential fuel injection	sequential fuel injection
Compression ratio:	10.3:1	9.9:1	10.9:1
Horsepower (hp / kw @ rpm):	291 / 217 @ 6000*	302 / 225 @ 5200**	395 / 294 @ 6000*
Torque (lb-ft / Nm @ rpm):	277 / 375 @ 4800*	330 / 447 @ 4000**	400 / 542 @ 4000*
Recommended fuel:	regular unleaded	regular unleaded	premium fuel recommended but not required
Maximum engine speed (rpm):	6300	6000	6600
Emissions controls:	3-way catalytic converter, positive crankcase ventilation, evaporative collection system, variable valve timing	evaporative system, catalytic converter, exhaust gas recirculation, positive crankcase ventilation	evaporative system, catalytic converter, exhaust gas recirculation, positive crankcase ventilation
Estimated fuel economy			
(mpg city / hwy / combined):	2WD: 16 / 21 / 18 4WD: 15 / 21 / 18	2WD: TBD 4WD: TBD	TBD

Transmission	**Hydra-Matic 4L60-E**	**Hydra-Matic 4L70-E**
Application:	std with 4.2L, 5.3L engines	std with SS 6.0L engine
Type:	4-speed automatic transmission, rear-wheel drive, electronically controlled automatic overdrive with torque converter clutch	heavy-duty 4-speed automatic transmission, rear-wheel-drive, electronically controlled automatic overdrive with torque converter clutch
Gear ratios (:1):		
First:	3.06	3.06
Second:	1.63	1.63
Third:	1.00	1.00
Fourth:	0.70	0.70
Reverse:	2.29	2.29
Final drive ratio:	3.42:1; 3.73:1 and 4.10:1* are optional (*not optional on V-8)	4.10:1

Chassis/Suspension	
Front:	independent, double A-arm, 46-mm shocks, 34-mm stabilizer
Rear:	LS and LT: 5-link solid axle, 36-mm shocks, 34-mm stabilizer bar on 2WD, 24-mm stabilizer bar on 4WD; SS: 5-link solid axle, solid 9.5-in heavy-duty (400-lb pre-load) limited-slip axle, 36-mm shocks, 24-mm stabilizer bar
Transfer case system:	Autotrac (standard on 4WD)
Steering type:	rack-and-pinion (hydraulically assisted)
Steering ratio:	TrailBlazer LS and LT: 20.4:1; TrailBlazer SS: 16:1 low friction
Steering wheel turns, lock-to-lock:	TrailBlazer LS and LT: 3.82; TrailBlazer SS: 3
Turning circle, curb-to-curb (ft / m):	TrailBlazer LS and LT: 36.4 / 11; TrailBlazer SS: 36.4 / 11.1

Brakes	**TrailBlazer**	**TrailBlazer SS**
Type:	4-wheel vented disc with front aluminum dual piston calipers, standard; drum-in-hat parking brake	4-wheel ABS; drum-in-hat parking brake 4-wheel vented disc with front aluminum dual piston calipers, standard 4-wheel ABS; drum-in-hat parking brake
Rotor diameter x thickness (in / mm):	front: 12 x 1.14 / 305 x 29; rear: 12.8 x 0.78 / 325 x 20	front: 12.8 x 1.14 / 325 x 29; rear: 12.8 x 0.78 / 325 x 20
Total swept area (sq in / sq cm):	front: 210 / 1353; rear: 217 / 1397	front: 228 / 1469; rear: 217 / 1397

Wheels/Tires	**TrailBlazer**	**TrailBlazer SS**
Wheel size & type:	std: 16-inch cast aluminum; opt: 17-inch bright aluminum; opt: 17-inch sport aluminum	20-inch polished cast aluminum
Tires:	std: P235/75R16; opt: P245/65R17	255/50 R20 V-rated

Dimensions

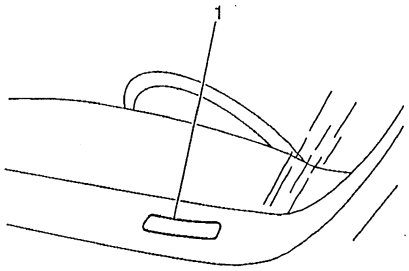
Exterior	TrailBlazer	Trailblazer SS
Wheelbase (in / mm):	113 / 2870	113 / 2870
Overall length (in / mm):	191.8 / 4872	191.8 / 4872
Overall width (in / mm):	74.6 / 1895	74.6 / 1895
Overall height, with side rails (in / mm):	74.5 / 1892	67.83 / 1723
Track (in / mm):	front: 63.1 / 1603; rear: 62.1 / 576	front: 63.1 / 1603 rear: 62.1 / 576
Minimum ground clearance (in / mm):	7.8 / 198	7.82 / 198.5
Ground to top of load floor (in / mm):	32.1 / 817	30.05 / 763
Step-in height, 2WD (in / mm):	19.7 / 500	17.6 / 446
Approach angle (deg):	29	TBD
Departure angle (deg):	23	TBD
Curb weight (lb / kg):	2WD: 4417 / 2004 4WD: 4594 / 2084	4552 / 2064
Weight distribution (% front / rear):	2WD: 53 / 47 4WD: 53 / 47	53 / 47

Interior	TrailBlazer and Trailblazer SS
Seating capacity:	1st row: 2 2nd row: 3 (total 5)
Headroom (in / mm):	1st row: 40.2 / 1021 2nd row: 39.6 / 1006
Legroom (in / mm):	1st row: 46.9 / 1191 2nd row: 37 / 940
Shoulder room (in / mm):	1st row: 58.5 / 1486 2nd row: 58.5 / 1486
Hip room (in / mm):	1st row: 56 / 1422 2nd row: 58.2 / 1478
Cargo length floor (in / mm):	70 / 1778
Cargo volume (cu ft / L):	2nd row seat up: 41 / 1162 behind 1st row seat: 80.1 / 2268

Capacities	TrailBlazer (4.2L)	TrailBlazer (5.3L)	TrailBlazer SS
GVWR, standard (lb / kg):	2WD: 5550 / 2517 4WD: 5750 / 2608	2WD: 4442 / 2015 4WD: 6001 / 2722	2WD: 6001 / 2722 4WD: 6001 / 2722
Payload, base (lb / kg):	2WD: 1133 / 514 4WD: 1156 / 524	TBD	2WD: 1449 / 514 4WD: 1273 / 577
Trailer towing maximum (lb / kg):	2WD: 6300 / 2858 4WD: 6100 / 2766	2WD: 6700 / 3039 4WD: 6500 / 2948	2WD: 6700 / 3039 4WD: 6500 / 2948
Maximum tongue weight (lb / kg):	400 / 181 (without sway control)	TBD	400 / 181 (without sway control)
Fuel tank (gal / L):	22 / 83.3	22 / 83.3	22 / 83.3
Engine oil (qt / L):	7 / 6.6	6 / 5.7	5.5 / 5.2
Cooling system (qt / L):	13.9 / 13.1	TBD	15.3 / 14.5

Vehicle Identification

Vehicle Identification Number (VIN)



The vehicle identification number (VIN) plate is the legal identifier of the vehicle. The VIN plate is located on the upper LH corner of the Instrument Panel and can be seen through the windshield from the outside of the vehicle:

Position	Definition	Character	Description
1	Country of Origin	1,4	U.S. Built
2	Manufacturer	G	General Motors
3	Make	N	Chevrolet MPV
4	GVWR/Brake System	D E	5001-6000/Hydraulic 6001-7000/Hydraulic
5	Truck Line/Chassis Type	S T	Sm Conventional Cab--4x2 Sm Conventional Cab--4x4
6	Series	1	½ Ton Nominal
7	Body Type	3 3	GMT 305 GMT 360
8	Engine Type	S M H	GM 4.2L L6 MFI (LL8) GM 5.3L V8 SFI (LH6) GM 6.0L V8 SFI (LS2)
9	Check Digit	--	Check Digit
10	Model Year	7	2007
11	Plant Location	K 2 X 6	Linden, NJ Moraine E.E.M.S Oklahoma City
12-17	Plant Sequence Number	--	Plant Sequence Number

VIN Derivative

All engines and transmissions are stamped or laser etched with a partial vehicle identification number (VIN), which was derived from the complete VIN. A VIN derivative contains the following nine positions:

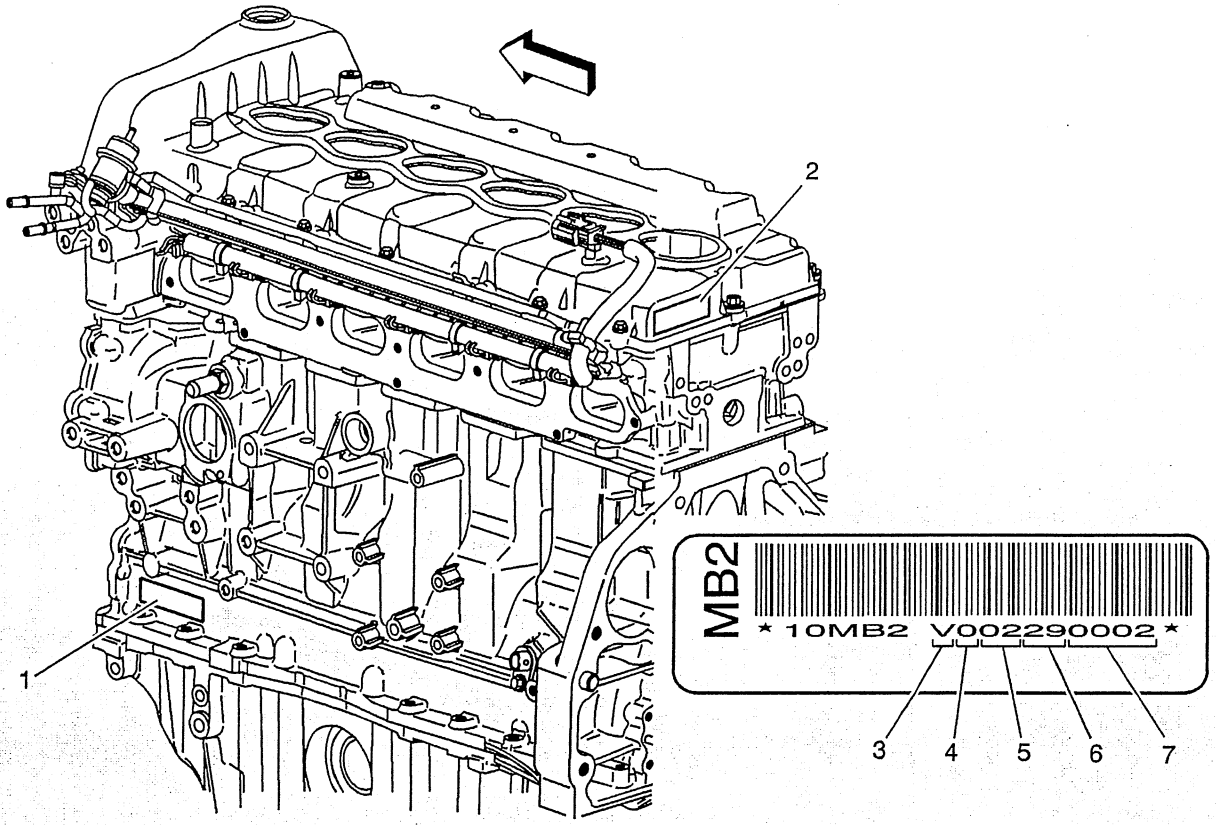
Position	Definition	Character	Description
1	GM Division Identifier	N	Chevrolet MPV
2	Model Year	7	2007
3	Assembly Plant	K 2 X 6	Linden, NJ Moraine E.E.M.S Oklahoma City
4-9	Plant Sequence Number	--	Plant Sequence Number

A VIN derivative can be used to determine if a vehicle contains the original engine or transmission, by matching the VIN derivative positions to their accompanying positions in the complete VIN:

VIN Derivative Position	Equivalent VIN Position
1	3
2	10
3	11
4-9	12-17

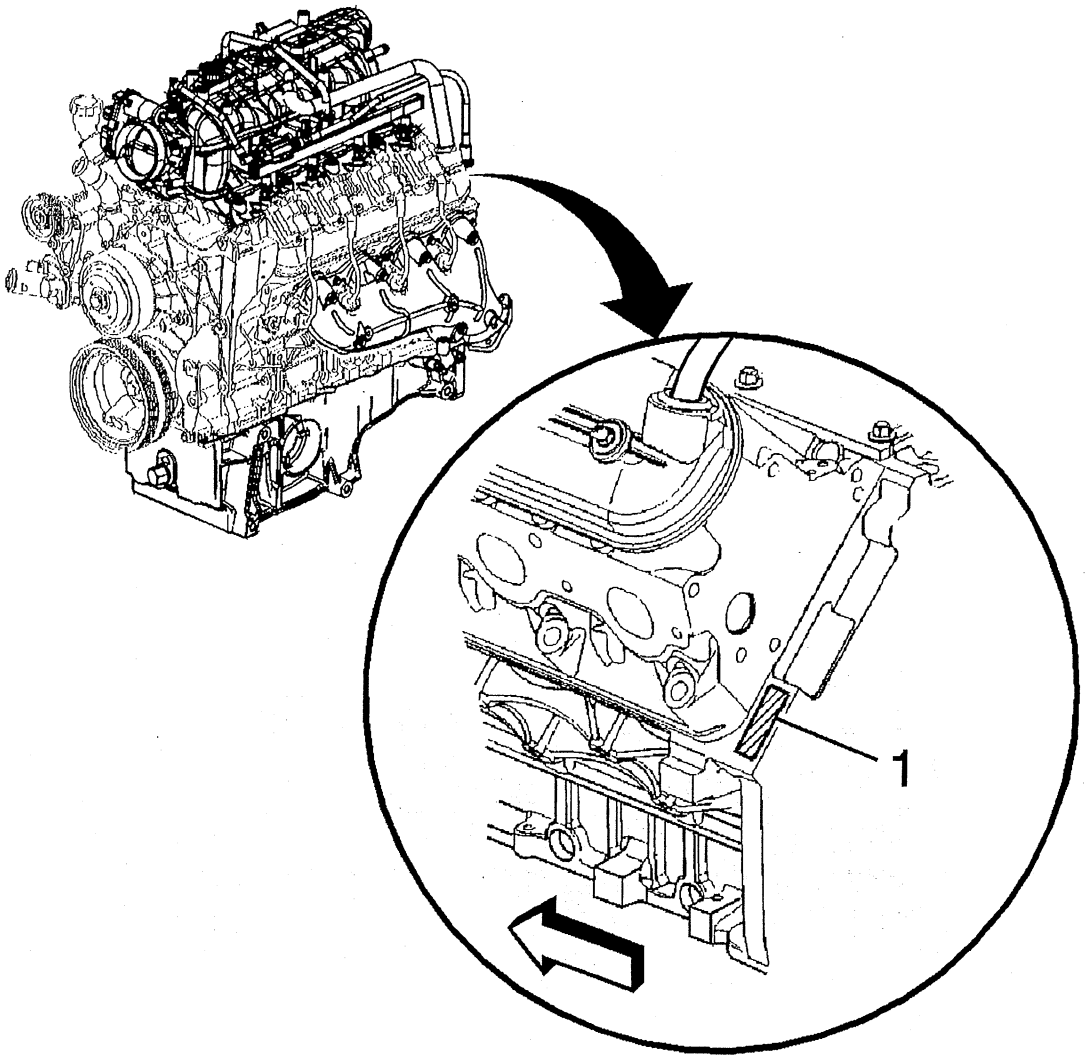
Engine ID and VIN Derivative Location

4.2L L6 Engine RPO LL8



(1) Transmission ID Location
(2) Engine ID Location
(3) The first digit identifies the engine build location - All first digits will be a V, this engine is only being built at Flint Engine South
(4) The second digit identifies the build year
(5) The third and fourth digits identify the build month
(6) The fifth and sixth digits identify the build date
(7) The seventh through tenth digits identify the engine build sequence

5.3L V-8 Engine RPO LH6 and 6.0L V-8 Engine RPO LS2

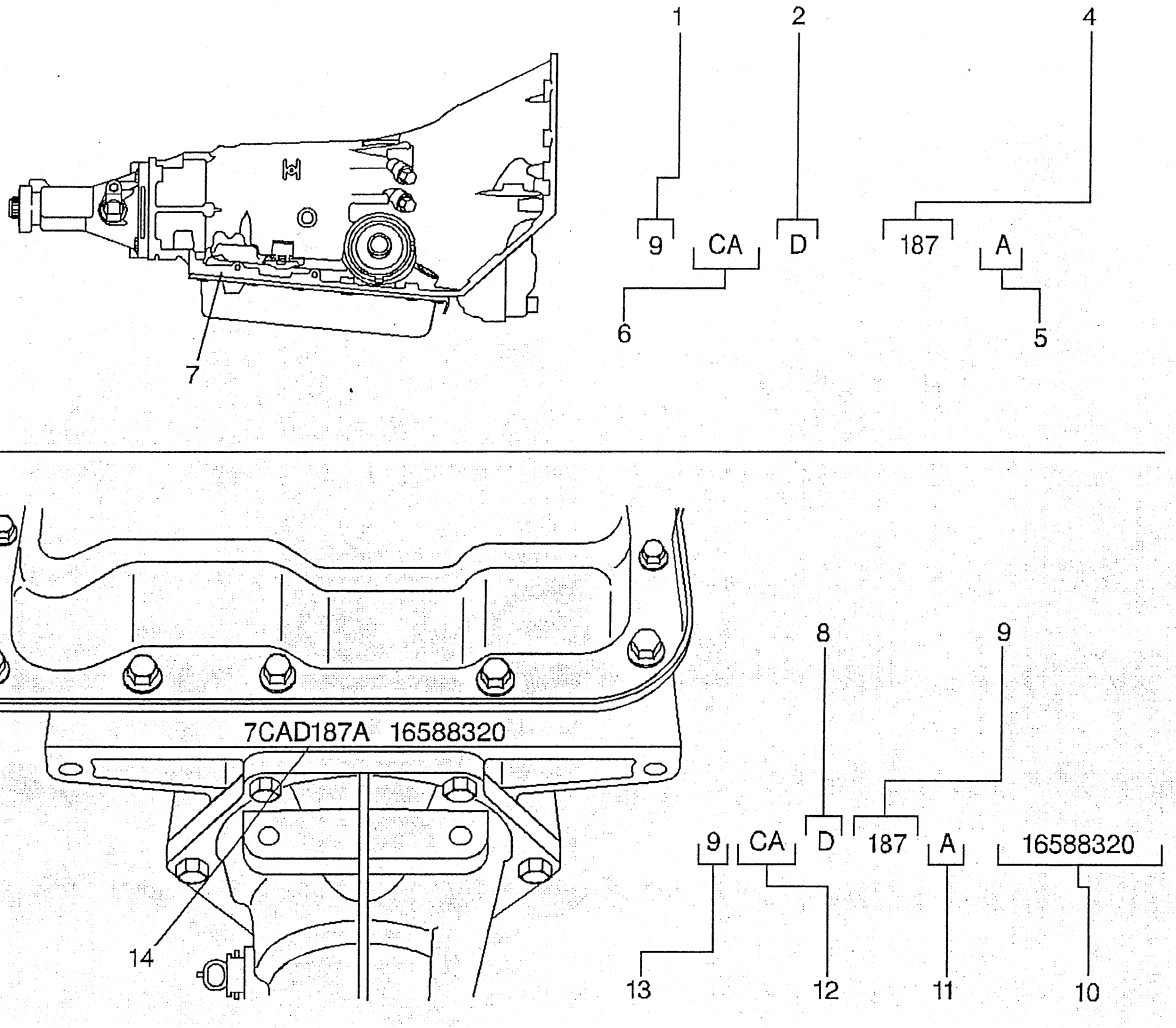


The vehicle identification number (VIN) is located on the left side rear of the engine block (1) and is typically a nine digit number stamped or laser-etched onto the engine at the vehicle assembly plant.

- The first digit identifies the division.
- The second digit identifies the model year.
- The third digit identifies the assembly plant.
- The fourth through ninth digits are the last six digits of the VIN.

Transmission ID and VIN Derivative Location

4L60-E/4L70-E Transmission ID Location

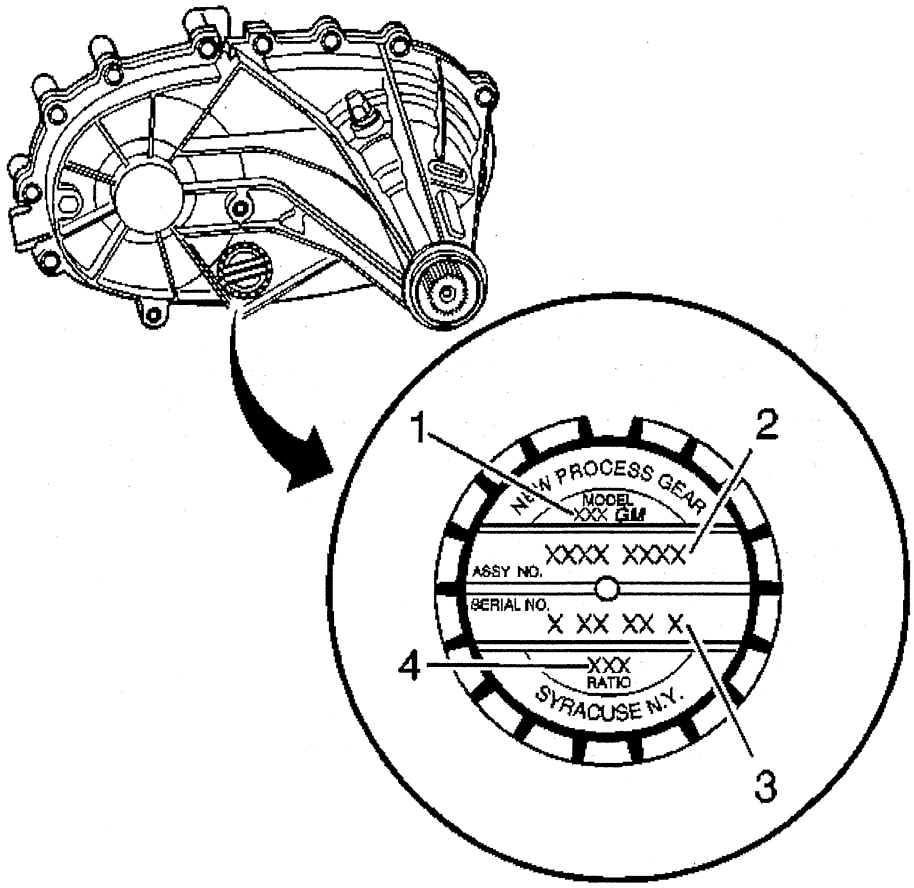


(1) Model Year
(2) Hydra-Matic 4L60-E
(4) Julian Date (or Day of the Year)
(5) Shift Built (A, B, J = First Shift; C, H, W = Second Shift)
(6) Model
(7) Transmission ID Location
(8) Hydra-Matic 4L60-E
(9) Julian Date (or Day of the Year)
(10) Serial No.
(11) Shift Built (A, B, J = First Shift; C, H, W = Second Shift)
(12) Model
(13) Model Year
(14) Transmission ID Location

Plant and Shift Build Chart

Plant	Build Line	1st Shift	2nd Shift	3rd Shift
Toledo, OH	ML1	J	W	X
	ML2	A	C	Not Used
	ML3	B	H	Not Used
	ML4	S	L	V
	ML5	K	E	Z
Romulus, MI	1	A	--	B
Ramos Arizpe, Mexico	1	A	--	--

Transfer Case Identification

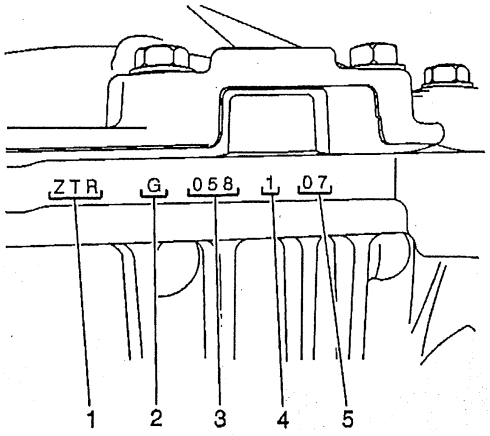


An identification tag is attached to the rear half of the transfer case. The tag provides the following information:

1 Model number (1)
   A First Digit-1 =Single Speed, 2=Two-Speed
   B Second Digit-2 = T Utility, 3 =T-Truck, L-Van, 4 or 6 = K Truck and Utility
   C Third Digit-1 = Manual, 3 = Electric Shift, 6 = Automatic, 9 = All Wheel Drive
2 Assembly number (2)
3 Serial number (Date and Shift Code) (3)
4 Low range reduction ratio (4)

The information on this tag is necessary for servicing the transfer case. If the tag is removed or becomes dislodged during service operations, keep the identification tag with the unit.

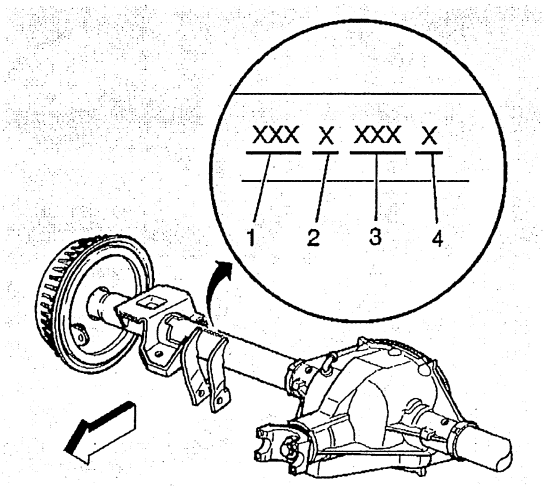
Axle Identification – Front



(1) Broadcast Code
(2) Supplier Code (G = American Axle)
(3) Julian Date (Day of Year)
(4) Shift Built (1 = First Shift; 2 = Second Shift) (Optional for 8.25" and 9.25" axles)
(5) Hour Built

Front axle identification information is stamped on the top of the differential carrier assembly.

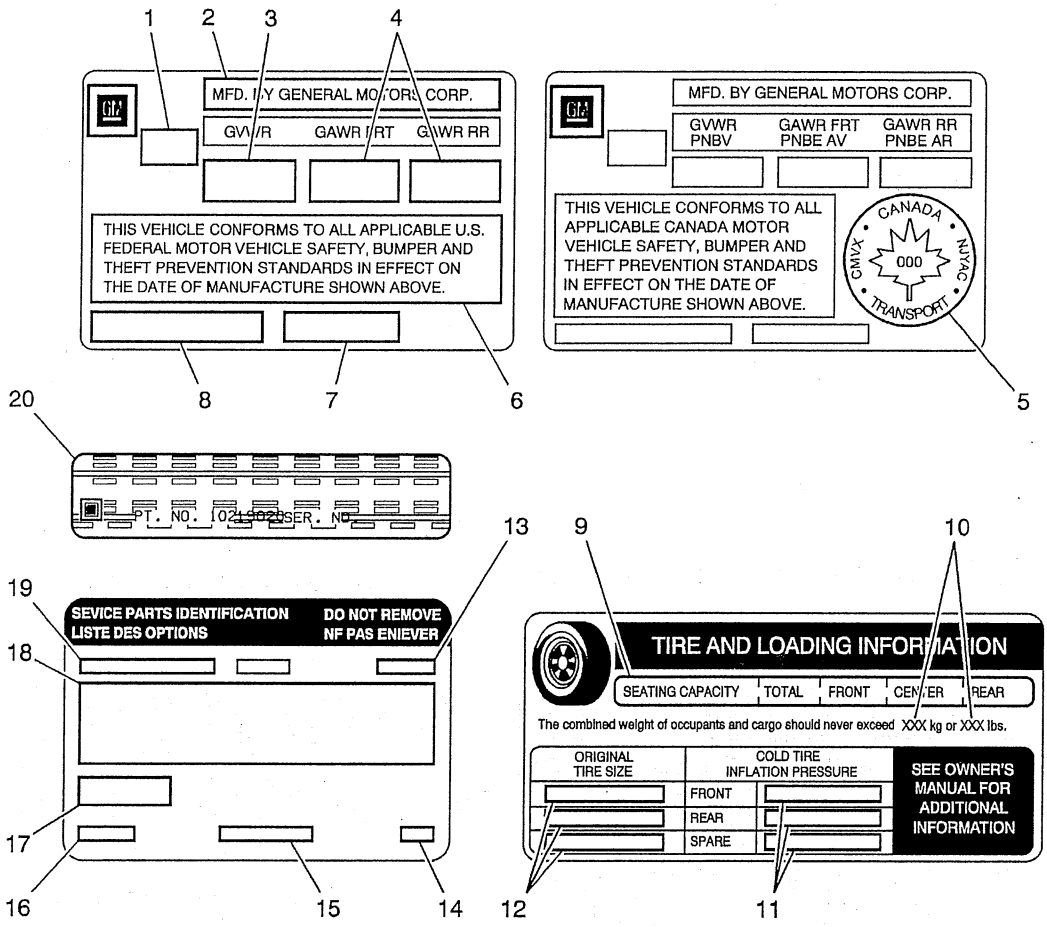
Axle Identification – Rear



(1) Rear Axle Ratio
(2) Build Source (C = Buffalo; K = Canada)
(3) Julian Date
(4) Shift Built (1 = First; 2 = Second)

All rear axles are identified by a broadcast code on the right axle tube near the carrier. The rear axle identification and manufacturer's codes must be known before attempting to adjust or to repair axle shafts or the rear axle case assembly. Rear axle ratio, differential type, manufacturer, and build date information is stamped on the right axle tube on the forward side.

Label - Vehicle Certification, Tire Place Card, Anti-Theft and Service Parts ID



Callout	Description
Vehicle Certification Label	The vehicle certification label is located on the driver door and displays the following assessments: Gross Vehicle Weight Rating (GVWR) Gross Axle Weight Rating (GAWR), front and rear The gross vehicle weight (GVW) is the weight of the vehicle and everything it carries. The GVW must not exceed the GVWR. Include the following items when figuring the GVW: The base vehicle weight (factory weight) The weight of all vehicle accessories The weight of the driver and the passengers The weight of the cargo
1	Name of Manufacturer
2	Gross Vehicle Weight Rating
3	Gross Axle Weight Rating (Front, Rear)
4	Canadian Safety Mark (w/RPO Z49)
5	Certification Statement
6	Vehicle Class Type (Pass Car, etc.)
7	Vehicle Identification Number
8	Date of Manufacture (Mo/Yr)

Callout	Description
Tire Placard	
The tire placard label is located on the driver door and displays the following assessments:	
9	Specified Occupant Seating Positions
10	Maximum Vehicle Capacity Weight
11	Original Equipment Tires Size
12	Tire Pressure, Front, Rear, and Spare (Cold)
Service Parts ID Label	
The vehicle service parts identification label is located in the glove compartment. The label is used to help identify the vehicle original parts and options.	
13	Vehicle Identification Number
14	Engineering Model Number (Vehicle Division, Line and Body Style)
15	Interior Trim Level and Decor
16	Exterior (Paint Color) WA Number
17	Paint Technology
18	Special Order Paint Colors and Numbers
19	Vehicle Option Content
Anti-Theft Label	
20	The Federal law requires that General Motors label certain body parts on this vehicle with the VIN. The purpose of the law is to reduce the number of motor vehicle thefts by helping in the tracing and recovery of parts from stolen vehicles. Labels are permanently affixed to an interior surface of the part. The label on the replacement part contains the letter R, the manufacturer's logo, and the DOT symbol. The anti-theft label must be covered before any painting, and rustproofing procedures, and uncovered after the procedures. Failure to follow the precautionary steps may result in liability for violation of the Federal Vehicle Theft Prevention Standard and possible suspicion to the owner that the part was stolen.

RPO Code List

The production/process codes provide the description of the Regular Production Options (RPOs) used on the vehicle. The RPO list is printed on the Service Parts Identification Label.

RPO	Description
AAB	Memory - Driver Convenience Package
AJ1	Window Tinted - Deep, All Except Windshield and Doors
AK5	Restraint System - Seat, Inflatable, Driver & Pass
AL0	Sensor Indicator - Inflatable Restraint, Front Passenger/Child Presence Detector
AL6	Restraint Cargo
AM9	Seat Rear - Split Back, Folding
ANP	Equipment-Camping Package, Tent and Mattress
ANS	Equipment-Pkg, Mud Flaps, Hood Protector, S/WDO Deflector
ANY	Equipment-Cargo Rails and Tie Downs
AP9	Net - Convenience
AQ2	Net-Convenience, Package
AR9	Seat - Front Bucket, Deluxe
ASF	Restraint Roof Side, LH & RH, Inflatable
ATZ	Seat Rear - Not Installed
AU0	Lock Control, Entry - Remote Entry
AU5	Lock Control, Entry - Remote Entry, Low Power
AU8	Lock Control, Entry - Remote Entry, Specific Frequency
AX4	Restraint Conversion - Seat, Manual, European

RPO	Description
A26	Window - European Glazing, All
A50	Seat - Front Bucket
BAE	Equipment - Security System, Immobilization
BAG	Parts Package - Export
BG2	Covering - Floor Mat, RR
BKE	Covering - Floor Mat Set, Molded Carpet
BMR	Molding Body Side - Body Color, Metallic Insert
BNB	Ornamentation - Exterior, Unpainted
BVE	Steps, Running Board - Side
BVF	Steps, Running Board - Side, Color Keyed
BVT	Steps, Running Board - Side, Chrome
BZR	Steps, Running board - Side, Clear Aluminum
BZT	Steps, Running board - Side, Black Aluminum
B30	Covering Floor - Carpet
B32	Covering Front - Floor Mats, Aux
B33	Covering Rear - Floor Mats, Aux
B3N	Covering - Floor Mat, Front & Rear, Aux - Not Desired
B42	Covering - Floor Mat, Luggage Compartment, Fitted
B86	Molding Body Side - Body Color
CE1	Wiper System - Windshield, Pulse, Moisture Sensitive
CE4	Washer - Headlamp, High Pressure
CF5	Roof - Sun, Glass, Sliding, Elec
CJ2	HVAC System - Air Conditioner Front, Auto Temp Control, Aux Temp Con
CJ3	HVAC System - Air Conditioner Front, Man Temp Control, Aux Temp Control
C4D	GVW Rating - 5,550 lbs
C49	Defogger - Rear Window, Electric
C5N	GVW Rating - 5,750 lbs
C5Q	GVW Rating - 6,300 lbs
DD4	Mirror Inside Rearview - Compass
DD5	Mirror Inside Rearview - Compass Outside Temp Display
DD7	Mirror Inside Rearview - Light Sensitive, Compass
DH2	Mirror Inside Front Van - LH & RH, Illum, with Dual Sunshade
DK2	Mirror Outside - LH & RH, Remote Control, Electric, Heated, Color
DK7	Console Roof - Interior Custom
DK9	Mirror Outside - LH & RH, Remote Control, Electric, Heated, Turn Signal Indicator, Color
DL2	Mirror Outside - LH & RH, Remote Control, Electric, Heated, Power Folding, Turn Signal Indicator, Color
DP1	Mirror Provisions - Convex Glass
DR1	Mirror Outside - LH & RH, Manual Control, Color
DS3	Mirror Outside - LH & RH, Remote Control, Electric, Heated, Manual Folding, Turn Signal Indicator, Color
DS4	Mirror O/S- LH and RH, Remote Control, Electric, Heated, Manual, FLDG, Turn Signal Indicator, Chrome
DT3	Box - RR Compartment, Stowage
EB1	GVW Rating - 6,001 lbs
EC0	Provisions - European Compliant HVAC Controls
EF7	Country - United States of America (USA)
E55	Body Equipment - Endgate
FG4	Shock Absorbers - Rear, Firm Ride
GT4	Axle Rear 3.73 Ratio
GT5	Axle Rear 4.10 Ratio
GU6	Axle Rear 3.42 Ratio

RPO	Description
G67	Level Control - Auto, Air
G80	Axle Positraction - Limited Slip
G86	Axle - Limited Slip
JF4	Pedals - Adjustable, Power
JF8	Brake - Vac Power, 4 Wheel Disc
JT1	GVW Rating - 6,125 lbs
JT3	GVW Rating - 6,375 lbs
KA1	Heater - Seat, Front
KG3	Generator - 150 Amp
KG4	Generator - 145 Amp
K05	Heater Engine - Block
K34	Cruise Control - Automatic, Electronic
LH6	Engine - Gas, 8 Cyl, 5.3L, SFI, Alum, Cylinder Deactivation HO, GM
LL8	Engine - Gas, 6 Cyl, 4.2L, MFI, L6, Alum, DOHC, GM
LS2	Engine - Gas, 8 Cyl, 6.0L, SFI, Alum, GM
M30	Transmission - Auto 4 Speed, HMD, 4L60-E, Electronic
M70	Transmission - Auto 4 Spd, HMD, 4L70-E, Super Duty
NA3	Emission System - Japan
NF4	Emission System - Clean Fuel Fleet
NF9	Emission System - General, OBD MIL Suppression
NP4	Transfer Case - Active, All Wheel Drive (AWD)
NP5	Steering Wheel - Leather Wrapped
NP7	Steering Column - EEC Approved
NP8	Transfer Case - Active, Two Speed, Push Button Control
NR9	Transfer Case - All Wheel Drive (AWD), Open Diff, Torque Biased Single Speed
NT4	Emission System - EEC 05
NT7	Emission System - Federal, Tier 2
NT8	Emission System - Federal, Tier 2 A
NU4	Emission System - California, Lev2 Plus
NZ3	Wheel Spare - Full Size 16" Steel
N30	Steering Wheel - Deluxe
N40	Steering - Power, Non-Variable Ratio
N74	Wheel - 17x7 Aluminum, Sport
N75	Wheel - 17x7 Aluminum, Custom
N77	Wheel - 17x7 Aluminum, Deluxe
N79	Wheel Spare - Full Size Steel
N80	Wheel - 17x7 Aluminum, Premium
P39	Wheel - 18x8 Aluminum, 6 Spoke
P40	Wheel - 18x8 Aluminum, Sport
P45	Wheel - 17 x 7, Aluminum, Bright Polish
P55	Wheel - 20 x 8.0, Aluminum, Polished
QC3	Wheel - 16x7, Aluminum, Special
QF8	Wheel - 18 x 8, Aluminum, Polished
QNF	Tire All - P235/75R16-106S BW R/PE ST TL ALS
QNG	Tire All - P235/75R16-106S WOL R/PE ST TL ALS
QRH	Tire All - 245/65R17-107H BW PE/ST TL HWY
QRK	Tire All - P255/60R17-105S BW PE/ST TL AL2
QTE	Tire All - P25/65R17 - 105S BW PE/ST TL OOR
QTM	Tire All - P245/65R17-105S BW PE/ST TL ALS
QTR	Tire All - P245/65R17-105S WOL PE/ST TL OOR
QUB	Tire All - P255/50R20-104V BW TL AL3
QVC	Tire All - P255/55R18-104H BW TL AL3

RPO	Description
QZD	Tire All - P245/60R18-104S BW TL AL3
Q4B	GVW Rating - 6,200 lbs
Q8H	Mud Flaps - FRT and RR, Formed
RYJ	Shade - Cargo Area, Retractable
STW	Steering Wheel - Leather Wrapped with Redundant Controls
TB4	Body Equipment - Liftgate (Manual)
TGA	Language Control - English, French, Spanish
TG9	Reflector - Safety Triangles
TR6	Headlamps Control - Leveling System, Manual
TT6	Headlamps - High Intensity Discharge
T61	Lamp System - Daytime Running
T62	Lamp System - Daytime Running - Delete
T78	Headlamps Control - Delete
T79	Lamp - Fog, Rear
T84	Headlamps - RH Rule of the Road, E Mark
T85	Headlamps - LH Rule of the Road, E Mark
T89	Lamp - Tail & Stop, Export
T96	Lamp - Fog, Front
UA2	Theft Deterrent System - Export Specific
UA4	Radio - AM/FM Stereo, Seek/Scan. CD, Auto Tone, Clock, ETR Navigation System
UA6	Theft Deterrent System
UB0	Radio - AM/FM Stereo, Seek/Scan, CD, Auto Tone, Data System, Clock, ETR
UB1	Radio - AM/FM Stereo, Seek/Scan, Auto Reverse, Music Search Cassette, CD, Auto Tone, Data System, Clock, ETR
UCB	Wiring Harness - Truck Trailer, 4 Wire
UC2	Speedometer - Inst, Kilo & Miles, Kilo Odometer, Positive Bias
UC6	Radio - AM/FM Stereo, Seek/Scan, RDS, Multiple Compact Disc, Auto Tone Control, Clock, ETR
UD4	Alarm - Vehicle Speed, 120 km/h
UE1	Communication System - Vehicle, GPS 1
UG1	Opener - Garage Door, Universal
UH3	Indicator - Low Tire Pressure, Var 2
UJ6	Indicator - Low Tire Pressure
UK1	Frequencies - Japanese
UK6	Radio Control - Rear Seat & Earphone Jacks
UL2	Frequencies - European
UL8	Frequencies - Saudi Arabian
UM8	Radio - AM/FM Stereo, Seek/Scan, CD, ETR, Navigation, Clock
UQA	Speaker System - Premium Performance Enhanced Radio
US8	Radio - AM/FM Stereo, Seek/Scan, CD, Auto Tone, Clock, ETR, MP3, RDS
UY7	Wiring Harness - Truck Trailer, HD
U19	Speedometer - Inst, Kilo & Miles, Kilo Odometer
U2K	Digital Audio System - S-Band
U42	Entertainment Package - Rear Seat
U68	Display - Driver Info Center
U73	Antenna - Fixed, Radio
V1K	Bar - Luggage Carrier, Center Cross
V40	Provision Options - Ultra Seating Package, Power Pass
V55	Luggage Carrier - Roof, Chrome
VCG	Provisions - International Switch/Control Symbols
VHB	Bar - Grille - Tubular
VHS	Cover - Trailer Hitch Receiver
VJ1	License Plate - Rear Mounting Package, Japanese

RPO	Description
VK3	License Plate Front - Front Mounting Package
VL4	License Plate Front - Front Mounting Package, EEC
WX7	Wiring Provisions
W49	Market Brand - Buick
X88	Market Brand - Chevrolet
Y99	Conversion Name PLT- SAAB
ZM5	Sales Package - Underbody Shield
ZQ8	Chassis Package - Sport
ZW7	Chassis Package - Premium Smooth Ride
Z5X	Mirror Provisions - Arabic Language
Z49	Export - Canadian Modify Mandatory Base Equipment
Z88	Market Brand - GMC
Z89	Market Brand - Isuzu

Technical Information

Maintenance and Lubrication

Capacities - Approximate Fluid

Application	Specification	
	Metric	English
Cooling System - Short W/B		
• 4.2L Engine (RPO LL8)	13.1 L	13.9 qt
• 5.3L Engine (RPO LH6)	14.5 L	15.3 qt
• 6.0L Engine (RPO L52)	14.5 L	15.3 qt
Cooling System - Long W/B		
• 4.2L Engine (RPO LL8)	14.4 L	15.2 qt
• 5.3L Engine (RPO LH6)	17.0 L	17.9 qt
• 6.0L Engine (RPO L52)	17.0 L	17.9 qt
Engine Oil with Filter		
• 4.2L Engine (RPO LL8)	6.6 L	7.0 qt
• 5.3L Engine (RPO LH6)	5.7 L	6.0 qt
• 6.0L Engine (RPO L52)	5.7 L	6.0 qt
Engine Oil without Filter		
• 4.2L Engine (RPO LL8)	6.1 L	6.5 qt
• 5.3L Engine (RPO LH6)	5.2 L	5.5 qt
• 6.0L Engine (RPO L52)	5.2 L	5.5 qt
Automatic Transmission 4L60-E/E/4L65-E/4L70-E		
• Pan Removal	4.7 L	5.0 qt
• After Complete Overhaul	10.6 L	11.0 qt
Differential Fluid - Rear Axle		
• 4.2L Engine (RPO LL8)	1.7 L	3.6 pt
• 5.3L Engine (RPO LH6)	2.0 L	4.3 pt
• 6.0L Engine (RPO L52)	2.0 L	4.3 pt
Differential Fluid - Front Axle	0.8 L	1.7 pt
Differential Fluid - Transfer Case	1.8 L	2.0 qt
Fuel Tank		
• Short W/B	83.3 L	22.0 gallons
• Long W/B	95.8 L	25.3 gallons

Maintenance Items

Part	GM Part Number	ACDelco Part Number
Automatic Transmission Filter Kit	24208576	TF337
Engine Air Cleaner/Filter	15036141	A2014C
Engine Oil Filter		
• 4.2 L6	89017342	PF61
• 5.3 V8	89017524	PF48
• 6.0 V8	89017524	PF48
Spark Plugs		
• 4.2 L6	12598004	41-103
• 5.0 V8	12571164	41-985
• 6.0 V8	12571164	41-985
Wiper Blades		
• Front - 22 inches (56 cm)	15214346	--
• Rear - 16 inches (41 cm)	15160740	--

Fluid and Lubricant Recommendations

Usage	Fluid/Lubricant
Engine Oil (Except 6.0L V8 Engine)	Engine oil which meets GM Standard GM6094M and displays the American Petroleum Institute Certified for Gasoline Engines starburst symbol. GM Goodwrench® oil meets all the requirements for your vehicle.
Engine Oil (6.0L V8 Engine Only)	The engine requires a special engine oil meeting GM Standard GM4718M. Oils meeting this standard can be identified as synthetic, and should also be identified with the American Petroleum Institute (API) Certified for Gasoline Engines starburst symbol. However, not all synthetic API oils with the starburst symbol will meet this GM standard. You should look for and use only an oil that meets GM Standard GM4718M. GM Goodwrench® oil meets all the requirements for your vehicle.
Engine Coolant	50/50 mixture of clean, drinkable water and use only DEX-COOL® Coolant
Hydraulic Brake System	Delco® Supreme 11 Brake Fluid or equivalent DOT-3 brake fluid.
Windshield Washer	GM Optikleen Washer Solvent.
Parking Brake Cable Guides	Chassis Lubricant (GM Part No. U.S. 12377985, in Canada 88901242) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB.
Power Steering System	GM Power Steering Fluid (GM Part No. U.S. 89021184, in Canada 89021186).
Automatic Transmission	DEXRON®-VI Automatic Transmission Fluid.
Key Lock Cylinders	Multi-Purpose Lubricant, Superlube (GM Part No. U.S. 12346241, in Canada 10953474).
Chassis Lubrication	Chassis Lubricant (GM Part No. U.S. 12377985, in Canada 88901242) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB.
Front Axle	SAE 75W-90 Synthetic Axle Lubricant (GM Part No. U.S. 12378261, in Canada 10953455) meeting GM Specification 9986115.
Rear Axle (Except SS Model)	SAE 75W-90 Synthetic Axle Lubricant (GM Part No. U.S. 12378261, in Canada 10953455) meeting GM Specification 9986115.
Rear Axle (SS Model)	SAE 75W-90 Synthetic Axle Lubricant (GM Part No. U.S. 12378261, in Canada 10953455) meeting GM Specification 9986115. With a complete drain and refill add 4 ounces (118 ml) of Limited-Slip Axle Lubricant Additive (GM Part No. U.S. 1052358, in Canada 992694) where required..
Transfer Case	AUTO-TRAK II Fluid (GM Part No. U.S. 12378508, in Canada 10953626).

Usage	Fluid/Lubricant
Rear Driveline Center Spline and Universal Joints	Chassis Lubricant (GM Part No. U.S. 12377985, in Canada 88901242) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB.
Constant Velocity Universal Joint	Chassis Lubricant (GM Part No. U.S. 12377985, in Canada 88901242) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB.
Hood Latch Assembly, Secondary Latch, Pivots, Spring Anchor, and Release Pawl	Lubriplate Lubricant Aerosol (GM Part No. U.S. 12346293, in Canada 992723) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB.
Hood and Door Hinges, Body Door Hinge Pins, Liftgate Hinge and Linkage, Folding Seats, and Fuel Door Hinge	Multi-Purpose Lubricant, Superlube (GM Part No. U.S. 12346241, in Canada 10953474).
Outer Tailgate Handle Pivot Points and Hinges	Multi-Purpose Lubricant, Superlube (GM Part No. U.S. 12346241, in Canada 10953474).
Weatherstrip Conditioning	Weatherstrip Lubricant (GM Part No. U.S. 3634770, in Canada 10953518) or Dielectric Silicone Grease (GM Part No. U.S. 12345579, in Canada 992887).
Weatherstrip Squeaks	Synthetic Grease with Teflon, Superlube (GM Part No. U.S. 12371287, in Canada 10953437).

GM Oil Life System - Resetting

This vehicle has an engine oil life monitor. The GM Oil Life System™ will show when to change the engine oil and oil filter. This will usually occur between 5 000 km (3,000 mi) and 12 500 km (7,500 mi) since the last oil change. Under severe conditions, the indicator may come on before 5 000 km (3,000 mi).

Vehicle should not be driven more than 12 500 km (7,500 mi) or 12 months without an oil and oil filter change. The system will not detect dust in the oil. So if the vehicle is driven in a dusty area, be sure to change the oil and oil filter every 5 000 km (3,000 mi) or sooner if the CHANGE OIL SOON indicator comes on. Reset the system when the oil has been changed.

Resetting Procedure

1. To reset the Engine Oil Life System, do the following:
2. Turn the ignition key to RUN with the engine off.
3. Fully press and release the accelerator pedal slowly three times within five seconds.
4. Turn the key to LOCK.
5. If the light/message comes back on when you start the vehicle, the engine oil life system has not reset. Repeat the procedure.

With the Driver Information Center (DIC)

1. Press the fuel information button until ENGINE OIL LIFE appears in the display.
2. To reset the monitor, press and hold the select button while ENGINE OIL LIFE is displayed.
3. If the light comes back on again when you start the engine, you will need to reset the system again.

Descriptions and Operations

Power Steering System

The hydraulic power steering pump is a constant displacement vane-type pump that provides hydraulic pressure and flow for the power steering gear. The hydraulic power steering pumps are either belt-driven or direct-drive, cam-driven.

The power steering fluid reservoir holds the power steering fluid and may be integral with the power steering pump or remotely located. The following locations are typical locations for the remote reservoir:

- Mounted to the front of the dash panel
- Mounted to the inner fender
- Mounted to a bracket on the engine

The 2 basic types of power steering gears are listed below:

- A recirculating ball system
- A rack and pinion system

In the recirculating ball system, a worm gear converts steering wheel movement to movement of a sector shaft. A pitman arm attached to the bottom of the sector shaft actually moves one tie rod and an intermediate rod move the other tie rod.

In the rack and pinion system, the rack and the pinion are the 2 components that convert steering wheel rotation to lateral movement. The steering shaft is attached to the pinion in the steering gear. The pinion rotates with the steering wheel. Gear teeth on the pinion mesh with the gear teeth on the rack. The rotating pinion moves the rack from side to side. The lateral action of the rack pushes and pulls the tie rods in order to change the direction of the vehicle's front wheels.

The power steering pressure hose connects the power steering pump union fitting to the power steering gear and allows pressurized power steering fluid to flow from the pump to the gear.

The power steering return hose returns fluid from the power steering gear back to the power steering fluid reservoir. The power steering return line may contain an integral fin-type or line-type power steering fluid cooler.

In a typical power steering system, a pump generates hydraulic pressure, causing fluid to flow, via the pressure hose, to the steering gear valve assembly. The steering gear valve assembly regulates the incoming fluid to the right and left chambers in order to assist in right and left turns.

Turning the steering wheel activates the valve assembly, which applies greater fluid pressure and flow to 1 side of the steering gear piston, and lower pressure and flow to the other side of the piston. The pressure assists the movement of the gear piston. Tie rods transfer this force to the front wheels, which turn the vehicle right or left.

Steering Wheel and Column

The steering wheel and column has 4 primary functions:

- Vehicle steering
- Vehicle security
- Driver convenience
- Driver safety

Vehicle Steering

The steering wheel is the first link between the driver and the vehicle. The steering wheel is fastened to a steering shaft within the column. At the lower end of the column, the intermediate shaft connects the column to the steering gear.

Vehicle Security

Theft deterrent components are mounted and designed into the steering column. The following components allow the column to be locked in order to minimize theft:

- The ignition switch
- The steering column lock
- The ignition cylinder

Driver Convenience

The steering wheel and column may also have driver controls attached for convenience and comfort. The following controls may be mounted on or near the steering wheel or column.

- The turn signal switch
- The hazard switch
- The headlamp dimmer switch
- The wiper/washer switch
- The horn pad/cruise control switch
- The redundant radio/entertainment system controls
- The tilt or tilt/telescoping functions
- The navigation/OnStar® features
- The HVAC controls

Driver Safety

The energy-absorbing steering column compresses in the event of a front-end collision, which reduces the chance of injury to the driver. The mounting capsules break away from the mounting bracket in the event of an accident.

Ignition Lock Cylinder Control Actuator

If the vehicle is equipped with a floor mounted console gear shifter, it has a ignition lock cylinder control actuator system in the steering column as an added safety feature. The ignition lock cylinder control actuators purpose is to prevent the steering wheel from being locked when the transmission is in gear and the vehicle may still be moving. The column ignition lock system consists of a ignition lock cylinder control acutator, and a park position switch that is located in the A/T shift lock control switch. The ignition lock cylinder control acutator contains a pin that is spring loaded out to mechanically prevent the ignition key cylinder from being turned to the lock position when vehicle transmission is not in the Park position. If vehicle power is lost, and/or the transmission is not in the Park position the operator will not be able to turn the ignition key to the lock position and will not be able to remove the ignition key from the column.

Suspension Description and Operation

Front Suspension

The front suspension has 2 primary purposes:

- Isolate the driver from irregularities in the road surface.
- Define the ride and handling characteristics of the vehicle.

The front suspension absorbs the impact of the tires travelling over irregular road surfaces and dissipates this energy throughout the suspension system. This process isolates the vehicle occupants from the road surface. The rate at which the suspension dissipates the energy and the amount of energy that is absorbed is how the suspension defines the vehicle's ride characteristics. Ride characteristics are designed into the suspension system and are not adjustable. The ride characteristics are mentioned in this description in order to aid in the understanding of the functions of the suspension system. The suspension system must allow for the vertical movement of the tire and wheel assembly as the vehicle travels over irregular road surfaces while maintaining the tire's horizontal relationship to the road.

This requires that the steering knuckle be suspended between an upper and a lower control arm. The lower control arm attaches from the steering Knuckle at the outermost point of the control arm. The attachment is through a ball and socket type joint. The innermost end of the control arm attached at 2 points to the vehicle frame, through semi-rigid bushings. The upper control arm attaches to the frame in the same fashion. Between the lower control arm and a spring seat on the vehicle's frame, under tension, is a coil spring.

This up and down motion of the steering knuckle as the vehicle travels over bumps is absorbed predominantly by the coil spring. The vertical movement of the steering knuckle as the vehicle travels over irregular road surfaces will tend to compress the spring and spring tension will lead the spring to return to the original, at-rest state. This action isolates the vehicle from the road surface. The upper and lower control arms are allowed to pivot at the vehicle frame in a vertical fashion. The ball joint allows the steering knuckle to maintain the perpendicular relationship to the road surface.

A shock absorber is used in conjunction with this system in order to dampen out the oscillations of the coil spring. A shock absorber is a basic hydraulic cylinder. The shock is filled with oil and has a moveable shaft that connects to a piston inside the shock absorber. Valves inside the shock absorber offer resistance to oil flow and consequently inhibit rapid movement of the piston and shaft. Each end of the shock absorber is connected in such a fashion to utilize this recoil action of a spring alone.

Front suspensions systems utilize a stabilizer shaft. The stabilizer bar connects between the left and right lower control arm assemblies through the stabilizer link and stabilizer shaft insulators. This bar controls the amount of independent movement of the suspension when the vehicle turns. Limiting the independent movement defines the vehicle's handling characteristics on turns.

Rear Suspension

These vehicles use either a coil spring suspension or an air suspension configuration that utilizes two air springs. On vehicles equipped with the air springs, two separate height sensors control the air springs, one for the left spring and one for the right spring.

A separate air compressor is used to inflate the air springs and maintain proper ride height.

Two direct double-acting shock absorbers provide ride control. The shock absorbers are angle-mounted between the frame. The shock absorbers are attached with brackets. The brackets are attached to the anchor plate.

The rear spring steel stabilizing bar helps minimize body roll and sway during cornering. The rear stabilizer shaft is connected to the rear axle and the frame.

The rear suspension system on this vehicle consists of the following components:

- The rear axle
- Two coil springs or two air springs
- Two height sensors, air suspension only
- Air compressor, air suspension only
- Air supply lines, air suspension only
- Two shock absorbers
- The rear axle tie rod
- Two upper control arms
- Two lower control arms

Air Suspension

The primary mission of the Air Suspension System is the following for the rear suspension under loaded and unloaded conditions:

- Keep the vehicle visually level
- Provide optimal headlight aiming
- Maintain optimal ride height

The Air Suspension System consists of the following items:

- Air Suspension Compressor Assembly
- Air Suspension Sensors
- Rear Air Springs

The Air Suspension Compressor Assembly has the ability to detect faults and indicate the appropriate fault code via a blink code on the inflator switch LED. The Air Suspension Compressor Assembly will indicate the code when the condition to cause the code becomes current.

During compressor activation the exhaust valve will be activated for a calibrated length of time to provide compressor head relief. After a calibrated length of time the compressor relay will activate to start the compressor. When trim height is achieved the relay will be deactivated. The exhaust valve and compressor relay are part of the air suspension compressor assembly. The Air Suspension System shall maintain the rear trim height within 4 mm (0.15 in)in all loading conditions and the leveling function shall deactivate if the vehicle is overloaded. The side to side variation has to be maintained within 8 mm (0.31 in). After ignition is turned off, the module will stay awake for between 30 minutes and 2 1/2 hours. The system will exhaust pressure within 30 minutes after ignition is turned off to lower the vehicle after unloading. The leakage of the complete load leveling system shall not result in more than 1.4 mm (0.05 in) drop of rear suspension height at GVWR during a 24 hour period.

There are software Leveling Sequence Timers that detect conditions of excessive output at which no leveling is accruing. These timers shall keep track of conditions which cause excessive run time or no calibratable change in trim height. These timers are defined in more detail below.

Accumulator Timer

The primary purpose of the accumulator timer is to detect conditions in which excessive activity may occur. The conditions are generally as follows: in the compress mode the existences of pneumatic leaks in the system, in the exhaust mode the existence of pneumatic blockage or unloaded vehicle conditions. The accumulator shall keep track of the accumulated run time of the compressor. If the accumulator timer reaches its calibratable limit the output function will be disabled until the accumulator is reset. The accumulator timer will be reset with each transition into the RUN power mode or if the complementary output activation is required.

Progress Timer

The primary propose of the progress timer is to quickly detect conditions in which excessive output activity may occur at zero vehicle speed condition. If the Air Suspension System does not detect a calibratable change in position within a calibratable time period, the output function will be disabled. The timer will be reset with each ignition switch cycle into the RUN position.

Air Suspension Sensors

The air suspension sensor arm is attached to an armature that rotates inside a coil. The inductance of the coil, not the resistance, changes dependant on the position of the armature in the coil. The air suspension module determines the angle of the sensor arm by sending a pulse width modulated supply voltage through the coil and measuring the response time. The sensors must be calibrated to the correct D height and are not adjustable.

Rear Air Springs

The air springs are mounted in the frame in the same location were the coil spring is mounted for a vehicle without air suspension. Support pieces are affixed to the axle for the air springs.

Wheels and Tires

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Spare Wheel Hoist Assembly Mounting Bolts	50 N·m	37 lb ft
Wheel Nut	140 N·m	103 lb ft

General Description

The factory installed tires are designed to operate satisfactorily with loads up to and including the full rated load capacity when these tires are inflated to the recommended pressures.

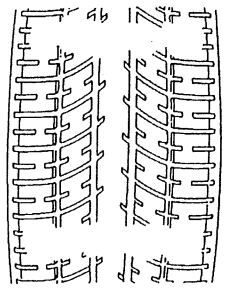
The following factors have an important influence on tire life:

- Correct tire pressures
- Correct wheel alignment
- Proper driving techniques
- Tire rotation

The following factors increase tire wear:

- Heavy cornering
- Excessively rapid acceleration
- Heavy braking

Tread Wear Indicators Description



The original equipment tires have tread wear indicators that show when you should replace the tires.

The location of these indicators are at 72 degree intervals around the outer diameter of the tire. The indicators appear as a 6 mm (0.25 in) wide band when the tire tread depth becomes 1.6 mm (2/32 in).

Metric Wheel Nuts and Bolts Description

Metric wheel/nuts and bolts are identified in the following way:

- The wheel/nut has the word Metric stamped on the face.
- The letter M is stamped on the end of the wheel bolt.

The thread sizes of metric wheel/nuts and the bolts are indicated by the following example: M12 x 1.5.

- M = Metric
- 12 = Diameter in millimeters
- 1.5 = Millimeters gap per thread

Tire Inflation Description

When you inflate the tires to the recommended inflation pressures, the factory-installed wheels and tires are designed in order to handle loads to the tire's rated load capacity. Incorrect tire pressures, or under-inflated tires, can cause the following conditions:

- Vehicle handling concerns
- Poor fuel economy
- Shortened tire life
- Tire overloading

Inspect the tire pressure when the following conditions apply:

- The vehicle has been sitting at least 3 hours.
- The vehicle has not been driven for more than 1.6 km (1 mi).
- The tires are cool.

Inspect the tires monthly or before any extended trip. Adjust the tire pressure to the specifications on the tire label. Install the valve caps or the extensions on the valves. The caps or the extensions keep out dust and water.

The kilopascal (kPa) is the metric term for pressure. The tire pressure may be printed in both kilopascal (kPa) and psi. One psi equals 6.9 kPa.

Inflation Pressure Conversion (Kilopascals to PSI)

kPa	psi	kPa	psi
140	20	215	31
145	21	220	32
155	22	230	33
160	23	235	34
165	24	240	35
170	25	250	36
180	26	275	40
185	27	310	45
190	28	345	50
200	29	380	55
205	30	415	60
Conversion: 6.9 kPa = 1 psi			

Tires with a higher than recommended pressure can cause the following conditions:

- A hard ride
- Tire bruising
- Rapid tread wear at the center of the tire

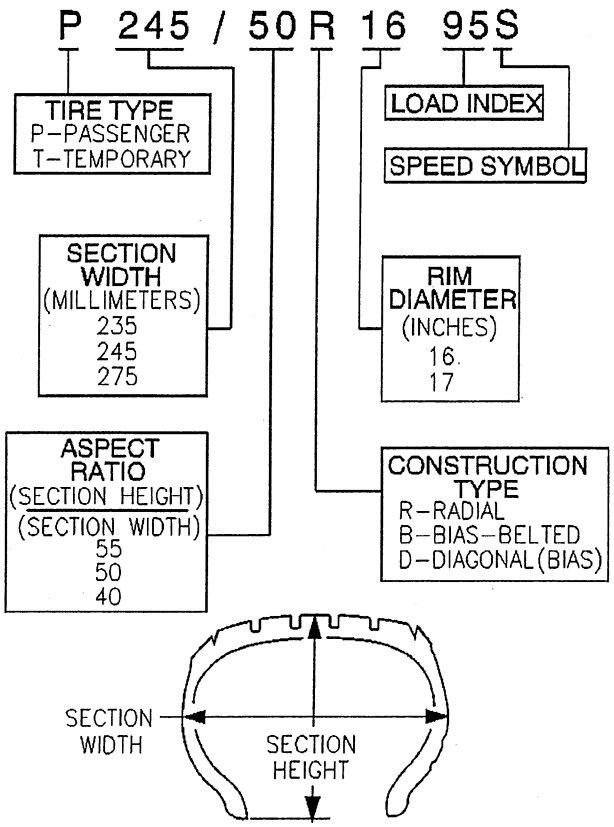
Tires with a lower than recommended pressure can cause the following conditions:

- A tire squeal on turns
- Hard steering
- Rapid wear and uneven wear on the edge of the tread
- Tire rim bruises and tire rim rupture
- Tire cord breakage
- High tire temperatures
- Reduced vehicle handling
- High fuel consumption
- Soft riding

Unequal pressure on the same axle can cause the following conditions:

- Uneven braking
- Steering lead
- Reduced vehicle handling

P-Metric Sized Tires Description



Most P-metric tire sizes do not have exact corresponding alphanumeric tire sizes. Replacement tires should be of the same tire performance criteria (TPC) specification number including the same size, the same load range, and the same construction as those originally installed on the vehicle. Consult a tire dealer if you must replace the P-metric tire with other sizes. Tire companies can best recommend the closest match of alphanumeric to P-metric sizes within their own tire lines.

Driveline System Description and Operation

Driveline/Axle – Propeller Shaft

The front propeller shaft consists of the following components:

- Propeller shaft tube
- Universal joint
- Flange yoke
- Constant velocity joint

The rear propeller shaft consists of the following components:

- Propeller shaft tube
- 2 universal joints
- Slip yoke

Front Propeller Shaft Operation

The front propeller shaft connects the transfer case to the front axle. It transmits the rotating force from the transfer case to the front axle when the transfer case is engaged.

Rear Propeller Shaft Operation

The rear propeller shaft connects the transmission or transfer case to the rear axle. It transmits the rotating force from the transmission or transfer case to the rear axle.

Propeller Shaft Phasing Description

The propeller shaft is designed and built with the yoke lugs or ears in line with each other. This produces the smoothest running shaft possible. A propeller shaft designed with built in yoke lugs in line is known as in - phase. An out of phase propeller shaft often causes vibration. The propeller shaft generates vibration from speeding up and slowing down each time the universal joint goes around. The vibration is the same as a person snapping a rope and watching the wave reaction flow to the end. An in phase propeller shaft is similar to 2 persons snapping a rope at the same time and watching the waves meet and cancel each other out. A total cancellation of vibration produces a smooth flow of power in the drive line. All splined shaft slip yokes are keyed in order to ensure proper phasing.

Universal Joint Description

The universal joint is connected to the propeller shaft. The universal consist of 4 caps with needle bearings and grease seals mounted on the trunnions of a cross or spider. These bearings and caps are greased at the factory and no periodic maintenance is required. The bearings and caps are pressed into the yokes and held in place with snap rings, except for 2 bearings on some models witch are strapped onto the pinion flange of the differential. Universal joints are designed to handle the effects of various loads and rear axle windup conditions during acceleration and braking. The universal joint operates efficiently and safely within the designed angle variations. when the design angles are exceeded, the operational life of the joint decreases.

Wheel Drive Shafts Description and Operation

Front Wheel Drive Shafts are flexible assemblies which consist of the following components:

- Front wheel drive shaft constant velocity joint (outer joint).
- Front wheel drive shaft tri-pot joint (inner joint).
- The front wheel drive shaft connects the front wheel drive shaft tri-pot joint and the front wheel drive shaft constant velocity joint.
- The front wheel drive shaft tri-pot joint is completely flexible, and moves with an in and out motion.
- The front wheel drive shaft constant velocity joint is flexible but can not move in and out.

The Wheel Drive Shaft is a balanced shaft that transmits rotational force from the front differential to the front wheels when the transfer case is engaged. The wheel drive shaft is mounted to the front differential

by bolting the flange of the wheel drive shaft to the flange on the inner output shaft of the front differential. The other end of the wheel drive shaft is splined to fit into and drive the hub assembly when the transfer case is engaged. The tri-pot joint and constant velocity joint on the wheel drive shaft allows the shaft to be flexible to move with the suspension travel of the vehicle.

Front Drive Axle Description and Operation

Selectable Four Wheel Drive (S4WD) Front Axle Description and Operation

The Selectable Four Wheel Drive (S4WD) Front Axle consist of the following components:

- Differential Carrier Housing
- Differential Case Assembly
- Inner Axle Shaft
- Intermediate Shaft Bearing Assembly (located on the right side of the oil pan)
- Electric Motor Actuator

The front axle on Selectable Four Wheel Drive (S4WD) model vehicles uses a disconnect feature mounted on the right side of the oil pan in order to engage and disengage the front axle. When the driver engages the 4WD system, the Transfer Case Control Module sends a signal to the electric motor actuator to energize and extend the plunger inside. The extended plunger moves the clutch fork and clutch fork sleeve across from the clutch fork outer gear that is splined to the right side wheel drive shaft to the clutch fork inner gear that is splined to the inner axle shaft. The locking of the two gears allows the axle to operate in the same manner as a semi-floating rear axle. A propeller shaft connects the transfer case to the front axle. The differential carrier assembly uses a conventional ring and pinion gear set to transmit the driving force of the engine to the wheels. The open differential allows the wheels to turn at different rates of speed while the axle continues to transmit the driving force. This prevents tire scuffing when going around corners and premature wear on internal axle parts. The ring and pinion set and the differential are contained within the carrier. The axle identification number is located on top of the differential carrier assembly or on a label on the bottom of the right half of differential carrier assembly. The wheel drive shafts are completely flexible assemblies consisting of inner and outer constant velocity CV joints protected by thermoplastic boots and connected by a wheel drive shaft.

Automatic Four Wheel Drive (A4WD) Front Axle Description and Operation

The Automatic Four Wheel Drive (A4WD) Front Axle consist of the following components:

- Differential Carrier Housing
- Differential Case Assembly
- Inner Axle Shaft
- Intermediate Shaft bearing Assembly (located on the right side of the oil pan)

The front axle on Automatic Four Wheel Drive (A4WD) model vehicles do not have a disconnect feature in order to engage and disengage the front axle. The Automatic Four Wheel Drive system uses the same differential carrier assembly and intermediate shaft bearing assembly, but the clutch fork, the clutch fork sleeve and the inner/outer gears have been replaced with a single splined sleeve that connects the inner axle shaft directly to the right side wheel drive shaft. This connection allows the right side wheel drive shaft and the intermediate axle shaft to be directly connected to the differential case assembly. It also results in having the wheel drive shafts, the intermediate axle shaft and the propeller shaft to spin continuously. When the transfer case is active, the clutch assembly within the transfer case controls the amount of torque applied to the front axle. The remaining components are the same as the selectable four wheel drive axle.

Rear Drive Axle Description and Operation

The rear axle for this vehicle consist of the following components:

- Aluminum Differential Carrier Housing
- Differential Case Assembly (Open or Locking)
- Ring Gear and Drive Pinion Shaft
- Left and right axle shaft tubes
- Left and right axle shafts
- Fill Plug
- Drain Plug

The rear axle receives power from the propeller shaft and transfers it to the drive pinion through the universal joint and the pinion yoke, which is attached to the drive pinion. The drive pinion transfers the power to the ring gear which is splined to the drive pinion at a 90 degree angle. The ring gear is attached to the differential case which contains four gears inside of it. Two of the gear are side gears and two are pinion gears. Each side gear is splined to an axle shaft so each axle shaft turns when it's side gear rotates. The pinion gears are mounted on a differential pinion shaft, and the pinion gears are free to rotate on this shaft. The pinion shaft is fitted into a bore in the differential case and is at right angles to the axle shafts. Power is transmitted through the differential as follows: the drive pinion rotates the ring gear. The ring gear rotates the differential case. The ring gear, as it rotates with the differential case, forces the pinion gears against the side gears. The side gears rotate the axle shafts to which the wheels are attached to. When both wheels have an equal amount of traction, the pinion gears do not rotate on the pinion shaft because of input force on the pinion gears is equally divided between the two side gears. Therefore, the pinion gears revolve with the pinion shaft, but do not rotate around the shaft itself. As long as the input force is equal between the two axle shafts, the axle shafts could be solidly attached to the ring gear. The addition of the two pinion gears and the two side gears are needed to allow the axle shafts to turn at different speeds. When the vehicle turns a corner, the inner wheel turns slower than the outer wheel. The amount slower the inner wheel spins is equal to the same amount the outer wheel spins faster, as compared to the straight line speed. When this happens, the pinion gears rotate around the pinion shaft and allow the wheels to spin at different speeds

Locking Differential Description and Operation

The locking differential consists of the following components:

- Differential case - 1 or 2 piece
- Locking differential spider - 2 piece case only
- Pinion gear shaft - 1 piece case only
- Differential pinion gear shaft lock bolt - 1 piece case only
- 2 clutch discs sets
- Locking differential side gear
- Thrust block
- Locking differential clutch disc guides
- Differential side gear shim
- Locking differential clutch disc thrust washer
- Locking differential governor
- Latching bracket
- Cam plate assembly
- Differential pinion gears
- Differential pinion gear thrust washers

The optional locking differential (RPO G80) enhances the traction capability of the rear axle by combining the characteristics of a limited-slip differential and the ability of the axle shafts to "lock" together when uneven traction surfaces exist. The differential accomplishes this in 2 ways. First by having a series of clutch plates at each side of the differential case to limit the amount of slippage between each wheel. Second, by using a mechanical locking mechanism to stop the rotation of the right differential side gear,

or the left differential side gear on the 10.5 inch axle, in order to transfer the rotating torque of the wheel without traction to the wheel with traction. Each of these functions occur under different conditions.

Limited-Slip Function

Under normal conditions, when the differential is not locked, a small amount of limited-slip action occurs. The gear separating force developed in the right-hand (left-hand side on 10.5 inch axle) clutch pack is primarily responsible for this.

The operation of how the limited-slip function of the unit works can be explained when the vehicle makes a right-hand turn. Since the left wheel travels farther than the right wheel, it must rotate faster than the ring gear and differential case assembly. This results in the left axle and left side gear rotating faster than the differential case. The faster rotation of the left-side gear causes the pinion gears to rotate on the pinion shaft. This causes the right-side gear to rotate slower than the differential case.

Although the side gear spreading force produced by the pinion gears compresses the clutch packs, primarily the right side, the friction between the tires and the road surface is sufficient to overcome the friction of the clutch packs. This prevents the side gears from being held to the differential case.

Locking Function

Locking action occurs through the use of some special parts:

- A governor mechanism with 2 flyweights
- A latching bracket
- The left side cam plate and cam side gear

When the wheel-to-wheel speed difference is 100 RPM or more, the flyweights of the governor will fling out and one of them will contact an edge of the latching bracket. This happens because the left cam side gear and cam plate are rotating at a speed different, either slower or faster, than that of the ring gear and differential case assembly. The cam plate has teeth on its outer diameter surface in mesh with teeth on the shaft of the governor.

As the side gear rotates at a speed different than that of the differential case, the shaft of the governor rotates with enough speed to force the flyweights outward against spring tension. One of the flyweights catches its edge on the closest edge of the latching bracket, which is stationary in the differential case. This latching process triggers a chain of events.

When the governor latches, it stops rotating. A small friction clutch inside the governor allows rotation, with resistance, of the governor shaft while one flyweight is held to the differential case through the latching bracket. The purpose of the governor's latching action is to slow the rotation of the cam plate as compared to the cam side gear. This will cause the cam plate to move out of its detent position.

The cam plate normally is held in its detent position by a small wave spring and detent humps resting in matching notches of the cam side gear. At this point, the ramps of the cam plate ride up on the ramps of the cam side gear, and the cam plate compresses the left clutch pack with a self-energizing action.

As the left clutch pack is compressed, it pushes the cam plate and cam side gear slightly toward the right side of the differential case. This movement of the cam side gear pushes the thrust block which compresses the right-hand side gear clutch pack.

At this point, the force of the self-energizing clutches and the side gear separating force combine to hold the side gears to the differential case in the locking stage.

The entire locking process occurs in less than 1 second. The process works with either the left or right wheel spinning, due to the design of the governor and cam mechanism. A torque reversal of any kind will unlatch the governor, causing the cam plate to ride back down to its detent position. Cornering or deceleration during a transmission shift will cause a torque reversal of this type. The differential unit returns to its limited-slip function.

The self-energizing process would not occur if it were not for the action of one of the left clutch discs. This energizing disc provides the holding force of the ramping action to occur. It is the only disc which is splined to the cam plate itself. The other splined discs fit on the cam side gear.

If the rotating speed of the ring gear and differential case assembly is high enough, the latching bracket will pivot due to centrifugal force. This will move the flyweights so that no locking is permitted. During vehicle driving, this happens at approximately 32 km/h (20 mph) and continues at faster speeds.

When comparing the effectiveness of the locking differential, in terms of percent-of-grade capability to open and limited-slip units, the locking differential has nearly 3 times the potential of the limited-slip unit under the same conditions.

Locking Differential Torque-Limiting Disc

The locking differential design was modified in mid-1986 to include a load-limiting feature to reduce the chance of breaking an axle shaft under abusive driving conditions. The number of tangs on the energizing disc in the left-hand clutch pack was reduced allowing these tangs to shear in the event of a high-torque engagement of the differential locking mechanism.

At the time of failure of the load-limiting disc, there will be a loud bang in the rear axle and the differential will operate as a standard differential with some limited-slip action of the clutch packs at low torques.

The service procedure, when the disc tangs shear, involves replacing the left-hand clutch plates and the wave spring. It is also necessary to examine the axle shafts for twisting because at high torques it is possible to not only shear the load-limiting disc, but to also twist the axle shafts.

Transfer Case - NVG 120-NR9

General Operation

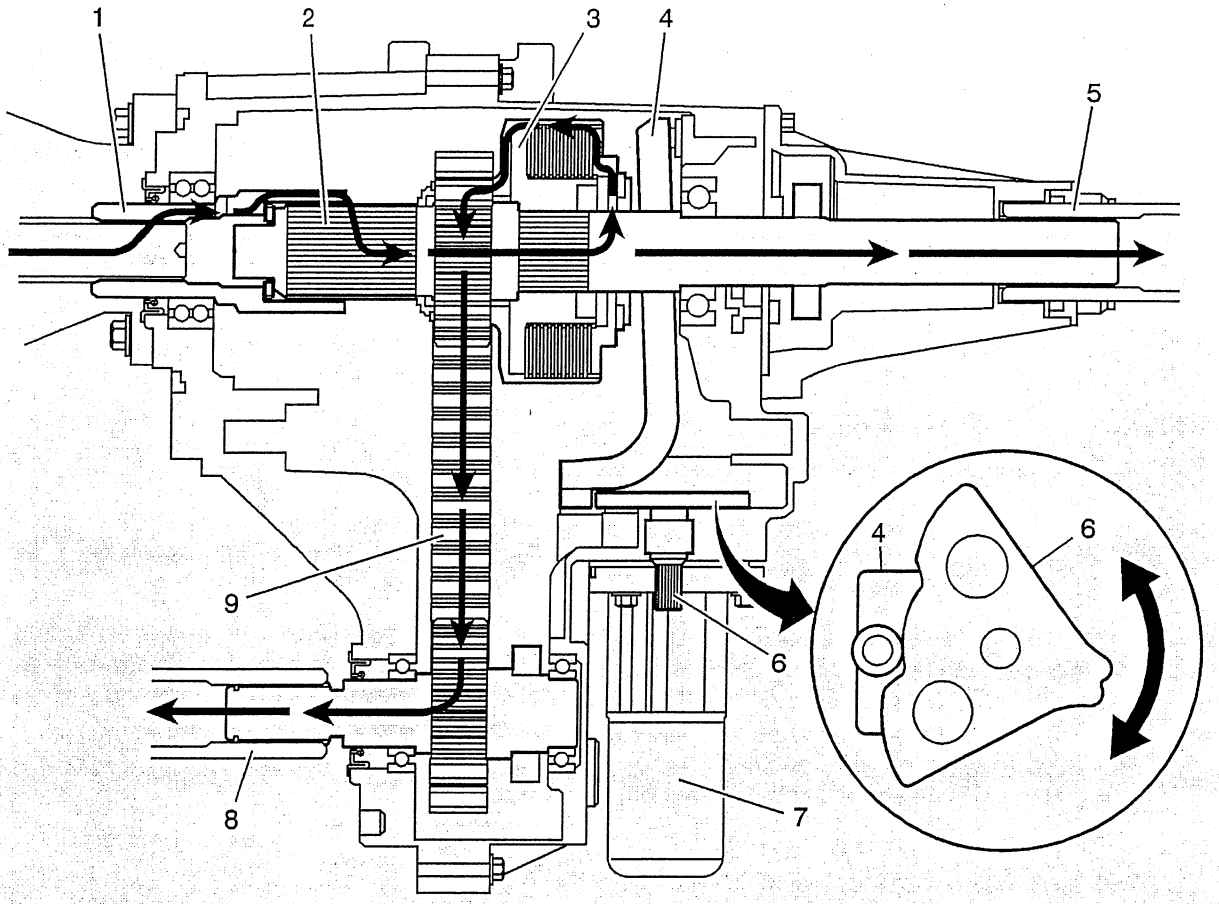
The New Venture Gear (NVG) model NV120, RPO NR9 transfer case is a single speed, full-time, all wheel drive (AWD), transfer case that incorporates a front/rear drive differential carrier assembly. The following are details of this system:

- The front/rear drive differential carrier assembly is an open differential in the transfer case that is always sending torque to both the front and rear axles. The front/rear drive differential carrier assembly is a torque-biasing devise that senses torque and multiplies it to the other wheel, so if one axle is on a low friction surface and loses traction, the front/rear drive differential carrier assembly applies more torque to the other axle, such as if the rear wheels are on ice, more torque is applied to the front axle, and vise versa.
- This is a true full-time system since it is always active with torque split between front and rear axles so torque adjustments occur instantly and smoothly.
- The ratio of front/rear drive differential carrier assembly application is split with 33 percent to the front axle and 67 percent to the rear axle under normal conditions, but since the system is torque biased, that ratio can range from a more balanced 45:55 split up to a 25:75 split depending on road conditions and driver demands.

The front/rear drive differential carrier assembly uses helical gearing in a planetary arrangement. There are no clutches or preload springs. Under a no-load condition, it differentiates freely similar to an open differential. When torque is applied, thrust forces generated by the helical gearing create friction and resist differentiation resulting in limited slip capability. These forces act to drive the ring gear and sun gear either together, during coast torque, or apart, during drive torque. Thrust washers with controlled friction surfaces react against the separating force and create friction to oppose the relative motion. It does not require differentiation or wheel slip to properly distribute torque. The locking capacity of the differential is a result of the gear design. Therefore, as long as it transmits torque and differentiates, it is operating properly. The front/rear drive differential carrier assembly is a non-serviceable assembly and must be replaced with a new assembly if damage is suspect.

Transfer Case - NVG 126-NP4

General Operation



The New Venture Gear model NVG 126 RPO NP4 transfer case is a one speed automatic, active, transfer case. The NVG 126 provides only one mode, Auto 4WD, and is transparent to the operator. The active transfer case provides the benefits of on-demand torque biasing, wet clutch and easy vehicle tuning through software calibrations. The software calibrations allow more features, such as flexible adapt ready position and clutch pre-load torque levels. The technology allows for vehicle speed dependent clutch torque levels to enhance the performance of the system. For example, the system is calibrated to provide 0-7 N·m (0-62 lb in) of clutch torque during low speed, low engine torque operation, and predetermined higher torque for 32 km/h (20 mph) and greater. This prevents crow-hop and binding at low speeds, and provides higher torque biases at higher vehicle speeds, to enhance stability.

The NVG 126 requires no clutch shimming. The transfer case control module controls the clutch wear and clutch torque levels. The software learns adapt ready positions which are for the correct clutch torque. The learned adapt ready positions vary as the unit wears over its life.

The NVG 126 case halves are high-pressure die-cast aluminum. Ball bearings support the input shaft gear, the front output shaft, and the rear output shaft. A needle bearing is located inside of the input shaft gear to support the front of the rear output shaft. The clutch discs have friction material on one side to

prevent warpage. The transfer case requires Auto Trac II Fluid GM P/N 12378508 (Canadian P/N 10953626) which is blue in color. The fluid is designed for smooth clutch application. An oil pump, driven by the rear output shaft, pumps the fluid through the rear output shaft oil gallery to the clutch and bearings.

To drive the rear propshaft (5), the power flows from the transmission to the input shaft gear (1). The input shaft gear (1) is splined to the rear output shaft (2). The power flows from the rear output shaft (2) to the rear propshaft (5).

To drive the front propshaft (8), the clutch hub (3) is splined to the rear output shaft (2). When the transfer case control module commands for more or less clutch torque, the encoder motor (7) turns the control actuator lever shaft (6). The control actuator lever shaft (6) is cam designed, and the cam action moves the clutch lever (4). The clutch lever (4) pivots on the control lever studs and moves toward the clutch apply plate to increase clutch torque. As more pressure is applied to the clutch apply plate, the clutch discs are compressed. Using inner clutch discs, which are engaged with the clutch hub (3), and outer clutch discs, which are engaged with the clutch housing, the power flow is delivered to the clutch housing. The chain drive sprocket is splined to the clutch housing. The power flows from the drive sprocket through the chain (9), to the chain driven sprocket. The driven sprocket is splined to the front output shaft (8). The power flow is delivered to the front propshaft through the front output shaft (8).

Transfer Case - NVG 226-NP8

General Operation

The New Venture Gear model NVG 226 RPO NP8 transfer case is a two speed automatic, active, transfer case. The NVG 226 provides five modes, Auto 4WD, 4 HI, 4 LO, 2 HI and Neutral. The Auto 4WD position allows the capability of an active transfer case, which provides the benefits of on-demand torque biasing wet clutch and easy vehicle tuning through software calibrations. The software calibrations allow more features such as flexible adapt ready position and clutch preload torque levels. The technology allows for vehicle speed dependent clutch torque levels to enhance the performance of the system. For example, the system is calibrated to provide 0-5 lb ft of clutch torque during low speed, low engine torque operation, and predetermined higher torque for 32 km/h (20 mph) and greater. This prevents crow-hop and binding at low speeds and provides higher torque biases at higher vehicle speeds, to enhance stability.

The NVG 226 requires no clutch shimming. The transfer case control module controls for the wear of the clutch and different clutch torque levels. The software learns adapt ready positions, which are for the correct clutch torque. The learned adapt ready positions vary as the unit wears over its life.

The NVG 226 case halves are high-pressure die-cast aluminum. Ball bearings support the input shaft, the front output shaft, and the rear output shaft. A thrust bearing is located inside of the input shaft gear to support the front of the rear output shaft. The clutch discs have friction material on one side only, to prevent warpage. The transfer case requires Auto Trac II Fluid GM P/N 12378508 (Canadian P/N 10953626) which is blue in color. The fluid is designed for smooth clutch application. An oil pump, driven by the rear output shaft, pumps the fluid through the rear output shaft oil gallery to the clutch and bearings.

The NVG 226 transfer case features a rotary 4 mode shift control switch located on the instrument panel. When the ignition key is in the RUN position, the transfer case shift control module monitors the transfer case shift control switch to determine if the driver desires a new mode/range position. At a single turn of the transfer case shift control switch, the lamp of the new desired position will begin flashing to inform the driver that the transfer case shift control module has received the request for a new mode/range position. The lamp will continue to flash until all shifting criteria has been met and the new mode/range position has been reached, or has been engaged. Once the new mode/range position is fully active, the switch indicator lamp for the new position will remain ON constantly. During normal driving situations, the transfer case can operate in the Auto 4WD mode. In the Auto 4WD mode, the transfer case shift control module monitors rear wheel slip speed, based on the inputs from both the front and rear propshaft speed sensors. When the vehicle experiences a rear wheel slip condition, the transfer case shift control module sends a pulse width modulated (PWM) signal to an electronic motor, which is the transfer case encoder

motor. This motor rotates the transfer case control actuator lever shaft, applying a clutch pack. This clutch pack is designed to deliver a variable amount of torque, normally delivered to the rear wheels, and transfers it to the front wheels. Torque is ramped up to the front wheels until the front propshaft speed sensor matches that of the rear propshaft speed sensor. Torque is ramped down to the front wheels. The process would repeat if rear wheel slip is detected again. The NVG 226 transfer case has the added feature of also providing the driver with 3 manual mode/range positions:

- 4HI 4-Wheel Drive high range
- 2HI 2-Wheel Drive high range
- 4LO 4-Wheel Drive low range

The driver may choose to select any of these mode/range positions while driving the vehicle. However, the transfer case will not allow a shift into or out of 4LO unless the following criteria has been met:

- The engine is running.
- The automatic transmission is in Neutral.
- The vehicle speed is less than 5 km/h (3 mph).

This transfer case also has a Neutral position. A shift to the Neutral position allows the vehicle to be towed without rotating the transmission output shaft. Neutral position may be obtained only if the following criteria has been met:

- The engine is running.
- The automatic transmission is in Neutral.
- The vehicle speed is less than 5 km/h (3 mph).
- The transfer case is in 2HI mode.

Once these conditions have been met, turn the rotary switch clockwise past the last and hold for 10 seconds. When the system completes the shift to neutral, the red neutral lamp will illuminate.

The transfer case shift control module uses the VIN information for calculations that are required for the different calibrations used based on axle ratio, transmission, tire size, and engine. The system does not know which calibration to use without this information. When the vehicle is in the AWD mode, the transfer case shift control module monitors the speed of the front and rear propshafts in order to detect wheel slippage. When wheel slippage is detected, the module applies a clutch pack contained in side the transfer case. This clutch pack is used to lock-in and apply the front propshaft, transferring torque to the front wheels. The clutch pack is applied by a motor/encoder assembly. When slip is no longer detected by the transfer case shift control module, the clutch is no longer applied.

Transfer Case Motor/Encoder

The transfer case Motor/Encoder consists of a permanent magnet (PM) DC motor and gear reduction assembly. It is located on the left hand side (drivers side) of the transfer case. When activated it turns the sector shaft of the transfer case (clockwise or counter clockwise) to shift the transfer case. The Motor/Encoder is controlled with a pulse width modulated (PWM) signal by the transfer case shift control module. This circuit consists of a driver on both the Motor A and Motor B circuits. The encoder motor is bi-directional to allow the motor to shift the transfer case from 2HI or 4HI to NEUTRAL and 4LO positions.

Transfer Case Encoder

The encoder is mounted to the transfer case motor/encoder assembly and is replaced as an assembly. The encoder converts the sector shaft position (representing a mode or range) into an electrical signal input to the transfer case shift control module. The module can detect what position the transfer case is in by monitoring the voltage returned on the encoder signal circuit. This voltage translates into AUTO, 2H, 4H, NEUTRAL, and 4L or in transition between gears.

Transfer Case Motor Lock

The transfer case motor lock is used to provide a 2H, 4H, and 4L lock-up feature. When the lock circuit is energized, the transfer case encoder motor is allowed to turn. When the transfer case is placed 2H, 4H, or 4L the motor lock circuit is de-energized and the lock is applied. This assures that the transfer case remains in the current gear position until a new gear position is requested. When AUTO is selected the motor lock remains applied until an adaptive mode (torque is applied to the front propshaft) is required.

During an adaptive mode the motor lock circuit is energized and the motor lock is released, enabling the encoder motor to turn and apply or release torque at the front propshaft.

Transfer Case Speed Sensors

There are three speed sensors on the automatic transfer case (ATC), two on the rear output shaft and one on the front output shaft. Each speed sensor is a permanent magnet (PM) generator. The PM generator produces a pulsing AC voltage. The AC voltage level and number of pulses increases as speed increases.

Vehicle Speed Sensor

One of the two on the rear output shaft is the vehicle speed sensor (VSS) input to the powertrain control module (PCM). The PCM sends this information to the transfer case shift control module via the Class 2 Serial Data bus.

Rear Propshaft Speed Sensor

The transfer case shift control module converts the pulsating AC voltage from the rear transfer case speed sensor to a rear propshaft speed in RPM to be used for calculations. The rear propshaft speed can be displayed with a scan tool.

Front Propshaft Speed Sensor

The transfer case shift control module converts the pulsating AC voltage from the front transfer case speed sensor to front propshaft speed in RPM to be used for calculations, and to monitor the difference between the front and rear sensor speed. It is also used in the AUTO (Adapt) mode of operation to determine the amount of slip and the percent of torque to apply to the front axle. The front propshaft speed can be displayed with a scan tool.

SERVICE 4WD Indicator

The SERVICE 4WD indicator is an integral part of the cluster and cannot be serviced separately. This lamp is used to inform the driver of the vehicle that a transfer case system malfunction. The SERVICE 4WD indicator is controlled by the transfer case shift control module via Class 2.

Braking System Description and Operation

Hydraulic Brake System Description and Operation

System Component Description

The hydraulic brake system consists of the following:

Hydraulic Brake Master Cylinder Fluid Reservoir

Contains supply of brake fluid for the hydraulic brake system.

Hydraulic Brake Master Cylinder

Converts mechanical input force into hydraulic output pressure.

Hydraulic output pressure is distributed from the master cylinder through two hydraulic circuits, supplying diagonally-opposed wheel apply circuits.

Hydraulic Brake Pressure Balance Control System

Regulates brake fluid pressure delivered to hydraulic brake wheel circuits, in order to control the distribution of braking force.

Pressure balance control is achieved through dynamic rear proportioning (DRP), which is a function of the ABS modulator.

Hydraulic Brake Pipes and Flexible Brake Hoses

Carries brake fluid to and from hydraulic brake system components.

Hydraulic Brake Wheel Apply Components

Converts hydraulic input pressure into mechanical output force.

System Operation

Mechanical force is converted into hydraulic pressure by the master cylinder, regulated to meet braking system demands by the pressure balance control system, and delivered to the hydraulic brake wheel circuits by the pipes and flexible hoses. The wheel apply components then convert the hydraulic pressure back into mechanical force which presses linings against rotating brake system components.

Brake Assist System Description and Operation

System Component Description

The brake assist system consists of the following:

Brake Pedal

Receives, multiplies and transfers brake system input force from driver.

Brake Pedal Pushrod

Transfers multiplied input force received from brake pedal to brake booster.

Vacuum Brake Booster

Uses source vacuum to decrease effort required by driver when applying brake system input force.

When brake system input force is applied, air at atmospheric pressure is admitted to the rear of both vacuum diaphragms, providing a decrease in brake pedal effort required. When input force is removed, vacuum replaces atmospheric pressure within the booster.

Vacuum Source

Supplies force used by vacuum brake booster to decrease brake pedal effort.

Vacuum Source Delivery System

Enables delivery and retention of source vacuum for vacuum brake booster.

System Operation

Brake system input force is multiplied by the brake pedal and transferred by the pedal pushrod to the hydraulic brake master cylinder. Effort required to apply the brake system is reduced by the vacuum brake booster.

Disc Brake System Description and Operation

System Component Description

The disc brake system consists of the following components:

Disc Brake Pads

Applies mechanical output force from the hydraulic brake calipers to friction surfaces of brake rotors.

Disc Brake Rotors

Uses mechanical output force applied to friction surfaces from the disc brake pads to slow speed of tire and wheel assembly rotation.

Disc Brake Pad Hardware

Secures disc brake pads firmly in proper relationship to the hydraulic brake calipers. Enables a sliding motion of brake pads when mechanical output force is applied.

Disc Brake Caliper Hardware

Provides mounting for hydraulic brake caliper and secures the caliper firmly in proper relationship to caliper bracket. Enables a sliding motion of the brake caliper to the brake pads when mechanical output force is applied.

System Operation

Mechanical output force is applied from the hydraulic brake caliper pistons to the inner brake pads. As the pistons press the inner brake pads outward, the caliper housings draw the outer brake pads inward. This allows the output force to be equally distributed. The brake pads apply the output force to the friction surfaces on both sides of the brake rotors, which slows the rotation of the tire and wheel assemblies. The correct function of both the brake pad and brake caliper hardware is essential for even distribution of braking force.

Park Brake System Description and Operation

System Component Description

The park brake system consists of the following:

Park Brake Lever Assembly

Receives, multiplies, and transfers park brake system apply input force from operator to park brake cable system.

Releases applied park brake system when lever is returned to at-rest, lowered, position.

Park Brake Cables

Transfers input force received from park brake lever, through park brake cable equalizer, to park brake apply levers.

Park Brake Cable Equalizer

Evenly distributes input force to both the left and right park brake units.

Park Brake Apply Lever

Multiplies and transfers input force to park brake actuator/adjuster.

Park Brake Actuator/Adjuster

Uses multiplied input force from apply lever to expand park brake shoe (rear disc, drum-in-hat system), or drum brake shoes toward the friction surface of the drum-in-hat of the rear brake rotor, or the brake drum.

Threaded park brake actuators/adjusters are also used to control clearance between the park brake shoe (rear disc, drum-in-hat system), or the drum brake shoes and the friction surface of the drum-in-hat (of the rear brake rotor), or the brake drum.

Park Brake Shoe (Rear Disc, Drum-In-Hat System)

Applies mechanical output force from park brake actuator to friction surface of the drum-in-hat (of the rear brake rotor).

System Operation

Park brake apply input force is received by the park brake pedal assembly being depressed, transferred and evenly distributed, through the park brake cables and the park brake cable equalizer, to the left and right park brake apply levers. The park brake apply levers multiply and transfer the apply input force to the park brake actuators/adjusters which expand the park brake shoe (rear disc, drum-in-hat system), or the drum brake shoes toward the friction surface of the drum-in-hat (of the rear brake rotor), or the brake drum in order to prevent the rotation of the rear tire and wheel assemblies. The park brake release handle assembly releases an applied park brake system when it is pulled rearward.

ABS Description and Operation

Antilock Brake System

When wheel slip is detected during a brake application, the ABS enters antilock mode. During antilock braking, hydraulic pressure in the individual wheel circuits is controlled to prevent any wheel from slipping. A separate hydraulic line and specific solenoid valves are provided for each wheel. The ABS can decrease, hold, or increase hydraulic pressure to each wheel brake. The ABS cannot, however, increase hydraulic pressure above the amount which is transmitted by the master cylinder during braking.

During antilock braking, a series of rapid pulsations is felt in the brake pedal. These pulsations are caused by the rapid changes in position of the individual solenoid valves as the EBCM responds to wheel speed sensor inputs and attempts to prevent wheel slip. These pedal pulsations are present only during antilock braking and stop when normal braking is resumed or when the vehicle comes to a stop. A ticking or popping noise may also be heard as the solenoid valves cycle rapidly. During antilock braking on dry pavement, intermittent chirping noises may be heard as the tires approach slipping. These noises and pedal pulsations are considered normal during antilock operation.

Vehicles equipped with ABS may be stopped by applying normal force to the brake pedal. Brake pedal operation during normal braking is no different than that of previous non-ABS systems. Maintaining a constant force on the brake pedal provides the shortest stopping distance while maintaining vehicle stability.

Engine Description and Operation

Engine Description – 4.2L (LL8)

Engine Mechanical Specifications 4.2L

Application	Specification	
	Metric	English
General		
• Engine Type	In-Line-6	
• Displacement	4.2L	256 cu in
• RPO	LL8	
• VIN	"S"	
• Bore	93 mm	3.66 in
• Stroke	102 mm	4.02 in
• Compression Ratio	10.3:1	
• Engine Compression Test	1482 KPa	215 psi
• Firing Order	1-5-3-6-2-4	
• Spark Plug Gap	1.07 mm	0.042 in
Block		
• Crankshaft Main Bearing Bore Diameter	78.070-78.088 mm	3.0760-3.0766 in
• Cylinder Bore Diameter	92.990-93.006 mm	3.6638-3.6644 in
• Cylinder Bore Out-of-Round	0.013 mm	0.0005 in
• Cylinder Head Deck Surface Flatness	0.08 mm	0.003 in
• Cylinder Liner Recession	0.015 mm	0.0006 in
Camshaft		
• Camshaft End Play - Exhaust	0.045-0.215 mm	0.0017-0.0084 in
• Camshaft End Play - Intake	0.051-0.201 mm	0.0020-0.0079 in
• Camshaft Journal Diameter - All Intake and Exhaust #2-#7	26.936-26.960 mm	1.0612-1.0622 in
• Camshaft Journal Diameter - Exhaust #1	29.936-29.960 mm	1.1794-1.1804 in
• Camshaft Journal to Bore Clearance	0.040-0.085 mm	0.0015-0.0033 in
Connecting Rod		
• Connecting Rod Bearing Clearance	0.021-0.065 mm	0.0008-0.0025 in
• Connecting Rod Bore Diameter - Bearing End	60.322-60.338 mm	2.3749-2.3755 in
• Connecting Rod Bore Out-of-Round - Bearing End	0.005 mm	0.0002 in
Connecting Rod Side Clearance	0.05-0.35 mm	0.0019-0.0137 in
Crankshaft		
• Crankshaft End Play	0.112-0.388 mm	0.0044-0.0153 in
• Crankshaft Main Bearing Clearance	0.012-0.064 mm	0.0004-0.0025 in
• Crankshaft Main Journal Diameter	69.968-69.984 mm	2.7567-2.7574 in
• Crankshaft Rod Journal Diameter	56.7 mm	2.234 in
• Crankshaft Main Journal Out-of-Round	0.005 mm	0.0002 in
• Crankshaft Main Journal Taper	0.005 mm	0.0002 in
Cylinder Head		
• Surface Flatness - Block Deck	0.08 mm	0.003 in
• Surface Flatness - Exhaust Manifold Deck	0.08 mm	0.003 in
• Surface Flatness - Intake Manifold Deck	0.08 mm	0.003 in

Application	Specification	
	Metric	English
Exhaust Manifold		
• Surface Flatness	0.08 mm	0.003 in
Lubrication System		
• Oil Capacity - with Filter	6.6 L	7.0 qts
• Oil Capacity - without Filter	6.1 L	6.5 qts
• Oil Pressure - Minimum	85 KPa	12 psi @ 1200 RPM
Oil Pump		
• Gear Diameter - Drive	73.415-73.370 mm	2.893-2.891 in
• Gear Diameter - Driven	87-86.975 mm	3.428-3.426 in
• Gear Pocket - Depth	15.609-15.584 mm	0.615-0.614 in
• Gear Pocket - Diameter	87.065-87.040 mm	3.430-3.429 in
• Gear Thickness - Drive	15.546-15.521 mm	0.613-0.611 in
• Gear Thickness - Driven	15.360-15.511 mm	0.605-0.611 in
• Lobe Inner Diameter - Maximum	11.9 mm	0.469 in
• Relief Valve-to-Bore Clearance	2.57-1.63 mm	0.101-0.064 in
Piston Rings		
• Piston Ring End Gap - First Compression Ring	0.15-0.3 mm	0.0059-0.0118 in
• Piston Ring End Gap - Second Compression Ring	0.36-0.51 mm	0.0142-0.0201 in
• Piston Ring End Gap - Oil Control Ring	0.250-0.760 mm	0.0098-0.0299 in
• Piston Ring to Groove Clearance - First Compression Ring	0.043-0.093 mm	0.0017-0.0037 in
• Piston Ring to Groove Clearance - Second Compression Ring	0.043-0.093 mm	0.0017-0.0037 in
• Piston Ring to Groove Clearance - Oil Control Ring	0.059-0.215 mm	0.0023-0.0085 in
Pistons and Pins		
• Piston - Piston Diameter	92.971-93.005 mm	3.6603-3.6616 in
• Piston - Piston Pin Bore Diameter	23.502-23.508 mm	0.9259-0.9262 in
• Piston - Piston to Bore Clearance	-0.015-0.035 mm	-0.0006-0.0014 in
• Pin - Piston Pin Clearance to Connecting Rod Bore	0.001-0.018 mm	0.0004-0.0007 in
• Pin - Piston Pin Clearance to Piston Pin Bore	0.003-0.012 mm	0.00012-0.0005 in
• Pin - Piston Pin Diameter	23.496-23.499 mm	0.9257-0.9258 in
Valve System		
• Valves - Valve Face Runout	0.038 mm	0.0015 in
• Valves - Valve Seat Runout	0.05 mm	0.002 in
• Valves - Valve Stem-to-Guide Clearance - Exhaust	0.0375-0.0775 mm	0.0015-0.0030 in
• Valves - Valve Stem-to-Guide Clearance - Intake	0.030-0.065 mm	0.0011-0.0025 in
• Valve Springs - Valve Spring Load - Closed	211.4-233.4 N @ 35 mm	47.5-52.5 lb @ 1.701 in
• Valve Springs - Valve Spring Load - Open	579-631 N @ 24.5 mm	130-142 lb @ 1.260 in

Fastener Tightening Specifications

Application	Specifications	
	Metric	English
A/C Line Bracket Nut at Oil Level Indicator Tube	7 N·m	61 lb in
A/C Line Bracket Bolt at Engine Lift Bracket	10 N·m	89 lb in
A/C Compressor Bolts	50 N·m	37 lb ft
A.I.R. Cover Stud	25 N·m	18 lb ft
Camshaft Cap Bolt	12 N·m	106 lb in
Camshaft Cover Bolt	10 N·m	89 lb in
Camshaft Position Actuator Valve Bolt	10 N·m	89 lb in
Connecting Rod Cap Bolt		
• First Pass	25 N·m	18 lb ft
• Final Pass	110 degrees	
Coolant Temperature Sensor	20 N·m	15 lb ft
Cooling Fan Hub Nut	56 N·m	41 lb ft
Crankshaft Balancer Bolt		
• First Pass	150 N·m	110.6 lb ft
• Final Pass	180 degrees	
Crankshaft Main Bearing Cap Bolt		
• First Pass	25 N·m	18 lb ft
• Final Pass	180 degrees	
Crankshaft Position Sensor Bolt	10 N·m	89 lb in
Crankshaft Rear Housing Bolt	10 N·m	89 lb in
Cylinder Head Access Hole Plug - Plastic	5 N·m	44 lb in
Cylinder Head Bolt - 14		
• First Pass	30 N·m	22 lb ft
• Final Pass	155 degrees	
Cylinder Head End Bolts - 2 Short		
• First Pass	7 N·m	62 lb in
• Final Pass	60 degrees	
Cylinder Head End Bolts - 1 Long		
• First Pass	7 N·m	62 lb in
• Final Pass	120 degrees	
Cylinder Head Oil Gallery Plug	38 N·m	28 lb ft
Drive Belt Idler Pulley Bolt	50 N·m	37 lb ft
Drive Belt Tensioner Bolt	50 N·m	37 lb ft
Engine Block Oil Gallery Plug - Front and Rear	80 N·m	60 lb ft
Engine Block Oil Gallery Plug - Side	35 N·m	26 lb ft
Engine Flywheel Bolt		
• First Pass	25 N·m	18 lb ft
• Final Pass	50 degrees	
Engine Front Cover Bolt	10 N·m	89 lb in
Engine Front Cover Spacer Bolt	10 N·m	89 lb in
Engine Front Lift Bracket Bolt	50 N·m	37 lb ft
Engine Harness Bracket Bolt	10 N·m	89 lb in
Engine Mount Bracket Bolt - Engine	50 N·m	37 lb ft
Engine Mount Bracket Bolt - Frame	110 N·m	81 lb ft
Engine Mount Nuts - Upper and Lower	70 N·m	52 lb ft
Engine Protection Shield Bolts	25 N·m	18 lb ft
EVAP Purge Solenoid Valve Bolt	10 N·m	89 lb in

Application	Specifications	
	Metric	English
Exhaust Camshaft Actuator Bolt		
• First Pass	25 N·m	18 lb ft
• Final Pass	135 degrees	
Exhaust Camshaft Position Sensor Bolt	10 N·m	89 lb in
Exhaust Manifold Bolt		
• First Pass	20 N·m	15 lb ft
• Second Pass	20 N·m	15 lb ft
• Final Pass	20 N·m	15 lb ft
Exhaust Manifold Heat Shield Nut	10 N·m	89 lb in
Exhaust Manifold Heat Shield Stud	10 N·m	89 lb in
Exhaust Pipe Bolt	50 N·m	37 lb ft
Front Differential Bolt	85 N·m	63 lb ft
Fuel Injector Rail Bolt	10 N·m	89 lb in
Generator Battery Lead Nut	9 N·m	80 lb in
Heater Inlet Fitting	45 N·m	33 lb ft
Heater Outlet Fitting	45 N·m	33 lb ft
Ignition Coil Bolt	10 N·m	89 lb in
Intake Camshaft Sprocket Bolt		
• First Pass	20 N·m	15 lb ft
• Final Pass	100 degrees	
Intake Manifold Bolt	10 N·m	89 lb in
Knock Sensor	25 N·m	18 lb ft
Oil Filter - PF 58	30 N·m	23 lb ft
Oil Filter Adapter	50 N·m	37 lb ft
Oil Filter Bypass Hole Plug	14 N·m	124 lb in
Oil Level Indicator Tube Stud	10 N·m	89 lb in
Oil Level Sensor Bolt	10 N·m	89 lb in
Oil Pan Bolt - Ends	10 N·m	89 lb in
Oil Pan Bolt - Sides	25 N·m	18 lb ft
Oil Pan Drain Plug	26 N·m	19 lb ft
Oil Pan Nut	25 N·m	18 lb ft
Oil Pan Stud	11 N·m	97 lb in
Oil Pressure Sensor	20 N·m	15 lb ft
Oil Pump Cover Bolt	10 N·m	89 lb in
Oil Pump Pickup Tube	10 N·m	89 lb in
Oil Pump Pressure Relief Valve	14 N·m	124 lb in
Power Steering Pump Bolt	25 N·m	18 lb ft
Power Steering Pump Bracket Bolt	50 N·m	37 lb ft
Spark Plug	18 N·m	13 lb ft
Starter Motor Bolt	50 N·m	37 lb ft
Starter Motor Nut	50 N·m	37 lb ft
Thermostat Housing bolt	10 N·m	89 lb in
Throttle Control Module Bolt	10 N·m	89 lb in
Timing Chain Tensioner Bolt	25 N·m	18 lb ft
Timing Chain Tensioner Guide Bolt	14 N·m	124 lb in
Timing Chain Tensioner Shoe Bolt	25 N·m	18 lb ft
Timing Chain Top Guide Bolt	10 N·m	89 lb in
Torque Converter Bolts	60 N·m	44 lb ft
Transmission Bell Housing Bolts	50 N·m	37 lb ft
Transmission Fluid Tube to Air Adapter Nut	10 N·m	89 lb in
Water Outlet Bolt	10 N·m	89 lb in

Application	Specifications	
	Metric	English
Water Pump Bolt	10 N·m	89 lb in
Water Pump Pulley Bolt	25 N·m	18 lb ft

Engine Component Description

Engine Block

The lost foam all aluminum engine block utilizes a deep skirt design for increased rigidity. The cylinders are positioned in a straight in-line 6 cylinder orientation. The crankshaft bearing caps have a bearing beam or "ladder" for enhaced structural rigidity and vibration reduction.

Oil Pan

A single piece cast aluminum oil pan contributes to crankshaft and block rigidity while reducing overall weight. The oil pan bolts to the bell housing as well as the block. This eliminates points of vibration and makes the complete powertrain act as a single casting. Jack screws are used to remove the oil pan.

Crankshaft

The crankshaft is a nodular iron design with seven main bearings.

Connecting Rods

The connecting rods are forged powdered metal. The connecting rods and caps are of a fractured split design to improve durability and reduce internal friction. Care must be taken to ensure the mating surfaces are not damaged during service procedures.

Pistons

The pistons are a full-floating design. The piston pins are a slip fit in the bronze bushed connecting rod and are retained in the piston by round wire retainers. There are two compression rings and one oil control ring.

Cylinder Head

The cylinder head is also made of the lost foam aluminum for lighter weight and rapid heat dissipation. There are 4 valves per cylinder and the ports are of a high swirl design for improved combustion. The cylinder head gasket consist of a steel laminated construction.

Valve Train

The engine utilizes dual overhead camshafts and roller followers for reduced friction, which results in improved gas mileage.

Fuel System

A new electronic throttle control system is used on the engine. A throttle actuator control or TAC system eliminates cable linkage from the pedal to the throttle control module. All throttle movements are controlled by the PCM.

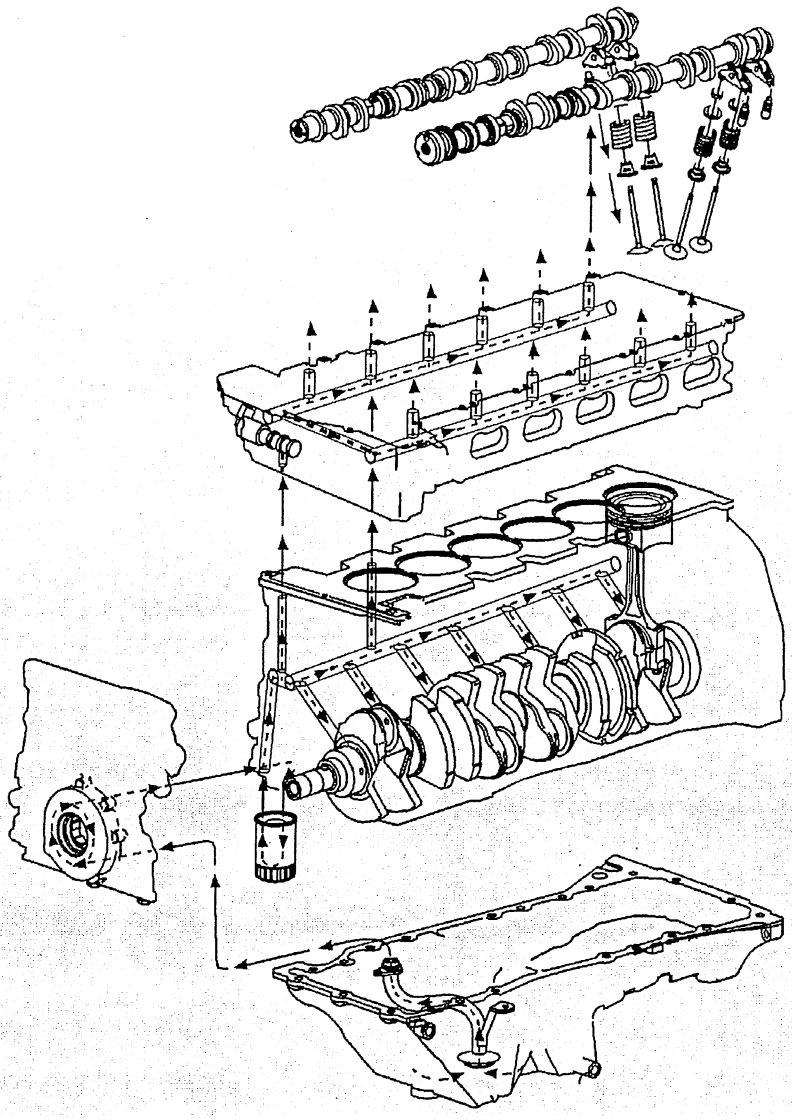
Oil Pump

The oil pump is gear driven directly from the crankshaft. The oil pump drive gear is a slip fit to the crankshaft.

Engine Covers

There is a front engine cover and a rear engine cover, both are made of aluminum. The front engine cover and rear engine cover have "T" sealing joints and need to be removed after the oil pan. The front and rear covers need to be installed before the oil pan. Jack screws are used to remove the covers. Guide pins are used to aid in the installation of both covers.

Lubrication Description



The engine lubrication system is of the force-feed type. The oil is supplied under full pressure to the crankshaft, connecting rods, valve lash adjusters, and cam phasing system. A controlled volume of oil is supplied to the camshaft and valve rocker arms. Gravity flow or splash lubricates all other parts. The engine oil is stored in the oil pan, which is filled through a fill cap in the camshaft cover. A removable oil level indicator, on the right side of the engine block, is provided to check the oil level. The oil pump is located in the engine front cover and is driven by the crankshaft. It is a gerotor-style pump, which is a combination of a gear, and a rotor pump. It is connected by a passage in the cylinder block to an oil screen and pipe assembly. The screen is submerged in the oil supply and has ample volume for all operating conditions. Oil is drawn into the pump through the screen and pipe assembly, and a passage in the crankcase, connecting to the passages in the engine front cover. Oil is discarged from the oil pump to the oil filter. The oil pressure relief valve limits the oil pressure. The oil filter bypass valve opens when the oil filter is restricted to approximately 68.95 kPa (10 psi) of pressure difference between the oil filter inlet and discharge. The oil will then bypass the oil filter and channel unfiltered oil directly to the main oil galleries of the engine. A full-flow oil filter is mounted to the oil filter adapter on the lower right front side of the engine. The main oil galleries run the full length of the engine block and cut into the valve lash adjuster holes to supply oil at full pressure to the valve lash adjusters. Holes are drilled from the crankshaft bearings to the main oil gallery. Oil is transferred from the crankshaft bearings to the connecting rod bearings through holes drilled in the crankshaft. Pistons, piston pins, and cylinder walls

are lubricated by oil splash from the crankshaft and connecting rods. The camshafts and valve rocker arms are supplied with oil from the oil passages drilled into the camshaft mounting areas.

Exhaust Camshaft Position Actuator Description

The camshaft position actuator is bolted to the front of the exhaust camshaft and is integral with the sprocket. The actuator and sprocket can only be replaced as one unit. The actuator has a hydraulically actuated piston located in the hub. The piston has an internal helical spline that slides in mesh with the gear. As the piston moves, the piston and gear mechanism changes the timing of the exhaust camshaft, relative to the cam drive sprocket. When oil pressure is applied to one side of the piston, the cam moves clockwise and timing is advanced. When oil pressure is applied to the other side of the piston the cam moves counter-clockwise to retard timing. The total range of actuator rotation is 0 to 25 camshaft degrees. At idle, the exhaust camshaft position actuator is at full advance or 0 degrees.

Crankcase Ventilation System Description

A closed crankcase ventilation system is used in order to provide a more complete scavenging of crankcase vapors. Fresh air from the throttle body is supplied to the crankcase, mixed with blow-by gases, and then passed through a crankcase ventilation pipe/passage into the intake manifold.

Results of Incorrect Operation

A plugged PCV Pipe/passage way may cause:

- Rough idle
- Stalling or slow idle speed
- Oil leaks
- Sludge in engine

Drive Belt System Description

The drive belt system consists of the following components:

- The drive belt
- The drive belt tensioner
- The drive belt idler pulley
- The crankshaft balancer pulley
- The accessory drive component mounting brackets
- The accessory drive components
    - The power steering pump, if belt driven
    - The generator
    - The A/C compressor, if equipped
    - The engine cooling fan, if belt driven
    - The water pump, if belt driven
    - The vacuum pump, if equipped
    - The air compressor, if equipped

The drive belt system may use one belt or two belts. The drive belt is thin so that it can bend backwards and has several ribs to match the grooves in the pulleys. There also may be a V-belt style belt used to drive certain accessory drive components. The drive belts are made of different types of rubbers (chloroprene or EPDM) and have different layers or plys containing either fiber cloth or cords for reinforcement.

Both sides of the drive belt may be used to drive the different accessory drive components. When the back side of the drive belt is used to drive a pulley, the pulley is smooth.

The drive belt is pulled by the crankshaft balancer pulley across the accessory drive component pulleys. The spring loaded drive belt tensioner keeps constant tension on the drive belt to prevent the drive belt from slipping. The drive belt tensioner arm will move when loads are applied to the drive belt by the accessory drive components and the crankshaft.

The drive belt system may have an idler pulley, which is used to add wrap to the adjacent pulleys. Some systems use an idler pulley in place of an accessory drive component when the vehicle is not equipped with the accessory.

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- Oil leaks
- Sludge in engine

Engine Description – 5.3L (LH6)

General Specifications

Application	Specification	
	Metric	English
General		
• Engine Type	V8	
• Displacement	5.3L	325 CID
• RPO	LH6	
• VIN	M	
• Bore	96.0-96.018 mm	3.779-3.78 in
• Stroke	92.0 mm	3.622 in
• Compression Ratio	9.95:1	
• Firing Order	1-8-7-2-6-5-4-3	
• Active Fuel Management Cylinders	1-4-6-7	
• Spark Plug Gap	1.02 mm	0.04 in
Block		
• Camshaft Bearing Bore 1 and 5 Diameter	59.58-59.63 mm	2.345-2.347 in
• Camshaft Bearing Bore 2 and 4 Diameter	59.08-59.13 mm	2.325-2.327 in
• Camshaft Bearing Bore 3 Diameter	58.58-58.63 mm	2.306-2.308 in
• Crankshaft Main Bearing Bore Diameter	69.871-69.889 mm	2.75-2.751 in
• Crankshaft Main Bearing Bore Out-of-Round	0.006 mm	0.0002 in
• Cylinder Bore Diameter	96.0-96.018 mm	3.779-3.78 in
• Cylinder Head Deck Height - Measuring from the Centerline of Crankshaft to the Deck Face	234.57-234.82 mm	9.235-9.245 in
• Cylinder Head Deck Surface Flatness - Measured Within a 152.4 mm (6.0 in) Area	0.11 mm	0.004 in
• Cylinder Head Deck Surface Flatness - Measuring the Overall Length of the Block Deck	0.22 mm	0.008 in
• Valve Lifter Bore Diameter	21.417-21.443 mm	0.843-0.844 in
Camshaft		
• Camshaft End Play	0.025-0.305 mm	0.001-0.012 in
• Camshaft Journal Diameter	54.99-55.04 mm	2.164-2.166 in
• Camshaft Journal Out-of-Round	0.025 mm	0.001 in
• Camshaft Lobe Lift - Intake - Non Active Fuel Management Cylinders	7.20 mm	0.283 in
• Camshaft Lobe Lift - Intake - Active Fuel Management Cylinders	7.33 mm	0.289 in
• Camshaft Lobe Lift - Exhaust - Non Active Fuel Management Cylinders	7.20 mm	0.283 in
• Camshaft Lobe Lift - Exhaust - Active Fuel Management Cylinders	7.33 mm	0.289 in
• Camshaft Runout - Measured at the Intermediate Journals	0.05 mm	0.002 in
Connecting Rod		
• Connecting Rod Bearing Clearance - Production	0.023-0.065 mm	0.0009-0.0025 in
• Connecting Rod Bearing Clearance - Service	0.023-0.076 mm	0.0009-0.003 in
• Connecting Rod Bore Diameter - Bearing End	56.505-56.525 mm	2.224-2.225 in

Application	Specification	
	Metric	English
• Connecting Rod Bore Out-of-Round - Bearing End - Production	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Bore Out-of-Round - Bearing End - Service	0.004-0.008 mm	0.00015-0.0003 in
• Connecting Rod Side Clearance	0.11-0.51 mm	0.00433-0.02 in
Crankshaft		
• Connecting Rod Journal Diameter - Production	53.318-53.338 mm	2.0991-2.0999 in
• Connecting Rod Journal Diameter - Service	53.308 mm	2.0987 in
• Connecting Rod Journal Out-of-Round - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Out-of-Round - Service	0.01 mm	0.0004 in
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Production	0.005 mm	0.0002 in
• Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Service	0.02 mm	0.00078 in
• Crankshaft End Play	0.04-0.2 mm	0.0015-0.0078 in
• Crankshaft Main Bearing Clearance - Production	0.02-0.052 mm	0.0008-0.0021 in
• Crankshaft Main Bearing Clearance - Service	0.02-0.065 mm	0.0008-0.0025 in
• Crankshaft Main Journal Diameter - Production	64.992-65.008 mm	2.558-2.559 in
• Crankshaft Main Journal Diameter - Service	64.992 mm	2.558 in
• Crankshaft Main Journal Out-of-Round - Production	0.003 mm	0.000118 in
• Crankshaft Main Journal Out-of-Round - Service	0.008 mm	0.0003 in
• Crankshaft Main Journal Taper - Production	0.01 mm	0.0004 in
• Crankshaft Main Journal Taper - Service	0.02 mm	0.00078 in
• Crankshaft Rear Flange Runout	0.05 mm	0.002 in
• Crankshaft Reluctor Ring Runout - Measured 1.0 mm (0.04 in) Below Tooth Diameter	0.7 mm	0.028 in
• Crankshaft Thrust Surface - Production	26.14-26.22 mm	1.029-1.0315 in
• Crankshaft Thrust Surface - Service	26.22 mm	1.0315 in
• Crankshaft Thrust Surface Runout	0.025 mm	0.001 in
Cylinder Head		
• Cylinder Head Height/Thickness - Measured from the Cylinder Head Deck to the Valve Rocker Arm Cover Seal Surface	120.2 mm	4.732 in
• Surface Flatness - Block Deck - Measured Within a 152.4 mm (6.0 in) Area	0.08 mm	0.003 in
• Surface Flatness - Block Deck - Measuring the Overall Length of the Cylinder Head	0.1 mm	0.004 in
• Surface Flatness - Exhaust Manifold Deck	0.13 mm	0.005 in
• Surface Flatness - Intake Manifold Deck	0.08 mm	0.0031 in
• Valve Guide Installed Height - Measured from the Spring Seat Surface to the Top of the Guide	17.32 mm	0.682 in
Intake Manifold		
• Surface Flatness - Measured at Gasket Sealing Surfaces and Measured Within a 200 mm (7.87 in) Area that Includes Two Runner Port Openings	0.3 mm	0.118 in

Application	Specification	
	Metric	English
Lubrication System		
• Oil Capacity - with Filter	5.68 liters	6.0 quarts
• Oil Capacity - without Filter	5.20 liters	5.5 quarts
• Oil Pressure - Minimum - Hot	41 kPa at 1,000 engine RPM 124 kPa at 2,000 engine RPM 165 kPa at 4,000 engine RPM	6 psig at 1,000 engine RPM 18 psig at 2,000 engine RPM 24 psig at 4,000 engine RPM
• Active Fuel Management Relief Valve Oil Pressure - as Measured at Oil Pressure Sensor Location	379-517 kPa Maximum	55-75 psig Maximum
Oil Pan		
• Front Cover Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
• Crankshaft Rear Oil Seal Housing Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
• Oil Pan Alignment - to Rear of Engine Block at Transmission Bell Housing Mounting Surface	0.0-0.1 mm	0.0-0.004 in
Piston Rings		
• Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Production	0.23-0.44 mm	0.009-0.017 in
• Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Service	0.23-0.5 mm	0.009-0.0196 in
• Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Production	0.44-0.7 mm	0.017-0.027 in
• Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Service	0.44-0.76 mm	0.0173-0.03 in
• Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Production	0.18-0.75 mm	0.007-0.029 in
• Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Service	0.18-0.81 mm	0.007-0.032 in
• Piston Ring-to-Groove Clearance - First Compression Ring - Production	0.04-0.085 mm	0.00157-0.00335 in
• Piston Ring-to-Groove Clearance - First Compression Ring - Service	0.04-0.085 mm	0.00157-0.00335 in
• Piston Ring-to-Groove Clearance - Second Compression Ring - Production	0.04-0.078 mm	0.00157-0.0031 in
• Piston Ring-to-Groove Clearance - Second Compression Ring - Service	0.04-0.078 mm	0.00157-0.0031 in
• Piston Ring-to-Groove Clearance - Oil Control Ring - Production	0.012-0.2 mm	0.0005-0.0078 in
• Piston Ring-to-Groove Clearance - Oil Control Ring - Service	0.012-0.2 mm	0.0005-0.0078 in
Pistons and Pins		
• Pin - Piston Pin Clearance-to-Piston Pin Bore - Production	0.002-0.01 mm	0.00008-0.0004 in
• Pin - Piston Pin Clearance-to-Piston Pin Bore - Service	0.002-0.015 mm	0.00008-0.0006 in
• Pin - Piston Pin Diameter	23.952-23.955 mm	0.943-0.943 in

Application	Specification	
	Metric	English
• Pin - Piston Pin Fit in Connecting Rod Bore - Production	0.007-0.02 mm	0.00027-0.00078 in
• Pin - Piston Pin Fit in Connecting Rod Bore - Service	0.007-0.022 mm	0.00027-0.00086 in
• Piston - Piston Diameter - Measured Over Skirt Coating	96.002-96.036 mm	3.779-3.78 in
• Piston - Piston-to-Bore Clearance - Production	-0.036 to +0.016 mm	-0.0014 to +0.0006 in
• Piston - Piston-to-Bore Clearance - Service Limit with Skirt Coating Worn Off	0.071 mm	0.0028 in
Valve System		
• Valves - Valve Face Angle	45 degrees	
• Valves - Valve Face Width	1.25 mm	0.05 in
• Valves - Valve Lash	Net Lash - No Adjustment	
• Valve Lift - Intake - Non Active Fuel Management	12.24 mm	0.482 in
• Valve Lift - Intake - Active Fuel Management	12.41 mm	0.489 in
• Valve Lift - Exhaust - Non Active Fuel Management	12.24 mm	0.482 in
• Valve Lift - Exhaust - Active Fuel Management	12.41 mm	0.489 in
• Valves - Valve Seat Angle	46 degrees	
• Valves - Valve Seat Runout	0.05 mm	0.002 in
• Valves - Valve Seat Width - Exhaust	1.78 mm	0.07 in
• Valves - Seat Width - Intake	1.02 mm	0.04 in
• Valves - Valve Stem Diameter - Production	7.955-7.976 mm	0.313-0.314 in
• Valves - Valve Stem Diameter - Service	7.95 mm	0.313 in
• Valves - Valve Stem-to-Guide Clearance - Production - Intake	0.025-0.066 mm	0.001-0.0026 in
• Valves - Valve Stem-to-Guide Clearance - Service - Intake	0.093 mm	0.0037 in
• Valves - Valve Stem-to-Guide Clearance - Production - Exhaust	0.025-0.066 mm	0.001-0.0026 in
• Valves - Valve Stem-to-Guide Clearance - Service - Exhaust	0.093 mm	0.0037 in
• Rocker Arms - Valve Rocker Arm Ratio	1.70:1	
• Valve Springs - Valve Spring Free Length	52.9 mm	2.08 in
• Valve Springs - Valve Spring Installed Height	45.75 mm	1.8 in
• Valve Springs - Valve Spring Load - Closed	340 N at 45.75 mm	76 lb at 1.8 in
• Valve Springs - Valve Spring Load - Open	980 N at 33.55 mm	220 lb at 1.32 in

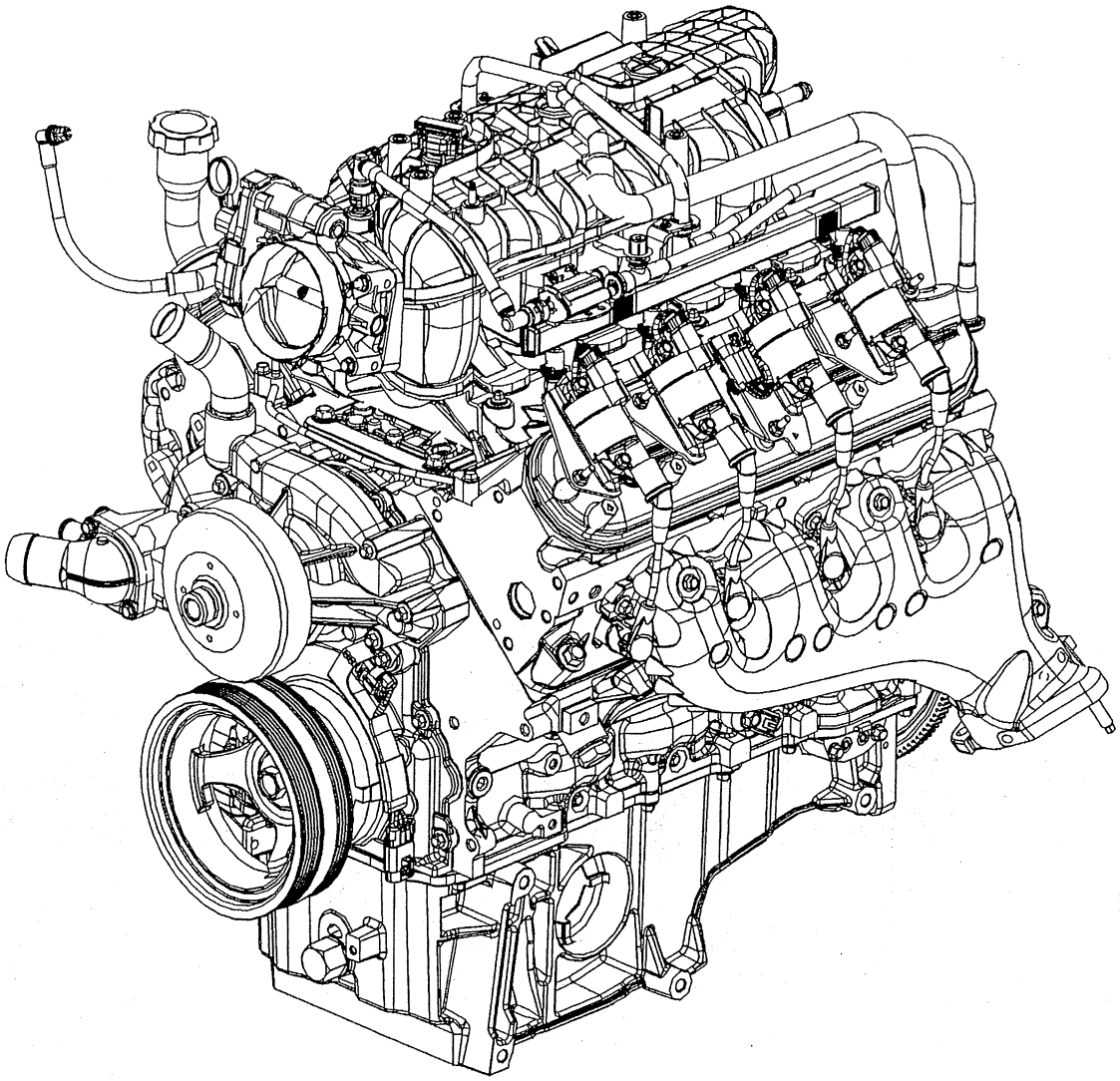
Fastener Tightening Specifications

Application	Specification	
	Metric	English
Air Cleaner Outlet Duct Bolt	10 N·m	89 lb in
Air Cleaner Outlet Duct Clamp	7 N·m	62 lb in
Air Conditioning Belt Tensioner Bolt	50 N·m	37 lb ft
Air Conditioning Bracket Bolt	50 N·m	37 lb ft
Automatic Transmission Flex Plate Bolts - First Pass	20 N·m	15 lb ft
Automatic Transmission Flex Plate Bolts - Second Pass	50 N·m	37 lb ft
Automatic Transmission Flex Plate Bolts - Final Pass	100 N·m	74 lb ft
Battery Cable Channel Bolt	12 N·m	106 lb in
Brake Hose Retaining Bolt	25 N·m	18 lb ft

Application	Specification	
	Metric	English
Camshaft Position (CMP) Sensor Bolt	12 N·m	106 lb in
Camshaft Position (CMP) Sensor Wire Harness Bolt	12 N·m	106 lb in
Camshaft Retainer Bolts - Hex Head Bolts	25 N·m	18 lb ft
Camshaft Retainer Bolts - TORX® Head Bolts	15 N·m	11 lb ft
Camshaft Sprocket Bolts	25 N·m	18 lb ft
Connecting Rod Bolts - First Pass	20 N·m	15 lb ft
Connecting Rod Bolts - Final Pass	75 degrees	
Coolant Air Bleed Pipe and Cover Bolts	12 N·m	106 lb in
Coolant Temperature Sensor	20 N·m	15 lb ft
Crankshaft Balancer Bolt - Installation Pass to Ensure the Balancer is Completely Installed	330 N·m	240 lb ft
Crankshaft Balancer Bolt - First Pass - Install a NEW Bolt After the Installation Pass and Tighten as Described in the First and Final Passes	50 N·m	37 lb ft
Crankshaft Balancer Bolt - Final Pass	140 degrees	
Crankshaft Bearing Cap M10 Bolts - First Pass in Sequence	20 N·m	15 lb ft
Crankshaft Bearing Cap M10 Bolts - Final Pass in Sequence	80 degrees	
Crankshaft Bearing Cap M10 Studs - First Pass in Sequence	20 N·m	15 lb ft
Crankshaft Bearing Cap M10 Studs - Final Pass in Sequence	51 degrees	
Crankshaft Bearing Cap M8 Bolts	25 N·m	18 lb ft
Crankshaft Oil Deflector Nuts	25 N·m	18 lb ft
Crankshaft Position (CKP) Sensor Bolt	25 N·m	18 lb ft
Crankshaft Rear Oil Seal Housing Bolts	25 N·m	18 lb ft
Cylinder Head M11 Bolts - First Pass in Sequence	30 N·m	22 lb ft
Cylinder Head M11 Bolts - Second Pass in Sequence	90 degrees	
Cylinder Head M11 Bolts - Final Pass in Sequence	70 degrees	
Cylinder Head M8 Bolts - in Sequence	30 N·m	22 lb ft
Cylinder Head Plug	20 N·m	15 lb ft
Differential Bolts	85 N·m	63 lb ft
Drive Belt Idler Pulley Bolt	50 N·m	37 lb ft
Drive Belt Tensioner Bolt	50 N·m	37 lb ft
Engine Block Coolant Drain Hole Plug	60 N·m	44 lb ft
Engine Block Coolant Heater	50 N·m	37 lb ft
Engine Block Oil Gallery Plugs	60 N·m	44 lb ft
Engine Harness Bracket Nut	10 N·m	89 lb in
Engine Mount Bracket Spacer	50 N·m	37 lb ft
Engine Mount Frame Bracket	100 N·m	74 lb ft
Engine Mount Nuts	50 N·m	37 lb ft
Engine Mount-to-Engine Bolts	50 N·m	37 lb ft
Engine Mount Upper Bracket Bolt	50 N·m	37 lb ft
Engine Shield Bolt	20 N·m	15 lb ft
Engine Sight Shield Bolt	10 N·m	89 lb in
Engine Sight Shield Retainer Bolt	5 N·m	44 lb in
Engine Valley Cover Bolts	25 N·m	18 lb ft
Evaporative Emission (EVAP) Canister Purge Solenoid Valve Bolt	10 N·m	89 lb in
Exhaust Manifold Bolts - First Pass	15 N·m	11 lb ft
Exhaust Manifold Bolts - Final Pass	20 N·m	15 lb ft
Exhaust Manifold Heat Shield Bolts	9 N·m	80 lb in
Exhaust Manifold Studs	20 N·m	15 lb ft
Front Cover Bolts	25 N·m	18 lb ft
Front Shock Upper Retaining Nut	100 N·m	74 lb ft

Application	Specification	
	Metric	English
Fuel Injection Fuel Rail Bolts	10 N·m	89 lb in
Fuel Rail Crossover Tube Bolts	3.8 N·m	34 lb in
Fuel Rail Stop Bracket Bolt	50 N·m	37 lb ft
Ignition Coil Bracket-to-Valve Rocker Arm Cover Studs	12 N·m	106 lb in
Ignition Coil-to-Bracket Bolts	10 N·m	89 lb in
Intake Manifold Bolts - First Pass in Sequence	5 N·m	44 lb in
Intake Manifold Bolts - Final Pass in Sequence	10 N·m	89 lb in
Intake Manifold Wiring Harness Stud	10 N·m	89 lb in
J 41798 M8 Bolt	25 N·m	18 lb ft
J 41798 M10 Bolts	50 N·m	37 lb ft
Knock Sensor Bolts	20 N·m	15 lb ft
Oil Filter	30 N·m	22 lb ft
Oil Filter Fitting	55 N·m	40 lb ft
Oil Filter Tube-to-Bottom of Oil Pan Bolts	12 N·m	106 lb in
Oil Filter Tube-to-Side of Oil Pan Bolts	12 N·m	106 lb in
Oil Level Indicator Tube Bolt	25 N·m	18 lb ft
Oil Pan Baffle Bolts	12 N·m	106 lb in
Oil Pan Closeout Cover Bolt - Left Side	9 N·m	80 lb in
Oil Pan Closeout Cover Bolt - Right Side	9 N·m	80 lb in
Oil Pan Cover Bolts	12 N·m	106 lb in
Oil Pan Drain Plug	25 N·m	18 lb ft
Oil Pan M6 Bolts - Oil Pan-to-Rear Housing	12 N·m	106 lb in
Oil Pan M8 Bolts - Oil Pan-to-Engine Block and Oil Pan-to-Front Cover	25 N·m	18 lb ft
Oil Pan Oil Gallery Plugs	25 N·m	18 lb ft
Oil Pressure Sensor	35 N·m	26 lb ft
Oil Pump Cover Bolts	12 N·m	106 lb in
Oil Pump Relief Valve Plug	12 N·m	106 lb in
Oil Pump Screen Nuts	25 N·m	18 lb ft
Oil Pump Screen-to-Oil Pump Bolts	12 N·m	106 lb in
Oil Pump-to-Engine Block Bolts	25 N·m	18 lb ft
Propeller Shaft Yoke Retainer Bolt	20 N·m	15 lb ft
Spark Plugs	15 N·m	11 lb ft
Throttle Body Bolts	10 N·m	89 lb in
Throttle Body Nuts	10 N·m	89 lb in
Throttle Body Studs	6 N·m	53 lb in
Timing Chain Dampener Bolts	25 N·m	15 lb ft
Torque Converter Bolts	60 N·m	44 lb ft
Transmission Bell Housing Bolt	50 N·m	37 lb ft
Transmission Oil Cooler Line Bracket Bolt	9 N·m	80 lb in
Upper Ball Joint Pinch Bolt	40 N·m	30 lb ft
Valve Lifter Guide Bolts	10 N·m	89 lb in
Valve Lifter Oil Manifold (VLOM) Bolts	25 N·m	18 lb ft
Valve Rocker Arm Bolts	30 N·m	22 lb ft
Valve Rocker Arm Cover Bolts	12 N·m	106 lb in
Water Inlet Housing Bolts	15 N·m	11 lb ft
Water Pump Bolts - First Pass	15 N·m	11 lb ft
Water Pump Bolts - Final Pass	30 N·m	22 lb ft

Engine Component Description



The 5.3 liter V8 engine is identified as RPO LH6 VIN M.

Camshaft and Drive System

A billet steel one piece camshaft is supported by 5 bearings pressed into the engine block. The camshaft timing sprocket is mounted to the front of the camshaft and is driven by the crankshaft sprocket through the camshaft timing chain. The camshaft position (CMP) sensor lobes are incorporated into the front face of the camshaft sprocket with the CMP sensor mounted in the engine front cover. A timing chain dampener is mounted to the front of the engine block above the crankshaft sprocket. The externally splined crankshaft sprocket is positioned to the crankshaft by a key and keyway. The crankshaft sprocket external splines drive the oil pump drive gear. A retaining plate mounted to the front of the engine block maintains camshaft location.

Crankshaft

The crankshaft is cast nodular iron. The crankshaft is supported by 5 crankshaft bearings. The bearings are retained by crankshaft bearing caps which are machined with the engine block for proper alignment and clearance. The crankshaft journals are undercut and rolled. The center main journal is the thrust

journal. A crankshaft position (CKP) reluctor ring is press fit mounted at the rear of the crankshaft. The reluctor ring is not serviceable separately.

Cylinder Heads

The cylinder heads are cast aluminum and have pressed in place powdered metal valve guides and valve seats. Passages for the engine coolant air bleed system are at the front of each cylinder head. The valve rocker arm covers are retained to the cylinder heads by 4 center mounted rocker arm cover bolts.

Engine Block

The engine block is a cam-in-block deep skirt 90 degree V configuration with 5 crankshaft bearing caps. The engine block is cast aluminum. The 5 crankshaft bearing caps each have 4 vertical M10 and 2 horizontal M8 mounting bolts. The camshaft is supported by 5 camshaft bearings pressed into the block.

Exhaust Manifolds

The exhaust manifolds are a one-piece cast iron design. The exhaust manifolds direct exhaust gasses from the combustion chambers to the exhaust system. Each manifold also has an externally mounted heat shield that is retained by bolts.

Intake Manifold

The intake manifold is a one-piece composite design that incorporates brass threaded inserts for mounting the fuel rail, throttle body, and wire harness studs. Each side of the intake manifold is sealed to the cylinder head by a non-reusable silicone sealing gasket/nylon carrier assembly. The electronically actuated throttle body bolts to the front of the intake manifold. The throttle body is sealed by a one-piece push in place silicone gasket. The fuel rail assembly, with 8 separate fuel injectors, is retained to the intake by 4 bolts. The injectors are seated into their individual manifold bores with O-ring seals to provide sealing. A fuel rail stop bracket is retained to the rear of the left cylinder head by a mounting bolt. The manifold absolute pressure (MAP) sensor is installed and retained to the top front of the intake manifold and sealed by an O-ring seal. The evaporative emission (EVAP) solenoid valve is mounted to the fuel rail at the left front of the intake manifold. There are no coolant passages within the intake manifold.

Oil Pan

The structural front-sump oil pan is cast aluminum. Incorporated into the design is the oil filter mounting boss, drain plug opening, oil level indicator tube opening, and oil pan baffle. An internal oil filter tube directs pressurized oil from the engine block to the oil filter. Filtered oil is returned to the engine block through the oil filter tube to the engine block upper oil galleries. The oil filter tube assembly, which is mounted in the center area of the pan, includes the press-fit oil pressure relief valve. The alignment of the structural oil pan to the rear of the engine block and transmission bell housing is critical.

Piston and Connecting Rod Assembly

The pistons are cast aluminum. The pistons use 2 compression rings and 1 oil control ring assembly. The piston is a low friction, lightweight design with a flat or recessed top and barrel shaped skirt. The piston pins are chromium steel and are a full-floating design. The connecting rods are powdered metal. The connecting rods are fractured at the connecting rod journal and then machined for the proper clearance. All applications use a piston with a graphite coated skirt. The piston and pin are to be serviced as an assembly.

Valve Rocker Arm Cover Assemblies

The valve rocker arm covers are cast aluminum and use a pre-molded silicon gasket for sealing. Mounted to each rocker cover are the coil and bracket assemblies. Incorporated into the left cover is the positive crankcase ventilation (PCV) system dirty air passage. Incorporated into the right cover are the oil fill tube and the PCV fresh air passage.

Valve Train

Motion is transmitted from the camshaft through the hydraulic roller valve lifters and tubular pushrods to the roller type rocker arms. The nylon valve lifter guides position and retain the valve lifters. The valve

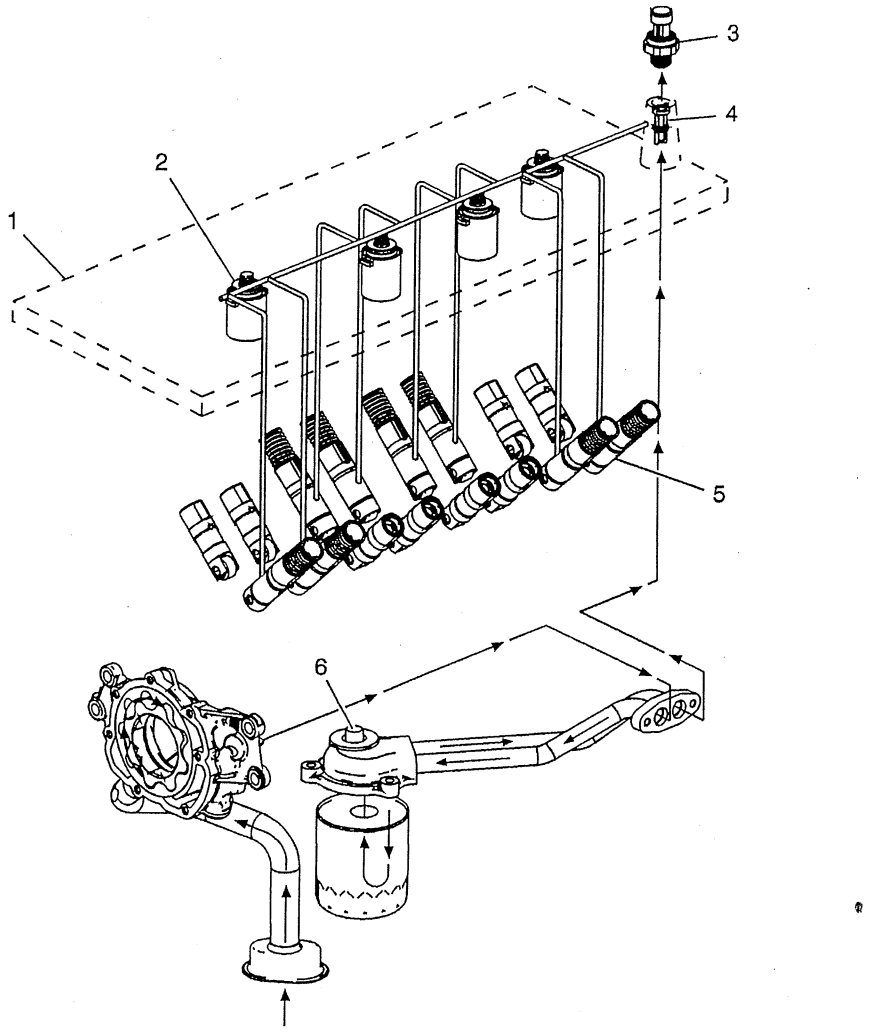
rocker arms for each bank of cylinders are mounted on pedestals or pivot supports. Each rocker arm is retained on the pivot support and cylinder head by a bolt. Valve lash is net build. Cylinders 1, 4, 6, and 7 are displacement on demand.

Displacement on Demand (DoD) System Description

System Operation

General Motors Displacement on Demand® (DoD) engine control system has the ability, under certain light load driving conditions, to provide maximum fuel economy by deactivating 4 of the engines 8 cylinders. The engine will normally operate on 8 cylinders in V8 mode during, starting, idling, and medium or heavy throttle conditions. When commanded ON, the engine control module (ECM) will direct the DoD system and deactivate cylinders 1 and 7 on the left bank and cylinders 4 and 6 on the right bank, forcing V4 mode.

Valve Lifter Oil Manifold Assembly



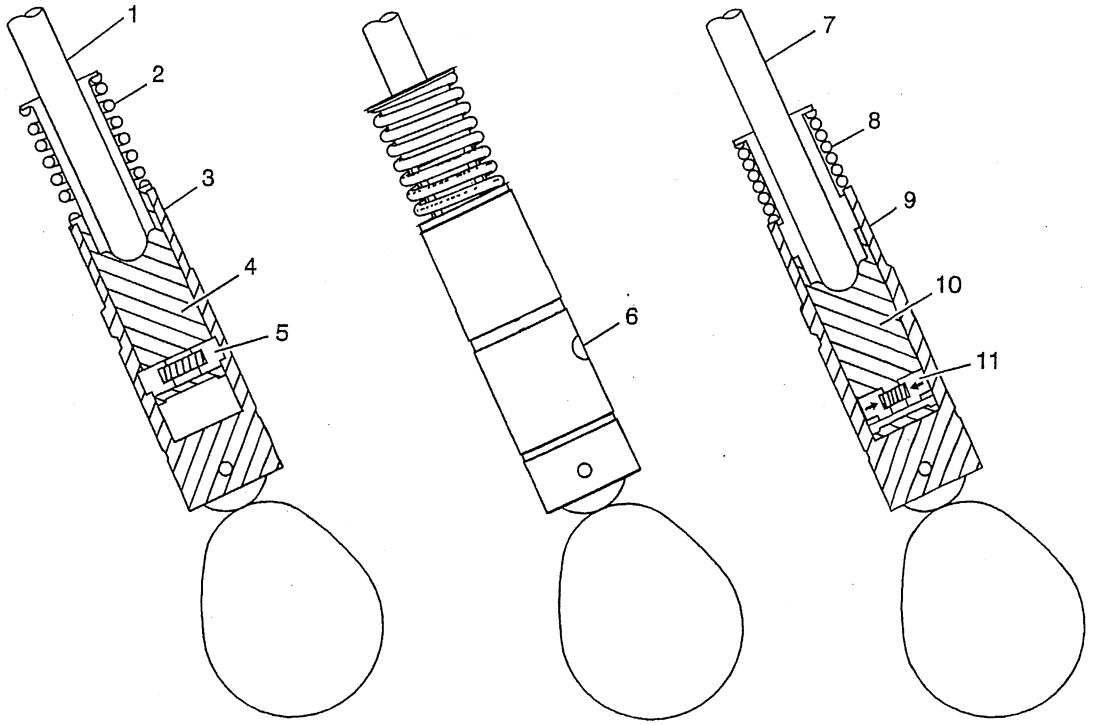
The valve lifter oil manifold (VLOM) assembly (1) is bolted to the top of the engine block beneath the intake manifold assembly. The oil manifold consists of 4 electrically operated and normally-closed solenoids (2). Each solenoid directs the flow of pressurized engine oil to the DoD intake and exhaust valve lifters (5). The oil pressure relief valve (6), located in the oil pan, regulates engine oil pressure to the lubrication system and the oil manifold.

When enabling conditions are met for DoD operation, the ECM will ground each solenoid control circuit in firing order sequence, allowing current to flow through the solenoid windings. With the windings

energized, the solenoid valves open and direct pressurized engine oil through the VLOM into 8 vertical passages in the engine block lifter valley. The 8 vertical passages, 2 per cylinder, direct pressurized oil to the valve lifter bores of the cylinders to be deactivated. When vehicle operating conditions require a return to V8 mode, the ECM will turn OFF the ground circuit for the solenoids, allowing the solenoid valves to close. When the solenoid valves are closed, remaining oil pressure is exhausted through the bleed passages of the VLOM into the engine block lifter valley. The housing of the oil manifold incorporates several oil bleed passages that continually purge trapped air from the manifold and engine block.

To help control contamination within the DoD hydraulic system, a small replaceable oil filter (4) is located in the VLOM oil inlet passage. The oil pressure sensor (3) monitors engine oil pressure and provides information to the ECM.

Displacement on Demand Valve Lifters



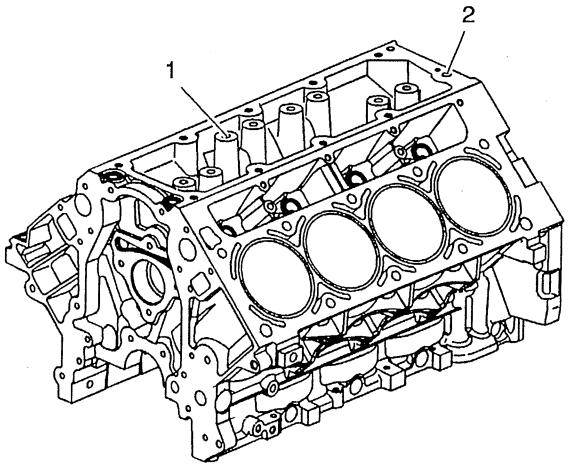
When operating in V8 mode, the DoD valve lifters function similar to the non-DoD valve lifters. The DoD oil manifold solenoids are in the closed position, with no pressurized oil directed to the valve lifters. The pushrod (1) travels upward and downward to actuate the rocker arm and valve. The spring loaded locking pins (5) of the lifter are extended outward and mechanically lock the pin housing (4) to the outer body of the valve lifter (3).

When the DoD system is commanded ON, the ECM will direct the solenoids of the oil manifold to open and direct pressurized oil to the valve lifters. Oil travels through the VLOM and engine block oil galleries and enters the inlet port (6) of the valve lifter.

When operating in V4 mode, pressurized oil forces the locking pins (11) inward. The pushrod (7) remains in a constant position and does not travel upward and downward. The outer body of the lifter (9) moves upward and downward independently from the pin housing (10). The valve lifter spring (8) retains tension on the valve train components to eliminate valve train noise.

When the DoD system is commanded OFF, the ECM directs the solenoids of the oil manifold to close, stopping the flow of pressurized oil to the valve lifters. The oil pressure within the lifter will decrease and the locking pins will move outward to mechanically lock the pin housing and outer body.

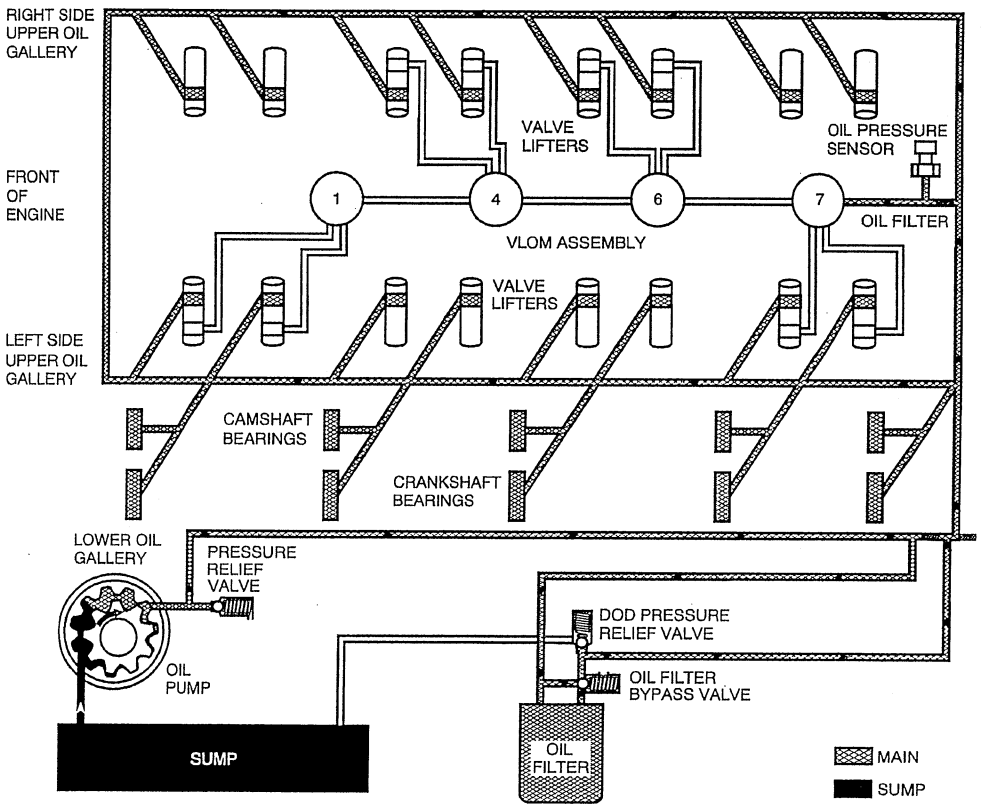
Engine Block



The DoD engine block incorporates additional features to support DoD system operation. Engine oil pressure is routed to the VLOM assembly from an oil gallery (2) in the rear of the cylinder block. Cylinders 1, 4, 6, and 7 each have 2 vertical, cast-in-block oil passages (1). The vertical oil passages permit oil flow from the manifold assembly to the valve lifter bores.

Lubrication Description

Lubrication Description (Main Pressure Below 55 psi - DoD Off)

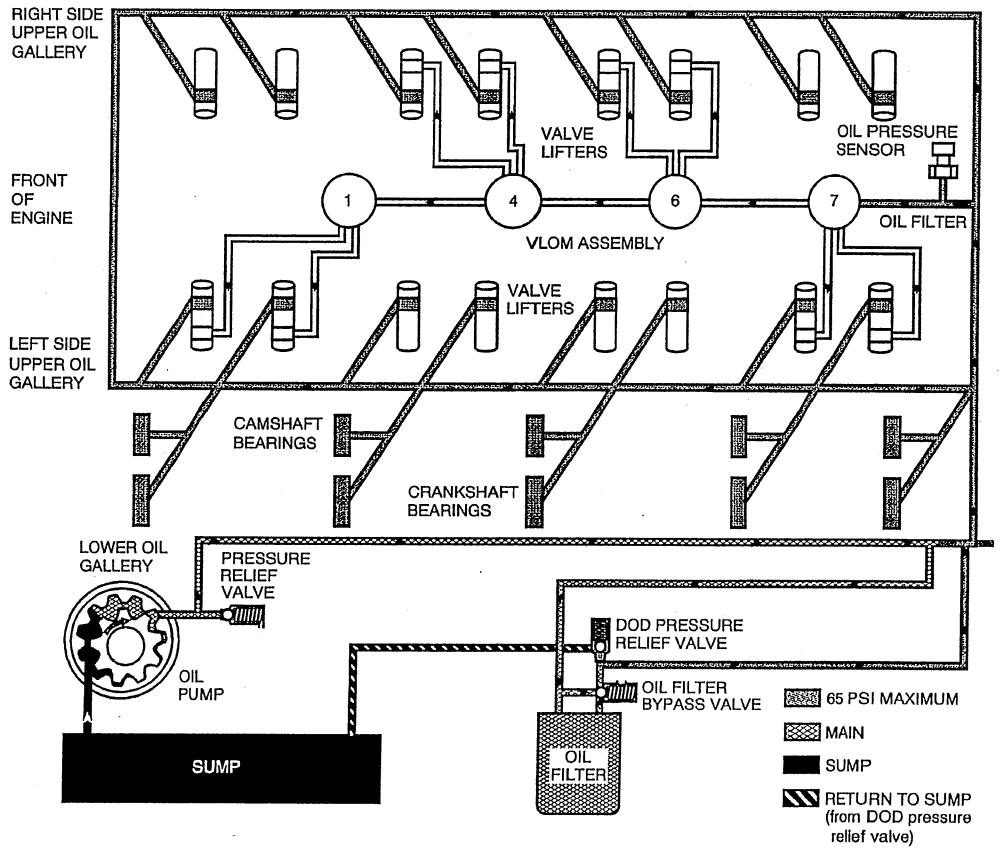


Engine lubrication is supplied by a gerotor type oil pump assembly. The pump is mounted on the front of the engine block and driven directly by the crankshaft sprocket. The pump gears rotate and draw oil from the oil pan sump through a pick-up screen and pipe. The oil is pressurized as it passes through the pump and is sent through the engine block lower oil gallery. Contained within the oil pump assembly is a pressure relief valve that maintains oil pressure within a specified range.

Pressurized oil is directed through the engine block lower oil gallery and through the oil filter tube to the full flow oil filter where harmful contaminants are removed. A bypass valve is incorporated into the oil pan at the oil filter boss, which permits oil flow in the event the filter becomes restricted. A second valve, the displacement on demand (DoD) oil pressure relief valve is incorporated into the oil filter tube. The DoD oil pressure relief valve limits oil pressure directed to the upper oil galleries and oil manifold assembly to 379-517 kPa (55-75 psi) maximum.

Oil is then directed from the filter to the upper main oil galleries and the valve lifter oil manifold (VLOM) assembly. Oil from the left upper oil gallery is directed to the crankshaft and camshaft bearings. Oil that has entered both the upper main oil galleries also pressurizes the valve lifter assemblies and is then pumped through the pushrods to lubricate the valve rocker arms and valve stems. Oil returning to the pan is directed by the crankshaft oil deflector. The oil pressure sensor is located at the top rear of the engine.

Lubrication Description (Main Pressure Above 55 psi - DoD Off)



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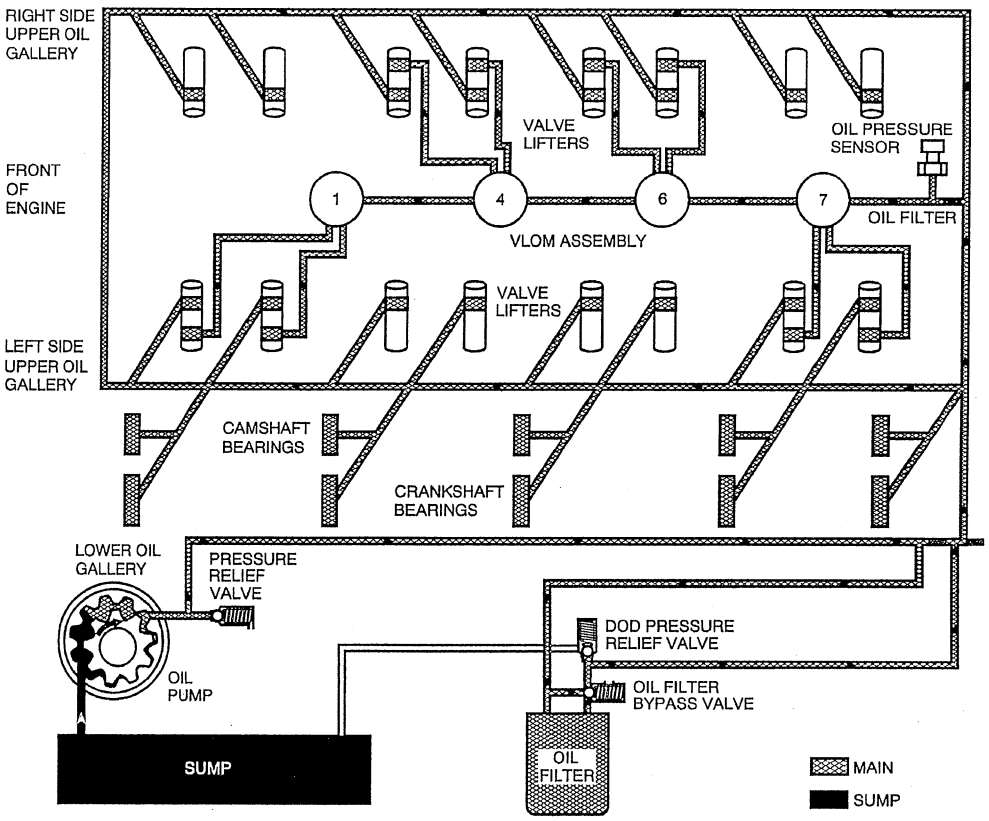

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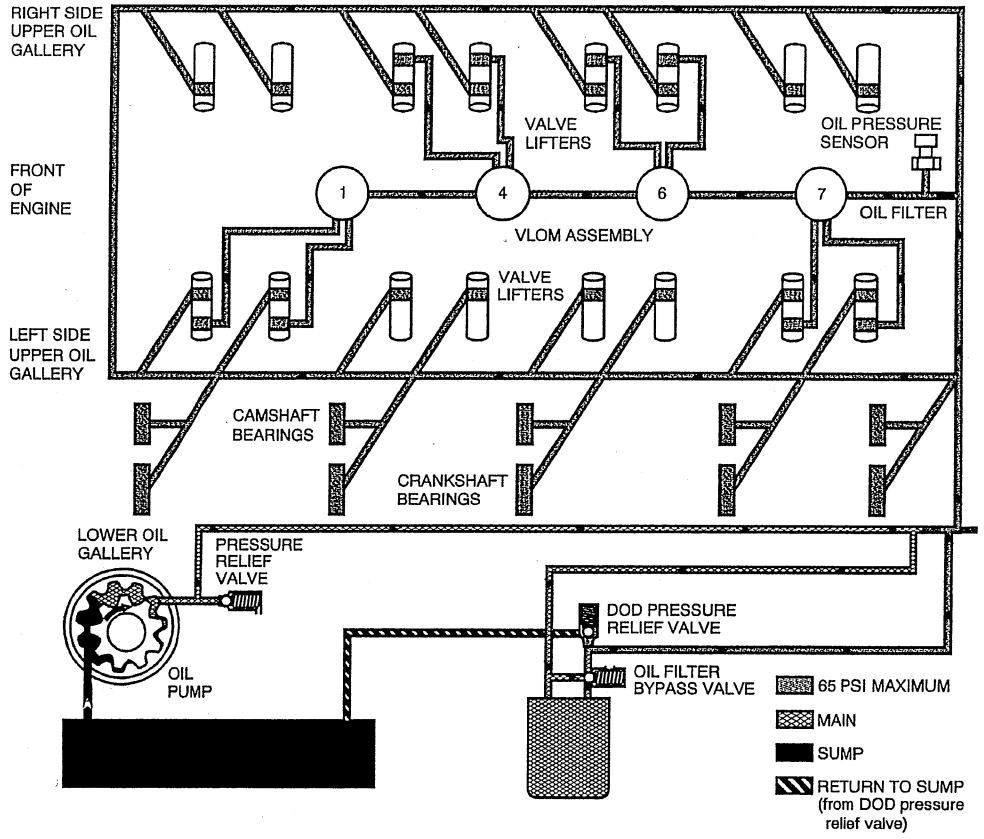
With DoD activated, the engine control module (ECM) commands the 4 solenoids to open, directing oil through the engine block oil galleries to the intake and exhaust valve lifters for cylinders 1, 4, 6, and 7.

Lubrication Description (Main Pressure Above 55 psi - DoD On)



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Drive Belt System Description

See Drive Belt System Description above.

Crankcase Ventilation System Description

A closed crankcase ventilation system is used in order to provide a more complete scavenging of the crankcase vapors. Fresh air from the throttle body is supplied to the crankcase, mixed with blow-by gases, and then passed through a crankcase ventilation valve into the intake manifold.

Engine Mechanical – LS2 6.0L

General Specifications

Application	Specification	
	Metric	English
General		
Engine Type	V8	
Displacement	6.0L	364 CID
RPO	LS2	
VIN	H	
Bore	101.618-101.636 mm	4.0007-4.0017 in
Stroke	92.0 mm	3.622 in
Compression Ratio	10.86:1	
Firing Order	1-8-7-2-6-5-4-3	
Spark Plug Gap	1.02 mm	0.04 in
Block		
Camshaft Bearing Bore 1 and 5 Diameter	59.58-59.63 mm	2.345-2.347 in
Camshaft Bearing Bore 2 and 4 Diameter	59.08-59.13 mm	2.325-2.327 in
Camshaft Bearing Bore 3 Diameter	58.58-58.63 mm	2.306-2.308 in
Crankshaft Main Bearing Bore Diameter	69.871-69.889 mm	2.75-2.751 in
Crankshaft Main Bearing Bore Out-of-Round	0.006 mm	0.0002 in
Cylinder Bore Diameter	101.618-101.636 mm	4.0007-4.0017 in
Cylinder Head Deck Height - Measuring from the Centerline of Crankshaft to the Deck Face	234.57-234.82 mm	9.235-9.245 in
Cylinder Head Deck Surface Flatness - Measured Within a 152.4 mm (6.0 in) Area	0.11 mm	0.004 in
Cylinder Head Deck Surface Flatness - Measuring the Overall Length of the Block Deck	0.22 mm	0.008 in
Valve Lifter Bore Diameter	21.417-21.443 mm	0.843-0.844 in
Camshaft		
Camshaft End Play	0.025-0.305 mm	0.001-0.012 in
Camshaft Journal Diameter	54.99-55.04 mm	2.164-2.166 in
Camshaft Journal Out-of-Round	0.025 mm	0.001 in
Camshaft Lobe Lift - Intake	7.78 mm	0.306 in
Camshaft Lobe Lift - Exhaust	7.77 mm	0.305 in
Camshaft Runout - Measured at the Intermediate Journals	0.05 mm	0.002 in
Connecting Rod		
Connecting Rod Bearing Clearance - Production	0.023-0.065 mm	0.0009-0.0025 in
Connecting Rod Bearing Clearance - Service	0.023-0.076 mm	0.0009-0.003 in

Application	Specification	
	Metric	English
Connecting Rod Bore Diameter - Bearing End	56.505-56.525 mm	2.224-2.225 in
Connecting Rod Bore Out-of-Round - Bearing End - Production	0.004-0.008 mm	0.00015-0.0003 in
Connecting Rod Bore Out-of-Round - Bearing End - Service	0.004-0.008 mm	0.00015-0.0003 in
Connecting Rod Side Clearance	0.11-0.51 mm	0.00433-0.02 in
Crankshaft		
Connecting Rod Journal Diameter - Production	53.318-53.338 mm	2.0991-2.0999 in
Connecting Rod Journal Diameter - Service	53.308 mm	2.0987 in
Connecting Rod Journal Out-of-Round - Production	0.005 mm	0.0002 in
Connecting Rod Journal Out-of-Round - Service	0.01 mm	0.0004 in
Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Production	0.005 mm	0.0002 in
Connecting Rod Journal Taper - Maximum for 1/2 of Journal Length - Service	0.02 mm	0.00078 in
Crankshaft End Play	0.04-0.2 mm	0.0015-0.0078 in
Crankshaft Main Bearing Clearance - Production	0.02-0.052 mm	0.0008-0.0021 in
Crankshaft Main Bearing Clearance - Service	0.02-0.065 mm	0.0008-0.0025 in
Crankshaft Main Journal Diameter - Production	64.992-65.008 mm	2.558-2.559 in
Crankshaft Main Journal Diameter - Service	64.992 mm	2.558 in
Crankshaft Main Journal Out-of-Round - Production	0.003 mm	0.000118 in
Crankshaft Main Journal Out-of-Round - Service	0.008 mm	0.0003 in
Crankshaft Main Journal Taper - Production	0.01 mm	0.0004 in
Crankshaft Main Journal Taper - Service	0.02 mm	0.00078 in
Crankshaft Rear Flange Runout	0.05 mm	0.002 in
Crankshaft Reluctor Ring Runout - Measured 1.0 mm (0.04 in) Below Tooth Diameter	0.7 mm	0.028 in
Crankshaft Thrust Surface - Production	26.14-26.22 mm	1.029-1.0315 in
Crankshaft Thrust Surface - Service	26.22 mm	1.0315 in
Crankshaft Thrust Surface Runout	0.025 mm	0.001 in
Cylinder Head		
Cylinder Head Height/Thickness - Measured from the Cylinder Head Deck to the Valve Rocker Arm Cover Seal Surface	120.2 mm	4.732 in
Surface Flatness - Block Deck - Measured Within a 152.4 mm (6.0 in) Area	0.08 mm	0.003 in
Surface Flatness - Block Deck - Measuring the Overall Length of the Cylinder Head	0.1 mm	0.004 in
Surface Flatness - Exhaust Manifold Deck	0.13 mm	0.005 in
Surface Flatness - Intake Manifold Deck	0.08 mm	0.0031 in
Valve Guide Installed Height - Measured from the Spring Seat Surface to the Top of the Guide	17.32 mm	0.682 in
Intake Manifold		
Surface Flatness - Measured at Gasket Sealing Surfaces and Measured Within a 200 mm (7.87 in) Area that Includes 2 Runner Port Openings	0.3 mm	0.118 in
Lubrication System		
Oil Capacity - with Filter	5.68 liters	6.0 quarts
Oil Capacity - without Filter	5.20 liters	5.5 quarts

Application	Specification	
	Metric	English
Oil Pressure - Minimum - Hot	41 kPa at 1,000 engine RPM 124 kPa at 2,000 engine RPM 165 kPa at 4,000 engine RPM	6 psig at 1,000 engine RPM 18 psig at 2,000 engine RPM 24 psig at 4,000 engine RPM
Oil Pressure Relief Valve Oil Pressure - as Measured at Oil Pressure Sensor Location	379-517 kPa Maximum	55-75 psig Maximum
Oil Pan		
Front Cover Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
Crankshaft Rear Oil Seal Housing Alignment - at Oil Pan Surface	0.0-0.5 mm	0.0-0.02 in
Oil Pan Alignment - to Rear of Engine Block at Transmission Bell Housing Mounting Surface	0.0-0.1 mm	0.0-0.004 in
Piston Rings		
Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Production	0.20-0.41 mm	0.008-0.016 in
Piston Ring End Gap - First Compression Ring - Measured in Cylinder Bore - Service	0.20-0.41 mm	0.008-0.016 in
Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Production	0.37-0.69 mm	0.015-0.027 in
Piston Ring End Gap - Second Compression Ring - Measured in Cylinder Bore - Service	0.37-0.69 mm	0.015-0.027 in
Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Production	0.22-0.79 mm	0.009-0.031 in
Piston Ring End Gap - Oil Control Ring - Measured in Cylinder Bore - Service	0.22-0.79 mm	0.009-0.031 in
Piston Ring to Groove Clearance - First Compression Ring - Production	0.030-0.10 mm	0.0012-0.0040 in
Piston Ring to Groove Clearance - First Compression Ring - Service	0.030-0.10 mm	0.0012-0.0040 in
Piston Ring to Groove Clearance - Second Compression Ring - Production	0.035-0.078 mm	0.0014-0.0031 in
Piston Ring to Groove Clearance - Second Compression Ring - Service	0.035-0.078 mm	0.0014-0.0031 in
Piston Ring to Groove Clearance - Oil Control Ring - Production	0.013-0.201 mm	0.0005-0.0079 in
Piston Ring to Groove Clearance - Oil Control Ring - Service	0.013-0.201 mm	0.0005-0.0079 in
Pistons and Pins		
Pin - Piston Pin Clearance to Piston Pin Bore - Production	0.002-0.01 mm	0.0008-0.0004 in
Pin - Piston Pin Clearance to Piston Pin Bore - Service	0.002-0.015 mm	0.00008-0.0006 in
Pin - Piston Pin Diameter	23.952-23.955 mm	0.943-0.943 in
Pin - Piston Pin Fit in Connecting Rod Bore - Production	0.007-0.02 mm	0.00027-0.00078 in
Pin - Piston Pin Fit in Connecting Rod Bore - Service	0.007-0.022 mm	0.00027-0.00086 in
Piston - Piston Diameter - Measured Over Skirt Coating	101.611-101.642 mm	4.0-4.001 in
Piston - Piston to Bore Clearance - Production	-0.022-0.030 mm	-0.0009-0.0012 in
Piston - Piston to Bore Clearance - Service Limit with Skirt Coating Worn Off	0.024-0.08 mm	0.00094-0.0031 in
Valve System		
Valves - Valve Face Angle	45 degrees	
Valves - Valve Face Width	1.25 mm	0.05 in

Application	Specification	
	Metric	English
Valves - Valve Lash	Net Lash - No Adjustment	
Valves - Valve Lift - Intake	13.23 mm	0.52 in
Valves - Valve Lift - Exhaust	13.22 mm	0.52 in
Valves - Valve Seat Angle	46 degrees	
Valves - Valve Seat Runout	0.05 mm	0.002 in
Valves - Valve Seat Width - Exhaust	1.78 mm	0.07 in
Valves - Seat Width - Intake	1.02 mm	0.04 in
Valves - Valve Stem Diameter - Production	7.955-7.976 mm	0.313-0.314 in
Valves - Valve Stem Diameter - Service	7.95 mm	0.313 in
Valves - Valve Stem-to-Guide Clearance - Production - Intake	0.025-0.066 mm	0.001-0.0026 in
Valves - Valve Stem-to-Guide Clearance - Service - Intake	0.093 mm	0.0037 in
Valves - Valve Stem-to-Guide Clearance - Production - Exhaust	0.025-0.066 mm	0.001-0.0026 in
Valves - Valve Stem-to-Guide Clearance - Service - Exhaust	0.093 mm	0.0037 in
Rocker Arms - Valve Rocker Arm Ratio	1.70:1	
Valve Springs - Valve Spring Free Length	52.9 mm	2.08 in
Valve Springs - Valve Spring Installed Height	45.75 mm	1.8 in
Valve Springs - Valve Spring Load - Closed	340 N at 45.75 mm	76 lb at 1.8 in
Valve Springs - Valve Spring Load - Open	980 N at 33.55 mm	220 lb at 1.32 in

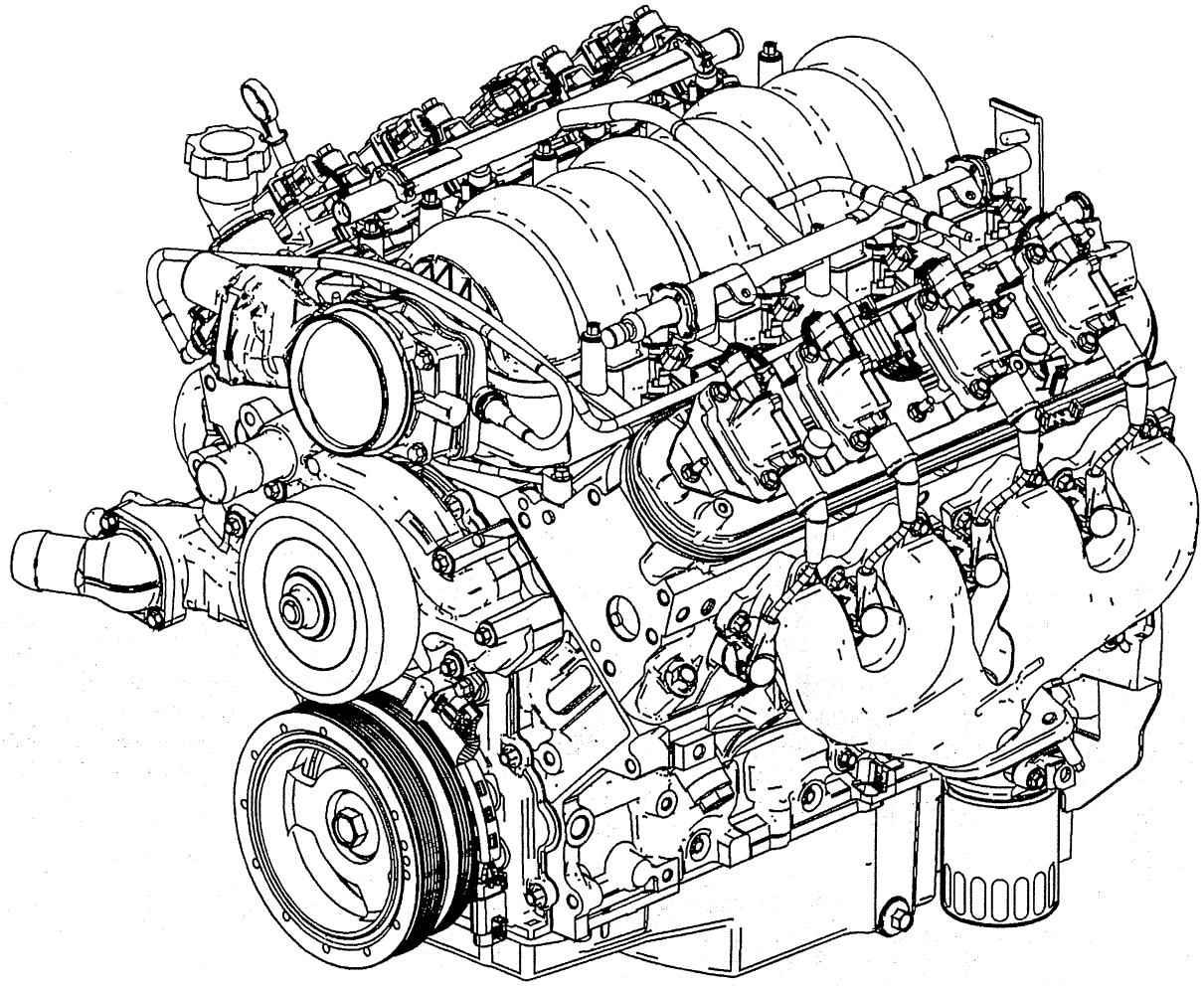
Fastener Tightening Specifications

Application	Specification	
	Metric	English
Air Cleaner Outlet Duct Clamp	7 N·m	62 lb in
Air Conditioning Belt Tensioner Bolt	50 N·m	37 lb ft
Air Conditioning Bracket Bolt	50 N·m	37 lb ft
Air Conditioning Compressor Line-to-Condenser Bolt	16 N·m	12 lb ft
Air Conditioning Compressor Line-to-Thermal Expansion Valve (TXV) Nut	20 N·m	15 lb ft
Camshaft Position (CMP) Sensor Bolt	12 N·m	106 lb in
CMP Sensor Wire Harness Bolt	12 N·m	106 lb in
Camshaft Retainer Bolts - Hex Head Bolts	25 N·m	18 lb ft
Camshaft Retainer Bolts - TORX® Head Bolts	15 N·m	11 lb ft
Camshaft Sprocket Bolts	25 N·m	18 lb ft
Connecting Rod Bolts - First Pass	20 N·m	15 lb ft
Connecting Rod Bolts - Final Pass	75 degrees	
Coolant Air Bleed Pipe and Cover Bolts	12 N·m	106 lb in
Coolant Temperature Sensor	20 N·m	15 lb ft
Crankshaft Balancer Bolt - Installation Pass to Ensure the Balancer is Completely Installed	330 N·m	240 lb ft
Crankshaft Balancer Bolt - First Pass - Install a NEW Bolt After the Installation Pass and Tighten as Described in the First and Final Passes	50 N·m	37 lb ft
Crankshaft Balancer Bolt - Final Pass	140 degrees	
Crankshaft Bearing Cap M10 Bolts - First Pass in Sequence	20 N·m	15 lb ft
Crankshaft Bearing Cap M10 Bolts - Final Pass in Sequence	80 degrees	
Crankshaft Bearing Cap M10 Studs - First Pass in Sequence	20 N·m	15 lb ft
Crankshaft Bearing Cap M10 Studs - Final Pass in Sequence	51 degrees	
Crankshaft Bearing Cap M8 Bolts	25 N·m	18 lb ft
Crankshaft Oil Deflector Nuts	25 N·m	18 lb ft
Crankshaft Position (CKP) Sensor Bolt	25 N·m	18 lb ft
Crankshaft Rear Oil Seal Housing Bolts	25 N·m	18 lb ft
Cylinder Head M11 Bolts - First Pass in Sequence	30 N·m	22 lb ft

Application	Specification	
	Metric	English
Cylinder Head M11 Bolts - Second Pass in Sequence	90 degrees	
Cylinder Head M11 Bolts - Final Pass in Sequence	70 degrees	
Cylinder Head M8 Bolts - in Sequence	30 N·m	22 lb ft
Cylinder Head Coolant Plug	20 N·m	15 lb ft
Drive Belt Idler Pulley Bolt	50 N·m	37 lb ft
Drive Belt Tensioner Bolt	50 N·m	37 lb ft
Engine Block Coolant Drain Hole Plug	60 N·m	44 lb ft
Engine Block Coolant Heater	50 N·m	37 lb ft
Engine Block Oil Gallery Plug	60 N·m	44 lb ft
Engine Ground Strap-to-Frame Nut	25 N·m	18 lb ft
Engine Ground-to-Engine Block Bolts	16 N·m	12 lb ft
Engine Harness Bracket Nut	10 N·m	89 lb in
Engine Mount Bracket Spacer	50 N·m	37 lb ft
Engine Mount Frame Bracket	100 N·m	74 lb ft
Engine Mount Nuts	50 N·m	37 lb ft
Engine Sight Shield Bolt	10 N·m	89 lb in
Engine Sight Shield Bracket Bolt	5 N·m	44 lb in
Evaporative (EVAP) Emission Canister Purge Solenoid Valve Bolt	10 N·m	89 lb in
Exhaust Manifold Bolts - First Pass	15 N·m	11 lb ft
Exhaust Manifold Bolts - Final Pass	20 N·m	15 lb ft
Exhaust Manifold Heat Shield Bolts	9 N·m	80 lb in
Exhaust Manifold Studs	20 N·m	15 lb ft
Flywheel Bolts - First Pass	20 N·m	15 lb ft
Flywheel Bolts - Second Pass	50 N·m	37 lb ft
Flywheel Bolts - Final Pass	100 N·m	74 lb ft
Front Cover Bolts	25 N·m	18 lb ft
Fuel Injection Fuel Rail Bolts	10 N·m	89 lb in
Fuel Rail Crossover Tube Bolts	3.8 N·m	34 lb in
Fuel Rail Stop Bracket Bolt	50 N·m	37 lb ft
Generator Power Lead Nut	9 N·m	80 lb in
Ignition Coil Bracket-to-Valve Rocker Arm Cover Studs	12 N·m	106 lb in
Ignition Coil-to-Bracket Bolts	10 N·m	89 lb in
Intake Manifold Bolts - First Pass in Sequence	5 N·m	44 lb in
Intake Manifold Bolts - Final Pass in Sequence	10 N·m	89 lb in
J 41798 M8 Bolt	25 N·m	18 lb ft
J 41798 M10 Bolts	50 N·m	37 lb ft
J 42386-A Bolts	50 N·m	37 lb ft
Knock Sensor Bolts	20 N·m	15 lb ft
Oil Filter	30 N·m	22 lb ft
Oil Filter Fitting	55 N·m	40 lb ft
Oil Filter Tube-to-Bottom of Oil Pan Bolts	12 N·m	106 lb in
Oil Filter Tube-to-Side of Oil Pan Bolts	12 N·m	106 lb in
Oil Level Indicator Tube Bolt	25 N·m	18 lb ft
Oil Pan Baffle Bolts	12 N·m	106 lb in
Oil Pan Closeout Cover Bolt - Left Side	9 N·m	80 lb in
Oil Pan Closeout Cover Bolt - Right Side	9 N·m	80 lb in
Oil Pan Cover Bolts	12 N·m	106 lb in
Oil Pan Drain Plug	25 N·m	18 lb ft
Oil Pan M6 Bolts - Oil Pan-to-Rear Oil Seal Housing	12 N·m	106 lb in
Oil Pan M8 Bolts - Oil Pan-to-Engine Block and Oil Pan-to-Front Cover	25 N·m	18 lb ft

Application	Specification	
	Metric	English
Oil Pan Oil Gallery Plugs	25 N·m	18 lb ft
Oil Pressure Sensor	35 N·m	26 lb ft
Oil Pump Cover Bolts	12 N·m	106 lb in
Oil Pump Relief Valve Plug	12 N·m	106 lb in
Oil Pump Screen Nuts	25 N·m	18 lb ft
Oil Pump Screen-to-Oil Pump Bolt	12 N·m	106 lb in
Oil Pump-to-Engine Block Bolts	25 N·m	18 lb ft
Spark Plugs	15 N·m	11 lb ft
Throttle Body Bolts	10 N·m	89 lb in
Throttle Body Nuts	10 N·m	89 lb in
Throttle Body Studs	6 N·m	53 lb in
Timing Chain Dampener Bolts	25 N·m	18 lb ft
Upper Engine Mount Bracket	50 N·m	37 lb ft
Valley Cover Bolts	25 N·m	18 lb ft
Valve Lifter Guide Bolts	10 N·m	89 lb in
Valve Rocker Arm Bolts	30 N·m	22 lb ft
Valve Rocker Arm Cover Bolts	12 N·m	106 lb in
Water Inlet Housing Bolts	15 N·m	11 lb ft
Water Pump Bolts - First Pass	15 N·m	11 lb ft
Water Pump Bolts - Final Pass	30 N·m	22 lb ft

Engine Component Description



The 6.0 Liter V8 engine is identified as RPO LS2 VIN H.

Camshaft and Drive System

A billet steel one piece camshaft is supported by five bearings pressed into the engine block. The camshaft timing sprocket is mounted to the front of the camshaft and is driven by the crankshaft sprocket through the camshaft timing chain. The camshaft position sensor lobes are incorporated into the front face of the camshaft sprocket with the camshaft position sensor mounted in the engine front cover. A timing chain guide is mounted to the front of the engine block above the crankshaft sprocket. The externally splined crankshaft sprocket is positioned to the crankshaft by a key and keyway. The crankshaft sprocket external splines drive the oil pump drive gear. A retaining plate mounted to the front of the engine block maintains camshaft location.

Crankshaft

The crankshaft is cast nodular iron. The crankshaft is supported by five crankshaft bearings. The bearings are retained by crankshaft bearing caps which are machined with the engine block for proper alignment and clearance. The crankshaft journals are undercut and rolled. The center main journal is the thrust

journal. A crankshaft position reluctor ring is press fit mounted at the rear of the crankshaft. The reluctor ring is not serviceable separately.

Cylinder Heads

The cylinder heads are cast aluminum and have pressed in place powdered metal valve guides and valve seats. Passages for the engine coolant air bleed system are at the front of each cylinder head. The valve rocker arm covers are retained to the cylinder heads by four center mounted rocker arm cover bolts.

Engine Block

The engine block is a cam-in-block deep skirt 90 degree V configuration with five crankshaft bearing caps. The engine block is cast aluminum. The five crankshaft bearing caps each have four vertical M10 and two horizontal M8 mounting bolts. The camshaft is supported by five camshaft bearings pressed into the block.

Exhaust Manifolds

The exhaust manifolds are a one-piece cast iron design. The exhaust manifolds direct exhaust gasses from the combustion chambers to the exhaust system. Each manifold also has an externally mounted heat shield that is retained by bolts.

Intake Manifold

The intake manifold is a one-piece composite design that incorporates brass threaded inserts for mounting the fuel rail, throttle body, and wire harness studs. Each side of the intake manifold is sealed to the cylinder head by a non-reusable push-in-place silicone sealing gasket. The electronically actuated throttle body bolts to the front of the intake manifold. The throttle body is sealed by a one-piece push-in-place silicone gasket. The fuel rail assembly, with eight separate fuel injectors, is retained to the intake by four bolts. The injectors are seated into their individual manifold bores with O-ring seals to provide sealing. A fuel rail stop bracket is retained to the rear left of the intake manifold by mounting bolts. The manifold absolute pressure (MAP) sensor is installed and retained to the top front of the intake manifold and sealed by an O-ring seal. The evaporative emission (EVAP) solenoid valve is mounted to the front of the right cylinder head. There are no coolant passages within the intake manifold.

Oil Pan

The structural rear-sump oil pan is cast aluminum. Incorporated into the design is the oil filter mounting boss, drain plug opening and oil level indicator tube opening. The alignment of the structural oil pan to the rear of the engine block and transmission bell housing is critical.

Piston and Connecting Rod Assembly

The pistons are cast aluminum. The pistons use two compression rings and one oil control ring assembly. The piston is a low friction, lightweight design with a flat or recessed top and barrel shaped skirt. The piston pins are chromium steel and are a full-floating design. The connecting rods are powdered metal. The connecting rods are fractured at the connecting rod journal and then machined for the proper clearance. All applications use a piston with a graphite coated skirt. The piston and pin are to be serviced as an assembly.

Valve Rocker Arm Cover Assemblies

The valve rocker arm covers are cast aluminum and use a pre-molded silicon gasket for sealing. Mounted to each rocker cover are the coil and bracket assemblies. Incorporated into the right cover is the oil fill tube and the positive crankcase ventilation (PCV) fresh air passage.

Valve Train

Motion is transmitted from the camshaft through the hydraulic roller valve lifters and tubular pushrods to the roller type rocker arms. The nylon valve lifter guides position and retain the valve lifters. The valve rocker arms for each bank of cylinders are mounted on pedestals or pivot supports. Each rocker arm is retained on the pivot support and cylinder head by a bolt. Valve lash is net build.

Drive Belt System Description

The drive belt system consists of the following components:

- The drive belt
- The drive belt tensioner
- The drive belt idler pulley
- The crankshaft balancer pulley
- The accessory drive component mounting brackets
- The accessory drive components
  - The power steering pump, if belt driven
  - The generator
  - The A/C compressor, if equipped
  - The engine cooling fan, if belt driven
  - The water pump, if belt driven
  - The vacuum pump, if equipped
  - The air compressor, if equipped

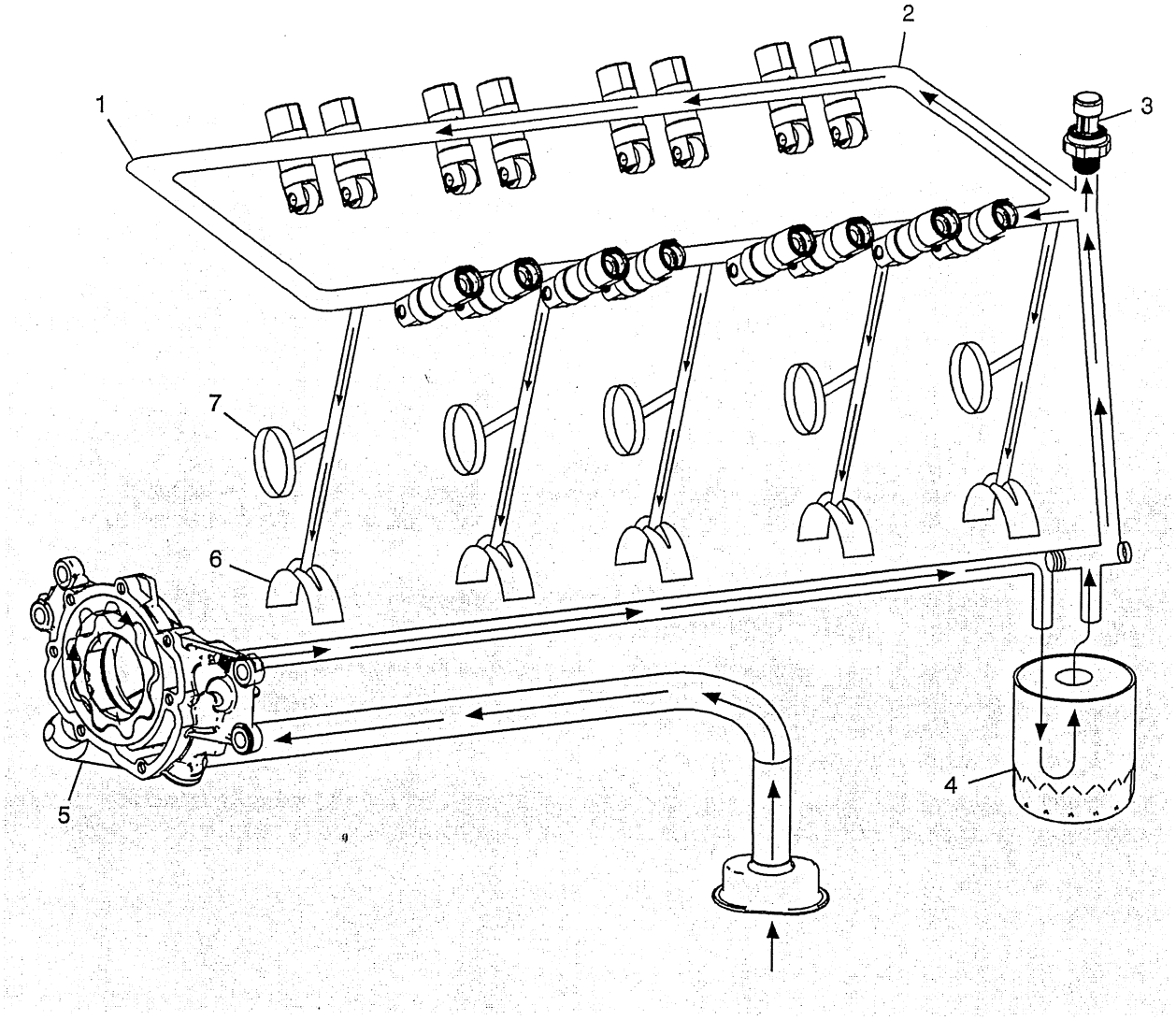
The drive belt system may use one belt or two belts. The drive belt is thin so that it can bend backwards and has several ribs to match the grooves in the pulleys. There also may be a V-belt style belt used to drive certain accessory drive components. The drive belts are made of different types of rubbers (chloroprene or EPDM) and have different layers or plys containing either fiber cloth or cords for reinforcement.

Both sides of the drive belt may be used to drive the different accessory drive components. When the back side of the drive belt is used to drive a pulley, the pulley is smooth.

The drive belt is pulled by the crankshaft balancer pulley across the accessory drive component pulleys. The spring loaded drive belt tensioner keeps constant tension on the drive belt to prevent the drive belt from slipping. The drive belt tensioner arm will move when loads are applied to the drive belt by the accessory drive components and the crankshaft.

The drive belt system may have an idler pulley, which is used to add wrap to the adjacent pulleys. Some systems use an idler pulley in place of an accessory drive component when the vehicle is not equipped with the accessory.

Lubrication



Engine lubrication is supplied by a gerotor type oil pump assembly (5). The pump is mounted on the front of the engine block and driven directly by the crankshaft sprocket. The pump gears rotate and draw oil from the oil pan sump through a pick-up screen and pipe. The oil is pressurized as it passes through the pump and is sent through the engine block lower oil gallery. Contained within the oil pump assembly is a pressure regulator valve that maintains oil pressure within a specified range.

Pressurized oil is directed through the engine block lower oil gallery to the full flow oil filter (4) where harmful contaminants are removed. A bypass valve is incorporated into the oil pan at the oil filter boss, which permits oil flow in the event the filter becomes restricted.

Oil is then directed from the filter to the upper main oil galleries (1). Oil from the left upper oil gallery is directed to the crankshaft bearings (6) and camshaft bearings (7). Oil that has entered both the upper main oil galleries also pressurizes the valve lifter assemblies (2) and is then pumped through the pushrods to lubricate the valve rocker arms and valve stems. Oil returning to the pan is directed by the crankshaft oil deflector. The oil pressure sensor (3) is located at the top rear of the engine.

Crankcase Ventilation System Description

A closed crankcase ventilation system is used in order to provide a more complete scavenging of crankcase vapors. Filtered air from the air induction system duct is supplied to the crankcase, mixed with blow-by vapors, and passes through a crankcase ventilation metering device before entering the intake manifold. The primary component in the positive crankcase ventilation (PCV) system is the PCV flow metering device (valve or orifice) . Vacuum changes within the intake manifold result in flow variations of the blow-by vapors. If abnormal operating conditions occur, the design of the PCV system permits excessive amounts of blow-by vapors to back flow through the crankcase vent tube and into the engine induction system to be consumed during normal combustion. This engine ventilation system design minimizes oil consumption and significantly reduces the potential for oil ingestion during vehicle limit handling maneuvers.

LS2 Engine

The LS2 engine utilizes an integral PCV system which is located in the engines valley cover beneath the intake manifold. The engine valley cover contains composite oil separating baffles and PCV plumbing. Filtered fresh air is routed from up stream of the throttle plate to the front of the right valve rocker arm cover through a formed nylon tube. The design of the rocker cover shields rocker arm oil spray thereby reducing the potential for oil being drawn into the throttle bore area during back flow of the ventilation system. Blow-by vapors are routed from the valley cover through a fixed orifice (2.5 mm) within a steel PCV tube, then through a formed rubber hose before entering the intake manifold behind the throttle body.

Engine Cooling

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Air Cleaner Outlet Duct Bolt (5.3L)	10 N·m	89 lb in
Air Cleaner Outlet Duct Clamp (5.3L)	7 N·m	62 lb in
Air Conditioning Condenser Bolt	28 N·m	21 lb ft
Auxiliary Heater Inlet and Outlet Hose/Pipe Nut (5.3L)	10 N·m	89 lb in
Coolant Air Bleed Pipe Bolt (5.3L)	12 N·m	106 lb in
Coolant Air Bleed Pipe Cover Bolt (5.3L)	12 N·m	106 lb in
Coolant Heater	50 N·m	37 lb ft
Coolant Recovery Reservoir Bolt	12 N·m	106 lb in
Coolant Recovery Reservoir Nut	10 N·m	89 lb in
Cooling Fan Nut	56 N·m	41 lb ft
Engine Harness Bracket Bolt (4.2L)	45 N·m	33 lb ft
Fan Blade Bolt	27 N·m	20 lb ft
Fan Shroud Bolt	28 N·m	21 lb ft
Thermostat Housing Bolt (4.2L)	10 N·m	89 lb in
Thermostat Housing Bolt (5.3L)	15 N·m	11 lb ft
Water Pump Bolt (4.2L)	10 N·m	89 lb in
Water Pump Bolt (5.3L)		
• First Pass	15 N·m	11 lb ft
• Final Pass	30 N·m	22 lb ft
Water Pump Pulley Bolt (4.2L)	25 N·m	18 lb ft

Cooling System Description and Operation

Coolant Heater

The optional engine coolant heater (RPO K05) operates using 110-volt AC external power and is designed to warm the coolant in the engine block area for improved starting in very cold weather -29°C (-20°F). The coolant heater helps reduce fuel consumption when a cold engine is warming up. The unit is

equipped with a detachable AC power cord. A weather shield on the cord is provided to protect the plug when not in use.

Cooling System

The cooling system's function is to maintain an efficient engine operating temperature during all engine speeds and operating conditions. The cooling system is designed to remove approximately one-third of the heat produced by the burning of the air-fuel mixture. When the engine is cold, the coolant does not flow to the radiator until the thermostat opens. This allows the engine to warm quickly.

Cooling Cycle

Coolant flows from the radiator outlet and into the water pump inlet. Some coolant flows from the water pump, to the heater core, then back to the water pump. This provides the passenger compartment with heat and defrost capability as the coolant warms up.

Coolant also flows from the water pump outlet and into the engine block. In the engine block, the coolant circulates through the water jackets surrounding the cylinders where it absorbs heat.

The coolant then flows through the cylinder head gasket openings and into the cylinder heads. In the cylinder heads, the coolant flows through the water jackets surrounding the combustion chambers and valve seats, where it absorbs additional heat.

From the cylinder heads, the coolant flows to the thermostat. The flow of coolant will either be stopped at the thermostat until the engine reaches normal operating temperature, or it will flow through the thermostat and into the radiator where it is cooled. At this point, the coolant flow cycle is completed.

Efficient operation of the cooling system requires proper functioning of all cooling system components. The cooling system consists of the following components:

Coolant

The engine coolant is a solution made up of a 50-50 mixture of DEX-COOL and suitable drinking water. The coolant solution carries excess heat away from the engine to the radiator, where the heat is dissipated to the atmosphere.

Radiator

The radiator is a heat exchanger. It consists of a core and two tanks. The aluminum core is a tube and fin crossflow design that extends from the inlet tank to the outlet tank. Fins are placed around the outside of the tubes to improve heat transfer to the atmosphere.

The inlet and outlet tanks are a molded, high temperature, nylon reinforced plastic material. A high temperature rubber gasket seals the tank flange edge to the aluminum core. The tanks are clamped to the core with clinch tabs. The tabs are part of the aluminum header at each end of the core.

The radiator also has a drain cock located in the bottom of the left hand tank. The drain cock unit includes the drain cock and drain cock seal.

The radiator removes heat from the coolant passing through it. The fins on the core transfer heat from the coolant passing through the tubes. As air passes between the fins, it absorbs heat and cools the coolant.

Pressure Cap

The pressure cap seals the cooling system. It contains a blow off or pressure valve and a vacuum or atmospheric valve. The pressure valve is held against its seat by a spring, which protects the radiator from excessive cooling system pressure. The vacuum valve is held against its seat by a spring, which permits opening of the valve to relieve vacuum created in the cooling system as it cools off. The vacuum, if not relieved, might cause the radiator and/or coolant hoses to collapse.

The pressure cap allows cooling system pressure to build up as the temperature increases. As the pressure builds, the boiling point of the coolant increases. Engine coolant can be safely run at a temperature much higher than the boiling point of the coolant at atmospheric pressure. The hotter the coolant is, the faster the heat transfers from the radiator to the cooler, passing air.

The pressure in the cooling system can get too high. When the cooling system pressure exceeds the rating of the pressure cap, it raises the pressure valve, venting the excess pressure.

As the engine cools down, the temperature of the coolant drops and a vacuum is created in the cooling system. This vacuum causes the vacuum valve to open, allowing outside air into the surge tank. This equalizes the pressure in the cooling system with atmospheric pressure, preventing the radiator and coolant hoses from collapsing.

Coolant Recovery System

The coolant recovery system consists of a plastic coolant recovery reservoir and overflow tube. The recovery reservoir is also called a recovery tank or expansion tank. It is partially filled with coolant and is connected to the radiator fill neck with the overflow tube. Coolant can flow back and forth between the radiator and the reservoir.

In effect, a cooling system with a coolant recovery reservoir is a closed system. When the pressure in the cooling system gets too high, it will open the pressure valve in the pressure cap. This allows the coolant, which has expanded due to being heated, is allowed to flow through the overflow tube and into the recovery reservoir. As the engine cools down, the temperature of the coolant drops and a vacuum is created in the cooling system. This vacuum opens the vacuum valve in the pressure cap, allowing some of the coolant in the reservoir to be siphoned back into the radiator. Under normal operating conditions, no coolant is lost. Although the coolant level in the recovery reservoir goes up and down, the radiator and cooling system are kept full. An advantage to using a coolant recovery reservoir is that it eliminates almost all air bubbles from the cooling system. Coolant without bubbles absorbs heat much better than coolant with bubbles.

Air Baffles and Seals

The cooling system uses deflectors, air baffles and air seals to increase cooling system capability. Deflectors are installed under the vehicle to redirect airflow beneath the vehicle and through the radiator to increase engine cooling. Air baffles are also used to direct airflow through the radiator and increase cooling capability. Air seals prevent air from bypassing the radiator and A/C condenser, and prevent recirculation of hot air for better hot weather cooling and A/C condenser performance.

Water Pump

The water pump is a centrifugal vane impeller type pump. The pump consists of a housing with coolant inlet and outlet passages and an impeller. The impeller is mounted on the pump shaft and consists of a series of flat or curved blades or vanes on a flat plate. When the impeller rotates, the coolant between the vanes is thrown outward by centrifugal force.

The impeller shaft is supported by one or more sealed bearings. The sealed bearings never need to be lubricated. Grease cannot leak out, dirt and water cannot get in as long as the seal is not damaged or worn.

The purpose of the water pump is to circulate coolant throughout the cooling system. The water pump is driven by the crankshaft via the drive belt.

Thermostat

The thermostat is a coolant flow control component. It's purpose is to help regulate the operating temperature of the engine. It utilizes a temperature sensitive wax-pellet element. The element connects to a valve through a small piston. When the element is heated, it expands and exerts pressure against the small piston. This pressure forces the valve to open. As the element is cooled, it contracts. This contraction allows a spring to push the valve closed.

When the coolant temperature is below the rated thermostat opening temperature, the thermostat valve remains closed. This prevents circulation of the coolant to the radiator and allows the engine to warm up. After the coolant temperature reaches the rated thermostat opening temperature, the thermostat valve will open. The coolant is then allowed to circulate through the thermostat to the radiator where the engine heat is dissipated to the atmosphere. The thermostat also provides a restriction in the cooling system,

after it has opened. This restriction creates a pressure difference which prevents cavitation at the water pump and forces coolant to circulate through the engine block.

Engine Oil Cooler

The engine oil cooler is a heat exchanger. It is located inside the left side end tank of the radiator. The engine oil temperature is controlled by the temperature of the engine coolant that surrounds the oil cooler in the radiator.

The engine oil pump, pumps the oil through the engine oil cooler line to the oil cooler. The oil then flows through the cooler where the engine coolant absorbs heat from the oil. The oil is then pumped through the oil cooler return line, to the oil filter, to the engine block oil system.

Transmission Oil Cooler

The transmission oil cooler is a heat exchanger. It is located inside the right side end tank of the radiator. The transmission fluid temperature is regulated by the temperature of the engine coolant in the radiator.

The transmission oil pump, pumps the fluid through the transmission oil cooler line to the transmission oil cooler. The fluid then flows through the cooler where the engine coolant absorbs heat from the fluid. The fluid is then pumped through the transmission oil cooler return line, to the transmission.

Engine Electrical

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Air Conditioning Line Bracket Bolt (4.2L)	10 N·m	89 lb in
Battery Cable Channel Bolt (5.3L)	12 N·m	106 lb in
Battery Hold Down Retainer Nut	15 N·m	11 lb ft
Battery Negative Cable	15 N·m	11 lb ft
Battery Positive Cable	15 N·m	11 lb ft
Battery Positive Cable Lead to Starter Nut	9 N·m	80 lb in
Battery Tray Bolt	20 N·m	15 lb ft
Battery Tray Brace Bolt	10 N·m	89 lb in
Engine Harness to Engine Block Bolt (4.2L)	50 N·m	37 lb ft
Engine Harness to Shock Tower Bolt (4.2L)	10 N·m	89 lb in
Engine Harness to Wheelhouse Panel Bolt (4.2L)	10 N·m	89 lb in
Engine Lift Hook Bolt (4.2L)	50 N·m	37 lb ft
Generator Bolt	50 N·m	37 lb ft
Generator Bracket Bolt (5.3L)	50 N·m	37 lb ft
Generator Cable Nut	9 N·m	80 lb in
Ground Cable to Shock Tower Bolt (5.3L)	10 N·m	89 lb in
Ground Terminal to Engine Block Bolt (5.3L)	50 N·m	37 lb ft
Ground Terminal to Front Fender Bolt (5.3L)	10 N·m	89 lb in
Positive Terminal to Underhood Junction Block Bolt	10 N·m	89 lb in
Starter Bolt	50 N·m	37 lb ft
Starter Solenoid Nut	3.4 N·m	30 lb in
Transmission Cover Bolt (5.3L)	9 N·m	80 lb in

Battery Usage

Base	
Cold Cranking Amperage (CCA)	600 A
Reserve Capacity Rating	115 Minutes
Replacement Battery Number	78-6YR

Battery Temperature vs Minimum Voltage

Estimated Temperature °F	Estimated Temperature °C	Minimum Voltage
70 or above	21 or above	9.6
50	10	9.4
32	0	9.1
15	-10	8.8
0	-18	8.5
Below 0	Below -18	8.0

Generator Usage

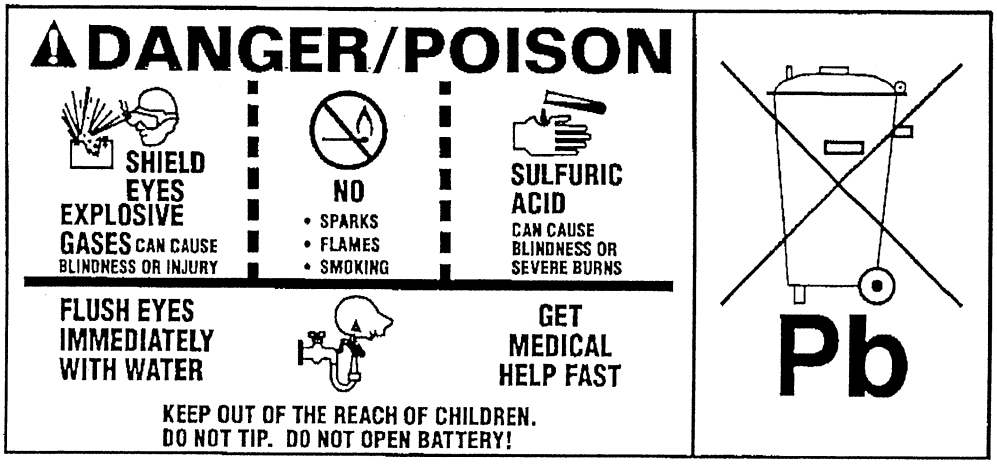
Engine	Generator Model	Rated Output AMPS	Load Test Output AMPS
Gasoline Engine	DR44G	150 A	105 A

Battery Description and Operation

Caution

Batteries produce explosive gases, contain corrosive acid, and supply levels of electrical current high enough to cause burns. Therefore, to reduce the risk of personal injury when working near a battery:

- Always shield your eyes and avoid leaning over the battery whenever possible.
- Do not expose the battery to open flames or sparks.
- Do not allow the battery electrolyte to contact the eyes or the skin. Flush immediately and thoroughly any contacted areas with water and get medical help.
- Follow each step of the jump starting procedure in order.
- Treat both the booster and the discharged batteries carefully when using the jumper cables.



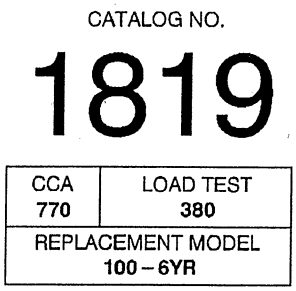
The maintenance free battery is standard. There are no vent plugs in the cover. The battery is completely sealed except for two small vent holes in the side. These vent holes allow the small amount of gas that is produced in the battery to escape.

The battery has three functions as a major source of energy:

- Engine cranking
- Voltage stabilizer
- Alternate source of energy with generator overload.

The battery specification label (example below) contains information about the following:

- The test ratings
- The original equipment catalog number
- The recommended replacement model number



A battery has 2 ratings:

- Reserve capacity
- Cold cranking amperage

When a battery is replaced use a battery with similar ratings. Refer to the battery specification label on the original battery or refer to Battery Usage .

Reserve Capacity

Reserve capacity is the amount of time in minutes it takes a fully charged battery, being discharged at a constant rate of 25 amperes and a constant temperature of 27°C (80°F) to reach a terminal voltage of 10.5 V. Refer to Battery Usage for the reserve capacity rating of the original equipment battery.

Cold Cranking Amperage

The cold cranking amperage is an indication of the ability of the battery to crank the engine at cold temperatures. The cold cranking amperage rating is the minimum amperage the battery must maintain for 30 seconds at -18°C (0°F) while maintaining at least 7.2 volts. Refer to Battery Usage for the cold cranking amperage rating for this vehicle.

Circuit Description

The battery positive terminal supplies Battery Positive voltage to the under hood fuse block and the rear fuse block. The under hood fuse block provides a cable connection for the generator and a cable connection for the starter.

The battery negative terminal is connected to chassis ground G305 and supplies ground for the AD converter in the DIM.

Starting System Description and Operation

The starter motors on these vehicles are non-repairable starter motors. They have pole pieces that are arranged around the armature. Both solenoid windings are energized. The pull-in winding circuit is completed to the ground through the starter motor. The windings work together magnetically to pull and hold in the plunger. The plunger moves the shift lever. This action causes the starter drive assembly to rotate on the armature shaft spline as it engages with the flywheel ring gear on the engine. Moving at the same time, the plunger also closes the solenoid switch contacts in the starter solenoid. Full battery voltage is applied directly to the starter motor and it cranks the engine.

As soon as the solenoid switch contacts close, current stops flowing thorough the pull-in winding because battery voltage is applied to both ends of the windings. The hold-in winding remains energized; its magnetic field is strong enough to hold the plunger, shift lever, starter drive assembly, and solenoid switch contacts in place to continue cranking the engine. When the engine starts, pinion overrun protects the armature from excessive speed until the switch is opened.

When the ignition switch is released from the START position, the start relay opens and battery voltage is removed from the starter solenoid S terminal. Current flows from the motor contacts through both windings to the ground at the end of the hold-in winding. However, the direction of the current flow through the pull-in winding is now opposite the direction of the current flow when the winding was first energized.

The magnetic fields of the pull-in and hold-in windings now oppose one another. This action of the windings, along with the help of the return spring, causes the starter drive assembly to disengage and the solenoid switch contacts to open simultaneously. As soon as the contacts open, the starter circuit is turned off.

Charging System Description and Operation

Generator

The generator features the following major components:

- The delta stator
- The rectifier bridge
- The rotor with slip rings and brushes
- A conventional pulley
- Dual internal fans
- The regulator

The pulley and the fan cool the slip ring and the frame.

The generator features permanently lubricated bearings. Service should only include tightening of mount components. Otherwise, replace the generator as a complete unit.

Regulator

The voltage regulator controls the rotor field current in order to limit the system voltage. When the field current is on, the regulator switches the current on and off at a rate of 400 cycles per second in order to perform the following functions:

- Radio noise control
- Obtain the correct average current needed for proper system voltage control

At high speeds, the on-time may be 10 percent with the off-time at 90 percent. At low speeds, the on-time may be 90 percent and the off-time 10 percent.

Circuit Description

The generator provides voltage to operate the vehicle's electrical system and to charge its battery. A magnetic field is created when current flows through the rotor. This field rotates as the rotor is driven by the engine, creating an AC voltage in the stator windings. The AC voltage is converted to DC by the rectifier bridge and is supplied to the electrical system at the battery terminal.

When the engine is running, the generator turn-on signal is sent to the generator from the PCM, turning on the regulator. The generator's voltage regulator controls current to the rotor, thereby controlling the output voltage. The rotor current is proportional to the electrical pulse width supplied by the regulator. When the engine is started, the regulator senses generator rotation by detecting AC voltage at the stator through an internal wire. Once the engine is running, the regulator varies the field current by controlling the pulse width. This regulates the generator output voltage for proper battery charging and electrical system operation. The generator F terminal is connected internally to the voltage regulator and externally to the PCM. When the voltage regulator detects a charging system problem, it grounds this cirouit to

signal the PCM that a problem exists. The PCM monitors the generator field duty cycle signal circuit. The system voltage sense circuit receives battery positive voltage that is Hot At All Times through a fuse link that is connected to the starter motor. This voltage is used by the regulator as the reference for system voltage control.

Engine Controls

Engine Controls – 4.2L

Ignition System Specifications

Application	Specification	
	Metric	English
Firing Order	1-5-3-6-2-4	
Spark Plug Torque	18 N·m	13 lb ft
Spark Plug Gap	1.08 mm	0.0425 in
Spark Plug Type	AC 41-981	

Fastener Tightening Specifications

Application	Specifications	
	Metric	English
Accelerator Pedal Position (APP) Sensor Bolt	10 N·m	89 lb in
Air Cleaner Cover/Resonator Retaining Screw	4 N·m	35 lb in
Air Cleaner Lower Housing/Washer Solvent Tank Assembly Nut	15 N·m	11 lb ft
Air Cleaner Outlet Duct Clamp	4 N·m	35 lb in
Air Cleaner Outlet Resonator Bolt	6 N·m	53 lb in
Camshaft Position (CMP) Sensor Bolt	10 N·m	89 lb in
Crankshaft Position (CKP) Sensor Bolt	10 N·m	89 lb in
Engine Coolant Temperature (ECT) Sensor	16 N·m	12 lb ft
EVAP Canister Purge Solenoid Bracket Bolt	25 N·m	18 lb ft
Fuel Fill Hose Clamp	2.5 N·m	22 lb in
Fuel Fill Pipe Bracket Nut	10 N·m	89 lb in
Fuel Fill Pipe Ground Strap Bolt	10 N·m	89 lb in
Fuel Filter Bracket Screw	1.5 N·m	13 lb in
Fuel Pipe Assembly Bracket Bolt	3.75 N·m	33 lb in
Fuel Pressure Regulator Screw	8 N·m	71 lb in
Fuel Rail Bolt	10 N·m	89 lb in
Fuel Tank Strap Bolt	32 N·m	24 lb ft
Heated Oxygen Sensor (HO2S)	41 N·m	30 lb ft
Ignition Coil Bolt	10 N·m	89 lb in
Knock Sensor (KS)	25 N·m	18 lb ft
Powertrain Control Module (PCM) Connector End Bolt	8 N·m	71 lb in
Powertrain Control Module (PCM) Mounting Stud	6 N·m	53 lb in
Powertrain Control Module (PCM) Retaining Bolt	10 N·m	89 lb in
Powertrain Control Module (PCM) Retaining Nut	10 N·m	89 lb in
Spark Plug	17-23 N·m	13-16 lb ft
Throttle Body Bolt	10 N·m	89 lb in

Fuel System Specifications

Use regular unleaded gasoline rated at 87 octane or higher. It is recommended that the gasoline meet specifications which have been developed by the American Automobile Manufacturers Association (AAMA) and endorsed by the Canadian Motor Vehicle Manufacturers Association for better vehicle performance and engine protection. Gasoline meeting the AAMA specification could provide improved driveability and emission control system performance compared to other gasolines. For more information, write to: American Automobile Manufacturer's Association, 7430 Second Ave, Suite 300, Detroit MI 48202.

Be sure the posted octane is at least 87. If the octane is less than 87, you may get a heavy knocking noise when you drive. If the knocking is bad enough, the knocking can damage your engine.

If you are using fuel rated at 87 octane or higher and you hear heavy knocking, your engine needs service. But do not worry if you hear a little pinging noise when you are accelerating or driving up a hill. That is normal, and you do not have to buy a higher octane fuel to get rid of the pinging. However, if there is a heavy, constant knock, that means you have a problem.

Notice

Your vehicle was not designed for fuel that contains methanol. Do not use methanol fuel which can corrode metal parts in your fuel system and also damage plastic and rubber parts. This kind of damage would not be covered under your warranty.

If your vehicle is certified to meet California Emission Standards, indicated on the under hood emission control label, your vehicle is designed to operate on fuels that meet California specifications. If such fuels are not available in states adopting California emissions standards, your vehicle will operate satisfactorily on fuels meeting federal specifications, but emission control system performance may be affected. The malfunction indicator lamp on your instrument panel may turn ON and/or your vehicle may fail a smog-check test. If this occurs, return to your authorized dealer for diagnosis to determine the cause of failure. In the event there is a determination that the cause of the condition is the type of fuels used, repairs may not be covered by your warranty.

Some gasolines that are not reformulated for low emissions may contain an octane-enhancing additive called methylcyclopentadienyl manganese tricarbonyl (MMT). Ask your service station operator whether or not the fuel contains MMT.

Engine Controls – 5.3L V-8

Ignition System Specifications

Application	Specification	
	Metric	English
Firing Order	1-8-7-2-6-5-4-3	
Spark Plug Wire Resistance	397-1,337 ohms	
Spark Plug Torque	15 N·m	11 lb ft
Spark Plug Gap	1.52 mm	0.060 in
Spark Plug Type	GM P/N 12571164 AC Spark Plug P/N 41-985	

Fastener Tightening Specifications

Application	Specifications	
	Metric	English
Accelerator Pedal Position (APP) Sensor Bolt	20 N·m	15 lb ft
Air Cleaner Housing Nut	12 N·m	106 lb in
Air Cleaner Outlet Duct Bolt	10 N·m	89 lb in
Air Cleaner Outlet Duct Clamp	7 N·m	62 lb in
Camshaft Position (CMP) Sensor Bolt	29 N·m	21 lb ft
Crankshaft Position (CKP) Sensor Bolt	25 N·m	18 lb ft
Engine Control Module (ECM) Bracket Bolts	10 N·m	89 lb in
Engine Coolant Temperature (ECT) Sensor	20 N·m	15 lb ft
Engine Wiring Harness Retaining Nut	5.5 N·m	49 lb in
EVAP Canister Purge Solenoid Bolt	10.5 N·m	93 lb in
Front End Diagonal Brace Bolt	25 N·m	18 lb ft
Fuel Fill Hose Clamp	2.5 N·m	22 lb in
Fuel Fill Pipe Bracket Nut	10 N·m	89 lb in
Fuel Fill Pipe Ground Strap Bolt	10 N·m	89 lb in
Fuel Pipe Bracket Nut	10 N·m	89 lb in
Fuel Rail Bolt	10 N·m	89 lb in
Fuel Rail Crossover Pipe Retainer Clip Attaching Screw	3.8 N·m	34 lb in
Fuel Return Pipe Attaching Screw	5 N·m	44 lb in

Application	Specifications	
	Metric	English
Fuel Tank Shield Bolt	25 N·m	18 lb ft
Fuel Tank Strap Bolt	32 N·m	24 lb ft
Heated Oxygen Sensor (HO2S)	42 N·m	31 lb ft
Ignition Coil Bolt	8 N·m	71 lb in
Knock Sensor (KS)	20 N·m	15 lb ft
Mass Airflow/Intake Air Temperature (MAF/IAT) Sensor Clamp	7 N·m	62 lb in
Spark Plug		
New Cylinder Heads	20 N·m	15 lb ft
Used Cylinder Heads	15 N·m	11 lb ft
Throttle Actuator Control (TAC) Module Bracket Nut	9 N·m	80 lb in
Throttle Body Bolt	10 N·m	89 lb in

Fuel System Specifications

See Fuel System Specifications above.

Engine Controls – 6.0L

Ignition System Specifications

Application	Specification	
	Metric	English
Firing Order	1-8-7-2-6-5-4-3	
Spark Plug Wire Resistance	397-1,337ohms	
Spark Plug Torque	15 N·m	11 lb ft
Spark Plug Gap	1.02 mm	0.040 in
Spark Plug Type	GM P/N 12571164 AC Spark Plug P/N 41-985	

Fastener Tightening Specifications

Application	Specifications	
	Metric	English
3-Phase Cable Bracket Nut	15 N·m	11 lb ft
3-Phase Cable to Starter/Generator Control Module (SGCM) Nut	9 N·m	80 lb in
Accelerator Pedal Bolt	9 N·m	80 lb in
Air Cleaner Outlet Duct Clamp	4 N·m	35 lb in
Auxiliary Heater Water Pump Bracket Bolt	15 N·m	11 lb ft
Brake Pipe Fittings to Electronic Brake Control Module (EBCM)	25 N·m	18 lb ft
Camshaft Position (CMP) Sensor Bolt	29 N·m	21 lb ft
Canister Vent Solenoid (CVS) Bracket Bolt	12 N·m	106 lb in
Crankshaft Position (CKP) Sensor Bolt	25 N·m	18 lb ft
Electro-Hydraulic Control Unit (EHCU) Bolts	25 N·m	18 lb ft
Engine Coolant Temperature (ECT) Sensor	20 N·m	15 lb ft
Engine Wiring Harness Bracket Nut	5 N·m	44 lb in
EVAP Canister Bolt/Nut	25 N·m	18 lb ft
EVAP Canister Bracket Nut	25 N·m	18 lb ft
EVAP Canister Purge Solenoid Bolt	10.5 N·m	93 lb in
EVAP Vent Valve Bracket Bolt	12 N·m	106 lb in
Fuel Composition Sensor Nut	17 N·m	13 lb ft
Fuel Composition Sensor to Bracket Bolt	10 N·m	89 lb in
Fuel Feed and EVAP Pipe Assembly Nut	12 N·m	106 lb in
Fuel Line Fitting	25 N·m	18 lb ft
Fuel Pipe Bracket Nut	10 N·m	89 lb in
Fuel Rail Bolts	10 N·m	89 lb in
Fuel Tank Fill Pipe Clamp	2.5 N·m	22 lb in

Application	Specifications	
	Metric	English
Fuel Tank Filler Housing to Body Screw	2.3 N·m	20 lb in
Fuel Tank Filler Pipe Housing to Fuel Tank Fill Pipe Screw	2.3 N·m	20 lb in
Fuel Tank Ground Strap Bolt	9 N·m	80 lb in
Fuel Tank Shield Bolt	18 N·m	13 lb ft
Fuel Tank Strap Bolt	40 N·m	30 lb ft
Heated Oxygen Sensor (HO2S)	42 N·m	31 lb ft
Ignition Coil Bolt	8 N·m	71 lb in
Knock Sensor	20 N·m	15 lb ft
Mass Air Flow/Intake Air Temperature (MAF/IAT) Sensor Clamp	7 N·m	62 lb in
Powertrain Control Module (PCM) Electrical Connector Bolt	8 N·m	71 lb in
Rear Fuel Line Bundle Nut	12 N·m	106 lb in
Spark Plug		
New Head	20 N·m	15 lb ft
Used Head	15 N·m	11 lb ft
Starter/Generator Control Module (SGCM) Cover Bolt	9 N·m	80 lb in
Throttle Actuator Control (TAC) Module Nut	9 N·m	80 lb in
Throttle Body Nut	10 N·m	89 lb in

Exhaust System

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Catalytic Converter Heat Shield Bolts	7 N·m	62 lb in
Exhaust Muffler Nuts	45 N·m	33 lb ft
Exhaust Manifold Bolts (4.2L)		
• First Pass	25 N·m	18 lb ft
• Second Pass	25 N·m	18 lb ft
• Final Pass	25 N·m	18 lb ft
Exhaust Manifold Bolt (5.3L)		
• First Pass	15 N·m	11 lb ft
• Final Pass	25 N·m	18 lb ft
Exhaust Manifold Heat Shield Bolt (5.3L)	9 N·m	80 lb in
Exhaust Manifold Heat Shield Nut (4.2L)	5 N·m	44 lb in
Exhaust Manifold Heat Shield Stud (4.2L)	10 N·m	89 lb in
Exhaust Muffler Heat Shield Bolt	7 N·m	62 lb in
Exhaust Pipe Clamp Nut	50 N·m	37 lb ft
Exhaust Pipe Nut	50 N·m	37 lb ft
Heated Oxygen Sensor (HO2S) (5.3L)	42 N·m	31 lb ft
Transmission Filler Tube Bracket Nut (4.2L)	10 N·m	89 lb in

Exhaust System Description

Important

Use of non-OEM parts may cause driveability concerns.

The exhaust system carries exhaust gases, treated by the catalytic converter, through a resonator, if applicable and into the exhaust muffler where exhaust noise is lessened.

In order to secure the exhaust pipe to the exhaust manifold, a flange and seal-joint coupling is utilized. The exhaust system may utilize a slip-joint coupling design with a clamp and a U-bolt or a flange connection with a gasket.

Exhaust hangers and rubber insulators help to support the weight of the exhaust pipe along with insulating any exhaust system vibration, rattle, or noise.

Exhaust hangers also space the exhaust system away from the underbody of the vehicle and allows the exhaust system to expand as the exhaust system warms up.

Exhaust heat shields are used to protect the body and other components from damage due to the heat from the exhaust system.

The exhaust system may be comprised of the following components:

- Exhaust manifold
- Exhaust pipes
- Catalytic converters
- Exhaust muffler
- Exhaust resonator, if equipped
- Exhaust tail pipe, if equipped
- Exhaust hangers
- Exhaust heat shields

Resonator

Some exhaust systems are equipped with a resonator. The resonator, located either before or after the muffler, allows the use of mufflers with less back pressure. Resonators are used when vehicle characteristics require specific exhaust tuning.

Catalytic Converter

The catalytic converter is an emission control device added to the engine exhaust system in order to reduce hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NOx) pollutants from the exhaust gas.

The catalytic converter is comprised of a ceramic monolith substrate, supported in insulation and housed within a sheet metal shell. The substrate may be washcoated with 3 noble metals:

- Platium (Pt)
- Palladium (Pd)
- Rhodium (Rh)

The catalyst in the converter is not serviceable.

Muffler

The exhaust muffler reduces the noise levels of the engine exhaust by the use of tuning tubes. The tuning tubes create channels inside the exhaust muffler that lower the sound levels created by the combustion of the engine.

Transmission/Transaxle Description and Operation

Automatic Transmission - 4L60-E

Transmission General Specifications

Name	Hydra-matic 4L60-E/4L70-E
RPO Codes	M30/M70
Production Location	Toledo, Ohio
Vehicle Platform (Engine/Transmission) Usage	S/T
Transmission Drive	Longitudinally-Mounted Rear Wheel Drive
1st Gear Ratio	3.059:1
2nd Gear Ratio	1.625:1
3rd Gear Ratio	1.000:1
4th Gear Ratio	0.696:1
Reverse	2.294:1
Torque Converter Size (Diameter of Torque Converter Turbine)	280 mm 300 mm
Pressure Taps	Line Pressure
Transmission Fluid Type	DEXRON® VI
Transmission Type: 4	Four Forward Gears
Transmission Type: L	Longitudinal Mount
Transmission Type: 60/70	Product Series
Transmission Type: E	Electronic Controls
Position Quadrant	P, R, N, OD, D, 2, 1 P, R, N, OD, 3, 2, 1
Case Material	Die Cast Aluminum
Transmission Weight Dry (Approximate)	280 mm Converter 70.5 kg (155.70 lbs) 300 mm Converter 86.17 kg (190.5 lbs)
Transmission Weight Wet (Approximate)	280 mm Converter 83.0-84.8 kg (183-187 lbs) 300 mm Converter 98.4 kg (218.0 lbs)
Maximum Trailer Towing Capacity	6,130 kg (13,500 lbs)
Maximum Gross Vehicle Weight (GVW)	3,900 kg (8,600 lbs)

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Accumulator Cover to Case Bolt	8-14 N·m	71-124 lb in
Case Extension to Case Bolt	42-48 N·m	31-35 lb ft
Case Extension to Case Bolt (4WD Shipping)	11.2-22.6 N·m	8.3-16.7 lb ft
Converter Cover Bolt	10 N·m	89 lb in
Converter Housing to Case Screw	65-75 N·m	48-55 lb ft
Detent Spring to Valve Body Bolt	20-27 N·m	15-20 lb ft
Floorshift Control Bolt	10 N·m	89 lb in
Flywheel to Torque Converter Bolt	63 N·m	46 lb ft
Forward Accumulator Cover to Valve Body Bolt	8-14 N·m	71-124 lb in
Heat Shield to Transmission Bolt	17 N·m	13 lb ft
Line Pressure Plug	8-14 N·m	71-124 lb in
Manual Shaft to Inside Detent Lever Nut	27-34 N·m	20-25 lb ft
Negative Battery Cable Bolt	15 N·m	11 lb ft
Oil Level Indicator Bolt	47 N·m	35 lb ft

Application	Specification	
	Metric	English
Oil Pan to Transmission Case Bolt	11 N·m	97 lb in
Oil Passage Cover to Case Bolt	8-14 N·m	71-124 lb in
Park Brake Bracket to Case Bolt	27-34 N·m	20-25 lb ft
Park/Neutral Position Switch Screw	3 N·m	27 lb in
Plate to Case Bolt (Shipping)	27-34 N·m	20-25 lb ft
Plate to Converter Bolt (Shipping)	27-34 N·m	20-25 lb ft
Pressure Control Solenoid Bracket to Valve Body Bolt	8-14 N·m	71-124 lb in
Pump Assembly to Case Bolt	26-32 N·m	19-24 lb ft
Pump Cover to Pump Body Bolt	20-27 N·m	15-20 lb ft
Shift Cable Grommet Screw	1.7 N·m	15 lb in
Shift Control Cable Attachment	20 N·m	15 lb ft
Speed Sensor Retainer Bolt	10.5-13.5 N·m	93-119 lb in
TCC Solenoid Assembly to Case Bolt	8-14 N·m	71-124 lb in
Transmission Fluid Pressure Manual Valve Position Switch to Valve Body Bolt	8-14 N·m	71-124 lb in
Transmission Mount to Exhaust Hanger Bracket Bolt	30 N·m	22 lb ft
Transmission Mount Spacer Bolts	65 N·m	48 lb ft
Transmission Mount to Transmission Bolt	65 N·m	48 lb ft
Transmission Mount to Transmission Support Nut	46 N·m	35 lb ft
Transmission Oil Cooler Pipe Fitting	35-41 N·m	26-30 lb ft
Transmission Oil Pan to Case Bolt	9.5-13.8 N·m	84-122 lb in
Transmission to Engine Bolt	47 N·m	35 lb ft
Valve Body to Case Bolt	8-14 N·m	71-124 lb in

Fluid Capacity Specifications

Application	Specification	
	Metric	English
Pan Removal	4.7 L	5 qts
Overhaul	10.6 L	11 qts
280 mm Torque Converter Approximate Fluid Capacity Dry Fill	11.25 L	11.9 qts
300 mm Torque Converter Approximate Fluid Capacity Dry Fill	11.50 L	12.1 qts

Transmission Component and System Description

The 4L60E transmission consists primarily of the following components:

- A torque converter with an electronically controlled capacity clutch (ECCC) This transmission is equipped with an ECCC. The pressure plate does not fully lock to the torque converter cover. Instead, the pressure plate maintains a small amount of slippage, about 20 RPM, in SECOND, THIRD, and FOURTH gears, depending on the vehicle application. ECCC was developed to reduce the possibility of noise, vibration, or chuggle caused by TCC apply. Typical apply speeds are 49-52 km/h (30-32 mph) in THIRD gear and 65-73 km/h (40-45 mph) in FOURTH gear. Full lockup is available at highway speeds on some applications.
- Torque converter assembly
- Servo assembly and 2-4 band assembly
- Reverse input clutch and housing
- Overrun clutch
- Forward clutch
- 3-4 clutch
- Forward sprag clutch assembly
- Lo and reverse roller clutch assembly
- Lo and reverse clutch assembly
- Two planetary gear sets: Input and Reaction
- Oil pump assembly

- Control valve body assembly

The electrical components of the 4L60-E are as follows:

- 1-2 and 2-3 shift solenoid valves
- 3-2 shift solenoid valve assembly
- Transmission pressure control (PC) solenoid
- Torque converter clutch (TCC) solenoid valve
- TCC pulse width modulation (PWM) solenoid valve
- Automatic transmission fluid pressure (TFP) manual valve position switch
- Automatic transmission fluid temperature (TFT) sensor
- Vehicle speed sensor assembly

Adapt Function

Transmission Adapt Function

The 4L60-E transmission uses a line pressure control system, which has the ability to continuously adapt the system's line pressure. This compensates for normal wear of the following parts:

- The clutch fiber plates
- The seals
- The springs

The PCM maintains the Upshift Adapt parameters for the transmission The PCM monitors the AT ISS sensor and the AT OSS during commanded shifts in order to determine if a shift is occurring too fast or too slow. The PCM adjusts the signal from the transmission pressure control solenoid in order to maintain a set shift feel.

Transmission adapts must be reset whenever the transmission is overhauled or replaced.

Automatic Transmission Shift Lock Control Description

The automatic transmission shift lock control is a safety device that prevents an inadvertent shift out of PARK when the ignition is ON. The driver must press the brake pedal before moving the shift lever out of the PARK position. The system consist of the following components:

- The automatic transmission shift lock control solenoid.
- The automatic transmission shift lock control switch.
- The park/neutral position switch.

With the ignition in the ON position battery positive voltage is supplied to the park/neutral position switch. With the transmission in the PARK position the contacts in the park/neutral position switch are closed. This allows current to flow through the switch to the automatic transmission shift lock control switch. The circuit continues through the normally-closed switch to the automatic transmission shift lock control solenoid. The automatic transmission shift lock control soleniod is permanently grounded. This energizes the automatic transmission shift lock control solenoid, locking the shift linkage in the PARK position. When the driver presses the brake pedal the contacts in the automatic transmission shift lock control switch open, causing the automatic transmission shift lock control solenoid to release. This allows the shift lever to move from the PARK position.

Transmission Indicators and Messages

The following transmission-related indicators and messages may be displayed on the Instrument Panel Cluster (IPC).

"Change Trans Fluid"

The IPC illuminates the "change trans fluid" message when the PCM determines that the transmission oil should be changed. The PCM sends a message to the IPC requesting illumination. The select button will allow this message to clear it from the DIC display.

Abbreviations and Meanings

Abbreviation	Meaning
A	
A	Ampere(s)
ABS	Antilock Brake System
A/C	Air Conditioning
AC	Alternating Current
ACC	Accessory, Automatic Climate Control
ACL	Air Cleaner
ACR4	Air Conditioning Refrigerant, Recovery, Recycling, Recharging
AD	Automatic Disconnect
A/D	Analog to Digital
ADL	Automatic Door Lock
A/F	Air/Fuel Ratio
AH	Active Handling
AIR	Secondary Air Injection
ALC	Automatic Level Control, Automatic Lamp Control
AM/FM	Amplitude Modulation/Frequency Modulation
Ant	Antenna
AP	Accelerator Pedal
APCM	Accessory Power Control Module
API	American Petroleum Institute
APP	Accelerator Pedal Position
APT	Adjustable Part Throttle
ASM	Assembly, Accelerator and Servo Control Module
ASR	Acceleration Slip Regulation
A/T	Automatic Transmission/Transaxle
ATC	Automatic Transfer Case, Automatic Temperature Control
ATDC	After Top Dead Center
ATSLC	Automatic Transmission Shift Lock Control
Auto	Automatic
avg	Average
A4WD	Automatic Four-Wheel Drive
AWG	American Wire Gage
B	
B+	Battery Positive Voltage
BARO	Barometric Pressure
BATT	Battery
BBV	Brake Booster Vacuum
BCA	Bias Control Assembly
BCM	Body Control Module
BHP	Brake Horsepower
BLK	Black
BLU	Blue
BP	Back Pressure
BPCM	Battery Pack Control Module
BPMV	Brake Pressure Modulator Valve
BPP	Brake Pedal Position
BRN	Brown

BTDC	Before Top Dead Center
BTM	Battery Thermal Module
BTSI	Brake Transmission Shift Interlock
Btu	British Thermal Units
C	
°C	Degrees Celsius
CAC	Charge Air Cooler
CAFE	Corporate Average Fuel Economy
Cal	Calibration
Cam	Camshaft
CARB	California Air Resources Board
CC	Coast Clutch
cm^3	Cubic Centimeters
CCM	Convenience Charge Module, Chassis Control Module
CCOT	Cycling Clutch Orifice Tube
CCP	Climate Control Panel
CD	Compact Disc
CE	Commutator End
CEAB	Cold Engine Air Bleed
CEMF	Counter Electromotive Force
CEX	Cabin Exchanger
cfm	Cubic Feet per Minute
cg	Center of Gravity
CID	Cubic Inch Displacement
CKP	Crankshaft Position
CKT	Circuit
C/Ltr	Cigar Lighter
CL	Closed Loop
CLS	Coolant Level Switch
CMC	Compressor Motor Controller
CMP	Camshaft Position
CNG	Compressed Natural Gas
CO	Carbon Monoxide
CO2	Carbon Dioxide
Coax	Coaxial
COMM	Communication
Conn	Connector
CPA	Connector Position Assurance
CPP	Clutch Pedal Position
CPS	Central Power Supply
CPU	Central Processing Unit
CRT	Cathode Ray Tube
CRTC	Cathode Ray Tube Controller
CS	Charging System
CSFI	Central Sequential Fuel Injection
CTP	Closed Throttle Position
cu ft	Cubic Foot/Feet
cu in	Cubic Inch/Inches
CV	Constant Velocity Joint
CVRSS	Continuously Variable Road Sensing Suspension

Cyl	Cylinder(s)
	D
DAB	Delayed Accessory Bus
dB	Decibels
dBA	Decibels on A-weighted Scale
DC	Direct Current, Duty Cycle
DCM	Door Control Module
DE	Drive End
DEC	Digital Electronic Controller
DERM	Diagnostic Energy Reserve Module
DI	Distributor Ignition
dia	Diameter
DIC	Driver Information Center
Diff	Differential
DIM	Dash Integration Module
DK	Dark
DLC	Data Link Connector
DMCM	Drive Motor Control Module
DMM	Digital Multimeter
DMSDS	Drive Motor Speed and Direction Sensor
DMU	Drive Motor Unit
DOHC	Dual Overhead Camshafts
DR, Drvr	Driver
DRL	Daytime Running Lamps
DTC	Diagnostic Trouble Code
	E
EBCM	Electronic Brake Control Module
EBTCM	Electronic Brake and Traction Control Module
EC	Electrical Center, Engine Control
ECC	Electronic Climate Control
ECI	Extended Compressor at Idle
ECL	Engine Coolant Level
ECM	Engine Control Module, Electronic Control Module
ECS	Emission Control System
ECT	Engine Coolant Temperature
EEPROM	Electrically Erasable Programmable Read Only Memory
EEVIR	Evaporator Equalized Values in Receiver
EFE	Early Fuel Evaporation
EGR	Exhaust Gas Recirculation
EGR TVV	Exhaust Gas Recirculation Thermal Vacuum Valve
EHPS	Electro-Hydraulic Power Steering
EI	Electronic Ignition
ELAP	Elapsed
ELC	Electronic Level Control
E/M	English/Metric
EMF	Electromotive Force
EMI	Electromagnetic Interference
Eng	Engine
EOP	Engine Oil Pressure
EOT	Engine Oil Temperature

EPA	Environmental Protection Agency
EPR	Exhaust Pressure Regulator
EPROM	Erasable Programmable Read Only Memory
ESB	Expansion Spring Brake
ESC	Electronic Suspension Control
ESD	Electrostatic Discharge
ESN	Electronic Serial Number
ETC	Electronic Throttle Control, Electronic Temperature Control, Electronic Timing Control
ETCC	Electronic Touch Climate Control
ETR	Electronically Tuned Receiver
ETS	Enhanced Traction System
EVAP	Evaporative Emission
EVO	Electronic Variable Orifice
Exh	Exhaust
F	
°F	Degrees Fahrenheit
FC	Fan Control
FDC	Fuel Data Center
FED	Federal All United States except California
FEDS	Fuel Enable Data Stream
FEX	Front Exchanger
FF	Flexible Fuel
FFH	Fuel-Fired Heater
FI	Fuel Injection
FMVSS	Federal U.S. Motor Vehicle Safety Standards
FP	Fuel Pump
ft	Foot/Feet
FT	Fuel Trim
F4WD	Full Time Four-Wheel Drive
4WAL	Four-Wheel Antilock
4WD	Four-Wheel Drive
FW	Flat Wire
FWD	Front Wheel Drive, Forward
G	
g	Grams, Gravitational Acceleration
GA	Gage, Gauge
gal	Gallon
gas	Gasoline
GCW	Gross Combination Weight
Gen	Generator
GL	Gear Lubricant
GM	General Motors
GM SPO	General Motors Service Parts Operations
gnd	Ground
gpm	Gallons per Minute
GRN	Green
GRY	Gray
GVWR	Gross Vehicle Weight Rating

H	
H	Hydrogen
H2O	Water
Harn	Harness
HC	Hydrocarbons
H/CMPR	High Compression
HD	Heavy Duty
HDC	Heavy Duty Cooling
hex	Hexagon, Hexadecimal
Hg	Mercury
Hi Alt	High Altitude
HO2S	Heated Oxygen Sensor
hp	Horsepower
HPL	High Pressure Liquid
HPS	High Performance System
HPV	High Pressure Vapor
HPVS	Heat Pump Ventilation System
Htd	Heated
HTR	Heater
HUD	Head-up Display
HVAC	Heater-Ventilation-Air Conditioning
HVACM	Heater-Vent-Air Conditioning Module
HVIL	High Voltage Interlock Loop
HVM	Heater Vent Module
Hz	Hertz
I	
IAC	Idle Air Control
IAT	Intake Air Temperature
IC	Integrated Circuit, Ignition Control
ICCS	Integrated Chassis Control System
ICM	Ignition Control Module
ID	Identification, Inside Diameter
IDI	Integrated Direct Ignition
IGBT	Insulated Gate Bi-Polar Transistor
ign	Ignition
ILC	Idle Load Compensator
in	Inch/Inches
INJ	Injection
inst	Instantaneous, Instant
IP	Instrument Panel
IPC	Instrument Panel Cluster
IPM	Instrument Panel Module
I/PEC	Instrument Panel Electrical Center
ISC	Idle Speed Control
ISO	International Standards Organization
ISS	Input Speed Shaft, Input Shaft Speed
K	
KAM	Keep Alive Memory
KDD	Keyboard Display Driver
kg	Kilogram

kHz	Kilohertz
km	Kilometer
km/h	Kilometers per Hour
km/l	Kilometers per Liter
kPa	Kilopascals
KS	Knock Sensor
kV	Kilovolts
L	
L	Liter
L4	Four Cylinder Engine, In-Line
L6	Six-Cylinder Engine, In-Line
lb	Pound
lb ft	Pound Feet Torque
lb in	Pound Inch Torque
LCD	Liquid Crystal Display
LDCL	Left Door Closed Locking
LDCM	Left Door Control Module
LDM	Lamp Driver Module
LED	Light Emitting Diode
LEV	Low Emissions Vehicle
LF	Left Front
lm	Lumens
LR	Left Rear
LT	Left
LT	Light
LT	Long Term
LTPI	Low Tire Pressure Indicator
LTPWS	Low Tire Pressure Warning System
M	
MAF	Mass Air Flow
Man	Manual
MAP	Manifold Absolute Pressure
MAT	Manifold Absolute Temperature
max	Maximum
M/C	Mixture Control
MDP	Manifold Differential Pressure
MFI	Multiport Fuel Injection
mi	Miles
MIL	Malfunction Indicator Lamp
min	Minimum
MIN	Mobile Identification Number
mL	Milliliter
mm	Millimeter
mpg	Miles per Gallon
mph	Miles per Hour
ms	Millisecond
MST	Manifold Surface Temperature
MSVA	Magnetic Steering Variable Assist, Magnasteer®
M/T	Manual Transmission/Transaxle
MV	Megavolt

mV	Millivolt
N	
NAES	North American Export Sales
NC	Normally Closed
NEG	Negative
Neu	Neutral
NI	Neutral Idle
NiMH	Nickel Metal Hydride
NLGI	National Lubricating Grease Institute
N·m	Newton-meter Torque
NO	Normally Open
NOx	Oxides of Nitrogen
NPTC	National Pipe Thread Coarse
NPTF	National Pipe Thread Fine
NOVRAM	Non-Volatile Random Access Memory
O	
O2	Oxygen
O2S	Oxygen Sensor
OBD	On-Board Diagnostics
OBD II	On-Board Diagnostics Second Generation
OC	Oxidation Converter Catalytic
OCS	Opportunity Charge Station
OD	Outside Diameter
ODM	Output Drive Module
ODO	Odometer
OE	Original Equipment
OEM	Original Equipment Manufacturer
OHC	Overhead Camshaft
ohms	Ohm
OL	Open Loop, Out of Limits
ORC	Oxidation Reduction Converter Catalytic
ORN	Orange
ORVR	On-Board Refueling Vapor Recovery
OSS	Output Shaft Speed
oz	Ounce(s)
P	
PAG	Polyalkylene Glycol
PAIR	Pulsed Secondary Air Injection
PASS, PSGR	Passenger
PASS-Key®	Personalized Automotive Security System
P/B	Power Brakes
PC	Pressure Control
PCB	Printed Circuit Board
PCM	Powertrain Control Module
PCS	Pressure Control Solenoid
PCV	Positive Crankcase Ventilation
PEB	Power Electronics Bay
PID	Parameter Identification
PIM	Power Inverter Module
PM	Permanent Magnet Generator

P/N	Part Number
PNK	Pink
PNP	Park/Neutral Position
PRNDL	Park, Reverse, Neutral, Drive, Low
POA	Pilot Operated Absolute Valve
POS	Positive, Position
POT	Potentiometer Variable Resistor
PPL	Purple
ppm	Parts per Million
PROM	Programmable Read Only Memory
P/S, PS	Power Steering
PSCM	Power Steering Control Module, Passenger Seat Control Module
PSD	Power Sliding Door
PSP	Power Steering Pressure
psi	Pounds per Square Inch
psia	Pounds per Square Inch Absolute
psig	Pounds per Square Inch Gauge
pt	Pint
PTC	Positive Temperature Coefficient
PWM	Pulse Width Modulated
Q	
QDM	Quad Driver Module
qt	Quart(s)
R	
R-12	Refrigerant-12
R-134a	Refrigerant-134a
RAM	Random Access Memory, Non-permanent memory device, memory contents are lost when power is removed.
RAP	Retained Accessory Power
RAV	Remote Activation Verification
RCDLR	Remote Control Door Lock Receiver
RDCM	Right Door Control Module
Ref	Reference
Rev	Reverse
REX	Rear Exchanger
RIM	Rear Integration Module
RF	Right Front, Radio Frequency
RFA	Remote Function Actuation
RFI	Radio Frequency Interference
RH	Right Hand
RKE	Remote Keyless Entry
Rly	Relay
ROM	Read Only Memory, Permanent memory device, memory contents are retained when power is removed.
RPM	Revolutions per Minute Engine Speed
RPO	Regular Production Option
RR	Right Rear
RSS	Road Sensing Suspension
RTD	Real Time Damping
RT	Right

RTV	Room Temperature Vulcanizing Sealer
RWAL	Rear Wheel Antilock
RWD	Rear Wheel Drive
S	
s	Second(s)
SAE	Society of Automotive Engineers
SC	Supercharger
SCB	Supercharger Bypass
SCM	Seat Control Module
SDM	Sensing and Diagnostic Module
SEO	Special Equipment Option
SFI	Sequential Multiport Fuel Injection
SI	System International Modern Version of Metric System
SIAB	Side Impact Air Bag
SIR	Supplemental Inflatable Restraint
SLA	Short/Long Arm Suspension
sol	Solenoid
SO2	Sulfur Dioxide
SP	Splice Pack
S/P	Series/Parallel
SPO	Service Parts Operations
SPS	Service Programming System, Speed Signal
sq ft, ft^2	Square Foot/Feet
sq in, in^2	Square Inch/Inches
SRC	Service Ride Control
SRI	Service Reminder Indicator
SRS	Supplemental Restraint System
SS	Shift Solenoid
ST	Scan Tool
STID	Station Identification Station ID
S4WD	Selectable Four-Wheel Drive
Sw	Switch
SWPS	Steering Wheel Position Sensor
syn	Synchronizer
T	
TAC	Throttle Actuator Control
Tach	Tachometer
TAP	Transmission Adaptive Pressure, Throttle Adaptive Pressure
TBI	Throttle Body Fuel Injection
TC	Turbocharger, Transmission Control
TCC	Torque Converter Clutch
TCS	Traction Control System
TDC	Top Dead Center
TEMP	Temperature
Term	Terminal
TFP	Transmission Fluid Pressure
TFT	Transmission Fluid Temperature
THM	Turbo Hydro-Matic
TIM	Tire Inflation Monitoring, Tire Inflation Module
TOC	Transmission Oil Cooler

TP	Throttle Position
TPA	Terminal Positive Assurance
TPM	Tire Pressure Monitoring, Tire Pressure Monitor
TR	Transmission Range
TRANS	Transmission/Transaxle
TT	Tell Tail Warning Lamp
TV	Throttle Valve
TVRS	Television and Radio Suppression
TVV	Thermal Vacuum Valve
TWC	Three Way Converter Catalytic
TWC+OC	Three Way + Oxidation Converter Catalytic
TXV	Thermal Expansion Valve
U	
UART	Universal Asynchronous Receiver Transmitter
U/H	Underhood
U/HEC	Underhood Electrical Center
U-joint	Universal Joint
UTD	Universal Theft Deterrent
UV	Ultraviolet
V	
V	Volt(s), Voltage
V6	Six-Cylinder Engine, V-Type
V8	Eight-Cylinder Engine, V-Type
Vac	Vacuum
VAC	Vehicle Access Code
VATS	Vehicle Anti-Theft System
VCIM	Vehicle Communication Interface Mode
VCM	Vehicle Control Module
V dif	Voltage Difference
VDOT	Variable Displacement Orifice Tube
VDV	Vacuum Delay Valve
vel	Velocity
VES	Variable Effort Steering
VF	Vacuum Fluorescent
VIO	Violet
VIN	Vehicle Identification Number
VLR	Voltage Loop Reserve
VMV	Vacuum Modulator Valve
VR	Voltage Regulator
V ref	Voltage Reference
VSES	Vehicle Stability Enhancement System
VSS	Vehicle Speed Sensor
W	
w/	With
W/B	Wheel Base
WHL	Wheel
WHT	White
w/o	Without
WOT	Wide Open Throttle
W/P	Water Pump

W/S	Windshield
WSS	Wheel Speed Sensor
WU-OC	Warm Up Oxidation Converter Catalytic
WU-TWC	Warm Up Three-Way Converter Catalytic
X	
X-valve	Expansion Valve
Y	
yd	Yard(s)
YEL	Yellow

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Conversion - English/Metric

English	Multiply/ Divide by	Metric
In order to calculate English measurement, divide by the number in the center column. In order to calculate metric measurement, multiply by the number in the center column.		
Length		
in	25.4	mm
ft	0.3048	m
yd	0.9144	
mi	1.609	km
Area		
sq in	645.2	sq mm
	6.45	sq cm
sq ft	0.0929	sq m
sq yd	0.8361	
Volume		
cu in	16,387.00	cu mm
	16.387	cu cm
	0.0164	L
qt	0.9464	
gal	3.7854	
cu yd	0.764	cu m
Mass		
lb	0.4536	kg
ton	907.18	
	0.907	tonne (t)
Force		
Kg F	9.807	newtons (N)
oz F	0.278	
lb F	4.448	
Acceleration		
ft/s²	0.3048	m/s²
In/s²	0.0254	
Torque		
Lb in	0.11298	N·m
lb ft	1.3558	
Power		
hp	0.745	kW
Pressure (Stress)		
inches of H2O	0.2488	kPa
lb/sq in	6.895	
Energy (Work)		
Btu	1055	J (J= one Ws)
lb ft	1.3558	
kW hour	3,600,000.00	
Light		
Foot Candle	10.764	lm/m²

Velocity		
mph	1.6093	km/h
Temperature		
(°F - 32) 5/9	=	°C
°F	=	(9/5 °C + 32)
Fuel Performance		
235.215/mpg	=	100 km/L

Equivalents - Decimal and Metric

Fraction (in)	Decimal (in)	Metric (mm)
1/64	0.015625	0.39688
1/32	0.03125	0.79375
3/64	0.046875	1.19062
1/16	0.0625	1.5875
5/64	0.078125	1.98437
3/32	0.09375	2.38125
7/64	0.109375	2.77812
1/8	0.125	3.175
9/64	0.140625	3.57187
5/32	0.15625	3.96875
11/64	0.171875	4.36562
3/16	0.1875	4.7625
13/64	0.203125	5.15937
7/32	0.21875	5.55625
15/64	0.234375	5.95312
1/4	0.25	6.35
17/64	0.265625	6.74687
9/32	0.28125	7.14375
19/64	0.296875	7.54062
5/16	0.3125	7.9375
21/64	0.328125	8.33437
11/32	0.34375	8.73125
23/64	0.359375	9.12812
3/8	0.375	9.525
25/64	0.390625	9.92187
13/32	0.40625	10.31875
27/64	0.421875	10.71562
7/16	0.4375	11.1125
29/64	0.453125	11.50937
15/32	0.46875	11.90625
31/64	0.484375	12.30312
1/2	0.5	12.7
33/64	0.515625	13.09687
17/32	0.53125	13.49375
35/64	0.546875	13.89062
9/16	0.5625	14.2875
37/64	0.578125	14.68437
19/32	0.59375	15.08125
39/64	0.609375	15.47812
5/8	0.625	15.875
41/64	0.640625	16.27187

Fraction (in)	Decimal (in)	Metric (mm)
21/32	0.65625	16.66875
43/64	0.671875	17.06562
11/16	0.6875	17.4625
45/64	0.703125	17.85937
23/32	0.71875	18.25625
47/64	0.734375	18.65312
3/4	0.75	19.05
49/64	0.765625	19.44687
25/32	0.78125	19.84375
51/64	0.796875	20.24062
13/16	0.8125	20.6375
53/64	0.828125	21.03437
27/32	0.84375	21.43125
55/64	0.859375	21.82812
7/8	0.875	22.225
57/64	0.890625	22.62187
29/32	0.90625	23.01875
59/64	0.921875	23.41562
15/16	0.9375	23.8125
61/64	0.953125	24.20937
31/32	0.96875	24.60625
63/64	0.984375	25.00312
1	1.0	25.4

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Fasteners

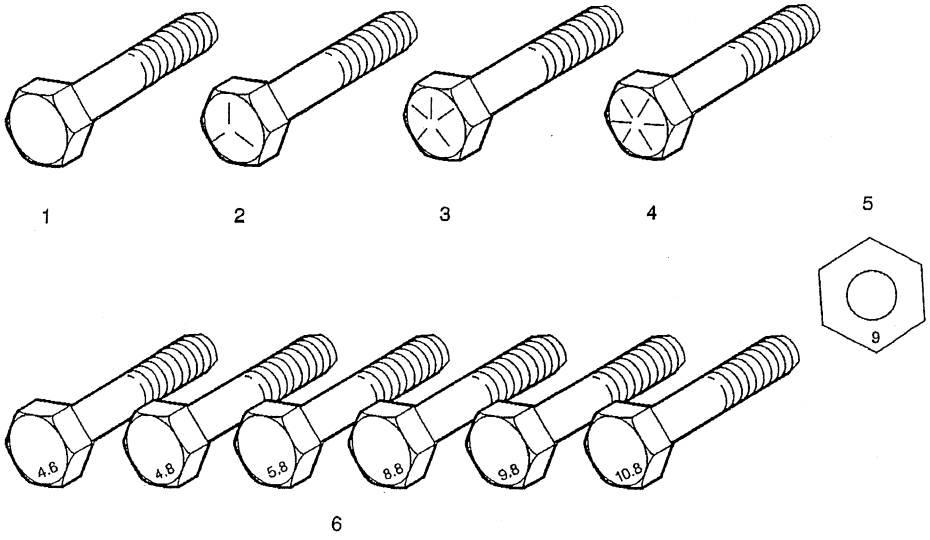
Metric Fasteners

This vehicle provides fastener dimensions using the metric system. Most metric fasteners are approximate in diameter to equivalent English fasteners. Make replacements using fasteners of the same nominal diameter, thread pitch, and strength.

A number marking identifies the OE metric fasteners except cross-recess head screws. The number also indicates the strength of the fastener material. A Posidrive® or Type 1A cross-recess identifies a metric cross-recess screw. For best results, use a Type 1A cross-recess screwdriver, or equivalent, in Posidrive® recess head screws.

GM Engineering Standards and North American Industries have adopted a portion of the ISO-defined standard metric fastener sizes. The purpose was to reduce the number of fastener sizes used while retaining the best thread qualities in each thread size. For example, the metric M6.0 X 1 screw, with nearly the same diameter and 25.4 threads per inch replaced the English 1/4-20 and 1/4-28 screws. The thread pitch is midway between the English coarse and fine thread pitches.

Fastener Strength Identification



1. English Bolt, Grade 2 (Strength Class)
2. English Bolt, Grade 5 (Strength Class)
3. English Bolt, Grade 7 (Strength Class)
4. English Bolt, Grade 8 (Strength Class)
5. Metric Nut, Strength Class 9
6. Metric Bolts, Strength Class Increases as Numbers Increase

The most commonly used metric fastener strength property classes are 9.8 and 10.9. The class identification is embossed on the head of each bolt. The English, inch strength classes range from grade 2 to grade 8. Radial lines are embossed on the head of each bolt in order to identify the strength class. The number of lines on the head of the bolt is 2 lines less than the actual grade. For example, a grade 8 bolt will have 6 radial lines on the bolt head. Some metric nuts are marked with a single digit strength identification number on the nut face.

The correct fasteners are available through GM SPO. Many metric fasteners available in the aftermarket parts channels are designed to metric standards of countries other than the United States, and may exhibit the following:

- Lower strength
- No numbered head marking system
- Wrong thread pitch

The metric fasteners on GM products are designed to new, international standards. The following are the common sizes and pitches, except for special applications:

- M6.0 X 1
- M8 X 1.25
- M10 X 1.5
- M12 X 1.75
- M14 X 2.00
- M16 X 2.00

Prevailing Torque Fasteners

Prevailing torque fasteners create a thread interface between the fastener and the fastener counterpart in order to prevent the fastener from loosening.

All Metal Prevailing Torque Fasteners

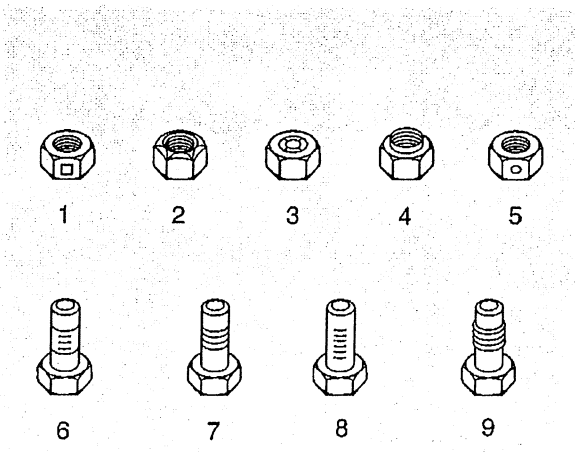
These fasteners accomplish the thread interface by a designed distortion or deformation in the fastener.

Nylon Interface Prevailing Torque Fasteners

These fasteners accomplish the thread interface by the presence of a nylon material on the fastener threads.

Adhesive Coated Fasteners

These fasteners accomplish the thread interface by the presence of a thread-locking compound on the fastener threads. Refer to the appropriate repair procedure in order to determine if the fastener may be reused and the applicable thread-locking compound to apply to the fastener.



1. Prevailing Torque Nut, Center Lock Type
2. Prevailing Torque Nut, Top Lock Type
3. Prevailing Torque Nut, Nylon Patch Type
4. Prevailing Torque Nut, Nylon Washer Insert Type
5. Prevailing Torque Nut, Nylon Insert Type

6. Prevailing Torque Bolt, Dry Adhesive Coating Type
7. Prevailing Torque Bolt, Thread Profile Deformed Type
8. Prevailing Torque Bolt, Nylon Strip Type
9. Prevailing Torque Bolt, Out-of-Round Thread Area Type

A prevailing torque fastener may be reused ONLY if:

- The fastener and the fastener counterpart are clean and not damaged
- There is no rust on the fastener
- The fastener develops the specified minimum torque against its counterpart prior to the fastener seating

Metric Prevailing Torque Fastener Minimum Torque Development

Application	Specification	
	Metric	English
All Metal Prevailing Torque Fasteners		
6 mm	0.4 N·m	4 lb in
8 mm	0.8 N·m	7 lb in
10 mm	1.4 N·m	12 lb in
12 mm	2.1 N·m	19 lb in
14 mm	3 N·m	27 lb in
16 mm	4.2 N·m	37 lb in
20 mm	7 N·m	62 lb in
24 mm	10.5 N·m	93 lb in
Nylon Interface Prevailing Torque Fasteners		
6 mm	0.3 N·m	3 lb in
8 mm	0.6 N·m	5 lb in
10 mm	1.1 N·m	10 lb in
12 mm	1.5 N·m	13 lb in
14 mm	2.3 N·m	20 lb in
16 mm	3.4 N·m	30 lb in
20 mm	5.5 N·m	49 lb in
24 mm	8.5 N·m	75 lb in

English Prevailing Torque Fastener Minimum Torque Development

Application	Specification	
	Metric	English
All Metal Prevailing Torque Fasteners		
1/4 in	0.5 N·m	4.5 lb in
5/16 in	0.8 N·m	7.5 lb in
3/8 in	1.3 N·m	11.5 lb in
7/16 in	1.8 N·m	16 lb in
1/2 in	2.3 N·m	20 lb in
9/16 in	3.2 N·m	28 lb in
5/8 in	4 N·m	36 lb in
3/4 in	7 N·m	54 lb in
Nylon Interface Prevailing Torque Fasteners		
1/4 in	0.3 N·m	3 lb in
5/16 in	0.6 N·m	5 lb in
3/8 in	1 N·m	9 lb in
7/16 in	1.3 N·m	12 lb in
1/2 in	1.8 N·m	16 lb in
9/16 in	2.5 N·m	22 lb in
5/8 in	3.4 N·m	30 lb in
3/4 in	5 N·m	45 lb in

S = Standard Equipment A = Available -- (dashes) = Not Available D = ADI Available
■ = Included in Equipment Group □ = Included in Equipment Group but upgradeable

*Indicates availability of feature on multiple models. For example, it indicates feature availability on 2WD and 4WD Models or Rear wheel drive and All-wheel drive Models.

Codes listed in the shaded column titled Ref. Only RPO Code are for internal use only and should not be ordered.

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
		Air bags, frontal, driver and front passenger with Passenger Sensing System **1 - Always use safety belts and the correct child restraints for your child's age and size. Even in vehicles equipped with air bags and the Passenger Sensing System, children are safer when properly secured in a rear seat. Never place a rear-facing infant restraint in the front seat of any vehicle equipped with an active frontal air bag. See the vehicle's Owner's Manual and child safety seat instructions for more safety information.**	S[1]	S[1]	S[1]	S[1]	S[1]	S[1]
	CJ3	**Air conditioning**, dual-zone manual climate control with individual climate settings for driver and right-front passenger	S	S	--	--	S	--
		Armrests, driver and passenger doors, padded	S	S	S	S	S	S
		Assist handles, front passenger and rear outboard	S	S	S	S	S	S
	UB0	**Audio system**, AM/FM stereo with CD player, seek-and-scan, digital clock, auto-tone control, speed-compensated volume and TheftLock **1 - May be substituted with (US8) AM/FM stereo with CD player and MP3 playback.** **2 - May be substituted with (US8) AM/FM stereo with CD player and MP3 playback or (UC6) AM/FM stereo with 6-disc in-dash CD changer. Not available with (PCR) Sun, Sound and Entertainment Package.** **3 - May be substituted with (UC6) AM/FM stereo with 6-disc in-dash CD changer or (UM8) AM/FM stereo with CD player and touch-screen navigation. Not available with (PCR) Sun, Sound and Entertainment Package.**	S[1]	S[2]	S[3]	S[3]	S[2]	S[3]
		Cargo tie downs, 5 in-floor, located in the rear compartment	S	S	S	S	S	S
		Console, floor with CD storage	S	S	S	S	S	S
		Convenience Package, power windows and door locks, programmable with lighted switches, driver and front passenger Express-Down windows, power rear glass release and rear-window wiper/washer	S	S	S	S	S	S
	K34	**Cruise control**, electronic with set and resume speed	S	S	S	S	S	S
		Cup holders, front and rear	S	S	S	S	S	S
		Door locks, rear child security	S	S	S	S	S	S
		Door trim, integral padded armrests and driver- and front passenger-side map pockets	S	S	S	S	S	S
	B30	**Floor covering**, full-floor color-keyed carpeting	S	S	S	S	S	S
		Glovebox, passenger-side of instrument panel	S	S	S	S	S	S

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
		Headliner, Neutral-colored cloth with matching retainer moldings	S	S	S	S	S	S
		Heater and defogger with front and side front door window defoggers and rear passenger heating ducts	S	S	S	S	S	S
		Instrumentation, analog with speedometer, odometer with trip odometer, fuel level, voltmeter, engine temperature, oil pressure, tachometer, liftgate ajar, warning light for safety belt, ABS/parking brake, directional hazard signals and high beam	S	S	S	S	S	S
		Key, single, 2-sided	S	S	S	S	S	S
		Lighting, interior with theater dimming, cargo compartment, reading lights for front seats, second row dome light, door- and tailgate-activated switches and illuminated entry and exit feature	S	S	S	S	S	S
		LATCH system (Lower Anchors and Top tethers for CHildren), for child safety seats	S	S	S	S	S	S
		Mirror, inside rearview manual day/night	S	S	--	--	--	--
	UE1	**OnStar**, 1-year of Safe and Sound plan. Includes Automatic Notification of Air Bag Deployment, Stolen Vehicle Location Assistance, Emergency Services, Roadside Assistance, Remote Door Unlock, OnStar Vehicle Diagnostics, Hands-Free Calling, AccidentAssist and Remote Horn & Lights **1 - OnStar services require vehicle electrical system (including battery), wireless service and GPS satellite signals to be available and operating for features to function properly. OnStar acts as a link to existing emergency service providers. OnStar Vehicle Diagnostics available on most 2004 MY and newer GM vehicles. Diagnostic capability varies by model. Visit onstar.com for system limitations and details. Not available with certain FDR order types. Not available with a ship-to of Puerto Rico or the Virgin Islands.**	S[1]	S[1]	S[1]	S[1]	S[1]	S[1]
		Power outlets, auxiliary	S	S	S	S	S	S
		Quiet Package with acoustic laminate in windows and strategically placed elements of sound insulation **1 - Includes acoustic laminated front side glass.**	S	S	S	S	S[1]	S[1]
	**H	**Seats**, front bucket with Premium Cloth , driver lumbar control, adjustable outboard head restraints and manual recline	S	S	--	--	--	--
	AM9	**Seats**, second row split-folding	S	S	S	S	S	S
		Steering column, Tilt-Wheel, adjustable with brake/transmission shift interlock	S	S	S	S	S	S
		Steering wheel, vinyl	S	S	--	--	--	--
		Theft-deterrent system, PASSlock	S	S	S	S	S	S
		Tools, mechanical jack and wheel wrench	S	S	S	S	S	S

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
		Visors, driver and front passenger vanity mirrors, padded with cloth trim, color-keyed	S	S	--	--	S	--
		Warning tones, headlamp on, key-in-ignition, driver safety belt unfasten and turn signal on	S	S	S	S	S	S
	TB4	**Body**, liftgate with liftglass	S	S	S	S	S	S
		Bumpers, front and rear body-color, rear step includes pad	S	S	--	--	--	--
	T61	**Daytime Running Lamps**	S	S	S	S	S	S
		Door handles, Black	S	S	--	--	--	--
		Glass, Solar-Ray light-tinted	S	S	S	S	S	S
		Grille, chrome bar	S	S	--	--	--	--
		Grille, body-color	--	--	■	■	S	S
		Headlamps, dual composite halogen with automatic exterior lamp control	S	S	S	S	S	S
		Horn, dual-note high and low	S	S	S	S	S	S
		Side rails, roof-mounted, Black	S	S	S	S	--	--
	DR1	**Mirrors**, outside manual, Black, manual-folding	S	--	--	--	--	--
	ZY1	**Paint**, solid	S	S	S	S	S	S
	QUB	NEW! **Tires**, P255/50R20 V-rated, all-season, blackwall	--	--	--	--	S	S
	ZNF	**Tire**, spare P235/75R16, all-season, blackwall **1 - Included and only available with (LL8) Vortec 4.2L I6 SFI engine and (QTM) P245/65R17 all-season blackwall tires, (QTE) P245/65R17 on-/off-road blackwall tires or (QTR) P245/65R17 on-/off-road White outlined-letter tires.**	S[1]	S[1]	S[1]	S[1]	--	--
	ZTM	**Tire**, spare P245/65R17 blackwall **1 - Required and only available with (N79) 17" (43.2 cm) full-size spare wheel.**	A[1]	A[1]	A[1]	A[1]	S	S
	UJ6	NEW! **Tire Pressure Monitoring System**	S	S	S	S	S	S
	P55	**Wheels**, 4 - 20" x 8" (50.8 cm x 20.3 cm) 6-spoke polished aluminum, includes center cap and steel spare	--	--	--	--	S	S
N79		**Wheel**, 17" (43.2 cm) full-size spare **1 - Required with (LH6) Vortec 5.3L V8 SFI engine.** **2 - Required with (LH6) Vortec 5.3L V8 SFI engine. Included when (PD8) 4 - 18" x 8" (45.7 cm x 20.3 cm) aluminum wheels are ordered.**	A[1]	A[1]	A[2]	A[2]	S	S
	NZ3	**Wheel**, 16" (40.6 cm) full-size spare **1 - Included and only available with (LL8) Vortec 4.2L I6 SFI engine and (N74) 4 - 17" x 7" (43.2 cm x 17.8 cm) bright aluminum wheels or (N75) 4 - 17" x 7" (43.2 cm x 17.8 cm) Sport aluminum wheels.**	S[1]	S[1]	S[1]	S[1]	--	--
		Wipers, front intermittent with pulse washers	S	S	S	S	S	S
		Wipers, rear intermittent with washer	S	S	S	S	S	S

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
	KG4	**Alternator**, 150 amps 1 - Standard with (LL8) Vortec 4.2L I6 SFI engine only.	S[1]	S[1]	S[1]	S[1]	--	--
		Battery, heavy-duty, maintenance-free with rundown protection and retained accessory power	S	S	S	S	S	S
	JF8	**Brakes**, 4-wheel antilock, 4-wheel disc	S	S	S	S	S	S
	G86	**Differential**, limited slip	--	--	--	--	S	S
	LL8	**Engine**, Vortec 4.2L I6 SFI with transmission oil cooler (291 hp [217 kW] @ 6000 rpm, 277 lb-ft of torque [375 Nm] @ 4800 rpm)	S	S	S	S	--	--
	LS2	**Engine**, 6.0L V8 SFI (395 hp [295 KW] @ 5400 rpm, 400 lb-ft of torque [542 Nm] @ 4400 rpm)	--	--	--	--	S	S
		Exhaust, aluminized stainless-steel muffler and tailpipe	S	S	S	S	S	S
	GU6	**Rear axle**, 3.42 ratio	S	S	S	S	--	--
		Stabilizer bars, front and rear	S	S	S	S	S	S
		StabiliTrak, Stability Control System	S	S	S	S	S	S
	N40	**Steering**, power	S	S	S	S	S	S
		Suspension, front independent	S	S	S	S	S	S
		Suspension, rear 5-link coil springs	S	S	S	S	S	S
	ZW7	**Suspension Package**, Premium Smooth Ride	S	S	S	S	--	--
	ZQ8	**Suspension Package**, Sport, Road Course Tuned	--	--	--	--	S	S
		Trailering equipment, heavy-duty, includes trailering hitch platform, 7-wire harness, CHMSL wire and heavy-duty flasher 1 - 4-wire and 7-wire adaptors shipped loose in glove box.	S	S	S	S	S[1]	S[1]
	M30	**Transmission**, 4-speed automatic, electronically controlled with overdrive	S	S	S	S	--	--
	M70	**Transmission**, 4-speed automatic, super-duty	--	--	--	--	S	S

S = Standard Equipment A = Available -- (dashes) = Not Available D = ADI Available

■ = Included in Equipment Group □ = Included in Equipment Group but upgradeable

No deletions allowed to Equipment Groups. Additional options may be added; check ordering information section for compatibility.

*Indicates availability of feature on multiple models. For example, it indicates feature availability on 2WD and 4WD Models or Rear wheel drive and All-wheel drive Models.

Codes listed in the shaded column titled Ref. Only RPO Code are for internal use only and should not be ordered.

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
	CJ2	**Air conditioning**, dual-zone automatic climate control with individual climate settings for driver and right-front passenger	--	--	■	■	--	■
		Air conditioning, rear with heater	--	--	■	■	--	■
	UK6	**Audio system controls**, rear with headphone jacks (headphones not included)	--	--	■	■	--	■
B42		**Cargo mat**, rear	--	A	■	■	--	■
	DK7	**Console**, overhead custom **1 - Included and only available with (CF5) power sunroof.**	--	A[1]	■	■	A[1]	■
C49		**Defogger**, rear-window electric **1 - Must specify (C49) rear-window defogger or (R9W) rear-window defogger delete.**	A[1]	■	■	■	■	■
	U68	**Driver Information Center**, monitors different systems, includes trip computer, fluid levels and door ajar	--	--	■	■	--	■
B32/B33		**Floor mats**, color-keyed carpeted front and rear, removable **1 - Fleet orders only.**	A[1]	■	■	■	■	■
	YC6	**LT Convenience Package**, includes (AAB) driver seat memory function, (KA1) heated driver and front passenger seats and (DS3) outside heated power-adjustable mirrors with memory and turn signal indicators	--	--	--	■	--	■
	DF5	**Mirror**, inside rearview auto-dimming with 8-point compass and outside temperature display	--	--	--	--	■	--
	DD7	**Mirror**, inside rearview auto-dimming with 8-point compass display	--	--	■	■	--	■
JF4		**Pedals**, power-adjustable for accelerator and brake	--	--	A	A	--	■
AU0		**Remote Keyless Entry**, programmable with 2 transmitters and panic button **1 - Fleet orders only.**	A[1]	■	■	■	■	■

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
	**H	**Seats**, front bucket with Premium Cloth , driver lumbar control, adjustable outboard head restraints and 8-way power driver seat adjuster with power recliner **1 - Included and only available with (PDC) 8-way power driver seat adjuster.**	--	A[1]	■	--	--	--
	**H	**Seats**, front bucket with Premium Cloth, "SS" embroidered, driver lumbar control, adjustable outboard head restraints and 8-way power driver seat adjuster with power recliner	--	--	--	--	■	--
	**2	**Seats**, front bucket with leather-appointed seating, driver and front passenger power lumbar control, adjustable outboard head restraints, 8-way power driver and front passenger seat adjusters with power recliners	--	--	--	■	--	--
	**2	**Seats**, front bucket with leather-appointed seating, "SS" embroidered, driver and front passenger power lumbar control, adjustable outboard head restraints, 8-way power driver and front passenger seat adjuster with power recliners	--	--	--	--	--	■
	KA1	**Seats**, heated driver and front passenger	--	--	--	■	--	■
PDC		**Seat adjuster**, driver 8-way power	--	A	■	■	■	■
V40		**Seat adjuster**, 8-way power front passenger with power lumbar control **1 - Required and only available with (**2) front bucket seats with leather-appointed seating.**	--	--	A[1]	■	--	■
	NP5	**Steering wheel**, leather-wrapped **1 - Perforated leather.**	--	--	--	--	■[1]	--
	STW	**Steering wheel**, leather-wrapped with mounted audio and Driver Information Center controls, includes theft-deterrent locking feature **1 - Perforated leather.**	--	--	■	■	--	■[1]
	UA6	**Theft-deterrent alarm system**, content theft alarm, includes beeping horn and flashing lights **1 - Included and only available with (AU0) Remote Keyless Entry and only available with Fleet orders.**	A[1]	■	■	■	■	■
	UG1	**Universal Home Remote**, includes garage door opener, 3-channel programmable	--	--	■	■	--	■
	DH2	**Visors**, driver and front passenger illuminated vanity mirrors, padded with cloth trim, color-keyed	--	--	■	■	--	■
		Bumper, front and rear body-color, rear step includes pad	--	--	■	■	--	--
		Bumpers, front and rear body-color	--	--	--	--	■	■
		Door handles, body-color	--	--	■	■	■	■

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
T96		**Fog lamps**, front, halogen 1 - Available as an SEO and requires a Fleet order. 2 - Projector lamps.	A[1]	A[1]	■	■	■[2]	■[2]
AJ1		**Glass**, Solar-Ray deep-tinted (all windows except light-tinted glass on windshield and driver- and front passenger-side glass) 1 - Requires Fleet or Government orders only.	A[1]	■	■	■	■	■
		Grille, body-color	--	--	■	■	S	S
V1K		**Luggage rack**, roof-mounted, Black, adjustable with center and side rails	A	■	■	■	--	--
	DP2	**Mirrors**, outside power-adjustable, Black 1 - Upgradeable to (DK2) outside heated, power-adjustable mirrors.	--	■	□[1]	--	--	--
DK2		**Mirrors**, outside heated power-adjustable, manual-folding	--	--	A	--	■	--
	DS3	**Mirrors**, outside heated power-adjustable, manual-folding with integrated turn signal indicators	--	--	--	■	--	■
	B86	**Moldings**, body-color bodyside	--	■	■	■	--	--
QTM		NEW! **Tires**, P245/65R17 all-season, blackwall 1 - Upgradeable to (QTE) P245/6R17 on-/off-road blackwall tires or (QTR) P245/65R17 on-/off-road White outlined-letter tires. 2 - Requires Fleet or Government orders only.	□[1]	□[1]	A[2]	--	--	--
QTR		**Tires**, P245/65R17 on-/off-road, White outlined-letter 1 - Upgradeable to (QZD) P245/60R18 all-season blackwall tires. Requires (PD8) 4 - 18" x 8" (45.7 cm x 20.3 cm) aluminum wheels.	A	A	□[1]	□[1]	--	--
	N75	**Wheels**, 4 - 17" x 7" (43.2 cm x 17.8 cm) Sport aluminum, includes center caps and steel spare 1 - Upgradeable to (N74) 4 - 17" x 7" (43.2 cm x 17.8 cm) bright aluminum wheels but only with a Fleet or Government order.	□[1]	□[1]	--	--	--	--
N74		**Wheels**, 4 - 17" x 7" (43.2 cm x 17.8 cm) bright aluminum, includes center caps and steel spare 1 - Requires Fleet or Government orders only. 2 - Upgradeable to (PD8) 4 - 18" x 8" (45.7 cm x 20.3 cm) polished aluminum wheels. Requires (QZD) P245/60R18 all-season, blackwall tires.	A[1]	A[1]	□[2]	□[2]	--	--
	C4D	**GVWR**, 5550 lbs. (2517 kg) 1 - CS15506 models only.	■[1]	■[1]	■[1]	■[1]	--	--
	C5N	**GVWR**, 5750 lbs. (2608 kg) 1 - CT15506 models only.	■[1]	■[1]	■[1]	■[1]	--	--
	EB1	**GVWR**, 6001 lbs. (2722 kg) 1 - Included and only available with (LH6) Vortec 5.3L V8 SFI engine.	A[1]	A[1]	A[1]	A[1]	■	■

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
GT5		**Rear axle**, 4.10 ratio **1 - Not available with (LH6) Vortec 5.3L V8 SFI engine.**	A[1]	A[1]	A[1]	A[1]	■	■
UY7		**Trailering wire harness**, connector in bumper	A	■	■	■	--	--
	NP8	**Transfer case**, electronic Autotrac, includes auto 4WD and panel-mounted electronic controls **1 - CT15506 models only.**	■[1]	■[1]	■[1]	■[1]	--	--
	NR9	**Transfer case**, AWD Torsen single-speed with torque-based differential **1 - Included and only available with AWD models.**	--	--	--	--	■[1]	■[1]

S = Standard Equipment A = Available -- (dashes) = Not Available D = ADI Available

■ = Included in Equipment Group □ = Included in Equipment Group but upgradeable

No deletions allowed to Equipment Groups. Additional options may be added; check ordering information section for compatibility.

*Indicates availability of feature on multiple models. For example, it indicates feature availability on 2WD and 4WD Models or Rear wheel drive and All-wheel drive Models.

Codes listed in the shaded column titled Ref. Only RPO Code are for internal use only and should not be ordered.

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
	CJ2	**Air conditioning**, dual-zone automatic climate control with individual climate settings for driver and right-front passenger	--	--	■	■	--	■
		Air conditioning, rear with heater	--	--	■	■	--	■
	UK6	**Audio system controls**, rear with headphone jacks (headphones not included)	--	--	■	■	--	■
B42		**Cargo mat**, rear	--	A	■	■	--	■
	DK7	**Console**, overhead custom 1 - Included and only available with (CF5) power sunroof.	--	A[1]	■	■	A[1]	■
C49		**Defogger**, rear-window electric 1 - Must specify (C49) rear-window defogger or (R9W) rear-window defogger delete.	A[1]	■	■	■	■	■
	U68	**Driver Information Center**, monitors different systems, includes trip computer, fluid levels and door ajar	--	--	■	■	--	■
B32/B33		**Floor mats**, color-keyed carpeted front and rear, removable 1 - Fleet orders only.	A[1]	■	■	■	■	■
	YC6	**LT Convenience Package**, includes (AAB) driver seat memory function, (KA1) heated driver and front passenger seats and (DS3) outside heated power-adjustable mirrors with memory and turn signal indicators	--	--	--	■	--	■
	DF5	**Mirror**, inside rearview auto-dimming with 8-point compass and outside temperature display	--	--	--	--	■	--
	DD7	**Mirror**, inside rearview auto-dimming with 8-point compass display	--	--	■	■	--	■
JF4		**Pedals**, power-adjustable for accelerator and brake	--	--	A	A	--	■
AU0		**Remote Keyless Entry**, programmable with 2 transmitters and panic button 1 - Fleet orders only.	A[1]	■	■	■	■	■

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
	**H	**Seats**, front bucket with Premium Cloth , driver lumbar control, adjustable outboard head restraints and 8-way power driver seat adjuster with power recliner **1 - Included and only available with (PDC) 8-way power driver seat adjuster.**	--	A[1]	■	--	--	--
	**H	**Seats**, front bucket with Premium Cloth, "SS" embroidered, driver lumbar control, adjustable outboard head restraints and 8-way power driver seat adjuster with power recliner	--	--	--	--	■	--
	**2	**Seats**, front bucket with leather-appointed seating, driver and front passenger power lumbar control, adjustable outboard head restraints, 8-way power driver and front passenger seat adjusters with power recliners	--	--	--	■	--	--
	**2	**Seats**, front bucket with leather-appointed seating, "SS" embroidered, driver and front passenger power lumbar control, adjustable outboard head restraints, 8-way power driver and front passenger seat adjuster with power recliners	--	--	--	--	--	■
	KA1	**Seats**, heated driver and front passenger	--	--	--	■	--	■
PDC		**Seat adjuster**, driver 8-way power	--	A	■	■	■	■
V40		**Seat adjuster**, 8-way power front passenger with power lumbar control **1 - Required and only available with (**2) front bucket seats with leather-appointed seating.**	--	--	A[1]	■	--	■
	NP5	**Steering wheel**, leather-wrapped **1 - Perforated leather.**	--	--	--	--	■[1]	--
	STW	**Steering wheel**, leather-wrapped with mounted audio and Driver Information Center controls, includes theft-deterrent locking feature **1 - Perforated leather.**	--	--	■	■	--	■[1]
	UA6	**Theft-deterrent alarm system**, content theft alarm, includes beeping horn and flashing lights **1 - Included and only available with (AU0) Remote Keyless Entry and only available with Fleet orders.**	A[1]	■	■	■	■	■
	UG1	**Universal Home Remote**, includes garage door opener, 3-channel programmable	--	--	■	■	--	■
	DH2	**Visors**, driver and front passenger illuminated vanity mirrors, padded with cloth trim, color-keyed	--	--	■	■	--	■
		Bumper, front and rear body-color, rear step includes pad	--	--	■	■	--	--
		Bumpers, front and rear body-color	--	--	--	--	■	■
		Door handles, body-color	--	--	■	■	■	■

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
T96		**Fog lamps**, front, halogen 1 - Available as an SEO and requires a Fleet order. 2 - Projector lamps.	A[1]	A[1]	■	■	■[2]	■[2]
AJ1		**Glass**, Solar-Ray deep-tinted (all windows except light-tinted glass on windshield and driver- and front passenger-side glass) 1 - Requires Fleet or Government orders only.	A[1]	■	■	■	■	■
		Grille, body-color	--	--	■	■	S	S
V1K		**Luggage rack**, roof-mounted, Black, adjustable with center and side rails	A	■	■	■	--	--
	DP2	**Mirrors**, outside power-adjustable, Black 1 - Upgradeable to (DK2) outside heated, power-adjustable mirrors.	--	■	□[1]	--	--	--
DK2		**Mirrors**, outside heated power-adjustable, manual-folding	--	--	A	--	■	--
	DS3	**Mirrors**, outside heated power-adjustable, manual-folding with integrated turn signal indicators	--	--	--	■	--	■
	B86	**Moldings**, body-color bodyside	--	■	■	■	--	--
QTM		NEW! **Tires**, P245/65R17 all-season, blackwall 1 - Upgradeable to (QTE) P245/6R17 on-/off-road blackwall tires or (QTR) P245/65R17 on-/off-road White outlined-letter tires. 2 - Requires Fleet or Government orders only.	□[1]	□[1]	A[2]	--	--	--
QTR		**Tires**, P245/65R17 on-/off-road, White outlined-letter 1 - Upgradeable to (QZD) P245/60R18 all-season blackwall tires. Requires (PD8) 4 - 18" x 8" (45.7 cm x 20.3 cm) aluminum wheels.	A	A	□[1]	□[1]	--	--
	N75	**Wheels**, 4 - 17" x 7" (43.2 cm x 17.8 cm) Sport aluminum, includes center caps and steel spare 1 - Upgradeable to (N74) 4 - 17" x 7" (43.2 cm x 17.8 cm) bright aluminum wheels but only with a Fleet or Government order.	□[1]	□[1]	--	--	--	--
N74		**Wheels**, 4 - 17" x 7" (43.2 cm x 17.8 cm) bright aluminum, includes center caps and steel spare 1 - Requires Fleet or Government orders only. 2 - Upgradeable to (PD8) 4 - 18" x 8" (45.7 cm x 20.3 cm) polished aluminum wheels. Requires (QZD) P245/60R18 all-season, blackwall tires.	A[1]	A[1]	⊓[2]	⊓[2]	--	--
	C4D	**GVWR**, 5550 lbs. (2517 kg) 1 - CS15506 models only.	■[1]	■[1]	■[1]	■[1]	--	--
	C5N	**GVWR**, 5750 lbs. (2608 kg) 1 - CT15506 models only.	■[1]	■[1]	■[1]	■[1]	--	--
	EB1	**GVWR**, 6001 lbs. (2722 kg) 1 - Included and only available with (LH6) Vortec 5.3L V8 SFI engine.	A[1]	A[1]	A[1]	A[1]	■	■

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
GT5		**Rear axle**, 4.10 ratio **1 - Not available with (LH6) Vortec 5.3L V8 SFI engine.**	A[1]	A[1]	A[1]	A[1]	■	■
UY7		**Trailering wire harness**, connector in bumper	A	■	■	■	--	--
	NP8	**Transfer case**, electronic Autotrac, includes auto 4WD and panel-mounted electronic controls **1 - CT15506 models only.**	■[1]	■[1]	■[1]	■[1]	--	--
	NR9	**Transfer case**, AWD Torsen single-speed with torque-based differential **1 - Included and only available with AWD models.**	--	--	--	--	■[1]	■[1]

ADDITIONAL OPTIONS

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
ASF		**Air bags**, head curtain side-impact, front and rear outboard seating positions **1 - Head curtain side air bags are designed to help reduce the risk of head and neck injuries to front and rear seat occupants on the near side of certain side-impact collisions. Always use safety belts and the correct child restraints for your child's age and size, even in vehicles equipped with air bags. Children are safer when properly secured in a rear seat. See the vehicle's Owner's Manual and child safety seat instructions for more safety information.**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]
US8		**Audio system**, AM/FM stereo with CD player and MP3 playback, seek-and-scan, digital clock, auto-tone control, Radio Data System (RDS), automatic volume, TheftLock and premium front and rear coaxial speakers **1 - Not available with (PCR) Sun, Sound and Entertainment Package.**	A	A[1]	--	--	A	--
UC6		**Audio system**, AM/FM stereo with 6-disc CD changer, seek-and-scan, digital clock, auto-tone control, Radio Data System (RDS), speed-compensated volume, TheftLock and 6 speakers	--	A	A	A	A	A
UM8		**Audio system with navigation**, AM/FM stereo with CD player and DVD-integrated touch-screen navigation, seek-and-scan, auto-tone control, Radio Data System (RDS), full-feature autonomous touch-screen navigation, 1 DVD disc and Points of Interest **1 - Requires (UQA) Bose premium speaker system. Not available in AK, PR or VI.**	--	--	A[1]	A[1]	--	A[1]
UQA		**Audio system feature**, Bose premium speaker system	--	A	A	A	A	A

ADDITIONAL OPTIONS								
Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
U2K		**XM Satellite Radio**. With a wide variety of programming, XM has something to excite any driver. Whether you want to be entertained or informed, to laugh, think, or sing, XM has the perfect channel for you - coast-to-coast, and in digital-quality sound. 3 trial months - no obligation **1 - Available in the 48 contiguous United States. Required $12.95 monthly subscription sold separately. All fees and programming subject to change. Subscription subject to customer agreement. For more information, visit gm.xmradio.com**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]
RAE		**Regular production accessory**, Cargo area management system, rear compartment cargo area organizer, non-skid rubberized surface, molded in leak-proof liquid container holder/compartments with collapsible partitions that fold down when not in use to provide flat load floor and re-configurable dividers. Color-keyed to interior trim selection (Special Equipment Package- dealer-installed - no tools needed, easily removable) **1 - For additional GM Accessory Offerings and Installation, please contact your local GM Accessory Distributor Installer (ADI).**	--	A/D[1]	A/D[1]	A/D[1]	A/D[1]	A/D[1]
AP9		**Cargo net**, in rear compartment area	--	A	A	A	A	A
B42		**Cargo mat**, rear	--	A	■	■	--	■
RYJ		**Cargo shade**, rear retractable, color-keyed and removable	--	A	A	A	A	A
C49		**Defogger**, rear-window electric **1 - Must specify (C49) rear-window defogger or (R9W) rear-window defogger delete.**	A[1]	■	■	■	■	■
R9W		**Defogger**, rear-window, delete **1 - Must specify (C49) rear-window defogger or (R9W) rear-window defogger delete.**	A[1]	--	--	--	--	--
U42		**Entertainment system**, rear seat DVD player with screen and headphones/controls	--	A	A	A	A	A
B32/B33		**Floor mats**, color-keyed carpeted front and rear, removable **1 - Fleet orders only.**	A[1]	■	■	■	■	■
B3N		**Floor mat delete**, first and second rows **1 - Available for Fleet or Government order types only.**	--	A[1]	A[1]	A[1]	--	--
R7M		**OnStar**, delete **1 - Fleet orders only. If order type is FDR, (R7M) will be forced on.**	A[1]	A[1]	A[1]	A[1]	--	--
JF4		**Pedals**, power-adjustable for accelerator and brake	--	--	A	A	--	■

ADDITIONAL OPTIONS								
Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
AU0		**Remote Keyless Entry**, programmable with 2 transmitters and panic button **1 - Fleet orders only.**	A[1]	■	■	■	■	■
**2		**Seats**, front bucket with leather-appointed seating, driver power lumbar control, front passenger manual lumbar control, adjustable outboard head restraints and 8-way power driver seat adjuster with power recliner **1 - Required and only available with (V40) 8-way power front passenger seat adjuster with power lumbar control.**	--	--	A[1]	--	--	--
PDC		**Seat adjuster**, driver 8-way power	--	A	■	■	■	■
V40		**Seat adjuster**, 8-way power front passenger with power lumbar control **1 - Required and only available with (**2) front bucket seats with leather-appointed seating.**	--	--	A[1]	■	--	■
DT4		**Smoker's Package**, includes ashtray and lighter	A	A	A	A	A	A
CF5		**Sunroof**, power, tilt-sliding with express-open and wind deflector **1 - Includes (DK7) overhead custom console.**	--	A[1]	A	A	A[1]	A
PCR		**Sun, Sound and Entertainment Package**, includes (CF5) power sunroof, (UQA) Bose premium speaker system, (U2K) XM Satellite Radio and (UC6) AM/FM stereo with 6-disc in-dash CD changer. OPTION PACKAGE SAVINGS WHEN ORDERED. **1 - (U42) Rear seat entertainment system may be ordered in addition to, or instead of (CF5) power sunroof. Must specify (CF5) power sunroof or (U42) Rear seat entertainment system or both when ordering.** **2 - (U42) Rear seat entertainment system may be ordered in addition to, or instead of (CF5) power sunroof. (UC6) AM/FM stereo with 6-disc in-dash CD changer may be substituted with (UM8) AM/FM stereo with CD player and touch-screen navigation. Must specify (CF5) power sunroof or (U42) Rear seat entertainment system or both.**	--	A[1]	A[2]	A[2]	A[1]	A[2]
R6Q		**Sun, Sound and Entertainment Package (PCR) discount not desired** **1 - Required when content within option package is ordered and entire package is not desired.**	--	A[1]	A[1]	A[1]	A[1]	A[1]
BVE		**Assist steps**, Black	A	A	A	A	--	--
T96		**Fog lamps**, front, halogen **1 - Available as an SEO and requires a Fleet order.** **2 - Projector lamps.**	A[1]	A[1]	■	■	■[2]	■[2]
VK3		**License plate bracket**, front (will be forced on orders with ship-to states that require a front license plate)	A	A	A	A	A	A

ADDITIONAL OPTIONS									
Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
AJ1		**Glass**, Solar-Ray deep-tinted (all windows except light-tinted glass on windshield and driver- and front passenger-side glass) **1 - Requires Fleet or Government orders only.**	A[1]	■	■	■	■	■
V1K		**Luggage rack**, roof-mounted, Black, adjustable with center and side rails	A	■	■	■	--	--
DK2		**Mirrors**, outside heated power-adjustable, manual-folding	--	--	A	--	■	--
ZY7		**Paint**, two-tone, accent body-color includes colored fascia, wheel well surround and lower rocker **1 - Requires (YC6) LT Convenience Package.**	--	--	--	A[1]	--	--
V76		**Recovery hooks**, 2 front, frame-mounted **1 - 4x4 only.**	A[1]	A[1]	A[1]	A[1]	--	--
VHS		**Regular production accessory**, Trailer hitch receiver cover **1 - For additional GM Accessory Offerings and Installation, please contact your local GM Accessory Distributor Installer (ADI).**	A/D[1]	A/D[1]	A/D[1]	A/D[1]	--	--
QTM		NEW! **Tires**, P245/65R17 all-season, blackwall **1 - Upgradeable to (QTE) P245/6R17 on-/off-road blackwall tires or (QTR) P245/65R17 on-/off-road White outlined-letter tires.** **2 - Requires Fleet or Government orders only.**	□[1]	□[1]	A[2]	--	--	--
QTE		**Tires**, P245/65R17 on-/off-road, blackwall **1 - Requires Fleet or Government orders only.**	A	A	--	A[1]	--	--
QTR		**Tires**, P245/65R17 on-/off-road, White outlined-letter **1 - Upgradeable to (QZD) P245/60R18 all-season blackwall tires. Requires (PD8) 4 - 18" x 8" (45.7 cm x 20.3 cm) aluminum wheels.**	A	A	□[1]	□[1]	--	--
N74		**Wheels**, 4 - 17" x 7" (43.2 cm x 17.8 cm) bright aluminum, includes center caps and steel spare **1 - Requires Fleet or Government orders only.** **2 - Upgradeable to (PD8) 4 - 18" x 8" (45.7 cm x 20.3 cm) polished aluminum wheels. Requires (QZD) P245/60R18 all-season, blackwall tires.**	A[1]	A[1]	□[2]	□[2]	--	--
PD8		NEW! **Wheels**, 4 - 18" x 8" (45.7 cm x 20.3 cm) polished aluminum, 5-spoke **1 - Inlcudes (QZD) P245/65R18 all-season blackwall tires.**	--	--	A[1]	A[1]	--	--
N79		**Wheel**, 17" (43.2 cm) full-size spare **1 - Required with (LH6) Vortec 5.3L V8 SFI engine.** **2 - Required with (LH6) Vortec 5.3L V8 SFI engine. Included when (PD8) 4 - 18" x 8" (45.7 cm x 20.3 cm) aluminum wheels are ordered.**	A[1]	A[1]	A[2]	A[2]	S	S
G80		**Differential**, heavy-duty locking rear	A	A	A	A	--	--
NE1		**Emissions**, Maine, Massachusetts, New York or Vermont state requirements	A	A	A	A	A	A

ADDITIONAL OPTIONS								
Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
FE9		**Emissions**, Federal requirements	A	A	A	A	A	A
YF5		**Emissions**, California state requirements	A	A	A	A	A	A
NB8		**Emissions override**, California, Massachusetts or New York (for vehicles ordered by dealers in states of California, Massachusetts or New York with Federal emissions) **1 - Requires (FE9) Federal emissions requirements.**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]
NC7		**Emissions override**, Federal (for vehicles ordered by dealers in Federal emission states with California, New York, Vermont, Massachusetts or Maine emissions; may also be used by dealers in states of California, New York, Vermont, Massachusetts or Maine to order different state-specific emissions) **1 - Requires (YF5) California state emissions requirements or (NE1) New York, Vermont, Massachusetts or Maine state emissions requirements.**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]
LH6		**Engine**, Vortec 5.3L V8 SFI with Active Fuel Management (302 hp [225 kW] @ 5200 rpm, 330 lb-ft of torque [447Nm] @ 4000 rpm) **1 - Requires (N79) 17" (43.2 cm) full-size spare wheel.**	A[1]	A[1]	A[1]	A[1]	--	--
K05		**Engine block heater** **1 - 4x4 only. Available on 2WD models for Fleet and Government orders only.**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]
GT4		**Rear axle**, 3.73 ratio	A	A	A	A	--	--
GT5		**Rear axle**, 4.10 ratio **1 - Not available with (LH6) Vortec 5.3L V8 SFI engine.**	A[1]	A[1]	A[1]	A[1]	■	■
ZM5		**Skid Plate Package**, includes shielding for radiator, front differential and oil-pan, transfer case and fuel tank **1 - 4x4 only.**	A[1]	A[1]	A[1]	A[1]	--	--
UY7		**Trailering wire harness**, connector in bumper	A	■	■	■	--	--

S = Standard Equipment A = Available -- (dashes) = Not Available D = ADI Available
■ = Included in Equipment Group □ = Included in Equipment Group but upgradeable

No deletions allowed to Equipment Groups. Additional options may be added; check ordering information section for compatibility.

*Indicates availability of feature on multiple models. For example, it indicates feature availability on 2WD and 4WD Models or Rear wheel drive and All-wheel drive Models.

Codes listed in the shaded column titled Ref. Only RPO Code are for internal use only and should not be ordered.

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
	C4D	**GVWR**, 5550 lbs. (2517 kg)	■	■	■	■		
	C5N	**GVWR**, 5750 lbs. (2608 kg)	■	■	■	■		
	NP8	**Transfer case**, electronic Autotrac	■	■	■	■		
QTM		NEW! **Tires**, P245/65R17 all-season, blackwall **1 - Upgradeable to (QTE) P245/6R17 on-/off-road blackwall tires or (QTR) P245/65R17 on-/off-road White outlined-letter tires.**	□[1]	□[1]				
	N75	**Wheels**, 4 - 17" x 7" (43.2 cm x 17.8 cm) Sport aluminum **1 - Upgradeable to (N74) 4 - 17" x 7" (43.2 cm x 17.8 cm) bright aluminum wheels but only with a Fleet or Government order.**	□[1]	□[1]				
C49		**Defogger**, rear-window		■	■	■	■	■
B32/B33		**Floor mats**, color-keyed carpeted front and rear		■	■	■	■	■
AJ1		**Glass**, Solar-Ray deep-tinted		■	■	■	■	■
AU0		**Remote Keyless Entry**		■	■	■	■	■
	UA6	**Theft-deterrent alarm system**		■	■	■	■	■
V1K		**Luggage rack**, roof-mounted, Black		■	■	■		
	B86	**Moldings**, body-color bodyside		■	■	■		
UY7		**Trailering wire harness**, connector		■	■	■		
	DP2	**Mirrors**, outside power-adjustable, Black **1 - Upgradeable to (DK2) outside heated, power-adjustable mirrors.**		■	□[1]			
		Door handles, body-color			■	■	■	■
T96		**Fog lamps**, front			■	■	■	■
PDC		**Seat adjuster**, driver 8-way power			■	■	■	■
	CJ2	**Air conditioning**, dual-zone automatic climate control			■	■		■
		Air conditioning, rear			■	■		■
	UK6	**Audio system controls**, rear			■	■		■
B42		**Cargo mat**, rear			■	■		■
	DK7	**Console**, overhead custom			■	■		■
	U68	**Driver Information Center**			■	■		■

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
	DD7	**Mirror**, inside rearview auto-dimming with 8-point compass display			■	■		■
	STW	**Steering wheel**, leather-wrapped			■	■		■
	UG1	**Universal Home Remote**			■	■		■
	DH2	**Visors**, driver and front passenger illuminated vanity mirrors			■	■		■
		Bumper, front			■	■		
		Grille, body-color			■	■		
QTR		**Tires**, P245/65R17 on-/off-road, White outlined-letter **1 - Upgradeable to (QZD) P245/60R18 all-season blackwall tires. Requires (PD8) 4 - 18" x 8" (45.7 cm x 20.3 cm) aluminum wheels.**			□[1]	□[1]		
N74		**Wheels**, 4 - 17" x 7" (43.2 cm x 17.8 cm) bright aluminum **1 - Upgradeable to (PD8) 4 - 18" x 8" (45.7 cm x 20.3 cm) polished aluminum wheels. Requires (QZD) P245/60R18 all-season, blackwall tires.**			□[1]	□[1]		
	**H	**Seats**, front bucket with Premium Cloth			■			
	YC6	**LT Convenience Package**				■		■
	DS3	**Mirrors**, outside heated power-adjustable				■		■
V40		**Seat adjuster**, 8-way power front passenger				■		■
	KA1	**Seats**, heated driver and front passenger				■		■
	**2	**Seats**, front bucket with leather-appointed seating				■		
		Bumpers, front and rear body-color					■	■
	EB1	**GVWR**, 6001 lbs. (2722 kg)					■	■
GT5		**Rear axle**, 4.10 ratio					■	■
	NR9	**Transfer case**, AWD Torsen single-speed					■	■
	DF5	**Mirror**, inside rearview auto-dimming					■	
DK2		**Mirrors**, outside heated power-adjustable					■	
	**H	**Seats**, front					■	
	NP5	**Steering wheel**, leather-wrapped					■	
JF4		**Pedals**, power-adjustable						■
	**2	**Seats**, front						■

S = Standard Equipment A = Available -- (dashes) = Not Available D = ADI Available
■ = Included in Equipment Group □ = Included in Equipment Group but upgradeable

*Indicates availability of feature on multiple models. For example, it indicates feature availability on 2WD and 4WD Models or Rear wheel drive and All-wheel drive Models.

Codes listed in the shaded column titled Ref. Only RPO Code are for internal use only and should not be ordered.

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
		Air bags, frontal, driver and front passenger with Passenger Sensing System **1 - Always use safety belts and the correct child restraints for your child's age and size. Even in vehicles equipped with air bags and the Passenger Sensing System, children are safer when properly secured in a rear seat. Never place a rear-facing infant restraint in the front seat of any vehicle equipped with an active frontal air bag. See the vehicle's Owner's Manual and child safety seat instructions for more safety information.**	S[1]	S[1]	S[1]	S[1]	S[1]	S[1]
ASF		**Air bags**, head curtain side-impact, front and rear outboard seating positions **1 - Head curtain side air bags are designed to help reduce the risk of head and neck injuries to front and rear seat occupants on the near side of certain side-impact collisions. Always use safety belts and the correct child restraints for your child's age and size, even in vehicles equipped with air bags. Children are safer when properly secured in a rear seat. See the vehicle's Owner's Manual and child safety seat instructions for more safety information.**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]
	CJ3	**Air conditioning**, dual-zone manual climate control with individual climate settings for driver and right-front passenger	S	S	--	--	S	--
	CJ2	**Air conditioning**, dual-zone automatic climate control with individual climate settings for driver and right-front passenger	--	--	■	■	--	■
		Air conditioning, rear with heater	--	--	■	■	--	■
		Armrests, driver and passenger doors, padded	S	S	S	S	S	S
		Assist handles, front passenger and rear outboard	S	S	S	S	S	S
	UB0	**Audio system**, AM/FM stereo with CD player, seek-and-scan, digital clock, auto-tone control, speed-compensated volume and TheftLock **1 - May be substituted with (US8) AM/FM stereo with CD player and MP3 playback.** **2 - May be substituted with (US8) AM/FM stereo with CD player and MP3 playback or (UC6) AM/FM stereo with 6-disc in-dash CD changer. Not available with (PCR) Sun, Sound and Entertainment Package.** **3 - May be substituted with (UC6) AM/FM stereo with 6-disc in-dash CD changer or (UM8) AM/FM stereo with CD player and touch-screen navigation. Not available with (PCR) Sun, Sound and Entertainment Package.**	S[1]	S[2]	S[3]	S[3]	S[2]	S[3]

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
US8		**Audio system**, AM/FM stereo with CD player and MP3 playback, seek-and-scan, digital clock, auto-tone control, Radio Data System (RDS), automatic volume, TheftLock and premium front and rear coaxial speakers **1 - Not available with (PCR) Sun, Sound and Entertainment Package.**	A	A[1]	--	--	A	--
UC6		**Audio system**, AM/FM stereo with 6-disc CD changer, seek-and-scan, digital clock, auto-tone control, Radio Data System (RDS), speed-compensated volume, TheftLock and 6 speakers	--	A	A	A	A	A
UM8		**Audio system with navigation**, AM/FM stereo with CD player and DVD-integrated touch-screen navigation, seek-and-scan, auto-tone control, Radio Data System (RDS), full-feature autonomous touch-screen navigation, 1 DVD disc and Points of Interest **1 - Requires (UQA) Bose premium speaker system. Not available in AK, PR or VI.**	--	--	A[1]	A[1]	--	A[1]
	UK6	**Audio system controls**, rear with headphone jacks (headphones not included)	--	--	■	■	--	■
UQA		**Audio system feature**, Bose premium speaker system	--	A	A	A	A	A
U2K		**XM Satellite Radio**. With a wide variety of programming, XM has something to excite any driver. Whether you want to be entertained or informed, to laugh, think, or sing, XM has the perfect channel for you - coast-to-coast, and in digital-quality sound. 3 trial months - no obligation **1 - Available in the 48 contiguous United States. Required $12.95 monthly subscription sold separately. All fees and programming subject to change. Subscription subject to customer agreement. For more information, visit gm.xmradio.com**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]
RAE		**Regular production accessory**, Cargo area management system, rear compartment cargo area organizer, non-skid rubberized surface, molded in leak-proof liquid container holder/compartments with collapsible partitions that fold down when not in use to provide flat load floor and re-configurable dividers. Color-keyed to interior trim selection (Special Equipment Package- dealer-installed - no tools needed, easily removable) **1 - For additional GM Accessory Offerings and Installation, please contact your local GM Accessory Distributor Installer (ADI).**	--	A/D[1]	A/D[1]	A/D[1]	A/D[1]	A/D[1]
AP9		**Cargo net**, in rear compartment area	--	A	A	A	A	A
B42		**Cargo mat**, rear	--	A	■	■	--	■
		Cargo tie downs, 5 in-floor, located in the rear compartment	S	S	S	S	S	S

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
RYJ		**Cargo shade**, rear retractable, color-keyed and removable	--	A	A	A	A	A
		Console, floor with CD storage	S	S	S	S	S	S
	DK7	**Console**, overhead custom 1 - Included and only available with (CF5) power sunroof.	--	A[1]	■	■	A[1]	■
		Convenience Package, power windows and door locks, programmable with lighted switches, driver and front passenger Express-Down windows, power rear glass release and rear-window wiper/washer	S	S	S	S	S	S
	K34	**Cruise control**, electronic with set and resume speed	S	S	S	S	S	S
		Cup holders, front and rear	S	S	S	S	S	S
C49		**Defogger**, rear-window electric 1 - Must specify (C49) rear-window defogger or (R9W) rear-window defogger delete.	A[1]	■	■	■	■	■
R9W		**Defogger**, rear-window, delete 1 - Must specify (C49) rear-window defogger or (R9W) rear-window defogger delete.	A[1]	--	--	--	--	--
		Door locks, rear child security	S	S	S	S	S	S
		Door trim, integral padded armrests and driver- and front passenger-side map pockets	S	S	S	S	S	S
	U68	**Driver Information Center**, monitors different systems, includes trip computer, fluid levels and door ajar	--	--	■	■	--	■
U42		**Entertainment system**, rear seat DVD player with screen and headphones/controls	--	A	A	A	A	A
	B30	**Floor covering**, full-floor color-keyed carpeting	S	S	S	S	S	S
B32/B33		**Floor mats**, color-keyed carpeted front and rear, removable 1 - Fleet orders only.	A[1]	■	■	■	■	■
B3N		**Floor mat delete**, first and second rows 1 - Available for Fleet or Government order types only.	--	A[1]	A[1]	A[1]	--	--
		Glovebox, passenger-side of instrument panel	S	S	S	S	S	S
		Headliner, Neutral-colored cloth with matching retainer moldings	S	S	S	S	S	S
		Heater and defogger with front and side front door window defoggers and rear passenger heating ducts	S	S	S	S	S	S
		Instrumentation, analog with speedometer, odometer with trip odometer, fuel level, voltmeter, engine temperature, oil pressure, tachometer, liftgate ajar, warning light for safety belt, ABS/parking brake, directional hazard signals and high beam	S	S	S	S	S	S
		Key, single, 2-sided	S	S	S	S	S	S

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
		Lighting, interior with theater dimming, cargo compartment, reading lights for front seats, second row dome light, door- and tailgate-activated switches and illuminated entry and exit feature	S	S	S	S	S	S
	YC6	**LT Convenience Package**, includes (AAB) driver seat memory function, (KA1) heated driver and front passenger seats and (DS3) outside heated power-adjustable mirrors with memory and turn signal indicators	--	--	--	■	--	■
		LATCH system (Lower Anchors and Top tethers for CHildren), for child safety seats	S	S	S	S	S	S
		Mirror, inside rearview manual day/night	S	S	--	--	--	--
	DF5	**Mirror**, inside rearview auto-dimming with 8-point compass and outside temperature display	--	--	--	--	■	--
	DD7	**Mirror**, inside rearview auto-dimming with 8-point compass display	--	--	■	■	--	■
	UE1	**OnStar**, 1-year of Safe and Sound plan. Includes Automatic Notification of Air Bag Deployment, Stolen Vehicle Location Assistance, Emergency Services, Roadside Assistance, Remote Door Unlock, OnStar Vehicle Diagnostics, Hands-Free Calling, AccidentAssist and Remote Horn & Lights **1 - OnStar services require vehicle electrical system (including battery), wireless service and GPS satellite signals to be available and operating for features to function properly. OnStar acts as a link to existing emergency service providers. OnStar Vehicle Diagnostics available on most 2004 MY and newer GM vehicles. Diagnostic capability varies by model. Visit onstar.com for system limitations and details. Not available with certain FDR order types. Not available with a ship-to of Puerto Rico or the Virgin Islands.**	S[1]	S[1]	S[1]	S[1]	S[1]	S[1]
R7M		**OnStar**, delete **1 - Fleet orders only. If order type is FDR, (R7M) will be forced on.**	A[1]	A[1]	A[1]	A[1]	--	--
JF4		**Pedals**, power-adjustable for accelerator and brake	--	--	A	A	--	■
		Power outlets, auxiliary	S	S	S	S	S	S
		Quiet Package with acoustic laminate in windows and strategically placed elements of sound insulation **1 - Includes acoustic laminated front side glass.**	S	S	S	S	S[1]	S[1]
AU0		**Remote Keyless Entry**, programmable with 2 transmitters and panic button **1 - Fleet orders only.**	A[1]	■	■	■	■	■
	**H	**Seats**, front bucket with Premium Cloth , driver lumbar control, adjustable outboard head restraints and manual recline	S	S	--	--	--	--

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
	**H	**Seats**, front bucket with Premium Cloth , driver lumbar control, adjustable outboard head restraints and 8-way power driver seat adjuster with power recliner 1 - Included and only available with (PDC) 8-way power driver seat adjuster.	--	A[1]	■	--	--	--
	**H	**Seats**, front bucket with Premium Cloth, "SS" embroidered, driver lumbar control, adjustable outboard head restraints and 8-way power driver seat adjuster with power recliner	--	--	--	--	■	--
	**2	**Seats**, front bucket with leather-appointed seating, driver and front passenger power lumbar control, adjustable outboard head restraints, 8-way power driver and front passenger seat adjusters with power recliners	--	--	--	■	--	--
**2		**Seats**, front bucket with leather-appointed seating, driver power lumbar control, front passenger manual lumbar control, adjustable outboard head restraints and 8-way power driver seat adjuster with power recliner 1 - Required and only available with (V40) 8-way power front passenger seat adjuster with power lumbar control.	--	--	A[1]	--	--	--
	**2	**Seats**, front bucket with leather-appointed seating, "SS" embroidered, driver and front passenger power lumbar control, adjustable outboard head restraints, 8-way power driver and front passenger seat adjuster with power recliners	--	--	--	--	--	■
	AM9	**Seats**, second row split-folding	S	S	S	S	S	S
	KA1	**Seats**, heated driver and front passenger	--	--	--	■	--	■
PDC		**Seat adjuster**, driver 8-way power	--	A	■	■	■	■
V40		**Seat adjuster**, 8-way power front passenger with power lumbar control 1 - Required and only available with (**2) front bucket seats with leather-appointed seating.	--	--	A[1]	■	--	■
DT4		**Smoker's Package**, includes ashtray and lighter	A	A	A	A	A	A
		Steering column, Tilt-Wheel, adjustable with brake/transmission shift interlock	S	S	S	S	S	S
		Steering wheel, vinyl	S	S	--	--	--	--
	NP5	**Steering wheel**, leather-wrapped 1 - Perforated leather.	--	--	--	--	■[1]	--
	STW	**Steering wheel**, leather-wrapped with mounted audio and Driver Information Center controls, includes theft-deterrent locking feature 1 - Perforated leather.	--	--	■	■	--	■[1]

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
CF5		**Sunroof**, power, tilt-sliding with express-open and wind deflector **1 - Includes (DK7) overhead custom console.**	--	A[1]	A	A	A[1]	A
PCR		**Sun, Sound and Entertainment Package**, includes (CF5) power sunroof, (UQA) Bose premium speaker system, (U2K) XM Satellite Radio and (UC6) AM/FM stereo with 6-disc in-dash CD changer. OPTION PACKAGE SAVINGS WHEN ORDERED. **1 - (U42) Rear seat entertainment system may be ordered in addition to, or instead of (CF5) power sunroof. Must specify (CF5) power sunroof or (U42) Rear seat entertainment system or both when ordering.** **2 - (U42) Rear seat entertainment system may be ordered in addition to, or instead of (CF5) power sunroof. (UC6) AM/FM stereo with 6-disc in-dash CD changer may be substituted with (UM8) AM/FM stereo with CD player and touch-screen navigation. Must specify (CF5) power sunroof or (U42) Rear seat entertainment system or both.**	--	A[1]	A[2]	A[2]	A[1]	A[2]
R6Q		**Sun, Sound and Entertainment Package (PCR) discount not desired** **1 - Required when content within option package is ordered and entire package is not desired.**	--	A[1]	A[1]	A[1]	A[1]	A[1]
		Theft-deterrent system, PASSlock	S	S	S	S	S	S
	UA6	**Theft-deterrent alarm system**, content theft alarm, includes beeping horn and flashing lights **1 - Included and only available with (AU0) Remote Keyless Entry and only available with Fleet orders.**	A[1]	■	■	■	■	■
		Tools, mechanical jack and wheel wrench	S	S	S	S	S	S
	UG1	**Universal Home Remote**, includes garage door opener, 3-channel programmable	--	--	■	■	--	■
		Visors, driver and front passenger vanity mirrors, padded with cloth trim, color-keyed	S	S	--	--	S	--
	DH2	**Visors**, driver and front passenger illuminated vanity mirrors, padded with cloth trim, color-keyed	--	--	■	■	--	■
		Warning tones, headlamp on, key-in-ignition, driver safety belt unfasten and turn signal on	S	S	S	S	S	S

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*Indicates availability of feature on multiple models. For example, it indicates feature availability on 2WD and 4WD Models or Rear wheel drive and All-wheel drive Models.

Codes listed in the shaded column titled Ref. Only RPO Code are for internal use only and should not be ordered.

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
BVE		**Assist steps**, Black	A	A	A	A	--	--
	TB4	**Body**, liftgate with liftglass	S	S	S	S	S	S
		Bumpers, front and rear body-color, rear step includes pad	S	S	--	--	--	--
		Bumper, front and rear body-color, rear step includes pad	--	--	■	■	--	--
		Bumpers, front and rear body-color	--	--	--	--	■	■
	T61	**Daytime Running Lamps**	S	S	S	S	S	S
		Door handles, Black	S	S	--	--	--	--
		Door handles, body-color	--	--	■	■	■	■
T96		**Fog lamps**, front, halogen **1 - Available as an SEO and requires a Fleet order.** **2 - Projector lamps.**	A[1]	A[1]	■	■	■[2]	■[2]
VK3		**License plate bracket**, front (will be forced on orders with ship-to states that require a front license plate)	A	A	A	A	A	A
		Glass, Solar-Ray light-tinted	S	S	S	S	S	S
AJ1		**Glass**, Solar-Ray deep-tinted (all windows except light-tinted glass on windshield and driver- and front passenger-side glass) **1 - Requires Fleet or Government orders only.**	A[1]	■	■	■	■	■
		Grille, chrome bar	S	S	--	--	--	--
		Grille, body-color	--	--	■	■	S	S
		Headlamps, dual composite halogen with automatic exterior lamp control	S	S	S	S	S	S
		Horn, dual-note high and low	S	S	S	S	S	S
		Side rails, roof-mounted, Black	S	S	S	S	--	--
V1K		**Luggage rack**, roof-mounted, Black, adjustable with center and side rails	A	■	■	■	--	--
	DR1	**Mirrors**, outside manual, Black, manual-folding	S	--	--	--	--	--
	DP2	**Mirrors**, outside power-adjustable, Black **1 - Upgradeable to (DK2) outside heated, power-adjustable mirrors.**	--	■	□[1]	--	--	--
DK2		**Mirrors**, outside heated power-adjustable, manual-folding	--	--	A	--	■	--

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
	DS3	**Mirrors**, outside heated power-adjustable, manual-folding with integrated turn signal indicators	--	--	--	■	--	■
	B86	**Moldings**, body-color bodyside	--	■	■	■	--	--
	ZY1	**Paint**, solid	S	S	S	S	S	S
ZY7		**Paint**, two-tone, accent body-color includes colored fascia, wheel well surround and lower rocker **1 - Requires (YC6) LT Convenience Package.**	--	--	--	A[1]	--	--
V76		**Recovery hooks**, 2 front, frame-mounted **1 - 4x4 only.**	A[1]	A[1]	A[1]	A[1]	--	--
VHS		**Regular production accessory**, Trailer hitch receiver cover **1 - For additional GM Accessory Offerings and Installation, please contact your local GM Accessory Distributor Installer (ADI).**	A/D[1]	A/D[1]	A/D[1]	A/D[1]	--	--
QTM		NEW! **Tires**, P245/65R17 all-season, blackwall **1 - Upgradeable to (QTE) P245/6R17 on-/off-road blackwall tires or (QTR) P245/65R17 on-/off-road White outlined-letter tires.** **2 - Requires Fleet or Government orders only.**	□[1]	□[1]	A[2]	--	--	--
QTE		**Tires**, P245/65R17 on-/off-road, blackwall **1 - Requires Fleet or Government orders only.**	A	A	--	A[1]	--	--
QTR		**Tires**, P245/65R17 on-/off-road, White outlined-letter **1 - Upgradeable to (QZD) P245/60R18 all-season blackwall tires. Requires (PD8) 4 - 18" x 8" (45.7 cm x 20.3 cm) aluminum wheels.**	A	A	□[1]	□[1]	--	--
	QUB	NEW! **Tires**, P255/50R20 V-rated, all-season, blackwall	--	--	--	--	S	S
	QZD	NEW! **Tires**, P245/60R18 all-season, blackwall **1 - Included and only available with (PD8) 4 - 18" x 8" (45.7 cm x 20.3 cm) aluminum wheels.**	--	--	A[1]	A[1]	--	--
	ZNF	**Tire**, spare P235/75R16, all-season, blackwall **1 - Included and only available with (LL8) Vortec 4.2L I6 SFI engine and (QTM) P245/65R17 all-season blackwall tires, (QTE) P245/65R17 on-/off-road blackwall tires or (QTR) P245/65R17 on-/off-road White outlined-letter tires.**	S[1]	S[1]	S[1]	S[1]	--	--
	ZTM	**Tire**, spare P245/65R17 blackwall **1 - Required and only available with (N79) 17" (43.2 cm) full-size spare wheel.**	A[1]	A[1]	A[1]	A[1]	S	S
	UJ6	NEW! **Tire Pressure Monitoring System**	S	S	S	S	S	S
	N75	**Wheels**, 4 - 17" x 7" (43.2 cm x 17.8 cm) Sport aluminum, includes center caps and steel spare **1 - Upgradeable to (N74) 4 - 17" x 7" (43.2 cm x 17.8 cm) bright aluminum wheels but only with a Fleet or Government order.**	□[1]	□[1]	--	--	--	--

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
N74		**Wheels**, 4 - 17" x 7" (43.2 cm x 17.8 cm) bright aluminum, includes center caps and steel spare **1 - Requires Fleet or Government orders only.** **2 - Upgradeable to (PD8) 4 - 18" x 8" (45.7 cm x 20.3 cm) polished aluminum wheels. Requires (QZD) P245/60R18 all-season, blackwall tires.**	A[1]	A[1]	□[2]	□[2]	--	--
PD8		NEW! **Wheels**, 4 - 18" x 8" (45.7 cm x 20.3 cm) polished aluminum, 5-spoke **1 - Inlcudes (QZD) P245/65R18 all-season blackwall tires.**	--	--	A[1]	A[1]	--	--
	P55	**Wheels**, 4 - 20" x 8" (50.8 cm x 20.3 cm) 6-spoke polished aluminum, includes center cap and steel spare	--	--	--	--	S	S
N79		**Wheel**, 17" (43.2 cm) full-size spare **1 - Required with (LH6) Vortec 5.3L V8 SFI engine.** **2 - Required with (LH6) Vortec 5.3L V8 SFI engine. Included when (PD8) 4 - 18" x 8" (45.7 cm x 20.3 cm) aluminum wheels are ordered.**	A[1]	A[1]	A[2]	A[2]	S	S
	NZ3	**Wheel**, 16" (40.6 cm) full-size spare **1 - Included and only available with (LL8) Vortec 4.2L I6 SFI engine and (N74) 4 - 17" x 7" (43.2 cm x 17.8 cm) bright aluminum wheels or (N75) 4 - 17" x 7" (43.2 cm x 17.8 cm) Sport aluminum wheels.**	S[1]	S[1]	S[1]	S[1]	--	--
		Wipers, front intermittent with pulse washers	S	S	S	S	S	S
		Wipers, rear intermittent with washer	S	S	S	S	S	S

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Codes listed in the shaded column titled Ref. Only RPO Code are for internal use only and should not be ordered.

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
	KG4	**Alternator**, 150 amps **1 - Standard with (LL8) Vortec 4.2L I6 SFI engine only.**	S[1]	S[1]	S[1]	S[1]	--	--
	KG3	**Alternator**, 145 amps **1 - Included and only available with (LH6) Vortec 5.3L V8 SFI engine.** **2 - Included and only available with (LS2) 6.0L V8 SFI engine.**	A[1]	A[1]	A[1]	A[1]	A[2]	A[2]
		Battery, heavy-duty, maintenance-free with rundown protection and retained accessory power	S	S	S	S	S	S
	JF8	**Brakes**, 4-wheel antilock, 4-wheel disc	S	S	S	S	S	S
G80		**Differential**, heavy-duty locking rear	A	A	A	A	--	--
	G86	**Differential**, limited slip	--	--	--	--	S	S
NE1		**Emissions**, Maine, Massachusetts, New York or Vermont state requirements	A	A	A	A	A	A
FE9		**Emissions**, Federal requirements	A	A	A	A	A	A
YF5		**Emissions**, California state requirements	A	A	A	A	A	A
NB8		**Emissions override**, California, Massachusetts or New York (for vehicles ordered by dealers in states of California, Massachusetts or New York with Federal emissions) **1 - Requires (FE9) Federal emissions requirements.**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]
NC7		**Emissions override**, Federal (for vehicles ordered by dealers in Federal emission states with California, New York, Vermont, Massachusetts or Maine emissions; may also be used by dealers in states of California, New York, Vermont, Massachusetts or Maine to order different state-specific emissions) **1 - Requires (YF5) California state emissions requirements or (NE1) New York, Vermont, Massachusetts or Maine state emissions requirements.**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]
	LL8	**Engine**, Vortec 4.2L I6 SFI with transmission oil cooler (291 hp [217 kW] @ 6000 rpm, 277 lb-ft of torque [375 Nm] @ 4800 rpm)	S	S	S	S	--	--
LH6		**Engine**, Vortec 5.3L V8 SFI with Active Fuel Management (302 hp [225 kW] @ 5200 rpm, 330 lb-ft of torque [447Nm] @ 4000 rpm) **1 - Requires (N79) 17" (43.2 cm) full-size spare wheel.**	A[1]	A[1]	A[1]	A[1]	--	--

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
	LS2	**Engine**, 6.0L V8 SFI (395 hp [295 KW] @ 5400 rpm, 400 lb-ft of torque [542 Nm] @ 4400 rpm)	--	--	--	--	S	S
K05		**Engine block heater** 1 - 4x4 only. Available on 2WD models for Fleet and Government orders only.	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]
		Exhaust, aluminized stainless-steel muffler and tailpipe	S	S	S	S	S	S
	C4D	**GVWR**, 5550 lbs. (2517 kg) 1 - CS15506 models only.	■[1]	■[1]	■[1]	■[1]	--	--
	C5N	**GVWR**, 5750 lbs. (2608 kg) 1 - CT15506 models only.	■[1]	■[1]	■[1]	■[1]	--	--
	EB1	**GVWR**, 6001 lbs. (2722 kg) 1 - Included and only available with (LH6) Vortec 5.3L V8 SFI engine.	A[1]	A[1]	A[1]	A[1]	■	■
	GU6	**Rear axle**, 3.42 ratio	S	S	S	S	--	--
GT4		**Rear axle**, 3.73 ratio	A	A	A	A	--	--
GT5		**Rear axle**, 4.10 ratio 1 - Not available with (LH6) Vortec 5.3L V8 SFI engine.	A[1]	A[1]	A[1]	A[1]	■	■
ZM5		**Skid Plate Package**, includes shielding for radiator, front differential and oil-pan, transfer case and fuel tank 1 - 4x4 only.	A[1]	A[1]	A[1]	A[1]	--	--
		Stabilizer bars, front and rear	S	S	S	S	S	S
		StabiliTrak, Stability Control System	S	S	S	S	S	S
	N40	**Steering**, power	S	S	S	S	S	S
		Suspension, front independent	S	S	S	S	S	S
		Suspension, rear 5-link coil springs	S	S	S	S	S	S
	ZW7	**Suspension Package**, Premium Smooth Ride	S	S	S	S	--	--
	ZQ8	**Suspension Package**, Sport, Road Course Tuned	--	--	--	--	S	S
		Trailering equipment, heavy-duty, includes trailering hitch platform, 7-wire harness, CHMSL wire and heavy-duty flasher 1 - 4-wire and 7-wire adaptors shipped loose in glove box.	S	S	S	S	S[1]	S[1]
UY7		**Trailering wire harness**, connector in bumper	A	■	■	■	--	--
	NP8	**Transfer case**, electronic Autotrac, includes auto 4WD and panel-mounted electronic controls 1 - CT15506 models only.	■[1]	■[1]	■[1]	■[1]	--	--
	NR9	**Transfer case**, AWD Torsen single-speed with torque-based differential 1 - Included and only available with AWD models.	--	--	--	--	■[1]	■[1]
	M30	**Transmission**, 4-speed automatic, electronically controlled with overdrive	S	S	S	S	--	--
	M70	**Transmission**, 4-speed automatic, super-duty	--	--	--	--	S	S

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		Transmissions		Axles			GVWR lbs. (kg)		
Model	Engine	M30 4-Speed Automatic	M70 4-speed automatic	GU6 3.42	GT4 3.73	GT5 4.10	C4D 5500 (2495)	C5N 5750 (2608)	EB1 6001 (2722)
CS15506	LL8 Vortec 4.2L SFI I6	S	--	S	A	A	S	--	--
	LH6 Vortec 5.3L V8 SFI	S	--	S	A	--	--	--	S
	LS2 6.0L V8 SFI	--	S[1]	--	--	S[1]	--	--	S[1]
CT15506	LL8 Vortec 4.2L SFI I6	S	--	S	A	A	--	S	--
	LH6 Vortec 5.3L V8 SFI	S	--	S	A	--	--	--	S
	LS2 6.0L V8 SFI	--	S[1]	--	--	S[1]	--	--	S[1]

1 - Standard with TrailBlazer SS model only.

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Decor Level	Seat Type	Seat Code	Seat Trim	Interior		
				Ebony	Light Cashmere/Ebony	Light Gray
TrailBlazer LS	Premium Cloth, reclining buckets	A50	Cloth	--	27H	28H
TrailBlazer LS	Premium Cloth, power reclining buckets	AR9	Cloth	--	27H	28H
TrailBlazer SS	Premium Cloth, power reclining buckets	AR9	Cloth	48H	--	--
TrailBlazer LT	Premium Cloth, power reclining buckets	AR9	Cloth	48H	27H	28H
TrailBlazer LT	Leather appointed, power reclining buckets	AR9	Premium Leather-Appointed Seats	482	272	282
TrailBlazer SS	Leather appointed, power reclining buckets	AR9	Premium Leather-Appointed Seats	482	--	--

Exterior Solid Paint	Color Code	Touch Up Paint Number	Interior		
			Ebony	Light Cashmere/Ebony[1]	Light Gray
Sandstone Metallic	15U	WA-929L	A	A	--
Graystone Metallic	16U	WA-213M	A	--	A
NEW! Moondust Metallic	32U	WA-407P	A	--	A
NEW! Imperial Blue Metallic[2]	37U	WA-403P	A	--	A
Black[2]	41U	WA-8555	A	A	A
Bordeaux Red Metallic	49U	WA-204M	A	A	A
Summit White[2]	50U	WA-8624	A	--	A
NEW! Graphite Metallic	54U	WA-323N	A	--	A
Silverstone Metallic[2]	67U	WA-994L	A	--	A
Red Jewel Tintcoat[3]	80U	WA-301N	A	A	A

1 - Light Cashmere seats with Ebony instrument panel, door trim and accents.
2 - Only colors available with TrailBlazer SS.
3 - Extra charge. Available with TrailBlazer SS. Available August 2006.

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*Indicates availability of feature on multiple models. For example, it indicates feature availability on 2WD and 4WD Models or Rear wheel drive and All-wheel drive Models.

Decor Level	Seat Type	Seat Code	Seat Trim	Interior	
				Light Cashmere/Ebony	Light Gray
TrailBlazer LT Package 2 (YC6)	Leather appointed, power reclining buckets	AR9	Premium Leather-Appointed Seats	272	282

Exterior Two Tone Paint	Upper Color Code	Touch Up Paint Number	Lower Color Code	Touch Up Paint Number	Interior	
					Light Cashmere/Ebony[1]	Light Gray
NEW! Imperial Blue Metallic / Silverstone Metallic	37U	WA-403P	67L	WA-994L	--	A
Black / Sandstone Metallic	41U	WA-8555	15L	WA-929L	A	--
Black / Silverstone Metallic	41U	WA-8555	67L	WA-994L	--	A
Bordeaux Red Metallic / Sandstone Metallic	49U	WA-204M	15L	WA-929L	A	--
Bordeaux Red Metallic / Silverstone Metallic	49U	WA-204M	67L	WA-994L	--	A
Summit White / Silverstone Metallic	50U	WA-8624	67L	WA-994L	--	A
NEW! Graphite Metallic / Silverstone Metallic	54U	WA-323N	67L	WA-994L	--	A
Red Jewel Tintcoat / Sandstone Metallic[2]	80U	WA-301N	15L	WA-929L	A	--
Red Jewel Tintcoat / Silverstone Metallic[2]	80U	WA-301N	67L	WA-994L	--	A

1 - Light Cashmere seats with Ebony instrument panel, door trim and accents.
2 - Extra charge. Available August 2006.

S = Standard Equipment A = Available -- (dashes) = Not Available
■ = Included in Equipment Group □ = Included in Equipment Group but upgradeable

*Indicates availability of feature on multiple models. For example, it indicates feature availability on 2WD and 4WD Models or Rear wheel drive and All-wheel drive Models.

Decor Level	Seat Type	Seat Code	Seat Trim	Interior	
				Light Cashmere/Ebony	Light Gray
TrailBlazer LS	Premium Cloth, reclining buckets	A50	Cloth	27H	28H
TrailBlazer LS	Premium Cloth, reclining buckets	AR9	Cloth	27H	28H

Exterior Solid Paint	Color Code	Touch Up Paint Number	Interior	
			Light Cashmere/Ebony[1]	Light Gray
Woodland Green	9V5	WA-9015	A	A
Doeskin Tan	9V9	WA-9403	A	A
Yellow	none	WA-9418	A	A
Indigo Blue	none	WA-9792	A	A

All non-sheet metal parts, i.e., fascia, bumpers, mirrors, door handles and moldings will be gloss Black.

1 - Light Cashmere seats with Ebony instrument panel, door trim and accents.

S = Standard Equipment A = Available -- (dashes) = Not Available D = ADI Available
■ = Included in Equipment Group □ = Included in Equipment Group but upgradeable

*Indicates availability of feature on multiple models. For example, it indicates feature availability on 2WD and 4WD Models or Rear wheel drive and All-wheel drive Models.

Codes listed in the shaded column titled Ref. Only RPO Code are for internal use only and should not be ordered.

Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
		Exterior						
T96		**Fog lamps, front (MSRP = $125.00)** Provides front fog lamps on base level decor **1 - Requires Fleet order.**	A[1]	A[1]	--	--	--	--
8X1		**Label, fasten safety belts (MSRP = $2.00)** "Fasten Safety Belts" reminder label on the front door glass.	A	A	--	--	--	--
9V9		**Paints, solid (MSRP = No Charge),** Doeskin Tan **1 - Includes Black front and rear fascia in lieu of color-keyed. Requires SEO (TGK) Solid paint, one color.**	A[1]	A[1]	--	--	--	--
9V5		**Paints, solid (MSRP = No Charge)** Woodland Green **1 - Includes Black front and rear fascia in lieu of color-keyed. Requires SEO (TGK) Solid paint, one color.**	A[1]	A[1]	--	--	--	--
TGK		**Solid Paint** SEO solid paint, one color **1 - Required with any SEO paint selection. May require an extended lead time.**	A[1]	A[1]	--	--	--	--
5TE		**Tires, P245/65R17 On/Off Road Tire (MSRP = $96.00)** **1 - Requires SEO (PFE) aluminum wheels and a Fleet or Government sales order.**	A[1]	A[1]	--	--	--	--
PFE		**Wheels, 17" x 7" (43.2 cm x 17.8 cm), aluminum wheels (MSRP = No Charge)** For use with on/off road tires on as a base decor level. **1 - Requires SEO (5TE) P245/65R17 on-/off-road tire and a Fleet or Government sales order.**	A[1]	A[1]	--	--	--	--

S = Standard Equipment A = Available -- (dashes) = Not Available D = ADI Available
■ = Included in Equipment Group □ = Included in Equipment Group but upgradeable

*Indicates availability of feature on multiple models. For example, it indicates feature availability on 2WD and 4WD Models or Rear wheel drive and All-wheel drive Models.

Codes listed in the shaded column titled Ref. Only RPO Code are for internal use only and should not be ordered.

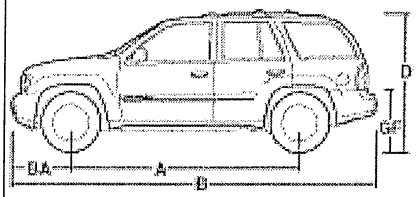
Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
R8G		**OnStar 1 Additional Year of Safe and Sound Service (MSRP= $199).** Provides 1 year of Safe and Sound service following the first year of OnStar service included in the price of the vehicle. Fleet may also order (RFB) 2-Years OnStar Business Vehicle Manager Service **1 - Requires one of the following Fleet or Government order types: FLS, FNR, FRC, FBC, FGO or FEF. Not available with the R8P, R8W, R8Y or R8Z. Not available with (R7M) OnStar delete.**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]
R8P		**OnStar 2 Additional Years of Safe and Sound Service (MSRP=$379)** Provides 2 additional years of Safe and Sound service following the first year of OnStar service included in the price of the vehicle. Fleet may also order (RFC) 3-Years OnStar Business Vehicle Manager Service **1 - Requires one of the following Fleet or Government order types: FLS, FNR, FRC, FBC, FGO or FEF. Not available with R8G, R8W, R8Y or R8Z. Not available with (R7M) OnStar delete.**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]
R8W		**OnStar 1-Year Directions and Connections Service (MSRP=$100)** Provides an upgrade from Safe and Sound service included in the price of the vehicle in the first year. Fleet may also order (RFA) 1-Year OnStar Business Vehicle Manager Service **1 - Requires one of the following Fleet or Government order types: FLS, FNR, FRC, FBC, FGO or FEF. Not available with R8G, R8P, R8Y or R8Z. Not available with (R7M) OnStar delete.**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]
R8Y		**OnStar 2-Years Directions and Connections Service (MSRP=$399)** Provides cumulative 2 Years of Directions and Connections service. In the first year, this is an upgrade from Safe and Sound service included in the price of the vehicle. Fleet may also order (RFB) 2-Years OnStar Business Vehicle Manager Service **1 - Requires one of the following Fleet or Government order types: FLS, FNR, FRC, FBC, FGO, or FEF. Not available with R8G, R8P, R8W or R8Z. Not available with (R7M) OnStar delete.**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]

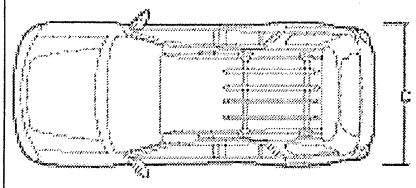
Free Flow RPO Code	Ref. Only RPO Code	Description 1 - Equipment groups 1SA, 1SB, 1SD, 1SE, 1SS and 3SS available on C*15506 models.	TrailBlazer				TrailBlazer SS	
			LS 1SA[1]	LS 1SB[1]	LT 1SD[1]	LT 1SE[1]	SS 1SS[1]	SS 3SS[1]
R8Z		**OnStar 3-Years Directions and Connections Service (MSRP=$679)** Provides cumulative 3 Years of Directions and Connections service. In the first year, this is an upgrade from Safe and Sound service included in the price of the vehicle. Fleet may also order (RFC) 3-Year OnStar Business Vehicle Manager Service **1 - Requires one of the following Fleet or Government order types: FLS, FNR, FRC, FBC, FGO or FEF. Not available with R8G, R8P, R8W or R8Y. Not available with (R7M) OnStar delete.**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]
RFA		**OnStar 1-Year Business Vehicle Manager Service (MSRP=$25)** Provides one year of OnStar Business Vehicle Manager Service **1 - Requires one of the following Fleet or Government order types: FLS, FNR, FRC, FBC, FGO or FEF. Not available with RFB or RFC. Not available with (R7M) OnStar delete.**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]
RFB		**OnStar 2-Years Business Vehicle Manager Service (No charge)** Provides two years of OnStar Business Vehicle Manager Service **1 - Requires one of the following Fleet or Government order types: FLS, FNR, FRC, FBC, FGO or FEF. Not available with RFA or RFC. Not available with (R7M) OnStar delete. Requires (UE1) 1-Year OnStar service and either (R8G) or (R8Y) which provide for a total of two years of OnStar service.**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]
RFC		**OnStar 3-Years Business Vehicle Manager Service (No Charge)** Provides three years of OnStar Business Vehicle Manager Service **1 - Requires one of the following Fleet or Government order types: FLS, FNR, FRC, FBC, FGO or FEF. Not available with RFA or RFB. Not available with (R7M) OnStar delete. Requires (UE1) 1-Year OnStar service and either (R8P) or (R8Z) which provide for a total of three years of OnStar service.**	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]

Cargo Management
Bicycle and Ski Carrier Wall Storage Unit
Bicycle/Ski Carrier Lock Package - Includes 2 keys
Cargo Area Liner - Black, Standard
Cargo Organizer - With Adjustable Dividers, Cashmere
Cargo Organizer - With Adjustable Dividers, Ebony
Cargo Organizer - With Adjustable Dividers, Gray
Cargo Organizer - With Adjustable, Removable Dividers, 8 inch Side Walls
Cargo Organizer - With Adjustable, Removable Dividers, Cashmere
Cargo Tray - Ebony with 2 Side Walls and Trailblazer Logo
Cargo Tray - Gray with 2 Side Walls and Trailblazer Logo
Hitch Mounted Bicycle Carrier - Carries 4 Bikes
Hitch-Mounted License Plate Holder
Hitch-Mounted Ski Carrier carries 5 pair of skis or 4 snowboards and 1 pair of skis
Roof Mounted Hard Cargo Carrier - 92" Long x 28" Wide x 15" High, Black with Textured Finish
Electronics
Headphone - Dual Channel Noise Cancellation
XM Satellite Radio
Exterior
Brush Grille Guard - Chrome
Contour Splash Guards - 9.70 inch Wide, Front and Rear White Bowtie Logo, Black
Contour Splash Guards - 9.70 inch Wide, Front and Rear White Chevrolet Logo, Black
Contour Splash Guards - 9.70 inch Wide, Front and Rear, Black
Front End Cover - Bowtie Logo, Includes Hood Cover
Front End Hood Cover - Bowtie Logo
Molded Assist Steps - Anodized, Black
Molded Assist Steps - Anodized, Brushed
Molded Assist Steps - Black with Chrome Edge
Molded Hood Protector - Indigo Blue
Molded Hood Protector - Smoke
Molded Hood Protector - Tarnish Metalic Silver
Molded Splash Guards - Front Bowtie Logo, Black
Molded Splash Guards - Front Bowtie Logo, Black, Without Fender Flares
Molded Splash Guards - Rear Bowtie Logo, Not for SS, LT or LTZ, Black
Reflective Triangle
Side Window Weather Deflector - Includes Front and Rear, Smoke
Tubular Assist Steps - Chrome with Black Raised Rectangle Step Pad
Under Body Shield
Interior
First Aid Kit - Black with White GM Logo
Floor Mats - Cargo Molded Carpet - Gray
Floor Mats - Cargo Molded Carpet -Ebony
Floor Mats - Front Carpet Replacements - Twin, No Logo, Gray
Floor Mats - Front Molded Carpet - Ebony with Bowtie Logo
Floor Mats - Front Molded Carpet - Gray with Bowtie Logo
Floor Mats - Front Premium All Weather -Ebony with Bowtie Logo
Floor Mats - Front Premium All Weather -Gray with Bowtie Logo
Floor Mats - Rear Carpet Replacements - Twin, Ebony
Floor Mats - Rear Carpet Replacements - Twin, Gray
Floor Mats - Rear Molded Carpet - Ebony

Floor Mats - Rear Molded Carpet - Gray
Floor Mats - Rear Premium All Weather - Ebony with No Logo
Floor Mats - Rear Premium All Weather- Gray with No Logo
Highway Emergency Kit with GM Accessory Logo
Roadside Assistance Package
Smoker's Package - Includes Lighter
Performance
Brake Cooling Ducts, Trailblazer SS
Trailering
Hitch Ball Assembly - 1-7/8 inch Ball, 1"x2-7/8 inch Shank, 2000 lb Gross
Hitch Ball Assembly - 1-7/8 inch Ball, 3/4 inchx2-5/16 inch Shank, 2000lb Gross
Hitch Ball Assembly - 2" Ball, 1"x2-7/8 inch Shank for Flange Thickness between 3/4 inch to 1-7/8 inch, 5000lb Gross
Hitch Ball Assembly - 2" Ball, 3/4"x2-5/16" Shank, 3500lb Gross
Hitch Ball Assembly - 2-5/16" Ball, 1"x2-7/8" Shank for Flange Thickness between 3/4" to 1-7/8", 6000lb Gross
Hitch Ball Mount Assembly - 2" Rise, 3-1/4" Drop, 5000lb Max Load, 500lb Tongue Weight
Hitch Ball Mount Assembly - 4" Rise, 5-1/4" Drop, 5000lb Max Load, 500lb Tongue Weight
Hitch Ball Mount Assembly - Standard, 3500lb Max Load, 300lb Tongue Weight Use with 2" Hitch
Hitch Receiver Cover with Bowtie Logo
Hitch Receiver Cover with GM Logo for 2 inch Hitch
Locking Hitch Pin
Trailer Wire Harness Adapater - Converts 7-Pin to Accessory Power Outlet
Trailer Wire Harness Adapater - Converts Heavy Duty 7 Pin Round to Light Duty 4 Pin Flat
Wheels
17 inch Wheel - ST609 Polished
17 inch Wheel - ST610 Polished
18 inch Wheel - ST182 Polished
18 inch Wheel - ST188 Polished
18 inch Wheel - ST191 Chrome
18 inch Wheel - ST243 Chrome
18 inch Wheel - ST328 Chrome
18 inch Wheel - ST354 Chrome
18 inch Wheel - ST357 Chrome
Center Cap - Bowtie Logo, Polished
Tire - 17 inch - CONTINENTAL CONTITRAC P245/65R17 BW (TPC 2321)
Tire - 17 inch - CONTINENTAL CONTITRAC P245/65R17 OWL (TPC 2321)
Tire - 17 inch - GOODYEAR FORTERA P245/65R17 105SBSL (TPC 1166MS)
Tire - 18 inch - GOODYEAR FORTERA HL P245/60R18 104S BSL (TPC 1252MS)
Wheel Lock Kit - Chrome (4 Nuts, 1 Key)
Wheel Lock Kit - Requires Lug Nut Cap (4 Nuts, 1 Key)

All dimensions in inches (mm) unless otherwise stated.

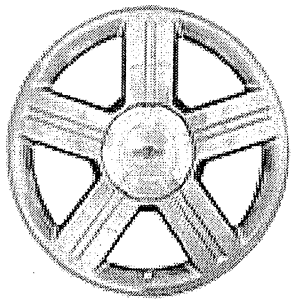
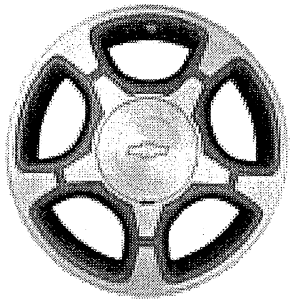
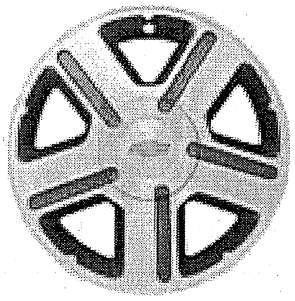
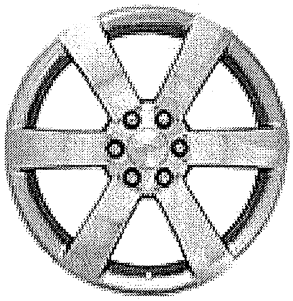
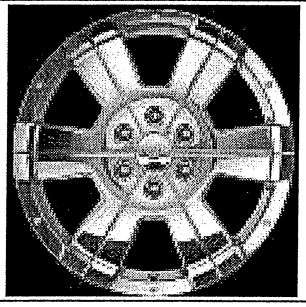


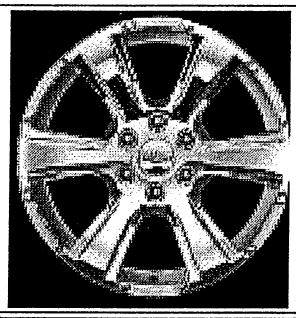
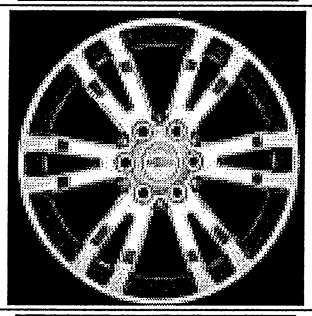
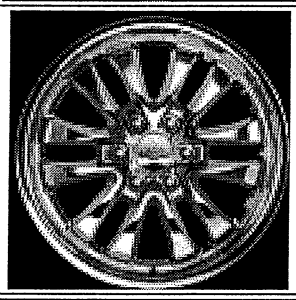
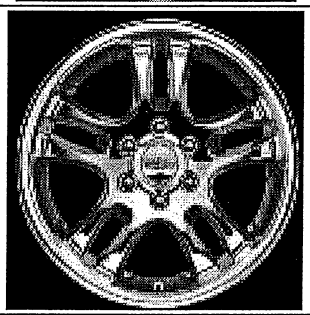
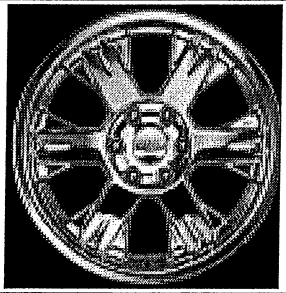


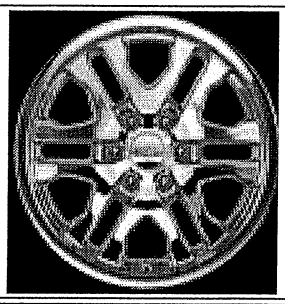
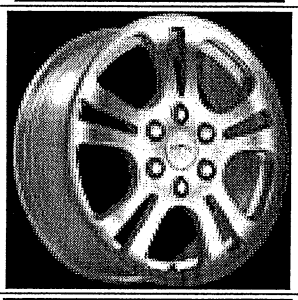
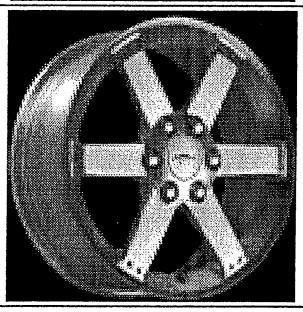
	Specifications	CS15506 2WD	CT15506 4x4
A	**Wheelbase**	113.00 (2870)	113.00 (2870)
B	**Overall length**	191.80 (4872)	191.80 (4872)
C	**Body width**	74.70 (1897)	74.70 (1897)
D	**Overall height,** without luggage rack	72.50 (1842)	72.50 (1842)
D	**Overall height,** without luggage rack, SS	67.83 (1723)	67.83 (1723)
	Head room, 1st row	40.20 (1021)	40.20 (1021)
	Head room, 2nd row	39.60 (1006)	39.60 (1006)
	Shoulder room, 1st row	58.50 (1486)	58.50 (1486)
	Shoulder room, 2nd row	58.50 (1486)	58.50 (1486)
	Hip room, 1st row	56.00 (1422)	56.00 (1422)
	Hip room, 2nd row	58.20 (1478)	58.20 (1478)
	Leg room, 1st row @ accelerator	46.90 (1191)	46.90 (1191)
	Leg room, 2nd row	37.00 (940)	37.00 (940)
BA	**Front bumper to axle**	34.96 (888)	34.96 (888)
GF	**Ground to top of rear load floor**	32.10 (815)	---
GF	**Ground to top of rear load floor,** SS	30.05 (763)	30.05 (763)
	Cargo area height	39.60 (1006)	39.60 (1006)
	Ground clearance	7.80 (198)	7.80 (198)
	Ground clearance, SS	7.82 (199)	7.82 (199)

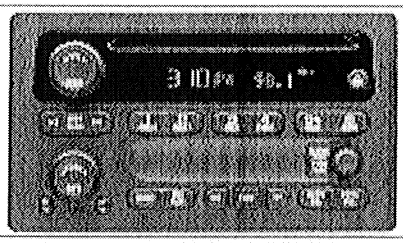
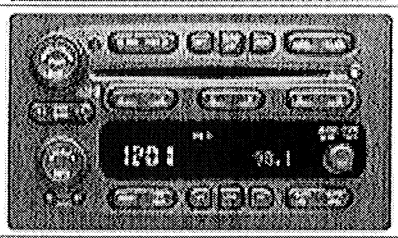
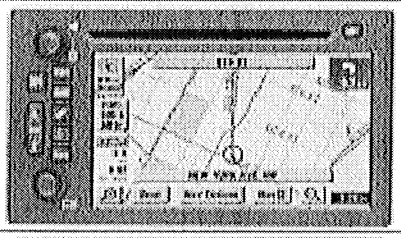
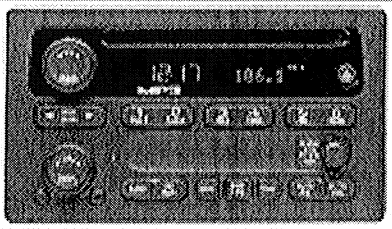
Published dimensions indicated are without optional equipment or accessories. Additional accessories or equipment ordered at the customer's request can result in a minor change in these dimensions.

	CS15506 2WD	CT15506 4x4
Specifications		
Front shock absorber diameter, in. (mm)	1.81 (46)	1.81 (46)
Front stabilizer bar diameter, in. (mm)	1.33 (34)	1.33 (34)
Front stabilizer bar diameter, SS, in. (mm)	1.41 (36)	1.41 (36)
Rear shock absorber diameter, in. (mm)	1.42 (36)	1.42 (36)
Rear stabilizer bar diameter, in. (mm)	0.82 (21)	0.94 (24)
Rear stabilizer bar diameter, SS, in. (mm)	0.94 (24)	0.94 (24)
Turning diameter, curb-to-curb, SS, ft. (m)	TBD	TBD
Turning diameter, curb-to-curb, ft. (m)	36.4 (11.1)	36.4 (11.1)
Capacities		
Front axle, lbs. (kg)	2950 (1338)	2950 (1338)
Front spring capacity, lbs. (kg)	3100 (1406)	3100 (1406)
Rear axle, lbs. (kg)	3200 (1452)	3200 (1452)
Rear axle, SS, lbs. (kg)	3400 (1542)	3400 (1542)
Rear spring capacity, lbs. (kg)	3200 (1452)	3200 (1452)
Rear spring capacity, SS, lbs. (kg)	3400 (1542)	3400 (1542)
Curb weight, lbs. (kg)	4356 (1976)	4523 (2052)
Curb weight, SS, lbs. (kg)	4496 (2039)	4663 (2115)
Cargo volume, behind 1st row seat, cu. ft. (liters)	80.1 (2268.4)	80.1 (2268.4)
Cargo volume, behind 2nd row seat, cu. ft. (liters)	41.0 (1161.1)	41.0 (1161.1)
Payload[1], lbs. (kg)	1194 (542)	1227 (557)
Payload, SS, lbs. (kg)	1505 (683)	1338 (607)
Gross Vehicle Weight Rating (GVWR), lbs. (kg)	5550 (2517)	5750 (2608)
Gross Vehicle Weight Rating (GVWR), V8 and SS, lbs. (kg)	6001 (2722)	6001 (2722)
Front Gross Axle Weight Rating (GAWR), lbs. (kg)	2950 (1338)	2950 (1338)
Rear Gross Axle Weight Rating (GAWR), lbs. (kg)	3200 (1452)	3200 (1452)
Rear Gross Axle Weight Rating (GAWR), V8 and SS, lbs. (kg)	3400 (1542)	3400 (1542)
Fuel capacity, approximate, gallon (liters)	22 (83)	22 (83)
Seating capacity (front/rear)	2/3	2/3
1. Maximum payload capacity includes weight of driver, passengers, optional equipment and cargo.		

	PD8 **Wheels**, 4 - 18" x 8" (45.7 cm x 20.3 cm) polished aluminum, 5-spoke
	N75 **Wheels**, 4 - 17" x 7" (43.2 cm x 17.8 cm) Sport aluminum, includes center caps and steel spare
	N74 **Wheels**, 4 - 17" x 7" (43.2 cm x 17.8 cm) bright aluminum, includes center caps and steel spare
	P55 **Wheels**, 4 - 20" x 8" (50.8 cm x 20.3 cm) 6-spoke polished aluminum, includes center cap and steel spare
	ADI Available **ST182**, 18 inch Wheel - ST182 Polished

	ADI Available **ST188**, 18 inch Wheel - ST188 Polished
	ADI Available **ST191**, 18 inch Wheel - ST191 Chrome
	ADI Available **ST243**, 18 inch Wheel - ST243 Chrome
	ADI Available **ST328**, 18 inch Wheel - ST328 Chrome
	ADI Available **ST354**, 18 inch Wheel - ST354 Chrome
	ADI Available **ST357**, 18 inch Wheel - ST357 Chrome

	
	ADI Available **ST609**, 17 inch Wheel - ST609 Polished
	ADI Available **ST610**, 17 inch Wheel - ST610 Polished

	UB0 **Audio system**, AM/FM stereo with CD player, seek-and-scan, digital clock, auto-tone control, speed-compensated volume and TheftLock
	UC6 **Audio system**, AM/FM stereo with 6-disc CD changer, seek-and-scan, digital clock, auto-tone control, Radio Data System (RDS), speed-compensated volume, TheftLock and 6 speakers
	UM8 **Audio system with navigation**, AM/FM stereo with CD player and DVD-integrated touch-screen navigation, seek-and-scan, auto-tone control, Radio Data System (RDS), full-feature autonomous touch-screen navigation, 1 DVD disc and Points of Interest
	US8 **Audio system**, AM/FM stereo with CD player and MP3 playback, seek-and-scan, digital clock, auto-tone control, Radio Data System (RDS), automatic volume, TheftLock and premium front and rear coaxial speakers

Maximum trailer ratings are calculated assuming standard equipped vehicle, driver and required trailering equipment. The weight of optional equipment, passengers and cargo will reduce the maximum trailer weight your vehicle can tow. 10 to 15% of the trailer weight is the recommended trailer tongue load.

Automatic Transmission with Ball Hitch						
Model	(LL8) Vortec 4.2L SFI I6		(LH6) Vortec 5.3L Gen IV V8 SFI		(LS2) 6.0L V8 SFI SS	
	Axle Ratio	Maximum Trailer Weight lbs. (kg)	Axle Ratio	Maximum Trailer Weight lbs. (kg)	Axle Ratio	Maximum Trailer Weight lbs. (kg)
CS15506	3.42	5400 (2449)	3.42	6300 (2858)	4.10	6800 (3084)
	3.73	5900 (2676)	3.73	6800 (3084)		
	4.10	6400 (2903)				
CT15506	3.42	5200 (2359)	3.42	6100 (2767)	4.10	6600 (2994)
	3.73	5700 (2586)	3.73	6600 (2994)		
	4.10	6200 (2812)				

Addition of trailer tongue weight cannot cause vehicle weights to exceed Rear Gross Axle Weight Rating (RGAWR) or Gross Vehicle Weight Rating (GVWR).

Base cooling system includes all content required to attain maximum trailer rating.

4WD models can be flat-towed in the neutral position.

GCWR For Engine/Rear Axle Ratio Combination with Automatic Transmission				
Engine	(GCWR) Gross Combination Weight Ratings lbs. (kg)			
	10000 (4536)	10500 (4763)	11000 (4990)	11500 (5216)
(LL8) Vortec 4.2L SFI I6	3.42	3.73[1]	4.10	
(LH6) Vortec 5.3L Gen IV V8 SFI			3.42	3.73
(LS2) 6.0L V8 SFI SS				4.10

1 - GCWR raised (up to 11,000 lbs. [4990 kg]) for European export.

Option Code	Description
**2	Seats, front
**2	Seats, front bucket with leather-appointed seating
**2	Seats, front bucket with leather-appointed seating
**2	Seats, front bucket with leather-appointed seating, "SS" embroidered
**H	Seats, front
**H	Seats, front bucket with Premium Cloth
**H	Seats, front bucket with Premium Cloth
5TE	Tires, P245/65R17 On/Off Road Tire (MSRP = $96.00)
8X1	Label, fasten safety belts (MSRP = $2.00)
9V5	Paints, solid (MSRP = No Charge) Woodland Green
9V9	Paints, solid (MSRP = No Charge), Doeskin Tan
AJ1	Glass, Solar-Ray deep-tinted
AM9	Seats, second row split-folding
AP9	Cargo net, in rear compartment area
ASF	Air bags, head curtain side-impact, front and rear outboard seating positions
AU0	Remote Keyless Entry
B30	Floor covering, full-floor color-keyed carpeting
B32/B33	Floor mats, color-keyed carpeted front and rear
B3N	Floor mat delete, first and second rows
B42	Cargo mat, rear
B86	Moldings, body-color bodyside
BVE	Assist steps, Black
C49	Defogger, rear-window
C4D	GVWR, 5550 lbs. (2517 kg)
C5N	GVWR, 5750 lbs. (2608 kg)
CF5	Sunroof, power
CJ2	Air conditioning, dual-zone automatic climate control
CJ3	Air conditioning, dual-zone manual climate control
DD7	Mirror, inside rearview auto-dimming with 8-point compass display
DF5	Mirror, inside rearview auto-dimming
DH2	Visors, driver and front passenger illuminated vanity mirrors
DK2	Mirrors, outside heated power-adjustable
DK7	Console, overhead custom
DP2	Mirrors, outside power-adjustable, Black
DR1	Mirrors, outside manual, Black
DS3	Mirrors, outside heated power-adjustable
DT4	Smoker's Package, includes ashtray and lighter
EB1	GVWR, 6001 lbs. (2722 kg)
FE9	Emissions, Federal requirements
G80	Differential, heavy-duty locking rear
G86	Differential, limited slip
GT4	Rear axle, 3.73 ratio
GT5	Rear axle, 4.10 ratio
GU6	Rear axle, 3.42 ratio
JF4	Pedals, power-adjustable
JF8	Brakes, 4-wheel antilock, 4-wheel disc
K05	Engine block heater
K34	Cruise control
KA1	Seats, heated driver and front passenger

Option Code	Description
KG3	Alternator, 145 amps
KG4	Alternator, 150 amps
LH6	Engine, Vortec 5.3L V8 SFI
LL8	Engine, Vortec 4.2L I6 SFI
LS2	Engine, 6.0L V8 SFI
M30	Transmission, 4-speed automatic
M70	Transmission, 4-speed automatic
N40	Steering, power
N74	Wheels, 4 - 17" x 7" (43.2 cm x 17.8 cm) bright aluminum
N75	Wheels, 4 - 17" x 7" (43.2 cm x 17.8 cm) Sport aluminum
N79	Wheel, 17" (43.2 cm) full-size spare
NB8	Emissions override
NC7	Emissions override, Federal
NE1	Emissions, Maine, Massachusetts, New York or Vermont state requirements
NP5	Steering wheel, leather-wrapped
NP8	Transfer case, electronic Autotrac
NR9	Transfer case, AWD Torsen single-speed
NZ3	Wheel, 16" (40.6 cm) full-size spare
P55	Wheels, 4 - 20" x 8" (50.8 cm x 20.3 cm) 6-spoke polished aluminum
PCR	Sun, Sound and Entertainment Package
PD8	Wheels, 4 - 18" x 8" (45.7 cm x 20.3 cm) polished aluminum, 5-spoke
PDC	Seat adjuster, driver 8-way power
PFE	Wheels, 17" x 7" (43.2 cm x 17.8 cm), aluminum wheels (MSRP = No Charge)For use with on/off road tires on as a base decor level.
QTE	Tires, P245/65R17 on-/off-road, blackwall
QTM	Tires, P245/65R17 all-season, blackwall
QTR	Tires, P245/65R17 on-/off-road, White outlined-letter
QUB	Tires, P255/50R20 V-rated, all-season, blackwall
QZD	Tires, P245/60R18 all-season, blackwall
R6Q	Sun, Sound and Entertainment Package (PCR) discount not desired
R7M	OnStar, delete
R8G	OnStar 1 Additional Year of Safe and Sound Service (MSRP= $199)
R8P	OnStar 2 Additional Years of Safe and Sound Service (MSRP=$379)
R8W	OnStar 1-Year Directions and Connections Service (MSRP=$100)
R8Y	OnStar 2-Years Directions and Connections Service (MSRP=$399)
R8Z	OnStar 3-Years Directions and Connections Service (MSRP=$679)
R9W	Defogger, rear-window, delete
RAE	Regular production accessory, Cargo area management system
RFA	OnStar 1-Year Business Vehicle Manager Service (MSRP=$25)
RFB	OnStar 2-Years Business Vehicle Manager Service (No charge)
RFC	OnStar 3-Years Business Vehicle Manager Service (No Charge)
RYJ	Cargo shade, rear retractable
STW	Steering wheel, leather-wrapped
T61	Daytime Running Lamps
T96	Fog lamps, front (MSRP = $125.00)
T96	Fog lamps, front
TB4	Body, liftgate with liftglass
TGK	Solid PaintSEO solid paint, one color
U2K	XM Satellite Radio

Option Code	Description
U42	Entertainment system, rear seat DVD player
U68	Driver Information Center
UA6	Theft-deterrent alarm system
UB0	Audio system, AM/FM stereo with CD player
UC6	Audio system, AM/FM stereo with 6-disc CD changer
UE1	OnStar, 1-year of Safe and Sound plan
UG1	Universal Home Remote
UJ6	Tire Pressure Monitoring System
UK6	Audio system controls, rear
UM8	Audio system with navigation, AM/FM stereo with CD player and DVD-integrated touch-screen navigation
UQA	Audio system feature, Bose premium speaker system
US8	Audio system, AM/FM stereo with CD player and MP3 playback
UY7	Trailering wire harness, connector
V1K	Luggage rack, roof-mounted, Black
V40	Seat adjuster, 8-way power front passenger
V76	Recovery hooks, 2 front, frame-mounted
VHS	Regular production accessory, Trailer hitch receiver cover
VK3	License plate bracket, front
YC6	LT Convenience Package
YF5	Emissions, California state requirements
ZM5	Skid Plate Package
ZNF	Tire, spare P235/75R16, all-season, blackwall
ZQ8	Suspension Package, Sport
ZTM	Tire, spare P245/65R17 blackwall
ZW7	Suspension Package, Premium Smooth Ride
ZY1	Paint, solid
ZY7	Paint, two-tone

Updates for TrailBlazer

Week of 7/10/2006

Effective 7/10/2006, the following changes will be made to the Vehicle Order Guide:

- Interior section-Air bags, frontal, driver and right-front passenger, changed the description to read "Air bags, frontal, driver and front passenger with Passenger Sensing System". Also, changed footnote 1 to read "Always use safety belts and the correct child restraints for your child's age and size. Even in vehicles equipped with air bags and the Passenger Sensing System, children are safer when properly secured in a rear seat. Never place a rear-facing infant restraint in the front seat of any vehicle equipped with an active frontal air bag. See the vehicle's Owner's Manual and child safety seat instructions for more safety information.".
- Interior section-(ASF) Air bags, head curtain side-impact, front and rear outboard seating positions, changed footnote 1 to read "Head curtain side air bags are designed to help reduce the risk of head and neck injuries to front and rear seat occupants on the near side of certain side-impact collisions. Always use safety belts and the correct child restraints for your child's age and size, even in vehicles equipped with air bags. Children are safer when properly secured in a rear seat. See the vehicle's Owner's Manual and child safety seat instructions for more safety information.".

Week of 6/26/2006

Effective 6/26/2006, the following changes will be made to the Vehicle Order Guide:

- Exterior section-(QZD) Tires, P245/60R18 all-season, blackwall, changed footnote 1 to read "Included and only available with (PD8) 4 - 18" x 8" (45.7 cm x 20.3 cm) aluminum wheels". Also, moved the RPO code to the "Ref. Only RPO Code" column.
- Exterior section-(PD8) Wheels, 4 - 18" x 8" (45.7 cm x 20.3 cm) polished aluminum, 5-spoke, changed footnote 1 to read "Includes (QZD) P245/65R18 all-season blackwall tires".
- Exterior section-(N79) Wheel, 17" (43.2 cm) full-size, changed footnote 1 in the LS 1SA and LS 1SB columns to read "Required with (LH6) Vortec 5.3L V8 SFI engine". Also, changed footnote 1 in the LT 1SD and LT 1SE columns to footnote 2 that reads "Required with (LH6) Vortec 5.3L V8 SFI engine. Included when (PD8) 4 - 18" x 8" (45.7 cm x 20.3 cm) aluminum wheels are ordered".

Week of 6/19/2006

Effective 6/19/2006, the following changes will be made to the Vehicle Order Guide:

- All sections-Removed the word "Federal" anywhere it used to say "Requires a Fleet or Federal Government order type".
- All sections-removed the hundred designation (ex: 5300) from all engine descriptions and liters designation (ex: 5.3L). Please review entire order guide to see where it changed.

Week of 6/5/2006

Effective 6/5/2006, the following changes will be made to the Vehicle Order Guide:

- Mechanical section-(LH6) Engine, Vortec 5300 V8 SFI, changed description to read "Engine, Vortec 5300 V8 SFI with Active Fuel Management (302 hp [225 kW] @ 5200 rpm, 330 lb-ft of torque [447 Nm] @ 4000 rpm)
- SEO Ship Thru section-(PFE) Wheels, 17" x 7" (43.2 cm x 17.8 cm), aluminum wheels, changed price to (MSRP = No Charge).

Week of 5/29/2006

Effective 5/29/2006, the following changes will be made to the Vehicle Order Guide:

- Interior section-(UB0) Audio system, AM/FM stereo with CD player, changed footnote 1 on SS 1SS to existing footnote 2.
- Interior section-(R7M) OnStar delete, changed footnote 1 to read "Fleet orders only. If order type is FDR, (R7M) will be forced on".
- OnStar fleet options section-(RFB) OnStar 2-Years Business Vehicle Manager Service (No charge), changed footnote 1 to read "Requires one of the following Fleet or Government order types: FLS, FNR, FRC, FBC, FGO or FEF. Not available with RFA or RFC. Not available with (R7M) OnStar delete. Requires (UE1) 1-Year OnStar service and either (R8G) or

(R8Y) which provide for a total of two years of OnStar service".

- OnStar fleet options section-(RFC) OnStar 3-Years Business Vehicle Manager Service (No charge), changed footnote 1 to read "Requires one of the following Fleet or Government order types: FLS, FNR, FRC, FBC, FGO or FEF. Not available with RFA or RFB. Not available with (R7M) OnStar delete. Requires (UE1) 1-Year OnStar service and either (R8P) or (R8Z) which provide for a total of three years of OnStar service".
- Exterior section-(N79) Wheel, 17" (43.2 cm) full size spare, changed footnote 1 to read "Required and only available with (LH6) Vortec 5300 V8 SFI engine or if (QZD) P245/60R18 all-season blackwall tires are ordered".
- Mechanical section-(LH6) Engine, Vortec 5300 V8 SFI, changed footnote 1 to read "Requires (N79) 17" (43.2 cm) full-size spare wheel".

Week of 5/22/2006

Effective 5/22/2006, the following changes will be made to the Vehicle Order Guide:

- Interior section-(B3N) Floor mat delete, first and second rows, added a footnote 1 to LS 1SB, LT 1SD and LT 1SE that reads "Available for Fleet or Government order types only".
- OnStar Fleet Options section-please review entire section as many changes have been made.

Week of 5/15/2006

Effective 5/15/2006, the following changes will be made to the Vehicle Order Guide:

- Interior section-Enhanced Quiet Package, changed package name to "Quiet Package".
- Exterior section-Bumpers, front and rear color-keyed, changed the description to read "front and rear body-color, rear step includes pad".
- Color and trim section (ZY1) Solid Paint-(80U) Red Jewel Tintcoat, changed footnote 3 to read "Extra charge. Available with TrailBlazer SS. Available August 2006".
- Color and trim section (ZY7)Two-Tone Paint-(80U) Red Jewel Tintcoat/(15L) Sandstone Metallic and (80U) Red Jewel Tintcoat/(67L) Silverstone Metallic, changed footnote 2 to read "Extra charge. Available August 2006".

Week of 5/8/2006

Effective 5/8/2006, the following changes will be made to the Vehicle Order Guide:

- Interior section-Air conditioning, rear with heater and rear seat fan/temperature controls, changed the description to read "rear with heater".
- Interior section-(**2) Seats, front bucket with leather-appointed seating [the 1SD entry], changed the description to read ""front bucket with leather-appointed seating, driver power lumbar control, front passenger manual lumbar control, adjustable outboard head restraints and 8-way power driver seat adjuster with power recliner". Also added a footnote 1 to LT 1SD that reads "Required and only available with (V40) 8-way power front passenger seat adjuster with power lumbar control".
- Interior section-(V40) Seat adjuster, 8-way power front passenger, changed the description to read "8-way power front passenger with power lumbar control". Also, added a footnote 1 to LT 1SD that reads "Required and only available with (**2) front bucket seats with leather-appointed seating".

Week of 5/1/2006

Effective 5/1/2006, the following changes will be made to the Vehicle Order Guide:

- Interior section-(RAE) Cargo area management system, changed description to read "Regular production accessory, Cargo area management system, rear compartment cargo area organizer, non-skid rubberized surface, molded in leak-proof liquid container holder/compartments with collapsible partitions that fold down when not in use to provide flat load floor and re-configurable dividers. Color-keyed to interior trim selection (Special Equipment package- dealer-installed - no tools needed, easily removable)". Also changed the symbols in LS 1SB, LT 1SD, LT 1SE, SS 1SS and SS 3SS equipment groups from an "A" to an "A/D" with footnote a footnote 1 that reads "For additional GM Accessory Offerings and Installation, please contact your local GM Accessory Distributor Installer (ADI)".
- Exterior section-(VHS) Regular production accessory, Trailer hitch receiver cover, added a new footnote 1 to LS 1SA, LS

1SB, LT 1SD and LT 1SE that reads "For additional GM Accessory Offerings and Installation, please contact your local GM Accessory Distributor Installer (ADI)".