GENERAL INFORMATION

General Information - Escalade, Suburban, Tahoe, Yukon

INTRODUCTION

ARROWS AND SYMBOLS

This service manual uses various symbols in order to describe different service operations.

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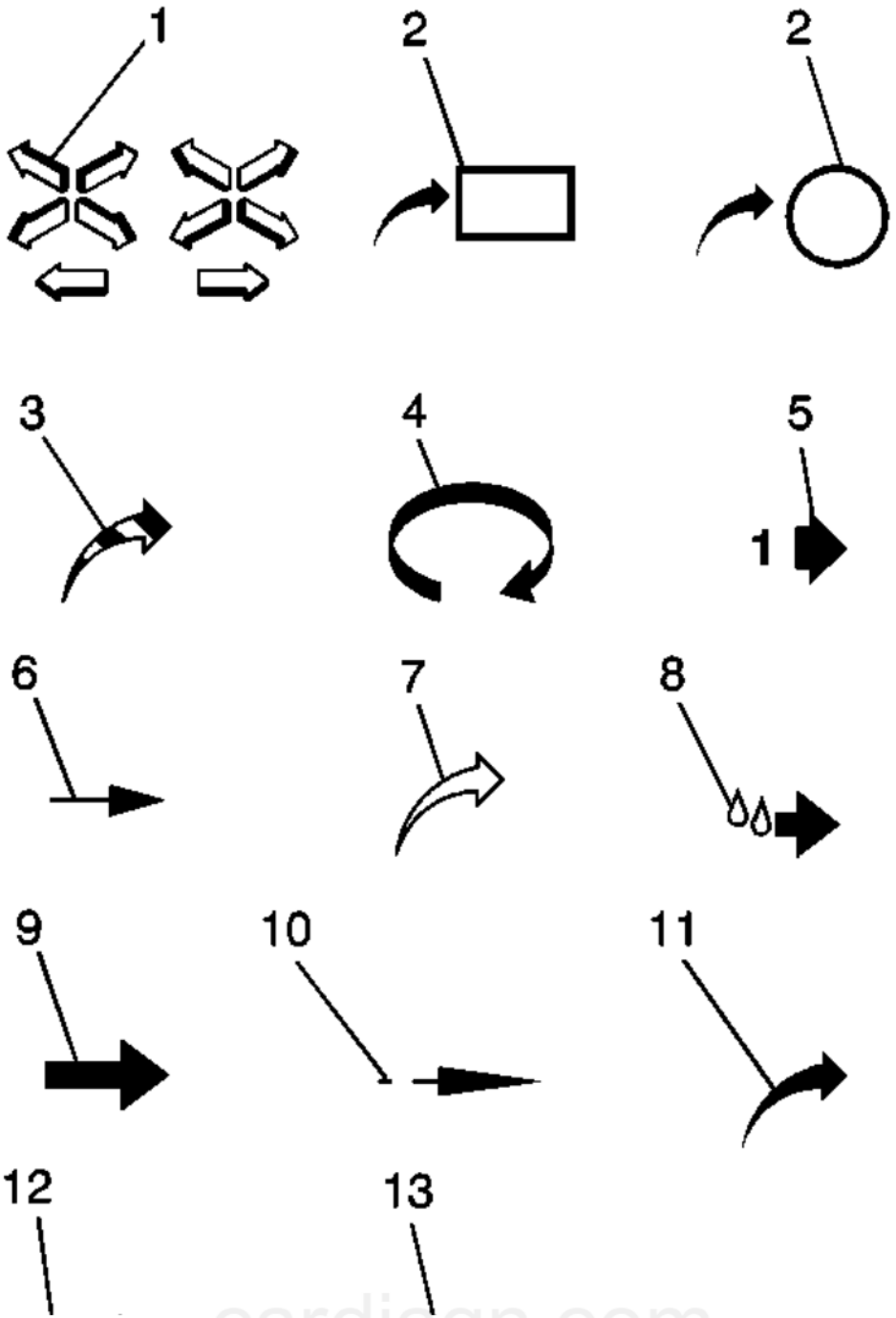

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Fig. 1: Service Operations Symbols
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Front of Vehicle
2	View Detail
2	View Detail
3	Ambient Air Mixed with Another Gas or Indicate Temperature Change
4	Motion or Direction
5	View Angle
6	Dimension (1:2)
7	Ambient/Clean Air Flow or Cool Air Flow
8	Lubrication Point- Oil or Fluid
9	Task Related
10	Sectioning (1:3)
11	Gas Other Than Ambient Air or Hot Air Flow
12	Lubrication Point- Grease or Jelly
13	Multidirectional Arrow

ACRONYMS AND UNITS

Acronyms

Acronym	Meaning	Definition
2WD	Two-Wheel Drive	Indicates that a vehicle has 2 driven wheels OR that a 4WD vehicle uses only 2 wheels for propulsion. So it can be the description of a vehicle configuration OR the operational mode of the drivetrain.
4WD	Four-Wheel Drive	Four-wheeled vehicle with a drivetrain that allows all four wheels to receive power from the engine simultaneously which provides better control on various surfaces. Can be used to describe the configuration of the vehicle OR as the operational mode of the drivetrain. 4WD vehicles usually can turn 2 wheels off to be in a 2WD mode. See also AWD.
A/C	Air Conditioning	The cooling and dehumidification of indoor air for thermal comfort.
A/D	Analog to Digital	Used in context of converting electrical analog signals to digital signals.

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Acronym	Meaning	Definition
ABS	Antilock Braking System	System on motor vehicles which prevents the wheels from locking while braking which helps the driver maintain control in heavy braking conditions.
AC	Alternating Current	An electrical current whose magnitude and direction vary cyclically.
AM	Amplitude Modulation	Method of impressing data onto an alternating-current (AC) carrier waveform.
APP	Accelerator Pedal Position	A pedal that controls the throttle valve.
AWD	All-Wheel Drive	All-wheel-drive systems are designed to function on all types of surfaces, both on- and off-road, and most of them cannot be switched off. This can also be called full-time four wheel drive. See also 4WD.
AWG	American Wire Gauge	American wire gauge is a standardized wire gauge system used since 1857 predominantly in the United States for the diameters of round, solid, nonferrous, electrically conducting wire. E.g. a wire of AWG10 has a diameter of 2.588mm, AWG20 corresponds to a diameter of 0.812mm.
B+	Battery Positive Voltage	The electrical potential on the positive terminal of the battery.
BARO	Barometric Pressure	Atmospheric pressure as measured by a barometer.
BCM	Body Control Module	This module supplies vehicle occupants with visual and audible information and controls various vehicle functions,
BECM	Battery Energy Control Module	Control module used to regulate the battery voltage.
BPP	Brake Pedal Position	Position of the foot pedal that moves a piston in the master brake cylinder.
CAN	Controller Area Network	Serial data connection between control modules by Bosch
CCM	Chassis Control Module	The module that controls various vehicle functions on the Chassis, like Engine/Trans Mount, Active Grille Air Shutter, Load Leveling, etc•••
CD	Compact Disc	A small optical disk on which data such as music, text, or graphic images is digitally encoded.
CNG	Compressed Natural Gas	This a substitute for gasoline or diesel fuel. It is made by compressing natural gas (which is mainly composed by methane (CH4), in a percentage range of 70% to 98%)
CO	Carbon Monoxide	This is a product of the incomplete combustion of carbon-containing compounds, at room temperature this is a gas. It consists of one carbon atom covalently bonded to one oxygen atom.

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Acronym	Meaning	Definition
CO2	Carbon Dioxide	Chemical compound composed of two oxygen atoms covalently bonded to a single carbon atom.
CPA	Connector Position Assurance	Part of an electrical connector that prevents the connector from moving out of its socket. Usually needs to be pressed to unlock the connector when disconnecting it.
CPP	Clutch Pedal Position	A lever operated with the foot that controls the coupling that connects or disconnects driving and driven parts of a driving mechanism.
CV	Constant Velocity	Used in conjunction with CV joints, which connect two shafts at an angle while both shafts always have the same rotational speed without variations.
CVT	Continuously Variable Transmission	A transmission in which the ratio of the rotational speeds of two shafts, as the input shaft and output shaft of a vehicle or other machine, can be varied continuously within a given range, providing an infinite number of possible ratios which improves fuel economy.
D	Drive	D on the transmission gear selector lever.
DAB	Digital Audio Broadcast	Technology for broadcasting of audio using digital radio (carries information via digital signal) transmission.
DC	Direct Current	Continuous current, constant flow of electric charge.
DLC	Data Link Connector	This is an electronic connector typically located underneath the driver's side dashboard, just above the pedals. The connector has 16 pins.
DMM	Digital Multimeter	Electronic measuring instrument that combines several functions in one unit. The most basic instruments include an ammeter, voltmeter, and ohmmeter.
DOHC	Dual Overhead Camshaft	Dual overhead camshafts (DOHC) are higher performance engines, they produce more power, and can run at higher speeds because they allow an engine to have four valves per cylinder. Each camshaft operates two of the valves, one camshaft handles the intake valves, and one handles the exhaust valves
DPF	Diesel Particulate Filter	Device designed to remove diesel particulate matter or soot from the exhaust gas of a diesel engine.
DRL	Daytime Running Lamps	White lights mounted on the front of an automobile that automatically switch on when the key is turned and are intended for daytime use, to increase the visibility of the automobile.

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Acronym	Meaning	Definition
DSCC	Distance Sensing Cruise Control	A type of cruise control that automatically maintains the distance between vehicles.
DSP	Digital Signal Processor	A specialized microprocessor designed specifically for digital signal processing, generally in real-time computing.
DTC	Diagnostic Trouble Code	An electronic signal stored in an automotive computer, indicating the presence of a fault detected by that computer.
DVD	DVD	A popular optical disc storage media format the size of a CD. Used mainly for movies but also for data. DVD has no spelled out version (officially it does not mean Digital Video Disc or Digital Versatile Disc, it just means DVD).
EBCM	Electronic Brake Control Module	This module contains a microprocessor and software for antilock braking system operation.
ECM	Engine Control Module	This electronic module works with a vehicle's sensors and engine control devices to insure that the engine operates at maximum efficiency and performance. It performs three vital functions. Receives electronic signals from engine sensors. Analyzes the data and makes an engine performance decision (based on the pre-set parameters within the unit). Sends an "output command" to an actuator that adjusts engine performance.
ECT	Engine Coolant Temperature	A measure of how hot or cold the fluid which flows through the engine in order to prevent its overheating, transferring the heat produced by the device to other devices that utilize or dissipate it.
EEPROM	Electrically Erasable Programmable Read-Only Memory	A non-volatile storage chip used in computers and other devices to store small amounts of volatile data, e.g. calibration tables or device configuration.
EGR	Exhaust Gas Recirculation	Is an NOx (nitrogen oxide and nitrogen dioxide) reduction technique used in most gasoline and diesel engines. EGR works by recirculating a portion of an engine's exhaust gas back to the engine cylinders.
EMI	Electromagnetic Interference	Electromagnetic interference (also called radio frequency interference) is a disturbance that affects an electrical circuit due to either electromagnetic conduction or electromagnetic radiation emitted from an external source.
ESD	Electrostatic Discharge	The sudden and momentary electric current that flows between two objects at different electrical potentials.
EV	Electric Vehicle	A category of vehicles that only have an electric drive system.

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Acronym	Meaning	Definition
EVAP	Evaporative Emission	A system that controls the fuel fumes in the fuel tank.
FM	Frequency Modulation	In telecommunication this is a way to convey information over a carrier wave by varying its frequency.
FWD	Front-Wheel Drive	A form of engine/transmission layout used in motor vehicles, where the engine drives the front wheels only.
GMLAN	General Motors Local Area Network	A local-area network is a computer network covering a small geographic area, like a home or vehicle. This specific type of LAN connects several controllers inside the vehicle and was developed by General Motors.
GPS	Global Positioning System	Satellite-based navigation system made up of a network of 24 satellites placed into orbit by the U.S. Department of Defense.
GSM	Global System for Mobile Communications	Globally accepted standard for digital cellular communication.
GVW	Gross Vehicle Weight	Maximum total weight of a road vehicle or trailer that is loaded, including the weight of the vehicle itself plus fuel, passengers, cargo, and trailer tongue weight.
HD	Heavy Duty	Robust design to accommodate large work loads.
HID	High Intensity Discharge	A type of light that produces a bright light by using gas filled bulbs. (gas is usually mercury, metal halide, and high-pressure sodium) Uses very little battery power and is a very "cool" light.
HO2S	Heated Oxygen Sensor	Heated oxygen sensors have an internal heater circuit that brings the sensor up to operating temperature more quickly than an unheated sensor. An oxygen sensor must be hot (about 600-650Â°F) before it will generate a voltage signal. The hot exhaust from the engine will provide enough heat to bring an O2 sensor up to operating temperature.
HVAC	Heating Ventilation Air Conditioning	This system is sometimes referred to as climate control. Ventilation air ducts installed throughout a vehicle that supply conditioned air to a room through rectangular or round outlet vents.
I^2C	Inter-Integrated Circuit	Serial data connection between Integrated Circuits (microchips) inside a control module invented by Phillips
IAT	Intake Air Temperature	Temperature of the air entering intake air flow system of the engine.
ICE	Internal Combustion Engine	An engine in which the combustion of fuel and an oxidizer (typically air) occurs in a confined space called a combustion chamber.

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Acronym	Meaning	Definition
ID	Identification	Number or Code that identifies a component or control module. Can be written on the part or be transmitted on a bus or via radio.
ISP	Internet Service Provider	A company that furnishes corporations and individual consumers with various services, mainly access to the Internet.
ISS	Input Shaft Speed	Rotational speed of the input shaft of a transmission.
LAN	Local Area Network	Standard network connection PC's.
LCD	Liquid Crystal Display	A thin, flat display device made up of any number of color or monochrome pixels arrayed in front of a light source or reflector.
LED	Light Emitting Diode	Small light bulbs that fit easily into an electrical circuit they do not have a filament that will burn out, and they do not get especially hot. They are illuminated solely by the movement of electrons in a semiconductor material.
LIN	Local Interconnect Network	Computer networking bus system used within automotive network architectures. Similar to CAN, but cheaper and less powerful.
LPG	Liquefied Petroleum Gas	A mixture of mainly propane and butane, produced commercially and stored under pressure to keep it in a liquid state.
MAF	Mass Air Flow	The amount of air drawn into the engine
MAP	Manifold Absolute Pressure	Pressure in the engine intake system after the throttle valve referenced to a perfect vacuum.
MDI	Multiple Diagnostics Interface	A device used by GM dealers that enables a PC to communicate with the control modules in a vehicle.
MIL	Malfunction Indicator Lamp	An indicator of the internal status of a car engine.
MOST	Media Oriented Systems Transport	Serial communication bus to transmit audio and video information.
N	Neutral	A state of the transmission in which it is not engaged.
NiMH	Nickel Metal Hydride	A type of rechargeable battery that uses a hydrogen absorbing alloy for the negative electrode.
NOx	Nitrogen Oxides	Refers to any of the following oxygen compounds of nitrogen or a mixture of them. Nitric Oxide, Nitrogen dioxide, Nitrous Oxide, Dinitrogen trioxide, Dinitrogen tetroxide, Dinitrogen pentoxide.
O2	Oxygen	A colorless, odorless, tasteless, gaseous chemical element with the chemical symbol O and atomic number 8.

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Acronym	Meaning	Definition
O2S	Oxygen Sensor	An electronic device that measures the proportion of oxygen (O2) in the gas or liquid being analyzed.
OBD	On-Board Diagnostic	A generic term referring to a vehicle's self-diagnostic and reporting capability.
OEM	Original Equipment Manufacturer	A producer that provides a product to its customers, who proceed to modify or bundle it before distributing it to their customers.
OSS	Output Shaft Speed	Rotational speed of the output shaft of a transmission.
P	Park	A state in which the transmission is set so one can leave the vehicle.
PCB	Printed Circuit Board	A thin plate on which chips and other electronic components are placed.
PCM	Powertrain Control Module	A control module that features the functions of both, the engine and the transmission control module.
PCMCIA	Personal Computer Memory Card Industry Association	An international standards body and trade association with over 100 member companies that was founded in 1989 to establish standards for Integrated Circuit cards and to promote interchangeability among mobile computers where ruggedness, low power, and small size were critical.
PIN	Personal Identification Number	A secret numeric password shared between a user and a system that can be used to authenticate the user to the system.
PPE	Personal Protective Equipment	Protective clothing, helmets, goggles, or other garment designed to protect the wearer's body from injury.
PRNDL	Park, Reverse, Neutral, Drive, Low	Park, Reverse, Neutral, Drive, Low (automatic transmission positions).
PTC	Positive Temperature Coefficient	Refers to materials that experience an increase in electrical resistance when their temperature is raised.
PTO	Power Take-Off	A splined driveshaft, usually on a tractor or truck that can be used to provide power to an attachment or separate machine. This mechanism allows implements to draw energy from the tractor's engine.
PVC	Polyvinyl Chloride	A thermoplastic copolymer.
PWM	Pulse Width Modulation	Square shaped type of signal that carries the information in the ratio between on and off times.
R	Reverse	Rearward: directed or moving toward the rear;
RAM	Random Access Memory	A type of computer data storage. It today takes the form of integrated circuits that allow the stored data to be accessed in any order.

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Acronym	Meaning	Definition
RCT	Radiator Coolant Temperature	This is the heat intensity of the radiator coolant measured in degrees. The radiator is a part of the cooling system that removes the engine heat. Coolant is a mixture of water and antifreeze (ethylene glycol) which lowers the freezing point of the water in the coolant system, this fluid also picks up heat from the engine and transfers it to the air.
RDS	Radio Data System	A standard from the European Broadcasting Union for sending small amounts of digital information using conventional FM radio broadcasts.
RF	Radio Frequency	A frequency or rate of oscillation within the range of about 3 Hz and 300 GHz. This range corresponds to frequency of alternating current electrical signals used to produce and detect radio waves.
ROM	Read-Only Memory	A class of storage media used in computers and other electronic devices. Data stored in ROM cannot be modified.
RPO	Regular Production Option	A three digit/letter code given to parts, assemblies, and systems originally installed on the vehicle. These RPO codes designate options and are assigned by General Motors.
RSA	Rear Seat Audio	An auxiliary set of controls that operate the main audio system from the rear seat. Rear passengers can also operate a different media source than the front passengers.
RWD	Rear-Wheel Drive	A common engine/transmission layout in which the engine is in the front of the vehicle, but the front mid-engine, rear mid-engine and rear engine layouts are also used.
SCV	Speed Controlled Volume	The volume control is set for a desired sound level in the vehicle as the vehicle increases its speed, the sound level is adjusted.
SDM	Sensing and Diagnostic Module	The name given to air bag modules used in General Motors vehicles.
SIM	Subscriber Identity Module	Part of a removable smart card Integrated Circuit Card. This is used for mobile cellular telephone devices such as mobile computers and mobile phones. SIM cards securely store the service-subscriber key used to identify a subscriber. The SIM card allows users to change phones by simply removing the SIM card from one mobile phone and inserting it into another mobile phone or broadband telephony device.
SIR	Supplemental Inflatable Restraint	Technical term for the air bag. Air bag is a stretchable membrane, which inflates during an automobile accident to provide cushioning to the passenger's head and torso to prevent injury to the passengers.

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Acronym	Meaning	Definition
SPI	Serial Peripheral Interface	This is an interface that enables the serial (one bit at a time) exchange of data between two devices. An SPI operates in full duplex mode. This means that data can be transferred in both directions at the same time. It is a standard bus technology like CAN or I2C.
SPS	Service Programming System	System that enables repair facilities to update the software in control modules.
SUV	Sport Utility Vehicle	A passenger vehicle which combines the towing capacity of a pickup truck with the passenger-carrying space of a minivan.
SVS	Service Vehicle Soon	Indicator lamp or symbol for a malfunction related to a vehicle component or system.
TA	Traffic Announcement	Message spoken on radio regarding the movement of vehicles or pedestrians through an area or along a route. The buttons on radios that enable this announcements are also often labeled TA.
TAC	Throttle Actuator Control	A motor which moves the engine throttle plate or valve, controlled by the engine control module. A throttle plate limits the amount of air entering a internal combustion gasoline engine.
TAP	Transmission Adaptive Pressure	The transmission control module learns each component's characteristics and adjusts fluid pressure accordingly.
TCC	Torque Converter Clutch	Resides in a torque converter to connect an engine to an automatic transmission. The clutch is applied when conditions are correct to achieve a 1:1 ratio of engine crankshaft to transmission input shaft.
TCM	Transmission Control Module	A module that controls electronic automatic transmissions. It uses sensors from the vehicle as well as data provided by the Engine Control Module to calculate how and when to change gears in the vehicle for optimum performance, fuel economy and shift quality.
TDC	Top Dead Center	The piston is in its highest position relative to the combustion chamber.
TIS	Techline Information System	The PC-based global dealership diagnostic software that provides the technician the ability to reference the most recent service information via the service department's computer.
TPA	Terminal Position Assurance	An additional locking mechanism inside an electric connector that holds the pins in place.
TV	Television	A telecommunication system for broadcasting and receiving moving pictures and sound over a distance.

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Acronym	Meaning	Definition
USB	Universal Serial Bus	A type of communication bus connection between a computer and a peripheral device.
VCI	Vehicle Communications Interface	A diagnostic tool that communicates to modules of multiple communication protocols in a vehicle by converting vehicle serial data into PC serial data communication.
VIN	Vehicle Identification Number	Used by manufacturers to uniquely identify motor vehicles using 17 characters.
VSCM	Vehicle Stability Control Module	This module uses information from several sensors to detect a loss of vehicle traction, then works with the antilock brake system to apply individual brakes to help keep the vehicle on its intended path.
VSS	Vehicle Speed Sensor	Sends data regarding how fast the car is traveling at the moment of driving. It is designed to be able to record the rate at which the vehicle's crankshaft is spinning.
WOT	Wide Open Throttle	When the throttle blade or valve is at its maximum open position, allowing maximum air to enter an internal combustion gasoline engine.
WLAN	Wireless Local Area Network	Standard to transmit digital data via radio frequency.
XM	XM (Satellite Radio)	XM Satellite Radio Holdings (XM) is one of two satellite radio services in the United States and Canada. XM provides pay-for-service radio, analogous to cable television. Its service includes 73 different music channels, 39 news, sports, talk, and entertainment channels, 21 regional traffic and weather channels and 23 play-by-play sports channels (2008).
XML	Extensible Markup Language	A markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable.

Units

Unit	Meaning	Definition
m^2	Square Meter	Area
A	Ampere	Electrical
Ah	Ampere Hour	Electrical
C	Coulomb	Electrical
dBm	Decibel Meter	Electrical
dBmV	Decibel Millivolt	Electrical

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Unit	Meaning	Definition
mV/DIV	Millivolts per Division	Electrical
mV/s	Millivolts per Second	Electrical
Ω	Ohm	Electrical
V	Volt	Electrical
V/DIV	Volts per Division	Electrical
V/ms	Volts per Millisecond	Electrical
W	Watt	Electrical
mm^3 /stroke	Cubic Millimeters per Stroke	Flow
gal/h	Gallons per Hour	Flow
g/s	grams per second	Flow
g/stroke	Grams per Stroke	Flow
kg/100km	Kilograms per 100 Kilometer	Flow
kg/h	Kilograms per Hour	Flow
km/L	kilometer/liter	Flow
L/100km	Liters per 100 Kilometers	Flow
L/h	Liters per Hour	Flow
L/min	Liters per Minute	Flow
MPG	Miles per Gallon	Flow
mg/s	Milligrams per Second	Flow
mg/stroke	Milligrams per stroke	Flow
ft	feet	Length
in	Inch	Length
m	Meter	Length
mi	Mile	Length
bar	Bar	Mechanical
bar/min	Bars per Minute	Mechanical
in. H2O	Inches of Water	Mechanical
in. H2O/s	Inches of Water per second	Mechanical
kPa/s	Kilopascals per Second	Mechanical
N	Newton	Mechanical

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Unit	Meaning	Definition
Â	Newton Meter	Mechanical
Pa	Pascal	Mechanical
Pa/s	Pascals per Second	Mechanical
lb ft	Pound Foot	Mechanical
PSI	Pound-Force per Square Inch	Mechanical
Counts	Counts	Misc.
Cycles	Cycles	Misc.
dB	Decibel	Misc.
Â°	Degree	Misc.
Â°C	Degree Centigrade	Misc.
Â°CA	Degree Crankshaft Angle	Misc.
Â°F	Degree Fahrenheit	Misc.
Â°/s	Degree per Second	Misc.
Hz	Hertz	Misc.
kbit/s	Kilobit per second	Misc.
lx	Lux	Misc.
ppm	Parts per Million	Misc.
%	Percent	Misc.
%/min	Percents per Minute	Misc.
%/sec	Percents per Second	Misc.
Pulses	Pulses	Misc.
:1	Ratio	Misc.
RPM	Revolutions per Minute	Misc.
Steps	Steps	Misc.
W/m^2	Watts per Square Meter	Misc.
g	g (Acceleration)	Movement
km/h	Kilometers per Hour	Movement
m/s	Meters per Second	Movement
m/s^3	Meters per Second Cubed	Movement
m/s^2	Meters per Second Squared	Movement

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Unit	Meaning	Definition
MPH	Miles per Hour	Movement
mm/s	Millimeters per Second	Movement
d	Day	Time
h	Hour	Time
hh:mm:ss	Hour:Minute:Second	Time
ms/DIV	Milliseconds per Division	Time
min	Minute	Time
s	Second	Time
s/DIV	Seconds per Division	Time
yy-mm-dd	Year-Month-Day (2 digits)	Time
yyyy-mm-dd	Year-Month-Day (4 digits, preferred)	Time
m^3	Cubic Meter	Volume
gal	Gallon	Volume
L	Liter	Volume
mL	milliliters	Volume
US gal	US Gallon	Volume
US pt	US Pint	Volume
US qt	US Quart	Volume
kg	Kilogram	Weight

TEXT FORMATS AND SYMBOLS

Service Information Text Strings

Text strings have been introduced in the Service Information procedures in an effort to increase consistent and common global phrases. Text strings are common, predefined, fixed phrases used in service information.

Text Strings - Sentence Format

Text string sentences are used when frequently used procedure steps require additional explanation. They are complete sentences that contain the necessary elements to describe an action or a fact.

Text Strings - Chain Format

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Text string chains contain a component name and an action verb. Text string chains are used when little explanation is required to complete a procedure step.

Text String Chain Symbols

Symbol	Description
Â»	This symbol is used to separate the object from the task or nominal value.
:	Used to separate tool and secondary qualifier statements from the details (operational, scan tool, or circuit information).
&	Separates two electrical test points.
@	Used to separate any location information (replaces "from the", "to the" or "at").
()	Used for illustration callout references.
[ ]	Used for quantity references.
{ }	Used to identify decisional information (RPOs, AWD, If equipped, etc.).
-	Dashes are used to separate additional information. Additional information goes at the end of the subject matter.

CUSTOMER CONCERN VERIFICATION SHEETS

The GM Customer Concern Verification Sheets have been designed to improve communications between the service customer and the technician. The more clearly the technician understands the concern and its symptoms, the more likely the concern will be fixed right the first time.

The GM-wide Customer Concern Verification Sheets are available in GM GlobalConnect. The Customer Concern Verification Sheets may be printed and reproduced locally.

TRAINING

Dealers

All U.S. GM Dealers participating in the Center of Learning / GM Service Technical College (STC) Programs can enroll through the Center of Learning website at https://www.centerlearning.com. Within the website, there are individual training paths that are designed to assist in planning the training needs for each individual and their job role. Dealers who have questions about Center of Learning Training should contact the Center of Learning help desk at 1-888-748-2687. The help desk is available Monday through Friday, 8:00 am - 9:00 pm Eastern Standard Time, excluding holidays. For GM Access support, contact the GM Access Help Desk at 1-888-337-1010.

Fleets

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GM Fleet customers with GM Warranty In-Shop agreements are able to participate in service technical training through the Center of Learning/GM Service Technical College (STC).

Assistance for GM fleet registered customers using GM STC training is provided by the Center of Learning help desk at 1-888-748-2687. The help desk is available Monday through Friday, 8:00 am-9:00 pm Eastern Standard Time, excluding holidays. For GM Access support, contact the GM Access Help Desk at 1-888-337-1010.

Most GM STC course materials have associated charges.

To purchase authentic GM STC Training Materials, contact the GM Training Materials Headquarters at 1-800-393-4831.

Non-GM Dealer Technicians

Technician training for non-GM dealers is available through ACDelco. This training is for ACDelco PSC and Fleet program members employed in the automotive or truck service industry.

ACDelco courses are available at approved GM STC Training Centers. Availability and schedules can be obtained by calling 1-800-825-5886 (prompt 1) or contact us via the web at www.acdelcotechconnect.com and select the Training tab. Seminars are also offered through the ACDelco Warehouse Distribution channel. Contact your Local ACDelco representative or distributor directly for more information.

VEHICLE, ENGINE AND TRANSMISSION ID AND VIN LOCATION, DERIVATIVE AND USAGE (CADILLAC)

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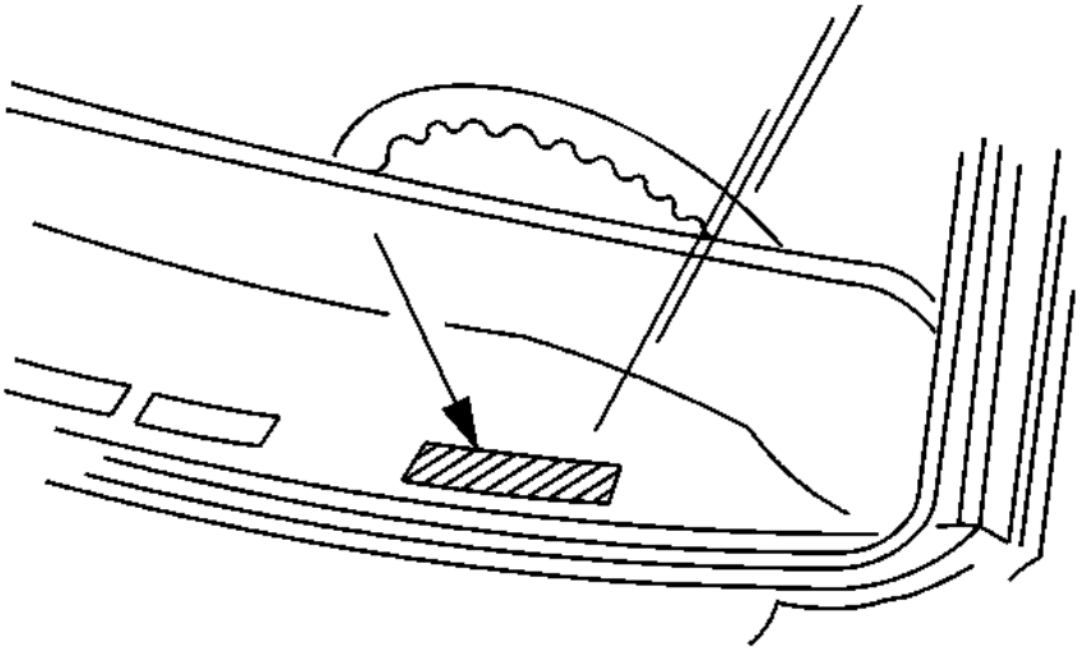

Fig. 2: Locating Vehicle Identification Number (VIN) Plate
Courtesy of GENERAL MOTORS COMPANY

The vehicle identification number (VIN) plate is the legal identifier of the vehicle. The VIN plate is located on the upper left corner of the instrument panel (I/P). The VIN number can be seen through the windshield from the outside of the vehicle:

Vehicle Identification Number (VIN) System

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Position	Definition	Character	Description
1	Country of Origin	1	United States
2	Manufacturer	G	General Motors
3	Make	Y	Cadillac MPV
4	GVWR/Brake System/Body Style	S	7, 001-8, 000 lbs Hydraulic
5	Line Chassis	3	4x2
		4	4x4
6	Series	A	Escalade Standard
		B	Escalade Luxury Collection
		C	Escalade Premium Collection
		D	Escalade Platinum Collection
		G	Escalade ESV Standard
		H	Escalade ESV Luxury Collection
		J	Escalade ESV Premium Collection
		K	Escalade ESV Platinum Collection
		7	Escalade Export (Non US, Non Canada)
		8	Escalade ESV Export (Non US, Non Canada)
7	Restraint System	K	Active Manual Belts, Airbag - Driver and Passenger - Front (1st row), Front Seat Side (1st row), Front Inboard Seat Side (1st) row), Roof Side (All seating rows)
8	Engine Type	J	RPO L86, Engine - Gas, 8 CYL, 6.2L, SIDI VVT, AFM, E85 MAX, Aluminum
9	Check Digit	-	Check Digit
10	Model Year	G	
11	Plant Location	R	Arlington, TX
12-17	Plant Sequence Number	100, 001	Plant Sequence Number

6.2L L86 Engine ID and VIN Derivative Location

Refer to **Engine Identification** .

6L80 MYC Transmission ID and VIN Derivative Location

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Refer to **Transmission Identification Information** .

VEHICLE, ENGINE AND TRANSMISSION ID AND VIN LOCATION, DERIVATIVE AND USAGE (CHEVROLET)

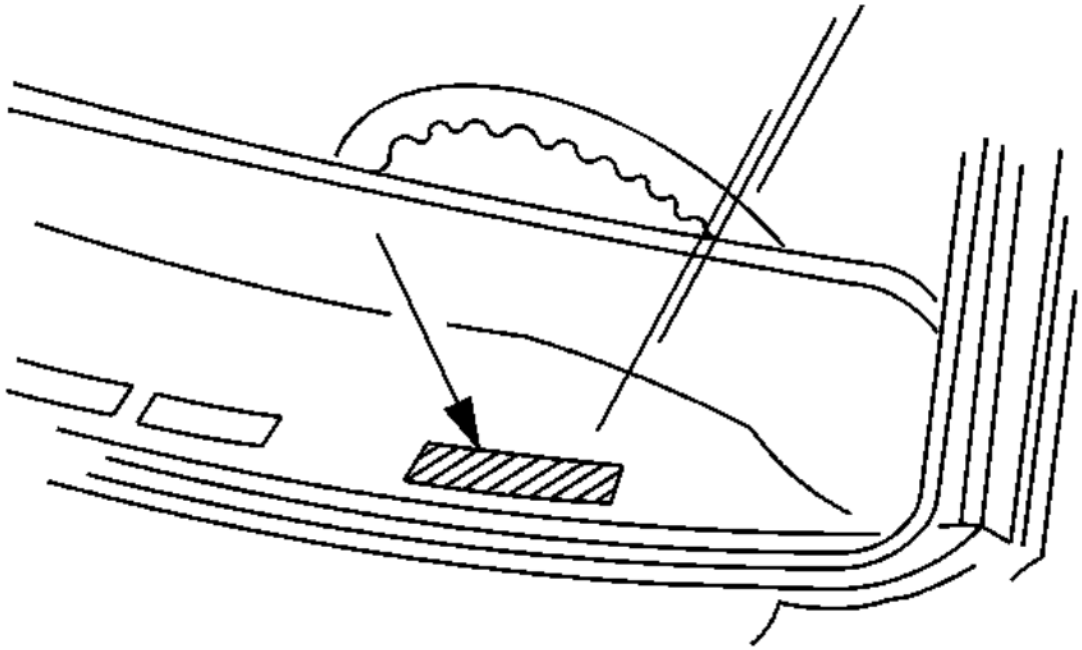

Fig. 3: Locating Vehicle Identification Number (VIN) Plate
Courtesy of GENERAL MOTORS COMPANY

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The vehicle identification number (VIN) plate is the legal identifier of the vehicle. The VIN plate is located on the upper left corner of the instrument panel (I/P). The VIN number can be seen through the windshield from the outside of the vehicle:

Vehicle Identification Number (VIN) System

Position	Definition	Character	Description
1	Country of Origin	1	United States
2	Manufacturer	G	General Motors
3	Make	N	Chevrolet MPV
4	GVWR/Brake System/Body Style	L	6, 001-7, 000 lbs Hydraulic
		S	7, 001-8, 000 lbs Hydraulic
5	Line Chassis	C	4x2
		K	4x4
6	Series	A	1/2 ton Tahoe LS
		B	1/2 ton Tahoe LT
		C	1/2 ton Tahoe LTZ
		D	1/2 ton Tahoe Police Vehicle
		G	1/2 ton Suburban LS
		H	1/2 ton Suburban LT
		J	1/2 ton Suburban LTZ
		K	1/2 ton Suburban FL
		3	1/2 ton Tahoe Special Services Vehicle
		4	1/2 ton Tahoe FL
		6	1/2 ton Tahoe Export (Non US, Non Canada)
		8	Suburban Export (Non US, Non Canada)
7	Restraint System	E	Active Manual Belts, Airbags - Driver and Passenger - Front (1st row), Front Seat Side (1st row), Roof Side (All seating rows)
		K	Active Manual Belts, Airbag - Driver and Passenger - Front (1st row), Front Seat Side (1st row), Front Inboard Seat Side (1st) row), Roof Side (All seating rows)
8	Engine Type	C	RPO L83, Engine - Gas, 8 CYL, 5.3L, SIDI VVT, AFM, E85 MAX, Aluminum

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Position	Definition	Character	Description
		J	RPO L86, Engine - Gas, 8 CYL, 6.2L, SIDI VVT, AFM, E85 MAX, Aluminum
9	Check Digit	-	Check Digit
10	Model Year	G	
11	Plant Location	R	Arlington, TX
12-17	Plant Sequence Number	100, 001	Plant Sequence Number

5.3L L83, 6.2L L86 Engine ID and VIN Derivative Location

Refer to **Engine Identification** .

6L80 MYC Transmission ID and VIN Derivative Location

Refer to **Transmission Identification Information** .

VEHICLE, ENGINE AND TRANSMISSION ID AND VIN LOCATION, DERIVATIVE AND USAGE (GMC)

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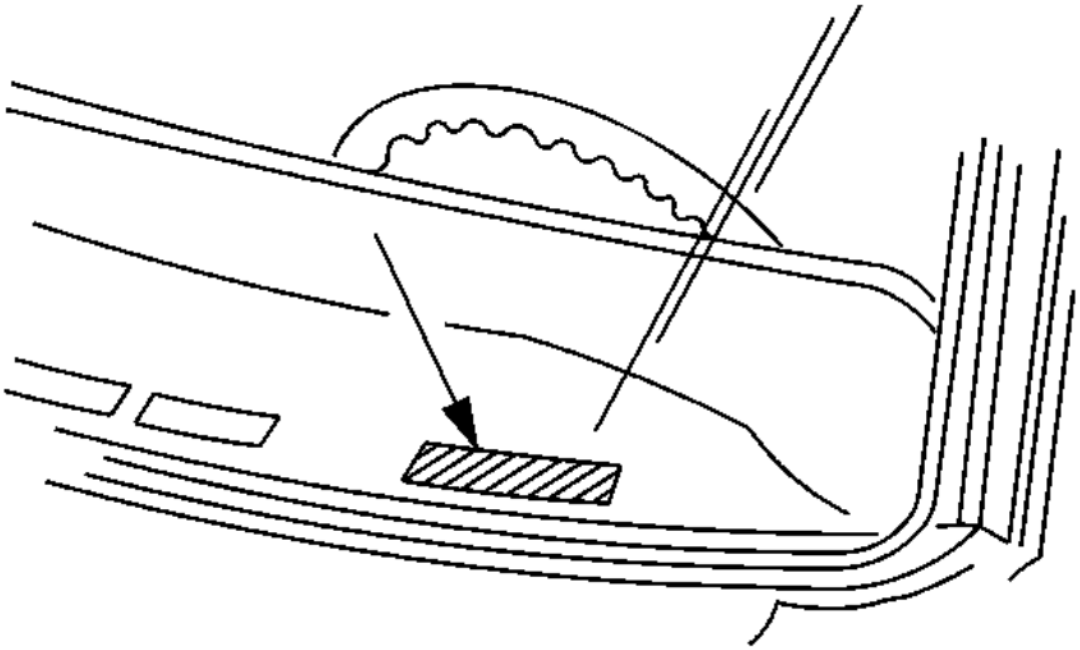

Fig. 4: Locating Vehicle Identification Number (VIN) Plate
Courtesy of GENERAL MOTORS COMPANY

The vehicle identification number (VIN) plate is the legal identifier of the vehicle. The VIN plate is located on the upper left corner of the instrument panel (I/P). The VIN number can be seen through the windshield from the outside of the vehicle:

Vehicle Identification Number (VIN) System

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Position	Definition	Character	Description
1	Country of Origin	1	United States
2	Manufacturer	G	General Motors
3	Make	K	GMC MPV
4	GVWR/Brake System/Body Style	S	7, 001-8, 000 lbs Hydraulic
5	Line Chassis	1	4x2
		2	4x4
6	Series	A	1/2 ton Yukon SLE
		B	1/2 ton Yukon SLT
		C	1/2 ton Yukon Denali
		F	1/2 ton Yukon XL SLE
		G	1/2 ton Yukon XL SLT
		H	1/2 ton Yukon XL Denali
		7	Yukon Export (Non US, Non Canada)
		8	Yukon XL Export (Non US, Non Canada)
7	Restraint System	E	Active Manual Belts, Airbags - Driver and Passenger - Front (1st row), Front Seat Side (1st row), Roof Side (All seating rows)
		K	Active Manual Belts, Airbag - Driver and Passenger - Front (1st row), Front Seat Side (1st row), Front Inboard Seat Side (1st) row), Roof Side (All seating rows)
8	Engine Type	C	RPO L83, Engine - Gas, 8 CYL, 5.3L, SIDI VVT, AFM, E85 MAX, Aluminum
		J	RPO L86, Engine - Gas, 8 CYL, 6.2L, SIDI VVT, AFM, E85 MAX, Aluminum
9	Check Digit	-	Check Digit
10	Model Year	G	2017
11	Plant Location	R	Arlington, TX
12-17	Plant Sequence Number	100, 001	Plant Sequence Number

5.3L L83, 6.2L L86 Engine ID and VIN Derivative Location

Refer to **Engine Identification** .

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6L80 MYC Transmission ID and VIN Derivative Location

Refer to **Transmission Identification Information** .

VEHICLE CERTIFICATION, TIRE PLACARD, ANTI-THEFT, AND SERVICE PARTS ID LABEL

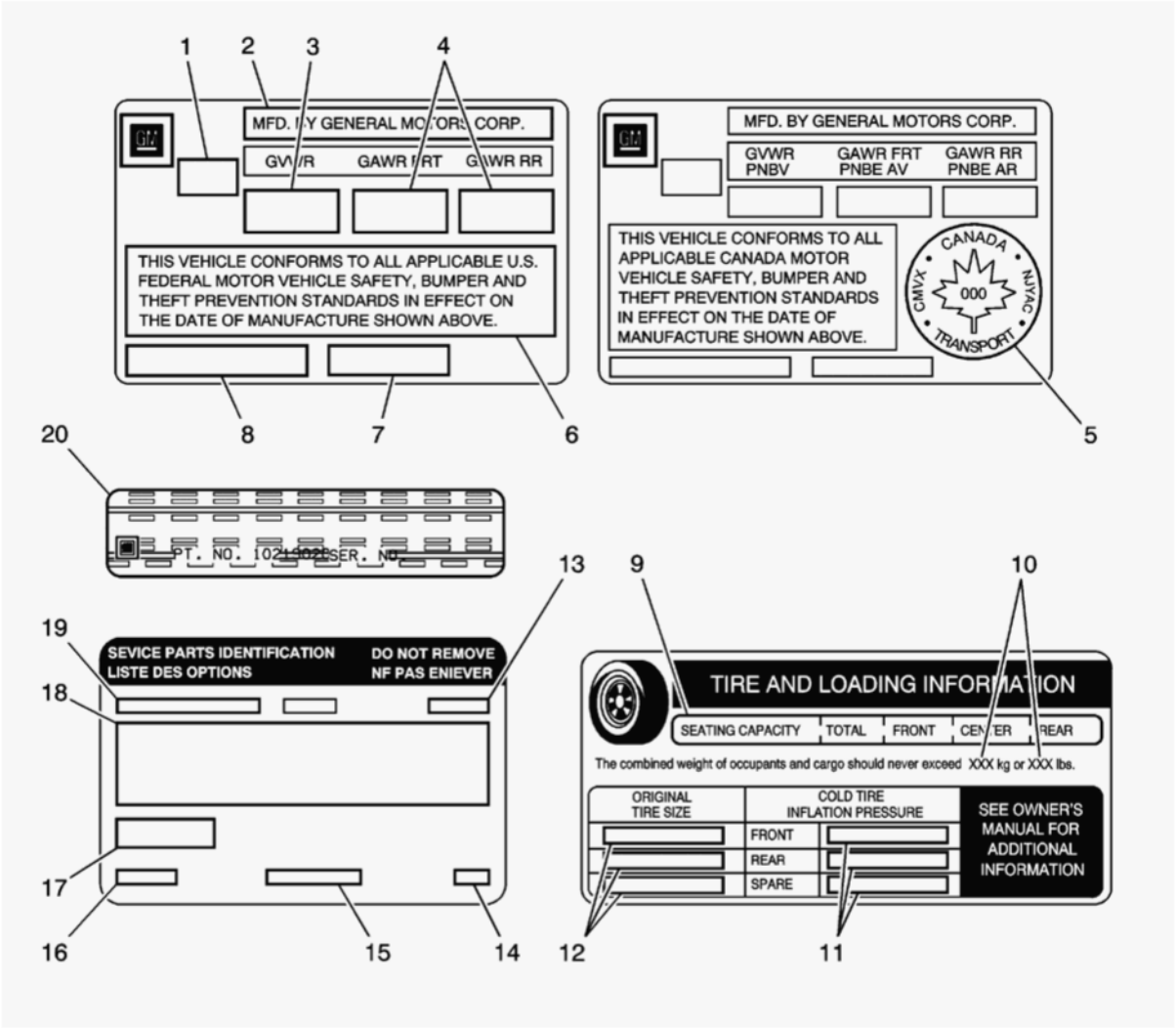

Fig. 5: Identifying Vehicle Certification, Tire Place Card, Anti-Theft & Service Parts ID Labels
Courtesy of GENERAL MOTORS COMPANY

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Callout	Description

Vehicle Certification Label
The vehicle certification label is located on the driver side B-pillar 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 gross vehicle weight 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)
Tire Placard The tire placard label is located on the driver side B-pillar and displays the following assessments:	
9	Specified Occupant Seating Positions
10	Maximum Vehicle Capacity Weight
11	Tire Pressure, Front, Rear, and Spare (Cold)
12	Original Equipment Tire Size
Service Parts ID Label The vehicle service parts identification label is located in the instrument panel (I/P) compartment. The label is use to help identify the vehicle original parts and options.	
13	Vehicle Identification Number
14	Engineering Model Number (Vehicle Division, Line and Body Style)

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Callout	Description
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

RPO Table

RPO	Description
The production/process codes provide the description of the Regular Production Options (RPOs). The RPO list is printed on the Service Parts Identification Label.	
1LR	MODIFICATION-BRAKE SYSTEM, OPTIONAL LININGS
4AA	INTERIOR TRIM-JET BLACK
4B8	INTERIOR TRIM-COCOA / SHALE
4D7	INTERIOR TRIM-JET BLACK/DK ASH
4DP	INTERIOR TRIM-COCOA / DUNE
4ER	INTERIOR TRIM-JET BLACK / VECCHIO
4EY	INTERIOR TRIM-COCOA / PILLION BROWN SAUVAGE
4EZ	INTERIOR TRIM-COCOA / DARK ATMOSPHERE
4FP	INTERIOR TRIM-PLATINUM JET BLACK
4FQ	INTERIOR TRIM-CHOOCCACHINO
5AZ	ACCESSORY-SAFETY KIT - UNIVERSAL
5JL	ACCESSORY-BRAKE UPGRADE PKG 1 - COMPLETE

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RPO	Description
5W4	SALES PACKAGE-SPECIAL SERVICE, MUNICIPAL
5Y3	ACCESSORY-TOW BALL - TRAILER HITCH
9C1	SALES PACKAGE-POLICE VEHICLE
9G3	SALES PACKAGE-"OFF ROAD"
A31	WINDOW-POWER OPERATED, ALL DOORS (DO NOT USE ON NEW/MAJOR PROGRAMS)
A45	MEMORY-SEAT ADJUSTER, MIRROR, POWER, DRIVER, PERSONALIZATION
A4M	SALES PROCESSING OPT-#3
A95	SEAT-FRT BKT, HIGH BACK, DRIVER & PASS RECL
ACO	IDENTIFICATION-ACCESSORY CATALOG OFFERING
AG1	ADJUSTER FRT ST-POWER, MULTI-DIRECTIONAL, DRIVER
AG2	ADJUSTER PASS ST-POWER, MULTI-DIRECTIONAL
AKJ	WINDSHIELD STYLE-SHADE BAND
AKK	WINDSHIELD STYLE-ACOUSTIC PVB
AKO	WINDOW TYPE-PRIVACY
AKP	WINDOW TYPE-SOLAR ABSORBING
AKX	WINDSHIELD TYPE-SOLAR ABSORBING
AL0	SENSOR INDICATOR-INFLATABLE RESTRAINT, FRT PASS/CHILD PRESENCE DETECTOR
AMF	LOCK CONTROL-ADDITIONAL, PROGRAMMABLE, REMOTE ENTRY, MULTIPLE UNITS
AN3	SEAT-FRT, INDIVIDUAL (NON BKT)
AP9	NET-CONVENIENCE
AQQ	LOCK CONTROL, ENTRY-REMOTE ENTRY, EXTENDED RANGE (MY 09 AND FUTURE)
ARL	PLANT CODE-ARLINGTON, TX, USA
ARN	SEAT THIRD ROW-60/40 BENCH, MAN FOLD
AS8	SEAT THIRD ROW-60/40 BENCH, POWER FOLD
AT6	SEAT RR-BENCH, 60/40 MANUAL CONFIGURABLE
ATD	SEAT THIRD ROW-NONE
ATH	LOCK CONTROL, ENTRY-REMOTE ENTRY, EXTENDED RANGE, PASSIVE ENTRY, ALL DOORS
ATN	SEAT RR-BUCKET, POWER CONFIGURABLE
ATT	SEAT RR-BENCH, 60/40 POWER CONFIGURABLE
ATV	SEAT RR-BUCKET, MANUAL CONFIGURABLE

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RPO	Description
AU3	LOCK CONTROL-SIDE DR, ELEC
AX4	RESTRAINT CONVERSION-SEAT, MAN, EUROPEAN
AX7	RESTRAINT PROVISIONS-AUTOMATIC BELTS, PRE-CRASH, PRE-TIGHTENING
AXP	VEHICLE TYPE-MULTI-PURPOSE PASSENGER VEHICLE
AXX	VEHICLE TYPE-VEHICLE TYPE - NOT REQUIRED DO NOT USE
AY0	RESTRAINT SYSTEM-SEAT, INFLATABLE, DRIVER & PASS FRT, SEAT SIDE, ROOF SIDE
AYE	RESTRAINT-HEAD, RR SEAT, ANILINE LEATHER (WITH DVD) (DO NOT USE AFTER M.Y. 2017)
AYQ	RESTRAINT SYSTEM-SEAT, INFLATABLE, DRIVER & PASS FRT, FRT SEAT SIDE, FRT INBOARD SEAT SIDE, ROOF SIDE
AZ3	SEAT-FRT SPLIT, DRIVER, PASS, FULL FEATURE CENTER
B30	COVERING FLOOR-CARPET
B3V	TEST-EXTENDED WATER
B58	COVERING-FLOOR MAT, FRT & RR, CARPETED INSERT
B5N	COVERING-FLOOR MAT, FRT & RR, RUBBER
B85	MOLDING B/S-EXTERIOR, BRIGHT
B86	MOLDING B/S-BODY COLOR
BAG	PARTS PKG-EXPORT
BG9	COVERING FLOOR-RUBBER
BPH	APPEARANCE PACKAGE-CHEVROLET "OFF ROAD"
BRS	STEPS, RUNNINGBOARD-SIDE, RETRACTABLE, POWER
BTM	SWITCH-ENGINE START, KEYLESS
BTV	REMOTE START-ENGINE
BVE	STEPS, RUNNINGBOARD-SIDE
C25	WIPER SYS RR WINDOW-INTERMITTENT
C49	DEFOGGER-RR WINDOW, ELECTRIC
C9I	SWITCH-ROLL OVER SENSING
CE1	WIPER SYS WINDSHIELD-PULSE, MOISTURE SENSITIVE
CF5	ROOF-SUN, GLASS, SLIDING, ELEC
CJ4	HVAC SYSTEM-AIR CONDITIONING, FRT & RR ELECTRONIC CONTROLS
CK4	COUNTRY-GREECE

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RPO	Description
CL5	COUNTRY-PERU
CL6	COUNTRY-BOLIVIA
CT1	COUNTRY-BELGIUM
CT2	COUNTRY-AUSTRIA
CT3	COUNTRY-GERMANY
CT5	COUNTRY-NETHERLANDS
CT6	COUNTRY-ITALY
CT7	COUNTRY-DENMARK
CT9	COUNTRY-SPAIN
CU1	COUNTRY-NORWAY
CU2	COUNTRY-FINLAND
CU3	COUNTRY-FRANCE
CU4	COUNTRY-SWEDEN
CU5	COUNTRY-SWITZERLAND
CU7	COUNTRY-KUWAIT
CU8	COUNTRY-SAUDI ARABIA
CV3	COUNTRY-MEXICO
CV5	COUNTRY-JAPAN
CV6	COUNTRY-CHILE
CW2	COUNTRY-GULF AREAS (BAHRAIN, KUWAIT, OMAN, QATAR, SAUDI ARABIA, UAE)
CW9	COUNTRY-MISCELLANEOUS
CX2	COUNTRY-COLOMBIA
CX3	COUNTRY-ECUADOR
CX9	COUNTRY-LEBANON
CY2	COUNTRY-JORDAN
CZ3	COUNTRY-RUSSIA
D07	CONSOLE-FRT COMPT, FLOOR, CUSTOM
D2D	COUNTRY-PHILIPPINES
D2Y	COUNTRY-ANTIGUA
D3B	COUNTRY-BERMUDA

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RPO	Description
D3D	COUNTRY-REPUBLIC OF TRINIDAD AND TOBAGO
D3I	COUNTRY-BARBADOS
D3J	COUNTRY-CAYMAN ISLANDS
D3K	COUNTRY-DOMINICAN REPUBLIC
D3L	COUNTRY-EL SALVADOR
D3M	COUNTRY-GUATEMALA
D3P	COUNTRY-HAITI
D3Q	COUNTRY-HONDURAS
D3U	COUNTRY-ST MAARTEN
D4G	COUNTRY-BAHAMAS
D4N	COUNTRY-COSTA RICA
D5D	COUNTRY-NICARAGUA
DCK	CONSOLE-FRT COMPT, FLOOR, CUSTOM, W/COOLER
DD8	MIRROR I/S R/V-LT SENSITIVE
DL3	MIRROR O/S-LH & RH, REMOTE CONTROL, ELECTRIC, HEATED, POWER FOLDING, TURN SIG IND, LT SENSITIVE, COLOR
DL8	MIRROR O/S-LH & RH, REMOTE CONTROL, ELECTRIC, HEATED
DNS	EQUIPMENT-SUPPLIER INSTALLED
DNU	EQUIPMENT-ADDITIONAL VIDEO SCREEN
DR4	MIRROR O/S-LH & RH, REMOTE CONTROL, ELECTRIC, HEATED, LT SENSITIVE, POWER FOLDING, COLOR
DT4	ASHTRAY-CIGARETTE LIGHTER
E01	STEPS-ASSIST
EF5	COUNTRY-PANAMA
EF7	COUNTRY-UNITED STATES OF AMERICA (USA)
EXP	EXPORT-
FE9	CERTIFICATION-EMISSION, FEDERAL
FHO	VEHICLE FUEL-GASOLINE E10
FHS	VEHICLE FUEL-GASOLINE E85
G1C	PRIMARY COLOR-EXTERIOR, OVERCAST MET(402Y)

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RPO	Description
G1E	PRIMARY COLOR-EXTERIOR, LIMITED ADDICTION RED TINT (405Y)
G1W	PRIMARY COLOR-EXTERIOR, ABALONE WHITE TRICOAT(140X)
G7U	PRIMARY COLOR-EXTERIOR, PLUM BERRY MET (143X)
G80	AXLE POSITRACTION-LIMITED SLIP
GAN	PRIMARY COLOR-EXTERIOR, SWITCHBLADE SILVER MET (G) 636R
GAZ	PRIMARY COLOR-EXTERIOR, SUMMIT WHITE (G) 8624
GBA	PRIMARY COLOR-EXTERIOR, BLACK (G) 8555
GT5	AXLE REAR-4.10 RATIO
GU4	AXLE REAR-3.08 RATIO
GU5	AXLE REAR-3.23 RATIO
GU6	AXLE REAR-3.42 RATIO
GWT	PRIMARY COLOR-EXTERIOR, CHAMPAGNE SILVER MET (102V)
GWX	PRIMARY COLOR-EXTERIOR, SUBTERRANEAN MET (105V)
GXG	PRIMARY COLOR-EXTERIOR, IRIDIUM MET (121V)
H0K	INTERIOR TRIM CONFIG-LEATHER, LEVEL 3, COCOA / DUNE
H0U	INTERIOR TRIM CONFIG-CLOTH, LEVEL 2, JET BLACK
H2G	INTERIOR TRIM CONFIG-VINYL, LEVEL 1, JET BLACK
H2T	INTERIOR TRIM CONFIG-CLOTH, LEVEL 2, COCOA / DUNE
H2U	INTERIOR TRIM CONFIG-LEATHER, LEVEL 3, JET BLACK
H2V	INTERIOR TRIM CONFIG-LEATHER, LEVEL 3, JET BLACK / DK ASH
H2X	INTERIOR TRIM CONFIG-LEATHER, LEVEL 4, JET BLACK
H2Y	INTERIOR TRIM CONFIG-LEATHER, LEVEL 4, COCOA / DUNE
H4W	INTERIOR TRIM CONFIG-LEATHER, LEVEL 4, COCOA / DARK ATMOSPHERE
H4X	INTERIOR TRIM CONFIG-LEATHER, LEVEL 4, COCOA / PILLION BROWN SAUVAGE
H4Y	INTERIOR TRIM CONFIG-LEATHER, LEVEL 4, COCOA / SHALE
HD7	HANDLE-O/S, DR, ILLUMINATED
HEW	INTERIOR TRIM CONFIG-CLOTH, LEVEL 3, JET BLACK
HEY	INTERIOR TRIM CONFIG-LEATHER, LEVEL 4, JET BLACK / VECCHIO
HHZ	INTERIOR TRIM CONFIG-LEATHER, LEVEL 4, CHOCCACHINO
HJU	INTERIOR TRIM CONFIG-LEATHER, LEVEL 4, PLATINUM JET BLACK

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RPO	Description
HJV	INTERIOR TRIM CONFIG-CLOTH, LEVEL 3, COCOA / DUNE
I16	ENGINEERING YEAR-2017
IO3	RADIO-INFOTAINMENT SYSTEM - BASE HMI
IO5	RADIO-INFOTAINMENT SYSTEM - UPLEVEL HMI, ENHANCED CONNECTIVITY
IO6	RADIO-INFOTAINMENT SYSTEM - UPLEVEL HMI, ENHANCED CONNECTIVITY, EMBEDDED NAVIGATION
J71	BRAKE PARKING-POWER OPERATED
J95	BRAKE-HYD POWER, SINGLE REAR WHEEL, 4 WHL DISC
JB1	BRAKE-VAC POWER, 17" DISC/DISC, W/ESS, 7700 LBS
JD9	BRAKE-VAC POWER, 17" DISC/DISC, W/VSES, 7700 LBS
JF4	PEDALS-ADJUSTABLE, POWER
JHD	CONTROL-HILL DESCENT, GEAR HOLD
JL1	CONTROL-INTEGRATED TRAILER BRAKE
K05	HEATER ENG-BLOCK
K34	CRUISE CONTROL-AUTOMATIC, ELECTRONIC
K47	AIR CLEANER-HIGH CAPACITY
K4B	BATTERY-LN3, FLA, 12V, 70AH, 730 SAE CCA, AUX
K4C	CHARGER-INDUCTIVE PORTABLE WIRELESS DEVICE
K59	CRUISE CONTROL-AUTOMATIC, ADAPTIVE
KA6	HEATER SEAT-REAR
KB6	HEATER-SEAT, COOLING, FRT
KC4	COOLING SYSTEM-ENG OIL
KG4	GENERATOR-150 AMP
KI4	RECEPTACLE-ELECTRICAL, ACCESSORY 110 VOLT
KI5	RECEPTACLE-ELECTRICAL, ACCESSORY 230 VOLT
KNP	COOLING SYSTEM-TRANS, HD
KRV	REFRIGERANT-LOW GWP
KSG	CRUISE CONTROL-AUTOMATIC, ADAPTIVE, WITH STOP/GO
KW5	GENERATOR-220 AMP
KW7	GENERATOR-170 AMP

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RPO	Description
L83	ENGINE-GAS, 8 CYL, 5.3L, SIDI VVT, AFM, E85 MAX, ALUM, GM
L86	ENGINE-GAS, 8 CYL, 6.2L, SIDI VVT, AFM, E85 MAX, ALUM, GM
L96	ENGINE-GAS, 8 CYL, 6.0L, SFI, E85 MAX, IRON, GM
M5U	TRANSMISSION-AUTO 8 SPD, 8L90
MAA	MARKETING AREA-AFRICA
MAF	MARKETING AREA-SOUTHEAST ASIA
MAH	MARKETING AREA-US, PUERTO RICO/USVI
MAM	MARKETING AREA-MIDDLE EAST
MAY	MARKETING AREA-ANDEAN (SOUTH AMERICA 2)
MBC	MARKETING AREA-CANADA
MBD	MARKETING AREA-CENTRAL AMERICA/CARIBBEAN
MBM	MARKETING AREA-EUROPE GROUP
MBR	MARKETING AREA-RUSSIA GROUP
MCX	MARKETING AREA-MEXICO
MYC	TRANSMISSION-AUTO 6 SPD, HMD, 6L80
MYD	TRANSMISSION-AUTO 6 SPD, HMD, 6L90
N08	LOCK CONTROL-FUEL FILLER DR, REM CONT
N12	EXHAUST SYSTEM-REAR EXIT
N30	STEERING WHEEL-DELUXE
N33	STEERING COLUMN-TILT TYPE
N37	STEERING COLUMN-TILT, TELESCOPING
N38	STEERING COLUMN-TILT, TELESCOPING, POWER
NE1	CERTIFICATION-EMISSION, GEOGRAPHICALLY RESTRICTED REGISTRATION FOR VEHICLES UP TO 14, 000 LBS GVW (USE 2003 MDL YR
NE4	EMISSION SYSTEM-EEC 14
NE9	EMISSION SYSTEM-EEC 09
NHT	PERFORMANCE PACKAGE-ENHANCED TOWING
NK5	STEERING WHEEL-STANDARD
NKC	NOISE CONTROL-SYSTEM, ACTIVE NOISE CANCELLATION
NP0	TRANSFER CASE-ACTIVE, SINGLE SPEED, SWITCH ACTIVATED, ALUM

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RPO	Description
NP5	STEERING WHEEL-LEATHER WRAPPED
NQH	TRANSFER CASE-ACTIVE, TWO SPEED, SWITCH ACTIVATED, ALUM
NT7	EMISSION SYSTEM-FEDERAL, TIER 2
NTB	EMISSION SYSTEM-FEDERAL, TIER 3
NU5	EMISSION SYSTEM-CALIFORNIA, BIN 4
NUF	EMISSION SYSTEM-CALIFORNIA, ULEV125
NUM	EMISSION SYSTEM-CALIFORNIA, LEV3 MDV 10-14K GVW
NZ4	WHEEL SPARE-17 X 7.5, J, STEEL, DESIGN 2
NZD	WHEEL-20 X 9.0, J, ALUMINUM, DESIGN 6
NZG	WHEEL-20 X 9.0, J, ALUMINUM, DESIGN 7
NZT	WHEEL-20 X 9.0, J, ALUMINUM, DESIGN 18
NZZ	SALES PACKAGE-SKID PLATE, "OFF ROAD" SPORT
PB4	LOCK CONTROL-WHEEL
PYQ	WHEEL-17 X 7.5, J, ALUMINUM, DESIGN 7
PZX	WHEEL-18 X 8.5, J, ALUMINUM, DESIGN 2
Q5U	WHEEL-17 X 8.0, J, ALUMINUM, DESIGN 2
Q7L	WHEEL-22 X 9.0, J, ALUMINUM, DESIGN 2
Q7M	WHEEL-22 X 9.0, J, ALUMINUM, DESIGN 3
QAR	TIRE ALL-P265/60R17 SL 108V BW AL3
QBL	TIRE ALL-P265/70R17 SL 113H BW OOR
QHX	TIRE ALL-P285/50R20 SL 111H BW AL3
QSS	TIRE ALL-P275/55R20 SL 111S BW AL2
QST	TIRE ALL-P285/45R22 SL 110H BW AL3
QXO	TIRE ALL-P265/65R18 SL 112H BW AL3
QXT	TIRE ALL-LT265/70R17 E 121/118 Q BW AT
QXU	TIRE ALL-LT265/70R17 E 121/118 Q BW AT
RAP	WHEEL-17 X 8.0, J, STEEL, DESIGN 1
RBR	WHEEL-22 X 9.0, J, STEEL, DESIGN 1
RBX	TIRE ALL-P265/65R18 SL 112T BW AT
RBZ	TIRE ALL-P255/70R17 SL 110S BW ALS

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RPO	Description
RC3	TIRE ALL-P265/70R17 SL 113S BW AT
RC4	TIRE SPARE-P265/70R17 SL 113S BW
RC7	TIRE ALL-P275/55R20 SL 111S BW AT
RCV	WHEEL-18 X 8.5, J, ALUMINUM, DESIGN 4
RCW	WHEEL-18 X 8.5, J, ALUMINUM, DESIGN 5
RD2	WHEEL-20 X 9.0, J, ALUMINUM, DESIGN 2
RD4	WHEEL-20 X 9.0, J, ALUMINUM, DESIGN 4
RD5	WHEEL-20 X 9.0, J, ALUMINUM, DESIGN 5
RD6	WHEEL-17 X 8.0, J, STEEL, DESIGN 2
RHO	WHEEL-20 X 9.0, J, ALUMINUM, DESIGN 19
RI8	TIRE ALL-265/65R18 SL 114S BW MT
RIA	ACCESSORY-FLOOR LINER - CONTOURED
RIB	ACCESSORY-FLOOR LINER - CONTOURED - 3RD ROW
RKX	TIRE ALL-P265/65R18 SL 112T BW ALS
RM7	WHEEL SPARE-17 X 8.0, J, STEEL, DESIGN 1
RTL	WHEEL-20 X 9.0, J, ALUMINUM, DESIGN 1
RUF	WHEEL SPARE-17 X 7.5, J, STEEL, DESIGN 1
RVA	WHEEL-22 X 9.0, J, ALUMINUM, DESIGN 1
RVG	ACCESSORY-ADAPTER - TRAILER HARNESS
RVQ	ACCESSORY-ASSIST STEPS - TUBULAR - OVAL - BLACK
RVX	ACCESSORY-BALL MOUNT - TRAILER HITCH
RWI	ACCESSORY-BODY SIDE MOLDINGS - CHROME
RWK	ACCESSORY-BODY SIDE MOLDINGS - PAINTED
RWS	ACCESSORY-FLOOR MATS - CARPET
RWU	ACCESSORY-CARGO AREA ORGANIZER - COLLAPSIBLE
RX1	ACCESSORY-WHEEL, WITH INSERTS - DESIGN 1
RXH	ACCESSORY-CENTER CAP - WHEEL - DESIGN 1
RXJ	ACCESSORY-CENTER CAP - WHEEL - DESIGN 2
RXN	ACCESSORY-WHEEL, WITH INSERTS - DESIGN 2
RYK	ACCESSORY-REAR SEAT INFOTAINMENT SYSTEM 1

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RPO	Description
RYT	ACCESSORY-FIRST AID KIT
RZ9	ACCESSORY-GRILLES/GRILLE INSERT - ALTERNATE DESIGN 1
RZO	ACCESSORY-WHEEL - 20" - ALUMINUM - DESIGN 9
S0M	ACCESSORY-ILLUMINATED DOOR SILLS
S0P	ACCESSORY-INSERT - FLOOR CONSOLE
S1V	ACCESSORY-HEADPHONES - RSE
S2B	WHEEL SPARE-17 X 7.0, J, ALUMINUM, DESIGN 1
S44	ACCESSORY-LOCKING PIN - TRAILER HITCH
S47	ACCESSORY-LUG NUTS
S6D	ACCESSORY-PORTABLE REFRIGERATOR
S6N	ACCESSORY-RECEIVER COVER - TRAILER HITCH
S6Q	ACCESSORY-ROADSIDE ASSISTANCE PACKAGE
SAF	LOCK-SPARE TIRE, HOIST SHAFT
SAM	ACCESSORY-SKID PLATES
SAO	ACCESSORY-SMOKERS PACKAGE
SD5	ACCESSORY-TIRE PRESSURE MONITOR
SDA	ACCESSORY-TOW HOOKS
SDI	ACCESSORY-TRIANGLE - REFLECTIVE
SES	ACCESSORY-WHEEL - 22 X 9.0 - J - ALUMINUM - DESIGN 1
SEU	ACCESSORY-WHEEL - 22 X 9.0 - J - ALUMINUM - DESIGN 2
SEV	ACCESSORY-WHEEL - 22 X 9.0 - J - ALUMINUM - DESIGN 3
SEW	ACCESSORY-WHEEL - 22 X 9.0 - J - ALUMINUM - DESIGN 4
SEY	ACCESSORY-WHEEL - 22 X 9.0 - J - ALUMINUM - DESIGN 5
SEZ	ACCESSORY-WHEEL - 22 X 9.0 - J - ALUMINUM - DESIGN 6
SF0	ACCESSORY-WHEEL - 22 X 9.0 - J - ALUMINUM - DESIGN 7
SF1	ACCESSORY-WHEEL - 22 X 9.0 - J - ALUMINUM - DESIGN 8
SFE	ACCESSORY-WHEEL LOCKS
SFJ	ACCESSORY-WINDOW SHADES - REFLECTIVE
SFV	ACCESSORY-WIRELESS NETWORK INTERFACE MODULE
SFZ	ACCESSORY-EMBLEM - EXTERIOR - DESIGN 1

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RPO	Description
SGF	WHEEL-22 X 9.0, J, ALUMINUM, DESIGN 4
SGG	WHEEL-22 X 9.0, J, ALUMINUM, DESIGN 5
SJA	ACCESSORY-GRILLE / GRILLE INSERTS - ALTERNATE FINISH 2
SLT	EQUIPMENT-LT' SALES PKG
T3U	LAMP FRT FOG-FRT FOG
T4F	HEADLAMPS-HIGH INTENSITY DISCHARGE
T79	LAMP-FOG, RR
T89	LAMP-TAIL & STOP, EXPORT
TB4	BODY EQUIPMENT-LIFT GATE (MANUAL)
TB5	BODY EQUIPMENT-LIFT GATE (POWER)
TB8	CONTROL, HEADLAMPS-RH RULE OF THE ROAD
TBD	COMMUNICATION SYSTEM-VEHICLE HEALTH MANAGEMENT
TC2	BODY EQUIPMENT-LIFT GATE, POWER, HANDS FREE
TG5	PLAYER-COMPACT DISC AND MP3
TGG	LANGUAGE CONTROL-ENGLISH, ARABIC, FRENCH
TQ5	HEADLAMP HIGH BEAM-AUTO CONTROL
TR2	LAMP-TURN SIGNAL, ENLARGED
TRW	PROVISIONS-LAMP, ROOF MOUNTED
TUF	ORNAMENTATION-EMBLEM, "TEXAS EDITION"
U19	SPEEDOMETER-INST, KILO & MILES, KILO ODOMETER
U2J	DIGITAL AUDIO SYSTEM-S-BAND - NONE
U2K	DIGITAL AUDIO SYSTEM-S-BAND
U2L	RECEPTION-HD
U42	ENTERTAINMENT PKG-RR SEAT, SINGLE DISP, REM CONTROL, RR CONSUMER PORT, 2-WIRELESS 2-CHANNEL HEADPHONES, OPTICAL DRIVE
U77	ANTENNA-RR WINDOW, RADIO
UD5	PARK ASSIST-FRONT AND REAR
UD7	PARK ASSIST-REAR
UDC	DISPLAY INSTRUMENT-DRIVER INFO ENHANCED (ONE COLOR GRAPHIC)
UDD	DISPLAY INSTRUMENT-DRIVER INFO ENHANCED (MULTI COLOR STANDARD GRAPHIC)

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RPO	Description
UDV	DISPLAY INSTRUMENT-DRIVER INFO ENHANCED, FULL CLUSTER (MULTI COLOR GRAPHIC)
UE0	COMMUNICATION SYSTEM-VEHICLE - NONE
UE1	COMMUNICATION SYSTEM-VEHICLE, ONSTAR
UEU	SENSOR INDICATOR-FORWARD COLLISION ALERT
UFG	SENSOR INDICATOR-REAR CROSS TRAFFIC ALERT
UFL	LANE ACTIVE SAFETY-DEPARTURE WARNING
UG1	OPENER-GARAGE DOOR, UNIVERSAL
UGN	COLL IMMINENT BRK-ALL SPEED, VEH FWD MOVEMENT, BRAKE PREFILL, INTEGRATED BRAKE ASSIST
UHN	WHEEL-18 X 8.5, J, ALUMINUM, DESIGN 3
UHS	DISPLAY INSTRUMENT-DRIVER INFO ENHANCED (MULTI COLOR ENHANCED GRAPHIC)
UHX	LANE ACTIVE SAFETY-KEEP ASSIST
UHY	COLL IMMINENT BRK-LOW SPEED, VEH FWD MOVEMENT, BRAKE PREFILL, INTEGRATED BRAKE ASSIST
UJM	TIRE PRESS INDICATOR-MANUAL LEARN
UK3	CONTROL-STEERING WHEEL, ACCESSORY
UKC	SIDE ACTIVE SAFETY-OBSTACLE DETECTION ENHANCED
UL2	FREQUENCIES-EUROPEAN
UL8	FREQUENCIES-SAUDI ARABIAN
ULT	APPEARANCE PACKAGE-CADILLAC ESCALADE, PLATINUM
UMN	SPEEDOMETER-INST, MILES & KILO, MILES ODOMETER
UPF	WIRELESS INTERFACE-SHORT RANGE, VOICE REC
UQ3	SPEAKER SYSTEM-ENHANCED AUDIO
UQA	SPEAKER SYSTEM-PREMIUM AUDIO BRANDED WITH AMPLIFIER
UQG	SPEAKER SYSTEM-ENHANCED AUDIO WITH AMPLIFIER
UQH	SPEAKER SYSTEM-PREMIUM AUDIO BRANDED WITH SURROUND AMPLIFIER, AUDIOPHILE
UQS	SPEAKER SYSTEM-PREMIUM AUDIO BRANDED WITH SURROUND AMPLIFIER
UTJ	THEFT DETERENT-ELECTRICAL, UNAUTHORIZED ENTRY
UTR	ALARM, HORN-CONTENT THEFT DETERENT, SELF POWERED
UTT	THEFT DETERENT-BODY SECURITY CONTENT

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RPO	Description
UTU	SENSOR, VEHICLE-INCLINATION
UTV	SENSOR, VEHICLE-INTERIOR MOVEMENT
UV6	DISPLAY-HEAD UP
UVC	VISION-REAR VIEW, MONO, ANALOG
UVD	STEERING WHEEL HEAT-MANUAL
UVH	VISION-360 VIEW, MONO, ANALOG
UVZ	SENSOR-COLLISION AVOIDANCE & MITIGATION, VEHICLE REVERSE MOVEMENT
V54	LUGGAGE CARRIER-ROOF, PAINTED
V76	HOOK-TOW
VAS	ACCESSORY-GRILLE / GRILLE INSERTS - ALTERNATE FINISH - BODY COLOR
VAT	ACCESSORY-GRILLE / GRILLE INSERTS - ALTERNATE FINISH - CHROME
VAV	ACCESSORY-FLOOR MATS - ALL WEATHER
VBX	LANGUAGE LABEL-ARABIC
VC5	LABEL-SHIPPING, EXCEPT US, US POSSESSIONS, OR JAPAN (DO NOT USE MY18 AND BEYOND)
VFF	VIDEO FORMAT-REGION 1, NTSC
VFJ	VIDEO FORMAT-REGION 2, PAL
VFK	VIDEO FORMAT-REGION 3, NTSC
VFM	VIDEO FORMAT-REGION 4, NTSC
VFP	VIDEO FORMAT-REGION 5, PAL
VGC	PROTECTOR-FILM, PAINT ETCH PREVENTIVE
VH9	ENVELOPE-OWNER INFO MAN
VK3	LICENSE PLATE FRONT-FRT MOUNTING PKG
VKU	ACCESSORY-MIRROR CAPS - CHROME
VKW	ACCESSORY-ORGANIZER - FRONT CONSOLE
VKY	ACCESSORY-DOOR HANDLES - ALTERNATE FINISH - CHROME
VL4	LICENSE PLATE FRONT-FRT MOUNTING PKG, EEC
VL5	LICENSE PLATE-RR MOUNTING PKG, EXPORT
VLG	ACCESSORY-CLOSEOUT - REAR FASCIA
VLI	ACCESSORY-MAT - TRUNK / CARGO AREA

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RPO	Description
VPH	VEHICLE PREPARATION-OVERSEAS DELIVERY
VPV	HANDLING CHARGE-ARLINGTON ASM TO KERR INDUSTRIES, ARLINGTON, TX AND RETURN TO ARLINGTON ASM
VQK	ACCESSORY-SPLASH GUARDS - CUSTOM MOLDED
VQQ	ACCESSORY-CROSS RAILS - ROOF RACK - INTEGRATED - BLACK
VQY	ACCESSORY-TOW HOOKS - CHROME
VQZ	ACCESSORY-EXHAUST TIP - DESIGN 1
VRS	ACCESSORY-CARGO SECURITY SHADE
VRV	ACCESSORY-SPLASH GUARDS - CUSTOM MOLDED - PAINTED
VT7	OWNERS MANUAL-ENGLISH LANGUAGE
VV4	COMMUNICATION EQUIP-MOBILE INTERNET CONNECTIVITY
VVJ	CALIBRATION-SPEEDOMETER (180 KPH/112 MPH)
VXH	ACCESSORY-ASSIST STEPS - TUBULAR - CHROME - OVAL
VZ3	LABEL-MERCURY DISPOSAL NOTIFICATION
W2D	ACCESSORY-CARGO NET
WH9	ACCESSORY-CARGO AREA DIVIDER - VERTICAL
WJI	SALES PACKAGE-MARY KAY
WMG	VIN MODEL YEAR-
WV9	MERCHANDISED PKG-VALUE LEADER
X88	MARKET BRAND-CHEVROLET
XAA	ACCESSORY-TIRE ALL-P275/55R20 SL 111S BW AL2 VAR 1
XAB	ACCESSORY-TIRE ALL-215/45ZR18 XL 93Y BW AL3 VAR 1
XAV	ACCESSORY-TIRE ALL - P285/45R22 SL 110H BW AL3 -VAR 1
XL7	FREQUENCIES RATING-315 MHZ, LONG DISTANCE
XL8	FREQUENCIES RATING-433 MHZ
Y65	SALES PACKAGE-ESS 1
Y66	SALES PACKAGE-ESS 2
Y86	SALES PACKAGE-ESS 1B
Y91	MERCHANDISED PKG-LUXURY EDITION
YF5	CERTIFICATION-EMISSION, CALIFORNIA

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RPO	Description
YM8	IDENTIFICATION-LIMITED PERSONALIZATION OPTION (LPO)
Z49	COUNTRY-CANADA
Z56	CHASSIS PACKAGE-POLICE CONVERSION
Z5X	MIRROR PROVISIONS-ARABIC LANGUAGE
Z71	CHASSIS PACKAGE-"OFF ROAD"
Z75	MARKET BRAND-CADILLAC
Z82	TRAILER PROVISIONS-SPECIAL EQUIPMENT, H.D.
Z85	CHASSIS PACKAGE-INCREASED CAPACITY
Z88	MARKET BRAND-GMC
Z95	CHASSIS PACKAGE-MAGNERIDE
ZAK	TIRE SPARE-P265/60R17 SL 108V BW AL3
ZBL	TIRE SPARE-P265/70R17 SL 113 H BW OOR
ZBZ	TIRE SPARE-P255/70R17 SL 110H BW ALS
ZW7	CHASSIS PACKAGE-PREMIUM SMOOTH RIDE
ZXT	TIRE SPARE-LT265/70R17/E BW TL
ZXU	TIRE SPARE-LT265/70R17 E 121/118 S BW AT
ZY1	COLOR COMBINATION-SOLID

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 PosidriveÂ® or Type 1A cross-recess identifies a metric cross-recess screw. For best results, use a Type 1A cross-recess screwdriver, or equivalent, in PosidriveÂ® 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.

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Fastener Strength Identification

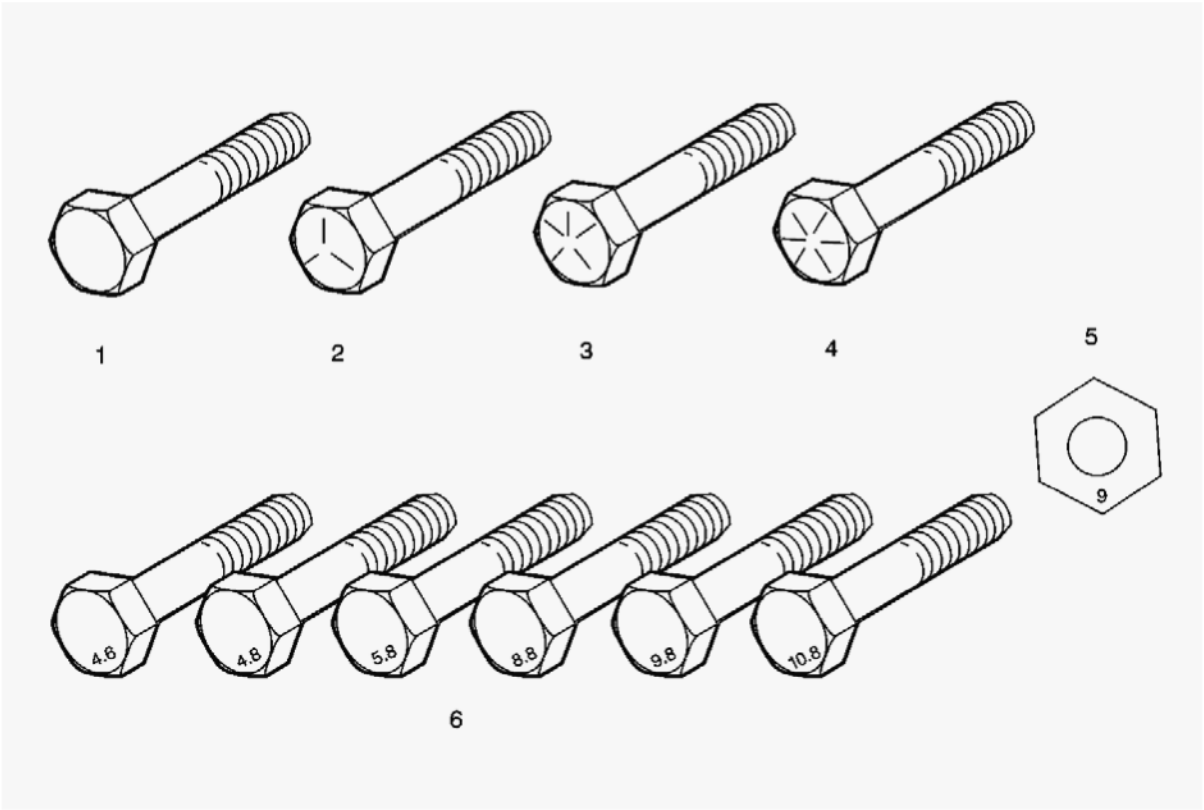

Fig. 6: Identifying Fastener Strength Marks
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
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.

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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

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procedure in order to determine if the fastener may be reused and the applicable thread-locking compound to apply to the fastener.

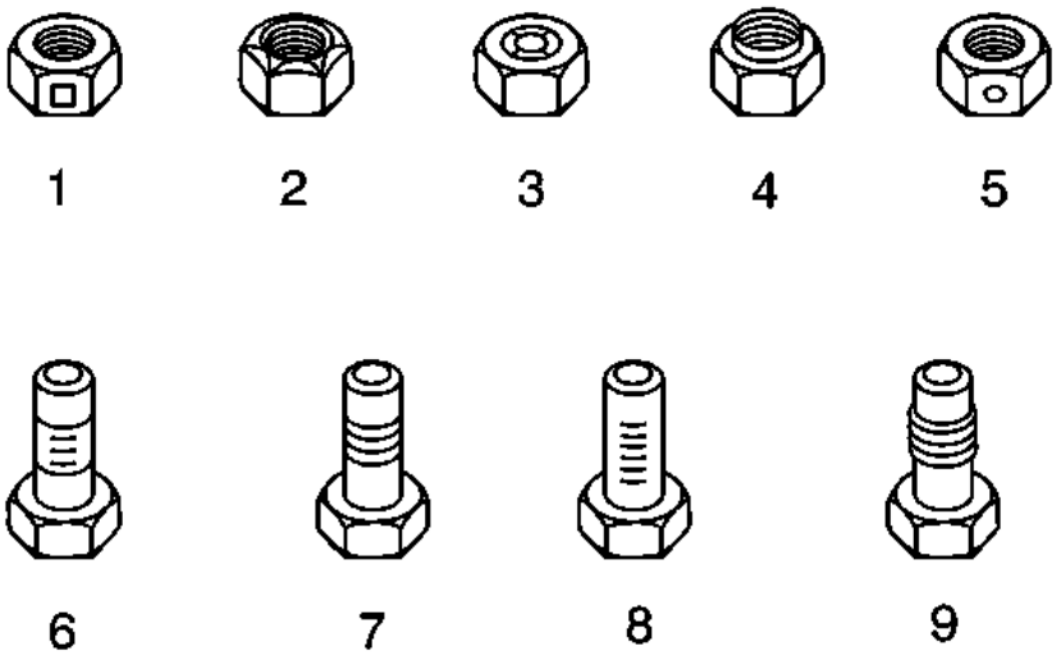

Fig. 7: Identifying Adhesive Coated Fasteners
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Prevailing Torque Nut, Center Lock Type

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Callout	Component Name
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

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Application	Specification	
	Metric	English
• 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

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Application	Specification	
	Metric	English
• 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	62 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

THREAD INSERTS

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General Purpose Thread Repair Kits.

These kits are available commercially.

Repair Procedure

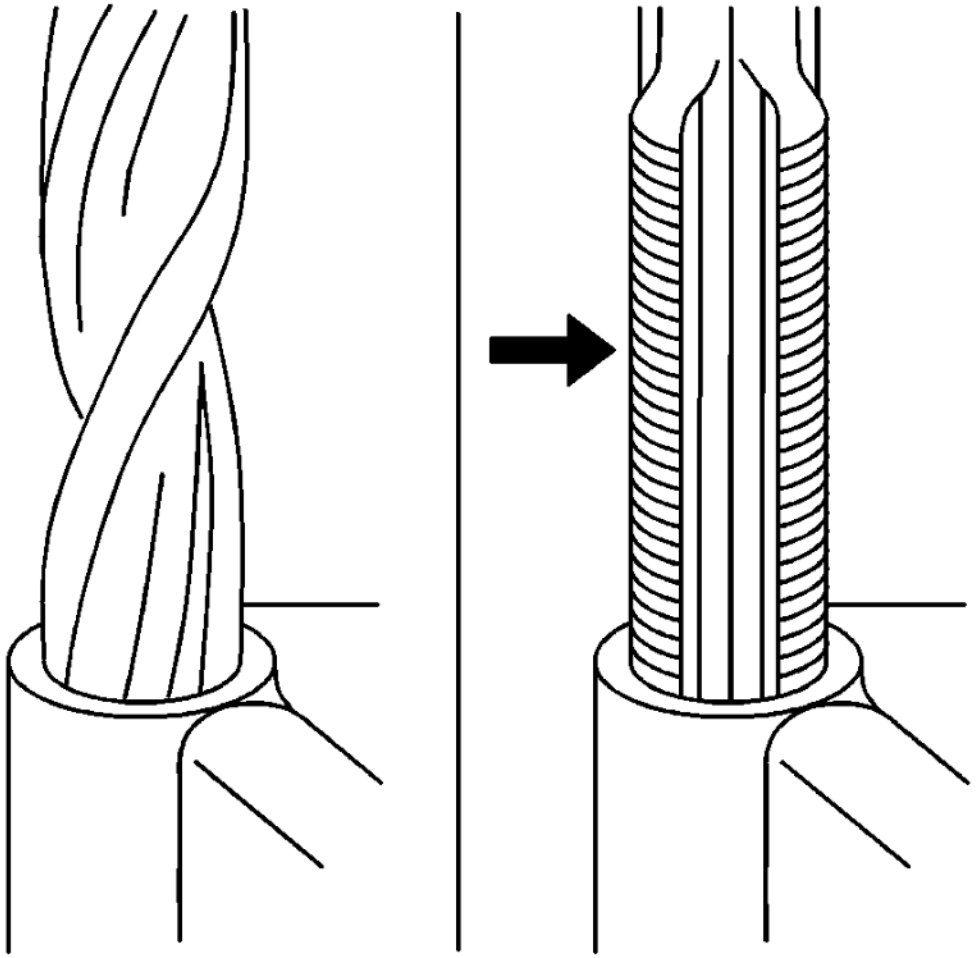

Fig. 8: Drilling & Tapping Damaged Threads

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Courtesy of GENERAL MOTORS COMPANY

WARNING: **Refer to Safety Glasses Warning .**

NOTE: **Refer to the thread repair kit manufacturer's instructions regarding the size of the drill and tap to use.**

Avoid any buildup of chips. Back out the tap every few turns and remove the chips.

1. Determine the size, the pitch, and the depth of the damaged thread. If necessary, adjust the stop collars on the cutting tool and tap to the required depth.
2. Drill out the damaged threads. Clean out any chips.
3. Lubricate the tap with light engine oil. Tap the hole. Clean the threads.

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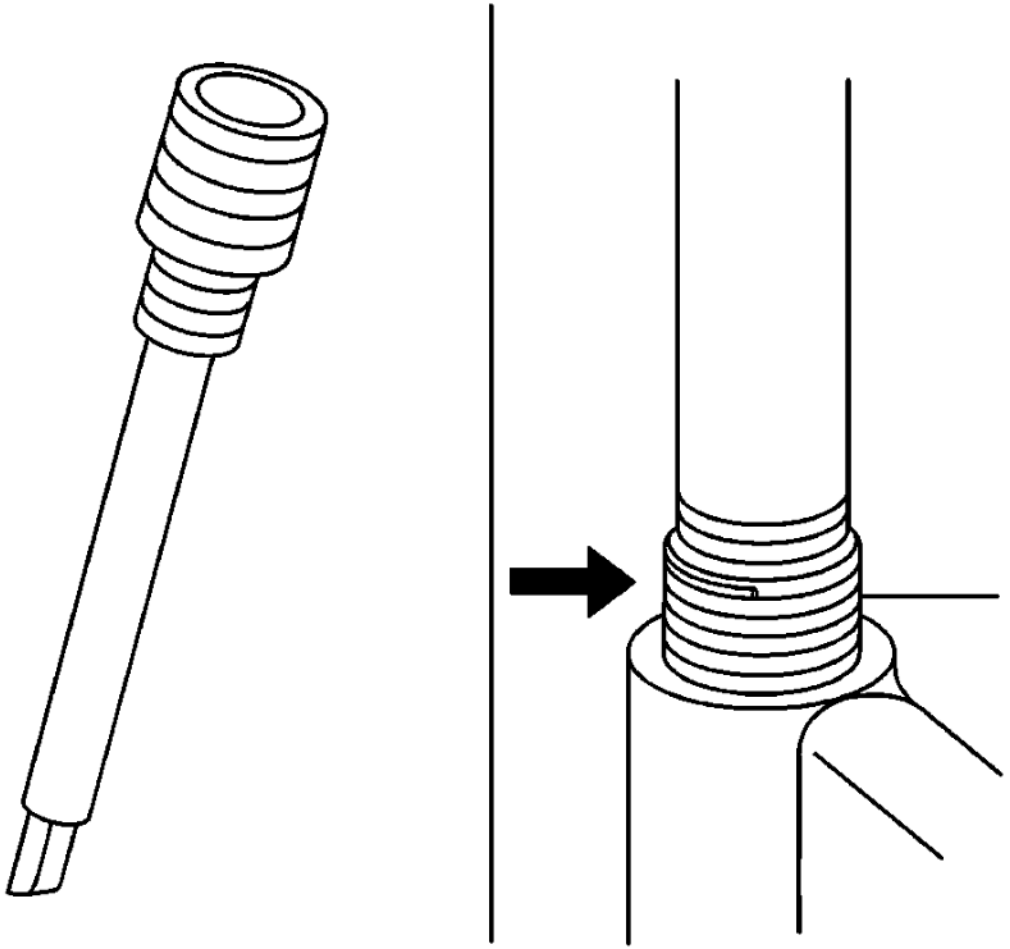

Fig. 9: View Of Thread Insert
Courtesy of GENERAL MOTORS COMPANY

4. Thread the thread insert onto the mandrel of the installer. Engage the tang of the insert onto the end of the mandrel.

NOTE: **The insert should be flush to one turn below the surface.**

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5. Lubricate the insert with light engine oil, except when installing in aluminum and install the insert.
6. If the tang of the insert does not break off when backing out the installer, break the tang off with a drift.

REGISTERED AND NON-REGISTERED TRADEMARKS

Listed below are Registered Trademarks (Â®) or Non-Registered Trademarks (™) which may appear in this service manual.

A
ACÂ®
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ACDelcoÂ®
Active Fuel Management™
AcuzincÂ®
AirbankÂ®
AllisonÂ®
AMMCOÂ®
AUTOFUSEÂ®
AUTOTRACÂ®
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DOOR LOCK AND IGNITION LOCK FOLDING KEY BLADE REMOVAL AND INSTALLATION

Special Tools

BO-51098 Flip Key Blade Fixture

For equivalent region tools, refer to **Special Tools**.

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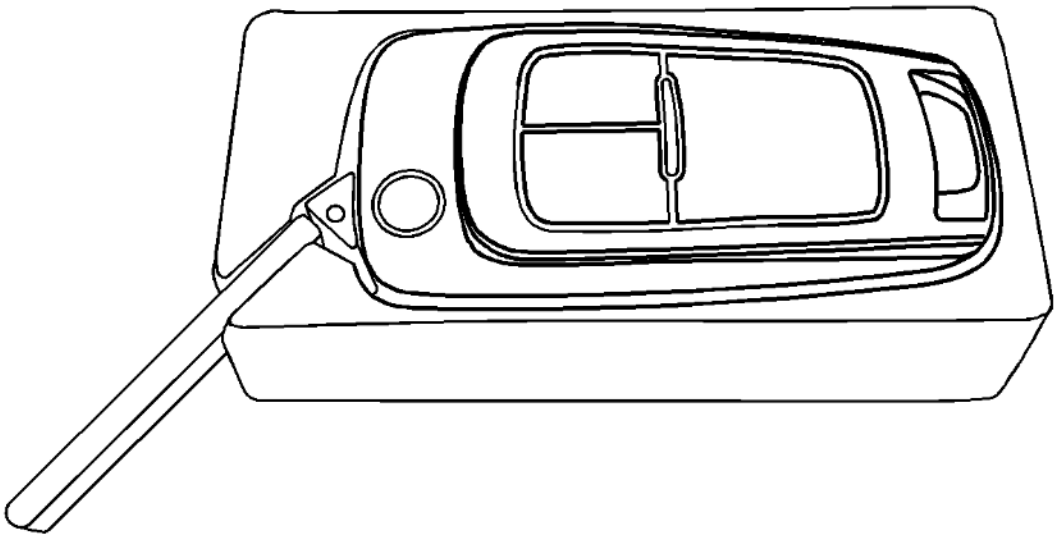

Fig. 10: Remote Keyless Entry (RKE) Transmitter Assembly
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Failure to properly support the Remote Keyless Entry (RKE) transmitter assembly while replacing the key blade may cause internal damage to the transmitter assembly.

1. Insert the RKE transmitter in the fixture as shown.

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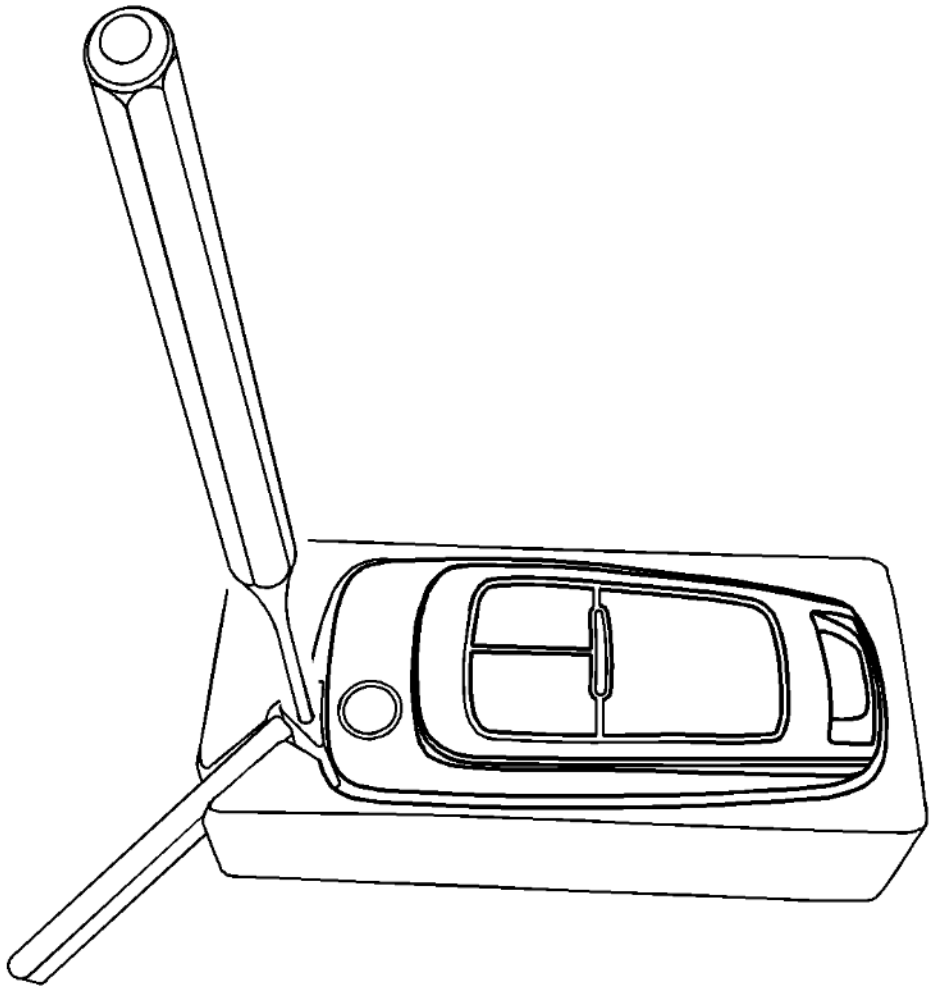

Fig. 11: Flip Key Blade Fixture & Transmitter Assembly
Courtesy of GENERAL MOTORS COMPANY

NOTE: **It may be necessary to dress the pin drift on a grinder to maintain the diameter in order to drive the pin through the housing.**

2. Using the **BO-51098** fixture, drive the retention pin from the transmitter assembly as shown.

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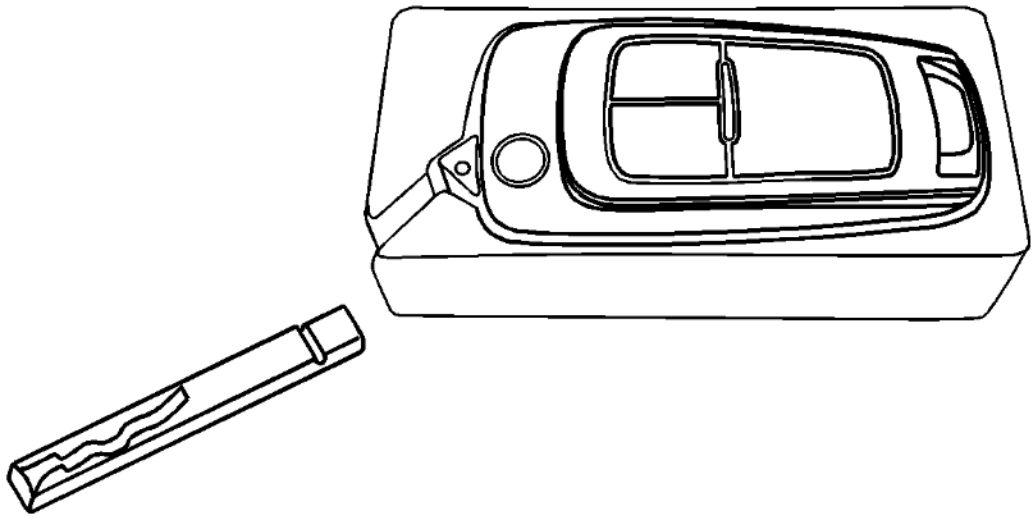

Fig. 12: Transmitter Assembly & Key Blade
Courtesy of GENERAL MOTORS COMPANY

3. Remove the key blade from the transmitter assembly.
4. Install the coded blank into the transmitter assembly, insure the indentation on the key blade faces the retention pin.

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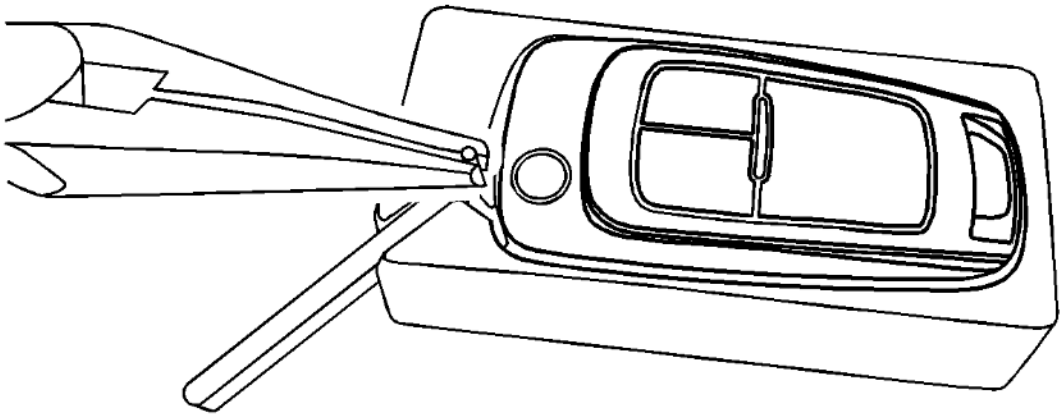

Fig. 13: Inserting Transmitter Pin
Courtesy of GENERAL MOTORS COMPANY

NOTE: **Use caution not to damage the surface, chrome plating, in the following steps.**

5. Using needle nose pliers, insert the pin half way into the transmitter assembly.

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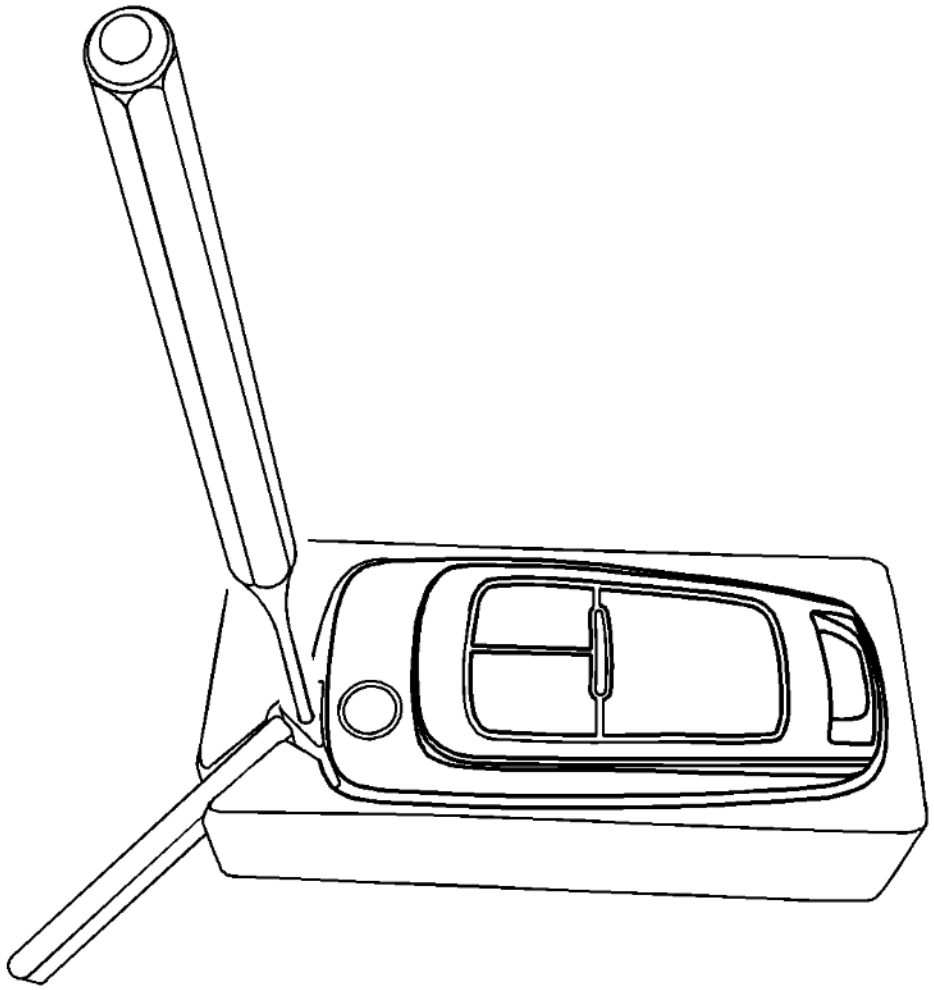

Fig. 14: Flip Key Blade Fixture
Courtesy of GENERAL MOTORS COMPANY

6. Using the **BO-51098** fixture, drive the roll pin flush to the surface.

INSTRUMENT PANEL COMPARTMENT DOOR LOCK CYLINDER CODING

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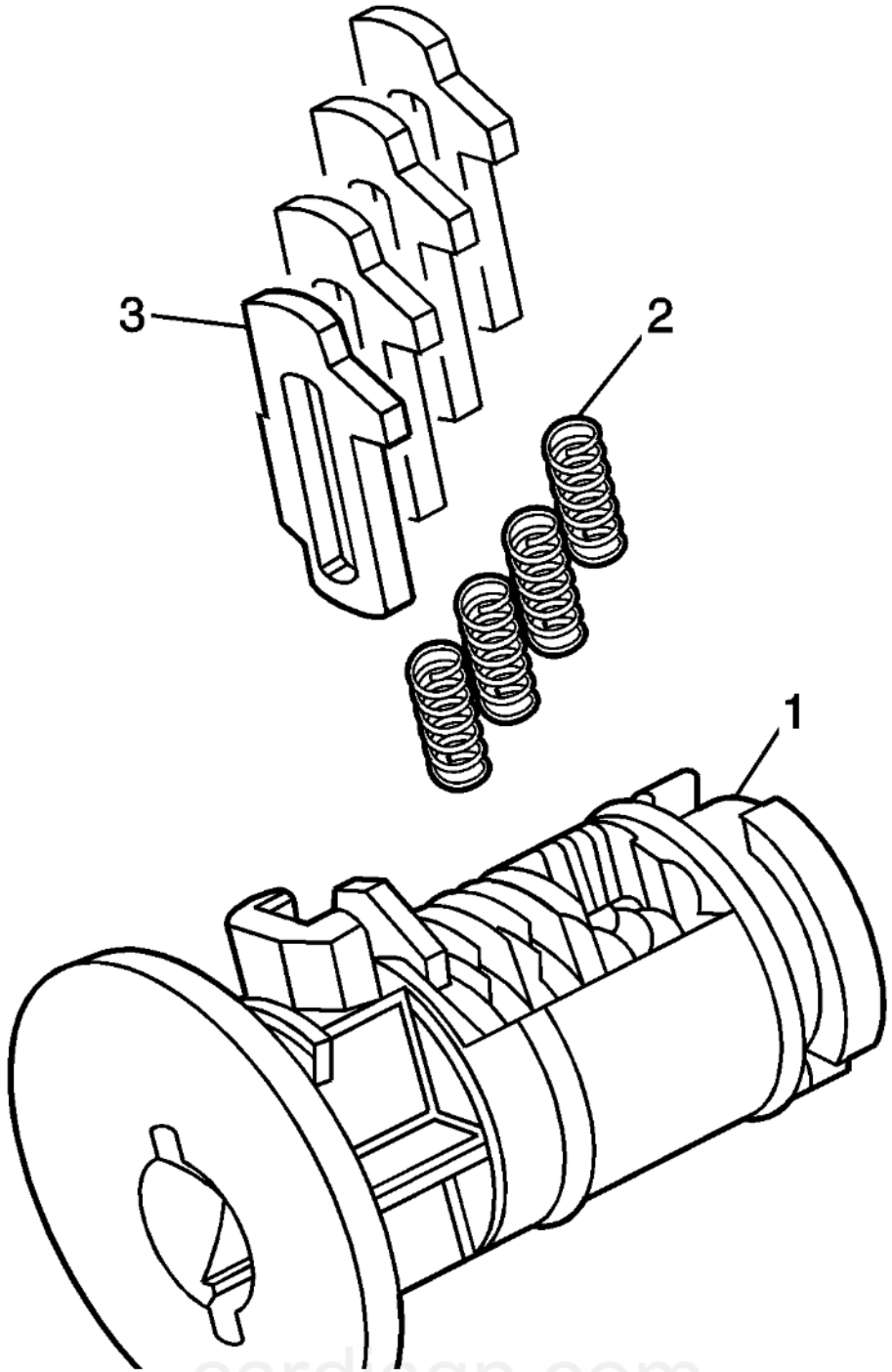

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Fig. 15: View Of Lock Cylinder Tumblers
Courtesy of GENERAL MOTORS COMPANY

The internal lock cylinder only uses 4 of the ten cut positions, 7 through 10. The tumbler positions are on one side and self-retaining.

1. Rotate the cylinder (1) so the side with tumbler spring wells faces up.
2. Insert the tumbler springs (2) into the 4 spring wells.
3. Install the first tumbler (3) for key cut position 7 in the slot nearest to the front of the lock cylinder. Install the remaining tumblers following the key code.
4. Press the tumblers in place until they are secure.
5. Check for correct loading of the tumblers by inserting the key into the cylinder. All tumblers should be flush with the lock cylinder body.

FRONT SIDE DOOR LOCK CYLINDER CODING

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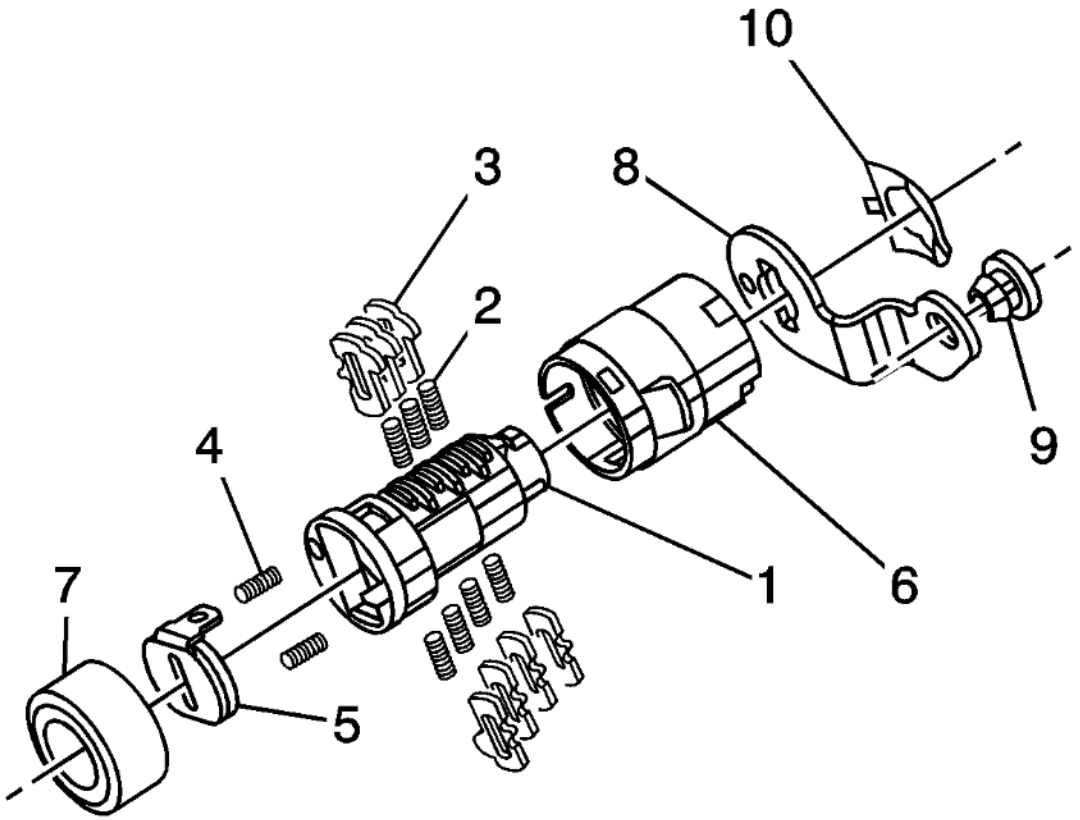

Fig. 16: Exploded View Of Lock Cylinder
Courtesy of GENERAL MOTORS COMPANY

The door lock cylinder only uses 7 of the 10 cut positions, 3 through 9. The tumbler positions are staggered from side to side, 4 on one side and 3 on the other side, are self-retaining. The left and right door lock cylinders are identical. The lever assembly determines which side of the vehicle the lock cylinder is for. After removing the current lock, record which lever is used and the orientation of rod clip.

NOTE: **All lock cylinders for side milled keys have right and left tumblers. The location of the tooth of the tumbler**

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determines whether it is right of left. Illustrations in this procedure show the right tumblers on the top and the left tumblers on the bottom. All tumblers are marked 1R, 1L, 2R, or 2L. The number being cut depth and the letter meaning right or left.

1. Rotate the cylinder (1) so the side with the 4 tumbler spring wells faces up.
2. Insert the tumbler springs (2) into the 4 spring wells.
3. Install the tumbler (3) for key cut position 3 in the slot closest to the cylinder. Install the remaining tumblers, key cut positions 5, 7 and 9, following the key code and same process. Press the tumblers in place until they are secure.
4. Check the correct loading of the tumblers by inserting the key into the cylinder. All tumblers should be flush with the lock cylinder body.
5. Turn the cylinder so the side with the 3 tumbler spring wells faces up.
6. Insert the tumbler springs into the 3 spring wells.
7. The first tumbler closest to the front of the lock cylinder to be loaded will be the fourth key cut position. Install the remaining tumblers for key cut positions 6 and 8. Press the tumblers in place until they are secure.
8. Check the correct loading of the tumblers by inserting the key into the cylinder. All of the tumblers should be flush with the lock cylinder body.
9. Apply lubricant to the cylinder body and tumbler surfaces along with a small amount in the head of the cylinder using the supplied grease.
10. Install 2 springs (4) into the spring wells in the head of the lock cylinder.
11. Snap the shutter assembly (5) into the cylinder.
12. Assemble the cylinder into the case (6).
13. Align dimples of the cylinder cap (7) with the 4 recesses in the cap. Secure by pressing the cap into place with light hand pressure.
14. If required, assemble the rod clip (9) to the lever (8) using the recorded lever information.
15. Assemble the lever to the lock. Use E-clip (10) to retain the lever assembly.
16. If supplied, assemble the gasket to the lock.
17. Insert the key into the lock and function the lock to check for proper assembly and smooth operation.

LOCK CYLINDER CODING - IGNITION

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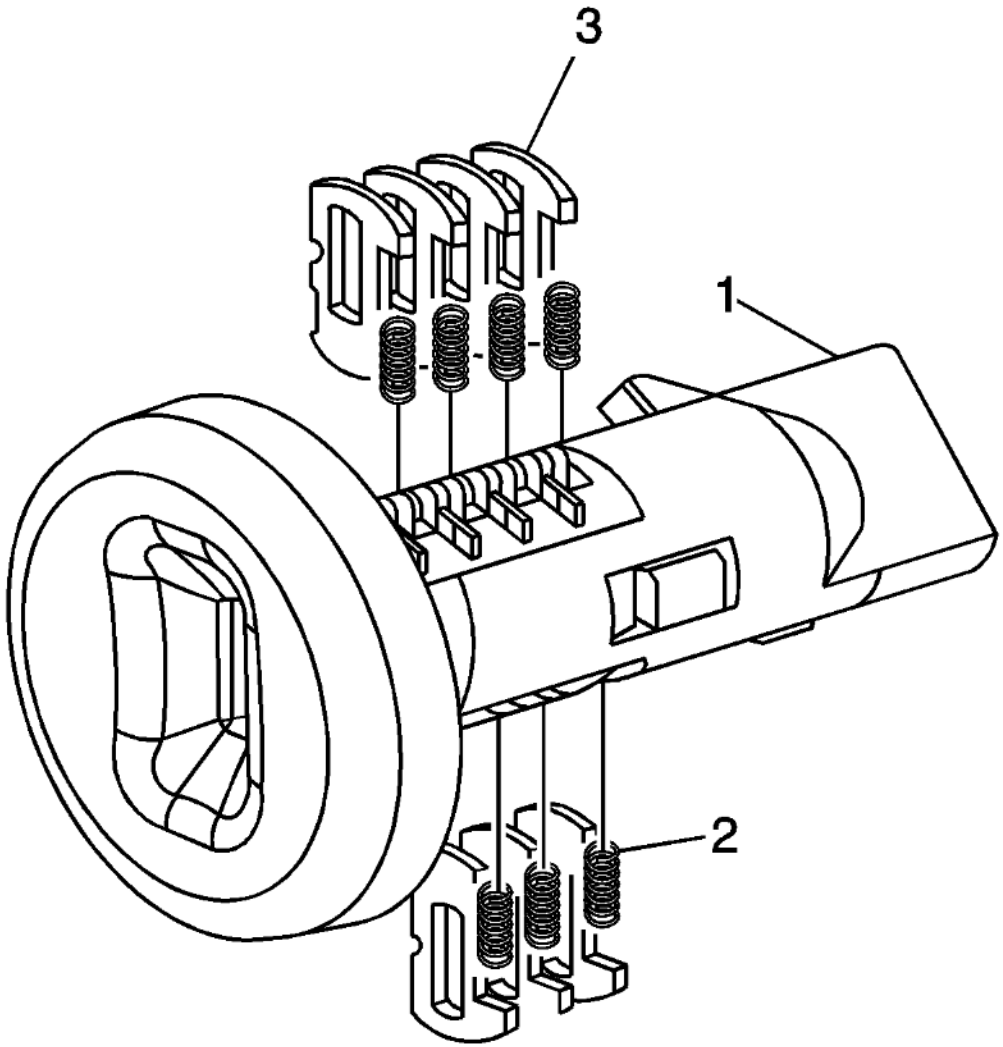

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Fig. 17: Ignition Lock Cylinder
Courtesy of GENERAL MOTORS COMPANY

The ignition lock cylinder uses only 7 of the 10 cut positions, 3 through 9. The ignition cylinder tumblers are all located on alternate sides of the cylinder (1). They are snap-in and self-retaining. It follows the key code with the first tumbler being the first depth of the key code, closest to the head of the key.

1. Hold the ignition cylinder assembly (1) so the side with the 4 tumblers spring pocket of the cylinder is facing up.
2. Insert the tumbler springs (2) into each of the spring pockets of the cylinder assembly.
3. The first tumbler (3) to be loaded will be the first key cut position, the first number in the key code. Install the first tumbler in the slot nearest the head of the lock cylinder. Install the remaining tumblers for cuts 5, 7 and 9 following the key code and same process. Press the tumblers in place until they are secure.
4. Rotate cylinder assembly so the 3 tumblers springs pocket of the cylinder is facing up. Insert tumbler springs (2) into each of the spring pockets of the cylinder assembly.
5. The first tumbler (3) to be loaded will be the fourth key cut position, the fourth number in the key code. Install the first tumbler in the slot nearest the head of the lock cylinder. Install the remaining tumblers for cuts 6 and 8 following the key code and same process. Press the tumblers in place until they are secure.
6. Inspect for correct loading of the tumblers by inserting the key into cylinder. The side bar should drop flush with the lock cylinder body diameter.
7. Lightly lubricate the outside surfaces in the tumbler area of the lock body and down the key slot using the provided grease. Insert and extract the key 5 times to lubricate the keyway.
8. Line-up the lock to the run position. Insert lock in steering column. Rotate lock to key out position and remove key. Insert key and rotate lock 3 times to distribute the grease from the lock to column housing inside diameter.

SPARE WHEEL HOIST LOCK CYLINDER CODING

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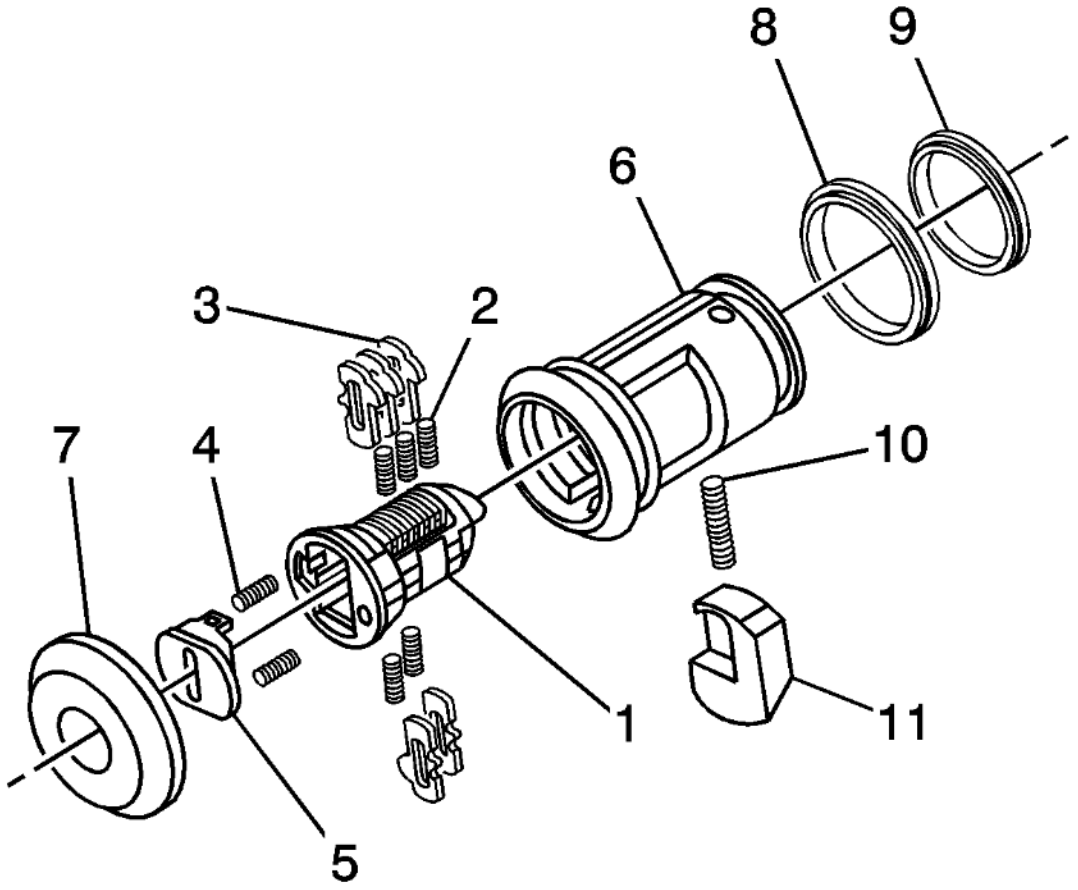

Fig. 18: Exploded View Of Spare Wheel Hoist Lock Cylinder
Courtesy of GENERAL MOTORS COMPANY

The internal lock cylinder only uses 5 of the 10 cut positions, 6 through 10. The tumbler positions are on one side and self-retaining.

NOTE: **All lock cylinders for side milled keys have right and left tumblers. The location of the tooth of the tumbler determines whether it is right of left. Illustrations in this procedure show the right tumblers on the top and the left tumblers on the bottom. All tumblers are marked 1R, 1L, 2R, or 2L. The number being cut depth**

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and the letter meaning right or left.

1. Rotate the cylinder (1) so the side with the 5 tumbler spring wells faces up.
2. Insert the tumbler springs (2) into the 4 spring wells.
3. Install the tumbler (3) for key cut position 6 in the slot closest to the cylinder head. Install the remaining tumblers, key cut positions 8 and 10, following the key code and the same process. Press the tumblers in place until they are secure.
4. Check for correct loading of the tumblers by inserting the key into the cylinder. All of the tumblers should be flush with the lock cylinder body.
5. Turn the cylinder so the side with the 3 tumbler spring wells faces up.
6. Insert tumbler springs into the 2 spring wells.
7. The first tumbler closest to the front of the lock cylinder to be loaded will be the seventh key cut position. Install the remaining tumblers for key cut position 9, following the key code and same process. Press the tumblers in place until they are secure.
8. Check for correct loading of the tumblers by inserting the key into the cylinder. All of the tumblers should be flush with the lock cylinder body.
9. Apply lubricant to the cylinder body and tumbler surfaces along with a small amount in the head of the cylinder using the supplied grease.
10. Install 2 springs (4) into the 2 spring wells in the head of the cylinder.
11. Snap the shutter assembly (5) into the cylinder.
12. Insert the retainer spring (10) in the retainer pocket making sure it is positioned on the spring post.
13. Place the retainer bolt (11) in the pocket with the angle facing the back of the case. Depress the retainer bolt and hold.
14. With the key still in the cylinder, insert into case (6) 90 degrees to the right of the drain slot/retainer.
15. Rotate back 90 degrees to the key out position. Hold lock in case and remove the key. The cylinder should secure bolt in case.
16. Place the lock cylinder cap (7) on top of the lock assembly. Bend tabs on cap to underside of case making sure they are secure and pulled tight to case.
17. Insert key and rotate to verify the lock was assembled properly. The key should not be able to be removed when bolt is down. The lock should only rotate clockwise 90 degrees.
18. Assembly gaskets (9), if supplied in the groove located at the end of the case and gasket (8) in the grove at the front of the case.

LIFTING AND JACKING THE VEHICLE

WARNING: To avoid any vehicle damage, serious personal injury or death, always use the jackstands to support the vehicle when lifting the vehicle with a jack.

WARNING: To avoid any vehicle damage, serious personal injury or death when major components are removed from the

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vehicle and the vehicle is supported by a hoist, support the vehicle with jack stands at the opposite end from which the components are being removed and strap the vehicle to the hoist.

CAUTION: **Perform the following steps before beginning any vehicle lifting or jacking procedure:**

- **Remove or secure all of the vehicle contents in order to avoid any shifting or any movement that may occur during the vehicle lifting or jacking procedure.**
- **The lifting equipment or the jacking equipment weight rating must meet or exceed the weight of the vehicle and any vehicle contents.**
- **The lifting equipment or the jacking equipment must meet the operational standards of the lifting equipment or jacking equipment manufacturer.**
- **Perform the vehicle lifting or jacking procedure on a clean, hard, dry, level surface.**
- **Perform the vehicle lifting or jacking procedure only at the identified lift points. DO NOT allow the lifting equipment or jacking equipment to contact any other vehicle components.**

Failure to perform the previous steps could result in damage to the lifting equipment or the jacking equipment, the vehicle, and/or the vehicle contents.

For lifting the vehicle, various lift points are recommended. Before you begin any lifting procedure, place the vehicle on a clean, hard, level surface. Verify that all the lifting equipment meets weight standards and is in good working order. Verify that all of the vehicle loads are equally distributed and secure. If you are only supporting the vehicle at the frame side rails, verify that the lifting equipment does not put too much stress on, or weaken, the frame side rails.

During hoisting, do NOT damage the fuel tanks, the exhaust system, or the underbody.

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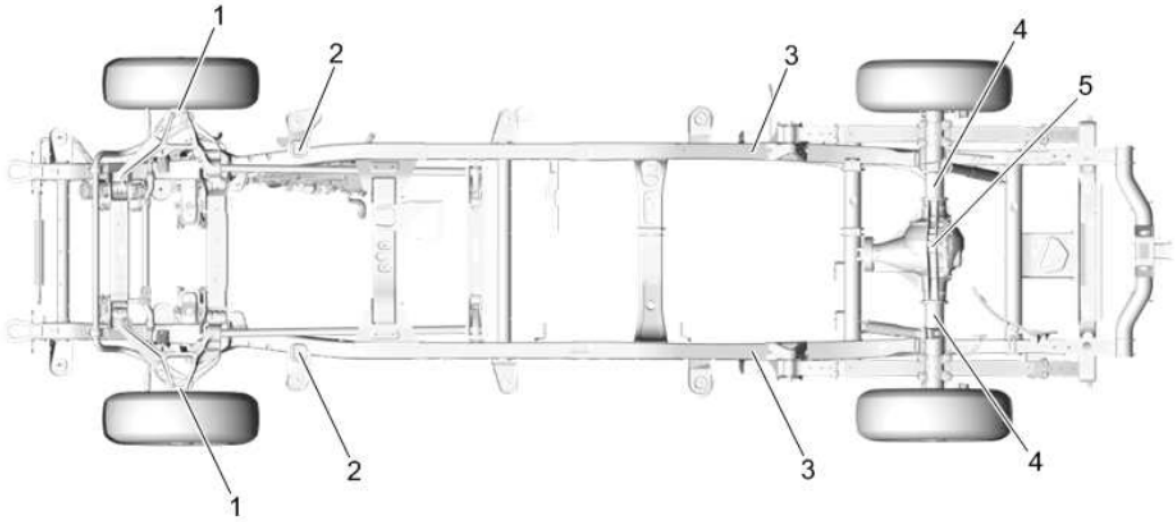

Fig. 19: Lifting and Jacking Vehicle
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Lower Control Arm Contact Points
2	Front Frame Contact Points
3	Rear Frame Contact Points
4	Rear Axle Contact Points
5	Differential Contact Points

Frame Contact Hoist

Front Hoist Pads

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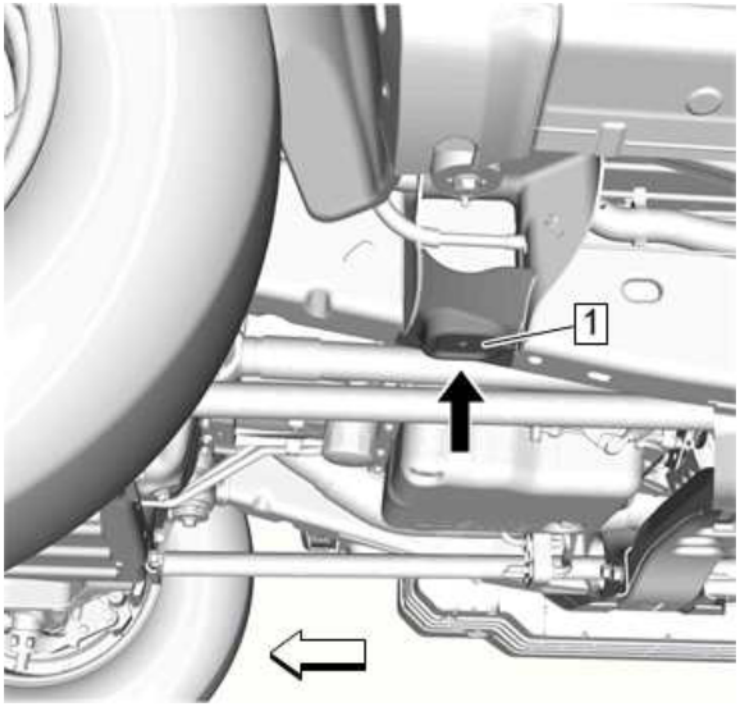

Fig. 20: Front Hoist Pads And Body Mount Bracket
Courtesy of GENERAL MOTORS COMPANY

NOTE: **The front hoist pads must not contact the rocker panels, the front fenders, or the floor pan.**

Position the front hoist pads under the front frame for all pickup and all utilities just after the rear edge of the number 1 body mount bracket (1).

Rear Hoist Pads

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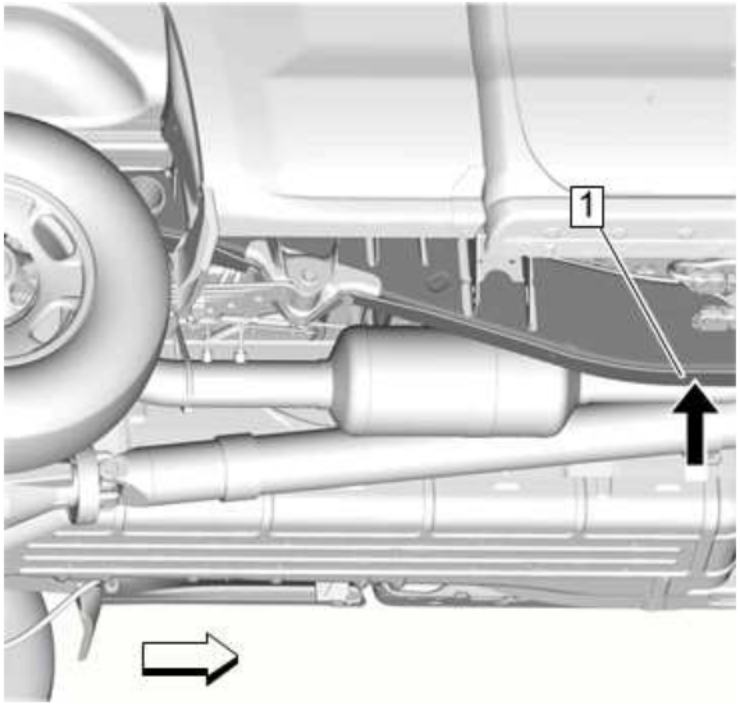

Fig. 21: Rear Hoist Pads And Frame Rail
Courtesy of GENERAL MOTORS COMPANY

NOTE: **The rear hoist pads must not contact the body rocker panels or the floor pan.**

Position the rear hoist pads under the flat portion of the frame rail (1), just in front of the rear spring.

Suspension Contact Hoist

Front Lift

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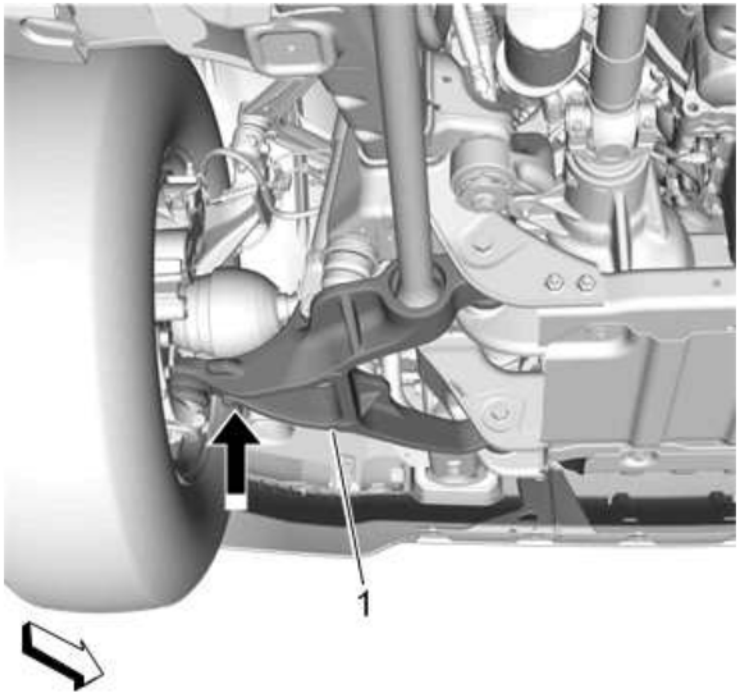

Fig. 22: Front Suspension Lower Control Arms
Courtesy of GENERAL MOTORS COMPANY

Position the front lift under the outer edge of the front suspension lower control arms (1).

Rear Lift

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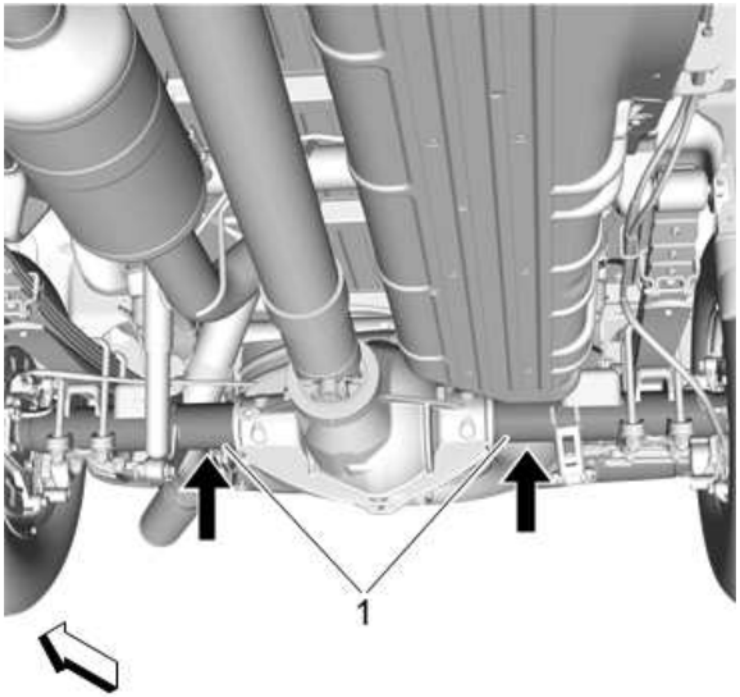

Fig. 23: Rear Lift Under Axle Housing Tubes
Courtesy of GENERAL MOTORS COMPANY

Position the rear lift under the axle housing tubes (1) on each side of the differential.

Do not damage the stabilizer bar.

Jacking

When you are lifting a vehicle with a vehicle jack or a floor jack, block the wheels at the opposite end from which you are lifting. Use jack stands to provide additional support.

Under the Frame Rails (Front)

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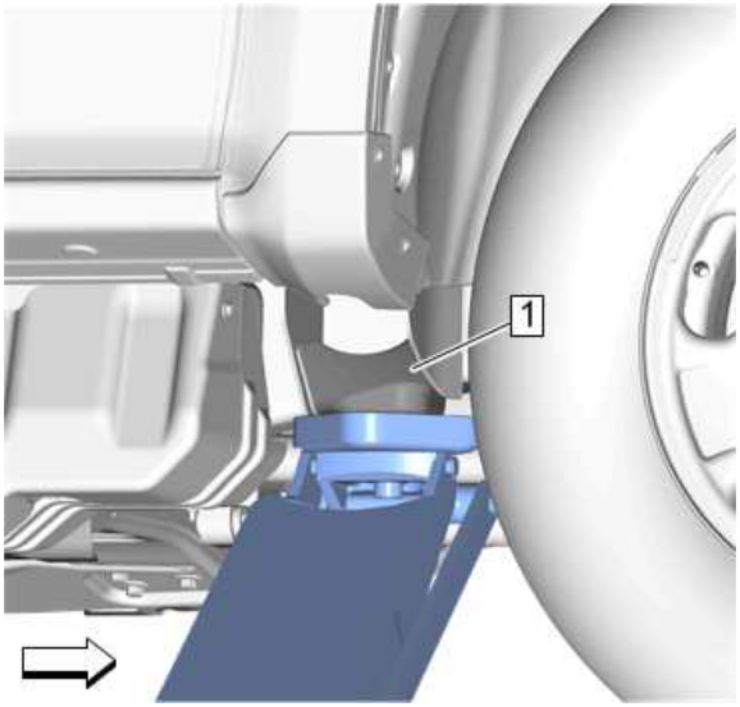

Fig. 24: Frame Rail Pad
Courtesy of GENERAL MOTORS COMPANY

NOTE: **The floor jack pad must not contact rocker panel or the floor pan.**

Position the floor jack pad under the frame rail pad (1).

Under the Rear Differential

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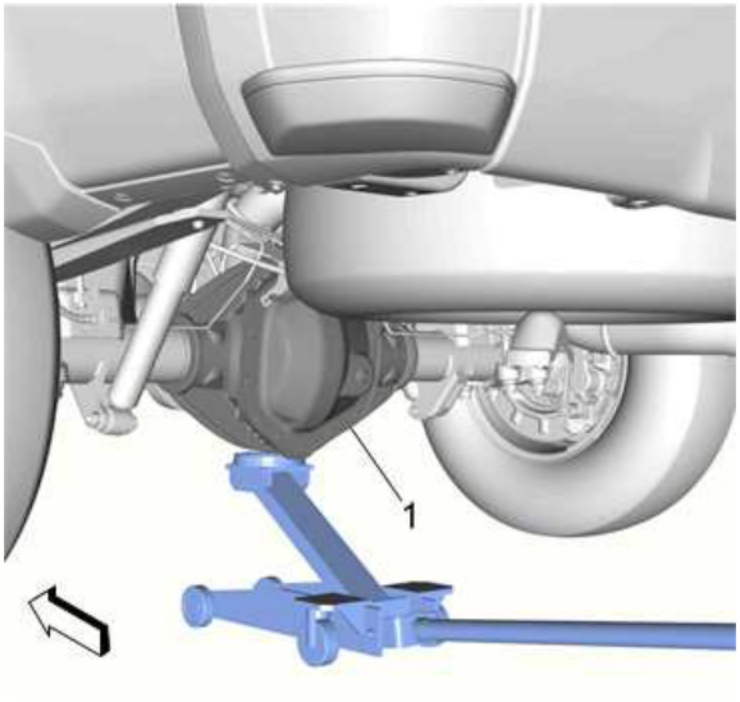

Fig. 25: Center Of Rear Axle Differential
Courtesy of GENERAL MOTORS COMPANY

Position the floor jack pad under the center of the rear axle differential (1).

Do not damage the establisher bar.

Under the Frame Rail (Rear)

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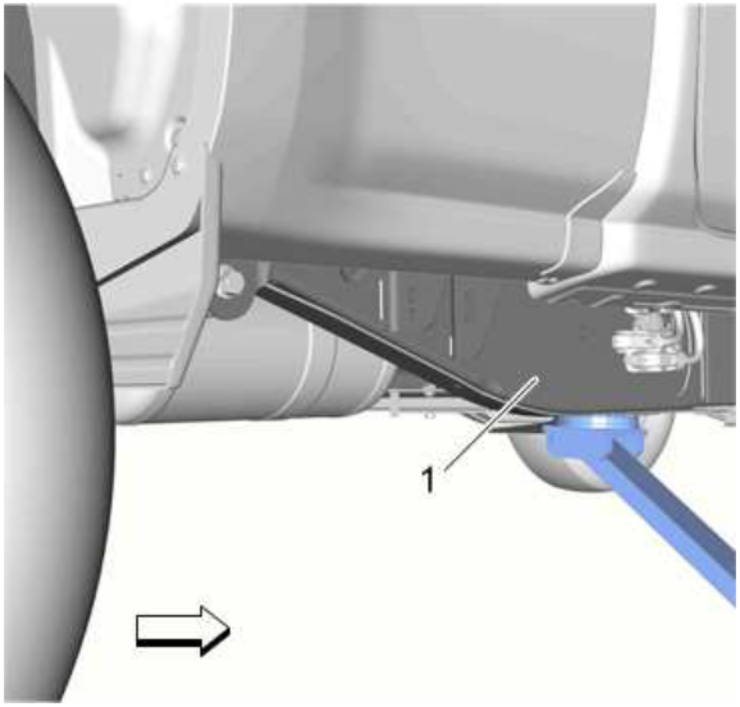

Fig. 26: Flat Part Of Frame
Courtesy of GENERAL MOTORS COMPANY

Position the jack under the flat part of the frame (1), just in front of the rear spring hanger.

Jack Stands

When you support the vehicle with jack stands, place the jack stands under the frame or the rear axle.

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

Illustration	Tool Number/ Description

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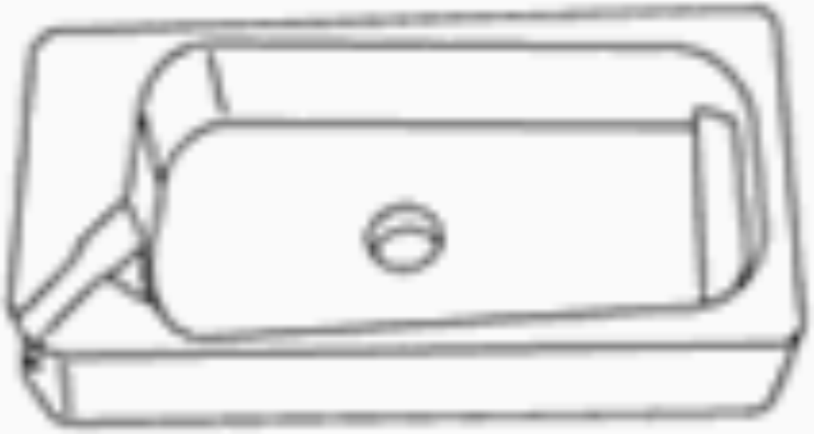
Illustration	Tool Number/ Description
	BO-51098 Flip Key Blade Fixture

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