

# Instructional Terminology

Automotive Technologies

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## A

**ABS:** Anti-lock brake system; an electrical-mechanical computerized brake system to prevent wheel lockup during hard braking so that the driver does not lose control of steering

**ABS Hydraulic unit:** A part in the brake system that may consist of valves and solenoids to isolate wheel brake units to prevent wheel lockup under hard braking. May or may not also house the computer circuit to operate valves and solenoids

**Aim:** To point or direct

**Air bags:** The inflatable component of the SRS (supplemental restraint system) that may be housed in various interior components

**Air filter:** A filter commonly made of pleated paper filter the air coming into the engine through the intake system

**Air flow:** The way air which moves

**Alignment:** When referring to wheel alignment, it is the proper adjustment of a vehicle's front or rear suspension for camber, toe-in, toe-out, and steering axis inclination

**Alternator:** A device that converts the engine's mechanical energy into alternating electrical current

**Amperage:** The strength of an electric current in amperes. Electron or current flow of one coulomb per second past a given point in circuit

**Anti-rattle clips:** A device that attaches to disc brake pads to keep them from making a rattle noise when the brakes are not applied

**API:** Abbreviation for American Petroleum Institute, the organization that classifies oil

**ATF:** Abbreviation for Automatic Transmission Fluid

**Atmospheric pressure:** The pressure exerted by the weight of the atmosphere. At sea level, atmospheric pressure is 14.7 psi

**Auxiliary:** Additionally, supplementary equipment or component that is added to the main propulsion unit

**Auxiliary battery:** An additional battery that may be used to power a separate load

**Auxiliary lights:** Extra illumination device such as fog lights, spot light, and driving lights

**Auxiliary pump:** Supplementary pump whether it be for air, water, fuel or another fluid

**Axle seals:** Seals that contact between the axle and axle housing to prevent loss of lubricating fluid

## **B**

**Backing plate:** The part of a drum brake to which the wheel cylinder(s) and the brake shoes are attached

**Baking soda/Sodium bicarbonate:** A base when mixed with water is used to neutralize battery acid

**Ball joints:** A ball and socket style joint, used in many steering linkage setups, steering knuckles, pivot points, and control arms

**Battery charger:** An electric device when connected to the properly connected to the battery used to restore the state of charge in the battery

**Battery hold down:** A device which secures the battery to the vehicle

**Battery pack:** A device that houses multiple batteries to be used together in a single unit

**Battery terminal cleaner:** A specially designed tool which cleans both the outside terminals and inside of the battery terminal end

**BCM:** Abbreviation for Body Control Module

**Bearing:** A support or guide used to decrease friction of a rotating, sliding, oscillating, wheel, or pivot

**Bearing grease:** A lubricant which reduces the friction between moving pieces

**Bearing preload:** Amount of static pressure exerted on a bearing or a set of bearings. The preload is usually adjusted by a threaded collar or shims

**Bell Mouth:** A form of brake drum distortion in which the open edge of the drum has a large diameter than the closed edge

**Bellows boots:** A sealed, accordion-type chamber which expands and contracts to provide a positive seal during movement of parts

**Bench lathe:** The machine used to resurface the friction surfaces of brake discs or drums

**Bleed:** To remove unwanted air bubbles from closed systems

**Blend door actuator:** An electronic mechanism used for moving or controlling the HVAC blend door in the HVAC system

**Bolt grade:** A grading system used to determine the tensile strength factor of a fastener (i.e., nuts and bolts)

**Booster battery pack:** Devices used to jump start a vehicle when the battery has insufficient power to crank the engine

**Boot:** A flexible rubber or plastic cover used to protect against water and dirt

**Bottom Dead Center (BDC):** The lowest point of the piston travel in a cylinder

**Brackets:** A support device which is often a right-angled shape or triangle shape designed to support or mount something

**Brake clean:** A chemical designed to clean brake parts of grease or dirt

**Brake disc calipers:** The device in a disc brake that converts hydraulic pressure back into the mechanical force used to apply the brake pads against the rotor

**Brake Drum:** The friction surface of drum style brakes, usually made of cast iron or aluminum, that rotates around the brake shoes

**Brake Fluid:** A special type of hydraulic fluid used in hydraulic brake systems

**Brake hold down springs:** A spring used to hold the brake shoes against the backing plate when the brakes are in a released position. A hold-down pin fits through the back of the backing plate, the spring placed over the pin, and a metal keeper locks onto the pins to secure the hold-down springs to the drum brake assembly

**Brake lathe:** A machine used to refinish brake drums and disc brake rotors

**Brake light:** A red light at the rear of the vehicle which is activated when the brakes are applied

**Brake lube:** A specialized high-heat lubricant used in the assembly of brakes

**Brake pads:** The friction material used with disc brake systems that make contact with the brake disc during the slowing or stopping of a vehicle

**Brake pedal free play:** The amount of brake pedal travel before any braking action takes place

**Brake pedal height:** A distance measured from a point on the body or dash to the brake pedal to determine proper adjustment

**Brake return springs:** A spring which is attached to the two brake shoes after the brake is applied, this spring pulls the shoes away from the drum

**Brake shoes:** The friction material used in drum brake system that make contact with the brake drum during the slowing or stopping of a vehicle

**Brake stop switch:** A switch which completes the electrical circuit to the stop lamp(s) when the brake pedal is applied

**Brake warning light system:** An indicator light on the instrument panel which indicates a problem with the braking system

**Brass hammer:** A hammer with a brass head

**Burnish:** The process of breaking-in new brake pads or shoes so the linings conform to the disc or drum friction surfaces

**Bushings:** A rubber or polyurethane bumper used to isolate vibration and used to reduce friction on body and suspension parts.

**Butt Connector:** A solderless wire connector used to permanently join two wire ends together

## C

**Cabin air filter:** A device that removes contaminants from external air entering the ventilation system

**Caliper:** See Brake shoe calipers

**Caliper mounting bracket:** A metal bracket that connects a brake caliper to the steering knuckle

**Camber:** The inward or outward tilt of the wheel inspected during alignment

**Camshaft:** A lobed shaft which is driven by the crank shaft via a gear, belt, or a chain from the crankshaft

**Capacity test:** In terms of a battery, a test to determine how many CCA's a battery has

**Carbon monoxide:** A "greenhouse gas" that is a byproduct of the combustion of fossil fuels

**Catalytic converter:** Contains a substance that reacts chemically with the exhaust in order to reduce harmful emissions

**Catch pan:** A pit or low mounted container into which liquid is drained

**Center high mounted stop light (CHMSL):** Third brake light mounted in the middle of the rear window

**Center pin/bolt:** The individual leafs are held together by a center bolt that passes through a hole in the center of each leaf

**Center link:** A steering link that connects the pitman arm to the idler arm

**Charging:** The action of passing a current through a battery to restore it to the charged state

**Check valve:** A one-way, in-line spring-loaded ball or piston valve that permits flow of liquids or gases in one direction only and closes to prevent passage in the opposite direction

**Child safety locks:** Locking device to ensure children's safety while riding in the back seat of a vehicle

**Circuit:** A source of electricity and wires that form a path for the flow of electricity

**Circuit amperage:** The amount of amperage flowing through the circuit

**Clamps:** A fastening device which secures something within its jaws without constant human pressure

**Clip on weights:** A wheel weight that is clipped on the rim between the rim and the tire It is used to balance a wheel

**Coil Springs:** A section of coiled steel rod wound in a spiral pattern or shape

**Coil wire:** The high voltage wire going from the coil to the distributor.

**Cold cranking amps CCA:** Measurement of cranking amperes a battery can deliver over a period of 30 seconds at 0°F (-18°C)

**Communication:** The continuous flow of information between computers and sensors and outputs

**Compression:** Increased pressure caused as volume is reduced

**Compression gauge:** Instrument used to measure positive pressures

**Compression stroke:** The second stroke of the Four-stroke cycle

**Computer input:** Signals from sensors, switches, or solenoids sent to a powertrain control module describing the operational state or condition of those devices at a particular moment

**Computer output:** Signals sent from a powertrain control module to actuators, relays, or solenoids to control the operations of those devices

**Condensation drain:** A drain in the HVAC system provided to drain the liquid formed by the cooling of the refrigerant back to its liquid state

**Condenser:** The unit in an air conditioning system that cools the hot compressed refrigerant and turns it from a vapor into a liquid

**Continuity:** A continuous path for the flow of an electrical current

**Control Arm:** A metal arm on the suspension which is located at the top and bottom of the wheel spindle

**Control Module:** An electronics module or a computer that receives input from various sensors to determine the operating condition of the related components at a particular moment

**Conventional Oil:** A petroleum based oil

**Coolant:** Also known as "antifreeze"

**Coolant dye:** Coloring agent added to aid in the locating of leaks

**Coolant/antifreeze:** See coolant

**Cooling lines:** A tube or hose that provides a path from the unit to the cooling device

**Cork gasket:** A material made of cork placed between two metal parts to insure proper sealing

**Cotter pin:** A fastener shaped like a pin, but split up the center

**Crankcase:** The lower part of the engine that surrounds the crankshaft

**Crankshaft:** A main rotating shaft running the length of the engine

**Crimping tool:** A tool which looks like pliers with serrated jaws which are used to attach fittings to the end of an electrical wire

**Cup type seal:** A circular rubber seal with a depressed center surrounded by a raised sealing lip Cup seals can contain high pressure in one direction, but do not seal in the other

**Cupping:** An uneven surface around the edge of the that may indicate a suspension issue.

**Current:** See amperage

**Current draw test:** A test by which the maximum electrical current is measured

**CV joints:** A type of universal joint designed as to create a smooth transfer of torque from the driven shaft to the driving shaft

**CVT Continuously variable transmission:** A transmission with a continuously variable drive ratio that maintains a steady acceleration curve with no pauses for gear changes

**Cylinder balance test:** Performed to locate the cylinder that has a lack of power

**Cylinder leakage:** A term used to describe the amount of air that leaks out of the combustion chamber during the compression stroke

## D

**Date Link Connector DLC:** A scan tool connector provided by the manufacturer to allow the technician to access the vehicle computer system

**Daytime running lights:** Amber lights that illuminate anytime the vehicle is operating

**Defective:** A description of a component which is faulty or flawed

**Defrost:** The action of removing frost from a window/s or the outside of a mirror by means of blowing hot air or heated wires imbedded in the glass

**Diagnostic trouble code (DTC):** code stored inside the vehicle's computer that alerts a faulty system

**Dial indicator:** measuring tool used to check small clearances up to 001", clearance is read on a dial

**Diameter:** straight line passing through the center of a circle

**Diesel exhaust fluid (DEF):** a non-hazardous solution which is 32% urea and 67% water, sprayed into the exhaust stream it breaks down dangerous NOX emissions into harmless nitrogen and water

**Differential:** a gear assembly that transmits power from the drive shaft to the wheels, also allows vehicle to corner without dragging one wheel

**Differential cover:** covers the differential gear in axle housing

**Differential housing:** housing the differential gears which allow wheels to turn at different rates while turning

**Dimmer switch:** switch in the headlight circuit used to switch electricity between low and high

**Dip stick:** rod used to measure fluid

**Disc Brake Rotor:** a parallel- faced rotating component of a disc brake system

**Disc micrometer:** for measuring thickness of various parts

**Disconnect tool:** tool used to disconnect fuel lines

**Dismount:** remove tire from wheel

**Distilled water:** involves boiling water then condensing the steam to produce clean water

**Distributor cap:** covers the top of the distributor protecting the rotor and ignition parts, distributes electricity through plug wires

**Division bar:** a strip of metal separating and holding windows

**DMM:** digital multimeter

**Dome light:** a small light in the passage compartment on the headliner of a vehicle

**Door lock actuator:** little motor that moves the lock up and down inside your door when you hit the lock/unlock button

**Door panel:** Trim panel inside a door designed to help insulate and improve the comfort level in the cabin of a vehicle

**Dot 3:** glycol-ether based brake fluid with a dry boiling point of 401 degrees

**Dot 4:** Same makeup as DOT 3 brake fluid but with a higher boiling point

**Dot 5:** silicone based, will not absorb water

**Drain plug:** removable plug for holding liquid in a container

**Drive axle:** transmits power from the transmission to the wheels

**Drive on lift/hoist:** designed to raise car safely off the floor

**Drum mic:** micrometer used to measure brake drums

**Dry compression test:** a standard test used to determine the condition of an internal combustion engine



**Dry rotting:** the degrading of a material due to exposure to extremes

**Ducts:** a channel or tube designed to deliver or remove air

**Dust boot:** a cover for a universal joint

**DVOM:** electronic measuring instrument that combines several functions Amp meter, ohm meter, and voltmeter

**Dynamic imbalance:** occurs when there is unequal weight on both sides of the tires and wheels centerline

## E

**E brake lever:** a hand brake

**E brake switch:** An electric circuit to warn that E brake is applied

**E-brake caliper adjusting tool:** tool used to reset E brake caliper piston

**Electric motor:** machine that converts electrical energy to mechanical energy

**Electric power assisted steering:** uses an electric motor to assist the driver

**Electric solenoid:** current used to convert electrical energy to mechanical energy

**Electrical tape:** tape used to insulate electrical wires that conduct electricity

**Electronic control unit (ECU):** controls one or more of the electrical systems in a car

**Electronic memory functions:** electrically-generated systems

**Engine:** power source that propels a vehicle

**Engine coolant temperature sensor:** used to measure the temperature of the engine coolant in an internal combustion engine

**Engine oil:** used to lubricate the moving parts in an internal combustion engine

**Evacuation route:** predetermined emergency evacuation plan

**Exhaust:** spent fuel, by product of burning fuel

**Exhaust hangers:** exhaust system supports

**Exhaust manifold:** parts used to channel exhaust away from the engine

**Exterior lamps:** used to make vehicle visible at night

**Eye wash station:** used to flush contaminants from face and eyes

## F

**Fast charge:** charging a battery using a higher rate of Amperes

**Feather edges:** Edges are tapered to feel smooth

**Feeler gauge:** Thin metal strips used to measure small gaps

**Filament:** thin wire in a light bulb that becomes red hot and glows when electricity passes through it

**Fill plug:** a part used to fill the hole designed to add lubrication

**Fire blanket:** blanket of fireproof material used to smother or remove the oxygen source from small fires

**Fire extinguisher:** fire protection device used to extinguish or control small fires

**Fixed caliper:** caliper with opposing pistons both inboard and outboard

**Flair nut:** fitting designed to fasten the end of tubing in a brake line or other pressure tubing

**Flex hose:** a flexible tubing

**Floor jack:** a tool designed to help lift a car or other objects off the floor

**Fluctuate:** to shift back and forth uncertainly

**Fluid level sensor:** designed to measure the fluid in a container

**Flush:** to cleanse by rushing large amounts of fluid through something

**Fog light:** headlight designed to penetrate fog

**Freeze frame data:** a record of engine conditions when a malfunction is detected

**Fuel filter:** filters impurities from fuel

**Fuel gauge:** informs driver of fuel available in the tank

**Fuel light:** tells you there is a set amount of fuel left in the tank

**Fuel pressure:** amount of force pushing fuel to the engine

**Funnel:** cone shaped tool used to guide liquid into a small opening

**Fuse:** a safety device with a small wire that melts if an electric overload occurs

**Fused jumper wires:** wire with a fuse in line, used to test circuits

**Fusible link:** two strips of a metal soldered together with an alloy designed to melt at a certain temperature allowing the circuit to break

**FWD front wheel drive:** vehicle powered by the front wheels

## G

**Gasket:** designed to keep two parts from leaking

**Gear lube:** lubricant designed specifically for some manual transmissions, transfer cases, and differentials

**Gear oil:** lubricant designed specifically for transmissions, transfer cases, and differentials

**Gear ratios:** the input speed relative to the output speed

**Generator:** a machine that converts mechanical energy to electrical energy

**Glass bulb fuse:** fuse enclosed in a glass tube

**Gravity bleed:** the process of purging brake lines of air using gravity or atmospheric pressure

**Grease zerk:** fitting to grease joints with a grease gun

**Ground:** a negative connection to a particular point in an electrical circuit

**Grounding:** connecting the negative electrical circuit to a point

## H

**Hazard lights:** flashing lights at the front and rear of a vehicle to warn oncoming traffic

**Head gasket:** seal between a block and head

**Headlight:** powerful light at the front of a vehicle

**Headlight switch:** switch to turn on external lights and headlamps

**Heat shields:** a device providing protection from excessive heat, usually from exhaust components

**Heat shrink:** shrinkable plastic tube used to insulate wire

**Heater core-** radiator like device used in heating the cabin of a vehicle

**Heater hoses:** Hoses that allow coolant to flow between the engine and heater core

**High beams:** brighter headlight circuit for improved visibility

**High intensity discharge HID:** type of light bulb which produces a brighter light by means of an electric arc between housed inside an arc tube

**High pressure hose:** hose designed to withstand high pressures

**High speed fan:** Designed to move air at a faster rate

**Hoist:** To raise or lift something using cables and pulleys or a hydraulic ram

**Hold down spring:** Holds brake shoes to the backing plate

**Hone:** An abrasive stone used for deglazing an engine cylinder

**Honing:** the process that produces a precision finish of an engine cylinder

**Hose clamps:** clamps to fasten the end of a hose to a male nipple

**Housing vent:** allows ventilation for an axle housing, transmission or other type of gearbox

**Hub assembly:** wheel bearing and hub already pressed together

**Hubs:** center where the wheels attaches to the vehicle

**Hybrid:** combination of electric and gas powered power plant

**Hydraulic fluid:** type of fluid used in hydraulic systems

**Hydraulic lifter:** lifter that uses oil pressure to keep centered and to move an engine push rod

**Hydro-boost:** uses the power steering pump fluid pressure to apply more force and assist braking

**Hydrocarbons:** organic compounds made of only hydrogen and carbon atoms found in crude oil

**Hydrometer:** an instrument used to measure specific gravity or density of liquids

**Hygroscopic:** Absorbs and retains moisture

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**Idler arm:** A pivoting support for the steering linkage at the opposite end of the pitman arm

**Idler pulley:** Used to allow a belt or chain to change directions smoothly

**Ignition coil:** an induction coil in an auto ignition system which steps up battery voltage to high voltage used in the secondary ignition system

**Illuminate-** To light up something

**Impact sockets:** Sockets made to withstand the higher forces of an impact wrench usually black in color

**Impact wrench:** A tool that provides impacting (or hammering) torque to a fastener Commonly used to remove wheel lug nuts

**Infrared thermometer:** This tool reads energy in the infrared energy range to determine the temperature of an object

**Inner tie rod:** Ball and Socket Joint used in both parallelogram, rack and pinion steering systems Transfers steering movement while allowing wheel vertical travel

**Inoperable:** Component or object not working

**Inspection:** Observing, measuring, testing a system or component for proper operation to determine its condition

**Instrument panel:** The dash assembly and the part of the dash where the vehicles gauges/instruments are located

**Instrument panel/cluster:** Where the gauges are mounted, usually one complete unit that can be removed Most of the gauges/instruments are located here

**Insulators:** component the keeps one item from touching another

**Intake Vacuum:** negative pressure that is in the intake manifold as the engine is running

**Integral parking brake system:** parking brake caliper assembly that shares components of the service brakes and the parking brake

**Integrity:** Used to describe a person's morals or lack thereof

**Interference Engine:** An engine design where the piston and a valve can contact and damage the engine if valve timing fails or is not correct

**Interior lamps:** Lights to illuminate the interior of the vehicle, usually turned on when a door is opened

**Intermittent:** Used to describe a symptom that does not happen every time, is random and can be hard to reproduce

**Internal Patch:** commonly used in tire repair

**Iridium:** A metal with a high melting point providing longer service life of a spark plug

## J

**Jack stand:** Used to support a vehicle's weight when being serviced

**Jounce:** pushing down on a vehicle's front or rear and watching the movement up and down

**Jounce bumpers:** Also known as bump stops. When a vehicle's suspension is jounced to the point of maximum compression and frame to suspension contact is possible.

**Jump start:** The process of using a booster battery, jump start pack, battery charger or another vehicle to provide boost voltage in an attempt to start a vehicle with a dead battery.

**Jumper cables:** Used to connect a discharged battery in a vehicle to a booster battery or another vehicle to provide boost voltage in an attempt to start the vehicle with the discharged battery.

## K

**Key fob:** A remote control or "clicker" used with most modern automobiles.

**Keyless entry:** Allows the driver or passenger to enter the vehicle via a FOB without using a key.

**Kinks:** a short tight twist or curl caused by a doubling or winding of something upon itself.

## L

**Lateral Links:** A suspension link that is aligned to resist sideways motions in a wheel.

**Leaf:** A length of flat spring steel plates bent in an arch usually with curled ends to allow mounting to the frame.

**Load carrying/non-load carrying:** Load carrying may be compression loaded or tension loaded.

**Load test:** A tester with a variety of amperage loads can be applied to determine if the battery is good.

**Locking Hubs:** Hubs that connect the front wheels to the front drive axles when they are in the locked position.

**Low pressure/Return hose:** The return hose usually connects to the power steering pump with a hose clamp and operates under low pressure.

**Low speed fan:** most automotive electric fans are capable of running at different speeds.

**Lower control arm:** also known as an A-arm, is a hinged suspension link between the chassis and the suspension upright or hub that carries the wheel.

**Lube:** Grease

**Lubricate:** The process of reducing friction between the moving parts of an engine with an oil or grease.

**Lug nut:** The nuts which secure the wheels to the vehicle.

# M

**MacPherson struts:** A suspension system in which the strut is connected from the steering knuckle to an upper strut mount

**Maintenance light:** The check engine light, or malfunction indication light

**Malfunction Indicator light MIL:** Known as a check engine light

**Manifold:** Collects the exhaust gases from multiple cylinders

**Manifold vacuum:** It is a measure of the amount of restriction of airflow through the engine

**Master Cylinder:** The liquid-filled cylinder in the hydraulic brake system or clutch where hydraulic pressure is developed when the driver depresses a foot pedal

**Metal Gasket:** Fills the space between two or more mating surfaces

**Metric measurement:** Finding the dimension of an object using the Metric measuring system,

**Metric micrometer:** A precision measuring device capable of resolutions of 1/1000<sup>th</sup> of a millimeter

**Mini fuse:** A type of automotive current limiting device found on later model vehicles

**Minimum thickness:** The smallest allowable size in automotive brake systems the is a specification for minimum thickness of brake rotors and drums.

**Misalignment:** The vehicle wheels must be aligned to the centerline of the car, if not it is considered misaligned.

**Misfiring:** A condition where one or more cylinders are not firing or are firing intermittently

**Mode door actuator:** An electric or vacuum operated device that moves a door in automotive HVAC systems

**Module:** A device that contains a solid state electronic device that controls a system within a motor vehicle

**Monitors:** on a motor vehicle monitors refers to a software routine that keeps track of various systems on the vehicle

**Mounts:** Usually a cushion installed between an engine or transmission and the mounting point on the vehicle

**MSD/MSDS:** Acronym for Material Safety Data Sheet

**Muffler:** A device in the exhaust system used to reduce the exhaust noise of the engine

**Multi-function switch:** A lever usually mounted on the steering column through which the operator can control more than one device

## N

**Needle bearing:** Shaped like a small round rod

**Neutral safety switch:** A device that inhibits the ability to start the engine unless the transmission is in park or neutral

## O

**Ohm's Law Formula:** a formula utilizing the relationship between voltage, resistance and current flow to diagnose or describe the characteristics of an electrical circuit

**Oil change interval:** A period expressed in mileage and/or time when the engine oil should be changed

**Oil filter:** A device through which the engine oil flows to remove dirt and foreign debris from the engine oil

**Oil filter wrench:** A special tool designed to firmly grip the oil filter and safely remove it

**Oil pressure gauge:** A device that can measure the pressure of engine oil when the engine is running

**On board diagnostic II (OBDII):** A federal specification for the emissions of automobiles and light trucks sold and operated in the United States beginning with the 1996 model year

**On car brake lathe:** A device that can resurface disk brake rotors while they are still on the car

**Open circuit:** a wiring system that will not allow current to flow because of a lack of continuity

**O-ring:** Usually a round circular rubber seal used to help seal a system

**Oscillation:** regular variation in magnitude or position around a central point

**Out of round:** Not perfectly round

**Outer tie rod:** the component of a steering system that connects to the steering knuckle

**Output:** The amount of energy or work that a system produces

**Over inflation:** The amount of pressure that is above specification

## P

**Pad Wear sensor:** A sensor used to warn the owner of a vehicle that the brake pad is in need of replacement

**Parallel Circuit:** A parallel circuit has more than one resistor that have multiple paths for the electricity to flow through.



**Parallelism:** The state of being parallel

**Parasitic drain/draw:** Electrical current from the battery that continues to flow even when the vehicle is switched off

**Park brake cable:** A steel cable that connects the parking brake lever to the parking brake shoes

**Park brake lever/pedal:** A mechanical lever or pedal that activates a vehicle's parking brake

**Parking lights:** Vehicle lights that provide nighttime standing-vehicle visibility.

**PCV:** Positive, Crankcase ventilation system-

**PCV valve:** A valve that controls the amount of burnt gasses in the PCV system

**Pedal bleed:** Is the procedure performed on hydraulic brake systems whereby the brake lines are purged of any air bubbles by use of the brake pedal

**Piston:** It is the moving component that is contained by a cylinder and is made gas-tight by piston rings In an engine

**Platinum:** A dense precious grey metal often used on spark plug electrodes

**Potentiometer:** Essentially a voltage divider used for measuring electric voltage

**Power steering fluid:** A hydraulic fluid designed specifically for use in a vehicle's power steering system.

**Power steering pressure switch:** Raises the idle speed of the engine when you are turning the steering wheel at very low or no velocity

**Powertrain control Module PCM:** On-board computer

**PPEs:** Personal protective equipment

**Pre-alignment inspection:** An inspection performed to ensure that the vehicle is an appropriate candidate for alignment

**Preload:** The amount of static pressure applied to a device

**Preset stations:** Set in advance radio adjusted to receive certain stations

**Pressure cap:** It holds a predetermined amount of pressure on the water in the cooling system, this enables the water to run hotter without boiling

**Pressure differential switch:** Senses a difference in pressure between two pressure sources in a control process

**Primary Shoe:** The brake shoe that faces the front of the vehicle

**Pry bar:** A heavy iron lever with one end forged into a wedge crowbar

**Pulleys:** A wheel with a grooved rim around which a belt passes

**Push rod:** A rod operated by cams that opens and closes the valves in an internal combustion engine

## R

**R & R:** Remove and repair

**Race:** The surfaces on the cup and cone of a bearing where the rolling elements make contact

**Rack and pinion:** Automobile's steering system that converts rotary motion into linear motion

**Radial Tire:** Is a vehicle tire design where the cord plies are arranged at 90 degrees to the direction of travel

**Radiator:** An engine-cooling device in a motor vehicle in which circulating fluid is cooled by the surrounding air

**Radiator hoses:** a flexible hose between the radiator and the engine block cooling system

**Rear suspension:** Is the system of tires, tire air, springs, shock absorbers and linkages that connects a vehicle to its wheels

**Rebound:** The rate of return for the suspension to return to idle height

**Rebound bumpers:** Rebound bumpers prevent a vehicle's suspension from bottoming out

**Recall:** a notice sent by a vehicle manufacturer to owners advising them the vehicle may have a serious defect and that the manufacturer's dealers will make any necessary replacement or repairs free of charge

**Recirculation door:** The door that changes the air recirculation from outside air to inside air

**Regenerative braking system:** A method of assisting the deceleration of a hybrid or electric vehicle in which the vehicle's electric motor switches from drive/output mode to generator mode

**Relay:** magnetically operated switch used to make or break current flow in a circuit

**Remote start systems:** A feature of a vehicle's electronic key fob that controls the vehicle's ignition

**Repair order:** Sales document for recording all the business processes that are involved in processing faulty goods that a customer sends in for repair

**Reservoir:** a tank or bottle used to hold a reserve of fluid

**Resistance:** the measure of opposition to electrical flow in a circuit

**Resonator:** A small muffler-like device that is placed in an exhaust system to further reduce exhaust sound

**Return springs:** A spring positioned to close a valve or return a brake shoe back to its resting position

**Reverse lights:** White lights fitted to the rear of a vehicle

**Revolution per minute (RPM):** measurement of how fast the engine's internal components are spinning

**Ride Height:** the amount of space between the road and the rocker panel of the vehicle.

**Road test:** a test of the performance of a vehicle on the road

**Roller bearings:** Bearings which contain hardened roller ball bearings between two races

**Rotor:** A flat metal disc that serves as the friction surface for the front brake assemblies

**RTV:** Room Temperature Vulcanization silicone

**Rubber cement:** A cement or adhesive containing rubber in a solvent

**Rubber Gasket:** used to seal off parts and prevent leakage

**Running compression test:** used to pinpoint the cause of a misfire when all of the usual tests return normal results

**Runout:** The side-to-side distortion or play of a rotating part

## S

**SAE:** Society of Automotive Engineers

**Scan tool-** An electronic tool that is used to read and interpret diagnostic codes

**Scoring:** Scratching or grooves on a finished surface

**Seals:** A formed device made of plastic, rope, neoprene to prevent oil leakage

**Secondary ignition:** the ignition system in any car has two circuits that result in a spark firing at the end of the spark plug

**Secondary shoe:** The brake shoe which faces the rear of the vehicle

**Secondary windings:** The high voltage winding in a coil

**Series circuit:** A circuit with only one path for electrons to flow

**Series Parallel:** A circuit in which a series and parallel circuits are combined

**Serpentine belt:** A single belt used to drive all of the engine-driven accessories

**Shackles:** links for connecting a leaf spring to the frame

**Shift linkage:** A cable or mechanical linkage used to shift a transmission into gear

**Shims:** A thin piece of brass, steel, or plastic inserted between two parts to adjust the distance between them

**Shock absorber:** An oil or gas filled device used to control spring oscillation in suspension systems

**Short to ground:** An accidental grounding of an electrical circuit or electrical device

**Short to voltage:** if the wire is touching a hot wire, which the device stays on even though switch is off

**Slave cylinder:** A hydraulic cylinder used to produce movement of the clutch fork

**Slide pins:** The caliper slide pin allows the sliding caliper to float on the pins

**Sliding caliper:** move in and out relative to the rotor and have one or two pistons only on the inboard side of the rotor

**Slow charge:** charging the battery slowly

**Socket:** a tool fitting that goes on a ratchet or breaker bar to loosen or tighten bolts

**Solder:** Is a metal alloy used to tin or solder wires in an electrical system.

**Soldering iron:** a tool used for melting solder

**Solenoids:** a cylindrical coil of wire acting as a magnet when carrying electric current

**Spark plug gap:** the space provided for the spark to jump between two electrodes

**Spark plug wires:** Transfer the spark from the coil to the spark plug

**Spark plugs:** provides spark to the cylinders

**Speedometer:** tells how fast a vehicle is going

**Spindle nut:** goes on to the spindle with a torque spec

**Spindle/knuckle:** a part of the suspension system for the wheel and attaches to the upper and lower control arms

**Spring:** reduces jounce

**Spring Insulators:** piece of rubber that prevents the spring from rubbing on the frame of the car

**SRS:** Supplemental Restraint System

**SRS Supplemental restraint system:** designed to supplement the driver's seat belt to help reduce the risk or severity

**Stability control system:** Used to stabilize the vehicle

**Stabilizer bar:** a steel bar that connects suspension components on opposite wheels

**Star adjuster:** a screw device that is used to adjust drum brake shoes

**Starter:** an automatic device for starting the engine

**Starter solenoid:** is the part of an automobile which switches a large electric current to the starter motor, in response to a small control current.

**State-of-charge test:** a test that shows the available capacity expressed as a percentage of charge left in a battery

**Static Electricity:** a stationary electric charge built up on an insulating material

**Static imbalance:** Tire condition caused by uneven weight distribution around the circumference of the tire resulting in bounce

**Steering angle sensor:** used to measure the overall steering angle during the movement of the steering wheel

**Steering damper:** damping device designed to inhibit an unwanted, uncontrolled movement of a vehicle steering mechanism

**Stoichiometry:** Used in air/fuel mixtures to determine the ratio.

**Strut:** suspension component containing a shock damper and cartridge and a coil spring

**Strut bearing:** what lets the wheel spin with little friction

**Strut mount:** what mounts the strut to the frame of the car

**Strut-Suspension:** part that helps to prevent excessive control arm movement

**Supply Voltage:** The amount of voltage a system is providing.

**Suspension:** absorbs bumps or holes in the road to give the vehicle a smoother ride

**Suspension Oscillation:** the up and down movement of the suspension system

**Suspension system:** Suspension is the system of springs, arms, shock absorbers and linkages that a vehicle uses to absorb bumps or dips in the road.

**Sway Bar bushings:** rubber that prevents metal on metal grinding, and helps absorb some of the bumps

**Supply voltage:** The amount of voltage a system is providing.

**Synthetic Oil:** Synthetic oil is not only refined but also distilled

**Synthetic Oil/conventional oil:** Synthetic oil is not only refined but also distilled

## T

**Tachometer:** is an instrument measuring the rotation speed of a shaft

**Tail pipe:** The pipe through which exhaust gases from an engine are discharged

**Tap and Die:** tools used to repair male or female thread

**Tape Weights:** replaces the traditional lead weights for a wheel

**TDC:** Top Dead Center

**Technical service bulletins:** Bulletins sent out by manufacturer explaining problems that have occurred on multiple vehicles

**TSB:** Technical service bulletins

**Temperature gauge:** signal that reads how hot or cold an object is

**Tensioner:** a device to take the slack out of a belt or timing chain/belt

**Test light:** devices that show presence of current

**Thermostat:** opens or closes when coolant is at certain temperatures

**Thermostat housing:** component that holds the thermostat in place

**Thickness variation:** how thick or thin something is; how much it changes from original size

**Thread Count:** how many threads are in an inch or mm

**Thread pitch:** how many threads are in an inch or mm

**Tie rod:** Connects the vehicle's steering rack to the steering arm

**Tie rod boot:** keeps dirt and water out of the tie rod

**Tie rod ends:** connects the steering linkage to the wheels of a vehicle

**Timing marks:** indicator used for setting the timing of the ignition system

**Tire Plug:** a piece of rubber used to patch a hole in a leaking tire

**Tire pressure gauge:** measures the pressure inside a tire

**Tire rotation:** the practice of moving the wheels and tires of an automobile from one position to another

**Toe in and Toe out:** the angle in or out of the front part of the front tires

**Top Dead Center TDC:** the highest point a piston will reach

**Torque:** how much pressure it takes to spin a nut

**Torque stick:** goes on an impact wrench to prevent it from over torquing a nut

**Torque wrench:** prevents a nut from being over torqued by setting a specific torque to the wrench

**Torsion bars:** metal bar that functions as a spring

**Total Resistance:** the sum of all of the resistance in a circuit

**TPMS:** Tire Pressure Monitoring System- it monitors the vehicle's tire pressure lights an icon on dash

**Track Bar:** (also called Panhard bar) is a suspension link that provides lateral location of the axle Used primarily in rear suspensions and four wheel drive trucks

**Traction control system:** Allows a vehicle to distribute the engine power to the wheels without slipping.

**Trans mounts:** A mount used to attach transmission to the vehicle. The mount is made of steel with rubber insulation so it will dampen transmission vibration

**Transaxle:** A type of transmission typically used in front-wheel drive vehicles in which the transmission also includes the differential and final drive gear

**Transmission:** An assembly that houses a variety of gear sets that allow the vehicle to be driven at a wider range of speeds and terrain conditions than would be possible without a transmission

**Transmission Filter:** Filter, usually accessed in an automatic transmission by removing Transmission oil pan Filter should be replaced when servicing transmission according to manufacturer's maintenance schedule

**Transmission mounts:** A mount used to attach transmission to the vehicle. The mount is made of steel with rubber insulation so it will dampen transmission vibration

**Transmission temperature gauge:** A gauge located in the instrument panel that will inform the driver of the transmission

temperature; usually original equipment on high end or performance vehicles

**Tread depth:** height of tread usually measured in 32<sup>nd</sup>s of an inch Considered worn out at 2/32 of an inch

**Trickle charger:** A battery charger that charges at a slow rate, usually 1-5 amps

**Trip:** A cycle where a vehicle is started driven and then stopped; usually used in vehicle computer programs to set MIL light Most malfunctions have to happen at least 2 trips to set a diagnostic code and turn on the Malfunction Indicator Light

**Troubleshoot:** To use a systematic approach with steps to diagnose the cause of a malfunction

**Turn signal switch:** A switch that turns the left and right turn signal lights on and off

**Turn signal/flasher:** electronic component used to control voltage to turn signal and flasher bulbs in a vehicle. A flasher can use an electromagnetic coil and contact points or use transistors to cause the bulbs to be turned off and on

## U

**Under inflation:** When a tire has less air pressure than specifications

**Upper control arm :**Component that serve as a primary load-bearing element of a vehicle's suspension system

## V

**V belt:** V belt is a loop of flexible material used to mechanically link two or more rotating shafts

**Vacuum:** A pressure in an enclosed area that is lower than atmospheric pressure

**Vacuum bleed:** Bleeding process that uses a vacuum bleeder to bleed the brake fluid from the system

**Vacuum booster:** It uses a diaphragm and the difference of low manifold pressure and higher atmospheric pressure to amplify force that is applied to the master cylinder

**Vacuum gauge:** A device used to measure the amount of vacuum an engine can generate during operating conditions

**Valve:** Used to control the flow of fuel and exhaust entering or exiting the engine combustion chamber.

**Valve lash:** the mechanical clearance in the valvetrain from the valve tip to the rocker in a engine using solid lifters

**Ventilation:** in a vehicle it is the system of doors and ducts used to control the flow of air

**Vibration dampener:** A metal disc attached to the front of the crankshaft that smoothes vibrations created by the crankshaft within the engine.



**VIN:** Vehicle Identification Number

**Viscosity:** A fluid's ability to flow

**Volt Meter:** A meter used to measure voltage

**Voltage:** Measure of electrical pressure

**Voltage drop:** The amount of voltage used in an electrical circuit between 2 components; the higher the voltage drop the higher the resistance

**Voltage drop test:** Test using volt meter to measure voltage drop between 2 points in a circuit Connect voltmeter in parallel between 2 points to be tested and must have current flowing through circuit

**Volts:** Unit used to measure electrical pressure

## W

**Warning indicators:** Appear on the instrument panel that can indicate faults with various systems on the vehicle

**Washer fluid:** A fluid for motor vehicles that is used in cleaning the windshield with the windshield wiper while the vehicle is being driven

**Washer motor:** A pump that is turned by an electric motor that pumps washer fluid from the reservoir to the spray nozzles

**Washer reservoir:** A container that stores windshield washer fluid

**Water pump:** The water pump circulates engine coolant through the engine and then through the radiator and heater core

**Wet Compression test:** Type of compression test where a small amount of oil is put in a cylinder with low compression, and then tested again If the compression goes up, this would indicate worn piston rings

**Wheel Bearing:** A component that allows the wheels to rotate freely

**Wheel Cylinder:** A hydraulic cylinder with one or two pistons, seals, dust boots, and a bleeder screw that pushes the brake shoes into contact with the brake drum to slow or stop the vehicle

**Wheel Imbalance:** When a wheel and tire assembly has one side of the tire that is heavier than the other side

**Wheel Seal:** A Seal used to keep lubrication contained on wheel bearings to keep dirt and moisture out

**Wheel speed sensor:** A device that creates an analog or digital signal according to the speed of the wheel

**Wheel stud:** Threaded fasteners that the wheel is attached to by using a lug nut.

**Wheel/rim:** A tire is mounted to the wheel that rotates on an axial bearing

**Windshield wiper:** A device used to remove rain and debris from a windshield

**Windshield wiper blade:** a long rubber blade attached to an arm

**Windshield wiper motor:** Electric motor that operates windshield wipers

**Windshield wiper switch:** Switch that controls the function of the windshield wipers

**Wire stripper:** Tool used to remove insulation from electrical wires

**Wiring diagram:** A schematic drawing and symbol representation of the wiring and components in an electrical circuit

**Work order:** A form used by shops to collect information regarding a vehicle coming in for repair with a brief description of the customer's complaints

## Y

**Yaw sensor:** A sensor that measures the amount a vehicle is turning around its vertical axis

**Yokes:** A yoke is a kind is a strap that holds a bearing in place. It is usually used in a driveline to hold universal joints in place