



KNOW YOUR VEHICLE™

FITNESS INSPECTION & TREATMENT PLAN

OUR VALUED CUSTOMER

Used Crest Cadillac

7501 N CENTRAL EXPRESSWAY
 PLANO, TX 75075-2525
 (972) 578-7511
 CNASTRO@VTAIG.COM

Cori Nastro
Service Consultant

B. Martschinsky
Certified Technician

YOUR VEHICLE

Year 2008	Make Cadillac	Model Escalade ESV	Engine Type 6.2L V8 8 OHV (MFI)
Odometer 143,200	VIN # 1GYFK66868R105311	License #	Date 6/23/2015

Vehicle Care Commitment

It's about "Peace of Mind..."

Thank you for choosing our service department to handle your vehicle's service needs. In order to provide the quality service you deserve, we have invested in the latest diagnostic equipment and information systems. These help us fully understand your vehicle's service and maintenance requirements so that we can service your vehicle in the most comprehensive and economical way possible.



We are pleased to present to you a "Know Your Vehicle" report today. It's important to us that you leave our dealership with peace of mind, so we take the extra time necessary to analyze your vehicle's health to make sure it is operating at its optimum levels. This bumper-to-bumper inspection report will help you better understand your vehicle's performance and health. Staying on top of your vehicle's health is vitally important to ensuring your safety on the road.



Thank you for this opportunity to assist you. We appreciate your business. Please feel free to contact your service advisor if you have any questions or concerns. We will do everything we can to put your mind at ease and keep you and your family safe on the road.



How we give you "Peace of Mind..."

To help you understand what your vehicle needs to stay in top operating condition, we:

- Perform a world class visual inspection on your vehicle every visit
- Review your vehicle's maintenance schedules and search our extensive database to uncover anything we believe you should know about your vehicle based on its odometer reading and time on the road
- Make recommendations and complete a Treatment Plan for your vehicle
- Offer a complete easy to read and understand report that enables you to make an educated decision for your vehicle's service needs. Items on the report will be classified as follows:
 - Pass** - Items are new or "like new" and do not require service at this time
 - Caution** - Items that are dirty or showing signs of wear and would benefit from being serviced soon
 - Fail** - Items that have either worn below minimum specifications or are no longer doing what it was designed to do and need to be repaired immediately

DISCLAIMER: Addressing any identified issues listed by the report, should improve the safety and performance of your vehicle. However, please remember that the inspection is limited to a visual inspection of the items listed on the report without disassembling or test driving your vehicle. Therefore, it is not possible for the technician to see or identify all potential defects, especially those that are internal to the engine, transmission, driveline, electrical system or other components. The cleanliness of the vehicle both inside and out at the time of the actual inspection may reduce the accuracy of the inspection. Your vehicle may have conditions that are not evident at the time of the inspection or otherwise not presented or noticed during the inspection process. Therefore, the inspection and condition report does not provide any guarantee or warranty that the vehicle will not break down in the future, or have conditions that were undetected during the inspection or were omitted from the report.

Table of Contents...



Original Customer Requests



Package Results



Recommended Services



Additional Information



Original Customer Requests

The following is what you requested we perform or investigate regarding your vehicle:

- ✓ A. 108 POINT INSPECTION



Package Results

Multi Point Inspection Pre Owned

Failed Task	Observation	Recommendation	Done
Inspect/measure left front tire tread depth	3/32" (2.379 MM)		
Inspect/measure right front tire tread depth	<ul style="list-style-type: none"> • 3/32" (2.379 MM) • Found abnormally worn front tires • Found all tires to be worn out (below minimum tread depth) 	<ul style="list-style-type: none"> • Perform alignment • Mount and balance four new tires 	
Check front wheel bearings for noise/play	<ul style="list-style-type: none"> • Found left front wheel bearing to be noisy/worn out • Found right front wheel bearing to be noisy/worn out 	<ul style="list-style-type: none"> • Replace left front wheel bearing • Replace right front wheel bearing 	
Inspect accessory drive belts	Found serpentine belt to be in poor condition	<ul style="list-style-type: none"> • Replace serpentine belt • Replace A/C belt 	
Inspect windshield wiper blades	Found wiper blades to be worn out	Replace windshield wiper blades	
Check taillight, turn signal, side marker, and license plate lights	Found burned out right front turn signal light bulb	Replace right front turn signal bulb	
Inspect taillight, turn signal, and side marker assemblies for cracks/damage	Found cracked/broken right front turn signal lens	Replace right front turn signal lens assembly	

Failed Task	Observation	Recommendation	Done
Inspect onboard diagnostics system (check engine light)	Found check engine light to be on	Scan vehicle for codes	
Scan vehicle computer for fault codes	<ul style="list-style-type: none"> • Found check engine light on • DTC P1153 HEATED O2 SENSOR INSUFFICIENT SWITCHING BANK 2 SENSOR 1 	<ul style="list-style-type: none"> • Diagnose cause of check engine light • REPLACE O2 SENSOR BANK 2 SENSOR 1--DTC P1153 HEATED O2 SENSOR INSUFFICIENT SWITCHING BANK 2 SENSOR 1 	

Cautioned Task	Observation	Recommendation	Done
Inspect under car splash shields	Found splash shield to be damaged	Replace splash shield	
Inspect/measure left rear tire tread depth	4/32" (3.175 MM)		
Inspect/measure right rear tire tread depth	<ul style="list-style-type: none"> • 4/32" (3.175 MM) • Found abnormally worn rear tires 		
Inspect/measure left rear brake pads/shoes	5/32" (3.967 MM)		
Inspect/measure right rear brake pads/shoes	5/32" (3.967 MM)		
Check front sway-bar links and bushings	<ul style="list-style-type: none"> • Found worn or broken left side sway-bar link • Found worn or broken right side sway-bar link • Found worn out sway-bar bushings 	<ul style="list-style-type: none"> • Replace left front sway-bar link • Replace right front sway-bar link • Replace sway-bar bushings 	
Inspect engine mounts	Found broken engine mount	Replace engine mount	
Check automatic transmission cooler hoses for damage or leaks	Found leak at automatic transmission cooler hose	Replace automatic transmission cooler hose	
Check idle speed	Found throttle body to be dirty	Clean and service throttle body	
Inspect air cleaner element	Found air cleaner element to be dirty	Replace air filter element	
Check engine oil level/condition	Found engine oil leak	Diagnose engine oil leak	
Check power window operation	FOUND RIGHT REAR POWER WINDOW INOPERATIVE AT RIGHT REAR DOOR SWITCH	Diagnose power window problem	

Cautioned Task	Observation	Recommendation	Done
Inspect rear shocks and struts; check operation	<ul style="list-style-type: none"> • Found worn out rear shock absorbers • FOUND REAR SHOCKS AIR BELLOWS BLOWN OUT 	<ul style="list-style-type: none"> • Replace rear shock absorbers • REPLACE AIR SUSPENSION COMPRESSOR 	
Inspect front shocks and struts; check operation	Found shocks/struts to be leaking	<ul style="list-style-type: none"> • Replace front struts • Perform alignment 	

Passed Task	Observation	Recommendation	Done
Inspect/measure left front brake pads/shoes	8/32" (6.35 MM)		
Inspect/measure right front brake pads/shoes	8/32" (6.35 MM)		

Passed Tasks

- | | | |
|---|--|---|
| ✓ Visually inspect EVAP system | ✓ Inspect catalytic converter | ✓ Inspect exhaust system heat shields |
| ✓ Inspect exhaust system for leaks, damage, and loose parts | ✓ Inspect inner fenders and mud guards | ✓ Inspect frame and chassis |
| ✓ Inspect lug nuts/wheel studs | ✓ Inspect rims for damage | ✓ Check tire pressure |
| ✓ Inspect/measure left front brake pads/shoes | ✓ Inspect/measure right front brake pads/shoes | ✓ Inspect brake calipers and wheel cylinders |
| ✓ Inspect brake hoses and lines | ✓ Inspect rear brake drums/rotors | ✓ Inspect front brake drums/rotors |
| ✓ Check rear sway-bar links and bushings | ✓ Check rear suspension bushings | ✓ Check rear strut/shock mounts |
| ✓ Check steering gear assembly | ✓ Check front strut/shock mounts | ✓ Check control arm bushings |
| ✓ Check pitman arm | ✓ Check idler arm | ✓ Check/lubricate tie-rod ends |
| ✓ Check/lubricate ball joints | ✓ Check rear wheel bearings for noise/play | ✓ Inspect u-joints and driveline slip-joints |
| ✓ Inspect front axle CV joints and boots | ✓ Inspect rear axle CV joints and boots | ✓ Inspect torque mounts |
| ✓ Inspect manual transmission mounts for damage | ✓ Inspect automatic transmission mounts for damage | ✓ Check transfer case fluid level/condition |
| ✓ Check front differential fluid level/condition | ✓ Check rear differential fluid level/condition | ✓ Check manual transmission fluid level and condition |
| ✓ Check front axle seals for leaks | ✓ Check front differential for leaks | ✓ Check rear axle seals for leaks |
| ✓ Check rear differential for leaks | ✓ Inspect fuel tank, lines, and connections | ✓ Check power steering system for leaks |
| ✓ Check engine for oil leaks | ✓ Check cooling system for leaks | ✓ Check brake system for leaks |
| ✓ Check clutch hydraulic system for leaks | ✓ Check automatic transmission for leaks | ✓ Visually inspect AIR system |
| ✓ Visually inspect PCV system | ✓ Visually inspect EGR system | ✓ Check alternator/charging system |
| ✓ Check battery fluid level | ✓ Inspect battery terminals/cables | ✓ Inspect wiring harness and connections |
| ✓ Inspect fuel hoses, lines, and connections | ✓ Inspect carburetor and choke | ✓ Inspect fuel injection system |
| ✓ Inspect ignition wires (spark plug wires) | ✓ Inspect distributor cap and rotor | ✓ Check distributor advance and ignition timing |

- ✓ Inspect timing belt/balance shaft belts
- ✓ Inspect radiator cap
- ✓ Inspect cooling system hoses
- ✓ Check windshield washer fluid level/condition
- ✓ Check brake fluid level/condition
- ✓ Inspect convertible top
- ✓ Inspect body for damage, dings, and dents
- ✓ Check back-up light operation
- ✓ Check seatbelts for normal operation/condition
- ✓ Check power antenna operation
- ✓ Check power locking system operation
- ✓ Check blower motor operation (all speeds)
- ✓ Check brake pedal travel/free-play
- ✓ Check dash and interior lights
- ✓ Inspect parking brake adjustment/operation
- ✓ Check for abnormal engine noise/vibrations
- ✓ Check shift lock operation
- ✓ Check engine performance/smooth acceleration
- ✓ Inspect ABS diagnostic system (ABS warning light)
- ✓ Check electric cooling fan operation
- ✓ Check condenser cooling fan operation
- ✓ Check power steering fluid level/condition
- ✓ Check clutch hydraulic fluid level/condition
- ✓ Inspect/lubricate door latches and mechanisms
- ✓ Check hazard light operation
- ✓ Check headlight low and bright beam
- ✓ Inspect SRS system
- ✓ Check windshield wiper/washer operation
- ✓ Inspect rear window defroster operation
- ✓ Inspect cabin air/HEPA filter (if equipped)
- ✓ Check clutch/start switch
- ✓ Inspect SRS diagnostic system (SRS warning light)
- ✓ Check front differential for abnormal noise
- ✓ Check clutch for normal operation (if equipped)
- ✓ Check automatic transmission for normal operation/shifting
- ✓ Check starter/starting system
- ✓ Inspect brake booster
- ✓ Inspect fan hub
- ✓ Inspect heater hoses
- ✓ Check engine coolant level/condition
- ✓ Check automatic transmission fluid level and condition
- ✓ Inspect/lubricate sunroof and check for leaks
- ✓ Check brake light operation
- ✓ Inspect headlight assemblies for cracks/damage
- ✓ Check power seat operation
- ✓ Check horn operation
- ✓ Check air flow switching control (floor, dash vent, and defroster outlets)
- ✓ Check air conditioning operation
- ✓ Check clutch adjustment
- ✓ Inspect ABS diagnostic system (ABS warning light)
- ✓ Check rear differential for abnormal noise
- ✓ Check manual transmission for normal operation/shifting
- ✓ Check cruise control operation (including resume)
- ✓ Check ease of starting

Additional Observations	Recommendation
VEHICLE PULLS HARD LEFT	DIAGNOSE--VEHICLE PULLS HARD LEFT
NON OEM TIRE SIZE INSTALLED	NON OEM TIRE SIZE INSTALLED
SERVICE STABILITRAK LAMP IS ILLUMINATED	DIAGNOSE--SERVICE STABILITRAK LAMP IS ILLUMINATED
TRACTION CONTROL LAMP IS ILLUMINTED	DIAGNOSE--TRACTION CONTROL LAMP IS ILLUMINTED
SQUEAKY SUSPENSION ON UNEVEN SURFACES	DIAGNOSE--SQUEAKY SUSPENSION ON UNEVEN SURFACES

Additional Observations	Recommendation
ROARING NOISE INCREASING WITH VEHICLE SPEED	DIAGNOSE AFTER TIRE REPLACEMENT AND WHEEL BEARING REPLACEMENT IF NEEDED--ROARING NOISE INCREASING WITH VEHICLE SPEED
ENGINE MAKES A TICKING NOISE AT COLD START UP UNTIL ENGINE REACHES RUNNING TEMPERATURE	DIAGNOSE--ENGINE MAKES A TICKING NOISE AT COLD START UP UNTIL ENGINE REACHES RUNNING TEMPERATURE
REAR WIPER ARM CAP IS MISSING	REPLACE--REAR WIPER ARM CAP IS MISSING
FRONT BUMPER IS DAMAGED	FRONT BUMPER IS DAMAGED
RIGHT POWER FOLD MIRROR IS INOPERATIVE	REPLACE RIGHT POWER MIRROR ASSEMBLY--RIGHT POWER FOLD MIRROR IS INOPERATIVE
FOUL ODOR IN INTERIOR	PERFORM ODOR OUT SERVICE--FOUL ODOR IN INTERIOR
DAMAGED UPHOLSTERY. INTERIOR IN POOR CONDITION	DAMAGED UPHOLSTERY. INTERIOR IN POOR CONDITION
FOG LAMP SWITCH IS INOPERATIVE AT TIMES	DIAGNOSE--FOG LAMP SWITCH IS INOPERATIVE AT TIMES
LEFT REAR TIRE IS FLAT	REPLACE TIRE--LEFT REAR TIRE IS FLAT
RIGHT REAR TIRE HAS A NAIL/PUNCTURE	REPLACE TIRE--RIGHT REAR TIRE HAS A NAIL/PUNCTURE
ABS/TRACTION CONTROL SYSTEM ENGAGES LEFT FRONT CORNER BRAKE AT TIMES WHEN TRAVELING AT LOW SPEED	DIAGNOSE--ABS/TRACTION CONTROL SYSTEM ENGAGES LEFT FRONT CORNER BRAKE AT TIMES WHEN TRAVELING AT LOW SPEED
BATTERY HOLD DOWN IS NOT PROPERLY INSTALLED, BATTERY IS LOOSE IN ENGINE COMPARTMENT	REPAIR CONDITION--BATTERY HOLD DOWN IS NOT PROPERLY INSTALLED, BATTERY IS LOOSE IN ENGINE COMPARTMENT





Recommended Services

Our technicians recommend the following services for your vehicle.

Original Customer Requests	Status	Deferred	Approved
A. 108 POINT INSPECTION			X
Subtotal			
Inspection & Additional Recommendations	Insp Status	Deferred	Approved

Inspection & Additional Recommendations	Insp	Status	Deferred	Approved
REPLACE O2 SENSOR BANK 2 SENSOR 1--DTC P1153 HEATED O2 SENSOR INSUFFICIENT SWITCHING BANK 2 SENSOR 1 (DTC P1153 HEATED O2 SENSOR INSUFFICIENT SWITCHING BANK 2 SENSOR 1)	x	Fail		
Mount and balance four new tires (Found abnormally worn front tires, Found all tires to be worn out (below minimum tread depth))	x	Fail		See AI-15
Replace right front turn signal bulb (Found burned out right front turn signal light bulb)	x	Fail		See AI-17
Replace serpentine belt (Found serpentine belt to be in poor condition)	x	Fail		See AI-20
Replace A/C belt (Found serpentine belt to be in poor condition)	x	Fail		See AI-20
Replace windshield wiper blades (Found wiper blades to be worn out)	x	Fail		See AI-24
Replace right front turn signal lens assembly (Found cracked/broken right front turn signal lens)	x	Fail		See AI-49
Replace left front wheel bearing (Found left front wheel bearing to be noisy/worn out)	x	Fail		See AI-53
Replace right front wheel bearing (Found right front wheel bearing to be noisy/worn out)	x	Fail		See AI-53
Scan vehicle for codes (Found check engine light to be on)	x	Fail		See AI-60
Diagnose cause of check engine light (Found check engine light on)	x	Fail		See AI-60
REPLACE TIRE--RIGHT REAR TIRE HAS A NAIL/PUNCTURE (RIGHT REAR TIRE HAS A NAIL/PUNCTURE)		Fail		
REPLACE TIRE--LEFT REAR TIRE IS FLAT (LEFT REAR TIRE IS FLAT)		Fail		
REPAIR CONDITION--BATTERY HOLD DOWN IS NOT PROPERLY INSTALLED, BATTERY IS LOOSE IN ENGINE COMPARTMENT (BATTERY HOLD DOWN IS NOT PROPERLY INSTALLED, BATTERY IS LOOSE IN ENGINE COMPARTMENT)		Fail		
DIAGNOSE--ABS/TRACTION CONTROL SYSTEM ENGAGES LEFT FRONT CORNER BRAKE AT TIMES WHEN TRAVELING AT LOW SPEED (ABS/TRACTION CONTROL SYSTEM ENGAGES LEFT FRONT CORNER BRAKE AT TIMES WHEN TRAVELING AT LOW SPEED)		Fail		
Subtotal				
Replace left front sway-bar link (Found worn or broken left side sway-bar link)	x	Caution		

Inspection & Additional Recommendations	Insp	Status	Deferred	Approved
Replace right front sway-bar link (Found worn or broken right side sway-bar link)	x	Caution		
Replace sway-bar bushings (Found worn out sway-bar bushings)	x	Caution		
Replace splash shield (Found splash shield to be damaged)	x	Caution		
Replace automatic transmission cooler hose (Found leak at automatic transmission cooler hose)	x	Caution		
Clean and service throttle body (Found throttle body to be dirty)	x	Caution		
Diagnose power window problem (FOUND RIGHT REAR POWER WINDOW INOPERATIVE AT RIGHT REAR DOOR SWITCH)	x	Caution		
REPLACE AIR SUSPENSION COMPRESSOR (FOUND REAR SHOCKS AIR BELLOWS BLOWN OUT)	x	Caution		
Diagnose engine oil leak (Found engine oil leak)	x	Caution		<i>See AI-23</i>
Perform alignment (Found abnormally worn front tires, Found shocks/struts to be leaking)	x	Caution		<i>See AI-29</i>
Replace air filter element (Found air cleaner element to be dirty)	x	Caution		<i>See AI-31</i>
Replace engine mount (Found broken engine mount)	x	Caution		<i>See AI-44</i>
Replace front struts (Found shocks/struts to be leaking)	x	Caution		<i>See AI-48</i>
Replace rear shock absorbers (FOUND REAR SHOCKS AIR BELLOWS BLOWN OUT, Found worn out rear shock absorbers)	x	Caution		<i>See AI-56</i>
DIAGNOSE--VEHICLE PULLS HARD LEFT (VEHICLE PULLS HARD LEFT)		Caution		
DIAGNOSE--TRACTION CONTROL LAMP IS ILLUMINTED (TRACTION CONTROL LAMP IS ILLUMINTED)		Caution		
DIAGNOSE--SQUEAKY SUSPENSION ON UNEVEN SURFACES (SQUEAKY SUSPENSION ON UNEVEN SURFACES)		Caution		
DIAGNOSE--SERVICE STABILITRAK LAMP IS ILLUMINATED (SERVICE STABILITRAK LAMP IS ILLUMINATED)		Caution		
DIAGNOSE AFTER TIRE REPLACEMENT AND WHEEL BEARING REPLACEMENT IF NEEDED--ROARING NOISE INCREASING WITH VEHICLE SPEED (ROARING NOISE INCREASING WITH VEHICLE SPEED)		Caution		
REPLACE RIGHT POWER MIRROR ASSEMBLY--RIGHT POWER FOLD MIRROR IS INOPERATIVE (RIGHT POWER FOLD MIRROR IS INOPERATIVE)		Caution		

Inspection & Additional Recommendations	Insp	Status	Deferred	Approved
REPLACE--REAR WIPER ARM CAP IS MISSING (REAR WIPER ARM CAP IS MISSING)		Caution		
NON OEM TIRE SIZE INSTALLED (NON OEM TIRE SIZE INSTALLED)		Caution		
FRONT BUMPER IS DAMAGED (FRONT BUMPER IS DAMAGED)		Caution		
PERFORM ODOR OUT SERVICE--FOUL ODOR IN INTERIOR (FOUL ODOR IN INTERIOR)		Caution		
DIAGNOSE--FOG LAMP SWITCH IS INOPERATIVE AT TIMES (FOG LAMP SWITCH IS INOPERATIVE AT TIMES)		Caution		
DIAGNOSE--ENGINE MAKES A TICKING NOISE AT COLD START UP UNTIL ENGINE REACHES RUNNING TEMPERATURE (ENGINE MAKES A TICKING NOISE AT COLD START UP UNTIL ENGINE REACHES RUNNING TEMPERATURE)		Caution		
DAMAGED UPHOLSTERY. INTERIOR IN POOR CONDITION (DAMAGED UPHOLSTERY. INTERIOR IN POOR CONDITION)		Caution		
Subtotal				
<i>For "See AI-" items  see the "Additional Information" section </i>				



Additional Information

Below is information we feel would help you better understand some of the reasons for taking preventive maintenance steps -- steps that help to ensure the reliability and safety of your vehicle for you and your family.

** The following section may contain instructions for servicing various components of your vehicle. These are an overview of the process that will be performed by a skilled technician in our shop. They are not intended to be a guide for a “do-it-yourself” operation.

Operation Description:

Carefully raise the vehicle using an approved automotive lift. Remove the rim/tire assembly from the vehicle. Remove the tire from the rim using the proper tire dismount/mounting equipment. Install a new valve stem assembly in the rim. Install a new tire on the rim using the tire dismount/mounting equipment. Inflate the tire to the vehicle manufacturers recommended pressure. Balance the tire/rim assembly on a computer aided dynamic tire balancing machine. Reinstall the tire/rim assembly onto the vehicle. Torque the wheel retaining nuts to the vehicle manufacturer’s specifications.



Signs of irregular tire wear.

Significance:

Your vehicles tires are the only connection between your vehicle and the road. Safe vehicle operation depends on your tires being in good condition. If your tires are neglected, the tread can wear completely away, leaving the tire bald and often exposing the steel cords. Not only is condition dangerous, it is also unlawful in many states. Tires with an abnormal tread wear pattern can cause the vehicle to shimmy and vibrate, and can adversely affect the manner in which your vehicle performs. A tire with an abnormal tread wear pattern will no longer contact the road the way that it was designed to, and this condition can be dangerous, especially during adverse road conditions.



New Tire.

Advantage:

Replacing worn tires is part of vehicle maintenance that is necessary to ensure that your driving experience is as safe as possible. Besides the obvious safety benefits, tires that are in good condition and properly inflated to the correct air pressure can increase the overall fuel economy, and help provide a comfortable ride.

Operation Description:

Perform a function test of entire lighting system. Visually inspect the headlamps, high and low beams, hazard signals, turn indicators, parking lights and brake lights. Remove and install new light bulbs as needed to repair inoperative vehicle lamps.



Examples of Burned Out Bulbs

Significance:

All vehicles have lighting systems for safety, and to adhere to State and Federal traffic laws. These important components allow you to see the road in front of you at night and allow other vehicles to see you coming. Replacing burned out light bulbs is an important service task. The cost is normally less than the inconvenience and can help prevent you from receiving a traffic citation.



New Light Bulb

Advantage:

The vehicle lighting system is an important safety feature of your car. Replacing burned out light bulbs is an inexpensive way to ensure that your driving experience is a safe one.

Operation Description:

Loosen the drive belt tensioner and remove the old belt. Repeat this step for any other belts that require replacement. Inspect the tensioner and idler pulley bearings for noise or signs of wear. Replace any tensioner or idler pulleys that require replacement. Install the new belt and tensioner to factory specifications. Repeat this step for any additional belts that require replacement. Start the engine, and after a minute or so, shut the engine off. Recheck the belt tension and make final adjustments as necessary.



*Cracked/Worn
Accessory Drive Belt*

Significance:

The accessory drive belt(s) on your vehicle performs many functions. The Power Steering System, Alternator (charging system), and Air conditioning System are all driven by accessory drive belts. On some vehicles, accessory drive belts also drive the water pump, engine cooling fan, and Air Injection Pump (emission control). Accessory drive belts wear during normal engine operation, and need to be checked and replaced periodically. Keep this point in mind, as you can lose one or more systems if a belt is broken. For example, a broken fan or waterpump belt can cause severe overheating which could result in expensive repairs, or even total engine failure. A broken power steering belt can result in the loss of your vehicle's power steering system, which could make your vehicle very difficult to steer. This condition could be dangerous if a quick steering maneuver is necessary. A broken alternator belt could cause your vehicle to lose all of its electrical power, and could eventually result in a dead battery. This condition could cause the engine to shut off and not restart.



*New Accessory Drive
Belt*

Advantage:

Make sure that the drive belt(s) on your vehicle are in good condition. This is an important point to keep in mind as you attempt to keep your vehicle reliable and safe. Drive belt replacement is recommended at certain mileage intervals, This step can also save you money by avoiding possible engine damage and costly engine repairs. Don't wait, have your drive belts inspected and replaced whenever it is recommended by the vehicle manufacturer!

Operation Description:

The first step is to determine where the engine oil is leaking from. Then repair the leak according to the instructions in the vehicle manufacturer's service information. Top off the engine oil, then take the vehicle for a test drive. At the end of the test drive, recheck the oil leak to verify that it has been effectively repaired.

Significance:

Engine oil leaks under your vehicle can indicate that a seal, gasket, or component has failed and needs to be repaired or replaced. Engine oil leaks, when ignored, can lead to major engine damage - not to mention the mess they can cause in your driveway.

Advantage:

Repairing an engine oil leak can help to keep your vehicle reliable and your driveway clean. Repairing an engine oil leak can also help to avoid the expensive repairs that can arise from an engine failure caused by the engine that is run while low on oil.



Removing a Leaking Rear Main Seal.



New Rear Main Seal Installed on Engine.

Operation Description:

Remove the wiper blades from the wiper arms following the vehicle manufacturer's instructions (found in the owner's guide). Install new wiper blade assemblies onto the wiper arms. Thoroughly clean the windshield.

Significance:

The ability to drive safely interests all of us. Having a clean windshield is a necessity for safe driving. Most driving decisions are dependent on the driver having a clear view of the road ahead. Worn or torn wiper blades do not effectively clean the windshield, and a dirty windshield can obstruct the drivers view, possibly resulting in an accident.

Advantage:

Most wiper blade manufacturers recommend replacing your wiper blades every 6 months or 6,000 miles. Something as simple and as inexpensive as replacing your windshield wiper blades will make your driving experience for you and your family a safer one.



Impaired View From Worn Wiper Blades



New Wiper Blades.

Operation Description:

Inspect the front and rear suspension components for any signs of wear or damage. Using wheel alignment equipment, adjust the suspension and wheels to the vehicle manufacturer's specifications.

Significance:

Vehicle suspensions can wear with age and repeated heavy use. Rough road surfaces and an occasional pothole can change the vehicle's wheel alignment. A wheel alignment can improve your steering control and overall vehicle handling. It can also help prevent abnormal tire wear by bringing the vehicle suspension components back to the vehicle manufacturer's specifications. This important step will keep your vehicle driving the way it was designed to. Keep in mind that a vehicle alignment is necessary any time a worn suspension part is replaced.

Advantage:

Even slightly worn suspension components can affect the vehicle's wheel alignment. This can lead to premature wear of tires and reduce overall vehicle comfort and safety. A vehicle with worn out suspension parts can be unsafe to drive. Maintaining your vehicle suspension and performing regular wheel alignments along with tire rotation can help keep your vehicle safe and reliable.



Abnormal Tire wear From a Vehicle that is out of Alignment.



A Wheel alignment being Performed.

Operation Description:

Remove the Air Filter Element from the air filter housing. Clean the air filter housing and inspect the fresh air duct hose for damage, dirt or obstructions. Inspect the warm air intake hose for signs of deterioration. Replace as necessary. Install a new filter element, and then reinstall the air filter housing access panel.

Significance:

A dirty or clogged air filter can affect the fuel economy and overall vehicle performance. Both Diesel and Gasoline powered engines are designed to maintain a specific air/fuel ratio. A restricted air filter can affect the way the engine maintains the correct air/fuel mixture. If the air filter is restricted, the fuel mileage and overall vehicle drivability can deteriorate rapidly.

Advantage:

Replacing your air filter element is a quick and effective way to keep your engine running at its peak performance.



Extremely Dirty/Restricted Air Filter



New Air Filter

Replace Engine/Transmission Mounts

AI-44

Operation Description:

Remove the weight of the engine/transmission from the mounts. Remove the worn engine mounts. Install the new mounts according to the manufacturer's service information.

Significance:

Engine/Transmission mounts secure the engine and Powertrain to the vehicle frame. These mounts limit engine movement, resulting in reduced noise and vibration. Engine/Transmission mounts also align the Powertrain for optimal performance under various engine load and torque transfer conditions.

Advantage:

Late model vehicles offer very little engine clearance under the hood. A broken mount can allow the engine to move and cause damage to the engine and/or body of the vehicle. Engine/Transmission mounts are tough components, but constant vibration and changes in temperature can weaken engine mounts over time. Serious engine or Powertrain damage can be prevented by replacing a worn or damaged engine mount.



Worn engine mount.



New engine mount.

Replace Worn-out Macpherson Struts

AI-48

Operation Description:

Note: McPherson Struts should always be replaced in pairs. Carefully lift the vehicle using an approved automotive lift. Remove the wheel that corresponds with the strut that is going to be replaced. Follow the vehicle manufacturer's service information and remove the strut/spring assembly from the vehicle. Using a strut spring compressor, carefully compress the coil spring and disassemble the strut assembly. Remove the strut cap and bearing, and inspect them for damage or wear. If the bearing or cap is damaged or worn, it must be replaced. Remove the strut insert from the strut assembly. Install the new strut insert. Reinstall the coil spring and cap and bearing. Carefully decompress the coil spring. Install the strut/spring assembly back onto the vehicle. Reinstall the wheel and torque the lug nuts to the correct torque specification. Perform a complete wheel alignment.

Significance:

When a strut wears out, your vehicle will bounce too much when going over bumps. It will also sway excessively while moving through a turn. Worn out struts can lead to serious handling problems with your vehicle, and this presents a safety issue. Your vehicle may even handle in an unpredictable manner. Worn out struts can also cause your tires to wear unevenly, greatly reducing the life of your tires. You should replace your struts before they get to this point.

Advantage:

Replacing your worn out struts can greatly improve how your vehicle handles, making your vehicle more predictable and safer to drive. It will also prevent premature tire wear that is associated with worn out McPherson struts.



Worn out struts damage tires.



New Struts

Operation Description:

Visually inspect all exterior lamp assemblies to identify a cracked or broken lamp lens. In some cases, the lens portion can be replaced making the lamp assembly serviceable. Normally the entire lamp assembly needs to be replaced in order to repair a cracked or broken lens.

Significance:

All vehicle lights are important safety features that allow you to see or to be seen during various driving conditions. A cracked or broken lens allows moisture to enter the lamp, and can cause damage to the light bulb or electrical connector, rendering the lamp useless. Water damage to electrical wiring will allow corrosion to build up and "wick" its way through the wiring harness. This may lead to a very costly repair at a later date. State and Federal traffic laws require vehicle lighting to function correctly at all times.

Advantage:

The safety features of your vehicle require very little maintenance and provide a lot of value to your vehicle. Procrastinating on the replacement of a cracked or broken lens will only lead to a larger repair later. Generally the repair is less than the time and inconvenience of the traffic stop and possible citation because of a broken lens or inoperative light.



Broken Damaged Tail Lamp Lens



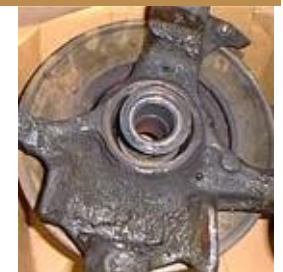
New Tail Lamp Lens

Operation Description:

Carefully raise the vehicle using an approved automotive lift. Remove the rim/tire assembly from the vehicle. Remove the worn out wheel bearing according to the vehicle manufacturer's repair information. Replace the wheel bearing and the wheel seal if applicable.

Significance:

The vehicle's wheel bearings allow the wheels to rotate with low resistance and low friction. Modern wheel bearings are usually tapered roller bearings that are matched to a precision machined race. High quality wheel bearing grease is used that can stand up to the high temperatures generated from today's aggressive disk brake systems. Some wheel bearings are serviceable and can be repacked with grease, while others are non-serviceable, or sealed units. A worn out wheel bearing will usually make a lot of resonating noise that will transfer to the interior of the vehicle. If a worn out wheel bearing is neglected and not replaced, it can seize up, which can cause your vehicle to lose control, or be unable to move. When this happens, it is likely that the seized bearing has caused irreparable damage to the spindle or hub, resulting in an expensive repair bill, and a lot of vehicle down time.



Wheel Bearing Failure; Seized.



New Wheel Bearing.

Advantage:

Replacing a worn out wheel bearing is an essential repair to ensure that your vehicle is safe to drive. Aside from the safety issues, a neglected wheel bearing can damage other components of your drivetrain, resulting in expensive repairs.

Operation Description:

Note: Shock absorbers should always be replaced in pairs. Carefully lift the vehicle using an approved automotive lift. Remove the wheel that corresponds with the shock that is going to be replaced. Follow the vehicle manufacturer’s service information and remove the shock absorber from the vehicle. Inspect the shock mounting points on the vehicle for wear or damage and make repairs as necessary. Install the new shock absorber. Reinstall the wheel and torque the lug nuts to the correct torque specification.



Uneven tire wear due to worn shock absorbers.

Significance:

When a shock absorber wears out, your vehicle will bounce too much when going over bumps. It will also sway excessively when you go into a turn. Worn out shocks can lead to serious handling problems with your vehicle, and this presents a safety issue. Additionally, your vehicle may handle in an unpredictable manner. Worn out shocks will also cause your tires to wear unevenly, greatly reducing the life of your tires. You should replace your shock absorbers before they get to this point.



New Shock Absorber.

Advantage:

Replacing your worn out shock absorbers can greatly improve how your vehicle handles, making your vehicle more predictable and safer to drive. It will also prevent the premature tire wear that is associated with worn out shock absorbers.

Operation Description:

Locate the vehicle's data link connector under the dash area. Turn the key on and follow the Scan Tool instructions to "read" any Powertrain or Transmission diagnostic trouble codes stored in memory. If any codes are stored, follow the vehicle manufacturer’s service information to troubleshoot the cause of the trouble code or codes. Then make the necessary repairs as discussed in the service information. When the repair is completed, clear the Powertrain or Transmission controller of all stored codes, and then drive the vehicle under the correct conditions to verify the problem has been repaired.



Check Engine Light is "On" Service is Required

Significance:

When a vehicle’s Check Engine light is "on", this is an indication that a significant problem with the emission control system has been detected by one or more of the vehicle controllers. In many states, your vehicle will fail the vehicle emissions inspection if the Check Engine light is "on". The Check Engine light is your vehicle’s way of telling you that it has detected a problem that is affecting the level of emissions released from your vehicle. If problems associated with the Check Engine light are not diagnosed and repaired in a timely fashion, expensive repairs may result. You may also run the risk of your car not starting, or stalling under various conditions.



Scanning vehicle for trouble codes.

Advantage:

When your Check Engine light is "on", it indicates a problem that needs to be addressed immediately. Repairing the problem right away can ensure that your vehicle continues to be reliable, and can help to avoid costly repairs in the future.