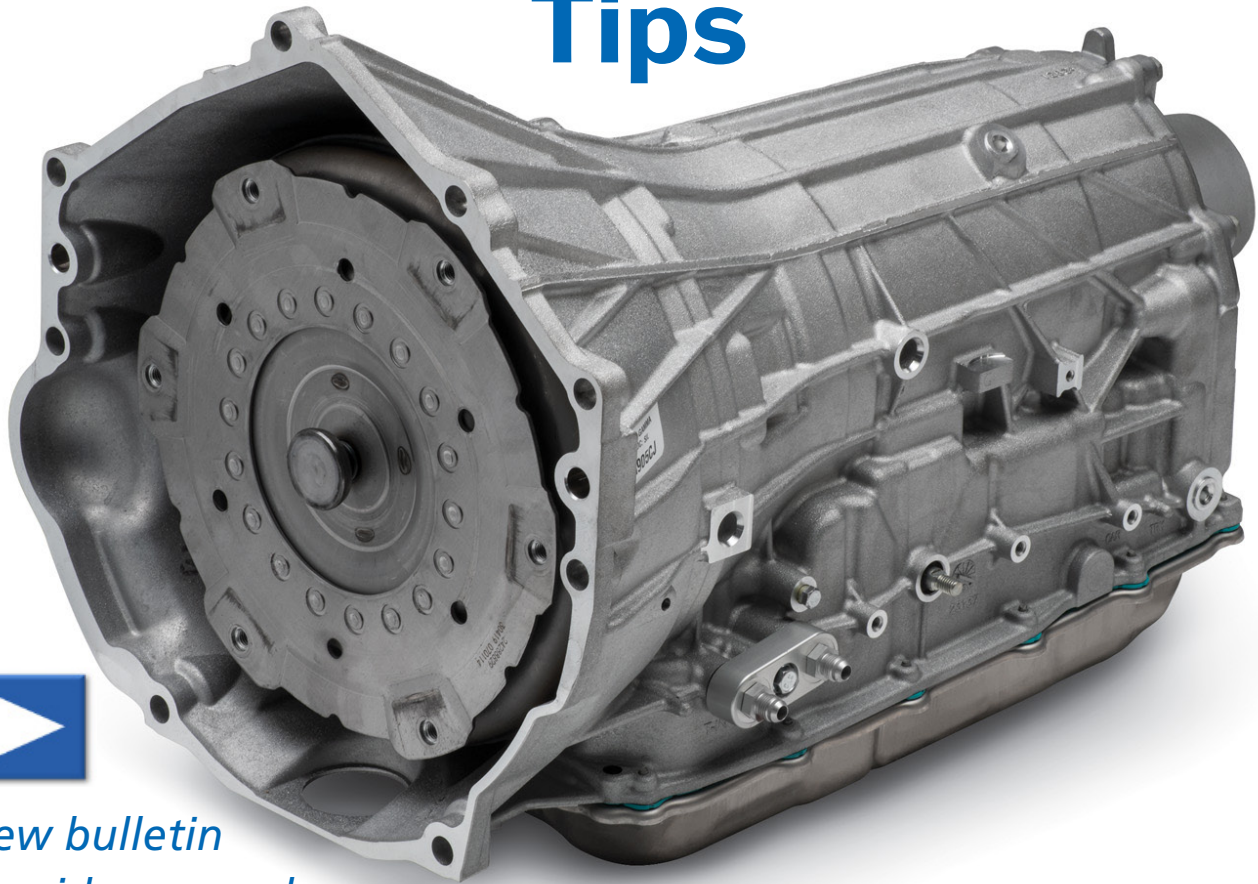


10-Speed Automatic Transmission Diagnostic Tips



New bulletin provides examples of possible transmission sounds and the components that may produce those sounds to help with transmission diagnosis.

general motors

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Rollout of Required Multi-Factor Authentication for Techline Connect Begins
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10-Speed Automatic Transmission Diagnostic Tips

Whine sounds, or similar sounds, from the 10-speed automatic transmission on some 2020-2025 CT4, CT5, Escalade, Camaro, Silverado 1500, Tahoe, Suburban, Sierra 1500 and Yukon models equipped with the 10L60/80/90 transmission (RPO M6F, ML1, ML2, ML4, MHO, MHS, MHT, MHU, MHW, MHX, MQA, MQB, MQC) may be caused by several possible sources or components.

To help with transmission diagnosis, a bulletin has been released with examples of possible transmission sounds that may be heard and the components that may produce those sounds. Some of these sounds are normal at certain temperatures or states of operation, while others may require additional diagnosis.

TRANSMISSION AUXILIARY PUMP PRIME

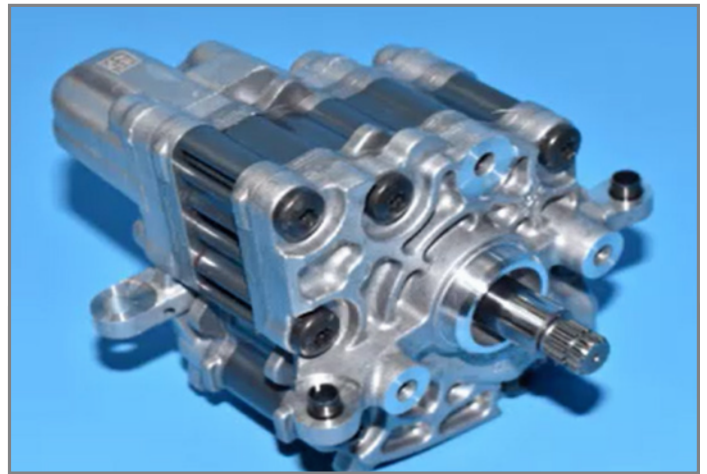
Transmissions equipped with automatic start/stop use an electronic G5 transmission fluid pump that maintains transmission fluid pressure during an auto stop event. With the engine off and the transmission in Park, the cycling of the auxiliary pump may be heard when approaching or unlocking the vehicle if the ambient background level is low, such as in a garage. This operation is normal.



Transmission auxiliary pump

TRANSMISSION OIL PUMP AERATION/CAVITATION

Aeration — an introduction of air into the transmission fluid (pump inlet) — may lead to an erratic whining sound due to

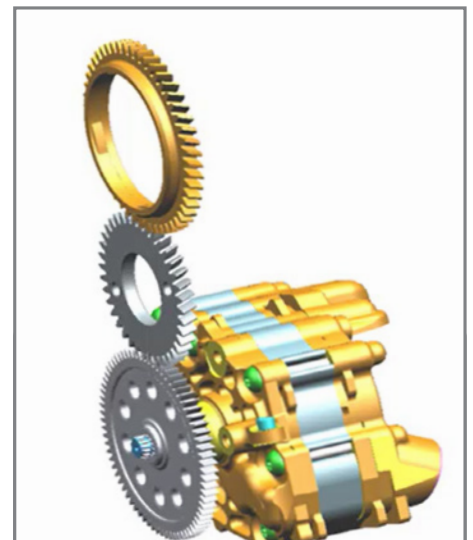


Transmission oil pump

uneven distribution of the air with the transmission in Park. Cavitation may occur when cavities are formed due to a drop in fluid pressure (outlet). Rattling, whirling/roaring or grinding sounds are all possible and may be the result of a low fluid level, a filter condition, a damaged O-ring or other condition with a DTC set.

TRANSMISSION OIL PUMP GEAR MESH WHINE

The Allison 10-speed transmission uses a spur gear design to drive the transmission oil pump. Due to the 3-helical gear design, some transmissions may have a whine sound while in Park or driving, which may get louder as engine speed or transmission temperature increases.



Transmission oil pump gears

CONTINUED ON PAGE 3

Isolating the whine to the oil pump gears can often be done by sweeping engine speed slowly from base idle to 2,500 RPM while in Park. If the whine can be reproduced in Park, replacing the transmission front support and/or transmission oil pump often will correct the whine sound.

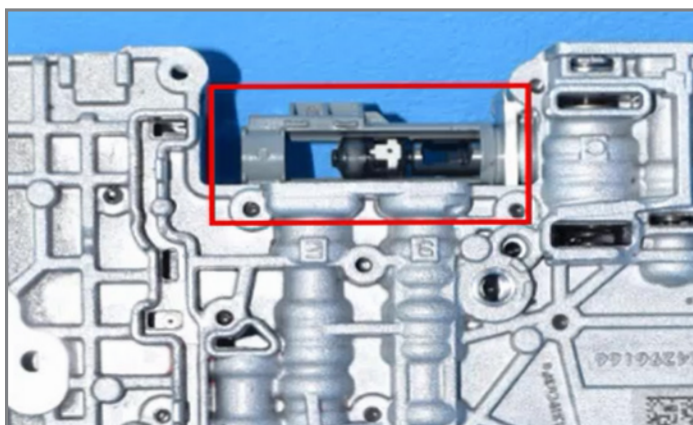
TIP: Some 4-cylinder CSS engines (RPO LSY, L3B) may generate their own set of whine noises from the balance shafts/timing drives that may make isolating the transmission whine more difficult.

BLOWOFF VALVE CHIRP

A faint, non-rhythmic chirping sound coming from underneath the vehicle with the transmission in Park and engine speed approximately 1,000 RPM (vehicles with ETRS only) may be caused by the Return-to-Park (RTP) blowoff valve becoming unseated due to line pressure spikes. The line pressure spikes occur because of clutch command cycling that takes place in Park. This condition is considered normal if the noise occurs just off idle speed.

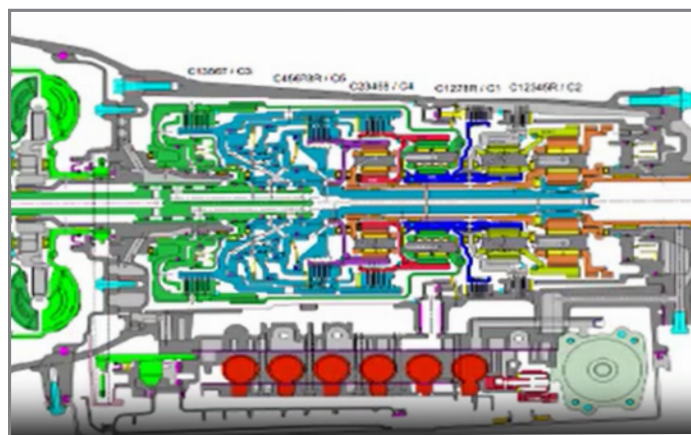
GARAGE SHIFT CLUNK

An infrequent audible thud that is delayed 400–700ms after either a key start or a garage shift event, with the severity of the sound depending on the load placed on the driveline, may be related to the C2 clutch application at high line pressure, which causes the rotating components in Park to stop too quickly.



Blowoff valve

The C2 clutch calibration has been modified to assure the C2 knockdown area is pressurized in Park and Neutral when C2 is being applied.

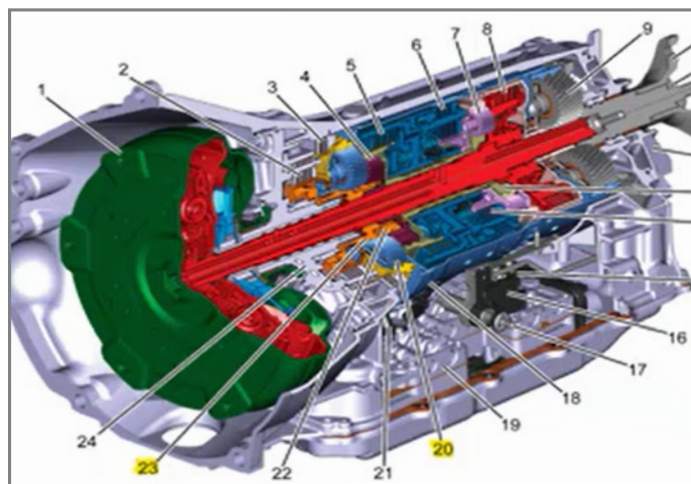


C2 clutch

REACTION GEARSET WHINE

A whine from the reaction planetary gearset may be heard during light-to-moderate driving conditions, especially when the reaction gearset is in 4th or 5th gear (20-35 MPH) (32-56 KM/H). The frequency of the whine will change as the transmission shifts gears due to component rotation speeds changing. Use the manual tap shift feature to shift through the gears to verify which gears have a whine sound present.

TIP: A whine sound from the reaction gearset should not be present in 7th gear due to the 1:1 ratio and the gears being locked. If a whine is present in 7th gear, check other components.



Reaction planetary gearset

CONTINUED ON PAGE 4

UNDERBODY GEAR RATTLE

The size of the idler gear inner diameter can affect the interference fit of the pressed-in bearing, reducing the overall axial/radial clearance of the bearing balls, and may produce a rattle during light acceleration in 7th gear only. A high interference fit can create the gear rattle. Increasing line pressure can reduce the rattle by overcoming the drag torque.

For more information, including the video links with sound files, refer to Bulletin #24-NA-264.

► Thanks to Mark Gordon



Idler gear

Transmission Shudder and Noise

A vehicle shudder and a growl or humming sound may be present when driving between 28-53 mph (45-85 km/h) on some 2024 Envista and Trax models equipped with the 6T40 automatic transmission (RPO MNH). The shudder or noise may be due to an internal torque converter condition that causes slipping.

TIP: Before beginning diagnosis for the shudder or noise condition, review Bulletin #23-NA-194, which covers a similar concern and is much more likely to resolve the issue.

VIBRATION OR BOOMING NOISE

Bulletin #23-NA-194 covers a low drumming or booming noise heard through the vehicle speakers of some 2024 Trax models when the engine RPM is between 1,500 and 2,000 RPM under a steady load. The noise, which may be present with the radio turned off, may be caused by the Active Noise Canceling (ANC) system.

To verify the condition, manually shift the transmission to a gear to allow the RPMs to remain close to 1,800 RPM.



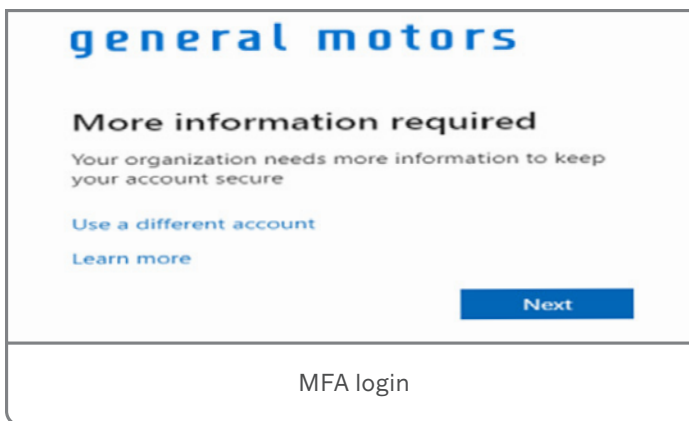
A vehicle shudder and a growl or humming sound may be present when driving between 28-53 mph.

If the vibration or noise is present, a service calibration is available to update the A11 radio (RPO IOR). Refer to A11 Radio Programming and Setup in the appropriate Service Information.

CONTINUED ON PAGE 5

Rollout of Required Multi-Factor Authentication for Techline Connect Begins

The rollout of Multi-Factor Authentication (MFA) for logging in to Techline Connect is now underway for GM dealerships. In the coming weeks, Global Connect Headline communications will be released with a list of states that will be activated for MFA. In addition to Techline Connect, other Global Connect applications also will require MFA in the future.



The MFA login procedure is designed to improve the security of the applications by requiring at least two methods of authentication, such as a password and a temporary passcode,



to verify a user's identity. If a user is currently sharing a login ID, contact your dealership's Partner Security Coordinator to create a unique ID, which will be needed for MFA.

There are three methods of validation using MFA:

- Text message to a mobile phone.
- Phone call to a mobile phone.
- Installation of the Microsoft Authenticator app on a smartphone.

The easiest method to use for dealership personnel may be a text message to a mobile phone.

► Thanks to Chris Henley

TRANSMISSION NOISE, FROM PAGE 4

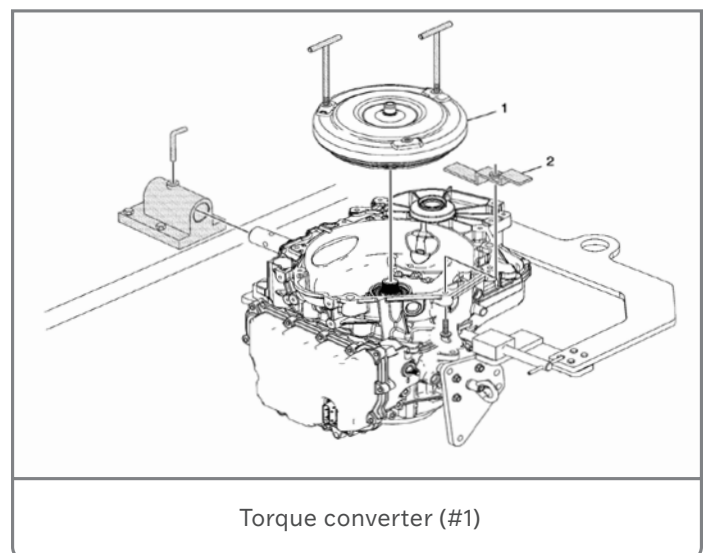
TORQUE CONVERTER REPLACEMENT

If the radio software is up to date after following the service procedure in Bulletin #23-NA-194 and the shudder or noise still occurs, the torque converter should be replaced.

Refer to Torque Converter Removal and Torque Converter Installation in the appropriate Service Information. Be sure to use the required special tools.

For more details, including part numbers, refer to Bulletin #24-NA-242.

► Thanks to Mark Kevnick



Improper Coolant Flow and Poor Heater Performance

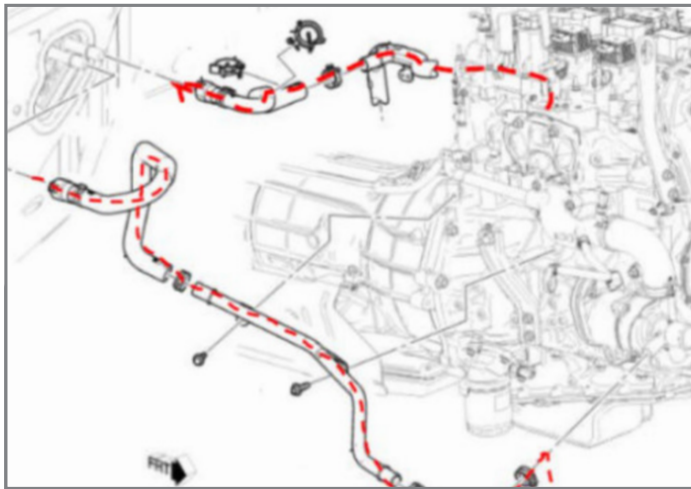
Some 2023-2025 Colorado, Silverado 1500, Canyon and Sierra 1500 trucks equipped with the 2.7L engine (RPO L3B, L2R) may have poor heater performance due to blocked coolant flow.

The coolant flow condition may be the result of an improperly positioned or twisted coolant hose, or an incomplete machining process in the heater core feed pipe port.

COOLANT HOSE

A kinked or twisted coolant hose on the 2.7L engine on some 2023-2025 Silverado 1500 and Sierra 1500 models may restrict coolant flow through the heater core.

If there is poor heater performance, inspect all coolant hoses for proper positioning.



Inspect all coolant hoses for proper positioning.

During inspection, it will be necessary to reposition the mesh covering on the coolant hoses in order to properly check the entire hose. In some cases, the hose may have twisted during installation, causing a kink approximately 2 inches above the hose clamp, which is covered by the mesh and is not visible.

Refer to #PIT6329 for more information about the twisted hose condition.

HEATER CORE FEED PIPE

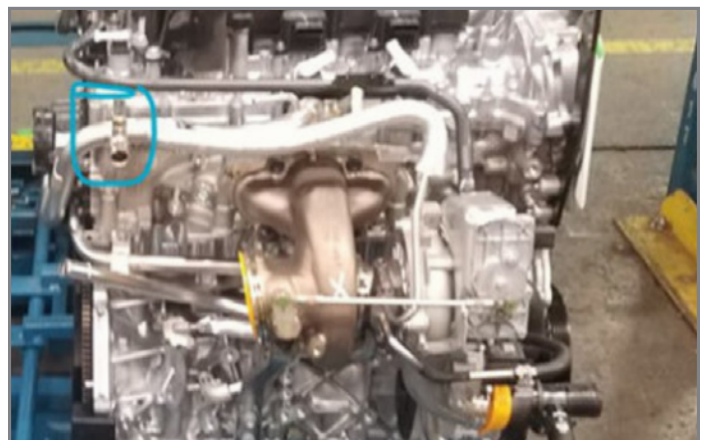
If there are not any twisted or kinked hoses found, another known area that may have impeded coolant flow is at the exhaust manifold outlet pipe T fitting on some 2023-2025 Colorado, Silverado 1500, Canyon and Sierra 1500 trucks equipped with the 2.7L engine.



Reposition the mesh covering on the coolant hoses in order to properly check the entire hose.

With the engine at operating temperature, check the temperature of the heater core feed pipe. If the coolant feed pipe is not near operating temperature, there may be an incomplete machining process where the pipe connects to the exhaust manifold coolant outlet pipe.

Once the engine cools down, disconnect the heater core coolant feed pipe at the exhaust manifold outlet pipe and inspect the outlet pipe spigot connection for any blockage. If there is blockage from an incomplete machining process, replace the exhaust manifold coolant outlet pipe.



Exhaust manifold outlet pipe spigot connection location.

Refer to #PIP5982 for more details.

► Thanks to Dave MacGillis

2025 Model Year Engine Oil Capacities Chart

The latest TechLink 2025 Engine Oil Capacities chart is now available under the Reference Charts menu. The chart includes engine, RPO, specifications (liters and quarts), oil viscosity and engine oil filter specs for 2025 Chevrolet, Buick, GMC and Cadillac models.

2025 ENGINE OIL CAPACITIES (WITH FILTER) – U.S. and Canada only						
CHEVROLET						
MODEL	ENGINE	RPO	SPEC - LITERS	SPEC - QUARTS	GRADE/ VISCOSITY	OIL FILTER - ACDELCO PN
Blazer	2.0L L4	LSV	5.0	5.3	dexos1 0W-20	PF66
	3.6L V6	L0X	5.7	6.0	dexos1 5W-30	UPF63R
Colorado	2.7L L4	L3B with aluminum pan	5.2	5.5	dexos1 5W-30	PF66
	2.7L L4	L3B with plastic pan	5.7	6.0	dexos1 5W-30	PF66
Corvette	6.2L V8	L72	7.1	7.5	dexos1 0W-40	PF64
	5.5L V8	L76, L77	7.6	8.0	dexos1 5W-50	PF2270G
Equinox	1.5L L4 FWD	LSD	4.0	4.2	dexos1 0W-20	PF64
	1.5L L4 AWD	LSD	5.0	5.3	dexos1 0W-20	PF64
Express	4.3L V6	LV1	5.7	6.0	dexos1 5W-30	PF63
	6.6L V8	L8T	7.6	8.0	dexos1 5W-30	PF63
Low Cab Forward 3500/4500/5500	5.2L L4 Diesel	4HK1	11.0	11.6	CK-4 10W-40	97780497 (GM PN)
	6.6L V8	L8T	7.6	8.0	dexos1 5W-30	12707246 (GM PN)
Low Cab Forward 6500XD/7500XD	6.7L V8 Diesel	LCB	15.1	16	CK-4 10W-40	3937736 (Cummins)
Malibu	1.5L L4	LPV	4.0	4.2	dexos1 0W-20	PF64
	2.7L L4	L3B with aluminum pan	5.2	5.5	dexos1 5W-30	PF66
	2.7L L4	L3B with plastic pan	5.7	6.0	dexos1 5W-30	PF66
	3.0L I6 Diesel	L20	6.6	7.0	dexos1 0W-20	PF66
	5.3L V8	L84	7.6	8.0	dexos1 0W-20	PF63
	6.2L V8	L8T	7.6	8.0	dexos1 0W-20	PF63
Silverado 1500	6.6L V8	L8T	7.6	8.0	dexos1 5W-30	PF63
	6.6L V8 Diesel	LSP	9.5	10.0	CJ-4 or CK-4 15W-40	PF63

Service Information	
2024 Buick Encore - AWD Engine Service Manual N America 14998115 Maintenance Items	
Search documents matching all of these keywords Search Reset	
Filter: Specifications RPO Code List Master Electrical Component List Diagnostic Starting Point Diagnostic Trouble Code List System List Control Module References	
Maintenance Procedure	Link
Approximate Fluid Capacities	Approximate Fluid Capacities
Fluid and Lubricant Recommendations	Fluid and Lubricant Recommendations
Maintenance Replacement Parts	Maintenance Replacement Parts
Oil Air Filter Life System Resetting	Oil Air Filter Life System Resetting
Oil Life System Resetting	Oil Life System Resetting
Tire Rotation	Tire Rotation
Tire Pressure Indicator Sensor Learn	Tire Pressure Indicator Sensor Learn
Passenger Compartment Air Filter Replacement	Passenger Compartment Air Filter Replacement
Brake Pad Inspection	Brake Pad Inspection
Cooling System Draining and Filling	Cooling System Draining and Filling
Hydraulic Brake System Bleeding	Hydraulic Brake System Bleeding
Air Cleaner Element Replacement - 3.6L (LPI)	Air Cleaner Element Replacement
Spark Plug Replacement - 3.6L (LPI)	Spark Plug Replacement

Maintenance Items information in SI

Parts sections provide fluid and filter specifications. There also is a link for the Oil Life System Resetting procedure. In addition, the Maintenance Items page provides quick access to a variety of other maintenance information.

More information also can be found in the Owner's Manual, available from the Vehicle Publication page in Service Information.

► Thanks to Scott Willems, Matt Gager, Bryan Salisbury and Larry Yaw



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