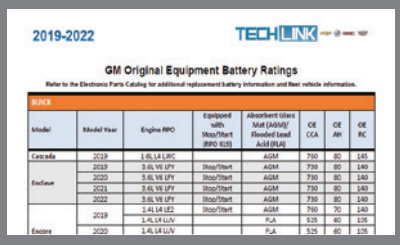
TECH LINK

Mid-June 2021, Volume 23, No. 12

Exhaust Control Valve ACTUATOR REPLACEMENT



2022 OE Battery Ratings Chart

see page 3

Inoperative Hood Release Buttons

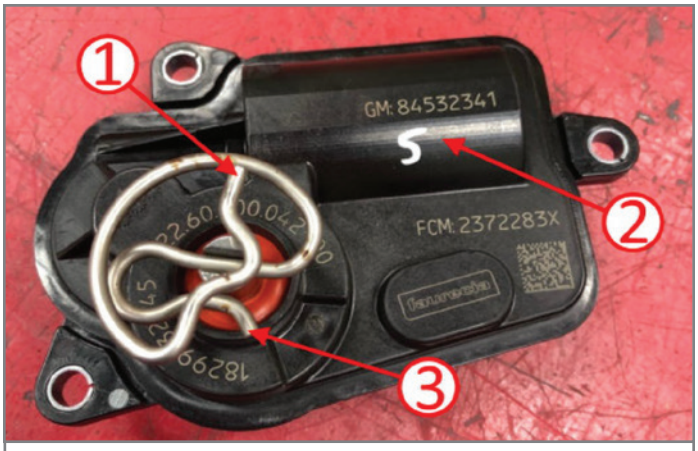
see page 6

Exhaust Control Valve Actuator Replacement

Several exhaust-related DTCs may be set in the Engine Control Module on some 2020-2021 CT4 and CT5 models equipped with the 2.7L engine (RPO L3B) or 3.0L engine (RPO LGY). These DTCs may include P31D4 (Exhaust Flow Control Valve - Position Signal Exceeds Upper Limit — Bank 1), P31DB (Exhaust Flow Control Valve Stuck Open — Bank 1), P31E2 (Exhaust Flow Control Valve - Position Signal Exceeds Upper Limit Bank 2), and/or P31E8 (Exhaust Flow Control Valve Stuck Open Bank 2).

The exhaust tailpipe flow control system is used to tune the exhaust note.

If these DTCs are set, it may be due to older firmware or failure of the fail-safe spring within the exhaust control valve actuator. It will be necessary to replace both exhaust control valve actuators.



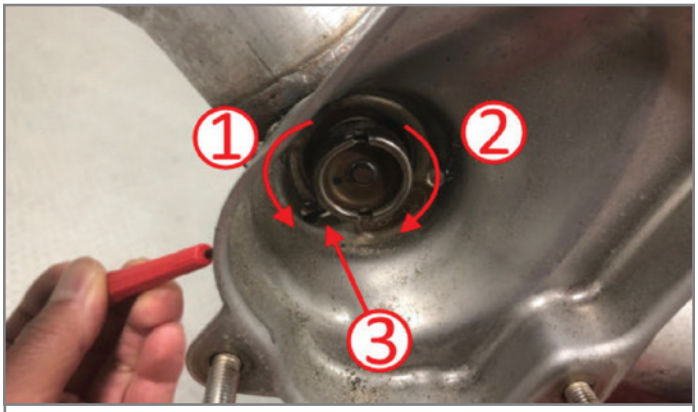
The linkage, or spring, (#1) must be fully seated. The short tab (#3) should point away from the actuator motor (#2).

The exhaust tailpipe flow control system is used to tune the exhaust note for high-performance CT4 and CT5 models. The vehicle is equipped with two tailpipe exhaust valves installed in the low restriction exhaust path of a dual outlet muffler, near the exhaust tip. An output circuit from the Chassis Control Module is used to control the actuator that opens the left and right exhaust tailpipe valves. When a tailpipe exhaust valve is open, the low restriction exhaust path is opened to the atmosphere, and the exhaust note becomes more aggressive.

ACTUATOR INSTALLATION

Prior to installing the exhaust control valve actuators, make sure the exhaust control valve actuator linkage is correctly installed on the actuator. Verify that the actuator is not connected or powered. Next, attach the linkage (or spring). It should be centered and fully seated. The short tab should be pointed away from the actuator motor.

To install the exhaust control valve actuator, first manually turn the valve bearing on the exhaust side to its closed position. Note the turning direction – turn the right-side valve bearing clockwise and turn the left-side valve bearing counterclockwise. With the valve bearing in its closed position, place a small flat-head screwdriver or pick tool through the access hole to hold the valve fully closed.



Turn the valve bearing on the exhaust side to its closed position (#1 or #2). Use a flat-head screwdriver or pick tool to hold the valve closed (#3).

Next, install the unpowered actuator as square as possible to the installation bolts. Once the actuator is installed and held in place, remove the screwdriver or pick.

CONTINUED ON PAGE 3

Compress the actuator against the valve body while installing the three nuts.

Compress the actuator against the valve body while installing the three nuts. Tighten the fasteners to specification. The electrical connector can now be connected to the exhaust control valve actuator.

EXHAUST CONTROL VALVE LEARN

On the 3.0L engine, program the exhaust control valve actuator by performing the Cylinder Deactivation Exhaust Control Valve Learn. Refer to the appropriate Service Information.

On the 2.7L engine, program the exhaust control valve actuator by performing the Exhaust Flow Control Valve Learn. Refer to the appropriate Service Information.

For additional information, including part numbers, refer to Bulletin #21-NA-130.

▶ Thanks to Bryan Salisbury

2022 OE Battery Ratings Chart

An updated Original Equipment (OE) Battery Ratings chart, with added specs for 2022 models, is now available for use when testing batteries using the EL-50313 GR8 Battery Tester/Charger and EL-52800 Diagnostic Charge Battery Station (DCBS). The chart includes cold cranking amperage (CCA), amp hours (AH) and reserve capacity (RC) ratings as well as battery type specifications for the 2019-2022 model years.

2019-2022 TECHLINK

GM Original Equipment Battery Ratings

Refer to the Electronic Parts Catalog for additional replacement battery information and fleet vehicle information.

BUICK

Model	Model Year	Engine RPO	Equipped with Stop/Start (RPO KL9)	Absorbent Glass Mat (AGM)/ Flooded Lead Acid (FLA)	OE CCA	OE AH	OE RC
Cascada	2019	1.6L L4 LWC		AGM	760	80	145
Enclave	2019	3.6L V6 LFY	Stop/Start	AGM	730	80	140
	2020	3.6L V6 LFY	Stop/Start	AGM	730	80	140
	2021	3.6L V6 LFY	Stop/Start	AGM	730	80	140
	2022	3.6L V6 LFY	Stop/Start	AGM	730	80	140
Encore	2019	1.4L L4 LE2	Stop/Start	AGM	760	70	140
		1.4L L4 LUV		FLA	525	60	105
	2020	1.4L L4 LUV		FLA	525	60	105
	2021	1.4L L4 LUV		FLA	525	60	105
	2022	1.4L L4 LE2		FLA	525	60	105
Encore GX	2020	1.2L L3 LIH 1.3L L3 L3T	Stop/Start	AGM	760	70	140
	2021	1.2L L3 LIH 1.3L L3 L3T	Stop/Start	AGM	760	70	140
	2022	1.2L L3 LIH 1.3L L3 L3T	Stop/Start	AGM	760	70	140
Envision	2019	2.0L L4 LTG 2.5L L4 LCV	Stop/Start	AGM	730	80	140
	2020	2.0L L4 LTG 2.5L L4 LCV	Stop/Start	AGM	730	80	140
	2021	2.0L L4 LSY	Stop/Start	AGM	730	80	140
	2022	2.0L L4 LSY	Stop/Start	AGM	730	80	140

Correct battery CCA ratings and battery type are critical for proper test results. Access to the battery label, which contains the OE CCA rating and battery type, may be difficult on some models, depending on the battery location. Using the updated chart can help when setting up a proper battery test for the OE battery. If the original battery in the vehicle has been replaced, the OE information in the battery chart may not match the battery currently installed in the vehicle.

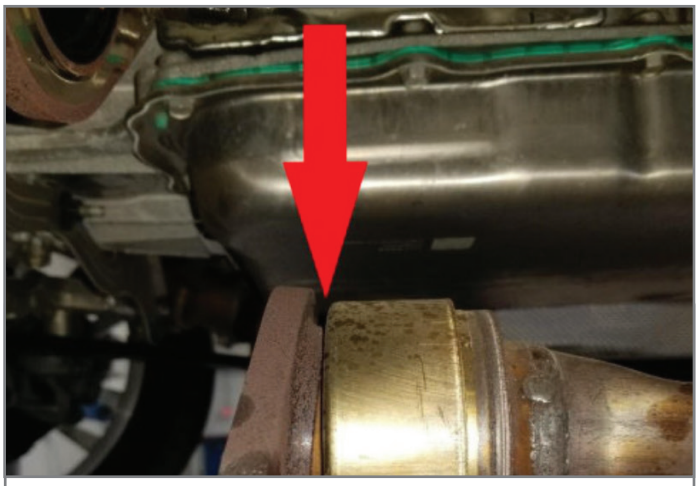
For more information on replacement batteries, refer to the Electronic Parts Catalog.

Refer to the appropriate Service Information for details on proper battery testing. Go to General Information > General Information > Specifications > 12 Volt Battery Usage.

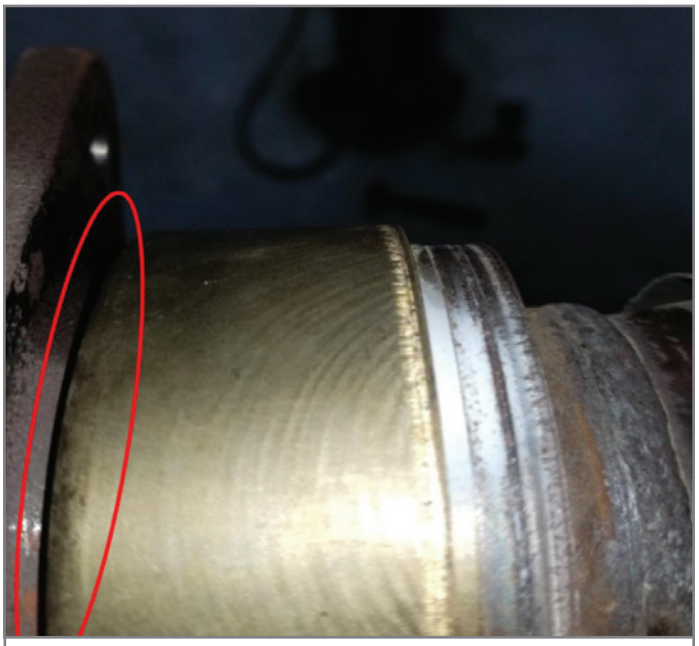
▶ Thanks to Ernie Haller and Brett Holsworth

Squeak Sound from Exhaust System

Some 2016-2021 Camaro models equipped with the 3.6L V6 engine (RPO LGX) may have a squeak sound coming from the exhaust system while driving over bumps. The sound may be generated by a misaligned intermediate exhaust pipe flange rubbing the cup on the flex joint. If this sound is heard, inspect the exhaust system and realign the flange.



Intermediate exhaust pipe



Reposition the flange to attain the proper clearance.

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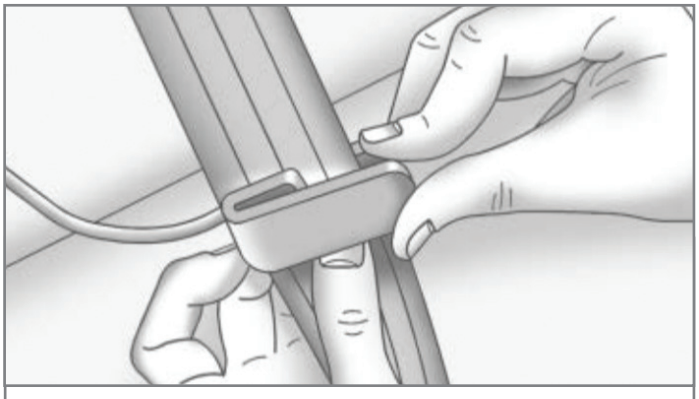
Rear Seat Belt Comfort Guides No Longer Included on Some Vehicles

Rear Seat Belt Comfort Guide package

Rear Seat Belt Comfort Guide packages for the second- and third-row seats, if equipped, are now available to order for 2022 XT4, XT5, XT6, Blazer, Traverse and Acadia models. These models do not include rear seat belt comfort guides, which were previously shipped in the glove box for installation by customers.



When installed, the rear seat belt comfort guide repositions the shoulder belt.

CONTINUED ON PAGE 5

EXHAUST SYSTEMS, FROM PAGE 4

To align the flange, first remove the intermediate exhaust pipe of the side where the sound is heard.

Wedge a suitable tool between the flex coupling cup and the flange to gain clearance between the flange and the flex coupler cup of approximately 1/8 inch (0.5 cm). Reposition the flange to attain the proper clearance.

Reassemble the intermediate pipe to the exhaust system and verify the sound is no longer present.

For more details, refer to Bulletin #21-NA-134.

▶ Thanks to Kurt Hoezee

COMFORT GUIDES, FROM PAGE 4

The Rear Seat Belt Comfort Guide package is available for a nominal cost. Each package includes two seat belt comfort guides and installation instructions. One kit will be needed for two-row vehicles and two kits will be needed for three-row vehicles.

TIP: The rear seat belt comfort guides should not be ordered and installed on a vehicle as a warranty claim. The guides will not be included in vehicles shipped from the assembly plant.

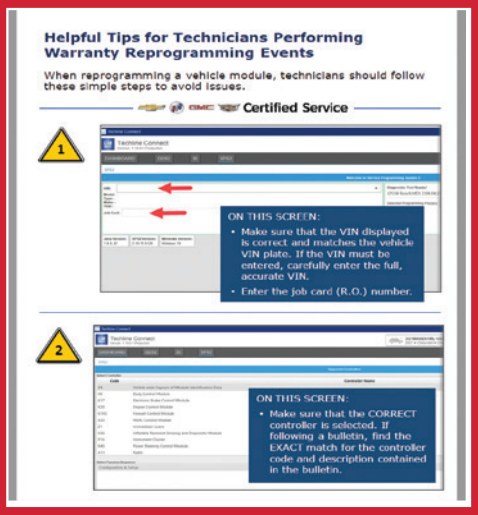
When installed on a shoulder belt, the rear seat belt comfort guide positions the shoulder belt away from the neck and head, providing added seat belt comfort for older children who have outgrown booster seats and for some adults.

Owner's manual information will note that the rear seat belt comfort guides are available to be ordered through dealerships.

▶ Thanks to Jonathan Johnson

Performing Successful Warranty Reprogramming Events

In order to ensure successful and complete repairs are made when reprogramming control modules, GM reviews module reprogramming warranty claim information and compares it to Service Programming System (SPS) reprogramming event data records. Comparison data between the two systems can help identify potential issues.



In some instances, minor errors made by technicians during the reprogramming process can lead to incorrect or incomplete repairs. These issues may appear as error codes in the Global Warranty Management (GWM) system. In the case of a Field Action repair, this will result in the Field Action remaining open until it is confirmed that the reprogramming event(s) were completed properly.

Some of the most common errors include:

- Incorrect or non-legible SPS Warranty Claim Codes being documented on the job card (repair order), which results in an invalid Warranty Claim Code being submitted with the warranty claim.
- Incorrect VINs being entered in SPS and programmed into the module.
- Incorrect modules being reprogrammed.
- Incomplete service events; for example, a field action calls for three different modules to be reprogrammed, but the technician only reprograms one module.

To help ensure successful control module reprogramming, follow the important steps in the updated Helpful Tips for Technicians Performing Warranty Reprogramming Events guide It provides the latest information to help avoid any issues with the repair and related warranty claim.

▶ Thanks to Patti Marino

INOPERATIVE HOOD RELEASE BUTTONS

The electrical hood release buttons may be inoperative and a Hood Ajar message may be displayed on the Driver Information Center on some 2020-2021 Corvette models. The hood can be opened using the manual release cable.

These conditions may be caused by possible water intrusion and terminal corrosion in connector X103, water intrusion in the hood latch actuator or failure of the auxiliary hood latch release switch. Check each of these components to determine the repair needed.

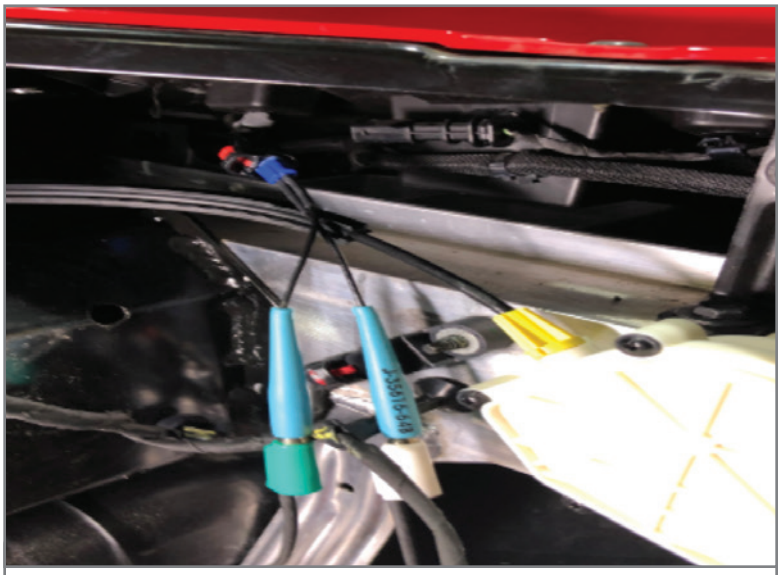
Remove the front compartment front panel to inspect connector X103. If corrosion is found in the connector, replace the connector as necessary.

If there is not any corrosion in connector X103, access the hood switch connector X102, remove the left horn and test the auxiliary hood latch release switch with an ohmmeter. The switch should be open when it's not pressed, and resistance should be no more than 0.2 ohm when the switch is pressed. If the switch is not operating correct, replace the switch.

Connector X103

CONTINUED ON PAGE 7

Corrosion in X103



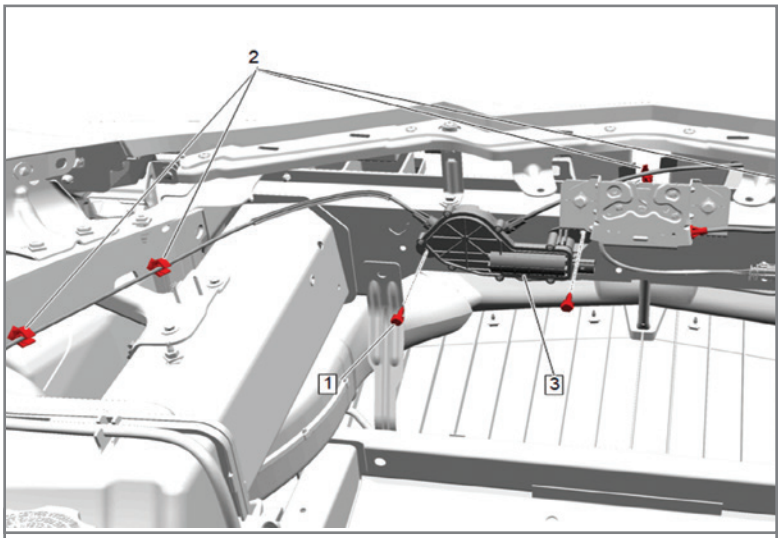
Test the resistance at the auxiliary hood latch release switch.

If the auxiliary hood latch release switch is not faulty, reinstall the left horn and then replace the hood latch actuator.

When reinstalling the front compartment front panel, be sure that the X103 connector is positioned below the right horn connector.

Refer to Bulletin #21-NA-094 for additional information and part numbers.

Thanks to Jeff Strausser

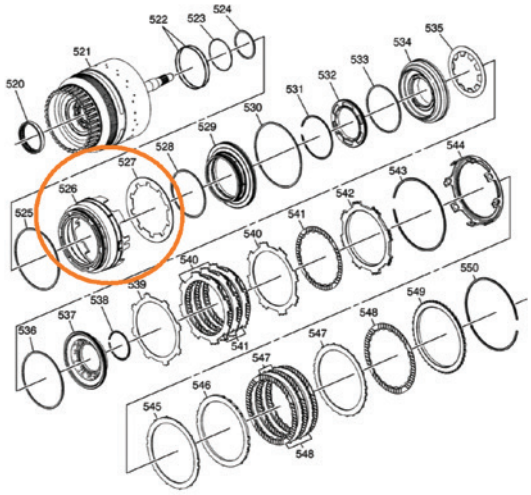


Hood latch actuator (#3)

Harsh Downshift and Upshift Conditions

A harsh 5-4 downshift and harsh 1-2 upshift may be felt on some 2017 Colorado and Canyon models equipped with the 8-speed 8L45 automatic transmission (RPO M5T). These shift conditions may be noticed after approximately 25,000 miles (40,000 km) and may only be present when the transmission temperature is above approximately 110°F (43°C). At lower operating temperatures, the transmission will have acceptable transmission shift quality.

The harsh downshift and upshift conditions may be caused by the 2-3-4-6-8 return spring, which may have degraded over time. If these conditions are found, replace the 2-3-4-6-8 piston and the 2-3-4-6-8 return spring.

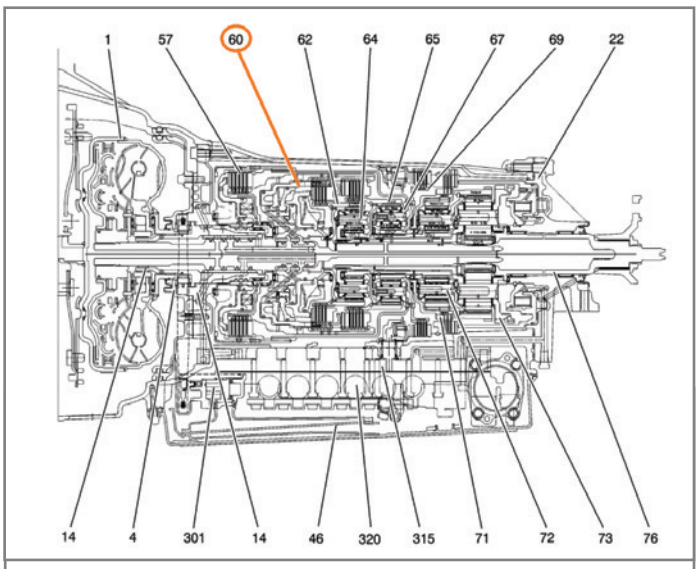


2-3-4-6-8 piston (526) and 2-3-4-6-8 return spring (527)

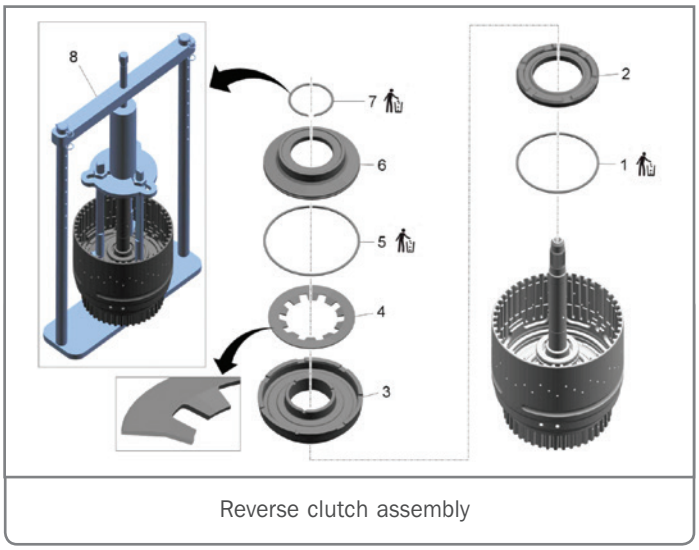
In addition to replacing the return spring and piston, reseal the 2-3-4-6-8 and 4-5-6-7-8 reverse clutch assembly.

Refer to 2-3-4-6-8 and 4-5-6-7-8 Reverse Clutch Assembly Removal and 2-3-4-6-8 and 4-5-6-7-8 Reverse Clutch Disassemble and Assemble procedures in the appropriate Service Information. Use all special tools as needed and replace the single use fasteners and components during the repair.

TIP: When assembling the reverse clutch assembly, position the 2-3-4-6-8 clutch piston return spring, the 4-5-6-7-8 reverse clutch piston stop, and the 4-5-6-7-8 reverse clutch piston return spring in the orientation as observed during removal. Also, it will be helpful to loosely install the 2-3-4-6-8 clutch piston dam retaining ring and the 4-5-6-7-8 reverse clutch piston dam retaining ring before installing the tool.



2-3-4-6-8 and 4-5-6-7-8-Reverse Clutch (#60)



Reverse clutch assembly

Be sure to follow the retaining ring measurement service procedure to determine each correct clutch backing plate retaining ring.

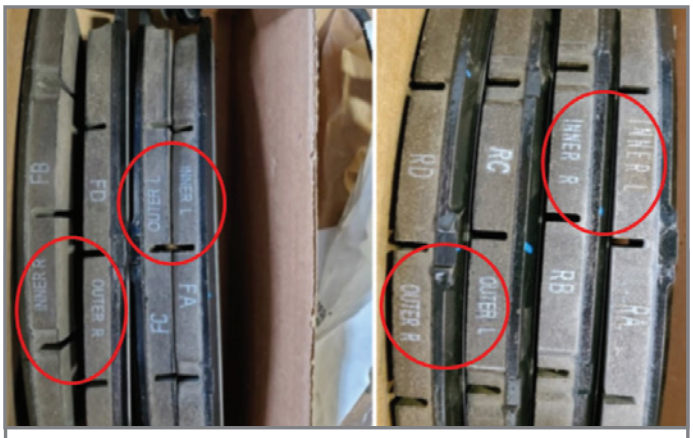
Refer to Bulletin #21-NA-076 for additional information and part numbers.

▶ Thanks to Mark Gordon

UPDATE

Silverado 2500HD/3500HD and Sierra 2500HD/3500HD Brake Pads

Some 2020-2021 Silverado 2500HD/3500HD and Sierra 2500HD/3500HD models may have a brake squeal condition caused by the low scorch friction material used on the original brake pads.



Each brake pad has an Inner or Outer label.

To reduce the potential for noise, updated brake pads are available that use a high scorch friction material and feature a new lining shim on the backing plate. These new pads also are now being used at the assembly plant.

Replace the front and rear brake pads with the new pads if brake noise occurs. Current parts in inventory are the updated design.

TIP: If the pads are replaced and the squeal sound continues, check the orientation of the pads. Each brake pad has an Inner or Outer label to indicate where it should be installed. If the inboard and outboard designation on the pads indicate the pads are installed in the wrong location, the squeal sound may persist.

During installation, keep in mind that only the left side of the truck has the wear sensors, which are mounted on the inner pad.

Refer to Bulletin #20-NA-020 for additional information and the updated brake pad part numbers.

Only the left side of the truck has the wear sensors

▶ Thanks to Kevin Minor

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