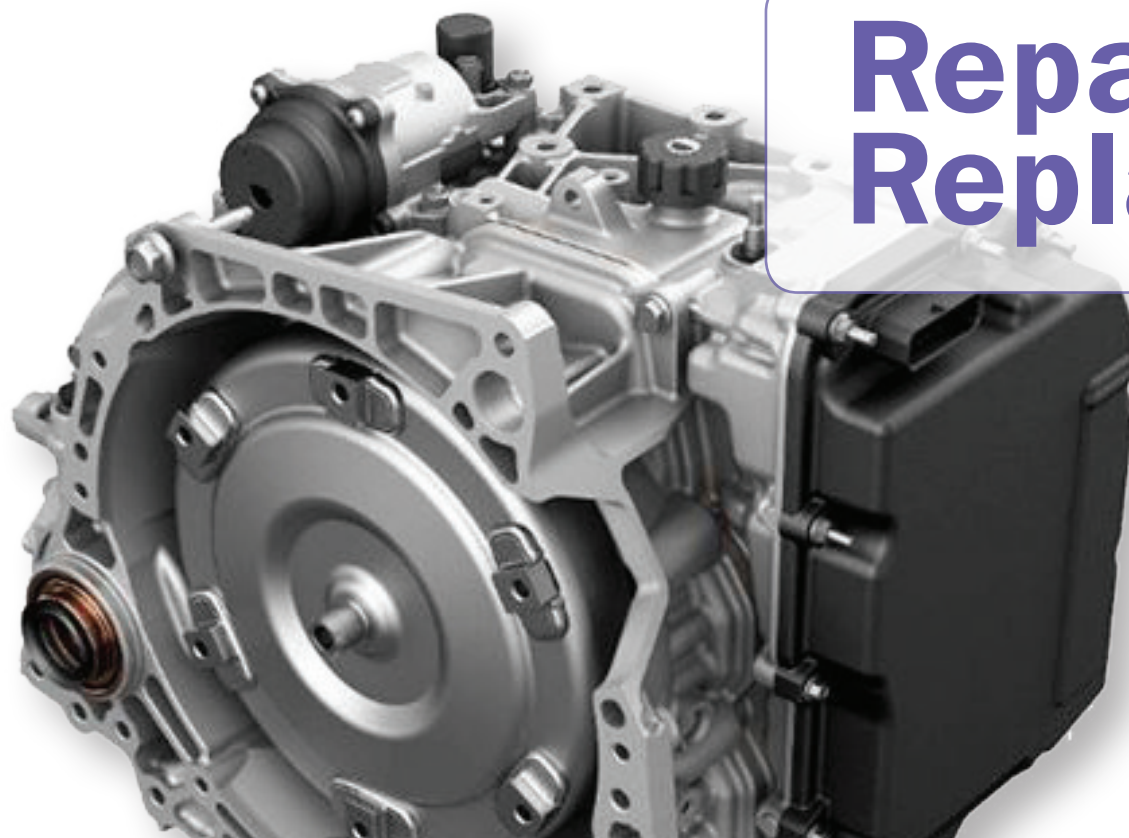
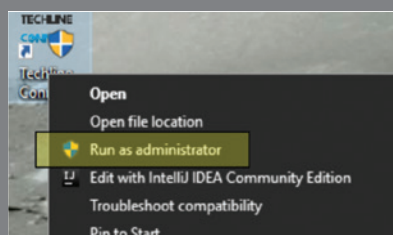


## Repair or Replace?



### NEW PROGRAM IDENTIFIES 9T65 TRANSMISSION REPLACEMENTS



**Run Techline Connect  
as Admin to Receive  
Updates Automatically**

see page 5



**Inspection/Maintenance  
Test DTCs Now  
Permanent DTCs**

see page 9

*Repair or Replace? New Program  
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*DEF Pump Unable to Build Pressure  
After Replacement. . . . . 3*

*Removal of Corvette Z51 Spoiler. . . . 4*

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*Disabling Systems After Pickup  
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*Quarter Panel Rattle Sound. . . . . 8*

# Repair or Replace?

## New Program Identifies 9T65 Transmission Replacements

A new replacement program for the 9T65 9-speed automatic transmission (RPO M3V, M3W) on 2018-2020 Enclave, Traverse; 2019-2020 Blazer; 2020 Acadia, XT5, and XT6 models is being piloted in the U.S. beginning July 1, 2020. The program is designed to reduce the number of days needed to complete vehicle repairs. After diagnosis of an internal fault, technicians are directed to replace the transmission assembly (following the necessary guidelines) instead of making internal repairs to the transmission.

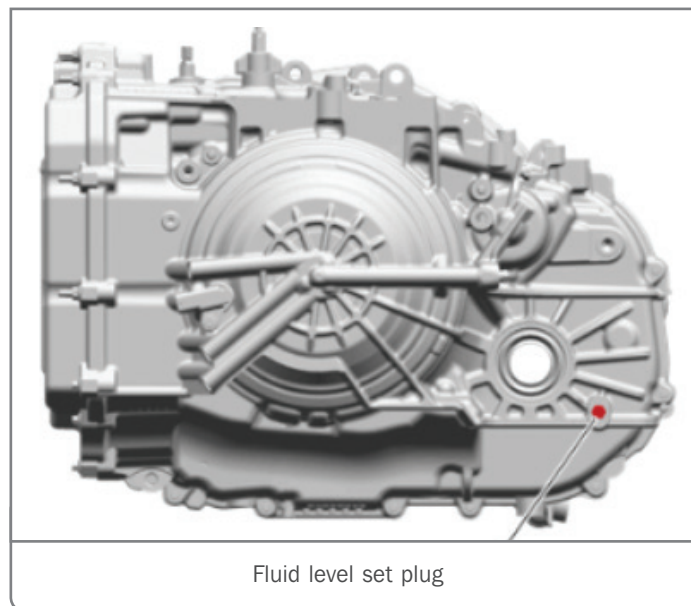
The pilot program will run for one year – from July 1, 2020 to June 30, 2021 – and applies to vehicles sold in the U.S. with less than 18 months from date of delivery (DOD) and with under 18,000 miles.



Transmission assembly orders should be coded as CSO order type and not as stock units. Transmission assemblies replaced during the pilot program will be requested by the Warranty Parts Center for engineering analysis. Refer to Bulletin #99-00-89-019S for the part return process.

The repair order for the transmission replacement should include the condition, cause, and correction information as well as details on any DTCs, transmission fluid level, and fluid pressure testing.

- DTCs – include history or current DTCs and the module each DTC was set in. Modules to be searched include the Transmission Control Module (TCM), Engine Control Module (ECM),



Body Control Module (BCM), Electronic Brake Control Module (EBCM), Instrument Panel Cluster (IPC), and Transmission Range Control Module (TRCM).

- Transmission Fluid Level – include overfill, under fill, and correct level test results. If there is a fluid overfill or under fill, estimate how much.
- Transmission Fluid Pressure – include test results of actual pressure reading taken.

### TRANSMISSION DIAGNOSIS BEFORE REPLACEMENT

To determine a repair strategy on a 9T65 transmission – repair or replacement, first review several previously released bulletins covering 9T65 transmission operating and performance conditions. For a complete list of the bulletins as well as other Service Information documents to review, refer to Bulletin #20-NA-136.

Bulletin #20-NA-136 also outlines the necessary steps to take to diagnose 9T65 transmission concerns.

1. Check modules for DTCs
2. Check the transmission fluid and level
3. Check line pressure

CONTINUED ON PAGE 3

# DEF Pump Unable to Build Pressure After Replacement

4. Perform a road test
5. Check current DTCs or DTCs that reset during the road test

If diagnosis determines internal components are the root cause or if parts are needed to complete repairs internal to the transmission, the transmission assembly should be replaced and not repaired. The intent of the pilot program is to favor transmission replacement over internal repairs.

## TRANSMISSION REPAIRS ALLOWED

Certain repairs can still be made to the transmission, including:

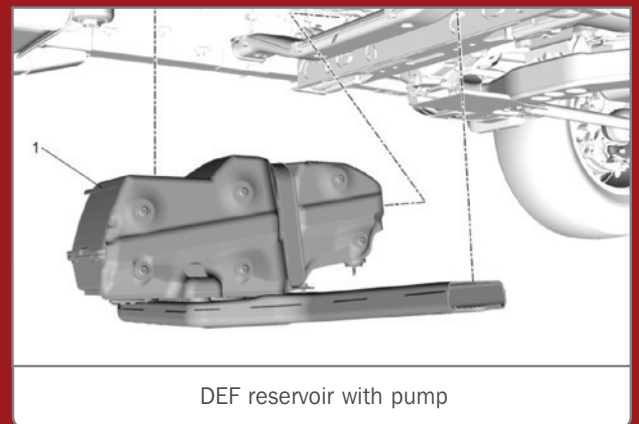
- Replacement of external seals, including axle, valve body cover, and torque converter seals
- Replacement of transmission oil cooler, lines and accumulator
- Replacement of external mounts
- Replacement of external sensors, plugs, and caps
- Replacement of external transmission controls, including lever, cables, knobs, and module
- Replacement of torque converter assembly

Refer to Bulletin #20-NA-136 for additional information about transmission diagnosis and guidelines for the transmission replacement program.

► Thanks to Mark Kevnick

After replacing the Diesel Exhaust Fluid (DEF) pump on some 2017-2020 Colorado, Cruze, Express, Silverado 1500, Silverado 2500/3500, Canyon, Sierra 1500, Sierra 2500/3500; 2017-2019 Savana; 2018-2019 Equinox, Terrain; and 2019-2020 Silverado 4500/5500/6500 models equipped with the 2.8L diesel engine (RPO LWN), 1.6L diesel engine (RPO LH7), 3.0L diesel engine (RPO LM2), or 6.6L diesel engine (RPO L5P, L5D), the pump may not build pressure. DTCs P20E8 (Reductant Low Pressure) and P249C (Excessive Time To Enter Closed Loop Reductant Injection Control) may be set.

Under typical operation, the electrically-operated DEF (emissions reductant) pump within the DEF reservoir supplies pressurized reductant to the reductant injector located upstream of the Selective Catalyst Reduction. A reductant level sensor within the reductant reservoir provides the reductant control module a signal indicating reductant level. The reductant pressure sensor provides the reductant control module with a voltage signal proportional to the reductant pressure generated by the reductant pump. The reductant control module varies the duty-cycle of the pump voltage to maintain reductant pressure within a calibrated range.



DEF reservoir with pump

## LEAK TEST

After replacing the DEF pump and confirming that the system is unable to build pressure, inspect for any leaks, loose connections or kinks in the supply line.

Also perform an initial leak test three times using a scan tool. If low pressure is present, the DEF pump filter may have dried out.

## SATURATE THE PUMP FILTER

Allow the vehicle to sit overnight with the new pump and DEF fluid in order to re-saturate the DEF pump filter. In the morning, perform the leak test three additional times. The pump should now be able to build pressure.

For additional information, refer to Bulletin #20-NA-110.

► Thanks to Larry Yaw

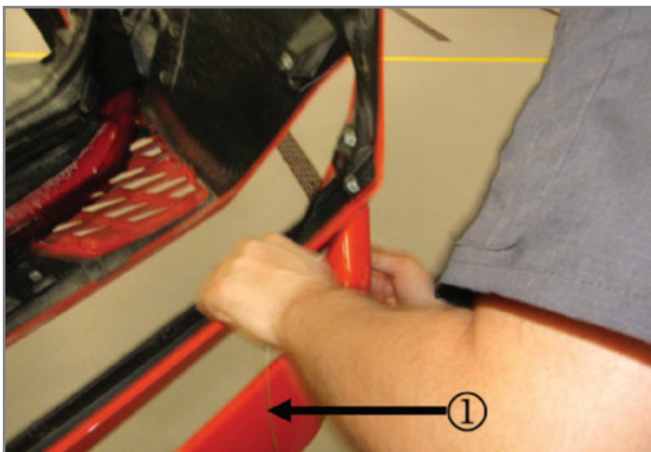


# Removal of Corvette Z51 Spoiler



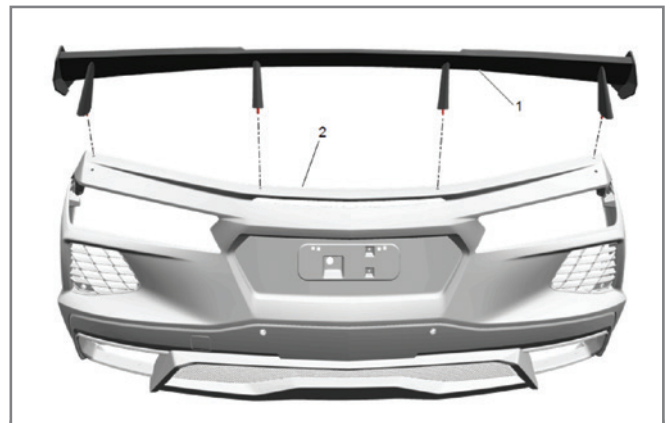
2020 Corvette Stingray models equipped with the Z51 Performance Package feature a rear spoiler that adds downforce to improve high-speed stability. If the Z51 spoiler is to be replaced with the high wing accessory spoiler, there may be some concern about applying heat to soften the two-way tape retaining the spoiler without damaging the rear fascia paint. The fascia paint may not be able to withstand high heat generated by a heat gun.

To remove the Z51 rear spoiler, it's recommended to use 50 lb. test monofilament fishing line. Position the line between the spoiler and fascia and, with a sawing motion, move the fishing line through the two-way tape to remove the spoiler. Using the fishing line method will eliminate any possibility of damage to the painted fascia surface.



Use 50 lb. test monofilament fishing line (#1) to remove the spoiler.

Do not use a heat gun, or attempt to pry the spoiler off the fascia with a plastic, metal or wood trim removal tool, in order to loosen the adhesive tape.



Follow the updated installation instructions for Rear End Spoiler Package Installation in the Accessories Manual.

The installation instructions for Rear End Spoiler Package Installation in the Accessories Manual in the Service Information have been updated to eliminate the use of a heat gun to soften the two-way tape. Follow the updated installation instructions and do not use a heat gun during the removal process.

Any damage to the fascia paint caused during the Z51 spoiler removal should not be submitted as a warranty expense.

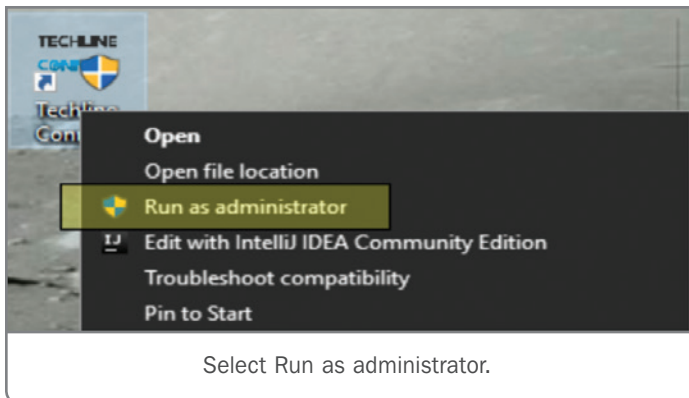
► Thanks to Jeff Strausser

# RUN Techline Connect AS ADMIN TO RECEIVE UPDATES AUTOMATICALLY

Techline Connect, GM's integrated Service Technician Diagnostic Scan Tool application, provides dealership service and parts personnel with access to GDS 2, Service Programming (SPS) and Service Information (SI) from a single application on their PC desktop. In order to receive the latest updates automatically to ensure Techline Connect is using up-to-date information, users need to launch the app as an administrator.

## TECHLINE CONNECT SETUP

Many dealership networks have elevated administrative rights, which may limit automatic updates. To ensure all Techline Connect system updates are received, it's necessary to set up the app to be run as an administrator. The following steps only need to be performed once on each desktop.



1. Right-click the Techline Connect desktop icon and select Run as administrator.
2. To set Techline Connect to run as an administrator permanently:
  - Right-click the Techline Connect icon and select Properties.
  - Select the Compatibility tab at the top and check the "Run this program as an administrator." box. Click Apply and OK.

Once these steps are completed, click the Techline Connect icon on the PC desktop and it will automatically open and run as an administrator, which will allow system updates to be performed automatically.

## APPLICATION UPDATES

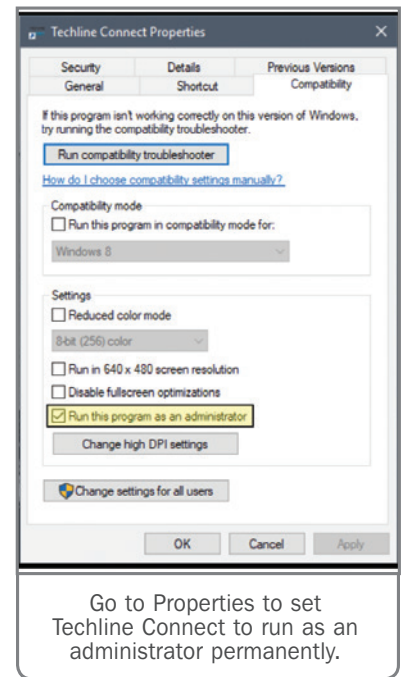
With the PC's security settings configured properly, Techline Connect will perform all updates needed to keep the applications up to date when logging in to Techline Connect, including GDS 2 and MDI updates and large calibration files (if configured in the Profile Preferences). If the PC's security settings do not allow updates to occur or be seen by the user, Techline Connect will continue the log in process, which may result in the app not being up to date at all times. If a core update for Techline Connect is not made, it will affect all of the component apps.

Some common signs that indicate if the app is not being updated include the GDS 2 lease not renewing upon log in or SPS showing an E4804 error (Version Mismatch).

Updates for Techline Connect are typically released on weekends. If an app works on Friday, but does not on Monday, it may be due to the PC security settings not allowing the update. Check the Messages box at the top of the Techline Connect dashboard to see if an update has been released and should have been downloaded. A message will be sent out when all updates are released.

If additional help is needed to set up a PC's security settings, contact your dealership's IT department. If you have any questions on Techline Connect, contact the Techline Customer Support Center at 1-800-828-6860 (English) or 1-800-503-3222 (French).

► Thanks to Lisa Scott and Nate O'Rourke

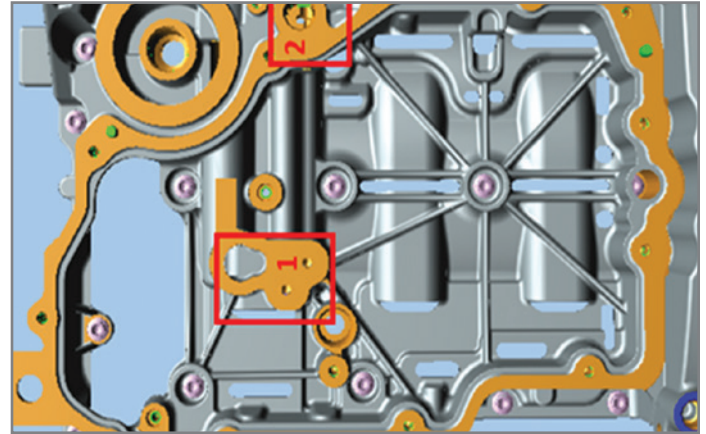


# Engine Oil Pump Pressure Control

Some 2020 Encore GX and 2021 Trailblazer models equipped with the 1.2L engine (RPO LIH) may have an illuminated Check Engine MIL and DTCs P0521 (Engine Oil Pressure Sensor Performance) and/or P06DE (Engine Oil Pressure Control Solenoid Valve Stuck On) and P06DD (Engine Oil Pressure Control Solenoid Valve Stuck Off) set. If these conditions are found, perform the engine oil pump failure screening test using GDS 2.

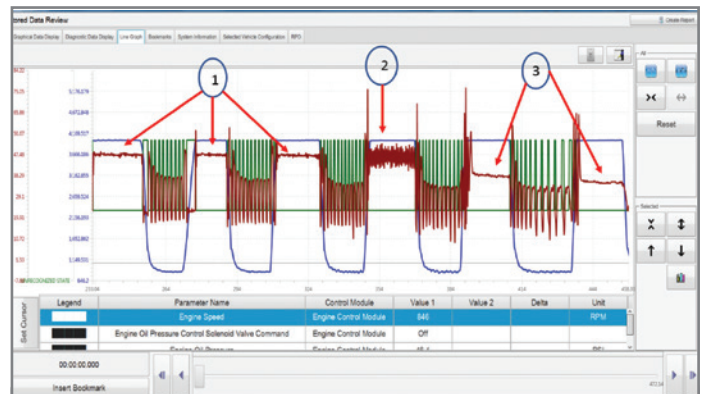
Before performing the test, delete any stored DTCs, run the engine for 15 minutes or until engine coolant temperature reaches a minimum of 175°F (79°C).

If DTCs P0521, P06DE, and/or P06DD set, engine oil pump replacement and lower crankcase extension port inspections are required. Refer to the appropriate Service Information for oil pump replacement.



1. Oil pump ports
2. Engine oil pressure control solenoid valve port

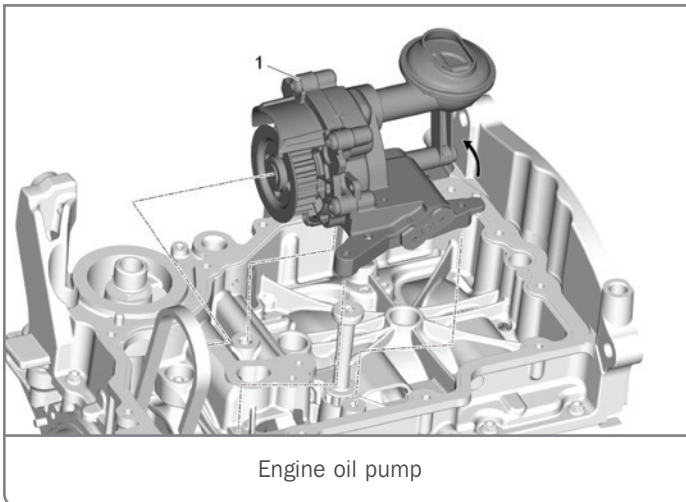
in a normal pattern. Look for an abnormal pattern that indicates normal pressure is not being achieved. In the following example, there is a normal pressure pattern (#1), and then abnormal pressure (#2) followed by failures to achieve normal pressure (#3), which indicates a failed engine oil pump.



Normal pressure pattern (1), and abnormal pressure (2) followed by failures to achieve normal pressure (3).

For more information about reviewing the GDS 2 data as well as part numbers, refer to #PIP5734.

► Thanks to Raymond Haglund



Engine oil pump

With the engine oil pan, engine oil pressure control solenoid valve, and oil pump removed, inspect the three oil pump ports and the engine oil pressure control solenoid valve port for any debris.

Remove any debris from the ports. Do not scratch or damage any surfaces or use brush-type tools or cloth materials that may leave debris in the oiling circuit ports.

If DTCs P0521, P06DE, and/or P06DD did not set during the engine oil pump failure screening test, review the GDS 2 stored data to isolate a potential oil pump pressure control issue. Each time the engine RPM is raised, the actual oil pressure should move up





# Properly Lifting the Corvette

Corvette models have required the J-43625 Lift Pad Adapters to properly lift the vehicle since the C5 generation debuted in 1997. The lift pad adapters help ensure proper vehicle weight distribution and must be installed in the correct locations when lifting the vehicle. Failure to use the lift pad adapters correctly may lead to the vehicle slipping or falling off the lift or jack.

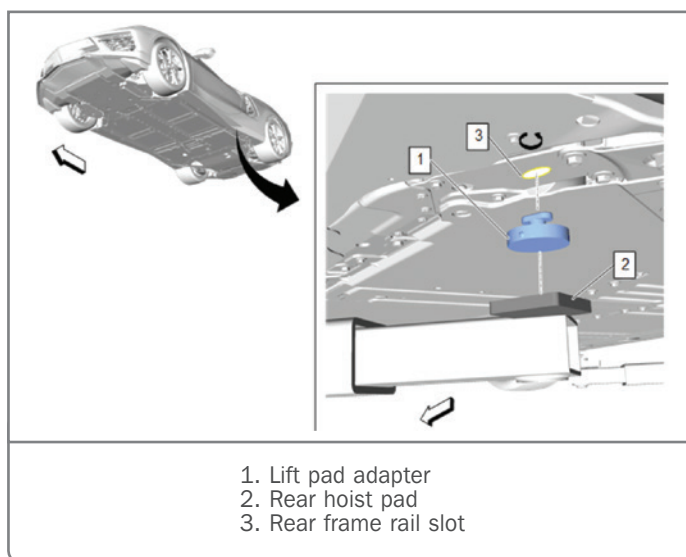
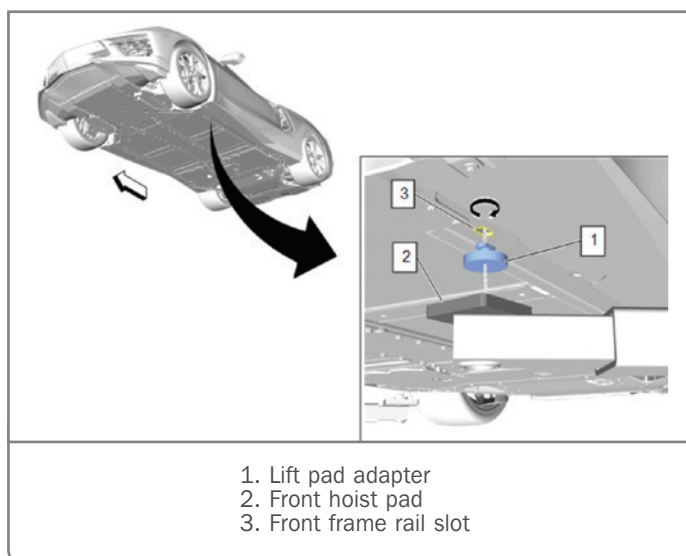
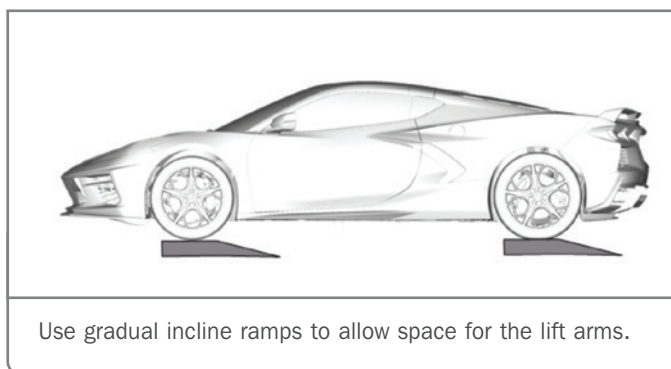
**TIP:** When major components are removed from the vehicle and the vehicle is supported by a hoist, support the vehicle with jack stands at the opposite end from where the components are being removed and strap the vehicle to the hoist.

## FRAME CONTACT HOIST

For the 2020 Corvette Stingray, install the J-43625 Lift Pad Adapters into the front and rear frame rail slots. Rotate each adapter 90 degrees. Center the hoist pad under the lift pad adapter.

The lift pad adapters also should be used in the frame rail slots when using service jacks.

## GROUND EFFECTS



Depending on the ground effects installed on a vehicle, it may be necessary to put the vehicle onto gradual incline ramps to allow the lift arms to fit under the vehicle.

Refer to Lifting and Jacking the Vehicle in the appropriate Service Information for complete lifting instructions.

► Thanks to Jeff Strausser

# Disabling Systems After Pickup Box Removal

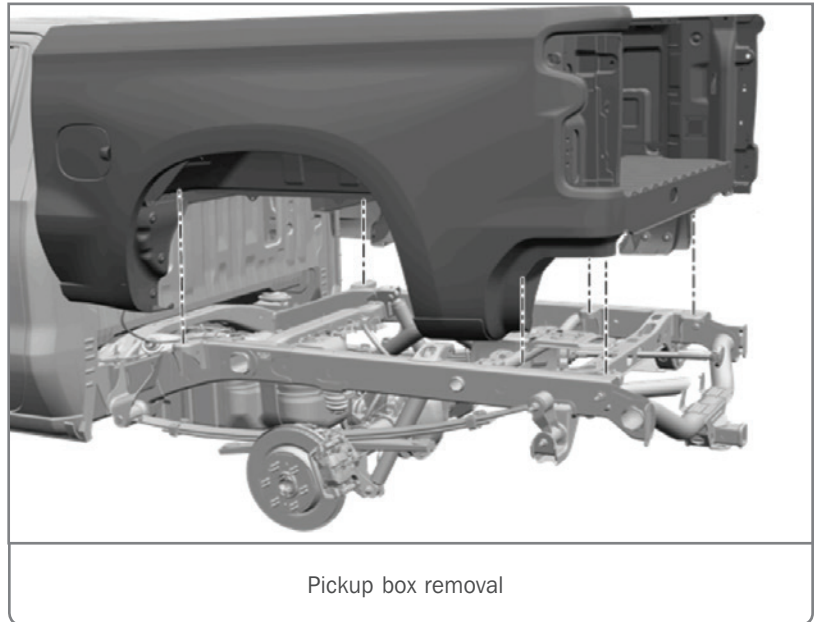
A customer may request the pickup box and rear bumper be removed on 2019-2020 Silverado 1500 and Sierra 1500 models to install an aftermarket bed or body. If the vehicle is equipped with Side Blind Zone Alert (RPO UKC) or Park Assist (RPO UD5, UD7), there will be several "Service System" messages displayed on the Driver Information Center due to the control modules and sensors being disconnected/missing after the box and bumper are removed.

To disable the optional driver assistance features that are no longer operational after installing a service body, refer to the latest version of GM Upfitter Integration Bulletin #168 – Box Removal – with Side Blind Zone Alert (UKC) and Park Assist (UD5/UD7). The information can be found at [www.gmupfitter.com](http://www.gmupfitter.com). Select the Technical Bulletins tab and then click the "Show all bulletins" link.

The disable procedure requires contacting the Techline Customer Support Center to remove the affected systems.

The Side Blind Zone Alert system is disabled due to the absence of the modules that are mounted inside the bumper corner step insert. Relocation of the Park Assist sensors or the Side Blind Zone Alert modules is not supported by GM. These devices are only tested in their OEM locations and performance and accuracy is unknown if the sensors or modules are moved to another location.

► Thanks to Jim Will



## Quarter Panel Rattle Sound

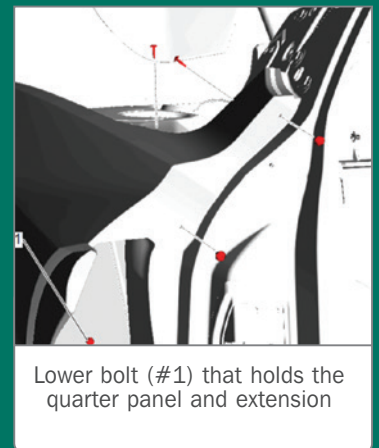
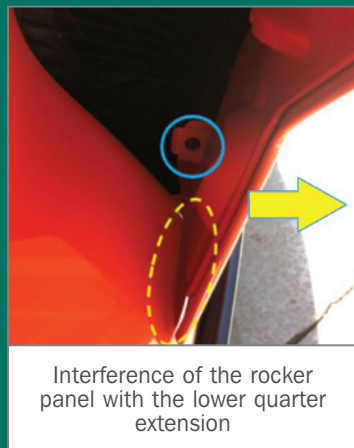
A rattle or creak sound may be heard coming from the quarter panel area while driving at highway speeds on some 2020 Corvette models. The sound may be due to interference of the rocker panel with the lower quarter extension.

To eliminate the interference condition, verify which side has the improper contact and adjust the quarter panel extension.

Loosen the lower bolt that holds the quarter panel and extension, and then pull outboard on the extension in order to achieve a 1mm clearance from the rocker panel. With the extension in the proper position, retighten the bolt.

Refer to Bulletin #20-NA-125 for additional information.

► Thanks to Jeff Strausser





# Inspection/Maintenance Test DTCs Now Permanent DTCs

Inspection/Maintenance Test DTCs, commonly referred to as Permanent DTCs, are codes that are currently commanding on the Check Engine MIL (Malfunction Indicator Lamp) and are stored in non-volatile memory of an electronic control module. These DTCs, which first appeared on 2010 GM models and have been required on all 2012 and later GM models, cannot be cleared using a scan tool or by disconnecting power to the control module, making them “permanent” codes.



Illuminated Check Engine MIL

The DTC data is intended to prevent vehicles from passing Inspection/Maintenance (I/M) inspections required by some states/provinces and local governments in order to renew license plates if there is an emissions-related condition. Since the permanent codes cannot be cleared by disconnecting the battery or using a scan tool, the presence of these fault codes at an inspection with-

out the MIL illuminated indicates that the proper repairs were not verified by the on-board diagnostic (OBD II) system. A vehicle will only pass an inspection by using a scan tool to confirm that no Permanent DTCs are present.

Any DTC that illuminates the MIL can be a Permanent DTC, including DTCs set by control modules other than the ECM.

## NEW NAMING IN SI AND GDS 2

In the past, there may have been misperceptions by some technicians regarding the naming of I/M Test DTCs and Permanent DTCs. These terms are interchangeable. The most common use in dealerships appears to be “Permanent” DTC, while the term Inspection/Maintenance Test DTC is used in the Service Information and GDS 2.

As a result, the naming of the I/M Test DTCs is being changed to Permanent DTCs in both the Service Information and GDS 2. All I/M Test DTCs references will now be listed as Permanent DTCs.

## CLEARING PERMANENT DTCs

Permanent DTCs will be cleared by the OBD II system when the internal algorithm for the DTC passes and the MIL is no longer being commanded on. The Permanent DTC will clear from the control module after the ignition has been turned off (power down).

► Thanks to Chris Henley and Morgan Chemello

## TECH LINK

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