TECH LINK

Mid-May 2020, Volume 22, No. 10

2020 Corvette Stingray TRACK PREPARATION

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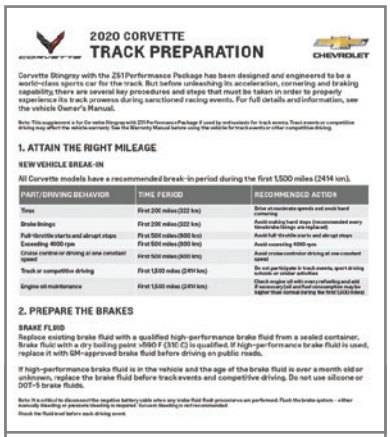
2020 Corvette Stingray Track Preparation

The all-new 2020 Corvette Stingray is the fastest and most powerful entry-level Corvette ever produced. It's mid-engine proportions and rear weight bias along with a race car-like view and driver's seat positioning all enhance performance on the track. But before owners take their vehicles out on a closed course, there are a number of items to be checked and adjusted, including several key procedures that must be completed in order to properly prepare the Corvette Stingray for a day at a sanctioned racing event.

The track prep requirements that should be undertaken before and after a track event are summarized in the recently released 2020 Corvette Track Preparation pdf on GM GlobalConnect (U.S.). The supplement is for the Corvette Stingray with the Z51 Performance Package. For full details, refer owners to the vehicle Owner's Manual.



2020 CORVETTE
TRACK PREPARATION

CHEVROLET

Corvette Stingray with the Z51 Performance Package has been designed and engineered to be a world-class sports car for the track. But before unleashing its acceleration, cornering and braking capability, there are several key procedures and steps that must be taken in order to properly experience its track prowess during sanctioned racing events. For full details and information, see the vehicle Owner's Manual.

1. ATTAIN THE RIGHT MILEAGE

NEW VEHICLE BREAK-IN

All Corvette models have a recommended break-in period during the first 1,500 miles (2414 km).

PART/DRIVING BEHAVIOR	TIME PERIOD	RECOMMENDED ACTION
Tires	First 200 miles (322 km)	Drive at moderate speeds and avoid hard cornering
Brake linings	First 200 miles (322 km)	Avoid making hard stops (recommended every time brake linings are replaced)
Full-throttle starts and abrupt stops	First 500 miles (800 km)	Avoid full-throttle starts and abrupt stops
Exceeding 4000 rpm	First 500 miles (800 km)	Avoid exceeding 4000 rpm
Cruise control or driving at one constant speed	First 500 miles (800 km)	Avoid cruise control or driving at one constant speed
Track or competitive driving	First 1,500 miles (2414 km)	Do not participate in track events, sport driving schools or similar activities
Engine oil maintenance	First 1,500 miles (2414 km)	Check engine oil with every refueling and add oil if necessary. Oil level may appear slightly higher than normal during the first 1,500 miles

2. PREPARE THE BRAKES

BRAKE FLUID

Replace existing brake fluid with a qualified high-performance brake fluid from a sealed container. Brake fluid with a dry boiling point >590 F (310 C) is qualified. If high-performance brake fluid is used, replace it with GM-approved brake fluid before driving on public roads.

If high-performance brake fluid is in the vehicle and the age of the brake fluid is over a month old or unknown, replace the brake fluid before track events and competitive driving. Do not use silicone or DOT-5 brake fluids.

2020 Corvette Track Preparation Guide

TIP: The service items covered in the Track Preparation supplement are the responsibility of the customer and should not be submitted under warranty. Failure to follow the recommendations may void the vehicle's warranty.

The 2020 Corvette Track Preparation pdf includes:

1. **Attain the Right Mileage –** New vehicle break-in periods for various components and systems. Vehicles must have over 1,500 miles before participating in any track events, sport driving schools, or similar activities.
2. **Prepare the Brakes –** High-performance brake fluid use, the Brake Fade Warning Assist system, new brake pad burnishing procedure, and installing and removing the brake cooling kit.

   Brake fluid flushing before and after a track event is critical. The battery must be disconnected prior to any brake service. If the brake pads on the vehicle need to be replaced, use GM-approved brake pads to ensure that the Brake Fade Warning Assist system functions properly.
3. **Adjust Four Corners and Alignment –** Shock spring seat adjustment, tire pressures for road courses, and racing and competitive driving wheel alignment settings.
4. **Fluid Levels –** Engine oil and dual clutch transmission (DCT) fluid and filter requirements.

   0W-40 dexos2 engine oil is approved for both track and street use. The DCT transmission must have an additional 2 quarts (2 liters) of fluid added to the transmission prior to track use. The added fluid will help with possible low pump pressure due to the fluid being pushed up the side of the transmission case. It is not required to remove the additional DCT fluid.
5. **Driver Mode and PTM Settings –** Using the Driver Mode selector, Competitive Driving Mode settings and Performance Traction Management (PTM) settings.

   After the track event, the Corvette Stingray should be returned back to the original factory settings using the proper fluids before normal street driving.

▶ Thanks to Jeff Strausser

New Accessory Front Leveling Kit Released

For Colorado and Canyon

A new Chevrolet Performance/GMC Accessories Front Leveling Kit is now available for 2015-2021 Colorado and Canyon models, excluding ZR2 models 2WD models, or models with 20-inch wheels. The leveling kit increases ride height by up to 1-inch, to level the vehicle's stance and provide a greater approach angle for increased clearance over off-road obstacles. It also enables the use of popular off-road tire combinations.

The kit provides increased ground clearance.

The kit is a direct bolt-on application. It features a unique e-coated steel upper spacer and polyurethane lower spacer to maintain optimal suspension geometry.

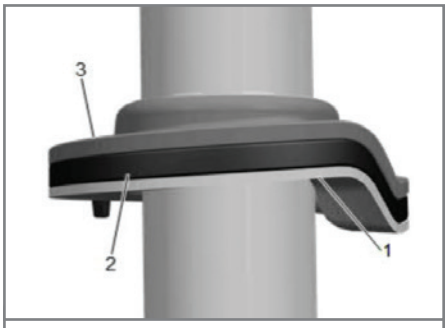
KIT INSTALLATION

Installation of the Front Leveling Kit requires the CH–48845 Strut Spring Compressor and CH-43631 Ball Joint Separator.

Front Leveling Kit

The provided lower spacer is installed on the front shock absorber assembly. After removing the front shock absorber and spring assembly, compress the coil spring and remove the tenon nut, top mount, coil spring, and lower spring isolator.

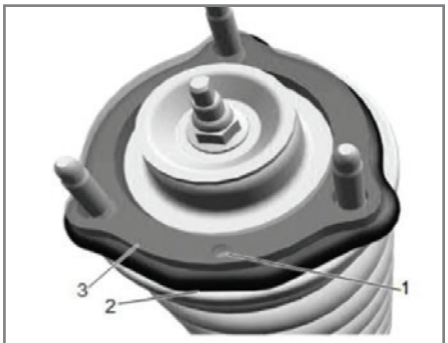
It's necessary to trim half of the alignment tab on the removed lower spring isolator. Do not trim the hard plastic spacer included in the kit. When installing the lower spacer on the shock absorber, the tab should align with the alignment hole. Once the lower spring isolator is installed on top of the lower spacer, the trimmed locating tab should be in the depression in the spacer.



Shock absorber (#1) with the provided lower spring spacer (#2) and lower spring isolator (#3) installed.

The provided upper spacer is installed on top of the front shock absorber assembly after reassembling the coil spring, top mount and tenon nut.

When reinstalling the shock absorber assembly on the vehicle, ensure it is installed in the correct position. The shock assembly upper mount is marked by a hole and a flat. The upper spacer obscures the hole. These markings must be installed in the outboard position.



The hole (#1) and flat (#2) will be obscured when the upper spacer (#3) is installed.

Use the low profile nuts provided in the kit to secure the top of the front shock absorber and spring assembly to the vehicle. Be sure to tighten all fasteners to specification.

After completing installation, measure front wheel alignment and adjust to spec if needed.

The instruction sheet for the Front Leveling Kit is provided with the kit. It's also available in the appropriate Service Information under the Accessories Manual link and under the accessories link at chevrolet.com and gmc.com.

▶ Thanks to Adrienne Peters

Diagnosing a SHUDDER VIBRATION Condition

When diagnosing a shudder vibration condition on some 2016-2018 Silverado, Sierra; 2016-2020 Tahoe, Suburban, Yukon; 2019-2020 Silverado 1500 and Sierra 1500 models equipped with 5.3L V8 engine (RPO L82, L83, L84) and 6L80 6-speed transmission (RPO MYC), it's critical to determine the source of the vibration in order to make the proper repairs.

The shudder vibration may be noticed mostly during light throttle acceleration of 30-64 mph (48-104 km/h) during steady state driving with the transmission not actively shifting gears. It also may feel like driving over rough pavement or rumble strips. The shudder feeling may be evident in both Drive and M5 mode.

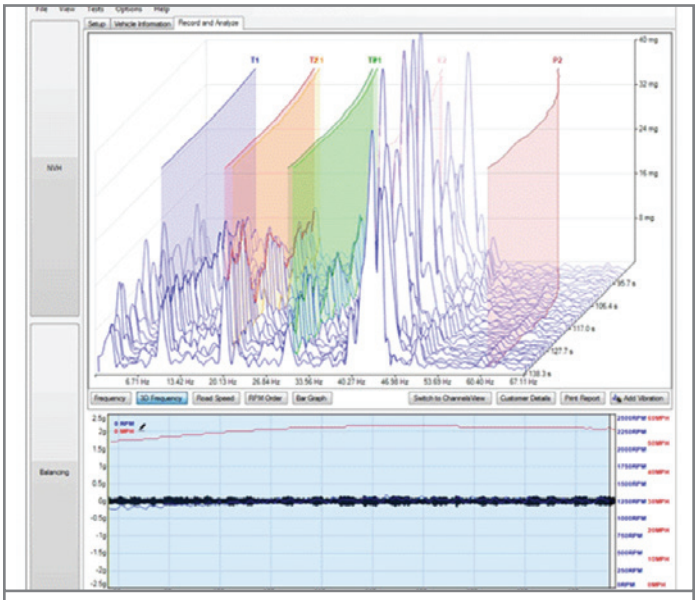
In general, if there is insufficient engine firing pulse isolation or combustion instability, vibrations can be transmitted through the steering wheel, seat track, or accelerator pedal. A torque converter shudder vibration may be induced by the torque converter clutch in normal driving mode (with an expected TCC slip amount) and is most often due to TCC friction material/ATF degradation). Other sources of a vibration include insufficient damping or isolation of the engine or driveline, an irregular combustion event, and Active Fuel Management (AFM) disturbances.

TIP: DEXRON 6 is the only approved automatic transmission fluid (ATF) to be used with 6L transmissions (RPO MYA, MYB, MYC, MYD) at this time.

DIAGNOSIS WITH THE PICOSCOPE OSCILLOSCOPE

Before beginning any repairs, verify and correct any DTCs.

The use of the CH-51450 PicoScope automotive oscilloscope and the CH-51450-A NVH kit can help confirm the disturbance frequency and determine if the disturbance tracks to engine speed (chuggle or misfire), road speed (tire vibration), or remains constant across various inputs (TCC shudder). Place the PicoScope pick-up on a metallic component where vibration can be felt the most (seat track, steering wheel column, accelerator pedal, etc.). Minimize extraneous vibration input by conducting the test on a smooth road and correct any other known vehicle vibration issues (for example, any tire or brake conditions) before testing.



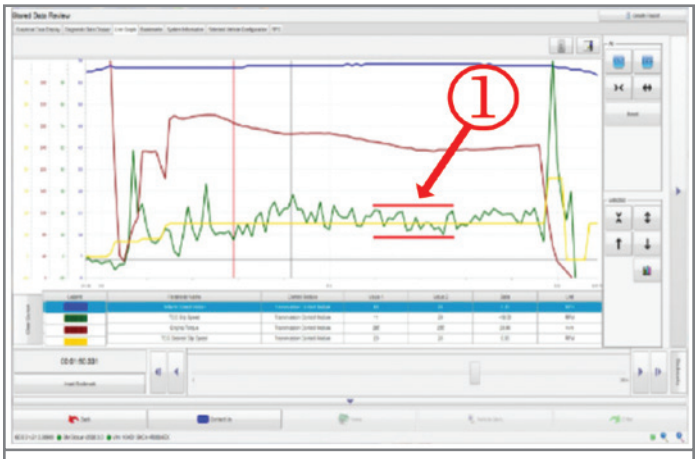
If TCC shudder is present, a vibration peak will appear at approximately 43Hz +/-3Hz.

To confirm TCC shudder, the vibration concern must be present in normal operation, but not present with the torque converter clutch disabled or with the torque converter clutch locked. Also perform a TCC slip control test. If TCC shudder is present, a vibration peak will appear at approximately 43Hz +/-3Hz. If the vibration frequency follows engine, tire, or driveshaft speed, then it is not a TCC shudder vibration.

DIAGNOSIS WITH GDS2

An alternative diagnostic for TCC shudder is to road test the vehicle and monitor commanded and actual TCC slip speeds. Road test the vehicle under light throttle acceleration at 55-65 mph (88-104 km/h) during steady state driving when the transmission is not actively shifting gears and monitor the following GDS2 parameters.

GDS2 data showing TCC slip peak-to-peak below 20 RPM is an example of normal TCC operation.

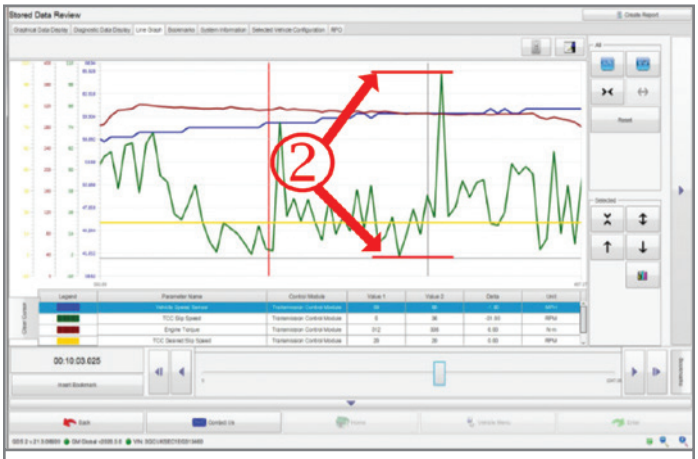


GDS2 data showing TCC slip peak-to-peak below 20 RPM.

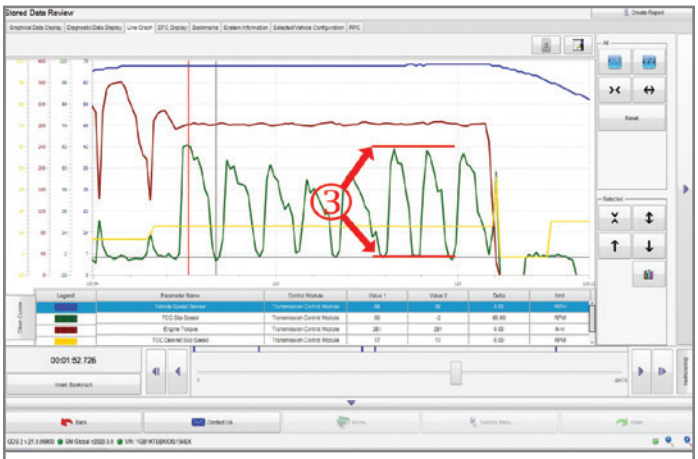
GDS2 data showing TCC slip peak-to-peak erratic near 0 RPM to over 100 RPM in a short time is an example of a damaged torque converter clutch.

GDS2 data showing TCC slip peak-to-peak repeating near 60 RPM or less is an example of degraded fluid. Perform the TCC slip control test within this procedure and compare service tool-collected data results to normal, damaged and degraded operation.

Additional information can be found in the latest version of #PIP5504. For more information about diagnosing vibration conditions, refer to Vehicle Vibration Diagnosis in the appropriate Service Information.



GDS2 data showing TCC slip peak-to-peak erratic near 0 RPM to over 100 RPM in a short time.

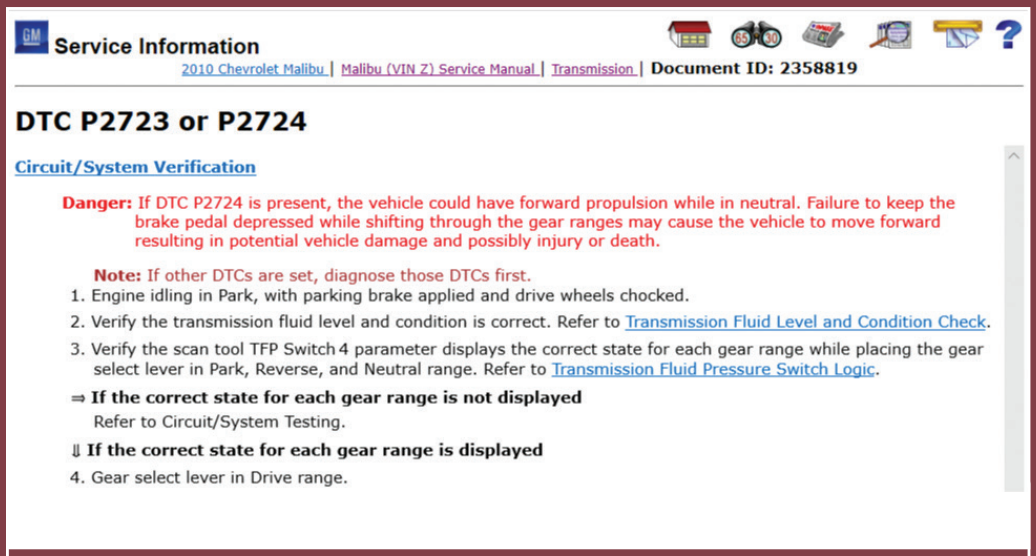


GDS2 data showing TCC slip peak-to-peak repeating near 60 RPM or less.

Thanks to Ron Caponey

Transmission Warning for DTCs with Solenoid Stuck On

The Service Information for 2008-2020 GM models equipped with the 6T40, 6T70, 6L50, 6L80, or 6L90 6-speed transmission; 9T45, 9T50, 9T60, or 9T65 9-speed transmission; or VT40 continuously variable transmission (CVT) has been updated to include a new danger statement for certain DTCs. The DTCs include P2724 (Solenoid Valve 5 Stuck On) on applicable 6-speed transmissions, P0747 (Solenoid Valve 1 Stuck On) on applicable 9-speed transmissions, and P2715 (Solenoid Valve 4 Stuck On) on applicable CVTs.



Service Information

2010 Chevrolet Malibu | Malibu (VIN Z) Service Manual | Transmission | Document ID: 2358819

DTC P2723 or P2724

Circuit/System Verification

Danger: If DTC P2724 is present, the vehicle could have forward propulsion while in neutral. Failure to keep the brake pedal depressed while shifting through the gear ranges may cause the vehicle to move forward resulting in potential vehicle damage and possibly injury or death.

Note: If other DTCs are set, diagnose those DTCs first.

1. Engine idling in Park, with parking brake applied and drive wheels chocked.
2. Verify the transmission fluid level and condition is correct. Refer to Transmission Fluid Level and Condition Check.
3. Verify the scan tool TFP Switch 4 parameter displays the correct state for each gear range while placing the gear select lever in Park, Reverse, and Neutral range. Refer to Transmission Fluid Pressure Switch Logic.

⇒ **If the correct state for each gear range is not displayed**

Refer to Circuit/System Testing.

⇓ **If the correct state for each gear range is displayed**

4. Gear select lever in Drive range.

New statement in the Service Information

When servicing these transmissions with these particular DTCs set, be aware that the vehicle could move forward if it is started in Neutral. In some failure modes, the friction and steel plates for the first gear clutch may be burned so badly that they have been welded together, which may result in possible vehicle movement.

The new danger statement for 6-speed transmissions reads, "If DTC P2724 is present, the vehicle will have forward propulsion while in neutral. Failure to keep the brake pedal depressed while shifting through the gear ranges may cause the vehicle to move forward, resulting in potential vehicle damage and possibly injury or death." The statement for the other DTCs is similar.

Regardless of the service procedure, it's recommended to keep the brake pedal applied any time the vehicle is started.

▶ Thanks to Ron Caponey

Burned clutch plates

SEARCH FOR

Safety Data Sheets

BY PART NUMBER OR DESCRIPTION

The Safety Data Sheets (U.S.) for ACDelco fluids and chemicals as well as other GM products are now available through a new link on ACDelco.com. The GM part number (long number) or the ACDelco part number (short number) can be used to search for the Safety Data Sheets. Searches also can be done using the product name printed on the label or the product description. Each Safety Data Sheet can be easily printed to be shared with employees and customers.


ACDelco

Safety Data Sheet

According to OSHA HCS 2012 (29 CFR 1910.1200), Health Canada HPR (SOR/2015-17), and Mexico NOM-018-STPS-2015

SECTION 1: Identification

Product Identifier: ACDelco dexos1™ Full Synthetic Motor Oil

Other means of identification: ACDelco dexos1™ Full Synthetic Motor Oil SAE 0W-20; ACDelco dexos1™ Full Synthetic Motor Oil SAE 5W-30; 88865607, 88865908, 88865762, 88865909, 88865691, 88865692, 88865743, 88865763

Code: 831426

Relevant identified uses: Automotive Engine Oil

Uses advised against: All others

24 Hour Emergency Phone Number: CHEMTREC 1-800-424-9300; CHEMTREC México 01-800-681-9531

Manufacturer/Supplier: Phillips 66 Lubricants, P.O. Box 4428, Houston, TX 77210

SDS Information: URL: www.Phillips66.com; Phone: 800-762-0942; Email: SDS@P66.com

Customer Service: U.S.: 800-368-7128 or International: 1-832-766-2600

Technical Information: 1-877-445-9160

Distributor: ACDelco, 6200 Grand Pointe Drive, Grand Blanc, MI 48439

SECTION 2: Hazard identification

Classified Hazards: No classified hazards

Hazards Not Otherwise Classified (HNOC): PHNOC: None known; HHNOC: None known

Label Elements: No classified hazards

SECTION 3: Composition/information on ingredients

Chemical Name	CAS/IN	Concentration*
Distillates, petroleum, hydrotreated heavy paraffinic	8147-42-54-7	>25

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and

831426 - ACDelco dexos1™ Full Synthetic Motor Oil — Page 1/6

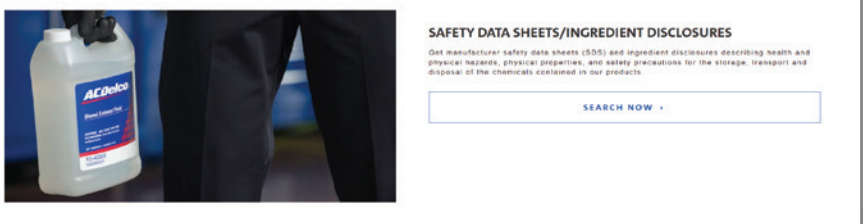
Issue Date: 17-Jul-2017 — Status: FINAL

Safety Data Sheet

A registration or password is not required to access the Safety Data Sheets.

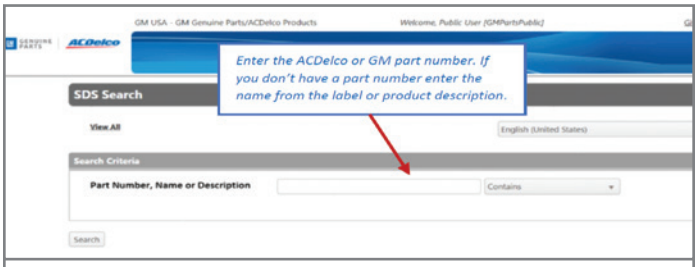
SITE NAVIGATION INSTRUCTIONS

To access the Safety Data Sheets, go to ACDelco.com and select Search Now in the Safety Data Sheets/Ingredient Disclosures section.



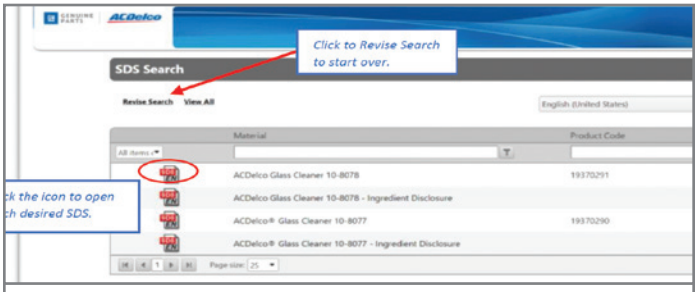
Select Search Now

On the Safety Data Sheets landing page, enter the GM or ACDelco part number in the search box for the most precise search. Searches also can use the name from the product label or a generic product description (5W-30, for example).



Search by part number, product name, or description.

If multiple Safety Data Sheets are returned, review the Material information and click the icon to launch the desired Safety Data Sheet. Select Revise Search to perform another search.



Click the icon to view a Safety Data Sheet.

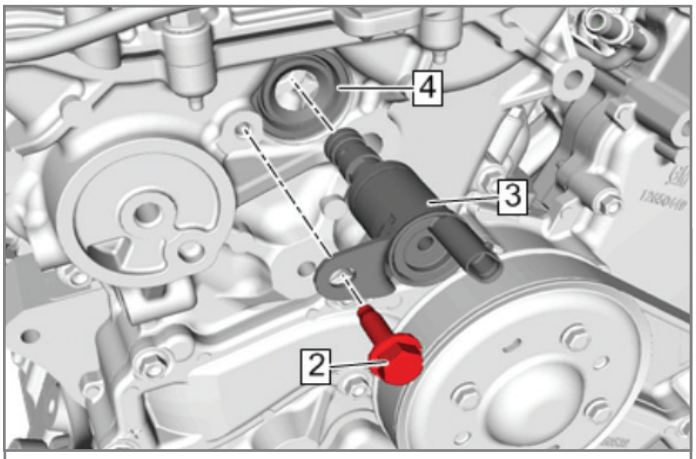
While viewing the Safety Data Sheet, it can be downloaded or printed from your web browser.

▶ Thanks to Deanna Hartwell

Diagnosing DTCs P0016 and P0018

DTCs P0016 (Crankshaft Position - Intake Camshaft Position Not Plausible Bank 1) and P0018 (Crankshaft Position - Intake Camshaft Position Not Plausible Bank 2) may be set and the Check Engine MIL may be illuminated on some 2016-2019 ATS, CTS; 2016-2020 CT6, Camaro; 2017-2019 LaCrosse; 2017-2020 XT5, Colorado, Acadia, Canyon; 2018-2020 Regal; 2019-2020 Blazer; and 2020 CT5 and XT6 models equipped with the 3.0L V6 engine (RPO LGY, LGW) or 3.6L V6 engine (RPO LGX, LGZ). No other drivability concerns will be present.

The DTCs may be caused by the Intake Camshaft Position Actuator Park Lock Solenoid Valves (or Camshaft Position Actuator Locating Pin Control Valves) sticking in the actuator or coming apart and leaving a portion of the valve stuck in the actuator. Remove the Intake Camshaft Position Actuator Park Lock Solenoid Valves and inspect them for any damage or sticking conditions. Replace both solenoid valves if there are any performance issues or damage found. Refer to Camshaft Position Actuator Locating Pin Control Valve Replacement in the appropriate Service Information.



Intake Camshaft Position Actuator Park Lock Solenoid Valve

The Service Information is being updated to include checking these solenoid valves for DTCs P0016 and P0018.

▶ Thanks to Aron Wilson

Incorrect Rear Camera Guidelines After Tailgate or Handle Replacement

The rear camera guidelines may be incorrect or misaligned after the tailgate handle or the entire tailgate has been replaced on some 2020 Silverado 2500/3500 and Sierra 2500/3500 models equipped with tailgate RPOs QK1 and QT2/QT3 and infotainment system RPO IOR.


Guidelines with original handle and calibration


Guidelines with new handle and previous calibration

The incorrect guidelines may be caused by a different rear camera angle in the replacement tailgate handle compared with the original tailgate handle. The new rear camera angle requires the infotainment system (radio) software to be updated when the tailgate handle/tailgate is replaced.

To update the infotainment system software, contact the Techline Customer Support Center (TCSC) for the correct calibration. Follow all programming guidelines when updating the software. Refer to A11 Radio: Programming and Setup in the appropriate Service Information.

For additional information, refer to Bulletin #20-NA-036.


Guidelines with new handle and new calibration

▶ Thanks to Kevin Minor

BODY HARNESS TO FUEL TANK DAMAGE

Some 2017-2020 Camaro SS 1LE (RPO A1Y) and Camaro ZL1 models and 2018-2020 Camaro ZL1 1LE (RPO A1Z) models may have an extended engine crank or reduce power condition along with an illuminated Check Engine lamp.

If these conditions are found, inspect the left rear wheelhouse liner for a rub-through condition due to incorrect tire size, which may result in a damaged body-to-fuel pump harness

Rub-through on the left rear wheelhouse liner

If the concern is caused by a rub-through condition and the vehicle is not equipped with the original equipment (OE) tires, advise the customer of the importance to use the same tire size and manufacturer with which the vehicle was originally equipped. The repair is not covered as a warranty claim.

TIP: The same tire size, but from a different manufacturer, could result in a difference of up to 10 mm in actual tire size.

If the concern is caused by a rub-through condition and the vehicle is equipped with the OE tires, repair the harness and submit a field product report, including photos and tire information.

Body harness damage

For additional information, refer to Bulletin #20-NA-104.

▶ Thanks to Ann Briedis

TECHLINK

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