Slow engine cranking, a dead battery or a no start condition on 2014-2016 Corvette models equipped with an automatic transmission may be caused by a misaligned driveline support assembly. The misaligned assembly can cause excessive pressure to the engine crankshaft thrust bearing.

If the driveline support assembly has been removed for a previous vehicle repair, the propeller shaft hub clamp must be realigned. Failure to properly align the driveline support assembly may push the crankshaft forward, removing any end play. The damaged thrust bearings typically fail approximately 3,000–5,000 miles (4,800–8,000 km) after the repair when the driveline support assembly was removed.

The driveline support assembly consists of a driveline support tube, with rear bell housing, and an internal propeller shaft assembly. The front of the driveline assembly mounts to the engine bellhousing. The driveline support assembly is specific to either automatic or manual transmission applications.

Any related warranty claims involving the driveline support assembly may be debited for improper workmanship.

CONTENTS

Updated Corvette Driveline Support Assembly Replacement Procedure ........ 1
Hydraulic Brake Conditions on Electric/Hybrid Vehicles .................. 2
Take the 2016 Service Technician Satisfaction Survey Today .............. 3
Testing for Accurate Fuel Economy Results .................................. 4
Airbag Connector Seating ...................................................... 5
Special Programming Instructions for Service Replacement Radios ....... 5
AFIT Adapter Cable Identification and Vehicle Application Chart .......... 6

continued on page 3
Hydraulic Brake Conditions on Electric/Hybrid Vehicles

There may be several brake system conditions on the 2016-2017 Volt and Malibu Hybrid (RPO HP4) that could be related to the hydraulic components. These types of hydraulic issues should not be overlooked when diagnosing a condition on electric/hybrid brake systems.

**Misrouted brake line** – A misrouted metal brake line may cause the line to kink, which would reduce the brake apply pressure to the wheel. DTC C05AD (Brake Blending System Performance) may set. This condition could occur if the misrouted line hits the shock tower when the wheel is turned.

**Worn rubber brake hose** – If the anti-rotation bracket is not seated into the hole properly, the rubber brake hose could rub through on the front wheel. This condition could lead to a loss of brake fluid and brake apply. DTCs C05AD, C0580 (Brake Booster Motor “A” Phase U-V-W Circuit Low), P05FF (Brake Pressure Sensor and Brake Pedal Position Sensor Correlation) may set.

**Twisted rubber brake hose** – A Master Cylinder (MC) line from the Secondary Port to MC2 that is twisted 360 degrees may cause pressure to get trapped in the brake system. This condition may cause a concern during a light coast with a light brake apply at 45 mph (72 km/h). DTC C05AD may set along with illuminated ABS, traction control and Check Engine warning lamps.

**Bent brake caliper slide pins** – If the right front bleeder screw is bent/cracked or the brake rotor shows uneven pad contact, check for a bent caliper guide pin. A bent pin may cause the brake warning light to illuminate or set DTC C05AD.

**Leak at caliper brake hose** – A brass crush washer can only be used one time. Reusing a brass crush washer may cause a leak. Look for the crush washer to have an oval shape and witness lines indicating multiple use. Always discard washer and replace with a new brass crush washers.

A leak also may be due to the crush washer bolt being cross-threaded and retightened. When tightening the crush washer bolt, make sure to finger tighten the bolt to guide to avoid cross-threading when reinstalling.

Thanks to Keith Newbury
Updated Corvette Driveline Support Assembly Replacement Procedure  continued from page 1

Updated Procedure

The Service Information procedure for driveline support assembly replacement was recently updated for vehicles with an automatic transmission (Doc. I.D. #3462804).

The updated procedure includes tightening the propeller shaft hub clamp bolt to 130 Nm (96 lb.-ft.). Measure crankshaft end play with a dial gauge.

After test driving the vehicle, recheck end play. If there is no end play, the clamp bolt must be loosened and the crankshaft pushed rearward again.

New Video

A video on the updated procedure is included in the September 2016 Emerging Issues seminar (102016.09V) that is available on the GM Center of Learning.

In Canada, go to the GM Centre of Learning (Resources/Video on Demand/GM Pro Centre of Learning/Service Technical/Corvette Driveline Support Assembly Replacement).

Thanks to Jeff Strausser and Tracy Lucas

Take the 2016 Service Technician Satisfaction Survey Today

The 2016 Service Technician Satisfaction Survey is taking place now and technicians at all dealerships are encouraged to participate. GM and other automotive manufacturers co-sponsor this annual survey to collect feedback on service trends, satisfaction levels, dealership operational issues and the level of manufacturer’s support. The survey this year focuses on technician recruitment and retention in the dealership.

All GM Service Technicians, Technician Apprentices, and Maintenance Inspection Technicians (MIT) profiled in the Center of Learning should have received an email announcing the survey along with a link to the survey. The survey also is available at www.GM TechSurvey.com or by clicking the link on the home page of the GM Center of Learning (In Canada, go to gmcanadatechsurvey.com). To complete the survey, you will need your 6-digit Dealer Code/BAC Code.

The Service Technician Satisfaction Survey will be active from September 19 – October 14.

It shouldn’t take more than 15 minutes to complete. All survey responses are strictly confidential and will not be shared with your dealership.

Your feedback is very important. Please take this opportunity to provide your comments and suggestions about your experiences.

Thanks to Lisa Scott, Diana Sancya and Chris Wallace
Testing for Accurate Fuel Economy Results

Owners of 2010-2017 Equinox and Terrain models equipped with the 2.4L engine (RPO LAF, LEA) and front-wheel drive may have questions about the actual fuel economy of their vehicle. In most cases, a small amount of city driving will quickly bring down the average fuel economy result of an individual vehicle. Owners who have a concern about poor fuel economy should be made aware of the impact driving style and driving conditions have on fuel economy results.

To properly perform a fuel economy evaluation of a vehicle to ensure accurate fuel economy results are being achieved, review the following tips.

**Initial Fuel Economy Evaluation**
- Review daily driving habits, including amount of distance traveled, types of roads and typical speeds.
- Check for stored DTCs
- Check for proper tires pressures. The Driver Information Center (DIC), if equipped, provides accurate tire pressure readings.
- Raise the vehicle and make sure the rear wheels turn freely on front-wheel drive models. Check that the parking brake is not dragging.
- Document temperature and climate conditions and the current seasonal fuel blend being used. Top Tier fuel is recommended for optimal fuel economy and engine performance.

**Actual Driving Evaluation**
- Fill the tank with fuel using the three click procedure: Add fuel until the pump nozzle shuts off automatically, count to five and fill again until the pump shuts off, count to five and fill once more until the pump shuts off a third time.
- Record the odometer reading and reset the trip odometers.
- On a flat road where a steady speed can be maintained, drive the vehicle at a steady speed for 5 miles (8 km). If a flat road is not nearby, use a road without large hills.
- Note any wind conditions.
- Bring the vehicle up to a speed between 50 to 65 mph (80 to 105 km/h) and set the cruise control.
- Reset the Average Fuel Economy reading under the Trip menu on the DIC, if equipped, by holding the SET/CLR button until the display reads 22 mpg (10.7 L/100 km). This is the ‘seed’ value that the system starts with and then learns the actual fuel economy from this value. It will take several miles for the Average Fuel Economy to stabilize and provide a true value.
- On average for 4-cylinder models, at 55 mph (89 km/h), the Average Fuel Economy should be 36 mpg (6.5 L/100 km) and, at 60 mph (97 km/h), it should be 33 mpg (7.1 L/100 km).
- Reset the display and try different speeds and conditions.
- Once enough distance is driven, top off the fuel tank following the three click procedure using the same fuel station and fuel pump. Record the odometer reading and calculate the fuel economy from the number of gallons/liters pumped.
- Observe and diagnose any performance issues such as rough idle, excessive vehicle drag when coasting, or poor driveability.

Review the complete road test findings with the customer to ensure the test and results are fully understood.

Thanks to David Rutkowski
Airbag Connector Seating

The airbag warning lamp may be illuminated on some 2016 Malibu (VIN Z); 2016-2017 CT6, Camaro, Volt; and 2017 LaCrosse, ATS, CTS, XT5, Escalade models; Colorado, Impala, Silverado, Tahoe, Suburban, Acadia (VIN NJ); Canyon, Sierra and Yukon models. One or more of the following airbag DTCs may be set: B0012, B0013, B0014, B0015, B0016, B0017, B0018, B0019, B0020, B0021, B0022, B0023, B0024, B001A or B001B.

The cause of the illuminated warning lamp may be an airbag warning lamp connector that is loose or not fully seated.

Inspect the airbag connector for complete contact. If the airbag connector is not fully seated, disconnect and reconnect it. Verify the repair.

**TIP:** Any time the airbag connector is disconnected and reconnected, perform a “push/push” test (not a “push/pull” test) on the connector to ensure it is fully seated.

(*) Thanks to Bob Wittmann

Special Programming Instructions for Service Replacement Radios

A new service replacement radio has been released for 2014-2016 Encore, Verano, Camaro, Caprice, Cruze, Equinox, Malibu, Orlando, SS, Volt, Terrain; and 2016 Cadillac models equipped with Radio RPOs UFU, UFU/UP9 or UHQ/UP9. Due to this change, the radio part number received may not be the same part number as the one that was ordered. In addition, certain service replacement radios do not require USB programming.

If USB programming is attempted on a replacement radio that does not require USB programming, SPS error code E4411 or E2907 will be displayed in TIS2Web and the USB programming will be prevented.

The following service replacement radios do not require USB programming at this time: 42481354, 84062099, 84062126, 84064072, 84064073, 84064074, 84064075, 84064076, 84064077, 84073998, 84156022, 84156023, 84156665, 84156666, 84156669, 84156924, 84159089, 84159090, 84159093, and 84159094.

Skip the usual USB programming instructions that are outlined in the Service Information procedure for these service replacement radios and only perform SPS programming with TIS2Web. For any other service replacement radios, follow the normal Service Information instructions to install and program the radio.

**TIP:** The listed Chevrolet service replacement radios will have a new start-up screen, which is a design characteristic of these new Chevrolet radios.

(*) Thanks to Jamie Parkhurst

GM TechLink is published for all GM retail technicians and service consultants to provide timely information to help increase knowledge about GM products and improve the performance of the service department.

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AFIT Adapter Cable Identification and Vehicle Application Chart

The Active Fuel Injector Tester (AFIT), essential tool CH-47976, is designed to test fuel injectors on port and direct injected engines going back to the 1996 model year. As new vehicle applications have been introduced, the kit has grown to include a number of available adapter cables, including for SIDI engine fuel systems and the Duramax diesel engine.

**TIP:** The AFIT Kit, CH-47976, was an essential tool for Tier 1, 2, 3, and 4 dealerships only. Tier 5 dealerships may order the tool at gmtoolsandequipment.com.

An AFIT Vehicle Application Chart has been developed to help identify the correct cable adapters for each GM model. It’s available on the TechLink website.

The chart lists the model applications, engine RPO, cable components, type of communication, SENT (Single Edge Nibble Transmission) applications and Stop/Start applications.

**Correct Connections**

When testing an engine using the AFIT kit, do not connect the adapter cables to the vehicle until instructed to by the AFIT MCU (Main Control Unit). The MCU should be placed in the vehicle cab and plugged into the power adapter.

The DMU (Drive & Measurement Unit) should be placed in the engine compartment and connected to the vehicle’s 12-volt battery and to the MCU.

Select a vehicle on the AFIT MCU and then select an injector test. Follow the on-screen instructions/prompts on the MCU to connect to the vehicle. When prompted, with the ignition off, connect the DMU cable to the vehicle ECM harness connectors.

**TIP:** To help in determining which adapter to use, the AFIT will display the correct adapter during the testing process. The latest software must be used in order to display all correct adapter and cable selections.

**Software Updates**

Download the latest AFIT software through the Service Workbench selection of “Essential Tools – Software Updates” in GM Global-Connect (U.S. only).

In Canada, GlobalConnect provides a Quick Link titled “Essential Tools – Software Updates” available from the Service page.

(*) Thanks to Chuck Berecz

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CH-47976 AFIT Kit

CH-47976-500A SIDI Adapter Set

CH-47976-505 Duramax Adapter Set