

TSB 05-06-01-001A (Feb 8, 2005)

Check Gages Light, Battery Voltage Low, Accessory Drive Belt Slipping or Missing
(Install Washer from WPC and Crankshaft Balancer) #05-06-01-001A - (Feb 8, 2005)

Table 1: Warranty Parts Center Parts

Table 2: GMSPO Parts

Table 3: Part Request Form -- Warranty Parts Center

Check Gages Light, Battery Voltage Low, Accessory Drive Belt Slipping or Missing
(Install Washer from WPC and Crankshaft Balancer)

2005 Chevrolet Corvette

with 6.0L Engine (VIN U - RPO LS2)

Built Prior to VIN Breakpoint 55111039

This bulletin is being revised to include VIN breakpoint and additional inspection information. Please discard Corporate Bulletin Number 05-06-01-001 (Section 6 -- Engine).

Condition

Some customers may comment on the Check Gages Light or the Battery Voltage Low indicator coming on. Additionally, some customers may comment on the accessory drive belt either slipping or being missing.

Cause

The crankshaft balancer bolt may have become loose.

Correction

Install a new crankshaft balancer pulley, washer and a new balancer pulley bolt using the following procedure:

Disconnect the negative battery cable at the battery.

Remove the air duct (6).

Remove the radiator support.

Remove the accessory drive belt.

Disconnect the generator.

Remove the generator bolts and generator.

Disconnect the steering intermediate shaft at the steering gear.

Install the lifting links to the engine (J 41798).

Install the fixture for lifting the engine (J 41803).

Hoist the vehicle.

Remove the front wheels.

Loosen the motor mounts.

Install the leaf spring fixture (J 33432-A).

Disconnect the tie rods (5) from the steering knuckle (4).

Disconnect the speed sensor.

Remove the lower ball joint nut and disconnect the lower control arm from the knuckle.

Disconnect the bottom shock absorber bolts.

Disconnect the ABS module bracket bolts.

Disconnect the stabilizer shaft insulator clamp bracket bolts and shaft.

Disconnect the cooler line bolts to the engine cradle.

Install a suitable jack under the cradle.

Remove the cradle nuts.

Lower the cradle.

Remove the A/C belt.

Disconnect and remove the starter.

Install the flywheel holding fixture J 42386-A.

Remove the cooling fan bolts and fan assembly.

Scribe or mark balancer orientation.

Remove the crankshaft balancer bolt (139). Do not discard the crankshaft balancer bolt.

The balancer bolt will be used during the balancer installation procedure.

Use the J 41816 (1) and the J 41816-2 (2) in order to remove the crankshaft balancer.

Place the old and new balancers on the bench and orient them the same way (i.e. face up with a weight balance hole at 12 o'clock). Scribe/mark the new balancer in the same location as the old balancer. Do not transfer weight pins on manual transmission equipped vehicles. Most vehicles will be balanced without the use of any additional weight pins. Because some balancers may have spun on the crankshaft, transferring weight pins to the same position would produce a random imbalance. For vehicles that exhibit imbalance (very rare), contact Technical Assistance.

Inspect for the following conditions:

- Metal transfer to the crank post. Replace the crankshaft if metal has been transferred to it or it is damaged.

- Metal transfer or damage to the timing chain sprocket face. Replace the sprocket if either condition is present.

- Verify that the bolt does not bottom out in the crank post.

Install the new washer onto the crankshaft and push into place by hand.

Install the new balancer paying attention to line up the scribe mark.

Use the J 41665 in order to install the balancer.

Assemble the threaded rod, nut, washer and installer. Insert the smaller end of the installer into the front of the balancer.

Use a wrench and hold the hex end of the threaded rod.

Use a second wrench and rotate the installation tool nut clockwise until the balancer is started onto the crankshaft.

Remove the tool and reverse the installation tool. Position the larger end of the installer against the front of the balancer.

Use a wrench and hold the hex end of the threaded rod.

Use a second wrench and rotate the installation tool nut clockwise until the balancer is installed onto the crankshaft.

Remove the balancer installation tool.

Notice: Failure to apply proper torque to the old balancer bolt may result in the balancer not being fully seated. This could lead to failure of this joint in the future.

Install the old balancer bolt and tighten.

Tighten

Tighten the old balancer bolt to 330N·m(240 ft. lb).

Important: The nose of the crankshaft should be recessed 2.4-4.48 mm (0.094-0.176 in)

into the balancer bore.

Remove the old bolt and measure the hub to crankshaft distance.

Coat the three to five threads of the new bolt with thread locker (LOCKTITE™ 272) P/N 12345493 before installation.

Notice: Be sure to follow the torque procedure for installing the new crankshaft bolt. Use of impact tools, or not using torque and angle method will result in joint failure.

Install and tighten the new crankshaft bolt.

- Tighten the crankshaft balancer bolt a first pass.

Tighten

Tighten the crankshaft balancer bolt a first pass to 50N·m (37 lb ft).

Put a paint stripe on the bolt running from the 12 o'clock to the 6 o'clock position in order to verify the correct torque requested in the next step.

- Important: When tightening for the second pass, a minimum torque of 320 N·m (236 lb ft) should be observed. If this torque is not achieved, the bolt should be replaced.

Tighten the crankshaft balancer bolt a second pass.

Tighten

Tighten the crankshaft balancer bolt a second pass to 140 degrees using the J 45059.

Important: Recheck the position of the previously painted stripe to assure 140 degree rotation. Achieving the correct torque angle is critical to the success of this repair. Over-torquing or under-torquing the joint will result in an unsatisfactory repair.

Remove the J 42386-A Flywheel Holding Tool.

Install the starter and bolts. Tighten the starter bolts.

Tighten

Tighten the starter bolts to 50 N·m (37 lb ft).

Important: Orient the purple lead wire to the 10 o'clock position when installing.

Connect the starter wiring.

Install the starter motor S terminal washer and purple lead wire (1).

Install the S terminal nut (2) and tighten.

Tighten

Tighten the S terminal nut to 4 N·m (35 lb in).

Important: Orient the gray and rust harness leads to the 6 o'clock and 7 o'clock position.

Install the gray and rust harness leads to the solenoid.

Raise and align the cradle.

Install and tighten the cradle nuts.

Tighten

Tighten the nuts, using hand tools only, to 110 N·m(81 lb ft).

Install and tighten the engine mount nuts.

Tighten

Tighten the nuts to 65 N·m(48 lb ft).

Install the A/C belt.

Install the cooler line bolts.

Install the fan shroud assembly and bolts.

Tighten

Tighten the bolts to 5 N·m(44 lb in).

Position the stabilizer shaft and install insulator clamps and bolts.

Tighten

Tighten the stabilizer shaft insulator clamp bolts to 58N·m (43 lb ft).

Install the tie rod to the steering knuckle.

Install the outer tie rod end stud nut to the outer tie rod end stud and tighten .

Tighten

Tighten the outer tie rod end stud nut to 20 N·m(15 lb ft) to seat the stud.

Turn the nut an additional 160 degrees.

Check for the outer tie rod end stud nut for a minimum final torque of 45 N·m(33 lb ft).

Install the lower ball joint to the steering knuckle.

Tighten the lower control arm ball joint stud nut.

Tighten

Tighten the nut to 20 N·m (15 lb ft) to seat the ball joint stud.

Turn the ball joint stud nut an additional 210 degrees.

Check the ball joint stud nut for a minimum final torque of 55 N·m (41 lb ft).

Install the shock bolts and tighten.

Tighten

Tighten the shock absorber lower mounting nuts to 28 N·m (21 lb ft).

Repeat tie rod, lower ball joint and shock for the other side.

Install the tires and lug nuts.

Important: Tighten the nuts evenly and alternately in order to avoid excessive run out of the tire and wheel assembly.

Using the J 39544-KIT , tighten the wheel nuts in the appropriate sequence shown.

Tighten

Tighten the nuts in sequence to 140 N·m(100 lb ft).

Remove the support jack.

Remove the Leaf Spring Compressor (J 33432-A).

Lower the vehicle.

Remove the engine support fixture.

Remove the engine support links.

Install the upper radiator support and tighten the bolts.

Tighten

Tighten the bolts to 9 N·m (80 lb in).

Install the coolant and EVAP lines to the fan shroud.

Install the engine cover and oil fill cap.

Install the intermediate shaft.

LOCTITE™ the steering intermediate shaft bolts and install.

Tighten

Tighten the lower coupling retaining bolt to 34 N·m (25 lb ft).

Install the generator and tighten the bolts.

Tighten

Tighten the generator bolts to 50 N·m(37 lb ft).

Connect the generator wiring.

Tighten

Tighten the battery feed cable nut to 13 N·m(10 lb ft).

Install the new accessory belt.

Install the air duct and box.

Connect the battery cable to the battery.

Perform a crankshaft variation relearn procedure.

Parts Information

Order a washer from the WPC using the form at the end of this bulletin. Fax the request form to the WPC at 248-371-0192, or E-mail to warrantypartscenterusa@gm.com .

All other parts should be ordered from GMSPO. Use the normal ordering process for all orders.

Warranty Parts Center Parts WPC Part Number
Description
Qty

305
Washer, Crankshaft Balancer
1

GMSPO Parts Part Number
Description
Qty

12557840
Bolt, Crankshaft Harmonic Balancer
1

12583637
Balancer, Crankshaft Harmonic
1

12579229
Belt, Water Pump, Power Steering and Generator
1 as req'd

12579228
Belt, Air Conditioning Compressor
1 as req'd

Parts are currently available from GMSPO.

Warranty Information
For vehicles repaired under warranty, use:

Labor Operation
Description
Labor Time

J0710
Pulley, Crankshaft Balancer - Replace
2.3 hrs