Bulletin No.: PIC5428G

Date: Jun-2016

Service Bulletin

PRELIMINARY INFORMATION

Subject: EBCM Wheel Speed Sensor Diagnostic Aid for ABS Message -Click Or Ratchet Noise- Service Traction Message - Service Stabilitrak Message - Service Steering Message

Models:

2008-2017 Buick Enclave
2010-2016 Buick LaCrosse
2011-2017 Buick Regal
2012-2017 Buick Verano (2014 MY: front driven wheel bearings only)
2013-2014 Cadillac ATS – AWD / RWD (driven wheel bearings only)
2014 Cadillac CTS (VIN A incl. V-Sport)
2008-2014 Cadillac CTS/CTS-V
2010-2014 Cadillac CTS Wagon
2010-2016 Cadillac SRX (driven wheel bearings only)
2013-2017 Cadillac XTS
2010-2015 Chevrolet Camaro
2011-2015 Chevrolet Camaro Convertible
2009-2012 Chevrolet Colorado
2011-2015 Chevrolet Cruze
2011- 2017 Chevrolet Volt (2014 MY: front driven wheel bearings only)
2010-2017 Chevrolet Equinox
2014-2017 Chevrolet Impala (New Body Style)
2013-2015 Chevrolet Malibu
2016 Chevrolet Malibu Limited
2009-2017 Chevrolet Traverse
2009-2012 GMC Canyon
2007-2016 GMC Acadia
2017 GMC Acadia Limited
2010-2017 GMC Terrain
2007-2010 Saturn Outlook
with any of the following DTCs or Symptom codes C0035 C0040 C0045 C0050 with symptom bytes 18 5A 0F

This PI was superseded to update model list and model years. Please discard PIC5428F.

The following diagnosis might be helpful if the vehicle exhibits the symptom(s) described in this PI.

Condition/Concern

Some customers may comment on any of the following conditions.

- The ABS, Service Traction Control System, and/or Service Stabilitrak telltale lights are on.During initial scan for EBCM module diagnostic codes you may find one or more of the following DTC's C0035-C0050 with specifically symptom bytes 18, 5A, 0F.

  Note:

  For vehicles equipped with Electric Power Steering RPO NJ2 only - Operator may also notice a Service Steering Message displaying in the Driver Information Center (DIC) and will experience heavier steering feel at low speed or static steering maneuvers when this happens.

  his will be accompanied with the Power Steering Control Module setting DTC U0415. This is a normal default action with the loss of a Wheel Speed Sensor signal. If DTC U0415 remains after removal of the Wheel Speed Sensor debris refer to published diagnostics.

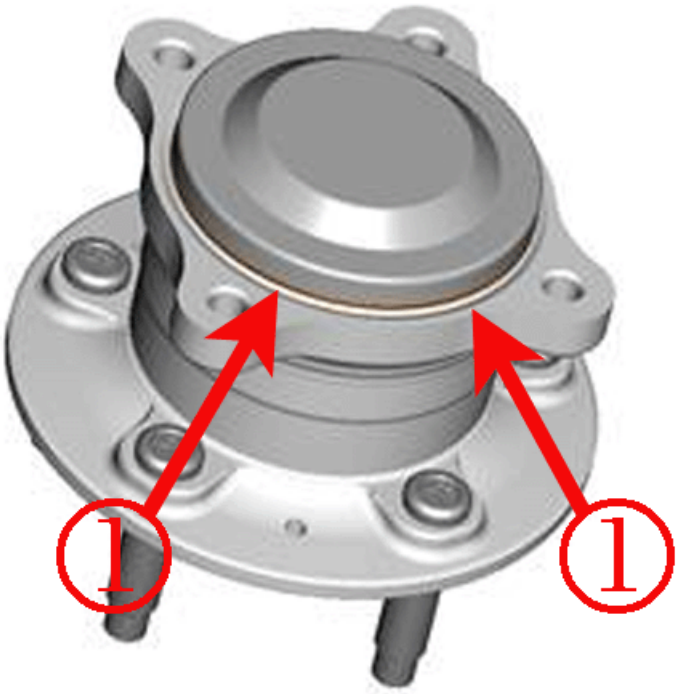
- A brief and intermittent noise, click, ratchet, grind, or ABS pump motor noises typically heard from the inside of the vehicle at parking lot speeds.

A flashing Traction Control or Stabilitrak telltale at low speeds.

The latter two conditions correspond with no reported EBCM / ABS / Stability DTCs set current or history.

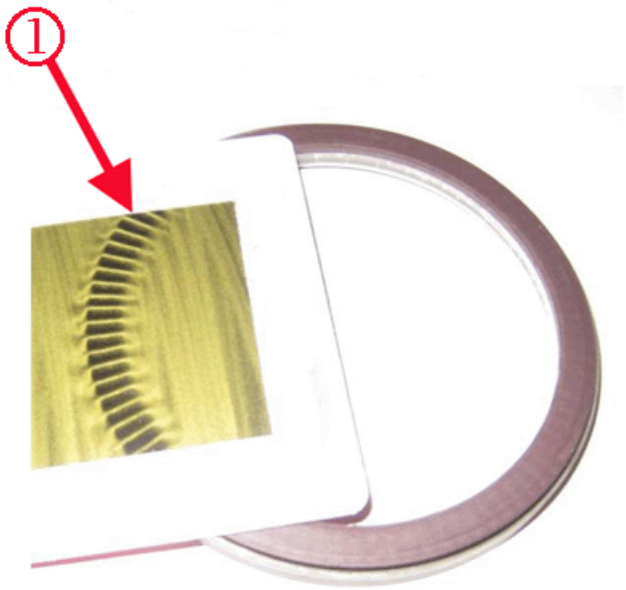
These conditions may be caused by single or multiple pieces of ferrous metallic debris stuck to the wheel speed sensor magnetic encoder ring. This magnetic encoder ring is now part of the inboard bearing hub assembly.

Note: THIS INFORMATION IS NOT APPLICABLE TO CAPPED WHEEL BEARINGS.



(1.) Capped Wheel Bearing

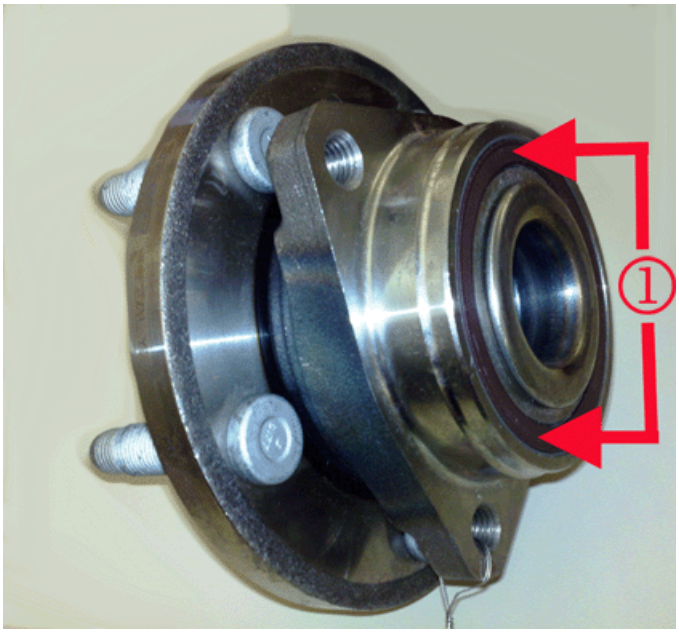
Background Information:



(1.) Wheel Speed Sensor

Magnetic Encoder Ring - North and South Poles are shown

New Bearing Design.



(1.) Magnetic Encoder Ring

Some new model vehicles today have begun to use a different type of wheel speed sensor encoder ring or tone wheel. Instead of a traditional mechanical type tooth tone wheel, the wheel speed sensor tone wheel is now made of a magnetized nitrile rubber ring, typically brown in color. This magnetic encoder consists of multiple North and South pole pairs surrounding the outer circumference. When this magnetic encoder ring rotates and passes by the wheel speed sensor head; it generates a sign wave in the wheel speed sensor. The wheel speed sensor converts an analog signal to a digital square wave, and typical digital signal values switch between 7mA (Low) and 14mA (High) DC current.

Recommendation/Instructions

Inspect and clean debris from the Encoder Ring.

Inspection and Cleaning Procedure:

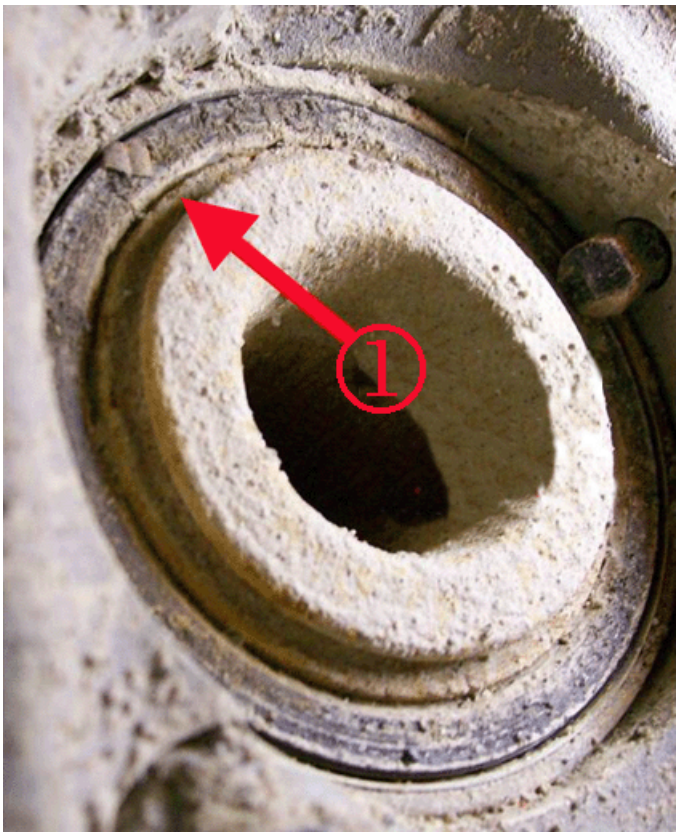
Below inspection and cleaning procedure is supporting information to the SI wheel speed sensor diagnostic mechanical fault table. In most cases the DTCs C0035-C0050 with symptom bytes 18, 5A, 0F can be repaired by removing and/or cleaning any accumulated debris on the magnetic encoder ring; which is located on the inboard side of the bearing hub.

Important: Most repairs can be performed without any replacement of the bearing hub assembly or wheel speed sensor.

Caution: Take care not to damage the bearing outer seal when brushing and/or cleaning the magnetic encoder debris.

Do not use any type of magnetic tool to remove the debris from the bearing magnetic encoder; an external magnet can damage the encoder.

BEFORE CLEANING



(1.) Sample Debris

1. Based on the specific EBCM module Wheel Speed Sensor DTC code; inspect the appropriate corner magnetic encoder ring for possible debris.
   - C0035 Left Front Corner
   - C0040 Right Front Corner
   - C0045 Left Rear Corner
   - C0050 Right Rear Corner
2. If debris is found, perform the following cleaning recommendations.

   Important: To properly clean the magnetic encoder ring, some applications may require removal of the bearing/hub assembly. Refer to the specific Wheel Bearing and Hub Replacement procedure in SI.

2.1. Gently using a dry nylon soft bristle brush, remove the foreign debris off the magnetic encoder ring. If debris was removed, proceed to step 3.

2.2. If debris still remains, wash the encoder ring using a mild soap detergent and wipe dry.

AFTER CLEANING

1. Connect a scan tool to the vehicle. Turn ON the ignition. Clear the DTCs.
2. Perform vehicle diagnostic repair verification procedure for DTC: C0035-C0050. Refer to SI.

Warranty Information

For vehicles repaired under warranty use:

Labor Operation	Description	Vehicle(s) Involved	Labor Time
* 2480068	Inspect and Clean Debris From Front Wheel Speed Sensor Encoder Ring (One Side)	Camaro, CTS VIN D (RWD), Colorado (RWD), Canyon (RWD)	0.4 hr
		SRX, Volt	0.7 hr
		ATS (AWD), CTS VIN A/D (AWD), Acadia, Enclave, Outlook, Traverse, Equinox, Terrain, Cruze, Verano	1.0 hrs
		LaCrosse, Regal	0.9 hr
		Malibu	0.8 hr
		Impala, XTS	1.6 hr
		Colorado (4WD), Canyon (4WD)	1.9 hr
* 2480078	Inspect and Clean Debris From Rear Wheel Speed Sensor Encoder Ring (One Side)	Acadia (FWD), Enclave (FWD), Outlook (FWD), Traverse (FWD), SRX (FWD), LaCrosse (FWD), Regal (FWD), Equinox (FWD), Terrain (FWD), Malibu, Impala, XTS (FWD)	0.4 hr
		Camaro, CTS VIN D, Equinox (AWD), Terrain (AWD)	0.9 hr
		SRX (AWD), ATS, CTS VIN A	1.1 hrs
		LaCrosse (AWD), Regal (AWD)	2.1 hrs
		Acadia (AWD), Enclave (AWD), Outlook (AWD), Traverse (AWD)	1.0 hrs

		Volt	0.8 hr
		Cruze, Verano	0.6 hr
		XTS (AWD)	1.4 hr
*This is a unique labor operation number for PI use only. This will not be published in the Labor Time Guide.			

Please follow this diagnostic or repair process thoroughly and complete each step. If the condition exhibited is resolved without completing every step, the remaining steps do not need to be performed.

GM bulletins are intended for use by professional technicians, NOT a "do-it-yourselfer". They are written to inform these technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do a job properly and safely. If a condition is described, DO NOT assume that the bulletin applies to your vehicle, or that your vehicle will have that condition. See your GM dealer for information on whether your vehicle may benefit from the information.

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