
#05068C: Product Safety - Front Wheel Speed Sensor Corrosion - (Mar 6, 2008)

Subject: 05068C -- FRONT WHEEL SPEED SENSOR CORROSION
Models: 1999-2002 CHEVROLET SILVERADO
2000-2002 CHEVROLET TAHOE, SUBURBAN
2002 CHEVROLET AVALANCHE
1999-2002 GMC SIERRA
2000-2002 GMC YUKON, YUKON XL
LOCATED IN THE SEVERE CORROSION AREAS LISTED
BELOW

Some breakpoints in this bulletin have been revised. Additional vehicles that have moved into the severe corrosion areas have been added. Please discard all copies of bulletin 05068B, issued April 2006.

Condition

General Motors has decided that a defect, which relates to motor vehicle safety, exists in *certain* 1999-2002 Chevrolet Silverado, 2000-2002 Chevrolet Tahoe, Suburban, 2002 Chevrolet Avalanche, 1999-2002 GMC Sierra, 2000-2002 GMC Yukon, Yukon XL vehicles located in the areas listed below. These vehicles may have a condition permitting corrosion to occur between the front hub/bearing assembly and the wheel speed sensor. If the brakes are applied while the vehicle is traveling at a speed of greater than 6 km/h (3.7 mph) but less than 16 km/h (10 mph), the corrosion may cause an unwanted anti-lock brake system (ABS) activation. If this condition occurred where stopping distance is limited, a crash could occur.

- Connecticut

- Delaware

- District of Columbia

- Illinois

- Indiana

- Iowa

- Maine

- Maryland
- Massachusetts
- Michigan
- Minnesota
- Missouri
- New Hampshire
- New Jersey
- New York
- Ohio
- Pennsylvania
- Rhode Island
- Vermont
- West Virginia
- Wisconsin

Correction

Dealers are to inspect, clean, and treat the affected area. In some cases, the front wheel speed sensor may require replacement.

Vehicles Involved

Involved are *certain* 1999-2002 Chevrolet Silverado, 2000-2002 Chevrolet Tahoe, Suburban, 2002 Chevrolet Avalanche, 1999-2002 GMC Sierra, and 2000-2002 GMC Yukon, Yukon XL vehicles located in severe corrosion areas and built within these VIN breakpoints:

| Year | Division | Model | From | Through |
|-------------|-----------------|--------------|-------------|----------------|
| 2002 | Chevrolet | Avalanche | 2G100011 | 2G363853 |
| 1999 | Chevrolet | Silverado | X1100007 | X1299263 |

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|------|-----------|-----------|----------|----------|
| | | | | |
| 1999 | Chevrolet | Silverado | XE100013 | XE256726 |
| 1999 | Chevrolet | Silverado | XZ100014 | XZ214615 |
| 2000 | Chevrolet | Silverado | Y1100007 | Y1409278 |
| 2000 | Chevrolet | Silverado | YE100004 | YE433948 |
| 2000 | Chevrolet | Silverado | YZ100007 | YZ371929 |
| 2001 | Chevrolet | Silverado | 11100003 | 11408135 |
| 2001 | Chevrolet | Silverado | 1E100046 | 1E346619 |
| 2001 | Chevrolet | Silverado | 1F106154 | 1F213776 |
| 2001 | Chevrolet | Silverado | 1Z100004 | 1Z335173 |
| 2002 | Chevrolet | Silverado | 21100010 | 21430583 |
| 2002 | Chevrolet | Silverado | 2E100039 | 2E306055 |
| 2002 | Chevrolet | Silverado | 2F100022 | 2F249730 |
| 2002 | Chevrolet | Silverado | 2Z100022 | 2Z348507 |
| 2000 | Chevrolet | Suburban | YG10006 | YG229688 |
| 2000 | Chevrolet | Suburban | YJ100096 | YJ209572 |
| 2001 | Chevrolet | Suburban | 1G100028 | 1G289556 |
| 2001 | Chevrolet | Suburban | 1J100018 | 1J318221 |
| 2002 | Chevrolet | Suburban | 2G100306 | 2G363792 |
| 2002 | Chevrolet | Suburban | 2J100007 | 2J343575 |

| | | | | |
|------|-----------|----------|----------|----------|
| 2002 | Chevrolet | Suburban | 2R199712 | 2R327763 |
| 2000 | Chevrolet | Tahoe | YJ100003 | YJ211862 |
| 2001 | Chevrolet | Tahoe | 1J100047 | 1J318217 |
| 2001 | Chevrolet | Tahoe | 1R100005 | 1R228102 |
| 2002 | Chevrolet | Tahoe | 2J100043 | 2J344546 |
| 2002 | Chevrolet | Tahoe | 2R109204 | 2R330531 |
| 1999 | GMC | Sierra | X1500002 | X1571274 |
| 1999 | GMC | Sierra | XE500010 | XE851658 |
| 1999 | GMC | Sierra | XZ500014 | XZ540991 |
| 2000 | GMC | Sierra | Y1100005 | Y1409250 |
| 2000 | GMC | Sierra | YE100026 | YE901599 |
| 2000 | GMC | Sierra | YZ100024 | YZ370502 |
| 2001 | GMC | Sierra | 11100009 | 11408106 |
| 2001 | GMC | Sierra | 1E100007 | 1E901430 |
| 2001 | GMC | Sierra | 1F106149 | 1F213708 |
| 2001 | GMC | Sierra | 1Z100045 | 1Z335202 |
| 2002 | GMC | Sierra | 21100003 | 21430563 |
| 2002 | GMC | Sierra | 2E100007 | 2E306397 |
| 2002 | GMC | Sierra | 2F100008 | 2F247747 |
| 2002 | GMC | Sierra | 2Z100013 | 2Z900932 |

| | | | | |
|------|-----|----------|----------|----------|
| 2000 | GMC | Yukon | YJ100002 | YJ211863 |
| 2001 | GMC | Yukon | 1J100012 | 1J314635 |
| 2001 | GMC | Yukon | 1R100092 | 1R228070 |
| 2002 | GMC | Yukon | 2J100012 | 2J344554 |
| 2002 | GMC | Yukon | 2R113694 | 2R330419 |
| 2000 | GMC | Yukon XL | YG100014 | YG229685 |
| 2000 | GMC | Yukon XL | YJ100172 | YJ211810 |
| 2001 | GMC | Yukon XL | 1G100018 | 1G289600 |
| 2001 | GMC | Yukon XL | 1J100013 | 1J318175 |
| 2002 | GMC | Yukon XL | 2G100132 | 2G363800 |
| 2002 | GMC | Yukon XL | 2J100058 | 2J343335 |
| 2002 | GMC | Yukon XL | 2R225724 | 2R319698 |

Important: Dealers retailers should confirm vehicle eligibility through *GMVIS* (GM Vehicle Inquiry System) prior to beginning recall repairs. [Not all vehicles within the above breakpoints may be involved.]

For dealers with involved vehicles, a Campaign Initiation Detail Report (CIDR) containing the complete vehicle identification number, customer name and address data has been prepared and will be loaded to the GM DealerWorld (US) Recall Information. Dealers will not have a report available if they have no involved vehicles currently assigned.

The Campaign Initiation Detail Report may contain customer names and addresses obtained from Motor Vehicle Registration Records. The use of such motor vehicle registration data for any purpose other than follow-up necessary to complete this recall is a violation of law in several states/provinces/countries. Accordingly, you are urged to limit the use of this report to the follow-up necessary to complete this recall.

Parts Information

Parts required to complete this recall are to be obtained from General Motors Service Parts Operations (GMSPO). Please refer to your "involved vehicles listing" before ordering parts. Normal orders should be placed on a DRO = Daily Replenishment Order. In an emergency situation, parts should be ordered on a CSO = Customer Special Order.

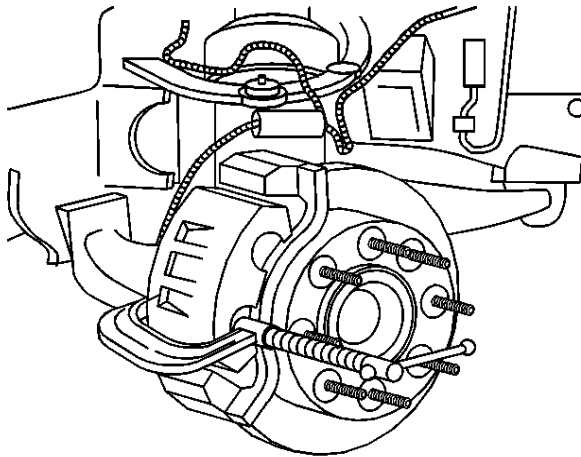
Note: Very few vehicles will require front wheel speed sensor replacement; if required, order appropriate part from GMSPO.

| Part Number | Description | Qty |
|-------------|---|-----|
| 89022217 | Lubricant, Rust Penetrating (will service 50+ vehicles) | 1 |
| 01051344 | Lubricant, Wheel Bearing (will service 25+ vehicles) | 1 |

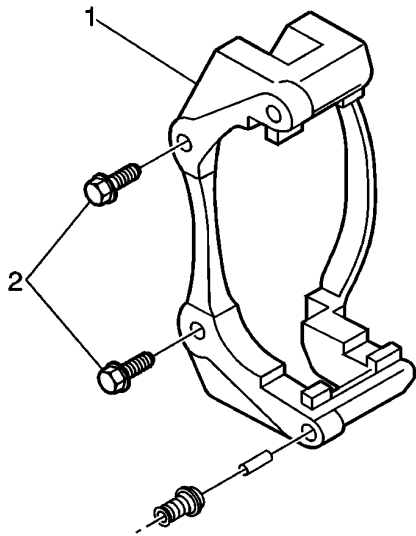
Service Procedure

The following procedure provides instructions for repairing a corrosion condition where the front wheel speed sensor mounts on the front wheel bearing assembly.

1. Raise the vehicle on a suitable hoist and support as necessary.
2. Remove both front tires and wheels.



3. Compress the front brake caliper pistons.
 - 3.1. Install a large C-clamp over the top of the caliper housing and against the back of the outboard pad.
 - 3.2. Slowly tighten the C-clamp until the pistons are pushed completely into the caliper bores.
 - 3.3. Remove the C-clamp from the caliper.

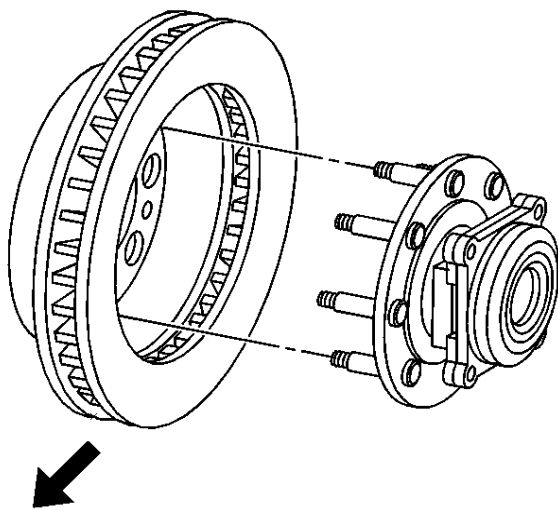


Important: It is not necessary to remove the front brake caliper from the bracket when removing the bracket in the next step.

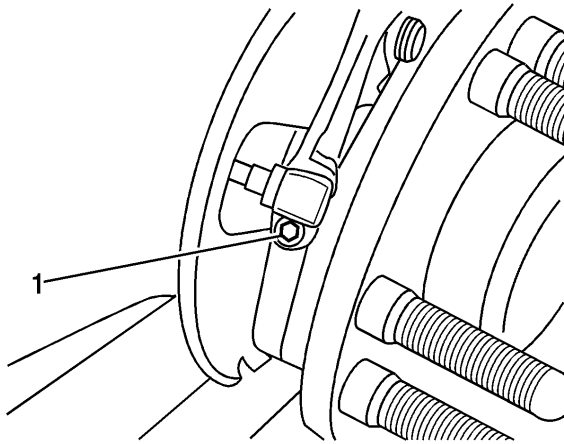
4. Remove the two bolts that attach the front brake caliper mounting brackets to the knuckle.

Notice: Support the brake caliper with heavy mechanic's wire, or equivalent, whenever it is separated from its mount, and the hydraulic flexible brake hose is still connected. Failure to support the caliper in this manner will cause the flexible brake hose to bear the weight of the caliper, which may cause damage to the brake hose and in turn may cause a brake fluid leak.

5. Remove the brake caliper and bracket as an assembly and support it with heavy mechanic's wire or equivalent. *DO NOT* disconnect the hydraulic brake flexible hose from the caliper.
6. Mark the relationship of the rotor to the bearing hub.
7. If equipped, remove the rotor retaining push nuts from the wheel studs



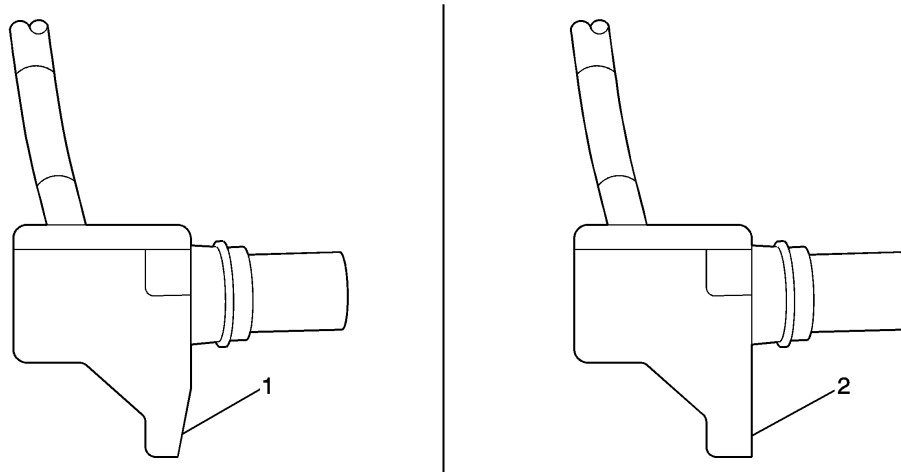
8. Remove the rotor.



9. Remove the bolt (1) that attaches the wheel speed sensor to the bearing hub.

Notice: Carefully remove the sensor by pulling it straight out of the bore. DO NOT use a screwdriver or other device to try to pry the sensor out of the bore. Prying will cause the sensor body to break off in the bore.

10. Remove the wheel speed sensor from the bearing hub assembly.

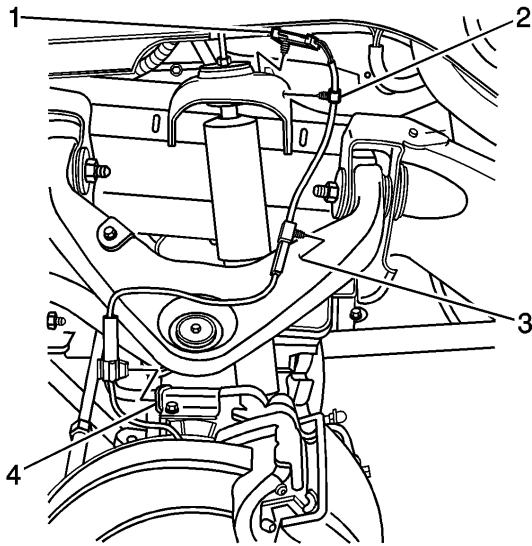


Important: The mounting surface on the sensor must be flat in the next step in order to be mounted correctly on the bearing hub assembly. If the mounting surface on the sensor is warped or bent, the sensor must be replaced.

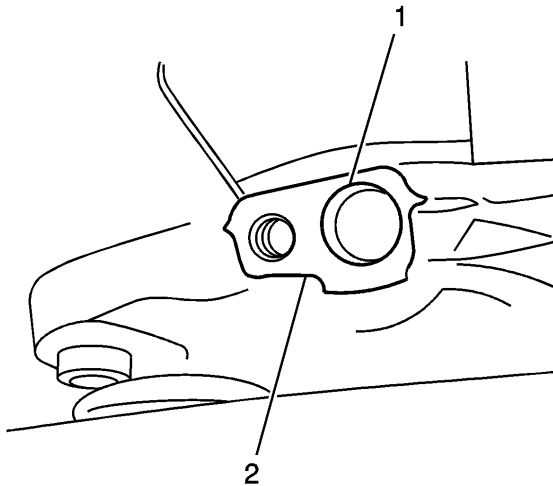
11. Inspect to see if the mounting surface on the sensor is flat. Check the mounting surface on the sensor head for flatness by placing it on the edge of a metal machinist's scale or other suitable straight edge to measure the flatness. Check the sensor for flatness in multiple positions/directions (minimum 3).

- If the sensor mounting surface is NOT flat (1), the sensor must be replaced. Proceed to the next step and replace the sensor.
- If the sensor mounting surface IS flat (2), the sensor IS to be reused. Proceed to Step

16.



12. Remove the wheel speed harness mounting clips from the knuckle (4) upper control arm (3) and frame (2).
13. Disconnect the wheel speed harness electrical connector (1) from the vehicle wiring harness.
14. Connect the new wheel speed sensor harness electrical connector to the vehicle wiring harness.
15. Attach the wheel speed sensor harness to the frame, upper control arm, and the knuckle.



16. Temporarily plug the wheel speed sensor hole (1) in the bearing hub to prevent debris from entering it when you clean it.

Important: All rust and corrosion must be removed from the wheel speed sensor mounting surfaces on the bearing hub in the next step.

17. Using a wire brush, sandpaper, emery cloth, scotch brite, or equivalent, thoroughly clean the wheel speed sensor mounting surface (2) on the bearing hub to remove any rust or corrosion.

18. Using compressed air, remove all debris from the bearing hub surface.
19. Using a clean shop towel, clean the sensor and the O-ring.

Important: While the corrosion inhibitor is drying in the next step, begin performing Steps 3-20 on the opposite side front wheel speed sensor.

20. Apply (spray) two thin coats of the specified rust penetrating lubricant (corrosion inhibitor) listed in this bulletin, to the complete sensor mounting surface on the bearing hub. Allow to dry for 3-5 minutes between coats.
21. When the corrosion inhibitor is dry to the touch (about 10 minutes), apply a light coating of the specified grease to the complete sensor mounting surface on the bearing hub and to the sensor and O-ring.
22. Remove the temporary plug from the hole in the bearing hub.
23. Install the wheel speed sensor in the bearing hub and install the bolt. Ensure that the sensor is seated flat against the hub.

Tighten

Tighten the wheel speed sensor mounting bolt to 18 N·m(13 lb ft).

24. Disconnect the front wheel speed sensor connector and place a digital volt meter (DVM) across the terminals of the wheel speed sensor connector. Rotate the bearing at approximately one revolution per second. The minimum reading should be at least 350 ACmV's. If the reading is less than 350 ACmV's, the wheel speed sensor must be replaced. Follow Steps 12-15 for instructions on replacing the wheel speed sensor. This step must be repeated after the new sensor has been installed.

Notice: Whenever the brake rotor has been separated from the wheel bearing flange, clean any rust or foreign material from the mating surface of the rotor and flange. Failure to do this may result in increased lateral runout of the rotor and brake.

Important: If the rotor was removed using the jack screw method, you must ensure that the hub flange is free of nicks or marks caused by this procedure. Remove all raised nicks or marks before installing the rotor.

25. Align the rotor to its original position on the hub and install the rotor.
26. Install the caliper and caliper mounting bracket assembly.
27. Perform the following procedure before installing the brake caliper bracket mounting bolts.
 - 27.1. Remove all traces of the original adhesive patch.
 - 27.2. Clean the threads of the bolt with brake parts cleaner, or the equivalent, and allow to dry.
 - 27.3. Apply threadlocker to the threads of the bolts.
28. Install the caliper bracket mounting bolts. Tighten the brake caliper mounting bracket mounting bolts to the specification listed below.

Tighten

- 1500 Series vehicles - 175 N·m(129 lb ft)
- 2500 Series vehicles - 300 N·m(221 lb ft)

29. Install the front tire and wheel assembly.

Tighten

Tighten the wheel nuts to 190 N·m(140 lb ft).

30. Complete Steps 21-30 on the opposite side front wheel speed sensor.

31. Lower the vehicle.
32. With the engine OFF, gradually apply the brake pedal to approximately 2/3 of its travel distance.
33. Slowly release the brake pedal.
34. Wait 15 seconds and repeat Steps 32-33 until a firm pedal is obtained. This will properly seat the brake caliper pistons and brake pads.

Reason For This Recall

General Motors has decided that a defect, which relates to motor vehicle safety, exists in certain 1999-2002 Chevrolet Silverado, 2000-2002 Chevrolet Tahoe, Suburban, 2002 Chevrolet Avalanche, 1999-2002 GMC Sierra, and 2000-2002 GMC Yukon, Yukon XL vehicles located in severe corrosion areas. These vehicles may have a condition permitting corrosion to occur between the front hub/bearing assembly and the wheel speed sensor. If the brakes are applied while the vehicle is traveling at a speed of greater than 3 mph but less than 10 mph, the corrosion may cause an unwanted anti-lock brake system (ABS) activation. If this condition occurred where stopping distance is limited, a crash could occur.

Recall Information Online

More information about this recall, including answers to frequently asked questions, can be found at the Owner Center at My GMLink. This free online service offers vehicle and ownership related information along with tools tailored to your specific vehicle. To join, visit www.gm.com/recall and enter your vehicle's 17-character vehicle identification number (VIN), shown on the enclosed customer reply form.