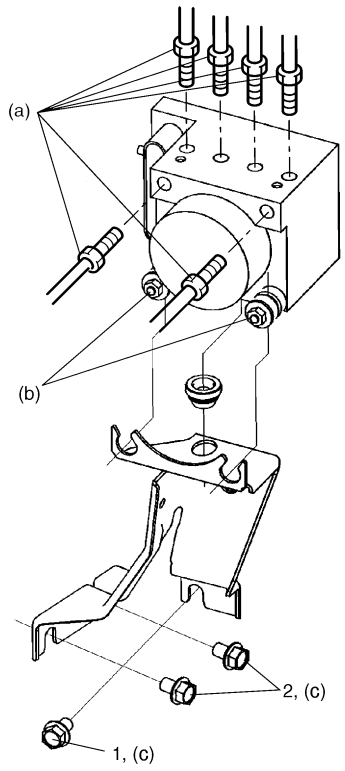
Installation

1) Install hydraulic unit / control module assembly by reversing removal procedure noting the following. Install ABS hydraulic unit / control module assembly bracket bolt as follows.
   a) Tighten bracket bolt (1) and (2) by hand.
   b) Then tighten bracket bolt to specified torque. Tightening order (1) → (2)

Tightening torque
Brake pipe flare nut (a): 16 N·m (1.6 kgf-m, 11.5 lb-ft)
ABS hydraulic unit / control module assembly bolt (b): 9 N·m (0.9 kgf-m, 6.5 lb-ft)
ABS hydraulic unit / control module assembly bracket bolt (c): 26 N·m (2.6 kgf-m, 19.0 lb-ft)



I6RW0C450011-01

2) Bleed air from brake system referring to “Air Bleeding of Brake System in Section 4A”.
3) Check each installed part for fluid leakage and perform “ABS Hydraulic Unit Operation Check”.

NOTE

For new ABS hydraulic unit / control module assembly, if “ABS Hydraulic Unit Operation Check” has not been performed, ABS warning light may flash when ignition switch is turned ON position.
Accordingly preform “ABS Hydraulic Unit Operation Check” to stop flashing of ABS warning light.

Front and Rear Wheel Speed Sensor On-Vehicle Inspection

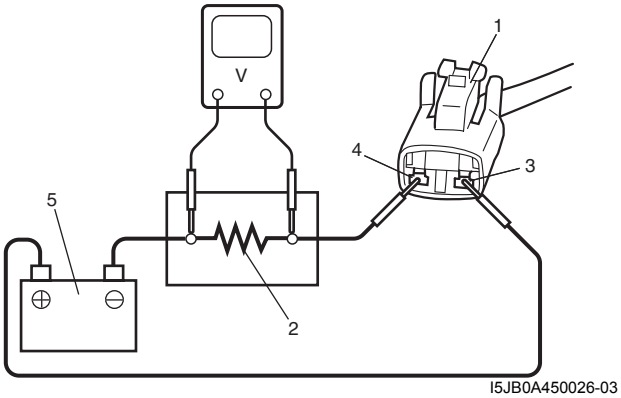
S6RW0C4506005

Output Voltage Inspection

1) Disconnect negative (–) cable from battery.
2) Hoist vehicle a little.
3) Disconnect wheel speed sensor connector.
4) Set up measuring device as shown in figure, the resistance to 115 Ω and the power supply voltage to 12 V.

⚠ CAUTION

Incorrect voltage and/or wrong connection cause damage to wheel speed sensor.



I5JB0A450026-03

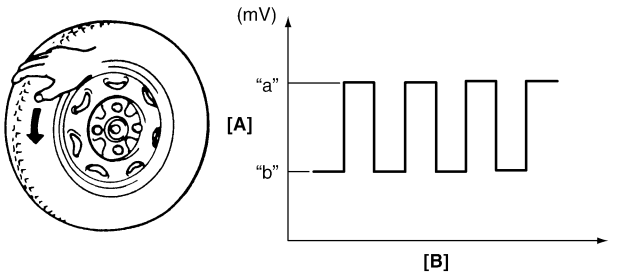
1. Wheel speed sensor connector	4. “BLK” wire terminal
2. Resistance (115Ω)	5. Power supply (12 V)
3. “WHT” wire terminal	

5) Measure voltage at resistance without wheel rotation.If voltage is out of specification, check sensor, mating encoder and their installation conditions.

Voltage at the resistance (115 Ω) without wheel rotation
680 – 960 mV

6) Measure voltage at resistance with wheel rotation and confirm voltage alternately changes between high and low voltages.If voltage does not change with wheel rotation, check sensor, mating encoder and their installation conditions.

Voltage at the resistance (115Ω) with wheel rotation
High voltage "a": 1360 – 1930 mV
Low voltage "b": 680 – 960 mV

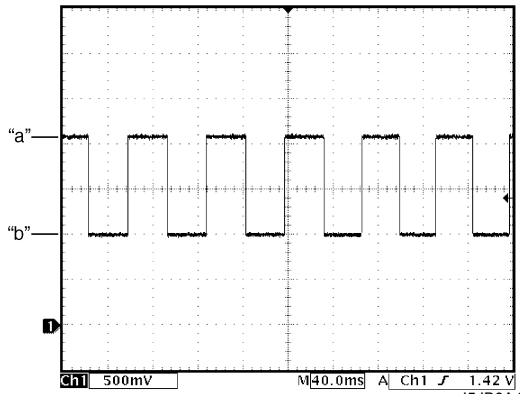


I5JB0A450027-01

[A]: Voltage	[B]: Time

Reference
When using oscilloscope for this check, check if peak-to-peak voltage and waveform meet specification.

Peak-to-peak voltage at the resistance (115 Ω) with wheel rotation
High voltage "a": 1360 to 1930 mV
Low voltage "b": 680 to 960 mV



I5JB0A450028-02

Front Wheel Speed Sensor Removal and Installation

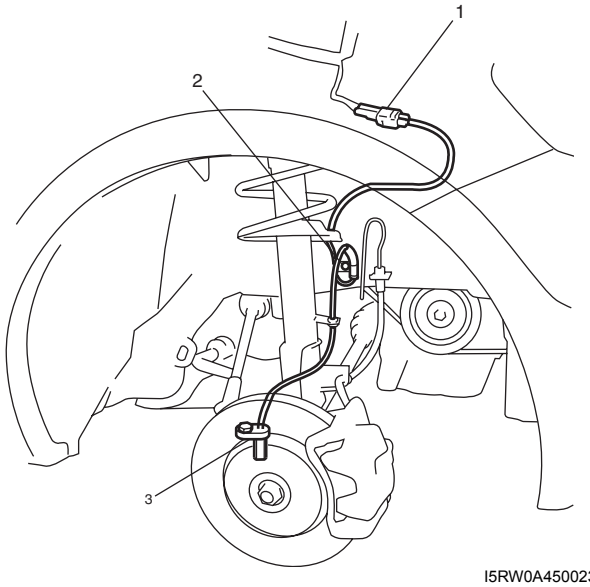
S6RW0C4506006

⚠ CAUTION

- **Do not pull wire harness when removing and installing front wheel speed sensor.**
- **Do not cause damage to surface of front wheel speed sensor and do not allow dust, etc. to enter its installation hole.**

Removal

1) Disconnect negative (–) cable from battery.
2) Disconnect front wheel speed sensor connector (1).
3) Hoist vehicle and remove wheel.
4) Remove harness clamp, clamp bolt (2).
5) Remove front wheel speed sensor (3) from knuckle.



I5RW0A450023-01

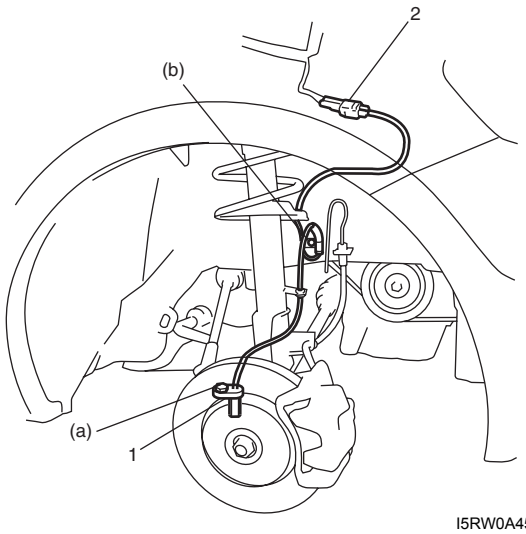
Installation

1) Check that no foreign material is attached to sensor (1) and wheel speed sensor encoder (included in wheel hub assembly).
2) Install it by reversing removal procedure.

NOTE

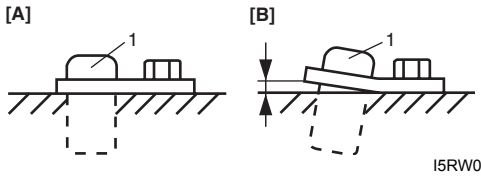
Before fitting wheel speed sensor, be sure to silicon grease to its O-ring.

Tightening torque
Front wheel speed sensor bolt (a): 11 N·m (1.1 kgf-m, 8.0 lb-ft)
Front wheel speed sensor harness clamp bolt (b): 11 N·m (1.1 kgf-m, 8.0 lb-ft)



I5RW0A450025-01

3) Check that there is no clearance between sensor and knuckle.



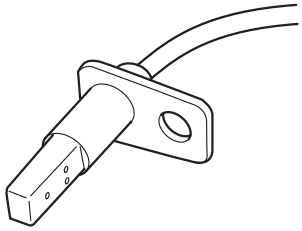
I5RW0A450024-01

[A]: OK	[B]: NG

Front and Rear Wheel Speed Sensor Inspection

S6RW0C4506007

Check sensor for damage.
If any malcondition is found, replace.



I5JB0A450031-01

Rear Wheel Speed Sensor Removal and Installation (4WD Model)

S6RW0C4506008

⚠ CAUTION

Rear wheel speed sensor is included in rear wheel hub assembly. If rear wheel speed sensor needs to be replaced, replace it as a rear wheel hub assembly.

For removal and Installation of rear wheel speed sensor (included in rear wheel hub), refer to “Rear Wheel Hub Assembly Removal and Installation in Section 2C”.

Rear Wheel Speed Sensor Removal and Installation (2WD Model)

S6RW0C4506009

⚠ CAUTION

- **Do not pull wire harness when removing and installing rear wheel speed sensor.**
- **Do not cause damage to surface of rear wheel speed sensor and do not allow dust, etc. to enter its installation hole.**

Removal

1) Disconnect negative (–) cable from battery.
2) Hoist vehicle, and remove wheel.
3) Disconnect rear wheel speed sensor connector.
4) Remove harness clamp.
5) Remove rear wheel speed sensor from wheel hub.

Installation

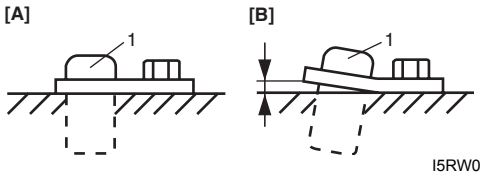
1) Check that no foreign material is attached to sensor and encoder (included in wheel hub assembly).
2) Install it by reversing removal procedure.

NOTE

Before fitting wheel speed sensor, be sure to silicon grease to its O-ring.

Tightening torque
Rear wheel speed sensor bolt: 11 N·m (1.1 kgf-m, 8.0 lb-ft)

3) Check that there is no clearance between sensor and wheel hub.



I5RW0A450024-01

[A]: OK	[B]: NG

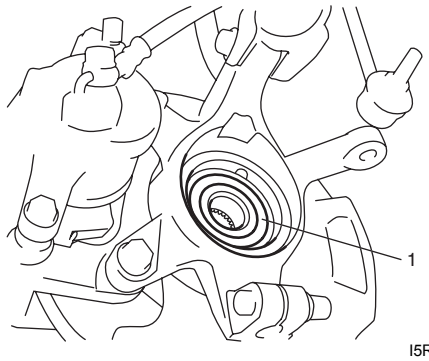
Front Wheel Speed Sensor Encoder On-Vehicle Inspection

S6RW0C4506010

Before inspecting front wheel speed sensor encoder, remove front drive shaft referring to “Front Drive Shaft Assembly Removal and Installation in Section 3A”.

- Check sensor encoder (1) for crack, damage or deformation.
- Turn wheel and check if sensor encoder rotation is free from eccentricity and looseness.
- Check that no foreign material is attached.

If any faulty is found, clean or replace. Refer to “Front Wheel Hub, Steering Knuckle and Wheel Bearing Removal and Installation in Section 2B”.



I5RW0A450026-01

Front Wheel Speed Sensor Encoder Removal and Installation

S6RW0C4506011

⚠ CAUTION

Front wheel speed sensor encoder is included in front wheel hub assembly. If front wheel speed sensor encoder needs to be replaced, replace it as a front wheel hub assembly.

For removal and installation of front wheel hub assembly, referring to “Front Wheel Hub, Steering Knuckle and Wheel Bearing Removal and Installation in Section 2B”.

Rear Wheel Speed Sensor Encoder On-Vehicle Inspection

S6RW0C4506012

For 4WD model

Refer to “Rear Wheel Speed Sensor On-Vehicle Inspection”.

For 2WD model

Before inspecting rear wheel speed sensor encoder, remove rear wheel speed sensor referring to “Rear Wheel Speed Sensor Removal and Installation (2WD Model)”.

- Check encoder (1) for crack, damage or deformation.
- Turn wheel and check if encoder rotation is free from eccentricity and looseness.
- Check that no foreign material is attached.

If any faulty is found, clean or replace. Refer to “Rear Wheel Hub Assembly Removal and Installation in Section 2C”.

Rear Wheel Speed Sensor Encoder Removal and Installation

S6RW0C4506013

⚠ CAUTION

Rear wheel speed sensor encoder is included in rear wheel hub assembly. If rear wheel speed sensor encoder needs to be replaced, replace it as a rear wheel hub assembly.

For removal and installation of rear wheel hub assembly, referring to “Rear Wheel Hub Assembly Removal and Installation in Section 2C”.