Last Modified: 3-22-2019	6.8:8.0.48	**Doc ID:** RM000000XIA0KAX
Model Year Start: 2013	**Model:** Prius C	**Prod Date Range:** [12/2012 -]
Title: BRAKE CONTROL / DYNAMIC CONTROL SYSTEMS: ELECTRONICALLY CONTROLLED BRAKE SYSTEM: C1273/73,C1274/74,C1466/33,C1467/34; Low Output Signal of Rear Speed Sensor RH (Test Mode DTC); 2013 MY Prius C [12/2012 -]		

DTC	**C1273/73**	**Low Output Signal of Rear Speed Sensor RH (Test Mode DTC)**

DTC	**C1274/74**	**Low Output Signal of Rear Speed Sensor LH (Test Mode DTC)**

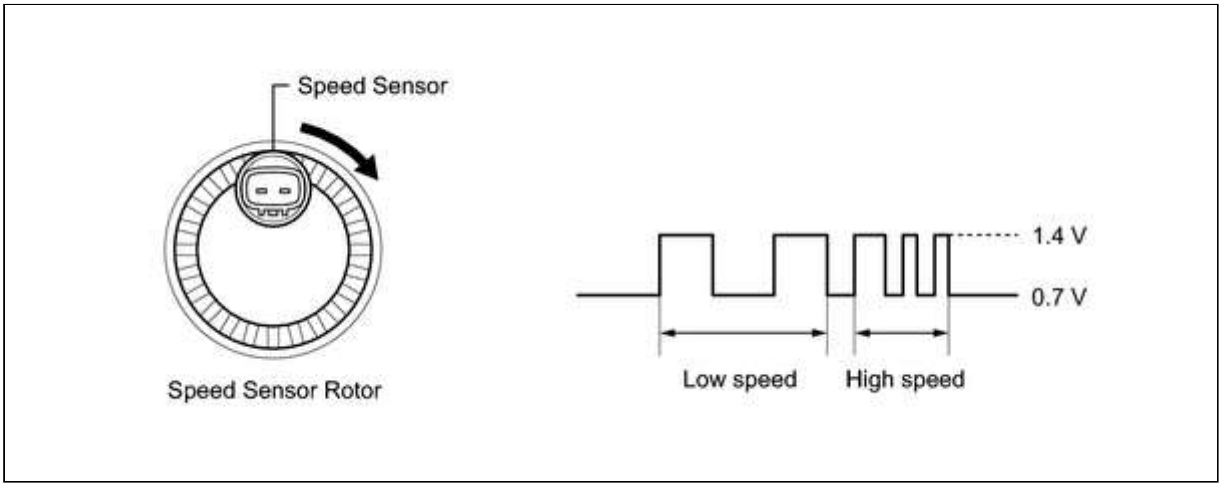
DTC	**C1466/33**	**Rear Speed Sensor RH Circuit**

DTC	**C1467/34**	**Rear Speed Sensor LH Circuit**

DESCRIPTION

The speed sensor detects wheel speed and sends signals to the skid control ECU. These signals are used for ABS control.

DTCs C1273/73 and C1274/74 can be cleared when the speed sensor sends a wheel speed signal or when Test Mode ends. DTCs C1273/73 and C1274/74 are output only in Test Mode.



DTC NO.	INF CODE	DTC DETECTION CONDITION	TROUBLE AREA

DTC NO.	INF CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1466/33	521	While driving at 10 km/h (6 mph) or more, speed sensor output from one or two wheels is lower than that from other wheels for 15 seconds or more.	• Open or short in speed sensor • Improperly installed speed sensor, or abnormal clearance between sensor and rotor • Open or short in wire harness • Improperly connected connector, deformation or corrosion of terminals • Rear speed sensor RH • Skid control ECU (Brake booster with master cylinder assembly)
↑	522	A malfunction occurs in 2 or more wheels.	↑
↑	523	An open is detected in the speed sensor signal circuit for 0.05 seconds or more.	• Open or short in speed sensor • Open or short in wire harness • Improperly connected connector, deformation or corrosion of terminals • Rear speed sensor RH • Skid control ECU (Brake booster with master cylinder assembly)
↑	524	Instantaneous interruption of sensor signal from the malfunctioning wheel occurs 255 times or more.	• Open or short in speed sensor • Improperly installed speed sensor, or abnormal clearance between sensor and rotor • Open or short in wire harness • Improperly connected connector, deformation or corrosion of terminals • Rear speed sensor RH • Skid control ECU (Brake booster with master cylinder assembly)

DTC NO.	INF CODE	DTC DETECTION CONDITION	TROUBLE AREA
↑	526	When VM1 voltage is 8.6 V or more, sensor supply voltage drops for 0.5 seconds or more.	• Open or short in wire harness • Skid control ECU (Brake booster with master cylinder assembly)
↑	527	While driving at 10 km/h (6 mph) or more, speed sensor output from one wheel is 0 km/h (0 mph) for 1 second or more.	• Open or short in speed sensor • Improperly installed speed sensor, or abnormal clearance between sensor and rotor • Open or short in wire harness • Improperly connected connector, deformation or corrosion of terminals • Rear speed sensor RH • Skid control ECU (Brake booster with master cylinder assembly)
↑	528	When VM1 voltage is 8.6 V or more, sensor supply voltage drops for 60 seconds or more.	• Open or short in wire harness • Skid control ECU (Brake booster with master cylinder assembly)
C1467/34	531	While driving at 10 km/h (6 mph) or more, speed sensor output from one or two wheels is lower than that from other wheels for 15 seconds or more.	• Open or short in speed sensor • Improperly installed speed sensor, or abnormal clearance between sensor and rotor • Open or short in wire harness • Improperly connected connector, deformation or corrosion of terminals • Rear speed sensor LH • Skid control ECU (Brake booster with master cylinder assembly)
↑	532	A malfunction occurs in 2 or more wheels.	↑

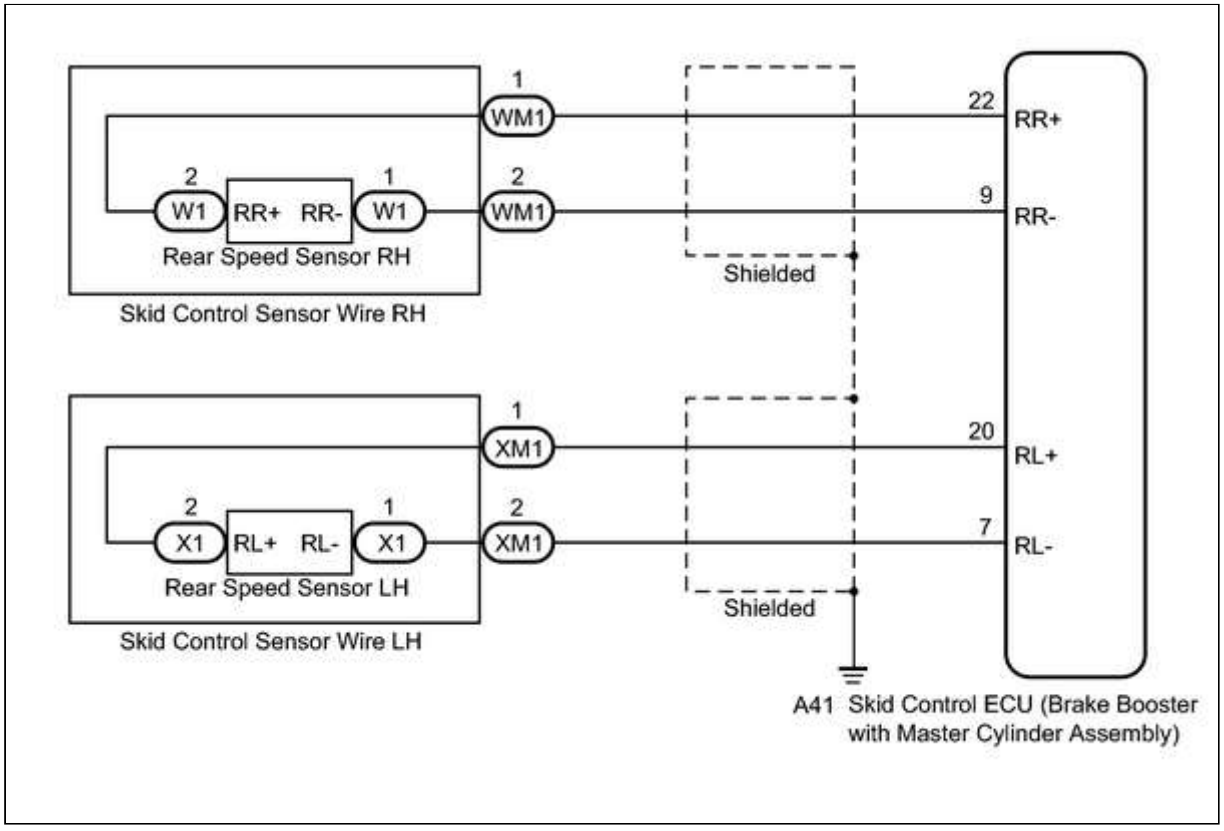
DTC NO.	INF CODE	DTC DETECTION CONDITION	TROUBLE AREA
↑	533	An open is detected in the speed sensor signal circuit for 0.05 seconds or more.	• Open or short in speed sensor • Open or short in wire harness • Improperly connected connector, deformation or corrosion of terminals • Rear speed sensor LH • Skid control ECU (Brake booster with master cylinder assembly)
↑	534	Instantaneous interruption of sensor signal from the malfunctioning wheel occurs 255 times or more.	• Open or short in speed sensor • Improperly installed speed sensor, or abnormal clearance between sensor and rotor • Open or short in wire harness • Improperly connected connector, deformation or corrosion of terminals • Rear speed sensor LH • Skid control ECU (Brake booster with master cylinder assembly)
↑	536	When VM1 voltage is 8.6 V or more, sensor supply voltage drops for 0.5 seconds or more.	• Open or short in wire harness • Skid control ECU (Brake booster with master cylinder assembly)
↑	537	While driving at 10 km/h (6 mph) or more, speed sensor output from one wheel is 0 km/h (0 mph) for 1 second or more.	• Open or short in speed sensor • Improperly installed speed sensor, or abnormal clearance between sensor and rotor • Open or short in wire harness • Improperly connected connector, deformation or corrosion of terminals • Rear speed sensor LH • Skid control ECU (Brake booster with master cylinder assembly)

DTC NO.	INF CODE	DTC DETECTION CONDITION	TROUBLE AREA
↑	538	When VM1 voltage is 8.6 V or more, sensor supply voltage drops for 60 seconds or more.	• Open or short in wire harness • Skid control ECU (Brake booster with master cylinder assembly)
C1273/73 C1274/74	-	Detected only during Test Mode.	• Rear speed sensor RH/LH • Sensor installation • Rear speed sensor rotor RH/LH (Rear axle hub and bearing assembly RH/LH)

HINT:

- DTCs C1466/33 and C1273/73 are for the rear speed sensor RH.
- DTCs C1467/34 and C1274/74 are for the rear speed sensor LH.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When replacing the skid control ECU (brake booster with master cylinder assembly), perform initialization and calibration of the linear solenoid valve INFO .

PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (MOMENTARY INTERRUPTION)

(a) Using the Techstream, check for any momentary interruptions in the wire harness and connector corresponding to a DTC INFO .

ABS/VSC/TRAC

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
RR Speed Open	Rear speed sensor RH open detection / Error or Normal	Error: Momentary interruption Normal: Normal	-
RL Speed Open	Rear speed sensor LH open detection / Error or Normal	Error: Momentary interruption Normal: Normal	-

OK:

There are no momentary interruptions.

HINT:

Perform the above inspection before removing the sensor and connector.

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK
▼

2.	READ VALUE USING TECHSTREAM (REAR SPEED SENSOR)

(a) Select the Data List on the Techstream INFO .

ABS/VSC/TRAC

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
RR Wheel Speed	Rear speed sensor RH / Min.: 0 km/h (0 mph), Max.: 326 km/h (202 mph)	Vehicle stopped: 0 km/h (0 mph)	When driving at constant speed: No large fluctuations
RL Wheel Speed	Rear speed sensor LH / Min.: 0 km/h (0 mph), Max.: 326 km/h (202 mph)	Vehicle stopped: 0 km/h (0 mph)	When driving at constant speed: No large fluctuations

(b) Check the speed value output from the speed sensor displayed on the Techstream.

HINT:

Factors that affect the indicated vehicle speed include tire size, tire inflation, and tire wear. The speed indicated on the speedometer has an allowable margin of error. This can be tested using a speedometer tester (calibrated chassis dynamometer). For details about testing and the margin of error, see the reference chart INFO .

OK:

The speed value output from the speed sensor displayed on the Techstream is similar to the speed indicated on the speedometer.

NG ▶ **GO TO STEP 5**

OK ▼

3.	**PERFORM TEST MODE INSPECTION (SIGNAL CHECK)**

(a) Turn the ignition switch off.

(b) Perform the sensor check in the Test Mode procedure INFO .

OK:

All Test Mode DTCs are cleared.

NG ▶ **GO TO STEP 5**

OK ▼

4.	**RECONFIRM DTC**

(a) Turn the ignition switch off.

(b) Clear the DTCs INFO .

(c) Turn the ignition switch to ON (READY).

(d) Perform a road test.

(e) Check if the same DTC is output INFO .

RESULT	PROCEED TO
DTCs C1466/33 and C1467/34 are not output.	A
DTCs C1466/33 and/or C1467/34 are output.	B

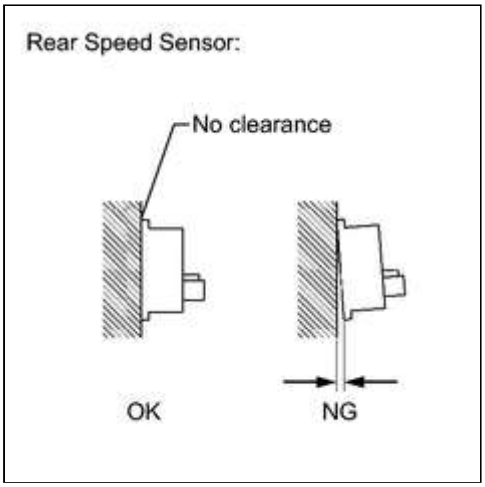
HINT:

If troubleshooting has been carried out according to Problem Symptoms Table, refer back to the table and proceed to the next step INFO .

B ▶ **GO TO STEP 10**

A ▶ **CHECK FOR INTERMITTENT PROBLEMS**

5.	CHECK REAR SPEED SENSOR INSTALLATION



(a) Turn the ignition switch off.

(b) Check the speed sensor installation.

OK:

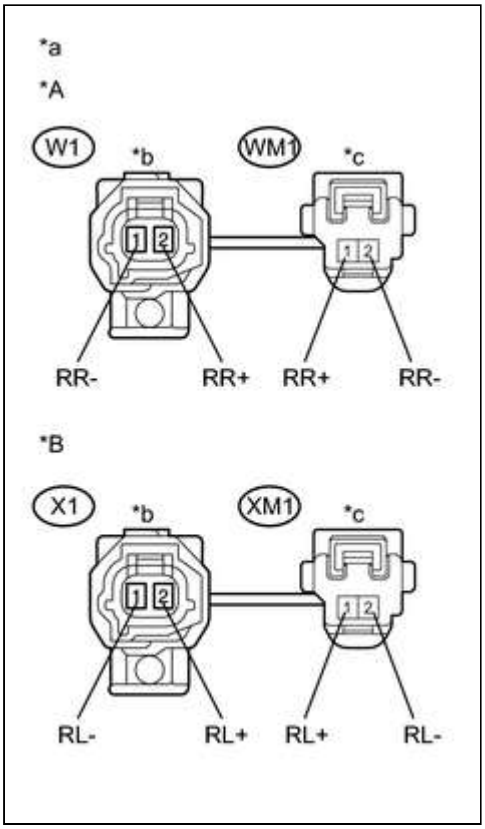
There is no clearance between the sensor and rear axle carrier.

NG ▶ **INSTALL REAR SPEED SENSOR CORRECTLY**

OK ▼

6.	CHECK HARNESS AND CONNECTOR (SKID CONTROL SENSOR WIRE)

(a) Make sure that there is no looseness at the locking part and the connecting part of the connectors.



(b) Disconnect the rear speed sensor connector and the skid control sensor wire.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for RH

for LH

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
W1-2 (RR+) - WM1-1 (RR+)	Always	Below 1 Ω
W1-2 (RR+) - WM1-2 (RR-)	Always	10 kΩ or higher
W1-2 (RR+) - Body ground	Always	10 kΩ or higher
W1-1 (RR-) - WM1-2 (RR-)	Always	Below 1 Ω
W1-1 (RR-) - WM1-1 (RR+)	Always	10 kΩ or higher
W1-1 (RR-) - Body ground	Always	10 kΩ or higher

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
X1-2 (RL+) - XM1-1 (RL+)	Always	Below 1 Ω
X1-2 (RL+) - XM1-2 (RL-)	Always	10 kΩ or higher
X1-2 (RL+) - Body ground	Always	10 kΩ or higher
X1-1 (RL-) - XM1-2 (RL-)	Always	Below 1 Ω
X1-1 (RL-) - XM1-1 (RL+)	Always	10 kΩ or higher
X1-1 (RL-) - Body ground	Always	10 kΩ or higher

Text in Illustration

*A	for RH
*B	for LH
*a	Front view of skid control sensor wire
*b	Front view of wire harness connector (to Sensor Side Connector)
*c	Front view of wire harness connector (to Vehicle Side Connector)

NOTICE:

Check the speed sensor signal after replacement INFO .

NG ▶ REPLACE SKID CONTROL SENSOR WIRE

OK
▼

7.	**CHECK HARNESS AND CONNECTOR (SKID CONTROL ECU - SKID CONTROL SENSOR WIRE)**

(a) Make sure that there is no looseness at the locking part and the connecting part of the connector.

(b) Disconnect the skid control ECU (brake booster with master cylinder assembly) connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for RH

for LH

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A41-22 (RR+) - WM1-1 (RR+)	Always	Below 1 Ω
A41-22 (RR+) - Body ground	Always	10 kΩ or higher
A41-9 (RR-) - WM1-2 (RR-)	Always	Below 1 Ω
A41-9 (RR-) - Body ground	Always	10 kΩ or higher

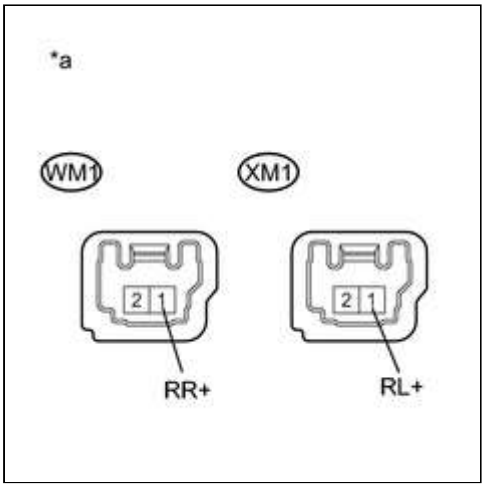
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A41-20 (RL+) - XM1-1 (RL+)	Always	Below 1 Ω
A41-20 (RL+) - Body ground	Always	10 kΩ or higher
A41-7 (RL-) - XM1-2 (RL-)	Always	Below 1 Ω
A41-7 (RL-) - Body ground	Always	10 kΩ or higher

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

8.	**INSPECT SKID CONTROL ECU (SENSOR OUTPUT)**

(a) Reconnect the skid control ECU (brake booster with master cylinder assembly) connector.



(b) Turn the ignition switch to ON (IG).

(c) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

for RH

for LH

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
WM1-1 (RR+) - Body ground	Ignition switch ON (IG)	5.7 to 14 V

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
XM1-1 (RL+) - Body ground	Ignition switch ON (IG)	5.7 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to Skid Control Sensor Wire)

NG ▶ **REPLACE BRAKE BOOSTER WITH MASTER CYLINDER ASSEMBLY**

OK ▼

9.	**RECONFIRM DTC**

(a) Turn the ignition switch off.

(b) Reconnect the rear speed sensor connector and the skid control sensor wire.

(c) Clear the DTCs INFO .

(d) Turn the ignition switch to ON (READY).

(e) Perform a road test.

(f) Check if the same DTC is output INFO .

RESULT	PROCEED TO
DTCs C1466/33 and/or C1467/34 are output.	A
DTCs C1466/33 and C1467/34 are not output.	B

HINT:

If troubleshooting has been carried out according to Problem Symptoms Table, refer back to the table and proceed to the next step INFO .

B ▶ CHECK FOR INTERMITTENT PROBLEMS

A

10.	**REPLACE REAR AXLE HUB AND BEARING ASSEMBLY**

(a) Turn the ignition switch off.

(b) Replace the rear speed sensor rotor with rear speed sensor (rear axle hub and bearing assembly) INFO .

HINT:

The rear speed sensor rotor is incorporated into the rear axle hub and bearing assembly.

If the rear speed sensor rotor needs to be replaced, replace the rear axle hub and bearing assembly with rear speed sensor.

NOTICE:

Check the speed sensor signal after replacement INFO .

NEXT

11.	**RECONFIRM DTC**

(a) Clear the DTCs INFO .

(b) Turn the ignition switch to ON (READY).

(c) Perform a road test.

(d) Check if the same DTC is output INFO .

RESULT	PROCEED TO
DTCs C1466/33 and/or C1467/34 are output.	A
DTCs C1466/33 and C1467/34 are not output.	B

HINT:

If troubleshooting has been carried out according to Problem Symptoms Table, refer back to the table and proceed to the next step INFO .

B ▶ END

A ▶ REPLACE BRAKE BOOSTER WITH MASTER CYLINDER ASSEMBLY