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2011 MAZDA 5 / Premacy OEM Service and Repair Workshop Manual

Go to manual page

Step	Inspection	Results	Action
5	INSPECT AWD SOLENOID • Inspect AWD solenoid. (See AWD SOLENOID INSPECTION.) • Is coupling component solenoid okay?	Yes	Inspect harness between AWD solenoid and AWD control module, then go to next step.
		No	Replace coupling component. (See COUPLING COMPONENT REMOVAL/INSTALLATION.)
6	INSPECT WHEEL ALIGNMENT • Inspect wheel alignment. • Is it okay?	Yes	Replace coupling component. (See COUPLING COMPONENT REMOVAL/INSTALLATION.)
		No	Inspect wheel alignment, and adjust it if necessary.

NO.3 ABNORMAL NOISE AND/OR VIBRATION FROM COUPLING COMPONENT [i-ACTIV AWD SYSTEM]

SM2898000

id0303d480060

3	Abnormal noise and/or vibration from coupling component

[TROUBLESHOOTING HINTS]
• Abnormal noise and/or vibration from coupling component during driving
• The Off-Road Traction Assist is operating. (Due to the Off-Road Traction Assist operation, controls that prioritize the road handling ability are performed, which tends to cause vibration and booming noise.)
• Propeller shaft is malfunctioning or attached improperly.
• Engine mount or differential mount malfunction
• Resonance of rotating parts on vehicle (engine, propeller shaft, rear differential, tire, etc.)
• Resonance with engine vibration (mainly with exhaust system parts)
• Rear differential malfunction
• Coupling component malfunction

Diagnostic procedure

Step	Inspection	Results	Action
1	VERIFY OFF-ROAD TRACTION ASSIST OPERATION CONDITION (WITH OFF-ROAD TRACTION ASSIST) • Verify with the customer the Off-Road Traction Assist operation condition when the malfunction occurred. • Was the Off-Road Traction Assist activated when the malfunction occurred?	Yes	Explain to the customer that vibration and booming noise increase because the road handling ability is prioritized when the Off-Road Traction Assist is operating compared to when it is not.
		No	Go to next step.
2	VERIFY DSC HU/CM, PCM, TCM, EPS CONTROL MODULE, AND i-ACTIV AWD SYSTEM DTCS • Verify DSC HU/CM, PCM, TCM, EPS control module, and i-ACTIV AWD system DTCs using the M-MDS. (See DTC INSPECTION [DSC HU/CM].) (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].) (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION))].) (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-D 2.2)].) (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5T)].) (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [TCM (FW6A-EL, FW6AX-EL)].) (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [TCM (GW6A-EL, GW6AX-EL)].) (See DTC INSPECTION [ELECTRIC POWER STEERING (EPS) CONTROL MODULE].) (See DTC INSPECTION [AWD CONTROL MODULE].) • Are there any DTCs present?	Yes	Go to applicable DTC inspection.
		No	Go to next step.

FRONT WHEEL HUB BOLT REPLACEMENT

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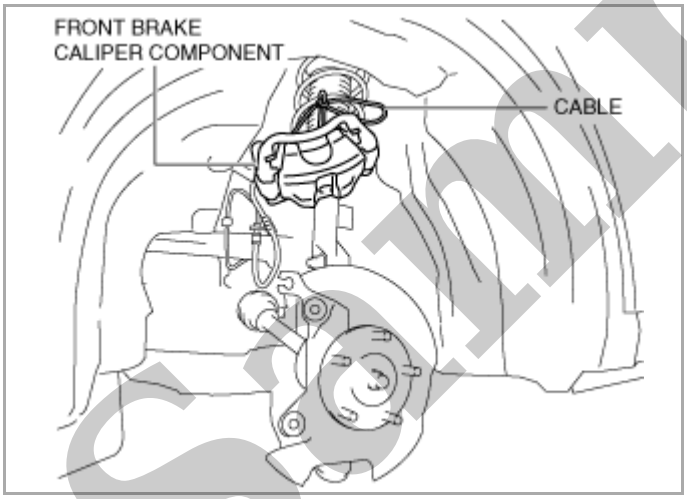
Special Service Tool (SST)

49 T028 3A0 Ball joint puller set	

1.Remove the wheel and tire. (See WHEEL AND TIRE REMOVAL/INSTALLATION.)

2.Remove the front brake caliper component and suspend it out of the way using a cable. (See FRONT BRAKE DISC REMOVAL/INSTALLATION [WITH SINGLE PISTON FLOATING CALIPER].) (See FRONT BRAKE DISC REMOVAL/INSTALLATION [WITH 2-PISTON FLOATING CALIPER].)



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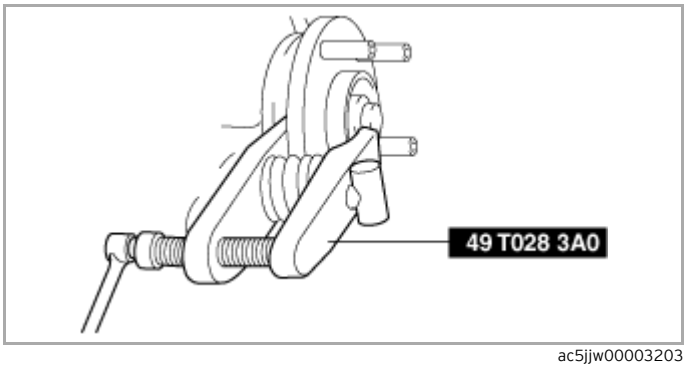
3.Remove the front disc plate. (See FRONT BRAKE DISC REMOVAL/INSTALLATION [WITH SINGLE PISTON FLOATING CALIPER].) (See FRONT BRAKE DISC REMOVAL/INSTALLATION [WITH 2-PISTON FLOATING CALIPER].)

4.Remove the wheel hub bolt using the SST as shown in the figure.



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• If it exceeds the maximum specification, replace the wheel hub bearing. (See WHEEL HUB, STEERING KNUCKLE REMOVAL/INSTALLATION.)

13	Steering knuckle
14	Wheel hub bolt (See Wheel Hub Bolt Removal Note.) (See Wheel Hub Bolt Installation Note.)

Locknut Removal Note

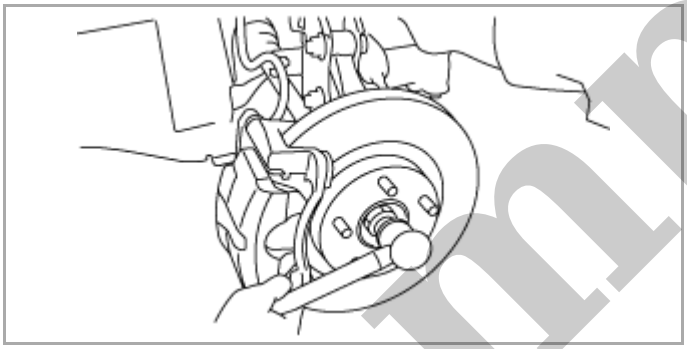
Caution

• When removing the locknut, remove it manually without using an electric or pneumatic tool. Otherwise, the locknut may seize.
• When removing the locknut, do not apply load at the ground to the axle. Otherwise, it could damage the wheel hub.

1.Remove the locknut with the brake pedal depressed.

2.Install a spare nut onto the drive shaft.

3.Tap the nut with a copper hammer and separate the drive shaft from the axle.



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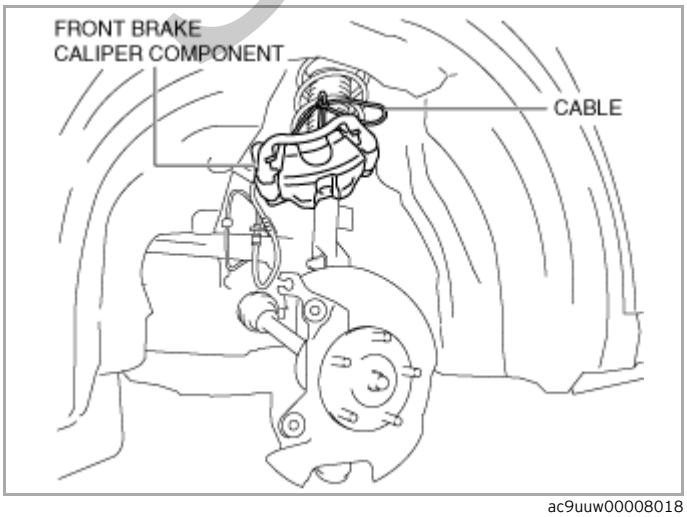
Brake Caliper Component Removal Note

1.Remove the brake caliper component from the steering knuckle and suspend it out of the way using a cable.



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Wheel Hub Bolt Removal Note

REAR AXLE LOCATION INDEX

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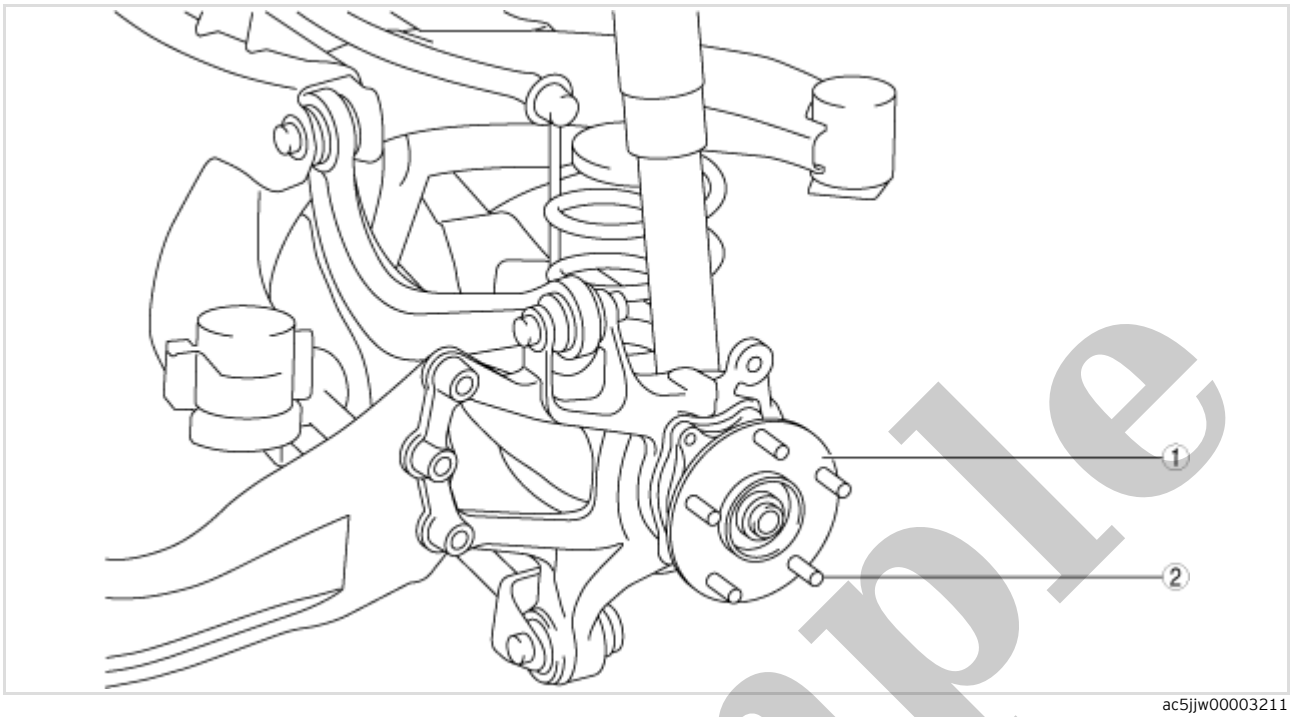

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1	Wheel hub component (See WHEEL HUB COMPONENT INSPECTION.) (See WHEEL HUB COMPONENT REMOVAL/INSTALLATION [2WD].) (See WHEEL HUB COMPONENT REMOVAL/INSTALLATION [AWD].)
2	Wheel hub bolt (See REAR WHEEL HUB BOLT REPLACEMENT.)

WHEEL HUB COMPONENT INSPECTION

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Wheel Bearing Excessive Play Inspection

1.Switch the ignition ON (engine off).

2.Release the electric parking brake.

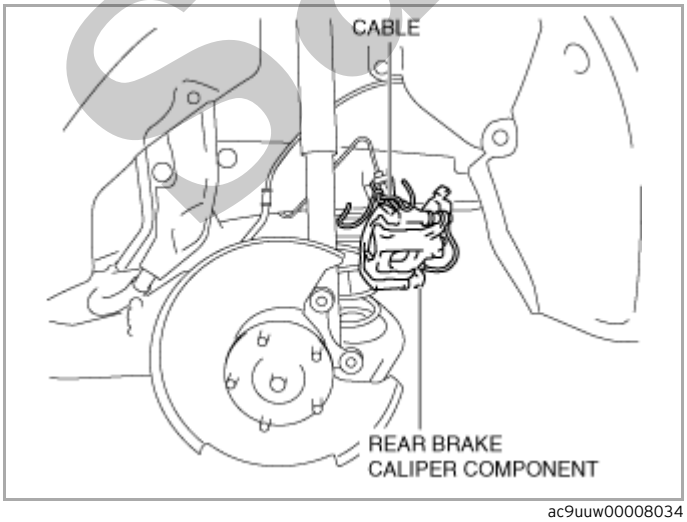
3.Switch the ignition off.

4.Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.)

5.Remove the wheel and tire. (See WHEEL AND TIRE REMOVAL/INSTALLATION.)

6.Disconnect the electric parking brake motor gear unit connector. (See ELECTRIC PARKING BRAKE MOTOR GEAR UNIT REMOVAL/INSTALLATION.)

7.Remove the rear brake caliper component and suspend it out of the way using a cable. (See REAR BRAKE DISC REMOVAL/INSTALLATION.)



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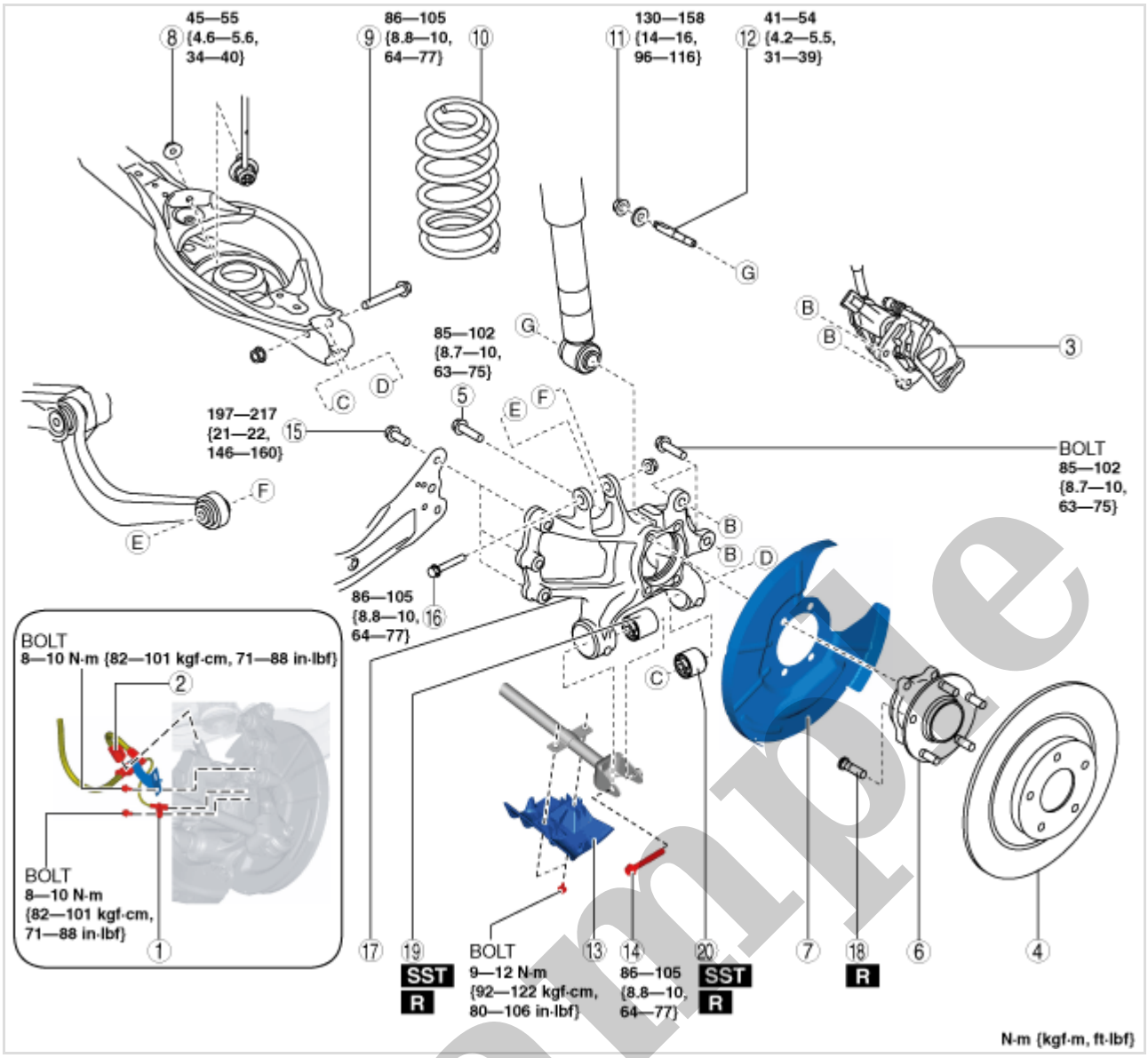
8.Remove the rear disc plate. (See REAR BRAKE DISC REMOVAL/INSTALLATION.)

9.Install the magnetic base and dial gauge as shown in the figure and measure the wheel bearing axial excessive play.



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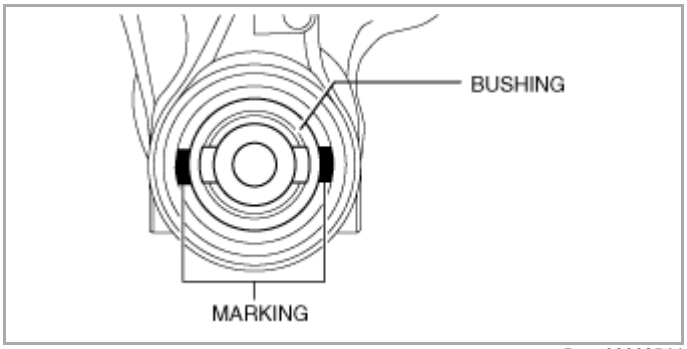
1	Rear ABS wheel-speed sensor
2	Electric parking brake motor gear unit connector
3	Brake caliper component (See Brake Caliper Component Removal Note.)
4	Disc plate
5	Bolt (wheel hub)
6	Wheel hub
7	Dust cover
8	Rear stabilizer control link lower side nut
9	Rear lower arm outer bolt (See Rear Lower Arm Outer Bolt Removal Note.)
10	Rear coil spring (See REAR COIL SPRING REMOVAL/INSTALLATION.)
11	Rear shock absorber lower nut
12	Stud bolt
13	Protector (With protector)
14	Rear lateral link outer bolt
15	Rear trailing link installation bolt
16	Bolt (rear upper arm outer side)
17	Hub support



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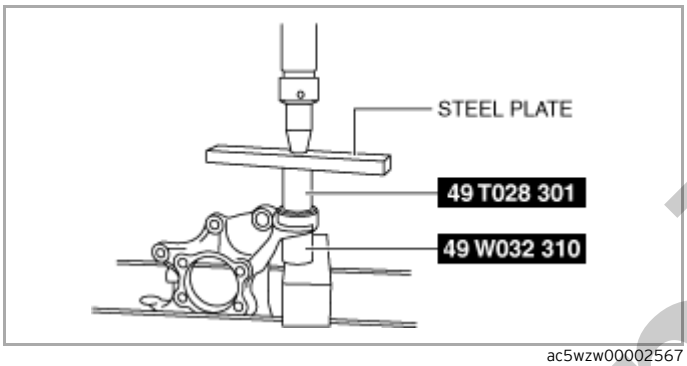
2.Press the rear hub support bushing (rear) out using the SSTs.



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Suspension Links Installation Note

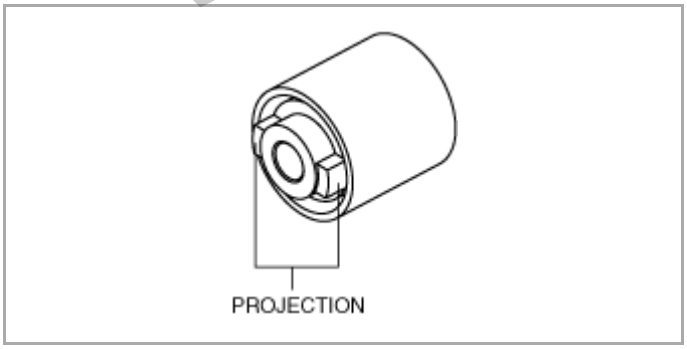
1.When installing the joint sections with rubber bushings, perform the following procedures.

(1)Temporarily tighten the bolts, stud bolt, and nuts with the vehicle lifted up.

(2)Lower the vehicle to the ground and tighten the bolts, stud bolt, and nuts to the specified torque.

Hub Support Bushing (Rear) Installation Note

1.Align the projection of the bushing with the hub support marking and set a new bushing to the hub support.



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2.Install a new hub support bushing (rear) using the SSTs.