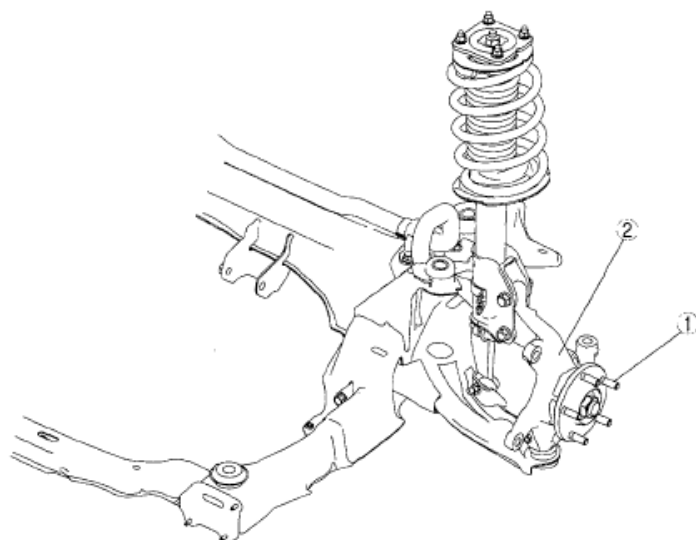


2008 DRIVELINE/AXLE

Front Axle - Mazda CX-9

FRONT AXLE LOCATION INDEX



ampjw0003178

1	Wheel hub bolt (See 03-11-8 FRONT WHEEL HUB BOLT REPLACEMENT.)
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2	Wheel hub, steering knuckle (See 03-11-2 WHEEL HUB, STEERING KNUCKLE INSPECTION.) (See 03-11-2 WHEEL HUB, STEERING KNUCKLE REMOVAL/INSTALLATION.)
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Fig. 1: Identifying Front Axle Components Location

Courtesy of MAZDA MOTORS CORP.

WHEEL HUB, STEERING KNUCKLE INSPECTION

WHEEL BEARING EXCESSIVE PLAY INSPECTION

1. Install the magnetic base and dial gauge as shown in the figure and measure the wheel bearing axial excessive play.
 - If it exceeds the maximum specification, replace the wheel hub bearing.

Front wheel bearing maximum play

0.05 mm {0.002 in}

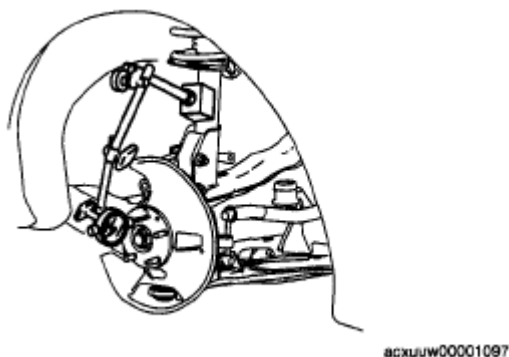


Fig. 2: Measuring Wheel Bearing Axial Excessive Play
Courtesy of MAZDA MOTORS CORP.

WHEEL HUB, STEERING KNUCKLE REMOVAL/INSTALLATION

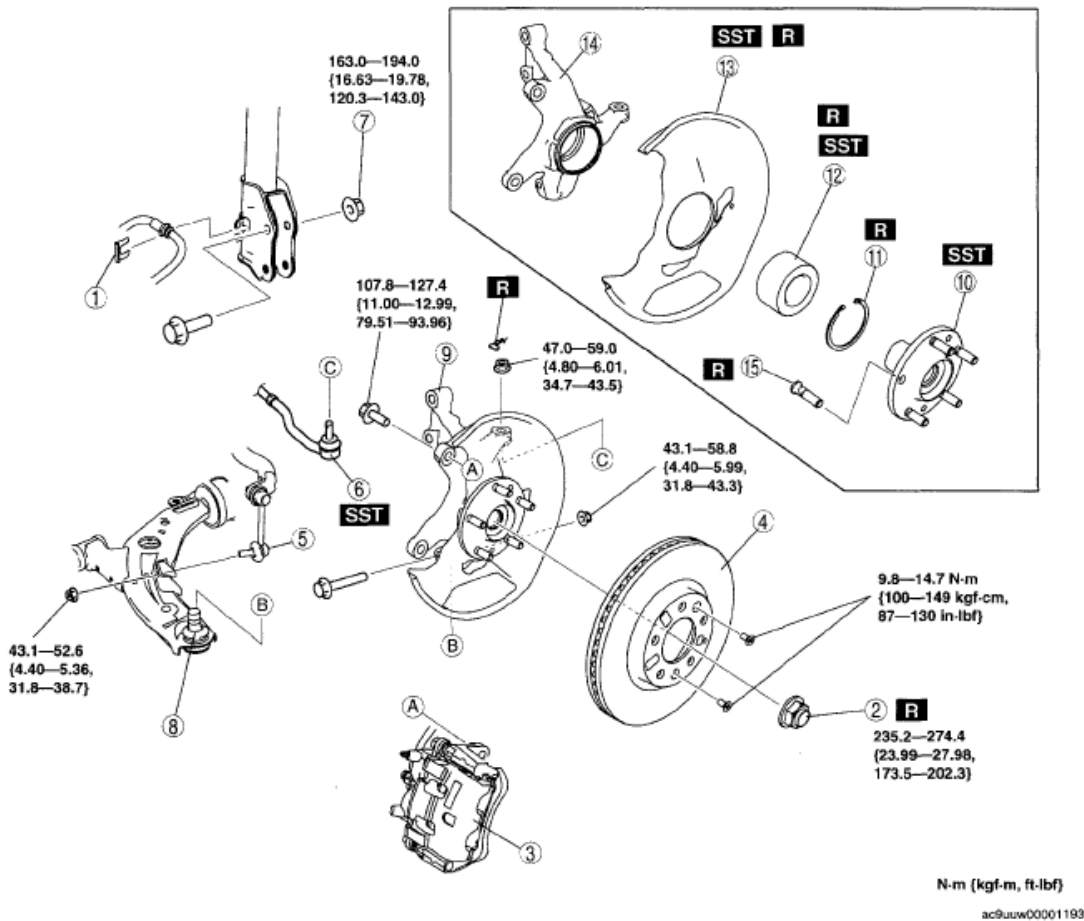
CAUTION:

- Performing the following procedures without first removing the ABS wheel-speed sensor may possibly cause an open circuit in the wiring harness if it is pulled by mistake. Before performing the following procedures, disconnect the ABS wheel-speed sensor connector (axle side) and fix the wiring harness to an appropriate place where it will not be pulled by mistake while servicing the vehicle.

1. Remove the front ABS wheel-speed sensor. (See FRONT ABS WHEEL-SPEED SENSOR REMOVAL/INSTALLATION .)
2. Remove in the order indicated in the table.
3. Install in the reverse order of removal.
4. After installation, inspect the front wheel alignment and adjust it if necessary. (See FRONT WHEEL ALIGNMENT .)

2008 Mazda CX-9 Grand Touring

2008 DRIVELINE/AXLE Front Axle - Mazda CX-9



N-m (kgf-m, ft-lbf)

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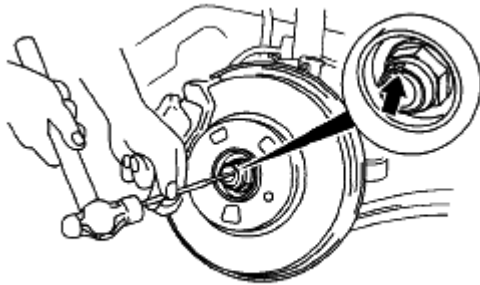
1	Brake hose clip
2	Locknut (See 03-11-4 Locknut Removal Note.) (See 03-11-7 Locknut Installation Note.)
3	Brake caliper component (See 03-11-4 Brake Caliper Removal Note.)
4	Disc plate
5	Stabilizer control link (lower side)
6	Tie-rod end ball joint (See 02-13-10 FRONT CROSSMEMBER REMOVAL/INSTALLATION.)
7	Nut (front shock absorber lower side)
8	Front lower arm ball joint
9	Wheel hub, steering knuckle component

10	Wheel hub (See 03-11-4 Wheel Hub Removal Note.) (See 03-11-7 Wheel Hub Installation Note.)
11	Retaining ring
12	Wheel bearing (See 03-11-5 Wheel Bearing Removal Note.) (See 03-11-7 Wheel Bearing Installation Note.)
13	Dust cover (See 03-11-5 Dust Cover Removal Note.) (See 03-11-6 Dust Cover Installation Note.)
14	Steering knuckle
15	Wheel hub bolt (See 03-11-6 Wheel Hub Bolt Removal Note.) (See 03-11-6 Wheel Hub Bolt Installation Note.)

Fig. 3: Exploded View Of Wheel Hub, Steering Knuckle & Torque Specifications
Courtesy of MAZDA MOTORS CORP.

LOCKNUT REMOVAL NOTE

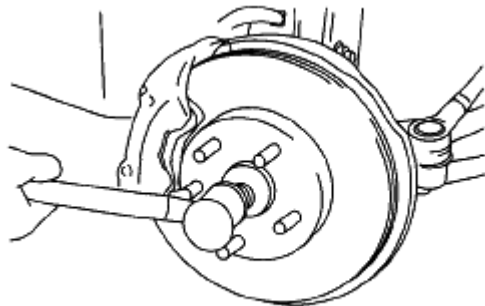
1. Lock the hub by applying the brakes.
2. Knock the crimped portion of the locknut outward using a small chisel and a hammer.
3. Remove the locknut.
4. Install a spare nut onto the drive shaft so that the nut is flush with the end of the drive shaft.



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Fig. 4: Tapping Locknut
Courtesy of MAZDA MOTORS CORP.

5. Tap the nut with a copper hammer to loosen the drive shaft from the front wheel hub.
6. Separate the drive shaft from the wheel hub.

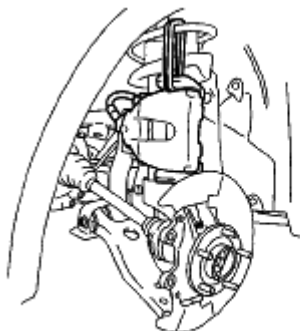


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Fig. 5: Tapping Drive Shaft
Courtesy of MAZDA MOTORS CORP.

BRAKE CALIPER 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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Fig. 6: Identifying Brake Caliper

Courtesy of MAZDA MOTORS CORP.

WHEEL HUB REMOVAL NOTE

1. Remove the wheel hub using the SSTs.

Substitution SST

- 49G033105

Outer diameter: 37-43 mm {1.5-1.6 in}

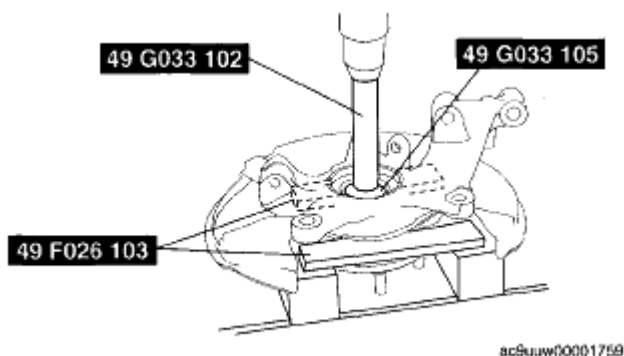


Fig. 7: Removing Wheel Hub With SSTs
Courtesy of MAZDA MOTORS CORP.

2. If the bearing inner race remains on the front wheel hub component, grind a section of the bearing inner race until **approx. 0.5 mm {0.02 in}** remains. Then remove it using a chisel.

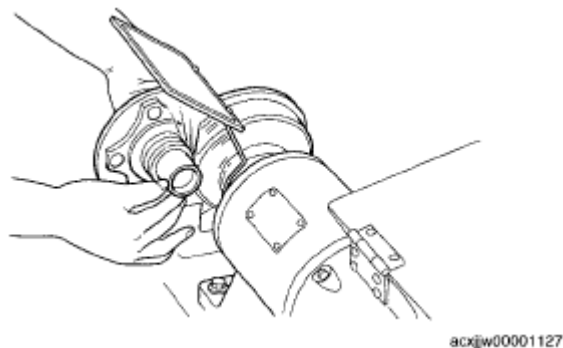


Fig. 8: Grinding Wheel Hub
Courtesy of MAZDA MOTORS CORP.

WHEEL BEARING REMOVAL NOTE

1. Remove the wheel bearing using the SSTs.

Substitution SST

- 49G033 106

Outer diameter: 54-63 mm {2.2-2.4 in}

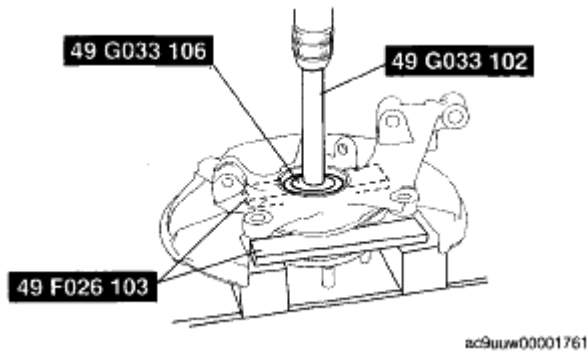


Fig. 9: Removing Wheel Bearing With SSTs
Courtesy of MAZDA MOTORS CORP.

DUST COVER REMOVAL NOTE

NOTE:

- The dust cover does not need to be removed unless it is being replaced.

1. Mark the dust cover and steering knuckle for proper installation.

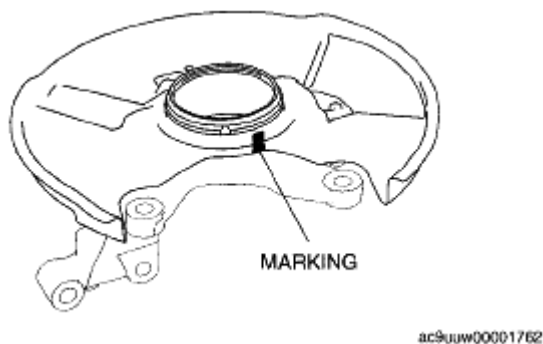
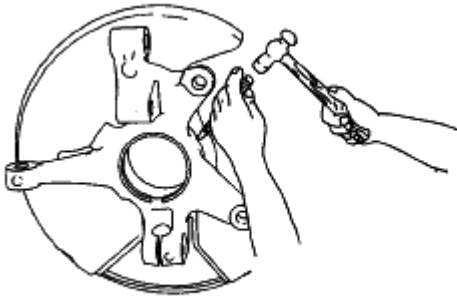


Fig. 10: Identifying Dust Cover Mark Location
Courtesy of MAZDA MOTORS CORP.

2. Remove the dust cover using a chisel.



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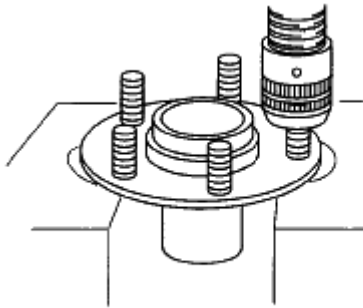
Fig. 11: Tapping Dust Cover
Courtesy of MAZDA MOTORS CORP.

WHEEL HUB BOLT REMOVAL NOTE

NOTE:

- The hub bolts do not need to be removed unless they are being replaced.

1. Remove the hub bolt using a press.



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Fig. 12: Pressing Hub Bolt
Courtesy of MAZDA MOTORS CORP.

WHEEL HUB BOLT INSTALLATION NOTE

1. Install the new hub bolt using a press.

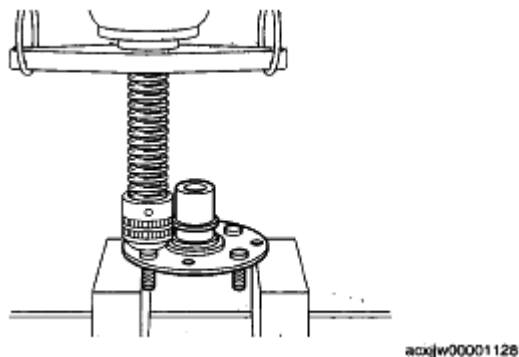


Fig. 13: Pressing Hub Bolt Installation Position
Courtesy of MAZDA MOTORS CORP.

DUST COVER INSTALLATION NOTE

1. Mark the new dust cover in the same way as the removed one.
2. Align the marks of the new dust cover and the knuckle.

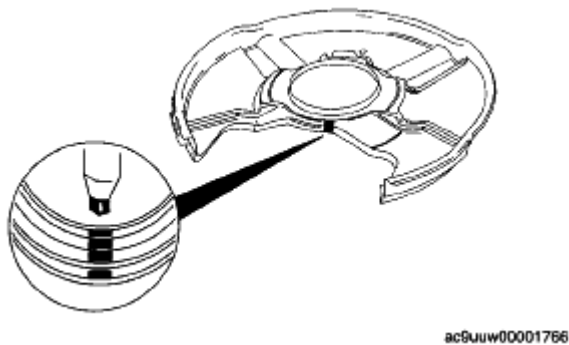


Fig. 14: Aligning Marks Of Dust Cover And Knuckle
Courtesy of MAZDA MOTORS CORP.

3. Install the new dust cover using the SSTs.

Substitution SST

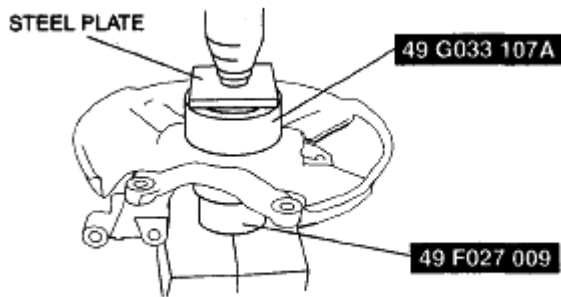
- **49 G033 107 A**

Inner diameter: 98-108 mm {3.9-4.2 in}

Tube with board thickness 3 mm {0.2 in} or more

- **49 F027 009**

Outer diameter: 77-82 mm {3.1-3.2 in}



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Fig. 15: Pressing Dust Cover
Courtesy of MAZDA MOTORS CORP.

WHEEL BEARING INSTALLATION NOTE

1. Install the new wheel bearing using the SSTs.

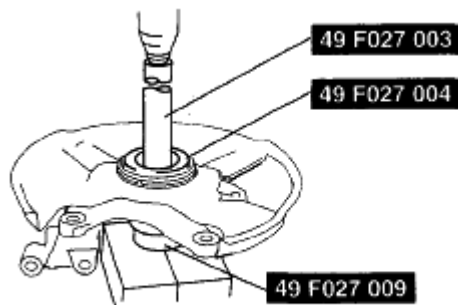
Substitution SST

- 49 F027 004

Outer diameter: 78-83 mm {3.1-3.2 in}

- 49 F027 009

Outer diameter: 77-82 mm {3.1-3.2 in}



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Fig. 16: Pressing Wheel Bearing Installation Position
Courtesy of MAZDA MOTORS CORP.

WHEEL HUB INSTALLATION NOTE

1. Install the wheel hub using the SSTs.

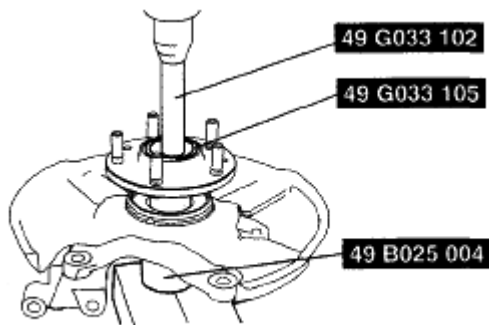
Substitution SST

- **49 G033 105**

Outer diameter: 39-48 mm {1.6-1.8 in}

- **49 B025 004**

Outer diameter: 54-63 mm {2.2-2.4 in}

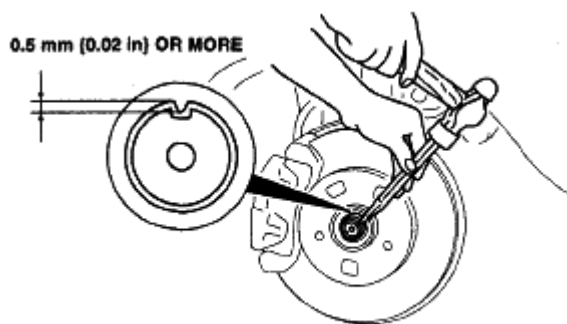


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Fig. 17: Pressing Wheel Hub Installation Position
Courtesy of MAZDA MOTORS CORP.

LOCKNUT INSTALLATION NOTE

1. Install a new locknut and stake it as shown.



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Fig. 18: Tapping Locknut
Courtesy of MAZDA MOTORS CORP.

FRONT WHEEL HUB BOLT REPLACEMENT

1. Remove the brake calliper component from the steering knuckle and suspend it out of the way using a cable.
2. Remove the disc plate.
3. Tap the dust cover (the part shown in the figure) with a chisel lightly and bend the processing point back to the steering knuckle side.

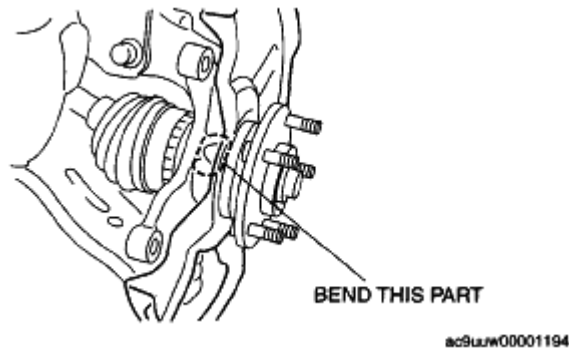


Fig. 19: Identifying Bend Part
Courtesy of MAZDA MOTORS CORP.

4. Remove the wheel hub bolt using the SST as shown in the figure.
5. Place a new wheel hub bolt in the wheel hub.

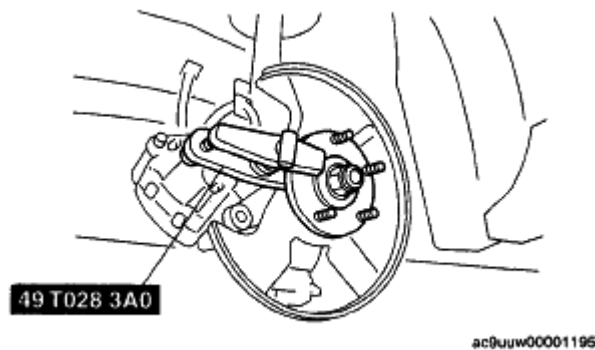


Fig. 20: Removing Wheel Hub Bolt
Courtesy of MAZDA MOTORS CORP.

6. Install the wheel hub by placing a proper sized washer on the hub, and tightening the nut as shown in the figure.

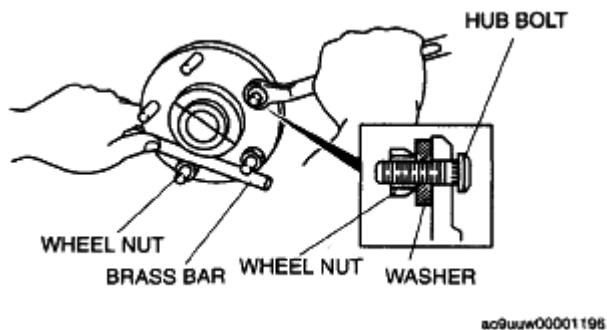


Fig. 21: Holding Wheel Hub
Courtesy of MAZDA MOTORS CORP.