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2010 MAZDA RX-8 OEM Service and Repair Workshop Manual

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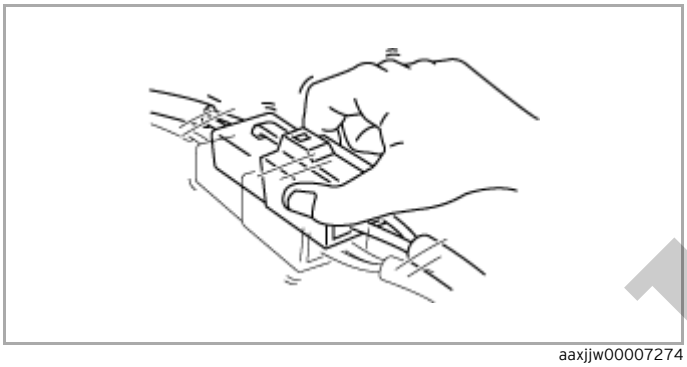
*1:(See CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [TYPE-A (SKYACTIV-G 2.5)].) (See CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [TYPE-A (SKYACTIV-G 2.5T, SKYACTIV-D 2.2)].) (See CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [TYPE-B].)

Action for Non-repeatable Malfunction

• If the malfunction does not recur, verify the malfunction cause by performing the following actions:

— Based on the repair order form, attempt to drive the vehicle or perform tests to replicate the malfunction, record the data at that time, and detect the malfunction cause.
— Shake the wiring harness or connector of the electrical component which is suspected to be the cause of the malfunction, and inspect for occurrence of any malfunction or DTCs.



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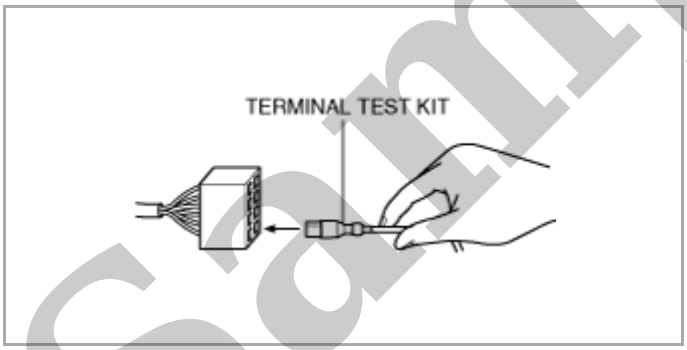
— Inspect the female terminals on the connector of the electric component which is suspected to be the cause of the malfunction for poor connection. (See ELECTRICAL SYSTEM.)

Note

• Tool used (Reference): terminal test kit (49US-15-KIT)



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5.Verify that the rack boot does not have any twisting and install the rack boot clamp.

WHEEL BALANCE ADJUSTMENT (ALUMINUM ALLOY WHEEL)

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Caution

• Perform the wheel balance adjustment on the outer side first, then the inner side.
• Be careful not to damage the wheel.
• Use genuine balance weight.

Affixing-type Balance Weight (Outer side)

1.Remove the balance weight from the wheel.

2.Remove the double-sided adhesive tape left on the wheel and remove any grease and dirt from the affixing surface.

3.Set the wheel to the wheel balancer and measure the unbalance amount and balance weight affixing position using the clip type balance weight mode.

4.Calculate the weight of the balance weight by multiplying 1.6 to the measured unbalance amount.

Example of balance weight calculation (unbalance amount displayed on wheel balancer: 23 g {0.81 oz})

23 g {0.81 oz}×1.6 = 36.8 g {1.30 oz}

5.Select the balance weight so that the weight is nearest to the calculated value (weight).

Note

• Select the balance weight so that the weight is nearest to the calculated value.

Ex.1) 32.4 g {1.14 oz} (calculated value) = 30 g {1.06 oz} (weight of balance weight to be selected)
Ex.2) 32.5 g {1.15 oz} (calculated value) = 35 g {1.23 oz} (weight of balance weight to be selected)

6.Affix the selected balance weight to the balance weight affixing position (outer side) displayed by the wheel balancer.

Caution

• Completely affix the balance weight by pressing it with 25 N {2.5 kgf, 5.6 lbf} or more of force per 5 g {0.2 oz} for 2 s or more.
• Do not install four or more balance weights.
• Do not affix the balance weights in parallel or stack them.
• The total weight of all the balance weights must be 160 g {5.64 oz} or less.
• If a weight of 125 g {4.41 oz} is to be added, divide the weight into two pieces and affix.

WHEEL AND TIRE ROTATION

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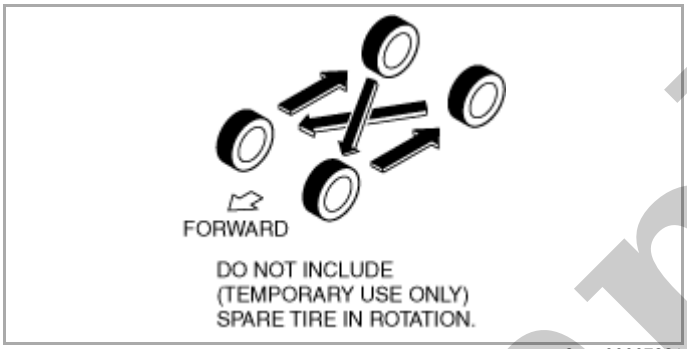
Note

• Irregular tire wear is dangerous. To equalize tread wear for maintaining good performance in handling and braking, rotate the tires every 12,000 km (7,500 miles). However Mazda recommends to rotate every 8,000 km (5,000 miles) to help increase tire life and distribute wear more evenly.
• For unidirectional tires, install the wheels and tires according to the specified direction.

1.Rotate the wheels and tires in the direction of the arrows shown in the figure.



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WHEEL UNIT ID REGISTRATION

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Note

• After the wheel unit replacement, registration of the wheel unit identification codes must be performed.

1.Switch the ignition ON (engine off or on).

2.Switch the ignition off.

3.Leave the vehicle with the ignition switched off for 15 min or more.

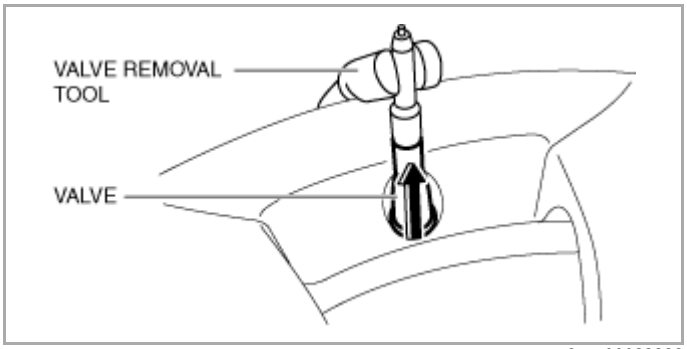
4.Switch the ignition ON (engine on).

5.Drive the vehicle at a speed of 25 km/h {16 mph} or more for 10 min or more.

6.After driving for 10 min, verify that the TPMS warning light does not flash and is not illuminated.

(3)Remove the tip of the valve.

(4)Using the valve removal tool, pull the valve straight out of the wheel hole.



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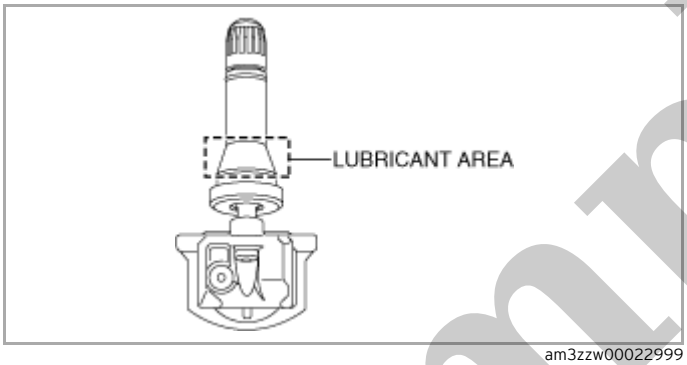
Installation

1.Apply soapy water to the area shown in the figure.



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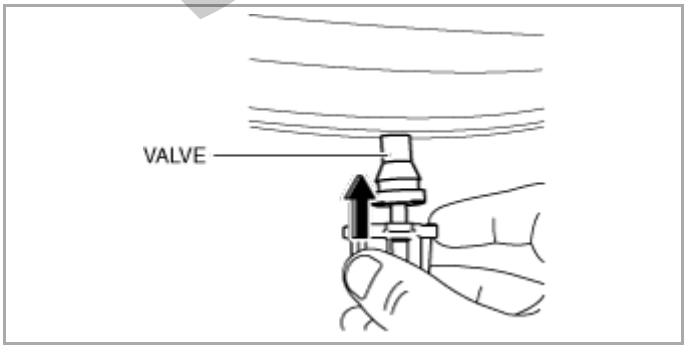
Caution

• To prevent damaging the air pressure sensor, do not soak it in water or spray water on it.

2.Remove the cap.

3.Insert the air pressure sensor valve into the wheel valve hole.



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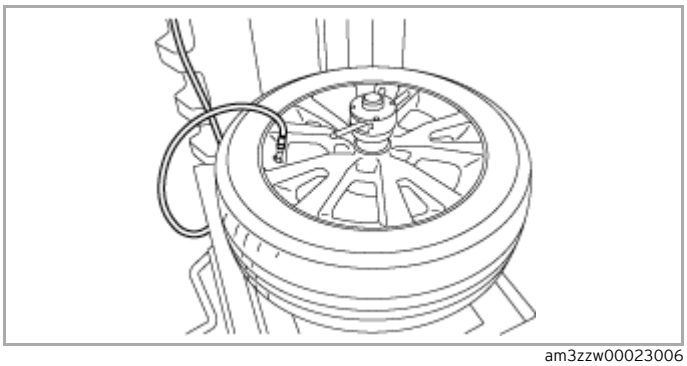
4.Install the valve removal tool to the air pressure sensor valve.

(5)Install the upper bead using the same installation procedure for the lower bead.

9.Pump air into the tire.



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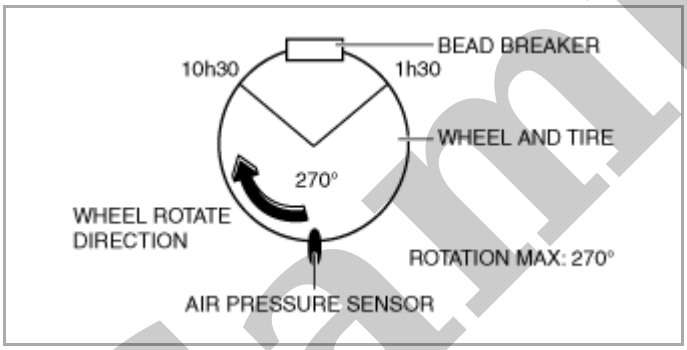
Bead Breaking Note (Method for Rotating Wheel Against Bead Breaker)

1.Install the wheel and tire to the turntable of the tire changer.

2.Set the bead breaker against the air pressure sensor as shown in the figure.



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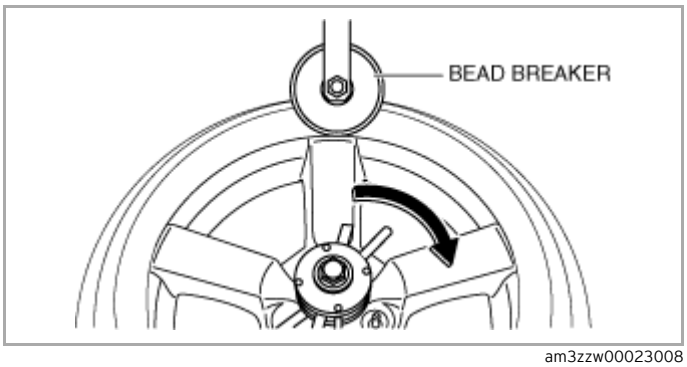
Caution

• Do not set the bead breaker outside of the area shown in the figure to prevent damaging the air pressure sensor.

3.Rotate the wheel and break the upper/lower bead.



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Caution

• Do not move the air pressure sensor outside of the area shown in the figure to prevent damaging the air pressure sensor.

TIRE PRESSURE ADJUSTMENT

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1.Use of a digital gauge is recommended for accurate measurement of the air pressure.

2.Tire pressure lowers gradually as time passes. Due to this, monthly air pressure inspection is recommended.

3.Perform tire pressure adjustment before driving. (When tires are cold)

• Tire pressure will increase after driving because the internal temperature of the tire is high. If tire pressure is adjusted to specifications when the internal temperature of the tire is high, tire pressure will decrease when the internal temperature of the tire decreases to the same level as ambient temperature. If the tire pressure is lower than the lower-limit pressure, the TPMS warning light may illuminate.
• Even though the air pressure is adjusted to specifications, the indicated air pressure may be higher than the specified value when the internal temperature of the tire is higher than ambient temperature. (Example: Air pressure changes approx. 10 kPa {0.10 kgf/cm^2, 1.5 psi} when the temperature changes 10 °C {18 °F})

Caution

• In an area or a season with varying temperatures, tire pressure will change due to ambient temperature change. If the tire pressure is lower than the lower-limit pressure due to low ambient temperature, the TPMS warning light may illuminate. Adjust the pressure when the TPMS warning light illuminates.