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# SECTION **WT**

## ROAD WHEELS & TIRES

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# PRECAUTIONS

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## PRECAUTION

### PRECAUTIONS

#### Service Notice or Precautions for Road Wheel

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- Genuine NISSAN aluminum wheel is designed for each type of vehicle. Use it on the specified vehicle only.
- Use Genuine NISSAN parts for the wheel nuts.
- Always use them after adjusting the wheel balance. For the balance weights, use Genuine NISSAN weights.
- Use caution when handling the aluminum wheels, because they can be easily scratched. When removing dirt, do not use any abrasives, a wire brush, or other items that may scratch the coating. Use a neutral detergent if a detergent is needed.
- After driving on roads scattered with anti-icing salts, wash off the wheels completely.
- When installing road wheels onto the vehicle, always wipe off any dirt or foreign substances to prevent them from being trapped between the contact surfaces of wheel.
- Never apply oil to nut and bolt threads.



# ROAD WHEEL

< PERIODIC MAINTENANCE >

## PERIODIC MAINTENANCE

### ROAD WHEEL

#### Adjustment

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#### BALANCING WHEELS (ALUMINUM WHEEL)

##### Preparation Before Adjustment

Using releasing agent, remove double-faced adhesive tape from the road wheel.

##### CAUTION:

- **Be careful not to scratch the road wheel during removal.**
- **After removing double-faced adhesive tape, wipe clean traces of releasing agent from the road wheel.**

##### Wheel Balance Adjustment

- The details of the adjustment procedure are different for each model of wheel balancer. Therefore, refer to each instruction manual.
- If a tire balance machine has adhesion balance weight mode settings and drive-in weight mode setting, select and adjust a drive-in weight mode suitable for aluminum wheels.

1. Set road wheel on tire balance machine using the center hole as a guide. Start the tire balance machine.
2. When inner and outer unbalance values are shown on the tire balance machine indicator, multiply outer unbalance value by  $5/3$  to determine balance weight that should be used. Select the outer balance weight with a value closest to the calculated value above and install to the designated outer position of, or at the designated angle in relation to the road wheel.

##### CAUTION:

- **Never install the inner balance weight before installing the outer balance weight.**
- **Before installing the balance weight, always to clean the mating surface of the road wheel.**

- a. Indicated unbalance value  $\times 5/3$  = balance weight to be installed

##### Calculation example:

$23 \text{ g (0.81 oz)} \times 5/3 = 38.33 \text{ g (1.35 oz)} \Rightarrow 40 \text{ g (1.41 oz)}$  balance weight (closer to calculated balance weight value)

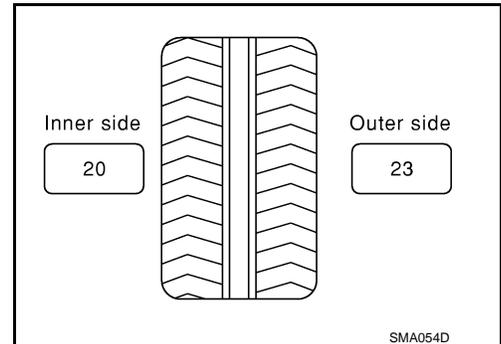
##### NOTE:

Note that balance weight value must be closer to the calculated balance weight value.

##### Example:

$37.4 \Rightarrow 35 \text{ g (1.23 oz)}$

$37.5 \Rightarrow 40 \text{ g (1.41 oz)}$



- b. Installed balance weight in the position.

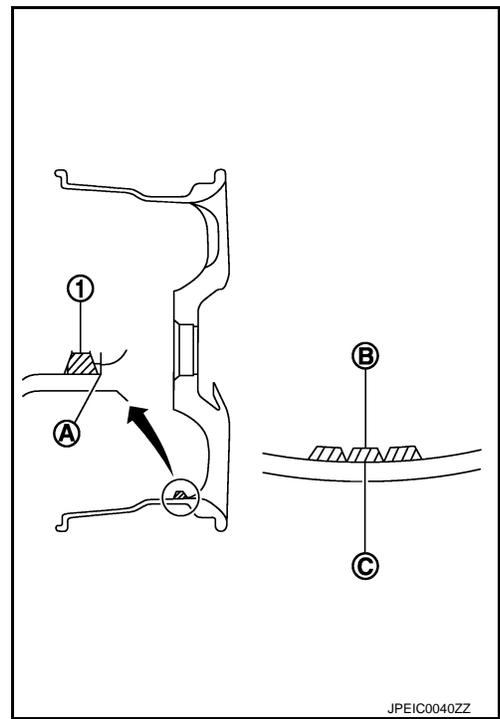
# ROAD WHEEL

## < PERIODIC MAINTENANCE >

- When installing balance weight (1) to road wheels, set it into the grooved area (A) on the inner wall of the road wheel as shown in the figure so that the balance weight center (B) is aligned with the tire balance machine indication position (angle) (C).

**CAUTION:**

- Always use genuine NISSAN balance weights.
- Balance weights are non-reusable; always replace with new ones.
- Never install three or more sheets of balance weight.



- c. If calculated balance weight value exceeds 50 g (1.76 oz), install two balance weight sheets in line with each other as shown in the figure.

**CAUTION:**

**Never install one balance weight sheet on top of another.**

- Start the tire balance machine again.
- Install drive-in balance weight on inner side of road wheel in the tire balance machine indication position (angle).

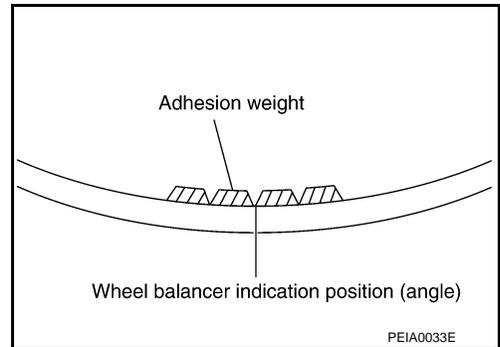
**CAUTION:**

**Never install three or more balance weight.**

- Start the tire balance machine. Check that the inner and outer residual unbalance value is within the allowable unbalance value.

**CAUTION:**

**If either residual unbalance value exceeds limit, repeat installation procedures.**



### Allowable unbalance value

**Dynamic (At flange) : Refer to [WT-9, "Road Wheel"](#).**

**Static (At flange) : Refer to [WT-9, "Road Wheel"](#).**

## BALANCING WHEELS (STEEL WHEEL)

### Preparation Before Adjustment

Remove balance weight from the road wheel.

### Wheel Balance Adjustment

- The details of the adjustment procedure are different for each model of wheel balancer. Therefore, refer to each instruction manual.
- If a tire balance machine has adhesion balance weight mode settings and drive-in weight mode setting, select and adjust a drive-in weight mode suitable for steel wheels.

- Set road wheel to wheel balancer, and then start wheel balancer.
- Install balance weight to road wheel according to the unbalance and position (angle) displayed on wheel balancer.

**CAUTION:**

- Always use genuine NISSAN balance weights.

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# ROAD WHEEL

## < PERIODIC MAINTENANCE >

- Balance weights are non-reusable; always replace with new ones.
  - Always use a plastic hammer when attaching the weight.
  - Never install three or more balance weights on one side.
3. Start the tire balance machine. Check that the inner and outer residual unbalance value is within the allowable unbalance value.

**CAUTION:**

If either residual unbalance value exceeds limit, repeat installation procedures.

**Allowable unbalance value**

**Dynamic (At flange)** : Refer to [WT-9, "Road Wheel"](#).

**Static (At flange)** : Refer to [WT-9, "Road Wheel"](#).

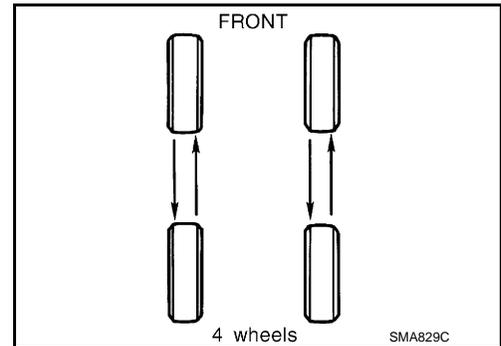
## Tire Rotation

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- Follow the maintenance schedule for tire rotation service intervals. Refer to [MA-5, "General Maintenance"](#).
- When installing the wheel, tighten wheel nuts to the specified torque. Refer to [WT-7, "Exploded View"](#).

**CAUTION:**

- Never include the T-type spare tire when rotating the tires.
- When installing wheels, tighten them diagonally by dividing the work two to three times in order to prevent the wheels from developing any distortion.
- Be careful not to tighten wheel nut at torque exceeding the criteria.
- Use NISSAN genuine wheel nut.



# ROAD WHEEL TIRE ASSEMBLY

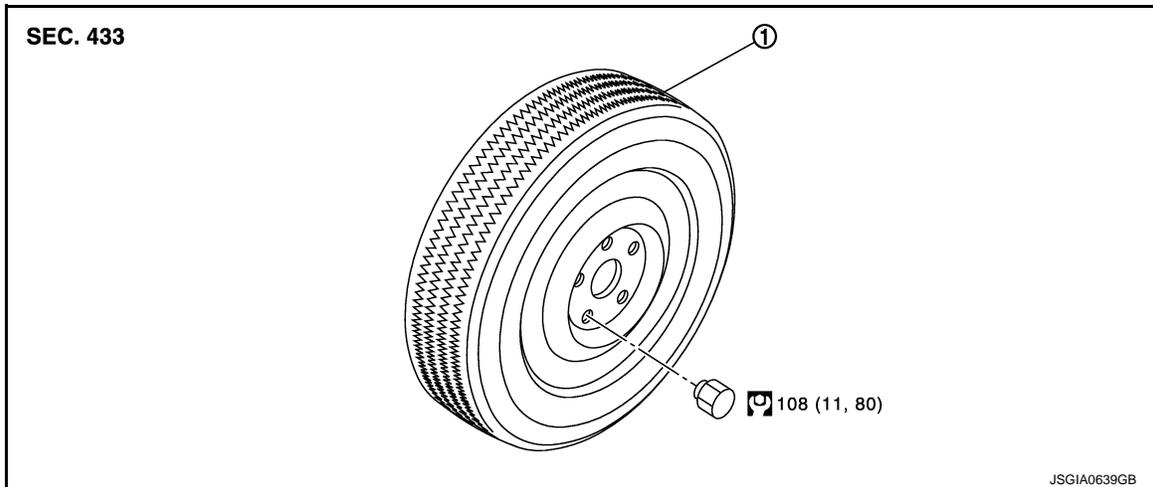
< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

### ROAD WHEEL TIRE ASSEMBLY

Exploded View

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1. Tire assembly

: N·m (kg·m, ft·lb)

### Removal and Installation

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#### REMOVAL

1. Remove wheel nuts.
2. Remove tire assembly.

#### INSTALLATION

Install in the reverse order of removal.

#### Inspection

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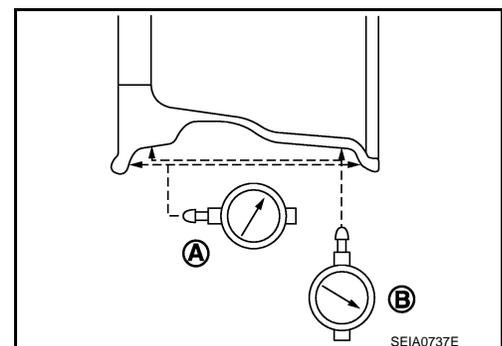
#### ALUMINUM WHEEL

1. Check tires for wear and improper inflation.
2. Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout.
  - a. Remove tire from aluminum wheel and mount on a tire balance machine.
  - b. Set dial indicator as shown in the figure.
  - c. Check radial runout, if the lateral deflection (A) or vertical deflection (B) for radial runout value exceeds the limit, replace aluminum wheel.

#### Limit

**Lateral deflection (A)** : Refer to [WT-9, "Road Wheel"](#).

**Vertical deflection (B)** : Refer to [WT-9, "Road Wheel"](#).



#### STEEL WHEEL

1. Check tires for were and improper inflation.

# ROAD WHEEL TIRE ASSEMBLY

## < REMOVAL AND INSTALLATION >

2. Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout.
  - a. Remove tire from steel wheel and mount wheel on a tire balance machine.
  - b. Set two dial indicators as shown in the illustration.
  - c. Set each dial indicator to "0".
  - d. Rotate wheel and check dial indicators at several points around the circumference of the wheel.
  - e. Calculate runout at each point as shown below.

**Lateral runout (A):**  $(1+2)/2$

**Radial runout (B):**  $(3+4)/2$

- f. Select maximum positive runout value and the maximum negative value. Add the two values to determine total runout.

**CAUTION:**

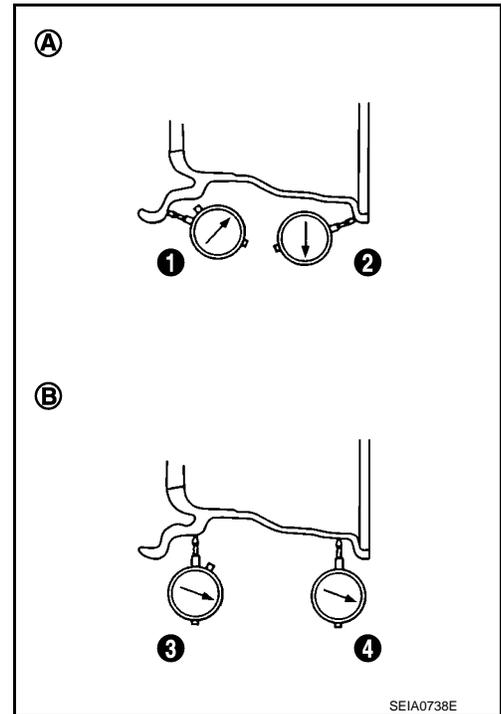
**In case a positive or negative value is not available, use the maximum value (negative or positive) for total runout.**

**Limit**

**Lateral deflection (A) : Refer to [WT-9, "Road Wheel"](#).**

**Vertical deflection (B) : Refer to [WT-9, "Road Wheel"](#).**

- g. If the total runout value exceeds limit, replace steel wheel.



## How to Handle Puncture Repair Agent (Without T-type Spare Tire)

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**CAUTION:**

- Never spill the sealant in the tire during repair.
- If the sealant spills, wipe it out with a waste cloth.

1. Remove tires. Refer to [WT-7, "Removal and Installation"](#).
2. Remove tire from road wheel, using a tire changer.

**CAUTION:**

- When deflating a tire, cover the valve with a waste cloth to prevent the sealant from splattering.
- Never spill the sealant in the tire during repair.

3. Dispose of sealant in the removed tire.

**CAUTION:**

- Wipe out sealant spilled on the road wheel, tire, tire changer, and floor with a waste cloth.
- Drained sealant or expired sealant returned by the customer must be disposed according to the law and local regulations.
- Fix a tire blowout, if repairable.

**NOTE:**

Sealant blocks holes caused by blowouts. These holes may not be found and repaired, depending on the level of blowout. Therefore, it is necessary to check tire air pressure frequently and replace tire with a new one, if the air pressure is decreasing.

- Replace tire with a new one, if not repairable.

**CAUTION:**

**Never dispose of tires with the sealant contained.**

## SERVICE DATA AND SPECIFICATIONS (SDS)

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# SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

### Road Wheel

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#### ALUMINUM WHEEL

| Item                               | Limit               |
|------------------------------------|---------------------|
| Radial runout                      | Lateral deflection  |
|                                    | Vertical deflection |
| Less than 0.3 mm (0.012 in)        |                     |
| Allowable unbalance                | Dynamic (At flange) |
|                                    | Static (At flange)  |
| Less than 5 g (0.17 oz) (one side) |                     |
| Less than 10 g (0.35 oz)           |                     |

#### STEEL WHEEL

| Item                               | Limit               |
|------------------------------------|---------------------|
| Radial runout                      | Lateral deflection  |
|                                    | Vertical deflection |
| Less than 0.8 mm (0.031 in)        |                     |
| Less than 0.5 mm (0.020 in)        |                     |
| Allowable unbalance                | Dynamic (At flange) |
|                                    | Static (At flange)  |
| Less than 5 g (0.17 oz) (one side) |                     |
| Less than 10 g (0.35 oz)           |                     |

#### STEEL WHEEL (EMERGENCY)

| Item                        | Limit               |
|-----------------------------|---------------------|
| Radial runout               | Lateral deflection  |
|                             | Vertical deflection |
| Less than 1.2 mm (0.047 in) |                     |
| Less than 1.0 mm (0.039 in) |                     |

### Tire Air Pressure

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#### 2WD

Unit: kPa (bar, kg/cm<sup>2</sup>, psi)

| Tire size       | Air pressure       |                    |
|-----------------|--------------------|--------------------|
|                 | Front              | Rear               |
| 205/60R16 92H   | 230 (2.3, 2.3, 33) | 210 (2.1, 2.1, 30) |
| 215/55R17 94V   | HR16DE, K9K        | 230 (2.3, 2.3, 33) |
|                 | MR16DDT            | 250 (2.5, 2.5, 36) |
| T135/90R16 102M | 420 (4.2, 4.2, 60) |                    |

#### 4WD

Unit: kPa (bar, kg/cm<sup>2</sup>, psi)

| Tire size     | Air pressure       |                    |
|---------------|--------------------|--------------------|
|               | Front              | Rear               |
| 215/55R17 94V | 250 (2.5, 2.5, 36) | 230 (2.3, 2.3, 33) |