

SECTION **WT**  
ROAD WHEELS & TIRES

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**WT**

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# NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

## NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

PF0:00003

### NVH Troubleshooting Chart

AES000G1

Use the chart below to help you find the cause of the symptom. If necessary, repair or replace these parts.

Symptom		Possible cause and SUSPECTED PARTS		Reference page																		
				FAX-4, FSU-5	WT-3	—	—	—	—	—	—	—	NVH in PR section.	NVH in RFD section.	NVH in FAX and FSU sections.	NVH in RAX and RSU sections.	Refer to TIRES in this chart.	Refer to ROAD WHEEL in this chart.	NVH in RAX section.	NVH in BR section.	NVH in PS section.	
Symptom	TIRES	Noise	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
		Shake	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
		Vibration				x					x	x	x	x								x
		Shimmy	x	x	x	x	x	x	x	x	x			x	x		x			x	x	x
		Judder	x	x	x	x	x	x		x			x	x		x			x	x	x	x
		Poor quality ride or handling	x	x	x	x	x	x		x			x	x		x						
	ROAD WHEEL	Noise	x	x	x			x			x	x	x	x	x			x	x	x	x	
		Shake	x	x	x			x			x		x	x	x			x	x	x	x	
		Shimmy, Judder	x	x	x			x					x	x	x				x	x	x	
		Poor quality ride or handling	x	x	x			x					x	x	x							

x: Applicable

# ROAD WHEEL

## ROAD WHEEL

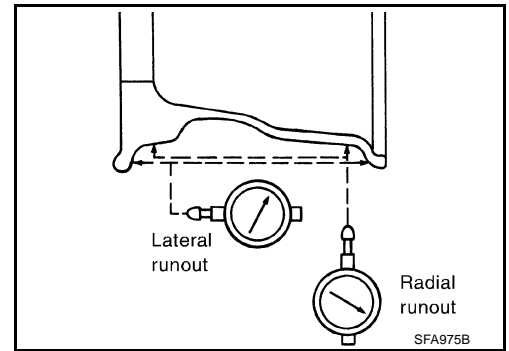
PFP:40300

### Inspection

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 wheel and mount on a tire balance machine.
  - b. Set dial indicator as shown in the illustration.

**Wheel runout (Dial indicator value):**

Refer to [WT-7, "SERVICE DATA"](#)



A  
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WT

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# ROAD WHEEL TIRE ASSEMBLY

## ROAD WHEEL TIRE ASSEMBLY

PFP:40300

### Balancing Wheels (Bonding Weight Type) REMOVAL

AES000G3

1. Remove inner and outer balance weights from the road wheel.

**CAUTION:**

**Be careful not to scratch the road wheel during removal.**

2. 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

- 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 road wheels.

1. Set road wheel on wheel balancer using the center hole as a guide. Start the tire balance machine.
2. When inner and outer unbalance values are shown on the wheel balancer 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 it to the designated outer position of, or at the designated angle in relation to the road wheel.

**CAUTION:**

- **Do not install the inner balance weight before installing the outer balance weight.**
- **Before installing the balance weight, be sure to clean the mating surface of the road wheel.**

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

Calculation example:

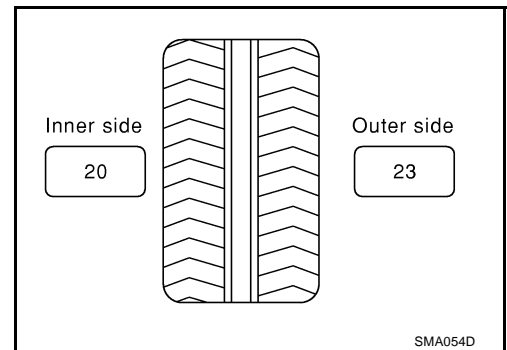
$23 \text{ g (0.81 oz)} \times 5/3 = 38.33 \text{ g (1.35 oz)} = 40 \text{ g (1.41 oz)}$  balance weight (closer to calculated balance weight value)

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

Example:

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

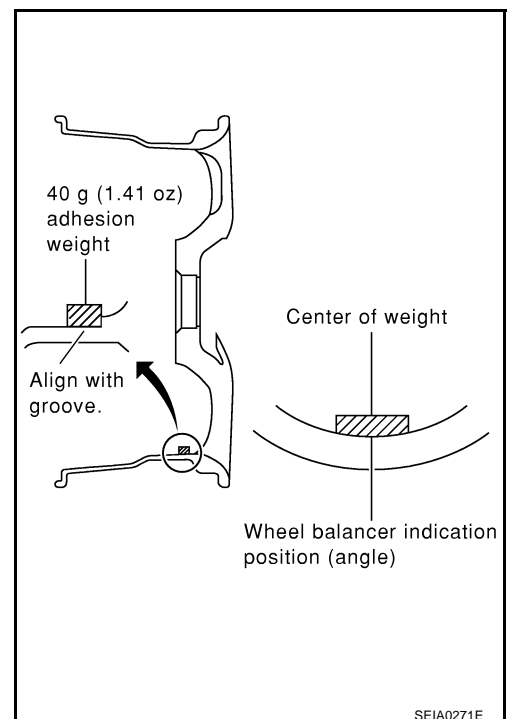
$37.5 = 40 \text{ g (1.41 oz)}$



- a. Install balance weight in the position shown in the figure.
- b. When installing balance weight to road wheels, set it into the grooved area on the inner wall of the road wheel as shown in the figure so that the balance weight center is aligned with the wheel balancer indication position (angle).

**CAUTION:**

- **Always use genuine Nissan adhesion balance weights.**
- **Balance weights are un reusable; always replace with new ones.**
- **Do not install more than three sheets of balance weight.**



# ROAD WHEEL TIRE ASSEMBLY

- 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:**

**Do not install one balance weight sheet on top of another.**

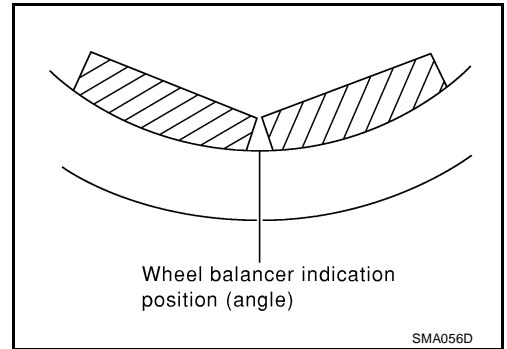
3. Start wheel balancer again.  
4. Install drive-in balance weight on inner side of road wheel in the wheel balancer indication position (angle).

**CAUTION:**

**Do not install more than two balance weights.**

5. Start wheel balancer. Make sure that inner and outer residual unbalance values are 10 g (0.35 oz) each or below.
- If either residual unbalance value exceeds 10 g (0.35 oz), repeat installation procedures.

**Wheel balance (Maximum allowable unbalance):**



Maximum allowable unbalance	Dynamic (At rim flange)	Less than 10 g (0.35 oz) (one side)
	Static (At rim flange)	Less than 20 g (0.70 oz)

## Rotation TIRES OF THIS MODEL CAN NOT ROTATE

AES000G4

**CAUTION:**

When installing wheels, tighten them diagonally by dividing the work two to three times in order to prevent the wheels from developing any distortion.

**Tightening torque of wheel nut:**

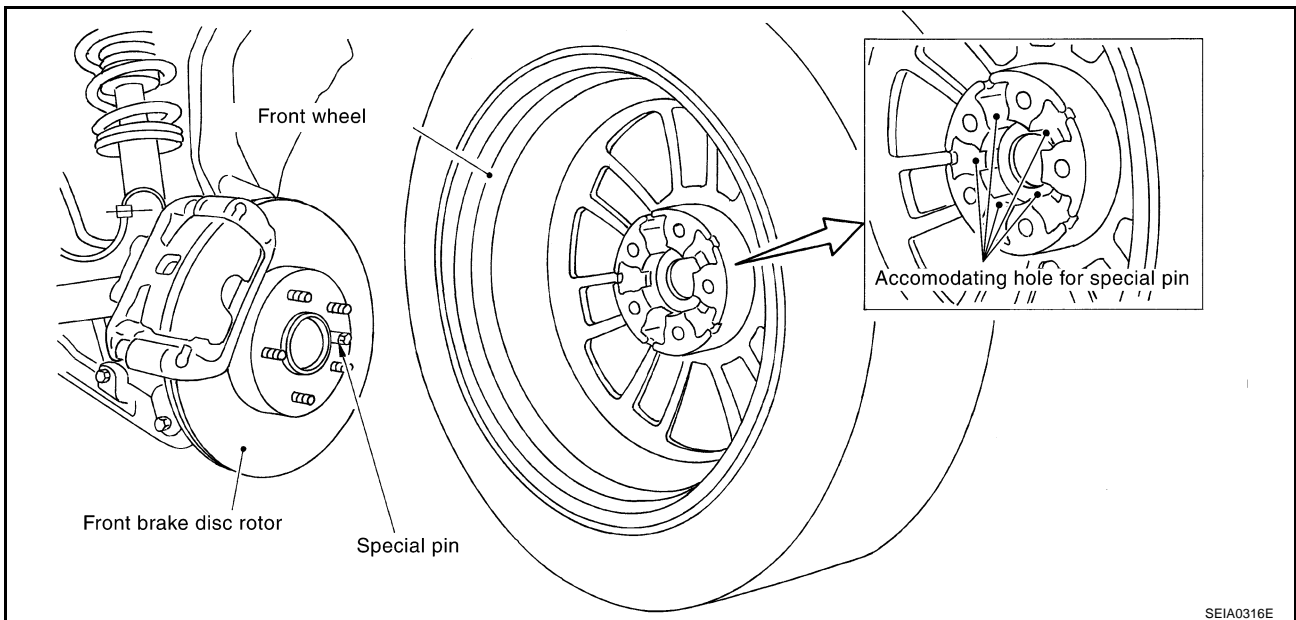
**98 - 118 N·m (10 - 12 kg·m, 72 - 87 ft·lb)**

## DESCRIPTION

### Safety Device Preventing from Being Incorrectly Installed

Front brake disc rotor and front wheel

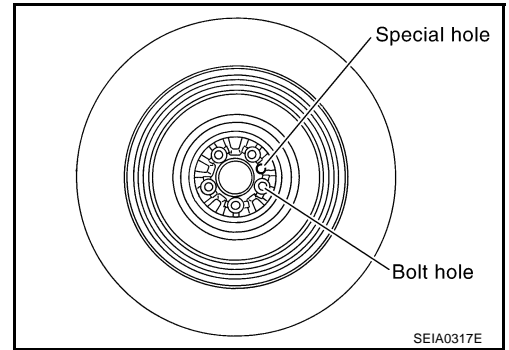
- Front and rear wheel size for this model differs, therefore a special pin has been installed on the front brake disc rotor. To accommodate this pin a hole has been provided on the front wheel (the rear wheel does not have this hole.) and in some case the rear wheel is being mistakenly installed on the front.



# ROAD WHEEL TIRE ASSEMBLY

## T-type spare tire wheel

- T-type spare tire wheel for this model has a special hole designed to avoid the pin on front disc rotor.



# SERVICE DATA

## SERVICE DATA

PFP:00030

### Road Wheel

AES000G5

A  
B  
C  
D

Standard item		Allowable value	
		Aluminum	Steel for emergency use
Deflection limit	Lateral deflection	Less than 0.3 mm (0.012 in)	Less than 1.0 mm (0.039 in)
	Vertical deflection	Less than 0.3mm (0.012 in)	Less than 1.2mm (0.047 in)
Allowable quantity of residual unbalance	Dynamic (At rim flange)	Less than 10g (0.35 oz) (per side)	
	Static (At rim flange)	Less than 20g (0.70 oz)	

WT

### Tire

AES000G6

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

F  
G  
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Tire size	Air pressure	
	Front tire	Rear tire
P225/50R17 93V	210 (2.1, 30)	—
P235/50R17 95W	—	210 (2.1, 30)
225/45R18 91W	240(2.4, 35)	—
245/45R18 96W	—	240(2.4, 35)
T145/90D16	420 (4.2, 60)	
T155/80R17	420 (4.2, 60)	

**SERVICE DATA**

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