SECTION WT
ROAD WHEELS & TYRES

CONTENTS

PRECAUTIONS

PFP:00011

Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

EES000ZD

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

PFP:00003

NVH Troubleshooting Chart

EES000ZE

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

Reference page			Refer to WT-4, "ROAD WHEEL"															
Possible cause and SUSPECTED PARTS			Out-of-round	Imbalance	Incorrect tyre pressure	Uneven tyre wear	Deformation or damage	Non-uniformity	Incorrect tyre size	DIFFERENTIAL	FRONT AXLE AND FRONT SUSPENSION	REAR AXLE AND REAR SUSPENSION	TYRES	ROAD WHEEL	DRIVE SHAFT	BRAKE	STEERING
Symptom	TYRES	Noise	×	×	×	×	×	×		×	×	×		×	×	×	×
		Shake	×	×	×	×	×		×		×	×		×	×	×	×
		Vibration			×				×		×	×			×		×
		Shimmy	×	×	×	×	×	×	×		×	×		×		×	×
		Judder	×	×	×	×	×		×		×	×		×		×	×
		Poor quality ride or handling	×	×	×	×	×		×		×	×		×			
	ROAD WHEEL	Noise	×	×			×			×	×	×	×		×	×	×
		Shake	×	×			×				×	×	×		×	×	×
		Shimmy, judder	×	×			×				×	×	×			×	×
		Poor quality ride or handling	×	×			×				×	×	×				

×: Applicable

ROAD WHEEL

PFP:40300

Inspection

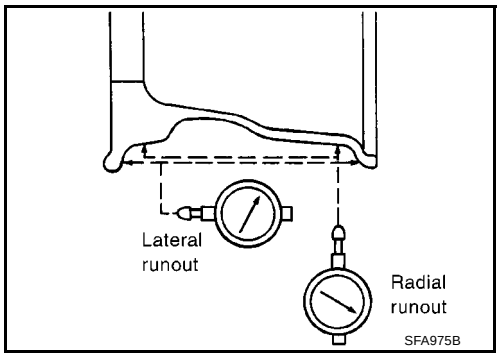
EES000ZF

ALUMINUM WHEEL

1. Check tyres for wear and improper inflation.
2. Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout.

a. Remove tyre from aluminum wheel and mount on a tyre balance machine.

b. Set dial indicator as shown in the illustration.



Wheel runout (Dial indicator value):

Refer to WT-8, "SERVICE DATA"

STEEL WHEEL

1. Check tyres for wear and improper inflation.
2. Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout.

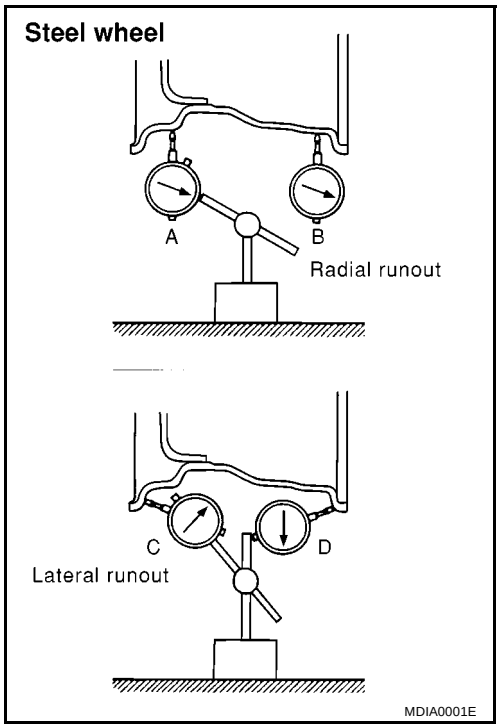
a. Remove tyre from steel wheel and mount wheel on a tyre balance machine.

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.



Radial runout = (A + B)/2 : 0.5 mm (0.020 in)

Lateral runout = (C + D)/2 : 0.8 mm (0.031 in)

f. Select maximum positive runout value and the maximum negative value.
Add the two values to determine total runout.
In case a positive or negative value is not available, use the maximum value (negative or positive) for total runout.
If the total runout value exceeds the limit, replace steel wheel.

Wheel runout:

Refer to WT-8, "SERVICE DATA"

ROAD WHEEL AND TYRE ASSEMBLY

PFP:40312

Balancing Wheels (Bonding Weight Type)

EES000ZG

REMOVAL

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

CAUTION:

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

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

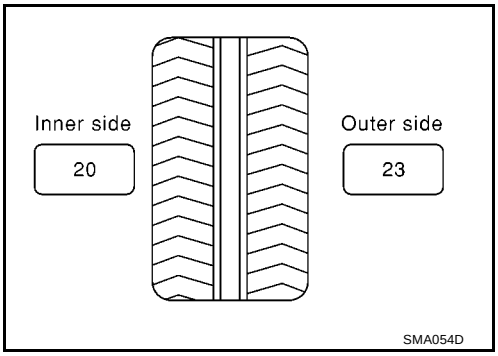
- If a tyre balance machine has adhesion balance weight mode settings and drive-in weight mode setting, select and adjust a drive-in weight mode suitable for road wheels.

1. Set road wheel on wheel balancer using the center hole as a guide. Start the tyre 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.

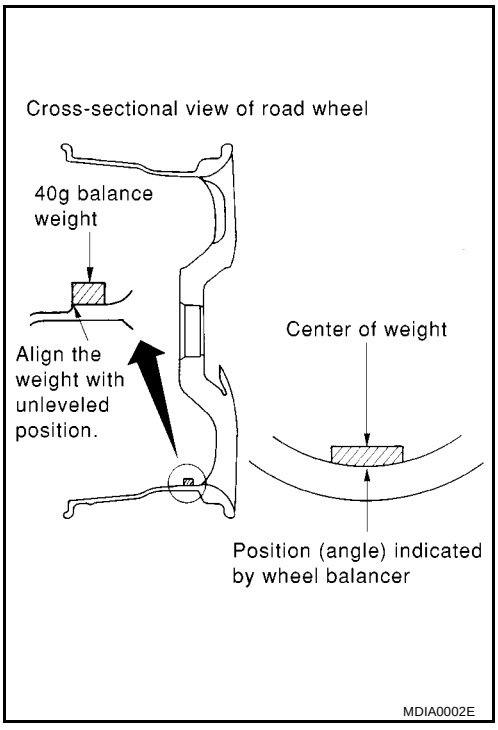
CAUTION:

- **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.**

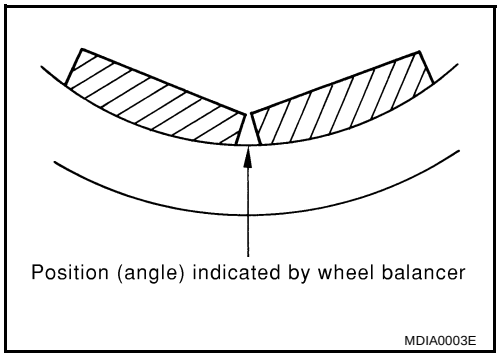
Indicated unbalance value × 5/3 = balance weight to be installed
Calculation example:
23 g (0.81 oz) × 5/3 = 38.33 g (1.35 oz) = 40 g (1.41 oz) balance weight (closer to calculated balance weight value)
Note that balance weight value must be closer to the calculated balance weight value.
Example:
37.4 = 35 g (1.23 oz)
37.5 = 40 g (1.41 oz)



- Attach weight as shown in figure.
- When attaching weight to road wheel, align it with step on rear surface of wheel, as shown in figure. Attach so that center of weight and position (angle) of wheel balancer indicator are aligned.
- Do not attach more than 2 adhesive weights.



- If calculated value exceeds 50 g (1.76 oz), attach two weights side by side, as shown in figure.



CAUTION:
When attaching two weights, do not attach them one on top of the other.

3. Start the wheel balancer again.
4. As before, attach drive-in weight to inner side of road wheel, according to amount and position (angle) of imbalance indicated by wheel balancer.
5. Start wheel balancer. Check that residual imbalance amount is 10 g (0.35 oz) or less for both outer and inner sides.

- If residual imbalance exceeds 10 g (0.35 oz), then repeat procedure from start.

Permissible amount of residual imbalance

Dynamic (at lug)	**: 10 g (0.35 oz) or less (one side)**
Static (at lug)	**: 20 g (0.71 oz) or less**
Maximum balance weight correction	**: 100 g (3.53 oz)**

Balancing Wheels (Drive-in Weight Type)

EES000ZH

WHEEL BALANCE ADJUSTMENT

1. Remove wheel from vehicle.
2. Set road wheel on wheel balancer and start balancer machine.

- Set with top/bottom reversed from vehicle installation position. After setting wheel on wheel balancer, make mark on top surface of wheel.
- Adjust wheel balance using a wheel balancer with straight cone attachment. Be sure cone contacts reverse side of wheel.
- If a general-purpose taper cone must be used to adjust wheel balance, place cone against reverse side of wheel and support it.
- Resin hammer must be used to drive in balance weights.

CAUTION:
Do not reuse balance weights after they are removed. Be sure to use new Nissan genuine weights designed for use with steel wheels.

Permissible amount of residual imbalance

Dynamic (at lug)	**: 10 g (0.35 oz) or less (one side)**
Static (at lug)	**: 20 g (0.71 oz) or less**
Maximum balance weight correction	**: 60 g (2.12 oz)**

3. Remove wheel from wheel balancer.
4. Install wheel to vehicle, with mark on lower side.

- Minimize imbalance by keeping same relative positions between hub-wheel contact points when installing to vehicle as when adjusting wheel balance.

CAUTION:
So as not to deform wheel, install by tightening at opposite angles, in 2 - 3 steps.

Tightening torque of wheel nut : 90 - 120 N·m (9.2 - 12.2 kg-m, 67 - 88 ft-lb)

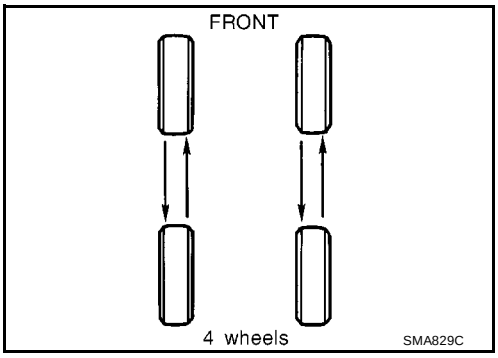
Rotation

EES000ZI

- After rotating the tyres, adjust the tyre pressure.
- Retighten the wheel nuts when the vehicle has been driven for 1,000 km (600 miles) (also in cases of a flat tyre, etc).
- Do not include the T-type spare tyre when rotating the tyres.

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 : 90 - 120 N·m (9.2 - 12.2 kg-m, 67 - 88 ft-lb)



SERVICE DATA

PFP:00030

Road Wheel

EES000ZJ

Kind of wheel		Aluminum	Steel
Deflection limit	Lateral deflection	Less than 0.3 mm (0.012 in)	Less than 0.5 mm (0.020 in)
	Vertical deflection	Less than 0.3 mm (0.012 in)	Less than 0.8 mm (0.031 in)
Allowable quantity of residual unbalance	Dynamic (On the ear part)	Less than 10 g (0.35 oz) (per side)	
	Static (On the ear part)	Less than 20 g (0.70 oz)	

Tyre

EES000ZK

FOR CR ENGINES:

Unit: kPa (kg/cm^2 , psi)

Tyre size	Air pressure		
	Front wheel	Rear wheel	
		3D	5D
165/70R14 175/60R15	226 (2.3, 33)	206 (2.1, 30)	245 (2.5, 36)
T0105/70D14	412 (4.2, 60)		

FOR K9K ENGINES:

Unit: kPa (kg/cm^2 , psi)

Tyre size	Air pressure		
	Front wheel	Rear wheel	
		Normal condition	Full load
175/65R15	226 (2.3, 34)	206 (2.1, 31)	275 (2.8, 41)
T125/70D14	420 (4.2, 60)		