

WHEEL AND TIRE SYSTEM

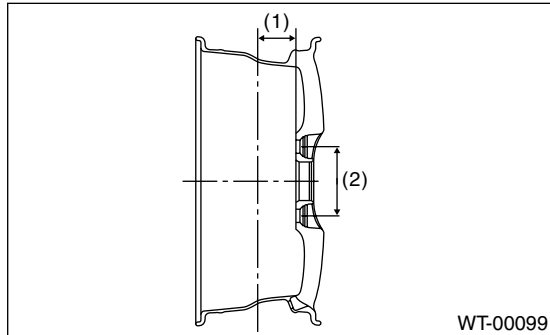
General Description

WHEEL AND TIRE SYSTEM

1. General Description

A: SPECIFICATION

1. WHEEL AND TIRE SIZE



(1) Offset

(2) P.C.D.

| Specification | Tire size | Wheel size | Offset mm (in) | P.C.D. mm (in) | Tire inflation pressure kPa (kgf/cm ² , psi) | | |
|---------------------------------------|--|-----------------|-------------------|-------------------|--|---------------|--|
| | | | | | Front wheel | Rear wheel | |
| RS sport package, RS, WRX, OUTBACK | 205/55R16 89V | 16×6 1/2JJ | 55 (2.17) | 100 (3.94) | 220 (2.2, 32) | 200 (2.0, 29) | |
| WRX: OPTION | 215/45R17 87W | 17 × 7JJ | 55 (2.17) | | 230 (2.3, 33) | 220 (2.2, 32) | |
| STi | 225/45R17 90W | 17 × 8JJ | 53 (2.09) | 114.3 (4.50) | 250 (2.5, 36) | 210 (2.1, 30) | |
| “T-type” Tire | RS sport pack- age, RS, WRX, OUTBACK | T135/70D16 100M | 16 × 4T | 50 (1.97) | 100 (3.94) | 420 (4.2, 60) | |
| | STi | T135/70D17 102M | 17 × 4T | 40 (1.57) | 114.3 (4.50) | | |

NOTE:

“T-type” tire for temporary use is supplied as a spare tire.

2. SERVICE DATA

| Item | Axial runout | Radial runout |
|----------------|-------------------|---------------|
| Aluminum wheel | 1.0 mm (0.039 in) | |

3. ADJUSTING PARTS

| Wheel balance | Standard | Service limit |
|-------------------|-------------------------|---------------|
| Dynamic unbalance | Less than 5 g (0.18 oz) | |

| Balance weight part number (Knock-on type weight for aluminum wheel) | Weight |
|--|----------------|
| 28101SA000 | 5 g (0.18 oz) |
| 28101SA010 | 10 g (0.35 oz) |
| 28101SA020 | 15 g (0.53 oz) |
| 28101SA030 | 20 g (0.71 oz) |
| 28101SA040 | 25 g (0.88 oz) |
| 23141GA512 | 30 g (1.06 oz) |
| 23141GA522 | 35 g (1.23 oz) |
| 23141GA532 | 40 g (1.41 oz) |
| 23141GA542 | 45 g (1.59 oz) |
| 23141GA552 | 50 g (1.76 oz) |
| — | 55 g (1.94 oz) |
| 23141GA572 | 60 g (2.12 oz) |

B: PREPARATION TOOL

1. GENERAL TOOL

| TOOL NAME | REMARKS |
|--------------------|---------------------------------------|
| Air pressure gauge | Used for measuring tire air pressure. |
| Dial gauge | Used for measuring wheel runout. |
| Wheel balancer | Used for adjusting wheel balance. |

2. Tire

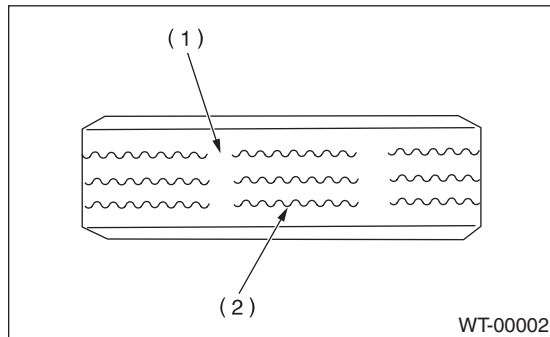
A: INSPECTION

- 1) Take stone, glass, nail etc. off from tread groove.
- 2) Replace the tire if as follows.

CAUTION:

When replacing a tire, make sure to use only the same size, construction and load range tire as originally installed.

- (1) When a large crack on the side wall, damage or a crack on tread are found.
- (2) When the "tread wear indicator" appears as a solid band across the tread.

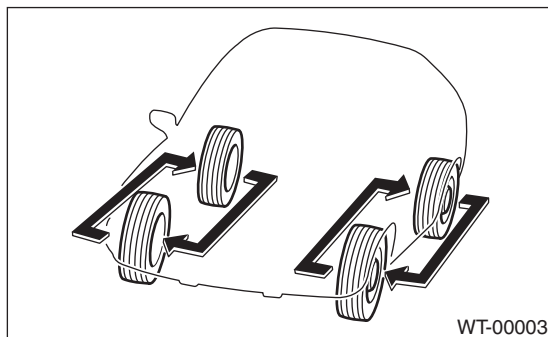


- (1) Tread wear indicator
- (2) Tire tread

- 3) When a crack on tire valve is found, replace the tire valve.

1. TIRE ROTATION

Rotate tires periodically (12,500 km/7,500 miles) as shown in the figure, in order to prevent them from uneven wear and to prolong their life.



3. Aluminum Wheel

A: REMOVAL

- 1) Apply parking brake, and position the select lever to "P" or "LOW".
- 2) Set jacks or a lift to the specified point, and support the vehicle with its tires slightly contacting the floor.
- 3) Loosen the wheel nuts.
- 4) Raise the vehicle until its tires take off the ground using a jack or a lift.
- 5) Remove the wheel nuts and wheels.

NOTE:

- While removing the wheels, prevent the hub bolts from damage.
- Place the wheels with their outer sides facing upward to prevent the wheels from damage.

B: INSTALLATION

- 1) Remove dirt from the mating surface of wheel and brake rotor.
- 2) Attach the wheel to hub by aligning the wheel bolt hole with hub bolt.
- 3) Temporarily attach the wheel nuts to hub bolts, using SUBARU genuine wheel nut.
- 4) Manually tighten the nuts making sure the wheel hub hole is aligned correctly to guide portion of hub.
- 5) Tighten the wheel nuts in a diagonal selection to specified torque. Use a wheel nut wrench.

Wheel nut tightening torque:
90 N·m (9.1 kgf·m, 65.7 ft·lb)

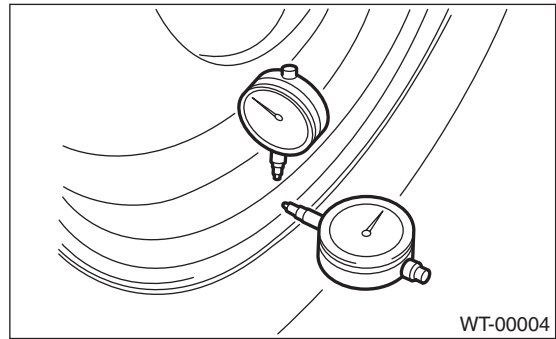
CAUTION:

- **Tighten the wheel nuts in two or three steps by gradually increasing the torque and working diagonally, until the specified torque is reached.**
 - **Do not depress the wrench with foot; Always use both hands when tightening.**
 - **Make sure the bolt, nut and nut seating surface of the wheel are free from oils.**
- 6) If a wheel is removed for replacement or for repair of a puncture, retighten the wheel nuts to the specified torque after running 1,000 km (600 miles).

C: INSPECTION

- 1) Deformation or damage on the rim can cause air leakage. Check the rim flange for deformation, crack or damage, and repair or replace as necessary.
- 2) Jack-up the vehicle until tires clear the floor.

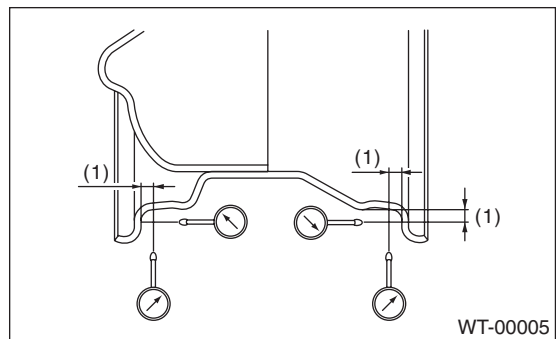
- 3) Slowly rotate the wheel to check the rim "runout" using a dial gauge.



WT-00004

| Axial runout limit | Radial runout limit |
|--------------------|---------------------|
| 1.0 mm (0.039 in) | |

- 4) If the rim runout exceeds specifications, remove the tire from rim and check runout while attaching the dial gauge to positions shown in the figure.



WT-00005

(1) Approx. 7 mm (0.28 in)

- 5) If the measured runout still exceeds specifications, replace the wheel.

D: CAUTION

- Aluminum wheels are easily scratched. To maintain their appearance and safety, do the following:
- 1) Do not damage the aluminum wheels during removal, installation, wheel balancing, etc. After removing, place them on a rubber mat, etc.
 - 2) While the vehicle is being driven, be careful not to ride over sharp obstacles or allow the wheels to contact the shoulder of road.
 - 3) When installing a tire chain, be sure to install it properly not to have slack; otherwise it may hit the wheel while driving.
 - 4) When washing the aluminum wheel, use neutral synthetic detergent and water. Avoid using the cleanser including abrasive, hard brushes or an automatic car washer.

Wheel Balancing

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4. Wheel Balancing

A: REPLACEMENT

- 1) Remove the balance weights.
- 2) Using wheel balancer, measure the wheel balance.
- 3) Select a weight close to the value measured by wheel balancer.

| Balance weight part number (Knock-on type weight for aluminum wheel) | Weight |
|--|----------------|
| 28101SA000 | 5 g (0.18 oz) |
| 28101SA010 | 10 g (0.35 oz) |
| 28101SA020 | 15 g (0.53 oz) |
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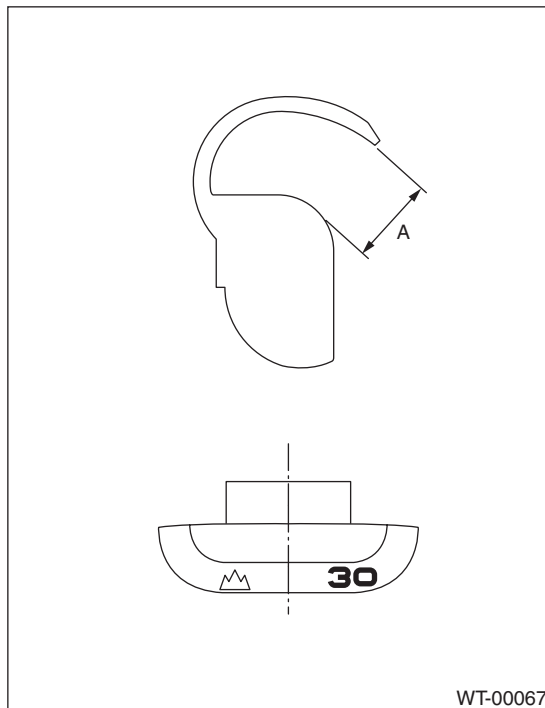
- 4) Install the selected weight to the point designated by wheel balancer.
- 5) Using wheel balancer, measure the wheel balance again. Check the wheel balance is correctly adjusted.

B: INSPECTION

- 1) Proper wheel balance may be lost if the tire is repaired or if it wears. Check the tire for dynamic balance, and repair as necessary.
- 2) To check for dynamic balance, use a wheel balancer. Drive in the balance weight on both the top and rear sides of rim.
- 3) Some types of balancer can cause damage to the wheel. Use an appropriate balancer when adjusting the wheel balance.
- 4) Use genuine balance weights.

NOTE:

- 55 g (1.94 oz) weight used with the aluminum wheel is not available.
- Balance weights are available for use with any of 16 to 17-inch wheels.



Service limit A:

5 g (0.18 oz) — 25 g (0.88 oz) 5.0 mm (0.20 in)
30 g (1.06 oz) or more 4.5 mm (0.177 in)

5. “T-type” Tire

A: NOTE

“T-type” tire for temporary use is prepared as a spare tire.

CAUTION:

- Do not use a tire chain with the “T-type” tire. Because of the smaller tire size, a tire chain will not fit properly and will result in damage to the vehicle and the tire.
- Do not drive at a speed greater than 80 km/h (50 MPH).
- Drive as slowly as possible and avoid passing over bumps.

B: REPLACEMENT

Refer to Aluminum Wheel for removal and installation of “T-type” tires. <Ref. to WT-5, Aluminum Wheel.>

CAUTION:

Replace with a conventional tire as soon as possible since the “T-type” tire is only for temporary use.

C: INSPECTION

1) Check the tire inflation pressure.

Specification:

420 kPa (4.2 kg/cm², 60 psi)

- 2) Take stones, glass, nails, etc. out of the tread groove.
- 3) Check the tires for deformation, cracks, partial or over limit wear.

CAUTION:

Replace the tire with a new one.

General Diagnostic Table

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6. General Diagnostic Table

A: INSPECTION

| Symptom | Possible cause | Remedy |
|--------------------|-----------------------------------|--|
| Front wheel shimmy | Worn or improperly inflated tire. | In case of worn tire, replace the tire. In case of improperly inflated tire, adjust the tire air pressure properly. |
| | Wheel is out of balance. | Adjustment. |
| Abnormal tire wear | Improperly inflated tire. | Replace. |
| Sways/pitches | Worn or improperly inflated tire. | In case of worn tire, replace the tire. In case of improperly inflated tire, adjust the tire air pressure properly. |
| Wander/pulls | Worn or improperly inflated tire. | In case of worn tire, replace the tire. In case of improperly inflated tire, adjust the tire air pressure properly. |