

# WHEELS AND TIRES

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## OUTLINE

### SPECIFICATIONS

| Wheels               |                   |                                  |                        |          | Tires                          |                                              |
|----------------------|-------------------|----------------------------------|------------------------|----------|--------------------------------|----------------------------------------------|
| Size                 | Offset            | Diameter of pitch circle         | Number of fixing holes | Material | Size                           | Tire pressure                                |
| Standard tire        |                   |                                  |                        |          |                                |                                              |
| 7JJ x 16             | 40mm<br>(1.57 in) | 114.3mm<br>(4.5 in)              | 5                      | Aluminum | 205/55R16 88V<br>(Directional) | 216 kPa<br>(2.2 kg/cm <sup>2</sup> , 32 psi) |
| 6 1/2JJ x 15         |                   |                                  |                        |          | 205/60VR15<br>(Directional)    |                                              |
| 6JJ x 15             |                   |                                  |                        |          | 205/60VR15<br>(Directional)    |                                              |
|                      | Steel             | 205/60R15 89H<br>(Undirectional) |                        |          |                                |                                              |
| Temporary spare tire |                   |                                  |                        |          |                                |                                              |
| 4T x 16              | 30mm<br>(1.18 in) | 114.3mm<br>(4.5 in)              | 5                      | Aluminum | T135/70 D16                    | 415 kpa<br>(4.2 kg/cm <sup>2</sup> , 60 psi) |
| 4T x 15              | 40mm<br>(1.57 in) |                                  |                        | Steel    | T135/70 D15                    |                                              |

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**TROUBLESHOOTING GUIDE**

| <b>Problem</b>                                                                 | <b>Possible Cause</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Action</b>                                                                                                                                                             | <b>Page</b>                                                                                                                                         |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Excessive or irregular tire wear</b>                                        | Refer to page Q– 5 for details.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                           |                                                                                                                                                     |
| <b>Premature tire wear</b>                                                     | Incorrect tire pressure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Adjust                                                                                                                                                                    | Q– 2                                                                                                                                                |
| <b>Tire squeal</b>                                                             | Incorrect tire pressure<br>Tire deterioration                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Adjust<br>Replace                                                                                                                                                         | Q– 2<br>—                                                                                                                                           |
| <b>Road noise or body vibration</b>                                            | Insufficient tire pressure<br>Unbalanced wheel(s)<br>Deformed wheel(s) or tire(s)<br>Irregular tire wear                                                                                                                                                                                                                                                                                                                                                                                               | Adjust<br>Adjust<br>Repair or replace<br>Replace                                                                                                                          | Q– 2<br>Q– 6<br>—<br>—                                                                                                                              |
| <b>“Shake” occurs (Steering wheel vibrates up/down)</b>                        | Excessive tire and wheel runout<br>Loose lug nuts<br>Unbalanced wheel(s)<br>Cracked or worn engine mount rubber<br>Cracked or worn transmission mount rubber                                                                                                                                                                                                                                                                                                                                           | Replace<br>Tighten<br>Adjust or replace<br>Replace<br>Replace                                                                                                             | —<br>Q– 5<br>Q– 6<br>Section C<br>Sections J1,J2,K                                                                                                  |
| <b>“Shimmy” occurs (Steering wheel vibrates left/right)</b>                    | Cracked or worn steering gear mount rubber<br>Loose steering gear mounting bolts<br>Stuck or damaged steering ball joint<br>Excessive tire and wheel runout<br>Loose lug nuts<br>Unbalanced wheel(s)<br>Insufficient tire pressure<br>Unevenly worn tires<br>Malfunction of shock absorber<br>Loose shock absorber mounting bolts<br>Struck or damaged lower arm ball joint<br>Cracked or worn suspension bushings<br>Damaged or worn front wheel bearing<br>Improperly adjusted front wheel alignment | Replace<br>Tighten<br>Replace<br>Replace<br>Tighten<br>Adjust or replace<br>Adjust<br>Replace<br>Replace<br>Tighten<br>Replace<br>Replace<br>Replace<br>Replace<br>Adjust | Section N<br>Section N<br>Section N<br>—<br>Q– 5<br>Q– 6<br>Q– 2<br>—<br>Section R<br>Section R<br>Section R<br>Section R<br>Section M<br>Section R |
| <b>Uneven (one-sided) braking</b>                                              | Unequal tire pressures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Adjust                                                                                                                                                                    | Q– 2                                                                                                                                                |
| <b>Steering wheel doesn’t return properly or pulls to either left or right</b> | Incorrect tire pressure<br>Irregular tire wear (left/right)<br>Unequal tire pressures<br>Different types or brands of tires mixed (left/right)<br>Loose lug nuts                                                                                                                                                                                                                                                                                                                                       | Adjust<br>Replace<br>Adjust<br>Replace<br>Tighten                                                                                                                         | Q– 2<br>—<br>Q– 2<br>—<br>Q– 5                                                                                                                      |
| <b>General driving instability</b>                                             | Unequal tire pressures<br>Damaged or unbalanced wheel(s)<br>Loose lug nuts                                                                                                                                                                                                                                                                                                                                                                                                                             | Adjust<br>Replace or adjust<br>Tighten                                                                                                                                    | Q– 2<br>Q– 6<br>Q– 5                                                                                                                                |
| <b>Excessive steering wheel play</b>                                           | Loose lug nuts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Tighten                                                                                                                                                                   | Q– 5                                                                                                                                                |

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## WHEELS AND TIRES

### SPECIAL NOTES ABOUT WHEELS AND TIRES

1. Do not use wheels or tires other than the specified types.
2. Aluminum wheels are easily scratched. When washing them, use a soft cloth, never a wire brush. If the vehicle is steam cleaned, do not allow boiling water to contact the wheels.
3. If alkaline compounds (such as saltwater or road salts) get on aluminum wheels, wash them as soon as possible to prevent damage. Use only a neutral detergent.

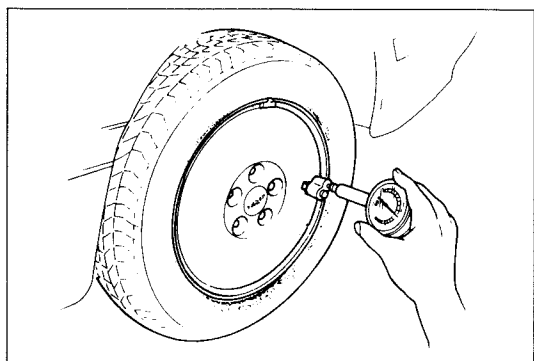
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### NOTES REGARDING TIRE REPLACEMENT

Note the following points when tires are to be removed from or mounted onto the wheels.

1. Be careful not to damage the tire bead, the rim bead, or the edge of the rim.
2. Apply a soapy solution to the tire bead and the edge of the rim.
3. Use a wire brush, sandpaper, or cloth to clean and remove all rust and dirt from the rim edge and the rim bead. For aluminum wheels, use only a cloth for this purpose; never use a wire brush or sandpaper.
4. Remove any pebbles, glass, nails, and other foreign items embedded in the tire tread.
5. Be sure the air valve is installed correctly.
6. After mounting a tire onto a wheel, inflate the tire to 250—300 kPa (2.55—3.06 kg/cm<sup>2</sup>, 35.55—42.66 psi). Check to be sure that the bead is seated correctly onto the rim and that there are no air leaks. Then reduce the pressure to the specified level.
7. If a tire iron is used to change a tire on an aluminum wheel, be sure to use a piece of rubber between the iron lever and the wheel to avoid damage to the wheel. Work should be done on a rubber mat, not on a hard or rough surface.

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### INSPECTION AND ADJUSTMENT

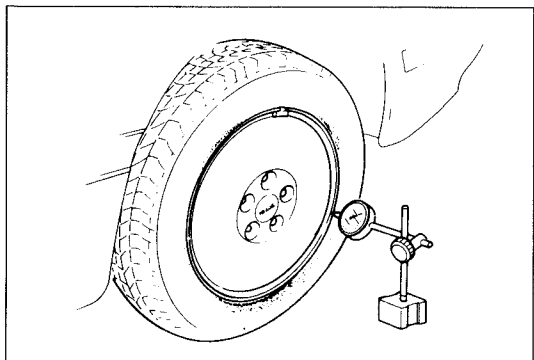
Check for the following and adjust or replace as necessary.

#### 1. Air pressure

Check the air pressure of all tires, including the spare tire, with an air pressure gauge.  
(Refer to page Q-2.)

#### Caution

**The air pressure must be measured when the tire is cold.**



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#### 2. Wheel runout

Set the probe of a dial indicator against the wheel, and turn the wheel one full revolution.

**Wheel runout limit: 2.0mm (0.08 in)**

#### 3. Tire wear

### Specifications

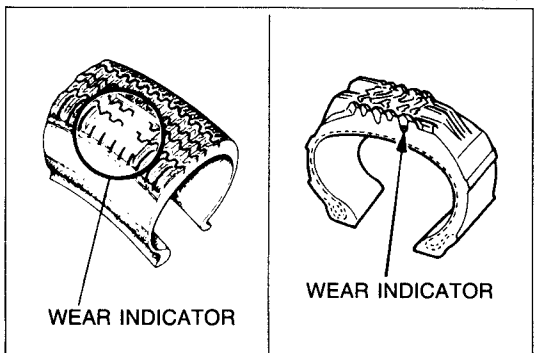
#### Remaining tread

**Ordinary tires: 1.6mm (0.063 in) min.**

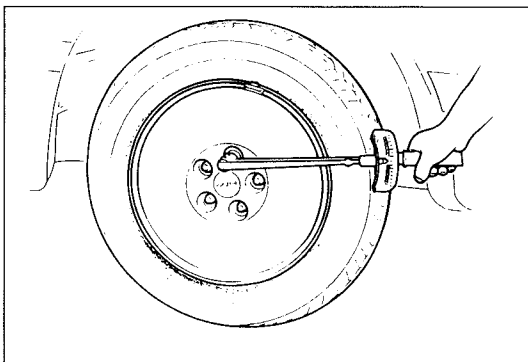
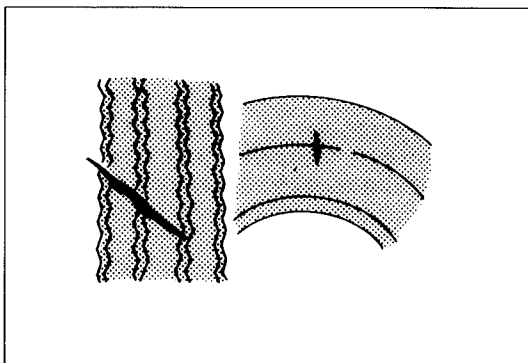
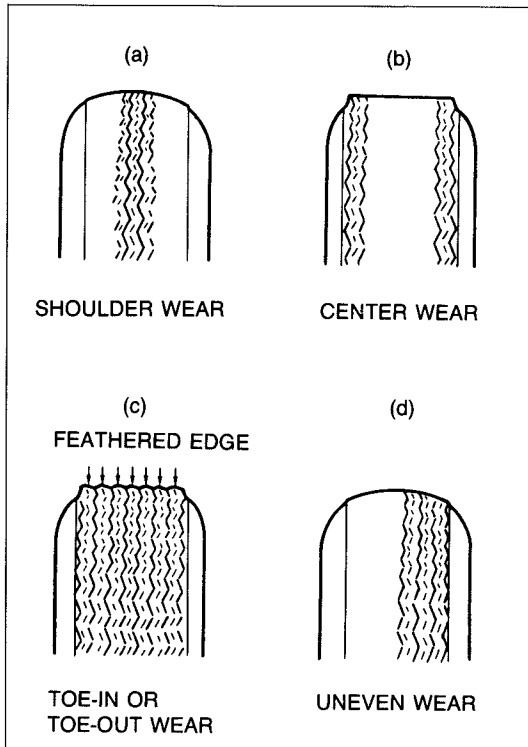
(Tire should be replaced if wear indicators are exposed.)

**Snow tires: 50% of tread**

(Tire should be replaced if wear indicators are exposed.)



9MU0QX-008



## Troubleshooting guide

Abnormal tire wear patterns shown in the illustration can occur. Refer to the chart for the possible causes and remedies.

|     | Possible cause                                                                                                                                                                                                                                    | Remedy                                                                                                                                                                                                                             |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (a) | <ul style="list-style-type: none"> <li>Underinflation (both sides worn)</li> <li>Incorrect camber (one side worn)</li> <li>Hard cornering</li> <li>Lack of rotation</li> </ul>                                                                    | <ul style="list-style-type: none"> <li>Measure and adjust pressure</li> <li>Repair or replace axle and suspension parts</li> <li>Reduce speed</li> <li>Rotate tires</li> </ul>                                                     |
| (b) | <ul style="list-style-type: none"> <li>Overinflation</li> <li>Lack of rotation</li> </ul>                                                                                                                                                         | <ul style="list-style-type: none"> <li>Measure and adjust pressure</li> <li>Rotate tires</li> </ul>                                                                                                                                |
| (c) | <ul style="list-style-type: none"> <li>Incorrect toe-in</li> </ul>                                                                                                                                                                                | <ul style="list-style-type: none"> <li>Adjust toe-in</li> </ul>                                                                                                                                                                    |
| (d) | <ul style="list-style-type: none"> <li>Incorrect camber or caster</li> <li>Malfunctioning suspension</li> <li>Unbalanced wheel</li> <li>Out-of-round brake drum or disc</li> <li>Other mechanical conditions</li> <li>Lack of rotation</li> </ul> | <ul style="list-style-type: none"> <li>Repair or replace axle and suspension parts</li> <li>Repair or replace</li> <li>Balance or replace</li> <li>Correct or replace</li> <li>Correct or replace</li> <li>Rotate tires</li> </ul> |

- Cracks, damage, or foreign matter (such as metal pieces, nails, and stones) in the tire and cracks, deformation, and damage to the wheel
- Loose wheel lug nut(s)
- Air leaking from valve stem

## REMOVAL AND INSTALLATION

Tighten the lug nuts to the specified torque in a crisscross fashion.

### Tightening torque:

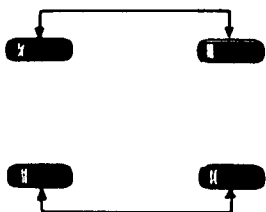
**88—118 N·m (9—12 m·kg, 65—87 ft·lb)**

### Caution

- The wheel-to-hub contact surfaces must be clean.
- Never apply oil to the nuts, bolts, or wheels; doing so might cause looseness or seizure of the lug nuts.

## DIRECTIONAL TIRE

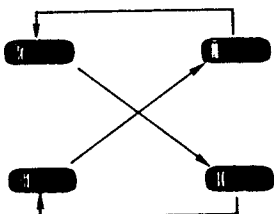
FRONT



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## UNDIRECTIONAL TIRE

FRONT



## TIRE ROTATION

To prolong tire life and assure uniform tire wear, rotate the tires every 6,000 km (3,750 miles), sooner if irregular wear develops.

### Caution

- Do not include "TEMPORARY USE ONLY" spare tire in rotation.
- After rotating the tires, adjust each tire to the specified air pressure. (Refer to page Q-2.)

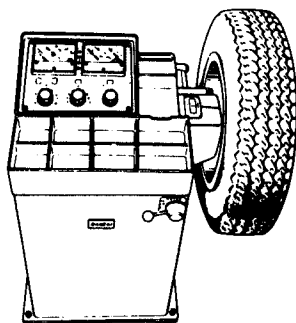
## WHEEL BALANCE ADJUSTMENT

If a wheel becomes unbalanced or if a tire is replaced or repaired, the wheel must be rebalanced to within specification.

### Maximum unbalance (at rim edge):

15 inch wheel: 9 g (0.31 oz)

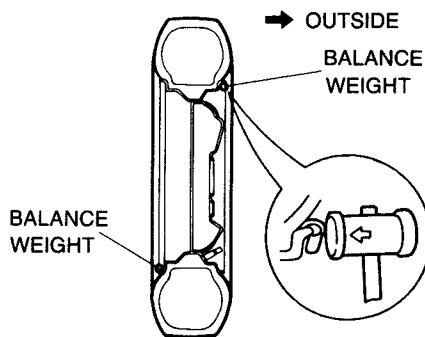
16 inch wheel: 8 g (0.28 oz)



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### Caution

- Do not use more than two balance weights on the inner or outer side of the wheel. If the total weight exceeds 100 g (3.5 oz), rebalance after moving the tire around on the rim.
- Attach the balance weights tightly so that they do not protrude more than 3mm (0.12 in) beyond the wheel edge.
- Select suitable balance weights for steel or aluminum alloy wheels.
- Do not use an on-car balancer on automatic transmission models; it may cause transmission damage.



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