

# WHEELS AND TIRES

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# Q

## OUTLINE, TROUBLESHOOTING GUIDE

### OUTLINE

#### SPECIFICATIONS

Item		Model	4x4		4x2	
			Standard	Temporary spare	Standard	Temporary spare
Wheels	Size		15 x 6 JJ	16 x 4T	14 x 5 1/2 JJ	16 x 4T
	Offset	mm (in)	30 (1.18)	48 (1.89)	40 (1.57)	48 (1.89)
	Diameter of pitch circle	mm (in)	139.7 (5.50)			
	Type		Styled or Non-styled			
Tires	Size		P215/75R15 P235/75R15	T155/90D16	P205/75R14	T145/80D16
	Air pressure kPa (kgf/cm <sup>2</sup> , psi)	Front	196 (2.0, 28)	415 (4.2, 60)	180 (1.8, 26)	415 (4.2, 60)
		Rear	216 (2.2, 31)		240 (2.5, 35)	

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### TROUBLESHOOTING GUIDE

Problem	Possible Cause	Remedy	Page
<b>Excessive or Irregular tire wear</b>	Refer to page Q- 4 for details.		
<b>Premature tire wear</b>	Incorrect tire pressure	Adjust	Q- 2
<b>Tire squeal</b>	Incorrect tire pressure Tire deterioration	Adjust Replace	Q- 2 —
<b>Road noise or body vibration</b>	Insufficient tire pressure Unbalanced wheel(s) Deformed wheel(s) or tire(s) Irregular tire wear	Adjust Adjust Repair or replace Replace	Q- 2 Q- 5 — —
<b>"Shake" occurs (Steering wheel vibrates up/down)</b>	Excessive tire and wheel runout Loose lug nuts Unbalanced wheel(s) Cracked or worn engine mount rubber Cracked or worn transmission mount rubber	Replace Tighten Adjust or replace Replace Replace	— Q- 4 Q- 5 Sections B1,B2 Sections J1,J2,K1,K2
<b>"Shimmy" occurs (Steering wheel vibrates left/right)</b>	Cracked or worn steering gear mount rubber Loose steering gear mounting bolts Stuck or damaged steering ball joint Excessive tire and wheel runout Loose lug nuts Unbalanced wheel(s) Insufficient tire pressure Unevenly worn tires Malfunction of shock absorber Loose shock absorber mounting bolts Struck or damaged lower arm ball joint Cracked or worn suspension bushings Damaged or worn front wheel bearing Improperly adjusted front wheel alignment	Replace Tighten Replace Replace Tighten Adjust or replace Adjust Replace Replace Tighten Replace Replace Replace Adjust	Section N Section N Section N — Q- 4 Q- 5 Q- 2 — Section R Section R Section R Section R Section M 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 Irregular tire wear (left/right) Unequal tire pressures Different types or brands of tires mixed (left/right) Loose lug nuts	Adjust Replace Adjust Replace Tighten	Q- 2 — Q- 2 — Q- 4
<b>General driving instability</b>	Unequal tire pressures Damaged or unbalanced wheel(s) Loose lug nuts	Adjust Replace or adjust Tighten	Q- 2 Q- 5 Q- 4
<b>Excessive steering wheel play</b>	Loose lug nuts	Tighten	Q- 4

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WHEELS AND TIRES

SPECIAL NOTES ABOUT WHEELS AND TIRES

Do not use wheels or tires other than the specified types.

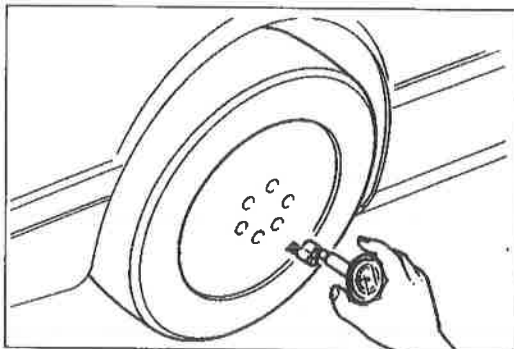
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NOTES REGARDING TIRE REPLACEMENT

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.
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.

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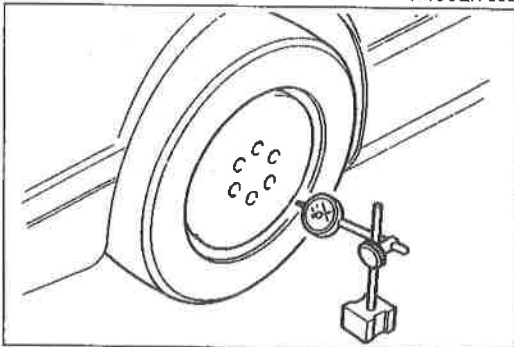
INSPECTION AND ADJUSTMENT

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.



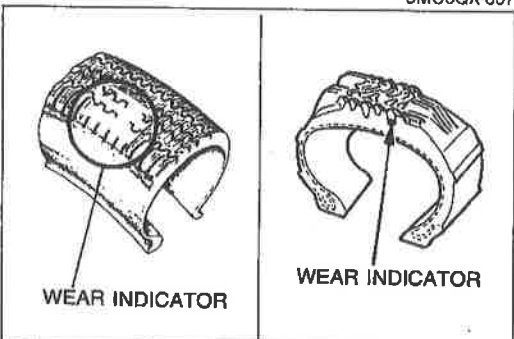
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2. Wheel runout  
Set the probe of a dial indicator against the wheel, and turn the wheel one full revolution.

Wheel runout limit

Horizontal: 2.0mm (0.079 in)

Vertical : 1.5mm (0.059 in)



WEAR INDICATOR

WEAR INDICATOR

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3. Tire wear

Specifications

Remaining tread

Ordinary tires: 1.6mm (0.063 in) min.

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

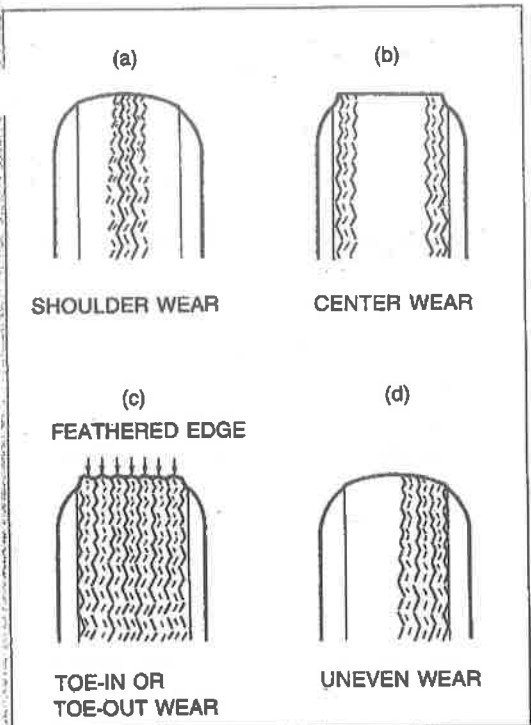
Snow tires: 50% of tread

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

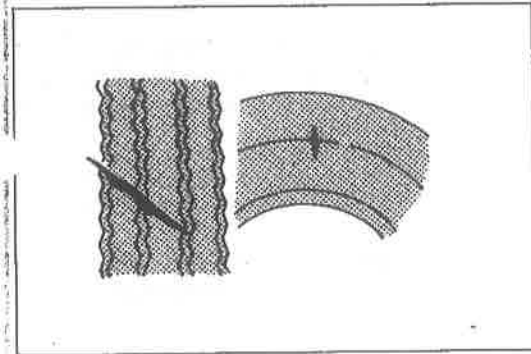
## WHEELS AND TIRES

### Troubleshooting guide

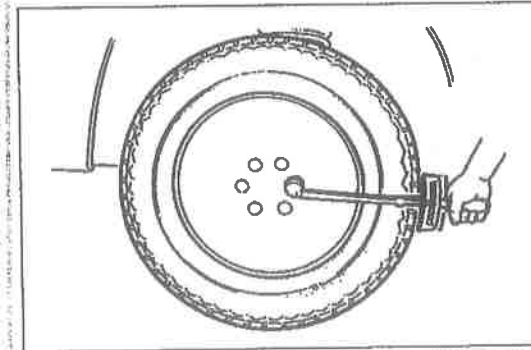
Abnormal tire wear patterns shown in the illustration can occur. Refer to the chart for the possible causes and remedies.



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	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>

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

### REMOVAL AND INSTALLATION

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

#### Tightening torque

##### Non-styled wheel:

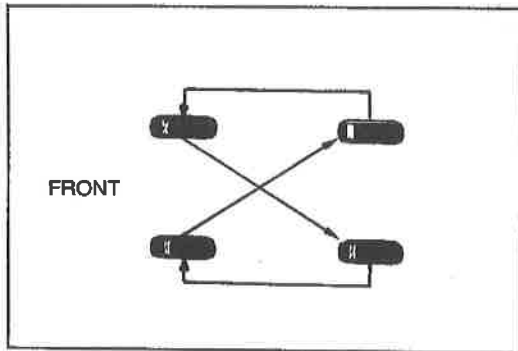
88—118 N·m (9.0—12.0 m·kg, 65—87 ft·lb)

##### Styled wheel:

118—147 N·m (12.0—15.0 m·kg, 87—108 ft·lb)

#### Caution

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



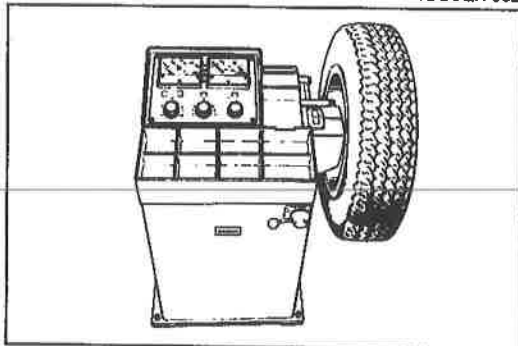
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### TIRE ROTATION

To prolong tire life and assure uniform tire wear, rotate the tires every 6000 km (3750 miles), sooner if irregular wear develops.

#### Caution

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

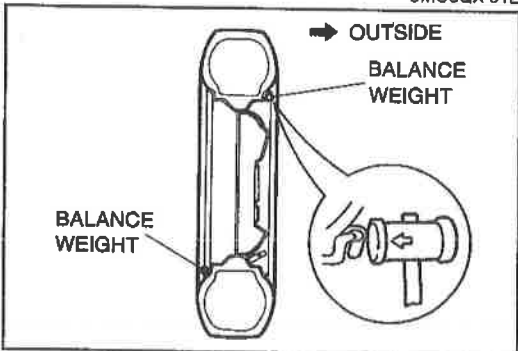


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### WHEEL BALANCE ADJUSTMENT

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): 10 g (0.35 oz)**



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#### Caution

- a) 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.
- b) Attach the balance weights tightly so that they do not protrude more than 3mm (0.12 in) beyond the wheel edge.
- c) Do not use an on-car balancer on automatic transmission models; it may cause transmission damage.