

20. HIGH-SPEED TIRE

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HIGH-SPEED TIRE (TUBELESS TIRE)

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## 20. HIGH-SPEED TIRE

### HIGH-SPEED TIRE CONSTRUCTION & FEATURES

#### INNER LINER

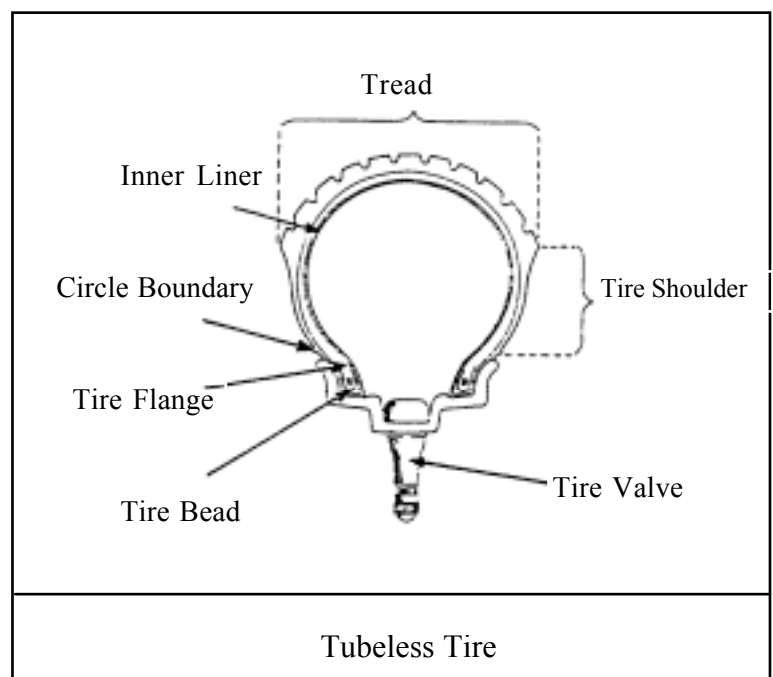
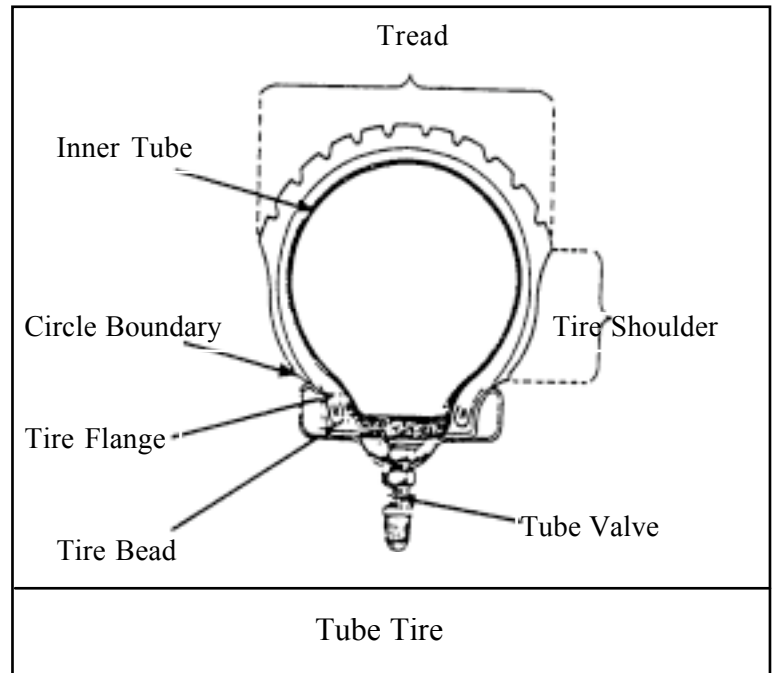
A layer of rubber (inner liner) which replaces the inner tube is stuck to the inside wall of the high-speed tire. The inner liner is made of thick rubber, a material that high-pressure air can not pass through. The liner can not be lengthened like other inner tubes, so when nails are inserted into the tire, breaks will not be enlarged because the nails are suppressed to avoid air leaks. When tire break occurs, the inserted nails will spring out to make the tire run under low pressure. It is very dangerous because the tire temperature will raise highly to make tire wobble during riding. Therefore, riders must be very careful to check tire pressure and inserted nails before riding at high-speed.

- Tire pressure
- Tire deformation and damage
- Tire groove depth and abnormal wear

**Tire Depth:** Front : 0.8mm  
Rear : 0.8mm

- Imbedded metals, stones, or other foreign matters

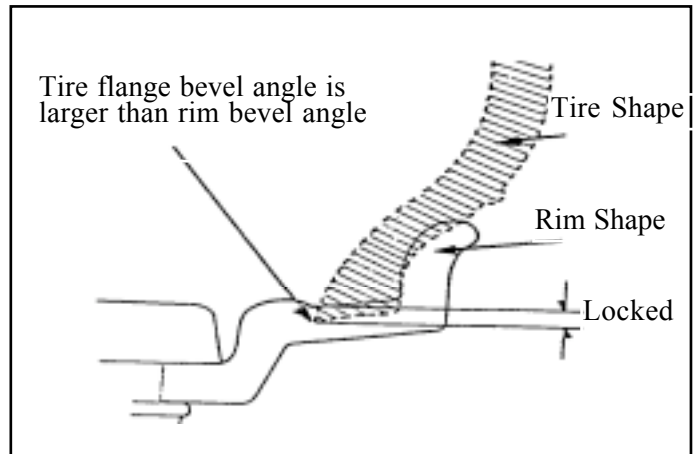
The bead base where tire and rim contact is wrapped by rubber fabrics called tire bead in order to reinforce its function. The fabrics is specially adopted for the high-speed tire to keep its air density because air can not pass through this material. Also, the fabrics can keep the tire from damage when the tire falls off, and protect tire from damage due to friction of wheel rim while riding.



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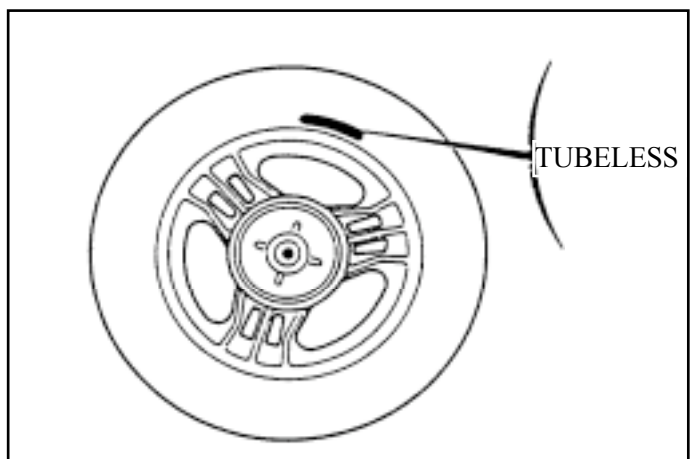
### TIRE FLANGE BEVEL ANGEL

If the tire flange radius is smaller than the wheel rim radius, the tire and wheel can be locked tightly. Take the advantage of tire bead bevel angle to enlarge tire bead so that the tire and rim can combine with each other precisely. Consequently, it can prevent air leaks and tire will not fall off the rim when tire break or low pressure occurs.



### METHOD TO IDENTIFY A HIGH-SPEED TIRE

For distinguishing a high-speed tire from a tube-tire, the word "TUBELESS" is stamped on the side wall of the high-speed tire. A tire without this word cannot be used as a high-speed tire.

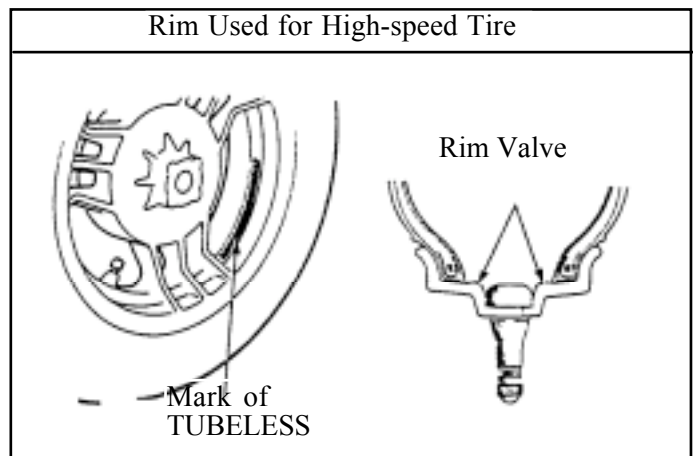


### RIM USED FOR HIGH-SPEED TIRE

For the purpose of preventing tire from falling off the wheel rim while driving, there are special requirements on the size, shape and pressure density of rim used for high-speed tire. It is necessary to use special rims.

Refer to the Figure shown for distinction. Air leaks occur easily when the wheel rim is deformed. Avoid driving on rugged road and crashing against stones.

When replacing the high-speed tire, also replace the valve as a set.



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- When replacing the high-speed tire, use a tire of the same specification.

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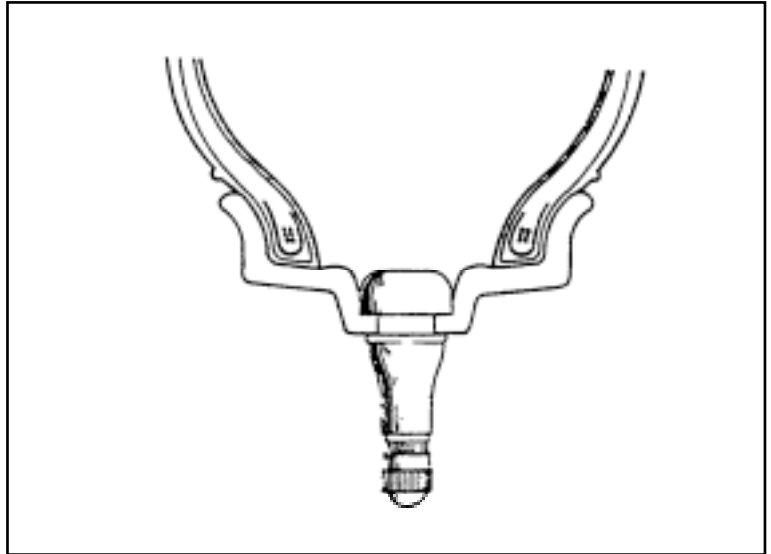
### RIM VALVE USED FOR HIGH-SPEED TIRE

Air-tight valve is specially designed for rim valve of a high-speed tire.

#### AIR-TIGHT VALVE

A rubber of special shape is used to cover around the valve hole. The spring of rubber can prevent air leaks. Install the valve from the inner side of the rim and then pull it out through the rim valve hole with a special tool.

- \* • Use only the KYMCO recommended air-tight valve.

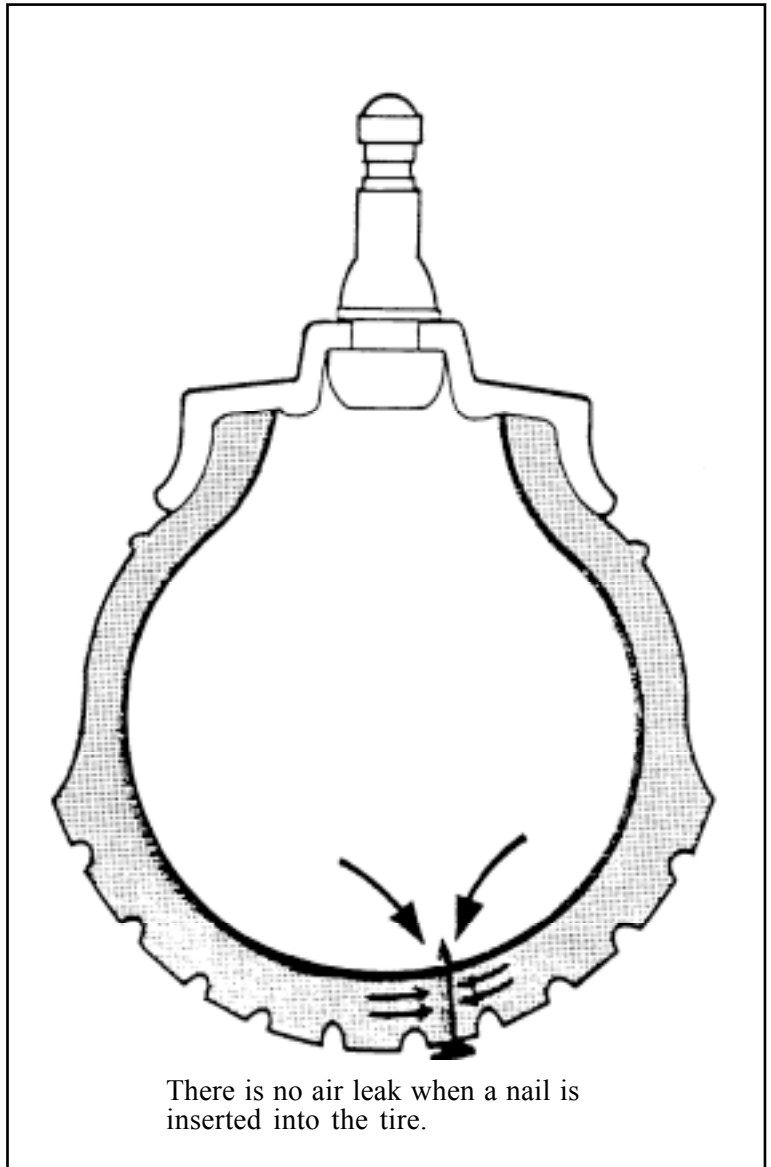


### HIGH-SPEED TIRE FEATURES

- Air will not release quickly when a nail is inserted into the tire. It is the same as the tube-tire that tire break may occur to a high-speed tire when nails or other objects are inserted into it. However, when a nail is inserted into a high-speed tire, external rubber and internal anti-leak rubber will grip the nail tightly to prevent air leaks. If the nail is deeply inserted, air will not release quickly to avoid sudden slipping of steering handlebar.

- EXCELLENT COOLING PERFORMANCE

Because the high-speed tire is tubeless, the air within the tire will contact the rim directly. Heat produced during driving can be dissipated through the rim. Heat affects the rubber greatly and if the tire temperature is not high, the tire service life can be prolonged.



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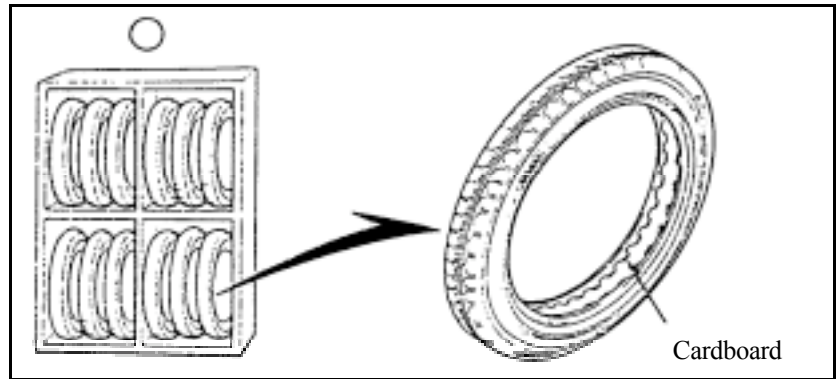
### PRECAUTIONS FOR HIGH SPEED TIRE STORAGE

#### •STORAGE METHODS

If the space within the tire bead of a high-speed tire is narrower than the width of its rim, it is hard to install the tire to the rim and pump air into the tire. Therefore, it is better to put cardboard within the tire bead and put tires in order.

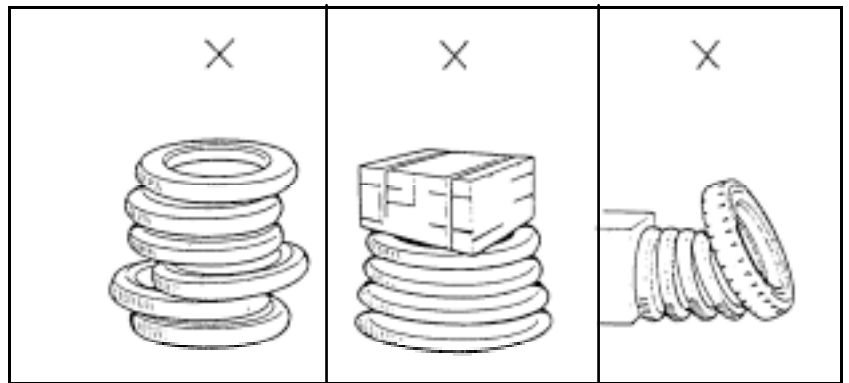
Tires deform easily if they are piled horizontally. Avoid doing so.

As to the reused tires, the structure of the rim remains the same. Install the valve cap when the tire pressure is lowered to 1/2 of the specified pressure.

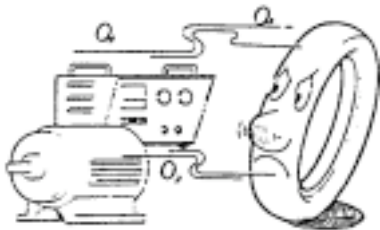


#### •PLACE FOR STORAGE

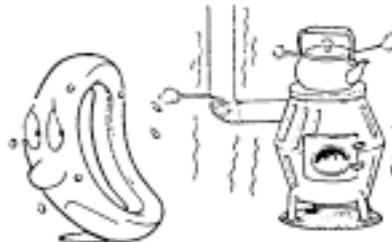
The place used for storage should avoid the following conditions:



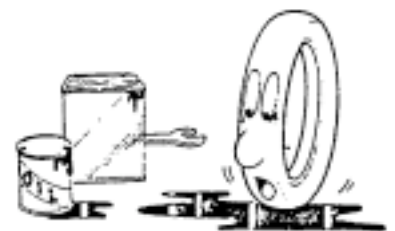
①A place where produces ozone (a place near motors or chargers)



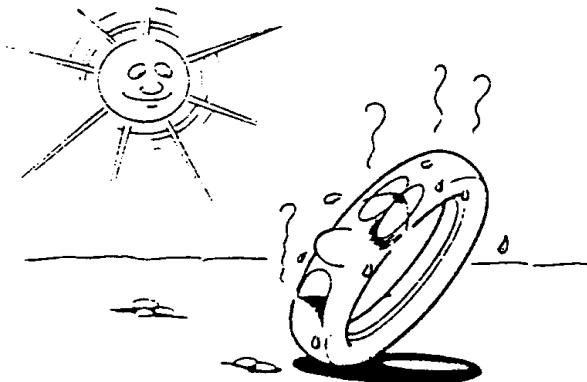
②A place where produces heat (a place near stoves or steam pipes)



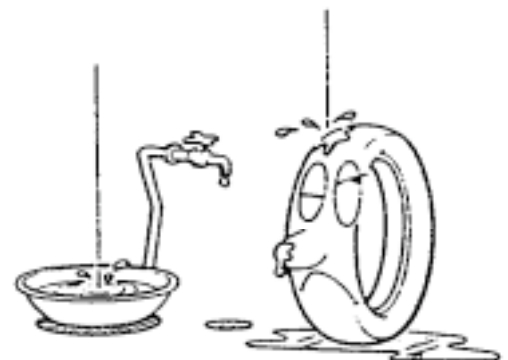
③A place with oils or lubricants (especially in service working area)



④A place with direct sunshine



⑤A place with high moisture



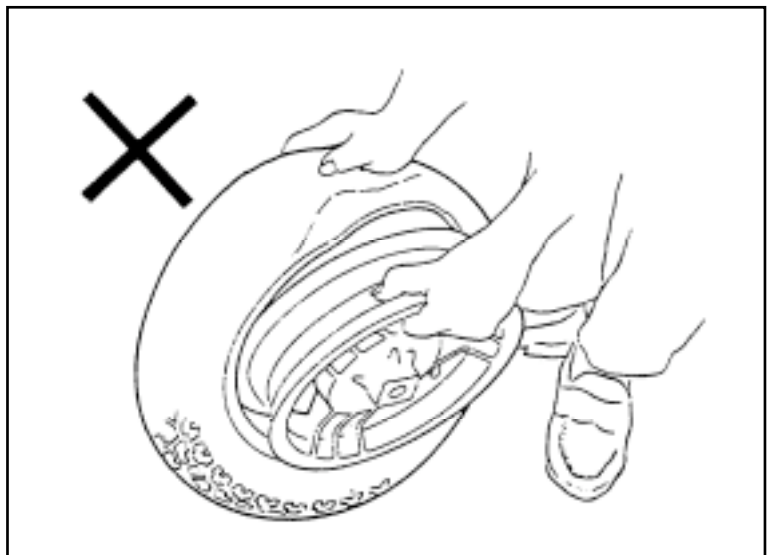
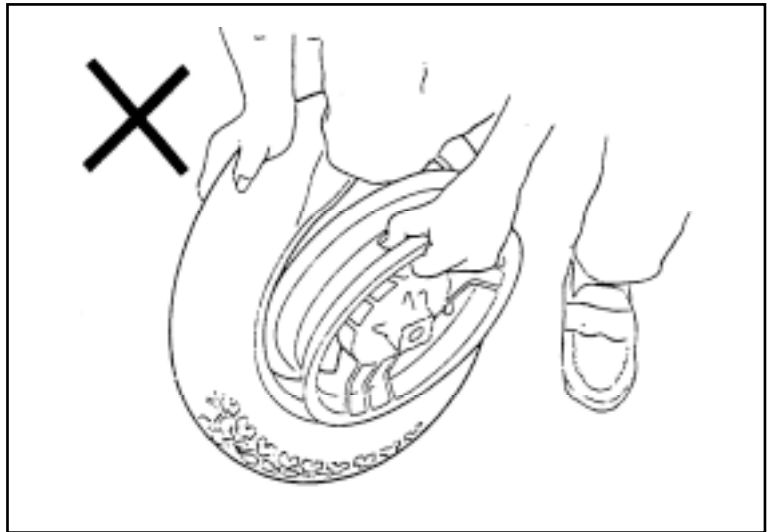
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### HIGH-SPEED TIRE REMOVAL/INSTALLATION

In comparison with the tube-tire, the following points must be noticed when removing and installing a high-speed tire.

- When removing the high-speed tire, avoid damaging the tire bead (special plastic seat), tire liner (internal anti-leak material) and rim flange (bead base).
- Apply vegetable soapy water to the contact area between the tire bead and rim, and use a tire iron for installation.
- It will cause tire deformation when removing the tire forcedly as the figure shown. Be sure to remove the tire following the instructions given in the manual.
- The tight joint of tire and rim can prevent air leaks. As long as the rim is deformed, air leaks will occur easily. Therefore, do not remove or install the tire forcedly. Use special tools and rim protector for servicing. Frequently check if there is any deformed part and do not use tools of poor quality.
- Rust and rubber materials on bead base are the main cause of air leaks. Remove them thoroughly.
- Be sure to remove and install the tire following the procedures provided in the manual.



\*

- When removing or installing a high-speed tire, do not damage the axle bearing. Draw or pull the rubber on the rim lower part.
- It is difficult to remove a tire when the rim valve is pressed by tire flange. In this situation, do not remove it forcedly because the rim valve hole will be damaged.

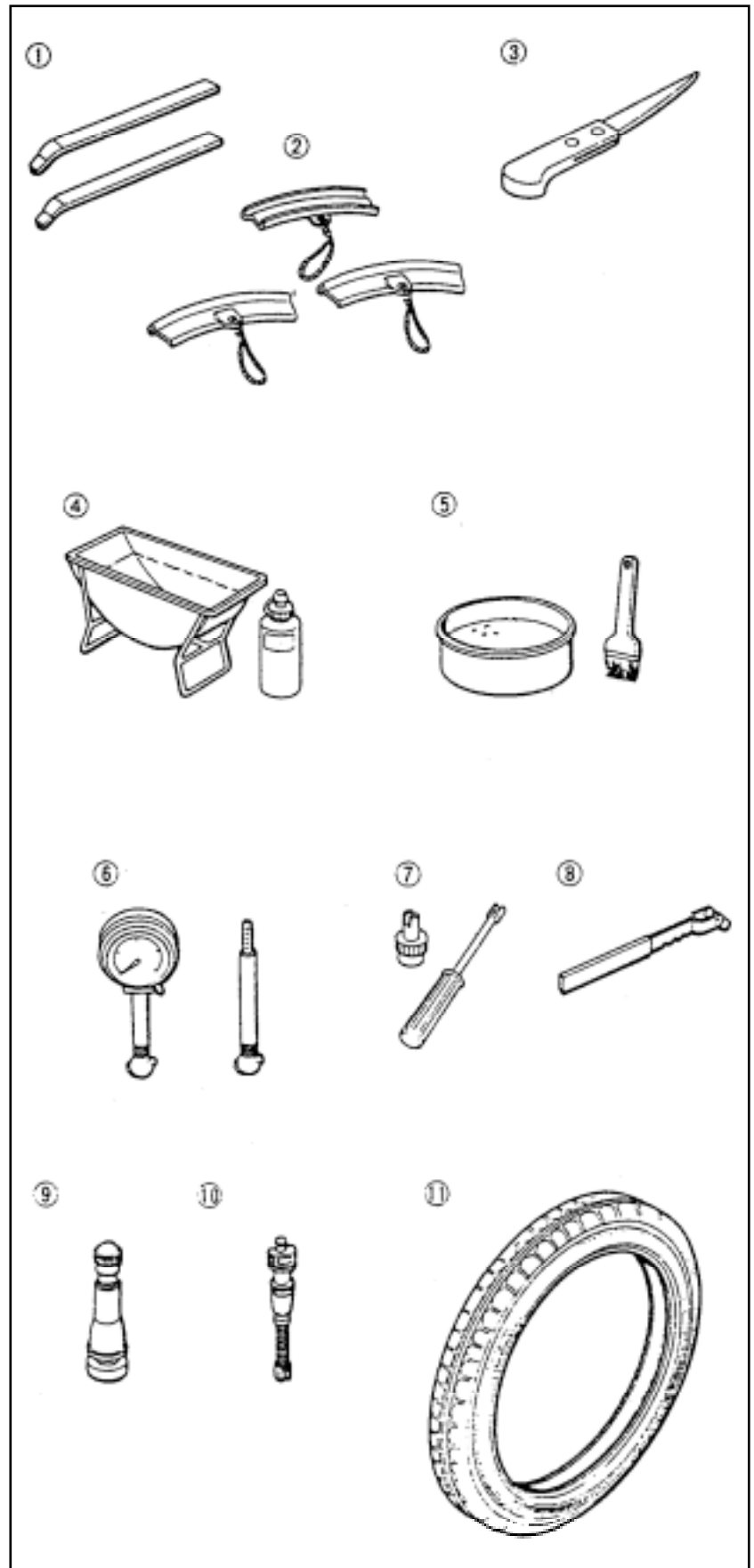
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### TOOLS & PARTS REQUIRED FOR SERVICING

- ① Tire iron
- ② Wheel rim protector
- ③ Knife
- ④ Water pan and probe
- ⑤ Vegetable soapy water
- ⑥ Pressure gauge
- ⑦ Valve core assembly tool
- ⑧ Valve assembly tool
- ⑨ Rim valve used for high-speed tire
- ⑩ Valve core
- ⑪ High-speed tire

High-speed tire  
Model: KYMCO DINK50  
Tire size: 110/70-12 (Front)  
130/70-12 (Rear)

Make sure to use KYMCO-recommend high-speed tire and rim valve.





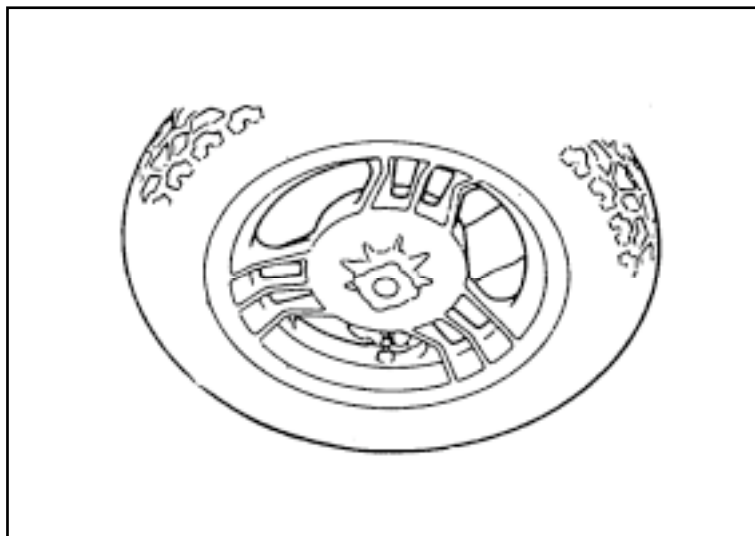
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### REMOVAL METHODS

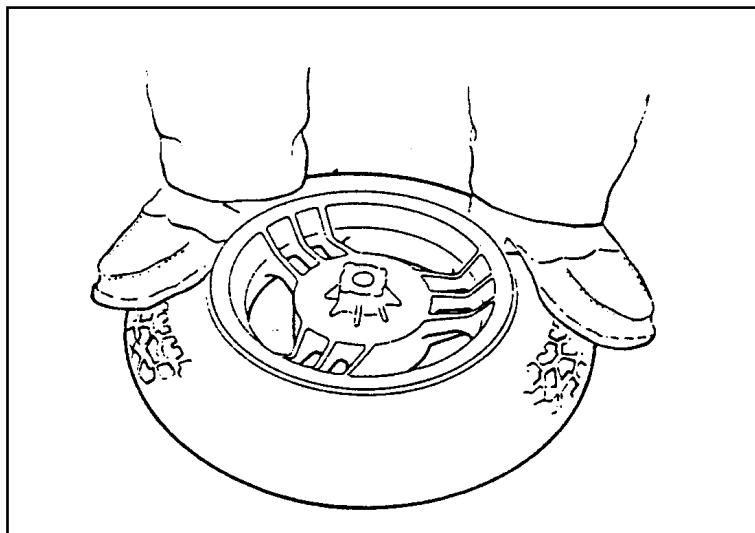
- ① Use the valve core assembly tool to take the valve core out and bleed air from the tire.

\* When removing the valve core, be careful that the high tire pressure may force out the valve core.



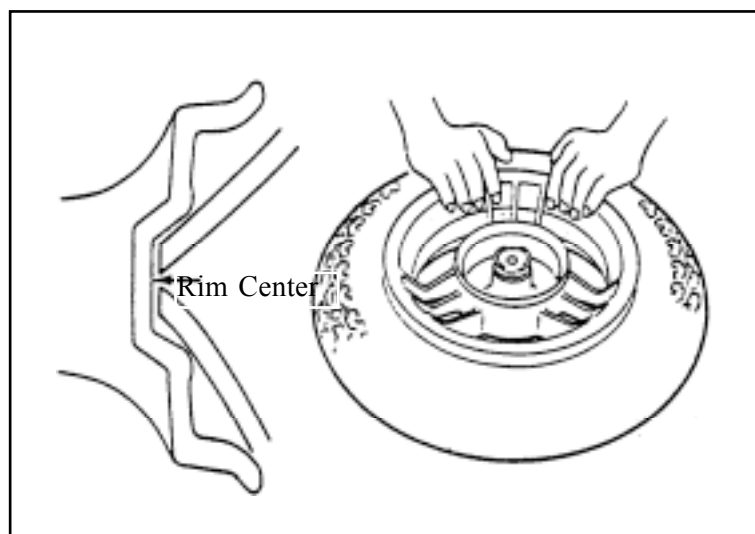
- ② If there is no special tool to pry off the tire bead, use your feet to do this as the figure shown.

\* •Don't step on the wheel rim and spoke wire.  
•Before installing the tire, make sure that the rim and axle bearing are not damaged. Be careful during installation.



- ③ After the tire bead is separated from the rim and before removing the tire, press the tire bead at the back of the valve into the rim groove completely. Then push the tire to the same side.

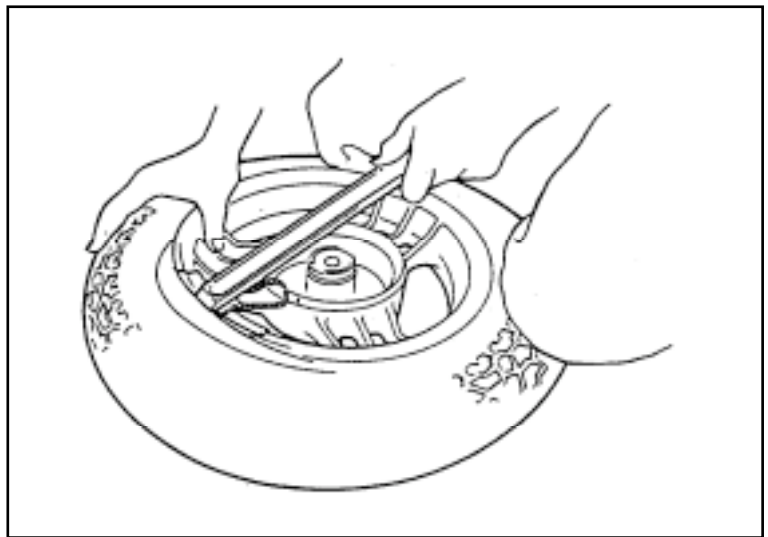
\* It is easier to remove the tire when it is pushed to the same side of rim.





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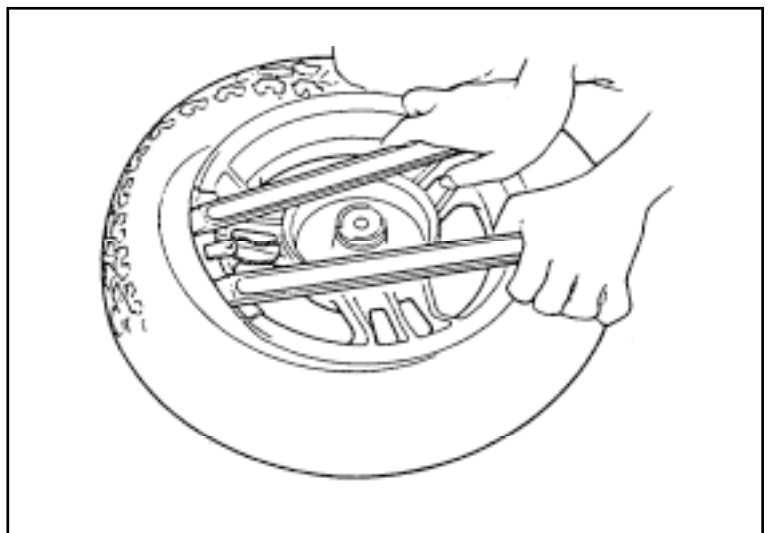
- ④ Apply vegetable soapy water to the area between the rim and tire and install the rim protector at the rim side. Then insert the tire iron to pry off the tire bead from the rim. At this time, the tire bead at the back side of the valve is in the rim groove completely. After making sure the above mentioned is done, remove the tire by following the sequence of 1→2→3→4.



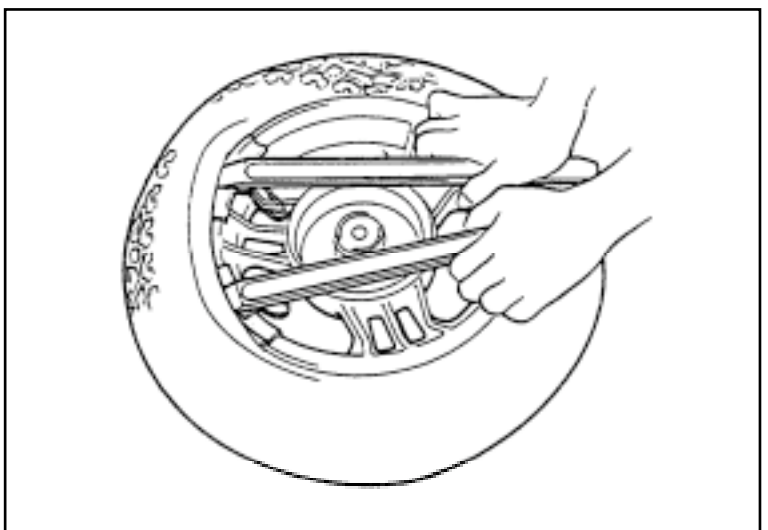
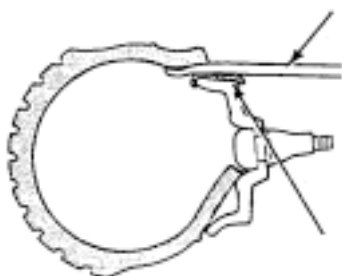
- \* Do not use a tool other than the tire iron for motorcycle tire removal. Use the wheel rim protector for removal.

- ⑤ Insert the second tire iron 30\_ 50mm from the first one. Then separate the tire bead from the rim.

- \* If you want to separate the tire bead from the rim only by one tire iron, the tire bead will be deformed due to using too much force. The rim will also be damaged seriously. Avoid this way of removal.



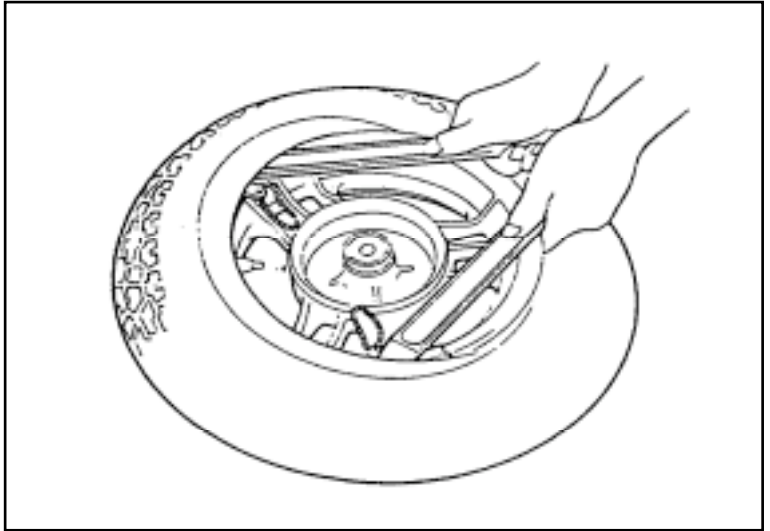
- ⑥ It is the same as ⑤. Use the first tire iron to pry off tire bead from the rim, then use the second one to pry off another part of the tire rim from the rim (distance: 30\_ 50mm) slowly.



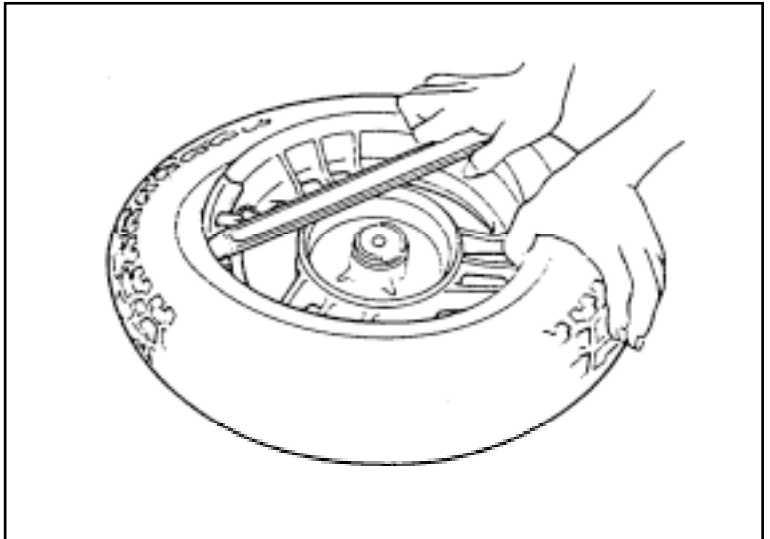
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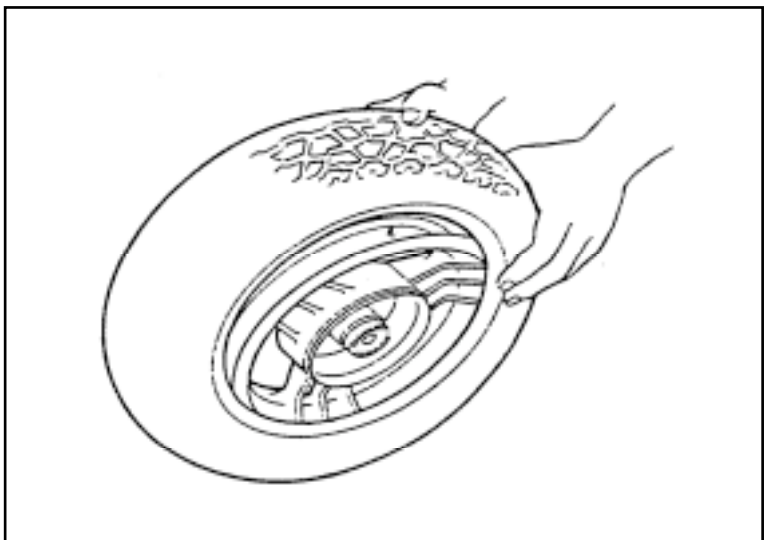
- ⑦ The procedure is the same as ⑤ and ⑥. If 1/3 of the tire bead is separated from the rim, the whole tire is easily taken off.



- ⑧ When 1/2 of the tire bead is pried off the rim, the tire will be easily removed by using only one tire iron.



- ⑨ The bead at the back side can be pried off in the same procedures described in ④\_ ⑧.



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- ⑩ Take out the rim from the tire.  
Check the rim valve for damage.  
Replace any faulty parts.

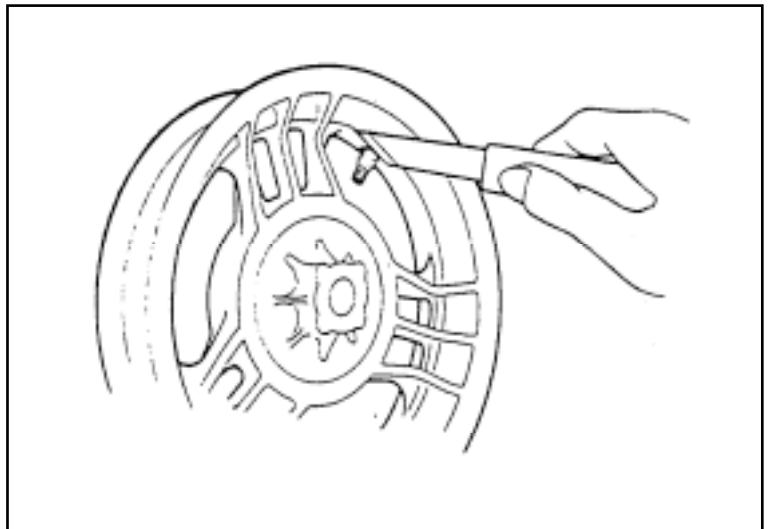
\* When the tire is replaced, replace the valve as a set.



### RIM VALVE REMOVAL

Cut the rim valve from its bottom.

\* Be careful not to damage the rim valve hole.



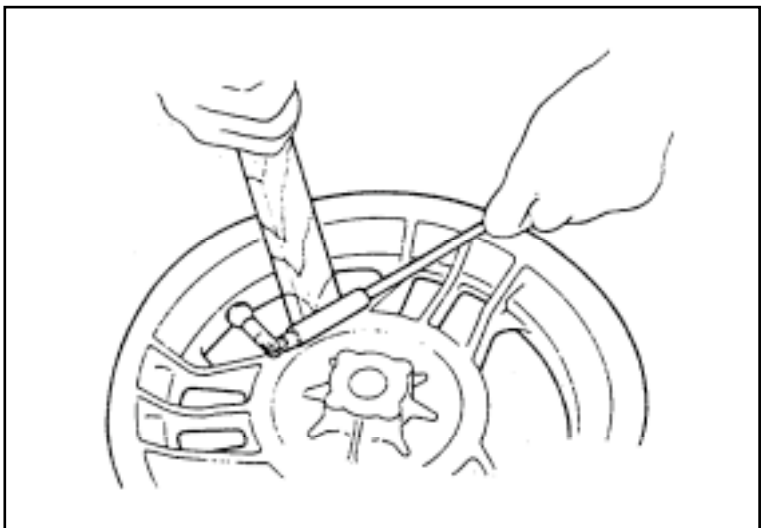
### RIM VALVE INSTALLATION

Apply vegetable soapy water to facilitate the installation of rim valve. Apply after other foreign objects are removed.

- Apply around the valve when installation.
- Apply to the tire bead while assembling the tire and rim.

\* Do not use oil or gasoline. Use vegetable soapy water only.

Apply vegetable soapy water to the inner side of rim valve and then use a special tool to pull the valve out.



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### RIM AND TIRE INSPECTION

#### RIM INSPECTION

Check the rim and remove rust and rubber materials from the rim.

Air leak will be caused by rim deformation or cracks.

When the tire or rim has cracks, do not repair them and immediately replace with a new one.

#### THE DEPTH AND WIDTH OF TIRE SCAR IS OVER 0.5MM AND 1.0MM

#### TIRE INSPECTION

The tire cannot be repaired and must be replaced with a new one under the following conditions.

- Tire crack or break is caused by a foreign object of 6mm outer radius.
- The layer of tire-contact part falls off.
- Worn tire tread.
- Worn tire bead.
- Broken tire bead stiffener or other bead damage.
- Broken fabrics.
- Deflection caused by dragging force.
- Rubber cutting damage.
- Abnormal internal anti-leak rubber.
- Side wall breaks or damage.
- Tire tread depth is under 0.8mm

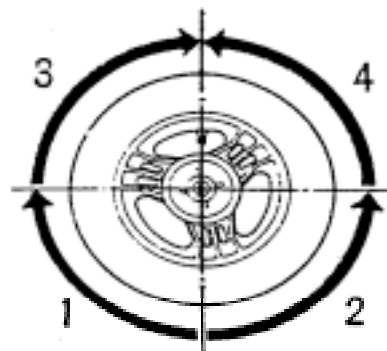
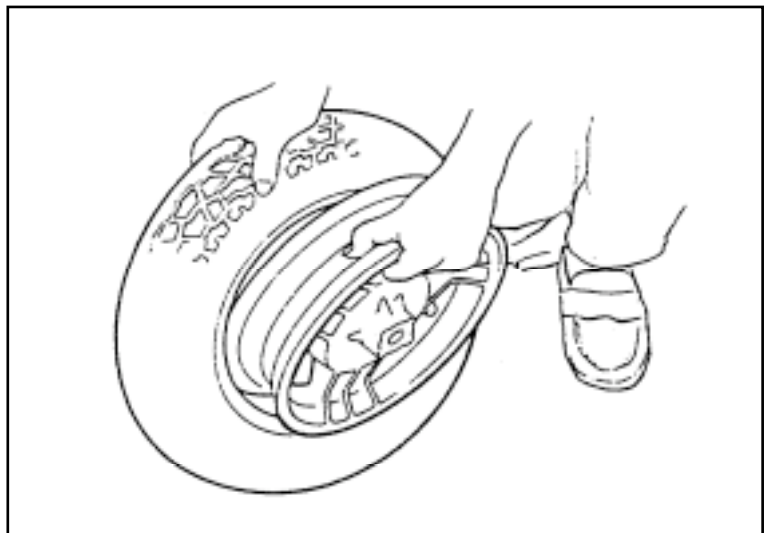
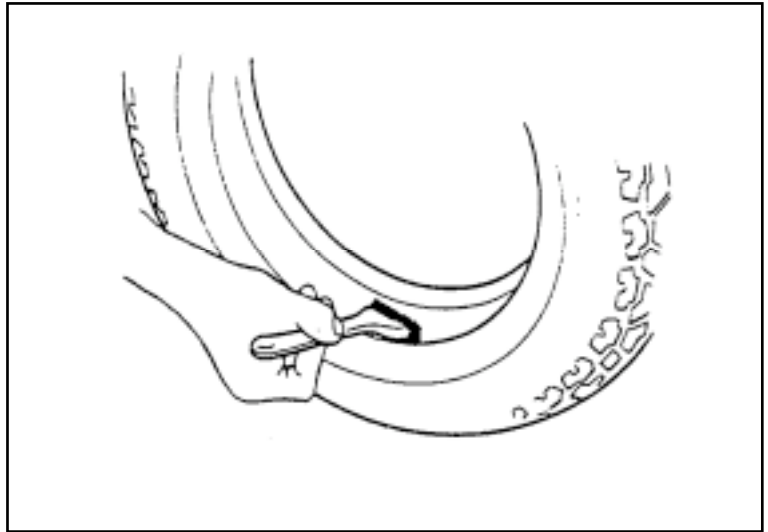
### INSTALLATION

Before installation, check the tire inside for damage.

\*

When the tire is deformed, repair and correct the deformed part by hand.

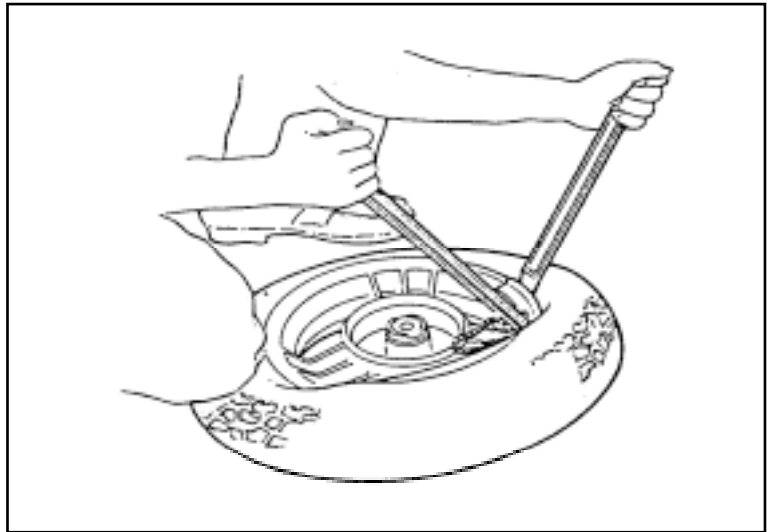
Apply vegetable soapy water to the right and left sides of tire bead. Keep the tire upright and start to install the tire from the back of the rim valve according to the order of 1→2→3→4. Then, push the tire into the rim by hand to the part where hands can reach in.



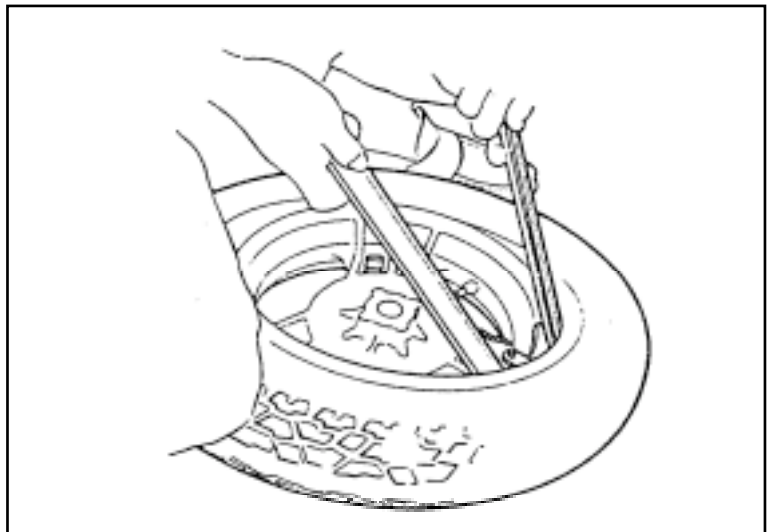
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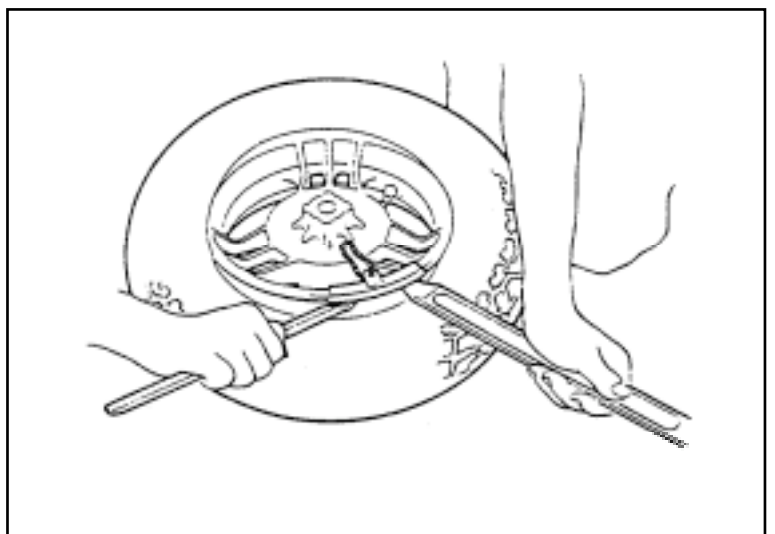
Put the wheel horizontally and put the rim protector on the rim. Use 2 tire irons to install the tire bead into the rim slowly (30\_ 50mm).



Use 2 tire irons to install the tire bead for the last 50\_ 60mm part. By this way, one side of the tire bead is installed.



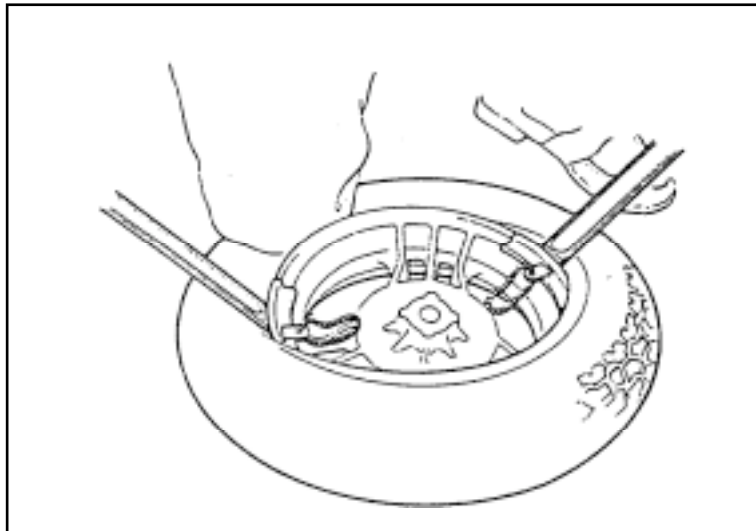
The installation of the other side of tire bead should be started from the opposite side of the tire valve according to the order of 1→2→3→4.



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Install the rim protector and insert 2 tire irons at an interval of 30mm to install the tire bead into the rim. Press to hold the installed part of tire bead by knees.

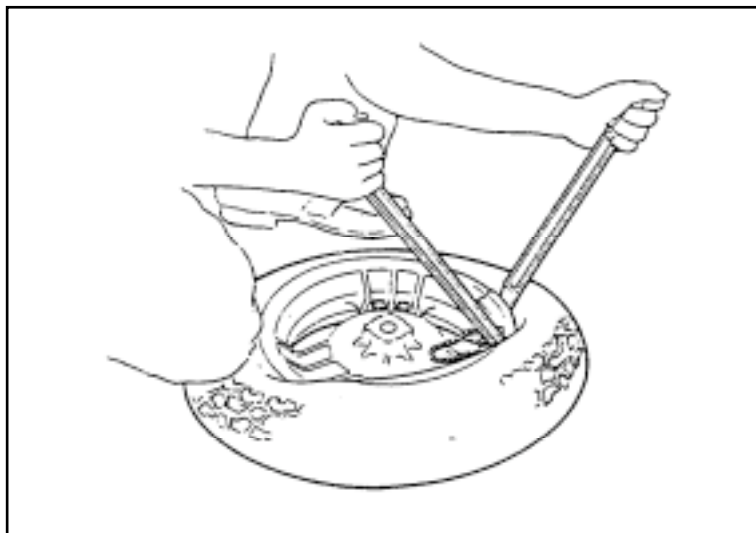


After 1/2 of tire bead is installed, insert 2 tire irons at an interval of 30\_ 40mm to finish the installation in order.

\*

- Both tire irons should be pulled out at the same time.
- The already installed part should be pressed.

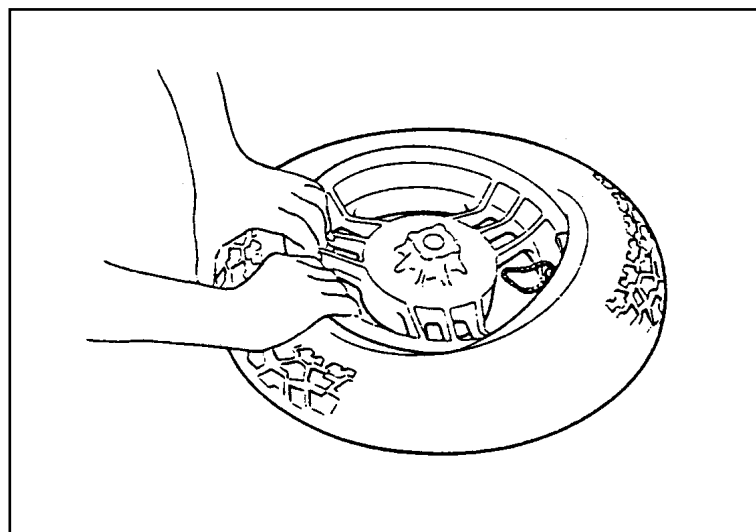
The pulled-out tire iron should be inserted beside the other tire iron which hasn't been pulled out.



After 2/3 of the tire bead is installed into the rim, make sure if the installed tire bead is completely inserted into the rim groove.

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If the tire bead is not completely inserted into the rim groove, it will be more difficult to install the rest part of the tire bead. Moreover, the rim bead is easily damaged.

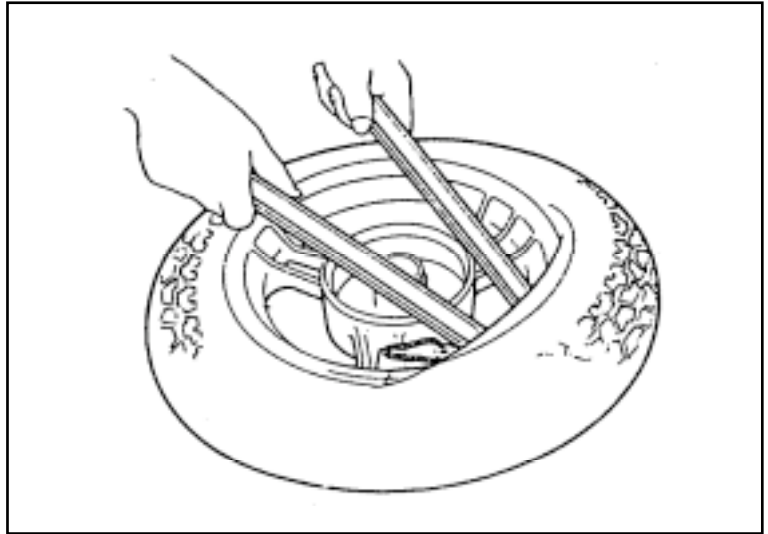




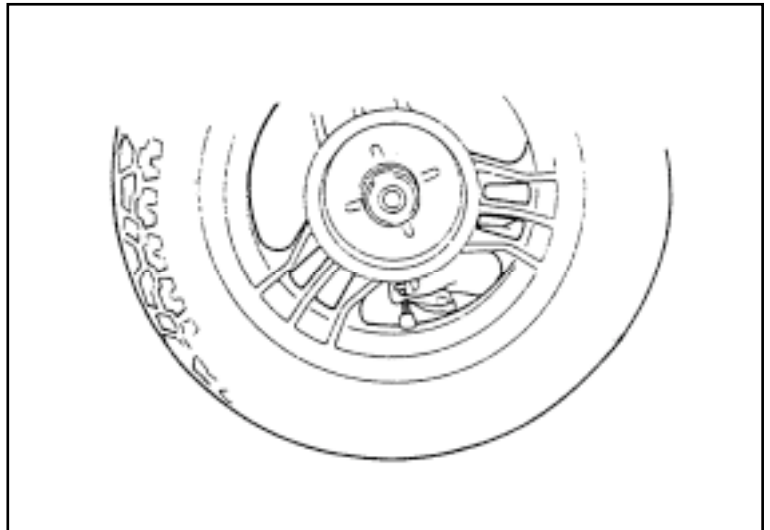
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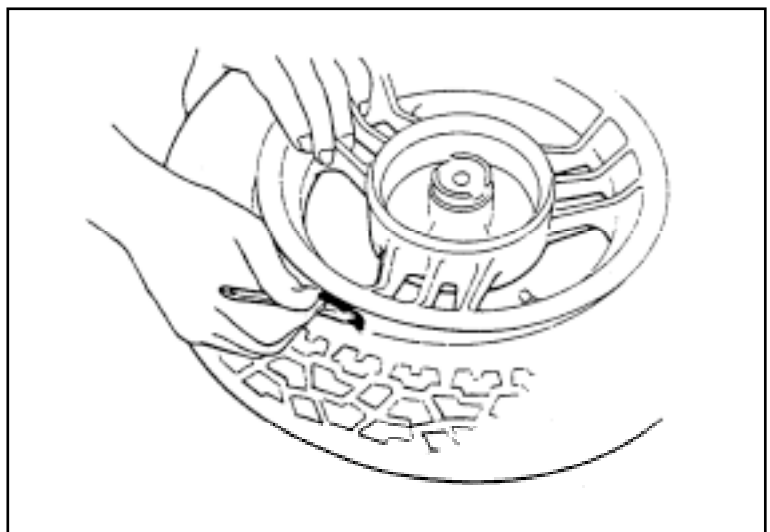
If 50\_ 60mm of the tire bead is not installed, use 2 tire irons to install the rest part of tire bead.



Use the valve core installer to install the valve core.



Apply vegetable soapy water to both sides of the tire bead.

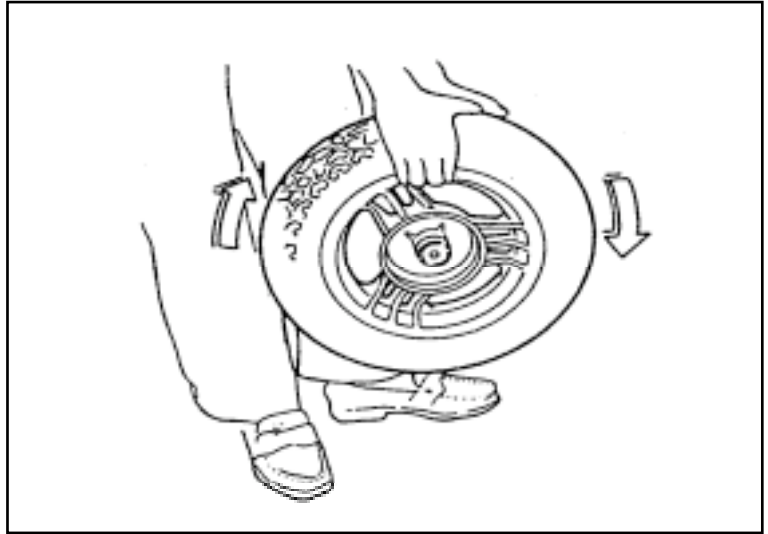




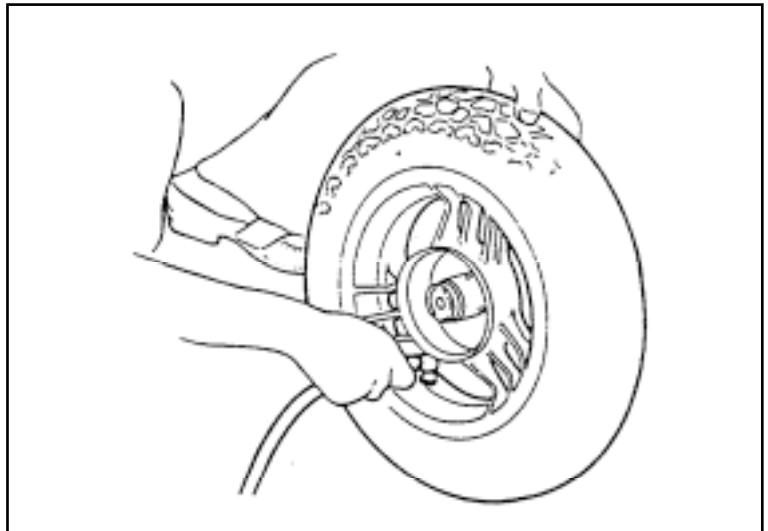
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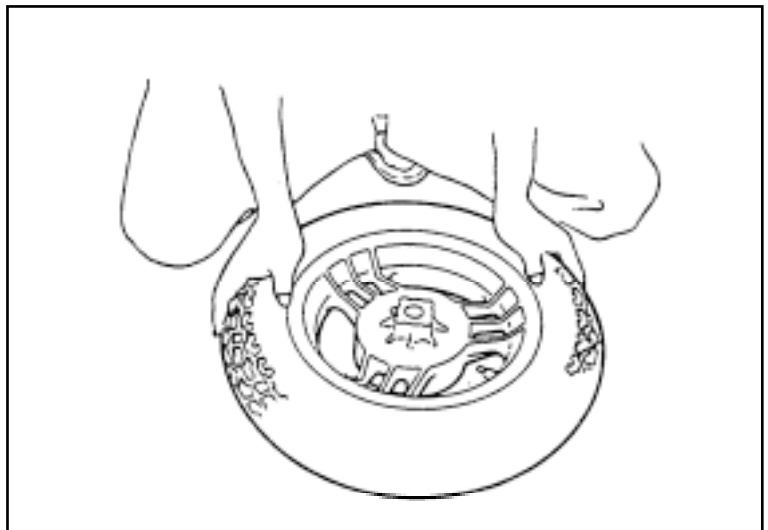
In order to ensure that the tire and the rim are well combined, raise the wheel and rotate it. Press around the tire by hand for several times to see if the tire is perfectly combined with the rim.



Pump the tire up to the specified tire pressure. If there is air leak between tire bead and rim after pumping, turn the valve down and press the upper side of the tire with hand to rotate the tire and pump the air in.



After pumping with specified air pressure, make sure if the tire bead is well installed into the rim.



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### HIGH-SPEED TIRE REPAIR

Repair the tire using the repair methods and repair agents recommended by the manufacturers.

### REPAIR PROCEDURES

- First remove the tire from the wheel.
- Find the crack and mark it.  
Take out foreign objects and check if the tire can be repaired.
- Tire repair  
Repair methods are divided into external and internal repairs.  
Perform the external repair first and then the internal repair.  
When repair agent is used, follow the instructions provided by the manufacturer.
- Remove dust and dirt from the tire bead.  
Clean out the tire inside. Recheck the repaired portion and make sure there is no other damage.
- Install the tire and wheel rim.

✱

- Check the rim valve when removing the tire and wheel rim.
- The gum on the repaired portion may not completely stick to the tire within 24 hours after repair, be careful to control the driving speed for safety.