Tubeless Tire Mounting Instructions

Tubeless Compatible technology allows the owner of these wheels to choose between a conventional tire with inner tube, or a tubeless tire, including all current tubeless type tires. However, a conventional tire mounted on a tubeless compatible rim will not hold air without an inner tube.

The key to using tubeless tires on Tubeless Compatible rims is a special rim and its mated rim strip. This rim strip is made of a thermoplastic rubber material, so that it is impervious to air. Installed correctly in the special mated rim, it seals tightly to the tubeless tire to prevent air from escaping through the spoke holes. There are additional surfaces which must seal tightly for the tubeless system to hold air. The rim's hook allows for greater contact with the tubeless tire's smooth, enlarged bead so these two surfaces also seal tightly. The inside of the tubeless tire has a special coating to prevent air from escaping through the tire's casing. When these features are in order, no tube is needed. Simply install the special presta valve stem into the rim and inflate.

WARNING! Do not attempt to use a standard tire without an inner tube. Such use may cause a rapid decrease of tire pressure, resulting in loss of control with possible personal injury. If you are unsure if the tire is a compatible tubeless design, consult with your local bike shop.

A properly mounted tubeless tire will 'bleed' air, up to 4 PSI (0.25 ATM) per day. If a tubeless tire loses air faster than 4 PSI (0.25 ATM) make sure the valve nut is tight, check for punctures, and make sure all sealing surfaces are smooth and clean. The sealing surfaces include the tire to rim contact, the tire to rim strip contact, the valve stem to rim strip contact, and the rim strip to rim contact. Dirt, sand, grime or roughness on any of these surfaces may allow extra air to escape. If necessary, purchase a replacement rim strip from your dealer.

In the case of a punctured tubeless tire, you can patch a small (less than 3 mm) hole from the inside of the tire. A sticky glueless patch is recommended. If the puncture is greater than 3 mm, or the tire casing is damaged instead of merely punctured, with any broken threads, replace the tire. If the air leaks rapidly and the source is not immediately obvious, it may be difficult to inflate the tire enough to locate the puncture. However, its easy to convert from tubeless to the use of a standard inner tube.

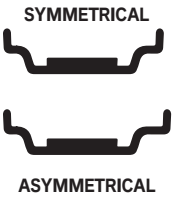
Installing and inflating a tubeless tire

To inflate a newly installed tubeless tire, the tire must make full contact with the rim strip at the bottom of the rim well. To achieve this contact a tubeless tire has to fit on the rim more tightly than a similarly sized conventional tire. With the tire beads contacting the rim strip at the bottom of the rim well, air pressure is used to push the beads into their seated, sealed position against the rim hooks. A compressor is not required to seat the tire beads. A good floor pump or an air cartridge will work, and a hand pump may work if nothing else is available. With a snug fitting tubeless tire, bare-handed installation may be difficult. If you use tire levers for installation or removal, do not damage the rim or abrade the tire beads. If either surface is damaged, the roughened surface may allow a greater rate of air to bleed from the mounted tire.

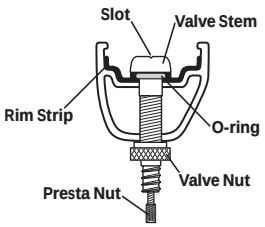
Install the valve stem

1. Center each rim strip in the correct rim (below). Make sure it fully covers all spoke holes.

WARNING! Make sure the rim strip covers all of the spoke holes or spoke heads. If they are exposed, it may allow air loss or can puncture the inner tube. Such use may cause a rapid decrease of tire pressure, resulting in loss of control with possible personal injury.



2. Align the slot on the head of the tubeless valve with the rim (right). Press the valve stem through the rim strip and rim.
3. Install the tubeless valve nut onto the valve, and tighten firmly. There should be no gap between the valve and the rim strip. There should be an O-ring on the tubeless valve that interfaces with the rim strip.
4. Inspect the rim strip. Make sure the rim strip lies centered in the rim well, with no wrinkles or unevenness.



Install the tubeless tire

1. Lay one tire bead into the center of the rim well. Start opposite the valve to give the tire beads the maximum slack. If you start at the valve, the bead will lie on top of the valve. With the bead on top of the valve, some slack will be taken up which is needed to lift the tire bead over the rim shoulder.

Note: If desired, the tire bead can be lubricated with soapy water to aid in tire installation and seating of the bead.

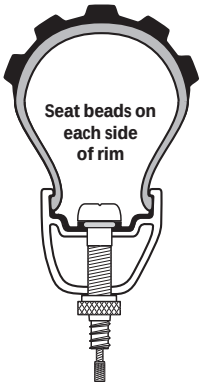
2. Start opposite the valve again, and install the second tire bead. Before installing the last 10 inches (25 cm) of the second bead, pivot the beads so the second bead is at the bottom of the rim well. With the additional slack afforded by this bead placement, finish installing the second bead until it is completely in the rim well (below right).

Note: If you choose to use tools to mount the tire, be careful not to mar the rim or abrade the tire as this could reduce the required ability of the rim to seal to the special beads of a tubeless tire.

Inflate the tubeless tire

Tip: *During initial inflation it may be helpful to hold both beads, adjacent to the valve stem, up and out of the center channel with your fingers. This will help remove any gaps between the tire beads and rim strip.*

1. Begin to inflate the tire. The tubeless valve stem works just like a standard presta valve. Unlock the presta nut, and use a pump with a presta fitting. Initially, its best to inflate the tubeless tire as rapidly as possible. This forces the beads out to the rim hook where they will seal.
2. With the tire beads sealed to the rim hook, inflate the tire to about 60 PSI (4 ATM) until the tire beads lock into the rim well.
3. Visually check that the beads are seated correctly in their locked position (right). Most tires have lines or marks running around the casing, just above the bead. When correctly installed, these lines are at an even distance from the rim. When the beads are correctly seated all around the rim, inflate (or deflate) to the desired pressure.



Adding an inner tube
Remove the tubeless tire

WARNING! Failure to maintain a minimum tire pressure of 30 PSI may result in rapid decrease of tire pressure, resulting in loss of control with possible personal injury.

1. Let all the air out of the tire.
2. On tubeless compatible rims the bottom of the well is too narrow for both beads to rest fully against the rim bottom at the same time, so the tire must be placed to get one bead down. With the wheel facing you, roll the tire up and away from the rim with your thumbs while you use your fingers to tuck the opposite bead into the rim well.
3. At the valve, pull the lower, slacker bead of the tire up, out, and away from the rim.
4. Pull the loosened bead up and out of the rim, rolling and pushing the tire toward the hub until the first bead is completely off the rim. Repeat to remove the other bead.

Note: If using tools to remove the tire, be careful not to mar the rim as this could reduce its ability to seal to the special beads of a tubeless tire.

Remove the valve stem

5. Remove the tubeless valve nut. Thread the presta nut into the valve stem, and push the stem out of the rim. Install the tire and tube.
6. Make sure the rim strip is centered in the rim well and fully covers all spoke holes. Install the tire and tube in the normal manner. ***When using an inner tube (with a tubeless compatible tire and rim), either a conventional or tubeless tire can be used.***

Removal and installation of a rim strip
Removal of the rim strip

1. After removing the tire (and tube, or tubeless valve stem) insert a round-bladed screwdriver (or similar tool) through the valve hole, and between the rim and rim strip. If the rim strip is to be used again, be careful not to tear or stretch the hole.
3. Lift the rim strip and place a tire lever underneath. Use the tire lever to lift and then roll the rim strip over the opposite rim hook. Be careful not to mar or damage the rim, or rim strip, with the tire lever.
4. Continue to roll the rim strip up and out of the rim as you work your way fully around the rim.

Installation of the rim strip

1. Make sure the rim strip is in good condition, with no tears, holes, or deformed areas near the valve hole or along its edges.
2. Align the rim valve hole and rim strip valve hole. Place the special tubeless valve (or a similar item) through the rim strip valve hole, and then the rim. The 'U' shape of the rim strip should face the same direction as the 'U' shape of the rim well.
3. Work the rim strip into the rim, moving away from the valve stem in both directions. With six to ten inches (15 to 25 cm) rim strip remaining outside the rim, manually lift and slightly stretch the rim strip so that it can be laid flat in the rim well.
4. Follow the appropriate installation procedures to install a tire.

Troubleshooting Guide

Problem: Attempts to initially inflate the tubeless tire are unsuccessful.

- A tire must be tubeless compatible to work without a tube. A tubeless tire will be clearly marked as such on the sidewall.
- Seat the tire beads on both sides of the inflation valve to prevent gaps that allow air to escape.
- Rest the tire beads uniformly in the center channel of the rim. Beads must not fold or deform prior to tire inflation. Any odd deformation will allow air to escape during inflation.
- Eliminate all gaps between the tire bead and the rim strip that may allow air to leak. If a gap is suspected, pull the tire towards the rim opposite from the gap. This will pull the bead with the gap into a sealed position on the rim strip.
- Seat the inflation valve against the rim strip or air will escape around it during inflation. Secure the valve retaining nut by hand only to ensure easy removal.
- When possible, inflate a tubeless tire initially with a larger hand pump, floor pump or CO2 cartridge. The air flow rate in some small hand pumps will not initially inflate a tubeless tire.
- If none of the above has solved the problem, the tire may be damaged. Substitute a tire that is known to work or try again. If it inflates, the original tire is probably damaged or defective and must be replaced.

Problem: The tire inflates initially, but then loses air quickly.

- If air comes out the valve hole of the rim, it does not necessarily indicate a problem with the valve.
- A tire must be tubeless-compatible to work without a tube. A tubeless tire will be clearly marked as such on the sidewall.
- Clean the rim strip for assembly and inflation. Dirt on the rim strip could cause a leak. Use soapy water to detect leak.
- Look for cuts, tears or gouges in the rim strip that could cause a leak. Use care when mounting or removing a tire (using soapy water my help) so as not to damage the rim strip. If a rim strip is damaged, it must be replaced with a new rim strip.
- Seat the inflation valve against the rim strip or air will escape around it. Secure the valve retaining nut by hand only to ensure easy removal.
- Inflate the tire to between 50 and 60 psi to properly seat the tire beads. (Note: some tires may not require a full 50-60 psi to seat properly).

Problem: An installed tubeless tire fits too tightly to be removed.

- Push one tire bead at a time into the rim's center channel. Beginning at the valve, pull one of the beads up and over the side of the rim. Extreme care should be exercised if a tire tool is used in the process. Excessive force on the tool could damage the rim strip or tire bead. For further detail, refer to the section "Adding an Innertube", earlier in the instructions.

ZONOS and ZONOS Disc wheels incorporate Bontrager Wheel Systems "Tubeless Compatible Technology". **(**Revised 5.19.2003)

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