



BONTRAGER TUBELESS READY TIRE OWNER'S MANUAL

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Important: About Tubeless Ready tires

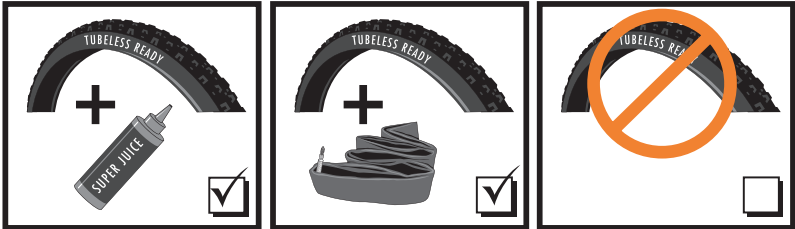
The Bontrager Wheelset Owner's Manual has additional information about Bontrager Tubeless technology. This manual and other useful information is available at <http://www.bontrager.com>, or at a Bontrager dealer.

Tire and rim compatibility

The following chart shows which tires are compatible with which rims, and any parts that are needed to make the tires compatible with the rims.

Table 1- Tire and rim compatibility

Rims	Tires		
	Tubeless	Tubeless Ready	Standard
Standard 26" (ETRTO 599)	NO	YES- <i>with inner tube</i>	YES- <i>with inner tube</i>
UST (standard tubeless type)	YES	YES- <i>with Super Juice or with inner tube</i>	NO
Bontrager Tubeless Compatible	YES	YES- <i>with Super Juice or with inner tube</i>	YES- <i>with Super Juice or with inner tube</i>



Tubeless Ready tires do not hold air without either an inner tube or liquid sealant inside the tire. To use a Tubeless Ready tire in tubeless mode, follow these instructions to install Bontrager Super Juice sealant. Super Juice is a long-lasting, quick-acting, glycol-based sealant developed for this purpose.

⚠ WARNING

Tubeless Ready tires require an inner tube or special sealant to hold air. Air loss can cause loss of control resulting in personal injury or death. Use an inner tube, or follow the instructions for Tubeless Ready sealant use.

Standard UST tubeless tires are designed to hold air without sealant, but using Bontrager Super Juice sealant in these tires will increase their puncture resistance and reduce their tendency to leak air.

Before you start: Tubeless tips

Tubeless tires fit tightly and require unique mounting procedures

tire manufacturer fit, so some tires are more difficult to mount than others. Carefully follow the installation instructions, and you should be able to easily mount any tubeless tire.

When mounting a tubeless tire, the tire must make an airtight seal against the inner surface of the rim to allow initial inflation. When riding, the bead must fit the rim securely when the tire is mounted in order to retain air, especially at low inflation pressures. Because of these requirements, a tubeless tire fits the rim more tightly and can be more difficult to mount than a conventional tire on a conventional rim. It's especially important to pay attention to the installation instructions for tubeless tires if you've already mastered installing conventional tires; there are very important differences between the two.

Pre-stretch the beads to make tire mounting easier

The Kevlar bead of a new tubeless tire will stretch a substantial amount after it has been inflated initially. It's best to mount a new tubeless tire onto a standard rim before installing it on a tubeless rim- any wheel will do. Use an inner tube, inflate the tire to 60 psi (4 ATM) and leave it overnight. This will make it much easier to mount onto your tubeless rim.

Use soapy water to mount tubeless tires

With a tubeless or Tubeless Ready tire, the tire beads have to move along the surface of the rim and remain in contact with it during the inflation process. Friction resists this motion and causes problems. The source of the friction is between the sticky rubber of the tire bead and the inner surface of the rim. A film of soapy water reduces the friction, allows the tire to more easily slide into place on the rim, and lets the tire seal better. Use dishwashing liquid diluted with water (1 part soap to 4 parts water). Brush, wipe or spray this solution onto both the rim and tire surfaces before you mount a tire. If you have to fix a flat on the trail, plain water also works.

Be careful when using tire tools

It is often easier to mount a tight tire using tire tools, especially if it's a new tire, so it's a good idea to carry tire tools with you in case you have to repair a flat on the trail. If you choose to use tire tools, do not use excessive force on the tool. If you have to use a lot of force, something is wrong; stop and determine the cause of the problem. Incorrect use of tire tools can damage the sealing surfaces of the rim strip or the tire bead; this damage can cause air leaks.

Installation

Removing a Bontrager Tubeless Ready or UST tubeless tire

If the tire has sealant installed, be careful not to spill it as you remove the tire. It is best to remove the old sealant and replace it. If you have to reuse the sealant, carefully pour the pool of fluid into a container. Scrape the sealant that remains on the casing into the container too. Rinse the rim and tire casing with water.

1. Deflate the tire.
2. Push the first bead into the center of the rim with your thumbs.
Leave the other bead in place and push the entire first bead inward until it is free from the bead seat and a loose fit on the rim.
3. Begin at the valve and pull the tire bead up and away from the rim with your fingers or a tire tool.
4. Continue removing the entire first bead from the center of the rim.
5. Repeat these steps with the second bead to remove the tire from the rim.

Installing a Tubeless Ready or UST tubeless tire with an inner tube

1. Inspect the rim strip.
The plastic rim strip is not necessary for use with a tube; a high-quality fiber tape like Bontrager rim tape is best. Carefully push the tape down into the center channel of the rim so that the tire bead has enough room to fit all the way to the bottom of that channel.
2. If you are switching the wheel from a tubeless to a conventional set up, remove the tubeless valve now.
Keep the valve so you can change back to a tubeless set up.
3. Install the tire and tube in the same way you would using a conventional tire and rim.
If it is difficult to fully seat the tire on the rim, spray some bead lubricant (soapy water) into the gap between the tire and rim, even if the tire is already on the rim.

Installing a Tubeless Ready or UST tubeless tire without an inner tube

To use a Tubeless Ready tire in tubeless mode, sealant must be added to the tire (see *Tire and rim compatibility*, page 2). The sealant must be put into the tire before you inflate it. Use no less than 50 ml of sealant per tire. Additional sealant (up to 120 grams) can seal punctures so this is a good way to maximize puncture protection. There are indicators on the side of the Super Juice bottle so that you can easily control the amount of sealant you use.

1. If you have been using a tube, install the tubeless valve.
Use your fingers to tighten the valve nut. Don't use pliers- if you puncture on the trail, you will have to be able to remove the nut by hand.
2. Lubricate the rim and tire beads with soapy water.
3. Install the first tire bead onto the rim.
Start 180 degrees away from the valve and position the bead into the center channel of the rim. Push the bead over the rim, working your way to the portion near the valve.
4. Start the installation of the second bead.
As in Step 3, start on the side opposite the valve. Position the second tire bead in the central channel of the rim and continue around the rim in both directions towards the valve area. When the bead becomes tight, complete the installation using one of the options below.

Option 1 - Adding the sealant through the valve

1. Finish installing the second tire bead. Make sure that the beads fit properly on either side of the valve before adding the sealant.
2. Loosen the inner portion of the valve with pliers and remove the core (Figure 2).
3. Trim the tip of the plastic sealant bottle to fit the outer diameter of the valve core, or use a piece of plastic tubing that is a tight fit on both the core and the tip of the bottle to transport the sealant into the wheel.
4. Carefully squeeze the proper amount of sealant into the wheel (Fig. 3).
5. Use a tire pump and push air through the valve to clear sealant out of the threaded area.
6. Replace the valve core and tighten it gently in place with pliers.

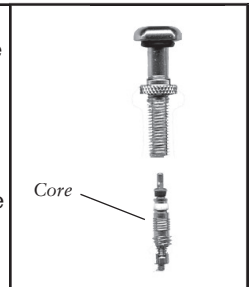


Figure 2- Tubeless valve stem with removable core



Figure 3- Adding Super Juice to the tire

Option 2 - Adding the sealant before the tire is completely mounted

Work carefully to avoid spilling any sealant.

1. Hold the wheel perpendicular to the ground and rotate the unmounted portion of the tire so that it is at the 6 o'clock position.
2. Pull the unmounted bead away from the rim to create a gap, and squeeze the proper amount of sealant through the gap into the inner portion of the tire.
3. Carefully rotate the wheel so that the unmounted portion of the bead is at the 12 o'clock position and finish mounting the second bead.

5. Continue mounting the tire- check the location and orientation of the tire beads in the rim (Figure 4).

The beads must fit uniformly into the central channel of the rim without twisting. The beads must straddle the valve where it projects through the rim strip, and make good contact with the rim strip surface in order to seal in that area. It is common to have to adjust the beads in the area around the valve before inflating the tire.

6. Start rapidly inflating the tire using a floor pump or compressed air source.

If you are using a floor pump, it is usually necessary to initially inflate the tire with the fastest pumping motion possible. Once the tire starts to seal and hold air you can slow down. If the tire doesn't begin to seal after attempting to inflate it, stop and reposition the bead of the tire with your hands. Small changes in the position of the tire can make a big difference.

7. Inflate the tire until the tire beads seat onto the rim (Figure 5).

The beads often make an audible popping sound as they snap into place. Use no more than 60PSI (4 ATM) to seat the beads.

If the beads don't seat properly, deflate the tire and relubricate the bead and rim surfaces by squirting the lubricant through the gap between the tire and rim, and reinflate the tire.

Make sure the beads are seated correctly in their locked position before you use the wheel.

8. Thoroughly distribute the sealant around the inner surface of the tire (Figure 6).

Hold the axle tips in each hand and spin the wheel. Orient the spinning wheel into a variety of positions (angles) so that the sealant can reach the entire inner surface of the tire. Some leaks in the casing can take time to seal, especially if they are located near the bead area.

9. Adjust the tire pressure to the desired value and install the wheel.

10. Verify that the casing has been completely sealed

Ride the bike for a short time, and then check the tire pressure. If the tire pressure drops too quickly, remove the wheel and follow the Step #8 above to distribute the sealant over the leak.

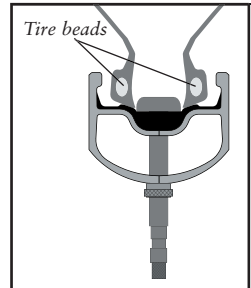


Figure 4- Beads straddling the valve stem

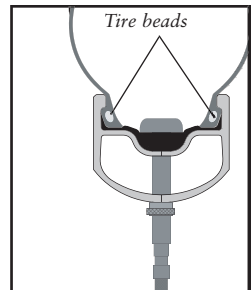


Figure 5- Beads seated onto rim



Figure 6- On an angle, rotate the wheel to distribute the sealant

Troubleshooting

Check the tire pressure on your bike before every ride; all tires lose air pressure due to air leaking through the inner tube or tire casing sidewall. Follow these troubleshooting steps in order to minimize the time it takes to repair a leaking tire.

Causes of leaks

If the rate at which air leaks from a tubeless tire is excessive, it can be reduced by repairing the source of the leak.

Use Bontrager Super Juice tire sealant in any UST tubeless tire to reduce the rate of air loss and add puncture protection.

- **If the tire has been ridden, check for punctures.**
A small piece of glass or a thorn can embed in the tread and cause a slow leak.
- **Make sure the valve nut is tight.**
Air can leak around the seal in the valve stem if it is loose or misaligned. If it is misaligned, loosen the valve nut and gently shift the valve slightly to seat it properly. Then tighten the nut. However, do not over-tighten it; if you puncture on the trail, you will have to remove it by hand.
- **Check for excessive wear of the tire casing.**
This is a problem that is unique to lightweight tubeless tires. The inner liner ply (the butyl rubber sealing ply on the inner surface of a UST tubeless tire) is as thin as possible to save weight and it will break down from hard use. The material will form gaps and these will allow air to escape at increasing rates through the casing. Adding Bontrager Super Juice sealant will stop this type of leak.
- **Make sure all of the critical sealing surfaces are clean and undamaged.**
These include all of the contact surfaces between the tire, rim strip, and valve. Gaps in the seals due to damage or dirt trapped on any of these surfaces can cause leaks. Clean or replace any damaged parts.

Checking for leaks

First, visually inspect all of the components for damage or evidence of leaks, and simply listen for the sound of escaping air.

If that doesn't work, cover all of the areas that might be leaking with a solution of soap and water, and watch for bubbles. With this method, you can also find some leaks through the tire or between the tire and rim strip near the brake wall. Use the same soap and water solution that you use to mount the tires. It's best to spray the solution on with a household spray bottle so that it is distributed evenly on the tire surface. It's normal to see some bubbles forming through the sidewall of the tire (a surprising amount!), but a significant leak will cause a very large amount of foam to form quickly.

Sometimes air leaks into the interior cavities of the rim, and these can be hard to find. Sources of these leaks include the

area around the valve seal or between the tire bead and rim strip. The leaking air can be detected at the spoke holes, but the location of the actual leak will not necessarily be close to the leaking spoke hole. There are two ways to find and eliminate leaks like these:

Partially immerse the wheel into a tub of water. Leave it in the tub long enough for the portion of the rim that is underwater to fill with water. Then, with your ear close to surface of the water listen for the sound of bubbles forming as you rotate the wheel slowly in the water. When a leak is at the water surface it will cause a bubbling noise and this will allow you to detect the location of the leak as accurately as possible.

Eliminate the possibility of all other possible leaks. If you have eliminated all visible sources, replace the rim strip or valve stem.

Fixing a puncture in a tubeless tire

Using Super Juice sealant in any tubeless tire is a huge advantage; Super Juice will seal small punctures and prevent air loss.

A puncture can be patched if it is not too severe, but first, the tire must be cleaned. The inside surface of a tire has release agents on it left over from the manufacturing process. Remove the release agents with an abrasive or tire buffer before installing the patch.

A large hole or fracture in the casing will weaken the tire. You should replace a severely damaged tire immediately, or as soon as possible. In an emergency a large patch, called a boot, can be made up of a fibrous material to cover the hole. The boot should overlap the hole by at least an inch in all directions and be bonded firmly to the casing. A tire repaired in this way should only be ridden slowly and used only as long as it takes to get back from the ride.

You should not try to patch a tubeless tire that is punctured on the trail. It's best to install a tube. Remove the tire and tubeless inflation valve. Find the cause of the puncture and remove any sharp objects in the tire so they will not puncture the tube. Install the tube and reinstall the tire.

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