



RECYCLABLE PACKAGING

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Part Number 281540



BONTRAGER

Fork Owner's Manual



BONTRAGER™

FORK OWNER'S MANUAL

READ THIS MANUAL BEFORE YOU RIDE

Please read this instruction manual thoroughly before using your new fork; it contains important safety and maintenance information. Also check our web site for further information or updates. If you do not understand the information, or you have a question about your fork that this manual does not cover, consult your Bontrager dealer. If you have a question or problem that your Bontrager dealer can't handle, contact us at:

Bontrager Components
Attn: Customer Service
801 W. Madison Street
Waterloo, Wisconsin 53594

920.478.4678
<http://www.bontrager.com>







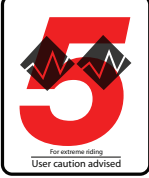
In this manual, the Safety Alert Symbol is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

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Conditions for Use

Each model of Bontrager fork is intended to be used in a specific set of conditions. Riding a Bontrager fork in a manner other than its intended use can cause the fork to fail. Determine the type of Bontrager fork you have purchased, and avoid conditions beyond the intent of your fork, as listed below:

	Use Condition	Bontrager fork type
 <p>For riding on pavement only</p>	Riding on a paved surface where the tires do not lose ground contact	Forks with caliper-type brake mounts (only)
 <p>For riding on improved paths and roadways only No jumping</p>	Condition 1 plus smooth gravel roads and improved trails with moderate grades where the tires do not lose ground contact	Forks for 650 or 700c-sized wheels with brake bosses on the fork blades (for V-type or cantilever brakes)
 <p>For riding on unimproved trails with small obstacles</p>	Conditions 1 and 2 plus rough trails, small obstacles, and smooth technical areas, including areas where momentary loss of tire contact with the ground may occur. NOT jumping.	Forks for 26" or 29" wheels
 <p>For riding on rough trails with medium obstacles</p>	Conditions 1, 2, and 3 plus rough technical areas, moderately sized obstacles, and small jumps.	none
 <p>For extreme riding User caution advised</p>	Jumping, hucking, high speeds, or aggressive riding on rougher surfaces, or landing on flat surfaces. This type of riding is extremely hazardous and puts unpredictable forces on a bicycle which may overload the frame, fork, or parts.	none

BEFORE EVERY RIDE: CHECKLIST

Before every ride, follow this check list to inspect the fork and its connected parts: the headset, stem, and front wheel. If any part of the bicycle fails the inspection, repair the bicycle by following the information provided by us or take it to your dealer for service. Never ride a bike with a damaged part; have it replaced. This is not a comprehensive maintenance program.

- Check the headset
 - Check the stem
 - Check that the wheel is properly attached
 - Check the fork for fatigue or impact damage
-

Check the headset

1. Apply the front brake firmly while you rock the bicycle forward and backward.
2. With the front wheel off the ground, slowly rotate the fork and handlebar to the right and left.

If the headset bearings rock in the frame or do not turn smoothly, do not ride the bicycle; take the bike to your dealer for service. Adjustment of headset bearings requires special tools and training, so these services should only be performed by your dealer.

Check the stem

Make sure the stem is in alignment with the front wheel. Test the stem connection to the fork by attempting to turn the handlebar from side to side with the front wheel locked between your knees. If the stem turns while the wheel is held in place, follow the instructions in your bicycle owner's manual to tighten the stem. If the stem attachment still fails the test, take your bike to your dealer for service.

Check that the wheel is properly attached

Test for proper wheel attachment. Pick up the bike, and sharply hit the top of the tire. The wheel must not come off, be loose, or move from side to side. If the wheel fails this test, re-attach the wheel by following the instructions in your bicycle or wheelset owner's manual. If the wheel still fails the test, take your bike to your dealer for service.

Check the fork for fatigue or impact damage

Before and after each ride, carefully inspect your fork for signs of impact or fatigue stress:

- Dents
- Cracks
- Scratches
- Deformation
- Discoloration
- Noise

WARNING

A damaged carbon fiber part can fail suddenly, causing serious injury or death. Inspect a carbon fiber bicycle or parts for damage frequently. If you suspect a carbon fiber part is damaged, immediately stop riding the bicycle. Before riding, replace the part or take the bike to your dealer for service.

Even if you perform regular inspections, if you exceed the limit of strength of a given part, it may fail if overloaded. After any high force load, thoroughly inspect all the parts of your bike. High force loads include crashes, but you don't have to crash to put a high force load on your bike. For example, hitting a large hole in the road or a sharp bump such as a railroad track can put large forces on your bike.

The manner in which you ride will determine whether your bike and its parts will last. If you ride hard or aggressively, you should replace the bike and/or its parts more often than riders who ride smoothly or cautiously. When evaluating your use of the fork, there are many variables: weight, speed, technique, terrain, maintenance, riding environment (humidity, salinity, temperature, etc.), and the frame or part itself—so it is impossible to give a precise timetable for replacement. But as a rule, it is better to err on the safe side and replace the bike or parts more frequently. If you aren't sure, ask your dealer.

Carbon fiber composite inspection procedures

Carbon fiber is among the strongest materials used in bicycle manufacture. However, carbon fiber has unique qualities, different from metal parts, and must be inspected carefully for damage.

Inspecting carbon fiber parts

Unlike metal parts, carbon fiber parts that have been damaged may not bend, bulge, or deform; a damaged part may appear to be normal to a cursory glance. Use the following procedures to inspect carbon fiber parts:

- Check for scratches, gouges, or other surface problems.
- Check the part for loss of rigidity.
- Check the part for delamination.
- Listen for unusual creaking or clicking noises.

These tests may not be conclusive.

The tests are difficult to describe, so as an aid to describing the tests we provide a movie of inspecting a carbon fiber part in the owner's manual section of the Bontrager web site. If you have any doubts about the integrity of a part, do not ride the bicycle.

SAFETY REQUIREMENTS

⚠ WARNING! Failure to follow the following requirements may result in failure of the fork resulting in serious personal injury or death.

Use a front brake

For some models, the brake bolt goes through both the carbon fork crown and the aluminum steerer. In the event of a frontal impact, the brake bolt functions as a key part of the impact absorption function; do not ride without a brake bolt through the fork crown and make sure the brake bolt is properly tightened.

Do not overtighten the brake attachment bolt. The maximum torque for the brake bolt is 70-85 lb•in (7.9-9.6 N•m).

Use a proper stem design and installation

The stem has several design requirements, which if not fulfilled, could damage the fork and cause it to break:

- Do not use a stem with a wedge-type steerer clamp (Figure 1), except for a Bontrager King Earl stem, which has a special design that will not damage forks. Improper clamp design can deform the steerer, adding to fatigue stress.
- Always use at least two spacers between the stem and headset. If the stem sits directly against the headset, any fatigue stress will be concentrated in a small area, which may damage the steerer.
- Never use more than 40mm of spacers under the stem. Additional spacers create more stress on the steerer, which could cause the steerer to fail.
- Do not overtighten the stem clamp; follow the stem manufacturer's recommendations. Overtightening can deform the steerer, adding to fatigue stress which may damage the steerer.

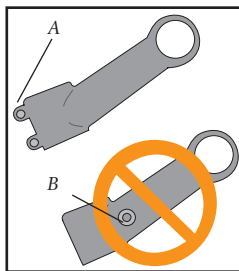


Figure 1- Stem clamp designs

A: pinch clamp
B: wedge clamp

Use a proper headset configuration

Make sure the headset is the correct size and that the lower crown race has a generous radius to the lower edge where it contacts the fork (Figure 2). A crown race where the lower, inside edge of the crown race is sharp and more square may not seat correctly against the fork crown, or may require excessive force to install. If the crown race does not go onto the fork with normal force, use a headset with the correct design. Do not alter the fork to fit the crown race.

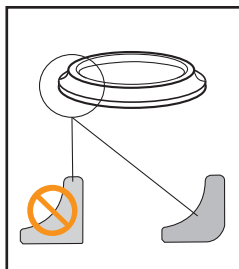


Figure 2- Proper shape for lower inside corner of crown race

Use the proper size of disc brake rotor

For Bontrager forks equipped for disc brakes, the fork should only be used with road-size rotors: 165mm, 6", or smaller. Larger rotors place greater force on the fork and could cause damage or cause the fork to break.

FORK MAINTENANCE

In addition to the checklist on page 2, your fork may require additional maintenance. This section provides information about such maintenance.

Re-alignment of the fork is not possible

Bontrager carbon fiber or aluminum forks, and their aluminum dropouts, are not as ductile as steel. Never attempt to make adjustments to a part by bending or twisting it. If the fork has been damaged, take it to your Bontrager dealer for inspection.

Keep the fork clean

Keep your fork clean with a soft rag and a solution of mild detergent and water.

Avoid chemicals or heat

Do not use solvents or harsh chemicals on the fork, as they can damage the paint and also the adhesive which joins the fork parts. Excessive heat over 180° F (82° C.) can also damage the adhesive.

Completely inspect the fork every six months

Every six months, take the fork out of the bike and inspect the steerer and crown. Since this requires disassembling the headset bearings, this procedure requires special tools and skills. If you do not have the training, take your bike to your dealer for inspection.

To inspect the fork

1. Remove the fork from the bike
2. Thoroughly clean the steerer and fork crown area.
3. Look for signs of fatigue or impact damage as explained on pages 2-3 of this manual.

If the fork shows any signs of stress, replace it. Do not ride a fork with signs of stress.

Do not modify the fork in any way

Modifying the fork in any way will void the manufacturer's warranty and may be unsafe.

Removing paint from a Bontrager carbon fork requires special techniques, so should only be done at the Bontrager factory. See your Bontrager dealer for more information.

⚠ WARNING

Never modify your fork in any way, including sanding, drilling, filing, removing redundant retention devices, or by any other technique. Such modifications will void your warranty, may cause your fork to fail, and may contribute to loss of control resulting in personal injury or death.

INSTALLATION INSTRUCTIONS

The correct installation of your new Bontrager fork is critical to your safety, so this work should be performed only by an experienced mechanic. The installation portion of these instructions is written for an experienced mechanic. If you are not sure of your ability to correctly install this fork, have the fork installed by your Bontrager dealer.

Make sure your fork is compatible

Changing the forks on your bicycle could alter the steering of the bicycle. Before installing this fork on any bike, check with your dealer or the Bontrager technical service department to ensure that these Bontrager forks are compatible with your bicycle frame.

Bontrager forks are not compatible with any mechanism which clamps around the fork blade, with the exception of bicycle computer sensors. Except for forks with eyelets for fenders or a rack, do not use mechanical fasteners to attach any other parts to this fork. If you are unsure of what items can be attached to this fork, consult your Bontrager dealer.

This fork has the following dimensions, which cannot be modified:

- 100mm front axle O.L.D. (Over Locknut Dimension)
- 28.6mm steerer outer diameter
- 30.0mm fork crown seat diameter

Basic installation information

Follow standard installation procedures for threadless headsets, and aluminum or steel steerers. Avoid scratching the fork. Inspect all parts for burrs or roughness and remove them before installing. Also read the section *Safety Requirements* on page 4.

When cutting the steerer, remember the saying, “Measure twice, cut once.” Any change in the existing overall stack height (head tube + headset stack height + spacers + stem steerer clamp height) will require a different steerer length. If no change is made to the overall stack height, you must still check that the existing steerer is of the correct length before determining the correct length for the new steerer (Figure 3). If in doubt, it is much better to leave the steerer long, and cut it shorter at a later time.



Figure 3- Stem clearance

To remove the existing fork

1. Remove the front wheel, front brake, and stem (with handlebar assembly) from the bike.
2. Remove the upper headset parts.
3. Lower the fork through the lower headset parts.
4. If the existing headset is to be installed on the new fork, remove the crown race from the old fork, and clean the race thoroughly.

To prepare the new fork for installation

1. Determine the correct length for the new steerer, and cut the steerer to length.
2. De-burr and smooth the inside and outside surfaces of the cut edge of the steerer.
In steps 3 and 4, prevent damage to the fork while hammering: hold the fork in your hands, by a single leg.
3. Install the star-fangled nut.
4. Install the crown race.

To install the new fork

1. Slide the steerer through the headset, spacers, and stem.
Check for the correct 2-5mm clearance under the top of the stem (Figure 3).
2. Attach the top cap.
3. Install the front brake.
For a caliper brake, use the special extra-long brake nut provided (Figure 4).
For a Bontrager fork built for cantilever or V-type brakes, the brakes are attached with standard hardware.
For a Bontrager fork with a disc brake mount, use only road-sized rotors: 165mm, 6", or smaller.

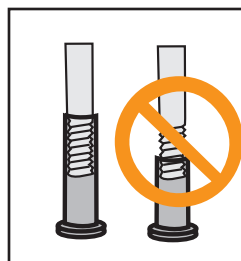


Figure 4- Use the long brake nut for proper thread engagement

⚠ WARNING

A Bontrager fork crown has a deeper cross-section than a standard fork crown, so a standard brake nut may not provide adequate thread engagement on a standard front brake bolt (Figure 4). Failure to properly attach the front brake may cause loss of control resulting in serious personal injury or death. Use only the extra-long brake nut supplied with the Bontrager fork.

4. Install the front wheel.
5. Re-adjust the front brake.
6. Put the bike on the ground and adjust the headset.
7. Tighten the stem's steerer clamp bolts. Follow the stem manufacturer's normal tightening procedure.
8. Function check the installation and adjustment of the stem, headset, and front brake.

BONTRAGER LIMITED WARRANTY

Bontrager warrants each new Bontrager component or wheelset against defects in workmanship and materials:

For five years-

- All Bontrager components and accessories, except consumables such as tires and inner tubes.

For one year-

- Bontrager consumables such as tires and inner tubes.

This warranty does not cover-

- Normal wear and tear
- Improper assembly
- Improper follow-up maintenance
- Installation of parts or accessories not originally intended for or compatible with the Bontrager fork, components, or wheelsets as sold
- Damage or failure due to accident, misuse, abuse, or neglect
- Labor charges for part replacement or changeover

This warranty is void in its entirety by any modification of the wheelset or components.

This warranty is expressly limited to the repair or replacement of a defective item and is the sole remedy of the warranty. This warranty extends from the date of purchase, applies only to the original owner, and is not transferable. Bontrager is not responsible for incidental or consequential damages. Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you.

Claims under this warranty must be made through an authorized Bontrager dealer. Proof of purchase is required.

This warranty gives the consumer specific legal rights, and those rights may vary from place to place. This warranty does not affect the statutory rights of the consumer.

Carbon crash replacement policy

Assessing any damage done to a carbon fiber part requires more experience than is needed to inspect metal parts. If you crash or impact your bike and the force of the impact is absorbed by a carbon part, we strongly encourage you to replace the part, even if there are no indications of damage.

If such a crash or impact occurs, Bontrager offers a crash replacement program for carbon parts, substantially reducing any replacement cost. To take advantage of this program, contact us using the information listed on page i, and ask for the Warranty department.