Part Number 27????

BONTRAGER™

RACE XXX LITE OWNER'S MANUAL

Wings for your feet. The lightweight carbon Race XXX Lite ATB crankset puts the strength of carbon fiber technology at your feet. Using an advanced structural design, the Race XXX Lite ATB crankset achieves an incredibly optimized strength-to-weight ratio.

The ultimate drivetrain upgrade for your high performance ATB bike.

The Bontrager Race XXX Lite ATB crankset is loaded with features:

- True hollow-molded carbon structure keeps the weight to an absolute minimum.
- Splined ISIS bottom bracket assembly redefines smooth and efficient pedaling.

Please read this instruction manual

Figure 1- Bontrager Reace XXX Lite carbon fiber crankset

READ THIS MANUAL BEFORE YOU RIDE

thoroughly before using your new crankset; it contains important safety and maintenance information.

If you do not understand the information in this manual, or you have a question about your crankset 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

Contents

Introduction

The crankset- left and right crank arms and chainring(s) (Figure 1), and bottom bracket (the axle and bearings on which the crankset rotates)- allows your legs to pedal, transmitting power to the rear wheel.

This section explains how to inspect, adjust, lubricate your crankset and bottom bracket, and how to check carbon fiber parts for damage.

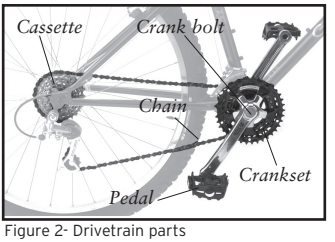

Figure 2- Drivetrain parts

Inspecting the crankset and bottom bracket

Once a month, clean the chainrings and inspect them for damage. If any teeth are bent or broken, have the chainring replaced by your dealer. Note that on some chainrings, a few teeth have a special shape to enhance shifting.

Every 3 months inspect the crankset, check the bottom bracket adjustment, and tighten the bolts. These are maximum torque specifications:

- Crank bolts: 350 lb•in (40 N•m)
- Chainring bolts: 50-70 lb•in (5.7-7.9 N•m).
- Bottom bracket cups: 430-610 lb•in (48.6-68.9 N•m).
- Pedals: 350-380 lb•in (40.2-42.9 N•m)

Turn the right pedal clockwise, but the left pedal counterclockwise (Figure 3).

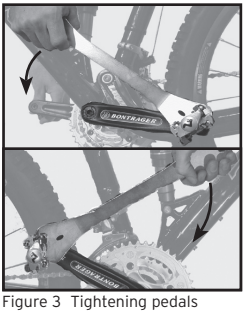
Figure 3 Tightening pedals

To check the bottom bracket bearing adjustment

1. Lift the chain from the chainrings.
2. Rotate the crank so that one of the arms is parallel to the seat tube.
3. Put one hand on the crank arm and one hand on the seat tube, and attempt to move the crank arm laterally toward and away from the seat tube.
4. Spin the cranks.

If the crank feels or sounds loose, or if the motion stops abruptly or you hear a grinding noise coming from the bearings, the bearings need to be adjusted or re-greased by your dealer.

Adjusting the crankset and bottom bracket

The Race XXX Lite crankset offers ALS (Adjustable Length System). Refer to the Installation Instructions.

Adjustment of the bearings in the bottom bracket requires special tools and training. These services should only be performed by your dealer.

Lubricating the crankset and bottom bracket

Once a year, re-grease the bottom bracket bearings. Some bottom bracket bearings are permanently sealed and do not require yearly re-greasing. Re-greasing bearings requires special tools and training, so this should only be done by your dealer.

Whenever you are installing a threaded part, apply a small amount of bicycle grease to the threads, except for aluminum chainring bolts. With aluminum chainring bolts apply a drop of Loctite 222 to the threads.

Check the carbon fiber parts for fatigue or impact damage.

Carefully inspect your components, including the crankset, before and after each ride for signs of impact or fatigue stress:

- Dents
- Cracks
- Scratches
- Deformation
- Discoloration

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.

⚠ 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.

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.

There are many variables to this equation: 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. If you aren't sure, ask your dealer. But as a rule, it is better to err on the safe side and replace the bike or parts more frequently.

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 website. If you have any doubts about the integrity of a part, do not ride the bicycle.

INSTALLATION INSTRUCTIONS

These instructions explain the steps to remove an existing crankset and install a new one. The correct installation of a new Bontrager crankset is critical to the rider's safety, so this work should be performed only by an experienced mechanic with the proper tools. If you are not sure of your ability to correctly install this crankset, have the crankset installed by your Bontrager dealer.

Lubricating threads

When installing a threaded part, apply a small amount of bicycle grease to the threads, except for aluminum chainring bolts. With aluminum chainring bolts, apply a drop of Loctite 222 to the threads.

Check all parts for compatibility before installing

The crankset interfaces with the frame, bottom bracket, chain, front derailleur, and front shifter. These parts must be compatible and the correct sizes and designs to function correctly. If you are not sure if this crankset is compatible with your bicycle, consult your dealer.

Pedal removal and installation

To remove the pedals

Note: There are right and left pedals, usually marked with a letter stamped on the end of the pedal axle, or on the wrench flats.

1. Turn the right pedal spindle counter-clockwise to remove the right pedal.
2. Turn the left pedal axle clockwise to remove the pedal.

To install the pedals

1. Lubricate the threads.
2. Place the pedal washer (Figure 4) over the pedal threads.
3. Thread the pedal into the crank arm by hand.
4. Tighten the pedals as in ***Inspect the crankset and bottom bracket***.

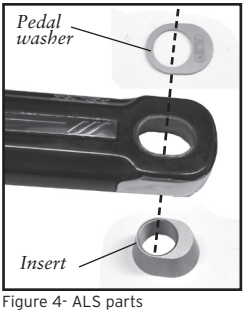

Figure 4- ALS parts

Changing crank length

The Bontrager Race XXX Lite ATB crankset uses ALS (Adjustable Length System) to provide a choice of lengths: 170 and 175mm. To change length, simply turn around the pedal-mount insert in the crank.

To turn around the pedal-mount insert

1. Loosen the pedal one turn.
2. Tap firmly on the end of the pedal with a plastic or rubber mallet until the insert (Figure 4) is dislodged.
3. Remove the pedal.
4. Press the insert out of the crank, and turn around.

   There is a left and right insert, marked L and R. Make sure the left insert is in the left crankarm.
5. Lubricate the insert and place in the crank with the pedal hole in the desired position.
6. Install the pedal.

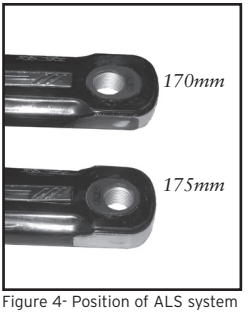

Figure 4- Position of ALS system for different crank lengths

Crank arm removal and installation

To remove a crankarm with self-extracting crank bolts, turn the crank bolt until the crank bolt threads disengage from the crankarm. The arm will then slide off the bottom bracket splines.

For cranks without self-extracting bolts, remove the standard bolts and use a crank puller to remove the cranks.

To install a crankarm

1. Lubricate the threads and the bottom bracket axle splines.
2. Align the splines of the axle with the crank arm, and slide the arm onto the axle.

   When installing a crankarm, note the alignment of the opposite crank arm.
3. Carefully engage the splines, then start the threads of the crank bolt.
4. Tighten as in ***Inspect the crankset and bottom bracket***.

Bottom bracket removal and installation

A conventional crankset is comprised of a left crankarm, right crankarm, and bottom bracket (Figure 5).

To remove a bottom bracket

1. Remove the crankarms.
2. Using the proper tool, loosen and remove the left ("adjustable") bottom bracket cup.

   The left cup is right-hand threaded, and the right cup is left-hand (reverse) threaded.
3. Using the proper tool, loosen and remove the right ("fixed") bottom bracket cup.

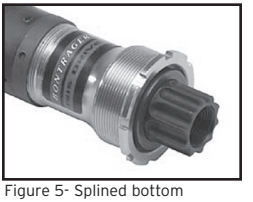

Figure 5- Splined bottom bracket axle

To install the bottom bracket

Make sure the bottom bracket threads of the frame are clean and in good condition. If necessary, chase and face the threads.

Lubricate all threaded surfaces, the bearing surfaces of the crank bolts, the interfaces between the bearings and axle, and the axle splines. Torque sepcifications are on page 2.

1. Install the right bottom bracket cup with the axle, and tighten.
2. Install the left bottom bracket cup, and tighten.
3. Attach the crankarms and tighten the crank bolts.
4. Check the left crankarm for play.

   If there is play, remove both crankarms, grease the contact between the bottom bracket axle and the bearings, and reinstall. It may require installing the cranks several times to eliminate all play.

Additional steps

After installing a crankset, check that there is at least 3mm between any part of the crankset and any part of the frame. If not, a longer bottom bracket axle is required to provide adequate clearance. Also check the adjustment of the front derailleur.

Limited Warranty

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

For five years-

- Rigid forks
- Bontrager carbon wheelsets

For one year-

- All Bontrager parts, excluding forks and carbon wheelsets

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 the cover and ask for the Warranty department.