03/04 CRONO Wheel Instructions (AROS, VOLOS, ZONOS & DUROS)

Introduction

Unique Design: Crono defines our proprietary technology (US Patent 5810453) of spoke nipples at the hub, spoke heads at the rim, and high-tension straight pull spokes. No weird, noodle like composite materials or dicey double-threaded spokes. The Crono design is different but very sensible.

Light weight: The high spoke tension allows the use of fewer spokes. And the reorientation of the spoke nipples at the hub reduces crucial rotating mass, making the Cronos the lightest-feeling wheels you can ride.

Acceleration and Stability: The high spoke tension and low rotating mass yield instant responsiveness and robust lateral stability. The wheels track beautifully straight and give you an eye-opening stiffness and speed into and out of corners.

Durability: The rim is stronger because its drillings for spoke heads are smaller than normal. And the combination of high-tension straight-pull spokes secured by Nylock® reinforced nipples makes Crono wheels much more resistant to deviating from their original trueness.

Serviceability: As with traditional wire-spokes wheels, truing adjustments are simple and intuitive; and crash damage can be quickly rectified without having to give up the entire wheel.

Compatibility: Our rear hubs can accept the latest Shimano® and Campagnolo® cassette cogs, allowing the use of your favorite component group. Our disc brake hubs are also compatible with the most popular disc brake mounting standard. Campagnolo compatible wheels ship with a .4mm cassette spacer. This spacer should be placed on before the Campagnolo cassette (cogs).

Use

Cane Creek Crono wheels are intended for single rider 2 wheel road or mountain bicycles, with conventional rim brakes or disc brakes. Use on tandems, or with hub mounted braking systems is not recommended. Always observe safe cycling practices.

Hub Adjustment

The Cane Creek Crono hubs use sealed cartridge bearings for a long, maintenance free life. Both the front and rear hubs are equipped with adjustment mechanisms to properly adjust the amount of axial play in the bearings. Maintaining proper adjustment will maximize the hub performance and extend the bearing life. To adjust the hubs remove the spoke nipple cover (except on disc hubs) to access the preload adjuster. This adjustment should be done while the wheel is installed on the bike with the quick release skewer tightened your normal amount. Loosen the small silver locking screw using a 2mm hex wrench. The preload adjusting nut can be unscrewed counterclockwise to release axial load on the hub. As you tighten the preload adjuster the amount of axial play in the hub will decrease. The goal is to eliminate the axial play while still allowing the wheel to rotate freely. Do not use a wrench on the preload adjuster, finger adjustment is sufficient. If you overtighten the preload adjuster, the hub will not rotate freely and bearing life will be compromised. Once you have found the desired adjustment location, tighten the silver screw to lock the preload adjuster in place (DO NOT OVERTIGHTEN). You can now remove the wheel from the bike and replace the spoke nipple cover. Returning the wheel to the bike and reapplying the skewer pressure will maintain the adjustment you set.

Installation of Rim Strips

It is necessary to install rim protective strips before mounting tires and tubes. Use a high quality rim strip that is wide enough to cover the spoke access holes completely. For adhesive backed rim strips, we recommend a minimum width of 15 mm for road wheels, and a minimum width of 17 mm for mountain wheels. For nonadhesive "Stretch-on" poly rim strips, widths of 17 mm (road) and 19 mm (mountain) are recommended. Rim strips are not required for tubular wheels. All ZONOS wheels ship with "Tubeless Compatible" rim strips and air valves. The "Tubeless Compatible" rim strips can be used with conventional tires or "UST" tires. Please refer to the "Tubeless Compatible" instructions provided with your wheels.

Installation of Tubes and Tires

There are no special requirements for mounting tires on Crono wheels. All road and mountain rims are drilled for Presta valves. As always with clinchers, don't use any sharp metal tools that can damage the tire, tube or rim. Check to be sure the tire and tube are properly seated before inflating to maximum pressure. For tubular wheels, please consult with a professional bicycle shop for proper gluing and tire mounting procedures.

Valve Extenders for Deep-Section/Carbon Rims

After the tires are installed, unscrew the knurled Presta valve locknut all the way. The locknut remains unscrewed while the extender is in use. A layer of Teflon® plumbers tape on the valve threads will assure a good seal. Screw the extender down finger-tight over the valve threads. To release air, push a small wire such as a paper clip into the extender to open the valve.

Quick-release Skewers

All 2003 Crono wheels ship with Cane Creek Stainless Steel Quick Release Skewers. If you choose not to use the provided "QR's", make sure to choose a high quality, strong and reliable quick release with Crono wheels. Always check that the quick-release skewer is firmly attached before every ride.

NOTICE! Always check that the quick-release skewer is firmly attached before every ride.

Wheel Truing

Crono wheels are designed to stay straight, due to the unique configuration and high spoke tension. Should the wheels ever require truing, a 3/16" open-end wrench is provided for turning the spoke nipples. The truing procedure is basically the same as for a conventional spoked wheel, except that the nipples are at the hub. The cassette cogs will have to be removed to provide access to the drive-side spoke nipples (road or mtn. wheel). If significant truing or spoke replacement is required, it is necessary to maintain the target spoke tensions as closely as possible. A Spokie Length/Tension Guide is provided on the following page if spoke replacement or repair is necessary. We recommend that any truing of Cane Creek Crono wheels be performed by an experienced bicycle shop mechanic/wheel builder.

2003/2004 Crono Wheel Spoke Length/Tension

WHEEL	ROAD (700c) Front	ROAD (700c) Rear Non/Drive	ROAD (650c) Front	ROAD (650c) Rear Non/Drive	MTN (26") Front Non/Rotor	MTN (26") Rear Non/Drive
VOLOS SS/TI/Sterling	281	281/283	258	259/261		
VOLOS SS/TI Tubular	281	281/283				
AROS SS/TI Tubular	248	248/251	227	225/227		
AROS SL SS/TI Tub	281	281/283	255	255/257		
ZONOS SS/TI					254	254/257
ZONOS SS/TI Disc					252/256	256/256
DUROS Disc SG					247/251	251/251
SPOKE TENSION	*120kg*	*100k/120kg*	*120kg*	*100/120kg*	*100/120kg*	*120/120kg*

WARNING! Never use or try to straighten a J-bend spoke as a substitute for a straight pull spoke in a Crono Wheel.

Spoke Information

Crono wheels employ 2.0 (14 gauge) straight, 2.0/1.7 (14/15 gauge) butted, or 2.0 (14 gauge) bladed spokes depending on the particular model. These are "standard" spoke configurations, but may not be readily available. Replacement spokes and nipples are available from Cane Creek, or proper spokes can be cut to length at a suitably equipped bicycle shop. Never use a J-bend spoke in a Crono wheel. Never try to straighten a J-bend spoke as a substitute for a straight pull spoke. We recommend that you have spokes replaced at your local bicycle shop. Refer to the Spokie Length/Tension Guide (right) if replacement is necessary.

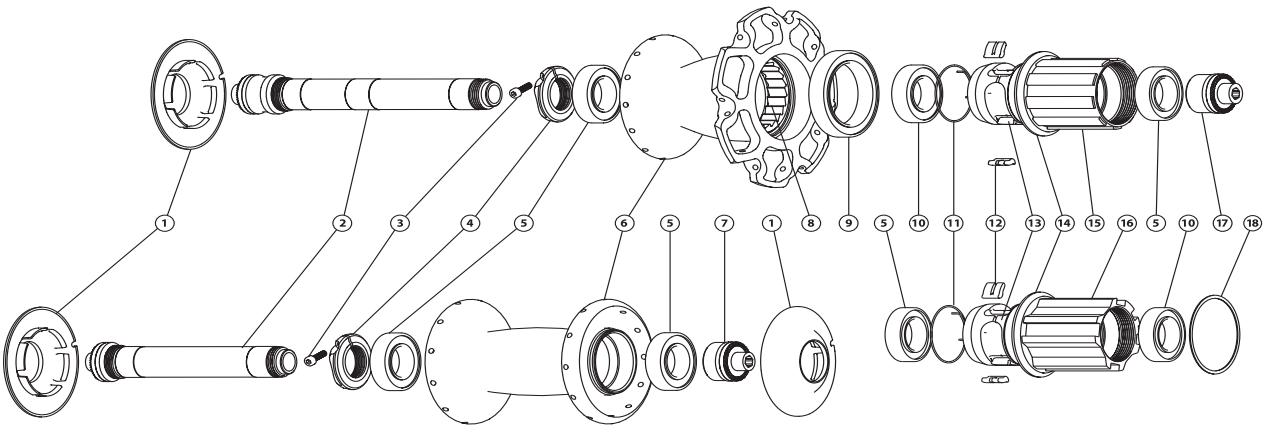
Safety and Maintenance

Although a Cane Creek Crono wheel is engineered for strength and durability, it is in fact a high performance lightweight bicycle component and not designed to withstand constant abuse. A little care and attention will extend the life of your wheels and your safety. Periodically inspect the rims for dings, cracks or excessive wear. Inspect the hub shells for cracks near the spoke holes, or on the flanges. If any cracks are present, do not ride the wheels, take them to a bicycle shop for service. Be sure all of the spoke nipples are secure. Check your quick release for proper function. Check the performance of the axle bearings, and the rear freehub. Clean the wheels with water and a household, automotive or bicycle detergent. Do not use solvents or abrasives for cleaning.

Bearing Replacement

NOTICE! The Rear hub uses **left hand** threads on the drive side of the axle/end cap. To loosen the end cap, twist the hex key in a **clockwise** direction.

While the sealed cartridge bearings used in the Crono wheels are very durable, eventually they may need to be replaced due to wear or contamination. The front and rear Crono hubs can be disassembled easily by removing the axle. To do so insert 5mm hex wrenches in both ends of the axle. The front axle is right-hand threaded (counter-clockwise, like most screws), but the rear axle is left hand threaded. To unscrew the rear hub, turn the wrenches in the direction as if you were tightening a normal screw (clockwise)! Once the axle end cap has been removed, the axle will slide out of the hub. On the rear hub, you will also have to remove the cassette from the hub shell. Do this by rotating it backwards and gently pulling. Once the hubs are fully disassembled, the bearings can be properly serviced. Using a punch or drift, carefully tap each bearing out of the hub. Press each new bearing in place, using an old bearing as a drift. Always apply pressure to the outside race of the bearing while pressing it in, never press on the inner race alone. Before reassembling the rear hub, inspect the ratchet ring inside the large end of the shell. Clean any debris from the teeth and apply a light grease coating. When the freehub is reinserted into the hub shell, compress the pawls as the pass the bearing inner race. Now the axle can be reinserted. It is best to loosen he preload adjuster before installing the axle to avoid the risk of loading the bearings. Thread on the axle end cap (remember that the rear axle is left-hand threaded) and tighten to 25 in-lb. Reinstall the quick release skewer. Finally, set the preload adjustment as described in the previous section. We recommend having the bearing replacement procedure carried out by a professional bicycle mechanic.



1. Spoke Nipple Cover
2. Hub Axle
3. Set Screw 2.5 x 10 SS
4. Preload Adjuster
5. Bearing 6902 (15x28)
6. Hub Shell
7. Front Hub End Cap
8. Ratchet Ring
9. Bearing 6806 (30x42)
10. Bearing 6902 (15x26)
11. Hub Pawl Spring
12. Freehub Pawl (2)
13. Pawl Carrier
14. Hub Sheild
15. Shimano® Freehub
16. Campagnolo® Freehub
17. End Cap (reverse thread)
18. Campagnolo® spacer (.4mm) *(must be placed on freehub before installing cassette cogs)*

WARRANTY

Cane Creek Cycling Components warrants its bicycle products for a period of 1 year from the original date of purchase. Any product that is found to be defective in materials or workmanship will be repaired or replaced at the discretion of Cane Creek. This warranty applies to the original owner only. This warranty does not cover damage or failure resulting from misuse, abuse, alteration, neglect, wear and tear, crash or impact, lack of maintenance or other conditions judged by Cane Creek to be abnormal, excessive, or improper. It is mandatory that a Return Authorization Number (RA#) be obtained by calling Cane Creek before any product is returned. Additionally, a dated Proof of Purchase must accompany the product when returned. (Revised 10.24.2003)

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