



CHRIS KING®
PRECISION COMPONENTS

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R45D GEN4 HUBSET

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CONGRATULATIONS!

You have just purchased the finest hubs available. With proper care and maintenance you will enjoy many years of the legendary performance you have come to expect from all Chris King Precision Components. This manual is designed to give you the information needed for the setup, use, and maintenance of your new hubs.

As with all Chris King Precision Components, our hubs are superbly designed and manufactured, responsibly light, and meticulously finished. Our hubs feature our patented RingDrive engagement system spinning around a 19.5mm aluminum axle on four sets of precision bearings, all of which are manufactured in-house. This combination, housed in an elegant aluminum shell, offers the solid and reliable performance demanded by serious cyclists. Like all of our components, our hubs are user serviceable and upgradeable.

Committed to longevity and waste reduction, our hubs are designed to last a life time. This includes addressing changing bike standards and frame designs making our hubs upgradeable. For future changes please contact our customer service team who can provide detailed assistance to conversion parts needed.

1. CHECK THE BIKE

Check the frame and fork dropouts to ensure that they are parallel to each other. If in doubt, use an appropriate tool made by a reputable bicycle tool manufacturer. Non-parallel dropouts may damage or compromise the performance of your hub.

2. INSTALL ROTORS

Please follow the rotor manufacturers instructions and specifications for installation.

To allow for clearance please use a Shimano Lockring Part # - Y2A598030 12/15/20mm Lockring on the Rear Hub

3. INSTALL CASSETTE

We recommend cassettes which use grouped cogs on spiders vs individual cogs, when possible.

Please follow the cassette manufacturers instructions and specifications for installation.

4. CHECK PRELOAD

1. Chris King hubs and wheels come with the preload adjusted from the factory. Before riding check to ensure Preload works correctly in your bicycle frame.
2. Mount the wheel securely in the bike and hold the rim between thumb and index finger checking for lateral motion.
3. If you experience looseness, lateral play or binding adjust the bearing preload per instruction in Maintenance Section.

! BREAK IN PERIOD !

Once you start riding your new hub, some settling may occur. During the first 60hrs of use, check for lateral play or binding by grabbing the rim near the tire and moving back and forth. Readjust clamp if necessary.

During the first 60 hours of use, above average amounts of drag may be noticed. This is normal as the seals break in, and will soon diminish.

TOOLS & LUBES

		PRELOAD ADJUSTMENT	QUICK SERVICE	MECHANIC SERVICE
	Aircraft - Simple Green Degreaser			✓
	<i>NO CITRUS DEGREASER!</i> Isopropynol Alcohol			✓
	Chris King Bearing Grease			✓
	Lint Free Cleaning rag		✓	✓
	Chris King Ring Drive 2.0 Lube		✓	✓

	Torx T10	✓	✓	✓
	Toothbrush		✓	✓
	Small Flat Blade Screwdriver		✓	✓
	Chris King Hub Tool			✓
	Metal Pick			✓
	Park FR 1.3 Cassette Tool			✓

! CAUTION : DO NOT USE CITRUS DEGREASER



BREAK IN PERIOD

Once you start riding your new hub, some settling may occur. Check for lateral play or binding by grabbing the rim near the tire and moving back and forth. Readjust clamp if necessary. Continue monitoring for the first 60 hours of use.

During the first 60 hours of use, above average amounts of drag may be noticed. This is normal as the seals break in, and will soon diminish. Please check for play every ride.

See PRELOAD ADJUSTMENT FOR FRONT OR REAR HUB.

12 MONTHS

REAR HUB : Normal preventative maintenance of the RingDrive is simple and can be performed using basic tools. In many cases, a minor cleaning and reapplication of lubricant is all that may be necessary. Judging when to perform this basic maintenance is determined by riding style and conditions. As a guideline, your hubs should be maintained every 12 months in normal and dry conditions and every 6 months in wet or muddy conditions.

During your **REAR HUB QUICK SERVICE**, check the bearings to ensure they are running freely and smoothly. If NOT proceed with a Professional Mechanic Service, this includes the removal of the RingDrive engagement mechanism and requires the use of our Hub Service Tool. See any authorized Chris King dealer for Professional Mechanic Service or you may purchase a Hub Service Tool Kit from your dealer or directly from Chris King Precision Components. Chris King Precision Components provides overhaul services at reasonable rates.

30 MONTHS or 20k MILES

FRONT & REAR HUB : Perform a Professional Mechanic Service using the Chris King Universal Hub Tool.


! WET / MUDDY CONDITIONS

Riding in wet or muddy conditions necessitates more frequent service. Often this is as simple as removing the Axle and Driveshell from the hub and removing any moisture from inside the hub shell. This should not replace periodic complete disassembly and maintenance, especially in extreme or prolonged wet conditions. Since it is nearly impossible to seal a hub from water and still have it spin freely, we have designed our hubs to be able to operate normally with some water intrusion. High-pressure spray washing, transporting or riding the bicycle in the rain, or submersion in water while riding can all lead to lubricant contamination by water. Be aware of these situations and service more frequently when they occur.




FRONT HUB: PRELOAD ADJUSTMENT

Chris King hubs feature adjustable bearing preload. The bearings should be kept in proper adjustment for optimum product performance. Do not allow the adjustment to become loose, as this may cause a loss of performance and could lead to damage to the hubs.



5 -10 Minutes

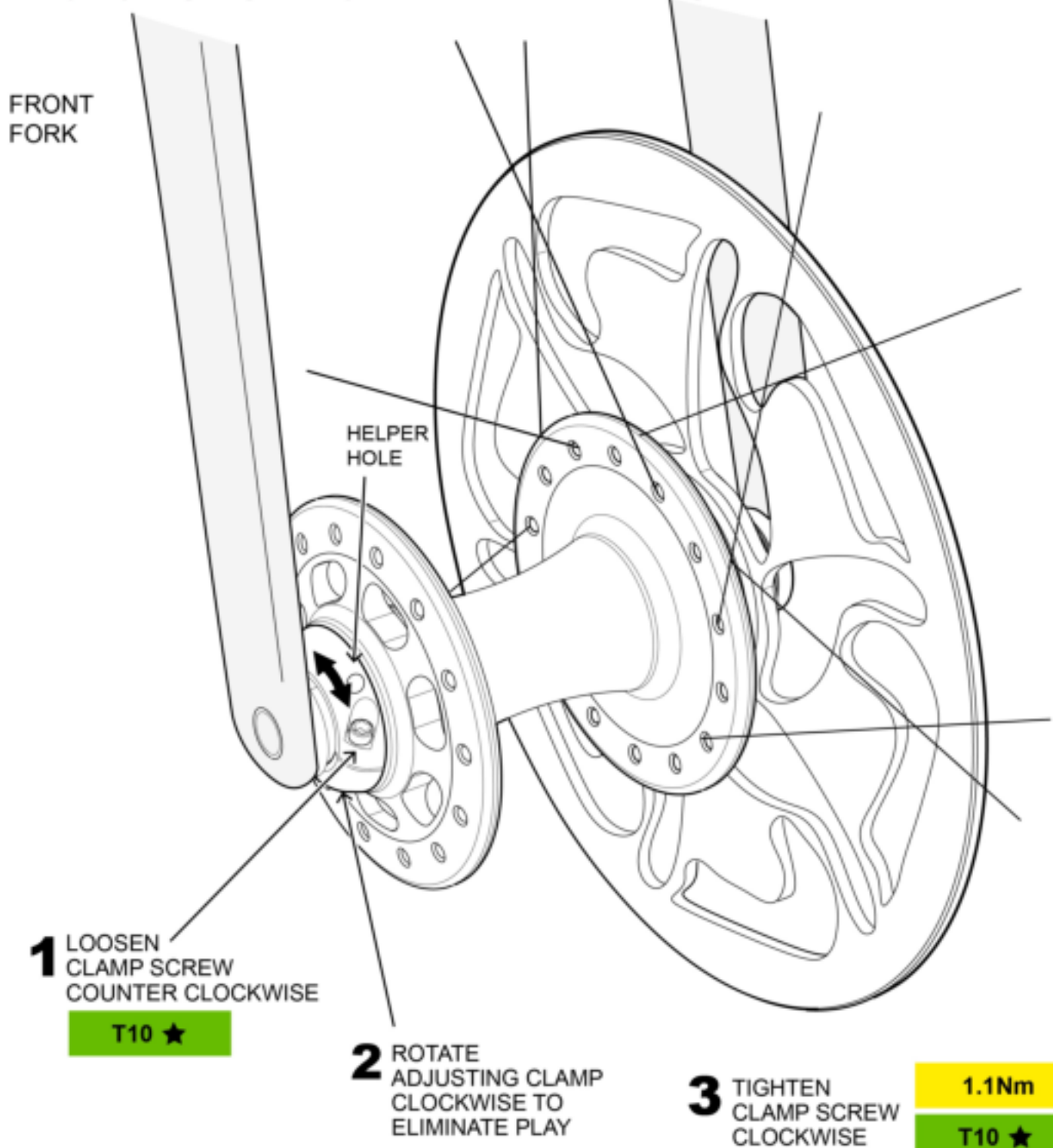


Torx T10



FRONT HUB: PRELOAD ADJUSTMENT

1. Loosen the T10 Clamp Screw located on the Adjusting Clamp
2. If needed, insert the T10 Torx Key into the helper hole on the Adjusting Clamp. Use the T10 Torx key as a lever to adjust.
3. Rotate the Adjusting Clamp clockwise until it stops and lateral play at the rim is eliminated. No need to overtighten.
4. Check for bearing play or binding, and readjust Adjusting Clamp if needed.
5. Once Adjusting Clamp is in position, tighten T10 screw to 1.13 Nm (10 inch- pounds).





FRONT HUB: BEARING CHECK



5 -10 Minutes



Torx T10

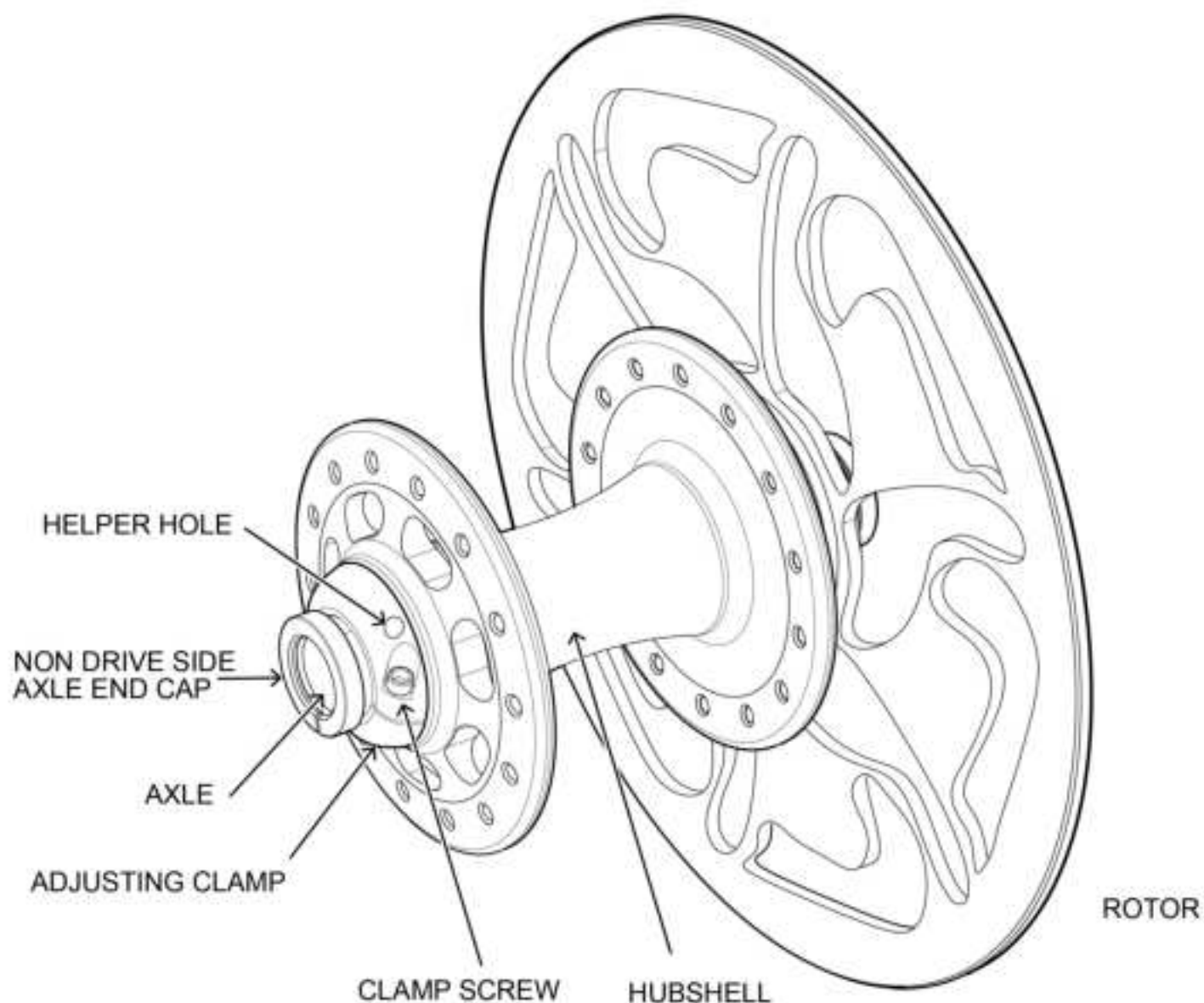


Small Flat Blade
Screwdriver



FRONT HUB: BEARING CHECK

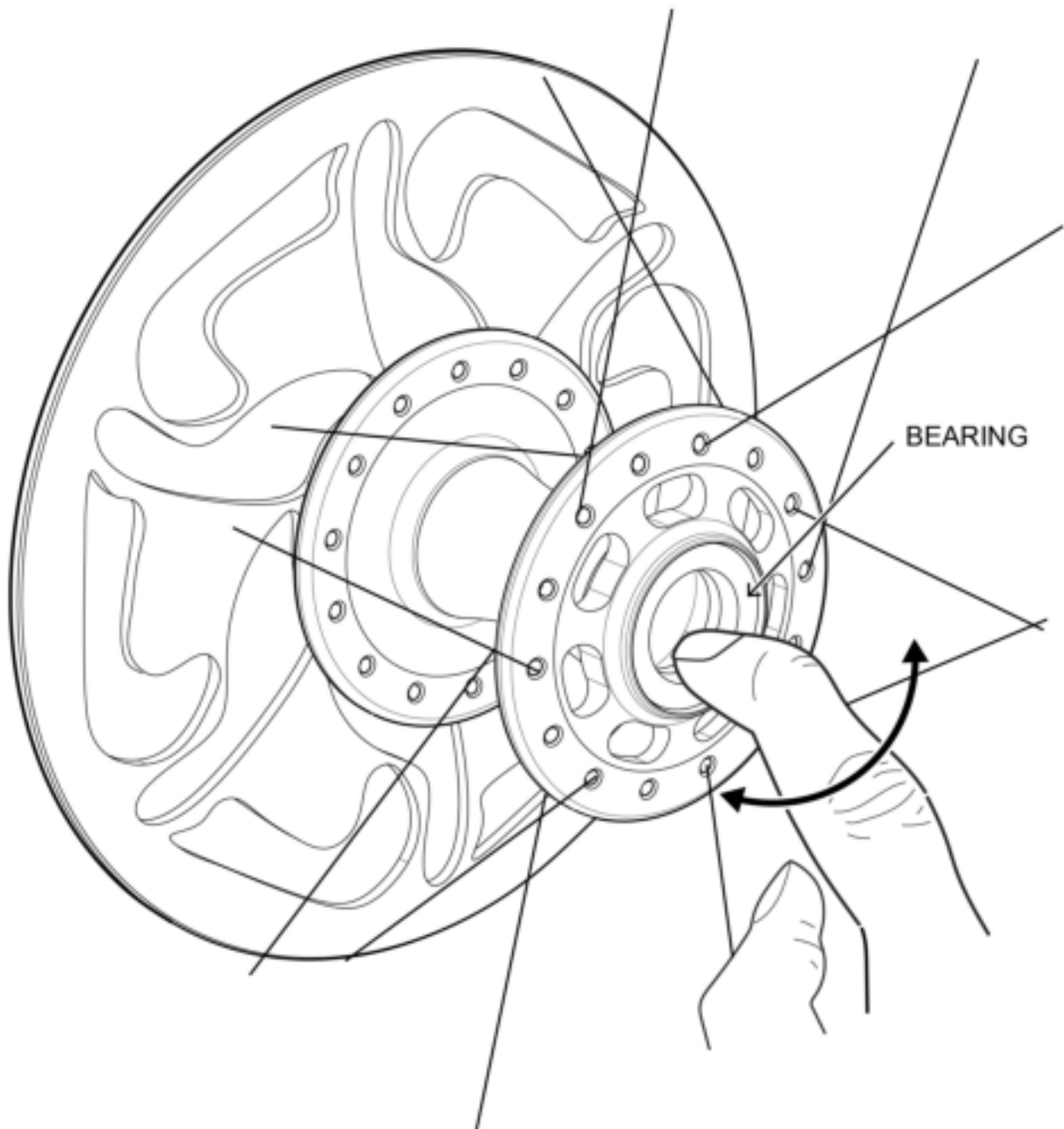
1. Loosen the T10 Clamp Screw located on the Adjusting Clamp
2. If needed, insert the T10 Torx Key into the helper hole on the Adjusting Clamp. Use the T10 Torx key as a lever to loosen the Adjusting Clamp (counter clockwise)
3. Remove the non-driveside Axle End Cap from the Axle assembly by using a small flat head screwdriver to insert into the split and GENTLY twist to pop off the End Cap
4. Remove the Adjusting Clamp by rotating counter clockwise
5. Slide the Axle out of the hub from the Drive Side (non disc side) towards the disc side, exposing the bearings.





FRONT HUB: BEARING CHECK

1. On both sides of the hub, using your finger press inner bearing race inward and spin to inspect their condition.
2. Bearings should feel smooth with no excessive lateral play. If you feel grittiness, a large amount of play or an inability to move, then a Professional Mechanic Service will be required





FRONT HUB: REASSEMBLY

1. ReAssemble the front hub in the reverse order of disassembly.
2. Adjust the bearing preload per Bearing Preload instructions.



REAR HUB: PRELOAD ADJUSTMENT

Chris King hubs feature adjustable bearing preload. The bearings should be kept in proper adjustment for optimum product performance. Do not allow the adjustment to become loose, as this may cause a loss of performance and could lead to damage to the hubs.



5 -10 Minutes



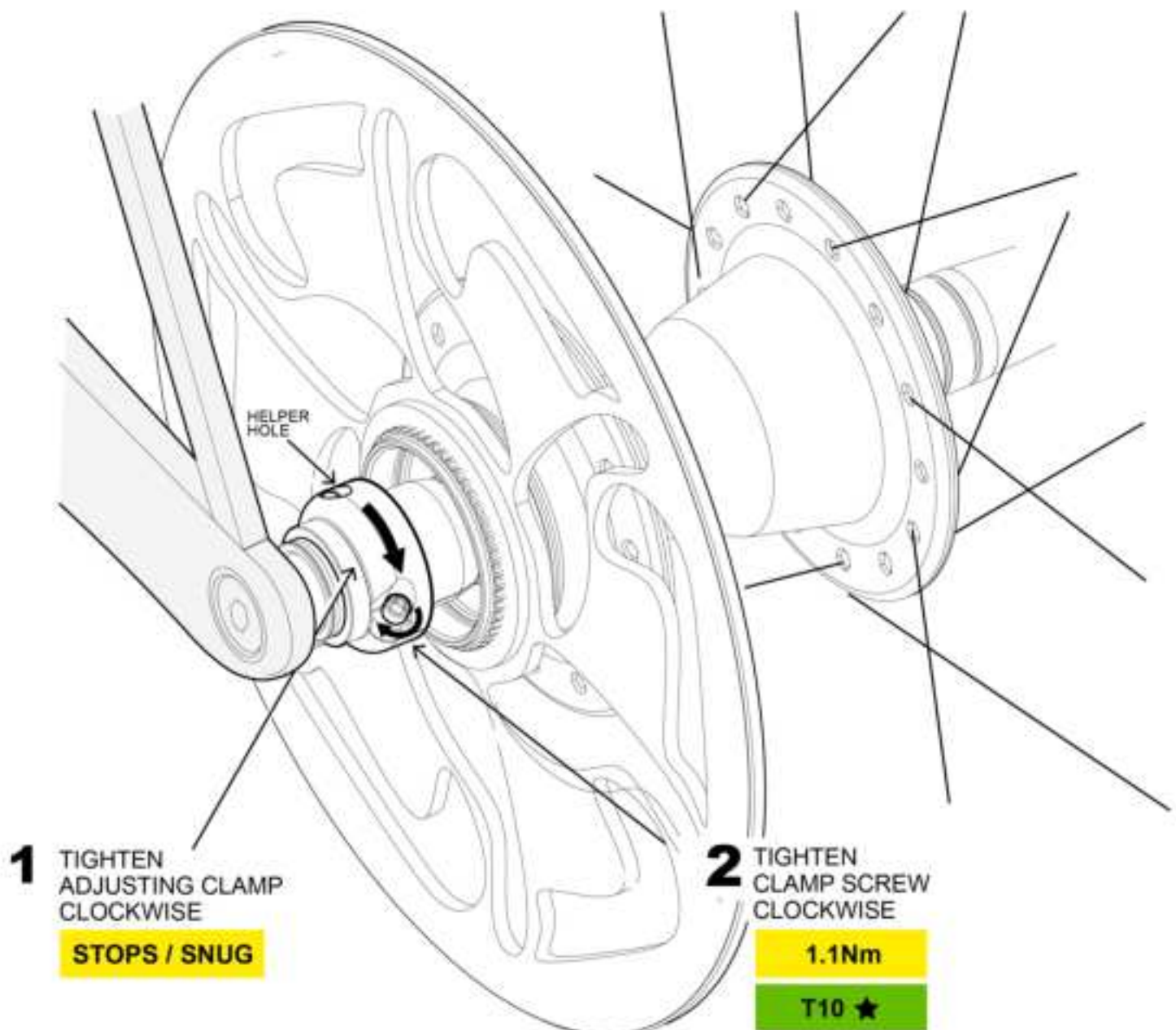
Torx T10



REAR HUB: PRELOAD ADJUSTMENT

Chris King hubs features an Adjusting Clamp that maintain proper bearing preload and seating.

1. Secure the wheel into the bike.
2. On the NON drive side, Loosen T10 screw located on Adjusting Clamp
3. If needed, insert the T10 Torx Key into the helper hole on the Adjusting Clamp. Use the T10 Torx key as a lever to adjust.
4. Rotate the Adjusting Clamp clockwise until it stops and lateral play at the rim is eliminated. No need to overtighten.
5. Check for bearing play or binding, and readjust Adjusting Clamp if needed.
6. Once Adjusting Clamp is in position, tighten T10 screw to 1.13 Nm (10 inch- pounds).





REAR HUB: QUICK SERVICE

Normal preventative maintenance of the RingDrive is simple and can be performed using basic tools. In many cases, a minor cleaning and reapplication of lubricant is all that may be necessary. Judging when to perform this basic maintenance is determined by riding style and conditions.



20-30 Minutes



Torx T10



Lint Free
Cleaning rag



Toothbrush



Chris King
Ring Drive 2.0 Lube

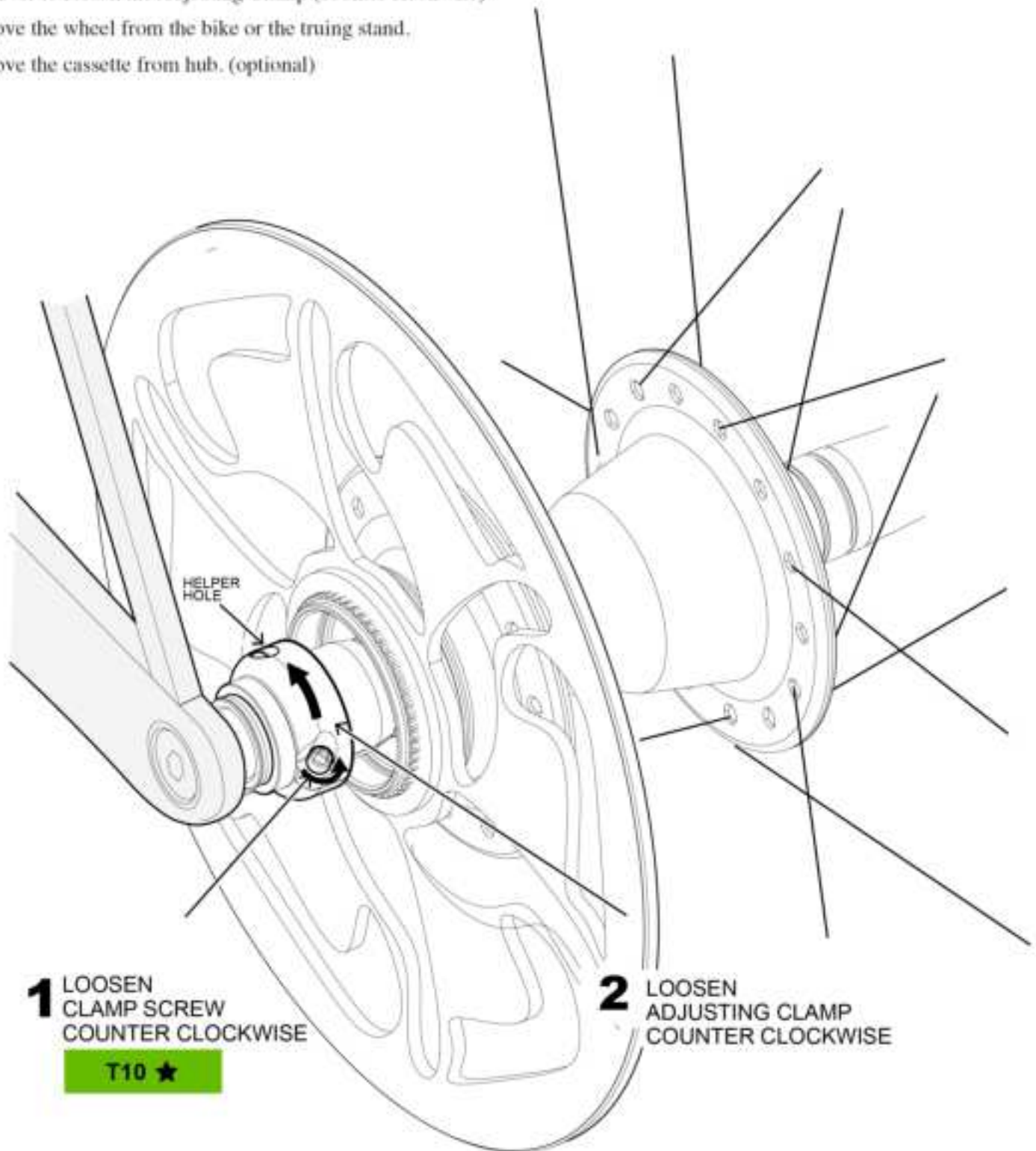


Small Flat Blade
Screwdriver



REAR HUB: QUICK SERVICE

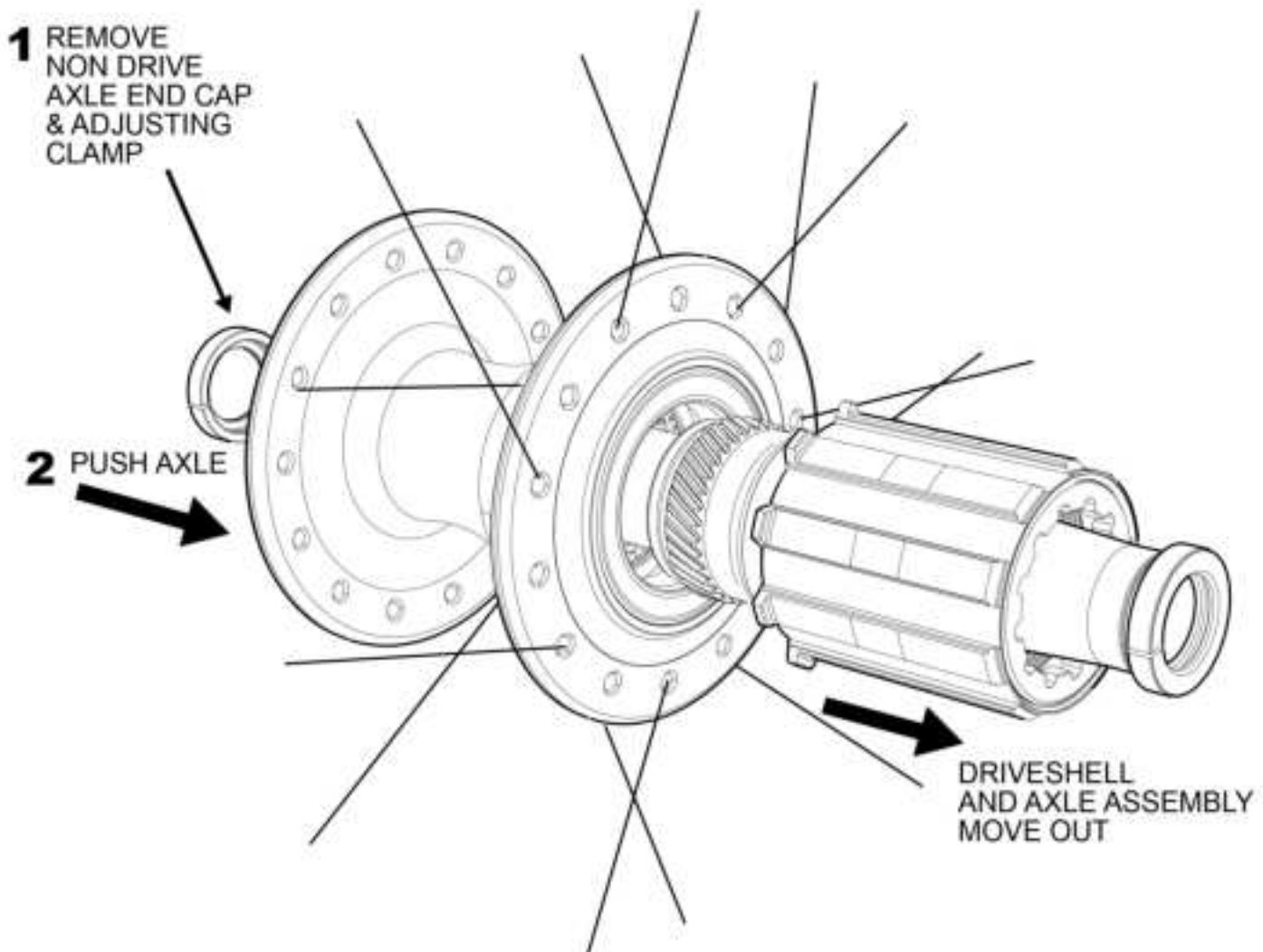
1. Secure the hub/wheel into the bike
2. On the NON drive side, Loosen T10 screw located on Adjusting Clamp
3. Insert the T10 Torx Key into the helper hole on the Adjusting Clamp opposite to the clamp screw. Use the T10 Torx key as a lever to loosen the Adjusting Clamp (counter clockwise)
4. Remove the wheel from the bike or the truing stand.
5. Remove the cassette from hub. (optional)





REAR HUB: QUICK SERVICE

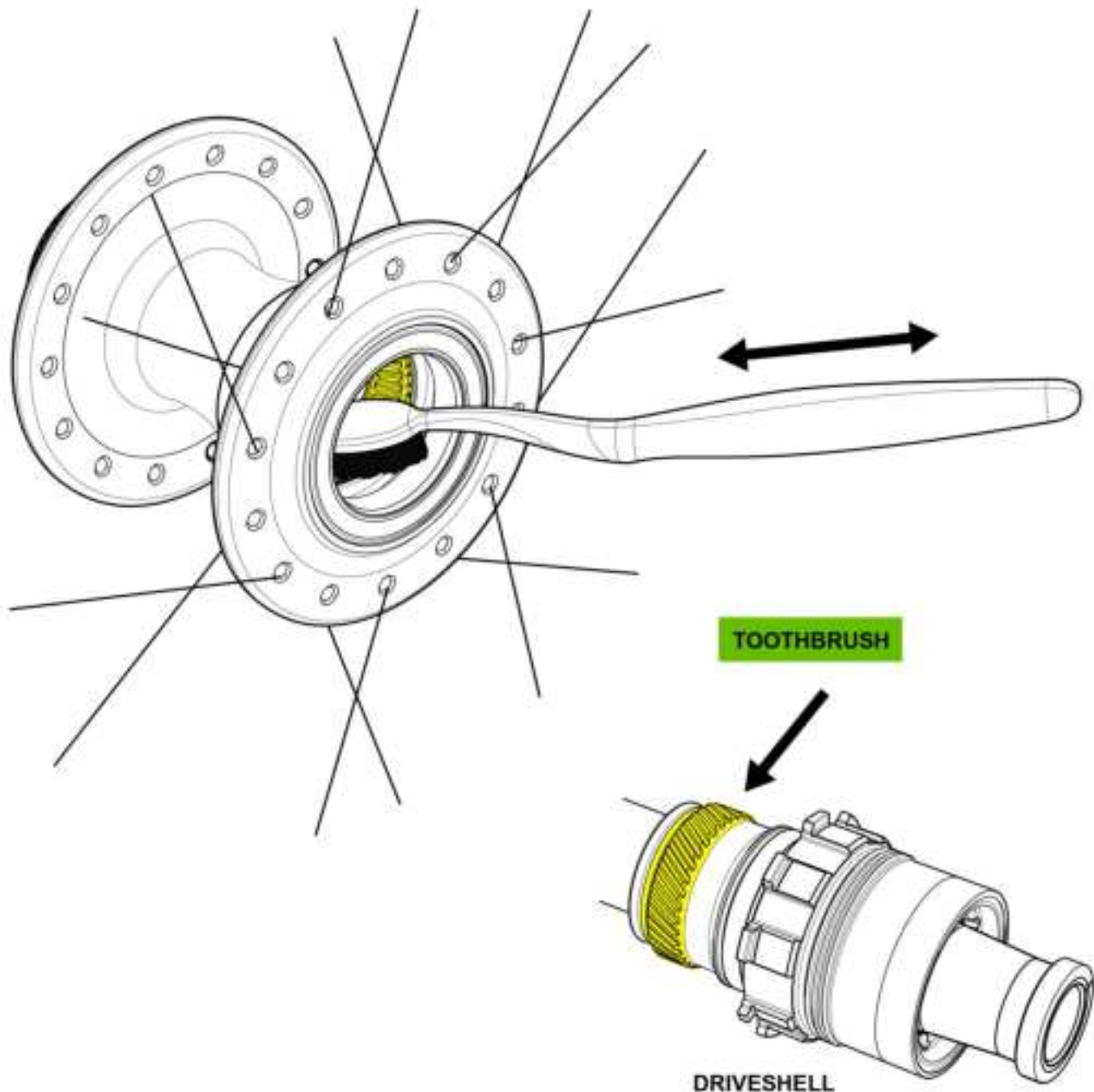
1. Remove the non-driveside Axle End Cap from the Axle assembly by using a small flat head screwdriver to insert into the split and GENTLY twist to pop off the End Cap.
2. Unscrew the Adjusting Clamp (that was loosened in previous step) counter clockwise and remove it from the Axle.
3. Remove the Driveshell and Axle by holding the hubshell or wheel in one hand and with the other hand push on the non drive side Axle to remove the Axle and Driveshell assembly via the other side,





REAR HUB: QUICK SERVICE

1. Using a toothbrush, pull the bristles across the helix in an outward direction. Work your way all the way around the inner circumference to remove any small particles that may be in the spline grooves.
2. Wipe inside the hub with a lint free rag.
3. Clean the helical splines on the Driveshell with the toothbrush. Brush outwards along the splines to clean out any debris and old lube, wipe with a lint free rag.

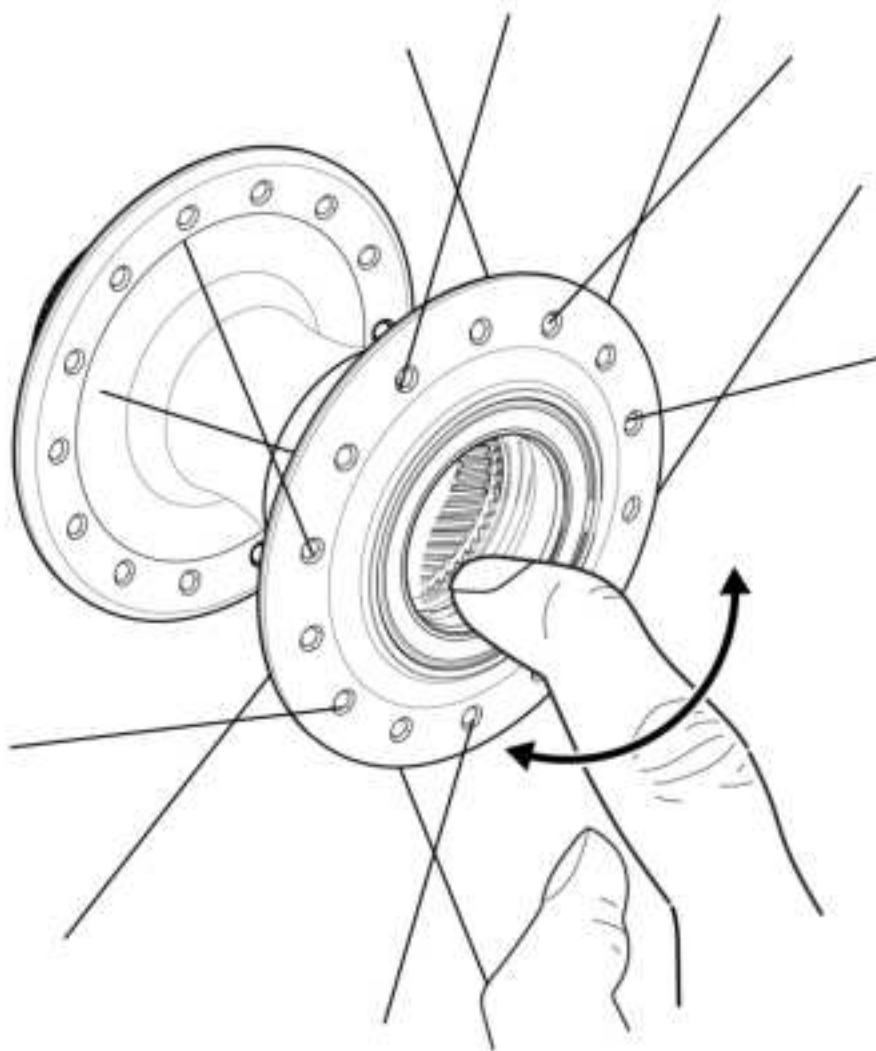




REAR HUB: QUICK SERVICE

HUBSHELL BEARING CHECK

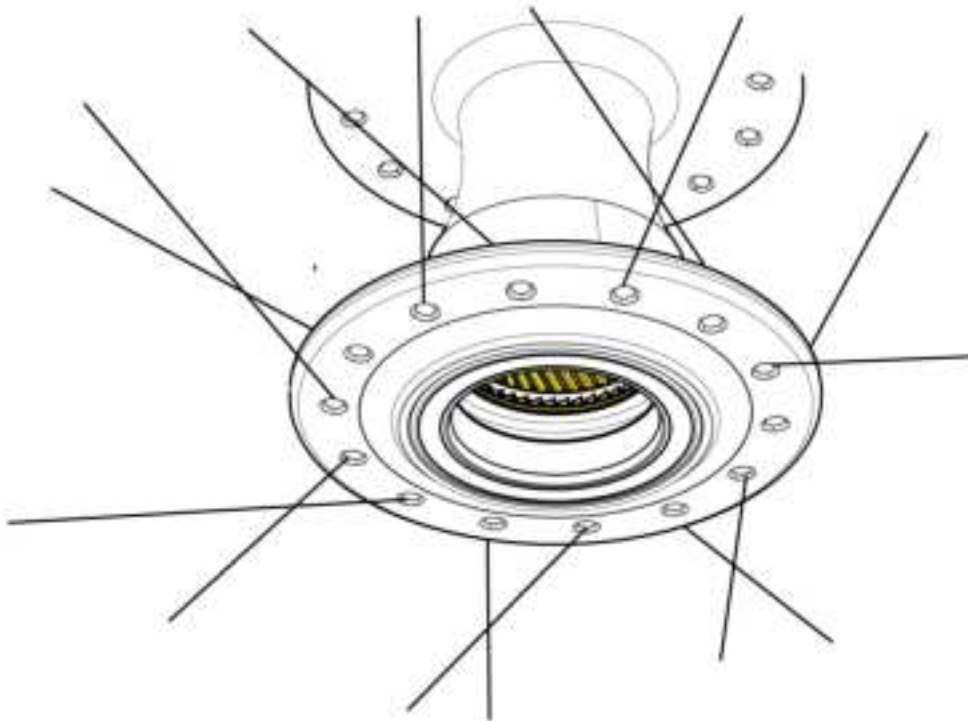
1. On the drive side and non drive side, Press inner bearing race inward and spin to inspect their condition.
2. Bearings should feel smooth with no excessive lateral play. If you feel grittiness, a large amount of play or an inability to move, a Professional Mechanic Service will be required



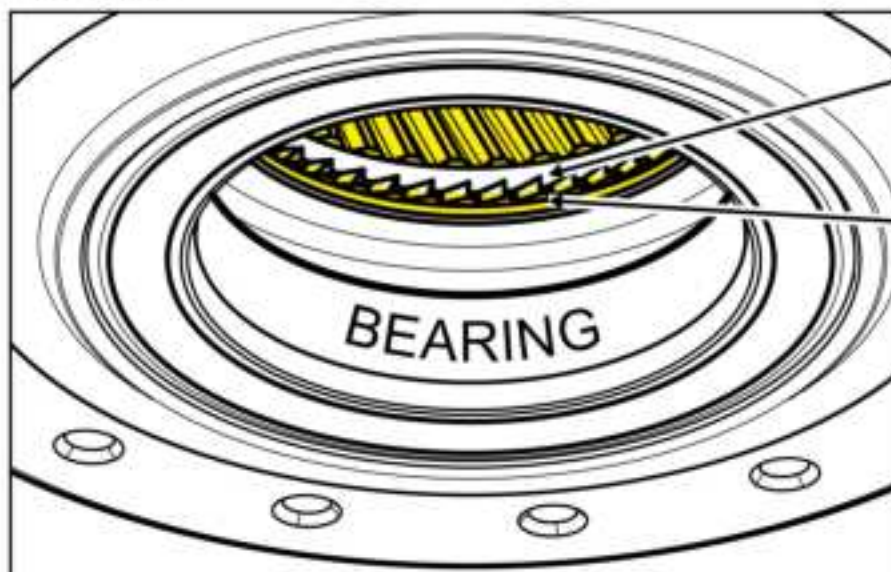


REAR HUB: QUICK SERVICE

1. Shake the Ring Drive Lube bottle thoroughly to ensure particles are mixed before applying.
2. Lubricate the Drive Ring helical splines with RingDrive Lube 2.0. Apply so all splines are coated. Open a gap between the Drive and Driven rings and apply lube in the gap so all teeth are coated.



CLOSE UP



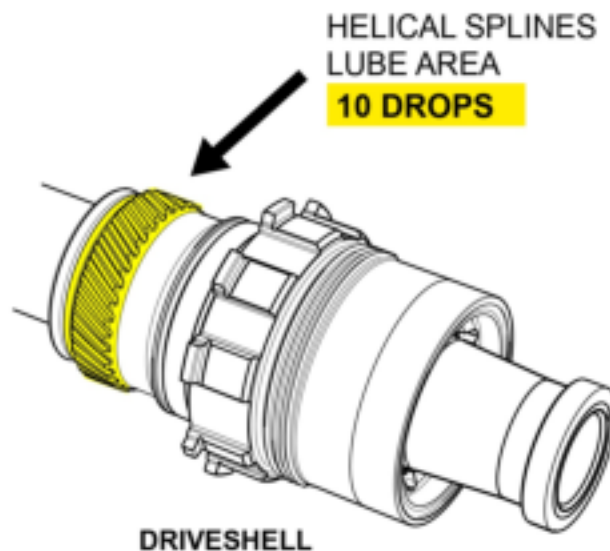
LUBE AREA
HELICAL SPLINES
10 DROPS

LUBE AREA
10 DROPS



REAR HUB: QUICK SERVICE

1. Shake the Ring Drive Lube bottle thoroughly to ensure particles are mixed before applying.
2. Lubricate the helical splines on the Driveshell with RingDrive Lube 2.0, so that all splines have a light coating of lube
*A max of 40 drops (2ml) should be used on the whole system.



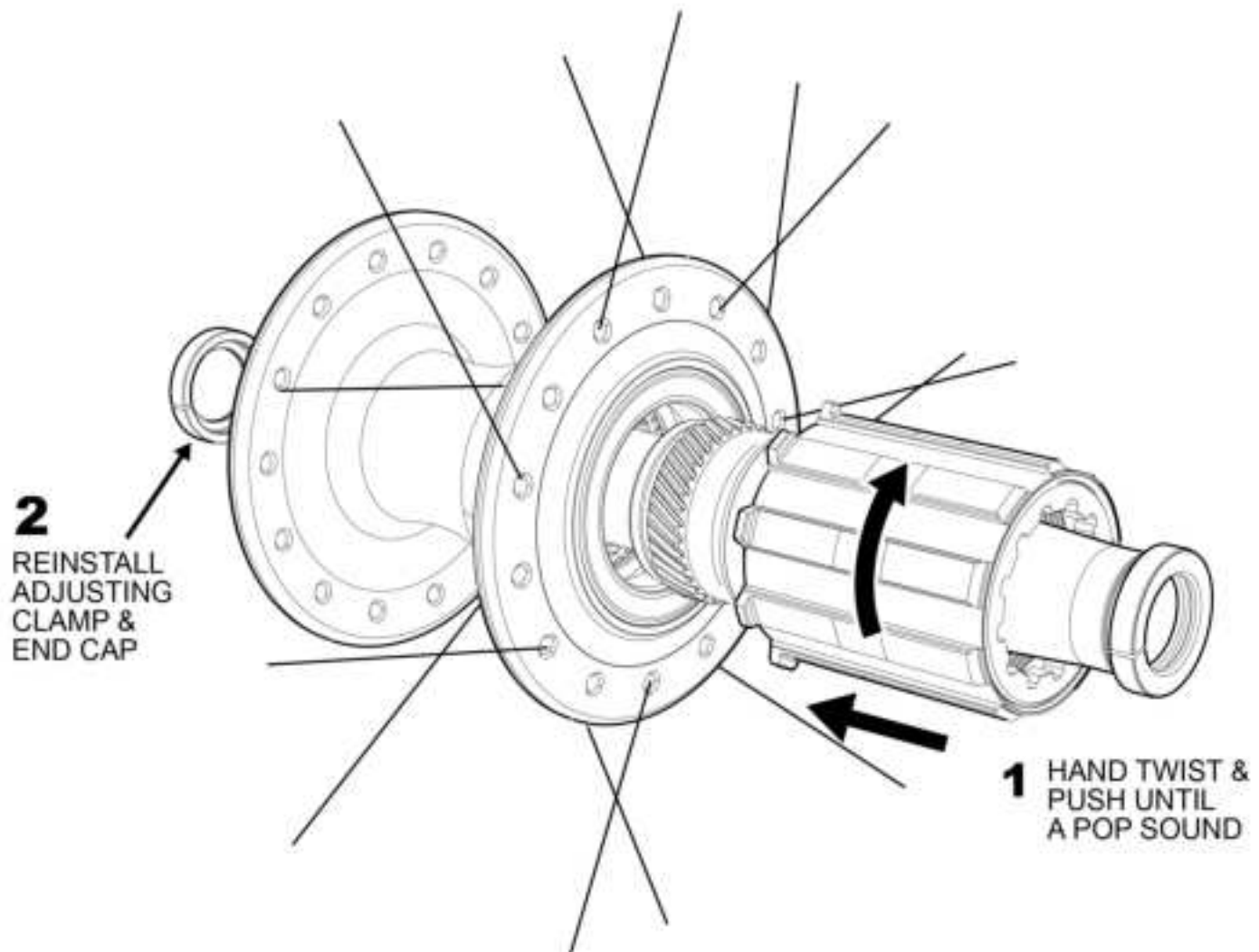
LUBE:

Use Chris King RingDrive Lube 2.0 on the RingDrive assembly and helical splines on the Driveshell. RingDrive Lube 2.0 provides optimal low drag, low viscosity lubrication. Do not substitute other brands of lubricant as they may be too sticky for the helix of the RingDrive and cause hub engagement problems and premature wear.



REAR HUB: QUICK SERVICE

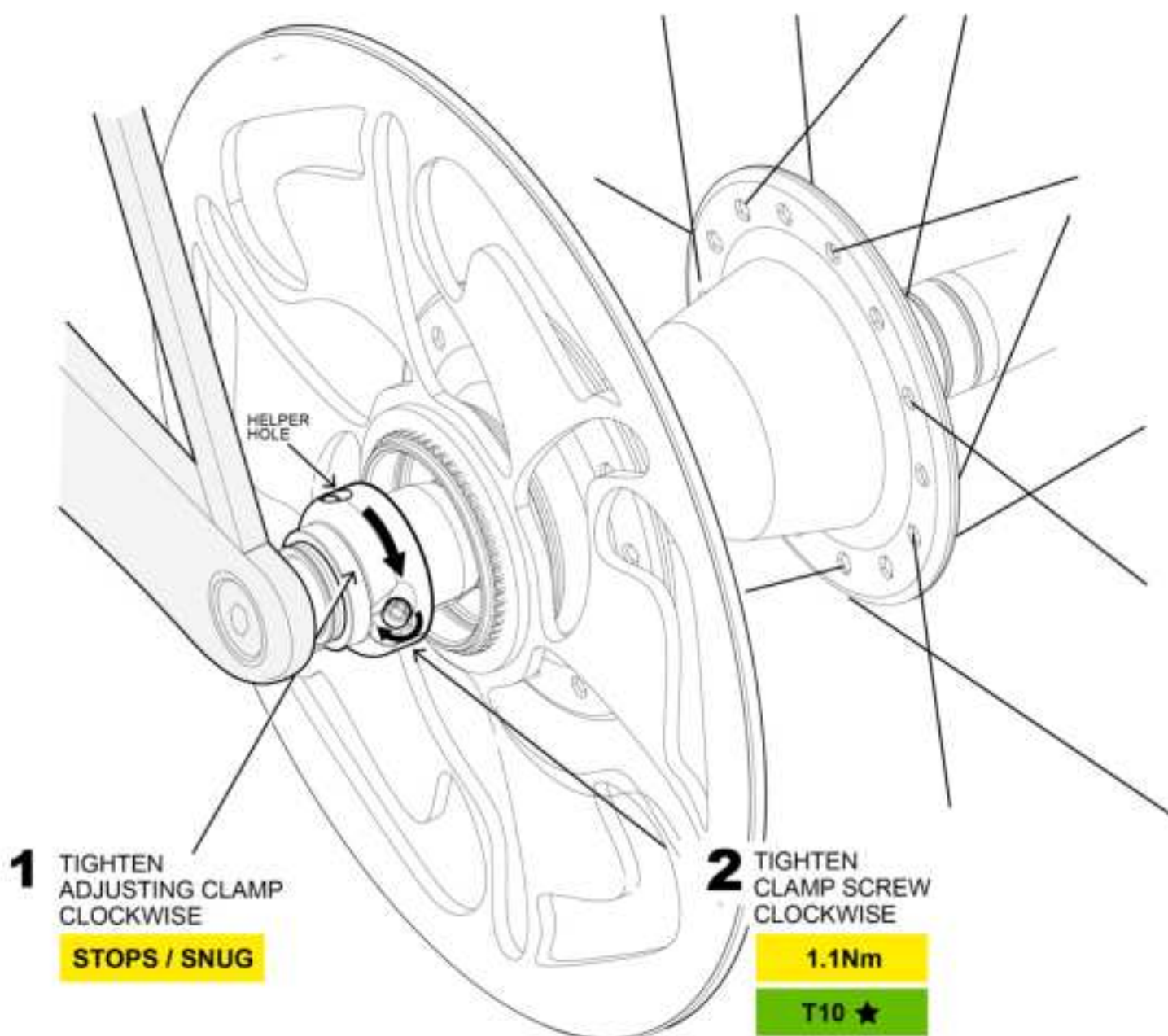
1. Reinstall the Driveshell and Axle assembly. test the engagement of the RingDrive by spinning in both directions. If there is no engagement, or a delay in engagement, remove the Driveshell and re insert.
2. Reinstall the Adjusting Clamp (clockwise rotation) and Axle End Cap. (snaps on with finger pressure)





REAR HUB: QUICK SERVICE

1. Secure the wheel into the bike.
2. On the NON drive side, Loosen T10 screw located on Adjusting Clamp
3. If needed, insert the T10 Torx Key into the helper hole on the Adjusting Clamp. Use the T10 Torx key as a lever to adjust.
4. Rotate the Adjusting Clamp clockwise until it stops and lateral play at the rim is eliminated. No need to overtighten.
5. Check for bearing play or binding, and readjust Adjusting Clamp if needed.
6. Once Adjusting Clamp is in position, tighten T10 screw to 1.13 Nm (10 inch- pounds).



GENERAL

MODEL:	R45 DISC REAR HUB
AXLE:	142mm SPACING, 12mm THRU AXLE
RECOMMENDED LUBRICANT:	RINGDRIVE 2.0
RECOMMENDED BEARING GREASE:	CHRIS KING SILVER
ADJUSTMENT CLAMP BOLT:	T10

WHEEL BUILD INFORMATION

Chris King hubs are designed to work with 13, 14 or 15 gauge spokes. Disc brake wheels must be laced using at least a 2 cross lacing pattern. As the torque generated by driving the cassette requires crossed spokes, so does the additional torque on the non-drive side flange generated by the braking action. Radial lacing your hubs is considered outside of the intended use and will void your warranty. We will not be responsible for damaged or destroyed hubs, any consequential damages, or any resulting labor costs due to radial lacing your hub.

Proper wheel building technique is essential in creating a strong wheel. Wheel building is a skill that requires proper training and specialized tools and should be done by a trained professional. The spoke tension on each side of the wheel should be as uniform as possible. Tension should not exceed 120kgf (1200N).

The hub(s) come pre-adjusted from the factory, however, a minor adjustment should be performed upon completion of the wheel build.

FRONT HUB SPECS FOR WHEEL BUILDING:

Axle Width: 100mm
 Flange Diameter DS & NDS: 57.4mm
 Center to Flange DS: 30.6mm
 Center to Flange NDS: 22.2mm

REAR HUB SPECS FOR WHEEL BUILDING:

Axle Width: 142mm
 Flange Diameter DS & NDS: 57.4mm
 Center to Flange DS: 18.7mm
 Center to Flange NDS: 33.0mm

SPECIFICATIONS

REAR HUB



#	PART #	DESCRIPTION
1	PHB575	END CAP, AXLE (QTY: 2)
2	PHB828(B)	ADJUSTMENT CLAMP
3	PHB828(B)	ADJUSTMENT CLAMP SCREW
4	PHB714	BEARING ASSY
5	PHB566	INNER SEAL (QTY: 2)
6	PHB670XXX	HUBSHELL (XX = HOLE COUNT)
7	PHB719	SPRING RETAINER
8	PHB566	O-RING
9	PHB726	DRIVE SPRING
10	PHB572	DRIVE RING
11	PHB572	DRIVEN RING
12	PHB566	INNER SEAL
13	PHB715	BEARING ASSY

#	PART #	DESCRIPTION
14	PHB925(S/B)	DRIVESHELL, XDR (X=COLOR)
15	PHB924(S/B)	DRIVESHELL, HG (X=COLOR)
16	PHB926(S/B)	DRIVESHELL, MS (X=COLOR)
17	PHB566	O-RING
18	PHB723	BEARING ASSY
19	PHB949(S/B)	SPACER, 10MM
20	PHB566	O-RING
21	PHB566	O-RING, AXLE (QTY: 2)
22	PHB942(S/B)	AXLE, 142X12MM (X=COLOR)
23	PHB951	BEARING ASSY
24	PHB948(S/B)	ENDCAP, XD (X=COLOR)
25	PHB946(S/B)	ENDCAP, HG (X=COLOR)
26	PHB947	ENDCAP, MS



FRONT HUB DIAGRAM HERE



Hubs, Headsets, and Bottom Brackets, including the bearings, are warranted for the lifetime of the original purchaser. All other products are warranted for the following periods: Cielo Frames and Stems (5 years), Accessories (1 year), Soft Goods (90 days), Wheels (The hubs only are warranted for the life of the original purchaser. All other wheel components that are not manufactured by King Cycle such as, but without limitation, rims, spokes, and nipples, are not warranted by King Cycle.).

This Limited Warranty does not cover damage or failure resulting from misuse, abuse, alteration, neglect, crash or impact, accidents, failure to perform routine maintenance, improper installation, use other than that for which the Product was intended, and normal wear and tear. This Limited Warranty does not cover any Product where the serial number has been altered or removed.

Any Chris King product that is found by Chris King Precision Components to be defective in materials or workmanship will be repaired or replaced at the discretion of Chris King Precision Components.

In order to make a warranty claim, the Chris King product alone (i.e., not including any other equipment such as cassettes, skewers, steering tubes, etc.), together with a copy of the original receipt showing the date of purchase of the product, must be returned to Chris King Precision Components at the address set forth on its website (www.chrisking.com) postage prepaid. If a defect is found, our entire liability and your sole remedy shall be, at our option, free repair or replacement of the Chris King product. Chris King Precision Components shall not be held liable for any indirect, special, punitive, or consequential damages. The warranty does not cover any Chris King Precision Components product where the serial number has been altered or removed.

To the fullest extent permitted by applicable law, this written express limited warranty is in lieu of all other warranties, implied or expressed, and does not cover any representation or warranty made by dealers beyond the provisions of this warranty. If any implied warranties exist by applicable law, such implied warranties shall be limited to the duration of the express limited warranty for the product. Some U.S. states and foreign countries provide rights in addition to those above or do not allow the exclusion or limitation of certain warranties or limitation of liability for certain types of damages. Therefore, the above limitations may not apply to you or there may be laws of a state or foreign country which supersede the above. Any clause of this limited warranty or any disclaimer or limitation of liability contained herein that is declared invalid shall be deemed severable and not affect the validity or enforceability of the remaining clauses.

You are strongly encouraged to register your Chris King product on the website within thirty (30) days of the original date of purchase. Registration will assist us in processing your warranty claim and in expediting our response.