



**CARBON
DRIVE™**

OWNER'S MANUAL



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- 3 Introduction
- 4 General Safety
- 6 What is Gates Carbon Drive?
- 8 Proper Tension and Proper Alignment
- 9 Rear Wheel Removal and Installation
- 10 Replace When Worn
- 11 Warranty



MODULE

OWNER'S MANUAL

This manual explains proper belt handling, contains information about proper care and tensioning as well as warranty information.

MODULE
HISTORY

Gates Corporation has been a global leader in power transmission and belt drive technologies since 1911, this module explains how Gates Carbon Drive evolved.

MODULE
PRODUCT LINES

Comparisons of our systems, their ideal applications, and guidance in choosing the right system for you.

MODULE
APPLICATIONS

A quick look at the hub and mid-motors, gearboxes, internal gear hubs and cranks we support.

MODULE
COMPONENTS

Our current product listing. Includes belts, front and rear sprockets.

MODULE
ASSEMBLIES

Technical information for eBike integration and specification of Gates cranksets.

MODULE
TECHNICAL RESOURCES

Frame design details, including dropout and frame stiffness and alignment requirements, assembly tolerances, online resources, available tools, troubleshooting, and a glossary.

LESS NOISE. LESS MAINTENANCE. A WHOLE LOT MORE FUN.

We are thrilled and honored you have chosen a bicycle equipped with Gates Carbon Drive™. We hope you enjoy the difference Clean, Quiet, Smooth, and Strong will mean for your ride. No grease. No rust.

RESOURCES



BELT HANDLING



TENSION



ALIGNMENT



WARRANTY

ISO REQUIREMENTS

Gates Carbon Drive products meet or exceed the standards set forth in the applicable requirements in ISO 4210-2 and ISO 4210-8. While individual Carbon Drive components sold by Gates meet or exceed these ISO requirements, it is the sole responsibility of the bicycle original equipment manufacturer (OEM) to configure the Gates Carbon Drive components in a way that meets or exceeds the ISO requirements for their particular bicycle model, especially regarding protective devices.

Note: All dimensions in millimeters unless otherwise noted.

WARNING

Read this information before using, replacing, or installing the Gates Carbon Drive belt. Improper installation, adjustment, alteration, service, or maintenance can result in property damage and serious bodily injury, including death. Refer to this manual for assistance or consult with a cycling professional for further information. www.GatesCarbonDrive.com/OwnersManual



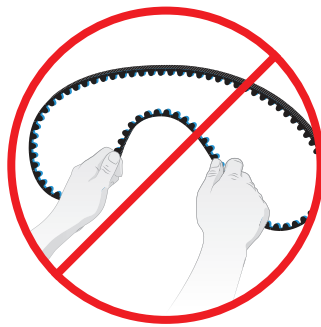
HANDLING THE BELT

Gates Carbon Drive™ belts are extremely durable and offer long life when properly handled. However, caution must be used before and during installation to avoid damaging the carbon tensile cords that make up the backbone of the belt's strength. Excessive bending and twisting creates crimps which can lead to belt breakage under high load.

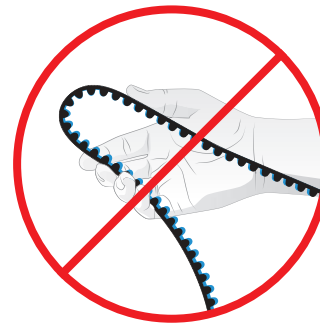
Do not twist, backbend, crimp, invert, bundle or zip tie the belt. Do not use the belt as a strap wrench or chainwhip. Do not lubricate, pry on, or roll on the belt.



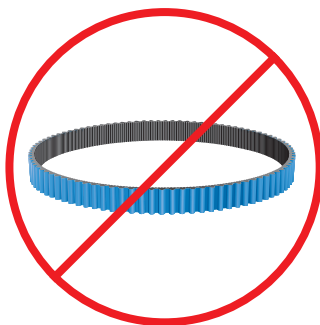
DO NOT TWIST



DO NOT BACKBEND



DO NOT CRIMP



DO NOT INVERT

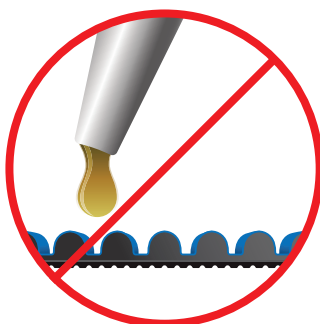


DO NOT ZIP TIE



DO NOT USE BELT AS A SPROCKET REMOVAL TOOL

GATES REQUIRES A HAND BRAKE AS PART OF THE BRAKING SYSTEM.



DO NOT LUBRICATE



DO NOT PRY ON



DO NOT ROLL ON

CARE FOR YOUR CARBON DRIVE

Wash with water to remove debris

Lubrication not required

If your bike is equipped with a snubber, the snubber must not be in contact with the belt

This is a drive system- it is imperative to keep bodily parts and clothing away from the drive while in motion

Acceptable temperature range for belts:

CDX



CDC



CDN/ST

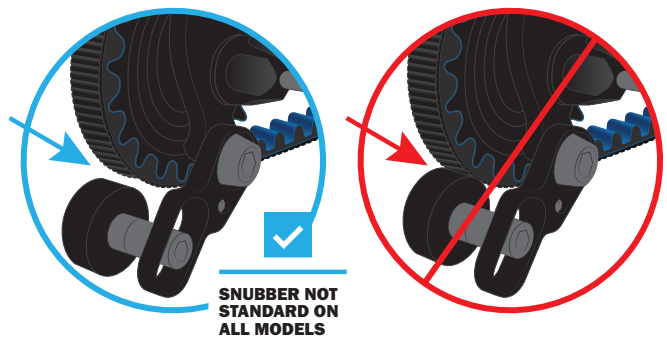
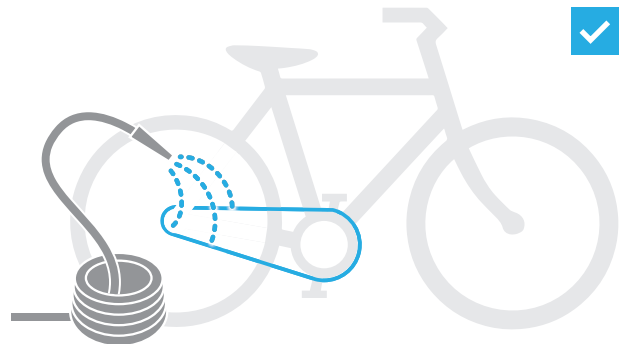
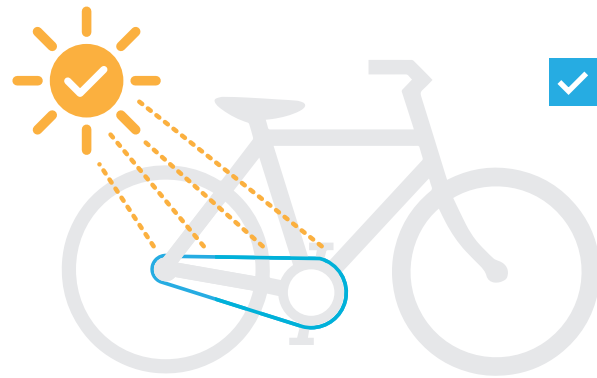
MY23 AND NEWER BICYCLES



MY22 AND OLDER BICYCLES



CDN/ST belts produced for MY22 and prior bicycles have a textured backing; MY23 and beyond CDN/ST belts are smooth.



PROPER TENSION AND DRIVE ALIGNMENT ARE KEY TO OPTIMAL PERFORMANCE

Lack of belt tension can lead to “skipping”. Too much tension can damage other components and increase the wear of your Carbon Drive System

Signs of a misaligned drive include, but are not limited to, noise, premature belt or sprocket wear, belt walk-off. Additional information is listed in this module. You can also contact us directly via email at CarbonDrive@Gates.com

DANGER

Use Caution. Although clean of grease, belt drives can still catch pants, skirts or loose clothing. Installation of a belt guard is recommended.



WHAT IS GATES CARBON DRIVE?

THE TECHNOLOGY BEHIND GATES CARBON DRIVE SYSTEM is rooted in high horsepower motorcycles and dragsters. Now, this high performance technology has been perfected for a wide variety of bicycles. At the core of the drive is the Carbon Drive belt. Custom made, this 11mm pitch, carbon-fiber belt is a strong and efficient replacement to a traditional bike chain. The drive is completed with our innovative sprocket designs and your choice of internally-geared or single-speed hub. The patented Gates Carbon Drive system gives you a longer-lasting, lower-maintenance drive, and most importantly, an unbelievably awesome ride.

CDX CENTERTRACK BELT

POLYURETHANE COMPOUND
CARBON UHD TENSILE CORDS
BLACK BELT WITH BLUE OR BLACK TOOTH FACE



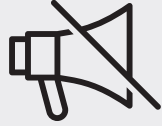
CDC CENTERTRACK BELT

NEXT GENERATION ETHYLENE ELASTOMER
CARBON HD TENSILE CORDS
BLACK BELT WITH BLACK TOOTH FACE





CLEAN



QUIET



SMOOTH



STRONG

CDN CENTERTRACK BELT

NEXT GENERATION ETHYLENE ELASTOMER
CARBON TENSILE CORDS
BLACK BELT WITH BLACK TOOTH FACE



ST SIDETRACK BELT

NEXT GENERATION ETHYLENE ELASTOMER
CARBON TENSILE CORDS
BLACK BELT WITH BLACK TOOTH FACE
NO CENTERTRACK



PROPER TENSION IS KEY

OWNER'S MANUAL

HISTORY

PRODUCT LINES

APPLICATIONS

COMPONENTS

ASSEMBLIES

TECHNICAL RESOURCES

Proper belt tension is essential for optimum operation of the Gates Carbon Drive System. Lack of belt tension can lead to tooth jump or skipping, potentially causing damage to the belt when the teeth of the belt slide over the teeth of the rear sprocket. Too much tension can damage the bearings within the rear hub, can cause the system to drag, and can increase the wear of your drive system.

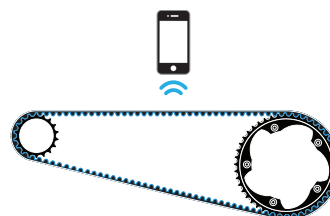
Tensioning procedures vary depending on the bike. Common types of tensioning systems include sliding or pivoting dropouts and eccentric bottom brackets. *Note – correct alignment of the belt has to be maintained as you adjust tension.*

For shops and consumers, there are two primary methods for measuring tension on the Gates Carbon Drive system: physical force using the Gates Carbon Drive Kriket Gauge or Eco Tension Tester, and sonic frequency measurements using the Gates Carbon Drive Mobile App. For each of these, the tension may vary a little along the belt, so you should repeat this procedure several times. Rotate the cranks a quarter turn after each measurement and measure again.

The tools only measure tension, they do not specify a needed tension. Refer to the chart below for the correct tension range recommendation for your Gates Carbon Drive setup.

GATES CARBON DRIVE MOBILE APPS

Belt tension can also be measured with the Gates Carbon Drive Mobile Apps, offered on both iPhone and Android. These apps can measure the belt tension in the form of natural frequency (Hz) of the belt span. Operating instructions are provided within each app. Basic operating instructions are to open the app, make sure the microphone is on, and then hold the phone over the top of the belt in the middle of the span – be sure the phone's microphone is facing the belt. Pluck the belt so that it vibrates similar to a guitar string. The app will convert the sound into the primary frequency of the belt. Rotate the crank to move the belt about a ¼ turn, and repeat the measurement process. Do this for at least one full revolution of the belt. Compare your belt's frequency to the chart (in the app) to see if you need to adjust the tension. The Carbon Drive app works best in a quiet environment.



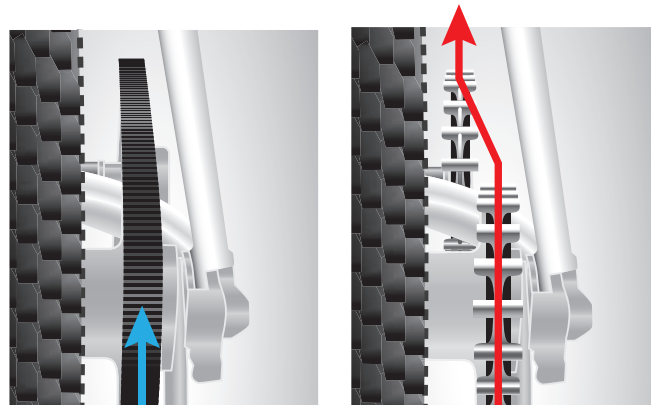
TENSION REQUIREMENTS

TENSION	35 Hz	40 Hz	45 Hz	50 Hz	55 Hz	60 Hz	65 Hz
	28 lbs 13 kg	32 lbs 15 kg	35 lbs 16 kg	40 lbs 18 kg	43 lbs 19 kg	45 lbs 20 kg	48 lbs 22 kg
Internal Gear Hub: Mid-Motor eBike System				●			
Internal Gear Hub: Pedal Bike, Hub Motor eBike		●					
Non-Gear Hub: MTB, Gearbox, Tandem, Cargo, Single-Speed					●		

- Indicates recommended tension setting.
- Acceptable tension range; tension may need to be adjusted within this range, but should never be set lower than the minimum range provided
- Tension higher than the recommended range may negatively affect shifting performance, drivetrain bearing life, and system efficiency
- Tension should never be lower than minimum tension, as tooth jump and reduced belt life are possible

PROPER ALIGNMENT

Alignment is critical, and depending on the particular bike and setup, spacers may be used to ensure proper alignment. Sprockets that are out of alignment can cause noise, wear, or belt walk-off. Belt alignment refers to the parallel (side to side) and angular (toe in – toe out) alignment of the belt between the front and rear sprocket positions. Proper alignment is critical in order to maintain proper system performance.

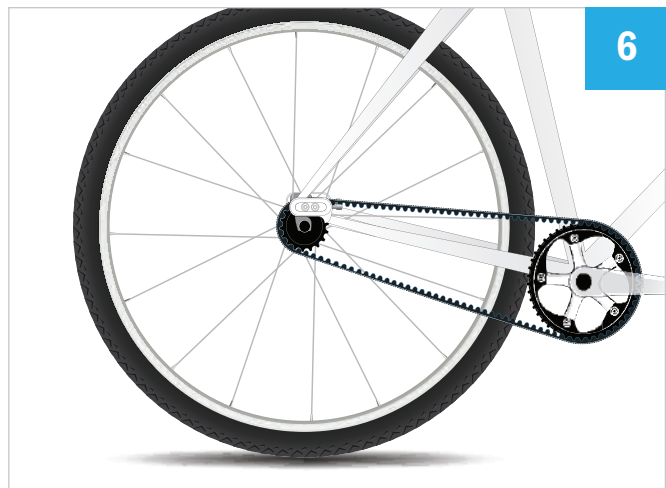
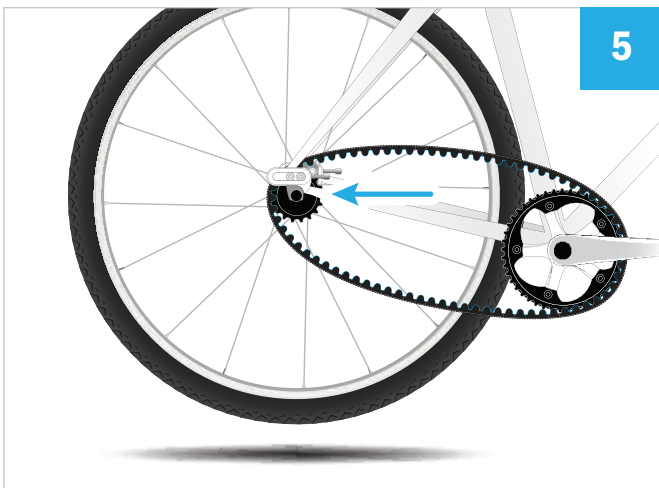
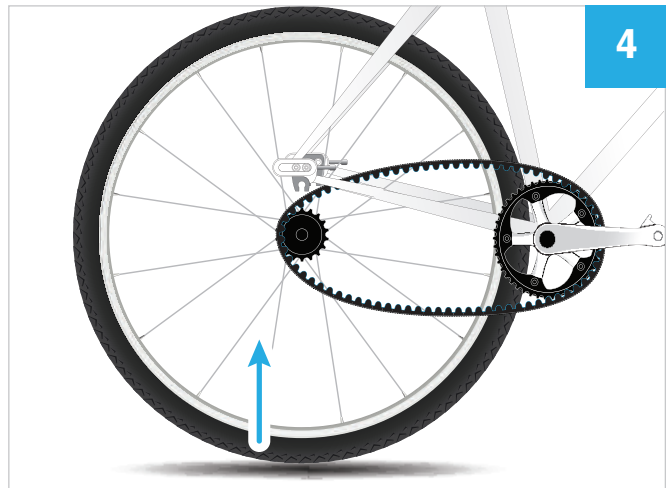
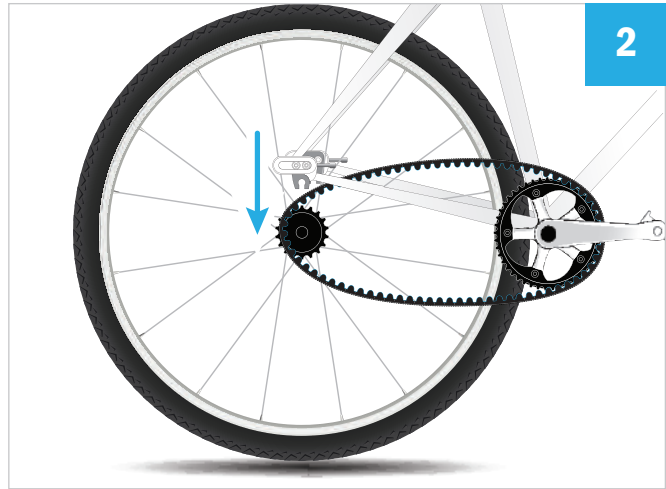


PROPER ALIGNMENT

SPROCKETS ARE NOT ALIGNED

REAR WHEEL REMOVAL & INSTALLATION

RECOMMENDATION: RELEASE BELT TENSION BEFORE REMOVING AXLE FROM DROPOUT

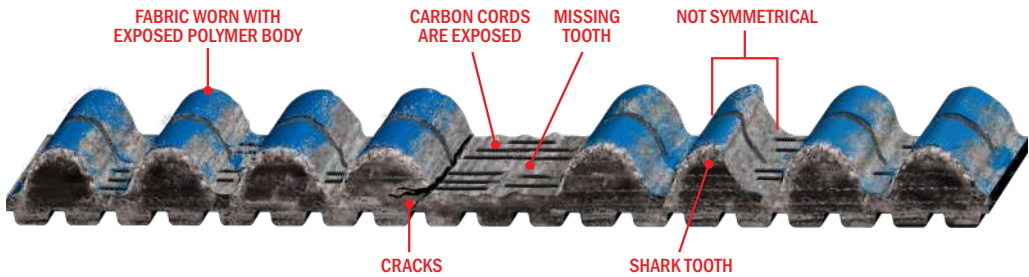


REPLACE WHEN WORN

Gates Carbon Drive™ belts and sprockets are extremely durable and built to offer a long life, but they do wear and tear over time. Periodically, carefully inspect your belt and sprockets for signs of deterioration:

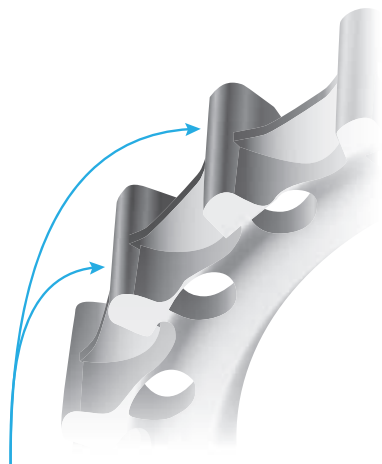


✓ This belt is in **excellent condition**. Loss of blue color does NOT indicate wear.



⊘ **Replace** your belt when it shows these signs of wear and tear.

WARNING: Using a worn or damaged Carbon Drive belt or failing to properly inspect the Carbon Drive belt before each usage can result in property damage and serious bodily injury, including death.



✓ This sprocket is in **excellent condition**.



⊘ **Replace** your sprockets when the teeth become worn.

CARBON DRIVE™ SYSTEMS LIMITED PRODUCT WARRANTY

We make this quality commitment: at the time of sale to our customers, Gates Carbon Drive Systems Products (belts, sprockets, and accessories used in the bicycle market) will be free from defects in materials and workmanship. Products will be warranted only to the original retail purchaser for a period of two years from the original date of purchase. If we determine a product does not comply, we will, at our option, replace or repair the product. This is your exclusive remedy. Color fade and color difference is not warranted.

Damage to the product due to abuse, improper use or installation, unauthorized modifications, inadequate maintenance, or failure to follow Gates Carbon Drive Systems' published recommendations for installation, use, and service will automatically void this warranty. Before using this product, please read the handling and installation instructions carefully (a copy of which is located at: www.GatesCarbonDrive.com/OwnersManual).

For warranty service, please contact the retailer from whom the product was purchased.

THERE IS NO OTHER EXPRESS WARRANTY. FURTHER, WE DISCLAIM ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY.

Some states do not allow the exclusion or limitation of damages, and some states do not allow limitations on how long a warranty lasts, so the above limitation and exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

RETURN POLICY: Gates Carbon Drive System Belts cannot be returned or exchanged.

Warranty submission form at: GatesCarbonDrive.com/Warranty

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Visit www.GatesCarbonDrive.com/OwnersManual for updates and other languages.

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