Gates® CARBON DRIVE™

BELTLINE SPECIFICATIONS

SPROCKET DIMENSIONS

FRAME DESIGN

BELT INSTALLATION & TENSIONING

2021 TECHNICAL MANUAL MAR21

SMOOTH | STRONG | CLEAN | EASY

Gates CARBON DRIVE™

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.

CONTENTS

Gates CARBON DRIVE™

CHOOSE YOUR RIDING STYLE

Gates Carbon Drive delivers a powerful and reliable ride over any terrain with a product line range that includes high-performance, urban, eBikes, leisure, and tandem bicycles.

CDN

LOW MILEAGE COMMUTING

NEW SIDETRACK

RECREATIONAL RIDING
(3 SPEEDS OR LESS)

CDC

CITY COMMUTING

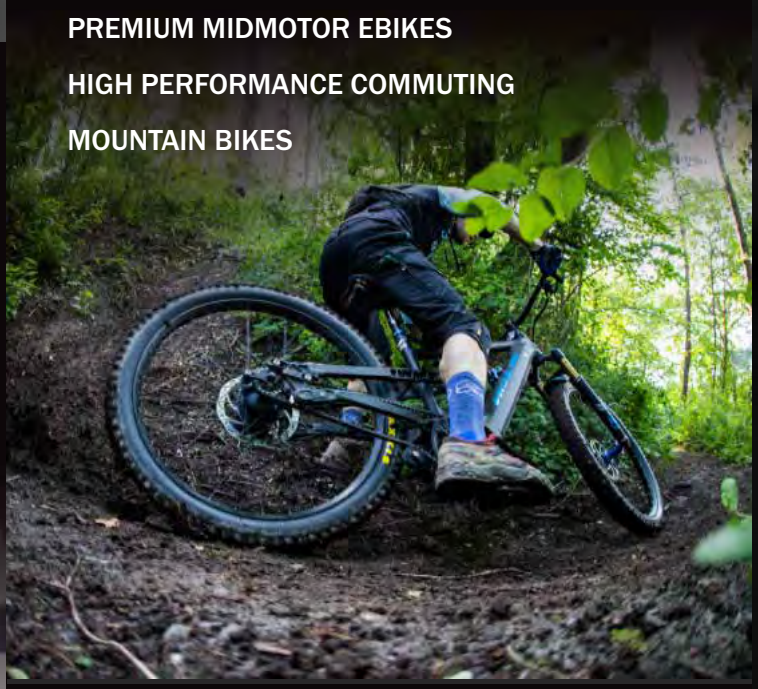
MIDMOTOR EBIKES
(50NM OR LESS)

CDX

PREMIUM MIDMOTOR EBIKES

HIGH PERFORMANCE COMMUTING

MOUNTAIN BIKES



CDX:EXP

TREKKING

EXTREME CONDITIONS

Gates CARBON DRIVE™

CARBON DRIVE PRODUCT LINE POSITIONING

DESIGNED FOR...	Seasonal, recreational cyclists looking for their first belt-driven bike	Seasonal, recreational cyclists who commute occasionally
PRODUCT DIFFERENTIATION	Entry-level performance and price vs. chain; few gears	Balance between performance and value for pedal bikes
BELT TRACKING	SideTrack™	CenterTrack™
LIFE/MILEAGE*	★ ★	★ ★
DEBRIS-SHEDDING RATING	 2	 3
E-BIKE MOTOR COMPATIBILITY		
GEAR COMPATIBILITY	Single-speed (SS), 3-Speed, 7-Speed Internal Gear Hub (IGH)	SS, 3–11 Speed IGH

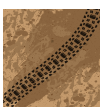
SPROCKET TECHNICAL COMPARISON

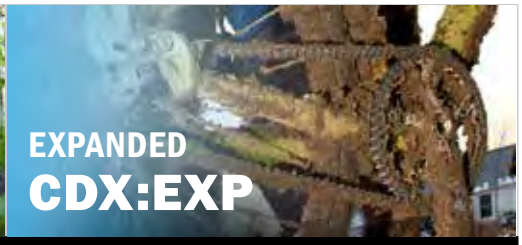
SPROCKET LOCATION	FRONT	REAR	FRONT
MATERIAL	6061 T6 Aluminum	Hardened, Chromoly Steel	Glass-filled Nylon Composite
COATING	Standard	Zinc	
CENTERTRACK			CenterTrack (FULL)
DEBRIS PORTS	Undercut		Wide, Angled
COLOR	Black/Silver	Silver	Black
TOOTH RANGE	46, 50, 60	22	46, 50, 55
WEIGHT (g)**	753***	142	48
eBIKE SPIDER ASSEMBLIES	N/A		N/A

BELT TECHNICAL COMPARISON

COMPOUND	Engineered Polymer	Engineered Polymer
CENTERTRACK GROOVE	No	Yes
TENSILE CORD	Carbon	Carbon
PITCH	11mm	11mm
BELT LENGTHS (TOOTH COUNT)	111–122	111–132
BELT/JACKET COLOR	Black/Black	Black/Black

* Mileage estimates application specific - data available on request.
** Sprocket weight assumes 46T Front, 22T Rear
*** SideTrack front weight includes crank, sprocket, guards, & guard hardware

 Pavement  Sand  Snow  Mud

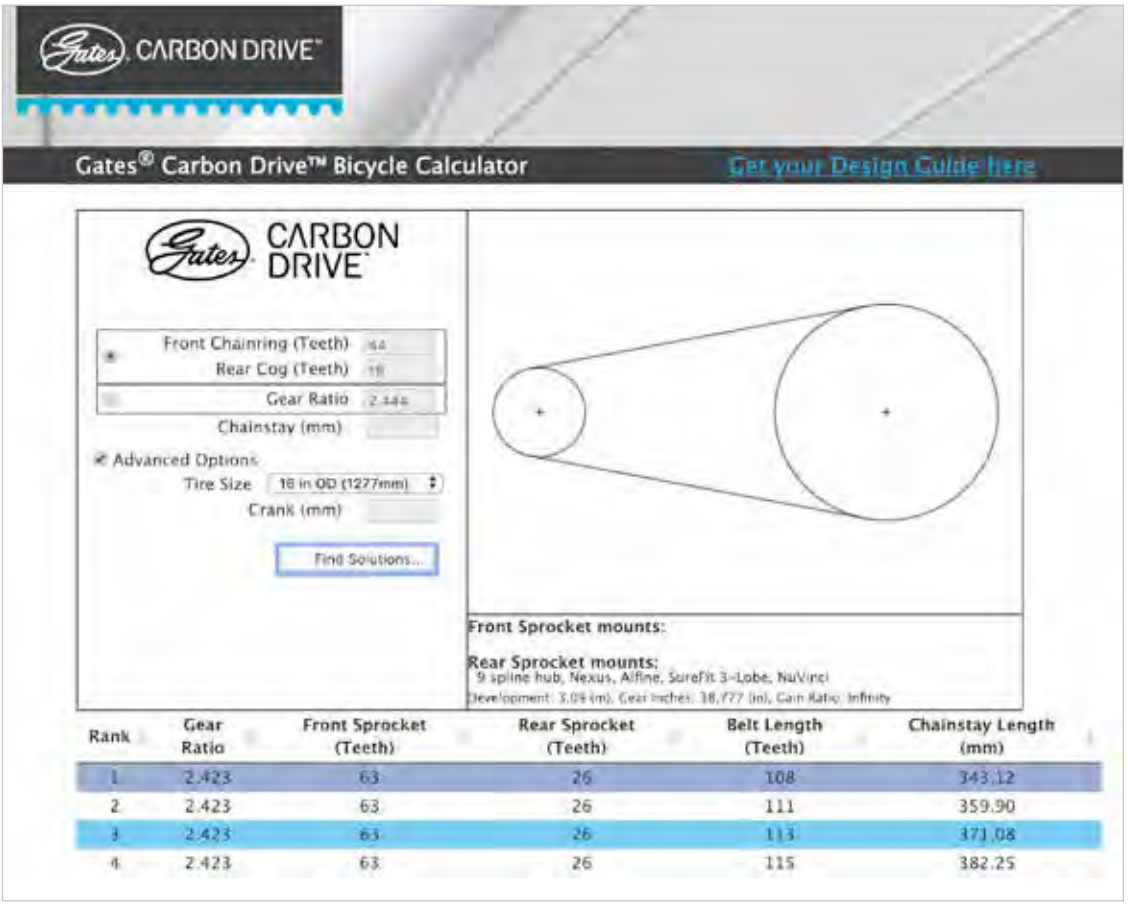


Cyclists who bike or eBike for many kinds of urban and suburban trips	Cyclists who ride pavement or dirt throughout the entire year	Strong cyclists up for the toughest, grittiest pavement or dirt adventures
Balance between performance and value for e-bikes	High-performance and versatile	Ultra-high performance and longevity
CenterTrack™	CenterTrack	CenterTrack
★ ★ ★	★ ★ ★ ★	★ ★ ★ ★ ★
4	5	5
SS, all IGH, Pinion	SS, all IGH, Pinion	SS, all IGH, Pinion

FRONT	REAR	FRONT	REAR	FRONT	REAR
6061 T6 Aluminum	Hardened Steel	6061 T6 Aluminum	Stainless Steel	7075 T6 Aluminum	Stainless/ Hardened Steel
Standard	Zinc	Premium	Zinc	Premium	Zinc
CenterTrack (FIN)	CenterTrack (FULL)	CenterTrack (FULL)	CenterTrack (FULL)	CenterTrack (FULL)	CenterTrack (FULL)
Narrow, Straight		Wide, Angled		Undercut	
Black	Silver	Black/Silver		Black/Silver	
46, 50, 55, 57, 60	22-28	22-70	19-39	32-55	19-39
82	104	61	78	90	96
Bosch Gen3, Shimano E5000		Bosch Gen3, Gen4, Shimano E5000/6100		N/A	

Polyurethane	Polyurethane	Polyurethane
Yes	Yes	Yes
Carbon	Carbon	Carbon
11mm	11mm	11mm
108-174	108-174	108-174
Black/Blue	Black/Blue	Black/Blue

FRAME DESIGN



Rank	Gear Ratio	Front Sprocket (Teeth)	Rear Sprocket (Teeth)	Belt Length (Teeth)	Chainstay Length (mm)
1	2.423	63	26	108	343.12
2	2.423	63	26	111	359.90
3	2.423	63	26	113	371.08
4	2.423	63	26	115	382.25

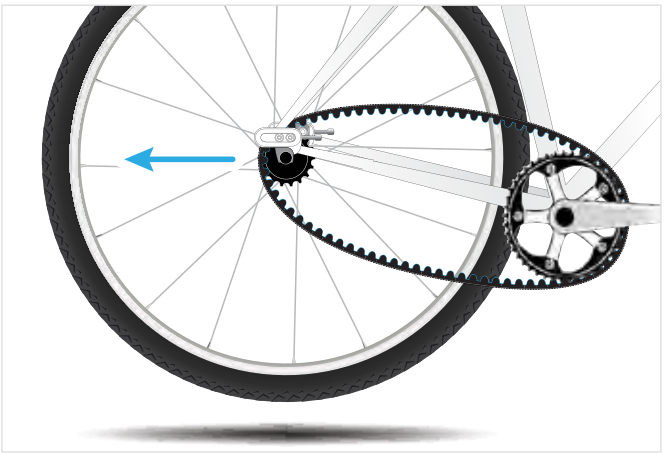
BELT & SPROCKET CALCULATOR

Sprocket selection is impacted by the target gear ratio, frame chainstay length, and available belt lengths. To simplify the selection process, use our drive calculator online at **Gatescarbondrive.com/drivecalculator** or download from **Gatescarbondrive.com/manuals**.

CENTER DISTANCE ADJUSTMENT

To allow for belt installation and tensioning, adjustment in the chainstay length or “center distance” is required. To install a belt, there must be enough room so the belt can slip over the sprockets, achieved by decreasing the center distance between sprockets. It is important to note that the belt must be installed loose, not rolled or pried onto the sprockets while under tension.

Once the belt is installed onto the sprockets, there must be a way to take up the slack in the drive. If only one ratio is desired for the application, a minimum range of movement of 12 mm is needed – 10 mm shorter than nominal for installation room, and 2 mm longer than nominal for tensioning and tolerance take-up. More center distance range may be desired to enable the bike to use different sprockets enabling multiple gear ratio combinations.



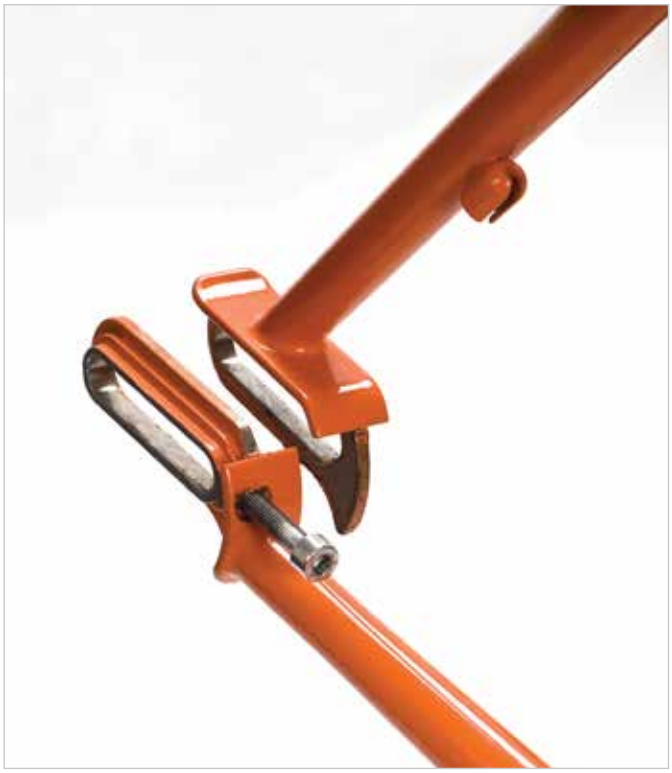
Center distance adjustments are typically made through rear axle movement with a sliding dropout, horizontal dropout, or bottom bracket axle movement with an eccentric bottom bracket. When using an eccentric bottom bracket, pay close attention to the sprocket selection, chainstay length, and center distance due to the limited range of adjustment typical eccentric bb shells provide.

FRAME DESIGN

INCORPORATING A GATES CARBON DRIVE BELT SYSTEM REQUIRES AN OPENING IN THE REAR TRIANGLE

FRAME BREAK

To incorporate a belt drive, a bicycle frame requires an opening in the rear triangle. Without a master link, a belt requires an opening in the rear triangle to be installed. The opening can be at the dropout or can be in one of the stays. Frame manufacturers have found various ways to accommodate the opening.



FRAME DESIGN

THERE ARE MANY DIFFERENT STYLES OF DROPOUTS AVAILABLE BUT MOST GENERALLY FALL INTO TWO CATEGORIES – VERTICAL AND HORIZONTAL

DROPOUT DESIGN

VERTICAL DROPOUTS

The benefit to a vertical dropout is that once tension and alignment of the belt have been set (assuming the mounting hardware has been properly tightened), the rear wheel can be released, and reinstalled without having to start over with the alignment and tensioning process. Furthermore, quick release type skewers can be used, because the clamping force of the skewer is not holding the belt tension. Vertical dropouts do not possess, by themselves, a center distance change, or tension adjustment capability. This means a secondary tension mechanism is required (eccentric bottom bracket, eccentric hub, or dropout slider).

HORIZONTAL DROPOUTS

Horizontal dropout designs are not ideal for belt drives. Horizontal dropouts almost always have some sort of center distance adjustment, allowing the use of various belt lengths and sprocket combinations. A key factor to consider is the need to realign and tension the belt every time you take the belt off or need to remove the rear wheel. Component selection is also important when using horizontal dropouts and may be more limited. For example, a standard 5 mm quick release does not produce the necessary clamping force to keep the rear wheel from moving under heavy loading, therefore features such as positive tensioning stops must be built into the dropouts or secondary axle tension devices may be required.

FRAME DESIGN

FRAME STIFFNESS

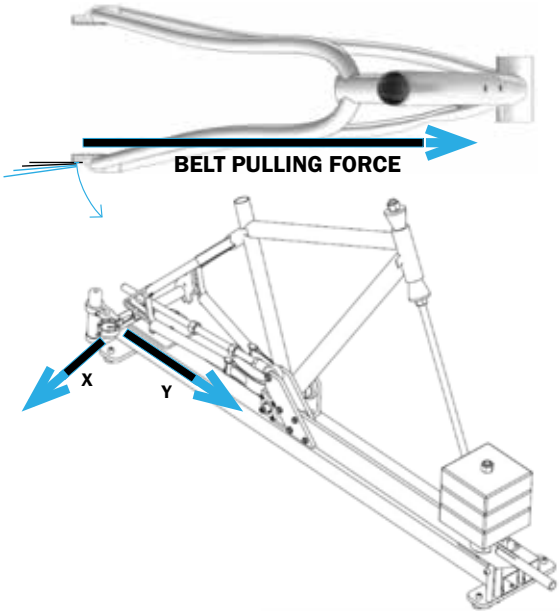
WHY IS IT IMPORTANT?

The stiffness of a frame's rear triangle plays a major role in the performance of the belt drive system.

If the rear triangle of a frame is too flexible, it is possible that frame deflection can result in tooth jumping, accelerated wear, drivetrain noise, or in extreme cases, belt derailment. Excessively high rear triangle stiffness can result in an uncomfortable ride.

HOW IS IT MEASURED?

Gates engineers have developed a method for measuring rear triangle stiffness, and this evaluation service is offered by Gates to all frame designers as a product development tool. Frame testing requires submission of a complete frameset to one of our three engineering development centers located in Germany, Taiwan, and USA.



STIFFNESS REQUIREMENTS		
BICYCLE TYPE	**X QUOTIENT (MINIMUM)**	**Y QUOTIENT (MINIMUM)**
MTB, Trekking, Sportive, Cargo bicycles, and mid-motor eBikes	5.0 kg/mm	26.5 kg/mm
Commuter bicycles, City, Urban, including front and rear hub motor eBikes	4.0 kg/mm	22.0 kg/mm

Note: Bicycles equipped with the Rohloff Speedhub need to pass the MTB/Trekking/Sportive standard.

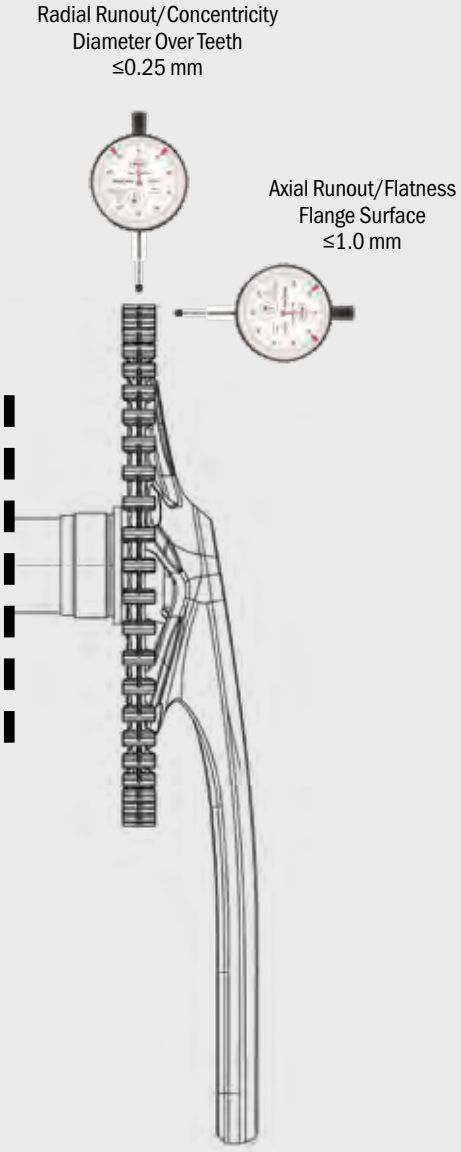
ADDITIONAL INFORMATION:

GatesCarbonDrive.com/FrameStiffness

CRANK/SPROCKET ASSEMBLY TOLERANCES:

To ensure optimal performance of belt drives, Gates requires the following runout tolerances for crank/sprocket assemblies measured with the intended bottom bracket. Excessive runout can result in large tension variation, improper shifting on geared hubs, and even premature belt failure.

Total radial runout allowed is less than or equal to 0.25 mm measured at diameter over teeth. Total axial runout allowed is less than or equal to 1.0 mm measured at flange surface.

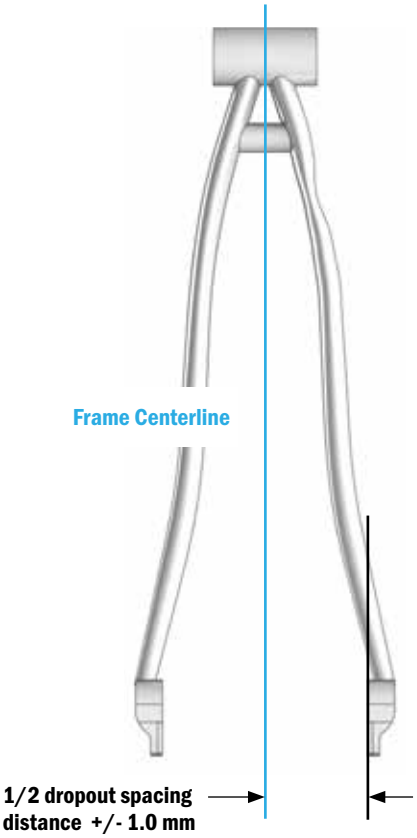


FRAME DESIGN

THERE ARE 3 PRIMARY TYPES OF REAR TRIANGLE ALIGNMENT WHICH DIRECTLY IMPACT THE PERFORMANCE OF THE BELT DRIVE SYSTEM

CENTERLINE OFFSET

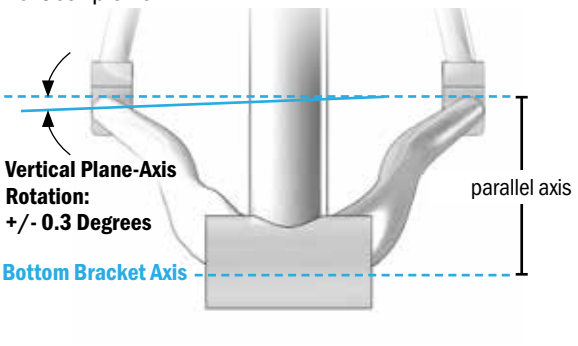
The distance between the center plane of the frame and the inside face of the dropout.



AXIS ALIGNMENT

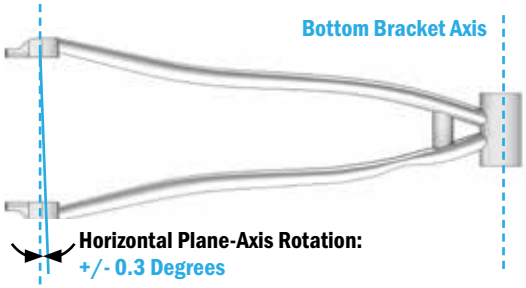
VERTICAL PLANE

Refers to the parallel relationship between the axis of the bottom bracket and the axis of the rear hub in the vertical plane.



HORIZONTAL PLANE

Refers to the parallel relationship between the axis of the bottom bracket and the axis of the rear hub in the horizontal plane.



GATES UT LASER ALIGNMENT TOOL

The UT Laser Belt Liner is a tool for a quick check of the alignment. Simply place the measuring unit on the belt or sprocket and alignment can be read within seconds. The fast and professional solution for every workshop.

Available through Universal Transmissions.

GATES PROFESSIONAL FRAME ALIGNMENT TOOL

Simply and accurately measures frame alignment and supports factories in the production and quality control of new frames.

Product No 7468-0998

FRAME DESIGN

SUSPENSION FRAME CONSIDERATIONS

In the earliest possible stages of designing a Carbon Drive compatible rear suspension frame, there are critical engineering factors which must be taken into consideration. In general, full suspension frame designs result in some form of chain growth. Chain growth being defined as a change in the resting distance between the axis of the bottom bracket axle and the axis of the rear hub axle. Because the belt does not have the ability to stretch and the tension in the belt must remain constant, even the smallest amount of chain growth during suspension travel would be detrimental to the system integrity. Devices which compensate for drivetrain slack - such as spring loaded idlers or chain guides - are not allowed unless specifically reviewed and approved by Gates.

If a full suspension frame design which utilizes the Carbon Drive system is desired, please contact the Carbon Drive Team (**CarbonDrive@Gates.com**) for engineering and development assistance.

BRAKES

Gates recommends that hand brakes are used as the primary braking system. Gates does not recommend the use of brake systems that incorporate the use of the belt drive as the only brake system, such as coaster brakes and fixed gears. If belt drive brake systems are installed, Gates requires a hand brake as a secondary braking system.

ALWAYS USE GATES CARBON DRIVE BELTS WITH AUTHENTIC GATES CARBON DRIVE SPROCKETS

Gates engineers have invested significant time designing, developing and testing the patented belts and sprockets to ensure optimal performance. Gates will not warranty the belts or sprockets if used with a substitute part from another manufacturer. Always use Gates Carbon Drive belts with authentic Gates Carbon Drive sprockets.

TENSIONER & IDLER INTEGRATION

Gates Carbon Drive has been working with bicycle manufacturers to properly design and implement idlers into some specific applications. For each application, thorough testing of the drive is completed, and certain parameters need to be met prior to releasing the bike to the market. Our belt handling instructions must still be followed, as back bending belts by hand could cause damage. Idlers that follow our design requirements do not cause belt failures. All idler designs require approval by Gates Carbon Drive engineering team.

BELT TENSIONING

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”, when the teeth of the belt slide over the teeth of the rear sprocket. Too much tension can damage bearings, 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.**

There are 3 common methods for measuring tension on your Carbon Drive system: the Gates Krikit Tension Gauge, the Eco Tension Tester, and the Gates Carbon Drive Mobile App for iPhone® and Android®. 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.

WARNING: Do not touch the Krikit gauge with a second finger. This process is a one finger operation.

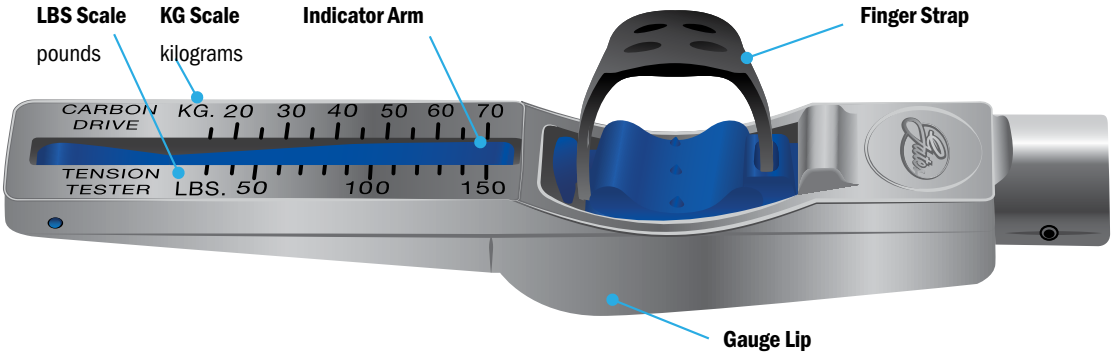
TENSION RECOMMENDATIONS

	SMOOTH & STEADY PEDALING STYLE	PUNCHY & ROUGH PEDALING STYLE
Mountain* and Single Speed Urban	45-60 Hz (35-45 lbs)	60-75 Hz (45-53 lbs)
Internal Gear Hub / Pinion Gearbox	35-50 Hz (28-40 lbs)	
Tandem	60-65 Hz (45-48 lbs)	

These tension recommendations are a good starting point, which may need to be adjusted higher or lower based on the rider size, gear ratio, and power placed on the pedals.

* CDN and SideTrack systems are not approved for use on mountain bikes, mid-drive eBikes or gear boxes, fixed gear bikes, or high mileage trekking/touring bikes.

GATES KRIKIT TENSION GAUGE



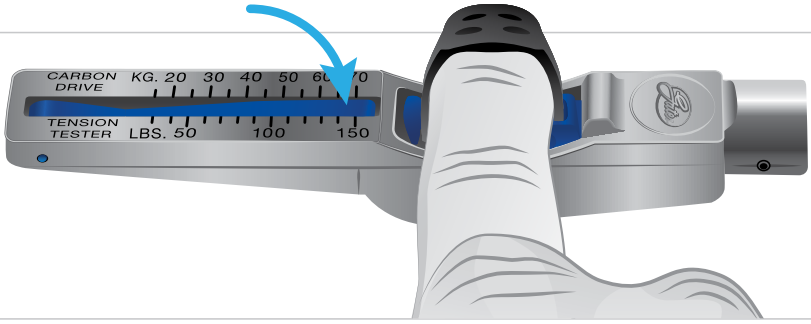
Product No 7401-0073

BELT TENSIONING

CHECKING BELT TENSION: GATES KRIKIT TENSION GAUGE

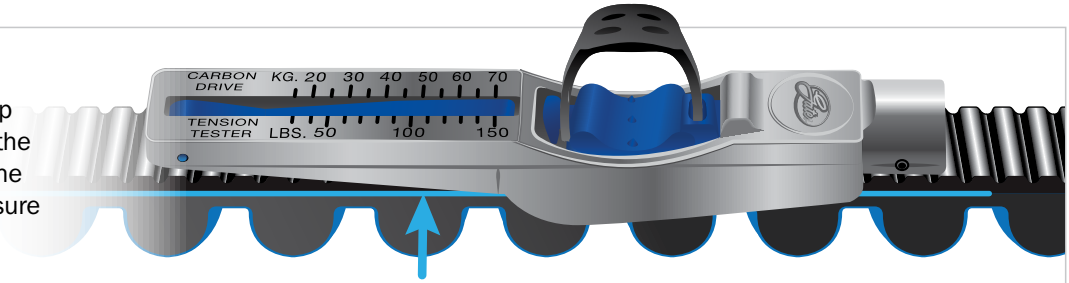
1

Verify Indicator Arm is positioned completely down. Place index finger in the rubber Finger Strap, on top of the Click Pad, as shown.



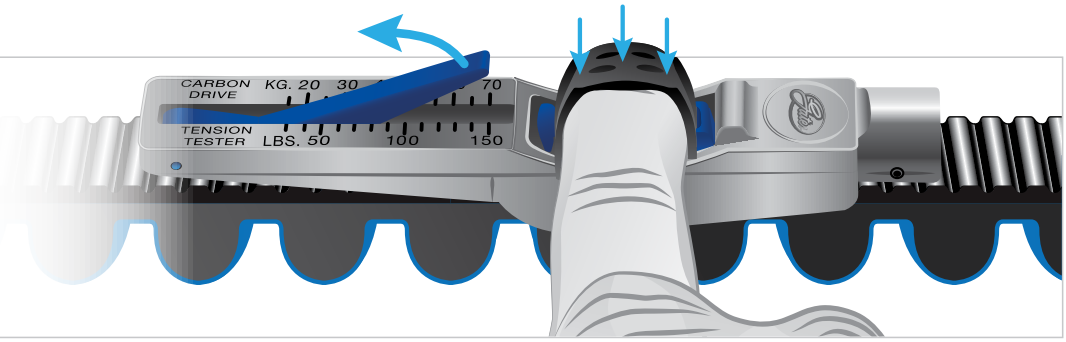
2

Place Krikit Gauge on top of the belt and position the gauge in the middle of the total belt span, making sure the Gauge Lip sits flush against the belt.



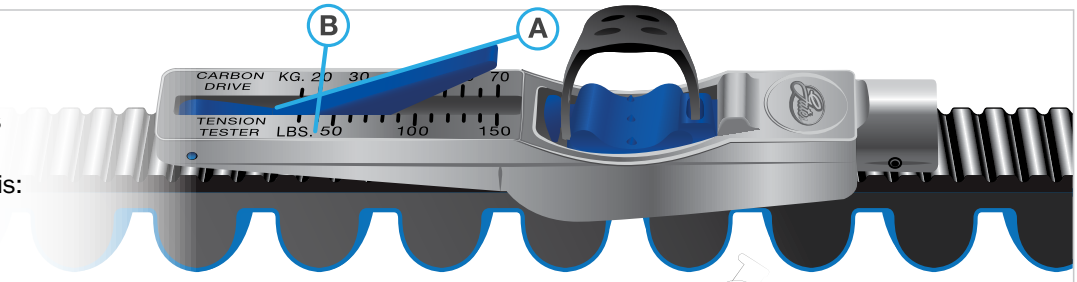
3

Press down on tester click pad until it clicks. It is critical to use only one finger on the gauge.



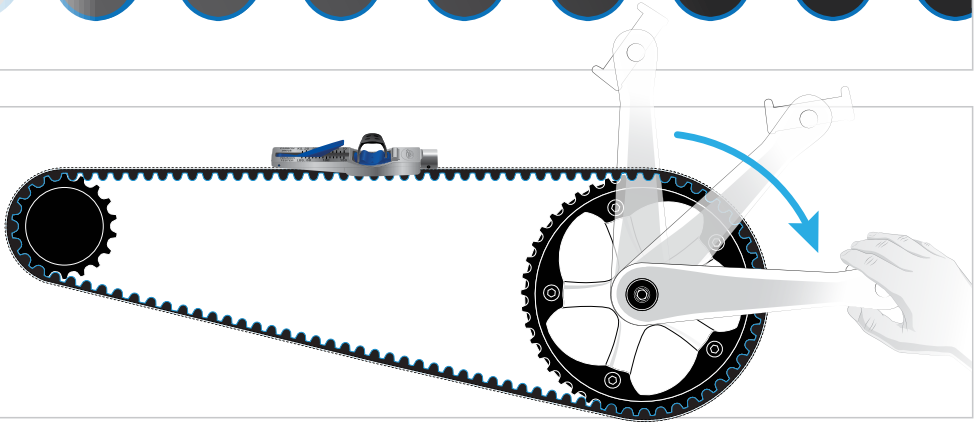
4

Measurement point is the intersection of lines **A** and **B**. The gauge tension reading shown is: **20 KG (40 LB)**



5

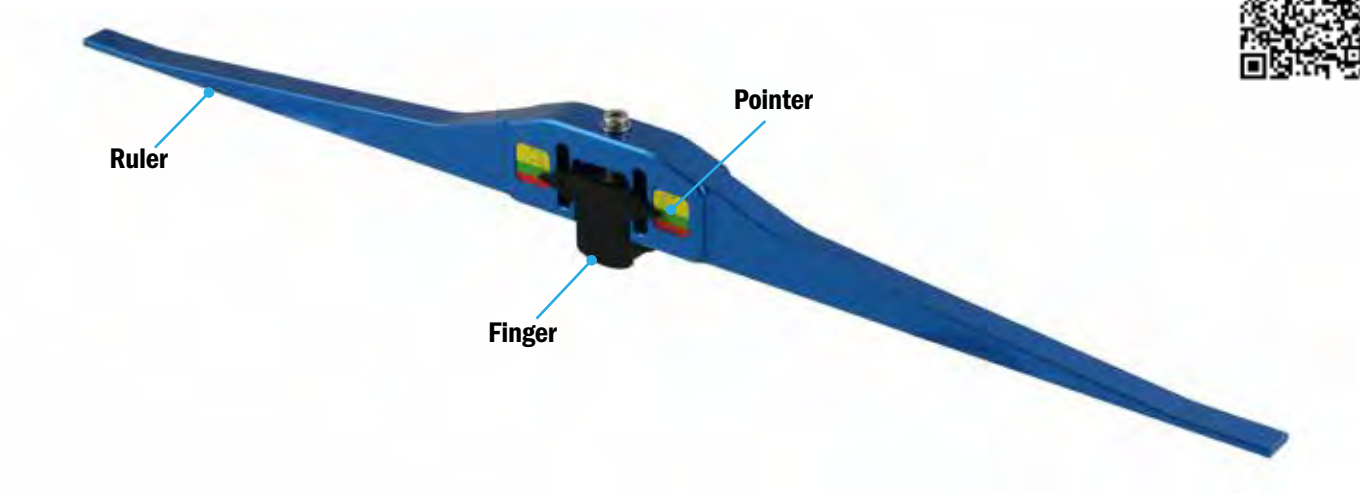
Rotate crank one-quarter turn and repeat previous steps 1 to 4. Repeat rotation and measurement no fewer than 3 times.



BELT TENSIONING

CHECKING BELT TENSION: PROFESSIONAL BELT TENSION GAUGE

Available through Universal Transmissions.



Reset the pointer to zero.
Note: Pointer must be reset before each measurement.

Contacting both sprockets, measure the belt tension across the span.

Too much belt tension

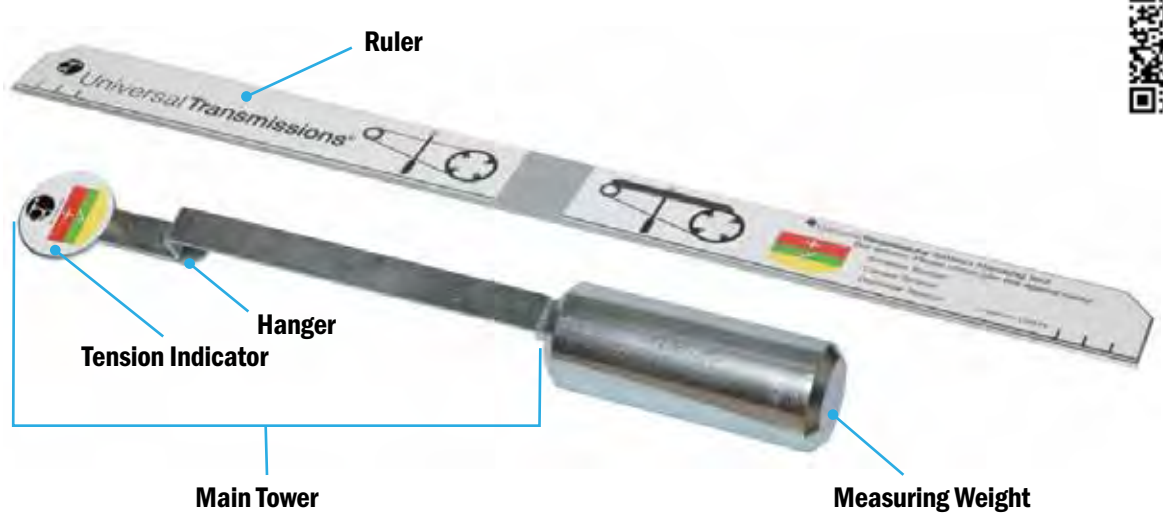
Optimal belt tension

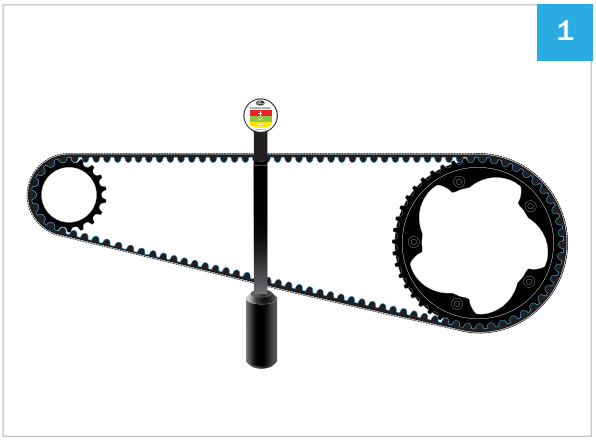
Too little belt tension

BELT TENSIONING

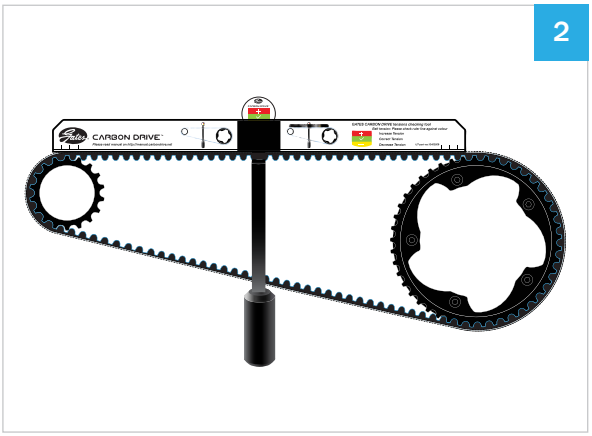
CHECKING BELT TENSION: ECO TENSION TESTER

Available through Universal Transmissions.





Hang the main tower on the belt.



Put the ruler on the two sprockets. Check the tension:

+	**Red**	Increase the tension
✓	**Green**	Tension is good
–	**Yellow**	Decrease the tension

BELT TENSIONING

CHECKING BELT TENSION:
GATES CARBON DRIVE MOBILE APP

[FOR iPHONE & ANDROID]

Gates Carbon Drive Mobile App measures belt tension from the natural frequency (Hz) of the belt span. Using the microphone, the App converts the sound into the primary frequency of the belt.

From the App, click the Tension icon and then click Measure. Hold the device microphone (be sure microphone is 'on') facing the belt. Pluck the belt so that it vibrates similar to a guitar string. Rotate the crank ¼ turn and repeat the frequency measurement. Compare your belt's frequency to the chart on page 14 to review any necessary tension adjustments. The Gates Carbon Drive Mobile App works best in a quiet environment.

- **Find key parameters of your drive such as speed ratio and center distance**
- **Change belt length or sprocket sizes to better suit your riding needs**
- **Compare two belt drive bikes to each other**
- **Check out what sprocket sizes, mounting options, and belt lengths are available in our catalog**
- **Check tension with our frequency measuring tool**

CHECKING BELT TENSION:
SONIC TENSION METER 508C

The Gates Sonic Tension Meter measures belt tension by analyzing the harmonic characteristics of a vibrating belt. Simply pluck the belt like a guitar string and the meter will take a reading and provide a highly accurate tension measurement.

COMPACT SIZE

- **About the size of a cellular telephone, the Sonic**
- **Tension Meter can easily be operated by one person for fast, accurate readings**

Note: Perfect for factory installation.

Product No 7420-0508

CENTERTRACK CRANKSETS

S550

20

S501

22

S300

24

S250

26

S150

28

S100

30

Gates CARBON DRIVE™

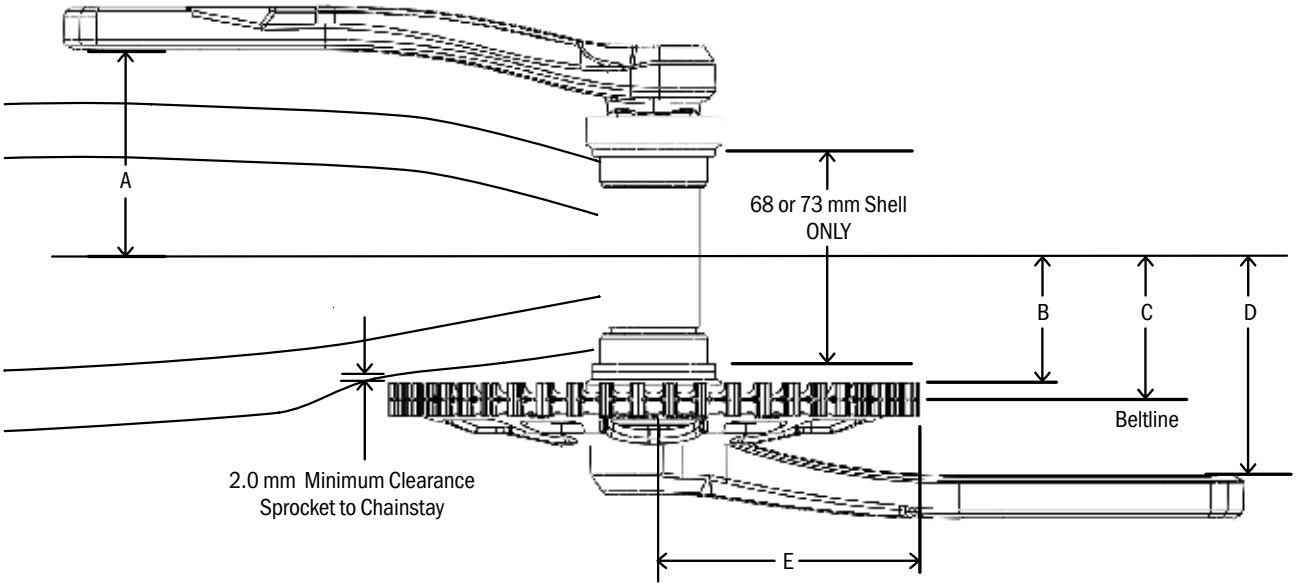
S550

CRANKSET SPECIFICATIONS

- Available to provide highest volume Shimano, enviolo, and Rohloff beltlines
- Saves valuable time in production
- 46T, 50T, and 55T direct mount 7075-T6 CDX:EXP sprockets
- Forged 6061 crank arms with 24 mm chromoly spindle
- Pre-built cranks available with 68/73 mm bottom bracket
- Available with or without ISO compliant guard
- 170 and 175 mm crank arm length
- Available in matte black

Crankset shown with ISO compliant guard

CRANKSETS



S550 PRE-ASSEMBLED CRANKSET FOR USE WITH CDX:EXP SPROCKETS

TEETH	PART NUMBER	ARM LENGTH	DIMENSION				
			A	B*	C*- BELTLINE	D	E
46	FC550 170BM 46CDX-0/45.5 BG	170	69.0	40.0	45.5	70.4	79.6
46	FC550 175BM 46CDX-0/45.5 BG	175					
50	FC550 170BM 50CDX-0/45.5 BG	170					86.6
50	FC550 175BM 50CDX-0/45.5 BG	175					
55	FC550 170BM 55CDX-0/45.5 BG	170					95.4
55	FC550 175BM 55CDX-0/45.5 BG	175					
46	FC550 170BM 46CDX-0/54.7 BG	170		49.2	54.7	70.4	79.6
46	FC550 175BM 46CDX-0/54.7 BG	175					
50	FC550 170BM 50CDX-0/54.7 BG	170					86.6
50	FC550 175BM 50CDX-0/54.7 BG	175					
55	FC550 170BM 55CDX-0/54.7 BG	170					95.4
55	FC550 175BM 55CDX-0/54.7 BG	175					

For beltlines not listed, please contact your Gates Carbon Drive technical representative.
"BG" at end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard.

*Measurements for Gates pre-assembled crankets only

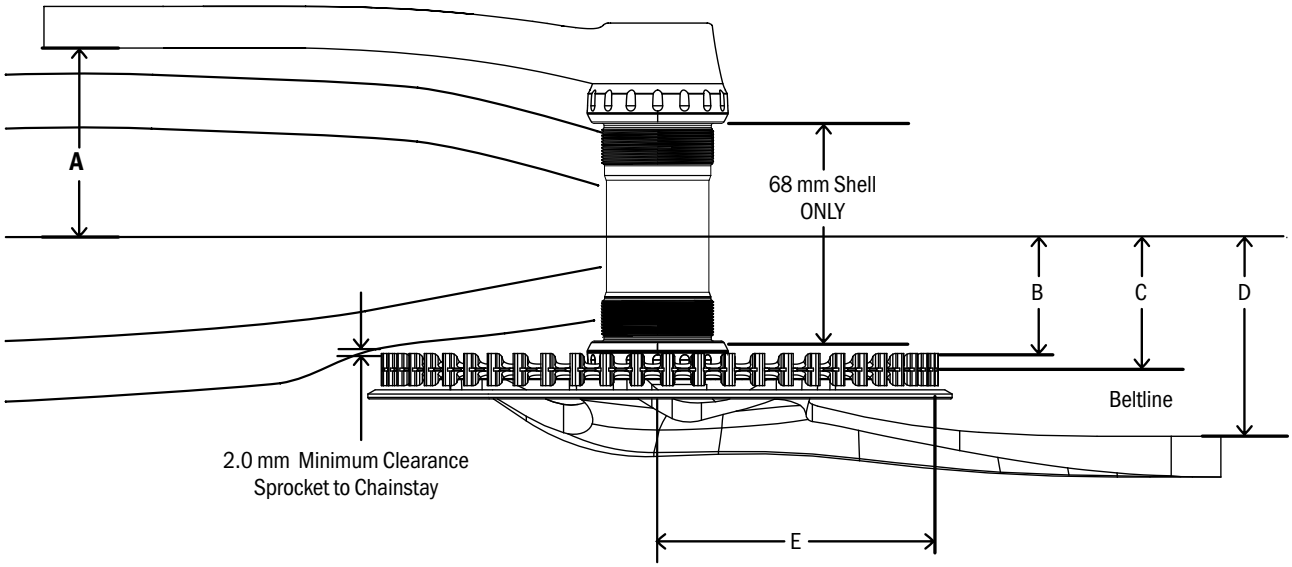
Gates CARBON DRIVE™

S501

CRANKSET SPECIFICATIONS

- Provides the specific beltline required when paired with Shimano internal gear hubs
- Saves valuable time in production
- Concentric assembly minimizes variation of belt tension
- Allows for mechanical and Di2 beltline options
- 170 mm crank length
- Recommended bottom bracket: SMBB4600
- Available in polished black

CRANKSETS



S501 CRANKSET FOR USE WITH CDX SPROCKETS

TEETH	PART NUMBER	ARM LENGTH	DIMENSION				
			A	B	C - BELTLINE	D	E
MECHANICAL VERSION							
50	S501 170 50T	170	63.3	38.2 +/- 0.5	43.7 +/-0.5	63.3	86.6
55	S501 170 55T	170					95.4
DI2 VERSION							
50	S501 170 50T Di2	170	63.3	34.3 +/- 0.5	39.8 +/-0.5	63.3	86.6
55	S501 170 55T Di2	170					95.4

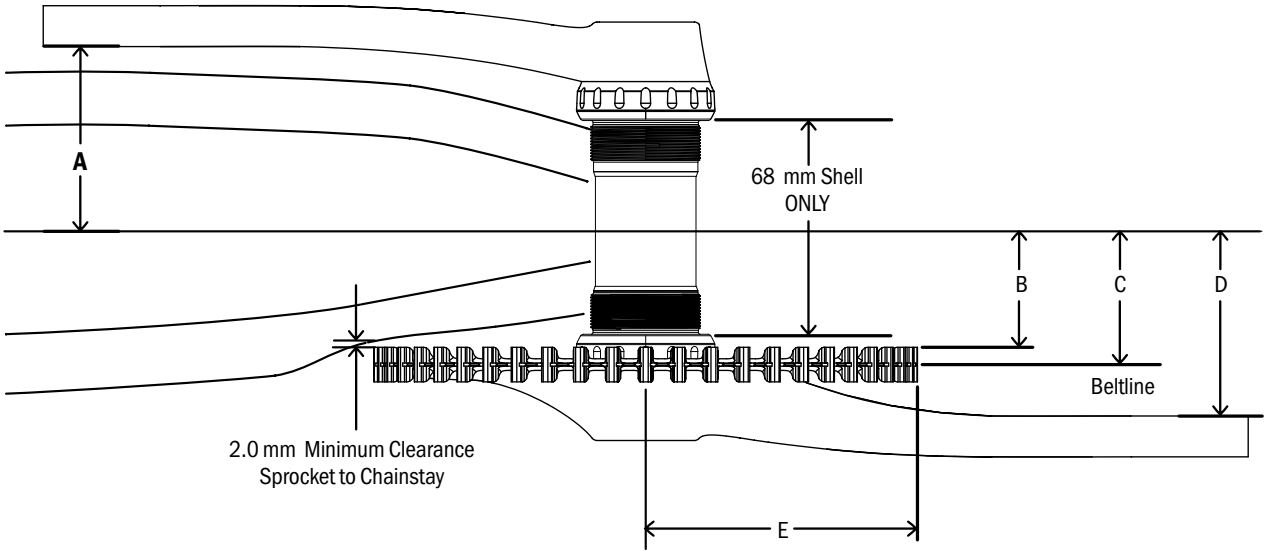
Gates CARBON DRIVE™

S300

CRANKSET SPECIFICATIONS

- **Provides the specific beltline required when paired with Shimano internal gear hubs**
- **Saves valuable time in production**
- **Concentric assembly minimizes variation of belt tension**
- **Allows for mechanical and Di2 beltline options**
- **68 mm GXP gutter bottom bracket included**
- **170 and 175 mm crank length options**
- **Compatible gear hubs:**
  - Shimano: Di2, Alfine 11, Alfine 8, Nexus 5, Nexus 3 (models SG-3D55 & SG-3C41)
- **Available in polished black or matte silver**
- **Available with ISO compliant composite guard**

CRANKSETS

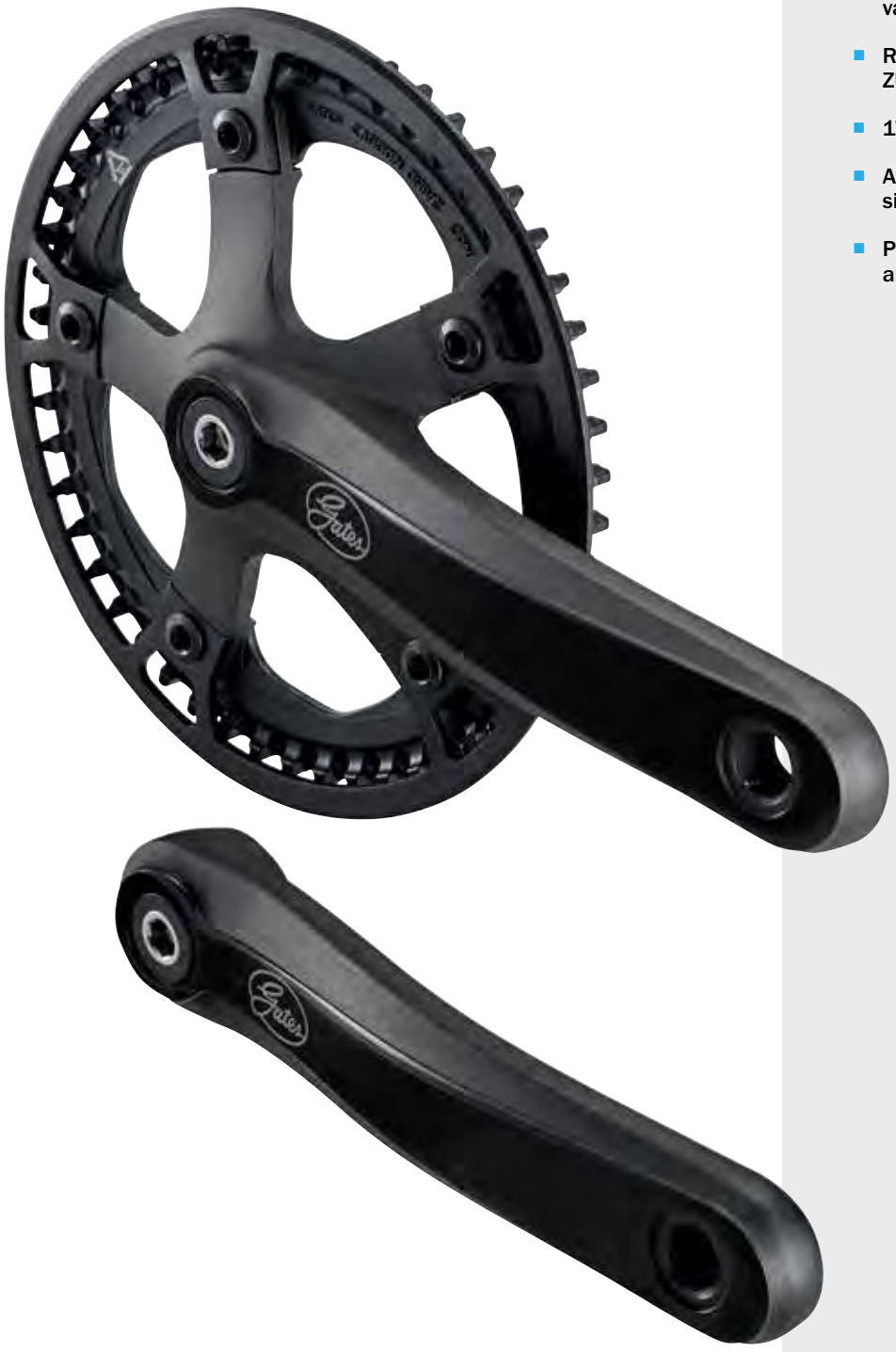


S300 CRANKSET FOR USE WITH CDX SPROCKETS

TEETH	PART NUMBER	ARM LENGTH	DIMENSION				
			A	B	C - BELTLINE	D	E
MECHANICAL VERSION							
46	S300 GXP 175 46T	175	60 +2/-1	38.2 +/0.5	43.7 +/-0.5	60 +2/-1	79.6
46	S300 GXP 170 46T	170					79.6
50	S300 GXP 175 50T	175					86.6
50	S300 GXP 170 50T	170					86.6
55	S300 GXP 175 55T	175					95.4
55	S300 GXP 170 55T	170					95.4
60	S300 GXP 175 60T	175					104
60	S300 GXP 170 60T	170					104
DI2 VERSION							
50	S300 GXP 175 50T Di2	175	60 +2/-1	34.3 +/-0.5	39.8 +/-0.5	60 +2/-1	86.6
50	S300 GXP 170 50T Di2	170					86.6
55	S300 GXP 175 55T Di2	175					95.4
55	S300 GXP 170 55T Di2	170					95.4
60	S300 GXP 175 60T Di2	175					104
60	S300 GXP 170 60T Di2	170					104

Gates CARBON DRIVE™

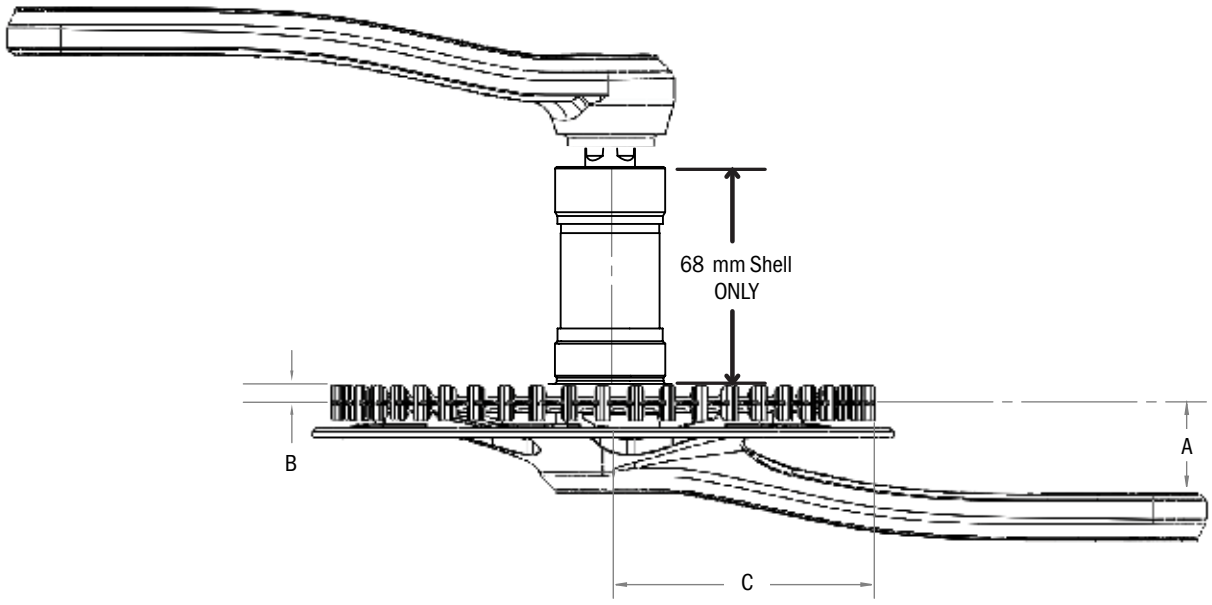
S250



CRANKSET SPECIFICATIONS

- Provides the specific beltline required when paired with recommended bottom bracket
- Saves valuable time in production
- Concentric assembly minimizes variation of belt tension
- Recommended bottom bracket: ZUMBA from Thun
- 170 and 175 mm crank length options
- Available in matte black or matte silver with polished raised surface
- Preassembled with matching aluminum ISO compliant guard

CRANKSETS



GATES S250 CRANKSET FOR USE WITH CDX OR CDN SPROCKETS

TEETH	PART NUMBER	ARM LENGTH	DIMENSION (MM)			
			A		B	C
			CDX	CDN		
46	FC S250 JIS 170 46T BG	170	28.8	28.3	5.5	79.6
46	FC S250 JIS 175 46T BG	175				79.6
50	FC S250 JIS 170 50T BG	170				86.6
50	FC S250 JIS 175 50T BG	175				86.6
55	FC S250 JIS 170 55T BG	170				95.4
55	FC S250 JIS 175 55T BG	175				95.4

For beltline and bottom bracket selection, refer to page 32.

"BG" or "SG" at end of Part Number specifies inclusion of an ISO compliant Black Guard or Silver Guard.

Gates CARBON DRIVE™

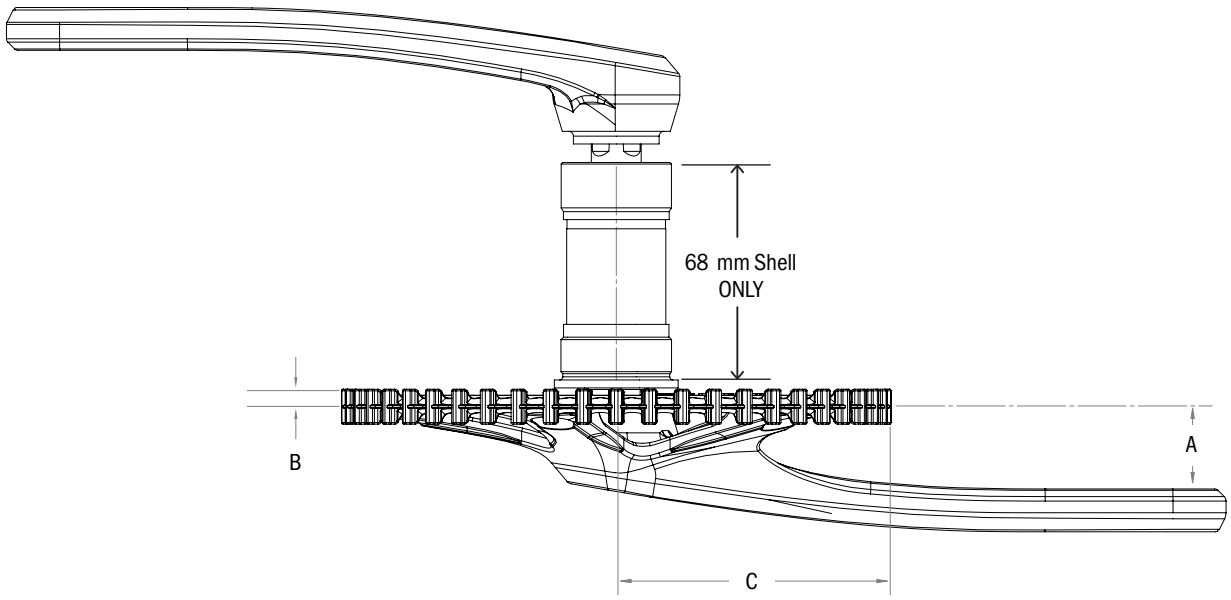
S150

CRANKSET SPECIFICATIONS

- Provides the specific beltline required when paired with recommended bottom bracket
- Saves valuable time in production
- Concentric assembly minimizes variation of belt tension
- Recommended bottom bracket: ZUMBA from Thun
- 170 and 175 mm crank length options
- Available in matte black or matte silver
- Available with ISO compliant composite guard

Crankset shown with ISO compliant guard

CRANKSETS



GATES S150 CRANKSET FOR USE WITH CDX OR CDN SPROCKETS

TEETH	PART NUMBER	ARM LENGTH	DIMENSION (MM)			
			A		B	C
			CDX	CDN		
46	FC S150 JIS 170 46T	170	30.0	29.5	5.5	79.6
46	FC S150 JIS 175 46T	175				79.6
50	FC S150 JIS 170 50T	170				86.6
50	FC S150 JIS 175 50T	175				86.6
55	FC S150 JIS 170 55T	170				95.4
55	FC S150 JIS 175 55T	175				95.4

For beltline and bottom bracket selection, refer to page 32.

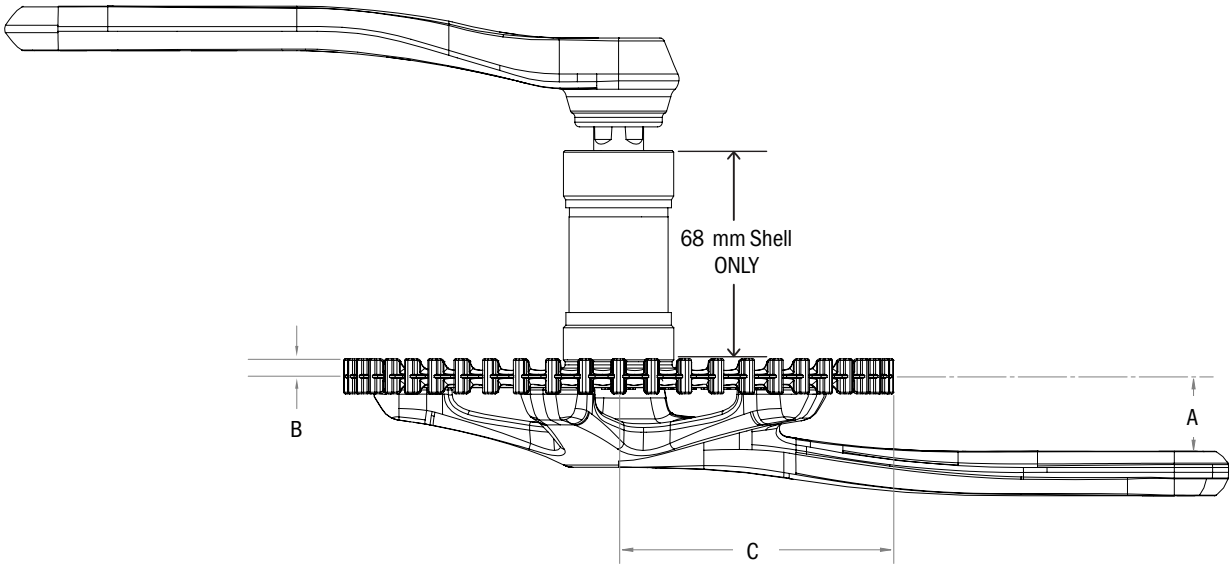
Gates CARBON DRIVE™

S100

CRANKSET SPECIFICATIONS

- Provides the specific beltline required when paired with recommended bottom bracket
- Saves valuable time in production
- Concentricity minimizes variation of belt tension
- Recommended bottom bracket: ZUMBA from Thun or RPM from FSA
- 170 and 175 mm crank length options
- Available in polished black

CRANKSETS



GATES S100 CRANKSET FOR USE WITH CDX OR CDN SPROCKETS

TEETH	PART NUMBER	ARM LENGTH	DIMENSION (MM)			
			A		B	C
			CDX	CDN		
46	FC S100 JIS 170 46T	170	20.5	20	5.5	79.6
46	FC S100 JIS 175 46T	175				79.6
50	FC S100 JIS 170 50T	170				86.6
50	FC S100 JIS 175 50T	175				86.6
55	FC S100 JIS 170 55T	170				95.4
55	FC S100 JIS 175 55T	175				95.4

For beltline and bottom bracket selection, refer to page 32.

CRANK ASSEMBLIES BOTTOM BRACKET SELECTION GUIDE

S100, S150, S250

	HUB	BRAKE TYPE	MODEL NO.	O.L.D.	REAR SPROCKET LINE	BELTLINE	Zumba GBL 400	Zumba GBL 420	Zumba GBL 430	Zumba GBL 440	Zumba GBL 450	Zumba GBL 460	Zumba GBL 550
enviolo	TR, SP, CA	Disc, Rim, Roller	135/142 mm Configurations	135/ 142	VMN / VSE	45.5						●	
Rohloff	500/14	Disc, Rim	500/14 - 135/142 mm Configurations	135/142	RMN / RSMN	54.7							●
Shimano (Mechanical Shift)	Nexus Inter-3	Disc	SG-3D55	135	XMN-U / XSE-U	45.5						●	
					XMN / XSE / NMN	43.7				●			
	Nexus Inter-3	Coaster	SG-3C41 (120 O.L.D.)	120	XMN-U / XSE-U	44.8					●		
					XMN / XSE	43.0			●				
	Nexus Inter-3	Coaster	SG-3C41 (127 O.L.D.)	127	XMN-U / XSE-U	43.3				●			
					XMN / XSE	41.5		●					
	Nexus Inter-5E	Disc, Rim, Roller	SG-C7000-5D/5R/5V	135	YMN-U	45.5						●	
	Nexus Inter-7	Coaster	SG-C3000-7C	127	XMN-U / XSE-U	45.1						●	
					XMN / XSE	43.3				●			
	Nexus Inter-7	Roller	SG-C3000-7R	130	XMN-U / XSE-U	43.9				●			
					XMN / XSE	42.1			●				
	Nexus Inter-7	Disc	SG-C3001-7D	135	XMN-U / XSE-U	45.7						●	
					XMN / XSE	43.9				●			
	Nexus Inter-8	Coaster	SG-C6001-8C	132.3	XMN / XSE	44.8					●		
	Nexus Inter-8	Roller, Rim	SG-C6011-8R/8V, SG-C6001-8R/8V	132	XMN / XSE	44.6					●		
	Nexus Inter-8	Disc	SG-C6001-8D/8CD	135	XMN-U / XSE-U	45.5						●	
					XMN / XSE	43.7				●			
	Alfine Inter-8	Disc	SG-S7001-8	135	XMN-U / XSE-U	45.5						●	
					XMN / XSE	43.7				●			
	Alfine Inter-11	Disc	SG-S700	135	XMN-U / XSE-U	45.5						●	
					XMN / XSE	43.7				●			
Shimano (Di2)	Nexus Inter-5E Di2	Disc, Roller, Coaster	SG-C7050-5V/5R/5D/5C	135	YMN-D	41.7		●					
	Nexus Inter-8 Di2	Disc, Roller, Coaster	SG-C6061-8R/8C/8D/8CD	135	XMN-D*	41.7		●					
					DMN	39.8	●						
	Alfine Inter-8 Di2	Disc	SG-S7051-8	135	XMN-D*	41.7		●					
					DMN	39.8	●						
	Alfine Inter-11 Di2	Disc	SG-S705	135	XMN-D*	41.7		●					
					DMN	39.8	●						
Sturmey -Archer	S-RF3	Rim	IHS3F.QBSS.AA3, IHS3F.QCSS.AA3	117	NMN	42.5			●				
	RX-RF5	Rim	IHC5F.XBSS.AA0, IHC5F.XCSS.AA0	135	AMN	43.7				●			

Type / Model

* Requires use of Shimano MU-UR500 Di2 system

eBike™

GATES EBIKE SPECIFIC PRODUCTS

BOSCH SPIDER ASSEMBLIES

34–35

SHIMANO SPIDER ASSEMBLIES

38–38

BOSCH GEN2/REVONTE SPROCKETS

44

EBIKE INTEGRATION MANUAL

ISO Requirements, frame stiffness requirements and crank/sprocket assembly tolerances, mid-drive and rear hub motor styles, internal gear hub beltline chart, and more—reference: **GatesCarbonDrive.com/eBike**

eBike SPIDER ASSEMBLIES

BOSCH GEN4

PERFORMANCE CX

SPEED

CARGO

Reference Gates Carbon Drive eBike Integration Manual for detailed information.

GEN4 ASSEMBLY SELECTION CHART

REAR HUB BRAND	COMPATIBLE HUBS	NOMINAL BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER	REAR SPROCKET TYPE
Shimano	Inter-5E (Di2)	41.7 mm	39	S4B4BM 39CDX -0/41.7 NG*	YMN-D
			42	S4B4BM 42CDX -0/41.7 BG	
	Nexus 8, Alfine 8/11 (Di2)		50	S4B4BM 50CDX -0/41.7 BG	XMN-D
			55	S4B4BM 55CDX -0/41.7 BG	
			55	S5B4BM 55CDX -0/41.7 BG	
			60	S5B4BM 60CDX -0/41.7 BG	
			63	S5B4BM 63CDX -0/41.7 BG	
	Inter-5E (Mechanical)	45.5 mm	39	S4B4BM 39CDX -0/45.5 BG	YMN-U
			42	S4B4BM 42CDX -0/45.5 BG	
	Nexus 7/8 DISC, Alfine 8/11 (Mechanical)	45.5 mm	46	S4B4BM 46CDX -0/45.5 BG	XMN-U
			50	S4B4BM 50CDX -0/45.5 BG	
			55	S4B4BM 55CDX -0/45.5 BG	
			48	S5B4BM 48CDX -0/45.5 BG	
			50	S5B4BM 50CDX -0/45.5 BG	
			55	S5B4BM 55CDX -0/45.5 BG	
			60	S5B4BM 60CDX -0/45.5 BG	
			63	S5B4BM 63CDX -0/45.5 BG	
enviolo	enviolo TR, SP, CA (135/142 mm)	45.5 mm	46	S4B4BM 46CDX -0/45.5 BG	VMN
			50	S4B4BM 50CDX -0/45.5 BG	
			55	S4B4BM 55CDX -0/45.5 BG	
			48	S5B4BM 48CDX -0/45.5 BG	
			50	S5B4BM 50CDX -0/45.5 BG	
			55	S5B4BM 55CDX -0/45.5 BG	
			60	S5B4BM 60CDX -0/45.5 BG	
			63	S5B4BM 63CDX -0/45.5 BG	
	enviolo SP (148 mm Boost)	48.7 mm	46	S4B4BM 46CDX -0/48.7 BG	
			50	S4B4BM 50CDX -0/48.7 BG	
			55	S4B4BM 55CDX -0/48.7 BG	
			48	S5B4BM 48CDX -0/48.7 BG	
			50	S5B4BM 50CDX -0/48.7 BG	
			55	S5B4BM 55CDX -0/48.7 BG	
			60	S5B4BM 60CDX -0/48.7 BG	
			63	S5B4BM 63CDX -0/48.7 BG	
Rohloff	SpeedHUB 500/14 (148 mm)	51.7 mm	55	S5B4BM 55CDX -0/51.7 BG	RSMN** RSSB**
			63	S5B4BM 63CDX -0/51.7 BG	
	SpeedHUB 500/14 (135/142 mm)	54.7 mm	46	S4B4BM 46CDX -0/54.7 BG	
			50	S4B4BM 50CDX -0/54.7 BG	
			55	S4B4BM 55CDX -0/54.7 BG	
			48	S5B4BM 48CDX -0/54.7 BG	
			50	S5B4BM 50CDX -0/54.7 BG	
			55	S5B4BM 55CDX -0/54.7 BG	
			60	S5B4BM 60CDX -0/54.7 BG	
			63	S5B4BM 63CDX -0/54.7 BG	

S5 in the part number indicates 5-bolt spiders, S4 indicates 4-bolt.

*Only available in “NG” (no guard) configuration.

**RSMN and RSSB sprockets require the Rohloff Splined Carrier ‘L’ (Art.#8540L), which secures the sprocket using a threaded lock-ring.

“BG” at the end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively “NG” would specify No Guard.

For hubs or beltlines not listed, please contact your Gates Carbon Drive technical representative or email CarbonDrive@Gates.com

eBike SPIDER ASSEMBLIES

BOSCH GEN3

ACTIVE LINE

ACTIVE LINE PLUS

PERFORMANCE 65

Reference Gates Carbon Drive eBike Integration Manual for detailed information.

GEN3 ASSEMBLY SELECTION CHART

REAR HUB BRAND	COMPATIBLE HUBS	NOMINAL BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER	6 MM OFFSET NODE ASSEMBLY PART NUMBER	REAR SPROCKET TYPE
Shimano	Inter-5E (Mechanical)	45.5 mm	46	S5B3BM 46CDX -0/45.5 BG**	N/A	YMN-U
	Nexus 7/8 DISC, Alfine 8/11 (Mechanical)	45.5 mm	46	S5B3BM 46CDX -0/45.5 BG**	S5B3BM 46CDX -6/45.5 BG	XMN-U/ XSE-U†
				S5B3BM 46CDC -0/45.5 BG**†		
			50	S5B3BM 50CDX -0/45.5 BG*	S5B3BM 50CDX -6/45.5 BG	
				S5B3BM 50CDC -0/45.5 BG*†		
			55	S5B3BM 55CDX -0/45.5 BG*	S5B3BM 55CDX -6/45.5 BG	
				S5B3BM 55CDC -0/45.5 BG*†		
			60	S5B3BM 60CDX -0/45.5 BG*	S5B3BM 60CDX -6/45.5 BG	
enviolo	enviolo TR, SP, CA (135/142 mm)	45.5 mm	46	S5B3BM 46CDX -0/45.5 BG**	S5B3BM 46CDX -6/45.5 BG	VMN/VSE†
				S5B3BM 46CDC -0/45.5 BG**†		
			50	S5B3BM 50CDX -0/45.5 BG*	S5B3BM 50CDX -6/45.5 BG	
				S5B3BM 50CDC -0/45.5 BG*†		
			55	S5B3BM 55CDX -0/45.5 BG*	S5B3BM 55CDX -6/45.5 BG	
				S5B3BM 55CDC -0/45.5 BG*†		
			60	S5B3BM 60CDX -0/45.5 BG*	S5B3BM 60CDX -6/45.5 BG	
Rohloff	SpeedHUB 500/14 (135/142 mm)	54.7 mm	46	S5B3BM 46CDX -0/54.7 BG	N/A	rsmn*** RSSB***
			48	S5B3BM 48CDX -0/54.7 BG		
			50	S5B3BM 50CDX -0/54.7 BG		
			55	S5B3BM 55CDX -0/54.7 BG		
			60	S5B3BM 60CDX -0/54.7 BG		

All are 5-bolt spiders as indicated by S5 in the part number.

* Compatibility with Active Line Plus and Performance 65 only. Interference may occur with Active Line stock cosmetic cover. Custom cover may eliminate this interference.

** Compatibility with Performance 65 covers only. Interference will occur with Active Line Plus covers. OE needs to verify their frame clearance with the P65 covers.

***RSMN and RSSB sprockets require the Rohloff Splined Carrier 'L' (Art.#8540L), which secures the sprocket using a threaded lock-ring.

† CDC sprockets are approved only for mid-drive motors producing 50 Nm or less of torque. CDC sprockets are not approved for Performance 65 motors.

"BG" at the end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard.

For hubs or beltlines not listed, please contact your Gates Carbon Drive technical representative or CarbonDrive@Gates.com.

ebike SPIDER ASSEMBLIES

Reference Gates Carbon Drive eBike Integration Manual for detailed information.

STEPS EP8 ASSEMBLY SELECTION CHART

REAR HUB BRAND	COMPATIBLE HUBS	BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER*	3 MM OFFSET NODE ASSEMBLY PART NUMBER*	REAR SPROCKET TYPE
Shimano	Inter-5E (Mechanical)	45.5 mm	39	N/A	S4S6BM 39CDX -3/45.5 BG	YMN-U
			42		S4S6BM 42CDX -3/45.5 BG	
	Nexus 7/8 Disc, Alfine 8/11 (Mechanical)	45.5 mm	46		S4S6BM 46CDX -3/45.5 BG	XMN-U / XSE-U †
			50		S4S6BM 50CDX -3/45.5 BG	
			55		S4S6BM 55CDX -3/45.5 BG	
enviolo	enviolo CT, TR, SP, CA, CO (135/142 mm OLD)	45.5 mm	46		S4S6BM 46CDX -3/45.5 BG	VMN / VSE †
			50		S4S6BM 50CDX -3/45.5 BG	
			55		S4S6BM 55CDX -3/45.5 BG	
	enviolo SP, CA (148 mm OLD)	48.7 mm	46	S4S6BM 46CDX -0/48.7 BG	N/A	
			50	S4S6BM 50CDX -0/48.7 BG		
			55	S4S6BM 55CDX -0/48.7 BG		

All are 4-bolt spiders as indicated by S4 in the part number.

"BG" at end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard.

* Requires use of Gates spider assemblies.

† CDC sprockets are approved for the EP8 motor when program-limited to 50 Nm of torque or less.

For hubs or beltlines not listed, please contact your Gates Carbon Drive technical representative or email CarbonDrive@Gates.com.

eBike SPIDER ASSEMBLIES

Reference Gates Carbon Drive eBike Integration Manual for detailed information.

STEPS E6100 ASSEMBLY SELECTION CHART

REAR HUB BRAND	COMPATIBLE HUBS	BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER**	3 MM OFFSET NODE ASSEMBLY PART NUMBER**	REAR SPROCKET TYPE
Shimano	Inter-5E (Di2)***	41.7 mm	39	N/A	S4S6BM 39CDX -3/41.7 BG	YMN-D
			42		S4S6BM 42CDX -3/41.7 BG	
	Nexus 8, Alfine 8/11 (Di2)***	41.7 mm	50	N/A	S4S6BM 50CDX -3/41.7 BG	XMN-D
			55		S4S6BM 55CDX -3/41.7 BG*	
	Inter-5E (Mechanical)	45.5 mm	39	S4S6BM 39CDX -0/45.5 BG	S4S6BM 39CDX -3/45.5 BG	YMN-U
			42	S4S6BM 42CDX -0/45.5 BG	S4S6BM 42CDX -3/45.5 BG	
	Nexus 7/8 Disc, Alfine 8/11 (Mechanical)	45.5 mm	46	S4S6BM 46CDX -0/45.5 BG	S4S6BM 46CDX -3/45.5 BG	XMN-U / XSE-U†
				S4S6BM 46CDC -0/45.5 BG†		
			50	S4S6BM 50CDX -0/45.5 BG	S4S6BM 50CDX -3/45.5 BG	
				S4S6BM 50CDC -0/45.5 BG†		
			55	S4S6BM 55CDX -0/45.5 BG*	S4S6BM 55CDX -3/45.5 BG	
				S4S6BM 55CDC -0/45.5 BG*†		
enviolo	enviolo CT, TR, SP, CA, CO (135/142 mm OLD)	45.5 mm	46	S4S6BM 46CDX -0/45.5 BG	S4S6BM 46CDX -3/45.5 BG	VMN / VSE†
				S4S6BM 46CDC -0/45.5 BG †		
			50	S4S6BM 50CDX -0/45.5 BG	S4S6BM 50CDX -3/45.5 BG	
				S4S6BM 50CDC -0/45.5 BG †		
			55	S4S6BM 55CDX -0/45.5 BG*	S4S6BM 55CDX -3/45.5 BG	
				S4S6BM 55CDC -0/45.5 BG*†		
	enviolo SP, CA (148 mm OLD)	48.7 mm	46	S4S6BM 46CDX -0/48.7 BG	N/A	
			50	S4S6BM 50CDX -0/48.7 BG		
			55	S4S6BM 55CDX -0/48.7 BG		

All are 4-bolt spiders as indicated by S4 in the part number.

"BG" at end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard.

* Compatibility with "T" Touring Cover only. Interference may occur with "C" City Cover. Custom covers may eliminate this interference.

** Requires use of Gates spider assemblies.

*** Requires use of Shimano MU-UR500 Di2 system.

† CDC sprockets are approved for the E6100 motor when program-limited to 50 Nm of torque or less.

For hubs or beltlines not listed, please contact your Gates Carbon Drive technical representative or email CarbonDrive@Gates.com.

eBike SPIDER ASSEMBLIES

Reference Gates Carbon Drive eBike Integration Manual for detailed information.

STEPS E5000 ASSEMBLY SELECTION CHART

REAR HUB BRAND	COMPATIBLE HUBS	BELTLINE	FRONT SPROCKET TEETH	CENTERED NODE ASSEMBLY PART NUMBER**	3 MM OFFSET NODE ASSEMBLY PART NUMBER**	REAR SPROCKET TYPE
Shimano	Inter-5E (Di2)***	41.7 mm	39	N/A	S4S5BM 39CDX -3/41.7 BG	YMN-D
			42		S4S5BM 42CDX -3/41.7 BG	
	Nexus 8, Alfine 8/11 (Di2)***	41.7 mm	50	N/A	S4S5BM 50CDX -3/41.7 BG	XMN-D
			55		S4S5BM 55CDX -3/41.7 BG*	
	Inter-5E (Mechanical)	45.5 mm	39	S4S5BM 39CDX -0/45.5 BG	S4S5BM 39CDX -3/45.5 BG	YMN-U
			42	S4S5BM 42CDX -0/45.5 BG	S4S5BM 42CDX -3/45.5 BG	
	Nexus 7/8 Disc, Alfine 8/11 (Mechanical)	45.5 mm	46	S4S5BM 46CDX -0/45.5 BG	S4S5BM 46CDX -3/45.5 BG	XMN-U/ XSE-U †
				S4S5BM 46CDC -0/45.5 BG †		
			50	S4S5BM 50CDX -0/45.5 BG	S4S5BM 50CDX -3/45.5 BG	
				S4S5BM 50CDC -0/45.5 BG †		
			55	S4S5BM 55CDX -0/45.5 BG*	S4S5BM 55CDX -3/45.5 BG	
				S4S5BM 55CDC -0/45.5 BG* †		
enviolo	enviolo CT, TR, SP, CA, CO (135/142 mm OLD)	45.5 mm	46	S4S5BM 46CDX -0/45.5 BG	S4S5BM 46CDX -3/45.5 BG	VMN / VSE †
				S4S5BM 46CDC -0/45.5 BG †		
			50	S4S5BM 50CDX -0/45.5 BG	S4S5BM 50CDX -3/45.5 BG	
				S4S5BM 50CDC -0/45.5 BG †		
			55	S4S5BM 55CDX -0/45.5 BG*	S4S5BM 55CDX -3/45.5 BG	
				S4S5BM 55CDC -0/45.5 BG* †		
	enviolo SP, CA (148 mm OLD)	48.7 mm	46	S4S5BM 46CDX -0/48.7 BG	N/A	
			50	S4S5BM 50CDX -0/48.7 BG		
			55	S4S5BM 55CDX -0/48.7 BG		

"BG" at end of Part Number specifies inclusion of an ISO compliant Black Guard. Alternatively "NG" would specify No Guard.

* Compatibility with "T" Touring Cover only. Interference may occur with "C" City Cover. Custom covers may eliminate this interference.

** Requires use of Gates spider assemblies.

*** Requires use of Shimano MU-UR500 Di2 system.

† CDC sprockets are approved only for mid-drive motors producing 50 Nm or less of torque.

For hubs or beltlines not listed, please contact your Gates Carbon Drive technical representative or email CarbonDrive@Gates.com.

CENTERTRACK FRONT SPROCKETS

THE CENTERTRACK SYSTEM PROVIDES MAXIMUM DURABILITY AND MINIMUM WEIGHT FOR ALL ENVIRONMENTS AND BIKE TYPES

CDN / CDC / CDX

The CenterTrack system includes a higher tensile strength belt, slimmer profile sprocket, and improved dirt and debris-shedding abilities. Dirt and grime simply fall away, making CenterTrack technology ideal for muddy or snowy conditions. The slender profile sprockets allow for additional chainstay clearance - making it easy to integrate with the latest generation of internal gear hubs and frame designs.

4-BOLT / 5-BOLT CDX

40

4-BOLT / 5-BOLT CDC

41

S550 DIRECT MOUNT

42

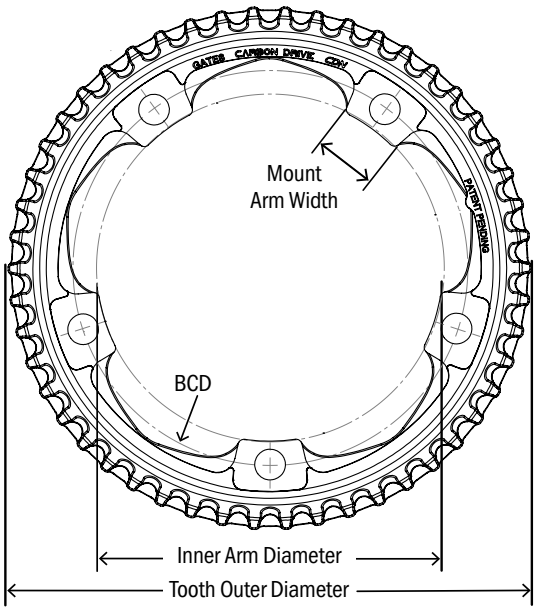
PINION

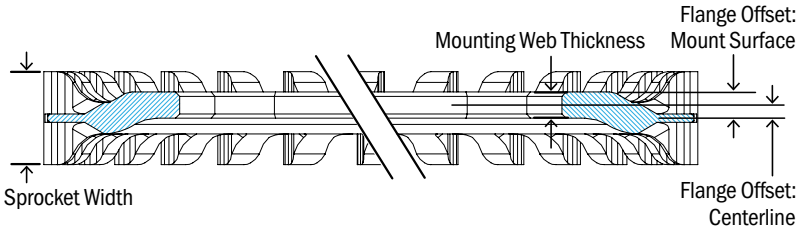
43

BOSCH GEN2 / REVONTE

44

FRONT SPROCKETS





Note: If using the Gates Carbon Drive system in an application where impact to the belt is possible by external objects (large rocks, logs, etc.), it is highly recommended that the bicycle have a structural-type "bash" guard to protect the belt from impact.

CDX FRONT SPROCKET

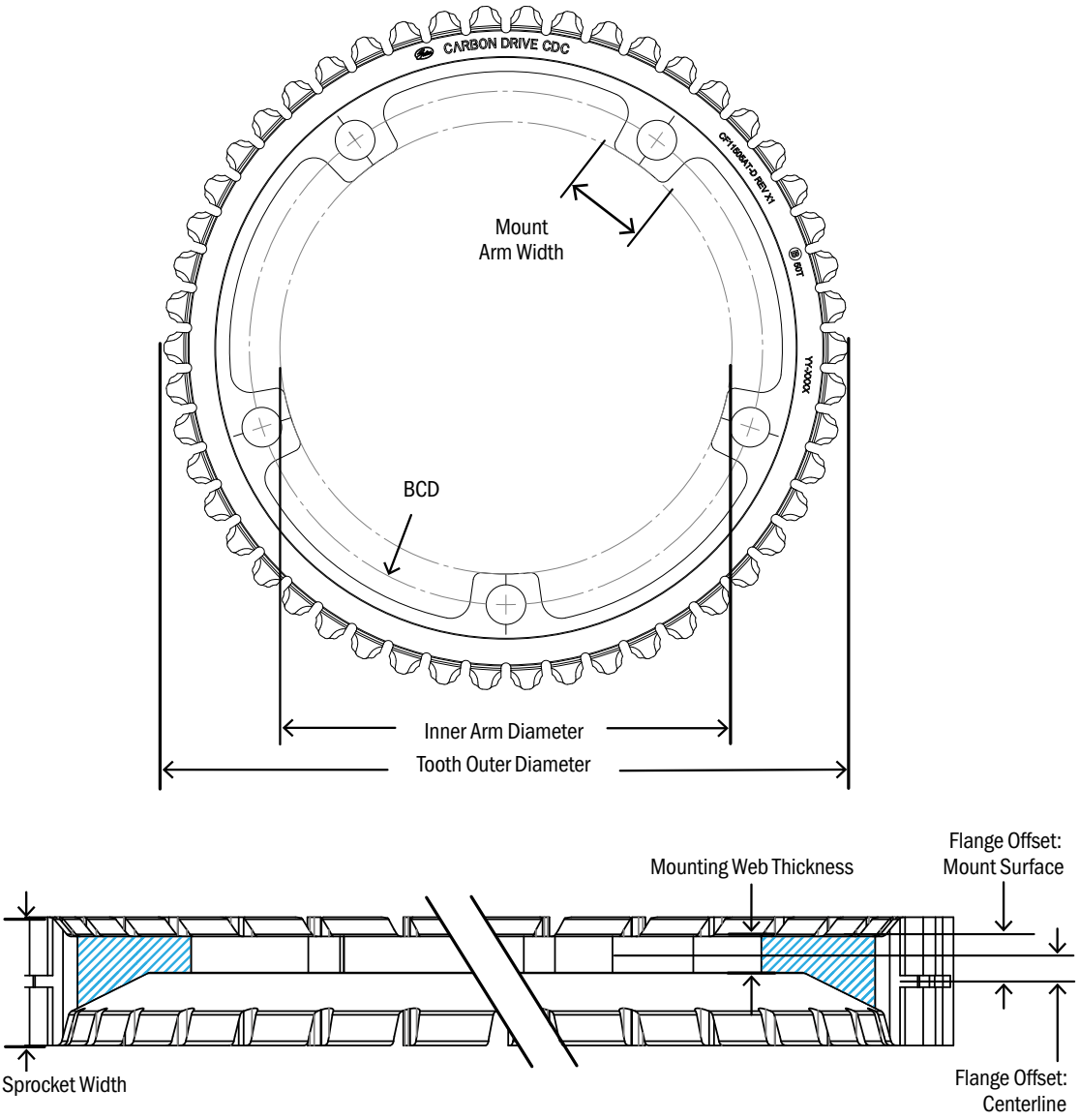
TEETH	NO. OF BOLT HOLES	PART NUMBER	MOUNTING ARM WIDTH	BCD	INNER ARM DIAMETER	TOOTH O.D.	MOUNTING WEB THICKNESS	SPROCKET WIDTH	FLANGE OFFSET MOUNT SURFACE	FLANGE OFFSET CENTERLINE
CDX										
39	4	CT11394AA	19	104	88.0	134.8	3.1	11.0	3.1	1.55
42		CT11424AA				145.2				
46		CT11464AA				159.3				
50		CT11504AA				173.2				
55		CT11554AA				190.7				
46	5	CT11465AA	18	130	114.5	159.3				
48		CT11485AA				166.2				
50		CT11505AA				173.2				
55		CT11555AA				190.7				
60		CT11605AA				208.2				
63		CT11635AA				218.7				
70		CT11705AA				243.2				
46		CT11465AA-D	17			159.3			3.85	2.3
50		CT11505AA-D				173.2				
55		CT11555AA-D				190.7				
60		CT11605AA-D				208.2				
CDX:EXP										
39	4	CT11394BA	19	104	88.0	134.8	3.1	11.0	3.1	1.55
46		CT11464BA				159.3				
50		CT11504BA				173.2				
55		CT11554BA				190.7				

CDN FRONT SPROCKET

TEETH	NO. OF BOLT HOLES	PART NUMBER	MOUNTING ARM WIDTH	BCD	INNER ARM DIAMETER	TOOTH O.D.	MOUNTING WEB THICKNESS	SPROCKET WIDTH	FLANGE OFFSET MOUNT SURFACE	FLANGE OFFSET CENTERLINE
46	5	CT11465CN	20.9	130	114.5	159.3	3.6	11.0	3.6	1.8
50		CT11505CN				173.2				
55		CT11555CN				190.7				

Note: CDN front sprockets are only available pre-assembled to S100, S150, or S250 cranksets.

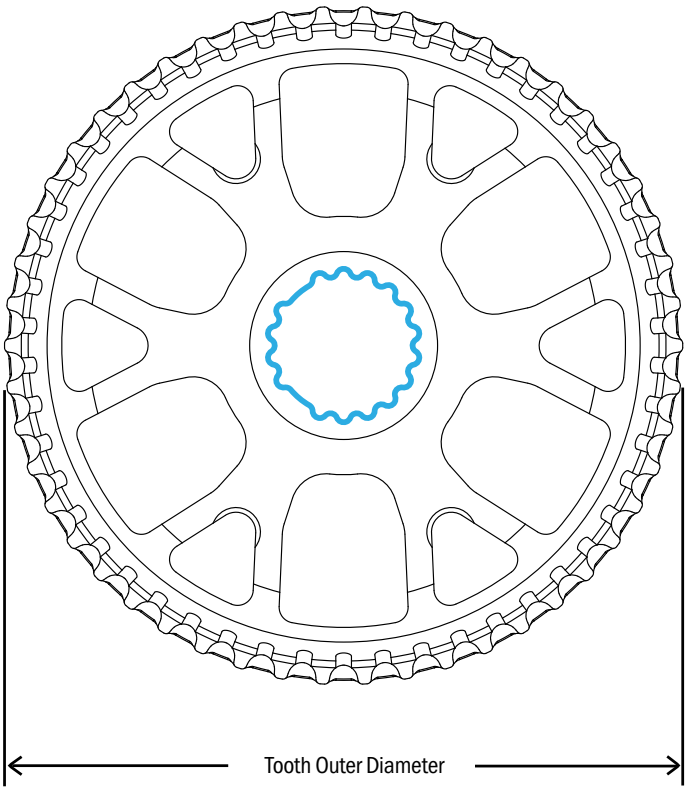
FRONT SPROCKETS

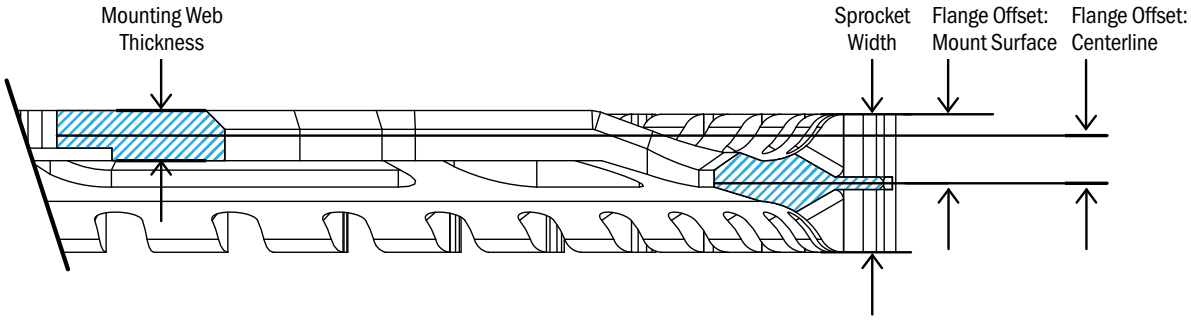


CDC FRONT SPROCKET

TEETH	NO. OF BOLT HOLES	PART NUMBER	MOUNTING ARM WIDTH	BCD	INNER ARM DIAMETER	TOOTH O.D.	MOUNTING WEB THICKNESS	SPROCKET WIDTH	FLANGE OFFSET MOUNT SURFACE	FLANGE OFFSET CENTERLINE
46	4	CF11464AT	19.00	104	88	159.23	3.10	11.00	3.10	1.8
46	5	CF11465AT-D	18.00	130	114.5	159.25	3.10	11.00	3.85	1.8
50	4	CF11504AT	19.00	104	88	173.23	3.10	11.00	3.10	1.8
50	5	CF11505AT-D	16.55	130	114.5	173.23	3.10	11.00	3.85	1.8
55	4	CF11554AT	20.00	104	88	190.70	3.10	11.00	3.10	1.8
55	5	CF11555AT-D	16.55	130	114.5	190.70	3.10	11.00	3.85	1.8
57	5	CF11575AT-D	16.55	130	114.5	197.71	3.10	11.00	3.85	1.8
60	5	CF11605AT-D	16.55	130	114.5	208.20	3.10	11.00	3.85	1.8

FRONT SPROCKETS





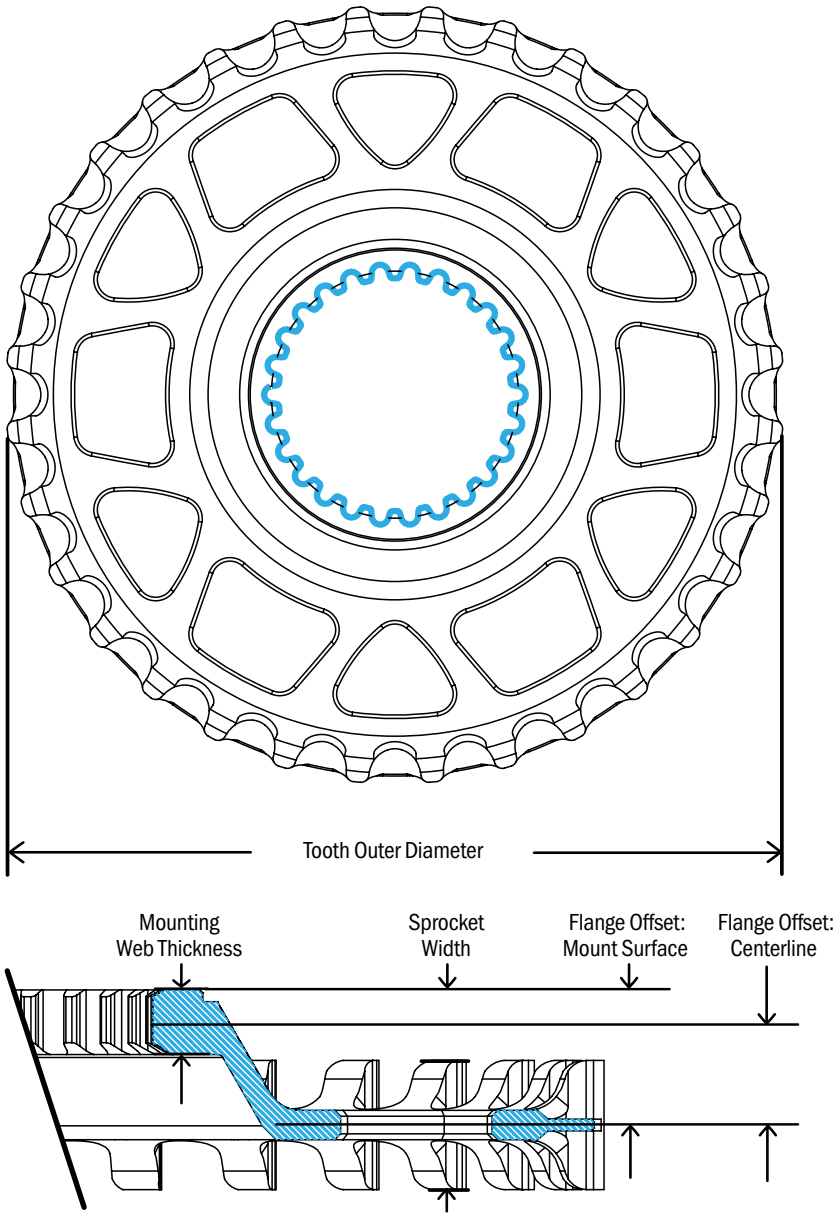
CDX:EXP MBA FRONT SPROCKET

TEETH	PART NUMBER	TOOTH O.D.	MOUNTING WEB THICKNESS	SPROCKET WIDTH	FLANGE OFFSET MOUNT SURFACE	FLANGE OFFSET CENTERLINE
46	CT1146MBA-5.8*	159.3	3.00	11.23	5.99	4.49
50	CT1150MBA-5.8*	173.2	3.00	11.23	5.99	4.49
55	CT1155MBA-5.8*	190.7	3.00	11.23	5.99	4.49
46	CT1146MBA-15.0**	159.3	3.00	20.50	15.00	13.50
50	CT1150MBA-15.0**	173.2	3.00	20.50	15.00	13.50
55	CT1150MBA-15.0**	190.7	3.00	20.50	15.00	13.50

* Reference assembly instructions, Rohloff and MTB beltlines 51.7 – 54.7

** Reference assembly instructions, interal gear hub beltlines 42.5 – 45.5

FRONT SPROCKETS

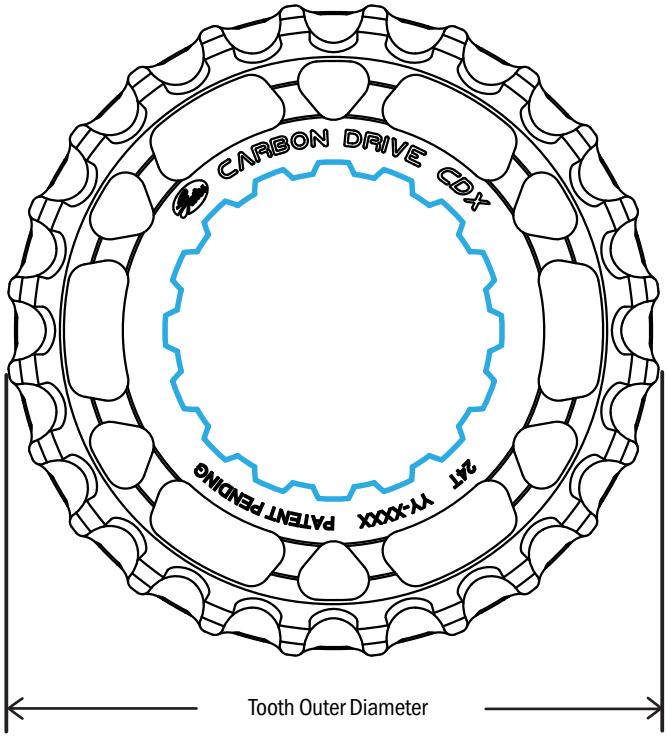


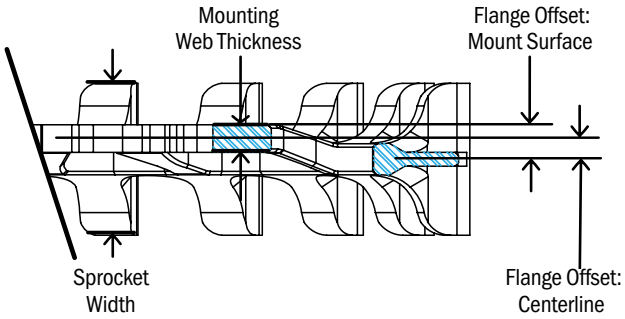
CDX PINION FRONT SPROCKET

TEETH	PART NUMBER	TOOTH O.D.	MOUNTING WEB THICKNESS	SPROCKET WIDTH	FLANGE OFFSET MOUNT SURFACE	FLANGE OFFSET CENTERLINE
CDX						
32	CT1132PMN	110.3	5.5	17.0	11.5	8.75
CDX:EXP						
39	CT1139PMN	134.8	5.5	17.0	11.5	8.75
CDX:SL						
32	CT1132PBA	110.3	5.5	17.0	11.5	8.75
39	CT1139PBA	134.8				

Note: Recommended rear sprocket see 9-spline page 48.

FRONT SPROCKETS





Shim Kit

Note: For additional eBike integration information, download Gates eBike integration manual. GatesCarbonDrive.com/eBike

ebike

CDX FRONT: BOSCH GEN2/REVONTE

TEETH	PART NUMBER	TOOTH O.D.	MOUNTING WEB THICKNESS	SPROCKET WIDTH	FLANGE OFFSET MOUNT SURFACE	FLANGE OFFSET CENTERLINE
22	CT1122BMN-K*	75.3	2.0	11.0	2.5	1.5
24	CT1124BMN-K*	82.3	2.0	11.0	2.5	1.5
26	CT1126BMN-K*	89.3	2.0	11.0	2.5	1.5
28	CT1128BMN-K*	96.3	2.0	11.0	2.5	1.5
22	CT1122BMN-0-R**	75.3	4.5**	11.0	8.2	6.0

* Must use shim kit and locknut provided by Gates. These part numbers includes the required shim kit and locknut.

** Rohloff-specific sprocket does not utilize shims.

CENTERTRACK REAR SPROCKETS

CDC / CDX

SHIMANO

9-SPLINE

9-SPLINE 6-BOLT

ENVIOLO

ROHLOFF

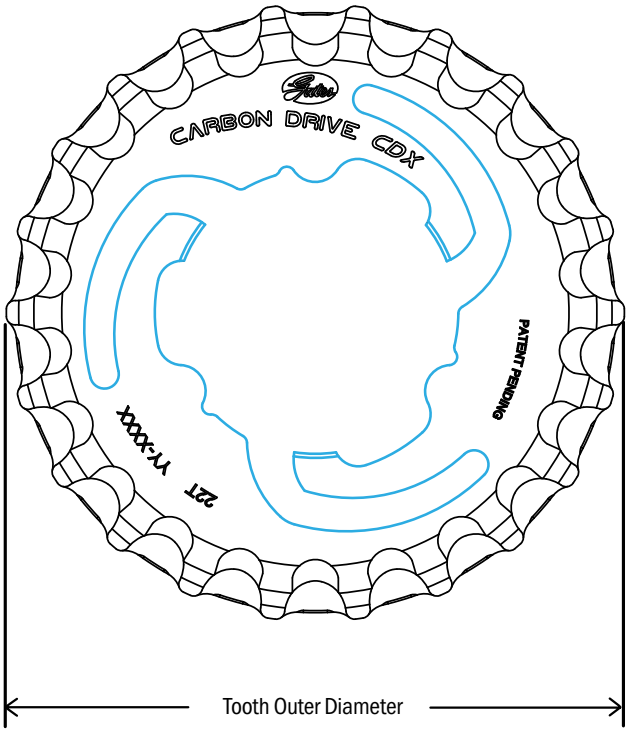
STURMEY-ARCHER

FREEWHEEL TRACK

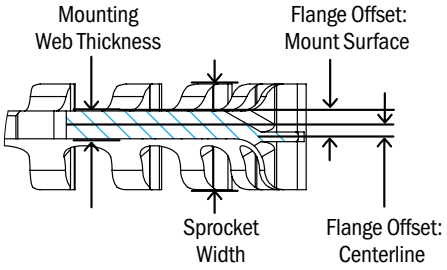
REAR SPROCKETS

SHIMANO

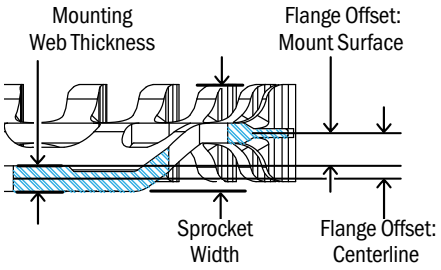
3-LOBE
FOR 3/7/8/11 SPEED HUBS



XMN-U
XMN



XMN-D
DMN



CDX REAR: SHIMANO SUREFIT 3-LOBE

TEETH	PART NUMBER	TOOTH OUTER DIAMETER	MOUNTING WEB THICKNESS	SPROCKET WIDTH	FLANGE OFFSET MOUNT SURFACE	FLANGE OFFSET CENTERLINE
SUREFIT 3-LOBE						
22	CT1122XMN*	75.3	2.9	11.0	0.9	-0.55
24	CT1124XMN*	82.3				
26	CT1126XMN*	89.3				
SUREFIT 3-LOBE - UNIFIED OFFSET						
22	CT1122XMN-U	75.3	2.9	11.0	2.7	1.25
24	CT1124XMN-U	82.3				
26	CT1126XMN-U	89.3				
SUREFIT 3-LOBE - SHIMANO DI2						
28	CT1128DMN**	96.3	2.9	12.1	3.71	5.16
28	CT1128XMN-D***	96.3	2.9	11.0	1.60	3.05

CDC REAR: SHIMANO SUREFIT 3-LOBE

TEETH	PART NUMBER	TOOTH OUTER DIAMETER	MOUNTING WEB THICKNESS	SPROCKET WIDTH	FLANGE OFFSET MOUNT SURFACE	FLANGE OFFSET CENTERLINE
SUREFIT 3-LOBE						
22	CT1122XSE*	75.3	2.9	11.0	0.9	-0.55
24	CT1124XSE*	82.3				
SUREFIT 3-LOBE - UNIFIED OFFSET						
22	CT1122XSE-U	75.3	2.9	11.0	2.7	1.25
24	CT1124XSE-U	82.3				
26	CT1126XSE-U	89.3				

* XMN sprocket type for 43.7 mm beltline will be discontinued for MY20/MY21, replaced by XMN-U for 45.5 mm beltline.

** DMN sprocket type for 39.8 mm beltline will be discontinued for MY20/MY21, replaced by XMN-D for 41.7 mm beltline.

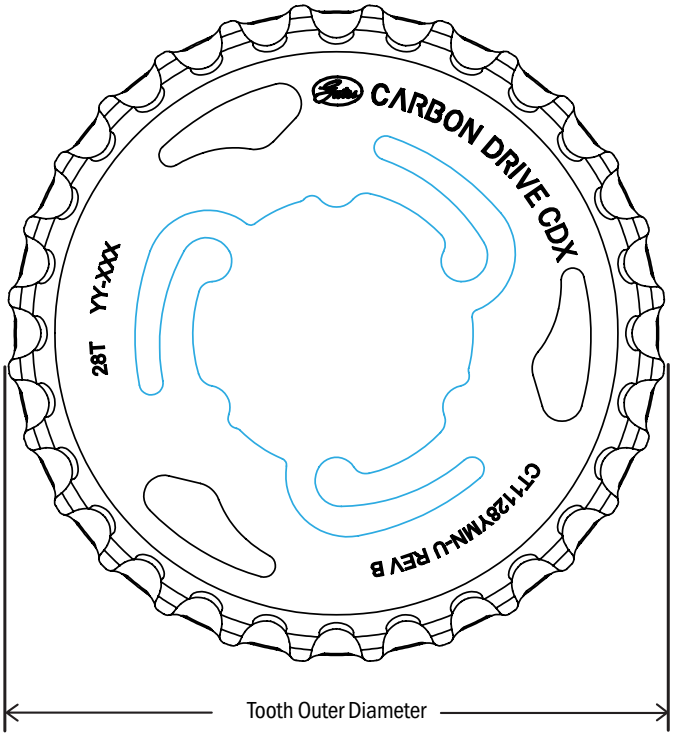
*** Requires use of Shimano MU-UR500 Di2 system.

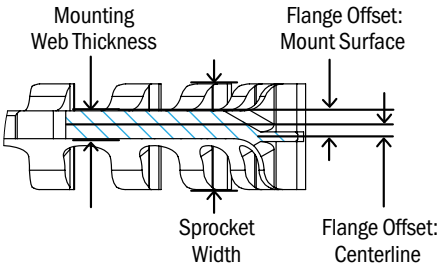
Note: NMN sprockets are no longer recommended for Shimano and SRAM 3-lobe hubs. Use XMN sprockets for optimal performance.

REAR SPROCKETS

SHIMANO

6-LOBE
FOR INTER-5E HUBS

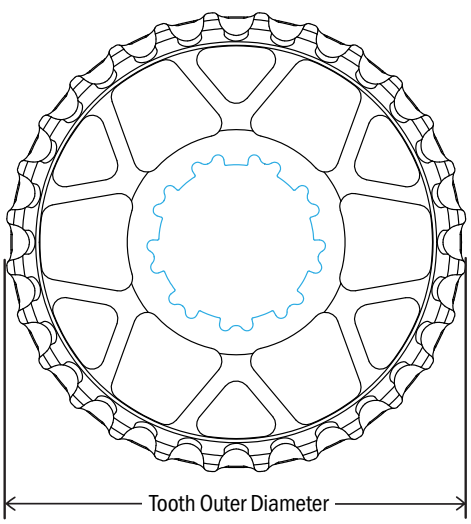


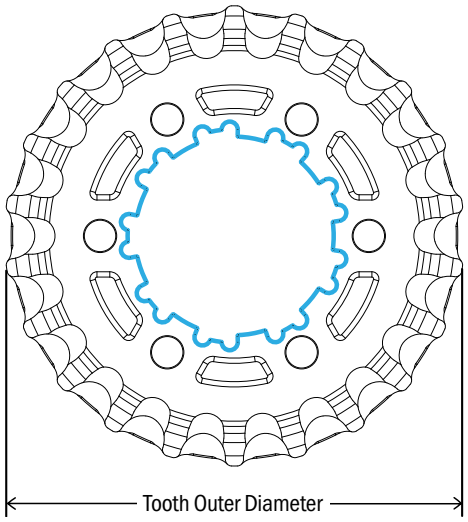


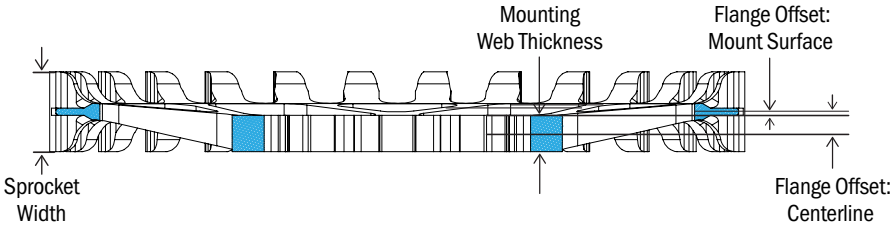
CDX REAR: SHIMANO SUREFIT 6-LOBE

TEETH	PART NUMBER	TOOTH OUTER DIAMETER	MOUNTING WEB THICKNESS	SPROCKET WIDTH	FLANGE OFFSET MOUNT SURFACE	FLANGE OFFSET CENTERLINE
SUREFIT 6-LOBE - UNIFIED OFFSET						
28	CT1128YMN-U	96.3	3.0	11.0	1.8	0.3
30	CT1130YMN-U	103.3				
32	CT1132YMN-U	110.3				
34	CT1134YMN-U	117.3				
36	CT1136YMN-U	124.3				
SUREFIT 6-LOBE - SHIMANO DI2						
28	CT1128YMN-D	96.3	3.0	11.0	-2.0	-3.5

REAR SPROCKETS





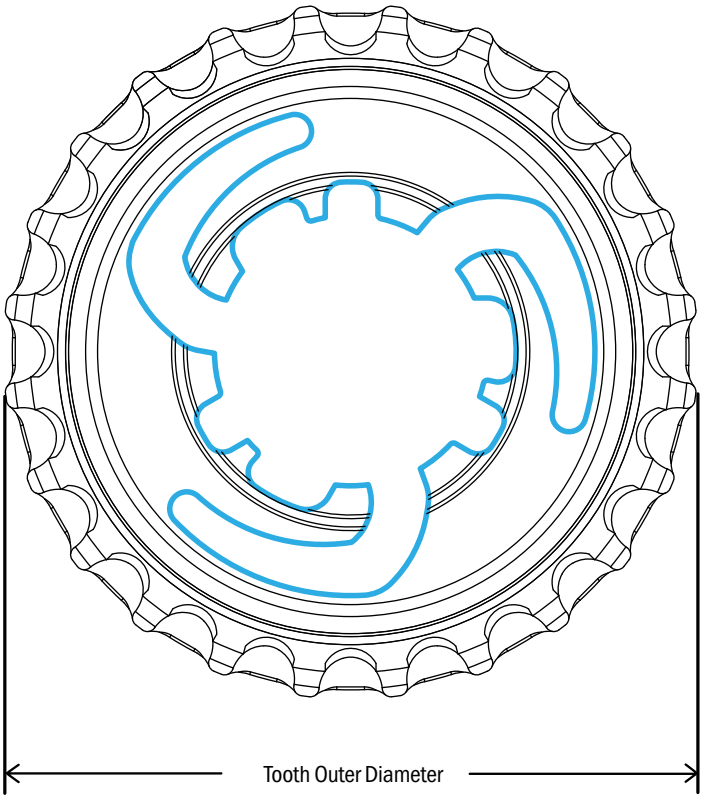


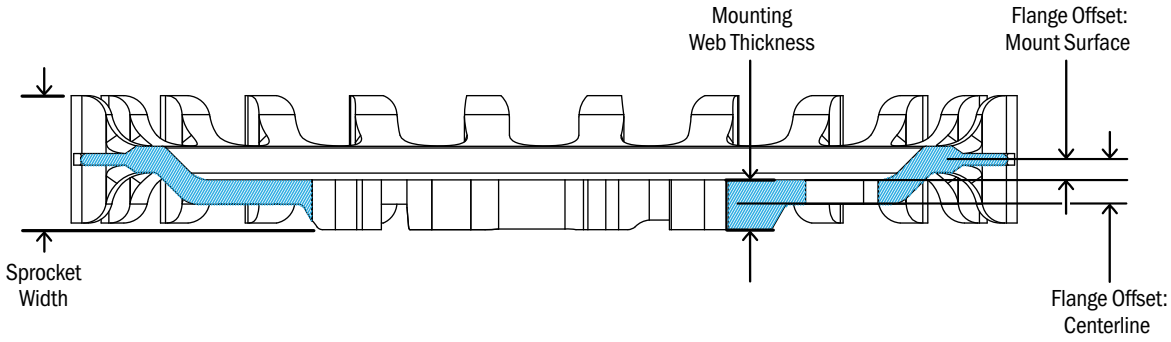
CDX/CDC REAR: 9-SPLINE

TEETH	PART NUMBER	TOOTH OUTER DIAMETER	MOUNTING WEB THICKNESS	SPROCKET WIDTH	FLANGE OFFSET MOUNT SURFACE	FLANGE OFFSET CENTERLINE
CDX						
19	CT1119SMN	64.8	5.0*	11.0	0.5	3.0
20	CT1120SMN	68.3				
21	CT1121SMN	71.8				
22	CT1122SMN	75.3				
23	CT1123SMN	78.8				
24	CT1124SMN	82.3				
26	CT1126SMN	89.3				
28	CT1128SMN	96.3				
30	CT1130SMN	103.3				
32	CT1132SMN	110.3				
34	CT1134SMN	117.3				
39	CT1139SMN	134.8				
CDX 9-SPLINE 6-BOLT						
22	CT1122HMN	75.3	2.35	11.0	2.1	2.25
CDX:SL						
24	CT1124SBA	82.3	5.0	11.0	0.5	3.0
26	CT1126SBA	89.3				
28	CT1128SBA	96.3				
30	CT1130SBA	103.3				
32	CT1132SBA	110.3				
34	CT1134SBA	117.3				
39	CT1139SBA	134.8				
CDC						
22	CT1122SVN	75.3	5.0	11.0	2.5	2.5

* Mounting Web Thickness has changed from 2.5 mm to 5.0 mm. Some stock of 2.5 mm remains. The beltline is unchanged but the removal of a spacer will be required.

REAR SPROCKETS

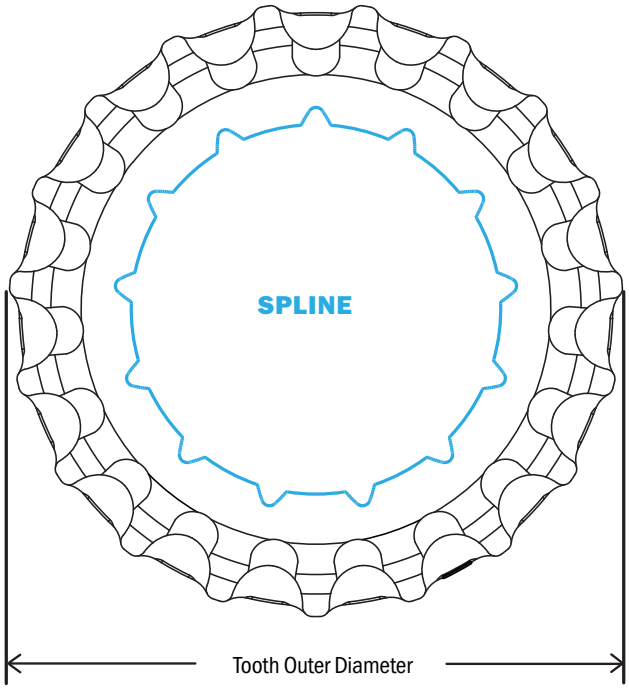


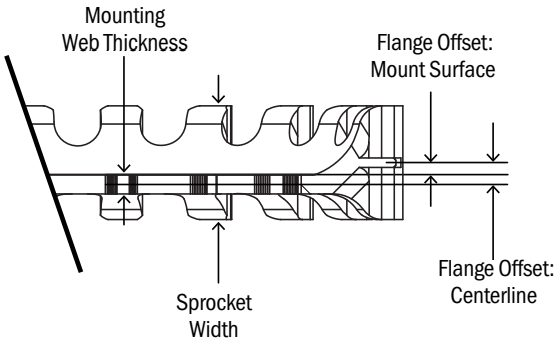


CDX REAR: ENVIOLO SUREFIT

TEETH	PART NUMBER	TOOTH OUTER DIAMETER	MOUNTING WEB THICKNESS	SPROCKET WIDTH	FLANGE OFFSET MOUNT SURFACE	FLANGE OFFSET CENTERLINE
CDX						
22	CT1122VMN	75.3	4.3	11.6	1.78	3.93
24	CT1124VMN	82.3				
26	CT1126VMN	89.3				
28	CT1128VMN	96.3				
CDC						
24	CT1124VSE	82.3	4.3	11.6	1.78	3.93
26	CT1126VSE	89.3				
28	CT1128VSE	96.3				

REAR SPROCKETS



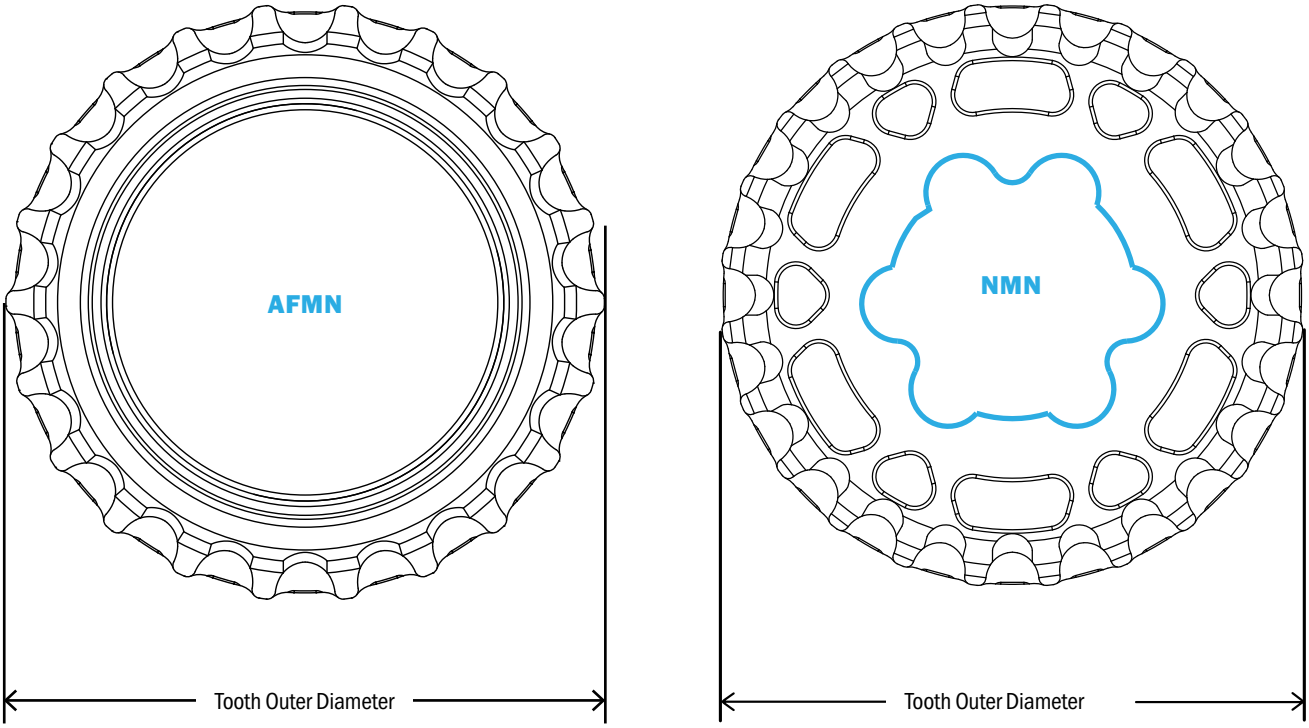


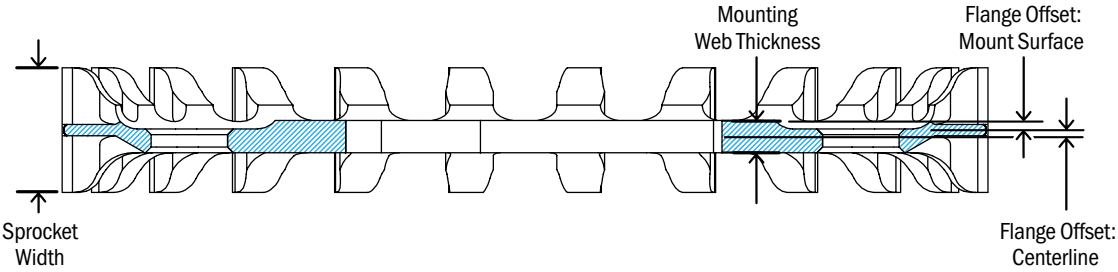
CDX:EXP REAR: ROHLOFF

TEETH	PART NUMBER	TOOTH OUTER DIAMETER	MOUNTING WEB THICKNESS	SPROCKET WIDTH	FLANGE OFFSET MOUNT SURFACE	FLANGE OFFSET CENTERLINE	INTERFACE	COLOR
ROHLOFF SPLINE*								
19	CT1119RSMN	64.85	2.0	12.0	-1.3	-2.3	ROHLOFF SPLINE	SILVER
20	CT1120RSMN	68.27						
22	CT1122RSMN	75.33						
19	CT1119RSSB	64.85	2.0	12.0	-1.3	-2.3	ROHLOFF SPLINE	BLACK
20	CT1120RSSB	68.27						
22	CT1122RSSB	75.33						

*Requires the Rohloff Splined Carrier 'L' (Art.#8540L), which secures the sprocket using a threaded lock-ring.

REAR SPROCKETS

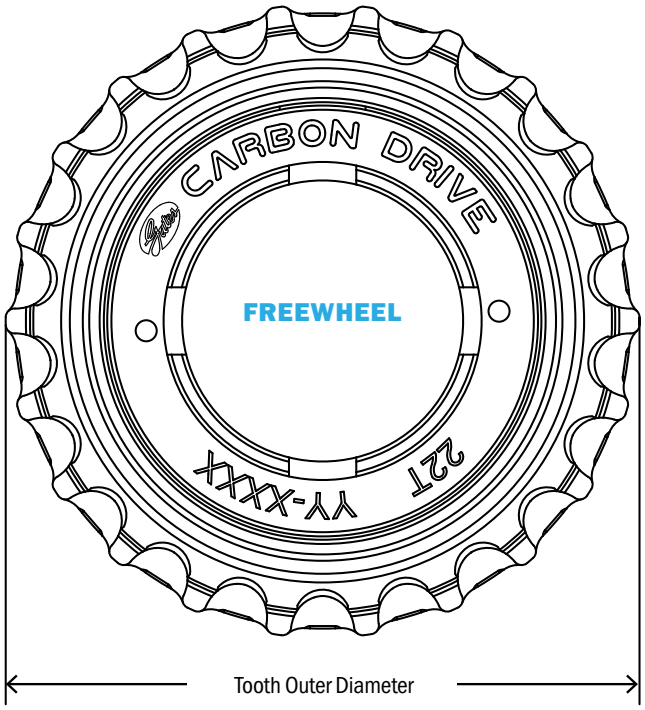


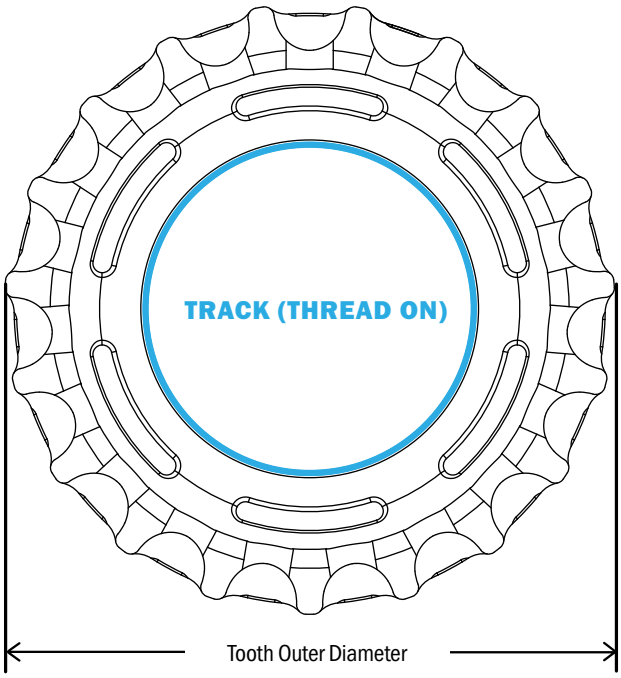


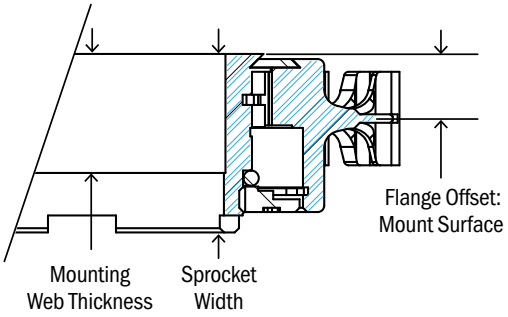
CDX REAR: STURMEY-ARCHER

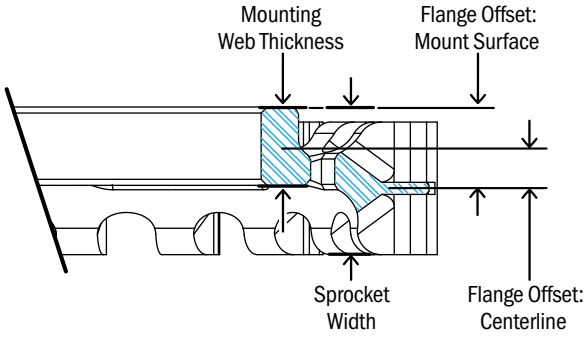
TEETH	PART NUMBER	TOOTH OUTER DIAMETER	DIAMETER OVER LOBE TIPS	INTERFACE	MOUNTING WEB THICKNESS	SPROCKET WIDTH	FLANGE OFFSET MOUNT SURFACE	FLANGE OFFSET CENTERLINE
3-LOBE								
22	CT1122NMN	75.3	31.9	3-LOBE	2.90	11.0	0.90	0.55
24	CT1124NMN	82.3	31.9	3-LOBE	2.90	11.0	0.90	0.55
26	CT1126AMN	89.3	46.9	3-LOBE	3.10	11.0	0.95	0.60
THREADED								
22	CT1122AFMN	75.3	N/A	M50X1.0 THREAD-ON	6.40	11.0	3.50	0.30

REAR SPROCKETS



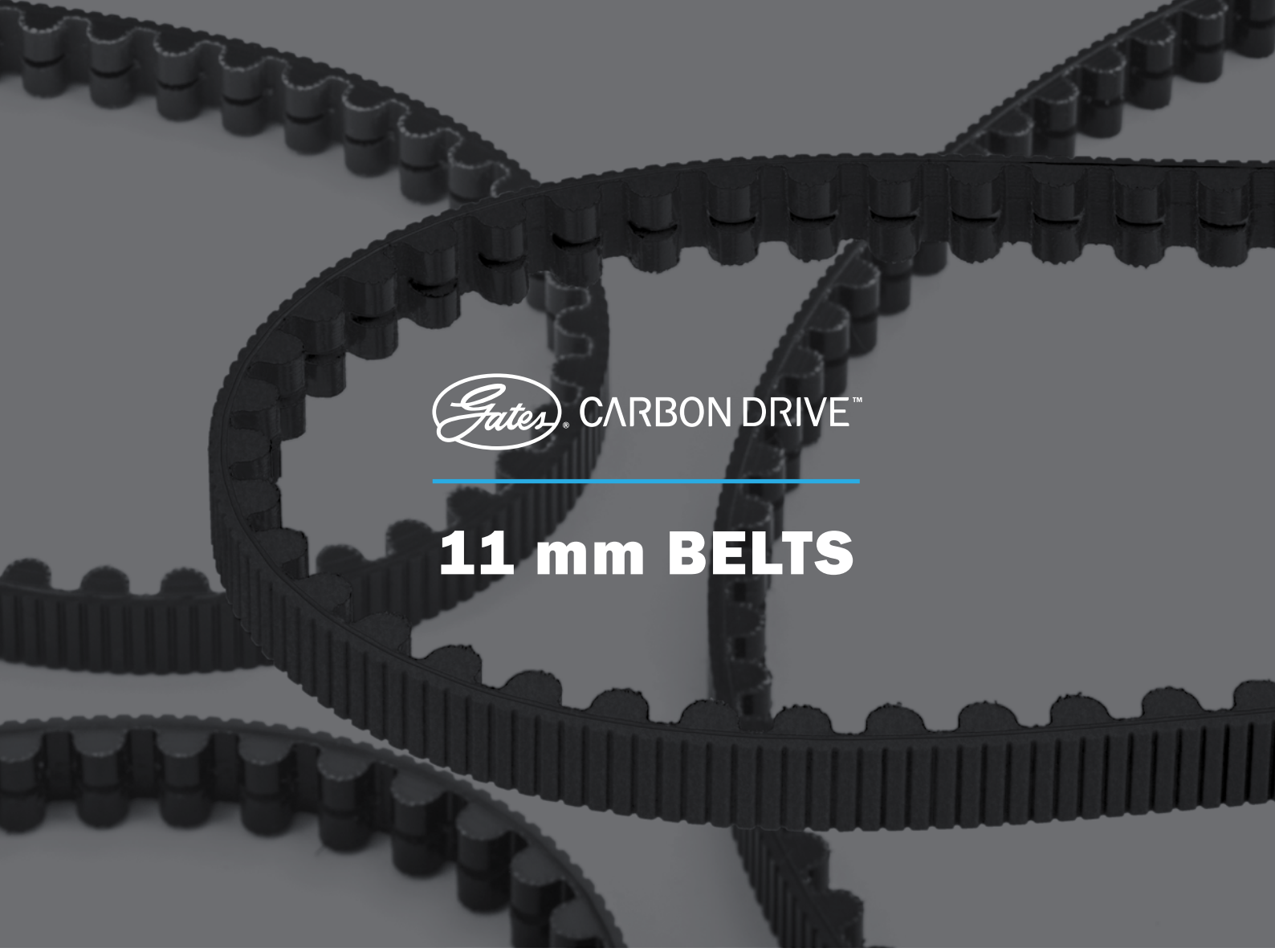






REAR FREEWHEEL / TRACK

TEETH	PART NUMBER	TOOTH OUTER DIAMETER	MOUNTING WEB THICKNESS	SPROCKET WIDTH	FLANGE OFFSET MOUNT SURFACE	FLANGE OFFSET CENTERLINE	THREAD COUNT
CDX FREEWHEEL							
22	CT1122WMN	75.3	14.0	18.5	6.90	N/A	1.370" x 24 RH
CDC FREEWHEEL							
22	CT1122WSE	75.3	14.0	21.0	6.90	N/A	1.370" x 24 RH
CDX TRACK (THREAD ON)							
19	CT1119FMN	64.8	6.5	12.5	6.75	3.5	1.370" x 24 RH
20	CT1120FMN	68.3					
21	CT1121FMN	71.8					
22	CT1122FMN	75.3					



Gates CARBON DRIVE™

11 mm BELTS

CDX

54

CDN

55

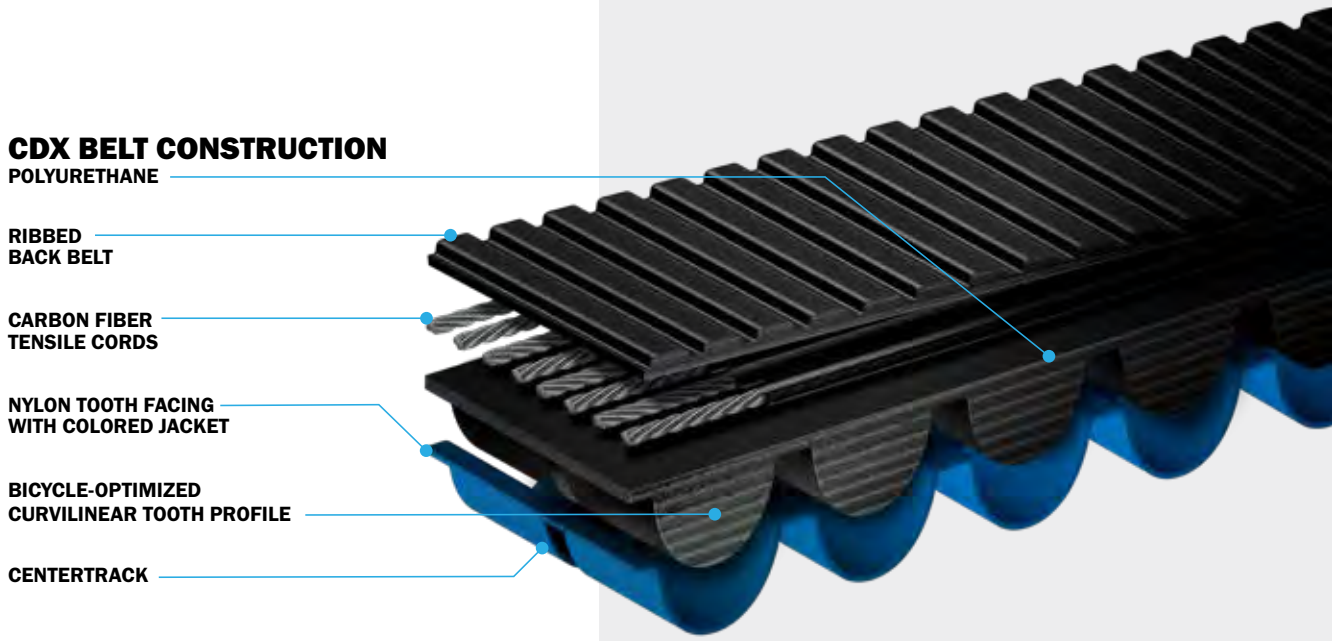
Gates CARBON DRIVE™

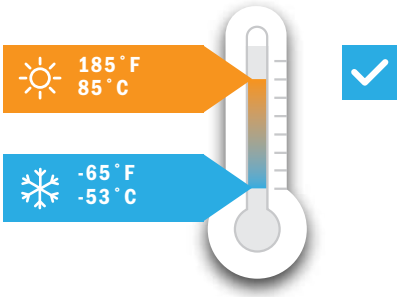
CDX™

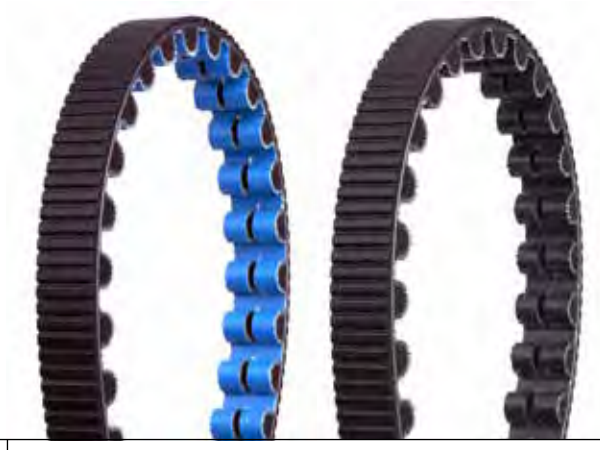
CLEAN, SMOOTH, SIMPLE

No lube required = no grease stains. Sheds dirt and grime, and cleaning with water is easy. Just get on it and ride. No chain = no chain clatter. It's spooky quiet. A Gates Carbon Drive System weighs less than a chain. Lighter weight means higher performance. The instant engagement and smooth feel is unlike anything you've experienced before. You've got to ride it to believe it.

CDX BELT CONSTRUCTION







CDX CENTERTRACK BELT (12 MM WIDTH)

TEETH	LENGTH	DESCRIPTION (SEE PRICE LIST FOR COLOR OPTIONS)
108	1188 mm	11M-108T-12CT
111	1221 mm	11M-111T-12CT
113	1243 mm	11M-113T-12CT
115	1265 mm	11M-115T-12CT
118	1298 mm	11M-118T-12CT
120	1320 mm	11M-120T-12CT
122	1342 mm	11M-122T-12CT
125	1375 mm	11M-125T-12CT
128	1408 mm	11M-128T-12CT
130	1430 mm	11M-130T-12CT
132	1452 mm	11M-132T-12CT
137	1507 mm	11M-137T-12CT
143	1573 mm	11M-143T-12CT
151	1661 mm	11M-151T-12CT
158	1738 mm	11M-158T-12CT
166	1826 mm	11M-166T-12CT
168	1848 mm	11M-168T-12CT
174	1914 mm	11M-174T-12CT

Gates CARBON DRIVE™

CDN™

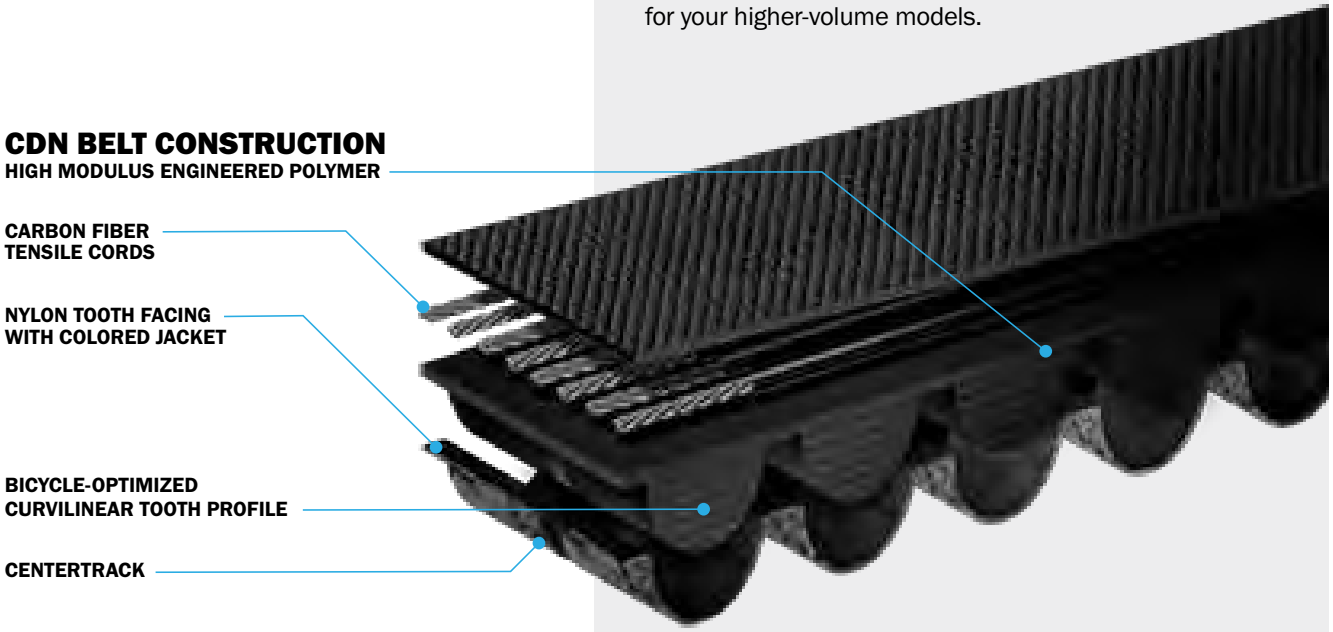
YOUR CARBON DRIVE NETWORK

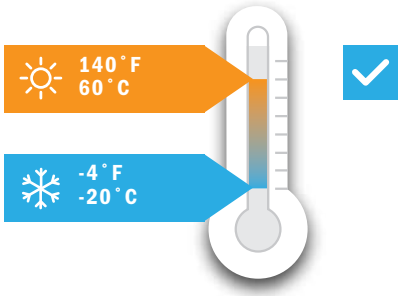
Everything city riders want in a belt drive - clean, quiet, light, and strong performance, now at a lower price point.

Gates has specially engineered a new high modulus polymer belt with no-stretch carbon fiber tensile cords, and has developed a high-strength reinforced composite sprocket with CenterTrack™ design.

Together, the new Carbon Drive CDN System delivers the reduced weight and optimal performance you count on from Gates, as well as new belt drive opportunities for your higher-volume models.

CDN BELT CONSTRUCTION



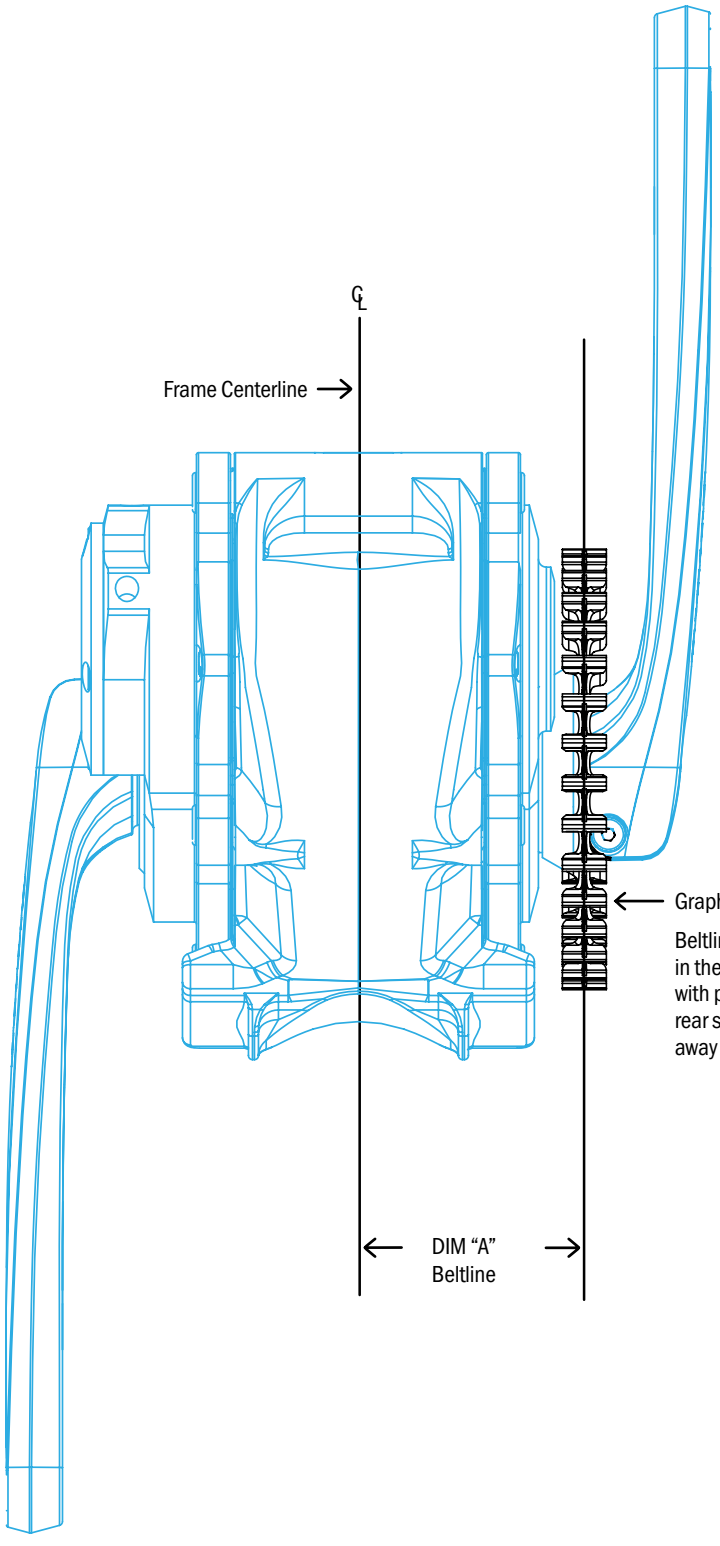


CDN CENTERTRACK BELT (12 MM WIDTH)

TEETH	LENGTH	DESCRIPTION (BLACK ONLY)
111	1221 mm	11M-111T-12CT CDN
113	1243 mm	11M-113T-12CT CDN
115	1265 mm	11M-115T-12CT CDN
118	1298 mm	11M-118T-12CT CDN
120	1320 mm	11M-120T-12CT CDN
122	1342 mm	11M-122T-12CT CDN
125	1375 mm	11M-125T-12CT CDN
128	1408 mm	11M-128T-12CT CDN
130	1430 mm	11M-130T-12CT CDN
132	1452 mm	11M-132T-12CT CDN

Note: The CDN System is not approved for use on mountain bikes, mid-drive eBikes or gear boxes, fixed gear bikes, or high mileage trekking/touring bikes.

BELTLINE SPECIFICATION

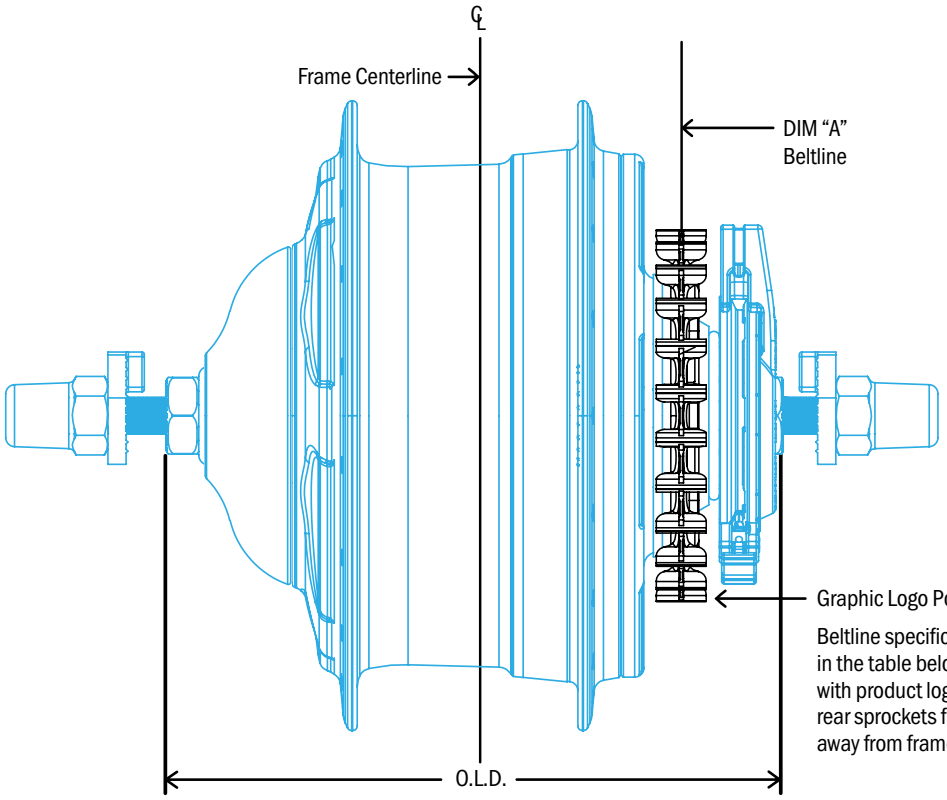


Beltline specifications, as listed in the table below are defined with product logos/graphics on rear sprockets facing outward, away from frame centerline.

CDX MID-MOUNT DRIVE SYSTEMS: PINION

MANUFACTURER	DESCRIPTION	MODEL NUMBER	DIM "A" BELTLINE
Pinion	Gearbox	P-Line	56.5
		C-Line	52.5

BELTLINE SPECIFICATION

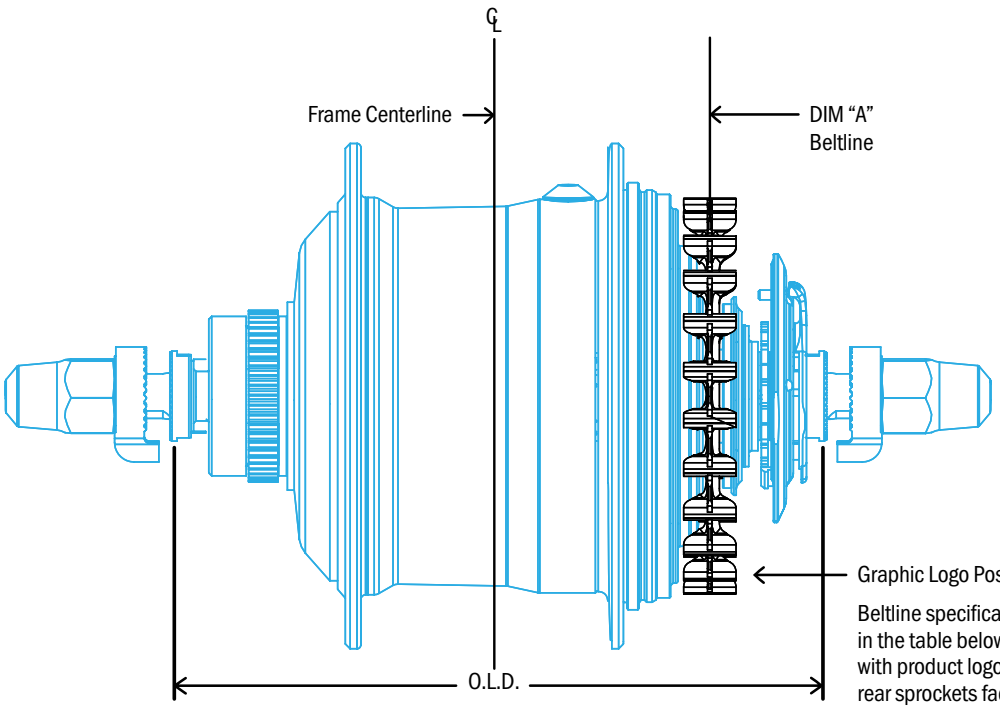


Beltline specifications, as listed in the table below are defined with product logos/graphics on rear sprockets facing outward, away from frame centerline.

CDX/CDC INTERNAL GEAR HUB BELTLINE: ENVIOLO

MANUFACTURER	HUB DESCRIPTION	OLD	BRAKE TYPE	HUB PRODUCT NUMBERS	DIM "A" BELTLINE	REAR SPROCKET CARBON DRIVE GROUP
enviolo	CVP	135/142	Disc, Rim, Roller	enviolo CT, TR, SP, CA, CO	45.5	VMN / VSE
		148	Disc, Rim	enviolo SP, CA	48.7	

BELTLINE SPECIFICATION



Beltline specifications, as listed in the table below are defined with product logos/graphics on rear sprockets facing outward, away from frame centerline.

CDX/CDC INTERNAL GEAR HUB BELTLINE: SHIMANO

MANUFACTURER	HUB DESCRIPTION	OLD	BRAKE TYPE	HUB PRODUCT NUMBERS	DIM "A" BELTLINE	REAR SPROCKET CARBON DRIVE GROUP
Shimano	Alfine 11	135	Disc	SG-S700	43.7* / 45.5	XMN*, XSE / XMN-U, XSE-U
	Alfine 11 Di2**			SG-S705	41.7	XMN-D
	Alfine 8			SG-S7001-8	43.7* / 45.5	XMN*, XSE / XMN-U, XSE-U
	Alfine 8 Di2**			SG-S7051-8	41.7	XMN-D
	Inter-5E			SG-S7000-5	45.5	YMN-U
	Inter-5E Di2			SG-S7050-5	41.7	YMN-D
	Nexus 3	127	Coaster	SG-3C41	41.2*	XMN* / XSE
		120		SG-3C41	42.7*	
	Nexus 3****	135	Disc	SG-3D55	43.7	NMN
	Nexus 7	130	Roller	SG-C3000-7R	42.1*	XMN* / XSE
		127	Coaster	SG-C3000-7C	43.3*	
		135	Disc	SG-C3001-7D	45.7	XMN-U / XSE-U
	Nexus 8 ***			SG-C6001-8D, SG-C6001-8CD	43.7* / 45.5	XMN*, XSE / XMN-U, XSE-U
		132	Roller, Rim	SG-C6011-8R, SG-C6001-8R, SG-C6011-8V, SG-C6001-8V	44.6*	XMN* / XSE
		132.3	Coaster	SG-C6001-8C	44.8*	XMN* / XSE
	Nexus 8 Di2**	135	Disc, Roller, Coaster	SG-C6061-8R, SG-C6061-8C, SG-C6061-8D, SG-C6061-8CD	41.7	XMN-D

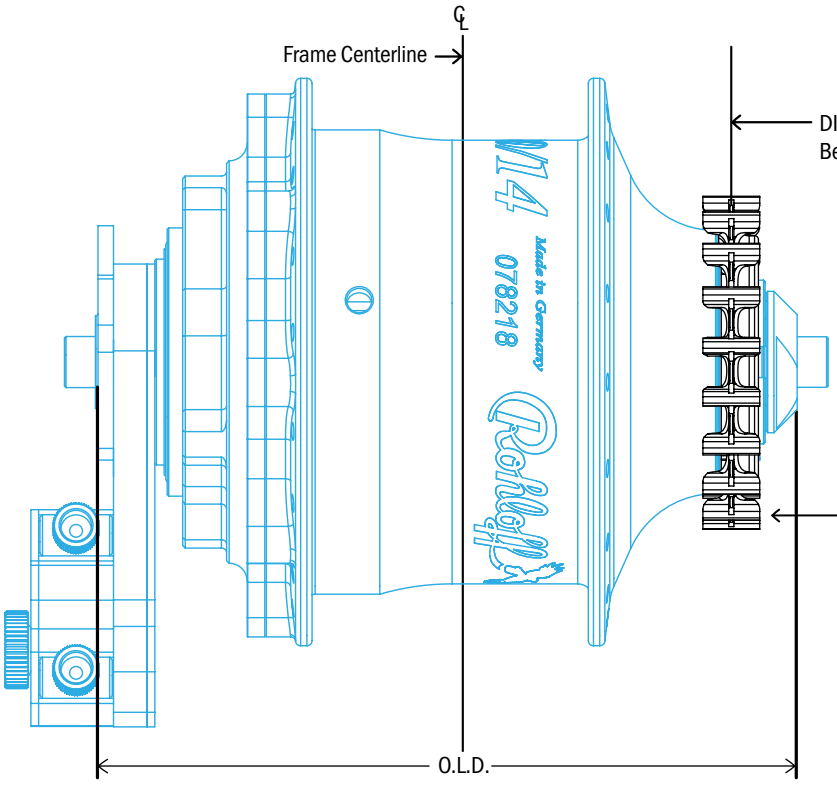
* XMN sprocket type for 43.7 mm beltline will be discontinued for MY20/MY21, replaced by XMN-U for 45.5 mm beltline

** Requires use of Shimano Di2 motor MU-UR500

*** For 22T sprockets on all mechanical 8-speed hub combinations, customers should order "Right hand dust cap B for INTER-8"

**** 6-lobe driver is not compatible with XMN sprockets

BELTLINE SPECIFICATION



Beltline specifications, as listed in the table below are defined with product logos/graphics on rear sprockets facing outward, away from frame centerline.

CDX INTERNAL GEAR HUB BELTLINE: ROHLOFF

MANUFACTURER	HUB DESCRIPTION	OLD	BRAKE TYPE	HUB PRODUCT NUMBERS	DIM "A" BELTLINE	REAR SPROCKET CARBON DRIVE GROUP
Rohloff	SpeedHUB	135/142	Disc	500/14	54.7	RMN-E / RSMN* / RSSB*
		148			51.7	
		170/177		XL 500/14	72.2	
		190/197		XXL 500/14		

Note: Rohloff integrations require a snubber. See Gates Rohloff specific manual for additional information.
*Requires the Rohloff Splined Carrier 'L' (Art.#8540L), which secures the sprocket using a threaded lock-ring.

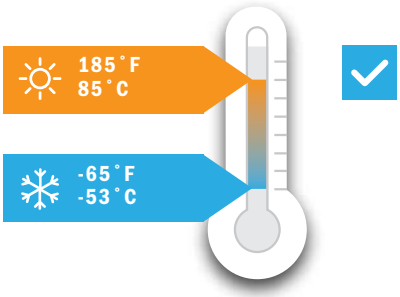
Gates CARBON DRIVE™

TANDEM PRODUCTS

LATEST GROWTH OF OFFERINGS ALLOWS GREATER COMPATIBILITY

Gates Carbon Drive provides the ideal power transmission solution between tandem captains and stokers. When compared to traditional chain tandem stoker drives, Gates CDX CenterTrack belts and sprockets deliver a cleaner, quieter, smoother ride, and last significantly longer than chains so you can spend less time worrying about maintenance and more time enjoying the ride.

Our first generation tandem sprockets and belt feature an 8mm tooth pitch along with our proven CenterTrack technology. Recent expansion of our 11 mm belt offerings now allow for greater compatibility with more tandem boom lengths. Refer to the CDX Tandem Stoker Drive chart to identify the proper drive solution for your frame. If you don't see an option that matches your frame or for help selecting the correct components, please contact us at **CarbonDrive@gates.com**.



CDX CENTERTRACK BELT (12 MM WIDTH)

TEETH	LENGTH	DESCRIPTION
250	2000 mm	8M-250T-12CT

Note: New longer length 11 mm pitch belt sizes now enable the use of standard CDX front sprockets for certain tandem timing applications. Contact **CarbonDrive@Gates.com** for more information.

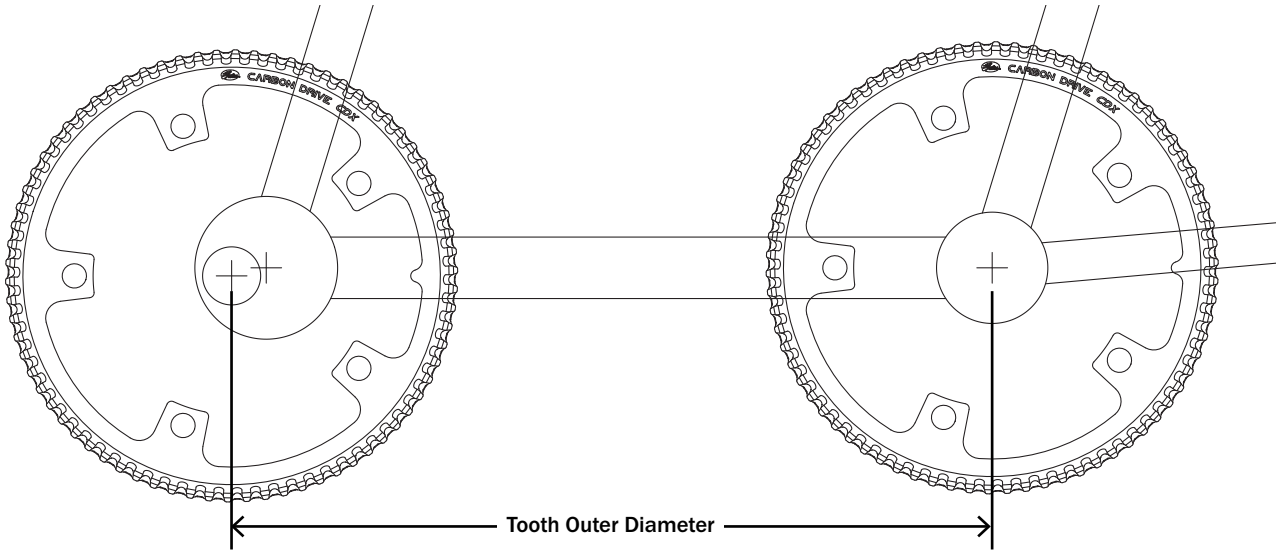
CDX TANDEM SPROCKETS – 8 MM*

TEETH	NO. OF BOLT HOLES	PART NUMBER	MOUNTING ARM WIDTH	BCD	INNER ARM DIAMETER	TOOTH O.D.	MOUNTING WEB THICKNESS	SPROCKET WIDTH	FLANGE OFFSET MOUNT SURFACE	FLANGE OFFSET CENTERLINE
66	5	CT08665AA	21	130	114.5	166.3	3.1	11.0	3.1	1.55
69		CT08695AA				174.2				
74		CT08745AA				186.8				

* 8 mm Tandem sprockets and standard 11 mm front sprockets are not interchangeable.

CDX TANDEM PRODUCTS

LONGER LASTING
REDUCES WEIGHT AND MAINTENANCE



The Gates Carbon Drive tandem stoker drive saves a significant amount of weight, reduces maintenance, and lasts longer than an equivalent chain stoker drive; and because the frame does not require a break to use the belt, the system can be retrofitted. However, it is important to note that its use is limited to frames that meet the center distance requirements.

To retrofit the drive, there needs to be enough room to both install the drive, and to tension it. Two measurements will need to be taken, the first at the minimum center distance (where the EBB is closest to the standard BB), and at the maximum center distance (where the EBB is furthest from the standard BB). There is not a lot of adjustment with an eccentric bottom bracket, so careful measurement is necessary. The chart below identifies the Install Center Distance, Actual Center Distance, and Recommended Total Travel of the three options. To ensure the drive will fit, the minimum center distance measured must be less than the Install Center Distance, and the maximum center distance measured must be more than the Recommended Total Travel. If you have any questions about fitment, contact Gates Carbon Drive for assistance.

CDX TANDEM STOKER DRIVE

SPROCKET TEETH	BELT	PITCH	INSTALL DISTANCE	ACTUAL CENTER	RECOMMENDED TOTAL TRAVEL
39	174	11 mm	738.30	742.30	745.30
39	168	11 mm	705.30	709.30	712.30
39	166	11 mm	694.30	698.30	701.30
42	174	11 mm	722.01	726.01	729.01
42	168	11 mm	689.01	693.01	696.01
42	166	11 mm	678.01	682.01	685.01
46	174	11 mm	700.30	704.30	707.30
46	168	11 mm	667.30	671.30	674.30
66	250	8 mm	732.44	736.44	739.44
69	250	8 mm	720.60	724.60	727.60
74	250	8 mm	700.86	704.86	707.86

* Available in 4-bolt 104 BCD Only.

** Available in 5-bolt 130 BCD Only. Only compatible with 250 tooth, 8 mm belt.

INTRODUCING SIDETRACK

SIDETRACK CRANKSET

64–65

SIDETRACK REAR SPROCKETS

66

SIDETRACK BELT

67–68

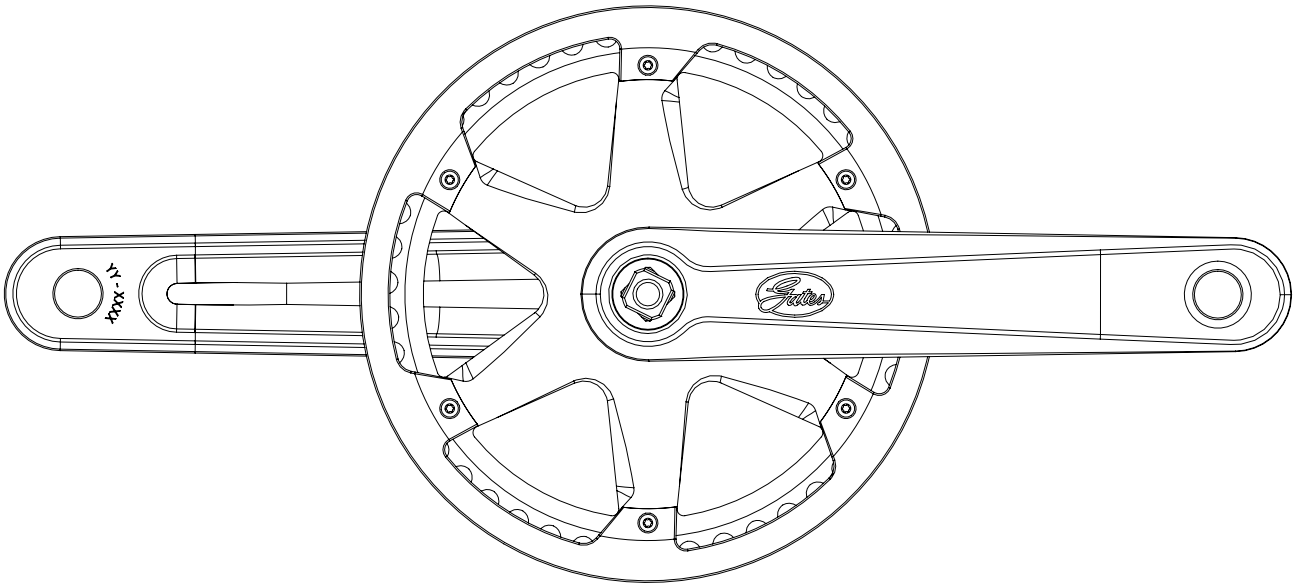
CARBON DRIVE™

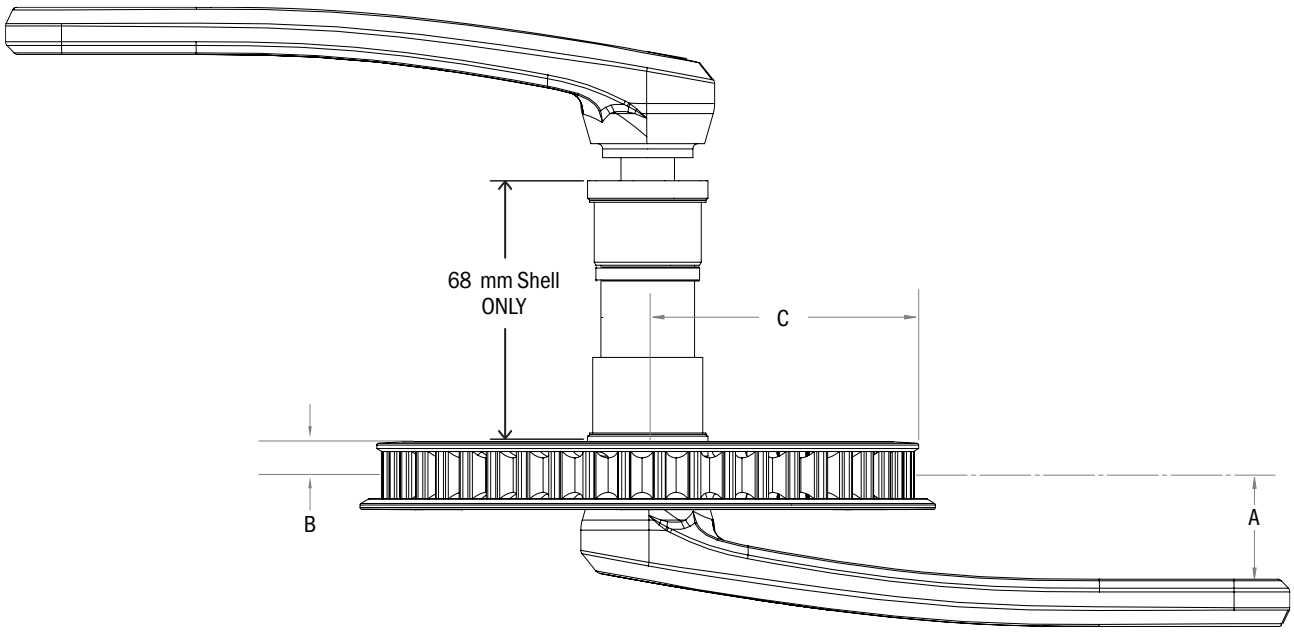
S050

CRANKSET SPECIFICATIONS

- Provides the specific beltline required when paired with recommended bottom bracket
- Saves valuable time in production
- Concentric assembly minimizes variation of belt tension
- Recommended bottom bracket: ZUMBA, from Thun
- 160 and 170 mm crank length options
- Available in black or matte silver
- Includes ISO compliant composite guard

SIDETRACK CRANKSET



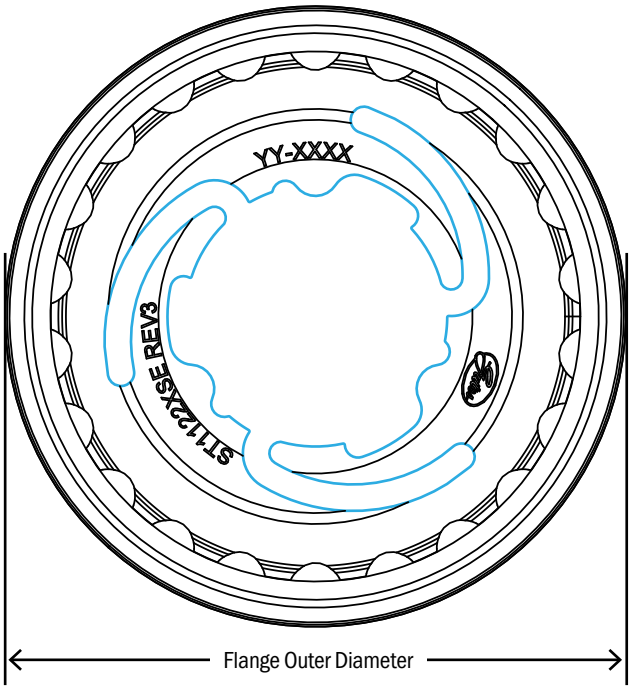


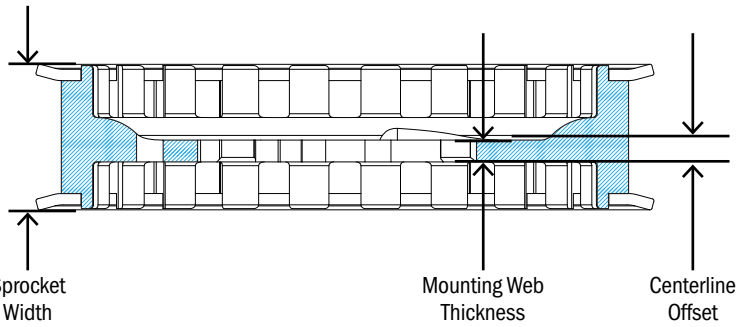
S050 CRANKSET FOR USE WITH SIDETRACK SPROCKETS

TEETH	PART NUMBER	ARM LENGTH	DIMENSION (MM)		
			A	B	C
46	FC S050 JIS 170BM 46T	170	29.75	9.1	86
46	FC S050 JIS 170SM 46T	170			86
50	FC S050 JIS 170BM 50T	170			93
60	FC S050 JIS 160BM 60T	160			110.5

For beltline and bottom bracket selection, refer to page 68.

SIDETRACK REAR SPROCKETS





SIDETRACK REAR SPROCKET

TEETH	PART NUMBER	FLANGE OUTER DIAMETER	MOUNTING WEB THICKNESS	SPROCKET WIDTH	CENTERLINE OFFSET
3-SPEED SHIMANO SUREFIT 3-LOBE/6-LOBE					
22	ST1122XSE+3.3	82	2.9	19.3	3.3
FREEHUB 9-SPLINE					
22	ST1122SSE	82	5	19.3	0.5
ISO THREADED FIXED					
22	ST1122FSE	82	6.5	18.0	6.8

Gates CARBON DRIVE™

SIDETRACK™

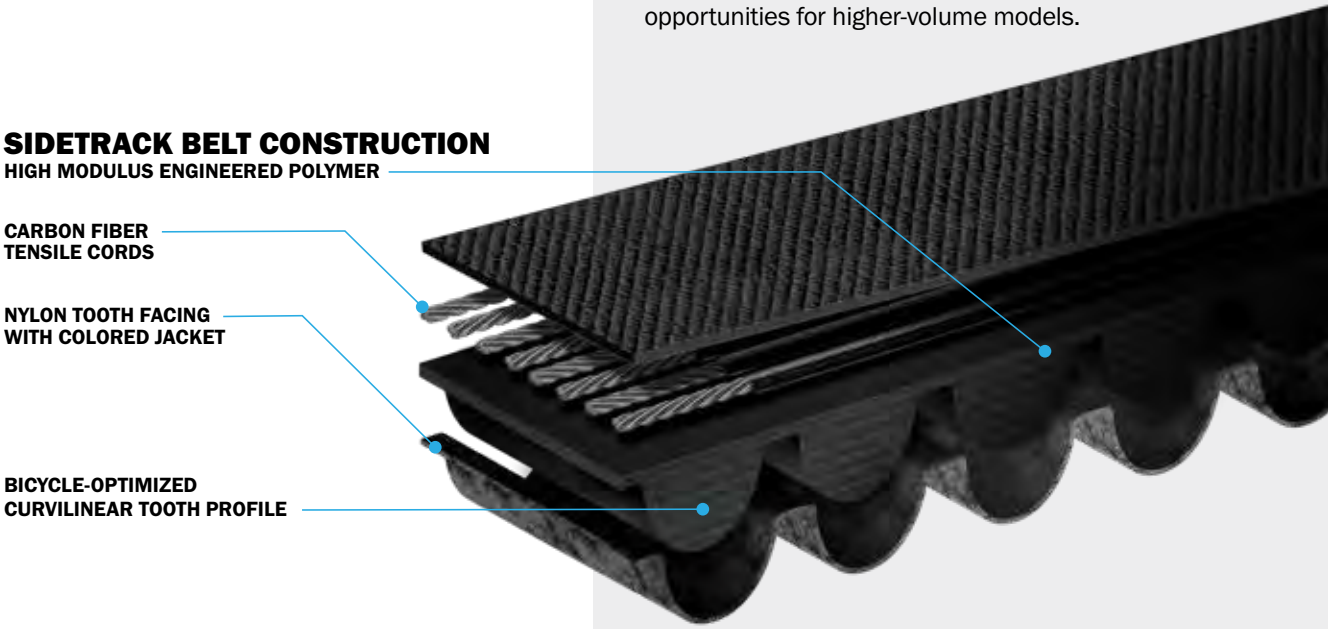
NEW: RECREATIONAL RIDING

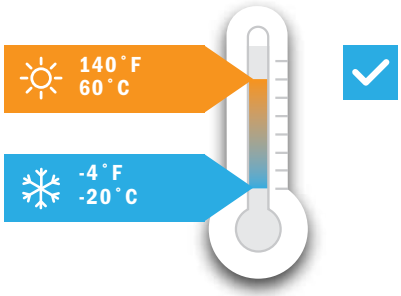
Clean, quiet, light, and strong performance, ideal for recreational bicycles.

The same specially engineered high modulus polymer belt with no-stretch carbon fiber tensile cords as our CDN belts. Manufactured in our Dumfries, Scotland plant. Not compatible with any CenterTrack product.

The new Carbon Drive SideTrack system delivers the reduced weight and optimal performance you count on from Gates, expanding new belt drive opportunities for higher-volume models.

SIDETRACK BELT CONSTRUCTION



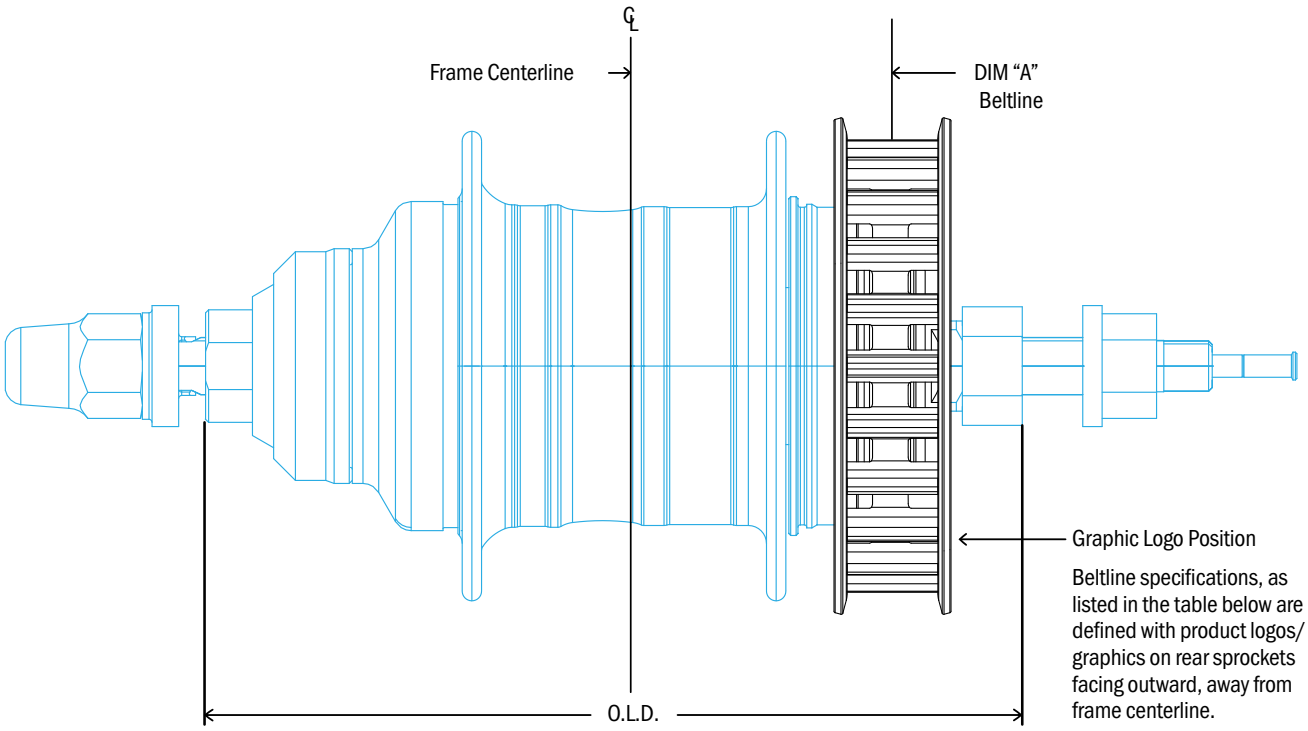


SIDETRACK BELT (12 MM WIDTH)

TEETH	LENGTH	DESCRIPTION (BLACK ONLY)
111	1221 mm	11M-111T-12 SIDETRACK BLACK
113	1243 mm	11M-113T-12 SIDETRACK BLACK
115	1265 mm	11M-115T-12 SIDETRACK BLACK
118	1298 mm	11M-118T-12 SIDETRACK BLACK
120	1320 mm	11M-120T-12 SIDETRACK BLACK
122	1342 mm	11M-122T-12 SIDETRACK BLACK

Note: The SideTrack system is not approved for use on mountain bikes, eBikes or gear boxes, fixed gear bikes, or high mileage trekking/touring bikes.

SIDETRACK BELTLINE SPECIFICATION



Beltline specifications, as listed in the table below are defined with product logos/ graphics on rear sprockets facing outward, away from frame centerline.

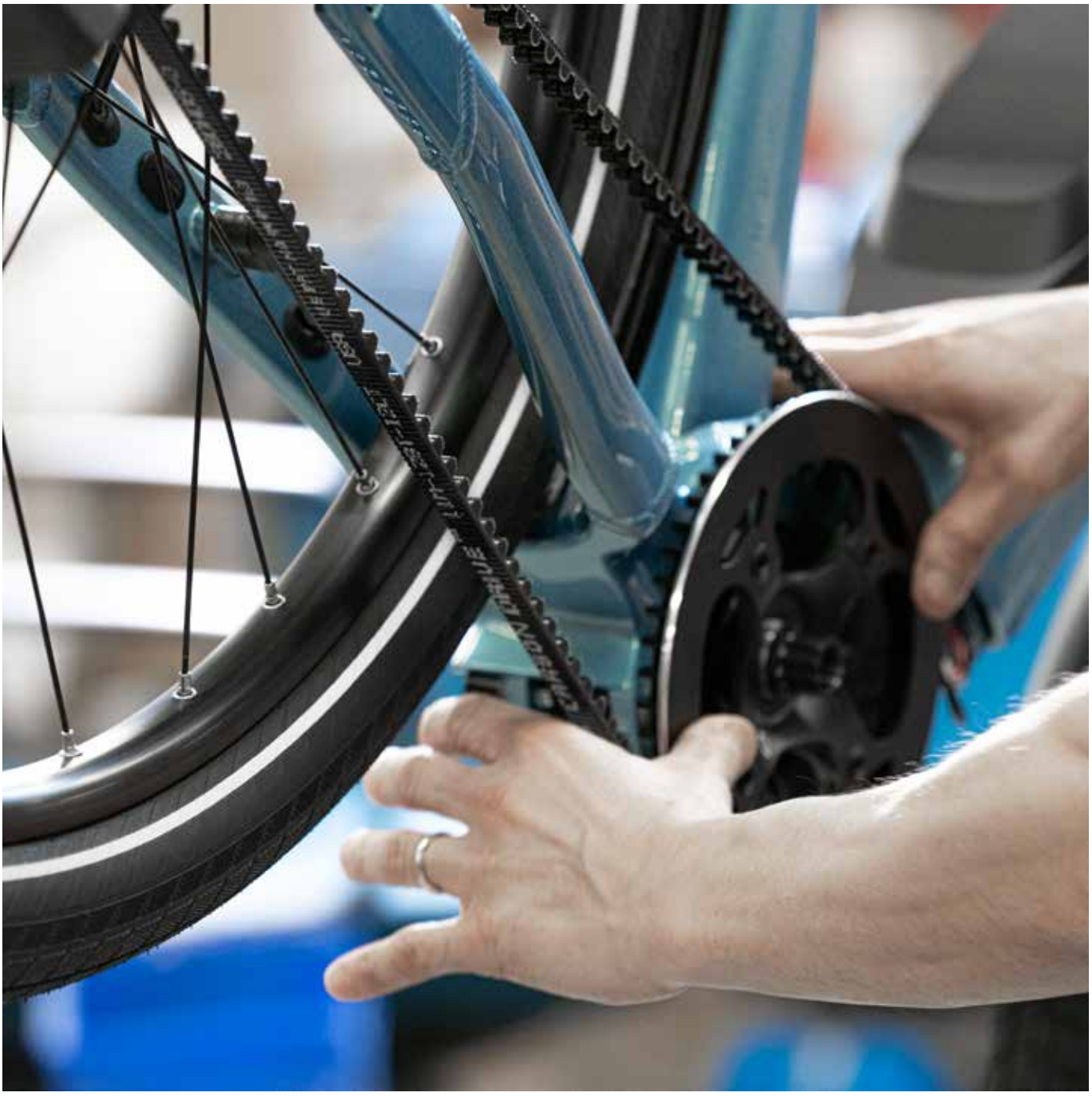
SIDETRACK INTERNAL GEAR HUB BELTLINE - SHIMANO

MANUFACTURER	HUB DESCRIPTION	OLD	BRAKE TYPE	HUB PRODUCT NUMBERS	DIM "A" BELTLINE	REAR SPROCKET CARBON DRIVE GROUP
Shimano	Nexus 3	135	Disc	SG-3D55	46.1	SIDETRACK
		120.4	Roller	SG-3R40	43.9	
		120	Coaster	SG-3C41	45.1	
	Nexus 7	130	Roller	SG-C3001-7R	43.8	
		127	Coaster	SG-C3001-7C	44.5	
		135	Disc	SG-C3001-7D	45.5	

For additional hub compatibility with SideTrack, contact Gates Carbon Drive.

Gates CARBON DRIVE™

RESOURCES, TOOLS, AND MAINTENANCE



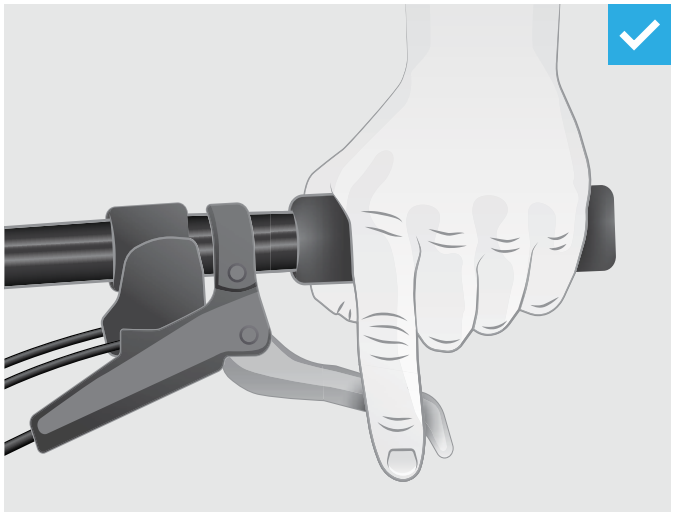
GENERAL SAFETY

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 the Gates Carbon Drive Owner's Manual for assistance or consult with a cycling professional for further information.

HANDLING THE BELT

Do not crimp, twist, backbend, invert, bundle or zip tie the belt. Do not use the belt as a strap wrench or chainwhip. Do not roll on or pry on the belt. See page 71.



Gates requires a hand brake as the primary braking system belt tension and drive alignment.

PROPER TENSION AND DRIVE ALIGNMENT IS 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, pvvremature belt or sprocket wear, belt walk-off. Detailed information and schematics can be found in this manual. You can also contact us directly via email at **CarbonDrive@Gates.com**

CARE FOR YOUR CARBON DRIVE

- Wash with water to remove debris
- Acceptable temperature range for CDX and CDC belts is -65°F (-53°C) to +185°F (+85°C)
- Acceptable temperature range for the CDN system is -4°F (-20°C) to +140°F (+60°C)
- Do not lubricate
- 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

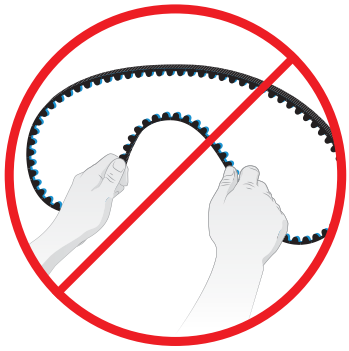
Improper installation, adjustment, alteration, service, or maintenance can result in property damage and serious bodily injury, including death. Refer to the Owner's Manual for assistance or consult with a cycling professional for further information.

www.GatesCarbonDrive.com/OwnersManual

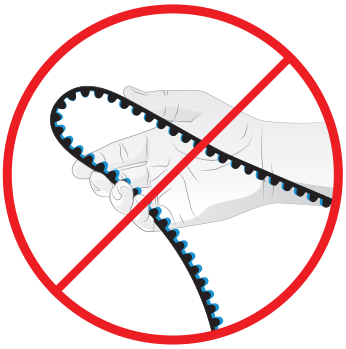
HANDLING THE BELT

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



DO NOT BACK BEND

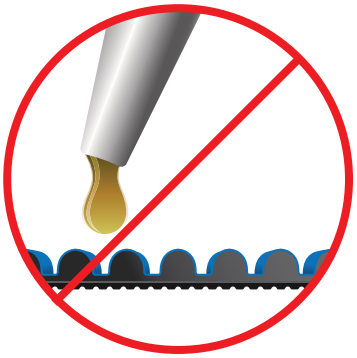


DO NOT CRIMP

DO NOT USE BELT AS A SPROCKET REMOVAL TOOL

DO NOT INVERT

DO NOT ZIP TIE



DO NOT LUBRICATE

DO NOT PRY ON

DO NOT ROLL ON

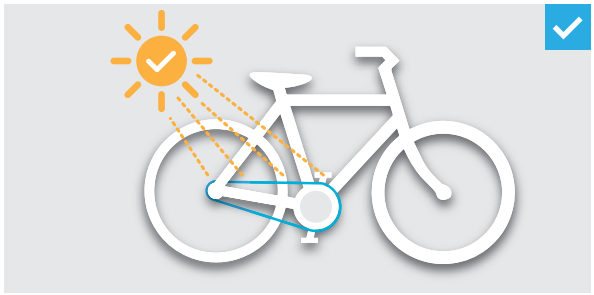
DANGER

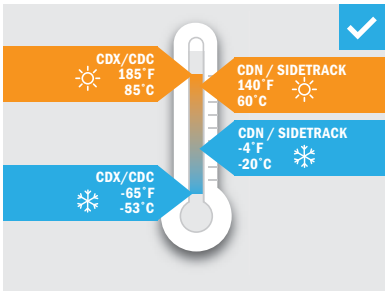
Use Caution. Although clean of grease, belt drives can still catch pants, skirts or loose clothing. Installation of a belt guard is recommended.

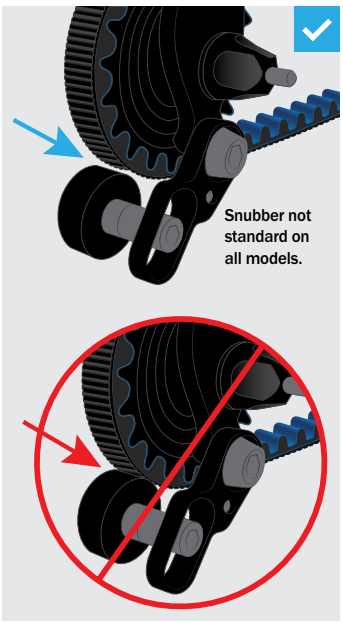
CARE FOR YOUR CARBON DRIVE

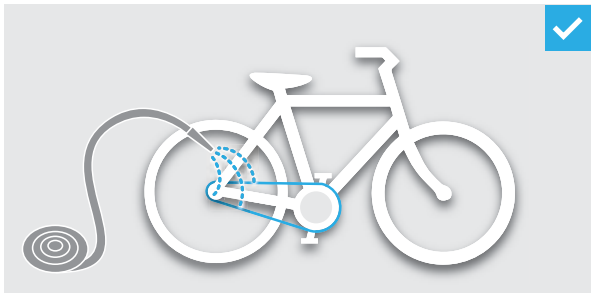
= APPROVED

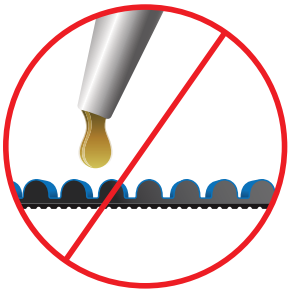
= NO







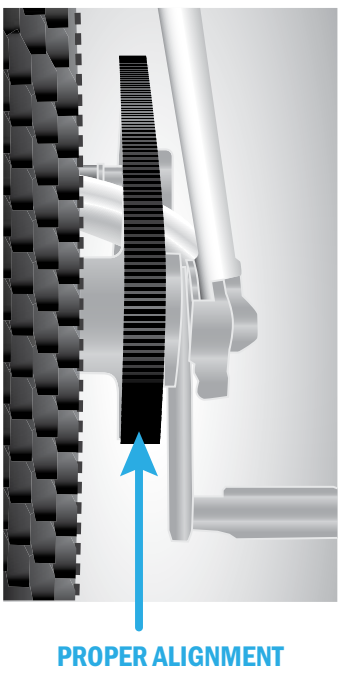


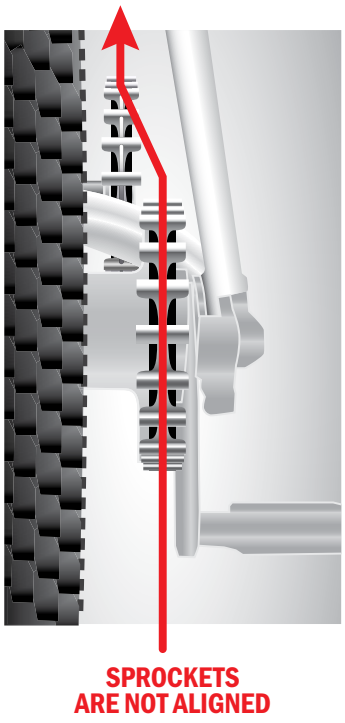


PROPER ALIGNMENT

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.

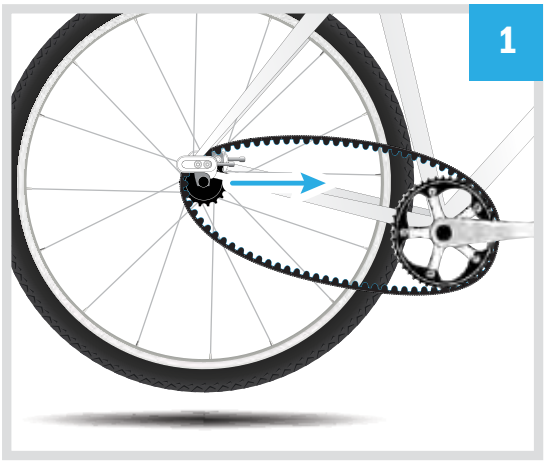
See page 12 for more information.

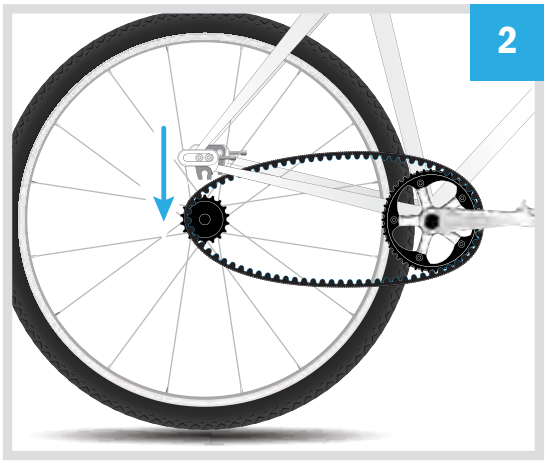


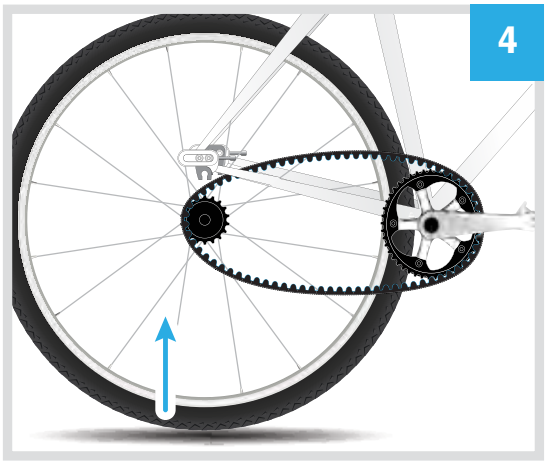


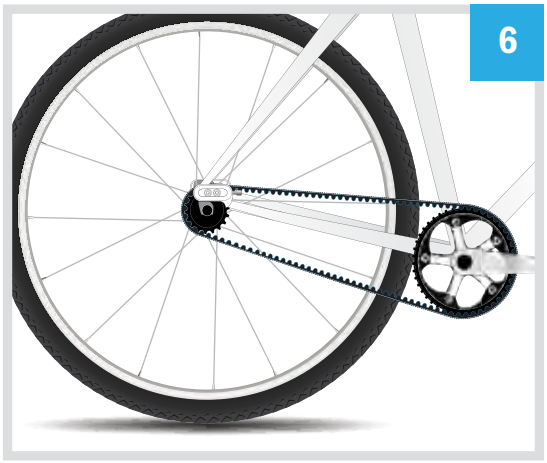
REAR WHEEL REMOVAL & INSTALLATION

RECOMMENDATION: RELEASE BELT TENSION BEFORE REMOVING AXLE FROM DROPOUT





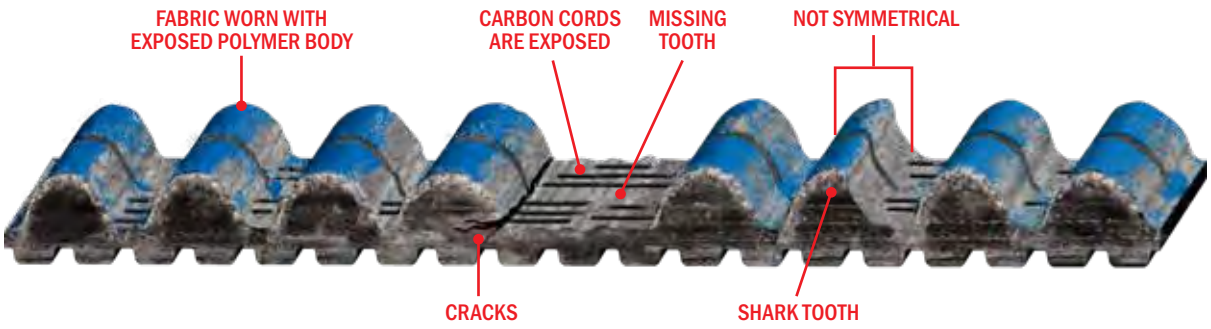




REPLACE WHEN WORN

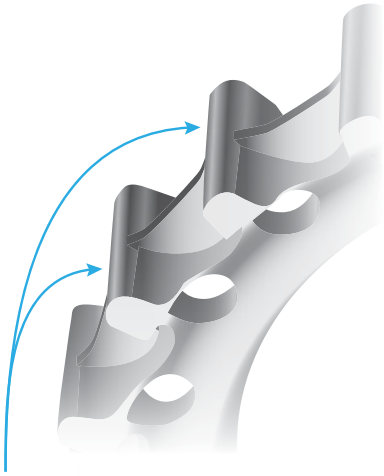
Gates Carbon Drive™ Belts and Sprockets are extremely durable and built to offer a long life, but they do wear and tear over time. Periodically, carefully inspect your belt and sprockets for signs of deterioration:

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

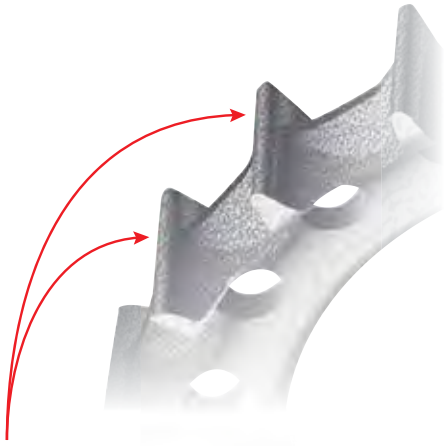


Replace your belt when it shows these signs of wear and tear.

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.

GATES SPROCKET TOOLS

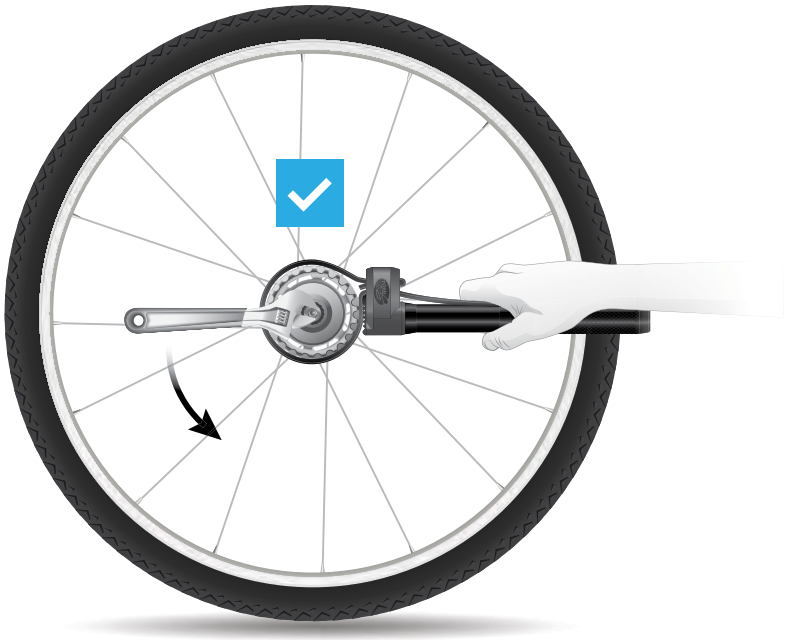
FOR REMOVAL OF REAR SPROCKET AND LOCKRING

GATES SPROCKET WRENCH

The Gates Sprocket Wrench is recommended for removing the rear sprocket. Be sure to follow all handling instructions for removing the Gates Carbon Drive belt: Do not crimp, twist, backbend, invert, bundle or zip tie the Carbon Drive belt. Do not use the Carbon Drive belt as a strap wrench or chainwhip. Do not roll or pry on the Carbon Drive belt.

Gates product # 7468-0007

DO NOT USE BELT AS A SPROCKET REMOVAL TOOL



SUREFIT™ INSTALLATION TOOLS

Aids in the installation of Shimano and enviolo SureFit sprockets.

XMN/XSE, VMN/VSE sprockets: Gates product #7468-0999

AFMN SPROCKET REMOVAL TOOL

Aids in the removal of Sturmey-Archer threaded sprockets.

Gates product #7468-0997

TROUBLESHOOTING

SYMPTOM: BELT RUNNING OFF SPROCKETS

POSSIBLE CAUSES	CORRECTIVE ACTION
Mis-alignment of the drive system	■ Check alignment of rear wheel ■ Check to make sure sprockets are properly aligned ■ Verify the correct amount of spacers have been used for the rear sprocket ■ Check to make sure the belt is not being pinched between sprocket flanges ■ Realign drive system and tension belt
Improper belt tension	■ Check to see if the rear wheel, eccentric bottom bracket, or dropout has moved ■ Check to see if the tensioning device has been affected ■ Reposition rear wheel in dropouts ■ Re-tension the belt and measure using an approved tool
Rear wheel has moved in dropout or sliding dropout has moved	■ Reposition rear wheel in dropouts ■ Re-tension the belt
Eccentric bottom bracket has moved	■ Loosen eccentric bottom bracket mechanism ■ Align front and rear sprockets ■ Re-tension system
Chainring bolts coming loose	■ Tighten chainring bolts
Cassette lockring or snap ring coming loose	■ Tighten cassette lockring ■ Verify correct number of spacers
Excessive mud or debris in the drive system	■ Clean mud or debris from the drive system ■ Belts that have been derailed may have been damaged, and should be replaced
System damaged or worn	■ Inspect sprockets and belt and replace if needed

SYMPTOM: BELT TOOTH JUMPING ON SPROCKETS

POSSIBLE CAUSES	CORRECTIVE ACTION
Improper belt tension	■ Adjust tension and measure using an approved tool
Belt system has lost its tension	■ Check to see if the rear wheel, eccentric bottom bracket, or dropout has moved ■ Check to see if the tensioning device has been affected ■ Reposition rear wheel in the dropouts ■ Re-tension the belt and measure using an approved tool
Rear wheel or sliding dropout has moved	■ Reposition rear wheel in dropouts ■ Re-tension the belt
Eccentric bottom bracket has moved	■ Loosen eccentric bottom bracket mechanism ■ Align front and rear sprockets ■ Re-tension system
System damaged or worn	■ Inspect sprockets and belt and replace if needed

TROUBLESHOOTING

SYMPTOM: BELT TOOTH WEAR

POSSIBLE CAUSES	CORRECTIVE ACTION
Excessive debris in drive system	■ Clean any debris from sprocket and belt
Improper belt tension	■ Check to see if the tensioning device (sliding dropout, eccentric bottom bracket) has been affected ■ Reposition rear wheel in dropouts ■ Re-tension the belt and measure using an approved tool
Mis-alignment of the drive system	■ Check to make sure the sprockets are properly aligned ■ Verify the correct amount of spacers have been used for the rear sprocket ■ Check to make sure the belt is not being pinched between the sprocket flanges ■ Realign drive system and tension belt, measure using an approved tool
Worn sprocket	■ Replace sprocket
Damaged sprocket teeth	■ Replace sprocket
Sprocket flange damage	■ Replace sprocket
Worn or damaged belt	■ Replace belt

SYMPTOM: BELT SQUEAKING

POSSIBLE CAUSES	CORRECTIVE ACTION
Mis-alignment of the drive system	■ Check to make sure sprockets are properly aligned ■ Verify the correct amount of spacers have been used for the rear sprockets ■ Check to make sure the belt is not being pinched between the sprocket flange ■ Realign drive system and tension belt, measure using an approved tool
Improper belt tension	■ Check to see if the rear wheel, eccentric bottom bracket, or dropout has moved ■ Check to see if the tensioning device has been affected ■ Reposition rear wheel in dropouts ■ Re-tension the belt and measure using an approved tool
Bent sprocket flange	■ Replace sprocket
Worn sprocket	■ Replace sprocket
Chainring bolts coming loose	■ Tighten chainring bolts
Dry, dusty conditions	■ Clean entire drive train with soap and water; allow to dry completely ■ Applying dry silicon to a clean belt can help

TROUBLESHOOTING

SYMPTOM: BROKEN BELT

POSSIBLE CAUSES	CORRECTIVE ACTION
Improper belt handling, storage or installation	■ Follow Owner's Manual belt handling instructions and installation tips **gatescarbondrive.com/ownersmanual** ■ Never roll or pry belt onto sprockets ■ Replace belt
Debris or object in drive system	■ Clean debris from sprocket ■ Replace belt
Belt ran off rear sprocket	■ Your belt could be damaged. A new belt is recommended. ■ Check to make sure sprockets are properly aligned ■ Verify the correct amount of spacers have been used for the rear sprocket ■ Realign drive system and tension belt
Stripped Teeth, Root Cracking or Worn Belt	■ Replace belt

SYMPTOM: CLICKING

Tolerance Issue with 3-Lobe Sprocket	■ Replace with current version SureFit sprocket ■ Examine hub body for damage/excessive wear
Chainring bolts coming loose	■ Tighten chainring bolts

SYMPTOM: TENSION LOSS IN DRIVE SYSTEM

Change in distance between sprockets	■ Check to see if the rear wheel or dropout has moved ■ Check to see if the tensioning device has been affected ■ Reposition rear wheel in dropouts ■ Re-tension the belt and measure using an approved tool

SYMPTOM: TENSION READINGS Excessive variation of tension readings in the belt after proper installation

Non-concentric assembly of sprocket/crank arm	■ Loosen chainring bolts and center sprocket on crank arm tabs ■ Re-tighten chainring bolts

For additional technical support, see page 81.

GLOSSARY

Axial Crank Run-Out
The amount of right to left crank arm tab movement relative to the centerline of the frame when rotating the cranks. Also referred to as wobble.

Belt Alignment
Refers to the parallel (side to side) and angular (toe in - toe out) alignment of the belt.

Belt Frequency
A term used in tensioning the belt. The natural frequency of a belt depends on the tension inside of the belt and distance between sprockets; the higher the tension the higher the frequency. Measurement of the belt frequency requires the Gates Carbon Drive Tensioning app or the Gates Sonic Tension Meter.

Belt Installation Distance
The minimum distance between center of the bottom bracket and rear axle needed to install the belt on the sprockets loosely. Initial installation of the belt loosely on the sprockets is required in order to avoid damaging the belt.

Beltline
The distance from the center line on the belt in relation to the centerline of the frame. See Beltline Specification page 56.

Belt Pitch
The distance from the center of one tooth to the center of the next tooth. This measurement is different than a chain.

Belt Tension
The amount of tension experienced inside of a loaded belt. Belts require correct tensioning. Proper installation tension keeps the belt from jumping teeth and increases the life of the belt.

Center Distance
The distance from center of the bottom bracket to center of the rear axle.

Eco Tension Tester
A tool used to set proper belt tension.

Flange
Sprocket feature that guides the belt.

Frame Break
A feature of the frame enabling a split or gap in the frame structure allowing belt installation into the rear triangle. Unlike a chain, a belt is continuous and cannot be broken and reconnected, therefore a separation in the frame is required for belt installation.

Frame Stiffness
Refers to a frame's resistance to flex for a given load applied. Stiffness plays a vital role in the operation of a belt drive. Too much flex can cause tooth jump, mis-alignment, noise, and wear.

Gear Inches
A system of measurement used to compare gear ratios based on the distance a bike travels with one pedal rotation.

Guard
An optional protective component to meet ISO 4210 requirements.

Krikit Gauge
A handheld tool used to set proper belt tension.

O.L.D.
Over locknut dimension - the distance between the hub locknuts that mate to the bicycle dropout (see drawings pages 57–59).

Profile
Refers to the shape of the belt tooth and sprocket groove.

Radial Crank Run-Out
The amount of "out-of-roundness" of crank arm tabs when rotating the cranks. Also referred to as Eccentricity. This type of run out is usually detected through tension variations in the belt leading to tight and loose spots in the belt.

Snubber
A device typically used on Rohloff drivetrains to increase belt wrap on the rear sprocket to help prevent the belt from skipping. A typical place for a snubber would be on the entry point of the belt into the rear sprocket (slack side).

Sonic Tension Meter
High precision electronic tool typically used by factories to set proper belt tension.

Sprocket
Using belt drive terminology, the term sprocket is used in place of rear cog and front chainring.

Sprocket Clearance
Distance from the closest edge of a front or rear sprocket to the frame. Belt drive sprockets are wider than chain rings, so clearance requirements must be considered.

Sprocket Wrench
A tool used to hold the rear sprocket in order to remove the rear cassette lockring. A sprocket wrench is the equivalent of a chain whip used for removing cogs on standard chain drive systems. Never use the Carbon Drive belt as a sprocket wrench.

Synchronous
Refers to drive systems using toothed belts in mesh with grooved sprockets.

Tensioned Center Distance
The distance between the center of the front sprocket and rear sprocket at proper belt tension for a given drive ratio.

Tooth Jump
Occurs when the belt tooth misses an engagement with a sprocket groove. This is typically due to incorrect belt tension.

Tooth Outer Diameter
The outer most diameter (OD) of the sprocket teeth.

WARRANTY

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, 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/Resources/Warranty-Submission

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info@carbondrive.net

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