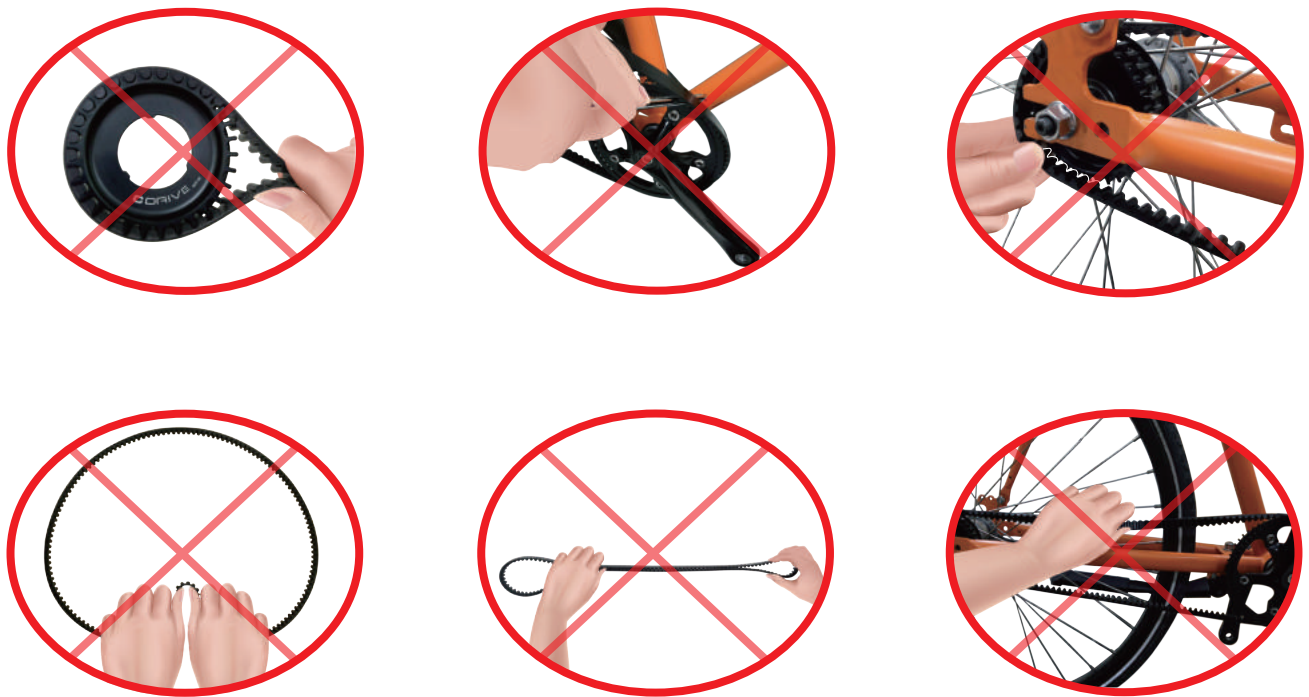




BELT DRIVE SYSTEM TECHNICAL MANUAL

Caution and care of belt

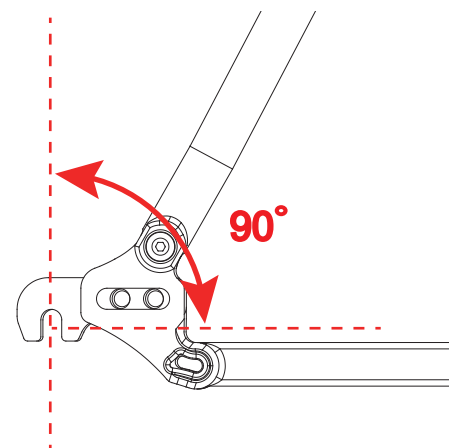
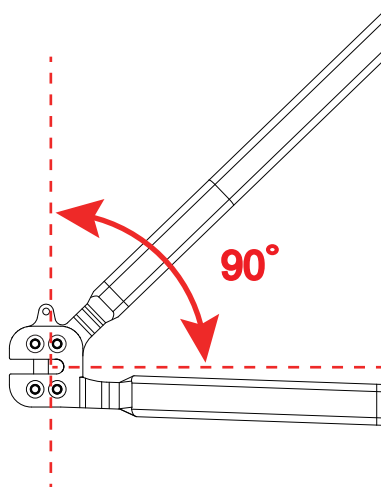
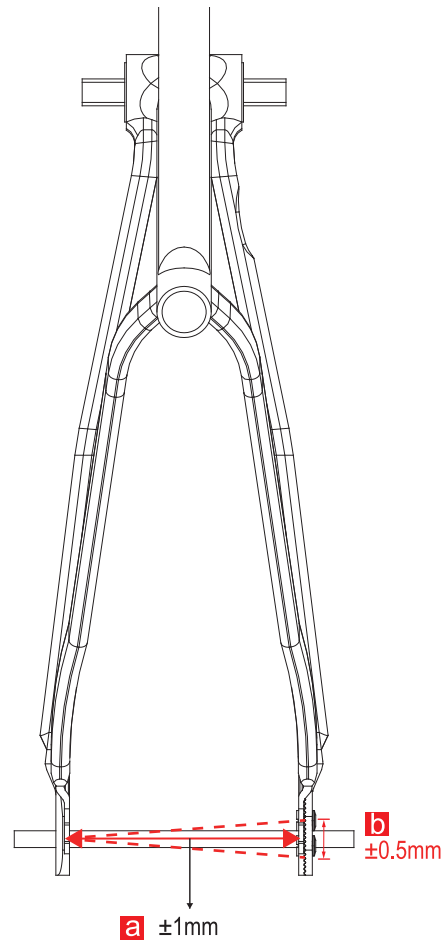
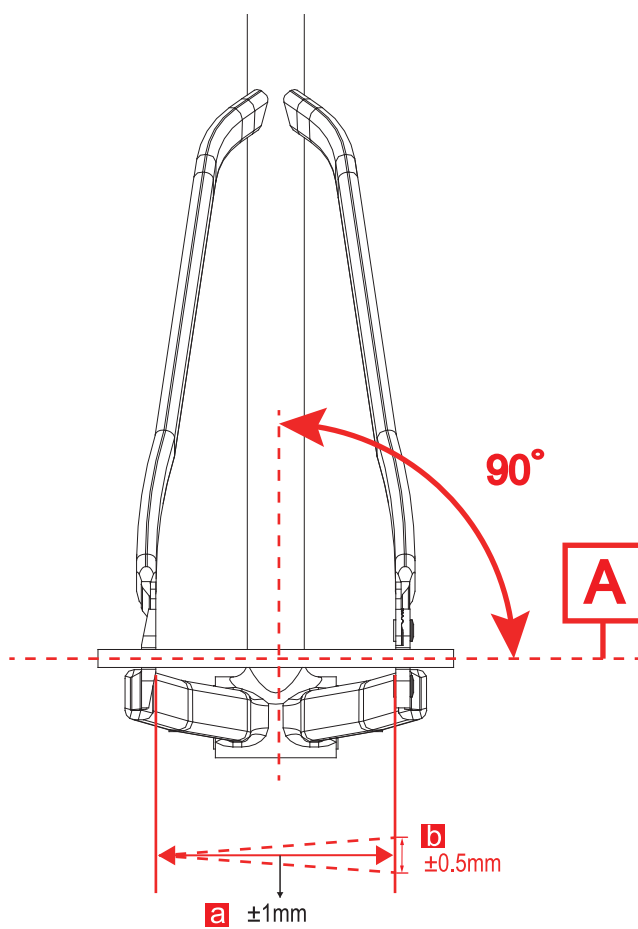


■ Caution and care of belt

1. Do not use belt for sole device to brake.
2. Do not curve/ twist/ cut/ reverse/ bend /clip the belt for prevention of belt damage.
3. Follow the assembling instruction for correct installation.
Do not use shape of tools to force the belt.
4. For maintenance : wash belt system with soft brush or air spary,
Do not leave water stain or detergent the surface when finished.
5. When install the pulley guide, leave 1mm of distance between the roller and belt ,the roller shall not touch the belt.
6. When install belt system ,front belt ring shall always be in line with rear belt ring.

STEP 1

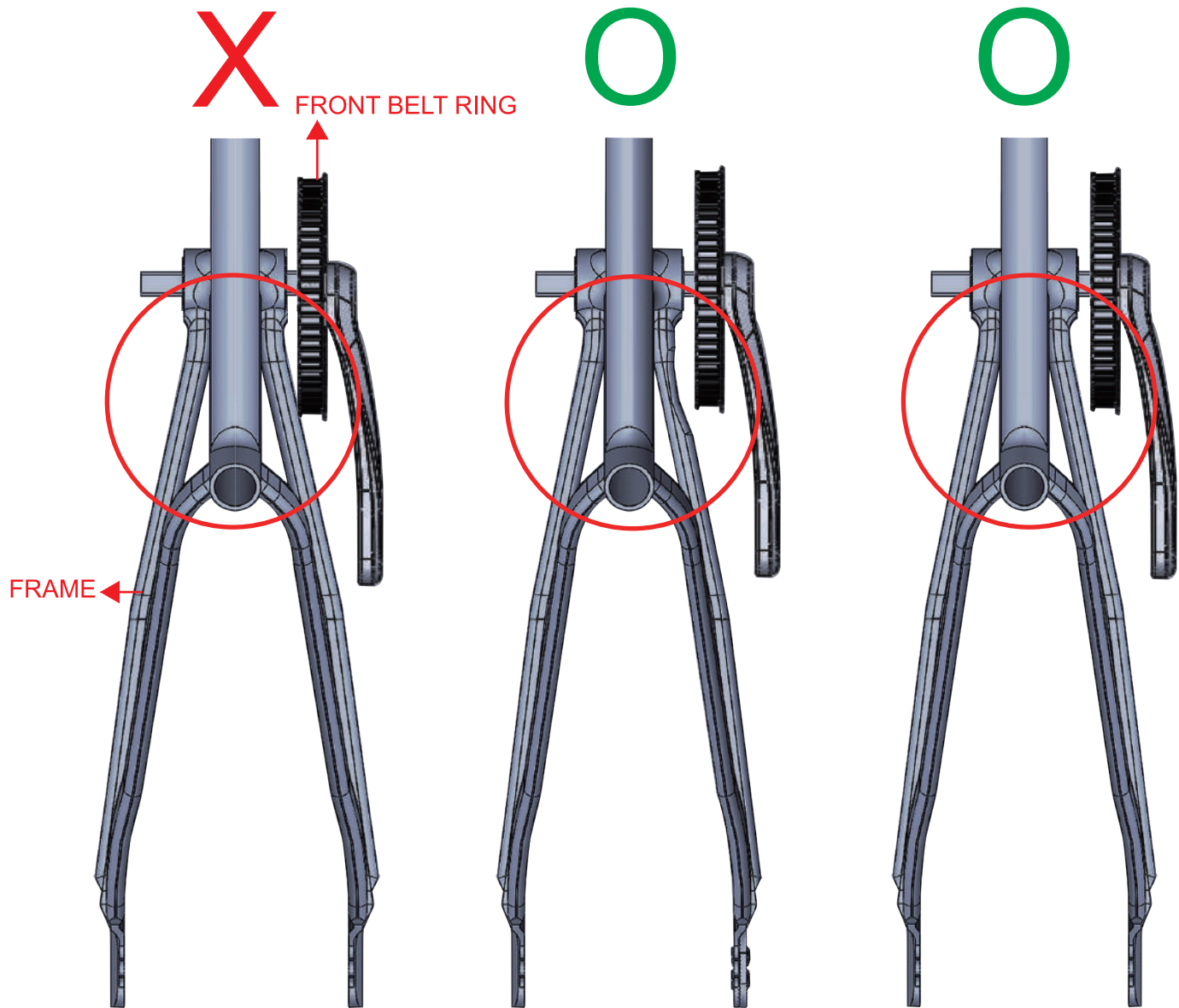
Ensure frame is within the tolerance range of requirements



Ground

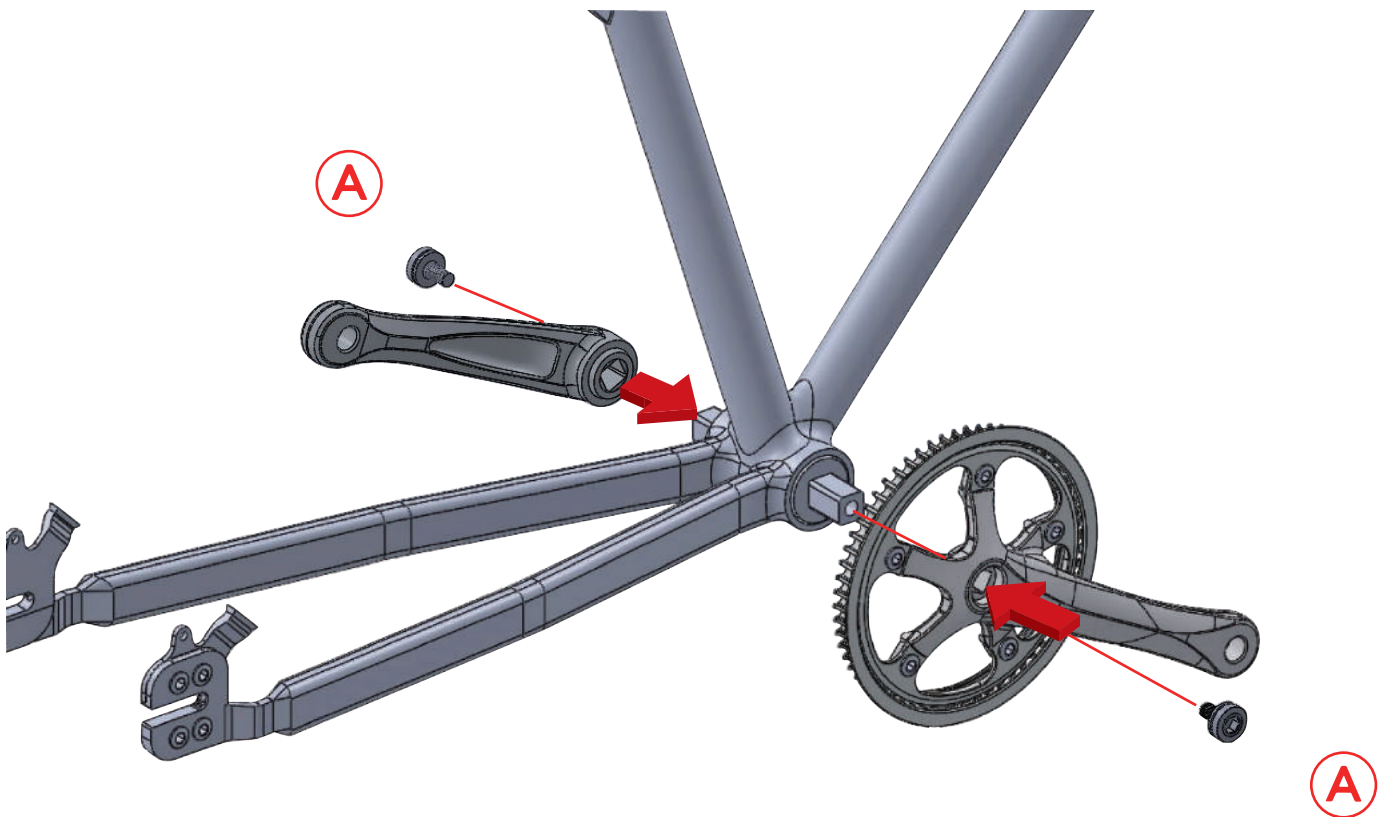
STEP 2

Ensure the rear chainstay does not interfere with the front sprocket



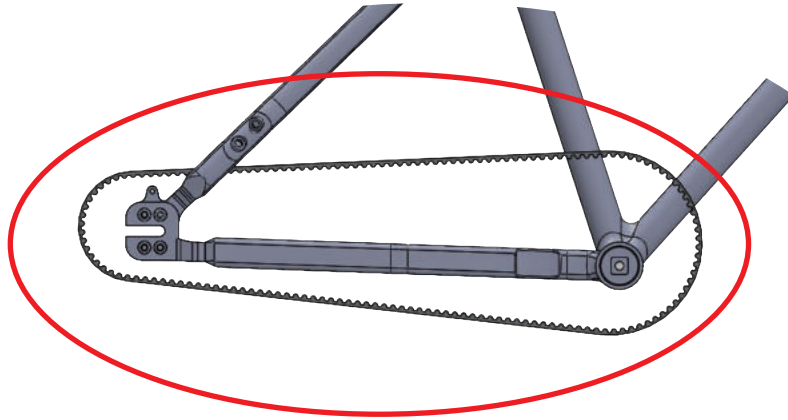
- Ensure to leave more than 6mm of clearance between frame stay and inner side of the front belt ring.

STEP 3 | Front crankset assembly

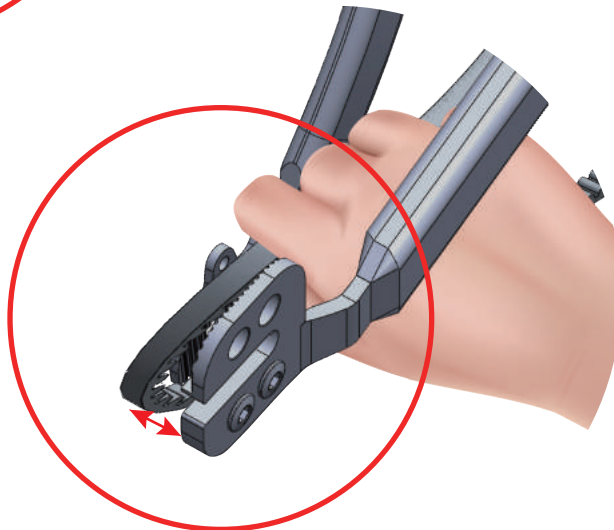
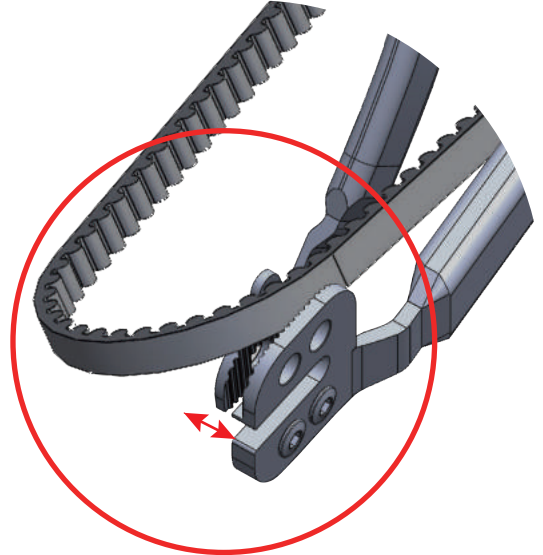
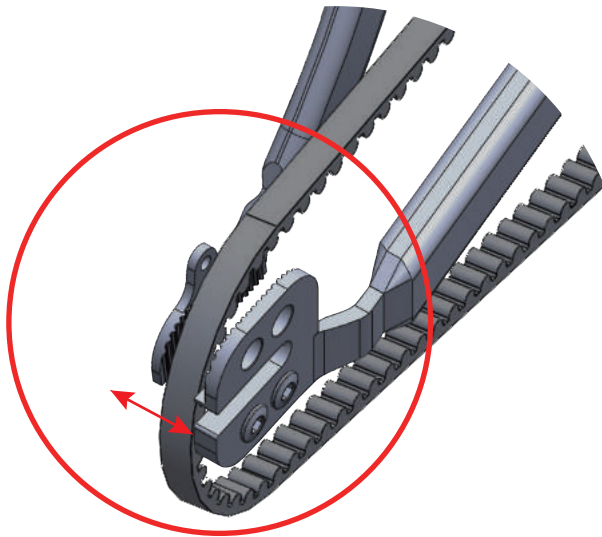


- Install the crank screw (A) with a torque wrench.
Apply 38~42 KGF force to tighten.(40KGF)

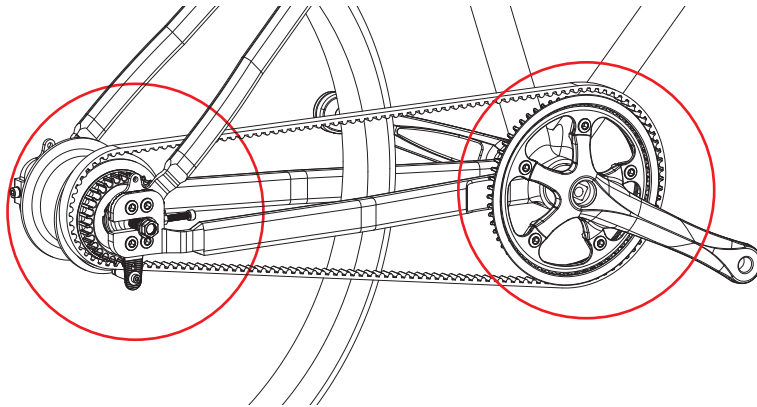
STEP 4 | Place the belt in the frame



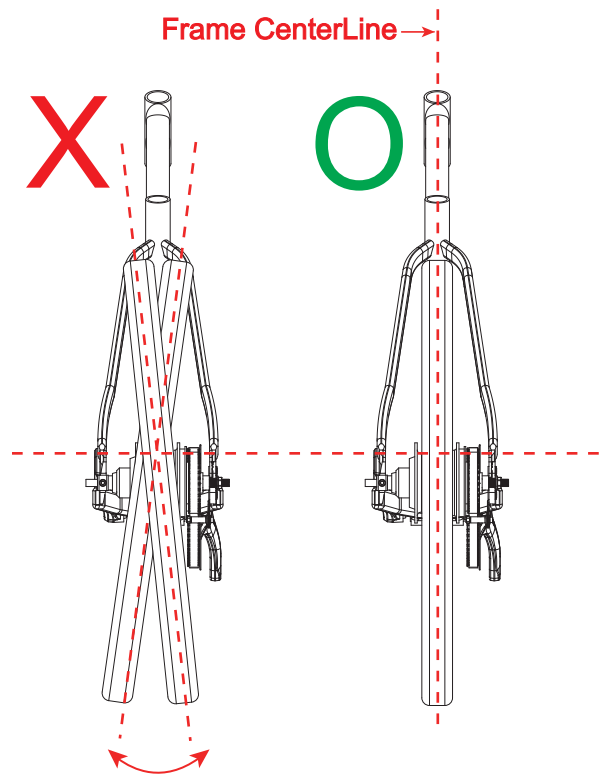
- Open the dropout on the rear stay, place the belt into the frame, keep correct distance on the opening to prevent damage the belt.



STEP 5 | Install the belt on the system

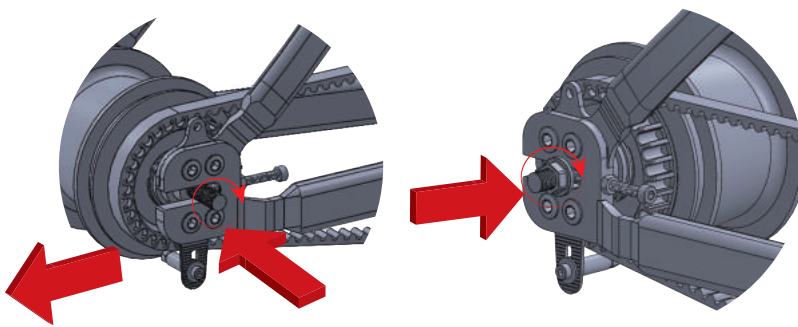


(Image of the side view)
Place the belt on both front
and rear belt ring.



(Image of the rear view)
The rear wheel should be lined
to the center of the rear frame
must be less than 1 mm offset.

TYPE 01



■ Type 01 - Dropout with pushed tension adjustment

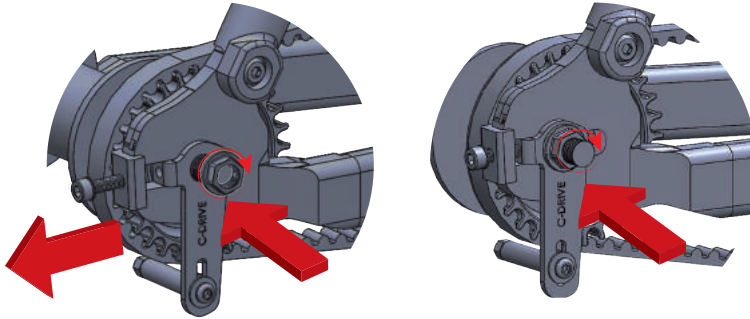
Pull the belt and the rear wheel till the belt is
slightly tensed, and adjust the tension adjusting
screw on both sides, till it's touched on the hub
axel. Screw the hub nut on both sides till it's
slightly touched on the surface of the dropout.

Final Adjustment :

Adjust the tension screw on the both sides till tension of the belt is tight,
then tighten the hub nut. (Please refer to Step 7 for the required tension.)
Equally adjust the tension screw on both sides till the belt tension achieved
to required standard.

STEP 6 | Installation & Adjustment

TYPE 02



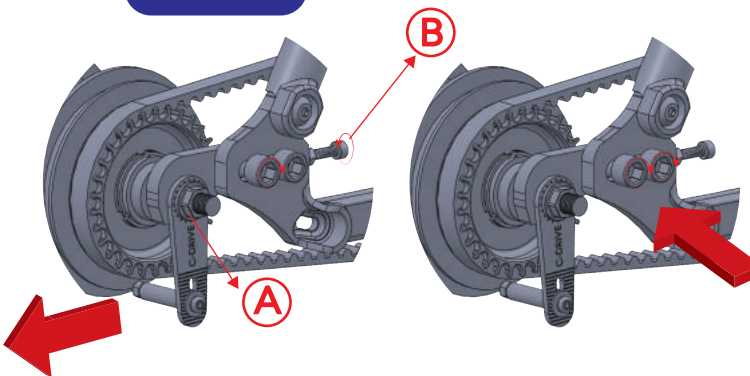
■ Type 02 - Dropout with back pull tension adjusting screw

Place the tension pulley part on the hub axel then pull the belt and the rear wheel till the belt is slightly tensed, and adjust the tension adjusting screw on both sides, till it's touched on the hub axel. On the left side of the bike, screw the hub nut on the hub axel till it is slightly touched the left side dropout. On the right side, screw the hub nut on the surface of the tension pulley part.

Final Adjustment :

Adjust the tension screw on the both sides till tension of the belt is tight, then tighten the hub nut. (Please refer to Step 7 for the required tension.) Equally adjust the tension screw on both sides till the belt tension achieved to required standard.

TYPE 03



■ Type 03 - Independent adjustment dropout system

Place the pulley part on the hub axel and tighten both sides of the hub nut **A** Screw.

Adjusting **B** screw clock wised till it's touched the tighten screws of the inner dropout plate.

Final Adjustment :

Equally adjust the tension screw on both sides till the belt tension achieved to required standard.

Tension Required Standards :

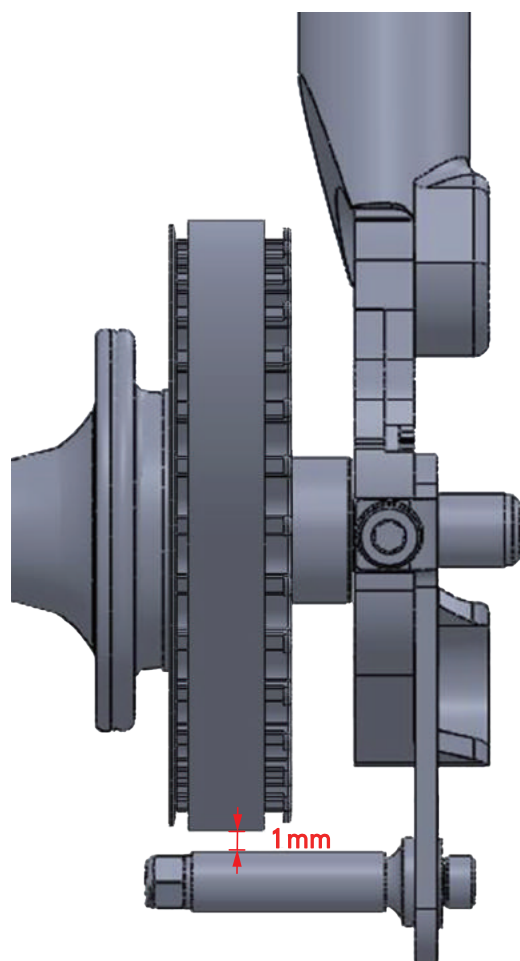
PU belt tension	25-30 KG/mm
Rubber belt tension	20-25 KG/mm

Hint : Before hub nut tightened

PU belt tension	= 19-21 KG/mm
Rubber belt tension	= 16-18 KG/mm

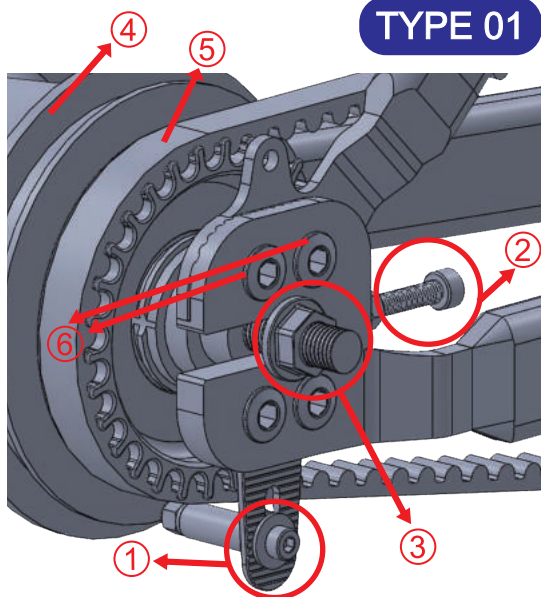
STEP 7

Installation of the pulley roller for preventing skipping



- In order to prevent the belt from skipping, the space between the roller of the pulley and the rear belt ring must be less than 1 mm distance.

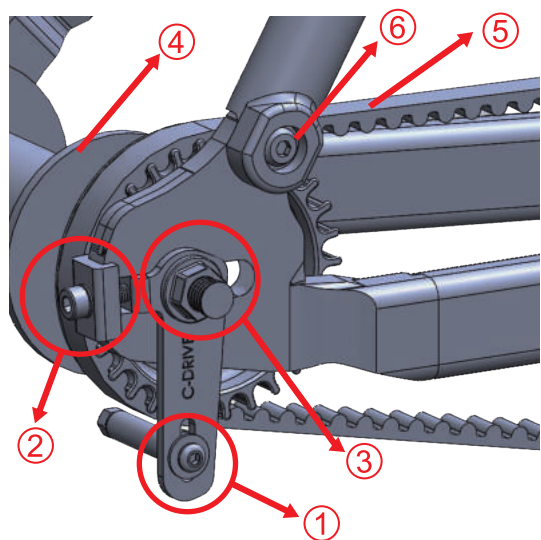
For the removal of the belt



TYPE 01

■ Type 01 - Dropout with push tension adjustment

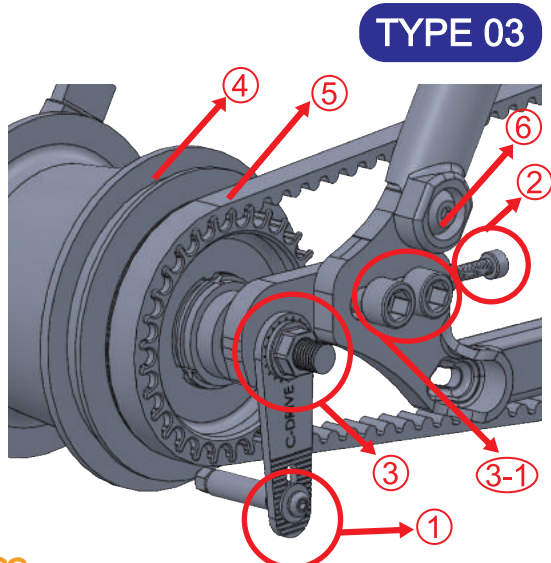
1. Lose the ① screw set of the roller till enough space for removal of the belt.
2. Lose the ② tensioning screw till apart from the hub axel.
3. Un-tighten and remove the ③ hub nut.
4. Push the ④ wheel set forward and remove it.
5. Remove the ⑤ belt from both rear and the front belt ring.
6. Remove the ⑥ screw sets of the dropouts.
7. Open the dropout and remove the belt through the open gap.



TYPE 02

■ Type 02 - Dropout with back pull adjustment screw

1. Lose the ① screw set of the roller till enough space for removal of the belt.
2. Lose the ② tensioning screw till apart from the hub axel.
3. Un-tighten and remove the ③ hub nut and the pulley set.
4. Push the ④ wheel set forward and remove it.
5. Remove the ⑤ belt from both rear and the front belt ring.
6. Remove the ⑥ screw sets of the dropouts.
7. Open the dropout and remove the belt through the open gap.

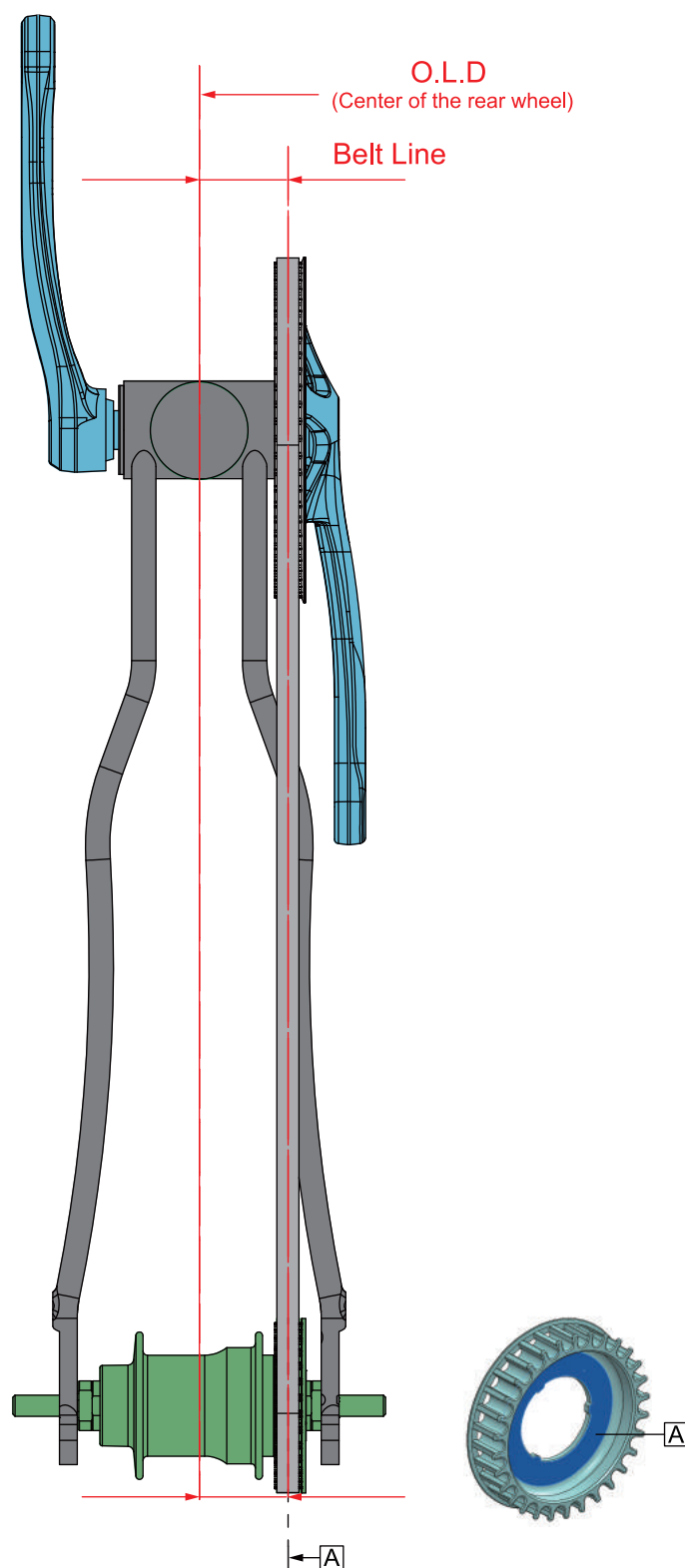


TYPE 03

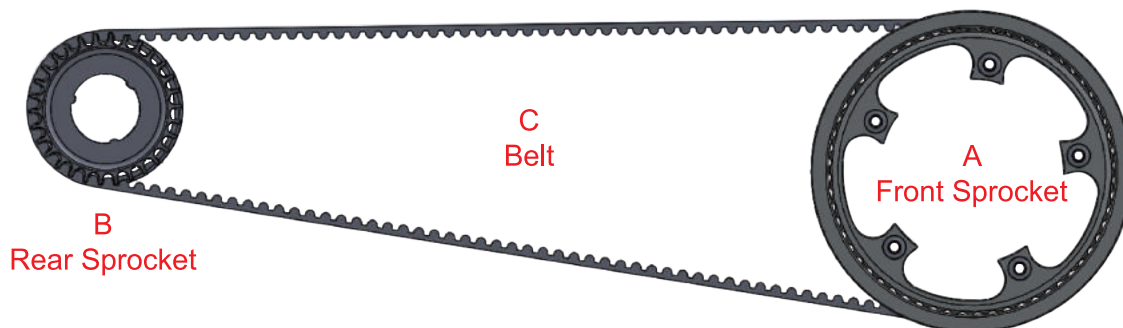
■ Type 03 - Independent dropout adjustment system

1. Lose the ② tension adjusting screw.
2. Remove the ③ hub nut and the pulley set from the hub axel on both sides.
3. Lose the ③-1 dropout screws.
4. Push the ④ wheel set forward and loosen the belt.
5. Unscrew the back ⑥ wheel dropout and to leave space to exit the belt.
6. Open the dropout then remove the ⑤ belt.

Alignment setting



- The belt line and the centre of the rear wheel must be parallel with maximum offset of one millimeter to avoid side to side friction and noise.



Top view

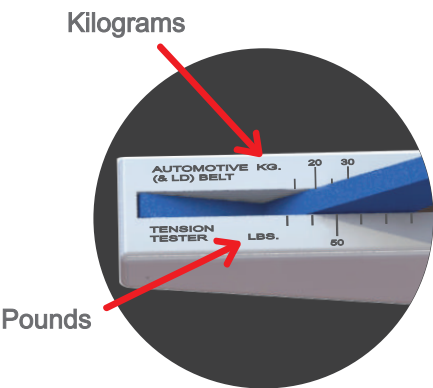
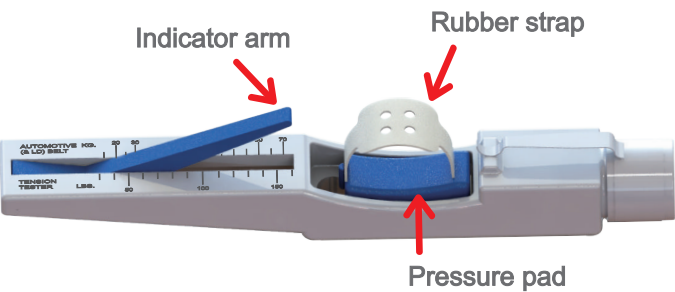


Trouble shooting



Instruction for Belt Tension Gauge

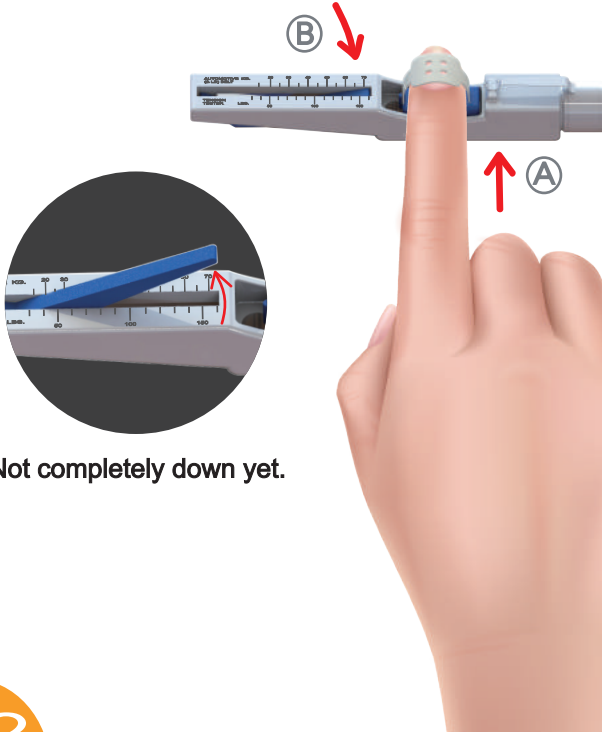
Belt Tension Gauge



<https://youtu.be/z11wfc-0-hY>

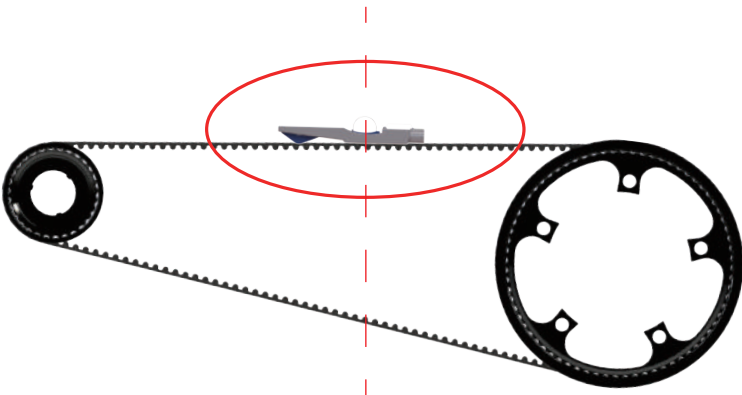
- Ⓐ Place index finger in the rubber strap, on top of the pressure pad.
- Ⓑ Check indicator arm is completely down.

This state is indicator arm completely down.

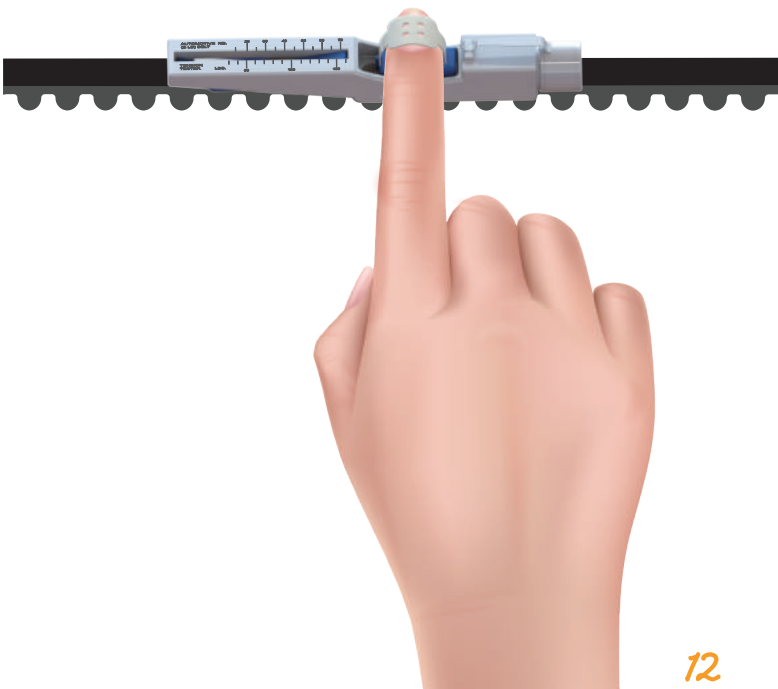


1 2
3 4

Place Belt Tension Gauge at the center of belt span.



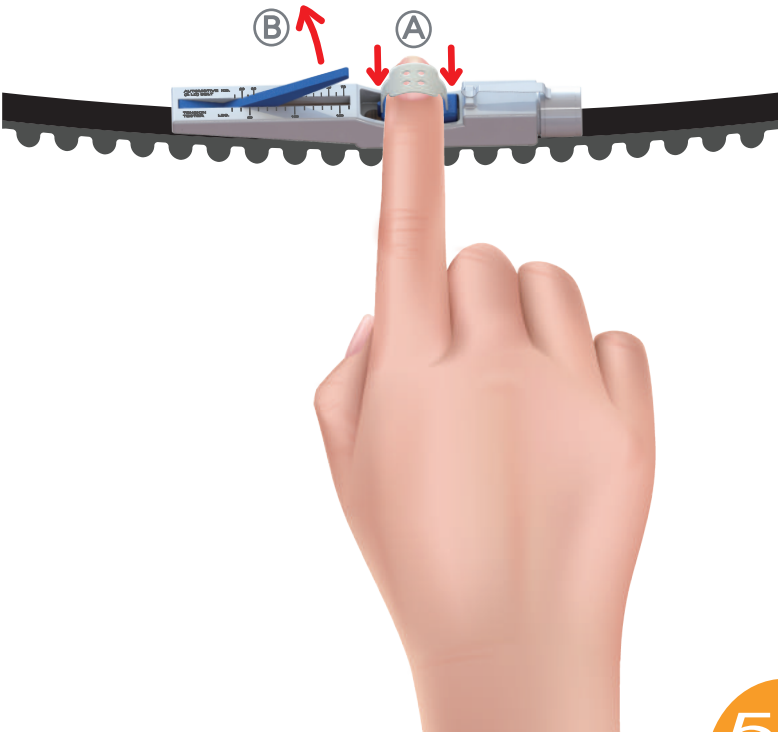
Lay flat and parallel with belt edge.



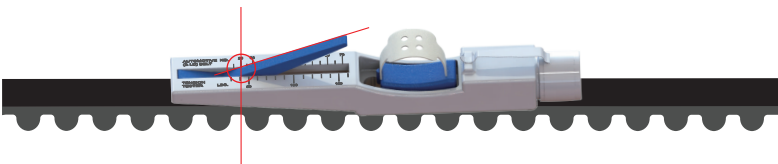
Ⓐ Press down slowly and perpendicularly on the belt.

Ⓑ At the same time indicator arm will be rised. Stop and remove Belt Tension Gauge after the click.

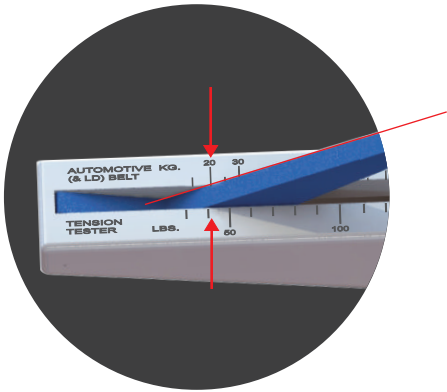
※ If the Belt Tension Gauge is “click”, do not keep pressing it.



This is reading point.

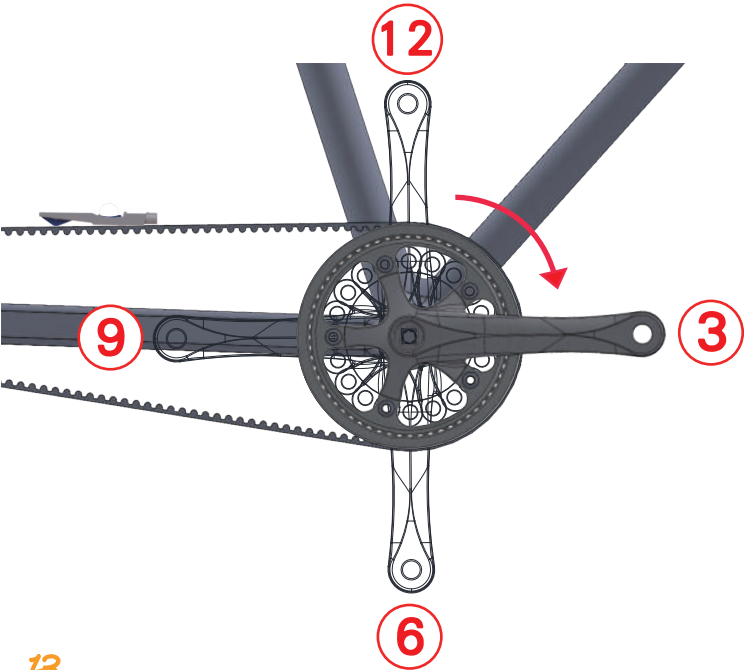


For example is 20 KG/mm



5 6
7 8

Reference of belt tension measurement -
For the image next to Memo.



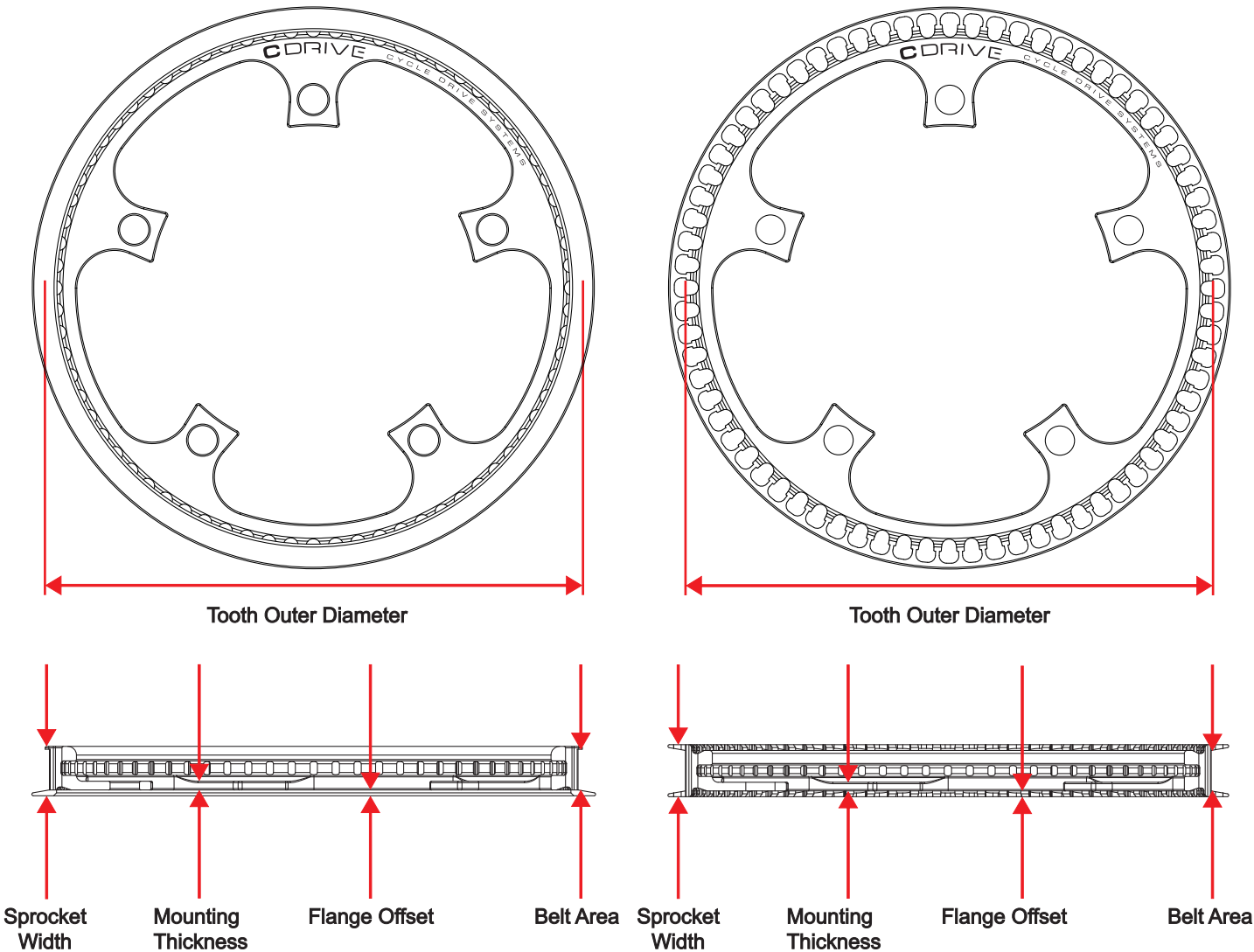
Position	Before hub nut tightened	After hub nut tightened
12 O'Clock	25	30
3 O'Clock	20	25
6 O'Clock	20	25
9 O'Clock	25	30

Front Sprocket : 60T / Rear Sprocket : 30T
Belt length(mm) : 1248 (PU)

PERFORMANCE SYSTEM

PERFORMANCE

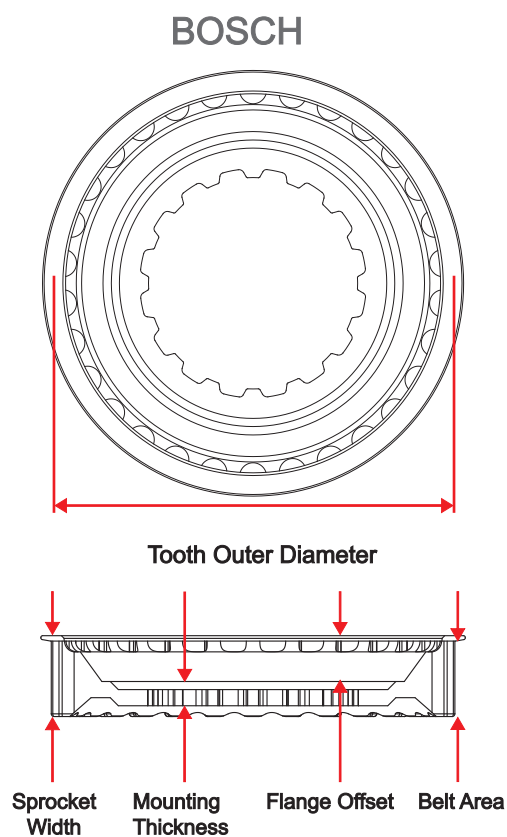
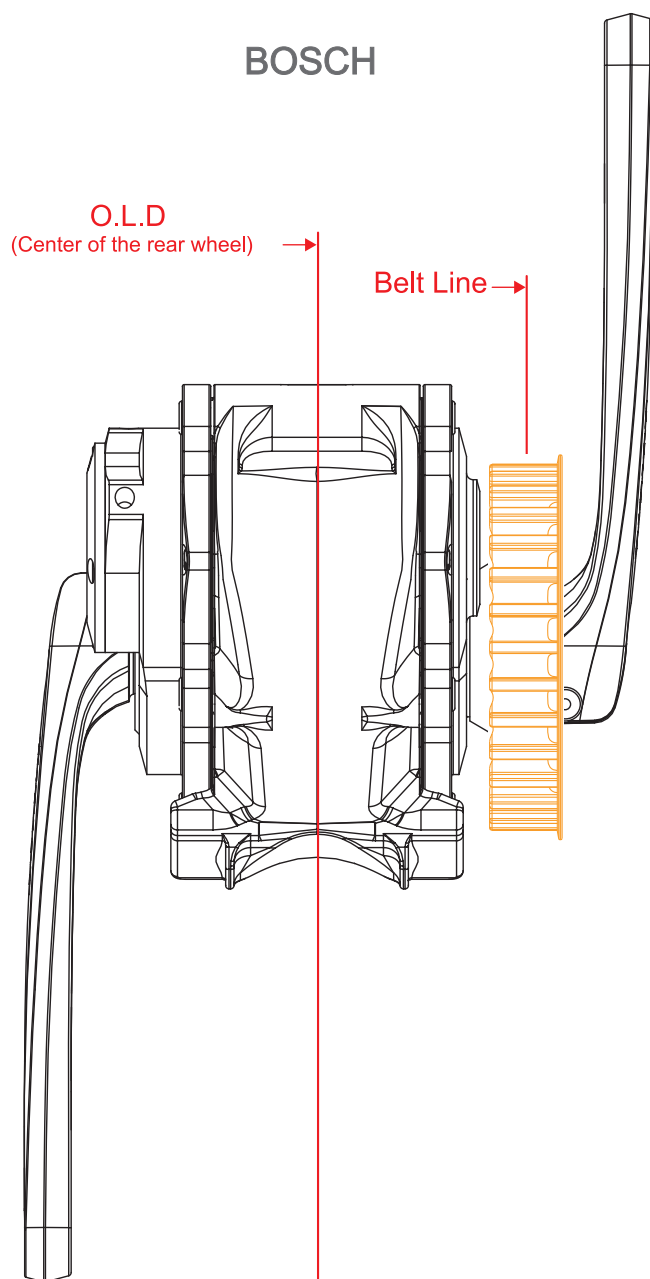
PERFORMANCE CLASSIC



PERFORMANCE						
Teeth	Sprocket Width(mm)	Tooth Outer Diameter(mm)	Mounting Thickness(mm)	Flange Offset (mm)	Belt Area (mm)	BCD (mm)
60	17	151.42	3	2	14	110
72	17	181.97	3	2	14	130
80	17	202.35	3	2	14	130

PERFORMANCE CLASSIC						
Teeth	Sprocket Width(mm)	Tooth Outer Diameter(mm)	Mounting Thickness(mm)	Flange Offset (mm)	Belt Area (mm)	BCD (mm)
60	18	151.42	3	2	14	110
72	18	181.97	3	2	14	130
80	18	202.35	3	2	14	130

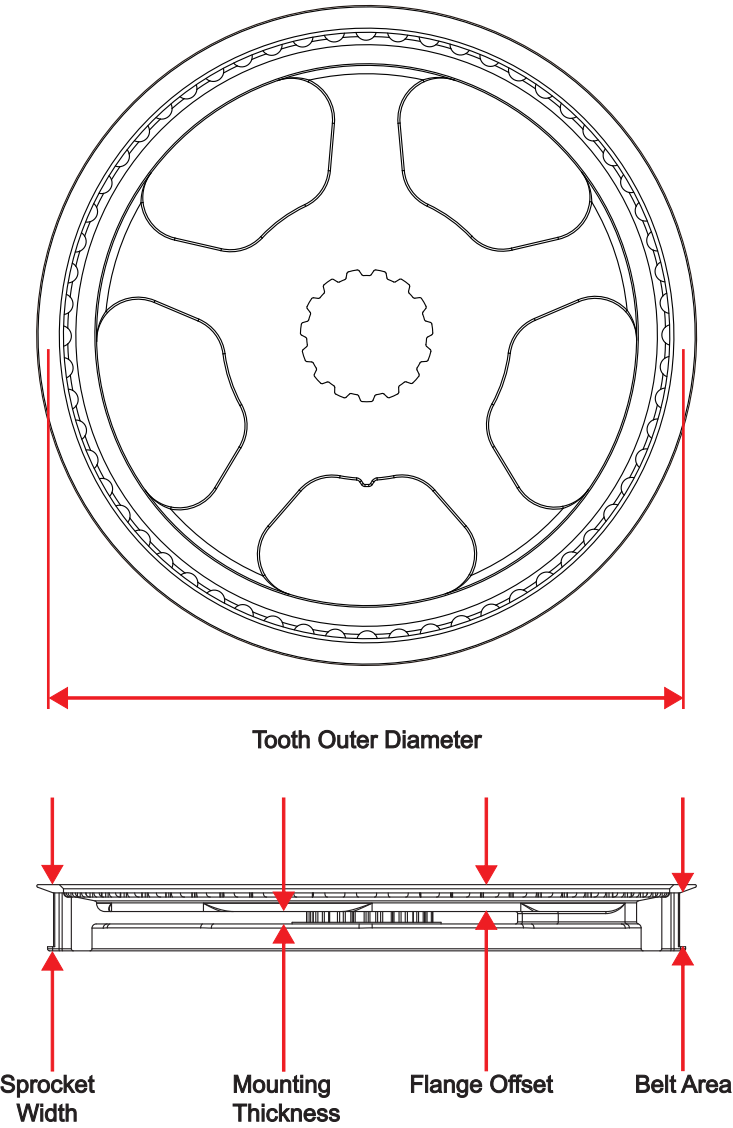
E-BIKE SYSTEM



BOSCH						
Teeth	Sprocket Width(mm)	Tooth Outer Diameter(mm)	Mounting Thickness(mm)	Flange Offset (mm)	Belt Area (mm)	BCD (mm)
30	15	75.12	3	10	14	45.5

JUNIOR SYSTEM

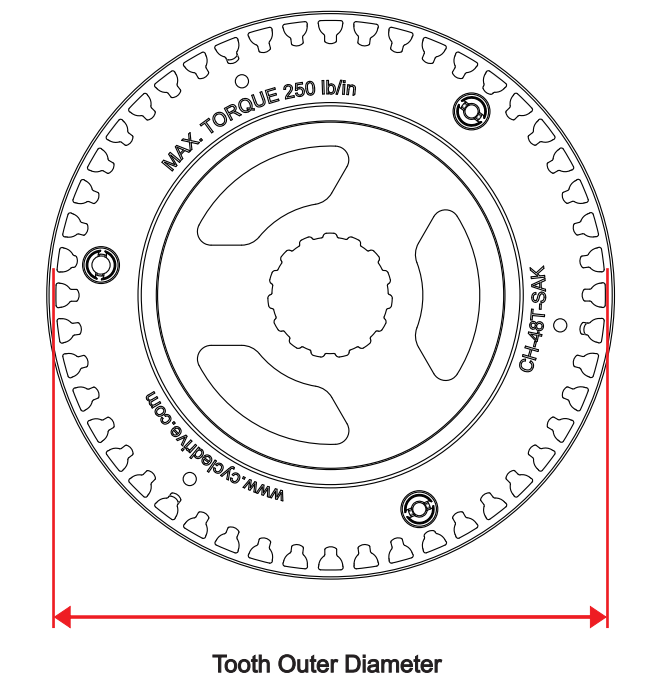
JUNIOR+



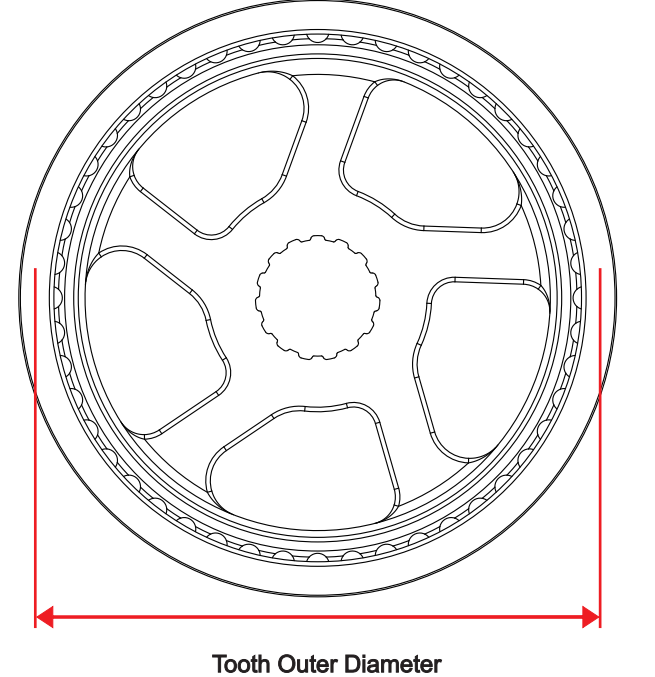
JUNIOR +					
Teeth	Sprocket Width(mm)	Tooth Outer Diameter(mm)	Mounting Thickness(mm)	Flange Offset (mm)	Belt Area (mm)
60	16	151.42	3	6.5	13

STARTER SYSTEM

STARTER



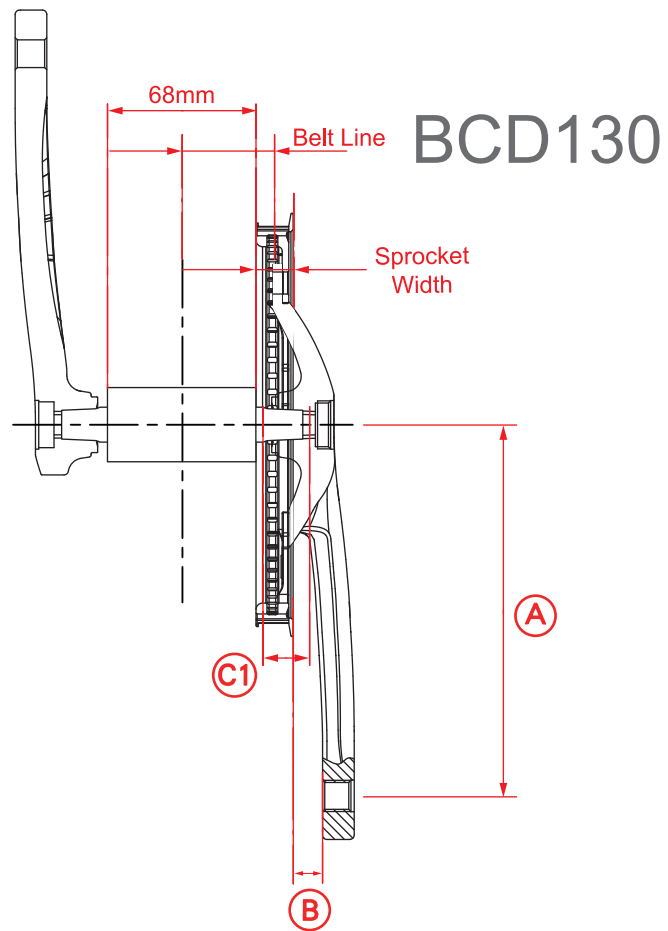
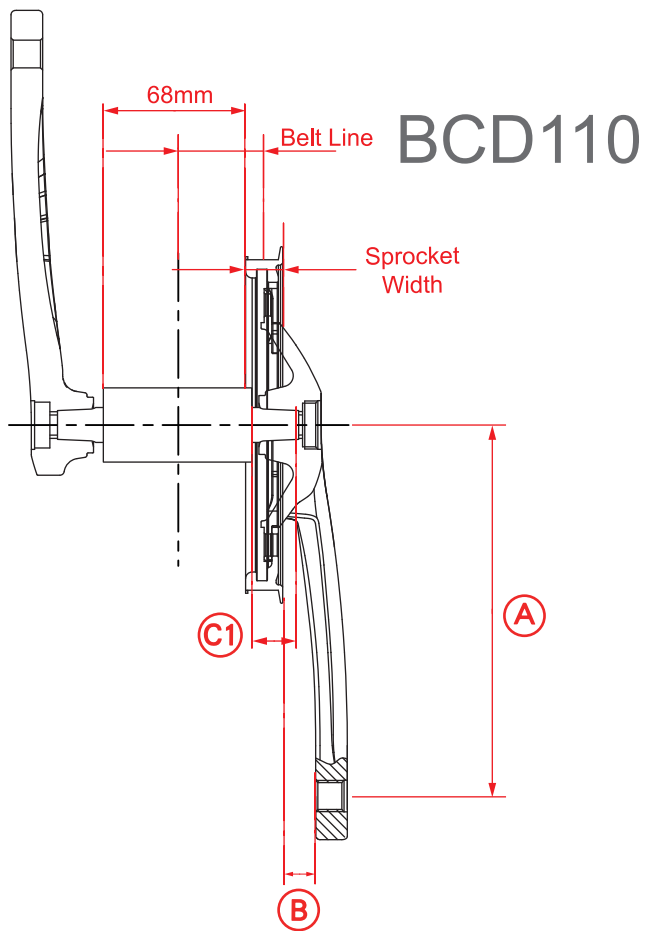
STARTER +



STARTER					
Teeth	Sprocket Width(mm)	Tooth Outer Diameter(mm)	Mounting Thickness(mm)	Flange Offset (mm)	Belt Area (mm)
48	12	120.86	2.3	5	9.7
60	12	151.42	2.3	5	9.7

STARTER +					
Teeth	Sprocket Width(mm)	Tooth Outer Diameter(mm)	Mounting Thickness(mm)	Flange Offset (mm)	Belt Area (mm)
48	13	120.86	3	5.5	10
60	13	151.42	3	5.5	10

PERFORMANCE CRANK SET



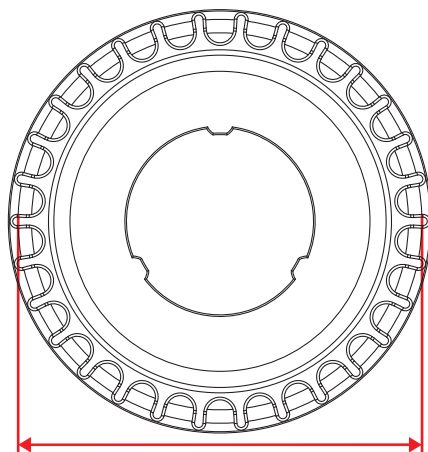
Sprocket/Crank			
BCD	A	B	Sprocket Width(mm)
110	170 / 175	15.1	17 / 18
130	170 / 175	13.5	17 / 18

※ Measurements for C1 and Belt Line, please refer to next page.

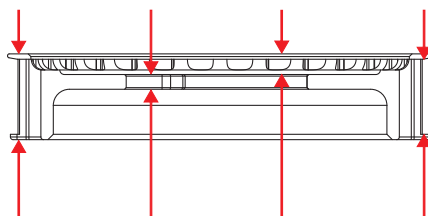
REAR SPROCKET FOR

PERFORMANCE SYSTEM E-BIKE SYSTEM STARTER+ JUNIOR+

COG3

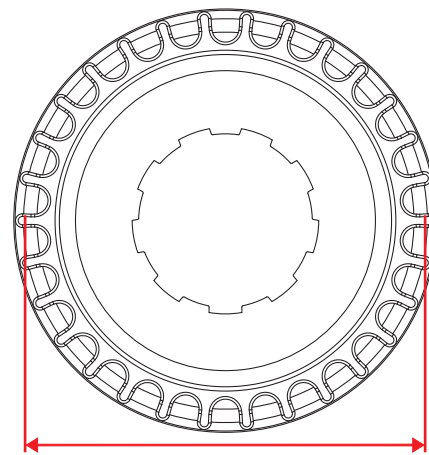


Tooth Outer Diameter

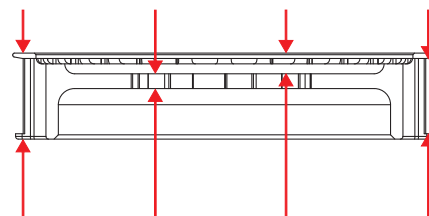


Sprocket Width Mounting Thickness Flange Offset Belt Area

COG9



Tooth Outer Diameter



Sprocket Width Mounting Thickness Flange Offset Belt Area

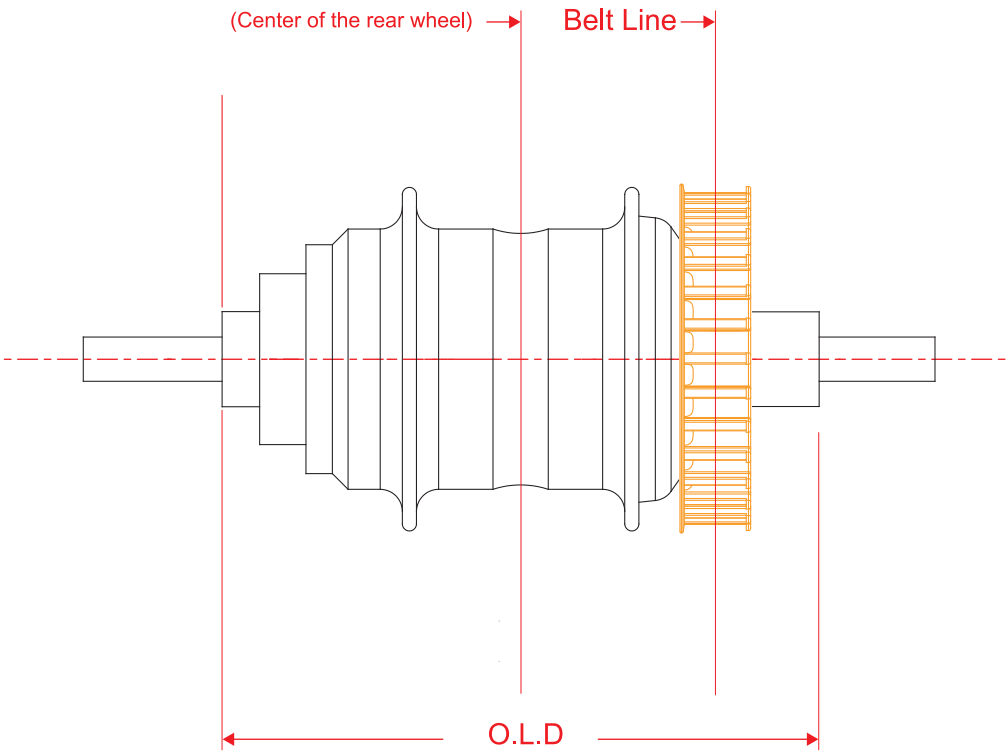
COG3

Teeth	Sprocket Width(mm)	Tooth Outer Diameter(mm)	Mounting Thickness(mm)	Flange Offset (mm)	Belt Area (mm)	Hub Model Number
30	15	75.12	2.75	3.85	13	Nexus 7 Nexus 8
33	15	82.70	2.75	3.85	13	Nexus 7 Nexus 8
36	15	90.30	2.75	3.85	13	Nexus 7 Nexus 8
30	16	75.12	2.75	3.85	14	Nexus 3
33	16	82.70	2.75	3.85	14	Nexus 3
36	16	90.30	2.75	3.85	14	Nexus 3
30	14	75.12	2.75	5.85	13	Alfine 8 Alfine 11
33	14	82.70	2.75	5.85	13	Alfine 8 Alfine 11
36	14	90.30	2.75	5.85	13	Alfine 8 Alfine 11

COG9

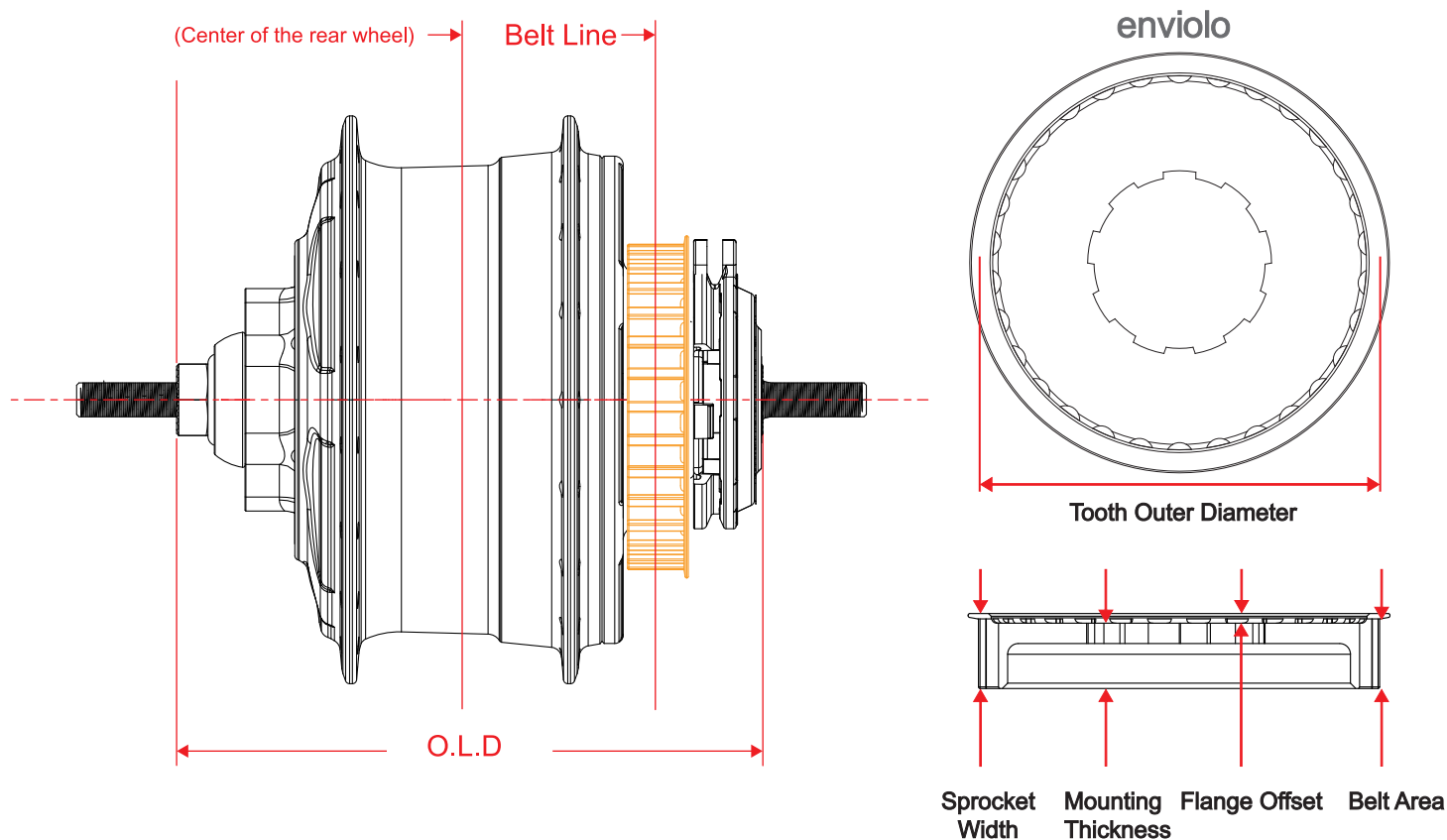
Teeth	Sprocket Width(mm)	Tooth Outer Diameter(mm)	Mounting Thickness(mm)	Flange Offset (mm)	Belt Area (mm)
30	15	75.12	2.75	3.85	13
33	15	82.70	2.75	3.85	13
36	15	90.30	2.75	3.85	13

INTERNAL GEAR HUB SYSTEM - SHIMANO



HUB							
Manufacturer	Hub Description	Hub Model Number	O.L.D (mm)	DTS Belt Line(mm)	Brake Type	BCD (mm)	B.B.-C1 Lenght (Range)
SHIMANO	Alfine 11	SG-S700	135	44.4	Dise	110 / 130	25 / 26
SHIMANO	Alfine 8	SG-S7001-8	135	44.4	Dise	110 / 130	25 / 26
SHIMANO	Nexus 8	SG-C6001-8D,SG-C6001-8CD	135	46.5	Dise	110 / 130	27 / 28
SHIMANO	Nexus 8	SG-C6011-8R,SG-C6001-8R	132	47.4	Roller	110 / 130	28 / 29
SHIMANO	Nexus 8	SG-C6011-8V,SG-C6001-8V	132	47.4	Rim	110 / 130	28 / 29
SHIMANO	Nexus 8	SG-C6001-8C	132.3	47.6	Coaster	110 / 130	28.5 / 29.3
SHIMANO	Nexus 7	SG-C3000-7R	130	44.9	Roller	110 / 130	25.5 / 27
SHIMANO	Nexus 7	SG-C3000-7C	127	46.1	Coaster	110 / 130	27 / 28
SHIMANO	Nexus 3	SG-3R75-A	122	44	Roller	110 / 130	25 / 26
SHIMANO	Nexus 3	SG-3C41	127	44.8	Coaster	110 / 130	25 / 26
SHIMANO	Nexus 3	SG-3C41	120	46.3	Coaster	110 / 130	27 / 28
SHIMANO	Nexus 3	SG-3D55	135	45.8	Dise	110 / 130	26 / 27
SHIMANO	Nexus 3	SG-3R40	120	44.8	Roller	110 / 130	25 / 26
SHIMANO	Nexus 3	SG-3R40	127	43.1	Roller	110 / 130	23.5 / 25
SHIMANO	Nexus 3	SG-3R40	130	43.1	Roller	110 / 130	23.5 / 25

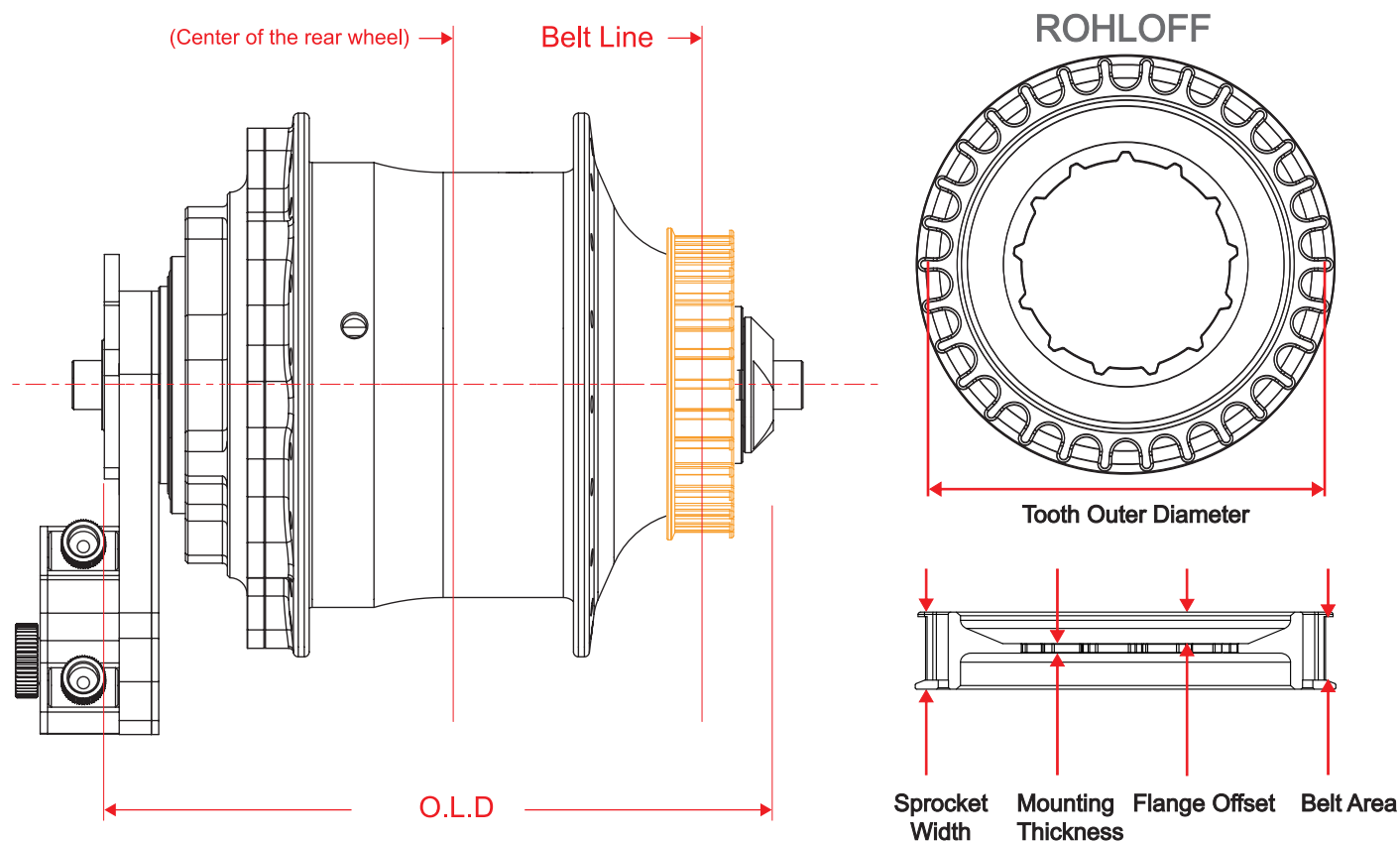
INTERNAL GEAR HUB SYSTEM - enviolo



HUB : enviolo						
Manufacturer	Hub Description	Hub Model Number	O.L.D (mm)	DTS Belt Line(mm)	BCD (mm)	B.B.-C1 Lenght (Range)
enviolo	CVP	enviolo CT	135	45.4	110 / 130	26 / 27
enviolo	CVP	enviolo TR	135	45.4	110 / 130	26 / 27
enviolo	CVP	enviolo SP	135 / 142 / 148	45.4 / 45.4 / 46.1	110 / 130	26 / 27 27 / 28
enviolo	CVP	enviolo CA	135 / 142 / 148	45.4 / 45.4 / 46.1	110 / 130	26 / 27 27 / 28
enviolo	CVP	enviolo CO	135	45.4	110 / 130	26 / 27
NUVINCI	CVP	N330 / N360 / N380	135	45.4	110 / 130	26 / 27

COG9E					
Teeth	Sprocket Width(mm)	Tooth Outer Diameter(mm)	Mounting Thickness(mm)	Flange Offset (mm)	Belt Area (mm)
30	14	75.12	3.8	1.8	13
33	14	82.70	3.8	1.8	13
36	14	90.30	3.8	1.8	13

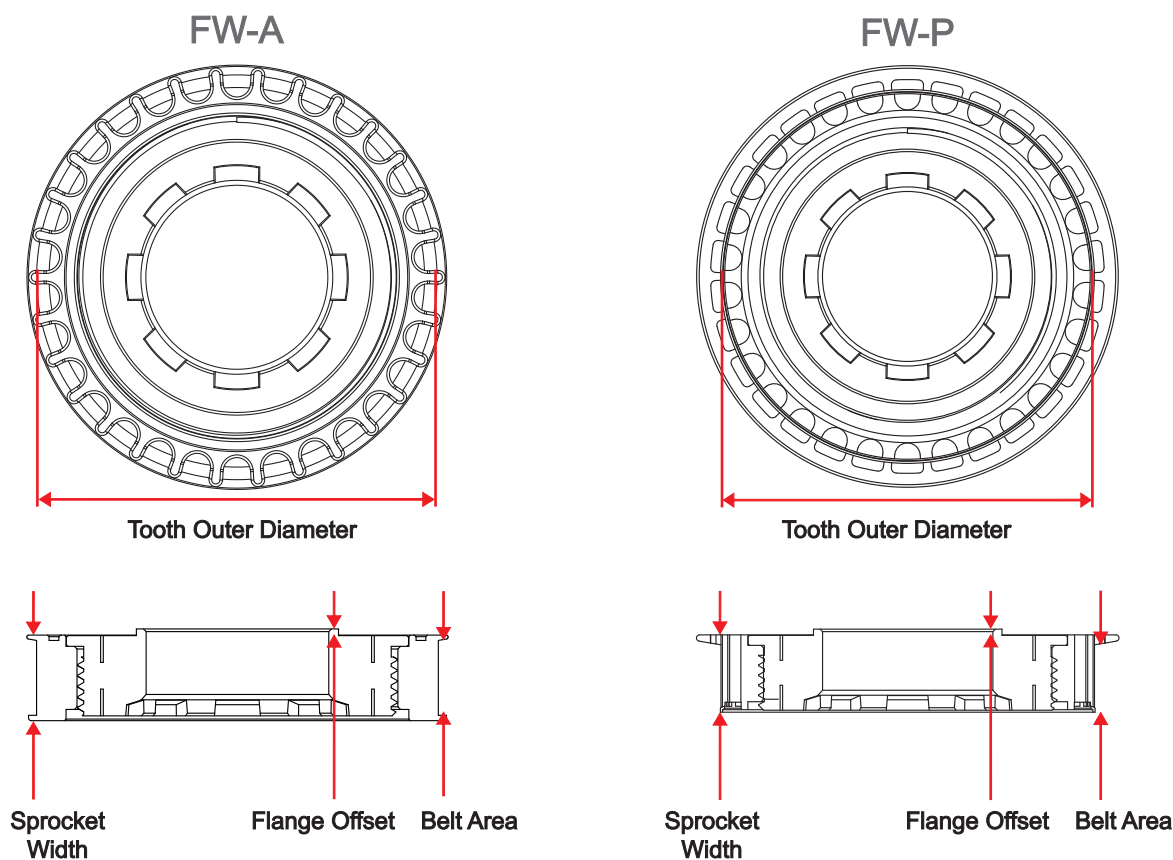
INTERNAL GEAR HUB SYSTEM - ROHLOFF



ROHLOFF						
Manufacturer	Hub Description	Hub Model Number	O.L.D (mm)	DTS Belt Line(mm)	BCD (mm)	B.B.-C1 Length (Range)
ROHLOFF	14 SPEED	500/14	135/142	57.05	110 / 130	38 / 38
ROHLOFF	14 SPEED	XL 500/14	177	74.55	110 / 130	----

COGR					
Teeth	Sprocket Width(mm)	Tooth Outer Diameter(mm)	Mounting Thickness(mm)	Flange Offset (mm)	Belt Area (mm)
30	17	75.12	2.10	7.95	14
33	17	82.70	2.10	7.95	14
36	17	90.30	2.10	7.95	14

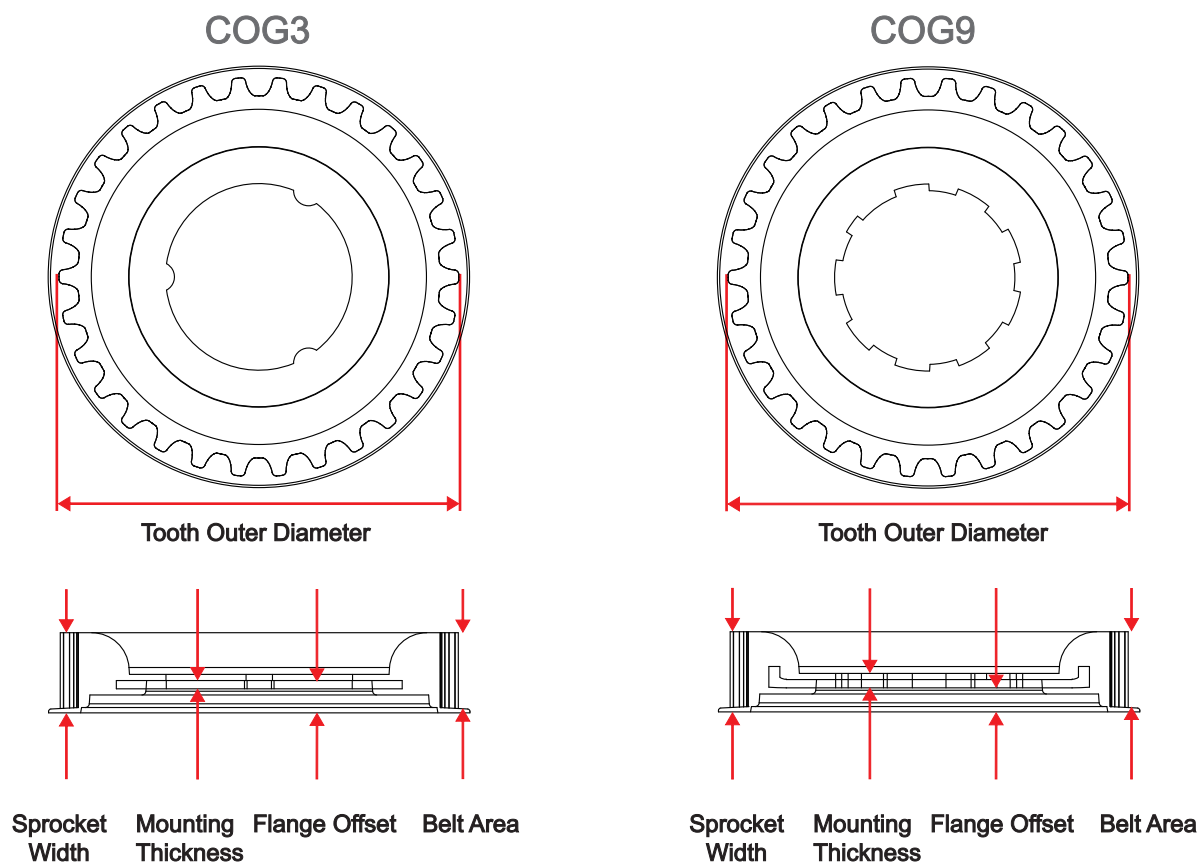
REAR SPROCKET WITH FREEWHEEL



FW-A				
Teeth	Sprocket Width(mm)	Tooth Outer Diameter(mm)	Flange Offset (mm)	Belt Area (mm)
30	16	75.12	1.15	14
33	16	82.70	1.15	14
36	16	90.30	1.15	14

FW-P				
Teeth	Sprocket Width(mm)	Tooth Outer Diameter(mm)	Flange Offset (mm)	Belt Area (mm)
30	16	75.12	1.15	14

REAR SPROCKET FOR STARTER



COG3					
Teeth	Sprocket Width(mm)	Tooth Outer Diameter(mm)	Mounting Thickness(mm)	Flange Offset (mm)	Belt Area (mm)
28	15	69.74	2.7	4.5	14
30	15	74.81	2.7	4.5	14

COG9					
Teeth	Sprocket Width(mm)	Tooth Outer Diameter(mm)	Mounting Thickness(mm)	Flange Offset (mm)	Belt Area (mm)
28	15	69.74	2.7	4.5	14
30	15	74.81	2.7	4.5	14

896 – Drivetrain Tech Solution Inc. This CDRIVE product exceeds international safety and compliance testing standards ISO 4210, 8098 and JIS D 9301, and verified by ACT Lab, and independent 3rd party testing firm.	
ISO 4210: Cycles – Safety requirements for bicycles	
Pt 8: Pedals & Drive System 4.5 Drive Belt Tensile Strength <i>Modified:</i> JIS JC1.1 Speed of 50mm/Min	
Pt 8: Pedals & Drive System 4.5 Drive Belt Tensile Strength <i>Modified:</i> JIS JC1.1 Speed of 50mm/Min, Immersed in Oil for 72 Hours	
Pt 8: Pedals & Drive System 4.5 Drive Belt Tensile Strength <i>Modified:</i> JIS JC1.1 Speed of 50mm/Min, Immersed in Water for 72 Hours	
Part 8: Pedals and Drive System Section 4.6 Crank Assembly – Fatigue test (Stage 1)	
ISO 8098: Cycles – Safety requirements for bicycles for young children	
Section 4.13.6 Crank Assembly – Fatigue Test with Crank at 45°	
JIS D 9301: Bicycles for general use	
Section 7.10 Static Strength of Drivetrain - Stationary Fixture.	
Section JC.1.1 Tensile strength	
Section JC.1.2 Temperature 60 °C / -20 °C Resistance	
Section JC.1.3 Oil resistance	
Section JC.1.4 Water resistance	
Section JC.1.5 Continuous Drive Durability	

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