

envido

The
Moving
Standard
for

City
Trekking
Sportive
Cargo
Commercial
bikes.

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General			

enviolo

The Moving Standard.

Introduction

We are excited to see that you have decided on the moving standard with our shifting solution containing the revolutionary 'CVT' technology. By selecting this internal gear hub solution, you are ensuring a low maintenance product life cycle combined with an unrivalled ease of use controls functionality to give you the best ride performance available.

These assembly instructions will guide you through the assembly steps of setting up your bike (or eBike), offers you tips and tricks in case of required maintenance, and ensures you know all the features, to get the most out of your ride experience.

Our stepless technology offers an infinite number of ratios inside its wide ratio range and will enable you to focus on the important aspects of a ride, like inner-city traffic or the scenery, while being able to shift under load in any ride condition.

Enjoy your ride with enviolo, the moving standard!



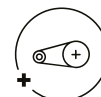
Near silent



Stepless shifting



Effortless shifting, even under load



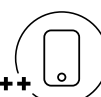
Greater gear ratio range



No additional shifter



Wireless connection



Mobile app customisation



Comfortable pedaling at your desired preset cadence

* available with enviolo manual

** available with enviolo AUTOMATIQ

For Your Safety

Please read the entire manual and pay special attention to all safety warnings before use, replacement of components or installation of enviolo components. Failure to follow the warnings or improper installation, set up, modification, or maintenance may result in material damage or in personal injury. Save all safety warnings and instructions for future reference.

Designated Use

Our 5 groupsets are designed specifically towards the rider needs and meet the attributes of the specific segments as highlighted in the chart below.

Product	Type of Bicycle	Type of Use	Allowable Ride Conditions	Minimum Sprocket Ratio Limit (Pedal/eBike)	Max Motor Torque	Max Nominal Power	Max Gross Vehicle Weight
enviolo CT	City, Urban, Commuter		Riding on paved surface with the tires always on the ground.	1.8/(250W) 2.0	55 Nm	250W	160kg
enviolo TR	Trekking, Urban, Cross, Commuter		Riding on paved surface or gravel roads or groomed trails with low-angle grades.	1.8/(250W) 2.0	85 Nm	250W	180kg
enviolo SP	Cross, Sportive, Cross-Country Hardtail		Riding on paved surface or gravel roads or forest paths and smooth technical trails including small obstacles with low-angle grades and drop offs less than 12" (30cm). It is not intended for steep or rough terrain. Can be used for commercial application.	1.8/(250W) 2.0	100 Nm	250W	160kg
enviolo SP	Speed Pedelec		Riding on paved surface or gravel roads or groomed trails with low-angle grades.	1.8/(up to 350W) 2.0	85 Nm	350W	160kg
enviolo SP	Speed Pedelec		Riding on paved surface or gravel roads without any drop offs. Can be used for commercial application.	1.8/(up to 500W) 2.0	65 Nm	500W	160kg
enviolo CO	City, Urban, Commuter		Riding on paved surface with the tires always on the ground. Can be used for commercial applications.	1.8/(250W) 2.0	55 Nm	250W	160kg
enviolo CA	Cargo, Delivery, Transport		Riding on paved surface or gravel roads without any drop offs. Can be used for commercial application.	1.8/(250W) 2.0	85 Nm	250W	250kg

Check the proper setup of the system before every ride to ensure a safe ride. If you discover any defects, these must be immediately corrected by your bicycle dealer. If any parts need to be replaced, make sure only original parts are used to ensure your own safety and to maintain the high level product quality.

We recommend to follow a customer service inspection, which can identify material fatigue at an early stage and ensures your safety.

Safety Notices

The following safety symbols identify the levels of danger and must be observed throughout this document:

Attention	Caution	Danger	Warning
This notice warns you about potential damage to material.	This notice warns you about a dangerous situation which can lead to minor or slight injury if not avoided.	This notice warns you about a dangerous situation which can lead to slight injury if not avoided.	This notice warns you about a dangerous situation which can lead to serious or fatal injury if not avoided.

Do not open our components yourself. All components have to be maintained by trained service staff.

Components of Groupsets

Our high-tech components, designed specifically for their use cases, offer unrivaled possibilities.

enviolo Manual

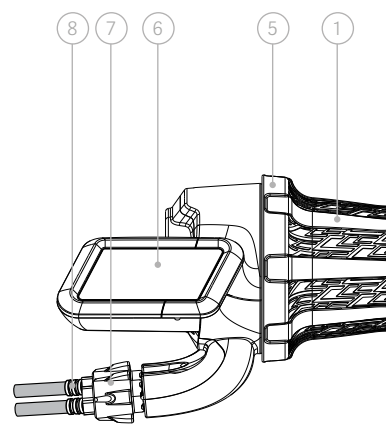
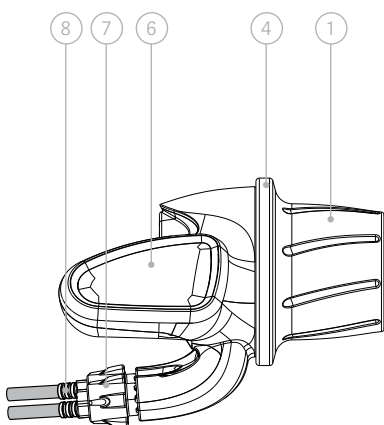
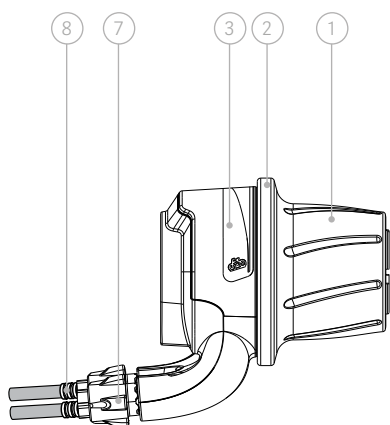
	CT	CO	TR	CA	SP
INTERNAL GEAR HUB					
MANUAL CONTROLLER & MOUNTING HARDWARE	<p>Each manual system is comprised of an internal gear hub with the enviolo® internal gear hub technology, a front shifter, a hub interface, and the according mounting hardware.</p>				
MANUAL HUB INTERFACE					

Manual System Components

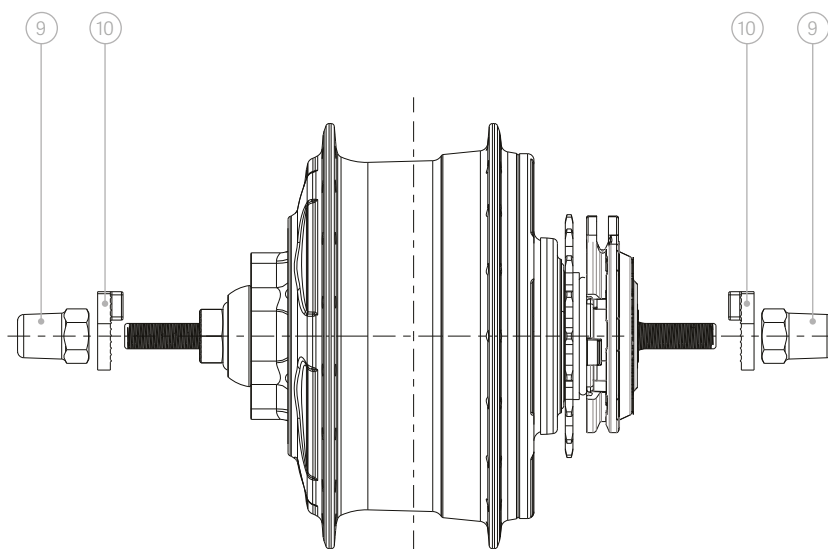
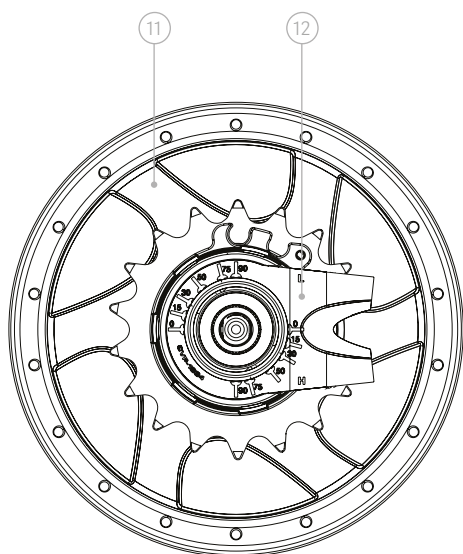
enviolo

Each manual system is comprised of an internal gear hub with the enviolo internal gear hub technology, a front shifter, a hub interface, and the according mounting hardware.

- | | |
|---------------------|-------------------------|
| 1 Controller grip | 7 Barrel adjuster |
| 2 enviolo CT/CA/CO | 8 Cable housing |
| 3 Indicator graphic | 9 Axle nuts |
| 4 enviolo TR | 10 No-turn washer |
| 5 enviolo SP | 11 CT/TR/CO hub |
| 6 Display | 12 Manual Hub Interface |

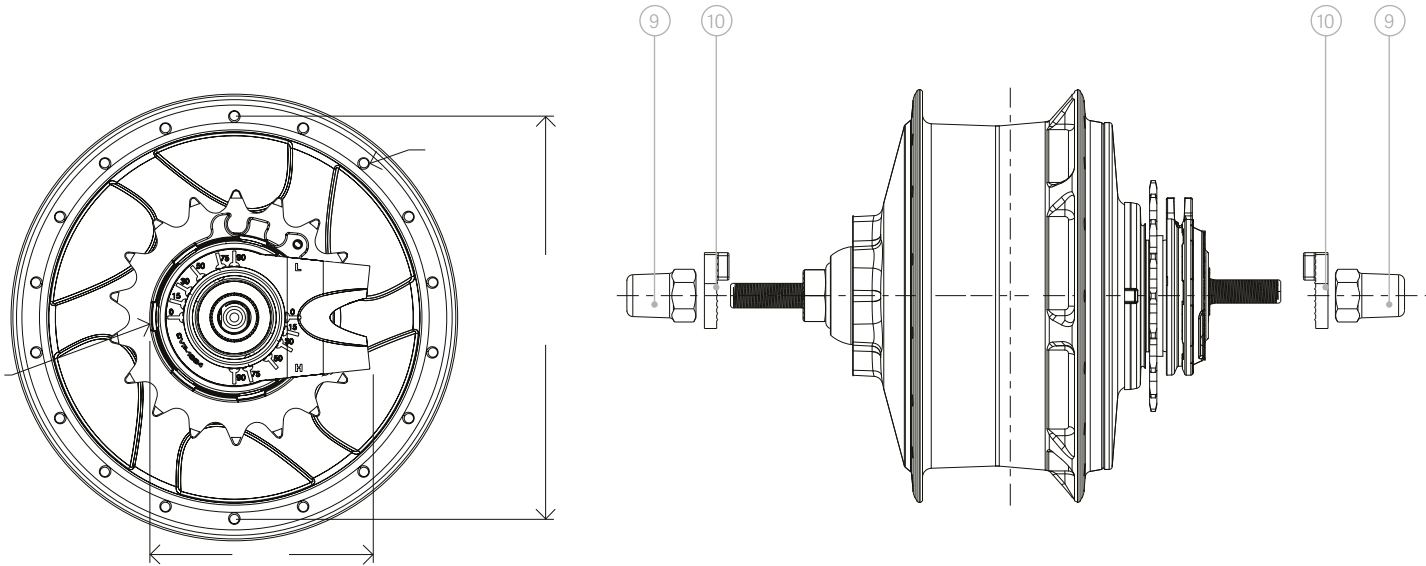


enviolo CT/TR/CO Internal Gear Hub



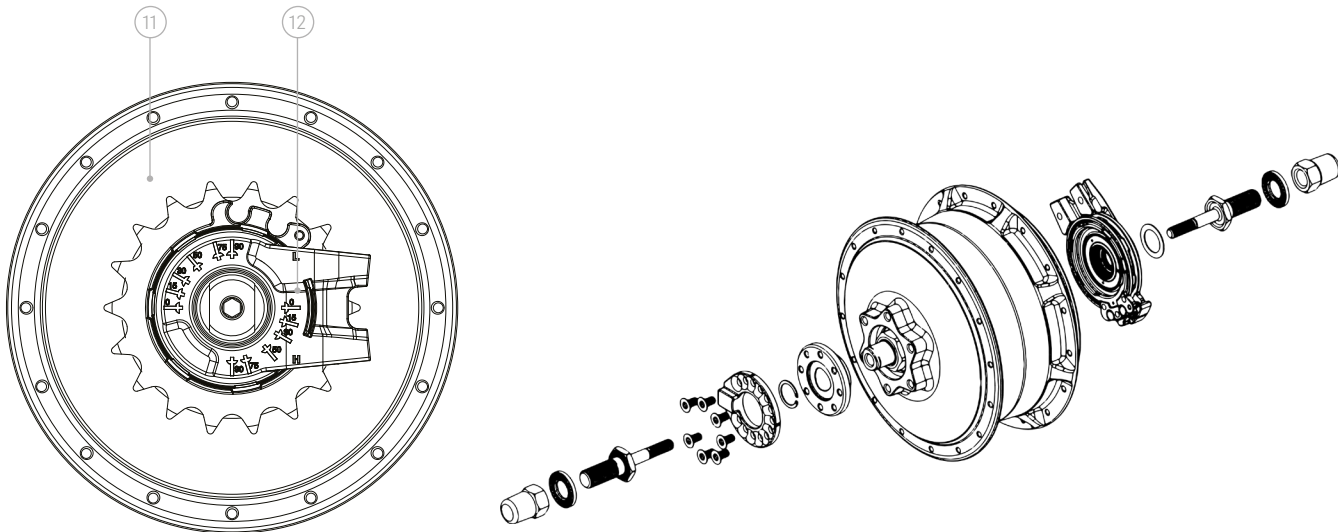
enviolo CA Internal Gear Hub

135mm



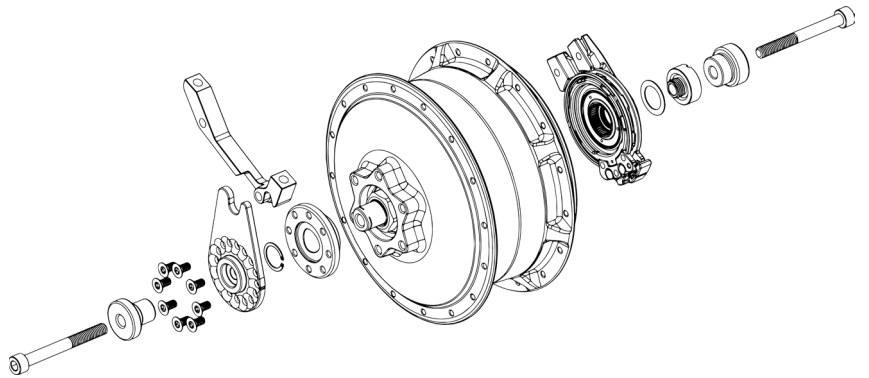
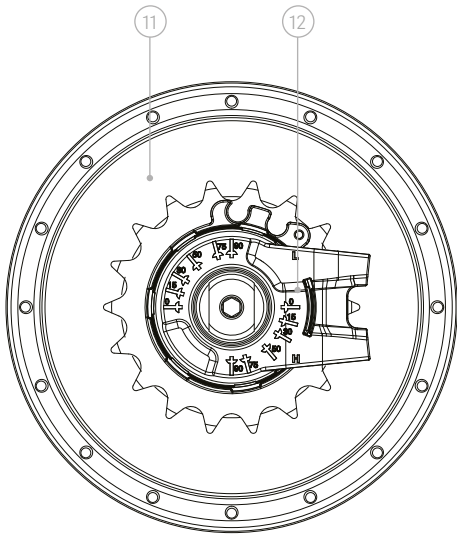
enviolo SP Internal Gear Hub

135mm



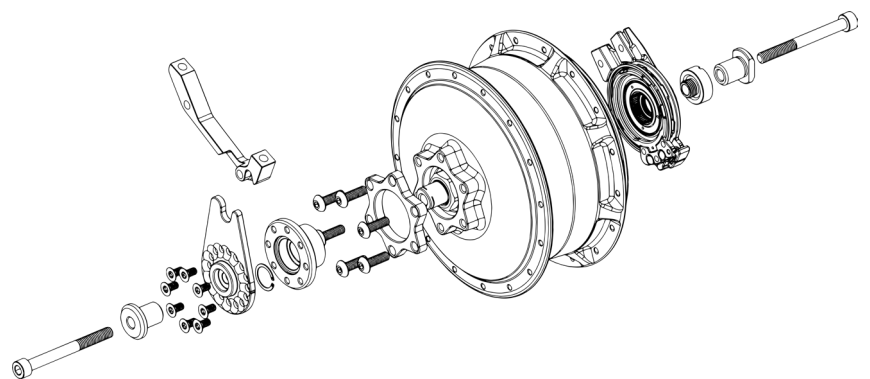
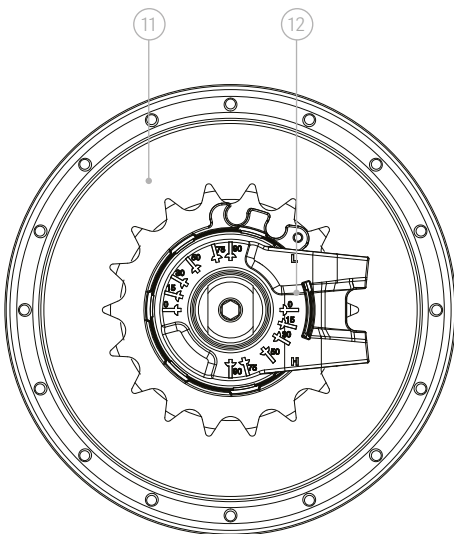
enviolo SP Internal Gear Hub

142mm



enviolo SP Internal Gear Hub

148mm



enviolo AUTOMATiQ

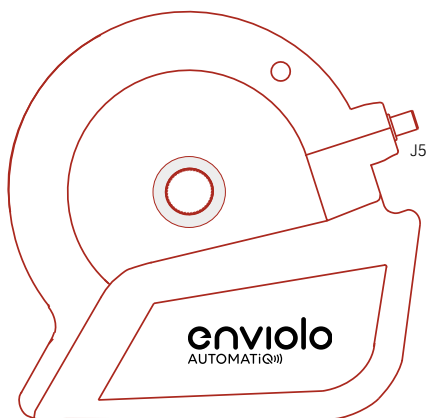
	CT	TR	SP	CA	CO
INTERNAL GEAR HUB					
AUTOMATiQ INTERFACE, CONTROLLER & SHIFTER	Each AUTOMATiQ system is comprised of an internal gear hub with the enviolo internal gear hub technology, a hub interface, a power cable, two sensor discs and the according mounting hardware.				
	✓ ✓	○ ○	○ ×	○ ×	○ ○
	○ ○	✓ ✓	○ ×	○ ×	○ ○
	○ ×	○ ×	✓ ✓	○ ○	○ ×
	○ ×	○ ×	○ ○	✓ ✓	○ ×
	○ ○	○ ○	○ ×	○ ×	✓ ✓
AUTOMATiQ SENSORS					
AUTOMATiQ WIRE HARNESSES					



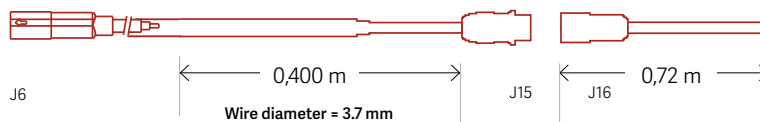
The mounting hardware mentioned in the enviolo manual components section (page 7) is also required for the enviolo AUTOMATiQ systems.

* The 3-button controller is currently under evaluation.

enviolo AUTOMATiQ System Components



enviolo CT: AHI-AUT-CT-OE
 enviolo CO: AHI-AUT-CO-OE
 enviolo TR: AHI-AUT-TR-OE
 enviolo CA: AHI-AUT-CA-OE
 enviolo SP: AHI-AUT-SP-OE



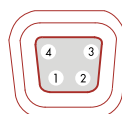
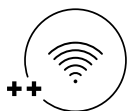
Hirose connector: WIRE-AT3-400-OE Available from drive system manufacturer.
 WIRE-AT3-600-OE

-----OR-----



WIRE-AT3-DS-OE

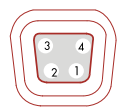
enviolo AUTOMATiQ is a CAN Bus / BLE system



J6/Mini F



J15/Hirose



J5/Mini F

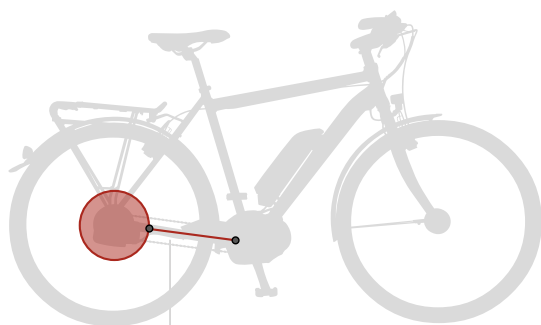


J16/Hirose

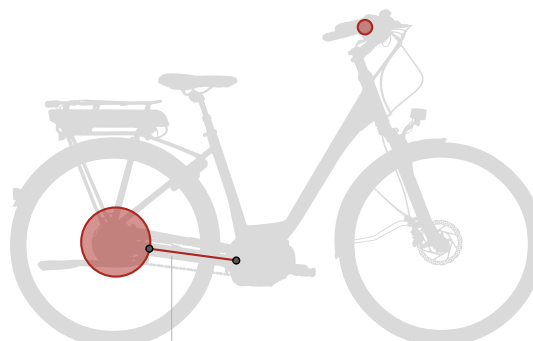
* This connector is only required if the counterplug is not provided by the drive system manufacturer. Please contact the drive system manufacturer for further information. For Yamaha we offer an alternative cable. Please contact the sales team for further information.

AUTOMATiQ Wire Harness

This diagram provides you an overview of the system connections.



I-Harness



I-Harness

Technical Data

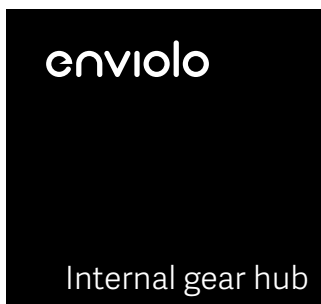
To make sure you use the best system possible for your application, you will find our product attributes on the next pages in this section.

Internal gear hub Specifications

City, Trekking, Sportive, Cargo, Commercial



Internal gear hub	enviolo CT	enviolo TR	enviolo CO
Nominal ratio range	310% (0.55 - 1.7)	380% (0.5 - 1.90)	310% (0.55 - 1.7)
Max. nominal power	250 W*	250 W*	250 W*
Max. vehicle weight	160 kg*	180 kg*	160 kg*
Chainline	49.0 +/- 0.5 mm	49.0 +/- 0.5 mm	49.0 +/- 0.5 mm
Beltline (Gates)	45.5 +/- 0.5 mm	45.5 +/- 0.5 mm	45.5 +/- 0.5 mm
Beltline (Continental)	46.6 +/- 0.5 mm	46.6 +/- 0.5 mm	46.6 +/- 0.5 mm
Sprocket sizes (chain)	16 - 22 T	16 - 22 T	16 - 22 T
Sprocket sizes (belt)	20 - 28 T	20 - 28 T	20 - 28 T
Spoke options	32/36	32/36	32/36
Weight	2450 g	2450 g	2450 g
IP classification	Hub = IP65, freewheel = IP54, Hub interface = IP54	Hub = IP65, freewheel = IP54, rear shifter = IP54	Hub = IP65, freewheel = IP54, rear shifter = IP54



Internal gear hub	enviolo SP	enviolo CA
Nominal ratio range	380% (0.5 - 1.90)	380% (0.5 - 1.90)
Max. nominal power	500 W*	500 W*
Max. vehicle weight	250 kg*	250 kg*
Chainline	135 & 142 mm = 49.0 +/- 0.5 mm 148 mm = 52.0 +/- 0.5 mm	135 mm = 49.0 +/- 0.5 mm
Beltline (Gates)	135 & 142 mm = 45.5 +/- 0.5 mm 148 mm = 48.7 +/- 0.5 mm	135 mm = 45.5 +/- 0.5 mm
Beltline (Continental)	135 & 142 mm = 46.6 +/- 0.5 mm 148 mm = 49.4 +/- 0.5 mm	135 mm = 46.6 +/- 0.5 mm
Sprocket sizes (chain)	16 - 22 T	16 - 22 T
Sprocket sizes (belt)	20 - 28 T	20 - 28 T
Spoke options	32/36	32/36
Weight	2450 g	2450 g
IP classification	Hub = IP65, freewheel = IP54, rear shifter = IP54	Hub = IP65, freewheel = IP54, rear shifter = IP54

Groupset Power Limits

enviolo

Nominal Power

250 W

	120 kg	130 kg	140 kg	150 kg	160 kg	170 kg	180 kg	190 kg	200 kg	210 kg	220 kg	230 kg	240 kg	250 kg
50 Nm	CT CO	CT CO	CT CO	CT CO	CT CO	TR	TR	SP CA	SP CA	SP CA	SP CA	SP CA	SP CA	SP CA
55 Nm	CT CO	CT CO	CT CO	CT CO	CT CO	TR	TR	SP CA	SP CA	SP CA	SP CA	SP CA	SP CA	SP CA
60 Nm	TR	TR	TR	TR	TR	TR	TR	SP CA	SP CA	SP CA	SP CA	SP CA	SP CA	SP CA
65 Nm	TR	TR	TR	TR	TR	TR	TR	SP CA	SP CA	SP CA	SP CA	SP CA	SP CA	SP CA
70 Nm	TR	TR	TR	TR	TR	TR	TR	SP CA	SP CA	SP CA	SP CA	SP CA	SP CA	SP CA
75 Nm	TR	TR	TR	TR	TR	TR	TR	SP CA	SP CA	SP CA	SP CA	SP CA	SP CA	SP CA
80 Nm	TR	TR	TR	TR	TR	TR	TR	SP CA	SP CA	SP CA	SP CA	SP CA	SP CA	SP CA
85 Nm	TR	TR	TR	TR	TR	TR	TR	SP CA	SP CA	SP CA	SP CA	SP CA	SP CA	SP CA
90 Nm	SP CA	SP CA	SP CA	SP CA	SP CA									
95 Nm	SP CA	SP CA	SP CA	SP CA	SP CA									
100 Nm	SP CA	SP CA	SP CA	SP CA	SP CA									

Nominal Power

350 W

	120 kg	130 kg	140 kg	150 kg	160 kg
50 Nm	SP CA	SP CA	SP CA	SP CA	SP CA
55 Nm	SP CA	SP CA	SP CA	SP CA	SP CA
60 Nm	SP CA	SP CA	SP CA	SP CA	SP CA
65 Nm	SP CA	SP CA	SP CA	SP CA	SP CA
70 Nm	SP CA	SP CA	SP CA	SP CA	SP CA
75 Nm	SP CA	SP CA	SP CA	SP CA	SP CA
80 Nm	SP CA	SP CA	SP CA	SP CA	SP CA
85 Nm	SP CA	SP CA	SP CA	SP CA	SP CA

Nominal Power

500 W

	120 kg	130 kg	140 kg	150 kg	160 kg
50 Nm	SP CA	SP CA	SP CA	SP CA	SP CA
55 Nm	SP CA	SP CA	SP CA	SP CA	SP CA
60 Nm	SP CA	SP CA	SP CA	SP CA	SP CA
65 Nm	SP CA	SP CA	SP CA	SP CA	SP CA

CT TR SP CA CO



IP classification
Electrical specifications*:
 Nominal voltage range
 Peak voltage
 Min. voltage
 Built-in fuse protection
 Average power consumption
 Peak power consumption
 Shut-down protection
 Sleep mode
 Power consumption Sleep mode
 Power consumption Non-shifting
Wiring:
 Wire diameter
 Connector Ø on AHI
 Connector Ø to power source

IP54
 18 V - 55 V
 60 V
 18 V
 3A
 (2Nm X 2.5W) = 5W
 10.5W < 3s
 Data is saved at shutdown
 Time can be pre-set using app
 0.5W
 0.5W
 I-Harness = 3.7mm
 4-pin = 9mm
 10.2 X 14.2 mm

IP54
 18 V - 55 V
 60 V
 18 V
 3A
 (8Nm X 2.5W) = 20W
 48W < 3s
 Data is saved at shutdown
 Time can be pre-set using app
 0.5W
 0.5W
 I-Harness = 3.7mm
 4-pin = 9mm
 10.2 X 14.2 mm

IP54
 18 V - 55 V
 60 V
 18 V
 3A
 (2Nm X 2.5W) = 5W
 10.5W < 3s
 Data is saved at shutdown
 Time can be pre-set using app
 0.5W
 0.5W
 I-Harness = 3.7mm
 4-pin = 9mm
 10.2 X 14.2 mm



IP classification
Electrical specifications*:
 Nominal voltage range
 Peak voltage
 Min. voltage
 Built-in fuse protection
 Average power consumption
 Peak power consumption
 Shut-down protection
 Sleep mode
 Power consumption Sleep mode
 Power consumption Non-shifting
Wiring:
 Wire diameter
 Connector Ø on AHI
 Connector Ø to power source

IP54
 18 V - 55 V
 60 V
 18 V
 3A
 (8Nm X 2.5W) = 20W
 48W < 3s
 Data is saved at shutdown
 Time can be pre-set using app
 0.5W
 0.5W
 I-Harness = 3.7mm
 4-pin = 9mm
 10.2 X 14.2 mm

IP54
 18 V - 55 V
 60 V
 18 V
 3A
 (8Nm X 2.5W) = 20W
 48W < 3s
 Data is saved at shutdown
 Time can be pre-set using app
 0.5W
 0.5W
 I-Harness = 3.7mm
 4-pin = 9mm
 10.2 X 14.2 mm

*Final specification under evaluation.
 enviolo Owner's Manual

enviolo

Manual
Controller

Shift cable length
Grip rotation options*
Handlebar diameter
Cable housing

Shift cable diameter
Compatible with all CVPs
IP classification
Grip Material



enviolo CT

2200
Multi-turn or One-turn
22.2 mm
Full cable housing recom-
mended, dual cable route
1.1 - 1.2 mm (original 1.2 mm)
Yes
IP54
Standard



enviolo CA

2200 or 3300mm
Multi-turn or One-turn
22.2 mm
Full cable housing recom-
mended, dual cable route
1.1 - 1.2 mm (original 1.1 mm)
Yes
IP54
Extended Durability



enviolo CO

2200mm
Multi-turn or One-turn
22.2 mm
Full cable housing recom-
mended, dual cable route
1.1 - 1.2 mm (original 1.1 mm)
Yes
IP54
Extended Durability

enviolo

Manual
Controller

Shift cable length
Grip rotation options*
Handlebar diameter
Cable housing

Shift cable diameter
Compatible with all CVPs
IP classification
Grip Material



enviolo TR

2200 or 3300mm
Multi-turn or One-turn
22.2 mm
Full cable housing recom-
mended, dual cable route
1.1 - 1.2 mm (original 1.1 mm)
Yes
IP54
Standard



enviolo SP

2200
Multi-turn or One-turn
22.2 mm
Full cable housing recom-
mended, dual cable route
1.1 - 1.2 mm (original 1.1 mm)
Yes
IP54
Standard

enviolo

AUTOMATI*Q*
Controller

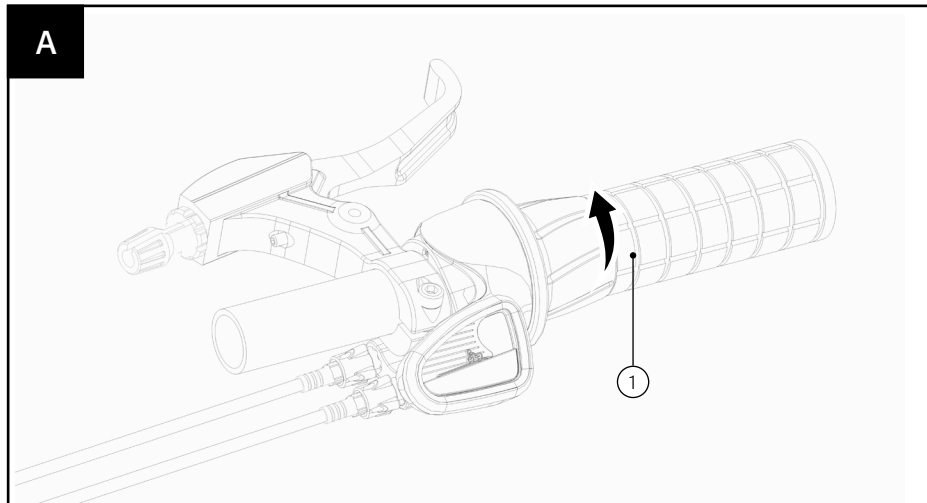
Cable
Handlebar diameter
Compatible with all IGH
IP classification

Wireless
22.2mm
Yes
IP54

Quick Start Guide

To get you on the bike quickly and let you experience our technology first hand, we have condensed the most important information on the next several pages.

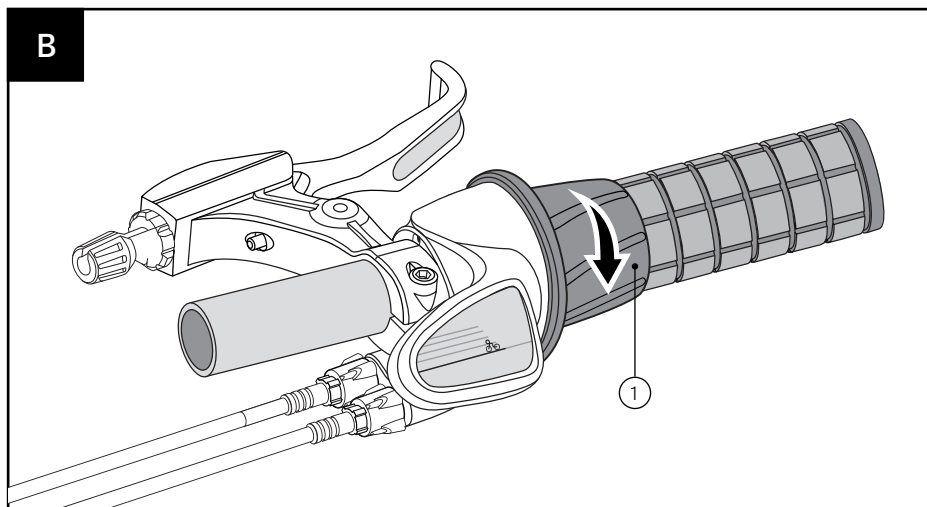
Enjoy the ride!



1. Shifting

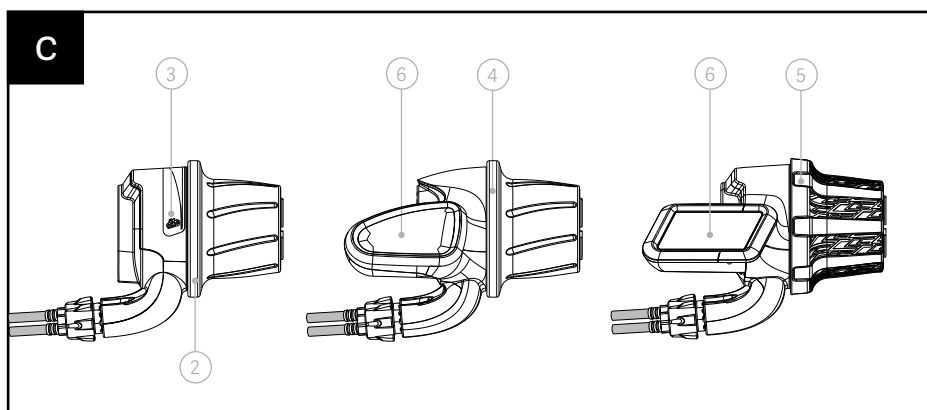
SHIFTING WHILE RIDING

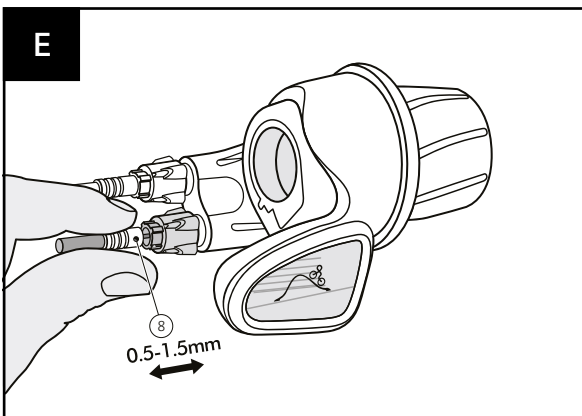
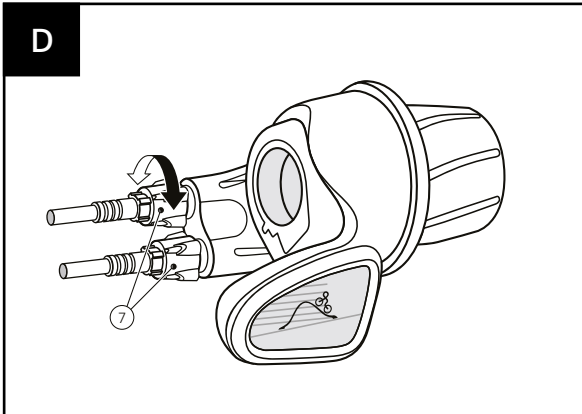
- [A] Shift into low ratios for starting or climbing, rotate the controller grip (1) clockwise.
- [B] Shift into high ratios for higher speeds rotate the controller grip (1) counterclockwise.
- [C] Orientation:
 - enviolo CT/CO/CA controller (2) simplified indicator graphic (3) on the housing for your orientation.
 - enviolo TR (4)/enviolo SP (5) controller display (6) with a unique shift indicator, which shows the chosen ratio.



SHIFTING WHILE STOPPED

- enviolo's hubs with enviolo® technology cannot be shifted completely through the ratio range while stopped.
- 50-70% of the shift range is typically accessible, with the remainder accessible with very little pedal rotation.





2. Adjusting Cable Slack

- [D] Cable slack can be adjusted with the barrel adjusters (7) at the controller.
- [E] Cable slack can be determined by pulling lightly on the cable housing (8) at the controller and noticing any slack. ~0.5mm of slack is ideal.
- Cable slack of more than 2.0mm may cause decreased shift performance and shift cable durability.
- For rear wheel removal, additional cable slack may be desired to ease shift cable hardware removal, which can be obtained with the barrel adjusters (7).

3. Upgrading the system

Alternative controllers and manual hub interface solutions are available, as all controllers can be used for all internal gear hub variants (see overview on page 8). In addition the manual hub interface offers multi-turn or one-turn options based on your desires to have more direct or more fine-tuned ratio shift steps. Contact your local retailer or enviolo Service & Support for more details.

1. System Functionality

The AUTOMATiQ system is integrated within the eBike drive system and provides automatic shifting for the rider at all times. It can be utilized with the drive system remote controller, which usually offers both fully automatic and manual shifting options. If supported by the drive system, the rider has the option to switch between “manual” and “automatic” modes by pressing the “mode” button (6) on the controller housing. For details, please look at your drive system manual, since the integration is handled differently by type of drive system.

The internal gear hub can be shifted ~50% while stationary. The AUTOMATiQ system will intelligently wait for pedaling or wheel movement if wide ratio ranges are commanded while stationary.

2. Setup

AUTOMATiQ Mode

In automatic mode the system automatically adjusts the ratio to maintain the rider’s preferred cadence. The rider can choose their ideal cadence setting through selection in the eBike drive system menu.

Manual Mode

In manual mode the rider is able to shift on their own electronically. The eBike drive system usually integrated this functionality by simulating gears.

Note: In case of the integration into the Bosch Intuvia, Nyon or Kiox displays a long press on the info button will get you directly to the cadence menu without having to click through all menu items.

3. Calibration

On the first set up or after system maintenance or incorrect functionality the system has to be calibrated.

1. Turn system power on. Select no motor assist.
2. Initiate the calibration process through the drive system menu.
For details review the eBike drive system manual.
3. Pedal the bicycle lightly through the entire calibration procedure (preferable on a stand with the rear wheel off the ground), while the system shifts from “low” to “high” ratio multiple times and completes the calibration.

Should you be using our app you can also access the calibration through the configuration tab.

3. Calibration continued



[A] enviolo AUTOMATiQ calibration - Bosch Intuvia

When

- After enviolo AUTOMATiQ assembly;
- After firmware update;
- When system functions are not appropriate.

How to - for Intuvia

- Turn on the Bosch Intuvia system. Select no motor assist
- Activate the "configuration mode" through simultaneous push and hold of [RESET] and [i] buttons (A).
- Push the [i] button, until you can see "gear calibration" on the screen.
- Lift up the rear wheel and pedal fast and easy.
- While pedaling, press the "Light" button (B) to start calibration
- Continue to pedal while the system shifts from full overdrive to full underdrive several times to complete the calibration process.
- After completion of the calibration process, the system returns to the ride mode automatically.



[B] enviolo AUTOMATiQ calibration - Bosch Nyon

When

- After enviolo AUTOMATiQ assembly;
- After firmware update;
- When system functions are not appropriate.

How to - for Nyon

- Turn on the Bosch Nyon system. Select no motor assist.
- Enter the menu by moving the joystick to the left.
- Select "Settings" and confirm by pressing the joystick.
- Select "My eBike" and confirm by pressing the joystick.
- Select "eShift (enviolo)" and confirm by pressing the joystick.
- Select "Gear calibration" and confirm by pressing the joystick.
- Lift up the rear wheel and pedal fast and easy.
- While pedaling, select "Continue" by pressing the joystick to start the calibration.
- Continue to pedal while the system shifts from full overdrive to full underdrive several times to complete the calibration process and the screen indicates "Gear calibration successful".
- After completion of the calibration process exit the menu.



[C] enviolo AUTOMATiQ calibration - Bosch Kiox

When

- After enviolo AUTOMATiQ assembly;
- After firmware update;
- When system functions are not appropriate.

How to - for Kiox:

- Turn on the Bosch Kiox system. Select no motor assist.
- Enter the "Settings" menu by pressing the [>] and [<] keys and confirm your selection with the pound key [<>].
- Use [+] and [-] to select the menu item "My eBike" and confirm your selection with [<>] or [>].
- Select the menu item "eShift" and confirm your selection.
- Select the menu item "Calibration" and confirm your selection.
- Continue to pedal while the system shifts from full overdrive to full underdrive several times to complete the calibration process and the screen indicates "Calibration successful".

After completion of the calibration process, the system returns to the ride mode automatically.



[D] enviolo AUTOMATiQ Calibration - Flyer FIT

When

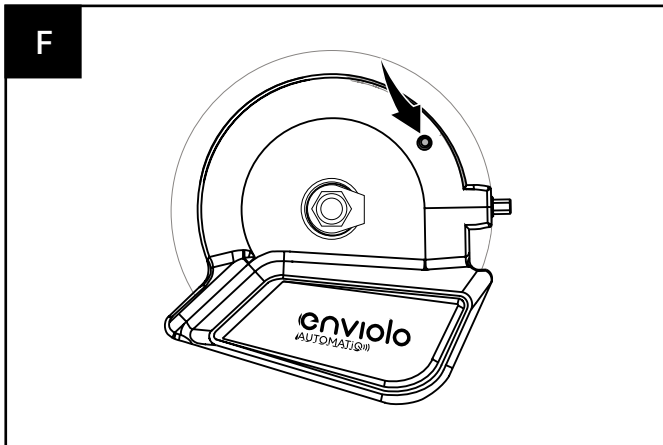
- After enviolo AUTOMATiQ assembly;
- After firmware update;
- When system functions are not appropriate.

How

- Turn on the Flyer system.
- Enter the setup menu using the joystick.
- Select "Calibration" and confirm by pressing the joystick.
- Select "Calibrate enviolo" and confirm by pressing the joystick.
- Lift up the rear wheel and pedal fast and easy.
- Start calibration by pressing the joystick again.
- Continue to pedal while the system shifts from full overdrive to full underdrive several times to complete the calibration process and the screen indicates "Calibration succeeded".

AUTOMATiQ system: INSTALLING THE AUTOMATiQ APP

enviolo
AUTOMATiQ™

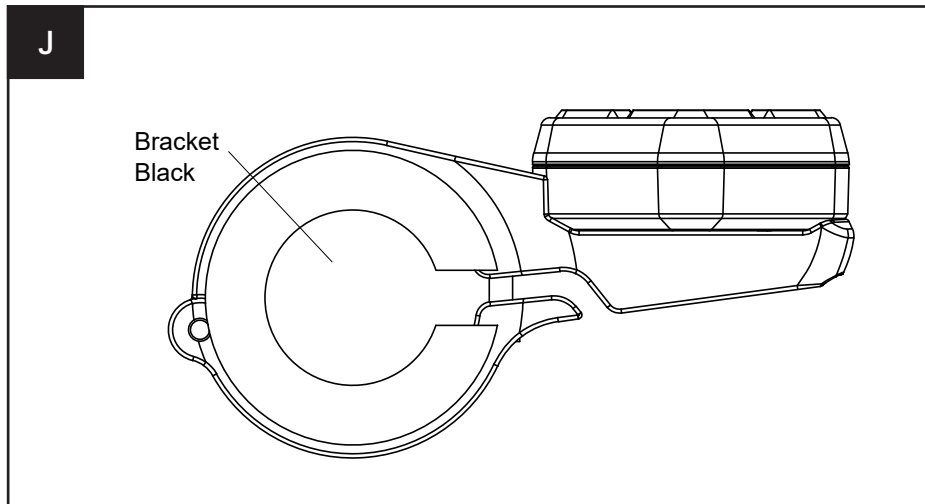


Installing the AUTOMATiQ App

- Ensure you have the correct AUTOMATiQ hub interface for your internal gear hub.
- enviolo CT/CO/TR/CA have one axle diameter and enviolo SP a different one.
- Search for "enviolo AUTOMATiQ" in the Apple Store or Google Play Store.
- Select "Install". The app should now be installing on your device.
- Start the drive system.
- Activate the BLE (bluetooth) connection on your phone.
- Activate the BLE connection on the hub interface by pressing the pairing button (indicated in image F) for 5 seconds until it starts blinking blue.
- Afterwards the app will start looking for available devices. Select the device you want to pair with representing the serial # also listed on the bottom of the hub interface.

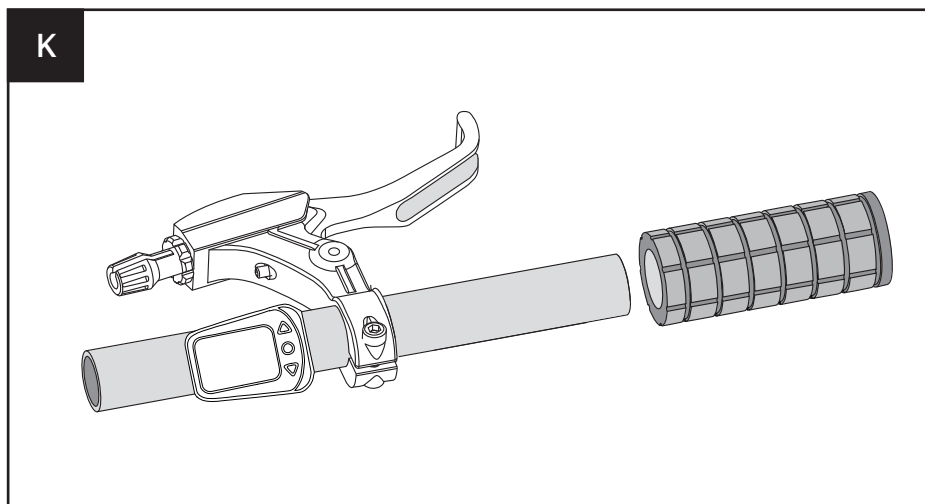
AUTOMATI*Q* system: INSTALLING THE AUTOMATI*Q* CONTROLLER

enviolo
AUTOMATI*Q*™



INSTALLING THE ENVILO CA CONTROLLER

- Install the right brake lever and grip according to the manufacturer's instruction.
- Push the controller bracket over the 22.2mm handlebar. Use the adapter ring if installing.
- Position the controller such that the buttons are positioned slightly under the handlebar and comfortable for thumb controls.
- Tighten the controller clamp to 1.5-2.0Nm with a 2.5mm allen wrench.



INSTALLING THE ENVILO CO CONTROLLER

- Install the right hand grip onto the handlebar according to the manufacturer's instructions.
- Slide the clamp over the handlebar and tighten it to 1.0-2.0Nm with a 3mm allen wrench.
- Position the controller such that the button can be easily reached with the thumb, while riding.
- The enviolo CO controller can be mounted to either right or left side of the handlebar.

For the enviolo CO controller, also note:

Assembly on the left side of the handlebar

After you have installed the enviolo CO on the left side, please press and hold the upper and middle buttons (and) for about 2 seconds.

Once the Status LED turns green for 2 seconds, the remote control is set to the left side of the handlebar.



Assembly on the right side of the handlebar

After you have installed the enviolo CO on the right side, please press and hold the upper and middle buttons (and) for about 2 seconds.

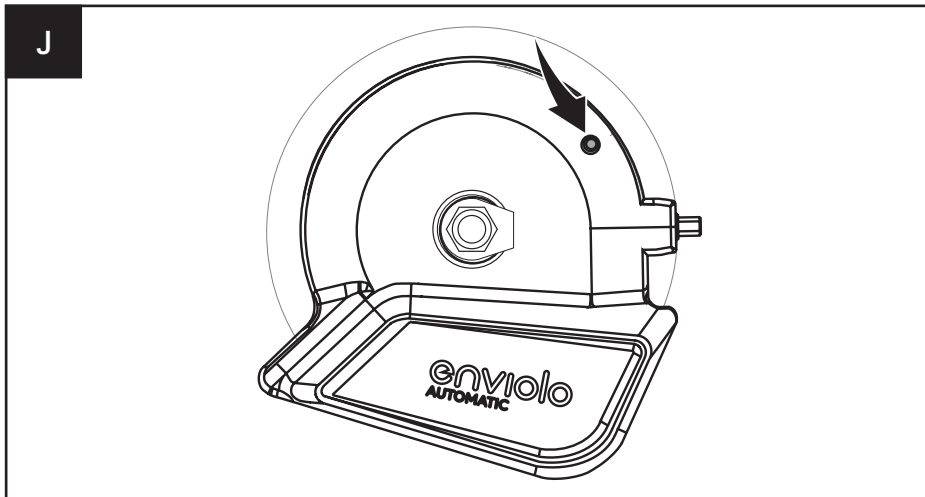
Once the Status LED turns red for 2 seconds, the remote control is set to the right side of the handlebar.



The battery of the controllers can be changed without special knowledge and by using a 50 euro cent coin. For this purpose, a standard CR2032 battery is required, which is inserted into the new remote control.

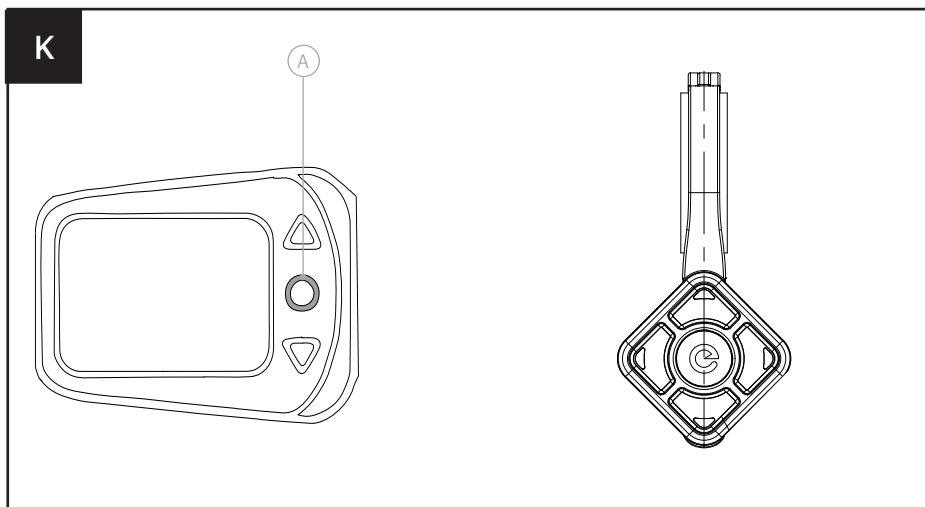
AUTOMATiQ system: PAIRING HUB INTERFACE WITH APP AND CONTROLLER

enviolo
AUTOMATiQ™



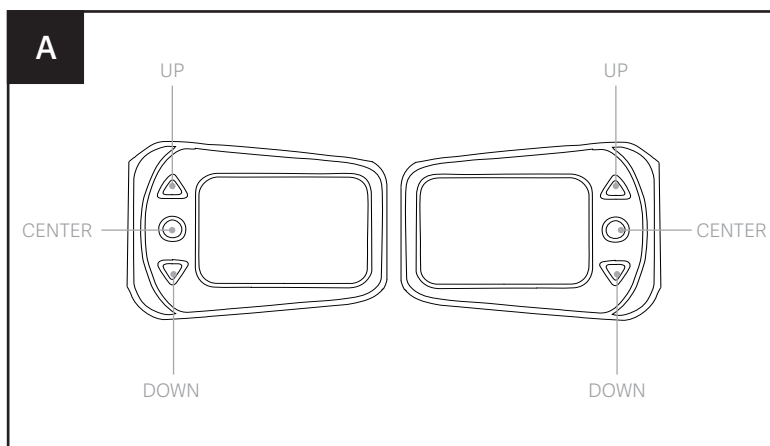
PAIRING THE AUTOMATiQ CONTROLLER

- After the welcome screen disappears you will see a connection request
- Power on your drive system.
- Push the button on the front side of the hub interface and hold it for 5 seconds.
- The button will start blinking blue.
- The device should now appear on your screen.
- Click on your preferred device to start the pairing process.
- After pairing is complete you will see the menu screen.
- Initiate the pairing mode on the hub interface again.
- **For the CA controller:**
Press and hold the center button for more than 8 seconds. Once the LED lights continuously in blue for 1 second the device is paired.
- **For the CO controller:**
Press and hold the center button for 3 seconds until the LED starts flashing green and red. Once the LED flashes green only, the device is paired.



1. System Functionality

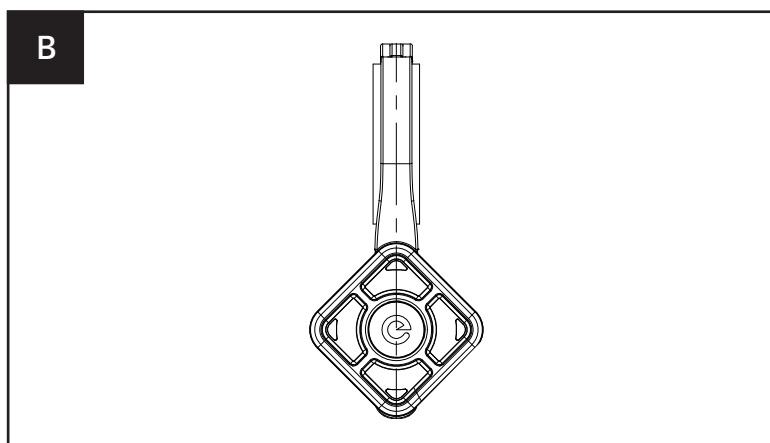
The AUTOMATiQ system provides automatic shifting for the rider at all times. It can be utilized with either the enviolo CO controller or enviolo CA controller making shifting as simple as pressing a button to choose your pedal cadence.



2. Setup

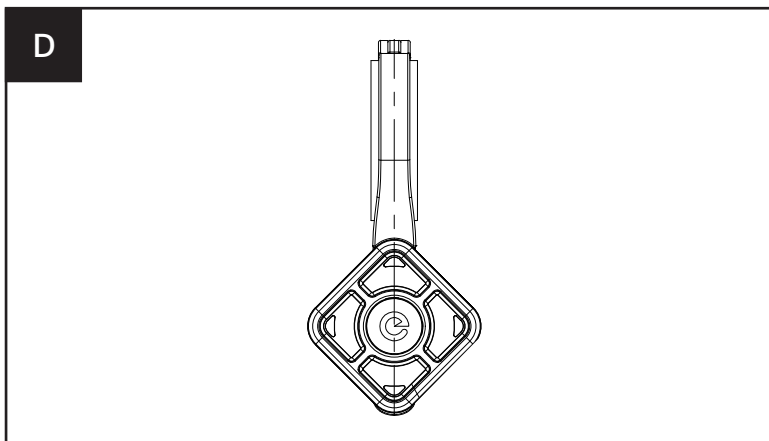
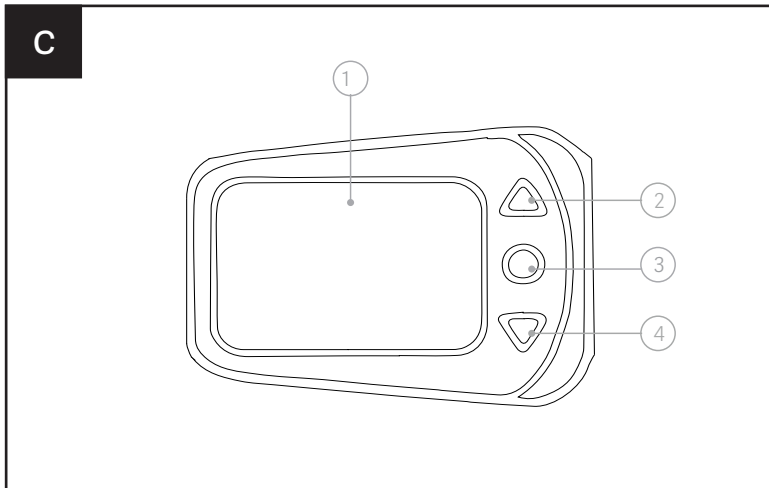
[A] ENVILO CO CONTROLLER

The enviolo CO controller can be used to adjust the desired cadence. The enviolo CO buttons are assigned by lower cadence (UP), calibration (CENTER) and higher cadence (DOWN). You can accelerate the desired cadence adjustment from increments of 1 to 5 by pushing and holding the UP/ DOWN buttons.



[B] ENVILO CA CONTROLLER

The enviolo CA controller can be used to adjust the desired cadence. The enviolo CA buttons are assigned by lower cadence (UP or RIGHT), power up (CENTER) and higher cadence (DOWN or LEFT). UP and DOWN buttons adjust the desired cadence by increments of 1 and LEFT/RIGHT adjust the desired cadence by increments of 5.



3. Calibration

On the first set up or after system maintenance or incorrect functionality the system has to be calibrated.

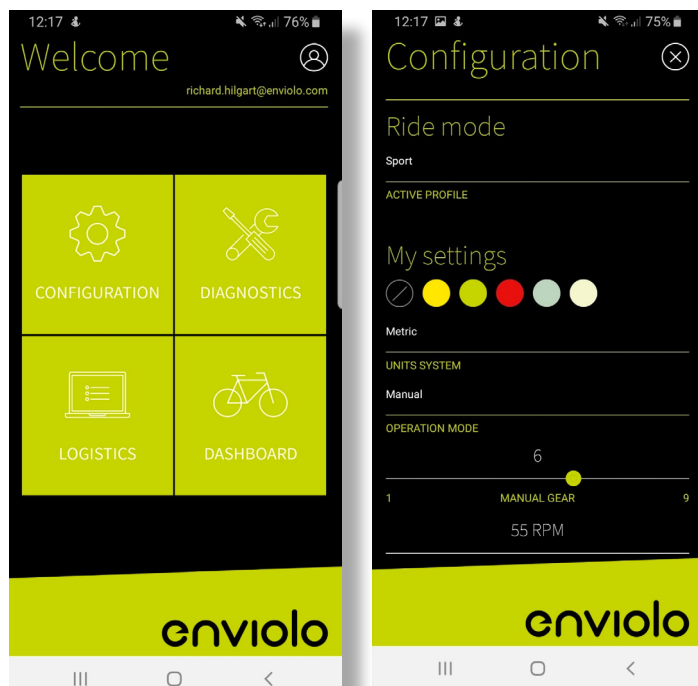
[C] ENVILO CO CONTROLLER

1. Turn system power on. Select no motor assist.
2. Pedal the bicycle lightly through the entire calibration process (preferable on a stand with the rear wheel off the ground).
3. On the enviolo CO controller (1), press and hold the center button for 3 seconds until the rear hub begins shifting (5-7 seconds) and then release the button.
4. Continue to pedal lightly through the entire calibration procedure, while the system shifts from "low" to "high" ratio multiple times and completes the calibration.
5. Calibration shall not take longer than 12 seconds.

[D] ENVILO CA CONTROLLER

1. Turn system power on. Select no motor assist.
2. On the enviolo CA controller (1), press and hold up and down button simultaneously for 3 seconds until the rear hub begins shifting (5-7 seconds) and then release the button. While the calibration is active, the LED will flash white.
3. Pedal the bicycle lightly through the entire calibration procedure (preferable on a stand with the rear wheel off the ground), while the system shifts from "low" to "high" ratio multiple times and completes the calibration.
4. Once calibration is successful the CA controller lights continuously blue for 5 seconds. In case the calibration is unsuccessful the CA controller lights continuously red for 5 seconds. Please retry the calibration.
5. Calibration shall not take longer than 12 seconds.

AUTOMATIq system: SYSTEM CONFIGURATION - OPTIONAL

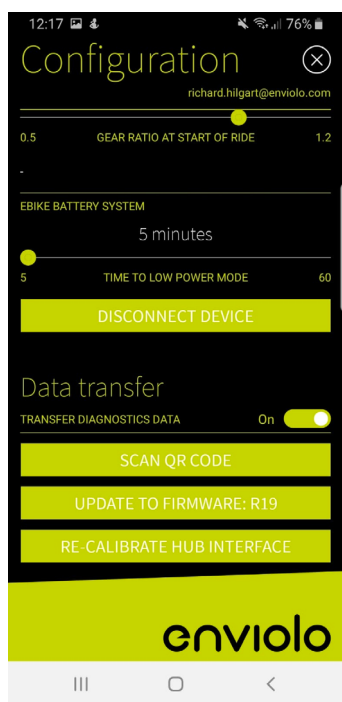


System Configuration

The app offers you various optional functions:

1. System configuration in the configuration tab
2. System data analysis in the diagnostics tab
3. System data collection in the logistics tab
4. Ride settings in the dashboard tab

The most interesting settings for you will likely be the traffic light setting, which defines the ratio the system will shift to after you come to a stop and the shift profile, which defines how aggressive and agile the shift system changes the ratios while riding.



Care and Maintenance

1. Cleaning

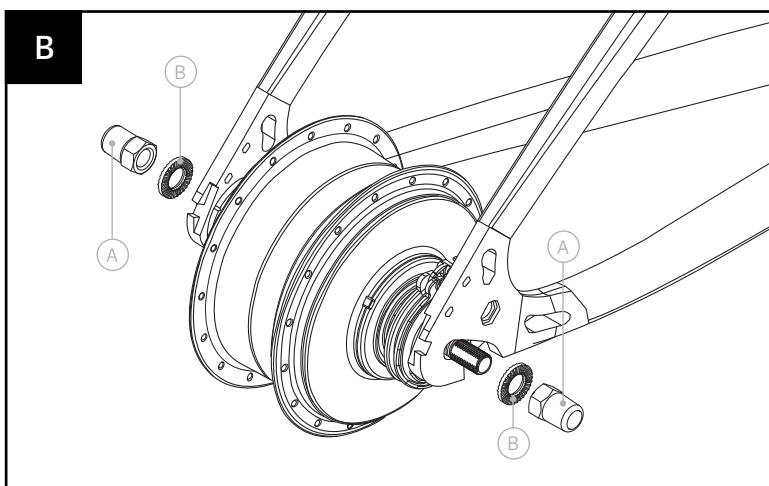
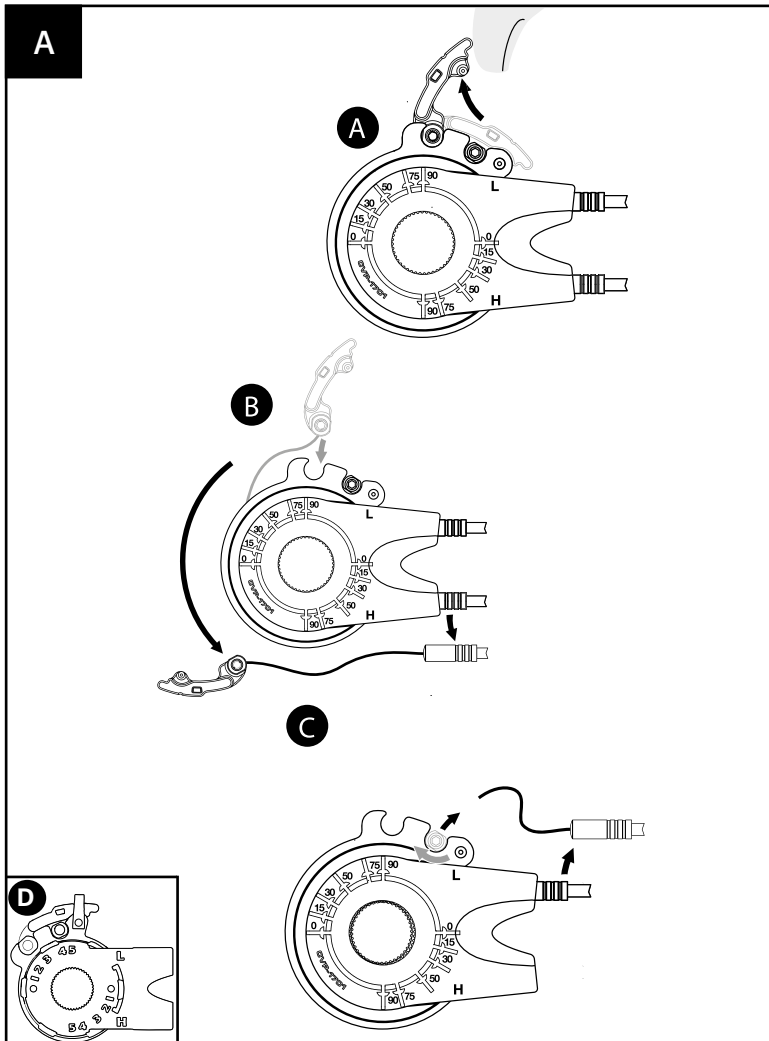
- Your enviolo components are sealed and well protected from the external environment. However do not use water under pressure (such as pressure washers or water jets) for cleaning to prevent malfunctions due to water penetration.
- During the winter season, you should clean your bicycle in shorter intervals, so that winter road salt cannot cause any damage.
- Do not use aggressive cleaners.
- Check the mounting bolts from time to time.

2. Lubrication

- The enviolo internal gear hubs are provided with permanent lubrication and the internal gear hub is maintenance-free for the life of the product.
- The internal freewheel mechanism is serviceable. Regular lubrication will extend the chain's service life.

3. Transport & Storage

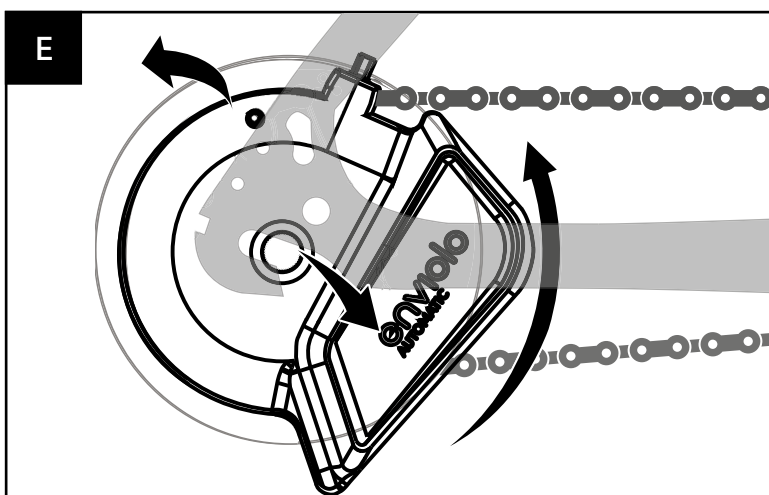
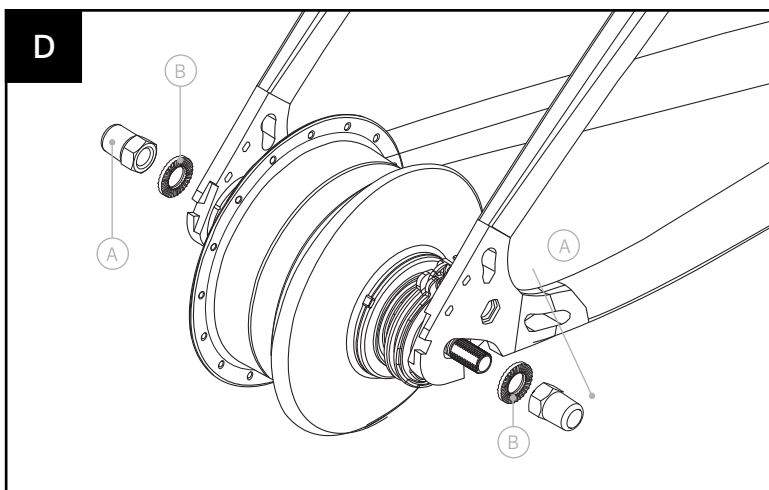
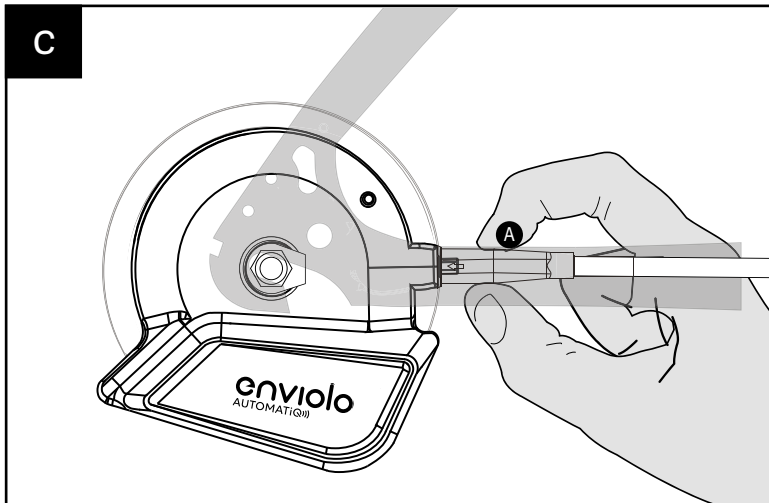
- Do not store your enviolo components at ambient temperatures below -20°C or above 48°C.



1. Disconnecting the Rear Wheel for Manual Variants

1. Shift to a position that allows easy access to the shift cable hardware.
2. **[A]** Remove shift cable hardware following steps (A, B and C). Using the one-turn interface (D) you have to carefully push aside the snap feature to remove the shift cable hardware.
- 3a. **[B]** For the variants **enviolo CT/TR/CO**
Loosen and/or remove the axle nuts (A), followed by the no turn washers.
For rim and roller applications follow the manufacturer's instructions.
- 3b. For the variants **enviolo CA/SP:**
 1. *135mm variants:* Loosen and remove the axle bolts and washers.
For rim brake applications follow the manufacturer's instructions.
 2. *142/148mm variants:* Loosen and remove the axle bolts and left side adapter.
For rim brake applications follow the manufacturer's instructions.
4. Remove the rear wheel.

In some cases, it is easiest to remove the chain from the front chainring to ease the rear wheel removal.



2. Disconnecting the Rear Wheel for AUTOMATIq Variants

1. Switch eBike power "off" and disconnect the eBike battery (if possible).

2. **[C] Remove the AUTOMATIq main connector at the rear wheel**

Grab the connector at the connector (A) and pull lightly away from the AUTOMATIq Hub Interface/ the frame.



Do not pull on the cable, only at the ribbed connector hall as shown.



The connector supplies electrical power to the AUTOMATIq Hub Interface. Protect the connector from water or other conductive elements when disconnected, as shock or damage to the system could result.

3a. **For the variants enviolo CT/TR/CO/CA:**

[D] Loosen and/or remove the axle nuts (A), followed by the no turn washers.

For rim and roller applications follow the manufacturer's instructions.

3b. **For the variants enviolo SP:**

1. *135mm variants:* Loosen and remove the axle nuts and washers.

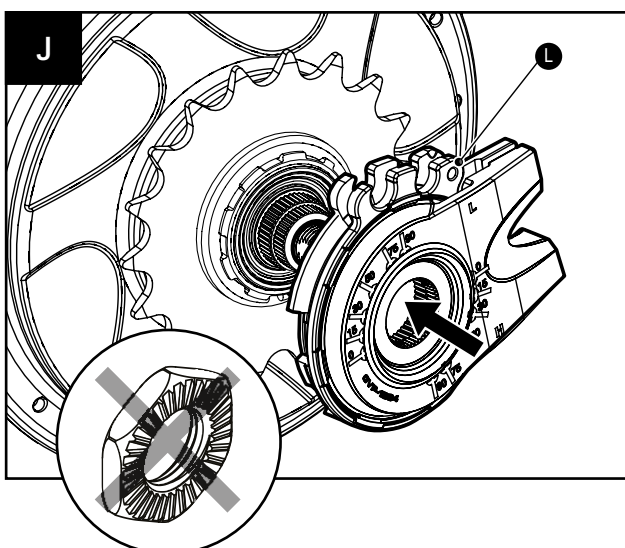
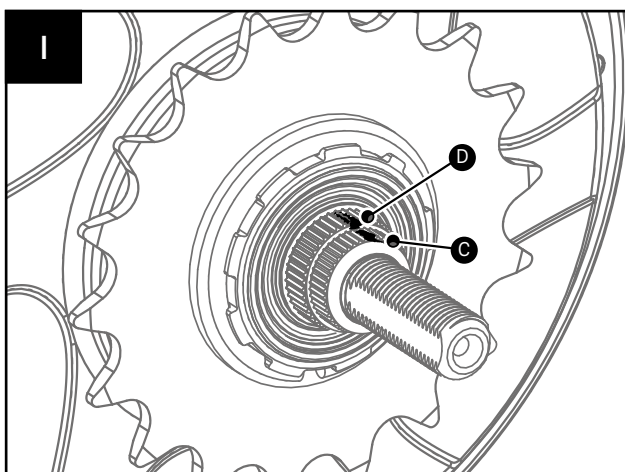
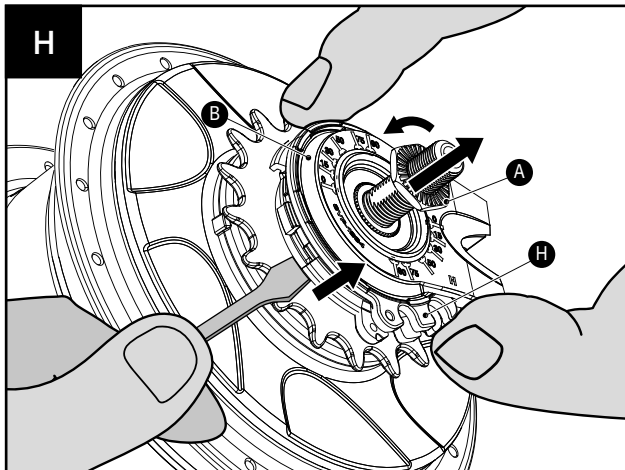
For rim brake applications follow the manufacturer's instructions.

2. *142/148mm variants:* Loosen and remove the axle bolts and left side adapter.

For rim brake applications follow the manufacturer's instructions.

4. **[E] Remove the rear wheel**

Some eBikes may require rotating the hub axle and AUTOMATIq Hub Interface to allow removal of the bicycle chain. In some cases, it is easiest to remove the chain from the front chainring to ease the rear wheel removal.



4. Resetting the internal gear hub to full overdrive

(only applicable to manual variants)

1. If the manual hub interface is incorrectly installed, full ratio range of the internal gear hub may be unavailable and full overdrive will need to be reset.
2. If installed on the bicycle, shift the hub into overdrive "H" as far as possible and remove the rear wheel per chapter 4.

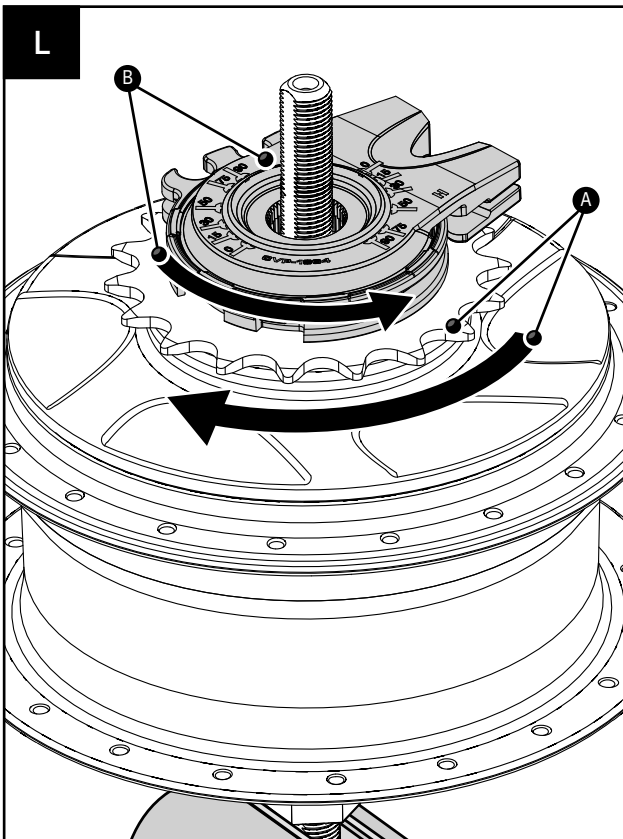
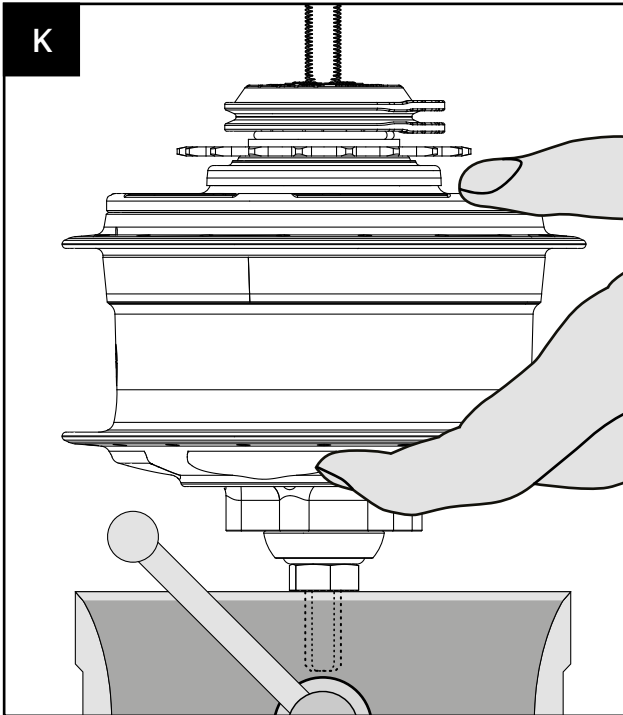
3. **[H]** For enviolo CT/TR/CO/CA internal gear hubs

Remove the right hand nut (A) that secures the manual hub interface, then remove the manual hub interface (B) by lifting carefully from underneath.

For enviolo P Internal gear hubs

Remove the right hand nut and axle screw that secure the manual hub interface, then remove the manual hub interface (B) by lifting carefully from underneath.

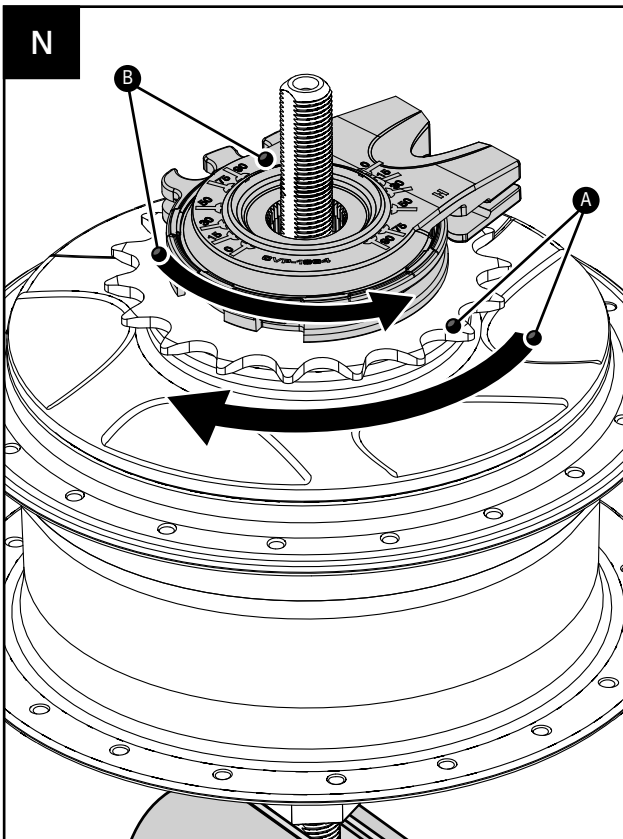
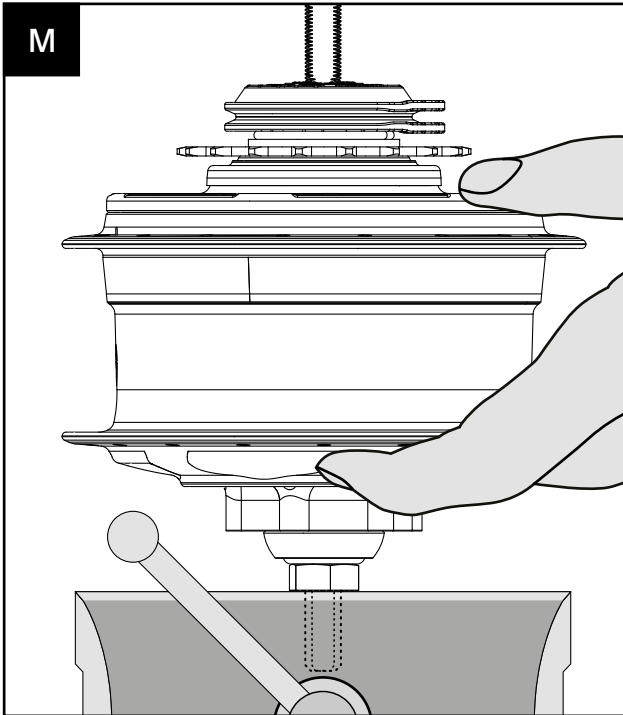
4. **[I]** If the spline nut (C) and shift drive (D) markings are not aligned, full overdrive will need to be reset.
5. If the markings are not obvious, full overdrive depending on the internal gear hub should result in the hub/wheel rotating ~1.6-2 times for every rotation of the sprocket. Also see your internal gear hub specification for the corresponding full overdrive ratio.
6. **[J]** Set the manual hub interface to the full underdrive "L" position (note this is opposite of normal installation). Reinstall the manual hub interface (angular position is unimportant), leaving the right hand nut uninstalled.



Resetting the internal gear hub to full overdrive continued

(only applicable to manual variants)

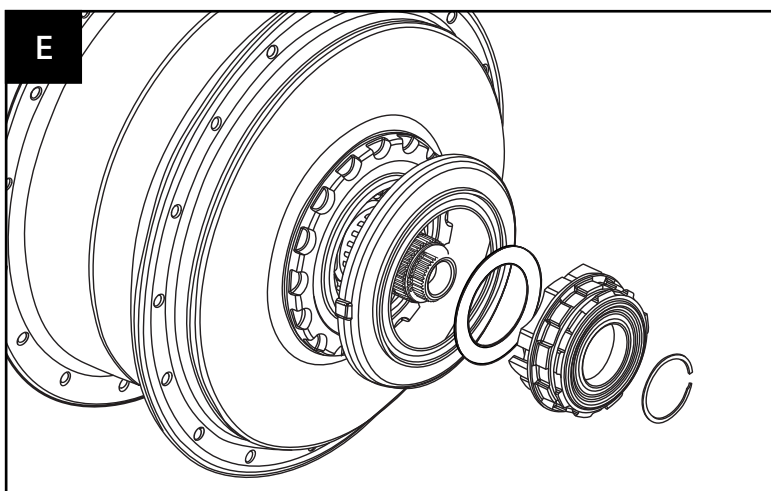
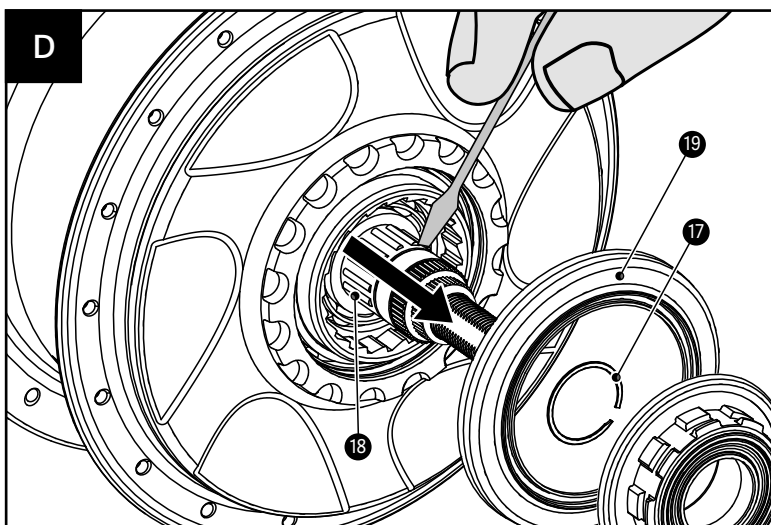
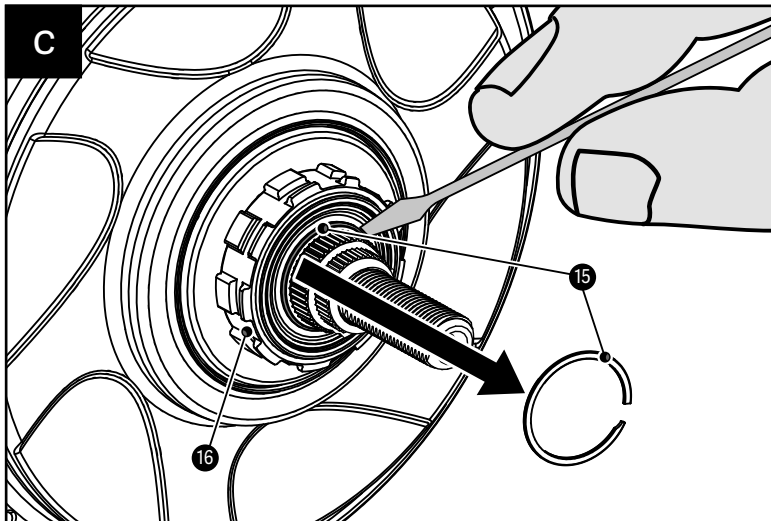
8. The manual hub interface will be used to shift the hub into full overdrive in the following steps.
9. **[K]** Install the enviolo hub into a vice or fixture as shown, clamping on the left hand axle flats. If a vice is not available, installation in the bicycle frame is possible, tightening only the left hand no-turn washer and axle nut to allow rotation of the manual hub interface.
10. **[L]** While driving hub clockwise with the sprocket (A), rotate the manual hub interface (B) counter-clockwise toward the full overdrive "H" position until a firm stop is felt. Repeat this rotation 2-3 times by driving the hub clockwise and rotating the manual hub interface back and forth, ending at a firm stop toward (but likely not at) the full overdrive "H" position.
11. The indicated position of the manual hub interface is unimportant in this step.
12. When in full overdrive, the hub/wheel should rotate approximately 1.6-2 times for every rotation of the sprocket.
13. When full overdrive is found, remove the manual hub interface per step 4 in this chapter.
14. Check to make sure the mark on the spline nut and shift driver align per step 5 in this chapter.
15. Install the manual hub interface per chapter 2.



Resetting the internal gear hub to full overdrive continued

(only applicable to manual variants)

8. The manual hub interface will be used to shift the hub into full overdrive in the following steps.
9. **[M]** Install the enviolo hub into a vice or fixture as shown, clamping on the left hand axle flats.
If a vice is not available, installation in the bicycle frame is possible, tightening only the left hand no-turn washer and axle nut to allow rotation of the manual hub interface.
10. **[N]** While driving hub clockwise with the sprocket (A), rotate the manual hub interface (B) counter-clockwise toward the full overdrive "H" position until a firm stop is felt. Repeat this rotation 2-3 times by driving the hub clockwise and rotating the manual hub interface back and forth, ending at a firm stop toward (but likely not at) the full overdrive "H" position.
11. The indicated position of the manual hub interface is unimportant in this step.
12. When in full overdrive, the hub/wheel should rotate approximately 1.6-2 times for every rotation of the sprocket.
13. When full overdrive is found, remove the manual hub interface per step 4 in this chapter.
14. Check to make sure the mark on the spline nut and shift driver align per step 5 in this chapter.
15. Install the manual hub interface per chapter 2.



Servicing or replacing the freewheel





1. Remove the rear wheel.
2. Remove the hub interface.
3. Reference the exploded view in chapter 2, page 9. Remove the sprocket snap ring (16), sprocket spacer (15, if installed) and sprocket (18).
4. **[C]** Remove the snap ring (15) on the shift driver, and remove the freewheel assembly (16).
5. If servicing or replacing, use a medium-weight oil or very lightweight water-resistant grease and check pawl and spring function.
6. **[D]** Remove the interior snap ring (17), needle bearing (18), and right hand shield (19) if these components are being replaced.
7. **[E]** Install the serviced/new freewheel components.
8. Install the sprocket and hub interface.
9. Install the rear wheel.






Set the enviolo hub in full overdrive with the controller or manual hub interface prior to removal.

Troubleshooting

Assembly Torque Specifications

Torque Specs <i>enviolo CT, enviolo TR, enviolo CO, enviolo CA</i>		Other Parts	
Axle nuts 30 - 40 Nm		Interface locknut 10 - 15 Nm	
Brake adapter + Loctite® 277 or similar 55 - 65 Nm		Spline nut 9-10 Nm	

Other parts	Other Parts
Cable hardware 1.5-2 Nm	
Controller 2.0 - 2.5 Nm	
	Output speed ring 1.0 Nm
	Controller cable cover screw 0.2 - 0.3 Nm (handtight)
	

Warranty

Basic Repair Work

Please check before every ride that all parts are not damaged, properly connected and correctly tightened with the recommended torque including axle nuts, hub interfaces controllers and brake discs.

Shift cables, cable housing, handlebar grips, sprockets, and bike chains are wear parts. Please check these parts regularly and replace them as necessary.

Only a qualified bike dealer should perform any necessary work on the enviolo manual and automatic systems.

Unauthorized work on your enviolo systems could endanger you and your warranty may become void.

Please contact your qualified dealer regarding any question or problem you may have.

In case of disposal, please note that all components, accessories and packaging should be disposed of in an environmentally correct manner and not into household waste.

- According to the European guideline 2012/19/EU, electrical components that are no longer usable must be collected separately.

Refer to our website for additional service information at **www.support.enviolo.com**.

Warranty, Misuse and Exclusion of Liability

Failure to use your enviolo shift solution as intended or to follow safety-relevant instructions can lead to an exclusion of liability for any material defects. Any misuse must therefore be avoided! Warranty will therefore not be covered if:



A product has been modified or where the serial # or date codes have been altered, defaced or removed.



Our hubs enviolo CT and enviolo TR are not to be used for commercial purposes without written pre-authorization from enviolo. Only enviolo CO, enviolo SP, enviolo CA hubs may be used for reasonable commercial purposes and this warranty will be limited to one (1) year for such reasonable commercial use.



Damage to the product occurs:

- determined by enviolo to be caused by crash, impact, or abuse of the product;
- resulting from use of the product in what enviolo, in its sole discretion, considers extreme applications such as, but not limited to, downhill, freeride, "North Shore" style, and BMX;
- resulting from powering of the enviolo CT, enviolo CO, and enviolo TR hubs with electric motors rated over 250W, or any powering of the product with internal combustion engines;
- resulting from running of the hubs with electric motors at continuous torques at the bottom bracket over the defined limits in the table on page 7;
- occurring during the shipment of the product;
- resulting from use of total weight (rider, cargo, and bike higher than 160kg for the enviolo CT and enviolo CO hubs, 180kg for the enviolo TR hubs, and defined limits in the table on page 8 for enviolo SP and enviolo CA;
- resulting from use of the product outside the defined cog ratio limits at 1.8 to 1 on standard bikes and 2.1 to 1 (enviolo CT/enviolo CO) or 2.0 to 1 (enviolo TR/ enviolo CA /enviolo SP) on eBikes;
- resulting from use of the product at nominal voltages of over 36V or peak voltages of over 50V;
- caused by the use of parts that are not compatible, suitable and/or authorized by enviolo for use with the product;



Do not make any modifications (including software) to your enviolo system, which could lead to an increased performance of your bike or eBike.



Please observe all national regulations on registering and using bikes and eBikes.

The following warranty is a voluntary two-year limited warranty offered by enviolo. It is offered to all purchasers of the enviolo CT, enviolo CO, enviolo TR, enviolo CA, enviolo SP (collectively, the "enviolo products").

Under the laws in certain countries (for example, Germany, and the Netherlands), a purchaser is entitled to statutory rights with respect to products that are defective or do not conform with the contract of sale. These rights allow a purchaser to demand, free of charge, repair, replacement, or under certain conditions, discount or refund by the seller of such products. This voluntary warranty does not affect your statutory rights. If you live in one of these countries, when you purchase enviolo products, in addition to your statutory rights, you are also entitled to claims out of enviolo's limited warranty described below. These claims exist concurrently with your statutory rights so that, should your product be defective or if it does not conform with the contract of sale, while the limited warranty is in place, you can choose to make a claim under your country's law or enviolo's limited warranty.

What does this warranty cover?

enviolo warrants any enviolo product that is defective in materials or workmanship. This warranty only extends to the original purchaser and is not transferable. (Some states or countries do not allow restriction of warranty coverage to the original buyer, so this restriction may not apply to you). If you purchased your enviolo product as part of another product, this warranty in no way replaces or is an extension of the warranty of the manufacturer of that product, which warranty is the sole responsibility of that product's manufacturer.

How long does this warranty last?

The warranty period lasts two years from the date of original purchase.

What will enviolo do?

enviolo will, at enviolo's sole option, repair, replace or refund the cost of the defective unit.

What does this warranty not cover?

This warranty does not apply to any of the following:

- Normal wear and tear to components subject to wear, such as, for example, rubber seals and rings, jockey wheels on chain tensioner (if applicable), twist grip rubber, and shifter cables.
- Damage to parts not manufactured by Fallbrook or its related entities (such as dropouts and chains).
- Labor required to remove, re-fit or re-adjust the product within the bicycle assembly.
- A product used in any installation other than a single rider bicycle. Tandems are not covered unless expressly allowed under a specific enviolo product owner's manual.
- A product that has been incorrectly installed and/or not adjusted according to the enviolo product owner's or technical manual, which can be found at www.support.enviolo.com.
- A product that has been disassembled into its components beyond the scope of service documentation (Owner's Manuals for enviolo™ internal gear hub with enviolo manual or automatic systems).

This limited warranty is the sole and exclusive warranty made by Fallbrook with respect to the product and is given in lieu of any other warranty. To the extent allowed by applicable law, and all express or implied warranties not set forth herein are waived and disclaimed, including any implied warranty of merchantability or fitness for a particular use. Fallbrook liability under this limited warranty is limited solely to those liabilities set forth above. In the event that any provision of this limited warranty should be or become invalid or unenforceable under applicable law, the remaining terms and conditions hereof shall remain in full force and effect and such invalid or unenforceable provision shall be construed in such a manner as to be valid and enforceable.

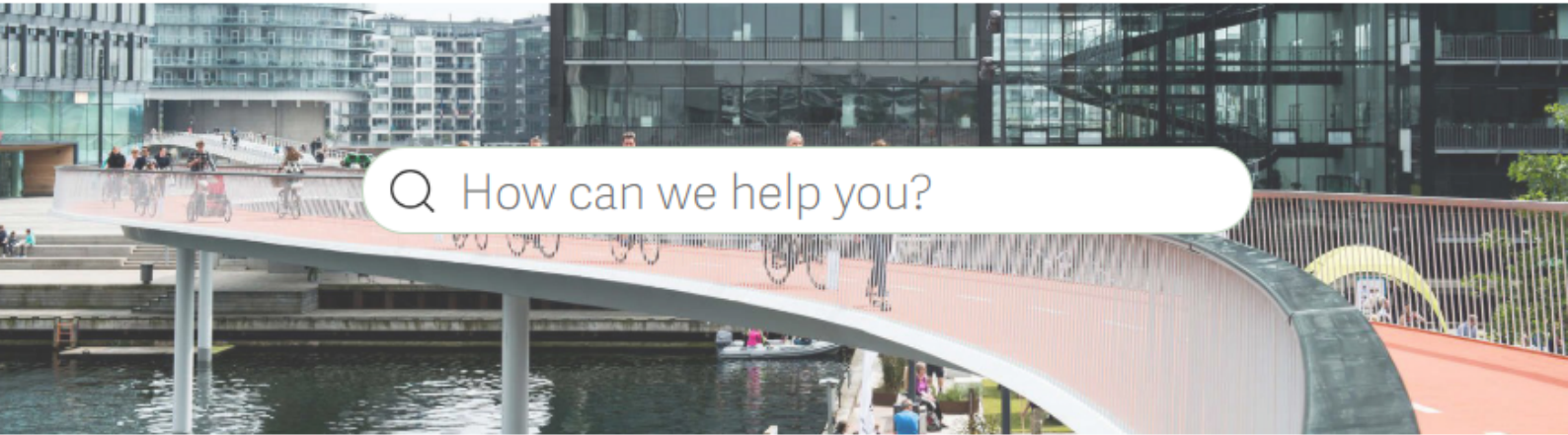
enviolo reserves the right to revise this limited warranty without notice.

How to get warranty service?

Claims under this warranty must be made through the retailer where the vehicle or the enviolo component was purchased, or through an authorized dealer of enviolo components. Please return the enviolo component to the retailer together with the original, dated invoice or receipt.

The retailer will contact enviolo customer service to handle your warranty claim. Retailers requesting a warranty claim should contact enviolo customer service to obtain a Warranty Return Authorization. The retailer will then need to return the product to enviolo together with satisfactory proof of the date of purchase.

enviolo dedicated materials on: images and logos, presentations and brochures, manuals and technical documentation service and warranty.



OEM & Assembly

Scroll through this section to find everything you need for your bike & product specification, assembly and certification, incl. tools on how to configure & optimize your system.



Retail & Service

This section contains service-oriented files as well as information about our retail programs and the according procedures for our service.



Videos

Here you will find all of our videos incl. technical videos, product videos and sales support videos.



Branding & Media

In this section you can find everything from how to apply our brand guidelines to key visuals and logos.

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Intellectual Property Notice

The enviolo, enviolo CT, enviolo CO, enviolo TR, enviolo CA, enviolo
SP control units

The enviolo, enviolo CT, enviolo CO, enviolo TR, enviolo CA, enviolo SP control units

By purchasing and/or using these enviolo Technology components and/or the bicycle incorporating them, you agree to the following terms and conditions. If you do not want to be bound by these terms and conditions, you must return the enviolo Technology components to your vendor within three (3) days for a full refund.

The enviolo® Technology components sold herewith are to be used only in the rear wheel of a bicycle for usual and customary rear hub purposes and in accordance with the accompanying instructions. You agree not to use the enviolo® Technology components for any other use or purpose, including without limitation reverse engineering or reproduction. Any unauthorized use of the enviolo® Technology components is not recommended, will void any applicable warranties and, to the extent such use leads to any improvements to or inventions from those components, and as allowed under applicable law, Fallbrook Technologies Inc. shall have a royalty free, worldwide, perpetual, non-exclusive license (with right to grant sublicenses) to all rights in any such inventions or improvements.

The enviolo® Technology components sold herewith, including, but not limited to the rear hub and gear shifter, are protected by patents in the U.S., Europe, China, Japan, South Korea, and Canada, as well as other countries and a current list of applicable patents can be found at www.enviolo.com/patentnotice. Other U.S. and foreign patent applications are pending for Fallbrook Technologies Inc. and its subsidiary Fallbrook Intellectual Property Co. LLC.

The enviolo Automatic products also include software, firmware and other digital information (collectively the "Software") that may be embedded or is available from Fallbrook Technologies or its authorized representatives for use with the products.

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