

USER MANUAL

POWERSHIFT HUB

CLASSIFIED

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1. Introduction

1.1 Symbols used

This user manual uses the following symbols:



TIP

Provides the user with suggestions and advice completing a procedure more easily or conveniently.



NOTE

A general comment that may improve economic usage.



ENVIRONMENT

Guidelines that must be followed when using hazardous substances and when recycling products and materials.



WARNING

Indicates a hazardous situation which, if the safety instructions are not followed, may lead to minor or moderate injury and/or damage to the product or the environment.



CAUTION

*Indicates a hazardous situation where not following the safety instructions **may** result in serious injury or death and/or serious damage to the product or its surroundings.*



DANGER

*Indicates a hazardous situation where not following safety instructions **will** result in serious injury or death.*

1.2 Abbreviations used

Abbreviation	More info
O.L.D.	Over-Lock-nut Dimension The hub distance is measured from the outside of the end caps.
ITS	Internal Torque Support In the ITS version of the hub and thru axle, the frame must have a specific Classified insert fitted on the rear brake side. The hub supports the torque via the thru axle in the Classified insert. The Classified insert must be provided by the manufacturer.
ETS	External Torque Support In the ETS version of the Powershift hub and smart thru axle, the torque is transmitted to the frame via a Classified torque support.

1.3 Intended use

The product is a wirelessly shiftable 2-speed Powershift hub which can be integrated in racing bikes, gravel bikes and mountain bikes.

The product should only be used on a bicycle:

- with compatible chains.

**TIP**

View our most recent complete overview: <https://support.classified-cycling.cc/hc/en-us/articles/14384306338845-Compatible-chains>

Other chains may negatively affect shifting quality.

- combined with dropbar handlebars equipped with a hole for wiring near to the end. For example: PRO Vibe Alloy and PRO Vibe Carbon
- combined with flatbar handlebars with outer diameter of 22.2 mm
- with brake discs
- with flatmount and postmount frames
- for a frame with an install width for the rear wheel of 142 mm or 148 mm
- in ambient temperatures (while in use) between -15 °C and +50 °C
- compatible with the Classified handlebar switches
- with a frame equipped with internal torque support or using external torque support (which has been approved for that specific frame)

**CAUTION**

Requirements for a 142 mm hub:

- A front chainring with at least 44 teeth for all applications
- Maximum 11-34T cassette for electric bicycles
- Maximum 11-40T cassette for non-electric bicycles
- Maximum 70 Nm mid-drive motor

**CAUTION**

Requirements for a 148 mm hub:

- A front chainring with at least 30 teeth for all applications
- Maximum 11-40T cassette for all applications
- Not suitable for use in electric bicycles

1.4 Prohibited uses

It is prohibited to use the product for any other purpose than those indicated in this manual, the safety indications or other safety documents accompanying the product.

Any modification to the product may affect its safety and warranty!

It is prohibited to use any other combinations than those described in the intended use.

It is prohibited to drill holes in the handlebar for the wiring. This will void the warranty and may lead to injuries or death.

It is prohibited to open the smart thru axle or the Powershift hub for any purpose not described in the maintenance section.

It is prohibited to install parts on the product which have not been approved by Classified Cycling. These may:

- diminish or prevent the operation of the product
- compromise the safety of the user or other people
- reduce the lifespan of the product
- void the compliance with the CE directives.

1.5 Type designation

The various Classified components are labelled with a serial number. The handlebar unit and the Powershift hub are also marked with a QR code. Scan the QR code on the registration card in order to register the component.

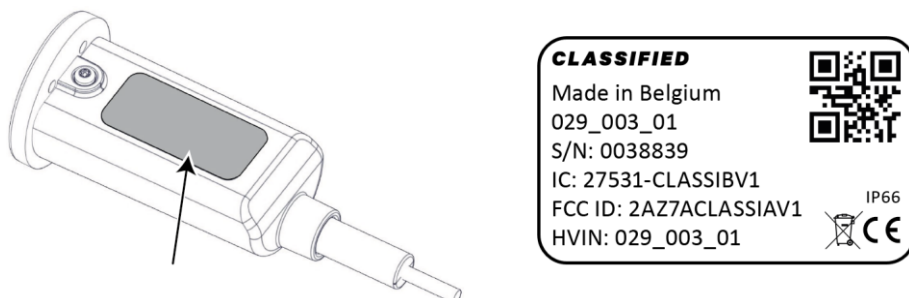


Fig. 1: Dropbar handlebar unit label

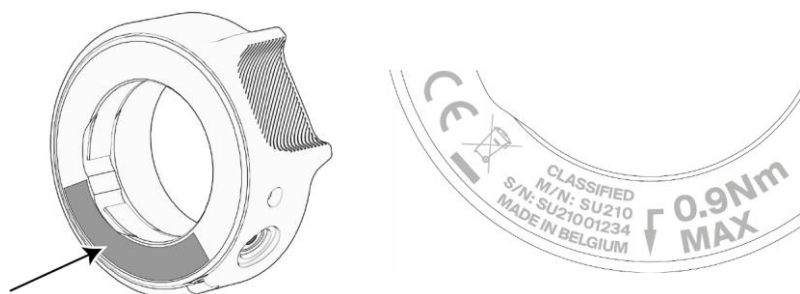


Fig. 2: Ring shifter label

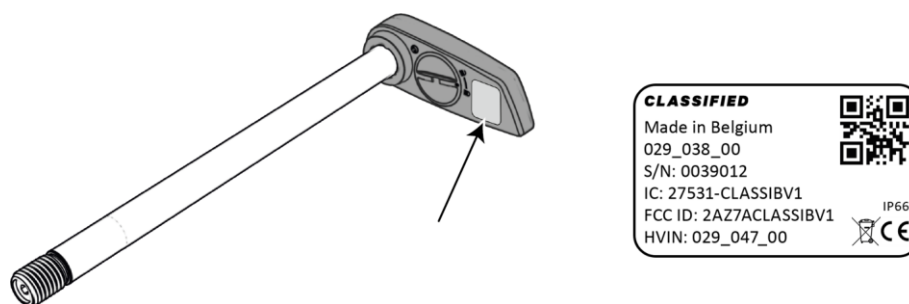


Fig. 3: Smart thru axle label

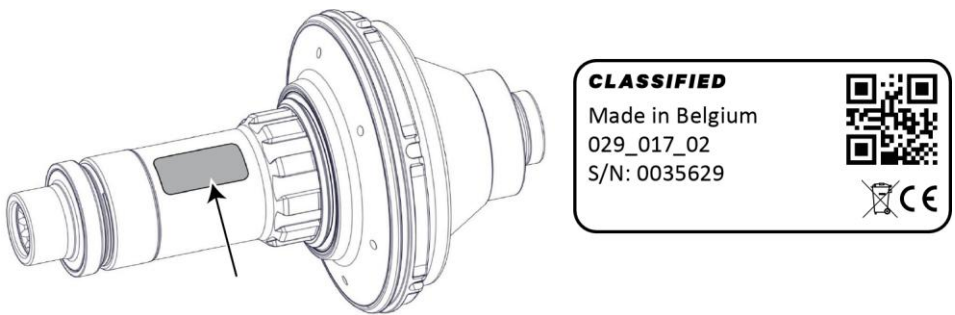


Fig. 4: Powershift hub label

1.6 Tightening torques

The table shows an overview of the torques for tightening the various parts.

NOTE
 Failure to respect the tightening torques may cause damage to the bike and its components. This also voids the warranty.

Part	Tool	Torque (Nm)	Moment (lbf in)
Threaded end of thru axle	Socket 3 mm	4	35
Support bolt	Torx T15	0.5 - 0.7	4.4 - 6.2
Cassette / belt sprocket lock ring	Lock ring tool	30 - 40	265 - 354
Hubshell lock ring	Lock ring tool	30 - 40	265 - 354
Thru axle	By hand	10 - 15	89 - 133

2. Safety

2.1 Safety regulations

**WARNING**

Read the user manual carefully before using the product! Keep this user manual for future reference. Also keep the supplied accessories and tools for later use.

**CAUTION**

Never open or disassemble the Classified Powershift hub. Doing so may cause damage to the Classified Powershift hub and serious injuries. Furthermore, the warranty will be voided.

**CAUTION**

In addition to the intended and prohibited uses, maintenance instructions must also be followed carefully. Failure to comply correctly may result in the Classified Powershift hub or the chain breaking. This can cause serious injuries.

**CAUTION**

The Classified Powershift hub can withstand riding in rainy weather conditions. However, do not submerge the Classified Powershift hub in water and do not clean it using a high pressure cleaner. This may cause damage to the Classified Powershift hub, leading to serious injuries as a result of defective operation.

2.2 Hazardous substances

The product contains:

1. A CR1632 replaceable button cell battery with a nominal voltage of 3V (in the dropbar handlebar unit only)
2. A rechargeable lithium-ion battery with a capacity of 320 mAh (in the smart thru axle)
3. A rechargeable lithium-ion battery with a capacity of 40 mAh (in the ring shifter)

**CAUTION**

Remove and recycle used batteries immediately in line with the local regulations, and keep them out of the reach of children. Do NOT dispose of batteries in domestic waste, and do not burn them.

Even used batteries can cause serious injury or death.

If the battery or substances in the battery are ingested, call the local poison control centre for treatment information.

Non-rechargeable batteries such as the CR1632 button cell battery must not be recharged.

Never discharge, recharge, disassemble, heat (above the temperature specified by the manufacturer) or burn batteries by force. Doing so may cause injury through deaeration, leakage or explosion, leading to chemical burns.

Make sure batteries are installed correctly in terms of polarity.

Do not mix old and new batteries, or different makes or types of batteries, such as alkaline, carbon zinc or rechargeable batteries.

Always close the battery compartment fully. If the battery compartment does not close properly, stop using the product, remove the batteries, and keep them out of the reach of children.

The lubricant used to lubricate the chain, and hence indirectly lubricating the cassette, is a hazardous substance. Carefully read the lubricant's safety instructions.

3. Description

3.1 ITS and ETS

For each internal hub gear, the torque must be supported on the frame. There are two ways to do this for 142 mm hubs: ITS and ETS. It can only be done for 148 mm hubs via ETS.

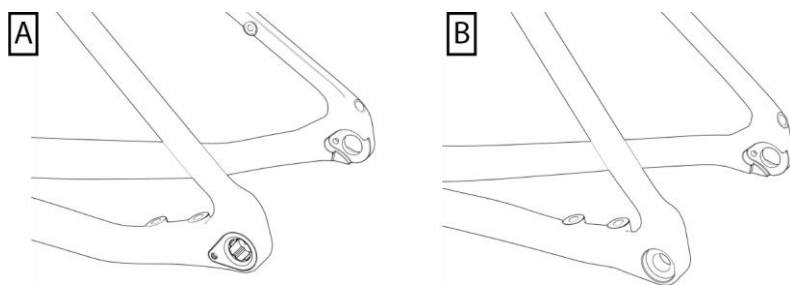


Fig. 5: ITS (A) and ETS (B)

ITS (Internal Torque Support)

In the ITS version (A) of the hub and thru axle, the frame must have a specific Classified insert on the rear brake side. The hub supports the torque via the smart thru axle in the Classified insert. The Classified insert must be provided by the manufacturer. Brands that use ITS include Ridley and Jaegher.

ETS (External Torque Support)

In the ETS version (B) of the Powershift hub and smart thru axle, torque is transmitted to the frame via a Classified torque support. The torque support must be chosen based on the frame type and brake type.

See also

Selecting and installing the correct torque support for a flatmount frame on page 27

Selecting and installing the correct torque support for a postmount frame on page 30

3.2 Part names

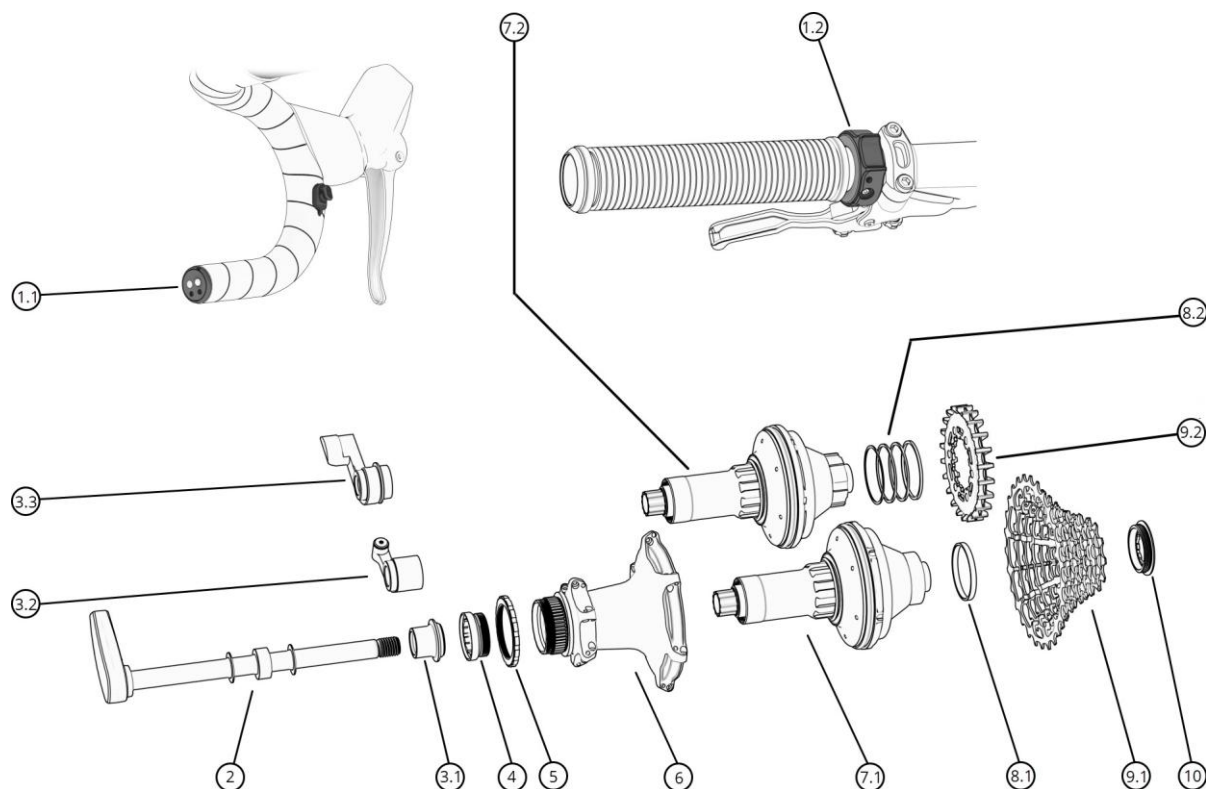






Fig. 6: Parts

No.	Part	No. variant	Variant	Description
1	Handlebar unit	1.1	Wireless dropper handlebar unit	The wireless dropper handlebar unit is installed into the left-hand side of the handlebar and is operated by a shifter or satellite buttons compatible with Classified. The dropper handlebar unit is powered by a battery. Systems integrated with SHIMANO Di2 do not need a handlebar unit. Instead, they use the left SHIMANO Di2 shifter as a transmitter and shift button.
		1.2	Ring shifter	The ring shifter can be installed on the left or right of the handlebar unit. The module is powered by a battery and charged by a pogo connector.

No.	Part	No. variant	Variant	Description
2	Smart thru axle	2.1	-	The smart thru axle receives the wireless shift signal from the handlebar unit and shifts the Powershift hub using contactless energy transfer. The smart thru axle is fitted with a rechargeable battery. The axle diameter is 12 mm. Various lengths are available to ensure the perfect fit for every frame. Various threaded ends are available to fit the frame dropout. The threaded ends have different pitches and lengths.
3	Brake-side end cap	3.1	Without torque support (ITS only)	This end cap seals off the Powershift hub and provides internal torque support.
		3.2	With flatmount torque support	This end cap seals off the Powershift hub and provides a flatmount torque support. Various torque supports are available to ensure the perfect fit for every frame.
		3.3	With postmount torque support	This end cap seals off the Powershift hub and provides a postmount torque support. Various torque supports are available to ensure the perfect fit for every frame.
4	Hubshell lock ring	4.1	-	The hubshell lock ensures that the hubshell is locked to the Powershift hub. Tighten to 40 Nm.
5	Brake disc lock ring	5.1	-	The brake disc lock ring ensures that the center lock brake disc is locked to the Classified hubshell. Tighten to 40 Nm.
6	Hubshell	6.1	Hubshell 142	<p>Different versions of this hubshell are available. The spokes hold the hubshell in place in the rim. You can fit different rims with a Classified hubshell and combine these with a single 142 Classified Powershift hub.</p> <p>NOTE <i>Combination with a Classified Powershift hub variant in another length is not possible. The 142 and 148 hub are not interchangeable.</i></p> 

EN	No.	Part	No. variant	Variant	Description
			6.2	Hubshell 148	<p>Different versions of this hubshell are available. The spokes hold the hubshell in place in the rim. You can fit different rims with a Classified hubshell and combine these with a single 148 Classified Powershift hub.</p> <p>NOTE</p> <p> <i>Combination with a Classified Powershift hub variant in another length is not possible. The 142 and 148 hub are not interchangeable.</i></p>
	7	Powershift hub	7.1	Powershift hub 142 cassette interface	<p>The Powershift hub 142 cassette interface is available in two variants:</p> <ul style="list-style-type: none"> • CD33 is only compatible with 11-teeth cassettes. • CD27 is compatible with both 11-teeth and 10-teeth cassettes. <p>The Powershift hub 142 cassette interface contains the shifting mechanism and is electronically controlled. This hub is especially designed for bicycles with an O.L.D. of 142 mm and a 12 mm thru axle. The hub does not contain any battery and gets its energy to shift from the smart thru axle. This hub can only be used with Classified cassettes.</p>
			7.2	Powershift hub 142 9-spline interface	<p>The Powershift hub 142 9-spline interface contains the shifting mechanism and is electronically controlled. This hub is especially designed for bicycles with an O.L.D. of 142 mm and a 12 mm thru axle. The hub does not contain any battery and gets its energy to shift from the smart thru axle. This hub can be used with standard third-party 9-spline belt or chainwheels.</p> <p>NOTE</p> <p> <i>Fitting a standard cassette to this interface is NOT possible.</i></p>

No.	Part	No. variant	Variant	Description
		7.3	Powershift hub 148 cassette interface	<p>The Powershift hub 148 cassette interface is available in two variants:</p> <ul style="list-style-type: none"> • CD33 is only compatible with 11-teeth cassettes. • CD27 is compatible with both 11-teeth and 10-teeth cassettes. <p>The Powershift hub 148 cassette interface contains the shifting mechanism and is electronically controlled. This hub is especially designed for bicycles with an O.L.D. of 148 mm and a 12 mm thru axle. The hub does not contain any battery and gets its energy to shift from the smart thru axle. This hub can only be used with Classified cassettes.</p>
		7.4	Powershift hub 148 9-spline interface	<p>The Powershift hub 148 9-spline interface contains the shifting mechanism and is electronically controlled. This hub is especially designed for bicycles with an O.L.D. of 148 mm and a 12 mm thru axle. The hub does not contain any battery and gets its energy to shift from the smart thru axle. This hub can be used with standard third-party 9-spline belt or chainwheels.</p> <p> NOTE Fitting a standard cassette to this interface is NOT possible.</p>
8	Center washer	8.1	Cassette center washer	<p>This center washer is used to ensure a seamless fit between your cassette and the Powershift hub. The center washer is available in different variants, depending on:</p> <ul style="list-style-type: none"> • the cassette type • the Powershift hub cassette interface type
		8.2	9-spline spacer kit	<p>The 9-spline spacer kit ensures a seamless fit between your 9-spline sprocket and the Powershift hub. The spacer kits contains spacers in a range of sizes to achieve the optimal belt/chainline.</p>
9	Cassette / sprocket	9.1	Classified cassette	<p>The Classified cassette is fitted to the Powershift hub with a cassette interface. Various cassettes are available.</p>

EN

No.	Part	No. variant	Variant	Description
		9.2	9-spline sprocket	The 9-spline sprocket is fitted to a Powershift hub with a 9-spline interface. A range of 9-spline sprockets are available, for both bicycles with a belt and a chain. The 9-spline sprocket does not come supplied.
10	Lock ring	10.1	Cassette lock ring	The cassette lock ring secures the cassette to the Powershift hub. The cassette lock ring is available in different variants, depending on: <ul style="list-style-type: none"> • the cassette type • the Powershift hub cassette interface type Color: black
		10.2	9-spline sprocket lock ring	The 9-spline sprocket lock ring secures the 9-spline sprocket to the Powershift hub. Color: silver

3.3 CD27 and CD33 compatibility matrix

Various types of Classified cassettes are available. This compatibility matrix shows which cassette type parts are compatible with which hub.

A cassette in which the smallest sprocket has 11 teeth (11T) is compatible with:

- The CD27 Powershift hub cassette interface (1)
- The CD33 Powershift hub cassette interface (1)

The cassette is not pictured. The cassette is located:

- In the CD27 Powershift hub cassette interface, between (2) and (4).
- In the CD33 Powershift hub cassette interface, between (2) and (3).

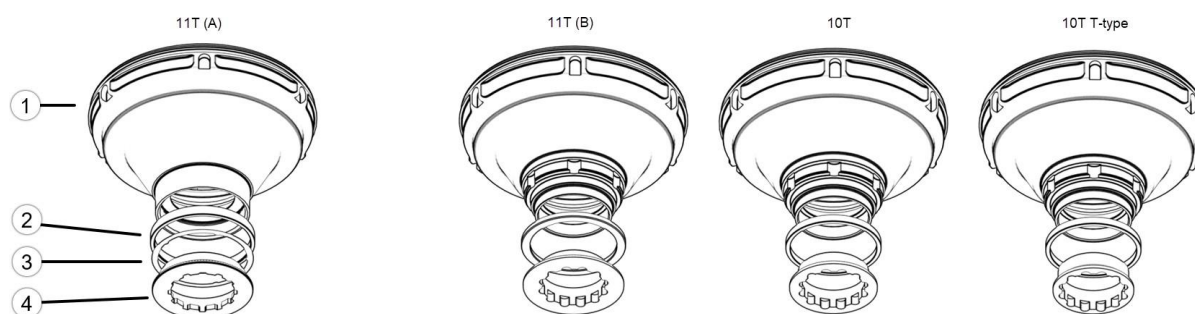


Fig. 7: Cassette type parts

No.	Part	11T (A)	11T (B)	10T	10T T-type
1	Powershift hub cassette interface	CD33	CD27	CD27	CD27
2	Center washer	Type CD33	Type CD27 (to 11T cassette)	Type CD27	Type CD27
3	Spacer	Yes	-	-	-
4	Cassette lock ring	CD33: X11	CD27: X11	CD27: X10	CD27: I10

Each cassette comes supplied with:

- 1 or more center washers (2). For 11T, all washers in (A) and (B) come supplied.
- 1 or more cassette lock rings (4). For 11T, all washers in (A) and (B) come supplied.
- 1 spacer (3). (For 11T only)

3.4 Partner products

3.4.1 TRP Vistar Powershift

The smart thru axle and the Powershift hub are also sold as parts of the TRP Vistar // Powershift groupset. For more information about the Vistar // Powershift groupset, please refer to the TRP Vistar // Powershift user manual.

3.4.2 Shimano Di2 partner

The smart thru axle can be connected to SHIMANO Di2 groupset to enable the user to operate the Powershift hub using the left Shimano shifter. In this case, you do not need a Classified handlebar unit and satellite button to be able to operate the Powershift hub.

4. How it works

4.1 How the Classified Powershift hub works

Through a compatible shifter or satellite button, a shifting command is sent to the handlebar unit. The handlebar unit wirelessly transmits the shifting command to the smart thru axle using Bluetooth®. The smart thru axle transfers the power needed for shifting and the shifting command to the Powershift hub. The shifting takes place internally within the Powershift hub.

If the smart thru axle does not move or receive a shifting command for 20 minutes, it enters sleep mode. When the smart thru axle is in sleep mode and the handlebar unit sends a shifting command, it takes a maximum of 5 seconds for the smart thru axle to wake up from sleep mode. Once that happens, you can start shifting with the Powershift hub again. As long as the smart thru axle is not in sleep mode, shifting will happen immediately when a shifting command is transmitted.

The smart thru axle transmits your current gear ratio and battery status to your GPS bike computer (not included) using ANT+. Consult the handbook of your bike computer for more information.

The Powershift hub has two gears:

- A 1:1 ratio where the speed of the cassette is equal to the speed of the wheel. This is similar to the large chainring on a traditional 2x.
- A 0.686 ratio (reduction ratio), where the speed of the wheel is lower than the speed of the cassette. This is similar to the small chainring on a traditional 2x. For example: $50 \times 0.68 = 34$.

Shifting from 1:1 to the reduction ratio is like shifting from the large to the small chainring on a traditional 2x.

Large front chainring	Virtual small front chainring (Classified)*
60	41
58	40
56	38
54	37
52	36
50	34
48	33
46	32
44	30
42	29
40	27
38	26
36	25

Large front chainring	Virtual small front chainring (Classified)*
34	23
32	22
30	21

*: These values are rounded.



CAUTION

Requirements for a 142 mm hub:

- *A front chainring with at least 44 teeth for all applications*
- *Maximum 11-34T cassette for electric bicycles*
- *Maximum 11-40T cassette for non-electric bicycles*



CAUTION

Requirements for a 148 mm hub:

- *A front chainring with at least 30 teeth for all applications*
- *Maximum 11-40T cassette for all applications*
- *Not suitable for use in electric mountain bikes*

5. Configuration

5.1 Selecting and preparing the correct smart thru axle

First check if the Powershift hub can be installed on your bicycle. Please refer to Intended use on page 5.

Tools required:

- Dealer toolkit
- Classified frame tool
- 3 mm socket wrench
- Cassette lock ring tool with internal diameter of > 19.5 mm
- External brake disc lock ring tool
- Torx T5 screwdriver (comes with the dropbar handlebar unit)



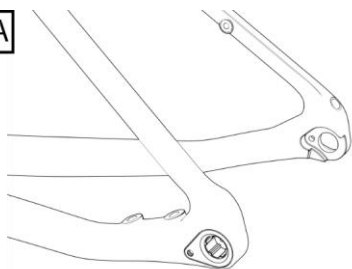
NOTE

If you do not have the required tools, it is advisable to obtain them from an official Classified dealer.

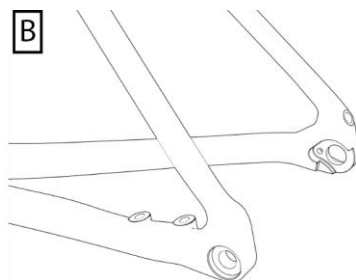
You must complete all the steps in this procedure, unless stated otherwise!

1. Measure the available distance (O.L.D.) for the hub.
 - Is the measured distance 142 mm? Go to the next step.
 - Is the measured distance 148 mm? Go to step 3.
2. Check how to install the torque support on the frame.

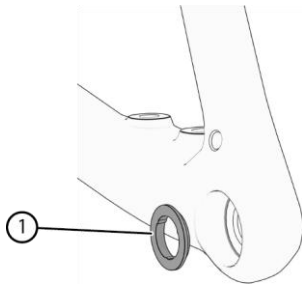
A



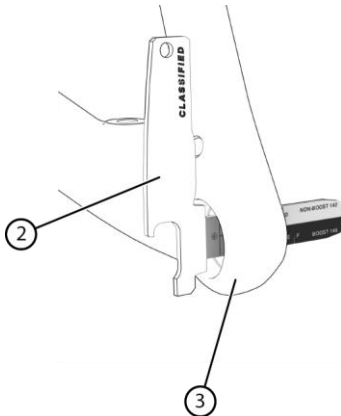
B



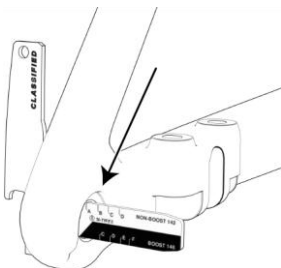
- The frame is designed for ITS (A) (Internal Torque Support). The thru axle and the brake side end cap are used as torque support. Go to step 11.
 - External torque support must be mounted on the brake side. ETS (B) (External Torque Support). Go to the next step.
3. Check if the outside of the frame dropout on the brake side is conical.
 - If it is conical, go to the next step.
 - If it is not conical, go to step 5.
 4. Install a conical ring (1) in the frame.



5. Insert the Classified frame tool (2) completely into the frame dropout (3) on the brake side.

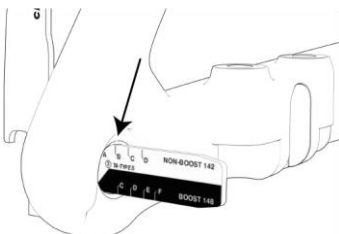


6. Select the thru axle based on the marking that matches the inside of the inner frame dropout. In this illustration, the distance between A and B is for 142 mm.

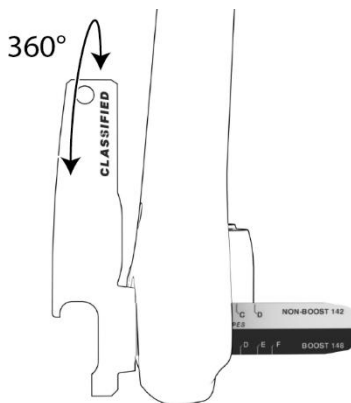


- For 142: A, B, C, D
- For 148: C, D, E, F

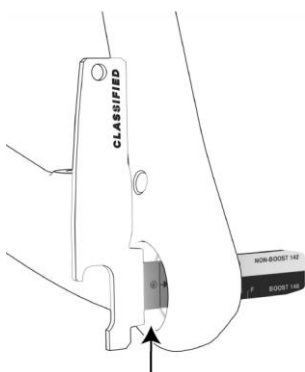
7. Slide the Classified frame tool to the left until the surface of the frame dropout lines up with the selected thru axle marking. In this illustration, you line up with 142 mm from B.



8. Turn the Classified frame tool 360°. If the Classified frame tool cannot keep turning, slide it to the left until it can rotate freely. Now look at the Classified frame tool to check the new position of the frame dropout. For example, C instead of B.

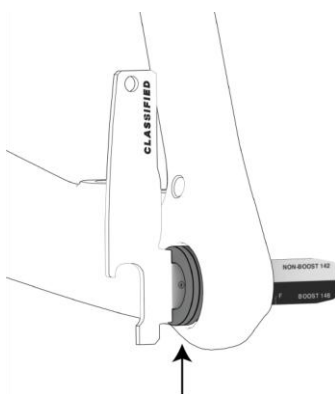


9. Check whether there is any space left between the Classified frame tool and the frame.



- If there is no space left between the Classified frame tool and the frame, go to step 11.
- If there is space left between the Classified frame tool and the frame, go to the next step.

10. Add spacers until the space has been filled.

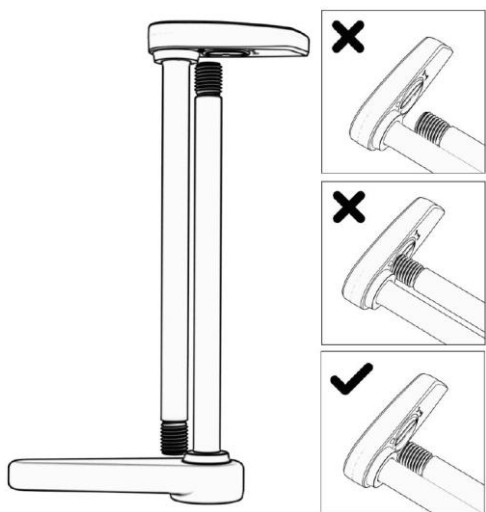


11. Determine the correct pitch for the threaded end.

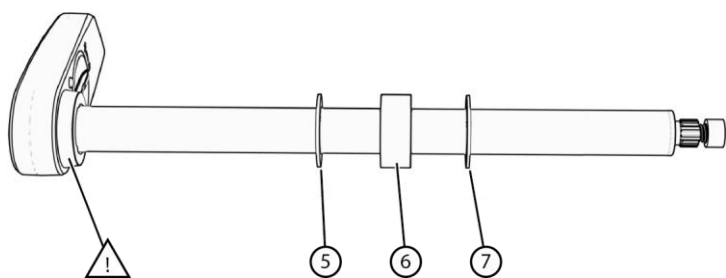
- Consult your bicycle manufacturer's website for the information.
- Check the marking on the previous thru axle. For example: M12 x P1.5.
- Compare the thread length of the previous thru axle to this thread end.



12. Carefully try to screw the thru axle into the frame to check if you have chosen the right pitch for the threaded end. Unscrew the thru axle again.
13. Check how long the threaded end needs to be by placing the smart thru axle beside the original axle. Choose the closest equivalent, preferably a bit longer.

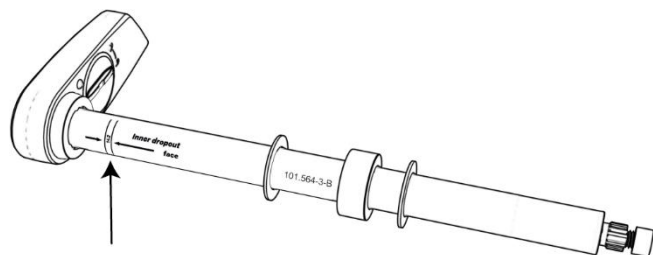


14. Place the spacers on the thru axle. If a metal spacer (6) needs to be added, ALWAYS slide it onto the thru axle between 2 plastic rings (5) (7).



NOTE
 The edge on the side of the thru axle lever is not a spacer (!).

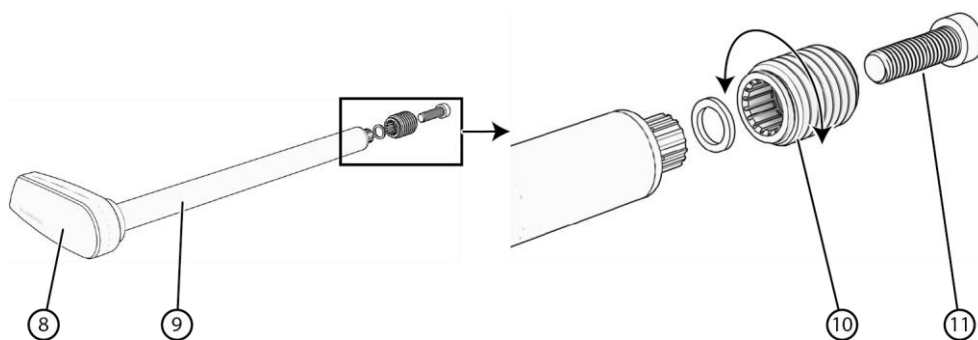
15. Install the thru axle in the frame.
16. Check that the marking is aligned with the inside of the dropout.



- The position of the thru axle is OK. Go to the next step.
- The position of the thru axle is NOT OK. Go back to step 12 to place the correct number of spacers.

17. Install the smart thru axle (9), ensuring that the thru axle lever (8) points towards the handlebar unit.

If required, loosen the smart thru axle again and loosen the socket bolt (11) on the end of the smart thru axle. Now the stud (10) can be removed from the axle and turned. Retighten the smart thru axle and check that the thru axle lever points towards the handlebar unit. Repeat this until the thru axle lever points in the right direction. Apply locking compound (Loctite 2701) to the socket bolt and tighten the threaded end to a torque of 4 Nm.



NOTE

Only the threaded end may be removed from the axle. No other components of the thru axle should be removed!

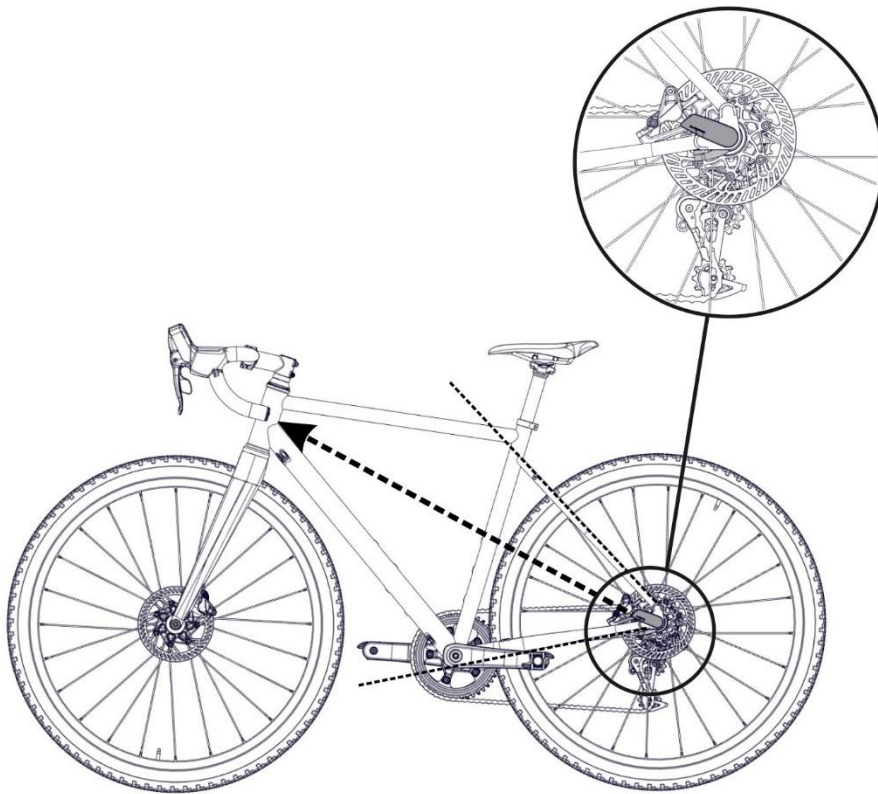
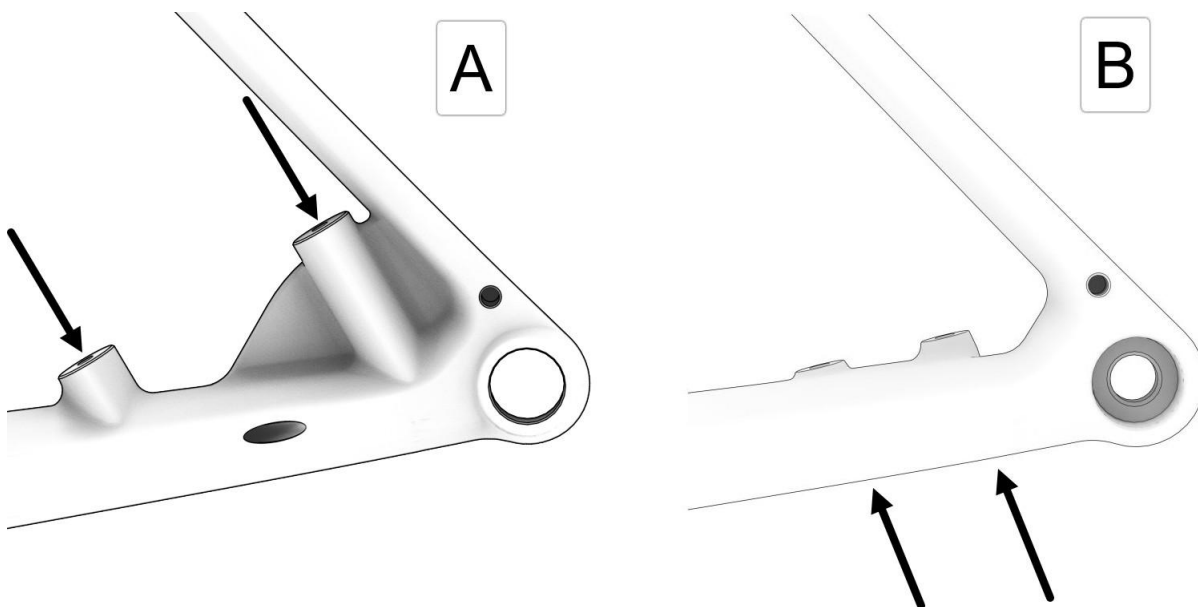


Fig. 8: Thru axle lever position

- 18. Charge the smart thru axle. Please refer to Recharging the battery of the smart thru axle on page 51.
- 19. Install the smart thru axle.

5.2 Identifying the bicycle frame type (postmount - flatmount)



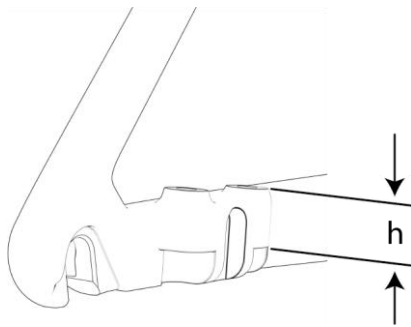
- 1. Look at the frame from the back, at the level of the frame dropout.
- 2. Check how the brake calipers are installed:

- The brake caliper is attached with screws through the top of the frame = postmount frame. (A)
- The brake caliper is attached with screws through the underside of the frame = flatmount frame. (B)

5.3 Selecting and installing the correct torque support for a flatmount frame

First check that the bicycle has a flatmount frame. Please refer to Identifying the bicycle frame type (postmount - flatmount) on page 26.

1. Measure the assembly height of the brake caliper and make a note of that distance.



2. Check whether the flatmount frame was made for 140 mm or 160 mm brake discs.
Not sure? Check the documentation for your bicycle.
3. Select the compatible torque support in the overview table. Please refer to Overview of options for torque supports and spacers for a flatmount frame on page 29.
 - a) In the first column, look up the assembly height for the brake caliper that you measured in step 1.
 - b) In the corresponding column for "140 flatmount frame" or "160 flatmount frame", select the compatible torque support that requires the fewest millimetres in spacers.

For example: For an assembly height of 18 mm and a 140 flatmount frame, you select torque support 00147_XX-A because it only needs 2 mm of spacers.



NOTE

If the torque support turns out not to fit after following this procedure, use a torque support that requires more spacers. For example: torque support 00147_XX-A with 7 mm of spacers.

4. Make a note of the spacers you need (in mm).
5. Choose the right thread length for the bolt on the torque support by adding 8 mm to the height distance and rounding up to the nearest available thread length (8 mm, 12 mm or 16 mm).

For example: 2 mm + 8 mm = 10 mm. Rounded up, the thread length should be 12 mm.

6. Gather all the components you need:

- Torque support
- Spacers
- Bolt

7. Slide the spacers onto the bolt.
8. Apply a drop of locking compound on the threaded part of the bolt.
9. Carefully screw the bolt into the torque support and tighten it with a torque wrench to at least 0.5 Nm and at most 0.7 Nm.



WARNING

Do not overtighten the plastic bolt! If you tighten it to a torque higher than 0.7 Nm, the bolt may break off.



WARNING

The plastic bolt is subject to wear and tear. Over time, you may start hearing a creaking noise. If so, replacing the bolt may solve the problem.

10. Check that the Powershift hub has been fully assembled and attached in the hubshell.
11. Slide the torque support onto the Powershift hub.
12. Install the wheel in the frame and tighten the smart thru axle.
13. Make sure that the torque support does not touch the frame, but aligns neatly with the flat fastening bolt.
 - If the torque support does not touch the frame, it has been installed successfully.
 - If the torque support does touch the frame, repeat the procedure from step 2, but now use the torque support that requires more millimetres in spacers.



NOTE

If you have already gone through this procedure twice, use the procedure for the postmount frame instead, even if you have a flatmount frame.

5.4 Overview of options for torque supports and spacers for a flatmount frame

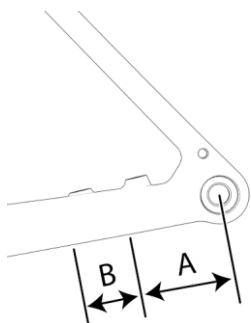
Type of torque support E	140 flatmount frame				160 flatmount frame
	00147_XX-A	00147_XX-B	00147_XX-C	00147_XX-D	00148_XX-A
Assembly height of brake caliper (mm) G	Spacers (mm)				
15	5	10	-	-	10
16	4	9	-	-	9
17	3	8	-	-	8
18	2	7	-	-	7
19	1	6	-	-	6
20	0	5	10	-	5
21	-	4	9	-	4
22	-	3	8	-	3
23	-	2	7	-	2
24	-	1	6	-	1
25	-	0	5	10	0
26	-	-	4	9	-
27	-	-	3	8	-
28	-	-	2	7	-
29	-	-	1	6	-
30	-	-	0	5	-
31	-	-	-	4	-
32	-	-	-	3	-
33	-	-	-	2	-
34	-	-	-	1	-
35	-	-	-	0	-

5.5 Selecting and installing the correct torque support for a postmount frame

First check that the bicycle has a postmount frame. Please refer to Identifying the bicycle frame type (postmount - flatmount) on page 26.

NOTE *If you have already gone through the flatmount procedure twice, you can go through this procedure, even if you have a flatmount frame.*

1. Check how much room is available at the frame dropout of the non-drive side. I.e., make sure there are no obstructions in this space.



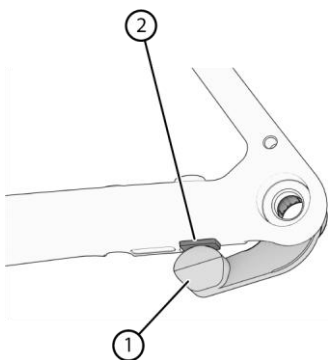
2. Select the torque support according to the distance measured.

Available distance	Type of torque support
There are no obstructions between 0 mm and 40 mm (A).	102.423-XX-B
There are no obstructions between 40 mm and 60 mm (B), but there are obstructions between 0 mm and 40 mm.	102.423-XX-A

3. Check that the Powershift hub has been fully assembled and attached in the hubshell.
4. Slide the torque support onto the Powershift hub.
5. Clean the frame dropout of the left rear fork with degreaser or alcohol wipes.
6. Mount the wheel in the frame. Gently tighten the smart thru axle such that the wheel is fixed in place while the torque support can rotate freely.
7. Identify the area where the torque support will touch the frame.
8. Remove the paper backing from the protective tape.
9. Stick the protective tape onto the frame at the place where the torque support will touch the frame.
10. Press on the protective tape for 30 seconds to ensure good adhesion.

CAUTION *The protective tape is subject to wear and tear. We recommend checking the protective tape for wear and tear after every ride, when you clean your bicycle. Loosen the thru axle and remove the torque support from the frame to inspect the protective tape. If the protective tape is worn through, replace the protective tape.*

11. Check that the torque support (1) touches the frame where the protective tape is located (2).



12. Double-check by repeating this procedure to confirm that you selected the right length for the torque support.

- If the torque support fully touches the frame without obstructions, then it has been installed successfully.
- If the torque support is blocked by an obstruction or does not fully touch the frame, it has not been installed successfully. Please contact Classified Cycling.



CAUTION

The torque support should never cover a drainage hole or spring hinge point on the flat rear fork.

6. Storage and transport

6.1 Storing and transporting the Classified Powershift hub

If you are not going to use the Classified Powershift hub for an extended period of time and want to store it for future use, recharge the battery of the smart thru axle once every 3 months.

The temperature for storage (when not in use) or transport is minimum -15 °C and maximum 60 °C.

After extended transport, it is recommended to recharge the battery of the smart thru axle. Vibrations during transport activate the smart thru axle for a longer period.

7. Assembly and installation

7.1 What is included?

Check that the following items are included. If not, please contact your distributor.

- The Classified Powershift hub, consisting of:
 - Handlebar unit (including battery) (optional)
 - Smart thru axle
 - Torque support (+ protective tape for the frame (if torque support is on flatmount frame))
 - Brake-side end cap
 - Hubshell lock ring
 - Brake disc lock ring
 - Hubshell (part of the Classified ready sprocket set)
 - Powershift hub + center washer
 - Cassette + spacer kit No 9-spline sprocket comes supplied.
 - Cassette lock ring
- Quick Start Guide
- USB charging cable 1.5 m
- Torx T5 screwdriver (for the dropbar handlebar unit)
- Registration card



NOTE

Check that all parts are undamaged. If not, contact your dealer or bicycle shop.

7.2 Replacing a wheel with a Classified Powershift hub

This procedure also applies to different types of bicycles than the model shown here, such as mountain bikes and city bikes.

Tools required:

- Torque wrench
- Lock ring tool
- Chain whip (only if you also want to change the cassette)
- Sprocket remover (only if you also want to swap out the belt sprocket)

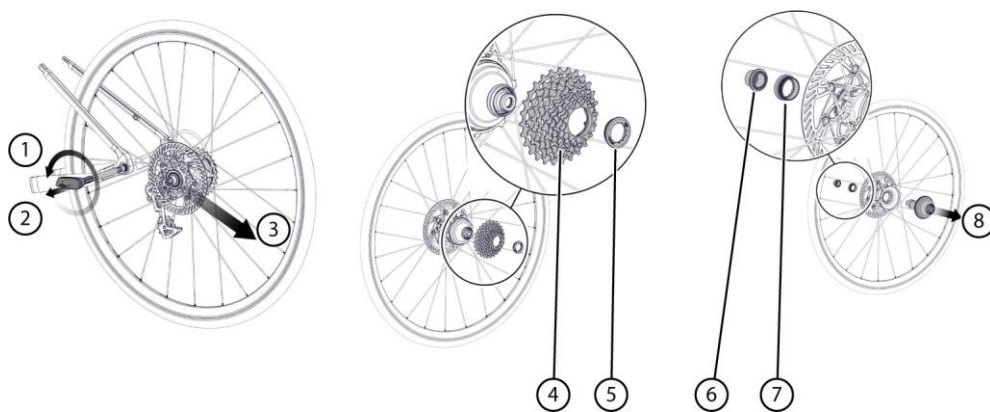



Fig. 9: Replacing a wheel

1. Shift the Powershift hub to the 1:1 ratio and shift the cassette to the smallest sprocket using the rear derailleur.
2. Remove the wheel from the bicycle as you would remove any traditional wheel by removing the smart thru axle.
 - a) Declutch the rear derailleur by setting the clutch to .
 - b) Turn the smart thru axle anti-clockwise (1).
 - c) Pull the smart thru axle out of the wheel (2).
 - d) Push the rear derailleur backwards and carefully remove the wheel from the bicycle (3).
3. If the cassette or belt sprocket also needs changing, go to the next step. If the cassette or belt sprocket does not need changing, go to step 6.
4. Unscrew the lock ring (5) of the cassette or belt sprocket using the lock ring tool.
If it is not shifted to the 1:1 ratio, you will need to use a chain whip to hold the cassette or a strap wrench to hold the belt sprocket.
5. Remove the cassette (4) or belt sprocket from the Powershift hub.
6. Remove the end cap (6) on the side of the brake disc.
7. Unscrew the hubshell lock ring (7) using the lock ring tool.
8. Pull the Powershift hub (8) out of the hubshell.
9. Acquire a new wheel with an installed and certified Classified hubshell.
10. Place the Powershift hub into the hubshell and complete the installation in the reverse order of removal. Use the following tightening torques:
 - Cassette / belt sprocket lock ring tightening torque: minimum 30 Nm and maximum 40 Nm. You only need to do this if the cassette or the belt sprocket was also changed.
 - Hubshell lock ring tightening torque: minimum 30 Nm and maximum 40 Nm.



NOTE

During initial installation of a Powershift hub in a postmount frame, you need to stick the protective tape onto the frame.



NOTE

For the variants that have a belt sprocket, all spacers must be installed and correctly distributed to the left and right of the belt sprocket to properly align the belt. The following tables may be helpful.

142 belt lines and spacers					
Belt line (mm)	Spacers (mm)		Spacers to be installed		Maximum rear sprocket
	Interior	Exterior	Interior	Exterior	
53.2	1.5	4.5	1.5	2-1.5-1	34T
53.7	2	4	2	1.5-1.5-1	34T
54.2	2.5	3.5	1-1.5	1.5-2	34T
54.7	3	3	1.5-1.5	1-2	34T
55.2	3.5	2.5	1.5-2	1-1.5	34T
55.7	4	2	1-1.5-1.5	2	34T
56.2	4.5	1.5	1-1.5-2	1.5	34T

148 belt lines and spacers					
Belt line (mm)	Spacers (mm)		Spacers to be installed		Maximum rear sprocket
	Interior	Exterior	Interior	Exterior	
56.2	1.5	4.5	1.5	2-1.5-1	34T
56.7	2	4	2	1.5-1.5-1	34T
57.2	2.5	3.5	1-1.5	1.5-2	34T
57.7	3	3	1.5-1.5	1-2	34T
58.2	3.5	2.5	1.5-2	1-1.5	34T
58.7	4	2	1-1.5-1.5	2	34T
59.2	4.5	1.5	1-1.5-2	1.5	34T

If you do not know the belt line, you can also find out by trial and error. Install the spacers to the left and right of the belt sprocket so they are distributed evenly. This corresponds to the configuration for a belt line of 54.7 mm (142) or 57.7 mm (149). Turn the belt by moving the pedals through 10 to 15 rotations. The belt is correctly aligned when it runs straight without making any noise. You can change the belt line by moving the spacers from one side of the belt sprocket to the other. Move the pedals through several more rotations to turn the belt again. Repeat these steps until the belt is running silently.

For information about belt tension, please contact the manufacturer of the bicycle or the belt.

11. Reinstall the end cap on the disc brake side.
12. Carefully install the wheel in the bicycle.
13. Install the smart thru axle, ensuring that the thru axle lever points towards the handlebar unit.

If required, loosen the smart thru axle again and loosen the socket bolt (9) on the end of the smart thru axle. Now the stud (10) can be removed from the axle and turned. Retighten the smart thru axle and check that the thru axle lever points towards the handlebar unit. Repeat this until the thru axle lever points in the right direction. Apply locking compound (Loctite 2701) to the socket bolt and tighten the threaded end to a torque of 4 Nm.



NOTE

Only the threaded end may be removed from the axle. No other components of the thru axle should be removed!

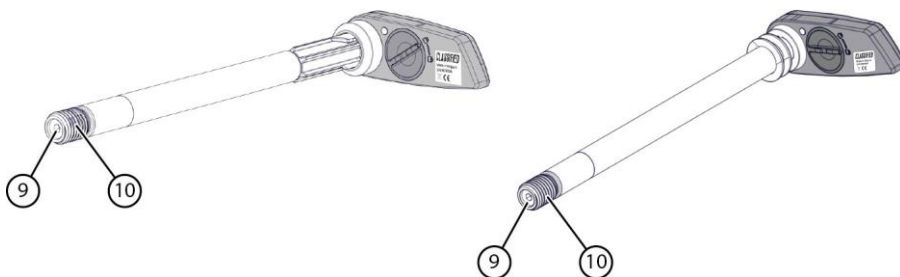


Fig. 10: Thru axle lever position adjustment

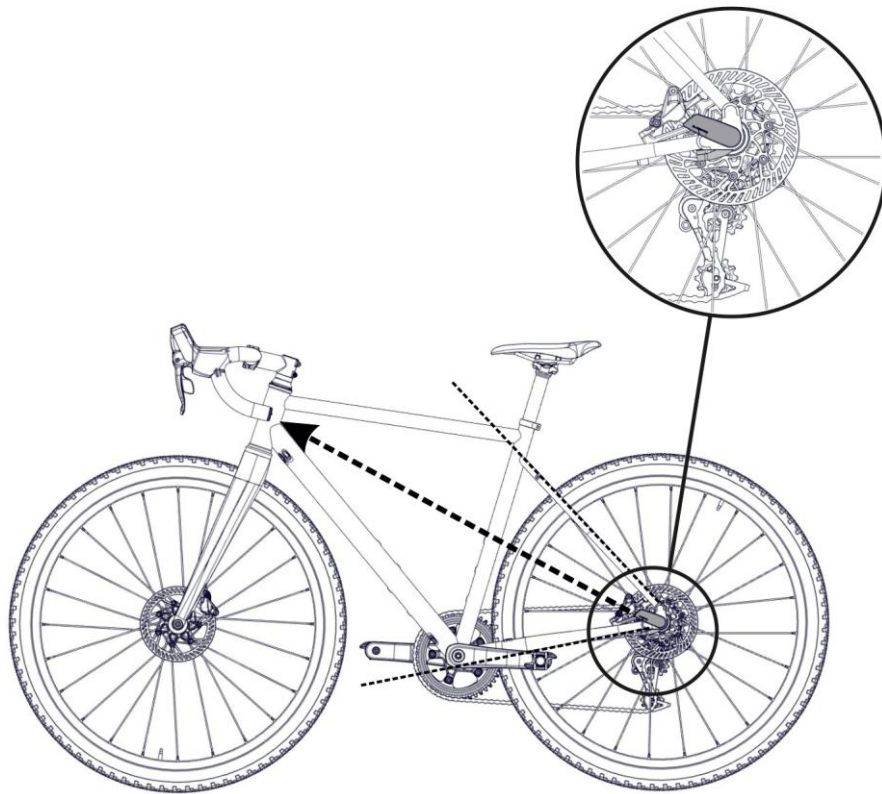


Fig. 11: Thru axle lever positioned toward handlebar unit

14. Install the smart thru axle.

15. ETS only: Place the torque support against the frame.

7.3 Installing the double satellite button

For time trial bikes and triathlon bikes, Classified has developed a splitter (2) to which two satellite buttons (1) can be connected. The splitter is connected with the wireless handlebar unit (3). The handlebar unit can be concealed in the handlebar, in the frame, or if there is not enough space, in a specially developed aero housing (4).



CAUTION

The splitter is only compatible with the satellite buttons that come with it. The standard single satellite button connector is not compatible with the splitter connectors.

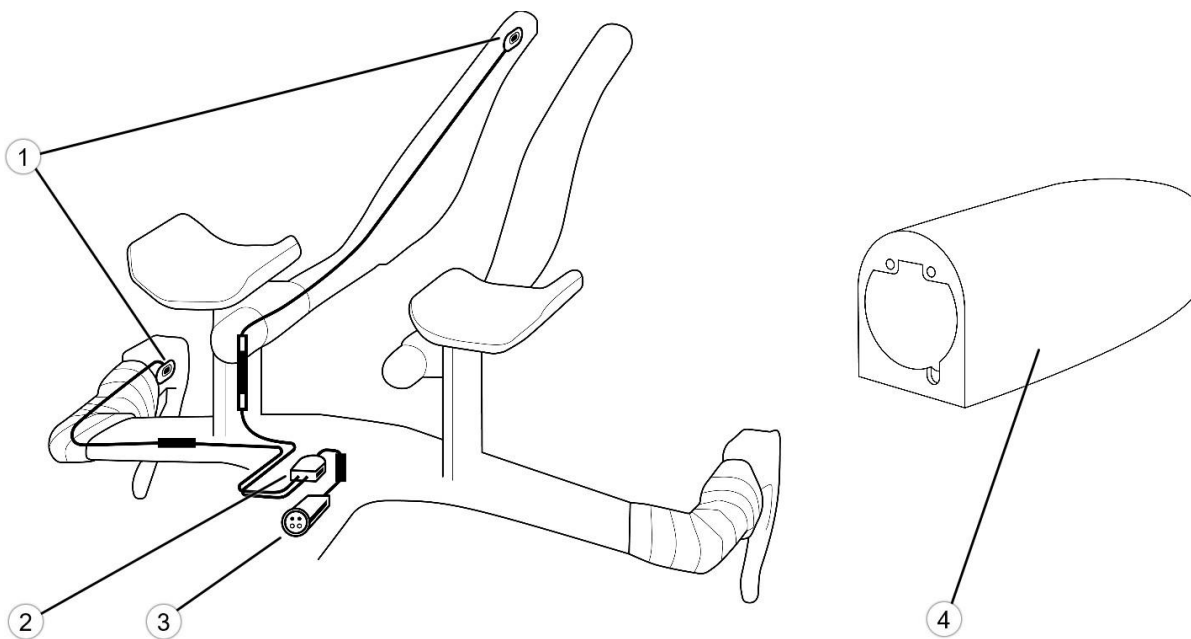


Fig. 12: Installing the double satellite button and aero housing

To ensure the button is installed correctly, follow the steps below:

1. Connect the two satellite buttons (1) to the splitter (2).



CAUTION

Take note of the color markings and connect the cables marked in yellow to one another, and the cables marked in black to one another.

2. Route the cables.
3. Connect the splitter to the handlebar unit (3).
4. Install the handlebar unit
 - In the handlebar.
 - In the frame.
 - In the aero housing (4), before attaching it to the handlebar or frame using double-sided tape.
5. Configure the controls using the Classified Cycling App. The standard configuration is as follows:
 - shift up: satellite button with the longest cable.
 - shift down: satellite button with the shortest cable.

7.4 Bluetooth® pairing (dropbar handlebar unit)

On delivery, the handlebar unit is already paired correctly to the smart thru axle using Bluetooth®. If they become unpaired or you buy an additional Classified Powershift hub that you want to operate using the same handlebar unit, you will have to create a new Bluetooth® connection.



NOTE

Bluetooth® pairing is possible using smartphones, tablets or other electronic devices that have the Classified app installed. It is also possible to use ANT+ to link to a cycling computer or similar device to show which gear you are in.

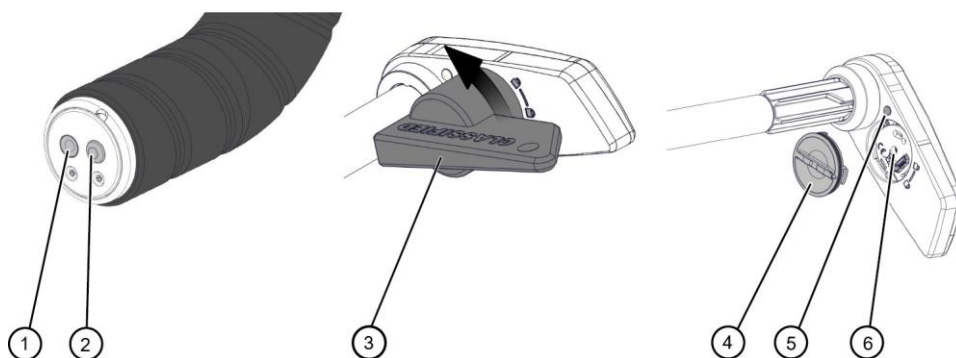


Fig. 13: Bluetooth® pairing

1. Remove the smart thru axle.
2. Take the Classified tool (3) and turn the bayonet lock (4) counter-clockwise past the release sign. The bayonet lock will be released automatically.



TIP

The Classified tool is available through Classified or your bicycle shop.



CAUTION

Use the correct tools to prevent damaging the bayonet lock.

3. Use a standard needle-nosed tool (such as a Torx T5 screwdriver) to push and hold the button (6) of the smart thru axle for at least 5 seconds until the LED (5) starts to blink.
4. Press and hold the button (2) of the handlebar unit for at least 5 seconds until the LED (1) starts to blink. As soon as both LEDs go off at the same time, the Bluetooth® connection has been established.
5. Check the connection by shifting the Classified Powershift hub using the shifter or the satellite buttons. The LED of the handlebar unit and the LED of the smart thru axle both briefly light up when shifting.

7.5 Bluetooth® pairing (ring shifter)

On delivery, the handlebar unit is already paired correctly to the smart thru axle using Bluetooth®. If they become unpaired or you buy an additional Classified Powershift hub that you want to operate using the same handlebar unit, you will have to create a new Bluetooth® connection.



NOTE

Bluetooth® pairing is possible using smartphones, tablets or other electronic devices that have the Classified app installed. You can use the app to change the shift up/down direction, for example. It is also possible to use ANT+ to link to a cycling computer or similar device to show which gear you are in.

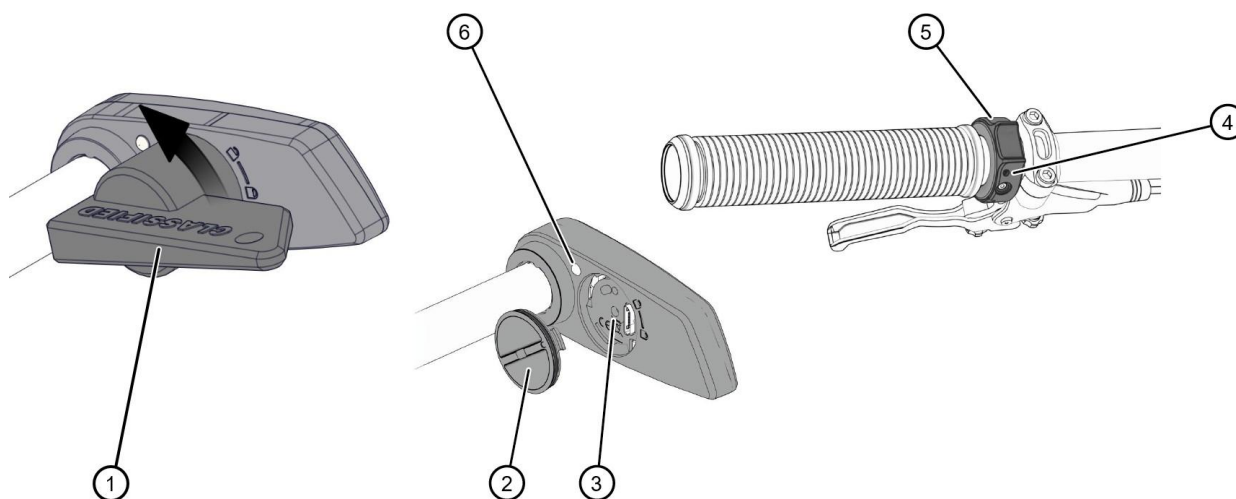


Fig. 14: Bluetooth® pairing

1. Remove the smart thru axle.
2. Take the Classified tool (1) and turn the bayonet lock (2) counter-clockwise past the release sign. The bayonet lock will be released automatically.



TIP

The Classified tool is available through Classified or your bicycle shop.

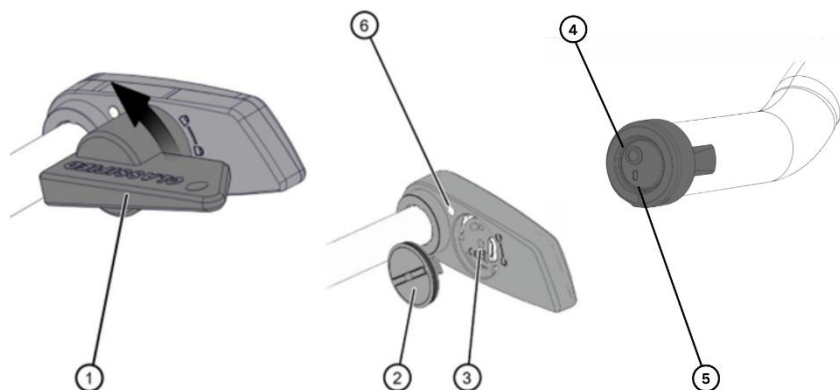


CAUTION

Use the correct tools to prevent damaging the bayonet lock.

3. Use a standard needle-nosed tool (such as a Torx T5 screwdriver) to push and hold the button (3) of the smart thru axle for at least 5 seconds until the LED (6) starts to blink.
4. Push the ring shifter (5) up and hold it for at least 5 seconds, then let go. The LED (4) blinks green for 5 seconds.
5. In the 5 seconds after releasing the handlebar unit in the previous step, push the ring shifter down and hold it for 1 second, then let go.
The device is pairing when the LED blinks green for up to 60 seconds. If the LED is not blinking, the device is not pairing. In that case, try again from step 3.
 - If the LED blinks a bit slower for 1.5 seconds within those 60 seconds, pairing has been successful!
 - If the LED blinks red for 1.5 seconds after the 60 seconds are over, pairing was unsuccessful.
6. Check the connection by shifting the Classified Powershift hub using the ring shifter. The LED of the ring shifter and the LED of the smart thru axle both briefly light up when shifting.

7.6 Bluetooth® pairing (TRP Vistar // Powershift)



CAUTION

Use the correct tools to prevent damaging the bayonet lock.

1. Remove the smart thru axle.
2. Take the Classified tool (1) and turn the bayonet lock (2) counter-clockwise past the release sign. The bayonet lock will be released automatically.



TIP

The Classified tool is available through Classified or your bicycle shop.

3. Press and hold the button (4) of the TRP handlebar unit for at least 10 seconds until the LED (1) starts to blink slowly.
4. Use a standard needle-nosed tool (such as a Torx T5 screwdriver) to push and hold the button (3) of the smart thru axle for at least 5 seconds until the LED (6) starts to blink.
5. The LED on the TRP handlebar unit (5) will now blink fast in green. This means the unit is successfully paired.
6. Check the connection by shifting the Classified Powershift hub using the TRP shifter. The LED of the handlebar unit and the LED of the smart thru axle both briefly light up when shifting.

7.7 Bluetooth® pairing (SHIMANO Di2)

1. Open the Classified Cycling App.
2. Click 'Create a bike'.
3. First, add the thru axle. Click 'Add a smart thru axle' and follow the steps in the app.
4. Next, add the shifter. Click 'Add a shifter' and select 'SHIMANO Di2'. Follow the steps in the app.
5. Check the connection by shifting the hub using the SHIMANO Di2 shifter.

8. First-time use

8.1 Using the dropbar handlebar unit for the first time

Before using the Classified Powershift hub, it is recommended that you check the following:

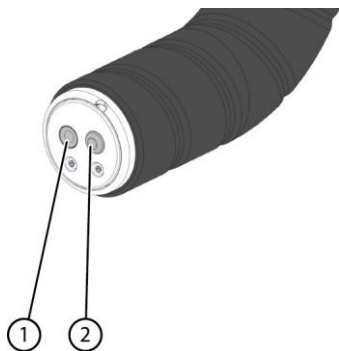


Fig. 15: Button and LED on the handlebar unit

1. Check the handlebar unit. Press and hold the button (2) less than 2 seconds in order to check the battery status. If the LED (1) blinks red or does not blink, the battery must be replaced. Please refer to Replacing the battery of the dropbar handlebar unit on page 50.
2. Recharge the battery of the smart thru axle. Please refer to Recharging the battery of the smart thru axle on page 51.
3. Wake up the handlebar unit by shifting once and then waiting 3 seconds. The vibration-sensitive smart thru axle will start up automatically when the bicycle moves.

8.2 Using the ring shifter for the first time

Before using the Classified Powershift hub, it is recommended that you check the following:

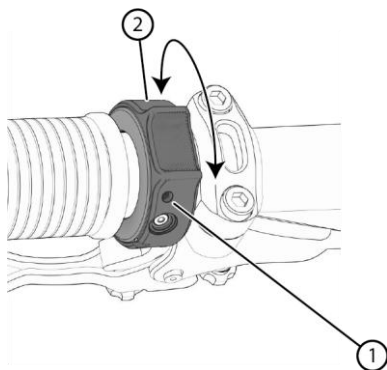


Fig. 16: Ring shifter

1. Check the ring shifter (2). Push the ring shifter in one direction for under 2 seconds, then push the ring shifter in the other direction for under 2 seconds. If the LED (1) blinks red or does not blink, the battery must be charged. Please refer to Charging the ring shifter battery on page 51.
2. Recharge the battery of the smart thru axle. Please refer to Recharging the battery of the smart thru axle on page 51.
3. Wake up the ring shifter by shifting once and then waiting 3 seconds. The vibration-sensitive smart thru axle will start up automatically when the bicycle moves.

9. Operation

9.1 Operation

A compatible shifter or satellite button sends a shifting command to the handlebar unit. The handlebar unit sends a wireless shifting command to the smart thru axle via Bluetooth®. The smart thru axle provides the power needed to shift and passes the shifting command on to the Powershift hub. Shifting happens internally, inside the Powershift hub.

When you buy a bicycle equipped with a Classified Powershift hub and a SHIMANO Di2 groupset, it is possible to use the original SHIMANO shifters to operate the Classified Powershift hub. You can do so by establishing a connection between the SHIMANO Di2 groupset and the Classified smart thru axle. If so, no handlebar unit and satellite button will be installed on the bicycle.

This only works with the following shifters:

- Dura-Ace ST-R9170
- Dura-Ace ST-R9270
- GRX ST-R815
- GRX ST-R825
- Ultegra ST-R8070
- Ultegra ST-R8170

With a TRP Vistar // Classified groupset too, the Powershift hub is operated using the TRP shifters.

Shifter integration is not available for Sram and Campagnolo or other groupset manufacturers. In those cases, you can fit the Classified satellite button to the handlebar to shift the Powershift hub.

10. Maintenance

10.1 Maintenance schedule


NOTE

The indicated frequency depends on the use of the Classified Powershift hub and the riding conditions.

Action	Frequency	Procedure
Inspection	Before riding	Please refer to Checking the Powershift hub on page 47
Cleaning	After riding	Please refer to Cleaning the Classified Powershift hub on page 52
Lubrication (*)	After riding	<ol style="list-style-type: none"> 1. Clean the chain with a degreaser. 2. Dry the chain with a dry cloth. 3. Lubricate the chain.
Inspect protective tape (**)	Every 1000 km	<ol style="list-style-type: none"> 1. Loosen the thru axle. 2. Remove the torque support from the frame. 3. Inspect the protective tape. 4. Replace the protective tape if it is showing signs of wear and tear.

(*) Lubrication is not needed for bicycles with a belt drive!

(**) Only for bicycles with a torque support on a postmount frame.

10.2 Checking the Powershift hub

Perform this check each time before you ride the bicycle!


CAUTION

If you notice any issues, please contact Classified.

1. Check the status of the batteries. Please refer to Checking the battery status of the thru axle on page 48.
2. Check the Bluetooth® connection. See Bluetooth® pairing (dropbar handlebar unit) on page 39.

10.3 Tools required

- Lock ring tool
- Torx T5 screwdriver
- Flat-head screwdriver

- Torque wrench
- Chain whip or sprocket remover

10.4 Checking the battery status of the thru axle

The handlebar unit and the smart thru axle are both equipped with an LED. The color of the LED indicates the battery status. You can check the colour of the LEDs while shifting. However, for safety it is recommended to get off the bicycle and perform the following procedure.

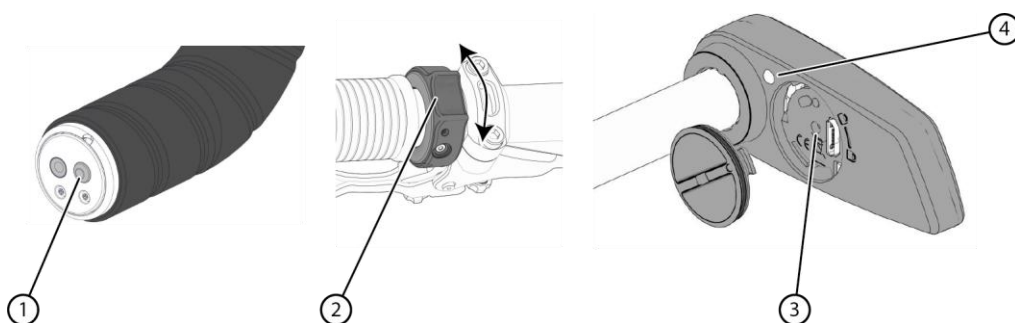


Fig. 17: Buttons and LEDs

1. Get off the bicycle to perform this procedure.
2. Perform one of the following actions:
 - Press and hold the button (1) on the dropbar handlebar unit for less than 2 seconds.
 - Press the ring shifter (2) briefly up or down.
 - Press and hold the button (3) on the smart thru axle for less than 2 seconds.
3. Observe the color of the LED (4) on the smart thru axle.

Color of the LED on the smart thru axle	Smart thru axle battery status
Green	The battery status is OK.
Blinking red	Recharge the battery of the smart thru axle.

10.5 Checking the battery status of the dropbar handlebar unit

The dropbar handlebar unit is equipped with an LED. The color of the LED indicates the battery status. You can check the colour of the LEDs while shifting. However, for safety it is recommended to get off the bicycle and perform the following procedure.

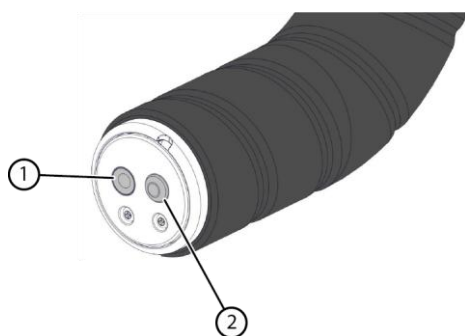


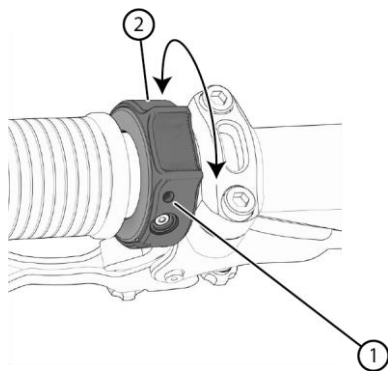
Fig. 18: Button and LED

1. Get off the bicycle to perform this procedure.
2. Press and hold the button (2) on the dropbar handlebar unit for less than 2 seconds.
3. Observe the color of the LED (1) on the dropbar handlebar unit.

LED color on the dropbar handlebar unit	Battery status of dropbar handlebar unit
Green, blinking at 2 pulses per second for 3 seconds	The battery is at more than 30% charge.
Red, blinking at 2 pulses per second for 3 seconds	The battery is at more than 20% but less than 30% charge.
Red, blinking at 5 pulses per second for 3 seconds	The battery is at more than 10% but less than 20% charge. Replace the battery of the dropbar handlebar unit. Please refer to Replacing the battery of the dropbar handlebar unit on page 50.

10.6 Checking the battery status of the ring shifter

The ring shifter is equipped with an LED. The color of the LED indicates the battery status. You can check the colour of the LEDs while shifting. However, for safety it is recommended to get off the bicycle and perform the following procedure.



1. Push the ring shifter (2) up or down very briefly (for less than 0.3 seconds).
2. Observe the color of the LED (1):

LED color	Battery status
Green, for 0.2 seconds	The battery is more than 25% charged.
Red, for 0.2 seconds	The battery is between 15% and 25% charged.
Red, blinking for 1.5 seconds	The battery is less than 15% charged.
No color	The battery is completely discharged.

10.7 Replacing the battery of the dropbar handlebar unit

You can replace the dropbar handlebar unit's button cell battery without removing the handlebar tape from your handlebar.

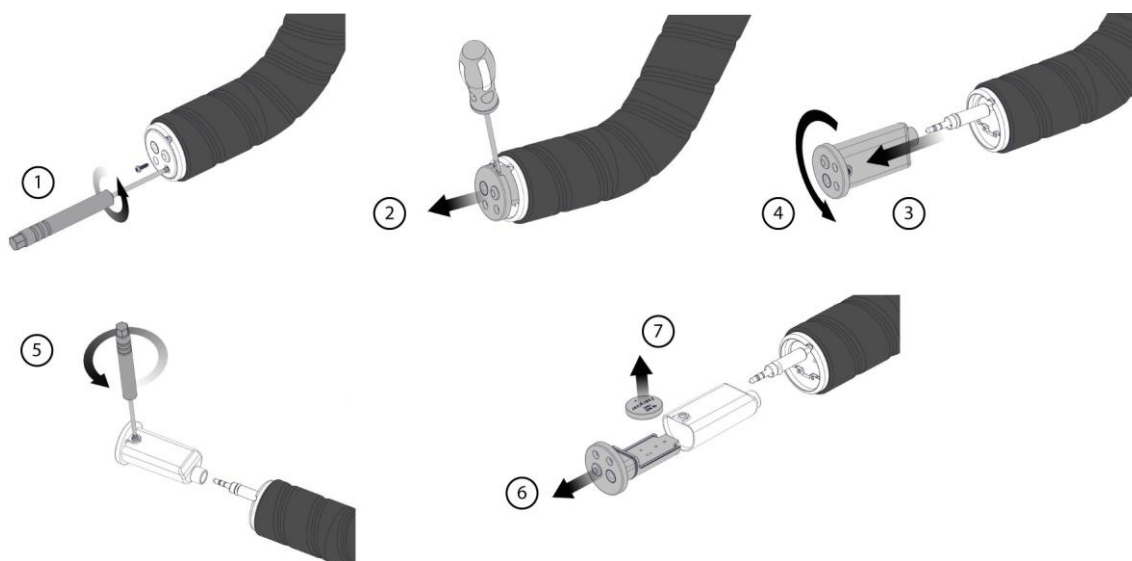


Fig. 19: Replacing the battery of the dropbar handlebar unit

1. Loosen the two Torx T5 screws on the dropbar handlebar unit.
2. Pry the handlebar unit from the dropbar handlebar unit using a flat-head screwdriver.
If required, you can lightly squeeze the edges of the holder in the handlebar to facilitate removing the dropbar handlebar unit.
3. Fully remove the dropbar handlebar unit from the handlebar and disconnect the handlebar unit's connector.
4. Turn the dropbar handlebar unit around.
5. Disconnect the housing using the Torx T5 screwdriver.
6. Slide the battery holder out of the housing.
7. Remove the CR1632 button cell battery while keeping the unit in place in its holder.
8. Install the new CR1632 button cell battery.
Place the battery correctly. Observe the + and - markings.
9. Reinstall all parts in the reverse order of removal. Pay special attention to the following:
 - Ensure that the rubber seal between the battery holder and the housing is installed correctly in the groove.
 - To ease assembly and disassembly, it is recommended to lubricate the bar-end unit O-ring with a dielectric grease such as "Loctite super lube"

- Install the connector fully up against the handlebar unit. Before continuing the installation, check that the LED blinks both when shifting up and when shifting down.

**NOTE**

Do not dispose of the battery in general waste! Take the discharged battery to an authorized collection point.

10.8 Recharging the battery of the smart thru axle

You cannot replace the battery of the ring shifter, but you can recharge the battery. A fully charged battery will last for up to 1 year, depending on usage and the conditions.

**NOTE**

When recharging, the ring shifter must be dry. Recharging must take place in a dry environment.

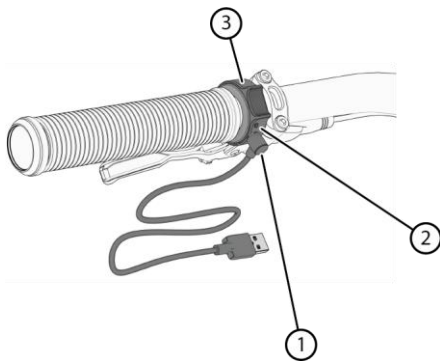


Fig. 20: Recharging the battery of the smart thru axle

1. Place the pogo connector in the opening (1) of the ring shifter (3).
2. Connect the USB charger to the power mains.

The LED (2) will blink green while charging. Once the battery is fully charged, the LED will remain steady green.

**CAUTION**

Only use USB chargers that are compliant with IEC/UL 60950-1 or IEC/UL 62368-1 standard.

3. Disconnect the pogo connector from the ring shifter.
4. Remove the USB charger from the power mains.

10.9 Recharging the battery of the smart thru axle

The battery in the smart thru axle cannot be replaced, but it can be recharged. You can use a fully charged battery for 3 to 6 months, depending on usage. The more you ride and the more you shift, the sooner the battery will need to be recharged. If the Classified Powershift hub is exposed to vibrations during extended transport, the battery will discharge more quickly.

Recharging takes about 4 hours at room temperature.

**WARNING**

NEVER recharge the battery of the smart thru axle while riding. If you do so, the smart thru axle will no longer be dust and watertight.

**NOTE**

When recharging, the smart thru axle must be dry. Recharging must take place in a dry environment.

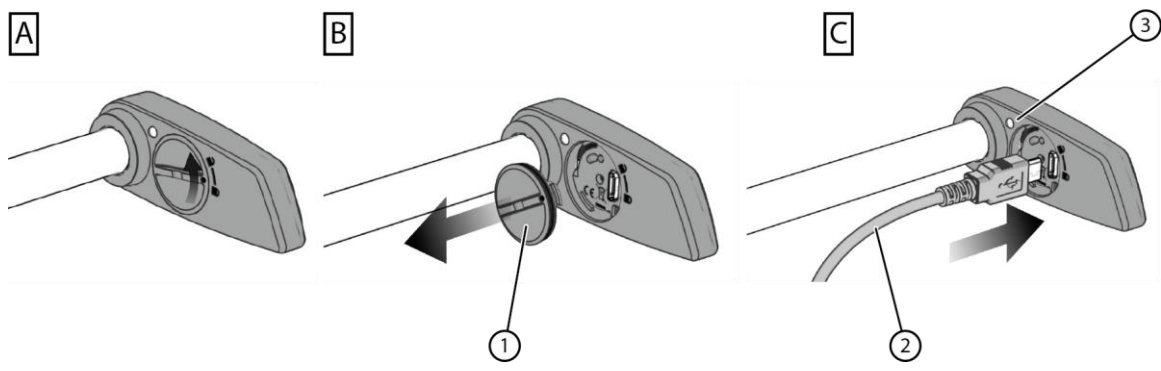


Fig. 21: Recharging the battery of the smart thru axle

1. Remove the smart thru axle.
2. Take the Classified tool and turn the bayonet lock (1) counter-clockwise past the release sign. (A)

TIP
 The Classified tool is available through Classified Cycling or your bicycle shop.

CAUTION
 Use the correct tools to prevent damaging the bayonet lock.

3. Remove the bayonet lock from the thru axle lever. (B)
4. Connect the USB cable (2). (C)
 Only use the supplied USB cable.
5. Connect the other end of the cable to a 5V USB charger.
 The LED (3) will blink green while charging and remain steady green when the battery is fully charged.
6. After fully charging the battery, remove the cable and reinstall the bayonet lock correctly.

CAUTION
 Not reinstalling the bayonet lock correctly will result in damage to the smart thru axle from moisture and dust.

10.10 Cleaning the Classified Powershift hub

Do not use scouring pads, abrasive cleaners, aggressive solutions (such as thinners) or alkaline or acidic solvents (such as rust removers).

Regular cleaning will extend the life of the Classified Powershift hub!

Clean the Classified Powershift hub using a mild soap solution and a NON-powerful water jet.

WARNING
 Do NOT use a pressure washer or steam washer!

10.11 Troubleshooting

Troubleshooting the dropbar handlebar unit

Problem	Cause	Solution
The LED on the dropbar handlebar unit does not blink after a shifting command.	The battery of the dropbar handlebar unit is flat.	Check the battery status: please refer to Checking the battery status of the thru axle on page 48. If necessary, replace the battery of the dropbar handlebar unit: please refer to Replacing the battery of the dropbar handlebar unit on page 50.
The LED on the dropbar handlebar unit blinks red after a shifting command.	The battery of the dropbar handlebar unit is flat.	Replace the battery of the dropbar handlebar unit: please refer to Replacing the battery of the dropbar handlebar unit on page 50.
The LED on the dropbar handlebar unit only blinks when shifting up, but not when shifting down, or vice versa.	The connector of the shifter or the satellite buttons is installed incorrectly into the dropbar handlebar unit.	Remove the dropbar handlebar unit from the handlebar and make sure the connector is installed into the dropbar handlebar unit up to the stop.

Troubleshooting the ring shifter

Problem	Cause	Solution
The LED on the ring shifter does not blink after a shifting command.	The ring shifter battery is flat.	Check the battery status: please refer to Checking the battery status of the thru axle on page 48. Recharge the battery of the ring shifter: please refer to Charging the ring shifter battery on page 51.
The LED on the ring shifter blinks red after a shifting command.	The ring shifter battery is flat.	Recharge the battery of the ring shifter: please refer to Charging the ring shifter battery on page 51.
The connection between the ring shifter and smart thru axle is failing.	The ring shifter is blocked and is unable to return to its neutral position after the shifting command. This will reset the connection.	Leave a clearance of at least 4 mm to the left and right of the ring shifter to avoid any obstruction caused by the brake lever or the dropper post lever.
The ring shifter is malfunctioning or feels rough to the touch.	The ring shifter is dirty.	Clea the ring shifter using a damp cloth and leave to dry.

EN Troubleshooting the smart thru axle

Problem	Cause	Solution
The LED of the smart thru axle does not blink after a shifting command.	The battery of the smart thru axle is flat.	Recharge the battery of the smart thru axle: please refer to Recharging the battery of the smart thru axle on page 51.
	The handlebar unit and smart thru axle are not paired via Bluetooth®.	Pair the handlebar unit and the smart thru axle via Bluetooth®: see Bluetooth® pairing (dropbar handlebar unit) on page 39.
The LED of the smart thru axle blinks red after a shifting command.	The battery of the smart thru axle is nearly flat.	Recharge the battery of the smart thru axle: please refer to Recharging the battery of the smart thru axle on page 51.
The LED of the smart thru axle continues to light up green after a shifting command.	There is a fault with the contactless energy transfer of the smart electronic thru axle.	Remove the smart thru axle from the bicycle until the green LED of the smart thru axle goes out. Next, reinstall the smart thru axle. Important: never give a shifting command while installing or removing the smart thru axle.
The bayonet lock is no longer fitted to the smart thru axle.		Spare parts are available through the website. Please refer to classified-cycling.cc . Using the bicycle without a bayonet lock on the smart thru axle is not permitted and can cause permanent damage to the system.

Troubleshooting the Classified Powershift hub

Problem	Cause	Solution
Play on the Classified Powershift hub	The smart thru axle is not sufficiently tightened.	Screw the smart thru axle finger-tight into the frame.
	The hubshell lock ring is not sufficiently tightened.	Ensure that the hubshell lock ring has been tightened to 35 Nm.
	One of the end caps is not installed, or installed incorrectly.	Ensure that both end caps (brake side and cassette side) have been installed on the Classified Powershift hub.

Problem	Cause	Solution
	There is play on the bearings of the Classified Powershift hub.	Contact Classified Cycling or a registered Classified dealer.
The Classified Powershift hub will not turn when riding with stationary pedals.	The hubshell lock ring is not installed, or installed incorrectly.	Remove the Classified Powershift hub from the wheel and ensure that the hubshell lock ring has been installed correctly.
The Powershift hub is making an unusual or constant noise.		Contact Classified Cycling or a registered Classified dealer.

Troubleshooting the cassette

Problem	Cause	Solution
There is play on the cassette or the cassette wobbles.	The plastic center washer has not been installed in the cassette.	Remove the cassette and ensure that the plastic center washer is installed in the cassette (black plastic washer on the inside of the smallest cassette sprocket). If you have previously swapped out the cassette, also ensure that only one cassette center washer was installed.
	The cassette lock ring is not sufficiently tightened.	Ensure that the cassette lock ring is tightened to 40 Nm.
The cassette does not shift well.	The rear derailleur has not been adjusted correctly.	Consult the rear derailleur's manual for adjusting the derailleur to the cassette. When changing the cassette size (e.g. from a 11-34 to a 11-27 cassette), it is important to adjust the derailleur's "B screw" correctly.
	An incompatible chain has been installed.	Please refer to classified-cycling.cc for the compatible chain types
	The chain is worn out.	Please refer to classified-cycling.cc for the compatible chain types and install a new chain.
	The cassette is worn out.	Spare parts are available through the website. Please refer to classified-cycling.cc

EN

Problem	Cause	Solution
	The cassette is not compatible with the rear derailleur.	I10 cassettes are compatible with SRAM T-type cassettes. X10 cassettes are compatible with all other groupsets. An up-to-date overview of all compatible groupsets and cassettes is available on classified-cycling.cc
The wheel is jammed in the frame and will not turn anymore.	The cassette-side end cap has not been installed.	Install the cassette-side end cap.
	The chain is jammed between the cassette and the frame.	Remove the wheel and reinstall the wheel after placing the chain back around the cassette.
The cassette is noisy when shifting.	-	A muffler cone is available via Classified customer support. Install the cassette and slide the cone over the driver of the Powershift hub. The cone will dampen the shifting sound of the cassette.



NOTE

For the most recent list of frequently asked questions, please refer to classified-cycling.cc

11. Recycling

11.1 Recycling the Classified Powershift hub

Remove the handlebar unit from the handlebar and disassemble the various components:

- Smart thru axle
- Hubshell
- Powershift hub
- Cassette

Do NOT dispose of the products in your general household waste! Comply with the current local legal requirements and contact your local authorities in case of any doubt.

The smart thru axle contains a non-replaceable rechargeable battery. This battery may only be removed by a qualified professional.

The ring shifter contains a non-replaceable rechargeable battery. This battery may only be removed by a qualified professional.

The dropbar handlebar unit contains a non-replaceable rechargeable battery. Remove this battery and only submit the discharged battery to an authorized collection point.



12. Appendices

12.1 Warranty

**NOTE**

The warranty is only valid for registered products when the service advice is followed.

In case of prohibited use, the warranty will be void. Please refer to Prohibited use on page 6.

Register by scanning the QR codes on the components or visit classified-cycling.cc/registration

For support, please contact Classified Cycling at support@classified-cycling.cc

12.2 EC declaration

Classified Cycling hereby declares that the radio equipment in the thru axle and the handlebar unit are in conformity with Directive 2014/53/EU. The full text of the EU declaration of conformity is provided on the following web page: classified-cycling.cc/service/regulatory

Both the thru axle and the handlebar unit operate in a frequency range between 2,400-2,480 MHz (BLE and ANT+) and have a maximum signal capacity of 1 mW.

12.3 FCC and ISED declaration

FCC declaration of conformity

This device complies with part 15 of the FCC rules.

Operation is subject to the following two conditions:

1. This device may not cause any harmful interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

**CAUTION**

Changes or modifications not expressly approved by the party responsible for compliance with the rules and standards could void the user's authority to operate the device. This applies in particular to the antenna supplied with the device.

**NOTE**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If the device is not installed and used in accordance with the instructions, it may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and receiver.

- *Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.*
- *Consult the dealer or an experienced radio/TV technician for help.*

Canadian declaration of conformity

This equipment contains one or more transmitters and/or receivers for which no permit is needed and which comply with the applicable RSS(s) for which no permit is needed in Canada.

Operation is subject to the following two conditions:

1. This device may not cause any interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

RF exposure

This portable transmitter and its antenna comply with FCC and ISED limits for RF exposure of the general population / uncontrolled exposure.

Overview of certificate numbers

Part	Numbers
Smart thru axle	<ul style="list-style-type: none"> • FCC ID: 2AZ7AClassIBV1 • IC: 27531-CLASSIBV1 • M/N: 029_047_00
Wireless dropbar handlebar unit	<ul style="list-style-type: none"> • FCC ID: 2AZ7AClassIAV1 • IC: 27531-CLASSIAV1 • M/N: 029_003_01
Ring shifter	<ul style="list-style-type: none"> • FCC ID: 2AZ7A-SU210 • IC: 27531-SU210 • M/N: SU210 • TDRA ID: ER21293/23

12.4 Other labels

South Africa



TA-2023/0291
TA-2023/0277
TA-2023/1133
Approved

Australia



Japan



- R 201-220154
- R 201-220155
- R 202-JKM099

Korea

	<p>Certificate number: R-R-1Cc-029_047_00</p> <p>Classified Cycling BV</p> <p>Item number: 029_047_00</p> <p>Model: Smart thru axle</p> <p>Manufacturer: Classified Cycling BV - Belgium</p>
	<p>Certificate number: R-R-1Cc-029_003_01</p> <p>Classified Cycling</p> <p>Item number: 029_003_01</p> <p>Model: Wireless dropbar handlebar unit</p> <p>Manufacturer: Classified Cycling BV - Belgium</p>
	<p>Certificate number: R-R-1Cc-SU210</p> <p>Classified Cycling</p> <p>Item number: SU210</p> <p>Model: Ring shifter</p> <p>Manufacturer: Classified Cycling BV - Belgium</p>

China

- CMIIT ID: 24J99X9GG836
- CMIIT ID: 24J99X9G5061
- CMIIT ID: 24J99X9G4683

Taiwan

 CCAK24LP1350T0

 CCAK24LP1130T9

 CCAK24LP1000T9

Singapore

**Complies with
IMDA Standards
DA107398**

12.5 Spare parts

Spare parts can be ordered from the dealers in the B2B web shop.

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