



# Impulse 2.0 pedelec

EPAC Electrically power assisted cycle

**Original User Guide | EN**

**Version 3**

**11/01/2016**



*impulse 2.0*

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\*depending on model



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\*depending on model

## I. Introduction

This user guide contains information on how to use, maintain and look after your Impulse 2.0 pedelec.



### DANGER

**Before using your pedelec for the first time, carefully read this user guide. Please also read the other items in the information pack ⇒ II. Information pack P. EN-5. Familiarise yourself with the meaning of the safety information symbols.** Should you have queries please contact your Derby Cycle Werke (DCW) or Raleigh Univega (RU) dealer ⇒ IV. DCW/RU dealers P. EN-7 or our customer service ⇒ III. Customer service P. EN-7. Failure to comply with safety information and instructions can result in death, severe injuries and/or damage to the pedelec. The manufacturer shall not be liable for injury and damage caused by the failure to comply with safety information and instructions. Furthermore, it will invalidate the manufacturer's warranty and guarantee (where applicable).

**Make sure your DCW/RU dealer has provided you with all of the documentation that was delivered with the pedelec. Keep this user guide and information pack safe for future use. Please pass on the guides and information pack to other people who will use, maintain or repair this pedelec,** otherwise uncertainties can arise that could result in death, severe injuries and/or damage to the pedelec.




You can download this guide, the 'Original User Guide | General' and parts of the information pack as PDFs from our website: [www.derby-cycle.com/de/downloads/downloads.html](http://www.derby-cycle.com/de/downloads/downloads.html). There you will also find links to the websites of the various component manufacturers.



### I.I Explanation of the safety information symbols




#### DANGER

This symbol  combined with the signal word "DANGER" indicates a potentially dangerous situation. Failure to comply with this safety instruction can result in death or very serious injuries.


#### WARNING



This symbol  in conjunction with the signal word "WARNING" indicates a potentially dangerous situation. Failure to comply with this safety warning can result in serious injury.


#### CAUTION



This symbol  combined with the signal word "CAUTION" indicates a potentially dangerous situation. Failure to comply with this safety instruction can result in minor injuries.

## IMPORTANT



This symbol  combined with the signal word "IMPORTANT" indicates a potentially dangerous situation. Failure to comply with this safety instruction can result in damage to the pedelec and its components.



This symbol indicates helpful tips, useful or important information about the product or its additional uses. It does not indicate a dangerous or harmful situation.

## I.II The Impulse 2.0 pedelec

Your Impulse 2.0 pedelec is an electrically power assisted cycle (EPAC). When the assist mode is switched on, the electric motor provides assistance as long as you are pedalling. You can control the degree of assistance, which is adjusted using various assist modes ⇒ [5.4 Changing assist mode P. EN-34](#). The drive assistance is dependent on the force and speed of your pedalling and the speed you are travelling. The motor assistance stops as soon as you stop pedalling and when the battery is discharged or if you reach a speed of 25 km/h. If you want to travel faster than 25 km/h it is therefore necessary to pedal harder.

## II. Information pack

In addition to this user guide, your Impulse 2.0 pedelec comes with a booklet, CD, a service book, two declarations of conformity, and if you have bought a Kalkhoff or Raleigh pedelec, a guarantee card. The following points describe the contents of the information pack in more detail.

### II.I Booklet and CD

The booklet contains a quick-start guide which describes how to check the torque settings, attach the pedals and adjust the height of the saddle. At the back of the booklet there is a CD on which you will find the 'Original User Guide | General' in several languages with general information about the various types of bike and their components. If you go online you can follow a link to our website. The CD can be played with any conventional PC or laptop. To do this, proceed as follows:

#### Procedure A

1. Insert the CD.
2. Double click the left mouse button on the file: shelexec.exe.
3. Select your desired language.
4. Select 'Open user guide from CD' or 'Go online and check for latest version of user guide'.

## Procedure B

1. Insert the CD.
2. Click once with the right mouse button on 'Open folder to display files'.
3. Double click with the left mouse button on 'Start'.
4. Select your desired language.
5. Select 'Open user guide from CD' or 'Go online and check for latest version of user guide'.



To open the user guide you need to have Adobe Reader installed. It is on the CD or can be downloaded free of charge at <https://acrobat.adobe.com/uk/en/products/pdf-reader.html>.

The paper version of 'Original User Guide | General' can be ordered free of charge from:

Derby Cycle Werke GmbH/Raleigh Univega GmbH  
Siemensstraße 1-3  
D-49661 Cloppenburg  
+ 49 (4471) 966-111  
[info@derby-cycle.com](mailto:info@derby-cycle.com)/[info@raleigh-univega.de](mailto:info@raleigh-univega.de)

## II.II Component guides

In the component guides you will find important information about the use and maintenance of components of your pedelec. They also often contain information about any warranties. If there is no specific user guide included for the particular component you are interested in, look on our 'Original User Guide | General' CD ⇒ [II.I Booklet and CD P. EN-5](#) or on the manufacturer's website.

You will find a list of our component manufacturers at .



## II.III Service book

The accompanying service book contains the warranty conditions, a list of consumable parts, a bike passport and forms to use for the transfer, maintenance and change of ownership of the pedelec.

### DANGER



**Make sure the service book is kept carefully up to date and observe the maintenance intervals.** If wear and damage are not detected in good time, components may fail. If that happens while you are riding the bike you could be severely injured or killed. Have worn, damaged or bent components replaced before you use the bike again.

## II.IV EU Declarations of Conformity

The EU declarations of conformity confirm that we have complied with all of the safety requirements of the regulations applicable to the pedelec and the battery charger.

## II.V Guarantee card\*

Since the model year 2014 we provide a guarantee of ten years for the brands **KALKHOFF** and **RALEIGH** on all pedelec frames in the City, Comfort and Trekking segments. You will find the terms of the guarantee on the guarantee card.

## III. Customer service






For all questions about the pedelec and its components please ask your DCW/RU dealer or the customer service team of Derby Cycle Werke GmbH/Raleigh Univega GmbH at:

Derby Cycle Werke GmbH/Raleigh Univega GmbH  
Siemensstraße 1-3  
D-49661 Cloppenburg  
+ 49 (4471) 966-111  
info@derby-cycle.com/info@raleigh-univega.de

\*depending on model

## IV. DCW/RU dealers

Ask our dealers for advice. You can find a list of all dealers in your region on our brand websites.

<b>KALKHOFF</b> MY BIKE	<a href="http://www.kalkhoff-bikes.com/en/service/dealer-search.html">http://www.kalkhoff-bikes.com/en/service/dealer-search.html</a>	
<b>FOCUS</b>	<a href="http://www.focus-bikes.com/gb/en/dealer-search.html">http://www.focus-bikes.com/gb/en/dealer-search.html</a>	
<b>rix</b>	<a href="http://www.rixe-bikes.de/">http://www.rixe-bikes.de/</a>	
<b>RALEIGH</b>	<a href="http://www.raleigh-bikes.de/de/haendler.html">http://www.raleigh-bikes.de/de/haendler.html</a>	
<b>UNIVEGA</b>	<a href="http://www.univega.com/en/dealer-locator.html">http://www.univega.com/en/dealer-locator.html</a>	

## V. Legal regulations

### V.I International



#### DANGER

**Never ride the bike 'no hands'.** You could fall off and seriously injure or even kill yourself – and also be liable for prosecution. You must always have at least one hand on the handlebars.

**Observe the respective national road traffic regulations,** otherwise you run the risk of a serious accident. Before using your pedelec abroad, find out about the regulations applicable in that country.

**Like all bicycles, the pedelec must comply with the respective national road traffic regulations and applicable standards. If you make technical modifications to the bike, take into account the respective national road traffic regulations and applicable standards.** If the cut-off speed and/or the speed of the push assist exceed the specified values, the pedelec will become liable to mandatory registration and insurance. Technical modifications can impair the function of your pedelec, resulting in damage to components. If this happens while you are riding the bike you could be severely injured or killed. Furthermore, it will invalidate the manufacturer's liability, warranty and guarantee (where applicable).



**Observe the respective national regulations regarding the disposal of the drive system, display, easy-reach control, battery and charger.** Otherwise you will be committing an offence and run the risk of a fine.

### V.II Germany

At the time of writing (January 2016) the following regulations apply in Germany:

- » The motor may only be used as an aid to pedalling, i.e. it may only "help" when the rider is actively pedalling.
- » The average motor power must not exceed 250 W.
- » The motor power must continue to fall as the speed of the bike continues to increase.
- » The motor must cut out automatically at 25 km/h.

**What this means for you:**

- » There is no obligation to wear a helmet.



#### DANGER

**However, for your own safety you should never ride a bike without a suitable cycle helmet.** A cycle helmet can protect you from severe injuries. Make sure the helmet is correctly positioned.

- » You do not require a driving licence.
- » There is no requirement for compulsory insurance.
- » The use of cycle paths is regulated as for normal bicycles.
- » The use of children trailers and cycle trailers is generally permitted for pedelecs.



## DANGER



**Before you use a trailer bike or trailer make sure you read Chapter**  
 ⇒ [6.9.2 Trailer bikes and trailers P. EN-56](#). Otherwise there is a risk of serious injury or death.

» The attachment of child seats is generally permitted.

## DANGER



**Before you attach a child seat make sure you read Chapter**  
 ⇒ [6.9.4 Child seats P. EN-58](#). Otherwise there is a risk of falling off, serious injury or death.

## V.II.I Lighting

In Germany the requirements for lighting on bicycles is regulated in Section 67 of the Road Traffic Licensing Regulation (StVZO) and in the Technical Requirements for vehicle parts. Lighting includes both battery and dynamo-powered lights, and includes reflectors that work without a power supply and simply reflect external light.

Type	Number	Position	Characteristics
Front light	1	Front	White light
			The illuminance must be at least 10 lux at the centre of the beam at a distance of 10 metres.
Reflector	At least 1	Front	White
			The reflector can be integrated into the front light.

Type	Number	Position	Characteristics
Rear light	1	Rear	Red light
			The lowest point of the illuminating surface must not be lower than 250 mm above the road surface.
			A standlight function is also permitted.
Reflector	At least 1	Rear	Red
			The highest point of the illuminating surface must not be higher than 600 mm above the road surface.
Large reflector	1	Rear	Red
			The large reflector is marked with a Z.
			It can be integrated in the rear light.
Reflector	2 per pedal	Pedals	Yellow
			Effective forwards and backwards.
Reflector (or reflective wheel stripes)	At least 2	Per wheel	Yellow
			Attached to the spokes at 180° to each other.
			Effective sideways on.
Reflective stripes (or wheel reflectors)	1	Per wheel	Circular continuous, reflective white stripe.

## V.II.I.I Replacement bulbs

The replacement bulbs you will need depend on the type of lighting fitted on your bike. The table below tells you what type of bulb you will need:

Type	Power supply	
Front light (LED, incandescent)	6 V	2.4 W
Front light halogen	6 V	2.4 W
Rear light	6 V	0.6 W
Rear light with standlight function	6 V	0.6 W
Lighting with LED lamps	LED lamps are not replaceable	
Hub dynamo	6 V	3 W

## V.II.II Disposal

Do not dispose of the display, easy-reach control, pedelec battery and charger in the household waste. Hand them in at the designated place (e.g. recycling centre, battery collection point, cycle dealer).



Electrical devices marked with this symbol must not be disposed in household waste.

## VI. Intended purpose

### VI.I Pedelec

This bicycle is designed and equipped for use on public roads and paved paths. It can also be used on easy terrain.

The manufacturer and dealer accept no liability for damage resulting from any use beyond this definition and/or failure to comply with the safety information and instructions in the user guide.

This applies particularly to off-road use, overloading and failure to properly rectify faults. Intended use also includes conformance with the specified operating, service and repair conditions in the user guides and service book ⇒ [II.III Service book P. EN-6](#). Fluctuations in the consumption and power of the battery and a reduction of capacity with increasing age ⇒ [7.3.1.2 Capacity P. EN-66](#) are common and technically unavoidable, and as such, do not constitute material defects.

## VI.II E-mountain bike

This bicycle is not designed and equipped for use on public roads. Before it can be used on public roads it must be fitted with the legally prescribed equipment. It is designed to be used off-road, but not for competitions. The manufacturer and dealer accept no liability for damage resulting from any use beyond this definition and/or failure to comply with the safety information and instructions in the user guide. This applies particularly to the use of this bicycle in competitions, overloading and the failure to properly rectify faults. Intended use also includes conformance with the specified operating, service and repair conditions in the user guides and service book ⇒ *II.III Service book P. EN-6*. Fluctuations in the consumption and power of the battery and a reduction of capacity with increasing age ⇒ *7.3.1.2 Capacity P. EN-66* are common and technically unavoidable, and as such, do not constitute material defects.

## VII. Pedelec weights



Pedelecs are heavier than normal bicycles. The exact weight depends on the equipment fitted. If you want to know the precise weight of your pedelec, we recommend that you have your pedelec weighed by a dealer. The majority of dealers have professional and very accurate bicycle scales.

## VII.I Total weight



### DANGER

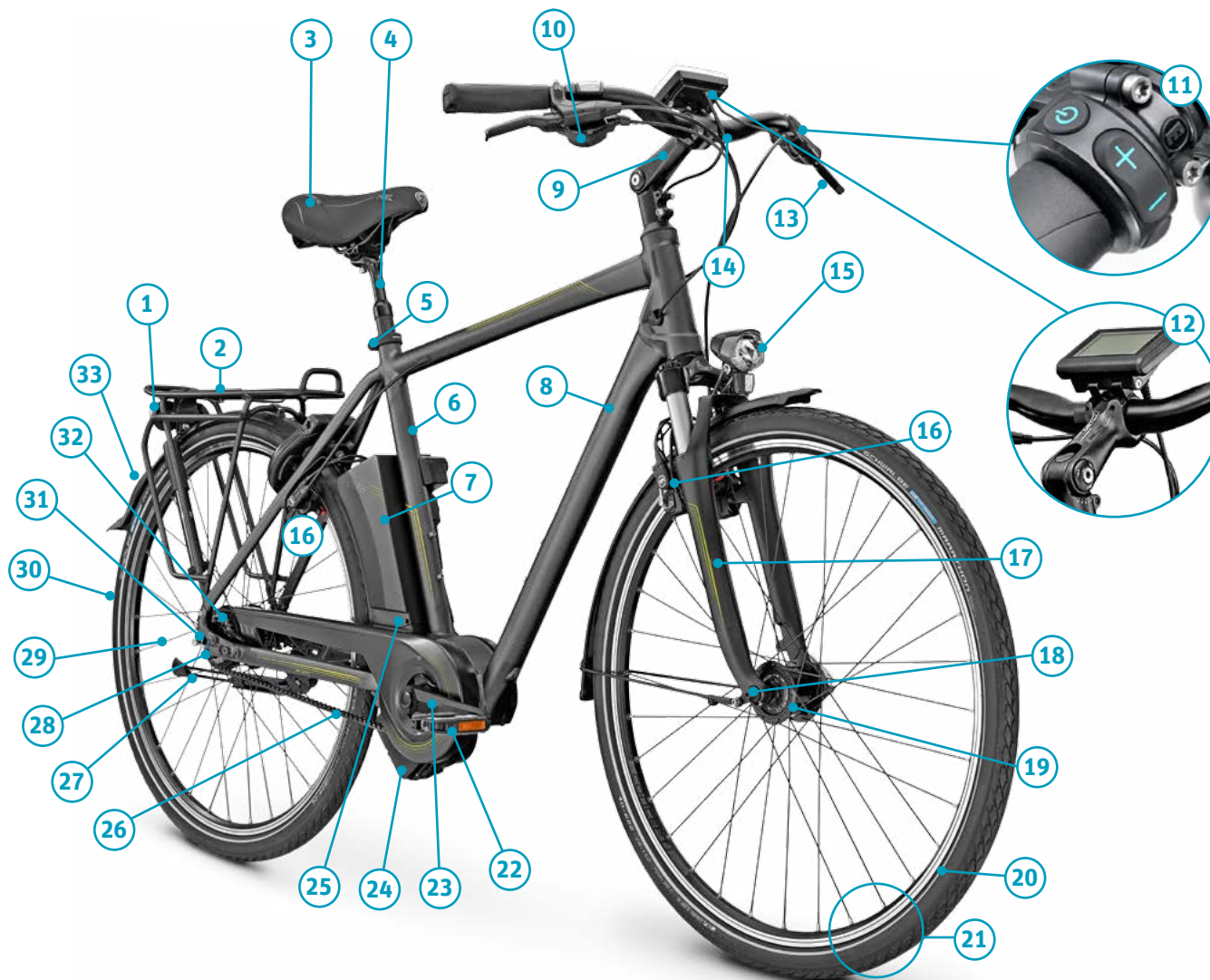
**Do not exceed the total weight of the pedelec, because it can lead to the fracture or failure of safety-relevant parts.** If this happens while you are riding the bike, it can lead to severe falls – with fatal consequences.

**Total weight =** Weight of the bike + weight of the rider + weight of the trailer bike or trailer + weight of luggage and/or child + weight of the child seat

Bike type	Maximum permissible total weight	Weight of rider*
Impulse 2.0 pedelec	130 kg	Max. 102 kg
Impulse 2.0 pedelec semi XXL	150 kg	Max. 122 kg
Impulse 2.0 pedelec XXL	170 kg	Max. 142 kg

\* for a pedelec weighing 28 kilograms.

## VIII. The pedelec and its components\*



- |                                  |                                       |
|----------------------------------|---------------------------------------|
| <b>1</b> Rear light              | <b>18</b> Drop-outs (suspension fork) |
| <b>2</b> Luggage rack            | <b>19</b> Front wheel hub             |
| <b>3</b> Saddle                  | <b>20</b> Reflective stripes          |
| <b>4</b> Saddle post             | <b>21</b> Wheel                       |
| <b>5</b> Saddle clamp            | <b>22</b> Pedal                       |
| <b>6</b> Seat tube               | <b>23</b> Pedal crank                 |
| <b>7</b> Seat tube battery       | <b>24</b> Motor                       |
| <b>8</b> Down tube               | <b>25</b> Docking station             |
| <b>9</b> Handlebar stem          | <b>26</b> Belt                        |
| <b>10</b> Gears (rotary handle*) | <b>27</b> Side stand                  |
| <b>11</b> Easy-reach control     | <b>28</b> Drop-outs                   |
| <b>12</b> LCD Big Display        | <b>29</b> Wheel rim                   |
| <b>13</b> Brake lever            | <b>30</b> Tyre                        |
| <b>14</b> Handlebars             | <b>31</b> Axle nut                    |
| <b>15</b> Front light            | <b>32</b> Gear hub                    |
| <b>16</b> Rim brake              | <b>33</b> Reflector                   |
| <b>17</b> Suspension fork        |                                       |

\*depending on model

## 1. General safety information

Comply with the safety and user instructions at the start of the following sections.



### DANGER

**We discourage allowing children under the age of 14 years to ride pedelecs.** They may not be able to cope with the speed. It can result in serious accidents and falls.

**Wear a cycle helmet.** While there is no legal obligation to wear one, you should always wear a suitable cycle helmet for your own safety. A cycle helmet can protect you from severe injuries. Make sure the helmet is correctly positioned.

**Keep your hands and other body parts and clothing away from moving parts,** otherwise you could catch yourself in them, fall off and/or injure yourself.

**Adapt your riding style to the prevailing traffic conditions,** otherwise you could fall off and involve yourself and others in a serious accident. Take into consideration the longer braking distances needed on wet or icy roads. Think ahead, anticipating the actions of other road users and reduce your speed. Avoid sudden jerky movements of the handlebars and braking actions. Dismount if you are unsure about a situation.

**Only use the bicycle for its intended purpose** ⇒ *VI. Intended purpose P. EN-10*, otherwise it can lead to component failure. If that happens while you are riding the bike you could be severely injured or killed.

### DANGER



**Inspect your pedelec before every trip, and after each time it has been transported anywhere or has been left unattended** ⇒ *4. Before every trip P. EN-30*. If wear and damage are not detected in good time, components may fail. If that happens while you are riding the bike you could be severely injured or killed. Due to the additional power, wearing parts on a pedelec are subject to more stress than a normal bike. Have worn, damaged or bent components replaced before you use the bike again.

**Do not exceed the total weight of the pedelec, because it can lead to the fracture or failure of safety-relevant parts** ⇒ *VII.I Total weight P. EN-11*. If this happens while you are riding the bike, it can lead to severe falls – with fatal consequences.

**Contact your cycle dealer when it is necessary to replace wearing parts and other** ⇒ *II.III Service book P. EN-6* **components. We recommend that all assembly and adjustment work is carried out by your DCW/RU dealer,** as incorrect assembly could cause components to become loose. If that happens while you are riding the bike you could be severely injured or killed. If you do have to tighten something, you will find a complete list of the required torque settings in Section ⇒ *10. Torque settings P. EN-86*, which must be strictly followed.

**Only use original replacement parts.** Replacement parts from other manufacturers can impair the function of your pedelec. It can result in serious accidents.

## DANGER



**Ask your DCW/RU dealer to show you the operation and features of the components. Please also read the component guides. We recommend that all assembly and adjustment work is carried out by your DCW/RU dealer,** as incorrect assembly could cause components to become loose. If that happens while you are riding the bike you could be severely injured or killed. If you do have to tighten something, you will find a complete list of the required torque settings in Section ⇒ [10. Torque settings P. EN-86](#), which must be strictly followed.

## WARNING



**Do not ride in unfavourable lighting conditions (fog, rain, dusk, darkness) without adequate lighting** ⇒ [V.II.I Lighting P. EN-9](#); it can lead to accidents and serious injuries.

**Always remove the battery before starting to work on the pedelec.**  
The pedelec could switch on unexpectedly and you could be seriously injured.

## CAUTION



**Do not attempt to open the motor, display, battery or charger;** you could injure yourself. Furthermore, parts may be destroyed, invalidating the warranty. If problems arise please contact your DCW/RU dealer.

## IMPORTANT



**Always park your pedelec so that it cannot tip over.** If the bike tips over components can be damaged. If your bike is not equipped with a kick stand, one can be retrofitted. Please ask your DCW/RU dealer.

**Do not clean the pedelec with a water hose or high pressure washer.**  
Although the components are sealed, you could damage the bike. Clean the pedelec with a soft damp cloth.

## 2. Protection from theft, manipulation and loss

### DANGER



**Protect your pedelec from unauthorised access.** If third parties alter components (e.g. the brakes) without your knowledge, you could be seriously injured. Inspect your pedelec before every trip, and after each time it has been transported anywhere or has been left unattended ⇒ [4. Before every trip P. EN-30](#). If your bike is damaged, do not ride it again before the damage has been rectified. If your bike is lost or stolen it will not be replaced under the warranty.

The following measures can help you to protect your pedelec from theft and manipulation and to recover it if it has been stolen:



**Always lock the bike and battery even if you are only leaving it for a short while. Ideally, the lock(s) should block the wheel powered by the motor.** Do not leave the key in. To be on the safe side, you can also remove the battery. The pedelec must also be secured with a lock when it is parked outside the home (e.g. sheds, basement).

**Do not park your pedelec in deserted locations** – especially for long periods. If possible, park your pedelec in manned private or communal garages or individual bike lockers.



**Attach the pedelec to a fixed object such as a tree, street lamp or fence,** so that it cannot be carried away.

**Quick-release wheels should be attached to a fixed object together with the frame.** That way the wheel cannot be stolen. Alternatively, the quick-release levers can be replaced by an anti-theft device. For questions about this please contact your DCW/RU dealer.

**Use a high quality bike lock:** you should invest approximately 10% of the purchase price of the bike in locks. Your DCW/RU dealer will be able to fit a suitable frame lock if your bike does not already have one. Alternatively, you can also use other types of bike locks. Ask your DCW/RU dealer for advice.

**Make a note of the important details of your pedelec (e.g. in the service book ⇒ [II.III Service book P. EN-6](#), bike passport) and get it registered with the police.** This makes it easier to identify if it is stolen.

**Have the police encode your pedelec;** the address and initials of the owner are engraved on the frame in an encrypted form. Encoding makes the illegal resale of the bike more difficult and deters thieves. An encoded bike also makes it easier to identify the owner.

**Bicycle theft is often covered by household contents insurance.** Check the terms of your insurance policy as soon as possible.

### 3. Before your first ride

Make sure that your pedelec is adjusted to suit your height and is ready to use. Familiarise yourself with the basic functions of your pedelec.



#### DANGER

**Adjusting the pedelec to your height.** If the bike is not correctly adjusted to your height you can lose control over the bike and fall off.

**Ask your DCW/RU dealer to show you the operation and features of the pedelec and its components. Please also read the component guides. We recommend that all assembly and adjustment work is carried out by a DCW/RU dealer,** as incorrect assembly could cause components to become loose. If that happens while you are riding the bike you could be severely injured or killed. If you do have to tighten something, you will find a complete list of the required torque settings in Section ⇒ [10. Torque settings P. EN-86](#), which must be strictly followed.

**Practise braking and riding with assistance in a safe place before venturing into traffic.** If you do not familiarise yourself with the operation and higher speed of your pedelec you could cause a serious accident. Ride in ECO mode until you feel confident enough to try the higher modes ⇒ [6.4 Changing assist mode P. EN-42](#). Dismount if you are unsure about a situation.

### 3.1 Attaching the pedals

1. Screw the right hand pedal (marked 'R') into the right hand pedal crank in a clockwise direction.
2. Screw the left hand pedal (marked 'L') into the left hand pedal crank in an anticlockwise direction.



#### DANGER

**Make sure you screw the pedals in straight** otherwise you could damage the thread on the pedal crank – if that happens while you are riding the bike you could fall off.

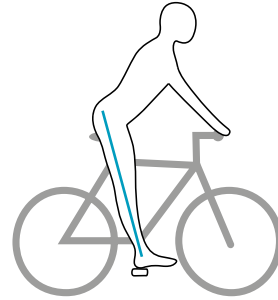
3. Tighten both pedals towards the front wheel with a torque setting of 40 Nm.



## 3.2 Adjusting the saddle height

### 3.2.1 Determining the correct saddle height

1. Sit on the pedelec and at the same time lean against a wall.
2. Turn the pedal crank on the side away from the wall to its lowest point.
3. Put your heel on the pedal.  
Your leg should be fully extended.



3. Extend leg

4. Raise the saddle if your leg is not fully extended when your heel is on the pedal. Lower the saddle if you cannot reach the pedals. The following sections explain how to adjust the saddle height on your bike. The saddle post can be fastened using the saddle clamp  
⇒ [3.2.2 Adjusting the saddle height: Saddle clamp\(s\)\\* P. EN-17](#) or quick-release lever ⇒ [3.2.3 Adjusting the saddle height: Quick-release clamps\\* P. EN-18](#).

#### WARNING



Saddle post marking

**There is a mark on the saddle post showing the maximum amount you can pull the saddle post out of the frame. Never pull out the saddle post beyond this mark, otherwise it can buckle or break and you could fall off.**

### 3.2.2 Adjusting the saddle height: Saddle clamp(s)\*

1. Loosen the saddle clamp(s) by turning it anticlockwise with an Allen key.
2. Move the saddle post to the desired position.
3. Tighten the saddle clamp(s) again by turning it clockwise  
⇒ [10. Torque settings P. EN-86](#).
4. Test the tightness of the saddle by trying to move it.



1. Loosen the saddle clamp(s)



3. Tighten the saddle clamp(s)

\*depending on model

### 3.2.3 Adjusting the saddle height: Quick-release clamps\*



#### DANGER

All quick-release clamps must be correctly tightened before you set off, otherwise the components can loosen or fracture – if that happens while you are riding the bike you could fall off and it could result in serious injury.

1. Open the quick-release lever by turning it down 180°. You will now usually be able to see the word 'OPEN' on the inside of the lever.



1. Quick-release lever open

2. Close the quick-release lever by turning it up 180°. You will now usually be able to see the word 'CLOSE' on the outside of the lever.



2. Quick-release lever closed

#### DANGER

Closing the quick-release lever should be so hard that you need to use the ball of your hand to do it. If not, it can open and loosen the saddle while you are riding the bike, which could result in you falling off the bike. If you have overtightened the quick-release lever the seat post can fracture – which could also result in serious injury if it happens while you are riding the bike.

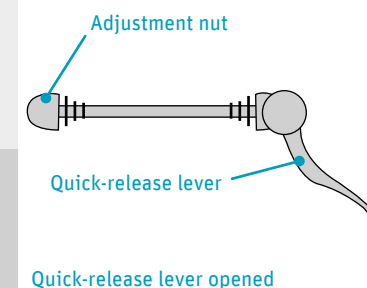


Quick-release lever closes too easily

1. Turn the adjustment nut **clockwise**.
2. Close the quick-release lever again.

Quick-release lever too stiff

1. Turn the adjustment nut **anticlockwise**.
2. Close the quick-release lever again.



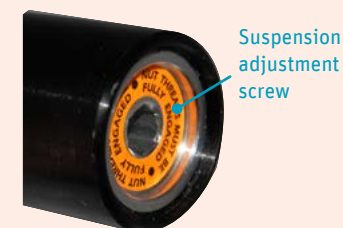
3. Test the tightness of the saddle by trying to move it.

### 3.3 Adjusting the sprung saddle post

1. Remove the saddle post ⇨ [3.2 Adjusting the saddle height P. EN-17](#).
2. Tighten the suspension adjustment screw with an Allen key (6 mm) in the clockwise direction to reduce the suspension or loosen anticlockwise to increase the suspension.

#### DANGER

The suspension adjustment screw must not protrude from the saddle post, otherwise the screws/saddle post can loosen – if that happens while riding you could fall off and it could result in serious injury.



Screw must not protrude from the saddle post



### 3.4 Adjusting the height and angle of the handlebars

#### DANGER

Ask your DCW/RU dealer to do this, otherwise there is a risk of the handlebars loosening, leading to falls and serious injuries.



### 3.5 Switching the lighting on/off\*

A slider control is located on the rear of the front light. Depending on which way you move it, the front and rear light will be on or off when you are riding.

### 3.6 Braking

Make sure that you can always reach the brakes comfortably and that you are familiar with their operation and position. Note which brake lever operates the front and rear brakes. If your pedelec is fitted with a back pedal or coaster brake you can operate it by pedalling backwards.

\*depending on model

#### DANGER



**Practise braking in a safe place before venturing into traffic.** The braking action may be stronger or weaker than you are used to. Serious accidents can happen if you do not familiarise yourself with the braking action. Practise until you feel confident enough. Dismount if you are unsure about a situation.

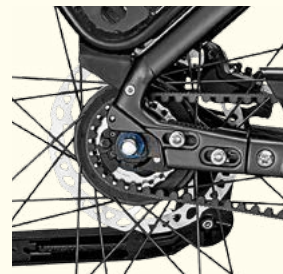


Rim brake

**Rim brakes: Avoid continuous braking on long downhill stretches.** It can lead to a loss in braking power and/or damage to the tyres. Brake intermittently with intervals in between to allow the airflow to cool the braking system. If necessary, make regular stops to ensure adequate cooling.

**Replace the brake pads when they reach the safe wear limit.** The use of worn brake pads can lead to serious injuries with fatal consequences.

#### CAUTION



Disc brake

**Disc brakes: Avoid touching the brake discs after intensive use of the brakes:** they can become very hot. You could burn yourself if you touch them.

## 3.7 Chain\*



Bicycle chain

### WARNING



**Always remove the battery before starting to work on the pedelec.** The system could switch itself on unexpectedly and you could be seriously injured.

### CAUTION



**Check the chain for signs of wear before every trip.** A worn or damaged chain can break. If that happens while you are riding the bike you could be thrown off and seriously injured.

## 3.7.1 Chain tension

### Measuring chain tension

1. Remove the pedelec battery.
2. Press the chain up or down at its tautest point. The tension is correct if you can move the chain up and down by about 5 mm.
3. Check the chain at four or five points over a complete revolution of the crank.

### Adjusting chain tension

1. Remove the pedelec battery.
2. Undo the rear wheel nuts.
3. If necessary remove the brake anchor.
4. Pull the rear wheel back in the drop-outs until the chain just has the permissible amount of play.
5. Carefully tighten all bolts in a clockwise direction to a torque setting of 35 – 40 Nm. Make sure the wheel is reinstalled straight.

\*depending on model

### 3.7.2 Checking for wear

1. Remove the pedelec battery.
2. Check chain wear with a chain wear indicator or a vernier calliper.
3. Replace the chain if it is worn.

### 3.7.3 Cleaning and maintenance



Lubricate the chain after riding in the rain. Clean and lubricate it when you clean the wheel.

1. Remove the pedelec battery.
2. Roughly brush the chain with a hand brush.
3. Then remove the old chain oil with a dry cloth.
4. You can now lubricate the chain. How you lubricate the chain depends on the product you have chosen.
5. When you have finished, turn the crank to distribute the chain oil.

\*depending on model

### 3.8 Drive belt\*



Bicycle belt

#### WARNING



**Always remove the battery before starting to work on the pedelec.** The system could switch itself on unexpectedly and you could be seriously injured.

#### CAUTION



**Check the drive belt for signs of wear before every trip.** A worn or damaged drive belt can break. If that happens while you are riding the bike you could be thrown off and seriously injured.

## 3.8.1 Belt tension

### Measuring belt tension

There are various methods of measuring the tension of the drive belt. One of these is the Carbon Drive app, which measures the tension based on the natural frequency (Hz) of the belt length.

Smartphone operating system	Download
iOS	<a href="http://www.gatescarbondrive.com/CDS/Products/ACCESSORIESANDTOOLS">http://www.gatescarbondrive.com/CDS/Products/ACCESSORIESANDTOOLS</a>
Android	



The Carbon Drive app works best in a quiet environment.

1. Remove the pedelec battery.
2. Load the app on to your smartphone.
3. Start the app.
4. Select the tension icon.
5. Switch on the microphone, click on "Measure" and hold the phone over the middle of the belt making sure that the microphone is pointing at the belt.

6. Pluck the belt so that it vibrates like a guitar string. The app converts the sound into the natural frequency of the belt.
7. Turn the crank a quarter of a revolution and repeat the measurement.
8. Compare the frequency of the belt with the reference value to see if the tension needs adjusting.

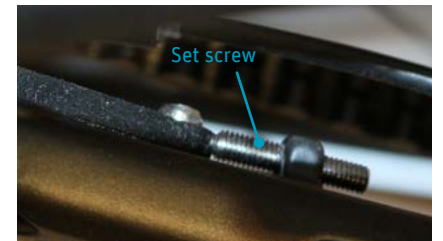
Specified tension values	Small, lighter riders	Tall, heavier riders
Hub gear	50 Hz	60 Hz

### Adjusting the belt tension

1. Remove the pedelec battery.
2. Undo the bolts from the drop-out by turning them anticlockwise.
3. Increase or reduce the tension with the set screw. Make sure the wheel is reinstalled straight.

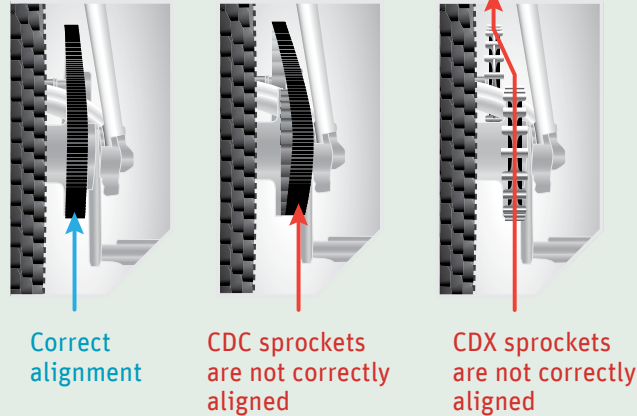


2. Undo bolts



3. Set screw

## IMPORTANT



When adjusting the tension, the correct alignment of the belt must be maintained. Otherwise, it can cause noise, premature wear of the belt or sprocket, and the belt to come off the drive.

Fig.: Gates Corporation: Gates Carbon Drive Owner's Manual. 2014, Page 13.  
URL: <http://www.gatescarbondrive.com/Tech/Resources> (Version 07/01/2016)

4. Tighten the drop-out screws to a torque setting of 16-20 Nm in a clockwise direction  
⇒ 10. Torque settings P. EN-86.



4. Tighten screws

## 3.8.2 Checking for wear

1. Remove the pedelec battery.
2. Check the belt for wear.

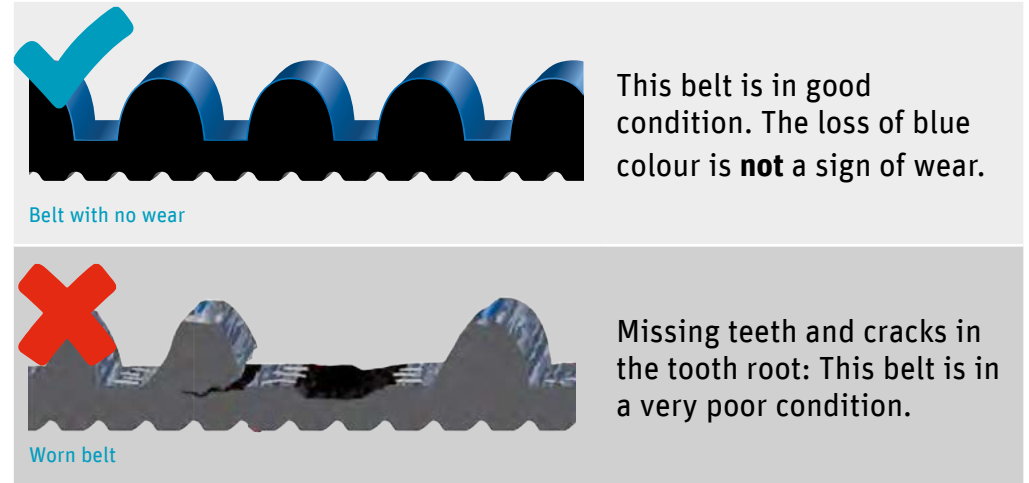


Fig.: Gates Corporation: Gates Carbon Drive Owner's Manual. 2014, Page 14.  
URL: <http://gatescarbondrive.com/Tech/Resources> (Version 07/01/2016)

3. When the safe wear limit has been reached, the belt must be replaced.



When the middle guide on the sprocket is more worn on one side than the other, this is a sign of a poorly adjusted belt line. On black anodized front sprockets, this is relatively easy to see, because the anodizing on the abrasive side is worn down to the aluminium.

### 3.8.3 Cleaning

1. Remove the pedelec battery.
2. Clean the belt with a soft, damp cloth.

#### IMPORTANT



**When you are cleaning the belt, make sure that no water gets into the motor.** Water ingress can damage the motor.

3. Leave to dry.

### 3.9 Gears

The gears are operated by controls on the handlebars (gear lever, twist grips, ...). The gear shift allows you to adjust the gear of your bicycle and the transmission to the current situation. On a straight level stretch a higher gear is sensible to achieve and maintain a higher speed without having to pedal too much. As soon as you start going uphill a lower gear is beneficial, because it is important to be able to climb the hill with little effort. Select the gears so that your legs are always moving at a steady pace.

#### Derailleur\*

With this system the chain is lifted on to a sprocket when changing gear. The chain must continue moving so that the teeth of the sprocket can engage with the chain links easily and smoothly. For a successful gear change you must therefore keep pedalling forwards, never backwards! – but at the same time pedalling lightly and without force.



Derailleur

#### Hub gear\*

Here the change of gear takes place inside the rear wheel hub. Space is very tight inside the hub, therefore it is sensible to pedal lightly when changing gear.



Hub gear

\*depending on model



## 3.10 Wheel

### 3.10.1 Changing the wheel

#### 3.10.1.1 Axle nut\*

##### Removing the rear wheel

1. Remove the pedelec battery.
2. Change the gear to the one recommended by the gear manufacturer for disassembly.
3. Remove the gear shift cable from the rear wheel.
4. Undo the axle nuts using a 15 mm spanner, turning anticlockwise.
5. If necessary remove the brake anchor.
6. Take off the belt/chain.
7. Remove the rear wheel.



3. Remove shift cable from rear wheel



4. Undo axle nuts

##### Replacing the rear wheel

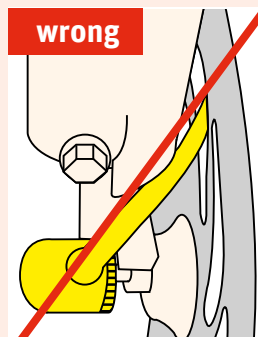
1. Attach the belt/chain.
2. Insert the rear wheel centrally in the drop-outs as far as it will go.
3. Re-attach the gear shift cable.
4. If necessary fasten the brake anchor.
5. Tighten the axle nuts using a 15 mm spanner, turning clockwise. Make sure that your wheel is correctly centred.
6. Reinsert the battery.

#### 3.10.1.2 Quick-release wheels\*

##### DANGER



##### wrong



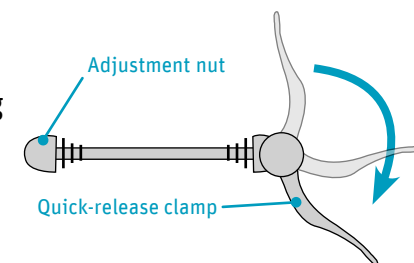
Quick-release lever and brake disc clash

**Front wheel: The quick-release lever must be positioned on the opposite side to the brake disc (where fitted).** If the quick-release lever is on the same side as the brake disc, there is a risk that they can clash and lock the front wheel (see diagram), which can cause a serious accident.

**All quick-release clamps must be correctly tightened before you set off,** otherwise the components can loosen – if that happens while riding you could fall off and it could result in serious injury.

##### Removing the front wheel

1. Remove the pedelec battery.
2. Open the quick-release lever by turning it down 180°. You will now usually be able to see the word 'OPEN' on the inside of the lever.
3. Carefully undo the adjustment nut, turning it **anticlockwise**.



2. Open quick-release clamp

\*depending on model

## IMPORTANT



**Detach all cables from the wheel (e.g. lighting cables),** otherwise you could tear them.

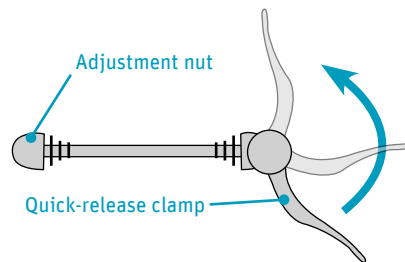


If your bike is fitted with rim brakes it is sensible to release them before you remove the front wheel. Otherwise you may not be able to remove the front wheel.

4. Remove the front wheel.

### Replacing the front wheel

1. Insert the wheel into the front fork ends.
2. Gently turn the adjustment nut on the quick-release lever in a **clockwise** direction. Make sure that your wheel is correctly centred.
3. Close the quick-release lever by turning it up 180°. You will now usually be able to see the word 'CLOSE' on the outside of the lever.



3. Close quick-release clamp



## DANGER

**Closing the quick-release lever should be so hard that you need to use the ball of your hand to do it.** If not, it can open and loosen the wheel while you are riding the bike, which could result in you falling off the bike.

### Quick-release lever closes too easily

1. Open the quick-release lever.
2. Turn the adjustment nut **clockwise**.
3. Close the quick-release lever again.
4. Repeat if necessary.

### Quick-release lever too stiff

1. Open the quick-release lever.
2. Turn the adjustment nut **anticlockwise**.
3. Close the quick-release lever again.
4. Repeat if necessary.



Quick-release levers cannot be closed just by simple turning.



## DANGER

**If you have released the rim brakes to remove the wheel, you must close them again,** otherwise you will not be able to brake and run the risk of serious injury.

## WARNING

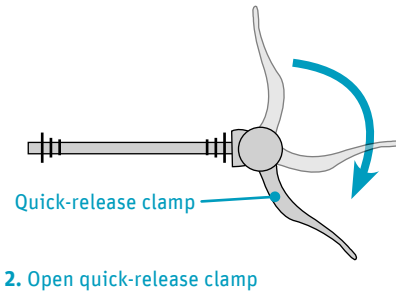


**Reattach any previously disconnected cables (e.g. lighting cables ),** otherwise they can get caught in the spokes. If that happens while you are riding the bike you could be thrown off and seriously injured.

### 3.10.1.3 Quick-release axle\*

#### Removing the front wheel

1. Remove the pedelec battery.
2. Open the quick-release lever on the front wheel by turning it down 180°.
3. Hook the quick-release lever into the slot and turn it anticlockwise until the quick-release axle protrudes from the axle hole about 1 cm.
4. Lift out the front wheel and remove the quick-release axle.



#### IMPORTANT

**Detach all cables from the wheel (e.g. lighting cables),** otherwise you could tear them.

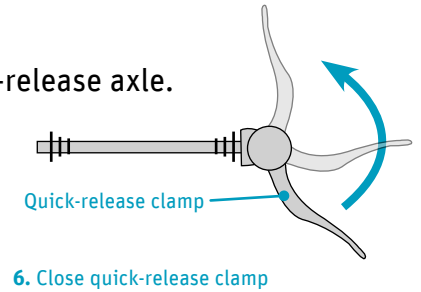


If your bike is fitted with rim brakes you must release them. Alternatively, you can deflate the front tyre. Otherwise you may not be able to remove the front wheel.

5. Remove the front wheel.

#### Replacing the front wheel

1. Apply a thin layer of grease to the quick-release axle.
2. Push the wheel into the front forks and align with the axle holes.
3. Reinsert the quick-release axle.
4. Move the quick-release lever to the open position.
5. Hook the quick-release lever into the slot and turn it clockwise. This screws the axle into the thread. Make sure that your wheel is correctly centred.
6. Close the quick-release lever by turning it up 180°.



#### DANGER



**Closing the quick-release lever should be so hard that you need to use the ball of your hand to do it.** If not, it can open and loosen the wheel while you are riding the bike, which could result in you falling off the bike.

\*depending on model

### Quick-release lever closes too easily

1. Open the quick-release lever.
2. Hook the quick-release lever into the slot and turn it clockwise. This screws the axle into the thread. Make sure that your wheel is correctly centred.
3. Close the quick-release lever.
4. Repeat if necessary.

### Quick-release lever too stiff

1. Open the quick-release lever.
2. Hook the quick-release lever into the slot and turn it anticlockwise until the quick-release axle protrudes from the axle hole about 1 cm.
3. Close the quick-release lever.
4. Repeat if necessary.

#### WARNING

Reattach any previously disconnected cables (e.g. lighting cables), otherwise you could tear them.

## 3.10.2 Rims

### Wear

#### WARNING

#### Look out for deep grooves on both rims.

The rims could fracture and cause a fall. Replace rims as soon as you detect signs of wear. Many rims have a wear indicator. If it can no longer be felt at a certain point, the rim is worn.



### Cleaning

1. Remove the pedelec battery.
2. Brush the rims with a hand brush. Heavier soiling can be removed with a soft, damp cloth.

#### IMPORTANT

When you are cleaning the belt, make sure that no water gets into the motor. Water ingress can damage the motor.

3. Leave to dry.

### 3.10.3 Tyres



#### DANGER

**Do not either overinflate or underinflate the tyres.** If the tyre pressure is too high, at worst, the tyre could burst, causing you to fall off. On the other hand, if the tyre pressure is continuously too low, the tyre can wear out prematurely. The maximum permissible pressure is marked on the side of tyre in bar and pounds per square inch. You can check the tyre pressure for yourself using a tyre pressure gauge. Alternatively, you can ask your DCW/RU dealer.

### 3.11 Suspension fork\*

The suspension forks support the front wheel.




The distance travelled by the wheel between its unloaded and fully loaded positions is called the total suspension travel.

Brand	Fork type	Total suspension travel
Fox	32 Float Evo	120 mm
Fox	32 F CTD	120 mm
Postmoderne	HG141	45 mm
RST	Pulse	50 mm
RST	Verso 3	50 mm
Sram	Recon Silver	100 mm   120 mm
Sram	Reba Rl	100 mm   120 mm
Sram	XC 32 TK	120 mm
Sram	XC	100 mm
Suntour	XCR Air	120 mm
Suntour	XCR	100 mm
Suntour	CR85	63 mm
Suntour	NCX-D	63 mm
Suntour	NEX	63 mm
Suntour	CR-8V	50 mm
Suntour	CR-7V	40 mm

Model year 2015/2016 Version 18/12/2015

\*depending on model

### 3.11.1 Lockout system

If your suspension forks are fitted with a lockout system it is possible to lock the suspension. There are some riding situations where that can be useful: for example, if you are riding up a hill or if you are standing up from the saddle when accelerating. To switch the suspension to fixed, turn the rotary control on the right hand side of the fork to 'LOCK' (or alternatively: ). To reactivate the suspension, turn the control to the 'OPEN' position.



LOCK/ 

Suspension locked

OPEN

Suspension activated

#### DANGER



**Do not ride over rough terrain with the suspension locked.** It can damage the suspension forks. A broken fork could cause you to fall off and seriously injure yourself.

### 3.11.2 Air system\*

On some suspension forks it is possible to alter the air pressure. To do that you will need the assistance of your DCW/RU dealer – or if you feel confident of doing it yourself – a suspension fork pump with a pressure gauge and the suspension fork manufacturer's installation manual. The valve with cap (e.g. marked 'AIR') is usually located on the left hand side of the fork.



## 4. Before every trip

#### DANGER



**Have damaged components (tears, cracks etc.) replaced before you use the bike again.** If not, important components may fail, causing you to fall off.

**Do not ride the pedelec if it is not in a technically satisfactory condition.** If you are not sure, have it checked out by your DCW/RU dealer.

Inspect your pedelec before every trip, and after each time it has been transported anywhere or has been left unattended. Use the following checklist to help you.

\*depending on model

## Checklist

Type	Characteristics
Screws, bolts and nuts	- Check for correct tightness.
Quick-release clamps / axles.	- Check for correct tightness.
Handlebars/steering	- Check they are correctly positioned and secure.
Brakes	- Check for damage, correct function and secure fixings. - Check brake pads for uneven wear.
Frame and forks	- Check for distortion and damage.
Lighting	- Check for completeness, proper function and secure fixings.
Bell	- Check for proper function and secure fixings.
Wheel	- Check for damage and embedded objects. - Check tightness of valves. - Check tyre pressures are correct. The maximum permissible pressure is marked on the side of tyre in bar and pounds per square inch. The tyres should not be inflated either above or below this pressure. - Check for trueness and circularity, damage and wear.
Chain or belt	- Check for wear. - Check the tension of the belt or chain.
Luggage	- Check it is securely fixed.

## 5. Quick-start guide

### 5.1 Charging the battery



If you only want to go for a quick test run, you do not need to charge the battery. You should definitely charge it before the first long trip ⇒ [8.3.1 Charging the battery P. EN-75](#), because for technical reasons, the battery is supplied only partially charged (approximately 50%).

#### IMPORTANT



**Perform a 'learning cycle':** You should completely run down a new, **fully** charged battery once until the drive assistance stops and without recharging it in between. In that way the battery 'learns' its capacity, and the actual capacity will agree with the level indicated on the battery status display. Please perform a learn cycle every six months or 5,000 kilometres. If you do not repeat this from time to time, the actual capacity of the battery will increasingly diverge from the value on the battery status display. Important: As soon as the battery switches to sleep mode the learning cycle is interrupted.

## 5.2 Inserting and locking the battery

### IMPORTANT



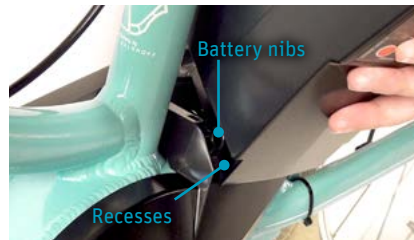
**Grasp the battery firmly**, so that it does not fall out of your hand. It can be damaged if you drop it.

### Seat tube battery

1. Hold the battery with the discharge plug downwards in front of the docking station at an angle of 80°, slightly tilted to the left.
2. Insert the battery nibs into the recesses provided.
3. Push the battery forwards and upwards into the docking station until the locking mechanism engages.
4. Turn the battery key clockwise. The battery is now locked.



1. Hold in front of the docking station



2. Battery nibs into recesses



3. Push battery into docking station



4. Locking the battery

### Down tube battery

1. Hold the battery with the discharge plug down on to the docking station.
2. Push the battery into the docking station until it engages.
3. Turn the battery key clockwise. The battery is now locked.



1. Hold at docking station



2. Push battery into docking station



3. Locking the battery

### IMPORTANT



**It is recommended that you remove the key to prevent it breaking off and getting lost.**




Make a note of the key number on the sales receipt or proof of purchase. You can order a replacement with this number if you lose the key ⇒ 9. *Faults P. EN-80.*



## 5.3 Switching on the pedelec



Do not switch on the pedelec when you are riding. Otherwise, the motor can stop and you will not be provided with the full assist level.

1. Press the  button on the easy-reach control for 1 second. The display lighting comes on for about 30 seconds. A welcome message appears in the information field of the display. If you have an Impulse 2.0 system with a back pedal brake the screen shows: "Please start pedalling " or "PEDAL". You can configure other settings from the start menu.




Press the  button



Start menu



If the system does not switch on despite pressing the  button, press the battery button for 1 second. The pedelec will switch on. If it still does not switch on, check the battery ⇒ [7.3.1 Display panel P. EN-66](#).



Seat tube battery **Battery button**






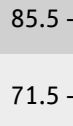
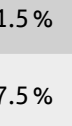
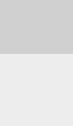
Down tube battery



**Down tube battery:** After switching on, wait five seconds before you set off. Otherwise, you will not be provided with the full assist level.

### Battery charge level

The battery charge level is shown in the top right of the display. Information is displayed on a battery-shaped icon with seven segments, telling you how full the battery is charged. The lower the battery charge level, the fewer segments are displayed. If the battery falls below the minimum charge level, the assist function is also switched off by the motor.

DISPLAY	BATTERY CHARGE LEVEL
	100 – 85.5%
	85.5 – 71.5 %
	71.5 – 57.5 %
	57.5 – 42.5 %
	42.5 – 28.5%
	28.5 – 14.5%

## 5.4 Changing assist mode

1. You must be in the start menu to change the assist mode. Select the level of assist you require by briefly pressing the ⊕/⊖ buttons.

Display	Assist	Power consumption
POWER SPORT ECO	Assist function is working hard	High
POWER SPORT ECO	Assist is working with medium power	Medium
POWER SPORT ECO	Assist is working with low power	Low
POWER SPORT ECO	No assist	Very low

2. Assist starts working as soon as you start pedalling. Assist cuts out as soon as you stop pedalling or when you have reached a speed of 25 km/h.

## 5.5 Enabling push assist

### WARNING



**Push assist may only be used when pushing the pedelec.** Otherwise you could seriously injure yourself. Push assist is not designed to provide assistance when someone is sitting on the pedelec. On back pedal models the pedal crank also turns.



Push assist helps you when pushing the bike (up to max. 6 km/h). This is particularly helpful when you want to push your pedelec uphill.

1. Press and hold the ⊕ button. The push assist is activated after three seconds. "**Push assist**" appears on the display. Keep the button pressed until you no longer need push assist.



Push assist activated

## 5.6 Displaying favourite settings



Favourite settings

If you are in the start menu and want to change to other favourite settings proceed as follows:

1. While in the start menu, briefly press the **SET** button. If you have selected several favourite settings in the start menu ⇒ [6.7.2 Preselecting favourite settings P. EN-43](#), the next favourite is now displayed.
2. Keep pressing the **SET** button until the desired favourite setting is displayed.

## 5.7 Configuring settings in the main menu



You cannot configure any settings in the main menu while you are riding.

### 5.7.1 Accessing the main menu

1. If you are in the start menu, press the **SET** button for three seconds: You will go to the main menu.



Start menu



Main menu


### 5.7.2 Navigating within a menu

1. Use the **+**/**-** buttons to navigate to the required option. The selected option is highlighted in bold.
2. To confirm your selection, briefly press the **SET** button. You will then either move to the next lowest menu level or confirm your setting.


### 5.7.3 Returning from a menu

There are four different ways to return to the next highest level or the start menu:


### Back option

1. Use the ⊕/⊖ buttons to navigate to the '**Back**' option. The selected option is highlighted in bold.
2. Confirm by pressing the  button. You will return to the next highest level.

### Briefly pressing the button

1. If there is no '**Back**' option, and one of the displayed options is selected, briefly press the  button to return to the next highest level.

### Prolonged pressing of the button


1. If you press the  button for three seconds, you will return to the start menu.

### Start riding

1. The start menu is displayed as soon as you start moving.

## 5.8 Switching off the pedelec

### On the easy-reach control

1. Press the  button on the easy-reach control for one second. The Impulse 2.0 system switches off.

### Via the battery

1. Briefly press the battery button twice. The Impulse 2.0 system switches off after a few seconds.

## 5.9 Unlocking and removing the battery

### Seat tube battery

1. Grip the battery firmly, put the key into the lock and turn anticlockwise. The battery is unlocked.
2. Grip the battery and tilt it out of the docking station on the side.



1. Unlocking the battery



2. Removing the battery

### Down tube battery

1. Grip the battery firmly, put the key into the lock and turn anticlockwise. The battery is unlocked.
2. Grip the battery and lift it upwards out of the docking station.



1. Unlocking the battery



2. Removing the battery

## IMPORTANT



**Hold the battery tight** so it does not fall. It can be damaged if you drop it.

**It is recommended that you remove the key to prevent it breaking off and getting lost.**

## 6. Drive unit, display and easy-reach control

### 6.1 Safety information

#### DANGER



**Do not let yourself become distracted by the display.** If you do not concentrate exclusively on the traffic, you run the risk of a serious accident or fall with fatal consequences.

#### WARNING



**Do not attempt any modifications to the drive unit. For example, it is not permitted to raise the cut-off speed above 25 km/h. Furthermore, the speed of the push assist must not exceed 6 km/h.** Pedelecs with modified drive power no longer comply with the legal requirements of their relevant country. You may be liable to prosecution if you ride on public roads with a 'tuned' pedelec. There is also the risk of a technical failure. Modified bikes of this type are excluded from the warranty and guarantee.

**Always remove the battery before starting to work on the pedelec.** Accidental activation of the  button may lead to severe injuries.

#### CAUTION



**Do not open the drive unit.** There is a risk of electric shock. It will also invalidate any warranty claim. Repairs to the drive unit should only be carried out by trained DCW/RU dealers.

**Do not touch the motor after a long downhill stretch.** It can become extremely hot. You could burn yourself if you touch it.

#### IMPORTANT



**All components mounted on the drive unit, and all other drive components, may only be replaced with identical components or those approved specially for your pedelec by the manufacturer.** Otherwise it may result in overloading and damage.

**Do not open the display; you may damage it beyond repair.**



At low temperatures the display can react slowly. Observe the operating temperature of the display ⇒ [6.2 Technical details P. EN-38](#).

## 6.2 Technical details

### Drive unit

Type	Brushless electric motor		
	Back pedal	Free-wheel	Offroad
Nominal power	250 W	250 W	250 W
Nominal torque	35 Nm	35 Nm	35 Nm
Max. torque	80 Nm	80 Nm	80 Nm
Nominal voltage	36 V	36 V	36 V
Cut-off speed	25 km/h	25 km/h	25 km/h
Operating temperature	-5 to +40°C	-5 to +40°C	-5 to +40°C
Storage temperature	-10 to +50°C	-10 to +50°C	-10 to +50°C
Protection class	IP 54	IP 54	IP 54
Weight	3.9 kg	3.8 kg	3.9 kg

### LCD Big Display

Type	LCD display
Operating temperature	-5 to +40°C
Storage temperature	-10 to +50°C
Dimensions L   W   H   D	9.6 cm   6.3 cm   3.3 cm   11.5 cm
Protection class	IP 54
Weight	150 g
Languages	DE   EN   NL   FR   ES   IT   FI   DA

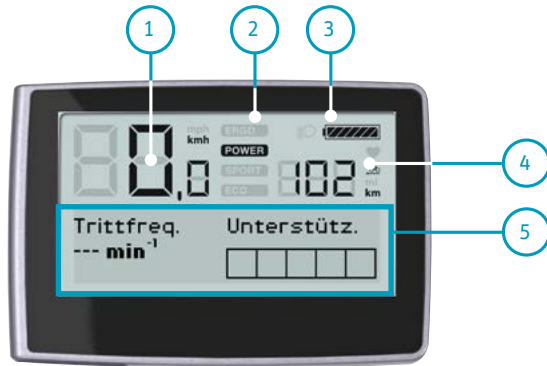
### LCD Compact Display

Type	LCD display
Operating temperature	-5 to +40°C
Storage temperature	-10 to +50°C
Dimensions L   W   H   D	4.8 cm   4.8 cm   2.5 cm   6.8 cm
Protection class	IP 54
Weight	45 g
Languages	EN   DE

### Easy-reach control

Type	Easy-reach control with 4 buttons
Operating temperature	-5 to +40°C
Storage temperature	-10 to +50°C
Protection class	IP 54
Weight	27 g

## 6.3 Overview and basic functions

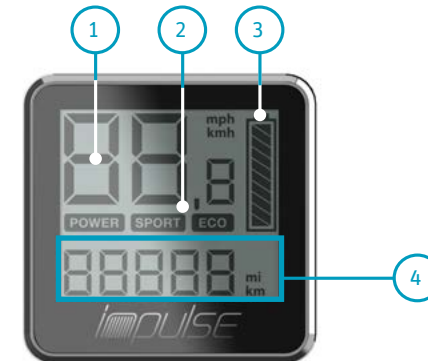


LCD Big Display

NO.	FUNCTION
1	Speed
2	Assist mode ⇒ 5.4 Changing assist mode Page EN-34
3	Battery charge level ⇒ 7.3.1.1 Battery charge level Page EN-66
4	Range ⇒ 7.5.1 Range P. EN-69
5	a) Information field b) Favourite settings ⇒ 6.7 LCD Big Display: Favourite settings P. EN-43

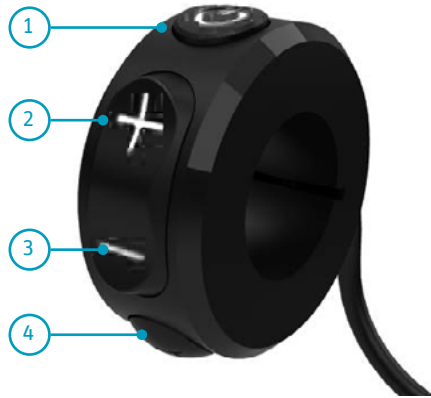


To learn more about the LCD Big Display, watch our video on YouTube: <https://youtu.be/3C1-0nr2I7E>.



LCD Compact Display

NO.	FUNCTION
1	Speed
2	Assist mode ⇒ 5.4 Changing assist mode Page EN-34
3	Battery charge level ⇒ 7.3.1.1 Battery charge level Page EN-66
4	a) Information field b) Total kilometres ⇒ 6.6 LCD Compact Display Page EN-42 c) Trip distance ⇒ 6.6 LCD Compact Display Page EN-42



### Easy-reach control

NO.	SYMBOL	FUNCTION
1	⏻	a) On ⇒ 6.3.1 Switching on the pedelec Page EN-40 b) Off ⇒ 6.3.2 Switching off the pedelec Page EN-41
2	⊕	a) Increase value/scroll up. b) Push assist ⇒ 5.5 Enabling push assist Page EN-34 c) Activates display lighting for 30 seconds.
3	⊖	a) Decrease value/scroll down. b) Activates display lighting for 30 seconds. c) <b>LCD Compact Display:</b> Reset trip distance to zero ⇒ 6.6 LCD Compact Display P. EN-42.
4	Ⓢ	a) Configure/confirm. b) <b>LCD Big Display:</b> Switches between favourite settings in main menu ⇒ 6.7 LCD Big Display: Favourite settings Page EN-43. c) <b>LCD Compact Display:</b> Switches between kmh/km and mph/mi ⇒ 6.6 LCD Compact Display P. EN-42. d) Activates display lighting for 30 seconds. e) <b>LCD Compact Display:</b> Switches between total kilometres and trip distance ⇒ 6.6 LCD Compact Display P. EN-42.

## 6.3.1 Switching on the pedelec



The system can only be activated if a sufficiently charged battery has been inserted.

Do not switch on the pedelec when you are riding. Otherwise, the motor can stop and you will not be provided with the full assist level.

1. Press the ⏻ button on the easy-reach control for one second. The display lighting comes on for about 30 seconds. A welcome message appears in the information field of the display. If you have an Impulse 2.0 system with a back pedal brake the screen shows: "Please start pedalling" or "PEDAL". You can configure other settings from here.



If the system does not switch on despite pressing the ⏻ button, press the battery button for 1 second. The pedelec will switch on. If it still does not switch on, check the battery ⇒ 7.3.1 Display panel P. EN-66.



Seat tube battery **Battery button**



Down tube battery

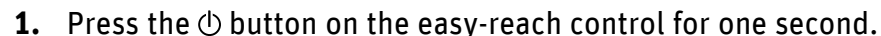




**Down tube battery:** After switching on, wait five seconds before you set off. Otherwise, you will not be provided with the full assist level.

### 6.3.2 Switching off the pedelec

#### On the easy-reach control

1. Press the  button on the easy-reach control for one second. The Impulse 2.0 system switches off.

#### Via the battery

1. Briefly press the battery button twice. The Impulse 2.0 system switches off after a few seconds.









You can switch off your Impulse 2.0 pedelec from any level in the menu. You do not have to display the start menu to do this.

The last configured settings remain saved.

If the pedelec remains stationary for about 20 minutes the Impulse 2.0 switches itself off.

### 6.3.3 Battery charge level

The battery charge level is shown in the top right of the display. Information is displayed on a battery-shaped icon with seven segments, telling you how full the battery is charged. The lower the battery charge level, the fewer segments are displayed. If the battery falls below the minimum charge level, the assist function is also switched off by the motor.

DISPLAY	BATTERY CHARGE LEVEL
	100 – 85.5%
	85.5 – 71.5%
	71.5 – 57.5%
	57.5 – 42.5%
	42.5 – 28.5%
	28.5 – 14.5%



The value displayed can change quickly when the circumstances change, such as when riding up an incline after a long, flat stretch.

## 6.4 Changing assist mode

1. You must be in the start menu to change the assist mode. Select the assist level you require by briefly pressing the ⊕/⊖ buttons.

DISPLAY	ASSIST	POWER CONSUMPTION
POWER SPORT ECO	Assist function is working hard	High
POWER SPORT ECO	Assist is working with medium power	Medium
POWER SPORT ECO	Assist is working with low power	Low
POWER SPORT ECO	No assist	Very low

2. Assist starts working as soon as you start pedalling. Assist cuts out as soon as you stop pedalling or when you have reached a speed of 25 km/h.



**Big Display:** You can have the ride profile (assistance behaviour) of your pedelec changed by your DCW/RU dealer.

## 6.5 Enabling push assist

Push assist helps you when pushing the bike.

### WARNING



**Push assist may only be used when pushing the pedelec.** Otherwise you could seriously injure yourself. Push assist is not designed to provide assistance when someone is sitting on the pedelec. On back pedal models the pedal crank also turns.



Push assist helps you when pushing the bike (up to max. 6 km/h). This is particularly helpful when you want to push your pedelec uphill.

1. Press and hold the ⊕ button. The push assist is activated after three seconds. **"Push assist"** appears on the display. Keep the button pressed until you no longer need push assist.




Push assist activated

## 6.6 LCD Compact Display

### Trip distance

To reset the trip distance to zero, press the ⊖ button for three seconds.

## Unit

To switch between kmh/km (kilometres) and mph/mi (miles), press the  button for three seconds.

## Display total kilometres and trip distance

To switch the display of total kilometres and trip distance, briefly press the SET button.



## 6.7 LCD Big Display: Favourite settings



Favourite settings

### 6.7.1 Displaying favourite settings


If you are in the start menu and want to change to other favourite settings proceed as follows:

1. While in the start menu, briefly press the  button. If you have selected several favourite settings in the start menu [⇒ 6.7.2 Preselecting favourite settings P. EN-43](#), the next favourite is now displayed.
2. Keep pressing the  button until the desired favourite setting is displayed.

### 6.7.2 Preselecting favourite settings

#### Path: Personalise | Favourite settings

You can select which of the following favourite settings you want displayed in the start menu.

Favourite settings	Display	Meaning
Trip km/time	Trip (in km)	Trip (e.g. day trip, short trip) in kilometres.
	Trip time (in 00:00:00 format)	Duration of trip (e.g. day trip, short trip) in hours, minutes and seconds.
Trip max/Ø	Trip max (in km/h)	Maximum speed (in kilometres per hour) achieved on the trip (e.g. day trip, short trip).
	Trip Ø (in km/h)	Average speed (in kilometres per hour) achieved on the trip (e.g. day trip, short trip).
Tour km/Ø	Tour (in km)	Tour (e.g. cycle tour over several days) in kilometres.
	Tour Ø (in km/h)	Average speed (in kilometres per hour) achieved on the tour (e.g. cycle tour over several days).
Cadence/Assistance	Cadence (in rpm)	The number of crank revolutions per minute.
	Assist 	The five equal-sized boxes indicate the assist level you are currently receiving. The greater the number of black boxes, the higher the assist level being provided.

Favourite settings	Display		Meaning	
Power cost	Trip cost (in €)		Cost in euro, incurred during the trip (e.g. day trip, short trip).	
	Tour cost (in €)		Cost in euro, incurred during the tour (e.g. cycle tour over several days).	
Total saving	(in €)	(in CO2)	Cost saving compared with travelling by car.	Total CO2 savings compared with travelling by car.
	(in km)		Total number of kilometres ridden.	

You can select all or just one of the available options. Proceed as follows:

1. While in the start menu, press the **SET** button for three seconds. You are now in the main menu.
2. Use the **+**/**-** buttons to select the "Personalise" option. The selected option is highlighted in bold.
3. Confirm by briefly pressing the **SET** button. You are now in sub-menu 1.
4. Use the **+**/**-** buttons to select the "Favourite settings" option. The selected option is highlighted in bold.
5. Confirm by pressing the **SET** button. You are now in sub-menu 2.
6. Use the **+**/**-** buttons to select the required option. It will be highlighted in bold.

7. Briefly press the **SET** button to set or remove the option in the box.
8. Once you have made your selection, you can return to the sub-menu 2 level by choosing the **'Back'** option.



7. Selecting favourite settings

## 6.8 LCD Big Display: Main menu

### 6.8.1 Configuring settings in the main menu



You cannot configure any settings in the main menu while you are riding.

### 6.8.1.1 Accessing the main menu

1. If you are in the start menu, press the **SET** button for 3 seconds. You will go to the main menu.



Start menu



Main menu

### 6.8.1.2 Navigating within a menu

1. Use the **+**/**-** buttons to navigate to the required option. The selected option is highlighted in bold.
2. To confirm your selection, briefly press the **SET** button. You access the next-lowest menu level.

### 6.8.1.3 Returning from a menu

There are four different ways to return to the next highest level or the start menu:

#### Back option

1. Use the **+**/**-** buttons to navigate to the '**Back**' option. The selected option is highlighted in bold.
2. Confirm by pressing the **SET** button. You return to the next-highest level.

#### Briefly pressing the **SET** button

1. If there is no '**Back**' option, and one of the displayed options is selected, briefly press the **SET** button to return to the next highest level.

#### Prolonged pressing of the **SET** button

1. Pressing the **SET** button for 3 seconds returns you to the start menu.

#### Start riding

1. The start menu is displayed as soon as you start moving.

## 6.8.2 Menu structure

Main menu	Sub-menu 1	
<b>Display ride data</b> ⇒ 6.8.2.1 <i>Display ride data P. EN-48</i>	Trip (in km)	
	Trip time (in 00:00:00 format)	
	Trip max. (in km/h)	
	Trip Ø (in km/h)	
	Trip cost (in €)	
	Tour (in km)	
	Tour Ø (in km/h)	
	Tour cost (in €)	
	Total (in km)	
	Total savings (in €)	
	Tot. sav. CO2 (in kg)	
<b>Delete trip data</b> ⇒ 6.8.2.2 <i>Delete trip data P. EN-49</i>	Confirm delete?	No
		Yes
<b>Delete tour data</b> ⇒ 6.8.2.3 <i>Delete tour data P. EN-49</i>	Confirm delete?	No
		Yes

Main menu	Sub-menu 1	Sub-menu 2	Sub-menu 3	
Device settings	Display	Contrast ⇒ <a href="#">6.8.2.4 Contrast P. EN-50</a>	-35% to 20%	
		Brightness ⇒ <a href="#">6.8.2.5 Brightness P. EN-50</a>	50% to 20%	
		Language ⇒ <a href="#">6.8.2.6 Language P. EN-50</a>	Deutsch	
			English	
			Français	
			Nederlands	
			Español	
			Italiano	
			Suomi	
		Dansk		
	Unit ⇒ <a href="#">6.8.2.7 Unit P. EN-51</a>	Kilometres		
		Miles		
	Drive	Wheel circumference ⇒ <a href="#">6.8.2.8 Wheel circumference P. EN-51</a>	1,510 mm to 2,330 mm	
		Shift sensor ⇒ <a href="#">6.8.2.9 Shift sensor P. EN-52</a>	OFF, 50 ms to 300 ms	
		Climb assist ⇒ <a href="#">6.8.2.10 Climb assist P. EN-52</a>	1 to 7	
Other	Factory settings ⇒ <a href="#">6.8.2.11 Factory settings P. EN-53</a>	Reset to factory settings?	No	
			Yes	
	Software	Version ⇒ <a href="#">6.8.2.12 Version P. EN-53</a>	Software version	Test display Serial no. motor
		Update ⇒ <a href="#">6.8.2.13 Update P. EN-53</a>		
Personalise	Name ⇒ <a href="#">6.8.2.14 Name P. EN-54</a>			
	Favourite settings ⇒ <a href="#">6.8.2.15 Favourite settings P. EN-54</a>	Trip max/∅		
		Tour km/∅		
		Cadence/Assistance		
		Power cost		
		Total saving		
		Total km		

Main menu	Sub-menu 1	Sub-menu 2
Target cost	Fuel price ⇒ <a href="#">6.8.2.16 Fuel price P. EN-54</a>	0 to €9
		0 to 99 ct
	Fuel consumption Ø ⇒ <a href="#">6.8.2.17 Fuel consumption Ø P. EN-55</a>	0 to 20 litres
	Fuel type ⇒ <a href="#">6.8.2.18 Fuel type P. EN-55</a>	Petrol
		Diesel
	Power cost ⇒ <a href="#">6.8.2.19 Power cost P. EN-55</a>	0 to 99 ct

## 6.8.2.1 Display ride data

In the main menu option "Display ride data" you can display the following items:


Sub-menu 1	Meaning
Trip (in km)	Trip (e.g. day trip, short trip) in kilometres.
Trip time (in 00:00:00 format)	Duration of trip (e.g. day trip, short trip) in hours, minutes and seconds.
Trip max (in km/h)	Maximum speed (in kilometres per hour) achieved on the trip (e.g. day trip, short trip).
Trip Ø (in km/h)	Average speed (in kilometres per hour) achieved on the trip (e.g. day trip, short trip).
Trip cost (in €)	Cost in euro, incurred during the trip (e.g. day trip, short trip).
Tour (in km)	Tour (e.g. cycle tour over several days) in kilometres.
Tour Ø (in km/h)	Average speed (in kilometres per hour) achieved on the tour (e.g. cycle tour over several days).
Tour cost (in €)	Cost in euro, incurred during the tour (e.g. cycle tour over several days).
Total (in km)	Total number of kilometres ridden.
Total savings (in €)	Cost saving compared with travelling by car (petrol/diesel).
Tot. sav. CO2 (in kg)	Total CO2 savings compared with travelling by car.

1. In the main menu, navigate to the option "Display ride data" as described under ⇒ [6.8.1.2 Navigating within a menu P. EN-45](#).






In order to calculate the cost savings and CO2 savings compared with travelling by car, the display needs the fuel price ⇒ [6.8.2.16 Fuel price P. EN-54](#), the fuel consumption ⇒ [6.8.2.17 Fuel consumption Ø P. EN-55](#), the fuel type ⇒ [6.8.2.18 Fuel type P. EN-55](#) and the power cost ⇒ [6.8.2.19 Power cost P. EN-55](#).

2. Select the required option using the ⊕/⊖ buttons. The selected option is highlighted in bold.
3. Briefly press the  button to return to the main menu.


### 6.8.2.2 Delete trip data

In main menu option "Delete trip data", you can reset to 0 options: Trip (in km), Trip time (in 00:00:00), Trip max (in km/h), Trip Ø (in km/h) and Trip cost (in €). Proceed as follows:

1. In the main menu, navigate to the option "Delete trip data" as described under ⇒ [6.8.1.2 Navigating within a menu P. EN-45](#).
2. The following question appears on the display: "Confirm delete?" with "Yes" and "No" underneath.
3. Select the required option using the ⊕/⊖ buttons. The selection is highlighted in bold.
4. Confirm your selection by briefly pressing the  button. You will then return to the main menu options.

### 6.8.2.3 Delete tour data

In main menu option "Delete tour data", you can reset to 0 options: Tour (in km), Tour Ø (in km) and Tour cost (in €). Proceed as follows:

1. In the main menu, navigate to the option "Delete tour data" as described under ⇒ [6.8.1.2 Navigating within a menu P. EN-45](#).
2. The following question appears on the display: "Confirm delete?" with "Yes" and "No" underneath.
3. Select the required option using the ⊕/⊖ buttons. The selection is highlighted in bold.
4. Confirm your selection by briefly pressing the  button. You will then return to the main menu options.

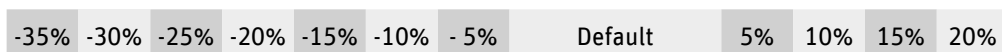
## 6.8.2.4 Contrast

### Path: Device settings | Display | Contrast

You can adjust the contrast of the display to improve legibility:

1. In the main menu, navigate to the option "Contrast" as described under ⇒ [6.8.1.2 Navigating within a menu P. EN-45](#).

You can choose between:



2. Use the ⊕/⊖ buttons to select the contrast strength required. The selected contrast level is highlighted in bold.
3. Press the **SET** button to confirm. You will return to the sub-menu 2 level.

## 6.8.2.5 Brightness

### Path: Device settings | Display | Brightness

You can adjust the brightness of the display to improve legibility:

1. In the main menu, navigate to the option "Brightness" as described under ⇒ [6.8.1.2 Navigating within a menu P. EN-45](#).

You can choose between:



2. Use the ⊕/⊖ buttons to select the brightness required. The selected brightness level is highlighted in bold.
3. Press the **SET** button to confirm. You will return to the sub-menu 2 level.

## 6.8.2.6 Language

### Path: Device settings | Display | Language

The option "Language" allows you to select the language in which the display text appears. You can choose between:

- |              |            |
|--------------|------------|
| » Deutsch    | » Español  |
| » English    | » Italiano |
| » Français   | » Suomi    |
| » Nederlands | » Dansk    |

1. In the main menu, navigate to the option "Language" as described under ⇒ [6.8.1.2 Navigating within a menu P. EN-45](#).
2. Use the ⊕/⊖ buttons to select the desired language. The selected language is highlighted in bold.
3. Confirm by briefly pressing **SET**. You will return to the sub-menu 2 level.

## 6.8.2.7 Unit

Path: Device settings | Display | Unit

1. In the main menu, navigate to the option "Unit" as described under [6.8.1.2 Navigating within a menu P. EN-45](#).

You can choose between:

- » Kilometres
- » Miles

2. Use the  $\oplus/\ominus$  buttons to select the desired unit. It will be highlighted in bold.
3. Confirm by briefly pressing  $\odot$ . You will return to the sub-menu 2 level.

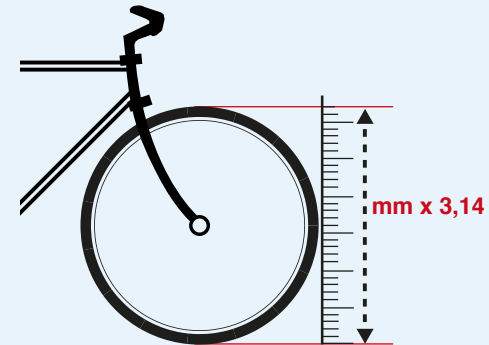
## 6.8.2.8 Wheel circumference

Path: Device settings | Drive | Wheel circumference

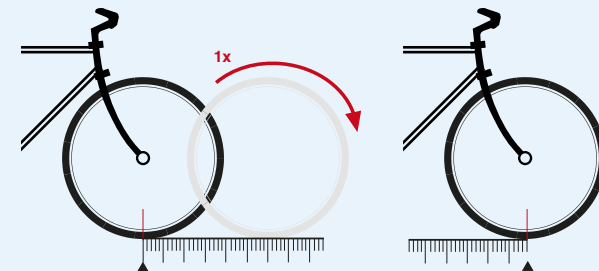


Ask your DCW/RU dealer for the wheel circumference. Alternatively, you can measure it yourself:

1. Wheel diameter in mm x 3.14 = wheel circumference in mm.



2. Push the bike for one complete revolution of the wheel and measure the distance travelled on the ground in mm.



### Calculation

(Tyre thickness x 2 + rim diameter in mm) x 3.14 = wheel circumference

e.g. [( 42 mm x 2 ) + 622 mm ] x 3.14 = 2037 mm

1. In the main menu, navigate to the option "Wheel circumference" as described under ⇒ [6.8.1.2 Navigating within a menu P. EN-45](#).

You can choose between:

» 1,540 mm to 2,330 mm

2. Use the ⊕/⊖ buttons to select the option required. The selected option is highlighted in bold.
3. If you have confirmed the wheel circumference with **SET**, you will return to sub-menu 2 level.

### 6.8.2.9 Shift sensor

**Path: Device settings | Drive | Shift sensor**

The shift sensor detects gear changes and interrupts the motor assist for a fraction of a second (ms = milliseconds). This enables smoother and quicker gear changes especially with a hub gear. The higher the value selected, the longer the interruption to the motor assist and the more time the gear has to change.

1. In the main menu, navigate to the option "Shift sensor" as described under ⇒ [6.8.1.2 Navigating within a menu P. EN-45](#).

You can choose between:

OFF	50 ms	100 ms	150 ms	200 ms	250 ms	300 ms
-----	-------	--------	--------	--------	--------	--------

Short interruption → Long interruption

2. Use the ⊕/⊖ buttons to select the desired option. The selected option is highlighted in bold.
3. If you have confirmed with **SET**, you will return to sub-menu 2 level.

### 6.8.2.10 Climb assist

**Path: Device settings | Drive | Climb assist**

The power sensor in the motor registers your pedalling force as you ride. The motor controller interprets the pedalling force signals and responds according to the climb assist setting. The lower the set value (e.g. 1), the more sluggish the reaction of the motor when assist is enabled. With a high value (e.g. 7), the motor reacts very responsively to the pedal force. When riding uphill it can be an advantage if the power sensor does not react so sensitively, so as to provide the motor assist as evenly and smoothly as possible.

1. In the main menu, navigate to the option "Climb assist" as described under ⇒ [6.8.1.2 Navigating within a menu P. EN-45](#).

You can choose between:

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Slow comportment → Sensitive comportment

2. Use the ⊕/⊖ buttons to select the option required. The selected option is highlighted in bold.
3. If you have confirmed with **SET**, you will return to sub-menu 2 level.

## 6.8.2.11 Factory settings

**Path: Device settings | Other | Factory settings**

1. In the main menu, navigate to the option "Factory settings" as described under ⇒ [6.8.1.2 Navigating within a menu P. EN-45](#).
2. The following question appears on the display: "Reset factory settings?" with "Yes" and "No" underneath.
3. Select the required option using the ⊕/⊖ buttons. The selection is highlighted in bold.
4. Confirm your selection by briefly pressing the Ⓜ button. You will return to the sub-menu 2 level.

## 6.8.2.12 Version

**Path: Device settings | Other | Version**

If you want to display the name of the current software version on your display and motor, proceed as follows:

1. In the main menu, navigate to the option "Version" as described under ⇒ [6.8.1.2 Navigating within a menu P. EN-45](#). This shows the current display and motor software.
2. Pressing the Ⓜ button returns you to the sub-menu 2 level.



Ask if there is a software update for your pedelec in the course of regular maintenance checks listed in the service book.

## Test display

It is advisable to access the test display in order to clearly identify pixel errors.

1. In the main menu, navigate to the option "Version" as described under ⇒ [6.8.1.2 Navigating within a menu P. EN-45](#). This shows the current display and motor software.
2. Briefly press the ⊖ button. The test display is shown.
3. Briefly pressing the ⊕ button takes you back to the option "Version" in the main menu.

## Display serial number of the motor

1. In the main menu, navigate to the option "Version" as described under ⇒ [6.8.1.2 Navigating within a menu P. EN-45](#). This shows the current display and motor software.
2. Briefly press the ⊕ button. The serial number of the motor will be displayed.
3. Briefly pressing the ⊖ button takes you back to the option "Version" in the main menu.

## 6.8.2.13 Update

**Path: Device settings | Other | Update**

"Memory card required" - in this area, DCW/RU dealers can carry out a software update.

1. Pressing the Ⓜ button returns you to the sub-menu 2 level.

## 6.8.2.14 Name

### Path: Personalise | Name

The "Name" option allows you to enter a name or text with a maximum of 21 characters, which is displayed when you switch the pedelec on or off.

1. In the main menu, navigate to the option "Name" as described under [⇒ 6.8.1.2 Navigating within a menu P. EN-45](#).
2. Use the ⊕/⊖ buttons to select the desired letters. The selected letter is highlighted in bold.



Setting the name

3. Confirm by briefly pressing the **SET** button.



No space character is permitted, instead please use the underscore character.

Use **<-** to delete the last letter entered.

4. When you have made your selection choose "OK" in order to return to sub-menu 1.

## 6.8.2.15 Favourite settings

⇒ [6.7.2 Preselecting favourite settings P. EN-43](#)

## 6.8.2.16 Fuel price

### Path: Target cost | Fuel price



The option "Fuel price" allows you to enter the price for the fuel (petrol/diesel) in euros and cents.

1. In the main menu, navigate to the option "Fuel price" as described under [⇒ 6.8.1.2 Navigating within a menu P. EN-45](#).
2. Use the ⊕/⊖ buttons to select the desired value in euros. You can specify 0 to 9 euros, in steps of 1 euro.
3. The selection is highlighted in bold.
4. Confirm by pressing the **SET** button.
5. Use the ⊕/⊖ buttons to select the desired value in cents. You can specify 0 to 99 cents, in steps of 1 cent. The selection is highlighted in bold.
6. Confirm by pressing the **SET** button. You will return to the sub-menu 1 level.

## 6.8.2.17 Fuel consumption Ø


### Path: Target cost | Fuel consumption Ø

You can enter the average fuel consumption that would result in the use of a car.

1. In the main menu, navigate to the option "Fuel consumption Ø" as described under ⇒ [6.8.1.2 Navigating within a menu P. EN-45](#).
2. Use the ⊕/⊖ buttons to select the desired value in euros. You can specify 0 to 9 euros, in steps of 1 euro.
3. The selection is highlighted in bold.
4. Confirm by pressing the  button.
5. Use the ⊕/⊖ buttons to select the desired value. The consumption can be set in half-litre increments from 0 to 20 litres.
6. Confirm by pressing the  button. You will return to the sub-menu 1 level.

## 6.8.2.18 Fuel type


### Path: Target cost | Fuel type

1. The option "Fuel type" allows you to choose between petrol and diesel.
2. In the main menu, navigate to the option "Fuel type" as described under ⇒ [6.8.1.2 Navigating within a menu P. EN-45](#).
3. Use the ⊕/⊖ buttons to select petrol or diesel. The selection is highlighted in bold.
4. Confirm by pressing the  button. You will return to the sub-menu 1 level.

## 6.8.2.19 Power cost

### Path: Target cost | Power cost

The option "Power cost" allows you to enter the electricity price in cents.

1. In the main menu, navigate to the option "Power cost" as described under ⇒ [6.8.1.2 Navigating within a menu P. EN-45](#).
2. Use the ⊕/⊖ buttons to select a value between 0 and 99 cents. This can be set in 1 cent increments. The selection is highlighted in bold.
3. Confirm by pressing the  button. You will return to the sub-menu 1 level.

## 6.9 Tips


### 6.9.1 Transporting your pedelec

#### WARNING



**Remove panniers and other attachments during transport**, as they can come off and cause serious accidents.

#### **Always remove the battery before transporting the pedelec.**

There is a risk of injury due to accidental activation of the  button. Furthermore, the battery can fall out of the docking station and become damaged. Use a special battery bag that protects the battery from heat, shocks and impacts.

**By car: The bike rack must be designed for the higher weight of the pedelec** ⇒ *VII.I Total weight P. EN-11*, otherwise it can break and cause a serious accident. It is imperative to follow the guidance of the bike rack manufacturer.

#### IMPORTANT



**Pedelecs carried on a rear-mounted bike rack must have suitable weather protection. This applies particularly to the docking, which must be protected from water ingress.** Water ingress can damage the motor and its components. You can find suitable protection at your DCW/RU dealer or in the online shop.



**Bus, train and plane:** Find out from your travel company well in advance if their regulations allow you to take your pedelec with you.

### 6.9.2 Trailer bikes and trailers

The use of trailer bikes and trailers is generally permitted for the Impulse 2.0 pedelec, but please observe the following safety instructions:

#### DANGER



**Do not exceed the total weight of the pedelec, because it can lead to the fracture or failure of safety-relevant parts.** If this happens while you are riding the bike, it can lead to severe falls – with fatal consequences ⇒ *VII.I Total weight P. EN-11*.

**Trailer bikes and trailers alter the riding characteristics.** Adapt your riding style accordingly. If you do not adapt your riding style, you could seriously injure or kill yourself or the child in the trailer. The braking distance is longer, so you have to start braking earlier, and the steering response becomes more sluggish. Practise starting, braking, going round corners, and up and down hills, starting with an empty trailer bike or trailer.

**Only use trailer bikes and trailers that conform to the relevant national regulations. Cycle trailers should also be designed and have been tested in accordance with DIN EN 15918**, otherwise components could break while you are riding the bike, resulting in serious or even fatal injuries for you and/or the child. If you are interested in purchasing a trailer bike or trailer please consult your DCW/RU dealer.



## 6.9.3 Luggage rack

<b>Position</b>	Over the rear wheel
<b>Maximum carrying capacity</b>	25 kg*
<b>Use of child seats</b>	Permitted if the luggage rack has a maximum carrying capacity of 25 kg.
<b>Tested</b>	in accordance with DIN EN 14872

### DANGER



**\*Check for different specifications on the luggage rack itself or in the luggage rack manufacturer's installation instructions.** Otherwise it may result in the luggage rack fracturing. If that happens while you are riding the bike you could be seriously injured. The maximum carrying capacity is specified on the luggage rack carrier or on the mounting of the rear light.

## 6.9.3.1 Safety information

### DANGER



**Make sure the luggage is securely attached and carry out regular checks to see it is correctly positioned,** otherwise loose straps can get caught in the spokes or rotating wheels, resulting in a serious fall.

**Do not exceed the total weight of the pedelec, because it can lead to the fracture or failure of safety-relevant parts.** If this happens while you are riding the bike, it can lead to severe falls – with fatal consequences. ⇨ [VII.I Total weight P. EN-11](#).

**It is not permitted to modify the luggage rack in any way,** otherwise it may result in the luggage rack fracturing. If that happens while you are riding the bike you could be seriously injured.

**The maximum carrying capacity of the luggage rack must not be exceeded,** otherwise it may result in the luggage rack fracturing. If that happens while you are riding the bike you could be seriously injured.

**Luggage alters the handling characteristics of the bike.** Adapt your riding style accordingly. If you do not adapt your riding style, you could seriously injure or kill yourself. The braking distance is longer, so you have to start braking earlier, and the steering response becomes more sluggish.

### WARNING



**Make sure that the luggage does not obscure the view of the reflectors and rear lights, and that they are easily visible to other road users.** Otherwise there is a risk of not being seen in unfavourable lighting conditions (fog, dusk, darkness), which could result in you being seriously injured.



**Carry your luggage in side-mounted panniers.** Distribute the weight evenly to ensure safer riding characteristics.

#### 6.9.4 Child seats

The use of child seats is generally permitted for the Impulse 2.0 pedelec. But please observe the following safety instructions:



#### DANGER

**The maximum carrying capacity of the luggage rack must not be exceeded** ⇒ [6.9.3 Luggage rack P. EN-57](#), otherwise there is a risk it may break causing serious injuries to the child being carried.

**Do not exceed the total weight of the pedelec, because it can lead to the fracture or failure of safety-relevant parts.** If this happens while you are riding the bike, it can lead to severe falls – with fatal consequences ⇒ [VII.I Total weight P. EN-11](#).

**Do not attach a child seat to the handlebars, seat post or directly to the luggage rack.** The seat post and luggage rack can break, causing the child to fall off and be seriously injured. A child seat attached to the handlebars makes it more difficult to steer the bike. Use a child seat adapter with a safety belt to attach a child seat to a luggage rack. Your DCW/RU dealer will be pleased to advise you.



#### DANGER

**Make sure the child seat is safely attached.** Incorrectly installed child seats can lead to serious accidents. Please follow the manufacturer's instructions. Make sure there are no loose straps that can get caught in the wheels. If you are really not sure how to attach the child seat ask your DCW/RU dealer.

**Make sure your child wears a good cycle helmet,** otherwise a fall can cause very serious head injuries. Explain to your child that the cycle helmet is only to be worn when riding the bike and must be taken off when the child is no longer sitting in the child seat.

**Never leave a child unattended in the child seat of a parked bike.** The bike can tip over and the child can be seriously injured.

**A child seat alters the ride characteristics of the bike.** Adapt your riding style accordingly. If you do not adapt your riding style, you could seriously injure or kill yourself or the child in the seat. The braking distance is longer, so you have to start braking earlier, and the steering response becomes more sluggish. Practise starting, braking, going round corners, and up and down hills, starting with an empty/unloaded child seat.

**Only use child seats that conform to the respective national regulations. In addition, they should be designed and have been tested in accordance with DIN EN 14344.** Otherwise components could break while you are riding the bike; resulting in serious or even fatal injuries for you and/or the child. If you are interested in purchasing a child seat please consult your DCW/RU dealer.

## CAUTION



**Cover helical springs.** If there are coil springs underneath your saddle, cover them up. A child being carried on the rear carrier can trap their fingers in them.


### 6.9.5 Storage

1. Remove the battery from the pedelec.
2. Store the battery in a dry, not excessively warm room. The battery should not be exposed to direct sunshine. The recommended storage temperature range is 0 to 20°C.

### 6.9.6 Cleaning

#### WARNING



**Remove the battery before cleaning the pedelec.** Accidental activation of the  button may lead to severe injuries.

#### IMPORTANT



**Do not clean the pedelec and its components with a water hose or high pressure washer.** Although the components are sealed off, damage may still result. Clean the bike with a soft damp cloth.

**Do not immerse the drive unit or components into water.** Although the components are sealed off, damage may still result.

**Do not use any cleaners which contain alcohol or solvent, or which scour. No coarse sponges or brushes may be used either.** They leave scratches and cause the surface to become matt. Clean the bike with a soft damp cloth.



Do not allow dirt to dry out. It is best to clean the cycle immediately after your ride.

## Drive unit

### CAUTION



#### **Do not clean the drive unit when it is warm**

(e.g. straight after a ride). You may burn yourself otherwise. Wait until the drive unit has cooled down.

1. Remove the battery from the pedelec.
2. Clean the outside of the drive unit with a soft, damp cloth.

## Display and easy-reach control

1. Clean the outside of the display and easy-reach control with a soft, damp cloth.

## 7. Battery

### 7.1 Safety information

#### DANGER



**People (including children) who, because of their physical, sensory or intellectual capabilities, or because of their lack of experience or knowledge, are unable to use batteries, are prohibited from using them unless supervised or under the instruction of a responsible person.** Otherwise there is a risk of mishandling with consequential very serious injuries.

#### WARNING



**Only operate your pedelec with a suitable original battery.** The use of other batteries can cause explosions, serious burns and fires. Further consequences can include malfunctions and a limited battery life. You can find a list of approved batteries in ⇒ [7.2 Technical details P. EN-63](#).

**Only use the correct original battery charger to charge your battery.** The use of other battery chargers can cause explosions, serious burns and fires. Further consequences can include malfunctions and a limited battery life. You can find a list of permitted chargers in ⇒ [8.3 Functions P. EN-75](#).

**Always remove the battery before starting to work on the pedelec.** Accidental activation of the ⏻ button may lead to serious injuries.

**WARNING**

**Keep batteries away from sparks and fires. Do not expose batteries to temperatures above 40 °C.** They can explode and cause serious burns and fires. Further consequences can include malfunctions and a limited battery life. Keep batteries away from sources of heat (e.g. direct sunlight and radiators). When charging the battery make sure there is sufficient ventilation and observe the permitted ambient temperature range: 0-40 °C. Do not extinguish a burning battery with water, only the surrounding burning material. Class D extinguishers (for use on metal fires) are better suited for this. If it is possible to take the battery safely outside, smother the fire with sand.

**Batteries must not be short-circuited.** They can explode and cause serious burns and fires. Further consequences can include malfunctions and a limited battery life. Do not store batteries in a box or drawer where they can be short-circuited by contact with each other or with conductive materials (screws, paper clips, keys, coins, nails or other small metal objects).

**Batteries must not be destroyed, shredded, taken apart, opened up or repaired.** They can explode and cause serious burns and fires. If you have problems with the battery, please contact your DCW/RU dealer. They will be able to assist you.

**WARNING**

**Damaged batteries must not be charged, used or transported.**

- » They can explode and cause serious burns and fires.
- » Gases can be released and irritate the airways. Ensure there is a supply of fresh air and consult a doctor in the event of discomfort.
- » Liquid can escape and cause skin irritation. Prevent contact with it. In the event of accidental contact, wash off the liquid with water. If the liquid gets into the eyes, flush out with plenty of water and seek medical help.

**Do not send batteries by post.** Batteries are dangerous goods that under certain conditions may explode, causing severe burns and fires. The preparation and dispatch of batteries must only be carried out by trained personnel. If you want to complain about a battery, please do this via your DCW/RU dealer. DCW/RU dealers are able to have the battery collected free of charge under the terms of the dangerous goods regulations.

## CAUTION



**Batteries must not be immersed in water.** This presents a risk of explosion. Do not extinguish a burning battery with water, only the surrounding burning material. Class D extinguishers (for use on metal fires) are better suited for this. If it is possible to take the battery safely outside, smother the fire with sand. You need have no worries that the battery beneath you could explode while you are riding in the rain – it is protected from ingress of moisture and condensation.

## IMPORTANT



**Batteries must not be subjected to mechanical impact.** This poses a risk of damage. A battery can still be damaged after a drop or impact even if there are no visible signs of damage. Even apparently perfect batteries should be inspected. Please ask your DCW/RU dealer.

**Perform a 'learning cycle':** A new, **fully charged** battery should be run down once until the motor assist stops and without recharging in between. In that way the battery 'learns' its capacity, and the actual capacity will agree with the level indicated on the battery status display. Please perform a learn cycle every six months or 5,000 kilometres. When the battery becomes older and you do not repeat the cycle from time to time, the difference between actual battery capacity and charge level display will become greater and greater. Important: As soon as the battery switches to sleep mode the learning cycle is interrupted.

## IMPORTANT



**Only use the battery to operate this pedelec,** otherwise there is a risk of damage to the device.



Batteries are subject to the dangerous goods regulations. Private users are permitted to transport them on the road without further conditions. If transported by commercial third parties (e.g by air freight, hauliers or logistics companies) special conditions apply to packing and labelling. For questions about transporting batteries, please contact your DCW/RU dealer.

## 7.2 Technical details

### Comfort down tube battery



\* With a 3 A charger, until battery is fully charged (95% battery capacity).

\*\* Measured in the lowest assist mode under optimal conditions and with a fully charged battery of the highest capacity.

<b>Type</b>	11 Ah	15 Ah	17 Ah
<b>Position</b>	Seat tube	Seat tube	Seat tube
<b>Nominal capacity</b>	11.25 Ah	15.5 Ah	16.75 Ah
<b>Nominal voltage</b>	37 V	36 V	36 V
<b>Power</b>	416 Wh	558 Wh	603 Wh
<b>Weight</b>	3200 g	3200 g	3265 g
<b>Charge cycles</b>	1,100 full cycles	1,100 full cycles	1,100 full cycles
<b>Charge time*</b>	Approx. 5 hours	Approx. 6.5 hours	Approx. 7 hours
<b>Cell</b>	Li-ion (50 cells)	Li-ion (50 cells)	Li-ion (50 cells)
<b>Range**</b>	135 km	180 km	205 km
<b>Permissible ambient temperature when charging</b>	0 to 40°C	0 to 40°C	0 to 40°C
<b>Recommended ambient temperature when charging</b>	+10 to +30°C	+10 to +30°C	+10 to +30°C
<b>Operating temperature</b>	-5 to 40°C	-5 to 40°C	-5 to 40°C
<b>Recommended storage temperature</b>	0 to 20°C	0 to 20°C	0 to 20°C

### Compact seat tube battery



\* With a 3 A charger, until battery is fully charged (95% battery capacity).

\*\* Measured in the lowest assist mode under optimal conditions and with a fully charged battery of the highest capacity.

<b>Type</b>	11 Ah	14.5 Ah
<b>Position</b>	Seat tube	Seat tube
<b>Nominal capacity</b>	11.25 Ah	14.5 Ah
<b>Nominal voltage</b>	37 V	36 V
<b>Power</b>	416 Wh	522 Wh
<b>Weight</b>	2950 g	2950 g
<b>Charge cycles</b>	1,100 full cycles	1,100 full cycles
<b>Charge time*</b>	Approx. 5 hours	Approx. 6.5 hours
<b>Cell</b>	Li-ion (50 cells)	Li-ion (50 cells)
<b>Range**</b>	135 km	180 km
<b>Permissible ambient temperature when charging</b>	0 to 40°C	0 to 40°C
<b>Recommended ambient temperature when charging</b>	+10 to +30°C	+10 to +30°C
<b>Operating temperature</b>	-5 to 40°C	-5 to 40°C
<b>Recommended storage temperature</b>	0 to 20°C	0 to 20°C

## Offroad down tube battery

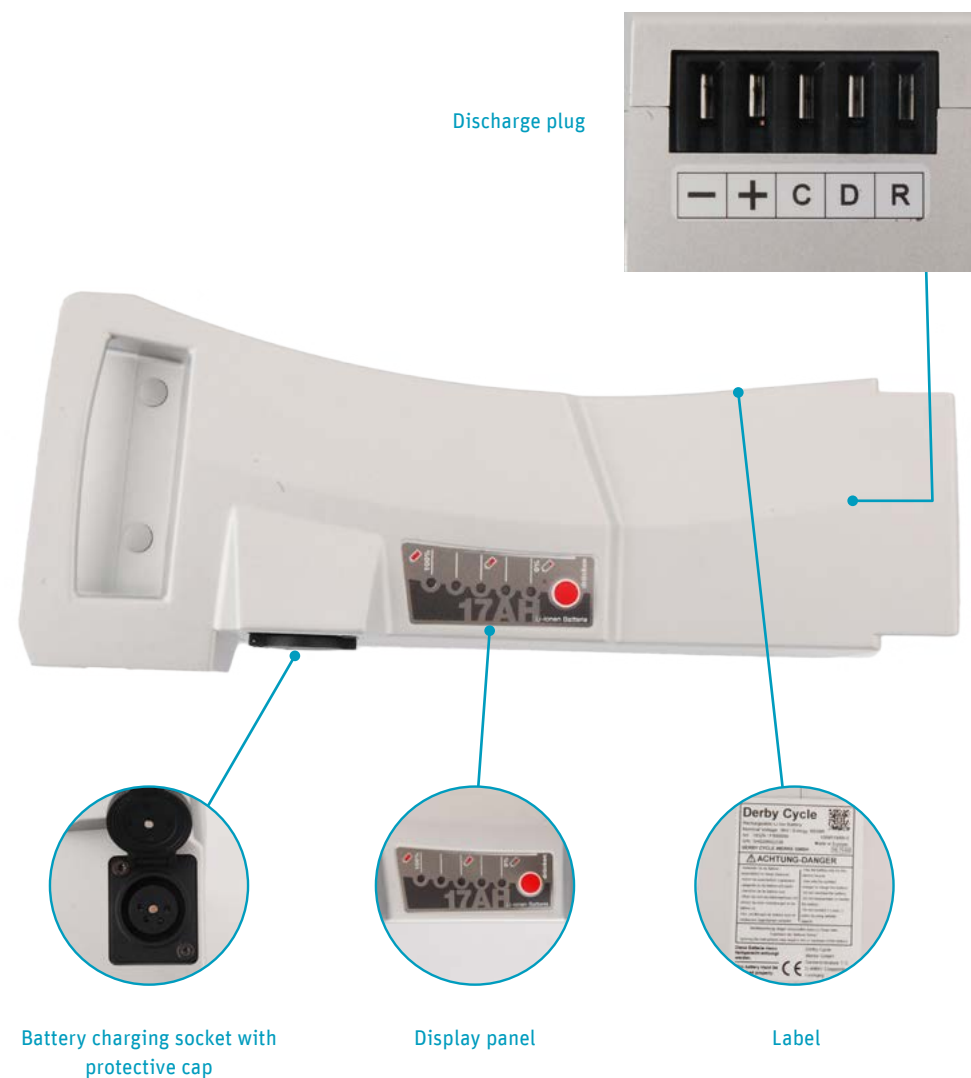


- \* With a 4 A charger, until battery is fully charged (95% battery capacity).
- \*\* Measured in the lowest assist mode under optimal conditions and with a fully charged battery of the highest capacity.

<b>Type</b>	11 Ah	17 Ah
<b>Position</b>	Down tube	Down tube
<b>Nominal capacity</b>	11.25 Ah	16.75 Ah
<b>Nominal voltage</b>	37 V	36 V
<b>Power</b>	416 Wh	603 Wh
<b>Weight</b>	2950 g	2950 g
<b>Charge cycles</b>	1,100 full cycles	1,100 full cycles
<b>Charge time*</b>	Approx. 3.5 hours	Approx. 5.5 hours
<b>Cell</b>	Li-ion (50 cells)	Li-ion (50 cells)
<b>Range**</b>	135 km	205 km
<b>Permissible ambient temperature when charging</b>	0 to 40°C	0 to 40°C
<b>Recommended ambient temperature when charging</b>	+10 to +30°C	+10 to +30°C
<b>Operating temperature</b>	-5 to 40°C	-5 to 40°C
<b>Recommended storage temperature</b>	0 to 20°C	0 to 20°C

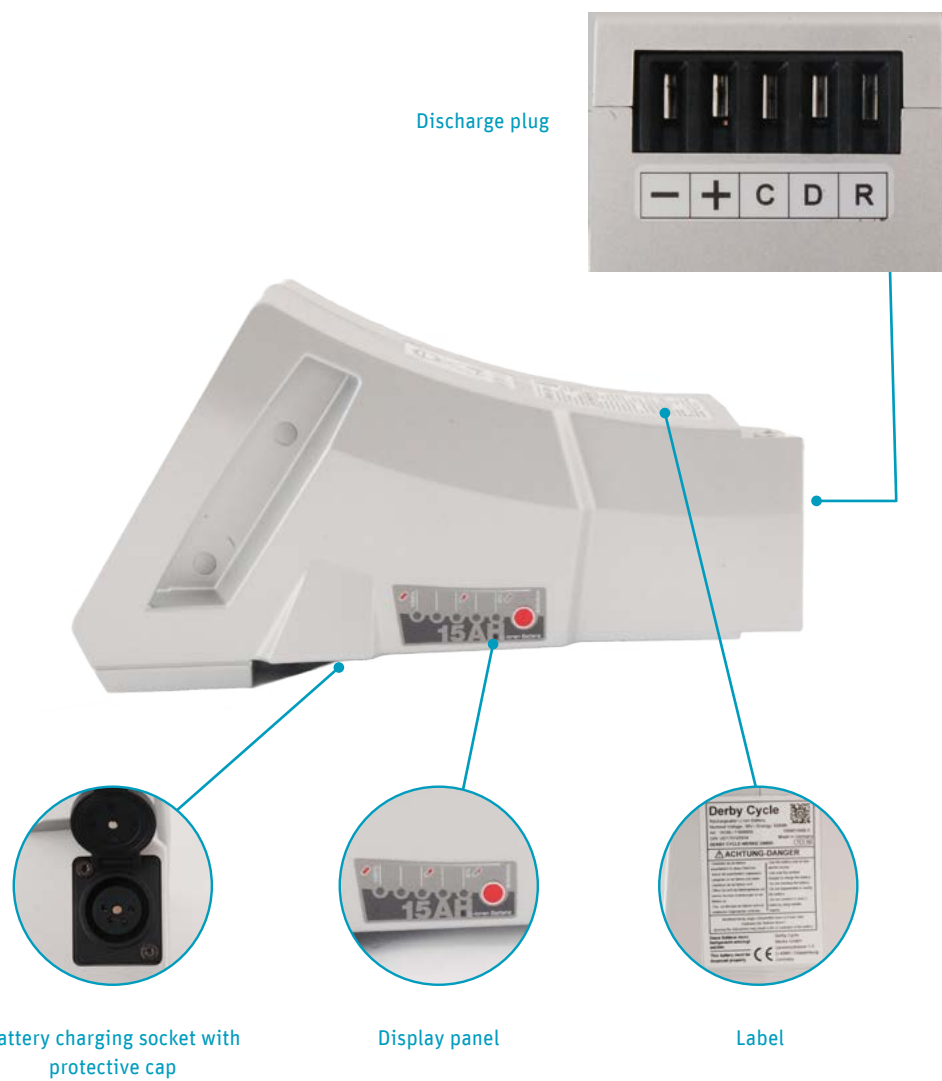
## 7.3 Overview and basic functions

### Comfort down tube battery





## Compact seat tube battery



## Offroad down tube battery



## 7.3.1 Display panel



Seat tube battery

**Battery button**

On the outside of the battery are a button and a display panel with five LEDs. The LEDs light up when you press the battery button. The number lighting up, and how, provides information on the battery.



Down tube battery

### 7.3.1.1 Battery charge level

1. Briefly press the battery button in standby mode

#### Seat tube battery

Display	Description	Battery charge level
●●●●●	5 LEDs light up	100 - 84%
●●●●	4 LEDs light up	83 - 68 %
●●●	3 LEDs light up	67 - 51%
●●	2 LEDs light up	50 - 34%
●	1 LED lights up	33 - 17%
○	1 LED flashes	16 - 0%

#### Down tube battery

Display	Description	Battery charge level
●●●●●	5 LEDs light up	100 - 81%
●●●●	4 LEDs light up	80 - 61%
●●●	3 LEDs light up	60 - 41%
●●	2 LEDs light up	40 - 21%
●	1 LED lights up	20 - 11%
○	1 LED flashes	10 - 0%

### 7.3.1.2 Capacity



Capacity indicates the quantity of electric charge that a battery can deliver or store. It is given in ampere hours (Ah). Even when used properly, capacity diminishes over time due to chemical reactions (ageing). So it reduces with every charging cycle. A battery also ages slightly when it is not used.

A charging cycle is the complete charging of a battery from 0 to 100% capacity. It follows that not every charging process equates to a charging cycle. For example, a charge from 50 to 100% capacity is only half a charging cycle.


1. Press the battery button for five seconds. The maximum available capacity (state of health) of the battery will be displayed.

## Seat tube battery

Display	Description	Capacity
●●●●●	3 – 5 LEDs light up	The battery has a capacity of over 60%
●●○○○	0 – 2 LEDs light up	The capacity of the battery is below 60%.

## Down tube battery

Display	Description	Capacity
●○○○○	The 1st LED lights up.	The battery has a capacity of over 60%
○○○○●	The 5th LED lights up.	The capacity of the battery is below 60%.



If fewer than three LEDs come on, or the 5th LED lights up, the battery may need to be replaced. To discuss the next steps speak to your DCW/RU dealer.

### 7.3.1.3 Sleep mode



To prevent a total discharge, the battery management system (BMS) switches the battery to sleep mode. After ten days (seat tube battery) or after two days (down tube battery), your battery will revert to sleep mode depending on the charge level.

## To wake from sleep mode

1. Press the battery button for one second. The following appears:

Display	Description
●●●●●	The first, second, third, fourth and fifth LEDs come on in order and then all go off.

2. The battery has now "woken up".



If no LED flashes, or all 5 LEDs flash several times, the battery may be faulty ⇒ [9.2 Battery P. EN-83](#).

## Initiating sleep mode (seat tube battery)

1. Press the battery button twice. The following appears:

Display	Description
○ ○	The first and fifth LEDs flash twice.

2. The battery is now in sleep mode.

## 7.4 Assembly

### IMPORTANT



**Grasp the battery firmly**, so that it does not fall out of your hand. It can be damaged if you drop it.

## 7.4.1 Inserting and locking the battery



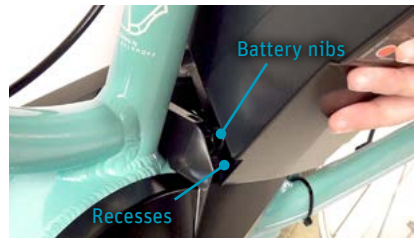
**One-key system:** The same key can be used for both the battery and bike locks (where fitted).

### Seat tube battery

1. Hold the battery with the discharge plug downwards in front of the docking station at an angle of 80°, slightly tilted to the left.
2. Insert the battery nibs into the recesses provided.
3. Push the battery forwards and upwards into the docking station until the locking mechanism engages.
4. Turn the battery key clockwise. The battery is now locked.



1. Hold in front of the docking station



2. Battery nibs into recesses



3. Push battery into docking station



4. Locking the battery

### Down tube battery

1. Hold the battery with the discharge plug down on to the docking station.
2. Push the battery into the holder until it engages.
3. Turn the battery key clockwise. The battery is now locked.



1. Hold at docking station



2. Push battery into docking station



3. Locking the battery

### IMPORTANT



**It is recommended that you remove the key to prevent it breaking off and getting lost.**

## 7.4.2 Unlocking and removing the battery

### Seat tube battery

1. Grip the battery firmly, put the key into the lock and turn anticlockwise. Hold the key. The battery is unlocked.
2. Grip the battery and tilt it out of the docking station on the side.



1. Unlocking the battery



2. Removing the battery

### Down tube battery

1. Grip the battery firmly, put the key into the lock and turn anticlockwise. The battery is unlocked.
2. Grip the battery and lift it upwards out of the docking station.



1. Unlocking the battery



2. Removing the battery

## IMPORTANT



**Hold the battery tight** so it does not fall. It can be damaged if you drop it.

## 7.5 Tips

### 7.5.1 Range

Various factors determine how far you can go with your battery:



When you go on a long trip it is worth taking a spare battery or battery charger with you.

**Assist mode:** You consume the most battery power in the highest assist mode. The range decreases, the higher the selected assist mode.



Vary the assist modes you use. If there is a tailwind when going down hill or on the level, you can still go fast with a lower assist mode.

**Tyre pressure:** If the tyre pressure is too low it is harder for the tyres to rotate. The drive unit needs to provide more assistance and the range decreases.

**Riding style:** A low cadence (pedalling rate) combined with high gears consumes the most battery power.



Change down in good time to maintain constant cadence, especially when starting.

**Your fitness level:** The fitter you are, the less assistance you will need.

**Total weight:** The lower the total weight supported by the bike, the easier it will be to ride ⇒ [VII.I Total weight P. EN-11](#).

**Outside temperatures:** The lower the outside temperatures (e.g. cold in winter), the shorter the range.



Insert the battery just before starting off with your pedelec. This way you prevent low temperatures shortening the range.

**Battery capacity:** A significantly reduced operating time after charging indicates that the battery has lost a considerable amount of capacity ⇒ [7.3.1.2 Capacity P. EN-66](#).



The battery may have to be replaced. To discuss the next steps speak to your DCW/RU dealer.

**Route selected:** You need to pedal harder when cycling uphill or against strong head wind. This is registered by the power sensor, which in turn requires the motor to work harder.

## 7.5.2 Storage

1. Remove the battery from the pedelec.
2. Store the battery in a dry, not excessively warm room. The battery should not be exposed to direct sunshine. The recommended storage temperature range is 0 to 20 °C.

### IMPORTANT



**The battery should not be stored in a fully charged state.** A charge level of 50–70% (●●●) is ideal. Since the battery loses charge very slowly, you should only recharge it when only one or two LEDs come on, but after six months at the latest.

## 7.5.3 Cleaning

### DANGER



**If you wipe the battery avoid touching the contacts,** otherwise there is the risk of an electric shock.

### WARNING



**Remove the battery from the pedelec before cleaning.** Unintentionally pressing the ⏻ button represents a risk of injury.

## CAUTION



**Batteries must not be immersed in water.** This presents a risk of explosion. Do not extinguish a burning battery with water, only the surrounding burning material. Class D extinguishers (for use on metal fires) are better suited for this. If it is possible to take the battery safely outside, smother the fire with sand. You need have no worries that the battery beneath you could explode while you are riding in the rain – it is protected from ingress of moisture and condensation.

## IMPORTANT



**Do not spray the battery with a water hose or wash it with a high-pressure cleaner.** Although the components are sealed off, damage to the battery may still result. Clean the battery with a soft, damp cloth.

**Do not use any cleaners which contain alcohol or solvent, or which scour. No coarse sponges or brushes may be used either.** They leave scratches and cause the surface to become matt. Clean the battery with a soft, damp cloth.



**Do not allow dirt to dry out.** It is best to clean the battery immediately after your ride.

1. Remove the battery from the pedelec.
2. Clean the casing with a slightly damp, soft cloth.
3. If the battery terminals are dirty, clean them with a dry, soft cloth.

## 8. Battery charger

### 8.1 Safety information

#### DANGER



**Battery chargers are not a toy and must not be used by children under the age of 8 years. Older children must be sufficiently trained on how to use the battery charger. People who, because of their physical, sensory or intellectual capabilities, or because of their lack of experience or knowledge, are unable to use battery chargers, are prohibited from using them unless supervised or under the instruction of a responsible person.** Otherwise there is a risk of mishandling with consequential very serious injuries.

#### WARNING



**Only use the correct, original charger to charge the battery.** The use of other battery chargers can cause explosions, serious burns and fires. Further consequences can include malfunctions and a limited battery life. You can find a list of permitted chargers in ⇒ [8.3 Functions P. EN-75](#).

**Only charge the correct, original battery with the charger.** The use of other batteries can cause explosions, serious burns and fires. Further consequences can include malfunctions and a limited battery life. You can find a list of approved batteries in ⇒ [7.2 Technical details P. EN-63](#).

#### WARNING



**Check the charger, cable and plug before each use. Do not use the charger if you detect signs of damage. Do not open the charger yourself, and only have it repaired by qualified experts using original spare parts. Do not replace the power cable.** This poses a risk of fire and explosion. Damaged chargers, cables and plugs also increase the risk of electric shock.

**The charger is only intended to be used indoors. Keep the charger away from rain and moisture.** If water gets into the charger there is a risk of electric shock. If water has penetrated the casing, unplug the device immediately and have it checked out by your dealer. Condensation may form on the charger when the temperature suddenly changes from cold to warm. When this happens, wait about an hour. This is the time a charger needs to reach the temperature of the warm surroundings. Prevent this happening by storing the charger where it is used.

**The charger and battery may not be covered during the charging process. Do not use the charger and battery on materials which can catch fire easily (such as paper and textiles) or within a combustible environment. This also applies when the battery is charged when fitted to the pedelec. In this case, the pedelec must be positioned such that a potential fire cannot spread quickly (exercise caution with carpeted floors).** The charger heat generated during the charge process represents a risk of fire. When the temperature is higher than 40°C, or there is smoke or an unusual smell, immediately unplug the mains connector of the charger from the socket and disconnect the battery from the charger. An overheated battery is damaged and may not be used again. Always stay with the charger when it is in use.



## WARNING



**Keep battery chargers away from sparks and fires.** It can explode causing severe burns and fires. Further consequences can include malfunctions and a reduced service life. Make sure there is sufficient ventilation when charging.

## IMPORTANT




**The mains voltage must match the supply voltage of the battery charger,** otherwise there is a risk of damage to the device. The supply voltage for the charger is specified on the label on the back of the device.

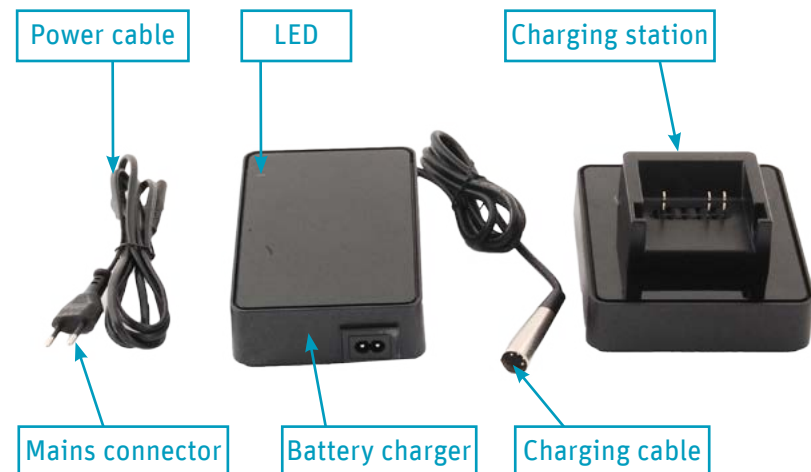
**Do not charge batteries for a long period if they are already fully charged or are not being used.** Electrical storms, voltage fluctuations and short circuits can damage the battery.

**Keep the battery charger clean.** If the contacts are dirty, the dirt can burn during charging, leaving burn marks. In such cases the charger may have to be replaced ⇒ [8.4.1 Cleaning P. EN-79](#).


## 8.2 Technical data and overview

Charger type 1 and charging station for type 1 seat tube battery (Comfort/Compact)


Battery voltage	36 V
AC input voltage	100 – 240 V
Frequency	50 – 60 Hz
Max. DC output voltage	42 V
Max. charge current	3 A
Dimensions ( L   W   H )	168 mm   108 mm   43 mm (battery charger) + 148 mm   128 mm   36 mm (charging station)
Operating temperature	-10°C to +40°C
Recommended storage temperature	0 to 20°C
Weight	706 g (charger) + 1074 g (charging station)
Protection class	 <b>The charger and the charging station is only intended for interior use.</b> Keep the charger away from rain and moisture. If water gets into the charger there is a risk of electric shock.

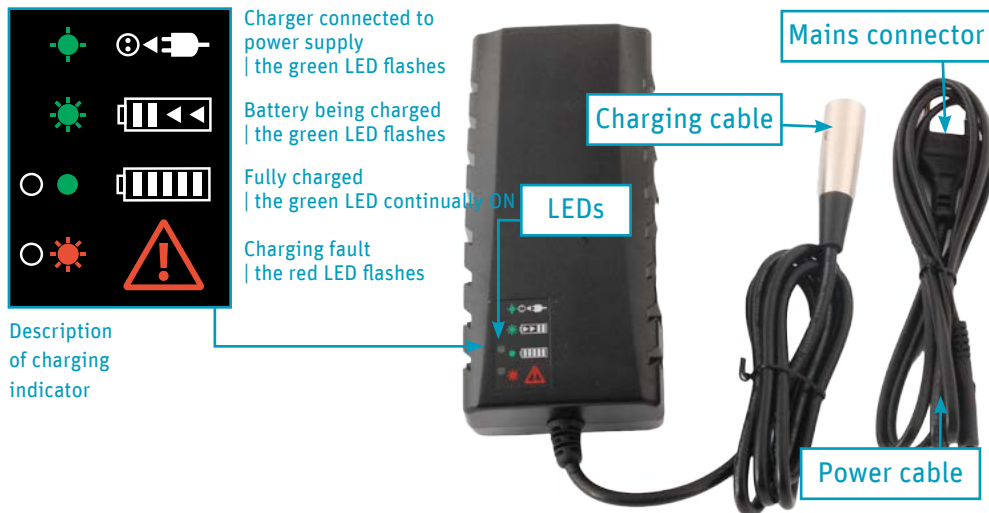


### Charger type 2 for seat tube battery (Comfort/Compact)


<b>Battery voltage</b>	36 V
<b>AC input voltage</b>	230 V
<b>Frequency</b>	50 Hz
<b>Max. DC output voltage</b>	42 V
<b>Max. charge current</b>	3 A
<b>Dimensions ( L   W   H )</b>	171 mm   77 mm   40 mm
<b>Operating temperature</b>	-10°C to +40°C
<b>Recommended storage temperature</b>	0 to 20°C
<b>Weight</b>	552 g
<b>Protection class</b>	 <b>The charger and the charging station is only intended for interior use.</b> Keep the charger away from rain and moisture. If water gets into the charger there is a risk of electric shock.

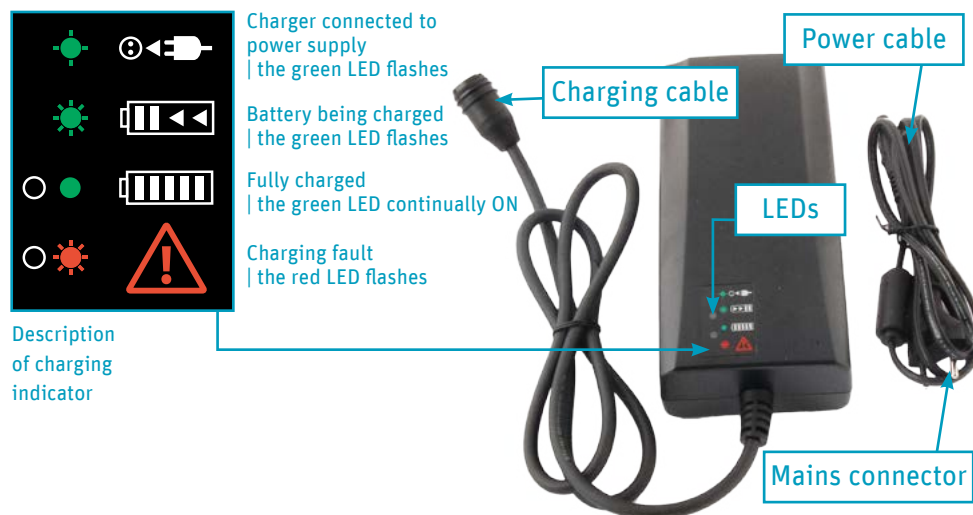
### Charger type 3 for down tube battery

<b>Battery voltage</b>	36 V
<b>AC input voltage</b>	230 – 240 V
<b>Frequency</b>	50 – 60 Hz
<b>Max. DC output voltage</b>	42 V
<b>Max. charge current</b>	4 A
<b>Dimensions ( L   W   H )</b>	171 mm   78 mm   42 mm
<b>Operating temperature</b>	-10°C to +40°C
<b>Recommended storage temperature</b>	0 to 20°C
<b>Weight</b>	520 g
<b>Protection class</b>	 <b>The charger is only intended to be used indoors.</b> Keep the charger away from rain and moisture. If water gets into the charger there is a risk of electric shock.



## Charger type 4 for down tube battery

Battery voltage	36 V
AC input voltage	230 V
Frequency	50 Hz
Max. DC output voltage	42 V
Max. charge current	4 A
Dimensions ( L   W   H )	202 mm   90 mm   55 mm
Operating temperature	-10°C to +40°C
Recommended storage temperature	0 to 20°C
Weight	745 g
Protection class	 <b>The charger is only intended to be used indoors.</b> Keep the charger away from rain and moisture. If water gets into the charger there is a risk of electric shock.



## 8.3 Functions

### 8.3.1 Charging the battery

#### DANGER



**Read and follow the information on the charger specification plate,** otherwise there is a risk of misuse resulting in serious injuries.



The battery can remain on the pedelec during charging. It can also be removed and charged elsewhere.

#### Charging

#### DANGER



**Damaged batteries must not be charged.**



The battery can remain on the pedelec during charging or you can remove the battery and charge it elsewhere. Before charging, please remove the plastic foil from the battery charger and charging station type 1.

### 8.3.1.1 Charging the seat tube battery with charger type 1

1. Connect the power cable to the battery charger.
2. Remove the protective cap on the battery.
3. Connect the charging cable to the battery charging socket until it engages.
4. Insert the mains plug into a power socket. The LED on the battery charger briefly lights up red ■, then permanently green ■ : The charging process has started.
5. Remove the power cable from the socket after completing the charging process.
6. Remove the charging cable from the battery charging socket.
7. Replace the protective cap.






### 8.3.1.2 Charging the seat tube battery with charger type 1 and charging station type 1

1. Connect the power cable to the battery charger.
2. Connect the charging cable of the charger to the charging station socket.
3. Insert the battery with the discharge plug down on to the charging station.
4. Insert the mains plug of the battery charger into a power socket. The LED on the battery charger briefly lights up red ■, then permanently green ■ : The charging process has started.
5. Remove the power cable from the socket after completing the charging process.
6. Remove the battery from the charging station.
7. Remove the charging cable of the charger from the charging station socket.



### 8.3.1.3 Charging the seat tube battery with charger type 2

1. Connect the power cable to the battery charger.
2. Remove the protective cap on the battery.
3. Connect the charging cable to the battery charging socket until it engages.
4. Insert the mains plug into a power socket. The red LED briefly lights up , then the green LED flashes steadily .
5. The charger switches off once the battery is fully charged. The green LED is permanently on .
6. Remove the power cable from the socket after completing the charging process.
7. Remove the charging cable from the battery charging socket.
8. Replace the protective cap.






### 8.3.1.4 Charging the down tube battery with charger type 3

1. Connect the power cable to the battery charger.
2. Remove the protective cap on the battery.
3. Connect the charging cable to the battery charging socket until it engages.
4. Insert the mains plug into a power socket.
5. Remove the power cable from the socket after completing the charging process.
6. Remove the charging cable from the battery charging socket.
7. Replace the protective cap on the battery charging socket.









### 8.3.1.5 Charging the down tube battery with charger type 4

1. Connect the power cable to the battery charger.
2. Remove the protective cap on the battery.
3. Connect the charging cable to the battery charging socket until it engages.
4. Insert the mains plug into a power socket. The red LED briefly lights up , then the green LED flashes steadily .
5. The charger switches off once the battery is fully charged. The green LED is permanently on .
6. Remove the power cable from the socket after completing the charging process.
7. Remove the charging cable from the battery charging socket.
8. Replace the protective cap on battery charging socket.



### 8.3.1.6 Battery display during charging

Display	Description	Battery charge level
	5 LEDs light up and no LED flashes	100 – 97%
	4 LEDs light up and the 5th LED flashes	80 – 96%
	3 LEDs light up and the 4th LED flashes	60 – 79%
	2 LEDs light up and the 3rd LED flashes	40 – 59%
	1 LED lights up and the 2nd LED flashes	20 – 39%
	1 LED flashes	0 – 19%

## 8.4 Tips

### 8.4.1 Cleaning

#### DANGER



**Always unplug the charger from the mains before cleaning and especially before wiping it,** otherwise you could get an electric shock if you touch the contacts.

#### IMPORTANT



**Do not immerse the charger in water.** Although the components are sealed off, damage may still result.

**Do not use any cleaners which contain alcohol or solvent, or which scour. No coarse sponges or brushes may be used either.** They leave scratches and cause the surface to become matt. Clean the charger with a soft damp cloth.


1. Remove the charging cable from the battery charging socket.
2. Unplug the charger from the mains socket.
3. Clean the casing with a slightly damp, soft cloth.
4. If the contacts are dirty, clean them with a soft dry cloth.

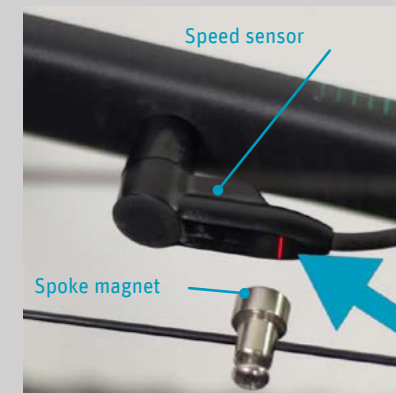
### 8.4.2 Storage

1. Store the battery charger in a dry, not excessively warm room. The charger should not be exposed to direct sunshine. The recommended storage temperature range is 0 to 20°C.

## 9. Faults

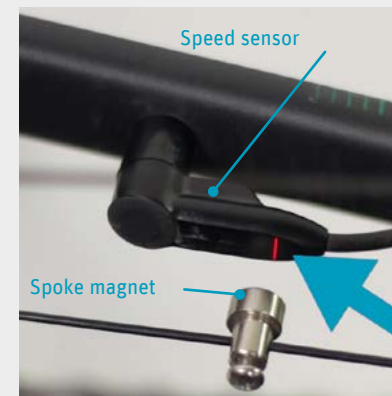
### 9.1 Drive unit, display and easy-reach control

Description	Cause	Remedy
Display does not light up and is not functioning, no motor assist	a) Battery is in sleep mode.	a) Wake battery from sleep mode ⇒ <a href="#">7.3.1.3 Sleep mode Page EN-67</a> . If the battery does not respond, briefly connect it to the battery charger ⇒ <a href="#">8.3.1 Charging the battery P. EN-75</a> .
	 <b>If the battery still does not respond or the LEDs flash in an unusual way the battery is damaged and must be removed from the charger.</b>	
	b) Battery is defective.	b) Insert a new battery.
There is no speed display	c) The pedelec is OFF. The Impulse 2.0 switches itself off after 20 minutes if there is no call for power from the drive (e.g. because the pedelec is stationary).	c) Switch on the pedelec ⇒ <a href="#">6.3.1 Switching on the pedelec Page EN-40</a> .
	a) The spoke magnet has slipped.	a) Check whether the spoke magnet has slipped. It should be as close as possible to the speed sensor on the chain stay (max. 10 mm). Align the magnet on the marker point with the speed sensor.
	b) The speed sensor is faulty.	b) Contact your DCW/RU dealer. He will be able to replace the speed sensor.
Speed display incorrect	c) Spoke magnet missing.	c) Contact your DCW/RU dealer. They can fit a new spoke magnet to your pedelec.
	d) Speeds below 10 km/h are not always displayed due to the inertia of the system.	d) Check whether a speed is displayed when riding at a higher speed. If that is the case, the display is not faulty.
Speed display incorrect	a) Incorrect unit set.	a) Check the mph and km/h settings ⇒ <a href="#">6.8.2.7 Unit Page EN-51</a> ⇒ <a href="#">6.6 LCD Compact Display P. EN-42</a> .
	b) Wheel circumference setting incorrect.	b) Set the correct wheel circumference ⇒ <a href="#">6.8.2.8 Wheel circumference Page EN-51</a> .
Some of the display is missing	The display is faulty.	Enable the test display ⇒ <a href="#">6.8.2.12 Version Page EN-53</a> . The display may have to be replaced. Please ask your DCW/RU dealer.
Display lighting not working	The display is faulty.	Please ask your DCW/RU dealer. The display may have to be replaced.






Description	Cause	Remedy
The display is misted up	Moisture has got in.	Dry out the pedelec complete with display at room temperature (19–21°C). If the display is still misted up, contact your DCW/RU dealer. The display may have to be replaced.
Motor assist level is too weak	a) Climb Assist is set too low.	a) Change the value ⇒ <a href="#">6.8.2.10 Climb assist Page EN-52</a> .
	b) Battery is flat.	b) Install new/charged battery ⇒ <a href="#">8.3.1 Charging the battery Page EN-75</a> .
	c) Unsuitable ride profile.	c) Please ask your DCW/RU dealer. They can set another ride profile on your pedelec.
Motor idles	a) Gear changing is not properly set.	a) Check the setting. If necessary, ask your DCW/RU dealer.
	b) Chain/belt has come off.	b) Lift the chain/belt on to the sprocket and adjust the tension. If necessary, ask your DCW/RU dealer ⇒ <a href="#">3.7.1 Chain tension Page EN-20</a> ⇒ <a href="#">3.8.1 Belt tension Page EN-22</a> .
Power assist sporadically cuts out	a) The spoke magnet has slipped.	a) Check whether the spoke magnet has slipped. It should be as close as possible to the speed sensor on the chain stay (max. 10 mm). Align the magnet on the marker point with the speed sensor.
	b) Climb Assist is set too high.	b) Change the value ⇒ <a href="#">6.8.2.10 Climb assist Page EN-52</a> .






Description	Cause	Remedy
Motor noise	a) There are various reasons for motor noise – it is not always due to a mechanical fault. For example, the following factors can negatively affect noise: » Excessively high cadence with a low load. » Very high assist level (e.g. riding uphill). » Derailleur gear (as opposed to a gear hub).	
	b) Chain/belt tension too high.	b) Reduce chain/belt tension. If necessary, ask your DCW/RU dealer ⇒ <a href="#">3.7.1 Chain tension Page EN-20</a> ⇒ <a href="#">3.8.1 Belt tension Page EN-22</a> .
	c) Dirty chain/belt.	c) Clean chain/belt ⇒ <a href="#">3.8.3 Cleaning Page EN-24</a> .
	d) Defective pedals.	d) Replace pedals ⇒ <a href="#">3.1 Attaching the pedals P. EN-16</a> .
	e) Motor bolts not tight enough.	e) Tighten motor bolts ⇒ <a href="#">10. Torque settings Page EN-86</a> .
Buttons on easy-reach control not functioning	Easy-reach control is defective.	Please ask your DCW/RU dealer. The easy-reach control may have to be replaced.
The system freezes in a mode		
Shift sensor not working	Shift sensor defective.	Please ask your DCW/RU dealer. The Shift sensor may have to be replaced.
Push assist is too weak	a) Software is not up to date.	Please ask your DCW/RU dealer. They can install the latest system software.
	b) Shift cable incorrectly threaded.	





Display	Cause	Remedy
"Check speed sensor"/"SPEED"	a) The spoke magnet has slipped.	a) Check whether the spoke magnet has slipped. It should be as close as possible to the speed sensor on the chain stay (max. 10 mm). Align the magnet on the marker point with the speed sensor.
	b) The speed sensor is faulty.	b) Contact your DCW/RU dealer. He will be able to replace the speed sensor.
	c) Spoke magnet missing.	c) Contact your DCW/RU dealer. He will be able to replace the spoke magnet.
	d) Assist mode is queried in standby.	d) The display should disappear when travelling at over 6 km/h.

Display	Cause	Remedy
"Communication error with the battery"/ Battery charge level indication on the display flashes	a) No connection to battery.	a) Remove battery and reinsert it.
	b) Dirty contacts.	b) Clean the battery discharge plug and docking station contacts with a soft, dry cloth.
	c) The battery is damaged.	 c) <b>Damaged batteries must not be charged or used for any other purpose.</b> Please ask your DCW/RU dealer; the battery may have to be replaced.
	d) Battery not charged.	d) Charge the battery.
"Motor temperature is too high"	The motor has overheated. For example, after riding up a long, steep incline in a high gear.	Allow the motor to cool down before resuming your journey.
"Battery temperature is too high"	The battery has overheated.	Allow the battery to cool down for a while by riding without motor assist.
"Battery temperature is too low"	The temperature of the battery is too low, e.g. after a very cold night outdoors.	Store the battery in a warm room for a while so that it reaches a sufficient temperature.
Permanent display: "Please move the pedals"/"PEDAL".	Caster switch may be faulty.	Turn the pedal crank backwards briefly, then forwards again so that a system check can be carried out. If the "Please move the pedals"/"PEDAL" message is still displayed, please contact your DCW/RU dealer. The motor may have to be replaced.


## 9.2 Battery

Display	Description	Cause	Remedy
●●●●●	5 LEDs rapidly flashing after pressing the battery button.	a) Battery is flat and is disabled.	a) If the battery is flat, it will work again briefly after a short recovery period, then switch off again. It must now be charged ⇒ <a href="#">8.3.1 Charging the battery Page EN-75</a> .
		b) The battery is overloaded.	b) If the battery is overloaded, it switches itself on again after a short rest period and can be used again as normal.
		c) The battery is too cold or too hot.	c) The operating temperature range of the battery is -5 to 40°C.
●	The 1st LED flashes rapidly after pressing the battery button.	There is a charging fault.	 <b>Unplug the charger from the mains immediately.</b> If the problem reoccurs, a new battery charger is required.
	No LEDs light up after pressing the battery button.	The battery is faulty.	Please ask your DCW/RU dealer. The battery must be replaced.





Display	Description	Cause	Remedy
	The range appears too short	a) The range depends on: <ul style="list-style-type: none"> <li>» Ride profile</li> <li>» Assist mode</li> <li>» Tyre pressure</li> <li>» Riding style</li> <li>» Physical condition</li> <li>» Overall weight</li> <li>» Outside temperatures</li> <li>» Battery capacity</li> <li>» The route selected</li> <li>» Smartphone charging via display</li> </ul>	a) There are many reasons why the range may seem low ⇒ <a href="#">7.5.1 Range Page EN-69</a> .
		b) A learning cycle has not been carried out. <div style="background-color: #006633; color: white; padding: 5px; display: inline-block;">  </div> <b>Perform a 'learning cycle':</b> A new, <b>fully charged</b> battery should be run down once until the motor assist stops and without recharging in between. In that way the battery 'learns' its capacity, and the actual capacity will agree with the level indicated on the battery status display. Please perform a learn cycle every six months or 5,000 kilometres. If you do not repeat this from time to time, the actual capacity of the battery will increasingly diverge from the value on the battery status display. Important: As soon as the battery switches to sleep mode the learning cycle is interrupted.	
	Battery key lost	Order another key. We recommend making a note of the key number on the sales receipt/document. This number can be used to order a replacement key. <ol style="list-style-type: none"> <li>1. Go to the website <a href="http://www.trelock.de">www.trelock.de</a>.</li> <li>2. Select your language.</li> <li>3. Select "Services" then "Spare key".</li> <li>4. Follow the instructions.</li> </ol> If you no longer have the key number, replacing the lock is the only option. Please ask your DCW/RU dealer about this.	
	Battery heats up to over 45 °C when charging	a) High ambient temperatures.	a) Stop charging immediately and let the battery cool down. Then resume charging in a cooler environment. If this problem keeps reoccurring, please contact your DCW/RU dealer; the battery may have to be replaced.
		b) Damaged battery.	<div style="background-color: #ff0000; color: white; padding: 5px; display: inline-block;">  </div> <b>b) Damaged batteries must not be charged or used for any other purpose.</b> Please ask your DCW/RU dealer; the battery may have to be replaced.

Display	Description	Cause	Remedy
	Battery cannot be recharged	a) Ambient temperature too high or too low.	a) You can charge the battery at ambient temperatures of between 0 °C and 40 °C.
		b) Damaged battery.	 b) <b>Damaged batteries must not be charged or used for any other purpose.</b> Please ask your DCW/RU dealer; the battery may have to be replaced.
		c) Battery charger faulty.	c) Have the battery charger checked out by your DCW/RU dealer; the battery charger may have to be replaced.
	Battery is damaged	Accident/fall with pedelec or the battery has been dropped.	 <b>Damaged batteries must not be charged or used for any other purpose.</b> Please ask your DCW/RU dealer; the battery may have to be replaced.
	Battery does not "wake up" from sleep mode	a) Battery is flat.	a) Briefly charge the battery.
		b) Damaged battery.	 a) <b>If the battery still does not respond or the LEDs flash in an unusual way the battery is damaged and must be removed from the charger.</b>  b) <b>Damaged batteries must not be charged or used for any other purpose.</b> Please ask your DCW/RU dealer; the battery may have to be replaced.

### 9.3 Battery charger

Description	Cause	Remedy
Charger gets hotter than 40 °C.	The charger is faulty.	 <b>Unplug the charger from the mains immediately.</b> If the problem reoccurs, a new battery charger is required.

#### Battery charger type 1, 2 and 4

Display	Description	Cause	Remedy
	The red LED flashes continuously.	There is a charging fault.	 <b>Unplug the charger from the mains immediately.</b> If the problem reoccurs, a new battery charger is required.   <b>Battery charger type 2 and 4:</b> Remove the battery, connect the battery charger to the mains. If the green LED flashes steadily  , then the battery charger is OK. Contact your cycle dealer. The battery may have to be replaced.

## 10. Torque settings



### DANGER

**Only use proper tools to tighten screws and bolts. Observe the specified torque setting. The component manufacturer's torque settings take precedence (where available).** Failure to comply can result in screws/bolts becoming loose, tearing away or fracturing. If that happens while riding the bike, components may come off and you could have a severe crash. If fixings are overtightened other components can also be damaged. Tighten all safety-relevant screws and bolts with a torque wrench. This indicates the corresponding torque in newton metres (Nm).

If no values are shown on the component or component manuals, use the torque settings from the following table.

Screw fixing	Thread	Tightening torque (Nm)
Pedal crank screw	M6	40
Pedal	9/16	40
Front axle nut	General	25 – 30
Rear axle nut	General	35 – 40
Ahead stem angle adjustment	M6	8 – 10
Ahead stem handlebar clamp	M5 / M6 / M7	M5: 5 / M6: 10 / M7: 14
Ahead stem steerer tube	M5 / M6 / M7	M5: 5 / M6: 10 / M7: 14
Bar end, external clamp	M5 / M6	M5: 5 / M6: 10
Saddle clamp bottom	M5 / M6 / M8	M5: 5 / M6: 10 / M8: 20
Saddle clamp top	M5 / M6 / M7 / M8	M5: 5.5 / M6: 5.5 / M7: 14 / M8: 20
Rim brake shoe	M6	10
Sliding drop-outs	M10	16
Disc brake calliper, Shimano, IS and PM	M6	6 – 8
Disc brake calliper, AVID, IS and PM	M6	8 – 10
Disc brake calliper, Magura, IS and PM	M6	6
Gear lever clamp	M5	5
Brake lever clamp	M5	Ref. manufacturer's spec.
Cassette fixing ring	N/A	30 – 40
Screw-on handlebar plugs	M4 / M5	M4: 3 / M5: 5
Motor housing	M5	5.9
Motor bolts	M8	25
Luggage rack	M5 / M6	M5: 5 – 6 / M6: 8 – 10



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User guides, service book and declarations of conformity are available for download in PDF format at:

<http://www.derby-cycle.com/de/downloads/downloads.html>