

USER MANUAL

COVERING OPERATION, SETTINGS, MAINTENANCE AND SERVICING

DIN EN ISO 4210 / DIN EN 82079-1

TREKKING BIKE CITY BIKE

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BRENNABOR

1 Warranty (Guarantee specifications)

With the purchase of this bicycle, you have purchased a high quality product. We are therefore able to offer you the following guarantee which is effective from the purchase date:

On aluminium frames and unsprung aluminium forks: 5-year guarantee for frame and fork breakage

On steel frames and unsprung steel forks: 5-year guarantee for frame and fork breakage

On carbon frames and carbon forks without suspension: 3-year guarantee for frame and fork breakage

During the guarantee period, product defects are resolved by replacement or repair at no charge. Guarantee repair services may be carried out only by a bicycle dealer specified by us.

The guarantee is only valid for the first owner and cannot be transferred to a subsequent owner.

Proof of purchase (invoice/dated sales document identifying the bicycle) is required for this.

The guarantee is invalidated if the bike is used for races and competitions.

This guarantee covers complete bikes, which have been fully assembled and adjusted by a dealer we have authorised.

This guarantee is voided if the bicycle is not used as specified, is inadequately maintained, incorrectly repaired, converted or modified.

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2 Bicycle part terms

Frame:

- ① Top tube
- ② Head tube
- ③ Down tube
- ④ Seat tube
- ⑤ Rear frame chain stay
- ⑥ Rear frame seat stay

Note: The figure may vary depending on your bicycle model or the selected configuration. Read the special notes regarding your configuration in the respective chapters.



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3 Safety

3.1 General notes and information

3.1.1 Reading the user manual



Read all warnings and notes in this user manual with care before you operate the bicycle for the first time.

Keep the manual to hand so that it is available at all times. Include the user manual when passing the bicycle on to third parties.

3.1.2 Validity

This user manual is valid for the 2018 and newer bicycle models. Depending on the model, your bicycle or e-bike (pedelec) may not be approved for road traffic, see Fig.: “Road Traffic Licensing Regulation stickers” or “Lighting equipment” to check if your bicycle or e-bike is approved for road usage.

Bicycles or e-bikes that are not approved for road usage under German Road Traffic Licensing Regulations are labelled accordingly on the seat tube or down tube (see Fig.: “Road Traffic Licensing Regulation stickers”).

- Use the diagrams “Road Traffic Licensing Regulation stickers” or “Lighting equipment” to check if your bicycle or e-bike model is approved for road usage (see Chapter “Road traffic” on page 11).

E-bikes (pedelecs) also have a supplementary user manual for the motor.

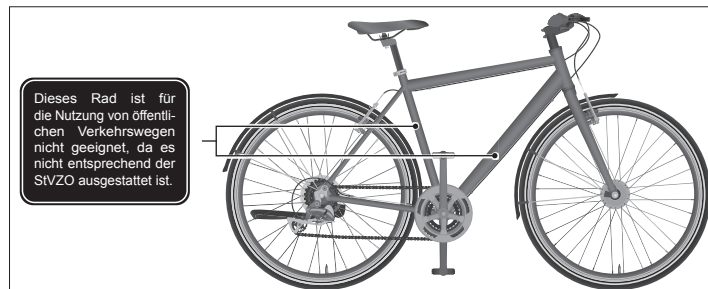


Fig.: Road Traffic Licensing Regulation stickers (example)

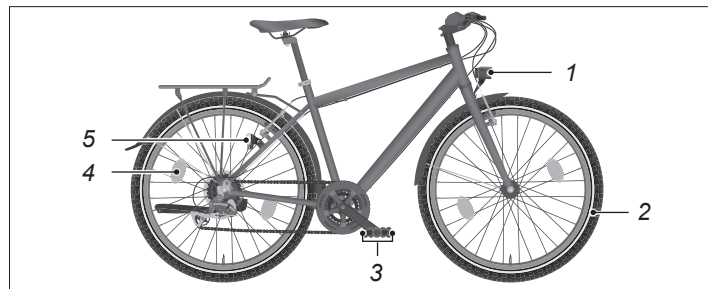


Fig.: Lighting equipment (example)

- | | |
|------------------------------------|-----------------------------------|
| 1 Headlight with reflector (white) | 4 Side reflectors (yellow) |
| 2 Reflective strips (white) | 5 Rear light with reflector (red) |
| 3 Reflectors on the pedal (yellow) | |

3.1.3 Categorisation of warning notes

The warning notes are intended to draw your attention to potential hazards. Your complete attention is required when reading the warning notes; the statements must be understood completely. Failure to follow a warning note may result in injury to yourself or other persons. The warning notes alone cannot prevent dangers. Follow all warning notes to avoid risks when using the bicycle.

There are warning notes in the following categories:



WARNING

This key word designates a hazard with a moderate degree of risk which may lead to death or severe injury if unheeded.



CAUTION

This key word designates hazard with a low degree of risk, which may result in minor or moderate injury if unheeded.

NOTICE

This key word warns of possible damage to property.

3.2 Proper use



WARNING

Danger for children or for individuals with insufficient knowledge or abilities!

Risk of accident and injury!

- You should only use the bicycle if you are fully acquainted with the operation of the bicycle and all of its functions.
- Do not allow persons with reduced physical, sensory or mental abilities or a lack of experience or knowledge to use the bicycle.
- Do not allow children to play with the bicycle.
- Do not allow children to clean, maintain or service the bicycle.



WARNING

Children have insufficient knowledge and skills.

Risk of suffocation!

- Do not allow children to play with the packaging wrapper. Children may get caught in it when playing and suffocate.



WARNING

Braking distances can be increased or the bicycle could slip on bends, e.g. when riding in wet conditions or where the riding surface is very dirty.

Risk of accident and injury!

- Adapt the manner in which you ride to the weather conditions and road surface conditions.



WARNING

Component breakages caused by improper usage.

Risk of accident and injury!

- The bicycle should only be used for the intended purpose as described.



CAUTION

Risk of trapping body parts due to the bicycle's moving parts.

Risk of injury!

- Wear tight-fitting clothing on the legs.
- Ensure no loose straps are hanging down, e.g. shoe-laces or jacket belts.



CAUTION

Slipping due to improper footwear.

Risk of injury!

- Wear shoes with non-slip soles.



CAUTION

Insufficient control of the bicycle.

Risk of injury!

- Hold on to both handlebar grips firmly with both hands while riding.
- Always remain ready to brake.
- Never ride one-handed or with no-hands.

NOTICE

Increased wear and breakage of components caused by improper use of your bicycle.

Risk of damage!

- Do not use your bicycle to jump over ramps or mounds of earth.
- Do not ride over steps or other types of ledges, e.g. kerbs or rocks.
- Do not ride through deep water.

Safety

Neither the manufacturer nor the specialist dealer will accept liability for damage which occurs due to improper use, which does not comply with the intended purpose. Only use the bicycle in the manner described in this user manual. Any other use is deemed improper and may cause accidents, serious injuries or damage to the bicycle itself.

The warranty is rendered void in the event of improper use of the bicycle.

The bicycle is intended for use by one person, for whom the bicycle has been adjusted to provide the correct sitting position according to their body size.

The bicycle is intended for use on paved roads and paths. It can be used with caution on easy terrain, e.g. gravel roads or field and forest paths. The wheels must always be in contact with the ground. Any use on rough terrain may lead to the failure of the bicycle.

The bicycle is not intended to be subjected to above-average loads during use, e.g. using the bicycle in racing or competitive events is considered improper use.

3.3 Road traffic



WARNING

Improper use or use for purposes other than those originally intended.

Risk of accident and injury!

- Only use the bicycle in public road traffic if it is equipped in accordance with the road traffic regulations in the respective country.
- Be aware of and follow the applicable national and regional regulations regarding road traffic.



WARNING

No head protection.

Risk of injury!

- Wear a suitable bicycle helmet when riding your bicycle.



WARNING

Poor visibility to other road users.

Risk of accident and injury!

- Wear light-coloured clothing with reflective elements when riding your bicycle.



WARNING

Not paying sufficient attention to the road traffic.

Risk of accident and injury!

- Do not allow yourself to become distracted by other activities when riding your bicycle, e.g. by switching the lights on.
- Do not use mobile devices when riding your bicycle, e.g. smartphones or MP3 players.
- Do not ride your bicycle if you have consumed alcohol, narcotics or medication which may impair your ability to ride.

Note: Dirt roads and forest tracks are also part of the road traffic network, as are private areas of land if these are accessible to the public.

- Seek information regarding the relevant applicable road traffic regulations for your respective country or the region, e.g. from the Ministry of Transport.
- Ensure that you regularly obtain information regarding changes to the content of the regulations currently in force.
- Ride in such a way that nobody suffers injury, is endangered, incapacitated or disturbed.
- Use the cycle routes intended for bicycles according to regulations.

3.3.1 Bicycle helmet

- For your safety: Wear a bicycle helmet even if you are not required to do so by law.
- Laws and regulations may change at any time. Check regularly for updates about regulations for your respective country or region.
- Wear a suitable bicycle helmet which has been tested in accordance with DIN EN 1078 standards and bears the CE seal of conformity.

3.3.2 Handlebar extensions

Handlebar extensions move the hands further away from the brake levers. This means there is a greater risk of accidents.



WARNING

Increased braking distance due to greater distance to the brake levers.

Risk of accident and injury!

- You must familiarise yourself with the handlebar extensions and how to reach over to the brake levers.
- Ride especially carefully when using handlebar extensions.

Safety

3.3.2.1 Bar ends

Using bar ends in road traffic is very risky. Your hands are further away from the brake levers. And this can lead to accidents in dangerous situations.

Bar ends are additional handles at the end of the standard handlebars, which can be used to adopt a better riding position, e.g. on particularly steep ascents.

3.3.2.2 Triathlon handlebar attachment

Triathlon handlebar attachments are used to adopt an aerodynamic position, for example, in triathlons or time trials on a road bike.

Triathlon handlebar attachments may only be fitted to road bikes that do not have a motor.

Triathlon gear levers are usually located at the end of the handlebars. The brake levers are located at the end of the base handlebar. If the road bike is ridden in an aerodynamic position, the rider cannot reach the brake levers easily.

- Before you start riding in road traffic, first familiarise yourself with riding with a triathlon handlebar attachment and how to reach over to the brake levers.
- When practising using the handlebars, do not take any other risks, such as using clipless pedals without practice.
- Adapt the way you ride to suit the changed handling of the bicycle.

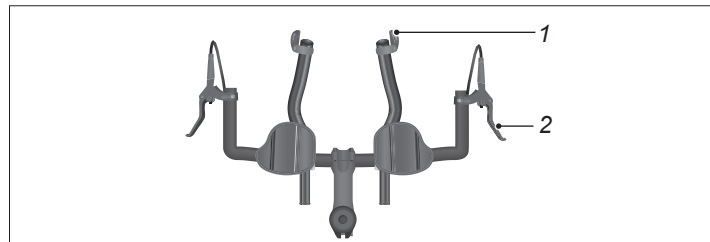


Fig.: Triathlon handlebar attachment (example)

6 Gear lever

7 Brake lever

3.3.3 Additional regulations

For use in road traffic, bicycles must be equipped with two brakes, which operate independently of one another, and a bell.

3.4 Modifications



WARNING

Changes to the bicycle or incorrectly selected spare parts can cause the bicycle to malfunction.

Risk of accident and injury!

- Only use original spare parts.
-

3.5 Residual risks

Despite the observance of all safety and warning notes, use of the bicycle is still associated with several unforeseeable residual risks, some examples are listed below:

- Misconduct of other road users
- Unforeseeable material defects or material fatigue can lead to breakages or failure of components
- Try to anticipate the actions of others and ride defensively.
- Before each ride, you should check your bicycle for cracks, changes in colour or other signs of damage.
- Before each ride, check that all safety-related components work properly, e.g. the brakes.
- After a fall or accident, ask your specialist dealer to thoroughly check your bicycle for damage.

4 Basic information

4.1 Symbols and terms

4.1.1 Symbols

- 1st** Steps to be performed in a particular order begin with a number.
- Steps to be performed in no particular order begin with a bullet point.
 - Dashes are used to denote lists.

Note: Supplementary notes regarding steps to be performed or use.

4.1.2 Terms

Dynamo: Contrary to the norm, the term “dynamo” is used instead of “generator”.

Threadless handlebar stem: Contrary to the norm, the term “threadless handlebar stem” is used instead of “quill stem”.

Dropout: Connection between the rear frame seat stays and the rear frame chain stays. The rear wheel’s axle is tightly screwed into the dropout.

Brake arm: Contrary to the norm, the lever installed on the chain stays as a bracket for the coaster brake is described as the brake arm.

Brake lever: Contrary to the norm, the term “brake lever” refers to the lever attached to the handlebars that is used to activate the rim brakes, drum brakes or disc brakes.

Pressure point (hydraulic brake): The position of the brake lever at which the brake begins to have a braking effect.

Lock-out: Mechanism to lock the suspension fork in place.

Pedal drive: Assembly consisting of pedal, pedal crank, bottom bracket and chainring.

Sag: The compression of the suspension system that takes place simply as a result of the rider’s bodyweight.

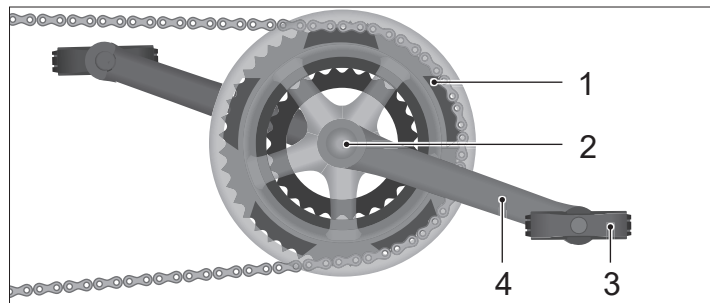


Fig. Pedal drive

1 Chainring

2 Bottom bracket

3 Pedal

4 Pedal crank

Basic information

4.1.3 Written labels

Italic font is used for picture captions and references in the text.

4.1.4 Units

Unit	Meaning	Unit for
1/min	per minute	Revolutions
Bar	Bar	Pressure (obsolete)
g	Gram	Weight (= kg/1000)
kg	Kilogramme	Weight (= g×1000)
kPa	Kilopascal	Pressure
Nm	Newton meter	Torque
psi	pound per square inch	Pressure (USA, obsolete)
"	Inch	Length (USA); 1 inch = 2.54 cm

4.2 Direction of rotation for screws

- Tighten screws, axles and nuts by turning them in a clockwise direction.

Note: If there are any deviations to this rule, a note will be included in the appropriate chapter, indicating the change in direction. Please observe the respective notes.

4.3 Torques



WARNING

Material fatigue caused by incorrect tightening of screw connections.

Risk of accident and injury!

- Do not use the bicycle if you notice any loose screw connections.
- Screw connections must be properly tightened with a torque wrench and the correct torque level.

The correct torques must be observed in order to correctly tighten screw connections. This requires the use of a torque wrench with a corresponding range of adjustment.

- If you do not have any experience with using torque wrenches, you should ask your specialist dealer to check your screw connections.
- Individual bicycle components are labelled with information about the appropriate torques or with markings showing insertion depths. You must make sure to observe these specifications and markings.

This table does not list all components. Torque specifications are to be used as basic values and do not apply to carbon components.

Basic information

- Please ask for more information about other components and their corresponding torques or read the enclosed instruction manual for these components.

Screw connection	Torque in Nm
Pedal crank (steel/aluminium)	30 / 40
Pedal	30
Axle nut front / rear (15 mm)	25 / 35
Saddle (adjustment screw) M6 / M8	14 / 20
Seat post clamp M5 / M6	5 / 10
Adjustment screw on the dropout M6	6 / 8
Clamp screw on dropout and slider	7
Brake and switch lever on the handlebars	3
Quill handlebar stem (expander bolt on the shaft stem)	8
Threadless handlebar stem (shaft clamp / handlebar clamp)	4 / 5

4.4 Sitting position



CAUTION

Muscle tension and joint pain due to an incorrectly adjusted sitting position.

Risk of injury!

- Ask your specialist dealer to adjust your sitting position correctly.



CAUTION

Limited accessibility to operating controls on the handlebar due to an incorrect sitting position.

Risk of accident and injury!

- Ask your specialist dealer to adjust your sitting position correctly.

The optimal sitting position depends on the frame size of the bicycle, the physical size of the rider and the settings of the handlebars and the seat. Specialist knowledge is required to adjust the bicycle to an optimal sitting position.

The optimal sitting position can also depend on the use of the bicycle, e.g. if it is predominantly used for sports.

The key features of an optimal sitting position are:

- If a pedal is at the top, the knee angle of the upper leg and the arm angle is 90°. The lower leg must be slightly bent (see Fig. “Characteristics of an appropriate seating position”, left).
- When one pedal is forwards, the knee must be above the axle of the front pedal (see Fig. “Characteristics of an appropriate seating position”, right).
- The arms are relaxed and slightly bent outwards (not shown in the picture below).
- The back is not perpendicular to the seat post.

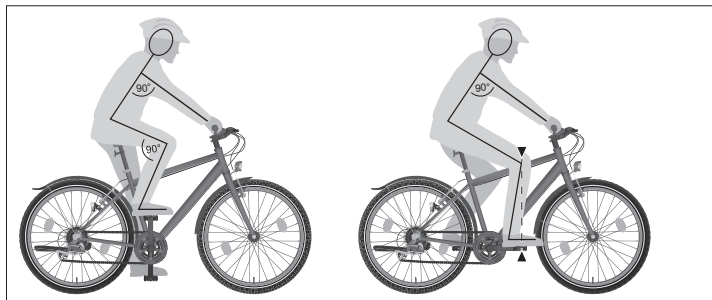


Fig. Key features of an optimal sitting position

If the optimal sitting position cannot be achieved by adjusting the seat and the handlebars, on many bicycle models it is possible to replace the relevant components.

If selling or passing the bicycle on to another person, this can be an option to enable continued use of the bicycle.

- If the sitting position cannot be optimally adjusted, ask your specialist dealer to fit components with different measurements.

4.5 Wear



WARNING

Malfunction caused by excessive wear and tear, material fatigue or loose screw connections.

Risk of accident and injury!

- Check the condition of your bicycle regularly.
- Do not use the bicycle if you notice excessive wear or loose screw connections.
- Do not use the bicycle if you notice any cracks, distortions or changes in colour.
- If you notice any signs of excessive wear and tear, loose screw connections, distortion, cracks or colour changes, you should get your specialist dealer to inspect your bicycle immediately.

As with all mechanical components, bicycle components are subject to wear. High levels of strain and improper use exacerbate wear. Different materials wear out at different rates.

Only a specialist dealer is able to assess wear on components made of aluminium, carbon or composite materials.

Basic information

Heavy blows, shocks and excessive tension can cause damage to frames, forks and wheels made of carbon and composite materials. The inner structure of the materials undergoes detrimental changes without showing any visible signs.

- Consult your specialist dealer about the wearing parts of your bicycle.
- Regularly check the condition of all wearing parts.
- Maintain the wearing parts on a regular basis.

4.6 Carbon components



WARNING

Invisible cracks and distortion of carbon components.

Risk of accident and injury!

- Always get carbon components checked over by a specialist dealer after falls, overloading and heavy impacts.



NOTICE

Increased wear and tear caused by incorrect care and maintenance of carbon components.

Risk of damage!

- Do not allow carbon components to come into contact with grease and oil.

4.7 Protection against theft

- Protect your bicycle against theft.
- For models with a frame lock: If you are not able to keep watch over your bicycle, lock it up using the frame lock.

Note: For effective protection against theft, use a chain lock or steel cable lock and attach the bicycle to a fixed object, e.g. to a bicycle stand.

The frame lock does not provide sufficient protection against theft.

4.8 Permissible total weight

Permissible total weight:

– Child's bike rim size 20 inches:	45 kg
– Child's bike rim size 24 inches:	60 kg
– Child's bike rim size 26 inches:	80 kg
– Rim size 26 inches:	130 kg
– Rim size 27.5 inches:	130 kg
– Rim size 28 inches:	130 kg
– Rim size 29 inches:	130 kg

Possible deviations from the permissible total weight (see Chapter "Bicycle passport" on page 93).

- If you own an e-bike, read the separate user manual on its drive system to learn the permissible total weight.

4.8.1 Determining unladen weight

- Determine the unladen weight of your bicycle by weighing it, with all optional extra equipment attached as appropriate.

Note: For the best results, the weight should be determined using a hanging scale. If necessary, ask your specialist dealer to determine the unladen weight of your bicycle.

4.8.2 Calculating the total weight

The actual total weight is calculated as follows:

Bicycle + rider (incl. rucksack) + baggage = total weight

Baggage includes panniers and baskets.

4.9 Transport



NOTICE

Incorrect use of bike racks.

Risk of damage!

- Only use approved bicycle racks with which the bicycle can be transported in an upright position.
- Find out how to use a bicycle rack, e.g. by consulting your specialist dealer.
- Secure the bicycle properly to prevent it from slipping and falling off.

Depending on the bicycle model, a transport restraint for the disc brakes is included in the bicycle's packaging.

- Ask your specialist dealer to explain how to use the transport restraint.
- Use the transport restraint when transporting the bicycle.
- Transport the bicycle in an upright position.

4.10 Before you start riding



WARNING

Unexpected bicycle handling.

Risk of accident and injury!

- Practice using the brakes and changing gears in a location that is free of traffic.
 - Enter road traffic only if you know how the bicycle normally handles and you know how to operate it.
-



WARNING

After cycling the first kilometres, cables and spokes may elongate and screwed connections may loosen. The components of the bicycle may malfunction, e.g. in the form of brake failure.

Risk of accident and injury!

- Make sure that a bicycle inspection is carried out by a specialist dealer after the first 200 km.
-



WARNING

Material failure caused by use-related wear and loose screw connections.

Risk of accident and injury!

- Check your bicycle before each ride, following the inspection instructions.
 - If in any doubt, ask your specialist dealer to show you how to check your bicycle.
 - Only use the bicycle if no damage is visible.
 - Only use the bicycle, if you cannot see any signs of excessive wear and cannot find any loose screw connections.
-

Your bicycle has been fully assembled and adjusted by your specialist dealer; it is now ready to ride.

Ensure that you are well acquainted with your bicycle before your first ride.

- Hold on to both handlebar grips firmly with both hands while riding.
- Do not ride one-handed; the handlebars can turn while braking.
- If you have hydraulic brakes, apply both brake levers multiple times to centre the brake pads in the brake calliper.
- Accustom yourself to the way the bicycle rides away from road traffic.

Basic information

- If you find that the location of the brake lever for the front wheel or rear wheel brake is unfamiliar to you, you can ask your specialist dealer to reposition them for you.
- Ride in an off-road location and at a low speed in order to familiarise yourself with the braking characteristics of your own types of brakes (see Chapter “*Brakes*” on page 25).
- Ride in an off-road location to practice using the gear shift system until you can change gears without it causing a distraction.
- For longer rides you should also check if you are in a comfortable sitting position and that you are able to safely operate all components located on the handlebars with ease while riding.

4.11 Inspection instructions

- Check the bicycle thoroughly for signs of damage and excessive wear before setting off.

Before each ride, check:

– **The brakes**

- Push the bicycle and operate one brake each – the front or rear wheel that is currently being braked should become locked.

– **The gear shift system**

- Check that the gear shift system works properly.

– **The tensioning devices**

- Check the preload tension of all tensioning devices.
- Check that all tensioning devices are positioned correctly.

– **The frame, fork and seat post**

- There should be no visible cracks, distortion or colour changes in the frame, fork and seat post.

– **The screw and plug connections**

- Visual check of the screw and plug connections.

– **The pedal drive**

- Check whether pedal drive is stable and functions correctly.

– **The lights**

- Check the headlight and taillights to ensure that they work correctly.

– **The bell**

- If you use a bell, you should hear a clear sound.

– **The handlebars and handlebar stem**

- Check the handlebars and handlebar stem to ensure that they are firmly in place.
- Visual inspection of the handlebars and handlebar stem to check for cracks, distortion or colour changes.

– **The tyres**

- Check the tyres for cracks, foreign bodies and tyre pressure.

– **The rims and spokes**

- Visual inspection of the rims.
- Check the spokes to ensure that tension is even all round.

4.12 After an accident



WARNING

After a fall or an accident, hidden damage can occur to the bicycle, e.g. hairline cracks. Carbon or aluminium components can be damaged, even if the damage is not visible.

Risk of accident and injury!

- After a fall or accident, ask your specialist dealer to conduct a thorough check for possible damage.
- Do not use the bicycle if damage to the bicycle is visible or suspected.

A fall or accident can cause damage to carbon components. Damage to carbon components is not always clearly visible. Fibres or paint may start to flake away or become damaged and component's rigidity can weaken.

- Ask your specialist dealer to replace carbon components after a fall or accident.
- After minor falls, check all components of the bicycle, e.g. if the bicycle has fallen over (see Chapter "*Inspection instructions*" on page 22).
- Consult your specialist dealer if you are in any doubt or need repair work doing.

4.13 Cleaning and servicing



CAUTION

Pinching or crushing of body parts between moving parts.

Risk of injury!

- Exercise caution when handling moving parts to ensure that you do not get your fingers trapped.
- Wear protective gloves if necessary.



NOTICE

Use of incorrect cleaning agents.

Risk of damage!

- Do not use any aggressive cleaning agents.
- Do not use any sharp, angular or metallic cleaning utensils.
- Never use a hard water jet or high pressure device to clean the bicycle.



NOTICE

Dripping oil or grease.

Environmental hazard!

- Take care to ensure that no oil or grease drips down.
- Wipe up spilled oil or grease with a cloth immediately.
- Spilled oil or excess grease should be disposed of in an environmentally responsible fashion, in accordance with applicable national and local regulations.

What should be used for cleaning:

- Clean cloths,
- Mild, lukewarm soapy solution,
- Soft brush or sponge,
- Cleaning and preservative agents.
- As and when required, seek advice from your specialist dealer on suitable cleaning and servicing products.
- Clean the bicycle immediately if it gets dirty e.g. after riding in the rain.
- Clean the bicycle regularly even if it is only slightly dirty.
- Wipe down all surfaces and components with a damp sponge.
- Use a mild soapy solution to dampen the sponge.
- After cleaning, wipe dry all surfaces and components.
- Maintain lacquered surfaces and metallic surfaces on the frame at least once every six months.

- If your bicycle is equipped with rim brakes, do not use maintenance products on the rims, likewise if it is fitted with disc brakes, do not use maintenance products on the brake discs.
- Read and follow the advice in the enclosed manufacturer's informational leaflets about cleaning individual components.
- If you use the bicycle in difficult conditions, shorten the cleaning and servicing intervals.

Difficult conditions include:

- Frequent use on challenging terrain.
- Use in poor weather conditions e.g.:
- In winter: particular risk of corrosion due to de-icing salt on the roads.
- In sludge or mud: increased wear due to excessive soiling of moving parts.
- In salty environments: particular risk of corrosion due to salty air.
- In livestock environments: particular risk of corrosion due to ammoniac air.

5 Brakes



WARNING

Prolonged braking distance due to reduced braking performance in wet conditions.

Risk of accident and injury!

- Adapt your speed and the manner in which you ride to the weather conditions and road surface conditions.
-



WARNING

Danger of overturning if the front brake is applied too forcefully.

Risk of accident and injury!

- When riding at high speeds, use the front brake lever very cautiously in order to avoid being thrown over the handlebars.
 - Adapt the force used to brake to suit the current riding situation, in order to avoid blocking the wheels.
 - Always brake with both brakes simultaneously so as to achieve optimum braking efficiency.
-



WARNING

Blocking the rear wheel can cause accidents.

Risk of accident and injury!

- Be very careful when using the rear brake in corners so as to avoid blocking the rear wheel.
-



WARNING

Unsuitable brake pads can lead to a reduced or excessively strong braking performance or could cause the brakes to fail.

Risk of accident and injury!

- Always replace the brake components with original spare parts; this is the only way to ensure the correct functioning of the brakes.
 - If you do not have the necessary expertise and the required tools to replace the brake pads, you should consult your specialist dealer.
-



WARNING

Potential loss of eyesight if brake fluid comes in contact with eyes.

Risk of accident and injury!

- Protect yourself from the risk of brake fluid coming into contact with your eyes.
 - If you do get brake fluid in your eyes, immediately rinse the eyes with plenty of clean water and consult a doctor immediately.
-



WARNING

Risk of injury in the event of skin contact with brake fluid.

Risk of chemical burns and poisoning!

- Avoid any contact with the brake fluid.
 - In the event of contact with brake fluid, immediately rinse the affected areas with plenty of clean water and consult a doctor immediately.
-



WARNING

Bent or leaking brake cables and open connections can cause hydraulic brakes to fail.

Risk of accident and injury!

- Do not use the bicycle if you notice damage or leakages on the hydraulic cables or connections.
 - Ask your specialist dealer to repair the brakes.
-

The brakes are a technical mechanism to slow the bicycle down. The collective group of the individual parts is referred to as the brake system.

Your bike is fitted with at least two independent brakes on the front and rear wheel.

Depending on the bicycle model, the following types of brakes have been installed:

- Coaster brakes
- Rim brakes
- Disc brakes (hydraulic and mechanical)
- Drum brakes
- Use Fig. “*Brake types*” and “*Brake types 1*” to determine which type of brakes your bicycle is fitted with (see Chapter “*Bicycle passport*” on page 93).
- To ensure a short braking distance, you should brake using both brakes at the same time.

5.1 Checking the condition of the brakes

Follow all the instructions listed below for the front and rear brakes.

1. Check that all the screws in the brake system are secure.
2. Check whether the brake lever is torque-proof on the handlebar.
 - If you find loose screw connections, ask your specialist dealer to tighten them, taking the correct torque into consideration.
3. Check that there is still at least 1 cm of clearance between the brake lever and the grip even when the brake lever is fully deployed.
 - If the clearance is less than 1 cm, you should ask your specialist dealer to adjust the brake system.
4. Check the brake pads for wear and tear.
 - If in any doubt, ask your specialist dealer to show you how to assess signs of wear.
5. Check that the brake disc sits on the wheel without any play by gently moving it backwards and forwards.
6. Check that the bicycle wheels come to a complete stop when brakes are applied.
 - If you notice that the brakes are not fully effective, you should ask your specialist dealer to adjust the brake system.

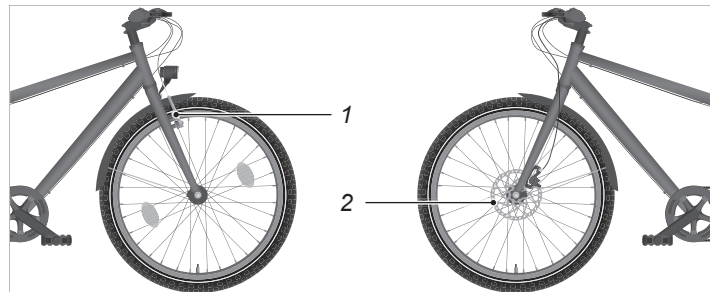


Fig. Brake types

1 Rim brakes

2 Disc brakes

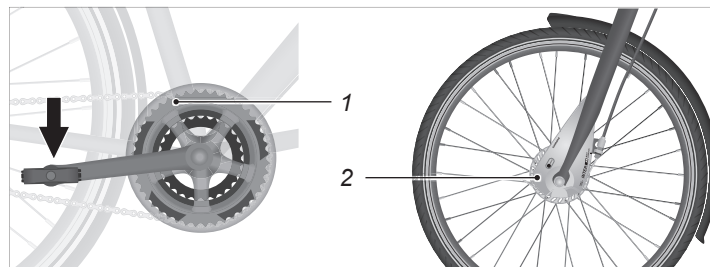


Fig. Brake types 1

1 Coaster brakes

2 Drum brakes

5.2 Brake lever configuration

In the basic configuration, the brake levers are arranged as follows (see Fig. “One brake lever” and “Two brake levers”).

- Familiarise yourself with the configuration of the brake levers before you start riding. Consult your specialist dealer if you wish to change the brake lever configuration.

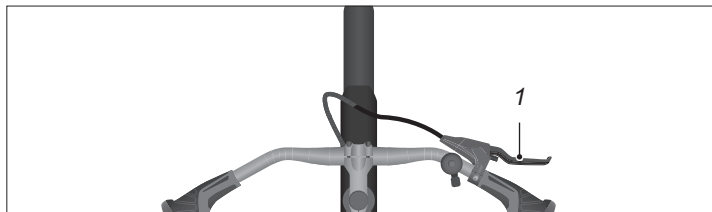


Fig. A brake lever (example)

1 Brake lever for the front brake

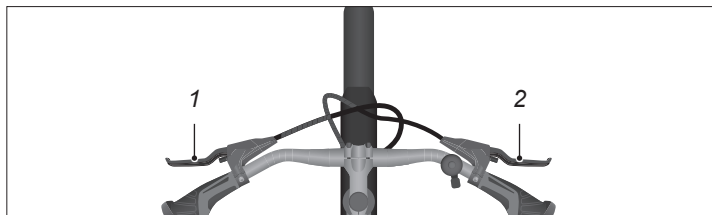


Fig. Two brake levers (example)

1 Brake lever for the front brake

2 Brake lever for the rear brake

5.3 Parking brake

A parking brake is a device that allows you to park your bicycle and prevent it from unintentionally rolling away.

Some brake levers come equipped with an adjustment function; there are various models.

- Check whether your brake lever has a parking function.
 - To engage the brake, pull the brake lever towards the handlebar and push the parking slider towards the brake lever.
 - To release the brake, pull the brake lever towards the handlebar and push the parking slider towards the front wheel.

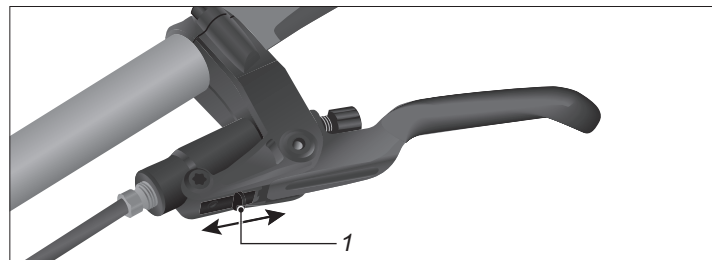


Fig. Parking brake (example)

1 Parking slider

5.4 Rim brakes



WARNING

Rim breakage as a result of wear and tear.

Risk of accident and injury!

- Ask your specialist dealer to inspect the rims at least once a year or after riding 1000 km.

When the brake lever on a mechanical rim brake is activated, the brake cable pulls the brake arms together, which presses the brake pads against the rim (see Fig. “Mechanical rim brakes”).

When the brake lever is operated on a hydraulic rim brake, the brake pistons within the brake unit are pushed outwards by oil pressure. The brake pads are thus pressed against the rim (see Fig. “Hydraulic rim brake”).

5.4.1 Basic information

Using rim brakes causes wear and tear to the brake pads and the rims.

The cable can also become worn in rim brakes operated by cable. In the case of hydraulic rim brakes, the brake fluid can also become damaged through use.

Please follow the instructions listed below for the front and rear brakes.

- Remove dirt from the components of the rim brakes and the rims immediately with a slightly dampened cloth.
- Check that all the screws in the brake system are secure.
- Check whether the brake lever is torque-proof on the handlebar.

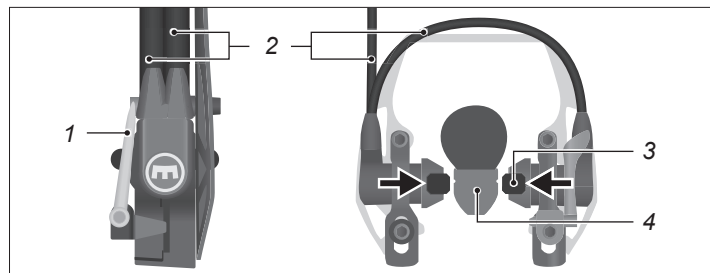


Fig. Hydraulic rim brake

- | | |
|-------------------|-------------|
| 1 Fastening lever | 3 Brake pad |
| 2 Hydraulic lines | 4 Rim |

- If you find loose screw connections, ask your specialist dealer to tighten them, taking the correct torque into consideration.
- Pull on the brake lever several times and check that the brake cable does not catch anywhere, that no scratching sounds can be heard and that no brake fluid leaks from the cables, connections or brake pads.
- Check for damage to the brake cable casing or torn wires (visual check).
 - If you notice damage to the brake cables or if you notice that brake fluid is leaking, do not use the bicycle.

Brakes

- Press the brake lever all the way down and check whether the gap remaining between the brake lever and grip is at least 1 cm.
 - If the clearance is less than 1 cm, you should ask your specialist dealer to adjust the rim brake.
- Check to ensure that the wheels come to a complete stop when the rim brakes are applied.
 - If you notice that the brakes are not fully effective, you should ask your specialist dealer to adjust the brake system.
- Check for unusual noises when operating the rim brake.
 - If you hear unusual noises, you should ask your specialist dealer to inspect the brake system.

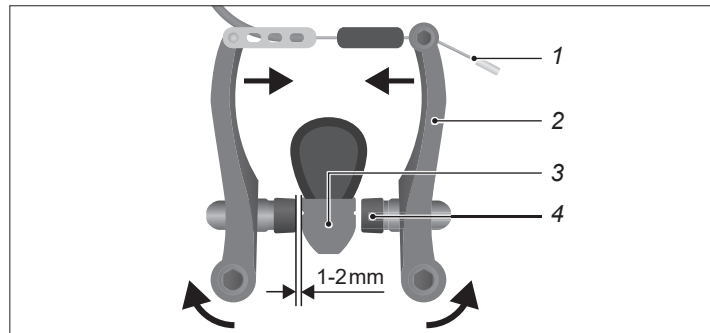


Fig. Mechanical rim brakes

1 Brake cable

2 Brake arm

3 Rim

4 Brake pad

5.4.1.1 Rim brakes with quick-release mechanism



WARNING

The rim brakes will not work if the quick-release mechanism is open.

Risk of accident and injury!

- Before each ride, you should make sure that the quick-release mechanism is properly fastened.

The rim brakes are fitted with a lever-operated quick-release mechanism so that the wheels can quickly be mounted or dismounted.

Brakes

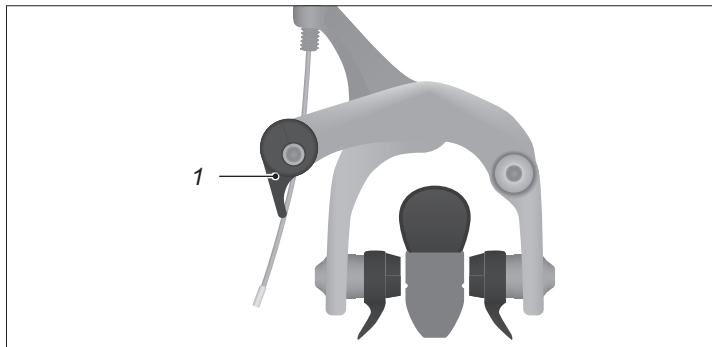


Fig. Rim brakes

1 Quick-release mechanism

Checking the condition of the brake pads

- Check whether the wear limit of the brake pads has been reached.
 - If in doubt, ask your specialist dealer to check the wear limit of the brake pads.



Fig. Brake pad

1 Wear limit

The brake pads must be changed before they have been worn down to their wear limit.

Ask your specialist dealer to replace your brake pads and then re-adjust the brake system.

Note: Not all brake pads have grooves as a wear limit indicator. Ask your specialist dealer to explain the wear limits to you.

- Check that there is still at least 1 cm of clearance between the brake lever and the grip even when the brake lever is fully deployed.
 - If the clearance is less than 1 cm, you should ask your specialist dealer to adjust the brake system.
- Check whether the brake shoes are wearing equally/wearing down on both sides (visual inspection).
 - If the brake pads are wearing diagonally or unevenly, you should have the brake system inspected by your specialist dealer.
- Check the brake pads for damage and heavy soiling (visual check).
 - Clean the brake pads if they are heavily soiled.
 - If the brake pads are damaged, you should get them replaced by your specialist dealer.
- Check that the brake pads are positioned to rub in the centre of the rim's flank.
 - The brake shoes should be positioned so that they follow the curve of the rim as closely as possible.
- Take hold of the brake shoes and check if they can be turned.
 - If you can turn the brake shoes, have them adjusted by your specialist dealer.

Brakes

- Check to see if the brake shoes move backwards and forwards in the direction of the rims in an even and symmetrical manner when you pull and release the brake lever (visual inspection).
 - If the brake shoes move in an uneven fashion, have the brake system checked by your specialist dealer.

5.4.2 Operation

When an even braking power is exerted, the rear wheel will lock more readily than the front wheel.

Depending on the bicycle model, your bicycle may be fitted with different types of brakes on the front and rear wheels.

- To operate the brakes, pull the brake lever towards the handlebars using your fingers (see Chapter “Brakes” on page 25).
- Regulate the brake action using the force you apply when pulling the brake lever.

To release the brakes, let go of the brake lever.

To ensure a short braking distance, you should brake evenly, using both brakes at the same time, or with hand brake or coaster brakes where applicable.

5.4.3 Settings



WARNING

Loss of braking power due to incorrectly adjusted brakes.

Risk of accident and injury!

- Adjustments to the brake system should only be carried out by your specialist dealer.

Specialist expertise are required to correctly adjust the brake system. If you do not have the necessary expertise and the required tools, you should consult your specialist dealer.

5.4.3.1 Gripping distance

Adjusting the gripping distance on mechanical brakes brings the brake lever closer to the grip.

- Adjust the brake lever in such a way that you can operate it safely during the journey without taking your hand off the handlebars.

Note: Adjusting the gripping distance also adjusts the tension of the brake cable.

1. Screw in the adjusting screw until you are able to operate the brake lever safely (see Fig. “Adjusting the brake lever”).

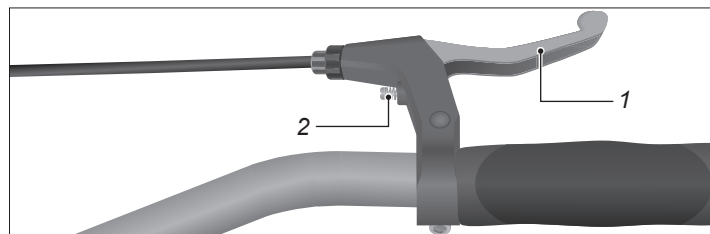


Fig. Adjusting the brake lever

1 Brake lever

2 Adjustment screw

Brakes

Note: Depending on the bicycle model, the adjusting screw is either a cross-recess or hexagon socket screw.

2. Adjust the tension of the brake cable.

5.4.3.2 Brake cable

Note: If the clearance of the brake shoe to the left and right of the rim differs by more than 1 mm, a full adjustment of the brake system must be carried out by your specialist dealer before adjusting the brake cable.

1. Unscrew the lock nut one or two revolutions in an anti-clockwise direction (see Fig. "Adjusting the brake cable").
2. Screw the knurled nut clockwise or anti-clockwise until the distance between the brake pads and the rim is 1 to 2 mm on both sides (see Fig. "Mechanical rim brake").
 - During this process, grip the brake cable in front of the knurled nut and pull lightly on it to make the knurled nut turn with greater ease.

3. Unscrew the knurled nut for a maximum of 5 revolutions.
 - If you are not able to adjust the brake shoes in this way, ask your specialist dealer to inspect the brake system.
4. Check whether you can only pull the brake lever towards the grip handle in such a way that the clearance between the brake lever and the grip handle is at least 1 cm.
5. Turn the counternut in a clockwise direction and tighten it carefully.

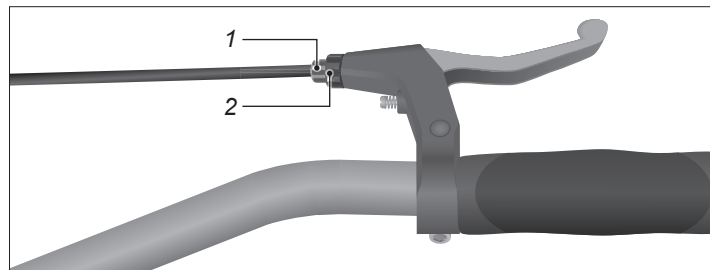


Fig. Adjusting the brake cable

1 Knurled nut

2 Counternut

5.5 Disc brakes



CAUTION

Burns from contact with hot disc brakes.

Skin burns!

- Wait until the brake discs have cooled down before you touch the brake discs.



NOTICE

Vitrification of the brake pads caused by long-lasting stress.

Risk of damage!

- If it is not dangerous to do so, brake intermittently but with greater force on long descents.



NOTICE

Damage to the brakes caused by dismantling the front or rear wheel.

Risk of damage!

- If you do not have the necessary expertise and the required tools, you should ask your specialist dealer to mount or dismount the front or rear wheel for you.



NOTICE

Full application of the brakes with new brake pads can cause the brake pads to vitrify.

Risk of damage!

- Break in new discs away from road traffic.

5.5.1 Basic information

When the brake lever is operated, the brake pistons within the brake callipers are pushed outwards. The brake pads are pushed against the brake discs by the brake pistons.

- Check the disc brakes regularly for signs of wear and proper functioning.
- Remove dirt from the brake components and the brake discs immediately with a slightly dampened cloth.
- If you have disc brakes, clean the brake discs regularly with brake cleaning fluid or warm water.

Using disc brakes causes wear and tear to the brake pads and the brake discs.

The cable can also become worn in disc brakes operated by a brake cable.

In the case of hydraulic disc brakes, the brake fluid can also become damaged through use.

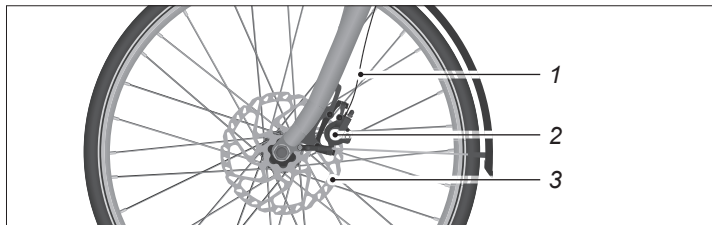


Fig. Hydraulic disc brake

1 Hydraulic lines

3 Brake disc

2 Brake calliper

Ask your specialist dealer for an inspection aid to help check for signs of wear and tear in the brake pads. Depending on your type of brakes, this may be the transport safety device, for example.

- Follow all the instructions listed below for the front and rear brakes.
- 1. Verify that the brake pads move backwards and forwards in an even and symmetrical manner towards the brake disc when you pull and release the brake lever.
 - If you can move the brake disc or if the brake pads move in an uneven fashion, have the brakes checked by your specialist dealer.
- 2. Pull the brake lever and check whether any brake fluid is coming out from the lines, connections or onto the brake pads.
 - If brake fluid is leaking out, do not use the bicycle.
 - Ask your specialist dealer to repair the brakes.

If the disc brakes are new or if the brake pads or the brake discs have been replaced, the disc brakes will need to be broken in (see Chapter “*Braking with disc brakes*” on page 38).

5.5.2 Operation

When an even braking power is exerted, the rear wheel will lock more readily than the front wheel.

Depending on the bicycle model, your bicycle may be fitted with different types of brakes on the front and rear wheels.

- To operate the brakes, pull the brake lever towards the handlebars using your fingers (see Chapter “*Brakes*” on page 25).
- Regulate the brake action using the force you apply when pulling the brake lever.

To release the brakes, let go of the brake lever.

To ensure a short braking distance, you should brake using both brakes at the same time.

5.5.3 Settings



WARNING

Reduced braking power or braking failure due to incorrectly adjusted brakes.

Risk of accident and injury!

- Adjustments to the brakes should only be carried out by your specialist dealer.
- If necessary, you can ask your specialist dealer to show you how to adjust your brakes.

5.5.3.1 Gripping distance

- If you do not have any experience in adjusting hydraulic brakes, have your specialist dealer adjust the gripping distance.
- Adjust the brake lever in such a way that you can operate it safely during the journey without taking your hand off the handlebars.
- To reduce the clearance between the brake lever and the grip, turn the adjusting screw for the gripping distance anti-clockwise (see Fig. “*Brake lever of the hydraulic brake*”).
- To reduce the clearance between the brake lever and the grip, rotate the adjusting screw for the gripping distance anti-clockwise.

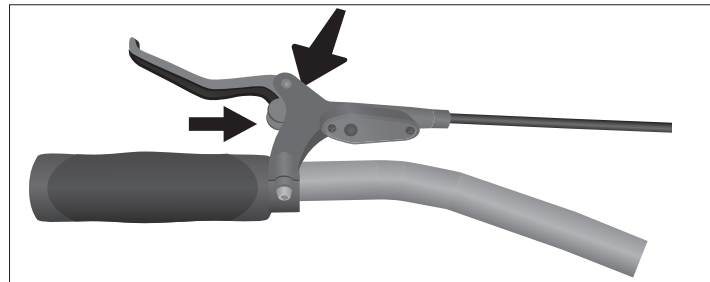


Fig. Brake lever of the hydraulic brake

Possible positions of the adjustment screw on the brake lever of a hydraulic brake

5.5.3.2 Replacing the brake pads



WARNING

Incorrect or improperly installed brake pads can lead to malfunctions, e.g. brake failure.

Risk of accident and injury!

- Only use original brake pads for hydraulic disc brakes.
- Seek professional advice when purchasing brake pads.
- If you are unable to replace the brake pads correctly, you can ask your specialist dealer to replace the brake pads.
- Make sure that you follow the brake pad manufacturer's operating instructions when replacing the brake pads.

Brakes

1. Dismantle the wheel to gain access to the brake calliper.
2. Use a flat tool to push the brake pistons back into the starting position in the brake calliper. Take care not to damage the brake pistons or the brake discs when doing so.
3. Use a pair of pointed pliers to bend the inner end of the cotter pin until straight and pull the cotter pin out of the brake calliper or completely unscrew the brake pad retaining screw.
4. Pull the old brake pads backwards out of the brake calliper.
5. To ensure optimum functioning, clean the brake pistons of any dirt or wear debris from the brake pads using a mild soapy solution and a clean cloth.
6. Assemble the new, original brake pads and the brake pad springs. Make sure to use the correct sides: All parts are labelled with "Right" or "Left".
7. Squeeze the two brake pads together with your thumb and forefinger and insert them the right way around into the brake calliper from behind.
8. Push the cotter pin back into the brake calliper. Make sure that you bend the cotter pin back into shape from the inside, or screw the brake pad retaining screw back in.
9. Reassemble the wheel that you previously removed.
10. Check the new brake pads (see Chapter "*Braking with disc brakes*" on page 38).
11. Check the brake action by pulling on the brake lever.
12. Adjust the brake system if braking action is insufficient.

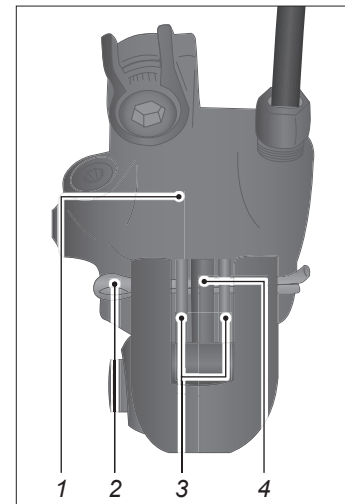


Fig. Brake calliper

- 1 Brake calliper
- 2 Cotter pin
- 3 Brake pad
- 4 Safety spring

5.5.3.3 Braking with disc brakes

If the disc brakes are new or if the brake pads or the brake discs have been replaced, the disc brakes will need to be broken in.

- Practise using the disc brakes before using them in road traffic.
 - To do so, follow the manufacturer's information or ask your specialist dealer for advice.
 - When braking, always remain in the saddle for safety reasons.
 - Never brake completely to a stop.
1. Accelerate the bicycle up to around 15 km/h.
 2. Brake sharply and evenly until you slow down to a walking speed. The wheels must not jam.
 3. Repeat this process 20 times for the rear wheel brake and 20 times for the front wheel brake. You will notice that the brakes become gradually more powerful.
 4. Accelerate the bicycle to a greater speed (around 20 to 25 km/h).
 5. Brake sharply and evenly until you slow down to a walking speed. The wheels must not jam.
 6. Repeat this process 10 times for the rear wheel brake and 10 times for the front wheel brake.
 7. Allow the brake discs and brake pads to cool off before your first trip.
 - If the disc brakes do not operate efficiently after being broken in or if you hear unusual noises when braking, you should have your disc brakes checked by your specialist dealer.

After breaking in the disc brakes, check the gripping distance and adjust it if necessary.

Adjust the brake lever in such a way that you can operate it safely during the journey without taking your hand off the handlebars (see Chapter *"Settings" on page 36*).

5.5.3.4 Retaining braking force

Reduced braking performance due to overheating of the brake system in disc brakes is known as "fading". As the temperature at the contact point between the brake pads and the disc increases, e.g. due to continuous braking, the braking force decreases.

- Avoid braking continuously for prolonged periods.
- Let the brake pads cool down regularly.
- Do not use the bicycle if there is a reduction in braking force due to overheating.
- Only use the bicycle again when full braking force has been restored.

5.6 Coaster brake



WARNING

The coaster brakes will not work if the chain has come off the chainring.

Risk of accident and injury!

- If the coaster brakes are ineffective, brake carefully using the brake lever for the front wheel and, if available, with the brake lever for the rear wheel.

Bikes with an internal gear hub or without any gear shift system are often fitted with a coaster brake. This is integrated in the rear wheel hub of the bicycle and is operated using the pedals.

If you can turn the pedal drive backwards freely then your bicycle is not equipped with a coaster brake.

5.6.1 Basic information

When the coaster brake is operated, a metallic ring inside the rear wheel hub is pressed against the outer hub shell, causing the wheel to slow down. Due to the bicycle's construction design, wear and tear only occurs after a long period of use.

Regularly check that the coaster brake works.

1. Take hold of the brake arm and check that it sits securely on the rear frame chain stay.
 - If the screw on the brake arm is loose, tighten it in a clockwise direction while still taking the torques into consideration.
 - Carefully tighten the screw.
2. Check for unusual noises when operating the coaster brake.
 - If you do hear unusual noises, you should ask your specialist dealer to inspect the coaster brake system.

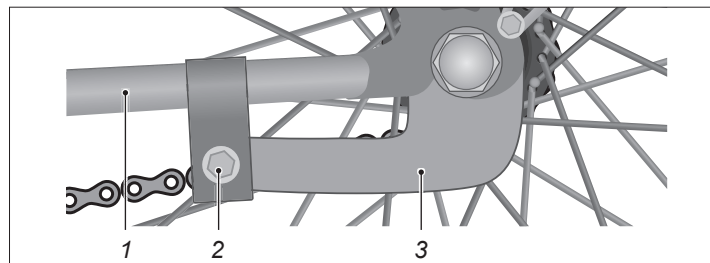


Fig.: Brake arm

1 Rear frame chain stay

3 Brake arm

2 Screw

5.6.2 Operation

- Pedal backwards to operate the braking system (see Fig. "Coaster brake").
- Regulate the braking power by adjusting the force you apply when pedalling against the resistance.
- Pedal forwards to release the coaster brake.

To ensure a short braking distance, you should brake evenly with both the hand brake and the coaster brake.

5.6.3 Settings



WARNING

Loss of braking power due to incorrectly adjusted brakes.

Risk of accident and injury!

- Adjustments to the coaster brake system should only be carried out by your specialist dealer.
- If necessary, you can ask your specialist dealer to show you how to adjust your coaster brakes.

Specialist expertise is required to correctly adjust the brakes.

If you do not have the necessary expertise and the required tools, you should consult your specialist dealer.

If you have a freewheel hub and the brakes need to be rotated more than $\frac{1}{6}$ of a revolution in a backwards direction in order to operate the brakes, then you should ask your specialist dealer to adjust the coaster brake.

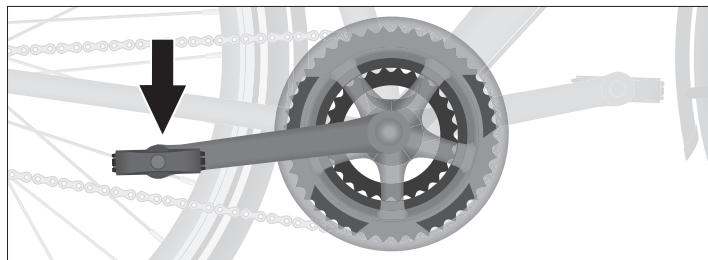


Fig.: Coaster brakes

6 Lights

6.1 Basic information



WARNING

Poor visibility to other road users.

Risk of accident and injury!

- Switch the light on in poor visibility conditions or darkness.

For riding in road traffic, bicycles must be equipped with headlights, rear lights, reflectors on the pedals, side reflectors for wheels and reflective strips, a white reflector at the front and a red reflector at the back (see Fig. “*Lighting equipment*”). The light components must correspond to the requirements of your respective country.

The front and rear lights in all models have been officially approved for road usage and come with long-lasting, energy-saving LEDs. The lamps cannot be replaced.

- If the lights are faulty, you should get them replaced by your specialist dealer.



Fig.: Road Traffic Licensing Regulation stickers (example)

The light fittings that are included with your bicycle upon delivery do not comply with the current German Road Traffic Licensing Regulation (see Fig. “*Road Traffic Licensing Regulation stickers*”). It is not permitted to use these models in road traffic due to their insufficient lighting equipment.

Lights



Fig.: Lighting equipment (example)

- 1 Headlight with reflector (white)
- 2 Reflective strips (white)
- 3 Reflectors on the pedal (yellow)
- 4 Side reflectors (yellow)
- 5 Rear light with reflector (red)

Note: In many countries, the light fittings required by law for road traffic use must also be fitted during the day and must be ready for use at all times.

Mounting points for lighting equipment

Depending on the bicycle model, the headlight is installed either on the head tube, above the mudguard or on the fork. The rear light is switched on together with the headlight in all bicycle models. Depending on the bicycle model, the rear light is either fitted beneath the pannier rack or on the mudguard (see Fig. "Mounting points for lighting equipment").



Fig.: Mounting points for lighting equipment

- | | |
|---------------------|--------------------------|
| 1 On the head tube | 4 On the seat stay |
| 2 Over the mudguard | 5 On the mudguard |
| 3 On the fork | 6 Under the baggage rack |

6.2 Operation



WARNING

Not paying enough attention to the road traffic when turning on the lights.

Risk of accident and injury!

- Operate the lights only when you have come to a complete stop.



WARNING

If you ride in low visibility without lights, you may not be visible to other road users.

Risk of accident and injury!

- Turn on lights in low visibility, e.g. when dusk is falling.
- Find out which type of dynamo your bicycle is fitted with (see Fig. “Types of dynamo”).

6.2.1 Sidewall dynamo

The sidewall dynamo is mounted on the left side of the fork or on the rear seat stays and is switched on when it is needed. Its performance may be impaired when riding in snowy weather or when temperatures are below 0°C.

1. If the dynamo is switched on, but not powered by the wheel's rotation, you should stop riding.
 2. Make sure you remove snow and ice from your tyres and from the sidewall dynamo.
- To switch the lights on, press down on the sidewall dynamo from above (see Fig. “On/off switch”).
 - To switch the lights off, swivel the sidewall dynamo away from the tyre.

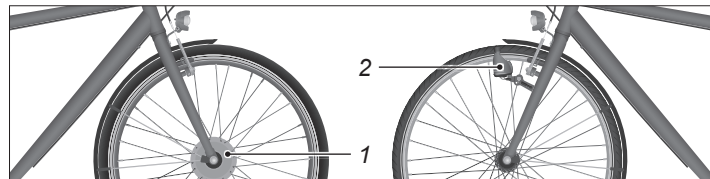


Fig.: Types of dynamo

1 Hub dynamo

2 Sidewall dynamo

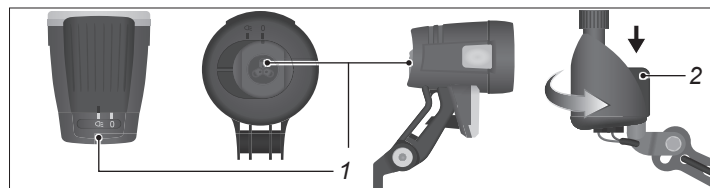


Fig.: On/off switch (example)

1 Headlight on/off switch

2 Sidewall dynamo on/off switch

6.2.2 Hub dynamo

The hub dynamo is positioned inside the front wheel hub and provides the lights with power as soon as the front wheel rotates. The hub dynamo does not require maintenance and operates without restrictions, even in snowy weather.

- To switch on the lights, set the on/off switch on the back of the headlight to the “ON”, “1” or “ ” position (see Fig. “On/off switch”).

Lights

- To switch the light off, set the on/off switch to the “OFF” or “0” position.

6.3 Settings



CAUTION

Dazzling of oncoming traffic due to incorrect adjustment of headlight height.

Risk of accident!

- Make sure to regularly check that the headlight is properly set to the correct height.

6.3.1 Vertical mounting

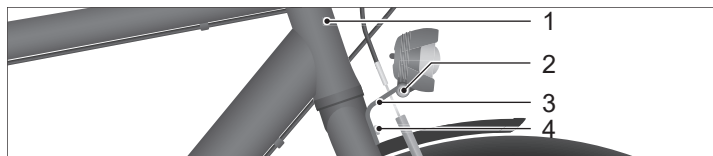


Fig.: Adjusting screws

- | | |
|-------------|-----------|
| 1 Head tube | 3 Bracket |
| 2 Screw 2 | 4 Screw 1 |

1. Check whether the bracket is vertically aligned with the head tube when looking at it from the front.
2. To adjust the bracket, unscrew screw 1 anti-clockwise until the bracket is loose enough to be turned (see Fig. “Adjusting screws”).

3. Turn the bracket so it is vertically aligned with the head tube when viewed from the front.
4. Carefully tighten Screw 1 clockwise.

6.3.2 Horizontal setting

1. Check to ensure that the headlight is correctly vertically aligned.
2. Loosen Screw 2 anti-clockwise until it is loose enough to tip the headlight forwards and backwards with only slight resistance.
3. Switch the headlight on.
4. Adjust the headlight in such a way that the beam of light is only half as high 5 m away as at its point of origin (see Fig. “Headlight range”).
5. Carefully tighten Screw 2 clockwise.

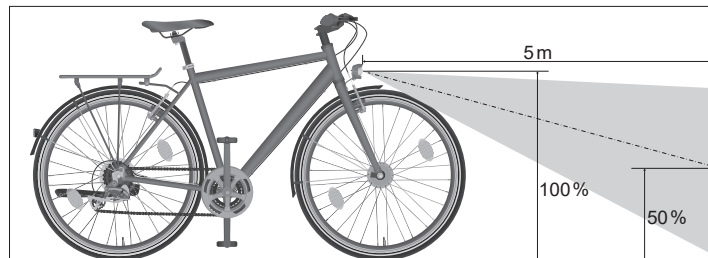


Fig.: Headlight range

7 Gear shift system

A bicycle's gear shift system comprises a shiftable gearing mechanism and the corresponding operating elements. This system allows the power generated by the rider to be better adapted to the riding speed and route conditions.

Depending on the bicycle model, your bike will be fitted with an automatic, hub-based, chain or hybrid gear shifting system.

- Find out which gear shift system your bicycle is fitted with (see Chapter *"Bicycle passport"* on page 93).
- Read all chapters relating to your gear shift system.
- If you own an e-bike, you should also read the separate user manual for your e-bike.

With regular care and maintenance and an average amount of use, the gear shift system will only suffer minimal amounts of wear and tear. The gear cables can become stretched through use.

In order to avoid premature wear and tear:

- Pedal slowly and without applying force when changing gears.
 - Shift down the gears in a timely fashion before ascents and choose a low gear.
1. Check to ensure that all components of the gear shift system are free of damage.
 - If you notice damage to the components, consult your specialist dealer.
 2. Check for damage to the casing of the gear shift cables or torn filaments (visual check).
 3. Hang your bicycle from its frame.

4. Turn the pedal crank.
5. Shift through all the gears.
6. Check to see if all gears shift into place correctly and that no unusual sounds can be heard when doing so.
7. Check to see whether the gear shift cable catches anywhere when shifting and whether any scratching sounds are produced.
 - If you hear unusual sounds or if the gears do not shift correctly, ask your specialist dealer to inspect the gear shift system.

7.1 Deraileur gears

7.1.1 Basic information

The deraileur gears consist of 1 to 3 chainrings on the pedal crank and 7 to 11 sprockets on the rear wheel (see Fig. “*Deraileur gears*”). The chain can be shifted to different chainrings and sprockets using separate control units on the left and right side of the handlebar.

- Pedal slowly and without applying force when changing gears.

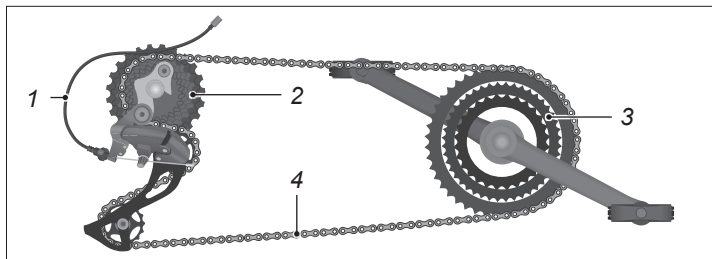


Fig.: Deraileur gears

- | | |
|-------------------------------|---------------------------------|
| 1 Gear shift cable | 3 Chainrings on the pedal crank |
| 2 Sprockets on the rear wheel | 4 Chain |

The theoretical number of gears is derived from the product of the sum “chainrings × sprockets”.

The smaller the sprocket, the higher the selected gear. In a higher gear you will have a lower pedal frequency.

The larger the sprocket, the lower the selected gear. In a low gear you will have a higher pedal frequency.

Note: The chain rings are not selected as gears, but are selected depending on the road.

The smaller the chainring, the higher the pedalling frequency.

The larger the chainring, the lower the pedalling frequency.

- Use the small chain ring for ascents.
- Use the large chainring for sport riding.
- Use a damp cloth to clean the operating parts for the deraileur gears.
- On bikes with deraileur gears, you should clean all moving components with a damp cloth or a soft brush, insofar as they are easily accessible (see Fig. “*Rear deraileur*”).
- After cleaning, you should lubricate all moving parts of the deraileur gears system with a small amount of lubricant, e.g. universal oil.
 - Afterwards, wipe up any excess lubricant with a clean cloth.
- Check to ensure that all components of the deraileur gears are free from damage and that the rear deraileur is not bent sideways.
 - If you notice damage to any of the components or the rear deraileur is bent to the side, you should ask your specialist dealer to inspect the deraileur gears.
- Check that there is sufficient clearance between the rear deraileur or chain and the wheel spokes.
 - If there is no clearance or if the chain is grinding against the spokes, you should ask your specialist dealer to inspect the deraileur gears.

Gear shift system

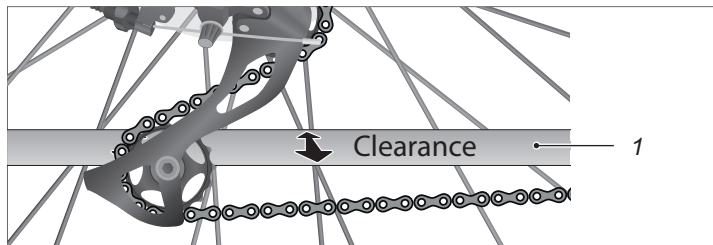


Fig.: Distance between the rear derailleur and spokes

1 Clearance

7.1.1.1 Gear combinations

! NOTICE

The use of incorrect gear combinations can damage the gear shift system.

Risk of damage!

- Do not combine the small chainring with the smallest rear sprocket or the large chainring with the largest rear sprocket.

Only certain gear combinations or gears are deemed appropriate for correct usage of the bicycle (see Fig. "Appropriate gear combinations").

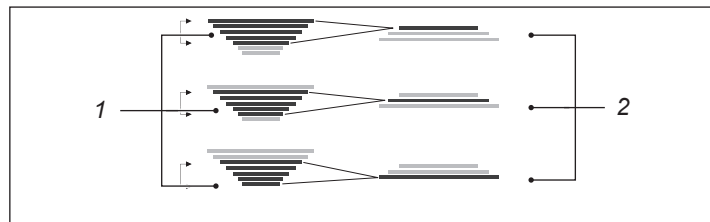


Fig.: Appropriate gear combinations

1 Sprockets on the rear wheel 2 Chainrings on the pedal crank

Incorrect gear combinations cause the chain to skew, leading to increased wear to chain rings, sprockets and the chain

- Use the gear combinations in such a way that the chain remains parallel to the direction you are riding in as far as possible.
- If you are at all unsure, ask your specialist dealer to show you how to use the derailleur gears.

7.1.1.2 Checking the chain tension

For bicycles with derailleur gears, the chain is tensioned by the chain guide with the guide rollers in the rear derailleur.

1. Check to see if the chain is starting to sag (visual check).
2. Gently push the chain guide towards the front and then check to see if it falls back into position by itself.
 - If the chain is sagging or if the chain guide does not reposition itself, you should ask your specialist dealer to repair the rear derailleur system.

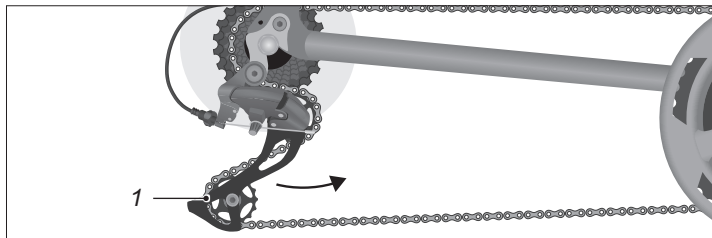


Fig.: Rear derailleur

1 Chain guide with guide rollers

7.1.2 Operation



WARNING

Not paying sufficient attention to the road traffic.

Risk of accident and injury!

- Familiarise yourself with how to use the gear shift system.
- Operate the gear shift system only if this does not distract your attention from the road traffic.



NOTICE

Damage to the gear shift system caused by improper use.

Risk of damage!

- When shifting gears, do not pedal hard.
 - When shifting gears, do not pedal backwards.
 - Shift down the gears in a timely fashion before ascents.
- If you are unsure about using the derailleur gears, ask your specialist dealer to explain how to correctly use the derailleur gears.
 - Use the gear combinations in such a way that the chain remains parallel to the direction you are riding in as far as possible.
 - Do not pedal too forcefully when changing gear.

7.1.2.1 Using the gear lever to switch sprockets

The furthest forward gear lever on the right has two levels.

- To let the gear lever which has been pressed automatically return to its original position, release the gear lever after shifting.
- In order to change down a gear on the sprocket, squeeze the gear lever that is furthest forward on the right side of the handlebars until it clicks into place once (see Fig. "Gear lever").

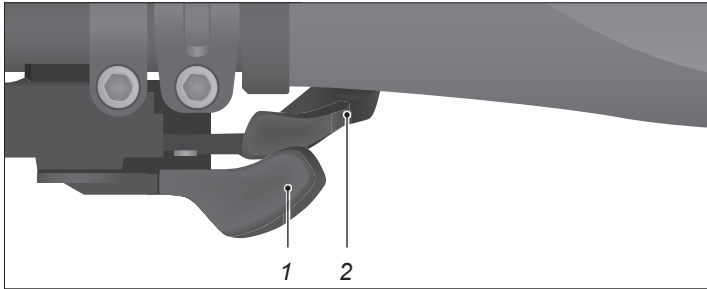


Fig.: Gear lever (example)

1 Front gear lever

2 Rear gear lever

- To change down two gears on the sprocket, press down on the front gear lever on the right side of the handlebar until it engages for the second time.
- To change up one gear on the rear sprocket, press down on the rear gear lever on the right-hand side of the handlebars.

7.1.2.2 Using the gear lever to switch the front chainrings

- To let the gear lever which has been pressed automatically return to its original position, release the gear lever after shifting.
- To move onto a larger chainring for even stretches of road, press down on the gear lever that is furthest forward on the left side of the handlebars (see Fig. “Gear lever”).
- To select a smaller chainring for ascending stretches of road, press down or pull the rear gear lever on the left-hand side of the handlebar.

7.1.2.3 Gear controls on road bike handlebars

The large gear lever on the right has two levels.

- To let the gear lever which has been pressed automatically return to its original position, release the gear lever after shifting.
- In order to change down a gear on the sprockets, press the large gear brake lever on the right-hand side of the handlebars inwards until it clicks once (see Fig. “Gear controls on road bike handlebars”).
- To change down two gears on the sprockets, press the large gear brake lever on the right-hand side of the handlebars inwards until it clicks twice.
- To change up one gear on the sprocket, press the small gear lever on the right-hand side of the handlebars inwards.

Gear shift system

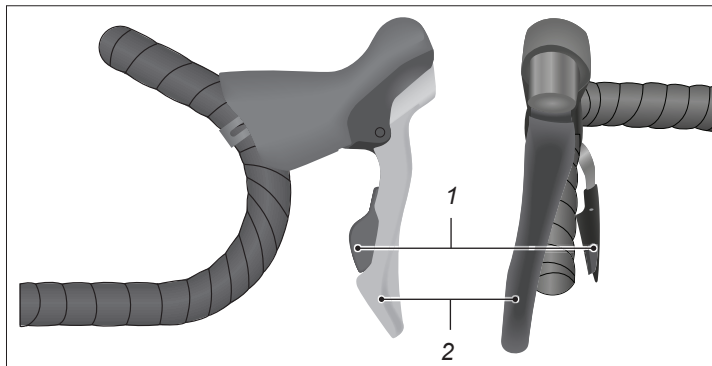


Fig.: Gear controls on road bike handlebars

1 Small gear lever 2 Large gear brake lever

- To move onto a larger chainring for even stretches of road, press the large gear brake lever on the left-hand side of the handlebars inwards.
- To move onto a smaller chainring for ascending stretches of road, press the small gear lever on the left-hand side of the handlebars inwards.

7.1.2.4 Changing gears with a twist-grip shifter

- Turn the twist grip shifter to change gears (see Fig. “Twist grip shifter for derailleur gears”).

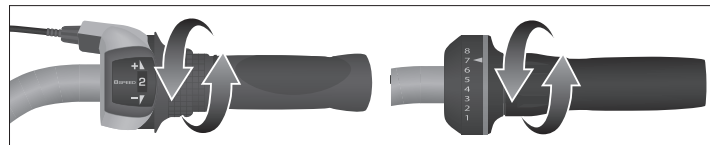


Fig.: Twist grip shifter for derailleur gears (example)

7.1.3 Settings



NOTICE

Damage to the gear shift system caused by incorrect settings.

Risk of damage!

- Consult your specialist dealer if you have questions about adjusting the gear shift system.

Specialist expertise are required to adjust the derailleur gears.

If you do not have the necessary expertise and the required tools, you should consult your specialist dealer.

If the derailleur gears begin to malfunction, adjust the tension of the gear cable.

Use the cable tensioning screw on the rear derailleur to adjust the tension on the rear derailleur; use the cable tensioning screw on the gear lever to adjust the tension on the front derailleur.

Gear shift system

- If you hear noises when shifting gears whilst riding, correct the gear cable tension using the tensioning screws on the rear derailleur or gear lever (see Fig. “*Tensioning screw*”).
 - To do this, turn the tensioning screw one half revolution.
 - If this helps reduce the noises, continue turning the tensioning screw very gradually in the same direction, until no more noises are heard while riding.
 - If this causes an increase in noises, turn the tensioning screw very gradually in the opposite direction, until no more noises are heard while riding.
 - If you continue to hear noises when shifting gears while riding, you should ask your specialist dealer to adjust your gear shift system for you.

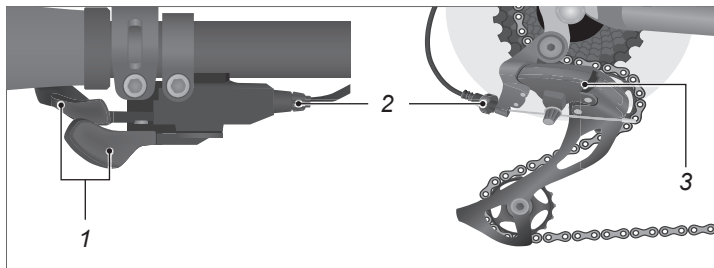


Fig.: *Tensioning screw*

1 Gear lever

3 Rear derailleur

2 Tensioning screw

7.2 Gear hub

7.2.1 Basic information

The gear hub is integrated in the rear wheel and is operated using a twist grip shifter or gear lever on the right-hand side of the handlebars.

Note: An exception to this is the two-speed automatic gear hub and the kick-shift hub. The two-speed automatic gear hub switches, depending on speed, up into second gear and/or down into first gear. With kick-shift hubs, a subtle backwards kick of the pedals allows you to change between first and second gears.

1. If your bicycle features the Alfine 11-gear hub or the Rohloff gear hub, ask your specialist retailer to change the oil once every year. For all other gear hubs, ask your specialist dealer to grease these once a year.
2. Check to ensure that all components of the gear hub system are free of damage.
 - If you notice damage to the components, consult your specialist dealer.
3. Check for damage to the gear cable casing or torn wires (visual check).
4. Hang your bicycle from its frame.
5. Turn the pedal crank.
6. Shift through all the gears.
7. Check to see if all gears shift into place correctly and that no unusual sounds can be heard when doing so.

- If the gear cables catch when shifting gears or if you hear unusual noises, you should ask your specialist dealer to inspect the gear hub.
- If you use the bicycle very often, you should perform maintenance work more frequently.
- If you use your bicycle in very dirty conditions or in an environment rich in salt, you should perform maintenance work more frequently.
- Make sure to use suitable cleaning agents in order to reduce weather-induced ageing.
- Ask your specialist dealer about suitable maintenance products for your gear hub.

7.2.2 Operation



WARNING

Not paying sufficient attention to the road traffic.

Risk of accident and injury!

- Familiarise yourself with the functionality of the gear hub system.
- Operate the gear hub system only if this does not distract your attention from the road traffic.
- Come to a stop if you are not able to use the gear hub system safely, e.g. if it malfunctions.

! NOTICE

Damage to the gear hub system caused by improper use.

Risk of damage!

- When shifting gears, do not pedal hard.
 - When shifting gears, do not pedal backwards.
 - Shift down the gears in a timely fashion before ascents.
-
- If you are unsure about using the gear hub, ask your specialist dealer to explain how to correctly use the gear hub.
 - Find out which gear hub system your bicycle is fitted with.

Note: Depending on the bicycle model, your bicycle is equipped with a gear hub with or without a coaster brake (see Chapter “Bicycle passport” on page 93).

7.2.2.1 Changing gears with a twist-grip shifter

To change gears, turn the twist grip shifter (see Fig. “Twist grip shifter for gear hubs”).

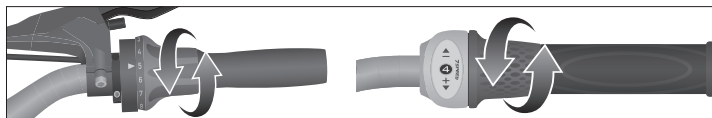


Fig.: Twist-grip shifter for gear hubs (example)

7.2.2.2 Changing gears with a gear lever

Depending on the type of gear hub installed, the front gear lever will have two settings. The rear gear lever can either be pressed or pulled.

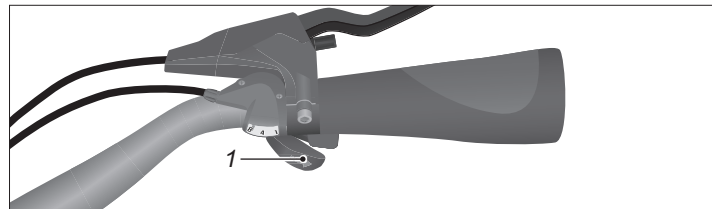


Fig.: Gear lever (example)

1 Gear lever

- To let the gear lever which has been pressed automatically return to its original position, release the gear lever after shifting.
- To change down a gear, squeeze the gear lever that is furthest forward with your thumb until it engages for the first time (see Fig. “Gear lever”).

To change up a gear, press or pull on the rear gear lever with your index finger.

7.2.3 Settings

- If the effectiveness of the gear hub reduces, adjust the gear cable tension.

The adjustment of the gear cable tension is done independently of your gear hub.

7.2.3.1 Gear hub with three gears

1. Select the third gear and then change to the second gear (see Chapter “Operation” on page 49).
2. Unscrew the counternut on the right-hand side of the rear wheel on the gear hub housing (see Fig. “Nexus’ settings”).
3. Turn the knurled nut in such a way that the marking in the window lies exactly between the lines or arrows.
4. Shift again from second gear to third gear and back to second gear.
5. Check that both markings on the rear wheel hub are aligned.
 - Repeat the setting process if the markings on the rear wheel hub are not aligned.
6. Tighten the counter nut.
 - Carefully tighten the counter nut.

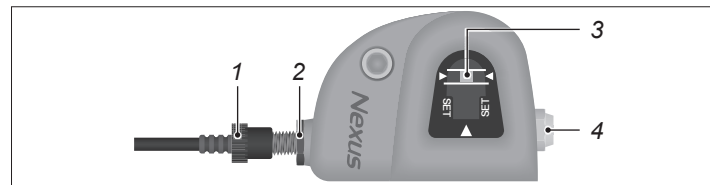


Fig.: “Nexus” settings

- | | |
|---------------|----------------|
| 1 Knurled nut | 3 Marking |
| 2 Counter nut | 4 Fixing screw |

Note: To remove the rear wheel, loosen the fixing screw (see Fig. “Nexus’ setting”).

When reattaching the wheel, tighten the fixing screw with a torque of 3 to 5 Nm.

7.2.3.2 Gear hub with 5 gears

1. Select the fifth gear and then change to the third gear (see Fig. “Twist grip shifter for gear hubs”).
 - Use as little force as possible when adjusting the gears to prevent overshifting.

The tension adjustment screw can be found underneath the handlebars.

2. Move the tension adjustment screw on the twist grip handle in such a way that both markings are aligned on the rear wheel hub (see Fig. “Markings on the rear wheel hub”).
3. Shift again from third gear to fifth gear and back to third gear.
4. Check that both markings on the rear wheel hub are aligned.

Gear shift system

- Repeat the setting process if the markings on the rear wheel hub are not aligned.

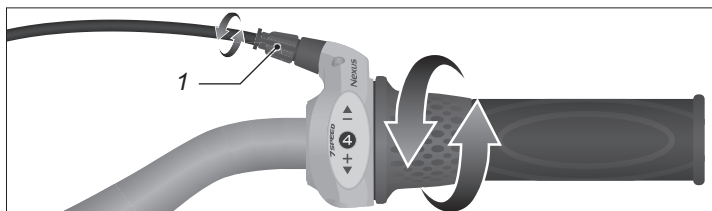


Fig.: Twist-grip shifter (example)

1 Tension adjustment screw on twist-grip shifter

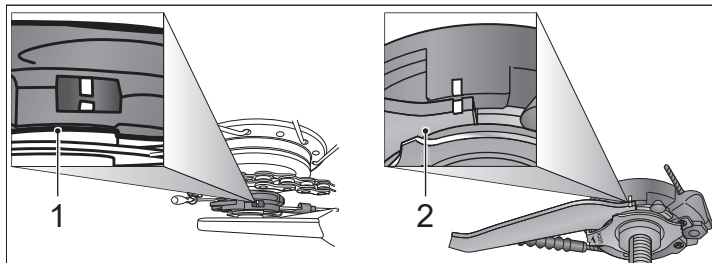


Fig.: Markings on the rear wheel hub

1 Marking on the top side

2 Marking on the bottom side

7.2.3.3 Gear hubs with 7 and 8 gears

1. Select the seventh or eighth gear and then change to the fourth gear (see Fig. *"Twist grip shifter for gear hubs"*).
 - Use as little force as possible when adjusting the gears to prevent overshifting.

The tension adjustment screw can be found underneath the handlebars.

2. Move the tension adjustment screw on the twist grip handle in such a way that both markings are aligned on the rear wheel hub (see Fig. *"Markings on the rear wheel hub"*).
3. Shift again from fourth gear to seventh or eighth gear and back to fourth gear.
4. Check that both markings on the rear wheel hub are aligned.
 - Repeat the setting process if the markings on the rear wheel hub are not aligned.

7.2.3.4 Gear hub with 11 gears

1. Select the eleventh gear and then change to the sixth gear (see Fig. *“Twist grip shifter for gear hubs”*).
 - Use as little force as possible when adjusting the gears to prevent overshifting.

The tension adjustment screw can be found underneath the handlebars.

2. Move the tension adjustment screw on the twist grip handle in such a way that both markings are aligned on the rear wheel hub (see Fig. *“Markings on the rear wheel hub”*).
3. Shift again from sixth gear to eleventh gear and back to sixth gear.
4. Check that both markings on the rear wheel hub are aligned.
 - Repeat the setting process if the markings on the rear wheel hub are not aligned.

8 Tightening the chain

8.1 Basic information

The chain drive can be adjusted to low-wear tension using a chain tensioner.

The correct pretensioning force prevents premature wear to the chain drive.

- Press the chain up and down and check whether you can move the chain through a distance of between 10 and 15 mm.
- If the chain can be pushed a distance of less than 10 mm or more than 15 mm upwards or downwards, have the chain re-tensioned by your specialist dealer.

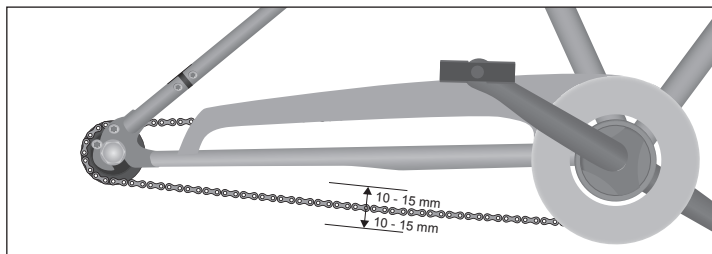


Fig.: Chain tension

8.2 Settings

8.2.1 Eccentric chain tensioner

Depending on the bicycle model, an eccentric chain tensioner may be installed. Compare your bike with Fig. “*Eccentric chain tensioner A*” and “*Eccentric chain tensioner B*” to see which type your bike is fitted with.

If you do not have the necessary expertise or correct tools to adjust the chain using the eccentric chain tensioner, you should ask your specialist dealer to adjust it for you.

1. Loosen the clamp screw or the three clamp screws on the left side of your bicycle when seen from the direction of travel (see Fig. “*Eccentric chain tensioner A*” or “*Eccentric chain tensioner B*”).
2. Insert a hooked tool, e.g. an Allen wrench into the adjusting hole or into both adjusting holes.
3. Turn the eccentric chain tensioner towards the rear wheel to reduce chain tension.
4. Turn the eccentric chain tensioner towards the front wheel to increase chain tension.

Once you have correctly adjusted the chain tension, re-tighten the clamp screw / three clamps screws.

5. Check the chain tension.

Tightening the chain

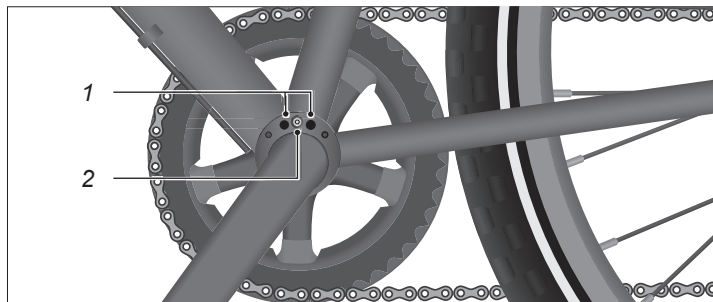


Fig.: Eccentric chain tensioner A

1 Adjusting holes

2 Clamp screw

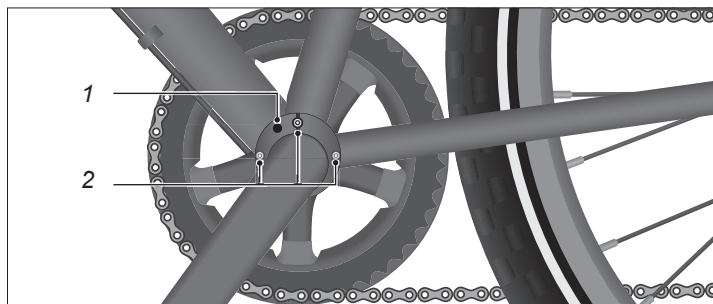


Fig.: Eccentric chain tensioner B

1 Adjusting hole

2 Clamp screws

8.2.2 Chain tensioner on the dropout



WARNING

Bicycle does not run properly straight.

Risk of accident and injury!

- Take care to ensure that the rear wheel is positioned in line with the frame.

Depending on the bicycle model, your bicycle may be fitted with a chain tensioner on the dropout (see Fig. “Chain tensioner on the dropout”).

If you lack the necessary expertise or correct tools to adjust the chain using the chain tensioner on the dropout, have your specialist dealer adjust it for you.

Do not loosen the quick-release adjusting nut to adjust the chain tension via the chain tensioner on the dropout.

1. Loosen the clamp screws on both sides of the frame (see Fig. “Chain tensioner on the dropout”).
2. The screws for adjusting the chain tension are on both sides of the underside of the dropout. The adjusting screws are hexagon socket screws measuring 4mm in width (see Fig. “Adjusting screws on the dropout”).

Tightening the chain

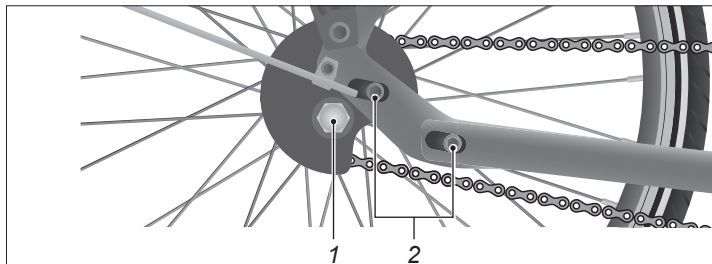


Fig.: Chain tensioner on the dropout

1 Axle nut

2 Clamp screw

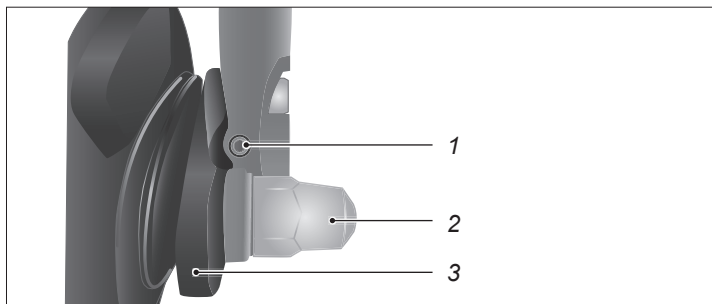


Fig.: Adjustment screw on the dropout

1 Adjustment screw

3 Dropout

2 Axle nut

3. To increase the chain tension, turn the adjusting screws on both sides of the frame clockwise.
4. To decrease the chain tension, turn the adjusting screws on both sides of the frame anti-clockwise.
 - Take care to ensure that you turn the adjusting screws evenly on both sides of the frame.
5. Check the chain tension (see Chapter “*Tightening the chain*” on page 55).
6. Check to make sure that the rear wheel is positioned in line with the frame.
7. If the rear wheel is not positioned in line with the frame, tighten the adjusting screw on the side turned away from the chain by one full turn.
 - If this improves the position of the rear wheel, continue to turn the adjusting screw in the same direction until the rear wheel lines up with the frame.
 - If this worsens the position of the rear wheel, turn the adjusting screw in the opposite direction until the rear wheel lines up with the frame.
8. Check the chain tension.
 - If your bicycle features rim brakes, check that the brake pads are positioned to rub in the centre of the rim’s flank; otherwise, re-adjust the rim brakes.
 - If you are unable to adjust the rim brakes, have them adjusted by your specialist dealer.

9 Drivetrain systems

The term 'drive' refers to a mechanism that generates a movement in order to move an object.

In the case of a bicycle, muscle power is transferred to the drive wheel via the pedals.

Depending on the bicycle model, your bike will be fitted with a chain or belt drive system.

- Check whether your bike is fitted with a chain or belt drive system (see Fig. "Chain drive system" and Fig. "Belt drive system").

9.1 Pedal drive

9.1.1 Basic information

Assembly consisting of pedal, pedal crank, bottom bracket and chainring.

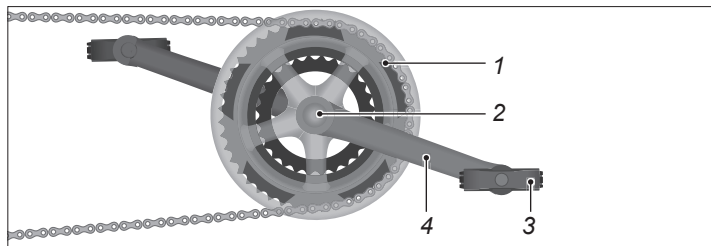


Fig.: Pedal drive

1 Chainring

2 Bottom bracket

3 Pedal

4 Pedal crank

9.1.2 Operation

Push the pedals with your feet in order to set the pedal drive – and thus the whole bicycle – in motion.

9.1.3 Checking the condition of the pedal drive

- Take hold of the pedal and try to move it in a vertical direction, up and down (1). While doing so, check to see if the pedal and crank arm or bottom bracket move vertically.
- Take hold of the pedal and try to move it outwards and inwards in a sideways direction (2). While doing so, check to see if the crank arm or bottom bracket move sideways (see Fig. "Checking the condition of the pedal drive").

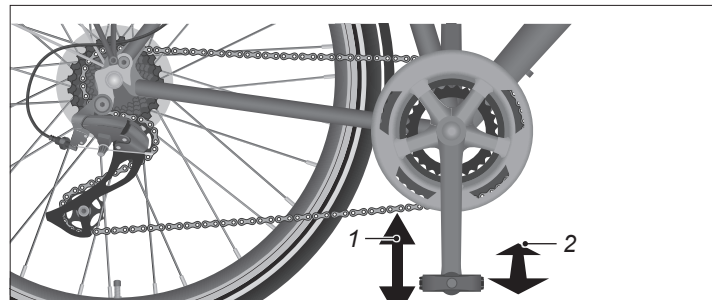


Fig.: Checking the condition of the pedal drive

1 Sideways

2 Outwards – inwards

- If the pedal, crank arm or bottom bracket can be moved in a vertical or sideways direction, you should consult your specialist bike dealer.

9.2 Chain drive system

9.2.1 Basic information

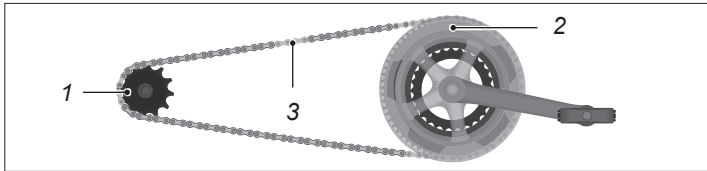


Fig.: Chain drive system

1 Sprocket

3 Chain

2 Chainring

A chain drive system is compatible with gear hubs, coaster brakes and derailleur gears.

- You should clean all accessible, moving components with a damp cloth or a soft brush.
- After cleaning the chain, after riding in the rain or after riding 250 km, you should oil the bike chain with universal oil or with another lubricant recommended by the manufacturer.
 - Afterwards, wipe up any excess lubricant with a clean cloth.
- Check that all components are free of damage.
 - If you notice damage to the components, consult your specialist dealer.

9.2.2 Operation

Push the pedals with your feet in order to set the chain drive – and thus the whole bicycle – in motion.

9.2.3 Settings

If you notice that the teeth on the sprocket or chainring have become sharp or pointed, you should replace the sprocket or chainring.

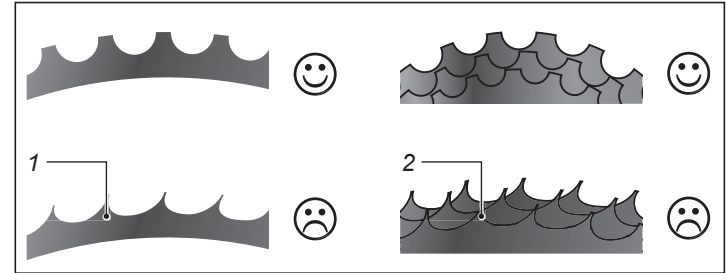


Fig.: Sprocket

1 Damage to the chainring

2 Damage to the sprocket

9.3 Belt drive system

9.3.1 Basic information

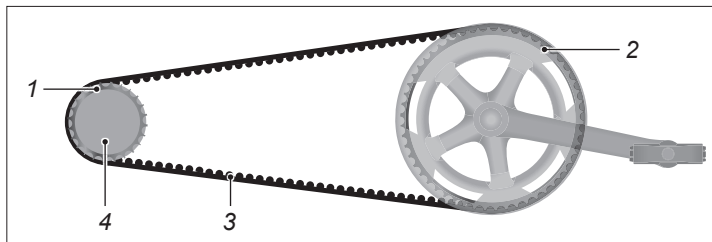


Fig.: Belt drive system

1 Rear sprocket

3 Belt

2 Front sprocket

4 Rear flange wheel

A belt drive system is compatible with gear hubs and coaster brakes, but not with derailleur gears.



NOTICE

Damage to the belt due to incorrect usage.

Risk of damage!

- Always make sure that the belt does not become buckled, twisted, bent backwards, turned outwards, tied up or used as a key.
- When assembling the belt drive system, the belt should not be rolled up with the front disc sprocket or put into position using any type of lever, e.g. a screwdriver.

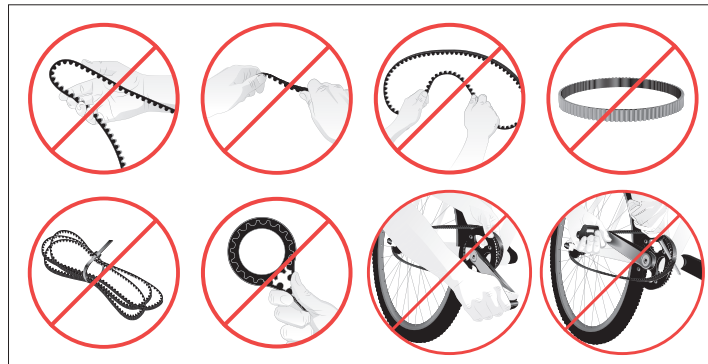


Fig.: Types of damage

9.3.2 Operation

Push the pedals with your feet in order to set the belt drive – and thus the whole bicycle – in motion.

9.3.3 Settings

9.3.3.1 Checking the belt tension

! NOTICE

Damage to the belt due to incorrect tool.

Risk of damage!

- The belt drive system may only be measured and adjusted using the original tools from the manufacturer.

In order for the belt drive system to work smoothly, the belt needs to be tightened to the correct tension.

The belt drive system may only be measured and adjusted using the original tools from the manufacturer.

- You should get the belt drive system checked and adjusted by your specialist dealer annually.

9.3.3.2 Checking for signs of wear on the belt drive system

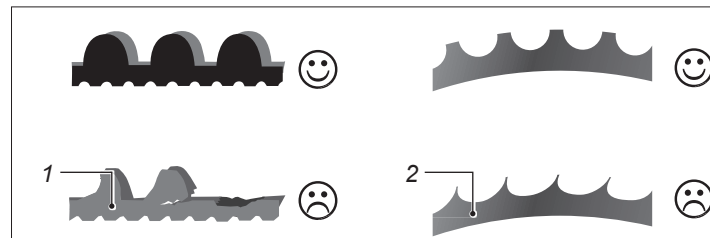


Fig.: Wear

1 Damage to the belt

2 Belt drive wear

- Check the belt drive system regularly for signs of wear.
 - If you notice damage e.g. sharp teeth, cracks or missing teeth, you should replace the belt.
 - If you notice damage on the belt pulley, e.g. sharp teeth, you should have it replaced.

10 Other components

10.1 Handlebars

10.1.1 Basic information

The handlebars are one of the points of contact between the rider and the bicycle. The handlebars play an important role in controlling direction and operating control mechanisms e.g. brake levers.

10.1.2 Operation

Hold on to the handlebars with both hands, take care to ensure that your wrists do not overbend and that you can adopt a comfortable sitting position.

10.1.3 Settings

Depending on the bicycle model, your bike will be fitted with either a threadless handlebar stem or a quill stem.

- Check to find out which type of handlebar stem your bicycle is fitted with (see Fig. "Handlebar stems").

Certain models are fitted with an angle adjustment on the handlebar stem (not pictured).

- If your handlebar stem is fitted with an angle adjustment mechanism, you can ask your specialist dealer to explain it to you.

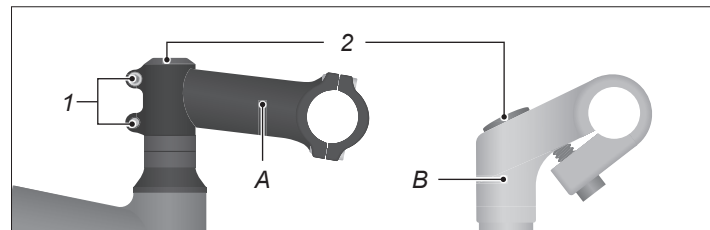


Fig.: Handlebar stems

1 Screws

2 Cap

A Threadless handlebar stem

B Quill handlebar stem

10.1.3.1 Handlebar height

10.1.3.2 Threadless handlebar stem



WARNING

Unexpected bicycle handling caused by improper set up.
Risk of accident and injury!

- Observe the correct torques.
- Observe the minimum insertion depth for the handlebar stem.

Note: Specialist expertise and tools are required to correctly adjust the handlebar height of a threadless handlebar stem.

Ask your specialist dealer to adjust the handlebar height.

10.1.3.3 Quill handlebar stem



WARNING

Breakage of the quill handlebar stem caused by incorrect set up.

Risk of accident and injury!

- If you adjust the handlebar height yourself, you should observe the minimum insertion depth for the quill handlebar stem.

1. Pull the cap on the top of the quill stem upwards (see Fig. "Handlebar stems", right).
2. Unscrew the internal screw with 1 to 2 turns in an anti-clockwise direction.
3. Take hold of the handlebars and push the quill stem up or down until it is in the desired position.
 - Push the quill handlebar stem upwards no further than the marking on the quill stem, which must remain out of sight (see Fig. "Quill handlebar stem").

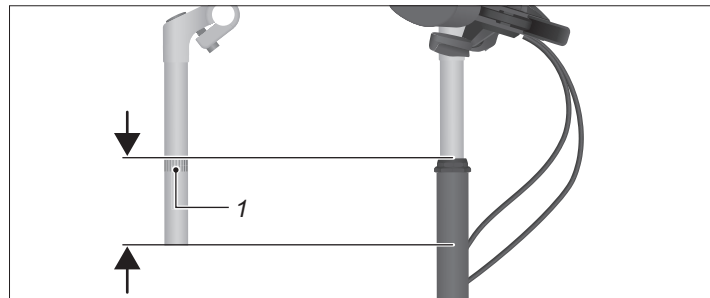


Fig.: Quill handlebar stem

1 Marking

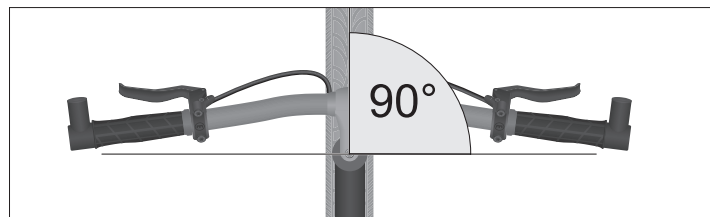


Fig.: Handlebar direction

4. Turn the interior screw in a clockwise direction, while still taking the torques into consideration.
5. Replace the cap on the quill handlebar stem.

Other components

10.1.3.4 Handlebar direction

10.1.3.5 Threadless handlebar stem

! NOTICE

Damage to the head bearing caused by incorrect set up of the threadless handlebar stem.

Risk of damage!

- Tighten the upper screw on the threadless handlebar stem only so tight that the headset or handlebars can still move freely.
- Tighten the upper screw tight enough that no movement can be detected in the head bearing.

1. Pull the cap on the top of the threadless stem upwards (see Fig. "Handlebar stems", left).
2. Unscrew the screw on the top by half a turn in an anti-clockwise direction.
3. Unscrew the two screws on the shaft clamp anti-clockwise, until you can turn the handlebars away from the front wheel (see Fig. "Head tube").

Note: The following step describes how to adjust the head bearing.

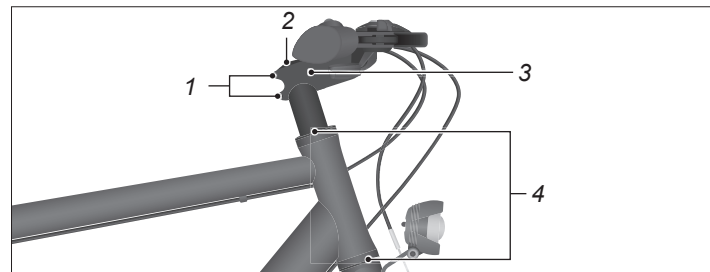


Fig.: Head tube

- | | |
|----------|-----------------------------|
| 1 Screws | 3 Threadless handlebar stem |
| 2 Cap | 4 Head bearing |
4. Gradually screw the screw on the top by a maximum of one-eighth of a turn each time.
 - Engage the front brake and move the bicycle backwards and forwards.
 - Check whether there is any play in the head bearing.
 - Tighten the screw until there is no play in the head bearing.
 - Lift the bicycle and check to see if the front wheel turns towards the left or right of its own accord if you hold the frame at an angle.
 5. Adjust the handlebar direction to position the handlebars at 90° to the front wheel (see Fig. "Handlebar direction").

Other components

6. Tighten the two screws on the handlebar stem, while still taking the torques into consideration.
7. Replace the cap on the handlebar stem.

10.1.3.6 Quill handlebar stem

1. Pull the cap on the top of the quill stem upwards (see Fig. *"Handlebar stems"*, right).
2. Unscrew the internal screw with 1 to 2 turns in an anti-clockwise direction.
3. Adjust the handlebar direction to position the handlebars at 90° to the front wheel (see Fig. *"Handlebar direction"*).
4. Turn the interior screw in a clockwise direction, while still taking the torques into consideration.
5. Replace the cap on the quill handlebar stem.

10.1.3.7 Adjusting the head bearing

You will need two open-ended spanners or two headset spanners; the spanner size may vary between individual bicycle models.

1. Place the bicycle in an upright position.
2. Loosen the clamping nuts.
3. Tighten the bearing until there is no play in the head bearing.
 - Engage the front wheel brake and move the bicycle backwards and forwards.
 - Check whether there is any play in the head bearing.
 - Lift the bicycle and check to see if the front wheel turns towards the left or right of its own accord if you hold the frame at an angle.

If no amount of play can be detected in the head bearing when checked and if the front wheel turns to the left or right as the frame is moved, this means that the head bearing is correctly adjusted.

4. Re-tighten the counter nuts, taking into account the torques; avoid turning the bearing with the nut by holding it in position with another spanner.
5. Check the handlebar direction after adjusting the steering head bearing (see Fig. *"Handlebar direction"*).

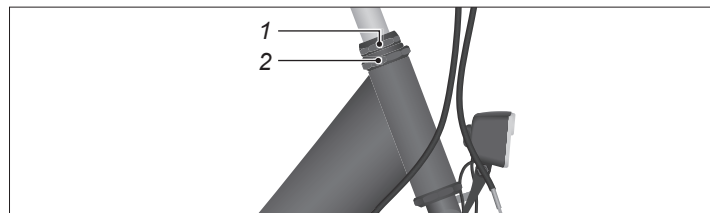


Fig.: Head bearing

1 Counter nut

2 Bearing

10.2 Saddle

10.2.1 Basic information

The saddle is the part of the bicycle that supports the rider and allows them to sit in different positions whilst cycling. The shape of the saddle depends on the intended purpose of the bicycle as well as the physical characteristics of the rider.

1. Check if you can rotate your saddle.
 - If you can twist the saddle, tighten the clamp screw on the seat post clamp, making sure you apply the correct torque.
2. Check to see if you can push the saddle towards the handlebars.
 - If you are able to push the saddle towards the handlebars, you should re-adjust the saddle position (see Chapter “*Saddle position*” on page 70).

10.2.2 Settings



WARNING

Splitting of the saddle or seat post due to overtension.

Risk of accident and injury!

- Always assess the load capacities of the saddle and seat post together.
- Never overload either the saddle or the seat post.

If you are not sure about the permissible load for the saddle and/or seat post, ask your specialist dealer.

The saddle and seat post comprise a single unit; this is why the load capacities must always be assessed together.

The load capacity depends on:

- the material
- the model
- the construction type
- the interior construction and
- the condition of the bicycle

Adjust the saddle so that you can assume a comfortable sitting position, easily operate all components on the handlebars and safely reach the ground with your feet.

10.2.2.1 Adjustable seat post



WARNING

Incorrect adjustment of the seat post.

Risk of accident and injury!

- Observe the minimum insertion depth for the seat post.

Depending on the model, your bicycle may be set up for an adjustable seat post. If this is the case, then the adjustment cable is in a different location in the frame and terminates in the seat tube (see Fig. “*Adjustable seat post*”).

Other components

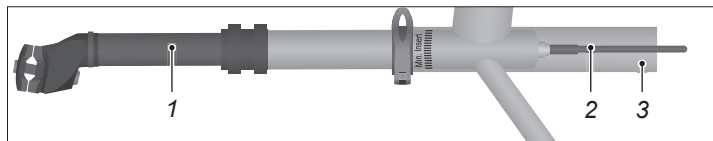


Fig.: Adjustable seat post

1 Adjustment range 2 Adjustment cable 3 Seat tube

! NOTICE

Damage to the adjustment cable may result from incorrect height adjustment of the seat post.

Risk of damage!

- Do not move the seat post any higher than the adjustment cable in the seat tube.
- Carefully use appropriate force to push the seat post within the seat tube.

The seat post has an adjustment range of 100 mm.

1. To adjust the saddle height, push the button on the handlebars inwards.
2. Once the button is depressed, pull the saddle up or push it down as needed.

3. Release the button.
4. If the range of movement is not sufficient for the required adjustment, you can adjust the seat post to alter the saddle height.

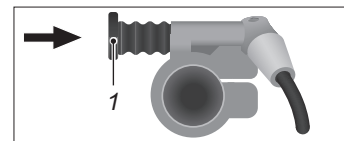


Fig.: Handlebar controls

1 Button

10.2.2.2 Saddle height

! NOTICE

Damage to the rear reflector caused by incorrect adjustment of the seat post.

Risk of damage!

- Make sure that you do not damage the rear reflector if you choose to adjust the saddle height yourself.

1. Hold on to the saddle and
 - open the quick-release (see Chapter “Operation” on page 76) or
 - unscrew the screws in the seat post clamp anti-clockwise until you can adjust the height of the seat post (see Fig. “Seat post clamp”, right).

Other components

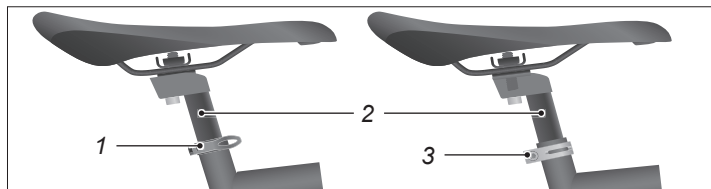


Fig.: Seat post clamp

1 Quick-release

3 Screw

2 Seat post

2. Adjust the saddle height so that you can sit on it comfortably.
3. Make sure that the marking on the seat post cannot be seen (see Fig. “Minimum insertion depth”).
4. Rotate the saddle so that it forms a straight line with the frame, when viewed from above.

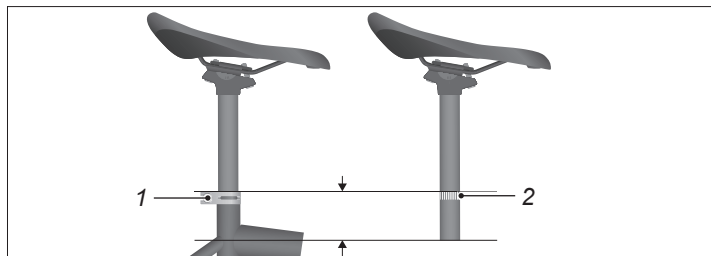


Fig.: Minimum insertion depth

1 Seat post clamp

2 Marking

5. Close the quick-release until it is flush with the seat post, or tighten the screw on the seat post clamp clockwise, taking the torques into account.
6. Check that the seat post is securely tightened. To do this, sit on the saddle and rock backwards and forwards.
7. Check if you can rotate your saddle.
 - If you can rotate the seat, adjust it using quick-release (see Chapter “Operation” on page 76).

10.2.2.3 Saddle position

Depending on the bicycle model, you can also adjust the saddle angle and distance to the handlebars.

- Refer to the diagrams to see which saddle fixture your seat post is fitted with (see Fig. “Seat posts with one screw” and Fig. “Seat posts with multiple screws”).

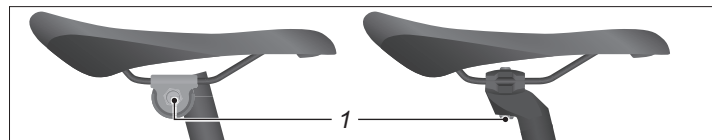


Fig.: Seat posts with one screw

1 Screw

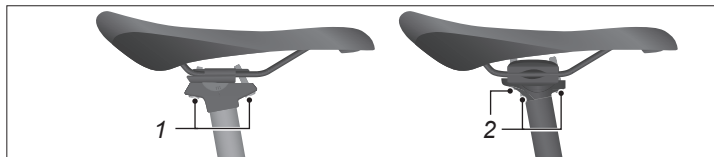


Fig.: Seat posts with multiple screws

1 Two screws

2 Three screws

1. Unscrew the screw(s) beneath the saddle by 1 to 2 turns in an anti-clockwise direction (see Fig. “Seat posts with one screw” and Fig. “Seat posts with multiple screws”).
2. Shift and tilt the saddle so that you can sit in a comfortable sitting position and are able to safely operate all components located on the handlebars while riding.

Note: If your seat post has 2 or 3 screws, you can adjust the saddle angle by turning the loosened screws in opposite directions.

3. Turn the screw(s) beneath the saddle in a clockwise direction, while still taking the torques into consideration.
4. Check to see if you can move the saddle.
 - If you are able to move the saddle, have it adjusted by your specialist dealer.

10.3 Pannier rack

10.3.1 Basic information

The pannier rack is a device on the bicycle that enables the rider to carry luggage.

Depending on the bicycle model, this may be a pannier rack with a clamp bracket, a pannier rack with bungee cords or a pannier rack system.



NOTICE

Damage to bicycle components caused by improper mounting of the pannier rack.

Risk of damage!

- Ask your specialist retailer to install the pannier rack.
- If your bicycle is fitted with a pannier rack, you should not make any modifications to the pannier rack.
- Consult your specialist dealer if you wish to replace the pannier rack.
- You can retrofit an approved pannier rack that complies with the DIN EN ISO 11243 standards.
- Get your specialist dealer to mount your pannier rack for you.
- Seek advice from your specialist dealer about the special features of a pannier rack system.
- Do not overload the pannier rack.

10.3.1.1 Maximum load



NOTICE

Overloading the pannier rack.

Risk of damage!

- Always observe the maximum permitted total weight.

Rear pannier rack: model-dependent 25 kg or 27 kg

Front pannier rack: 12 kg

10.3.2 Operation



WARNING

Fall caused by incorrectly transported luggage.

Risk of accident and injury!

- Do not attempt to carry bags or other objects on the handlebars.
- Secure objects to the pannier rack to prevent them from slipping or falling off.
- Only used undamaged bungee cords to secure your luggage.
- Always use robust panniers to transport your luggage.



WARNING

Changed riding characteristics due to additional weight.

Risk of accident and injury!

- Familiarise yourself with the how it feels to ride your bicycle with additional luggage before riding on the road.
- Any additional weight should be distributed evenly on both sides of the pannier rack or centrally on top of the rack.
- Adapt the way you ride to suit the changed handling of the bicycle.



CAUTION

The bungee cord or the clamp bracket may snap back and hit you.

Risk of injury!

- When using the bungee cord or the clamp bracket, ensure that you hold them so tightly that you cannot accidentally let go of them.

Other components

10.3.2.1 Pannier rack system

Take hold of the clamp bracket, carefully push it upwards and hold it in this position.

1. Place your luggage on the pannier rack.
2. Secure your luggage to the pannier rack by slowly releasing the clamp bracket.
3. If your pannier rack system has no clamp bracket, use sufficient system components for your purpose or use bungee cords to secure your luggage.

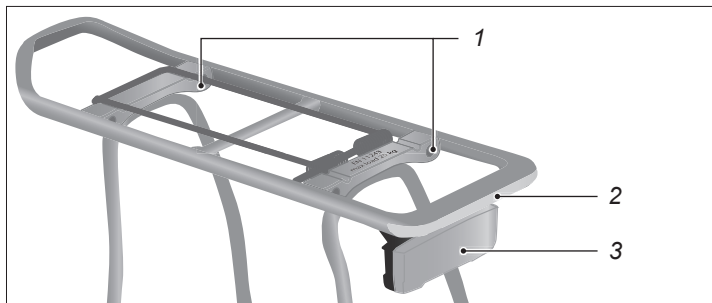


Fig.: Pannier rack system

- 1 Mounting point for system components
- 2 Rear light
- 3 Rear reflector

A pannier rack system can be adjusted to suit your requirements with just a few simple steps, e.g. adding a bicycle basket.

10.4 Baggage



WARNING

Changed riding characteristics due to saddle bags and front baskets.

Risk of accident and injury!

- Familiarise yourself with the how it feels to ride your bicycle with additional attachments such as saddle bags and front baskets before riding on the road.
 - **Saddle bags, front baskets and “lowriders” dramatically impair the steering behaviour.**
 - Adapt the way you ride to suit the changed handling of the bicycle.
-
- Position your load in such a way that it does not obscure reflectors or lights.
 - Apply the brakes sooner, expect a longer braking distance and less responsive steering.
 - Secure the baggage against slipping or falling off, e.g. using bungee cords.
 - Stow heavy objects in such a way that the principal weight is as near as possible to the wheel hub, e.g. in the lower area of the saddle bag.
 - Keep the centre of gravity as low as possible.

Other components

- If you use fasteners, e.g. bungee straps or cables, make sure that these cannot become caught in any moving parts.
- Any additional weight should be distributed evenly on both sides of the pannier rack or centrally on top of the rack (see Fig. "Transportation containers").

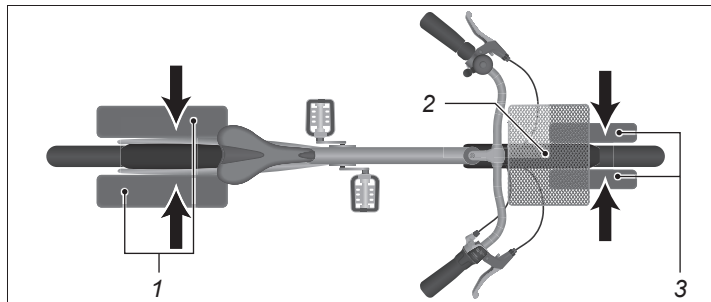


Fig.: Transportation containers

1 Saddle bags

3 Lowriders

2 Baskets

10.5 Bell

10.5.1 Basic information

A bicycle bell is a metal bell on your bicycle that produces a clear ringing sound.

You can attract the attention of other road users by ringing the bell.

- If you do not hear a clear, high ringing sound when attempting to sound the bell, you should have the bell replaced by your specialist dealer.

10.5.2 Operation

- Press the button on the bell downwards or to the side and allow it to spring back.

10.5.3 Settings

Position the bell on your handlebars so that you can easily reach it at any time.

10.6 Prop stand

10.6.1 Basic information

The stand is a device that allows you to stand the bicycle in an upright position after use.

Other components

10.6.2 Operation

1. To use the bicycle, hold it firmly and flip the kickstand upwards.
2. To park the bicycle, hold it firmly and flip the stands downwards.
3. Rest the bicycle on the stands.
4. Once the bicycle is standing securely, let it go.
5. Secure the bicycle against theft or unauthorised use.

10.6.3 Settings

Depending on the bicycle model, your bicycle will be fitted with an adjustable stand (not pictured).

- If you cannot securely position your bicycle using the stand, you should adjust the stand so it can be properly used.
- If you are unable to adjust the stand, have it adjusted by your specialist dealer.

10.7 Frame lock

Note: This chapter applies only to models with a frame lock.

10.7.1 Close the frame lock

1. Insert the key in the lock and open it.
2. Push the handle downwards until the lock engages (see Fig. "Frame lock").
 - Ensure that the spokes do not block the lock.
3. Remove the key.

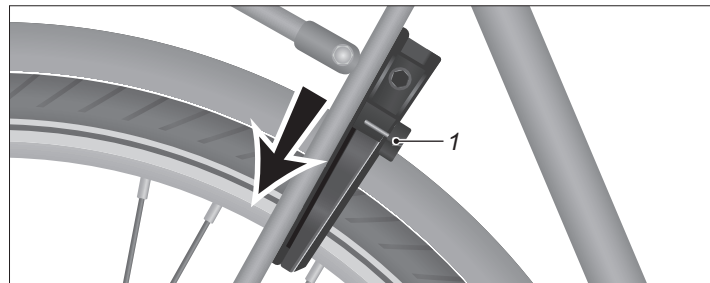


Fig.: Frame lock

1 Handle

10.7.2 Open the frame lock

1. Hold the handle of the frame lock.
2. Insert the key in the lock and close the lock.
3. Once the lock is unlocked, push the handle upwards.

10.8 Quick-release

Only use the quick-release axles if you have sufficient knowledge to correctly mount and dismount the wheels.



WARNING

Risk of accidents due to quick-release axles being left open and causing the wheels to fall off.

Risk of accident and injury!

- If you do not have the necessary expertise and the required tools, you should ask your specialist dealer to install or remove the quick-release axles.

10.8.1 Basic information

Quick-release mechanisms make it easy for you to quickly remove, install or adjust bicycle components without any additional tools.

Depending on the bicycle model, your bicycle may be fitted with quick-release on the wheel axles or on the seat post clamp.

Use Fig. “Quick-release” to check if your bicycle is fitted with a quick-release.

1. Open and close the quick-release lever and listen for unusual noises.
 - If you hear any unusual noises, you should ask your specialist dealer to inspect the quick-release mechanism.
2. Cleaning the quick-release.
3. Close and lock the quick-release.

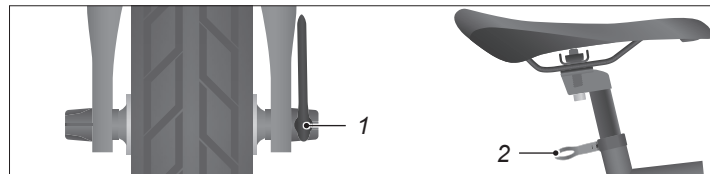


Fig.: Quick-release

1 Quick-release axle

2 Seat post clamp

10.8.2 Operation



WARNING

Pinching or crushing of body parts.

Risk of injury!

- Open and close the quick-release slowly and carefully.



WARNING

Risk of falling if the quick-release lever on the seat post is left open.

Risk of accident and injury!

- Before each ride, check that the quick-release lever on the seat post is closed with a sufficient amount of pre-tension.

Other components

10.8.2.1 Opening the quick-release

- Turn the quick-release outwards.

10.8.2.2 Closing the quick-release

- Turn the quick-release inwards until it is flush against the seat post and/or the front fork.
 - If the seat post or the quick-release axle are not secure, adjust the quick-release.

10.8.3 Settings

1. Open the quick-release mechanism.
2. Screw in the adjusting screw or axle nut clockwise one quarter of a turn (see Fig. "Adjusting the quick-release mechanism").
3. Close the quick-release and check the seat post / wheel is securely tightened.
4. Repeat the process until the seat post / wheel is secure when the quick-release / quick-release axle is closed.
5. If you can close the quick-release lever without using additional force, you should re-adjust the initial tension.
 - If you are not able to adjust the quick-release, ask your specialist dealer to inspect it.

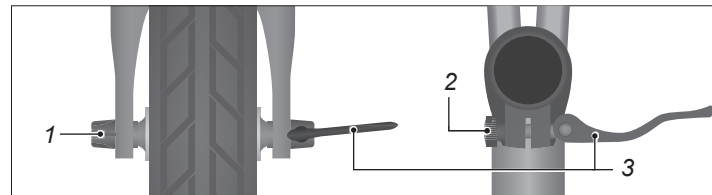


Fig.: Adjusting the quick-release

1 Axle nut

2 Adjustment screw

3 Quick-release lever

10.9 Suspension

Suspension systems on bicycles increase comfort and safety when riding over uneven surfaces. The suspension system must be adjusted to suit the weight of the rider. This requires specialist expertise and may also involve replacing the suspension system completely.

If you do not have the necessary expertise or correct tools to adjust the suspension, you should ask your specialist dealer to adjust the suspension system for you.



WARNING

Depending on the road conditions, incorrectly adjusted suspension can lead to a loss of traction with the ground.

Risk of accident and injury!

- Ask your specialist dealer to set up the suspension system for you.



WARNING

The suspension seat post, suspension fork and the rear frame suspension are under pressure/tension.

Risk of injury!

- Only your specialist dealer should be permitted to disassemble and repair your suspension seat post, suspension fork and rear frame suspension.



NOTICE

Impact noises occur if suspension is set up incorrectly.

Risk of damage!

- If you feel hard shocks or can hear noises when the suspension compresses, you should get your suspension checked by your specialist dealer.

10.9.1 Suspension fork

10.9.1.1 Basic information

Depending on the model, your bicycle may include a suspension fork.

- Check to see if your bicycle is fitted with a suspension fork (see Fig. “*Suspension fork*”).

Suspension forks absorb shocks from the front wheel and increase comfort and safety when riding over uneven surfaces.

Suspension fork stanchion legs feature a gold or black sliding layer. Over time, usage will wear out this sliding layer – this is therefore not a valid reason to submit a warranty complaint.

- Remove dirt from sliding surfaces and adjacent seals immediately with a clean or lightly oiled cloth, as appropriate.
- Lubricate the sliding surfaces immediately after cleaning with some lubricant, e.g. universal oil.

Other components

- Consult your specialist dealer for information about suitable maintenance and lubrication products for the suspension fork.
- Compress the suspension fork in and out five times. Afterwards, wipe up any excess lubricant with a clean cloth.
- If you hear unusual sounds when compressing and decompressing the fork or if the suspension fork gives way without any resistance, get your specialist dealer to check your suspension fork.



Fig.: Suspension fork

1 Suspension fork stanchion leg 2 Stand tube

10.9.1.2 Sag

Sag refers to the compression which takes place simply as a result of the rider's bodyweight. Depending on the model of the suspension fork, the sag is set at a value of between 15 % and 30 % of the total suspension travel.

The sag setting does not affect the spring stiffness. The sag setting affects the suspension preload. If the sag is optimally adjusted, the suspension will compress by just a few millimetres when you sit on the bicycle.

Expert knowledge is required to adjust the sag setting, especially when the bicycle features several different suspension elements.

Note: To ensure optimally adjusted sag, your specialist dealer may install stiffer or softer springs in the suspension.

10.9.1.3 Lock-out

The "lock-out" function blocks the suspension fork. This can reduce the build-up of vibrations and dipping of the suspension fork, e.g. if the suspension dips down when pedalling with greater force.

10.9.1.4 Rebound and compression damping

The settings of the rebound and compression damping affects the cushioning effect, or responsiveness, of the suspension system. The key factor here is the ratio between the rebound and compression damping. Many models are therefore only fitted with one setting for rebound damping. The ratio between the rebound and compression damping is determined by the road conditions. A correctly adjust ratio ensures optimum contact between the wheels and the ground.

10.9.1.5 Operation

The operation of the suspension fork depends on your suspension fork type.

- If your suspension fork is fitted with other controls or additional controls than those listed below, you should ask your specialist dealer to explain how to operate the suspension fork or read the manufacturer's documentation.

! NOTICE

Increased wear and tear caused by using the lock-out.

Risk of damage!

- Only use the lock-out function if this improves the quality of the ride.

10.9.1.6 Lock-out

Note: Certain models of suspension fork have additional settings to control them.

Depending on the bicycle model, the lock-out function can be operated using a control knob on the upper side of the suspension fork or on the remote operating controls on the handlebars.

- Compare images to check which operating controls your suspension fork is equipped with (see Fig. “Lock-out operation”).

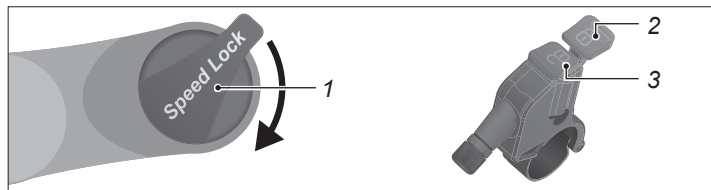


Fig.: Lock-out operation (example)

- | | |
|------------------|-----------------|
| 1 Adjusting dial | 2 Locking key |
| | 3 Unlocking key |

- To lock the suspension fork, turn the control knob 90° clockwise or press the lock-out button.
- To unlock the suspension fork, turn the control knob 90° anti-clockwise or press the unlock button.

Note: Depending on the model, the suspension system still provides cushioning on uneven surfaces of up to 15 mm even when locked.

10.9.1.7 Adjusting mechanic suspension

- Remove the protective dust cap from each stanchion leg by pulling it upwards in a vertical direction.
- In order to increase suspension preload, use a coin or an appropriate tool for your suspension to turn the control knob on top of the stanchion leg towards the “+” sign (see Fig. “Suspension preload”).
- In order to decrease suspension preload, use a coin or the appropriate tool for your suspension to turn the control knob on top of the stanchion leg towards the “-” sign.
- Make sure that the suspension preload is adjusted to the same level on both sides.
- Consult your specialist dealer if you are unsure about how to adjust the suspension preload.

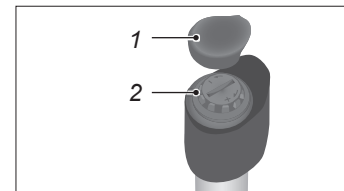


Fig.: Suspension preload

- | |
|-----------------------|
| 1 Protective dust cap |
| 2 Adjusting dial |

10.9.1.8 Adjusting pneumatic suspension

! NOTICE

Damage to the suspension system caused by incorrectly adjusted dampers.

Risk of damage!

- Ask your specialist dealer to adjust the pneumatic dampers.

Special expertise is required to correctly adjust pneumatic suspension forks.

If you already have experience of adjusting pneumatic suspension systems and want to adjust the suspension yourself:

- use a suitable air pump for the suspension fork and
- read the manufacturer's documentation to find out about permissible air pressure levels.

10.9.1.9 Suspension fork travel

To reduce suspension travel distance:

1. Push the button labelled "Push" and hold it down (see Fig. "Suspension travel").
2. Press down on the handlebars from above.

The fork will dip down. The further the fork sinks down, the shorter the suspension travel distance will be.

3. Release the "Push" button once the settings satisfy your needs.

To extend suspension travel distance:

4. Push the button labelled "Push" and hold it down.
5. Pull the handlebars upwards.

The fork will extend. The further the fork extends out, the longer the suspension travel distance will be.

6. Release the "Push" button once the settings satisfy your needs.

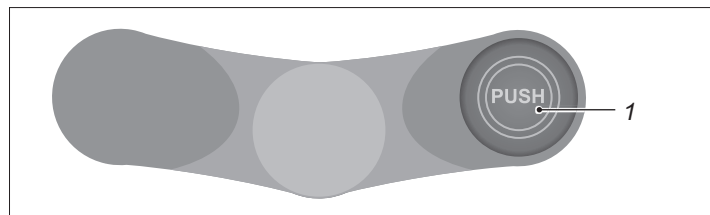


Fig.: Suspension travel

1 Push button

10.9.2 Suspension seat post

10.9.2.1 Basic information

Suspension-equipped seat posts on bicycles increase comfort and safety when riding over uneven surfaces. The suspension seat post must be adjusted to suit the weight of the rider.

If you do not have the necessary expertise or correct tools to adjust the suspension seat post, you should ask your specialist dealer to adjust the suspension seat post for you.

- Consult your specialist dealer for information about suitable maintenance and lubrication products for the suspension elements.
- Remove dirt from joints and sliding surfaces on the suspension seat post immediately with a clean or lightly oiled cloth, as appropriate.
- Lubricate the sliding surfaces and joints immediately after cleaning with some lubricant, e.g. universal oil.
- Compress the suspension seat post five times in and out. Afterwards, wipe up any excess lubricant with a clean cloth.
- Compress the suspension seat post in and out and check for noises.
 - If you hear unusual sounds when compressing and decompressing or if the suspension seat post gives way without any resistance, get your specialist dealer to check your suspension seat post.

10.9.2.2 Settings



WARNING

If the tensioning screw is unscrewed too far, this can damage the suspension seat post.

Risk of accident and injury!

- Do not unscrew the tensioning screw any further if you are adjusting the suspension seat post as delivered.
- Do not screw the tensioning screw any further than three revolutions inward.
- Make sure that at least 10 mm of the thread is visible in the suspension seat post.



WARNING

Splitting of the saddle or seat post due to overtension.

Risk of accident and injury!

- Always assess the load capacities of the saddle and seat post together.
- Never overload either the saddle or the seat post.

If you are not sure about the permissible load for the saddle and/or seat post, ask your specialist dealer.

The saddle and seat post comprise a single unit; this is why the load capacities must always be assessed together.

Other components

The load capacity depends on:

- the material
- the model
- the construction type
- the interior construction and
- the condition of the bicycle

Suspension seat posts require a higher level of maintenance.

Suspension seat posts are subject to more wear and tear.

- If the suspension seat post as delivered is too loose, adjust the suspension fork (see Fig. “Suspension seat post”).
- If the suspension seat post as delivered is too tight, have your specialist dealer install a looser additional suspension fork.

1. Hold the saddle firmly and loosen the suspension seat post.
 - Unscrew the screw for the suspension seat post on the seat post clamp anti-clockwise until the suspension seat post can be shifted up or down, or
 - open the quick-release by turning the quick-release lever outwards.
2. Pull the suspension seat post out of the seat tube.
3. For a tighter suspension, rotate the suspension screw a maximum of three rotations (clockwise) into the suspension seat post.
4. Insert the suspension seat post into the seat tube and adjust the height.

5. Secure the seat post.

- Turn the screws on the seat post clamp clockwise until the suspension seat post no longer moves and tighten the screws, while still taking the torques into consideration, or
- Close the quick-release by turning the quick-release lever inwards.
- Adjust the quick-release if it does not close completely (see Chapter “Operation” on page 76).

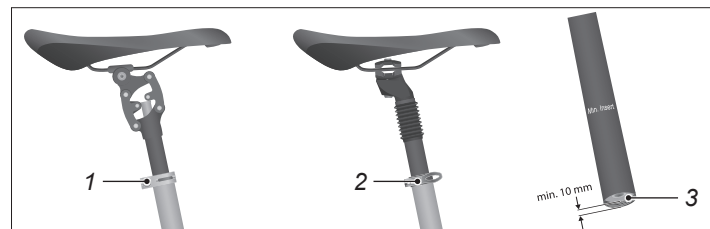


Fig.: Suspension seat post

1 Screw on the
seat post clamp

2 Quick-release

3 Tensioning screw

11 Wheels and tyres

11.1 Wheels

11.1.1 Basic information

The wheel is made up of a hub, spokes and a rim. The tyre is fitted in the rim of the wheel. Depending on the bicycle model, an inner tube is fitted inside the tyre. The front wheel and its tyre together are referred to as the front wheel; the rear wheel and its tyre are referred to as the rear wheel.

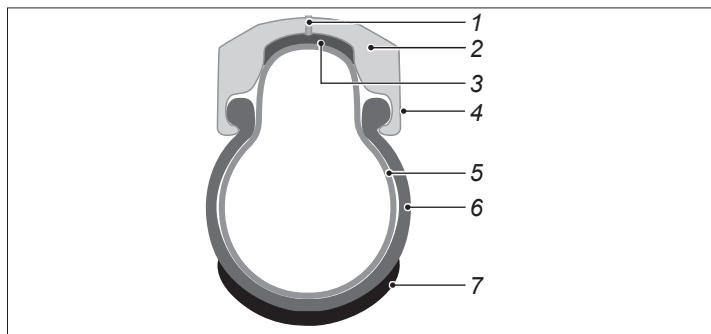


Fig. Cross-section of a wheel and tyre (example)

- | | |
|------------|--------------|
| 1 Spoke | 5 Inner tube |
| 2 Rim | 6 Tyre |
| 3 Rim tape | 7 Tyre tread |
| 4 Rim wall | |

- If an inner tube is included, rim tape is also fitted around the inside of the rim to protect the tube from the rim base and the spoke nipples.
- If the tyre does not have an inner tube, road bikes are fitted with so-called tubular tyres or mountain bikes are fitted with UST tyres (Universal System for Tubeless).

The wheels are exposed to considerable stresses and strains due to the weight of the rider and their luggage as well as the conditions of the road.

- After an initial riding period (at the latest after cycling 200 km, using the bike for over 15 hours or after 2 months – depending on which milestone is achieved first), you should get your specialist dealer to check the wheels and re-centre them.
- You should check your wheels regularly following the initial riding period.

11.1.1.1 Rims and spokes



WARNING

Risk of falling due to blocked rim brakes or wobbling wheels caused by the rims becoming laterally out of true.

Risk of accident and injury!

- Get your specialist dealer to true any untrue wheels.

Wheels and tyres

It is essential that all spokes are evenly tensioned in order for the wheel to run properly true. The tension of individual spokes can change if obstacles such as kerb edges are ridden over too quickly or if a spoke nipple becomes loose. The true running of the wheel and the stability of the rim are reduced if individual spokes are no longer under tension or damaged.

11.1.1.2 Wear limit

Depending on the bicycle model, indentations are imprinted in the rims to indicate the wear limit. The wear limit has been reached when the indentation is no longer perceptible.

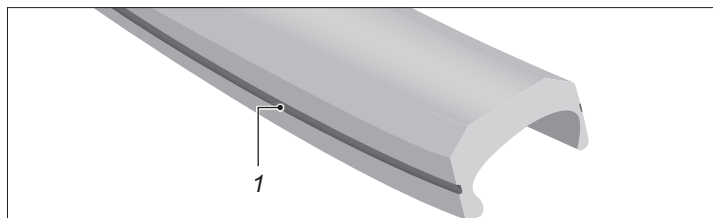


Fig. Rim (example)

1 Wear indicators

11.1.2 Settings

11.1.2.1 Checking and adjusting the spokes

1. Press the spokes together with your thumbs and finger and check that the tension is equal on all spokes.
 - If the tension varies or if spokes are loose, ask your specialist dealer to tauten the spokes.

Alternatively, you can stroke a wooden or plastic baton over the spokes and listen for differences in sound.

11.1.2.2 Checking the wear limit or replacing the rims

1. Check whether the rims of your bicycle have indentations to indicate the wear limit (see Fig. “Rim”).
2. If the rims of your bicycle do have indentations, check to see if the wear limit has been reached.
3. Stroke a finger nail or a toothpick over the indentation in a vertical direction.
 - Do not use the bicycle if you cannot feel the indentation; there is a **risk of breakage**.
 - Ask your specialist dealer to replace the wheel rims.

11.2 Tyres and valves

11.2.1 Basic information



CAUTION

Poor visibility to other road users.

Risk of accident and injury!

- Make sure that all reflectors are clean and clearly visible.



CAUTION

Burst tyres caused by penetrating foreign bodies.

Risk of accident and injury!

- Check the tyres regularly for signs of damage and wear.
- If you do not have the necessary expertise and the required tools, you should ask your specialist dealer to replace damaged or worn tyres.



NOTICE

Damage caused by fitting differently sized tyres than those originally intended for use.

Risk of damage!

- Consult your specialist dealer if you have any questions about the correct tyre size.

The tyres give the bicycle grip on the road, transfer the propulsive forces generated by pedalling to the road and absorb unevenness in the road.

Different types of tyres are used depending on the intended use of the bicycle.

The size of the tyre is indicated on the side of the respective tyre. Various different details may be included here, for example:

- Size in millimetres. If the tyre is described as '52–559', this means that the tyre is 52 mm wide when fully inflated and has an inner diameter of 559 mm.

- Size in inches. If the tyre is described as 26 × 2.35, this means that the tyre is 2.35" wide when fully inflated and has an inner diameter of 26".

With the exception of tubular tyres and UST tyres, rims and tyres alone are not airtight. An inner tube filled through a valve is used to keep the air inside the tyre.

1. Check the tyres for cracks and damage caused by foreign bodies.
 2. Check whether the profile of the tyres can be clearly felt.
- If a tyre shows signs of cracks, is damaged or the profile depth is insufficient, have the tyre replaced by your specialist dealer.

11.2.1.1 Valve types

All bicycles are fitted with one of the following types of valve (see Fig. "Valve types"):

- Standard bicycle valve (Dunlop): held in place with a lock nut, 8.5 mm rim hole, maximum pressure 6 bar.
- Schrader valve: held in place by a metal pin in the valve, 8.5 mm rim hole, maximum pressure 10 bar.
- Presta valve: held in place by a metal pin in the valve, 6.5 mm rim hole, maximum pressure 15 bar.

All three types of valve include a valve cap to prevent dirt from getting into the valve.

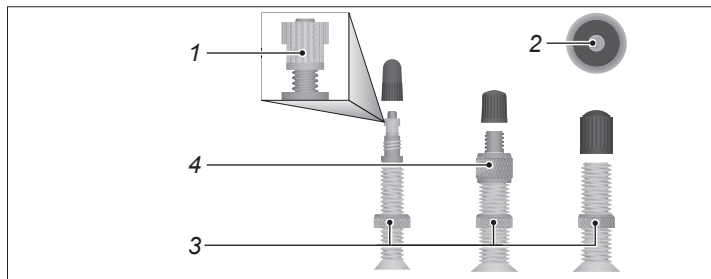


Fig. Valve types (example)

1 Knurled screw

3 Lower knurled nut

2 Valve tappet

4 Upper knurled nut

Note: Depending on your valve type, you will require a suitable air pump and a suitable adaptor.

11.2.1.2 Tyre pressure



WARNING

Too much pressure can cause the inner tubes to burst or to bulge out from the rim.

Risk of accident and injury!

- Observe the correct tyre pressure.
- When pumping up your tyres, you should use a pump with a pressure gauge.



NOTICE

Damage to the inner tube caused by too little pressure.

Risk of damage!

- Do not ride over sharp edges if the tyre pressure is too low.
- Observe the correct tyre pressure.
- When pumping up your tyres, you should use a pump with a pressure gauge.

Observe the maximum tyre pressure, which is indicated by the lower value printed on the rim or on the side of the tyre.

Tyre inflation pressure is indicated in psi (pound per square inch), kPa or bar (see Table “Tyre pressure conversion”).

The lower limit of the tire inflation pressure is suitable for light riders, for uneven ground and provides a higher suspension comfort with a higher rolling resistance. The upper limit of the tire inflation pressure is suitable for heavy riders, for level road surfaces and provides a low rolling resistance with lower suspension comfort.

- You should always ride with tyres filled to the prescribed tyre pressure.
- Check your tyre pressure regularly.
- Fill your tyres with air at least to the lower limit and at most, to the maximum limit indicated for tyre inflation pressure.
- When pumping up your tyres, you should use a pump with a pressure gauge.

Wheels and tyres

Tyre pressure conversion			
psi	bar	psi	bar
12	0.8	80	5.5
15	1.5	90	6.2
30	2.1	100	6.9
40	2.8	110	7.6
50	3.5	120	8.3
60	4.1	130	9.0
70	4.8	140	9.7

Note: Depending on the manufacturer, the values are given in psi, kPa or bar.



Fig. Print on the side of the tyre (example)

11.2.2 Settings

1. To check or adjust the air pressure, screw or pull the protective cap off the valve and open the valve as appropriate.
2. Attach an air pressure gauge or an air pump with a pressure indicator to the valve and read the pressure values. Ensure that you are using the correct attachment for your type of valve.
 - If the air pressure is too low, pump the tyres with an air pump.
 - If the air pressure is too high, release some of the air.
 - Select an air pressure within the upper and lower limits given on the tyres and which is appropriate for your body weight, the bike's load and your riding habits.
3. Screw or push the protective cap back onto the valve after adjusting the air pressure.
 - Do not use excessive force in the process.
4. After adjusting the air pressure, check the lower knurled nut is secure and tighten it if necessary (see Fig. "Valve types").
 - Carefully tighten the knurled nut.

12 Storage and disposal

12.1 Storage

Please observe the following points regarding storage if the bicycle is not to be used for a long period of time:

- Clean the bicycle.
- Store the bicycle in a dry room where it is protected from frost and large changes in temperature.
- To prevent the wheels from becoming distorted, the bicycle should be stored by hanging it from its frame.
- If your bicycle has derailleur gears, you should shift to the small chainring at the front and the smallest sprocket at the back, in order to relieve the gear cables of as much tension as possible.

Note: After storage, you should shift the gears on the chainring and cassette into a suitable gear combination for cycling before using the bicycle again (see Chapter “*Gear combinations*” on page 47).



WARNING

Danger for children or for individuals with insufficient knowledge or abilities!

Risk of accident and injury!

- Do not allow children to play with the bicycle.
- Do not allow children to clean, maintain or service the bicycle.



CAUTION

Pinching or crushing of body parts between moving parts.

Risk of injury!

- Exercise caution when handling moving parts to ensure that you do not get your fingers trapped.
- Wear protective gloves if necessary.



NOTICE

Use of incorrect cleaning agents.

Risk of damage!

- Do not use any aggressive cleaning agents.
- Do not use any sharp, angular or metallic cleaning utensils.
- Never use a hard water jet or high pressure device to clean the bicycle.



NOTICE

Dripping oil or grease.

Environmental hazard!

- Take care to ensure that no oil or grease drips down.
- Wipe up spilled oil or grease with a cloth immediately.
- Spilled oil or excess grease should be disposed of in an environmentally responsible fashion, in accordance with applicable national and local regulations.

Storage and disposal

What should be used for cleaning:

- Clean cloths,
- Mild, lukewarm soapy solution,
- Soft brush or sponge,
- Cleaning and preservative agents.
- As and when required, seek advice from your specialist dealer on suitable cleaning and servicing products.
- Clean the bicycle regularly even if it is only slightly dirty.
- Wipe down all surfaces and components with a damp sponge.
- Use a mild soapy solution to dampen the sponge.
- After cleaning, wipe dry all surfaces and components.
- Maintain lacquered surfaces and metallic surfaces on the frame at least once every six months.
- If your bicycle is equipped with rim brakes, do not use maintenance products on the rims, likewise if it is fitted with disc brakes, do not use maintenance products on the brake discs.
- Read and follow the advice in the enclosed manufacturer's informational leaflets about cleaning individual components.

12.2 Disposal

- If you own an e-bike, you should also read the original user manual for information about disposal.

12.2.1 Disposing of the packaging

- Sort the packaging before you dispose of it. Dispose of cardboard and carton as waste paper and foils via the recyclable material collection service.

12.2.2 Disposing of lubricants and cleaning products

- Dispose of lubricants, cleaning and maintenance products in an environmentally responsible fashion. These products do not belong in the household garbage, in sewers or in natural habitats. Read the instructions on the packaging. Dispose of lubricants, cleaners and maintenance products at a collection point for special waste.

12.2.3 Disposing of tyres and inner tubes

Tyres and inner tubes are not residual waste or household rubbish.

- Dispose of tyres and inner tubes at a recycling depot or at a recycling collection point run by your city or municipality.

12.2.4 Disposing of the bicycle

- Dispose of your bicycle at a recycling depot.

13 Inspection report

First inspection

After approximately 200 km or 2 months
Work done:

Materials installed:

Second inspection

After approximately 1000 km or 1 year
Work done:

Materials installed:

Third inspection

After approximately 2000 km or 2 years
Work done:

Materials installed:

Fourth inspection

After approximately 3000 km or 3 years

Work done:

Materials installed:

Fifth inspection

After approximately 4000 km or 4 years

Work done:

Materials installed:

Sixth inspection

After approximately 5000 km or 5 years

Work done:

Materials installed:

14 Bicycle passport

Model _____ Make _____

Frame no. _____ Colour _____

Aluminium components ☐ Frame ☐ Rim ☐ Fork ☐ _____

Brake

Front brake ☐ Rim brakes ☐ Roller brakes ☐ Disc brakes

Rear brake ☐ Rim brakes ☐ Roller brakes ☐ Disc brakes ☐ Coaster brakes

Wheels

Rim size ☐ 20" ☐ 24" ☐ 26" ☐ 27.5" ☐ 28" ☐ 29" Tyre size _____

Rim ☐ Wear limit present

Quick-tensioning devices

☐ Seat post ☐ Front wheel ☐ Rear wheel

Lights ☐ Hub dynamo ☐ E-bike (battery) ☐ Detachable lighting

Bicycle passport

Suspension

☐ Suspension seat post

☐ Suspension fork

Accessories

Pannier rack

☐ Installed

☐ Can be installed

☐ Not suitable for pannier rack

Basket

☐ Installed

☐ Can be installed

☐ Not suitable for basket

Frame lock

☐ Installed

Trailer/child seat

Trailer couplings and child seats may not be installed.

Permissible total weight

☐ 130 kg

☐ 140 kg

☐ 170 kg

☐ _____

Drivetrain

☐ Chain drive

☐ Belt drive

Gear shift

Gear hub

_____ Derailleur gears _____

Special features

Tip for the vendor: Make a copy of the bicycle passport and handover document and add the copies to your customer file.

15 Handover document

15.1 Dealer

The handover of the bicycle indicated in the bicycle passport to the customer took place once:

- the bicycle had been fully assembled
- all screw connections had been verified
- the functionality of all components had been tested
- excess oil and grease had been removed
- a test ride had taken place
- the bicycle had been adjusted to suit the customer
- the customer had been briefed on how to use the bicycle
- the customer had been informed that an inspection must be carried out after the first 200 km and
- the customer had been asked to read the user manual before using the bicycle for the first time.

Stamp

Place, date _____

Signature _____

15.2 Customer

Surname _____

First name _____

Street _____

Post code/city _____

Tel. _____

E-mail _____

- The bicycle passport was filled in by the specialist dealer.
- The bicycle has been adjusted to suit me.
- I have received an explanation of the basic operations of the bicycle.

I have been given the following user manuals:

☐ Bicycle ☐ E-bike ☐ E-bike 45 km/h

Place, date _____

Signature _____

16 Legal notice

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