NOX CYCLES

NOXCYCLES.COM

USER MANUAL

Thank you for choosing a NOX hybrid bike!

With a NOX bike you not only purchased an extraordinary high-quality e-bike with outstanding performance but also a piece of our beautiful corporate history.

We welcome you in our NOX family – from now on you will make history as well!

Your NOX team

Index

1 Safety instructions

⚠ WARNING

There is a risk of injury if you disregard the safety instructions!

Follow all safety and usage instructions, both in this and in all other user manuals enclosed with the e-bike. Failure to follow the safety instructions may result in electric shock, fire and/or serious injury.

- CAUTION: Risk of burning when touching the engine case!
- CAUTION: Risk of injury in case of unintentional activation of BMZ Drive Systems! Before working on the e-bike (e.g. assembly, maintenance, work on the chain, etc.), transporting or storing it, remove the battery from the e-bike.
- CAUTION: Danger of injury when using the push-assist without ground contact of the wheels! Only use the push-assist when pushing the e-bike.
- CAUTION: Do not make any changes to your e-bike system! Never try to increase the performance of the e-bike system. This reduces the life of the components and may damage the e-bike system and the e-bike. In addition, any kind of manipulation of the e-bike system will void the warranty of your e-bike. Improper use of the system also endangers your own safety and the safety of other road users. Unauthorized changes to the e-bike system can result in high personal liability costs or even the risk of prosecution in the event of accidents due to manipulation.
- Follow all national regulations for the approval and use of e-bikes.
- Never open the engine. The engine is maintenance-free and may only be repaired by qualified specialist personnel, and only with original spare parts, to maintain the engine's safety. Unauthorized opening of the engine voids the warranty.
- All components associated with the e-bike system, as well as components that are mounted on the engine (e.g. chainring, pedals), may only be replaced with components approved by the e-bike manufacturer. This protects the engine from damage (e.g. due to overload).
- Read and follow the safety instructions in the user manual of the battery as well as in the user manual of your e-bike.
- Keep this manual for the future.
- Keep all components of your e-bike clean, especially the contacts of the battery and its mount. Gently clean it with a dry, soft cloth.
- All components, including the engine, must not be submerged in water nor cleaned with a high-pressure cleaner.
- For service or repairs on your e-bike, please contact an authorized dealer.

These safety instructions apply to all subsequent chapters!

2 Engine

2.1 When does the e-bike drive work?

BMZ Drive Systems provides electromotive support for the cyclist in a Pedal Electric Cycle (pedelec). The support depends on the force applied to the pedals by the cyclist. Support by the e-bike drive is therefore only given when the cyclist is pedalling, regardless of the support level.

2.2 Shutdown from 25 km/h

The e-bike drive switches off automatically at a speed over 25 km/h. If the speed drops below 25 km/h, the support automatically resumes.

2.3 Push-assist

An exception applies to the push-assist function, in which the e-bike can be pushed comfortably at a speed of up to 6 km/h without pedalling. To activate the push-assist, press the push-assist button (see chapter 3.6) twice and hold it. After >3 sec. the e-bike will start moving automatically for as long as you hold the push-assist button.

NOTE

When using the push-assist, pedals are rotating! Please mind that if the chain is on a large sprocket, the e-bike slows down, and if the chain is on a small sprocket, the e-bike speeds up.

2.4 Riding without support

You can ride the e-bike at any time without engine support like a normal bike, either by switching off the e-bike system or by setting the support level to Off. The same applies when the battery is empty.

2.5 Engine setup

The e-bike system supports various engine setups. The standard support setup is distributed over the four levels as follows: 40% - 80% - 160% - 320%
Upon request, these levels can be adjusted individually, but not beyond the maximum percentage. Consult your authorized point of sale.

2.6 Influences on the reach

The reach of your e-bike is affected by many factors, such as:

- The higher the support level, the lower the reach
- Shifting behaviour
- Type of tyres
- Tyre pressure
- Age, maintenance condition and charge status of the battery
- Trail profile (gradients) and condition (road surface)
- Weather conditions (e.g. head wind, surrounding temperature, etc.)
- Weight of the e-bike
- Weight of the cyclist
- Additional load

2.7 Careful handling

Please mind the operating and storage temperatures of the e-bike components. Protect the engine, display and battery from extreme temperatures (e.g. due to intense sunlight without simultaneous ventilation). The components (especially the battery) can be damaged when exposed to extreme temperatures.

2.7.1 Cleaning

Keep all components of your e-bike clean, especially the contacts of the battery and its mount. Clean it gently with a dry, soft cloth.
All components, including the engine, must not be submerged in water or cleaned with a high-pressure cleaner. For service or repairs on your e-bike, please contact your authorized dealer.

2.7.2 Maintenance and inspection

After a mileage of 15,000 km, the drive belt needs to be replaced by a BMZ certified service centre. Contact your authorized dealer for information on the nearest service centre.

2.8 Disposal

Engine, display, battery, speed sensor, accessories and packaging are to be recycled in an environmentally sound way. Do not dispose of e-bikes and their components in the household waste.

According to European Directive 2012/19/EU, no longer usable electrical appliances and, according to European Directive 2006/66/EC, defective or used batteries must be collected separately and recycled in an environmentally sound way.

Please return no longer usable batteries and displays to an authorized dealer.

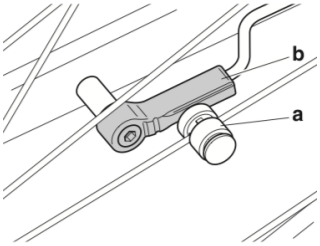
2.9 Technical data engine

Art. No.: #23084

- Measurements: 213 x 150 x 128 mm
- Weight: 3,400 g
- Nominal voltage: 36 V DC
- Type of protection: IP56
- Torque: 90 Nm
- max. continuous rated power: 250 W
- Support up to: 25 km/h
- Working temperature range: -10 to 50 °C

2.10 Aligning the sensor

Make sure that the magnet (a) is aligned parallel to the marking on the sensor (b). If the magnet is misaligned, it may cause problems with the engine's support.



3 Display

3.1 Use

The display and operating unit is intended exclusively for use with BMZ Drive Systems. It is used to display driving and status-relevant information and to control the engine.

All illustrations are schematic and may differ in details on your e-bike.

3.2 Versions

3.2.1 Sportive display

The compact sportive display is display and control unit in one. It can be installed inconspicuously close to the handle and is less prone to damages in case of a fall.

3.2.2 New-style display

The larger new-style display is easy to read and displays additional functions (see 3.3 and 3.6). The system is conveniently controlled via the control unit close to the handle.

3.3 Mounting

3.3.1 Mounting the sportive display

Prerequisite: Engine and battery are already installed
Required tools: Allen key SW 2.5

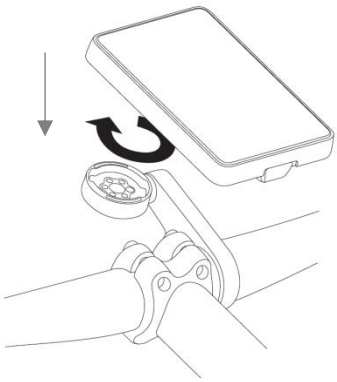
Instructions

1. Mount the sportive display near the handlebar (SW 2.5)
2. Connect the plug connection to the engine

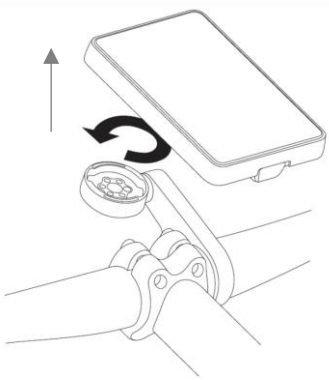
The display is ready for use as soon as it has been correctly inserted into the holder.

3.3.2 Mounting the new-style display

Prerequisite: Engine and battery are already installed
Required tools: Allen key SW 2.5 / Allen key SW 3 / intermediate cable



Mounting the display



Demounting the display

Instructions

1. Mount the control unit near the handlebar (SW 2.5)
2. Mount the new-style display holder in the middle of the handlebar (SW 3)
3. Tilt the display 45° to the left, put it onto the holder and turn it straight to the right
4. Connect the display to the engine via intermediate cable

The display is ready for use as soon as it has been correctly inserted into the holder.

To remove the new-style display, disconnect the intermediate cable, rotate the display 45° to the left and lift it upwards.

NOTE

The displays and control units can only function correctly if the speed sensor and the wiring have been mounted correctly and the battery is sufficiently charged.

3.4 Activation

3.4.1 Switching the e-bike system on and off

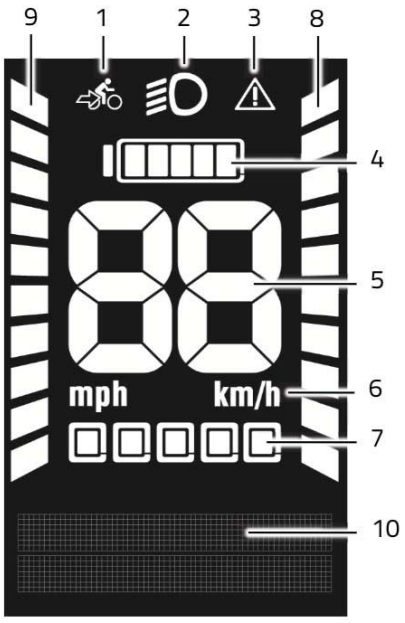
To turn on the e-bike, press the power on/off button on the display/control unit. To turn off the e-bike completely, press and hold the power on/off button for >3 sec.

3.4.2 Standby mode

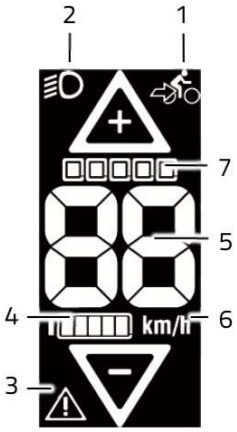
If the e-bike is not being moved, the display unit and the engine go into standby mode. However, this can also be activated manually. If you want to switch off your e-bike for a short period of time, you can switch into standby mode by briefly pressing the power on/off button on the display/control unit.

3.5 Display symbol explanation

The different displays have a similar structure. The new-style display comes with an additional multifunction display and shows the current overall performance of the cyclist and the engine.



New-style display



Sportive display

Symbols

1	Push-assist
2	Lighting
3	Warning
4	Charge status
5	Speed
6	Unit (km/h, mph)
7	Support level
8	Power input of cyclist
9	Power input of engine
10	Multifunction display

3.5.1 Charge status

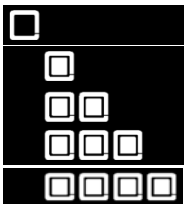
The charge status of the battery (4) is shown in the display with five segments. Each segment corresponds to approx. 20% of the battery capacity.

Display while charging (LED flashing)	Display while riding
 0-19%	 100-80%
 20-39%	 79-60%
 40-59%	 59-40%
 60-79%	 39-20%
 80-99%	 19-5%
 100%	No display = emergency operation/engine off

NOTE

If the charge state is <20%, the charge status indicator will start flashing. If the charge state is <5%, the charge status indicator disappears. In this case, the engine support is turned off to ensure the display lighting for another two hours.

3.5.2 Support levels



Off – no support
Level 1 – 40% support
Level 2 – 80% support
Level 3 – 160% support
Level 4 – 320% support

3.5.3 Multifunction display

At the bottom of the new-style display is the multifunction display. Touch the menu touch field on the control unit to switch through the menu and show the different features:

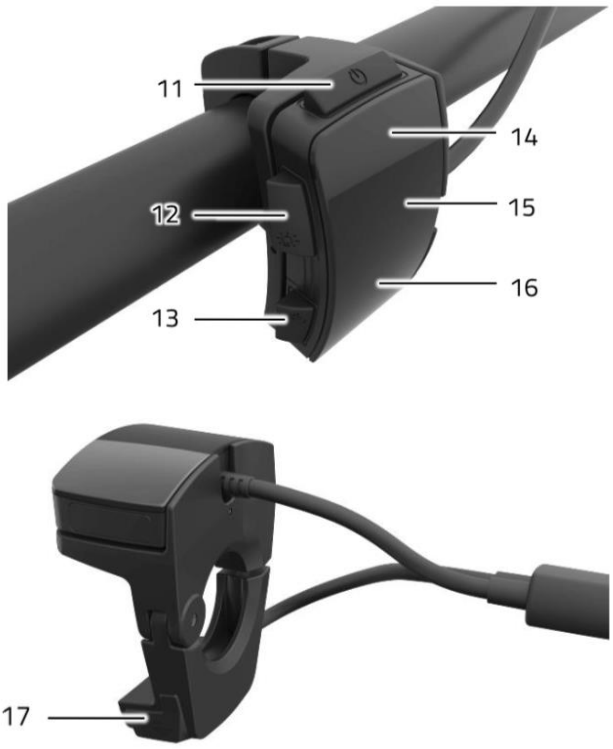
Feature	Unit
Time of day	hh:mm (24h or 12h am/pm)
Trip distance	km | mi
Trip calories	Kcal
Trip time	hh:mm
Avg. speed	km | mi
Max. speed	km/h | mph
Total distance	km | mi
Total time	hh:mm

NOTE

Individual features may be disabled depending on the e-bike model. For detailed information, contact your e-bike manufacturer or e-bike dealer.

3.6 Control unit

3.6.1 Buttons and functions



11	Power on/off (button)
12	Lighting (button)
13	Push-assist (button)
14	Up (compensator)
15	Menu (touch field)
16	Down (compensator)
17	Micro USB port

Both display types come with a micro USB port (17) at the bottom. With a suitable USB cable, you can use it to charge other devices such as your smartphone.

3.6.2 Charging external devices via USB

- Open the cap of the USB port
- Use a suitable USB cable to connect your device with the USB port
- Once connected the display will briefly show “CHARG”

NOTE

The charging current is 500 mA. Always check the permissible charging currents of your devices before charging.

3.7 Settings

3.7.1 Sportive display settings

The sportive display can show the speed in kilometres per hour or miles per hour. To switch between metric and imperial:

1. Press and hold lighting button >3 sec.
2. Switch unit with the compensators (up/down)
3. To confirm press and hold lighting button again >3 sec.

3.7.2 New-style display settings

The following settings can be made on the new-style display:

Feature	Value
Reset Trip	Resets trip time, burnt calories, distance and avg. speed to zero
Reset All	Resets every value incl. total distance and total time to zero
Light	Auto/Always On/Manual
Date	DD/MM/YY
Time Format	24/12
Time	hh/mm
Language	German/English
Metric/imperial	km/mi

Instructions

1. Press and hold the lighting button on the control unit for >3 sec.
2. Tap the menu touch field in the middle of the control unit until the desired feature is displayed
3. Set values with the compensators (up/down)
4. To confirm tap menu touch field

NOTE

After the last feature, tap the touch field menu again to exit the settings menu. To exit the settings menu immediately, briefly press the lighting button.

3.8 Technical data display

Art. No.: #27937

- Measurements:
  - New-style display: 67 x 100 x 11 mm
  - Display area: 47 x 72 mm
  - Sportive display/control unit: 27 x 47 x 16 mm
- Weight: New-style display 67 g
- Nominal voltage: 36 V DC
- Type of protection: IP65
- Working temperature range: -10 to 60 °C
- Storing temperature range: -20 to 85 °C
- USB charging voltage: 5 V DC
- USB charging current.: 500 mA

4 Battery

⚠ WARNING

Please read and mind all safety instructions in chapter 1!

4.1 Mounting

With all NOX hybrid bikes the battery is integrated in the frame. For this purpose, the battery is inserted through the lower frame opening, locked, connected with plug connections and

finally compacted with a frame cover cap. The cap is attached to the frame with two screws left and right. To charge the battery, use the charging port on the motor housing or, if necessary, remove the battery from the frame, for example if you have several batteries and would like to charge them separately.

4.2 Activation

To activate the battery, press the power on/off button on the control unit/display. After switching it on, the display will show the current charge status of the battery.

The battery is delivered partially charged. To ensure full battery performance, fully charge it with the charger before using it for the first time.

Only use the charger included with your e-bike! Only this charger is matched to your battery!

The battery can be charged at any time separately or on the e-bike, without shortening its operating life. During the charging process, you can see the current charge status on the display.

1. Connect the charger to the mains
   → The LED status indicator of the charger should now be activated
2. Connect the charging plug of the charger to the charging port of the battery
   → The charging process begins

NOTE

- Interrupting the charging process does not damage the battery.
- If the battery cannot be charged, the cell voltage has fallen below the critical value of 2 V per cell and the battery is defective.
- Do not charge a damaged battery and do not use it. Contact an authorized point of sale.
- The battery reaches its maximum life when charged at ambient temperatures between 10 and 30°C.

4.2.1 Active mode

After switching on, the battery is in active mode. Without further action (operation or movement of the e-bike), it will remain in active mode for two hours. The active mode is activated by pressing the LED button, charging the battery or inserting the battery into the e-bike.

4.2.2 Deep sleep mode

To minimize the self-drain of the system, the battery automatically switches to deep sleep mode after 2 hours without activity in active mode and with the display unit switched off. The deep sleep mode is also activated if the lighting button or the power on/off button of the control unit is pressed for >3 sec. or if the battery is removed from the e-bike for >30 sec.

4.3 Maintenance, cleaning and storage

Keep the battery clean. Gently clean it with a dry, soft cloth. The battery must not be submerged in water or cleaned with a water jet. Only place the battery on clean surfaces. In particular, avoid the contamination of the charging ports and the contacts. If soiled and

corroded, the contacts can be cleaned with a mild cleaner or penetrating oil and protected with pole grease.

After about three months of storage, check the charge status of the battery and recharge it to about 50% if necessary.

4.4 Operating life

The life of the battery can be extended if it is well maintained and, above all, stored under the right conditions:

- Temperature: 18-23°C
- Humidity: 0-80%
- Charge level: about 50%

With increasing age, the capacity of the battery will decrease even with good care. A significantly reduced operating time after charging indicates that the battery has been used up and should be replaced.

4.5 Shipping and transport

The battery may only be shipped with dangerous goods packaging and the necessary warnings.

If you have questions about transportation or need suitable transport packaging, contact an authorized e-bike dealer.

4.6 Disposal

The engine, display, battery, speed sensor, accessories and packaging are to be recycled in an environmentally sound way. Do not dispose of e-bikes and their components in the household waste.

According to European Directive 2012/19/EU, obsolete electrical appliances must be disposed of and according to European Directive 2006/66/EC, defective or used batteries must be collected separately and recycled in an environmentally sound way.

Please return no longer usable batteries and displays to an authorized dealer.

5 Charging unit

5.1 Safety instructions

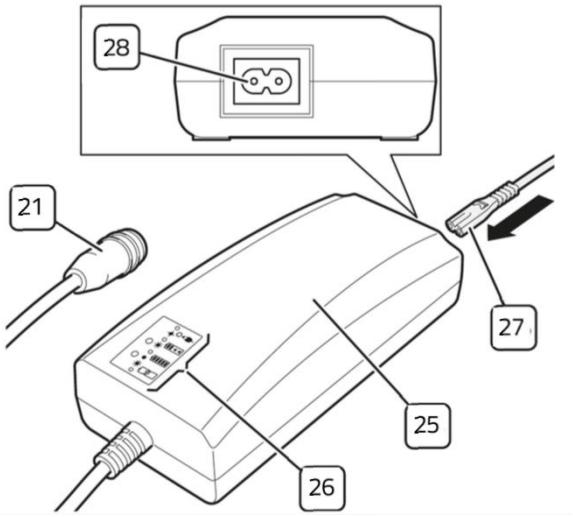
⚠ WARNING

The charger must only be used to charge the battery supplied with the BMZ Drive System!
Please read and mind all safety instructions in chapter 1!

- For safe use, observe the operating instructions. Risk of electric shock!
- Use only in a dry environment.
- Only charge batteries of the BMZ Drive System. Other batteries may explode and cause injury!
- Do not replace the power cord. Risk of fire and explosion!

5.2 Components of the charger

All illustrations are schematic and may differ in details on your e-bike because BMZ Drive Systems can be combined with different chargers. For detailed information about the charger of your e-bike, see enclosed usage and safety instructions of the manufacturer.



21	Charging plug
25	Charging unit
26	LED status indicator
27	Power cord
28	Power connection

5.3 Activation

⚠ WARNING

Mind mains voltage!

The voltage of the power source must match the information on the type label of the charger.

1. Connect power cord to the charging unit by plugging it into the power connection
2. Connect power cord to the mains by plugging it into a power socket
   → The LED status indicator of the charger should now be activated

NOTE

Avoid contamination of charging ports and contacts. Be careful when touching the charger while charging. It can heat up a lot, especially at high ambient temperatures.

5.4 Charging process

Only charge the battery in compliance with all safety instructions in chapter 1 and the supplied warnings of the manufacturer!

Charging starts automatically as soon as the charging unit is connected to the battery and the mains.

Charging the battery is possible with and without a display/control unit. Without a display/control unit, the charge status is only shown on the LED status indicator of the charger. The display/control unit can be removed during the charging process or put on after the start of the charging process.

When the battery is fully charged, the green LED lights up:

1. Disconnect the charger from the mains
2. Disconnect the battery from the charger
   → Battery will switch off

If the battery is not disconnected from the charger after charging and the charger is still connected to the mains supply, it will switch on again after a few hours, check the charge status of the battery and start recharging if necessary until the battery is fully charged again. The LED lights up green.

5.5 Charging error

Sometimes it can occur that the charger detects an error while charging and automatically stops the charging process. This is a protective mechanism and can be caused by different influencing factors.

When the **red** LED on the charger lights up, please proceed as follows:

1. Disconnect the charger from the battery/engine and the mains supply.
2. Wait until the LED stops flashing and the remaining voltage has dissipated. This can take up to two minutes.
3. Connect the charger to the battery/engine
4. Connect the charger to the mains supply
   → The charging process should be continued as usual.

5.6 Functions of the charger

1. The charger is suitable for charging a Li-Ion battery pack with a nominal 36 volts, 10 Li-Ion cells in series. The charging current is max. 4 A. The max. battery capacity can be up to 25 Ah.
2. The charger is protected against
   - Overcurrent: shutdown as soon as the output current is greater than 7 A
   - Short circuit: shutdown in case of short circuit on the DC side
   - Overvoltage: shutdown as soon as the output voltage is greater than 50 V
   - Reverse polarity: shutdown if a wrongly polarized battery pack is connected to the charging cable
3. The charger has an additional capacity counter which stops the charging process automatically after a charge of 25 Ah.
4. The charger has a temperature monitor, which protects the device in case of too high ambient temperature as well as permanent overload. In this case, the output power is reduced.
5. In the event of an error, the red LED flashes.

5.7 LED charge status indicator

Status	Red LED	Green LED
Standby	Off	Flashes slowly 10% on
Pre-charging	Off	Flashes 50%
Charging	Off	Flashes 50%
Fully charged/trickle charge	Off	On
Error	Flashes	Off

End-of-charge voltage 42 V +/- 1%

5.8 Operating the charger

1. Before initial use, check the parameters of the charger and your battery according to the specifications on the type label or the supplied documentation.
2. Check if the mains voltage is suitable for the charger:
   → Input voltage (V): minimum 207, nominal 230, maximum 264
3. To check the function, insert the plug of the charger into the power socket. The green LED flashes slowly when ready to use.
4. Then connect the charging cord (DC cable) to the battery. The green LED flashes evenly and indicates that the charging has started. If the battery voltage is too low (<25 V DC), the battery is charged with a pre-charging current of approx. 500 mA. The green LED flashes evenly. This process takes max. 30 min. If the voltage threshold of 25 V DC is not exceeded during this time, the charger switches itself off and indicates a battery defect. The charger shows fault. In this case, contact a point of sale for further assistance. When 25 V is reached, the charger automatically switches to fast charging.
5. When the battery is fully charged, the charger will turn off. The green LED lights up permanently.
6. The charger has a temperature control, which protects the device from too high ambient temperature as well as continuous overload. In this case, the output power is reduced until a stable operating temperature is reached.
7. If the battery has been discharged below its nominal discharge voltage, it is possible that the battery will no longer charge.

5.9 Maintenance and cleaning

If the charger fails, please contact an authorized point of sale.
Use a soft, dry cloth to clean the charger. Do not use water or other cleaning fluids!

5.10 Technical data

	4-A-charger
Measurements (mm)	206 x 94 x 61
Weight	770 g
End-of-charge voltage	42 V DC
Nominal output current	4 A
Working temperature range	0 to 45°C
Storing temperature range	-25 to 70°C

6 Brakes

NOTE
Excessive pressure on the brake handles can block the wheels during braking! This could cause accidents.

Please mind all user and safety instructions given by the manufacturer!

Detailed user instructions to MAGURA brakes can be found online under http://www.magura.com/de/components/techcenter as well as detailed video tutorials under https://www.youtube.com/user/MAGURAPassionPeople

7 Suspension fork and shock absorber

NOTE
Both the suspension fork and shock absorber (strut) must be adjusted to the rider's weight with the correct air pressure before first use. Only use a suitable shock pump for this.

Please mind all user and safety instructions given by the manufacturer!

Detailed user instructions to Rock Shox suspension elements can be found online under https://www.sram.com/de/service/include-archived/rockshox/all as well as detailed video tutorials under https://www.youtube.com/user/SRAMtech/videos

8 Shifting system

NOTE
Make sure to shift gears separately, do not shift several gears in one go. If possible, always shift into lower gears **before** going uphill.

Please mind all user and safety instructions given by the manufacturer!

Detailed user instructions to SRAM shifting systems can be found online under https://www.sram.com/de/service/include-archived/sram/258 as well as detailed video tutorials under https://www.youtube.com/user/SRAMtech/videos

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