

brose

Brose Drive Magnesium

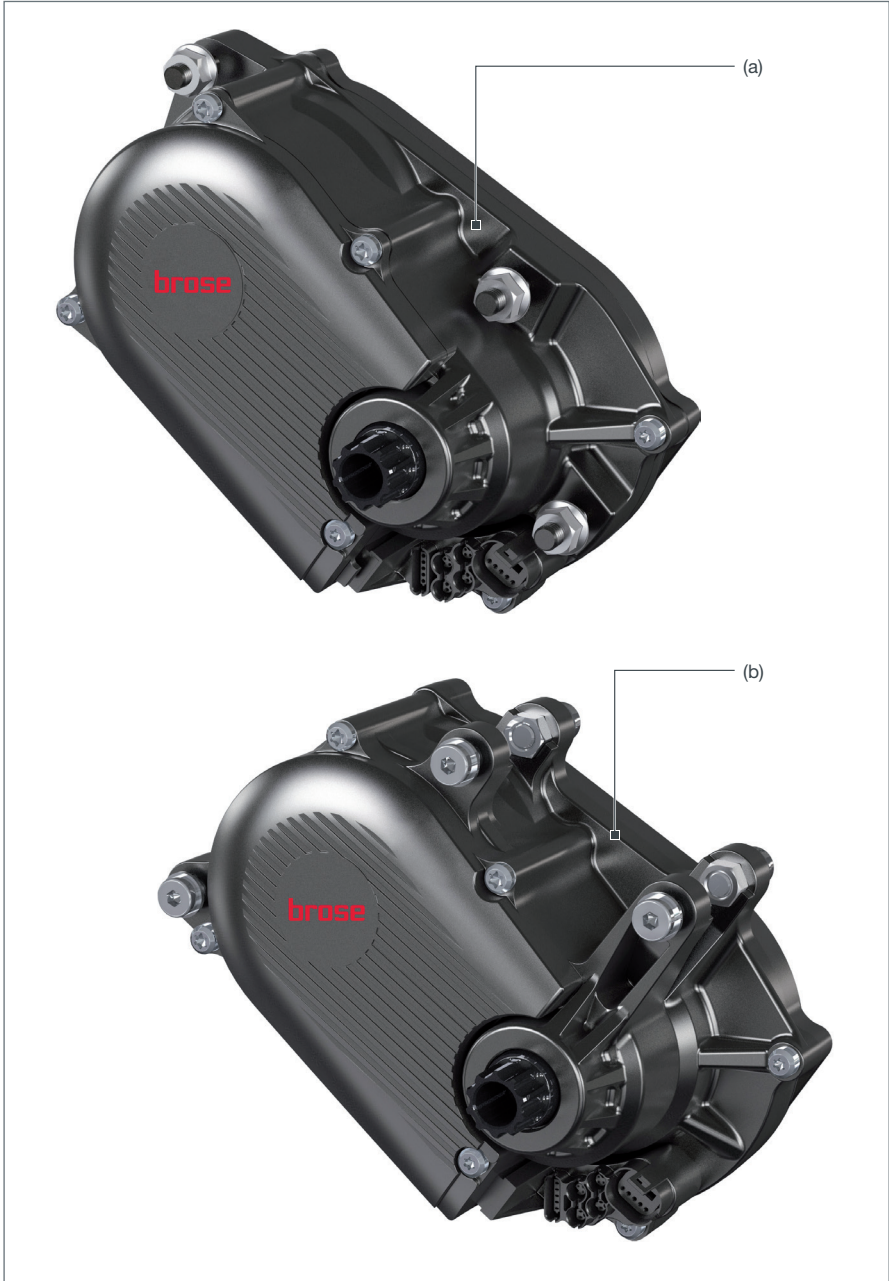
E 57028 / E 41219

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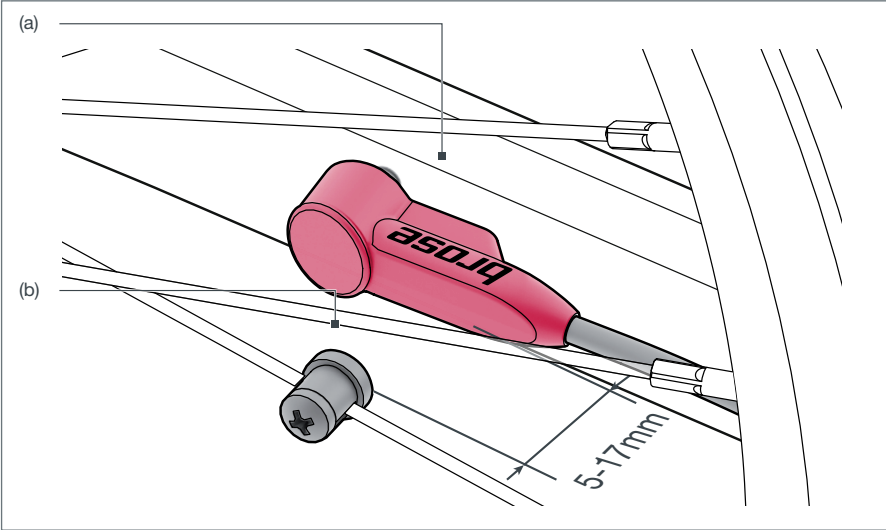
E 06855 / E 06855



EN User Manual



A. Brose Drive Magnesiumgehäuse / Magnesium Housing



B. Geschwindigkeitssensor / Speedsensor

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The user manual contains important information about the use and settings of Brose components.

This user manual is based on the standards and regulations valid in the European Union.

Read the operating instructions, especially the safety instructions, carefully in the following chapter before using the Brose Drive System.

Failure to follow the instructions in the user manual may result in serious injury or damage to your e-bike. Keep the operating instructions at hand for further use.

If you pass on the Brose components to third parties, please always include the respective user manual.

The term **«e-bike»** used in this user manual relates to electric bikes, pedelecs and EPAC. It is an electric bicycle with electronic assistance.

The term **«battery»** refers equally to mounted down tube batteries, luggage carrier batteries and batteries integrated in the frame.

The term battery is used synonymously for rechargeable energy stores.

1. Safety Advice



Read the user manual carefully and observe all safety advice and instructions.

- › Read and observe the safety advice and instructions in this manual as well as in all other instructions enclosed with the e-bike. Only then is the safe use of the e-bike possible.
- › Failure to comply with or observe the safety advice and instructions may result in electric shock, fire and/or serious injury.
- › Keep this user manual and all other enclosed information for future reference.
- › Never open the drive unit. This is low maintenance and must be repaired only by qualified personnel and only with original spare parts. The drive unit requires an inspection by a certified service centre after 15,000 km.
- › This preserves the safety of the drive unit. Unauthorised opening of the drive unit voids the warranty claim.

- › The walk assist may only be used when pushing the e-bike.
 - » If the e-bike wheels have no ground contact when using the Walk assist, there is a risk of injury.
- › All components belonging to the Brose Drive System as well as components that are mounted on the drive unit (e.g. chainring, chainring mount, pedals) must only be replaced with approved components.
 - » This protects the drive unit from damage (e.g. due to overload).
- › Do not make any changes to your Brose Drive System. Never try to increase the performance of your Brose Drive System.
 - » You otherwise reduce the life of the components and risk damaging the Brose Drive System and your e-bike. In addition, any kind of manipulation of the Brose Drive System voids all guarantee and warranty claims for your e-bike. Improper use of the system will also jeopardise your own safety and that of other road users. Unauthorised changes to the Brose Drive System could result in high levels of personal liability or even the risk of prosecution in the event of accidents due to manipulation.
- › Comply with all national regulations for the approval and use of e-bikes. These may differ depending on which country you are in.
- › Remove the battery from the e-bike before handling it (e.g. before assembly, maintenance, working on the chain, etc.), and before transporting or storing it.
 - » Inadvertent activation of the Brose Drive System may result in injury.
- › ***Do not let the display and/or control unit distract you.***
If you do not focus solely on traffic, you risk being involved in an accident. If you want to make a keypad entry apart from changing the assist mode and ride data, stop and enter the appropriate data.
- › ***ATTENTION:*** There is a risk of burns if the motor housing is touched. Under extreme conditions, e.g. sustained high load at low speed when riding uphill or with a load, temperatures >60°C can occur on some parts of the drive.
- › ***NOTE:*** Familiarise yourself with the functions of the e-bike and its operation before starting your first journey.
- › ***NOTE:*** Keep the user manual with you on all trips. This will allow you to look up less frequently needed functions at any time.

2. Intended Use

The drive unit is intended solely for driving your e-bike and may not be used for other purposes.

3. Product Description

3.1. Explanation of Illustrations

The numbering of the described components also refers to the illustrations on the graphics pages at the beginning of the manual. All illustrations are schematic and may differ in details from the actual features of your e-bike.

Brose Drive with magnesium housing (Fig. A)		
(a) horizontal	Brose Drive C _{Mag}	E 57028
	Brose Drive T _{Mag}	E 57026
	Brose Drive S _{Mag}	E 06855
(b) vertikal	Brose Drive C _{Mag}	E 41219
	Brose Drive T _{Mag}	E 41222
	Brose Drive S _{Mag}	E 01680

Speed sensor (Abb B,C)

(a) Speed Sensor

(b) Spoke magnet

3.2. Brose Drive System

3.2.1. Brose Drive C_{Mag}

This drive represents an urban lifestyle. Whether on the way to work or cruising through the city – thanks to its particularly harmonious handling, the Brose Drive C_{Mag} ensures serenity in the hustle and bustle of the city. This gentle response drive is the perfect companion in everyday life.

3.2.2. Brose Drive T_{Mag}

Thanks to its high efficiency, this drive cuts a particularly good figure over long distances. Long tours or a short afterwork trip – this all-rounder provides enough power for all the requirements of everyday life.

3.2.3. Brose Drive S_{Mag}

This powerhouse delivers maximum power straight. The Brose Drive S_{Mag} is 15 % smaller and 500 g lighter than the Brose Drive S_{Alu}. E-bikers can enjoy the maximum power of 90 Nm over an even wider cadence range, even when the trail turns into a real adventure.

Thanks to its exclusive assistance level **«Flex Power Mode»**, e-bikers can now switch into a torque- and cadence-sensitive support mode. In this new riding mode e-bikers can enjoy the cadence-sensitive support **«Cadence Power Control (CPC)»**. They can receive up to 30 % more support at higher cadences. The newly developed **«Progressive Pedal Response (PPR)»** provides an even faster drive response when pressure is applied to the pedals. The instant power output of the Brose Drive S_{Mag} enables riders to master even demanding trails with confidence.

3.3. Technical Data

Brose Drive with magnesium housing		
Material no. (horizontal)	Brose Drive C _{Mag}	E 57028
	Brose Drive T _{Mag}	E 57026
	Brose Drive S _{Mag}	E 06855
Material no. (vertical)	Brose Drive C _{Mag}	E 41219
	Brose Drive T _{Mag}	E 41222
	Brose Drive S _{Mag}	E 01680
L × W × H	193 × 150 × 115 mm	
Weight, approx.	2,9 kg / 6,3 lbs	
Rated voltage	36 V	
Continuous rated power	250 W	
Torque	Brose Drive C _{Mag}	50 Nm
	Brose Drive T _{Mag}	70 Nm
	Brose Drive S _{Mag}	90 Nm
Max. assistance	Brose Drive T _{Mag}	280 %
	Brose Drive T _{Mag}	320 %
	Brose Drive T _{Mag}	410 %
Assistance up to	25 km/h	
Walk Assit	3-6 km/h	
Tightness	IP 56 (dust-protected, protection against strong water jets)	
Operating and storage temperature	-25°C bis 80°C	

Table 01: Technical Data

* Check which drive version has been installed in your e-bike using the article number on the drive unit. If the name is not recognisable, you can also find the article number of your motor in the «Settings» of the «Brose Display Allround» and «Brose Display Central» displays.

Lighting for all drive variants	
Rated voltage	12 V ---
Max. continuous rated power	
Front light	6,6 W
Rear light	0,6 W

Table 02: Technical Data - Lighting

Socket Assignment

Socket assignment
(3) Rechargeable battery
(4) E-bike plug (green)
(5) Speed sensor (red)
(6) Rear light/brake
(7) Front light (yellow)
(8) HMI

Table 03: Socket Assignment

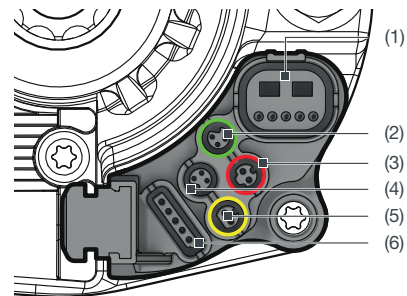


Abb. 1: Socket assignment

3.4. Declaration of Conformity

Brose Antriebstechnik GmbH und Co. Kommanditgesellschaft, Berlin, hereby confirms that the drive unit corresponds with directive 2014/53/EU. The complete text of the EU declaration of conformity is available at the following Internet address (Service/ Servicetool):

www.brose-ebike.com

4. Operation and Control

4.1. Before First Use

The Brose Drive System can only be activated if the following prerequisites are met:

Inserting and removing the battery

To insert the e-bike battery into the e-bike and to remove it, read and observe the operating instructions for the battery.

Check the speed sensor (Fig. C/D)

Please first check which speed measuring system your e-bike is equipped with.

NOTE: If the distance between the speed sensor and the magnet is too small or too large, or if the speed sensor is not connected correctly, the tachometer display will fail and the e-bike drive will run in the emergency mode.

Depending on the system installed, you should loosen the spoke magnet screw in this case and attach the spoke magnet to the spoke so that it passes the speed sensor at the correct distance.

Check whether the sensor is correctly connected.

If still no speed appears on the display, please contact an authorised bicycle dealer

NOTE: Check all fixing screws regularly. Shocks, heat and cold can cause screws to become loose. Tighten all screws to the required torque or contact an authorised dealer.

NOTE: A full function is only possible if the speed sensor and all cables have been connected correctly and the battery is charged up enough.

4.2. Operating your Brose Drive Systems

Please refer to the operating instructions for the control unit installed in your e-bike for details on the exact operation of your e-bike with Brose Drive.

5. Ride Advice and Tips

When does the Brose Drive unit operate? › Belt or chain drive

The Brose Drive System gives the cyclist motor-powered assistance in a « **PEDal ELeCtric Cycle/ Electrically Power Assisted Cycles (EPAC)**».

The assistance depends on the force applied to the pedals by the cyclist. Assistance by the e-bike drive is therefore given only when the cyclist pedalling. This applies regardless of the level of assistance.

The e-bike drive shuts off automatically at speeds over 25 km/h. If the speed drops below 25 km/h, assistance automatically resumes.

An exception applies to the push aid function, in which the e-bike can be pushed more comfortably without pedalling at low speed. The pedals can rotate when using the push aid. You can ride the e-bike at any time without assistance like a normal bike, either by switching the Brose Drive System off or by switching the assistance level to the «**OFF**» mode (refer to the control unit instructions). The same applies to a drained battery.

Familiarisation

Take some time to get used to the Brose Drive System before you use it in normal road traffic.

Test the different levels of assistance until you feel confident in using the product. Before long rides, gather experience of how various parameters and environmental conditions affect the range of your e-bike.

Factors that influence the range

The range is influenced by many different factors, such as:

- › Assistance level
- › Gear response
- › Type of tyres

› Tyre pressure

› Age, condition and charge of the battery

› Route profile (gradients) and route characteristics (road surface)

› Weather conditions (e.g. ambient temperature etc.)

› Weight of your e-bike

› Weight of rider and load

Therefore, it is not possible to accurately predict the range before starting a journey and during a journey.

However, in general (with the same level of assistance by the e-bike drive):

- › The higher the support level (under the same conditions), the lower the range.



Motor tuning

The Brose Drive System supports various motor tuning options. These are individually adapted together with your bicycle manufacturer for each bicycle model. Detailed information on motor tuning for your e-bike is available from your bicycle manufacturer and your bicycle dealer.

Careful handling of the Brose Drive System

Observe the operating and storage temperatures of the e-bike components (see section 3.4.). Protect the drive unit, display unit and battery from extreme temperatures (e.g. from intense sunlight without simultaneous ventilation). The components (especially the battery) can be damaged by extreme temperatures.

6. Troubleshooting

	WARNING! Always observe all error information!
	NOTE: Have repairs done by a certified bicycle dealer only.

The fault display indicates fault that the system can detect independently.

Depending on the type of fault, the drive may be automatically switched off. Check the e-bike before making any further trips. Driving on without the assistance of the drive is possible at any time.

Depending on the type of fault, the drive may be automatically switched off. Check

the e-bike before making any further trips. Driving on without the assistance of the drive is possible at any time.

The fault display may indicate serious errors in your Brose Drive system. Errors prevent the safe operation of the e-bike. There is a risk of accidents involving personal injury and damage to the e-bike.

- › Stop riding the e-bike. Inform yourself about the meaning of the error information and take note of the solution.
- › If the meaning of the information is unclear, stop riding and turn the bike off. Contact the bike manufacturer, dealer or workshop for information on the next steps.

Fault information	Remedy
Speed sensor fault	Check the speed sensor and position of the spoke magnet.
Bicycle lighting faults	Turn off the system completely. Then check all cables and connectors of the front and/or rear lighting system. Restart the system.
Internal system error identified	Restart the system.
If the problem persists, contact an authorised e-bike dealer.	Restart the system. If the problem persists, contact an authorised e-bike dealer.
Brake lighting faults	Turn off the system completely. Then check all cables and connectors of the brake system. Restart the system.

Table 04: Fault Information

If you experience any problems using your Brose Drive System, first check the items listed in the following table. In many cases, you can already remedy this yourself.

Symptom	Possible cause	Solution
Display unit and/or Brose Drive System cannot be activated.	Battery not correctly clicked into the holder.	If possible, remove the battery and reinsert it. Pay attention that it is in the proper position.
	Battery not charged up.	Charge up fully using the supplied battery charger.
	Battery contacts and/or holder soiled.	Make sure all contacts are clean. If necessary, clean with a soft, dry cloth.
	Display unit not correctly connected.	Check the plug connection of the display unit. Pay attention that it is properly connected.
	Display unit contacts and/or holder soiled.	Make sure all contacts are clean. If necessary, clean with a soft, dry cloth.
	Plug connections on the drive unit not correctly inserted.	Check cabling and connections and connect them correctly if necessary.
Display unit does not provide trip data even though the e-bike is in motion.	Spoke magnet not correctly mounted (distance to the speed sensor).	Check the mounting of the spoke magnet, in particular its distance to the speed sensor on the chainstay. This must be between 5 and 17 mm (see Fig B). Correct the distance if necessary.
Bicycle lighting cannot be activated.	Lighting cable incorrectly connected.	Check cabling and connections and connect them correctly if necessary.
Display unit indicates an error in the multifunction panel.	There is an active error in the system.	Please note table 04.

Table 05: Fehlerhinweise

7. Service

7.1. Maintenance and Cleaning

- › Keep all components of your e-bike clean, especially the battery contacts and all exposed cable connections.
- › Prevent the drive unit from coming into contact with aggressive cleaning products and care products, in particular creep oils and brake cleaners.
- › The drive unit must not be submerged in water or cleaned with a high-pressure cleaner.
- › For e-bike service or repairs, please contact an authorised Brose dealer.
- › Have all repairs done by an authorised Brose dealer.

NOTE: Have your e-bike system checked at least once a year (including mechanics, system software update, etc.).

7.2. Customer Service and Advice on Use

For all questions about the Brose Drive System and its components, please contact an authorised bicycle dealer.

Contact details of authorised bicycle dealers can be found on the website (Service)

www.brose-ebike.com

7.3. Inspection

NOTE: Have your e-bike system checked at least once a year (including mechanics, system software update, etc.).

The drive unit requires an inspection after 15,000 km by a Brose authorised service centre.

For e-bike service or repairs, please contact an authorised bicycle dealer.

Information of authorised bicycle dealers can be found on the website (Service)

www.brose-ebike.com

7.4. Transport

If you have your e-bike outside of your car, e.g. you are transporting it on a car rack, remove the e-bike battery to avoid damage.

Even at a speed of over 100km/h, moisture can penetrate system components.

NOTE: Protect all e-bike components, such as the display, open plugs, etc. from penetrating water. You can obtain corresponding protectors from bike retailers.

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

If you have questions about transportation, contact an authorised bicycle dealer. You can also get suitable transport packaging from the dealer.

7.5. Disposal

Drive unit, display/control unit, battery, speed sensor, accessories and packaging should be recycled in an environmentally friendly way.

Do not throw e-bikes and their components in the household waste!

Only for EU countries

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

environmentally friendly way.

Old machines, replacement parts and packaging are made of recyclable materials. The owner is obliged to dispose of them in accordance with legal regulations in a proper and environmentally friendly manner.

All plastic injection-moulded parts are provided with a recycling symbol.

REACH directive no. 1907/2006 (EC)

RoHS directive (2011/65/EU)

Please return any unusable Brose E-Bike components to an authorised bicycle dealer.

Subject to changes.**7.6. Liability**

Brose Antriebstechnik GmbH & Co. Kommanditgesellschaft, Berlin, shall not be liable for damage to (or parts of) the bicycle resulting from incorrect adjustment of the moving parts of the bicycle or inappropriate use and/or maintenance of the bicycle (including late replacement of wear parts).

If Brose accepts a warranty claim, this in no case implies the assumption of liability for possible damages. In the event of disputes regarding the (correlative) damages suffered, Brose excludes any liability, as the company is not legally obliged to pay compensation.



WARNING! Any unauthorised modification to the components of the electrical system can be dangerous and will void warranty claims.

7.7. Copyrights

The contents of this manual are protected by copyright. Their use is permitted within the scope of use of the device. Any further use is not permitted without the written consent of the manufacturer.

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