

Schaeffler B-SAFE braking system, brake lever User manual

This user manual is part of the product and contains important information. Please read the manual thoroughly prior to use and follow the instructions precisely. The original language of the user manual is German; the other languages are translations from the German language.

Download the current user manual BA 62-02:
<https://www.schaeffler.de/std/1F3D>

Symbols

The warning and hazard symbols are defined in accordance with ANSI Z535.6-2011.

⚠ WARNING

In case of non-compliance, death or serious injury may occur. ◀

⚠ CAUTION

In case of non-compliance, minor or moderate injury may occur. ◀

NOTICE

In case of non-compliance, damage or malfunctions in the product or the adjacent construction may occur. ◀

Legal guidelines

The information in this manual reflects the status as of May 2022.

Unauthorised modifications to or improper use of the product are not permitted. Schaeffler does not assume any liability in this respect.

General safety guidelines

The brake lever is a component of the Schaeffler B-SAFE braking system, which, as intended, may only be used as a hydraulic rim brake for the following vehicles:

- light electric vehicles as defined in the PLEV ordinance
- vehicles of class L1e-B, with a vehicle mass of ≤ 35 kg, in a roadworthy condition as defined in ordinance (EU) no. 168/2013

These “vehicles” are also referred to below as “scooters” or “electric scooters”.

The brake lever is intended for mounting on the conventional handlebars of scooters or electric scooters.

The braking system is designed for use in an urban environment.

Usage for the intended purpose also includes:

- adherence to all instructions in the user manual
- compliance with all safety regulations
- adherence to the maintenance intervals

Usage not for the intended purpose can lead to personal injury or damage to the brake lever.

Use for longer journeys on steep inclines is not permissible. Usage which is not the intended purpose of the product also includes:

- operation in the presence of, or with, obvious faults
 - use which is contrary to the intended purpose
- The Schaeffler B-SAFE braking system may only be fitted, dismantled, commissioned or maintained by appropriately qualified and authorised personnel wearing personal protective equipment:
- For installation, initial operation or repairs, always contact your dealer or a specialist workshop, or consult the instructions provided by your vehicle manufacturer. The dealer user manual for the Schaeffler B-SAFE brake system can be accessed by specialist workshops at <https://www.schaeffler.de/std/1D51>
 - Do not modify or dismantle the product.

The applicable national and local regulations on disposal and environmental protection must be observed.

To avoid personal injury or damage to property, all safety regulations and warning notices in this user manual must be observed.

Keep the user manual in a safe place for immediate reference.

Safety regulations – Using, maintaining and caring for the rim brake

⚠ WARNING

Potential risk of accident or serious injury due to incorrect use or handling of the braking system.

Unauthorised modifications to (conversion of) the Schaeffler B-SAFE braking system are not permitted. A modified lever blade could tear during braking, for example.

If the vehicle is not in its usual riding position, but is upside down or on its side, the functionality of the brakes is no longer guaranteed. The brakes may fail during or after such events as they are not designed to operate in these positions. This also applies following transportation, for example.

Before riding, check that the brakes are working correctly by actuating the lever blade several times. If the brakes do not work, refrain from using the vehicle and contact your dealer or a specialist workshop.

Continuous operation of the brakes can cause vapour locks to form in the operating medium due to excessive heating of the brakes. When vapour locks are formed, there is an abrupt increase in the lever blade stroke and, in the worst case, the brakes can fail. To avoid vapour lock formation during braking, do not apply the brakes continuously, but release the lever blade periodically while braking. Avoid longer journeys on steep inclines. Arrange for the operating medium to be replaced at regular intervals by a specialist workshop.

Incorrect maintenance can damage the braking system. Arrange for the brakes to be maintained at regular intervals by a specialist workshop ▶  1. ◀

⚠ CAUTION

Risk of injury from contact with the operating medium used in the braking system.

Depending on the vehicle model, the operating medium can either be mineral oil, synthetic oil or a water/glycol mixture. Please observe the instructions provided by the vehicle manufacturer.

Eye irritation can occur if the operating medium comes into contact with the eyes. If the eyes are exposed to operating medium, flush immediately for > 15 min under running water and consult a doctor. Contact lenses should be removed prior to rinsing.

The operating medium can cause a rash or discomfort in contact with the skin. In the event of contact with the skin, wash the affected area immediately and thoroughly with soap and water.

The operating medium can cause diarrhoea or nausea if ingested. Do not drink and keep out of reach of children.

Nausea can occur if the vapours or mists emitted by the operating medium are inhaled. If vapours or mists are emitted by the operating medium, ensure good ventilation and cover your mouth and nose with a mask. If you have already inhaled vapours or mists emitted by the operating medium, seek fresh air immediately and keep warm. Keep calm and contact a doctor. ◀

NOTICE

Possibility of damage to the braking system or of a reduced braking effect if the product is not maintained or cleaned correctly.

Please observe the instructions provided in the *Care* section.

There is no guarantee covering normal wear and tear or ageing of the braking system components that occurs during normal use. ◀

Safety regulations –

Check that the brakes are ready for operation

⚠ WARNING

Risk of accident if the brake is worn or not ready for operation.

Wear to the brake pad or brake disc leads to a reduced braking effect. A reduced braking effect due to natural wear and tear can be compensated for by readjusting the master cylinder in the brake lever, see section *Adjusting the pressure point*.

Follow the instructions on adjusting the contact point or contact a specialist workshop.

In the event that the brake pad or brake disc is severely worn, safe functioning of the brakes is no longer guaranteed. If, despite adjusting the pressure point, the braking effect is not adequate or unusual noises are produced during braking, cease riding and contact a specialist workshop.

With regard to the concentric brake cylinder in the Schaeffler B-SAFE braking system, please observe the information provided in user manual BA 62-01, Schaeffler B-SAFE braking system, concentric brake cylinder.

If the brake lever is deformed, cracked or not adequately attached to the handlebars, cease riding and contact a specialist workshop.

If no resistance can be felt on actuating the lever blade, cease riding and contact a specialist workshop.

If fluid is leaking from the braking system, cease riding and contact a specialist workshop. ◀

Safety regulations – Riding the vehicle

⚠️ WARNING

Risk of accident due to inappropriate configuration or misconduct while riding.

The handling of each vehicle differs according to the model, braking system or wheel size. Inappropriate braking or incorrect operation of the vehicle may lead to a loss of control and collisions while riding.

Familiarise yourself with the operation and braking characteristics of your vehicle before riding. Learn how to operate the vehicle correctly and master the correct, appropriate riding and braking technique. Only ride if you are in good physical condition.

Applying the front brake too hard can lock the front wheel, which may lead to serious collisions. Brake using the front and rear brakes at the same time, applying the force to the lever blade.

Ensure that no foreign bodies can enter the brake disc or the area between the scooter fork and the concentric brake cylinder during operation, as this may cause the brakes to lock.

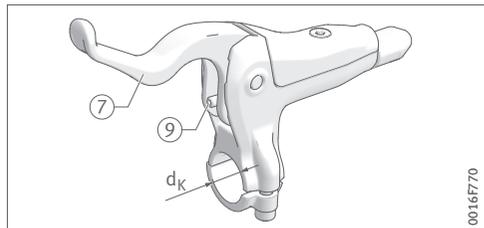
On wet roads, the tyres can start to skid more easily and the braking distance is longer. Ensure that the braking distance is adequate and adapted to the weather and road conditions. Reduce your speed on wet roads and brake early and gently.

Only ride if the vehicle and its components are in perfect condition, with no cracks or damage. Check the functionality of the brakes. Should you experience any problems, read the user manual carefully and consult your dealer or a specialist workshop. ◀

Product description

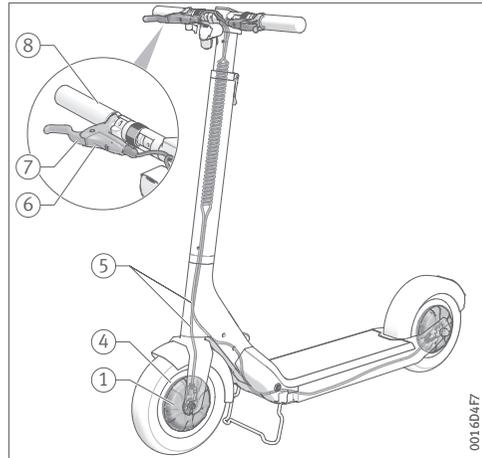
The brake lever is part of the Schaeffler B-SAFE hydraulic braking system and contains the master cylinder of the braking system. This hydraulic rim brake is used as an integrated front or rear wheel brake in light vehicles such as electric scooters.

1 Brake lever BMC



d_k = Clamping diameter, (7) Lever blade, (9) Adjustment screw (for braking force)

2 Scooter with Schaeffler B-SAFE braking system



(1) Concentric brake cylinder, (4) Rim, (5) Brake lines, (6) Brake levers, (7) Lever blade, (8) Handlebars

Check before every ride

⚠️ WARNING

Risk of accident if the braking system fails or the vehicle and brakes are used incorrectly.

Ensure that you have understood all of the safety regulations before riding. Review the items in the checklist below and ensure that they can all be confirmed. ◀

Checklist before riding:

- No operating medium is leaking from any point
- The lever blades move freely and are neither cracked nor deformed
- Both brakes work correctly, the lever blade does not come into contact with the handlebars when actuated, the pressure point can be clearly felt during braking
- No unusual braking noises are audible
- The brake levers are securely attached to the handlebars.

Adjusting the pressure point

To compensate for natural wear and tear to the brake pads, the pressure point of the brakes is readjusted when the braking effect is reduced. The pressure point is defined as the point at which the braking effect is applied when the lever blade is pressed down (contact between the brake pad and brake disc), or the end of free travel.

In the case of brake lever BMC, the pressure point is adjusted using an adjusting screw. Turning the adjusting screw to the right results in the following:

- Brake pads move closer to the brake disc. The pressure point on the lever blade is tangible at an earlier point upon actuation.

Adjusting the pressure point:

- ▶ Park the vehicle so that you are able to turn the front or rear wheel freely.
- ▶ Allow the front wheel to rotate freely, ensuring that the corresponding lever blade is not pressed down at the same time.
- ▶ Carefully turn the adjusting screw (▶ 1) of the corresponding lever blade to the right until a grinding noise can be heard (braking effect is applied).
- ▶ Turn the adjusting screw back by 2 revolutions (counterclockwise rotation).
- ▶ Perform the same steps for the rear-wheel braking system.
- » The pressure point of both braking systems is now adjusted.
- ▶ Press the lever blade down to its maximum point and check the end position.

⚠️ WARNING

Risk of accident due to failure of worn brakes.

In the event that the brake pads or brake discs are severely worn, safe functioning of the brakes is no longer guaranteed. If, despite adjusting the pressure point, the braking effect is not adequate, unusual noises are produced during braking or the lever blade is close to, or in contact with, the handlebars when actuated, cease riding and contact a specialist workshop immediately. ◀

Maintenance

The brakes must be repaired or maintained by a specialist workshop. Maintenance plan ▶ 1.

⚠️ WARNING

Risk of accident due to inadequately or incorrectly maintained brakes.

The function of the brakes can be severely impaired by ageing or wear.

If unsuitable replacement parts are used or the parts are incorrectly mounted, the brakes may fail.

Always contact a specialist workshop or your dealer for maintenance. ◀

1 Maintenance plan

Maintenance	What needs to be done?
Before every use	<ul style="list-style-type: none"> • Check the items in the checklist, see section <i>Check before every ride</i> • Where necessary, arrange for damaged components to be repaired or replaced
After 2 years or 5 000 km	<ul style="list-style-type: none"> • Arrange for the brakes to be checked by a specialist workshop
After 5 years or as necessary	<ul style="list-style-type: none"> • Check the adjustment function of the brake levers • Check that the adjusting screw can move freely • Arrange for the operating medium to be replaced

Care

NOTICE

Possibility of damage to the braking system or of a reduced braking effect if the product is not maintained or cleaned correctly.

Do not use compressed air to clean the braking system, as this may cause contaminants to reach sensitive areas, leading to a reduction in the operating life of the components.

Use a dry cloth or mild soapy water to clean the braking system. Do not use commercially available brake cleaners or noise-reducing brake sprays, as these may damage the seals. ◀

- ▶ Clean the braking system at regular intervals with a dry cloth.
- ▶ Clean any components that have come into contact with oil, grease or lubricants using soap and water.

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