

## Schaeffler B-SAFE braking system, concentric brake cylinder 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 62-01:  
<https://www.schaeffler.de/std/1F3C>

### 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. ◀

### Signs

The warning and prohibition signs are defined in accordance with DIN EN ISO 7010.

#### 1 Warning and prohibition signs

##### Signs and descriptions

	Warning of hot surface
	Do not touch

### 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 concentric brake cylinder 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  $\leq 35$  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 rims must be designed accordingly.

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 cylinder.

Use for longer journeys on steep inclines is not permissible. Usage not for the intended purpose 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 component could tear during braking, for example.

Any contact between the brake discs or brake pads and oil, grease or lubricants must be avoided, otherwise the functionality of the brakes cannot be guaranteed. In the event that the brake cylinders or brake pads do come into contact with oil, grease or lubricant, cease riding and contact your dealer or a specialist workshop.

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.

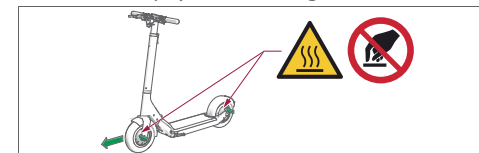
Continuous operation of the brakes can cause vapour locks to form in the operating medium due to excessive heating of the brakes. When vapour locks are formed, there is an abrupt increase in the lever blade stroke and, in the worst case, the brakes can fail. To avoid vapour lock formation during braking, 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 ▶ 2.

Fingers are at risk of serious injury from sharp-edged components, if they enter the spaces between the rotating and stationary components of the concentric brake cylinder during operation. Do not reach into openings between rotating and stationary components.

Risk of burns. The brakes get hot during operation. Do not touch the brakes during or immediately after operation, especially not when folding the vehicle. ◀

#### 1 Risk of injury from touching the brakes



#### ⚠️ 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. Observe the relevant user manual or contact a specialist workshop.

With regard to the Schaeffler brake lever, please observe the information provided in the user manual BA 62-02, Schaeffler B-SAFE braking system, brake lever.

If the contact side of the brake disc is ground down to  $\leq 1$  mm or the aluminium surface becomes visible on the contact side, the safe functioning of the brakes is no longer guaranteed ► 2. As soon as the braking effect is no longer adequate, cease riding and contact a specialist workshop.

If unusual noises are produced during braking, a specialist workshop must check whether the brake pads are worn. If the measured thickness is  $\leq 4$  mm, the pads must be replaced by a specialist workshop. If the linings are applied to a carrier plate, the thickness must be measured inclusive of the carrier plate ► 2.

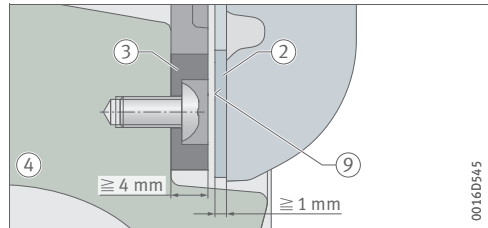
The braking effect may be altered if a foreign body is present in the brake disc or in the area between the scooter fork and the concentric brake cylinder. An abrupt change in riding or braking behaviour may occur while travelling. Cease riding until the foreign object has been removed.

If the brake disc is deformed or cracked, 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. ◀

## 2 Limit values for wear



② Brake disc, ③ Brake pad, ④ Rim, ⑨ Contact side of the brake disc

## 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. ◀

### ⚠ CAUTION

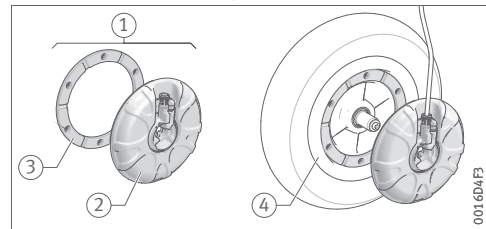
Risk of injury due to increased braking effect during the brake running-in period.

If new brakes are in use or the brake pads or concentric brake cylinder have been replaced, there will be a continuous change and increase in the braking effect during the initial phase of use. Please make allowances for changes in braking behaviour during the brake running-in period. ◀

## Product description

The concentric brake cylinder with slave piston in a radial design is part of the Schaeffler B-SAFE hydraulic braking system. This hydraulic rim brake is used as an integrated front or rear wheel brake in light vehicles such as electric scooters.

## 3 Concentric brake cylinder CBC



① Concentric brake cylinder CBC, ② Brake disc, ③ Brake pad, ④ Rim

## 4 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 concentric brake cylinders are neither cracked nor deformed
- Both brakes work correctly
- No unusual braking noises are audible
- The brake levers are securely attached to the handlebars.

## Maintenance

The brakes must be repaired or maintained by a specialist workshop. Maintenance plan ► 2.

### ⚠ 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. ◀

## 2 Maintenance plan

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

## 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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