



# Technical Information

## Installation notes for brake discs

### General note

Please always observe the installation instructions or information leaflet that accompanies the product.

- Brake discs may only be exchanged by persons with corresponding specialist knowledge.
- Incorrectly-performed work could lead to complete failure of the braking system.
- Additional installation instructions from the vehicle and braking system manufacturer must be observed.
- Only use type-approved brake discs that are intended for the vehicle.
- Before installation, ensure that the spare part is suitable for the purpose of application and has the required dimensions and properties.
- Brake disks must always be replaced in pairs / axle sets and with new brake pads.
- Mechanical damage of the brake disc must be avoided. (e.g. due to dropping)
- Only use suitable tools for the braking system repair.



### Installation instructions

Before commencement of repair work on the braking system, a warning note must be attached to the steering wheel drawing attention to the fact that a repair is being undertaken.

- Lift the vehicle properly and ensure that it is stable, then remove the wheels.
- Remove the brake pads in accordance with the installation notes for brake pads.
- Remove the brake caliper, if necessary together with the brake caliper anchor bracket, but without loosening or twisting the brake hose. Fix the brake caliper in such a way that the brake hose is protected from possible damage.
- Release the brake disc attachment screw and remove the brake disc.
- Clean the wheel hub. The contact surface on the wheel hub or the flange must be clean and undamaged. Carefully clean traces of corrosion, dirt, paint and/or other impurities from the wheel hub. Then lightly grease the contact surface with non-metallic, long-lasting lubricant.
- Installing the new brake disc.
- Check the direction of rotation in the case of ventilated brake discs.



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- Tighten the attachment screw in accordance with the specified torque.
- Install new brake pads and the brake caliper. Follow the installation notes for brake pads.
- Attach the wheels and tighten the wheel nuts / bolts to the specified torque.
- Repeat the procedure on the other side.
- Lower the vehicle again.

## Installation notes for brake discs with wheel bearing and ABS impulse ring

Brake discs with integrated wheel bearings must be installed very carefully. Incorrect installation adversely affects the service life of the bearings. Do not tilt the brake discs during installation. For easier installation, lubricate the steering knuckle. Ensure that force is only exerted on the inner bearing ring when attaching the brake disk to the steering knuckle.

In the case of brake discs with integrated ABS sensor, check the encoder ring for damage before installation. This prevents possible malfunction of the ABS system due to incorrect sensor signals.

- Do not subject the encoder ring to strong magnetic fields, this can lead to damage and malfunction.
- Brake discs with integrated wheel bearings must be turned in when tightening the wheel bolts to align the rolling elements. This prevents damage to the bearing shells.
- Do not apply mechanical force when installing the brake disc. Do not use hammers or other percussive tools.
- Do not use an impact wrench to tighten the axle nut.



## Function check

- Check the level of the brake fluid in the expansion tank. If necessary, fill up to the maximum fill height.
- Only use brake fluid that has been approved for the vehicle.
- Slowly press the brake pedal several times two thirds of the way down so that the brake pads reach their working position.
- Check the braking system for leaks.
- Carry out a test drive.
- Make the first few braking actions at low speeds, and bear in mind that the effectiveness of the brakes can be somewhat reduced during these braking actions.
- In order to guarantee safe and trouble-free function of the wheel brake, it is necessary to adjust the friction surfaces of the new components to one



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another by running in the brake.

- A running-in phase of 200 - 300 kilometers is recommended so that optimum adjustment is achieved.
- The respective running-in notes of the brake or vehicle manufacturer must be observed in all cases.
- Avoid unnecessary hard or continuous braking to achieve quicker adjustment.
- Please observe the traffic regulations when conducting all driving maneuvers.

## Additional tests

In order to prevent in advance the problem of brake judder when driving, the axial runout of the new brake disc should be tested using a suitable dial gauge in accordance with the specifications of the vehicle manufacturer.

If the tolerance values are not attained, the wheel hub must be checked.

NOTE: excessive axial runout can be caused by dirty / damaged wheel hub / flanges and/or worn bearings.

Other helpful content can be found in the technical information:

- "Checking the lateral runout of the brake disc"
- "Checking the lateral runout of the wheel hub"
- "Notes for running in the brake discs"

## Safety notice

Observe the following safety notes:

- Brake discs must be replaced if they are strongly corroded, grooved, cracked, warped or worn to minimum thickness.
- The thickness of the brake disc may never be less than the minimum thickness.
- The minimum thickness (the wear limit specified by the manufacturer) is specified on the brake disc.
- The minimum thickness must be regularly checked at the thinnest part of the brake disk (e.g. each time the brake pads are changed).
- Do not allow brake discs to come into contact with greases, oils, other lubricants or re-fattening cleansing agents as these can lead to failure of the braking system.
- Oil-contaminated or heavily soiled brake pads must be replaced.
- Clean the components and remove all residues of preserving agents or lubrication grease, but not the protective coating.
- Do not clean the braking system with compressed air, use a suitable brush or brake cleaner.





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- Inhaled brake dust can cause damage to health. Wear a dust mask in poorly-ventilated working areas.
- If handled incorrectly, brake fluid can cause serious injury or damage. Observe the respective manufacturer's safety notes for brake fluid.

