

Manual Brake Disc and Brake Drum

I. General instructions / requirements

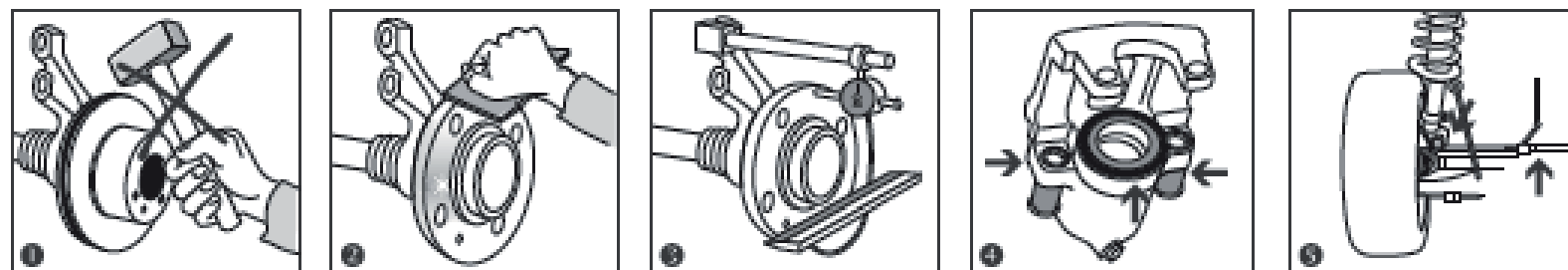
1 Brake discs and brake drums are safety components!

The replacement of brake discs or brake drums and the necessary work on the other brake system components may only be carried out by authorised mechanics. Incorrect handling may lead to complete failure of the brake system.

- 2 Ensure that the products are correctly assigned to the relevant vehicle (type, year of construction, engine, fixtures).
- 3 Zimmermann Brake Discs and Brake Drums can simply replace the original brake disc, because all its functionally relevant characteristics are the same as those of the original brake disc. Additional, adapted elements, parts and components are not required.
- 4 Always repair brake discs / brake drums in pairs or per axle.
- 5 Always use new brake pads which are recommended by the vehicle manufacturer. ZIMMERMANN brake pads have proven themselves in practise.
- 6 It is essential to replace brake discs / brake drums when they show the following signs of wear
 - heavy corrosion
 - deep grooves
 - uninterrupted cracks in the brake surface sides / in the brake surface
 - excessive run out
 - wear limit reached (stamped into the outside diameter of the brake surface or the hub of Zimmermann Brake Discs and Brake Drums ⇒ Min. Th. / Max. Dia.)
- 7 Otherwise, observe the relevant stipulations of the vehicle manufacturer!

II. Preparatory measures

- 1 Remove the worn brake discs / brake drums and pads. When doing so, do not apply force, and use suitable tools and the special tools provided (please see picture 1).
- 2 Clean the contact surface and centring projection of the wheel hub / shaft journal (for hub discs¹ and hub drums¹) using suitable tools and environmentally friendly agents. The surfaces must be completely clean (metallically bright), burr-free and free of corrosion residues (please see picture 2)!
- 3 Check the contact surface of the hub (please see picture 3; not for hub discs and hub drums)
 - ⇒ Use a dial gauge / precision dial gauge with an articulated magnetic stand
 - ⇒ Guideline value < 0.03 mm (measured on the outside diameter of the wheel hub)
- 4 Check the contact surface of the hub for evenness (please see picture 3; not for hub discs and hub drums)
 - ⇒ use a hairline gauge
 - ⇒ No gap is permissible
- 5 Check all components of the brake and steering system (brake calliper, pistons, guide and sealing elements, wheel bearings, steering transmission and wheel suspension parts) for wear and / or damage. Replace components if necessary (please see picture 4 and 5).



III. Installation

- 1 During installation, do not apply force and use suitable tools and the special tools provided (please see picture 1).
- 2 Position Zimmermann Brake Discs and Brake Drums dry on the wheel hub and secure it with the centring or retaining screw (depending on the type; not for hub discs¹ and hub drums¹).

ATTENTION: Do not use any grease or paste or something else (please see picture 6A und 6B).
Please don't remove the corrosion protection of Zimmermann hub discs and hub drums (please see picture 7).

- 3 Tighten the centring / retaining screw(s) with the stipulated torque as specified in the workshop manual.

Check the brake surface for run out (please see picture 8; not for brake drums)
⇒ Use a dial gauge / precision dial gauge with an articulated magnetic stand
⇒ Permissible deviation < 0.05 mm (measured 10 mm from the outside diameter of the brake surface)
Note: The **total run out** of the wheel hub and brake disc is measured here!

- 4 Tighten the wheel bolts / wheel nuts with the stipulated torque as specified by the manufacturer and in accordance with the operating instructions (please see picture 9).

IV. Recommended running-in

- 1 Run in on sections of road that allow the following driving maneuvers to be performed safely and in accordance with the traffic rules.
- 2 Running-in causes the brake discs / brake hubs to heat up gradually without a thermal shock and serves to adapt the friction surfaces of the brake discs / hubs and pads / shoes to each other.
- 3 Please perform 10-15 braking operations by braking in about 3-5 seconds from 100km/h to 50km/h. Then carry out another 10-15 braking operations with braking within about 5 seconds from 100km/h to 25km/h. Between the single braking actions the brake disc should cool down by the airstream for about 3 minutes. Therefore please avoid any stop-over during the above-mentioned running-in procedure with 20-30 braking maneuvers.
- 4 **Please note: Avoid strong and sudden braking for the first 300 km after changing the brake discs.**

If these installation instructions are not followed, the manufacturer accepts no liability if product damage or injuries to third parties occur as a result.

Also, no warranty is provided if damage and / or defects occur that are attributable to intensive use and / or individual driving behavior or incorrect use!

Essentially Zimmermann Standard Brake Disc and Drums are equivalent-quality spare parts, as defined by motor vehicle block exemption regulation KFZ-GVO (EU) no. 330/2010, which are on a par with the respective original parts first fitted. The dimensioning and the materials used meet the respective specifications of the motor vehicle manufacturers. Process tolerances, particularly in respect of the running characteristics of the products (shape and positional tolerances), are often set smaller than specified by the motor vehicle manufacturers.

The ZIMMERMANN Sport Brake Disc has been tested by the RWTÜV with regard to functional capability, operational safety and wear performance and has been approved by the KBA for correct use in **series vehicles**.

All Zimmermann Brake Discs and Brake Drums meet the usual mechanical and thermal stress requirements if used correctly.

¹ For hub discs and hub drums with an active sensoring:

- don't damage the vulcanized protection coating of the active sensoring
- avoid any contact between the sensoring and a magnetic source
- check after the assembly if the vulcanized protection coating is clean; if necessary clarify it with a clean scarf

