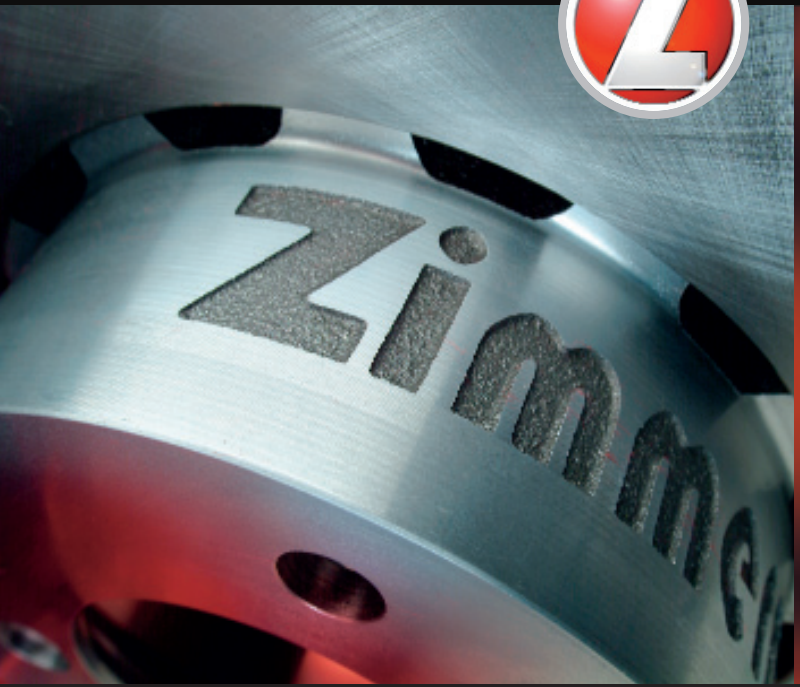
Highest Quality Made in Germany

Formula



Zimmermann

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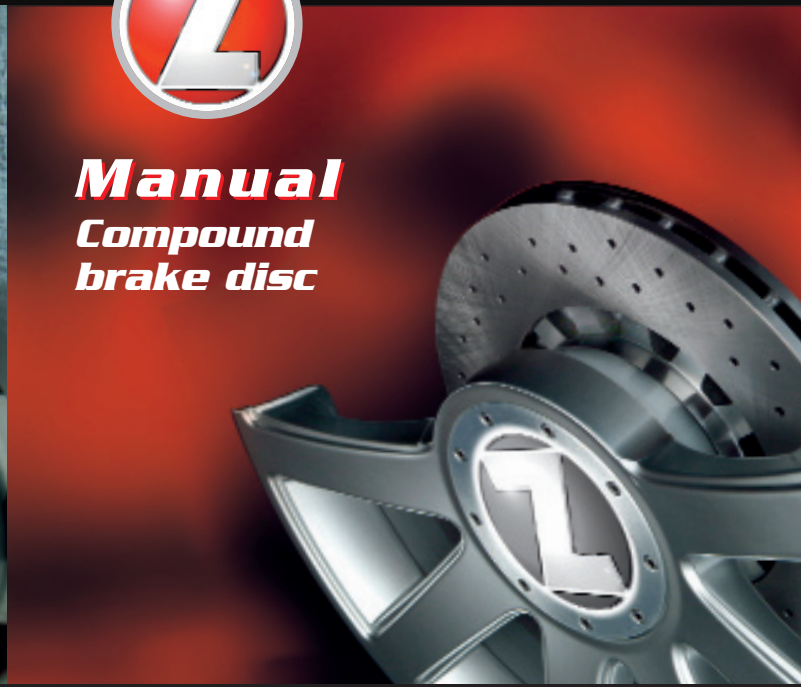
Formula

Montage-anleitung

Manual

Compound brake disc



Zimmermann

Dear Customer,

Congratulations on buying the ZIMMERMANN compound brake disc Formula Z. You have selected a quality product that meets the most exacting driving demands.

In order to be able to guarantee functional and operational safety, the following assembly instructions must be observed.

I. General instructions / requirements

❶ **Brake discs are safety components!**
The replacement of brake discs 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. The package contents are not intended for installation by the end user!

❷ Ensure that the products are correctly assigned to the relevant vehicle (type, year of construction, engine, fixtures).

❸ The ZIMMERMANN compound brake disc **Formula Z** 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.

❹ The ZIMMERMANN compound brake disc **Formula Z** consists of several components. When the wear limit is reached, replace the entire brake disc. It is not permissible to replace and disassemble individual components.

❺ Always repair brake discs in pairs or per axle.

❻ Always use new brake pads.
We recommend ZIMMERMANN brake pads that have been tested interacting with the brake discs and therefore guarantee optimum friction and delay performance as well as comfortable braking.

❼ It is essential to replace brake discs 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 on ZIMMERMANN compound brake discs **Formula Z**)

❽ Using an aluminium hub means that particular care must be paid when handling the ZIMMERMANN compound brake disc **Formula Z**!

❾ Otherwise, observe the relevant stipulations of the vehicle manufacturer!

II. Preparatory measures

❶ Remove the worn brake discs and pads. When doing so, do not apply force, and use suitable tools and the special tools provided. (please see picture 1)

❷ Clean the contact surface and centring projection of the wheel hub 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)!

❸ Check the contact surface for run out
➤ 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, please see picture 3).

❹ Check the contact surface for flatness
➤ use a hairline gauge
➤ No gap is permissible (please see picture 3)

❺ 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 picture 5).

III. Installation

❶ During installation, do not apply force and use suitable tools and the special tools provided (please see picture 1).

❷ Position the ZIMMERMANN compound brake disc Formula Z dry on the wheel hub and secure it with the centring or retaining screw (depending on the type).

ATTENTION: Do not use any grease or paste or something else (please see picture 6A und 6B).
There is no need to remove the corrosion protection applied at the factory!

❸ Tighten the centring / retaining screw(s) with the stipulated torque as specified in the workshop manual.
Check the brake surface for run out
➤ 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 (please see picture 7) !!!

❹ 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 8).

IV. Recommended running in

As authorised mechanics
please inform also your customer.

❶ Run in on sections of road that allow the following driving manoeuvres to be performed safely and in accordance with the traffic rules.

❷ Running in causes the brake disc to heat up gradually without a thermal shock and serves to adapt the friction surfaces of the brake disc and pads to each other.

❸ Please perform 15 braking operations by braking in about 3 seconds from 100km/h to 50km/h. Then carry out another 15 braking operations with braking within about 3 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 30 braking maneuvers.

❹ **Please note: Avoid strong and sudden braking for the first 300 km after changing the brake discs (please see picture 9)!**

Illustrations