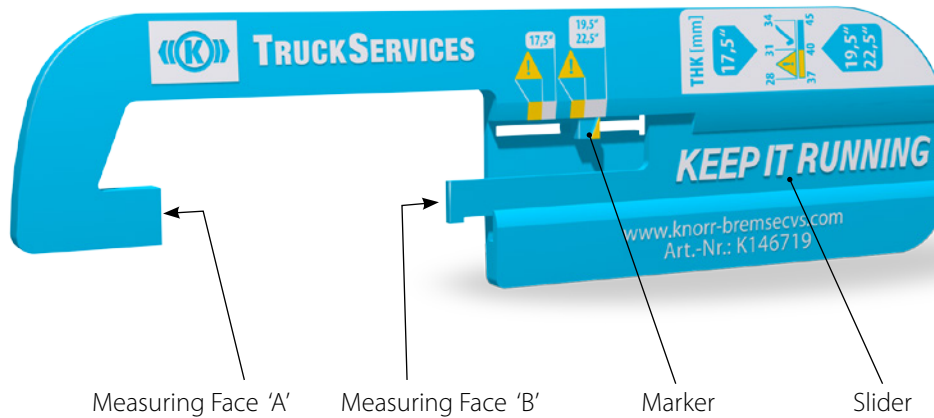


TRUCKSERVICES BRAKE DISC MEASURING GAUGE



Measuring Face 'A'

Measuring Face 'B'

Marker

Slider

EVERY VEHICLE TELLS ITS STORY. **KEEP IT RUNNING**

... means that we constantly strive to improve our service concepts and provide you with specifically designed tools to ensure that your vehicle is back on the road as fast as possible.

Introduction

In order to quickly identify the current wear condition of a given brake disc, TruckServices has introduced its Brake Disc Measuring Gauge. This allows quick monitoring of the wear condition of all 17,5", 19,5" and 22,5" brake discs whilst the wheel is still assembled on the vehicle.

At a glance

- › Quick, easy monitoring of the wear condition of the brake disc
- › Wheel remains on the vehicle
- › Reduction of downtime

Note: the disc thickness is only one of many wear factors that must be considered when maintaining a safe and reliable braking system. Please refer to the vehicle manufacturers instructions, the safety guidelines in this document, as well as the respective Knorr-Bremse service manual, for an in-depth coverage of all safety aspects of the braking system.

The following pages give guidelines and a simple step-by-step guide of how to set-up the Gauge and safely measure the wear condition of a Knorr-Bremse brake disc.

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Safety and Environmental Guidelines:

Note: The safety advice listed below is applicable to general service and diagnostic work on braking systems. Also observe any recommendations from the axle or vehicle manufacturer concerning towing, jacking-up and securing the vehicle.

CAUTION: KNORR-BREMSE IS NOT LIABLE FOR ANY INJURIES OR DAMAGES CAUSED BY IMPROPER USE OF SPECIFIED SERVICE KITS AND/OR SERVICE TOOLS. FURTHERMORE, MISUSE OF TOOLS OR INCORRECT INSTALLATION OR APPLICATION OF SERVICE KITS MAY RESULT IN DAMAGE OR POTENTIALLY UNSAFE VEHICLE OPERATIONS. IN THIS CASE, KNORR-BREMSE DOES NOT HAVE ANY WARRANTY OBLIGATIONS.

Before and during working on or around compressed air systems and devices, the following precautions should be observed:

- 1 Always wear safety glasses when working with air pressure.
- 2 Never exceed the vehicle manufacturer's recommended air pressures.
- 3 Never look into air jets or direct them at anyone.
- 4 Never connect or disconnect a hose or line containing pressure; it may whip as air escapes.
- 5 When removing or servicing a product, ensure all pressure related to the specific system it is contained in has been depleted to 0 bar. Be aware that if the vehicle is equipped with an air dryer system, it can also contain air pressure along with its purge reservoir, if fitted, even after pressure has been drained from the other reservoirs.
- 6 If it is necessary to drain the air pressure from reservoirs, etc., keep away from brake actuator push rods and levers since they may move as system pressure drops. On vehicles fitted with air suspension, it is advised when undertaking such work, to support the chassis from sudden lowering and therefore prevent any possibility of being trapped between the chassis and axle or ground.
- 7 Park the vehicle on a level surface, apply the parking brakes, and always chock the wheels as depleting vehicle air system pressure may cause the vehicle to roll.
- 8 When working under or around the vehicle, and particularly when working in the engine compartment, the engine should be shut off and the ignition key removed. Where circumstances require that the engine be running, EXTREME CAUTION should be taken to prevent personal injury resulting from contact with moving, rotating, leaking, heated or electrically charged components. Additionally, it is advisable to place a clear sign on or near the steering wheel advising that there is work in progress on the vehicle.
- 9 When working on vehicles equipped with air suspension, to guard against injury due to unexpected downward movement of the chassis caused by sudden pressure loss in the suspension system, ensure that the vehicle chassis is mechanically supported with a 'prop' between the chassis and the axle or between the chassis and the ground.
- 10 Examine all pipework for signs of kinks, dents, abrasion, drying out or overheating. Be aware that kinks in pipework may result in air pressure being trapped in the pipework and associated equipment. Replacement hardware, tubing, hose, fittings, etc. must be of equivalent size, type and strength as original equipment and be designed specifically for such applications and systems. Check the attachment of all pipework; it should be installed so that it cannot abrade or be subjected to excessive heat.
- 11 Components with stripped threads or damaged/corroded parts must be replaced completely. Do not attempt repairs requiring machining or welding unless specifically stated and approved by the vehicle or component manufacturer.
- 12 Never attempt to install, remove, disassemble or assemble a device until you have read and thoroughly understood the recommended procedures. Some units contain powerful springs and injury can result if not properly dismantled and reassembled. Use only the correct tools and observe all precautions pertaining to use of those tools.
- 13 Before removing any device note its position and the connections of all pipework so that the replacement/serviced device can be properly installed. Ensure that adequate support or assistance is provided for the removal/installation of heavy items.
- 14 Only use genuine replacement parts, components and kits as supplied by Knorr-Bremse or the vehicle manufacturer. Only use the recommended tools as specified in related Knorr-Bremse instructions.
- 15 The serviced or replaced product must be checked for correct function and effectiveness.
- 16 If products have been dismantled, serviced or replaced, whose performance could affect braking performance or system behaviour, this should be checked on a roller dynamometer. Bear in mind that a lower performance may be experienced during the bedding-in phase if new brake pads/linings and/or brake discs/drums have been fitted.
- 17 The use of impact screwdrivers or impact wrenches in conjunction with Knorr-Bremse service tools for air disc brakes is not permitted. The service tools are not designed for such use. It is likely that the tools or the vehicle will be damaged and there is a serious risk of injury – see Caution on previous page.
- 18 Do not use compressed air to clean the disc brake. Avoid air contamination of brake dust.
- 19 Prior to returning the vehicle to service, make certain that all components and the complete brake systems are leak free and restored to their proper operating condition.

Welding

To avoid damage to electronic components when carrying out electrical welding, the following precautions should be observed:

- 1 In all cases, before starting any electrical welding, remove all connections from any electronic control units or modules, noting their position and the order in which they are removed.
- 2 When re-inserting the electrical connectors (in reverse order) it is essential that they are fitted to their correct assigned position - if necessary this must be checked by PC Diagnostics.



Disposal of Waste Equipment by Business Users in the European Union

This symbol on the product, packaging or in user instructions, indicates that this product must not be disposed of with other general waste. Instead, it is your responsibility to dispose of the waste electrical and electronic parts of this product by handing them over to a company or organisation authorised for the recycling of waste electrical and electronic equipment. For more information about arrangements for waste equipment disposal please contact your Knorr-Bremse distributor or local Knorr-Bremse representative.

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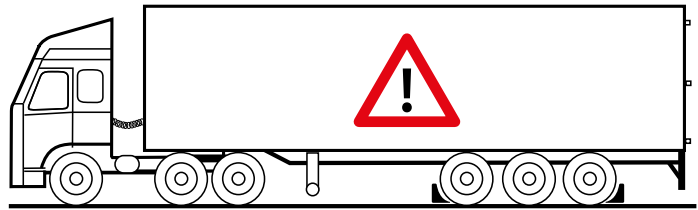
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How to use the TruckServices Brake Disc Measuring Gauge

Step 1)

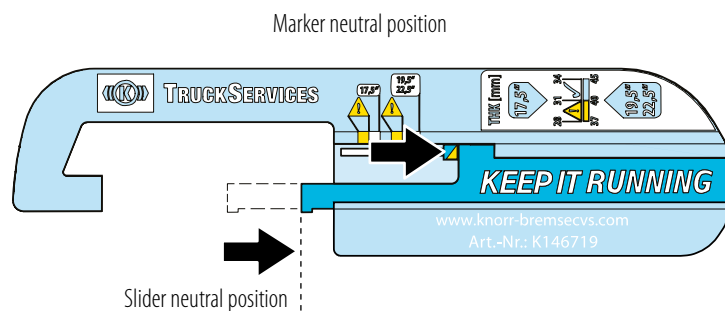
Make sure the vehicle cannot roll away and all safety precautions are undertaken that apply to working under a vehicle.

DO NOT use the gauge on hot discs, allow the discs to cool if the truck was recently driven.



Step 2)

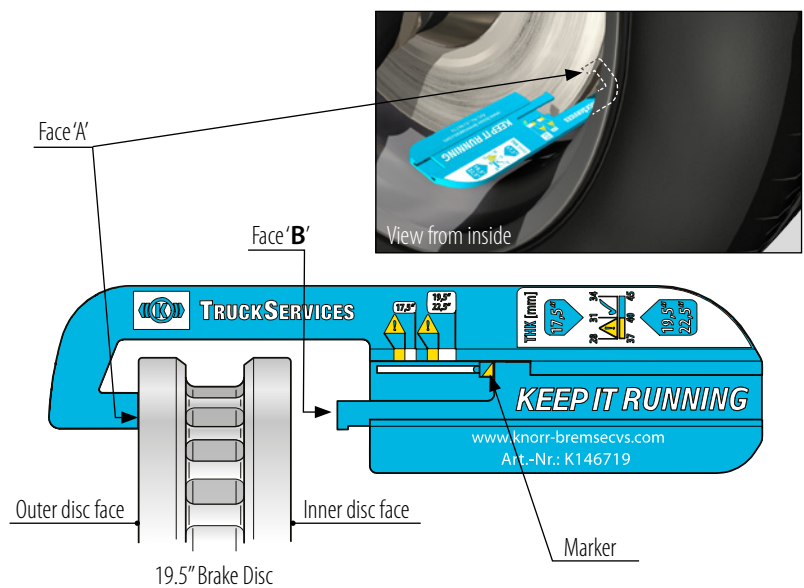
Set the *Slider* and then the *Marker* into the neutral position.



Step 3)

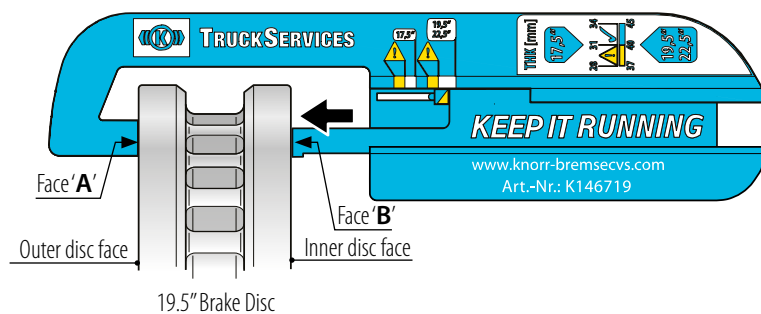
Place the gauge on the brake disc as shown, so the measuring face 'A' of the gauge touches the outer face of the brake disc.

NOTE: Face 'B' does not touch the disc at this stage.



Step 4)

Push the slider so far until the measuring surfaces 'A' and 'B' touch the respective surface of the brake disc (note, this in turn moves the *Marker*).



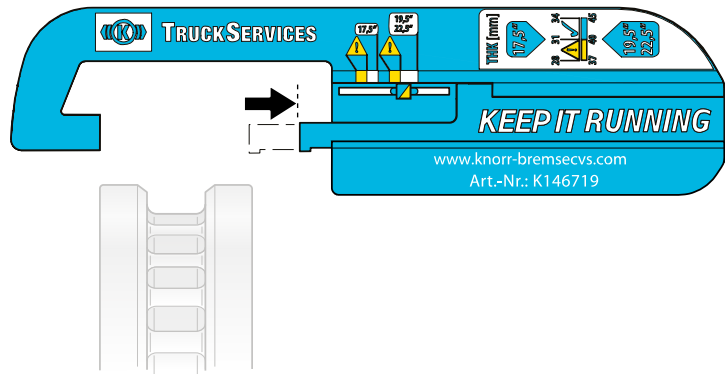
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Step 5)

Retract the *Slider* back to the neutral position and carefully remove the gauge away from the brake disc (the *Marker* will stay in its position).



Step 6)

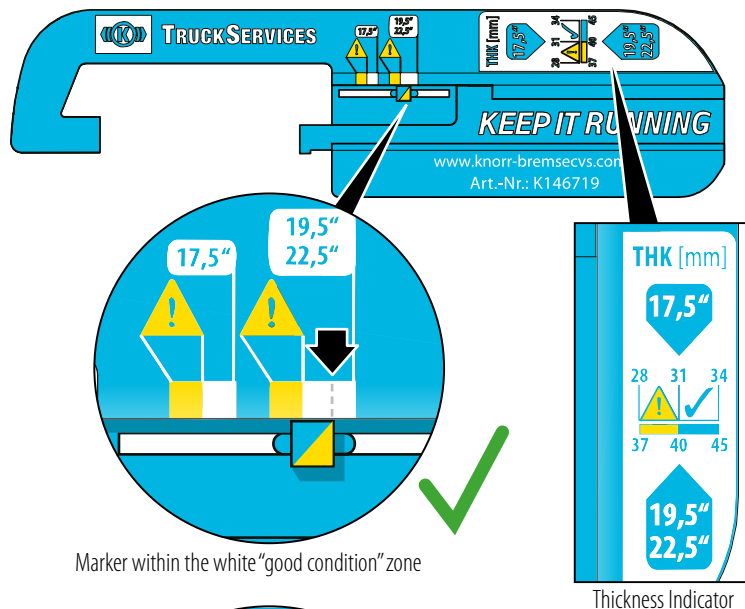
The position of the marker indicates (depending on the disc type and its original thickness parameters) the current wear condition.

White = good condition

Yellow = critical condition

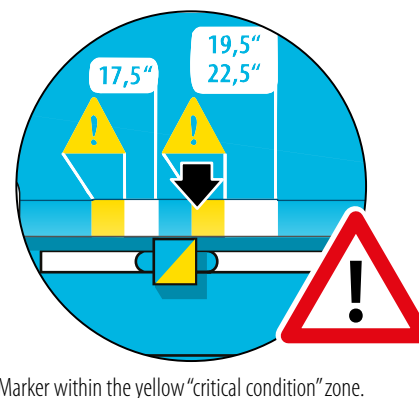
If the *Marker* is in the yellow zone, the condition of the brake disc should be further inspected after removing the wheel.

NOTE: The gauge is intended for a quick control only. Uneven disc wear, cracks and brake pad wear inspection must still be adhered to according to the service manual and/or manufacturer's instructions.



For further information please refer to the respective Knorr-Bremse service manual, which can be found on the Knorr-Bremse website:

www.knorr-bremsecvs.com



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