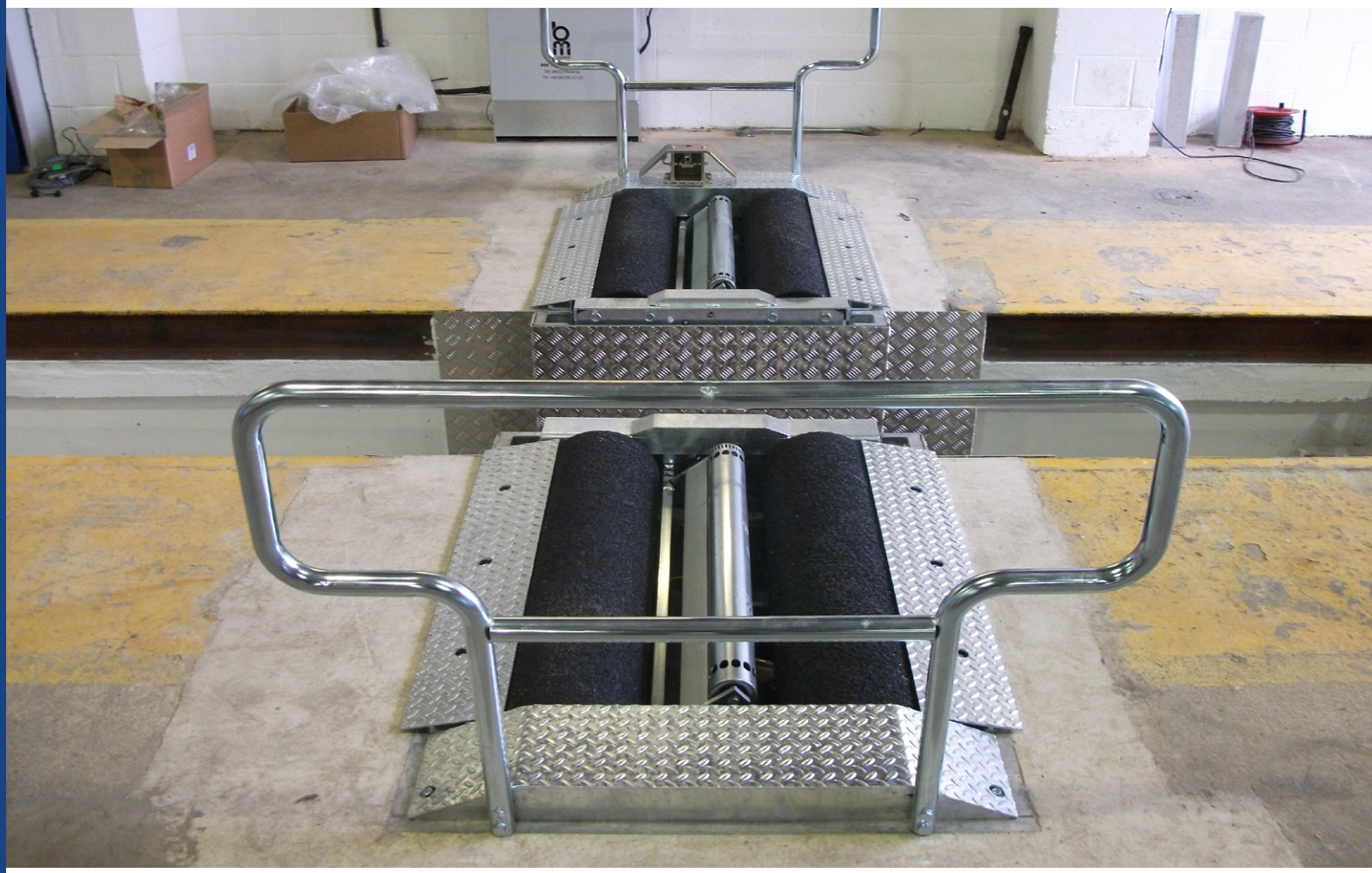
BM TEST EQUIPMENT
- the safe choice

BM14200 ROLLER BRAKE TESTER

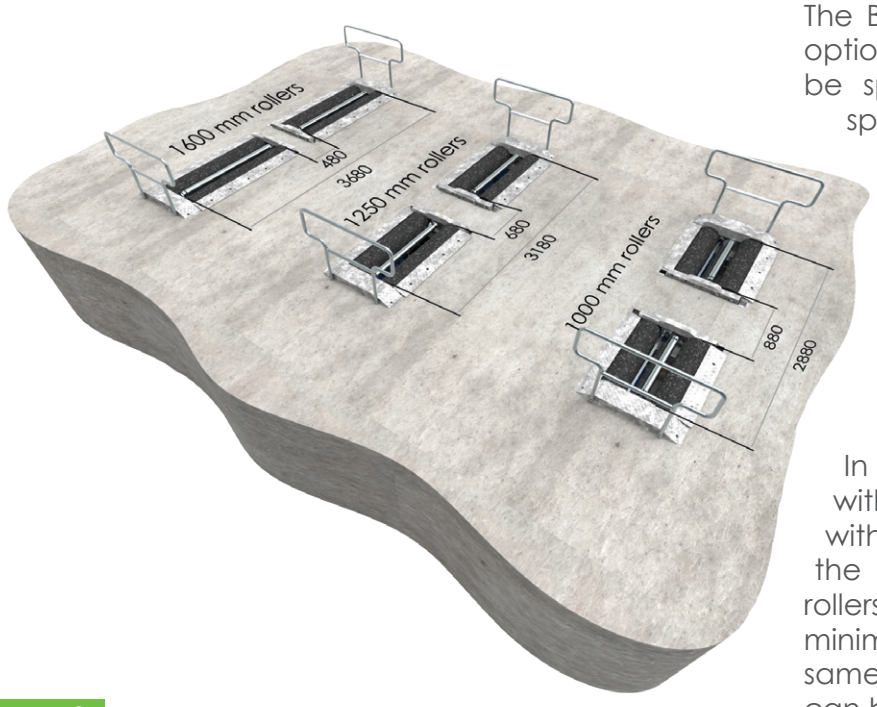
- for Light and Heavy Vehicles



- Hot galvanized for long lifetime.
- IT system using latest app technology for smartphone and tablet.
- The most comprehensive load simulation system program.
- Selected by some of the most prestigious vehicle inspection companies worldwide.

The BM14200 Roller Brake Tester (RBT) design involves technical solutions, which place the product among the strongest and most reliable brake testers in the market.

The design allows for optional upgrades, which can enhance the durability to meet the toughest requirements in relation to high throughput test lanes at vehicle inspection centers and private repair work shops.



Customising the BM14200

The BM14200 RBT has the widest and deepest option list, which ensures that the model can be specified to meet the customer's exact specifications and needs:

Roller length for testing larger wheel span variation

As standard the BM14200 RBT is supplied with 1000 mm roller length. With a standard installation, this will allow for testing vehicles with a wheel span between 880 mm to 2880 mm.

In order to cater for brake tests of vehicles with very low wheel base as experienced with small light vehicles and small city trucks, the BM14200 can be supplied with 1250 mm rollers or 1600 mm rollers. With these options, the minimum wheel base can be reduced at the same time as the maximum outer wheel base can be increased.

Windows Phone and Tablet Remote Control

The BM14200 can be supplied with the PC Windows program, BM FlexCheck, which can be installed on a PC placed either integrated into a special vehicle inspection bench with touch-screen control or inside a traditional PC cabinet.

Together with BM FlexCheck, the BM14200 can be supplied with a handheld Android/Windows phone or tablet which communicates wirelessly with the brake tester. The units have a virtual display which shows all the readings of the brake test and a touch screen based remote control.

BM FlexCheck

Vehicle Inspection Bench

Traditional PC cabinet

Advantages of the handheld units

In many applications, the location of the traditional physical display or traditional PC console prevents an optimal use of the brake tester by the operator. One reason can be that the vehicle cabin passes the display or PC console when testing the last axles of the vehicle and trailer - a problem which has increased due to introduction of long modular vehicle combinations. Another reason can be that the vehicles need to be reversed over the brake tester in non-drive through lanes, and then the operator cannot see the display or PC console.

The Android/Windows phone or tablet are solutions to these problems.

Operator brake test guide - BMAssist

Another distinct feature of the handheld units compared to a traditional infrared remote control is the integrated BM Assist, which is a menu based software, which guides the operator safely and correctly through the complete brake test.

BM Assist is available for Windows phone, tablet and PC.

The BM14200 roller brake tester has one of the strongest designs in the market and is built to withstand a high daily throughput of fully laden vehicles. The BM14200 is designed for brake test of all vehicles from passenger cars to the heaviest of trucks.

Large chain wheels
The large chain wheels reduce required maintenance of chains and increase the life of the gears, motors and other components.

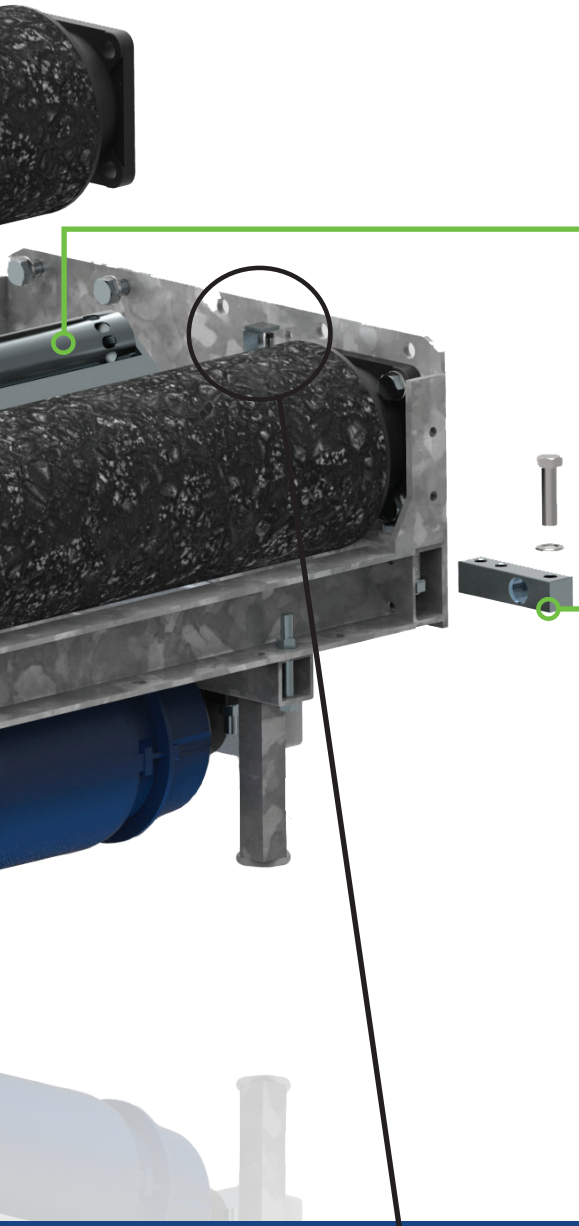
- 33 % stress reduction compared to standard chain wheels.
- Reduction of required chain tightening from 4 times to once a year.

Heavy duty bearings
The heavy duty bearings are designed to meet the extreme loads experienced when applying the brakes to lock of a fully loaded vehicle and to absorb chock loads if/when an axle is driven hard into the rollerbed.

The display
The display is made of aluminium and contains a gauge with a double brake force scale from 0 to 800 daN and 0 to 4000 daN. The display is a modular design so that it can be customised to existing and future demands. The display is based on a white background plate, on which the analogue point meters are printed in black. The red digital numbers are presented on a black background. This combination of colours optimizes the readability of the display for the inspector.

Strength of roller axles
A 60 mm roller shaft diameter provides the necessary over-load capacity to ensure maximum and trouble free lifetime.

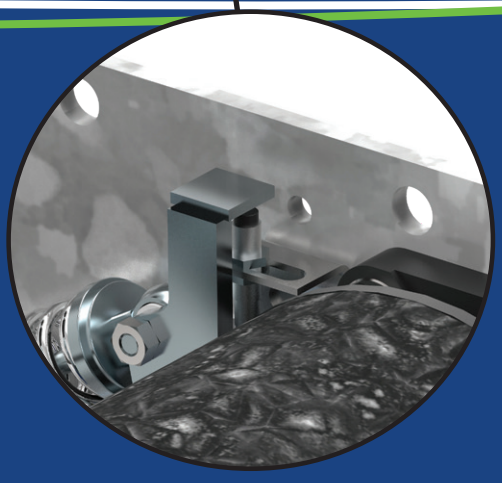
Did you know...
...that BM Autoteknik A/S was founded in 1977 and therefore has more than 35 years of experience.



Large middle roller and improved damping system
The 80 mm diameter middle rollers provide an optimal contact with tires and improve test results.
The damping system of the middle roller also enhances strength, lifetime and reliability.

Improved design of automatic weighing system
Weight transducers are designed to manage the high stress applied when testing fully laden vehicles. The superior crimp characteristic ensures correct measurement even when being applied with the high shock loads from "drive-over" axles.

The rollerbed is "hung" in the weight transducers when placed in the sub frame. The benefit of this "hanging" design is less sensitivity of the accuracy to forward and backward forces and other vertical and horizontal movements of the rollerbed.

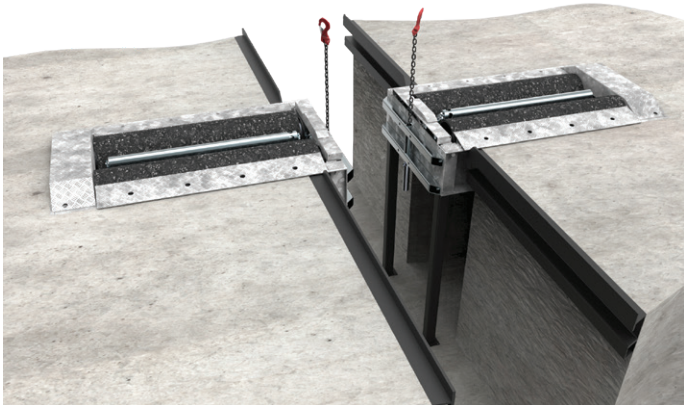


Improved protection of on-off and speed sensors
Inductive sensors are known to be the component most vulnerable to break down due to lack of proper protection from dirt and stones dropping down from vehicles. The protection of the on-off and speed inductive sensors provides a higher reliability hence less downtime.

Load Simulation Systems

The BM14200 RBT can be supplied with four different systems:

- Conventional Axle Load Simulation
- Chassis Load Simulation – Pit wall or pit floor installation
- Chassis Load Simulation – Applied to chassis from top-down



Conventional Axle Load Simulation

Conventional Axle Load Simulation

The Axle Load Simulation is easily installed or retrofitted to the sides of subframes of the BM14200 RBT. With a load capacity of 8 ton, the system allows for a load simulation to the maximum allowed axle weight of most heavy vehicles.

Chassis load simulation - Pit wall or pit floor

Over decades operators has experienced the disadvantage of ALS not being able to activate the load sensing valve and hence the load simulation did not simulate a real load of the vehicle.

This disadvantage is overcome, if the load simulation is applied to the chassis of the vehicle instead of the axles and such Chassis Load Simulation system, CLS, can optionally be supplied with the BM14200 RBT.

CLS pit wall mounting

CLS pit floor mounting

Chassis Load Simulation - Applied to chassis from top-down

Alternatively, the load simulation can be added directly from top down on the vehicle using the optional BM74000 load simulator. With a load capacity of 10 T, the BM74000 load simulator is unique in the market.

CLS applied to chassis from top-down

EBS Test with BM25 *Smart*Test

Traditionally, vehicle brakes are considered as a 2-level brake system, air pressure system and mechanical system:

1. The air pressure system, consists of compressor, valves and hoses creating the brake cylinder air pressure being the input to the mechanical system.

2. The mechanical system, consists of the mechanical brake components around the individual wheel i.e. slack adjuster, brake springs, brake lining and brake drum or brake disk.

In combination, these two systems can be described as the foundation of the vehicle brake system.

The BM25 *Smart*Test consists of a radio receiver box, which measures the deceleration and receives data from the radio air pressure transducers. The BM25 *Smart*Test is additionally supplied with a MS Windows program, which presents the test results graphically.

Today – and in the future - we will see the brake system as a 3-level brake system, where the 3rd system is:

3. The EBS control, consists of ECU, actuators and sensors. The BM25 *Smart*Test in combination with advanced roller brake testers, such as model BM14200 make up a superior tool for testing brakes on heavy vehicles and vehicle combinations.

The EBS system can only be expected to perform in an optimal manner if the foundation of the brake system works. The operator will, therefore, use the advanced roller brake tester to conduct static brake test, diagnosing and repairing the foundation of the vehicle brake system.

With a correct performance of the foundation of the vehicle brake system, the operator will use the BM25 *Smart*Test to check the EBS control and the actual overall on-road performance of the brake system.

Technical Data

BM14200 DESCRIPTION		
Roller bed per side (1000 mm rollers)	L x W x H	910 x 1285 x 622 mm
Roller bed per side (1250 mm rollers)	L x W x H	910 x 1535 x 622 mm
Roller bed per side (1600 mm rollers)	L x W x H	910 x 1885 x 622 mm
Subframe for split bed installation (1000 mm rollers)	L x W x H	990 x 1355 x 300 mm
Subframe for split bed installation (1250 mm rollers)	L x W x H	990 x 1605 x 300 mm
Subframe for split bed installation (1600 mm rollers)	L x W x H	990 x 1955 x 300 mm
Roller diameter		260 mm
Roller length		1000/1250/1600 mm
Height of middle cover plate over floor level		75 mm
Roller heigth over floor level	front/rear	35/75 mm
Friction coefficient of roller from factory	dry/wet	Min 0.7/0.6
Wheel span (can be customised)		890 to 2890/3390/4090 mm
Distance between roller centres		493 mm
Maximum test axle weight		16000 kg / 20000 kg
Gear motor size		11/15 kW
Max brake force measurement		3600/5500 daN
Test speed		2.7 km/h
Display	L x W x H	930 x 820 x 100 mm
Control box	L x W x H	760 x 600 x 210 mm
Display brake force scale		0 - 800 daN 0 - 4000 daN
Brake force measuring accuracy		0 – 100 daN : ± 2 daN > 100 daN: ± 2 % FS
Pedal force measurement accuracy		0 – 100 daN : ± 1 daN
Operating temperature		-15°C to + 50°C
Power and fuses		3 x 400 Vac + N + PE Minimum 50/80 Amp 3 x 230 Vac + PE Minimum 80/125 Amp

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