The perfect choice if you are looking for...

- Roller Brake Tester designed to last.
- The most comprehensive Load Simulation System Program and EBS Diagnosing tool.
- Roller Brake Tester selected by some of the most prestigious Vehicle Inspection Companies worldwide.
BM14200 Roller Brake Tester

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 as found at vehicle inspection centers and private repair work shops.

Customizing the BM14200 to meet the exact customer requirement

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 need:

**Roller length for testing larger variation in vehicle’s wheel span**

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.
Load simulation systems

The flexibility and innovation of roller brake testers for heavy vehicles is often determined by which load simulation solutions can be supplied. 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**

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 have 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.

**Chassis Load Simulation - Applied to chassis from top-down**

Alternatively, the load simulation can be added directly from top down the vehicle using the optionally BM74000 load simulator. With a load capacity of 10 T, the BM74000 load simulator is unique in the market.
Handheld PDA control and BM FlexCheck Windows software

The BM14200 can be supplied with a 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.

In conjunction with BM FlexCheck, the BM14200 can be supplied with a handheld PDA unit, which communicates wirelessly (WLAN) with the BM14200. The PDA has a virtual display, which shows all the readings of the brake test and together with the integrated touch screen based remote control feature, the operator can fully control the brake test from the PDA unit in all situations.

Practical advantages of the PDA unit

In many applications, the location of the traditional physical display or traditional PC consol prevents an optimal use of the brake tester by the operator. One reason can be that vehicle cabin passes the Display or PC consol 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 vehicles needs to be reversed over the brake tester in non-drive through lanes, and then the operator cannot see the Display or PC consol.

The PDA is a solution to these problems and can easily be stored in a jacket pocket when not used.

Operator brake test guide - BMAssist

Another distinct feature of the PDA unit 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 both on the PDA unit and PC program.
EBS test with BM25 *SmartTest*

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

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

2. The mechanical system, consisting 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.

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**, consisting of ECU, actuators and sensors. The BM25 SmartTest in combination with advanced roller brake testers, such as model BM14200, BM17200, and BM20200 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 SmartTest to check the EBS control and the actual overall on-road performance of the brake system.

The BM25 SmartTest consists of a radio receiver box, which measures the deceleration and receives data from the radio air pressure transducers. The BM25 SmartTest is additionally supplied with a MS Windows program, which presents the test results graphically:
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. Some of the key strengths of the BM14200 brake tester are:

**Large Chain Wheels**
When a brake tester is used for testing of axles, which are semi or full laden, more stress is added to the chain system. This stress requires chain regular chain adjustments. Failing to maintain correct tension of chains will increase the risk of gear and motor damage.

In order to reduce required maintenance of chains and increase the life of the gears, motors and other components, the BM14200 is supplied with large chain wheels. Research suggests a stress reduction of approx 33 % and a reduction of required chain tightening from 4 times to once a year.

**Large middle roller and improved damping system**
The BM14200 is supplied with 80 mm diameter middle rollers, which provide a better contact with wheels with Knobbly tires. The damping system of the middle roller on BM14200 also enhances strength, lifetime and reliability.

**Strength of roller axles**
The strength of the axles of the rollers is increased, the roller axle on BM14200 is 60 mm. The benefit is a longer mechanical lifetime due to the increase of overload capacity.

**Heavy Duty Bearings**
The BM14200 is equipped with heavy duty bearings, which 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.

**Improved design of automatic weighing system**
The BM14200 is equipped with higher quality weight transducers, which are less sensitive to stress and have a superior crimp-characteristic. This includes in particular a more durable design in situations, where vehicles presented are driving through for re-checks at relatively high speed.

The BM14200 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 is improved on the BM14200, which provides a higher reliability hence less downtime.

The Display

The display is made of aluminium and contains a gauge with a double brake force scale from 0 – 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.

<table>
<thead>
<tr>
<th>BM14200 Description</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rollerbed L x W x H * 2</td>
<td>910 x 1285 x 622 mm</td>
</tr>
<tr>
<td>Sub-frame for split bed installation – L x W x H * 2</td>
<td>990 x 1355 x 300 mm</td>
</tr>
<tr>
<td>Height of middle cover plate over floor level</td>
<td>75 mm</td>
</tr>
<tr>
<td>Roller diameter and length</td>
<td>260 mm, 1000 mm</td>
</tr>
<tr>
<td>Roller height over floor level front/rear</td>
<td>25/70 mm</td>
</tr>
<tr>
<td>Friction coefficient of roller from factory dry/wet</td>
<td>Min 0.7/0.6</td>
</tr>
<tr>
<td>Wheel span *) – can be customized</td>
<td>850 to 2850 mm</td>
</tr>
<tr>
<td>Distance between roller centres</td>
<td>493 mm</td>
</tr>
<tr>
<td>Maximum test axle weight</td>
<td>16000 kg / 20000 kg (optional)</td>
</tr>
<tr>
<td>Gear motor size</td>
<td>11 kW</td>
</tr>
<tr>
<td>Max brake force measurement</td>
<td>0 – 3600 daN</td>
</tr>
<tr>
<td>Test speed</td>
<td>2.7 km/h</td>
</tr>
<tr>
<td>Display L x W x H</td>
<td>930 x 820 x 100 mm</td>
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<tr>
<td>Control box L x W x H</td>
<td>760 x 600 x 210 mm</td>
</tr>
<tr>
<td>Display brake force scale</td>
<td>0 – 4000 daN</td>
</tr>
<tr>
<td>Brake force measuring accuracy</td>
<td>0 – 100 daN / ± 2 daN</td>
</tr>
<tr>
<td>Pedal force measurement accuracy</td>
<td>0 – 100 daN / ± 1 daN</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>−15°C to + 50°C</td>
</tr>
<tr>
<td>Power and fuses</td>
<td>3 x 400 VAC + N + E</td>
</tr>
</tbody>
</table>
Business Profile

Since the foundation of BM Autoteknik A/S in 1977, the company has developed and manufactured roller brake testers and test line systems for workshops and vehicle inspection bodies all over the world. BM employs more than 60 people located in Denmark, Germany and England. We consider our committed and motivated staff as being the most important factor for our international success.

BM trades internationally through a network of international distributors. Key staff of our partners are trained and certified by BM Autoteknik A/S in order to provide excellent service to the end-user in their individual markets.

BM is internationally known to have one of the widest and deepest product ranges in the industry, including advanced mobile roller brake tester systems for both light and heavy vehicles.

Selection of our product range

BM Autoteknik A/S core business is development and manufacturing of quality test equipment for vehicle inspection including a complete supporting IT system, BM FlexCheck. Our product range includes roller brake testers, play detectors, suspension testers, speedometer testers, side slip, headlight testers, emission testers and the vehicle inspection IT system, BM FlexCheck.

Visit us at www.bmtest.dk
...to find more info about BM Autoteknik A/S