

MBT-SERIES



MBT 1000 EUROSYSYSTEM

Roller Brake Tester for Motorcycles and Lightweight Vehicles

Original Operating Instructions

BAE12901-en

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1 Safety

1.1 Introduction

Thoroughly read this manual before operating the equipment and comply with the instructions. Always display the manual in a conspicuous location.

Personal injury and property damage incurred due to non-compliance with these safety instructions are not covered by the product liability regulations.

1.2 Symbols



Important safety instructions. Failure to comply with instructions could result in personal injury or property damage.



Important information.

1.3 Intended Use

This equipment is to be used exclusively for the testing of motorcycles and lightweight vehicles. Observe the rated axle load.

The equipment shall not be modified without the express written consent of the manufacturer. In case of non-compliance the declaration of conformity becomes void.

1.4 Inappropriate Use

Any use other than described is inappropriate.

1.5 Requirements on Operating and Service Personnel

All persons employed in the operation, maintenance, installation, removal and disposal of the device must

- be at least 18 years old,
- be trained and instructed in writing,
- have read and understood this manual
- be on record as having been instructed in safety guidelines.

1.6 Safety Instructions for Installation and Initial Operation

- The system shall only be commissioned by MAHA service technicians or authorized service partners.
- All parts of the electrical equipment must be protected from moisture and wetness.
- The system shall not be installed and operated in hazardous locations or wash halls.
- The operator must provide for optional safeguards (e.g. warn lamps, barriers, etc.) depending on local conditions.
- Wear safety shoes and gloves.
- Safeguard roller set with suitable means (e.g. cordon chains or strap).
- The display must be installed in a secure area and folded into the wall when not in use (wall hinges optionally available).
- When folding the display, grasp it on the edges. Danger of pinching!
- Ensure that a lockable emergency-stop main switch is installed based on installation instructions before connecting the feed line. Use motor protection switch and cable cross sections as per specification. Reference in circuit diagram (standard delivery), nameplate. Fuse max. X.X A (see nameplate).
- The main switch must be provided by the customer and installed on-site. It must be positioned in direct vicinity to the tester and takes over the emergency-stop function.

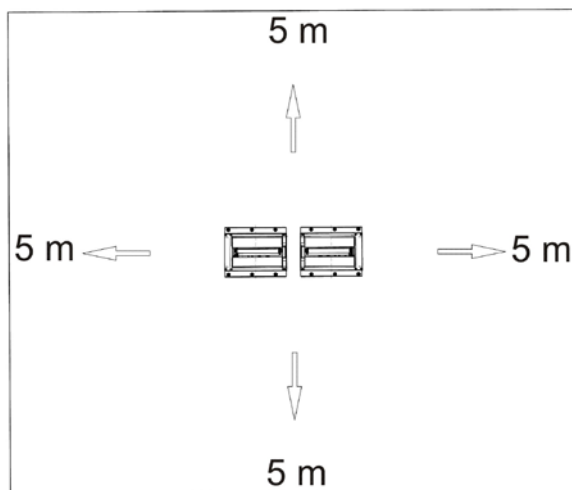
1.7 Safety Instructions for Operation

- The system shall only be operated within its performance limits.
- The system shall only be operated by trained personnel.
- The system and surrounding area must be kept clean.
- Switch off the system when not in use and secure the main switch against re-start with a padlock.
- In emergency situations switch off system with main switch or emergency-stop switch.
- No persons shall be in the danger zone of the system. Rotating or moving parts (e.g. test stand rollers) are dangerous.
- Danger of carbon monoxide poisoning with running vehicle engine in closed rooms. The operator is responsible for providing sufficient air exchange.
- Avoid unnecessary strain on vehicle and tester.
- Drive the vehicle slowly on to the tester.
- Check the danger zone before driving the vehicle onto the tester.

- When the vehicle with the driven axle is on the roller set, exit only with running roller drive. Exiting with roller drive at standstill can destroy the motors due to extreme roller acceleration.
- The system shall not be operated without functioning slip monitoring. This can cause tire damage.
- Never jump start a vehicle with the system. This can lead to equipment damage.
- No 4 wheel-drive vehicles shall be tested on the standard roller set. Damage to vehicle and system are possible. When in doubt contact your responsible service representative.
- The vehicle must be closed during testing. If persons outside of the vehicle are endangered, use noise protection.
- The operator shall not leave the vehicle during testing.
- No vehicle shall be parked in/on the roller set or on the optional ramps.

1.8 Danger Zone

During brake tester operation no persons are allowed in the danger zone: **5 (five) meters** around the roller set in all directions.



1.9 Safety Instructions for Servicing

- Service work shall only be done by MAHA service technicians or authorized service partners.
- Work on electric parts of the system shall only be done by trained electricians.
- The main switch must be switched off and secured against restart before doing repair, maintenance and set-up work.
- Fire danger due to rubber abrasion on the roller set. Clean regularly. Remove abrasion before maintenance work.

- The main switch must be secured and if necessary the motor protection switch turned off when doing work in the roller set.
- When working on the control cabinet or on the roller sets pay attention to the heating (optional) or hot parts.
- Immediately turn off the tester when it starts up unintentionally. Contact the service department.

1.10 Safety Features

The safety features (partly optional) are to be inspected regularly by an authorized service technician. Official guidelines must be followed at all times. *The equipment shall not be operated when the safety features are defective!*

- **Lockable Main Switch**

Serves as normal On and Off switch for the equipment and as emergency switch. The switch can be padlocked to protect it against unauthorized usage.

- **Emergency Switch**

Is used for quick switch-off during operation. Interrupts the power supply to the equipment.

- **Startup Monitoring**

Prevents the rollers from starting up in case the wheels are blocked (seized bearings, jammed brake pads). This feature helps prevent the vehicle tyres from being damaged.

- **Sensor Rollers**

The RPM difference between equipment rollers and sensor rollers determines the slip. Both sensor rollers must be pushed down in order to start the roller brake tester.

- **Visual and Audible Warning Devices**

These must be positioned at a suitable location and must be easily seen or heard at all times. In the event that the warning devices are defective, the brake tester must be shut down until they are fully functional again.

- **Pit Safety**

Light barrier or infrared movement sensor. If any person enters the safety area, the brake tester is switched off.

- **Yellow-Black Marking Tape**

The yellow-black marking tape around roller set and pit serves to mark out the brake tester and must be replaced if defective. Part # 19 6014 (Ø 38 mm) / 19 6015 (Ø 50 mm).

- **Warning and Information Labels**

Warning and information labels are attached to the equipment. These must not be changed or removed and must be replaced if unreadable (see below for part numbers).



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1.11 Accessories

The equipment shall be operated only with accessories which have been approved or permitted by MAHA.

1.12 What to Do in the Event of an Accident

- The injured person is to be removed from the danger area. Find out where dressing and bandages are kept. Seek first-aid.
- Provide first-aid (stop bleeding, immobilise injured limbs), report the accident and seal off the accident site.
- Immediately report any accident to your supervisor. Make sure a record is kept of every occasion first-aid is provided, e.g. in an accident book.
- Remain calm and answer any questions that may arise.

2 Description

2.1 General Information

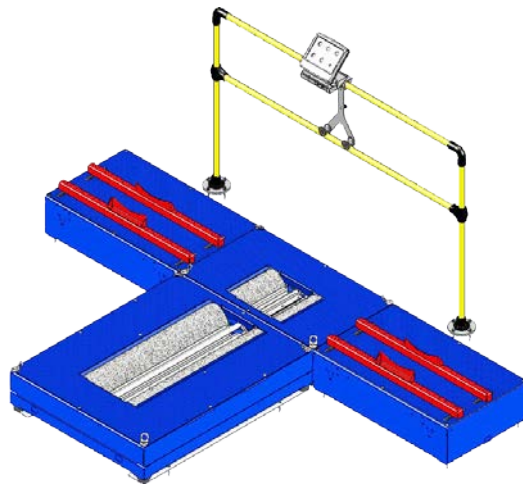
The safety test lane EUROSYSTEM uses modular design. It is easily expandable and has the following function groups as standard equipment: side-slip tester, shock tester, brake tester. In addition, all kinds of MAHA test equipment can be connected. Test equipment from other manufacturers can be integrated in some instances.

PC and screen display as well as EUROSYSTEM software are standard equipment. This test lane-specific software developed by MAHA is based on the Windows operating system and is network-compatible. The measurement values can be processed on your own computer network.

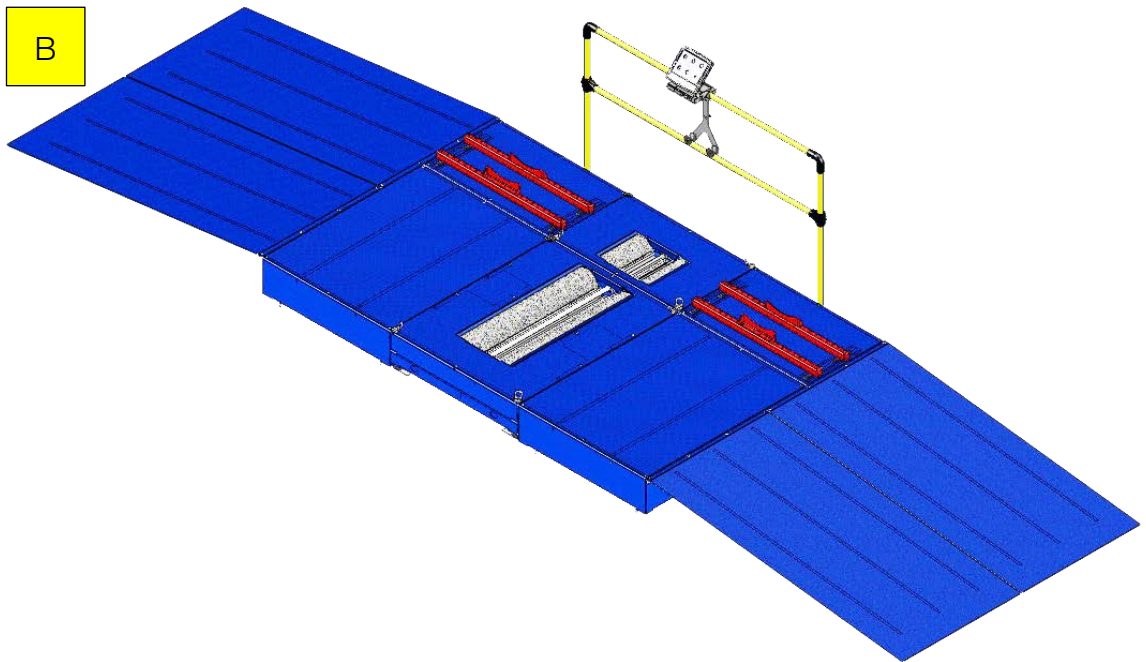
Measurement data can be stored with or without remote control and organized in databases. An additional analog display (pointer) can be used.

2.2 Overview

A



B



Examples:

A Flush-floor version

B Surface-mounted version

Illustrations show highest expansion stage with roller sets 1 + 2 and clamping device.

2.3 Specifications

	RS1	RS2
Fuse	25 A time-delay	
Drive power	3 kW	
Roller set dimensions (H x W x L)	280/315* x700 x 1150 mm	280/315* x1400 x 1150 mm
Display range	0 – 3 kN	
Testable wheel bases	800 – 1500 mm	
Testable wheel diameters	380 – 700 mm	
Test speed	5 km/h	
Wheel load (drive-over load)	1000 kg	
Roller centre distance	380 mm	
Roller diameter	202 mm	
Roller length	350 mm	1100 mm
Power supply	3 x 400 V/NPE 50 Hz	

*315 mm height only in conjunction with dynamometer

2.4 Noise Emission

The noise emission during a vehicle test results mainly from the vehicle's engine. The noise emission varies from vehicle to vehicle and cannot be attributed to the testing equipment.

Roller Brake Tester

The noise emission value created by the brake tester (roller drive) is less than 70 dB(A) in the work area of the operator.

Shock Tester

The noise emission value created by the shock tester (oscillating test plates) is between 75 and 80 dB(A) in the work area of the operator.

Side-Slip Tester

The noise emission value created by the side-slip tester is less than 70 dB(A) in the work area of the operator.

3 Transport and Storage

Check package to ensure it is complete, in accordance with the order confirmation. Report any transport damage to the carrier immediately.

During loading, unloading and transport always use suitable lifting equipment, material handling equipment (e.g. cranes, forklifts, etc.) and the right load handling attachments and slings. Always ensure that the parts to be transported are suspended or loaded properly so that they cannot fall, taking into account size, weight and the centre of gravity.

Store the packages in a covered area, protected from direct sunlight, at a low humidity and with temperatures between 0...+40 °C (32...104 °F). Do not stack packages.

When unpacking, take care to avoid any possibility of injury or damage. Keep at a safe distance when opening the package strapping, do not allow any parts to fall out.

4 Installation and Initial Operation

Installation and initial operation of the equipment may be done only by authorized and trained service technicians provided by the manufacturer, licensed dealers or service partners.

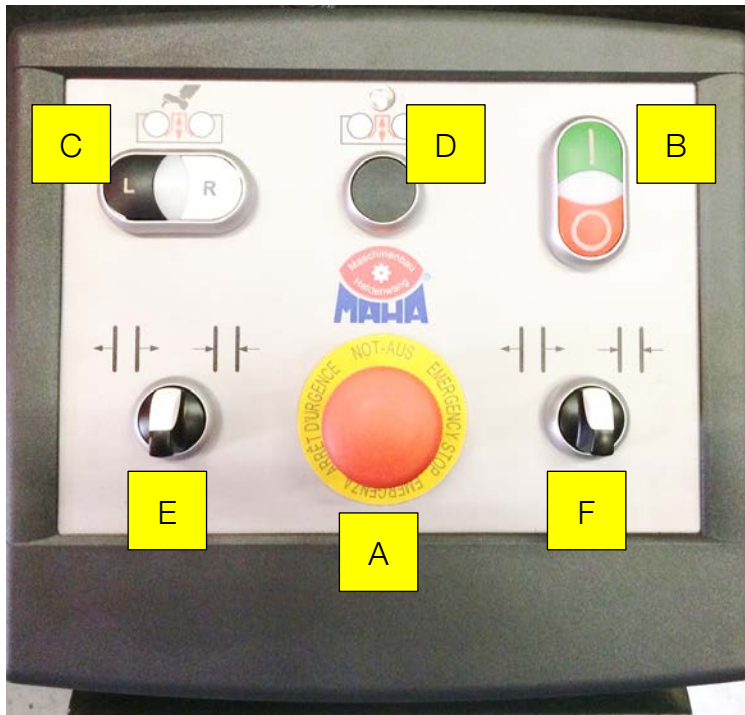
5 Operation

5.1 Main Switch

- Main switch in position 0: Power supply OFF
- Main switch in position 1: Power supply ON
- When in position 0, the main switch can be protected against tampering by means of a padlock.



5.2 Control Unit



- | | |
|---|---|
| A Emergency stop button | D Lifting bar Speedometer tester (opt.) |
| B Motors On/Off | E Clamping device, front (option) |
| C Lifting bar Brake tester (left: option) | F Clamping device, rear (option) |

The control unit is continuously movable along the handrail and can be swivelled sideways after pulling it in a forward direction.

5.3 Test Procedure

IMPORTANT NOTICE

The statutory requirements for the verification of braking efficiency do not demand that the brake test be completed until slippage cutoff occurs.



Automatic slippage cutoff should be generally regarded as a safety feature, *not* as the cutoff point for brake testing.*

It is adequate to terminate the test at approx. 90% of the maximum braking force. This method is strongly recommended to help prevent tyre damage!

* Please note the implementing provisions for braking efficiency determination.

- 1 Enter the roller set with the front wheel/axle (A).
- 2 Secure the rear wheel/axle with the clamping device (B).
- 3 Perform the brake test.
- 4 Open the clamping device at the rear wheel/axle.
- 5 Enter the roller set with the rear wheel/axle.
- 6 Secure the front wheel/axle with the clamping device.
- 7 Perform the brake test.
- 8 Open the clamping device at the front wheel/axle.
- 9 Exit the brake tester.



For a detailed description of the test lane software please see the operating instructions MBT EUROSYSYSTEM (document No. BAE10101-en, included).

6 Maintenance



Danger! Electric shock hazard!

Before doing any maintenance work, turn off the main switch and protect it against tampering.

6.1 Annual Inspection



- The maintenance interval prescribed by the manufacturer is **12 (twelve) months**. This maintenance interval refers to normal workshop usage. If the equipment is used more frequently or under severe operating conditions (e.g. outdoors), the interval must be reduced accordingly.



- Maintenance work shall be done only by authorized and trained service technicians provided by the manufacturer, licensed dealers or service partners.
 - In case of non-compliance the manufacturer's warranty becomes void.
-

6.2 Care Instructions

- Periodically clean the equipment and treat it with a care product.
 - Repair damage to the paintwork immediately to prevent corrosion.
 - Usage of caustic cleaning agents or high pressure and steam jet cleaners may lead to equipment damage.
-



Regular care and maintenance is the key condition for functionality and long life expectancy of the equipment!

6.3 Spare Parts

To ensure safe and reliable operation, only use original spare parts supplied by the equipment manufacturer.

6.4 Chain Drive Maintenance: Cleaning, Retensioning, Lubricating



Maintenance interval: Monthly

Before doing any maintenance work, turn off the main switch and protect it against tampering.

Remove the roller set covers from above the chains, reinstall before restarting the brake tester.

Cleaning the Chains

The chains can normally be cleaned using a cloth or brush, stubborn dirt can be removed with petroleum solvent or benzine. Do not use pickles or acids! Reapply a new anticorrosive film immediately after using degreasing agents (see section "Greasing the Chains").

Retensioning the Chains

Check the chain slack: the chain should be movable by hand approx. 5 mm up and down. If the chain needs retensioning, proceed as follows:

- Open the fastening screws.
- Adjust the chain tension using the tensioning screw.
- Tighten the fastening screws (see table for torque figures).
- Recheck the chain slack.

Brake tester model	Thread	Strength	Tightening torque	Position	Required for chain tensioning?
MBT 1xxx/2xxx/3xxx	M10	8.8	50 Nm	Running roller	yes
	M16	8.8	120 Nm	Motor mount	yes
MBT 4xxx	M18	8.8	350 Nm	Running roller	yes
	M20	8.8	350 Nm	Motor mount	only for RS1
MBT 5xxx	M16	8.8	220 Nm	Running roller	no
	M18	8.8	350 Nm	Motor mount	yes
MBT 6xxx/7xxx	M18	8.8	350 Nm	Running roller	yes
	M20	8.8	350 Nm	Motor mount	only for RS1 + RS3
MBT 7xxx	M18	8.8	500 Nm	Raised running roller	yes
	M27	8.8	500 Nm	Motor mount 3:4	no

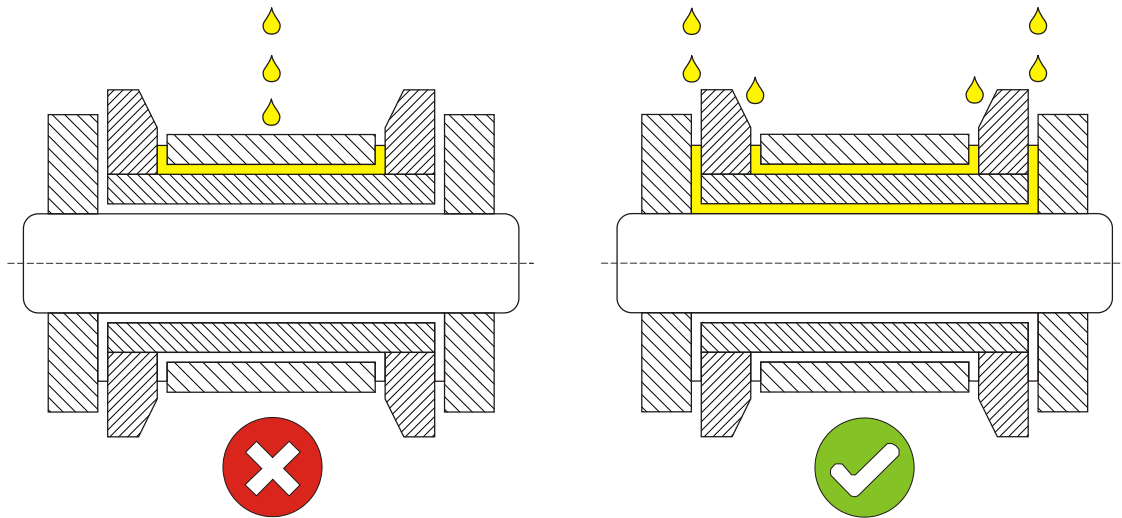
Lubricating the Chains

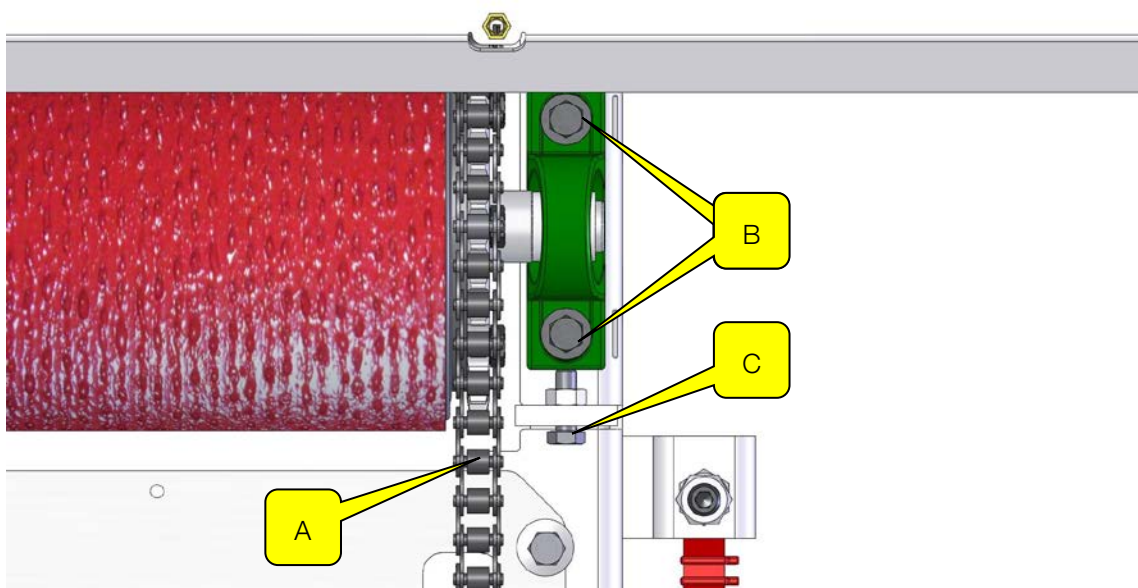
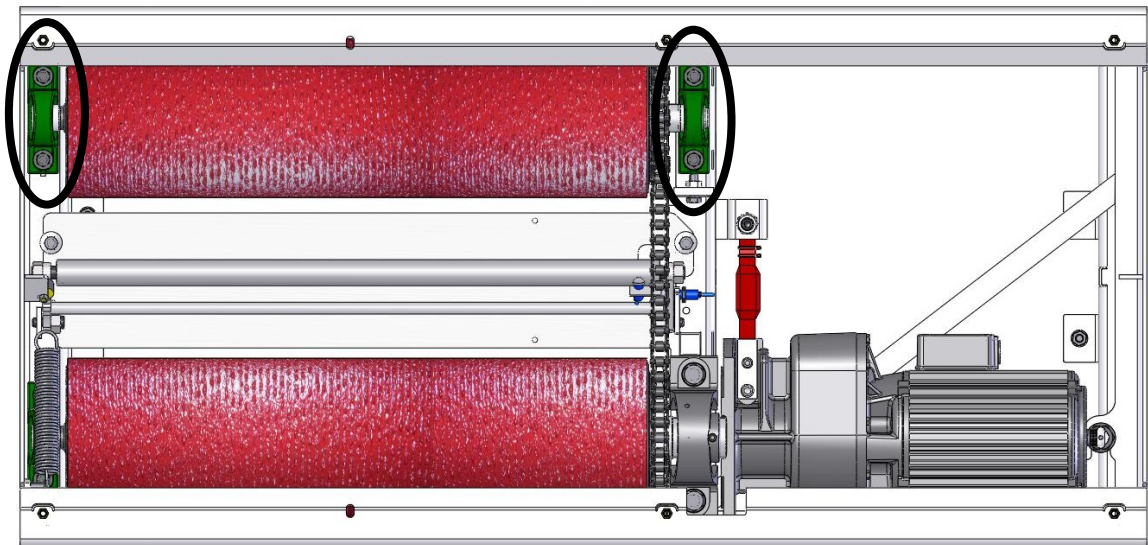


The service lifetime of the chains directly depends on correct lubrication. Provided that the lubricating film is continuously maintained, chain wear can be reduced to a minimum

Recommended lubricant: LongLub adhesive lubricant (MAHA part # 35 1020)

- Lubricate the chain over its entire length while turning over the rollers by hand.
Important: The lubricant must contact the chain links!





A Chain

B Fastening screws

C Tensioning screw

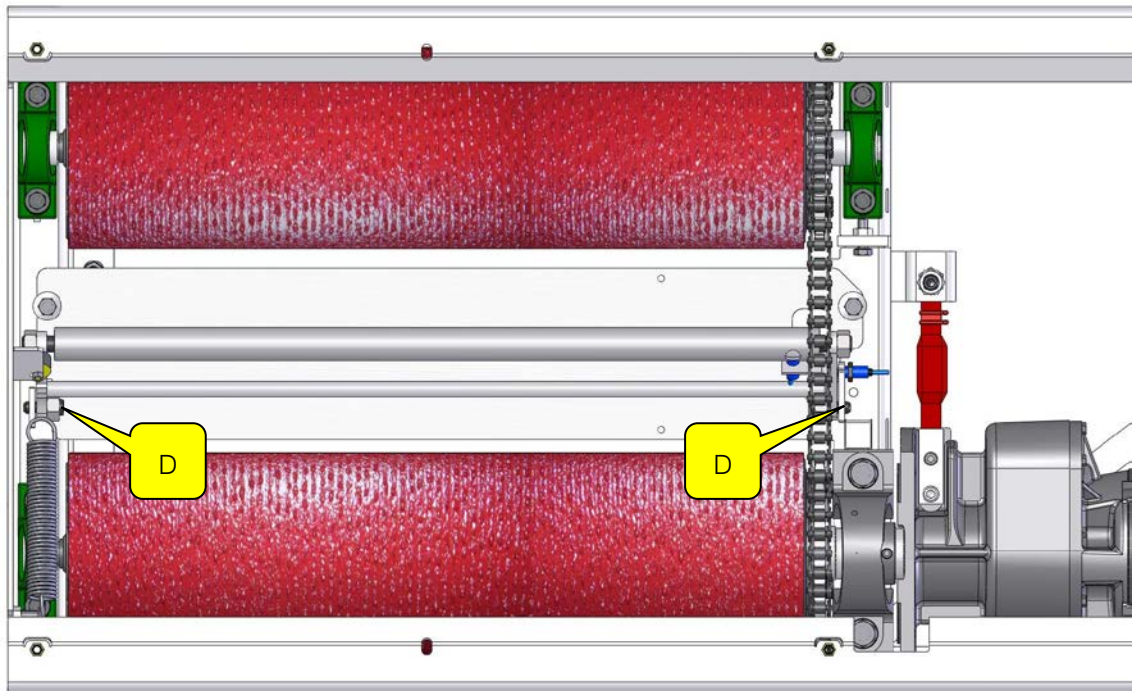
6.5 Greasing the Sensor Roller Hinges



Maintenance interval: 200 hours / 12 months

Grease the sensor roller hinges every 200 (two hundred) operating hours or once annually.

- 1 Remove the cover plates from the roller set.
- 2 Treat the greasing points (D) using a spray lubricant. Move the sensor roller up and down.
- 3 Reinstall the cover plates to the roller set.



7 Dismantling

Decommissioning and dismantling of the equipment may be done only by specially authorized and trained personnel provided by the manufacturer, licensed dealers or service partners.

8 Disposal

Pay attention to the product and safety data sheets of the lubricant used. Avoid damage to the environment. Should a disposal of the device be necessary it must be done in adherence with locally applicable legal regulations regarding environmental protection. Remove all materials properly sorted out and bring them to a suitable waste disposal service. Collect operating materials such as grease, oils, coolant, solvent-based cleaning fluids etc. in suitable containers and dispose of in an environmentally protective manner.

Alternatively, you may take the equipment to a specialised waste management plant to ensure that all components and operating liquids are properly disposed of.

9 Contents of the Declaration of Conformity

MAHA Maschinenbau Haldenwang GmbH & Co. KG

herewith declares as a manufacturer its sole responsibility to ensure that the product named hereafter meets the safety and health regulations both in design and construction required by the EC directives stated below.

This declaration becomes void if any change is made to the product that was not discussed and approved by named company beforehand.

- Model: MBT 1000 EUROSISTEM / MBT 2250 EUROSISTEM
 MBT 2450 EUROSISTEM 4WD / MBT 3250 EUROSISTEM
 MBT 3450 EUROSISTEM 4WD / MBT 4250 EUROSISTEM
 MBT 4450 EUROSISTEM 4WD / MBT 5250 EUROSISTEM
 MBT 6250 EUROSISTEM / MBT 7250 EUROSISTEM
 MBT 7450 EUROSISTEM 4WD
- Designation: Safety Test Lane, consisting of:
 Roller Brake Tester:
 MBT 1000 EUROSISTEM:
 (optional) Motorcycle Holding Device
 Rated Axle Load 2000 kg
 Motor Power 2x3 kW
 MBT 2250 EUROSISTEM / MBT 2450 EUROSISTEM 4WD
 MBT 3250 EUROSISTEM / MBT 3450 EUROSISTEM 4WD:
 Rated Axle Load 3500 kg (optional 4000, 5000 or 8000 kg)
 Motor Power 2x3 kW (4 or 5,5 kW optional)
 MBT 4250 EUROSISTEM / MBT 4450 EUROSISTEM 4WD
 MBT 5250 EUROSISTEM / MBT 6250 EUROSISTEM:
 Rated Axle Load 13 000 kg (optional 15 000 or 18 000 kg)
 Motor Power 2x7,5 kW, 2x9 kW, 2x11 kW, 2x15 kW
 MBT 7250 EUROSISTEM / MBT 7450 EUROSISTEM 4WD:
 Rated Axle Load 18 000 kg (optional 20 000 kg)
 Motor Power 2x9 kW, 2x11 kW, 2x16 kW
 Side-Slip Tester MINC EURO / MINC II EURO:
 Rated Axle Load 3000 / 5000 kg
 Shock Tester SA2 EURO oder MSD 3000:
 Rated Axle Load 1100 kg (optional 2000 kg) or 2200 kg
 Speedometer Tester TPS I / II / III; TPS 25
- Directives: 2006/42/EC; 2014/30/EU
- Standards: DIN EN ISO 12100:2010; DIN EN ISO 13850,
 DIN EN ISO 13857,
 DIN EN 349; DIN EN 60204-1; DIN EN 61000-6-3,
 DIN EN 61000-6-2

10 Company Information

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The contents of this edition have been checked with great care. However, errors cannot be fully excluded. Subject to technical change without notice.

Document

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