

## MBT EUROSYSTEM

Safety Test Lane

### Original Operating Instructions

BAE10101-en

MBT 1000 EUROSYSTEM  
MBT 2250 EUROSYSTEM  
MBT 2450 EUROSYSTEM 4WD  
MBT 3250 EUROSYSTEM  
MBT 3450 EUROSYSTEM 4WD  
MBT 4250 EUROSYSTEM  
MBT 4450 EUROSYSTEM 4WD  
MBT 5250 EUROSYSTEM  
MBT 6250 EUROSYSTEM  
MBT 7250 EUROSYSTEM  
MBT 7450 EUROSYSTEM 4WD

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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

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

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Important information.

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## 1.3 Intended Use

- The test lane EUROSISTEM is available in different versions. It was developed for the testing of passenger cars, commercial vehicles and motorcycles (special roller cover required). Depending on the equipment, various vehicle functions such as brakes, axle damping, side-slip etc. can be tested.
- The test lane 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 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.

## 1.5 Safety Instructions for Commissioning

- 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.

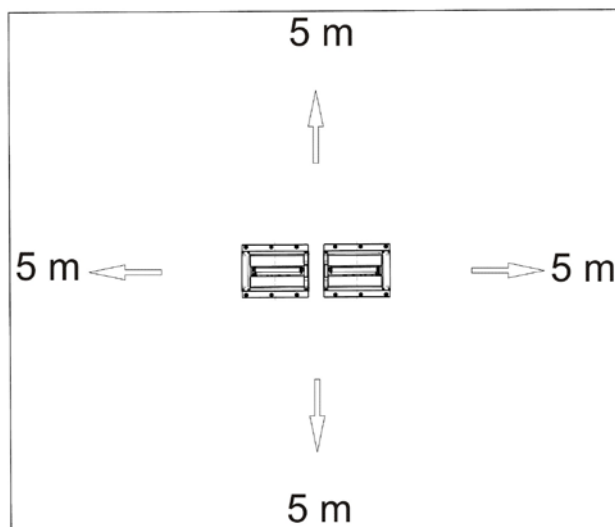
## 1.6 Safety Instructions for Operation

- 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 restart 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.

## 1.7 Danger Zone

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



## 1.8 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.

## 1.9 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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## 1.10 Accessories

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

## 1.11 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 Transport

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.

## 2.3 Installation

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.

## 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.

## 2.5 Specifications

### IW 2 / MBT 2x00

Display / Control	Communication Desk 3000 / EUROSYSYSTEM
Display unit	PC screen, optional via TV screen or simultaneous display
Control	Fully automatic with EUROSYSYSTEM communication desk or with a separate control cabinet
Communication desk (H x W x D)	1400 x 800 x 670 mm
Control cabinet (H x W x D)	950 x 800 x 250 mm

Brake tester IW 2	EURO-PROFI	EURO	EURO
Roller set	No. 2	No. 2	No. 5
Axle load (drive-over)	3500 kg	4000 kg	5000 kg
Drive power	2 x 3 kW	2 x 4 kW	2 x 4 kW
Test speed	5 km/h		
Measurement range	0...8 kN		
Display accuracy	2 % of full scale value 2 % difference between left-/right-hand side		
Track width	min.	780 mm	
	max.	2200 mm	2800 mm
Roller diameter	202 mm		
Dimensions	Length	2320 mm	2710 mm
	Width	680 mm	
	Height	280 mm	
Power supply / Fuse protection	230/400 V, 3 phases, 50/60 Hz / 25...35 A		

Shock tester	MSD 3000
Axle load-testable	2200 kg
Axle load (drive-over)	2500 / 13 500* kg
Drive power	1.1 kW
Excitement frequency	2...10 Hz
Measurement range	Max. 70 mm stroke
Track width min / max	880 / 2200 mm
Dimensions (L x W x H)	2320 x 800 x 280 mm
Power supply / Fuse protection	230 V / 1 phase, 50/60 Hz / 16 A

Side-slip tester	MINC-PROFI	MINC I EURO
Axle load testable	2000 kg	3000 kg
Measurement range	0...20 m/km	
Dimensions (L x W x H)	1020 x 460 x 80 mm	
Power supply / Fuse protection	230 V, 50/60 Hz / 10 A	

\*Option

## IW 4/7 / MBT 4x00/7x00

Display / Control	Communication Desk 3000 / EUROSYSYSTEM
Display unit	PC screen, optional via TV screen or simultaneous display
Control	Fully automatic with EUROSYSYSTEM communication desk
Communication desk (H x W x D)	1400 x 800 x 670 mm

Brake tester	IW 4 EURO		IW 7 EURO		
Roller set	No. 1	No. 2	No. 1	No. 2	
Axle (drive-over)	13 000 / 15 000* kg		18 000 / 20 000* kg		
Drive power	(2x) 9 kW, 11 kW		(2 x) 11 kW, 16 kW*		
Test speed	2.3 or 4.6 km/h*		3 or 6 km/h*		
Measurement range	0...30 or 40 kN		0...40 or 60 kN		
Display accuracy	2 % of full scale value 2 % difference between left and right side				
Roller length	1000 mm		1150 mm		
Roller diameter	202 mm		265 mm		
Dimensions	Length	2005 mm	1236 mm	2225 mm	1427 mm
	Width	765 mm	1043 mm	862 mm	1142 mm
	Height	280 mm	550 mm	400 mm	700 mm
Power supply / Fuse protection	230/400 V, 3 phases, 50/60 Hz / 35...65 A				

Axle play detector	LMS
Axle load testable	20 000 kg
Movement each side	max. 100 mm
Dimensions test plate (L x W x H)	750 x 750 x 232 mm
Power supply / Fuse protection	230/400 V, 3 phases, 50/60 Hz, 16 A

Side-slip tester	MINC II EURO
Axle load testable	15 000 kg
Measurement range	0...20 m/km
Dimensions (L x W x H)	1020 x 770 x 135 mm
Voltage supply / Fuse	230 V, 50/60 Hz / 10 A

Accessories	
Radio pressure converter	0...20 bar (pneumatic) or 0...160 bar (hydraulic)
Recharging box	for radio remote control and 10 radio pressure converters
Hydraulic weight simulator	0...15 000 kg
Weighing device	0...20 000 kg
4 wheel drive regulator set	for all 4 wheel drive vehicles

\*Option

**IW 10 / MBT 1000**

Axle load	20 000 kg
Motor power	3 kW
Test speed	5 km/h
Motor position	lateral
Roller length	610 mm
Roller diameter	202 mm
Roller center distance	400 mm
Power supply	400 V, 3 phases, 50 Hz
Fuse protection	25 A time-delay
Dimensions (W x H x L)	680 x 265 x 1420 mm
Weight	215 kg

**MBT 3x00**

Axle load (traversable)	8000 kg	
Motor power	(2 x) 5.5 kW	
Test speed	5 km/h	
Indicating range	0...8 kN / 0...16 kN	
Display accuracy	2 % of full scale; 2 % diff. left/right	
Track width min....max.	870...2800 mm (variable)	
Roller length	1000 mm	
Roller diameter	192 mm	
Roller axle distance	400 mm	
Supply voltage	3~ 400 V + N + E; 50/60 Hz	
Fuse protection	35 A time-delay	
Roller friction coefficient	Dry Steel / Plastic*	approx. 0.9
	Wet Steel / Plastic*	approx. 0.7 / approx. 0.8

\*Option



**MBT 5250**

Axle load (traversable)		18 000 kg
Drive power		(2x) 4 kW > "low speed"; (2x) 11 kW "high speed"
Test speed		0,7 km/h "low speed"; 2 km/h "high speed"
Display accuracy		2 % of full scale value 2 % difference between left and right side
Track width	min.	600 mm (variable)
	max.	3000 mm (variable)
Roller length		1200 mm
Roller diameter		130 mm
Roller center distance		450 mm
Minimum drive-over height		150 mm
Power supply / fuse		230/400 V, 3 phases; 50/60 Hz
		25 A delay "low speed" 63 A delay "high speed"

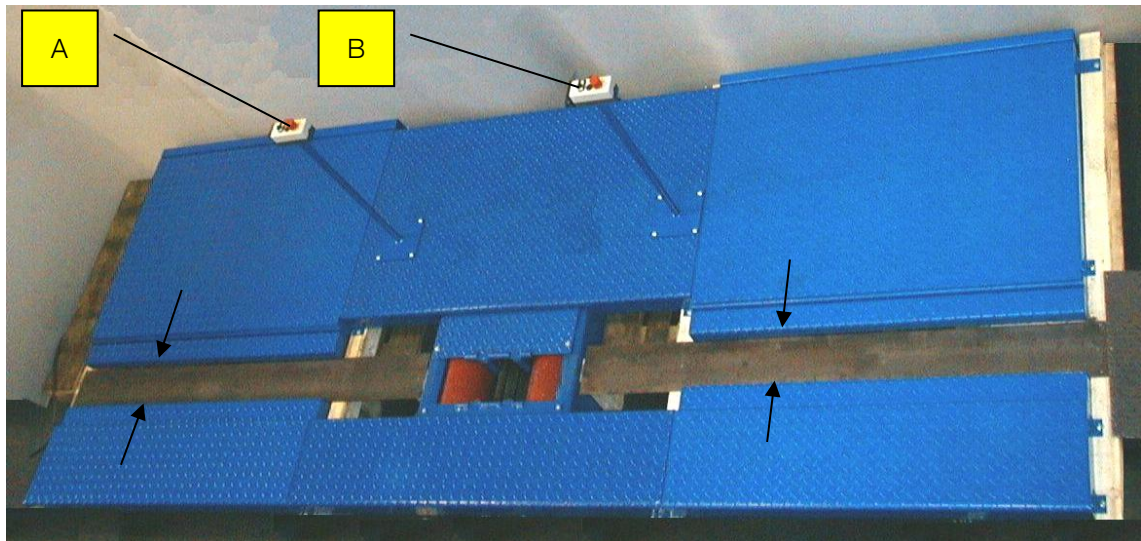
Display unit	PC monitor or radio touch screen FTS 2010
Control	Fully automatic with communication desk 3000 or control cabinet
Dimensions, communication desk (H x W x D)	1400 x 800 x 670 mm
Dimensions, control cabinet (H x W x D)	950 x 800 x 300 mm
Interface connection	Ethernet network

**MBT 6250**

Axle load (traversable)		18 000 kg	
Motor power		(2 x) 11 kW	
Test speed		3 km/h	
Display accuracy		2 % of full scale value 2 % difference between left/right side	
Track width		800 mm (variable) 3100 mm (variable)	
Roller length		1150 mm	
Roller diameter		265 mm	
Roller center distance		685 mm	
Testable tyre diameters		800...2200 mm	
Voltage supply / fuse		3~ 400 V; 50/60 Hz; 63 A delay	
Roller friction coefficient	Dry	Steel / Plastic (Option)	approx. 0.9
	Wet	Steel	approx. 0.7
		Plastic (Option)	approx. 0.8

Display unit	PC monitor or radio touchscreen
Control	Fully automatic with EUROSISTEM communication desk or with a separate control cabinet
Dimensions, communication desk (H x W x D)	1400 x 800 x 670 mm
Dimensions, control cabinet (H x W x D)	950 x 800 x 300 mm
Interface connection	Ethernet network

## 2.6 Holding Device for Motorcycles



- A Holding Device Switch for Front Wheel
- B Holding Device Switch for Rear Wheel
- C Pressure Control Device (inside operating desk, for adjustment of clamping pressure)

### 3 Installation and Configuration

#### 3.1 System Requirements

OS.....Win XP with SP 3; Win Vista (32 Bit) for ES v7.00.015 or later  
 ..... Win 7 for ES v7.10.001 or later  
 CPU..... > 1.6 GHz; recommended: Intel or similar AMD products  
 HDD ..... 1 GB free memory space  
 Graphics card .....Resolution 1024 x 768 with 24 bit color depth (True Color)  
 RAM ..... Win XP: 512 MB; Win Vista or Win 7: 1 GB  
 Drives ..... DVD-ROM  
 Interfaces..... 2 free USB interfaces

- 
- All passwords and administrator rights must be available at the time of the installation.
  - If the tester is used with multiple work stations, a TCP/IP network must be available.
  - For external devices with RS232 connectors an RS 232 interface must be available.
  - PC speciality stores offer a wide range of USB-to-RS232 adapters. There is, however, no standard guarantee that every adapter will function on the RS232 interfaces. For this reason, MAHA offers adapters with the order number (VZ 910140) which have been tested on MAHA products.
  - When replacing old computers with PC-LON cards (ISA slot), be aware that new computers no longer have ISA slots. For new computers that means that a LON-USB card (VZ 912033) is needed for the connection to the test lane.
- 



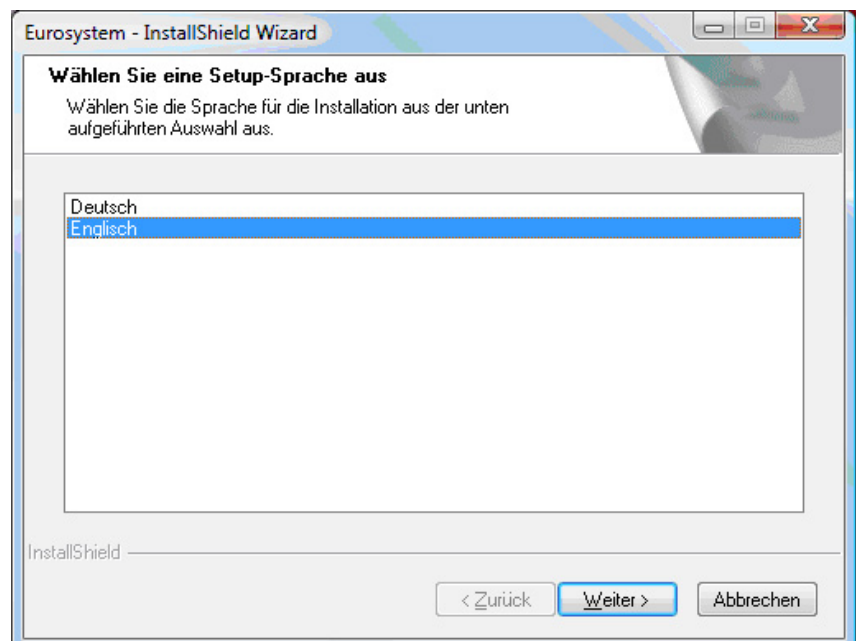
## 3.2 Starting the Setup

- 1 Insert the CD in the disk drive.  
→ Installation starts automatically. If not, start **Autorun.exe** or **EUROSYSTEMS etup.exe** from the CD.
- 2 To start the setup, click **EUROSYSTEM**.

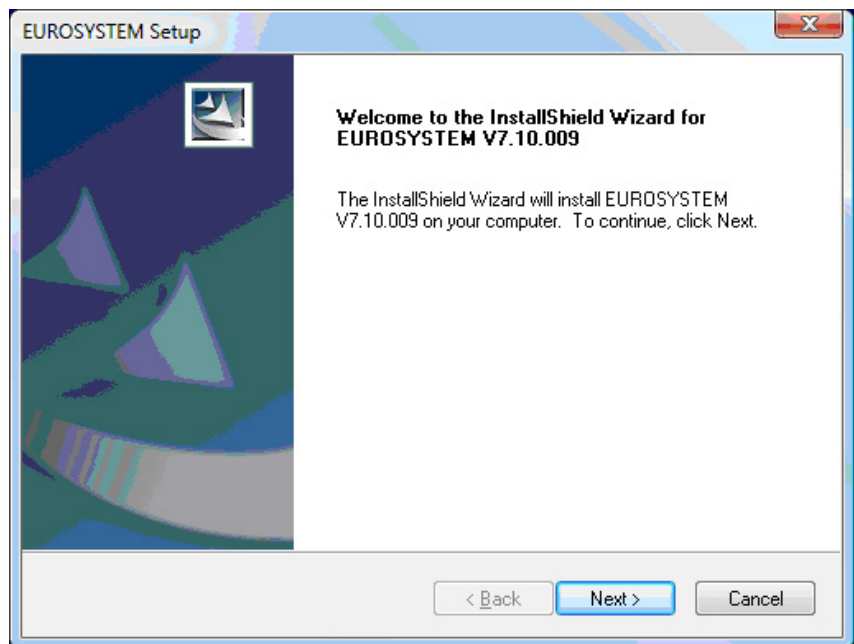


## 3.3 Selecting the Setup Language

- 1 Choose a setup language. German and English are available.
- 2 Confirm with <Weiter>.

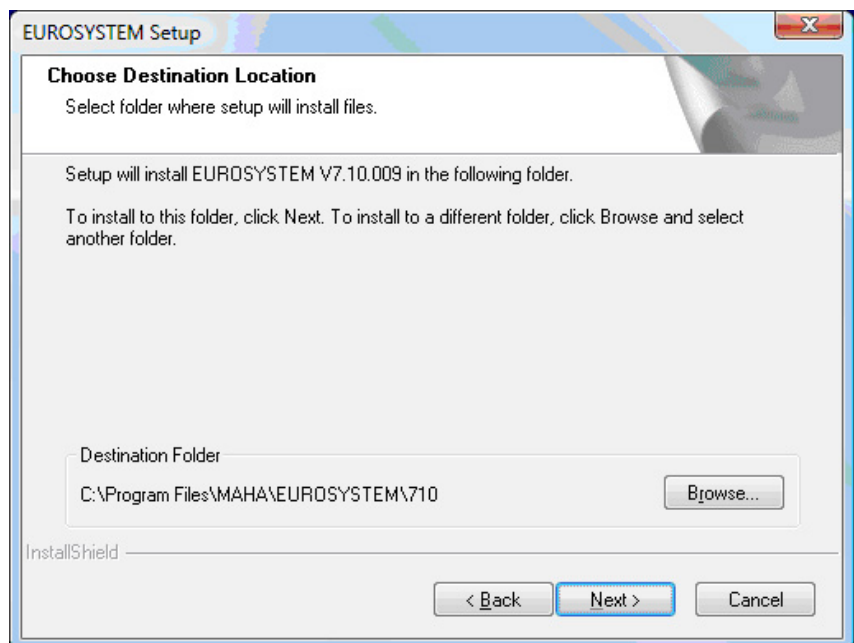


- The InstallShield Wizard appears.
- 3 Confirm with <Next>.



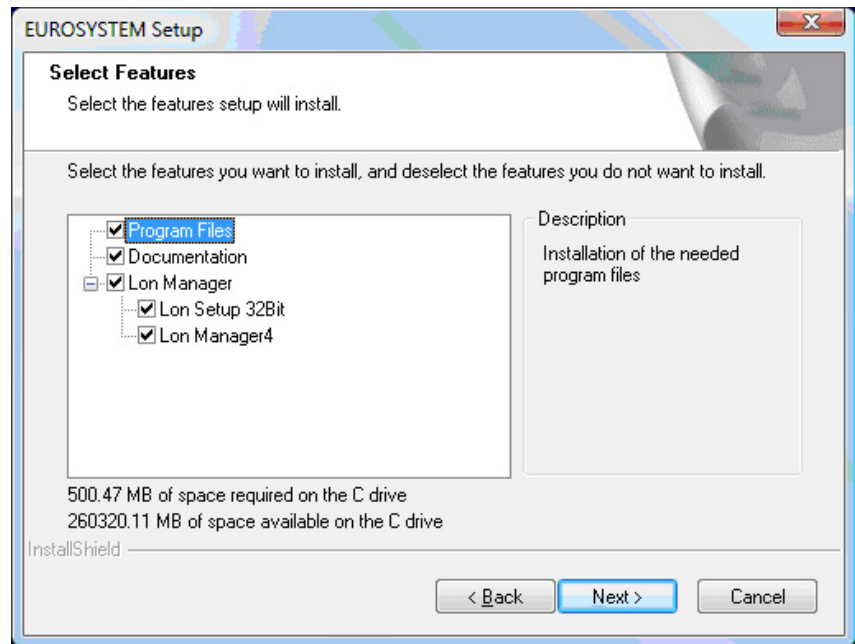
### 3.4 Selecting the Destination Folder

- 1 Choose the default destination folder or click <Browse> to select a different folder.
- 2 Confirm with <Next>.



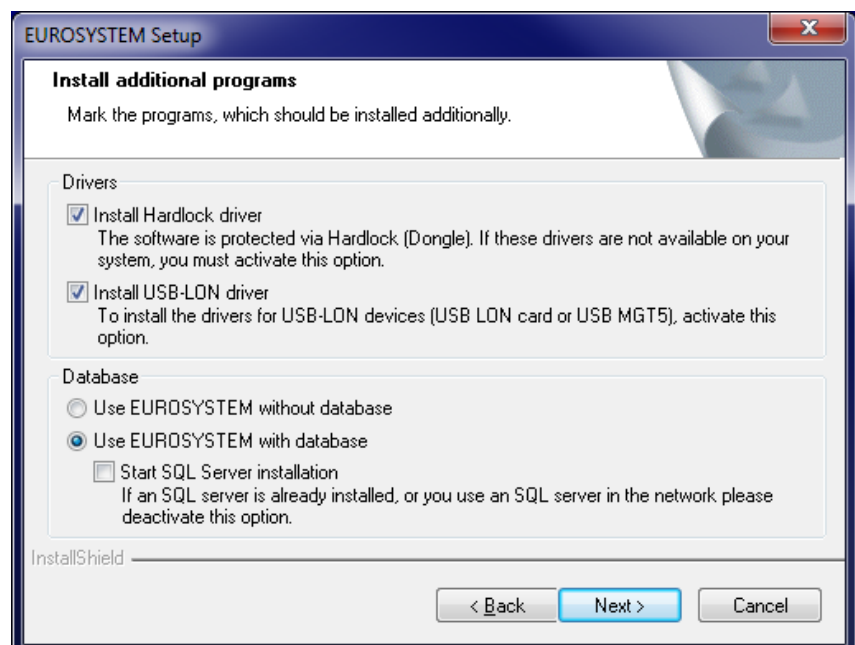
### 3.5 Selecting Features

- 1 Mark the checkboxes of the features you want to install.
- 2 Confirm with <Next>.



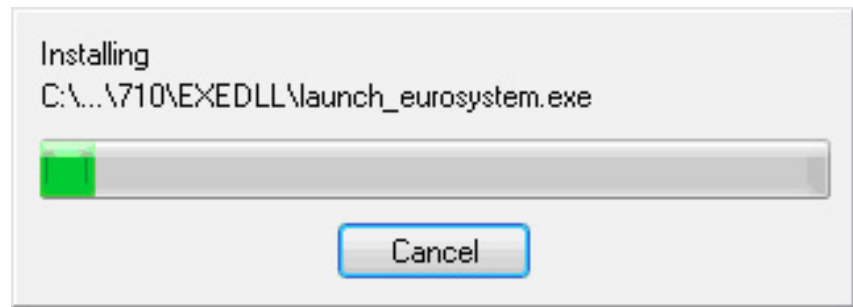
### 3.6 Installing Additional Programs

- 1 Mark the checkboxes of the programs you want to install additionally.
- 2 Confirm with <Next>.



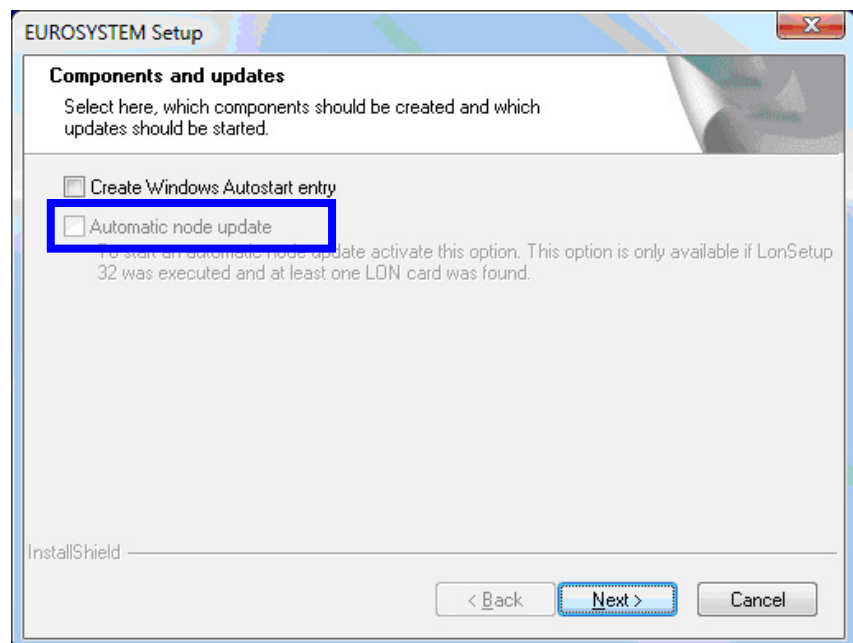
If an SQL server is already installed on your computer, option <Start SQL Server installation> will be disabled automatically.

→ EUROSYSYSTEM and the additional programs are installed on your system.



### 3.7 Selecting Components and Updates

- 1 Choose to create an Autostart entry and/or to start an automatic node update.
- 2 Confirm with <Next>.

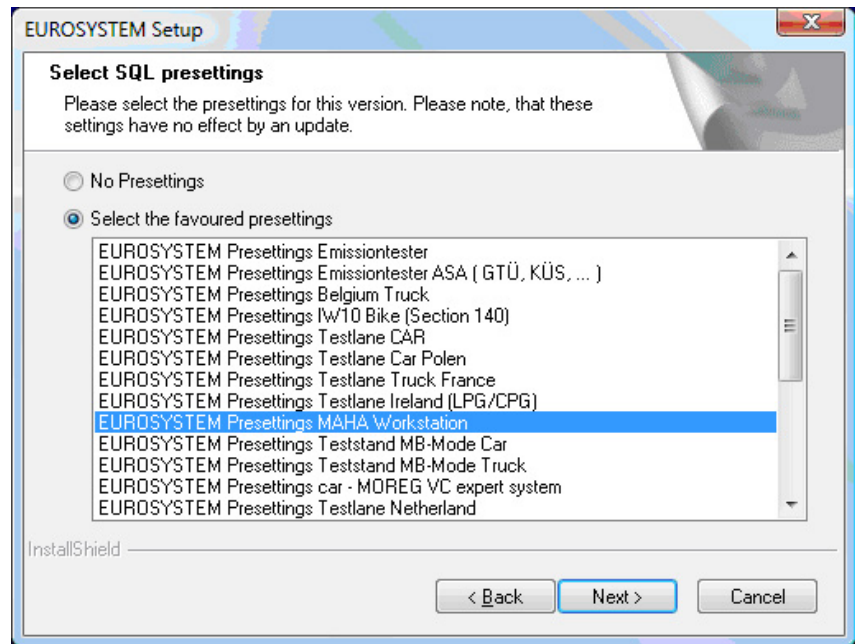


Option <Automatic node update> is only available if LonSetup 32 was executed and at least one LON card was found.



### 3.8 Selecting SQL Presettings

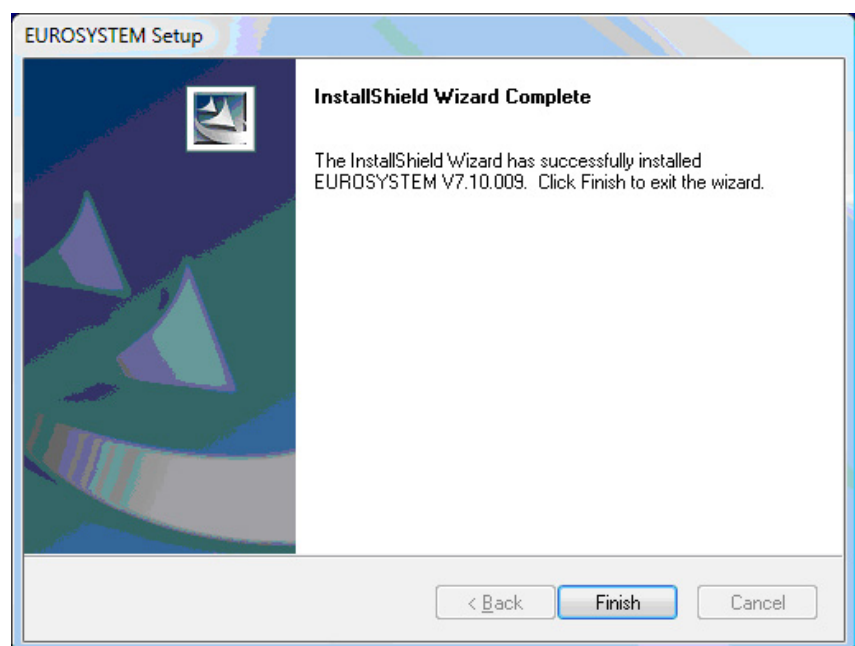
- 1 Select your SQL presettings.
- 2 Confirm with <Next>.



Depending on the presettings you select, additional dialog windows may appear.

### 3.9 Finishing the Setup

- When this window appears, the installation has been successfully completed.
- 1 Click <Finish>.

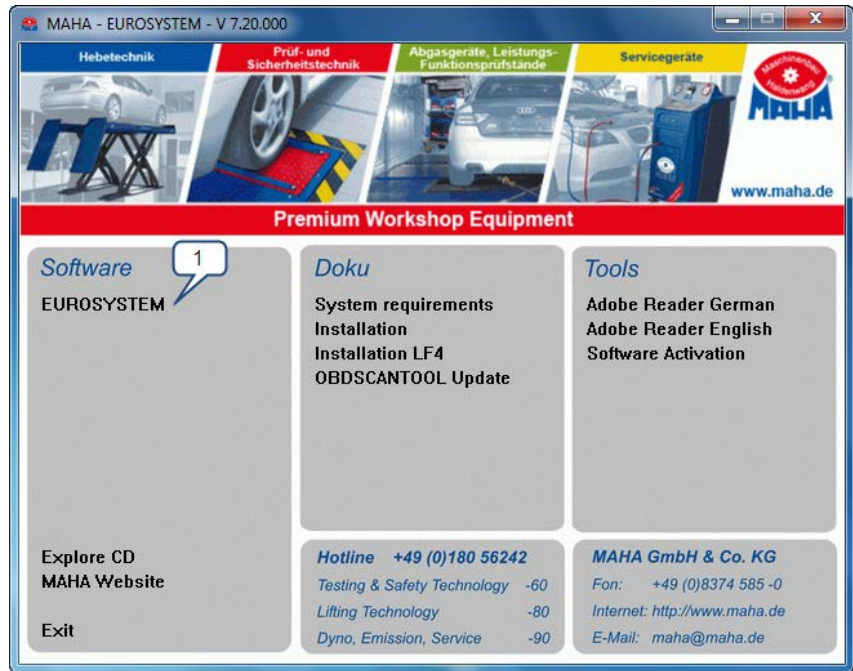


3.10 Additional Settings under Windows 7 or higher

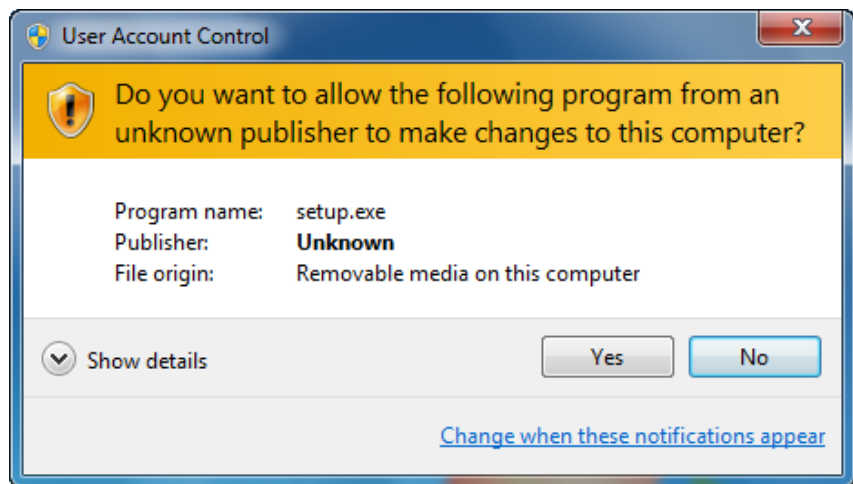


This section covers the installation of EUROSYS-TEM with the User Account Control enabled, under Windows 7 or later.

After inserting the EUROSYS-TEM CD "AutoRun" is started. Use this program to install your version of EUROSYS-TEM. Click EUROSYS-TEM (1).



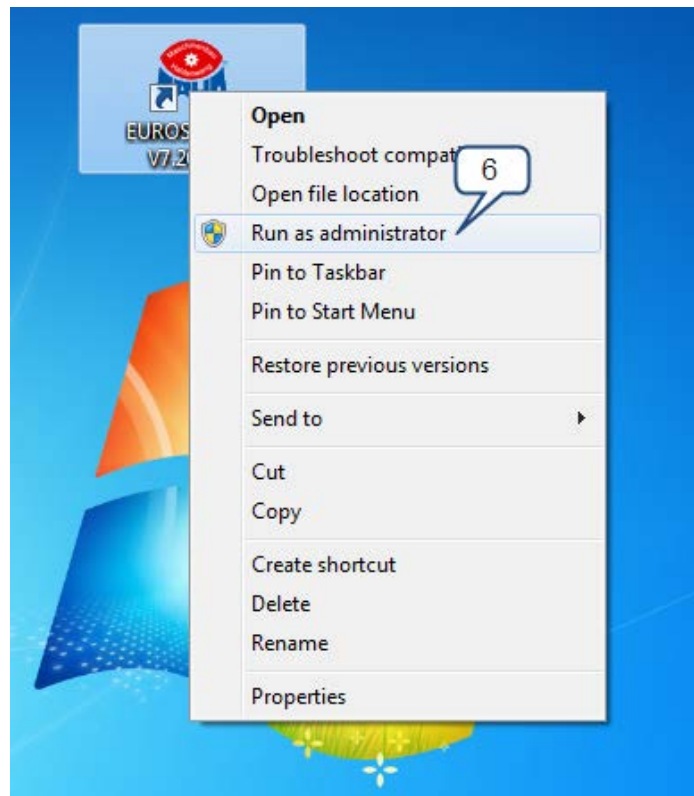
Provided the User Account Control is enabled, this Windows confirmation prompt appears. Confirm with "Yes".



Do the EUROSYS-TEM installation as described above, starting with step "Selecting the Setup Language".

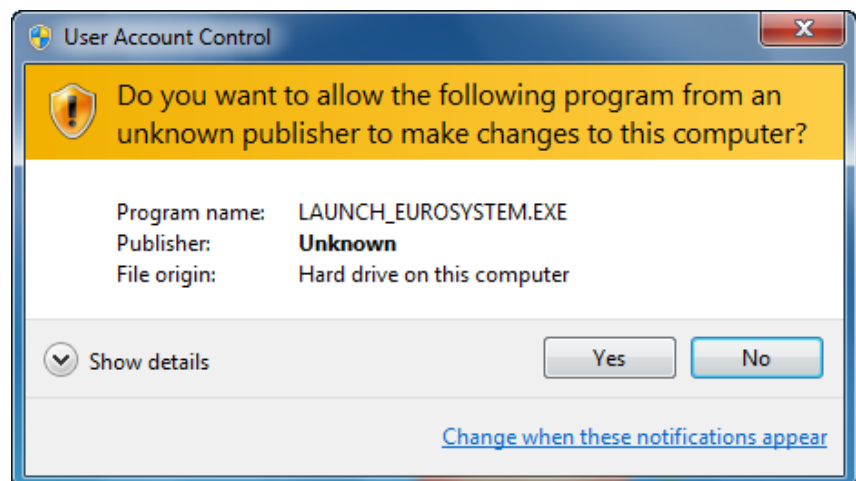
Continue by restarting EUROSYSTEM as administrator.

Right-click the EUROSYSTEM desktop icon. In the object menu, select "Run as administrator" (6).



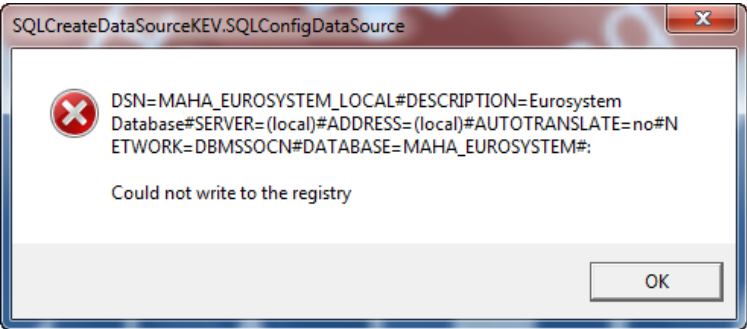
The Windows confirmation prompt is repeated.

Confirm with "Yes" again.



EUROSYSTEM now runs in the administrative context and has permission to create the ODBC data sources it requires. When starting EUROSYSTEM for the next time, simply double-click the desktop icon.

Troubleshooting

Error	Cause	Remedy
<p>While starting EUROSYSYSTEM, this error message appears.</p> <p>After confirmation, more error messages are displayed.</p> 	<p>When started for the first time, EUROSYSYSTEM requires administrative rights to be able to create ODBC data sources.</p>	<p>Start EUROSYSYSTEM by running it "as administrator" (see above).</p>
<p>Various settings are discarded after EUROSYSYSTEM has been restarted.</p>	<p>Insufficient permission to access the EUROSYSYSTEM directory.</p>	<p>Assign the appropriate permission as described above.</p>

## 3.11 Unattended Setup

### Possible Application

EUROSYSTEM 7.10 supports an "Unattended Setup" mode. This kind of installation is executed without any dialog boxes or other user prompts appearing during the installation process.

Using an Unattended Setup, system administrators are able to combine EUROSYSTEM 7.10 with products such as Microsoft SMS or other "Push" technologies. The installation process cannot be cancelled or influenced by the user.

### Creating a Response File

The Unattended Setup reads out the values of a response file generated from the original user entries. To create this response file, start the following call from the command line:

#### **Setup.exe -r**

When doing this, be sure the folder containing the file Setup.exe is active. Now install EUROSYSTEM as usual and make all settings which should be executed later during the Unattended Setup.

When the installation is finished, you will find the file Setup.ISS in the Windows directory. Copy this file into the folder with the source files of your EUROSYSTEM.

### Executing an Unattended Setup

To execute an Unattended Setup, start the following call from the command line:

#### **Setup.exe -s**

To start this call, the file Setup.ISS must be in the same folder as the file Setup.EXE. If the file Setup.ISS is in a different folder, this can be indicated by using parameter -f1 as follows:

#### **Setup.exe -s -f1"<Path>\Setup.ISS"**

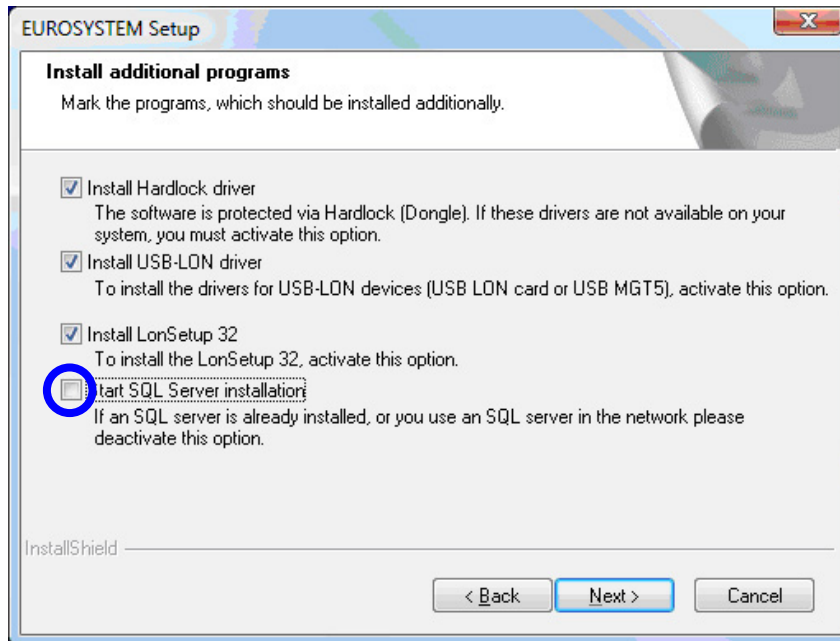
At completion of the Unattended Setup, a log file is created in the folder containing the file Setup.ISS (by default).

If you want the log file to be created in a different folder, use parameter -f2 as follows:

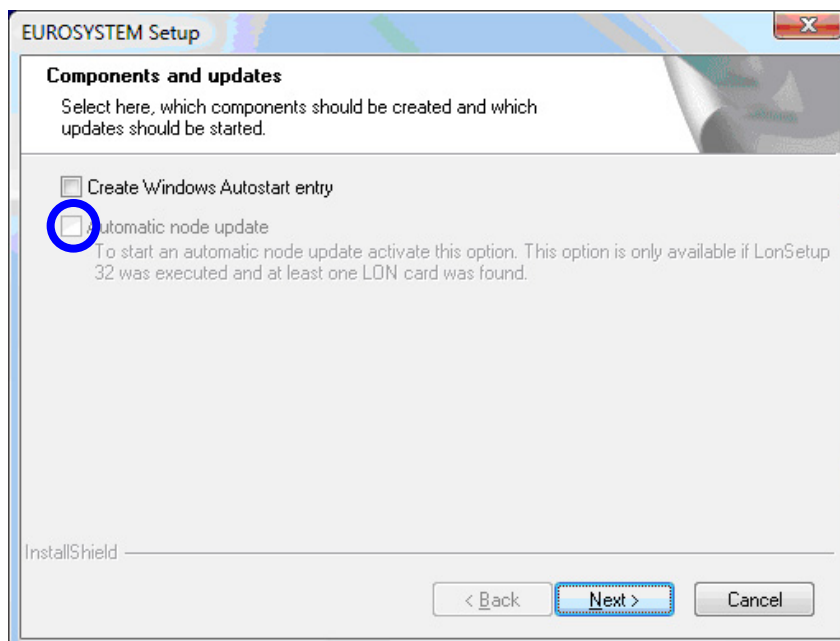
#### **Setup.exe -s -f1"<Path>\Setup.ISS" -f2"<Path>\Setup.LOG"**

## Restrictions and Recommendations

If you want to use a Software Deployment Tool, we recommend to install the SQL server not together with EUROSYSYSTEM, but to create a separate "distribution package". This is the only way to ensure that the SQL server installation is not started twice.



Before starting an Unattended Setup, make sure that option **Automatic Node Update** is disabled. If it is not, the LonManager 4 will be started to execute the automatic node update. For safety reasons, this update procedure uses dialog boxes, which is inconsistent with the requirements of an Unattended Setup.



## 4 Operation



Operation of the EUROSYSYSTEM software is menu-driven and mostly self-explanatory. In the following, only the principal program items are explained.

### 4.1 Screen Design

#### Main Menu

Generally speaking, all functions or buttons on the screen can be selected using the cursor or tabulator key and then be activated by pressing <Return> or <Enter>.

Further possibilities are digit or function keys, activation with mouse click or touchscreens.



The main menu shows a list of the sub-functions of the system.

The system is ready for the vehicle to drive onto the test lane.

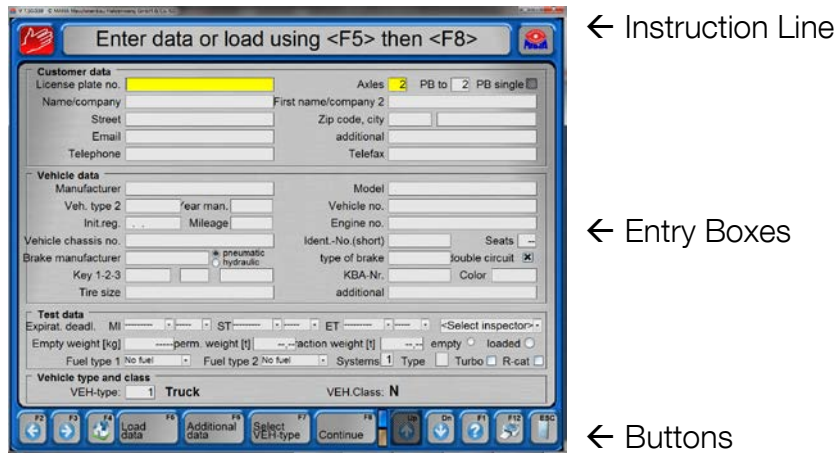
If the vehicle is now driven over the side-slip plates onto the brake tester, the test data recording will be automatically started at the same time.

It is possible to intervene at any time in the automatic procedure if measurements are wrong or not correctly filed.



The screen layout of the main menu may vary depending on section number and/or options selected.

## Screen Elements



### *Instruction Line*

The top line on the screen is the instruction line. The instructions during the program procedure indicate what is to do next or explain the current operation.

### *Entry Boxes*

Entry boxes appear slightly recessed on the screen. Entries partly numerical or alphameric can be made using the keyboard.

Move among the entry boxes by pressing the tabulator key (or cursor keys up/down, or Return key).

Within an entry box use the cursor keys left/right. The entry boxes use the overwrite mode, meaning that new character entries automatically overwrite the next character behind the cursor. Use the Insert key to disable the overwrite mode.

Use the Delete key or Backspace key to delete individual characters.

### *Buttons*









Buttons appear as slightly raised "Keys" on the screen. Generally speaking they can be activated by mouse click and by pressing the appropriate function key on the keyboard.

Touchscreens offer additional operating possibilities and comfortable use.

Not all buttons shown here are constantly displayed on the screen. Also, their position may change depending on the kind of display. Other buttons may be larger and labeled to indicate the functions they are assigned with.



---

Button	Key	Assignment
	F2	Previous page
	F3	Next page
	F4	Start page (Main menu)
	Page ↑	One level up
	Page ↓	One level down
	F1	Start help
	F12	Start printout
	Esc	Exit page

---

## 4.2 Start and Quit Program

### Start Program

- 1 Turn the main switch to ON.

After switching on the system and booting the PC, Windows and the EUROSYSTEM program are automatically started.

The first screen to appear is the MAHA logo. The footer indicates the program version.

- 2 Initialization. Please wait.

The components listed under "Connected Devices" are installed.

- 3 Press

Return

→ Please wait...

The main menu appears.

### Quit Program

Before turning off the main switch properly quit the PC program and Windows.

- 1 Press

Esc

A window will open over the main menu screen.

- 2 To quit the program, use

F2

To return to the program, use

Esc

The program is quit and the Windows screen appears.

- 3 Quit Windows and switch off the system.

## 4.3 Virtual Remote Control

- 1 Click this symbol in the instruction line to enable the virtual remote control.

- 2 Click the symbol again to switch it off.

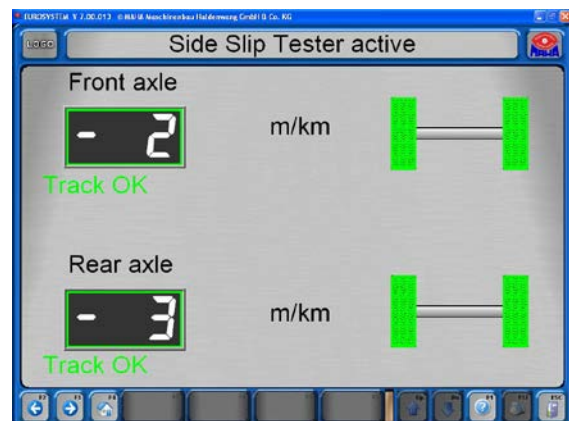
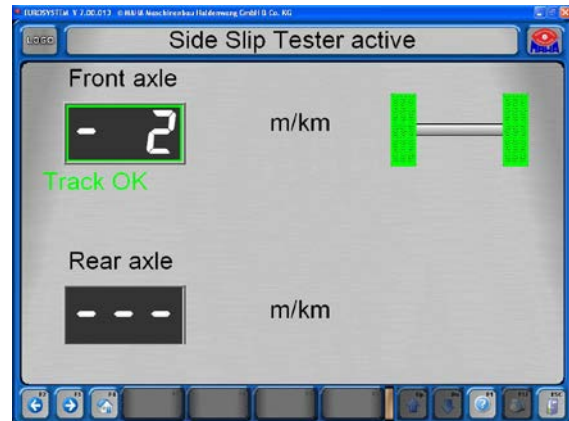


## 4.4 Test Procedure

### 4.4.1 Side-Slip Test

- 1 Drive with front axle over the test plates of the side-slip tester (speed 2.5...7.5 km/h).  
→ *Side-slip tester active*  
The screen opposite appears and shows the front axle measured side-slip deviation.
- 2 If the measurement values are within the range of tolerance, i.e if the side-slip is OK the values will be shown in green, otherwise in red.
- 3 The measurement of the rear side-slip takes place when the rear axle of the vehicle passes over the side-slip plates.  
The rear axle test is analogous to the front axle test.  
→ *Side-slip tester active*  
The screen now includes the values of the rear axle measurement.

The measurement values in the example are within the tolerance range. i.e. the side-slip is OK.



Note that the **first measurement value** filed in the temporary storage is **always** the side-slip of the **front axle**. This order cannot be changed!

**Intervention in the automatic test procedure** is not possible for this measurement. If the test is directly repeated, the measurement values in the temporary storage are overwritten.

The measurement values can be stored and reviewed at a later point. For an exact description read section "*Storage of Test Values*" and "*Redisplay of Measurements*".

#### 4.4.2 Shock Test

1 Drive the vehicle onto the test plates with the front axle.  
The wheels must be positioned straight in the center of the test plates and must not be blocked by an engaged gear or brake.

→ The tester is activated automatically once the load on both test plates exceeds 100kg.

→ The tester conducts a controlled measurement from 10...5 Hz. Both sides are measured simultaneously.

→ At completion of the measurement the tester switches off automatically.

→ The damping rate D is determined and displayed on the screen.

2 Drive the vehicle onto the test plates with the rear axle.

→ The test is repeated in the same way as for the front axle.

→ Use <F5> to display the amplitudes either in separate diagrams or one on top of the other in the same diagram.



**Intervention in the automatic testing procedure** is possible by driving onto the test plates again. Check to make sure that the desired axle is shown in the box in the upper middle. If necessary, switch with <F2> or <F3> to the proper axle.

#### 4.4.3 Brake Test

##### 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.

Please pay attention to the **preset order** in which the brake test is done:

- Ovality test of the front axle
- Brake force test of the front axle
- Brake force test of the parking brake
- Ovality test of the rear axle
- Brake force test of the rear axle



The measurement values are filed in the above order in the temporary storage. The brake tester does not recognize which brake is being tested!

Example: You have conducted the brake test for the parking brake. The display jumps to the next brake test, i.e. for the rear axle. Even if you repeat the parking brake test, the test values will be stored as rear axle values!



Always pay attention to the displayed brake which is to be tested. ("FA" or "RA"). If necessary, switch with <F2> or <F3> to the proper axle.

**Intervention in the automatic testing procedure** and proper storage is described after completion of the Ovality test and the Brake force test.

Drive slowly and straight onto the brake tester. Both sensor rollers must be pushed down. Release brake and place gear shift to neutral.

## Ovality Test

- 1 In a box in the lower middle appears "FA" for front axle.
- 2 A yellow sector appears in the analog displays for ovality measurement.
- 3 Brake slowly until the brake force is in the yellow range and remains there.
- 4 Wait until the timer has run out. The ovality values are filed in the temporary storage.



The settings for the braking range of the ovality test and the timer are preset. The timer is set for the time which corresponds with one wheel revolution.

Changes to these settings may only be done by MAHA service technicians. The brake force test follows directly after the ovality test.

## Brake Force Test

- 5 Slowly apply the brakes until approx. 90% of the maximum braking force is reached. Do not brake until slippage cutoff occurs!

The rollers stop. The measured maximum brake force appears on the display and is filed in the temporary storage. The corresponding box appears green.



- 6 Release the brake pedal immediately. The test stand is ready for the next test and the rollers are running again.
- 7 Drive off the rollers in a forward direction with the rollers running.

After the **Ovality and Brake force tests for the front axle (FA)**, the side-slip test and the shock test for the rear axle are conducted. Then drive onto the brake tester with the rear axle.

Now the **Brake force test for the parking brake (PB)** follows. This is analogous to the brake force test for the front axle. Please follow steps 5 and 6.

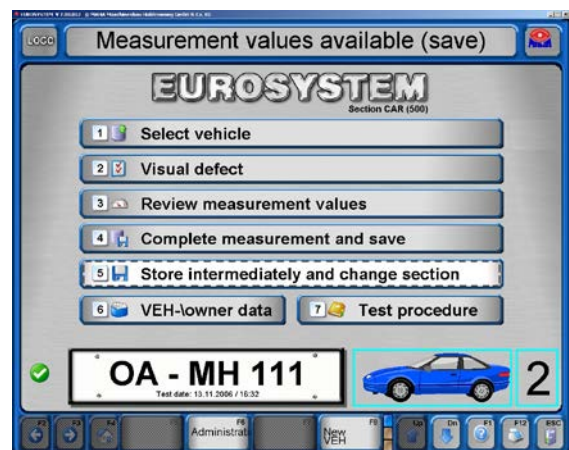
Finally the **Ovality and Brake force tests for the rear axle (RA)** are conducted. The procedure is analogous to the front axle tests. Please follow steps 1 to 7.

### Exit Test Lane

The automatic testing procedure is now finished. The display returns to the main menu.

- 8 Wait until the roller drive of the brake tester switches off and the rollers are at standstill.
- 9 If possible, exit the test lane in a forward direction, otherwise drive in a reverse direction quickly over the roller set of the brake tester and the test plates of shock tester and side-slip tester.

- 10 Store the measurement values as described in section "*Storage of Test Values*".



### Intervention in the Automatic Testing Procedure

Drive slowly and straightly onto the brake tester with the axle which is to be tested again. Both sensor rollers must be pushed down. Release brake and place gear shift to neutral.

- 1 Select <FA>, <PB>, <RA> (or <F2>, <F3>) to change between the displays for front axle, rear axle, and parking brake.
- 2 The box in the lower middle shows for which brake the test can be repeated.
- 3 The ovality test is repeated with <F4>. Wait until the timer has run out.
- 4 Delete the temporary storage with <DEL>.
- 5 Use <F8> to set the displayed measurement value as max. measurement value if, for example, the vehicle has not reached the preset slip.
- 6 Use <F9> to file the displayed measurement values in the temporary storage for the brake which is being displayed.



The measurement values can only be changed as long as they are still in the temporary storage.

If the measurements have been stored already with customer and vehicle data (section "*Storage of Test Values*"), after-the-fact changes are no longer possible. In this case the test will have to be done again.



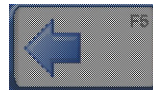
#### 4.4.4 Visual Defects

##### Entry and Storage of Visual Defects

The user is free to decide if visual defects are to be included in the evaluation of a vehicle. The entry can be done either before or after the test procedure. Even after the measurements have been re-displayed, entry is possible.

The EUROSISTEM defect catalog corresponds with the Evaluation Catalog for the main inspection based on §29 StVZO (Germany).

For the following screens, this box corresponds with <ESC>, i.e. the display returns to the previous screen.



- 1 Select <2> Visual Defects in the main menu. The evaluation catalogue will appear.  
→ *Defect category*
- 2 Select the defect category.

The subdivisions of the defect categories follow:  
→ *Select defect*



- 3 Select the defect.

The screen for location and evaluation of the defect (next screen).

Page up or down when defect groups consist of several pages.



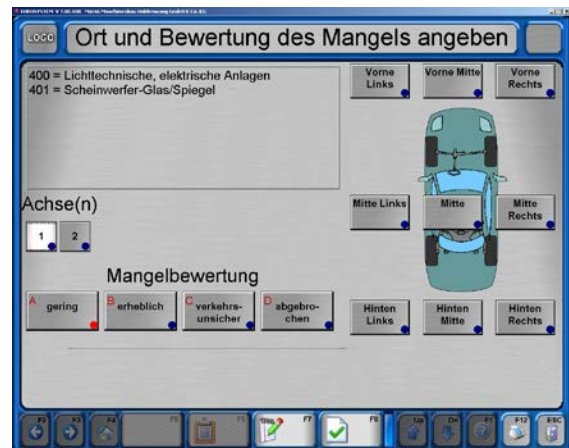
After doing steps 1 to 3 the screen to the left appears.

→ *provide location and evaluation*

- 4 Select the defect location with the cursor key and confirm with <RETURN>.

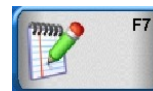
The blue point in the right hand corner turns red (means defect is selected). The marking can be reversed again by pressing the <RETURN> key.

- 5 Evaluate the defect.

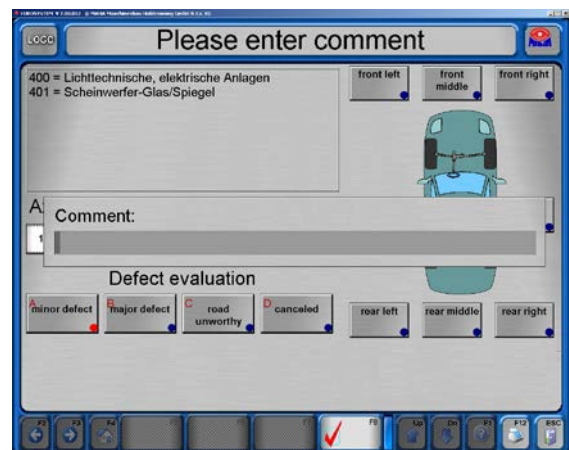


After the defect has been selected and its location set down, store this, otherwise the entries are lost.

- 6 Select <F7> to enter an additional comment.



- 7 An entry field with a max. of 40 characters can be used to enter an additional comment.
- 8 Confirm with <RETURN> to complete the entry.
- 9 After storing the entry with <F8> the display returns automatically to the screen with the defect classes.
- 10 Enter further defects in the same way.



- 11 Select <F8> for storage of all entries. The display returns to the defect category screen.




### Display of the Defect List

- 1 Select <F6> to display the defect list



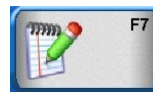
- 2 The defect list offers an overview of the selected defects. Defects which were entered erroneously can be deleted here.
- 3 Use the cursor key to move the marking up and down.



The screenshot shows a window titled "Defect overview" with a table of defects. The table has columns for "Line" and "Sect".

	Line	Sect
1. 101 = BBA: Mindestabbremsung nicht erreicht; ;	1	0
2. 401 = Scheinwerfer-Glas/Spiegel; ;	1	0

- 4 With <F7> commentaries which were entered previously can be changed and/or subsequently added to..
- 5 Select <F8> to delete individual defects
- 6 Use <F6> to return to the defect class view.



#### 4.4.5 Storage of Test Values

The measurement values must be allocated to a specific customer with vehicle in order to be stored. The stored test results are administered in the measurement database. The measurements can be reviewed at any time from this database.



The customer/vehicle can be allocated **before or after** the test.

Customers waiting in line for testing are also taken into the measurement database. The inclusion of customers in the queue is defined as **"Create measurement"**.

After the automatic testing procedure is completed the main menu will appear on the screen again. Use the following steps:

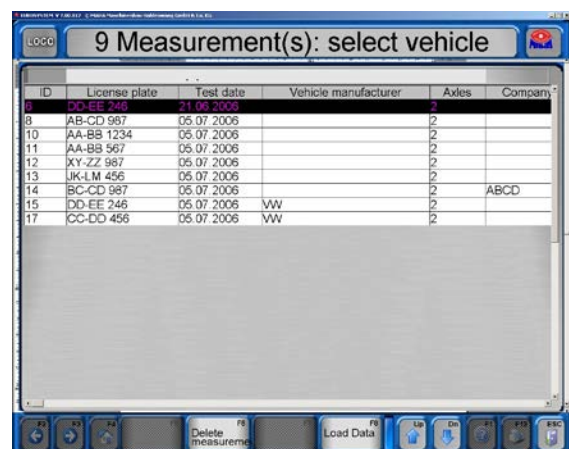
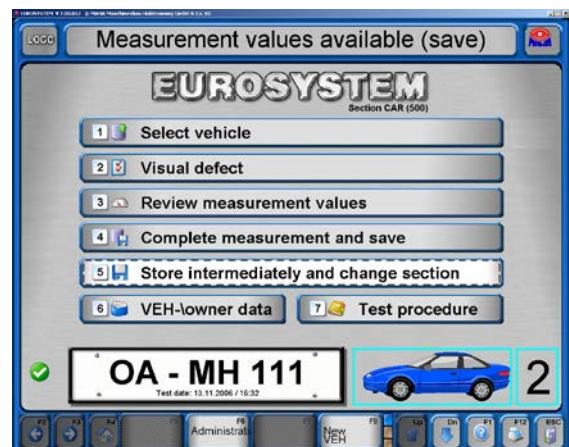
→ *Measurement values available (save)*  
You have already exited the test stand!

- 1 Please select <4> "Complete measurement and save". When allocating a vehicle before beginning the test select <1> Vehicle from list.

A selection of the measurement database appears.

- 2 Move the existing marking with the cursor keys until the desired measurement is marked or enter the search name in the upper line using the keyboard.
- 3 Confirm with <Return> or <F8> Load data.

Depending upon whether the vehicle allocation took place before or after the test the following occurs:



### Allocation after the test

The screen confirms that the current measurement values are stored as dataset with the allocated customer/vehicle.

At the same time the vehicle is completed, i.e. the system signals that it is ready for a new measurement if the screen returns to the main menu after approx. 3 seconds.

The main menu appears and the instruction line reads:

→ *Vehicle test can start ...*



### Allocation before the test

You have selected a vehicle from the queue in order to start with the test.

- 1 The main menu appears and shows the vehicle license plate in the last line.

The system is ready.

→ *Vehicle test test can start ...*

Drive onto the test lane

- 2 After test completion the instruction line reads:

→ *Measurement values available (save)...*

- 3 a) Store the test values with <5>, if other tests are to be done  
or  
b) Store the measurement values with <4> and end the vehicle test.



#### 4.4.6 Prepare New Test

Make sure that the temporary storage is empty and the main menu appears.

After properly storing the test values the main menu appears automatically in test readiness. It is also possible that the instruction line shows a different ready message or that a test has been aborted and is to be started again from the very beginning.

- 1 Activate <F8> in the main menu.



### 4.5 Customer and Vehicle Administration

The stored customer and vehicle data can be organized in the customer and vehicle administration. A customer is joined with a specific vehicle license plate number and stored as a dataset.

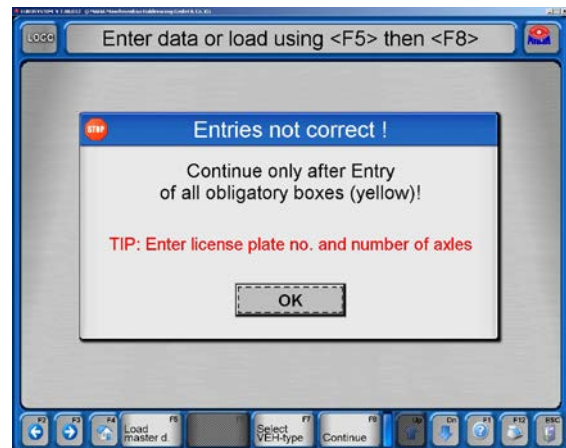
Customers stored once can always be called up again to allocate measurement values gathered from testing to the customer. In this way tests conducted at different times can be compared.

#### 4.5.1 Enter Data

Switch between the entry boxes using the cursor or the return key. The data entry is set for numeric or alpha-numeric in the individual boxes.

- 1 Select the main menu <6> VEH-/ Holder data. This screen appears.
- 2 It is mandatory to fill out the boxes "License plate no." and "Axles". The user decides the remainder of the boxes to be filled out.

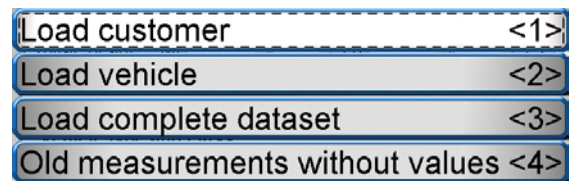
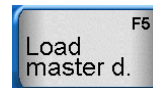
→ If the highlighted boxes are not filled out, then this message window appears:



#### 4.5.2 Load Master Data

To simplify the data entry existing data sets can be loaded into the entry window:

- An existing customer is called up with <1>. A customer database appears.
- Use <2> to allocate a customer to a vehicle. The Vehicle Dataset appears.
- Use <3> to load a complete dataset.
- Use <4> to select an old measurement without measurement value.

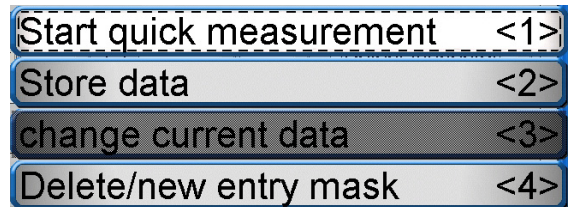
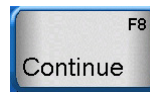


### 4.5.3 Complete Data Entry

After completion of the data entry the following possibilities are available:

- The test can be started immediately with <1>. The main menu appears.  
→ *Vehicle test can start ...*
- Use <2> to store the dataset. The data entry window appears again.
- Use <3> to change or expand the current data.
- Use <4> to delete all current entries.

→ After every master data change this safety inquiry appears at storage:



### 4.5.4 Delete Measurements

See paragraph "Administration / Database (Administrator)".



## 4.6 Redisplay of Measurements

A distinction is made between

- Display of a currently conducted measurement, i.e. the customer/vehicle is still active, and
- Display of a measurement which was recorded in the past, i.e. the desired measurement must be loaded.

- 1 Select <3> Measurements in main menu.

The measurement database appears from which the desired measurement is selected

or

the screen at the bottom of the page will appear after a currently conducted test.

If a license plate number appears in the last line the measurements of this vehicle will be shown. In order to select another vehicle use the box <F8> New Vehicle and then <3> Measurements. The measurement database appears:

- 2 Use the cursor key until the desired VEH is marked or enter the search word in the upper line with the keyboard.
- 3 Confirm with <RETURN> or <8> Load Data. The measurement values are called up and are available for selection as shown in the screen below.

The vehicle data appear for the vehicle which is currently being tested or which was loaded from the database.

- 4 Select the desired test device.

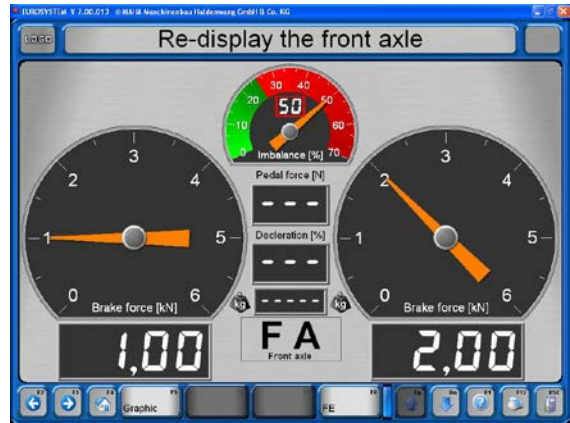
→ If the test is passed, the boxes will have a green frame, otherwise it will be red. Boxes not highlighted cannot be activated, because no test was done on this device with the selected vehicle.



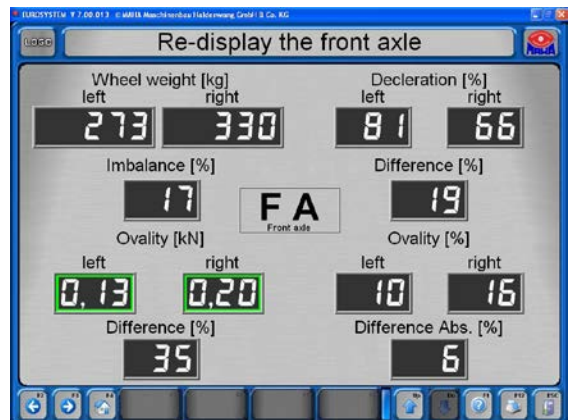
4.6.1 Brake Test

Although the following screens only show values recorded for the front axle, the description for the re-display of brake tests applies also to the parking brake and the rear axle.

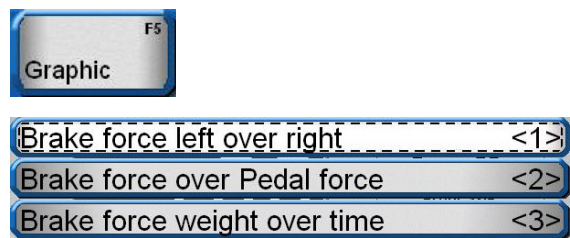
- 1 Select the box <A> Brake tester.
- 2 Select the box <F2> or <F3> to switch among the displays for front axle, parking brake and rear axle.
- 3 Use <Esc> to exit this screen and return to selection display.
- 4 Printout is started with <F12> .
- 5 Use the page down <↓> key to page to next screen where the measurement value is further broken down.



- 6 Use the page up <↑> key to return to the previous screen.



- 7 Use the <F5> Graphic key to select the various graphics (see example below).

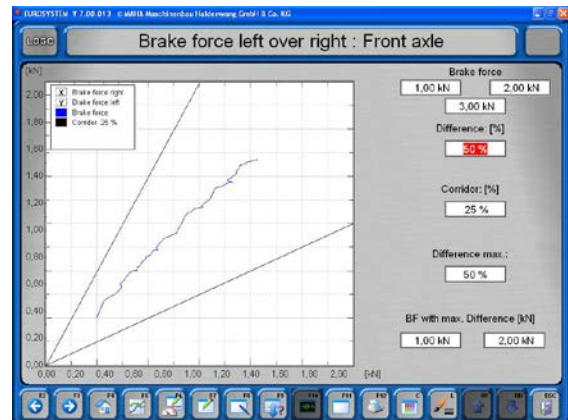


### Example: Brake force left over right

Here the brake force is displayed respectively left over right. The values are given in kN to the right and their difference is readable in percentage.

The curve should be located inside the corridor. The corridor can be changed in the variable list.

Use <Esc> to exit the screen and return to the selection display.



Following boxes can be selected for graphic displays:

- <F5> Select graphic
- <F6> Fade in/out wake-up pressure
- <F7> Fade in/out help lines
- <F8> Fade in/out legend
- <F9> Constant / Dynamic scaling
- <F10> Smooth curves
- <F11> Display graphic whole page /  
Fade in measurement values
- <C> Background color diagram
- <L> Line strength

### Final Evaluation Brake Test

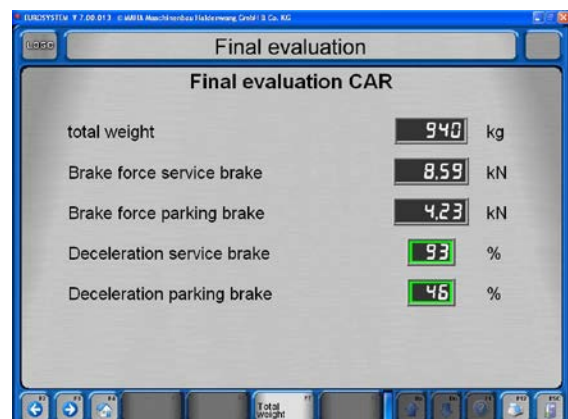
- 1 Use <F8> to activate the final evaluation.  
Here it is necessary to distinguish whether or not the vehicle total weight has already been recorded.



#### Total weight already recorded:

All brake values as well as resulting deceleration displayed.

- 2 Use <F12> to print out the displayed values
- 3 Use <Esc> to exit the screen return to the selection display.

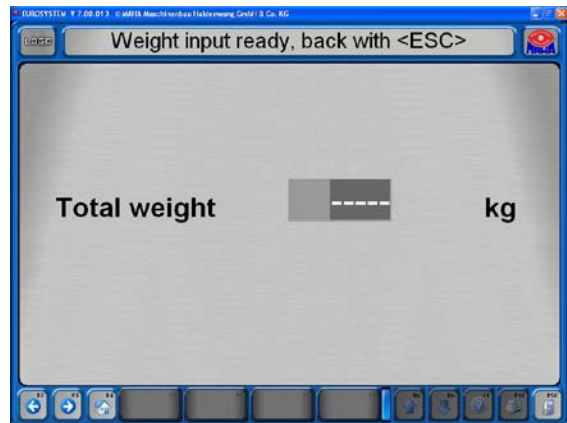
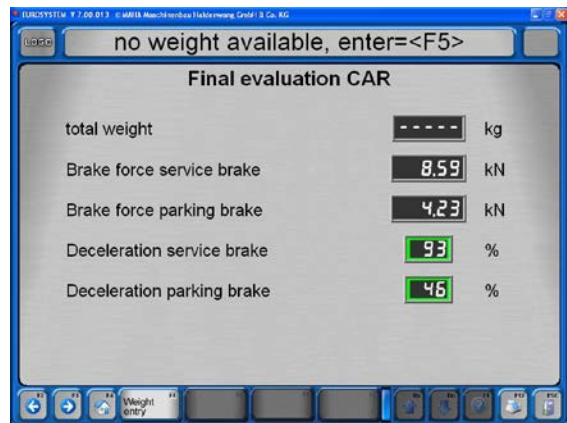


**Total weight not recorded:**

The brake test was conducted as the only test on a brake tester without weighing device.

- 2 The screen opposite will appear. It shows the brake values and is identical with the screen above. Only the box <F5> Weight entry has been added.
- 3 Use <F5> to switch to the display for the weight entry screen.
- 2 Enter the weight in kg and confirm with <RETURN> to start the final evaluation.

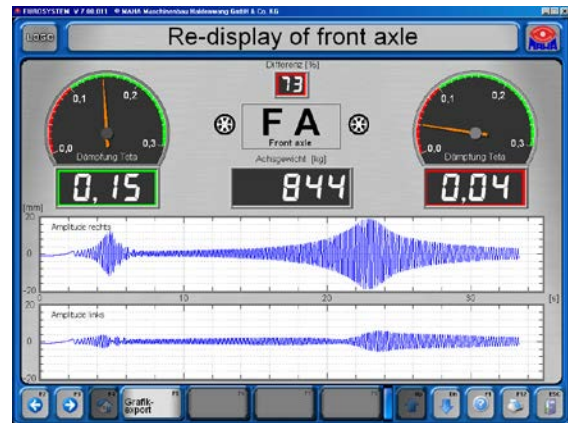
Without weight entry (no entry, <Return>). The final evaluation appears without percentage deceleration.



#### 4.6.2 Shock Test

Although the following illustrations only show values which were recorded for a front axle, the description applies to the rear axle as well.

- 1 Select <Shock tester>.
- 2 Select the box <F2> or <F3> to change between the displays for front axle and rear axle.
- 3 Use <Esc> to exit the screen and return to the selection display.
- 4 Use <F12> to start the printout.



The tester measures the *complete* axle damping rate, *not* the condition of the shock absorbers.

The manufacturer is not liable for damage or costs incurred due to faulty evaluation of shock absorbers.

#### 4.6.3 Side-Slip Test

- 1 Select <Side-slip tester>, to re-display the side-slip measurement.  
→ The side-slip test display appears which is known from the test procedure. Measurement values outside of the given limit value are displayed red.
- 2 Use <Esc> to exit the screen and return to the selection display.
- 3 Use <F12> to start the printout.

### 4.7 Test Procedure, Section 132

In order to start the test procedure, the screen must show the main menu.

Now the test lane is ready.

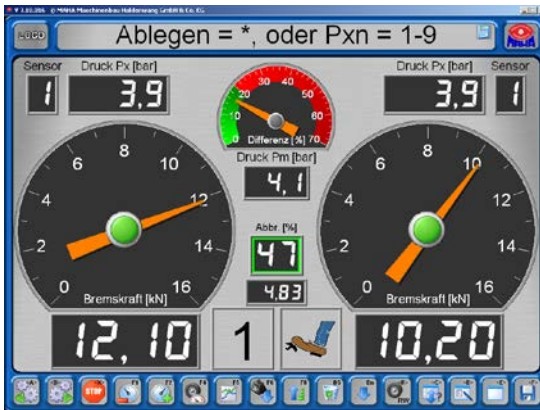


4.7.1 Test without Predefinition



1 After driving onto the roller set, activate the pointer stop using <F8>. (Required only once for each vehicle.)

2 When prompted, apply the brake. → The maximum test values are displayed.



3 Enter axle number and brake type, store the test using <\*>.

→ Test values are being stored.

4 Change axles as required and repeat the test procedure for other brakes.

5 Exit the roller set.



6 Open the VEH/Owner Data screen using button <6>.

7 Enter data (mandatory inputs are highlighted yellow), press <F3> or <F8>.



→ The newly entered vehicle appears in the main screen.



8 Use button <3> in the main screen to open the measurements overview.

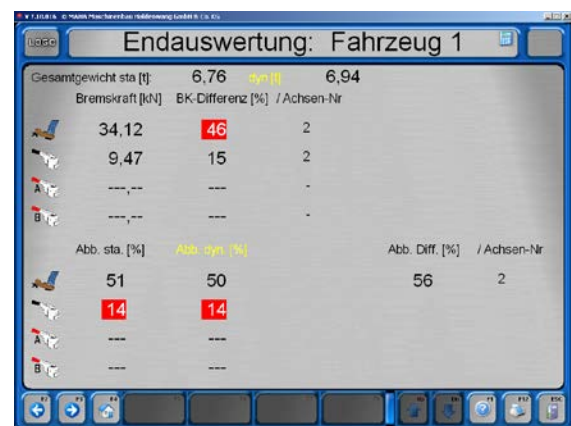


Brake evaluation: Individual test values can be selected and displayed.

9a Use button <4> in the main screen to complete and store the measurement. The vehicle is removed from the waiting list, the test values can no longer be changed.

9b Use button <5> in the main screen to store the measurement intermediately.

10 In the latter case, the vehicle can later be selected from the list and tested once more. The previous test values are overwritten.



Final evaluation: Use <F12> to open a printer menu for printing out the results.



## 4.7.2 Safety Test

- 1 In the main menu: <Test Procedure>.
- 2 <Safety Test>.
- 3 Select desired test procedure.
- 4 Enter or load data.
- 5 <Print Test Procedure>.
- 6 Test vehicle, enter defects.
- 7 Finally determine the result of the Safety Test and <End ST>. The data record can no longer be changed.

	Betriebsbremsanlage			Feststellbremsanlage (FBA blockiert)			Druck [bar]	Gewicht [t]					
	links	rechts	Achse	links	rechts	Achse							
Achse 1	3,03	3,10	6,13	2 %	57 %			1,50	1,10				
Achse 2	5,07	5,02	10,09	1 %	80 %	6,01	5,88	11,89	2 %	95 %	1,50	1,28	
Achse 3	4,25	4,06	8,32	5 %	59 %	5,00	5,23	10,83	7 %	76 %	1,50	1,45	
Gesamt			24,54		65 %			22,72		60 %		3,83	
Einpunkt Hochrech			127,55		72 %					10 %		6,30	24,00

Anwiedruck: Er Hochrechnung: pneumatisch mit 0,40 bar



### 4.7.3 Define Automatic Measurement

- 1 In the main menu: <Test Procedure>.
- 2 <Define Automatic Measurement>.
- 3 Define the vehicle manually or load a definition model.
- 4 Drive onto the tester, conduct the test.
- 5 After test completion the test values can be corrected or the test can be finished.

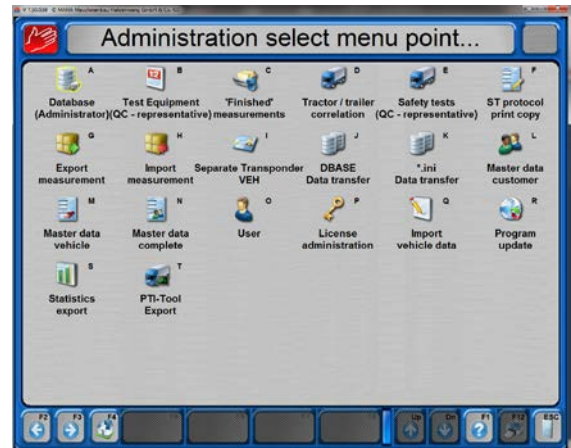


## 4.8 Administration



In the following, only those functions are described which every user has access to without hardlock.

- Activate <F6> in the main menu.  
→ The menu "Administration" appears.



### 4.8.1 Database (Administrator)

Using menu item "Database", measurements and open tests can be deleted and data backed up, exported and imported.

- Select menu item  
<Database (Administrator)>.

The following menu items are available for database administration:

- <A> Delete individually
- <B> Delete via data range
- <C> Delete via ID range
- <D> Delete open tests
- <E> Backup database
- <F> Restore database
- <G> Data import from external software
- <H> Import / export / delete tables
- <I> Change settings
- <J> Save settings
- <K> Compress database



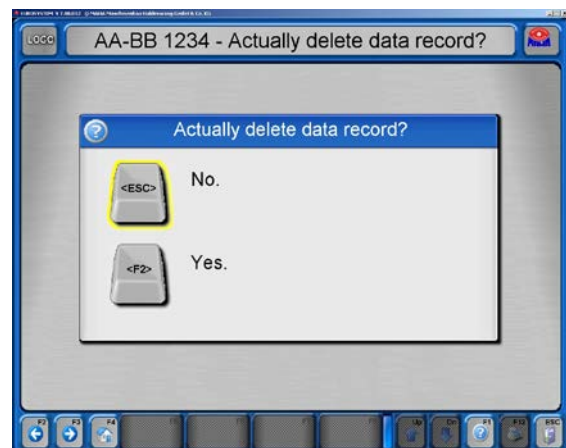
### Delete measurement individually

- 1 In the database menu, select <A> Delete individually.
- 2 Mark the measurements to be deleted in the list.
- 3 Select <F8> Load data.

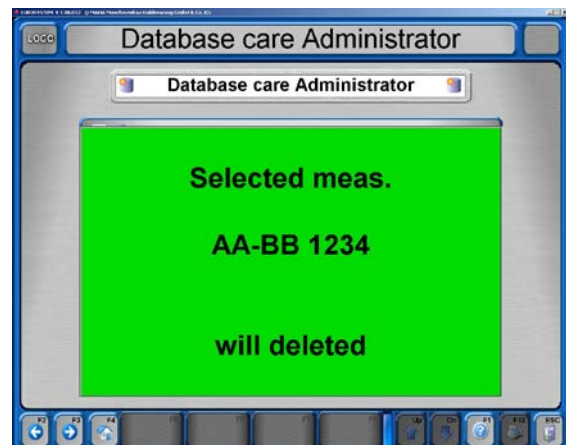


→ This confirmation request appears before deletion:

- 4 a) Select <F2> to delete the measurement or
- b) Exit the screen with <Esc> if no deletion is wanted.

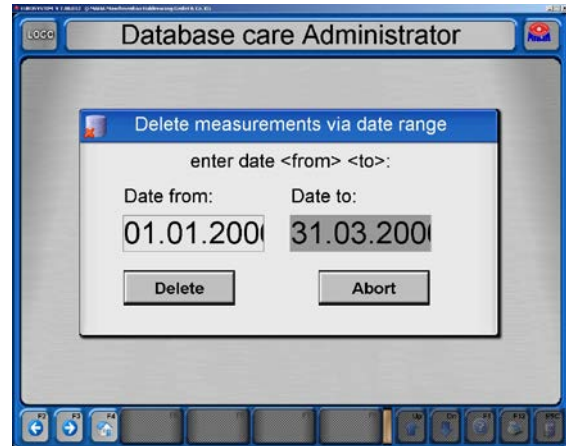


→ After deletion the database administration screen appears.



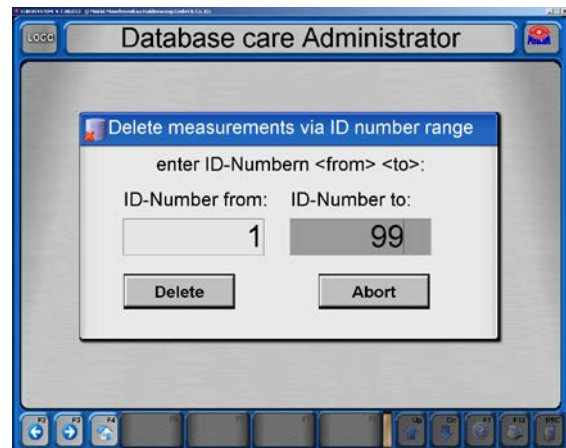
### Delete Measurement via date range

- 1 In the database menu, select <B> Delete via date range.
  - 2 Enter the desired time period in both entry boxes for which measurements should be deleted.
  - 3 a) Select <F2> to delete the measurements *or*  
b) Exit the screen with <Esc> if deletion is not wanted.
- After deletion the screen of the database administration appears.



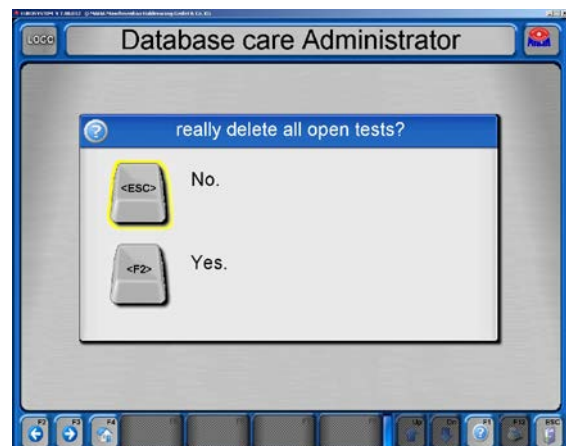
### Delete Measurement via ID number range

- 1 In the database menu, select <C> Delete via ID range.
  - 2 Enter the ID number range in both entry boxes for the measurements which should be deleted.
  - 3 a) Select <F2> to delete the measurements *or*  
b) Exit the screen with <Esc> if deleting is not wanted.
- After deletion the database administration screen appears again.



### Delete all open tests

- 1 In the database menu, select <D> Delete all open tests.
  - 2 a) Select <F2> to delete the open tests *or*  
b) Exit the screen with <Esc> if deleting is not wanted.
- After deletion the database administration screen appears again.



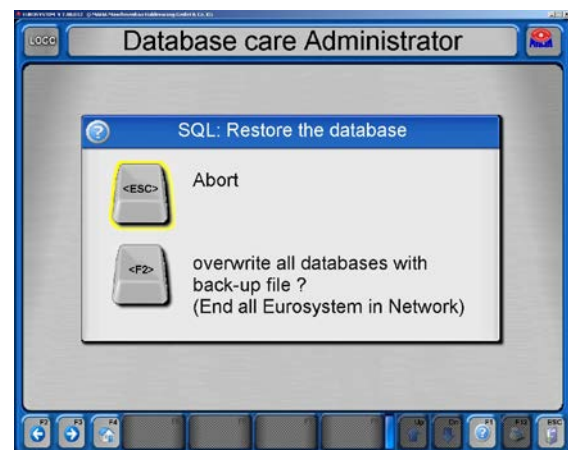
### Back-up of the Databases (Backup)

- 1 In the database menu, select <E> Backup database.
  - 2 a) Select <F2> to create a backup in the suggested directory *or*  
b) Use <F3> to select the backup file yourself  
*or*  
c) Exit the screen with <Esc> if you do not want to create a back-up.
- After the backup the database administration screen appears.



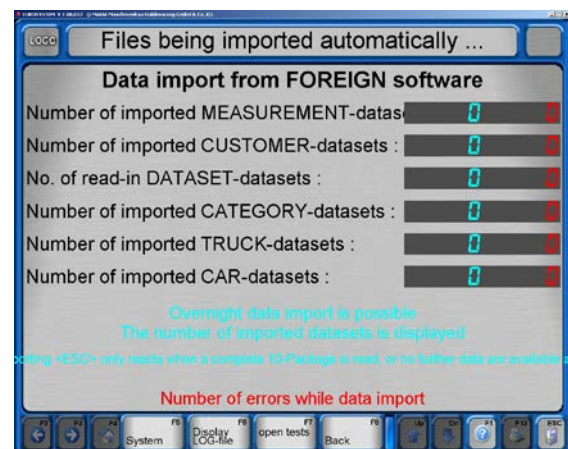
### Restore the Databases (Restore)

- 1 In the database menu, select <F> Restore database.
  - 2 a) Select <F2> to overwrite all databases with the backup file  
*or*  
b) Exit the screen with <Esc> if no restoring is to be done.
- After restoring, the database administration screen appears.



### Data import from an external software

- 1 In the database menu, select, <G> Data import from external software.
- The files are automatically imported from the external software. The number of read datasets is displayed.
- After data import the database administration appears.



### Export / import / delete tables

- 1 In the database menu, select ,  
<H> Import / export / delete tables.
- 2 Select the desired table and then  
<F5> Delete *or*  
<F7> Table export *or*  
<F8> Table import
- 3 Confirm the corresponding  
confirmation request.  
→ The database administration appears  
again afterwards.



#### 4.8.2 Test Equipment (QC-Representative)

Using the menu item "Test Equipment" the test equipment and the calibration deadlines can be displayed, changed and printed out.

- 1 Select the menu item  
<B> Test Equipment (QC-representative).
- Following screen appears:
- 2 Enter the test equipment. Test equipment designation entry is mandatory, all others are optional.
- 3 Use <F5> Load master data to load test equipment data already created.
- 4 Use <F6> Calibration=Manufacturer to import the manufacturer information
- 5 Use <F7> to create a work order for the test equipment.
- 6 Open this menu with <F8> Continue and select a menu item.

Store master dataset	<1>
Change master dataset	<2>
New/delete entry mask	<3>
Delete master dataset	<4>

### 4.8.3 Old Measurements

Using the menu item "Old Measurements" any number of measurements can be selected and loaded from the measurement database.

- 1 Select menu item <Old measurements>.
- Following screen appears:
- 2 Mark the desired measurement in the list.
- 3 Select <F8> Load data.



### 4.8.4 Export Measurement

- 1 Select menu item <Export Measurement>.
- The following screen appears:
- 2 Mark the desired measurement in the list.
- 3 Select <F8> Load data.
- 4 In the file search box select the desired export directory and confirm with <Store>.



### 4.8.5 Import Measurement

- 1 Select menu item <Import Measurement>.
- 2 Select the desired import file in the file search box and confirm with <Open>.
- The file is imported into the measurement database.





#### 4.8.6 Customer Master Data

- 1 Select menu item <Customer Master Data>.
- The following screen appears:
- 2 Enter the customer data. The colored highlighted boxed are mandatory.
- 3 Open the pop-up menu with <F8> Continue and select a menu item.

#### 4.8.7 Vehicle Master Data

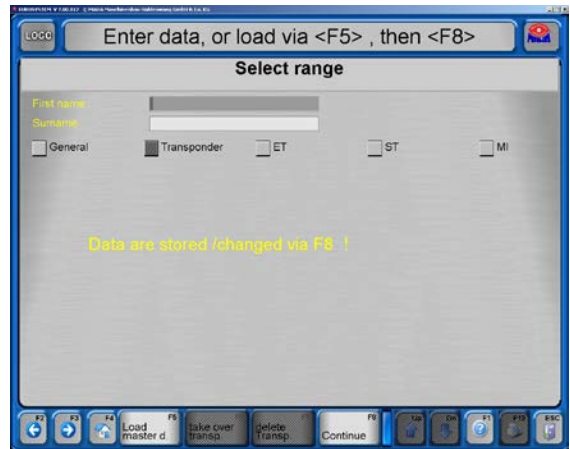
- 1 Select menu item <Vehicle Master Data>.
- The following screen appears:
- 2 Enter the vehicle data. The colored highlighted boxes are mandatory.
- 3 Open the pop-up menu with <F8> Continue and select a menu item.

#### 4.8.8 Complete Master Data

- 1 Select menu item <Complete Master Data>.
- The following screen appears:
- 2 Enter the customer and vehicle data. The colored highlighted boxes are mandatory.
- 3 Open the pop-up menu with <F8> Continue and select a menu item.

4.8.9 User

- 1 Select menu item <User>.
- The following screen appears:
- 2 Enter the user name.
- 3 Mark one of the boxes depending on the user's area of responsibility.
- 4 Fill out the additional entry boxes.
- 5 Open the pop-up menu with <F8> Continue and select a menu item.



4.9 Settings

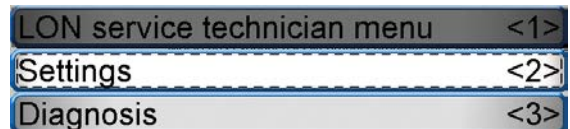


Please note that unqualified changes can cause functional errors which are not covered by the warranty.

The menu functions are accessible to the user but should only be activated with qualified instruction. Minor malfunctions can be corrected via our service hotline +49 (0)180 5624260.

In addition to the system settings, issues such as software adaptations for test stand and measurement devices integrated into the test lane can be done. The user can also choose languages and appearance.

- 1 Switch from the main menu into the third level.
- 2 Select <F5> System.
- 3 Select <2> Settings.



→ The setting menu appears:



## 4.10 Diagnosis

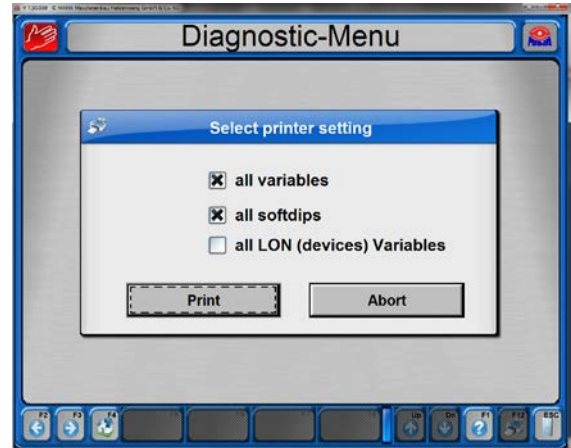
The diagnosis menu supplies all program and system information. The connected devices can be checked for their functional capabilities.

- 1 Switch to the third level from the main menu.
  - 2 Select the <F5> System.
  - 3 Select <3> Diagnosis.
- The diagnostic menu appears:



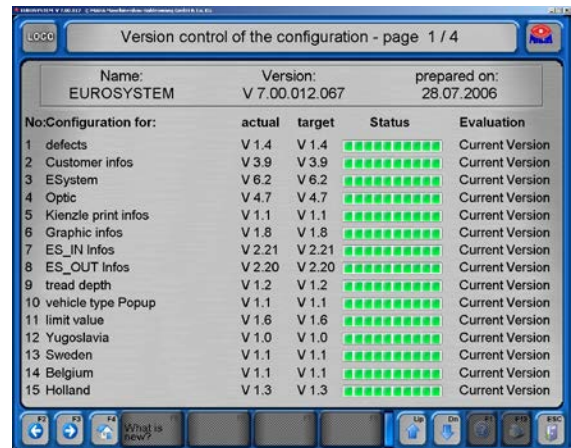
4.10.1 Print All Settings

- 1 Select menu item <Print All Settings>.
- 2 Select the desired category and start the printout.



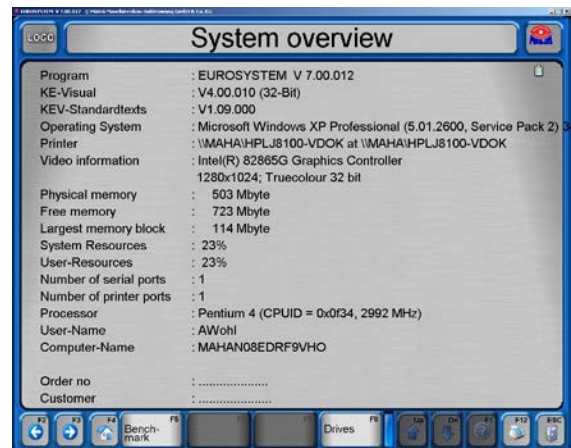
4.10.2 Version Control

- 1 Select menu item <Version Control>.
- The configuration is checked for validity by comparing the actual and target versions and appropriately evaluated.



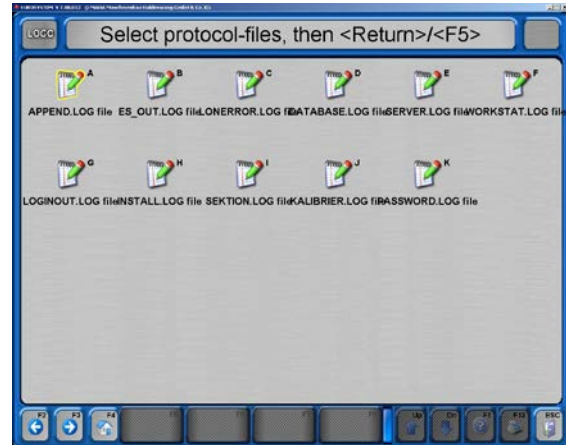
4.10.3 PC System Overview

- 1 Select menu item <PC System Overview>.
- An overview of all technical data of the PC is shown.



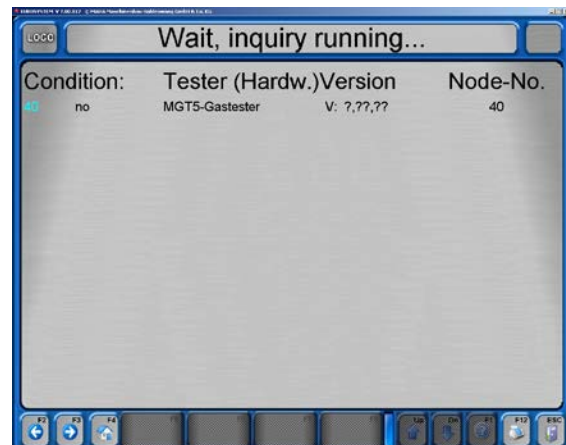
#### 4.10.4 Edit Protocol

- 1 Select menu item <Edit Protocol>.
- 2 The screen can be exited again with <ESC> without changing the existing settings.



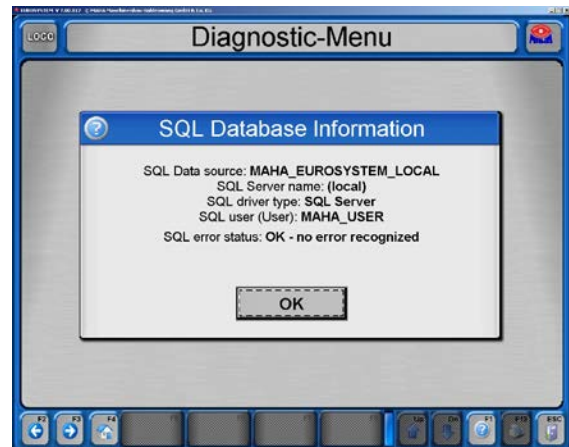
#### 4.10.5 LON Bus System

- 1 Select menu item <LON Bus System>.
  - The first cycle inquires about the versions of the individual components. The third column shows the version numbers one after the other.
  - The following cycles inquire about the readiness of the components. In the first column the readiness is shown with "yes" or "no" one after the other.
  - The inquiry repeats itself cyclically.
- 2 Use <Esc> to cancel the inquiry and return to the diagnostic menu.



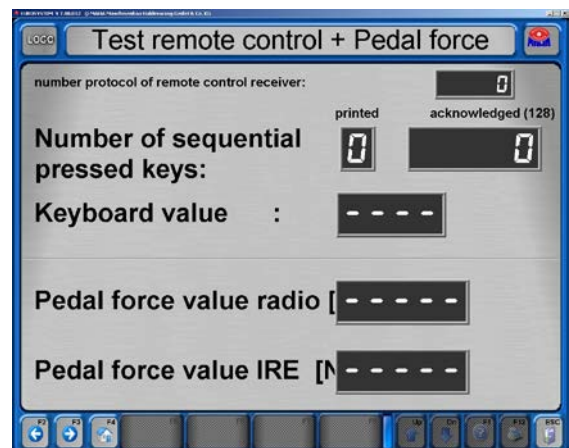
#### 4.10.6 SQL Database

- 1 Select menu item <SQL Database>.  
→ An info window for SQL database appears.
- 2 Confirm with <OK>.
- 3 The screen can be exited again with <ESC>.



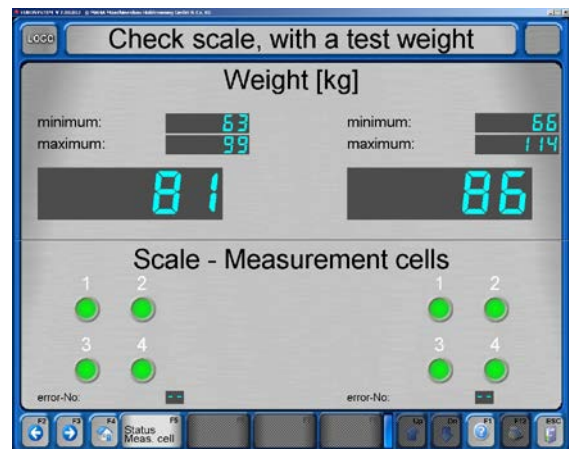
#### 4.10.7 Remote Control / Pedal Force

- 1 Select menu item <Remote control / Pedal force>.
- 2 Here the remote control and pedal force meter can be checked.



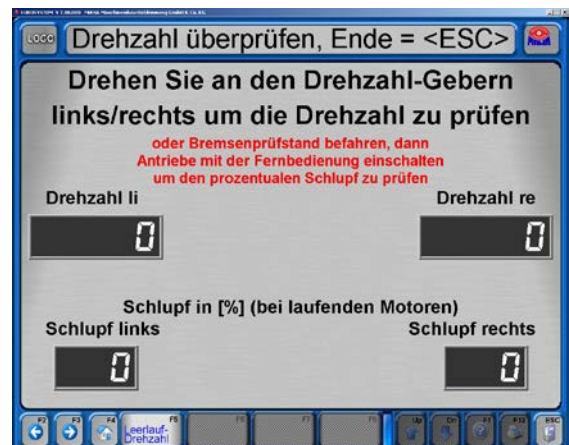
#### 4.10.8 Scale

- 1 Select menu item <Scale>.
- 2 The scale can be tested with a test weight.



#### 4.10.9 Check RPM Pulses

- 1 Select menu item <Check RPM pulses>.
- 2 The RPM can be checked here.



#### 4.10.10 Pit Safety

- 1 Select menu item <Pit safety>.
- 2 With <F7> PIT SAFETY activation the pit safety can be tested.

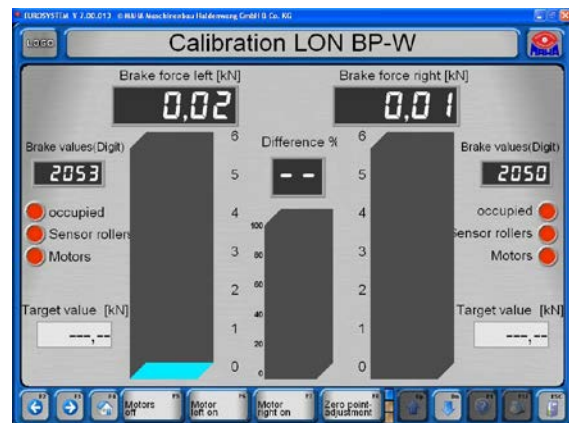


#### 4.10.11 Calibration

- 1 Select menu item <Calibration>.
- 2 Select the test device to be calibrated.



→ Example: Brake force calibration.



#### 4.10.12 Pointer

- 1 Select menu item <Pointer>.
- 2 Here the mechanical system and hardware can be tested (access only with hardlock).





## 4.11 Additional Tests

### 4.11.1 Noise Detection



The Noise Detection option can be activated via software.

#### Selecting Noise Detection



- 1 From the main menu, switch to the second level using  $\langle \downarrow \text{Dn} \rangle$ .
- 2  $\langle \text{F8} \rangle$  Shock absorber.
- 3  $\langle 1 \rangle$  Noise detection.

or

- 1 In the main menu, select  $\langle 7 \rangle$  Test procedure.
- 2  $\langle \text{K} \rangle$  Shock tester Noise detection.

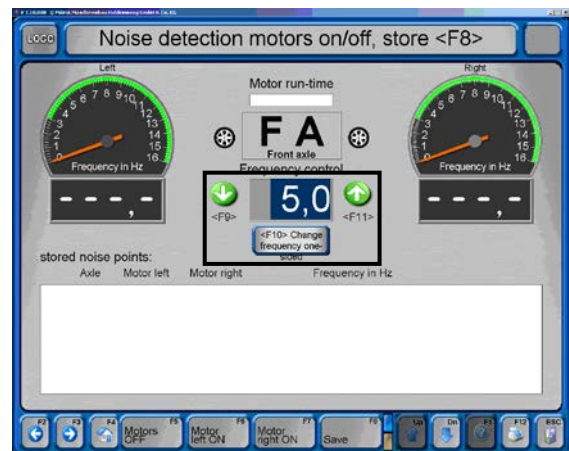
#### Starting the Motors

- Use  $\langle \text{F6} \rangle$  or  $\langle \text{F7} \rangle$  to start the left- or right-side motor respectively.
- Use  $\langle \text{F5} \rangle$  to switch off both motors.



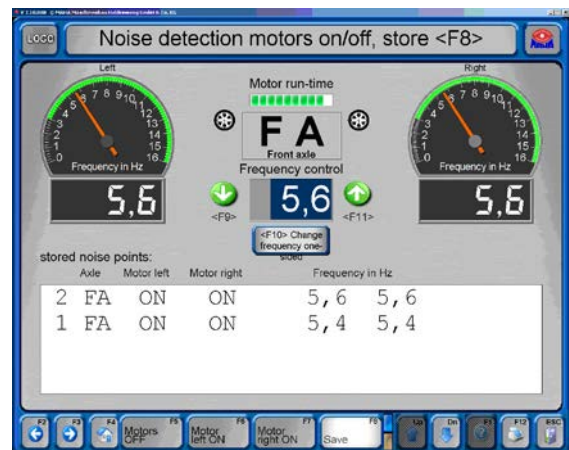
## Changing the Frequency

- Use <F9> or <F11> to reduce or increase the frequency of the test plates.
- Use <F10> to determine *one particular* side to be changed.



## Storing Noise Points

- After setting the frequency the noise point can be stored using <F8>.
- A list with all noise points already stored appears on the display.



## Automatic Shutdown

- After a preset operating time, the tester switches off automatically to prevent the motors from overheating.
- This screen appears for confirmation.

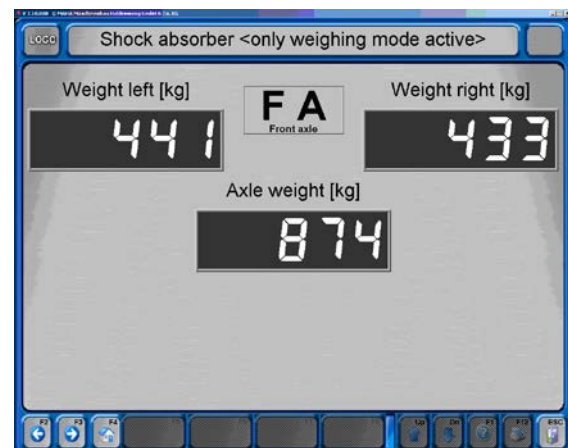


#### 4.11.2 Weighing Mode

- 1 From the main menu, switch to the second level using <↓ Dn>.
- 2 <F8> Shock absorber.
- 3 <2> Shock tester mode.
- 4 <F9> Weigh only, confirm with <F2>.



→ The left-side, right-side and overall axle weights are displayed.



#### 4.11.3 Pit Safety

If the brake tester is in operation then the entire pit or the safety area around the tester is secured. If a person, an object or any kind of movement is registered the tester is disabled by the pit safety.

If the pit safety is triggered while the tester is occupied, it must be unlocked once the error has been detected and removed. Use the button on the control desk casing for this.

#### 4.11.4 Load Simulation

##### Load Simulator NZV

---



The load simulator is activated in the test screen after driving onto the roller set.

---

- 1 Drive onto the tester. Weight and rolling resistance are shown, then the display switches to the test screen.
- 2 Enable the weight simulation mode using button <F6>. The brake tester motors switch off, the screen switches to the weight display.
- 3 Pull down the vehicle, either
  - a) at the control box of the load simulator or
  - b) if option "LON-TRAN PCB" is available, press the remote control keys 'Up' or 'Down' while holding the 'Shift' key, until the desired weight is reached. (A separate operating manual is available for the Load Simulator.)
- 4 Confirm using <Esc> to disable the load simulator. The weight screen is closed. This message appears: <<After Return the motors will be switched on again>>.
- 5 Use the <Return> key. The motors are switched on again. The test screen appears, the vehicle test can be started.

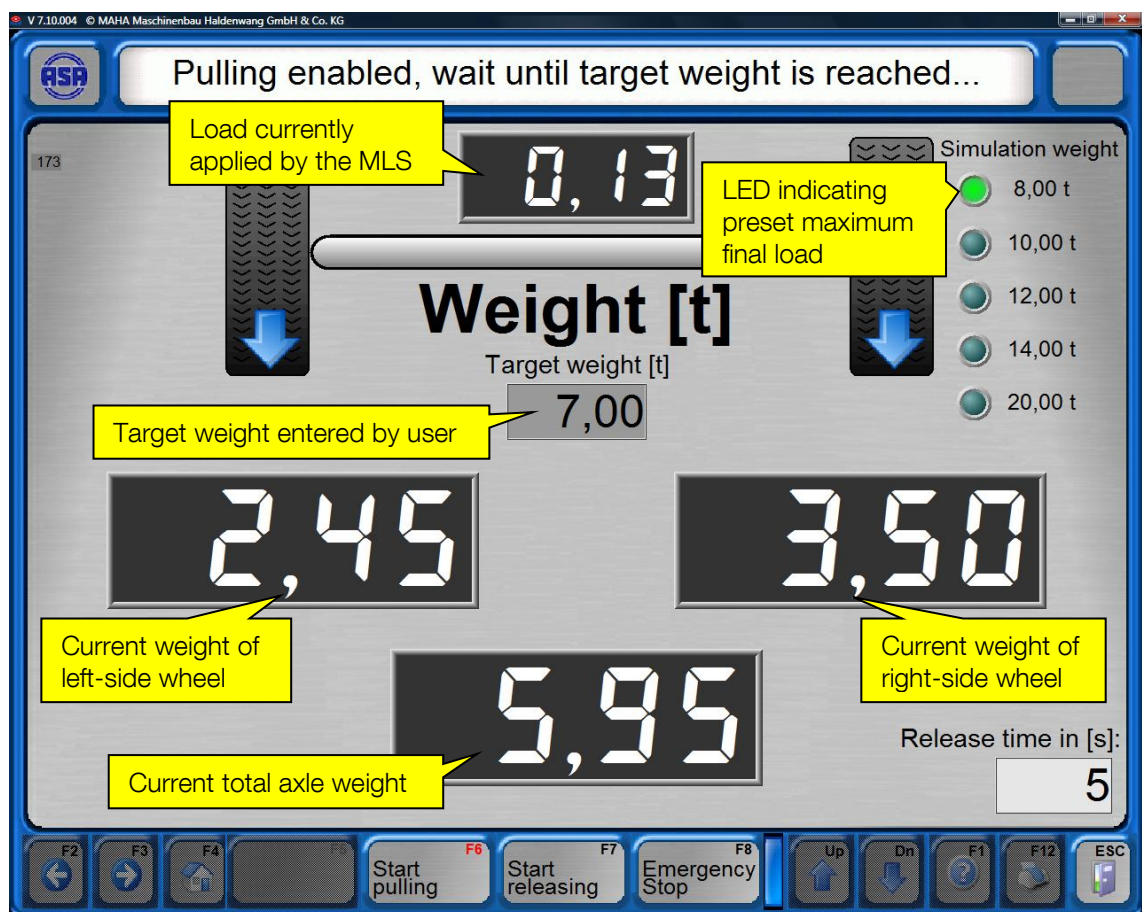
## MLS

→ When the Brake Test screen appears:

- 1 Open the Load Simulation screen using <F6>.
- 2 Install the chains to the vehicle.
- 3 Enter the target weight.  
The program will not accept any inputs greater than the maximum final load which has been preset with the key switch on the hydraulic power unit.



When simulating loads of 12 / 14 / 20 t make sure to keep a minimum distance of 1 m between cylinders!



- 4 Start the load simulation using <F6>.
- 5 When the target weight is reached, use <Esc> to return to the Brake Test screen.

6 When prompted, confirm with <Enter>.

7 Conduct the brake test.

8 At completion of the brake test, open the Load Simulation screen again using <F6>.



9 Release the chains using <F7>.

→ The release time is indicated in the bottom right-hand corner. The value is adjustable in the variables list.

10 Remove the chains from the vehicle. If the chains are still tensioned and cannot be removed, repeat the release procedure using <F7>.

11 Use <Esc> to return to the Brake Test screen.

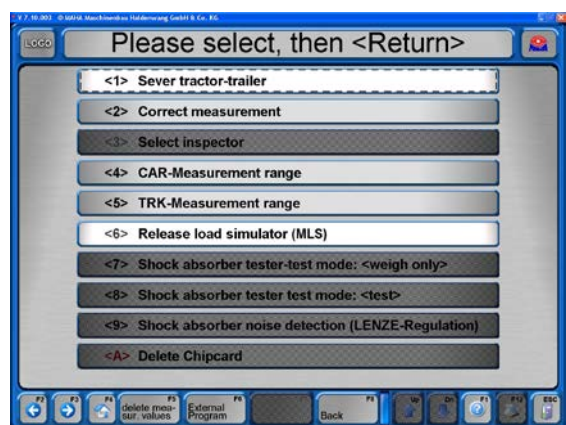
12 When prompted, confirm with <Enter>.

→ The motors switch on automatically.

13 Change axles or exit the brake tester.



Unable to Release Load Simulator?

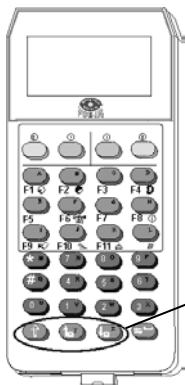


1 Switch to 2nd level using <↓ Dn>.  
 2 <Miscell.>.

3 <Release load simulator (MLS)>.

### Elevated Roller Set

- 1 Switch on the brake tester.
- 2 Drive onto the roller set with the axle to be tested.
- 3 Raise or lower the roller set using the remote control keys:



Shift



RAISE  
Roller set



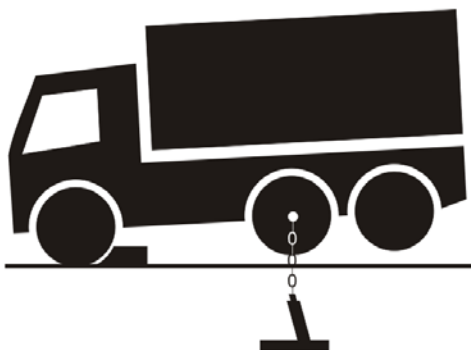
LOWER  
Roller set

- Press the Shift key  
(Shift symbol appears on the display)
- Press the RAISE or LOWER arrow key.

- 4 Conduct the brake test.



The elevation adjustment of the roller set is stopped when the arrow key is released. There is no automatic limit stop.



### **HINWEIS**

ZUR PRÜFUNG DER FESTSTELL-  
BREMSE MUSS DAS FAHRZEUG  
GEGEN WEGROLLEN GESICHERT/  
FESTGEZURRT WERDEN.

### **NOTICE**

VEHICLE MUST BE CHOCKED  
AND/OR SECURED FOR PARK  
BRAKE TEST.

#### 4.11.5 4WD / ASR / ASD Test

The brake testers of the safety test lane can be optionally equipped with a 4WD mode. Use this mode to test the brakes of vehicles with "rigid" or Visco 4WD regulation as well as ASR (Anti-Slip-Regulation) and ASD (Automatic locking differential).



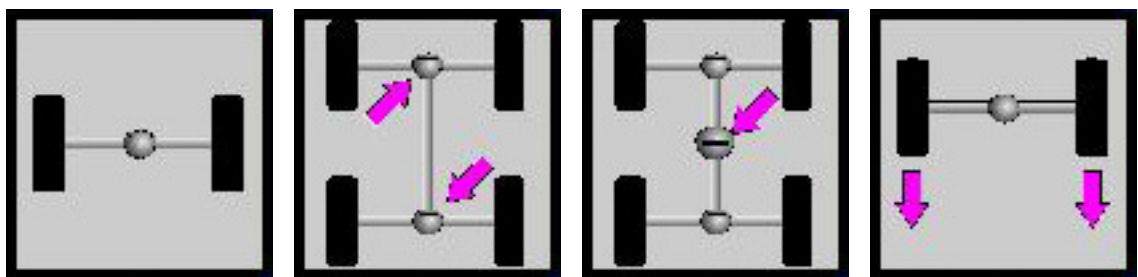
Please note that a pedal force meter and remote control IFB3 are required to do a 4WD test.

The installation of the 4WD in the PC program is done by a MAHA service technician.

- 1 The main menu appears then with the instruction line "4WD" and an additional symbol for the 4WD mode which is active.
- 2 Use <F5> 4WD mode to change between the various modes.



The different modes are indicated as follows:



Standard

Rigid

Visco

ASR / ASD

#### Brake Test 4WD

4WD vehicle brake testing must distinguish between a "rigid" or a "Visco" 4WD regulation. Furthermore, "Visco" 4WD regulation is divided up between hard and soft.

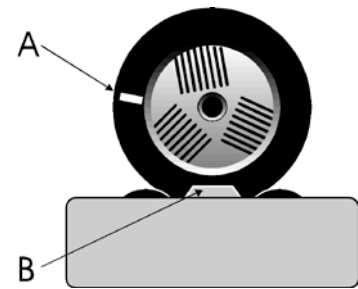
Before brake testing, the cable of the pedal force meter must be connected to the remote control and the pedal force meter attached to the shoe or the brake pedal.



Reflector strips must be attached to the vehicle tires when testing vehicles with "rigid" or hard "Visco" 4WD regulation.

An integrated light barrier on the brake tester then records exactly one wheel rotation.

A = Reflector strips B = Light barrier



The motor regulation records the exact rpm of the forward rotating rollers and transfers this to the backwards rotating rollers. In this way, a force transfer to the second axle as well as torque on the drive train are avoided.

The brakes of the wheels are tested individually:

1. Front axle, left-hand wheel
2. Front axle, right-hand wheel
3. Rear axle, left-hand wheel
4. Rear axle, right-hand wheel

## Test Procedure

### 1 Activate ASR/ASD-Mode

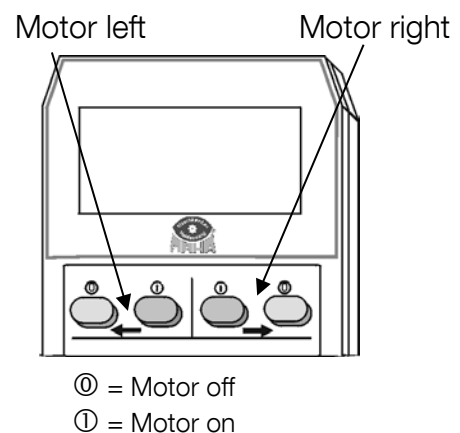
Select desired 4WD mode with <F5>.

### 2 Prepare brake test

- a. Drive onto the brake tester with the front axle.  
Both sensor rollers of the roller set must be pressed.
- b. Release brake.
- c. Press the clutch or put gear into idle.  
Place automatic transmission into Neutral position (N).

### 3 Brake effectiveness test, left-hand

- a. Start the left hand roller set via the Motor-On-key of the remote control.  
→ The left hand roller set runs forward, the right hand roller set runs in the reverse direction.



- b. Ovality test (if desired) see paragraph "*Ovality test*".

- c. Slowly press the brake pedal until approx. 90% of the maximum braking force is reached. Do not brake until slippage cutoff occurs!  
→ The roller drive switches off.
- d. Release brake pedal immediately.  
→ The measured max. brake force is shown by the left-hand bar.  
→ The right-hand bar remains at zero.

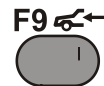
#### 4 Brake effectiveness test, right-hand

- a. Start the right hand roller set via the motor-on key on the remote control.  
→ The right-hand roller set runs forward, the left-hand runs backward.
- b. Press the brake pedal slowly until the noted pedal force is reached.  
→ The roller drive switches off as soon as the pre-set slip is reached.
- c. Release brake pedal immediately.  
→ The measured max. brake force is shown by the right-hand bar.  
→ The left hand bar shows the brake force of the left-hand side.

#### 5 Storing measurement values

The vehicle must be on the roller set in order to store. If the vehicle is lifted out of the roller set with the brake test, the vehicle must be driven onto the roller set anew for storing of the measurement values.

Storage key of the remote control IFB3:



#### 6 Exiting the brake tester

- a. Wait until the rollers stop.
- b. Slowly drive the vehicle off the roller set.

#### 7 Return to Standard mode

Select Standard mode with <F9>.

## Checking ASR / ASD

A check of the ASR or ASD simulates the situation of a "gripping" tire and a slipping tire. For example, one tire of the vehicle is on a dry surface and the other tire is on an ice plate.

During the check, one roller set is blocked (dry surface), and the other runs freely (ice plate). If the ASR (or ASD) is functioning during the check, it is possible to drive the vehicle out of the tester.

## Test Procedure

### 1 Activate ASR/ASD mode

Select desired 4WD with <F5>.

### 2 Prepare function test

- a. Drive onto the brake tester with the driven axle.  
Both sensor rollers of the roller set must be pressed.
- b. Press the clutch or place the gear in idle.  
Place automatic transmission into Neutral position (N).

### 3 Function test, left-hand

- a. Select the left-hand roller set via the motor-on key of the remote control.  
→ The selected (left) roller set is blocked.
- b. Place in gear and slowly drive off the roller set.  
→ If the ASR (or ASD) is functioning properly, it is possible to drive off the roller set.  
→ The blocking is released when the sensor roller is no longer pressed.



Risk of damage for roller motors!

With a defective ASR (or ASD) the freely running roller set is accelerated. Do not accelerate beyond 11 km/h!

---

### 4 Function test, right-hand

- a. Reverse the vehicle onto the roller set.
- b. Press the clutch or place the gear into idle.  
Place automatic transmission into Neutral position (N).
- c. Repeat steps 3.a. and 3.b. for the right-hand side.

### 5 Return to Standard mode

Select Standard mode with <F9>.

## 4.12 Setting up the Database Connection

EUROSYSTEM is suitable for single-user and for network operation. The following settings are required:

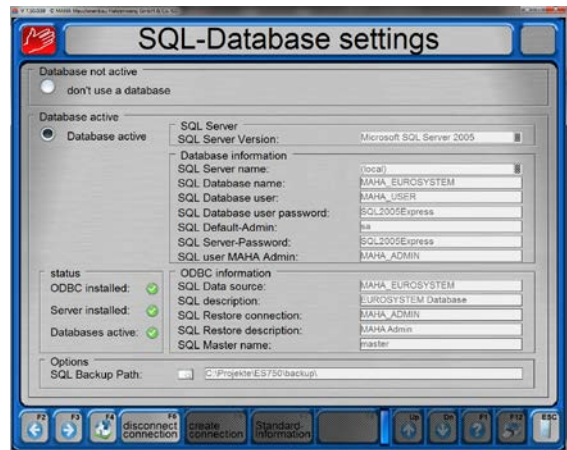
- 1 In the main menu switch to the third level.
- 2 Use button <F5> System.  
→ A pop-up menu opens.
- 3 Select menu item <2> Settings.
- 4 Select menu item <B> Database.



### 4.12.1 Single Position Operation

Standard installation of EUROSYSTEM is in standalone mode.

- 1 Be sure the checkbox <Database active> is marked.  
→ The green LEDs
  - ODBC installed
  - Server installed
  - Databases active
 must light up.
- 2 Exit the setting menu with <Esc>.



### 4.12.2 Network Operation

- 1 Install only the SQL database on the server. Procedure:

- Insert installations CD.
- Cancel Auto Setup.
- Open directory MSDE in the Explorer.
- Start file "Start.bat"





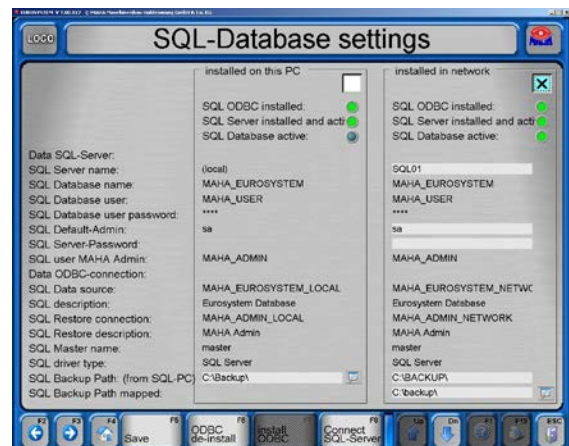
Do the following settings with all work station computers, but **not** with the server.

- 2 Install the EUROSYSYSTEM program with the SQL database on all work station computers.
- 3 Restart all work station computers.
- 4 Open the dialog box with a double click on the SQL Icon.
- 5 Remove the marking of the control box.



- 6 Start EUROSYSYSTEM on all work station computers and select the database setting.
- 7 Mark the control box <Installed in network>

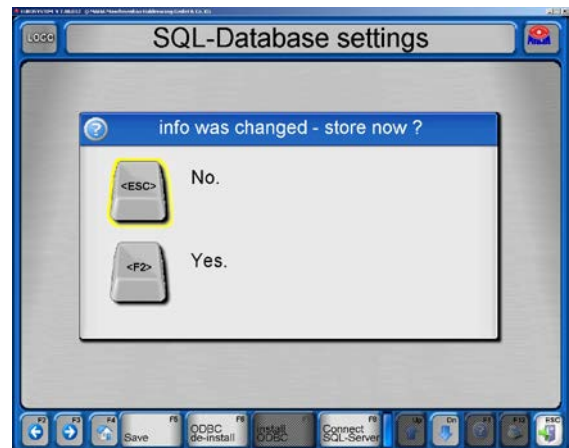
- The green LEDs
- SQL ODBC installed
  - SQL Server installed and active
  - SQL Databases active
- under the control box must light up.



- 8 Answer inquiry with <F3>
- If no error message appears, the database access on the server was successfully set up.



- 9 Exit setting menu with <Esc>.
- 10 Answer inquiry with <F2> and restart EUROSYSYSTEM.



---

## 5 Maintenance

---



Danger! Electric shock hazard!

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

---

### 5.1 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.
- 

### 5.2 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!

---

### 5.3 Spare Parts

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

## 5.4 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



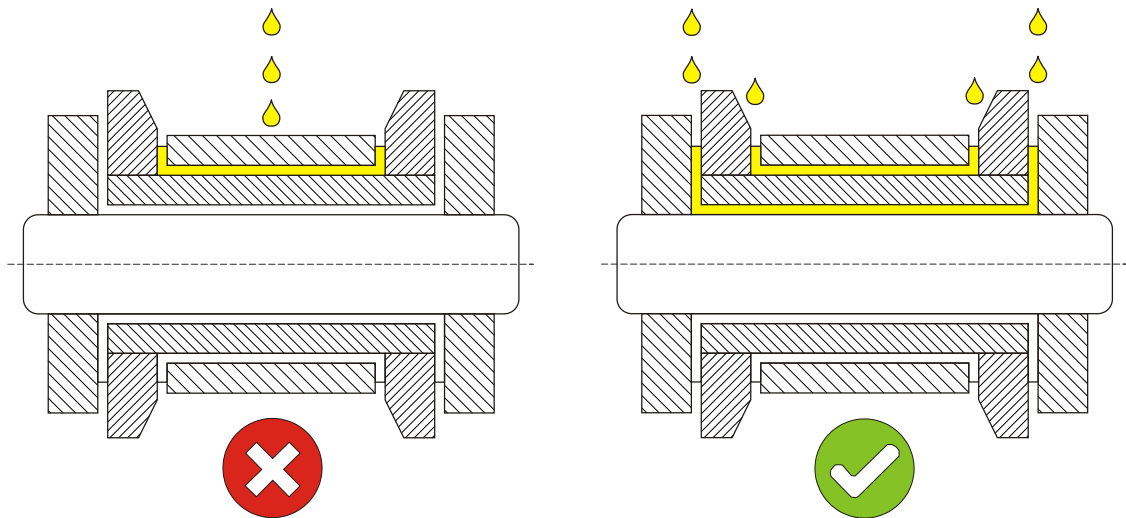
## Lubricating the Chains



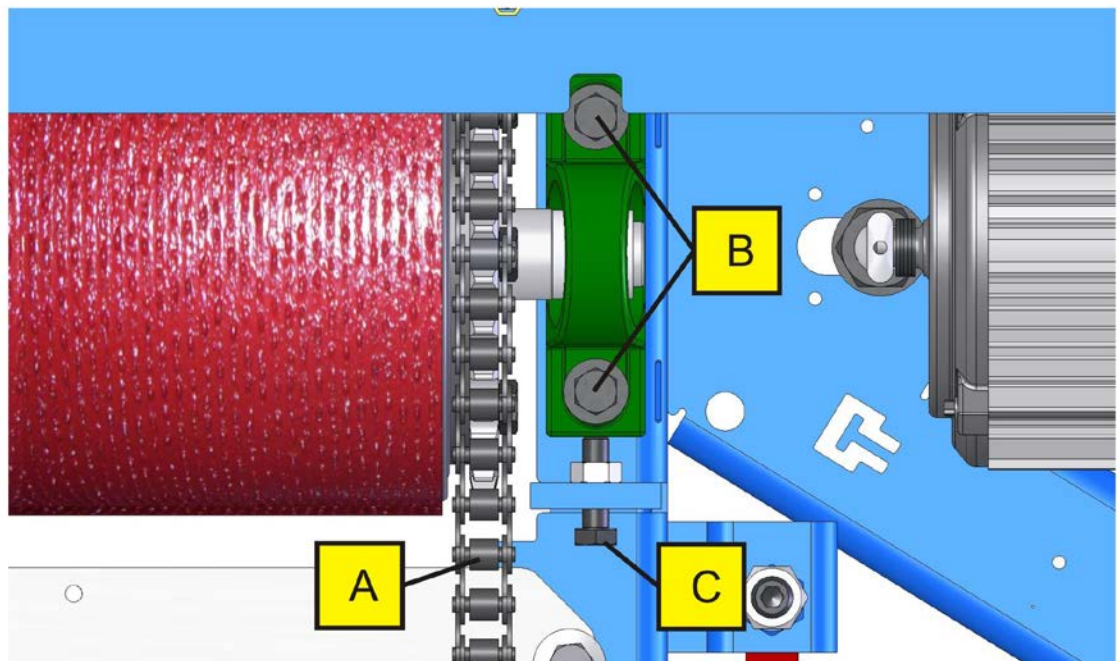
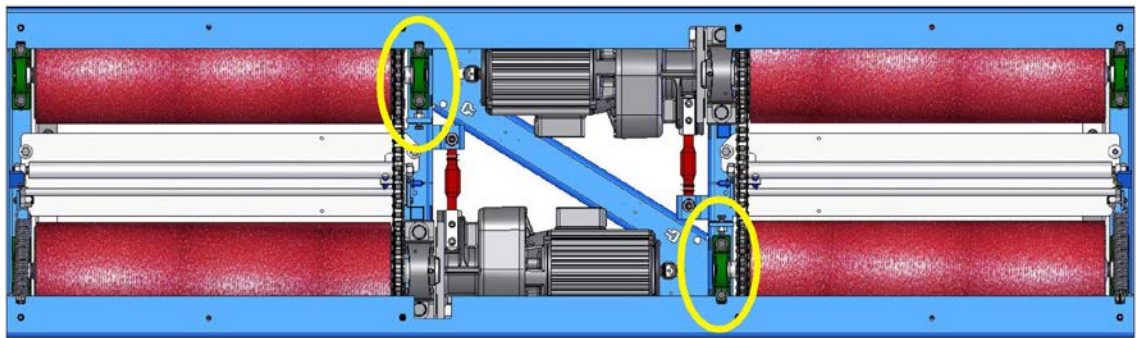
The service lifetime of the chains directly depends on correct lubrication. Provided that the lubricating film is continuously maintained, chain wear can be reduced to a minimum

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!**



IW 2 / MBT 2x00

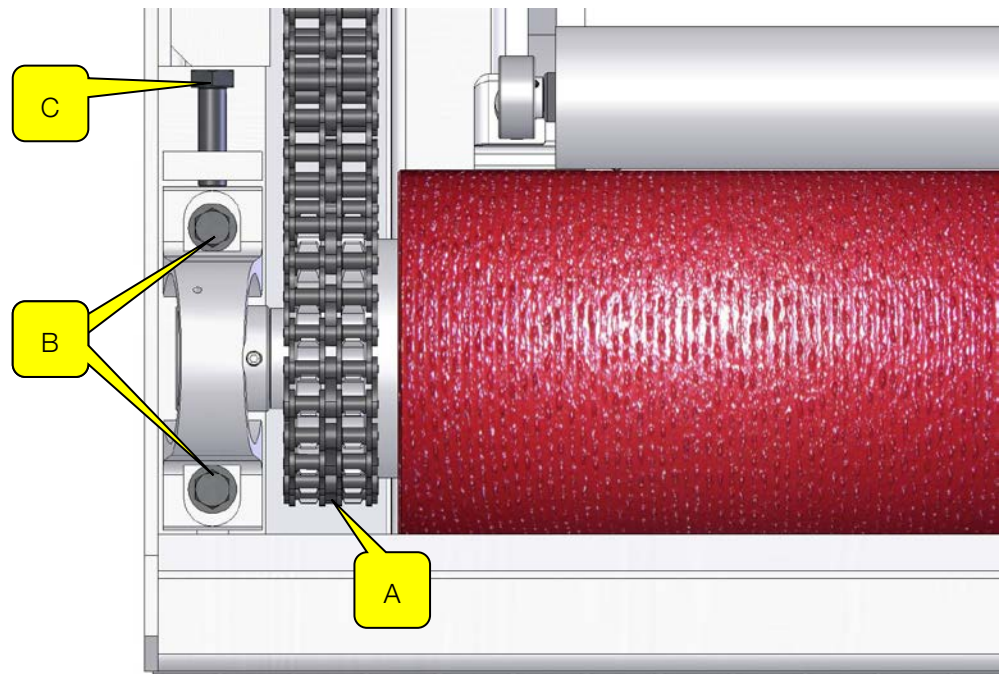
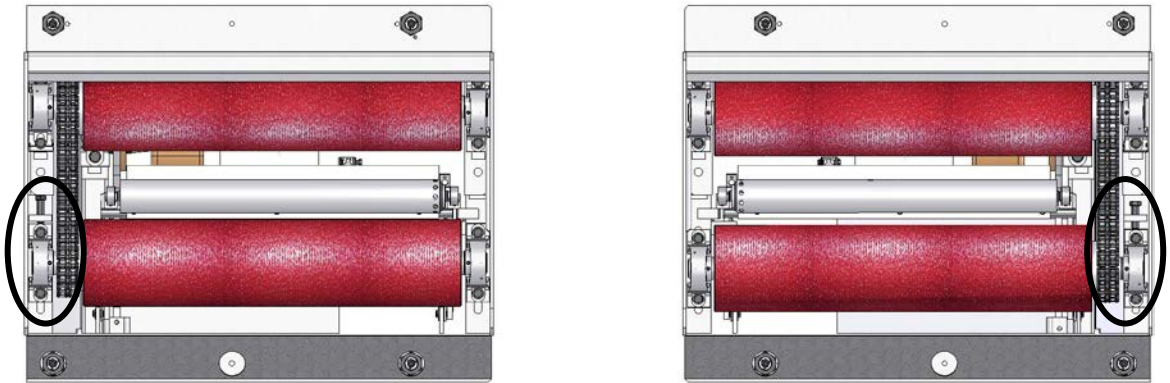


A Chain

B Fastening screws

C Tensioning screw

IW 4/7 / MBT 4x00/7x00

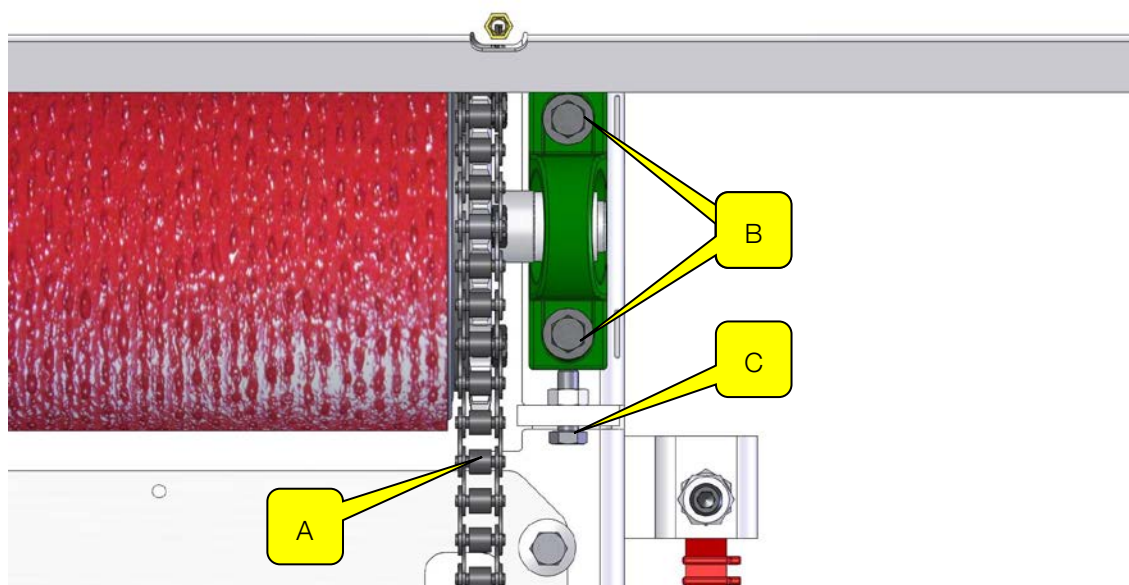
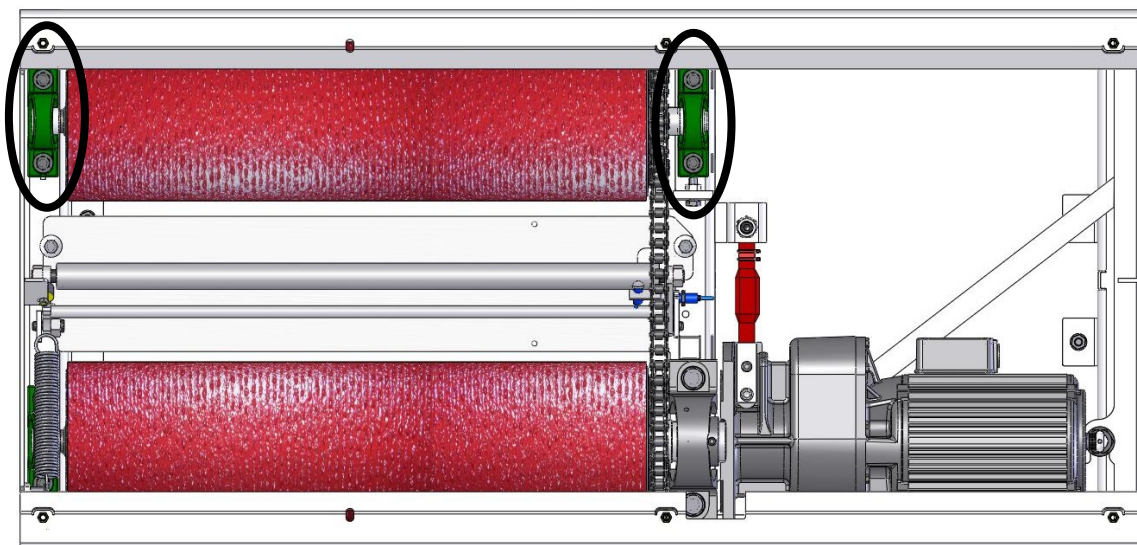


A Chain

B Fastening screws

C Tensioning screw

## IW 10 / MBT 1000



A Chain

B Fastening screws

C Tensioning screw

## 5.5 Greasing the Sensor Roller Hinges

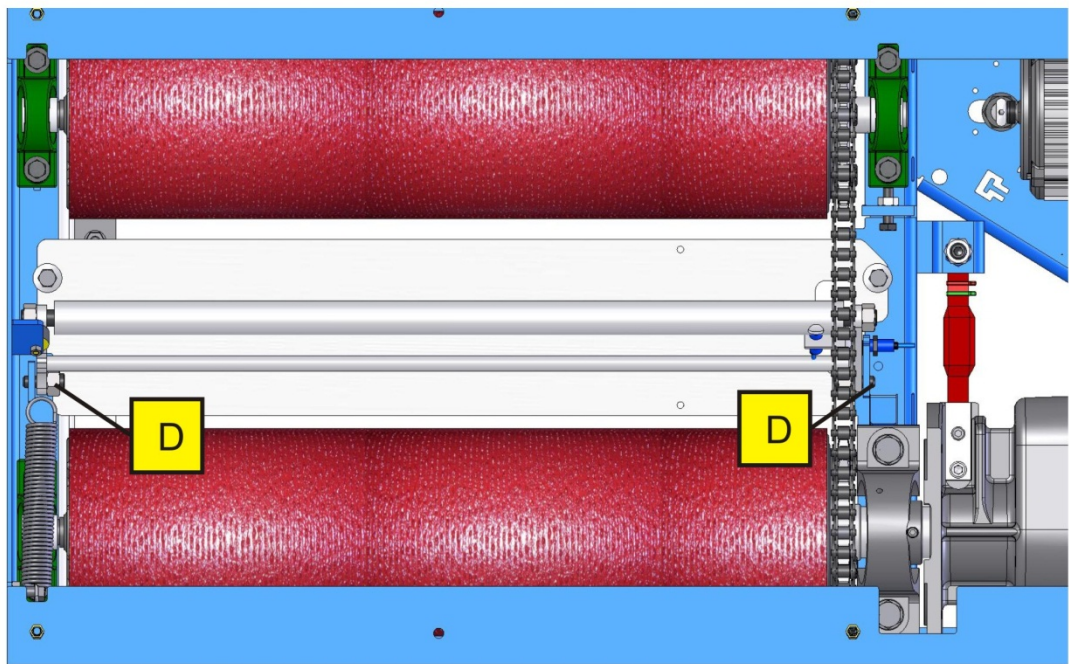
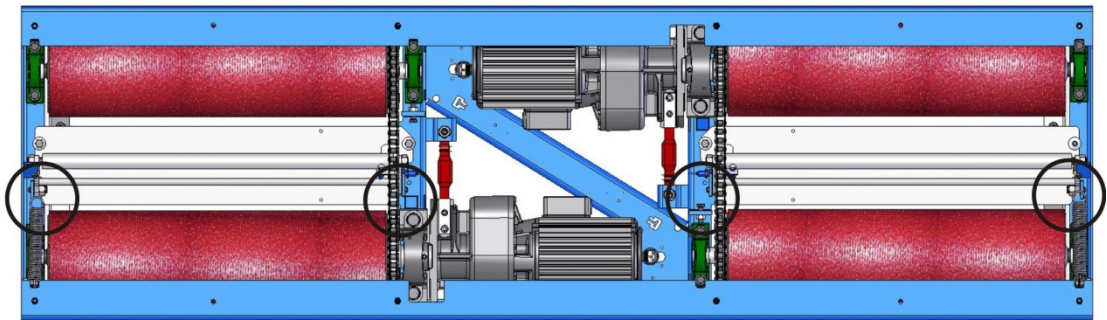


Maintenance interval: 200 hours / 12 months

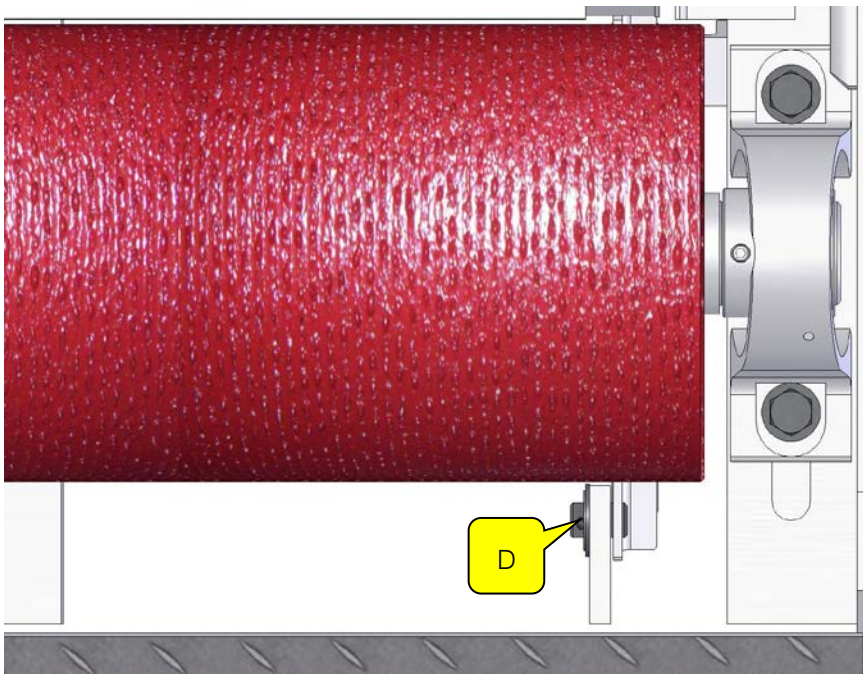
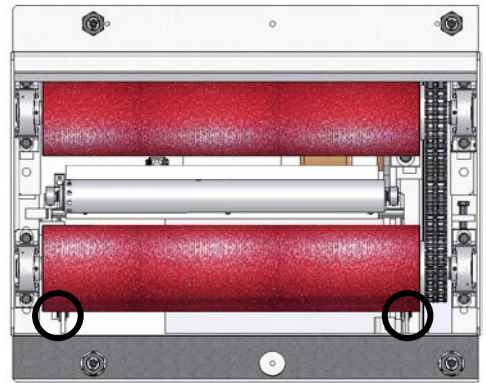
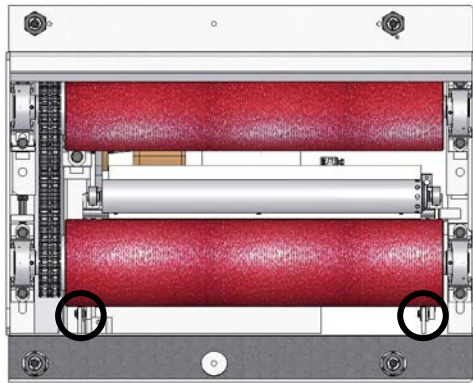
Grease the sensor roller hinges every 200 (two hundred) operating hours or once annually.

- 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.

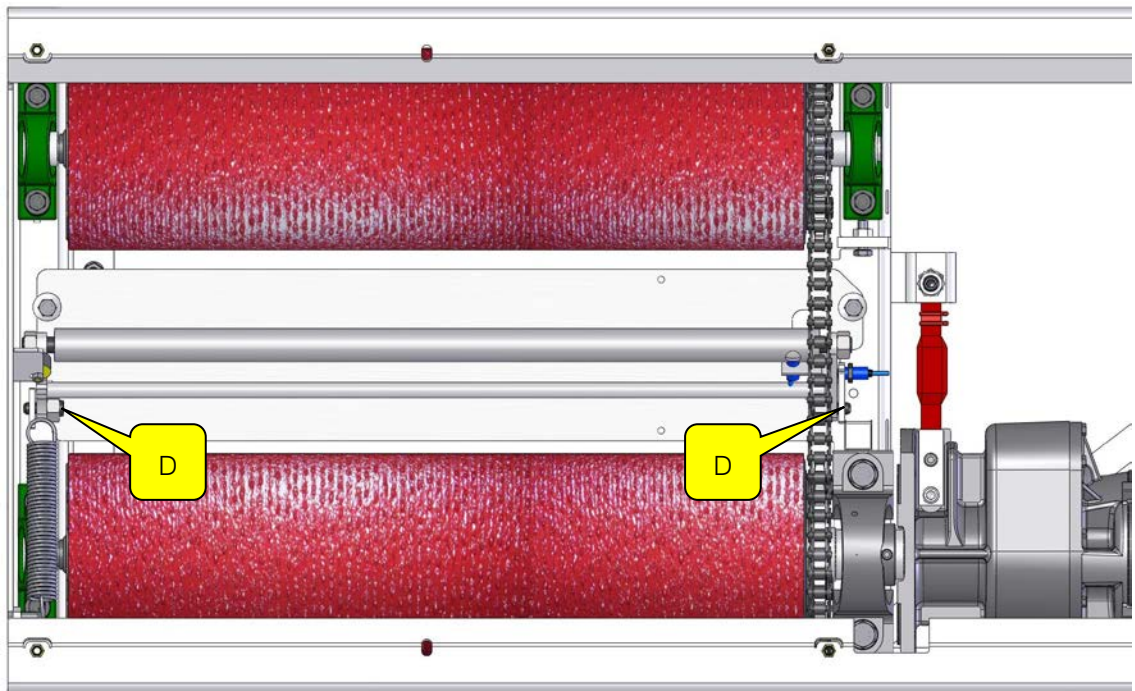
IW 2 / MBT 2x00



IW 4/7 / MBT 4x00/7x00



## IW 10 / MBT 1000



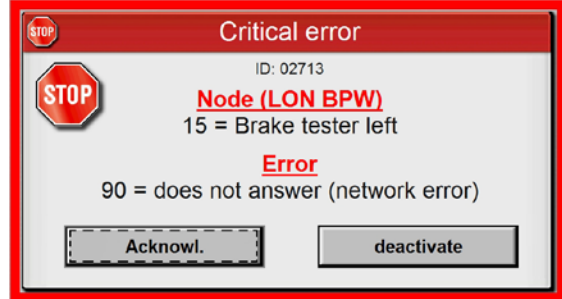
5.6 Error Classes



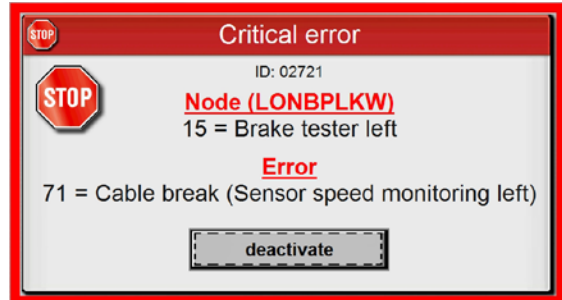
**CRITICAL ERROR**

Depending on the type of error, a distinction is made between the following subcategories:

**Group 1** is "reparable". The user is able to choose whether to repeat the action or to ignore the error.

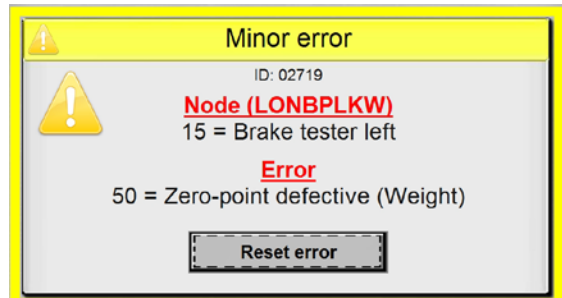


**Group 2** is "irreparable". The user may only confirm deactivation of the device.



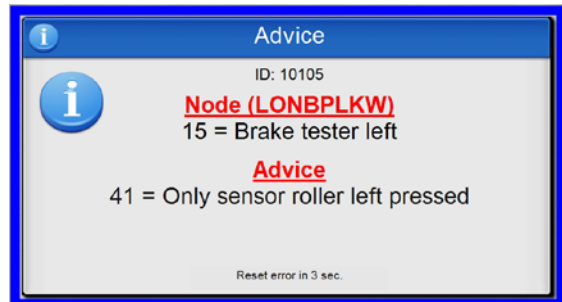
**MINOR ERROR**

May be reset by the user. Program restart is not necessary.



**NOTICE**



Important information for the user. Will be reset automatically. Operation of device may be continued without program being restarted.







## 5.7 Error List





### ID 03 – "LON OR 8 (1)" → Relay Card 1

Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)







### ID 04 – "LON IN 8 (1)" → Input Card 1









Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)

### ID 06 – "LON IRE" → Infrared Receiver








Error	Cat	Description
01		Transmission Error
02		Weak Battery
90		No Response (Network Error)
91		No Response (Timeout)

### ID 08 – "LON BP" → Brake Tester CAR



Error	Cat	Description
01		Only Left-Side Sensor Roller Pressed
02		Only Right-Side Sensor Roller Pressed
03		Already Occupied at RESET
05		Software Version Out-of-Date (Node Software)
11		Zero Compensation: Tolerance Limit Exceeded Left Side
12		Zero Compensation: Tolerance Limit Exceeded Right Side

Error	Cat	Description
13		Amplification: Tolerance Limit Exceeded Left Side
14		Amplification: Tolerance Limit Exceeded Right Side
15		Zero Compensation: Cancelled Left Side
16		Zero Compensation: Cancelled Right Side
17		Amplification: Cancelled Left Side
18		Amplification: Cancelled Right Side
90		No Response (Network Error)
91		No Response (Timeout)



#### ID 09 – "LON SB" → Shock Tester

Error	Cat	Description
01		Only Left Side Occupied
02		Only Right Side Occupied
03		Tester Exited before Test Start
04		Vehicle too Heavy
05		Software Version Out-of-Date (Node Software)
90		No Response (Network Error)
91		No Response (Timeout)



















#### ID 10 – "LON RA" → Side-Slip Tester MINC






















Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)

## ID 11 – "LON TP" → Speedometer Tester



Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)

## ID 15 (le) und ID 16 (ri) – "LONBPW", "LONBPLKW" → BT w. Weigh. Mach.



Error	Cat	Description
05		Software Version Out-of-Date (Node Software)
06		Conflict between Variables
11		Zero Compensation: Tolerance Limit Exceeded Left Side
12		Zero Compensation: Tolerance Limit Exceeded Right Side
13		Amplification: Tolerance Limit Exceeded Left Side
14		Amplification: Tolerance Limit Exceeded Right Side
15		Zero Compensation: Cancelled Left Side
16		Zero Compensation: Cancelled Right Side
17		Amplification: Cancelled Left Side
18		Amplification: Cancelled Right Side
19		Weighing Machine: Tolerance Limit Exceeded
20		Communication Error Left ← → Right Side
21		Weighing Machine: Zero Compensation Impossible
25		Weighing Machine: Load Cell(s) Defective / Disconnected
27		Weighing Machine: Load Cell(s) Defective (Measuring Range)
32		RPM Pulse Generator Defective – Left Side Slip Signals
33		RPM Pulse Generator Defective – Both Sides Slip Signals
34		RPM Pulse Generator Defective – Right Side

Error	Cat	Description
Slip Signals		
40		Brake Force: Zero Compensation Error
41 (01)		Only Left-Side Sensor Roller Pressed
42 (02)		Only Right-Side Sensor Roller Pressed
43		MOREG: General Error
50		Weighing Machine: Zero Compensation Error
51		Occupied at RESET
61		EMERGENCY STOP (Memory Overflow) Left Side
62		EMERGENCY STOP (Maximum Brake Force Exceeded)
65		Start-up Monitoring
71		Cable Failure Namur 1 (Slip Left-Side Wheel)
72		Cable Failure Namur 2 (Slip Left-Side Motor)
73		Cable Failure Namur 3 (Left Side Occupied)
74		Cable Failure Namur 4 (Slip Right-Side Wheel)
75		Cable Failure Namur 5 (Slip Right-Side Motor)
76		Cable Failure Namur 6 (Right Side Occupied)
81		Cable Failure (Brake Force Left-Side Strain Gauge)
82		Cable Failure (Brake Force Right-Side Strain Gauge)
83		Cable Failure (Weighing Machine Left-Side Strain Gauge)
84		Cable Failure (Weighing Machine Right-Side Strain Gauge)
90		No Response (Network Error)
91		No Response (Timeout)



## ID 17 – "LON IN 8 (2)" → Input Card 2 (w/o LON Release)

Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)



## ID 18 – "LON IN 8 (3)" → Input Card 3 (w/o LON Release)

Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)



## ID 21 – "LON RS232 (1)" → RS232 Module 1

Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)


## ID 23 – "LON RS232 (2)" → RS232 Module 2


Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)

## ID 24 – "LON RS232 (3)" → RS232 Module 3



Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)

## ID 25 – "LON DT" → Turntables (w/o LON Release)



Error	Cat	Description
90		No Response (Network Error)

Error	Cat	Description
91		No Response (Timeout)





## ID 27 – "LON OR (2)" → Relay Card 2 (w/o LON Release)

Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)



## ID 28 – "LON OR (3)" → Relay Card 3 (w/o LON Release)

Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)







## ID 31 – "LON Zeiger" → Pointer Module

Error	Cat	Description
05		Software Version Out-of-Date (Node Software)
06		Conflict between Variables
90		No Response (Network Error)
91		No Response (Timeout)



## ID 32 – "LON UHF" → Radio Module

Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)



## ID 45 – "MOREG LON" → 4WD Control

Error	Cat	Description
10		MOREG: Unable to Find LON TP Module
44		MOREG: Left-Side Light Barrier Defective
45		MOREG: Right-Side Light Barrier Defective
46		MOREG: Both Light Barriers Defective
90		No Response (Network Error)
91		No Response (Timeout)



## ID 53 – "PROFIL" → Tread Depth

Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)



## ID 56 – "LON SMC (1)" → Stepping Motor Controller 1

Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)



## ID 60 – "LON SMC (2)" → Stepping Motor Controller 2

Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)












## ID 61 – "LON SMC (3)" → Stepping Motor Controller 3

Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)

## ID 62 – "LON MLS" → Load Simulator

Error	Cat	Description
90		No Response (Network Error)
91		No Response (Timeout)

## ID 99 – "Allgemein" → General EUROSYSYEM Error Messages

Error	Cat	Description
101		License Plate Recognition
104		LITE 3: Timeout
110		GIEGLAN: Directory Error
111		ES_IN (Import): Directory Error
112		ES_OUT (Export): Directory Error
113		MCTC Directory Error
115		Invalid Operating System
116		Insufficient Memory
117		Insufficient CPU
118		Insufficient Colour Depth (< 32 Bit)
120		Motor Overload Switch Triggered



## 6 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.

## 7 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.

## 8 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

## 9 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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