Test Lane

Eurosystem / Profi-LON

for cars and vans

Roller Brake Tester ♦ Shock Absorber Tester ♦ Side-Slip-Tester

Operation & Maintenance Manual

English

EDITION

Version 9 of the operating manual dated 17.07.2003
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Profi-LON Software Version 1.54

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The contents of this version have been checked with great care. However, errors cannot be fully excluded. Please contact MAHA should you find errors of any kind.
Subject to technical change without notice.

These instructions are intended for users with previous technical knowledge in the field of vehicle testing technology as well as basic computer knowledge and MS-Windows operating system application.

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1 Description

1.1 Introduction

Eurosystem
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 absorber tester, roller 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. 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 analogue display (pointer) can be used.

Extensive test lanes can be divided into sections which are also supported and organized by the Eurosystem software. Customer and vehicle data are quickly available at every section by the use of chip cards.

Profi-LON
The safety test lane Profi-LON uses modular design and is partly expandable. The following function groups are standard equipment:

- Side-slip tester
- Shock absorber tester
- Brake tester

The test lane is equipped with a multifunctional analogue display.

A remote control is necessary to store measurement data. Only the current measurement values can be filed (stored) and called up again.

If the test lane is equipped with a printer the measurement values stored last can be printed out.

Profi Eurosystem
The safety test lane Profi Eurosystem is a smaller version of **Eurosystem.**

The connection of a PC with Eurosystem-Software to the test lane Profi-LON makes a Profi Eurosystem out of Profi-LON. The measurement values of the functional groups mentioned above can then be displayed on the screen. Simultaneously many of the program functions of Eurosystem are available.

1.2 Usage, Range of Application

Eurosystem and Profi-LON were developed for the testing of cars and vans. Depending on the equipment various vehicle functions such as brakes, shock absorbers, side-slip, exhaust values, etc. can be tested.

Please see the current price list for equipment options.

1.3   Installation

The test lane may only be installed and commissioned by MAHA service technicians or by authorized service partners. MAHA regulations and instructions for installation and expansion of the test lane must be complied with.

☞   The manufacturer's CE Conformity Certification becomes void when installation is done by unqualified technicians. MAHA accepts no liability for damage caused by unqualified, unauthorized installation. In addition, the manufacturer's warranty is also void..

1.4   Software Update

An „empty" database is, in principle, supplied with every Eurosystem software.

1.4.1   Backup Data

Data backup can be carried out by every skilled and qualified employee.

❗   **All important data on the harddisk must be backed up before the update.**
MAHA accepts no liability for lost data!

1.5   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 test stand.

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 operational personnel.

Suspension Tester/Shock Absorber Tester
The noise emission value created by the test stand (oscillating test plates) is between 75 dB (A) and 80 dB (A) in the work area of the operator (measurement date 99-12-06, type of measuring device: Monacor SM-6).

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.

1.6   Display Cabinet Profi-LON

left   front   right
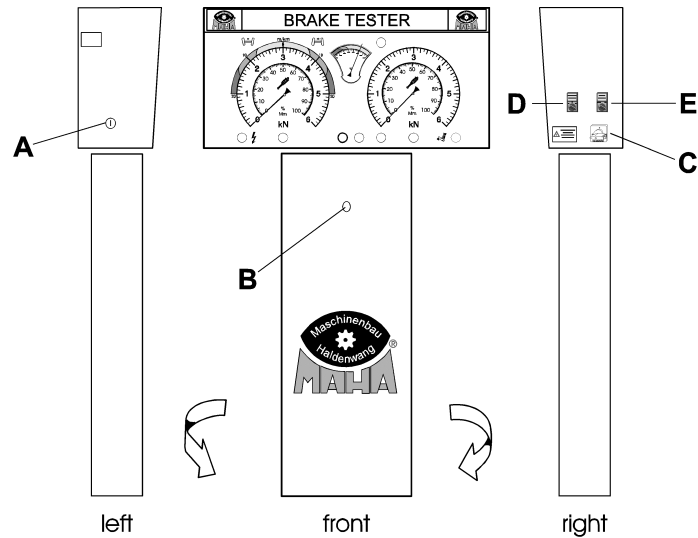
A   Mains Supply (ON) key'
B   Lock
C   Main switch

D   Single wheel switch for brake tester and
    shock absorber tester (if used without
    remote control)

E   Brake tester switch to select evaluation
    program (Mahameter or percentage)

1.6.1   Multi-Functional Display, Profi-LON

The test lane **Profi-LON** is equipped with a multifunctional analogue display. The recorded measurement values are displayed at the same moment that the test is done and remain on the display for a certain time.
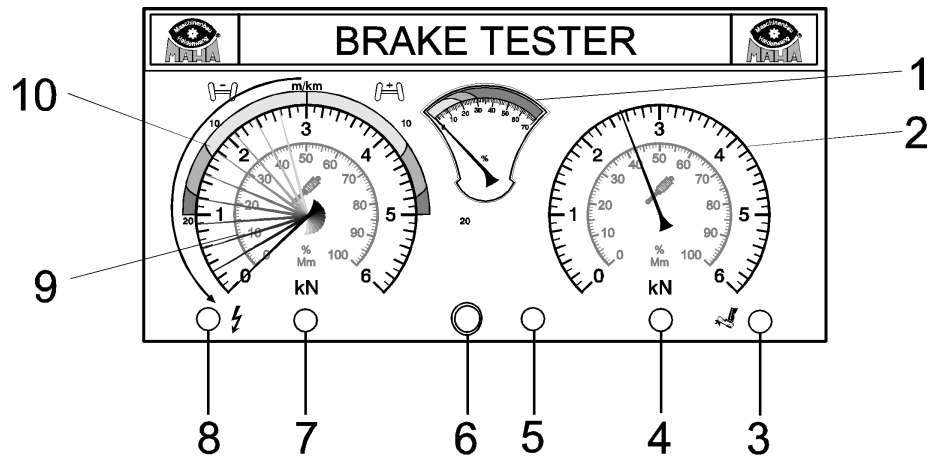
1   Imbalance display

2   Display for brake tester

3   READY lamp brake tester (yellow)

4   Lamp for measurement range expansion,
    TRK mode, imbalance limit (optional)

5   Receiver control lamp (green), lights up
    with reception

6   Receiver eye (white)

7   Multi-axle mode (optional)

8   Mains Supply (ON) lamp (white)

9   Display for shock absorber tester

10 Display for side-slip tester

Multi-functional displays with measurement ranges from 0 to 40 kN are available. Measurement values in expanded measurement ranges are shown by a burning lamp (Position 4) and must be multiplied by factor two.

1.6.2 Digital Displays

Additionally, up to three LCD-displays can be integrated in the multifunctional display. They can show various measurement values digitally:

Positions of the LCD displays   **Measurement values**
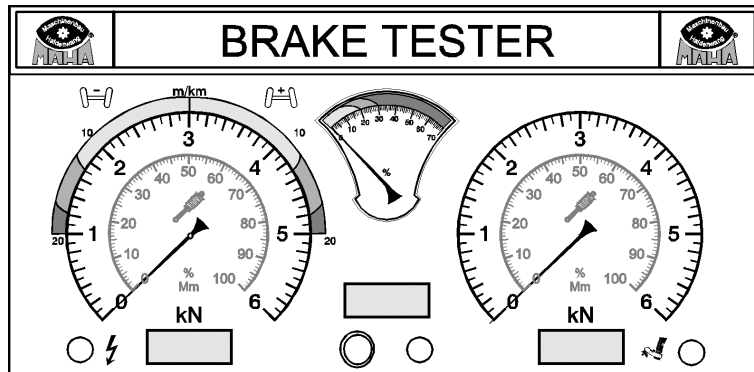
- Wheel weight left/right (if weighing device in the roller set)
- Axle weight (centre)

1.7 Test Lane Floor Assemblies

- Functional group
  - Side-slip tester MINC Profi or
  - Side-slip tester MINC I Euro

- Functional group
  - Shock absorber tester SA2 Euro or
  - Suspension tester FWT 1 Euro

- Functional group
  - Roller brake tester IW2 Euro Standard
  - Roller brake tester IW2 Euro Profi
  - Roller brake tester IW2 Euro RS-No. 2
  - Roller brake tester IW2 Euro RS-No. 3
  - Roller brake tester IW2 Euro RS-No. 4
  - Roller brake tester IW2 Euro RS-No. 5

1.7.1   Side-Slip Tester

Consists of the functional group MINC and the control module.
The MINC is a side-slip tester to check the vehicle tracking.

1.7.1.1   Measurement principle

While the vehicle passes over, the test plate is pressed to the right or the left, depending on the wheel track. This deviation is displayed in m/km.
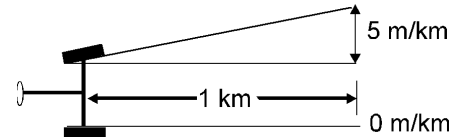
New vehicles often have more toe-in. It must be offset against the measurement value.

Side-Slip Measurement Value Display

Color	Side-slip deviation	Result
Green	0 - 12 m/km	OK
Orange	12 - 16 m/km	Check wheel position
Red	> 16 m/km	Not OK

There are no official limit values for side-slip.
The measured values must therefore be interpreted by the inspector.

The sides-slip values are displayed on the left hand measurement value scale of the analog display. The color coding makes the evalution easier.

The wheel tracking can be positive or negative.

The track deviation in this example is (+) 5 m/km (positive wheel position).

When the pointer moves to the right on the analog display this indicates a positive track deviation. When the pointer moves to the left on the analog display this indicates a negative track deviation.
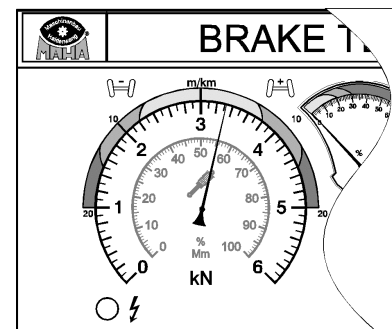
1.7.1.2   Technical Data

	MINC 1 Euro	MINC 1 Profi
Measurement range	0 - 20 m/km	
Display accuracy	1 m/km	
Axle load	3,0 t	2,0 t
Test plate dimensions	1020 x 460 x 80 mm	

1.7.2 Shock Absorber Tester / Suspension

Consists of the functional group SA 2 / FWT 1 Euro and the control module.
SA 2 and FWT 1 are used for judging the condition of a vehicle's shock absorber..

Selection of the Evaluation Program

Profi-LON: Use this switch for shock absorber measurement to be displayed in MAHA-Meter or percentage.

Eurosystem: Selection via software.
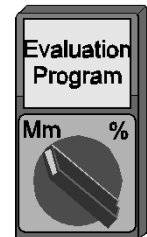
Single Wheel Program

Profi-LON: Use this switch to start the left or the right-hand test plate. Position "0" means Standard, i.e. both plates vibrate, one after the other. This function is suitable for noise detection on the vehicle body or suspension.

Eurosystem offers the single wheel switch over as standard equipment via software.
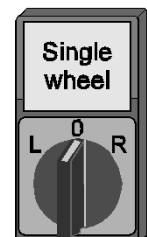
1.7.2.1 Measurement Principle

Oscillations of the test vehicle wheels are induced via the test plates. The oscillations run through various frequency ranges. The reaction of the tire-shock absorber functional group to these oscillations is recorded.

Amplitude Evaluation Mm
The amplitudes of the measured oscillations at the resonance position are given for each wheel in MAHA-Meter (Mm).

Percentage evaluation
This evaluation judges the quality of the vehicle's shock absorber in percentage (%).

1.7.2.2 Technical Data

	SA 2 Euro	FWT 1 Euro
Tread max.	2200 mm	
Tread min.	800 mm	
Exciter stroke	9 mm	7.5 mm
Exciter frequency	at 50 Hz rated frequency approx. 16 Hz	
	at 60 Hz rated frequency approx. 20 Hz	
Measurement range	max. 16 Hz; max. 100 mm Hub	
Display accuracy	1 % of measurement range end value	
Axle load normal/reinforce	1100 kg / 2000 kg	
Voltage supply	230 V / 400 V, 3 Phases, 50 Hz	
Fuse	16 A	
Motor performance	2 x 1.3 kW	2 x 1.1 kW
Total weight	approx. 500 kg	
Dimensions floor assembly (L x W x H)	2320 x 800 x 280 mm	
Start of the test stand	automatic at a load of more than 60 kg	

1.7.3 Brake Tester

Consists of the roller set, model IW 2, and the control module.

Single Wheel Program (Optional)

Profi-LON: Use this switch to select single wheel test (Left or Right). i.e. only the left or the right-hand roller set is on. Position "0" means standard. i.e. both rollers start as soon as the test stand is occupied and both sensor rollers are pressed.

Eurosystem offers the single wheel switch over as standard equipment via software.
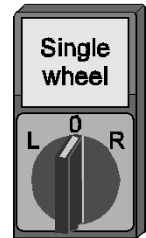
Lifting Bar (Optional)
The additional installation of a lifting bar makes drive-on and drive-off easier. The lifting bar is operated either using a light barrier or manually using the keys <B> and <F9>.

Use a sturdy cover for protection of the brake tester if it is being driven over to reach a lift positioned in front of it.

Weighing Device (Optional)
The total weight of the vehicle is required to calculate the percentage deceleration in the final evaluation of the brake test. It makes sense to have an additional weighing device in the brake tester if there is no shock absorber tester installed.

When the brake tester is equipped with a weighing device some displays and functions in the final evaluation vary from the standard version. These variations are explained in section 3 "Operation".

4 Wheel Drive Mode (Optional)
This mode means that vehicles with a rigid 4 wheel drive regulation or those with a Visco 4-wheel drive regulation can have their brakes tested. Additionally it is possible to test ASR (Anti Slip Regulation) and ASD (Automatic Differential Llock).

The exact RPM of the forward rotating rollers is recorded and transferred exactly to the reverse rotating rollers. In this way power transmission to the second axle and torque on the driveline are avoided.

A 4-wheel drive brake test requires that the pedal force is measured. Only in this way can the brake values of the left- and right-hand side of the vehicle be set in relation to one another. The use of the remote control, model Tele-BPS I, is required.

Profi-LON: The 4-wheel drive mode is activated using the 4-wheel drive selector switch.

Eurosystem: The 4-wheel drive mode is activated by pressing the <F9> key. An additional box is shown in the main menu on the PC which shows the respective mode.
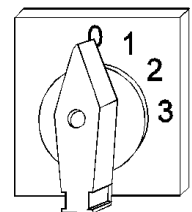
4 wheel drive mode

Standard (4 Wheel Drive Off)		**„Rigid" 4 Wheel Drive mode**	
Profi-LON ➢ ➢ Switch position 0		Profi-LON ➢ ➢ Switch Position 2	
Eurosystem ➢ ➢		Eurosystem ➢ ➢	**S**
ASR/ASD-Test		**Visco-4 Wheel Drive Mode**	
Profi-LON ➢ ➢ Switch Position 1	**A**	Profi-LON ➢ ➢ Switch Position 3	
Eurosystem ➢ ➢		Eurosystem ➢ ➢	**V**

1.7.3.1   Measurement Principle

The motor-driven test stand rollers transmit the rotation to the tires of the test vehicle axle.
Using the vehicle brakes the tires are braked until the pre-defined slip between vehicle tires and test stand roller is reached. The brake force applied to do this is measured.

1.7.3.2   Technical Data

	IW 2 Euro Standard	IW 2 Euro-Profi	IW 2 Euro			
Roller set		Nr. 2	Nr. 2	Nr. 3	Nr. 4	Nr. 5
Axle load	3,0 t	3,5 t	4,0 t		5,0 t	8,0 t
Motor power	2 x 3 kW		2 x 4 kW		2 x 4 kW oder 2 x 5,5 kW	
Test speed	5 km/h					
Measurement range	0 - 6 kN				0 - 6 kN oder 0 - 12 kN	
Display accuracy	3 % of measurement range end value 2 % difference between left and right hand side					
Track width min. max.	780 mm 2200 mm			930 mm 2350 mm	870 mm 2580 mm	870 mm 2800 mm
Roller diameter	202 mm					192 mm
Roller separation	400 mm					
Roller set dimensions Height Width Length	280 mm 680 mm 2320 mm			280 mm 680 mm 2470 mm	280 mm 680 mm 2710 mm	280 mm 680 mm 2925 mm
Test speed	5 km/h					
Voltage supply	3 x 400 V					
Fuse	25 A slow					
Test lane above floor use	suitable		not suitable			

	Lifting bar
System pressure	6.5 bar
Lifting capacity	2.5 t

	Weighing device
Measurement range	0 – 3.5 t
Display accuracy	± 2 % of measurement range end value

1.8   Remote Control (Option)

The test lane can be equipped with a remote control. When using a remote control differentiate between test lanes with or without PC's.

The test lane **Profi-LON** with a multi-function display (without PC) requires a remote control to store the measurement values. With the brake tester, the brake values can be allocated to the individual axles using the remote control. Additional functions are possible with the remote control, such as printing, roller drive start-up, ovality measurement.

Eurosystem: The Eurosystem and Profi-Eurosystem test lanes require no remote control to store measurement results. The test procedure with storage is conducted automatically. The complete operation of the test lane can be done using the PC. A remote control simply makes usage more convenient, e.g. for test reruns from inside the vehicle.

Two different types of remote control are available

1.8.1   Infrared Remote Control IFB3
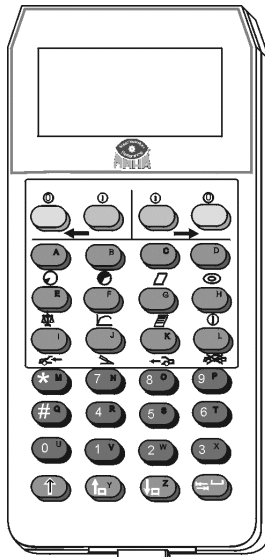
The important functions of the test lane can be comfortably controlled while in the vehicle using the remote control. Measurement values are stored, called up and printed out.

The remote control is operated by batteries and the automatic recharging box is included in standard delivery. A pedal force meter can be connected.

Key assignments and labeling depend upon the type of test lane. These are explained in Chapter 3 „Operations Profi-LON" and 4 „Operations Eurosystem" .

Additional functions are described in the operating manual for IFB3.

IFB3 Profi-LON
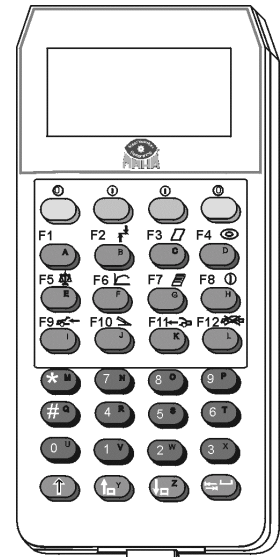
**IFB3 Eurosystem
and
Profi Eurosystem**

1.9   Pedal Force Meter (Optional)

The pedal force meter must be connected to
the remote control IFB3 to measure the pedal
force. Then it is simply attached to the shoe or
the brake pedal.

Once the pedal is pushed down the pedal force
meter automatically measures the applied
force and transmits it to the test stand.

The pedal force meter is required for brake
testing on 4-wheel drive vehicles.
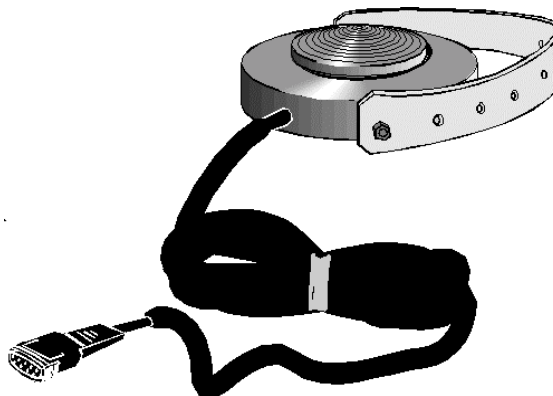
1.10   Printer

Various printers can be connected to the Eurosystem test lane. Please see the current price list
for further information.

1.11   Accessories

- Speedometer tester, type TPS
- Diesel emission tester, type MDO 2
- Brake fluid tester, type BFT 2000
- Headlight tester, types LITE 1.1 and LITE 1.2
- 4-gas tester / 5-gas tester, type MGT5
- Noise level meter

2 Safety

2.1 Introduction

Please read the operation & maintenance manual thoroughly and carefully before commissioning the machinery and comply with the instructions. The manual should always be conveniently stored to be readily available at all times.

Injury to persons incurred due to non-compliance with these operating instructions are not covered by the product liability regulations.

MAHA is not liable for damage to the test lane and/or vehicles incurred due to non-compliance with these operating instructions.

⚠️	**Warning means that instructions that are not complied with or incompletely complied with can endanger persons**

❗	**Attention means that instructions that are not complied with or incompletely complied with can lead to equipment damage.**

☞	Notes provide additional information.

Safety information is provided to warn about dangerous situations and help prevent damage to equipment and injury to persons. For your own safety it is imperative that all safety regulations included in these instructions be carefully observed.

Carefully observe all national and international safety and health regulations. Every user is responsible for observing all regulations which apply to his workplace and is obliged to integrate any new regulations that may be initiated.

2.2 Safety Regulations for Commissioning

- The MAHA test lane Eurosystem may only be commissioned by MAHA service technicians or those authorized by MAHA as service partners.
- All electrical parts of the testing machinery must be protected from moisture and humidity.

- The MAHA test lane Eurosystem may not be installed and operated in explosion endangered rooms or wash halls.

2.3 Safety Regulations during Operation

- The MAHA test lane Eurosystem may only be used and operated for its intended purpose and within its stated performance limits.
- The MAHA test lane Eurosystem may only be operated by trained, authorized personnel. The test lane and the surrounding work area must be kept clean.
- The test stand must be switched off when not in use and the main switch secured against tampering with a padlock.
- No persons are allowed in the MAHA test lane Eurosystem danger zone. Rotating or moving parts are dangerous. (e.g. test stand rollers)
- In case of emergency turn the main switch (the Emergency-Off switch) to 0.
- Running vehicle engines represent potential carbon monoxide poisoning. The operator/owner is responsible for providing sufficient air ventilation.

2.4 Safety Regulations for Service Work

- Service work such as installation, maintenance or repair work on the MAHA test lane Eurosystem may only be done by MAHA service technicians or authorized service partner technicians.
- All work done on electrical parts of the equipment is to be carried out by trained, qualified electricians.
1 Before doing any repair / maintenance / set up work turn off the main switch and secure it against tampering.

2.5 Attention

- When the vehicle is on the brake tester roller set with the driven axle, exit the roller set only when the roller drive is running. Exiting when the roller drive is not on can destroy the electric motors due to extreme acceleration of the rollers.
- Never exit the shock absorber test plates during shock absorber testing. This can lead to equipment damage.
- The brake tester may not be operated without a functioning slip monitoring. Otherwise there is risk of tyre damage.
- Never start a vehicle engine using the roller set drive. This can lead to equipment damage.
- No vehicle with a rigid 4-wheel drive may be tested on the brake tester with a standard roller set. This can lead to damage to both vehicle and test lane. Please ask your MAHA service representative for more information.

2.6 Further Information

- 4-wheel drive vehicles cannot be tested using the standard roller set. Erroneous tests will be the result.
  A special 4-wheel drive control is necessary. Please ask your MAHA service representative for more information.
- Avoid unnecessary strain on vehicle and test stand.
  Drive the vehicle slowly onto the test stand.
  Pay attention that the vehicle has sufficient ground clearance.

2.7 Combining the MAHA Test Lane with Accessories

The MAHA test lane Eurosystem may only be operated with accessories which MAHA has offered, approved and/or permitted. This applies especially for every accessory with electrical and/or mechanical connection to MAHA test lanes.

2.8 Spare Parts

Only genuine MAHA spare parts may be used to guarantee the reliable functioning and thereby the safety of the MAHA test lane Eurosystem (and/or Profi-LON). Original MAHA spare parts are manufactured under the highest quality standards.

2.9 Safety Features

The safety features are to be inspected regularly by an authorized service technician (recommended interval: 12 months). Official guidelines should be followed at all times. The test stand may not be operated when the safety features are defective.

2.9.1 Emergency-Off (Optional)

Is used for quick switch off during operation. Interrupts the power supply to the MAHA safety test lane Eurosystem.
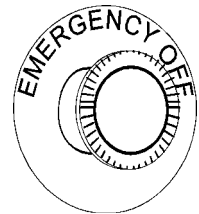
2.9.2 Lockable Main Switch

Serves as normal On and Off switch for the MAHA test lane Eurosystem and as emergency switch.

The switch can be padlocked to assure against unauthorized usage.
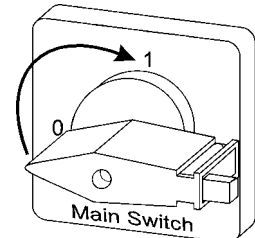
2.9.3 Sensor Rollers (Brake Tester)

Both sensor rollers must be pushed down in order to start the roller brake tester.
The RPM difference between sensor rollers and test stand rollers determines the slip. If the preset slip is reached the roller drive switches off.

2.9.4 Pit Safety (Optional)

Light barrier or infrared movement sensor. Prevents the test stand from starting up when persons are in the pit.

2.9.5 Warning and Information Labels

Warning and information labels are attached to the MAHA test lane Eurosystem. The labels may not be changed or removed and must be replaced if unreadable.

3 Profi-LON Operation (with Multifunctional Display)

3.1 Introduction

Section 3 describes the operation of the **Profi-LON** test lane equipped with multifunctional display (**without PC**).

Section 3.2 "Test Procedure" describes in detail the operation of the complete test lane with the function groups side-slip tester, shock absorber tester and brake tester. The following sections describe the final evaluation and further tests using the information provided in the two above mentioned sections.

A distinction is made between test lanes with remote control and those without:

- **Without** remote control the measurement values **cannot** be stored. The measurement values will be displayed for a preset time (standard 5 sec) and then deleted.

- **With** remote control the measurement values can be stored. They can be re-displayed via the multifunctional display or printed out. They remain stored only until the main switch is turned off.

In most cases the function groups (floor assemblies) are arranged as follows:
Side-slip tester → Shock absorber tester → Brake tester

Test sequence:

1) Side-slip test front axle

2) Shock absorber test front axle

3) Brake test front axle (including ovality test and brake effectiveness test)

4) Side-slip test rear axle

5) Shock absorber test rear axle

6) Brake test parking brake (including ovality test and brake effectiveness test)

7) Brake test rear axle (including ovality test and brake effectiveness test)

The measurement values of the side-slip tester and the shock absorber tester are automatically stored in the given order. The measurement values of the brake tester, however, can be freely allocated to axle/brake using the remote control.

As only one measurement can be stored at a time the values will be automatically overwritten when the next test is conducted. If the function groups are arranged differently, the test sequence will change accordingly.

3.2   Test Procedure

⚠	**Rotating test stand rollers are potentially dangerous.** **If <u>both</u> sensor rollers of the brake tester are pushed down with main switch turned on the rollers will start up.**

ⓘ	**Be sure the vehicle has enough ground clearance.** **4-wheel drive vehicles with a rigid 4-wheel drive control may only be tested on a suitable 4-wheel drive test lane (optional).**

☞	Before switching on the test lane it should be visually inspected for satisfactory condition. <u>No</u> vehicle may be on the test lane.

3.2.1   Switching on the Test Lane

1 Switch on
Turn main switch to position „1" .
⇒ ON lamp lights up.
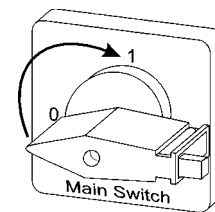
2 Initialization
Please wait.
→ON lamp goes out.
→Pointers of display first go below zero and then return to zero point of brake tester scale.
→ON lamp lights up briefly..
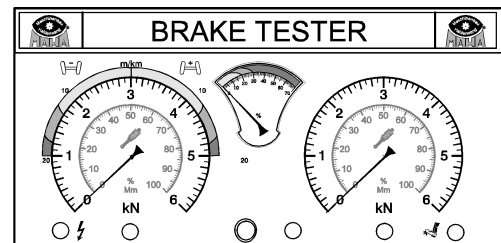
3 Press ON key
→ON lamp lights up again.
→Left pointer goes to zero point of side-slip tester scale (if connected).
→Test stand is ready.!
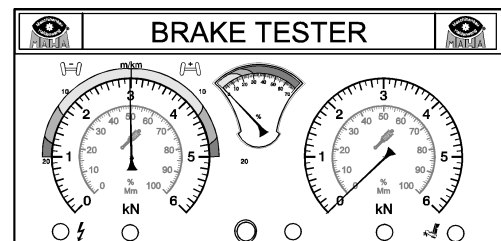
The ON key corresponds with the ★ key on the remote control.

3.2.2   Test Procedure without Remote Control

Once the test lane has been properly switched on, (paragraph 3.2.1) and ready for testing, the test procedure can start.

1   Side-slip test front axle
Slowly and straight ahead drive vehicle front axle over side-slip test plate onto test plates of shock absorber tester. Avoid any steering motions.
→Left pointer indicates side-slip in m/km.

Prepare shock absorber test
Vehicle axle to be tested is on test plates of shock absorber tester.
a) Release brake.
b) Place gear shift to neutral.

 Wheel must be straight and in centre on test plate to avoid measuring errors (especially important when equipped with FWT suspension tester). Wheel to be tested must not be blocked by brakes or gear shift.

☞   Weight will <u>not</u> be displayed as described in point 5 if an additional weighing device is integrated in the brake tester.

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3   Weight display
Axle weight is displayed once vehicle is on test plates.
Example: left display indicates 32 % or Mm and right display 33 % or Mm.
→Axle weight left is 320 kg, right 330 kg.

Weight can be displayed on shock absorber scale or brake tester scale. Setting by MAHA-service.

4   Shock absorber test
Once vehicle is on shock absorber test plates first left-hand and then right-hand plate will start vibrating.
→Once right-hand plate reaches standstill both measurement results will be displayed.

⊘   **Never exit shock absorber plates when they are still vibrating. This can result in equipment damage.**

---

5   Prepare brake test
a) Drive with front axle onto brake tester. Both sensor rollers must be pushed down.
b) Release brake.
c) Press clutch or place gear shift to neutral.
⇒ Roller drive starts automatically once both sensor rollers are pushed down. READY lamp lights up when brake test can be started.

6   Ovality test (if desired)
See section 3.4 "Ovality Test".

7   Brake force test
  a. Slowly push down brake pedal until the rollers switch off.
       The roller drive switches off as soon as the preset slip is reached.
  b. Release brake pedal immediately.

⇒ Max. measured brake force appears on
display and remains visible for the preset time.
→Rollers start up again and pointers return to
zero point.
→READY lamp lights up. Test stand is ready for
next measurement.
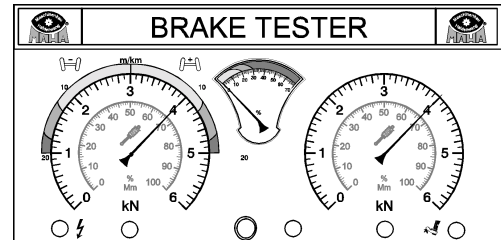
If brake force is not sufficient to reach slip the max. values will not remain on the display.!

3.2.3   Exit Brake Tester & Repeat Test with Rear Axle

Driven axle of vehicle should be driven forward (never reverse) off the rotating rollers.

→**Otherwise motor failure may occur.**

1   To exit roller brake tester correctly
  a) Wait until both rollers are running and the READY lamp lights up.
  b) Drive vehicle forward off roller set.

2   Repeat test with rear axle
  Conduct test as described above for front axle.
  a) Drive with rear axle over test plates of side-slip tester.
  b) Shock absorber test with rear axle.
  c) Brake test with rear axle:
  →Ovality test parking brake (if desired)
  →Brake test parking brake
  →Ovality test service brake (if desired)
  →Brake test service brake

3   To exit roller brake tester
  a) Wait until both rollers are running and READY lamp lights up.
  b) Drive vehicle forward off roller set.

3.2.4   Exit Test Lane

After completion of all tests correctly exit the test lane:

1   a. Drive vehicle **forward** off roller set..

OR, in case this is not possible**:**

1   a. Wait until roller drive has switched off and rollers have stopped rotating

2   b. Quickly **reverse** vehicle over brake tester, shock absorber tester and side-slip tester, and
     exit test lane..

3.2.5   Test Procedure with Remote Control

Once the test lane has been properly switched on, (paragraph 3.2.1) and ready for testing, the test procedure can start.

1   Side-slip test front axle
Slowly and straight ahead drive front axle over side-slip test plate onto test plates of shock absorber tester. Avoid any steering motions.
→Left pointer indicates side-slip in m/km.
→Measurement value is automatically stored.
→Side-slip value measured later for rear axle will be also automatically stored. If test plates are driven over several times values will be overwritten in this order.

Prepare shock absorber test
Vehicle axle to be tested is on test plates of shock absorber tester.
a) Release brake.
b) Place gear shift to neutral.

1   Wheel must be straight and in centre on test plate to avoid measuring errors (especially important when test lane is equipped with FWT suspension tester). Wheel to be tested must not be blocked by brakes or gear shift.

☞   Weight will <u>not</u> be displayed as described in point 4 if an additional weighing device is integrated in the brake tester.

3   Weight display
Axle weight is displayed once vehicle is on test plates.
Example: left display indicates 32 % or Mm and right display 33 % or Mm.
→Axle weight left is 320 kg, right 330 kg.

Weight can be displayed on shock absorber scale or brake tester scale. Setting by MAHA-service.

4   Shock absorber test
Once vehicle is on shock absorber test plates first left-hand and then right-hand plate will start vibrating.
→Once right-hand plate reaches standstill both measurement results will be displayed.

❗   **Never exit shock absorber plates when they are still vibrating. This can result in equipment damage.**

5 Prepare brake test
a) Drive with front axle onto brake tester. Both sensor rollers must be pushed down.
b) Release brake.
c) Press clutch or place gear shift to neutral.
    Automatic transmission should be placed to Neutral-Position (N) .
⇒ Roller drive starts automatically once both sensor rollers are pushed down. Yellow
READY lamp lights up when brake test can be started.

6 Activate pointer stop
If pointer stop is activated pointer will indicate measurement value until it is stored or deleted.

After each measurement the pointer stop is switched off again at final evaluation by pressing
the Auto-Off-key and must be, if desired, reactivated again before each new measurement.
Taste wieder ausgeschaltet und muss daher, falls gewünscht, vor jeder neuen Messung
wieder aktiviert werden. Press ★ key of remote control.

7 Ovality test (if desired)
See section 3.4 "Ovality Test".

8 Brake test
a) Slowly push down brake pedal until rollers switch off at preset slip.
b) Release brake pedal immediately.

⇒ Max. measured brake force appears on the
display and remains visible for the preset time.
→Rollers start up again and pointers return to
zero point.
→READY lamp lights up. Test stand is ready for
next measurement.
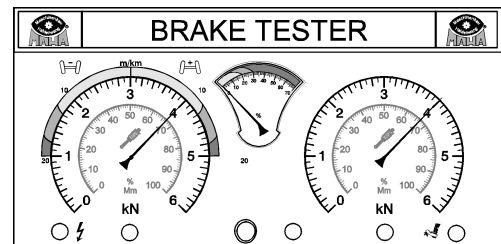
Slip is not reached?
If brake force is not sufficient to reach slip switch off drive using Motor-Off key of remote
control.
→Max. brake value is displayed.

9 Store measurement values
Brake values must be allocated to respective axles. Use appropriate storing keys on remote
control.

Vehicle must be on roller set. If vehicle is lifted out of roller set during brake test drive onto
roller set again to store the measurement values.

Slip is not reached?
If slip is not reached during brake test max. brake force can be stored during test by pressing
appropriate storing key on remote control.

Storage keys on the remote control

		IFB3 Profi-LON	IFB3 Profi-Eurosystem
Front axle	**(FA)**	I	F9
Parking brake	**(PB)**	J	F10
Rear axle	**(RA)**	K	F11

Driven axle of vehicle should be driven forward (never reverse) off the rotating rollers.

→**Otherwise motor failure may occur.**

10 Exit roller brake tester & repeat test with rear axle
See section 3.2.3.

11 End Measurement (vehicle no longer on the roller set!)
Press the Auto-Off-key of the remote control.
⇒ The test automatically does the final evaluation.

	IFB3 Profi-LON	IFB3 Profi-Eurosystem
Auto-Off-key	L	F12

3.2.6 Exit the Test Lane

After all tests have been completed pay attention to the following:

1 a. Drive vehicle **forward** off roller set.

OR, in case this is not possible**:**

1 a. Wait until roller drive has switched off and rollers have stopped rotating

2 b. Quickly **reverse** vehicle over brake tester, shock absorber tester and side-slip tester, and exit test lane.

3.3 Final Evaluation (only with remote control)

3.3.1 Completion of Measurement

☞ Exit test lane before completion of measurement and initiating of final evaluation

1 Complete measurement
Press Auto-Off key on remote control.
⇒ Test stand automatically conducts final evaluation.

	IFB3 Profi-LON	IFB3 Profi-Eurosystem
Auto-Off-key		**F12**

2 The **final evaluation** is displayed and can be printed out.
Measurement values are read as follows:
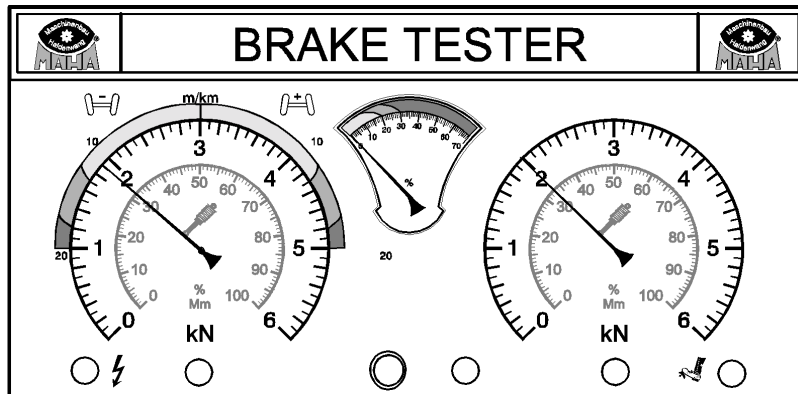
Left	**Center** (optional)	**Right**
Brake force in kN ∗ 10	Deceleration in %	Total weight

The first display of final evaluation shows the **service brake values**. The re-display of the other measurement values is described in the following section.

3.3.2   Re-Display of Measurement Values

At completion of the brake test the measurement values can be re-displayed on the analogue display using the appropriate keys on the remote control.

1   Display max. brake values
Press key for axle in question:

	IFB3 Profi-LON	IFB3 Profi-Eurosystem
Front axle (FA)	I ⇍←	F9 ⇍← I
Parking brake (PB)	J ⤷	F10 ⤷ J
Rear axle (RA)	K ←⤴	F11←⤴ K

2   Ovality values in kN
Press key for axle in question and digit key 1.

3   Wheel weight in kg
Press key for axle in question and digit key 2.

☞ If brake tester is equipped with an additional weighing device weight is <u>not</u> displayed but appears in the printout.

4   Axle deceleration in %
Press key of axle in question and digit key 3.
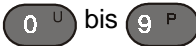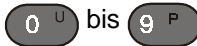
5   Pedal force in kN
Press key of axle in question and digit key 4.

6 Press digit key 9 on remote control to change display to **parking brake values**.
Measurement values can be read as described in section 4.

7 Press digit key 8 on remote control to return to display of **service brake values**.

3.3.3   Manual Weight Entry

The test stand can only conduct a final evaluation (calculation of deceleration in %) with a known vehicle weight. If the test lane is not equipped with a weighing device manually enter the vehicle weight using the following keys on the remote control.

	IFB3 Profi-LON	IFB3 Profi-Eurosystem
Auto-Off-key	L	F12
Digit keys	0 U bis 9 P	0 U bis 9 P
Delete	# Q	# Q
Confirm	* M	* M

1 After completion of brake test exit roller and set press Auto-Off key to complete measurement.
→Pointers return to zero point on brake tester scale.
→ON lamp goes out.

2 **Manual entry** of vehicle weight using remote control
A vehicle weight of e.g. 1380 kg is entered with the digit keys 1-3-8-0.
→Left-hand pointer goes to 1.38 kN (corresponds with 1380 kg).
If the wrong weight was entered use the Delete key. Then enter the correct weight.

3 Press **Confirmation** key
→Final evaluation is conducted.
Brake force of service brake is indicated on left side of display, entered weight on right side.
→ON lamp lights up.
If the wrong weight was entered use Auto-Off key to delete. Then enter the correct weight.

3.3.4   Printout of Measurements

The max. brake values can be printed out during brake test already. After final evaluation the total measurement values can be printed out (test protocol). Use the following keys.

	IFB3 Profi-LON	IFB3 Profi-Eurosystem
Printout during the brake test	C	F3 / C
Printout of the final evaluation	G	F7 / G

3.4   Ovality Test

The out-of-round of drum or disc brakes can be judged with this measurement.

The ovality can be read on the pointer deflection. The difference between the highest and the lowest pointer value is then the ovality in kN.

3.4.1   Ovality test without Remote Control

1 Drive onto roller set with desired axle..

2 Apply brakes with average force (approx. 1 kN, vehicle-dependent).

3 Hold for approx. one wheel revolution

4 Ovality is read on the pointer deflections.
    The difference between highest and lowest pointer value is the ovality in kN.

3.4.2   Ovality Test with Remote Control

1 Drive onto roller set with desired axle.

2 Apply brakes with average force (approx. 1 kN, vehicle-dependent) and hold.

3 Press ovality key on remote control and hold for 1 wheel revolution minimum.

	IFB3 **Profi-LON**	IFB3 **Profi-Eurosystem**
Ovality key	D ⊚	F4 ⊚ D

4 Release the ovality key on the remote control.

5 Release brake pedal.

❗ **If brake force is not held constant during measurement or if ovality key is not pressed for an entire wheel revolution false test values will be the result due to "artificially induced" out-of-roundness.**

The ovality value is automatically stored together with the respective axle when storing the max. brake force.

3.5   Single Wheel Test (Optional)

3.5.1   Brake Test – Single Wheel, without Remote Control

The single wheel measurement is used for testing the brake effectiveness of only one side. Use single wheel selector switch to turn on roller drive of **one** vehicle side only. Selection is possible **before or after** driving vehicle on to the roller set.

⚠️   **DO NOT leave vehicle during test. A second person is required to turn on selector switch if vehicle is already on roller set..**

Once the test lane has been properly switched on (paragraph 3.2.1) and ready for testing, the test procedure can proceed.

1 Select single wheel test
Select desired vehicle side.

This setting can be done either before or after driving onto the brake tester.

2 Do brake test
As described in paragraph *„Test procedure without remote control".*

left   right
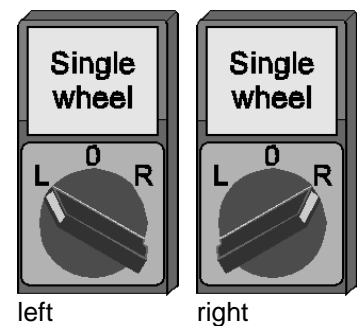
3 Change to other vehicle side
If the other vehicle side is also to be tested first turn single wheel switch to position 0.
→Roller drive switches off.
Select other vehicle side.
→Roller drive of other side switches on.

4 Complete single wheel test
Turn single wheel switch to position 0.
→Both roller drives are running.

🛈   **Exit assistance device does not work during single wheel test. At test completion turn selector switch to position 0.**

3.5.2   Brake Test – Single Wheel Test with Remote Control

The single wheel measurement is used for testing the brake effectiveness of only one side. To turn on roller drive of **one** vehicle side only use the following keys on the remote control.

Following keys on the remote control are used for this:

```
┌─────────────────────────────────────┐
│           Remote Control            │
│                IFB3                 │
├─────────────────────────────────────┤
│  ┌───────────┐     ┌───────────┐   │
│  │ Motor left│     │Motor right│   │
│  └───────────┘     └───────────┘   │
│                                     │
│         ⓪ = Motor off              │
│         ① = Motor on               │
└─────────────────────────────────────┘
```
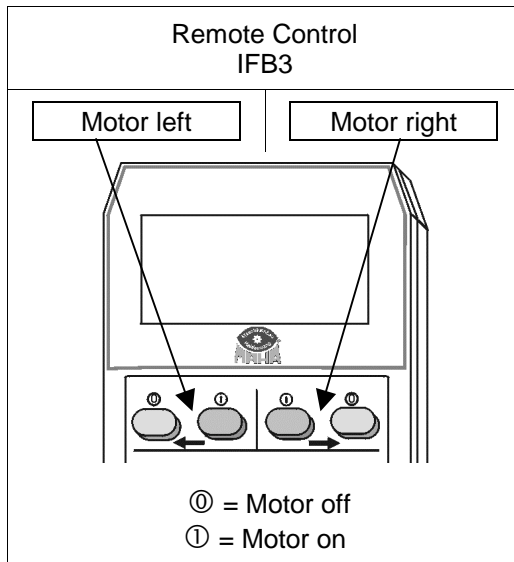
Once test lane is ready (section 3.2.1) proceed as follows:

1   Activate single wheel measurement
Press any Motor-Off key on remote control.

2   Pre-select single wheel test
Press Motor-On key on the remote key to start up desired side of roller set.

3   Conduct brake test
as described in section 3.2.4 "Test procedure with remote control".

4   Switch off roller set
Roller drive is switched off with Motor-Off key.

> **Exit assistance device does not work during single wheel test. Switch on both motors before driving off roller set.**

5   Return to standard mode
Press Motor-On keys for both roller sides.

3.6   Noise Investigation (Optional)

The manual operation of the shock absorber tester is used for noise investigation on wheels or suspension. The test plates can be switched on for as long as required. No test values are recorded.

3.6.1   Manual Operation without Remote Control

☞   Selection of the side to be tested must be done **before** the test stand is occupied.

Once test lane is ready (section 3.2.1) proceed as follows.

1   Prepare noise investigation
Use single wheel switch to select the desired side.

2   Drive onto test plate
→Test plate on selected side will vibrate until switched off with single wheel switch.
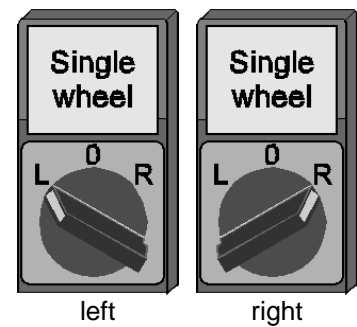
❗   **Never exit the shock absorber test plates when they are vibrating. This can result in equipment damage**

3   Noise investigation on the other side
Turn single wheel switch to position 0.
→The drive switches off.
Turn switch to the other side.
→The drive of the other side switches on.

4   Complete test
Turn single wheel switch to position 0.
→The motors switch off. The ON lamp of the analogue display blinks briefly for confirmation when the shock absorber test plates are exited.

3.6.2   Manual Operation with Remote Control

The single wheel mode is activated by pressing the Motor-On key of the side in question when the vehicle is already on the test stand.

```
┌─────────────────────────────────────────┐
│              Remote Control              │
│                  IFB3                    │
├──────────────────────┬──────────────────┤
│     Motor left       │   Motor right     │
└──────────────────────┴──────────────────┘
```

$\textcircled{0}$ = Motor off
$\textcircled{1}$ = Motor on
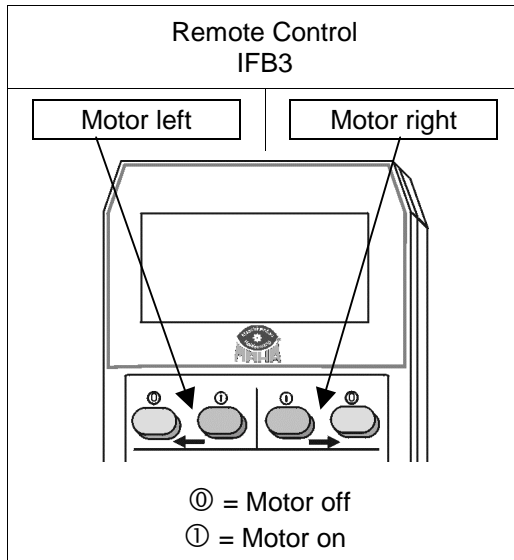
Once test lane is ready (section 3.2.1) proceed as follows.

1   Activate manual operation
Press any Motor-Off key of remote control
→Left pointer moves from zero position of side-slip tester (if present) to zero position of shock absorber tester.
Lamps of analog display blink briefly for confirmation.
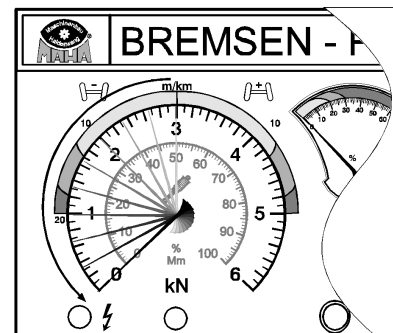
2   Noise investigation
Drive onto test plates, then press Motor-On key of desired side.
→Selected test plate starts vibrating.

Never exit the shock absorber test plates when they are vibrating. This can result in equipment damage.

3   End noise investigation
Switch off the vibrating test plate again with the appropriate Motor-Off-key, then exit the test stand.

4   Return to automatic mode
System automatically changes back to automatic mode.
→ON lamp blinks once..

3.7   4-Wheel Drive (Optional)

The 4-wheel drive mode is used to test brakes, anti-slip regulation (ASR) and automatic locking differential (ASD) of 4-wheel drive vehicles.

The 4-wheel drive selection switch is required to activate the various modes.

0 = Standard (4-wheel drive mode off)
1 = ASR/ASD test
2 = "Rigid" 4-wheel drive
3 = "Visco" 4-wheel drive
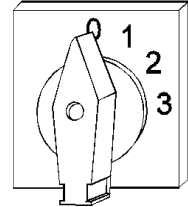
👉   Both the remote control Tele-BPS I and the pedal force meter are required to conduct the 4-wheel drive test.

The following paragraph describes the 4 wheel drive test for „rigid" and for „Visco"-4 wheel drive regulation. The tests for ASR and ASD are explained in the second paragraph.

3.7.1   Brake Test 4-Wheel Drive

A distinction is made between "rigid" and "Visco" 4-wheel drives. "Visco" 4-wheel drives are subdivided again into "hard" and "soft" drives.

Before brake test is done connect cable of pedal force meter to remote control and attach pedal force meter to shoe or brake pedal.

Attach reflex strips to vehicle tyres before the test if vehicles with "rigid" or hard "Visco" 4-wheel drive are tested.

With the help of a light barrier integrated into the brake tester exactly one wheel revolution is recorded.

A = Reflex strips   **B** = Light barrier
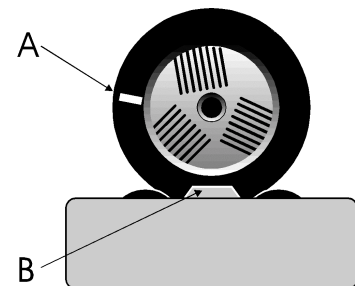
The motor control exactly records the RPM of the forward rotating rollers and transfers it to the reverse rotating rollers. In this way power transmission to the second axle and torque on the driveline are avoided.

Brakes are tested individually in the following order:
1   Front axle, left wheel
2   Front axle, right wheel
3   Rear axle, left wheel
4   Rear axle, right wheel

Once test lane is ready (section 3.2.1) proceed as follows

1   Activate the 4-wheel drive mode
Turn 4-wheel drive selection switch to desired position:
2 = "rigid"/"Visco hard"
3 = "Visco soft"

→Analogue display lamp blinks briefly for confirmation
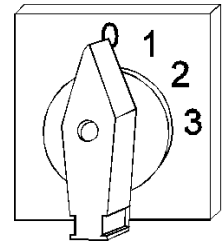
2   Prepare brake test
a) Drive onto brake tester with front axle. Both sensor rollers must be pushed down.
b) Release brakes.
c) Press clutch or place gear shift to neutral.
   Automatic transmission should be placed to Neutral-Position (N) .

3   Ovality test (if desired)
See section 3.4 "Ovality Test".

4   Brake test left
a) Start left roller set using Motor-On key on remote control.
→Left roller set rotates forward, right roller set rotates reverse.
→READY lamp lights up when brake test can be started.
b) Slowly apply brake pedal until rollers switch off.
→Roller drive switches off at preset slip.

Slip is not reached?
If brake force is not sufficient to reach slip switch off drive using Motor-Off key of remote control.
→Max. brake value is indicated by left pointer.

c. Release brake pedal immediately.
d) Read pedal force on display of remote control and note it down.
→Max. measured brake force is indicated by left pointer.
→Right pointer remains at zero.
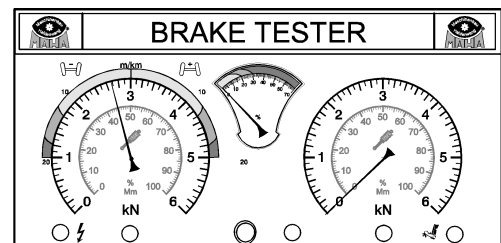
5   Brake test right
a) Start right roller set using Motor-On key of remote control.

⇒ Left pointer returns to zero.
→Right roller set rotates forward, left set rotates reverse.
→READY lamp lights up when brake test can be started
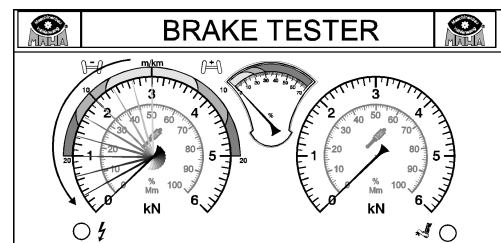
b. Slowly apply brake pedal until pedal force which has been noted down is reached.
→Roller drive switches off as soon as preset slip is reached.

Slip is not reached?
If brake force is not sufficient to reach slip switch off drive using Motor-Off key of remote control.
→Max. brake value is indicated by left pointer.

c. Release brake pedal immediately.
→Max. measured brake force is indicated by right pointer.
→Left pointer goes up again and indicates brake force of left side.
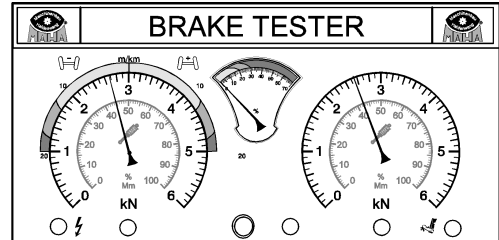
6 **Store measurement values**
Measurement values must be allocated to respectively tested axles. Press appropriate keys on remote control.
Vehicle must be on roller set in order to store. If vehicle is lifted out of roller set during brake test, drive onto roller set again.

Storage keys on the remote control

		IFB3 Profi-LON	IFB3 Profi-Eurosystem
Front axle	**(FA)**	I	F9
Parking brake	**(PB)**	J	F10
Rear axle	**(RA)**	K	F11

7 **Exit brake tester**
a) Wait until rollers are at a standstill and READY lamp lights up.
b) Drive vehicle off roller set in a forward direction.

8 **Return to standard mode**
Turn 4-wheel drive switch to position 0.

3.7.2   ASR / ASD Test

When testing ASR or ASD a "gripping" and a "spinning" tyre motion is simulated, e.g. one tyre on a dry road surface and the other on an ice patch.

In the test one roller set is blocked (dry road surface) and the other rotates freely (ice patch). If the ASR (or ASD) is working it is possible to drive the vehicle off the test stand.

1   Activate ASR/ASD-Mode
Turn the 4-wheel drive selection switch to position 1.
→Analogue display lamp blinks briefly for confirmation.
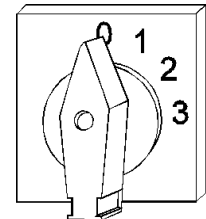
2   Prepare function test
a) Drive onto brake tester with front axle.
Both sensor rollers of roller set must be pushed down.
b) Press clutch or place gear shift to neutral.
   Automatic transmission should be placed in Neutral position (N) .

3   Function test left
a) Select left roller set using Motor-On key on remote control.
→Selected (left) roller set will be blocked.
→READY lamp lights up when test can begin.
b) Put in gear and slowly drive off roller set.
→With a properly functioning ASR (or ASD) it is possible to drive off the roller set.
→Blocking is released once sensor rollers are no longer pushed down.

If the ASR (or ASD) is defective the freely rotating roller set is accelerated!
READY lamp goes out at approx. 11 km/h.
Do not accelerate past this limit. Otherwise the roller drive could be damaged

---

4   Function test right
a) Drive vehicle in a reverse direction onto roller set again.
b) Press clutch or place gear shift to neutral.
   Automatic transmission should be placed in Neutral position (N) .
c) Repeat points **3)a)** and **3)b)** for the right side.

5   Exit brake tester
a) Wait until rollers are at a standstill and READY lamp lights up.
b) Drive vehicle off roller set in a forward direction.

6   Return to standard mode
Turn 4-wheel drive switch to position 0.

4 Eurosystem Operation (PC Program)

4.1 Introduction

The introduction of the program operation describes the program start in the first paragraph. Then information about the main menu and the system readiness follows.

The screens design is described in the third part to better show the user the individual screen elements and their operation. A short keyboard description follows.

The operating instructions guide the user through the automatic testing procedure. The screens are shown as they appear in the course of the program. A detailed step-by-step explanation is also provided.

4.1.1 Start Eurosystem

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 screen below will appear.

GB30127   V6.07.001

3 The connected devices are listed. Press <RETURN>.
☞ *Please wait*.

The main menu appears.

4.1.2   Main Menu

Generally speaking all functions or boxes on the screen can be selected using the cursor or tabulator key and then be activated by pressing <RETURN>.

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

New test can begin...

EUROSYSTEM

<1> Select vehicle
<2> Visual defect
<3> Measurements
<4> End measurement and store
<5> Store measurement only
<6> Customer data   <7> Test procedure

VEH.:

Misc F5 | Admini- stration F6 | External Program F7 | New VEH F8

The main menu shows a list of the sub-points of the system.
☞ *New test can begin...*

Now the **system is ready**.

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 description of the test procedure can be found under "*Automatic Test Procedure*".

4.1.3   Screen Elements

The individual screen elements are briefly explained for better understanding.

Please enter data   **Instruction line**

<F5> New customer   <F6> Update customer   <F9> Page deleted   **Entry mask**

Surname   **Boxes**
First name
Street
City, postal cod
Telephone   Comment

Lic. plate no.   Mileage   Init.reg.
Veh. chas. no.
Comment

Vehicle manuf.
Veh. make

<F2> Load vehicle   <F3> Load customer   <F4> Create measurement
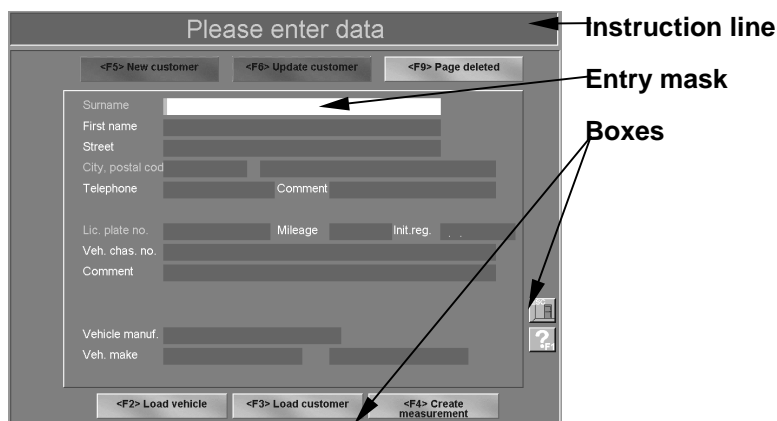
Instruction line
The top line on the screen is the instruction line. The instructions during the program procedure indicate what is to do next and/or the current operation.

☞ Please pay attention to the *Messages on the instruction line* on the screen.
These messages are indicated by ☞ *instruction text* in this description.

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

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

Within an entry mask use the cursor keys left/right. The entry masks use the overwrite mode meaning that new character entries automatically overwrite the next character in the mask. Use the Insert key to deactivate the overwrite mode.

Use the delete key (or backspace key) to delete individual characters.

Boxes
Boxes appear slightly raised as "keys" on the screen. Boxes can be activated by mouse click and by pressing the appropriate key on the keyboard.

Touchscreens offer additional operational possibilities which are particularly user-friendly.

Escape-key
The Escape key is used to exit the current screen.
The program returns to the previous screen.

Function-key F1
The F1 key is used for calling up the help program.

Page down-key
Page up-key
Use this key to move between the pages when in a function with several pages.
If the last or first page is reached the page up/down boxes will be inactive respectively. (grey highlighted).

Function-key F12
The print key activates the printout of the screen or the measurement values.

Not all boxes shown here are seen on the screen. Their position may change depending on the kind of display.

Other boxes may be larger and labeled. They are mostly self-explanatory. Examples:

RA
Rear axle

<3>
RA-service brake

External Program   F7
Function-box
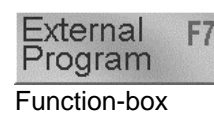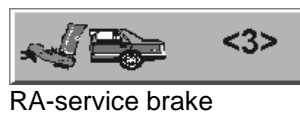
4.1.4   Keyboard Usage

The keyboard supplied is used for program guidance, for data entry such as customer address, defects, vehicle data, for calling up measurements etc.

The description which follows describes only the operation of the communication desk of the Eurosystem test lane. (or Profi-Eurosystem)

Always pay attention to the blue header (instruction line) of the screen which indicates the keys to be used.

- **Escape-key <ESC>**
  Aborting a function without storing; exiting a sub-menu..

- **Function keys <F1> - <F12>**
  Can be assigned differently depending on the usage. The detailed function key description follows later.

- **Backspace <Return> (Delete)**
  Deletes the character which was entered last or changes to the previous menu point. This key is identical with the # key on the remote control but not with the # key on the keyboard!

- **Page up/Page down**
  Use these keys to page forward or backward through the screens. This is only possible if there are several entry pages.

- **Tabulator key**
  Use the Tabulator key to jump to the next entry mask. Press the Shift key and the Tabulator key simultaneously to jump to the previous mask..

- **Digit keys**
  To enter numbers use the keys indicated or the number block on the right-hand side of the keyboard.
  The NUM key must be activated when entering numbers on the number block. (Light over the key lights up).
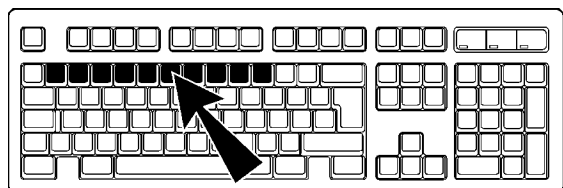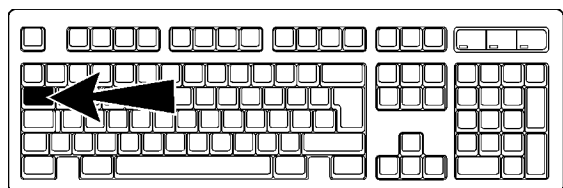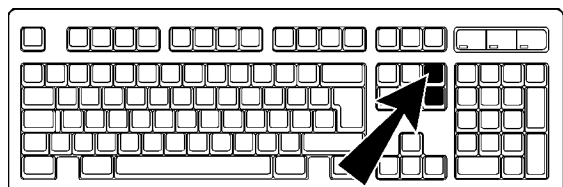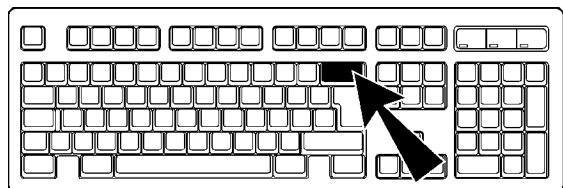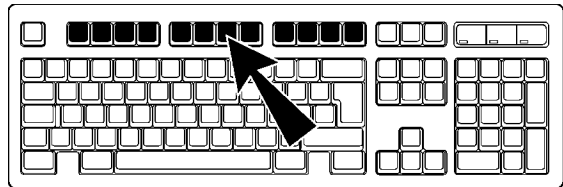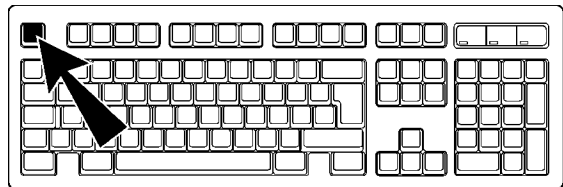
♦ **Caps-lock key**
Use this to switch the keyboard to capital letters. Press a shift key to deactivate this function.
(With Windows 95 by pressing the Caps-lock key again.)

♦ **Shift keys**
These keys are used for shifting from lower to upper case letters and for keys which are doubly assigned.
They stay activated as long as shift key is held.

♦ **Shift key for Triple Functions** (Alt Gr)
Activates keys with triple functions. Press it simultaneously with another key. The character in the lower right-hand corner of the key will then be activated.

♦ **Cursor keys** (← ↑ ↓ →)
Move to the various options and menu points using the cursor keys.

♦ **Confirmation keys** (Return, Enter)
Used to confirm the entries and carry out the menu points.
This keys correspond with the * key on the remote control but not with the * key on the keyboard.
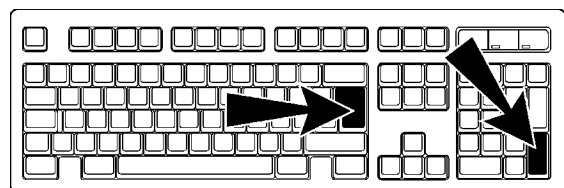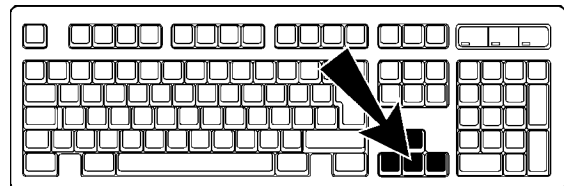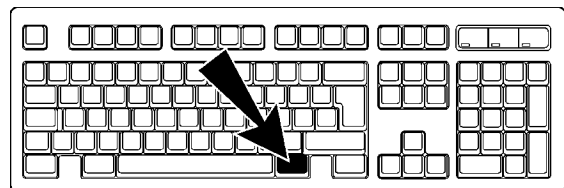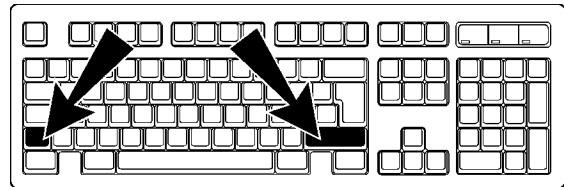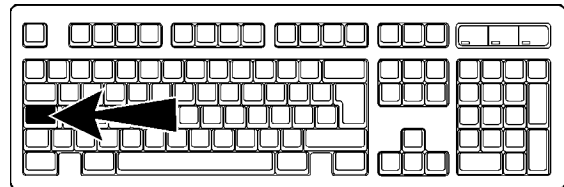
4.1.5   Exit Program

Before turning off the main switch correctly exit the PC program and Windows.

1 Press <ESC> to end Eurosystem.
A window will open over the main menu screen.

2 Select <F2> to exit the program (or use <ESC> to return to the program again).
The Windows screen appears.

3 Exit Windows and switch off the system.

Exit Program?

ESC   No.

F2   Yes.
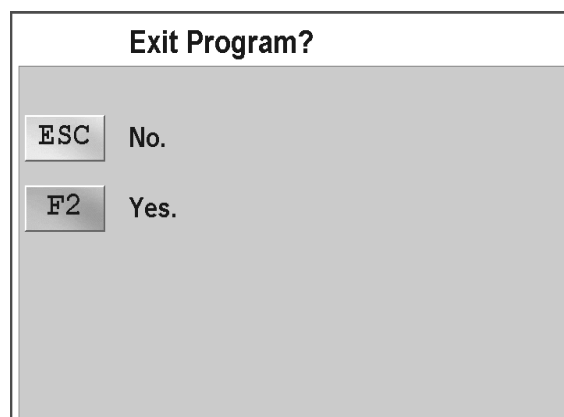
☞ The system can be set in such a way that Windows is automatically exited after Eurosystem. Please contact your MAHA service representative.

4.2   Automatic Test Procedure

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

The instruction line shows the following message:
☞ *New test can begin...*
If this message does not appear press <F8> New Vehicle

Now the test lane is ready. When the vehicle is driven onto the individual equipment the corresponding test screen appears.

New test can begin...

EUROSYSTEM

| <1> Select vehicle |
| <2> Visual defect |
| <3> Measurements |
| <4> End measurement and store |
| <5> Store measurement only |
| <6> Customer data | <7> Test procedure |

VEH.:

| Misc | F5 | Admini-stration | F6 | External Program | F7 | New VEH | F8 |

4.2.1   General Information

☞ During testing always pay attention to the messages and instructions on the instruction line (in the description this is indicated by ☞ *instruction text*).

The recorded measurement values are automatically taken over in the temporary memory and remain there until they are stored in connection with customer/vehicle **or** until they are overwritten when a new test is conducted.

☞ The order in which the measurements are filed in the memory is preset and therefore of special importance for the brake test.

It is possible to intervene in the automatic test procedure via keyboard or remote control. The function keys mentioned in this description correspond with the function keys on the remote control:

The order of tests is side-slip test, shock absorber test and brake test. The test procedure is identical for **Eurosystem** and **Profi Eurosystem**. The same applies to the entry of visual vehicle defects.

You are now guided step by step through the automatic test procedure. The operation of the individual screen elements and the keyboard should already be familiar to you. Otherwise we recommend that the chapter „*Screen elements*" and „*Keyboard operation*" should be repeated.

4.2.2   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.

Side Slip Tester test values
Deviation front axle
+   5   m/km
Track OK
Deviation rear axle
- - -   m/km
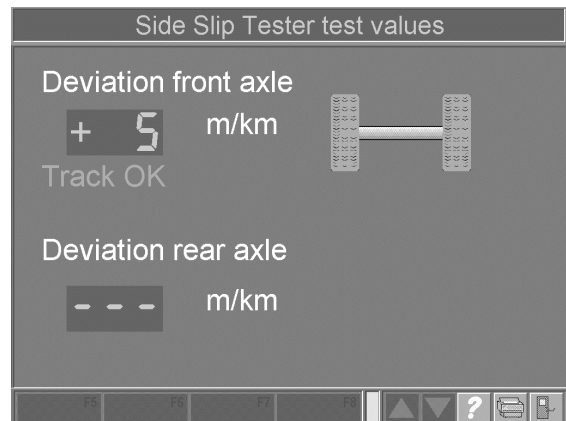
The measurement of the rear side-slip takes place when the rear axle of the vehicle passes over the side-slip plates.

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 value in the example is outside the tolerance range, i.e. the side-slip is not OK and the value is shown in red.

Side Slip Tester test values
Deviation front axle
+   5   m/km
Track OK
Deviation rear axle
-   15   m/km
Track not OK
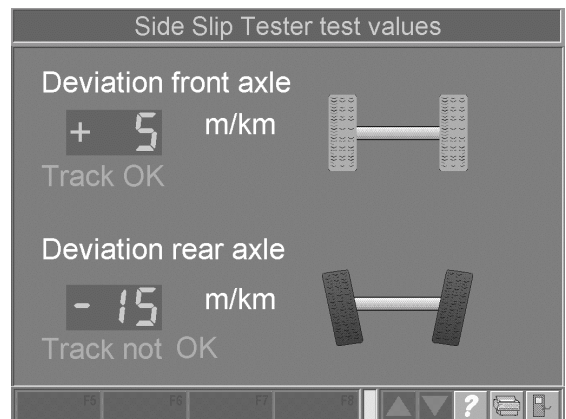
☞   Note that the first measurement value filed in the temporary storage is **always** the side-slip of the **front axle**. (second measurement value is the rear axle) This order cannot be changed.!

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 *"Review of Measurement" and "Storage of Measurements".*

4.2.3   Shock Absorber Test / Suspension Tester

Drive vehicle with the axle to be tested onto the shock absorber tester. The wheels must be straight and in centre on the test plates and must not be blocked by gear shift or brakes. The test stand is activated by the weight difference. The display below will appear.

1   In the upper right-hand box "Testing:" "FA" will appear for front axle.
Simultaneously the front axle of the vehicle outline below will be highlighted red.

2   The axle weight is recorded and shown in kg in the middle of the screen.
☞ *Shock absorber tester active*

3   The test begins when the left-hand test plate starts vibrating. The test values are plotted as a red curve in the graph. The values in Mahameter and percentage are shown on the display.

4   Then the right-hand test plate vibrates. The test values of the right-hand shock absorber are shown as a blue curve in the graph. The values appear on the display.
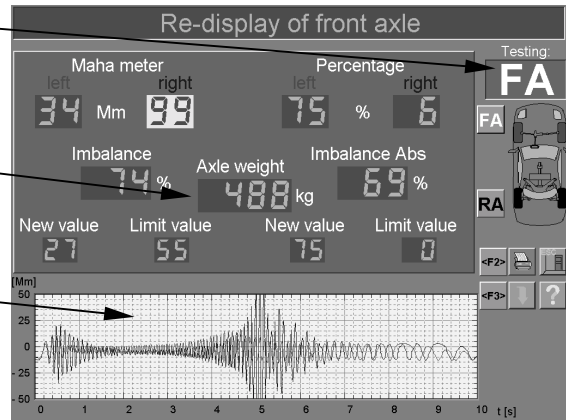
The measurement of the rear shock absorber is done when the rear axle of the vehicle passes over the side-slip plates onto the shock absorber test plates.

5   In the upper right-hand box "Testing:" "RA" will appear for rear axle.
Simultaneously the rear axle of the vehicle outline below will be highlighted red.
☞ *Shock absorber tester active*

6   Testing of the rear shock absorber is analogous to the front shock absorber . (Steps 2 to 4 as above).
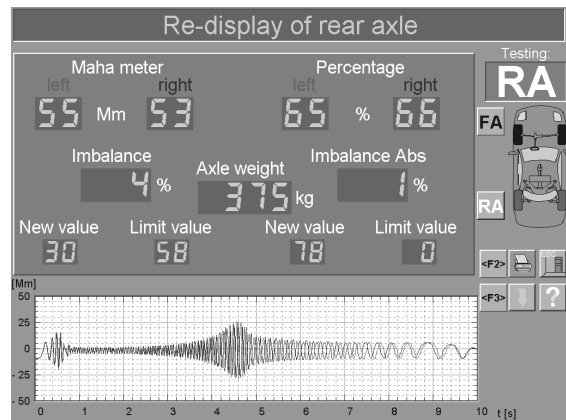
Intervention in the automatic testing procedure is possible by driving onto the shock absorber test plates anew. Check to make sure that the desired axle is shown in box "Testing" and if necessary switch with **<F2>** or **<F3>** to the proper axle. Steps **2** to **4** will run automatically again.

The measurement values can be stored at a later point and also reviewed again. See section "*Review of Measurements*" for a more detailed description.

There is the possibility to set a „**Warm up time"** with which the shock absorber tester can be brought up to operating temperature before the actual measurement. In addition, if the Mm amplitude is larger by build up than by fade out the error message „**Attention: Air in the shock"** is issued.
Please contact your MAHA-Service Technician!

4.2.4   Brake Test

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 test stand <u>cannot</u> 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 measurement values will be stored as rear axle values.

☞   Always pay attention to the box "Testing" in the upper right-hand corner of the screen. It shows which brake is to be tested. (Or 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.
The screen below appears. Instruction line: ☞ *Please wait* and then ☞ *Please brake*

4.2.4.1   Ovalitätsprüfung

1   In box "Testing" in the upper right-hand corner "FA" will appear for front axle. Simultaneously the axle of the vehicle outline below will be highlighted red.

2   A yellow range for the ovality measurement is indicated on the lower left column scale.

3   Brake slowly until the brake force is in the yellow range and keep it constant.
    ☞ *Ovality test, hold brake force*

4   Wait until the timer has run out. The ovality values are shown in the display over the timer and filed in the temporary storage.
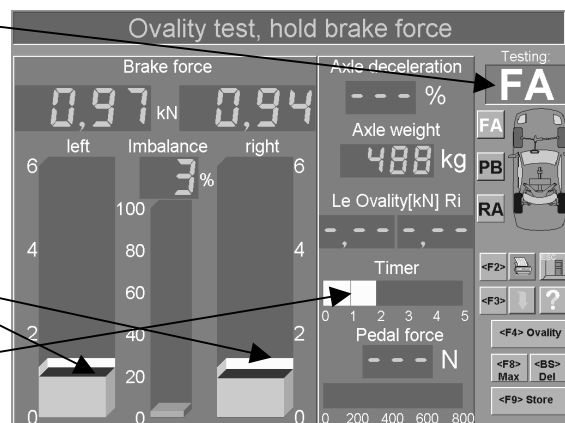
The settings for the braking range of the ovality test and the timer are preset. The timer is set for the time which corresponds with one wheel revolution.

Changes to these settings may only be done by MAHA service technicians.

The brake force test follows directly after the ovality test.

4.2.4.2   Brake Effectiveness Test

5   Slowly apply the brakes until the rollers switch off, i.e. preset slip has been reached.
☞ *Slip left* (or *right*)
The rollers stop.
☞ *Max. values*
The measured brake force appears on the display and is filed in the temporary storage. The corresponding box appears green.

6   Release brake pedal immediately.
☞ *Please brake*
This message in the instruction line confirms that 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.
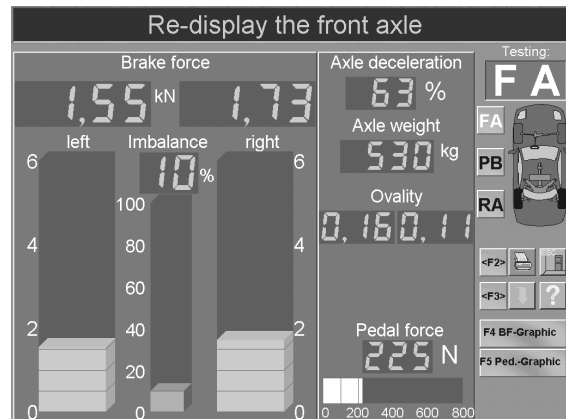
After the ovality and brake force tests for the **front axle (FA)**, the side-slip test (4.2.2) and the shock absorber test (4.2.3) for the rear axle are conducted. Then drive onto the brake tester with the rear axle.

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**.

4.2.4.3   Exit test lane

The automatic testing procedure is now finished. The display returns to the main menu. Instruction line:
☞ *Test values available (store)*

8   Wait until the roller drive of the brake tester switches off and the rollers are at standstill.

9   If possible exit 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 the shock absorber tester and side-slip tester.

10 Store the measurement values as described in section 4.2.6 "*Storage of the Test Values*".
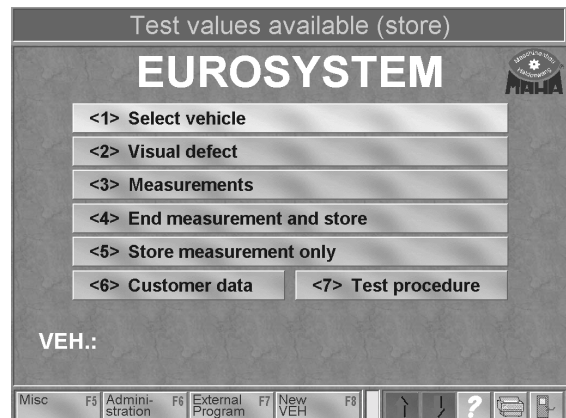
4.2.4.4   Intervention in the Automatic Testing Procedure

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. The screen below will appear. Instruction line:

☞ *Please wait*   and then   ☞ *Please brake*

1   Select <FA>, <PB>, <RA> (or <F2>, <F3>) to change between the displays for front, rear, and parking brake.

2   The box "Testing" in the upper right-hand corner of the screen shows for which brake the test can be repeated.

3   The ovality test can be repeated with <F4>.
   ☞ *Ovality test, Maintain brake force*
   Wait until the timer has run out.

4   Delete the temporary storage with <DEL> .
   ☞ *Delete temporary measurement values*

5   Use <F8> to set the displayed measurement value as max. measurement value if , for example, the vehicle has not reached the preset slip.
   ☞ *Maximum values*

6   Use <F9> to file the displayed measurement values in the temporary storage for brakes which are shown in the box "Testing".
   ☞ *Maximum values*
   ☞ *Store m. values in FA (PB, RA)*
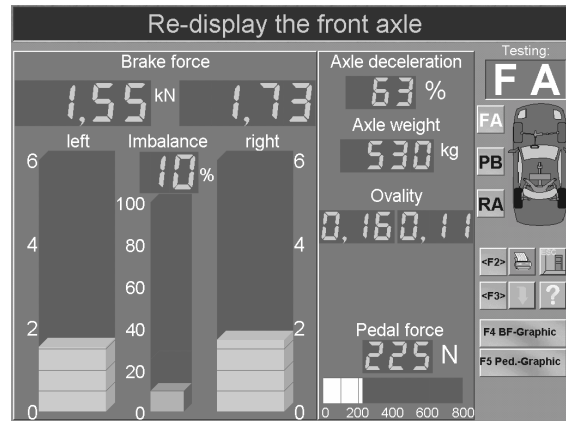
👉 The measurement values can only be changed as long as the measurement values are still in the temporary storage.

If the measurements are already stored with customer and vehicle data after the test procedure (section 4.2.6 "*Storage of the Test Values*"), after-the-fact changes are no longer possible. In this case the test will have to be done again.

4.2.5   Visual Defects

4.2.5.1   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 Eurosystem defect catalog corresponds with the Evaluation Catalog for the main inspection based on §29 StVZO.

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.
  ☞ *select defect category - level 0*

2   Use letter keys to select the defect class. As an alternative, the class can be entered in this entry mask using the digit keys. Enter:
01 for class 100,
02 for class 200, and so on.
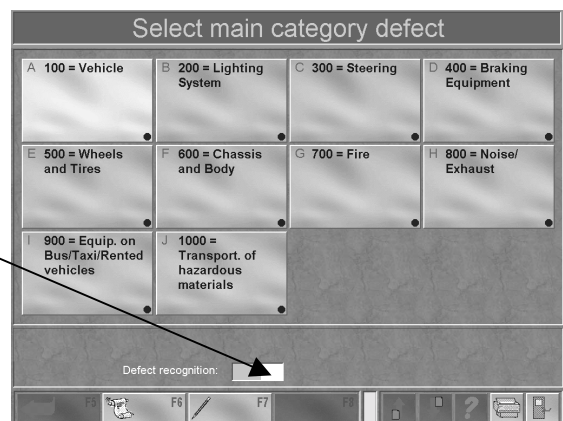
   Subdivisions of the defect classes will appear.:
  ☞ *select defect - level 1*

3   Select the defect using the letter keys. As an alternative, the entry can be done using the digit keys. Enter the last two positions of the defect number.

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

   If defect groups consist of several pages, page through them with page-up or page-down.
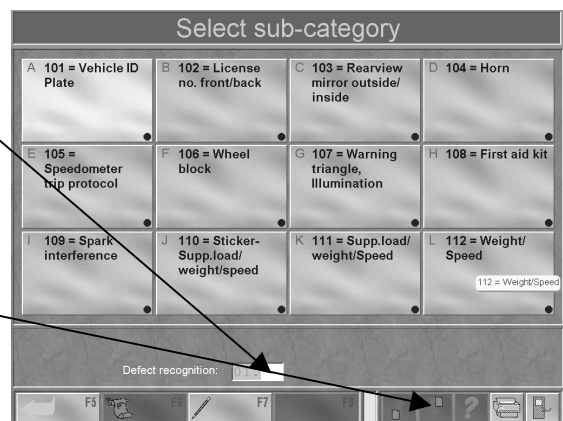
After doing steps 1 to 3 the screen to the left appears.
  ☞ *provide location and evaluation*

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   Use the letters A to D to declare the importance of the defect.
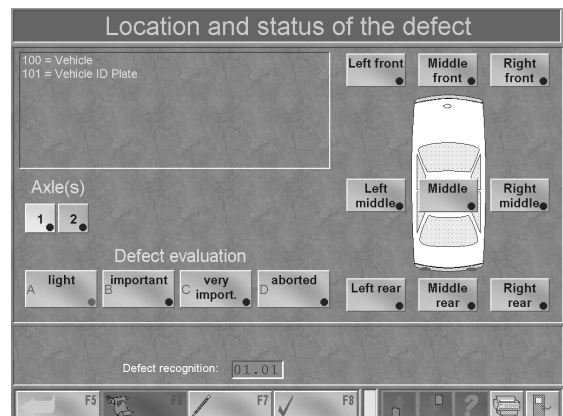
After the defect has been selected and its location set down, store this, otherwise the entries are lost.

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

7 An entry mask 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.
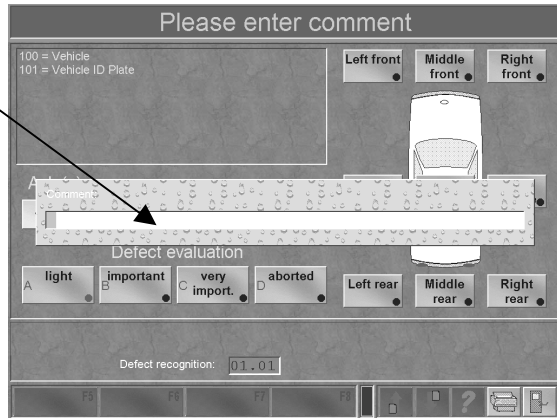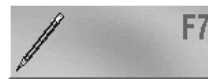
11 Select <F8> for storage of all entries. The display returns to the defect catagory screen.

4.2.5.2   Display of 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.

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.
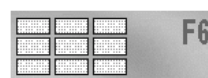
4.2.6   Storage of the Test Values

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"**. Please read section 4.3.3.

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

) *Test values available (store)*
You have already exited the test stand.

1   Please select <4> "End measurement and store". When allocating a vehicle before beginning the test select <1> "Select vehicle".

The list of the measurement database appears which is called "queue" in the following.

1   Use <F3> Change index to push a particular column to the left to make searching easier.

2   Move through the list using the cursor key until the desired customer is found or enter the search term in the upper line using the keyboard.

3   Confirm with <RETURN> or <F4>. 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 signalizes 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:
☞ *New test can begin ...*
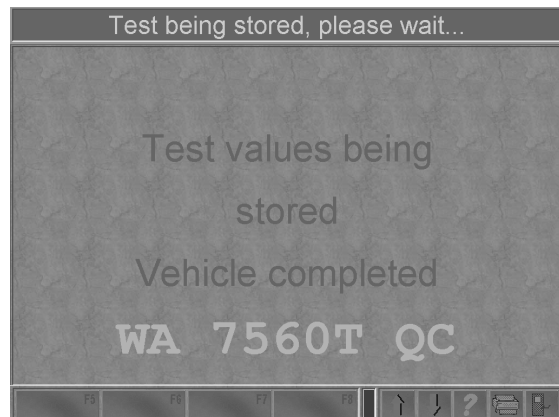
Allocation before the test

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.
☞ *New test can begin ...*
Drive onto the test lane

2   After the test the instruction line reads:
☞ *Test values available (store)...*

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.

Test being stored, please wait...

Test values being
stored
Vehicle completed
WA 7560T QC

Test values available (store)

EUROSYSTEM

<1> Select vehicle
<2> Visual defect
<3> Measurements
<4> End measurement and store
<5> Store measurement only
<6> Customer data   <7> Test procedure

VEH.:   **WA 7560T QC**

Misc   F5   Admini-stration   F6   External Program   F7   New VEH   F8
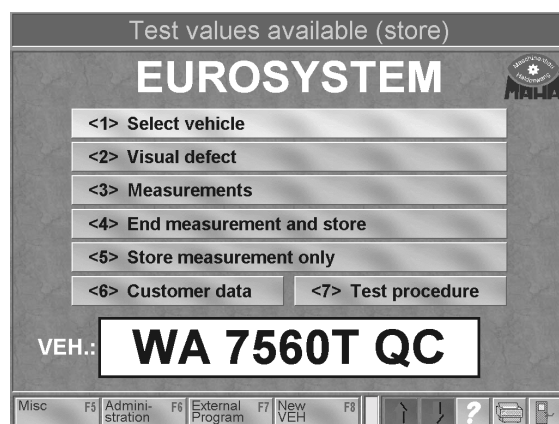
4.2.7   Prepare New Test

Make sure that the temporary storage is empty and the main menu appears with the message:
☞ *New test can begin ...*

After properly storing the test values (section 4.2.6) 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.

New VEH   F8

4.3 Customer Administration

The stored customer data can be organized in the customer 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.

This chapter explains

- ◆ how to enter new customers and store them in the master customer list
- ◆ how to allocate customers to the appropriate vehicle
- ◆ how to take customers into the queue
- ◆ how to call up (load) customers already stored
- ◆ how to change customer data
- ◆ how to delete customers from the customer list

1 Select <6> Customer data.
The screen which is shown in section "Enter customer" (below) appears. It is referred to as "customer mask" in the following.

The customer mask can also be called up via the administration:

1 Select the box <F6> Administration in the main menu.

2 Select point <1> Customer administration in the Administration menu.

4.3.1 Enter New Customer and Store

The **customer mask** is an **entry screen**. Switch between the various entry masks using the cursor or the Return key. The data entry for individual masks is numerical or alphameric.

1 The following masks must be filled out: "Surname", "Postal code, City" and "Lic plate no.".
The user is free to fill out the other masks.

   If any of the 4 requisite boxes are not filled out the following message will appear:
   ☞ *Entry not complete, enter + repeat*

2 Use <F5> to store a new customer in the customer database.
   ☞ *Customer stored in master customer list*
   ☞ *Create measurement with <F4>*
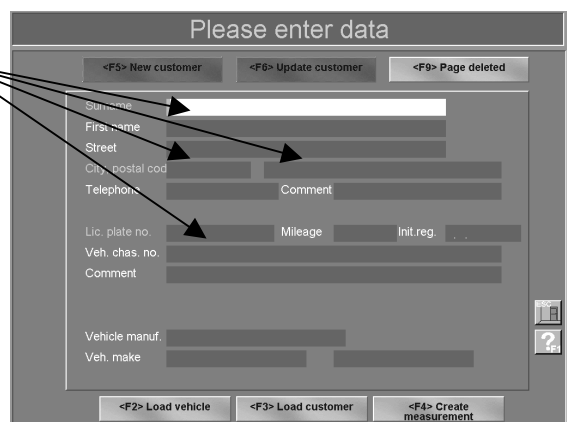
4.3.1.1   **Further functions in the customer mask:**

Use **<F9>** to delete all masks in order to enter new data.

☞ *Please enter data*

Use **<F4>** to enter the customer into the database. (Function of a queue, see 4.3.3).

Use **<F3>** to call up a customer. The customer database appears (see 4.3.4).

Use **<F2>** to allocate a customer to a vehicle. The VEH-Database appears (see 4.3.2).
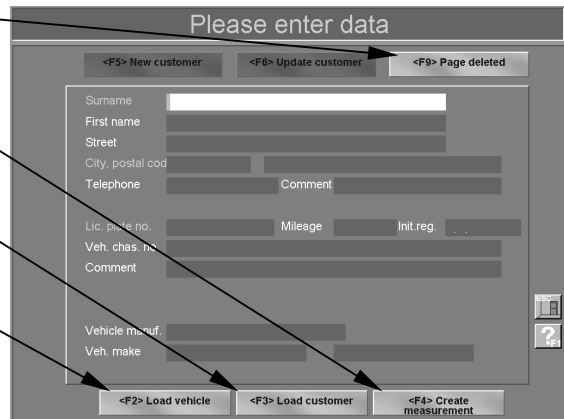
Use **<ESC>** to exit the customer mask and return to the main menu.
The function **<F6>** Update customer appears on the upper part of the screen as inactive (grey highlighted). This is described in detail in section 4.3.5 *"Change customer"*.

4.3.2   Allocate Customer to Vehicle

After entering customer data the measurement can start immediately. However, it makes sense to allocate the customer first to the respective vehicle via the VEH database. The **limit and new values** for shock absorber and emission values from the VEH database appear on the test screens **for comparison**.

Select **<F2>** load vehicle in the customer mask. The vehicle database below appears:

1   Use <F3> Change index to move a particular column to the left to make the search easier.

2   Move the marking with the cursor keys until the desired VEH is marked or enter the search word in the upper line using the keyboard.

3   Confirm with <RETURN> or <F4>. The VEH is taken over into the customer mask.
    ☞ *Create measurement with <F4>*

The following data can be put into the VEH database in addition to manufacturer and model:

- VEH model 2 (model code number)
- Date from/Date to (Manufacturing period)
- Limit values for shock absorber test
- Limit value for brake test

- Key no. 1, 2 and 3
- Cubic capacity
- Axle weight
- Limit values for exhaust test

4.3.3   Taking Customers into the Queue

A queue function in the Eurosystem program clearly separates the administrative tasks from the testing process.

In the administration the customer is registered for testing (taken into the queue). This procedure is referred to as "**Create measurement**". The inspector then calls up the customer for testing out of the queue.

4.3.3.1   Create measurement for new or existing customer

1   a) Enter the data for the new customer and confirm with <F5>.
    ☞ *Customer stored in customer master list*
    or
    b) Call up an existing customer
    (see 4.3.4 "Display customer data").

2   Select <F4> Create measurement. The customer is taken up into the measurement database queue.
    ☞ *Measurement created (store)*

3   Use the <ESC> key to exit the customer mask and return to "Office" screen.

4   Use <ESC> to exit the "Office" and return to the main menu.

5   Select <1> Select vehicle. The measurement datebase appears with the customers in the queue.

6   Use the cursor keys to select the vehicle to be tested and confirm with <RETURN>.

7   The license plate number of the vehicle appears in the last line of the main menu. The test can begin.

Differentiate between:

⬥   New customers who are **only** to be taken into the master customer list (description in section 4.3.1 *Enter New Customer and Store*).

⬥   New customers who are to be taken into **both** the master list **and** the queue (description as above)

⬥   Existing customers who are to be taken into the queue (description as above)

⬥   New customers who are only to be taken into the queue but not into the master list. For example, if a customer is only coming once for a test (description follows in 4.3.3.2)).

4.3.3.2   Create measurement without entering customer in database list

1   Enter the data for the new customer.

2   Select <F4> Create measurement. A window opens over the customer mask. (screen below).

Please enter data

3   a) Use <ESC> to return to the customer mask, measurement is not created.
or
b) Use <F2> to take up the customer into the master customer list and into the queue.
or
c) Use <F3> to put the customer only into the queue of the measurement database and not into the customer master list.

New customer not stored

ESC   Cancel

F2   Add customer to customer record+ Create test

F3   Do not add customer+ Create test

4.3.4   Display (Load) Customer Data

Call up an existing customer out of the customer master list in order to display customer data. Select **<F3>** Load customer in the customer mask. The Customer database appears.

1   Use <F3> Change index to move a particular column to the left to make the search easier.

2   Move the marking with the cursor key until the desired VEH is marked or enter the search word in the upper line using the keyboard.

3   Confirm with <RETURN> or <F4>. The VEH is loaded into the customer mask.

Starting out from this display you now can

♦ Create measurements, see section 4.3.3, or

♦ Change, expand, update customer data, see section 4.3.5

4.3.5   Change, Expand, Update Customer Data

1   Call up the customer with <F3> from the customer database (see section 4.3.4). The customer appears in the customer mask.

2   Use the cursor keys to move to the entry mask where the changes are to be made and change or expand the data.

3   Use <F6> to store the changes in the customer database. The old dataset is overwritten.
    ☞ *Customer data are updated*

Take care when changing customer data. As soon as the <F6> function is selected the original data will be lost.

If for any reason the wrong box has been overwritten or deleted and the error has been caught **in time** simply select <F9> delete page. Then call up the customer again from the database. Nothing will have been changed.

4.3.6   Delete Customer Data

Customer data deletion is a somewhat longer process. This process adds a measure of safety to prevent data from being unintentionally deleted. Carefully consider any data deletion!

1 Select <F6> Administration in the main menu.
  The "Administration" menu appears.

2   Select <3> File administration in menu "Administration".
    The screen of the file administration appears.

3   Select <1> Delete individual customers.
    The customer database appears.

4   Move the cursor through the customer database and select the customer which is to be deleted.

5   The selected dataset is **marked as deleted** with <F4>.

6   A message appears. Wait for 3 seconds until the file administration menu appears again.

Selected datasets are only marked as deleted for the moment, i.e. the datasets are still physically present in the database.

The actual deleting process takes place when the database is newly packed (see 4.6.1.4). During this particular period (marking…packing) the datasets can still be restored (see section 4.6.1.3).

4.4   Re-Display 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 The screen to the left shows the measurements database.

3 Use the cursor key until the desired VEH is marked or enter the search word in the upper line with the keyboard.

4 Confirm with <RETURN> or <F4>. The measurement values are called up and are available for selection as shown in the screen below.

Please pay attention to the line:
Lic. plate no.:   Test date: Customer name:
The vehicle data appear for the vehicle which is currently being tested or which was loaded from the database.

5 Select the desired test stand with the cursor keys and confirm with <RETURN>.
The selection can also be done using the function and/or letter keys.
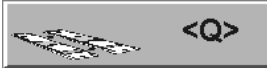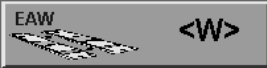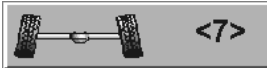
Explanation of the Key Symbols
A measurement can only be re-displayed if the corresponding equipment is integrated into the test lane and the test was actually conducted.

The functions marked with a ** are not available with the Profi-Eurosystem program.

<1>	<2>
Service brake values, front axle	Parking brake values
<3>	<4>
Service brake values, rear axle	Final evaluation brake test
<P>	<Q>
Performance tester values**	Single brake values platform tester**
EAW <W>	<5>
Final evaluation Platform tester**	Shock absorber values, front axle
<6>	<7>
Shock absorber values, rear axle	Side-slip values
<8>	00029572 <9>
Speedometer values**	Odometer values**
<T>	<A>
Toe angle difference values**	4-gas tester values**
<O>	<L>
Diesel emission values**	Light tester values**
CHECK <M>	<B>
Visual defects	Brake fluid values**
<S>	
Noise level values**	

To the right of the symbol boxes there is a light indicating the test result:

RED
= failed [1]

GREEN
= passed

GREY
= not tested

[1] i.e. limit values of the VEH database or system variables were exceeded.

4.4.1   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 <1>. The brake test selection menu appears.

2   Select the brake values to be re-displayed:
<1> front axle
<2> parking brake
<3> rear axle
<4> final evaluation.
The display of the brake force values appears which are part of the automatic testing procedure. Measurement value which are outside the approved limit values are shown in red.
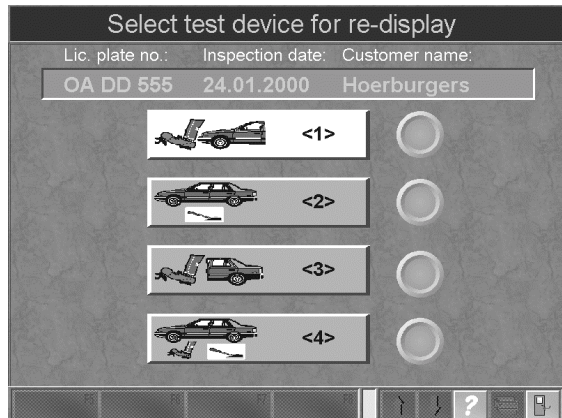
3   Select among <FA>, <PB> or <RA>, to switch between the displays for front, rear or parking brake. The keys/boxes <F2> and <F3> have the same function.
The box „Testing:" shows which brake the measurement values apply to.

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

5   Use the box Print or function key <F12> to print out the measurement values.
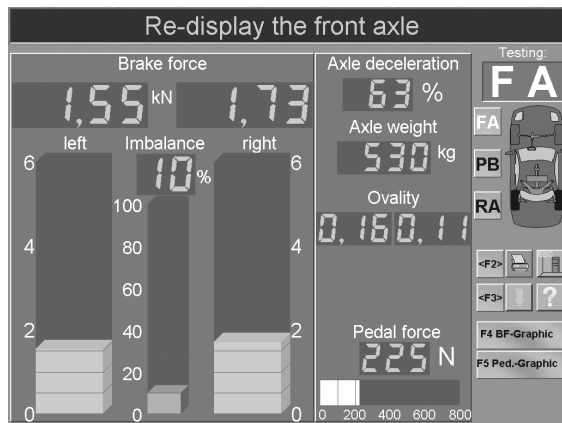
6   Use the <↓> key to page forward to the next key which gives more information about the measurement values.

7   Use the <↑> key to page back to the previous screen.

8   Use <F4> BF-Graphic and <F5> Pedal Graphic to page to the appropriate graphic (screens and explanations next page).
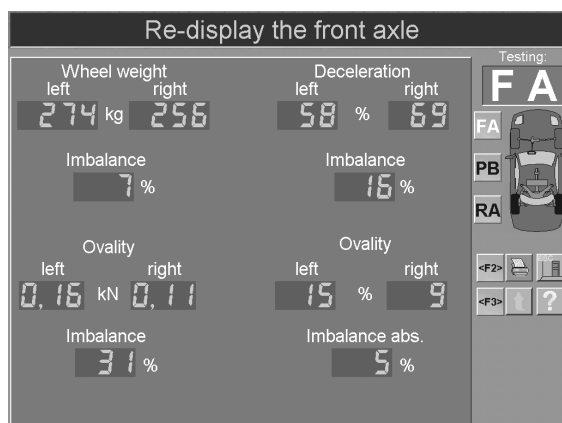
4.4.1.1   Brake force graphic

The brake force is displayed here left over right. The values are shown in kN and their difference can be read in percentage.

The curve should be within the corridor lines. The corridor can be changed in the variables list.

Use **<F12>** to print out the **displayed values**, and **<F11>** prints out the **values of all axles** in comparison to each other.

Use the **<↓>** key to page forward to the pedal force graphic.

Use **<ESC>** to exit this screen and return to the brake force value screen.

4.4.1.2   Pedal force graphic

Pay attention that in order to conduct this measurement the pedal force meter and the Tele-BPS remote control are required.

The measurement values appear on the brake force value display.

Use **<F5> Pedal Graphic** to page to the appropriate screen.
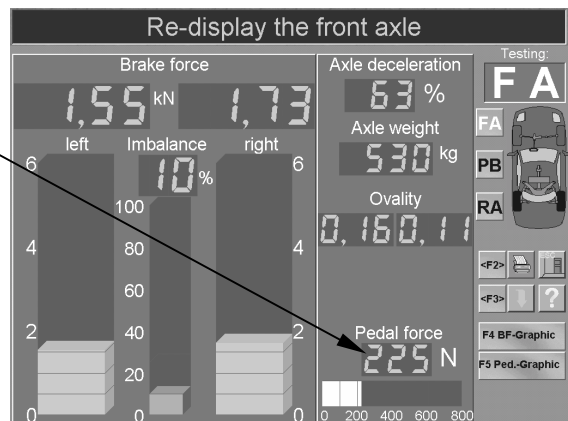
The pedal force graphic shows the curve of the brake force over the pedal force. Two curves can be seen, green for left and blue for right.

Use **<F12>** to print out the **displayed values**.

Use the **<↓>** key to page forward to the brake force graphic.

Use **<ESC>** to exit this screen and return to the brake force values.
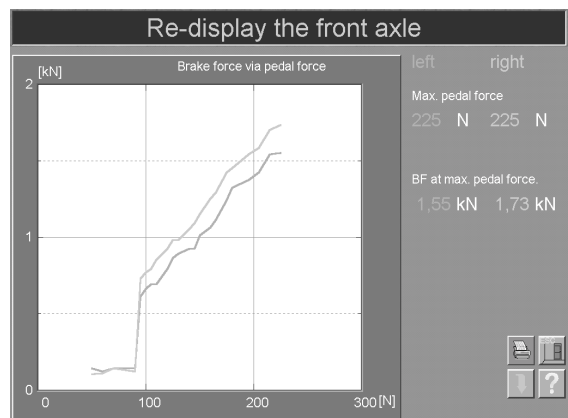
4.4.1.3   Final Evaluation Brake Test

1   Use **<4>** 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:

Final evaluation	
Final evaluation	
Total weight	**863 kg**
Brake force service brakes	**6 kN**
Brake force parking brake	**2 kN**
Deceleration service brakes	**75 %**
Deceleration parking brake	**21 %**

2   Use **<F12>** to print out the displayed values.

3   Use **<ESC>** to exit the screen and return to the selection display again.
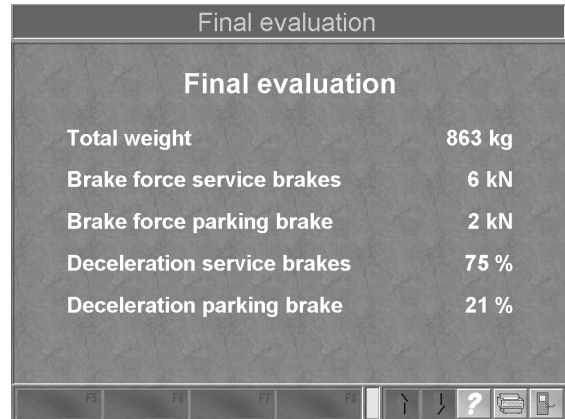
Total weight not recorded:
The brake test was conducted as the only test on a brake tester without weighing device.

2   The screen opposite will appear. It shows the brake values and is identical with screen above. Only the box **<F5> Weight entry** has been added.

3   Use **<F5>** to switch to the display for the weight entry screen.

Final evaluation	
Final evaluation	
Total weight	**1530 kg**
Brake force service brakes	**7 kN**
Brake force parking brake	**4 kN**
Deceleration service brakes	**49 %**
Deceleration parking brake	**29 %**
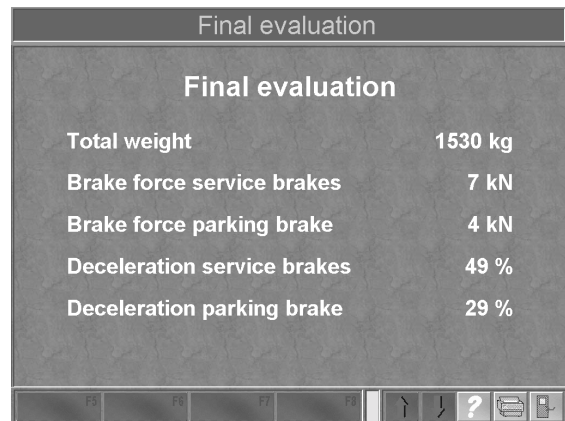
4   Enter the weight in kg and confirm with <RETURN> to start the final evaluation.

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

Continue with Return, End <ESC>

Weight entry screen

Total weight   – – – –   **kg**
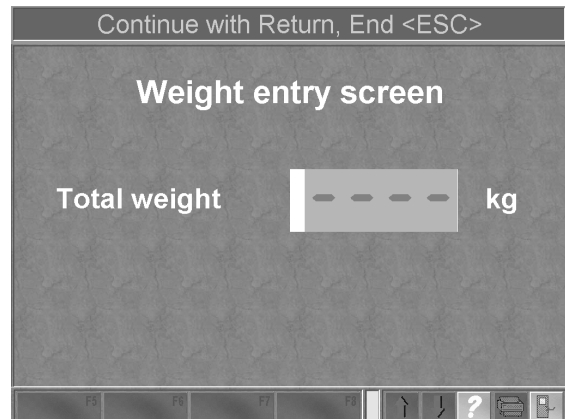
4.4.2   Shock Absorber Test

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

1   Select <5> to re-display the shock absorber values for the front axle *or*

Select <6> to re-display the shock absorber values for the rear axle.

2   The screen opposite appears. Measurement values outside the given limit values or the Eurosystem variables are displayed in red.

3   In the box "Testing:" in the right-hand corner of the screen "FA" appears for front axle. Simultaneously the front axle of the vehicle outline below will be highlighted red.
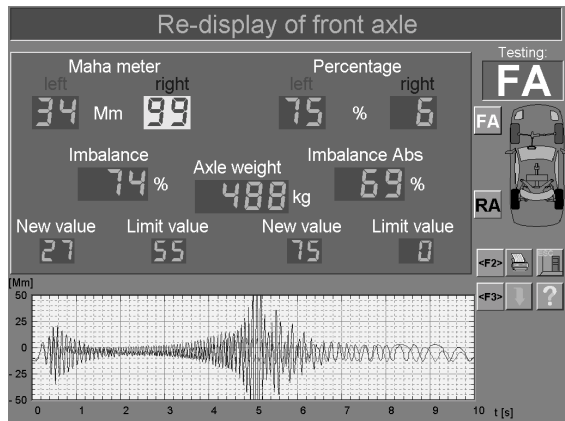
4   Select <FA> or <RA> to change between the display for front/rear axle (the keys <F2> and <F3> have the same function). The box "Testing:" shows to which shock absorbers the measurement values apply.

5   Use <ESC> to exit this screen and return to the selection display.

6   Use <F12> to print out the measurement values.

7   Use the <↓> key to page forward to the next screen which defines the measurement values even further.

8   Use the <↑> key to page back to the previous screen.

4.4.3   Side-Slip Test

1   Select **<7>** to re-display the side-slip test.

2   The display of the side-slip tester appears. Measurement values outside the given limit values are displayed in red.

3   Use <ESC> to exit this screen and return to the selection display.

4   Use <F12> to print out the measurement values.

Side Slip Tester test values

Deviation front axle

+   5   m/km

Track OK

Deviation rear axle

- 15   m/km

Track not OK
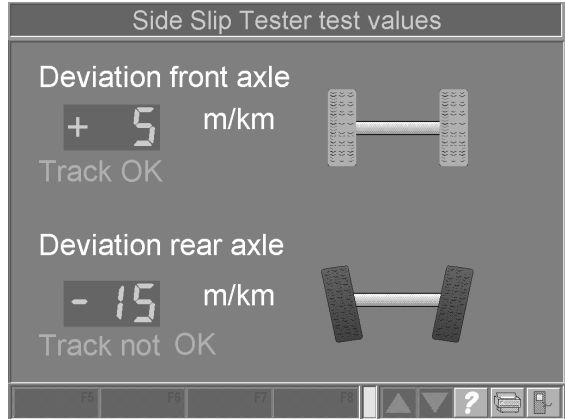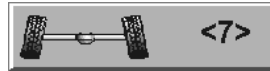
4.4.4   Speedometer Test

1   Select **<8>**. The selection display for the speedometer test appears.

2   Select **<1>** to redisplay the speedometer test.

The screen shows the target and actual speeds.

3   Use <ESC> to exit this screen and return to the selection display.

4   Use <F12> to print out the measurement values.

Rquest the special operating manual for the speedometer tester.

Re-display the speed values

Speeds in km/h

	Target		Actual	
1.	---,-	km/h	---,-	km/h
2.	---,-	km/h	---,-	km/h
3.	---,-	km/h	---,-	km/h
4.	---,-	km/h	---,-	km/h
5.	---,-	km/h	---,-	km/h
6.	---,-	km/h	---,-	km/h
7.	---,-	km/h	---,-	km/h
8.	---,-	km/h	---,-	km/h
9.	---,-	km/h	---,-	km/h
10.	---,-	km/h	---,-	km/h

4.4.5   Odometer Test

1   Select **<8>**. The selection display for the odometer test appears.

2   Select **<2>**, to redisplay the odometer test.

Ten distance measurements which have been conducted will be displayed.

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

4   Use <F12> to print out the measurement values.

Please ask for the detailed operation manual.

Re-display the distance tests

Correction factor: ---,- %
Distances in km

1.	--,---	km	6.	--,---	km
2.	--,---	km	7.	--,---	km
3.	--,---	km	8.	--,---	km
4.	--,---	km	9.	--,---	km
5.	--,---	km	10.	--,---	km

Average distance length: --,--- km
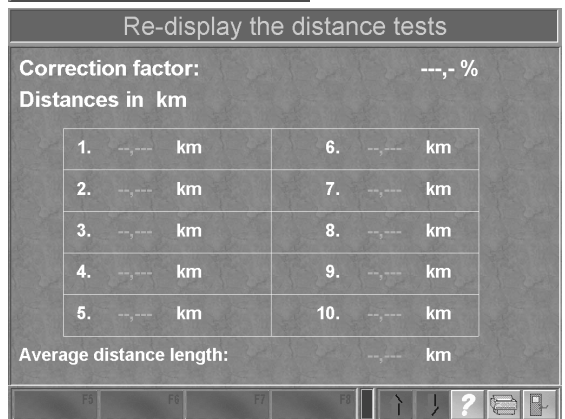
4.4.6 Toe Angle Difference

1 Select **<T>** to re-display the toe angle difference.

2 The measured toe angle difference as well as the max. steering angle are shown.

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

4 Use <F12> to print out the measurement values.

Please ask for the detailed operation manual.

4.4.7 4-Gas Test

1 Select **<A>** to re-display the 4-gas test.

2 The measured emission values are displayed.

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

4 Use <F12> to print out the measurement values.

Please ask for the detailed operation manual.
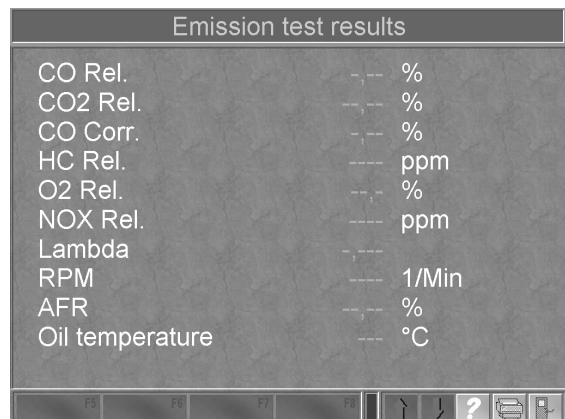
4.4.8 Diesel Emission Test

1 Select **<O>** to re-display the diesel emission test.

2 The diesel emission values are displayed.

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

4 Use <F12> to print out the measurement values.

Please ask for the detailed operation manual.
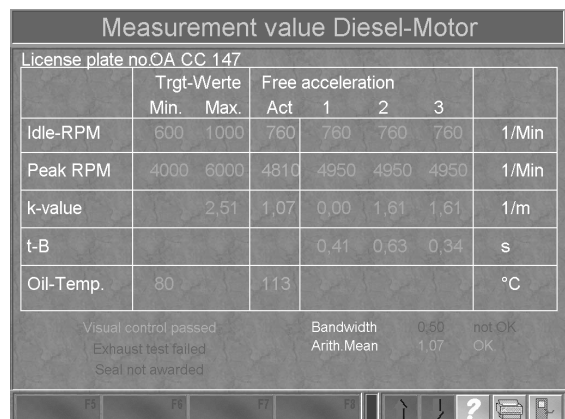
4.4.9   Headlight Tester

1   Select **<L>** to re-display the headlight test.

2   The measurement values of the headlight tester are displayed.

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

4   Use <F12> to print out the measurement values.

Please ask for the detailed operation manual.

4.4.10   Visual Defects

1   Select **<M>** to re-display the visual defects.

2   The evaluation catalogue of defects appears.

3   Use <F6> to call up the list of defects. After-the-fact changes are *not* possible.

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

5   Use <F12> to print out the measurement values.

4.4.11   Brake Fluid Test

1   Select **<B>** to re-display the brake fluid test.

2   The measurement values of the brake fluid test are shown.

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

4   Use <F12> to print out the measurement values.

Please ask for the detailed operation manual.

4.4.12   Noise Level Test

1   Select **<S>** to re-display the noise level test.

2   The measurement values of the noise level test are displayed.

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

4   Use <F12> to print out the measurement values.

Please ask for the detailed operation manual.

Test value: Noise level tester

Test 1   63,5 [dB A]

Test 2   76,6 [dB A]

Test 3   84,3 [dB A]
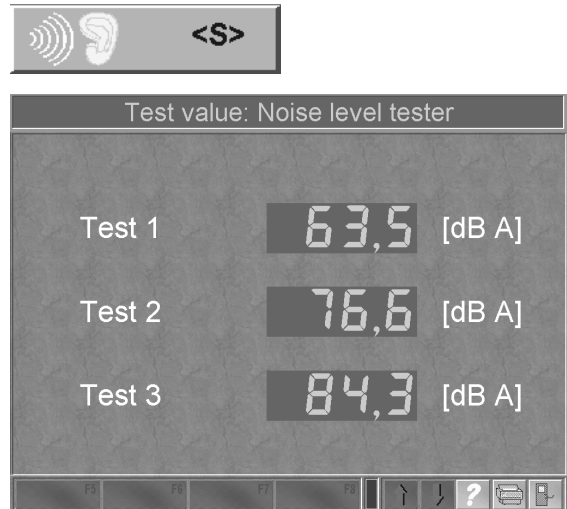
4.4.13   Wheel Alignment

1   Select **<3>** to redisplay the wheel alignment.

The measurement values of the wheel alignment are displayed.

2   Change to the rear axle with <F5>.

3   Use <ESC> to exit the screen and rturn tot he selection display.

4   Use the <F12> to start the print out.

Please ask for the detailed operation manual.

Alignment of the front axle
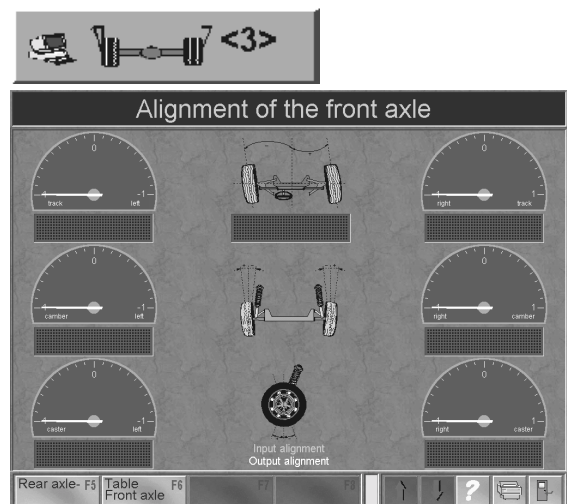
4.4.14   Performance Test

1   Select **<P>** to redisplay the performance tester.

The measurement value of the performance test are displayed.

2   Use <ESC> to exit the screen and return to the selection screen.

3   Use <F12> to start the print out.

Please ask for the detailed operation manual.

Re-display LPS test values

License pl. no.:
Date:
Time:

Pnorm: ----,- KW
Torque: ---- Nm
Turbidity: --- %
Consumption: ---,- g/KWh
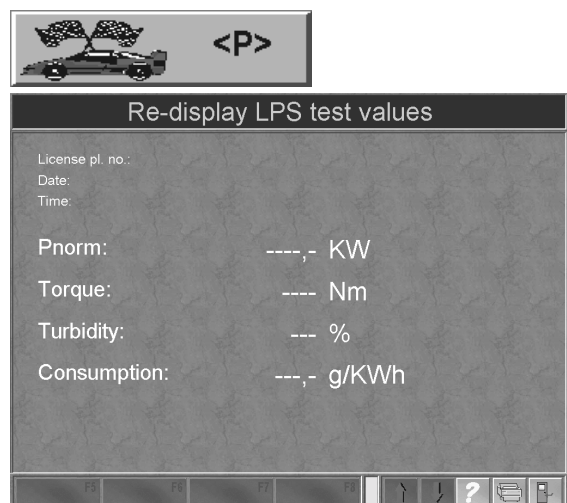
4.5   Vehicle Administration

Vehicle specific data can be organized in the vehicle administration. Each vehicle is stored as a dataset which includes the vehicle manufacturer together with model of vehicle and all important data and values.

The stored vehicles can be allocated to a customer for a vehicle test. The respective limit and new values are then included in the test screen display for comparison purposes.

This chapter explains:

* how to enter new vehicles and include them in the vehicle database
* how to call up (load) existing vehicles
* how to change, expand, and update vehicle data
* how to delete vehicles out of the vehicle database

How a vehicle is allocated to a customer is explained in section 4.3.2 "*Allocate Customer to Vehicle*".

1   Select **<F6>** in the main menu.

2   Select <2> Vehicle administration in menu "Office".

3   The screen below appears which is referred to as **vehicle mask** in the following.
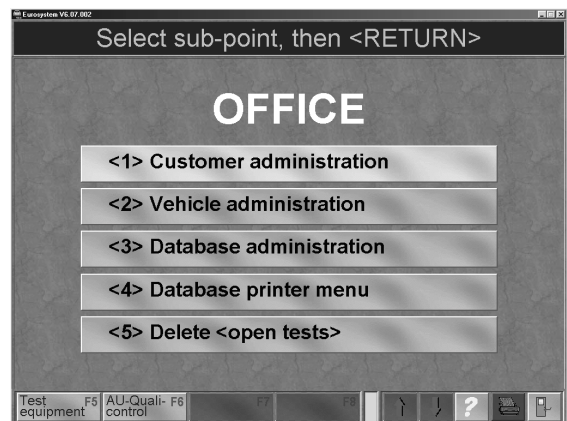
4   The vehicle mask is an entry screen. Switch among the entry boxes using the cursor keys or the Return key.

5   The data entry in the individual boxes has been fixed for alphabetical, numerical, or alphameric entry.
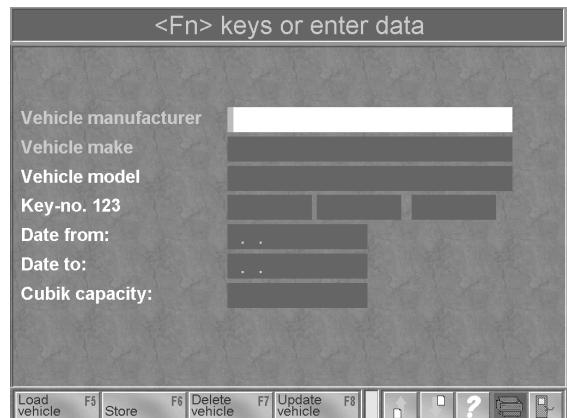
4.5.1   Enter New Vehicle and Store

1   Call up the vehicle mask from the "Office" menu and enter new vehicle data using the keyboard as described below.

2   To enter a vehicle it is necessary to fill in the masks „Vehicle manufacturer" and „Vehicle model". The user is free to decide if the remaining masks are to be used.

3   Move to the next page with the <↓> key (see the screen below).
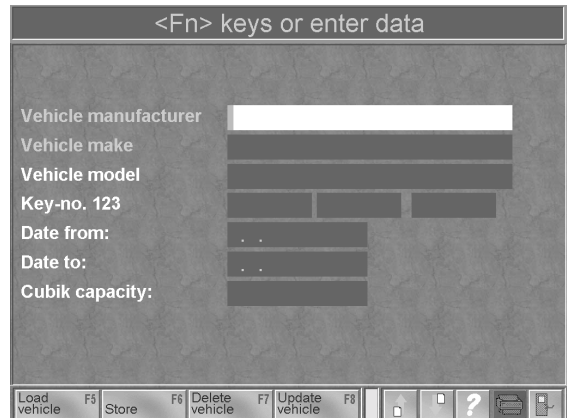
On page two the dataset for limit and new values for shock absorbers and brakes can be expanded.

4   Use the <↑> key to page back to the previous screen.

5   Use the <↓> key to page forward to the next page. (see screen below).
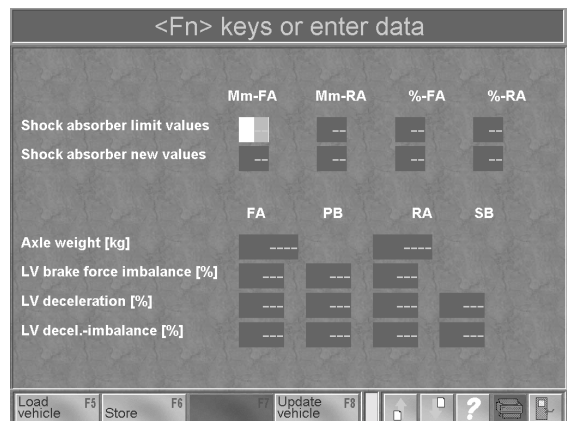
On page three there is the possibility to enter 4-gas limit values for the vehicle.

6   Use the <↑> key to return to the previous screen.
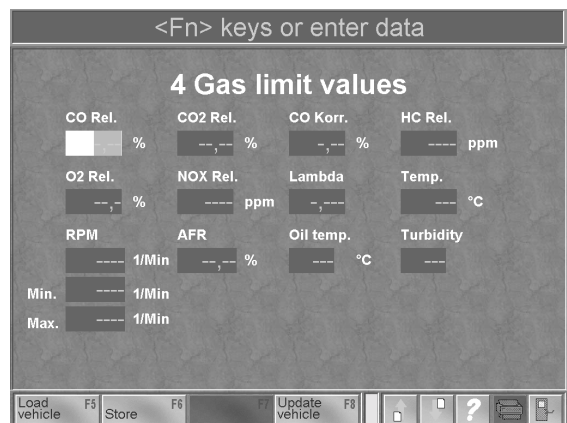
7   Select **<F6>** to store new vehicle data.
    ☞ *New VEH being stored…*
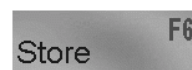
4.5.1.1   Shock Absorber Limit Values as Evaluation Criteria

As long as a customer with vehicle is selected **before the test begins**, registered limit values (not the new values) for shock absorbers are shown on the measurement screen during testing and used for evaluating the shock absorber.

- Measurement values larger than the registered shock absorber limit values in **MAHA-Meter** are evaluated as "defective".

- Measurement values smaller than the registered shock absorber limit values **in percentage** are evaluated as "defective".

If no limit values are registered or no customer/vehicle is linked before the test begins the shock absorbers will be evaluated on the basis of the Eurosystem variables as follows:

- Measurement values under 40 % are evaluated as "defective".

- Measurement values between 40 % and 60 % are evaluated as "weak".

- Measurement values above 60 % are evaluated as "OK".

The total print out contains the respective limits of the front and rear axle for the evaluation in the column "Limits".

Your Garage Specialists
Commercial Street 250
29876 Test City
Phone 98 76 54 32

EURO SYSTEM

Customer	: Smith Mary	License plate	: TX 7460J QWX
Street	:	VEH-manufact.	:
City	: 23456 Dallas	VEH-Model	:
Telephone	:	Kilometer	:

Meas. from: 17.06.1998   8:44 Time   Date 31.03.99   Time: 13:55

	Test Values	Limits	Result

Side-Slip

							below 7 ok	
Front axle :	2	m/km					7- 14 moder.	FA test ok
Rear axle :	1	m/km					above 14 def	RA test ok

Shock absorber

	left	right	Imbalance	Weight	left	right	Front axle :	FA Lt effect. normal
							above 59 Mm	
Front axle :	76 %	72 %	4 %	597 kg	29 Mm	35 Mm	below 0 % defect	FA Rt effect. normal
Rear axle :	59 %	74 %	15 %	417 kg	61 Mm	39 Mm		RA Lt defect
Total weight:				1014 kg			Rear axle : above 45 Mm below 0 % defect	RA Rt effect. normal

Brake test

	left	Brakeforce right	Imbalance		Imbalance FA below 30 ok above 30 def.	
Front axle :	1,46 kN	1,73 kN	16 %			FA Test ok
Parking br.:	1,02 kN	1,00 kN	2 %		Imbalance Parking br. below 40 ok above 40 def.	PB Test ok
Rear axle :	1,04 kN	1,04 kN	0 %			RA Test ok
Total effectiveness					Imbalance RA	

When judging the condition of shock absorbers your own experience can be part of the evaluation process.

MAHA is not liable for costs and damages due to erroneous evaluation of shock absorbers.

4.5.2 Display (Load) Vehicle Data

Use this function to call up a stored vehicle into the vehicle mask. The limit and new values can be viewed also.

1   Select **<F5>** in the vehicle mask. The vehicle database will open.

2   Use <F3> Change Index to move a particular column to the left to make the search easier.

3   Move the marking with the cursor key until the desired VEH is marked or enter the search word in the upper line using the keyboard.

4   Confirm with <RETURN> or <F4>. The VEH is loaded into the customer mask.
    ☞ *<Fn> keys, or enter data*

The data of the desired vehicle will be shown. Page through the data set pages using the <↑> or <↓> keys. Use <ESC> to exit the vehicle mask and return to the "Administration".

4.5.3 Change, Expand, Update Vehicle Data

Existing vehicle data can be changed, expanded or updated. To do this call up the vehicle in the vehicle mask as described in section "*Display Vehicle Data*".

1   Enter the new data or change the existing data by overwriting.

2   Use the <↓> key to page forward to pages 2 and 3 of the dataset and change/expand the data here, too.

3   Use <F8> to update the dataset.

4   Use <ESC> to exit the vehicle mask and return to the administration.

4.5.4 Delete Vehicle

Individual vehicles can be removed from the vehicle database. To do so, call up the vehicle mask in the Administration menu.

1 Select <F7> in the vehicle mask. The vehicle database opens.

2 Use <F3> Change Index to move a particular column to the left to make the search easier.

3 Move the marking with the cursor key until the desired VEH is marked or enter the search word in the upper line using the keyboard.

4 Confirm with <RETURN> or <F4>.
The following inquiry will appear:
☞ *Delete vehicle?*

5 a) Use <ESC> to exit the screen, the vehicle will not be deleted.
or
b) Use the <F5> key to mark the selected dataset as deleted.

6 A message appears. Wait for about 3 seconds until the display returns to the vehicle mask.

Datasets selected for deletion are only marked as deleted at first. This means that the dataset is physically still in the database.
The actual physical deletion takes place when the database is newly compressed (see section 4.6.1.4). Until then the datasets can still be restored (see section 4.6.1.3).

4.6   Administration / Office

The "Administration/Office" menu has already been mentioned in connection with the customer/vehicle administration. In addition to these two sub-points the database administration and printer menu can be organized here.

1   Select **<F6>** in the main menu. The "Office" menu appears.

2   Select one of the sub-points in the "Office" menu using the cursor key and confirm with <RETURN>.
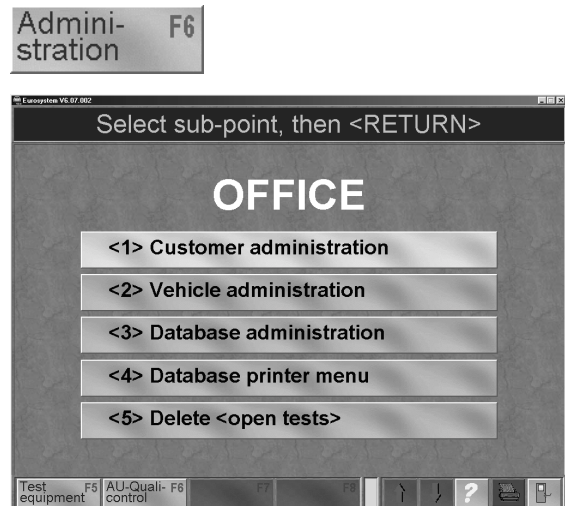
4.6.1   Database Administration

Some of the functions from the database administration are described in earlier sections, e.g. 4.3.6 *"Delete customer data",* or 4.5.4 *"Delete vehicle".*

The measurement database which has already been mentioned is managed by the functions **<5>**, **<6>** and **<7>**.

To restore datasets (sub-points **<2>**, **<4>** and **<7>**) see section 4.6.1.3.

The function of the sub-point **<8>** Compress everything (delete physically) is described in section 4.6.1.4.
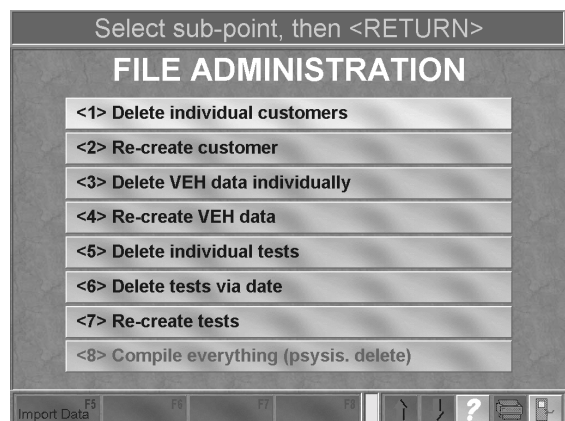
4.6.1.1   <5> Delete individual tests

1 You have selected function <5> in database administration.
   The measurement database appears.

2 Use <F3> Change Index to move a particular column to the left to make the search easier.

3 Mark the measurement to be deleted using the cursor keys.

4 Confirm with **<F4>** to mark the dataset as deleted.

5 Wait for about 3 seconds. The screen returns to menu "Database administration".

6 Use <ESC> to exit the database administration and return to menu "Office".

4.6.1.2   <6> Delete tests via date

1 You have selected function <6> Delete tests via date. The screen opposite appears.

2 Enter the period of time for which the measurements should be deleted.

3 Use <F5> Data file to determine beforehand how many measurements belong to the selected period. Pay attention to the display "Records in range:".

4 a) If you really intend to mark the displayed number of measurements as deleted, confirm with <F6>.
   or
   b) Exit the screen with <ESC>, if you do not want to delete.
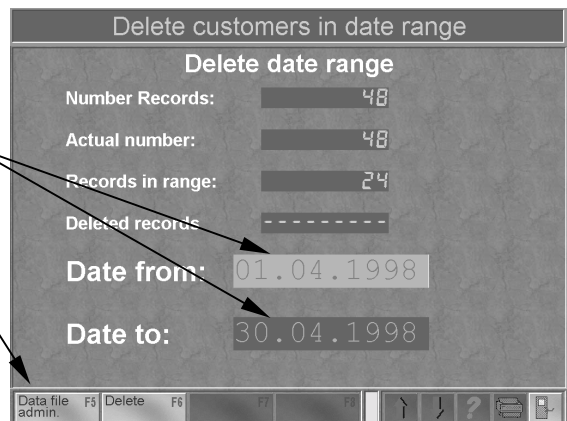
4.6.1.3   **Restoring Datasets**

As mentioned in sections 4.3.6 *"Delete Customer Data"* and 4.5.4 *"Delete vehicle"*, the datasets to be deleted are only marked as such. This means that the dataset is physically still in the database.

The dataset is removed when the database is compressed the next time (see section 4.6.1.4). Within this period there is the possibility to restore the dataset.

1   In the "Administration" menu select:

    <2> to restore customer data.

    <4> to restore vehicle data.

    <7> to restore test values.

2   The screen below will appear.

Select sub-point, then <RETURN>
FILE ADMINISTRATION
<1> Delete individual customers
<2> Re-create customer
<3> Delete VEH data individually
<4> Re-create VEH data
<5> Delete individual tests
<6> Delete tests via date
<7> Re-create tests
<8> Compile everything (psysis. delete)
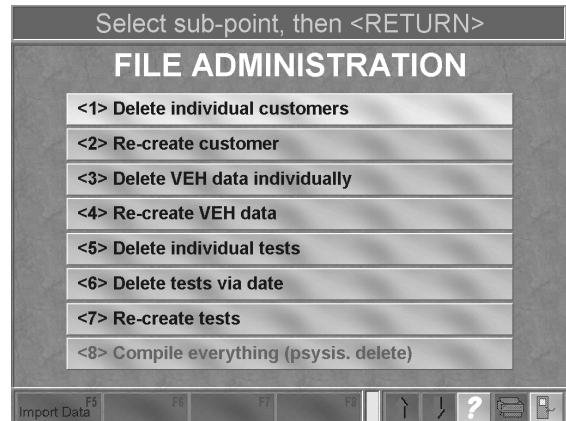
3   Please note that all datasets since the last compressing are restored.

    The delete markings are removed, i.e. the datasets are released again.

4   After about 3 seconds the menu of the database administration will appear again. (screen above).

Customers being restored wait...
All data sets
will be restored

4.6.1.4   <8> Compress (delete physically)

This function is used to store all datasets of the three databases in a space-saving manner on the PC hard disc.

All datasets are removed which have been marked as deleted since the last compressing procedure.

1   You have selected the function <8> Compress everything in the database administration.
    The screen opposite appears.

2   a) Select <F5> to compress. Wait until the procedure is completed.
    or
    b) Exit the screen with <ESC> and return to the menu of the database administration.

> Select interrupt=<ESC> okay=<F2>
>
> Preparation for compressing
>
> This program may only be
>
> used by authorized personnel
>
> No other user may be present in
>
> the network, <Exclusive use>
>
> If you select <OKAY>, you must
>
> exit the program after the procedure
>
> has been completed !
>
> ATTENTION: Procedure can take minutes !
>
> Compress F5

3   A countdown shows how far along the compressing procedure is.

4   Wait until the next screen appears.

> Compressing running, please wait ...
>
> Area ....:   12   /   14
> Whole Records: 48
>
> Compress F5

5   A message on the screen signals completion of the compressing procedure.

6   Use <ESC> to exit Eurosystem.

7   If you intend to work on with Eurosystem the program can be restarted immediately under Windows.

> Compressing successfully completed!
>
> After <ESC>
>
> <EUROSYSTEM>
>
> terminated
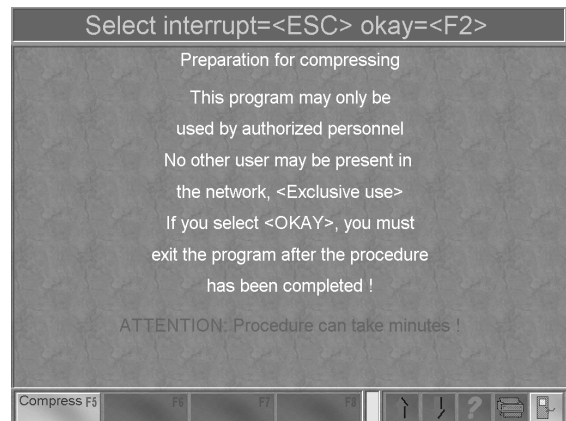
4.6.2 Printer Menu

Various printouts are available in the printer menu. Customer data can be printed out as required.

It is also possible to print out a daily report. However, the program has to be coupled with the spreadsheet "Excel".

1   Select the sub-point <4> Database printer menu in the "Office" menu and confirm with <RETURN>.
The screen below appears.:

Select sub-point, then <RETURN>

OFFICE

<1> Customer administration

<2> Vehicle administration

<3> Database administration

<4> Database printer menu

<5> Delete <open tests>
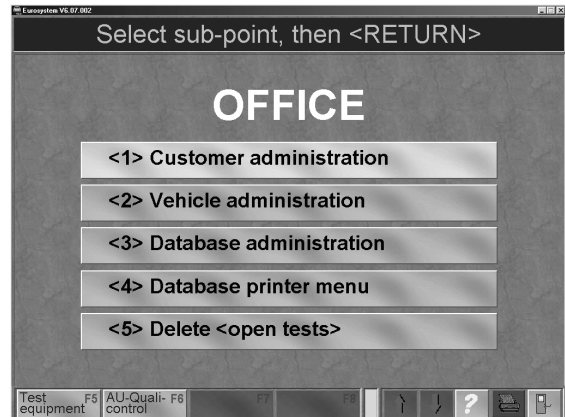
2   Select the desired sub-point

3   Confirm with <RETURN>, the customer list is printed out in the desired mode.

Select printer point then <RETURN>

PRINTER MENU

<1> Print customer based on last name

<2> Print customer based on number

<3> Print customer based on city

<4> Print customer based on license plate no.

<5> Open

<6> Open

<7> Open

<8> Open

4.6.3   Test Equipment

Using the menu point „Test Equipment" the test equipment and calibration deadlines can be shown, changed and printed out.

1 Activate **<F5 Test Equipment>** in the administration menu.

Following screen appears:

2 In menu „Test Equipment" select the desired sub-point using the cursor keys and confirm with <RETURN>.
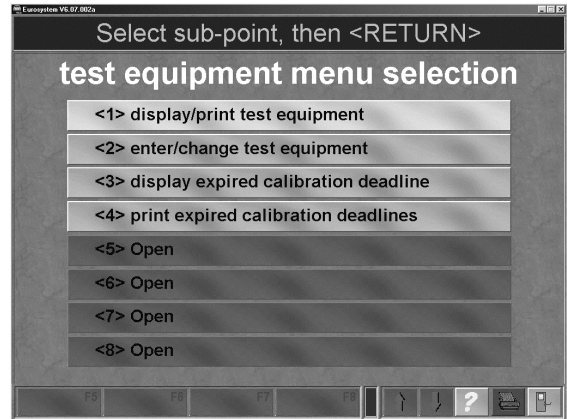
4.6.3.1   Display/print test equipment

The test equipment is shown using this menu point.

Following screen appears:

Use the PgUp/PgDn-keys to page between the screens.

Use the PRINT or <F12> key. The print out is started.

Exit the screen with <F5> RETURN.
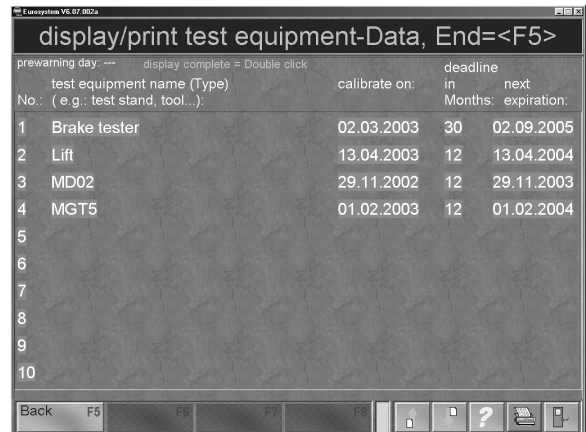
4.6.3.2   Enter / Change Test Equipment

The menu point „Enter/Change Test Equipment" allows the entry of 20 test equipments (test stand, tools,...).

Enter Test Equipment:

1   Call up the menu point „Enter/Change Test Equipment".

2   Enter the password (if available) in the input line and use the button <F5> CONFIRM. Following screen appears:

3   Input of:
- Test equipment designation (column 2).
- Calibration date (Column 3).
- Deadline in months (Column 4).
Column 5 with next calibration date is automatically created.

Switch between the input lines using the cursor keys or the <Enter> key.

4   Double click on the desired input line to open a second input window for the complete input.

5   Use <F6> CALIBRATION=MANUFACTURER to import the manufacturer info in the calibration info column..

6   Store with <F5> STORE. The test equipment data are stored.

7   Exit the menu using the <ESC> key.

4.6.3.3   Display Expired Calibration Deadlines

Display the expired calibration deadlines using this menu point.

4.6.3.4   Print Expired Calibration Deadlines

Use this menu point to print the expired calibration deadlines.

4.6.4   AU-Quality Control (Emission Testing)

The menu point „AU-Quality Control" provides a software which completes your system of documentation for the quality control measures with the AU Emission Testing. Your defect statistic runs automatically when using the MAHA emission tester. An existing recognition of the workshop will only continue to be valid if the Motor Vehicle Guild is shown that an Quality Control System has been introduced. The Quality Control documentation covers following areas:

- Naming of the qualified personnel (skilled workers, responsible persons and AU authorized Emission Testing)
- Training planning
- Defect statistic
- Test seal management
- Control of the calibration and maintenance deadlines of the AU equipment

Internal measures to maintain the quality of AU testing during testing and documentation.

1   Activate **<F6 AU-Quality Control>** in the administration menu.

Following screen appears:

2   Select the desired sub-point in menu „AU-Quality Control" using the cursor key and confirm with <RETURN>.

1   Additional functions are described in their own operating manual „QS-System with AU Testing" .

4.7 Miscellaneous

All functions described below are available to the user. Use **<ESC>** to exit the screens without changing the settings.

☞ Please note that any unskilled changes to the variables can cause function errors to the test lane. These are not covered by the warranty.

1 Select **<F5>** in the main menu.

| Misc | F5 |

2 Select the desired function and confirm with <RETURN>.

3 The appropriate sub-menu appears.

Keys for <Miscellaneous>

<1> LON service technician
<2> Settings
<3> Password menu
<4> Diagnostic menu
<5> Transponder
<6> Delete chipcard
<7> Customer promotion

4.7.1 Display LON Variables/Print

The LON variables for the connected floor assemblies can be displayed and printed out. These variables may be changed by MAHA service technicians only.

☞ Please note that any unskilled changes to the variables can cause function errors to the test lane. These are not covered by the warranty.

1 You have selected <1> display/print LON variables in the menu "Miscellaneous". The screen opposite appears.

2 The appropriate variables are loaded when the individual equipment is selected.
☞ *Variables being read: No. "*

3 The variables are displayed in the next screen. Use <F12> to print out the variables list.

4 Use <ESC> to exit this and the following screen without changing the settings and return to the menu "Miscellaneous".

LON Variable page 1

<1> Variables: Brake tester
<2> Var.: Shock absorber tester
<3> Variables: Side-slip tester
<4> Variables: Remotecontrol
<5> Variables: Speedometer.
<6> Variables: Turning plates
<7> Variables: RS232 1
<8> Variables: RS232 2
<9> Variables: Pointer
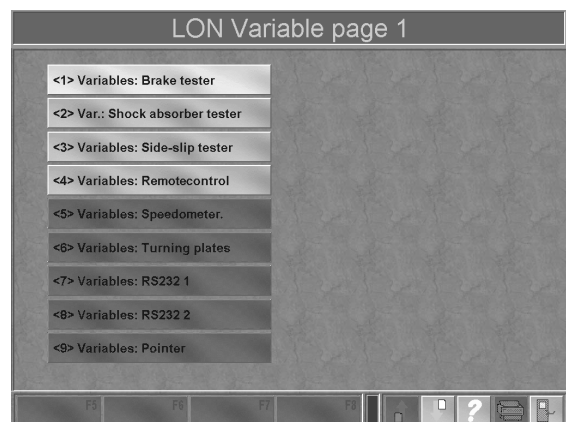
4.7.2   Settings

☞ The menu is used by MAHA service technicians to change the system configuration. Any unauthorized changes may cause malfunctions which are not covered by the warranty.

The user has access to the menu functions but should be activated only with skilled instructors. Minor malfunctions may be corrected by calling our service hotline 08374 / 585-260.

In addition to system settings software adaptions for test stands and measurement devices subsequently integrated into the test lane can be done here. The user also has language selection and optical selection available.

1   If function <2> Settings is selected in menu "Miscellaneous", the password menu will appear.

2   Exit this with <ESC> and return to the menu "Miscellaneous".
    or
    Use <F5> to jump over the screen and the setting menu will appear.

    If a password was stored enter your password and confirm with <F5>.

3   Select the desired sub-function and confirm with <RETURN>.

4   The following screen can be exited with <ESC> again without changing the existing settings.

5   The menu opposite can also be exited with <ESC>. The program is automatically ended and must be started anew from Windows.
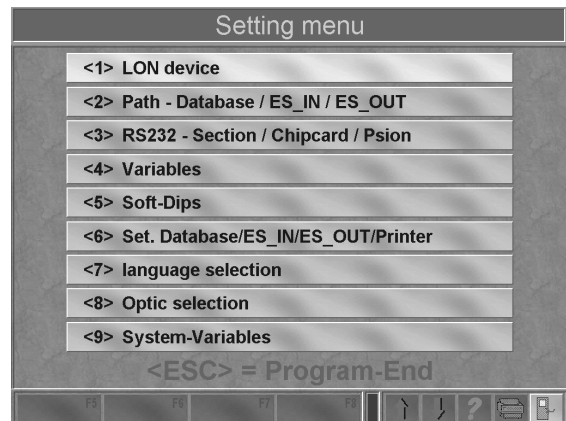
The following sections describe the sub-functions of the setting menu very briefly. For further questions please contact our service hotline.

4.7.2.1 LON Equipment

This sub-function shows which equipment is connected. Additional measurement devices are registered here, too.

☞ Please note that any unskilled changes to the settings may cause malfunctions in the program. These are not covered by the warranty.

1 If the function <1> LON devices is selected the screen opposite will appear.

2 Use <ESC> to exit the screen without changing the existing settings.

For further questions please contact our service hotline.

On the corresponding screen of Profi Eurosystem an additional box <F8> Profi options is available.
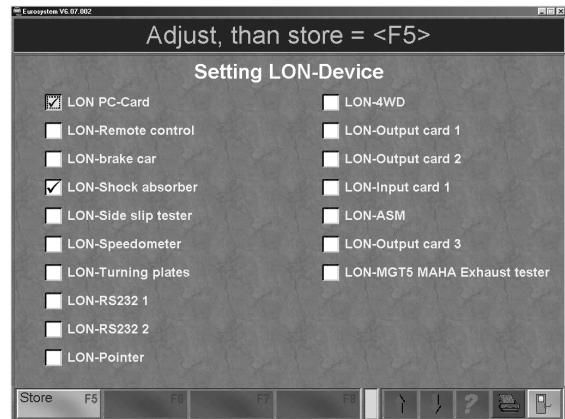
4.7.2.2 Path-Database / ES_IN / ES_OUT

In this sub-function the paths of the Eurosystem databases are indicated.

☞ Please note that unskilled changes can cause malfunctions in the program. These are not covered by the warranty.

1 Select the function <2> Path-Database / ES_IN / ES_OUT. The screen opposite will appear.

2 Use <ESC> to exit the screen without changing the existing settings.

Standard setting on the local hard disc is C:\MAHA\PKW\607XX_X\...

A network drive can be alternatively used!

Please contact our service hotline if you have further questions.
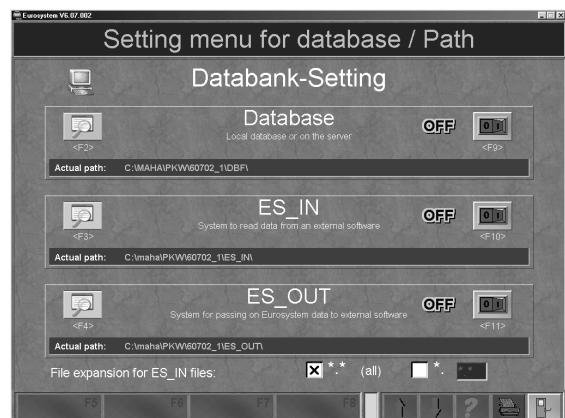
<u>Change directory:</u>

1   Use the button or the appropriate function key. Following screen appears:

2   Select the new path and confirm with <OK>.
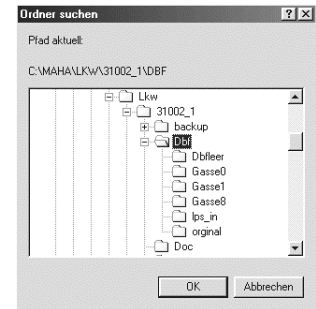
<u>Switch setting on/off:</u>

1   Use the button or the appropriate function key.

4.7.2.3   RS232 - Section / Chip Card / Psion

This sub-function organizes the usage of the COM interfaces.

   Please note that unskilled changes can cause malfunctions in the program. These are not covered by the warranty.

1   Select the function <3> RS232 - Section / Chip card / Psion in the setting menu. The screen opposite will appear.

2   Use <ESC> to exit the screen <u>without</u> changing the existing settings.

Please contact our service hotline if you have further questions.
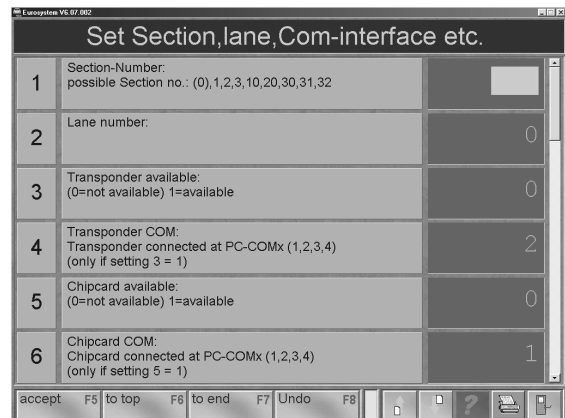
4.7.2.4 Variables

This sub-function shows various variables of the PC which can also be printed out with **<F12>.**
A list of these variables can be found in the appendix.

☞ Please note that unskilled changes can cause malfunctions in the program. These are not covered by the warranty.

1 Select the function <4> Variables in the setting menu. The screen opposite will appear.

2 Use <ESC> to exit the screen without changing the existing settings.

Please contact our service hotline if you have further questions.

	Variable of PC	
1	BT Slip current in %(25-30)	25
2	BT Slip 25 % (53)	53
3	BT Slip 26 % (54)	54
4	BT Slip 27 % (55)	55
5	BT Slip 28 % (56)	56
6	BT Slip 29 % (57)	57

accept   F5 | to top   F6 | to end   F7 | Undo   F8

4.7.2.5 Softdips

Softdips have a function similar to that of system variables. They differ from the variables only in their binary functions (on/off).

☞ Please note that unskilled changes can cause malfunctions in the program. These are not covered by the warranty.

1 Select the function <5> Softdips in the setting menu. The screen opposite will appear.

2 Select the desired Softdip group.

Soft-Dips selection

<1> Soft-Dips
<2> Soft-Dips breaktester
<3> Soft-Dips platform tester
<4> Soft-Dips exhaust tester MGT 5
<5>
<6>
<7>
<8>
<9> Soft-Dips Frankreich

3   Use <ESC> to exit the screen <u>without</u>
    changing the existing settings.

Please contact our service hotline if you have
further questions.

	Softdip setting
1	BT: Issue Brake force 0 = kN 1 = daN
2	BT: Issue weight 0 = kg 1 = daN
3	Brake Tester: free
4	Brake Tester: free
5	Brake Tester: free
6	Brake Tester: free

accept   F5 to top   F6 to end   F7 Undo   F8

4.7.2.6   Settings Database / ES_IN / ES_OUT / Printer

These settings refer to databanks, interfaces and printer.

☞   Please note that unskilled changes can cause malfunctions in the program. These are not
    covered by the warranty.

1   Select the function <6> Settings Databank /
    ES_IN / ES_OUT / Printer in the setting
    menu the screen to the left will appear.

2   Use <ESC> to exit the screen <u>without</u>
    changing the existing settings.

Please contact our service hotline if you have
further questions.

Enter, then store = <F5>

Data bank, ES_IN/ES_OUT

Actual databank	**Off**	On = always open
Enter databank:		Off = not always open
Actual ES_IN:	**Off**	On = aktiv
Enter ES_IN:	Off	Off = not active
Actual ES_OUT	**Off**	On = aktiv
Enter ES_OUT:	Off	Off = not active
Actual defect list	**2**	1 = Defect list 1 (PSION possible)
Enter defect list:	2	2 = Defect list 2 (PSION not possible)

Store   F5 Printer   F6
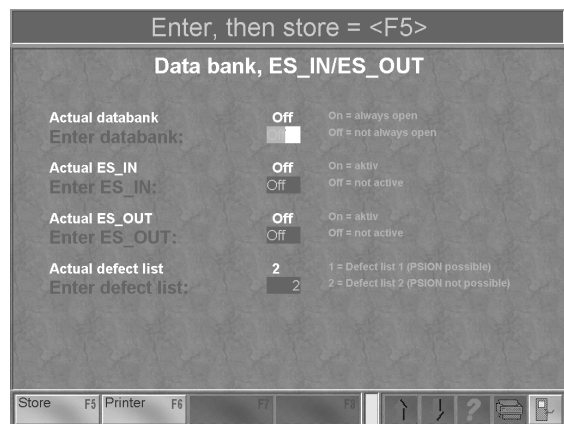
4.7.2.7   Language Selection

Language as well as country-specific units can be changed in this sub-point.

1   Select the function <7> Language in the setting menu. The screen opposite will appear.

2   Use <ESC> to exit the screen <u>without</u> changing the existing settings.

Please contact our service hotline if you have further questions.

Select with <F6>/<F7>, Store <F5>

Setting language

current language   English

selected language   English

Setting unit

current unit   german

current unit   german

Store   F5 | Selection F6 | Selection F7 language | unit
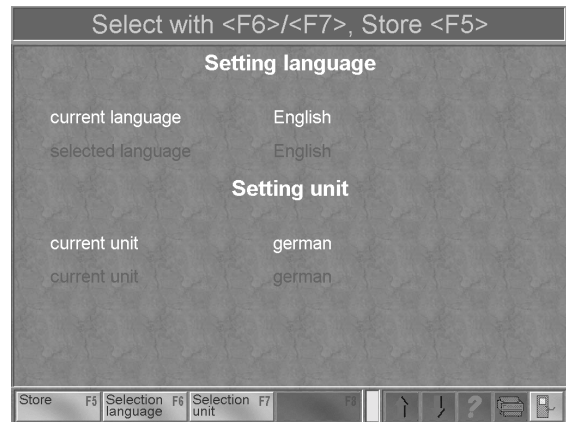
4.7.2.8   Optics Selection

If the color design of the screen is not ideal for your needs, it can be changed in this sub-function.

1   Select the function <8> Optics selection in the setting menu. The screen opposite will appear.

2   Select a colour from <1> to <9>.

3   Set down which box should get this colour: <F5> to <F7>.

4   Proceed likewise to determine the background colour.

5   Use <ESC> to exit the screen.

Please contact our service hotline if you have further questions.

Select color (1-9) with (F5-F8) import

<1>   **Inactive Button**

<2>   **Active Button**

<3>   **Button pressed**

<4>

<5>   Bitmap background :   marmor.bmp

<6>   Bitmap Button inactive : bgray.bmp

<7>   Bitmap Button active :   bblau.bmp

<8>   Bitmap Button pressed : blue.bmp

<9>

Inactive F5 | Active F6 | Button F7 | Back- F8
Button | Button | pressed | ground
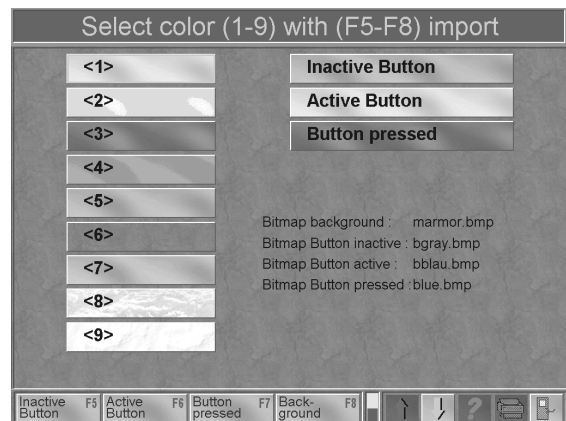
4.7.2.9   System Variables

The system variables are settings and limit values. Settings are sometimes binding, limit values are sometimes official regulations.

Official regulations often vary in different countries, therefore these variables can be changed accordingly. Please inquire which official regulations apply to your country.

Please note that unskilled changes can cause malfunctions in the program. These are not covered by the warranty.

1   Select the function <9> System variables in the setting menu. The screen opposite will appear.

2   The first column shows the variable number, not all numbers are assigned.
    The second column is a detailed description of the variable.

3   The variable values in the right-hand entry masks can be changed.
    Please follow the instructions for the variable in question.

4   Store the entered changes with <F5>.

5   Use <F6> to jump to the beginning of the variables list and <F7> to jump to the end.

6   Use <F8> to reverse the changes and restore the previous settings.

7   Use <ESC> to exit the screen without changing the existing settings.

	System variables country:	
1	Brake tester: Limit value of the brake force imbalance of the front axle	30
2	Brake tester: Limit value of the brake force imbalance of the parking brake	40
3	Brake tester: Limit value of the brake force imbalance of the rear axle	30
4	Brake tester: Limit value of the brake force imbalance of the service brake	30
5	Brake tester: Limit value of the brake force imbalance of the emergency brake	40
6	not used	_ _ _ _ _

| accept | F5 | to top | F6 | to end | F7 | Undo | F8 |

The list of all system variables can be found in the appendix. Please contact our service hotline if you have further questions.

4.7.3   Password Menu

No password is pre-set as a standard setting. It is **not generally required** to use a password.

Only assign a password, if it is absolutely necessary to protect your system from outside users. It is important not to forget it!

If the password was forgotten the system will have to be re-installed and configured!
Customer service: 08374 / 585-110 to 113 and 115

---

1   Select <3> in menu "Miscellaneous" and confirm with <RETURN>. The password menu will appear.

2   Use <ESC> to exit this screen without entering a password. The screen returns to the menu "Miscellaneous".
or
Enter a password and confirm with <F5>. The changing mask will appear.

3   Enter any password with a max. of 14 characters and confirm with <RETURN>.

4   Repeat the entry of the new password in the second entry box to check.

5   Store the new password using <F5>.

6   Exit the changing mask using <ESC> and return to the password menu.

Please note that the system distinguishes between capital and small letters. Always enter your password with exactly the same spelling.

4.7.4   Diagnostic Menu

The diagnostic menu provides all program- and system-relevant information. The functionality of the connected equipment can be tested.

1   Select <4> in menu "Miscellaneous" and confirm with <RETURN>. The diagnostic menu appears.

Diagnostic Menu
<1> Test Equipment
<2> LON Information
<3> System Information
<4> Program Configuration (print out)
<5> Daily password
<6>
<7>
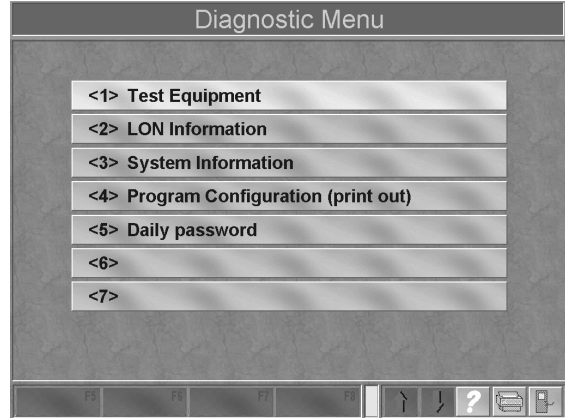
4.7.4.1   Device Diagnosis

The device diagnosis is used to test the functionality of a test stand. It may be possible to correct minor malfunctions by telephone via our hotline 08374 / 585-260.

2   Select the function <1> Devices in the diagnostic menu. The screen opposite appears.

3   The connected devices appear as active boxes, here <1> to <3>. Boxes are prepared for further test stands or measurement devices. They appear as inactive (highlighted as grey).

4   Select one of the connected devices, e.g. <1> Side-slip tester and confirm with <RETURN>. The test screen of the device will appear.

select device
<1> Side-slip tester
<2> Shock absorber tester
<3> Brake tester
<4> Turning plates
<5> Speedometer tester
<6> Pointer
<7> Input card

5   Use <ESC> to exit the test screen. The display will return to the menu shown here.

Please contact our service hotline if you have further questions.

4.7.4.2   LON Information

This sub-point is used for inquiring about the electronic components of the system. A cyclic inquiry takes place and the components report back on their readiness.

1   Select the function <2> LON information in the diagnostic menu. The screen opposite appears.

2   The first cycle inquires about the versions of the individual components.
☞ *Wait, versions are being inquired...*
The version numbers appear one after the other in the middle column

3   The next cycle inquires about the components' readiness.
☞ *Cyclical inquiry about the LON-nodes*
The readiness appears with "yes" or "no" in the first column one after the other.
☞ *current status*

4   The inquiry repeats itself cyclically.
☞ *Wait, inquiry running ...*
Use <ESC> to exit the inquiry and return to the diagnostic menu.

Wait, inquiry running...

Condition ok: (yes/no)	Tester (Hardware):
	Relay card 1(LON OR8)
V: ???	IRE-receiver (LON IE)
V: ???	Brake tester (LON BP)
V: ???	Shock absorber tester (LON SB)
V: ???	Track tester (LON RA)
	Speedometer (LON TACHO)
	RS232 1 (LON RS232)
	RS232 2 (LON RS232)
	Turning plate (LON DT)
	Pointer (LON ZEIGER)
	Input card (LON IN8)
	Relay card 2(LON OR8)

4.7.4.3   System Information

The user is provided with a system overview here.

1   Select the function <3> System information in the diagnostic menu. The screen opposite appears.

2   Use <ESC> to exit the overview and return to the diagnostic menu.

A *Benchmark test* can be started in this screen. i.e.the performance capacity of the program can be checked.

System overview

Program	: EURO-SYSTEM V 6.07.001 (Feb 7 2003)
KE-Visual	: V2.31.004 (32-Bit)
KEV-Standardtexts	: V1.08.005
Operating System	: Microsoft Windows 98 4.10.2222 A (SE Zweite Ausgabe)
Printer	: HP LaserJet 8100 DN PS at HPLaserJet8100Series
Video information	: NVIDIA Vanta/Vanta LT (Compaq)
	1024x768; Truecolour 32 bit
Physical memory	: 127 MBytes
Free memory	: 1766 MBytes
Largest memory block	: 4 MBytes
System Resources	: 0%
User-Resources	: 0%
Number of serial ports	: 2
Number of printer ports	: 1
Processor	: Pentium III (Model 8) (CPUID = 0x0683, 731 MHz)
User-Name	: CWehrung
Computer-Name	: WEHRUNG

Procedure:

1   Use the button <F5> BENCHMARKTEST. The following screen appears:

2   Test graphic performance :
    Button GRAPHIC <F5>

    Test hard disk performance:
    Button HARD DISK <F6>
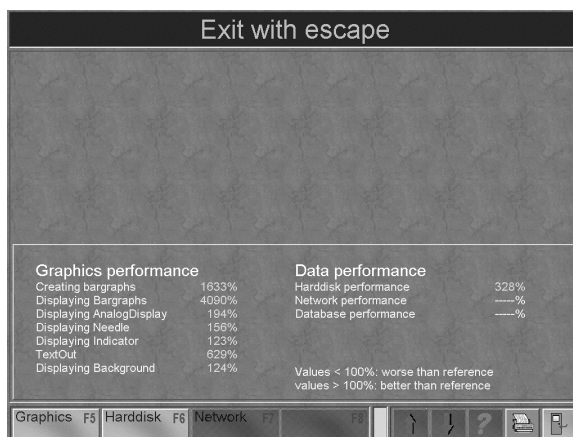
4.7.4.4   Program Configuration

The fourth sub-function of the diagnostic menu provides a printout of the program configuration.

4.7.5   Customer Promotion

This function allows the entry of five lines for address, messages to customers or promotional slogans.

1   Select <7> Customer promotion in menu "Miscellaneous". The screen opposite will appear.

2   Switch between the boxes with the cursor or return key.

3   Enter the text using the keyboard.

4   Use <F5> to confirm and store the text.
    ☞ *company data are stored.*

5   Use <ESC> to return to menu "Miscellaneous".

The first four lines of the text appear in the header, ...

... the fifth line in the footer of the printout.

4.7.6   External Programs

Eurosystem offers the possibility of coupling other Windows applications so that they can be started simply and comfortably and used parallelly.

Following example explains how the Acrobat Reader is started.

4.7.6.1   Starting the Acrobat Reader

1   Activate the main menu **<F7>**.

2   The menu to the right shows which external programs are integrated. Select the Acrobat Reader with <1> .

3   Confirm with <RETURN>.
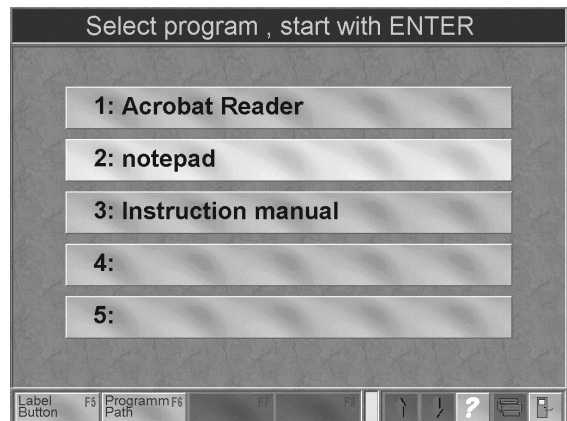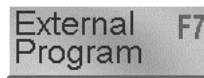
4   Acrobat Reader appears over the Eurosystem-surface and can be used.

5   End the Acrobat Reader with <Alt> + <F4>.

    All external programs are ended with <Alt> + <F4>

6   Use <ESC> to exit the screen.
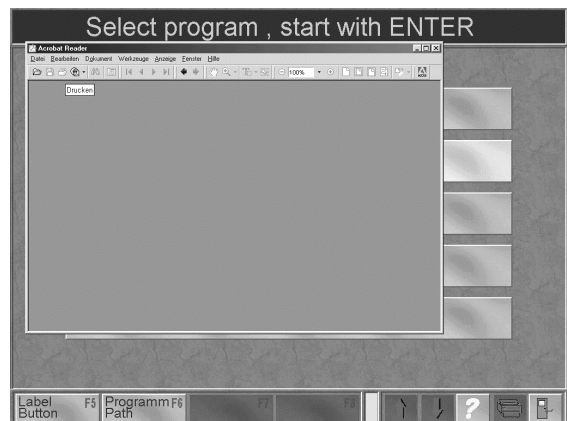
4.7.6.2   Integrating the Acrobat Reader

1   Move the marking to the next open program box by pressing the appropriate digit key or use the cursor key.

2   Select the labeling <F5> Button. An entry box is faded in under the program box. The program boxes appear inactive (grey background)
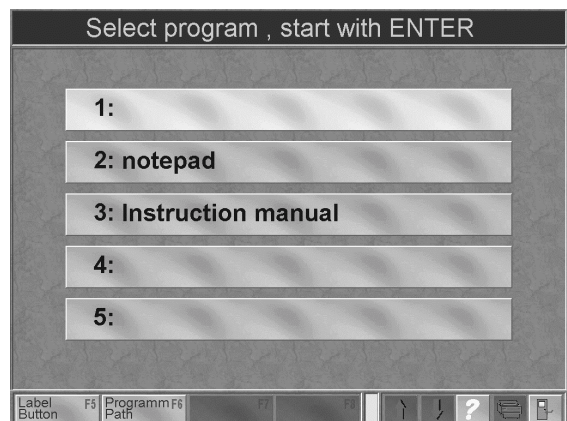
3   Enter the labeling for the program box using the keyboard. "Acrobat Reader" is entered in the example.

4   Confirm with <RETURN>. The program-box appear active again and the entered labelings are taken over.

```
          1 .Label Button

     1:

     2: notepad

     3: Instruction manual

     4:

     5:
          Acrobat Reader
```

5   Use <F6> to allocate the program box to the appropriate path. A selection window appears.

6   Select the program path and confirm with <OPEN>.

7   Now the program is integrated and can be started at any time using the appropriate program box. It can then be used parallel with other functions.

```
Select File

Suchen in:  [ Reader ]

 ActiveX
 browser
 Optional
 plug_ins
 AcroRd32.exe

Dateiname:   AcroRd32.exe          Öffnen
Dateityp:    notepad.exe           Abbrechen
         Mit Schreibschutz öffnen
```
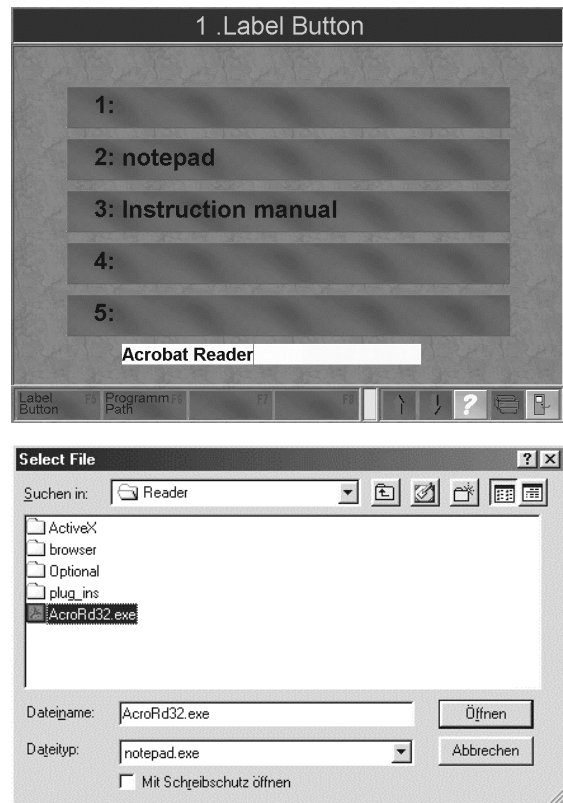
Setting the Acrobat Reader:

Arobat Reader is installed standard unter program path C:\Programme\... .
Window versions in other languages may have the Acrobat Reader installed under another program path.

When the Acrobat Reader is opened an error message then appears.

1   Start Windows-Explorer .

2   Check the program path of the Acrobat Reader (under C:\Programme\Adobe\Acrobat 4.0\ Reader\AcroRd32.exe).

3   If the program path is wrong , the program path for starting the program path must be registered anew.

4   Return to Eurosystem and follow the instructions under 4.7.6.2 „Integrating the Acrobat Reader"

5   With Point 6 „Selection of the Program Path" select C:\Program Files\Adobe\Acrobat 4.0\ Reader\AcroRd32.exe.

4.8   Additional Functions

4.8.1   Single Wheel Test

With a single wheel measurement only the roller set of one side is started on the test stand. First, switch to the proper mode to conduct a single wheel test.

1   Use <7> Test procedure in the main menu. The screen opposite will appear.

2   Use <7> to switch between the five settings. Confirm with <RETURN>.

3   Exit the screen with <ESC> and return to the main menu.

4   After the single wheel test switch off the special mode in the same way.

5   The test procedure has already been described in section 3.5.
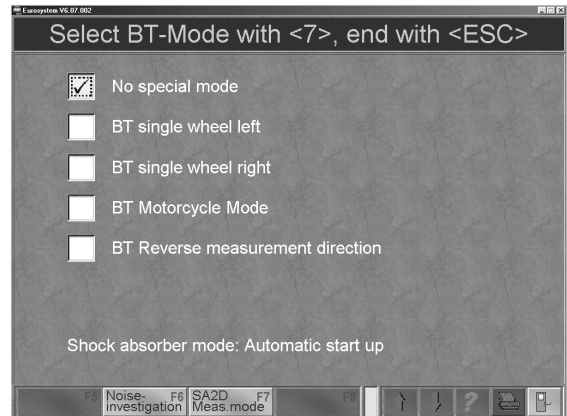
4.8.2   Noise Investigation

Use the noise investigation mode to detect noise sources and possible damage on wheel and suspension. Only one plate at a time is started on the shock absorber test stand. No measurement values are recorded.

1   Before driving onto the shock absorber tester, activate the noise detection mode using the switch on the sidewall of the control cabinet.

2   Use <7> Test procedure in the main menu. The screen opposite appears.

3   Activate the noise investigation with <F6>. The following screen appears.

4   After driving onto the shock absorber plates the wheel weights will be shown.

5   Use <F6> (or <F7>) to start the left (or right) test plate.

6   The test plate vibrates until it is switched off with <F5>.

7   Use <ESC> to exit the screen and the noise investigation mode.

Manual Increase/
Reduction of Frequency

Motors on/off, save <F8>

Noise investigation
Frequency in Hz

Frequencycontrol

Testing:
FA — Axle on the test plate

Current
Frequency

FA
F9

Frequency in Hz

20,0 — Start frequency (pre-set)
F4

Test Plates
ON/OFF?

Left   Right

Motors
0=OFF 1=ON

RA
F11

Stored
measurement values

Axle   Motor left   Motor right   Frequency in Hz

25 30
20   35
15   40
10   45
5   Hz   50

Current
Frequency

Motors OFF F5 | Motor left ON F6 | Motor right ON F7 | Store F8

Buttons in the...	Operational level
Motors OFF F5 | Motor left ON F6 | Motor right ON F7 | Store F8 ?	Level 1
Automatic 5...50 Hz F5 | Automatic Continue F6 | Automatic 50...5 Hz F7 | Store F8 ?	Level 2

Button	Description
Motors OFF F5	Both test plates are stopped
Motor left ON F6	The left test plate is started
Motor right ON F7	The right test plate is started
Store F8	The current frequency is stored.
Automatic 5...50 Hz F5	An automatic procedure starts in which the frequency increases from 5 Hz to 50 Hz in increments of 0.5 Hz. The current frequency can be stored at any time using the <F8>.

Button	Description
Automatik Stop F6	The automatic procedure is stopped. The button switches over to Automatic Continue

Button	Description
Automatic F6 Continue	The automatic procedure can be continued with <F6>
Automatic F7 50…5 Hz	An automatic procedure starts in which the frequency increases from 5 Hz to 50 Hz in increments of 0.5 Hz. The current frequency can be stored at any time using the <F8>.

Description of the Test

1 Drive the vehicle onto the test plate with the desired axle.

The test plates may only be started when occupied, otherwise there may be test stand damage due to oscillating unloaded test plates.

2 The left or the right or both test plates start. The pre-set start frequency is 20 Hz. This frequency can be changed at any time.

3 The frequency can be manually raised or reduced to search for noise sources. An automatic procedure can also be started.

4 If an unusual noise occurs at a certain frequency, this frequency can be stored.

The measurement value stored last appears in the upper line. The max. number of values to be stored depends upon the resolution. A bar appears to the right for scrolling when there are more than 4 stored values. (Scrolling is only possible with the mouse)

Axle	Motor left	Motor right	Frequency in Hz
4 RA	ON	OFF	22,0
3 RA	ON	OFF	21,5
2 RA	ON	OFF	21,0
1 RA	ON	OFF	20,0

The stored frequencies appear on the print out after completion of the test.

4.8.3   SA2D Measurement Mode

When clicking the menu point „SA2D Measurement Mode" select between automatic start up or only weighing.

1   Use <7> Test Procedure in the main menu. The screen to the right appears.

2   Select the box <F7> to activate the weighing mode.
    The shock absorber tester determines only the axle weight, the test stand motors are deactivated.
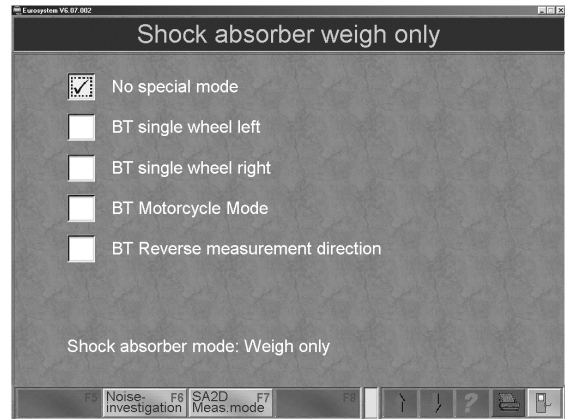
4.8.4   4-Wheel Drive Mode - ASR/ASD Check

The brake tester can optionally be equipped with a 4-wheel drive mode for testing the brakes of vehicles with "rigid" or "Visco-" 4-wheel drive control. ASR (anti-slip regulation) and ASD (automatic locking differential) checks are also possible.

☞   Please note that a pedal force meter and a remote control "Tele-BPS" are required for a 4-wheel drive test.

The installation of the 4-wheel drive mode in the PC program is to be done by a MAHA service technician via the setting menu.

1   The main menu screen is then expanded to include an additional display and box labelled "F9 4-wheel drive".

2   Use <F9> to switch between the various modes or to switch off the 4-wheel drive mode.
    In addition the desired mode must be set using the 4-wheel drive switch.

The various modes are shown as follows:

  for ASR / ASD - test   for "rigid" 4-wheel drive regulation

  for Visco 4 wheel drive regulation   for switched-off mode

4.8.4.1   4 Wheel Drive Brake Test

4 Wheel drive vehicle brake testing must distinguish between a „rigid" or a „Visco"-4 wheel drive regulation. Furthermore, „Visco"-4 wheel drive 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.

Reflex strips must be attached to the vehicle tires when testing vehicles with „rigid" or hard „Visco"-4 wheel drive regulation.

An integrated light barrier on the brake tester records the exact wheel rotations.

A = Reflex strips   **B** = Light barrier
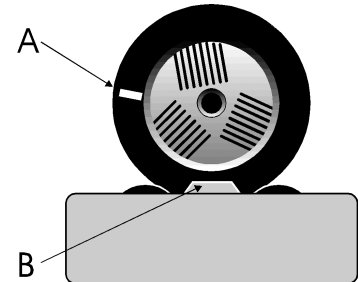
The motor regulation records the exact rpm of the forward rotating rollers and transfers this to the backwards rotating rollers. In this way, a force transfer to the second axle as well as torque on the drive rod are avoided.

The brakes of the wheels are tested individually with 4 wheel drive tests:

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   Active 4 wheel drive mode
   Select desired 4 wheel drive mode with
   <F9>.
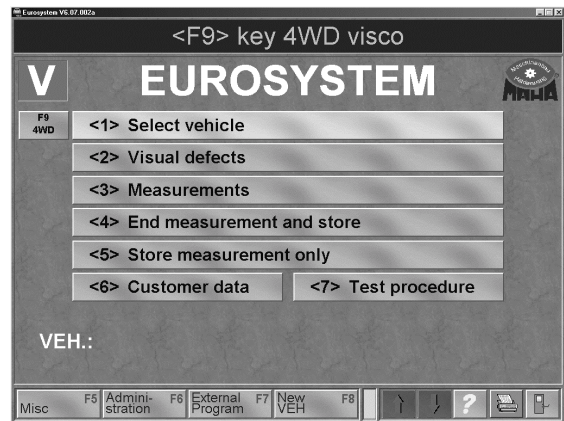
2   Prepare brake test
   a. Drive onto the brake tester with the front axle.
      Both sensor rollers of the roller set must be pressed.
   b. Release brake.
   c. Press the clutch or put gear into idle.
      Put automatic transmission into Neutral-Position (N).

3 Brake effectiveness test left

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.

Motor left   Motor right

⓪ = Motor off
① = Motor on
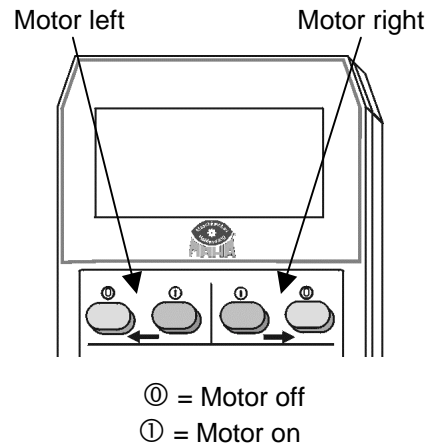
b. Ovality test (if desired) see paragraph *„Ovality test"*.

c. Slowly press the brake pedal until the
rollers switch off.
⇒ The roller drive switches off as soon as
the pre-set slip is reached.
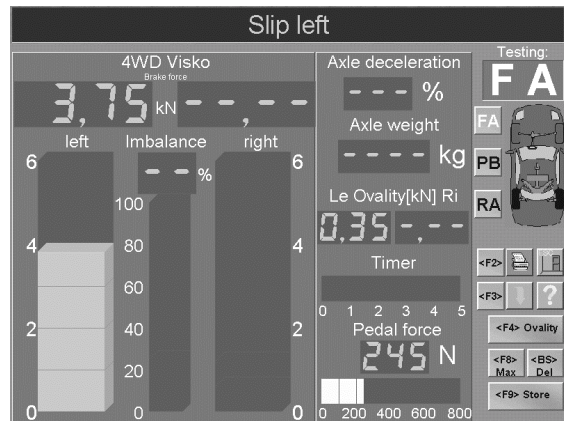
Slip is not reached?
If the brake force of the vehicle brake is not enough to reach slip, then the roller drive is
switched off with the Motor-Off-key of the remote control.
⇒ The max.brake force is displayed by the left hand bar.

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
  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 backwards.

  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.

  Slip is not reached?
  If the brake force of the vehicle brake is not enough to reach slip, then the roller drive is
  switched off with the Motor-Off-key of the remote control.
  ⇒ The max.brake force is displayed by the right-hand bar.

  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 keys of the remote control

		IFB3 Profi-Eurosystem
Front axle	**(FA)**	F9 ⇇
Parking brake	**(PB)**	F9 ⇇
Rear axle	**(RA)**	F9 ⇇

6 Exiting the brake tester
  a. Wait until the rollers stop.
  b. Slowly drive the vehicle off the roller set.

7 Return to the Standard-Mode
  Select Standard-Mode with <F9>.

4.8.4.2   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 test stand.

<u>Test Procedure</u>

1   Activate ASR/ASD Mode
Select desired 4 wheel drive mode with <F9>.
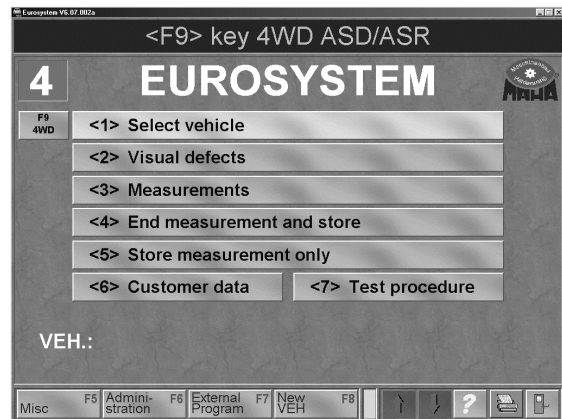
2   Prepare function test
   a. Drive onto the brake tester with the driven axle.
      Both sensor roller of the roller set must be pressed.
   b. Press the clutch or place the gear in idle.
      Place automatic gear to the neutral position (N) .

3   Left-hand function test
   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.
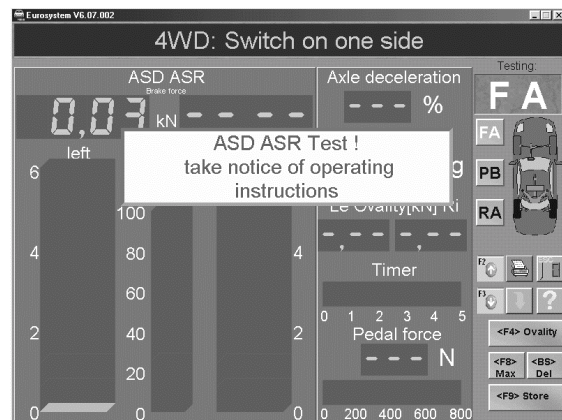
(!) **With a defective ASR (or ASD) the freely running roller set is accelerated!**
⇒ **Do not accelerate beyond 11 km/h, otherwise the roller drive may be damaged.**

---

4   **Function test right**
  a. Drive the vehicle onto the roller set in a reverse manner.
  b. Press the clutch or place the gear into idle.
  Place the automatic transmission to Neutral-Position (N) .
  c. Repeat Point 3.a. and 3.b. for the right hand side.

5   Return to the standard mode
Select standard mode with <F9> .

4.8.5   Diesel-Emission Test with MDO2-LON

1   When the MDO2-LON is correctly set the main menu appears with a box listed as „F4" and the symbol of the gas tester.

2   Use <F4> to start the MDO2-LON software. It will take a few seconds until the measurement screen appears for the diesel emission test.

Eurosystem continues to run in the background.

3   See the MDO2-LON operating manual and software operation for instructions of Diesel Emission testing.

New test can begin...
EUROSYSTEM
<1> Select vehicle   F4
<2> Visual defects
<3> Measurements
<4> End measurement and store
<5> Store measurement only
<6> Customer data   <7> Test procedure
VEH.:
Misc   F5   Admini-stration   F6   External Program   F7   New VEH   F8
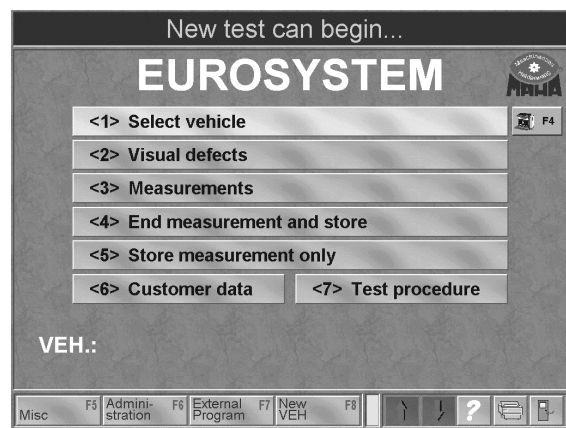
4.8.6   5-Gas Test with MGT 5

1   After correctly installing the MGT 5 software the main menu appears with an extra box "F11" and the gas tester symbol.

2   Use <F11> to start the MGT 5 software. It takes a few seconds until the measurement screen for the gas test appears.

Eurosystem continues to run in the background.

3   See the MGT 5 operation manual for instruction on how to conduct the test and operate the software.

New test can begin...
EUROSYSTEM
<1> Select vehicle   F11
<2> Visual defect
<3> Measurements
<4> End measurement and store
<5> Store measurement only
<6> Customer data   <7> Test procedure
VEH.:
Misc   F5   Admini-stration   F6   External Program   F7   New VEH   F8
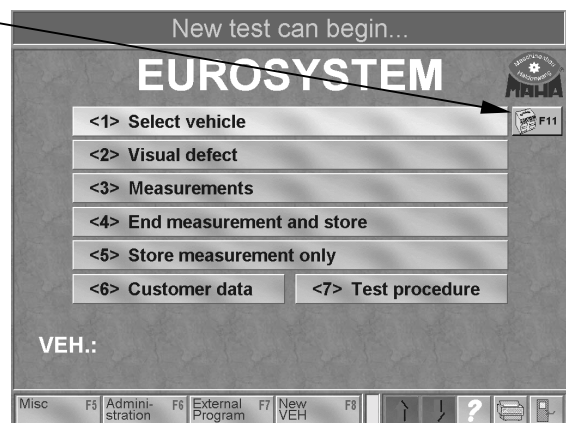
4.8.7   4 Gas Test with Eurogas-Module

The 4 gas test with the Eurogas-Module is described separately in this section because Multex developed its own software for the operation of the Eurogas-Module to which Eurosystem can create a link.

The Multex Eurogas module is connected to the computer via a serial interface and the Multex Software is installed by MAHA-Service technicians. All other settings are also done by a skilled technician.

4.8.7.1   Switching on the System

Eurosystem loads in the usual manner when switching on the system. During the Eurosystem start sequence a self-test of the Eurogas module will also be done.

☞ For this reason, attention should be paid that when the system is switched on the Eurogas module must be switched on at the same time.

Wait for the entire start sequence to be run through and pay attention to the messages on the screen. Continue as always.

1 After switch on, booting and initialization follows exaclty as described in paragraph *4.1.1 Start Eurosystem* .

2 As soon as the screen „Connected devices" has been confirmed with <RETURN> the message to the right appears

3 Then a light blue bar labeled „self-test running" fades in.

4 Wait for the self-test to run through. After successfully completed test run the Eurosystem main menu appears.

5 The main menu which appears has been expanded with a box titled „F11" and with the symbol of the 4 gas tester.

6 A window will appear on top of the main men if the Eurogas module presents an error message.

   In this case, please check the power supply and the wiring of the interface of the Eurogas-Module.

   After the error has been corrected the Eurosystem must be started anew. (per Warm start or main switch)


```
GAS ANALYSER mod. 7121/8040 - rel. 1.4 - 21/09/1998

--> MODE: EUROSYSTEM
--> REGULATION: AU2
--> COM PORT: 1
```


New test can begin...

EUROSYSTEM

<1> Se
<2> Vis
<3> Me
<4> En
<5> Sto
<6> Cu

**Selftest:
Error-4 Gas modul

test power supply
and
RS232-connection**

VEH.:

Misc   F5 Admini- F6 External F7 New   F8
           stration   Program   VEH

4.8.7.2   Activation of the Multex-Software / Conducting the 4 gas test

1   The main menu appears with an extra box "F11" and the gas tester symbol.

2   Use <F11> to start the Multex software. It takes a few seconds until the measurement screen for the 4 gas tester appears. (below).

    Eurosystem continues to run in the background.

3   See the Multex operating manual for instruction on how to conduct the 4 gas test and operate the software.

4   The measurement screen to the right shows the Multex Eurogas module.

5   The Eurogas-Module always runs through a warm-up phase and a leakage test. See the Multex operating manual for more detailed information.

6   The 4 gas test is started with the <F10> after the connection of the induction pliers..

7   After the test is completed, the measurement values are stored with <Alt> + <F6> .

8   Exit the Multex program with the <F6> key. Confirm the question about returning to Eurosystem with <F5>.

9   The display returns to the main menu. The message line reports that measurement values are available which can be stored.

10 The storage of the total measurement is done as described in paragraph *4.2.6 Storage of the measurement.*
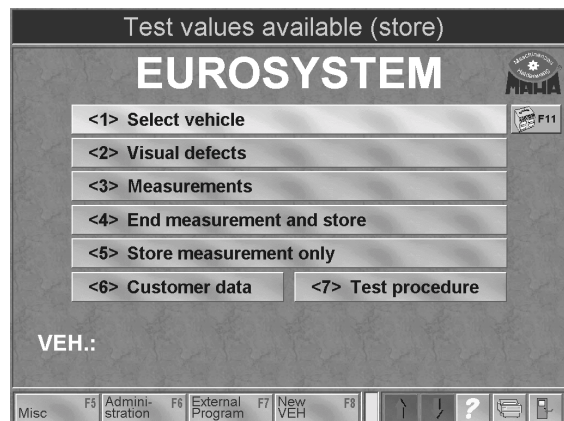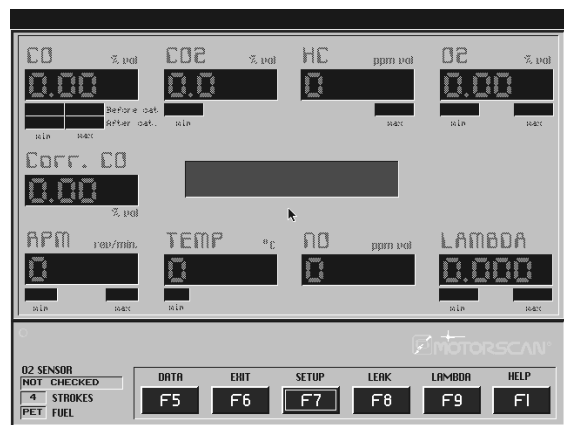
4.8.7.3   Customer- / Vehicle Administration

The total customer administration as already explained in paragraph *3.3 Customer administration*.

More details are given for the sub-paragraph *4.3.2 Allocate customer to vehicle.* A large AU vehicle database is available once the Multex Eurogas-Module has been connected.

The vehicle databases already known from Eurosystem are also still available for use.

1   The customer mask appears with an additional box „<F7> AU-Data" .

2   Enter the customer data as usual (four obligatory boxes!), see. paragraph *4.3.1 Enter new customer and store*.

3   Move the marking by pressing the tab key or the return key till you reach the „Vehicle man." box.

4   Activate the small square next to the box using the mouse click and menu is faded in

5   Move the marking to the desired manufacturer and confirm with <RETURN> (Manufacturer can also be entered via the keyboard).

6   Go to the next box „Year" using the tab key. Enter the year of construction using th digit keys.

    The entry of the manufacturer and if known, the year of construction serve a preselection.

7   If the <F7> AU-Data key is now used, only
    data sets out of the database appear for
    the manufacturer and year of construction
    which has been entered.

    This makes it easier to find the vehicle with
    the proper motor type.

8   Go to the desired vehicle with the cursor
    keys and load the AU-Data with <F4>.

9   The customer mask will appear again in
    which the selected vehicle has been
    imported.

The data from the AU-Database are faded onto the screen for comparison purposes during the
4 gas test.

The vehicle selection can also be done when the Multex-Software is running. See the Multex
operating manual for the proper procedure.

4.8.7.4   Redisplay of the Measurements

The redisplay of the measurements is already described in detail in paragraph *4.4 Redisplay of
Measurements*. It is recommended that this paragraph be read through again.

1   Activate the <A> with the 4 gas tester
    symbol on the redisplay selection screen

2   Eurosystem starts the Multex software as
    with a measurement and after a few
    seconds the redisplay screen appears
    which is very similar to the Multex
    measurement screen.

3   Here the measurement values can be
    viewed and printed out as oftenas needed.

4   Exit the Multex-redisplay with <F6> and
    confirm the inquiry which followed with
    <F6>.

5   It is also possible to print measurement
    values from the selection screen to the
    right. Use the box with the printer symbol or
    the <F12> key.

4.9   Section "Office"

In addition to the PC terminals on the test lane, Eurosystem offers the possibility to install a terminal as the "Office" section. The separation of administrative and test activities has already been mentioned.

The advantages of an "Office" section are:

*   Reception of the customer in a friendly atmosphere,
*   Efficient, quick entry of vehicle and customer data,
*   Printout of earlier tests on the same vehicle for comparison purposes,
*   Customer oriented service and advice,
*   Optimum test preparation,
*   Immediate test begin after calling up customer,
*   Acceleration of the test procedure by concentrating on the vehicle,
*   Central administration of the important databases,
*   and much more...

Once the additional terminal has been started the screen opposite will appear instead of the main menu.

Proceed as described before.
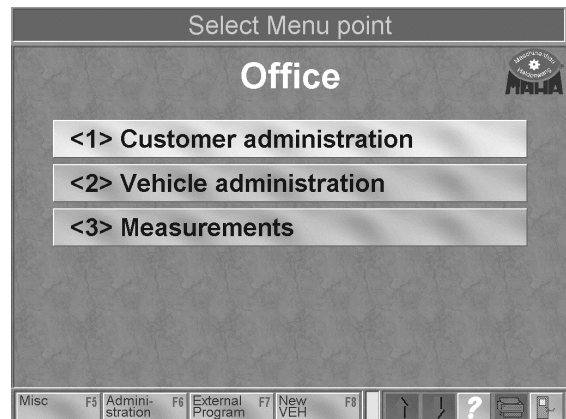
The **customer administration** consists of a database in which the customer can be joined to a specific vehicle and stored as a dataset. Please read paragraph *"Customer Administration"*.

The **vehicle administration** database contains VEH makes with specific data and values. Please read paragraph "*Vehicle Administration*".

5   Maintenance / Troubleshooting

Repair and calibration work on the safety test lane Eurosystem (or Profi-LON) may only be done by MAHA or authorized service partners.

The safety features should be periodically inspected by authorized service technicians (recommended interval: 24 months).
National health and safety regulations should be complied with.

The test stands must be regularly calibrated by authorized service technicians (recommended interval: 24 months).
National guidelines for measurement accuracy are to be complied with at all times.

The following maintenance instructions of the safety test lane can be done by the operator.

⚠️   **Before doing any maintenance work on the test lane place the main switch to position "0". The main switch should be secured against unauthorized switch on. (padlock)**

5.1   Shock Absorber Tester / Suspension Tester

Maintenance work	Interval
Inspect floor assembly, lubricate	every 200 hours or annually
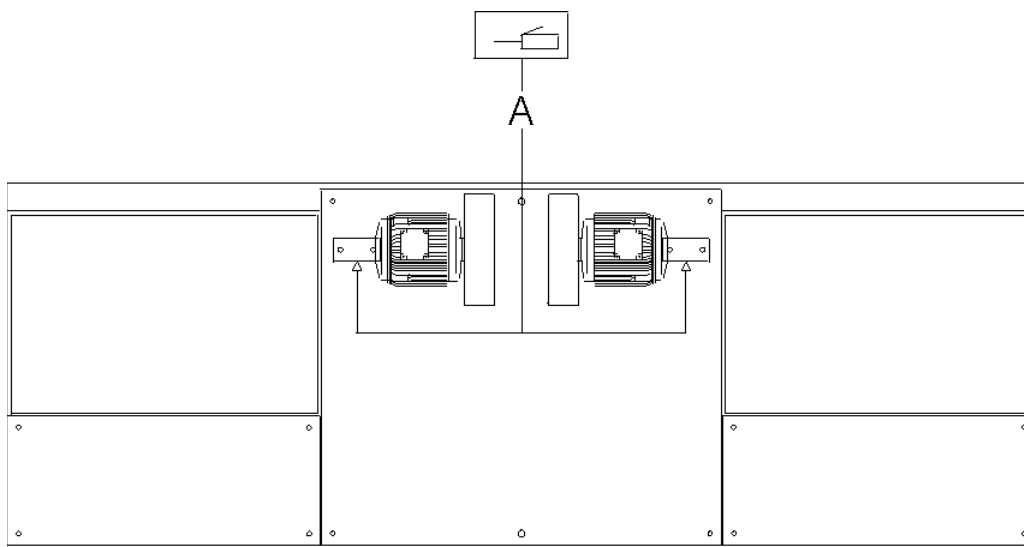
Maintenance points on the shock absorber floor assembly

1   Lubricate points **A**.

2   Check screws for tightness

5.2   Roller Brake Tester

Maintenance points on the roller set
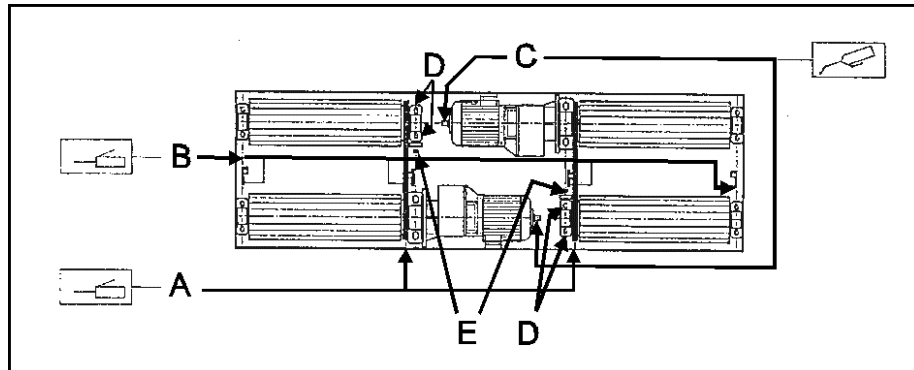
A Chains   **D** Fastening screws

B Sensor roller hinges   **E** Tightening screws

C Motor counter bearings

Maintenance work	Interval
Check chain tension The chain should have a slack of about 5 mm in either direction. 1 Remove middle cover plate on the roller set.. 2 Remove fastening screw D. 3 Adjust tightening screw E until chain tension is correct. 4 Tighten fastening screw D.	14 days after commissioning, then monthly
Grease chain 1 Remove middle cover plate on the roller set.. 2 Lubricate chain.	as required, annually at least
Grease/oil sensor roller hinge	every 200 hours or annually
Lubricate motor counter bearing 1 Inject viscous lubricating oil into drill hole of motor thrust bearing C.	every 200 hours or annually

5.3   Side-Slip Tester

Maintenance work	Interval
Inspect, clean and lubricate the floor assembly.	every 200 hours or annually
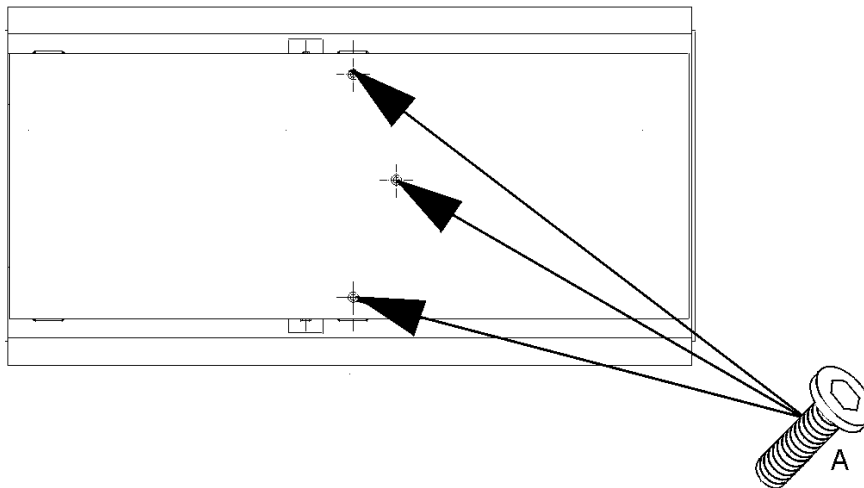
Do not readjust or mechanically modify the sensor in any way

1 Remove screws (A) from test plate.

2 Remove test plate to open side-slip tester.

3 Remove any residue from ground pan.

4 Remove roller bearings from slides.

5 Remove spacer rollers from slides.

6 Clean slides.

7 Clean spacer rollers and roller bearings.

8 Generously lubricate slides with multipurpose grease. Reassemble spacer rollers and roller bearings in their correct sequence and position.

9 Replace spacer rollers and roller bearings.

10 Check correct position of spacer rollers and roller bearings.

11 Put back test plate.

12 Fasten test plate with 3 screws

7	1　Slides
	2　Slides
6	3　Slides
	4　Sensor
5	5　Slides
	6　Slides
	7　Ground pan, (Side view)

1　　　2　　　3　　4
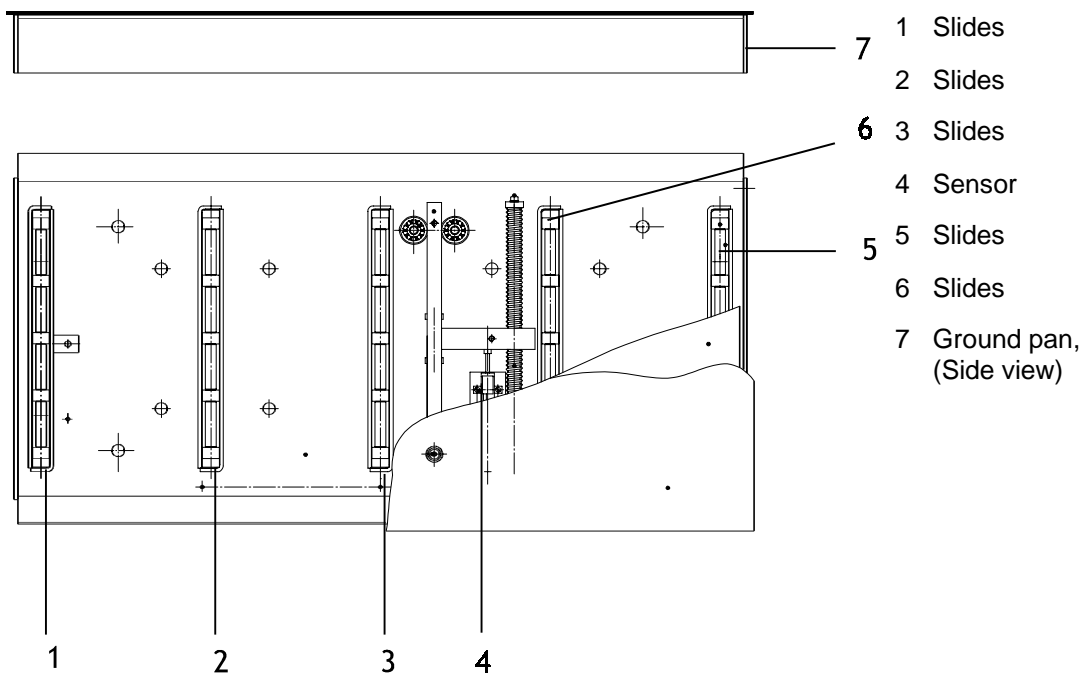
5.4 Error Codes / Error Messages on the Multifunctional Display

Error codes can be displayed in the Profi-LON analog display using the pointer.

Display error code 32

3 kN on the left hand display
2 kN on the right hand display
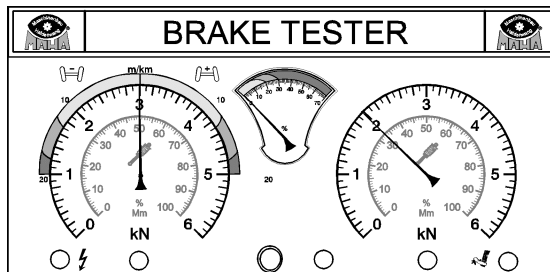
If error code appears turn off the test lane with the main switch and turn on again. If error code reappears contact MAHA service.

Error codes brake tester

Pointer le.	Pointer ri.	Description	Remedy
0	1	Hardware test defective	Contact service.
0	3	Zero point left side defective	Contact service.
0	4	Zero point right defective	Contact service.
3	2	Slip switch-off left side defective	Contact service. Only limited operation possible.
3	3	Slip switch off of both sides does not function	Contact service Test stand without function
3	4	Slip switch off of the right side does not function	Contact service. Only limited operation possible.
4	1	Only left sensor roller pressed	Correctly position vehicle or contact service.
4	2	Only right sensor roller pressed	Correctly position vehicle or contact service.
5	1	Test stand occupied when being started.	Exit test stand. Switch on again or contact service.

To skip error codes press ON key. Brake test is possible.
Particular error codes such as 32 / 34 may cause the slip control to switch off
(ON lamp blinking). In this case do not operate the brake tester.
→Failure to comply can result in tire destruction

5.5 Troubleshooting

5.5.1 Shock Absorber Tester / Suspension Tester

Description	
Cause	**Remedy**
Shock absorber tester will not start up.	
Shock absorber tester occupied when being started.	Turn off main switch. Remove vehicle from test stand. Turn on main switch again.

5.5.2 General / Brake Tester

Description	
Cause	**Remedy**
READY lamp does not light up after test stand has been switched on.	
No power supply	Restore power supply.
Fuse defective.	Contact service.
Lamp defective	Contact service.
Roller set will not start up. Error code 32 / 33 / 34.	
Protective motor switches off and/or defective.	Contact service.
One roller set side starts up and switches off again.	
RPM signal missing, proximity switch defective, protective motor switch on one side off.	Switch on protective motor switch. Contact service.
Measurement values not correct.	
Zero point / amplification not correct.	Contact service to recalibrate test stand.
No screen display.	
Display switched off.	Switch on display.
Cable connection OK?	Check cable.

5.5.3   Side-Slip Tester

Description	
Cause	**Remedy**
No recognition of vehicle on test plate.	
Proximity switch defective.	Contact service.
Proximity switch is set too low.	Carefully set proximity switch higher (must not protrude over the rails).
Connecting cable between proximity switch and control defective.	Contact service.
Deviation of test plate is not or incorrectly displayed.	
Sliding potentiometer defective.	Replace sliding potentiometer.
Connecting cable between sliding potentiometer and control defective.	Contact service.
Vehicle on test plate.	Turn off main switch. Remove vehicle from test stand. Switch on again.
Faulty side-slip value for rear axle of small vehicles.	
Vehicle's rear axle is on side-slip test plate during brake test of front axle.	Measure side-slip of front axle only. To do this deactivate the rear axle side-slip test in the system variables.

6 Appendix

6.1 System Variables

No.	Description	Default	Unit	Comments
1	Brake tester : Front axle limit value difference If the difference of the brake forces is larger than this value an error message will appear.	**25**	%	
2	Brake tester : Parking brake limit value difference If the difference of the brake forces is larger than this value an error message will appear.	**30**	%	
3	Brake tester : Rear axle limit value difference If the difference of the brake forces is larger than this value an error message will appear.	**25**	%	
4	Brake tester : Service brake limit value difference If the difference of the brake forces is larger than this value an error message will appear.	**25**	%	
5	Brake tester: Emergency brake limit value difference If the difference of the brake forces is larger than this value an error message will appear.	**40**	%	
6	Brake tester: Brake force difference limit value (green) If the difference of the brake forces is larger than this value an error message will appear.	**25**	%	Belgium mode only
7	Brake tester: Brake force difference limit value (red) If the difference of the brake forces is larger than this value an error message will appear.	**50**	%	
8	**to 10** not used	**--**	--	
11	Brake tester: Deceleration limit value front axle If the deceleration is smaller than this value an error message will appear.	**50**		
12	Brake tester: Deceleration limit value parking brake If the deceleration is smaller than this value an error message will appear.	**16**		
13	Brake tester: Deceleration limit value rear axle If the deceleration is smaller than this value an error message will appear.	**50**		
14	Brake tester: Deceleration limit value service brake If the deceleration is smaller than this value an error message will appear.	**50**		
15	Brake tester : Deceleration limit value emergency brake If the deceleration is smaller than this value an error message will appear.	**25**	%	
16	Brake tester: Deceleration difference limit value of the front axle If the difference of the deceleration is larger than this value an error message will appear.			no Function
17	Brake tester: Deceleration difference limit value of the parking brake If the difference of the deceleration is larger than this value an error message will appear.			

6.1   System Variables

No.	Description	Default	Unit	Comments
18	Brake tester: Deceleration difference limit value of the rear axle			
	If the difference of the deceleration is larger than this value an error message will appear.			
19	Brake tester: Deceleration difference limit value of the service brake			
	If the difference of the deceleration is larger than this value an error message will appear.			
20	not used	---	---	
21	Brake tester: Front axle limit value ovality	400	N	
22	Brake tester: Front axle limit value ovality	50	%	
23	Brake tester: Rear axle limit value ovality	300	N	
24	Brake tester: Rear axle limit value ovality	30	%	
25	Brake tester: Parking brake limit value ovality	400	N	
26	Brake tester: Parking brake limit value ovality	40	%	
27	Brake tester: Service brake limit value pedal force	300	N	Italian-Mode only
28	Brake tester: Parking brake limit value pedal force	200	N	
29	not used	--	--	
30	Brake tester: Min. brake value per axle	0.5	kN	
	The brake force on at least one side of the axle must exceed this value so that the test is automatically stored and switched to the next axle.			
31	Brake tester: Difference threshold	0.5	kN	
	The brake force difference will only be displayed when the brake force on both sides exceeds this value.			
32	Brake tester: Deceleration unit	0	%	0 = % 1 = m / s^2
33	not used	0.10	s	
34	Platform tester: Wheel brake force to distinguish between CAR/Van	4	kN	
35	Platform tester: Min. wheel brake force for vans	0.5	kN	
36	Platform tester: Axle separation for speed calculation	1900	mm	
37	Platform tester: min. test speed	2.5	km/h	
38	Platform tester: max. test speed	7.5	km/h	
39	Platform tester: Min. wheel brake force for CAR	0.2	kN	
40	Side-slip: Value with position after comma	0		0 = no 1 = yes
	! Only active after program re-start!			
41	Side-slip tester: Deviation limit value (orange)	7	m/km	
	Test values which lie between this value and that of Variable 42 are displayed as orange. Test values which are smaller or the same as the value set down here are displayed as green.			
42	Side-slip tester: Deviation limit value (red)	14	m/km	
	Test values which are smaller or the same as the value set down here are displayed as red.			
43	not used			
44	Side slip tester: Limit value of the deviation (orange) of axle 2.	18		Ireland (Dublin) Mode
45	Side slip tester: Limit value of the deviation (red) of axle 2.	18		
46	**to 50** not used	--	--	

6.1 System Variables

No.	Description	Default	Unit	Comments
51	Speedometer tester: 1st target speed	**30**	km/h	
	This variable sets down the first target speed which the test vehicle's speedometer should approach.			
52	Speedometer tester: 2nd target speed	**60**	km/h	
	This variable sets down the second target speed which the test vehicle's speedometer should approach.			
53	Speedometer tester: 3rd target speed	**90**	km/h	
	This variable sets down the third target speed which the test vehicle's speedometer should approach.			
54	Speedometer tester: 4th target speed	**120**	km/h	
	This variable sets down the fourth target speed which the test vehicle's speedometer should approach.			
55	Speedometer tester: 5th target speed	**150**	km/h	
	This variable sets down the fifth target speed which the test vehicle's speedometer should approach.			
56	Speedometer tester: 6th target speed	**180**	km/h	
	This variable sets down the sixth target speed which the test vehicle's speedometer should approach.			
57	Speedometer tester: 7th target speed	**210**	km/h	
	This variable sets down the seventh target speed which the test vehicle's speedometer should approach.			
58	Speedometer tester: 8th target speed	**220**	km/h	
	This variable sets down the eighth target speed which the test vehicle's speedometer should approach.			
59	Speedometer tester: 9th target speed	**230**	km/h	
	This variable sets down the ninth target speed which the test vehicle's speedometer should approach.			
60	Speedometer tester: 10th target speed	**240**	km/h	
	This variable sets down the tenth target speed which the test vehicle's speedometer should approach.			
61	Speedometer tester: max. display	**180**	km/h	
62	Speedometer tester: Speed window	**5**	km/h	
	A range within the speed must lie is set dowm in this variable so that the test value is automatically filed.			
63	Speedometer tester: Time window	**30**	1/10 s	
	The time set down in this variable has influence on the automatic storing of the test values. Only when the speed is in the speed window, as set down in variable 62, during the time set down here will the test value be automatically stored.			
64	not used	**--**	--	
65	LPS-File read-in possible Only if LPS_IN directory is available Active only after renewed program start	**0**		0 = inactive 1 = active
66	Task switching Windows/Eurosystem possible (Taskswitching)! Active only after renewed program start!	**2**		1 = inactive 2 = active
67	Spain / Ireland Mode	**0**		0 = inactive 1 = active
68	License no. always with capital letters	**1**		0 = inactive 1 = active
69	Norway –Mode	**0**		0 = inactive 1 = active

6.1   System Variables

No.	Description	Default	Unit	Comments
70	**to 73** not used	**--**	--	
74	Poland mode: Limit value pedal force Service brake	**300**	kN	
75	Poland mode: Limit value pedal force parking brake	**200**	kN	
76	Poland mode: Number of after comma positions MINC	**1**		1 to 3
77	**to 80** not used	**--**	--	
81	Brake tester France Limit value Service brake Type 0	**50**	%	
82	Brake tester France Limit value Parking brake Type 0	**18**	%	
83	Brake tester France Limit value Service brake Type 1	**35**	%	
84	Brake tester France Limit value Parking brake Type 1	**18**	%	
85	Brake tester France Limit value Service brake Type 2	**50**	%	
86	Brake tester France Limit value Parking brake Type 2	**18**	%	
87	Brake tester France Limit value Service brake Type 3	**45**	%	
88	Brake tester France Limit value Parking brake Type 3	**18**	%	
89	Brake tester France Limit value Service brake Type 4	**30**	%	
90	Brake tester France Limit value Parking brake Type 4	**15**	%	
91 to 92	not used	**--**	--	
93	Ireland (Dublin) Mode To activate the Ireland (Dublin) Mode.	**0**		0 = inactive 1 = active
94	Ireland (Dublin) Mode: Shock absorber tester: Limit value difference of the values	**30**	%	
95	Ireland (Dublin) Mode: Brake tester: Limit value MIN per wheel brake force	**0.25**	kN	
96	Ireland (Dublin) Mode: Brake tester: Limit value parking brake decleration before deadline	**20**	%	
97	Ireland (Dublin) Mode: Brake tester: Limit value parking brake with 2-circuit brake system	**16**	%	
98	Hungary –Mode to activate the Hungarian mode	**0**		0 = inactive 1 = active
99	Oval-measurement point 1(40) only for Hungarian mode	**40**	%	0 = inactive
100	Oval-measurement point 2 (60) only for Hungarian mode	**60**	%	0 = inactive
101	Oval-measurement point 3 (80) only for Hungarian mode	**80**	%	0 = inactive
102	Oval-measurement point 4 (100) only for Hungarian mode	**100**	%	0 = inactive
103	Oval-window only for Hungarian mode	**10**	N	
104	Oval-window only for Hungarian mode	**10**	%	
105	Percentage limit value from percent only for Hungarian mode	**40**		
106	Trigger for Pedalforce only for Hungarian mode	**500**	N	
107	Trigger for test time only for Hungarian mode	**5**	s	
108	not used	**--**	--	
109	Turn over to section 2	**0**		0 = inactive 1 = active
110	Turn over to section 3 only if no Transponder is available	**0**		0 = inactive 1 = active

6.1   System Variables

No.	Description	Default	Unit	Comments
111	not used			
112	Dekra Mode The Dekra mode can be activated with this mode.	0		0 = inactive 1 = active
113	Italian-Mode The Italian mode can be activated with this mode.	0		0 = inactive 1 = active
114	Austria-Mode The Austrian mode can be activated with this mode.	0		0 = inactive 1 = active
115	Selection of the LOGOS	1		1 = MAHA 2 = SUN 3 = SLIFT
116	Print out of brake force graphic plot for max. values	0		0 = no 1 = yes
117	Print out footline	1		0 = no 1 = yes
118	Chipcard printer available	0		0 = no 1 = yes
119	Receipt automatically printed The receipt is automatically printed in section "Office" after storing of a customer if variable is set to "1". If the variable is set to "0" the print out must be separately started.	0		0 = no 1 = yes
120	Display test price mask The test price mask is displayed in the menu Customer administrationin section "Office" if variable is set to "1". Using this mask the test price is automatically entered when selecting a vehicle.	0		0 = no 1 = yes
121	New-Price Test method TRK heavy	10	DM	
122	New-Price Test method TRK light	9	DM	
123	New-Price Test method CAR	8	DM	
124	New-Price Test method Motorcycle	7	DM	
125	New-Price Test method Special price	6	DM	
126	New-Price Test method TRK heavy	5	DM	
127	New-Price Test method TRK light	4	DM	
128	New-Price Test method CAR	3	DM	
129	New-Price Test method Motorcycle	2	DM	
130	New-Price Test method Special price	1	DM	
131	Brake tester: Screen display after the test The time during which the screen display remains on the screen after the test stand has been exited. (if, in the meantime no other test stand has been driven onto!)	50	1/10 s	
132	Shock absorber tester: Screen display after the test The time during which the screen display remains on the screen after the test stand has been exited. (if, in the meantime no other test stand has been driven onto!)	50	1/10 s	
133	Side-slip Tester: Screen display after the test The time during which the screen display remains on the screen after the test stand has been exited. (if, in the meantime no other test stand has been driven onto!)	25	1/10 s	(valid for side slip tester with proximity switch)
134	Speedometer tester: Screen display after the test The time during which the screen display remains on the screen after the test stand has been exited. (if, in the meantime no other test stand has been driven onto!)	25	1/10 s	

6.1 System Variables

No.	Description	Default	Unit	Comments
135	4 gas tester: Screen display after the test The time during which the screen display remains on the screen after the test has been completed. (if, in the meantime no other test stand has been driven onto!)	**25**	1/10 s	
136	Opacimeter: Screen display after the test The time during which the screen display remains on the screen after the test has been completed (if, in the meantime no other test stand has been driven onto!)	**25**	1/10 s	
137	Light tester: Screen display after the test The time during which the screen display remains on the screen after the test has been completed (if, in the meantime no other test stand has been driven onto!)	**25**	1/10 s	
138	Brake fluid tester: Screen display after the test The time during which the screen display remains on the screen after the test has been completed (if, in the meantime no other test stand has been driven onto!)	**25**	1/10 s	
139	Platform tester: Screen display after the test The time during which the screen display remains on the screen after the test has been completed (if, in the meantime no other test stand has been driven onto!)	**0**	1/10 s	25 without scale 0 = with scale
140	Total print out visual defect: total evaluation with minor defect	**0**		0 = no error 1=error
141	Time for screen set up (after Browser display)	**2**	1/10 s	**do not change!**
142	Totalprintout: Evaluation (Minc/BFT or Shock absorber) in limit range	**0**		0 = no error 1=error
143	Selection of the print out (0-10)	**0**		0 = Standard 1 = TÜV Nord 2 = I 3 = A 4 = E 5 = F fast
144	Selection of the Opaci-Software version	**0**		0 = D V3.00 1 = GB V0.51 2 = DK V0.02 3 = FIN V0.11 4 = A Euro I V0.01 5 = A/1 V0.42 6 = NL V0.05 7 = GB V0.61 8 = DK/1 V0.01 9 = CH/1 V0.12 10 = VAG1743 11 = GR/1 V0.01 12 = FAVL435
145	Selection of shock absorber evaluation	**2**		0 = Mm 1 = % 2 = general
146	Shock absorber tester-Limit value 1(Weak effectiveness)	**0**		0 = no 1 = yes
147	Shock absorber tester-Limit value 2 (defective)	**60**	%	
148	Shock absorber tester-Limit value 1(Weak effectiveness))	**40**	%	
149	Total print out: Issue Ovality	**0**		0 = no 1 = N 2 = %

6.1 System Variables

No.	Description	Default	Unit	Comments
150	Total print out: Issue total evaluation	1		0 = no 1 = yes
151	Shock absorber tester: Store graphic	1		0 = no 1 = yes
152	Shock absorber tester: Offset for the percentage calculation	240		
153	Shock absorber tester: divider for the percentage calculation	680		
154	Shock absorber tester: Percentage factor for the axle weight	24		
155	Shock absorber tester: Percentage -Divider for axle weight	46		
156	**to 162** not used	--	--	
163	Brake tester: Test range end value	6	kN	6kN or 8kN or 12kN
164	Brake tester: Single wheel mode Start time	3	s	
165	Brake tester: Auto oval test min.	0.6	kN	
166	Brake tester: Auto oval test max.	1.2	kN	
167	Brake tester: Auto oval test time for Start	1.5	s	
168	Brake tester: Auto oval test time for test	3	s	
169	Brake tester: Scale left calibration factor Only with the own scale	1000		
170	Brake tester: Scale right calibration factor Only with the own scale	1000		
171	Brake tester: Scale (2 channels) Only with the own scale	0		0 = no 1 = two channel
172	not used	--	--	
173	Speedometer tester: Taxi Test number of ops Only if Softdip general 9 = 1!	2	--	1 to 5
174	Speedometer tester: min. value Stop 1 Only if Softdip general 9 = 1!	999	--	
175	Speedometer tester: max. value Stop 1 Only if Softdip general 9 = 1!	1101	--	
176	Speedometer tester: min. value Stop 2 Only if Softdip general 9 = 1	1479	--	
177	Speedometer tester: max. value Stop 2 Only if Softdip general 9 = 1	1581	--	
178	Speedometer tester: min. value Stop 3 Only if Softdip general 9 = 1	2000	--	
179	Speedometer tester: max. value Stop 3 Only if Softdip general 9 = 1	2100	--	
180	Speedometer tester: min. value Stop 4 Only if Softdip general 9 = 1	3000	--	
181	Speedometer tester: max. value Stop 4 Only if Softdip general 9 = 1	3100	--	
182	Speedometer tester: min. value Stop 5 Only if Softdip general 9 = 1	4000	--	
183	Speedometer tester: max. value Stop 5 Only if Softdip general 9 = 1	4100	--	
184	**to 188** not used	--	--	
189	Turning Plate: Type of angle issue	0	°	0 = Grad 1 = Grad/Min

6.1 System Variables

No.	Description	Default	Unit	Comments
190	Turning Plate: No. of Impulses per rotation	**1000**	Imp./U	
191	Turning Plate: Timeout after occupied	**10**	s	
192	Turning Plate: Limit value for angle Difference	**0.02**	Grad (°)	
193	Noise level: Calibration factor	**5781**		Quest 2400 = 5781
194	Noise level: Offset	**49.4**		Quest 2400
195	Noise level: Limit value orange	**90**		
196	Noise level: Limit value red	**90**		
197	ES_IN limit value storage after completion only if ES_IN ES_OUT active	**1**		0 = no 1 = yes
198	Motorcycle test	**0**		0 = Manual start 1 = Automatic
199	4 gas test (channel 1) request with F11 key	**0**		0 = automatic 1 = active
200	**Test Equipment-Adminstration** pre-warning days till next calibration	**10**		
201	Singapore Special mode Minc with switching	**1**		0 = no 1 = yes
202	Side-slip tester- only test with front axle	**0**		0 = no 1 = yes
203	**to 204** not used	**--**	--	
205	Brake tester: Automatic Oval test	**1**		0 = no 1 = yes
206	Brake tester: Autom. Oval test with parking brake	**0**		0 = no 1 = yes
207	not used	**--**	--	
208	Brake tester: dynamic weight only when variable 209 = 1	**0**		0 = no 1 = yes
209	Brake tester: own scale	**0**		0 = no 1 = yes
210 to 219	to 219 not used	**--**	--	

6.2   Short Instructions

Switch On
Main Switch

Wait for
Initializing

Test Lane
is ready

1. SIDE-SLIP TEST

Drive slowly and straight
over the test plate

Side-slip
is being recorded

2. SHOCK ABSORBER TEST

Drive onto the plates,
release brake and
Place gear shift to neutral

1. Axle weight is displayed
2. Right test plate vibrates
3. Test values are being recorded
4. Right test plate stops vibrating
5. Left test plate vibrates
6. Test values are being recorded
7. Right test plate stops vibrating

BRAKE TESTER

EURO-SYSTEM

EUROSYSTEM
<1> Select vehicle
<2> Visual defect
<3> Measurements
<4> End measurement and store
<5> Store measurement only
<6> Customer data   <7> Test procedure

Side Slip Tester test values
Deviation front axle
+ 5 m/km
Track OK
Deviation rear axle
- - - m/km

3. BRAKE TEST

Drive slowly onto the roller set
Both sensor rollers
must be pressed

a) OVALITY

Apply the brakes with
average force and maintain
for one wheel rotation

Ovality ist being recorded
and displayed

b) BRAKE EFFECTIVENESS

Slowly apply the brakes until
the pre-set slip is reached

Maximum Brakeforce is being
recorded and displayed

Wait until the rollers are **runnig**
then drive the vehicle
**forwards** off the roller set

6.3   Connection to External Software

In Eurosystem Version 5.0 connection to external software has been made possible. All Eurosystem functions remain in application and operation.

6.3.1   Werbas and Vaudis

The new Eurosystem-Software offers connection possibilities for the complete solution systems for automobile dealerships such as **Werbas from Dekra** or **Vaudis from Volkswagen**.

Via **asanetwork** the respective office software is triggered. The Eurosystem main menu appears slightly changed but the operation remains essentially the same.
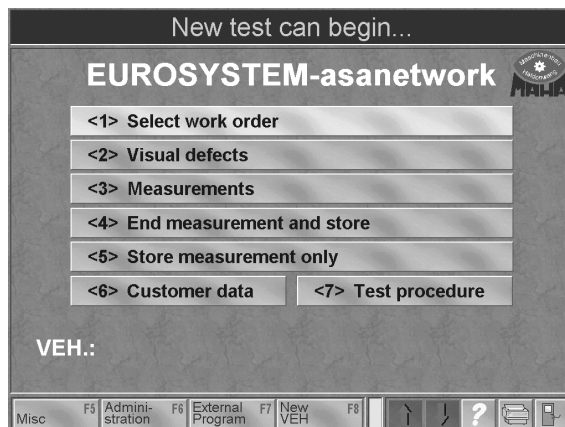
Select „Work Order" (Function 1) in the main menu when **Werbas** or **Vaudis** is connected.

These work orders have been previously created in the external software and put at disposal in a database similar to the Eurosystem waiting line.

Please read the operating manual for Werbas or Vaudis.

6.3.2   Eurotax-Schwacke (WIPS)

The connection of the Eurotax-Schwacke-Software **WIPS** (**W**orkshop-**I**nformation- and **T**est **s**ystem) is used to determine the current value of the vehicle bases on a detailed vehicle database. This replaces the Eurosystem-VEHICLE-database.

The WIPS management is offered under function <6> in the main menu when WIPS is connected.

Access to the Eurotax-Schwacke-Database is possible through this.

Please read the WIPS operating manual for more detailed information.

$C \in$ Konformitätserklärung
Declaration of Conformity
Nr. 801202DG

Hiermit erklärt **MAHA Maschinenbau Haldenwang GmbH & Co. KG.** als Hersteller, in alleiniger Verantwortung, dass nachstehend bezeichnete Maschine in Konzeption und Bauart den grundlegenden Sicherheits- und Gesundheitsanforderungen den hier genannten EG-Richtlinien entspricht.

Bei Änderungen an der Maschine, die nicht mit uns abgestimmt und genehmigt wurde, verliert diese Erklärung ihre Gültigkeit.

Herewith **MAHA Maschinenbau Haldenwang GmbH & Co. KG.** declares as a manufacturer its sole responsibility to ensure that the equipment named hereafter meets the safety and health regulations both in design and construction required by the EC Guidelines stated below.

This declaration becomes invalid if any change is made to the equipment that was not discussed and approved by MAHA beforehand.

Bezeichnung

Prüfstraße Eurosystem

Model:

Test Lane Eurosystem

Maschinentyp

Rollen-Bremsprüfstand
IW2 Euro-Profi bis 3,5 t Achslast,
Antriebsleistung 2 x 3 kW
IW2 EURO 2 / EURO 3 / EURO 4 bis 4,0 t Achslast,
Antriebsleistung 2 x 4 kW
IW2 EURO 5; bis 6,0 t Achslast,
Antriebsleistung 2 x 5,5 kW
Radlauftester
MINC EURO; bis 2,5 t Achslast
Fahrwerkstester oder Stoßdämpferprüfstand
FWT 1 EURO; bis 1,1 t Achslast
SA2 EURO; bis 1,1 t Achslast
Tachometerprüfstand
TPS I EURO; bis 4,0 t Achslast

Type of equipment:

Roller Brake Tester
IW2 Euro-Profi up to 3.5 t axle load.
drive motors 2 x 3 kW
IW2 EURO 2/EURO 3/EURO 4; up to 4.0 t axle load.
drive motors 2 x 4 kW
IW2 EURO 5; up to 6.0 t axle load.
drive motor 2 x 5.5 kW
Side Slip Tester
MINC EURO; up to 2.5 t axle load
Suspension or Shock Absorber Tester
FWT 1 EURO up to 1.1 t axle load
SA2 EURO; up to 1.1 t axle load
Speedometer Tester
TPS 1 EURO; up to 4.0 t axle load

EG-Richtlinien:

- 98/37/EG für Maschinen
- 89/336/EG für Elektromagnetische Verträglichkeit
- 73/23/EG für Niederspannung

EC Guidelines:

- 98/37/EEC for machines
- 89/336/EEC for electro-magnetic compability
- 73/23/EEC for low voltage

DIN EN-Normen:

- EN 292 Teil 1 und 2, EN 294, EN 349, EN 418
- EN 60204 Teil 1
- EN 50081 Teil 1, EN 50082 Teil 2

EN Standards:

- EN 292 Part 1 and 2, EN 294, EN 349, EN 418
- EN 60204 Part 1
- EN 50081 Part 1, EN 50082 Part 2

Technische Dokumentation:

- Entwicklungs- und Konstruktionsunterlagen
- Gefahren- und Risikoanalyse
- Handbuch des Qualitätsmanagements
- Zertifikat nach DIN EN ISO 9001
- Sicherheitsgerechte Bedienungsanleitung
- Montage- und Installationsanleitung

Technical Documentation:

- Design and construction documents
- Danger and risk analysis
- Quality Management Handbook
- Certificate in accordance with EN ISO 9001
- Operating manual based on established safety regulations
- Assembly and installation instructions

Haldenwang, den 4. Juli 2002

Betriebsleitung / Operations Manager

C€ Konformitätserklärung
Declaration of Conformity
Nr. 803202DG

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Bei Änderungen an der Maschine, die nicht mit uns abgestimmt und genehmigt wurde, verliert diese Erklärung ihre Gültigkeit.

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Bezeichnung

Prüfstraße Profi

Maschinentyp

Rollen-Bremsprüfstand
IW2 LON-Profi bis 3,5 t Achslast
Antriebsleistung 2 x 3 kW
Radlauftester
MINC EURO, bis 2,5 t Achslast
Fahrwerkstester oder Stoßdämpferprüfstand
FWT 1 EURO; bis 1,1 t Achslast
SA2 EURO; bis 1,1 t Achslast
Tachometerprüfstand
TPS I EURO; bis 4,0 t Achslast

Model:

Test Lane Profi

Type of equipment:

Roller Brake Tester
IW2 LON-Profi up to 3.5 t axle load
drive motors 2 x 3 kW
Side Slip Tester
MINC EURO up to 2.5 t axle load
Suspension or Shock Absorber Tester
FWT 1 EURO up to 1.1 t axle load
SA2 EURO up to 1.1 t axle load
Speedometer Tester
TPS 1 EURO up to 4.0 t axle load

EG-Richtlinien:

- 98/37/EG für Maschinen
- 89/336/EG für Elektromagnetische Verträglichkeit
- 73/23/EG für Niederspannung

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