# Operating Instructions

HEKA testing lane **UNIVERS "TX" 4cm above floor**
Brakes, suspension and toe
Display, Assist A7.2, Automatic

Manufacturer: **HEKA AUTO TEST GMBH**
Ensisheimer Str. 4

79110 Freiburg / Germany

**Tel.: +49-761-81080**
**E-Mail: info@heka-online.**

**For more information such as testing process and functions of the computer program see our web site: http://www.heka-online.de by clicking on the "Practice" tab!**

**Thank you very much**
for choosing the HEKA testing lane.
We wish you the best of success with it in your automobile service shop!

**Have you got any questions? We will be happy to assist you.**

**HEKA service telephone:** **+49-761-81080**
**HEKA service e-mail:** **info@heka-online.de**

**The HEKA customer service reaches from Freiburg, Germany throughout the world.**

- ***fast*** - ***direct*** - ***competent*** - ***value for money***

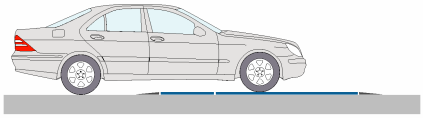
Best regards, your HEKA team Freiburg, Germany

# Contents:

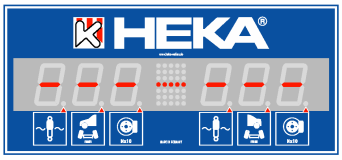
**1. Ready for test Front Axle**


**Testing: Toe front axle**
**Brake front axle**

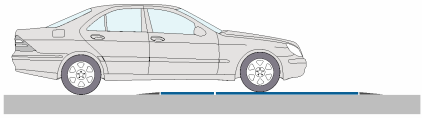




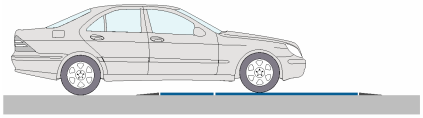
**Saving data: Toe front axle**
**Brake front axle**







**Ready for test Rear Axle**

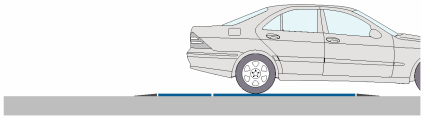



**Testing: Toe rear axle**
**Brake rear axle**

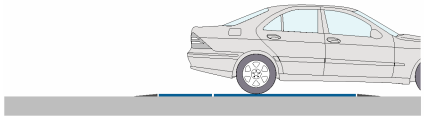


**Saving data: Toe rear axle**
**Brake rear axle**



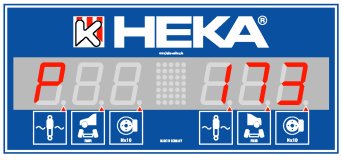


**Ready for test Handbrake**

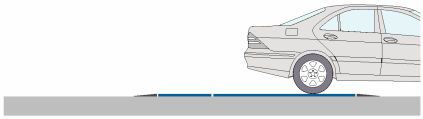



**Testing: Handbrake**


**Saving data: Handbrake**
**Printing measured results**


notice the
*P*
number



The programm: **HEKA 3001 Assist 7.2**

## PC system requirements:

- Operating systems Windows: XP/2000 Professional, 7, 8, 8.1
- PC with Pentium II processor or comparable with at least 166MHz.
- Main memory at least 16MB, recommended: 32MB.
- available hard disk memory: at least 100MB.
- Serial interface COM1 ... COM8
- Protocol: 38400 Baud, 8 Bit, 1 Stop, no parity

## CD installation instructions:

**1.** CD Insert CD and follow the instructions of the set-up program.
**2.** In the user information window, the fields “name” and “company” must be filled in (at least one character each.)

**3.** Quit setup program.
**4.** Remove CD and keep it in a safe place.

The installation is now complete, please restart your PC.

Before you start the application, please check at “Printers and Faxes” if a printer is already installed, otherwise “Add a printer”. Start the program “HEKA 3001” and choose under “File” and “Printer settings” the printer you need.

**Start** program :

PC screen, desktop


## Important information:

The customer and vehicle data are stored in a separate database folder:
“C:\programs\HEKA\HEKA3001\HEKAdb”
or “
C:\program files\HEKA\HEKA3001\HEKAdb”

**! When uninstalling the program, these customer and vehicle data are lost!**

If you want to retain this information during a change of program and/or computer, all of the above mentioned data base should be stored at a separate location.

## Start of operation

**1.** Sensor cable, display cable, PC cable connected.

**2.** E-Box 3001, power supply connected, green LED light on.
Digital display, power supply connected, numbers red, traffic light green.

**3. Testing lane is ready to measure!**

## Brake testing

**1.** Drive onto the testing lane at a speed of approx. 5-10 km/h. Once the **front axle** reaches the brake segments, apply the brakes gently until the vehicle comes to a halt,

**2.** On the digital display you will see in Newton x 10:

| **Brake force left** | **Difference in %** | **Brake force right** |
|---|---|---|
| Brake values left | Traffic light matrix<br>Green OK<br>Yellow “at the limit”<br>Red “not OK” | Brake values right |

**3.** Results appears for a period, depending of the time that is set e.g. 6 seconds.
After the 6 seconds display period, you will see 000 ⬆ 000 .
**The testing lane is now ready for operation again.**

**4.** Start driving again from this position (front wheels on the brake segments) and apply the brakes once more, when the **rear axle** has reached the measuring area
Same as items 2 and 3.

**5. Handbrake** diagnosis same as front axle and rear axle:
Approach the testing lane (you might first have to go back for about 1 meter) and gently apply the handbrake on the braking segments.
Same as items 2 and 3.

**The measuring period equals 3 seconds, the display period e.g. 6 seconds.**

**The display period** can be adjusted under “Settings” / “Default settings”.

## Diagnosis of suspension parts (shock absorbers, springs, etc.)

**Our measuring principle is the post-pulse oscillation method.**
**Through the brake diagnosis process the suspension system is stimulated.**
**The resulting oscillations are recorded by the high-speed sensors**
**and electronically evaluated.**

1. **The suspension check is performed through** a brake test: minimum speed of- 5 km/h, then apply brake pedal. Please ensure to push down on the pedal gently until the vehicle comes to a halt and after stopping still another 2 seconds. without interruption! Then release the brake

2. **Results on the screen:** **Display period e.g.: 6 seconds**
You can change the display period under settings / default settings

**Printout results:**
**Print automatically.**
**Numbers** left and right, from the 1st to the 3rd post-pulse oscillation.
**Curves** rear and front axle, handbrake

**Results on the screen:** **Display period e.g.: 6 seconds,**
You can change the display period under settings / default settings
**Numbers** display the amount of the first suspension post-pulse oscillation

3. **Analysis:**
Die The most significant results come from the diagnosis of the front axle because the brake on the front axle constitutes the highest stimulation **for the front and rear suspension parts.**.
Therefore, for the beginning, we recommend to focus the diagnosis on the front axle.

| | |
|---|---|
| The **first criterion** is the | amount of the 1st post-pulse oscillation |
| Suspension **in good shape**: | mild initial post-pulse oscillation |
| Suspension **in poor shape**: | high initial post-pulse oscillation |

The **second criterion** is the progression from the 1st to the 2nd to the 3rd post-pulse oscillation,

| | |
|---|---|
| Suspension **in good shape** : | oscillations become significantly milder. |
| Suspension **in poor shape** : | oscillations hardly show any decrease. |

For a reliable diagnosis, please also check new vehicles or vehicles of which the suspension parts have just been replaced. By doing so, you determine empirical values, which assist you in selling suspension parts successfully.

**Conduct your diagnosis <u>by checking the visible parts and combining it with the HEKA results!</u>**
**A consequent application will enable you to increase sales enormously.**

## Toe check

**Our measuring principle is the dynamic toe measurement.**
**When the wheels run over the measuring plates, the movable plate is shifted sideways: to the outside: plus (toe out), to the inside: minus (toe in).**
**The results are shown with the respective (plus / minus) sign in millimetres.**

**1.** Within the measuring range, **the relevant axle of the vehicle is driven neutrally,** i.e. without acceleration or delay **and without steering movements measuring segmentsat** a min. speed of 5 km/h

Leave the measuring plates completely, but do not let the next axle touch them!

**2.** **Results on the screen:** **Display period e.g.: 6 seconds,**
display period adjustable under settings / default settings

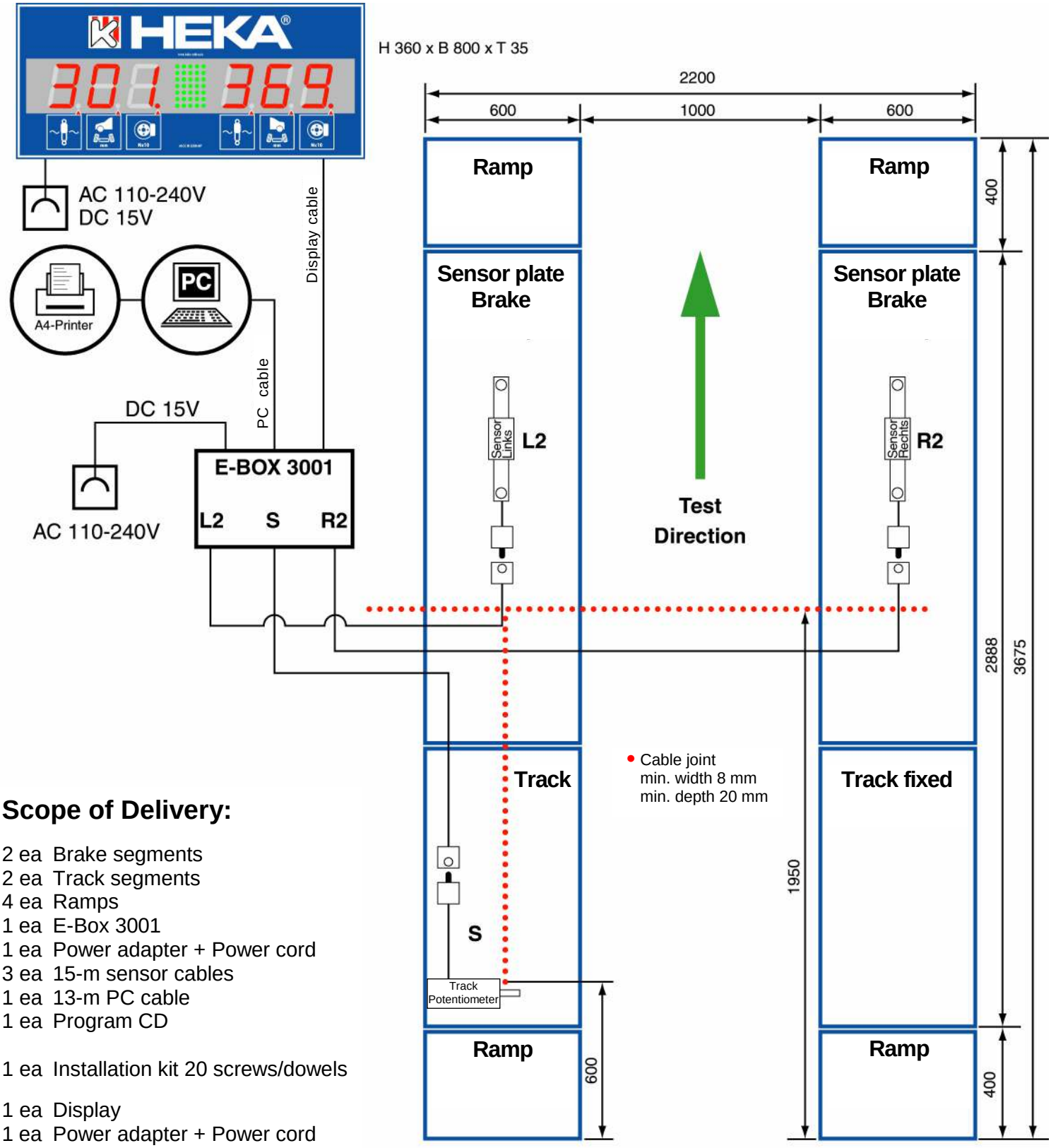
**Results on the printout:**
**Print automatically.**
Results in 1/10 millimetres
Entry of tolerance via Assistant with “OK” / “not OK” analysis

**Results on the display:** **Display period e.g.: 6 seconds,**
display period adjustable under settings / default settings
**Numbers** on the left show front axle, numbers on the right show rear axle.

Please note: the rear axle results will not be displayed before the front axle values have been saved.

**3.** **Analysis:**
Usually, the tolerance indicated by the vehicle manufactures can be applied
Please convert values shown in degrees to millimetres.

The Assistant 7.2 lets you use predetermined values.




## Scope of Delivery:

2 ea Brake segments
2 ea Track segments
4 ea Ramps
1 ea E-Box 3001
1 ea Power adapter + Power cord
3 ea 15-m sensor cables
1 ea 13-m PC cable
1 ea Program CD

1 ea Installation kit 20 screws/dowels

1 ea Display
1 ea Power adapter + Power cord
1 ea 20-m display cable
1 ea 1-m ceiling suspension

## Tools:

1. Heavy-duty hammer drill 6 mm, 10 mm, and 12 mm
2. Impact wrench and nut SW 17
3. Hammer, approx. 300 gr (~10.5 oz)
4. Cross screwdriver, medium
5. Flat screwdriver, electric
6. 2 ea combination wrenches SW 13
7. 1 ea combination wrench SW 17
8. Vacuum cleaner
9. Tape measure and chalk

## Installation of the brake and toe segments acc. to the plan:

1. **Aim towards testing direction on the floor and position.**
   Recommended distance between the segments: 1,000 mm.
   This distance can vary, depending on the vehicles to be diagnosed (car or van).
   Caution! Please take the ramps into account.

2. **Remove the mesh plates SW 17 mm.**

3. **Mark fastening holes** per brake segment x 4, per toe segment x 4 as well as ramp fastening holes with the hammer drill
   Using stone drill, drill about 15 mm deep.

4. **Clear floor area, store brake and toe segments in a dust-free area.**

5. **Finish drilling all fastening holes with a 12 mm drill about 100 mm deep.**

6. **Outline cable duct on the floor,** see dimensional specifications.
   Required width: min. 4 mm, depth: approx. 20 mm. We recommend wet cutting by a road construction firm (avoids exposure to dust).

7. After the cable duct is ready, the floor assembly can be mounted.

**Caution! Please be aware of testing direction (see arrow).**

## Sensor cable diagram.

From sensor to E-Box 3001

Let the sensor cable project 20 cm from cable duct. **1.**

Connect sensor cable to sensor. **2.**

For cable protection apply cover. **3.**

## Sensor cable, E-Box 3001

**1.** Cable lengths see plan.

**2.** Install E-Box 3001.
A 220-V power outlet must be available near the E-Box 3001 for its power unit.

**3.** Lay the sensor cable: from the sensor to the E-Box 3001, acc. to plan.

**After you have checked the functionality, seal the cable duct with joint sealant**

## Display cable

**1.** Plan the cable layout from the E-Box 3001 to the display (the way you want to hang it). display must be well visible during all testing procedures.

**2. Install the display**
Please fasten it in a secure way in order to avoid any risk of injury! A 220-V power outlet must be available near the display for its power unit.

**3.** First, connect the display cable with the display.
Then, lay the display cable and connect it with the E-Box 301at the display terminal.

## PC cable

**1.** Lay the PC cable from the E-Box 3001 to the PC and plug into free COM port.

## Installing and connecting the E-Box 3001

1. Connect the left sensor cable FA on **(L2)**.
2. Connect the right sensor cable FA on **(R2)**.
3. Connect the centre Sensor cable **(S)** in the middle.
4. Connect the **display cable** on the upper right.
5. Connect the **PC cable** in the upper centre.
6. Connect the **power unit** in the upper centre.

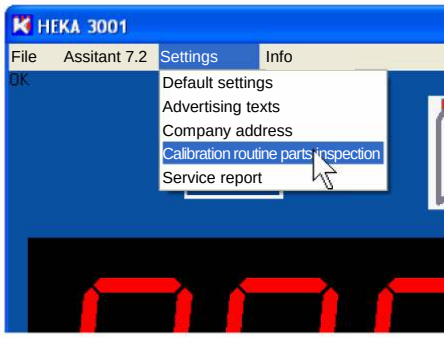

## Ready for operation

The green LED is on.

**Service message on display, blinking "S", call customer service ☎**


**Service message on the screen, blinking "00", call customer service ☎**

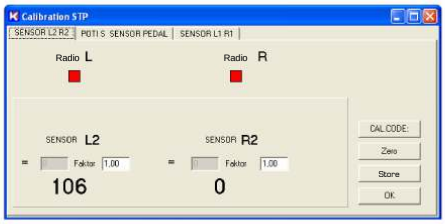

**Turn on service mode.**



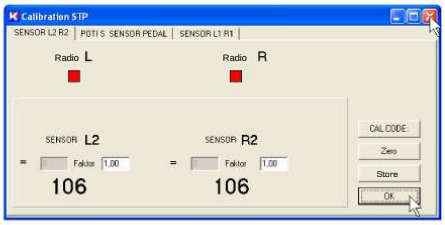

☎ **+49-761-81080**

**Service modus active**


**Service modus active**
**Zero point defect**




**Zero point o.k.**
**Leave service mode**

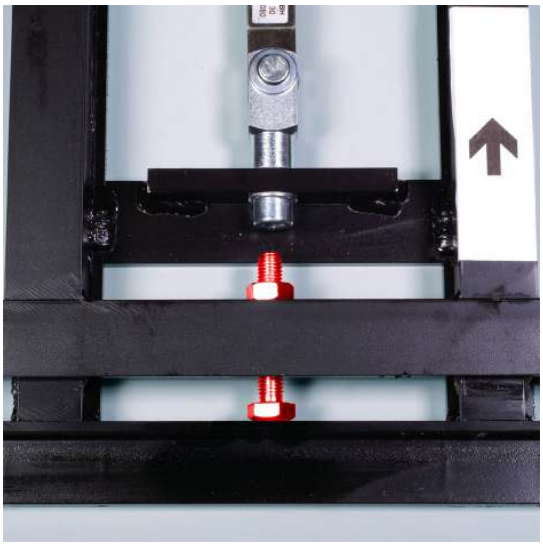



**Display ready to measure**


**Screen ready to measure**

## Adjusting test plate clearance for sensor

Please check the clearance on
a regular basis (2/10 mm).
Adjusting screw and lock nut (SW17 / M10)



**Adjustment:**

Adjust the adjusting screw in a manner that
ensures that clearance (2/10 mm) exists.
The upper brake frame must run smoothly.

## Warranty

HEKA AUTO TEST GMBH Freiburg guarantee their end customers that the HEKA products are free from material and processing errors during the warranty period

**The warranty periody encompasses two years, starting with the day of purchase.**

The warranty is limited to defects occurring during normal use.

**The warranty is excluded in cases of:**

- Lightning strike or overvoltage damage (we recommend a respective insurance).
- Water damage caused by flooding
- Damage caused by welding
- Exceeding the permissible axle load
- Snow melt damage caused by de-icing the vehicle on the testing lane
- Washing the vehicle on the testing lane
- Installation of the testing lane outside of buildings
  (We recommend installation inside rooms).
- Installation in areas with insufficient or clogged water drains.

**HEKA testing lanes may only be used for their intended purpose!**

**We wish you a lot of success with your HEKA testing lane.**

HEKA AUTO TEST GMBH

Ensisheimer Str. 4

79111 Freiburg / Germany