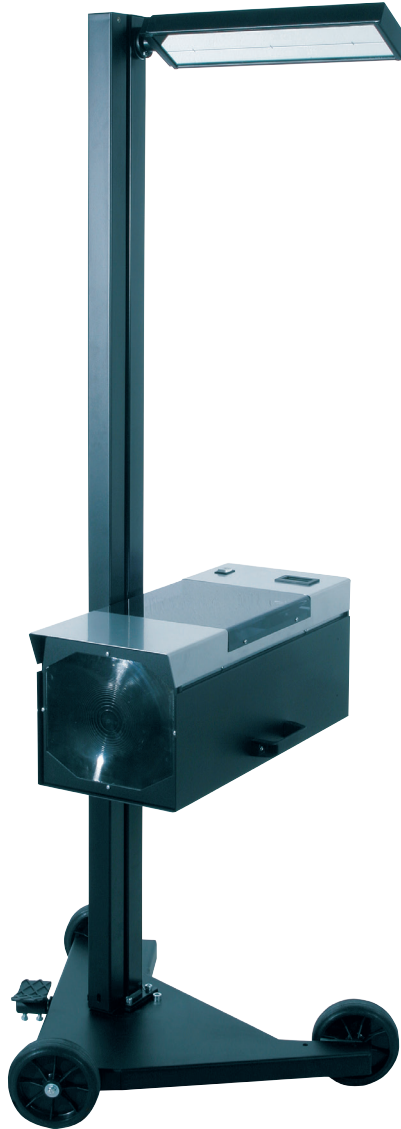


# 02695000

## Pre-Inspection Headlight Beam Tester



## INSTRUCTION MANUAL

E&OE - December 2015

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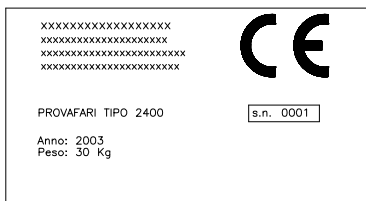
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## TAKING DELIVERY OF THE DEVICE

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At the moment of taking delivery of the device make sure that you have received all the material indicated on the accompanying documentation and that the device has not suffered any damage during transport. If this should be the case point out the extent of the damage to the forwarder and in the meantime contact our customer service department. Only by promptly following this procedure will it be possible to receive the missing material and compensation for damages.



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## INTRODUCTION

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This is a device designed for centering the headlights of any vehicle or motor-vehicle correctly.

The device must be used exclusively for such purpose.

Even the best machinery can only function properly and efficiently if used correctly and kept fully efficient. We therefore request that you carefully read this instruction booklet and refer to it every time any difficulties should arise when using the device. In case of need, we would like to remind you that our service centres, organised jointly with our retailers, are always willing to provide any advice required.

**NOTE:** for the purposes of updating the device in line with technological progress and specific production or installation requirements, the manufacturer may decide without warning to introduce modifications to it. As a result, even if the illustrations shown in this manual should differ slightly from the device in your possession, the safety features and instructions given in it remain applicable.

TECHNICAL DATA	U/M	
width	mm	600
length	mm	670
height	mm	1740
weight	kg	30
Power supply voltage art. 2400/D	V d.c.	9
Power supply voltage art. 2400/I	V d.c.	12

## SYMBOLS USED IN THE MANUAL



Warning symbol

Read the section preceded by this symbol carefully, for the safety of the operator and the device.

## PREPARATION OF THE DEVICE

### HANDLING THE PACKAGED DEVICE

The device has its own special box.

Not more than two boxes should be piled on top of each other.

The weight is 30 kg.

The measurements of the boxes are:

**B:** 670 mm

**L:** 590 mm

**H:** 760 mm

### HOW TO UNPACK THE DEVICE

Open the top end of the box and pull out the device while inclining it slightly.

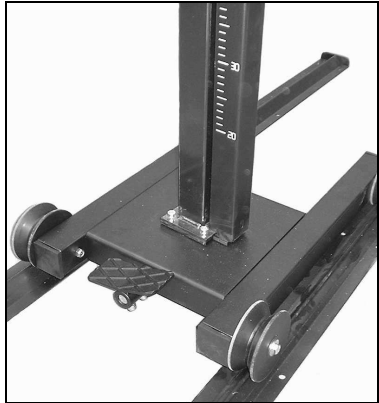
Keep the box for possible transport requirements.

## DESCRIPTION OF THE DEVICE

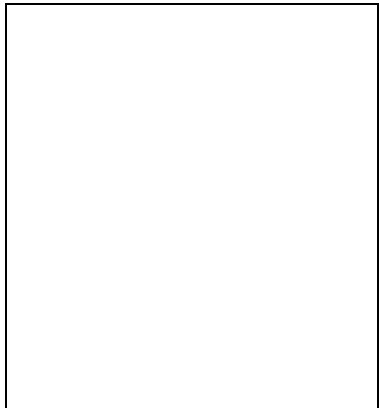
The headlight beam tester is a device for testing the headlights of all types of motor vehicles, vehicles and heavy goods vehicles.

The device can be installed as a fixed station with "v" wheels and lateral movement on tracks.

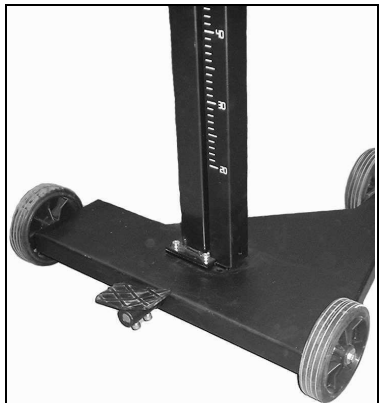
The column can rotate, by means of a pin mounted on precision ball bearings, by about 30° for alignment with the vehicle and is blocked by a pedal operated brake.



Using the same base rubber castors can also be mounted

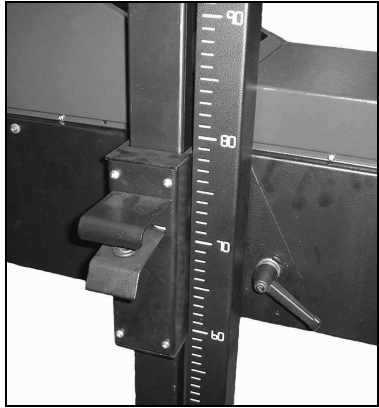


The headlight beam tester can also be mounted on a traditional type base which again allows rotation of the column.



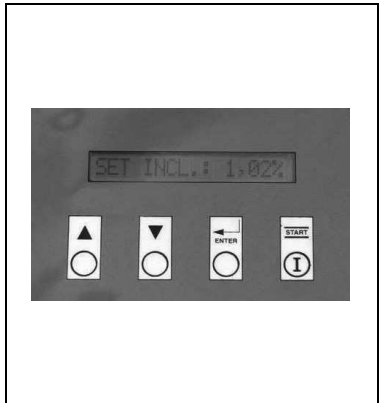
## DESCRIPTION OF THE DEVICE

The optical box can be adjusted height-wise by sliding it along silent and precise plastic sliding blocks balanced by a spring mounted on the inside of metal sheeting cover containing a centimetre gauge for exact positioning in relation to the headlight.



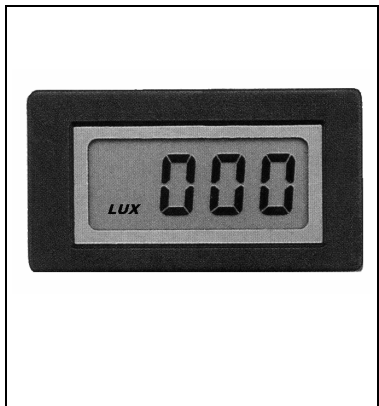
### ART. 2400 I

The control monitor has a large, back-lit LCD display and serial socket RS232, enabling a number of operations to be carried out rapidly and guiding the operator in the centering of the headlight.



### Art. 2400/D

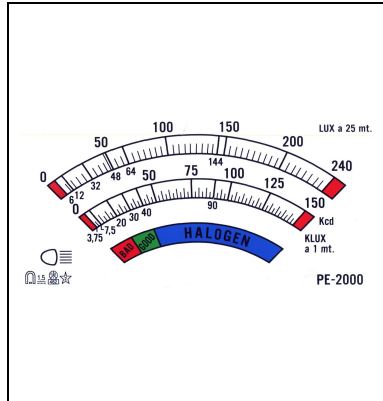
The digital display means the luminous intensity value can be quickly read off.



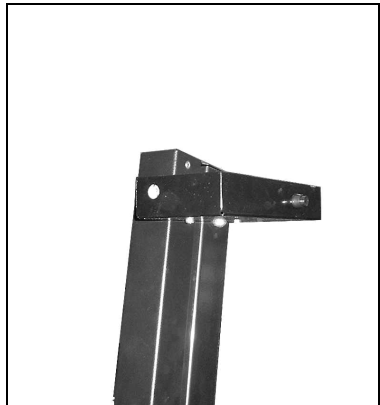
## DESCRIPTION OF THE DEVICE

### ART. 2400 e 2400/S

The analogical instrument has three scales, two of which are graduated and one of which is coloured.



The visor facilitating alignment of the device with the vehicle may function by means of a mirror or laser.





## GENERAL SAFETY PRECAUTIONS

**The rules shown below should be followed carefully to prevent damage to the operator or the device**

- Carefully read the safety labels on the device, do not cover them for any reason and replace them immediately if they should be damaged
- The device should only be used by authorised staff trained to use it.
- Do not use the device in an explosive environment.
- The workplace must be dry and sufficiently aired.
- When moving the device watch out for other people and especially children.
- Do not bang against shelves or scaffolding where there is a risk of falling objects, you could be injured or the device damaged.
- The storage temperature should be between -5°C and +55°C.
- The operating temperature should be between -5°C and 45°C.
- Provide an appropriate exhaust fumes extraction system, since the headlights must be tested with the engine on. Accidental inhalation of carbon monoxide can cause serious injury and even prove fatal. Contact our area representative to find out which is the best system for your premises.
- Avoid leaving the headlight beam tester exposed to sunlight or in the immediate vicinity of sources of heat such as stoves, radiators etc.
- Do not leave the headlight beam tester in the rain or in excessively damp places, the electronic circuits could be damaged.
- If the headlight beam tester is to be left idle for prolonged periods cover it with a special dustsheet (optional).
- The headlight beam tester contains a battery which if handled improperly could cause a risk of fire or explosion. To prevent such risks do not use sources of heat or naked flames near the battery and in the event of replacement use another with the same technical characteristics.
- If anomalous functioning of the device should be observed request the assistance of the retailer or send the machine to the nearest servicing centre.
- In the event of replacing components, request ORIGINAL spare parts from a concessionaire and/or Authorised Retailer.
- Tampering with any parts of the device will entail lapsing of the guarantee.

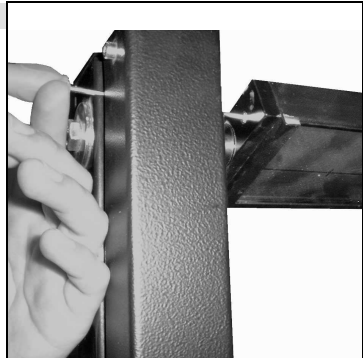
## PREPARATION

### ASSEMBLING THE MIRROR VISOR

The mirror visor is calibrated with the respective device during the testing phase and cannot consequently be used with other headlight beam testers.

Place the visor beside the plate so that the attachment holes and external rims coincide; screw on using the two screws provided.

Do not mount the mirror in a rotated position (protruding from the joint block) it would be in an incorrect position.



### PREPARATION OF THE VEHICLE

Make sure that the headlights are clean and dry. If the vehicle has its own headlight adjuster inside the vehicle, position this to "0". Remove anything which might affect the correct attitude of the vehicle: mud, snow, ice etc. Straighten up the wheels of the vehicle. Make sure that the vehicle has no distortion of the body. Check that the tyre pressure is correct. Turn on the engine and perform the test. In the case of vehicles with pneumatic suspensions turn on the engine five minutes before starting the test and continue with the engine on.

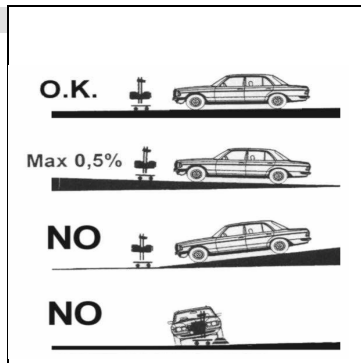


### WARNING!

When working in enclosed areas with the engine on, an extraction system of the noxious fumes produced is required. Use of a specific exhaust fume extraction system is recommended.

### WORK SURFACE

During testing of the headlights the floor surface should be flat. If this is not possible the headlight beam tester and the vehicle should, at least, be positioned on a surface with an even difference in level and in any case with an incline of not more than 0.5%. The testing of headlights on surfaces which are not perfectly regular or flat is not recommended inasmuch as the adjustment of the same may not be correct.



## ALIGNMENT OF THE VEHICLE

### POSITIONING

Place the headlight beam tester in front of the right headlight of the car at a distance of approx. 20cm, measure the height from the ground to the centre of the headlight and adjust the optical box to the corresponding height using the graduated scale on the column. Use the top of the sliding block as an index on the scale.

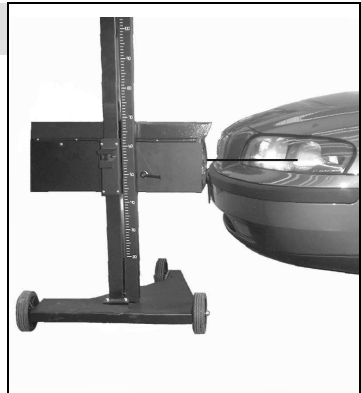


### POSITIONING WITH THE HELP OF THE LASER POINTER

By turning the wheel on the back of the optical box to the "0", position, corresponding to the centre of the lens, a laser ray will be emitted which will help you to align the centre of the headlight.

When you set the inclination of the headlight using the wheel the laser will switch off automatically.

At the end of every test, to prevent the batteries from going flat, turn the inclination wheel situated at the back of the optical box to a percentage other than 0% ( e.g. 1%)



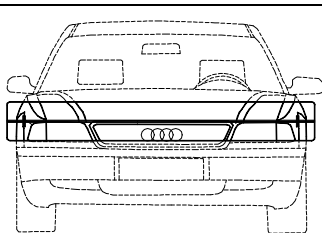
### WARNING!

Do not look at the laser beam directly during this operation and make sure that it is not pointing at people near the workstation.

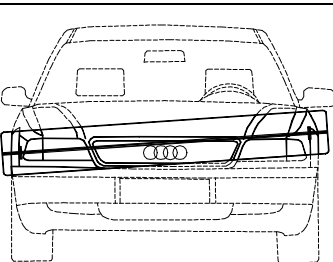
## ALIGNMENT OF THE VEHICLE

### ALIGNMENT WITH THE MIRROR VISOR

Look for two symmetrical details on the front of the vehicle (such as the top of the windscreen or the headlights themselves). Release the column using the pedal, turn the optical box until the two points of reference coincide with the black line impressed on the mirror when looking into the mirror.



**OK**



**NO**

### ADJUSTMENT

Check that the optical box is level by checking the spirit-level inside it. If it is not level, loosen the lever in the picture and adjust the box.



## ALIGNMENT OF THE VEHICLE

### ALIGNMENT WITH THE LASER VISOR

The operator and planner of the workstation should be aware of the risks deriving from laser beams. The work station should not in any case be in an area of transit, must be clearly identified and marked off by a yellow line, if possible enclosed by barriers.

Check that there are no people present in the testing area, release the column using the pedal, turn the visor downwards and turn it on.

Look for two details on the front part of the vehicle, such as the two headlights and turn the optical box until the two reference points coincide with the line projected by the visor, then block the column.



### **WARNING!**

Turn off the laser immediately, before continuing any other operations, whether for testing or adjusting the headlight.

The line laser is in class 3A with a wavelength of 650 nm (nanometres) and a power of 3 mW (milliwatt) so that even direct observation of the beam with the assistance of amplifying observation instruments such as binoculars may be dangerous. Accidental exposure is not considered dangerous inasmuch as since the beam is visible the eyelid reflex does not allow exposure of more than 0.25 sec.

## HEADLIGHT BEAM TESTING ART. 2400 AND 2400/D

### ADJUSTMENT

At the top of the headlight read off the headlight inclination given by the manufacturer, e.g. 1.2%, turn the wheel situated at the back of the optical box accordingly.

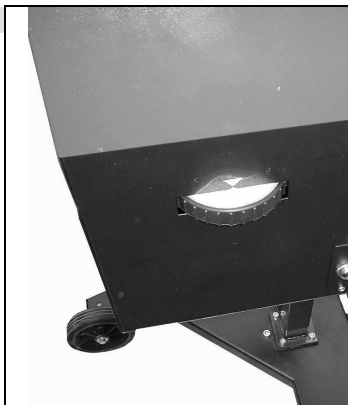
Should no indications be given by the manufacturer, observe the legal dispositions.



### WARNING!

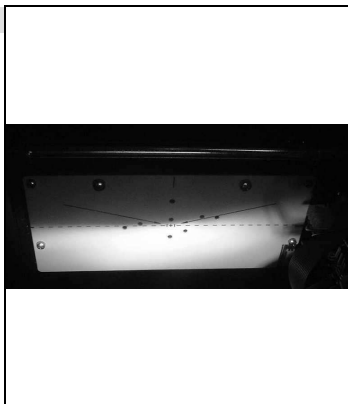
We would like to remind you that the inclination of the headlights must in any case be in observance of current law, which states that for **lower beam headlights** situated at **up to 80cm from the ground the inclination must be at least 1%**.

**For upper beam headlights above 80 cm, the inclination must be at least 1.5%.**



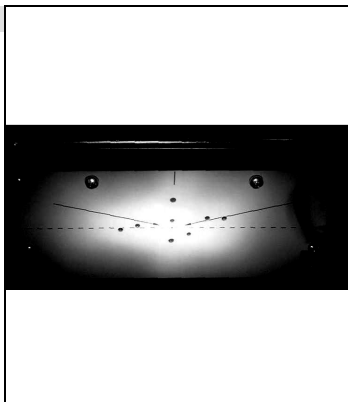
### TESTING THE LOWER BEAM HEADLIGHT

Check that the position of the projection of the headlight is aligned with the serigraphed line on the test panel and if so, press the switch with the lower beam headlight symbol to read off the value.



### TESTING THE UPPER BEAM HEADLIGHT

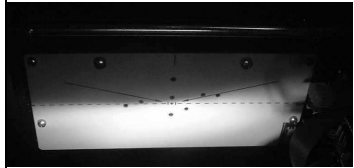
Check that the position of the projection of the headlight is aligned with the serigraphed line on the test panel and if so, press the switch with the upper beam headlight symbol to read off the value.



## HEADLIGHT BEAM TESTING ART. 2400 AND 2400/D

### TESTING THE FOGLIGHT BEAM

Check that the position of the projection of the foglight is aligned with the serigraphed line on the test panel and if so, press the switch with the foglight symbol to read off the value.



## HEADLIGHT BEAM TESTING ART. 2400/ I

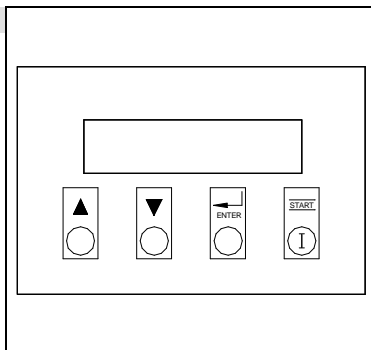
### PREPARATION

Using the **UP** and **DOWN** buttons, type in the height of the headlight from the ground and press **ENTER**.



### WARNING!

If the writing **BATTERY FLAT** appears when turning on, connect the battery charger provided to the socket situated on the back of the optical box and leave to charge for at least **12 hours**; testing can also be done however with the battery charger connected and functioning.



### ADJUSTMENT

At the top of the headlight read off the headlight inclination stated by the manufacturer, e.g. 1.2%, turn the wheel situated at the back of the optical box accordingly.

Should no indications be given by the manufacturer, observe the legal dispositions.



### WARNING!

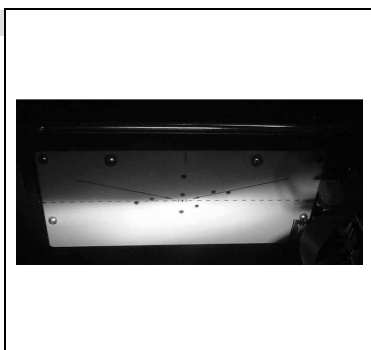
We would like to remind you that the inclination of the headlights must in any case be in observance of current law, which states that for **lower beam headlights** situated at **up to 80cm from the ground the inclination must be at least 1%**.  
**For upper beam headlights above 80 cm, the inclination must be at least 1.5%.**



### TESTING THE LOWER BEAM HEADLIGHT

The display will now read **"CHECK RIGHT HEADLIGHT"**, press **ENTER**.

The wording **"ANB.DX KLX=015,2"** (right lower beam Klux= "read off value ") will now appear, check that the position of the projection of the headlight is aligned with the serigraphed line on the test panel and if so, press **ENTER**.

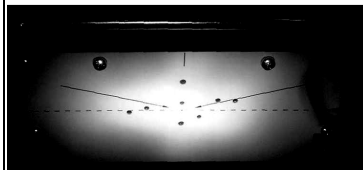




## HEADLIGHT BEAM TESTING ART. 2400/ I

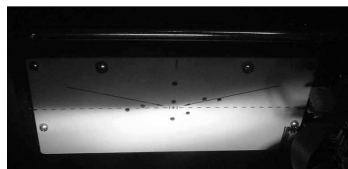
### TESTING THE UPPER BEAM HEADLIGHT

The wording "**ABB.DX KLX=041.5**" (right upper beam Klux= "read off value ") will now appear on the display, check the position of the projection of the headlight on the test panel and press **ENTER**.



### TESTING THE FOG LIGHT

The wording "**FNB.DX KLX=011.4**" (right foglight Klux= "read off value ") will now appear on the display, check the position of the projection of the foglight on the test panel and press **ENTER**



Now move over to the left-hand side of the vehicle and repeat the test sequence.

At the end of the procedure the device will forward the data to the PC station.



### **WARNING!**

In the case of free-standing headlight beam testers (on rubber castors) after being positioned on the left headlight, check the alignment once again using the visor.

## ADDITIONAL INSTRUCTIONS

### REPLACING THE LASER VISOR BATTERIES

Unscrew the two screws on the cover of the laser visor and replace the 3 1.5V size AA batteries making sure you put them in the right way up; close the visor again fixing the cover on using the screws provided.



### WARNING!

For longer duration we recommend using alkaline batteries.



### REPLACING THE BATTERIES ART. 2400/D

Should the headlight beam tester device battery need replacing proceed as follows:

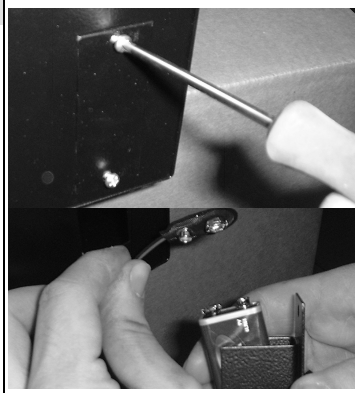
with a crosshead screwdriver unscrew the two self-tapping screws fixing the battery support to the back cover of the optical box.

Remove the support and extract the battery, detach the connector and replace. Reassemble, repeating the operations described for disassembly in the reverse order.



### WARNING!

For longer duration we recommend using alkaline batteries.



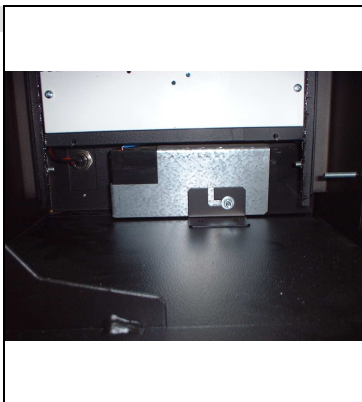
### REPLACING THE BATTERIES ART. 2400/I

To replace the 12Vcc 2Ah lead battery proceed as follows:

open the optical box, removing the cover, be careful not to damage the electrical connections.

The battery is attached behind the test panel, to remove it unscrew the nut with a socket wrench and unhook the attachment bracket. Remove the battery and replace with a new one making sure you put it in the right way up.

Reassemble and check the movement of the test panel before putting the cover back on.



## ADDITIONAL INSTRUCTIONS

### CLEANING AND SERVICING

The machine does not require special servicing apart from normal cleaning with a damp cloth (water and spirit or normal detergent).



### **WARNING!**

Do not use nitrogen based solvents

### DEMOLITION AND DISPOSAL

The machine is made mainly of steel.

Other parts:

Plastic: some small parts

Cardboard and paper: packaging and documents

Painting of the machine: epoxy, scratch-resistant powder.

For disposal of the machine, observe local council regulations.