

HEADLIGHT TESTER

Series 2029

**MANUAL FOR USE AND
MAINTENANCE**

INDEX

ACCEPTANCE OF THE MACHINE	4
FOREWORD	4
TECHNICAL DATA	4
SYMBOLS USED IN THE MANUAL	5
PREPARATION OF THE MACHINE	6
HANDLING MACHINE	6
HOW TO UNPACK THE MACHINE	6
DESCRIPTION OF THE MACHINE	7
DESCRIPTION	7
GENERAL SAFETY RULES	9
PREPARATION OF THE HEADLIGHT TESTER	10
ASSEMBLY OF THE COLUMN ON THE BASE	10
ASSEMBLY OF THE OPTICAL BOX	10
ASSEMBLY OF THE MIRROR AND LASER VISOR.....	10
PREPARATION OF THE VEHICLE	11
WORK SURFACE	11
ALIGNMENT TO THE VEHICLE	12
POSITIONING	12
ADJUSTMENT.....	12
ALIGNMENT TO THE VEHICLE	13
ALIGNMENT WITH THE MIRROR VISOR	13
LASER VISOR ALIGNMENT.....	13
HEADLIGHT TEST	14
ADJUSTMENT.....	14
TESTING THE LOW BEAM HEADLIGHT	14
TEST OF THE HIGH BEAM HEADLIGHT	15
FOG LIGHT TEST	16
CLEANING AND MAINTENANCE	18
DEMOLITION AND DISPOSAL.....	18
WARRANTY	19

ACCEPTANCE OF THE MACHINE

At the time of delivery it is essential to check at once and make sure you have received all the material indicated in the shipping documents and that the machine has not undergone damage during shipment. In this case, show the damage to the forwarder and inform our customer service department. Only if you proceed promptly in this way will it be possible to obtain any missing material and reimbursement of the damage.

FOREWORD

This is a device designed for correct headlight beam alignment of any motor vehicle.

The machine must be used for this purpose only. Even the finest of machines can function properly and ensure profitable service only if used correctly and kept in the best possible condition. For this reason, we ask you to read this manual with care and to reread it whenever difficulties should arise in using the machine. In case of need, we remind you that our service centers, organized in cooperation with our retailers, are always at your disposal for any advice you may need.

NOTE: the manufacturer may decide to make changes in the device without notice, in order to adapt it to technological advances and specific production or installation needs. Therefore, even if the illustrations shown in the manual differ slightly from the machine in your possession, the safety and instructions about it are guaranteed.

TECHNICAL DATA	U/M	
Width	mm	600
Length	mm	670
Height	mm	1740
Weight	kg	30
Minimum working height	mm	240
Maximum working height	mm	1410

SYMBOLS USED IN THE MANUAL



Warning symbol

Read the sections preceded by this symbol with particular care, for the safety of the operator and the machine.

PREPARATION OF THE MACHINE

HANDLING MACHINE

The machine is packed in a special crate divided into three parts.

- Optical box, mirror visor
- Base, handle.
- Column complete with slider.

Every part is, in turn, separately packed.

Do not stack more than two crates.

The packed weight is 30 kg.

The external dimensions are:

W: 630 mm

L: 1720 mm

H: 310 mm

HOW TO UNPACK THE MACHINE

Open the crate from the top and remove the parts.

Keep the crate for possible shipping needs.

DESCRIPTION OF THE MACHINE

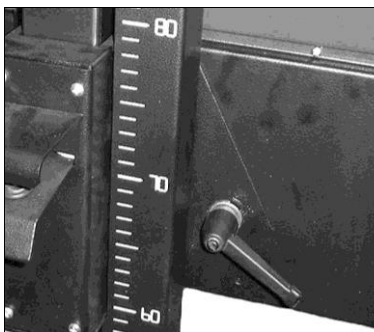
DESCRIPTION

The headlight tester is a device that serves to test headlights of all types, for motor vehicles, cars and trucks in general. Aiming with the mirror visor.

The device is mobile, equipped with a base mounted on rubberized wheels.



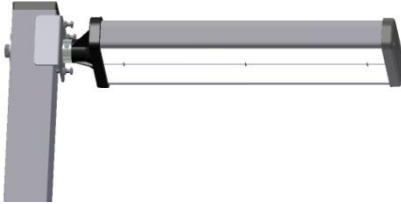
The optical chamber is adjustable in height by means of slides on precise, silent, plastic runners on a column marked with a centimeter scale for exact positioning with respect to the headlight.



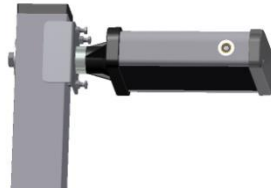
The analogical instrument is equipped with three scales, two of which are graduated and one colored.



The visor that facilitates the alignment of the device to the vehicle is a mirror type.



Mirror visor



Laser visor

GENERAL SAFETY RULES

The following rules must be followed carefully to prevent damage to the operator and machine.

- Read the machine labels, do not cover them for any reason, and replace them immediately if they should be damaged.
- The device should only be used by authorized personnel, trained in its use.
- Do not use the device in an explosive atmosphere.
- The working environment should be dry and sufficiently ventilated.
- When moving the machine, pay attention to other people, especially children, in the vicinity.
- Do not bump shelves or scaffoldings where there may be a danger of falling objects: you and the machine could be hurt.
- The storage temperature should be between -5° and +55°C.
- The working temperature should be between +5° and +45°C.
- Provide an adequate exhaust system for the exhaust gas, since the headlight test must be performed with the engine of the motor vehicle running. Accidental inhalation of carbon monoxide can cause serious damage to the organism, with a fatal outcome in some cases. Contact our agent in your zone, who can indicate the most suitable system for your company.
- Do not leave the headlight tester in the sun or in the immediate vicinity of hot objects like heaters, radiators, etc.
- Do not leave the headlight tester out in the rain or in an excessively damp place as its electronic circuits could be damaged.
- If the headlight tester will not be used for a prolonged period, we recommend that you cover it with its dust cover (optional).
- There is a battery in the headlight tester that could cause a fire or explosion hazard if handled improperly. To prevent this risk do not heat or use open flames near the battery and, when replacing it, use one with the same characteristics.
- When you encounter any malfunction in use of the machine, contact the retailer or send the machine to the nearest service center.
- In case of parts replacements, order ORIGINAL replacement parts from a concessionaire or authorized retailer.
- Tampering with any part of the machine will cause invalidation of the warranty.

PREPARATION OF THE HEADLIGHT TESTER

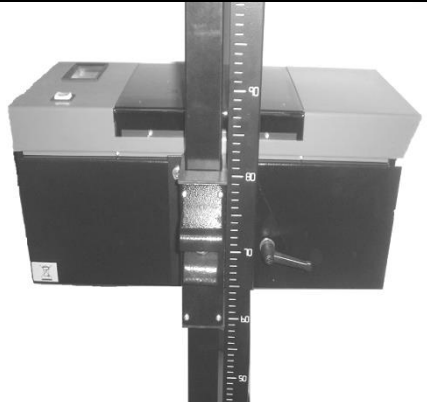
ASSEMBLY OF THE COLUMN ON THE BASE

Position the column on the base as shown in the photo.
Fasten with the hardware supplied.
(M8x20 screw – d.8 washer - M8 nut)



ASSEMBLY OF THE OPTICAL BOX

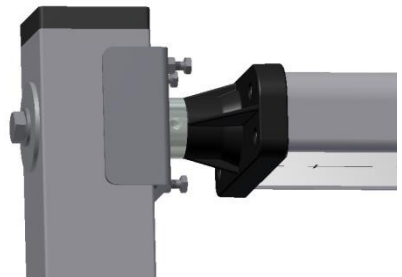
Position the optical box as shown in the photo.
Fasten with a d.8 washer and M8X20 screw at the top left and with an 8X24 (enlarged) washer and M8X20 trip lever at the bottom right.



ASSEMBLY OF THE MIRROR AND LASER VISOR

The mirror and the laser visors have already been calibrated during testing and does not require any calibration at the time of assembly.

To assemble the visor, proceed as follows:
insert the visor supporting pin in the hole at the top of the column and tighten the screws to fasten the part. The visor must be installed from the same side of the optical box.



PREPARATION OF THE VEHICLE

Make sure the headlights are clean and dry. If the vehicle is equipped with a headlight aligner, set in on "0". Eliminate anything that could affect the correct position of the vehicle: mud, snow, ice, etc. Straighten the wheels. Make sure the vehicle does not have any distortions of the frame. Make sure the tires are inflated at the correct pressure. Start the engine and perform the test. In case of vehicles with pneumatic suspension, start the engine five minutes before starting the test and proceed with the engine running.

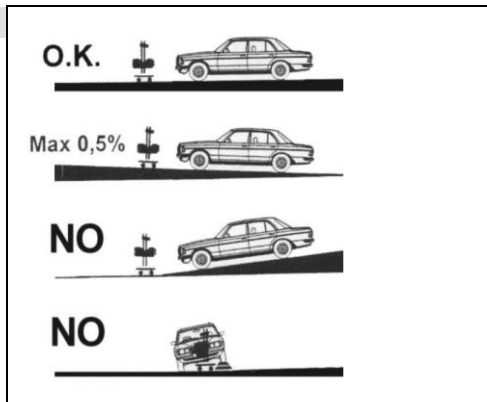


CAUTION!

When operating in an enclosed space with the engine on, it is essential to evacuate the toxic gasses produced by combustion. We recommend using a specific fan for exhaust fumes.

WORK SURFACE

During the headlight test the floor surface must be level. If this is not possible, the headlight tester should be positioned on a surface with a uniform slope, in any case not exceeding 0.5%. Do not test headlights on floors that are not perfectly regular and level, as the measurement might not be accurate.



ALIGNMENT TO THE VEHICLE

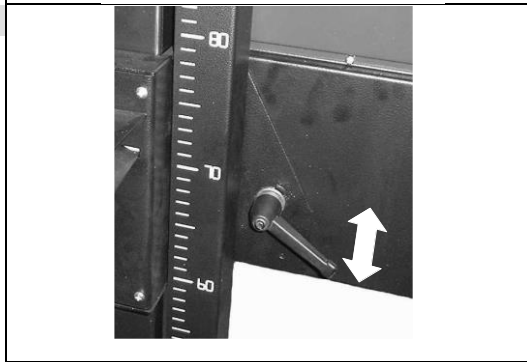
POSITIONING

Place the headlight tester in front of the right headlight of the vehicle at a distance of about 20cm, measure the height from the floor at the center of the headlight and adjust the optical chamber at the corresponding height using the graduated scale on the column. As index of the scale use the top of the sliding runner.



ADJUSTMENT

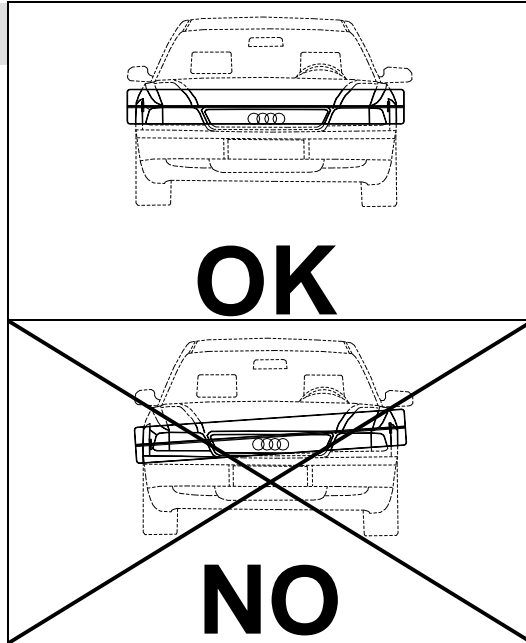
Make sure the optical chamber is horizontal by checking the level on the inside. If it is not perfectly horizontal loosen the lever shown in the figure and adjust the chamber position.



ALIGNMENT TO THE VEHICLE

ALIGNMENT WITH THE MIRROR VISOR

Locate two details, on the front of the vehicle, that are perfectly symmetrical between them (for example the top of the windshield or the headlights themselves). Make sure the line of the visor crosses the two points taken as reference and, if not, turn the headlight tester until they do.



LASER VISOR ALIGNMENT

Operator and engineer must know exactly all the risks coming from laser use. The working bay cannot absolutely be a trespassing area of things or people, the working bay must be well visible and limited by a yellow line and, if it is possible, by a fence.

Verify that people are not in the working bay area before testing

Turn the visor to the floor direction and switch on the headlight beam tester. Find two symmetrical points on the forward car body (ex: the beams themselves). Move the tester in front of the car, turn the optical box till the two points will coincide with the light projected by the laser and then lock the column.



WARNING!

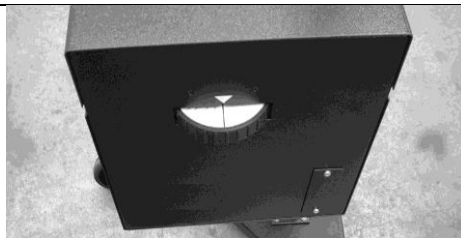
Switch immediately off the laser before proceeding in the testing operations or headlight beam adjustment operations.

The laser line is a 3A class with a wave length of 650 nm (manometre) and a 3 mW power (milliwatt) and it is dangerous a direct exposition to the light ray through amplifying optical instrument , for example a binoculars. It is not dangerous an accidental exposition to the laser light ray, because being the ray visible, human eye will react to the light immediately, after 0.25 sec.

HEADLIGHT TEST

ADJUSTMENT

Read at the top of the headlight the tilt indicated by the manufacturer, e.g. 1.2%, and turn the wheel on the bottom of the optical chamber as needed.



TESTING THE LOW BEAM HEADLIGHT

Check if the "elbow" of the projection in the **tolerances of the horizontal orientation: 5cm/10m left or 20 cm/10m right.**

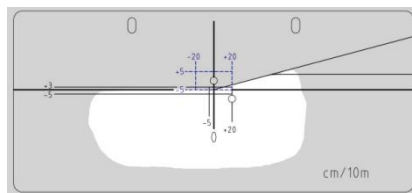
Now read the value of inclination in the rear knob of the headlight tester if the value corresponds at the car headlight value or is in the **tolerances of the vertical orientation: 3cm/10m up or 5cm/10m down**

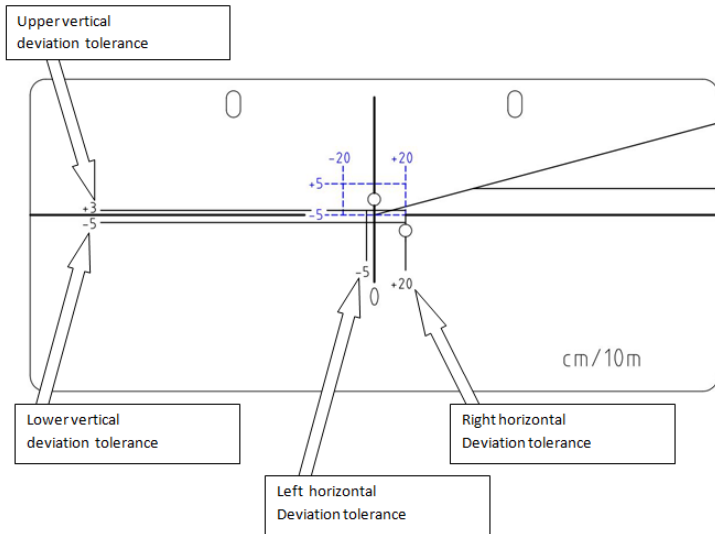
If these values are inside the tolerances the position of the headlight is correct.

Note: Headlight beam tester can display intensity light values in the following measurement units :

Kcandles - Klux at 1 Meter – Lux at 25 Meters.

In order to display one of the above measure at your convenience, select the required measurement unit pressing units selector





TEST OF THE HIGH BEAM HEADLIGHT

Check if the value is **>30 kCd for the cars** and **>12.5 kCd for the motorcycles**

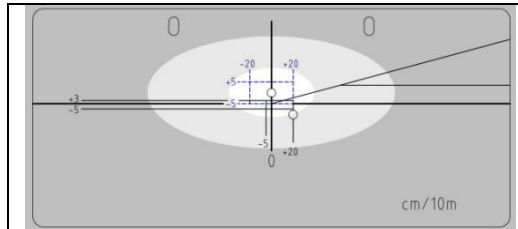
Check if the maximum intensity zone of the projection is in the **tolerances of the horizontal orientation: 20 cm/10m left or 20 cm/10m right.**

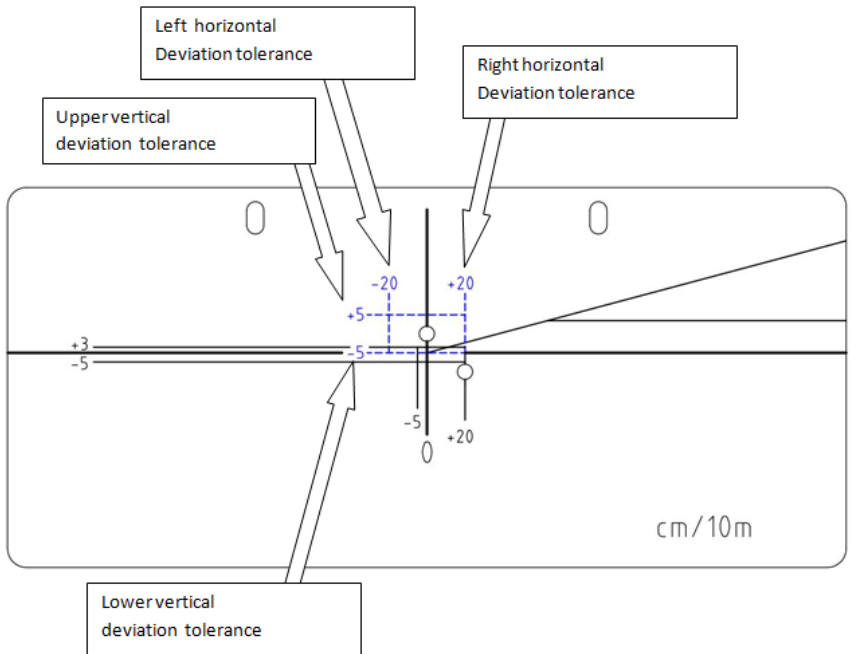
Now read the value of inclination in the rear knob of the headlight tester if the value corresponds at the car headlight value or is in the tolerances **of the vertical orientation: 5cm/10m up or 5cm/10m down**

If these values are inside the tolerances the headlight is correct.

Note: Headlight beam tester can display intensity light values in the following measurement units : Kcandles - Klux at 1 Meter – Lux at 25 Meters.

In order to display one of the above measure at your convenience, select the required measurement unit pressing units selector





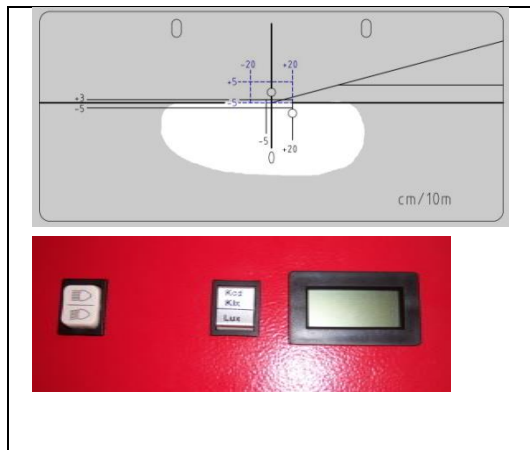
FOG LIGHT TEST

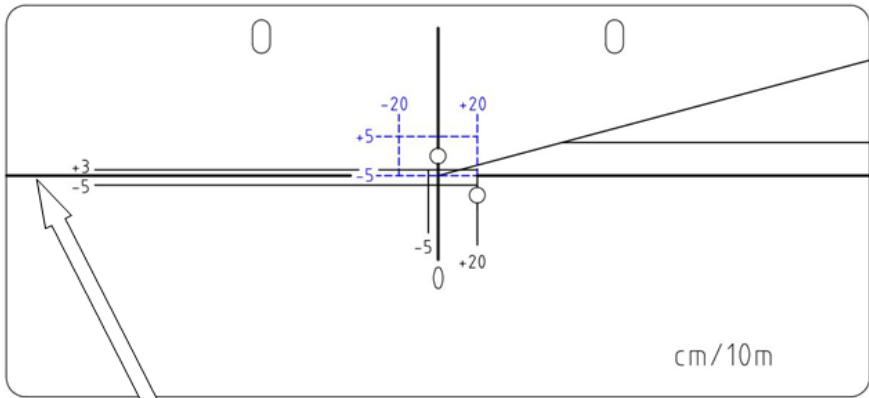
Check the position of the low beam projection on the aiming screen match the reference lines

Note: Headlight beam tester can display intensity light values in the following measurement units :

Kcandles - **Klux** at 1 Meter – **Lux** at 25 Meters.

In order to display one of the above measure at your convenience, select the required measurement unit pressing units selector





Fog beam reference line

SUPPLEMENTARY INSTRUCTIONS

CLEANING AND MAINTENANCE

The machine does not require particular maintenance other than normal cleaning with a damp cloth (water and alcohol, or normal detergent).



CAUTION!

Do not use nitro solvents

DEMOLITION AND DISPOSAL

The machine is mainly composed of steel.

Other parts:

in plastic, some parts

in cardboard and paper, packing and documents.

The machine is painted with scratch-resistant epoxy powder.

In disposing of the machine, comply with the provisions of the local authorities.

WARRANTY

In case of recognised production defects, the unit will be replaced or repaired under warranty, when the claim will be communicated to the company INTER CARS S.A. ul. Powsinska 64, 02-903 Warszawa, Polska within 8 days from goods delivery date. Defected good return will be accepted only with no freight cost included and will be return to delivery address ex-works. No other indemnity is considered.

TECNOLUX S.R.L. Via del Lavoro 12 - 37060 Trevenzuolo ITALY

Imported and distributed by
INTER CARS S.A. ul. Powsinska 64, 02-903 Warszawa, Polska