



MOT APPROVED HEADLIGHT BEAM TESTER

Model:

02683000 - LV

02688000 - HGV

INSTRUCTION MANUAL



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GENERAL REGULATIONS

Carefully read the instructions in this manual, before using the headlight beam tester. Do not allow unqualified persons to use this device. The workplace should be dry, well lit and ventilated. Working areas should be equipped with an exhausts gas aspirator, since the headlight tester must be used with the engine running. Breathing carbon monoxide can be harmful. Put the handbrake on. Do not use the device in direct sunlight and avoid sudden changes of temperature and vibrations.

DESCRIPTION OF THE DEVICE

Headlight beam tester (HBT): Suitable for all headlight types including Xenon

Supplied with:

- Turning column
- Mirror-visor
- Luxmeter

TECHNICAL CHARACTERISTICS:

Column Height: 166 cm.

Width: 61 cm.

Length: 61 cm.

MOT Approved Headlight Beam Tester - LV (02683000)

Includes a kit to make 2 x 3.75 metre rails (4 x 1.50m + 2 x 0.75m)

MOT Approved Headlight Beam tester - HGV (02688000)

Includes a kit to make 2 x 5.2 metre rails (6 x 1.50m + 2 x 0.70m)

MAXIMUM MEASUREMENT HEIGHT: 141 CM.

Minimum measurement height: 24 cm.

Focal length: 500 mm.

PACKING

The HBT is delivered in a recycled carton box.

HEADLIGHT BEAM TESTER ASSEMBLY

Fix the column with 4 screws

Fix the optical box with the screw and the lever

Fix the mirror-visor with two screws

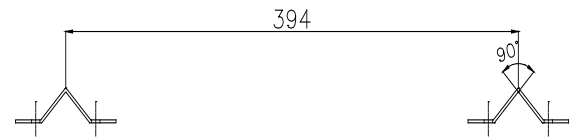
The stand is calibrated and locked in the correct position at the moment of test



INSTALLING RAILS

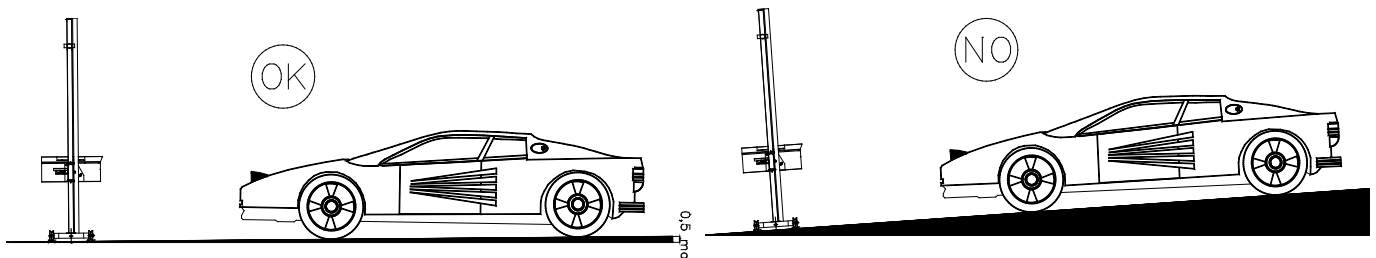
Two sets of rails, each secured to the floor by screws and plastic raw plugs. The rails are positioned at right angles to the test vehicle's line of travel. The two rails must be level with each other, shimmed as necessary, and re-checked after tightening down. In the final position, the rails must be flat within +/- 2mm.

NOTE: For heavy vehicles grout under rails (customers responsibility)



WORKING SURFACE

During positioning, the floor must be perfectly flat and level. It is inadvisable to check headlights on an unlevelled surface, as the test will not be precise.



CAR PREPARATION

Straighten the car wheels up. Check the tyre pressure. Ascertain the headlights are clean and dry. Eliminate any obstruction that could alter the position of the vehicle: i.e. ice, snow, etc. Switch the engine on. Proceed with the engine on. In case of vehicles with an automatic dimmer, switch the engine on for 5 minutes before the test and proceed with the engine on.

OPTICAL POSITIONING

Put the HBT in front of one of the car lights, approximately 20-50 cm from the car.

Look through the visor and look for a horizontal part of the car, or two symmetrical points on the car, for example the top part of the windshield or the bonnet.

Make sure that the visor lines match with these lines, so that the device is completely parallel to the car.

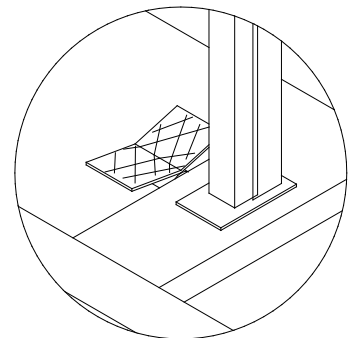
If it is not, slightly turn the HBT, until the lines match.

Measure the height from the floor to the centre of the light and put the optical box at the corresponding height, using the scale shown.

You must use as a point of reference, the top of part VSS (e.g. if the height from the floor is 80cm, put the VSS at the 80cm mark) There is an allowance of +/- 3cm.

The HBT is equipped with a rotating column and brake that allows the device to be easily rotated and locked in the desired position.

The brake is operated by pressing the pedal.





COMPLEX SYSTEMS INCLUDING XENON AND BI-XENON HEADLIGHT SYSTEMS

It is essential that this equipment is aligned exactly on the centre line of the dipped beam pocket.

If when carrying out a normal test/adjustment a clearly defined headlamp pattern cannot be seen, it will be necessary to move the vehicle closer to the test equipment.

It is essential that the vehicle headlamp and test equipment are as close together as possible.

TESTING HEADLAMPS WITH COMPLEX LENS SYSTEMS.

Complex headlamp systems are those that have more than one lamp behind a single lens.

It is essential that the headlamp aim test equipment is aligned exactly on the centre of the dipped beam pocket.

If when carrying out a normal test a clearly defined headlamp pattern cannot be seen, it will be necessary to move the vehicle closer to the test equipment.

It is essential that the car headlamp and test equipment are as close together as possible, otherwise the whole of the beam pattern may not be visible.

EUROPEAN TYPE HEADLAMP CHARACTERISTICS (NOTE:1)

An asymmetric dipped beam, pattern with a distinctive horizontal cut-off on the right, and a 15 degree wedge of light above the horizontal (the "Kick up") towards the left.

A lens with one or more asymmetric stepped patterns molded in the glass.

A lens may carry:

European approval mark – a circle containing an "E" and a number, or

Rectangle containing an "e", and a number

The European approval mark should incorporate a single or double-headed arrow.

The dipped beam is denoted by either:

Capital letter "C" above a capital "E"

Capital letter "C" above an "e"

NOTE: Setting "E" Beam Headlamp aim

These dip-beam headlamps should be set to aim downwards the amount shown on a marking which is either close to the vehicle manufacturer's plate or the headlamp.

For vehicles without a marking, the downward aim should be set as follows:

1.3%, if the headlamp centre is not more than 850mm from the ground

2.0%, if the headlamp centre is more than 850mm from the ground

Reason for rejection

The beam image "Kick-up" is to the offside.



For headlamps with a centre not more than 850mm from the ground, the beam image horizontal cut-off is not between the horizontal 0,5% and 2% lines, i.e. the red tolerance band.

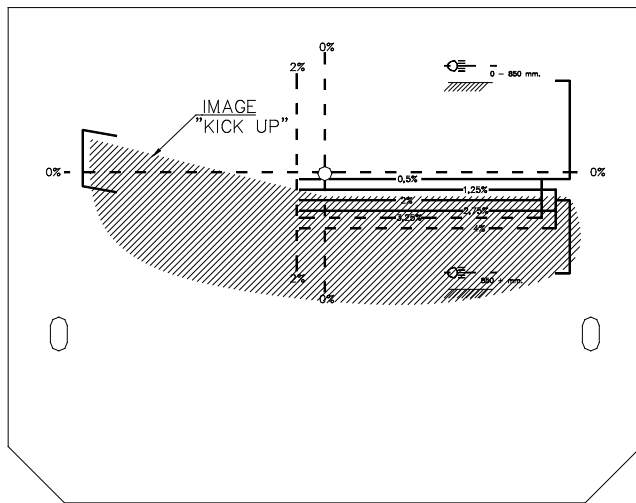
For headlamps with a centre more than 850mm from the ground, the beam image horizontal cut-off is not between the horizontal 1,25% and 2,75% lines, i.e. the blue tolerance band.

The beam image “break point” is:

To the right of the 0% vertical line or

To the left of the vertical 2% line

(NOTE 1) The above information is based on the criteria published in the MOT Inspection Manual which is an HMSO publication and is available from most bookshops. Always refer to the current edition for any amendments or changes to current legislation.





**BRITISH AMERICAN TYPE, (CHECKED ON MAIN BEAM)- CHARACTERISTICS:
(NOTE:1)**

Headlamps tested on main beam have a symmetrical main beam pattern with a central area of maximum intensity (hot spot).
This type of lamp generally has a circular lens

Reason for rejection

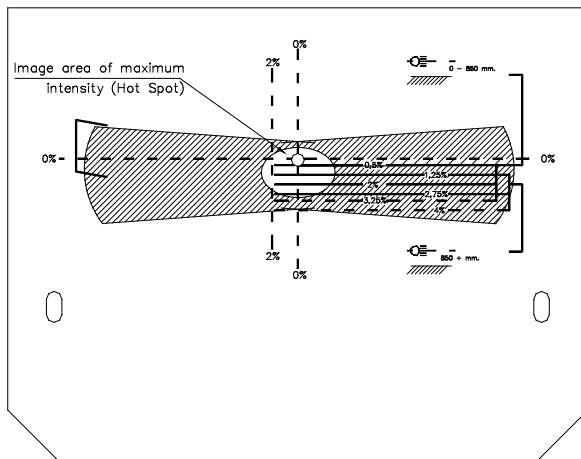
The "hot spot" centre is above the horizontal 0% line.

The "hot spot" centre is to the right of the vertical 0% line, or to the left of the vertical 2% line.

For headlamps whose centre is not more than 850mm from the ground, the "hot spot" centre is below the horizontal 2% line.

For headlamps whose centre is more than 850mm from the ground, the "hot spot" centre is below the horizontal 2,75 line.

(NOTE:1) The above information is based on the criteria published in the MOT Inspection Manual which is an HMSO publication and is available from most bookshops. Always refer to the current edition for any amendments or changes to current legislation.





**BRITISH AMERICAN TYPE (CHECKED ON DIPPED BEAM)- CHARACTERISTICS:
(NOTE:1)**

Asymmetric dipped beam pattern with an area of high intensity intended to be directed along the nearside of the road.

Circular lens.

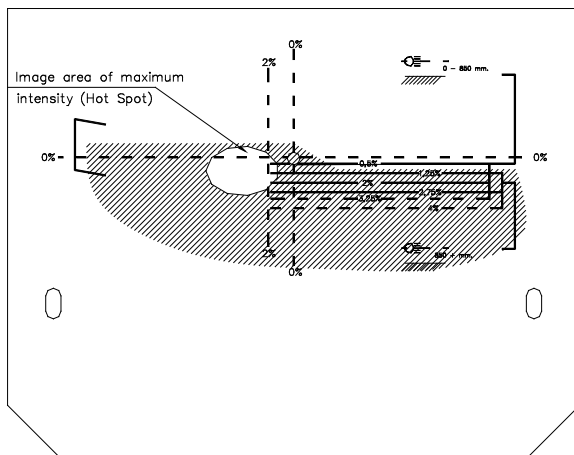
Reason for rejection

The upper edge of the “hot spot” is above the horizontal 0% line.

The upper edge of the “hot spot” is below the horizontal 2,75% line.

The right hand edge of the “hot spot” is: to the right of the vertical 0% line or to the left of the vertical 2% line.

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CONTROL OF THE LIGHT INTENSITY OF HIGH BEAMS

Switch on the high beams.

Read the intensity on the luxmeter.



CALIBRATION

We suggest the unit is periodically checked for calibration in situ. If the unit is covered by a service agreement with the MOT package installer, they will carry this out on your behalf. Should you wish to regularly check the calibration yourself, we recommend you purchase an Alignment Device from your local dealer. Full instructions are provided with the re-calibration tool.

OTHER REGULATIONS AND CALIBRATIONS

The machine is equipped with a spirit level located on the base of the optical box and visible through the transparent panel, with headlights on. If necessary, to level the box open the clutch lever located on the side of the box itself and move the box until perfectly level, then re-close the clutch lever. This operation may prove necessary whenever the equipment is mounted on a different work surface.

Correct use of the machine permits long periods of use without significant maintenance. Eventual calibration of the panel and luxmeter must be carried out on our premises, sending just the optical box that can be easily dismantled by removing the screws.

CLEANING

It is good practice to protect the instrument from dust when not in use. A plastic cover for the optical box is available on request.

Occasionally clean with a damp cloth and remove any stains. Paintwork is detergent resistant. Do not oil the column, or use alcohol for stain removal.

Do not leave the machine in areas where corrosive vapor is present, for example in battery charging or painting areas.

DEMOLITION AND DISPOSAL

The machine is composed of:

Glass (lens)

Plastic (wheels, Plexiglas cover, handles and other small details)

Copper (wiring and luxmeter coils)

Steel (structure and mechanics) up to 80%

Paper and cardboard (instruction manual, packaging)

The machine is constructed principally of steel. For disposal of this material, local authority regulations must be observed.



LASER PASSING THROUGH THE LENS

First, place the tester in front of the beam and adjust the inclination wheel on “0” position. Once the bubble level is centred, set the inclination value indicated by the car manufacturer instructions.

When inclination is not more zero, laser projection will automatically start.

ATTENTION:

To avoid battery discharge, do not leave “0” inclination setting.

LASER PASSING THROUGH THE VISOR

To start the laser, switch on the button placed aside the visor.

To adjust the unit in front of the car, point two symmetrical parts of the car, switch on the laser and adjust until these two points will coincide with the horizontal line projected by the laser.

ATTENTION:

Do not point the laser on people faces.

Switch off the laser if not in use.