



***DUNLOP GARAGE EQUIPMENT***  
**LITECHECK 2 & 3**  
**HEADLAMP BEAM SETTERS**



***USER MANUAL***

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## **GENERAL REGULATIONS**

Carefully read the instructions in this manual before using the headlamp beam setter. To prevent damage to this equipment do not allow unqualified people to use. The work place should be dry, well lit and ventilated. Apply the parking brake. Do not subject the lens to direct sunlight. Avoid sudden changes of temperature and vibration. Do not splash with water or other liquids.

## **DESCRIPTION OF THE EQUIPMENT**

Headlamp beam tester: Equipment for the checking of car, motorcycle and HGV headlamps.

Model: **Litecheck 2** complies with 2005 MOT specification for all classes except HGV. This model is the only version that may be used in a test bay that does not test HGV.

**Litecheck 3** complies with 2005 MOT specification for all classes. This model only to be used in an MOT Test bay where classes of vehicles being tested include HGV.

All Technical characteristics are the same with the exception of:

Headlamp Aiming Screen.  
Length of rails.

Technical characteristics:

	Height	177 cm
	Width	65 cm
	Length	57 cm
	Weight	49 kg
Maximum measuring	Height :	1500 mm
Minimum measuring	Height :	240 mm

Power supply: by 9v battery, all models with analogue luxmeter. The HBT is delivered in carton packing.

## **INSTALLING THE RAIL MOUNTED HEADLIGHT BEAM TESTER**

1. Fit the column on the base using the four screws M8.
2. Insert the mirror visor in the hole of the upper side of the column.
3. Fix the side of the optical box on the vertical sliding system. In the upper hole you have to insert the screw M8, in the lower bolt hole you have to insert the special clutch-lever.
4. Fix the spring protection on the same base by the small screw.
5. LITECHECK 2 is supplied with rails in 4 pieces. LITECHECK 3 (HGV) has 6 pieces.
6. Place the rails on the floor and place carriage on the rails to check position. Once satisfied with position fit rails with the screws supplied.  
NOTE! For UK MOT test bays the rails must be installed level within +/- 2mm of vehicle standing area mean plane.
7. Put the headlight beam tester on the rails and correct any possible instability of the machine by adjusting the eccentric self-locking clamping device on two of the four wheels. (See picture)



## **CAR PREPARATION**

Straighten the car wheels up. Check the tyre pressure. Ascertain the headlights are clean and dry. If there are suspension levelling systems in the car set these for normal use. If there is internal adjustment for the headlamp in the car set this for normal use. Eliminate anything that could alter the position of the vehicle: ice, snow, mud. Switch the engine on. Carry on with the test with the engine running.

## **OPTICAL POSITIONING**

Put the HBT in the front of one of the head lamps, between 20 and 50 cm from the car for normal headlamps. For Gas discharge headlamps position the headlamp as close as possible to the headlamp beam setter.

Adjust the mirror at the top of the column so that one of the lines align with a horizontal part of the car, or two symmetrical points on the car, for example the top part of the windscreen or the bonnet. Make sure that the mirror lines matches with these points, so that the HBT is parallel to the car.

Measure the height from the floor to the centre of the light, using the scale situated on the carter. You must use as a point of reference, the top part of the VSS. (If the height from the floor is 80 cm, for example, put the VSS at the 80 cm mark as in the picture). There is a tolerance of 3 cm.

## **LASER POSITIONING** *(Where the HBT is fitted with an optional Laser positioning device)*

Put the HBT in the front of one of the head lamps, between 20 and 50 cm from the car for normal headlamps. For Gas discharge headlamps position the headlamp as close as possible to the headlamp beam setter..

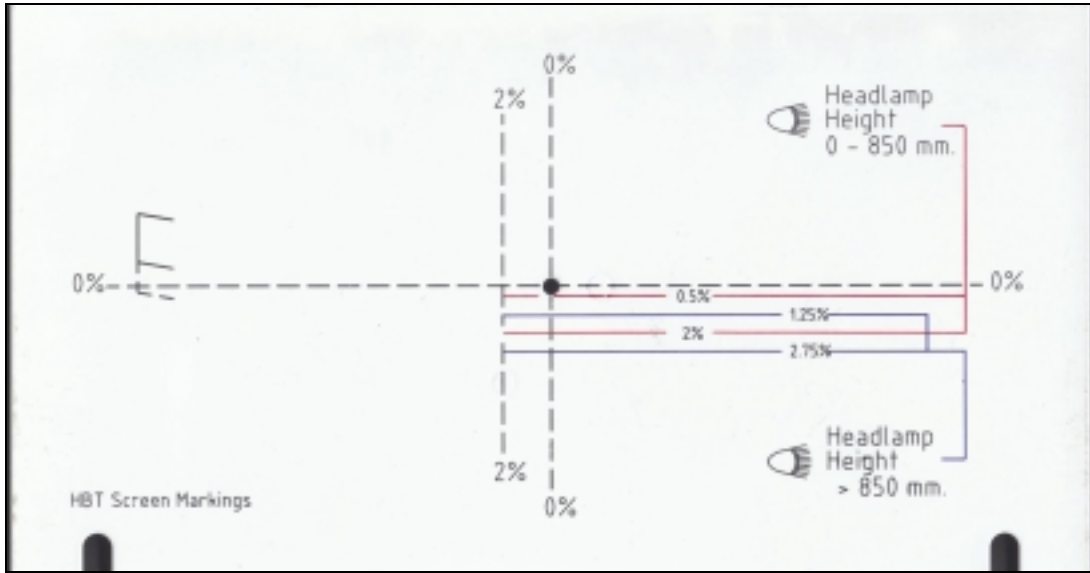
Switch on the laser box at the top of the column and align the laser beam line with a horizontal part of the car, or two symmetrical points on the car, for example the top part of the windscreen or the bonnet. Make sure that the laser lines match with these points, so that the HBT is parallel to the car.

Measure the height from the floor to the centre of the light, using the scale situated on the carter. You must use as a point of reference, the top part of the VSS. (If the height from the floor is 80 cm, for example, put the VSS at the 80 cm mark as in the picture). There is a tolerance of 3 cm.

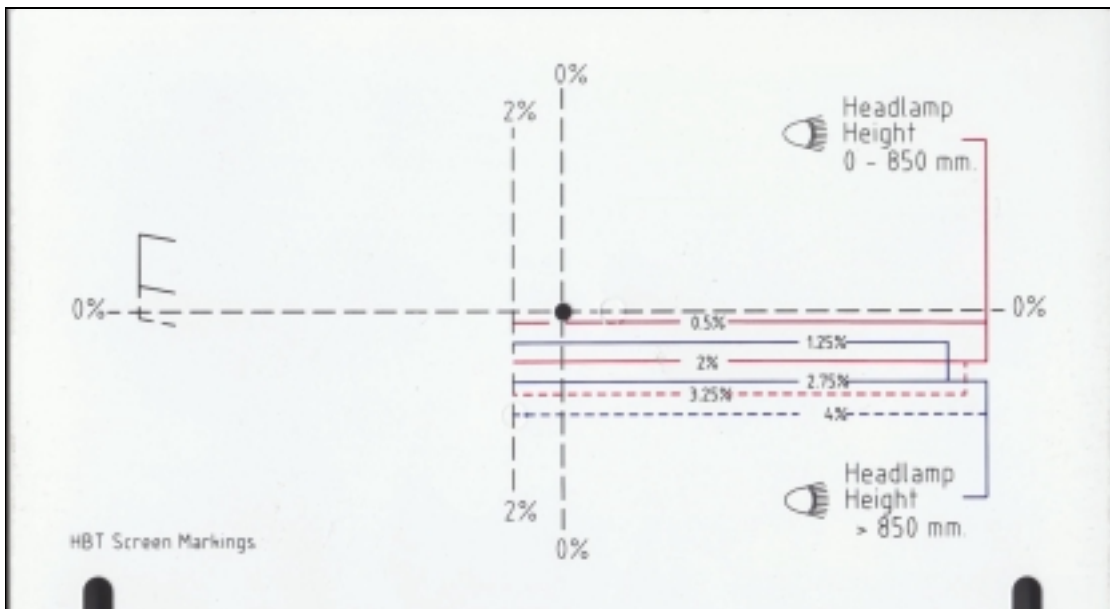
## **CHECKING HEADLAMP AIM**

1. The MOT Tester's Manual should be consulted to determine whether, for the vehicle being tested, the headlamp should be set on main or dipped beam.
2. Switch on the headlamps and select dipped or main beam as appropriate.
3. The pattern of the beam can be seen on the aiming screen through the viewing panel in the top of the optical unit. Check the beam aim for the appropriate type of headlamp referring to the MOT Tester's Manual.
4. Move the headlamp beam tester along the rails to align with the other headlamp and repeat 1 to 3 above.

# AIMING SCREEN



*Aiming Screen for LITECHECK 2 (All classes except HGV)*



*Aiming Screen for LITECHECK 3 (All classes including HGV)*

## **Checking of headlamp intensity (NOT part of MOT test)**

After checking the inclination of the headlights, the light intensity of both high and low beams can be checked. To do this:

- ) Switch on the high beams
- ) Press the lux test button on the mark
- ) Read the intensity on the luxmeter

Repeat the test with the low beams (press the lux test button on the mark)

### **VALUES ACCORDING TO ECE/ONU 20**

The latest generation of headlamp have a manufacturer number printed on the glass of the headlamp. This number indicates the illumination that the projector must have as per the following table:

NO INDICATED ON THE HEADLIGHT	BEAM	
	HIGH	LOW
7,5	36,5	42,06
10	42,06	56,49
12,5	56,49	72
17,5	72	90,14
20	90,14	108,17
25	108,17	126,2
27,5	126,2	138,22
30	138,22	162,25
37,5	162,25	186,29
40	186,29	204,32
45	204,32	228,36
50	228,36	240,38

E.g. (25): The headlamp must have a minimum illumination of 108.17 and a maximum illumination of 126.2.

The values are represented in lux at 25 metres distance. Use a conversion table (fig.3) for instruments calibrated in Klux ok candles at 1 metre.

## **CALIBRATION**

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. The adjustment of this level is not to be undertaken without level calibration by an approved contractor. Certified Calibration should be undertaken 6 monthly to comply with MOT regulations.

The calibration procedure is undertaken using a calibrated laser-type levelling unit.

1. Place the laser on a level platform 300-500mm away from the headlamp aligner and set to level.
2. The laser beam should coincide with the 0% line on the aiming screen.
3. If adjustment is required the inclination of the optical unit can be adjusted by slackening off the retaining bolt just behind the column. This bolt must be securely tightened following adjustment.
4. Re-check that the laser spot is on the 0% line on the screen

Correct use of the machine allows long periods of use without significant maintenance.



Typical Laser levelling unit



'Place the laser on a level platform'

For certified calibration to comply with MOT requirements the following are recommended.

M.S.I. LTD. Tel. 0870 5329620

M.S.I. have 170 service and calibration engineers covering the whole of the U.K. They are able to calibrate and service all types of MOT and garage equipment.



**CLEANING**

It is good practice to protect the instrument from dust and direct sunlight when not in use. Occasionally clean with a damp cloth and remove any stains. Paintwork is detergent resistant. Do not oil the column, or use solvents for stain removal. Do not leave the machine in areas where corrosive vapour is present, for example in battery charging or painting areas.

**END OF LIFE DISPOSAL**

The machine is composed of: -

- Glass (lens)
- Plastic (wheels, plexiglas cover, handles and other small details)
- Copper (wiring and luxometer coils)
- Steel (structure and mechanics) up to 85%.
- Paper and cardboard (instruction manual packaging)

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

**NOTES**

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