SEALEY Professional TOOLS
AUTO SERVICE LINE

INSTRUCTIONS FOR:

UNIVERSAL HEADLAMP BEAM SETTER

Models: **HBS97** & **HBS971**

Thank you for purchasing a Sealey Product. Manufactured to a high standard this product will, if used according to these instructions and properly maintained, give you years of trouble free performance.

⚠ ***IMPORTANT***
PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS AND CAUTIONS. USE THIS PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE OR PERSONAL INJURY, AND WILL INVALIDATE THE WARRANTY. PLEASE KEEP INSTRUCTIONS SAFE FOR FUTURE USE.

(The use of symbols in this manual is to attract your attention to possible danger, and reminders, the symbols and warnings themselves do not eliminate any danger, nor are they substitutes for proper accident prevention measures).

⚠ **GENERAL RULES**
Read instruction manual carefully before using the headlight beam tester.

TO AVOID DAMAGE ENSURE THE FOLLOWING IS STRICTLY APPLIED.

DO NOT allow unqualified persons to operate this device.
DO NOT use this device in direct sunlight.
DO NOT splash the unit with water or any other liquid.
DO ensure the work area is well ventilated.
DO ensure that there is good lighting
DO put the handbrake on.
DO avoid sudden changes in temperature.
DO avoid sudden vibration.

1. DESCRIPTION

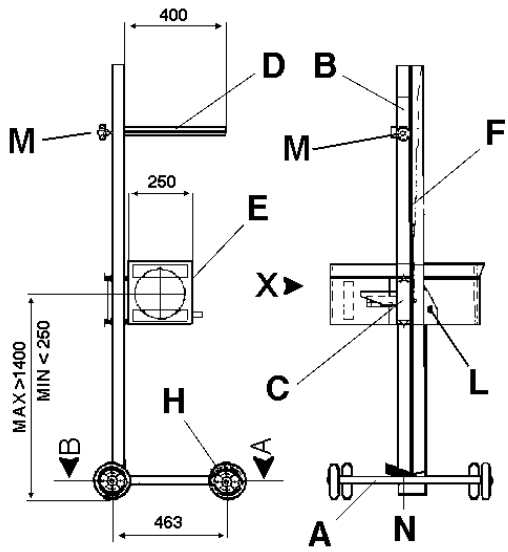
The SEALEY HEADLAMP BEAM SETTER, HBS971, is supplied with a rotating column, mirror and visor. The HBS97, has the addition of a rail set. The HEADLAMP BEAM SETTER or (HBS), may be used for checking headlights on Cars, Heavy goods vehicles and Motorcycles.

SPECIFICATIONS:

Height	1520/1770mm	Maximum height of beam measurement	1410mm
Width	610mm	Minimum height of beam measurement	240mm
Length	610mm	Focal Length	500mm

2. ASSEMBLING THE HBS971

A BASE
B COLUMN
C VERTICAL SLIDING SYSTEM
D MIRROR-VISOR
E OPTICAL SYSTEM
F SPRING PROTECTION
H WHEELS
L LEVELLING BOLT
M VISOR LOCKING WHEEL
N BRAKE

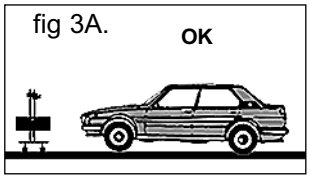


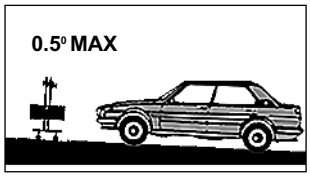
2. 1. Insert column B into base A.
2. 2. insert the mirror-visor D in the hole at the top of column B.
2. 3. In the upper hole insert visor locking wheel M.
2. 4. Fit the optical system E to the vertical - sliding system using an M8 bolt in the top hole and levelling bolt L in the bottom.

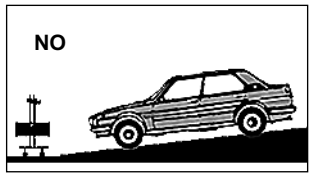
3. WORKING SURFACE

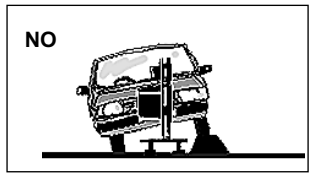
3. 1. Position the vehicle on the designated headlamp aim standing area.
3. 2. When positioning the HBS ensure the floor is perfectly even and level.
3. 3. If this is not possible the vehicle and HBS must be on the same slope, which must not exceed 0.5º.
3. 4. Headlights must not be checked where surfaces exceed 0.5º angle. (See fig 3A.).

fig 3A.









4. VEHICLE PREPARATION

4. 1. Straighten vehicle wheels.
4. 2. Check the tyre pressure.
4. 3. Ensure the headlights are clean and dry.
4. 4. If the vehicle is fitted with manual or electric headlamp levelling devices, ensure these are set up for vehicle with normal load.
4. 5. Remove anything which could alter the vehicles position, i.e. Snow, Ice, Mud, etc.

5. OPTICAL POSITIONING

5.1. Positioning.

Locate the HBS approximately 200 to 500mm from the vehicles headlight.

5. 1. 1 Use the visor to align with a horizontal, or two symmetrical points on the vehicle fig 5B. i.e. The bonnet lip or the bottom of the windscreen.

5. 1. 2. Ensure the visor lines match with your horizontal, or symmetrical selection, to ensure the HBS is parallel to the headlamp.

5. 1. 3. Using the scale situated on the carrier (fig 5A.) measure the height from the floor to the centre of the headlight. As a point of reference, you must use the top of the "Vertical sliding system" or "VSS".
e.g. The height from floor is 650mm, place the VSS at the 650mm mark as shown in (fig 5A.). There is a tolerance level of 30mm.

fig 5A.

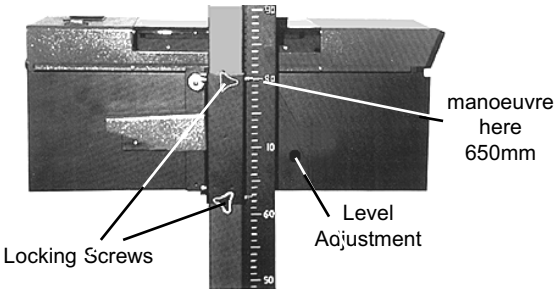
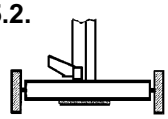


fig 5B.

5. 2. HBS Brake System.

The HBS system is fitted with a rotating column and is suitable for use either on or off rails. If you are using the system on rails then the rotating column aids correct alignment. To release the column brake (fig 5.2.) put pressure on release mechanism. To apply column brake, put pressure on foot pedal.

fig 5.2.



6. METHOD OF INSPECTION

6. 1. Switch engine on.

6. 2 Align the headlamp aim equipment with the longitudinal axis of the vehicle.

6. 3. Align the centre of the collecting lens with the centre of the headlamp under test.

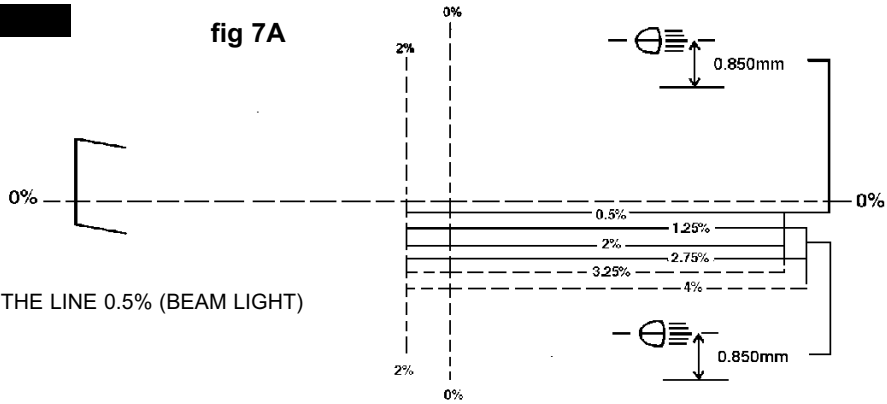
6. 4. With an assistant sitting in the driving seat, switch on the headlamps to the beam on which the headlamp is to be checked.
Note: When checking headlamp aim on vehicles with hydropneumatic suspension systems, it is necessary to have the engine idling.

6. 5. Determine the appropriate headlamp beam image and its aim (See fig 7A.). Old vehicles (approx. pre 1950) headlamps beam image may not conform to fig 7A, in such cases check::
a) **DIP BEAM** headlamps are aimed so they do not dazzle =, ie the beam image brightest part is aimed at least 0.5% below the horizontal (fig 8A). Or, for headlamps which cannot be checked on dip beam, check:
b) **MAIN BEAM** headlamps are aimed so that the beam image centre is on or slightly below the horizontal (fig 9A).

7. GRADUATED SCREEN

IMPORTANT
The HBS system uses a fixed graduated screen in accordance with the requirements of the MOT regulations.

fig 7A



CORRECT LIGHT PROJECTION ON THE LINE 0.5% (BEAM LIGHT)

8. DIPPED BEAM

8. 1. Prepare the HBS , and the car as previously instructed, then turn on the dipped beam.

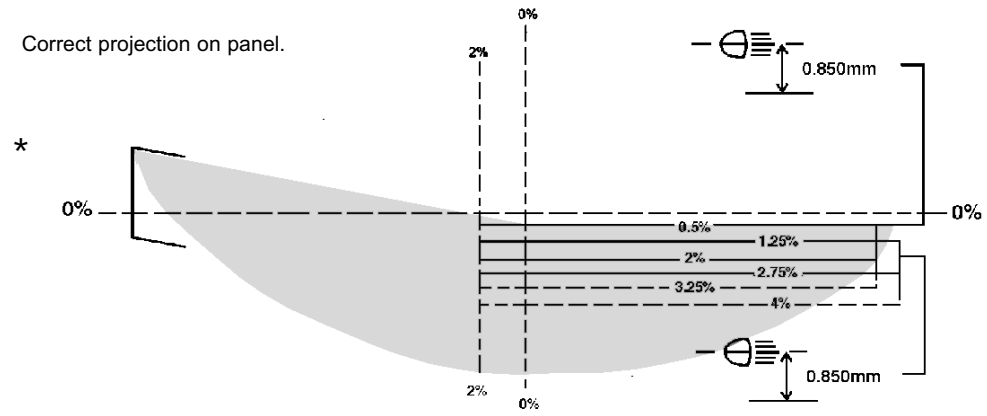
8. 2. Check the headlamp beam tolerances are in accordance with MOT inspection manual, and are within operating tolerances of manufacturer's guidelines.

8. 3. Adjust the vehicles light regulating system until you obtain the required result.

8. 4. When testing the more commonly used asymmetrical headlight (see fig 7A), remember that their projection will light up a section on the ***LEFT*** hand side of the plate with a corner of about 15° from the horizontal plane. Just under the centre, on the right, a small zone will appear brighter than the rest of the projection.

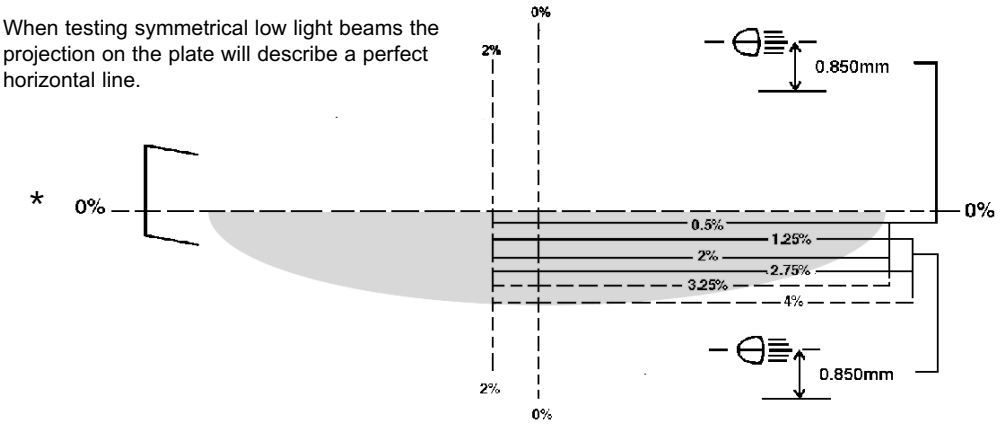
8. DIPPED BEAM

fig 8A. Correct projection on panel.



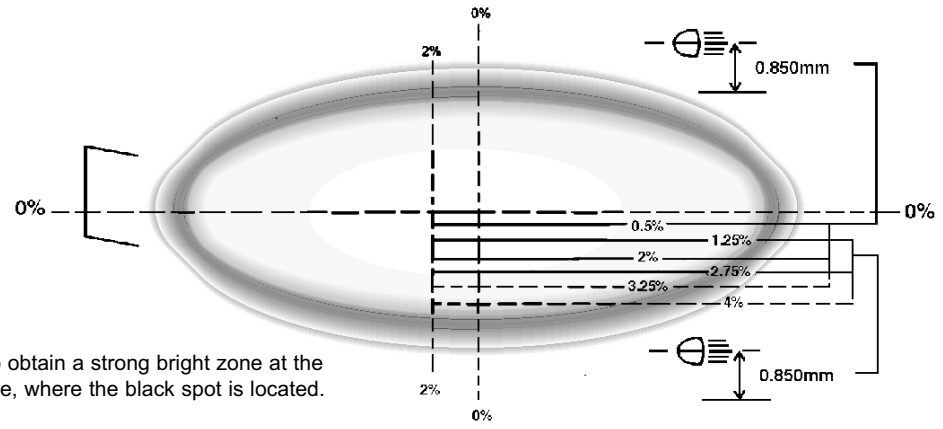
9. SYMMETRICAL LIGHTS

fig 9A. When testing symmetrical low light beams the projection on the plate will describe a perfect horizontal line.



10. INDEPENDENT HEADLIGHTS

fig 10A.

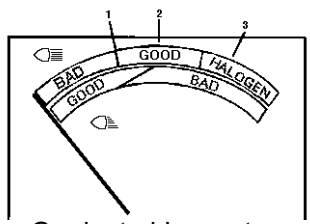


It is necessary to obtain a strong bright zone at the centre of the plate, where the black spot is located.

11. THE LUXMETER

The “Luxmeter” is colour graduated for clear reading as follows:

11. 1. Indicator at BAD/GOOD limit:
Use for vehicles travelling under 30mph (40Km/h) and motorbikes.
11. 2. Indicator at the centre of GOOD:
Use for vehicles travelling over 30mph (40Km/h)
11. 3. Indicator on HALOGEN:
Use for vehicles with halogen or iodine headlights.
11. 4. CONTROL OF THE HEADLAMP LIGHT INTENSITY
a) Switch on the headlamp main beam. b) Read the intensity on the luxmeter.



Graduated Luxmeter

12. 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.

13. OTHER INFORMATION

The Headlamp Beam Tester (*Floor Mounted version only*) is equipped with a spirit level located on the base of the optical box which is visible through the transparent panel by turning on the vehicle head lights. To level the box, open the clutch lever located on the side of the box and move the box until the spirit level registers correctly. Re-tighten the clutch lever “L”. The box level must be checked every time it is used on a different working surface.

14. CARE OF THE BEAM TESTER

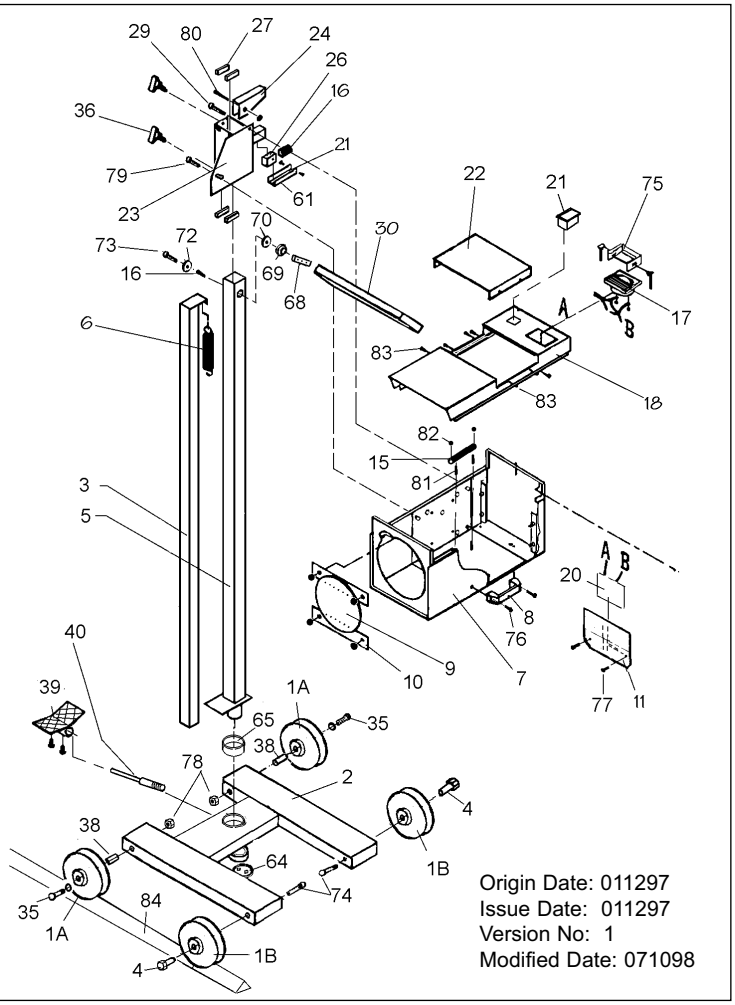
14. 1. The paint work is detergent resistant. Clean with a damp cloth, removing any stains. A small amount of alcohol may be applied to stubborn areas of grime.

14. 2. DO NOT leave the machine in areas where corrosive vapour is present, i.e. Battery charging or painting shops etc.

14 .3. DO NOT oil the column.

14 .4. An optical box dust cover is available upon request.

15. PARTS LIST



ITEM	PART NO	DESCRIPTION
1A	TC024010004	Wheel for rails
1B	TC024010005	Wheel for rails
2	TC024010001	Base rail
3	TC025010003	Case for column
4	TC020010045	Front wheel shaft
5	TC025010002	Turning column
6	TC025010004	Spring for vettical sliding system
7	TC024010002	Optical box
8	TC025030011	Black handle
9	TC025030014	Glass Ø200mm
10	TC025030013	Lens stand
11	TC027010037	inner panel
15	TC020010038	Spirit level
16	TC025020009	Brake spring
17	TC021010006	Coloured luxmeter
18	TC020010028	Steel cover
20	TC020020018	Electronic card wqith photodiode
21	TCNR5020033	Stopper 22x30mm
22	TC020010050	Plexiglass cover
23	TC025020005	Vertical sliding system (VSS)
24	TC025020007	Spring pusher
26	TC025020008	Stopper
27	TC025020006	Brakr got VSS
30	TC025020011	Mirror visor
35	TCNA2010037	Screw M8x110mm
36	TCNR5020008	Wheel handle Ø35mm
38	TC020010047	Wheel axle 15x45mm
39	TC022040010	Brake pedal
40	TC022040006	Brake pivot thread
61	TC025020010	Lower closing
64	TC025010068	Washer
65	TCND1010002	Bearing B/6005-RS
68	TC025010122	Plate for mirror visor
69	TC025010121	Compass for mirror visor
70	TC025010123	PVC Washer
72	TC025010119	OT Washer
73	TCNA1010034	Screw M10x80mm
74	TCNA2010011	Screw M8x60mm
75	TC021010023	Frame for luxmeter
76	TCNA0010009	Screw M6x16mm
77	TCNA1010034	Screw M4x16mm
78	TCNB1010006	Nut M8
79	TCNA0010026	Screw M8x20mm
80	TCNA0010005	Screw M6x50mm
81	TC020010037	Spring for spirit level
82	TCNB0010005	Nut M8
83	TCNA4010006	Screw 3.9x9.5mm
84	TC025020059	Rail kit complete

NOTE: *It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.*
IMPORTANT: No liability is accepted for incorrect use of product. **WARRANTY:** Guarantee is 12 months from purchase date, proof of which will be required for any claim. **INFORMATION:** Call us for a copy of our latest catalogue on 01284 757525 and leave your full name and address including your postcode.

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