
FKI CRYPTON

Headlamp Aligner ***Models HLA1 & HLA2***

OPERATING & CALIBRATING INSTRUCTIONS

When used for DTp. M.O.T. testing

Operating Instructions

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When used for DTp. M.O.T. testing

WARNING:

Do not attempt to operate this equipment unless you have read and understood these instructions.

The reliability of this equipment is fully supported by FKI Transervice with repair workshops and field service engineers to provide a full range of after-sales care, including installation, contract maintenance, factory overhaul and emergency repairs on site. Please refer to the page at the end of this manual for details of your local service area.

NOTE:

Your attention is drawn to our Terms & Conditions of Sale, particularly paragraph 2 (an extract of which can be found at the back of this manual and full Terms & Conditions on our current Price List). If a service engineer is called out under service warranty where, upon inspection and test the equipment is found to be in full working order and no fault found, the user is liable to be charged the cost incurred for this call out. Before calling out an engineer ensure your equipment is faulty by checking its operation, particularly mains supply and fault codes self test if applicable.

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Introduction

The Headlamp Aligner is designed to check the setting of main or dipped beams of car, motorcycle and commercial vehicle headlamps. Two models are available:

- | | |
|------------|---|
| Model HLA1 | For cars and commercial vehicles with headlamp centres up to a maximum of 2500mm apart, and all motorcycles. |
| Model HLA2 | Similar to the above model but incorporating a light intensity meter capable of measuring the light output of both standard and halogen lamps without the aid of filters. |

The range of height adjustment from vehicle lens centre to ground is 470mm to 1365mm.

Reception

Carefully inspect the equipment as soon as it is received. If any loss or damage has occurred in transit, report immediately in writing to the carrier and supplier, giving full details.

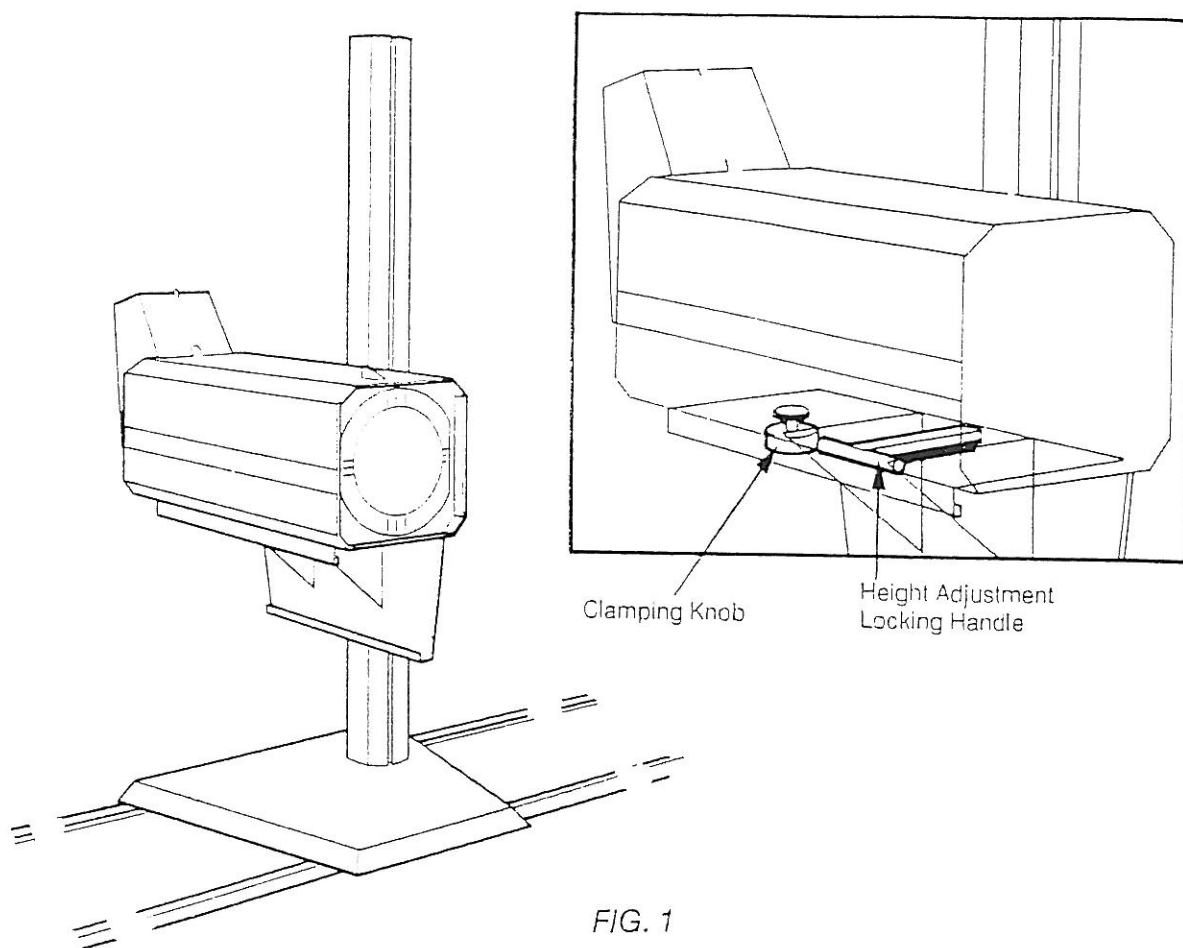
Installation

Important: Where this equipment is to be used for the DTp. vehicle testing scheme in the U.K. it must be sited and installed in accordance with DTp. requirements. This is the customer's responsibility.

The Headlamp Aligner is an optical instrument containing a lens. The siting should be chosen to avoid sunlight falling directly on the front. If this cannot be achieved, then the front of the Aligner should be covered with a dark cloth when not in use.

The Headlamp Aligner is robust and has a minimum of moving parts and there is little that can go wrong once it is correctly set up.

If desired, the rails may be driven over by vehicles, but damage by heavy garage equipment, e.g. trolley jacks must be avoided.



To Secure the Rails

1. Place the rail mounting plate in position and scribe marks on the floor through the fixing holes.
2. Remove the mounting plate and using a suitable masonry drill or rawl punch make 15 holes in the floor and fit 15 No. 12 rawl plugs 40mm. (1.5in).
3. Re-position the mounting plate and secure to the floor using 15 No. 12 screws 40mm (1.5in) long.
4. Position the Headlamp Aligner on the rails.
5. Perform a calibration check as described in the section HEADLAMP ALIGNER CALIBRATION CHECKING.

Since the vehicle lighting regulations vary throughout the countries of the world, the following instructions can only be taken as a guide. When in doubt consult your National standards officer.

The headlamp beams must be set accurately and the greatest possible care must be taken when aligning the vehicle and the equipment.

UK Users will find further information in the DTp. Testers Manual.

Using the Headlamp Aligner to Check the Aim of Vehicle Headlamps

(As required for the DTp MOT testing scheme).

1. Drive the vehicle to be tested squarely up to the headlamp aligner and bring the car to rest with the headlamp lens 710mm from the lens of the aligner. This is the optimum position for size, brightness and focus of the image but the distance may be varied between 510 and 910mm when acceptable results can be obtained.
2. Select two points on the vehicle, parallel with the front to back axis.

For motorcycles, two points on the centreline, one at the front and one at the rear, can normally be located.

For private cars, a suitable method is to determine the centre of the front and rear windows and affix a strip of tape to each.

On commercial vehicles, the straight line produced by the side of the vehicle may be used.

3. Move the aligner along the rails until the body of the aligner is in line with the two selected points. Raise or lower the aligner as necessary so that the two selected points can be seen when looking through the backsight of the aligner. Release the clamping knob (Fig. 2-1) and by turning the aligner body from left to right, align the backsight (Fig. 2-2) and foresight (Fig. 2-3) on the headlamp aligner with the two selected points on the vehicle arrowed in Fig. 2.

When the alignment is complete, retighten the clamping knob.

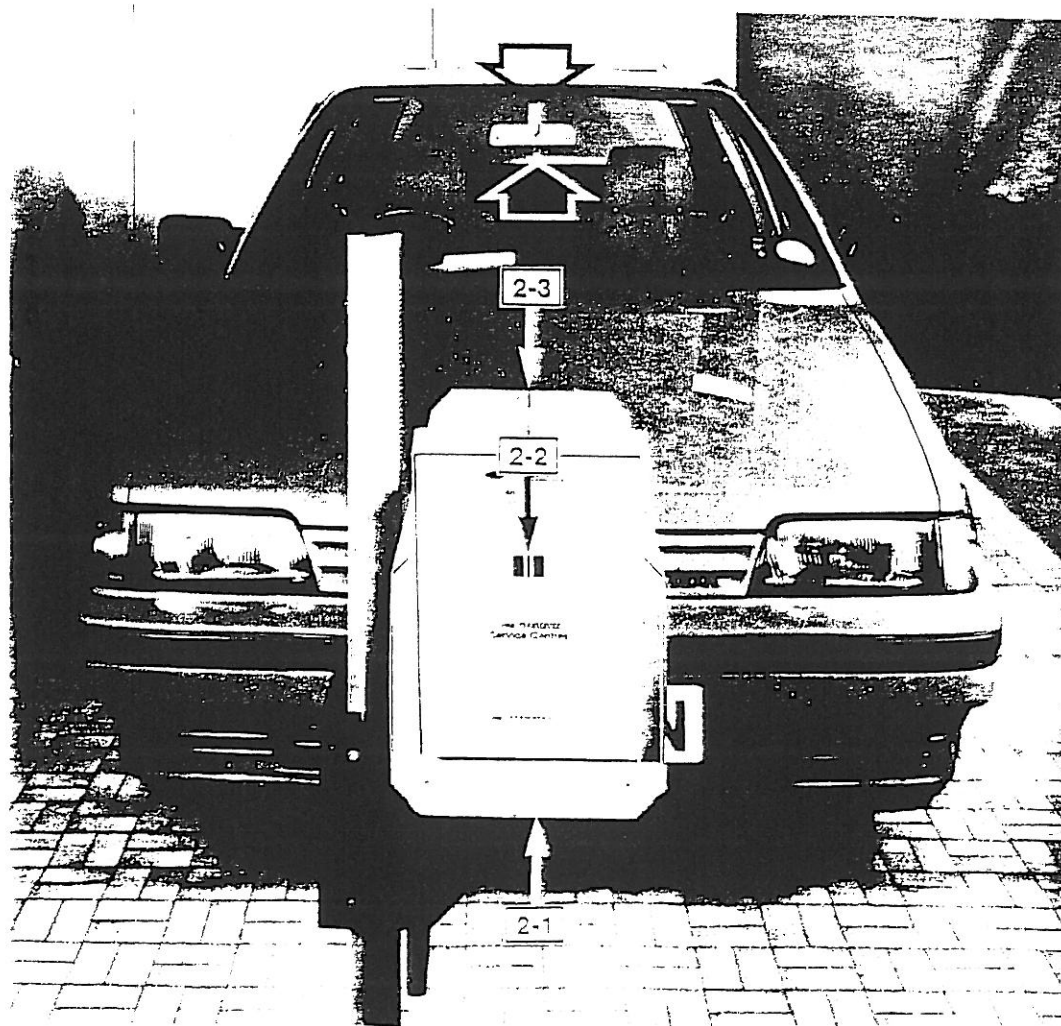


FIG. 2

4. Move the headlamp aligner to bring the right hand side (with the CRYPTON nameplate) into line with the vertical centre line of one of the headlamps. Sight along the TOP EDGE of the CRYPTON nameplate (Fig. 3-1) and raise or lower the aligner to line up with the horizontal centre line of the headlamp. (Fig. 3-2)

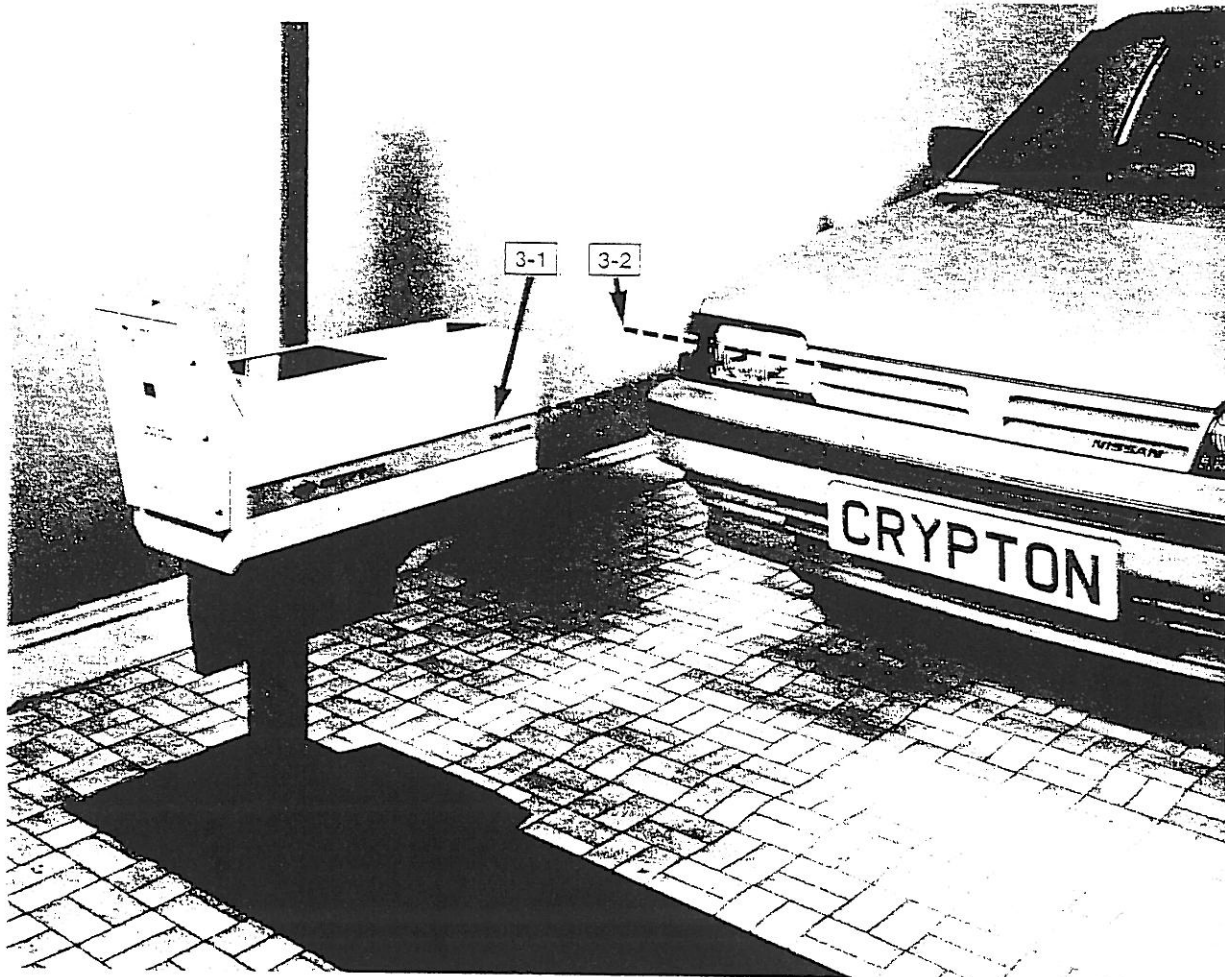


FIG. 3

5. Move the headlamp aligner on the track so that the top sight (Fig. 4-1) and the foresight (Fig. 4-2) of the aligner line up with the vertical centre line of the headlamp. (Fig. 4-3)

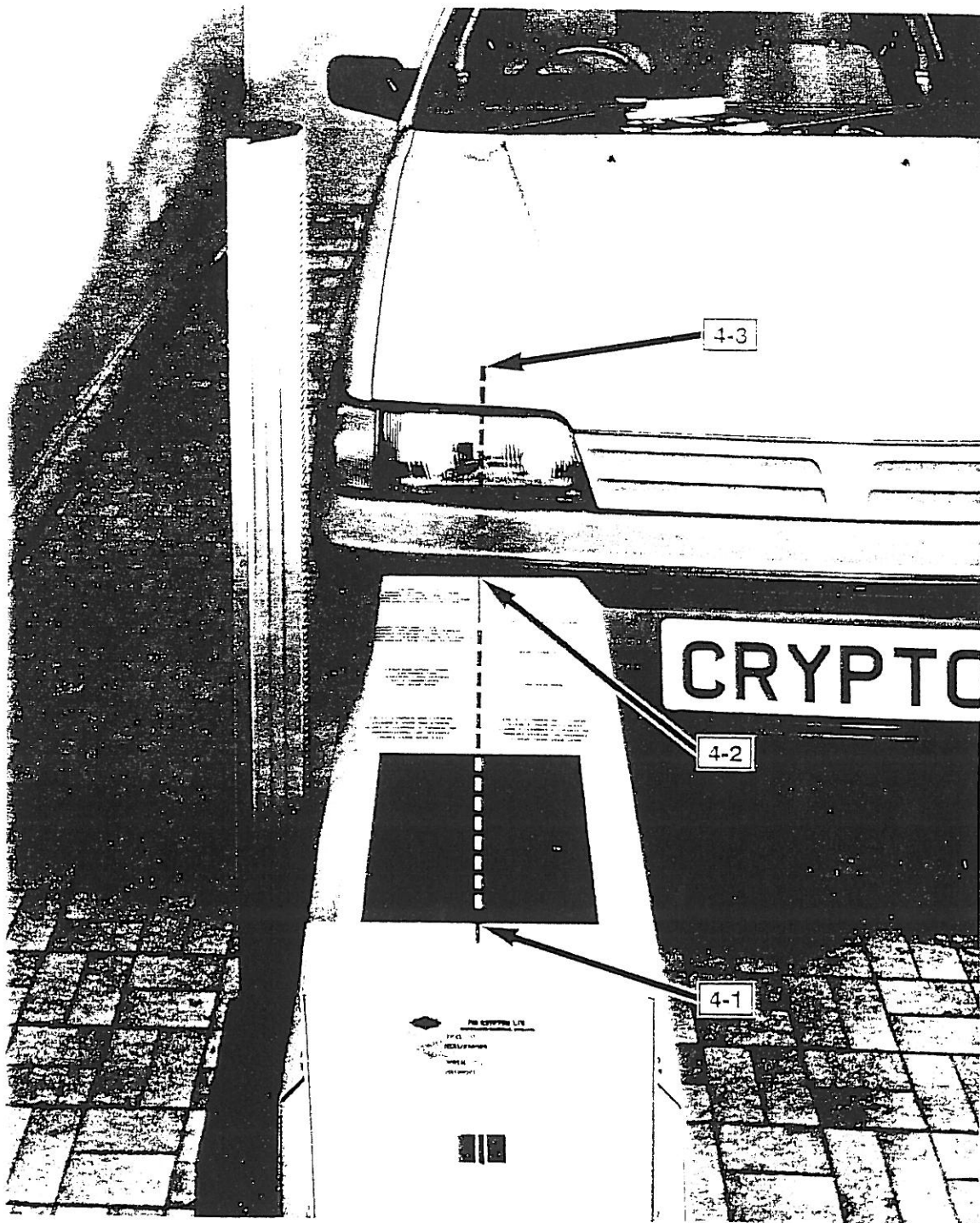


FIG. 4

The headlamp beam may now be checked for alignment on dipped or main beam as appropriate. Having checked one headlamp, move the aligner across to the other lamp if appropriate. Repeat 4 and 5 above to ensure that the aligner is correctly aligned and check the beam setting of the other headlamp.

Headlamp Alignment Checking Procedure

A screen (Fig. 5) inside the equipment is viewed through the tinted window, and is a scaled down reproduction of a test screen at least 3m (10ft) wide placed at a distance of 10m (33ft) from the vehicle headlamps.

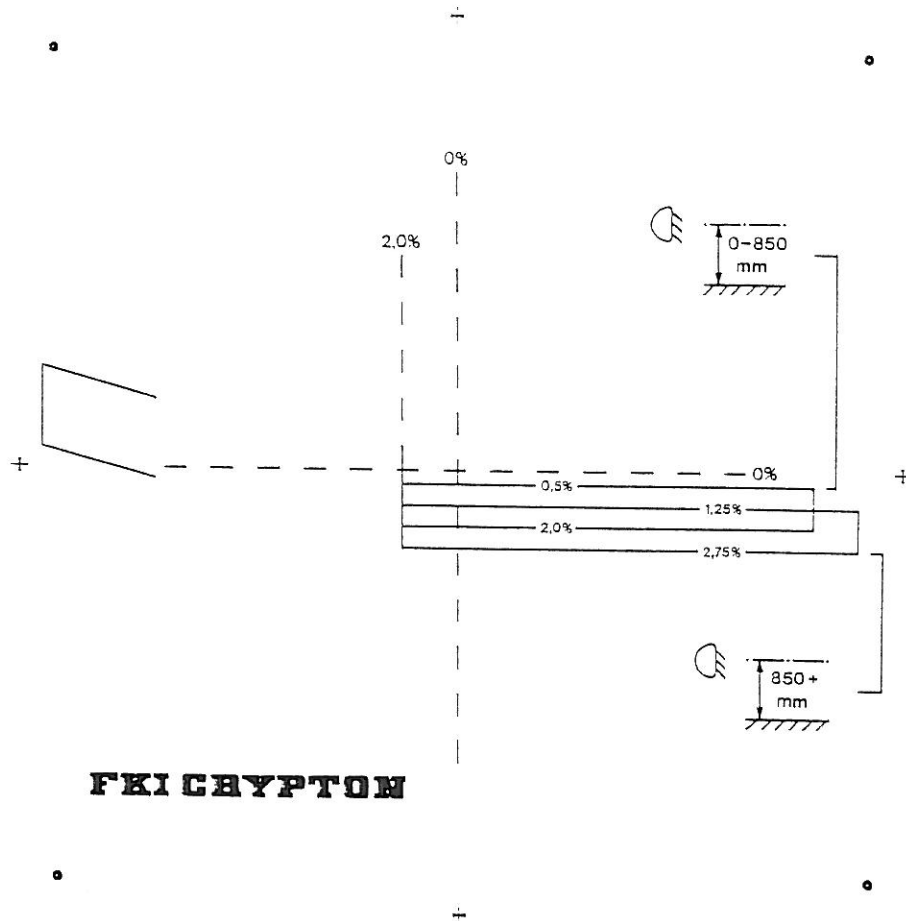


FIG. 5

1. The tester's manual appropriate to the vehicle being tested should be consulted to determine whether the headlamp should be set on main or dipped beam.
2. Switch on the headlamps and select dipped or main beam as appropriate.
3. View the light pattern displayed on the screen through the tinted window. The pattern displayed should be checked for the appropriate type of headlamp by reference to the tester's manual.

Headlamp Aligner Calibration Checking

Introduction

Before a Headlamp Aligner can be used with accuracy it is essential that the equipment itself is installed and set correctly in both vertical and horizontal planes.

The Calibration Checking Unit is designed for use on site and provides a quick and simple method of ensuring that either Model HLA1 or HLA2 Headlamp Aligner is set up accurately.

Calibration checks must be performed at intervals as specified by the DTp.

The component parts of the unit (Fig. 6) are:

- (a) Stand with checking screen.
- (b) Electric tubular hand torch (not supplied with the equipment). The torch is held securely on the calibration stand by three rubber loops as shown in Fig. 6.
- (c) Height adjustment rod. This is used to set the centreline of the lens on the Headlamp Aligner at the same height as the horizontal slits in the screen of the checking unit.

NOTE: Where a Headlamp Aligner is used in conjunction with a vehicle lift which is not flush mounted and the checking unit has to be located on the lift platform, a new mark must be made higher up on the height adjustment rod to compensate for the height of the lift platform.

Carefully inspect the equipment as soon as it is received. If any loss or damage has occurred in transit, report immediately in writing to the carrier and supplier, giving full details.

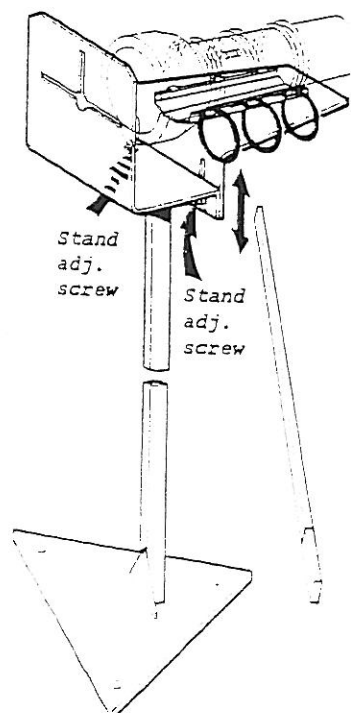


FIG. 6

Checking Procedure

1. Place the Checking Unit in front of the Headlamp Aligner with the checking screen 2.44m (8ft) from the lens. Switch the torch ON. Adjustment of the torch height may be gained by loosening off the two stand adjusting screws, altering the height of the torch stand so that the torch is parallel and square on centre with the aperture in the calibration screen. Retighten the screws and check for correct torch alignment.

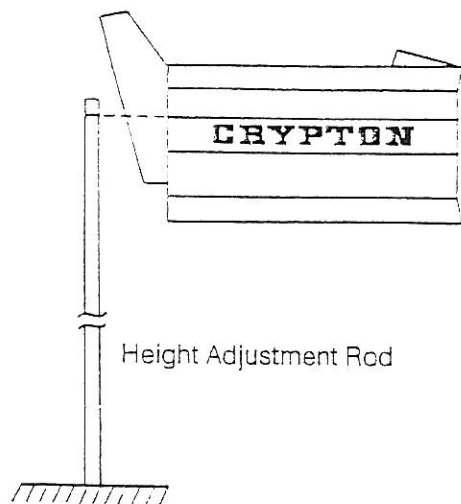
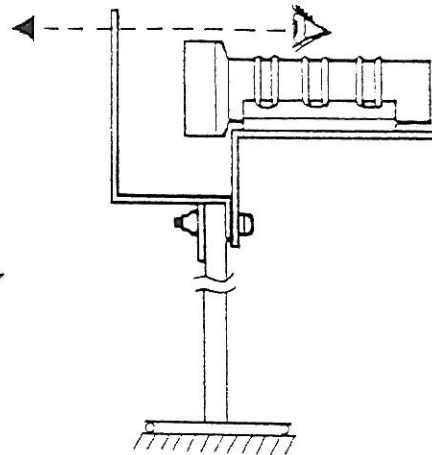


FIG. 7



2. Looking through the backsight of the Headlamp Aligner, towards the checking unit, raise or lower the Aligner so that the illuminated centre aperture and slits of the screen come into view (see Fig. 8).
3. Release the clamping knob on the underside of the Headlamp Aligner, and swing the aligner body left or right until the backsight, the foresight and the vertical slit on the screen are all in line (see Fig. 8). Retighten the clamping knob.

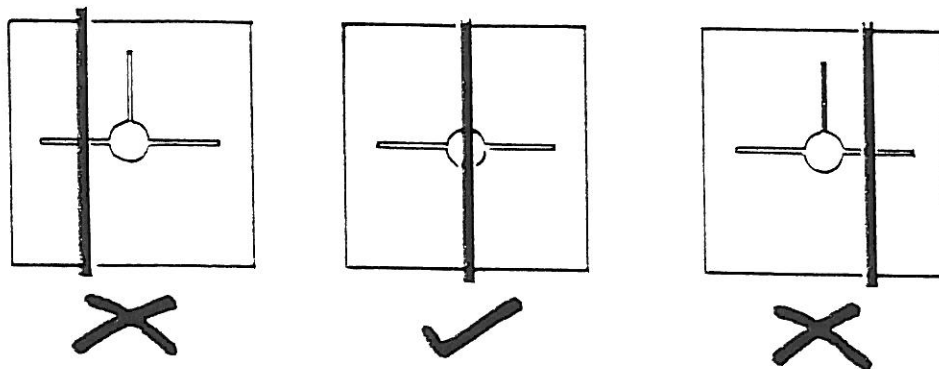


FIG. 8

4. Using the height adjustment rod, set the Headlamp Aligner to the correct height from the floor. The top edge of the mark on the rod is to be aligned with the top edge of the CRYPTON nameplate (see Fig. 7). The Headlamp Aligner is now correctly set up for height and must not be moved during the rest of the test.
5. Move to the rear of the checking unit and taking care not to move the stand, look at the Headlamp Aligner through the top vertical slit (see Fig. 7).

6. Observe the lens calibration ring and test screen from the front of the Headlamp Aligner - these are illuminated by the beam from the torch. The alignment in the vertical plane is checked by noting that the vertical centreline on the test screen, the centre vertical mark on the lens calibration ring and the foresight are all in line (see Fig. 9).

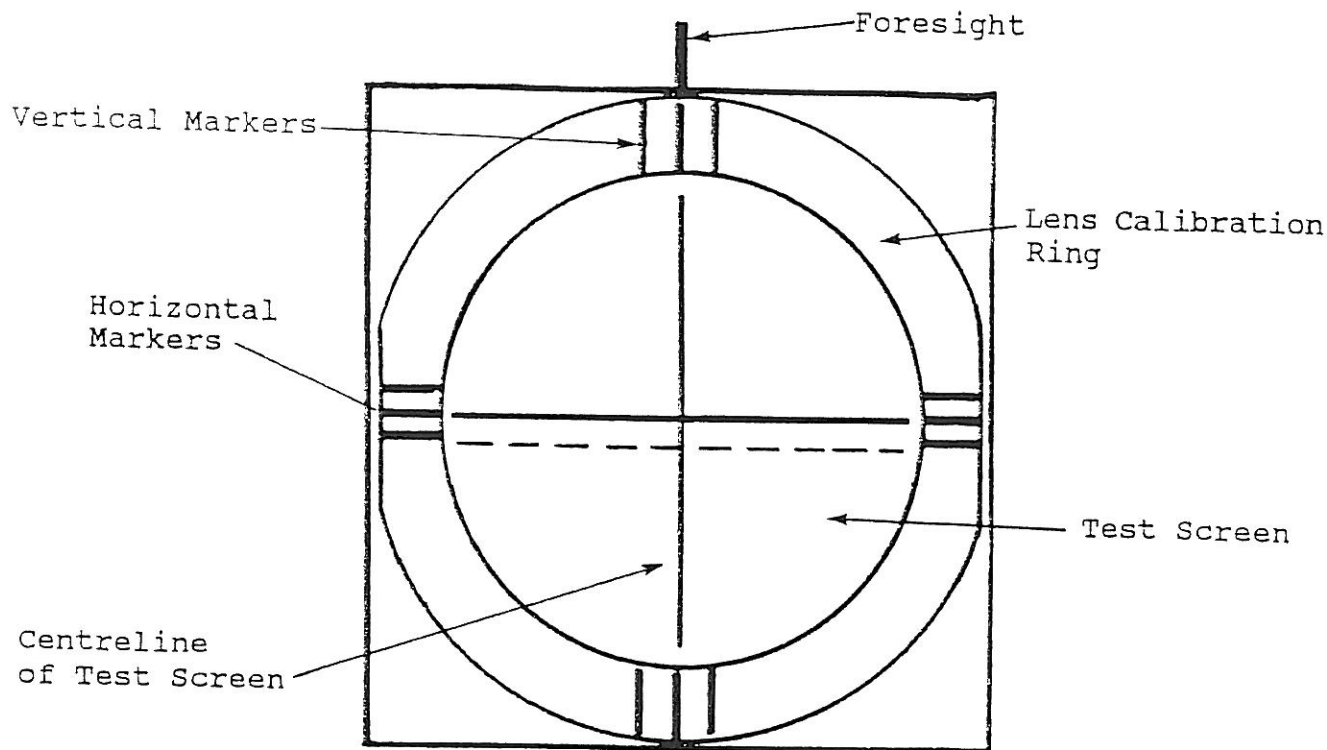


FIG. 9

NOTE: If the foresight is difficult to see, chalk or paint white its front edge. It is inadvisable to carry out the checking procedure in high ambient light conditions, i.e. in bright sunlight or where high intensity overhead lighting is employed. However, if difficulty is experienced in observing the calibration marks, an additional lamp can be used along-side the checking unit to illuminate the aligner, e.g. a car headlamp or a handheld spot lamp.

7. To check the horizontal plane repeat the procedure, viewing this time through the right hand horizontal slit of the checking screen. In this case the horizontal centreline of the test screen and the centre horizontal mark on the calibration retaining ring should be in line.

NOTE:

If at any time the above procedure shows the equipment to be out of calibration, then providing the rails are still in correct alignment and the requirements under INSTALLATION (page 1) have been met, the equipment is faulty and should be carefully packed and returned to FKI Transervice at Bridgwater for overhaul.

FOR THE ATTENTION OF
COLIN CROWAR.

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(cont'd)

Aim of Headlamps

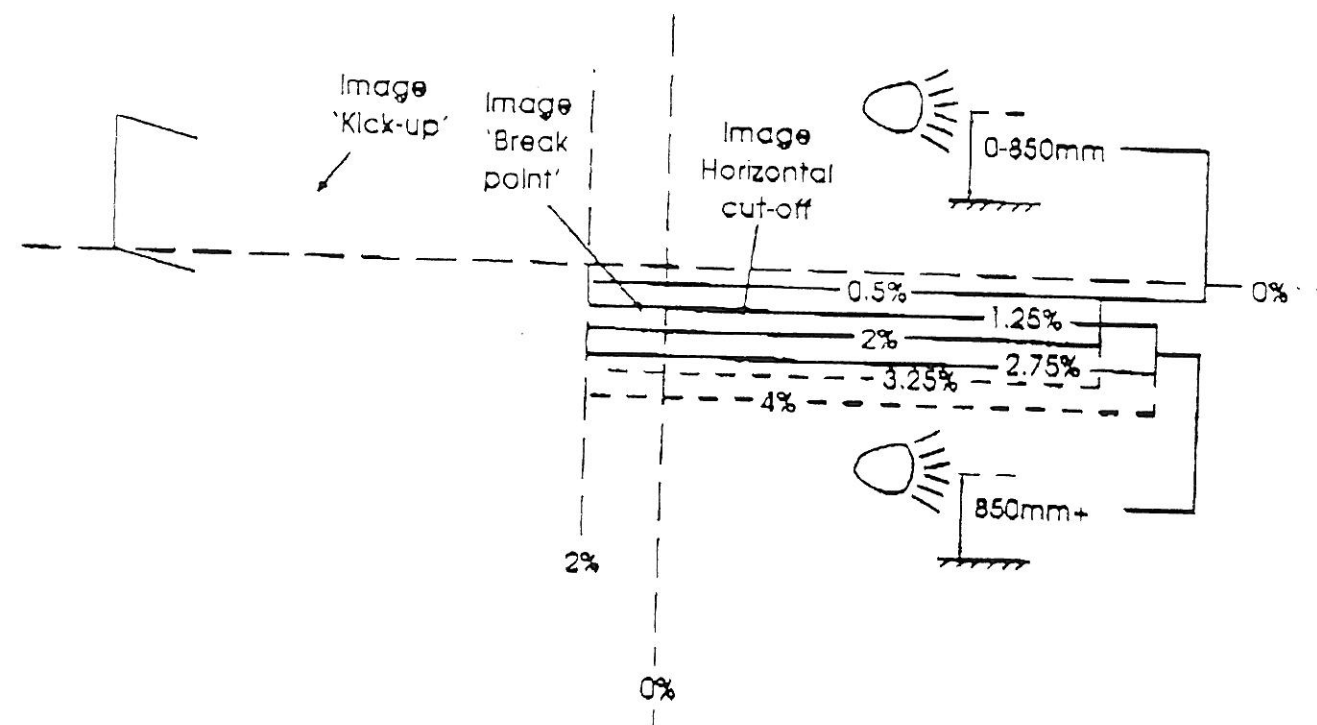


Figure 1. European Headlamp

Heavy Goods Vehicle Inspection Manual

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