



Vehicle & Operator
Services Agency

GUIDE

Headlamp Aim

A Guide to Help Your Vehicle Pass
the Headlamp Aim Check



Background

Headlamp aim is the most common failure item at Annual Test for both HGVs and PSVs.

As a result of research carried out in 2008, VOSA implemented changes designed to improve consistency and simplify the test. VOSA sites are equipped with electronic aim measurement devices and these can be used in a variety of ways:

- ▶ Initial centre point alignment visually or electronically
- ▶ Aim measurement visually or electronically
- ▶ Headlamp aim adjustment visually or electronically

You should check with VOSA or the ATF/DP where you present your vehicles which system is operated make sure you use consistent methods of inspection.

General checks before your annual test

There are a number of things operators and vehicle repairers/presenters can do to improve the likelihood of their vehicles passing the test.

- ▶ **Is the headlamp free of condensation, the lens clean and the reflector in good condition?**
If the beam pattern is blurred and the examiner cannot determine a distinctive cut off point, this is a reason for failure. Try leaving the headlamps on for a short time to 'burn off' the condensation. If the reflector is deteriorated or corroded, consider a replacement.
- ▶ **Has the headlamp bulb been changed?**
Make sure that the bulb is correctly aligned with the location lugs in the headlamp unit
After a bulb has been changed, it may be necessary to re-aim the headlamp (a different bulb may alter the headlamp aim). It is recommended to always use good quality bulbs.
- ▶ **Is the headlamp & its internal reflector secure?**
Tap the headlamp with your hand and assess if the headlamp unit or the internal reflector is insecure.
- ▶ **Is the headlamp adjuster free?**
A check of the adjusters (and a drop of penetrating oil) while preparing the vehicle for test can make all the difference.
- ▶ **Is the vehicle fitted with headlamps that dip to the right?**
Vehicles with UK registration plates should have headlamps that dip to the left to comply with the Road Vehicle Lighting Regulations. However, headlamps that dip to the right are acceptable at the MOT test providing beam converters are fitted.

- ▶ **General checks before the headlamp aim is checked**
Ensure that the tyre pressures are correct, the suspension is correctly adjusted /settled inflated and always check the headlamp aim in the condition that the vehicle will be presented for test i.e. laden or unladen.
- ▶ **Are the headlamp adjusters easily accessible?**
It may be easier to remove the headlamp surround before presenting the vehicle for test. Be careful however that the removal of these surrounds doesn't leave sharp edges.
- ▶ **Does the in-cab headlamp adjustment device work?**
If your vehicle is presented unladen, your in-cab headlamp adjuster must be set in the unloaded position. This device may be used to enable the headlamp alignment criteria to be met. This said, both headlamps must comply with the device set in one position.
- ▶ **Setting your headlamps**
Always set your headlamp aim in accordance with manufacturer's instructions or at mid point between the upper and lower standard

If you use test equipment

- ▶ **Ensure staff are fully competent**
Make sure your staff are up to date with the standards and know how to use the equipment. They should be equipped with the necessary tools to carry out minor adjustment and try to ensure your headlamp aim is set using as few staff as possible.
- ▶ **Monitor annual test fail rates**
VOSA annual test fail cards record the reason for failure. Use this information to investigate headlamp aim test failure features and investigate what is going wrong and take action to rectify where possible.

What do I do if I don't have a headlamp beam checker?

You can always take your vehicle to a garage that has calibrated headlamp aim equipment or to a VOSA test station for a voluntary check of the headlamp aim. If this is not practical, there are a couple of straightforward checks that can be undertaken which may help you.

The checks below rely on the surface the vehicle is standing on being flat and level.

Either

a) **Drive the vehicle to within approx. 600mm (24") of a wall, and with the headlamps on dipped beam:**

- ▶ **Do both headlamps aim at the same height?**
If they do not, the best you can do is ensure the adjusters are free and then adjust one to match the other. Refer to the diagrams in the centre pages of the handout to see which part of the patterns must be aligned.

▶ **Does the in-cab adjusting device work?**

Do both headlamps go up and down together?

▶ **Do both headlamps dip to the left?**

If you have changed a headlamp unit, you may have been supplied with one designed for use on the continent.

OR

b) Hold a black board approx. 600mm (24") in front of one headlamp, and with the headlamps on dipped beam:

▶ Mark the beam height.

▶ Move the board in front of the other headlamp and compare the image.

▶ **Follow the steps described in method a) above.**

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