

# SPEEDOMETER - TACHOGRAPH

## APPLICATION

The tachograph inspection applies to all buses (except minibuses NOT for hire or reward) and vehicles over 3500kg GVW.

A vehicle must have a tachograph fitted unless the presenter claims that it is exempt from the tachograph regulations. Exempt vehicles may have either a tachograph or a speedometer fitted.

Vehicles first used before 1<sup>st</sup> May 2006 requiring a tachograph, may have an analogue or a digital tachograph fitted.

Vehicles first used on or after 1<sup>st</sup> May 2006 requiring a tachograph, must be fitted with a digital tachograph.

Vehicles first used on or after 15<sup>th</sup> June 2019 requiring a tachograph, must be fitted with a smart tachograph.

## PROCEDURE AND STANDARDS

### ALL VEHICLES

Check that a tachograph or speedometer is fitted, operative and is complete.

Check for condition and that it can be illuminated.

Where only a speedometer is fitted, it must indicate speed in MPH and KPH (if first used on or after 1/4/1984

#### **Note:**

If the dial glass is cracked and this does not affect operation this is not a Reason for Failure but the presenter should be advised of the defect.

If the tachograph head cannot be opened or if the calibration plaque does not match the vehicle to which it is fitted it should be treated as if the plaque and any relevant seals were not there.

A non-matching registration number may refer to a previous registration, the vehicles technical records should be checked before failing

## FOR VEHICLES REQUIRED TO BE FITTED WITH A TACHOGRAPH

Check that the correct type of Tachograph is fitted.

Check that tachograph scale is marked in KPH – there is no requirement for a tachograph to be marked with MPH increments.

### **Analogue tachograph**

The tachograph head must only be opened with the steering wheel in the straight ahead position and with the engine switched off.

Check the presence of the tachograph manufacturer's serial number/data plaque. This can be located on the back cover or on the edge of the head. Check for "e" marking.

Check tachograph DIL switch covers and all seals. It will be sufficient to check that they have an approved marking. It is not necessary to identify the sealer.

Check tachograph installation/calibration plaque for presence and condition, and the date of calibration is clearly visible.

#### **Note:**

On analogue tachographs the installation/calibration plaques expire after 6 years.

#### **Note:**

Tyre sizes are not required to be displayed on installation/calibration plaques where an analogue tachograph is installed in the vehicle. However if tyre sizes are displayed on the plaque they should correspond with the tyres fitted to the vehicle.

It is acceptable for plaque to contain additional information (e.g. Reg No, tyre pressures etc.). The plaque is designed to be tamper proof and should show signs of damage if it has been tampered with. The 2 year check is not part of the inspection. However if the examiner notices this plaque is not displayed the presenter must be advised.

Check the "K factor" plaque for presence and condition, and the "K factor" is clearly visible.

#### **Note:**

On a manual tachograph (cable driven) the "K factor" is set by the manufacturer and will be displayed on the manufacturer's plate.

#### **Note:**

If the time clock is inoperative this is a reason for failure under 1b.

### **Digital tachographs**

Check tachograph installation/calibration/K factor plaque for presence and condition, and the date of calibration is clearly visible.

**Note:**

On digital tachographs the installation/calibration plaque expires after 2 years.

Due to the design of the digital tachograph the installation/calibration plaque cannot be inserted inside the unit. Therefore it is generally located around the driver's door aperture or seat mounting area (easily accessible structural area unlikely to be subject to replacement).

It is acceptable for plaque to contain additional information (e.g. Reg No, tyre pressures etc.). The plaque is designed to be tamper proof and should show signs of damage if it has been tampered with.

Check tachograph dill switch covers and all seals for presence and condition and that they are the correct type. It will be sufficient to check that they have an approved mark. It is not necessary to identify the sealer.

Check that a printout can be obtained from the digital tachograph. Where a printout from a digital tachograph cannot be obtained initially (because of a jammed, depleted or missing roll) the presenter should be given the opportunity to rectify this before the test is concluded and this will not be classed as a defect.

Check that the size of road tyres (on an axle used for the calibration of the tachograph) comply with the calibration plaque.


From the printout check the tachograph has the same 'K' factor as that which is displayed on the tachograph plaque. Also check the date shown on the printout is the same date on the plaque; this is to ensure that the plaque relates to the calibration of the tachograph.

**Smart tachographs**

1C tachographs must be installed to all vehicles requiring a tachograph registered from June 15th 2019.

Smart tachographs are digital tachographs with added functionality, including a Global Navigation Satellite System (GNSS), and an intelligent transport system used to share transport management data.

Smart tachographs are inspected to the same standards as the previous digital tachographs. These tachographs can be identified from the technical printout:

Stoneridge – The tachograph technical printout will display "GEN 2" immediately before section "B" or the presence of the GNSS symbol  .

VDO – The tachograph technical printout will display a software version greater than 4000 in section "B" e.g. "V 4010"

**Note:**

The calibration plaque for a smart tachograph is similar to the previous digital tachograph version, but may contain additional data relating to the links to external devices.

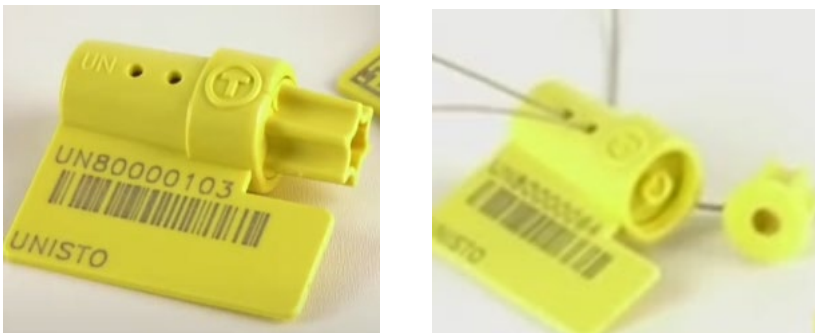
**Note:**

A range of new seals are being used with smart tachographs. These seals display a pre-printed serial number. Seals fixed from 2 July 2020 must be embossed using sealing pliers by an approved calibration centre. The twist off element from the tachograph seal should be completely detached, see examples below:

**Meter Nano T seal with twist tab in place and tab detached after correct fitting**



**Unisto Tacho Seal with tab in place and tab detached after correct fitting**



**WHERE VEHICLE PRESENTER CLAIMS EXEMPTION FROM THE REQUIREMENTS OF A TACHOGRAPH OR THE TACHOGRAPH IS USED AS A SPEEDOMETER.**

If a tachograph is used in place of a speedometer (even if the vehicle is tachograph exempt) it is only required to be marked in KPH, although it may be dual marked in MPH

Check installation/calibration plaque for presence and condition, and the date of calibration is clearly visible.

**Note:**

There is no requirement for a re-calibration of these systems provided that the system has been initially calibrated and sealed, **and that the calibration plaque and necessary seals remain intact.**

**Note:**

If a speed limiter is NOT required, or the speed limiter does not receive the speed signal from the tachograph head, it is only necessary to check the seal inside the tachograph head. There is no requirement for the gearbox sender unit to be sealed.

Check tachograph dill switch covers and seals for presence and condition and that they are the correct type. It will be sufficient to check that they have an approved mark. It is not necessary to identify the sealer.

**Note:**

Digital Tachographs do not require a 'K' factor check or a paper printout.

## **VEHICLES FITTED WITH MODULAR TACHOGRAPHS.**

There are presently two types of Modular Tachograph using encrypted sender units. They are VDO Keinzl 1324 and Stoneridge Electronics (formerly TVI) and are easily identified as they are shaped like a car radio.

Vehicles fitted with Modular Tachograph systems have received type approval that permits the use of a 4 wire data transmission cable instead of an armoured cable provided it is used to connect an encrypted sender unit to the tachograph. When used in this arrangement the approval also does not require the cable connections to be sealed. However, the sender unit itself is still required to be sealed to the gearbox.

## **IDENTIFICATION OF ENCRYPTED SENDER UNITS**

These appear similar to other sender units and can be positively identified by the cream/beige colour of the sender unit 4 pin bayonet connector. This colour is the same whether the sender unit is the rotating type or a proximity type. It should be noted that when the cable is connected that only a small part of the cream/beige coloured connector is visible.

**Note:**

For the VDO Keinzl 1324 that there is an exception to the above colour code when the vehicle is fitted with a TELMA retarder, the socket housing will be red.

**Note:** If a vehicle is fitted with more than one tachograph and a speed limiter, the speed limiter should operate off all tachographs.

**Note:** Plastic sleeve seals are acceptable but will require an embossed identification, (see example below).



Tachograph plaques are required to be tamperproof, this is not a reason for Failure at annual test if they are not tamperproof.

## REASONS FOR FAILURE

	Deficiency Category
1. For all Vehicles, a speedometer or tachograph:	
a. Not fitted.	MAJOR
b. Incomplete or dial glass broken without affecting the operation.	MINOR
c. Incomplete, clearly inoperative, or with the dial glass broken or missing and affecting the operation.	MAJOR
d. Cannot be illuminated.	MAJOR
e. Speedometer does not indicate speed in MPH and KPH (this only applies to vehicles not fitted with a tachograph used on or after 1 April 1984)	MAJOR
2. For all vehicles fitted with a tachograph:	
a. Tachograph installation/calibration plaque missing, damaged	MAJOR
b. DIL switch cover missing, broken or damaged through interference.	MAJOR
3. For vehicles required to be fitted with a tachograph:	
a. Wrong type of tachograph fitted	MAJOR

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|----|---|-------|
| b. | Tachograph scale not marked in KPH (there is no requirement for tachographs to be marked in m.p.h.).  | MAJOR |
| c. | Tachograph manufacturer's serial number/data plaque missing or not showing an "e" marking.  | MAJOR |
| d. | Tachograph installation/calibration plaque out of date or details not relating to the calibration of the tachograph fitted.   | MAJOR |
| e. | Size of road tyres does not comply with calibration plaque  | MAJOR |
| f. | "K" factor plaque missing.  | MAJOR |
| g. | Seal missing, broken, incorrectly fitted, or where a clearly "non mandatory" seal has been fitted in place of an "official" seal.   | MAJOR |
| h. | Unable to obtain a printout from a digital tachograph.  | MAJOR |
| i. | A digital tachograph that displays a 'K' factor reading different to that shown on the calibration plaque.  | MAJOR |
| 4. | For vehicles not required to be fitted with a tachograph, where a tachograph is fitted in place of a speedometer.   |       |
|    | <b>If a speed limiter is required (which is sensed from the tachograph head):</b>   |       |
| a. | Seal missing, broken or where a clearly "non mandatory" seal has been fitted in place of an "official" seal.  | MAJOR |
|    | <b>If a speed limiter is NOT required:</b>  |       |
| b. | A seal (within the tachograph head) missing, broken, or where a clearly "non mandatory" seal has been fitted in place of an "official" seal. There is <b>no</b> requirement for the gearbox sender unit to be sealed. | MAJOR |