



SEG V

# User Manual



manuals



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# 1. About these Instructions

Original operating instructions

In these instructions, we have clearly structured the most important information so that you can use your product quickly and efficiently.

## 1.1. Notes about the Use of these Operating Instructions

These operating instructions contain important information relevant to operator safety.

Go to [www.hella-gutmann.com/manuals](http://www.hella-gutmann.com/manuals) to find all the manuals, instructions, references and lists about our diagnostic devices, tools and much more.

Please also visit our Hella Academy under [www.hella-academy.com](http://www.hella-academy.com) and expand your knowledge with various online tutorials and other training courses.

Please read the instructions completely. Pay special attention to the first pages containing the safety instructions. They exclusively deal with your safety during the work with the diagnostic device.

When working with the diagnostic device, it is recommended to read the individual work steps in the instructions again to prevent hazard of persons and equipment or operating errors.

The diagnostic device shall be operated exclusively by personnel qualified in vehicle engineering. Information and knowledge included in this training is not explained in these operating instructions.

The manufacturer reserves the right to modify these instructions and the diagnostic device itself without prior notice. We therefore recommend checking it for any updates. These operating instructions must accompany the diagnostic device in case of sale or any other transfer.

These operating instructions shall be kept for the entire service life of the diagnostic device and shall be accessible at any time.

## 1.2. Marking of Text Parts



### **DANGER**

Text parts marked in this way indicate an imminent dangerous situation, which will lead to death or severe injuries if not avoided.









### **WARNING**

Text parts marked in this way indicate a possibly dangerous situation, which may lead to death or severe injuries if not avoided.



### **CAUTION!**

Text parts marked in this way indicate a possibly dangerous situation, which may lead to minor or slight injuries if not avoided.

	<p>These symbols indicate rotating parts.</p>
	
	<p>This symbol indicates dangerous electric voltage/high voltage.</p>
	<p>This symbol indicates the risk of crushing limbs.</p>
	<p>This symbol indicates a potential injury of the hand.</p>
	<p><b>IMPORTANT</b> All texts labeled <b>IMPORTANT</b> refer to a hazard in the diagnostic device or environment. The advices or rather instructions stated here must therefore be observed by all means.</p>
	<p><b>NOTICE</b> Texts marked with <b>NOTICE</b> contain important and helpful information. It is recommended to observe these texts.</p>
	<p><b>Struck-through waste bin</b> This marking indicates that the product must not be discarded as domestic waste. The bar underneath the waste bin indicates whether the product was "placed on the market" after 13 August 2005.</p>
	<p><b>Refer to manual</b> This marking indicates that the user manual must always be read and always be available.</p>



## 2. User Information

### 2.1. Safety Precautions

#### 2.1.1. General Safety Precautions



- The device is intended for use on motor vehicles only. It is a precondition for the use of the device that the user has knowledge of automotive technology and is therefore aware of the sources of danger and risks in the workshop and on motor vehicles.
- Please read the entire user manual thoroughly and carefully before using the **SEG V**. You can also find the user manual on the enclosed HGS data carrier.
- All notes given in the individual sections of this user manual apply. It is important to regard the following measures and safety precautions.
- Furthermore, pay attention to all general instructions from labor inspectorates, trade associations and vehicle manufacturers as well as all laws, legal ordinances and instructions which have to be commonly obeyed by a repair shop.

#### 2.1.2. Safety Precautions for the SEG V



In order to avoid incorrect handling and injury to the user or destruction of the SEG V arising from this, pay attention to the following:

- Select functions and menus on the TFT LCD only with clean fingers. Do not use tools such as a screwdriver.
- Only connect original power adapters to the power cord (supply voltage 115 to 230 V / 50 to 60 V).
- Protect the TFT LCD and the device from long periods of exposure to solar radiation.
- Protect the Fresnel lens of the SEG V from direct solar radiation. The concentration of light beams can lead to thermal overload or even fire damage on the SEG V.
- It is recommended to cover the beamsetter box with a protective cover (8XS 002 500-031) after having finished work with the SEG V.
- Protect the product and the connecting cable from hot components.
- Protect the product and the connecting cables from rotating parts.
- Regularly check the connecting cables/accessory parts for damage (destruction of the product due to short circuit).



- Connect the device exclusively according to user manual.
- Keep the product away from fluids such as water, oil or gasoline. The **SEG V** is not waterproof.
- Protect the product from strong impacts and do not drop it.
- Do not open the device on your own. Only technicians authorized by **Hella Gutmann** are allowed to open the device. Warranty and guarantee will be rendered void at any case of unauthorized tampering of the device or if the protective seal is damaged.
- Immediately contact **Hella Gutmann** or a Hella Gutmann trading partner in case of any malfunctions.
- Arrange for any scratched Fresnel lenses to be replaced.
- Dust and scratches can have a negative impact on the display of the test screen. Only clean the lens with a soft cloth and glass cleaner.
- Check the 9-V monobloc battery of the laser sight for leaks/sulphation in regular intervals.
- Arrange for damaged protective shields to be replaced before the next use.

### **2.1.3. Safety Notes Regarding High Voltage/Mains Voltage**



Very high voltages occur in electrical systems. Due to voltage flashover on damaged components, such as marten damage or touching live components, the risk of electric shock is likely. High voltage via the vehicle and line voltage via the building's mains supply can cause severe injury or even death if adequate care is not taken. Voltage flashover can occur e.g. on the primary and secondary side of the ignition system, the connection to the vehicle, the lighting systems or the wiring harness with plug connections. Therefore regard the following:

- Only use power supply cables with grounding contact.
- Only use a checked or the attached power cord.
- Always use the original cable set.
- Regularly check cables and adapters for damage.
- Perform any assembly work such as the connection of the diagnostic device to the vehicle or the replacement of components only when ignition is switched off.

### **2.1.4. Safety Precautions – Risk of Injury**



When working on the vehicle, there is a risk of injury through rotating parts or rolling of the vehicle. Therefore regard the following:

- Protect vehicle against rolling away.
- Additionally place gear selector lever of AT vehicles to park position.
- Deactivate the start/stop system to avoid an inadvertent engine startup.
- Connect the product to the vehicle only when ignition is switched off.
- Do not reach into rotating parts while the engine is running.
- Do not run cables near rotating parts.
- Check the high-voltage parts for damage.

### **2.1.5. Safety Precautions – Chemical Burns**



If the TFT display is damaged, there is a danger of chemical burns due to the escape of liquid crystal. Therefore regard the following:

- Immediately rinse affected parts of the body or clothing with water (consult a doctor).
- Seek medical attention immediately after inhaling or swallowing.

### **2.1.6. Safety Precautions – Laser Sight**



The laser sight corresponds to laser class 2.

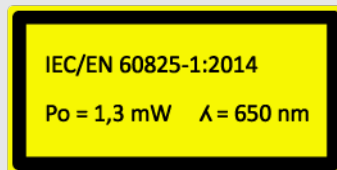
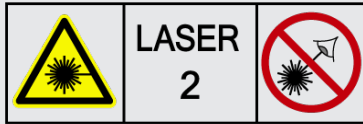
There is a risk of injury through dazzling the eyes when working with the laser. Therefore regard the following:

- Only use the laser in connection with the mounted protective shields.
- Replace defective protective shields instantly.
- Do not direct the laser beam towards persons, doors or windows.
- Never look directly into the laser beam.
- Only use the laser sight for the intended purpose.



- The notes on the device shall be present and clearly visible any any time.


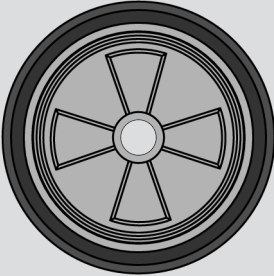
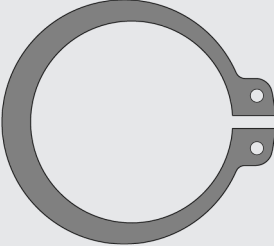
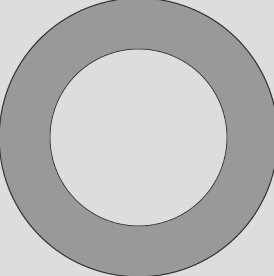
#### Laser class 2





The accessible laser radiation lies in the visible spectral range (from 400 to 700 nm). If the exposure is brief (up to 0.25 s), it is not dangerous to the eyes. Additional radiation shares outside the wavelength range between 400 and 700 nm fulfil the conditions of laser class 1. The eye is protected by the eyelid if a user should accidentally, briefly look into the laser beam. Due to the class 2 rating of the laser sight the nomination of a laser protection officer is not necessary.

## 3. Product Description

### 3.1. Delivery Contents

Count	Name	
1	SEG V (without 3rd rubber castor)	
1	3rd rubber castor (assembly necessary)	
2	Retaining clip (for assembly of the 3rd rubber castor)	
3	Washer (for assembly of the 3rd rubber castor)	

Count	Name	
1	Power cord	 IEC-60320 C13
1	HGS data carrier (incl. operating instructions)	

### 3.1.1. Checking Delivery Contents



#### ⚠ CAUTION!

#### **Danger of short circuit due to loose parts in or on the device.**

Never put the device into operation if you suspect that there are loose parts in or on the device.

Inform the Hella Gutmann trading partner or the Technical Help Line of Hella Gutmann immediately.

Please check the delivery contents upon receiving your device so that complaints can be issued immediately regarding any potential damage.

Proceed as follows to check the delivery contents:

1. Open the package supplied and check for completeness based on the delivery slip. Should you identify any damage to the package, then open the package in the presence of the delivery service and check the device for hidden damage. Any transport damage to the package supplied and damage to the device shall be registered in a damage report by the delivery service.
2. Remove the device from the packaging.



#### ⚠ CAUTION!

#### **Risk of Injury due to Heavy Device**

The device may drop down and cause injuries during unloading.

Always unload the device with the aid of a second person.

Use suitable aids such as a forklift truck if necessary.

3. Check the device for mechanical damage.

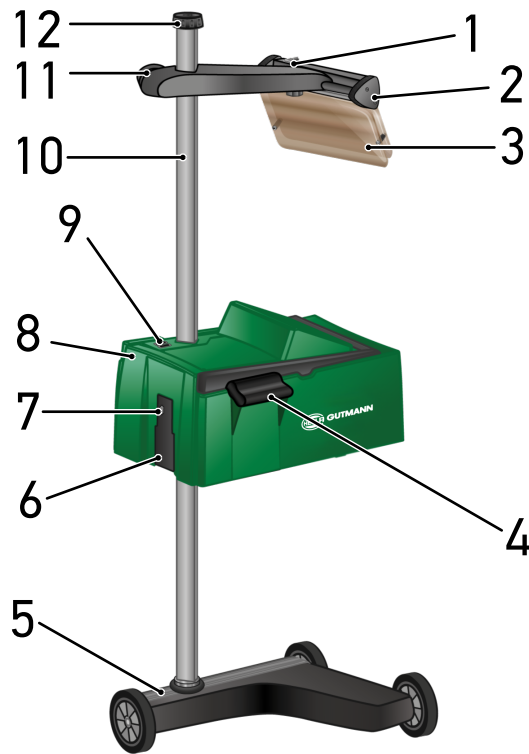
## 3.2. Intended Use

The **SEG V** is a mobile device for testing the modern headlight systems of motor vehicles.

The **SEG V** is equipped with a modern camera system. This enables precise testing of halogen, xenon, LED and laser headlight systems with the various light distribution functions such as dipped, high beam and fog light but also the vertical light-dark boundary.

The CMOS camera catches the light distribution of the headlight and transmits it to the electronic evaluation system. In combination with precise data records the light distribution is displayed on the test screen in almost real time. The software guides the user through the evaluation and aiming process based on stored vehicle-specific data and procedures. The recorded measurement data sets can be transmitted to peripheral devices through the USB or WiFi interface.

### 3.3. Equipment Overview



1 ON/OFF button (Switch the laser on and off with the ON/OFF button.)

2 Laser sight (The SEG V is correctly aligned if the line laser pointer is parallel to two symmetrical reference points on the front side of the vehicle. Alternatively you can use the optical unit (on the right in the laser sight) for the alignment to the vehicle.)

3 Protective shield (The protective shield protects the eye of the user from the laser beam.)

4 Recessed grip (Adjust the height of the optic housing with the recessed grip.)

5 Device base (The device base of the SEG V has rubber castors.)

6 Power supply socket (The power supply socket supplies the device with power and charges the internal battery.)

7 USB port (Use the USB port to download updates from a pen drive or to save reports on a pen drive.)

8 Optic housing (Use the optic housing to check modern lighting systems.)

9 ON/OFF button of optic housing (Switch the device on or off with the ON/OFF button.)

10 Column (Adjust the height of the optic housing at the column.)

11 Laser sight handwheel (Loosen the handwheel to shift the height of the laser sight.)

12 Column locking mechanism handwheel (Loosen the handwheel to turn the optic housing.)



13 Operating lever (Push the operating lever to adjust the height of the optic housing.)

15 Fresnel lens (The Fresnel lens bundles the scattered headlight light and projects it to a projection surface in the optic housing.)

17 Laser sight pinch bolt (Loosen the pinch bolt to adjust the tilt angle of the laser sight.)

14 Recessed grip (Adjust the height of the optic housing with the recessed grip.)

16 TFT display (touch screen) (Select or activate all menus and functions by slight tipping onto the TFT display with the finger, the stylus or with the arrow keys.)

18 Battery compartment (You can insert a 9-V monobloc battery in the battery compartment of the laser sight.)

### **3.4. Adjusting the Height of the Optic Housing**

To set the height of the optical housing, proceed as follows:

1. Hold both handles (4 + 14) on the optical housing (8).
2. Press the control lever (13).
3. Set the desired height.
4. Release the control lever.

⇒ The optical housing latches in.

### **3.5. Turning the Optic Housing**

To rotate the optical housing, proceed as follows:



1. Loosen the hand wheel of the column locking mechanism (12).
2. Rotate the optical housing (8).
3. Tighten the hand wheel of the column locking mechanism.

## **3.6. Switching On the Laser**



### **! CAUTION!**

#### **Laser radiation**

Damage to/destruction of the retina

Never look directly into the laser beam.



### **NOTICE**

After switching on the laser, the laser output is activated for approx. 30 s via an integrated interval timer. Within this time you can align the **SEG V** in front of the vehicle.

Proceed as follows to switch on the laser module:

1. Briefly push the ON/OFF button of the laser module (1).  
*The laser is activated for approx. 30 s.*
  2. If required, repeat step 1 to reactivate the laser.
- ⇒ Now, you can align the device in front of the vehicle.

## **3.7. Adjusting the Height of the Laser Sight**

To adjust the height of the laser sight, proceed as follows:

1. Loosen the hand wheel of the laser sight (11).
2. Set the desired height.
3. Tighten the hand wheel of the laser sight.

## **3.8. Adjusting the Inclination of the Laser Sight**

To adjust the inclination of the laser sight, proceed as follows:

1. Loosen the pinch bolt of the laser sight (17).
2. Set the desired inclination.
3. Tighten the pinch bolt of the laser sight.

## 3.9. Operating the Device



### ⚠ CAUTION!

#### Damage or destruction of the display





Never touch the display using a tool or pointed metal object.

Always use the stylus or a finger.

The device is equipped with an 8.4" touch screen display (16). All menus and functions can be selected and/or activated by gently touching with the stylus or finger.

## 3.10. Important Icons

Symbols	Meaning
	<p><b>Switch off</b></p> <p>Switch the device off.</p>
	<p><b>Confirm</b></p> <p>Perform the following functions:</p> <ul style="list-style-type: none"> <li>• Start the selected function.</li> <li>• Confirm the present entry.</li> <li>• Confirm your menu selection.</li> </ul>
	<p><b>Cancel</b></p> <p>Cancel the following functions:</p> <ul style="list-style-type: none"> <li>• Active function</li> <li>• Input</li> </ul>
	<p><b>Start</b></p> <p>Start a function or procedure.</p>
	<p><b>Delete</b></p> <p>Delete data or entries.</p>

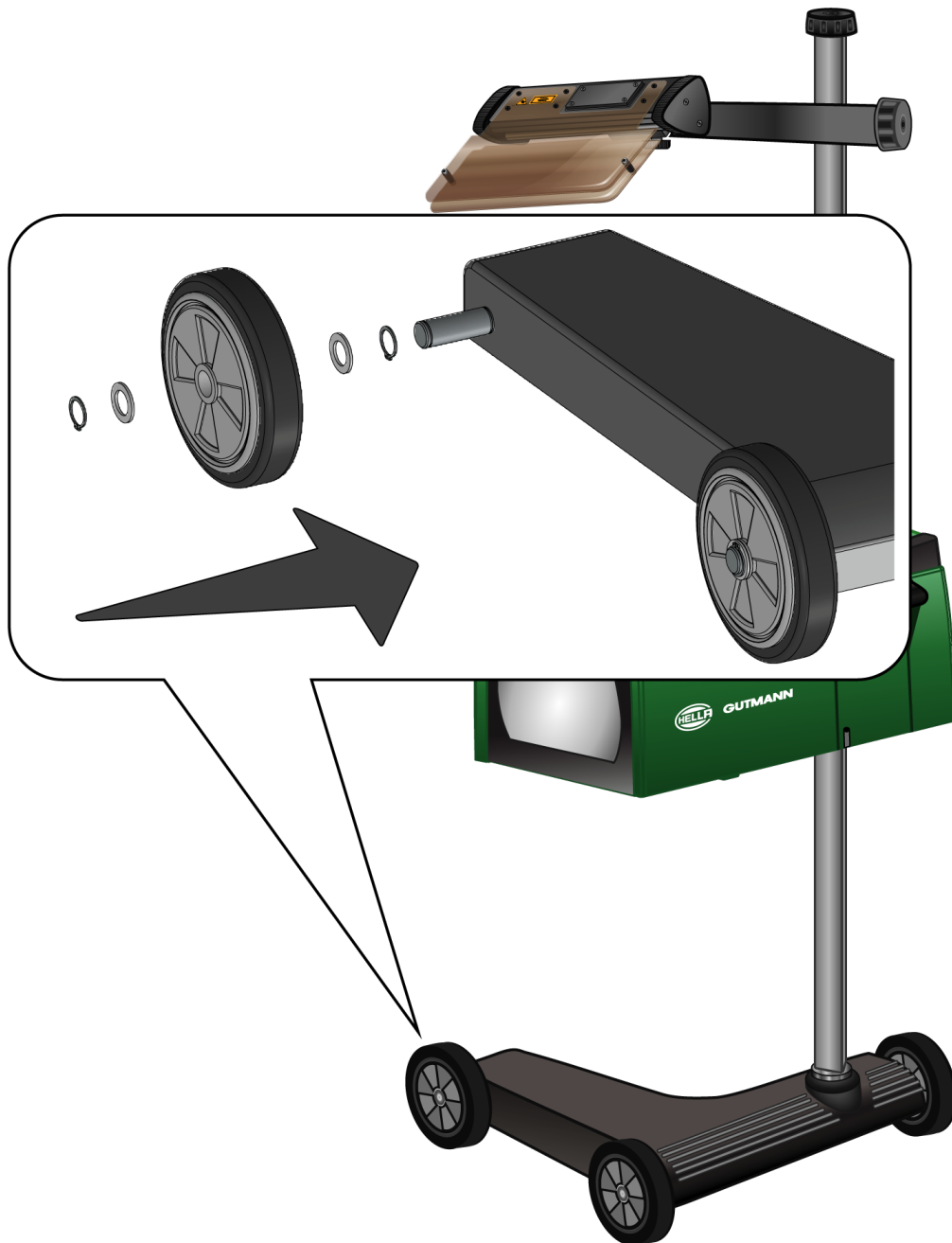
Symbols	Meaning
	<b>Arrow keys</b> Navigate with the cursor in menus or functions.
	<b>Virtual keypad</b> Open the virtual keypad for text input.
	<b>Information</b> Information on the contents of the respective menu can be displayed here.
	<b>Drop-down list</b> A drop-down list can be opened here.

## 4. Mounting

### 4.1. Mounting the Rubber Castor

The SEG V is entirely assembled except the 3rd rubber castor at the device's base. The delivery contents of the rubber castor include 3 washers and 2 retaining clips.

Proceed as follows to mount the 3rd rubber castor to the device base:



1. Slide a washer onto the shaft up to the retaining clip.
2. Push the rubber castor onto the shaft up to the washer.
3. Slide the two other washers onto the shaft.

4. Use the second retaining clip to secure the rubber castor.

⇒ Now the 3rd rubber castor is mounted to the SEG V.

## 5. Using the User Manual

This section describes how to call up the user manual from the HGS data carrier.

Go to [www.hella-gutmann.com/manuals](http://www.hella-gutmann.com/manuals) to find all the manuals, instructions, references and lists about our diagnostic devices, tools and much more.

Please also visit our Hella Academy under [www.hella-academy.com](http://www.hella-academy.com) and expand your knowledge with various online tutorials and other training courses.

### 5.1. Calling Up the SEG V User Manual

Proceed as follows to call up the operating instructions for the SEG V via the supplied HGS data carrier:

1. Switch on the PC.
2. Insert the supplied HGS data carrier into a USB port on the PC.
3. Open the USB drive of the inserted HGS data carrier.
4. Open the application **>Start.exe<** with a double click.
5. Click to **>Instructions and Manuals<**.
6. Open the list under **Language** with ▼.
7. Select the requested language.
8. Open the list under **Operating instructions** with ▼.
9. Select **>SEG V<**.
10. Call up the operating instructions with **>Open<**.

⇒ The selected PDF file is displayed.

## 6. Installation

This section gives a description of how to switch the device on and off as well as all the necessary steps for the first use of the device.

### 6.1. Charging the Battery

Prior to putting the device into operation, charge the integrated battery for at least 3 to 4 h. Then charge the integrated battery regularly, e.g. overnight.



#### NOTICE

In order to ensure proper operation, we recommend charging the SEG V daily (preferably overnight).

Proceed as follows to charge the battery:

1. Connect the power supply plug into the device's socket.
2. Plug in the power plug into the socket.

⇒ The battery is being charged.

### 6.2. Switching On the Device




#### NOTICE

When starting the device for the first time and after every software update, you need to confirm the general terms and conditions (GTC) of the **Hella Gutmann Solutions GmbH**. Otherwise, certain device functions will be unavailable.

The first time the device is started you need to confirm also the order processing agreement of the **Hella Gutmann Solutions GmbH**. This contract governs the handling of personal data pursuant to the GDPR.

Proceed as follows to switch on the device:

1. Keep the ON/OFF button of the optic housing (9) pushed for at least 5 s.  
*The device boots.*  
*The GTCs appear.*
2. Read the GTCs and confirm them at the end of the text.  
*The order processing agreement is indicated.*
3. Read the order processing agreement, then confirm it and agree to it at the end of the text.
4. Confirm your input with ✓.  
*The window **User selection** appears.*

5. Open the list with .


6. Select the user.

*The user selection enables quicker identification of the mechanic who performed the measurements if a query is subsequently made.*

*Perform the steps as described in the section Entering the User Name [▶ 32] if you wish to add further users or to edit existing users.*

7. Activate the **Stay logged in** check box if necessary.

*If the **Stay logged in** check box is activated, you will not need to select a user name when switching on the device in the future.*


8. Confirm your input with .

*The main menu appears.*



⇒ Now you can start working with the device.

## **6.3. Switching Off the Device**

Proceed as follows to switch off the device:

1. Switch off the device with .

2. Observe the confirmation prompt.

3. Confirm the confirmation prompt with . Abort the procedure with .



## 7. Device configuration

Configure all interfaces and functions under **>Settings<** in the main menu.

### 7.1. Configuring interfaces

Make your WLAN and e-mail settings here.

Wi-Fi is a wireless local area network. Data is transmitted wirelessly via a router and DSL modem (access point). The respective devices register in the Wi-Fi router.

#### 7.1.1. Searching and Installing a Wi-Fi Interface

Proceed as follows to connect the device to a network (router) via Wi-Fi interface:

1. Select **Settings > Device > Interfaces > Network** in the main menu.

2. Open the list under **IP address mode** with .

*If **>Determine automatically (DHCP)<** (recommended) is selected, the DHCP server of the network will assign an IP address to the **SEG V** automatically. This option is set ex works.*

*If **>Manual<** is selected, then go to **SEG V – IP address** and enter a free IP network address, e.g.: **Network mask 192.168.246.002 / Standard gateway: 192.168.204.2**.*

3. Select **>Determine automatically (DHCP)<** (recommended) or **>Determine manually<**.

*The selection will be saved automatically.*


4. **Create wireless network** with .

*The Wi-Fi connection search is active.*


*Once the device has successfully finished the search for a Wi-Fi connection, a drop-down list of Wi-Fi networks found is displayed.*


5. Select a Wi-Fi network.

6. Confirm the selection with .

7. Open the virtual keypad with .

8. Enter the Wi-Fi password.

9. Close the virtual keypad with .

10. Confirm your input with .

*The input will be saved automatically.*

*If the connection to the Wi-Fi network was successfully set up, the name of the selected Wi-Fi network is shown under **Wireless network (SSID)**.*

⇒ Now you can start working with Wi-Fi connection.

#### 7.1.2. Test Wi-Fi configuration

Proceed as follows to test the Wi-Fi configuration:

1. Select **Settings > Device > Interfaces > Network** in the main menu.

2. Use  for the function **Test Wi-Fi configuration**.

*The Wi-Fi configuration is tested.*

⇒ The address of the selected Wi-Fi is displayed under **SEG V IP address** if the Wi-Fi configuration has been tested successfully.

### 7.1.3. Reset Wi-Fi configuration

Reset the Wi-Fi configuration again here.

Proceed as follows to reset the Wi-Fi configuration:

1. Select **Settings > Device > Interfaces > Network** in the main menu.

2. **Reset Wi-Fi configuration** with .

*The Wi-Fi configuration is reset.*

### 7.1.4. Sending Reports by E-Mail


Take the corresponding e-mail settings before you can send reports by e-mail.

Proceed as follows to take e-mail settings:

1. Select **Settings > Device > Interfaces > E-Mail** in the main menu.

2. Open the virtual keypad under **Receiver address** with .

3. Enter the e-mail address of the receiver.

4. Close the virtual keypad with .


5. Open the list under **Server settings** with .

*Further settings are not necessary if >Automatically< is selected.*

*Continue with steps 6-22 if >Manually< is selected.*

6. Open the virtual keypad under **Host** with .


7. Enter the host name of the outbox server.

8. Close the virtual keypad with .


9. Open the virtual keypad under **Port** with .

10. Enter the port number of the outbox server.

11. Close the virtual keypad with .






12. Open the virtual keypad under **Sender address** with .

13. Enter the e-mail address of the sender.

14. Close the virtual keypad with .

15. Click  under **User login**.

The **User login** window is displayed.

16. Open the virtual keypad under **Name** with .
17. Enter the user name of the sender.
18. Close the virtual keypad with .
19. Open the virtual keypad under **Password** with .
20. Enter the user password.
21. Close the virtual keypad with .
22. Close the **User login** window with .

The input will be saved automatically.

⇒ Reports can be sent via e-mail now.

### **7.1.5. Activate the Screen Duplication**


The screen duplication enables to have the SEG V display indicated on an external terminal device via VNC viewer. Thus it is possible to do all work steps via external device. The response time of the screen indication depends on the network utilization. The example of VNC Connect describes the connection setup.

Proceed as follows to activate the screen duplication:

1. Select **Settings > Device > Interfaces > Activate screen duplication**.

*Regard the info window.*

*The info window shows the data for connection to the VNC client (PC, tablet etc.) if the screen duplication has been activated successfully.*

2. Start the VNC viewer on the terminal device and set up the connection. For this click to **>File<** and select **>New connection<**.
3. Enter the IP address of the SEG-V in line **VNC server** and confirm the entry with **>OK<**.  
*Now the info window of the VNC viewer indicates a symbol with the IP address of the SEG V.*
4. Position the cursor on the symbol, push the right mouse button and click to **>Connect<**.  
*If the connection has been established successfully, the display of the SEG V is indicated on the terminal device.*
5. Click  to close the info window in the SEG-V again.
6. Click to **>Deactivate screen duplication<** to finish the function.

### **7.1.6. Asanetwork**

Asanetwork is the cross-brand communication standard for linking workspaces in automotive shops. Asanetwork establishes the connection and, thus, the option to exchange data between the procedures and systems used in the repair shop, such as inspection and testing devices (engine diagnostics, exhaust-emission check, brake test stand, air conditioning service station, headlight aiming device, etc.) and the commercial software in the office (DMS – Dealer Management System). The compatibility of these devices is required.

### **7.1.6.1. Installing the Network Manager**

The use of the function **Asanetwork** requires the network manager "**netman**" installed on the shop PC. This software is a product of a third-party supplier and can be acquired under the following link:

<https://workshop-net.net/netman/>







The use of the software requires merely 5 steps:

1. Download and install the network manager.
2. Start the network manager and go to **Documented text > Start asanetwork** and connect with the SEG V.  
*The connected SEG V is indicated under **Connected services**.*
3. The purchase of the device license requires a registration. For this select the tab **>License<** in the drop-down menu and confirm the selection **Click here for free registration** under **Free registration required**.  
*This option is indicated only if step 2 was successful.*
4. Enter the license, that has been transmitted by e-mail, under **License activation** for the online activation and click to **>Save<**.

⇒ The license is activated now.

### **7.1.6.2. Processing an Asanetwork Order in the SEG V**

If an order is created in the commercial software, call up the configured order in the headlight aiming device as follows:

1. Select **Documented test > Vehicle selection > Start asanetwork** in the main menu.  
*The info window shows that the dial-up to the asanetwork controller is being established.  
A list of the created asanetwork orders appears.*
2. Selected the relevant order.  
*This entry is marked in green now.*
3. Confirm the selection with .
- The **Target specifications** window appears.*
4. Abort the procedure with .
5. If required, change the data as described in the section Entering Vehicle Data [▶ 29].  
*The headlight setting data shall correspond to the manufacturer's specifications.*
6. Open the **Headlight selection** window with .
7. Perform the headlight test as described in the section Performing headlight test [▶ 56].
8. Finish the measurements with .
- An info window indicates that the results are being sent to the asanetwork DMS.*
9. Confirm the selection with .
- The window closes and the main menu appears again.*
10. Abort the procedure with .

⇒ In the DMS software the order is indicated as done now. The results are listed in the corresponding protocol.

## 7.2. Entering Vehicle Data

Enter data for the quick test and the documented test here.


Proceed as follows to enter or to change vehicle data:

1. Select **Settings** > **Measurement** in the main menu.

2. Open the list under **Vehicle type** with .

3. Select a vehicle type.


*The selection will be saved automatically.*

4. Open the virtual keyboard under **Inclination in %** with .

*The percentage value for the inclination is generally specified on headlight. This value (e.g. 1%) means that the low beam tilts by 10 cm within a 10 m distance.*



5. Enter the required value.

6. Close the virtual keypad with .

*The input will be saved automatically.*

7. Repeat the steps 4 to 7 for **Front fog lamp inclination in %**.

8. Open the list under **Driving direction** with .

9. Select >**Left-hand traffic**< or >**Right-hand traffic**<.

⇒ The inputs will be saved automatically.

### 7.2.1. Configuring the Light Measurement Unit

Proceed as follows to configure the light measuring unit:

1. Select **Settings** > **Measurement** in the main menu.

2. Open the list under **Light measuring unit** with .

3. Select >**Lux**< or >**Candela**<.

*Lux (receive size) is the illumination level and measures, how much light arrives on a certain surface from a light source.*

*Candela (send size) is the light intensity and describes the luminous flux, that is emitted from a light source in a specific direction.*

⇒ The selection will be saved automatically.

## 7.3. Setting the Country

Configure the following data here:

- Country
- Language
- Date format
- Time format
- Date
- Time

### **7.3.1. Setting the Country**

You can set your country here.

Proceed as follows to set the country:

1. Select **Settings** > **Device** > **Region** in the main menu.
2. Open the list under **Country** with .
 


*The compilation of countries depends on the prevailing software.*
3. Select the country to the corresponding language.
 

*The selection will be saved automatically.*

### **7.3.2. Setting the Language**

Here you can set the language version if the software is multilingual. After having set the language, the update will be installed in this language.

Proceed as follows to set the language:




1. Select **Settings** > **Device** > **Region** in the main menu.
2. Open the list under **Language** with .
 

*The compilation of languages depends on the prevailing software.*
3. Select the requested language.



#### **NOTICE**

Restart the device to display the changed language.


4. Return to the main menu with .
  5. Observe the information window.
  6. Confirm the information window with . Abort the procedure with .
 

*The language setting is saved automatically. The device switches off and on again automatically.*
- ⇒ The main menu is displayed in the language selected.

### **7.3.3. Setting the Date Format**

Here you can set the date format.

Proceed as follows to set the date format:


1. Select **Settings** > **Device** > **Region** in the main menu.
2. Open the list under **Date format** with .
3. Select the required date format.

*The selection will be saved automatically.*

### **7.3.4. Setting the Time Format**

Set the time format here.

Proceed as follows to set the time format:





1. Select **Settings** > **Device** > **Region** in the main menu.
2. Open the list under **Time format** with .
3. Select **>24 h<** or **>12 h<**.

*The selection will be saved automatically.*

### **7.3.5. Setting the Date**

Here you can set the present date.

Proceed as follows to set the date:




1. Select **Settings** > **Device** > **Region** in the main menu.
2. Open the selection window under **Date** with .
3. Select the requested day under **Day** with  .
4. Repeat steps 2 and 3 for **Month** and **Year**.
5. Confirm the selection with .

*The selection will be saved automatically.*

### **7.3.6. Setting the Time**

Set the current time here.

Proceed as follows to set the time:

1. Select **Settings** > **Device** > **Region** in the main menu.
2. Open the settings window under **Time** with .
3. Set the desired hour under **Hour** with  .
4. Repeat step 3 for **Minute** and **Second**.

5. Confirm settings with  .

*The setting is saved automatically.*



## **7.4. Setting company data**

Enter the company data that shall appear on the hard-copy printout, e.g.:

- Company address
- Fax number
- Homepage

### **7.4.1. Entering Company Data**

Proceed as follows to enter the company data:



1. Select **Settings** > **Company** in the main menu.
2. Open the virtual keypad under **Company name** with  .
3. Enter the company name.
4. Close the virtual keypad with  .  
*The input will be saved automatically.*
5. Repeat steps 2–4 to make more inputs.

## **7.5. Configuring users**

### **7.5.1. Entering the User Name**

Here you can manage the different users.

Proceed as follows to enter the user name:

1. Select **Settings** > **User** in the main menu.
2. Open the virtual keypad with  .
3. Enter the desired user name.
4. Close the virtual keypad with  .  
*The input will be saved automatically.*

## **7.6. Installing Password Protection**

The introduction of the General Data Protection Regulation (GDPR) of the European Union which came into force on 25 May 2018 includes the requirement to ensure better protection for customer-related data in devices.

To prevent access to our diagnostic devices by third parties, we have integrated the function **Password protection**.






## NOTICE

If the device no longer has a valid password, it can only be reactivated with the menu **>Starting the factory reset<** or with the help of the Hella Gutmann's Technical Help Line. In this case personal data and the Car History will be cleared, and it might not be possible to restore them again.

Proceed as follows to set up the password protection:

1. Select **Settings > User** in the main menu.
2. Call up **Password management** with .



## NOTICE

The length of the password must not exceed 10 characters.


3. Enter a password and confirm by entering it again.
  4. Observe the warning notice and confirm.
- ⇒ The device can now be accessed only with the selected password.

## 7.7. Configuring the SEG V

Here you can calibrate the display brightness, light measuring unit and level compensation, for example.

### 7.7.1. Setting the Display Brightness


Proceed as follows to set the display brightness:

1. Select **Settings > Device > Save energy** in the main menu.
2. Open the list under **Display brightness** with .
3. Select the requested brightness value.

*The display brightness is adjusted immediately. The selection will be saved automatically.*

### 7.7.2. Automatic display dimming

Proceed as follows to activate or deactivate the display dimming:


1. Select **Settings > Device > Save energy** in the main menu.
2. Open the list under **Automatic display dimming** with .
3. Select **>On<** or **>Off<**.

*If >On< is selected, the display brightness will be automatically dimmed to the minimum brightness value after 5 minutes of inactivity.*

⇒ The selection will be saved automatically.

### **7.7.3. Automatic switching off when inactive**

Proceed as follows to activate or deactivate the automatic display dimming in case of inactivity:




1. Select **Settings > Device > Save energy** in the main menu.
2. Open the list under **Automatic display dimming in case of inactivity** with .
3. Select **>On<** or **>Off<**.

*The SEG V will switch off automatically after 30 minutes if >On< is selected.*

⇒ The selection will be saved automatically.

### **7.7.4. Calibrate touch screen**

Proceed as follows to calibrate the touch screen:

1. Select **Settings > Device > Extended** in the main menu.
2. Start the calibration process with  in the menu **Calibrate touch screen**.
3. Regard the window with information and instructions.
4. Activate the calibration with . Abort the procedure with .

*Five calibration points are displayed consecutively.*

5. Choose the five calibration points.



*The selection will be saved automatically. The device switches off and on again automatically. This may take a few seconds.*

⇒ The touch screen is now recalibrated.

### **7.7.5. Save diagnostic data**

Use this function to save diagnostic data on a pen drive in case of troubles.

Proceed as follows to save diagnostic data:

1. Insert a pen drive into the USB port on the SEG V.
2. Select **Settings > Device > Extended** in the main menu.
3. Open the list under **Save diagnostic data** with .
4. Select **USB** and start saving with . Observe the information window.


⇒ The Technical Help Line of Hella Gutmann requires the diagnostic data for troubleshooting.

### **7.7.6. Sending Diagnostic Data**

Use this function to send diagnostic data to an e-mail address in case of troubles.


Proceed as follows to send diagnostic data to the saved e-mail address:

1. Open the list under **Save diagnostic data** with .

2. Select **E-mail** and send the diagnostic data with . Observe the information window.


### **7.7.7. Report**

Proceed as follows to display the report in another language:

1. Select the main menu **Settings > Report**.
2. Open the list under **Language** with .
3. Select the requested language.

⇒ The prevailing selection will be saved automatically.

Proceed as follows to display a logo on the report:

1. Select **Settings > Report** in the main menu.
  2. Open the list under **Logo** with .
- If >With logo< is selected, a logo will appear on the report.*  
*If >No logo< is selected, no logo appears on the report.*

⇒ The prevailing selection will be saved automatically.

#### **7.7.7.1. Having Indicated Light Distribution Images**

Proceed as follows to display light distribution images on the report:

1. Open the list under **Images** with .  
*If >With images< is selected, the light distribution will appear on the report.*  
*If >No image< is selected, no light distribution appears on the report.*

⇒ The prevailing selection will be saved automatically.

### **7.7.8. Level compensation**

Activate the level compensation and make settings here.



A level sensor registers the inclination angle of the **SEG V** and compensates floor unevenness and inclinations of up to 2% to prevent improper measurements.

#### **7.7.8.1. Executing Manual Level Compensation**

Proceed as follows to perform the manual level compensation:



1. Select **Settings > Device > Extended** in the main menu.
2. Open the selection window under **Level compensation** with .
3. Open the list under **Level compensation** with .
4. Select **>Manual<**.

*If >Manual< is selected, the vertical and horizontal axis level can be manually determined. This compensates unevenness/inclinations in the set-up area of the SEG V and the vehicle.*

5. Open the virtual keypad under **Pitch angle in %** with .
  6. Enter the desired value and apply.
  7. Repeat steps 5 to 7 for the **Roll angle in %**.
  8. Confirm the inputs with . Abort the procedure with .
- The inputs will be saved automatically.*
- ⇒ Automatic level compensation continues to remain operational in this mode.

### **7.7.8.2. Executing Automatic Level Compensation**

Proceed as follows to do the automatic level compensation:

1. Select **Settings > Device > Extended** in the main menu.
  2. Open the selection window under **Level compensation** with .
  3. Open the list under **Level compensation** with .
  4. Select **>Automatic<**.
- If >Automatic< is selected, the level of the vertical and horizontal axis adjusts automatically so that any unevenness in the SEG V setup area is compensated.*
- Now the device is balanced.*
5. Confirm the selection with . Abort the procedure with .
- The selection will be saved automatically.*

### **7.7.8.3. Switching Off Level Compensation**

Proceed as follows to switch off the level compensation:


1. Select **Settings > Device > Extended** in the main menu.
  2. Open the selection window under **Level compensation** with .
  3. Open the list under **Level compensation** with .
  4. Select **>Off<**.
- When >Off< is selected, level compensation is switched off.*
5. Confirm the selection with . Abort the procedure with .
- The selection will be saved automatically.*

### **7.7.9. Start factory reset**

Use this function to reset the device to factory settings.

All customer-specific data records will be reset if you perform the factory reset.

Proceed as follows to perform a factory reset:

1. Select **Settings > Device > Extended** in the main menu.
2. Use  to start the factory reset under **Start factory reset**.

*Observe the confirmation prompt.*

3. Confirm the confirmation prompt with ✓.

*The device will be automatically reset to the state of delivery.*

## **7.8. Updating the Device**

Perform device updates here. Various system parameters are also displayed, e.g.:

- Software version
- Hardware version
- Device number

**Hella Gutmann Solutions** supplies customers with software updates at varying intervals. These updates contain technical modifications and improvements. We recommend keeping your device up to date with these updates.

### **7.8.1. Preconditions for an Update**

Ensure the following to perform updates:

- Voltage supply of the device is ensured.

### **7.8.2. Starting the Software Update**

Start the update of the device's software here.

Proceed as follows to start the software update:

1. Select **Settings > Update** in the main menu.



#### **⚠ CAUTION!**

##### **Insufficient voltage supply**

System data loss

Do not switch off the device during the update and do not disconnect it from voltage supply.

Ensure sufficient voltage supply.

2. Start the update with .

*The device searches for a new update, the files will then be downloaded and installed.*

⇒ The device switches off and on again automatically after the successful software update.







## **7.9. Service menu**

The **>Service menu<** is exclusively reserved for Hella Gutmann service technicians or the testing organizations.


## 8. Working with the Device

### 8.1. Symbols










#### 8.1.1. Symbols in the Header



Symbols	Meaning
	<p><b>Vehicle data</b></p> <p>This menu contains the data of the currently selected vehicle.</p>
	<p><b>User</b></p> <p>Here you can click the symbol to change the user or double-click to enter a new user name.</p>
	<p><b>Battery state of charge:</b></p> <p>The battery state of charge is indicated here.</p> <ul style="list-style-type: none"> <li>• Green symbol: Battery fully charged</li> <li>• Symbol flashing green-white: Battery being charged</li> <li>• Symbol partly red: Battery must be charged</li> </ul>
	<p><b>Wi-Fi</b></p> <p>The WLAN symbol is indicated if an active WLAN connection is existing.</p>
	<p><b>Language selection</b></p> <p>Click the symbol to change the user language.</p>
	<p><b>Screen duplication</b></p> <p>This symbol indicates that the screen duplication is activated.</p>

#### 8.1.2. Symbols in the Main Menu

Symbols	Meaning
	<p><b>Home</b></p> <p>Return directly to the main menu.</p>

### 8.1.3. Headlight Test Symbols

Symbols	Meaning
	<p><b>Vehicle database</b></p> <p>Select a vehicle from the database, e.g., according to the following criteria:</p> <ul style="list-style-type: none"> <li>• Manufacturer</li> <li>• Type</li> <li>• Model year</li> <li>• Engine code</li> </ul>
	<p><b>Car history</b></p> <p>Call up the <b>Car History</b> here.</p>
	<p><b>Low beam</b></p> <p>The road ahead of the vehicle is illuminated.</p>
	<p><b>High beam</b></p> <p>The road ahead is illuminated as far as possible.</p>
	<p><b>Front fog light</b></p> <p>The immediate road ahead is illuminated more brightly.</p>
	<p><b>Adaptive light control/high beam assistant</b></p> <p>Here, moving lenses in the headlights illuminate curves more effectively. Oncoming traffic or preceding vehicles are not dazzled by high beam lights that are always on.</p>
	<p><b>Dynamic Light Spot (night vision spot light)</b></p> <p>Here people in the dark are detected from a distance and lit in a targeted way.</p>
	<p><b>Create vehicle entry manually</b></p> <p>Here you can create a vehicle by entering vehicle data manually.</p>
	<p><b>Asanetwork</b></p> <p>Retrieve jobs from the Asanetwork controller here.</p>

Symbols	Meaning
	<p><b>Direction arrows</b></p> <p>Direction arrows symbolize the setting recommendations for the respective headlights.</p> <p>The measure of the deviation is depicted by means of different colours.</p> <ul style="list-style-type: none"> <li>• Green symbol: No correction of headlight adjustment necessary</li> <li>• Yellow symbol: Slight correction of headlight adjustment necessary</li> <li>• Red symbol: Major correction of headlight adjustment necessary</li> </ul>
	<p><b>Right/left headlight</b></p> <p>Here the device indicates which headlight is tested.</p>

## 8.2. Preparing headlight test

### 8.2.1. Requirements for Vehicle Setup Area and SEG V



#### NOTICE

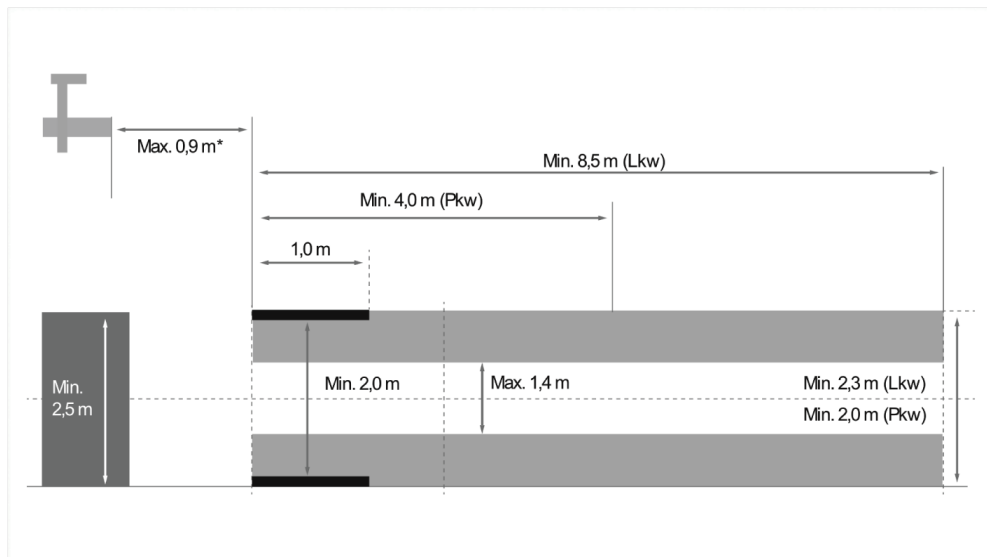
In general the requirements on the set-up areas shall correspond to the prevailing laws demands of the prevailing countries.

The dimensions specified for the set-up area exclusively apply to Germany.

Following the valid regulation with regards to the adjustment of vehicle headlights, in line with §29 of the German Road Traffic Licensing Regulation (StVZO) (MOT test headlight testing directive), the testing and set-up areas are defined as follows for the vehicle and **SEG V**:

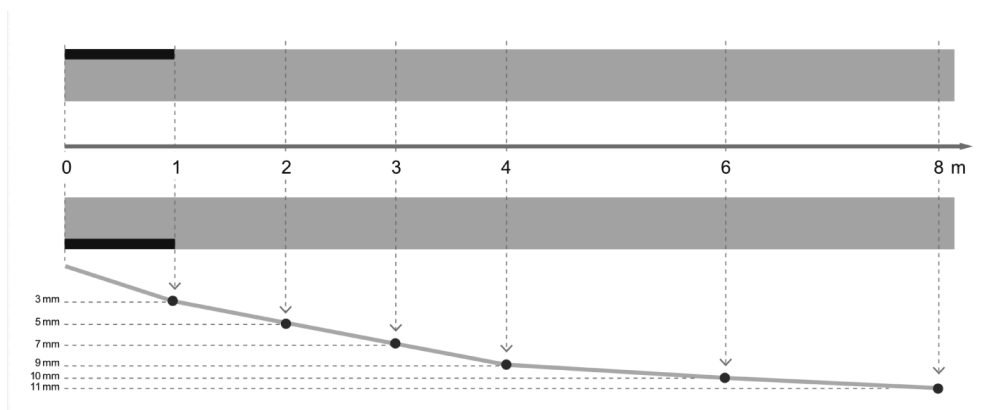
Fig. 1: Dimensions of the setup area





\*In case of vehicle hoists, measure the distance is taken from the front edge of the optical housing to the front edge of the vehicle hoist.

Fig. 2: Tolerance



- The dimensions for the set-up area for vehicles as well as the **SEG V** must correspond to fig. 1. The unevenness of the set-up area for the **SEG V** must be max.  $\pm 1$  mm/1 m. The tolerances of the set-up area for vehicles are specified as in fig. 2 (source of figures: Verkehrsblatt 11/2018).
- The set-up areas for the vehicle and the **SEG V** must be clearly marked e.g. through floor markings.

### 8.2.2. Setup Area for Stationary SEG V



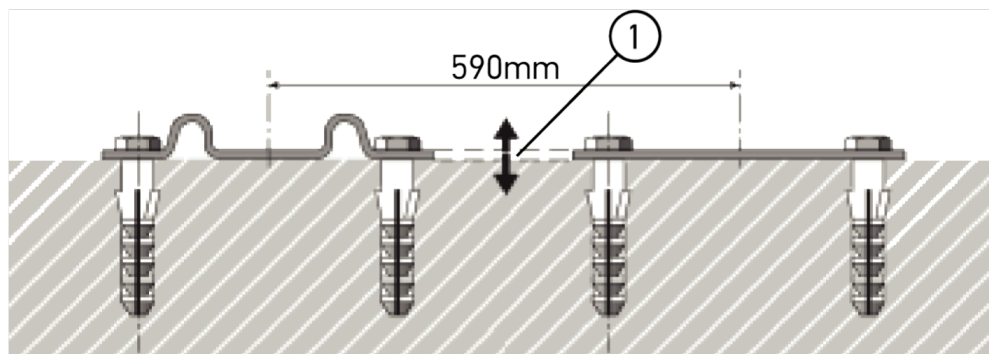
#### NOTICE

The ground must comply with the requirements of Eurocode 2/DIN EN 1992 and the concrete must correspond to the compression strength class C20/25.

The area around the rail system has to be marked as a hazardous area (risk of tripping) (DIN 4844-1). This must be taken into account when assessing the hazards in the workplace.

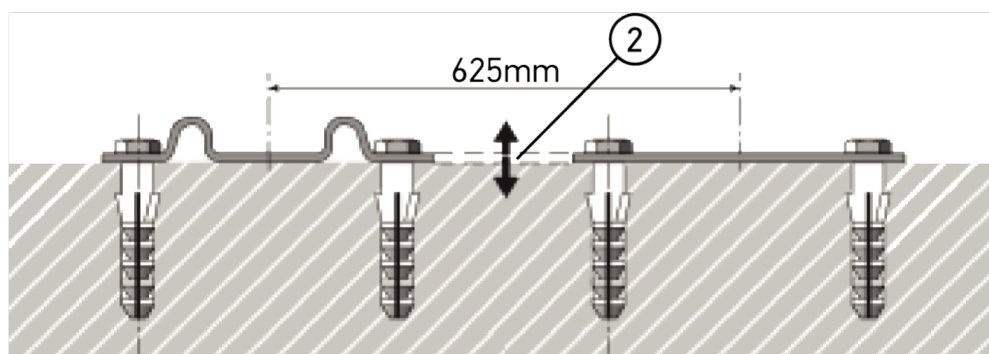
Up to device no. 2272

Fig. 3:



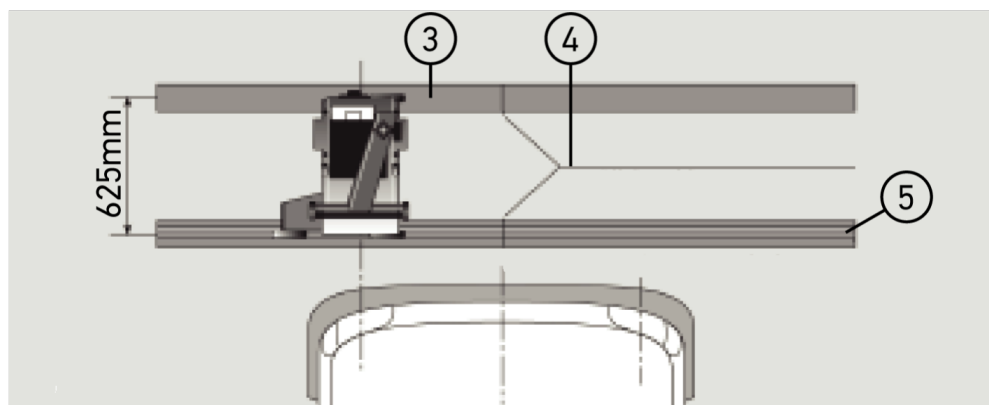
From device no. 2273

Fig. 3.1:



Name	
1	Height difference +/- 1 mm
2	Height difference +/- 1 mm

Fig. 4:



Name	
3	Spacer plate
4	Rail joint without lateral displacement
5	Rolled section not greater than 1 mm

- The **SEG V** is also suitable for fixed installation.

- Rails are mounted onto the ground.
- When used as a rail unit, you need to order a rail set for each **SEG V** (ord. no. 9XS 861 736-001). The rail serves as a drill template during assembly.

Moreover, we offer an adjustable rail system (ord. no.: 9XS 861 736-021) and a caster set (order no. 9XS 862 004-021).

- To establish the vehicle setup area, the same conditions apply as described in the section Requirements for Vehicle Setup Area and SEG V [► 40].

To test and adjust headlights observe the following when running the rails:

- The vehicle floor surface and rail level for the **SEG V** must lie parallel to each other in both dimensions.
- The height difference of the caster running surface must correspond to legal specifications.
- The rails (order no.: 9XS 861 736-001) must entirely rest onto the surface, so that they cannot bend.
- The rails are positioned in pairs 90° to the vehicle's longitudinal axis. Prevent lateral displacements on rails that collide (fig. 4).



## NOTICE

If the device is placed onto guide rails you need to add or respectively subtract the height measure accordingly.

The tape measure is available as spare part and can be attached to the post accordingly.

### 8.2.3. Vehicle Test



## NOTICE

Observe complete regulation, §29 of the German Road Traffic Licensing Regulation.

Observe national regulations.

Observe the manufacturer's specifications.



## NOTICE

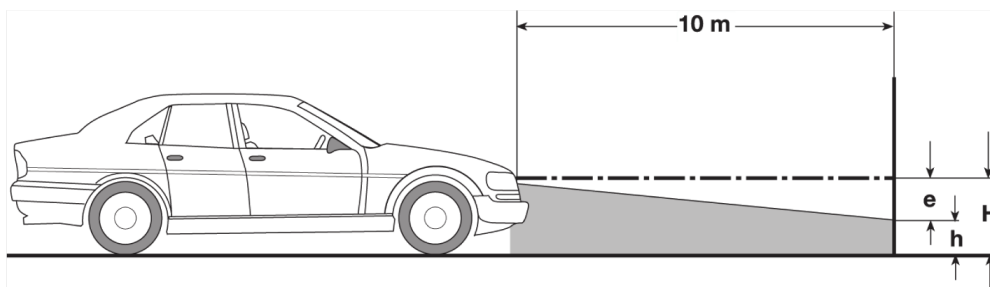
The **SEG V** can be used to test all headlight systems, including DE, FF, LED and xenon headlights. Headlights must be fastened to the vehicle after adjustment such that unintended adjustment *cannot* occur. After repairs are made to the vehicle suspension, the headlight aiming must always be tested. This is also recommended after changing a headlight bulb.

- Tires have the prescribed air pressure.
- The headlight lenses are not damaged or dirty.
- The headlights are checked for good working order.

- The vehicle is unloaded (for single or multi-track vehicles with just one headlight). Put a weight of 75 kg on the driver seat.  
Observe the manufacturer's specifications in general.
- Do not load lorries or multi-track vehicles.
- Load single-track vehicles or single-axle tractors and work machines (with driver cab or trailer) with one person or 75 kg on the driver's seat.
- Observe manufacturer specifications for vehicles with hydraulics or air suspension.
- If automatic correction of the headlights or continuously variable or multistage adjustment is possible, then observe manufacturer specifications. Depending on the manufacturer, various function tests must be carried out here.
- A diagnostic device, e.g. from Hella Gutmann, is required to apply settings for various vehicles with automatic headlight leveling. The vehicle ECU must be in basic mode during the setting process. If the light-dark border is set correctly, then this value is stored as the new normal position.
- For headlights with multi-stage adjustment systems where position settings are not marked especially, proceed as follows:
  - If the light beam lifts with increased load, then apply the setting for the adjustment setting where the light beam sits highest.
  - If the light beam lowers with increased load, then apply the setting for the adjustment setting where the light beam sits lowest.

### 8.2.4. Setting Dimensions and Tolerances

Fig. 5:



e	Setting dimension in cm by which the light-dark border must be tilted at a distance of 10 m.
H	Height of the center of the headlight over the floor surface in cm.
h	Height of the divider from test surface to floor surface in cm. The light-dark border is set for low beam and front fog lights at this height.

Fahrzeugart		Scheinwerfer-Einstellmaß "e" Kraftfahrzeuge nach Nr. 1 und 2 — [%] Nr. 3 und 4 — [cm]		Toleranzen Kraftfahrzeuge nach Nr. 1 und 2 — [%] Nr. 3 und 4 — [cm]			
		zulässige Abweichung vom Scheinwerfer-Einstellmaß					
		Scheinwerfer für Abblendlicht und Fernlicht	Nebelschein- werfer	nach o- ben	nach unten	nach links	nach rechts
1	Kraftfahrzeuge, deren Scheinwerfer nach EG/ECE genehmigt sind <sup>3</sup>	am Fahrzeug angegebenes Einstellmaß <sup>2</sup>	am Fahrzeug angegebenes Einstellmaß <sup>2</sup>	Toleranzen wie unter Nr. 2			
2	Andere Kraftfahrzeuge mit einer Höhe der Scheinwerfermitte über der Aufstellfläche (H) ≤ 140 cm						
	a) PKW und PKW-Kombi <sup>3</sup>	1,2	2,0	0,2	0,8		
	b) Kraftfahrzeuge mit niveaugeregelter Federung oder automatischem Neigungsausgleich des Lichtbündels	1,0	2,0				
	c) mehrachsige Zug- und Arbeitsmaschinen			0,5	0,5	0,5***	
	d) einspurige Kraftfahrzeuge und mehrspurige Kraftfahrzeuge mit 1 Scheinwerfer						
	e) LKW mit vorn liegender Ladefläche						
	f) LKW mit hinten liegender Ladefläche ausgenommen Kfz nach Nr. 2c	3,0	4,0	1,0	0,5		
	g) Sattelzugmaschinen						
	h) Kraftomnibusse						
3	Andere Kraftfahrzeuge mit einer Höhe der Scheinwerfermitte über der Aufstellfläche (H) > 140 cm (unter Berücksichtigung der Tabelle in Anlage 3). Gilt auch für Kraftfahrzeuge ≤ 40 km/h	H/3*	H/3+7*				
				10	5	5***	
4	Einachsige Zug- oder Arbeitsmaschinen	2xN**	20				

<sup>2</sup> The adjustment instructions apply in accordance with UN-ECE Regulation no. 48, 53 or 86. For class B and F3 front fog lights in accordance with UN-ECE (with a luminous flux of ≤ 2000 lumens). If a setting dimension is not specified on the vehicle, the upper limit value is 1.0%, and there are no demands with respect to a lower limit value.

<sup>3</sup> For vehicles with a wheelbase less than 2.5 m, load testing is conducted by loading a person on the driver's seat or using the additive correction value of 0.3 on the setting dimension applicable to the vehicle (e.g. for a setting dimension of 1.2 on the vehicle, the correction of 0.3 means that the tolerances of +/- 0.5 are applied with reference to the value 1.5).

\* see chart in section Performing Headlight Test with a 10-meter Panel [► 64]

\*\* N [cm] dimension by which the center of the light beam is tilted at a distance of 5 m

\*\*\* Does not apply to fog lights

## **8.3. Aligning the SEG V**

### **8.3.1. Switching On the Laser**



#### **⚠ CAUTION!**

##### **Laser radiation**

Damage to/destruction of the retina

Never look directly into the laser beam.



#### **NOTICE**

After switching on the laser, the laser output is activated for approx. 30 s via an integrated interval timer. Within this time you can align the SEG V in front of the vehicle.

Proceed as follows to switch on the laser module:

1. Briefly push the ON/OFF button of the laser module (1).

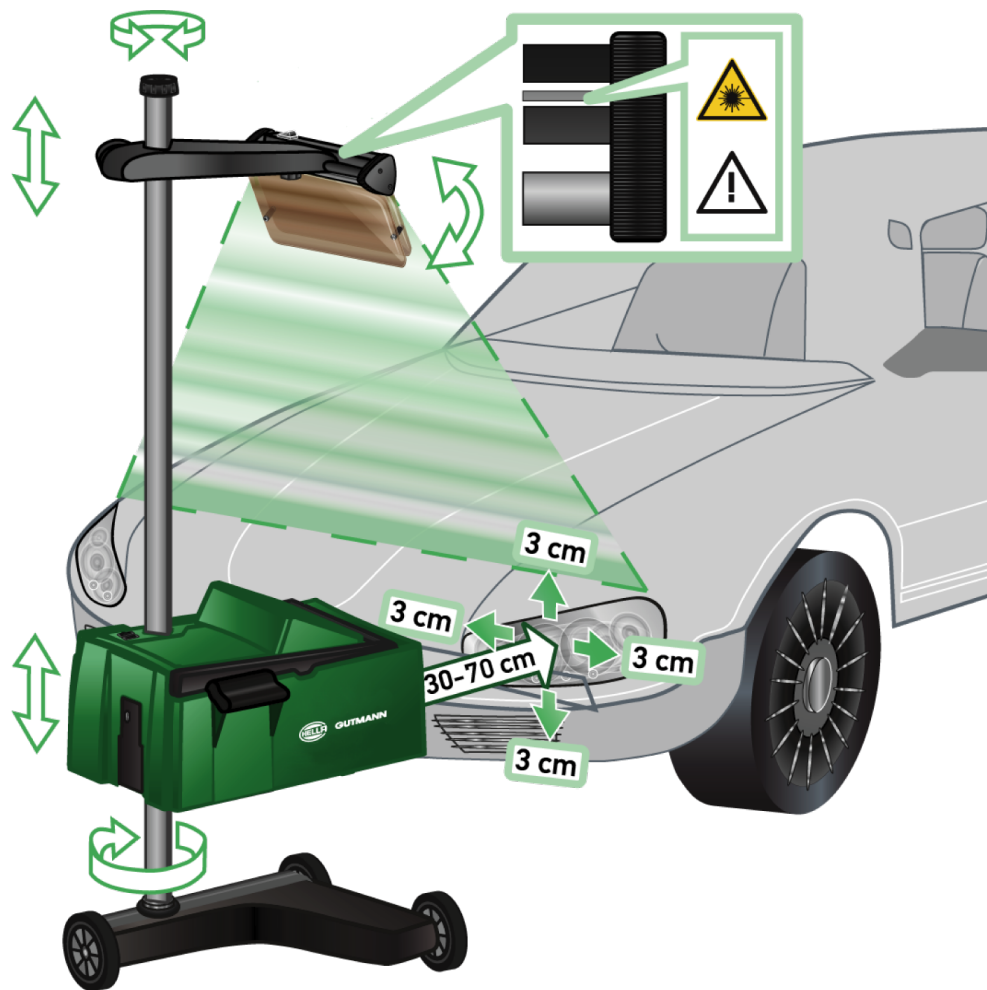
*The laser is activated for approx. 30 s.*

2. If required, repeat step 1 to reactivate the laser.

⇒ Now, you can align the SEG V in front of the vehicle.

### **8.3.2. Aligning the Optic Housing to the Vehicle**

Fig. 6:



Proceed as follows to align the SEG V to the vehicle:

1. Position the **SEG V** at a distance between 30 and 70 cm in front of the headlights.
2. Switch on the laser sight.  
*Alternatively you can use the optical sight (black line in the right area of the sight).  
The laser is activated for approx. 30 s.*
3. Loosen the hand wheel of the column locking mechanism (12).  
*By loosening the hand wheel, you can turn the optic housing.*
4. Use the laser sight or the optical sight to align the optic housing in a way that the laser line 2 touches points at the same height, symmetrical to the geometric center line (fig. 6).
5. Tighten the hand wheel of the column locking mechanism (fig. 6), without changing the alignment.
6. Move the **SEG V** in front of the headlight to be tested.  
*The distance from the front edge of the optic housing to the headlight shall be between 30 and 70 cm (see fig. 6).*
7. Fasten the optic housing to the center of the headlight.  
*Deviations in height and side to the prevailing light source shall be max. 3 cm.*

### **8.3.3. Adjusting the Height of the Laser Sight**

The laser sight provides the option to align the **SEG V** and headlights using a laser pointer. Two parallel points on the vehicle front can be detected with the generated light band. If the required power supply (9 V block battery, 9 V type) is not available, then the alignment can be carried out using the broad-band sight.



#### **NOTICE**

Devices with rubber castors must be individually aligned for each headlight to be tested. Devices on rails need to be aligned only once per vehicle.

The targeted points on the vehicle must be significantly below the height of the sight.

To adjust the height of the laser sight, proceed as follows:

1. Loosen the hand wheel of the laser sight (11).
2. Set the desired height.
3. Tighten the hand wheel of the laser sight.

### **8.3.4. Aligning the Optic Housing on Commercial Vehicles**

Fig. 7:

