

# HE150

## Installation Instructions

(Translation of the original installation instructions)



# Foreword

## Disclaimer and exclusion of liability

DewertOkin is not responsible for damage resulting from:

- failure to observe these instructions,
- changes made to this product which have not been approved by DewertOkin, or
- the use of replacement parts which have not been approved or manufactured by DewertOkin.

► We reserve the right to make unannounced technical changes in the course of our continual product improvement process!

## Creation of a complete operating instruction manual for the entire end product

These instructions are only intended to be used by the end-product manufacturer. They should not be given to the operator of the end product. The factual information contained within may be used as a basis when creating the end-product manual.

The warning and danger notices are best suited for use in the end product's manual. However it is not sufficient to simply follow these notices. You should also carry out an internal risk assessment for your end product. This can then be used as the basis for the safety notices in your manual.

These installation instructions do not contain all information required to safely operate the end product. They only describe the installation and operation of the product as partially completed machinery.

The instructions are intended for the technicians responsible for manufacturing an end product and not for the operators of the end product.

## Usage in medical products

The HE150 is not a medicinal product. If used in a medical end product, you (the end manufacturer) are obliged to ensure compliance with EC directives and to ensure that other pertinent medical product regulations are maintained.

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# 1. General Information

## 1.1 About these installation instructions

In order to install the HE150 successfully and safely in the end product, these installation instructions must be observed. These instructions are not an operating manual for the end product.

These instructions will help you to minimize danger, repair costs and down times. They will also help you to increase the reliability and lifespan of the device.



### CAUTION

The notices in these instructions must be followed! Follow the guidelines during installation and connection procedures to minimize:

- the risk of accident and injury, and
- damage to the HE150 or the end product.

These installation instructions have been written with due care and attention. However, we cannot guarantee that the data, images and drawings are complete and correct nor do we accept any liability for the information contained therein, unless required by law.

## 1.2 Conventions used

Notices which do not relate to safety are indicated in these instructions with a symbol:

- Triangular notice symbol

### Explanations of warning notices



### CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

### NOTICE

NOTICE is used to address practices which are not related to personal injury but may result in damage to the product or surroundings.

## 2. Safety notices

### 2.1 Proper and intended usage

The HE150 is intended for use:

- as a control unit for suitable DewertOkin drive systems,
- for HOME applications (in beds, reclining chairs, etc.),
- with external power supply.



#### CAUTION

##### Risk of accident

The HE150 should only be used for the applications described above. Any other use is forbidden. Improper usage can lead to accidents or destruction of the unit. Such non-approved applications will lead immediately to the expiration of all guarantee and warranty claims on the part of the end-product manufacturer against the manufacturer.

#### 2.1.1 Improper usage

Be sure to follow the notices below concerning improper usage. You should include them in your product manual in order to inform the users of your end product.

The HE150 should not be used:

- in any environment where combustible or explosive gases or vapours (e.g., anaesthesiology) may be present,
- in the proximity of open fires or other heat sources (such as furnaces, ovens or direct sunlight),
- as a power source for toys or games,
- in any application that will be cleaned with an automated washing system,
- in a moist environment, or
- outdoors.

The HE150 can be used by children of 8 years and older, persons with reduced physical, sensory or mental capabilities, or persons with lack of experience or knowledge when they are supervised or instructed concerning the safe use of the device and when they understand the resulting risks. Do not allow children to play with this device. The cleaning and user maintenance must not be carried out by children without supervision.

- ▶ You should only use spare parts which have been manufactured or approved by DewertOkin. Only these parts will guarantee a sufficient level of safety.

## 2.2 Selection and qualification of personnel

The HE150 should only be installed into the end product by someone who has completed training in electronic motor assembly or has equivalent qualifications.

You should only install the HE150 when you are qualified to do so. Otherwise, a properly qualified person should be found for this task.

### 2.2.1 Electrical safety



#### CAUTION

##### **Electric shock**

Be careful; there is a risk of electrical shock! Before installing, make sure that you disconnect the external DewertOkin power supply for the HE150 from the power outlet!

The HE150 should not be opened! You must properly dispose of malfunctioning or broken units.

## 2.3 Ratings plate

- The ratings plate shown is an example; The specifications for your HE150 may differ from this illustration.

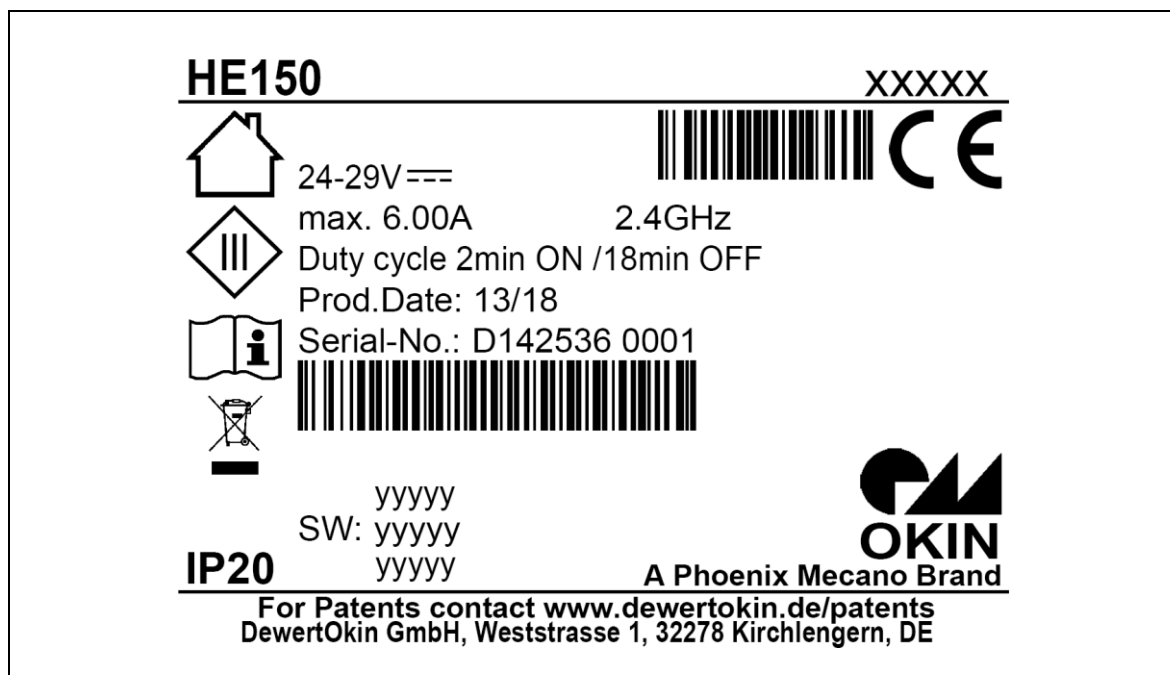







Figure 1 Ratings plate for the HE150 (example)

HE150	Model name
xxxxx	Article number
24 - 29V 	Input voltage
max. 6.00A	Current consumption
2.4GHz	Radio frequency
Duty Cycle 2min ON / 18min OFF	Mode of operation
Prod.Date	Calendar week / year
Serial-No.	Serial number
IP20	Protection degree
SW: yyyyyy	Software version
	Use in dry rooms only!
	Protection class III
	Conformity mark
	Follow all special disposal instructions!



### 3. Possible combinations

The HE150 can be used together with multiple individual drives, massage motors and accessories that have been approved by DewertOkin.

A tailored system consists of the combination of control unit, single drive, massage motor, accessories, and hand-held remote.

DewertOkin has separate system instruction manuals containing the additional information and instructions needed for these systems.

► Detailed information on combination possibilities can be requested directly from DewertOkin.

## 4. Description

The HE150 is a control unit and power supply for one or more DewertOkin drives. An external DewertOkin power supply unit is used to connect the HE150 to the mains power. The HE150 is equipped with built-in radio receiver.

### 4.1 Components

The housing of the HE150 has a connection for an external DewertOkin power supply, as well as connections for single drives, massage motors and various accessories (refer to Chapter 3, "Possible combinations").

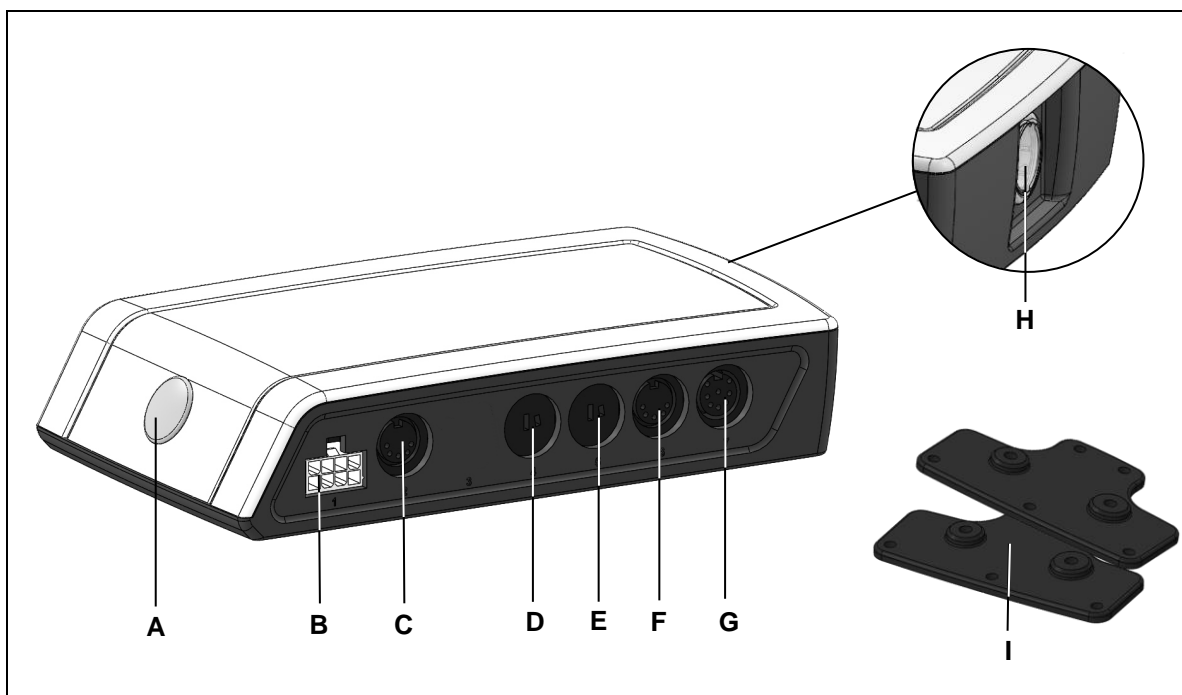


Figure 2 HE150

- |  |   |
|--|---|
| <b>A</b> Floor lighting (UBB, LED white)   | <b>B</b> Cable connection for POWER SUPPLY (e.g.: POWER SUPPLY HE-300 SMPS)             |
| <b>C</b> Connection for motor control cable (e.g.: OKIMAT 4 with single drive M1 /single drive M2) | <b>D</b> Connection for single drive M3 (socket 4)                                      |
| <b>E</b> Connection for single drive M4 (socket 5)   | <b>F</b> Connection for massage motor (socket 6)  |
| <b>G</b> Multi-function port for optional accessories  | <b>H</b> Floor lighting (UBB, LED white) / Reset- / Pairing button<br>BT-LED (LED blue) |
| <b>I</b> Mounting plates (optional)  |   |

## 5. Technical specifications

Input voltage	24 - 29 V DC
Current consumption at nominal operations	max. 6.0 A in intermittent duty, 2 min. ON / 18 min. OFF
	max. 1.5 A in continuous duty (e.g. massage motors etc.)
Mode of operations <sup>1)</sup>	Intermittent duty, 2 min. ON / 18 min. OFF
Protection class	III
Radio frequency	2.4 GHz
Protection degree	IP20
<b>Dimensions and weight</b>	
Length x width x height	196 mm x 116 mm x 40 mm
Weight	approx. 400 g
<b>Ambient conditions for operation, storage and transport</b>	
Transport / storage temperature	from -20 °C to +50 °C from -4 °F to +122 °F
Operating temperature	from +10 °C to +40 °C from +50 °F to +104 °F
Relative humidity	from 30% to 75%
Air pressure	from 800 hPa to 1060 hPa
Height	< 2000 m

<sup>1)</sup> Mode of operation: intermittent duty 2 min. ON / 18 min. OFF. This means that after the unit is operated with its rated load for up to two minutes it must then be paused for 18 minutes. The system can malfunction if this pause is not observed!

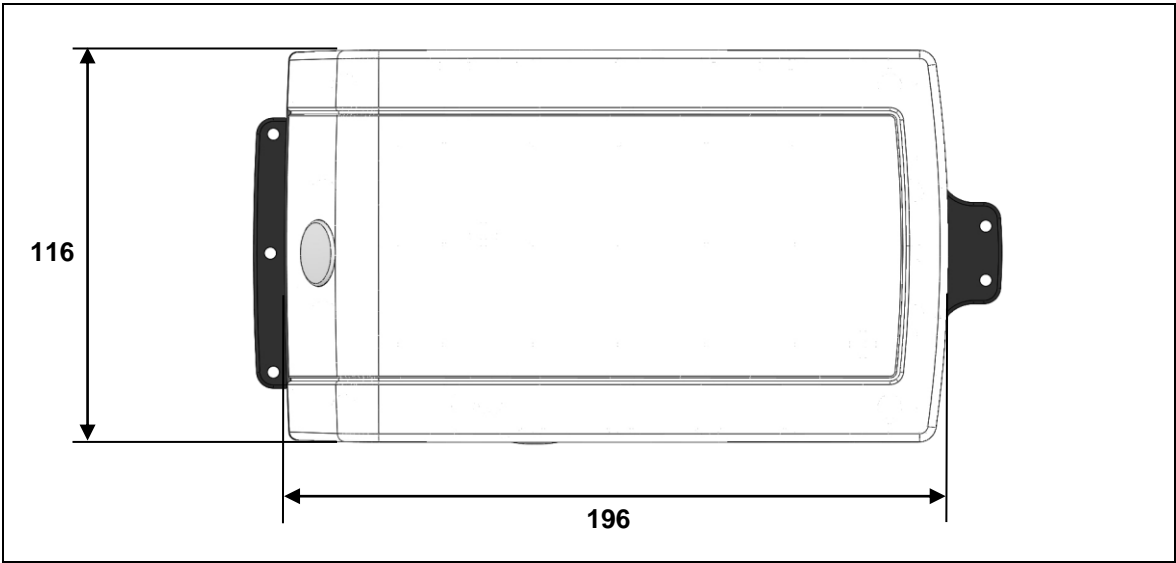


Figure 3 Dimensions of the HE150, top view (in mm)

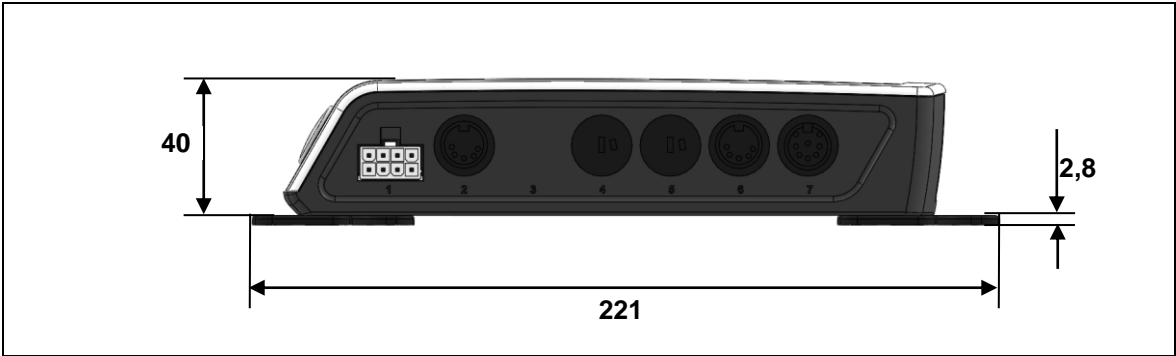


Figure 4 Dimensions of the HE150, side view (in mm)

## 6. Installation

### 6.1 Safety notices to observe during installation

Basic safety rules must be followed in order to ensure that the end product can be continually operated in a safe manner. These rules must be observed while using the end product and while installing the HE150 in the end product.

#### 6.1.1 Ensuring operational reliability during installation

The safety and reliability of the end product containing DewertOkin components can be ensured by using the proper construction methods as described below.

### 6.2 Installation procedure

Before installing and connecting the HE150, make sure that you are observing all of the safety notices found in the "Safety notice to observe during installation" section.

#### 6.2.1 Installation the mounting plates

Screws should be screwed into the five mounting points on the two mounting plates for attaching the HE150 to the end product. Two screws are used for each of the two delivered mounting plates to attach them to the HE150.

- The drilling dimensions shown in Figure 5 only illustrate an example and are not necessarily authoritative for all applications.

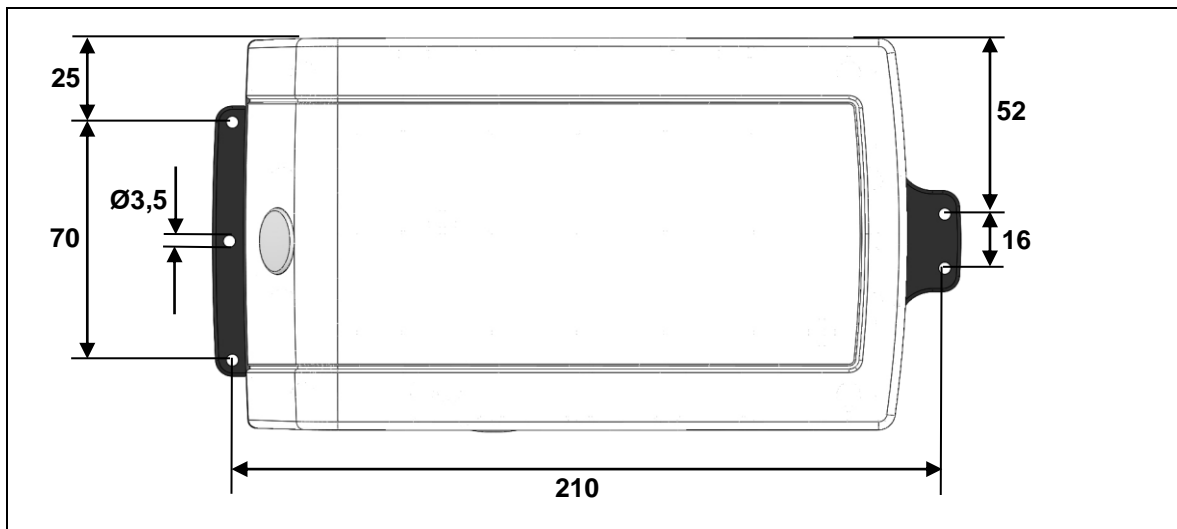


Figure 5 Drilling dimensions (example): Mounting points on the HE150, (in mm)



#### CAUTION

You should only connect and disconnect the cables when they are completely disconnected from any live current!

- 1 Screw the mounting plates firmly onto the HE150 (as shown in Figure 6). Use at least two screws for each of the two mounting plates.

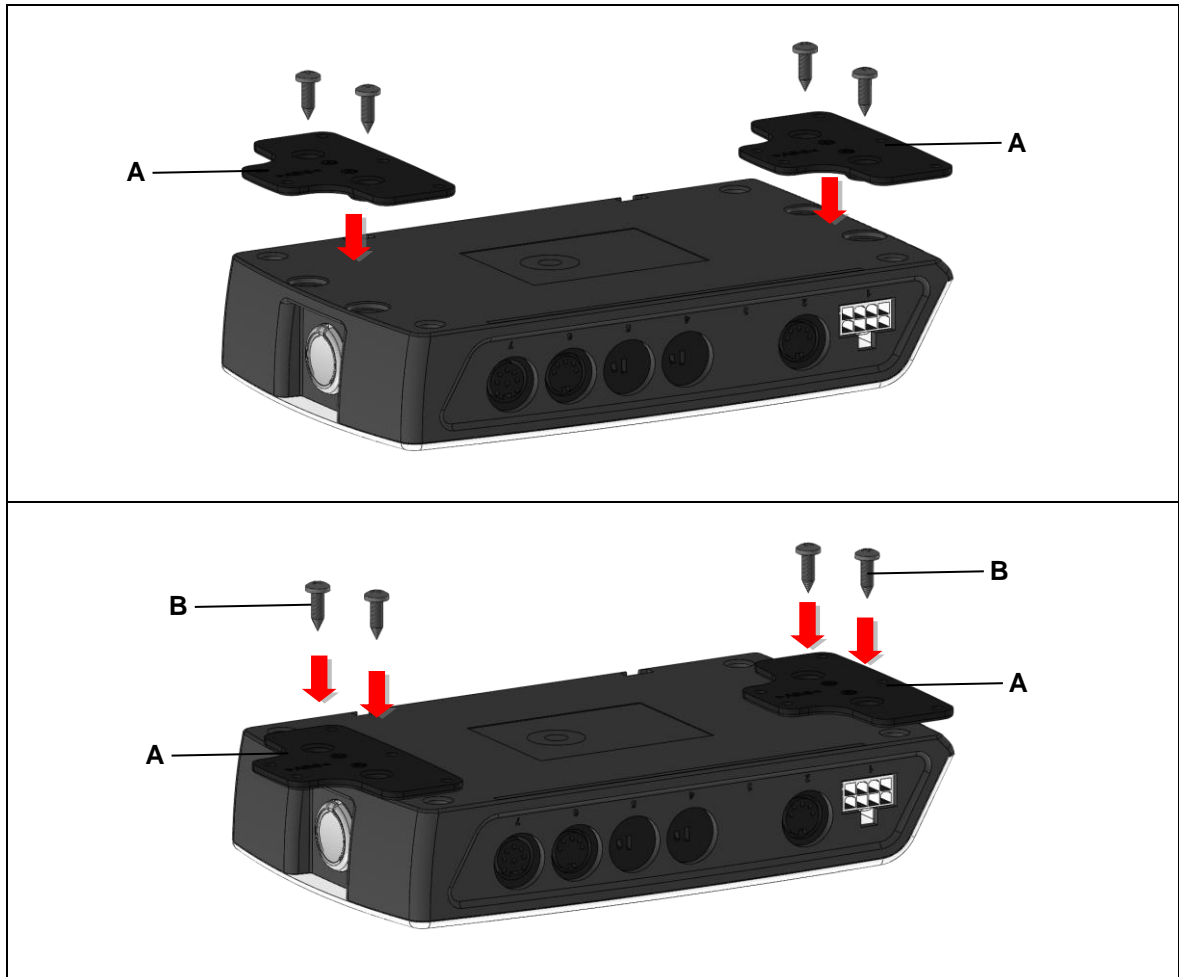


Figure 6 Installation the mounting plates

**A** Mounting plates

**B** Screws

- 2 Mark the holes and drill the five screw points in the application.
- 3 Tighten the screws on both mounting plates so the plates are firmly attached to the end product.
- 4 Use screws meeting the requirements of DIN 7981 with 3.5 mm diameter and of suitable length (5 mm plus the screw-in depth into the end product, screw head: 5.5 mm diameter).

### 6.2.2 Mounting the HE150 to the OKIMAT 4

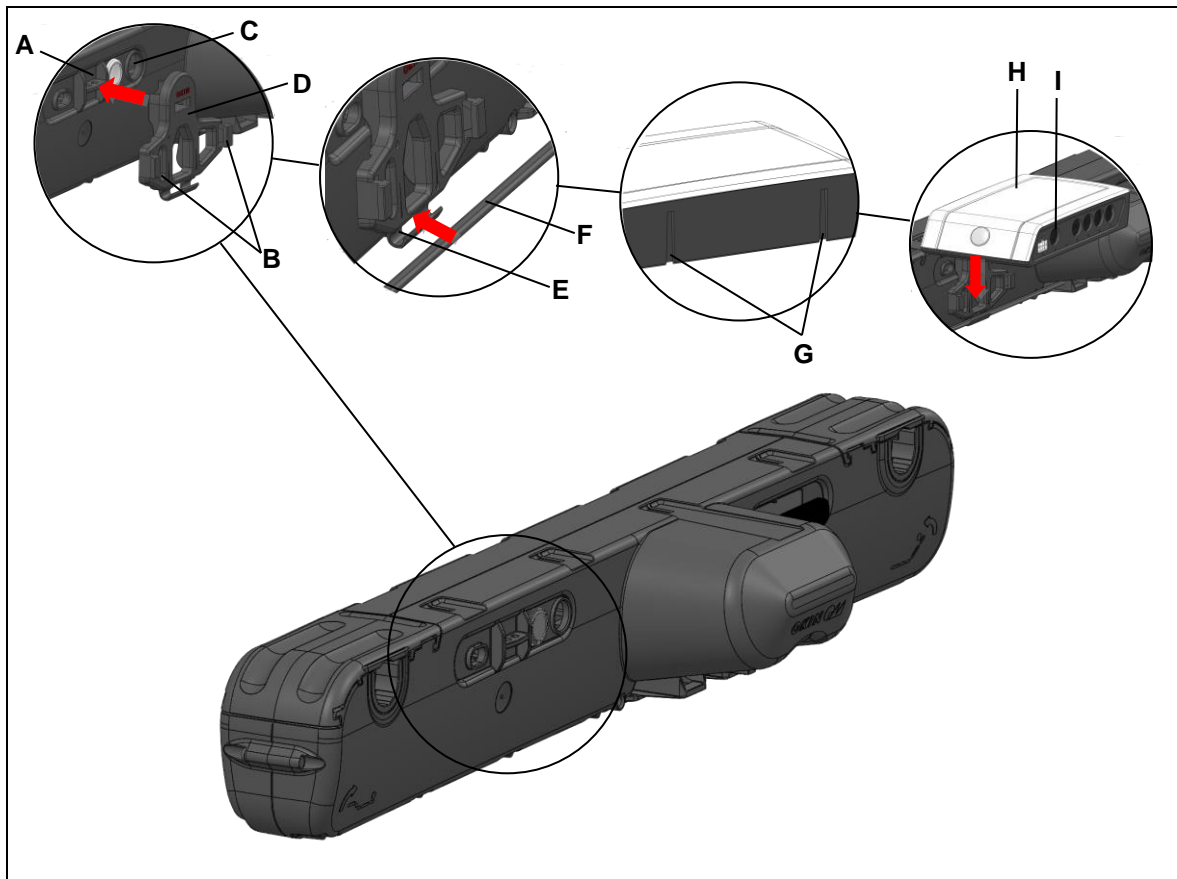


Figure 7 Mounting the HE150 to the OKIMAT 4

- |  |                              |
|--|------------------------------|
| <b>A</b> Mounting attachment               | <b>B</b> Guide for the HE150 |
| <b>C</b> Connection socket at the OKIMAT 4 | <b>D</b> Adapter             |
| <b>E</b> Cable guide                       | <b>F</b> Junction cable      |
| <b>G</b> Adapter seat                      | <b>H</b> HE150               |
| <b>I</b> Connection socket of the HE150    |                              |

- 1 Push the adapter's locking clip into the OKIMAT 4's mounting attachment (**A**) until you hear the clip snap in.
- 2 Connect the connecting cable plug to the connecting socket of the OKIMAT 4 (**C**).
- 3 Route the connecting cable (**F**) in the cable guide (**E**) of the adapter.
- 4 Put the HE150 (from the top downwards) into the adapter's guide (**B**).
- 5 Connect the connecting cable plug to the connecting socket on the HE150 (**H**).

### 6.2.3 Electrical connection



#### CAUTION

##### Electric shock

Electrical components should be connected or disconnected only when the power supply cord is unplugged.

- There is a delay after the supply voltage is applied before the device actually turns on. Wait at least 2 seconds before initial commissioning.

##### Routing the electrical cables

When routing the cables, be sure that:

- the cables cannot get jammed,
- no mechanical load (such as pulling, pushing or bending) will be put on the cables, and
- the cables cannot be damaged in any way.

Fasten all cables (especially the connecting cables) to the end product using sufficient kink prevention methods. Be sure that the design of the end product prevents the connecting cables from coming into contact with the floor during transport.

### 6.2.4 Connecting to the POWER SUPPLY

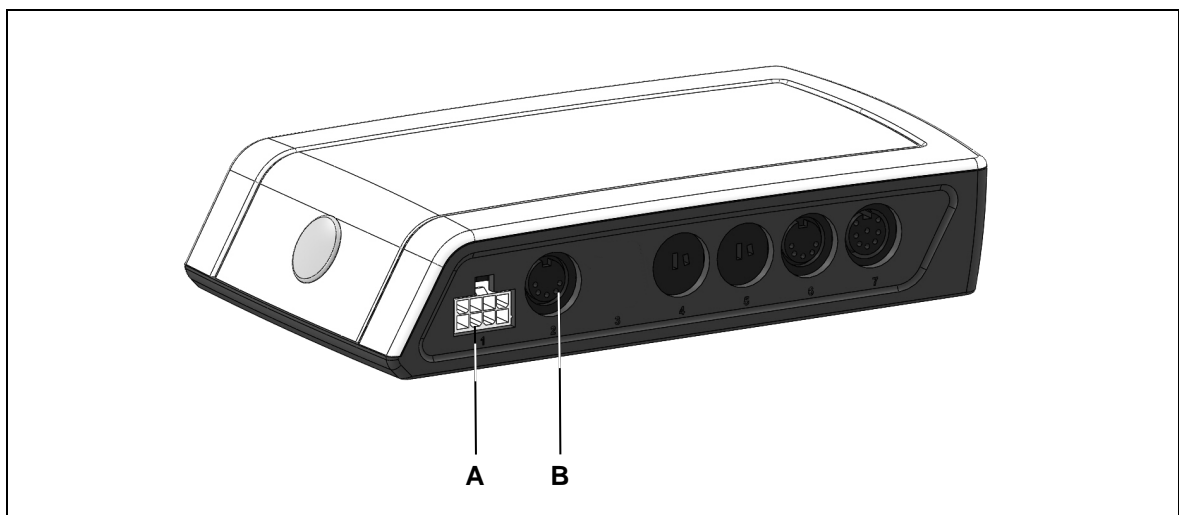


Figure 8 Example: Connecting the HE150 to the Power Supply

**A** Cable connection for POWER SUPPLY  
(e.g.: POWER SUPPLY HE-300 SMPS)

**B** Connection for motor control cable  
(e.g.: OKIMAT 4)



## 7. Information about creating your Operating Manual

The factual information contained within may be used when you are creating the end-product manual. The installation instructions do not contain all information required for the safe operation of the end product. They only describe the assembly and operation of the HE150 as a partially assembled piece of machinery.

- ▶ When creating the operating instructions, remember that the installation instructions are intended for qualified specialists and are not for typical users of the end product.

### 7.1 General information

- ▶ You should only connect drives, massage motors and accessories from DewertOkin to the HE150. Only DewertOkin components have been verified to work when combined together.

#### Avoiding damage caused by the floor lighting



##### CAUTION

##### Risk of accident

Do not look directly into this light and do not point the light into other people's eyes.

#### Delayed start-up

After plugging the power plug into the power outlet:

- ▶ There is a delay after the supply voltage is applied before the device actually turns on. Wait at least 2 seconds before initial commissioning.

#### Avoiding electrical risks



##### CAUTION

##### Electric shock

Make sure that all live (current-carrying) components and connections on the control unit cannot be touched.

**Power-on time / intermittent operations**

The HE150 has been designed for intermittent operations. Intermittent operation is an operational mode where the drive must pause after a specified maximum period of operation (power-on time). This protects the drive from overheating. Extreme overheating can cause a malfunction.

- The ratings plate specifies the maximum power-on time and the required pause intervals.

**Avoiding electrical risks****CAUTION****Risk of accident**

Please follow these operating instructions carefully. You could be injured if you do not follow these assembly instructions.

**Emergency shut off of a connected drive or HE150**

In an emergency, disconnect the power supply unit's power plug in order to shut off the connected drive. The power plug and the pluggable unit must always be accessible during operations so that it is possible to shut down the drive or HE150 at any time.

**Avoiding cable damage**

Be sure that your operating instructions inform the user about the possible cable risks.

**CAUTION****Risk of accident**

The cables (particularly the connecting cable) should not be run over. In order to prevent injuries or damage to the drive and HE150, no mechanical strain should be placed on the cables.

## 8. Troubleshooting

This chapter describes troubleshooting methods for fixing problems. If you experience an error that is not listed in this table, please contact your supplier.

- Only qualified specialists who have received electrician training should carry out troubleshooting and repairs.

Problem	Possible cause	Solution
The drive, accessory or control unit is not functioning.	There is no mains supply voltage.	Connect the mains power. Connect the connecting cable between the HE150 and the external power supply
	The drive, accessory or control unit is defective.	Please contact your supplier or sales agent.
	The hand-held remote control has not been programmed with the teach-in.	Carry out the teach-in routine for the hand-held remote.
	The hand-held remote batteries are empty.	Replace the batteries.
The drives or massage motors are suddenly not capable of movement.	The overheating protection or system protection has been triggered.	Remove the overload (change or remove the load). Allow the system to rest for 20 to 30 minutes with the mains power unplugged. Please contact your supplier or sales agent.
	The unit's fuse may have been triggered.	Please contact your supplier or sales agent.
	The hand-held remote batteries are empty.	Replace the batteries.
	Radio interference	Try to re-establish the wireless connection.
	There is no mains supply voltage.	Connect the mains power.
	A cable has been disconnected (to the mains power, massage motors, drives or accessory).	Check the cables and reinsert them, if required.

## 9. Maintenance

### 9.1 Maintenance

- ▶ The HE150 does not require maintenance.

### 9.2 Cleaning and care

- ▶ Clean the HE150 as needed using a dry antistatic cloth.

<b><i>NOTICE</i></b>
<ul style="list-style-type: none"><li>• Always disconnect the mains power plug from the power supply before you start to clean it.</li><li>• Never clean the HE150 in an automated washing system or with a high-pressure cleaner. Do not allow fluids to penetrate the lighting. Damage to the system could result.</li><li>• Do not use a cleanser that contains benzene, alcohol or similar solvents.</li><li>• Be sure that you do not damage the connecting cables during the cleaning.</li></ul>

## 10. Disposal

### 10.1 Packaging material

The packaging material should be sorted into recyclable components and then disposed of in accordance with the appropriate national environmental regulations (in Germany according to the recycling law KrWG from 01.06.2012; internationally according to the EU Directive 2008/98/EC (Waste Framework Directive WFD as of 12.12.2008)).

### 10.2 Components in the HE150

The HE150 consists of electronic components, cables and metal and plastic parts. You should observe all corresponding national and regional environmental regulations when disposing of the system.

The disposal of the end product is regulated in Germany by Elektro-G, internationally by the EU Directive 2012/19/EC (WEEE) or by any applicable national laws and regulations.



The HE150 should not be disposed of with normal household waste!

## EG-Konformitätserklärung

Nach Anhang IV der EMV-Richtlinie 2014/30/EU

Nach Anhang IV der EU-Niederspannungsrichtlinie 2014/35/EU

Nach Anhang VI der RoHS-Richtlinie 2011/65/EU  
(inkl. Delegierte Richtlinie (EU) 2015/863)

Der Hersteller

## EU Declaration of Conformity

*In compliance with Appendix IV of the EMC-Directive 2014/30/EU*

*In compliance with Appendix IV of the LVD-Directive 2014/35/EU*

*In compliance with Appendix VI of the EU RoHS Directive 2011/65/EU  
(incl. Commission delegated Directive (EU) 2015/863)*

*The manufacturer*

DewertOkin GmbH  
Weststraße 1  
32278 Kirchlegern  
Deutschland - Germany

erklärt hiermit, dass das Produkt

*declares that the following product*

### HE150

**mit DewertOkin Komponenten / with DewertOkin components**

die Anforderungen folgender EG-Richtlinien erfüllt:

*meets the requirements of the following EU directives:*

**Richtlinie über elektromagnetische Verträglichkeit 2014/30/EU**

***Electromagnetic Compatibility Directive 2014/30/EU***

**Niederspannungsrichtlinie 2014/35/EU**

***Low Voltage Directive 2014/35/EU***

**DELEGIERTE RICHTLINIE (EU) 2015/863 DER KOMMISSION vom 31. März 2015 zur Änderung von Anhang II der Richtlinie 2011/65/EU des Europäischen Parlaments und des Rates hinsichtlich der Liste der Stoffe, die Beschränkungen unterliegen.**

***COMMISSION DELEGATED DIRECTIVE (EU) 2015/863 of 31 March 2015 amending Annex II to Directive 2011/65/EU of the European Parliament and of the Council as regards the list of restricted substances.***

Angewendete Normen

*Applied standards:*

- EN 60335-1:2012/A11:2014
- EN 55014-1:2006/A1:2009/A2:2011
- EN 55014-2:1997/A1:2001/A2:2008
- EN 61000-3-2:2014
- EN 61000-3-3:2013
- EN 62233:2008

Konstruktive Änderungen, die Auswirkungen auf die in der Montageanleitung angegebenen technischen Daten und den bestimmungsgemäßen Gebrauch haben, das Produkt also wesentlich verändern, machen diese Konformitätserklärung ungültig!

*This declaration of conformity is no longer valid if constructional changes are made which significantly change the drive system (i.e., which influence the technical specifications found in the instructions or the intended use)!*



Kirchlegern, Germany 25 November 2019

Dr.-Ing. Josef G. Groß  
Geschäftsführer / Managing Director

## EG-Konformitätserklärung

(Ausführung 2,4GHz)

Nach Anhang VI der RED-Richtlinie 2014/53/EU

Nach Anhang VI der RoHS-Richtlinie 2011/65/EU  
(inkl. Delegierte Richtlinie (EU) 2015/863)

Der Hersteller

## EU Declaration of Conformity

(Version 2.4GHz)

*In compliance with Appendix VI of the RED-Directive  
2014/53/EU*

*In compliance with Appendix VI of the EU RoHS  
Directive 2011/65/EU  
(incl. Commission delegated Directive (EU) 2015/863)*

*The manufacturer:*

DewertOkin GmbH  
Weststraße 1  
32278 Kirchlegern  
Deutschland - Germany

erklärt hiermit, dass das Produkt

*declares that the following product*

### HE150

**mit DewertOkin Komponenten / with DewertOkin components**

die Anforderungen folgender EG-Richtlinien erfüllt:

*meets the requirements of the following EU directives:*

**Richtlinie 2014/53 über die Harmonisierung der  
Rechtsvorschriften der Mitgliedstaaten über die  
Bereitstellung von Funkanlagen auf dem Markt**

**RED Directive 2014/53/EU**

**DELEGIERTE RICHTLINIE (EU) 2015/863 DER  
KOMMISSION vom 31. März 2015 zur Änderung  
von Anhang II der Richtlinie 2011/65/EU des Euro-  
päischen Parlaments und des Rates hinsichtlich  
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- EN 55014-1:2006/A1:2009/A2:2011
- EN 55014-2:1997/A1:2001/A2:2008
- EN 61000-3-2:2014
- EN 61000-3-3:2013
- EN 62233:2008
- EN 62479:2010
- ETSI EN 300440 V2.1.1
- Draft ETSI EN 301489-1 V2.2.0
- Final Draft ETSI EN 301489-3 V2.1.1

Konstruktive Änderungen, die Auswirkungen auf die  
in der Montageanleitung angegebenen technischen  
Daten und den bestimmungsgemäßen Gebrauch  
haben, das Produkt also wesentlich verändern,  
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constructional changes are made which significantly  
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technical specifications found in the instructions or  
the intended use)!*



Kirchlegern, Germany 25. November 2019

Dr.-Ing. Josef G. Groß  
Geschäftsführer / Managing Director

DewertOkin GmbH  
Weststraße 1  
32278 Kirchlegern, Germany  
Phone: +49 (0)5223/979-0  
Fax: +49 (0)5223/75182  
<http://www.dewertokin.de>  
[Info@dewertokin.de](mailto:Info@dewertokin.de)

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