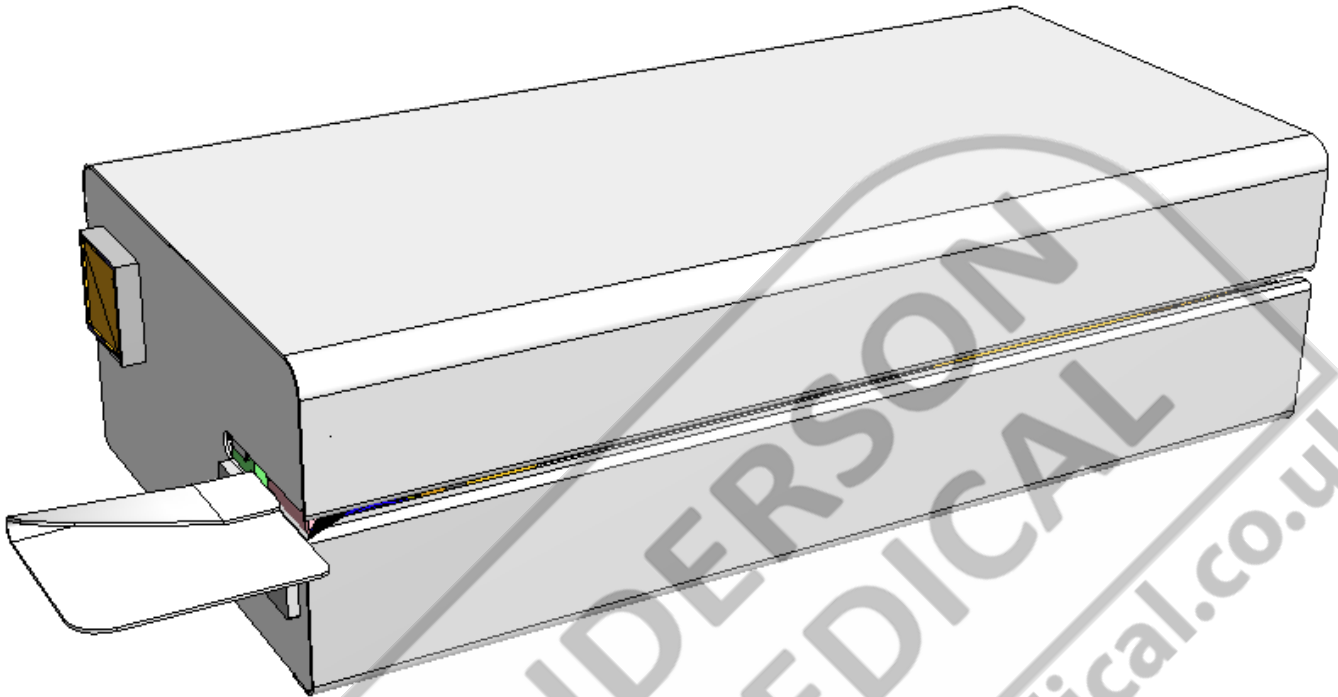


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## hd 650 DC EcoPak

### OPERATING INSTRUCTIONS

Valid for device versions hd 650 DC EcoPak as of 07/2020

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# 1 Introduction

## 1.1 Preface

First of all we would like to thank you for purchasing this sealing device. In these instructions you will find information about using the device, servicing and care.

The sealing device is a microprocessor controlled rotary sealer with a printer for packaging sealable transparent pouches and reels (med. packaging).



Please read these operating instructions carefully before commissioning so that you are familiar with the capabilities of the device and you can make optimum use of its functions.

## 1.2 Legend

	The exclamation mark in the triangle draws your attention to important notes in the operating instructions, which must absolutely be observed.
	This warning sign refers to measures that could result in danger to human health if they are not observed. It is compulsory to observe it.
	Tips with a hand symbol next to them relate to daily practice.

### 1.3 Important notice



In accordance with the intended use, the CE marking is displayed based on the following EU directives: 2006/42/EC, 2014/30/EU and 2011/65/EU.

The Medical Device Directive 93/42/EEC and Medical Device Regulation 2017/745 (MDR) is not applicable to sealing devices.

The limit values of IEC 60601-1 must not be applied in repeated electrical inspections.

The manufacturer accepts no liability whatsoever for damage caused by tests in accordance with standards not listed in the declaration of conformity.

In the event of conversion work or interventions to the device undertaken without the express written permission of the manufacturer, the warranty shall be deemed void and any liability for physical or material damage shall be transferred to the operator.

**Note**

We are constantly improving our products, therefore we reserve the right to modify these operating instructions and the functions described in them.

**These operating instructions apply to products from the hd 650 DC EcoPak series.**

### 1.4 Cleaning

Before cleaning, disconnect the mains plug from the socket and disconnect the device from the power supply with the plug.

Clean the device only with a dry or damp soft cloth and a mild cleaning agent. (E.g.: isopropanol, spirit, etc.) Do not allow any water to find its way into the device.

**Caution! Never wet clean the device!**

## 1.5 Safety instructions



1. Our products are in a flawless condition in terms of safety technology when they leave the plant.
2. To maintain this condition, the contents of these safety instructions as well as type plates, labelling and safety instructions attached to the device must be observed while handling the device (transport, storage, installation, commissioning, operation and maintenance).
3. This device is suitable for processing laminated films in the heat-sealing process. See also chapter 2.1 "Intended use".
4. Please check the packaging, and lodge a complaint for any damage with the carrier or parcel service immediately, before installing the device.
5. Before commissioning, ensure that the device does not show any evidence of damage. In case of doubt, contact the manufacturer or a service partner authorised by the manufacturer.
6. Do not operate the device if the power cable or the power plug is damaged. Do not use the device if it does not operate correctly or it is damaged in any way. If the mains cable or the device have been damaged, the device must be repaired by the manufacturer or by one of the manufacturer's authorised service partners.
7. The device must be connected using the mains cable included in the scope of delivery to a protective contact socket with a stable voltage. Operation on IT networks is not permitted.
8. Place the device on a stable base.
9. The device must not be installed or operated in potentially explosive areas.
10. If the sealing device is brought directly from a cold environment into a warm environment, condensation may form. Wait until temperature equalisation has taken place.  
**Starting up the device when it contains condensation causes danger to life!**
11. Repairs and the replacement of wear parts / spare parts must be performed only by the manufacturer or by one of the manufacturer's authorised service partners.
12. Switch off the device when it is not in use, or remove the power plug from the socket.
13. Before cleaning: Disconnect from the mains! Clean the device only with a dry or damp soft cloth and a mild cleaning agent. Do not allow any water to find its way into the device. Caution! Never wet clean the device!
14. Do not insert pointed or flat items into the import slot of the device. This can result in damage to the device and instruments.
15. Do not insert items into the louvres of the device. You may receive an electric shock or the device could be damaged.
16. Do not use the device if you have any doubts about its safety.
17. The device must not be installed or operated by persons under 16 years of age.

18. The device must not be operated unsupervised.
19. It is forbidden to operate the device under the influence of drugs or alcohol.
20. Keep hair, clothing and gloves away from moving parts! Loose clothing, jewellery or long hair can be caught by moving parts.



21. The device contains valuable materials that can be recycled and reused. The device should therefore be disposed of at a public disposal facility near you. The device has been labelled in accordance with Directive 2002/96/EC (WEEE) on waste electrical and electronic equipment. This directive governs the return and recycling of scrap equipment within the EU.

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## 2 Before starting

### 2.1 Intended use

#### SEALING MATERIALS

Sealable paper pouches in accordance with EN ISO 11607-1/EN 868-4	x
Sealable pouches and tubes in accordance with EN ISO 11607-1/EN 868-5 made of film and paper as per EN 868-3	x
Sealable pouches and tubes in accordance with ISO EN 11607-1/EN 868-5 made of film and uncoated materials made of polyolefins as per EN 868-9 (e.g. Tyvek <sup>®1</sup> )	x
Sealable pouches and tubes in accordance with ISO 11606-1/EN 868-5 made of PP fleece or PP non-woven	x <sup>2</sup>

#### NON-SEALABLE MATERIALS

Soft PVC films
Polyamide films
Coated HDPE
Aluminium-laminate film
Polyethylene films
Hard PVC films
Polypropylene films

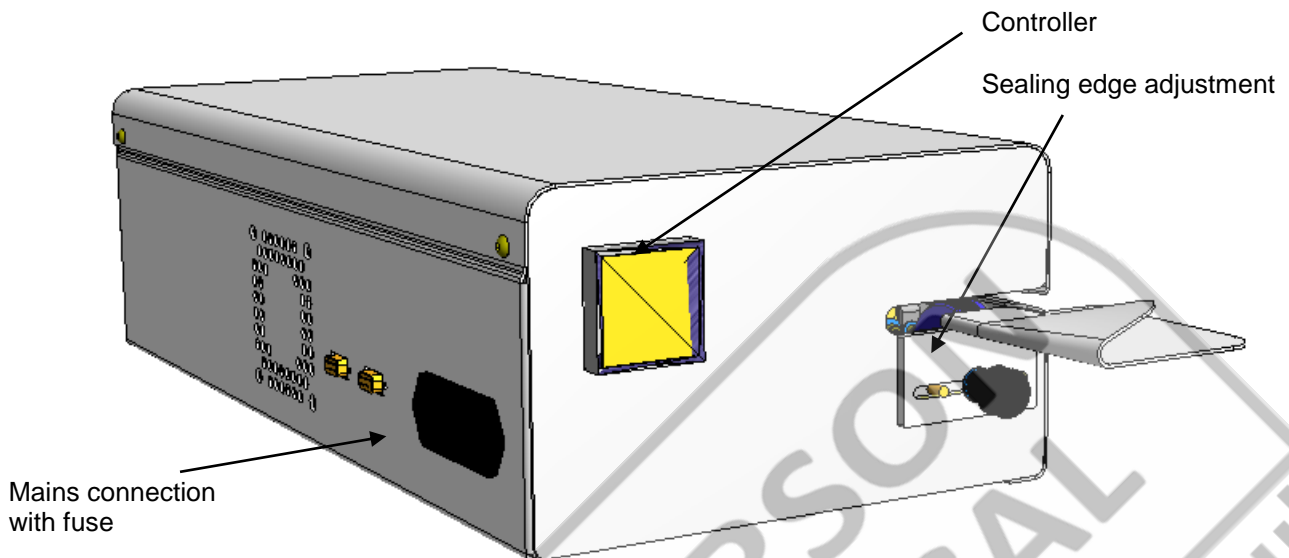
<sup>1</sup> Tyvek<sup>®</sup> is a registered trademark of E.I. du Pont Nemours.

<sup>2</sup> Release and / or test required



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## 2.2 Design and functions



### Sealing process sequence

- Step 1:** After the med. packaging has been inserted, the feed is automatically switched on.
- Step 2:** The med. packaging is now fed and the sealing seam area is heated up to the set sealing temperature by the heating units located at the top and bottom.
- Step 3:** The sealing seam, which is now heated, is pressed together by the sealing rollers and sealed.
- Step 4:** The finished med. packaging is transported to the extraction side.
- Step 5:** If no item to be sealed is fed in, the feed switches off after approximately 30 seconds.



### 2.3 Installation



The device must not be installed or operated in potentially explosive areas.

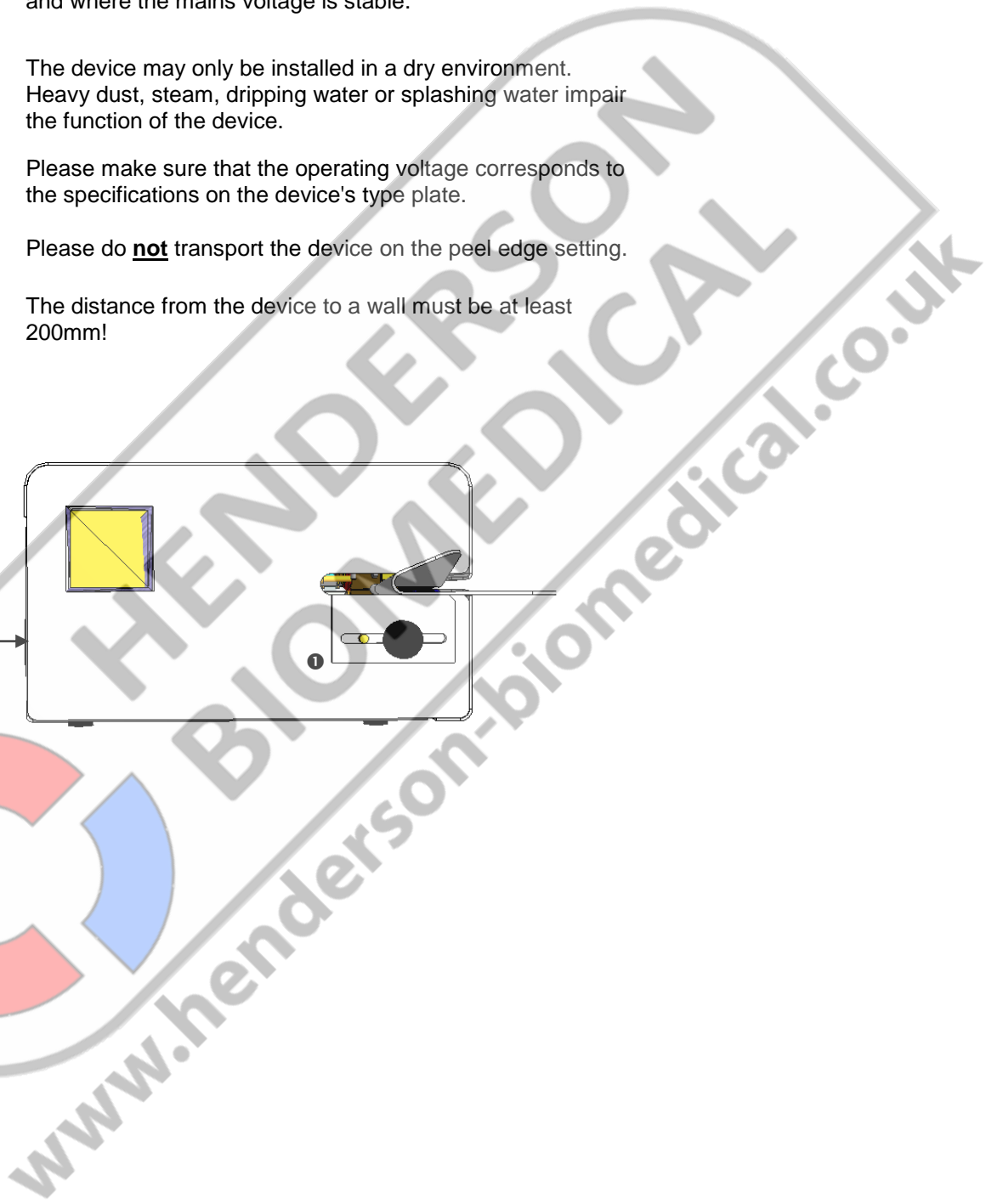
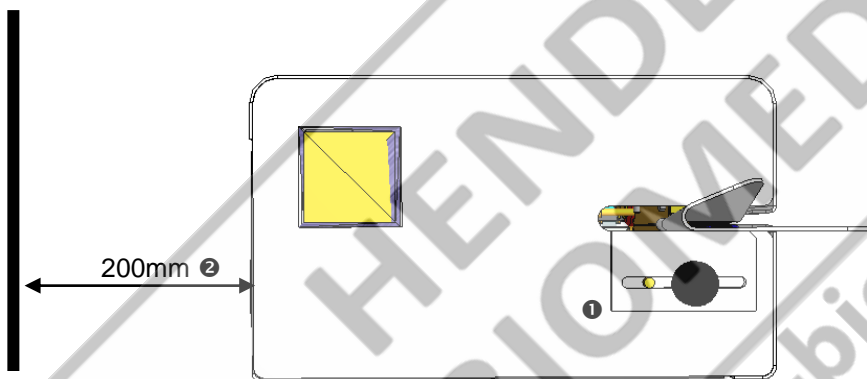
Only use sockets that are equipped with a protective conductor and where the mains voltage is stable.



The device may only be installed in a dry environment. Heavy dust, steam, dripping water or splashing water impair the function of the device.

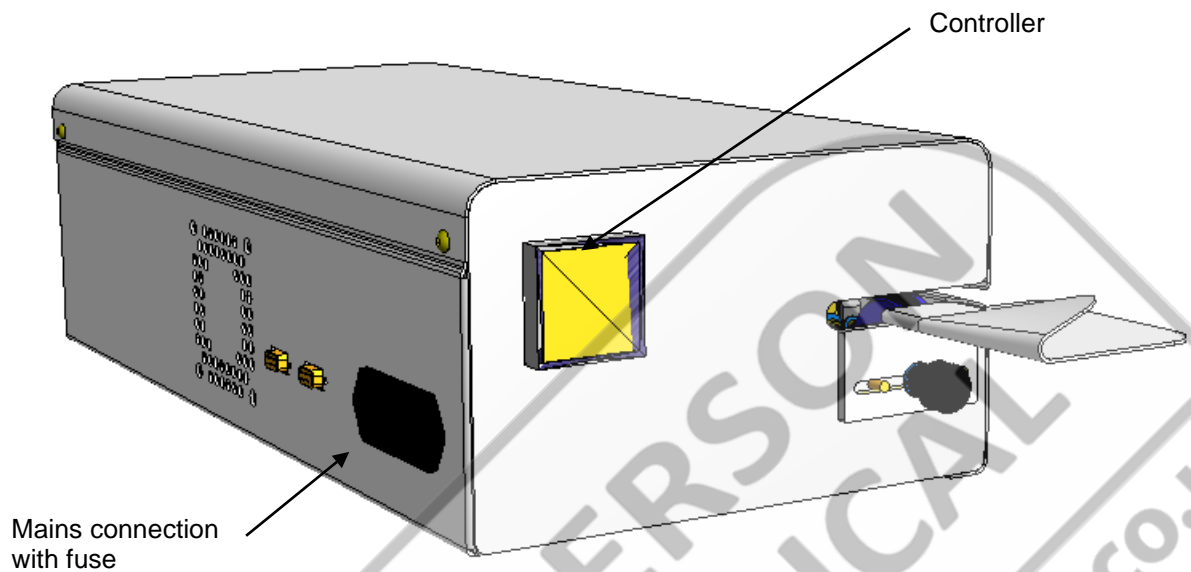
Please make sure that the operating voltage corresponds to the specifications on the device's type plate.

- ❶ Please do **not** transport the device on the peel edge setting.
- ❷ The distance from the device to a wall must be at least 200mm!



### 3 Basic functions

#### 3.1 Switching on the device



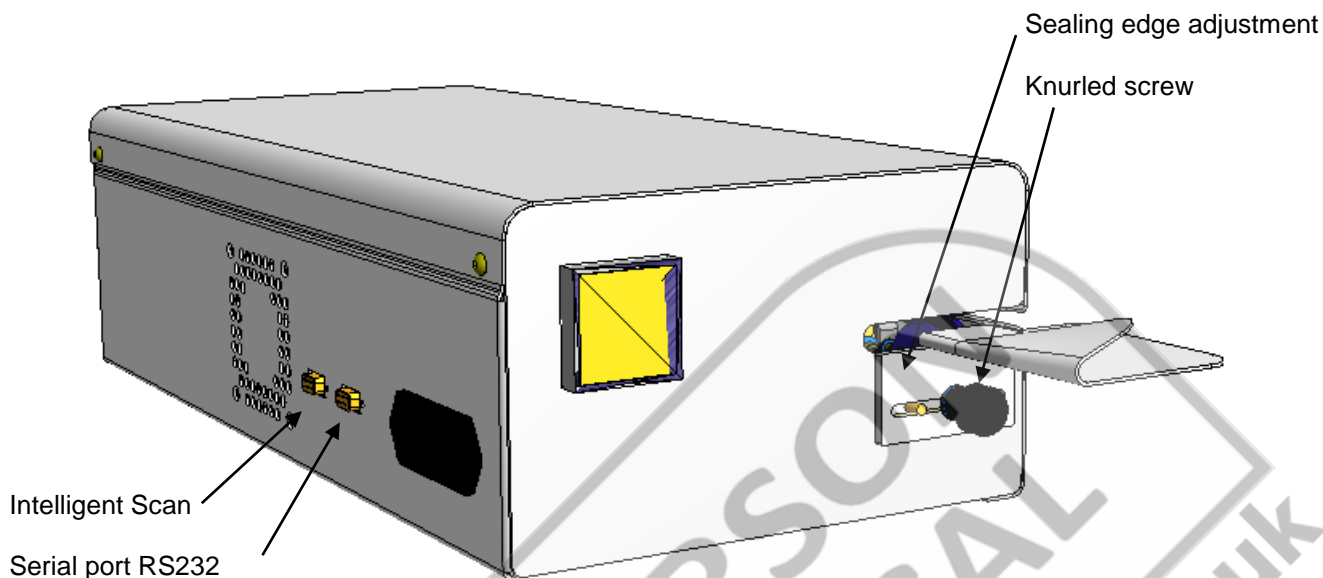
Plug the mains cable into the mains connection.

Switch on the device with the mains switch in position "1".

Set the required sealing temperature on the temperature controller as described in Chapter 3.3.

The device is heated up and ready for operation as soon as the set sealing temperature is displayed.

3.2 Operation



- Schritt 1: Set the required sealing edge width. After loosening the knurled screw, the lower insertion plate can be continuously adjusted for sealing edge widths of 0 - 30mm.
- Schritt 2: Insert packaging into the device from the left via the insertion plate.
- Schritt 3: Remove the sealed package on the outlet side and allow to cool down briefly.



**Check of the sealing seam**

If leaks appear, the sealing temperature must be increased. If the film melts, the set temperature is too high.

As per DIN 58953 -7, the suitable sealing temperature is to be determined by test sealing.


3.3 Process variables

Sealing temperature

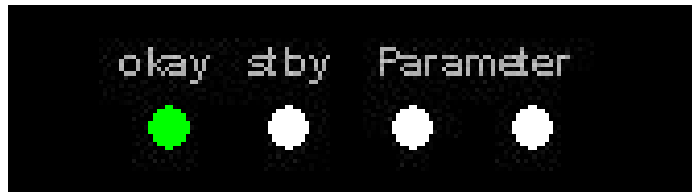
The temperature is monitored electronically by means of a temperature sensor. If this varies from the set value by 5°C (requirements set out in DIN 58953-7), the drive is locked.

3.4 Setting the temperature controller

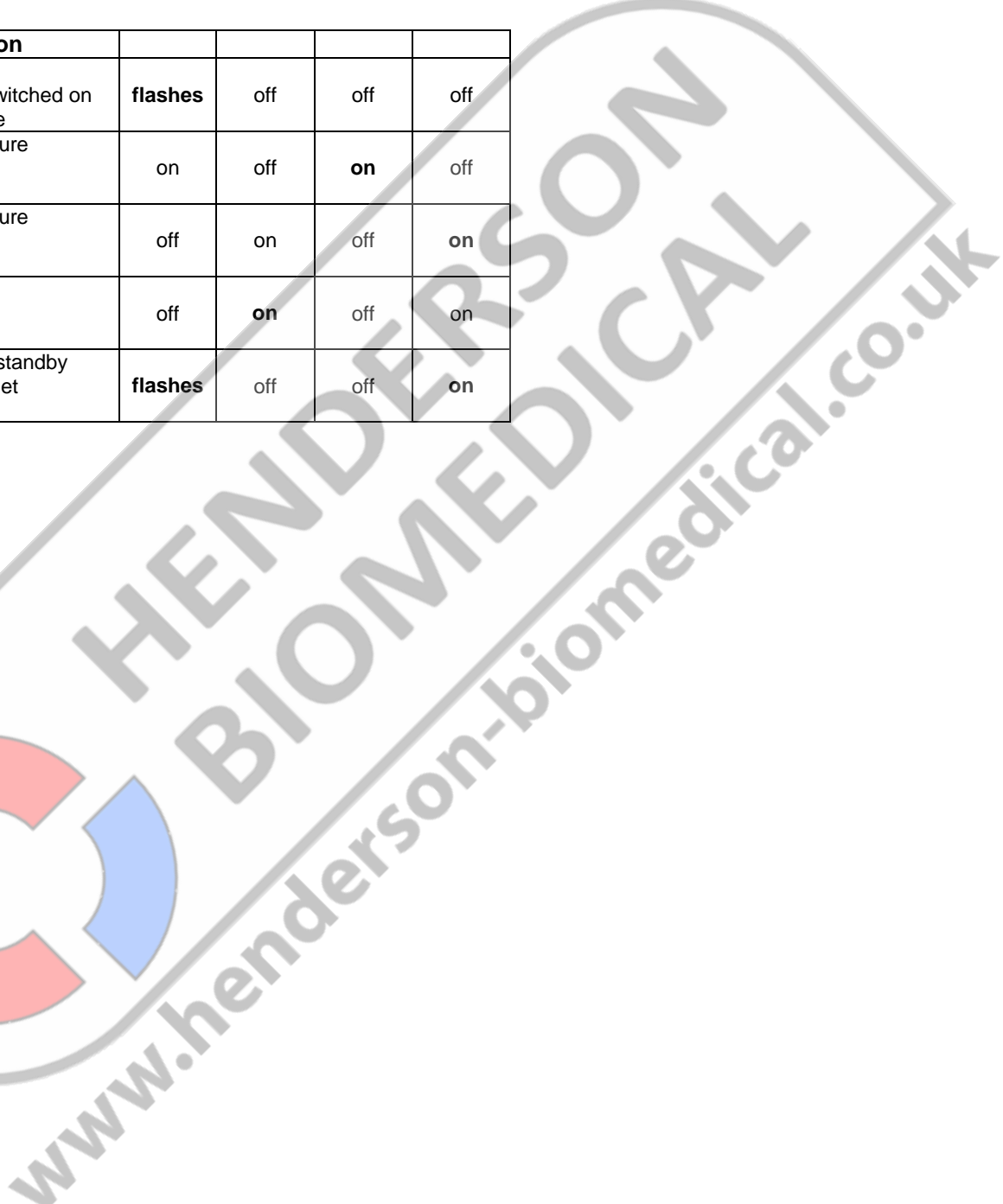
General settings

<p><b>Switching on the sealing device</b> Self-test runs for approx. 5 s (see Chapter 2.3)</p>          <p>Until the set temperature has been reached, after approx. 3-4 mins, the control light flashes "okay"</p> <p>Once the set temperature has been reached, the control light remains permanently on</p>	<p><b>Test the control lights and the display</b></p>  <p><b>Software version indicator</b></p>  <p><b>Configuration test</b></p>  <p>Control light "okay" flashes</p> <p><b>Display current actual temperature</b></p>  <p>Control light "okay" on</p> <p><b>Selected actual temperature is reached</b></p> <p><b>The sealing device is ready for operation</b></p>	
--	--	--

3.5 Control light functions







Function				
Sealing device switched on Heating-up phase	<b>flashes</b>	off	off	off
Sealing temperature = ± 5°	on	off	<b>on</b>	off
Sealing temperature <> ± 5°	off	on	off	<b>on</b>
Standby	off	<b>on</b>	off	on
Heating up after standby or changing the set temperature	<b>flashes</b>	off	off	<b>on</b>










3.6 Functions of the buttons







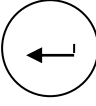


			
<p><b>Menu level 1</b></p> <p>Activation of menu level 2 <b>Press 3 s</b></p> <p>Activation of menu level 3 <b>Press 7 s</b></p>	<p>Switch printer off/on</p>	<p>Enter personal identification</p>	<p>Activation of "seal check"</p>
<p><b>Menu level 2</b></p> <p>Entering sealing temperature</p>	<p>Temperature value + 1</p>	<p>Temperature value + -1</p>	<p>Confirm entry</p>
<p><b>Menu level 3</b></p> <p>3.1 Sealing parameter view</p> <p>3.2 Print data configuration</p> <p>3.3 Data entry</p>	<p>Changeover 3.1 - 3.2 - 3.3</p> <p>on</p> <p>Entry value +1</p>	<p>Changeover 3.1 - 3.2 - 3.3</p> <p>off</p> <p>Entry value -1</p>	<p>Confirm entry</p>

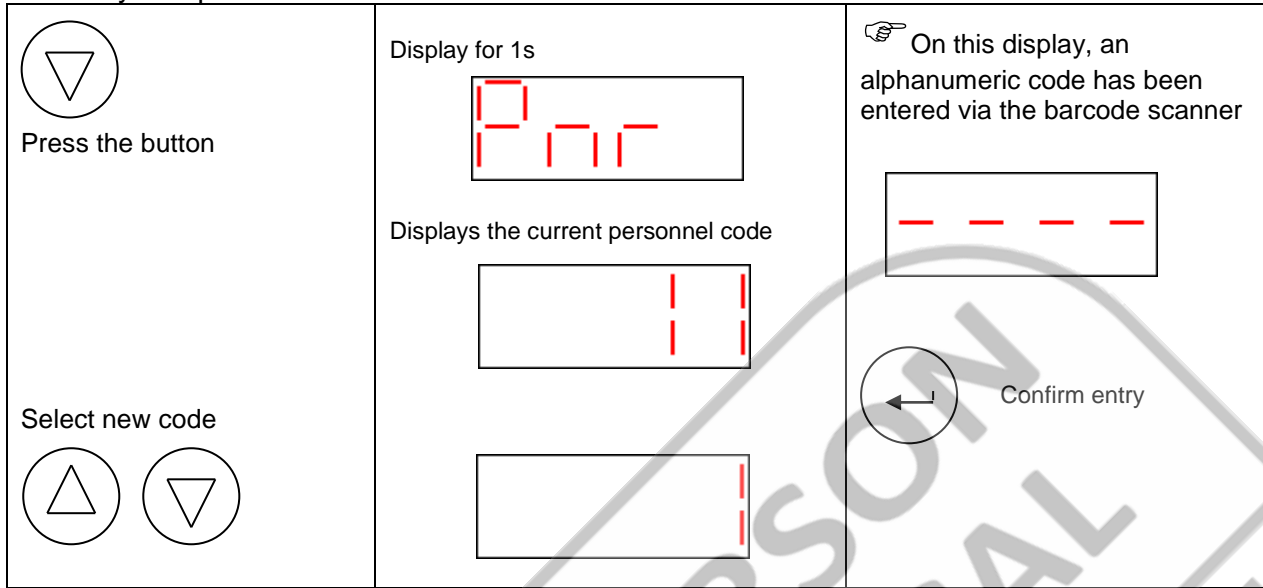
3.7 Device settings  
Sealing temperature entry

<p> <b>S</b></p> <p>Press button <b>3s</b></p> <p>Change set temperature</p> <p> </p>	<p>Display for 1s</p>  <p>Display the current temperature setpoint</p>  	 Confirm entry
---	---	---

Switch printer off and on

<p> <b>△</b></p> <p>Press the button</p> <p>Switch printer off and on</p> <p> </p>	<p>Display for 1s</p>  <p>Display the current setting</p> <p>Printer switched on</p>  <p>Printer switched off</p> 	 Confirm entry
--	---	---






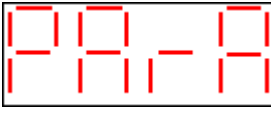



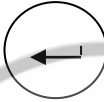




Entry of a personnel code


















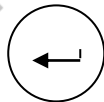
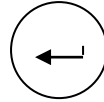
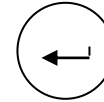
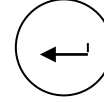
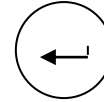












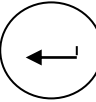
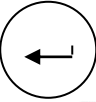









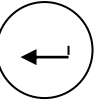




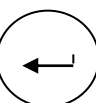
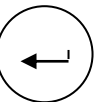
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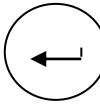

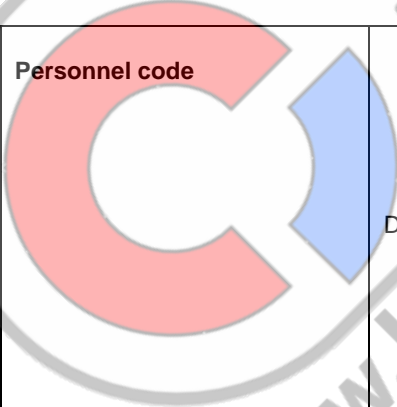





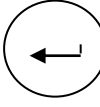
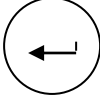


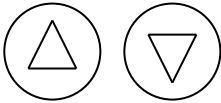


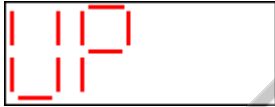


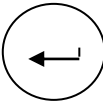
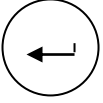

Data entry

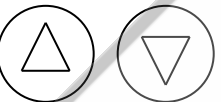




<p>Activate</p>  <p>Press button 7s</p> <p>Toggle to data entry</p>   <p><b>Key lock</b></p> <p><b>Activated</b> Enter 1 - 9999</p> <p><b>Deactivated</b> Enter 0</p>  	   	 Confirm selection Select data    Confirm selection  Confirm entry
--	---	---

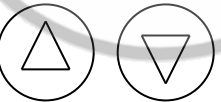


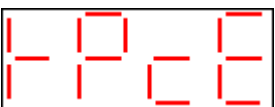
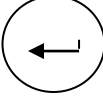
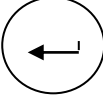
<p><b>Date and time</b></p> <p>Enter the day</p>   <p>Enter month</p>   <p>Enter year</p>   <p>Enter hour</p>   <p>Enter minute</p>  	     	 Confirm selection  Confirm entry  Confirm entry  Confirm entry  Confirm entry  Confirm entry
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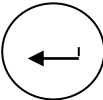

<p>Expiry date</p> <p>Enter the day</p> <p>Enter month</p> <p>Enter year</p> <p>           </p>	<p></p> <p></p> <p></p> <p></p>	<p> Confirm selection</p> <p> Confirm entry</p> <p> Confirm entry</p> <p> Confirm entry</p>
<p><b>Batch</b> Enter 0000 - 9999</p> <p>   </p>	<p></p> <p></p>	<p> Confirm selection</p> <p>  On this display,                      an alphanumeric code has                      been entered via the barcode                      scanner                 </p> <p></p> <p> Confirm entry</p>
<p><b>Package content quantity</b> Enter 0 - 99</p> <p>   </p>	<p></p> <p></p>	<p> Confirm selection</p> <p> Confirm entry</p>



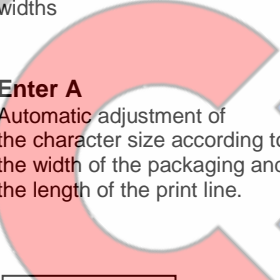







<p><b>Sterilisation type</b></p> <p>Select the sterilisation method</p> <p> </p>	<p></p> <p>Steam</p> <p></p> <p>Ethylene oxide</p> <p></p> <p>Formaldehyde</p> <p></p> <p>Plasma</p> <p></p> <p>Dry heat</p> <p></p> <p>Ionising radiation</p> <p></p>	<p> Confirm selection</p> <p> Confirm selection</p>
<p><b>Personnel code</b></p> <p></p> <p>Select new code</p> <p> </p>	<p></p> <p>Displays the current personnel code</p> <p></p> <p></p>	<p> Confirm selection</p> <p> Confirm entry</p>

<p><b>Batch counter</b> Enter 0 - 9999</p>  <p><b>Select counting direction</b></p> <p>If the counting direction is selected downwards, a signal sounds on reaching the value 0</p> <p><b>Switch off batch counter</b></p>	  <p>Counting direction upwards</p>  <p>Counting direction downwards</p>  <p>Switch off batch counter</p> 	 Confirm selection  Confirm entry   Confirm selection
---	---	---

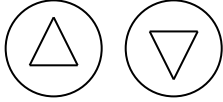
<p><b>Standby</b> Enter 0 – 60min</p>  <p>If the motor does not start until the set time is reached, the temperature is automatically set to 50°C / 122°F.</p>	  <p>By briefly inserting a package, the temperature returns to it previously set value. Once this is reached, the sealing device is ready for use again</p>	 Confirm selection  Confirm entry
---	--	--

<p><b>Operating data</b> View operating hours and the absolute batch counter</p> <p>Select view</p> 	 <p>Operating hours</p>  <p>Absolute batch counter</p> 	 Confirm selection   Confirm selection
---	--	--

<p><b>Measurement units</b></p> <p>Select measurement units</p>   <p><b>Europe</b> Temperature in °C</p> <p><b>USA</b> Temperature in °F</p>	 <p>Measurement units - Europe</p>  <p>Measurement units - USA</p> 	 <p>Confirm selection</p>  <p>Confirm selection</p>
--	--	--

<p><b>Character width</b></p>   <p><b>Enter 0 - 2</b></p> <p>Depending on the selected setting, the characters are printed in different widths</p> <p><b>Enter A</b> Automatic adjustment of the character size according to the width of the packaging and the length of the print line.</p>    	 	 <p>Confirm selection</p>  <p>Confirm entry</p>
---	---	--

**Monitoring**  
**Personnel number**  
 Enter 0 – 60min

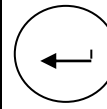
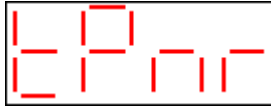


When entering a time >0, personal number monitoring is activated and the motor can only ever be started if the personal number value is 1-9999

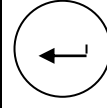
If the set time is reached, the personal number is automatically set to 0

If the personal number is 0 and a package is inserted, a prompt appears





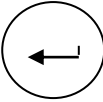

By entering a personal number 1-9999, the lock on the drive motor is released and the prompt disappears






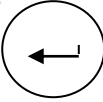


Confirm selection



Confirm entry

<p><b>Date format</b></p> <p>Selection of the date format</p> <div style="display: flex; justify-content: space-around;">   </div> <ol style="list-style-type: none"> <li>1 DD.MM.YYYY</li> <li>2 MM.DD.YYYY</li> <li>3 YYYY.MM.DD</li> <li>4 YYYY.MM</li> <li>5 DD.MM.YY</li> <li>6 MM.DD.YY</li> <li>7 YY.MM.DD</li> </ol>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">  </div> <div style="border: 1px solid black; padding: 5px;">  </div>	<div style="text-align: center; margin-bottom: 20px;">  <p>Confirm selection</p> </div> <div style="text-align: center;">  <p>Confirm selection</p> </div>
--	--	--

<p><b>Time format</b></p> <p>Select time format</p> <div style="display: flex; justify-content: space-around;">   </div> <p>24 13:26</p> <p>12 01:26 PM</p>	<p>24-hour time format</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">  </div> <p>12-hour time format</p> <div style="border: 1px solid black; padding: 5px;">  </div>	<div style="text-align: center; margin-bottom: 20px;">  <p>Confirm selection</p> </div> <div style="text-align: center;">  <p>Confirm selection</p> </div>
---	--	--

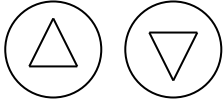
Select print data

Activate



Press button 7s

Switching of print data



The printing sequence is set and cannot be changed. Activated print data are always printed in this order

**Sterilisation date**

**Time**

**Expiry date**

**Batch number**

**Personnel identification**

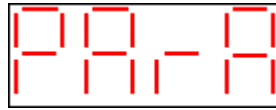
**Batch counter**

**Sterilisation type**

**Package content quantity**

**Text**

(via barcode list with connected barcode scanner)



Sterilisation date



Time



Expiry date



Batch number



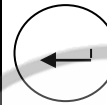
Personnel identification



Batch counter

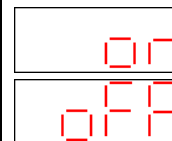
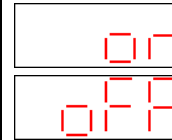
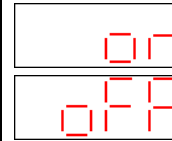
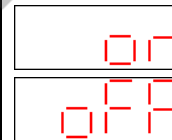


Sterilisation type

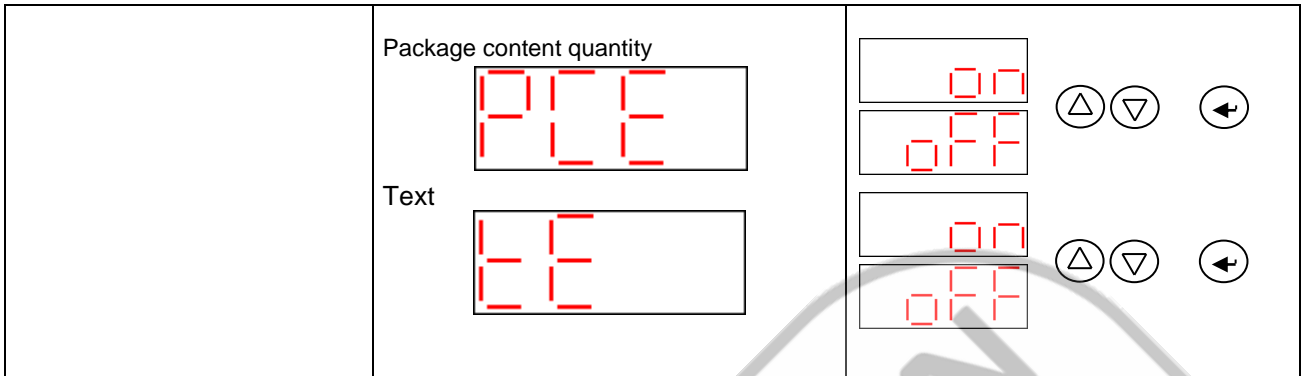


Confirm selection

Select data to be printed

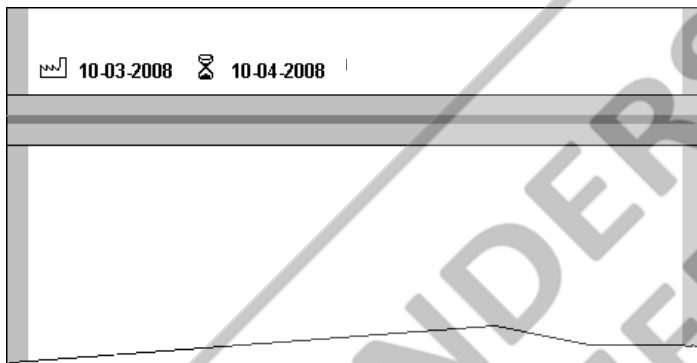






**Example**

Printing the sterilisation date and the expiration date



HENDERSON  
BIOMEDICAL  
www.henderson-biomedical.co.uk

### 3.8 IntelligentScan, connection of a barcode scanner

The following entries and functions can be implemented using a hm 980 BR barcode scanner (item number 1.421.018) connected to the "Intelligent Scan" interface (see page 9), and relevant barcode lists:

#### Entries and functions using the controller or the barcode scanner

##### Entries

Sealing temperature entry	Page 14
Personnel code entry	Page 15
Batch number entry	Page 18
Quantity entry of the packaging contents	Page 18
Sterilisation type selection	Page 18
Default setting of the batch counter	Page 19
Character width selection	Page 20
Print data selection	Page 22

##### Functions

Switching the printer off or on	Page 14
Activating/deactivating the standby function	Page 19
Monitoring the personal number	Page 21
Switching off or on	
Seal check activation	Page 26

#### Entries and functions only using the barcode scanner

##### Entries

Entry of a 10-digit alphanumeric personnel code  
 Entry of a 10-digit alphanumeric batch designation  
 Entry of an alphanumeric text  
 Expiry dates in 1,3,6,9,12,24 and 60 months

##### Functions

Switching the item counter off or on



The hm 980 BR barcode scanner (item number 1.421.018) is supplied with a CD (item number 1.490.028) enclosed, facilitating the generation and recording of the barcode lists on a PC.



Please only use barcode scanners approved by hawo. hawo accepts no liability for damage caused by connecting and using other barcode scanners.

**For further information, please contact your authorised service partner or the hawo Service Hotline: +49 (0) 6261 9770 0**

**3.9 Sealing seam test – “Seal Check”**

Test the critical process parameters (temperature, contact pressure and sealing time) with "SEAL CHECK".

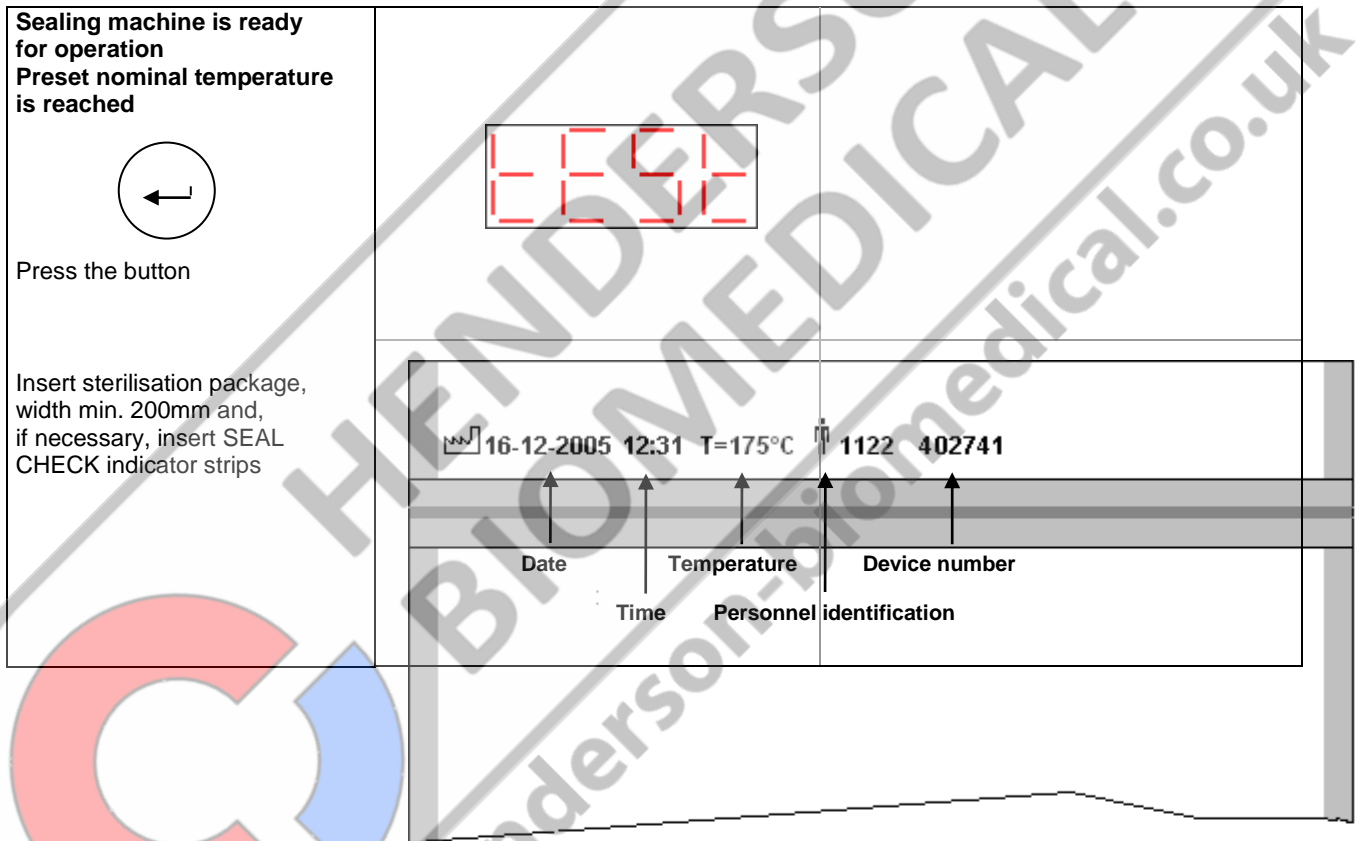


**Seal Check seal indicators are not suitable for packaging with side folds.**

This test should be performed before and after the daily working process and/or before/after each batch and can be documented by routine filing of the print-out.

Additional use of the SEAL CHECK sealing indicator in combination with the SEAL CHECK function of the sealing device is recommended.

Before the test, the sealing device must be ready for use and the set temperature must have been reached.



## 4 Troubleshooting and maintenance

### 4.1 Troubleshooting checklist



The troubleshooting suggestions marked with a \* may be carried out only by the manufacturer or an authorised service partner appointed by the manufacturer.

Malfunction	Possible cause	Remedy
The sealing device does not switch on No data on the display	Mains connection power cable not plugged in	Check the mains connection and, if necessary, plug into a different power outlet
	-Power cable defective	Replace power cable
	Fuse	Replace the fuse* ! If the fuse blows again, it is imperative to have the sealing device tested
The sealing device does not heat up	Temperature controller faulty	Replace temperature controller*
	Set temperature is too low	Increase nominal temperature (see pg. 14 3.4.1)
	Temperature limitation activated	Switch off the sealing device and allow it to cool down ! If it still trips it is imperative to have the sealing device tested
	Temperature sensor	Replace temperature sensor*
	Heating cartridge	Check heating cartridges and replace if necessary*
	Temperature controller faulty	Replace temperature controller*
No transport	SST module faulty	Replace SST module
	Transport belt -damaged -no transport	Replace transport belt Check belt tension
	Front flap not closed	Close front flap
	Motor sensor	Replace light barrier*
	Front flaps sensor	Replace front flap sensor*
	Motor	Replace motor*
	Temperature controller faulty	Replace temperature controller*

Malfunction	Possible cause	Remedy
Uneven material feed or loud running noise	Transport belt guide	Renew PTFE belt on guide rail (see pg. 36)
	Transport belt -damaged -no transport	Replace transport belt Check belt tension
	Motor	Replace motor*
Sealing seam will not hold	Temperature too low	Increase temperature
	Contact pressure too low	Readjust the contact pressure of the sealing roller or replace the sealing roller*
	Sealing die Distance between the sealing dies too great	Set the distance of the sealing dies to 0.5 mm*
Sealed seam distorted	Pressure applied too high	Readjust the contact pressure of the sealing roller or replace the sealing roller*
Paper side of the package is discoloured or side fold shrunk	Temperature too high	Reduce to temperature (see pg. 14 3.4.1)
No printing or printing incomplete	Ink ribbon	Ink ribbon not inserted properly Replace ink ribbon. (see pg. 35)
	Print head	Replace print head*
	Printer control faulty	Replace printer control*
	Switching power supply faulty	Replace switching power supply
Printing too faint	Ink ribbon	Replace ink ribbon.
	Print head	Readjust print head*
	Paper pressure roller	Adjust paper pressure roller*

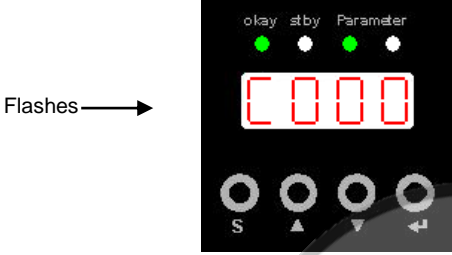
#### 4.2 Customer service




**Your hawo customer service team is available from Mon - Fri 8 a.m. - 5 p.m. and on +49 (0)6261-9770-31.**


**You are also welcome to send questions to the following e-mail address: [service@hawo.com](mailto:service@hawo.com)**

4.3 Alarm functions and error displays  
Alarm functions

<p><b>Batch counter, set with counting direction downwards, has reached the value 0</b></p>	
<p><b>Cancelling the alarm</b></p> <p>Set batch counter to a value &gt; 0</p> <p>or</p> <p>set the counting direction of the batch counter to up</p> <p>See page 19</p>	

Error displays

 The troubleshooting suggestions marked with a \* may be carried out only by the manufacturer or an authorised service partner appointed by the manufacturer.

<p><b>Sealing temperature outside Tolerance</b></p>									
<table border="1"> <thead> <tr> <th data-bbox="552 1355 954 1391">Possible cause</th> <th data-bbox="954 1355 1447 1391">Remedy</th> </tr> </thead> <tbody> <tr> <td data-bbox="552 1391 954 1426">Temperature sensor defective</td> <td data-bbox="954 1391 1447 1426">Replace temperature sensor*</td> </tr> <tr> <td data-bbox="552 1426 954 1462">Controller defective</td> <td data-bbox="954 1426 1447 1462">Replace controller*</td> </tr> <tr> <td data-bbox="552 1462 954 1532">SST module faulty</td> <td data-bbox="954 1462 1447 1532">Replace SST module*</td> </tr> </tbody> </table>		Possible cause	Remedy	Temperature sensor defective	Replace temperature sensor*	Controller defective	Replace controller*	SST module faulty	Replace SST module*
Possible cause	Remedy								
Temperature sensor defective	Replace temperature sensor*								
Controller defective	Replace controller*								
SST module faulty	Replace SST module*								

4.4 Maintenance/calibration



Like all technical devices, your device is also subject to technical wear. In order to guarantee continuous operational readiness, your device should be inspected regularly by a competent person and serviced and calibrated at least once per year by the manufacturer or by one of the manufacturer's authorised service partners.

Maintenance cycle	Ink ribbon	PTFE tape Guiding die	Pressure roller	Toothed belt	Distance of Sealing die	Calibration of critical process parameters
At least every 3 months						
Depending on usage, at least once a year						

Legend:



Check



Replace



Adjust



Measure

4.5 Spare parts service



**Simply order parts by fax:**

- Please copy the following pages according to the part required  
Page 31: Maintenance and wear parts  
Page 32: Spare parts
- Enter the device number.
- Enter the device type.
- Enter address, fax number and order number.
- Mark items required.
- Enter quantity required.
- Sign order.
- Fax order.

**S/N:** 123.456  
**Type:** hd 650 DC

Bitte diese Daten bei Ersatzteilbestellung angeben.  
Please state this data when ordering spares.  
Indiquez toujours ces données en cas de commandes  
des pièces de rechange.

**hAWO** Gerätebau GmbH  
D-74847 Obriegheim  
Tel. 06261-62016  
Fax. 06261-62019  
Made in Germany

2 000 004

To:

Sender:

Fax no.

Your order no. _____		Date _____	
Device type _____		Serial number _____	
<input checked="" type="checkbox"/>	<b>Designation</b>	<b>Art. No.:</b>	<b>Qty.</b>
<input type="checkbox"/>	Ink ribbon, black	6.813.104	
<input type="checkbox"/>	Ink ribbon, red	6.813.224	
<input type="checkbox"/>	PTFE strip on upper guide rail	6.105.178	
<input type="checkbox"/>	PTFE strip on lower guide rail	6.105.177	
<input type="checkbox"/>	PTFE strip heating die	6.105.125	
<input type="checkbox"/>	Plastic pressure roller	2.230.008	
<input type="checkbox"/>	Toothed belt, drive	6.271.018	
<input type="checkbox"/>	Toothed belt, transport sealing material	6.271.019	
<input type="checkbox"/>	Heating cartridge	6.536.024	
<input type="checkbox"/>	Upper sealing die assembly	1.616.049	
<input type="checkbox"/>	Complete lower sealing die	1.616.050	
<input type="checkbox"/>			
<input type="checkbox"/>	Print head	1.653.002	
<input type="checkbox"/>			



To:

Sender:

\_\_\_\_\_

\_\_\_\_\_

Fax no.

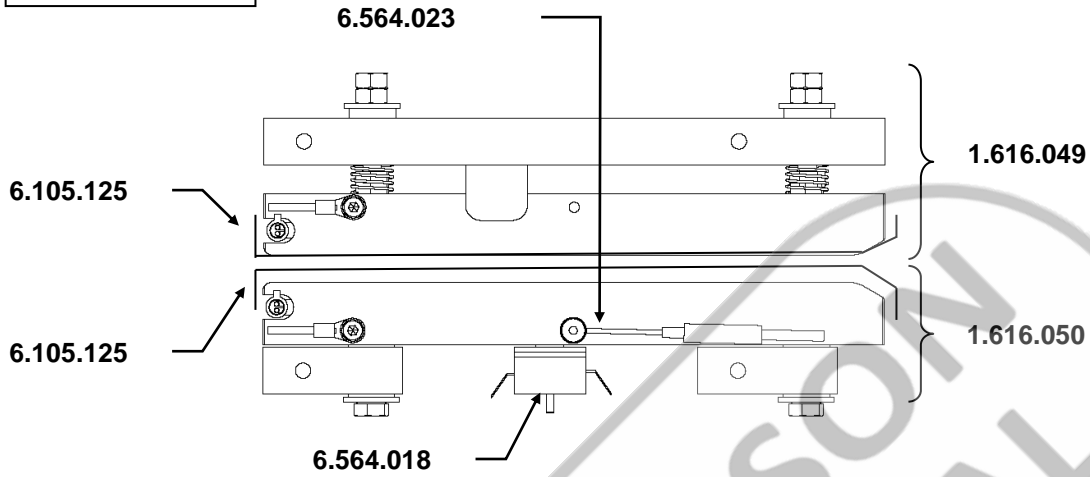
\_\_\_\_\_

\_\_\_\_\_

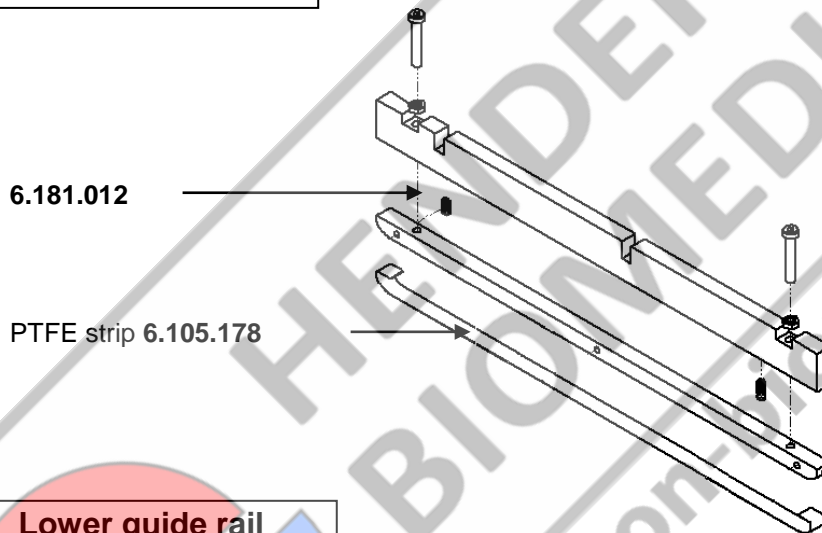
Your order no. _____		Date _____	
Device type _____		Serial number _____	
<input checked="" type="checkbox"/>	<b>Designation</b>	<b>Art. No.:</b>	<b>Qty.</b>
<input type="checkbox"/>	Temperature controller 100 - 240V	6.564.042	
<input type="checkbox"/>	Printer control	1.461.013	
<input type="checkbox"/>			
<input type="checkbox"/>	SST module	1.461.014	
<input type="checkbox"/>	Switching power supply	6.533.001	
<input type="checkbox"/>	Printer optical sensor	1.561.003	
<input type="checkbox"/>	Motor optical sensor	1.561.010	
<input type="checkbox"/>	Gear motor 230V	1.212.026	
<input type="checkbox"/>			
<input type="checkbox"/>	Ink ribbon motor	1.212.012	
<input type="checkbox"/>	Reset the temperature limiter	6.564.018	
<input type="checkbox"/>	Temperature sensor	6.564.023	
<input type="checkbox"/>	Fan 24V	6.212.028	

4.6 Replacement parts ordering – allocation of article numbers

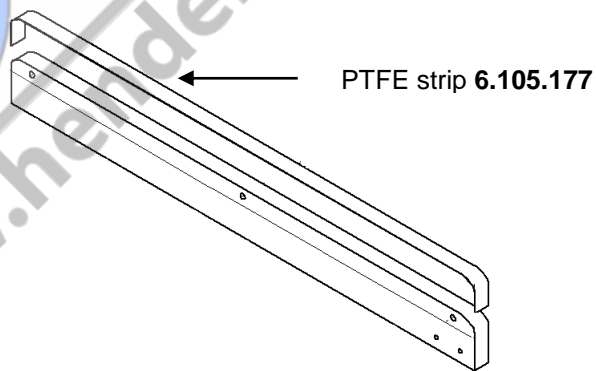
**Heating die**



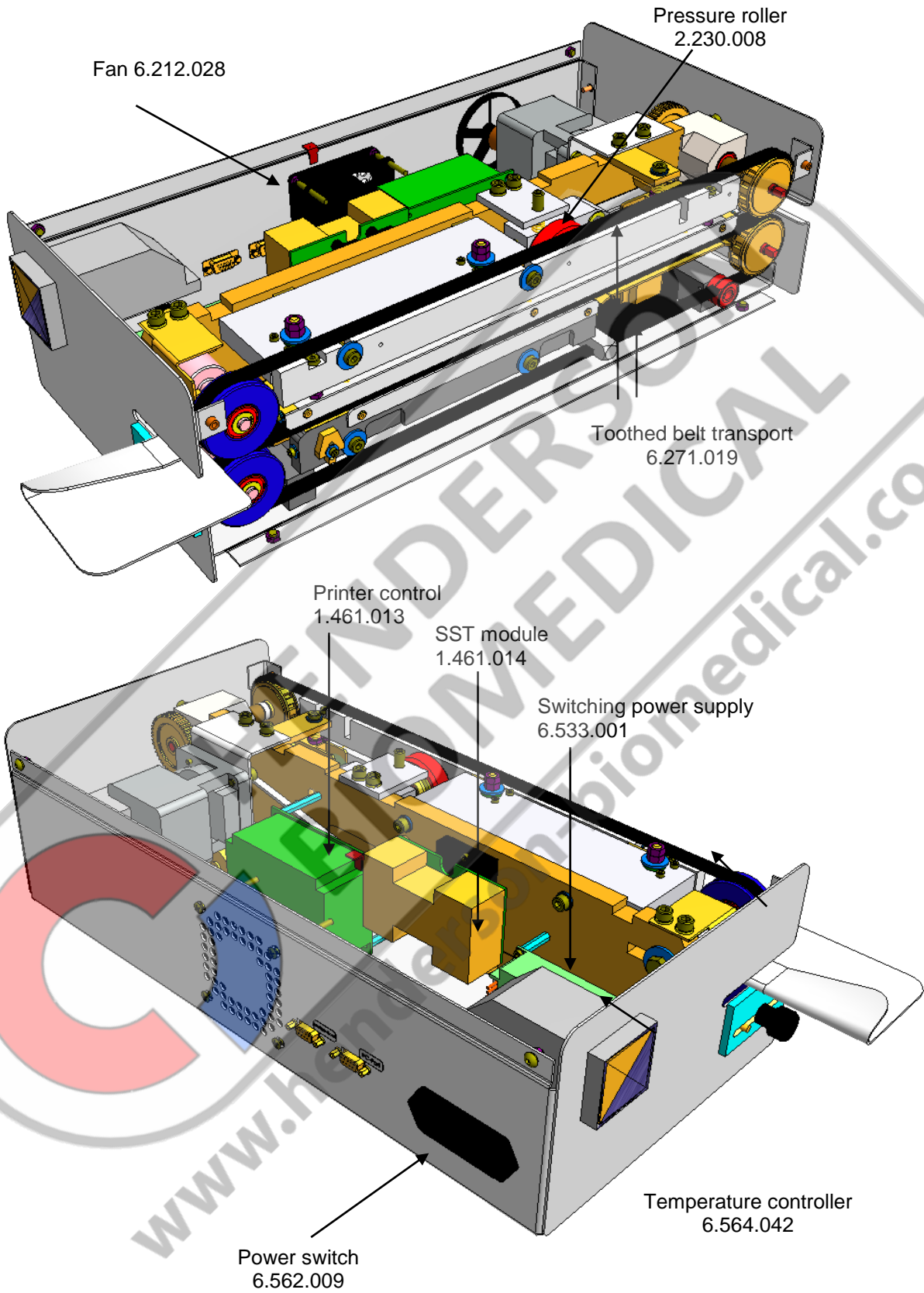
**Upper guide rail**



**Lower guide rail**



4.7 Replacement parts ordering - comprehensive overview



## 4.8 Replacing worn and spare parts

### Replacing ink ribbon

#### → Switching off the sealing device

**!** Please use **only genuine replacement parts**

Open front flap, if necessary set infeed section to 0.

Press the lever for the ink ribbon holder **1** down with your left hand.

Press the holder for the ink ribbon cassette **2** to the side and remove the cassette.

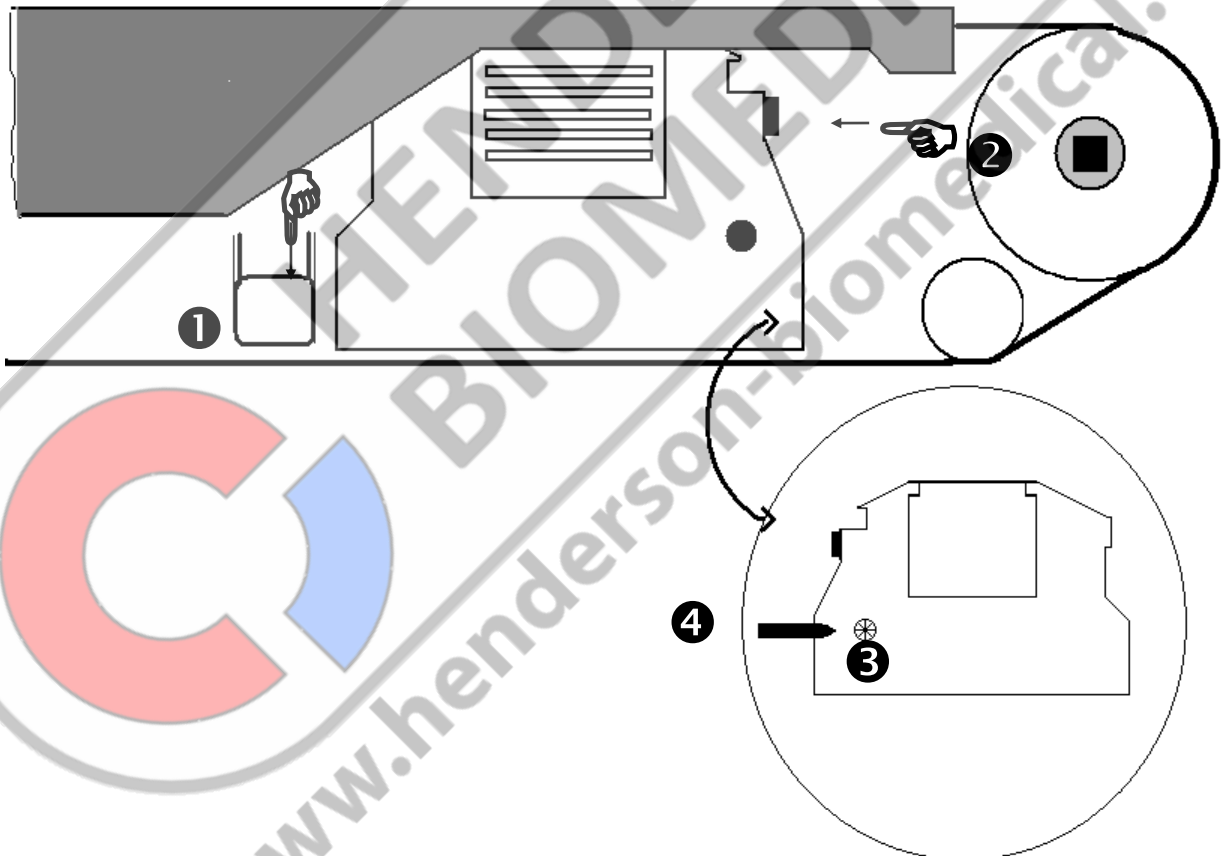
Insert a new ink ribbon cassette.

Always ensure that the transport opening **3** in the cassette is attached to the transport shaft **4**.

Press the ink ribbon cassette toward the rear until holder **2** catches

Close front flap

#### → Switch on sealing device and check printing function after reaching nominal temperature



## Maintenance information

**!** Please use **only genuine replacement parts**

### Replacement of PTFE tape on guide rail

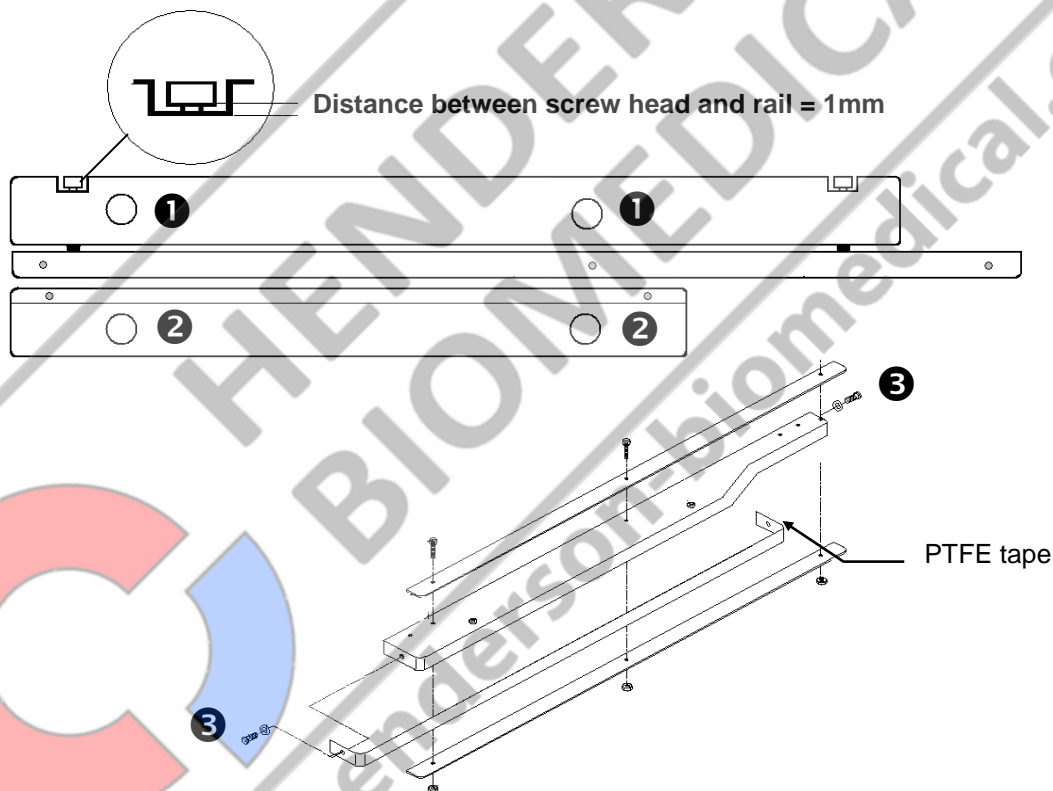
#### → Switch off the sealing device and **DISCONNECT THE POWER PLUG!**

- Opening the housing
- Remove mounting screws **1** for the upper guide rail and remove the guide rail **or**
- Remove mounting screws **2** for the lower guide rail and remove guide rail
- Remove mounting screws **3** and detach the PTFE strip
- Pull backing foil off of new PTFE strip and glue new PTFE strip on straight and without wrinkles
- Fasten PTFE strip with screw **3**
- Install the guide rails.



When installing the upper guide rail, push the die down before fastening so that the gap between the screw head and the rail is 1mm on both sides. This ensures the correct contact pressure for the guide rail.

- Close housing

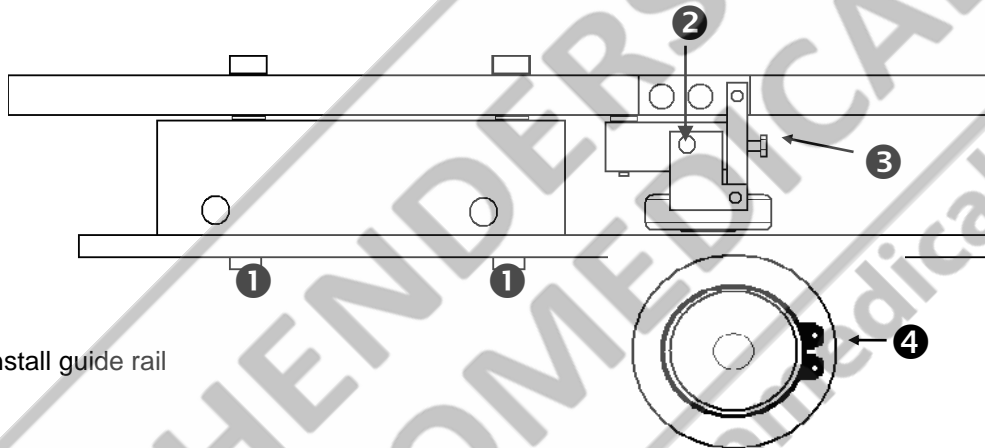


## Maintenance information

### Replacing the pressure roller

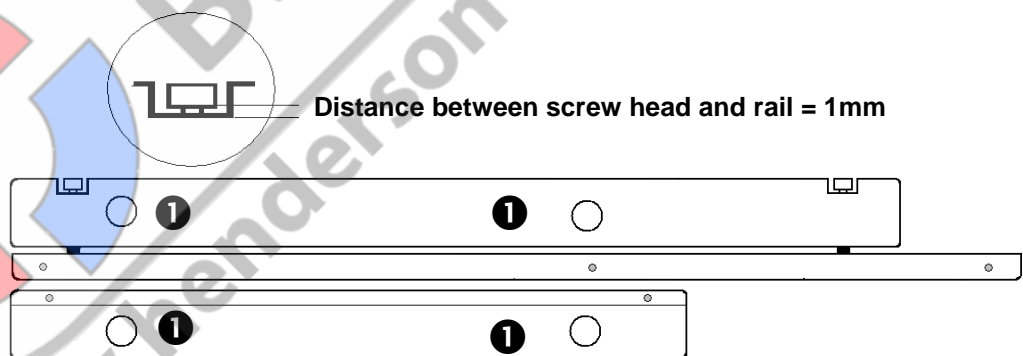
➔ **Switch off the sealing device and DISCONNECT THE POWER PLUG!**

- Opening the housing
- Remove mounting screws **1** for the upper guide rail and remove the guide rail.
- Unscrew pressure adjustment screw **2** approx. 5 mm
- Loosen mounting screw **3** and pull the pressure roller completely out of the holder
- Detach snap ring **4** and remove the pressure roller
- Install the new pressure roller and fasten with snap ring **4**
- Place the pressure roller fully in the holder, aligning it centrally with the lower roller
- Tighten the mounting screw **3**
- Adjust contact pressure by screwing in adjustment screw **2** according to calibration instructions on page 41




- Install guide rail

When installing the upper guide rail before fastening, push the rail as far down as possible, before final fixing with the mounting screw, **1** so that the gap between the screw head and the rail is 1mm on both sides. This ensures the correct contact pressure for the guide rail.



- Close housing

### 4.9 Adjusting the process parameters

 After adjusting, the sealing device must remain switched on for another 10 seconds!

#### Temperature control

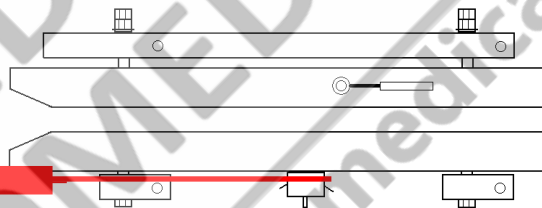
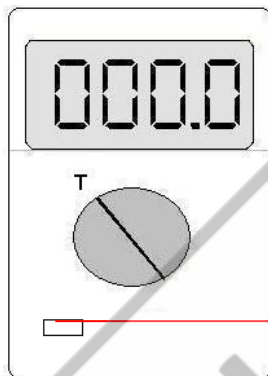
Adjustment of temperature control must always be performed after replacing a heating cartridge, after replacing the temperature sensor and after replacing the temperature controller.

The temperatures **120°C** and **200°C** are measured one after another and the difference between the set value and the actual value is corrected.

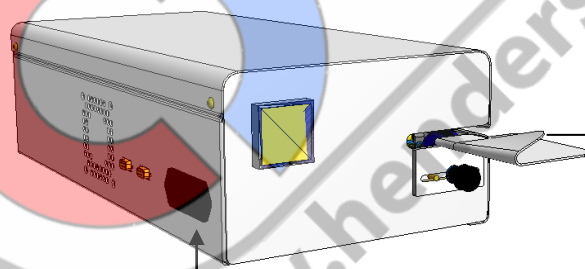
After a set temperature has been reached it is stabilised for 120s. After the 120 seconds have elapsed, the measured temperature value is entered using the temperature measuring instrument

#### Procedure

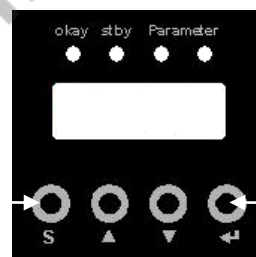
Insert the temperature measuring instrument's sensor between the sealing dies from the left infeed side















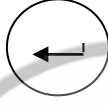

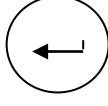


Press both buttons at the same time and switch on the sealing device



Power switch



<p><b>Select temperature adjustment</b></p> <p> </p> <p>The set temperature of the device is automatically set to 120°C</p> <p>After reaching the temperature, the stabilisation period starts</p> <p>After this time has elapsed, enter the temperature which has been measured with the measuring device</p> <p> </p> <p>The set temperature of the device is automatically set to 200°C</p> <p>After reaching the temperature, the stabilisation period starts</p> <p>After this time has elapsed, enter the temperature which has been measured with the measuring device</p> <p> </p>	<p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p>	<p> Confirm selection</p> <p> Confirm entry</p> <p> Confirm entry</p>
--	---	--



Setting the serial interface transmission rate (baud rate)

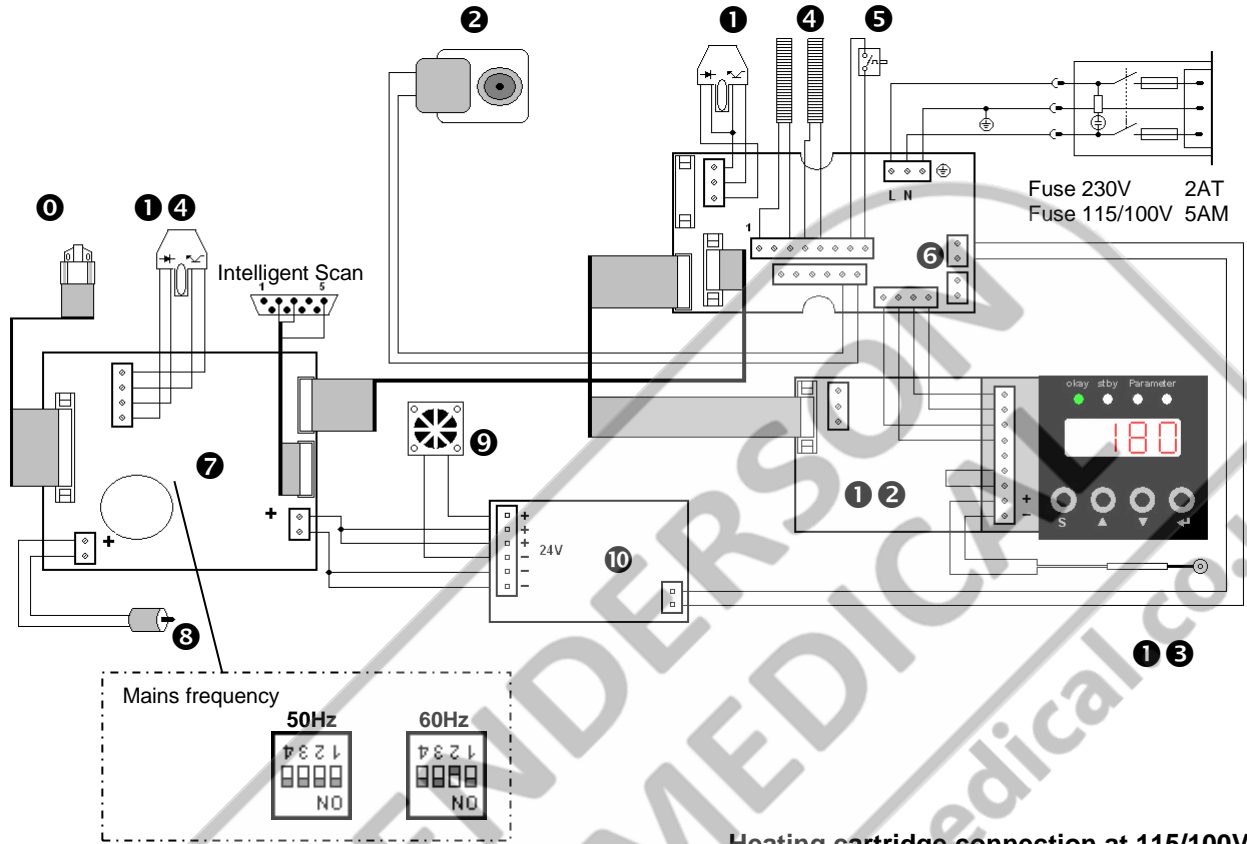
Press both buttons at the same time and switch on the sealing device

Power switch

<p><b>Select baud rate setting</b></p> <p>▲ ▼</p>	 	<p>← Confirm selection</p>
<p><b>Select baud rate</b></p> <p>1200Bd – 57600Bd</p> <p>▲ ▼</p>	<p>Example: Baud rate 57600Bd</p>	<p>← Confirm selection</p>

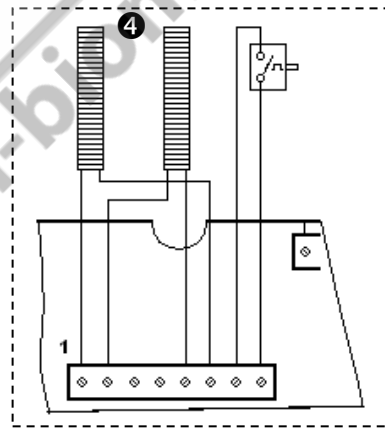
### 5 Technical data

#### 5.1 Circuit diagram and wiring diagram hd 650 DC



Heating cartridge connection at 115/100V

<b>0</b>	Print head	1.653.002
<b>1</b>	Optical sensors	1.561.010
<b>2</b>	Gear motor 230V	1.212.026
<b>3</b>		
<b>4</b>	Heating cartridges	6.564.024
<b>5</b>	Reset the temperature limiter	6.564.018
<b>6</b>	SST module	1.461.014
<b>7</b>	Printer control	1.461.013
<b>8</b>	Ink ribbon motor	1.212.012
<b>9</b>	Fan	6.212.028
<b>10</b>	Switching power supply	6.533.001
<b>1 1</b>		
<b>1 2</b>	Temperature controller	6.564.042
<b>1 3</b>	Temperature sensor	6.564.023
<b>1 4</b>	Printer optical sensor	1.561.003



## 5.2 Specifications

### Connection data

Mains connection	[ V ]	115 / 230
Mains frequency	[ Hz ]	50 / 60
Power consumption max.	[ W ]	500
Mains fuse 115V / 230V	[ A ]	5A / 2A

### Mechanical system

Dimensions	Length	[ mm ]	593
Including	Width		285
Infeed section	Height		155
Housing			Metal, powder-coated
Weight		[ kg ]	16,5
Seal distance from edge		[ mm ]	0 – 35
Sealing seam width		[ mm ]	12
Sealing system			Seal Peak
Sealing seam length		[ mm ]	Unlimited
Distance from medical product		[ mm ]	>30 (as per DIN 58953-7)

### Process variables/sealing parameters

Sealing temperature max.	[ °C ]	220
Tolerance for sealing temperature	[ °C ]	±5
Throughput speed [fixed]	[ m / min ]	10
Temperature standard tolerance	[ % ]	±2



### Electronics and communication systems

System		electronic
Electrical protection class		1

### Environmental parameters

Ambient temperature	[ °C ]	5-25
Heat output	[ kJ/s ]	0.1
Noise intensity acc. to Machinery Directive 2006/42/EC Appendix I 1.7.4.2 u.)	[ dB/ A ]	<70
Relative humidity	[ % ]	30-80 non-condensing

## 6 Declaration of conformity

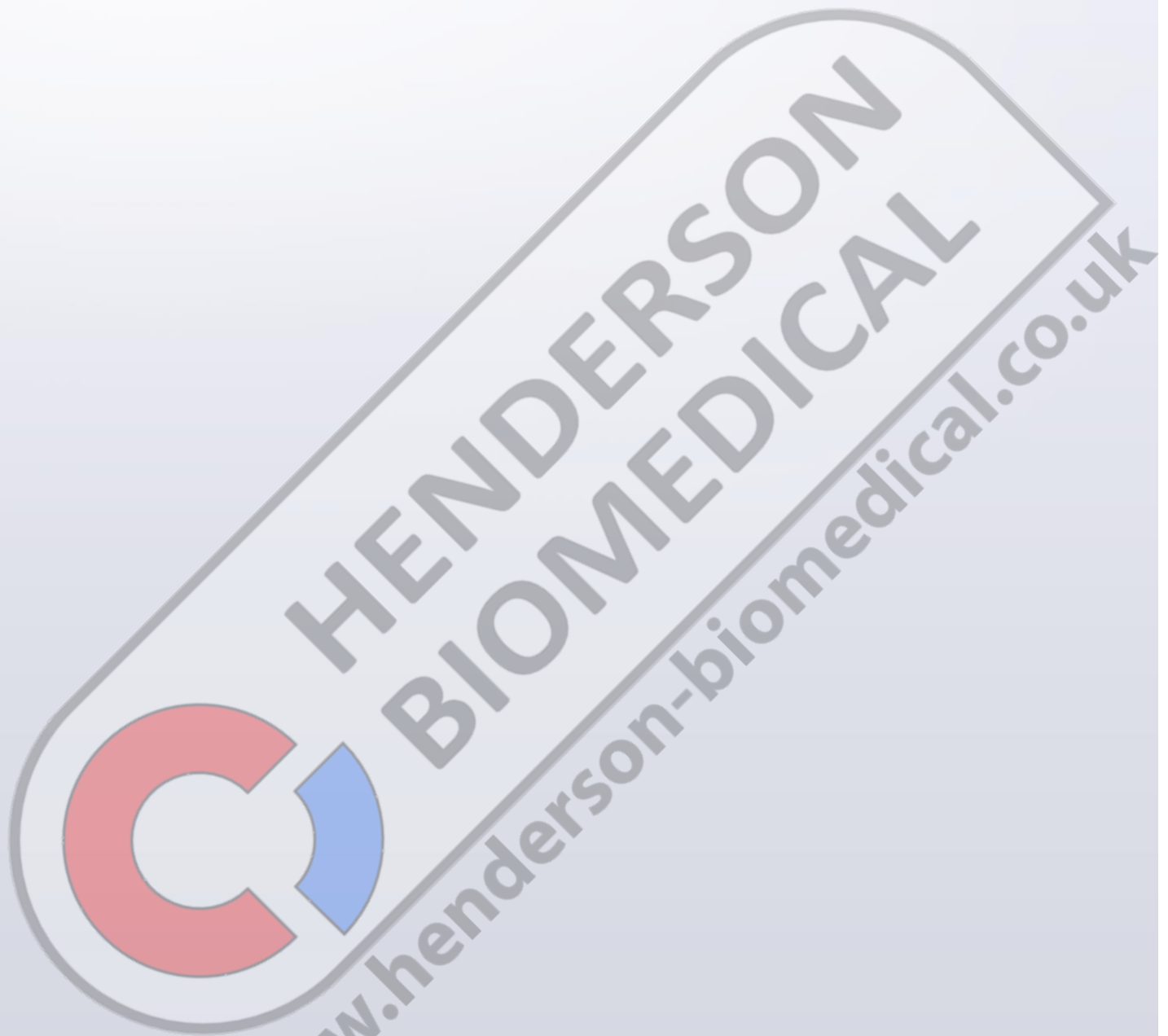
 74847 Obrigheim / Germany	Konformitätserklärung – Declaration of Conformity Déclaration "CE" de Conformité Declaración de conformidad de la C.E. Dichiarazione di conformità - Declaração de conformidade	<b>9.693.024C</b>																				
Gültig ab: 06.08.2020 Valid from:		Seite 1/1 Version 1.1																				
<p>Hiermit erklären wir, daß die Folienschweissmaschinen:                  Herewith we declare that the Foil sealing unit:                  Par la présente, nous déclarons que la gamme de Soudeuse de films plastique:                  Por la presente certificamos que las máquinas embolsadoras modelos:                  Dichiariamo con la presente che le macchine per saldatura di fogli:                  Por este meio se declara que as máquinas de selagem de folhas de plástico:</p> <p style="text-align: center;"><b>hd 650 DC ECOPAK</b></p> <p>folgenden einschlägigen Bestimmungen und harmonisierten Normen entsprechen:                  complies with the requirements of the following regulations and harmonised standards:                  corresponde aux dispositions suivantes et standards harmonisés:                  objeto de esta Declaración cumple con las siguientes disposiciones:                  Sono conformi alle seguenti disposizioni in materia nonché alle seguenti norme armonizzate:                  correspondem às seguintes determinações e normas harmonizadas:</p> <table border="0"> <tr> <td>EG - Maschinenrichtlinie Machinery directive Directive "CE" rel. aux machines Directiva de Maquinaria de la CE Direttiva CE sulle macchine nella versione Directiva da UE relativa a maquinaria</td> <td>2006/42/EG</td> <td></td> <td></td> </tr> <tr> <td>EMV-Richtlinie Directive CEM Direttiva CEM</td> <td>EMC-directive Directiva de CEM Directiva CEM</td> <td>2014/30/EU</td> <td></td> </tr> <tr> <td>WEEE-Richtlinie Directive WEEE Direttiva WEEE</td> <td>WEEE-directive Directiva de WEEE Directiva WEEE</td> <td>2012/19/EU</td> <td></td> </tr> <tr> <td>RoHS-Richtlinie Directive RoHS Direttiva RoHS</td> <td>RoHS-directive Directiva de RoHS Directiva RoHS</td> <td>2011/65/EG</td> <td></td> </tr> <tr> <td>Harmonisierte Normen Standard harmonise Norme armonizzate</td> <td>Harmonized standards Las normas armonizadas Normas harmonizadas</td> <td>EN ISO 12100:2010 EN ISO 13857:2008</td> <td>EN 60204-1:2018 EN 61000-6-1:2019 EN 61000-6-3/A1:2012</td> </tr> </table> <p>Verantwortliche Person für die Technischen Unterlagen siehe unten                  Responsible person for technical documentation see below                  La personne responsable pour la documentation technique est mentionnée au-dessous</p> <p style="text-align: center;">                   hAWO GmbH                  74847 Obrigheim/Germany                  T + 49 (0) 6261 9770-0                  info@hAWO.com  <b>Torsten Ehrhardt</b>                  Prokurist / authorized officer                  hAWO GmbH, Obere Au 2, D-74847 Obrigheim, Germany             </p>			EG - Maschinenrichtlinie Machinery directive Directive "CE" rel. aux machines Directiva de Maquinaria de la CE Direttiva CE sulle macchine nella versione Directiva da UE relativa a maquinaria	2006/42/EG			EMV-Richtlinie Directive CEM Direttiva CEM	EMC-directive Directiva de CEM Directiva CEM	2014/30/EU		WEEE-Richtlinie Directive WEEE Direttiva WEEE	WEEE-directive Directiva de WEEE Directiva WEEE	2012/19/EU		RoHS-Richtlinie Directive RoHS Direttiva RoHS	RoHS-directive Directiva de RoHS Directiva RoHS	2011/65/EG		Harmonisierte Normen Standard harmonise Norme armonizzate	Harmonized standards Las normas armonizadas Normas harmonizadas	EN ISO 12100:2010 EN ISO 13857:2008	EN 60204-1:2018 EN 61000-6-1:2019 EN 61000-6-3/A1:2012
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