

# Erkoform 3d

# Instructions

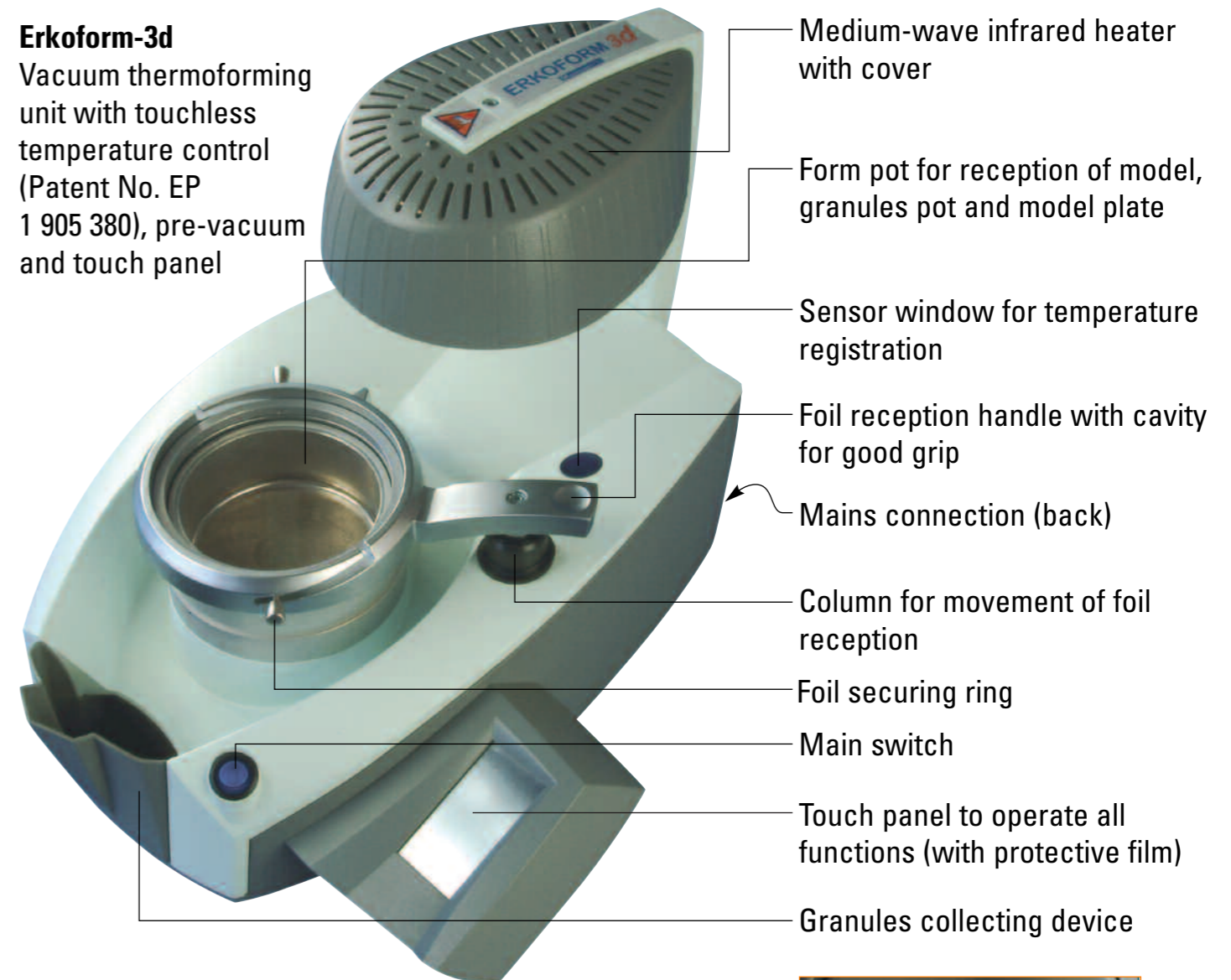
## Delivery form Erkoform-3d

please check concerning completeness

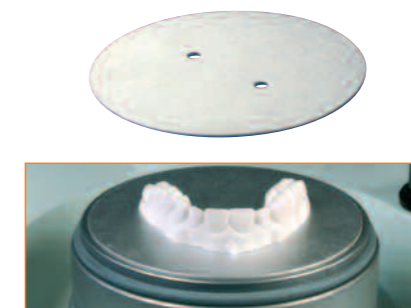
Piece:	Article:	Order number:
1	Erkoform-3d	188 500
1	with accessories as follows:	
1	foil securing ring <i>to fix the foils in the foil reception</i>	188 550
1	granules collecting device	188 570
1	centering plate (assembled) <i>to later on install the Occluform-3</i>	188 095 (188 580)
1	model plate	188 507
1	granules pot	188 593
1	brush for granules, incl. magnet <i>to embed the models into the granules, magnet to collect scattered granules</i>	188 510
1	replacement protective foil for display <i>if necessary, remove old protective foil, put on new one and slightly rub on</i>	188 506
1	power supply cable	188 001
1	filling granules (supplied with Erkoform-3d, 1.8 kg) <i>high-grade steel granules (magnetic) with rounded edges</i>	110 852 (1.3 kg)
1	foil trial package <i>including list of contents</i>	
1	machine documents (folder) <i>instructions, thermoforming technique manual, material card, ERKODENT program, guarantee card, declaration of conformity (if applicable)</i>	

## Erkoform-3d

Vacuum thermoforming unit with touchless temperature control (Patent No. EP 1 905 380), pre-vacuum and touch panel



Granules pot\*  
Ø inside 97 mm  
Height inside 40 mm



Model plate\* for very flat trimmed models.



All machines are ex works equipped with centering plate for the supplementary available Occluform-3 (page 10).

\*supplied along



BA 61-8002-2



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## Security

Before starting please read instructions for use.

The operator of the machine is responsible for the compliance with regulations for accident prevention concerning technical security.

The construction of the Erkoform-3d unit complies to legal standards.

## ATTENTION! Security hints

Do not touch heater - hot surface!

Housing of the heater reaches a temperature of up to 70 °C!

Only operate the machine under supervision.

Do not keep highly inflammable materials in direct area of the machine.

Heat and work only with suitable thermoforming materials.

## Usage as directed

The Erkoform-3d unit should only be used with suitable dental thermoforming material in diameter 120 mm and thickness of up to 6 mm for forming on suitable models. In case of non-observance, we cannot take any liability or guarantee for damages.

## Cleaning and maintenance

The unit should be cleaned with a damp cloth. Do not use any solvents or other cleaning agents. To ensure that the unit maintains its full suction, the rubber seals require replacing once a year when the unit is permanently in use. The new seals should be firmly pushed into position.

To avoid the creation of condensed water in case of reinstalling the unit, store the unit in dry condition at room temperature.

## Technical data:

Measurement:	height 315 mm width 350 mm depth 370 mm weight 11.9 kg
Foil measures:	diameter 120 mm thickness 0-6 mm inner diameter 101 mm inner height 42 mm
Form pot:	
Electricity:	volt 230/240/115/100 watt 340 (incl. heater)
Fuse:	2 x T-2A (230/240 V), or 2 x T-4A (115/100 V)
Heater technique:	medium-wave round-pipe infrared heater volt 230/240/115/100 watt 280
Sensor:	touchless infrared temperature sensor, pro- grammable measuring range up to 240 °C
Vacuum technique:	with pre-vacuum vacuum 0.8 bar litre capacity 6 l/min noise level < 70 db(A)

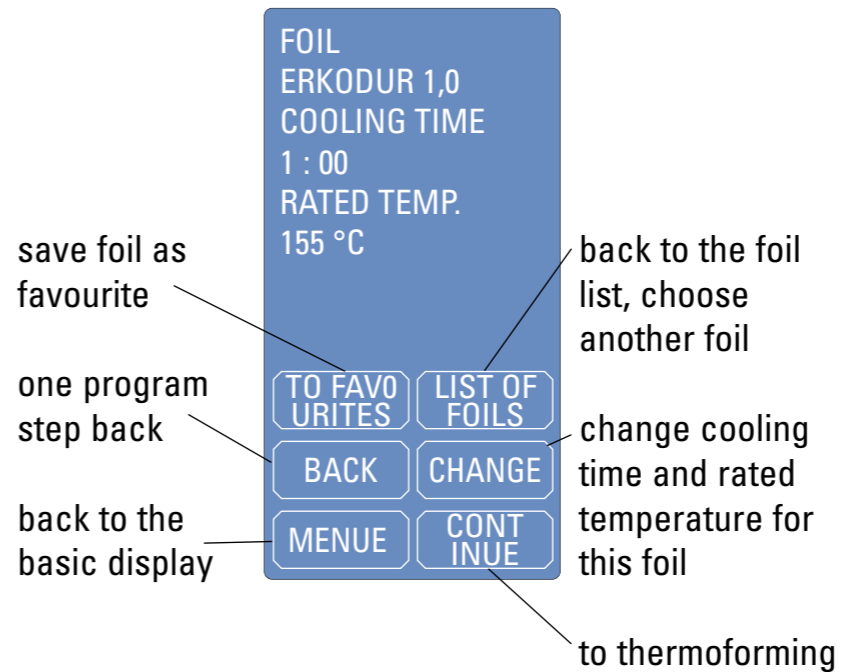


Spare sealing foil reception  
188 011



Spare sealing form pot  
188 017

## Functions of display, selected foil



Optionally available Occluform-3 unit (188 580) to imprint the opposing bite.

The construction is based on a Bonwill triangle with a side length of 11.5 cm and a Balkwill angle of 20°.

## Trouble shooting:

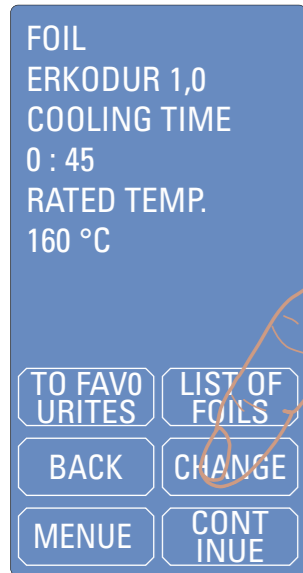
mistake	possible reasons	possible elimination
machine not ready to use, no display in the touch panel	wall socket, machine plug or fuses defective	check wall socket, machine plug, fuses
heater does not glow	heater, switch for heater or circuit board defective	exchange heater, switch for heater or circuit board - after-sales service (ass)
program reacts absurdly	system crash, program faulty	switch machine on and off, renew factory settings (ass)
absurd temperature indication	sensor window soiled, sensor defective	clean sensor window, exchange sensor (ass)
vacuum not sufficient	granules on sealings, hole in the foil, sealings used, vacuum pump soiled or defective	remove granules from sealings, check foil concerning holes, exchange sealings, clean or exchange vacuum pump (ass)
vacuum pump does not function	membrane clotty membrane too hard (surrounding temperature below 15 °C)	clean membrane (ass) allow machine to warm up for app. 2 hours at room temp. to avoid condensed water



## Change factory settings for foils

The rated temperature and the cooling time can be changed for one single thermoforming process or constantly, in the latter case as favourite. The changes are done in the window "selected foil" or "favourite", see "choose foil" or "save favourite".

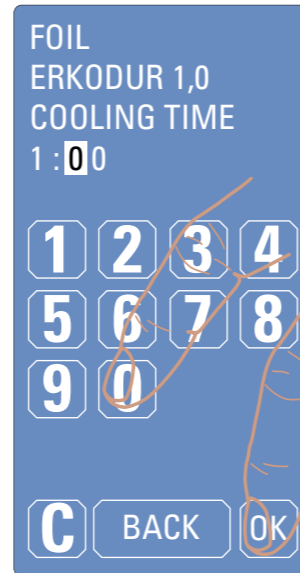
### 1. Choose change



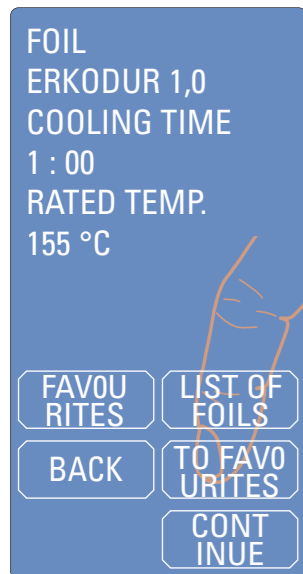
### 2. Enter rated temperature and confirm (ok)



### 3. Enter cooling time and confirm (ok)



### 4a. Choose to favourites



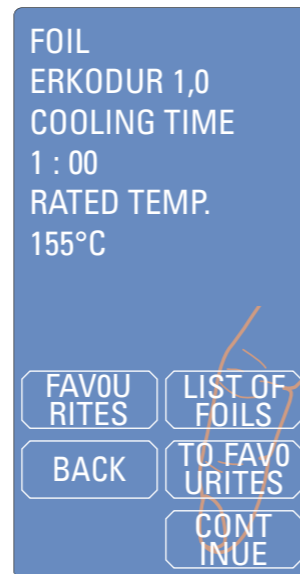
### 5. Choose save



The display changes now to the 2. display see "thermoforming", continue as described there.

The foil with the changes is saved as favourite in the list of favourites.

### 4b. Choose continue



The display changes now to the 2. display see "thermoforming", continue as described there.

The changes are only kept for one thermoforming process.

## Installation instructions

The Erkoform-3d is connected to electricity independently of compressed air equipment. In order to avoid water getting into the appliance (for example water splashes), the appliance should be installed in dry and dust-free conditions.

## Putting into operation

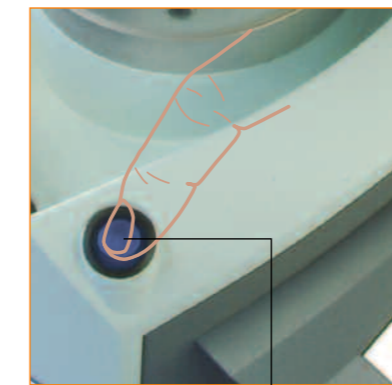
Fit in the supplied plug in the rear socket of the machine. Plug in at the wall socket, the unit is operational. Unplug the machine when not in use.

## Recommendation

Use the machine only with granules (illustr.). To fill the granules, put the foil frame by the handle (cavity for good grip) upwards until you reach the highest possible position and then move it backwards towards outside until it stops. Smooth the granules, excessive granules will fall in the surrounding channel and can be swept with the brush in the granules collecting device. It should be ensured that there are no granules on the sealings.



## Operation:



main switch



sensor window

A reliable function of the touch panel is only guaranteed at a unit temperature of  $\geq 15\text{ °C}$ .

**Attention:** Program language ex works is German!

Switch on main switch.

The touch panel shows at first "ERKODENT" and then "Sensor window clean? (Sensorfenster sauber?)".

If necessary, please see instructions on how to choose your language. Please check if the sensor window is dusty or dirty. This leads to measuring mistakes. If necessary, clean with a damp cloth (no cleaning agents).

After a few seconds automatically the basic display will be seen.

The requested function can be chosen by slightly pressing the finger on the framed functional fields of the touch panel or by using a blunt plastic tip.

The touch panel is protected by an adhesive-free foil. A replacement protective foil is supplied along with the machine.



Sensor window clean?

PLEASE CHOOSE:

LIST OF FOILS

LIST OF FAVOR.

INPUT:

NEW FOIL

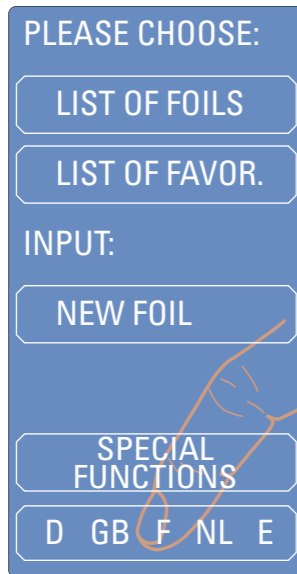
SPECIAL FUNCTIONS

D GB F NL E

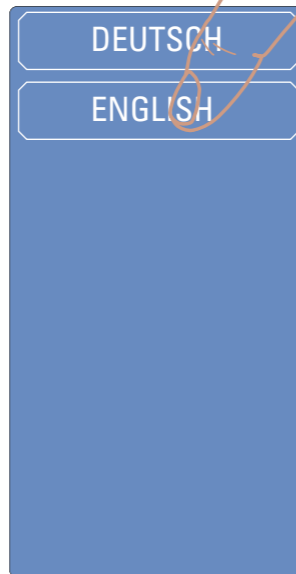
### Choose language

For any further use of the machine, the language that was chosen last time is used.

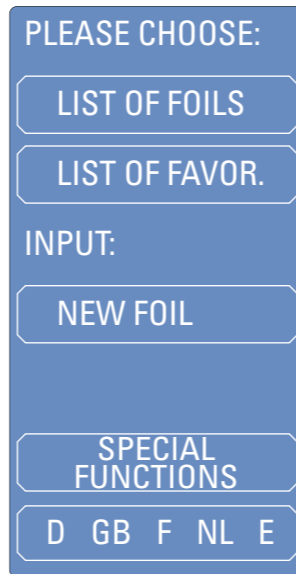
#### 1. Choose field of languages



#### 2. Choose language



#### 3. Basic display will be seen



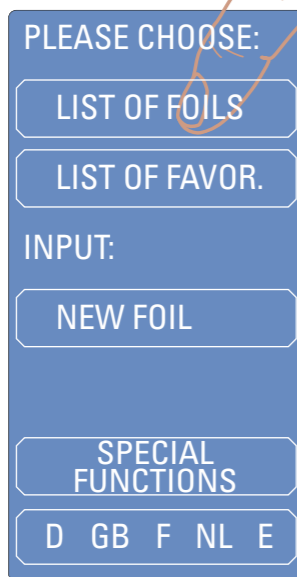
### Choose foil

The list of foils contains all foils of the ERKODENT range of products that can be used on this machine and that have been available at the time of production of this unit. New foils can be added with the functional field "new foil", please see "enter new foils". If the range of foils will change considerably, ERKODENT will supply a program update.

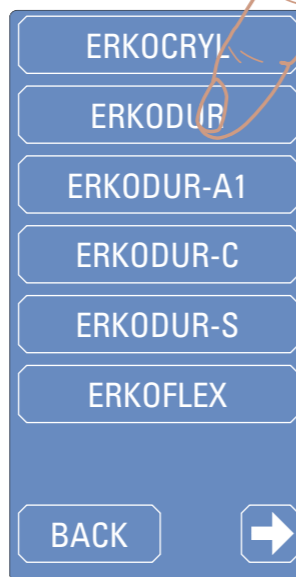
Example:  
 requested foil, Erkodur, thickness 1 mm

\* ERKOLEN +  
 UZF braun = brown  
 UFZ rot = red

#### 1. Choose list of foils



#### 2. Choose Erkodur



#### Thumb list of foils



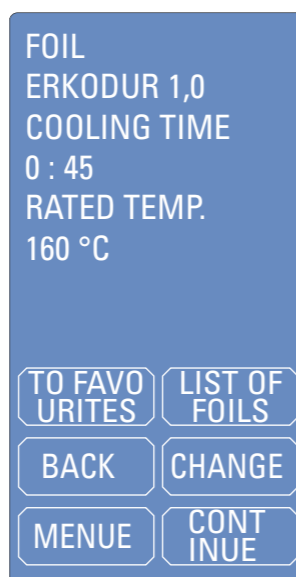
one page forward or back

one program step back

#### 3. Choose Erkodur 1.0 mm



#### 4. Display, foil chosen



Functions of the display "foil chosen" see page 9.

Next step "save favourite" or "thermoforming".

### Special functions

With the special functions the heating and the vacuum pump can be switched on and off independently of the program.

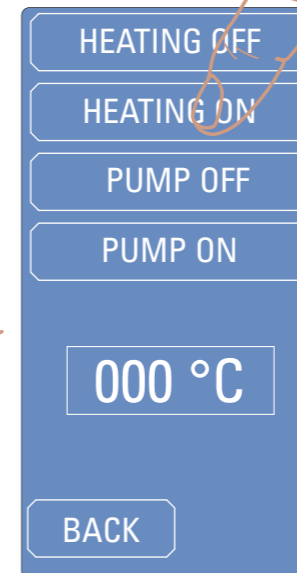
To determine the rated temperature (thermoforming temperature) of an unknown foil, choose "heating on" (2.) and clamp the foil in the foil frame as mentioned under "thermoforming". As soon as the foil frame is swivelled under the heating (a), it will be switched on and the sensor will measure the temperature of the foil. If it is intended to afterwards thermoform the foil, choose "pump on" (3.).



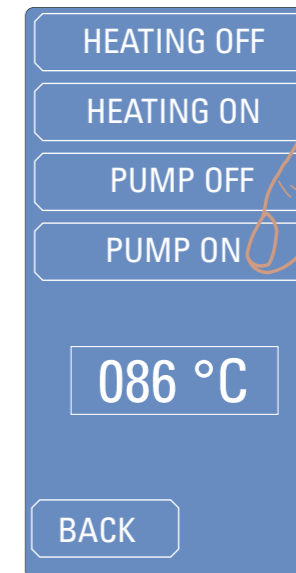
#### 1. Choose special functions



#### 2. Choose heating on



#### 3. Choose pump on



To check the thermoformability, swivel the foil towards outside (b) and check with a blunt instrument. If permanent impressions result, generally the foil is ready for thermoforming. The heating switches off, if the foil is swivelled out of the heating area, if "heating off" is chosen or if the sensor measures >240 °C.

The temperature shown on the display is the temperature measured at last. If the foil is ready for thermoforming, this temperature corresponds to the rated temperature.

To determine the cooling time, the time beginning with the adaptation is measured. For the first time check the foil temperature manually app. after 1 minute (earlier: risk of burning!). The correct cooling time is achieved if the foil on the surface has app. room temperature. The foil can now be saved, as described under "enter new foils".



## Enter new foils

New foils can be future ERKODENT foils or foreign foils. If ERKODENT launches a new foil, the necessary data will be found on the label of the box (for example: ERKO-XY, thickness 2.0 mm, rated temperature 135 °C, cooling temperature 1:30 min.). The foil can be saved under "new foil". In case of foreign foils the rated temperature and the cooling time need to be determined with the help of the special functions. All new saved thermoforming foils are lined up and saved in the list of favourites and chosen via this list.

**1. Choose new foil**

PLEASE CHOOSE:  
 LIST OF FOILS  
 LIST OF FAVOR.  
 INPUT:  
 NEW FOIL  
 SPECIAL FUNCTIONS  
 D GB F NL E

**2. Enter ERKO-XY**

Foil name:  
 -----  
 ER KO A B C  
 D E F G  
 H I J → further letters, figures and characters  
 C BACK OK input correct  
 one program step back  
 one input step back

**3. Confirm ERKO-XY (ok)**

Foil name:  
 -----  
 ER KO A B C  
 D E F G  
 H I J →  
 C BACK OK

**4. Enter thickness and confirm (ok)**

FOIL ERKO-XY  
 Thickness:  
 2,00 MM  
 1 2 3 4  
 5 6 7 8  
 9 0  
 C BACK OK

**5. Enter rated temperature and confirm (ok)**

FOIL ERKO-XY 2,0  
 RATED TEMP.  
 135 °C  
 1 2 3 4  
 5 6 7 8  
 9 0  
 C BACK OK

**5. Enter rated cooling time and confirm (ok)**

FOIL ERKO-XY 2,0  
 COOLING TIME  
 1:30  
 1 2 3 4  
 5 6 7 8  
 9 0  
 C BACK OK

**6. Basic display, new foil is saved**

PLEASE CHOOSE:  
 LIST OF FOILS  
 LIST OF FAVOR.  
 INPUT:  
 NEW FOIL  
 SPECIAL FUNCTIONS  
 D GB F NL E

## Save favourites

The list of favourites allows a quicker selecting of often used foils. To save a foil in the list of favourites, this foil is chosen out of the list of favourites as described under "choose foil". New foils, either future ERKODENT foils or foreign foils, are entered with the functional field "new foil" and are saved in the list of favourites.

After having chosen the requested foil from the list of foils you will see display 1. To save the foil as favourite, select "to favourites".

**1. Choose to favourites**

FOIL ERKODUR 1,0  
 COOLING TIME  
 0 : 45  
 RATED TEMP.  
 160 °C  
 TO FAVORITES LIST OF FOILS  
 BACK CHANGE  
 MENUE CONTINUE

**2. Choose save**

Do you want to save this foil in the list of favourites?  
 BACK SAVE

**3. Choose list of favor.**

PLEASE CHOOSE:  
 LIST OF FOILS  
 LIST OF FAVOR.  
 INPUT:  
 NEW FOIL  
 SPECIAL FUNCTIONS  
 D GB F NL E

**4. Choose favourite**

ERKOLOC PRO 2,0  
 ERKOFLEX-BLEACH 1,0  
 ERKODUR 1,0  
 BACK

## 5. Favourite is displayed

FOIL ERKODUR 1,0  
 COOLING TIME  
 0 : 45  
 RATED TEMP.  
 160 °C  
 LIST OF FOILS  
 BACK CHANGE  
 DELETE CONTINUE

to 5. For thermoforming choose "continue", please see section "thermoforming".

## Delete favourites

**1. Choose delete**

FOIL ERKODUR 1,0  
 COOLING TIME  
 0 : 45  
 RATED TEMP.  
 160 °C  
 LIST OF FOILS  
 BACK CHANGE  
 DELETE CONTINUE

**2. Choose delete**

ATTENTION!  
 Do you really want to delete this foil from the list of favourites?  
 BACK DELETE

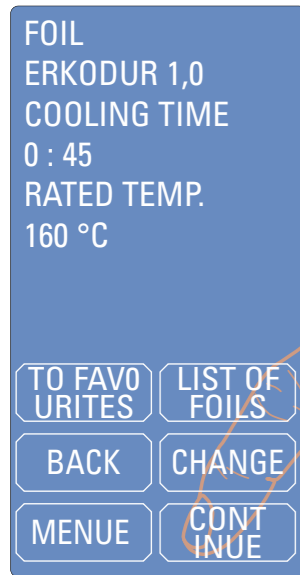
**3. Basis display, favourite is deleted**

PLEASE CHOOSE:  
 LIST OF FOILS  
 LIST OF FAVOR.  
 INPUT:  
 NEW FOIL  
 SPECIAL FUNCTIONS  
 D GB F NL E



## Thermoforming

### 1. Correct foil selected?



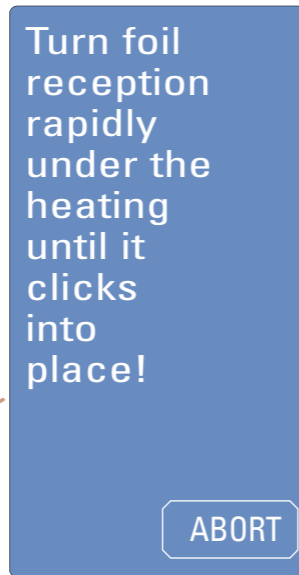
to 1. Correct foil selected? If not, please choose "list of foils" and choose a new one. The display offers further functions which are described in section "functions of display, selected foil" (see page 10). To start the following thermoforming process please choose "continue".

### 2. Execute and choose start



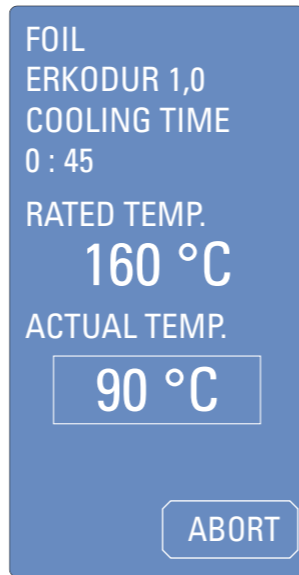
to 2. Swivel foil reception upwards and then to the right (a). Take out foil securing ring, put in the selected foil Erkodur 1.0 mm and clamp with the foil securing ring (b). Embed the model now or during the heating process in the granules. (c). Please choose "start".

### 3. Execute and heat foil



to 3. For better clicking into place slightly push the grip cavity downwards. When it clicks in, the heating switches on (d + e). The functional field "abort" stops the standby mode or the heating process and leads back to display 2. If the foil is turned out of the heating contact, this display is shown as well.

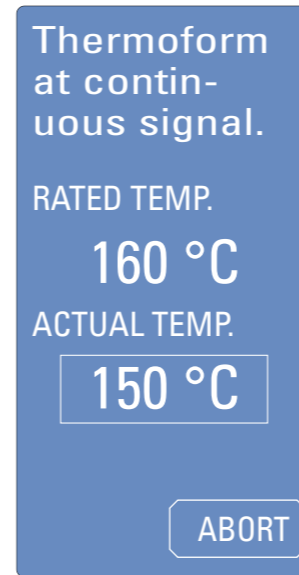
### 4. Display during the heating process



to 4. The actual temperature shows the temperature of the foil in the measuring area. 70 °C before reaching the rated temperature the vacuum pump switches on to build-up the pre-vacuum. When reaching the rated temperature, the heating switches off.

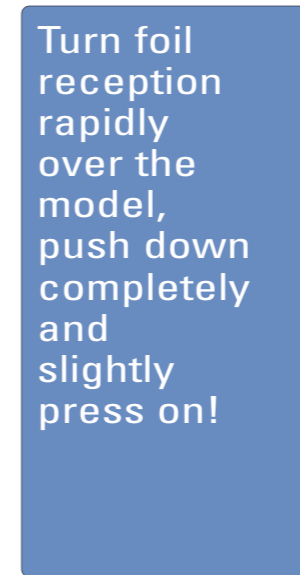
## Thermoforming

### 5. Display 10 °C before rated temp.



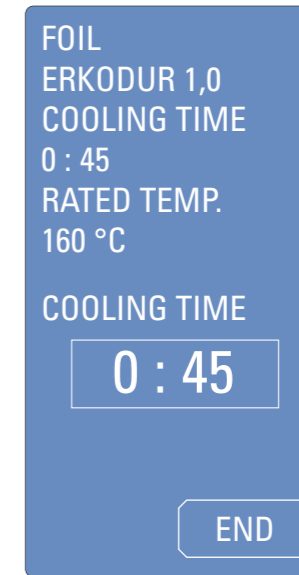
to 5. 10 °C before reaching the rated temperature, you will hear a signal. Depending on the selected foil the heating process around the last 10 °C may be of varying length.

### 6. Display in case of continuous signal



to 6. When reaching the rated temperature, you will hear a continuous signal and the heating switches off. Now thermoform by taking the foil reception at the grip cavity and by executing steps f + g.

### 7. Display after thermoforming



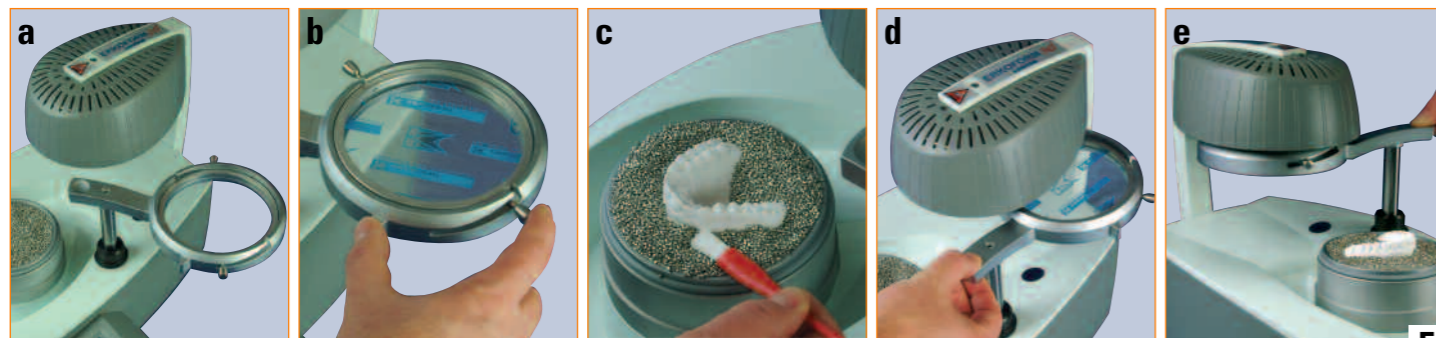
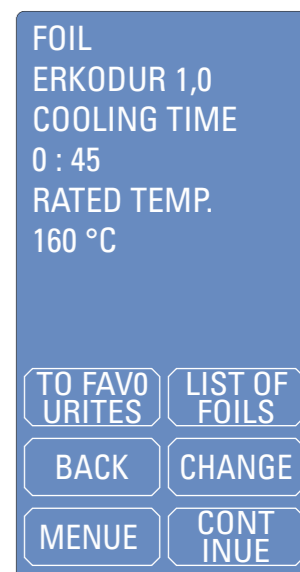
to 7. The cooling time corresponding to the selected foil now runs backwards. The cooling time can be interrupted with the functional field "end". The foil should only be taken out after the complete cooling time.

### 8. Display end of cooling time

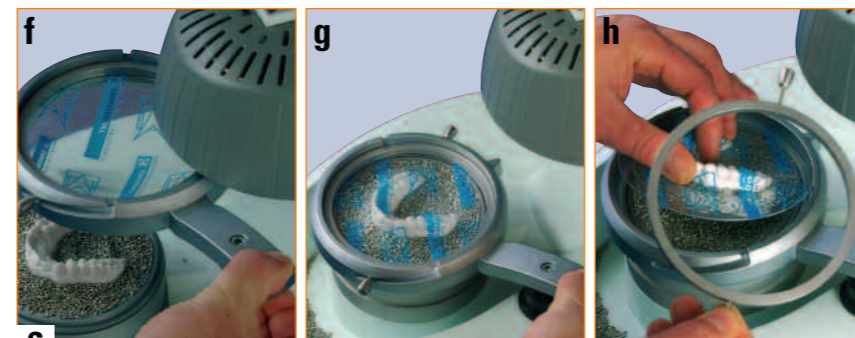


to 8. Take off the foil securing ring and take out model with foil (h). The functional field "continue" guides back to the display "chosen foil" (9.), to the foil just used.

### 9. Chosen foil



5



6