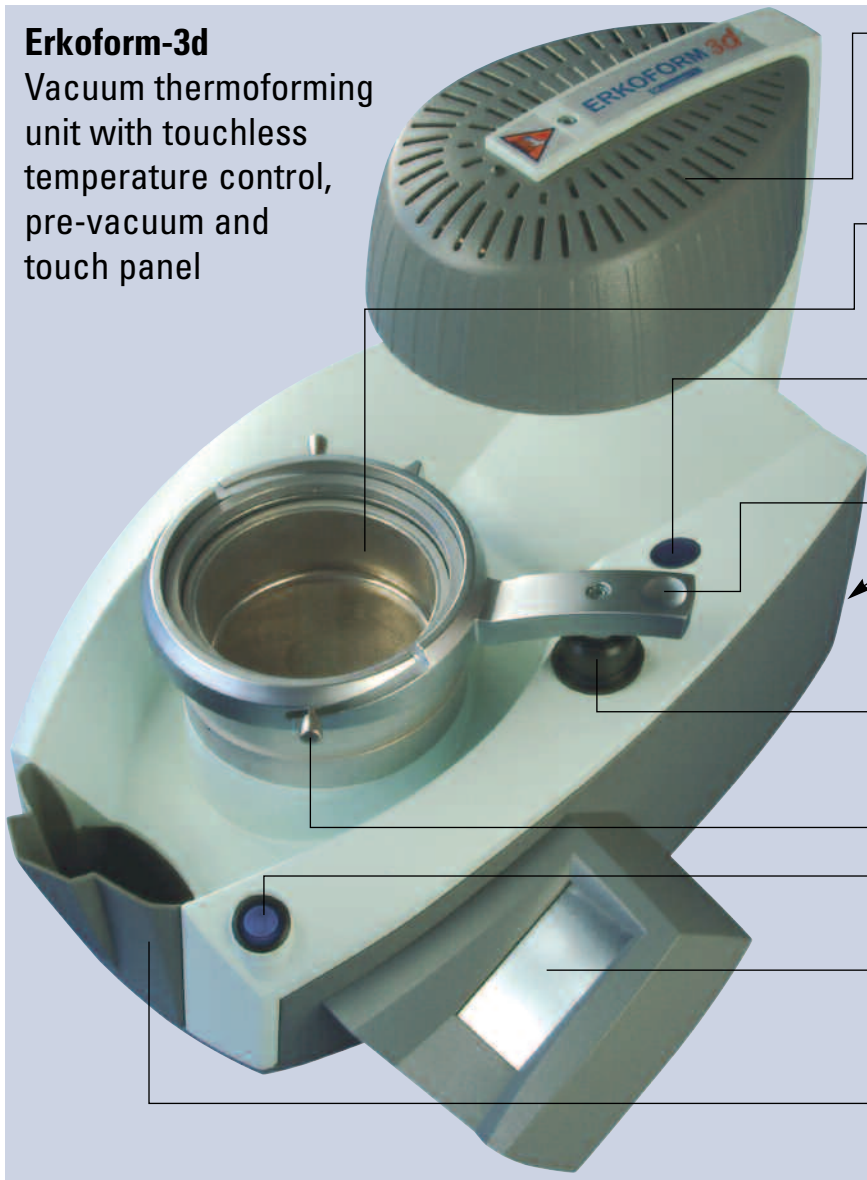


Erkoform-3d

Instructions

Erkoform-3d

Vacuum thermoforming unit with touchless temperature control, pre-vacuum and touch panel



Medium-wave infrared heater with cover

Form pot for reception of model, granules pot and model plate

Sensor window for temperature registration

Foil reception handle with cavity for good grip

Mains connection (back)

Column for movement of foil reception

Foil securing ring

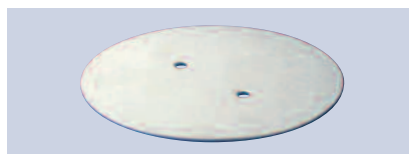
Main switch

Touch panel to operate all functions (with protective film)

Granules collecting device



Granules pot*
⌀ inside 97 mm
Height inside 40 mm



Model plate* for very flat trimmed models.



*supplied along

All machines are ex works equipped with centering plate for the supplementary available occludator Occluform-3 (188 580).



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ERKODENT®

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
Form pot:	inner diameter 101 mm inner height 42 mm
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

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

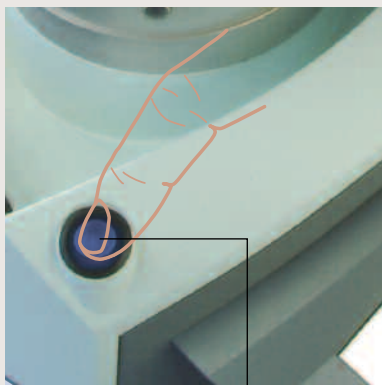
Fit in the supplied plug in the rear socket of the machine. Plug in at the wall socket, the unit is operational. Unplug the machine when not in use.

Recommendation

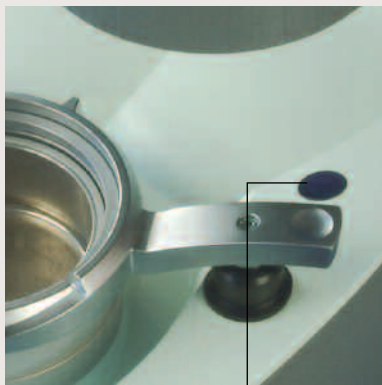
Use the machine only with granules (illustr.). To fill the granules, put the foil frame by the handle (cavity for good grip) upwards until you reach the highest possible position and then move it backwards towards outside until it stops. Smooth the granules, excessive granules will fall in the surrounding 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

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

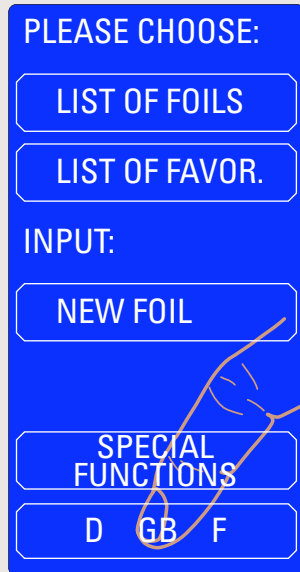
SPECIAL FUNCTIONS

D GB F

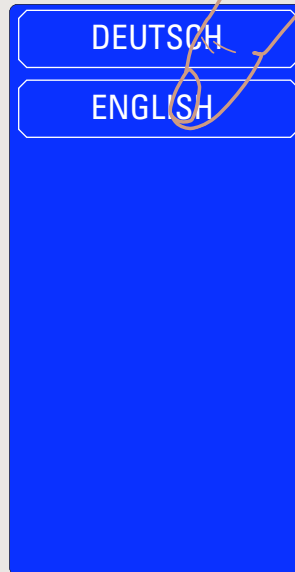
Choose language

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

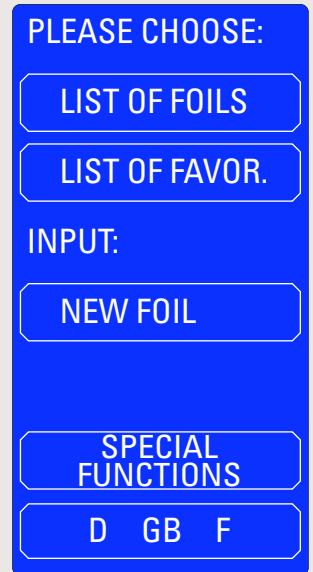
1. Choose field of languages



2. Choose language



3. Basic display will be seen



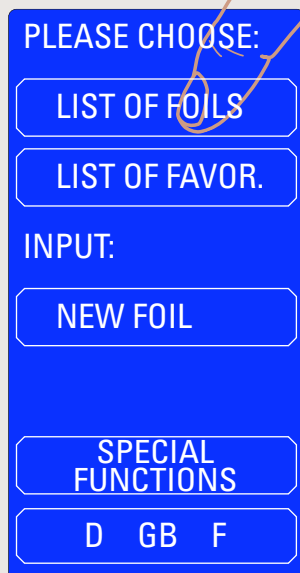
Choose foil

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*

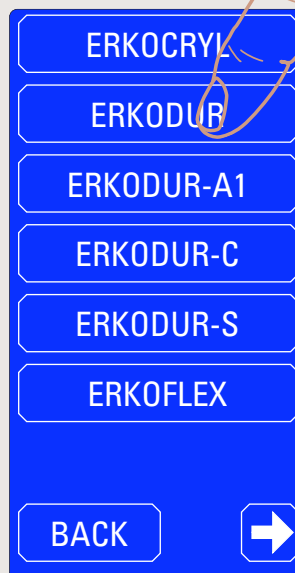
1. Choose list of foils



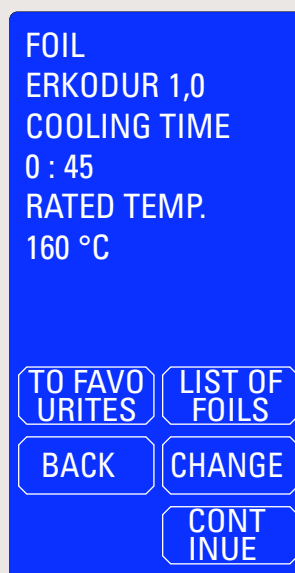
3. Choose Erkodur 1.0 mm



2. Choose Erkodur



4. Display, foil chosen



Thumb list of foils



one page forward or back

one program step back

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

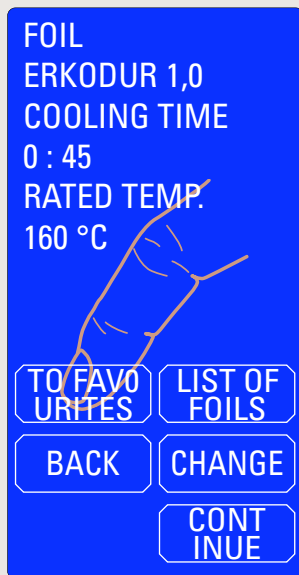
Next step "save favourite" or "thermoforming".

Save Favourites

The list of favourites serves for quicker finding of frequently 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".

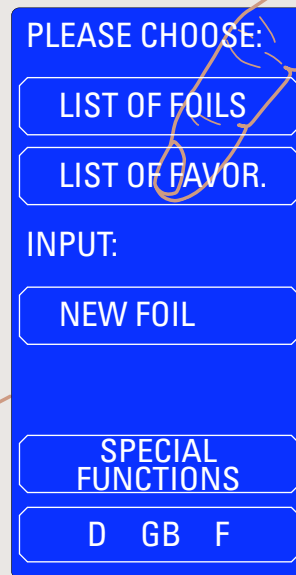
1. Choose to favourites



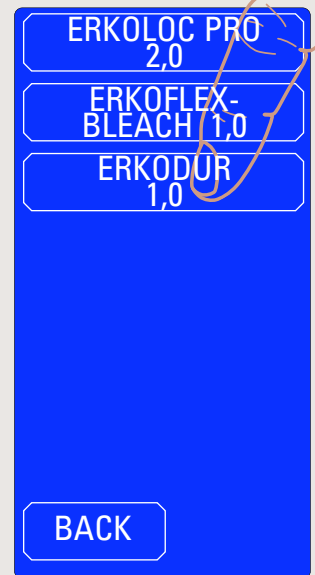
2. Choose save



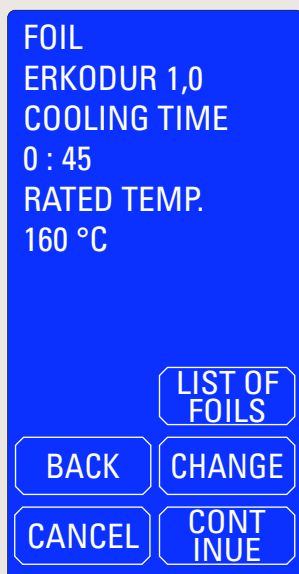
3. Choose list of favor.



4. Choose favourite



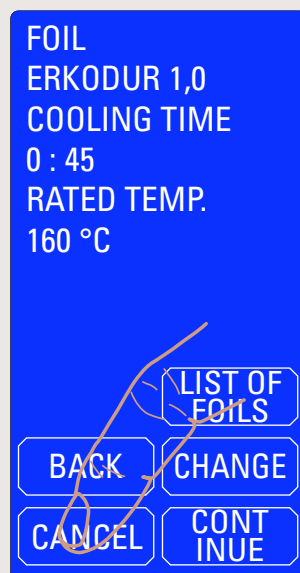
5. Favourite is displayed



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

Delete favourites

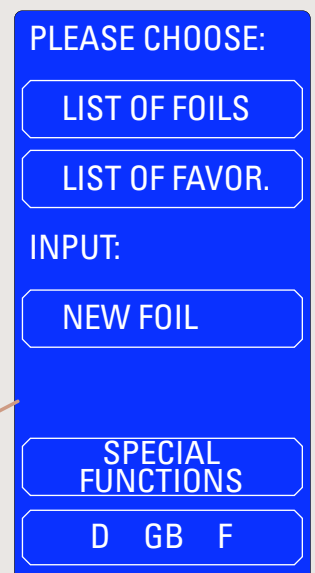
1. Choose cancel



2. Choose cancel

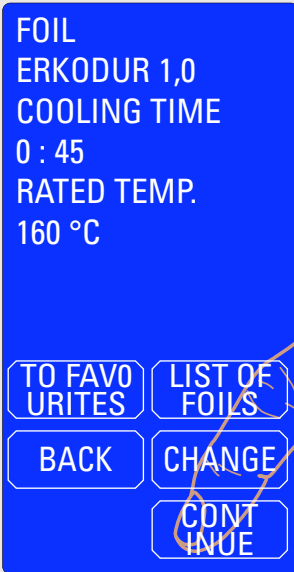


3. Basis display, favourite is deleted



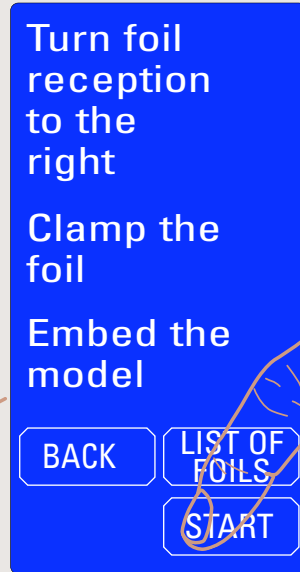
Thermoforming

1. Correct foil selected?



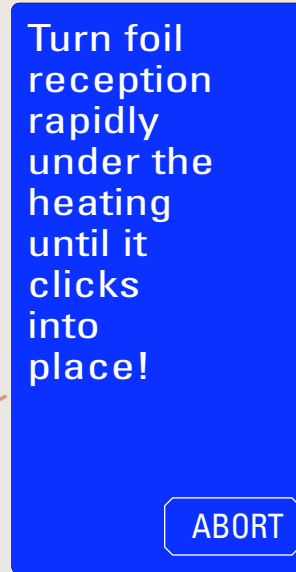
to 1. Correct foil selected? If not, please choose "list of foils" and choose a new one. The display offers further functions which are described in section "functions of display, selected foil" (see page 10). To start the following thermoforming process please choose "continue".

2. Execute and choose start



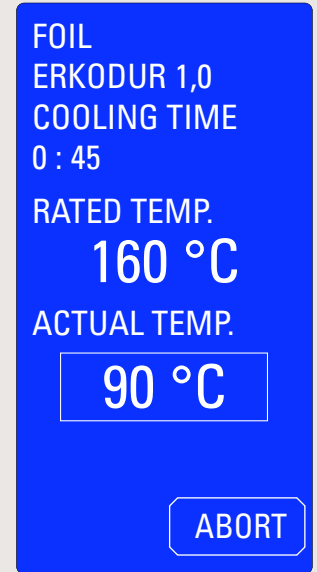
to 2. Swivel foil reception upwards and then to the right (a). Take out foil securing ring, put in the selected foil Erkodur 1.0 mm and clamp with the foil securing ring (b). Embed the model now or during the heating process in the granules. (c). Please choose "start".

3. Execute and heat foil

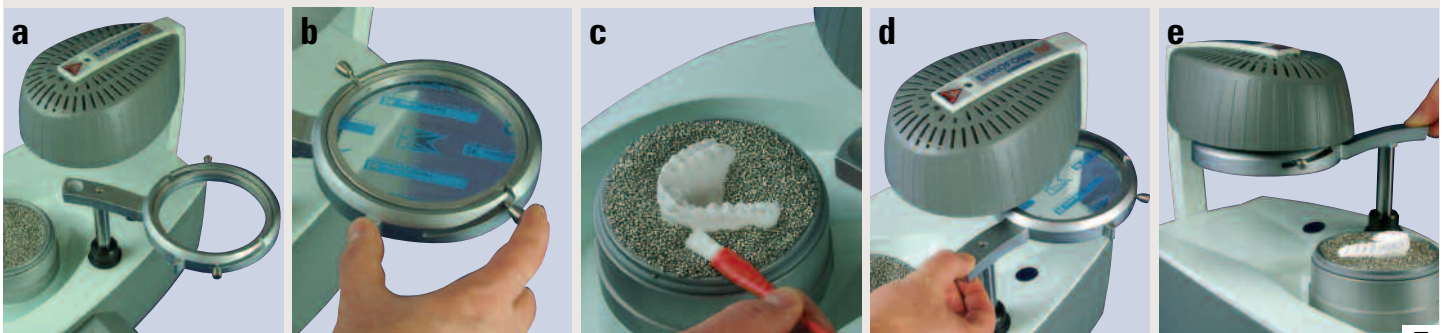


to 3. For better clicking into place slightly push the grip cavity downwards. When it clicks in, the heating switches on (d + e). The functional field "abort" stops the standby mode or the heating process and leads back to display 2. If the foil is turned out of the heating contact, this display is shown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

Thermoform at continuous signal.

RATED TEMP.

160 °C

ACTUAL TEMP.

150 °C

ABORT

6. Display in case of continuous signal

Turn foil reception rapidly over the model, push down completely and slightly press on!

7. Display after thermoforming

FOIL
ERKODUR 1,0
COOLING TIME
0 : 45
RATED TEMP.
160 °C

COOLING TIME

0 : 45

END

8. Display end of cooling time

Release foil securing ring and take out model with plate.

CONTINUE

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.

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**.

zu 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.

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

FOIL
ERKODUR 1,0
COOLING TIME
0 : 45
RATED TEMP.
160 °C

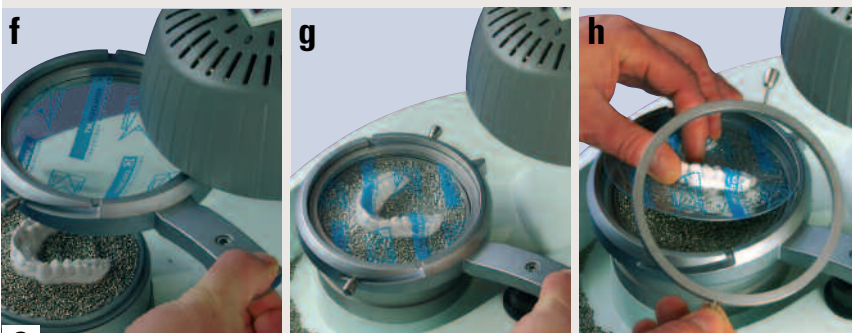
TO FAVORITES

LIST OF FOILS

BACK

CHANGE

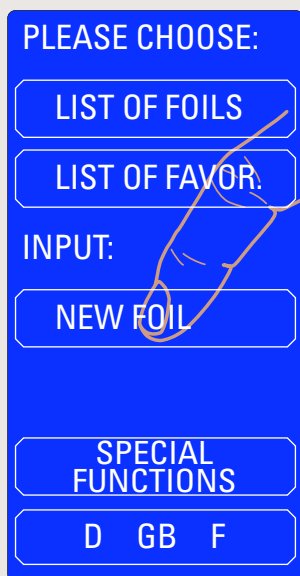
CONTINUE



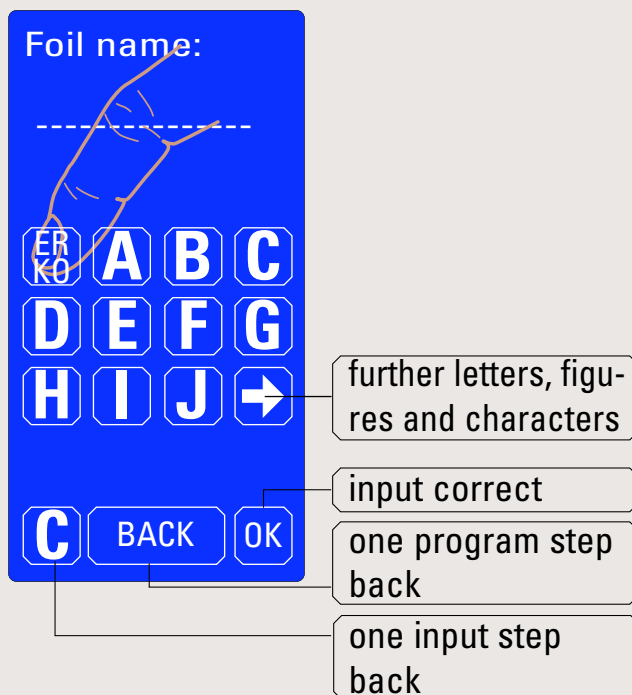
Enter new foils

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 time 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.

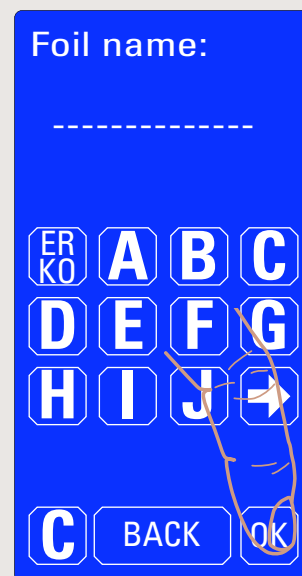
1. Choose new foil



2. Enter ERKO-XY



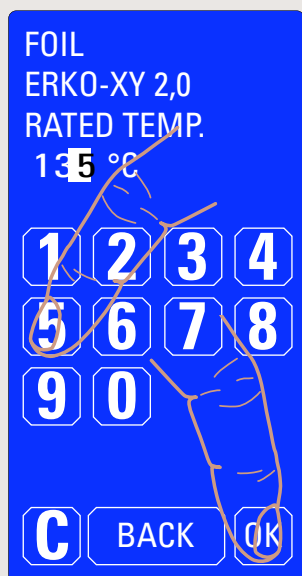
3. Confirm ERKO-XY (ok)



4. Enter thickness and confirm (ok)



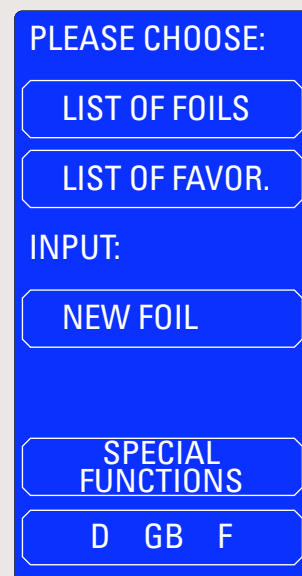
5. Confirm rated temperature and confirm (ok)



5. Confirm rated cooling time and confirm (ok)



6. Basic display, new foil is saved



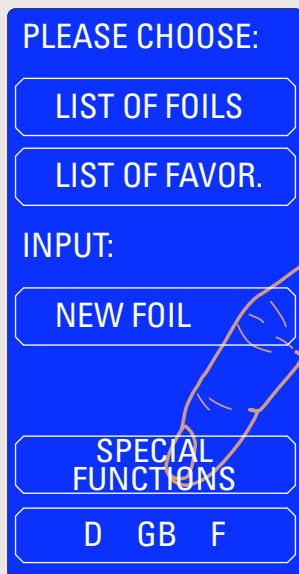
Special functions

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

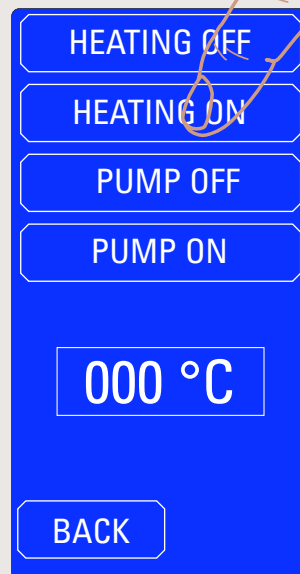
To determine the rated temperature (thermoforming temperature) of an unknown foil, choose "heating on" (2.) and clamp the foil in the foil frame as mentioned under "thermoforming". As soon as the foil frame is swivelled under the heating (a), it will be switched on and the sensor will measure the temperature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



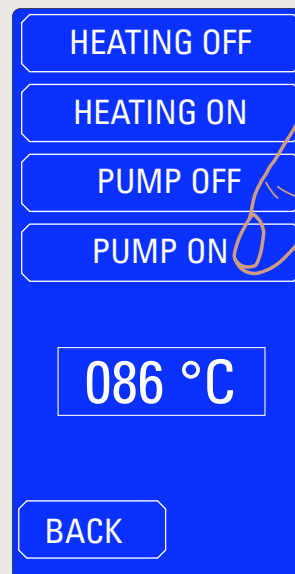
1. Choose special functions



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 $>240\text{ °C}$.

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.

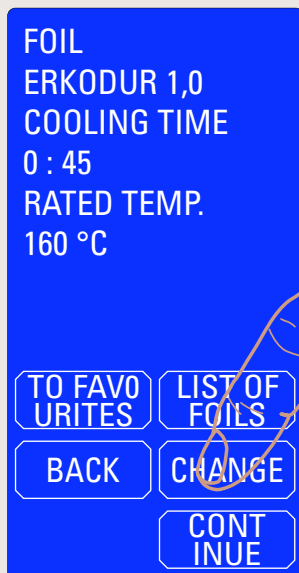
To determine the cooling time, the time beginning with the adaptation is measured. For the first time check the foil temperature manually app. after 1 minute (earlier: **risk of burning!**). The correct cooling time is achieved if the foil on the surface has app. room temperature. The foil can now be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



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".

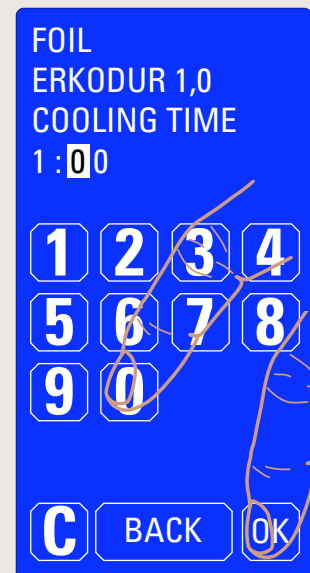
1. Choose change



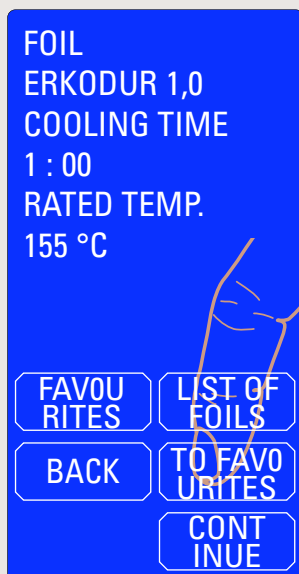
2. Enter rated temperature and confirm (ok)



3. Enter cooling time and confirm (ok)



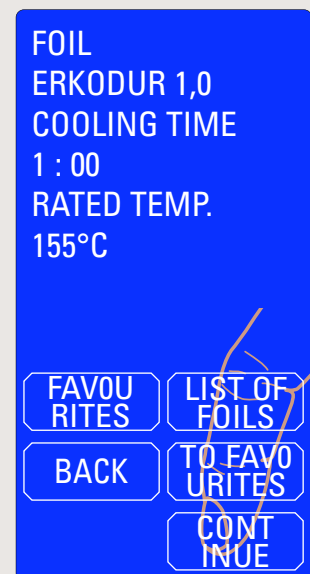
4a. Choose to favourites



5. Choose save



4b. Choose continue



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.

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

The changes are only kept for one thermoforming process.

Functions of display, selected foil

FOIL
ERKODUR 1,0
COOLING TIME
1 : 00
RATED TEMP.
155 °C

TO FAVO
URITES LIST OF
FOILS
BACK CHANGE
CONT
INUE

TO FAVO
URITES

save foil as favourite

LIST OF
FOILS

back to the foil list,
choose another foil

BACK

one program step
back

CHANGE

change cooling time
and rated temperature
for this foil

CONTINUE

to thermoforming



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
(room temp. below 15 °C)

clean membrane (ass)
allow machine to warm up for
app. 2 hours at room temperatu-
re because of condensed water

Delivery form Erkoform-3d

please check concerning completeness

Piece:	Article:	Order number:
1	Erkoform-3d	188 500
	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 <i>(188 580)</i>
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, declaraction of conformity (if applicable)</i>	