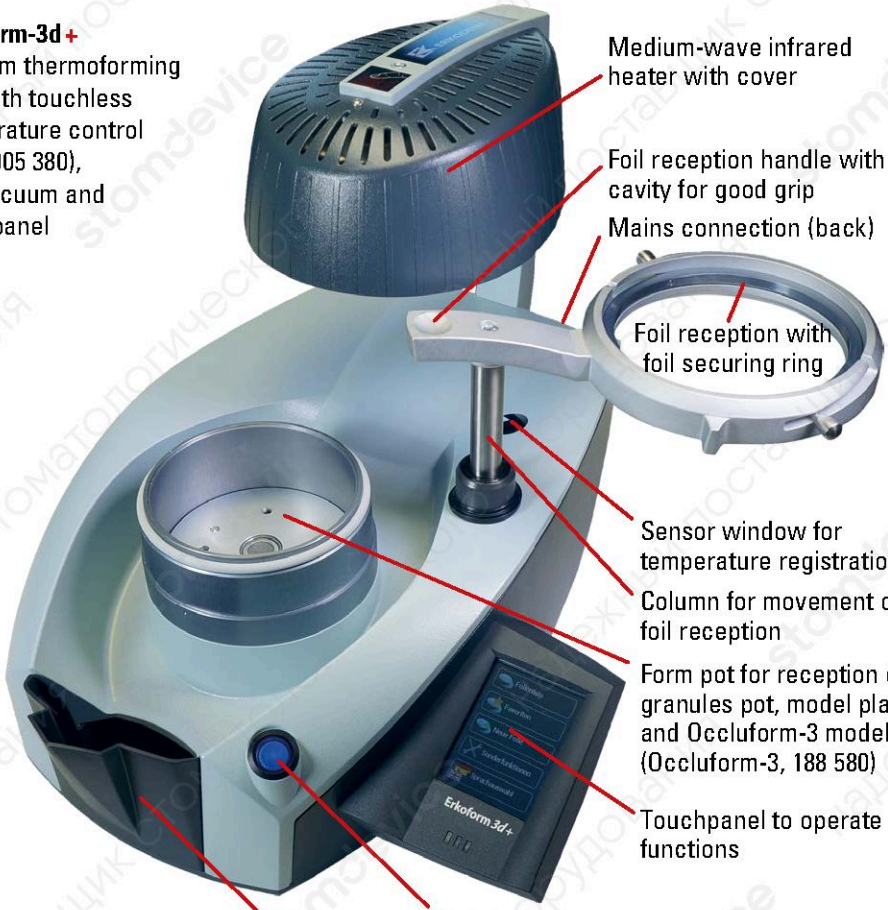
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Erkoform-3d+ Instructions

Instructions Video

Erkoform-3d+
Vacuum thermoforming unit with touchless temperature control (EP 1 905 380), pre-vacuum and touchpanel





Granules pot*, ∅ inside 97 mm
height inside 40 mm





Model plate* for very flat trimmed models

**also included*

ERKODENT®

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Technical data:

Measurement:	height	315 mm
	width	350 mm
	depth	370 mm
	weight	11,9 kg
Foil measures:	diameter	120 mm
	thickness	0 - 5.5 mm
Form pot:	inner ∅	101 mm
	inner height	42 mm
Electricity:	volt:	~220 - 240 (100, 110 - 120)
	watt:	340 (incl. heater)
Fuse:	2 x T - 2 A (230/240 V) or 2 x T - 4 A (100/115 V)	

Heater technique:	medium-wave round-pipe infrared heater	
	volt:	~220 - 240 (100, 110 - 120)
	watt:	280 - 300
Sensor:	touchless infrared temperature sensor, programmable measuring range up to	240 °C
Vacuum technique:		with pre-vacuum
	vacuum	0.8 bar
	litre capacity	9 l/min
	noise level	< 60 db(A)

Security

Before starting, please read instructions for use. The operator of the machine is responsible for the complying with regulations for accident prevention concerning technical security.

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

Security hints

ATTENTION! Risk of burns, do not touch heater, housing of the heater and hot foils!

Only operate the machine under supervision. Do not keep highly inflammable materials near the machine. Heat and work only with suitable thermoforming materials.

Usage as directed

The Erkoform-3d+ unit must only be used with suitable dental thermoforming material in diameter 120 mm and thickness of up to 5.5 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 only be cleaned with a damp cloth.

Do not use any solvents or other cleaning agents. To ensure that the unit maintains its full function the sealing rings require replacing once a year when the unit is consistently in use. New seals should be firmly pushed into position.



Spare sealing foil reception 188 011



Spare sealing form pot 188 017

Installation instructions: In order to avoid humidity and dirt entering the unit install and store it in a dry and low-dust environment. Allow a cold unit (after transportation, storage or similar) to warm up for 2 hours at minimum 15 °C room temperature to avoid condensed water.

Putting into operation

Fit in the supplied plug in the rear socket of the machine and plug in at the wall socket. Unplug the machine when not in use.

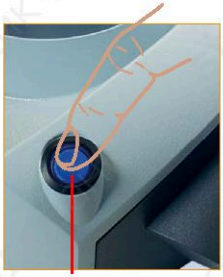
Recommendation:

Operate the machine only with granules (illustr.) To fill the granules pot move the foil reception in the upper right position. Smooth the granules, excessive granules will fall in the surrounding chanel and can be swept with the brush in the granules collecting device. Ensure that no granules remain on the sealings.

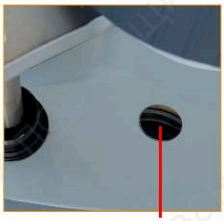


The symbols of the touchpanel:





main switch

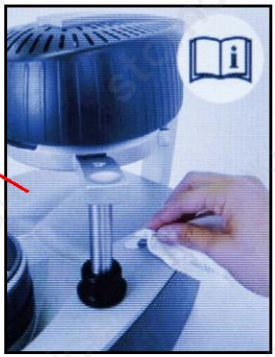


sensor window

Switch unit on

Switch the unit on at the main switch.

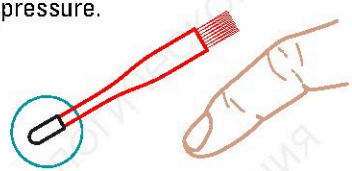
A picture in the touchpanel reminds to clean the sensor window.
A dirty sensor window leads to measurement errors. If necessary, dust off or clean with a damp cloth (no cleaning agents!).



After a few seconds the basic display automatically appears.

The touchpanel responds in the framed function fields on slight pressure.





For input, the enclosed brush for granules is equipped with a rubber cap. Input is also possible with fingers.

Select language: (The unit retains the language selected)

1. Select language option



2. Select language



3. Menu, selected language



Select foil *example, Erkodur, thickness 1 mm*

The list of foils contains all foils of the Erkodent range of products that can be used with this machine and that have been available at the time of production of this unit.

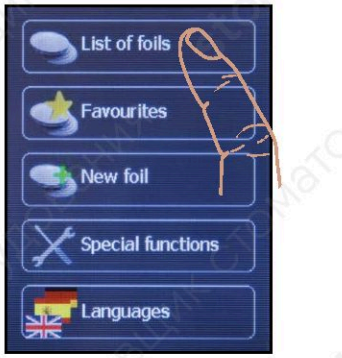
Add new foil, page 6 *Save favourites, page 5*

Thumb list of foils

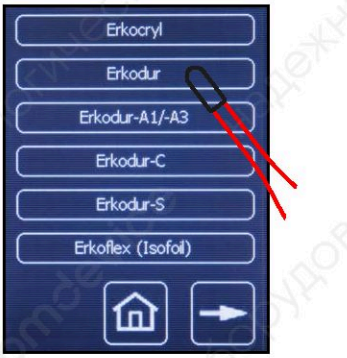


back menu continue

1. Select list of foils



2. Select Erkodur



3. Select 1.0 mm



4. Selected foil

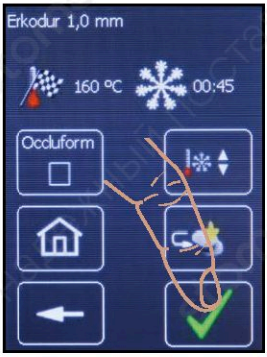


Functions of this indication



- selected foil
- rated temperature
- cooling time
- work with Occluform-3
- change rated temperature and cooling time
- save as favourite
- menu
- OK, next step
- one step backwards

Thermoforming (see also page 10)



1. Correct foil (?), confirm.

As soon as the foil is confirmed the display shows the further working steps.

Further functions of this indication (see page 10).

Hint:
Press abort: X



2. Foil will be heated.

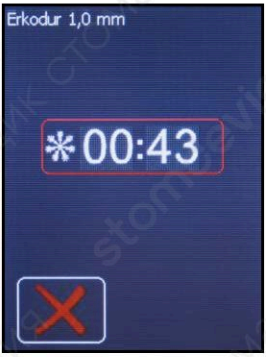
As soon as the foil reception clearly clicks into place under the heating, the display shows the foil temperature.

70 °C before the rated temperature is reached the vacuum pump switches on to built up the pre-vacuum.



3. Attention! Thermoforming process

10 °C before the rated temperature is reached there will be an acoustic, optic and written request to thermoform, „Thermoform when the lights are green!“



4. Cooling time

After the thermoforming process the cooling time runs.

to 2. and 3.
During the heating process the foil reception can shortly (max. 3 sec.) be swivelled towards the starting position without interrupting the program.



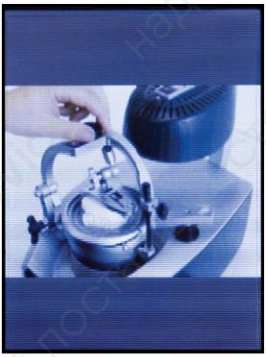
1. Select Occluform-3 and confirm.



2. As above



3. As above, the thermoforming process runs after the rated temperature is reached.



4. Request to close the Occluform-3.

Afterwards the cooling time is indicated.

Hint: When thermoforming Playsafe triple the machine requires to close the Occluform-3 only 1 min. after the thermoforming process.

Save favourites

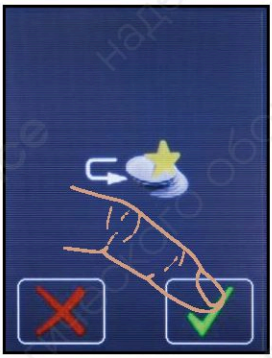
The list of favourites allows a quicker selection of often used foils. To save a foil in the list of favourites, this foil is selected out of the list of foils as described under "select foil". New foils, either future Erkodent foils or foreign foils, are entered with the functional field "new foil"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

After having selected the desired foil from the list of foils the display **1.** will be visible. To save the foil as favourite, select „to favourites".

1. Select add favourite



2. Confirm add favourite

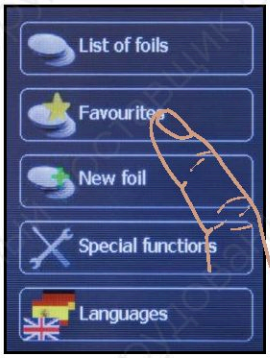


3. The favourite appears and can be processed

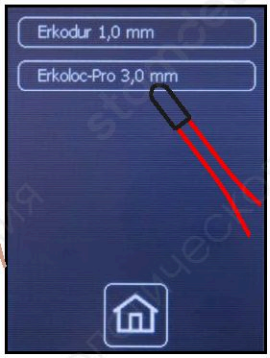


Delete favourite

1. Select favourites



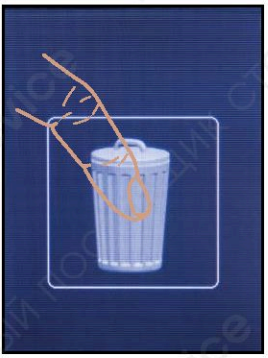
2. Select favourite



3. Select delete favourite



4. Confirm delete favourite



Recommendation: If an Erkodent foil will be saved with the factory parameters and as a favourite with changed parameters, the changed one should be saved as new foil with a different name in order to avoid any mix-up.

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Enter new foils

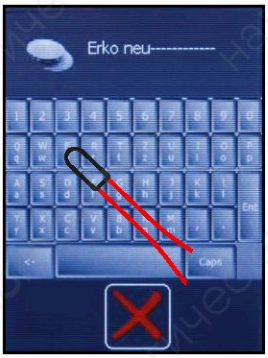
New foils can be future Erkodent foils or foreign foils.
If Erkodent launches a new foil the necessary data will be found on the label (example: Erko neu (new), thickness 1.8 mm, rated temperature 150 °C, cooling time 1:40 min.). The foil can be saved under input „New foils“. In case of foreign foils the rated temperature and the cooling time have to be determined with the help of the special functions.
The new foils will be saved in the list of favourites and selected via this list.

Hint: Max. 240 °C can be entered as rated temperature. The cooling time has to be at least 30 sec. Otherwise there may be malfunctions.

1. Select new foils



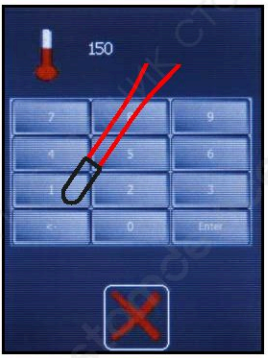
2. Enter foil name



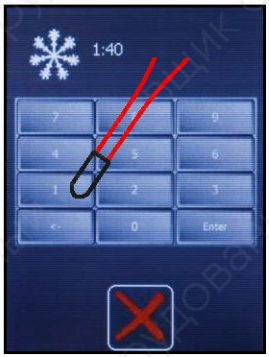
3. Enter foil thickness



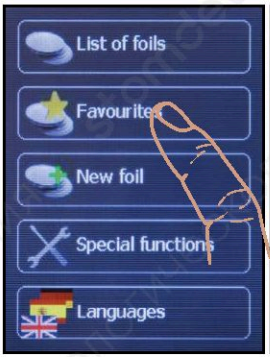
4. Enter rated temperature



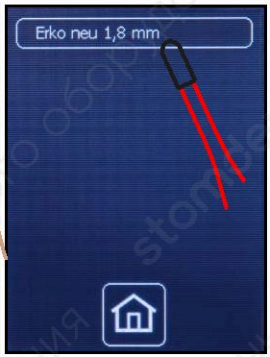
5. Enter cooling time



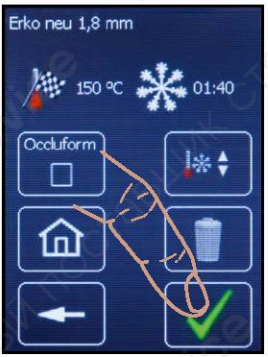
6. Select favourite



7. Select new foil



8. Thermoform new foil



To 2., the new foil is saved as favourite, the menu appears

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Change factory settings for foils

The rated temperature and cooling time can be changed for one single thermoforming process or constantly as favourite. The rated temperature (factory presetting) can only be changed by maximum +/- 5 °C. The changes are done in the window „selected foil" or „favourite", also see "select foil" and "save favourite".

1. Select change

2. Change rated temperature and cooling time

3. Thermoform or save as favourite



Abort Save

Thermoform once with the changed data

Save as favourite. As favourite the changed data and the foil name will remain.

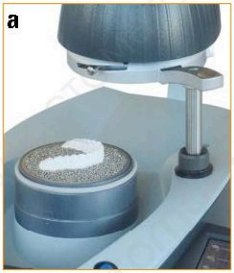
Occluform-3



Optional Occluform-3 device (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°.

Special functions

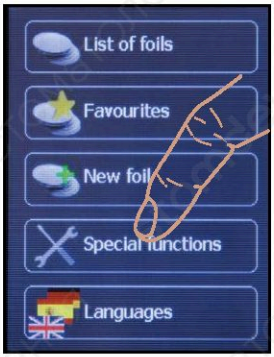


Using special functions the heating and the vacuum pump can be switched on and off independently of the program.

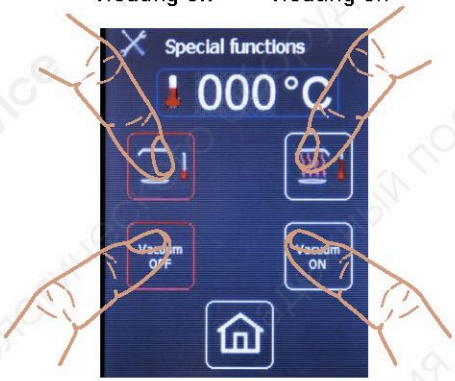
To determine the rated temperature (thermoforming temperature) of an unknown foil, select „heating on“ and clamp the foil in the foil frame as mentioned under „thermoforming“. As soon as the foil frame is swivelled under the heating (**a**), it will be switched on and the sensor will measure the temperature of the foil. If the foil shall be thermoformed afterwards, select „pump on“.

Note, switch on the vacuum pump only with the foil reception in the upper position.

Select special functions

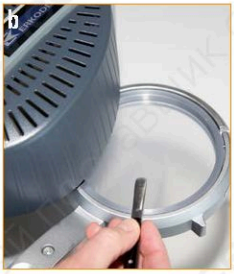


Heating off Heating on



Vacuum pump off Vacuum 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, “heating off“ is selected or 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 foil“.

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Trouble shooting:

error	possible reason	elimination (after sales service = ass)
machine not ready to use, no display in the touchpanel	wall socket, machine plug or fuses defective	check wall socket, machine plug, fuses (at the machine plug)
heating does not switch on	foil reception not in the correct position heater, switch for heater or circuit board defective	foil reception has to clearly click into place under the heating, exchange heater, switch for heater or circuit board (ass)
program reacts absurdly	system crash, program faulty	switch machine on and off, deploy program again (ass)
absurd temperature indication	sensor window soiled, sensor defective	clean sensor window, exchange sensor (ass)
vacuum not sufficient	granules on the sealings, hole in the foil, sealings used, vacuum pump soiled or defective	remove granules from sealings, check foils concerning holes, exchange sealings, clean or exchange vacuum pump (ass)
vacuum pump does not function	membrane clotty, menbrane too hard at room temperature below 15 °C	clean membrane (ass) allow machine to warm up for app. 2 hours at room temperature to avoid condensed water

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Thermoforming with Occluform-3

* the working steps required before thermo-forming will be shown in a repeating animation.

All animations will be stopped with the next working step.



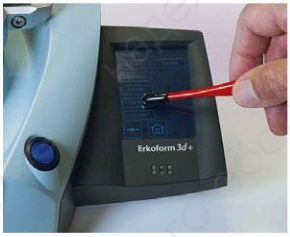
1. Select list of foils



2. Thumb list of foils



3. Select desired foil (in the example Erkoloc-pro)



4. Select foil thickness



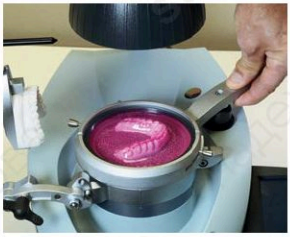
5. Select Occluform



6. Continue, thermoform-ing*, swivel foil reception under the heating ...



7. ... until it clicks into place (!). The heating switches on.



8. Thermoform.



8. Animated request to close the Occluform-3.



9. Close the Occluform-3 to the stop, wait for the cooling time.



10. Release foil securing ring, remove the Occluform model pot with the foil.

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Delivery form for Erkoform-3d+

please check concerning completeness

Piece:	Article:	Order number:
1	**Erkoform-3d+**	**188 600**
	with accessories as follows:	
1	**foil securing ring** *to fix the foils in the foil reception*	**188 550**
1	**granules collecting device**	**188 470**
1	**centering plate** (assembled) *to later on install the Occluform-3 device*	**188 095** *(188 580)*
1	**model plate**	**188 507**
1	**granules pot**	**188 593**
1	**brush for filling granules with rubber cap** *can also be used as input pen* *(in the foil trial package)*	**188 530**
1	**on-off magnet** red *to collect filling granules* *(in the foil trial package)*	**110 890**
1	**power supply cable**	**188 001**
1	**worktray** white	**222 100**
1	**filling granules** (supplied with the Erkoform-3d motion 1.8 kg) *high-grade steel filling granules (magnetic) with rounded edges*	**110 852** (1.3 kg)
1	foil trial package	
1	machine documents (folder) *instructions, thermoforming technique manual, material card, Erkodent program, guarantee card, declaration of conformity (if applicable)*	

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