

Translation of the original instructions

Vacuum packaging machines Tray sealer & skin packaging machine Floor model (TSK360 PRO)



 **Before starting work, read these instructions!**

ERME AG SWISS VACUUM SOLUTIONS

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1 General information

Every person who operates, cleans or maintains the machine must have been briefed accordingly.

1.1 Subject of these instructions

The tray and skin machine described here was manufactured and put into circulation by:

ERME AG SWISS VACUUM SOLUTIONS

Contact data (see Legal notice page 2)

1.2 Target group

In addition to the operator, the target groups for these operating instructions include:

- Specialists authorised by the owner to perform assembly and installation work.
- Operating personnel — operation and cleaning instructions.
- Maintenance personnel — troubleshooting and maintenance instructions.
- Specialists who are tasked by the operator with performing tests and maintenance work.

1.3 Information about these instructions

1.3.1 Information about the content

These operating instructions contain important information about handling the machine during installation, commissioning, operation, maintenance and servicing as well as disassembly and disposal.

Compliance with all specified warning messages and instructions is a prerequisite for safely, correctly and efficiently working on and with the machine.

Observing the above information helps to prevent dangers, reduce repair costs and downtimes and increase the reliability and service life of the machine.

In addition, the local accident prevention regulations and general safety regulations applicable at the site where the machine is operated must also be observed.

Carefully read through the operating instructions before starting all work. They are part of the product and must be stored at a location where they are always accessible to the personnel.

In addition to these operating instructions, the instructions for the installed components provided by the respective supplier are located in the overall documentation. See Chapter Additional sources of information.

**NOTE**

- ▶ Observe the information — in particular, the warning messages — contained therein.

1.3.2 Instructions for use

Instructions and system reactions

The work steps to be carried out by the operating personnel are described consecutively. The order of the steps must be observed. The system reactions to the respective operational steps are marked by an arrow.

Example:

- ✓ Requirement
- 1 Work step 1
- ⇒ Reaction to work step 1

Lists

Lists without a mandatory order are displayed as a list with a preceding bullet point.

Example:

- Item 1
 - Item 1, sub-item A
- Item 2

Lists with a mandatory order are displayed as a list with a preceding number.

Example:

1. First
2. Second

References to chapters/pages

References to specific chapters in which procedures and instructions are described are illustrated as active links.

Example: (see [chapter A \[▶ 8\]](#))




1.3.3 Used symbols

Pictograms







The warning messages used in these operating instructions are also provided with pictograms to clarify the type of the possible hazard.

The following pictograms are used:




General symbols

Symbol	Meaning
	General information and helpful tips on handling
	Special information on working safely
	Information about possible material damage


Warning symbols

Symbol	Meaning
	General warning message
	Danger due to electricity
	Danger due to hot surfaces
	Danger of pulling in
	Danger of hand injuries!
	Risk of crushing!

Mandatory signs

Symbol	Meaning
	Observe the operating instructions
	Wear protective gloves
	Wear foot protection

Prohibition signs


Symbol	Meaning
	Do not remove protective facilities

1.3.4 Structure of the warning messages

The warning messages in these operating instructions are introduced by signal words that express the extent of the hazard.


The warning symbol also indicates the nature of the hazard.

The following warning messages are used in these operating instructions:

	⚠ DANGER
	<p>Risk to life!</p> <p>Consequences of non-compliance...</p> <p>▶ Information about avoidance</p>


A warning message of this danger level indicates an impending dangerous situation. If the dangerous situation is not avoided, it will result in death or extremely severe injuries.

Follow the instructions in this warning message to prevent the risk of death or severe personal injuries.

	⚠ WARNING
	<p>Risk of injury!</p> <p>Consequences of non-compliance...</p> <p>▶ Information about avoidance</p>

A warning message of this danger level indicates a potentially dangerous situation. If the dangerous situation is not prevented, it may result in death or serious injuries.


Follow the instructions in this warning message to prevent the possible risk of death or serious personal injuries.

	⚠ CAUTION
	<p>Personal injuries due to...</p> <p>Consequences of non-compliance...</p> <p>▶ Information about avoidance</p>


A warning message of this danger level indicates a potentially dangerous situation.

If the dangerous situation is not prevented, it may result in light or moderate injuries.


Follow the instructions in this warning message to prevent personal injuries.

	NOTICE
	<p>Material damage due to...</p> <p>Consequences of non-compliance...</p> <ul style="list-style-type: none"> ▶ Information about avoidance

A warning message of this danger level indicates possible material damage. If the situation is not prevented, it may result in material damage. Follow the instructions in this warning message to prevent material damage.

	SAFETY INSTRUCTIONS
	<p>Working safely during...!</p> <p>Perform all work while observing the safety instructions listed in the following:</p> <ul style="list-style-type: none"> ▶ Information on working safely

This notice contains important information and information on working safely during the following activity steps. Follow the instructions in this notice to avoid accidents and injuries.

	NOTE
	<p>Notice text...</p> <p>Consequences</p>

A notice identifies additional information that is important for further processing or which makes the described work step easier.

1.4 Additional sources of information

In addition to the instructions contained in these machine operating instructions, the information contained in the sources of information specified below must also be taken into consideration:

- Information about the signage on the machine
- Operating instructions for the assemblies and purchased parts that are in use
- Instructions from the operator
- Safety data sheets for auxiliary and operating materials
- Local accident prevention regulations and regional regulations at the machine operating site
- Data sheets for installed components

i	NOTE
	<p>► Observe the information — in particular, the safety instructions — contained therein.</p>

1.5 Limitations of liability

All information and instructions provided in these operating instructions were compiled taking into consideration the applicable standards and regulations, the technological state-of-the-art as well as knowledge and experience acquired over many years.

We reserve the right to make technical modifications in the course of further developing the machine that is the subject of these operating instructions. No claims can be derived from the information, figures and descriptions provided in these operating instructions.

The manufacturer assumes no liability for damage and malfunctions due to:

- Non-compliance with these operating instructions
- Unintended use
- Personnel who are not sufficiently trained or trained at all
- Use of impermissible equipment
- Faulty connection
- Non-use of original spare parts and accessories
- Technical modifications and conversions unless they have been coordinated with the manufacturer
- Non-performance of the required maintenance work
- Performance of welding work on the machine

The manufacturer is liable for any faults or failures on our part, not including further claims arising within the context of the warranty obligations specified in the contract. Claims for compensation, regardless of the legal grounds, will be excluded.

1.6 Copyright protection

This documentation is protected by copyright.

We reserve all rights, including the rights of photomechanical reproduction, duplication and the distribution through special procedures (for example, data processing, data carriers and data networks), also in part, as well as the right to make content-related and technical modifications.

1.7 Warranty provisions

According to the Purchase Agreement, the company ERME AG provides the corresponding warranty from the delivery date of the machine.

The warranty extends to the material and manufacturing defects, which occur during normal load (single-shift operation).

The warranty excludes improper operation, incorrect electrical installations and wear parts.

Our "General Terms and Conditions" apply.

1.8 Customer service

Please keep the following information readily available for all contact with our customer service department:

- Machine type (see type plate on the machine)
- Purchase date (see proof of purchase)

Contact data (see Legal notice page 2)

i	NOTE
	<p>We recommend that the operator conclude a maintenance agreement with ERME AG.</p> <p>This ensures that the machine will be regularly maintained by our service personnel and also ensures the supply of necessary wear and spare parts without long delivery times.</p>

1.9 Product monitoring

The company ERME AG monitors its machines up to and after delivery.

Therefore, please provide us with the following information:

- Any accidents that have occurred;
- Problems that have occurred when using the machine;
- Malfunctions that occur during specific operational situations;
- Experiences that could be important for other users.

Contact data (see Legal notice page 2)

2 Safety

2.1 General information


This chapter provides important information about all safety aspects to ensure the optimum protection of personnel as well as safe and smooth operation.

In addition to the general safety instructions provided in this chapter, further safety instructions that are relevant to the corresponding chapter are listed in each activity chapter.

Hazards that can occur in a specific activity step are described prior to the activity step.

Knowledge of the safety and user instructions set out in these operating instructions provides the basis for safe handling and trouble-free operation of this machine.

Non-compliance with the safety instructions and handling instructions specified in these operating instructions may result in significant hazards.

	SAFETY INSTRUCTIONS
	<ul style="list-style-type: none">▶ Always observe the warnings and instructions listed here.▶ Always store the operating instructions at the operating location of the machine.▶ The operating instructions must be freely accessible to operators and maintenance personnel at all times.

2.2 Intended use

The machine is exclusively intended for vacuum sealing food containers.

The machine may only be used within the technical specifications and under the operating conditions defined by the manufacturer.

Any other use beyond this scope is not considered as the intended use.

The permissible values specified in the "**Technical data** [▶ 26]" section must be observed.

2.2.1 Foreseeable misuse

Any use for purposes other than that specified above is not intended.

The operating company alone bears the risk of improper use or misuse.

Misuse occurs, for example, if

- The machine is not used for its intended purpose.
- The information provided in these operating instructions is not strictly observed.
- Modifications are made to the machine.
- The machine is used in potentially explosive areas.
- The machine is used in electrostatic discharge-protected (ESD) departments.

Only operate the machine with the following recommended food gases or equivalent products from other manufacturers:

BIOGON C30	Gas mixture consisting of 70% nitrogen (N ₂) and 30% carbon dioxide (CO ₂)
BIOGON OC20	Gas mixture consisting of 80% oxygen (O ₂) and 20% carbon dioxide (CO ₂)

2.3 Basic safety instructions

The machine is built according to the current directives, the technological state-of-the-art and the established safety rules and regulations.

Hazards and adverse effects may, however, occur when operating the machine:

- To life and limb of the user or third parties
- To life and limb of the maintenance personnel
- To the machine itself
- To other equipment

Knowledge of the safety and user instructions set out in these instructions provides the basis for safe handling and smooth operation of the machine.

Regularly clean the machine.

Only have service and repair work performed by the ERME customer service department or an authorised dealer.

2.4 Special dangers / residual risks

2.4.1 Danger due to electrical current

There is a risk of death when making contact with lines or components that carry current.

- Do not use the machine if electrical lines, plugs or the insulating housing are damaged. Perform checks according to the intervals for recurring tests/ inspections specified in the operating instructions.
- Work on electrical equipment must only be carried out by qualified electricians or personnel under the guidance and supervision of a qualified electrician in accordance with electrical engineering regulations.
- Defects identified on the electrical components/equipment must be corrected immediately. If there is an acute danger up until that point, the machine, component or equipment must not be used in a defective condition.
- Machine parts on which inspection, maintenance and repair work are performed — if required — must be de-energised. First check that parts that have been disconnected from the power are free of voltage, then earth and short circuit them and isolate adjacent live parts.
- If work is required on live parts, involve a second person who can disconnect the main power switch in case of an emergency. Block off the work area with a red and white security chain and a warning sign. Only use insulated tools.

2.4.2 Danger due to hot surfaces

Hot surfaces can cause serious injuries.

The machine reaches high temperatures during operation.

- Take safety precautions against fires, burns and overheating.
- Wear personal protective equipment.
- After stopping operation, let the machine sufficiently cool down.

2.4.3 Danger due to pressurised components

Serious injuries may occur due to components under high pressure.

- Prior to maintenance and repair work, depressurise all machine components that are under pressure (take the pressure accumulator into consideration here).
- Regularly check the pressurised components.
- Regularly replace hose lines during preventative maintenance, even if no damage is detected.
- Observe the warning messages and instructions specified in the operating instructions.
- Wear personal protective equipment when working on the machine.

2.4.4 Danger due to oxygen-displacing gases

Risk of suffocation due to high inert gas concentrations.

Higher concentrations of inert gas can result in suffocation, since they displace the atmospheric oxygen.

- Only operate the machine at a well-ventilated location.
If necessary, install a device for monitoring the ambient air.
- Keep the air slots and openings free and clean.
- Make sure that the inert gas equipment is regularly checked for leaks.
- To ensure safe handling, observe the safety data sheet for the inert gas.

2.4.5 Danger of pulling in and crushing

There is a danger of pulling in and crushing due to moving mechanical parts.

- Observe the warning signs.
- Never reach into moving parts.
- Do not remove any protective facilities.

2.5 Noise emission

Refer to the technical data for the machine's noise emission (see "Technical data [► 26]").

To evaluate the overall noise level at the machine's operating site, observe the local noise control regulations and measure the noise if necessary.

2.6 The operator's responsibility

When using the machine in the commercial sector, the operator is subject to the legal obligations on occupational safety.

In addition to the occupational safety instructions provided in these operating instructions, the safety, accident prevention and environmental protection regulations applicable for the location where the machine is operated must be observed.

The operator must

- obtain information about the applicable occupational safety regulations and carry out a risk assessment to identify additional dangers, which arise due to the special working conditions at the machine's operating site. This assessment must be implemented in the form of operating instructions for the machine.
- check during the entire operating time of the machine whether the operating instructions prepared by the operator correspond with the current status of the regulations, and adapt them as necessary.
- secure dangerous areas that are created between the machine and other equipment provided by the customer.
- clearly regulate and define the responsibilities for installation, operation, maintenance and cleaning.
- define the machine operator's responsibility and authorise it to reject instructions from third parties that are detrimental to safety.
- ensure that all personnel who handle the machine have read and understood the operating instructions.
In addition, it must also train the personnel at regular intervals and notify them of the dangers.
- ensure that these operating instructions and all other applicable regulations are readily available to the operating and maintenance personnel.
- regularly check that the personnel are working in a safe manner while remaining aware of the dangers in compliance with these operating instructions.
- provide the personnel with the required personal protective equipment.
- ensure that hearing protection is worn if the permissible noise level (85 dB(A)) is exceeded at the operating site.

The operator is also responsible for ensuring that the machine is in perfect working order. The following therefore applies:

- The operator must ensure that the cleaning and maintenance intervals defined in these operating instructions are observed.

- The operator must have all safety equipment regularly checked for proper functioning and completeness.

2.7 Personnel requirements

2.7.1 Personnel qualifications

Improper handling can result in significant personal injuries and material damages.

- Have all activities performed by appropriately qualified personnel only.

The following qualifications for various areas of activities are specified in these operating instructions:

Instructed person

- The instructed person has been trained using instructions provided by the operator about the work assigned to him/her and the possible hazards in case of improper behaviour.

Skilled personnel

- The specialised personnel can, as a result of his/her technical training, knowledge and experiences as well as knowledge of the relevant regulations, perform the work to which he/she has been assigned and independently identify and avoid possible hazards.

Qualified electricians

- can, as a result of his/her technical training, knowledge and experience as well as knowledge of the relevant standards and regulations, perform work on electrical machines and independently identify and avoid possible hazards.

The qualified electrician is trained for the particular operation site where he/she works and knows the relevant standards and regulations.

Only persons who can be expected to reliably perform their work are permitted to work as operating personnel. Persons whose responsiveness is impaired, e.g. by drugs, alcohol or medicines, are not permitted.

Personnel who are yet to be trained, taught, instructed or are undergoing general training may only work on the machine under constant supervision of an experienced person.

The machine may be used by persons with limited physical, sensory or mental capabilities or with insufficient experience if they are supervised or have been instructed in its safe use and have understood the associated dangers.



NOTE

Observe the age and occupational-specific regulations that apply at the operating site when selecting personnel.

2.7.2 Unauthorised personnel

Unauthorised personnel who do not fulfil the described requirements are not aware of the dangers in the work area.

- Keep unauthorised personnel away from the work area.
- In case of doubt, address the personnel and direct them out of the work area.
- Stop working as long as unauthorised personnel are in the work area.

2.7.3 Instruction

The personnel must be regularly instructed by the operator.

i	NOTE
	For better tracking, document the performance of the training programs and have the participants confirm their participation with their signature.

2.8 Personal protective equipment

Personal protective equipment must be worn when performing work in order to minimise health risks.

- When performing the work, always wear the protective equipment necessary for the respective work.
- Observe the signs in the work area concerning the use of personal protective equipment.
- Adhere to the safety requirements defined by the owner.

Wear the following protective equipment for special work:



Protective footwear with steel caps and puncture-resistant safety soles.



Work gloves to protect against injuries.

2.9 Safety equipment on the machine

Missing or non-functioning safety equipment can result in severe injuries.

- Only operate the machine if all the safety equipment is fitted and functional.
- Prior to starting work, check whether the safety equipment is functional and installed correctly.
- Never disable the safety equipment.
- Make sure that the safety equipment is always freely accessible.

The machine was manufactured in accordance with the legal regulations that apply in the European Union.

The machine, however, may pose dangers if it is not operated correctly or in a proper condition. Dangerous areas that cannot be eliminated by design are fitted with safety equipment and, where necessary, marked by warning signs on the machine and by corresponding safety instructions in the operating instructions.

The machine is equipped with the following safety equipment:

- Warning signs
- Safety and pressure relief valves
- The motors are protected with motor protection switches.
- Protective covers
- EMERGENCY STOP button on the control panel

2.10 Signage on the machine

Stickers and signs can become dirty or otherwise unrecognisable over time.

- Always keep all safety, warning and operating instructions in an easily readable condition.
- Immediately replace damaged signs or stickers.

The following symbols and signs are located on the machine. They refer to the immediate surroundings where they are attached.



Do not touch!

The pictogram is located at the areas of the machine where there is a danger of crushing during operation due to moving assemblies.



Danger due to electrical voltage!

The symbol is located at the back of the machine and indicates electrical voltages that are applied to the control panel.

2.11 Conversions prohibited

Any conversions and modifications on the machine, in particular, removing or manipulating the safety equipment are prohibited.

The manufacturer no longer assumes any liability or provides any warranty if unauthorised conversions or modifications are made to the machine.

The electromagnetic behaviour of the machine can be adversely affected by additions or modifications of any kind. Therefore, do not make any changes or additions to the machine without consulting or the written consent of the manufacturer.

Opening the housing is prohibited.

2.12 Spare parts

Risk of injury due to incorrect or faulty spare parts.

Incorrect or faulty spare parts can result in damage to and malfunctions or total failure of the machine and endanger safety.

- Only use original spare parts or spare parts approved by the manufacturer.

The manufacturer assumes no liability for damages resulting from the use of spare or wear parts that have not been approved by the manufacturer.

2.13 Auxiliary and operating materials

Risk of injury due to impermissible auxiliary and operating materials.

Impermissible auxiliary and operating materials can result in damage to and malfunctions or total failure of the machine and endanger safety.

- Only use auxiliary and operating materials that have been specified and approved by the manufacturer.

The manufacturer assumes no liability for damage resulting from the use of auxiliary and operating materials that have not been approved by the manufacturer.

2.14 Accident prevention measures

2.14.1 Preventative measures

- 1 Always be prepared for accidents or fires.
- 2 Keep first aid equipment (first aid kit, blankets, etc.) and fire extinguishers readily available.
- 3 Familiarise personnel with accident signaling, first aid and rescue equipment.
- 4 Keep the access roads clear for the rescue vehicles.

2.14.2 Response measures in case of accidents

- 1 Immediately shut down the machine.
- 2 Initiate first aid measures.
- 3 Rescue people from the danger zone.
- 4 Notify the responsible personnel at the operation site.
- 5 Alert the emergency services.
- 6 Clear the access roads for the rescue vehicles.

3 Technical data

3.1 Machine data

Specification	Value Unit
Height	1636 mm
Width	783 mm
Width: Table rotation	973 mm
Depth	1091 mm
Total weight (without options)	300 kg
Power supply	400 V Three-phase
Frequency	50 Hz
Nominal power (with heating)	3.5 kW
Mains fuse	16 A
Suction power of vacuum pump	63 m ³ / h
Final vacuum pressure	1/99.9 mbar/%
Maximum standard tray height	100 mm
Maximum seal	457 x 266 mm
Maximum film reel width	310 mm
Maximum film reel diameter	250 mm

3.2 Tray use

Use	Value (in mm)	Fig.
1-fold use	457 x 266	
2-fold use	457 x 122.5	
2-fold use	218 x 266	
3-fold use	138.35 x 266	
4-fold use	218 x 122.5	
4-fold use	98.52 x 266	
6-fold use	138.35 x 122.5	
8-fold use	98.48 x 122.5	

3.3 Ambient conditions

Information	Value	Unit
Operating ambient temperature range	+10 ... +30	°C
Max. operating humidity (non-condensing)	80	%
Max. altitude above sea level	2000	m

3.4 Type plate

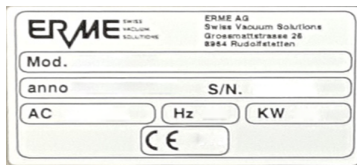


Fig. 1: Type plate

The type plate is located on the rear of the machine and contains the following information:

- Manufacturer address
- Model designation
- Year of manufacture
- Serial no.
- Input voltage
- Frequency
- Power
- CE label

4 Structure and function

4.1 Functional description

The machine is exclusively intended for vacuum sealing food containers.

The mould box with the positioned container is inserted up to the centre of the bell. The film required for the packaging process is unwound from a film reel and guided through the machine.

At the start of the device cycle, the bell closes the chamber and the pump generates a vacuum by pumping the air out of the chamber and the tray with the food to be preserved. An inert gas is then injected. The tray with the food to be packaged is sealed. If the machine is equipped accordingly, the film is stamped at the edge of the tray. The air now flows into the chamber again and returns the atmospheric pressure to the value of the exterior environment (atmosphere).

The machine can optionally be equipped with a rotary table designed to load and unload the second chamber during the packaging cycle.

4.2 Machine overview

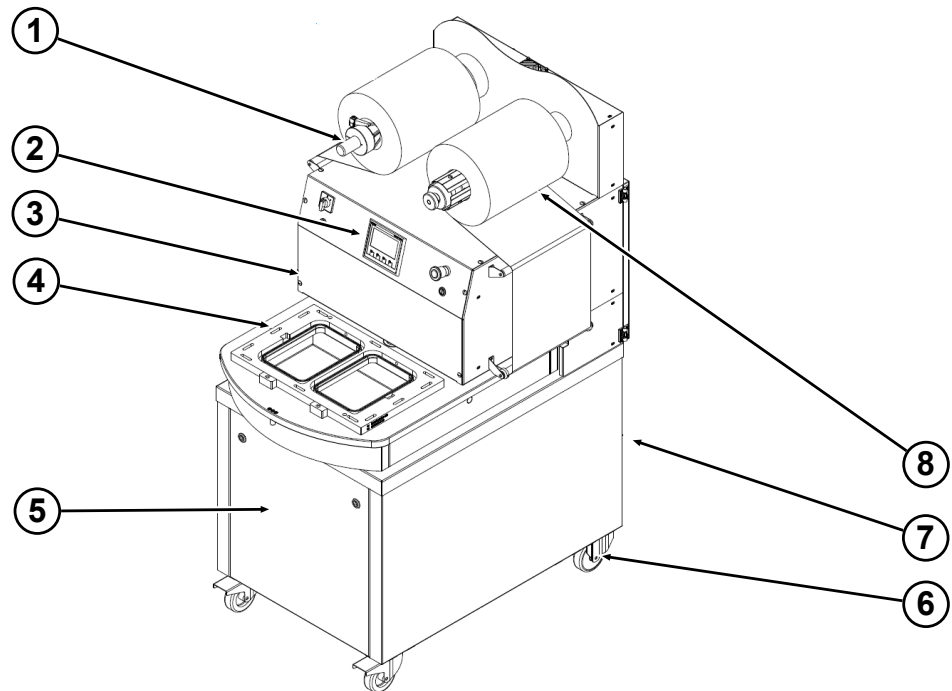


Fig. 2: Machine front

1 Shaft on which the film reel is mounted for sealing	2 Control panel
3 Central area with the sealing mould, where the packaging process takes place	4 Rotary table with two separate vacuum chambers
5 Machine housing	6 Transport rollers
7 Switch cabinet (at the rear of the machine)	8 Shaft on which the film waste is collected

4.3 Options

The machine can be equipped with the following options:

- Pneumatic tray lifting system
- Automatic rotary table rotation
- Photocell print centring
- Skin packaging system

4.4 Operating modes

The machine can be operated in the following operating modes:

Tray packaging mode

The tray packaging mode enables the packaging of trays under modified atmosphere.

SKIN operating mode (optional)

The SKIN operating mode enables the vacuum containers to be packaged.

4.5 Control panel

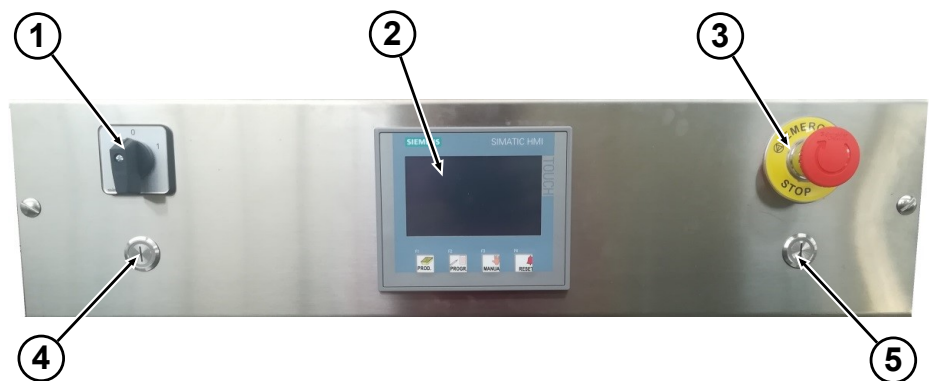


Fig. 3: Control panel

- | | |
|--------------------------------------|--------------------------------------|
| 1 Main switch 0/1 | 2 HMI multifunction control panel |
| 3 EMERGENCY STOP button | 4 START cycle and RESET alarm button |
| 5 START cycle and RESET alarm button | |

The control panel is used to display the various phases of the operating cycle and the respective progress. In the event of failure or malfunctions, the corresponding error message is output via the display along with the cause of the malfunction.

4.6 Control panel: automatic rotary table rotation (optional)

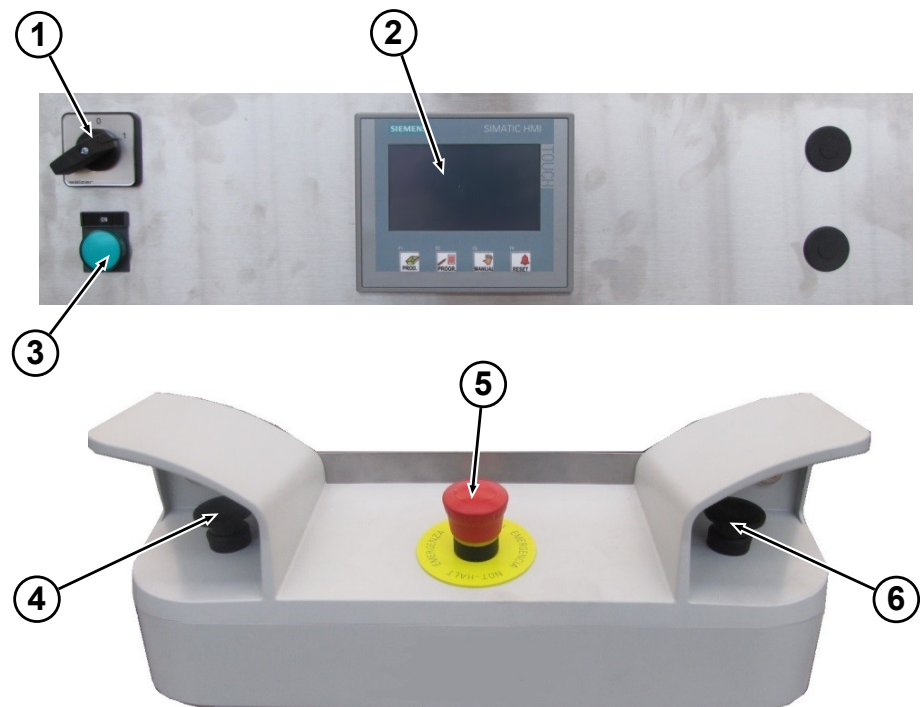


Fig. 4: Control panel

1 Main switch 0/1	2 HMI multifunction control panel
3 Cycle status indicator	4 START cycle and RESET alarm button
5 EMERGENCY STOP button	6 START cycle and RESET alarm button

4.7 Description of the user interface

4.7.1 Structure of the screen display

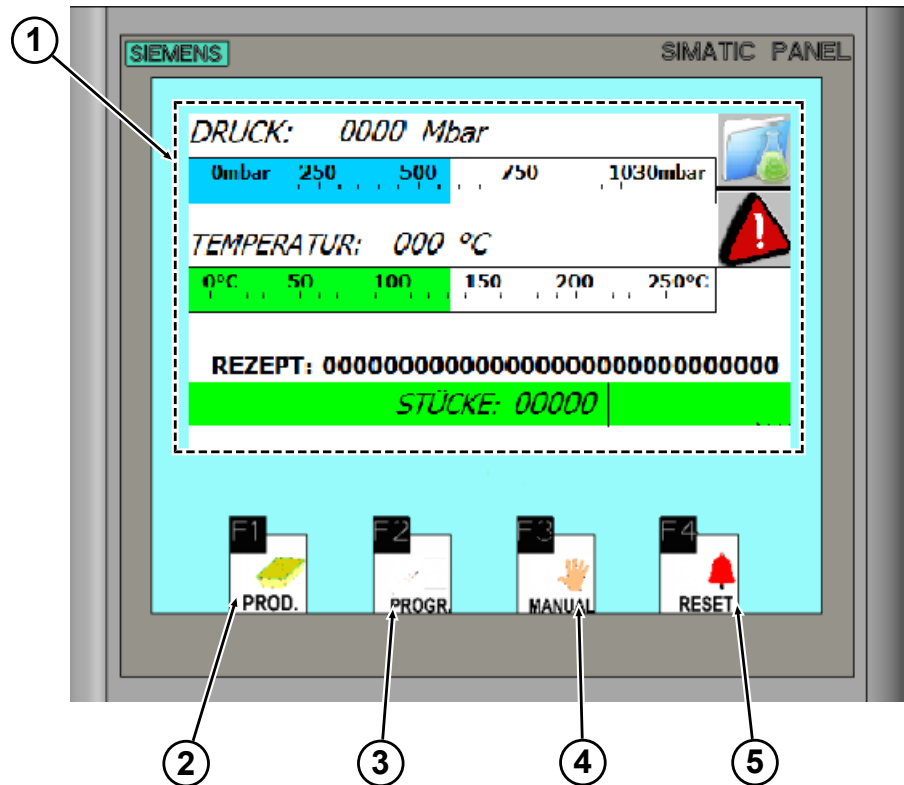


Fig. 5: Subdivision of the display area

No.	Element	Function
1	Display	Display with visualisation area for the content of the current page.
2	"F1-PROD" button	Buttons for displaying <ul style="list-style-type: none"> – the pressure in the vacuum chambers (in mbar), – the number of pieces produced, – the sealing temperature and – the number of the recipe used in real time.
3	"F2-PROGR." button	Button for editing parameters to create a recipe.
4	"F3-MANUAL" button	Buttons to access the "Manual Control" field. The "Manual control" field contains the operations that can be carried out when the machine is stopped.
5	"F4-RESET" button	Button on the control panel for resetting alarms.

4.7.2 Description of the menu pages

4.7.2.1 F1-PROD screen

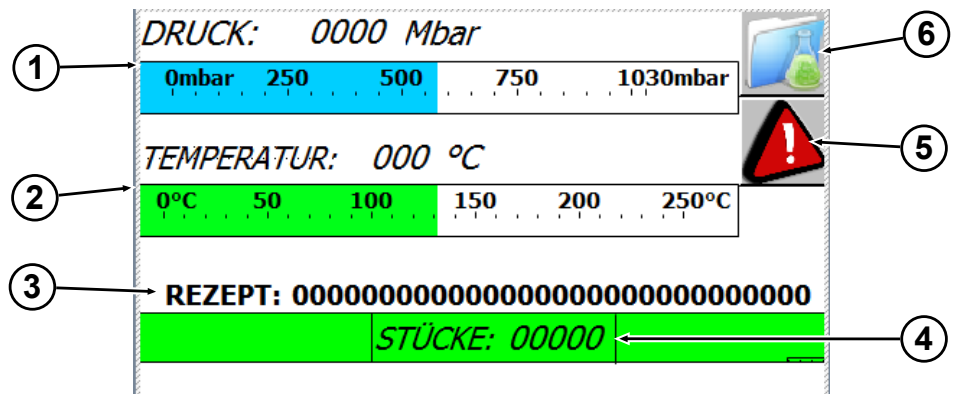


Fig. 6: F1-PROD screen

No.	Element	Function
1	"Vacuum pressure" display field	Displays the progress of the vacuum pressure during the packaging cycle in real time.
2	"Temperature" display field	Displays the progress of the sealing temperature during the packaging cycle in real time.
3	"Recipe used" display field	Displays the recipe used in the production cycle.
4	"Pieces" display field	Value that indicates the number of pieces produced.
5	"Alarm" button	Opens the alarm page.
6	"Recipe" button	Opens the page for setting the recipes.

4.7.2.2 F2-PROGR screen

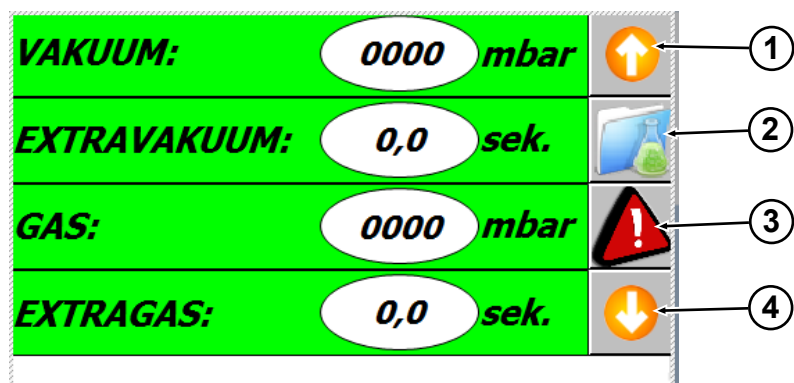


Fig. 7: F2-PROGR screen

No.	Element	Function
1	"Up arrow" button	Allows you to navigate through the different screen pages.
2	"Recipe" button	Opens the page for setting the recipes.
3	"Alarm" button	Opens the alarm page.
4	"Down arrow" button	Allows you to navigate through the different screen pages.

4.7.2.3 F3-MANUAL screen

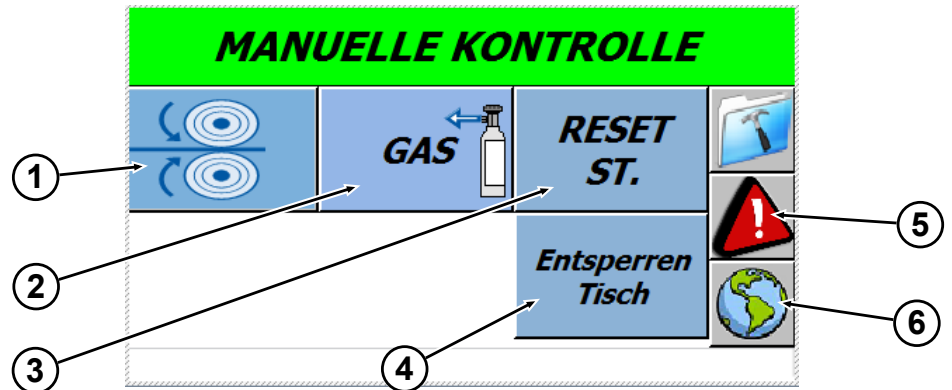


Fig. 8: F3-MANUAL screen

No.	Element	Function
1	"Manual film cycle" button	Allows you to unwind a piece of film (used for changing reels or removing film waste).
2	"Gas release" button	Gas discharge from the pipes; to be used when a new inert gas is used. (Optional, only available if the machine is prepared for use with inert gas)
3	"Reset pieces" button	Resets the number of pieces indicated on the production page screen (F1-PROD).
4	"Unlock table" button	Enables manual release of the rotary table in case it was blocked by accident.
5	"Alarm" button	Opens the alarm page.
6	"Change language" button	Change language function: to change the language of the control panel.

4.7.2.4 Changing the language

To change the language:

- 1 Press the "F3-MANUAL" button.



- 2 Press the "Globe" button.

⇒ A selection of available languages appears.

- 3 Press the flag symbol of the desired language.

- 4 Press the "START" button.

⇒ The PLC adjusts to the selected language.

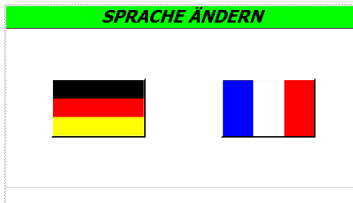


Fig. 9: Example for the language change selection

4.8 Meaning of the parameters

4.8.1 General parameters

Designation	Meaning / function
Vacuum (mbar)	<p>Value of the vacuum generated in the packaging chamber, variable between 0 and 1000 mbar.</p> <p>The value of atmospheric pressure at sea level is 1013 mbar, which is equivalent to a residual oxygen quantity of 20.95%. Extracting the air in a packaging means reducing the pressure and thus the residual oxygen.</p> <p>Also take the conversion table into account (see Chapter Conversion table for vacuum level [▶ 39]).</p>
Extra Vacuum	<p>Extra vacuum time: the Extra Vacuum value makes it possible to eliminate virtually all the air that remains trapped in some products with "spongy" consistency (e.g. in pizzas); variable between 0 and 9.9 seconds.</p>
Gas (mbar)	<p>Value of the inert gas vacuum generated in the packaging chamber.</p> <p>The gas is essential for packaging with very low residual oxygen (and therefore very low pressure in the packaging). It balances the internal and external pressure of the packaging and prevents the external pressure from pressing on the walls of the packaging and deforming it. The gas is also necessary to slow down the spoilage process of the product and extend its shelf life; variable between 0 and 1000 mbar.</p>
Extra gas	<p>Additional time for gas emission to produce inflated packaging. This is particularly useful for packaging dark meat, variable between 0 and 1 second.</p>

Designation	Meaning / function
Seal delay	Delay time of the sealing phase. This is useful to ensure an even distribution of the inert gas in the packaging, variable between 0 and 9.9 seconds.
Sealing time (sec)	Contact time between the tray and the film to carry out the hermetic sealing of the packaging, variable between 0 and 60 tenths of a second (i.e. between 0 and 6.0 seconds).
Vent time del.	Delay time between sealing and ventilation. This function is necessary if the packaging has a concave film. This is useful for cooling the sealing seam before ventilation; variable between 0 and 9.9 seconds.
Ventilation time	Time allowed for air to return to the upper chamber to restore atmospheric pressure; variable between 0 and 9.9 seconds.
Film progress	Feed rate value of the neutral film. This value corresponds to the length of the film that is unwound during each sealing cycle. Determine the optimum value through practical tests to reduce film consumption. Variable between 0 and 9.9 seconds.
Delay film cycle	Delay time to start unwinding the film after opening the chambers. Variable between 0 and 9.9 seconds.
Mould cavity	Sets the number of trays packed per cycle. It is used to increase the piece counter by the number of trays sealed per cycle. E.g. sets the number 6 if there are 6 trays in the mould.
Sealing temperature (°C)	Temperature of the heating element for sealing the film on the tray.
Cycle start delay	Delay time of the cycle start after pressing the two start buttons.

4.8.2 Parameters for photocell print centring (optional)

i	NOTE
	Parameters for photocell print centring are only available if the machine is equipped with a photocell unit for print centring.

Designation	Meaning / function
Film type	<p>There are three types of film unwinding:</p> <ol style="list-style-type: none"> 1. PRINTED if a film with overprint and references is used for print centring. 2. NEUTRAL in case of neutral film. If this parameter is set, the film can be unwound in the length of the piece defined in the "Film feed rate" parameter. 3. TIME, to be used to scan the film feed (sensor or photocell) in case of a system failure. This function can be used to unwind the FILM by setting the unwind time. Increase or decrease the "Film time" parameter to let the optimum amount of film advance.
Photocell film time	Delay in stopping the film after scanning the photocell for print centring, if provided. Variable between 0 and 9.9 seconds.
Film time	Allows you to set the unwinding time of the film, if the "Film time" option was selected during "film scanning".

4.8.3 Parameters for the pneumatic lifting of the tray (optional)

i	NOTE
	Parameters for the pneumatic lifting of the tray are only available if the machine is equipped with a pneumatic lifting option for the trays.

Designation	Meaning / function
Time to lift the tray	Time for which the trays remain lifted at the end of the rotation. If the rotary table is turned, the trays are lowered immediately, regardless of the set time.

4.8.4 Parameters for the automatic rotation of the table (optional)

i	NOTE
	Automatic rotation parameters for the automatic rotation of the rotary table are only available if the automatic table rotation group is available on the machine.

Designation	Meaning / function
High speed	Speed of the rotary table at the beginning of the rotation.
Low speed	Speed of the rotary table before the rotary table lock is inserted

4.8.5 Parameters for the packaging skin (optional)

i	NOTE
	Parameters for the packaging skin are only available if the machine is designed for the skin packaging type.


Designation	Meaning / function
Lower vacuum delay	Delay time for starting the vacuum in the lower chamber relative to the upper chamber.
Film heating time	Time period between when the film is positioned in the packaging chamber and when the vacuum in the upper chamber starts.
Vacuum time for lifting film	Corresponds to the time of the upper vacuum that lifts the film.
Film heating time on the cover	Corresponds to the time in which the film is heated when it makes contact with the cover of the sealing device.

4.8.6 Conversion table for vacuum level

mbar	101	900	800	700	600	500	400	300	200	100	50	20	10	5
	3													
% vacuum	0	10	20	30	40	50	60	70	80	90	95	98	99	99.9
Residual oxygen	20.9	18.61	16.54	14.48	12.41	10.34	8.27	6.20	4.14	2.07	1.03	0.41	0.21	0.1
	5													

5 Transport

5.1 Safety instructions

	SAFETY INSTRUCTIONS
	<p>Working safely during transport!</p> <p>Perform all work while observing the safety instructions listed in the following:</p> <ul style="list-style-type: none"> ▶ Adhere to the regulations listed in Chapter Safety during all work on/with the machine. ▶ Refrain from unsafe working methods. Transport work may only be performed by trained specialists. ▶ Perform the work only as per the regulations in these operating instructions. ▶ Adhere to the corresponding national regulations on working safety and the locally valid safety regulations. ▶ Wear the specified personal protective equipment. ▶ Lift heavy loads only with suitable lifting and fastening equipment at the intended attachment points. ▶ Do not remain or work under suspended loads. ▶ Observe the corresponding national regulations on the transport of goods (paying particular attention to load securing). ▶ Do not use the attachment facilities of individual parts (e.g. transport eyelets) for the transport of other parts. ▶ Make sure that no persons are endangered by the transport.

Special safety instructions:

- Observe the information on the packaging regarding the designated attachment points.
- Do not lift the unit on protruding machine parts or on eyelets of fitted components. Check that the lifting equipment is securely attached.
- Only use approved lifting gear and fastening equipment with sufficient load-bearing capacity.
- Do not use any damaged ropes and/or belts.
- Do not lay ropes or straps over sharp edges or corners. Do not knot or twist them.

Eccentric centre of gravity

Packages may have an eccentric centre of gravity. If the package is fastened incorrectly, it may tilt and cause life-threatening injuries.

- Observe the markings on the packages.
- Attach the crane hook so that it is located at the centre of the gravity.

Incorrect transport

Improper transportation may result in significant material damage.

- Prior to each transport, make sure that the machine is correctly packaged.
- Do not tilt the machine during transport and only transport the machine horizontally.
- When unloading delivered packages and when transporting them on the premises, proceed with caution and observe the symbols and instructions on the packaging.
- Do not remove the packaging until shortly before installation.

5.2 Personnel qualifications

Transport, packaging and storage may only be carried out by personnel who

- are authorised to do so due to their training and qualifications.
- are tasked to do so by the machine operator.

5.3 Transport inspection

After receiving the machine:

- 1 Refer to the order papers for the scope of machine delivery and compare them with the delivery note.
- 2 Check that the delivery is complete using the delivery note.
- 3 Check the delivery for visible damage.
- 4 Report an incomplete or damaged delivery to the dealer/supplier immediately.

5.4 Packaging

The used packaging materials are recyclable. Dispose of packaging materials that are no longer necessary according to the local applicable regulations.

5.5 Storage


If the machine must be stored for downtime, the following measures must be taken:

- Disconnect the compressed air system
- Disconnect the inert gas system
- Disconnect the electrical system
- Use a closed room to store the unit
- Grease any parts that are not painted

-
- Protect the machine from shocks and/or loads
 - Protect the machine from the elements, moisture and high temperature fluctuations
 - Protect the machine from contact with corrosive materials
 - Drain the cooling water system (if fitted)

6 Installation

6.1 Safety instructions

	SAFETY INSTRUCTIONS
	<p>Working safely during connection work!</p> <p>Perform all work while observing the safety instructions listed in the following:</p> <ul style="list-style-type: none">▶ Adhere to the regulations listed in Chapter Safety during all work on/with the machine.▶ Refrain from unsafe working methods. Work on the connections may only be performed by trained specialists.▶ Perform the work only as per the regulations in these operating instructions.▶ Adhere to the corresponding national regulations on working safety and the locally valid safety regulations.▶ Wear the specified personal protective equipment.

Additional warnings:

Danger due to electrical voltage!

There is a risk of death when making contact with lines or components that carry voltage.


- Work on electrical equipment must only be carried out by qualified electricians or personnel under the guidance and supervision of a qualified electrician in accordance with electrical engineering regulations.

Danger due to pressurised lines and components!

Serious injuries may occur due to pressurised lines and components.

- Have work on the pneumatic system performed exclusively by trained specialists.


6.2 Electrical connection

	⚠ DANGER
	<p>Risk to life!</p> <p>There is a risk of fatal injury in case of contact with live parts.</p> <ul style="list-style-type: none">▶ Work on the electrical connections may only be carried out by trained specialist electricians.▶ Switch off the voltage during all connection work. Only switch on the voltage during commissioning.

During electrical connection, observe the following instructions to ensure safe and fault-free machine operation:

- ✓ Check that the existing mains voltage matches the voltage specified on the type plate. This data must match to ensure that the machine is not damaged.
- ✓ Refer to the Technical data chapter for the fuse necessary for operating the machine.
- ✓ Make sure that the power cable is not damaged and not routed over sharp edges.
- ✓ The connection cable must not be tightly stretched, kinked, crushed or knotted or come into contact with hot surfaces.
- ✓ The electrical safety of the machine is only ensured if it is connected to a protective conductor system (residual current circuit breaker with a trip current of 30 mA) that has been installed in accordance with the applicable regulations. The machine must not be powered from a socket without a protective conductor. In case of doubt, the installation must be checked by a qualified electrician. The manufacturer accepts no responsibility for damage caused by a missing or disconnected protective conductor.
- ✓ Install the connection cable so that it does not create a tripping hazard.
 - 1 Route and connect all electrical lines as per the wiring diagram.
 - 2 Connect the mains plug to the socket.

6.3 Compressed air connection

	⚠ WARNING
	<p>Risk of injury!</p> <p>An incorrect compressed air connection can lead to various injuries.</p> <ul style="list-style-type: none"> ▶ Connection work may only be carried out by a corresponding specialist. ▶ Route compressed air lines so that they are protected from damage. <p>Make sure that there is no risk of hitting the cable (whiplash effect) or risk of tripping.</p>

The machine is equipped with a quick-release coupling for connection to the compressed air supply system.

When connecting the compressed air, observe the following instructions to ensure safe and fault-free machine operation:

- ✓ Check that the compressed air supply matches the pressure indicated on the type plate. This data must match to ensure that the machine is not damaged.
- ✓ Make sure that there is a compressed air source with a suitable container to ensure stable pressure during operation.
- ✓ Make sure that the pressure of the compressed air supply is between 6 and 7 bar.
- ✓ Install a pneumatic hose with an inner diameter of 8 mm and an outer diameter of 10 mm for the connection to the machine.

1 Connect the pneumatic hose to the supply network.

2 Connect the quick-release coupling for the compressed air connection at the lower rear of the machine to the pneumatic hose.

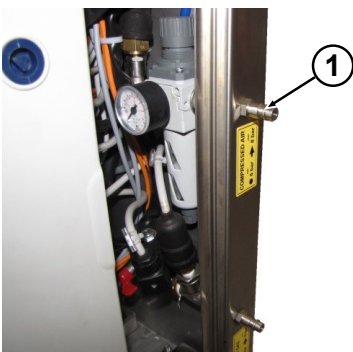


Fig. 10: Quick-release coupling for the compressed air connection



Fig. 11: Pressure control knob

To adjust the compressed air supply:

- Turn the compressed air knob (2) clockwise: the pressure is increased.
- Turn the compressed air knob (2) anti-clockwise: the pressure is reduced.

**NOTE**

For further information, also refer to the notes in the applicable documents.

6.4 Inert gas connection (optional)

**WARNING****Fire hazard!**

There is a risk of fire if vacuum pumps are not used correctly!

- ▶ For a machine that is not fitted with an oxygen pump, the oxygen content (O₂) in the gas mixture must never exceed 20%.
- ▶ Have all work on the vacuum pump carried out by qualified personnel only.
- ▶ Observe the notes and instructions in the other applicable documents of the vacuum pump.
- ▶ Make sure that the installation area of the machine is sufficiently ventilated.
- ▶ Make sure that fittings, valves, and pipes do not come into contact with oil and grease. Clean the supply lines before connecting them.

**NOTE**

We recommend equipping the inert gas supply with a pressure reducer before connecting the machine. This allows you to set the optimum pressure for the specific production.

The following gases are to be used in machines prepared for the introduction of inert gas:

- Nitrogen (N₂)
- Carbon dioxide (CO₂)
- Any mixture of these gases, with or without oxygen (O₂).

For machines that provide inert gas packaging, connect the gas supply system to the machine as follows:

- ✓ Make sure that the pressure of the compressed air supply is between 3 and 6 bar.

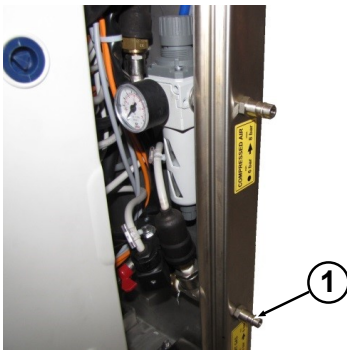


Fig. 12: Inert gas connection



Fig. 13: Securing the gas cylinder

- ✓ Install a pneumatic hose with an inner diameter of 8 mm and an outer diameter of 10 mm.

- 1 Connect the inert gas supply to the inert gas connection (1).
- 2 After it is connected to the hose connector, secure the hose in the correct position with a suitably tightened hose clamp.

- 3 When using gas cylinders, place them close to the machine and secure them against falling over using suitable equipment.

6.5 Checks before commissioning

Carry out the following checks before commissioning the machine:

- ✓ Stability check
 - 1 Make sure that the machine is completely horizontal and that any installed wheels are braked.
 - 2 Make sure that the machine does not move, even if you try to push it.
- ✓ Compressed air connection
 - 3 Make sure that the pressure of the air supplied by the compressor is within the permissible value range of at least 6 bar and at most 8 bar. The value is indicated near the hose connector at the rear of the machine.
 - 4 Make sure that the machine is connected to the compressed air supply system.
- ✓ Electrical connection
 - 5 Make sure that the electrical data (voltage, frequency, power) indicated on the machine's type plate matches the characteristics of the mains supply.
 - 6 Make sure that the machine is connected to the mains supply.
- ✓ Inert gas connection (for machines equipped for this purpose)
 - 7 Make sure that the pressure of the gas that is supplied to the machine is within the permissible value range of minimum 3 bar and maximum 6 bar. The value is indicated near the connection at the rear of the machine.
 - 8 Make sure that the gas composition corresponds to the properties specified in Chapter **Inert gas connection (optional)** [▶ 46]
 - 9 Make sure that the machine is connected to the inert gas supply
- ✓ Check for film movement
 - 10 Turn main switch to position "ON" to switch on the machine.
 - 11 Wait a few seconds until "Olympia Pro" is displayed on the control panel.

12 Press the "F4-RESET" button.

⇒ The control system of the safety equipment is active.

13 Press the "F3-MANUAL" button.



14 Press the "Film movement" button


⇒ A film movement cycle is carried out.

15 Check the rotation of the film unwinding shaft and the film waste shaft.

16 Make sure that the film unwinding shaft and the film waste shaft stop as soon as the shaft specified in the recipes has been unwound.

7 Control/operation

7.1 Safety instructions

	SAFETY INSTRUCTIONS
	<p>Working safely during operation!</p> <p>Perform all work while observing the safety instructions listed in the following:</p> <ul style="list-style-type: none">▶ Adhere to the regulations listed in Chapter Safety during all work on/with the machine.▶ Refrain from unsafe working methods. The machine may only be operated by trained operators.▶ Perform the work only as per the regulations in these operating instructions.▶ Adhere to the corresponding national regulations on working safety and the locally valid safety regulations.▶ Wear the specified personal protective equipment.▶ Operate the machine only if no damage is apparent and when all safety facilities are in perfect condition.

7.2 Requirements for the installation site

The following requirements for the installation site must be met in order to ensure safe and smooth machine operation:

- Operate the machine on a solid level surface. The clearance to the walls and other objects must be at least 30 cm.
- The power socket must be easily accessible so that the mains connection can be quickly disconnected.
- The machine must not be operated or stored outside.
- When selecting the installation site, take the space requirements for the connections into consideration.
- The machine must be installed in a well-ventilated, dry room. Direct contact with water or vapour must be avoided.
- The machine may only be operated if the locking brakes on the transport rollers are closed (pressed down).

7.3 Information about packaged goods

7.3.1 Instructions on storage times

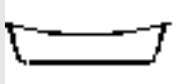
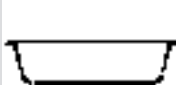

The following information is based on experience and may deviate upwards or downwards from various factors, such as age and food, feeding of livestock and refrigeration chain, etc.

The company ERME AG therefore rejects all liability for any resulting damage.

The storage times refers to vacuum-packed, non-frozen products that are stored in a cool location.

Product	Storage times	Comments
Veal	10 - 14 days	
Beef	4 - 6 weeks	Ripening process 2 - 3 weeks
Pork	7 - 10 days	
Poultry	10 - 14 days	Cover sharp bones
Fish	5 - 10 days	Smoked several weeks
Sausage products	7 - 14 days	Depending on product quality
Smoked	Weeks/months	
Pasta	5 - 10 days	Possibly under protective atmosphere
Baked goods	5 - 10 days	Possibly under protective atmosphere
Cheese	Days/weeks	– Depending on product quality – Possibly under protective atmosphere
Fruit, vegetables	7 - 15 days	Possibly blanch
Salads	5 - 10 days	Only partially seal
Liquids	7 - 14 days	Use slanted insert

7.3.2 Packaging examples

Tray and film	Film	Pressure difference	Example only with vacuum, without gas	Example only with vacuum and gas	Product example
	Concave	Atmospheric pressure > Packaging pressure	900 – 950 mbar	8 mbar vacuum 900 mbar gas	Products immersed in oil
	Flat	Atmospheric pressure = Packaging pressure	No vacuum, only sealing	8 mbar vacuum 990 mbar gas	General product
	Convex	Atmospheric pressure < Packaging pressure	Not possible	8 mbar vacuum 990 mbar gas + 0.4 sec extra gas	Dark meat

7.3.3 Recommended sealing temperature and sealing time

Sealing temperature and sealing time may vary depending on the material used. In the case of the sealing temperature, for example, the optimum value may vary from 15°C to 20°C depending on the material of the film and tray.

i	NOTE
	The parameters specified below are not binding. They are to be understood as a starting point for achieving optimum results. In any case, they must be checked and optimised depending on the machine.

Tray material	Film material	Sealing temperature	Sealing time
PP	PP/PET	160 - 170°C	1 - 2 sec
PET	PET	170 - 190°C	1.5 - 2.5 sec
PS	Shrinkwrap	115 - 130°C	0.5 - 2 sec

7.3.4 Packaging liquids

When packaging liquid products, it must be ensured that the vacuuming process is interrupted in good time. Liquids foam under a vacuum. This effect is triggered by reducing the atmospheric pressure in the vacuum chamber. Since the liquid surges up, there is a risk of the liquid leaking out of the tray. This then results in material loss and soiling of the vacuum chamber and the sealing plate.

7.3.5 Notes on SKIN packaging (optional)

When the machine is configured for skin operation, the machine carries out the vacuum cycle in both the upper and lower chambers.

To operate the machine in SKIN mode, the "GAS" function on the control panel must be set to "0".

Proceed as follows for optimum packaging:

- 1 Set parameter "Lower vacuum delay":
 - ⇒ Delay time for starting the vacuum in the lower chamber relative to the upper chamber.
- 2 Set the "Film heating time" parameter:
 - ⇒ Time period between when the film is positioned in the packaging chamber and when the vacuum in the upper chamber starts.
- 3 Set the "Vacuum time for lifting film" parameter:
 - ⇒ Corresponds to the time of the upper vacuum that lifts the film.
- 4 Set the "Film heating time on cover" parameter:
 - ⇒ Corresponds to the time in which the film is heated when it makes contact with the cover of the sealing device.

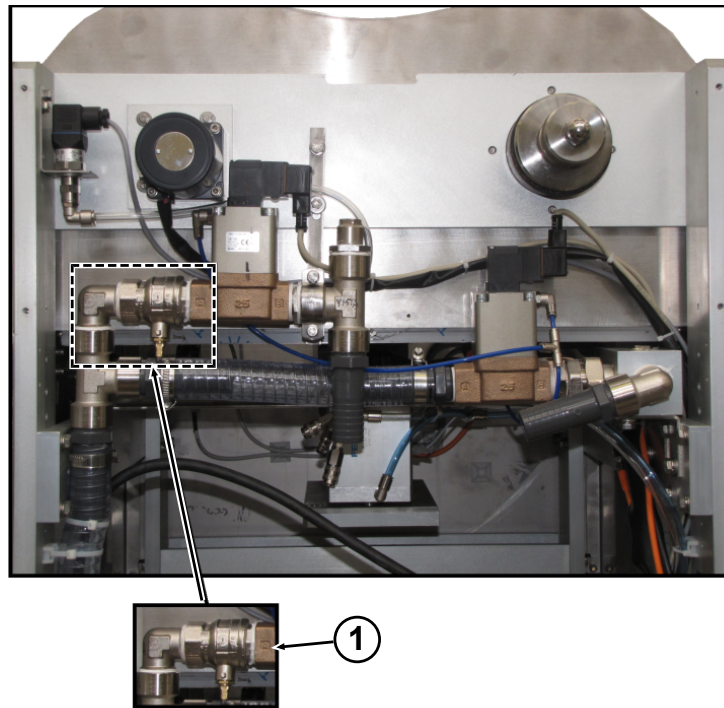



Fig. 14: Flow controller RB1

5 Set flow controller for partialisation of lower suction (RB1):

- ⇒ Opening the valve creates a stronger vacuum in the lower bell and the film is moved towards the product. Closing the valve reduces the vacuum in the lower chamber and moves the film up. Tests must be carried out to achieve the optimum setting for the best packaging result.

7.3.6 Note for the packaging vacuum gas mould on the machine with skin circuit

	⚠ WARNING
	<p>Risk of burns on hot surfaces.</p> <p>The mould reaches high temperatures during operation. There is a considerable risk of burns in case of contact with heated assemblies.</p> <ul style="list-style-type: none"> ▶ Wear protective gloves. ▶ Before all work, make sure that components have cooled down to ambient temperature.



⚠ WARNING

Risk of cuts on components with sharp edges!

If work is carried out improperly, there is a risk of cuts from components with sharp edges.

- ▶ Wear protective gloves.
- ▶ Do not place hands under components with sharp edges.

If a vacuum and gas mould is used on the skin machine, set a GAS value other than "0" on the control panel.

If the mould is to be used in gas-vacuum operation, remove the air sealing caps on the upper bell of the mould.

Remove the mould from the machine for this operation as follows:

- 1 If the mould has been used before performing this operation, wait until it has sufficiently cooled down.
- 2 Open the rear flap.
- 3 Unscrew the electrical connector on the housing.
- 4 Disconnect the pneumatic supply (if installed).
- 5 Disconnect the quick-release coupling of the vacuum line.
- 6 Lift the pin that is used as limit stop for the upper bell.
- 7 Prepare a table on which the bell can be positioned.
- 8 The bell must be pulled out by two people using the handles and placed on the shelf with the lower part facing up.
- 9 Loosen the fastening screws of the air sealing caps



- 10 Remove the air sealing caps.
 - 11 Keep the air sealing caps stored in a safe place.
 - 12 Make sure that two people lift the bell by the handles and insert it into the machine.
 - 13 Connect the quick-release coupling of the vacuum line.
 - 14 Connect the pneumatic supply (if installed).
 - 15 Screw the electrical connector onto the housing.
 - 16 Close the rear flap.
- ⇒ The skin mould can be used as a vacuum gas mould.

**NOTE**

There is no need to operate RB1 in the operating cycle with the vacuum gas mould.

7.4 Packaging cycle

A packaging cycle is broken down as follows:

- 1 The tray is inserted into the first chamber.
- 2 The table rotates (can be performed automatically using the optional kit).
- 3 The chamber is closed.
- 4 A vacuum is generated in the chamber (*).
- 5 Gas is fed into the chamber (*).
- 6 The tray is sealed.
- 7 The film is cut around the tray.
- 8 Air is fed back into the chamber (*).
- 9 The chamber opens.
- 10 The film is moved and the waste is collected.

(*). Steps 4, 5 and 8 are only performed by machines that package items under vacuum and/or in a protective atmosphere.

7.5 Preparing the machine

7.5.1 Changing the film reel



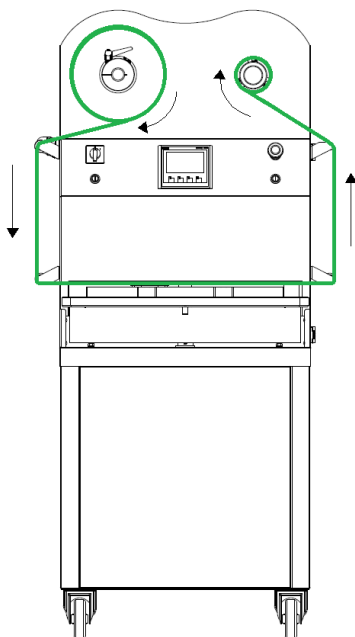
⚠ WARNING


Risk of burns on hot surfaces.

The mould reaches high temperatures during operation. There is a considerable risk of burns in case of contact with heated assemblies.

- ▶ Wear protective gloves.
- ▶ Before all work, make sure that components have cooled down to ambient temperature.

To change the film reel



- 1 Turn main switch to position "0" to switch off the machine.
- 2 Unlock the locking/unlocking device with the supplied key.
- 3 Open the rear plate.
- 4 Make sure that heated components (e.g. the upper bell and the sealing element) have cooled down to ambient temperature.
- 5 Cut the film to separate the unwinding roller from the take-up roller.
- 6 Wind up the reel to be removed so that it is no longer in contact with the machine.
- 7 Remove the aluminium cone holding the roll and pull the roll off the shaft.
- 8 Insert the new roll between the two cones and ensure that the film is unwound clockwise.
- 9 Insert the aluminium cone and press until the roller is properly locked, then tighten the handle.
- 10 Unroll about 2 metres of film and guide it around the rollers of the machine, following the path shown in the figure (grab the film at the back of the machine).
- 11 Manually wrap the film around the waste recovery shaft by one or two turns.
- 12 Turn the waste recovery shaft clockwise to tighten the film.
- 13 Close the rear plate with the supplied key.
- 14 Turn main switch to position "I" to switch on the machine.
- 15 Press the "F4-RESET" button to clear the alarm on the control panel.
- 16 Press the "F3-MANUAL" button.
- 17 Press the "Film actuation" button  to unwind a piece of film.
- 18 Run a packaging cycle according to the instructions in the chapter "Using the machine" to check that the machine is working properly.
 - ⇒ The machine is ready for operation.

7.5.2 Changing the mould



⚠ WARNING

Risk of burns on hot surfaces.

The mould reaches high temperatures during operation. There is a considerable risk of burns in case of contact with heated assemblies.

- ▶ Wear protective gloves.
- ▶ Before all work, make sure that components have cooled down to ambient temperature.

To change the mould:

- 1 Turn main switch of the machine to position "0" to switch off the machine.
- 2 Unlock the locking/unlocking device with the supplied key.



Fig. 15: Quick-release coupling



Fig. 16: Vacuum hose

- 3 Disconnect the quick-release coupling of the vacuum by pulling it towards you.



Fig. 17: Support

- 4 Place the vacuum hose on the support attached to the side of the machine (optional).

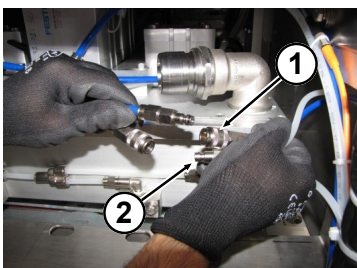


Fig. 18: Quick-release couplings

- 5 First, disconnect the quick-release coupling (1) connected to the white hose.
- 6 Then disconnect the quick-release coupling (2) connected to the blue hose.

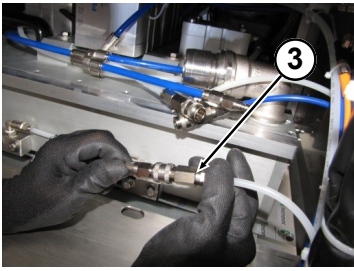


Fig. 19: Inert gas quick-release coupling



Fig. 20: Hand wheel

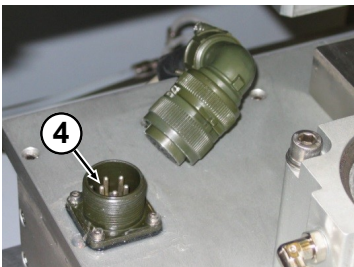


Fig. 21: Electrical plug connection

7 If the machine is prepared for the use of inert gas, disconnect the quick-release coupling 3 (optional).

8 Pull the hand wheel out of the guide.

9 Unscrew the rear electrical plug connection (4).

10 Pull out the upper bell.

11 Prepare a table on which the bell can be placed.

12 The bell must be pulled out by two people using the handles and placed on the shelf with the lower part facing up.

13 Make sure that two people lift the new bell by the handles and insert it into the machine.

14 Connect the quick-release coupling of the vacuum line.

15 Tighten the rear electrical plug connection.

The counterparts to the upper bell are screwed to the rotary table. The counterpart and the upper bell must match.

To change the counterpart:

16 Loosen both screws at the edge of each counterpart and remove the counterpart.

17 Fit a new counterpart and fix it with both screws.

To switch the machine on again:

18 Close the rear plate with the supplied key.

19 Turn main switch to position "I" to switch on the machine.

20 Wait until the sealing temperature is reached.

21 Call up the appropriate program for the product to be packaged.

⇒ The machine is ready for packaging.

7.5.3 Preparing the machine for the inert gas supply (optional)



⚠ DANGER

There is a risk of fire due to use of the wrong inert gas.

There is a risk of fire when injecting gas with oxygen.

- ▶ By default, only nitrogen or a mixture of nitrogen and carbon dioxide may be used as an inert gas.
- ▶ Oxygenated gases (over 21%) may only be used after taking special safety measures (special vacuum pump, special oil and safety valves).

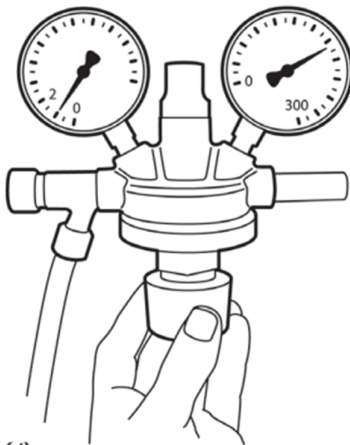


Fig. 22: Valve fitting

- 1 Open the main valve on the gas cylinder.
- 2 Open the knurled screw at the valve fitting (left).
The filling pressure of the gas cylinder is displayed on the right pressure gauge.
- 3 Set the gassing pressure to max. 5 bar (displayed on the left pressure gauge).



SAFETY INSTRUCTIONS

- ▶ Food packaged with inert gas must be labelled accordingly.
- ▶ The main tap on the gas cylinder must always be closed when the inert gas is not being injected.

7.5.4 Setting the photocells

7.5.4.1 Use printed film with optional kit (optional)

The following is required to use the printed film:

- Photocell kit (optional)
- Printed film according to the drawing supplied by the manufacturer

To activate the function on the control panel:

- 1 Activate the "FILM" parameter.
- 2 Press the "PRINT" button.

The photocell sensitivity was adjusted by the manufacturer taking into account the film acquired for the tests. Proceed as follows if the photocell sensitivity needs to be adjusted:

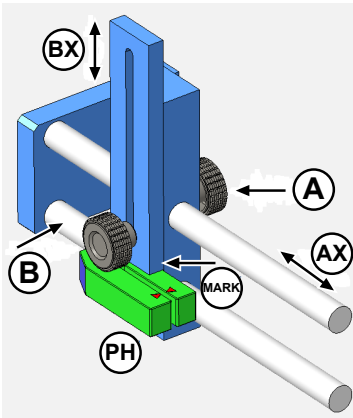


Fig. 23: Setting the photocell

- 3 Loosen the hand wheel (A).
- 4 Move the unit in the AX direction until the photocell is in the correct position.
- 5 Tighten the hand wheel.

The mark on the film is read in the position marked MARK. Perform some packaging tests and leave the packed tray in the machine. If the film print is not perfectly centred, the position of the photocell must be adjusted in the BY direction:

- 6 Loosen the hand wheel (B).
- 7 Raise the photocell in the BY direction when the print appears on the right of the tray. Lower the photocell in the BY direction when the print appears on the left of the tray.
- 8 • Tighten the hand wheel.

7.5.4.2 Setting photocell print centring on film (optional)

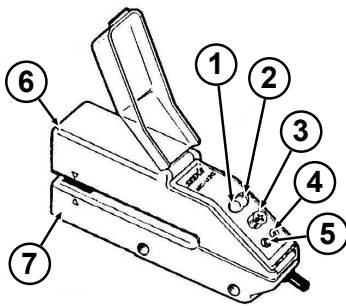
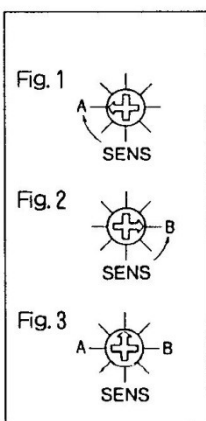


Fig. 24: Setting photocell print centring

Position	Component
1	Red LED Op.L indicates that the output is active
2	Green LED STB Stability indicator
3	Yellow potentiometer SENS Sensitivity setting
4	Light-dark L-D switch (light-dark)
5	Low-high power L-H switch (low-high)
6	Receiver
7	Transmitter

- 1 Set the power switch (5) (L H) to L = low power.
- 2 Set the switch (4) Light-Dark (L D) to D (dark-ON) when the marking on the film is black. Set to L (light-ON) when the marking on the film is light.
- 3 Let the photocell scan the mark on the film. Adjust the yellow potentiometer SENS until the red LED (1) lights up. If it does not light up, set the switch (5) (L H) to H = high power.
- 4 Adjust the yellow potentiometer SENS until the red LED (1) lights up.
- 5 Let the photocell scan the film without a marking (neutral area). Adjust the yellow potentiometer SENS until the red LED (1) lights up.
- 6 Adjust the yellow potentiometer SENS in the middle of the two previously identified settings (A and B).



7.6 Using the machine

7.6.1 Switching on the machine.

Proceed as follows to switch on the machine:

- 1 Turn the main switch on the machine to position "I".
- 2 Switch on the compressed air supply.
 - ⇒ The pressure must be in the value range from minimum 3 bar to maximum 6 bar.
- 3 Switch on the inert gas supply if necessary.
 - ⇒ The pressure may be a maximum of 4 bar.
- 4 Wait until the control system has booted.
 - ⇒ The start screen is displayed.

7.6.2 Switching off the machine

Proceed as follows to switch off the machine:

- 1 Make sure that no containers are in the machine.
- 2 Turn the main switch of the machine to position "O".
- 3 Switch off the machine's compressed air supply.
- 4 Switch off the inert gas supply if necessary.

7.6.3 Manually turning the rotary table

- 1 Turn the main switch to position "I".
- 2 Call up the program suitable for the trays used.
- 3 Make sure that the film reel is not yet used up and that the film is in the correct position. Replace the film roll if necessary (see Chapter **Changing the film reel** [▶ 55]).
- 4 Insert the tray(s) into the counterpart of the first chamber of the rotary table.
- 5 Make sure that
 - the product does not protrude beyond the edge of the tray.
 - the upper edge of the tray is clean.

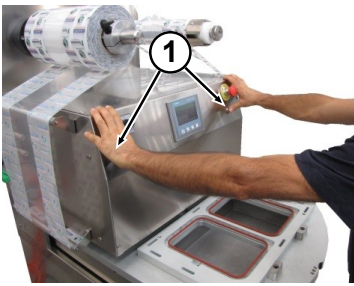


NOTE

Do not run a packaging cycle without trays or film!

- 6 Turn the rotary table 180° clockwise until it is blocked.





- 7 Press the two cycle start buttons (1) at the front of the machine. Make sure they are flashing green.
- 8 Keep the cycle start buttons (1) pressed down until the chamber is closed.
- 9 Insert the tray(s) into the counterpart of the second chamber of the rotary table.
 - ⇒ At the end of the packaging cycle, the rotary table is released and can be turned again.
- 10 To repeat the packaging cycle for the second chamber, perform steps 5 to 9 again.
- 11 To switch the machine off, turn the main switch to position "0".

7.6.4 Automatic table rotation (optional)


- 1 Turn the main switch to position "I".
- 2 Call up the program suitable for the trays used.
- 3 Make sure that the film reel is not yet used up and that the film is in the correct position. Replace the film roll if necessary (see Chapter **Changing the film reel** [► 55]).
- 4 Insert the tray(s) into the counterpart of the first chamber of the rotary table.
- 5 Make sure that
 - the product does not protrude beyond the edge of the tray.
 - the upper edge of the tray is clean.

i	NOTE
Do not run a packaging cycle without trays or film!	




- 6 Press the two cycle start buttons.
- 7 Keep the cycle start buttons pressed down until they are permanently lit.
 - ⇒ The table is turned automatically.
- 8 Insert the tray(s) into the counterpart of the second chamber of the rotary table.
 - ⇒ At the end of the packaging cycle, the rotary table is released and can be turned again.
- 9 To repeat the packaging cycle for the second chamber, perform steps 5 to 7 again.
- 10 To switch the machine off, turn the main switch to position "0".

7.6.5 Removing film waste

	⚠ WARNING
	<p>Risk of burns on hot surfaces.</p> <p>The mould reaches high temperatures during operation. There is a considerable risk of burns in case of contact with heated assemblies.</p> <ul style="list-style-type: none"> ▶ Wear protective gloves. ▶ Before all work, make sure that components have cooled down to ambient temperature.

To remove the film waste:

- 1 Turn the film recovery shaft anti-clockwise a few turns. Stand to the right of the machine to simplify the process.
- 2 Cut the film at the film recovery shaft.
- 3 Turn the front rotary knob of the film waste shaft anti-clockwise. Remove the film waste by pulling it towards you.
- 4 Turn the front rotary knob of the film waste shaft clockwise.
- 5 Wrap the unwound film piece around the film recovery shaft.
- 6 Turn the waste recovery shaft clockwise to tighten the film.
- 7 Press the "F4-RESET" button to acknowledge the alarm on the control panel.
- 8 Press the "F3-MANUAL" button and then the "Film operation" button.  Check whether the film unwinds and rewinds correctly.

7.6.6 Managing and creating recipes

7.6.6.1 Recipe definition

A recipe is a set of data required to package the trays, such as vacuum and gas level and sealing time, etc.

The machine can store up to 5 recipes from 1 to 5.

7.6.6.2 Creating a recipe

To create a recipe:

- 1 Press the "F2-PROG" button.
- 2 Press the value (1) to be changed.
⇒ The virtual keyboard appears.
- 3 Enter the desired value.
- 4 Press "ENTER" to confirm the value.
- 5 Scroll the pages using the arrow keys.
- 6 Repeat steps a. to f. to change the other parameters.
- 7 Press the "Recipes" (4) button.
⇒ A password request appears.
- 8 Enter password **1470 1470** in the input field (2).
- 9 Press the "OK" button (3) to confirm the input.
⇒ The password is valid for 5 minutes.
- 10 Press the "Recipes" (4) button.
- 11 The following menu page appears:

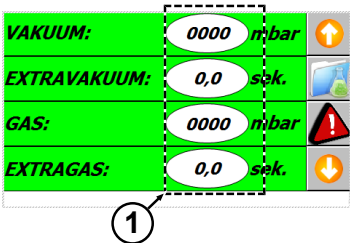


Fig. 25: Recipe parameters

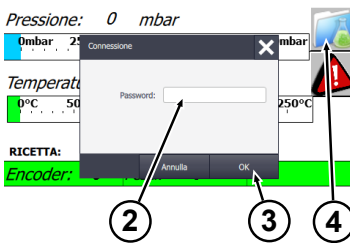


Fig. 26: Password request

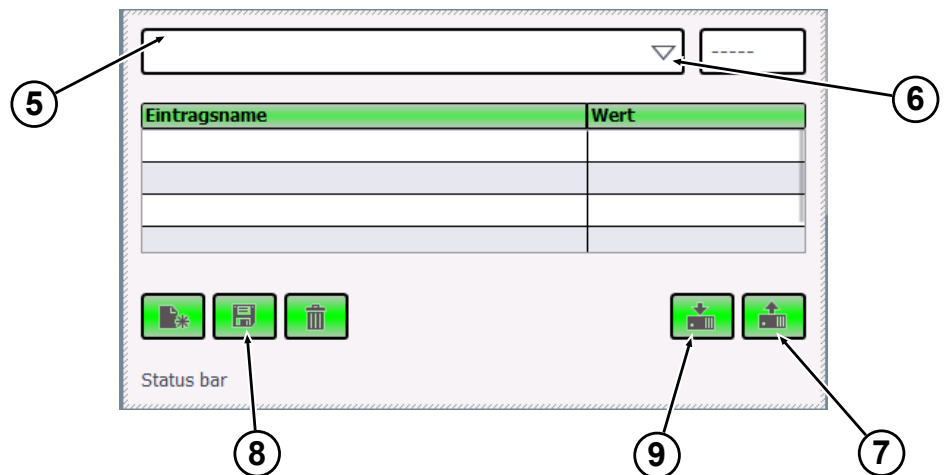


Fig. 27: Recipe input

- 12 Press the "Acquire data" button (7) to acquire the previously entered data on the control panel.
- 13 Press the arrow (6) in the input line (5) and enter a name for the new recipe.
- 14 Press the "Save" button (8) to save the adjusted recipe.
- 15 Press the "Transfer data" button (9) to transfer the program to the PLC.

i	NOTE
	Make sure that the program is transferred to the PLC. Otherwise, the last program available in memory is used.

7.6.6.3 Calling up a recipe

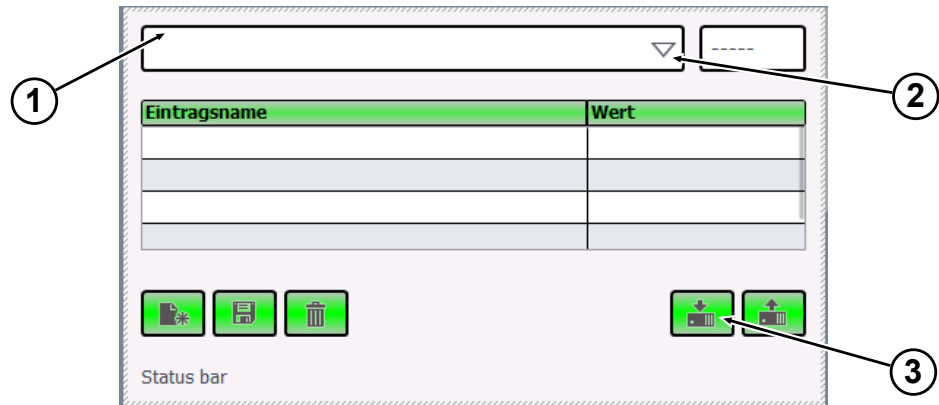


Fig. 28: Calling up a recipe

To call up a recipe:

- 1 Press the arrow (2) of the input line (1).
- 2 Select the desired recipe.
- 3 Press the "Transfer data" button (3).

⇒ The selected recipe is transferred to the PLC. The machine operates with the transferred recipe.

7.6.6.4 Deleting a recipe

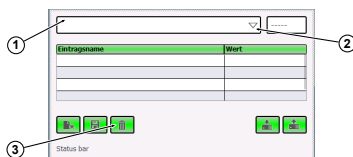


Fig. 29: Deleting a recipe

To delete a recipe:

- 1 Press the arrow (2) of the input line (1).
- 2 Select the recipe to be deleted.
- 3 Press the "Delete" button (3).

⇒ The selected recipe is deleted.

i	NOTE
	We recommend storing a copy of the parameter values of the various recipes.

7.7 Shut-down in an emergency

For shut-down in an emergency:

- 1 Press the EMERGENCY STOP strike button.

7.8 Switching on again after an emergency

Perform the following measures to switch on again after an emergency:


- 1 Rectify the cause of the emergency/have it rectified.
- 2 Release the EMERGENCY STOP button.
- 3 Press the "RESET" button on the control console.
- 4 Check safety facilities.

7.9 Activities after use

- 1 Make sure that no trays are on the loading area or in the machine.
- 2 Close the main tap on the inert gas cylinder if the vacuum is generated under inert gas.
- 3 Clean the machine (see Chapter Cleaning the machine).

8 Troubleshooting

8.1 Safety instructions

	SAFETY INSTRUCTIONS
	<p>Working safely during troubleshooting!</p> <p>Perform all work while observing the safety instructions listed in the following:</p> <ul style="list-style-type: none"> ▶ Adhere to the regulations listed in Chapter Safety [▶ 15] during all work on/with the machine. ▶ Refrain from unsafe working methods. Troubleshooting work may only be performed by trained specialists. ▶ Perform the work only as per the regulations in these operating instructions. ▶ Adhere to the corresponding national regulations on working safety and the locally valid safety regulations. ▶ Wear the specified personal protective equipment.

Additional warnings for troubleshooting:

Danger due to electrical voltage!

There is a risk of death when making contact with lines or components that carry voltage.

- Work on electrical equipment must only be carried out by qualified electricians or personnel under the guidance and supervision of a qualified electrician in accordance with electrical engineering regulations.
- De-energise the machine, check that zero voltage is present and secure to prevent reactivation.

Danger due to pressurised lines and components!

Serious injuries may occur due to pressurised lines and components.

- Switch off the machine and depressurise any pressurised parts.

Danger due to hot surfaces!

Parts of the machine can become very hot during operation and lead to injuries on contact.

- Observe the warning signs.
- Avoid contact with hot surfaces, or wear protective gloves.
- Let hot components cool down before starting work.



NOTICE

Material damage due to incorrect troubleshooting.

If pending faults are ignored or not correctly rectified, it can result in damage to the machine.

- ▶ In case of active faults, shut down the machine.
- ▶ Properly rectify the malfunction or have it rectified by appropriate specialists.

8.2 Personnel qualifications

Troubleshooting may only be performed by persons who:

- are authorised to do so due to their training and qualifications.
- are tasked to do so by the machine operator.

8.3 Instructions on troubleshooting



NOTE

If the measures listed here do not rectify the fault, contact the customer service department of the company ERME AG.

See chapter "Customer service [▶ 14]".

8.4 Fault displays

The following malfunctions and problems may occur:

Error message	Possible causes	Remedy
The machine does not switch on	The power supply cable is not plugged in	Connect the power supply cable to the mains socket
	The power supply cable is damaged	Replace the power supply cable
	The main switch of the machine is in position "0"	Turn the main switch of the machine to position "I"
The vacuum pump does not work	The cycle start switch is defective or not in the correct position	Replace the switch or move it to the correct position
	The pump oil is dirty or there is not enough	Replace or top up the oil as previously indicated
The pump works, but does not achieve the adjusted vacuum	The seal of the upper bell is defective or moved	Replace the seal or move it to the correct position

Error message	Possible causes	Remedy
	The air intake openings in the chamber are clogged or blocked	Clear the air intake openings of any obstacles
	The suction hose between chamber and pump is defective or loose	Reconnect the hose or call the customer service department to replace it
	The metal filter inserted in the hose near the quick-release coupling is dirty	Clean the filter
	The pump motor rotates in the wrong direction, the pump is very loud	Reverse two phases in the connection between the machine cable and the plug
	The pump oil is below the minimum level or dirty	Top up or replace oil. See Chapter
Incorrect welding	The set sealing time is not sufficient	Increase the sealing time
	The set sealing temperature is not sufficient	Consult the technical data sheet for the film supplied by the manufacturer and increase the set temperature value
	The sealing element has not yet reached the set temperature	Wait for the mould to heat up
	The edge of the tray is dirty	Make sure that the edge of the tray is clean
	The edge of the sealing plate is dirty	Let the mould cool down and clean it with a damp cloth (note: do not use brushes or tools that could damage the non-stick coating of the plate)
Irregular film cut	Dirt on the cutting blades	Let the mould cool down and clean it with compressed air
	Cutting blades worn out	Sharpen or replace the cutting blade
	Springs on the film retaining plate defective	Replace the springs

8.5 Fault messages and alarms

The following fault messages and alarms can be output via the control panel:


Fault message / alarm	Explanation	Possible causes	Remedy
ALARM: LOW COMPRESSED AIR	The compressed air pressure is not sufficient	The EMERGENCY STOP button was not reset	Press the "R" button and then "ON" button

Fault message / alarm	Explanation	Possible causes	Remedy
		The air compressor that supplies the machine is switched off	Switch on the compressor
		Pressure switch defective	Contact the technical customer service department
		The pressure value indicated on the pressure gauge of the machine is less than 6 bar	Set the pressure value at the air pressure reducer to 6 bar
ALARM: LOW GAS	The packaging inert gas pressure is not sufficient	The inlet pressure of the inert gas is set to a value below 3 bar	Set the pressure from 3 to max. 4 bar
		The gas in the cylinder is used up	Replace the gas cylinder
		Pressure switch defective	Contact the technical customer service department
ALARM: EMERGENCY STOP PRESSED	The EMERGENCY STOP button has been pressed	The EMERGENCY STOP button was pressed intentionally or accidentally	Make sure that the cause of the EMERGENCY STOP has been eliminated. Turn the EMERGENCY STOP button clockwise to release it
CIRCUIT BREAKER OPEN	Warning from safety module	The front plate or the upper stainless steel cover of the bell is open	Close the parts correctly, then press the "F4-Reset" button to reset the emergency stop
		Relay RL1 or RL2 defective	Contact the technical customer service department
		Safety module defective	Contact the technical customer service department
ALARM: FILM CYCLE	Error when measuring the feed rate of the sealing film	Defect in the film feed rate sensor	Run a film cycle in manual mode. If the problem persists, contact the technical customer service department
ALARM: UPPER BELL MISSING	The upper bell is not attached in the correct position	Centring mandrel not inserted	Check the position of the upper bell, insert the upper centring pin correctly
ALARM: VACUUM SENSOR ERROR	The sensor that measures the vacuum value in the packaging chambers has delivered an incorrect value. The sensor is located in the rear switch cabinet	Electrical defect in the sensor	Check whether the plug of the sensor is correctly plugged in. If the problem persists, restart the machine (turn off and on again). If the problem persists, contact the technical customer service department

Fault message / alarm	Explanation	Possible causes	Remedy
ALARM: MOTOR PROTECTION SWITCH	A motor protection switch has tripped	Electric motor overload	Press the black push button of the tripped switch to reset the motor protection. If the problem persists, contact the technical customer service department
ALARM: LEAK IN VACUUM CIRCUIT	Leak in the vacuum circuit	The counterpressure beam for sealing was mounted incorrectly	Check the position of the centring pin of the counterpressure beam
		The seals of the chambers are worn out or missing	Replace the seals
		Vacuum lines defective	Replace the lines
		Quick-release coupling seal worn or missing	Replace O-ring (part number 99.40.68)
		Ventilation solenoid valve defective	Replace the solenoid valve
		Solenoid valve for inert gas defective, constant flow of inert gas even when the machine is not running	Replace the solenoid valve
CHECK THE OIL LEVEL OF THE VACUUM PUMP	The operating hours counter of the pump has reached 500 operating hours	Tap of the lower chamber open	Close the tap.
			After checking the lubricant condition in the vacuum pump, press the "Alarm Reset" button
BELL-CLOSED SENSOR PROBABLY DEFECTIVE	The signal from the upper sensor on the bell's lifting cylinder was not detected	Position error or electrical defect in the upper sensor	Contact the technical customer service department
BELL-OPEN SENSOR PROBABLY DEFECTIVE	The signal from the lower sensor on the bell's lifting cylinder was not detected	Position error or electrical defect in the upper sensor	Contact the technical customer service department
ALARM: DEFECT IN THE GAS CIRCUIT	The set gas value is not reached	Gas tap closed	Open the gas tap on the tank inside the machine correctly
		Inert gas solenoid valve defective	Replace the solenoid valve
ALARM: MOULD TEMPERATURE	The temperature differs from the set one		Check the position of the electrical connector of the upper bell or the temperature sensor
ALARM: MICRO SWITCH	The cycle cannot start due to a defective micro switch	The micro switch has shifted or the counterpart holder was not inserted correctly	Insert the counter piece holder down to the bottom. If the problem persists, contact the technical customer service department

9 Cleaning

9.1 Safety instructions

	SAFETY INSTRUCTIONS
	<p>Working safely during cleaning!</p> <p>Perform all work while observing the safety instructions listed in the following:</p> <ul style="list-style-type: none"> ▶ Adhere to the regulations listed in Chapter Safety [▶ 15] during all work on/with the machine. ▶ Refrain from using unsafe working methods. ▶ Perform the work only as per the regulations in these operating instructions. ▶ Adhere to the corresponding national regulations on working safety and the locally valid safety regulations.

Additional warnings for cleaning:

Danger due to hot surfaces!

Parts of the machine can become very hot during operation and lead to injuries on contact.

- Observe the warning signs.
- Avoid contact with hot surfaces, or wear protective gloves.
- Let hot components cool down before starting work.

	NOTICE
	<p>Possible material damage during cleaning.</p> <p>Incorrect cleaning can result in material damage to the machine.</p> <ul style="list-style-type: none"> ▶ Make sure that no liquids enter into the suction openings. ▶ Do not clean the machine with a high-pressure or powerful water jet.

9.2 Personnel qualifications

The machine may only be cleaned by personnel who

- have received the corresponding training.
- are tasked to do so by the machine operator.

9.3 Cleaning agent

Manufacturer / supplier	Henkel Hygiene GmbH	Fink Hygienetechnik	Lever Sutter	Optimol	Internal registrations
Cleaning agent for cleaning the inside and outside of the machine	P3 - Topax 12	Special cleaner for butcher's tables	SU 113		
pH-value (conc.) of 1% in 0° dH	9.5	9.3	9.4		
	7.5				
Cleaning agent for the protective covers	Clin plus	Ökoron gentle cleaner (mild detergent), Ökoron MRG	SU 118		
Disinfectantl	P3 - Alcodes	Antisept	SU 319		
pH value not diluted	7.3	7.1	7.4		
Corrosion inhibitors				F + D spray	



NOTE

For detailed information, refer to the safety data sheets for the cleaning agents, contact the manufacturer or representative if necessary.

9.4 Cleaning the machine

Proceed as follows to clean the tool and the chamber:

- 1 Switch off the machine (see **Switching off the machine** [▶ 60]).
- 2 Clean the inside of the bell with a sponge or cloth soaked in water or cleaning agent.
- 3 Blow away any granules or film residues with compressed air.
- 4 Drain the liquid from the lower bell by opening the ball valve inside the machine (optional)
- 5 Make sure that the ball valve is correctly closed again.
- 6 Rinse the machine.
- 7 Dry the sliding guides of the lower tray with the compressed air jet.
- 8 Lubricate the sliding guides of the lower tray with food-grade grease.

**NOTE**

- ▶ Do not use aggressive cleaning agents when cleaning the machine.
- ▶ If you detect damage, notify the responsible personnel.

9.5 Disinfecting the machine

After each cleaning (see Chapter [Cleaning the machine](#) [▶ 73]) disinfect the machine:

- 1 Clean machine with alcohol-based disinfectant. Take into account the working time of the disinfectant.
- 2 After the working time, thoroughly rinse the machine with drinking water.

9.6 Protecting the machine from corrosion

After each time the machine is disinfected (see Chapter [Disinfecting the machine](#) [▶ 74]), use a corrosion inhibitor to restore the grease film on the metal surface:

- 1 If necessary, remove existing rust layer.
- 2 Apply food-grade corrosion inhibitor (e.g. paraffin oil).


9.7 Decalcifying the machine

Acidic cleaning agents can discolour the surfaces of the moulds. For this reason, descale the machine at longer intervals:

- 1 Remove calcium deposits with citric acid-based cleaning agents.
- 2 Leave the cleaning agent to work for 8 to 10 hours.
- 3 Thoroughly rinse with lukewarm water.

10 Maintenance

10.1 Safety instructions

	SAFETY INSTRUCTIONS
	<p>Working safely during maintenance!</p> <p>Perform all work while observing the safety instructions listed in the following:</p> <ul style="list-style-type: none"> ▶ Adhere to the regulations listed in Chapter Safety [▶ 15] during all work on/with the machine. ▶ Refrain from unsafe working methods. Maintenance work may only be performed by trained specialists. ▶ Perform the work only as per the regulations in these operating instructions. ▶ Adhere to the corresponding national regulations on working safety and the locally valid safety regulations. ▶ Wear the specified personal protective equipment.

Additional warnings for maintenance:

Danger due to electrical voltage!

There is a risk of death when making contact with lines or components that carry voltage.

- Work on electrical equipment must only be carried out by qualified electricians or personnel under the guidance and supervision of a qualified electrician in accordance with electrical engineering regulations.
- De-energise the machine, check that zero voltage is present and secure to prevent reactivation.

Danger due to pressurised lines and components!

Serious injuries may occur due to pressurised lines and components.

- Switch off the machine and depressurise any pressurised parts.

Danger due to hot surfaces!

Parts of the machine can become very hot during operation and lead to injuries on contact.

- Observe the warning signs.
- Avoid contact with hot surfaces, or wear protective gloves.
- Let hot components cool down before starting work.



NOTICE

Material damage due to the incorrect performance of the maintenance work.

If maintenance work is not carried out correctly, it can result in damage to the machine.

- ▶ Perform the maintenance work correctly and appropriately.

10.2 Personnel qualifications

Maintenance work on the machine may only be performed by personnel who

- are authorised to do so due to their training and qualifications.
- are tasked to do so by the machine operator.

10.3 Maintenance overview

Perform the following maintenance work on the machine:

Work to be performed	Interval	Additional information
Clean the machine	Every 8 hours or at the end of each working shift	Cleaning the machine [▶ 73]
Disinfecting the machine	Every 8 hours or at the end of each working shift	Disinfecting the machine [▶ 74]
Protecting the machine from corrosion	Regularly	Protecting the machine from corrosion [▶ 74]
Decalcifying the machine	As necessary	Decalcifying the machine [▶ 74]
Lubricate machine components (chains, gear wheels)	Regularly	
Check the safety equipment	Every 8 hours or at the end of each working shift	Check that safety equipment is functioning properly: <ol style="list-style-type: none"> 1. Press the EMERGENCY STOP button. 2. Make sure that the closed moulds are opened immediately.
Check compressed air inlet	Every 8 hours or at the end of each working shift	<ol style="list-style-type: none"> 1. Check that the pressure of the compressed air system at the pressure reducer is between 6 and max. 7 bar. 2. Check whether condensate is present in the filter, empty it if necessary.
Check inert gas inlet (optional)	Every 8 hours or at the end of each working shift	<ol style="list-style-type: none"> 1. Check the inert gas pressure and set it to a value between 3 and max. 4 bar.
Check sealing gaskets	Every 50 operating hours	<ol style="list-style-type: none"> 1. Check the sealing gaskets. 2. Replace the sealing gaskets if necessary.
Check punching die	Every 50 operating hours	<ol style="list-style-type: none"> 1. Check the punching die.

Work to be performed	Interval	Additional information
		2. Replace cutting die if necessary (see Chapter Replacing the cutting die [▶ 78]).
Check brake disc ring	Every 200 operating hours	1. Check brake disc ring. 2. Replace the check brake disc ring is necessary.
Lubrication	Every 200 operating hours	1. Lubricate grease nipple (see Chapter Lubricating the machine [▶ 83]).
Service vacuum pump	Every 500 operating hours	1. Replace vacuum pump and oil separator elements (see Chapter Servicing the vacuum pump [▶ 82]). 2. Have machine checked by service personnel of the manufacturer or specialist dealer.
Replace the compressed air filter	Every 5000 operating hours	1. Replace the filter and vacuum valves (see Chapter Servicing the vacuum pump [▶ 82]).
Drive motor	Every 5000 operating hours	Check the lubrication.

10.4 Replacing the cutting die



⚠ WARNING

Risk of burns on hot surfaces.

The mould reaches high temperatures during operation. There is a considerable risk of burns in case of contact with heated assemblies.

- ▶ Wear protective gloves.
- ▶ Before all work, make sure that components have cooled down to ambient temperature.

- 1 Turn main switch of the machine to position "0" to switch off the machine.
- 2 Unlock the locking/unlocking device with the supplied key.



Fig. 30: Quick-release coupling



Fig. 31: Vacuum hose

- 3 Disconnect the quick-release coupling of the vacuum by pulling it towards you.



Fig. 32: Support

- 4 Place the vacuum hose on the support attached to the side of the machine (optional).

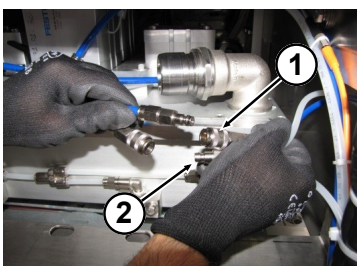


Fig. 33: Quick-release couplings

- 5 First, disconnect the quick-release coupling (1) connected to the white hose.
- 6 Then disconnect the quick-release coupling (2) connected to the blue hose.

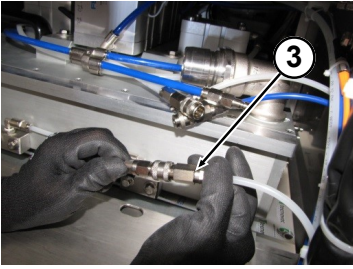


Fig. 34: Inert gas quick-release coupling



Fig. 35: Hand wheel

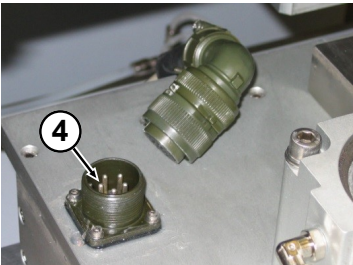


Fig. 36: Electrical plug connection



Fig. 37: Disconnecting the electrical plug connection

7 If the machine is prepared for the use of inert gas, disconnect the quick-release coupling 3 (optional).

8 Pull the hand wheel out of the guide.

9 Unscrew the rear electrical plug connection (4).

10 Pull out the upper bell.

11 Prepare a table on which the bell can be placed.

12 The bell must be pulled out by two people using the handles and placed on the shelf with the lower part facing up.

13 Loosen and remove the 4 round head screws.

14 Disconnect the electrical connectors.

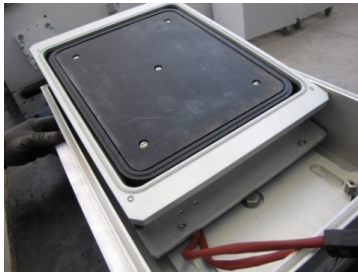


Fig. 38: Lifting out the mould

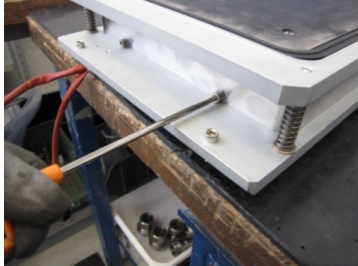


Fig. 39: Loosening the round head screws



Fig. 40: Lifting out the cutting die

15 Lift out the inner mould and place it on a work surface.

16 Loosen and remove the round head screws with which the cutting die is fixed.

17 Lift and pull out the cutting die with a screwdriver.

18 Insert the new cutting die.

19 Fasten the cutting die with round head screws.

20 Lift the inner mould into the bell.

21 Tighten the inner mould using the 4 round head screws.

22 Establish the rear electrical plug connection.

23 Make sure that two people lift the bell by the handles and insert it into the machine.

24 Connect the quick-release coupling of the vacuum line.

25 Tighten the rear electrical plug connection.

10.5 Setting the film tension

To adjust the film tension:

- 1 Unscrew the locking knob (1).
- 2 Press the adjustment knob (2):
 - ⇒ Turn clockwise to increase the film tension.
 - ⇒ Turn anti-clockwise to reduce the film tension.
- 3 Tighten the locking knob (1) on the rotary knob (2).

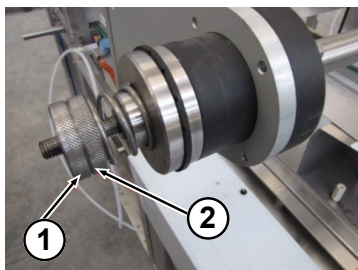


Fig. 41: Setting the film tension

10.6 Topping up or replacing the oil



NOTE

To top up or change oil for oxygen vacuum pumps (optional), contact the customer service of the pump manufacturer.



⚠ WARNING

Risk of burns on hot surfaces.

The mould reaches high temperatures during operation. There is a considerable risk of burns in case of contact with heated assemblies.

- ▶ Wear protective gloves.
- ▶ Before all work, make sure that components have cooled down to ambient temperature.

Oil recommendations for vacuum pumps (from 40 m³/h to 100 m³/h), type VC according to DIN 51506:

Viscosity SAE 30 = ISO VG 100

AGIP	ACER 100
SHELL	TURBO T 100
FINA	SOLNA 100
ESSO	NU TO H 100
BP	ENERGOL HP 100
ARAL	MOTANOL GM 100
ROL OIL	LR/100-CCV
IP	HERMEA OIL 100
MOBIL	VACTRA OIL HEAVY

- 1 Switch off the machine (see Chapter **Switching off the machine** [▶ 60]).
- 2 Loosen and remove the fastening screws on the rear housing plate.
- 3 Remove the rear housing plate.
- 4 Find the oil drain and oil filler plug on the pump. Follow the instructions in the operating instructions of the pump.
- 5 Place a suitable collection container for the used oil under the oil drain.
- 6 Open the oil drain and drain the oil into the collection container.
- 7 Close the oil drain.
- 8 Open the oil filler plug.
- 9 Fill a recommended oil into the oil tank until it can be seen in the oil level indicator.
- 10 Close the oil filler plug.
- 11 Fit the rear housing plate and fasten it using the fastening screws.
- 12 Dispose of used oil in an environmentally-friendly manner.

10.7 Servicing the vacuum pump



NOTE

To service an oxygen vacuum pump (optional), contact the pump manufacturer's customer service department.

- 1 Switch off the machine (see Chapter **Switching off the machine** [▶ 60]).
- 2 Open the front housing plate with the key.
- 3 Maintain the pump. Observe the information in the operating instructions of the vacuum pump.
- 4 Close the front housing plate with the key.

10.8 Resetting the pump operating hours counter alarm

If the display shows the message "CHECK PUMP OIL LEVEL", the pump motor has been supplied with power for approximately 500 hours. The message is generated by an operating hours counter, not by an oil level sensor.

- 1 Check the level and condition of the vacuum pump lubricating oil, top up oil if necessary or replace the oil (see Chapter **Topping up or replacing the oil** [▶ 80]).



NOTE

If a red vacuum pump lubricant maintenance (i.e. for suction of mixtures with high oxygen content) is required, contact the pump manufacturer.

To reset the operating hours counter and clear the message on the display:

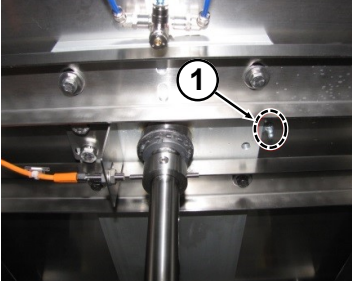
- 2 Press the "ALARM RESET" button while the "CHECK PUMP OIL LEVEL" message is displayed.
 - ⇒ The next message is displayed again after the pump runs for another 500 hours.

10.9 Lubricating the machine

Lubricant to be used: AREXONS SYSTEM-GFU2


To lubricate the machine:

- 1 Switch off the machine (see Chapter **Switching off the machine** [► 60]).
- 2 Open front housing cover with the key.
- 3 Press grease through the grease nipple (1), which can be accessed from the bottom of the machine.
- 4 Close the front housing cover with the key.



11 Decommissioning and disposal

11.1 Safety instructions

	SAFETY INSTRUCTIONS
	<p>Working safely during maintenance!</p> <p>Perform all work while observing the safety instructions listed in the following:</p> <ul style="list-style-type: none"> ▶ Adhere to the regulations listed in Chapter Safety during all work on/with the machine. ▶ Refrain from unsafe working methods. Decommissioning and disposal work may only be performed by trained specialists. ▶ Perform the work only as per the regulations in these operating instructions. ▶ Adhere to the corresponding national regulations on working safety and the locally valid safety regulations. ▶ Wear the specified personal protective equipment.

Additional warnings for decommissioning and disposal:

Danger due to electrical voltage!

There is a risk of death when making contact with lines or components that carry voltage.

- Work on electrical equipment must only be carried out by qualified electricians or personnel under the guidance and supervision of a qualified electrician in accordance with electrical engineering regulations.
- De-energise the machine, check that zero voltage is present and secure to prevent reactivation.

Danger due to pressurised lines and components!

Serious injuries may occur due to pressurised lines and components.

- Switch off the machine and depressurise any pressurised parts.

Danger due to hot surfaces!

Parts of the machine can become very hot during operation and lead to injuries on contact.

- Observe the warning signs.
- Avoid contact with hot surfaces, or wear protective gloves.
- Let hot components cool down before starting work.

11.2 Personnel qualifications


The unit may only be decommissioned and disposed of by personnel who

- are authorised to do so due to their training and qualifications.
- are tasked to do so by the machine operator.

11.3 Decommissioning

11.3.1 Final decommissioning / disassembly

- 1 Perform the work steps set out in the "Temporary decommissioning" section.
- 2 Disconnect the machine from any external power supplies.

	SAFETY INSTRUCTIONS
	<ul style="list-style-type: none">▶ Make sure that the machine is voltage-free; observe residual voltages (e.g. with frequency converter)!▶ Make sure that the machine is completely depressurised; observe the pressure reservoir!

- 3 Remove all connection hoses/pipes.
- 4 Properly dispose of materials, components, lubricating and auxiliary materials.

11.4 Disposal

Perform the following steps to ensure proper disposal after disassembly:

- Separate metals and plastics and take them to authorised scrapping or recycling facilities.
- Dispose of problematic substances that can no longer be reused, such as lubricants and cleaning agents or electrical components, according to the local applicable regulations.

	<p data-bbox="970 517 1118 555">NOTICE</p> <p data-bbox="663 591 1262 624">Environmental damage if improperly disposed of!</p> <p data-bbox="663 651 1283 685">Incorrect disposal may result in environmental damage.</p> <ul style="list-style-type: none"><li data-bbox="663 712 1414 784">▶ Observe the manufacturer's specifications for the lubricants and auxiliary materials to ensure environmentally-friendly disposal.
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12 Declaration of Conformity

(Translation of the original Declaration of Conformity)

in accordance to the Machinery Directive 2006/42/EC, Annex II 1A

Name of the manufacturer

ERME AG
SWISS VACUUM SOLUTIONS

Manufacturer address

Grossmattstrasse 25
CH - 8964 Rudolfstetten

Product

We declare that the product:

Vacuum packaging machines
Tray sealer & skin packaging machine (TSK360 PRO)

Relevant EU directives

complies with the relevant regulations:

EC directive version 2006/42/EC
EMC directive version 2014/30/EC

Applied harmonised standards:

DIN EN ISO 12100: 03/2011:

Safety of machinery — General principles for design — Risk assessment and risk reduction

DIN EN 60204-1: 06/2007:

Safety of machinery — Electrical equipment of machines — Part 1: General requirements

EN ISO 14159:

Safety of machinery — Hygiene requirements for the design of machinery

Authorised representative for the compilation of technical documents:

ERME AG

Technical documentation is available.

The operating instructions for the machine are available.

- In the original version
- In the national language of the user

It is assumed that the product will only be operated in accordance with its intended use. Refer to the technical documentation for information about the intended use.

Rudolfstetten, 1. July 2020

Signature



Thomas Meyer