ATMOVAC

Vacuum Packaging Machine

ARCTIC

User Manual

Art No. 0894514

- The machine is not suitable for the packaging of toxic, corrosive, irritant or potentially explosive materials.
- All persons responsible for the operation of this machine must at least fully read and understand the chapters about the operation and safety provided in these operating instructions.
- All persons responsible for the assembly, installation, maintenance and/or repairs must fully read and understand these operating instructions.
- The user is at all times responsible for the interpretation and use of this manual. Contact the owner or the manager in case of questions or doubts about the correct interpretation.
- This manual should be kept near the machine and should be within reach for its users.
- All major maintenance work, modifications to the machine and observations must be kept in a logbook; see *Logbook* on page 38.
- Modifications to the installation/machine are not allowed without the prior written consent of the supplier. Due to modifications the ETL Certification will probably no longer be valid.
- For specific maintenance work not included in this manual, please contact the supplier.
- Comply with the safety requirements as set out in *Safety* on page 7 at all times.
- The correct operation and safety of the system can only be guaranteed if the recommended maintenance is performed on time and properly.
- Illustrations shown may differ from your machine.

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1 Preamble

This is the manual for your Atmovac vacuum packaging machine. This manual is intended for anyone who works with or services the machine.

This manual contains information and instructions for installation, operation and maintenance of the machine. We recommend that you carefully read this manual before use and follow the procedures and instructions strictly. This will ensure that you get the best out of the machine and prevents possible accidents and serious injury.

2 Safety

Your vacuum packaging machine has been carefully designed and expertly built to be operated safely. This is corroborated by the ETL Certification. However, there are always dangers and safety risks that cannot be eliminated. These dangers and risks are the result of the use functions of the machine and operation of the machine by the user. This section discusses safety instructions and precautions, how they will be pointed out to you and the requirements the user must meet. It is essential that you are well aware of these safety instructions and requirements and observe them at all times!

2.1 List of the Symbols Used in this Manual

For all operations in which the safety of the operator and/or technician is at stake and where caution should be exercised, the following symbols are used.

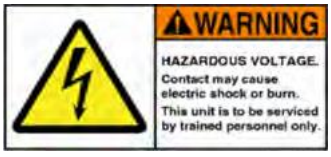
This symbol provides insight or offers tips to help facilitate certain actions.

This symbol warns for dangerous situations that may lead to damage to the machine or personal injury.

This symbol warns for high voltage.

2.2 Pictograms on the Machine

Pictograms and warnings have been fitted on the machine to warn users of the possible risks.



Warning sign "Hazardous Voltage"

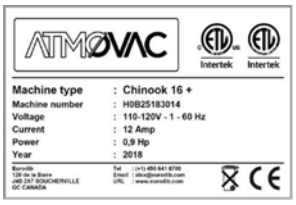
- Is located on the back of the machine

Caution sign ‘Electric shock’

- Is located on the back of the machine

Caution sign ‘Hot surface’

- Is located on the housing of the machine



Machine plate

- Is located on the back of the machine

Regularly check whether the pictograms and markings are still clearly recognisable and legible. Replace them if this is not the case.

2.3 General Warnings

- All persons responsible for the operation of this machine must at least fully read and understand the chapters *Safety* on page 7 and *Operation* on page 18.
- Failure to follow or disregard of the safety instructions may result in serious injury.
- Never pack products that can be damaged by vacuum.
- Never vacuum live animals.
- Warranty, ETL Certification and/or liability is void if any damage is caused by repairs and/or modifications that are not authorised by the supplier or any of its distributors.
- In case of malfunction, contact the supplier.
- High pressure cleaning is not allowed. This may cause damage to the electronics and other components.
- Prevent water from entering the ventilation inlet of the chamber or the exhaust of the pump. This causes irreversible damage to the pump.
- The work space around the machine must be safe. The owner of the machine must take the necessary precautions to operate the machine safely.
- It is forbidden to start the machine in an explosive environment.
- The machine has been designed in such a way that production is safe under normal ambient conditions.
- The owner of the machine must ensure that the instructions in this manual are actually complied with.
- The available safety devices may not be removed.
- The correct operation and safety of the system can only be guaranteed if the recommended maintenance is performed on time and properly.
- If work must be carried out on the machine, it must be disconnected and blocked from the power supply.

- Only a technical expert may perform work on the electrical installation.
- Internal procedures and monitoring must be in place to ensure that all relevant power supplies are disconnected.
- The machine may not be used during cleaning, inspection, repair or maintenance and must be disconnected from the power supply by disconnecting the plug.
- Never perform welding work on the machine without first disconnecting the cable connection to the electrical components.
- Never use the power supply of the control unit to connect other machines.
- All electrical connections must be connected to the terminal strips according to the wiring diagram.

2.4 Warnings During Use

- Before starting the machine, make sure no work is being performed on the installation and that the machine is ready for use.
- The machine may not be operated by unauthorised persons. This should be monitored by the machine operator(s).
- Immediately contact the service technician of your technical department or dealer if something does not seem right, such as unusual vibrations or unusual noise.
- Components of the sealing system can become very hot. Contact with these components may cause injuries.
- Improper use, such as switching off the machine while it is creating a vacuum, is strongly discouraged. Such actions may cause oil leaking back to the vacuum chamber.

2.5 Warnings for Operating Personnel

- Operating personnel must be 18 years or older.
- Only authorised persons are allowed to perform work on or with the machine.
- Personnel may only perform work for which it was trained. This applies to both maintenance and normal use.
- The machine may only be operated by trained personnel.
- Operating personnel must be familiar with all circumstances, so quick and effective action can be taken in case of an emergency.
- If an operator notices errors or risks or disagrees with safety measures, he or she should report this to the owner or manager.
- Safety shoes are mandatory.
- Appropriate work clothing is mandatory.
- All personnel must obey the safety regulations to avoid danger to themselves and others. Always strictly follow the work instructions.

3 Introduction

Eurodib is a supplier of ultra-modern vacuum packaging machines. Our machines are developed and manufactured to meet the highest standards. They combine a sleekly built and functional design with optimal ease of use and a long service life. After mounting the plug, it is just a matter of "plug & pack". The clever design ensures compliance with the hygiene standards at all times.

The Jumbo series are professional table top models, use-friendly and low-maintenance.

4 Description of the Machine

This section provides an overview of the main components and functions. If detailed information is available in this manual, you will be referred to the specific sections.

4.1 Overview of the Main Components

The figure below shows the main components of the system. The model shown may differ from your machine.

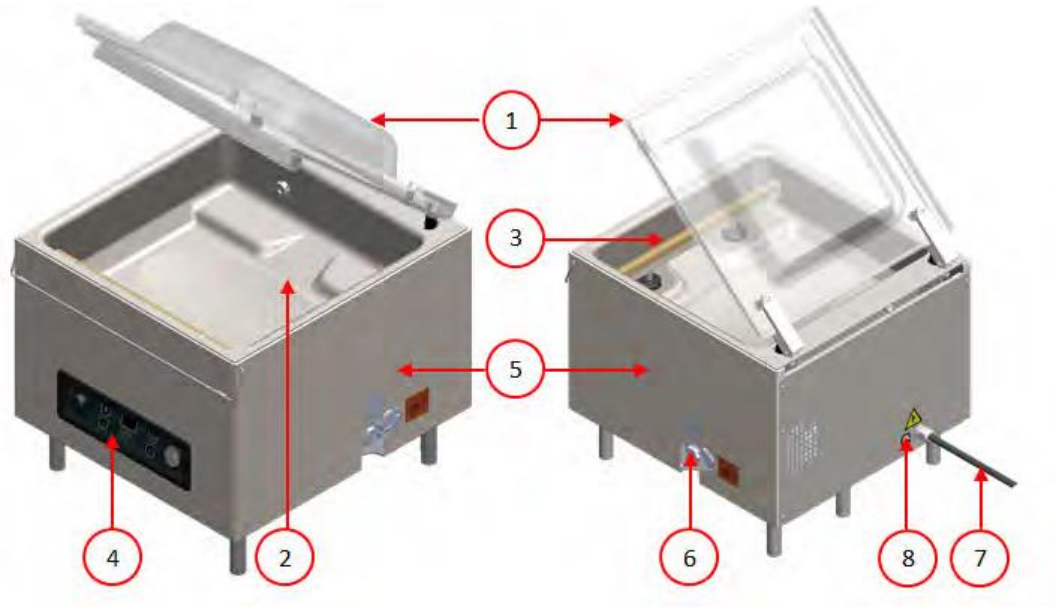


Figure 1: Overview of the Main Components

1. **Lid**
   The lid closes the vacuum chamber during the application of the vacuum. A rubber is mounted in the lid to ensure proper closing. Silicone holders are mounted in the lid as counter beams of the sealing bar(s).
2. **Vacuum chamber**
   The products to be packaged are placed on the work surface with the openings of the vacuum bags on the sealing position.
3. **Seal system**
   Depending on the model, one or two sealing bars are mounted in the vacuum chamber. These close the vacuum bag.
4. **Control panel**
   This serves to operate the available control functions.
5. **Machine housing**
   The machine housing contains all the components necessary for the functioning of the machine.

6. **Vacuum pump**
   The vacuum pump creates the vacuum.
7. **Power connection and cable**
   This serves to connect the machine to the power supply.

4.2 Description of the Packaging Process/Machine Functions

This section provides an overview of the packaging process and available machine functions.

See *Changing the Programme Settings* on page 20 for information about setting the parameters to the correct values.

4.2.1 Packaging Process/Machine Functions

This section describes the packaging process and the machine functions. See *Operation* on page 18 for the realization of the specific steps of the procedure.

Step	Process phase	Operation
1.	**Preparation**	The operator puts the product in a vacuum bag and places it on the work surface with the opening on the sealing position.
2.	**Applying vacuum**	The vacuum process is initiated by closing the lid. During the cycle, the air will be removed from the chamber until the set vacuum percentage has been reached.
3.	**Sealing**	The sealing bars are pressed against the vacuum bag and melt the bag closed. During the sealing process, the material of the vacuum bag is heated and pressed together to create a hermetic seal. The programming of this function takes place in seconds. Optionally, the second sealing wire can be replaced by a cut-off wire. The purpose of the cut-off wire is to remove the excess foil from the remaining flap.
4.	**Decompressing**	The vacuum is removed from the vacuum chamber by letting air into the chamber.
5.	**Opening the vacuum chamber**	The lid opens.
6.	**Removing the product**	The operator can remove the packaged product from the work surface.

4.2.2 General Functions

Function	Pictogram	Operation
Cleaning of the oil pump		The pump cleaning programme ensures that the pump is thoroughly rinsed. During the programme, the pump and oil reach the operating temperature, so the oil and moisture are separated and any contamination is filtered. The high temperature causes any moisture in the pump to evaporate, thus minimising the risk of corrosion.
External Vacuum		This function allows special food containers to be vacuumed outside the machine. The options to set the vacuum value are the same as for standard vacuuming (see *External Vacuum (optional)* on page 21).

4.3 Sealing System

The sealing system closes the opening(s) of the bag to retain the vacuum and/or gas in the bag. The end of the bag can optionally be cut off by the sealing bar.

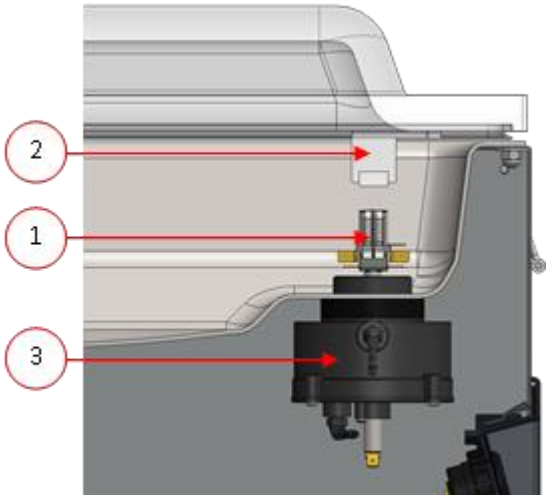


Figure 2: Overview of the Sealing System

1. Sealing bar

The sealing bar consists of the following components:

- Sealing wires: during the sealing process, the sealing wires are heated for a certain time causing the edges of the vacuum bag to melt together.
- Cut-off wires (optional): A cut-off wire is heated in such a way that the foil of the bag partially melts, allowing the excess foil of the vacuum bag to be removed easily.
- Teflon tape: sealing and cut-off wires are covered with Teflon tape to prevent the bag from sticking to the sealing bar.

Consult *Replacing the Sealing Wire* on page 28 for more detailed information about maintenance.

2. **Silicone holder**
   Opposite the sealing bar is a silicone holder which provides counter pressure on the cylinders (*Replacing the Silicone Rubber of the Silicone Holders* on page 30).
3. **Sealing mechanism**
   The sealing bars are pressed onto the vacuum bag by cylinders.
   By connecting the inlet of the cylinders with the atmospheric pressure outside, they press the sealing bar onto the bag.

4.4 Vacuum Pump

The vacuum pump creates the vacuum.

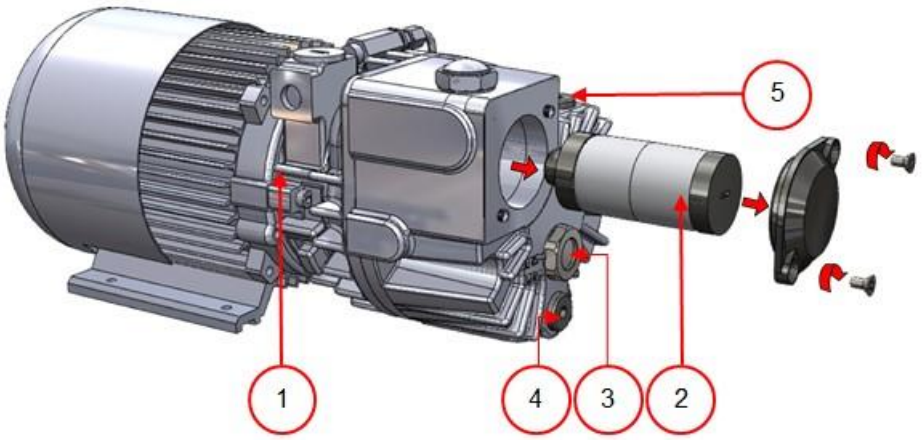


Figure 4: Overview of the Pump (Pump 9 m^3/h / 285 cf/h)

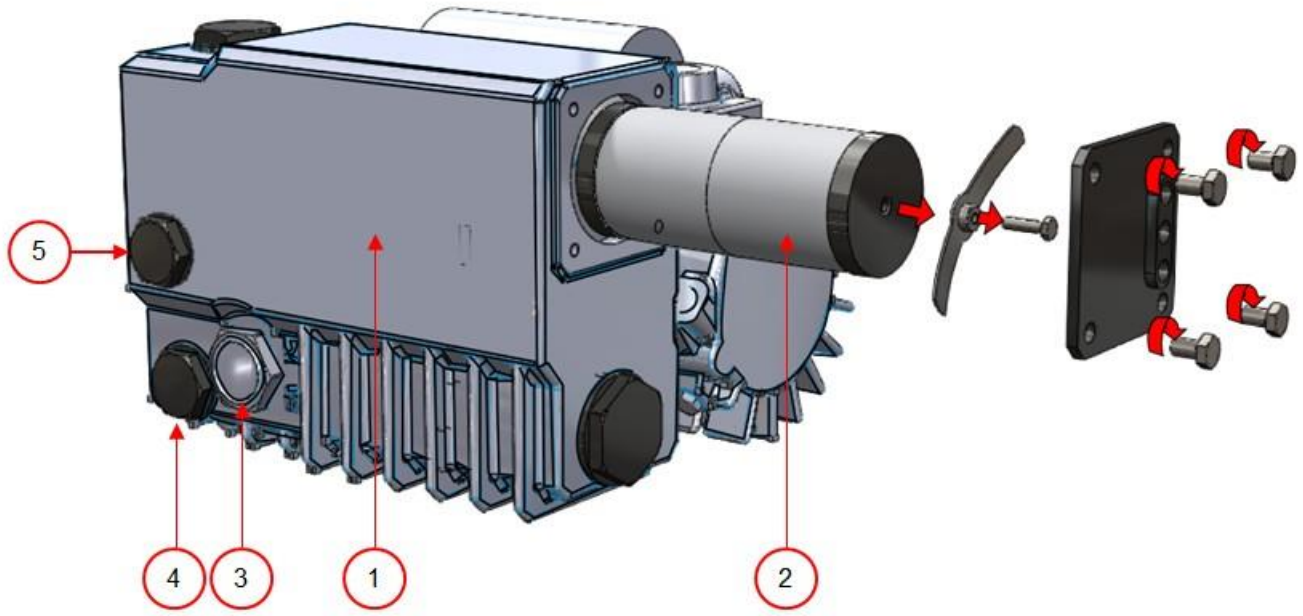


Figure 5: Overview of the Pump (Pump 19 m^3/h / 565 cf/h & 25 m^3/h / 889cf/h)

1. **Vacuum pump** - Creates the vacuum for the process.
2. **Oil exhaust filter** - Filters the air by capturing oil vapours.
3. **Oil sight glass** - Indicates the maximum and minimum oil levels of the vacuum pump.
4. **Oil drain plug** - Removing the oil drain plug allows the oil to be drained.
5. **Oil filler plug** - Removing the oil filler plug allows the oil to be refilled.

4.5 Electrical Installation

The electrical installation provides power for the vacuum pump, the seal system and the operation of the machine.

See the electrical diagram for the further structure and operation of the electrical installation. Please contact your supplier for the electrical diagram.

Only a technical expert may perform work on the electrical installation.

The machine consists of the following electrical components:

Figure 6: Overview of the Electrical Installation

1. **Power connection and cable**
   This serves to connect the machine to the power supply.
2. **Control panel**
   This serves to operate the control functions. Your machine has the following control option:

   - *Operating Elements of the 1-Programme Control* on page 18

5 Installation

Consult *Technical Data* on page 36 for the specifications of the machine.

Before installing the machine, carefully read the safety instructions in *Safety* on page 7. Failure to follow or disregard of the safety instructions may result in serious injury.

5.1 Transportation and Installation

The machine must be moved and transported in an upright position.

1. Place the machine on a flat, level surface. This is essential to ensure a trouble-free operation of the machine.

Do not position machines with plastic covers in the vicinity of a heat source.

Make sure there is sufficient space (at least 15 cm) around the machine to ensure a proper ventilation.

2. Verify that the machine housing is present and correctly fitted.

5.2 Connecting the Machine

1. Make sure the voltage stated on the machine plate matches the mains voltage.
2. Connect the machine to a grounded wall outlet to avoid fire or electric shock.

The power cable must be free at all times, and nothing may be placed on it.

Immediately replace the power cable if damaged.

5.3 Prior to the First Use

1. Check the oil sight glass to see if the amount of oil in the pump is sufficient.
2. Optional: If the amount of oil in the pump is insufficient, refill it. See *Removing Oil, Refilling Oil* on page 25.
3. Proceed with *Starting the Machine* on page 19 to start up the machine.
4. Run the pump cleaning program before using the machine for the first time (see *Running the Pump Cleaning Programme* on page 25).

6 Operation

It is possible to optimise a programme for your products by modifying the parameters of a programme, see *Changing the Programme Settings* on page 20.

- All persons responsible for the operation of this machine must at least fully read and understand the chapters *Safety* on page 7 and *Operation* on page 18.
- Failure to follow or disregard of the safety instructions may result in serious injury.

6.1 Operating Elements of the 1-Programme Control

The 1-program control allows the machine to be operated and programmes to be changed.

See *Operation* on page 18 for instructions on the operation and programming.

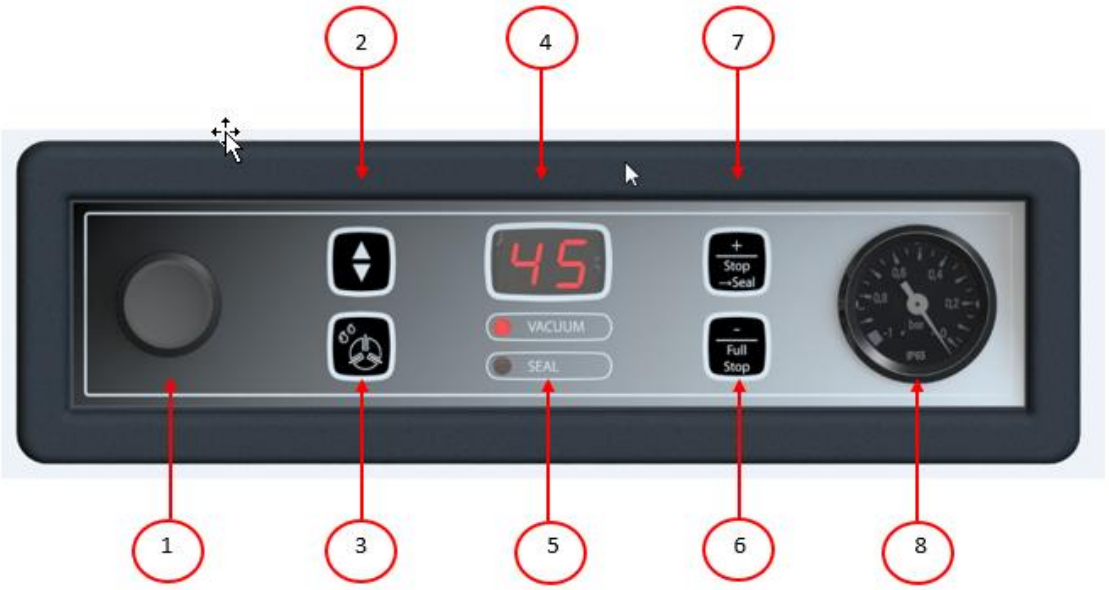


Figure 7: Control Panel of the 1-Programme Control

1. **On/Off button**
   Serves to turn the control panel on or off.
   Depending on the model, the on/off button is located on the left side of the control panel (as shown in *Figure 7: Control Panel of the 1-Programme Control* on page 18) or on the rear of the machine near the power cord.
2. **Cursor key**
   This key is used to operate the functions of the parameter display and function display.
3. **Pump cleaning program button**
   This is used to activate the pump cleaning program. Moisture can condensate in the oil when the pump is running only short cycles or when you are packaging moisture-containing products. This program removes moisture from the oil of the vacuum pump. See *Running the Pump Cleaning Programme* on page 25 for instructions.
4. **Parameter display**
   This display shows the current value of the active function during the program cycle or the set value of the selected function when the machine is inactive.

5. **Function display**
   The LED light in front of the function lights up if the function is active during the program cycle or if the function is selected in the programming mode.
6. **– / STOP button**
   This is used to interrupt the entire cycle during a packaging cycle. All functions are skipped and the cycle is terminated. In the programming mode, the value of the selected parameter can be lowered using this button.
7. **+ / VACUUM STOP button**
   This stops the active function and proceeds to the next program step. In the programming mode, the value of the selected parameter can be increased using this button.
8. **Vacuum meter**
   Shows the pressure in the vacuum chamber. A value of -1 bar corresponds to 99% vacuum.

6.2 Starting the Machine

1. Plug in the machine.
2. Press the on/off button on the control panel to enable the operation.

2 dashes may be shown on the display during the first start-up or ventilation. This means that the machine needs to be decompressed. In this case, open the lid to decompress the machine.

6.3 Starting the Packaging Cycle

The machine must be started in accordance with *Starting the Machine* on page 19 before starting a packaging cycle.

1. Put the product/products in place.
   a. Put the product/products in the vacuum bag.
   b. Place the vacuum bag in/on the vacuum chamber. Make sure the opening(s) is/are correctly placed with regard to the seal position(s).
2. Close the lid.
   The packaging cycle will start.

6.4 Proceeding to the Next Step in the Cycle

For some products, it may be necessary to proceed to the next step in the packaging cycle before the vacuum time or the vacuum level has been reached.

1. Proceed to the next step in the cycle.
   Press the **+ / VACUUM STOP** button.
   The next step will be started.

6.5 Terminating a Programme

Programmes such as the packaging programme or the pump cleaning programme can be terminated at any time.

1. Terminate the programme.

   Press the **– / STOP** button.

   The programme will be terminated and the vacuum chamber is decompressed.

6.6 Changing the Programme Settings

6.6.1 1-Programme Control System

This section describes the units and limits of the parameters and how parameters can be adjusted.

See *Operating Elements of the 1-Programme Control* on page 18 for an overview of the operating elements of the 1-program control system.

1. Use the **Cursor key** to scroll to the desired parameter.
   The LED in front of the selected function will light up.
2. Press the **– / STOP** button and the **+ / VACUUM STOP** button to adjust the value.

   The **– / STOP** button and the **+ / VACUUM STOP** button must be pressed and held for several seconds to adjust the value. This prevents the accidental changing of settings.
3. Press the **Cursor key** to activate the new parameter.

6.6.1.1 Vacuum

During the cycle, the air is removed from the chamber until the set time has been reached.

1. Use the **Cursor key** to scroll to the parameter Vacuum.
   The LED in front of the selected function will light up.
2. Press the **+ / VACUUM STOP** button to adjust the value.

   The **– / STOP** button and the **+ / VACUUM STOP** button must be pressed and held for several seconds to adjust the value. This prevents the accidental changing of settings.
3. Press the **Cursor key** to activate the new parameter.

6.6.1.2 Vacuum+ time

When air inclusions appear in the product, it may be desirable to prolong the vacuum time after reaching the maximum vacuum. This process is meant to let enclosed air escape from the product. The Vacuum+ time is set in seconds. If a Vacuum+ time is set, a dot will appear in the lower right corner of the parameter display.

1. Use the **Cursor key** to scroll to the parameter Vacuum.
   The LED in front of the selected function will light up.
2. Press the **+ / VACUUM STOP** button to adjust the value to the maximum vacuum percentage of 99%.

   The **+ / VACUUM STOP** button must be pressed and held for several seconds to adjust the value. This prevents the accidental changing of settings.
3. Press the **Cursor key** once to select the Vacuum+ time.

The display shows **O**.
The LED stays lit in front of **VACUUM**.

4. Press the buttons **– / STOP** and **+ / VACUUM STOP** to change the value in seconds.
   A dot will appear in the lower right corner of the parameter display when the value is set.
5. Wait a few seconds or press the **Cursor key** to activate the new parameter.

6.6.1.3 Seal

This is the time that the sealing wire and/or the cut-off wire are heated. The longer the time, the more heat is transferred to the bag.

1. Use the **Cursor key** to scroll to the parameter Seal.
   The LED in front of the selected function will light up.
2. Press the **– / STOP** button and the **+ / VACUUM STOP** button to adjust the value.

   The **– / STOP** button and the **+ / VACUUM STOP** button must be pressed and held for several seconds to adjust the value. This prevents the accidental changing of settings.
3. Press the **Cursor key** to activate the new parameter.

6.6.1.4 External Vacuum (optional)

The External Vacuum function allows special food containers to be vacuumed outside the machine.

Check in advance whether the relevant gastronorm container can withstand and hold a vacuum.

To select the External Vacuum option, follow the steps below.

1. Select the External Vacuum programme.
   a. Press the **Pump Cleaning Program** button.
      The display will show "C".
   b. Press the **Cursor key**.
      The display will show "E".
2. Connect the external vacuum hose to the machine by placing the adapter over the suction inlet (1) in the vacuum chamber.
3. Connect the external vacuum hose to the packaging.
   a. Connect the adapter (3) of the external vacuum hose to the valve of the food container.
   b. Slide the sliding valve (2) towards the hose (closed position).

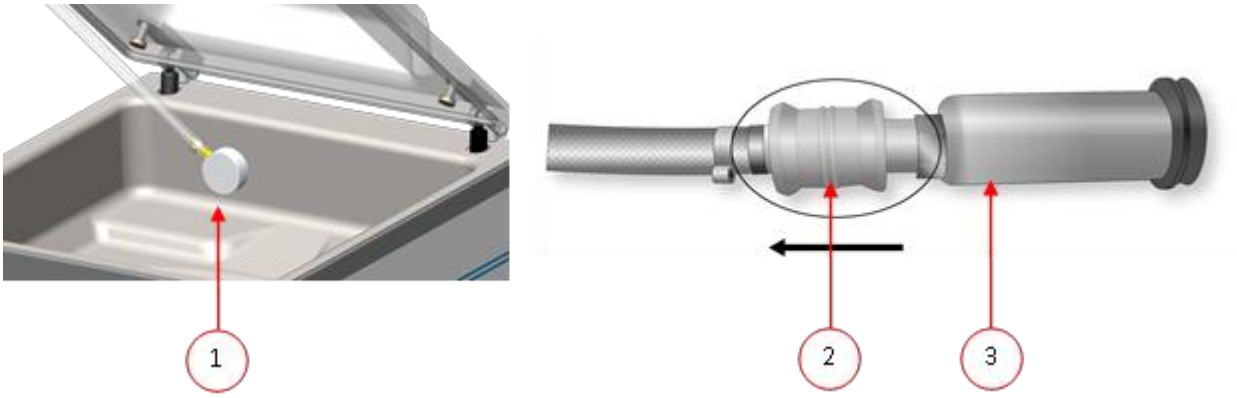


Figure 8: External Vacuum Adapter Set (1-Program Control)

4. Press the **+ / VACUUM STOP** button to start vacuuming.
   The food container will be vacuumed.

5. Slide the sliding valve of the adapter towards the gastronorm container (open position) and remove the external vacuum hose from the food container.

6.7 Guideline for Function Values

Values can be set for each function. In order to understand the consequence of the set value, the table below explains the consequences of giving a low or high value for each function.

Function	Range	Conditions
Vacuum	30-99 %	Rule of thumb: the higher the vacuum, the less oxygen remains in the package and the longer the shelf life of the product. There are exceptions to this rule.
Vaccum +	0-99 seconds	This is the time that is needed to let enclosed air escape after reaching the maximum vacuum. Vacuum must be set to maximum.
Seal time	0.5 – 4.0 seconds	This is the time that the sealing wire and/or the cut-off wire are heated. The longer the time, the more heat is transferred to the bag. The average seal time is 1.8-2.5 seconds.
Cleaning of the pump	15 minutes	Fixed value.

The vacuum in the chamber must be at least 30% at the moment of sealing (0.7 bar on the meter).

If the pressure is reduced, the boiling point of liquids will be decreased; see *Figure 9: Vapour Pressure Curve of Water* on page 23. As a result of this law of nature, a product may start boiling. In addition to contamination of the machine, this will reduce the weight and quality of the product to be packaged.

When packaging moisture-containing products, such as soups and sauces, it is important to closely monitor the vacuuming process. The moment bubbles are formed or the product starts to bubble, you should immediately proceed to the next step in the cycle. See *Proceeding to the Next Step in the Cycle* on page 19.

By letting products cool down sufficiently prior to starting the vacuuming process, a higher vacuum can be achieved.

When packaging moisture-containing products, it is important to run the pump cleaning programme at least once a week. When moisture-containing products are vacuumed on a daily basis, it is recommended to run the pump cleaning programme at the end of the day.

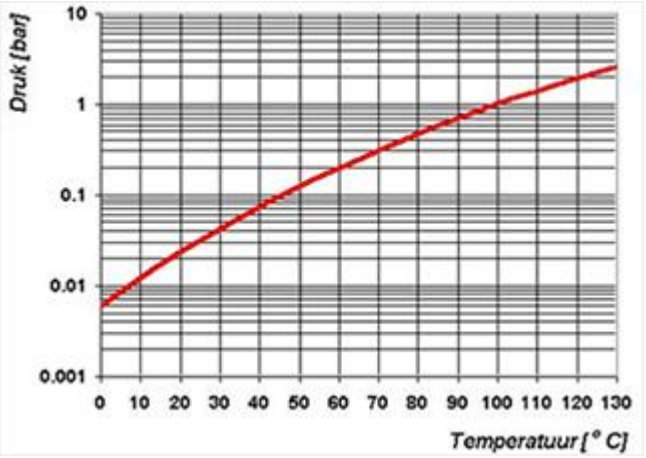


Figure 9: Vapour Pressure Curve of Water

7 Maintenance

When carrying out maintenance work, always observe the following safety rules.

- Only trained technicians are authorised to perform the described maintenance activities.
- Always disconnect the power supply by disconnecting the plug.
- Test the machine after carrying out maintenance work or repairs to make sure the machine can be used safely.

7.1 Maintenance Schedule

The diagram below shows the maintenance activities that must be performed and the interval with which these activities must be performed.

For specific descriptions for performing maintenance activities, consult the appropriate section within *Maintenance* on page 24.

Activity *	**1-D**	**1-W**	**6-M**	**1-Y**	**4-Y**
Cleaning					
Cleaning the machine.	X				
Inspections					
Check the oil level.		X			
Run the pump cleaning programme.		X			
Inspect the sealing bars.		X			
Inspect the silicone rubber of the silicone holders.		X			
Inspect the lid gasket.		X			
Check the plastic lid for cracks.		X			
Inspect the lid springs. Pay additional attention to damage and the fastenings of the lid springs (not for the Neo series).		X			
Lubrication					
Replace the oil of the vacuum pump. See *Technical Data* on page 36 for the type of oil.			X		
Replacement					
Replace the sealing wires.			X		
Replace the silicone rubber of the silicone holders.			X		
Replace the lid gasket.			X		
Replace the oil exhaust filter.				X	
Contact your dealer for professional servicing.				X	

Activity *	1-D	1-W	6-M	1-Y	4-Y
Replace the plastic lid.					X

* 1-D = Daily, 1-W = Weekly, 6-M = Every 6 months, 1-Y = Annually, 4-Y = Every 4 years

7.2 Cleaning the Machine

Never clean the machine using a high pressure cleaner.

Do not use any aggressive or toxic cleaning agents.

Do not use any cleaning agents containing solvents.

1. Clean the surfaces with a soft, damp cloth. You can also apply a cleaning agent to the machine and wash it with clean water.

7.3 Running the Pump Cleaning Programme

The pump cleaning programme runs the vacuum pump for 15 minutes. During the programme, the pump and the oil reach the operating temperature. Moisture in the pump is absorbed by the oil. The high temperature causes any moisture in the pump to evaporate, and minimises the risk of corrosion.

It is advisable to run the programme before using the machine for the first time, after the machine has been stationary for a lengthy period of time, and especially prior to changing oil.

Run the pump cleaning programme every week. If you package moisture-containing products, such as soups and sauces, the pump cleaning programme should be run every day.

1. Select the pump cleaning programme.

   Press the **Pump Cleaning Programme** button.
2. Close the lid to start the pump cleaning programme.
   The pump cleaning programme will run for 15 minutes.

7.4 Removing Oil, Refilling Oil

This section describes how to remove oil from the pump and how to refill the oil.

See *Vacuum Pump* on page 14 for an overview of the pump parts.

If the machine remains unused for a prolonged period of time, the oil must be removed from the pump. This is necessary because moisture and dirt in the oil may affect the pump, causing the pump to jam at the next use.

The oil in the vacuum pump may be hot. Avoid contact with hot oil when removing the oil.

Follow the steps below to remove the oil from the pump:

1. Place a drip pan under the oil drain plug.
2. Remove the oil drain plug.
   The oil will drain from the pump.
3. Replace the oil drain plug.

   Follow the steps below to add oil to the pump. You can follow these steps after all oil has been removed, but also to refill oil.
4. Remove the oil drain plug.
5. Add oil until the oil level is between the minimum and maximum levels.
6. Replace the oil drain plug.

7.5 Replacing the Oil Exhaust Filter

The oil exhaust filter prevents oil vapours from being emitted from the vacuum pump with the exhaust air. If the filter becomes saturated, the maximum vacuum level can no longer be reached. Replace the filter in case of vacuuming problems or as specified in *Maintenance Schedule* on page 24.

7.5.1 Pump 9 m3/h / 318 cf/h

The oil exhaust filter prevents oil vapours from being emitted from the vacuum pump with the exhaust air. If the filter becomes saturated, the maximum vacuum level can no longer be reached. Replace the filter in case of vacuuming problems or as specified in *Maintenance Schedule* on page 24.

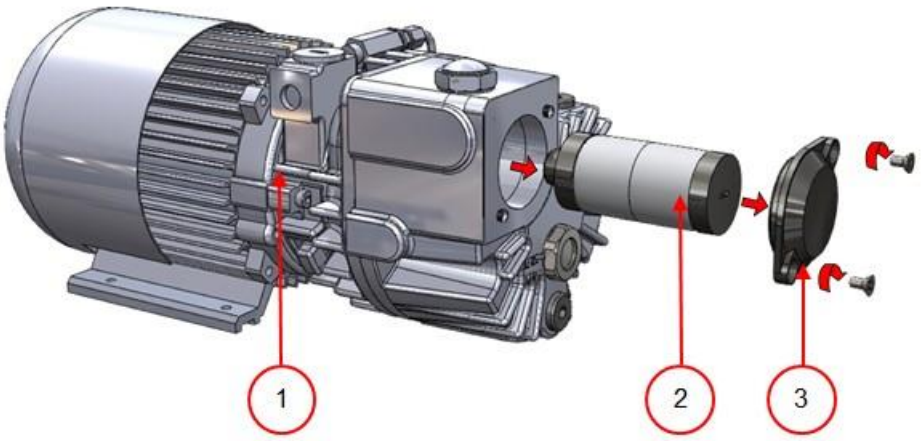


Figure 11: Replacing the Oil Exhaust Filter (Pump 9 m^3/h / 318 cf/h)

Follow the steps below to remove the old oil exhaust filter:

1. Remove the filter cover (3) of the vacuum pump (1) and put it aside.
2. Remove the oil exhaust filter (2) from the vacuum pump.

Follow the steps below to install a new oil exhaust filter:

3. Turn the new filter into the vacuum pump.
   Make sure the O-ring is properly placed on the filter inlet.
4. Mount the filter cover placed aside.

7.5.3 Pump 19 m3/h / 671 cf/h & 25 m3/h / 889 cf/h

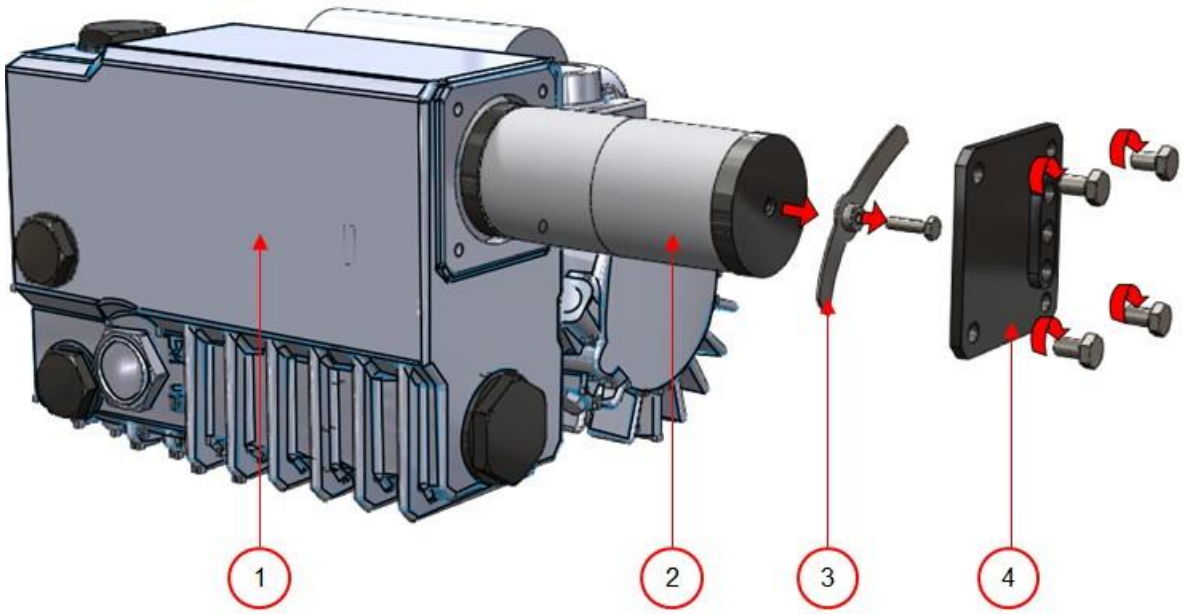


Figure 12: Replacing the Oil Exhaust Filter (Pump 19 m3/h / 671 cf/h & 25 m3/h / 889 cf/h)

Follow the steps below to remove the old oil exhaust filter:

1. Remove the filter cover (4) of the vacuum pump (1) and put it aside.
2. Remove the leaf spring (3) and put it aside.
3. Remove the old filter (2).

Follow the steps below to install a new oil exhaust filter:

4. Insert the new filter into the vacuum pump.

   Make sure the O-ring is properly placed on the filter inlet.
5. Mount the leaf spring placed aside.
6. Mount the filter cover placed aside.

7.6 Replacing the Sealing Wire

Depending on the specifications of your machine, you can have one of the following (combinations of) sealing wires:

- Wide seal: one wide sealing wire
- Double seal: two sealing wires
- Trenn seal: one sealing wire and one cutting wire

The process of replacing the sealing wires is the same for all types.

Replace the sealing wires if the wire and/or the Teflon tape are damaged, or as specified in *Maintenance Schedule* on page 24.

Figure 13: Removing the Sealing Bar

1. Remove the sealing bar by lifting it from the cylinders. See *Figure 13: Removing the Sealing Bar* on page 29.

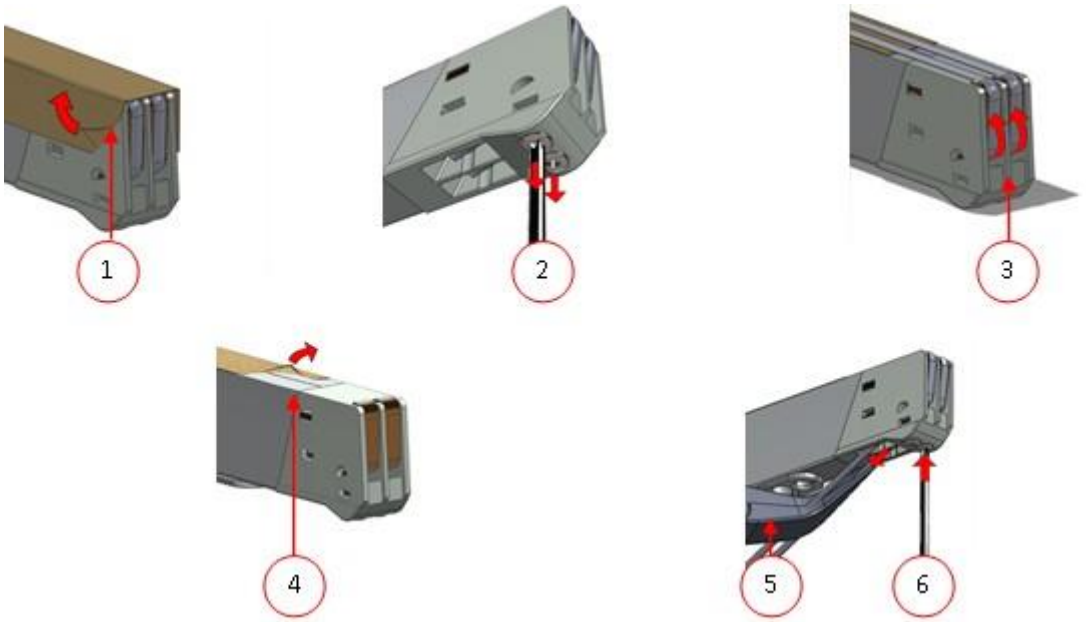


Figure 14: Replacing the Sealing Wire

2. Remove the Teflon tape (1) that protects the sealing wire.

3. Remove the screws (2) at the bottom of the sealing bar and remove the sealing wires (3).

4. Replace the Teflon tape on the sealing bar.

a. Pull the Teflon tape from the top of the sealing bar (4).

b. Clean the sealing bar with a dust-free cloth.

c. Apply a new piece of Teflon tape of the same length on the sealing bar.

5. Replace the sealing wires.

a. Cut a new piece of sealing wire or cutting wire at the length of the sealing bar plus approximately 15 cm.

b. First place the wire on one side of the sealing bar by tightening the screws (2).

c. Place the other end of the wire in its location and tension it with pliers. Now fasten it by tightening the screws.

d. Cut both ends of the wire.

6. Replace the Teflon tape on the sealing wire.

a. Cut a piece of Teflon tape at the length of the sealing bar plus approximately 5 cm.
b. Attach the tape over the sealing wires on the sealing bar evenly and without folds.
c. Cut the tape.

7. Place the sealing bar back in its position.

7.7 Replacing the Silicone Rubber of the Silicone Holders

To ensure a seal of good quality, the silicone rubber may not be damaged and the surface must be smooth. Mechanical contact or burning by the sealing wire may damage the rubber.

Replace the silicone rubber if damaged or as specified in *Maintenance Schedule* on page 24.

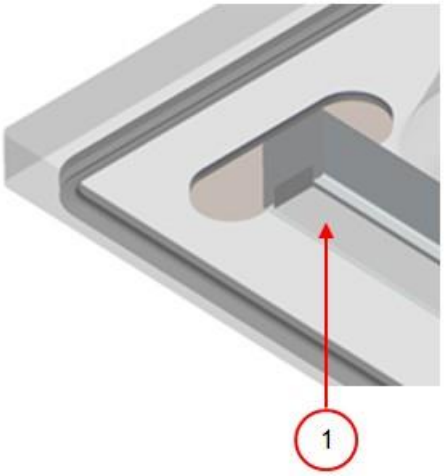


Figure 15: Replacing the Silicone Rubber of the Silicone Holders

1. Pull the old silicone rubber from the holder, see *Figure 15: Replacing the Silicone Rubber of the Silicone Holders* on page 30.

2. Cut a new piece of silicone rubber. Make sure it is the same length as the holder.

If the rubber is too short or too long, this may cause problems with the seal of the bag.

3. Install the new piece of silicone rubber by pressing it into the recess of the silicone holder.

Ensure that the silicone rubber is fully and uniformly placed in the recess. It is also important that the surface of the silicone rubber is smooth after it is in place, and that it shows no signs of stress.

7.8 Replacing the Lid Gasket

The lid gasket ensures the vacuum chamber is fully closed during the machine cycle. This is essential to reach the maximum vacuum level. Due to extreme pressure differences, the gasket wears and should therefore be replaced regularly.

Replace the lid gasket if damaged or as specified in *Maintenance Schedule* on page 24.

Figure 16: Replacing the Lid Gasket

1. Pull the old gasket loose to remove it.
2. Cut a new piece of rubber.

Preferably cut the new piece of rubber slightly longer than the old piece.

The edges must be cut straight.

If the lid gasket is too short or too long, this may cause problems when closing the lid or it may cause leakage.

3. Install the new gasket by pressing it into the gasket slot. The lip of the gasket must face downwards and outwards.

   The gasket should be placed in the slot evenly and without any tension. The edges must be placed closely together to prevent leakage.

7.9 Inspecting the Lid Springs

1. Check the fastenings of the lid springs for wear, corrosion and damage.
2. Check the lid springs for wear and damage.

In the case of irregularities, please contact your service dealer.

8 Troubleshooting

The tables below show the possible malfunctions and the corresponding causes as well as the steps to be taken.

Malfunction	Activity	More information
Control panel does not illuminate.	• Connect the machine to the power supply.	*Electrical Installation* on page 15.
The control panel is on, but there is no activity after closing the lid.	• Check or adjust the switch of the lid.	Contact your supplier.
Insufficient end vacuum.	• Check the vacuum settings of the programme and adjust them. • Make sure that the extraction opening is not covered. • Check the oil level in the pump. • Check/replace the oil exhaust filter. • Check/replace the lid gasket.	*Changing the Programme Settings* on page 20. *Vacuum Pump* on page 14. *Replacing the Oil Exhaust Filter* on page 26. *Replacing the Lid Gasket* on page 30.
Vacuum process is slow.	• Make sure that the extraction opening is not covered. • Check the oil level in the pump. • Check/replace the oil exhaust filter.	*Vacuum Pump* on page 14. *Replacing the Oil Exhaust Filter* on page 26.
Vacuum bag is not sealed correctly.	• Check the seal settings of the programme and adjust them. • Check/replace the Teflon tape and the sealing wires. • Check/replace the silicone rubber of the silicone holders. • Check the inside of the vacuum for contamination and clean it.	*Changing the Programme Settings* on page 20. *Replacing the Sealing Wire* on page 28. *Replacing the Silicone Rubber of the Silicone Holders* on page 30.

Malfunction	Activity	More information
The lid does not open automatically.	• Check the gas spring/ springs of the lid.	Contact your supplier.

Error messages for the 1-programme control system

Malfunction	Activity	More information
"F1" in display.	• Check or adjust the switch of the lid. • Verify that the vacuum pump is running.	Contact your supplier.
"F2" in display.	• Check whether the lid is open. • Restart the machine.	In case the malfunction reoccurs, contact your supplier.
--- in display.	• Check whether the lid is open.	
Flashing "C" in display.	• This is a reminder to run the pump cleaning programme.	• Run the pump cleaning programme.

9 Terms of Warranty

The warranty is subject to the following limitations. The warranty period for products supplied by Eurodib is 1 years from the date indicated on the purchase document. This warranty is limited to manufacturing and machining defects and therefore does not cover breakdowns involving any part of the product that is exposed to any form of wear and tear. Normal wear and tear that may be expected with the use of this product is therefore hereby excluded.

- The responsibility of Eurodib is limited to replacing defective parts; we shall not acknowledge claims for any other kind of damage or costs.
- The warranty automatically expires in case of overdue or poor maintenance.
- If there are doubts about the maintenance activities or if the machine fails to work correctly, always contact the supplier.
- The warranty does not apply if the defect is the result of incorrect or negligent use, or maintenance that was conducted contrary to the instructions given in this manual.
- The warranty is void in the event of repairs or modifications to the product by third parties.
- Defects due to damage or accidents caused by external factors are excluded from the warranty.
- If we replace parts in compliance with the obligations of this warranty, then the replaced parts become our property.

The provisions regarding the warranty and liability are part of the general terms and conditions of sale, which can be sent to you upon request.

9.1 Liability

- We exclude all liability insofar as far as it is not required by law.
- Our liability shall never exceed the total amount of the machine value in question.
- With the exception of the applicable legal regulations of public order and good faith, we are not liable to pay for any damage of any sort whatsoever to the counterparty or to third parties, directly or indirectly, including lost profits, damage to movable or immovable property or personal injury.
- We are in no way liable for damages arising from or resulting from the use of the product used, or the unsuitability thereof for the purpose for which the other party decided to purchase the product.

10 Disposal

Do not dispose of oil and components as household waste. When replacing oil or components at the end of the service life, ensure that all materials are collected and disposedor reused in alegal and environmentally sound manner.

11 Appendices

11.1 Technical Data

11.1.1 Technical Data Arctic

	Arctic 11
General	
Ambient temperature during operation	5 to 30°C
Machine working conditions: relative humidity (non-condensing)	10-90%
Sound emission	< 70 dB(A)
Maximum daily production	5 hrs/day*
Dimensions of the machine	
Width	13.2 in
Length	17.7 in
Height	12.0/13.4 in**
Weight	66 lbs
Maximum product height	3.3/5.0 in**
Electrical connection	
Supply voltage	****
Connected load	****
Vacuum pump	
Capacity	9 m^3/h / 318 cf/h
Oil	0.25 litre
Type of synthetic oil	VS 32
Ambient temperature synthetic oil	14 to 104 °F

*This machine is not designed for continuous use. The maximum used setting for vacuum should be 60 seconds. Maintain a 15 second waiting period between each following cycle. Also, if the machine is used for 1 hour continuously, the machine should be switched off, until the temperature of the enclosure has reached the ambient temperature.
**Depending on whether the machine has a low or a high hood.
***Extension legs are available for this machine. These legs will add 4 inches to the total height.
****See machine plate.

	Arctic 16	Arctic 16D
General		
Ambient temperature during operation	5 to 30°C	5 to 30°C
Machine working conditions: relative humidity (non-condensing)	10-90%	10-90%
Sound emission	< 70 dB(A)	< 70 dB(A)
Maximum daily production	5 hrs/day*	5 hrs/day*
Dimensions of the machine		
Width	19.4 in	19.4 in
Length	20.8 in	24.2 in
Height***	17.3 in	18.4 in
Weight	128 lbs	154 lbs
Maximum product height	7.1 in	7.1 in
Electrical connection		
Supply voltage	****	****
Connected load	****	****
Vacuum pump		
Capacity	19 m^3/h / 671 cf/h	25 m^3/h / 889 cf/h
Oil	0.3 litre	0.5 litre
Type of synthetic oil	VS 32	VS 32
Ambient temperature synthetic oil	14 to 104 °F	14 to 104 °F

*This machine is not designed for continuous use. The maximum used setting for vacuum should be 60 seconds. Maintain a 15 second waiting period between each following cycle. Also, if the machine is used for 1 hour continuously, the machine should be switched off, until the temperature of the enclosure has reached the ambient temperature.
**Depending on whether the machine has a low or a high hood.
***Extension legs are available for this machine. These legs will add 4 inches to the total height.
****See machine plate.

11.2 Logbook

This logbook must include:

- Annual maintenance work
- Major replacements and emergencies
- Modifications
- Tests of the emergency stop buttons and safety devices

Date:	**Performed by:** **(authority, technician)**	**Description:** **(nature of the activities, which parts have been replaced)**

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