

ART.NO 96.07.1.0030

HFE VACUUM SYSTEMS

SENSOR VACUUMMACHINES

HENKO VAC

HFE VACUUM SYSTEMS

Het Sterrenbeeld 36
5215 ML 's-Hertogenbosch
The Netherlands
Tel.: +31 (0) 73 - 627 1271
Fax: +31 (0) 73 - 627 1200

TYPE

YEAR

NO.

Contents

Introduction	3
The vacuum machine	4
Safety and installation	6
The control panel	7
Functions	8
Operation	11
A quick start	11
Programming	12
Adjusting values with open lid	12
Programming with closed lid	13
Machine maintenance	14
Pump maintenance	15
Sealing Beam maintenance	16
Problems and solutions	19
Liability	21
Register	22
Technical specifications	24

All rights reserved. No part of this publication may be reproduced in any form or by any electronic or mechanical means including information storage and retrieval systems without prior permission from HFE VACUUM SYSTEMS b.v.

HFE VACUUM SYSTEMS b.v. retains all rights to modify parts and/or specifications without prior notice.

The contents of this manual are also subject to modification without prior notice.

This manual pertains to machines that are equipped with sensor control. HFE VACUUM SYSTEMS b.v. accepts no liability whatsoever for any damage caused by any specifications deviating from those of the standard model.

Although this manual has been compiled with the utmost care, HFE VACUUM SYSTEMS b.v. accepts no liability whatsoever for any errors in this manual and/or for the (incorrect) interpretation of its contents.

HFE VACUUM SYSTEMS b.v. accepts no liability for damage or problems resulting from use of any parts other than original parts.

If this manual does not contain instructions for certain repairs, adjustments and maintenance, please contact your dealer or HFE VACUUM SYSTEMS b.v.

Introduction

The HFE Sensor vacuum machines are specially developed for vacuum packaging. Over forty years of experience and specialist know-how guarantee that these durable machines are of the highest quality and satisfy all requirements in the area of reliability and trouble-free operation.

The HFE Sensor vacuum machines are fitted with a unique sensor control and built-in software safeguards. Function values which do not correspond with one another cannot be keyed in due to this safety feature. After setting the desired vacuum percentage, the machine automatically creates the set vacuum level. In addition, the HFE Sensor vacuum machines are also equipped with an additional time-controlled vacuuming cycle to remove any trapped air from the product.

To make use even easier, the operating system memory includes nine programs which can be adapted to suit your circumstances.

All HFE vacuum machines are designed for easy maintenance and cleaning, ensuring a high level of hygiene.

The HFE Sensor vacuum machines comply with the requirements of the machine directive 89/392/EEC, amended by the directives 91/368/EEC, 93/44/EEC and 93/68 EEC, the low-voltage directive 73/23/EEC, amended by the directive 93/68 EEC and the EEC directive 89/336/EEC, amended by the directive 92/31/EEC and 93/68/EEC.

All HFE Sensor vacuum machines can be fitted with the following options:

- ☐ **Gas.** This option is applied for the packaging of delicate products. Certain gas mixtures can also be used as a preservative. Further information on the use of gas can be found on page 9.
- ☐ **Various sealing methods.** Double Seal for extra seal protection. Cut Off Seal to remove the remains of the bag after the seal line. Bi-active Seal in which both the upper and lower sealing beams are provided with sealing wire. Further information can be found on page 10.
- ☐ **Soft Air.** This option is used if soft and/or delicate products or products with hard protrusions are vacuum packaged. The vacuum chamber is then decompressed in such a manner that the pouch can mould itself to the product. More information can be found on page 10.

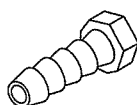
The vacuum machine

Machines with a **transparent acrylic lid** have a silicon sealing strip in the lid. The counter beam for sealing is also fitted to the lid.

Machines with **aluminium or stainless steel lids** have the sealing beam fitted in the lid.

Insert plates. The height in the vacuum chamber can be adjusted by adding and removing these plates (see page 11, fig. 1)

Connection Nipple for gas and sealing pressure. If applicable, this can be found on the back of the machine.

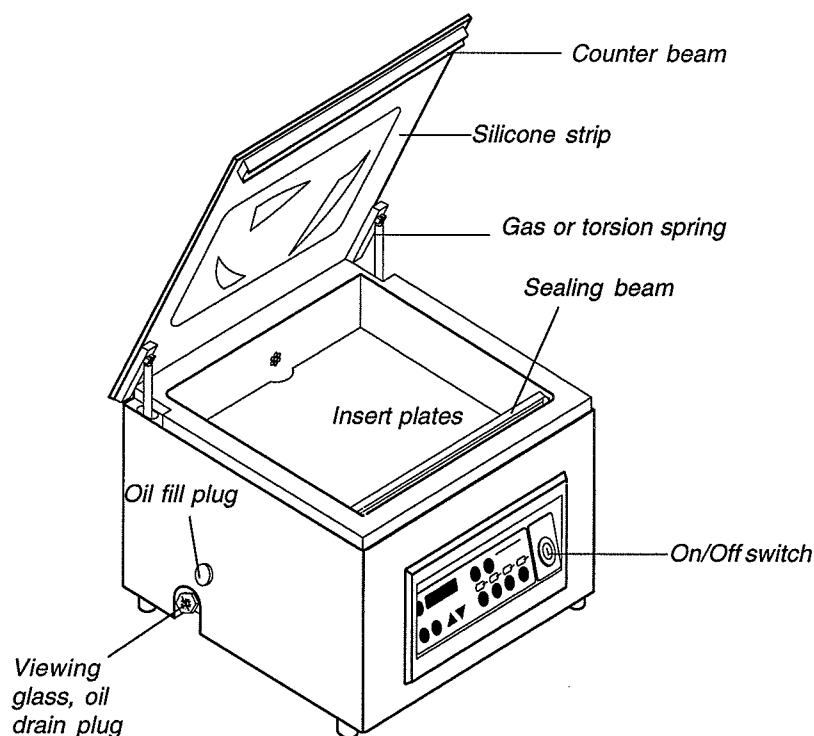
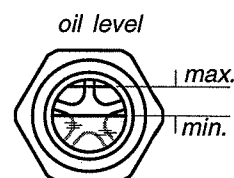


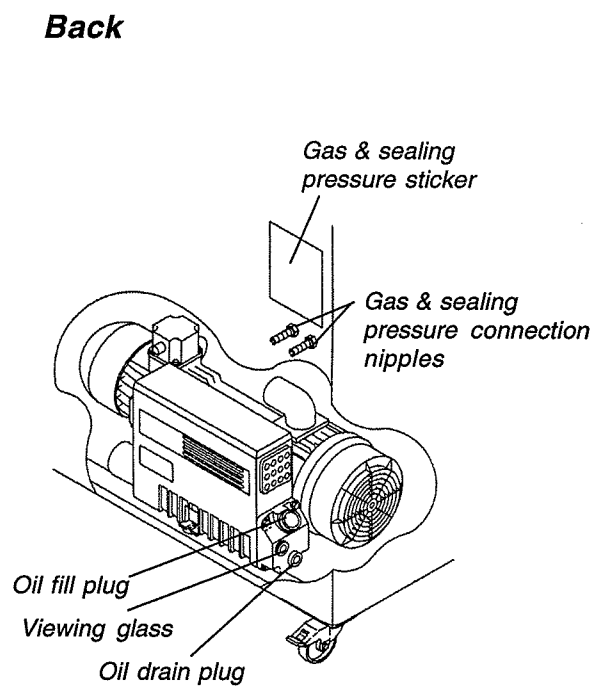
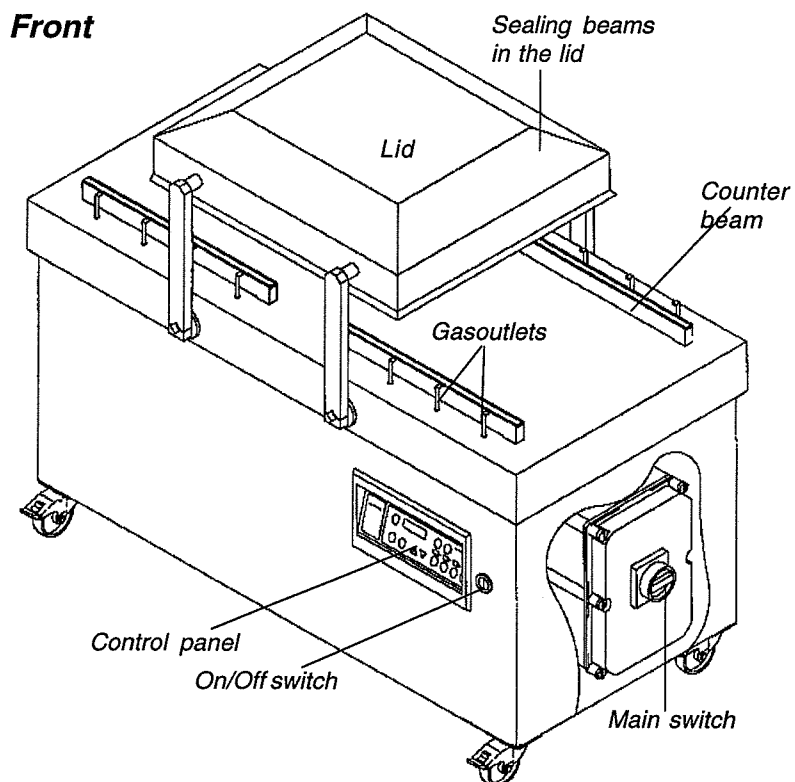
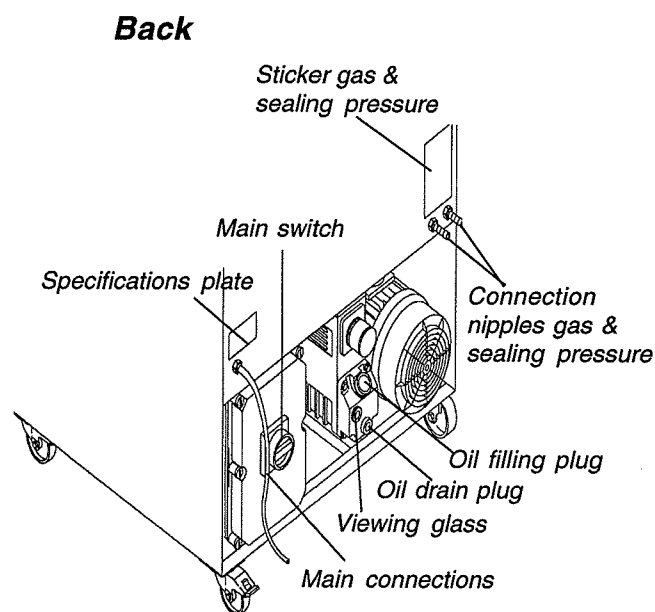
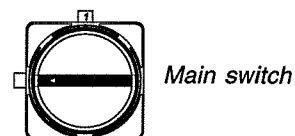
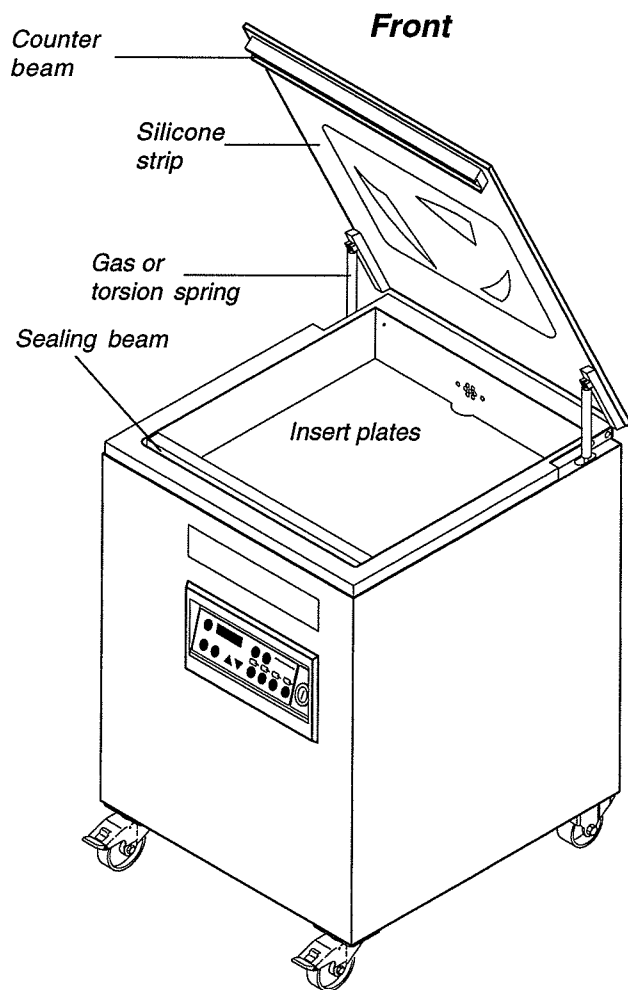
Always anchor **gas bottles**, for example by chaining them to a wall. If no gas is being used, then the bottles should be closed.

Connection Nipple for sealing pressure. On some models a 2nd Connection Nipple has been fitted for additional sealing pressure (Max. 1 bar).

Mains Connections and the Specifications Plate can be found on the back of all models.

Viewing Glass. The oil level should be between the following levels.





Safety and installation

The HFE Sensor vacuum machines are safe and durable machines. Observe the following instructions for your own safety and the optimum maintenance of the machines.

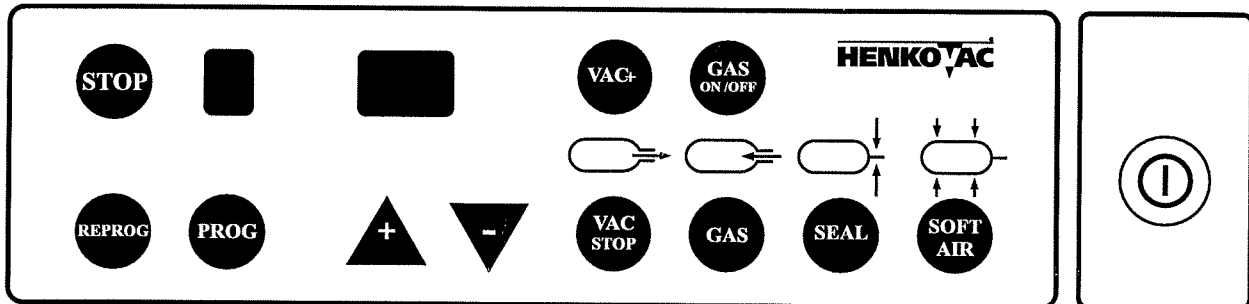
- ☐ Make sure this manual is always within easy reach.
- ☐ Make sure the machine is level and has been placed on a solid smooth floor. This prevents the deformation of the vacuum chamber and ensures the proper closing of the lid.
- ☐ To ensure easy access for maintenance and sufficient ventilation, the machine must not be built in. Ensure that the machine is easily accessible from all sides.
- ☐ Before connecting the machine to the power supply make sure that the voltage stated on the specifications plate is the same as that of the mains supply and that the connection is properly earthed.
- ☐ The temperature in the workspace should not be lower than 10°C, as the oil in the vacuum pump will thicken and prevent the smooth operation of the pump.
- ☐ Always anchor gas bottles, for example by chaining them to the wall. If no gas is being used, then the bottles should be closed.

WARNING

Because of the risk of explosion, it is strictly forbidden to use gas mixtures containing oxygen. Damage and/or accidents which occur due to the use of oxygen invalidate all guarantees and liability. Gas mixtures containing oxygen can only be used in very special circumstances with written permission and under the strictest conditions, providing that HFE has installed an oxygen safety device.

- ☐ On three-phase machines, check whether the vacuum pump is rotating in the correct direction i.e. the direction indicated by on the motor. If you have any queries, contact your dealer.
- ☐ Is the oil level of the vacuum pump correct? Refer to page 4, 14, 15.
- ☐ Some models are equipped with a 2nd connection nipple. This is not for gas, but for compressed air to increase the sealing pressure (max. 1 bar).
- ☐ Always disconnect the machine from the power supply before carrying out repairs and maintenance work. Depending on the model remove the plug from the socket or turn the main switch to OFF and lock it with a padlock if appropriate.
- ☐ Never clean the machine with a high-pressure hose; as the machine and specifically the electronics could be damaged.
- ☐ Replace oxidised gas & torsion springs on the lid immediately to prevent accidents.
- ☐ Switch the machine off immediately in the event of breakage in any of the gas or torsion springs. Contact your dealer as soon as possible.
- ☐ Repairs and maintenance work may only be carried out by authorized Henkovac dealers.
- ☐ Do not vacuum package sauces or other moist products before acquainting yourself with operating procedures. See page 8 for further information. Incorrect use can lead to irreparable damage.

The control panel



On/Off switch.



Letter on the 1st display of an active function:

U = Vacuum, *G* = Gas, *S* = Sealing, *A* = Soft Air and *d* = Decompression



The **2nd display** indicates the values for vacuuming, gas flushing, sealing and Soft Air.

When the machine is switched on the 2nd display indicates the settings of the dip switches followed by the relevant software code.



[**STOP**] key: general stop key. Stops the process completely. The chamber is decompressed.



[**REPROG**] key: for (re)programming.



[**PROG**] key: for selecting program numbers.



[**▲**] and [**▼**] keys for changing values.



[**VAC+**] key: for the setting and calling-up the extra vacuum time, or to interrupt the additional vacuuming.



[**VAC STOP**] key: for setting and calling-up the vacuum values or for interrupting the vacuuming.



[**GAS ON/OFF**] key (optional): for switching the gas function ON and OFF the gas function. This key has no function if the gas option has not been installed.



[**GAS**] key (optional): for setting and calling-up the gas values or for interrupting the gas flushing. This key has no function if the gas option has not been installed.



[**SEAL**] key: for setting and calling-up the sealing time or for interrupting the process (same as stop key).



[**SOFT AIR**] key (optional): for setting and calling-up the Soft Air time or for interrupting the Soft Air function. This key has no function if the Soft Air option has not been installed.

Functions

Stopping



If intervention is necessary while a program is in progress the cycle can be stopped immediately by pressing the **[STOP]** or the **[SEAL]** keys. The vacuum chamber is then decompressed and the lid opens automatically.

Take note!

- The pouch will not be sealed! The programmed value will remain unchanged.
- This is a cycle interruption and not an emergency stop key.

Programming



The **[PROG]** and **[REPROG]** keys are used for programming. Programming can take place with the lid open or closed. Programming is explained on page 12.



The values for vacuuming, gas flushing, sealing and Soft Air can be adjusted for every program except program '0', using the **▲▼** keys (Program 0 is the program for removing moisture from the pump (see page 15).

Vacuuming



Press the **[VAC STOP]** key to set and call-up the vacuum values or to interrupt vacuuming. The vacuuming value indicates the vacuum percentage. The highest value is 99%.



Extra vacuuming

Sometimes extra vacuuming is necessary to extract any trapped air. The extra vacuum values (the **[VAC+]** key) indicates the number of seconds. The **[VAC+]** value can only be entered if the basic vacuum value has been set to 99%

Vacuuming sauces

When vacuum packaging sauces, soups and other products containing liquids, careful attention must be paid to the vacuum percentage as the boiling point of liquids drops as the vacuum percentage increases. If the boiling point has been reached you can see gas bubbles in the product. The resulting water vapour gets into the pump and condenses. This oxidises the pump, shortening its economic life. Use program '0' after vacuuming a large amount of moist products. (For further information on program '0' see page 15).

Boiling point at vacuum percentage

% vacuum	10	20	30	40	50	60	70	80	90	97	99
°C	97	94	90	86	82	76	68	60	45	20	6



Interrupting vacuum packaging

The vacuum packaging can be stopped during the cycle in order to switch to another function. When, for example, the **[VAC/STOP]** key is hit at vacuum percentage 75, the machine will immediately switch to the following function. This is particularly convenient when vacuum packaging liquids. This does not alter the programmed value is not altered.

Gaspackaging(optional)

The gas packaging option is not a standard option. Gas packaging is applied to package delicate products. If only vacuum packaging takes place, the resulting pressure difference will crush the product. To compensate for this pressure difference, the air is replaced by a controlled gas mixture. In general a 30% carbon dioxide and 70% nitrogen mix. These gasses also have a preservative function. Ask your dealer or gas supplier for advice on the gas mixtures to be used.



While a program is in progress, the gas function can be switched on or off by pressing the **[GAS ON/OFF]** key. If your machine is not equipped with the gas option then the gas function cannot be activated.



The decimal point in the bottom right of the 1st display indicates that the gas function is active. The gas values can be read or adjusted.

Gas packaging value

The value for the gas packaging indicates the percentage of pressure in the vacuum chamber after gas flushing. If your machine is not equipped with a gas option, the **[GAS]** key will not function. *Example:* If the value is set to 60, the machine will gas flush until a vacuum percentage of 60% is reached in the chamber.

Take note! Do not let the gas value fall below 40. At this level it can occur that the pouch is not properly sealed. The recommended minimum value is 50.

Interrupting gas flushing

Gas flushing can be stopped during the cycle to subsequently switch to the next function. If for example during the adding of the gas the **[GAS]** key is pressed at a value of 75, the machine will immediately switch to the next function. This does not alter the programmed value.

Caution!

- ☐ Always anchor gas bottles, for example by chaining them to the wall.
- ☐ If no gas is being used then the bottle should be closed.



WARNING

Because of the risk of explosion, it is strictly forbidden to use gas mixtures containing oxygen. Damage and/or accidents which occur due to the use of oxygen invalidate all guarantees and liability. Gas mixtures containing oxygen can only be used in very special circumstances with written permission and under the strictest conditions, providing that HFE VACUUM SYSTEMS has installed an oxygen safety device.

Sealing

After vacuum packaging and optional gas flushing, the sealing beams press the pouch closed. The pouch is sealed by heating the sealing wires. The sealing time (with the **[SEAL]** key) depends on the thickness and quality of the vacuum pouch. After sealing the sealing beam rests on the pouch for 3 seconds to allow for optimum cooling and bonding of the seam. The condition of the sealing beams is crucial for the quality of the seam. Therefore ensure that you read the section on the maintenance of the sealing beams under 'Maintenance' on page 16.

The following sealing options can be used:

- ☐ *Single Seal.* The standard version with one sealing wire.
- ☐ *Double Seal.* For additional protection, two equally wide sealing wires are mounted side-by-side on the sealing beam.
- ☐ *Cut Off Seal.* A second, thinner wire behind the sealing wire removes the surplus part of the pouch behind the seam.
- ☐ *Bi-active Seal.* Optional, not available with all models. Both the top and the bottom sealing beam, are equipped with sealing wires. This enables the perfect sealing of thick or aluminium pouches.



Sealing time value

The value on the 2nd display is indicated in seconds and tenths of seconds. This explains the decimal point between the numbers. The maximum sealing time is 6 seconds.

Decompression



After sealing, the air valve is opened automatically. Air enters the vacuum chamber and when the pressure in the vacuum chamber is the same as the pressure outside the chamber the lid is automatically opened by the gas or torsion springs. During decompression two bars [- -] will flash on the 2nd .

Soft Air(optional)

The Soft Air option is not a standard feature. It is designed to prevent damage to soft or delicate products or damage to the pouch by products with hard protrusions (such as spare ribs) caused by too rapid decompression. This option slows down decompression so that the pouch can gently shape itself to the contours of the product.



Soft Air value

The Soft Air value on the 2nd display indicates up to which vacuum percentage the decompression will be slowed down. After that percentage, decompression will resume at normal speed and the lid will open automatically.

If the machine is not equipped with the Soft Air function, the **[Soft Air]** key will not function.

Take note! The value of the Soft Air setting should be lower than the vacuum value. If, for example, the Soft Air has been set at 90% and the vacuum percentage at 70% decompression will not be slowed down. The Soft Air function only works if the setting for the vacuum percentage is higher than that of the Soft Air.

Interrupting the Soft Air function

The Soft Air function can be stopped during the cycle in order to switch to the next function. If, for example, during decompression the **[Soft Air]** key is pressed at a value of 75, then the machine will immediately switch to the next function. The programmed value will not be changed.

Operation

A Quickstart

For rapid familiarity with the machine follow the 'Quick Start' example given below.

TAKE NOTE! If the machine is being used for the first time, first read the instructions about 'Safety and installation' (on page 6).

Automatic vacuum packaging

HFE has simplified getting started with the Sensor vacuum machines by equipping them with 10 standard programs. The values set in these 10 programs are given in the table 'Values for vacuum' below. In the Chapter 'Programming' you can learn how to adjust each program step-by-step (see page 12).

1 Switch the machine on with the **ON/OFF** key. With the bigger machines do not forget to turn the main switch on. After switching on, two codes and then the program number appear on the 1st display. If the lid is closed two beams will flash. Open the lid and the program number will appear.

2 Remove or place one or more insert plates to adjust the vacuum pouch height.

Make sure the opening of the pouch is wrinkle-free when placed over the Sealing Beam.

Do not fill the pouch more than 3/4 full. Make sure the opening of the pouch is clean. If the vacuum machine is equipped with gas flushing (optional), insert the gas nozzle into the opening of the pouch. For optimal gas flushing, place the pouch at the correct height (see Fig. 1).

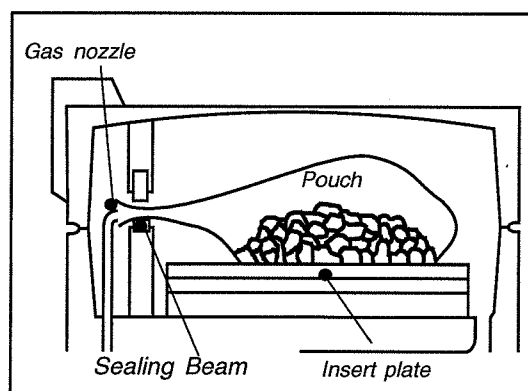


Fig. 1

3 Press the **[PROG]** key until the desired program number appears on the 1st display.



4 Close the lid and the program will start.

5 After decompression the lid will open automatically.

Settings of the ten pre-installed programs.

PROG	VAC	VAC+	GAS	SEAL	SOFT AIR
0	'Warm up' position (see page 15)				
1	99	0	0	2.5	99
2	99	5	0	2.5	75
3	99	10	0	2.5	50
4	99	15	0	2.5	99

PROG	VAC	VAC+	GAS	SEAL	SOFT AIR
5	99	5	50	2.5	99
6	99	10	40	2.5	99
7	99	0	35	2.5	99
8	99	15	20	2.5	99
9	99	5	70	2.5	99

Programming

There are two ways to program.














- ☐ The values of the various functions can be adjusted while the lid is open and the functions are non-operative. .
- ☐ The values of the various functions can be adjusted while the lid is closed and the functions are operative.

Take note! Program '0' can be used, but cannot be changed as it serves to extract moisture from the pump (see pages 8 and 15).

Adjusting values with open lid

- 1** Select the program by pressing the **[PROG]** key until the number of the program you want appears on the 1st display.
- 2** Press the **[REPROG]** key until the number on the 1st display flashes; you can now adjust the values of the functions.
- 3** Press the function key of which you want to adjust the **[VAC]**, **[GAS]** **[SEAL]**, **[SOFT AIR]**, etc. value.
 - * **GAS.** If the gas installation has been installed on the machines, the gas functions can be activated if necessary. A dot in the bottom right-hand corner of the 1st display indicates when the gas function is active. This function can be switched ON and OFF by pressing the **[GAS ON/OFF]** key.
- 4** The **[▲]** and **[▼]** keys can be used to adjust the value of a selected function.
- 5** When all values have been adjusted to your satisfaction, press **[REPROG]** again to store these new values to the memory.
- 6** The program number on the 1st display will stop flashing.

After filling the machine and closing the lid the program will start.

key	1st display	2nd display
		
		
		
		
		
		
		
		
		
		

Programming with functions operative

- 1** Select the program by pressing the **[PROG]** key until the number appears on the 1st display.
- 2** Press the **[REPROG]** key, the number on the 1st display will flash.

Place the pouch to be vacuumed in the machine and close the lid. The machine will start the vacuum cycle.

The letter U will flash on the 1st display. The value will start to increase on the 2nd display.

- 3** Press the **[VAC/STOP]** key once the desired percentage has been reached.

N.B. If the vacuum value has risen to 99 the machine automatically switches to extra vacuum; the value on the display is for whole seconds. When the desired time appears press the **[VAC+]** key.

- 4** After pressing the **[VAC/STOP]** or **[VAC+]** key, the value for gas flushing will appear (only if present and activated), the letter **S** will flash on the 1st display. The value on the 2nd display will drop as gas is now entering the vacuum chamber.

- 5** Press the **[GAS]** key once the desired value has been reached























The machine will now automatically switch over to the SEAL function; the letter **S** starts flashing on the 1st display. Nothing can be adjusted here as the value must be set separately (with the lid open).

After sealing, the letter **R** will flash on the 1st display if the Soft Air option has been installed* [If no Soft Air is required (when using the gas function) press the [Soft Air] key immediately after sealing when the R appears on the 1st display. This function will then not be activated.]

- 6** Press the **[SOFT AIR]** key, once the desired Soft Air percentage has been reached. The vacuum percentage will drop.

The machine will automatically start decompressing the vacuum chamber; on the 1st display the letter **d** will start flashing. If the lid is open a dot will light up in the bottom right-hand corner of the 2nd display. The new values are stored in the memory.

The program number will then reappear on the 1st display.

key	1st display	2nd display
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		

Machine maintenance

Regular and thorough maintenance prevents breakdowns, prolongs the machine's operational life and guarantees optimum hygiene.

Important points to keep in mind:

- ☐ Always unplug the machine or if applicable turn the main switch to OFF when carrying out maintenance or repairs.
- ☐ Never use a high-pressure cleaner to clean the machine as this can cause irreparable damage to the machine and to the electronics in particular.
- ☐ The gas or torsion springs on the lid may not be damaged in any way. To prevent accidents, replace the gas springs immediately if there is any evidence of oxidation.
- ☐ If breakage of the gas or torsion springs is discovered, switch off the machine immediately and contact your dealer.
- ☐ If any oil spray is detected or if the machine uses more oil than usual, or if the machine has difficulty starting, replace the oil spray filters in the vacuum pump.
- ☐ Never let maintenance or repairs be carried out by unauthorised persons.

The following maintenance schedule is based on normal usage. If used more intensively or under extreme circumstances the following activities must take place at shorter intervals.

Daily maintenance

<ul style="list-style-type: none">• Vacuum chamber and insert plates.	<ul style="list-style-type: none">• Clean the lid, insert plates, bottom and walls of the vacuum chamber with a damp cloth, pay particular attention to the silicon strip in the lid. Always, dust the silicon strip with talcum powder after cleaning. N.B. The transparent lid may not be cleaned with a synthetic cleaning agent as this weakens the acrylic material.
-------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Weekly maintenance

<ul style="list-style-type: none">• Vacuum pump.• Oil reservoir• Sealing beams	<ul style="list-style-type: none">• Dehumidify the vacuum pump at least once a week to prevent oxidation (see '<i>Pump Maintenance</i>')• Use the correct type of oil. In the table models use ISO-VG32 to under normal circumstances and ISO-VG100 in the other models. Under extreme temperatures other types of oil must be used. Ask your dealer for the specifications.• Check the condition of the beams; replace if damaged (see pages 16, 17, 18). Check the silicone strip; replace if damaged.
----------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Six monthly maintenance

<ul style="list-style-type: none"> Oil reservoir and the oil filter if present 	<ul style="list-style-type: none"> Change the oil and, if present, the oil filter. If the OIL message has not appeared yet, replace the oil anyway. If however, a lot of moist products are packaged the oil must be changed every 3 months. After changing the oil, the oil message must be reset by pressing the ▲ key for 5 seconds until the oil message appears, then release the key. The oil message has now been reset.
-----------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Yearly maintenance

<ul style="list-style-type: none"> Vacuum hoses and pipes. Silicone strip of the counter beam Oil exhaust filters in the pump. Gas and torsion springs in the lid. 	<ul style="list-style-type: none"> Check the condition (kinks, tears and porosity); replace if necessary. Check the condition (tears and scorching); replace if necessary. Check the condition; replace if necessary. Check the condition (damage, corrosion); replace if necessary.
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Five-year maintenance

<ul style="list-style-type: none"> Gas and torsion springs in the lid. Oil spray filters in the vacuum pump. Electrical wiring. 	<ul style="list-style-type: none"> If these have not yet been replaced, do so now. Contact your dealer. If the machine is exposed to aggressive materials, these parts should be replaced more often. Replace these now. Contact your dealer. Take note! If oil spray is visible at any time, replace the oil spray filters immediately; do not wait until the 5-year maintenance check. This prevents damage to the pump. Let your dealer check and repair the wiring if necessary.
------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Pump maintenance

- The machine is equipped with automatic oil change indication. If the oil message appears on the 2nd display, the oil must be changed. After the oil has been changed, reset the message by pressing the ▲ key for 5 seconds until the oil message appears, then release the key. The oil message has now been reset.
- On a new machine the oil must be changed once the **oil** message appears or after 100 hours of operation (whichever comes first).
- To prevent oxidation of the pump, remove the moisture from the oil regularly (at least once a week). Program '0' allows you to warm up the pump, thereby evaporating the moisture. On vacuuming of moist products (see also page 8 '*Vacuuming sauces*') warm up the pump and change the oil more frequently. Change the value of the oil change indicator accordingly (ask your dealer for advice).

The initial position of the oil change indicator can be changed as follows:

- Hold the ▼ key and the [VAC/STOP] key down for 5 seconds. A value between 00 and 99 appears on the 2nd display. This value indicates the number of cycles in hundreds (2,000 on small and 9,000 on big machines) the machine can carry out before the **oil** message appears.
- This value can be adjusted using the ▲▼ keys.
- Press the [REPROG] keys to store this new value.

Sealing beam maintenance

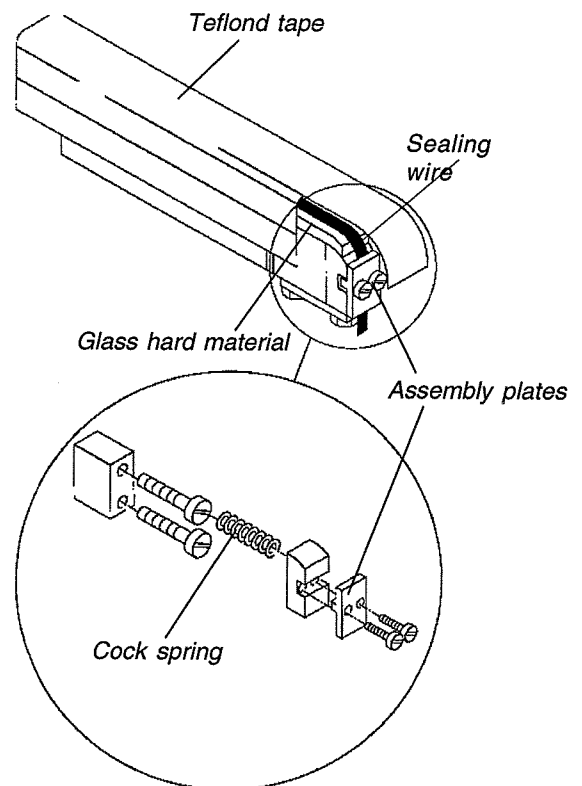
- Clean the sealing and counter beams daily to ensure optimum sealing of the packaging material. Use a dry cloth for this purpose.
- Check the condition of the sealing wires regularly. They should be free of kinks and should be tightly strung on the sealing beam. For flawless operation the teflon tape must be free of damage.
- If the sealing wires or the teflon tape are damaged, replace them immediately.
- Check the counter beam. This is made of silicone which generally has a long operational life and therefore does not need replacing very often. However, if parts of the beam are scorched, replace the silicone strip immediately.
- Ensure that spare sealing wires and teflon tape are always kept in stock. This prevents unnecessary and annoying delays.

Replacing the sealing wire and teflon tape

Removing existing materials

1. Remove the sealing beam from the vacuum chamber or lid.
2. Remove the old teflon tape.
3. Undo the screws on both ends of the beam and remove the assembly plates. Remove the sealing wires.
4. Check the glass hard material.
5. Clean the sealing beam thoroughly with a degreasing agent (for example, paraffin).
6. Check whether the cock springs on both ends of the beam are still in place. The cock springs accommodate the expansion of the sealing wire during the heating process.

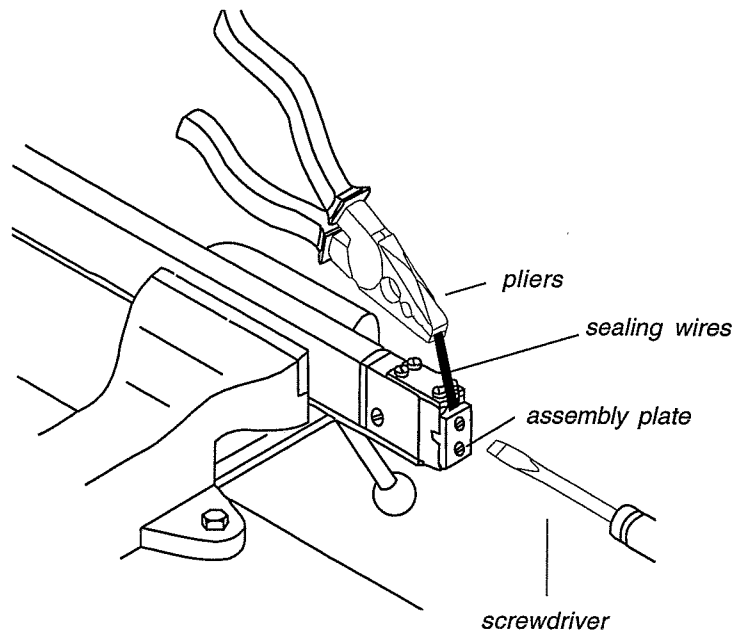
N.B. On machines with the sealing beam in the lid, remove the contact shoes on either end of the beam and remount them when the machine is reassembled. Check this connection too.



Replacing the sealing wires

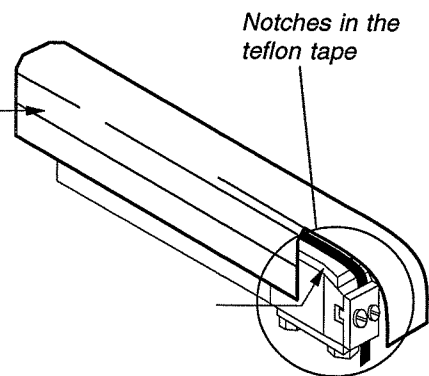
N.B. are the cock springs still in place ?

1. Insert the two wires (depending on the sealing option) behind the assembly plate. The ends of the wires should be level with the bottom of the sealing beam. Fasten the wires by tightening the screws in the assembly plate.
2. Guide the wires along the beam to the other side and insert the wire ends under the assembly plate.
3. Clamp the sealing beam upside-down into a vice so that you have both hands free to tighten the wires.
4. Pull both wires as tight as possible on the beam, then tighten the assembly plate screws. The wires can also be individually tightened by loosening the screws in the assembly plate just enough to hold the wires in place. You can then re-tighten one of the two wires and screw down the assembly plate completely.
5. Cut off excess wire level with the bottom of the beam. Then clean the sealing wires again.



Replacing the teflon tape

Replace the protective paper strip and stick the teflon tape onto the beam. Cut the notches.



Reinstalling a serviced sealing beam

Put the serviced sealing beam back over the plug pins. On machines with the sealing beam in the lid the contact points must be reconnected. Pay particular attention that the teflon tape hangs over the beam on both sides and that the sealing beam does not make contact with the walls of the vacuum chamber or with the lid. Make sure when placing Cut Off sealing beams that the Cut Off wire is on the outside.

Replacing the silicone in the counter beam.

Pull the silicone strip out of the groove and push the new strip into the beam's groove.

Maintainance the silicone strip in the lid

Clean the silicone edge with a damp cloth. Never use synthetic cleaning agents. Rub talcum powder into the silicone strip.

Replacing silicon strip in the lid

Cut a length of new silicon strip to match the old strip and press it into the groove. Make sure the ends of the strip are pressed evenly together. No leakage should occur!

Problems and solutions

Problem	Cause	Solution
Machine does not work. Both displays are off.	<ul style="list-style-type: none"> • The plug is not in the socket properly. • The main switch (if present) is in the 'OFF' position. • A fuse in the machine is broken. 	<ul style="list-style-type: none"> • Push the plug into the socket properly. • Put the switch in the 'ON' position. • Replace the fuse. Ask your dealer for the location of the fuses. <p>Warning Only use fuses of the same type and value. Otherwise fire or other irreparable damage could result. If the new fuse also melts call your dealer immediately.</p>
<p>The machine does not work. Two bars are flashing in the 2nd display.</p> <p>The machine does not work, but the displays are on.</p>	<ul style="list-style-type: none"> • The microswitch of the lid is closed because: <ul style="list-style-type: none"> - The lid is closed - The setting of the microswitch is wrong - The microswitch is broken. • The thermal safeguard has switched the machine off due to overheating. • A fuse could have melted. • There is an internal malfunction. 	<ul style="list-style-type: none"> • Open the lid or switch the machine off and reset the microswitch or replace it. • Check if the ventilation openings are free from obstructions. <ul style="list-style-type: none"> - Is the machine too close to a wall? - Let the machine cool down and switch on the safeguard once more. Contact your dealer if the machine switches off again shortly afterwards. • Replace the fuse. Ask your dealer for the location of the fuse. • Contact your dealer.
The vacuum pump is not getting up to speed.	<ul style="list-style-type: none"> • The machine is running on one or two phases. • The oil is too thick, the temperature is too low. • The pump is turning in the wrong direction. 	<ul style="list-style-type: none"> • Check the connection and the mains fuses. Switch the machine off and replace the mains fuse(s) if necessary. • Let the pump warm up. • Change the position of two phase wires.

Problems and solutions

Problems	Cause	Solution
There is insufficient vacuum.	<ul style="list-style-type: none"> • The value entered for the vacuum function is too low. • There is not enough oil in the pump. • The oil is dirty. • The suction filter is clogged. • The pump's spray filter is clogged. • The lid's silicone is damaged. • The gas function has been activated: gas is entering the machine. 	<ul style="list-style-type: none"> • Increase the value of the vacuum function (see page 8). • Replenish the oil (see page 15). • Change the oil (see page 15). • Contact your dealer. • Contact your dealer. • Replace the silicone strip (see page 18). • Switch off the gas function (see page 9).
Insufficient vacuum in the package.	<ul style="list-style-type: none"> • The vacuum pouch is of inferior quality. • The product has damaged the pouch. • There is insufficient room between the sealing beam and the counter beam • The gas function is switched on. 	<ul style="list-style-type: none"> • Select vacuum pouches of a better quality. • Use a new pouch; lower the value of the Soft Air function (see page 10). • Check the position of the sealing beam (see page 18). • Set the correct value.
The vacuum pouch is incorrectly sealed.	<ul style="list-style-type: none"> • The vacuum pouch is incorrectly placed on the sealing beam correctly. • The sealing time is not set correctly. • There is a break in the sealing wire. • The sealing beams are dirty. • The teflon tape is worn. • The counter beam is damaged. • The vacuum pouches are of inferior quality. • The gas function value is too low. • The opening of the vacuum pouch is contaminated. 	<ul style="list-style-type: none"> • Place the opening of the vacuum pouch over the sealing beam correctly. • Adjust the sealing time value (see page 10). • Replace the sealing wire (see pages 17 & 18). • Clean the sealing beams (see page 16). • Replace the teflon strip (see page 16). • Replace the silicon strip (see page 18). • Select better quality vacuum pouches. • The gas function value may not be lower than 30. • Remove any obstructions from the opening of the pouch. Make sure the opening of the package remains clean while filling.
There is not enough gas in the vacuum pouch.	<ul style="list-style-type: none"> • The gas bottle is still closed. • The gas bottle is empty. • The pouch is too small. • The pouch is incorrectly placed over the gas nozzle. • The vacuum value is set too high. 	<ul style="list-style-type: none"> • Check the position of the valve on the gas bottle and open it. • Turn the machine off, shut the valve and replace the gas bottle. Open the valve on the new bottle and check whether the pressure is correct (no higher than 1 bar). • Use a larger pouch. • Place the pouch correctly over the gas nozzle. • Reduce the value for more gas (see page 9).

Liability

1. Excluding deliberate cases and cases of malice and subject to the stipulations in Article 14, (of the Terms of Warranty, available on request from your dealer) HFE VACUUM SYSTEMS b.v. accepts no liability for any damage, however specified or caused, unless and to the extent that Howden's liability is covered by insurance.
2. If the opposing party holds HFE VACUUM SYSTEMS b.v. liable for any damages, however specified or caused, the opposing party must demonstrate to HFE VACUUM SYSTEMS b.v. that all delivered machinery and/or work has been handled responsibly.
3. If the opposing party sells, rents, delivers or makes available to a third party for whatever reason any machinery after having been informed of the inferior quality of said machinery by Howden, the opposing party will indemnify HFE VACUUM SYSTEMS b.v. against any third party claims in connection with the machinery delivered by HFE VACUUM SYSTEMS b.v. to the opposing party.
4. The opposing party will indemnify HFE VACUUM SYSTEMS b.v. against all third party claims, incurred as a result of breach of patents and copyrights, or through use of blueprints, data, materials, parts, or by applying work procedures prescribed and/or provided by HFE VACUUM SYSTEMS b.v. in the interest of the opposing party.
5. HFE VACUUM SYSTEMS b.v. is never obligated to compensate financial losses incurred by the opposing party or any third party for whatever reason, including delay in the completion of work.
6. All cases in which HFE VACUUM SYSTEMS b.v. is entitled to appeal to said stipulations apply correspondingly to HFE's personnel and service teams, as if this clause was stipulated by the personnel and service teams in question.

Index

Keys

[GAS ON/OFF] key 7
[GAS] key 7
[PROG] key 7, 12
[REPROG] key 7, 12
[SEAL] key 7
[SOFT AIR] 7
[STOP] key 7
[VAC STOP] key 7
[VAC+] key 7
[▲] and [▼] keys 7

A

Assembly plate 17
Automatic oil change indication 15

B

Bi-active Seal 3, 10

C

Change oil 15
Cock springs 16
Compressed air 6
Connection nipples gas & sealing pressure 5
Contrabalk 5
Counterbeam 4, 5, 16
Cut Off Seal 3

D

Decompression 7, 10
Dehumidify 14
Dubble Seal 10

E

Electrical wiring. 15
Explosion 9
Extra vacuuming 8

G

Gas 3, 7, 12
Gas & sealing pressure sticker 5
Gas and torsion springs in the lid. 15

Gas bottles 4, 6
Gas flushing 7, 9
Gas mixtures containing oxygen 9
Gas or torsion spring 4, 5, 6, 14
Gas bottles 6, 9
Gas nozzles 5
Gas packaging 7, 9

H

High-pressure cleaner 14

I

Insert plates 4, 11
Interrupting the Soft Air function 10

M

Mains Connections 4
Maintenance schedule,
 daily 14
 five-year 15
 six monthly 15
 weekly 14
 yearly 15
Maximum oil level 4
Minimum oil level 4

N

Nipple gas and sealing pressure 4

O

Oil drain plug 4, 5
Oil filling plug 4, 5
Oil level vacuum pump 4, 6
OIL message 15
Oil, Replenish 14
Oil spray 14
Oil spray filters in the vacuum pump. 15
On/Off switch 4
Oxidation 14, 15
Oxygen 6, 9

P

Pliers 17
Program '0' 12
Programming 8, 12
Programming with functions operative 13

Q

'Quick Start' 11,

R

Repairs and maintenance 6, 14, 15, 16, 17, 18
Replenish oil 14

S

Safety and installation 6
Sauces, moist products 6
Sealing 7, 10
Sealing beam 4, 5, 11, 17
Sealing time (value) 10
Sealing wire 3, 10
Select program 13
Silicone strip 4, 5
Six monthly maintenance 15
Soft Air (value) 10
Soft and/or delicate products 3
Soft-Air 7
Soft-Air 3
Specifications Plate 4
Sticker gas and seal pressure 5
Stop 8
Synthetic cleaning agent 14

T

Table boiling point at vacuum percentage 8
Teflon tape 16
Temperature in the workspace 6
Transparent lid 4, 14

V

Vacuuming 7, 8
Vacuuming sauces 8
Vacuum pipes 15
Values for vacuuming 7
Viewing Glass 4, 5

W

Warm up position 11
Workspace 6

Technical specifications

Because the technical specifications differ for every type of machine, these are enclosed separate. If this is not the case, these can be requested from your dealer.

Important!

Read the specifications carefully so that you are aware of the conditions required for the correct functioning of the machine.