

## 1 DESCRIPTION

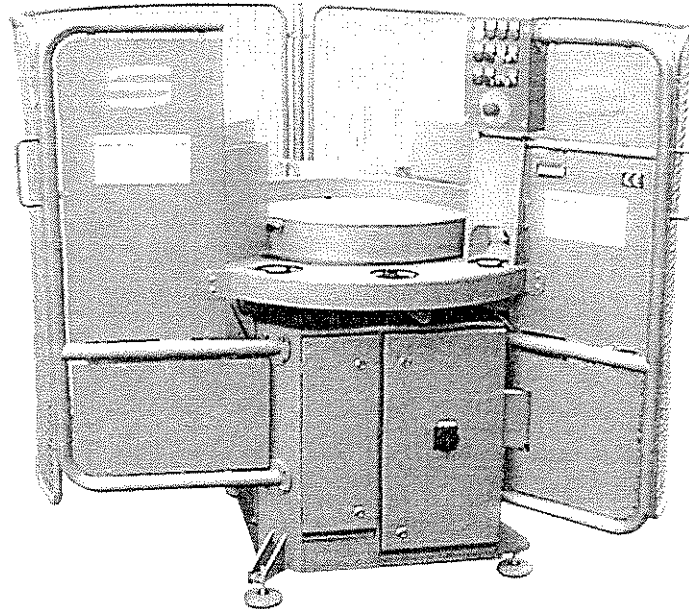


Fig. 1

This stand-alone Backus Sormac machine, is suitable for automatically decoring of bell peppers with a diameter of min. 60 mm and max. 115 mm, and a height of min. 65 mm and max. 150 mm.

Basically the machine consist of a rotating, indexed driven, product table with a 10 position product holder. Table and holder are moved 2 positions at the time. Each position of the 10 position product holder is equipped with a gentle clamping device to centre and hold the product in position. The storage bin on top of the table, enables the operator to quickly fill-up the 2 product holders manually at the time. From the operators position, a good overview of the total machine and operating panel is possible.

The first operation is to cut off most of the stalk in order to successfully decore the product. Next, the products are decored by 2 upwards moving/rotating cylindrical cutters, both are connected to a vacuum unit in order to extract the complete cores with seeds while being cutted.

Optionally the following functions can be added to the machine enabling:

- decapping the product top / bottom section,
- dividing the product into 2 - 3 - 4 - 6 or 12 segments.

The machine is driven by 2 motors, 1 motor for table movement, the movement of this motor is the source of all pneumatical functions like the movement of the decoring knives.

Another motor is for stalk cutting.

The optional decapping section requires also a drive motor

Finally, a vacuum pump is used to extract the complete cores and seeds from the decore cutters.

All necessary safety precautions have been taken to protect the operating people and the machine it self. The machine is equipped with safety switch protected safety cage to shield of most moving parts.

## 2 TECHNICAL DATA

### 2.1 Dimensions

L = 3.350 (incl. vacuum unit)  
 W = 1.750  
 H = 1.620  
 (in mm)

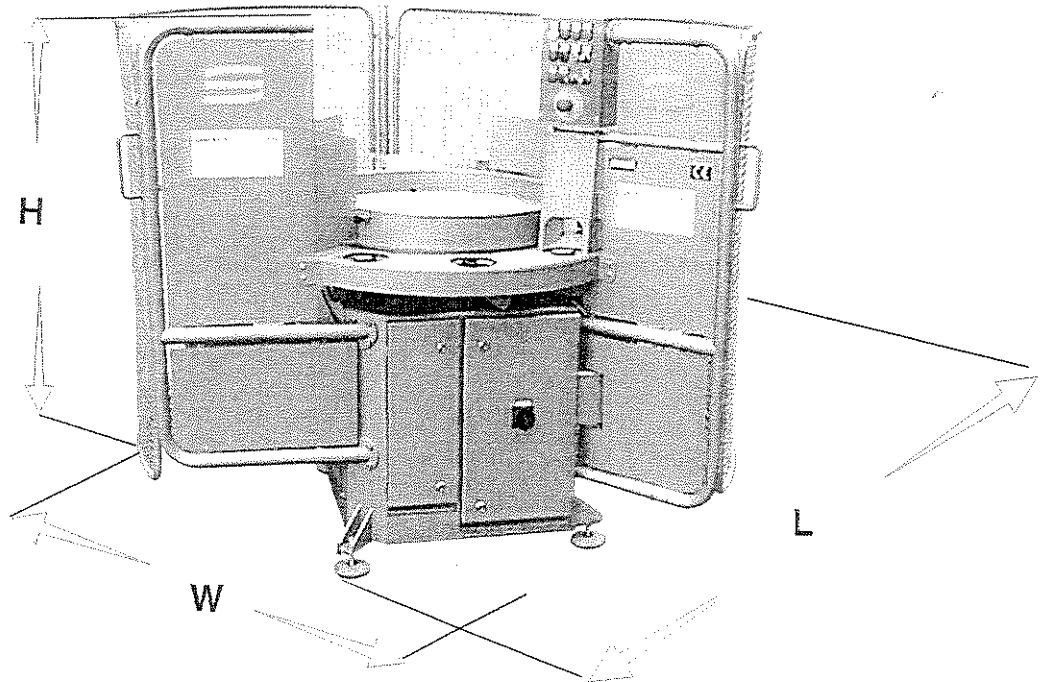


Fig. 2

### 2.2 Material

Frame & housing : Cr-Ni steel , Nr. 1.4301

### 2.3 Electrical requirements

**General:**

Operating voltage : 415 V, 50 Hz, 3 phase  
 Protection class : IP 55

<b>Main drive</b>	<b>Stalk cutting unit</b>	<b>Vacuum unit SD-42</b>	<b>Vacuum unit SD-9</b>	<b>Decapping unit</b>
Capacity: 0.37 kW	Capacity: 0.25 kW	Capacity : 2x 1.3 kW USA : 2x 1.9 kW	Capacity: 7.5 kW	Capacity: 0.18 kW

### 2.4 Pneumatic requirements

Dry clean air : 400 l/min - 6 Bar

### 2.5 Weight

<b>Decorating machine:</b>	<b>Vacuum unit SD-42:</b>	<b>Vacuum unit SD-9:</b>
Weight : ± 400 kG	Weight : approx. 100 kG	Weight : approx. 500 kG

## 2.6 Identity plate

The fitted identity plate:

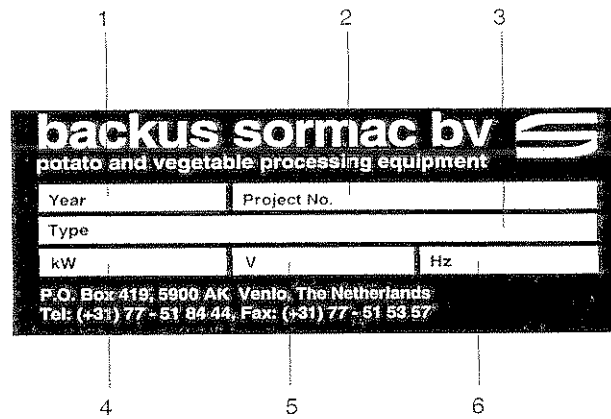


Fig. 3

1. Year of build
2. Project No.
3. Type
4. Capacity
5. Voltage
6. Frequency

46 PAM

2800 PCS/HR

## 3.2 Safety devices

### 3.2.1 Main power switch

The main power switch (4/1) is located on the door of the electrical cabinet.  
When maintenance, service or repair work has to be carried out, this switch must be placed in the 'OFF'- resp. '0'-position and padlocked.

### 3.2.2 Emergency stop switch

The machine is supplied with 1 emergency stop switch (Fig. 4/2) located on the operating console.

The emergency stop switch must only be activated in case of danger to life or in situations where damage to the machine/installation or other goods can be expected.  
Activating the emergency stop switch causes the complete machine to switch off immediately.

### 3.2.3 Safety switches

The machine is equipped with several safety devices (Fig. 4/3) to guarantee operator safety.  
On top of the product holder, at the infeed side, a safety device is placed. When the hand of the operator activates this device, the machine immediately will be switched off.

The safety cage protects the operating- and other persons from touching moving parts.  
In case the safety cage is opened, a safety switch is activated causing immediate machine switch off.

### 3.2.4 Limit sensors

Several movements within the machine are controlled by limit switches (refer to the electrical drawings).

All pneumatical functions are sensor controlled, when the decoder and/or the product divider are not in home position, the product holder cannot move.

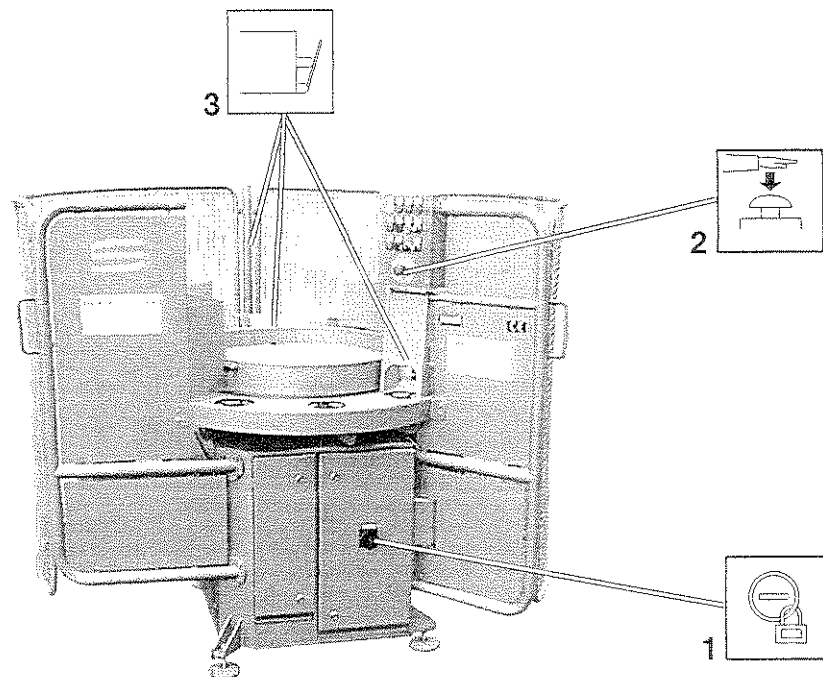


Fig. 4

## 4 OPERATION

### 4.1 Operation hints

The unit must only be used to process products complying to the description and sizes as described in the contract between both parties.



**DO NOT** touch moving parts of the unit.

**DO NOT** open panels/covers of the machine while the electrical power is applied to it.

**DO NOT** enter the inside of the machine while the vacuum unit is switched on.

#### Caution!

**DO NOT** place or throw any foreign objects into the product holders of the machine (unintended use).

The hygienic state of the machine must always comply with the legal requirements and regulations for food processing machinery.

### 4.2 Conditions for operation

Operation of the machine is only possible after fulfilling a few conditions first:

- safety cage must be closed,
- compressed air (minimum 5.5 Bar) must be applied to the machine (pressure sensor controlled),
- vacuum must be applied to the decoring knives (pressure sensor controlled),
- emergency stops must be disengaged and emergency stop circuit reset,
- failure indication must be off (no: machine blockings; open panels/cage; thermal-, frequency failures),
- core knives must be in down position (sensor controlled),
- segment cutters must be in upper position (sensor controlled).

### 4.3 Operating elements

**Control elements**

The position of the operator is next to the operating console. All operating elements are located on this console (Fig. 5/1).

**Main power switch**

The main power switch is located on the front panel of the machine (Fig. 5/2).

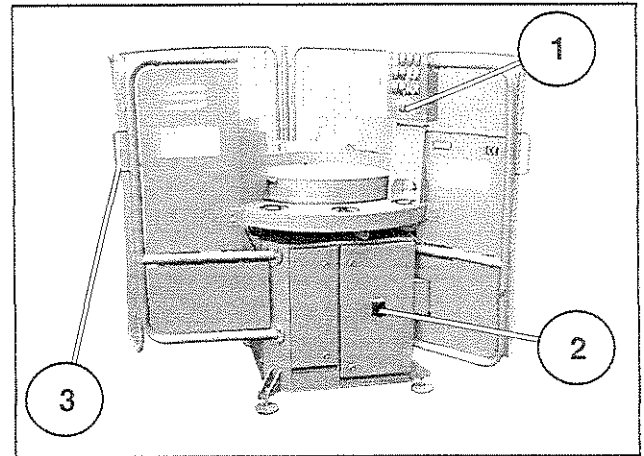


Fig. 5

**Product divider**

The product divider can be switched on using handle (Fig. 5/3, resp. 6/1). When the product divider is switched on, both divider knives are pneumatically moved up and down.

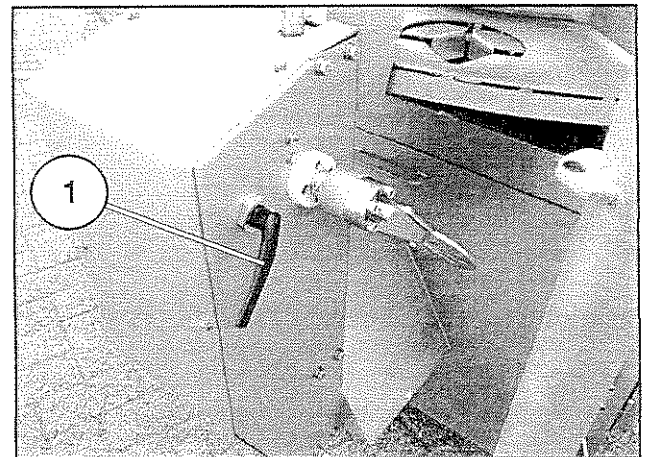


Fig. 6

### 4.4 Tasks of the operating persons

- Operate the machine (Fig. 7/1),
- Put products into the product holders (Fig.7/1),
- Visual checking of the vacuum unit,
- Clean the machine after production.

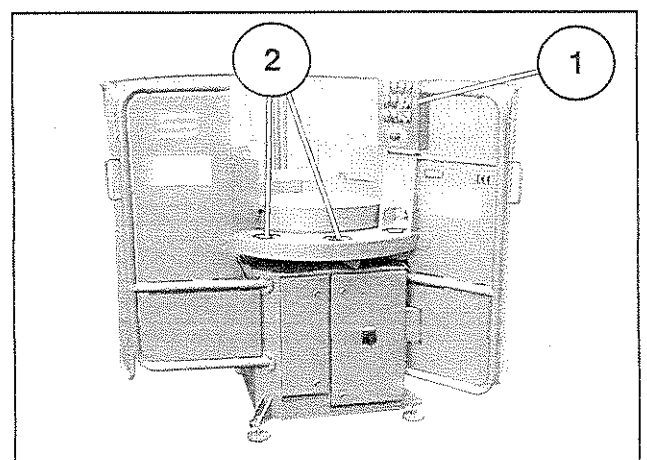


Fig. 7

#### 4.5 Before switching on and off

**NOTE:** Before switching on, the operator must check the machine and be certain that it is in good condition.

Things to check in particular:

- Damages in the construction of the machine,
- Oil leaking out of drives / motors,
- Broken, damaged or blocked switches,
- Broken, damaged or blocked emergency stop switches,
- Pieces of material/products, lying around,
- Properly mounted and closed covers and panels.

If failures or shortcomings in one of the above mentioned points occur the machine must not be used. Inform your superior instead.

#### 4.6 Taking out of operation

**NOTE:**

The emergency stop switch(es) must not be used to switch of the machine after normal production.



After an emergency stop situation, only start the machine after the cause, which led to the emergency stop, has been lifted. Starting the machine again must not lead to a new dangerous situations.

Always follow the normal start-up procedure after an emergency stop.

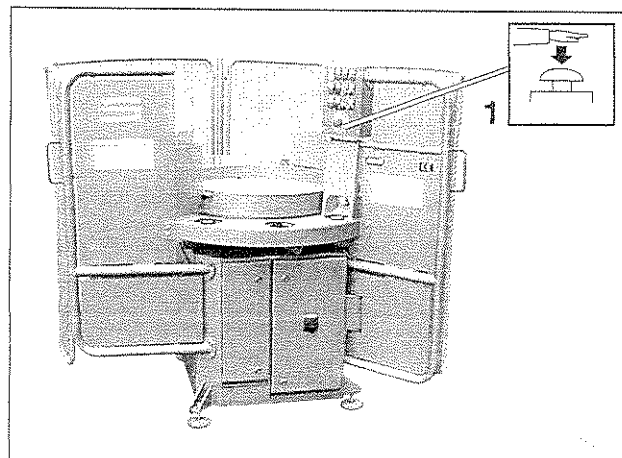


Fig. 8

### 4.7 Operating panel

The control panel (Fig. 9) contains all elements for the operation of the machine.

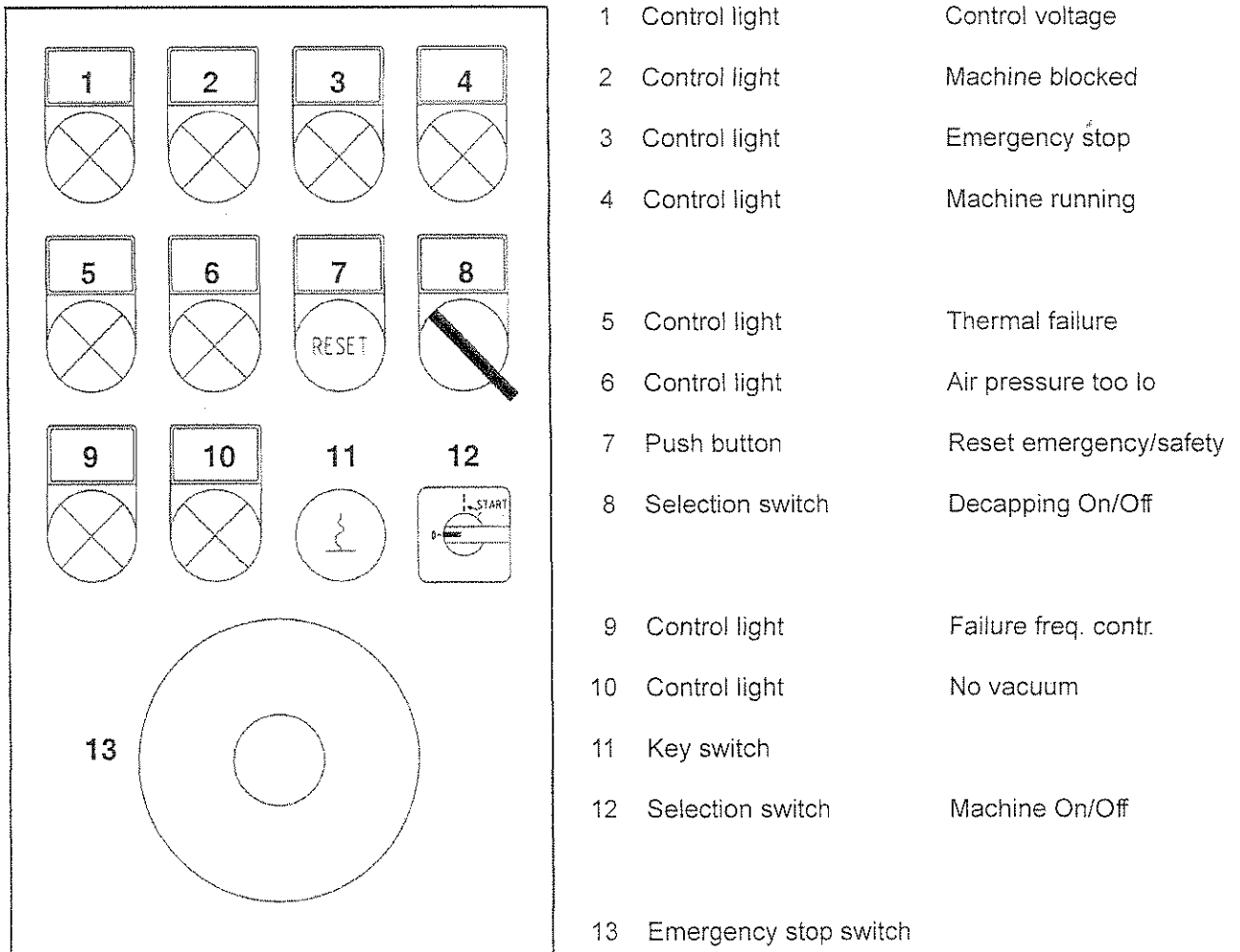


Fig. 9

The main power switch is located on the door of the electrical panel (Fig. 5/2).



### 4.7.1 Operation conditions

Before operation is possible, a few conditions must be fulfilled:

- machine ready and clean,
- machine in optimal condition,
- panels/cage closed,
- emergency stop switch must be disengaged,
- no failure indication lights burning (when the electric power is turned on),
- air pressure available,
- vacuum unit stand-by.

In case one of the following indication lights is burning, the following should be checked:

<b>Failure indication:</b>	<b>Check:</b>
Fig. 9/2	- if table is blocked by product or other obstacle
Fig. 9/5	- reset the thermal block(s) inside the electrical cabinet (authorised person!)
Fig. 9/6	- air pressure must be at least 5.5 bar,
Fig. 9/9	- possible cause, push Fig. 9/9, start the machine again
Fig. 9/10	- the work switch(es) of the vacuum unit,
	- check the hose connections,
	- check the hoses for obstruction

### 4.7.2 Resetting the emergency stop circuit

After the machine has been switched on or when an emergency stop switch has been pushed, reset the machine. In this case indication light 'Emergency', (Fig. 9/3) is burning.

The following must be performed:

- turn the key-switch (Fig. 9/11) to the off or '0'- position,
- disengage the emergency stop switch,
- press push button (Fig. 9/7) 'Reset emergency/safety' (indication light Fig. 9/3 goes off),
- turn the key switch (Fig. 9/11) in the on or 'I'- position.

### 4.7.3 Machine operation

1. Switch on the main electrical power.
2. No failure indication should be visible (see § 4.7.1).
3. Reset the emergency stop circuit (see § 4.7.2).
4. Switch on the vacuum unit.
5. Turn selection switch (Fig. 9/12) to the start ('1') position.

When starting the machine, the main drive, for rotating the table starts and also the stalk cutter is running.

With selection switch (Fig. 9/8) the decore drive can be switched on separately.

With pneumatic handle (Fig. 6/1), the product divider is selectable.

## 4.8 Cleaning



The hygienic condition of the machine must always be in compliance with the legal regulations and requirements for food processing machinery.

Always switch off and padlock the main power switch (Fig. 10) of the machine before cleaning takes place.

**NOTE:** Before switching off, all products must have left the machine.

1. Turn 'OFF' and padlock the main power switch (Fig. 10/1).
2. Open covers/cage (Fig. 10/2).
3. Lift up the product table (Fig. 10/3).
4. Clean the machine using a brush and plenty of water.

Clean with water of max. 90 °C, if necessary a high pressure cleaner is advisable.

**NOTE:** If necessary, use a cleanser suitable and permitted for use at food processing machinery.



On no account aggressive cleansing agents or solvents should be used.

5. Close covers/cage (Fig. 10/2).

### Caution!

If a cleansing agent has been used, it must be washed down with plenty of water. All traces of cleansing agent must be thoroughly removed, so that contact between products to be processed and the cleansing agents used is not possible.

A direct waterjet from a high pressure cleaning device at electrical components must always be avoided.

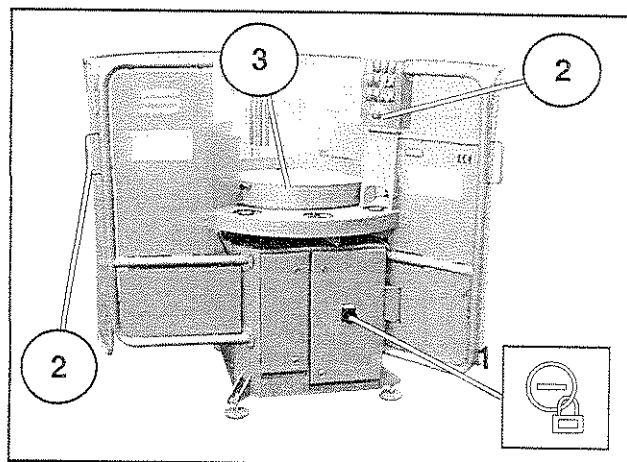


Fig. 10

## 5 MAINTENANCE, ADJUSTMENT AND REPAIR.

### 5.1 General information

In this section, work is described which should be carried out by authorized, skilled personnel at the indicated intervals. All this work is necessary to ensure trouble free operation over a long period of time. It also serves to maintain the reliability and expectancy of the system.

All other service, maintenance and repair tasks which are not dealt with in this manual and cannot be dealt with by the user should therefore be done by the Backus Service Department.

### 5.2 Special safety rules



Besides the hints in this manual, the general safety and accident prevention regulations must be observed.

For service, maintenance and repair, always turn the main power switch and the motor work switches (Fig. 11/1) to the 'OFF' position and padlock it. Disconnect the electrical supply from the machine.

Disconnect the compressed air supply from the machine.

Switch off and disconnect the vacuum supply from the machine.

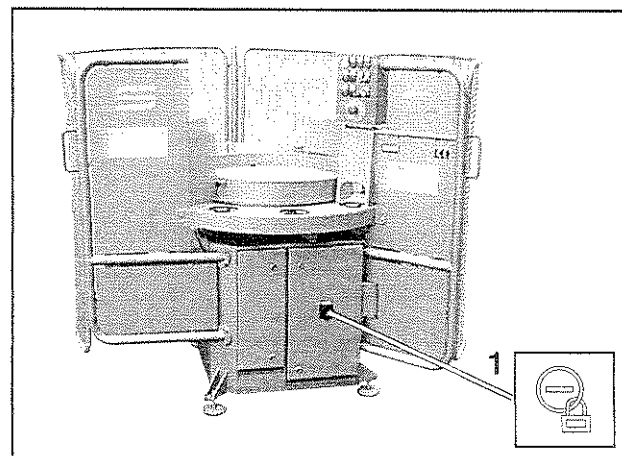


Fig. 11

### 5.3 Inadmissible activities

Service, maintenance and repair activities must never be done while the electrical power and vacuum is applied to the machine.

Solvents and aggressive cleansers must never be used.

### 5.4 Competence

The operators are obliged to report anomalies to their superiors without hesitation.

The actual troubleshooting, repairing and maintenance must be reserved to the authorized service personnel.