



## USER'S MANUAL

**Final Inspection Machine  
FIM RotoVac 8/15/16/20 RS LD/(Norm)/HD/SHD**

**Document number:  
91013\_04\_C\_ENG**

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## 1 PREFACE

### 1.1 User's Manual identification

The data on the machine plate can be found in the index of the documentation set. It contains a reference to the document number of this User's Manual.

Check if the User's Manual belongs to the machine.

The index can also contain references to corresponding documentation.

### 1.2 General information

The User's Manual provides information and instructions for proper and safe use of the machine and applies to the life of it.

All users of the machine must be acquainted with the presence and contents of the User's Manual, which for that reason has to be kept in an accessible place.

Carefully read through the User's Manual before starting to use the machine. Familiarize yourself with the information and follow the instructions.

If you have questions, require explanation of subjects related to the machine or the User's Manual, please contact the manufacturer. You can find the address on the front page.

Replace damaged and missing User's Manuals.

Always mention the data of the machine plate below in correspondence about the machine:

- Machine
- Model / Machine code
- Serial no.

See fig. 1.

### 1.3 Reading indicator

The User's Manual uses the term machine. By "machine" is meant: the specific module, installation, unit or system with the corresponding equipment.

This User's Manual contains several boxes. They draw your attention to dangerous situations for the user, control panel and/or product and give you tips. They have been subdivided and displayed as follows:

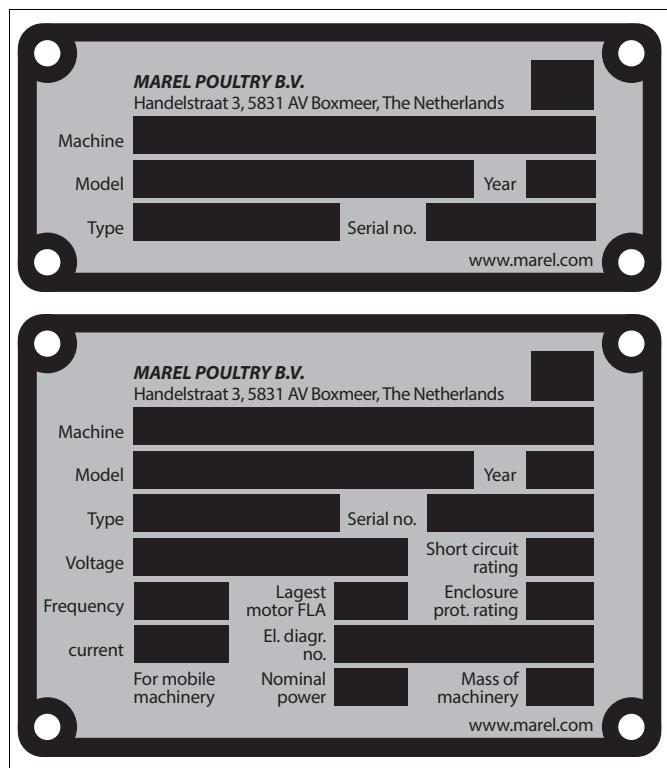
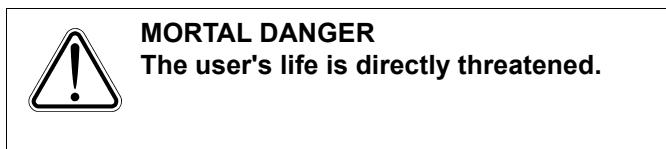


fig. 1 Machine plate example

**WARNING**

The user can be (seriously) injured or seriously damage the machine.

The picture in this box depends on the risk-bearing action that is discussed.

**TAKE CARE**

The user can damage the machine or products when the instructions are not carried out with care.

**NOTE**

Observation containing additional information for the user.

**TIP**

Provides suggestions and advice to the user to carry out certain instructions more skilfully and easier.

**Page and document numbers**

Each page has a unique identification and consists of:

- The page number with the total number of pages.  
Example:  
4 / 24
- The document number and the date of issue.  
Example:  
90952\_00\_01\_ENG / 17-08-2013

**Position numbers and letters in text**

Bold printed position numbers and letters in the text refer to the specific section in the figure.

Example:

Product guides **40** and **41** stop the legs when ....

**NOTE**

The pictures in this User's Manual can deviate from your machine. Keep this in mind when reading this User's Manual and carrying out operations on the machine.

Some components can have documentation of their own. Consult the index on this.

**1.4 Keeping machine data up to date**

We advise you to keep a logbook.

You can enter data regarding production, maintenance, cleaning, inspections, defects, repairs, overhauls, modifications and other operations on the machine. See appendix: LOGBOOK.

We also advise you to keep a registration form for entering the setting data.

See appendix: SETTINGS.

### 1.5 General terms of delivery

The general terms of delivery of the manufacturer apply to the machine. These can be found in the documentation set.

### 1.6 Responsibilities of the purchaser

By "purchaser" this User's Manual means every enterprise that uses the machine, regardless if it concerns purchase, rent, lease or another user's right.



#### MORTAL DANGER

If the machine is not installed in accordance with our layout drawings, or if local regulations or the individual circumstances make this necessary, than additional safety measures are necessary.

The purchaser has a duty to familiarize all users with the information and instructions given in this User's Manual.

The purchaser is obliged to take care of the safety of the users and the machine.

In particular:

- he makes sure that all required information is available to all users.
- he allocates authorities to the users per chapter of the User's Manual.
- only authorized, skilled and instructed users are allowed to carry out the instructions.
- he supervises the users to make sure they meet all regulations and instructions.
- he makes sure that the machine is only used within the limits mentioned in the User's Manual and "Technical Data".
- he makes sure that the original state of the machine must not be changed by modifications, repairs and/or other influences by or on behalf of the purchaser or a third party without prior written permission of the manufacturer.
- he makes sure that settings, maintenance and cleaning of the machine are properly carried out in time.

### 1.7 Modifications to the machine

The data contained in this User's Manual are based on the latest information.

The manufacturer reserves the right to change the design and/or configuration of its machines at any time, without any obligation on our part to change any previous supplies accordingly.

The original state of the machine must not be changed by modifications, repairs and/or other influences by or

on behalf of the purchaser or a third party without prior written permission of the manufacturer.

If the CE-2A-status is applicable to the machine (see EC-declaration), this can become defunct due to modifications to the machine.

### **1.8 Use of the machine**

- The machine can only be used for industrial ends.
- The machine can only be used within the limits mentioned in the User's Manual and "Technical Data".
- Prior written permission of the manufacturer is required for other use.
- It is not allowed to install parts that have not been supplied, installed and/or released beforehand by the manufacturer.

## 2 SAFETY

### 2.1 Safety at work

The manufacturer has made every possible effort to provide you with comprehensive, accurate information as regards any hazards relating to the operation of the machine. The purchaser himself shall be responsible for the implementation and proper observance of these rules of conduct.

You must not let minors of 14 years old or younger work on this machine, even if local legislation of the country where the machine is in operation permits it.

Observe the current state of labour, safety and environmental regulations when carrying out any operations.

#### MORTAL DANGER

**Do not wear:**

- loose-fitting and loose articles of clothing.
  - jewellery and suchlike.
- They can come into contact with moving parts.**

**Wear footwear that prevents slipping.**

### 2.2 Safety labels

The adjacent safety labels alert the user to possible dangers. You will find them on the machine and in the text of this User's Manual.

### 2.3 Noise pollution

The manufacturer designs and constructs machines where noise pollution has been reasonably reduced to a minimum.

However it is possible that users, due to local circumstances, will be exposed to noise pollution which may cause hearing impairment.

#### WARNING

**To prevent hearing impairment due to noise pollution, you should always observe the legal standards and regulations relating to noise pollution and take proper measures if required.**

The noise pollution of the machine is mentioned in the "Technical Data".

We draw your attention to the fact that wrong settings and overdue maintenance can cause an increase in

noise pollution.

## **2.4 Hygiene and environment**

Uphold the rules of hygiene and environment during (maintenance) operations on the machine.

Make certain that the production process does not absorb any damaging influences from outside, such as detergents and maintenance tools.

### **Recycling**

Offer materials for recycling sorted as much as possible.

### **Chemical waste**

Materials that come under the category of chemical waste should be separated when discharged. This includes, for example, batteries, oil filters, oils and greases.

### **Waste discharge**

Waste should only be offered to recognized waste-disposal companies that meet local legislation, standards and regulations.

### **Putting machine out of operation**

If the machine is not used over a longer period of time or is dismantled, the purchaser must remove all components that can cause danger, such as knives, guides sticking out, batteries.

### 3 TRANSPORT



**MORTAL DANGER**  
Activities described in this chapter must  
be carried out by competent,  
professional and trained personnel.

#### 3.1 Transport and storage

- During transport of the machine/control panel follow instructions on the packing. Consult the weight marking on the packing for transport weights.
- Check if the machines or spare parts are correct and available by means of the documents that have also been supplied.
- Check the machine for transport damage.
- In case of incorrect delivery or damage contact the manufacturer.
- Keep the machine dry, clean and safeguarded against humidity, dust and dirt.

## 4 MACHINE DESCRIPTION

### 4.1 Area of Application

The Final Inspection Machine is available in the following models:

Machine code	Model machine	Shackle distance X
C3734	FIM RotoVac 8 RS LD	12"
	FIM RotoVac 8 RS (Norm)	12"
	FIM RotoVac 8 RS HD	12"
C3739	FIM RotoVac 15 RS SHD	8"
C3735	FIM RotoVac 16 RS LD	6"
	FIM RotoVac 16 RS (Norm)	6"
	FIM RotoVac 16 RS HD	6"
C3737	FIM RotoVac 20 RS LD	6"
	FIM RotoVac 20 RS (Norm)	6"
	FIM RotoVac 20 RS HD	6"

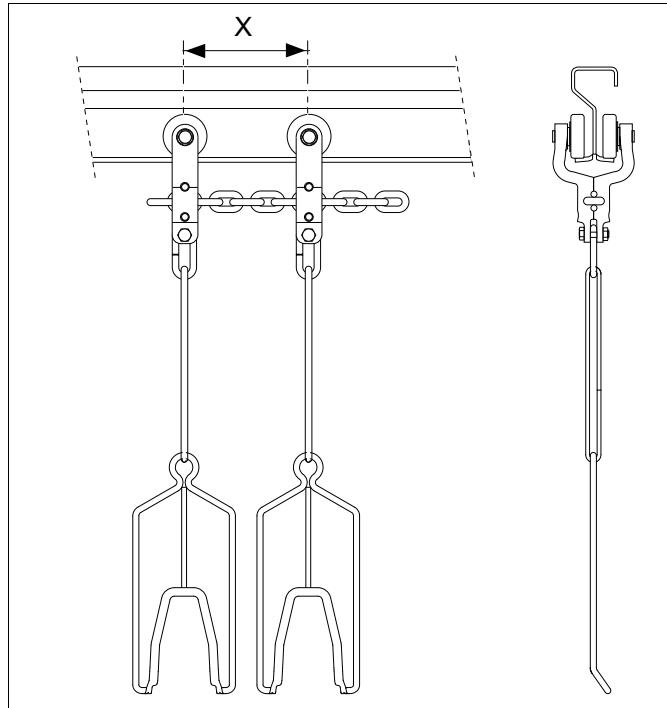


fig. 2 Shackle distance

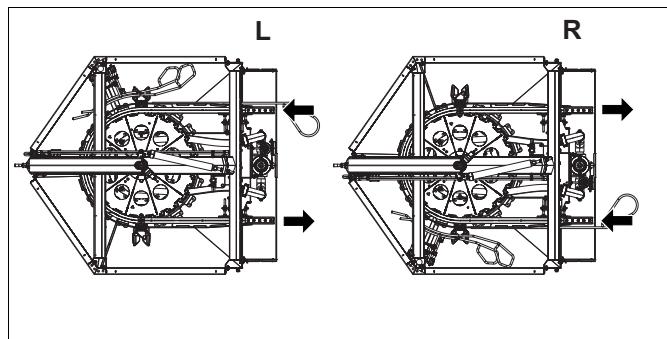


fig. 3 Models

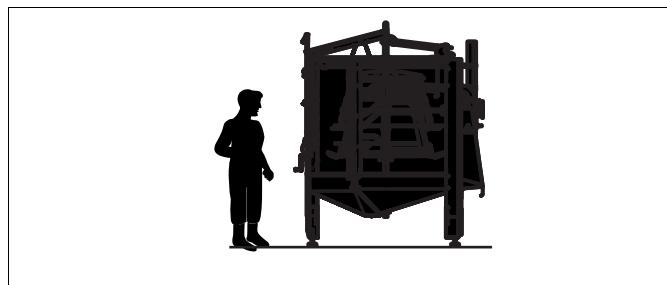


fig. 4 Machine size

See fig. 2.

- "FIM" stands for Final Inspection Machine.
- "RotoVac" means that the machine has rotating nozzles in combination with vacuum.
- The number represents the number of units in the machine.
- "RS" stands for "Reference Series".
- "LD" stands for Light Duty. This machine is suitable for the processing of lighter products.
- "(Norm)" is the standard module.
- "HD" stands for Heavy Duty. This machine is suitable for the processing of heavier products.
- "SHD" stands for Super Heavy Duty. This machine is suitable for processing products exceeding the limits of the HD machine.



#### NOTE

When the model is not mentioned separately, the information for all models applies.

The machine is available in a:

- right-hand execution **R**.
- left-hand execution **L**.

See fig. 3.

## 4.2 Names

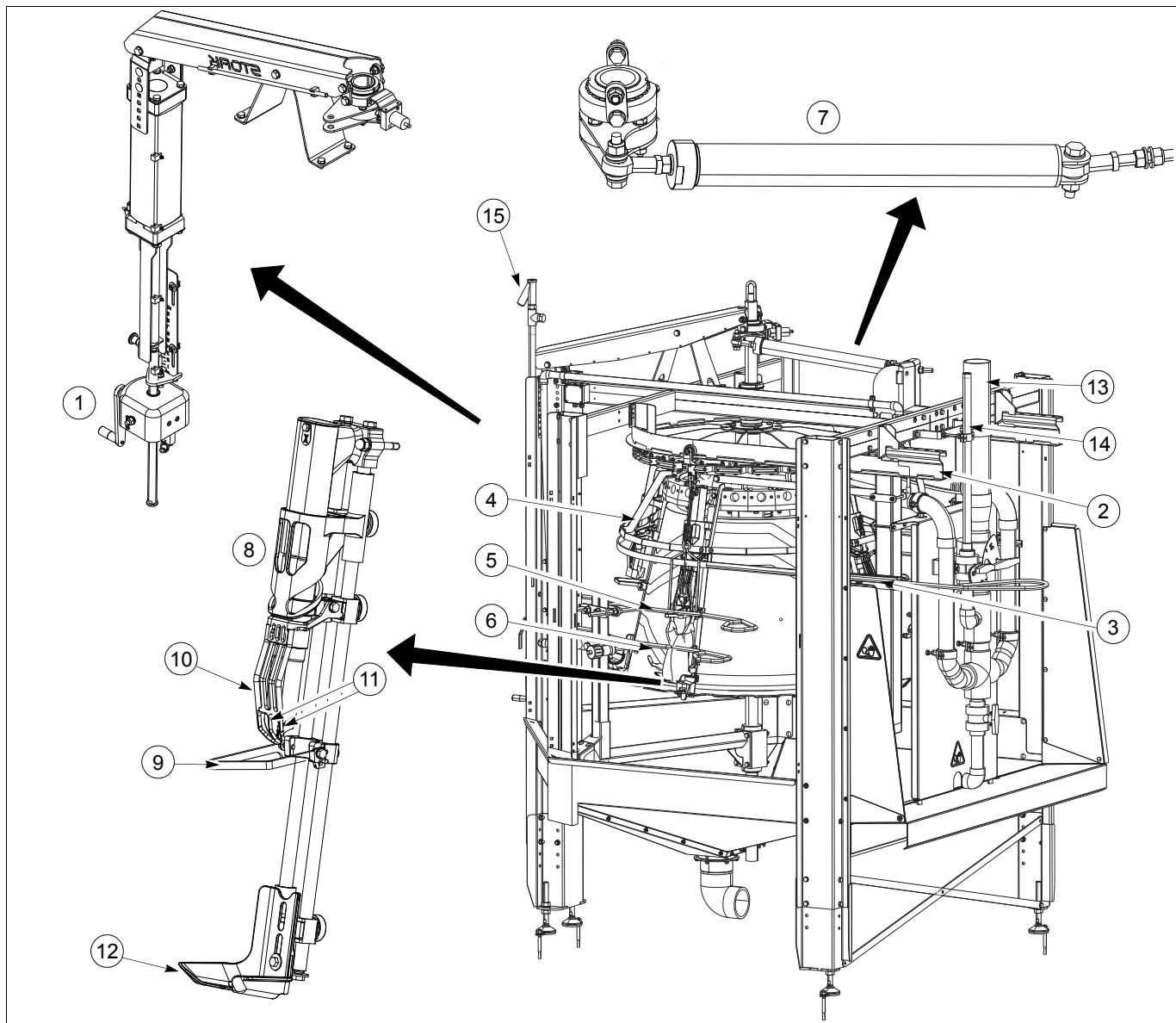


fig. 5 Names

1. Height adjustment
  2. Track profile
  3. Inner shackle guide
  4. Shackle guide (only for rigid shackle)
  5. Infeed guide, tarsal joint
  6. Infeed guide, breast
  7. Overload limiter
  8. Unit
  9. Spreader bracket
  10. Infeed bracket
  11. Suction nozzles
  12. Shoulder lifter
  13. Vacuum connection
  14. Rinsing water connection
  15. Water connection
- See fig. 5.

### 4.3 Process description

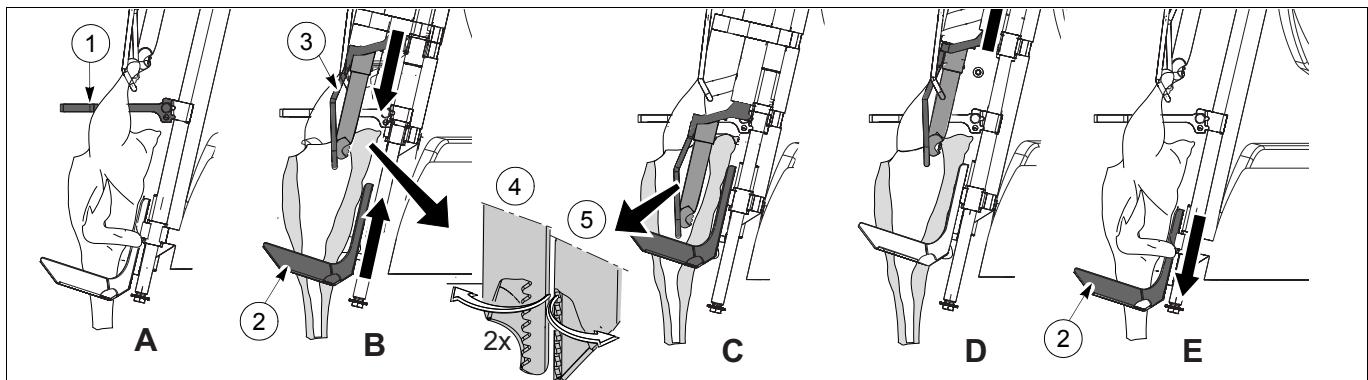


fig. 6 Process description

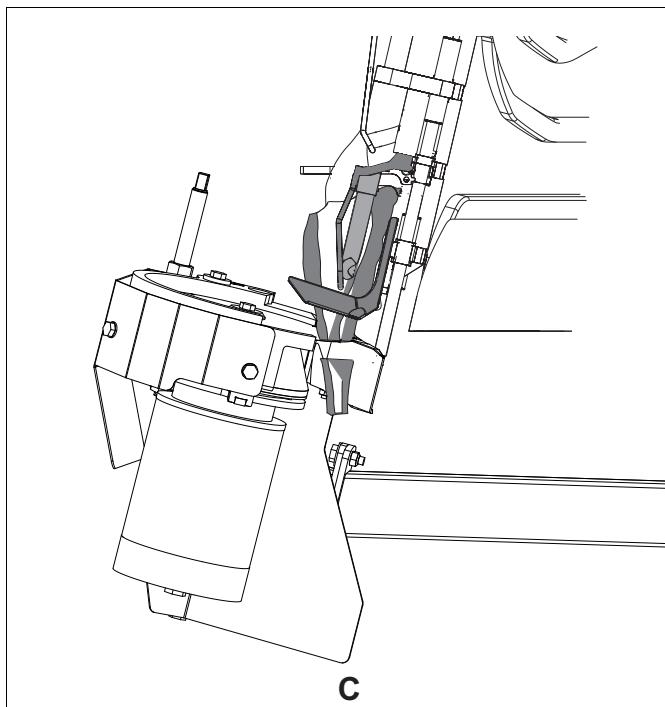


fig. 7 FIM RotoVac 20 RS with the Neck Skin Cutting Module

The FIM removes the lungs, hearts and other loose parts, which remained from the previous processes, with vacuum to the eviscerating line.

#### A

The product is fed into the machine with its back towards the center. The legs of the product are positioned around spreader bracket 1.

#### B

The upper unit with infeed bracket 3 and suction nozzles 4 and 5 are partially lowered into the product. When the upper unit is partially lowered into the product, shoulder lifter 2 moves upward and positions the product in a fixed position.

#### C

The upper unit with infeed bracket 3 and suction nozzles 4 and 5 are lowered to the bottom of the product. When the suction nozzles are at the bottom and the shoulder lifter upward, the vacuum is switched on and the tubes begin to rotate in opposite directions. The tubes turn 2 times about half a rotation.

#### For the FIM RotoVac 20 RS with the optional Neck Skin Cutting Module:

When the shoulder lifter is completely up, the Neck Skin Cutting Module will remove the neck skin of the product. The neck skin drops into the collection bin of the Neck Skin Cutting Module (which keeps the neck skin separated from the waste water of the FIM) and fed out of the machine. See fig. 7.

#### D

After the second rotation, the vacuum is switched off and the upper unit with the infeed bracket and suction nozzles are raised.

#### E

Shoulder lifter 2 drops again and the product is transported from the machine.

After each cycle, spray nozzles clean the suction nozzles.

The waste water is collected in collecting bin **6**. Overload limiter **7** disables the drive motors of the overhead conveyor if the machine is, for example, loaded too heavily due to a technical error. See fig. 6 and fig. 8.

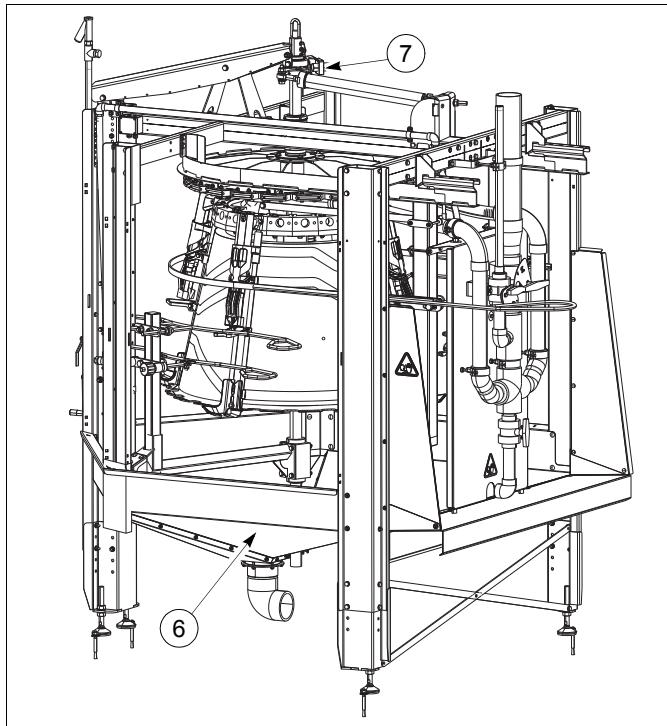


fig. 8 Final inspection machine

#### 4.4 Safety provisions



**MORTAL DANGER**  
Never remove, bridge or block safety provisions.



**MORTAL DANGER**  
If necessary, take extra safety measures when:

- changes are made to the manufacturer's recommendations and instructions during installation of the machine.
- local regulations, legislation or circumstances require this.

The machine is equipped with the following safety provisions:

- Doors (4x).
- Key bit 2 locks the doors.
- Emergency stop button and/or emergency stop cord within reach.

See fig. 9.

The machine can be equipped with the following safety provisions:

- Emergency stop button 3 on machine, as shown in fig. 10.

You will find safety labels on the machine, as shown in fig. 9.

See paragraph 2.2 Safety labels for an explanation of the labels.



**WARNING**

Regularly check the safety labels for:

- Presence
- Damage
- Recognisability

If necessary, immediately apply new safety labels.

See the User's Manual "Safety labels" (90840).

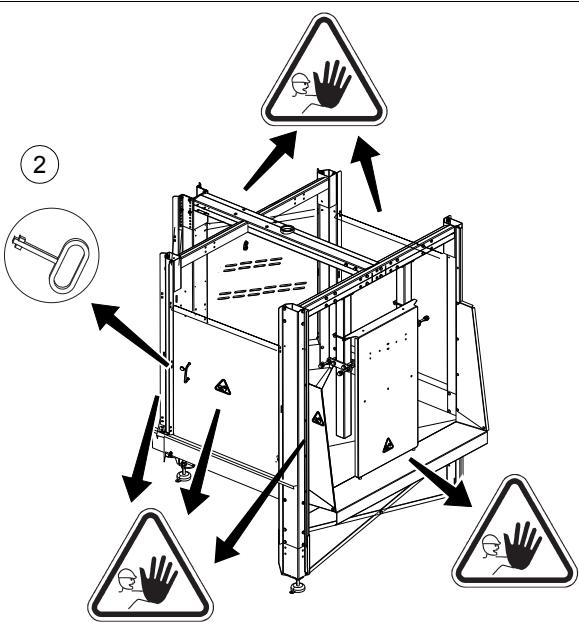


fig. 9 Safety provisions and safety labels

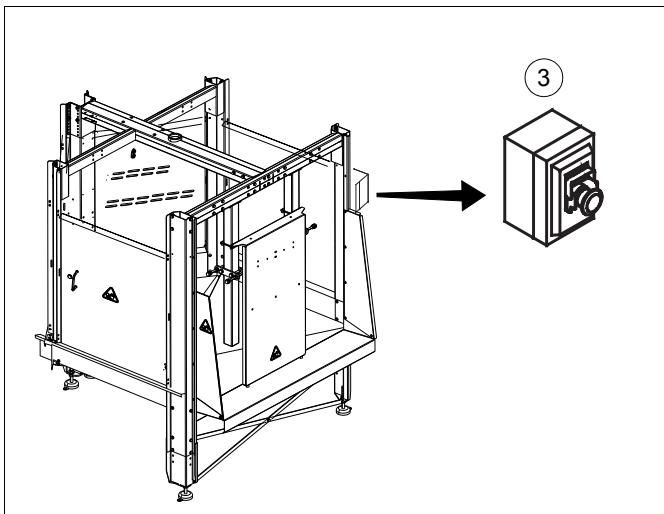


fig. 10 Emergency stop button

#### 4.5 Workspace

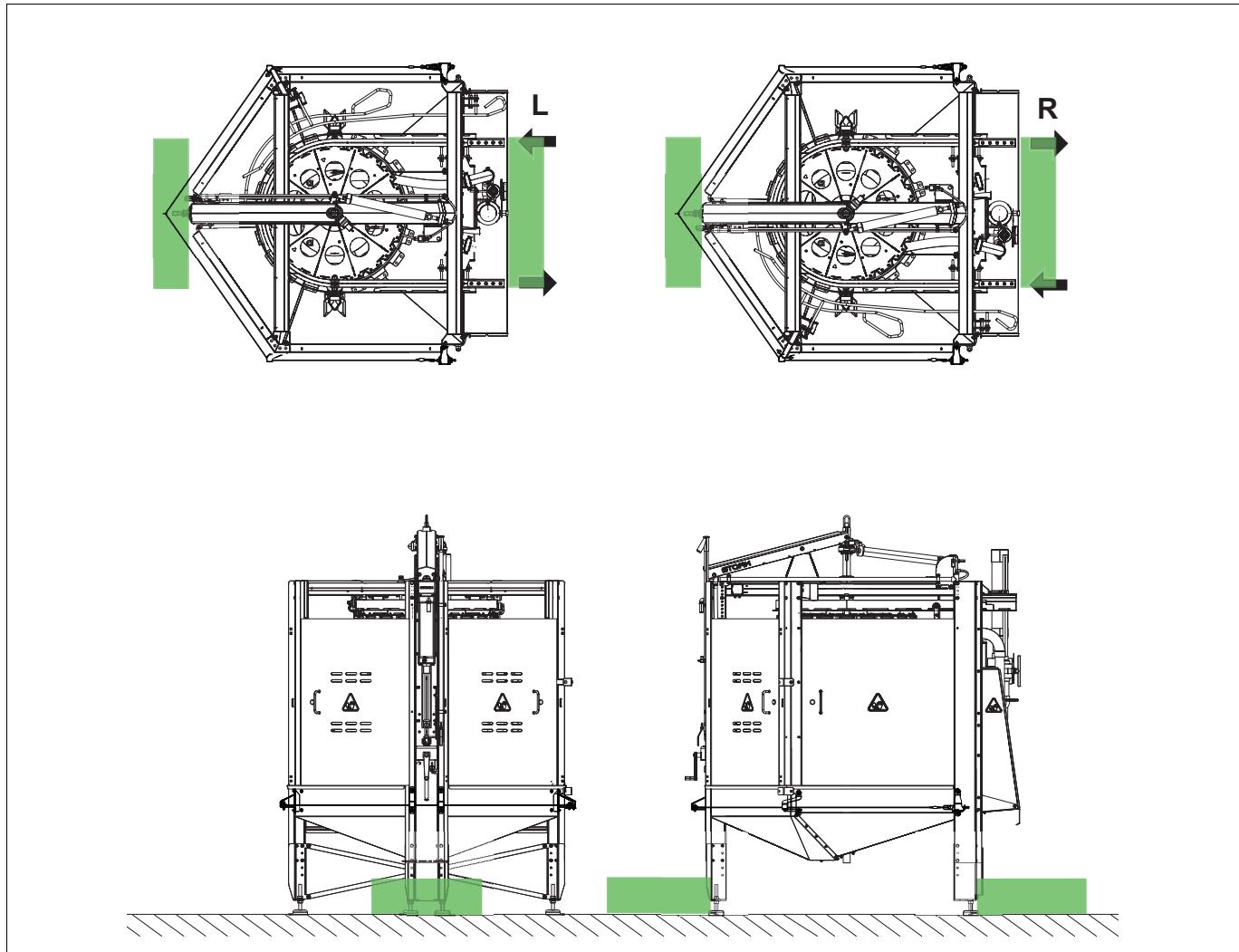
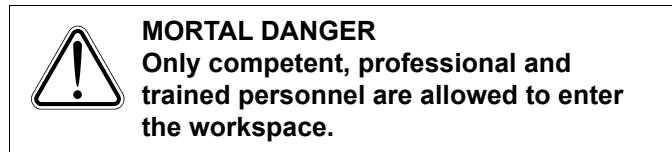


fig. 11 Workspace

The shaded area is the workspace for the operation of the machine. After or before the operation, the machine and the area around the machine are the workspace for all other work.  
See fig. 11.

#### 4.6 Danger zones



**MORTAL DANGER**  
Only competent, professional and  
trained personnel are allowed to enter  
the danger zone.

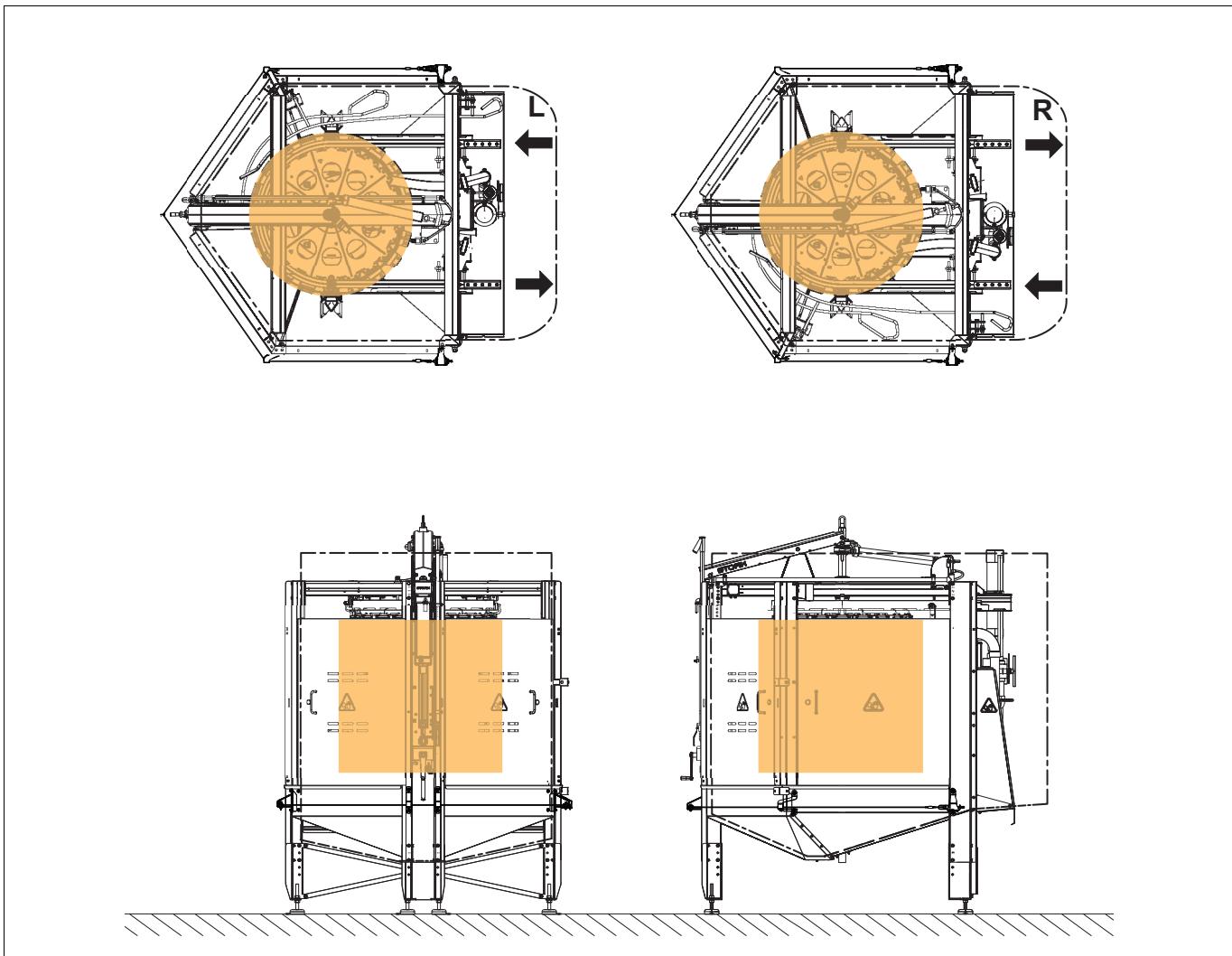


fig. 12 Danger zones and danger spots

The dashed line identifies the full danger zone around the machine. The shaded areas identify the danger spots in the machine. The safety provisions of the machine give as much protection as possible from these danger spots.  
See fig. 12.

#### 4.7 Specifications

See the "Basic design specifications" in the order confirmation for the machine and the product specifications.

- The relevant machine specifications are the production speed and the process times.
- The relevant product specifications are the weights and the weight distributions.

Use the machine only within these specifications.

See the "Technical Data" and the User's Manual "Explanation of Symbols Technical Data" (90819) for:

- The connections
- The consumptions
- The dimensions
- The requirements for steam, water and compressed air, whatever is applicable

## 5 INSTALLATION

The machine will be installed by the manufacturer or by others commissioned by the manufacturer.

If the purchaser carries out the installation himself, the following instructions apply.



### MORTAL DANGER

Activities described in this chapter must be carried out by competent, professional and trained personnel.

### 5.1 Set-up

Set up the machine as shown on the manufacturer's layout drawings. See also the "Technical Data".



### MORTAL DANGER

If necessary, take extra safety measures when:

- changes are made to the manufacturer's recommendations and instructions during installation of the machine.
- local regulations, legislation or circumstances require this.

Note the following points:

- Make sure that the surface is hard and level and that there is sufficient space around the machine to carry out work on the machine.
- Make sure the set-up requirements for the other machines are taken into account.
- Make sure there is enough light to carry out work safely on the machine.

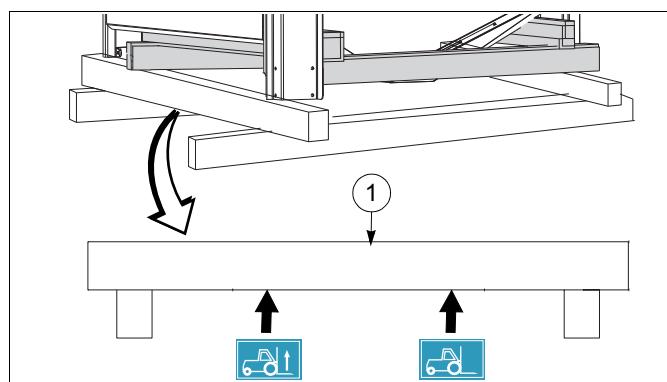


fig. 13 Transport frame

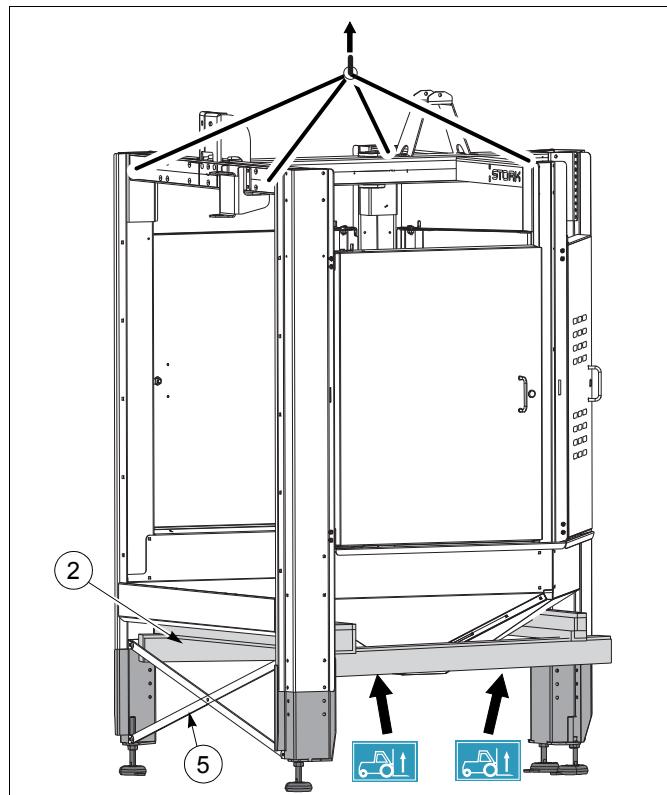


fig. 14 Transport frame

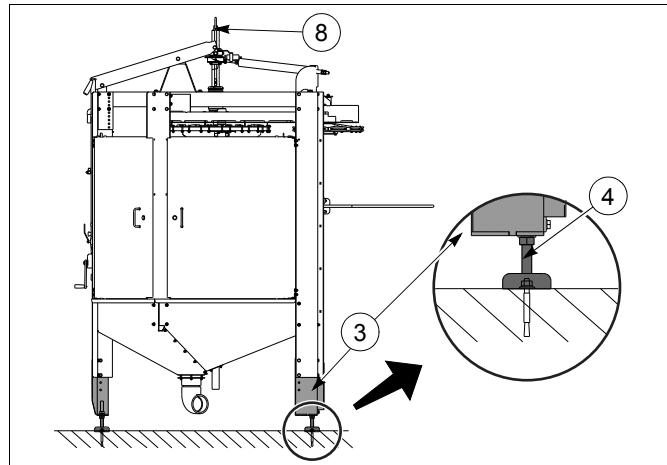


fig. 15 Machine set-up

Set the machine up as follows:



TAKE CARE

Never use hoist eyelet **8** for lifting the machine.

Only use the hoist eyelet for overhauling activities such as replacing the main shaft.

1. Lift the machine by forklift truck or pallet wagon, and move the packaged machine to the desired location. Use a transport frame **1** for this. See fig. 13
  2. Remove the packaging around the machine.
  3. Disconnect the machine from transport frame **1**.
  4. Lift the machine with a hoist or a forklift truck until the overhead conveyor is in line with the other track sections. Use transport frame **2** if you use a forklift truck. See fig. 14.



## MORTAL DANGER

**Make sure that unauthorised persons are not in the direct vicinity when hoisting the machine. Be aware of the centre of machine's gravity. See Technical Data.**

5. Fit reinforcement cross **5** and the adjustment legs **3** together with the adjustable feet **4** onto the machine.
  6. Remove transport frame **2**.
  7. Set the height with the adjustable feet **4** so that the overhead conveyor is in line with the other track sections.
  8. Use adjustable feet **4** to level the frame.
  9. Attach the adjusting feet to the floor.
  10. Connect the machine to the overhead conveyor.  
See the User's Manual "Overhead conveyor" (90714 or 90727).

## 5.2 Connection

### 5.2.1 Connecting the power



#### MORTAL DANGER

Do the work described in this chapter only if:

1. the power supply to the machines and/or control panels is switched off.
2. all the electrical plugs of the machine have been removed from the wall sockets.
3. all the main switches have been fitted with a padlock.
4. all measures have been taken to prevent that the electricity is unintendedly switched on.

Take care when performing the work.

Before connecting, check if the power supply and frequency match the data on the type plate of the main drive. Follow local regulations when connecting the machine.

For data about the connections, see the electric circuit diagrams supplied by the manufacturer.

For connection and consumption details consult the "Technical Data".

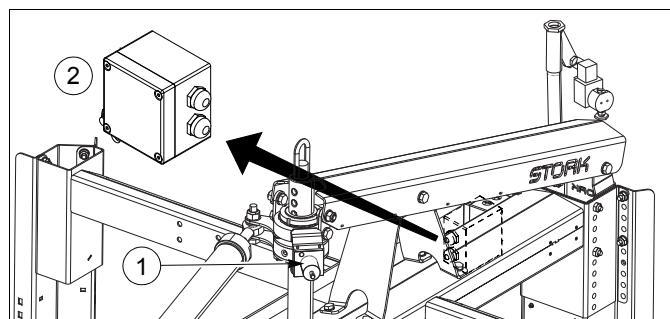


fig. 16 Connect electricity

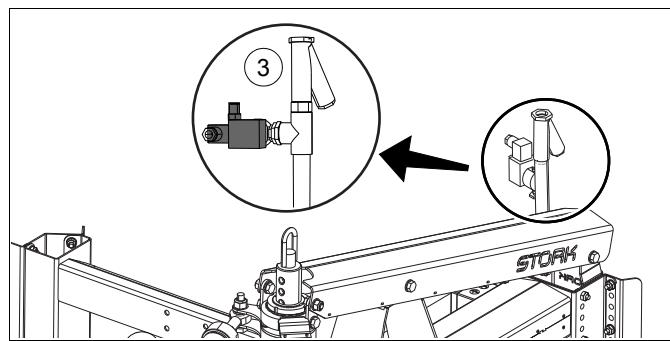


fig. 17 Connect solenoid valve for a machine without chlorinated water connection

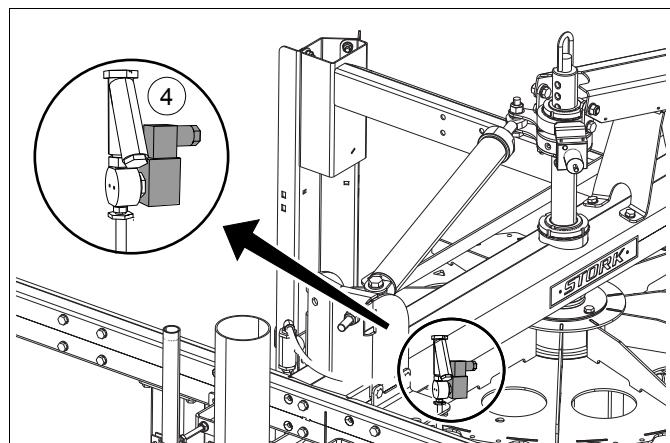


fig. 18 Connect solenoid valve for a machine with chlorinated water connection

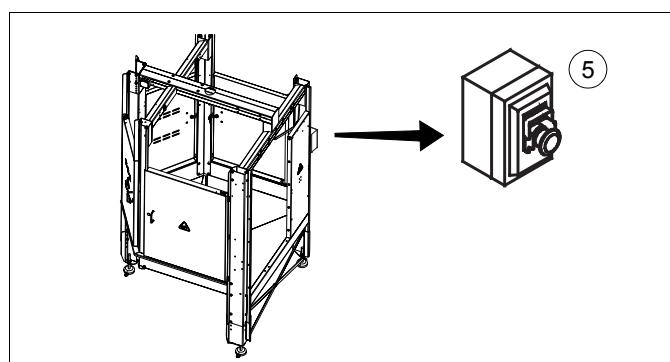


fig. 19 Machine with emergency stop

- Proximity switch **1** of the overload limiter is cabled to terminal box **2**.
  - Connect the terminal box to the control panel of the overhead conveyor.
  - After connection, check the operation of the proximity switch. See paragraph 5.2.1.1 Check proximity switch overload limiter.

See fig. 16.

- Machine without chlorinated water connection
  - Connect solenoid valve **3** in the control panel of the overhead conveyor.
  - After connection, check that the water supply is opened when the overhead conveyor is switched on.

See fig. 17.

- Machine with chlorinated water connection
  - Connect solenoid valve **4** in the control panel of the overhead conveyor.
  - After connection, check that the water supply is opened when the overhead conveyor is switched on.

See fig. 18.

**Machine with emergency stop:**

- Emergency stop switch **5** when activated stops the machine.
  - Connect emergency stop switch **5** in the control panel of the overhead conveyor. See the User's Manual "Emergency Stop Provisions" (90839).
  - After connection, check the operation of the emergency stop switch. See the User's Manual "Emergency Stop Provisions" (90839).

See fig. 19.

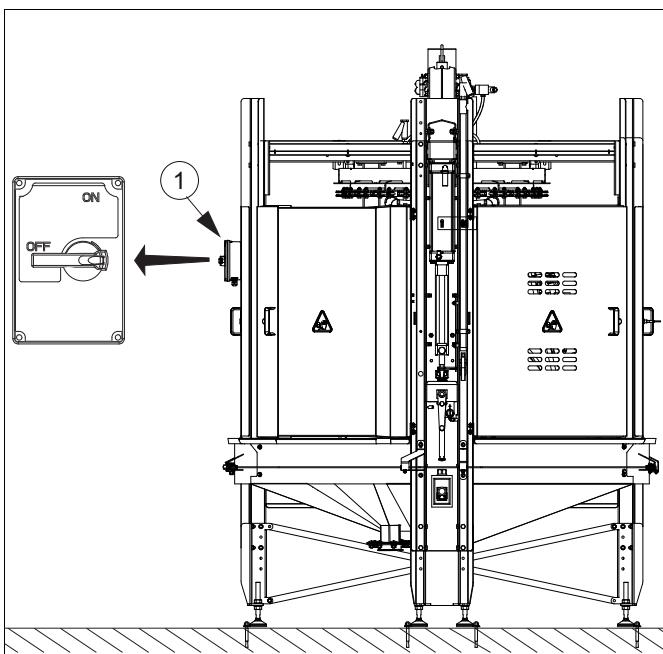


fig. 20 Neck Skin Cutting Module disconnect switch

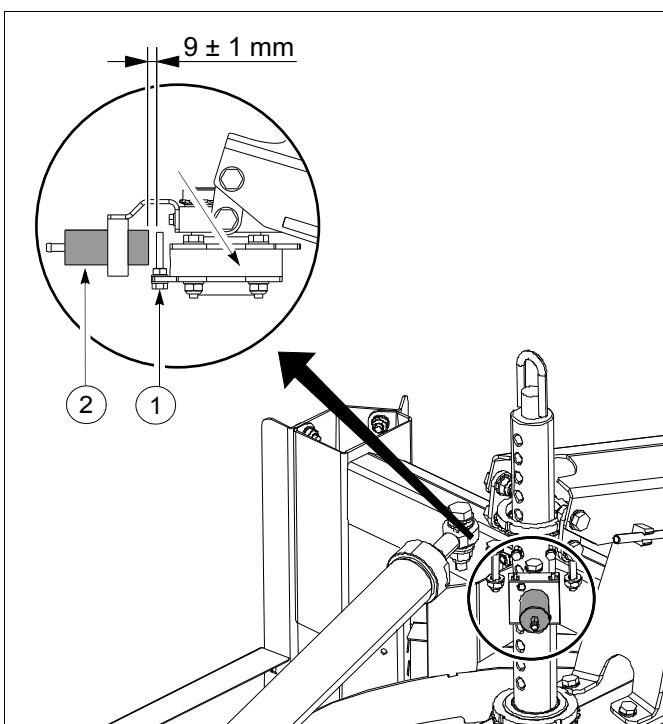


fig. 21 Proximity switch

#### For the FIM RotoVac 20 RS with optional Neck Skin Cutting Module

- The motor is factory wired to disconnect switch 1.
- Connect disconnect switch 1 in the control panel of the overhead conveyor.

See fig. 20.

##### 5.2.1.1 Check proximity switch overload limiter

If the machine is loaded too heavily (for example, due to a technical error), bolt 1 is pulled away from proximity switch 2. The proximity switch is deactivated so that the drive motor(s) of the overhead conveyor are switched off.



##### TAKE CARE

The overload limiter must work properly.  
The machine can be badly damaged if the overload limiter does not work properly.

The proximity switch is activated when the machine is in operational status.

- After connecting the terminal box, check whether the drive motor(s) of the overhead conveyor are switched off when overload limiter 2 is activated.  
For connection and consumption details consult the "Technical Data".

In order to guarantee the proper functioning of the proximity switch, the distance between bolt 1 and proximity switch 2 must be  $9 \pm 1$  mm.

See fig. 21.

### 5.2.2 Connecting the collecting bin

The water for cleaning the units is collected in the collecting bin.

- Fit a pipe to discharge 1 of the collecting bin to drain the waste water.

For connection and consumption details consult the "Technical Data".

See fig. 22.

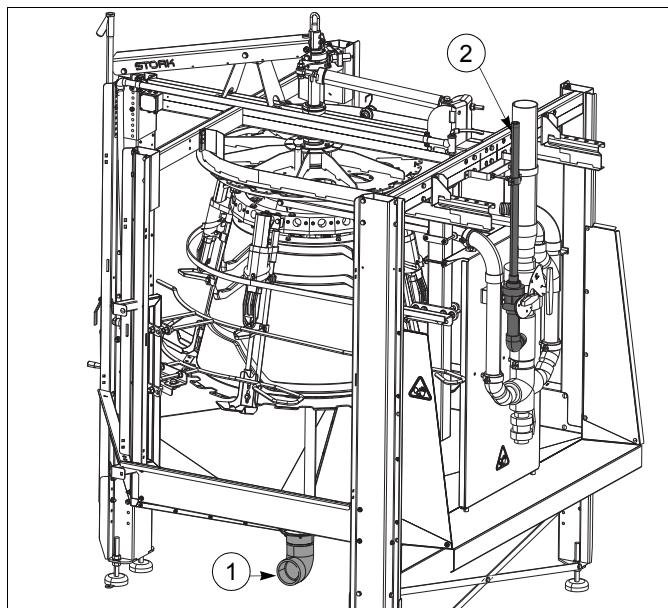


fig. 22 Connecting collecting bin and rinsing water pipe

### 5.2.3 Connecting the optional Neck Skin Cutting Module collecting bin of the FIM RotoVac 20 RS

The neck skins are collected in the collecting bin of the Neck Skin Cutting Module.

- Fit a pipe to discharge 4 of the collecting bin to drain the waste water and neck skins.

For connection and consumption details consult the "Technical Data".

See fig. 23.

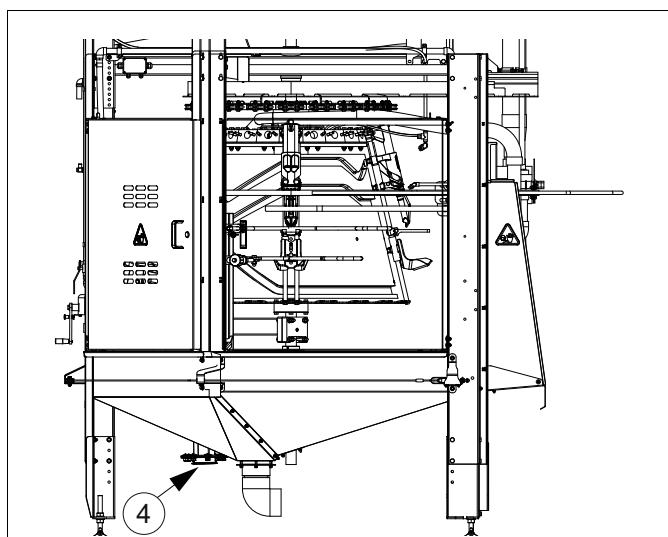


fig. 23 Connecting Neck Skin Cutting Module discharge

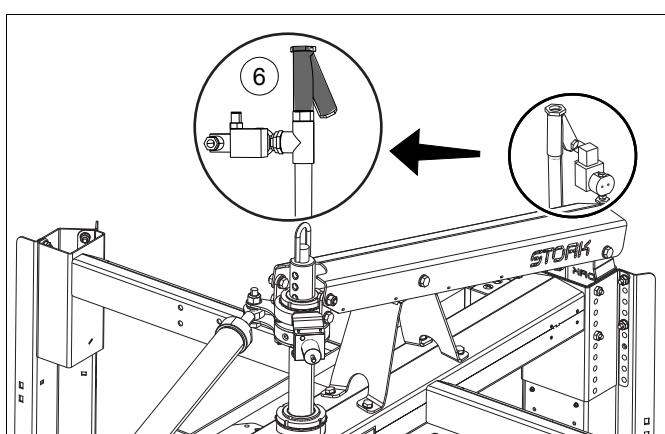


fig. 24 Connecting water, non-chlorinated water

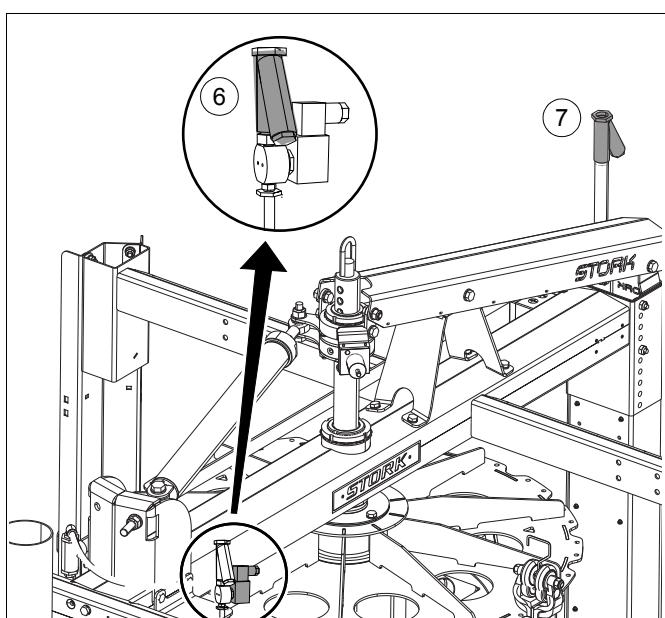


fig. 25 Connecting water, chlorinated water

#### 5.2.4 Connecting water

##### Hot water

The hot water is used for the inside rinsing of the side tubes and suction nozzles after production. See also paragraph 8.1 Rinsing inside of machine.

- Connect point **2** to the hot water supply. See fig. 22.

##### Cold water

The cold water is used for cleaning the suction nozzles and lubricating the guide shafts.

- Connecting non-chlorinated water  
Connect point **6** to the water supply system. See fig. 24 and fig. 25.
- Connecting chlorinated water  
Connect point **7** to the chlorinated water supply system. See fig. 25.



##### WARNING

The water must meet the following requirements:

- Be of drinking water quality.
- The chloride content in the water must meet local legislation and demands.
- The iron content in the water must be lower than 0.1 mg/l.
- The water hardness level must be between 1.068 and 2.136 mMol/l (6 and 12 °dH).
- The PH value must be between 6.5 and 9.5.
- Do not add disinfectants or detergents to the water.

A lower quality water can have a negative effect on the products and the machine.

### 5.2.5 Connecting the vacuum

The vacuum ensures the discharge of product residue.

- Connect pipe **3** to the vacuum system.

For connection and consumption details consult the "Technical Data".

See fig. 26.

### 5.3 Cleaning the machine after installation

Clean the machine thoroughly before putting it into operation for the first time.

See paragraph 8.1 Rinsing inside of machine.

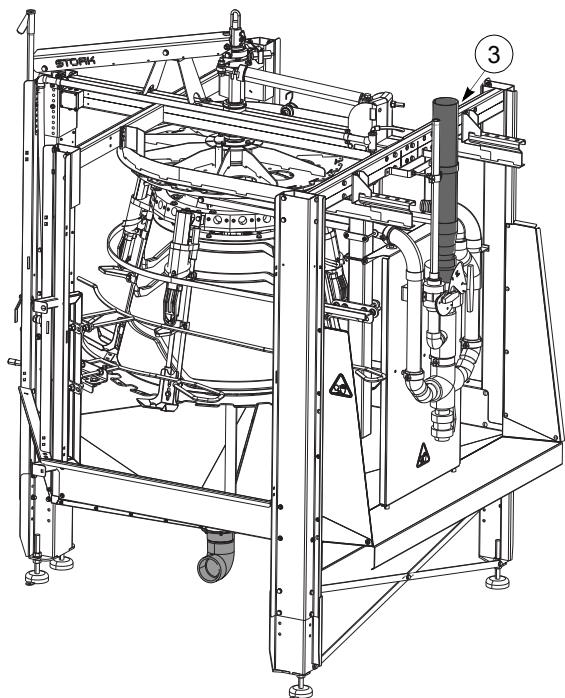


fig. 26 Connecting the vacuum

## 6 ADJUSTMENTS AND SETTINGS



**MORTAL DANGER**  
Activities described in this chapter must be carried out by competent, professional and trained personnel.



**NOTE**

The setting and adjustment data you read in the User's Manual are the basic settings. They may need changing to make the machine work better. Write down the old settings and the corrected settings in the appendix Settings.

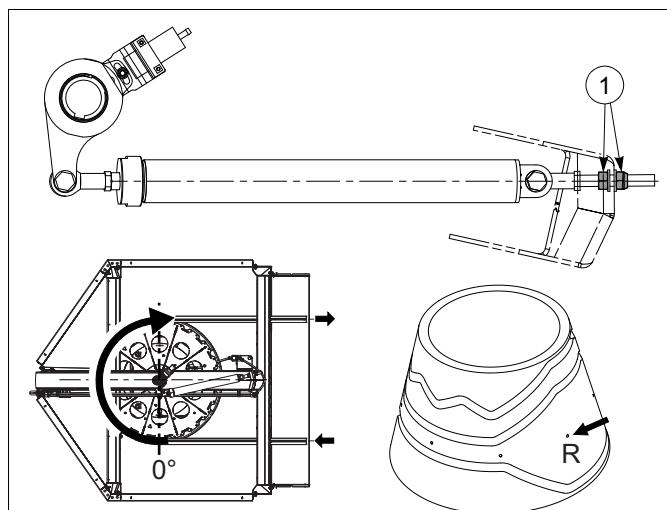


fig. 27 Adjust zero point, right-hand machine



**MORTAL DANGER**  
Activities described in this chapter must only be carried out if the power supply to the machine and/or control panel is switched off.

1. Switch off main switch(es) of the control panel(s)  
or  
remove all machine plugs from the wall sockets.
2. Lock the main switch(es) with a padlock.
3. Take all measures to prevent unintentional recovery of the power supply.
4. Proceed carefully during carrying out the work.

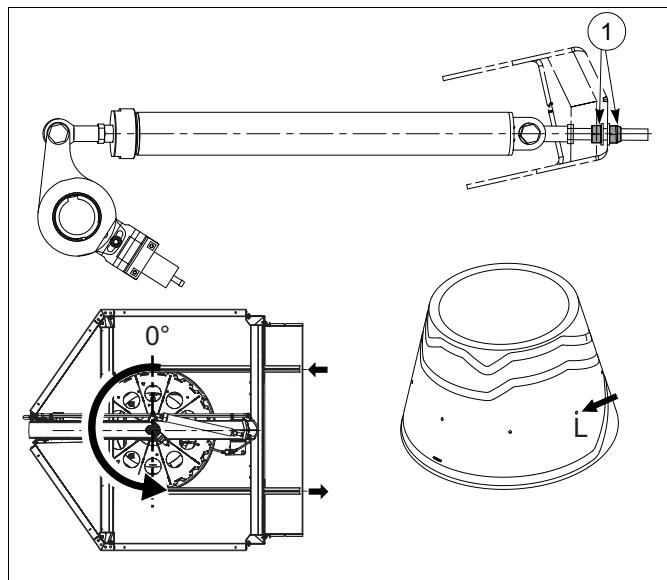


fig. 28 Adjust zero point, left-hand machine

### 6.1 Adjust zero point

Make sure that the reference point on the curve is aligned with the zero point of the machine. Do this by adjusting nuts 1 of the overload limiter. See fig. 27 and fig. 28.

## 6.2 Adjust spreader bracket

Spreader bracket 1 positions the legs of the product.

Set the spreader bracket as follows:

1. Loosen bolt 2 and 3.
2. Place the spreader bracket according to the machine execution and the configuration of fig. 29.
3. Tighten bolt 2 and 3.

**NOTE**

Push spreader bracket up to remove play when you tighten the bolts.

See fig. 29.

See fig. 29.

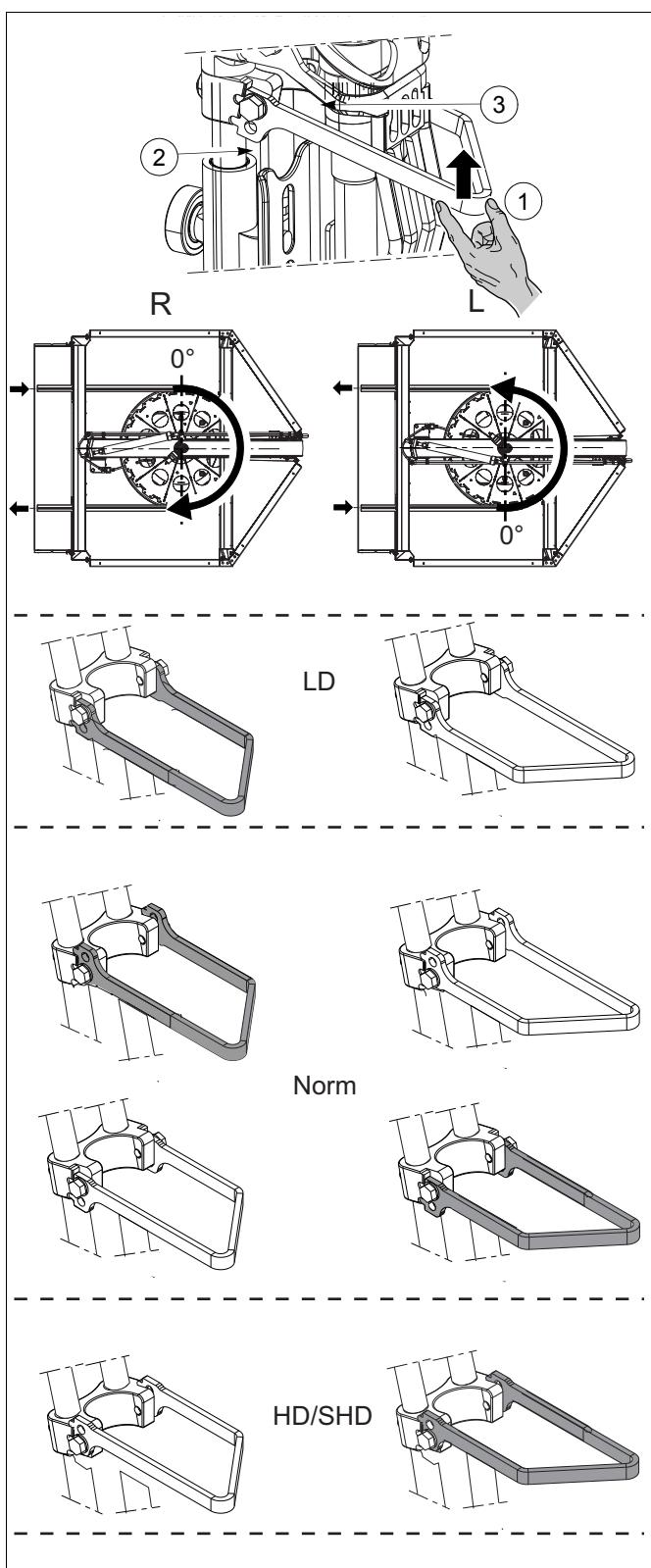


fig. 29 Adjust spreader bracket

### 6.3 Adjusting shoulder lifter


**TIP**

Use adjusting tool 3 that is supplied, for simply and accurately setting up the shoulder lifter.  
See fig. 30.

#### 6.3.1 Without the optional Neck Skin Cutting Module

Shoulder lifter 1 positions the product in a fixed position.

Set the shoulder lifter as follows:

1. Rotate the carousel where the shoulder lifter is completely up and the suction nozzles are completely down (at approximately 130°).
2. Loosen bolt 2.
3. Place the adjustment tool 3 as shown in fig. 30.
4. Adjust the distance between infeed bracket 4 and the bottom of the shoulder lifter 1 according to tab. 1. The adjustment tool has three top surfaces. Use the surface related to the model of the machine.

**NOTE**

- Push guide block 6 of the shoulder lifter down in the cam groove when you adjust the shoulder lifter.
- Do not move blocks 7 and 8 when you adjust the shoulder lifter to prevent play in the upper unit.

See fig. 30.

5. Tighten bolt 2.

See fig. 30 and tab. 1.

tab. 1 Adjust shoulder lifter without optional Neck Skin Cutting Module

Model	Distance X
LD	20 mm
Norm	25 mm
HD	30 mm
SHD	45 mm
	.....*

\* to be completed by the user.

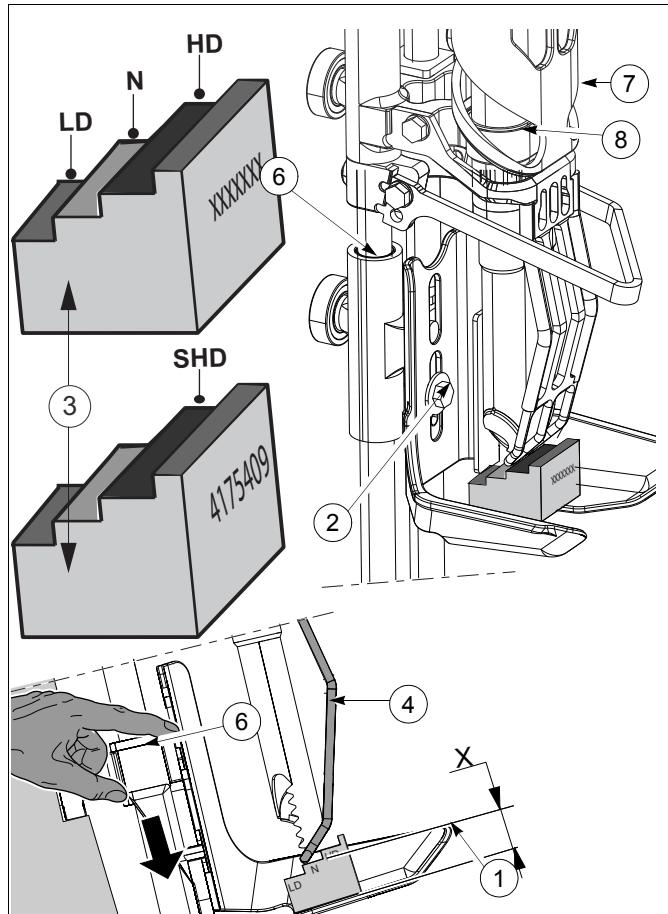


fig. 30 Adjust shoulder lifter

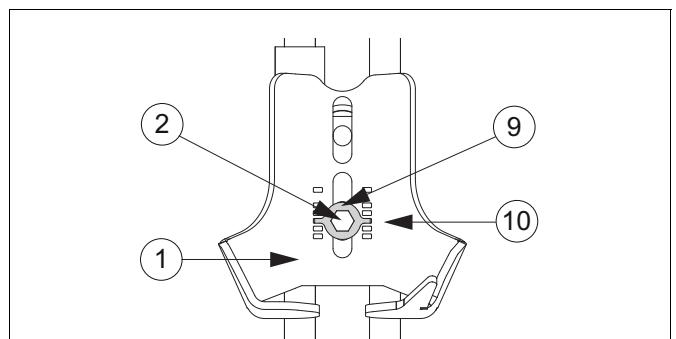


fig. 31 Adjust shoulder lifter with optional Neck Skin Cutting Module

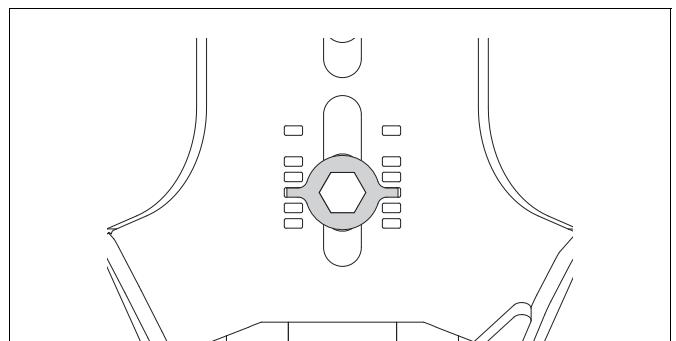


fig. 32 Step adjustment

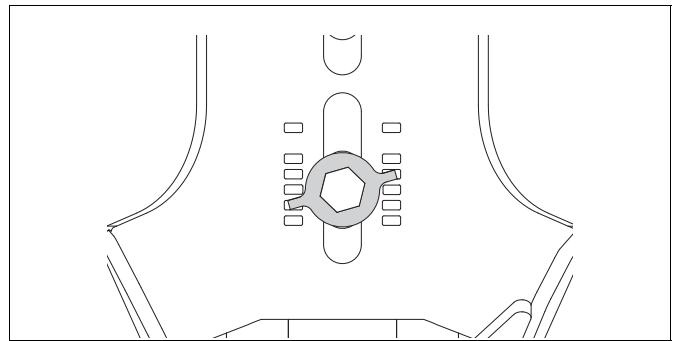


fig. 33 Half step adjustment

### 6.3.2 With the optional Neck Skin Cutting Module

Shoulder lifter **1** positions the product in a fixed position.

Set the shoulder lifter as follows:

1. Rotate the carrousel where the shoulder lifter is completely up and the suction nozzles are completely down (at approximately 130°).
2. Loosen bolt **2** to release locking washer **9**.
3. Pull out on locking washer **9** to remove from washer locking holes **10**.
4. Place the adjustment tool **3** as shown in fig. 30.
5. Adjust the distance between infeed bracket **4** and the bottom of the shoulder lifter **1** according to tab. 2. The adjustment tool has three top surfaces. Use the surface related to the model of the machine. .

#### NOTE

- Push guide block **6** of the shoulder lifter down in the cam groove when you adjust the shoulder lifter.
- Do not move blocks **7** and **8** when you adjust the shoulder lifter to prevent play in the upper unit.

See fig. 30.



#### TIP

When a full step adjustment (see fig. 32) is outside the  $\pm 2$  mm tolerance, use a half step adjustment (see fig. 33).

6. Insert locking washer **9** into locking holes **10**
  7. Tighten bolt **2**.
  8. Note which of the locking holes **10** locking washer **9** is in.
  9. Repeat steps 1 - 7 on the remaining units.
- See fig. 30, fig. 31, fig. 32, fig. 33 and tab. 2.

tab. 2 Adjust shoulder lifter with optional Neck Skin Cutting Module

Model	Distance X with optional Neck Skin Cutting Module
<b>LD</b>	20 mm $\pm$ 2 mm
<b>Norm</b>	25 mm $\pm$ 2 mm
<b>HD</b>	30 mm $\pm$ 2 mm
<b>SHD</b>	45 mm $\pm$ 2 mm
	.....*

\* to be completed by the user.

## 6.4 Adjusting Infeed bracket


**TIP**

Use adjusting tool **6** that is supplied, for simply and accurately setting up the infeed bracket.

See fig. 34.

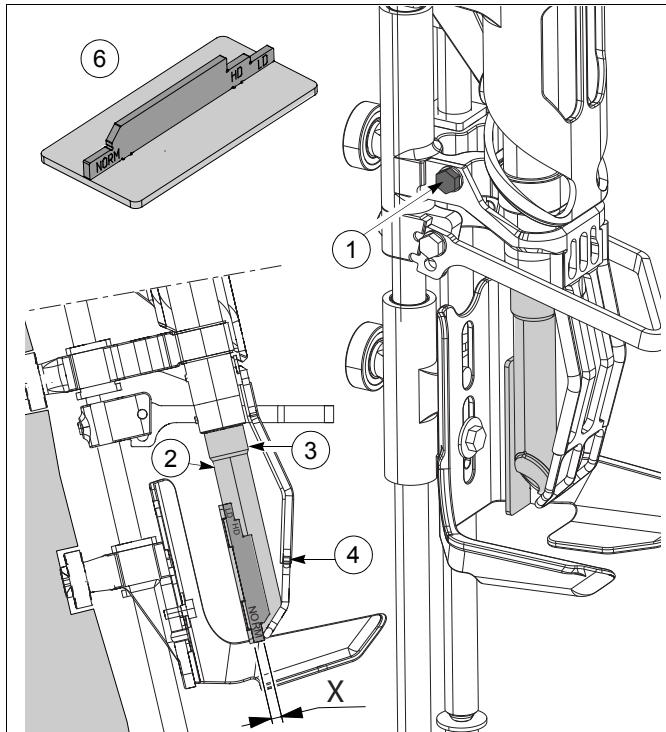


fig. 34 Adjust infeed bracket

Infeed bracket **4** and suction nozzles **2** and **3** go into the product.

Set the infeed bracket as follows:

1. Rotate the carousel where the shoulder lifter is completely up and the suction nozzles are completely down (at approximately. 130°).
2. Loosen bolts **1** (2x).
3. Place the adjustment tool between suction nozzles **2** and **3** as shown in fig. 34.
4. Move the infeed bracket and adjust the distance between the backside of suction nozzles **2** and infeed bracket **4** according to tab. 3. The model of the machine that is given on the adjustment tool corresponds with the correct distance.
5. Tighten bolts **1** (2x).

See fig. 34.

tab. 3 Adjust infeed bracket

Model	Distance X
LD	6 mm
Norm	7,5 mm
HD	9 mm
SHD	9 mm
	.....*

\* to be completed by the user.

## 6.5 Disconnecting and connecting the machine

Carrier pins **1** make a connection between the drive wheel that is driven by the overhead conveyor and the unit wheel. Locating pin **2** of the height adjustment ensures that the machine stays connected in failure of the compressed air supply.

**WARNING**

Different components move during rotation of the units. Be careful that your hands do not get stuck.

Disconnect the machine as follows:

1. Stop the overhead conveyor. See the User's Manual "Overhead conveyor" (90714 or 90727).
2. Pull out locating pin **2** and hold the pin.
3. Set switch **3** in position "**A**".  
• The pneumatic cylinder goes out and the main shaft with cam and units is lowered.
4. Release locating pin **2**.

See fig. 35.

Connect the machine as follows:

1. Stop the overhead conveyor. See the User's Manual "Overhead conveyor" (90714 or 90727).
2. Set switch **3** in position "**B**".  
• The pneumatic cylinder goes in and the main shaft with cam and units is brought to the adjusted height. See paragraph 6.7 Adjusting the height for adjusting the height.
3. Rotate the carrousel with the units against the direction of rotation until carrier pins **1** fall into the openings of plate **5**.

See fig. 35.

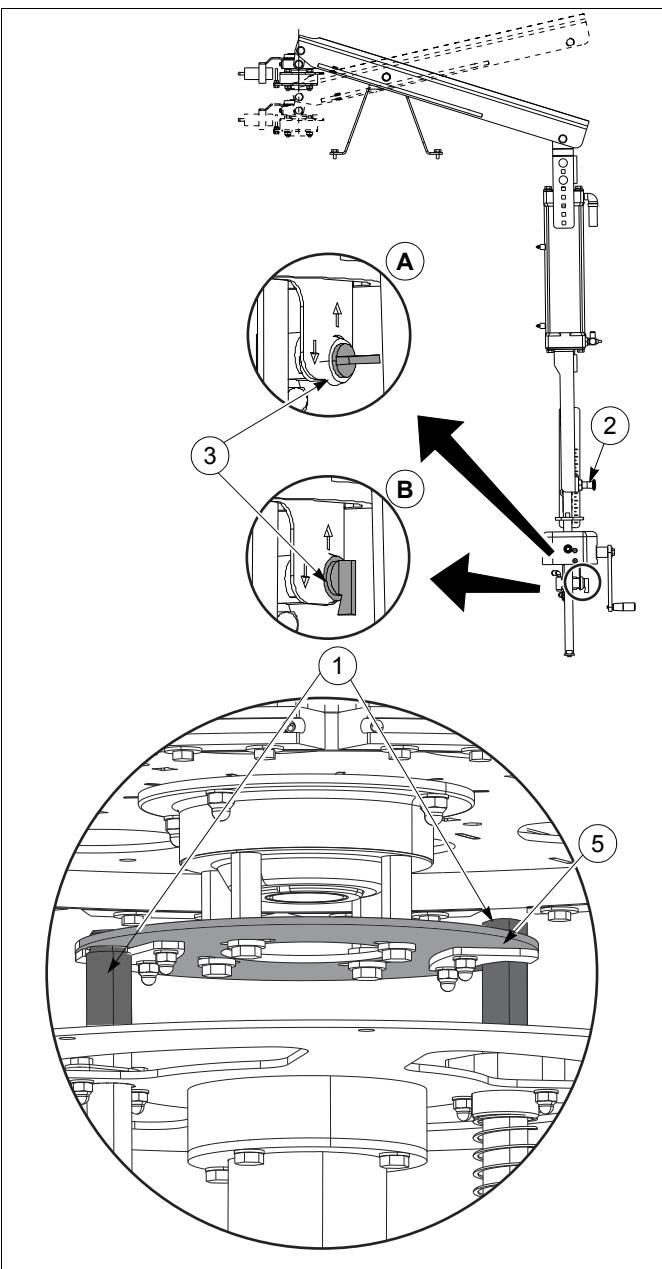


fig. 35 Connecting and disconnecting the machine

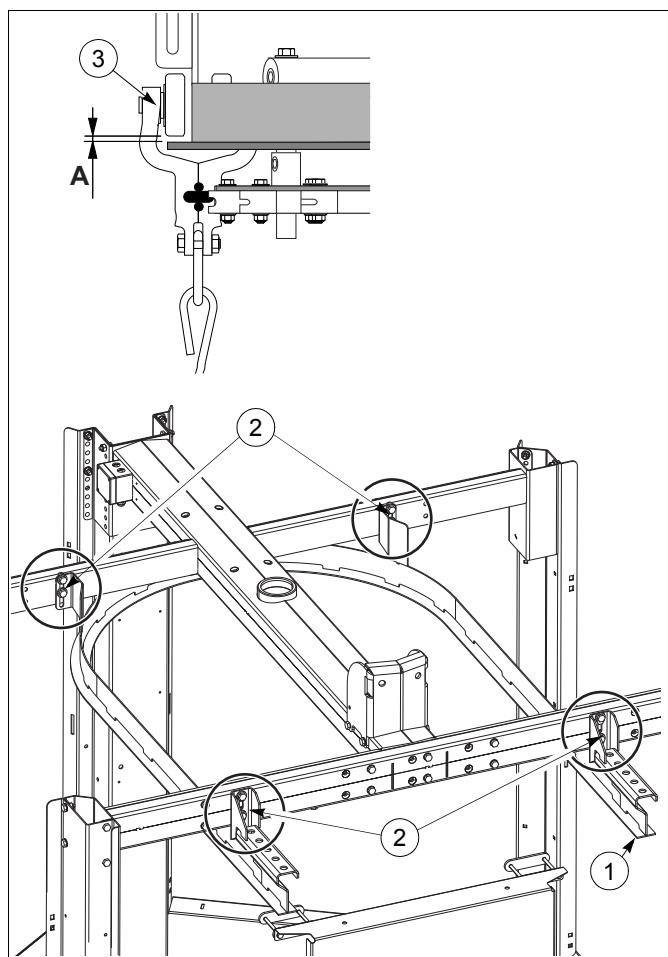


fig. 36 Adjust track height

## 6.6 Adjust track height

Adjusting the track height depends on the type of track profile and shackle.

Set the track height as follows:

1. Turn bolts **2** a few times to loosen them.
2. Adjust the distance between the bottom of the trolley wheel and top of overhead conveyor according to tab. 4.
  - Trolley **3** should just not touch overhead conveyor.
3. Tighten bolts **2**



### NOTE

Check that track section **1** runs horizontally.

See fig. 36.

tab. 4 Adjust track height

Track profile	Distance A
T-profile	1 mm
.....*	.....*

\* to be completed by the user.

See fig. 36.

## 6.7 Adjusting the height

The height of the units can be adjusted on the length of the products or the shackles by using the height adjustment.

Adjust this as follows:

1. Adjust with handle **1** the distance between the bottom of shackle **9** and the top of spreader bracket **2** according to tab. 5.

Turn handle **1**:

- counterclockwise to make distance **H** smaller.
- clockwise to make distance **H** larger.

See fig. 37.

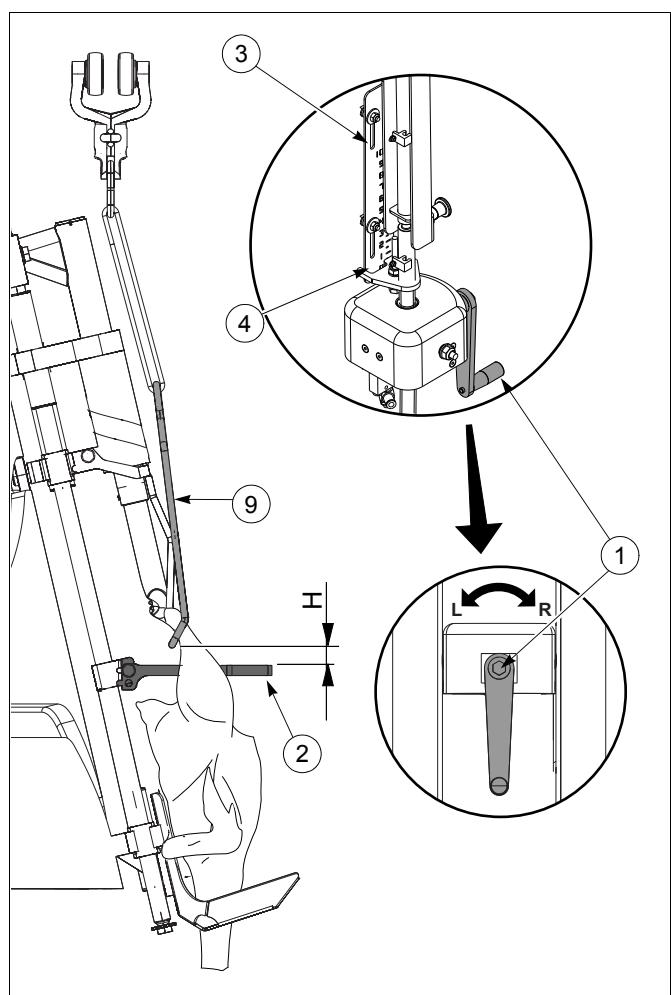


fig. 37 Adjusting the height

### TAKE CARE

- Pay attention that the spreader brackets stay below the shackles.
- Spreader bracket **2** must run quietly between the legs of the product.



### TIP

- The height adjustment is equipped with ruler **3** and indicator **4** to read the setting easily.  
The scale calibration of the ruler is as follows:
  - position 0, highest position of the main shaft with curve.
  - position 10, 100 mm lower in relation to position 0.

tab. 5 Adjusting the height of the machine

Shackle	Distance <b>H</b>
<b>Nuova</b>	10 mm
<b>Rigid</b>	10 mm
.....*	.....*

\* to be completed by the user.

## 6.8 Adjust guides

The machine has the following guides:

- Inner shackle guide **1**  
See paragraph 6.8.1 Inner shackle guide for adjusting the guide.
- Infeed guide, tarsal joint **2**  
See paragraph 6.8.2 Adjust infeed guide tarsal joint for adjusting the guide.
- Infeed guide, breast **3**  
See paragraph 6.8.3 Adjust infeed guide breast for adjusting the guide.

See fig. 38.

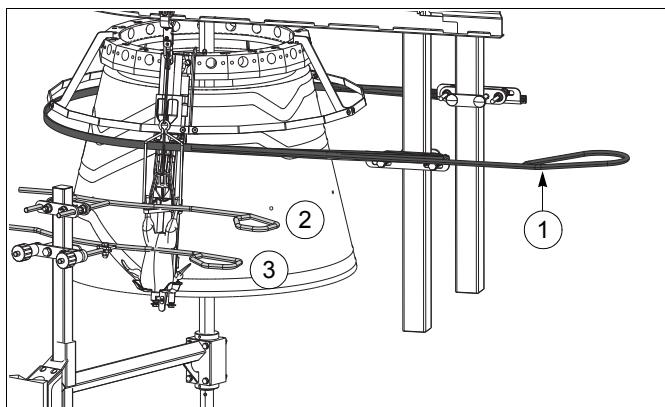


fig. 38 Guides

### 6.8.1 Inner shackle guide

Inner shackle guide **1** positions the products in the units and prevents the shackles from getting caught in the machine.

#### Height

Adjusting the height of inner shackle guide **1** depends on the type of track profile and shackle.

Adjust the height as follows:

1. Adjust the machine to the correct height. See paragraph 6.7 Adjusting the height.
2. Turn nuts **5** a few times to loosen them.
3. Adjust the distance between the top of inner shackle guide **1** and the bottom of shackle **6** according to tab. 6.
4. Tighten nuts **5**.

See fig. 39.

tab. 6 Adjust height inner shackle guide

Shackle	Model	Distance H
Nuova	LD/Norm/HD/SHD	190 mm
Rigid	LD	325 mm
	Norm	.....
	HD	285 mm
.....*	.....*	.....*

\* to be completed by the user.

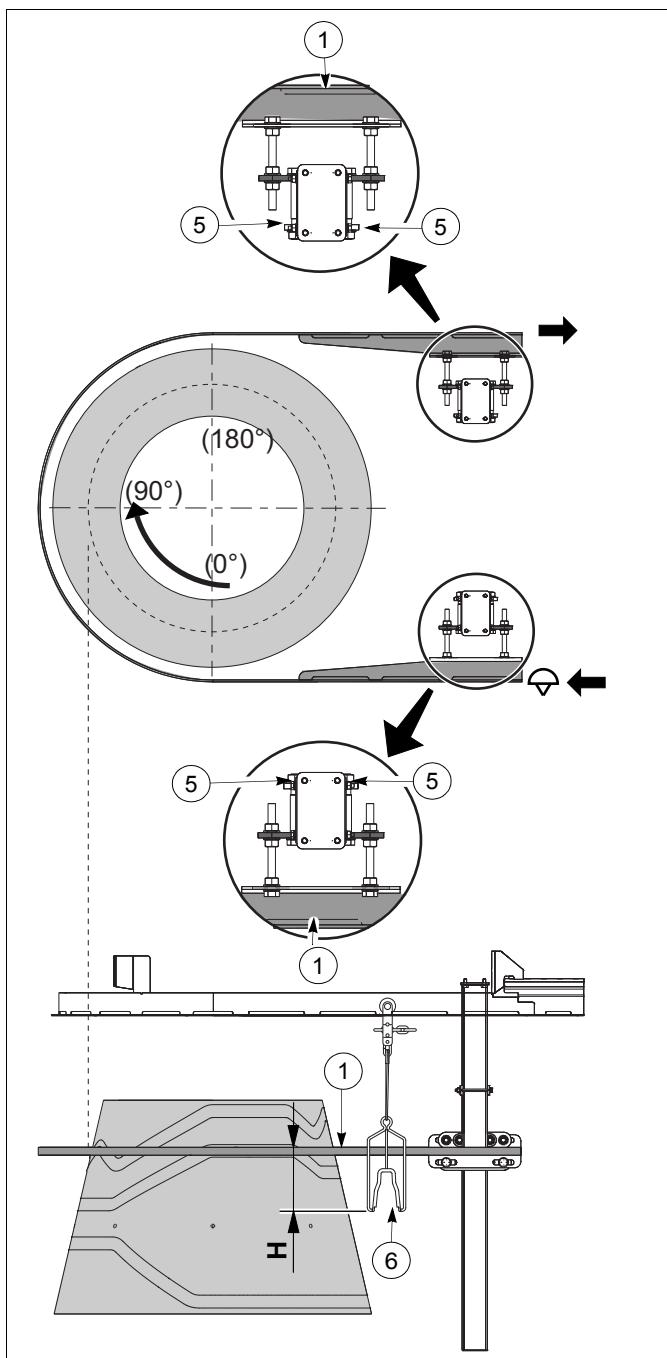
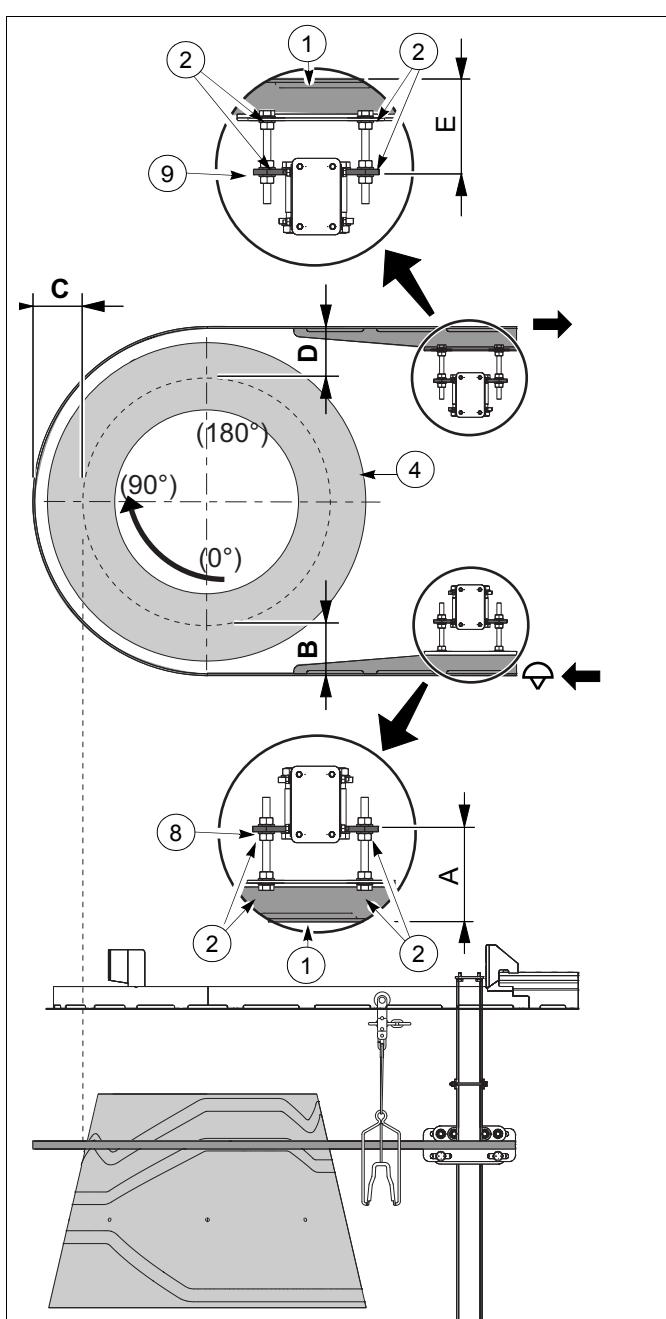


fig. 39 Adjust guides

**Width**

Adjust this as follows:

1. Loosen nuts **2**.
2. Adjust the distances below according to tab. 7 or tab. 8:
  - Distance **A**, between strip **8** and guide **1**.
  - Distance **B**, **C** and **D**, between cam **4** and guide **1**.
  - Distance **E**, between strip **9** and guide **1**.
3. Tighten nuts **2**.

See fig. 39.

tab. 7 Adjust inner shackle guide

		Distance....mm				
Shackle	Model FIM 15/ 20	A	B (0°)	C (90°)	D (180°)	E
Nuova	LD	180	165	165	170	180
	Norm	180	170	180	185	165
	HD	180	170	180	185	165
	SHD	145	160	190	175	147
Rigid	LD	145	175	175	180	150
	Norm	.....	.....	.....	.....	.....
	HD	170	175	187	187	145
	.....*	.....*	.....*	.....*	.....*	.....*

\* to be completed by the user.

tab. 8 Adjust inner shackle guide

		Distance....mm				
Shackle	Model FIM 8/16	A	B (0°)	C (90°)	D (180°)	E
Nuova	LD	215	155	175	185	225
	Norm	215	155	175	185	225
	HD	215	155	175	185	225
Rigid	LD	.....	.....	.....	.....	.....
	Norm	.....	.....	.....	.....	.....
	HD	.....	.....	.....	.....	.....
	.....*	.....*	.....*	.....*	.....*	.....*

\* to be completed by the user.

### 6.8.2 Adjust infeed guide tarsal joint

Infeed guide **2** positions the products in the units.

#### Height

Adjusting the height of infeed guide **2** depends on the type of track profile and shackle.

Adjust the height as follows:

1. Adjust the machine to the correct height. See paragraph 6.7 Adjusting the height.
2. Loosen bolts **5** and nuts **7**.
3. Adjust the distance between the center of infeed guide **2** and the top of leg loop **6** according to tab. 9. The guide should press against the tarsal joint of the product.
4. Tighten bolts **5** and nuts **7**.

See fig. 41.

tab. 9 Adjust height infeed guide

Shackle	Model	Distance H
Nuova	LD/Norm/HD/SHD	20 mm
Rigid	LD	..
	Norm	..
	HD	..
.....*	.....*	.....*

\* to be completed by the user.

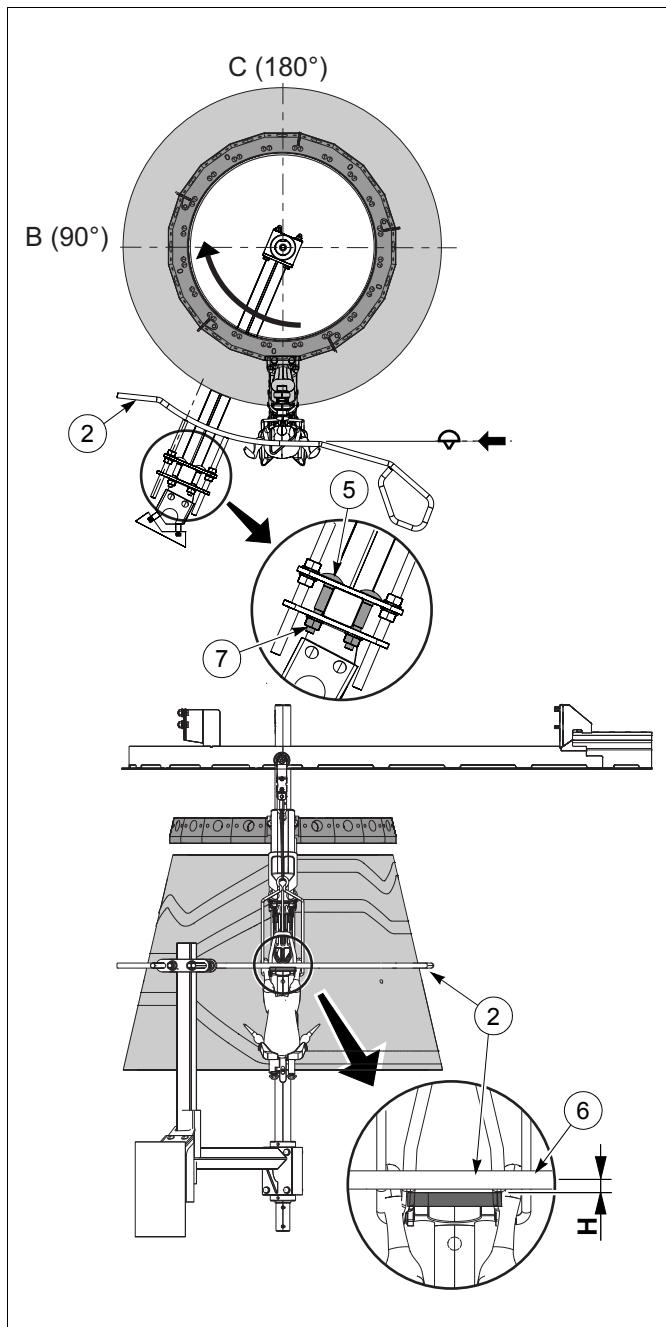


fig. 41 Adjust infeed guide tarsal joint

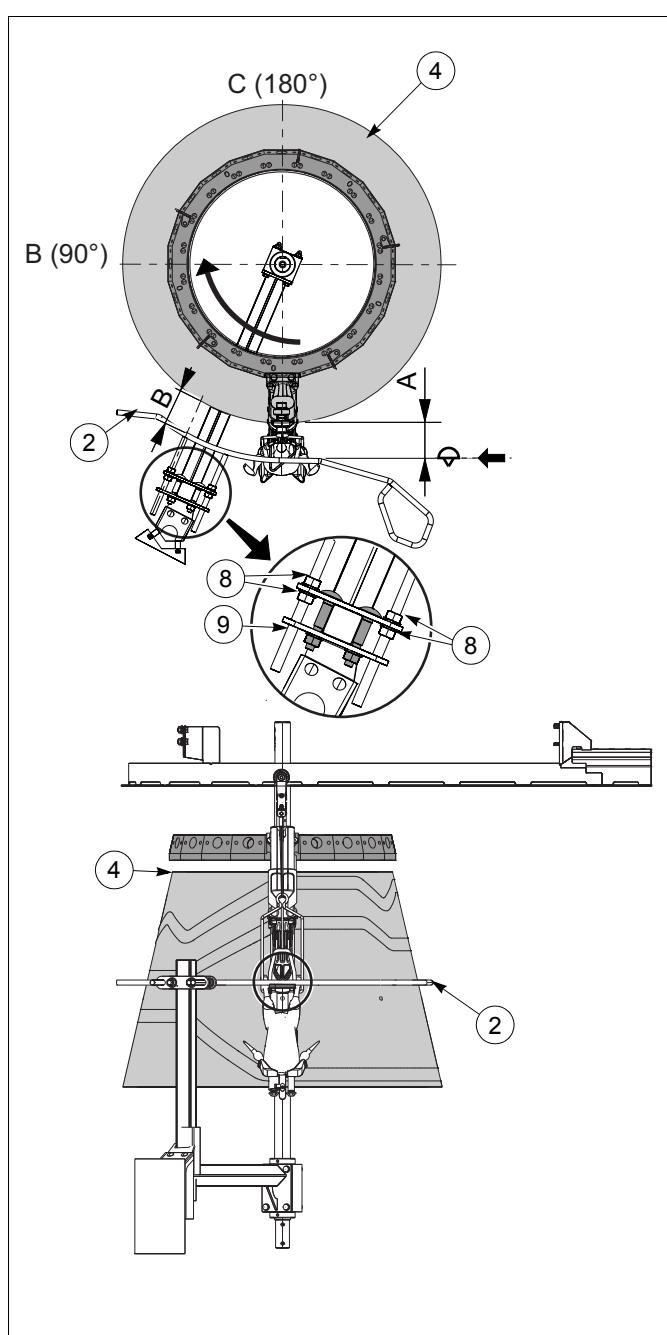


fig. 42 Adjust infeed guide tarsal joint

**Width**

Adjust this as follows:

1. Turn nuts 8 a few times to loosen them.
2. Adjust the distances below according to tab. 10 or tab. 11
  - Distance **A**, between outside of cam 4 and center of infeed guide 2.
  - Distance **B**, between outside of cam 4 and center of infeed guide 2 in position of thread 9.
3. Tighten nuts 8.

See fig. 42.

tab. 10 Adjust width infeed guide

		Distance	
Shackle	Model FIM 15/20	A (0°)	B
Nuova	LD	160 mm	175 mm
	Norm	160 mm	175 mm
	HD	195 mm	175 mm
	SHD	180 mm	175 mm
Rigid	LD	...	...
	Norm	...	...
	HD	...	...
.....*	.....*	.....*	.....*

\* to be completed by the user.

tab. 11 Adjust width infeed guide

		Distance	
Shackle	Model FIM 8/16	A (0°)	B
Nuova	LD	175 mm	175 mm
	Norm	175 mm	175 mm
	HD	175 mm	175 mm
Rigid	LD	...	...
	Norm	...	...
	HD	...	...
.....*	.....*	.....*	.....*

\* to be completed by the user.

### 6.8.3 Adjust infeed guide breast

Infeed guide **8** positions the products in the units.

#### Height

Adjusting the height of infeed guide **8** depends on the type of track profile and shackle.

Adjust the height as follows:

1. Adjust the machine to the correct height. See paragraph 6.7 Adjusting the height.
2. Loosen bolts **5**.
3. Adjust the distance between the center of infeed guide **8** and the top of leg loop **6** according to tab. 12. The guide should press against the breast of the product.
4. Tighten bolts **5**.

See fig. 43.

tab. 12 Adjust height infeed guide

Shackle	Model	Distance H
<b>Nuova</b>	<b>LD</b>	110 mm
	<b>Norm</b>	125 mm
	<b>HD</b>	140 mm
	<b>SHD</b>	120 mm
<b>Rigid</b>	<b>LD</b>	..
	<b>Norm</b>	..
	<b>HD</b>	..
	.....*	.....*

\* to be completed by the user.

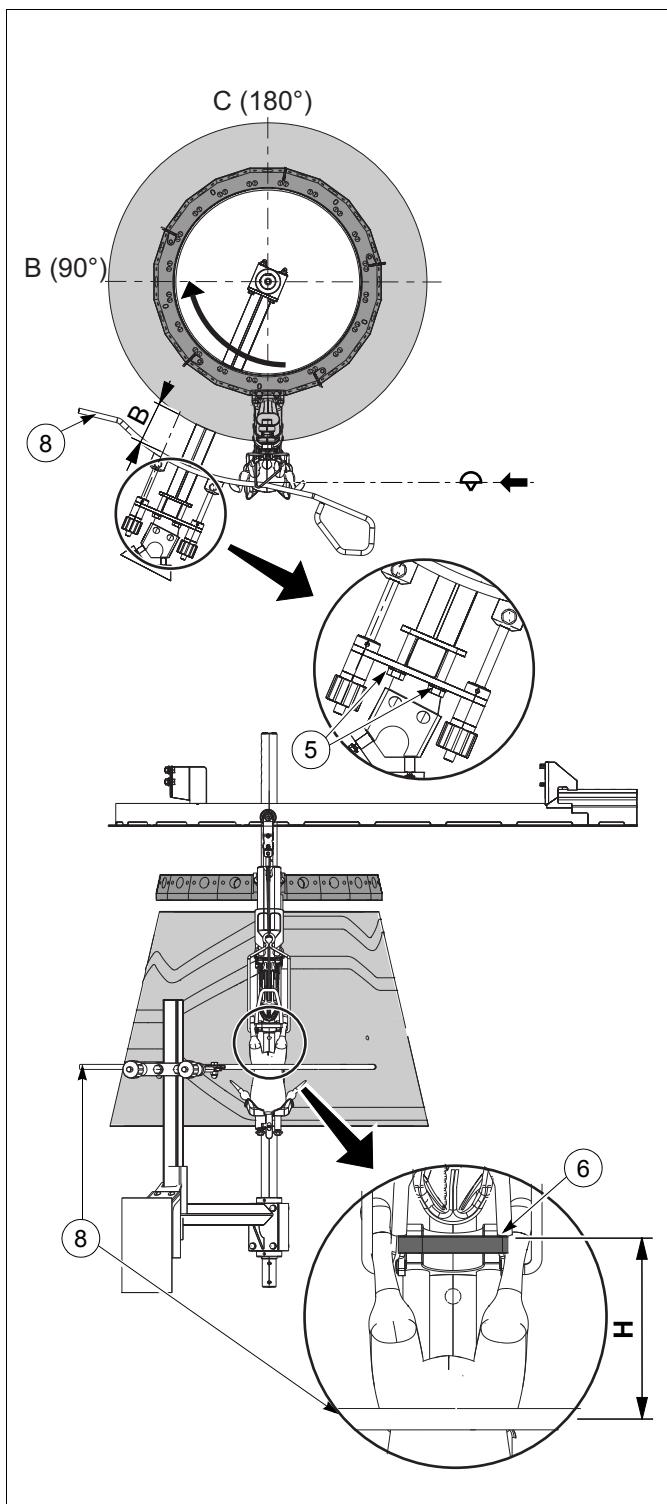


fig. 43 Adjust infeed guide breast

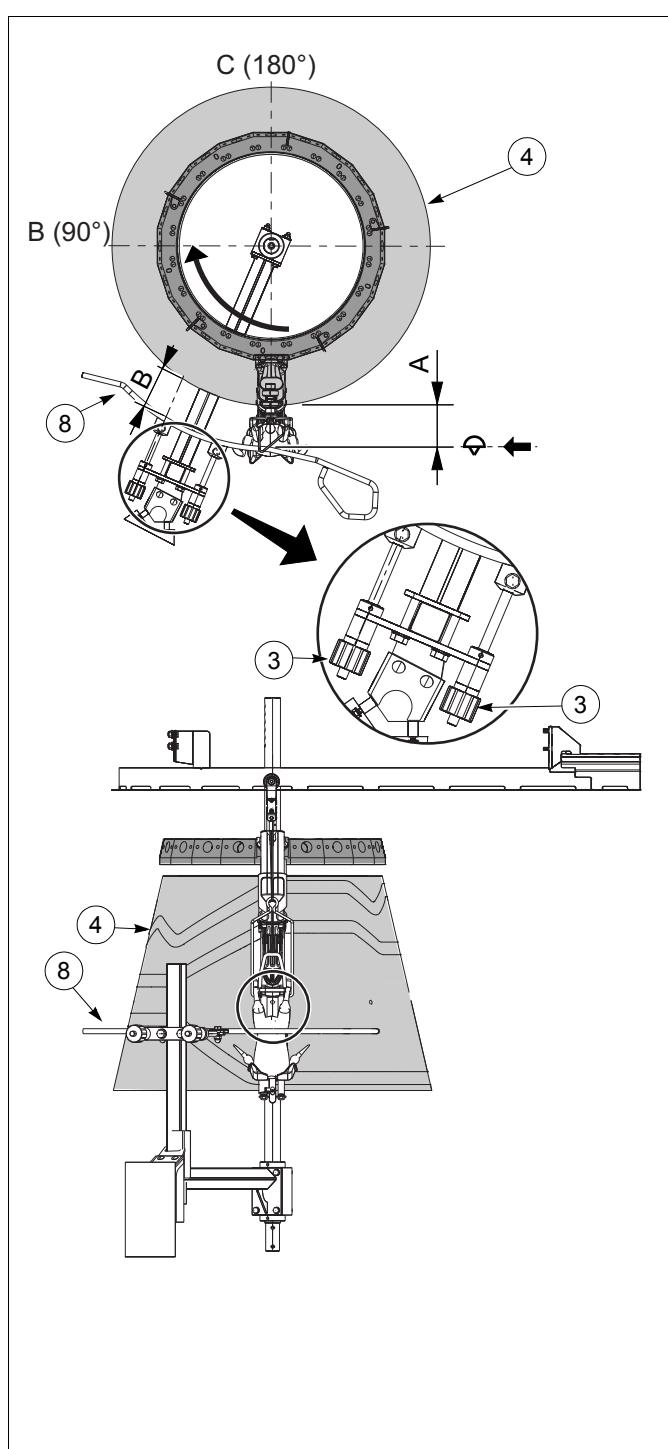


fig. 44 Adjust infeed guide breast

**Width**

Adjust this as follows:

1. Adjust the following distances with rotary knob **3** according to tab. 13 or tab. 14:
  - Distance **A**, between outside of cam **4** and center of infeed guide **8**.
  - Distance **B**, between outside of cam **4** and center of infeed guide **8** in position of thread **9**.

See fig. 44.

tab. 13 Adjust width infeed guide

		Distance	
Shackle	Model FIM 15/20	A (0°)	B
Nuova	LD	165 mm	165 mm
	Norm	190 mm	180 mm
	HD	210 mm	200 mm
	SHD	210 mm	200 mm
Rigid	LD	...	...
	Norm	...	...
	HD	...	...
.....*	.....*	.....*	.....*

\* to be completed by the user.

tab. 14 Adjust width infeed guide

		Distance	
Shackle	Model FIM 8/16	A (0°)	B
Nuova	LD	200 mm	200 mm
	Norm	200 mm	200 mm
	HD	200 mm	200 mm
Rigid	LD	...	...
	Norm	...	...
	HD	...	...
.....*	.....*	.....*	.....*

\* to be completed by the user.

#### 6.8.4 Adjust the FIM RotoVac 20 RS with Neck Skin Cutting Module inner shackle bump out guide

Adjust bump out guide **4** as follows:

1. Loosen nuts **6** (2x).
2. Loosen nuts **7** (2x).
3. Adjust bump out guide **4** at point **A** flush ( $\pm 2$  mm) with guide **1** at point **B** using nuts **6** (2x).
4. Adjust bump out guide **4** so infeed of product neck is in shoulder lifter **5**.
5. Tighten nuts **7**.

See fig. 45 and fig. 46.

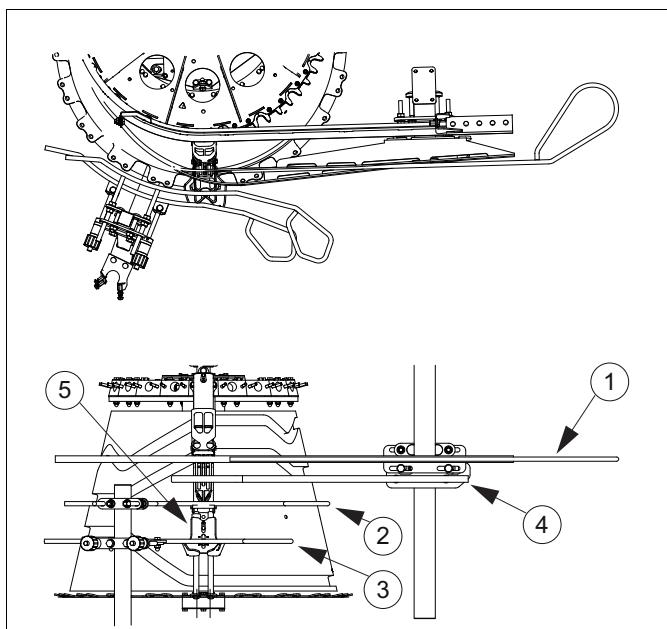


fig. 45 Adjust the FIM RotoVac 20 RS with Neck Skin Cutting Module inner shackle bump out guide

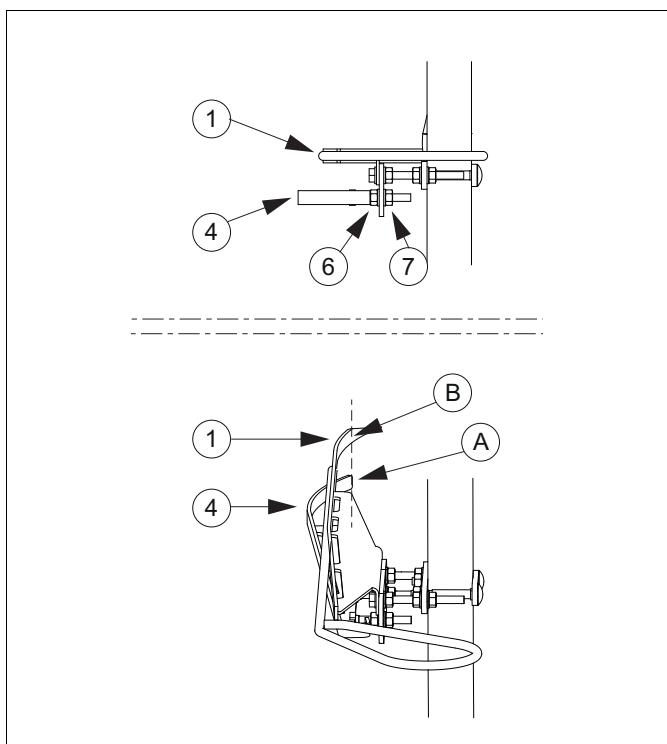


fig. 46 Adjust the FIM RotoVac 20 RS with Neck Skin Cutting Module inner shackle bump out guide bolts

## 6.9 Adjust timing of the unit in relation to the shackle

For proper positioning of the product, the unit should lead in relation to the shackle.

See fig. 47.

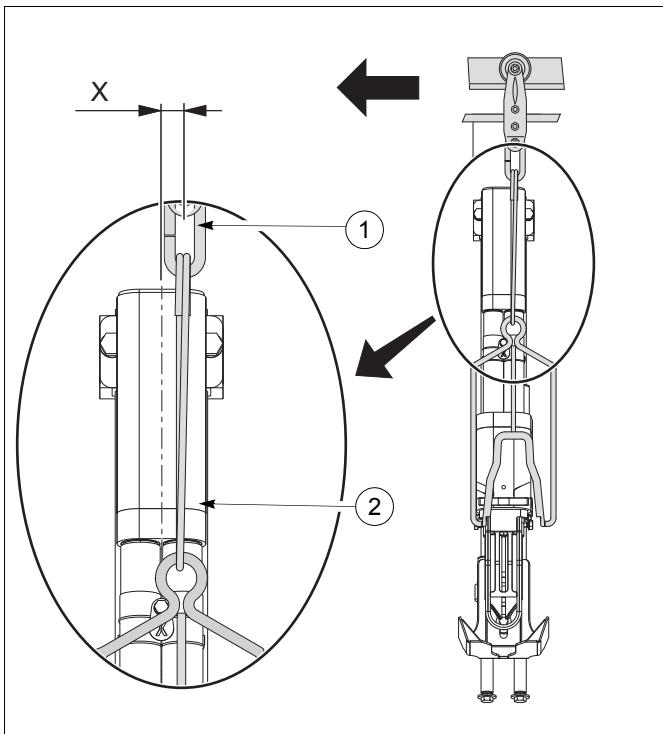


fig. 47 Adjust timing

The optimal lead depends on the operating conditions, such as:

- the speed of the overhead conveyor.
- the weight of the products.
- the elasticity of the cable or wear of the chain.

Adjust the lead as follows:

1. Connect the machine. See paragraph 6.5 Disconnecting and connecting the machine.
2. Turn bolts 4 a few times to loosen them.
3. Adjust the leading of the center of unit 2 in relation to the center of shackle 1 according to tab. 15. Do this by rotating the carrousel.

### WARNING

Different components move during the rotation of the unit. Be careful that your hands do not get stuck.

4. Tighten bolts 4.
5. Check during production whether the products are transported quietly in the machine.

See fig. 47 and fig. 48.

tab. 15 Adjust lead

Shackle	Model	Distance X
<b>Nuova</b>	<b>LD/Norm/HD/SHD</b>	10 mm
	<b>FIM RotoVac 20 RS with optional Neck Skin Cutting Module</b>	20 mm
<b>Rigid</b>	<b>LD</b>	0 mm
	<b>Norm</b>	0 mm
	<b>HD</b>	0 mm
	.....*	.....*

\* to be completed by the user.

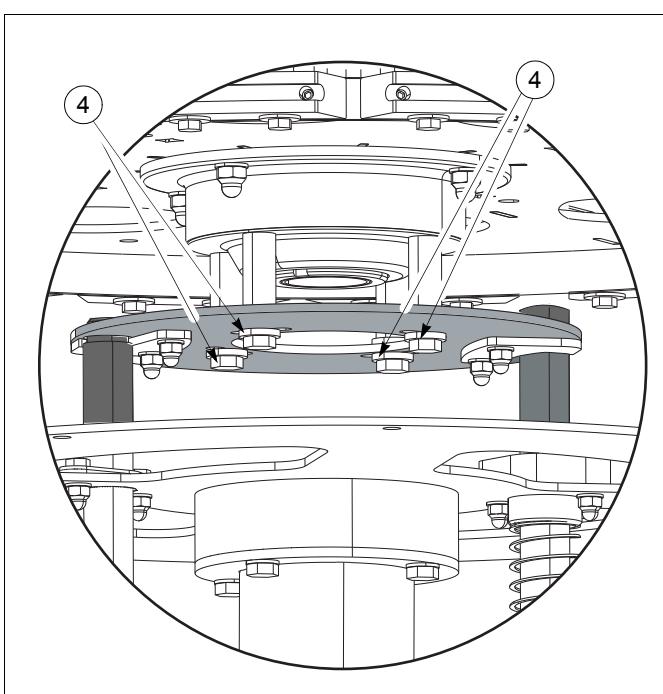


fig. 48 Adjust timing

## 6.10 Adjust the optional Neck Skin Cutting Module of the FIM RotoVac 20 RS

The Neck Skin Cutting Module removes the neck skin from the product.

### 6.10.1 Adjust the cutting angle

- Loosen bolt 1 (2x).
- Adjust the cutting angle to 13°.
- Tighten bolt 1 (2x).

See fig. 49.

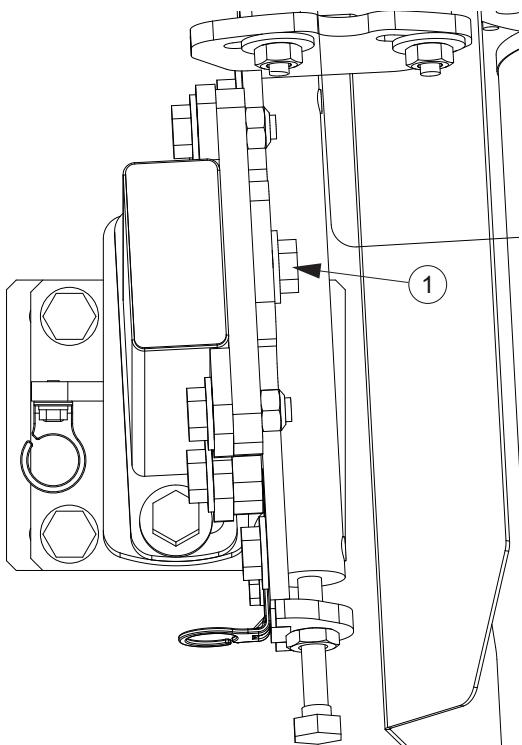


fig. 49 Adjust Neck Skin Cutting Module - cutting angle

### 6.10.2 Adjust parallel to shoulder lifter

- Loosen bolts 1.
- Adjust module 2 until parallel with shoulder lifter 3.
- Tighten bolts 1.

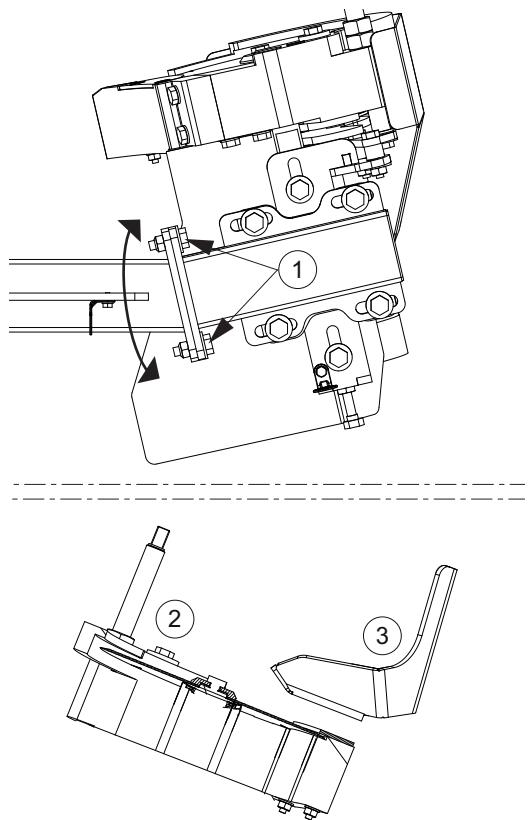


fig. 50 Adjust Neck Skin Cutting Module - parallel to shoulder lifter

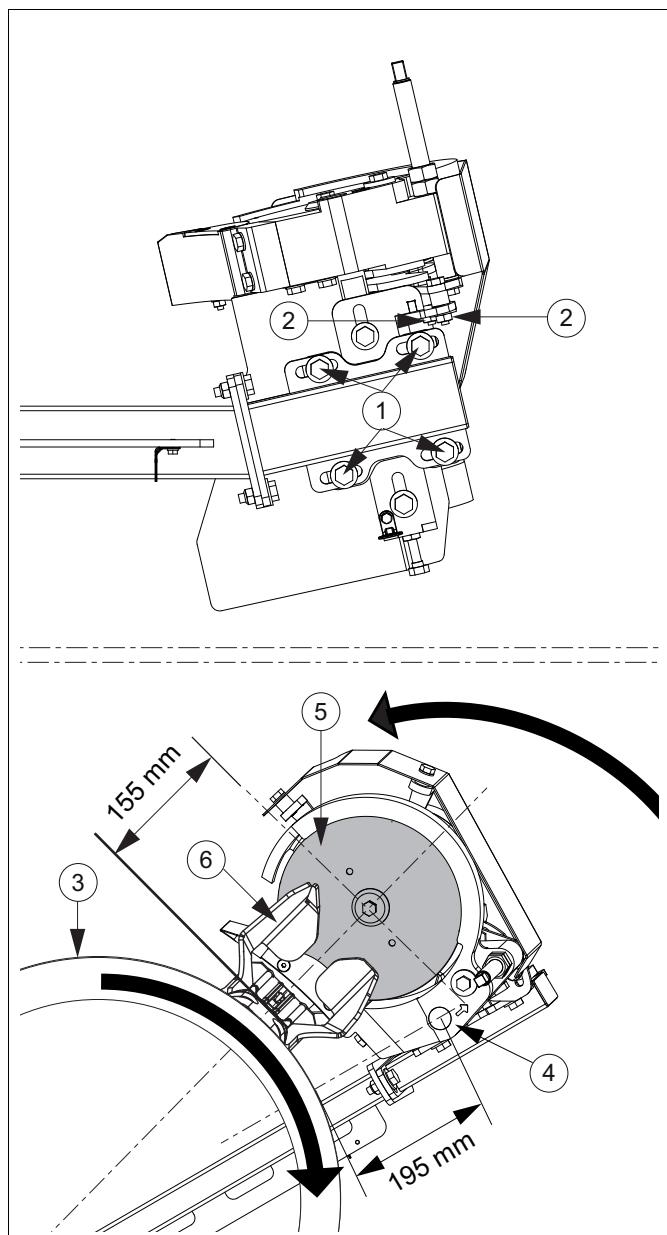


fig. 51 Adjust Neck Skin Cutting Module - horizontal

#### 6.10.3 Adjust the horizontal position

- Loosen bolts 1.
- Adjust the distance between cam 3 and the center of the 30 mm vertical rod 4 to 195 mm.
- Tighten bolts 1.
- Loosen nuts 2.
- Adjust the radial until the distance between the center of blade 5 and the back of shoulder lifter 6 is 155 mm.
- Tighten nuts 2.

See fig. 51.

**6.10.4 Adjust the vertical position:**

- Loosen nut 1.
- Loosen nut 2.
- Adjust the distance between the top of neck guide 4 and the bottom of shoulder lifter 5 to 4 mm by turning adjusting rod 3.
  - Turn clockwise to increase the distance.
  - Turn counterclockwise to decrease the distance.
- Rotate the machine and verify all lifters have a minimum of 4 mm clearance. Adjust if necessary.
- Tighten nut 2.
- Tighten nut 1.

See fig. 52.

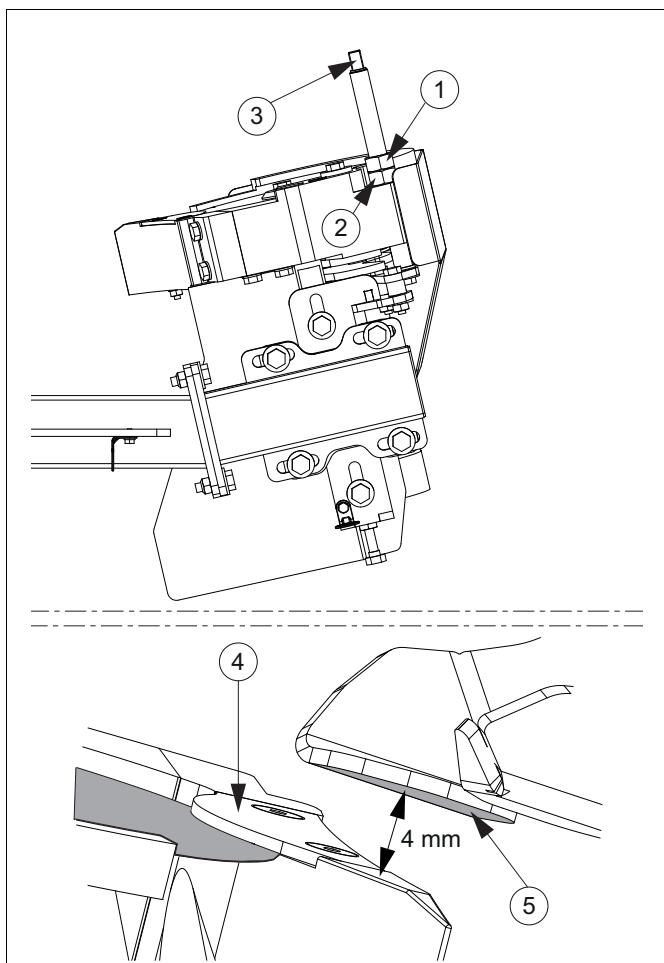


fig. 52 Adjust Neck Skin Cutting Module - vertical

**6.10.5 Adjust the 30 mm vertical rod**

- Loosen nut 1.
- Loosen bolts 2.
- Adjust the 30 mm vertical rod by turning bolt 3 until the rod is flush with housing 4.
  - Clockwise to raise the rod.
  - Counterclockwise to lower the rod.
- Tighten nut 1.
- Tighten bolts 2.

See fig. 53.

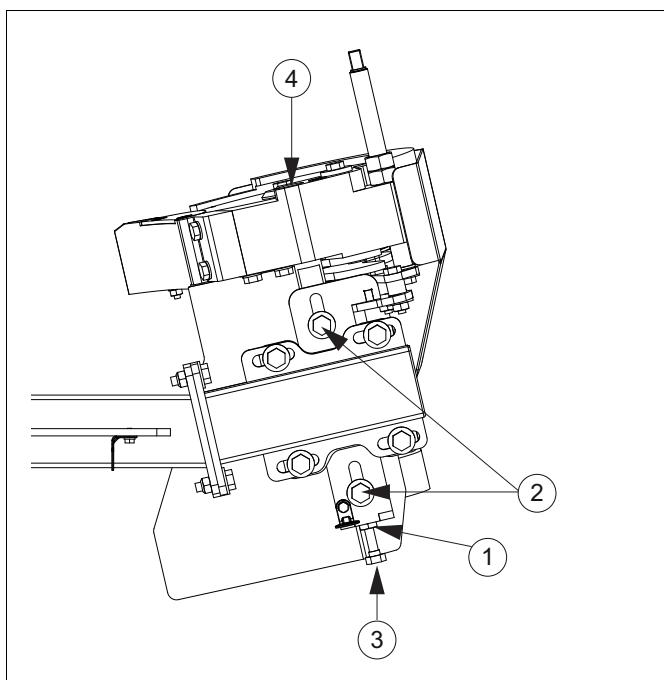


fig. 53 Adjust Neck Skin Cutting Module - 30mm vertical rod

## 6.11 Adjust spray nozzles

### 6.11.1 Adjust spray nozzles guide shafts

In spray pipe 1 is one flat jet spray nozzle with a spray angle of 25°.

- Adjust the spray nozzle vertical position.
- Adjust spray nozzle 3 so the guide shafts are lubricated.

See fig. 54.

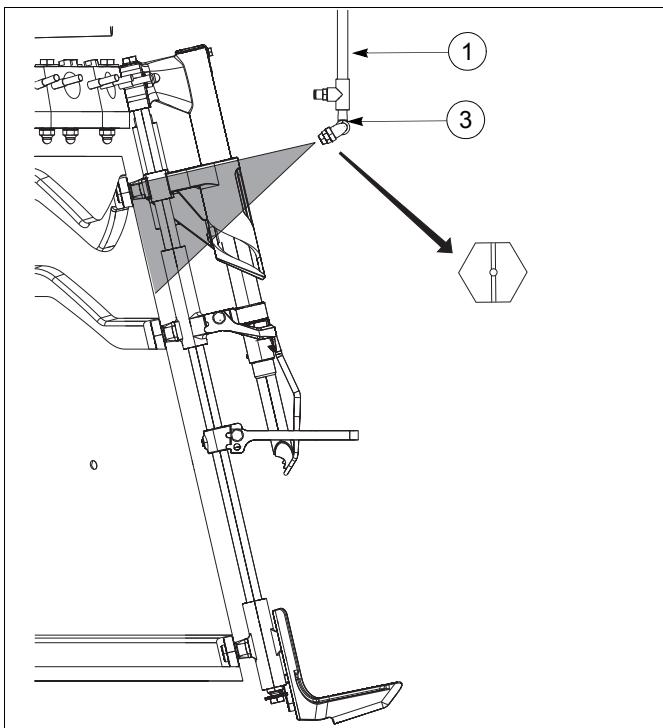


fig. 54 Adjust spray nozzles

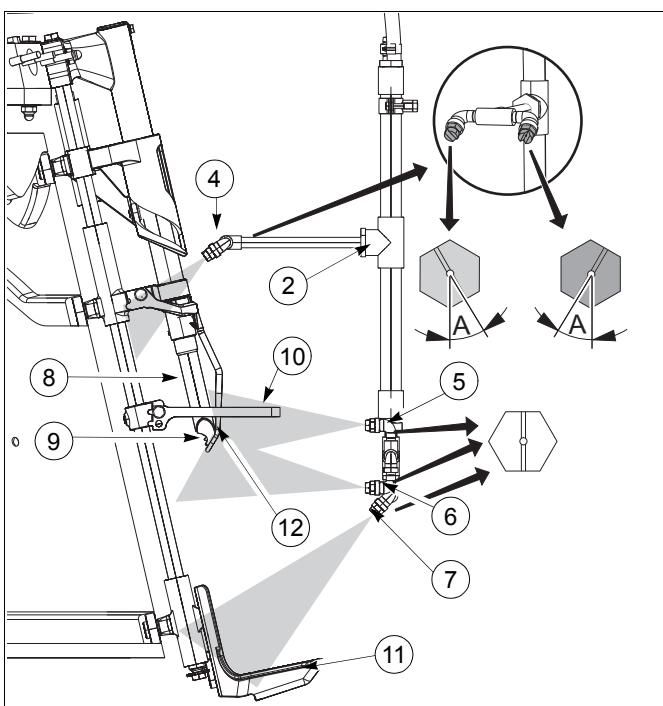


fig. 55 Adjust spray unit

#### 6.11.1.1 Adjust spray nozzles unit

In spray unit 2 are 6 flat jet spray nozzles with a spray angle of 25°.

- Adjust the angle of spray nozzles 4 according to tab. 16.
- Adjust spray nozzle 4 so the upper unit is cleaned.

tab. 16 Angle spray nozzles

<b>Angle A</b>
30°

- Adjust spray nozzles 5, 6 and 7 in vertical position.
- Adjust spray nozzle 5 (2x) so suction pipes 8 and spreader bracket 10 are cleaned.
- Adjust spray nozzle 6 (2x) so suction nozzles 9 and the bottom of infeed bracket 12 are cleaned.
- Adjust spray nozzle 7 so shoulder lifter 11 is cleaned.

See fig. 55.

#### 6.11.1.2 Adjust spray nozzle of the FIM RotoVac 20 RS with optional Neck Skin Cutting Module

There is one flat jet spray nozzle **1** with a spray angle of 95°.

- Loosen nuts **2**.
- Adjust the vertical position of spray nozzle **1** so blade **3** is lubricated.
- Tighten nuts **2**.

See fig. 56.

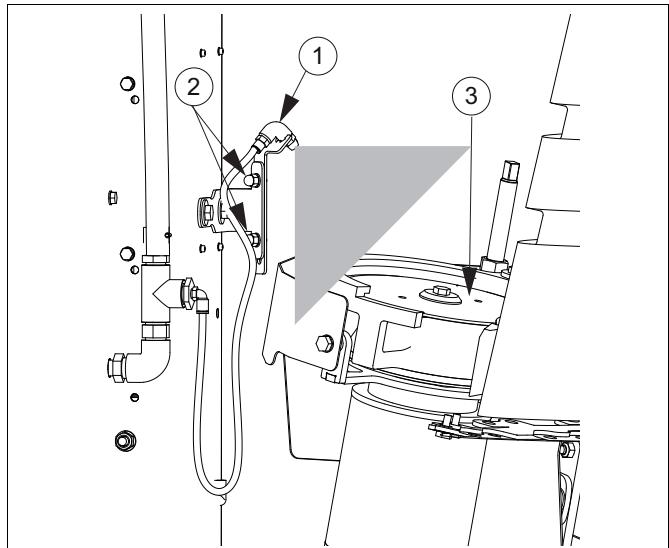


fig. 56 Adjust Neck Skin Cutting Module spray nozzle

## 6.12 Adjust doors

The doors of the machine have adjustable stops to prevent a door from being opened too far.

Adjust the stop as follows:

1. Turn bolt **2** and nut **3** a few times to loosen them.
2. Adjust the stop so that no obstacle is touched when a door is opened.
3. Tighten bolt **2** and nut **3**.

See fig. 57.

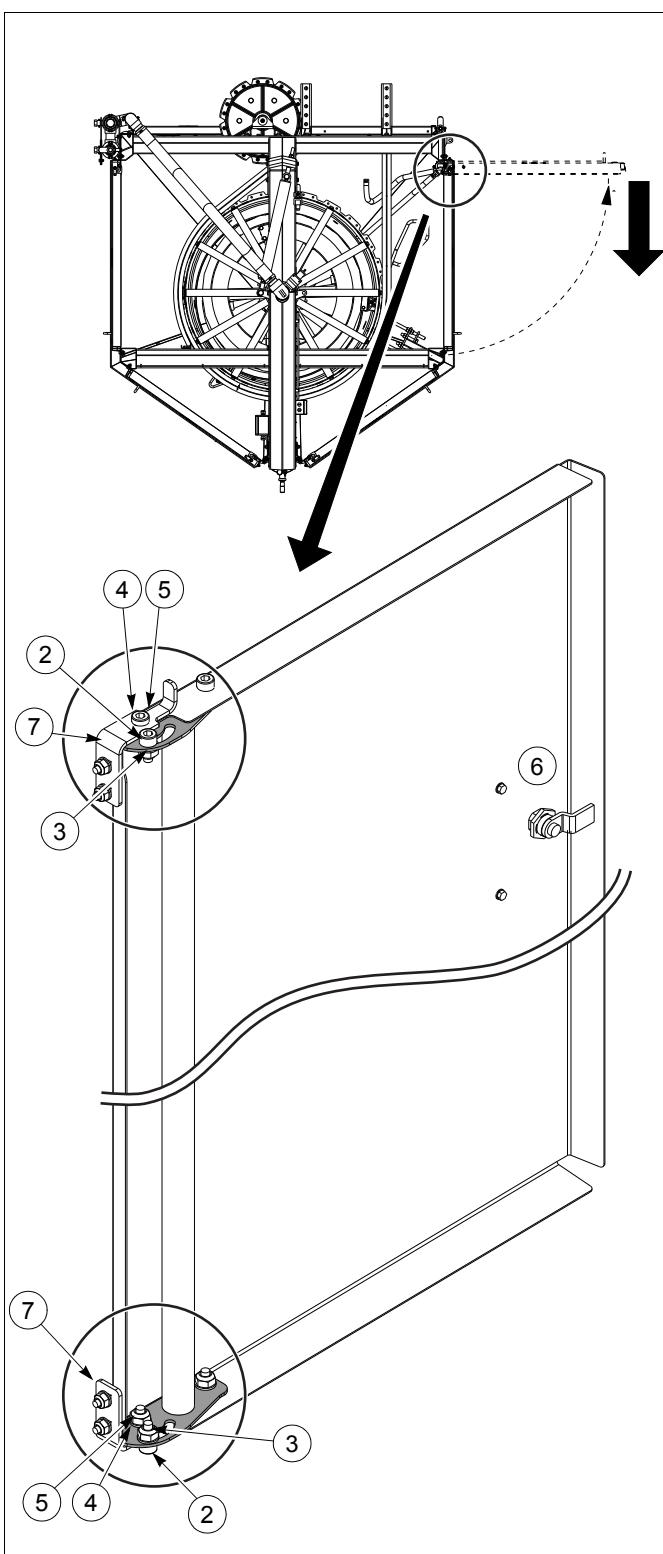


fig. 57 Adjust doors



### TIP

The direction of rotation of the door can be changed:

Do this as follows:

1. Loosen bolt **4** and nut **5**.
2. Mount hinges **7** on the desired frame.
3. Turn the door around to change the direction of rotation.
4. Tighten bolt **4** and nut **5**.

See fig. 57.

Check and fit lock **6** so that the door is locked by the lock.



### TIP

To be able to open the door further, the stop can be removed.



### TIP

Assemble the door so that the direction of rotation is the same as the transport direction of any adjacent transport system.

## 7 OPERATION



**MORTAL DANGER**  
It is forbidden to approach within the protected or the non-protected zone of a machine which is switched on.



**MORTAL DANGER**  
Activities described in this chapter must be carried out by competent, professional and trained personnel.

### WARNING

First read chapter 7 Operation prior to processing products.

### 7.1 Emergency stop

In an emergency you must:

- pull the emergency stop cord.
- press the emergency stop button.

See fig. 58 and fig. 59.

The overhead conveyor stops as soon as the emergency stop is activated. All electrical connections to the machine are switched off.

An alarm message appears on the control panel. See the User's Manual "Overhead conveyor" (90714 or 90727).

Resolve the emergency situation as follows:

1. Ask an authorized person to resolve the emergency.



**MORTAL DANGER**  
Make sure that nothing is done on the machine until the emergency stop is released.

Warn everybody near the machine before you start the machine again.

2. Unlock the emergency stop. See the User's Manual "Overhead conveyor" (90714 or 90727) and "Emergency stop provisions" (90839).
3. Continue processing products. See paragraph 7.5 Process products.



### NOTE

Only use the emergency stop in an emergency situation.

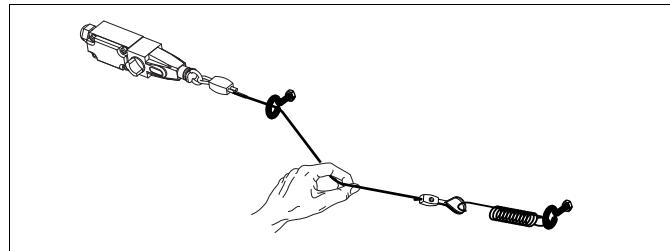


fig. 58 Emergency stop cord

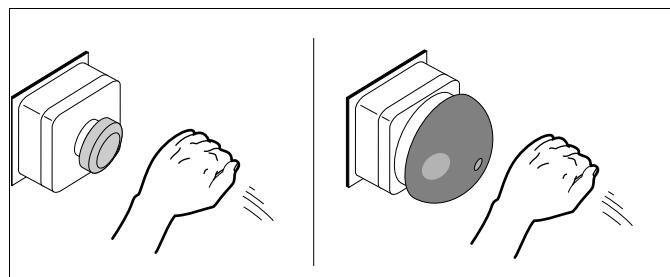


fig. 59 Emergency stop button

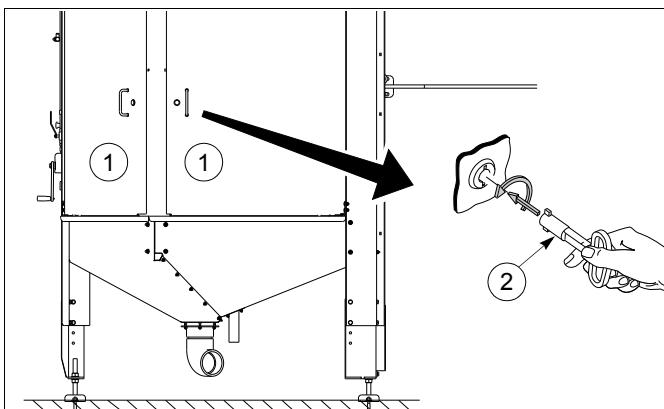


fig. 60 Locking the doors

## 7.2 Locking the doors

Before the products are processed, the doors **1** (4x) must be locked.

Ask an authorized person to lock the doors with key **2**. See fig. 60.

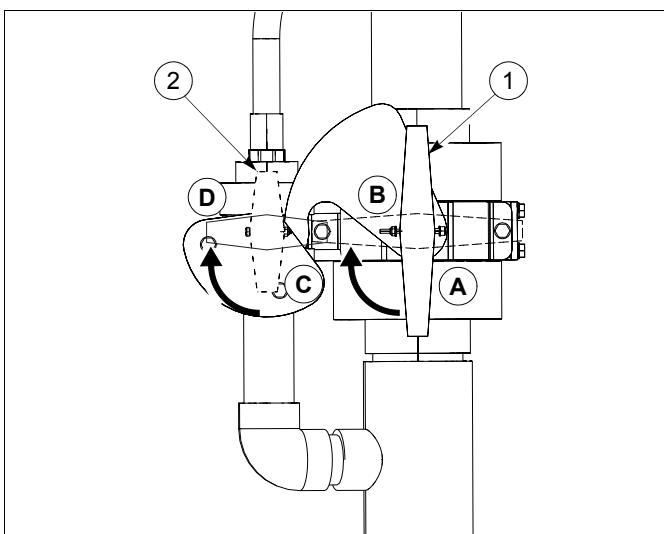


fig. 61 Valve hot water and vacuum

## 7.3 Valves

### 7.3.1 Valve vacuum

The vacuum ensures the discharge of product residue.

Operate valve **1** of the vacuum as follows:

1. Valve open, position **A**.
2. Valve closed, position **B**.

See fig. 61.

### 7.3.2 Valves water supply

#### Hot water

The hot water is used for the inside rinsing of the machine after production.

Operate valve **2** of the hot water as follows:

1. Valve open, position **C**.
2. Valve closed, position **D**.

See fig. 61.

#### Cold water

The cold water is used for cleaning the products, for the inside cleaning of the drills and for lubricating the guide shafts.

Operate valve **3** of the cold water as follows:

1. Valve open, position **E**.
2. Valve closed, position **F**.

See fig. 62.

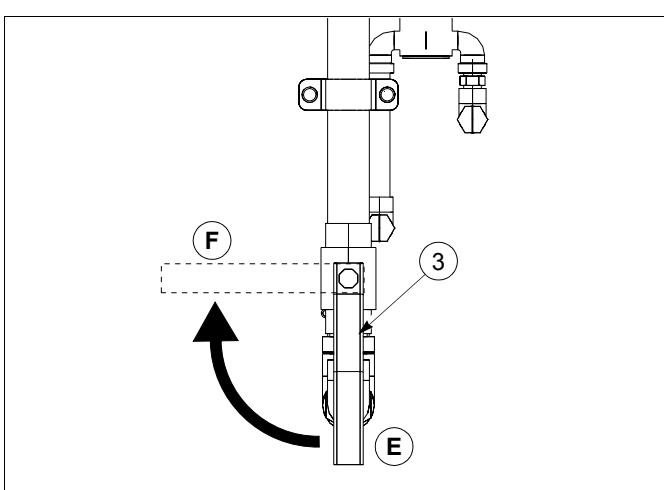


fig. 62 Valve cold water

## 7.4 Start/Stop the optional Neck Skin Cutting Module of the FIM RotoVac 20 RS

### 7.4.1 Start the Neck Skin Cutting Module

- Turn disconnect switch 1 to the on position. See fig. 63.

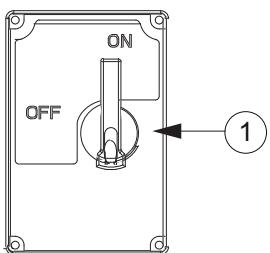


fig. 63 Start the Neck Skin Cutting Module

### 7.4.2 Stop the Neck Skin Cutting Module

- Turn disconnect switch 1 to the off position. See fig. 64.

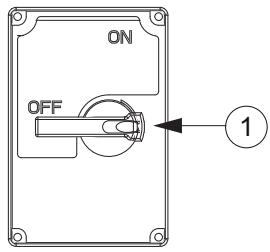


fig. 64 Stop the Neck Skin Cutting Module

## 7.5 Process products

Processing products is done as follows:

1. Stop the overhead conveyor. See the User's Manual "Overhead conveyor" (90714 or 90727).
2. Check that the machine is connected. See paragraph 6.5 Disconnecting and connecting the machine.
3. Adjust the height of the machine. See paragraph 6.7 Adjusting the height.
4. Close all doors around the machine. See paragraph 7.2 Locking the doors.
5. Open the spraying water supply and the vacuum supply. See paragraph 7.3 Valves.

### For the FIM RotoVac 20 RS with optional Neck Skin Cutting Module

- Start the Neck Skin Cutting Module. See paragraph 7.4.1 Start the Neck Skin Cutting Module.
- 6. Start the overhead conveyor. See the User's Manual "Overhead conveyor" (90714 or 90727).
- 7. Check the height of the machine again during the processing of the products. See paragraph 6.7 Adjusting the height.



#### NOTE

Close the spraying water supply and the vacuum supply after production.

## 7.6 Do not process products

Not processing products is done as follows:

1. Stop the overhead conveyor. See the User's Manual "Overhead conveyor" (90714 or 90727).

### For the FIM RotoVac 20 RS with optional Neck Skin Cutting Module

- Stop the Neck Skin Cutting Module. See paragraph 7.4.2 Stop the Neck Skin Cutting Module.
- 2. Close the vacuum supply. See paragraph 7.3 Valves.

3. If required, rinse and clean the machine. See paragraph 8 CLEANING.
4. Close the spraying water supply. See paragraph 7.3 Valves.
5. Disconnect the machine. See paragraph 6.5 Disconnecting and connecting the machine.
6. Start the overhead conveyor. See the User's Manual "Overhead conveyor" (90714 or 90727).

## 8 CLEANING

**MORTAL DANGER**

Activities described in this chapter must be carried out by competent, professional and trained personnel.

**MORTAL DANGER**

Activities described in this chapter must only be carried out if the power supply to the machine and/or control panel is switched off.

1. Switch off main switch(es) of the control panel(s)  
or  
remove all machine plugs from the wall sockets.
2. Lock the main switch(es) with a padlock.
3. Take all measures to prevent unintentional recovery of the power supply.
4. Proceed carefully during carrying out the work.

**NOTE**

Consult the User's Manual "Cleaning and Disinfection" (90811).

## 8.1 Rinsing inside of machine



**MORAL DANGER**  
Rinsing inside of the machine takes place with a control panel that is switched on. Proceed with due care.

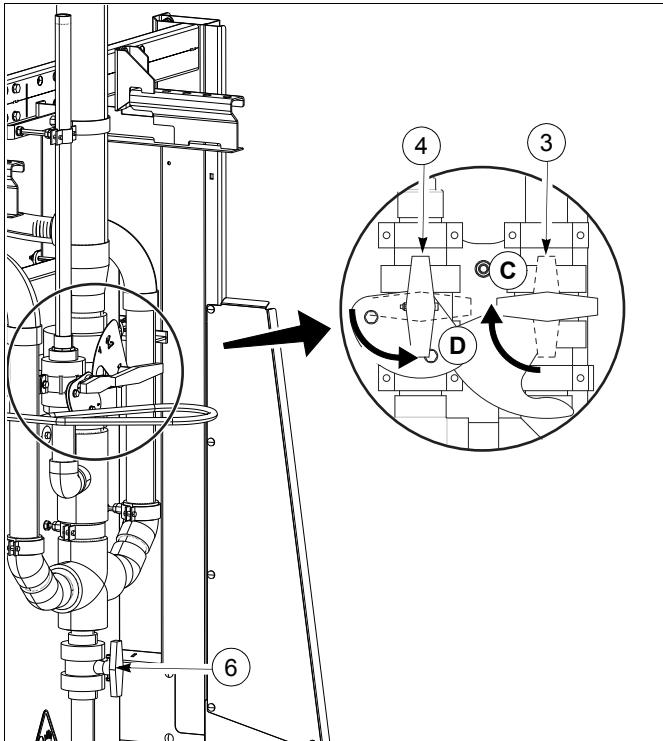


fig. 65 Rinsing water pipe and exhaust pipe

Rinse the machine immediately after production, so that no residue is stuck. The rinsing water rinses product residue from the suction pipes and the suction nozzles to the collecting bin.

Rinse inside of the machine as follows:

1. Stop the overhead conveyor. See the User's Manual "Overhead conveyor" (90714 or 90727).

### For the FIM RotoVac 20 RS with optional Neck Skin Cutting Module

- Stop the Neck Skin Cutting Module. See paragraph 7.4.2 Stop the Neck Skin Cutting Module.
- 2. Close off the vacuum with valve **3**, position **C**.
- 3. Close rinsing water tap **6**.
- 4. Turn open valve **4** of the rinsing water, position **D**. The suction pipes and the suction nozzles are now cleaned on the inside.
- 5. Start the overhead conveyor. See the User's Manual "Overhead conveyor" (90714 or 90727).

### For the FIM RotoVac 20 RS with optional Neck Skin Cutting Module

- Start the Neck Skin Cutting Module. See paragraph 7.4.1 Start the Neck Skin Cutting Module.
- 6. The cleaning time depends on the degree of contamination. For normal operating conditions around 20 minutes is sufficient.
- 7. Stop the overhead conveyor. See the User's Manual "Overhead conveyor" (90714 or 90727).

### For the FIM RotoVac 20 RS with optional Neck Skin Cutting Module

- Stop the Neck Skin Cutting Module. See paragraph 7.4.2 Stop the Neck Skin Cutting Module.
  - 8. Check that every suction nozzle is cleaned properly. If necessary, repeat step 5 to step 7.
  - 9. Close valve **4** of the rinsing water.
  - 10. Open rinsing water tap **6**. The water in the machine is now drained.
  - 11. Close rinsing water tap **6**.
  - 12. Open the vacuum with valve **3**.
- See fig. 65.

## 8.2 Cleaning the machine

Proceed as follows:

1. Clean on a daily basis the entire machine thoroughly both inside and out. Also see User's Manual Cleaning and disinfecting.



### NOTE

Open the machine safeguard for cleaning.

See fig. 66.

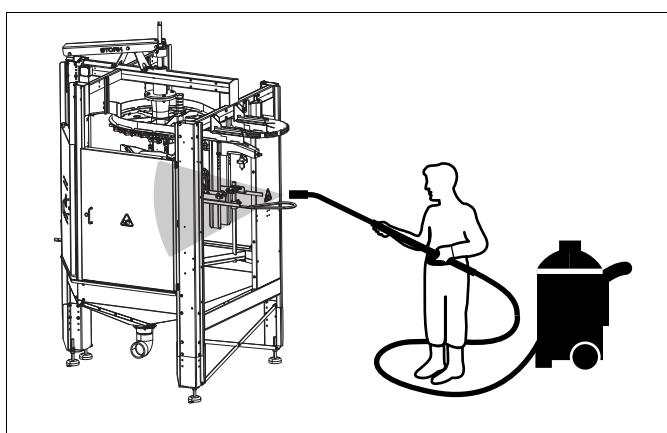


fig. 66 Cleaning the machine

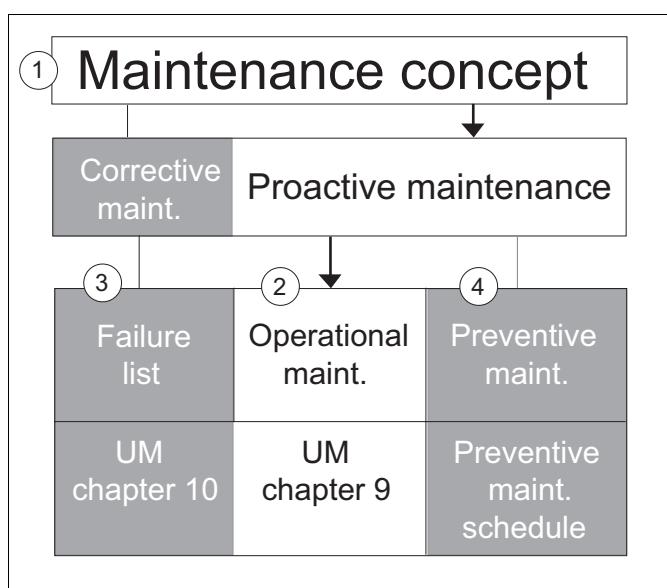


fig. 67 Maintenance concept

Translation figure text

English	
maintenance concept	
corrective maintenance	
proactive maintenance	
failure list	
operational maintenance	
preventive maintenance	
UM (User Manual) chapter xx.	
preventive maintenance schedule	

## 9 MAINTENANCE

Maintenance activities must be carried out promptly and accurately to maintain the machine state at the highest technical and technological level possible.

Any anomalies during the production process and/or technical functioning of the machine will become visible in an early stage.

Maintenance concept 1 is shown in fig. 67. This chapter describes the operational maintenance 2 as a part of the maintenance concept.

In chapter 10 the possible proceedings during corrective maintenance 3 are described.

For more information about preventive maintenance 4, ask the manufacturer.



### MORTAL DANGER

Activities described in this chapter must be carried out by competent, professional and trained personnel.



### MORTAL DANGER

Activities described in this chapter must only be carried out if the power supply to the machine and/or control panel is switched off.

1. Switch off main switch(es) of the control panel(s)  
or  
remove all machine plugs from the wall sockets.
2. Lock the main switch(es) with a padlock.
3. Take all measures to prevent unintentional recovery of the power supply.
4. Proceed carefully during carrying out the work.

### Operational maintenance

The basic maintenance activities to be performed at the machine are defined in the maintenance schedule off paragraph 9.1 Maintenance schedule. See fig. 67.

#### 9.1 Maintenance schedule

The maintenance schedule contains all points of attention and intervals related to the operational maintenance of the machine.



#### NOTE

The manufacturer strongly advises the availability of the right spare parts.

tab. 17 Maintenance schedule

Part	Daily*	Weekly*	Every two weeks*	Monthly*	Every three months*	Every six months*	Annually*	Cleaning Checking Adjusting/setting or replacing Lubricating	Description	Checked	Paragraph
Safety provisions									Make sure that the safety provisions are working. Make sure that the safety labels are in place.		<a href="#">4.4</a>
Filter cyclone of the vacuum system									Check the filter for dirt. See User's Manual Vacuum system.		<a href="#">-</a>
									Clean the filter, if necessary. See User's Manual Vacuum system.		
Spray nozzles									Check the spray nozzles for dirt.		<a href="#">9.2</a>
									Clean the spray nozzles, if necessary.		
Water filter (2x)									Check the filter for dirt.		<a href="#">9.2</a>
									Clean the filter, if necessary.		
Locating pin									Make sure that the locating pin is working. The pin must be operated smoothly.		<a href="#">6.5</a>
Carrier pin									Make sure that the carrier pin is working.		<a href="#">6.5</a>
Whole machine									Check for cracks, wear and the free running of moving parts.		<a href="#">-</a>
									Replace or repair, as necessary.		<a href="#">-</a>
Cam rollers									Check for wear.		<a href="#">-</a>
Vacuum block									Check the spring pressure.		<a href="#">9.3</a>
									Re-adjust the spring pressure, as necessary.		
Blade†									Check the blade sharpness. Grind or replace if necessary.		<a href="#">9.5,</a> <a href="#">9.6</a>

\* Maintenance frequency based on 40 hrs./week.

† Only for the FIM RotoVac 20 RS with the optional Neck Skin Cutting Module

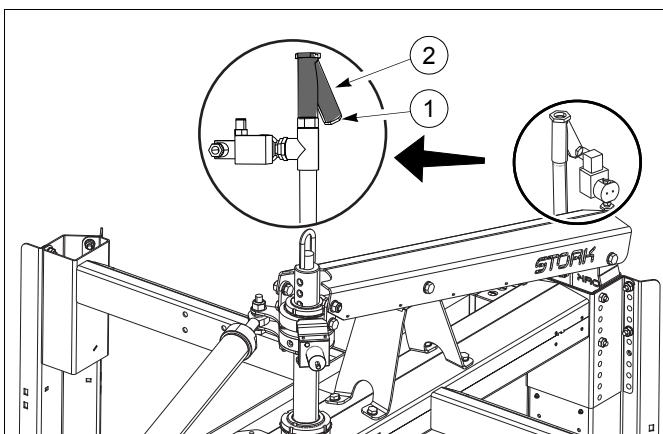


fig. 68 Water filter, non-chlorinated water

## 9.2 Clean water filter

The water filter removes any existing solid contaminations from the water.

Clean the filter as follows:

1. Close the valve in the water supply pipe before the filter.
2. Loosen nut 1 of filter housing 2.
3. Pull the filter out of the filter housing.
4. Clean the filter.
5. Mount the filter in the filter housing.
6. Tighten nut 1 of filter housing 2.

See fig. 68 and fig. 69.

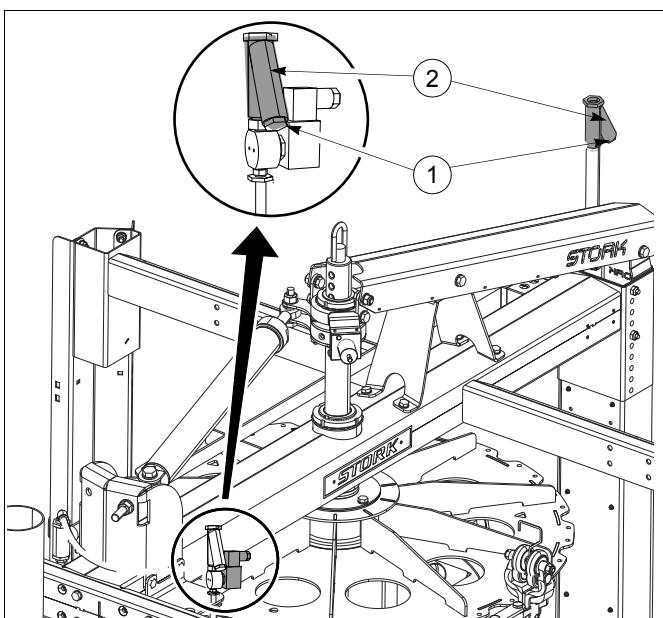
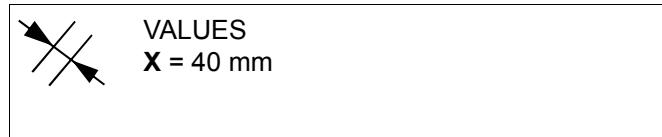


fig. 69 Water filter, chlorinated water

### 9.3 Check distributor block spring pressure



For the correct vacuum, the spring pressure of the distributor block must be checked regularly and adjusted if necessary.

Adjust this as follows:

1. Disconnect the machine. See paragraph 6.5 Disconnecting and connecting the machine.
2. Check value X between washer 1 and plastic distributor block 2. If necessary, adjust the correct value by using nuts 3.

See fig. 70.

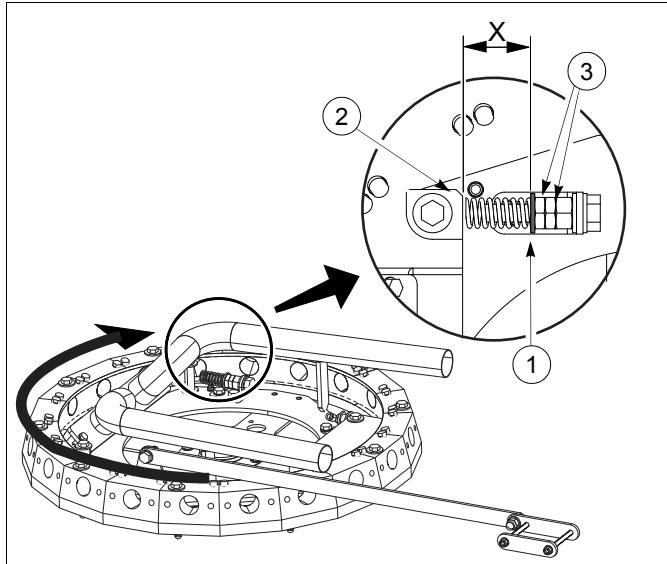
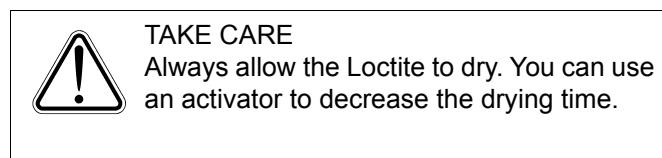


fig. 70 Adjust spring pressure

### 9.4 Tighten the suction nozzles

Do this as follows:

1. Loosen bolts 4 and 5.
2. Remove suction nozzles 6.
3. Degrease the bolts.
4. Degrease the suction nozzles.
5. Put the suction nozzles in position. Make sure the nozzles are dry.
6. Replace bolts 4 and 5.
7. Tighten the new bolts 4 and 5 with a torque of 5.5 Nm and lock it with *Loctite* type 2. See the User's Manual "Fasteners, Lubricants" (90897).



See fig. 71.

fig. 71 Tighten the suction nozzles

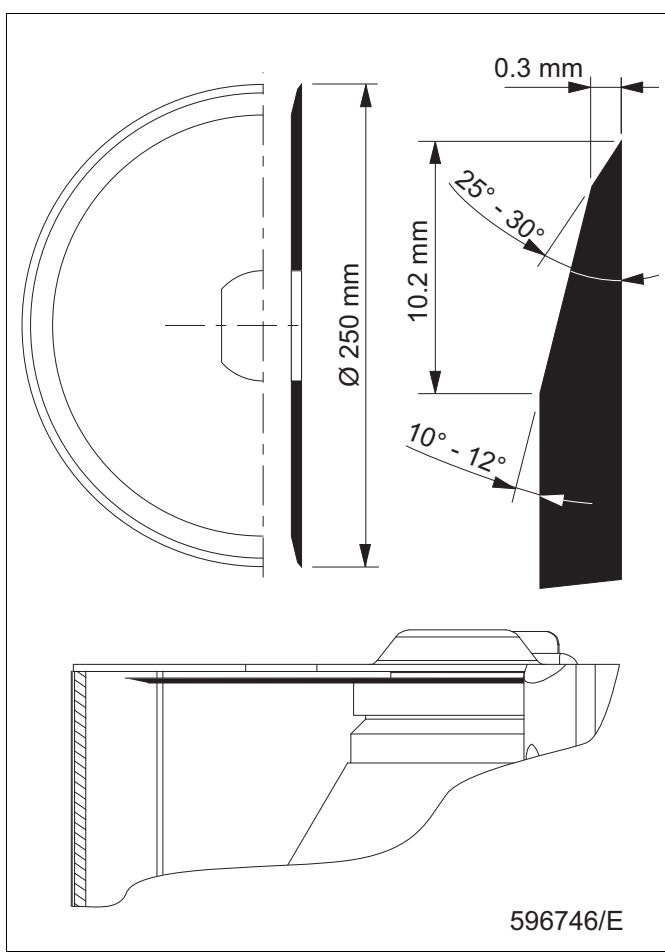


fig. 72 Grind the blade of the FIM RotoVac 20 RS with the optional Neck Skin Cutting Module

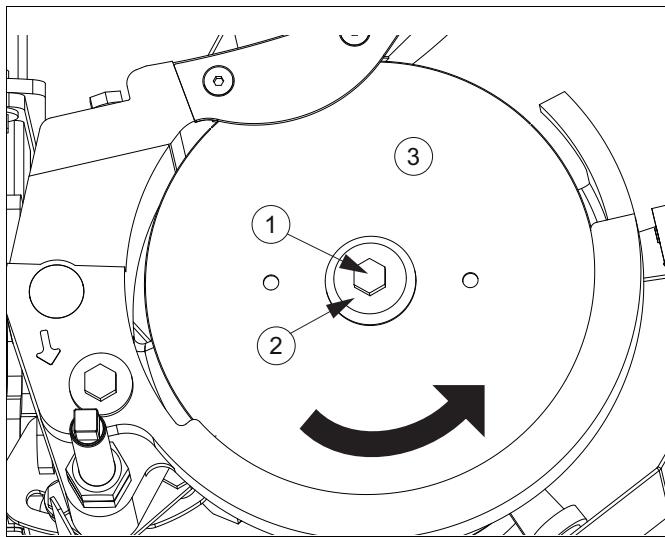


fig. 73 Remove and install the blade

## 9.5 Grind the blade of the FIM RotoVac 20 RS with the optional Neck Skin Cutting Module

The blade must be sharp for the best performance. Grind the blade if the cutting performance decreases.



**WARNING**  
Blades can cause injuries. Be careful when you do work on blades.



**NOTE**  
Replace the blade when the diameter is less than 230 mm.

When you grind the blade with a whetstone or a grindstone, follow these instructions:

1. Remove the blade.

See the paragraph 9.6 Remove and install the blade of the FIM RotoVac 20 RS with the optional Neck Skin Cutting Module.

2. Grind the blade. See fig. 72.

3. Install the blade.

See the paragraph 9.6 Remove and install the blade of the FIM RotoVac 20 RS with the optional Neck Skin Cutting Module.

The minimum blade diameter is 230 mm.

## 9.6 Remove and install the blade of the FIM RotoVac 20 RS with the optional Neck Skin Cutting Module

It is necessary to remove and install the blade when you:

- Replace the blade.
- Grind the blade. See the paragraph 9.5 Grind the blade of the FIM RotoVac 20 RS with the optional Neck Skin Cutting Module.



**WARNING**  
Blades can cause injuries. Be careful when you do work on blades.

1. Remove bolt 1.
  2. Remove arbor 2.
  3. Remove blade 3.
  4. Install new blade.
  5. Install arbor 2.
  6. Install bolt 1.
- See fig. 73.

## 10 FAILURES



**MORTAL DANGER**  
Activities described in this chapter must be carried out by competent, professional and trained personnel.



**MORTAL DANGER**  
Activities described in this chapter must only be carried out if the power supply to the machine and/or control panel is switched off.

1. Switch off main switch(es) of the control panel(s)  
or  
remove all machine plugs from the wall sockets.
2. Lock the main switch(es) with a padlock.
3. Take all measures to prevent unintentional recovery of the power supply.
4. Proceed carefully during carrying out the work.

### 10.1 Failure list

The following failure list includes the most usual failures, their possible cause and solution. Always fix failures as quickly as possible.

tab. 18 Fault list

Fault	Possible cause	Possible solution	Para-graph
Product is not positioned correctly.	Product is not suspended correctly: - One leg on shackle. - Too high in shackle slot. - Not hanging on right pitch.	Ensure proper infeed of the products.	-
	Guides not adjusted properly.	Check and correct the guides.	6.8
Product does not run properly in the machine.	Height adjustment of machine is not right.	Adjust height.	6.7
	Spreader bracket does not run properly between the legs, lead too big or too small.	1. Determine the desired product speed of the overhead conveyor. 2. Check and correct the lead setting.	6.7

tab. 18 Fault list

Fault	Possible cause	Possible solution	Para-graph
None or insufficient vacuum.	Vacuum system clogged.	Clean vacuum system. See User's Manual Vacuum system.	-
	Cyclone filter of the vacuum system clogged.		
	Vacuum leakages in the bearing bushes of suction pipes.	Check the spray nozzle lubrication of the bearing bushes.	-
		Replace the bearing bushes.	-
Difference in vacuum between the different suction units.	One or more suction units (partially) clogged.	Check and possibly clean.	8.1
Suction nozzle movement not correct.	Suction nozzle keeps getting hooked.	Check the cam rollers.	-
	The suction nozzles are loose.	Tighten the suction nozzles.	9.4
Suction nozzle pipe clamps in the housing.	Bearing bushes are stuck.	Clean bearing bushes.	-
	Bearing bushes worn.	Replace bearing bushes.	-
Spray nozzles do not work properly.	Spray nozzles clogged.	Clean the spray nozzles.	-
	Filter in the supply clogged.	Clean the filter in the supply.	-
Exhaust result not sufficient.	Vacuum not sufficient.	See vacuum failures.	-
	Suction nozzle movement not good.	See suction nozzle failures.	-
Overload limiter switches machine off.	Proximity switch not adjusted properly.	Check the adjustment of the proximity switch.	5.2.1.1
	Proximity switch faulty.	Replace proximity switch.	5.2.1.1
	Resistance in cam too high.	Check the movement of the suction pipes.	-
		Check the guide of the suction pipes.	-
	Cam rollers faulty or worn.	Replace the cam rollers.	-
Neck skins not removed*	Unit blocked.	Deblock the unit.	-
	Neck Skin Cutting Module is turned off.	Turn Neck Skin Cutting Module on.	7.4.1
	Worn blade.	Check blade sharpness. If necessary replace the blade.	9.6

\* Pertains ONLY to the FIM RotoVac 20 RS with the optional Neck Skin Cutting Module.

## **Appendix 1: LOGBOOK**

You can use the logbook to maintain a record of production, maintenance, cleaning, checks, faults, repairs, overhauls, modifications and other measures.

## **Appendix 2: SETTINGS**

Note here the settings for the components for various products.