



USER'S MANUAL

**Inside/Outside Washer
RW-16 RS; RW-12 RS (8").**

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Marel Poultry B.V.

Handelstraat 3
P.O. Box 118
5830 AC Boxmeer
The Netherlands

T: +31 (0)485 586111
F: +31 (0)485 586222
I: marel.com/poultry

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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:

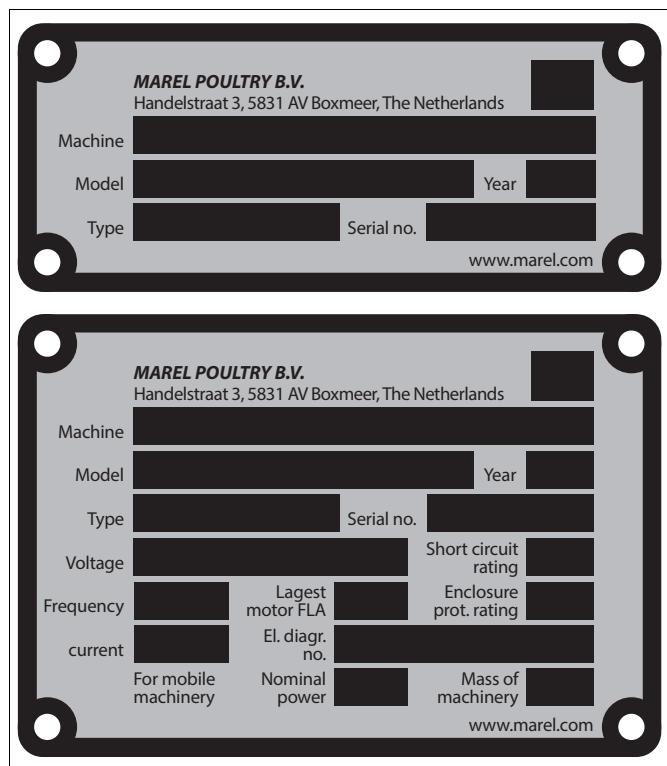
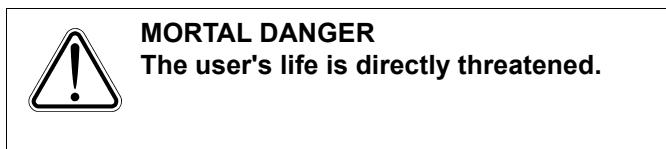


fig. 1 Machine plate example

**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

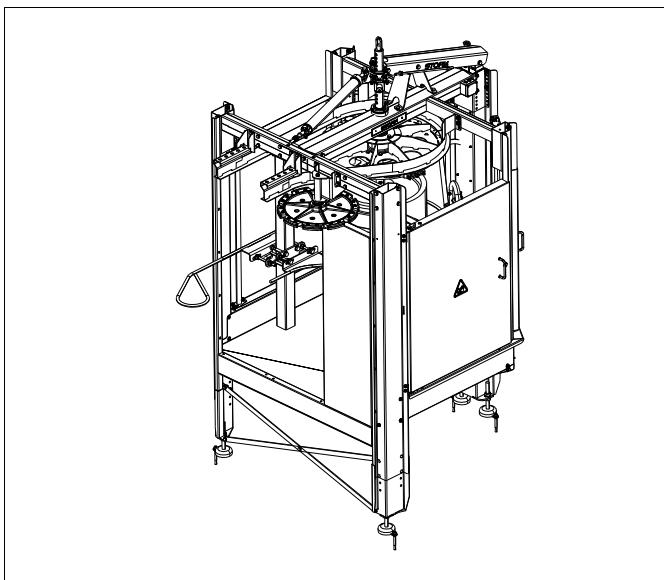
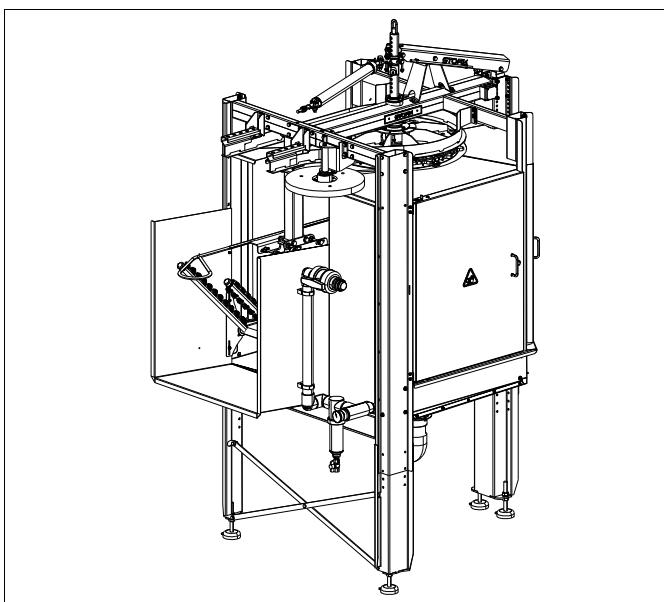
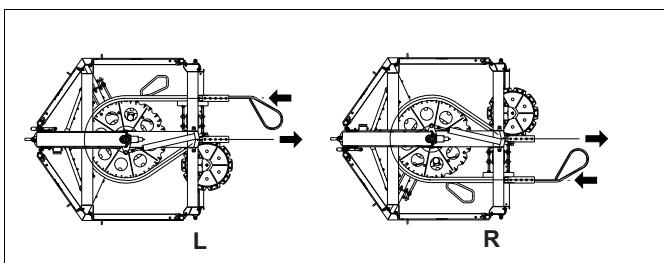
fig. 2 Model **B**fig. 3 Model **HV**

fig. 4 Models

4.1 Field of application

The Inside/Outside Washer washes the product internally and externally at the end of the evisceration line.

This User's Manual describes the following model:

- RW-16 RS
- RW-16 RS (8")



NOTE

The machine model is shown on the machine plate.

- "RW" stands for Rotating Washer.
- The number stands for the number of units in the machine.
- "RS" stands for "Reference Series".
- 8" indicates 8" line for heavy product.



NOTE

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

The machine is available in two models:

- Basic (**B**).
- High volume flow (**HV**).

Machine model **HV** has a higher water volume flow than machine model **B**.

See fig. 2 and fig. 3.



NOTE

Unless otherwise stated, the images in this User's Manual are of the Inside/Outside Washer model **B**.

The machine is available as a:

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

See fig. 4.

Machine model **HV** is available with the following option:

- Pump. See fig. 5.

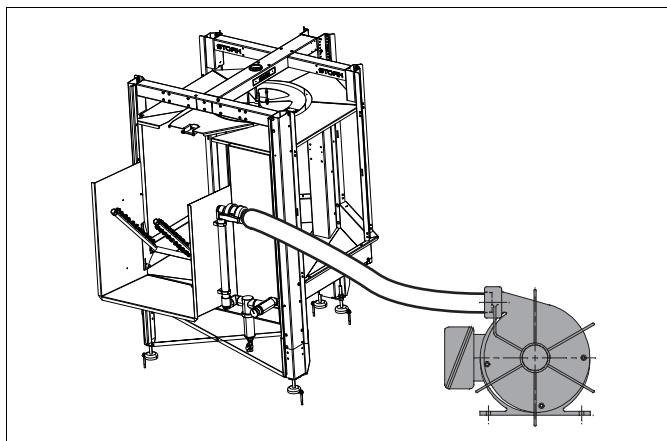
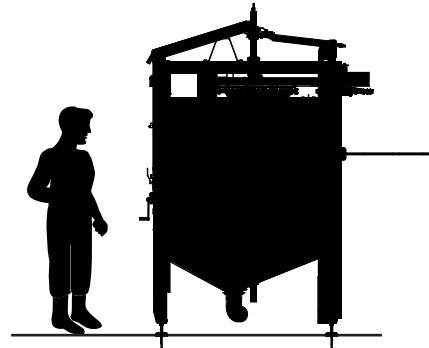


fig. 5 Options model HV



4.2 Names

Names B

1. Unit with inner and outer spray pipe
2. Outer spray pipe
3. Overload limiter
4. Product guide
5. Inner shackle guide
6. Height adjustment
7. Lead wheel

See fig. 6.

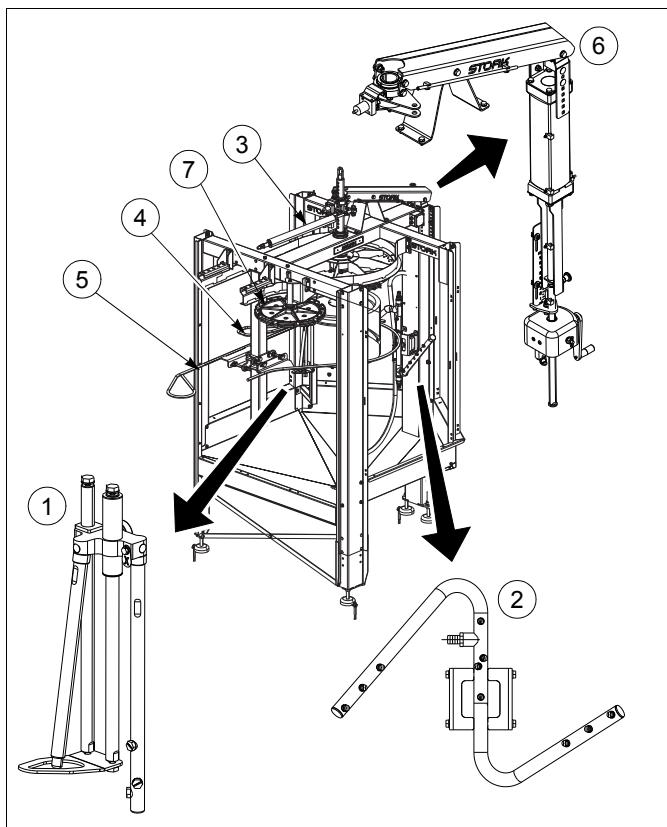


fig. 6 Names B

Names HV

- 8. Unit with inner and outer spray pipe
- 9. Outer spray pipe
- 10. Overload limiter
- 11. Product guide
- 12. Inner shackle guide
- 13. Height adjustment
- 14. Lead wheel

See fig. 7.

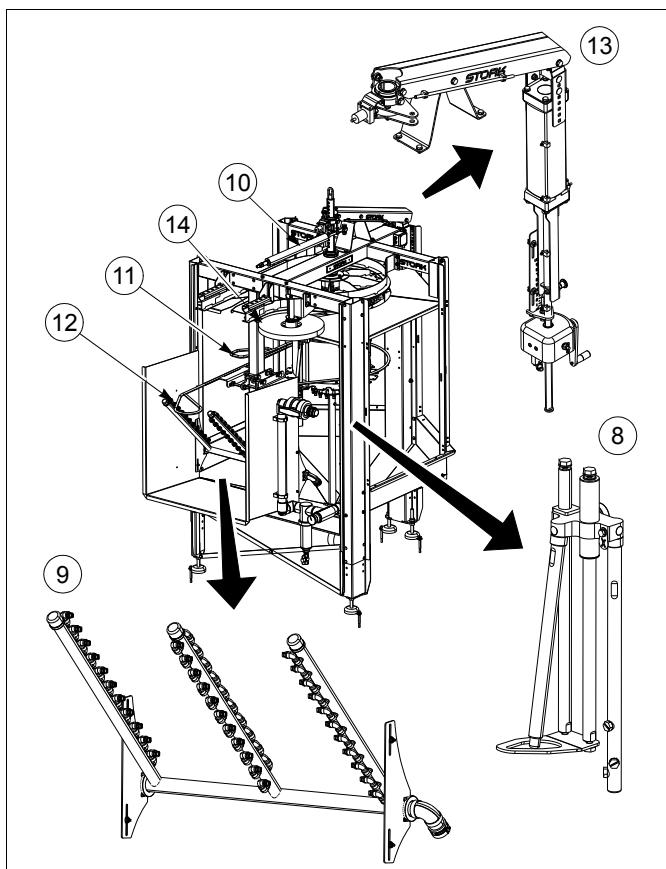


fig. 7 Names HV

4.3 Process description

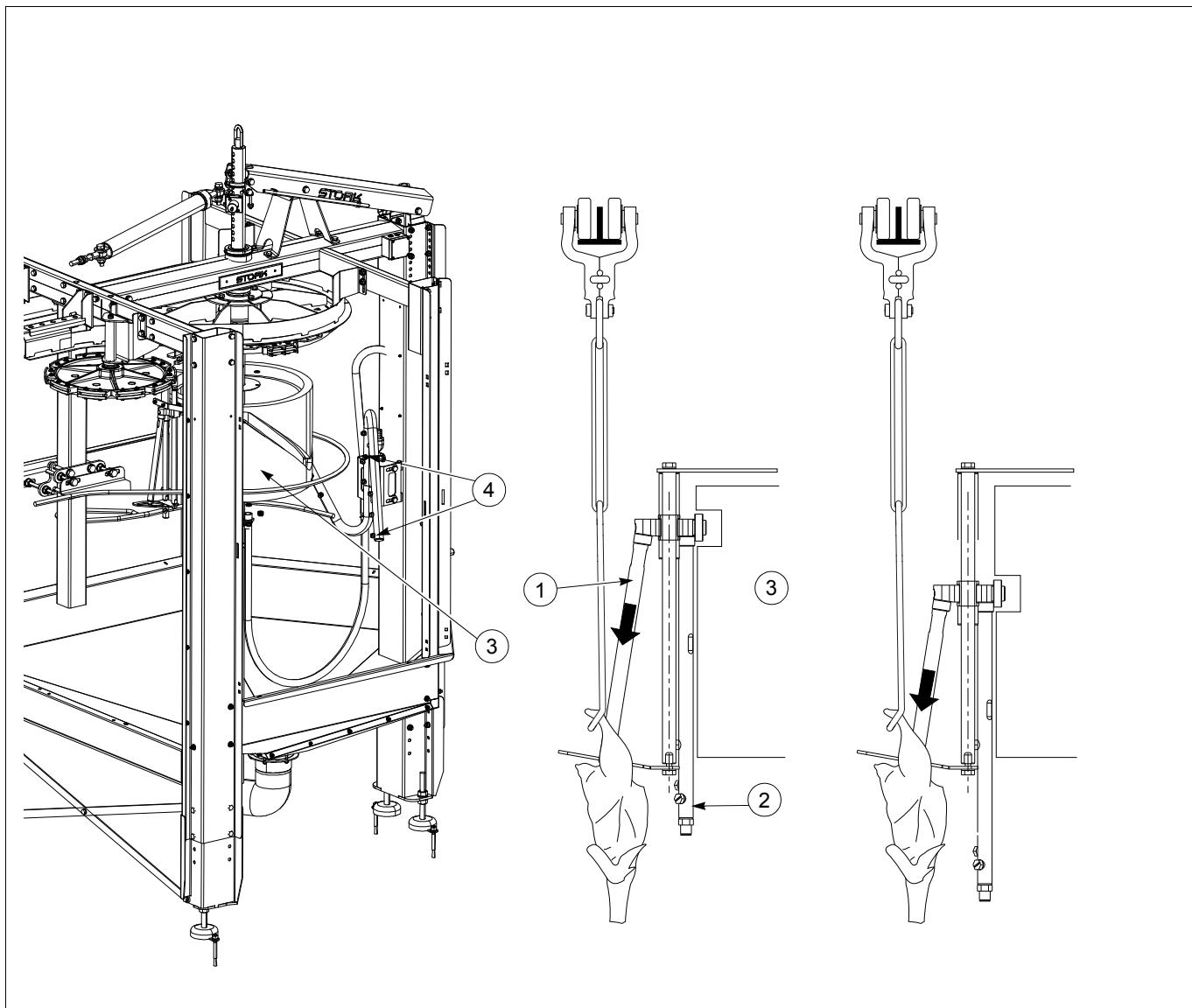


fig. 8 Process description

The machine washes the product internally and externally. The machine has moving units for this purpose with an inner and outer spray pipe and 1 fixed outer spray pipe which carry out the treatment. Each unit consists of spray pipes **1** and **2**. Spray pipe **1** enters the product and cleans the product internally with the aid of the sprayers. Spray pipe **2** cleans the product externally with the aid of the sprayers. The upward and downward movement of the unit is operated by Curve **3**. The sprayers **4** of the fixed pipe also clean the product externally. See fig. 8.

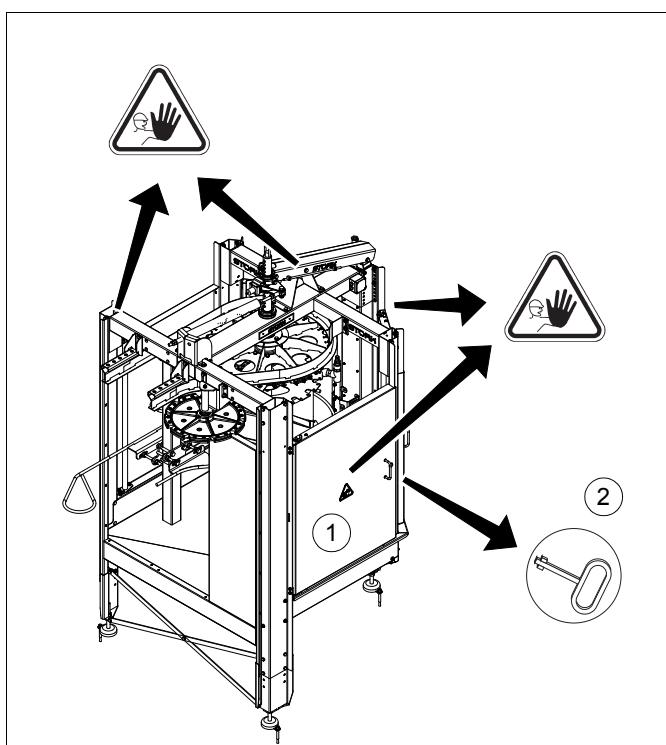


fig. 9 Safety provisions

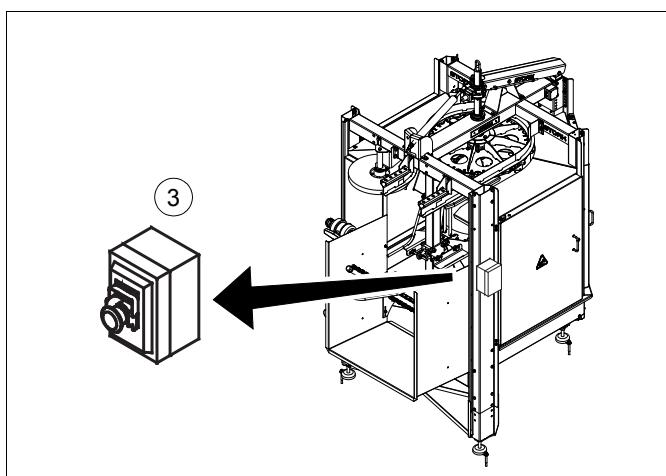


fig. 10 Emergency stop cord

4.4 Safety provisions

The machine has the following safety provisions:

- Doors 1 (4x) See fig. 9.
- Key 2 for opening and closing the doors.
- Emergency stop and/or emergency stop cord within reach.

The machine can be fitted with the following safety feature:

- Emergency stop button 3 on the machine. See fig. 10.



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.

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

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

4.5 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 Setting 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 solid and level and that there is sufficient space to move around the machine for carrying out work.
- Take account of the setup requirements for the other machines.
- Make sure there is sufficient lighting to work safely on the machine.

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.
2. Remove the packaging around the machine.
3. Lift the machine up using a hoist or a forklift truck and remove the base.



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 the "Technical Data".

4. Hoist the machine up until the overhead conveyor is in line with the adjoining track sections.
5. Fit reinforcement cross 5 and the adjustment legs 2 together with the adjuster feet 3 onto the machine.
6. Remove the transport frame 1.
7. Set the height with the adjustable feet 3 so that the overhead conveyor is in line with the adjoining belt sections.
8. Use adjusting feet 3 to level the frame.
9. Attach the foot plates 4 to the floor.
10. Connect the machine to the overhead conveyor. See the User's Manual Overhead Conveyor. See fig. 11 and fig. 12.

fig. 11 Transport frame

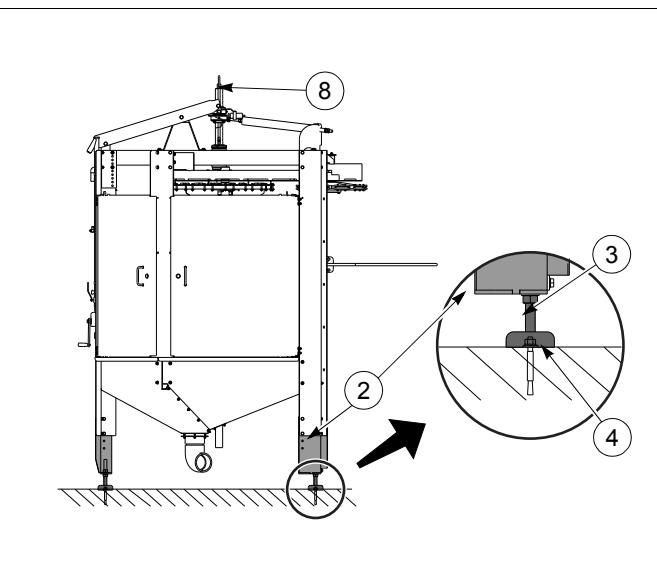


fig. 12 Machine set-up

5.2 Connection

5.2.1 Connecting up electricity



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".

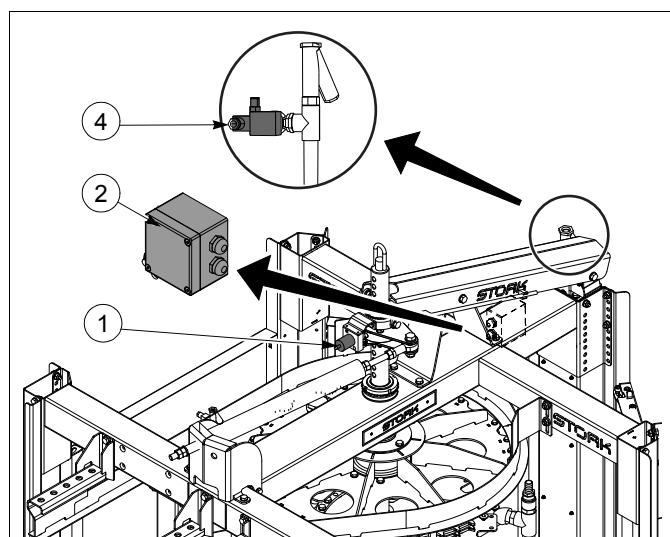


fig. 13 Electrical connections

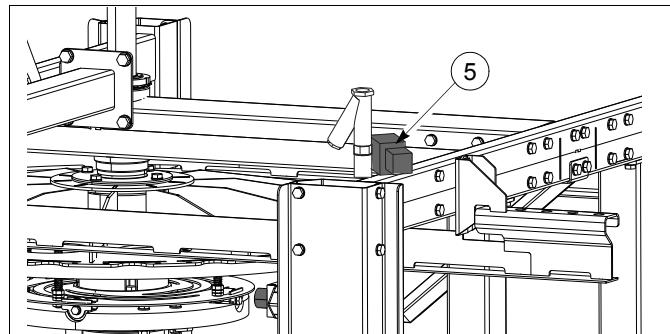


fig. 14 Magnetic valve connection for machines connected to chlorinated water

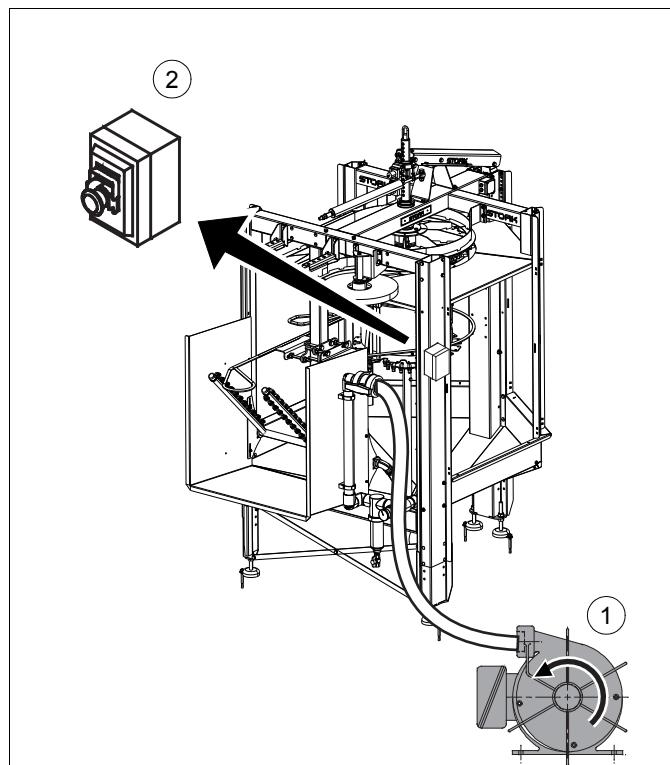


fig. 15 Pump connection

- Overload limiter proximity switch **1** is wired up to the terminal box **2**.
 - Connect the terminal box to the overhead conveyor Control Panel.
 - After connection, check the operation of the proximity switch. See paragraph 5.2.1.1 Check the operation of the overload limiter proximity switch.

See fig. 13.

- Machine without chlorinated water connection
 - Connect magnetic valve **4** to the overhead conveyor Control Panel. See paragraph 5.2.1.2 Connect magnetic valve. See fig. 13.
- Machine with chlorinated water connection
 - Connect magnetic valve **5** to the overhead conveyor Control Panel. See paragraph 5.2.1.2 Connect magnetic valve. See fig. 14.

Pump Inside/Outside Washer (option: model HV)

- Pump **1** supplies the sprayers with the correct water pressure.
 - Connect the motor for the pump drive to the electrical system.
 - After connection check the direction of turn of the pump.

TAKE CARE

An incorrect direction of rotation can lead to damage to the machine.

See fig. 15.

Machine with emergency stop:

- Emergency stop switch **2** stops after the switching on all the electrical controls to the machine.
 - Connect the emergency stop switch **2** to the overhead conveyor Control Panel. See the User's Manual Emergency Stop Provisions.
 - After connection, check the operation of the emergency stop switch. See the User's Manual Emergency Stop Provisions.

See fig. 15.

5.2.1.1 Check the operation of the overload limiter proximity switch

If the machine is subjected to an overload (due to a technical defect, for example), bolt 1 on the proximity switch 2 is withdrawn. The proximity switch will be deactivated, resulting in the overhead conveyor drive motor(s) being switched off.



TAKE CARE

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

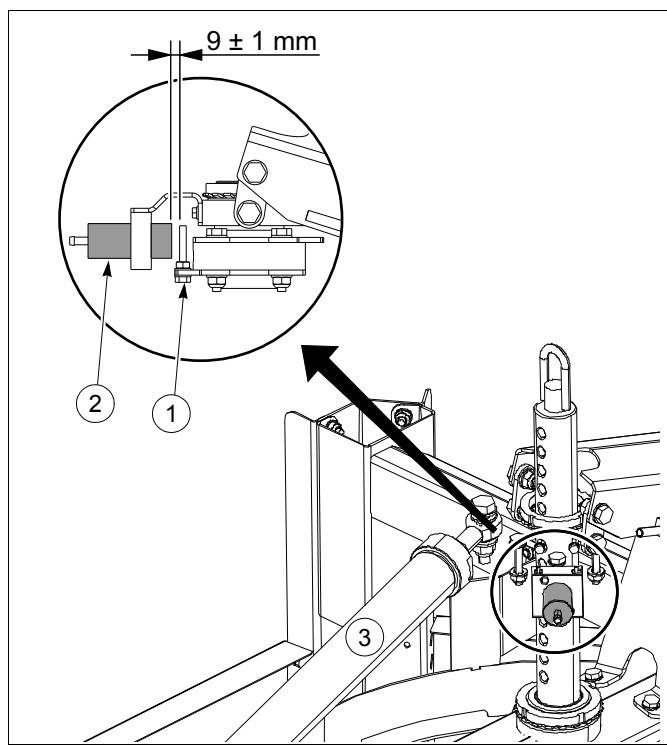


fig. 16 Proximity switch

During operation the proximity switch is activated.

- After connection of the terminal box check that the drive motor(s) of the overhead conveyor is (are) switched off when overload limiter 3 is activated. For connection and consumption details consult the "Technical Data".

To guarantee the proper functioning of the proximity switch there must be a distance of 9 ± 1 mm between the bolt and the proximity switch.

See fig. 16.

5.2.1.2 Connect magnetic valve

The magnetic valve opens the water supply for the spray water.

The spray water lubricates the guide shafts of the units.

- Machine without chlorinated water connection
Magnetic valve **6** should be connected so that the water supply is opened when the overhead conveyor is switched on. See fig. 17.
- Machine with chlorinated water connection
Magnetic valve **7** should be connected so that the water supply is opened when the overhead conveyor is switched on. See fig. 18.

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

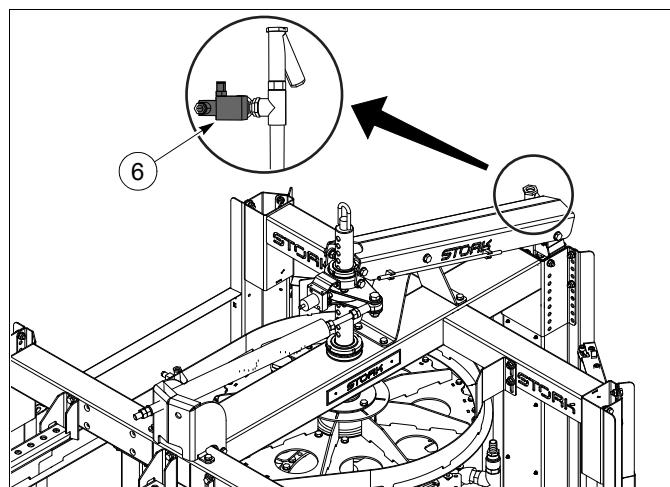


fig. 17 Magnetic valve connection, non-chlorinated water

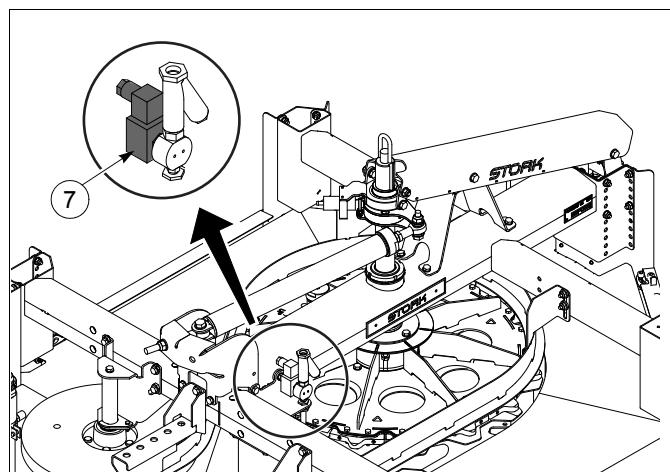


fig. 18 Connect magnetic valve for chlorinated water

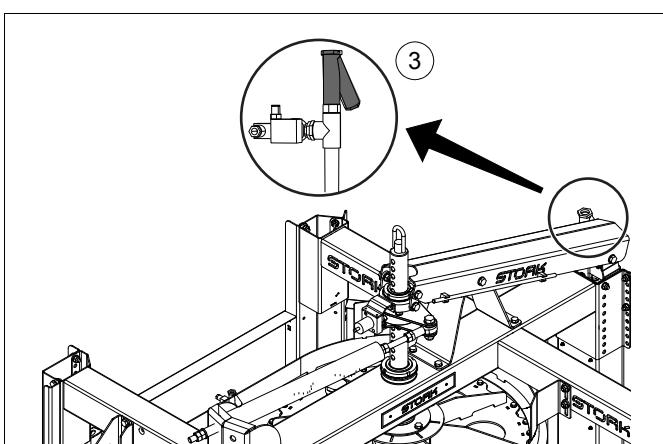


fig. 19 Water connection model B

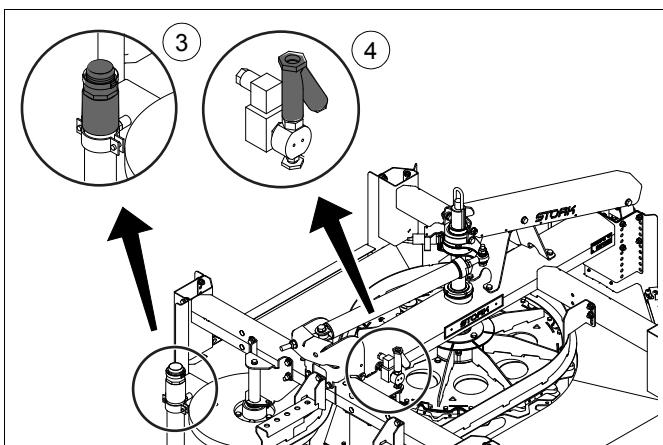


fig. 20 Water connection model HV

5.2.2 Connect the water supply

The water supply is used for cleaning the products and for the lubrication of the guide shafts of the units.

- Non chlorinated water connection
Connect point 3 to the water supply system. See fig. 19 and fig. 20.
- Chlorinated water supply
Connect point 4 to the water supply system. See fig. 20.

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

See fig. 19 and fig. 20.



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.

5.2.3 Connecting the compressed air

The machine has pneumatic components which are operated by compressed air.

- Connect point **1** to the compressed air system. For connection and consumption details consult the "Technical Data". See fig. 21.



TAKE CARE

The compressed air should meet the following requirements:

- The size of the contaminated particles should not exceed 5 µm.
- The dew point should not exceed a maximum of 3 °C.
- It should not contain any chemically contaminated particles.
- The compressed air should be oilproof. Oil, water and contaminations in the compressed air cause defects and early wear.

The requirements above correspond with ISO8573-1, class:

- 3 for particles.
- 4 for water.
- 1 for oil.

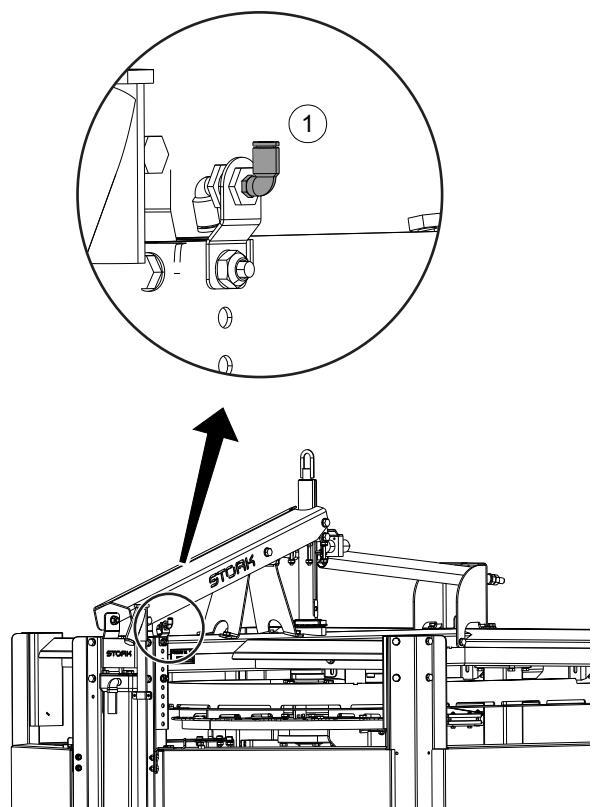


fig. 21 Connect compressed air

5.2.4 Connect drainage receptacle

- A pipe can be fitted to receptacle **1** to drain the spray water.

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

See fig. 22.

5.3 Cleaning the machine after installation

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

See paragraph 8.1 Clean the machine.

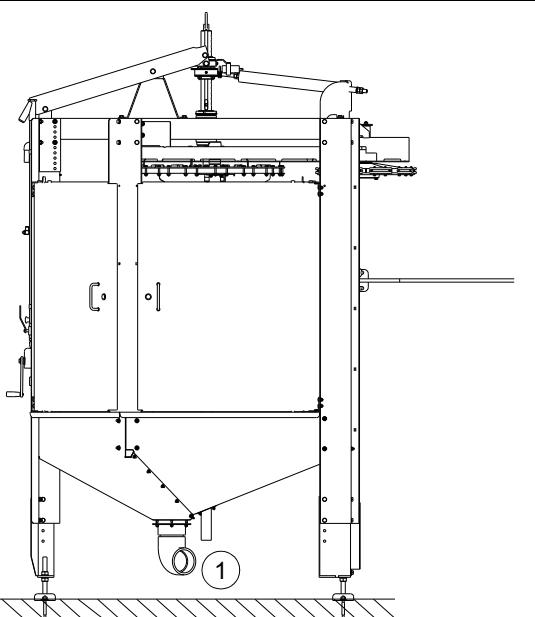


fig. 22 Connect drain

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.



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.

6.1 Set zero point

Make sure that the reference point on the curve is level with the zero point of the machine.
Do this by adjusting nuts 1 on the overload limiter.
See fig. 23.

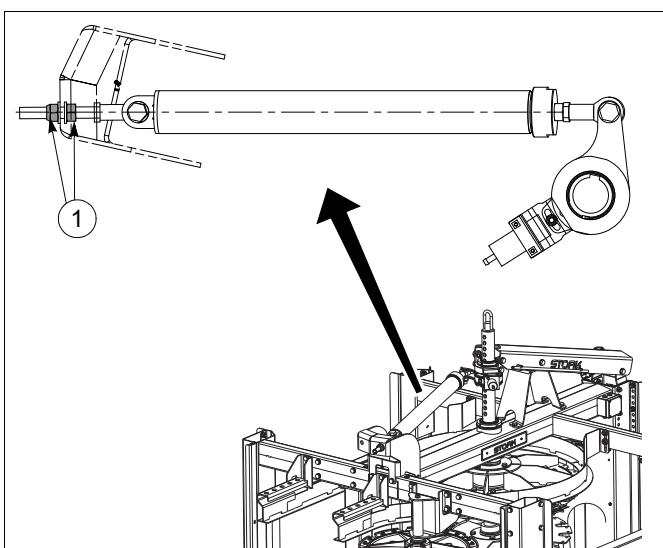


fig. 23 Set zero point

6.2 Coupling and decoupling the machine

Carrier pin 1 makes a connection between the drive wheel which is driven by the overhead conveyor and the unit wheel. Fixing pin 2 for the height adjustment ensures that the machine remains coupled when the compressed air fails.

Various parts move while the units are rotating. Beware of getting your hands caught.

Uncouple the machine as follows:

1. Stop the overhead conveyor. See the User's Manual Overhead Conveyor.
2. Pull fixing pin 2 out and hold on to it.
3. Set switch 3 to position "A".
 - The pneumatic cylinder goes out so that the main shaft with the curve and washing units drops.
4. Release fixing pin 1 again.

See fig. 24.

Couple the machine as follows:

1. Stop the overhead conveyor. See the User's Manual Overhead Conveyor.
2. Set switch 3 to position "B".
 - The pneumatic cylinder retracts so that the main shaft rises with the curve and the units to the preset height. See paragraph 6.4 Setting the height for the height adjustment.
3. Turn the carousel with the inner and outer washing units against the direction of turn until the carrier pin 1 falls into the recess of plate 5.

See fig. 24.

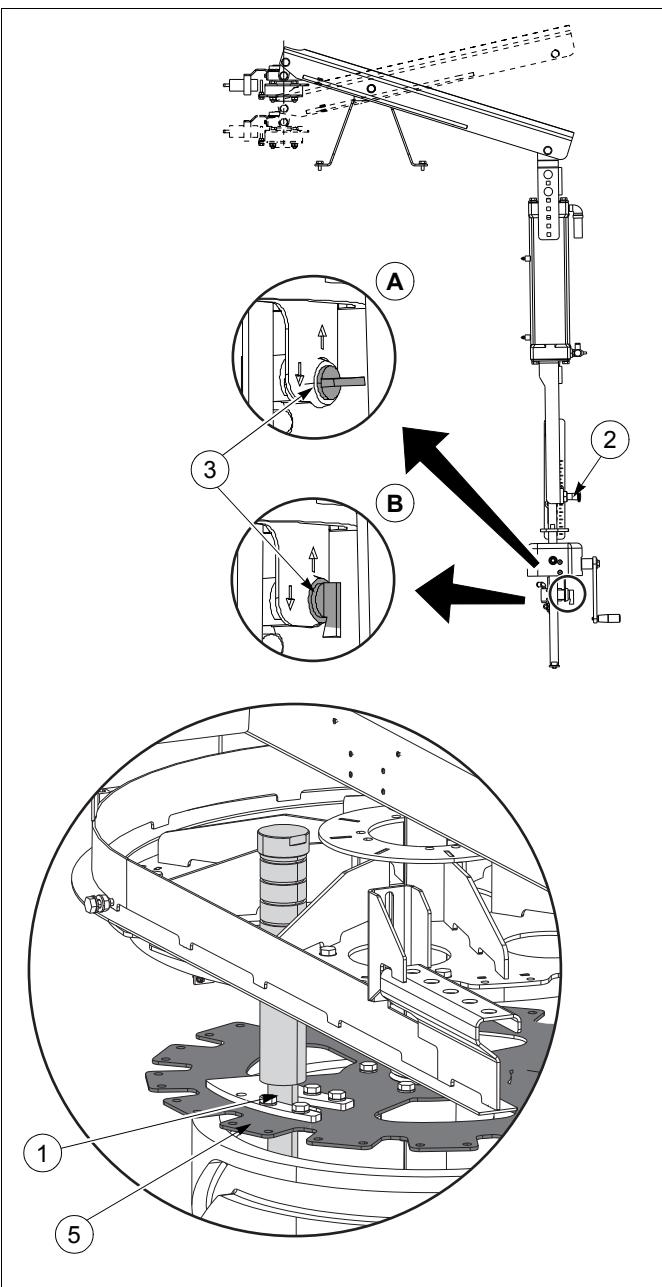


fig. 24 Coupling and decoupling the machine

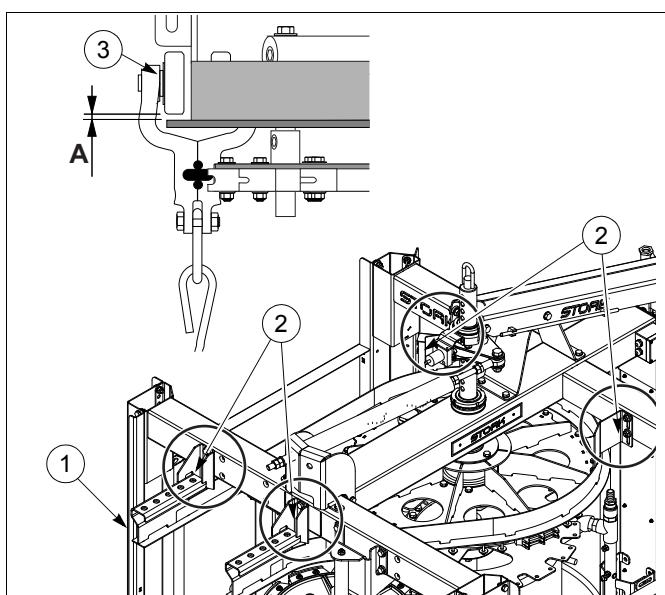


fig. 25 Adjust track height

6.3 Adjust track height

Track section **1** connects to the overhead conveyor from the processing plant.

The adjustment of the track height depends on the type of track profile.

Adjust the track height as follows:

1. Loosen bolts **2** a number of turns.
2. Adjust the distance between the bottom of the trolley wheel and the top of the overhead conveyor according to tab. 1.
 - Trolley **3** must not touch the overhead conveyor.
3. Tighten bolts **2**.



NOTE

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

See fig. 25.

tab. 1 Adjust track height

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

* to be completed by the user.

See fig. 25.

6.4 Setting the height

The height adjustment can be used to adjust the height of the fixed and moving unit in relation to the product.

Adjust as follows:

1. Adjust with handle **1** the distance between the bottom of the shackle **4** and the top of spreader bracket **5** according to tab. 2. Turn handle **1**:
 - anticlockwise to decrease distance **H**.
 - clockwise to increase distance **H**.



The height adjuster is fitted with ruler **2** and indicator **3** to read off the settings easily.

The scale of the ruler is as follows:

- position 0, highest position of the main shaft with curve.
- position 10, 100 mm lower than position 0.

tab. 2 Adjust the machine height

Shackle	Distance H
Nuova	30 mm
Nu-tech	30 mm
Rigid 24"	..
.....**

* to be completed by the user.

See fig. 26.

6.5 Adjust guides

The machine is supplied with the following guides:

- Inner shackle guide **1**
See paragraph 6.5.1 Inner shackle guide for adjusting the guide.
- Product guide **8**
See paragraph 6.5.2 Product guide for adjusting the guide.
See fig. 27.

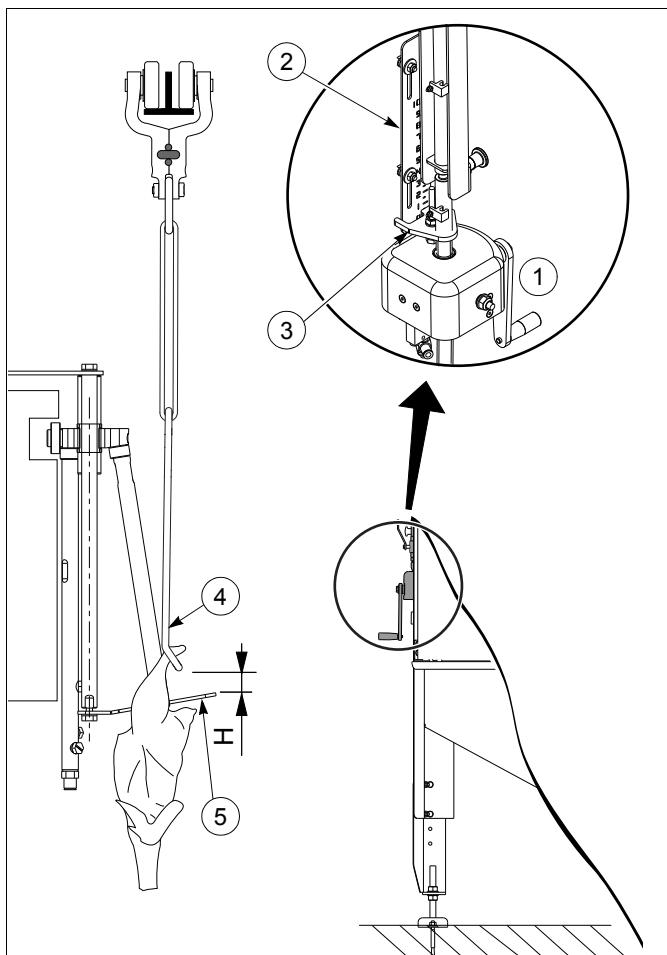


fig. 26 Setting the height

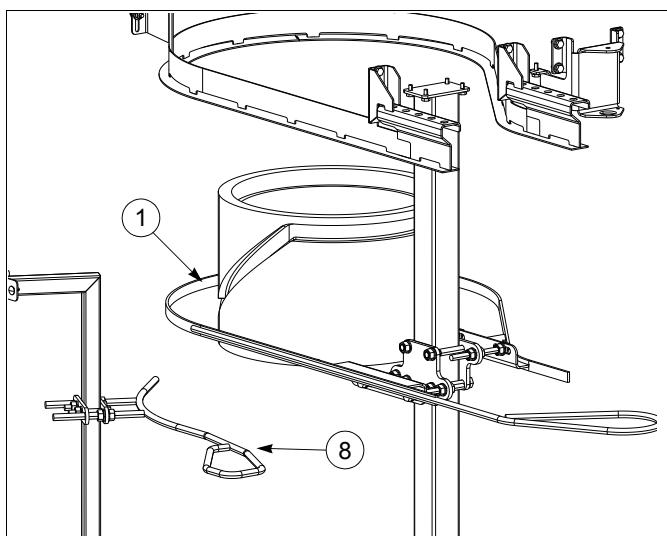


fig. 27 Guides

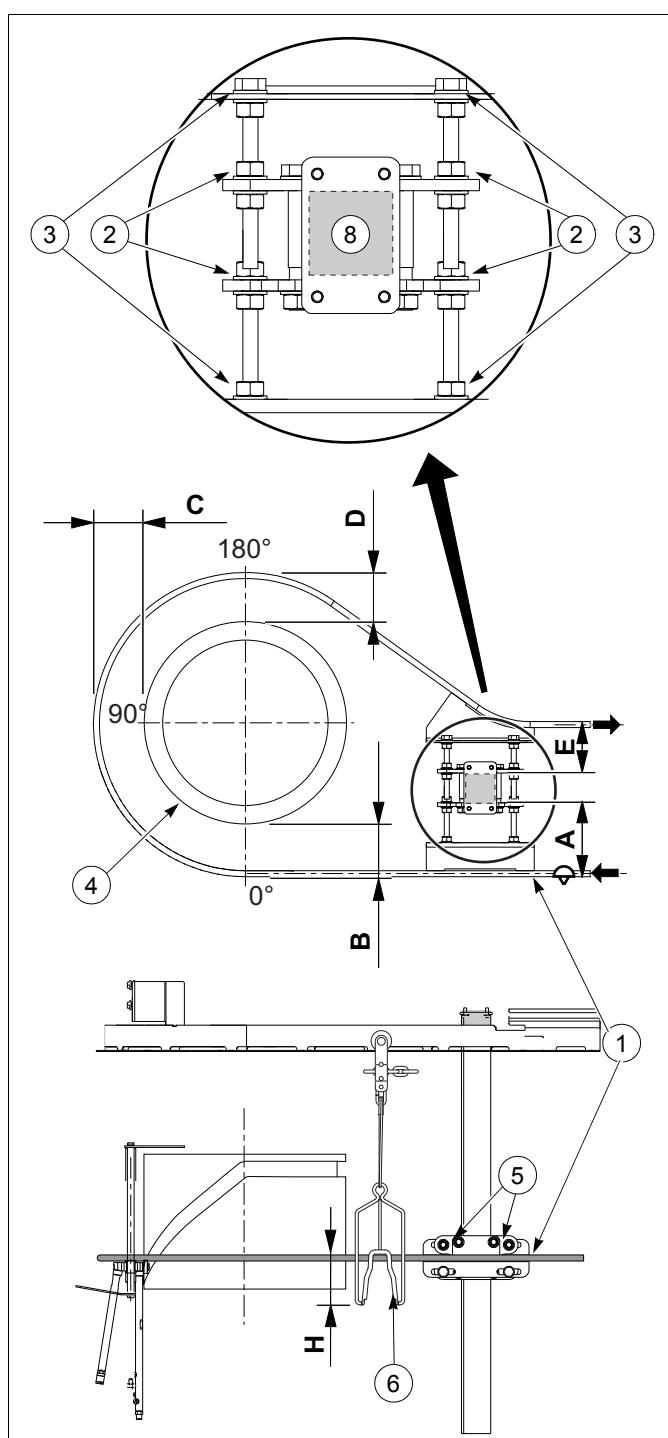


fig. 28 Adjust guides

6.5.1 Inner shackle guide

Inner shackle guide **1** positions the product in the units and prevents the shackles getting stuck in the machine.

Width

Adjust as follows:

1. Undo nuts **2** and **3**.
2. Set the distances below as follows tab. 3:
 - Distance **A**, between profile **8** and outer side of guide **1**
 - Distance **B**, **C** and **D**, between the outside of curve **4** and the outside of guide **1**
 - Distance **E**, between profile **8** and outer side of guide **1**
3. Tighten nuts **2** and **3** again.

tab. 3 Adjust inner shackle guide

	Distance				
Shackle	A	B (0°)	C (90°)	D (180°)	E
Nuova	180 mm	133 mm	130 mm	135 mm	136 mm
Nutech	180 mm	133 mm	130 mm	135 mm	136 mm
Rigid
.....*****	

* to be completed by the user.

See fig. 28.

Height

The adjustment of 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 up to the correct height. See paragraph 6.4 Setting the height.
2. Undo nuts **5**.
3. Adjust the distance between the top of inside shackle guide **1** and bottom of shackle **6** according to tab. 4.
4. Tighten nuts **5**.

tab. 4 Adjust the height of the inner shackle guide

Shackle	Distance H
Nuova	110 mm
Nutech	110 mm
Rigid	..
.....**

* to be completed by the user.

See fig. 28.

6.5.2 Product guide

Product guide 8 positions the products in the units.

Width

Adjust as follows:

1. Undo nuts 2.
2. Set the distances below as follows tab. 5:
 - Distance A, between the outside of curve 4 and the centre of product guide 8.
 - Distance J, between the outside of curve 4 and the centre of product guide 8 at the position of thread 10.
3. Tighten nuts 2 again.

tab. 5 Adjust in-feed guide

	Distance	
Shackle	A (0°)	J
Nuova	175 mm	155
Nutech	175 mm	155
Rigid
.....***

* to be completed by the user.

See fig. 29.

Height

The adjustment of the height of product guide 8 depends on the type of track profile and shackle.

Adjust the height as follows:

1. Undo bolts 5 and nuts 7.
2. Adjust the distance between the top of product guide 8 and bottom of shackle 6 according to tab. 6.
3. Tighten bolts 5 and nuts 7 again.

tab. 6 Adjust the height of product guide

Shackle	Distance H
Nuova	27 mm
Nutech	27 mm
Rigid	..
.....**

* to be completed by the user.

See fig. 29.

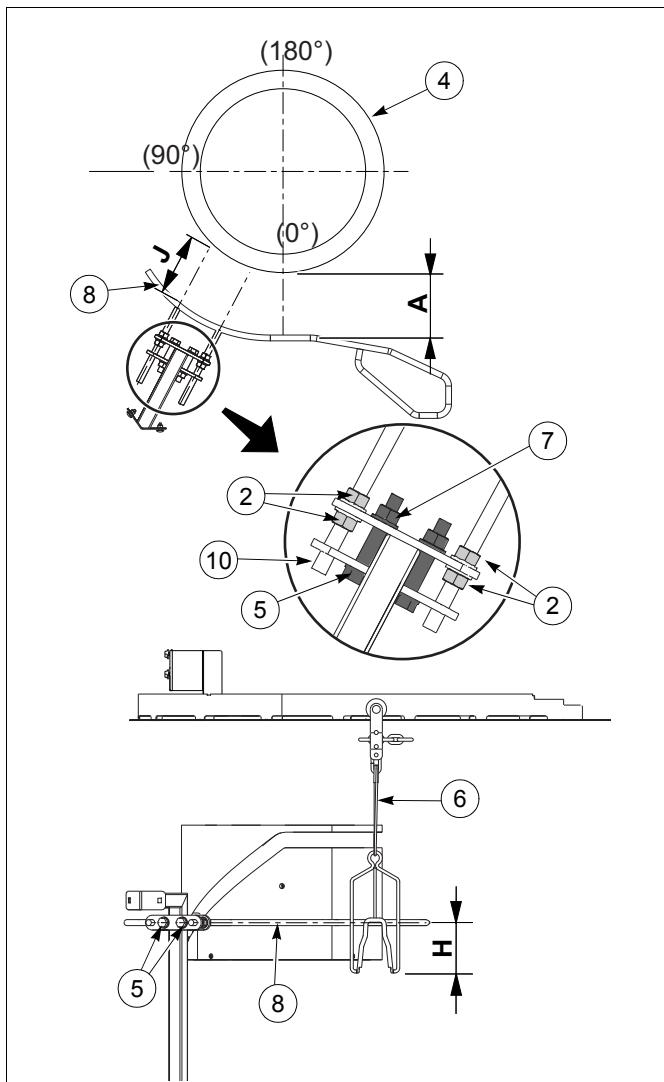


fig. 29 Adjust guides

6.6 Timing of the inside/outside washing unit compared shackle position

For the proper positioning of the product, the moving washing unit must run ahead of the shackle.

Adjust the washing unit compared to the shackle as follows.

1. Couple the machine. See paragraph 6.2 Coupling and decoupling the machine.
2. Loosen bolts **1** a number of turns.
3. Turn the carousel until the centre line of the washing unit **2** lies in line with the evisceration shackle **3**.



Various parts move while the unit is rotating. Beware of getting your hands caught.

4. Tighten bolts **1**.
5. During production check whether the movable washing unit is properly positioned in the products. See fig. 30.

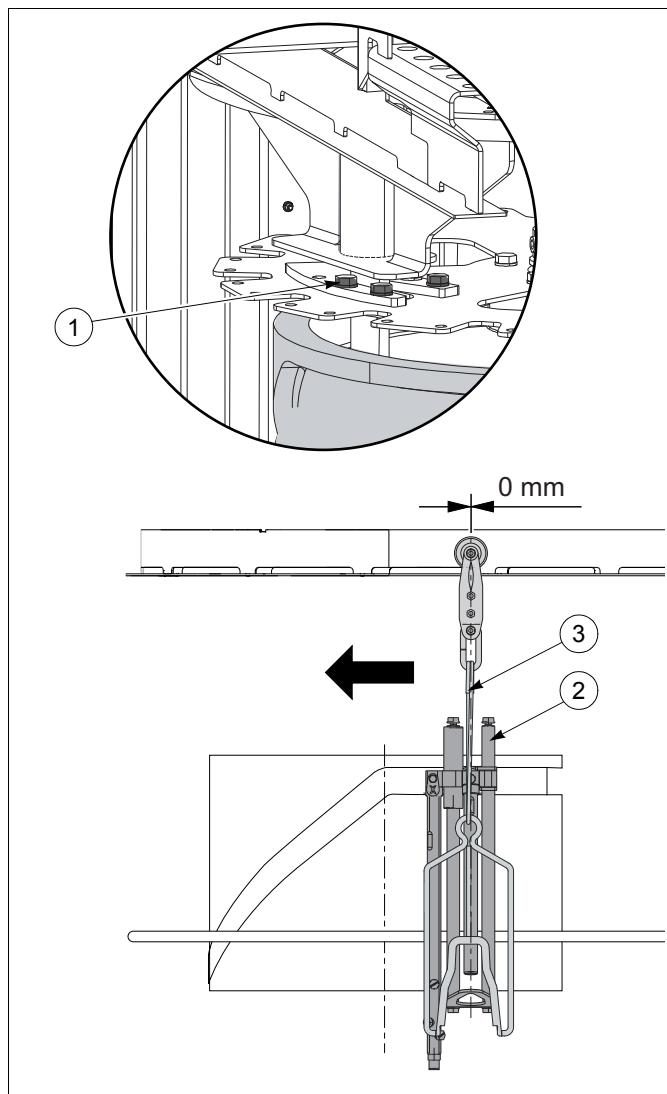


fig. 30 Unit/shackle position

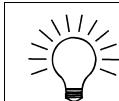
6.7 Adjust cover

The machine doors are fitted with adjustable stops to prevent a door being opened too far.

Adjust the stop as follows:

1. Undo bolt **2** and nut **3** a number of turns.
2. Adjust the stop so that during the opening of the cover no obstacle is touched.
3. Tighten bolt **2** and nut **3** again.

See fig. 31.



TIP

The direction of turn of the door can be changed.

Do as follows:

1. Undo bolt **4** and nut **5**.
2. Fit the hinges **7** on the desired frame.
3. Turn the door round to change the direction of opening.
4. Tighten bolt **4** and nut **5** again.

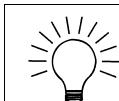
See fig. 31.

Check and fit lock **6** so that the cover can be locked with the lock.



TIP

The stop can be removed to open the cover further.



TIP

Fit the cover so that the direction of turn of the cover is the same as the transport direction of any neighbouring conveyor system.

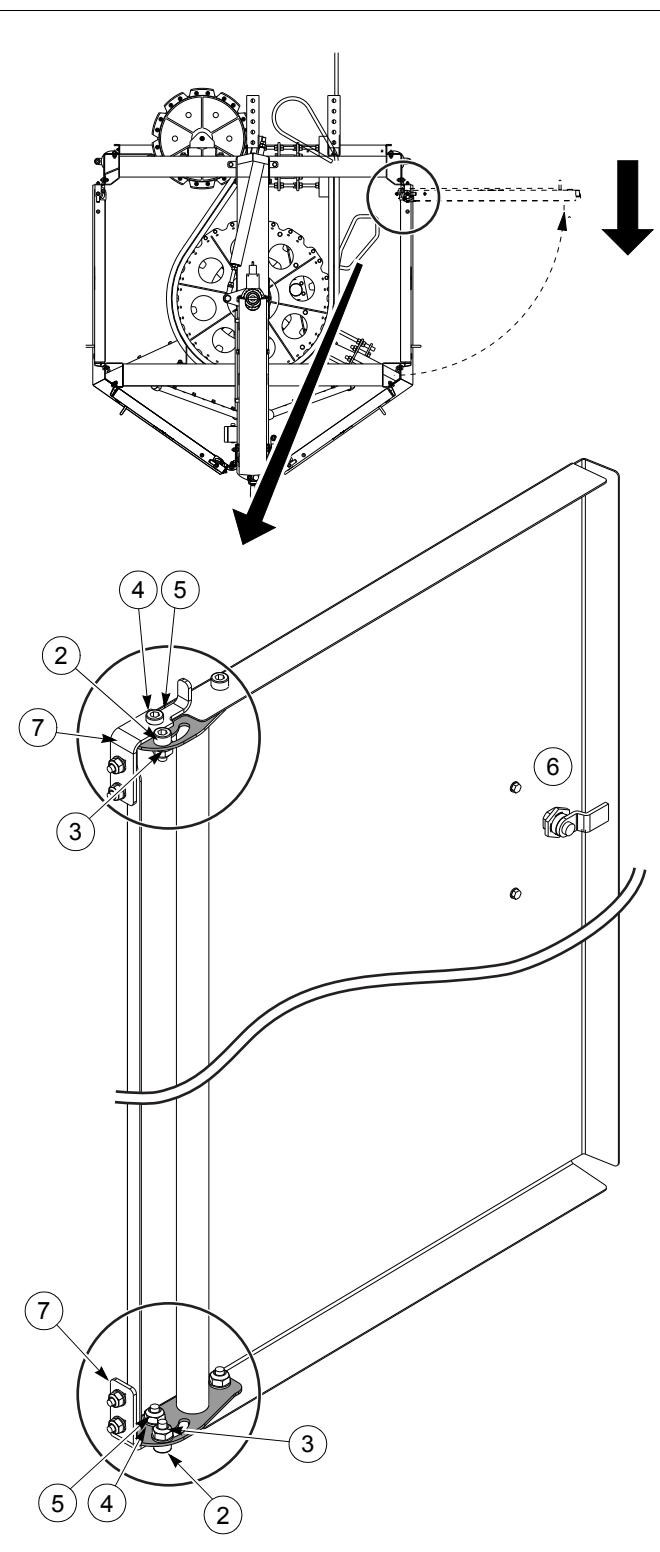


fig. 31 Adjust protective cover

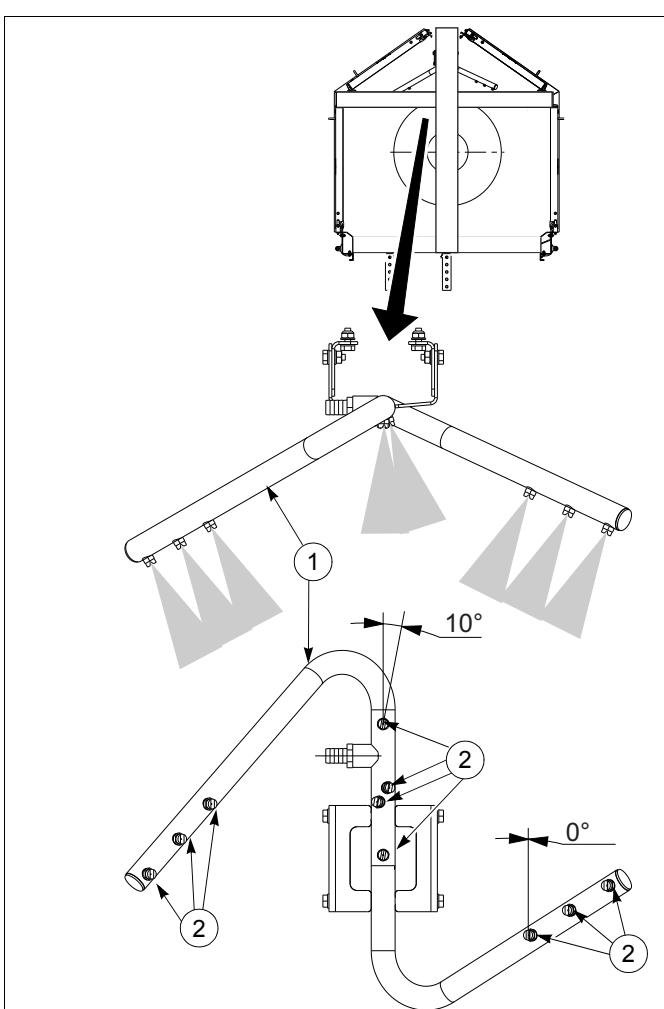


fig. 32 Outer spray pipe model B

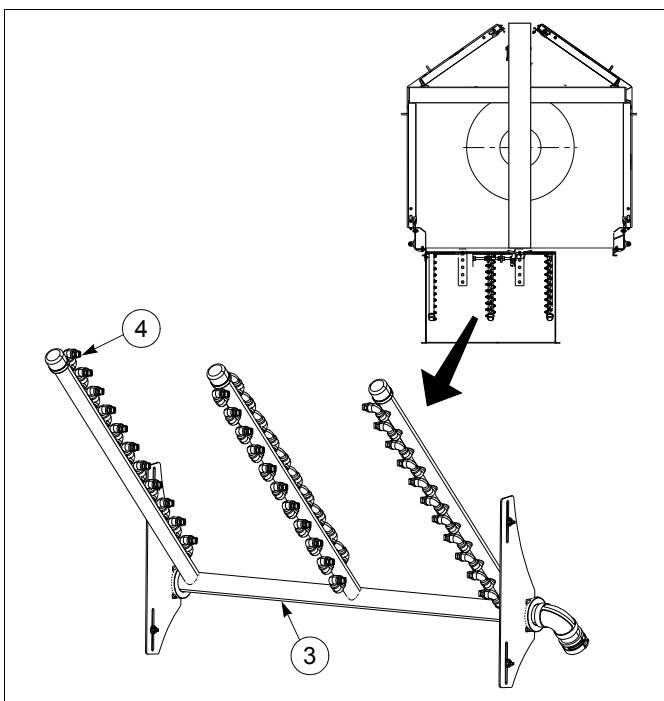


fig. 33 Outer spray pipe model HV

6.8 Adjust spray nozzles

Model: B

In spray pipe 1 there are 10 flat jet sprays 2 with a spray angle of 25°.

- Adjust the flat jet spray as shown in fig. 32.
Aim the sprayers so that the product is cleaned.

Model: HV

In the spray pipe 3 there are 43 flat jet sprays 4 with a spray angle of 25°.

- Adjust the flat jet sprayer so that the product is cleaned.

See fig. 33.

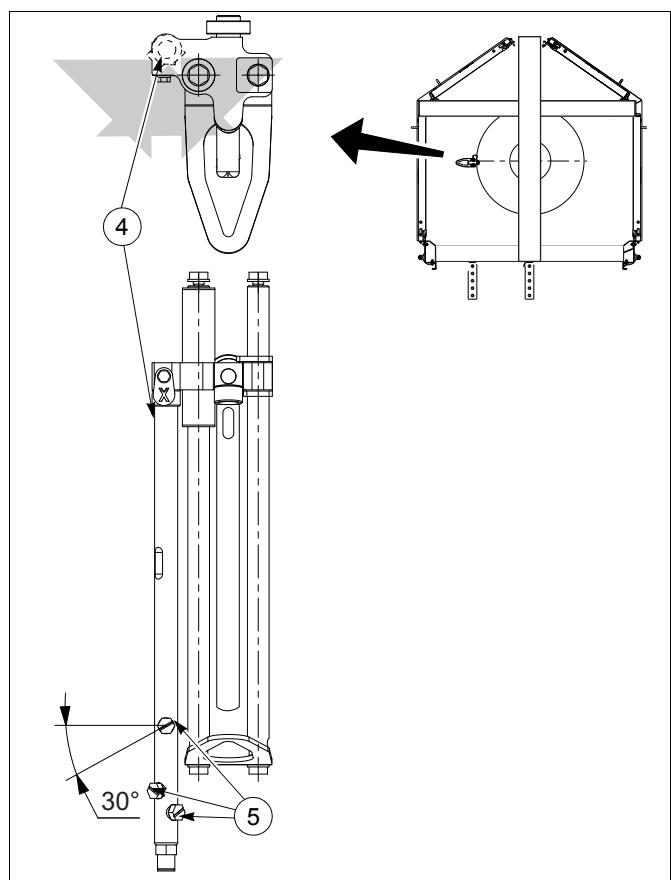


fig. 34 Unit with inner and outer spray pipe model B and HV

Model: B and HV

In the spray pipe 4 there are 3 flat jet sprays 5 with a spray angle of 90°.

- Adjust the flat jet spray as shown in fig. 34.

In spray pipe 6 there is a single sprayer with a nozzle angle of 25°.

- Adjust sprayer 7 so that the guide shafts are lubricated.

See fig. 35.

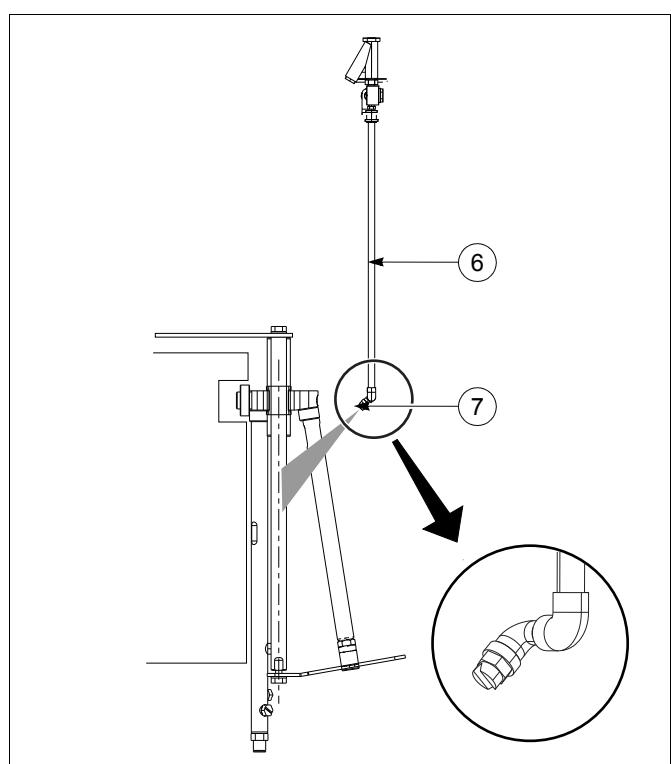


fig. 35 Adjust the guide shaft sprayers

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.

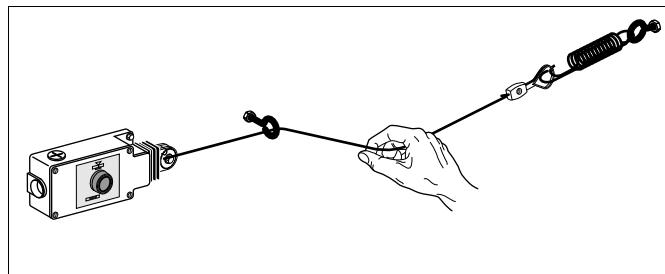


fig. 36 Emergency stop cord

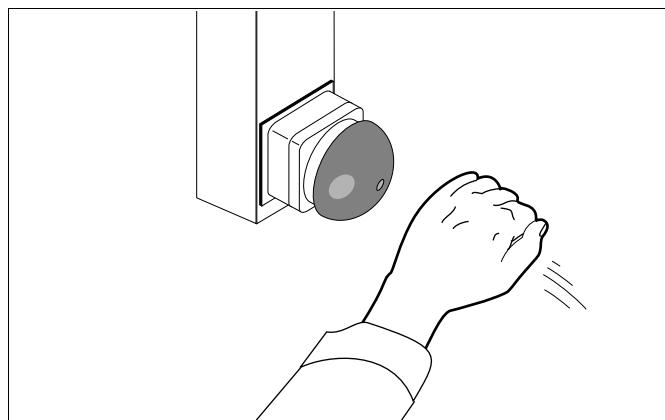


fig. 37 Emergency stop button

7.1 Emergency stop

In an emergency you must:

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

See fig. 36 and fig. 37.

When the emergency stop has been operated the overhead conveyor stops. All electrical connections to the machine are switched off.

An alert will appear on the Control Panel, see the User's Manual Overhead Conveyor Control Panel.

Deal with the emergency situation as follows:

1. The emergency situation should only be dealt with by authorised persons.



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. De-block the emergency stop. See the User's Manuals Overhead Conveyor Control Panel and Emergency Stop Provisions.
3. Proceed with processing the products, see paragraph 7.4 Processing products.



NOTE

Only use the emergency stop in an emergency situation.

7.2 Close/open the door

The machine has hinged doors. Open and close/lock the doors with the customer-supplied key 1.

See fig. 38.



NOTE

Keep plant-supplied keys in a place only accessible to authorized, skilled and instructed staff.

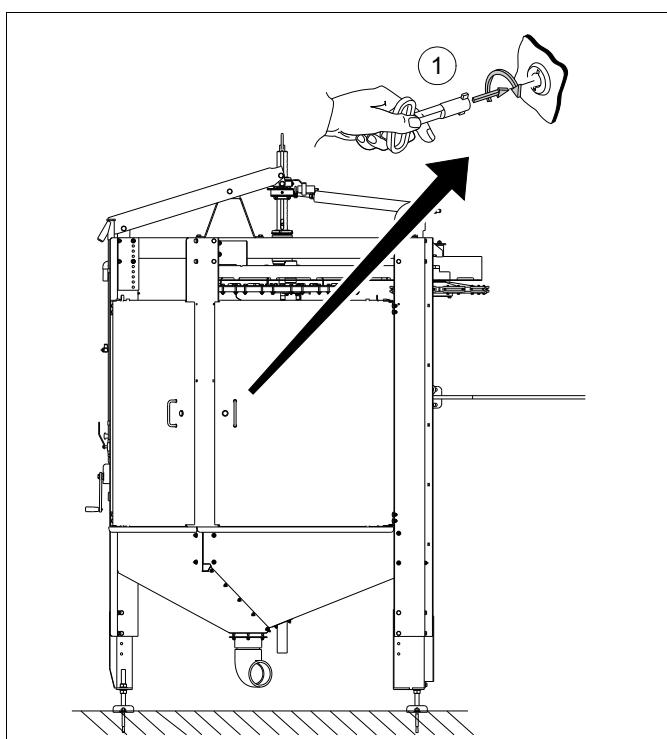


fig. 38 Lock doors / adjust height

7.3 Operate shut-off valve

The machine has a hand-operated ball valve in the water supply pipe.

Operate the water supply as follows:

1. Open shut-off valve 1 before the overhead conveyor is started (position A).
2. Close shut-off valve 1 after the machine stops (position B).

See fig. 39.

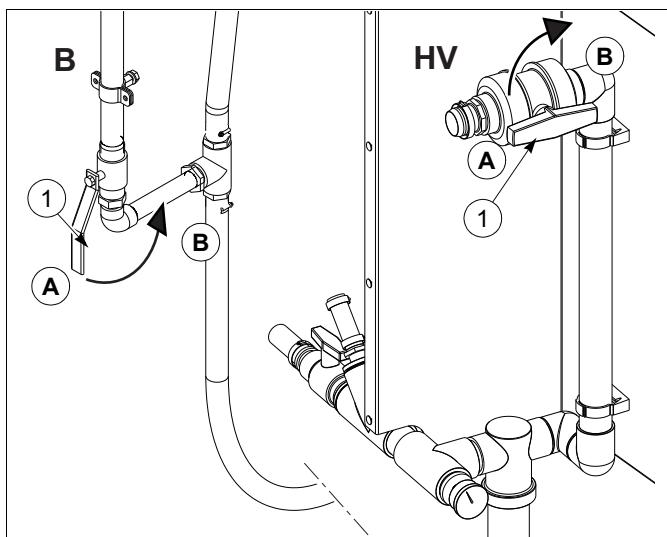


fig. 39 Operate shut-off valve

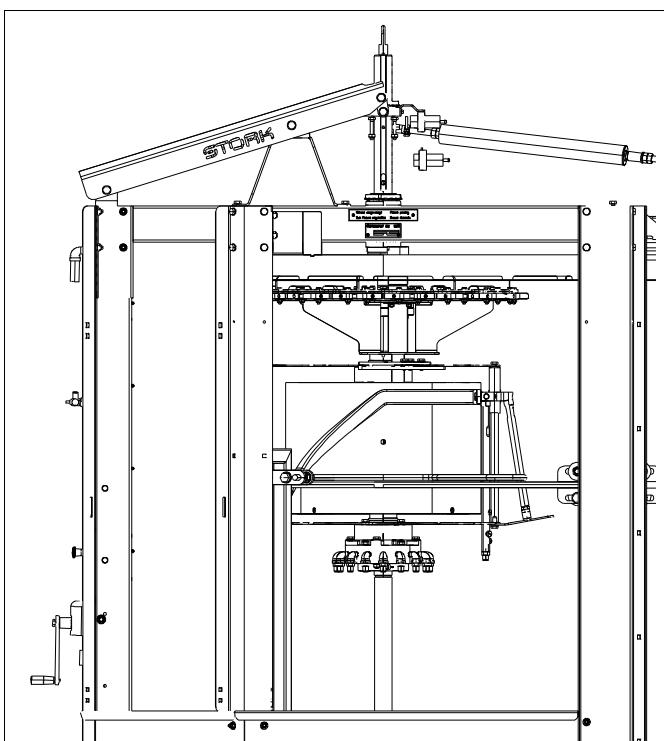


fig. 40 Processing products

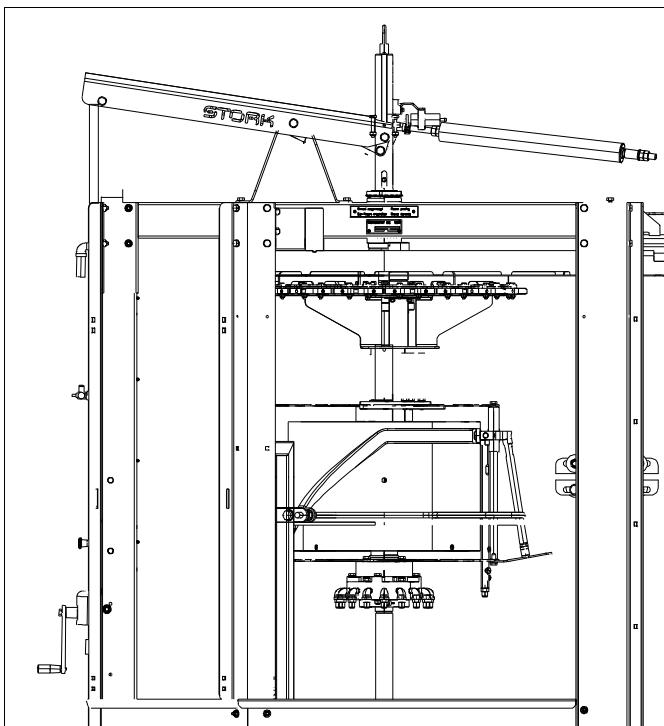


fig. 41 Do not process products

7.4 Processing products

Processing products is carried out as follows:

1. Stop the overhead conveyor. See the User's Manual Overhead Conveyor Control Panel.
2. Check that the machine is connected. See paragraph 6.2 Coupling and decoupling the machine.
3. Adjust the height of the machine. See paragraph 6.4 Setting the height.
4. Close all the doors around the machine. See paragraph 7.2 Close/open the door.
5. Open the sprayer water supply. See paragraph 7.3 Operate shut-off valve.
6. Model HV
Start the pump to provide the sprayers with the correct water pressure.
7. Start the overhead conveyor. See the User's Manual Overhead Conveyor Control Panel.
8. Check once again the height of the machine during product processing.
9. During production check regularly that the sprayers are not blocked.

See fig. 40.

7.5 Do not process products

Non-processing of products is carried out as follows:

1. Stop the overhead conveyor. See the User's Manual Overhead Conveyor Control Panel.
2. If necessary, rinse and clean the machine. See chapter 8 CLEANING.
3. Close the water supply for the sprayer. See paragraph 7.3 Operate shut-off valve.
4. Disengage the machine. See paragraph 6.2 Coupling and decoupling the machine.
5. Start the overhead conveyor. See the User's Manual Overhead Conveyor Control Panel.

See fig. 41.

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 Clean the machine

Open the covers of the machine for cleaning. See paragraph 7.2 Close/open the door.

Carry out the cleaning instructions as follows:

1. Disengage the machine. See paragraph 6.2 Coupling and decoupling the machine.
2. Close the valves of the water supply. See paragraph 7.3 Operate shut-off valve.
3. Clean the whole machine daily both externally and internally. See also the User's Manual Cleaning and Disinfection.
4. Couple the machine. See paragraph 6.2 Coupling and decoupling the machine.

See fig. 42.

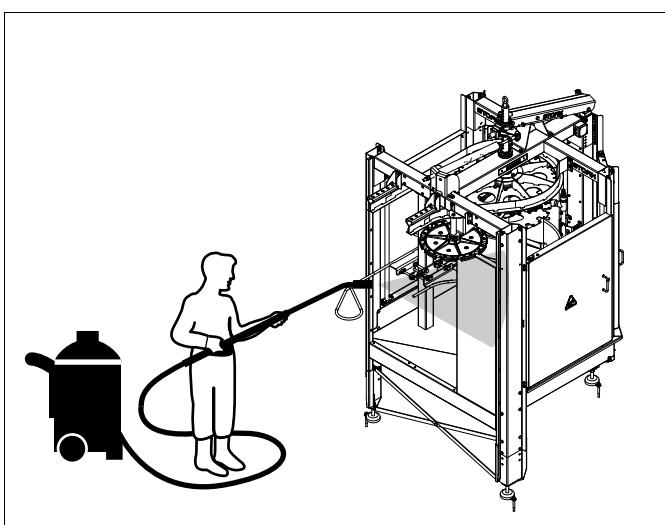


fig. 42 Clean the machine

9 MAINTENANCE



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.

9.1 Maintenance schedule

The schedule includes a list of all the maintenance activities which must be carried out. Good, regular maintenance increase the life span of the machine, improves safety and decreases the chance of faults.

	Cleaning		Checking		Setting or replacing		Lubrication
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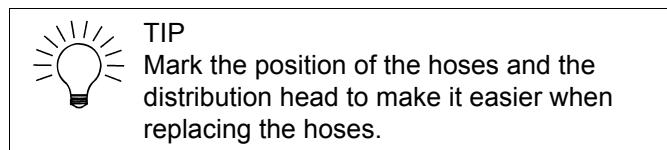
tab. 7 Maintenance schedule

Frequency	Component	Activity	Maintenance	Para-graph
Daily	Safety provisions		Check the safety provisions and the presence of the safety labels.	-
Weekly	Spray nozzles		Check and clean sprayers.	-
Weekly	Check water filter		Check the filter and clean if necessary.	-
Weekly	Fixing pin		Check the operation of the fixing pin. It should be possible to operate the pin easily.	6.2

tab. 7 Maintenance schedule

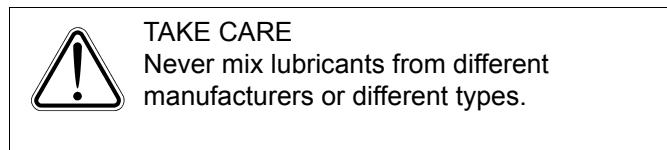
Frequency	Component	Activity	Maintenance	Para-graph
Weekly	Carrier pin		Check the operation of the carrier pin.	6.2
Monthly	Whole machine		Check for wear, breakage and the free running of moving parts.	-
Every 500 operating hours	Curve rollers		Check for wear.	-
Yearly	Quad Rings		Replace the Quad Rings.	-

9.2 Replace the Quad Rings



Replace the Quad Rings as follows:

1. Remove hoses **1**.
2. Undo bolts **2**.
3. remove sleeve **3**.
4. Undo bolts **4** and nuts **5**.
5. Remove distribution head **6**.
6. Replace Quad Rings **7**. Use a grease from tab. 8 when installing the Quad Rings.



7. Fit distribution head **6**, sleeve **3** and hoses **1**. See fig. 43.

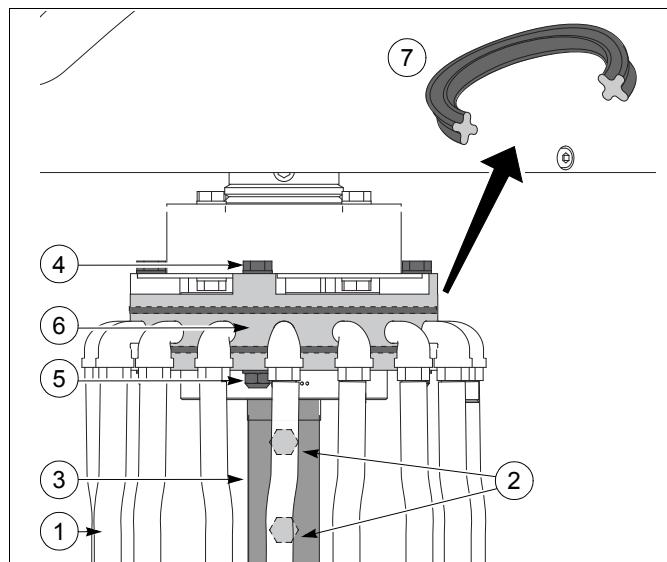


fig. 43 Replace the Quad Rings

tab. 8 Lubricants

Contents [litres]				
As required.	Carum 330	Mobil grease FM102	Cassida RLS 2	Cygnus grease 2

10 FAULTS



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. 9 Fault list

Fault	Possible cause	Possible solution	Paragraph
Product is not positioned properly.	Product is not suspended correctly in the shackle - one leg in shackle - too high in shackle slot	Ensure correct input of products.	-
	Guides not properly adjusted.	Check and correct the guides.	6.5
	Shackle faulty.	Replace the shackle.	-
Product does not run properly in the machine.	Machine height adjustment incorrect.	Adjust height.	6.4
	Machine is not connected properly.	Connect the machine.	6.2
	Spread clamp does not run between the legs properly.	Check and correct the timing of the inner/outer washing unit in relation to the shackle.	6.6
Sprayers do not work properly.	Sprayers blocked.	Clean the sprayers.	-
	Shut-off valve is closed.	Open the shut-off valve.	7.3
	Filter in the supply is blocked.	Clean the filter in the supply.	-

tab. 9 Fault list

Fault	Possible cause	Possible solution	Para-graph
Overload protector switches machine off.	Proximity switch not properly adjusted.	Check the position of the proximity switch.	5.2.1.1
	Unit blocks due to contamination, seized bearings or another fault.	Check unit and clean or repair where necessary.	-
	Overload limiter faulty.	Check and repair if necessary.	-

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.