USER'S MANUAL

Intestine Pack Handling
Intestine/Gall-Bladder Remover
PGI Nuova

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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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This User’s Manual is a translation of the original User’s Manual.

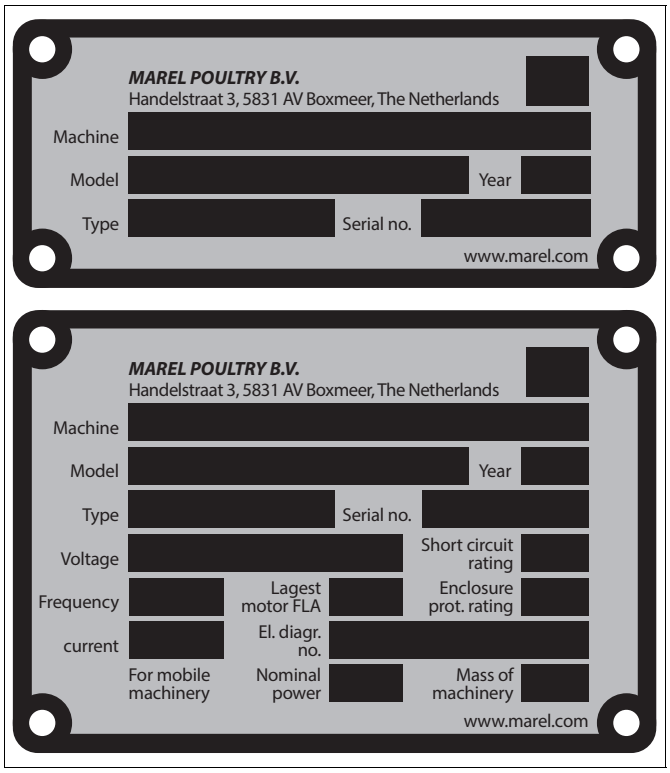


fig. 1 Machine plate example

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 aquainted 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:

MORTAL DANGER
The user's life is directly threatened.

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.


Risk of injury from sharp objects.


Risk of injury from rotating parts.


Risk of injury from entrapment.


Risk of injury from electrical voltage.


Risk of injury from high temperatures.


Risk of hearing loss from high noise levels.


Approaching a dangerous area.


Risk of injury from breathing poisonous gases.


Risk of injury from flammable substances that make a fire.


Risk of injury from ionizing radiation.


Risk of injury from laser beams.


Risk of injury when you climb the machine.

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

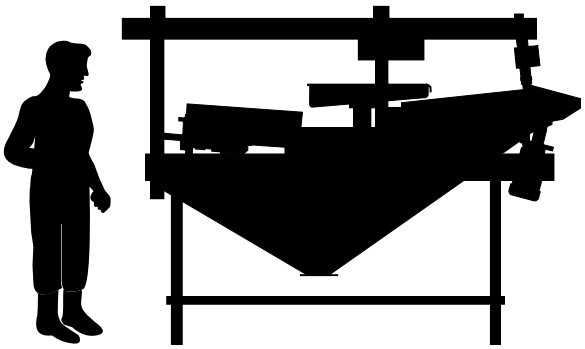
4.1 Area of Application

The PGI removes the intestines from the viscera pack and removes the gall-bladder.

This User's Manual describes the following machine:
- Intestine/Gall-Bladder Remover PGI-Nuova

> NOTE
> The machine model is shown on the machine plate.

- PGI means Pack Gall Intestine
- Nuova stands for New



The machine can be supplied with the following options:
- Shackle guide
- Unloading station (see fig. 3)

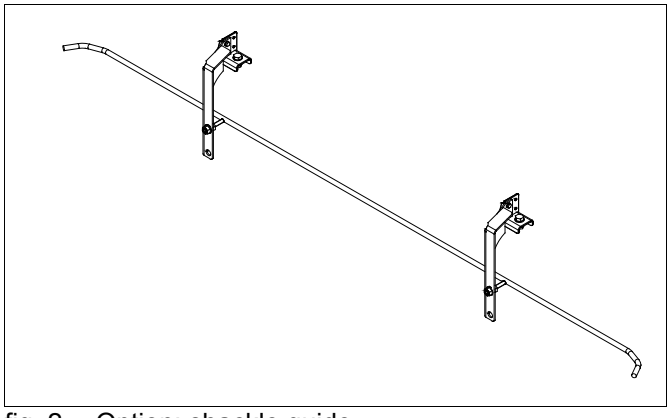


fig. 2 Option: shackle guide

4.2 Names

The machine consists of the following main components:

1. Intestine stretcher section
2. Gizzard guide
3. Gall-bladder positioning section
4. Cutting unit with serrated blade **4a** or smooth blade **4b**
5. Collecting trough
6. Vacuum pipe
7. Protection covers
8. Frame
9. On/off switches
10. Unloading station (option)

See fig. 3.

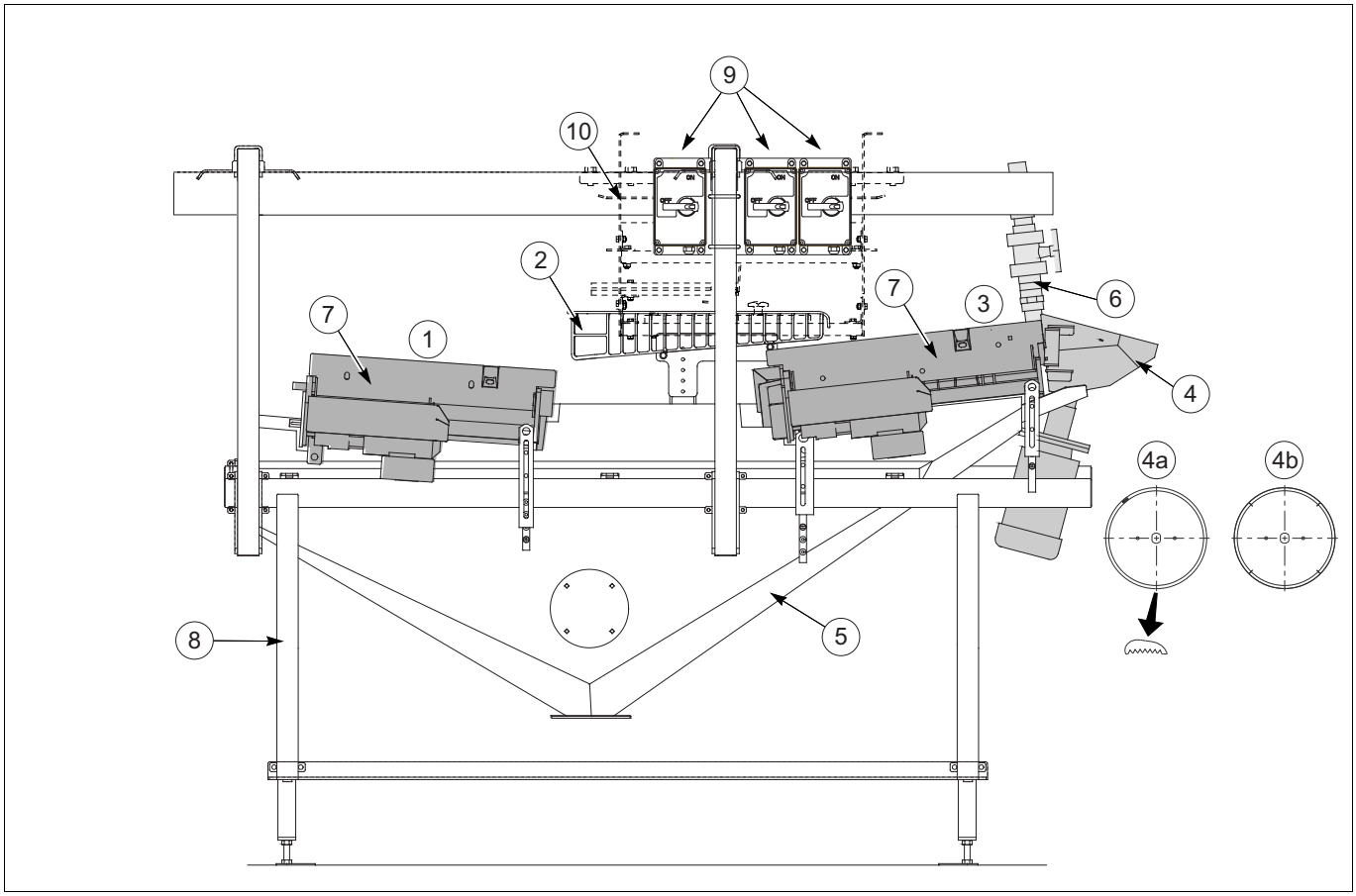


fig. 3 Names

4.3 Process description

A viscera shackle conveys the viscera pack through the Intestine/Gall-Bladder Remover.

In intestine stretcher section **1**, a roller pulls the intestines down so that they end up hanging under the gizzard.

Gizzard guide **2** turns the gizzard. This makes the liver turn backwards before the viscera pack is entered into gall-bladder positioning section **3**.

In the gall-bladder positioning section a roller pulls at the intestines, which positions the gall-bladder between guides. The gall-bladder is then caught and pulled down correctly with vacuum.

The intestines and gall-bladder are severed from the liver by cutting unit **4** and discharged via vacuum pipe **5** or via the floor of collecting trough **6**.
See fig. 4.

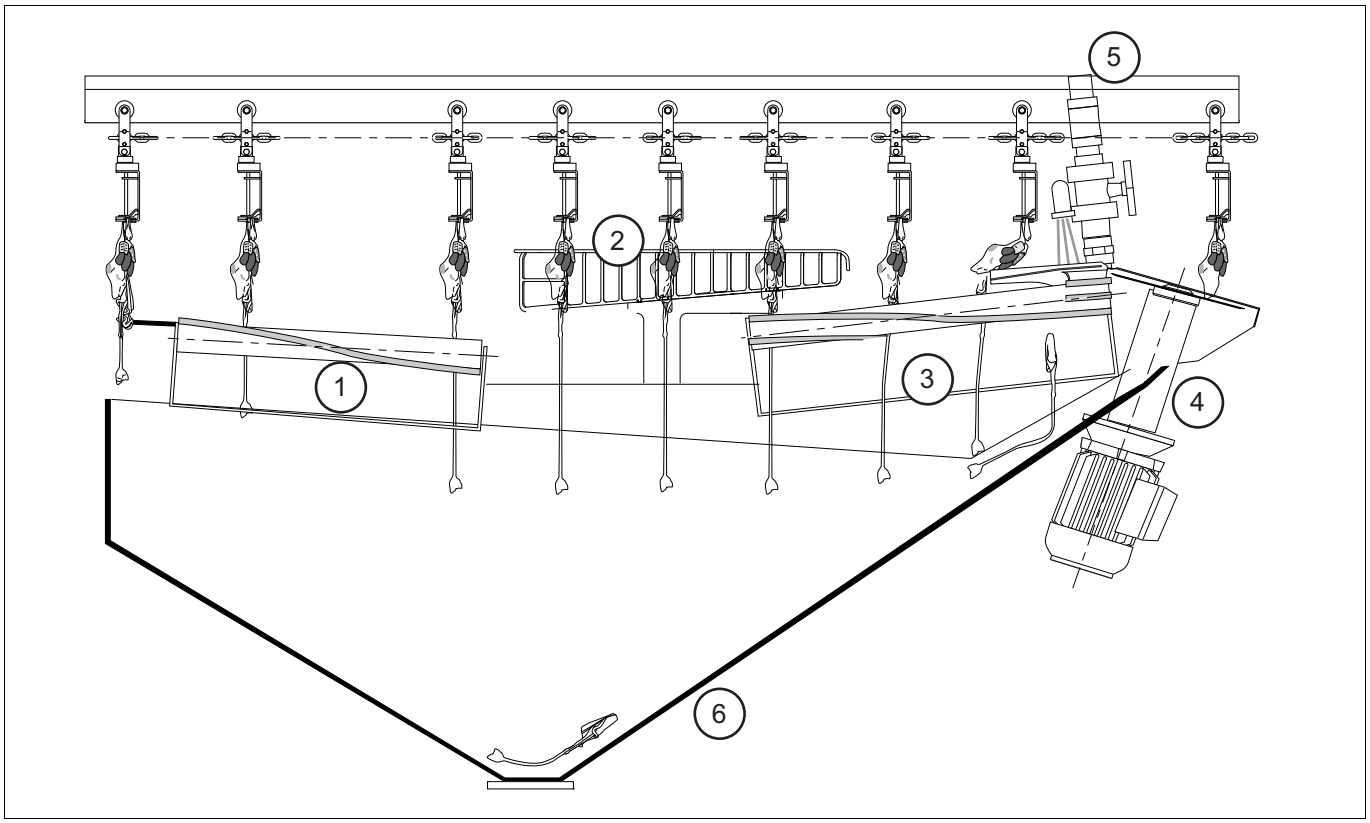


fig. 4 Process description

If the unloading station (option, see fig. 3) is used, then the viscera pack is unloaded before treatment and carried away by the collecting bin.

4.4 Safety provisions

MORTAL DANGER
Never remove, bridge or block safety provisions.

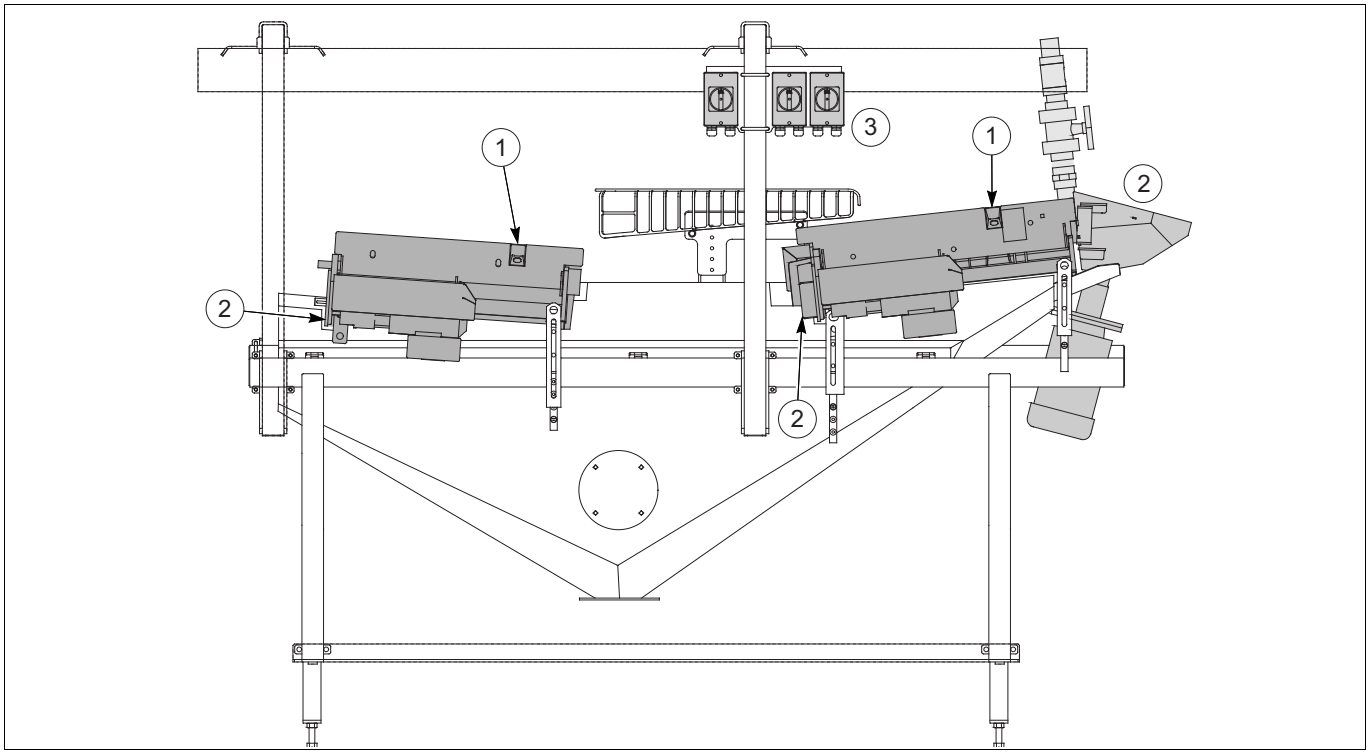


fig. 5 Safety provisions

The machine has the following safety provisions:
- Protection covers with locks **1**.
- Protection cover **2** around the blade and the drive chains.
- On/off switches **3**.
- Emergency stop button and/or emergency stop cord within reach.

See fig. 5.

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.**

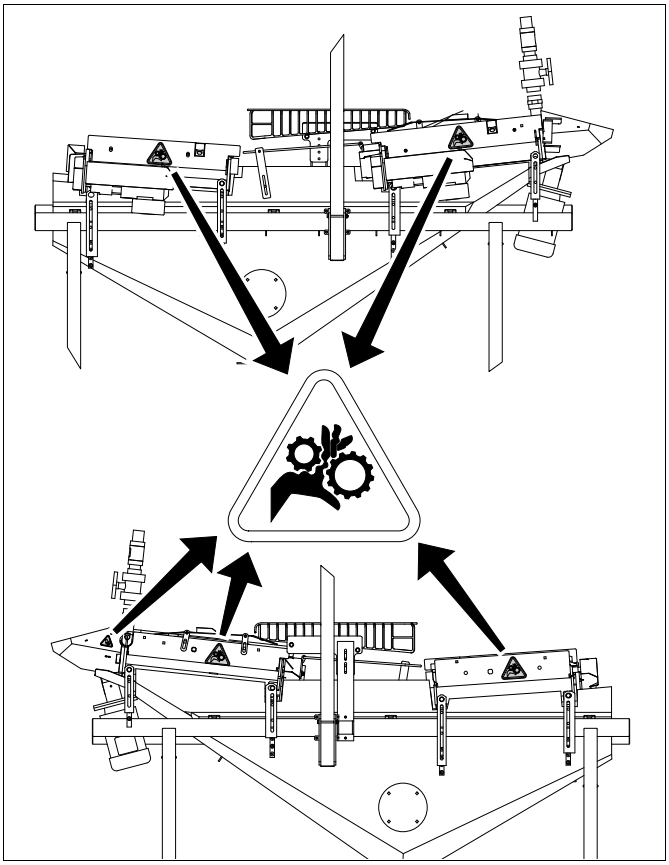


fig. 6 Safety labels

You will find safety labels on the machine as shown in fig. 6.
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 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.**

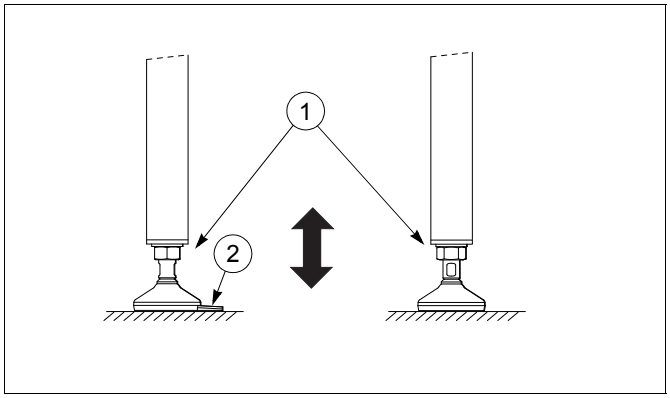


fig. 7 Setup

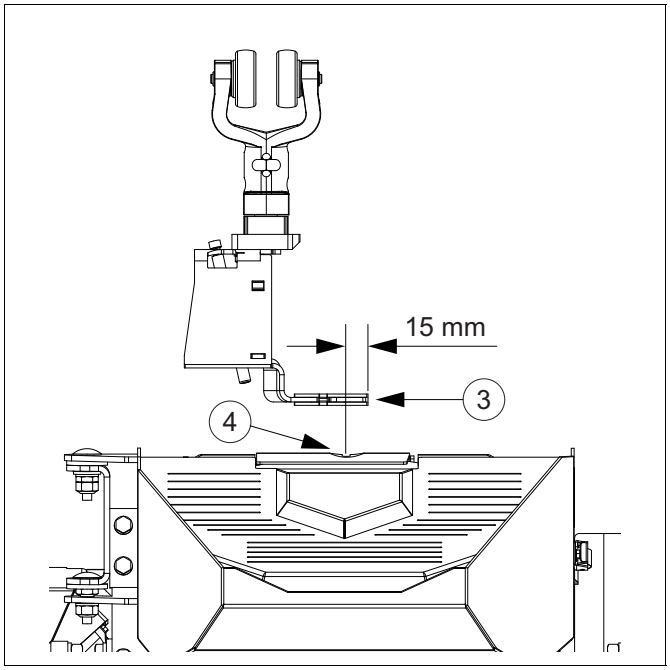


fig. 8 Verify the machine position to the shackle

Note the following points:
- Make sure that the surface is hard and even and that there is sufficient space to move around the machine to carry out work on the machine.
- Take account of the setup requirements of the other machines.
- Make sure there is sufficient light to carry out work on the machine.

Set the machine up as follows:
1. Move the packed machine to the destination using a forklift truck or a pallet wagon.
2. Remove the packaging around the machine.
3. Lift the machine with a hoist or forklift and remove the shipping pallet.
4. Lift the machine level and to the right height.
5. Use nut **1** to level the frame and align the machine with the overhead conveyor.
6. Verify that the distance from the tip of the viscera shackle **3** to the center of the notch **4** is 15 mm, ±1 mm. Move the machine if necessary.
7. Fasten foot plates **2** to the floor.
8. Anchor the machine to the floor.
   See the User's Manual Overhead Conveyor.

See fig. 7 and fig. 8.

5.2 Connections

5.2.1 Electricity connection

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".

- The drive motors of the intestine stretcher section, the gall-bladder positioning section and the blade are wired up to on/off switches **1**.
  - Connect the on/off switches in the Control Panel.

See fig. 9.

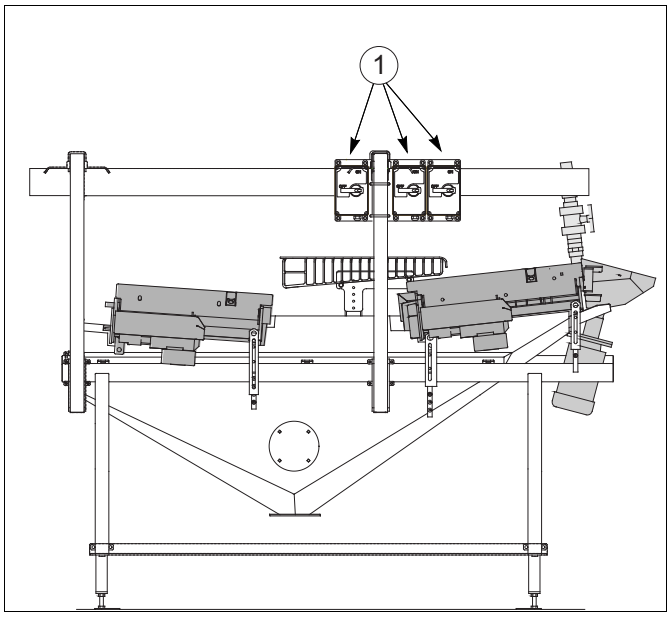


fig. 9 Connect on/off switches

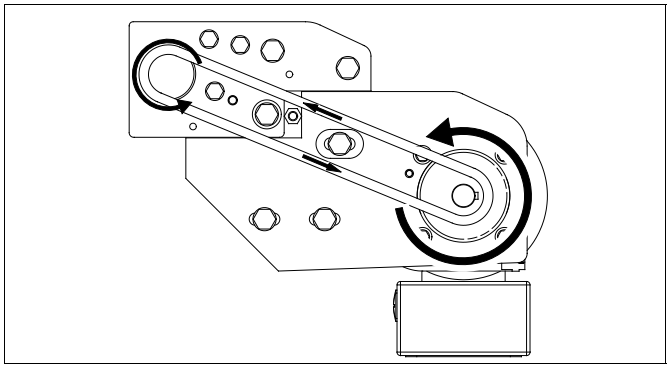


fig. 10 Direction of rotation of the rollers

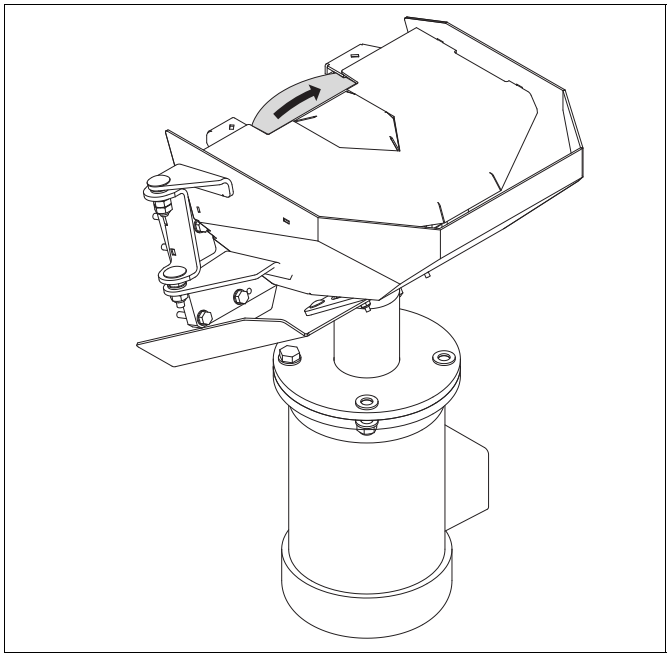


fig. 11 Direction of rotation of the blade

- After connection operations, check the directions of rotation of the rollers (intestine stretcher and gall-bladder positioning sections) and the blade.

See fig. 10 and fig. 11.

5.2.2 Connect the vacuum

Particles that are released during cutting are discharged via a vacuum pipe.

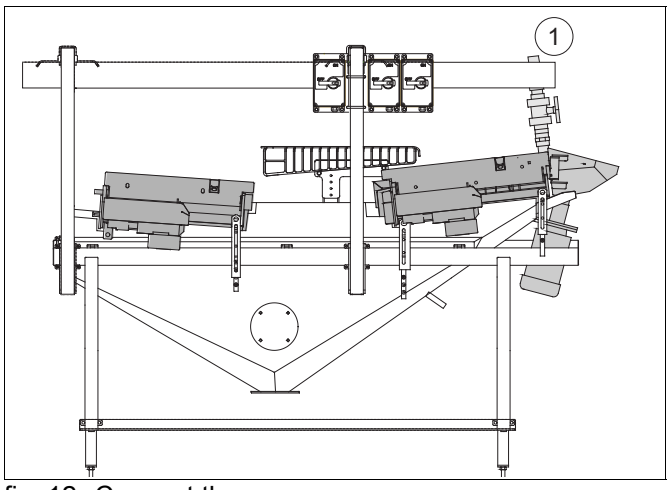


fig. 12 Connect the vacuum

- Connect point **1** to the vacuum system.

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

See fig. 12.

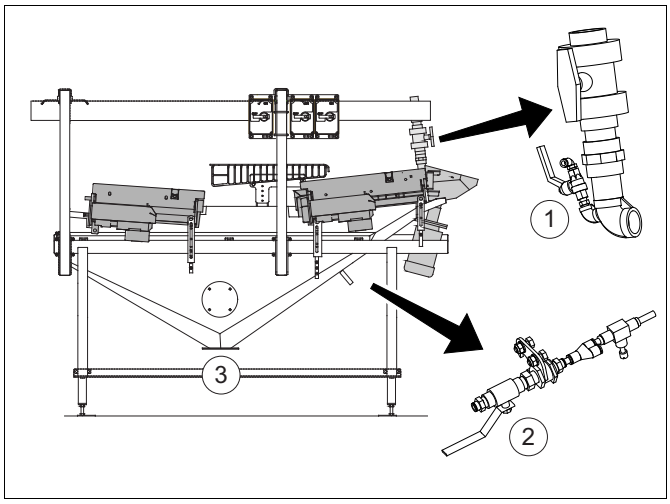


fig. 13 Connecting water and vacuum

5.2.3 Connect the water

If applicable:
The spray system uses water.

- Connect point **1** and **2** to the water system.

For connection and consumption details consult the "Technical Data".
See fig. 13.

5.2.4 Connect the drain

The product remnants gather at the bottom of the discharge trough.

- Connect point **3** to the discharge system.

For connection and consumption details consult the "Technical Data".
See fig. 13.

6 ADJUSTMENTS

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
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.

6.1 Adjust the intestine stretcher section

The intestine stretcher section has the following settings:

1. Height
2. Horizontal position
3. Position of the guide over the feed roller
4. Distances between product guides and feed roller

NOTE
Prevent the section from pulling too hard. The duodenum must remain attached to the gall-bladder.

NOTE
At the entry the bottom of the gizzard should spread across the guide above the roller. At the exit the bottom of the gizzard should hang loose over this guide.

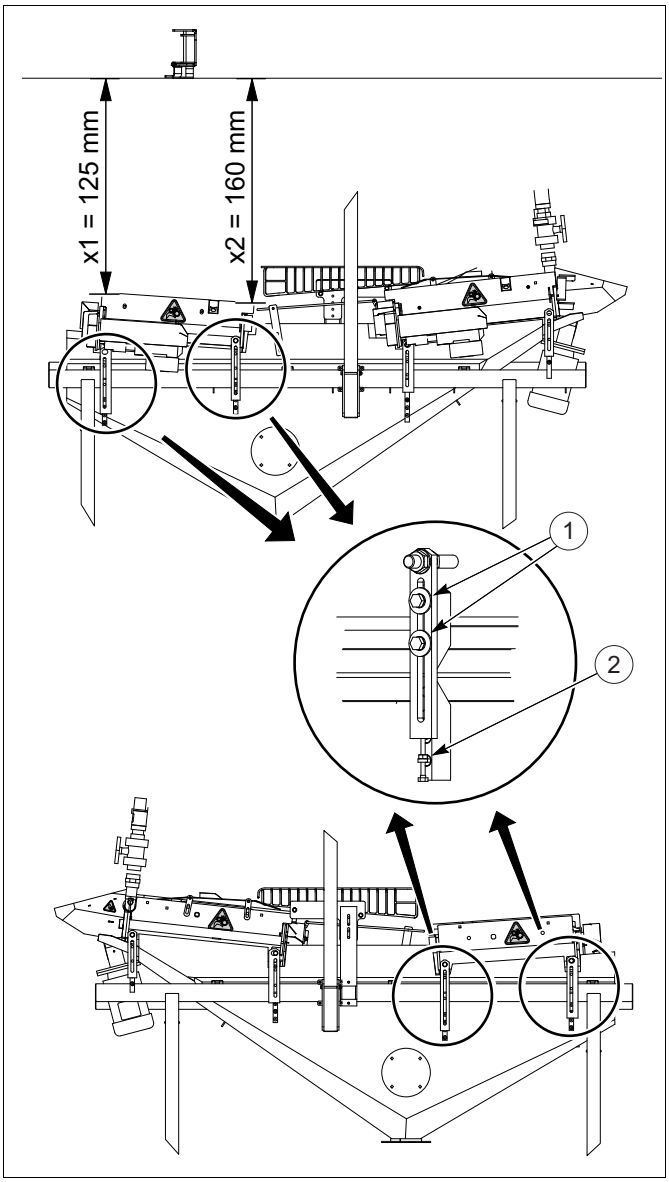


fig. 14 Setting the height of the feed roller

6.1.1 Height

Adjust the height as follows:

1. Loosen bolts **1** (8x) a few turns.
2. Entry of feed roller:
   Use bolts/nuts **2** to adjust distance **x1** between the bottom of the viscera shackle and the opening between the roller guides at 125 mm.
3. Exit of feed roller:
   Use bolts/nuts 2 to set distance **x2** between the bottom of the viscera shackle and the opening between the roller guides at 160 mm.

NOTE
Always maintain a height difference of 35 mm between x1 and x2.

4. Tighten bolts **1** (8x).

See fig. 14.

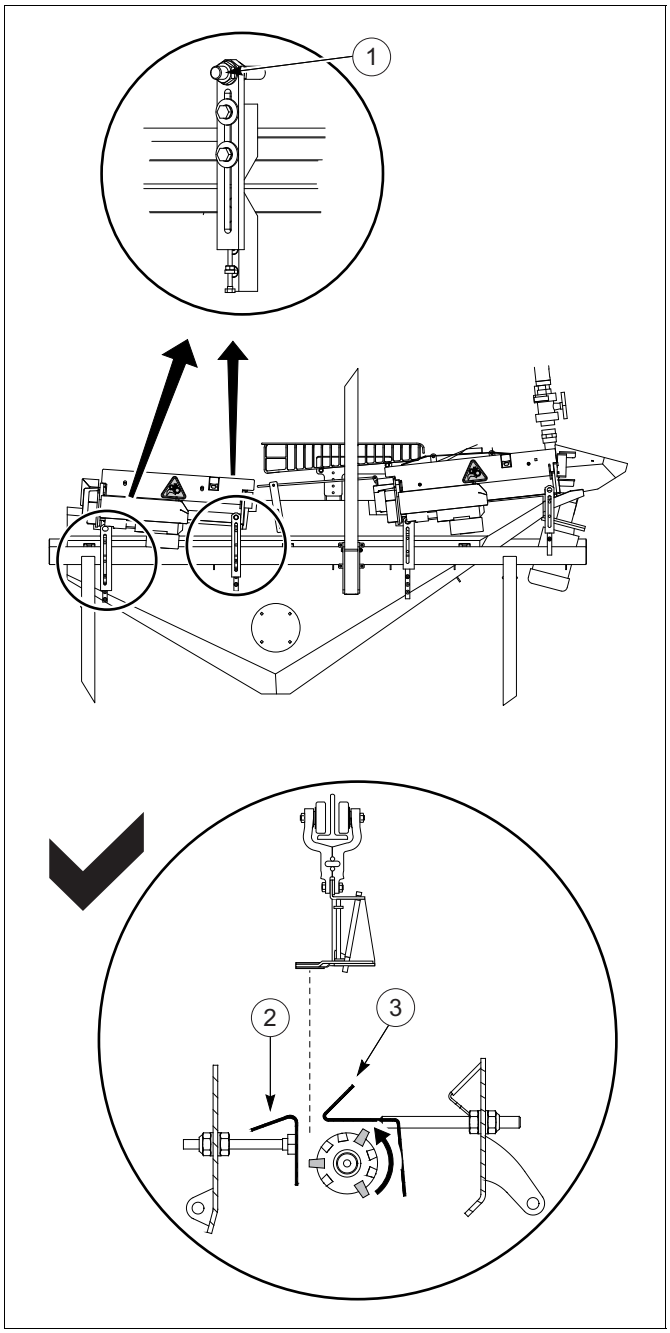


fig. 15 Horizontal position of the intestine stretcher section

6.1.2 Horizontal position

Set the horizontal position as follows:

1. Loosen bolts **1** (4x) a few turns.
2. Position the intestine stretcher section so the centre of the opening between guides **2** and **3** is level with the centre of the bottom of the viscera shackle.
3. Tighten bolts **1**.

See fig. 15.

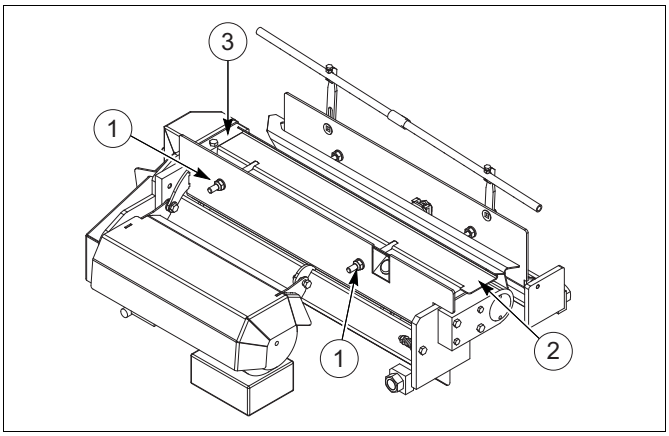


fig. 16 Setting the guide above the infeed roller

6.1.3 Guide over feed roller

Set guide **2** as follows:

1. Loosen bolts **1** a few turns.
2. Position guide **2** so the height of the guide corresponds with the height of bearing block **3**.
3. Check if the guide is in line with the feed roller.
4. Tighten bolts **1**.

See fig. 16.

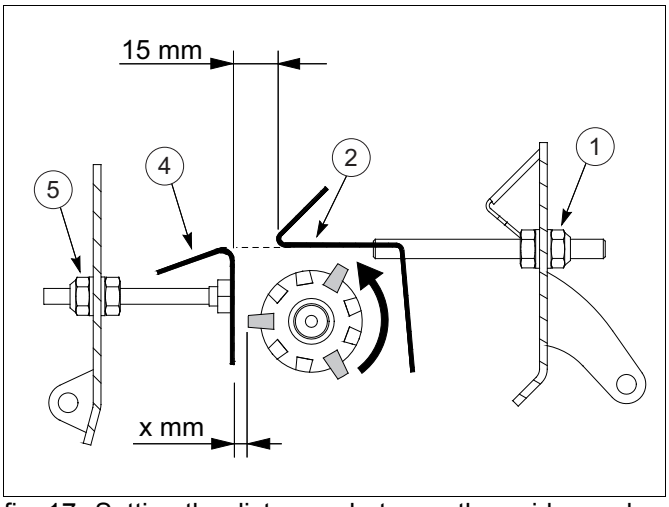


fig. 17 Setting the distances between the guides and the infeed roller

6.1.4 Product guides and feed roller

Set the distances as follows:

1. Loosen bolts **5** a few turns.
2. Bring guide **4** at the same height as guide **2** (dotted line).
3. Position guide **4** so that:
   - at the entry distance x = 0.5 mm.
   - at the exit distance x = 2 mm.
4. Tighten bolts **5**.
5. Loosen bolts **1**.
6. Position guide **2** (without changing the height) so that distance y = 15 mm.
7. Tighten bolts **1**.

See fig. 17.

6.2 Setting the gall-bladder positioning section

The gall-bladder positioning section has the following settings:

1. Height.
2. Horizontal position.
3. Position of the product guides and the discharge roller.
4. Position of the gall-bladder positioning guide.

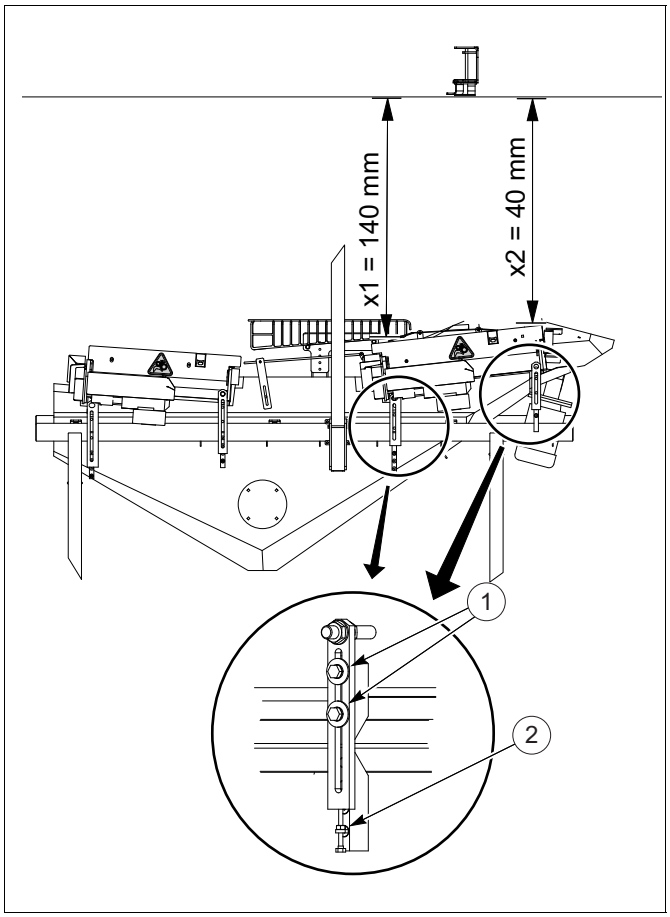


fig. 18 Setting the height of the discharge roller

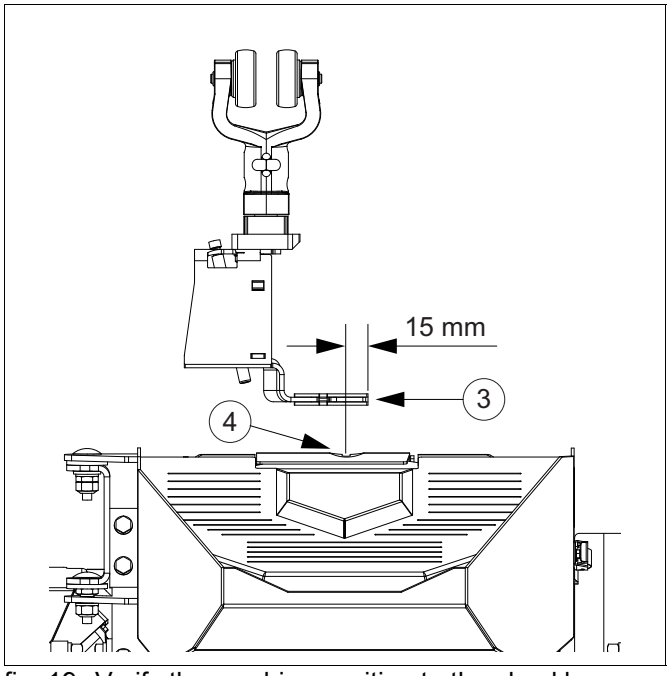


fig. 19 Verify the machine position to the shackle

6.2.1 Height

Adjust the height as follows:

1. Loosen bolts **1** (8x) a few turns.
2. Entry of feed roller:
   Use bolts/nuts **2** to set distance x1 between the bottom of the viscera shackle and the opening between the roller guides at 140 mm.
3. Exit of feed roller:
   Use bolts/nuts **2** to set distance x2 between the bottom of the viscera shackle and the top of the blade to 40 mm.
4. Tighten bolts **1** (8x).
5. Verify that the distance from the tip of the viscera shackle **3** to the center of the notch **4** is 15 mm, ±1 mm. Move the machine if necessary.

See fig. 18 and fig. 19.

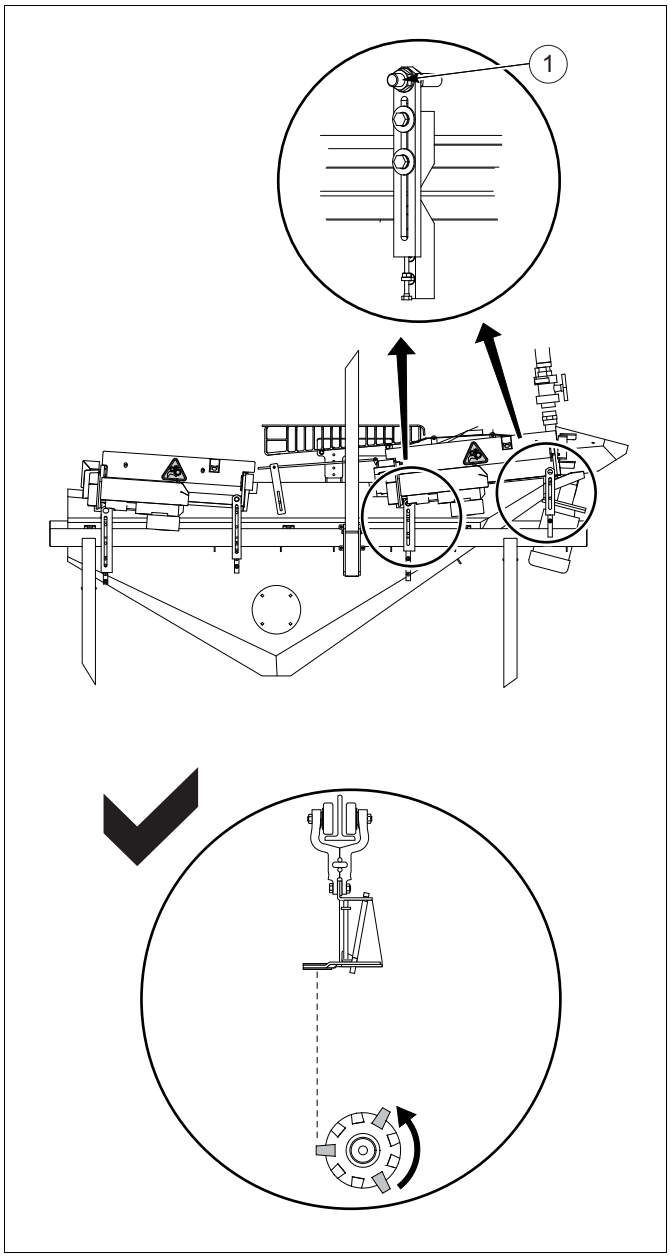


fig. 20 Horizontal position of the gall-bladder positioning section

6.2.2 Horizontal position

Set the horizontal position as follows:

1. Loosen bolts **1** (4x) a few turns.
2. Position the section so the strips of the discharge roller are situated straight under the pliers of the viscera shackle.
3. Tighten bolts **1**.

See fig. 15.

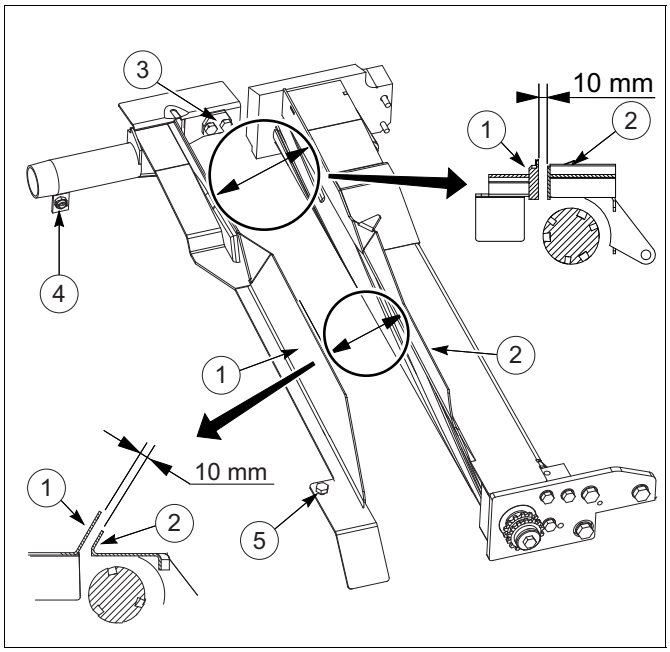


fig. 21 Setting gall-bladder guides 1 and 2

6.2.3 Gall-bladder guides 1 and 2

Set gall-bladder guides **1** and **2** as follows:

1. Loosen bolts **3**, **4** and **5**.
2. Position gall-bladder guide **1** so the space that is created (crack) between both guides is 10 mm both at the entry and exit.
3. Tighten bolts **3**, **4** and **5**.

See fig. 21.

6.3 Top gall-bladder guide

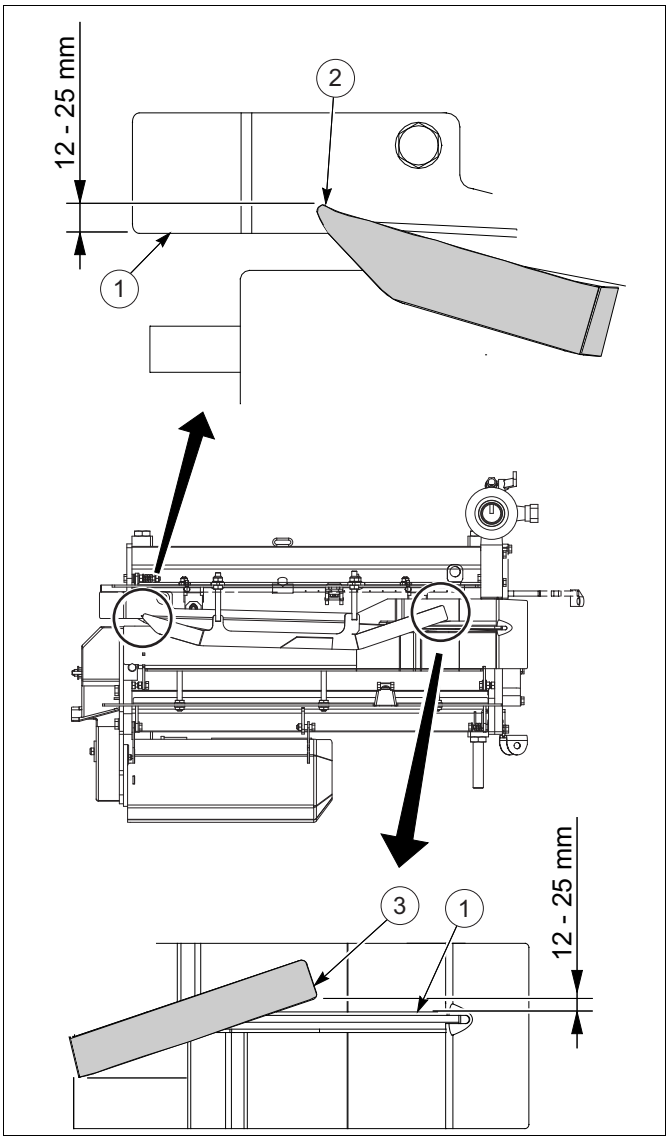


fig. 22 Setting the top gall-bladder guide horizontally

6.3.1 Horizontal position

Set the top gall-bladder guide as follows:

1. Loosen the nuts of the guide.
2. Position the guide so tip **2** of the guide at the entry is 12 to 25 mm over left-hand gall-bladder guide **1**.
3. Position the guide so tip **3** of the guide at the exit is 12 to 25 mm over left-hand gall-bladder guide **1**.
4. Tighten the nuts.

See fig. 22.

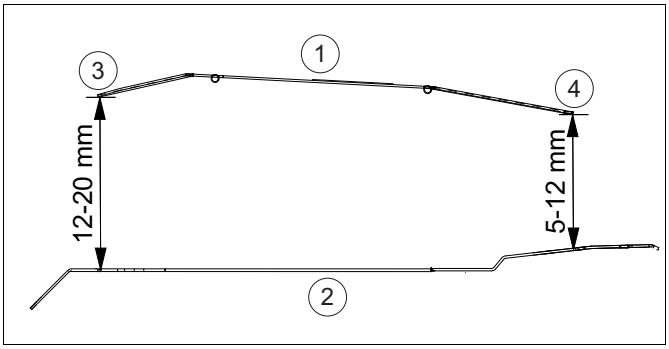


fig. 23 Setting the height of the top gall-bladder guide

6.3.2 Height

Set top gall-bladder guide **1** as follows:

1. Loosen the nuts in the slotted holes of the guide.
2. Position the guide so tip **3** of the guide at the entry is 12 to 20 mm over left-hand gall-bladder guide **2**.
3. Position the guide so tip **4** of the guide at the exit is 5 to 12 mm over left-hand gall-bladder guide **2**.
4. Tighten the nuts in the slotted holes of the guide.

See fig. 23.

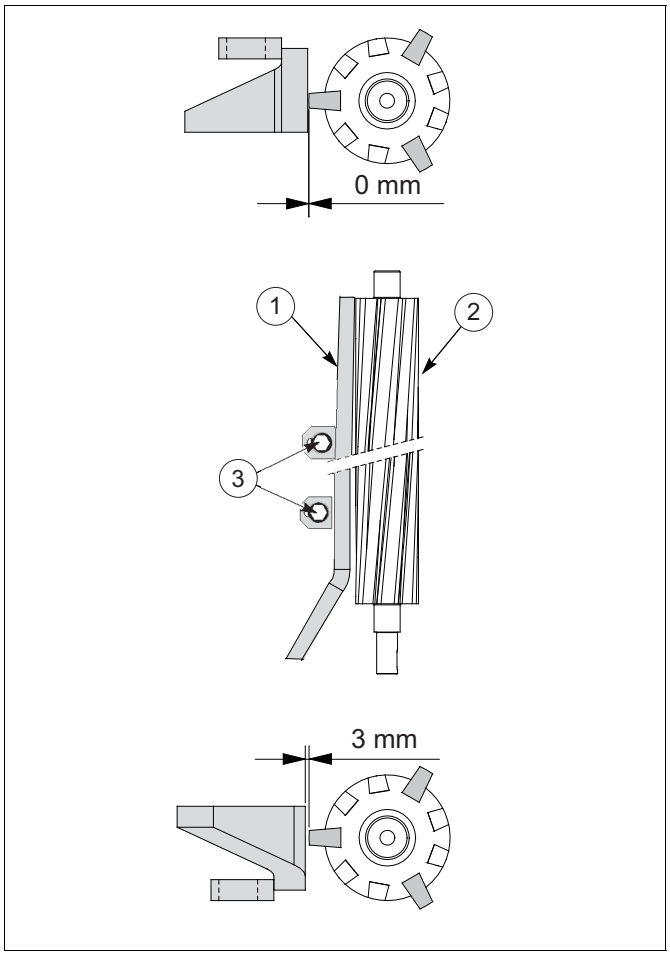


fig. 24 Setting the bottom gall-bladder positioning guide

6.3.3 Horizontal position of the pressure plate

Set the horizontal position as follows:

1. Loosen bolts **3**.
2. Position the roller so the distance between pressure plate **1** and the tip of the strip on roller **2**:
   - is 3 mm at the entry.
   - is 0 mm at the discharge side.
3. Tighten bolts **3**.

See fig. 24.

6.4 Setting the gizzard guide

The gizzard guide turns the gizzard. This makes the liver turn backwards before the viscera pack is entered into the gall-bladder positioning section.

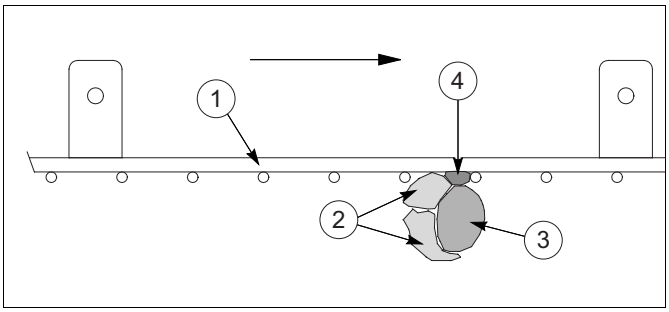


fig. 25 Viscera pack position

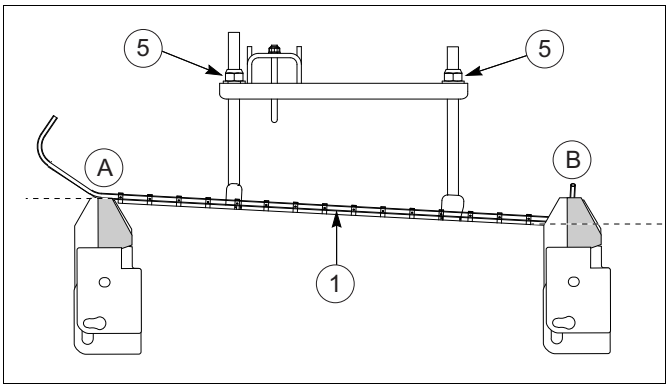


fig. 26 Horizontal position of the gizzard guide

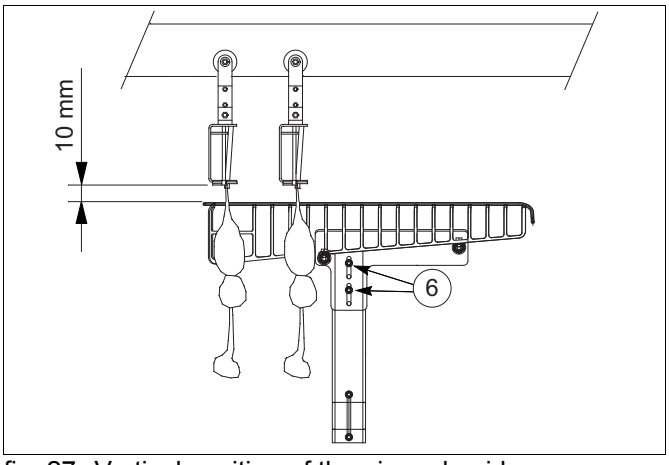


fig. 27 Vertical position of the gizzard guide

6.4.1 Horizontal position

Set the horizontal position of gizzard guide **1** as follows:

1. Loosen bolts **5**.
2. Position gizzard guide **1** in such a way that gizzard **3** has a free passage past the stages of the gizzard guide. Gall-bladder **4** is situated between the gizzard and the guide. Livers **2** turn behind the gizzard.
   Basic setting:
   - A: the position of the bend in the gizzard guide and the tip of the viscera shackle coincide.
   - B: the position of the exit of the gizzard guide coincides with the centre of the viscera holder.
3. Tighten bolts **2**.

See fig. 25 and fig. 26.

6.4.2 Height

Set the height of gizzard guide **1** as follows:

1. Loosen bolts **6**.
2. Position gizzard guide **1** in such a way that the gizzard and liver are positioned on the guide across the entire length of the section. The viscera shackles must not touch the gizzard guide.
   Basic setting:
   - The distance between the top of the gizzard guide and the bottom of the viscera shackle is 10 mm.
3. Tighten bolts **6**.

See fig. 27.

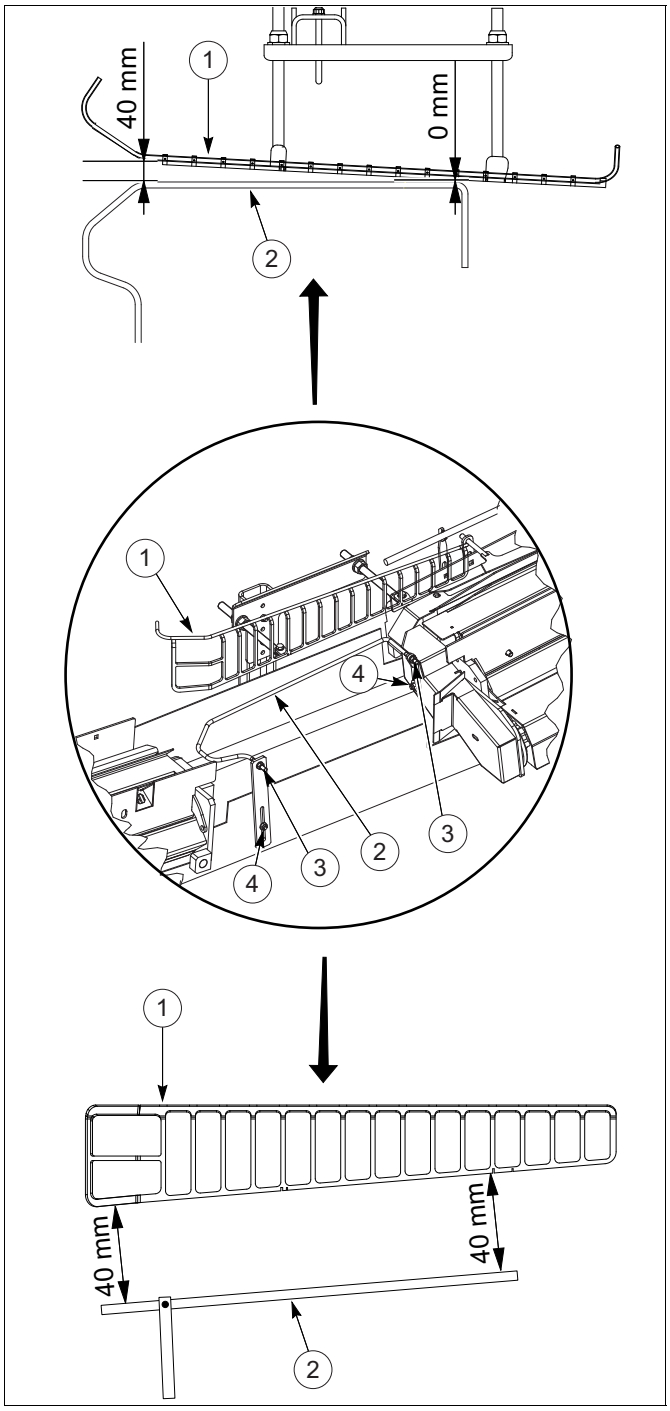


fig. 28 Horizontal and vertical position of the fat separation guide

6.5 Setting the fat separation guide

The fat separation guide prevents existing fat from arriving in the roller of the gall-bladder positioning section.

6.5.1 Horizontal position

Set the horizontal position of the fat separation guide as follows:

1. Loosen bolts **3**.
2. Position fat separation guide **1** so that the distance between the fat separation guide and gizzard guide **2**:
   - is 40 mm at the infeed side.
   - is 0 mm at the discharge side.
3. Tighten bolts **3**.

See fig. 28.

6.5.2 Height

Set the height of the fat separation guide as follows:

1. Loosen bolts **4**.
2. Position fat separation guide **1** so that the distance between the bottom of gizzard guide **5** and the top of fat separation guide **1** is 40 mm.
3. Tighten bolts **4**.

See fig. 28.

6.6 Adjust cutting unit

The rotating blade of the cutting unit cuts the gall-bladder and the intestines from the liver.

6.6.1 Horizontal position

Set the horizontal position as follows:

1. Loosen bolts **1**.
2. Loosen bolt/lock nut **2**.
3. Turn bolt **2** until the distance between rotating blade **3** and the rim of blade protection **4** is 0.5 to 1 mm.
4. Tighten bolt/lock nut **2**.
5. Tighten bolts **1**.

See fig. 29.

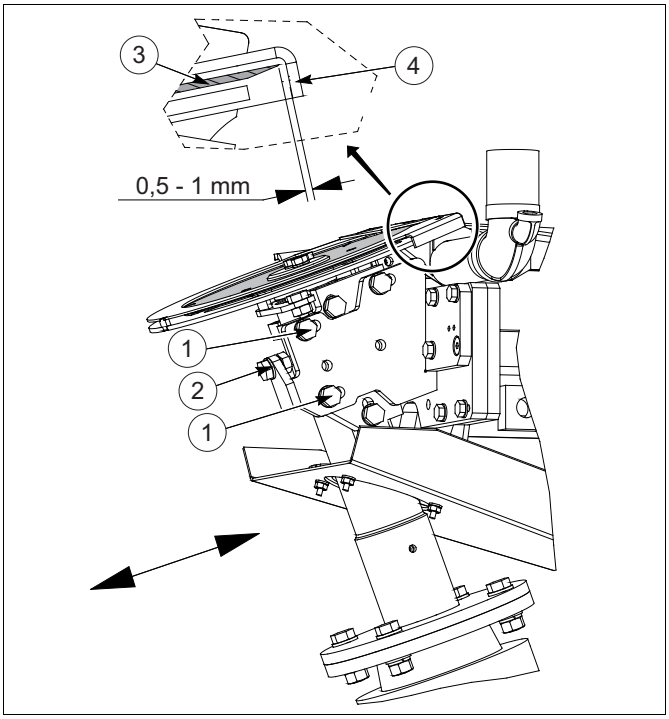


fig. 29 Setting the horizontal position of the cutting unit

6.6.2 Vertical position

Set the vertical position as follows:

1. Loosen bolts **5**.
2. Loosen bolt/lock nut **6**.
3. Turn bolt **6** until the distance between rotating blade **3** and the rim of blade protection **4** is 0.5 to 1 mm.
4. Tighten bolt/lock nut **6**.
5. Tighten bolts **5**.

See fig. 30.

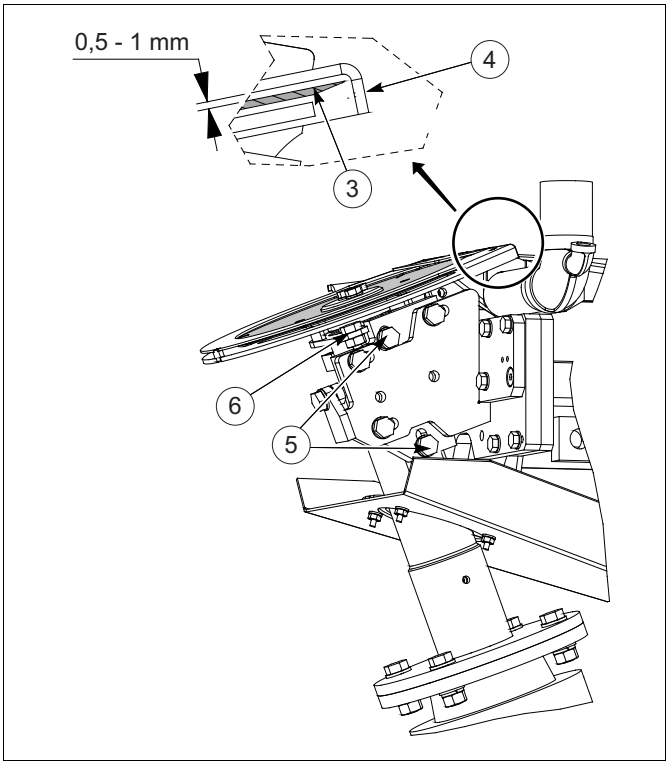


fig. 30 Setting the vertical position of the cutting unit

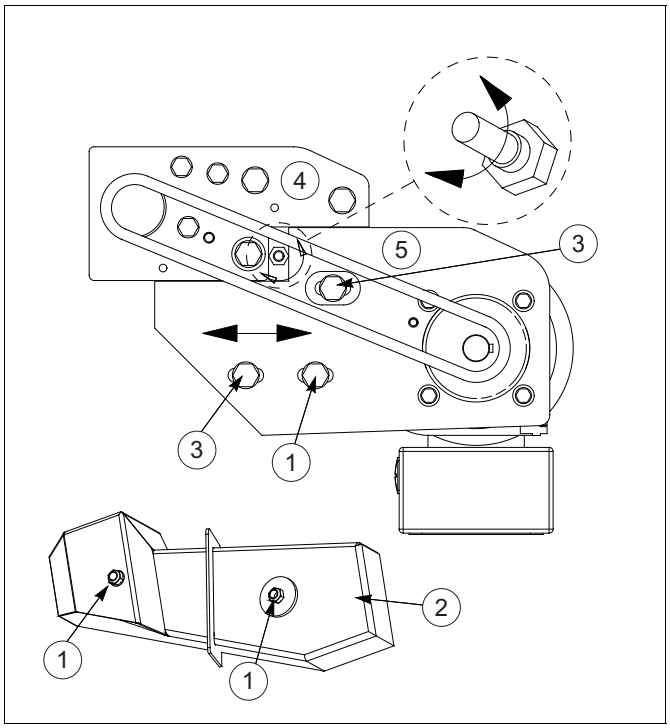


fig. 31 Tensioning the chain

6.7 Tensioning the chain

The roller of the intestine stretcher section and the roller of the gall-bladder positioning section are each activated by a chain. Correct chain tension prevents failures and excessive wear.

Tension the chains as follows:
1. Remove bolts **1** and take off protection cover **2**.
2. Loosen bolts **3**.
3. Push parts **4** and **5** apart until the correct chain tension has been reached.

TIP
Use an M8 or M10 bolt to move parts 4 and 5 apart. To that end put the bolt in the rectangular opening between parts 4 and 5 and turn the bolt with a wrench.

4. Tighten bolts **3** while maintaining the chain tension.
5. Put back protection cover **2** and mount bolts **1**.

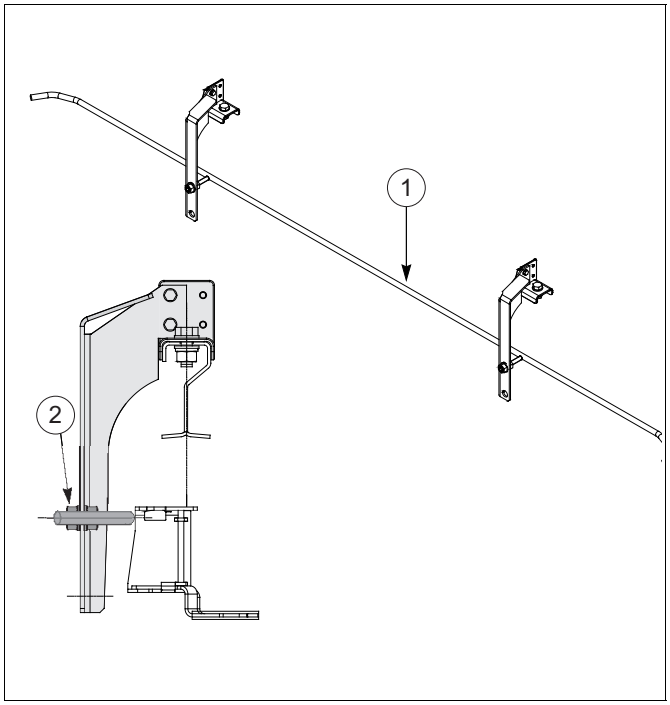


fig. 32 Setting the optional shackle guide

6.8 Setting the optional shackle guide

Set optional shackle guide **1** as follows:
1. Loosen bolts **2**.
2. Position the shackle guide in such a way that it just misses the viscera shackle.
3. Tighten bolts **2**.

See fig. 29.

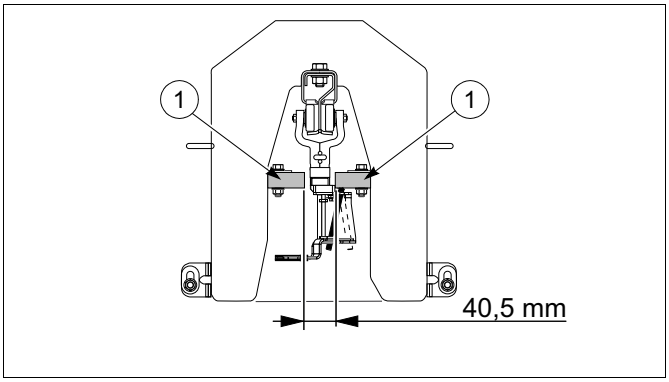


fig. 33 Adjust viscera shackle guides from viscera unloading station without turning station

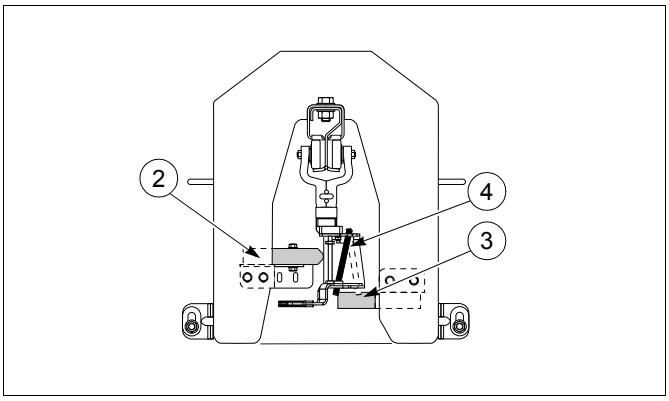


fig. 34 Adjust feed blocks

6.9 Adjust unloading station (option)

6.9.1 Adjust viscera shackle guides

Viscera shackle guides **1** guide the viscera shackle and must be adjusted symmetrically with respect to the machine.

- Adjust the width between the viscera shackle guides in accordance with fig. 33. Adjust the cutting unit symmetrically with respect to the centre line.

6.9.2 Adjust feed blocks

Infeed blocks **2** and **3** open the clamp of the viscera shackle so that the viscera pack is unloaded.

- Adjust the feed block **2** so that the viscera shackle is kept in position during the opening of the clamp.
- Adjust feed block **3** so that fixing pin **4** of the viscera shackle is pressed fully forwards so that the clamp is opened.

See fig. 34.

7 OPERATION

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

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

NOTE
Read this prior to putting the machine into operation.
The machine is NOT driven by the overhead conveyor and is switched on and off INDEPENDENTLY of the overhead conveyor.

7.1 Emergency stop

NOTE
Only use the emergency stop in an emergency situation.

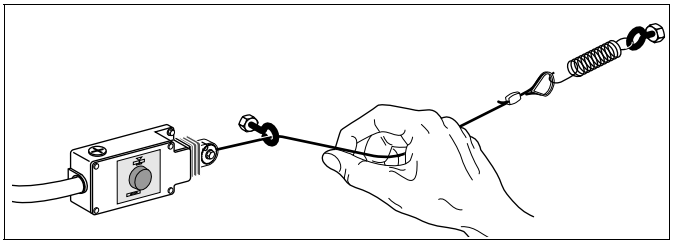


fig. 35 Emergency stop cord

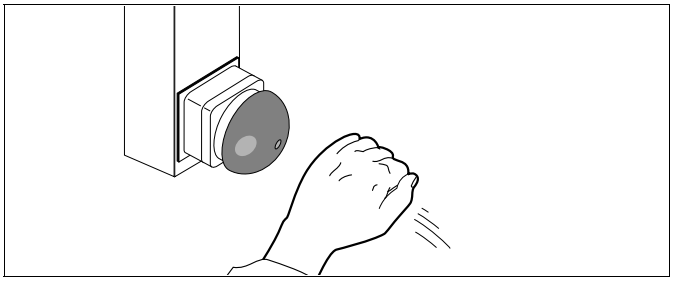


fig. 36 Emergency stop cord

In an emergency you must:
- pull the emergency stop cord.
- press the emergency stop button.

See fig. 35 and fig. 36.

When the emergency stop has been operated the machine stops. All electrical connections to the machine will be switched off.

Resolve the emergency situation as follows:
1. Have the emergency situation resolved by an authorised person.

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. Release the emergency stop and set it once again. See the User's Manual "Emergency Stop Provisions".
3. Proceed with treating the products. See paragraph 7.2 Starting/stopping the machine.

7.2 Starting/stopping the machine

7.2.1 Starting the machine

Put the machine into operation as follows:

1. Check if the strips in the rollers have not been damaged. See paragraph 9.2 Installing strips in rollers.
2. Close the protection covers around the rollers. See paragraph 7.4 Open/close protection covers.
3. Check the setting and the sharpness of the blade. See paragraph 6.6 Adjust cutting unit.
4. Check the safety provisions. See paragraph 4.4 Safety provisions.
5. Start the vacuum installation. See the User's Manual "PGI Vacuum Installation".

MORTAL DANGER
Warn everyone in the vicinity before the machine is started again.

6. Put on/off switches in the “ON” position.
7. Start the overhead conveyor. See the User´s Manual "Overhead Conveyor".

7.2.2 Stopping the machine

Shut the machine down as follows:

1. Stop the overhead conveyor. See the User’s Manual "Overhead Conveyor".
2. Put on/off switches in the “OFF” position.
3. Stop the vacuum installation. See the User's Manual "PGI Vacuum Installation".
4. Clean the machine. See paragraph 8.1 Clean after production.

7.3 Switch the unload station on and off (option)

If the unloading station is used, then the viscera pack is unloaded before treatment and carried away by the collecting duct.
The unloading station has one adjustable feed block **1**.

Adjust the feed block as follows:
1. Loosen knob **2** a number of turns.
2. Put the guide in:
   position **A** for unloading the products.
   position **B** for not unloading the products.
3. Tighten the knob again.

See fig. 37.

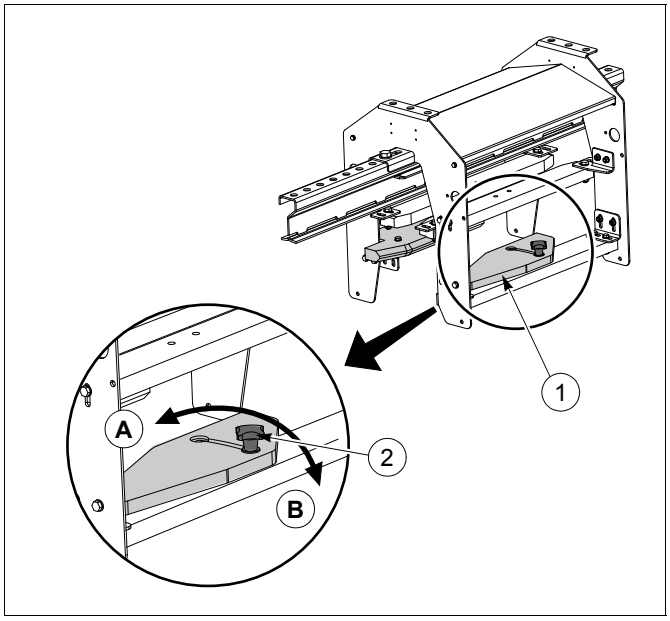


fig. 37 Switch the unload station on and off

7.4 Open/close protection covers

The protection covers around the rollers of the intestine stretcher section and the gall-bladder positioning section have a lock. Open and close/lock the protection covers using the key supplied with the machine.
See fig. 38.

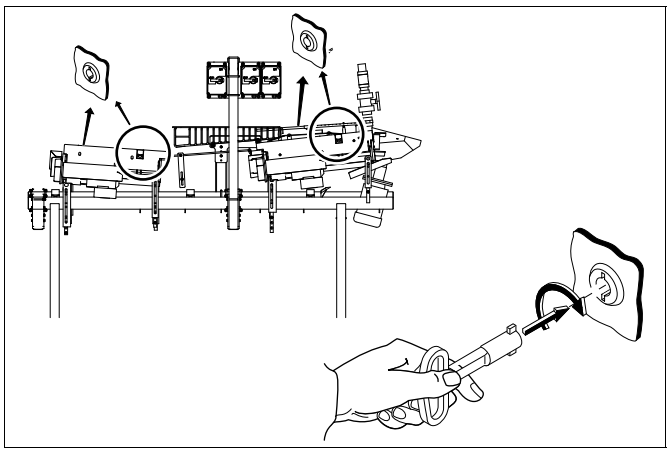


fig. 38 Protection covers with lock

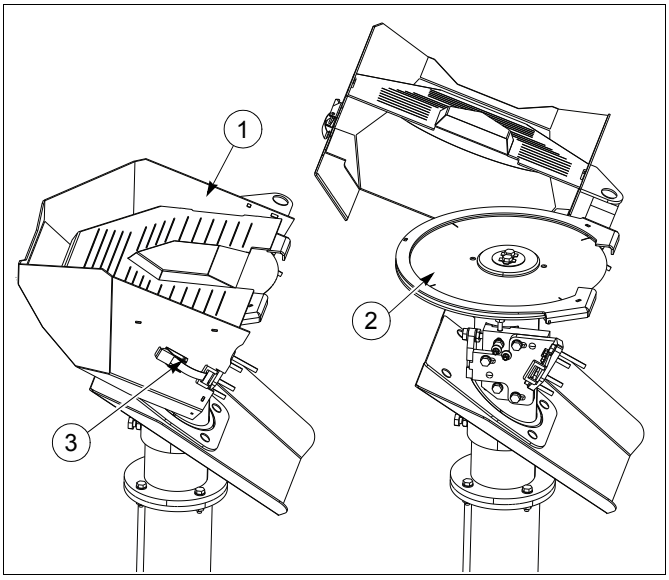


fig. 39 Open and Close the protection cover of the blade

7.5 Open and close the protection cover of the blade

The machine has protection cover **1** around blade **2**.
Open and close the cover with latch **3**.
See fig. 39.

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 after production

Carry out the cleaning instructions as follows:

1. Put on/off switches **1** in the “OFF” position.
2. Open the protection covers. See paragraph 7.4 Open/close protection covers.
3. Clean the whole machine thoroughly, see also the User’s Manual "Cleaning and Disinfecting".

See fig. 40 and fig. 41.

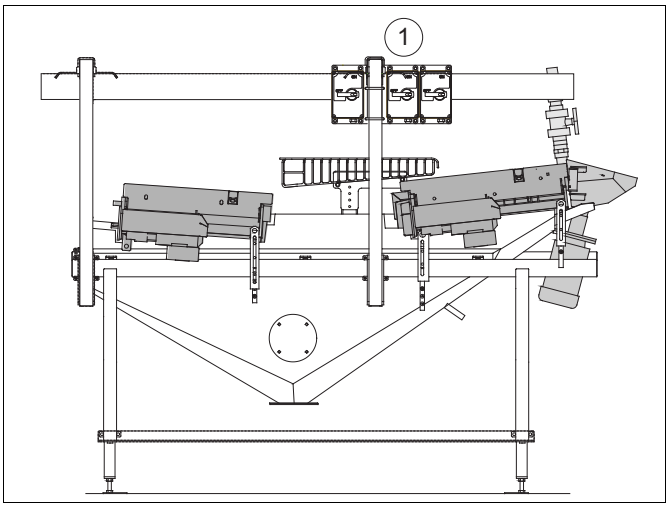


fig. 40 On/off switches

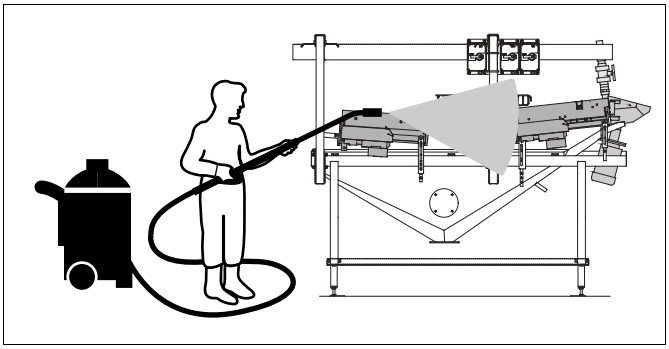


fig. 41 Clean

8.2 Unblock the vacuum line

If the vacuum line is blocked then it can be unblocked with water.

Unblock the vacuum line as follows:

1. Connect the vacuum valve **1**.
2. Open water shut-off valve **2**. The stoppage is washed out of the vacuum nozzle.
3. Close water shut-off valve **2**.
4. Open the vacuum valve **1**.

See fig. 42.

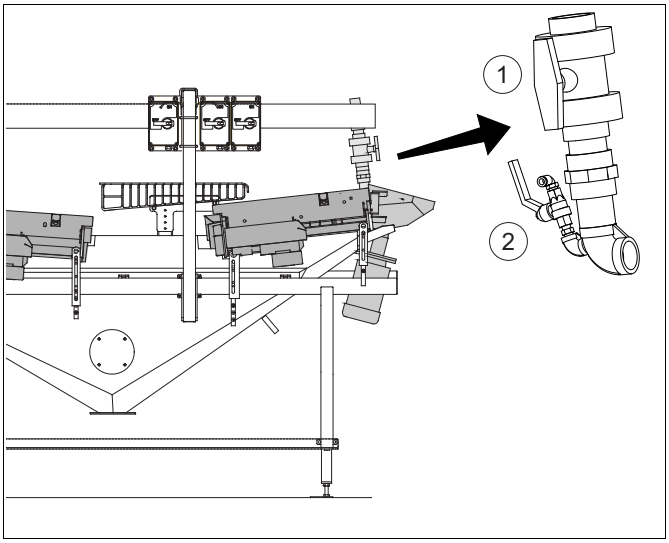


fig. 42 Unblock the vacuum line

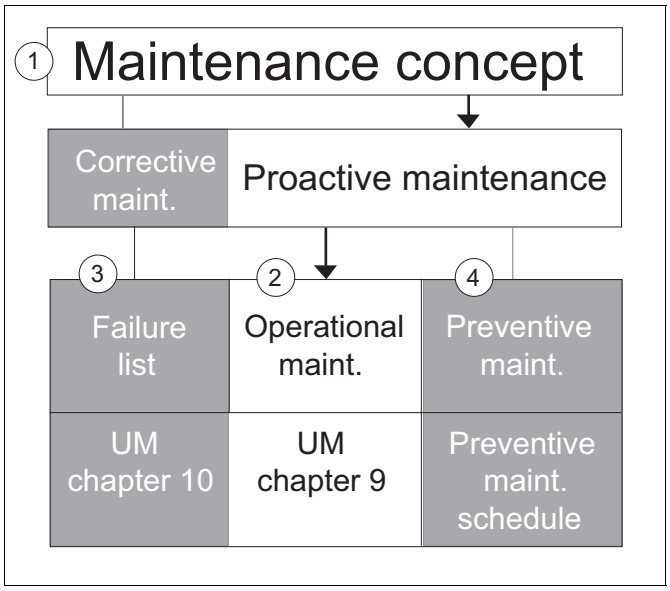


fig. 43 Maintenance concept

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. 43. 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. 43.

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. 1 Maintenance schedule

Part	Daily*	Weekly*	2-weekly*	Monthly*	3-monthly*	6-monthly*	early*	Clean Check Adjust / set up / replace Lubricate Description	Checked	Paragraph
Safety provisions								Check the functioning of the safety provisions.		4.4
								Check the presence of the safety labels.		
Rotating blade (serrated)								Check the sharpness of the blade.		9.3, 9.4
								Sharpen or replace the blade if necessary.		
Rotating blade (smooth)								Check the sharpness of the blade.		9.4
								Replace the blade if necessary.		
Strips of the rollers								Check the synthetic strips in the rollers.		9.2
								Replace the synthetic strips in the rollers if necessary.		
Whole machine								Check for wear, broken parts, smooth running of moving parts.		-
								Replace or repair if necessary.		-
Lubricate								Motor reducers.		9.5

* Maintenance frequency based on 40 hrs./week.

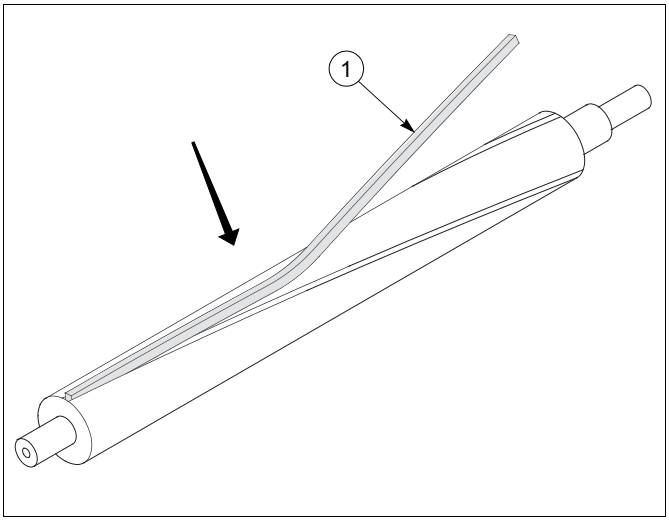


fig. 44 Installing strips in rollers

9.2 Installing strips in rollers

Replace the strips of the rollers as follows:

1. Open the protection covers of the roller. See also paragraph 7.4 Open/close protection covers.
2. Remove the old synthetic strip and carefully clean the groove.

NOTE
Do NOT use any sharp objects to install strip.

TIP
Mounting the strips is easiest when moving the strip left and right while pushing the strip in the groove.

3. Press the new synthetic strips **1** in roller openings without deforming.
   If a strip is not long enough to fill the whole groove, add another strip; the groove should be filled over its full length.

See fig. 44.

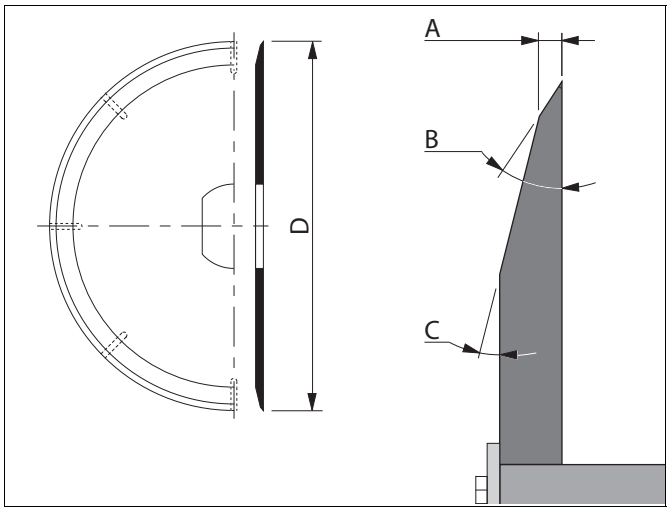


fig. 45 Grind the blade

9.3 Grind the blade

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 if dimension **D** is the same or smaller than **D minimal**.
See the table Measurement.

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

1. Disassemble the blade.
   See the paragraph Assemble/disassemble the blade.
2. Grind the blade. See fig. 45.
3. Assemble the blade.
   See the paragraph Assemble/disassemble the blade.
4. Adjust the blade height, see the paragraph Adjust cutting unit.

MEASUREMENT
A = 0.3 mm
B = 25-30°
C = 10-12°
D = 300 mm
D minimal = 280 mm

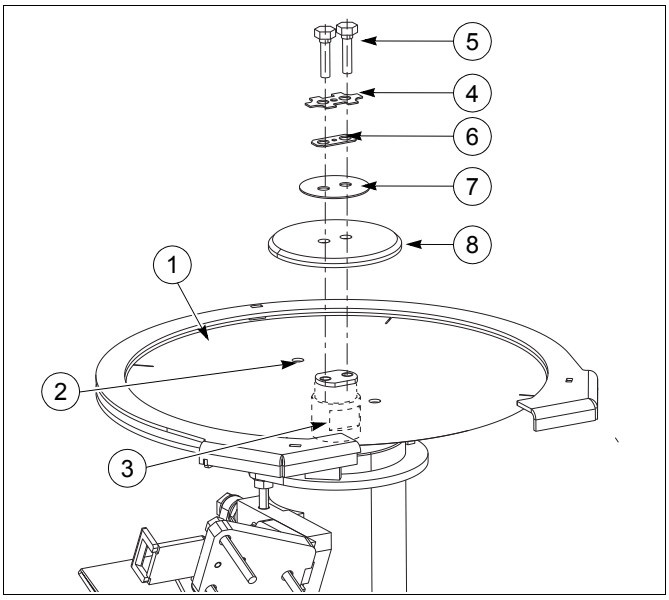


fig. 46 Assemble/disassemble the blade

9.4 Disassemble/assemble the blade

The assembly / disassembly of the blade is necessary when you:
- replace the blade
  or
- grind the blade.

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

Disassemble blade **1** as follows:
1. Open the cutting blade cover. See also paragraph 7.5 Open and close the protection cover of the blade.
2. Lock shaft **1** with:
   - a screwdriver in hole **2** of the blade
     or
   - a wrench on recess **3**.
3. Bend back the edges of lock plate **4**.
4. Remove bolts **5**.
5. Remove plate **6**.
6. Remove plate **7**.
7. Remove press-on ring **8**.
8. Remove blade **1**.

See fig. 46.

Assemble blade **1** as follows:
1. Open the cutting blade cover. See also paragraph 7.5 Open and close the protection cover of the blade.
2. Put blade **1** in position with the bevel side down.
3. Install press-on ring **8**.
4. Install plate **7**.
5. Install plate **6**.
6. Install lock plate **4**.
7. Install and tighten bolts **5**.
8. Bend the edges of the lock plate **4** to lock bolts **5**.
9. Close the cutting blade cover. See also paragraph 7.5 Open and close the protection cover of the blade.
10. Check the adjustment of the blade. See paragraph 6.6 Adjust cutting unit.

See fig. 46.

9.5 Lubrication

Lubricate these parts:

- Motor reducer **1**, see fig. 47 and tab. 2.

TAKE CARE
Never mix lubricants from different manufacturers or different types.

-

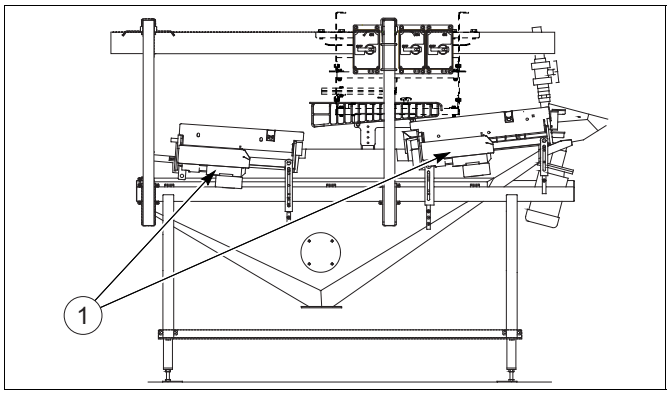


fig. 47 Lubrication

tab. 2 Lubricants

	Interval to replace the grease / the oil (a)			**Quantity**	**Specification of the grease / the oil (b)**				
	[h]	**[h]**	**[yr]**	**[l]**	**Symbol**		**Application**	**Oil type**	**Viscosity at 40 ^{0}C in mm^2/s**
1.	3000	3000		0,5			Oil, Food grade	CLP HC	220

(a) First replacement [h=hours]/replacement interval [h=hours]/max. replacement interval [yr=years].
(b) See User's Manual Fasteners, Lubricants (90897) for the explanation of the symbols and the recommended oils.

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. 3 Fault list

Problem	Possible cause	Possible solution	Para-graph
Excessive loss of viscera packs in the intestine stretcher section.	The distance between the roller strips and the guide is too close in the intestine stretcher section.	Readjust the guides in the intestine stretcher section.	6.1
The intestines are not stretched sufficiently.	The synthetic strips in the intestine stretcher roller are worn.	Replace the synthetic strips.	9.2
	The distance between the guide plate and the synthetic strip is too large.	Readjust the guides in the intestine stretcher section.	6.1

tab. 3 Fault list

Problem	Possible cause	Possible solution	Paragraph
The gall-bladder has not been sufficiently cut away.	No or insufficient vacuum.	Clean the filter in the collecting cyclone of the vacuum installation.	-
		Turn the vacuum installation on and regulate the settings. See the User's Manual "PGI Vacuum Installation".	-
		Open the vacuum shut-off valve on the PGI.	-
	Incorrect positioning of the gall-bladder.	See next fault; the gall-bladder is not properly positioned.	-
	Dull blade.	Grind or replace the blade.	9.3
	The distance between the rotating blade and the blade cover is too large.	Adjust the blade.	6.6
Incorrect positioning of the gall-bladder.	The intestines are not stretched sufficiently.	Readjust the guides in the intestine stretcher section.	6.1
	The gizzard guide does not position the viscera pack correctly.	Reset the gizzard guide.	6.4
	The synthetic strips in the gall-bladder positioning section roller are worn.	Replace the synthetic strips.	9.2
Build up of viscera packs in the intestine stretcher section.	The gizzard is caught between the guide plates because the intestine stretcher section is set too high.	Lower the intestine stretcher section height.	6.1
	The viscera packs are not hung correctly in the viscera shackles.	Adjust the timing on the viscera pack transfer section of PNT.	-
Build up of viscera packs in the gall-bladder positioning section.	The gizzard is caught between the guide plates because the gall-bladder positioning section is set too high.	Lower the gall-bladder positioning section height.	6.2
	The viscera packs are not hung correctly in the viscera shackles.	Adjust the timing on the viscera pack transfer section of PNT.	-
Excessive soiling with gall.	No or insufficient vacuum.	Clean the filter in the collecting cyclone of the vacuum installation.	-
		Turn the vacuum installation on and regulate the settings. See User's Manual "PGI vacuum installation".	-
		Open the vacuum shut-off valve on the PGI.	-
	Dull blade.	Grind or replace the blade.	9.3
	The blade has not been adjusted correctly.	Adjust the blade.	6.6

tab. 3 Fault list

Problem	**Possible cause**	**Possible solution**	**Para-graph**
Too many livers and / or hearts are sucked off.	The vacuum is too high.	Reduce the vacuum.	-
Livers and hearts are not sucked out.	Vacuum line is blocked.	Flush the vacuum line.	8.2

Appendix 1: LOGBOOK

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

Date	Carried out by	Activity

Appendix 2: SETTINGS

Note here the settings for the components for various products.

Component	Chapter	Date	Product:	Product:	Product: .....