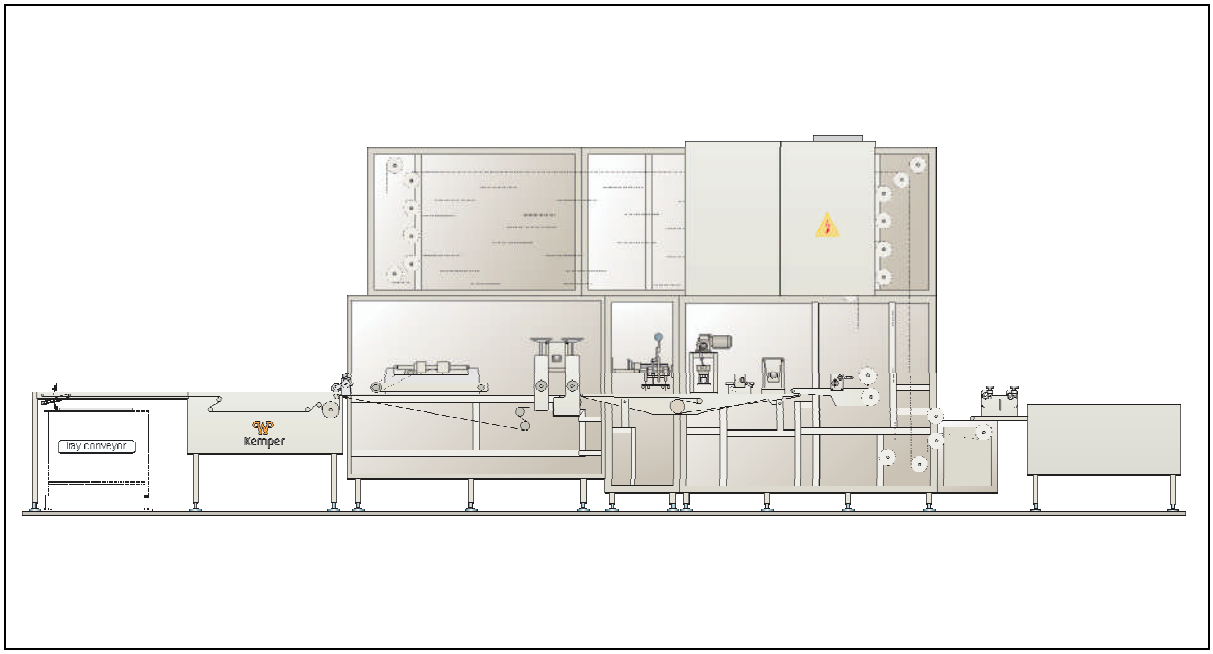
OPERATING MANUAL

(Translation of the original operating manual)



EVOLUTION LINE roll machine

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Keep for future use!

Machine type: Evolution Line

Machine number:

Edition: April 2011

Contents

1 Introduction

This operating manual provides all the information you need to run the EVOLUTION LINE roll machine (called line from now on).

After reading the operating manual you will be able to:

- operate the line safely,
- carry out maintenance according to the rules and
- take the necessary action in the event of a fault.

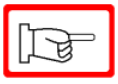
All persons working with the line must follow this operating manual (e.g. machine operators, supervisors, mechanics, electricians). This applies in particular to the safety information given in this chapter.

It is also necessary to obey the accident prevention rules in force at the point of use.

This operating manual must always be kept at the line's point of use.

1.1 Notational conventions

Passages of this user manual that require special attention or are a direct danger warning are shown as follows:



Note!

This symbol indicates information about a function or setting or that care is required.

Attention!

This symbol indicates potential damage to line components and how to behave at the line.

Hazard!

This symbol indicates a particular hazard to health from the line and ways of averting it.

Warning – electrical hazard!

This symbol indicates an electrical hazard.
Work on electrical equipment should only be carried out by qualified and authorized electrical specialists.

The following conventions are also used:

– Text following this mark represents an item in a list.

- Text following this mark describes actions to be performed in the specified order.

' ' Text in single quotation marks indicates screens on the touch panel.

" " Text in double quotation marks refers to other chapters or sections in this document.

ON Text in small capitals indicates an operator control pushbutton/switch or a button / input box on the touch panel.

1.2 Symbols used on the line

Warning – electrical hazard!

This symbol indicates an electrical hazard.

1.3 Safety information

Before working with the line you must carefully read the safety information below and then follow it. It is intended to protect you, averting hazards and/or injuries.

1.3.1 General safety information

- Do not exceed the technical performance and capacity limits.
- Keep all safety and danger signs on the line clean and renew them if necessary.
- The machine is only allowed to be operated by trained personnel.
- If the line malfunctions, take it out of operation immediately. Have faults rectified by appropriately trained personnel.
- Follow the procedures described in this operating manual to switch the machine on and off and watch the control indicators.
- Do not start the line if other persons are in the danger zone.
- Always keep the operating manual at the line's point of use.

1.3.2 Personal protective equipment

Wear the necessary personal protective equipment, e.g. safety shoes, whenever working at the line.
These must be provided by the plant operator and must satisfy the requirements.
It is also necessary to obey national rules and the plant operator's internal instructions.

1.3.3 Safety devices and guards

- Before switching the line on always make sure that all safety devices and guards have been fitted properly and are functional.
- The line's sound absorbers (panelling) must be attached during operation.
- Guards are only allowed to be removed
  - after the machine has come to a standstill and
  - after it has been prevented from being turned on again unexpectedly (e.g. by locking the locally installed switch).
- When sub-components are delivered, the plant operator must ensure that the guards are fitted according to the rules.
- You must not bridge or remove safety devices and guards or defeat them in any other way.

1.3.4 Electric power hazards

- Always disconnect the power supply before carrying out work at the line (e.g. via the main switch or a local switch installed by the plant operator) and ensure it cannot be reconnected.
- Work in the electrical areas of the line should only be carried by a qualified electrical specialist – e.g. plant electrician.
- Regularly check the line's electrical equipment for defects such as loose connections or scorched cables. Have any defects rectified immediately.
- Have the electrical installations and fixed electrical equipment tested by an electrical specialist every 4 years at least.
- Have non-fixed electrical equipment and extension and device cabling with plugs and sockets tested by an electrical specialist, or by a trained person using suitable inspection facilities, every 6 months at least.

  Equipment is non-fixed if, by its nature and in its normal use, it is moved while under power. This includes, for example, electric floor cleaners.
- Alterations made after testing must comply with DIN EN 60204-1.
- Only use original fuses.

1.3.5 Pneumatic power hazards

- Work on the pneumatic equipment should only be carried out by personnel with specific knowledge of and experience with pneumatics.
- Before working on the equipment, switch it off and prevent it from being reconnected.
- Before starting repairs, depressurize the line sections that need to be opened and the pressure pipes.
- Regularly inspect all pneumatic pipes, hoses and screw fittings for leaks and externally recognizable damage.
- Carefully detach the hoses. The release of compressed air could whirl up dust.

1.3.6 Flour dust and sugar hazards

- To avoid flour dust hazards, take operational measures to reduce the build-up of flour dust as much as possible.
- Make sure that a flour dust concentration of 10 mg/m^3 of air in an 8-hour shift is not exceeded.
- Wear fine-dust masks.
- Remove flour dust deposits regularly.
- Smoking and naked flames are prohibited in flour storage rooms and flour silos.
- Flour silo vehicles must be electrically earthed during unloading in order to avoid electrostatic charging.
- Oak and beech sawdust must not be used.
- Keep contact with flour and dough to the bare minimum.
- Frequent washing of your hands and drying with a clean towel helps prevent baker's eczema.

1.3.7 Information for emergencies

- In emergencies always press the EMERGENCY STOP button (red mushroom button on a yellow background).
- Extinguish any burning oil with CO_2 or powder extinguisher.
- Use a CO_2 extinguisher to put out any fire in the electric control system.
- Always notify an emergency doctor in case of doubt.

1.3.8 Training level of personnel

- Everyone who works at the line must have read the operating manual and be aware of and follow its content.
- The plant manager is obliged to instruct personnel on the basis of the operating manual and to oblige them to obey the various rules and instructions.
- Auxiliary personnel and trainees are only allowed to work on the line under the supervision of technical personnel.
- The responsibilities of personnel for installation, commissioning, operating, maintenance and repair are to be clearly defined.

1.4 Residual risks

The line has a state-of-the-art design and complies with recognized safety rules and regulations. But using it can still endanger life and limb of users or third parties or result in damage to the actual line or other objects.

The line must only be used

- as intended (see section "1.5 Intended use") and
- in a perfectly safe state.

Any faults that could impair safety must be rectified immediately.

1.5 Intended use

Intended use – as set out by the applicable standard – is that use for which the technical product is suited according to information provided by the manufacturer, including information provided for advertising purposes.
In case of doubt it is that use which is deemed to be common practice due to design, configuration and function of the technical product.
To keep the line functional, it is only allowed to be used "as intended" according to DIN 31000 / VDE 0100.

This Kemper line is used to produce dough pieces for buns and cut rolls in readiness for further processing by downstream lines. It is intended exclusively for use in the food industry.

Any other use, or use for other tasks, is not as intended.

Emil Kemper GmbH is not liable for any damage arising from unintended use. Any unintended use is at the plant operator’s sole risk.

Intended use also includes:

- Heeding all information from the operating manual
- Satisfying the inspection and maintenance conditions
- Using operating material and auxiliary resources in compliance with applicable safety rules
- Satisfying the operating and service conditions,
- Taking foreseeable operating errors into account (e. g. bridging the safety switch).

1.6 Structural alterations to the line

- Construction and acceptance at the plant are based on the German Equipment and Product Safety Act (GPSG).
- No alterations, additions or conversions are allowed to be made to the line without prior written permission from Emil Kemper GmbH.

  Any breach of this causes the line to lose its EC conformity. Such a breach absolves the manufacturer of the line from warranty.

  This also applies to welding work on load-bearing parts.
- Any parts not in a perfect state must be replaced immediately.
- Use original spare parts only. Only they satisfy the technical requirements.

1.7 Cleaning and waste disposal

- Materials used to clean the line must be handled and disposed of properly. National rules must be obeyed, especially when working on lubrication systems and devices and cleaning with solvents.
- All parts of the electrical installations must be protected from moisture, humidity and dust.
- Before all cleaning work on the line shut off electrical power to the line and prevent the main switch from being switched on again unexpectedly.
- Cleaning during operation is strictly prohibited. There is an increased risk of injury if this is done.
- The cleaning personnel must have read and understood the operating manual before cleaning.
- The safety information and cleaning intervals must be followed (see chapter "8 Cleaning and maintenance").

1.8 Obligations of the plant operator

The plant operator undertakes to only let personnel work at the line who

- are familar with the basic rules concerning safety at work and accident prevention, have been instructed in handling the line,
- have read and understood this operating manual (especially the safety information) and have confirmed this with their signatures.

The safety awareness of personnel will be checked at regular intervals.

1.9 Obligations of personnel

Before starting work at the line all persons designated to do so undertake to

- obey the basic safety and accident prevention rules,
- read the safety information and warnings in this operating manual and confirm their understanding of the issues with their signatures.

1.10 Warranty and liability

Solely our general terms and conditions of delivery and service apply to warranty and liability. These are available to the buyer / plant operator upon conclusion of the contract at the latest.
Warranty and liability claims for personal injury and material damage are, in particular, excluded if they are attributable to one or more of the following causes:

- Unintended or inappropriate use of the line
- Inappropriate installation, commissioning, operating or maintenance of the line
- Operation of the line with defective safety devices or with improperly fitted or non-functional safety devices and guards
- Failure to heed information in the operating manual regarding installation, commissioning, operation and maintenance of the line
- Structural alterations to the line
  Conversions or other alterations to the line are not allowed to be made without prior written permission from Emil Kemper GmbH.
  Any breach of this causes the line to lose its EC conformity and its authorisation to operate.
- Use of spare parts that do not satisfy the technically established requirements
- Improperly executed repairs
- Disasters, effects of extraneous elements and force majeure

2 Transport and storage

The line is delivered to the customer by Emil Kemper GmbH or by an authorised forwarding agent or by other transport companies.

2.1 Inspection by the recipient on handover

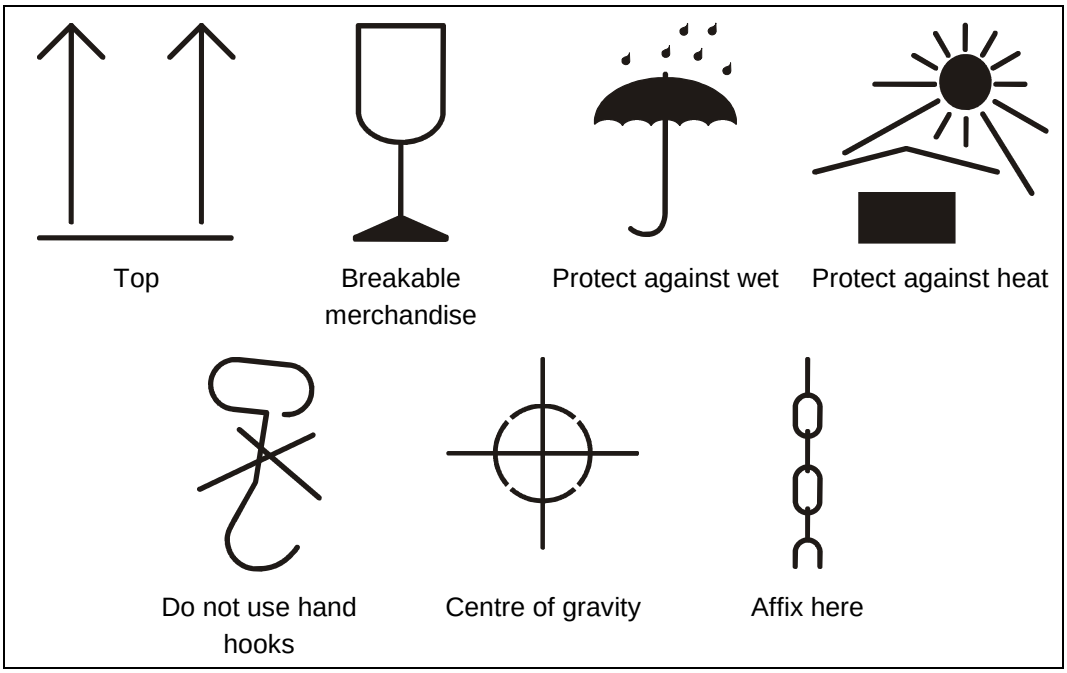
The line must be inspected for transport damage when it arrives at the customer's premises.

- Immediately report any transport damage to the transporting organisation.

2.2 Packaging

The method of transport partly determines the type of packaging. Unless a special contractual agreement exists the packaging will satisfy the HPE packaging guidelines, which are established by the Federal Wood Products, Pallets and Export Packaging Association and by the Society of German Machine-Building Establishments.

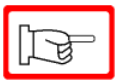
- Heed the pictograms on the packaging:



Packaging material

The packaging used for transport and protection of the line consists primarily of the following materials, which are suited to recycling:

- Cardboard including corrugated
- Styrofoam, CFC-free
- Polyethylene foil (transparent)
- Pressed chipboard without phenolic resin
- Wood, untreated



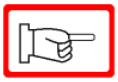
Note!

Do not put the packaging in the normal waste but find out from your community's waste disposal centre where these packaging materials should be handed in.

2.3 Transport information

Special care must be taken when transporting this line in order to avoid damage from extraneous elements or from careless loading and unloading.

The line may be delivered on a pallet, depending on the type and duration of transport. In this case, there are transport restraints.



Note!

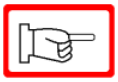
Please refer to the separate line documentation provided by Emil Kemper GmbH to see more information about this section.

Attention!

To load and unload the line modules or pallets, lift them at the marked points only.
The load capacity of the lifting equipment (e.g. forklift) must at least match the weight of the line module with its packaging (see separate line documentation from Emil Kemper GmbH).
When moving the pallets and line modules within the plant, fasten them to prevent toppling (e.g. with belts).

2.4 Temporary storage

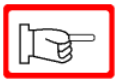
If the line is not installed immediately after delivery, it must be carefully stored in a protected place. The line must be temporarily stored so that no dust and no moisture can enter.



Note!

No liability will be accepted for damage arising in the event of incorrect storage.

3 Installation



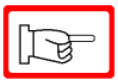
Note!

To install the line, follow the safety information in chapter "1 Introduction".

3.1 Erecting the line

The line is erected by Emil Kemper GmbH according to the line documentation that is delivered in advance.

The dimensions, space requirements and weights can be seen there.



Note!

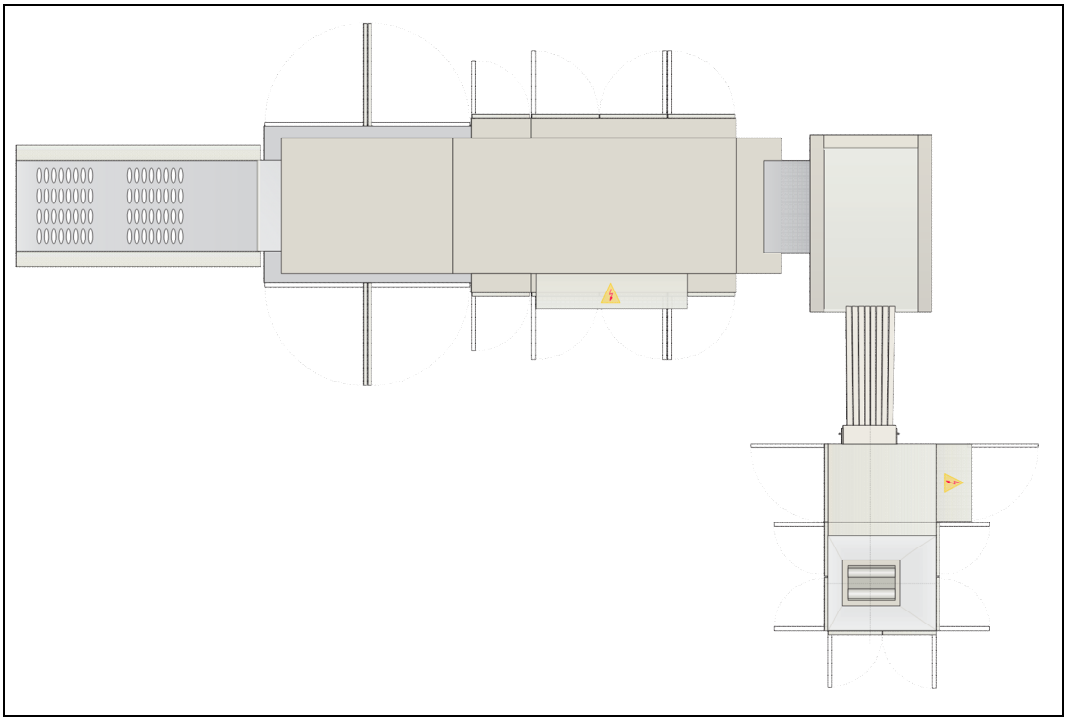
To ensure correct installation, and thus the functional reliability and precision of the line, it is essential for any employees made available by the plant operator to obey the instructions of Emil Kemper GmbH.

3.2 Choice of installation site

3.2.1 Necessary operating and maintenance space

Note!

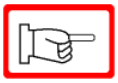
When choosing the installation site, make sure there is enough operating and maintenance space. The space at the line should not be less than the dimensions given in the illustration below.



3.2.2 Floor requirements

The floor must meet the following requirements to ensure smooth operation:

- Make sure the floor is level.
- Check the floor's load capacity. Please refer to the layout provided by Emil Kemper GmbH to see the weight of the line.

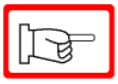


Note!

Please refer to the layout provided by Emil Kemper GmbH to see more information about this section.

3.3 Erecting the line

The line may have been transported on a pallet. In this case the line modules are secured on the pallet with belts.



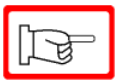
Note!

Please refer to the layout provided by Emil Kemper GmbH to see more information about this section.

3.4 Electrical characteristics of the supply network

Warning – electrical hazard!

Electrical cabling and fusing are only allowed to be fitted by a qualified electrical specialist. It is necessary to obey VDE regulations and local accident prevention regulations.



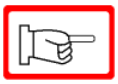
Note!

Please refer to the separate line documentation provided by Emil Kemper GmbH to see more information about this section.

3.4.1 Preparations

The customer is responsible for supplying the electric mains cable and other electrical equipment in the building.

The electrical characteristics of the supply network must match the values shown on the rating plates of the assemblies and line modules (see section "3.4.2 Rating plate").



Note!

The line can be connected to a 300 mA residual-current-operated circuit breaker.
We recommend a residual-current-operated circuit breaker that is sensitive to all types of current in order to avoid mistriggers.
We strongly recommend the installation of a lockable local switch. Such a local switch prevents the line from being switched on unexpectedly during cleaning, fault or repair work and allows the line to be disconnected from the mains if necessary.

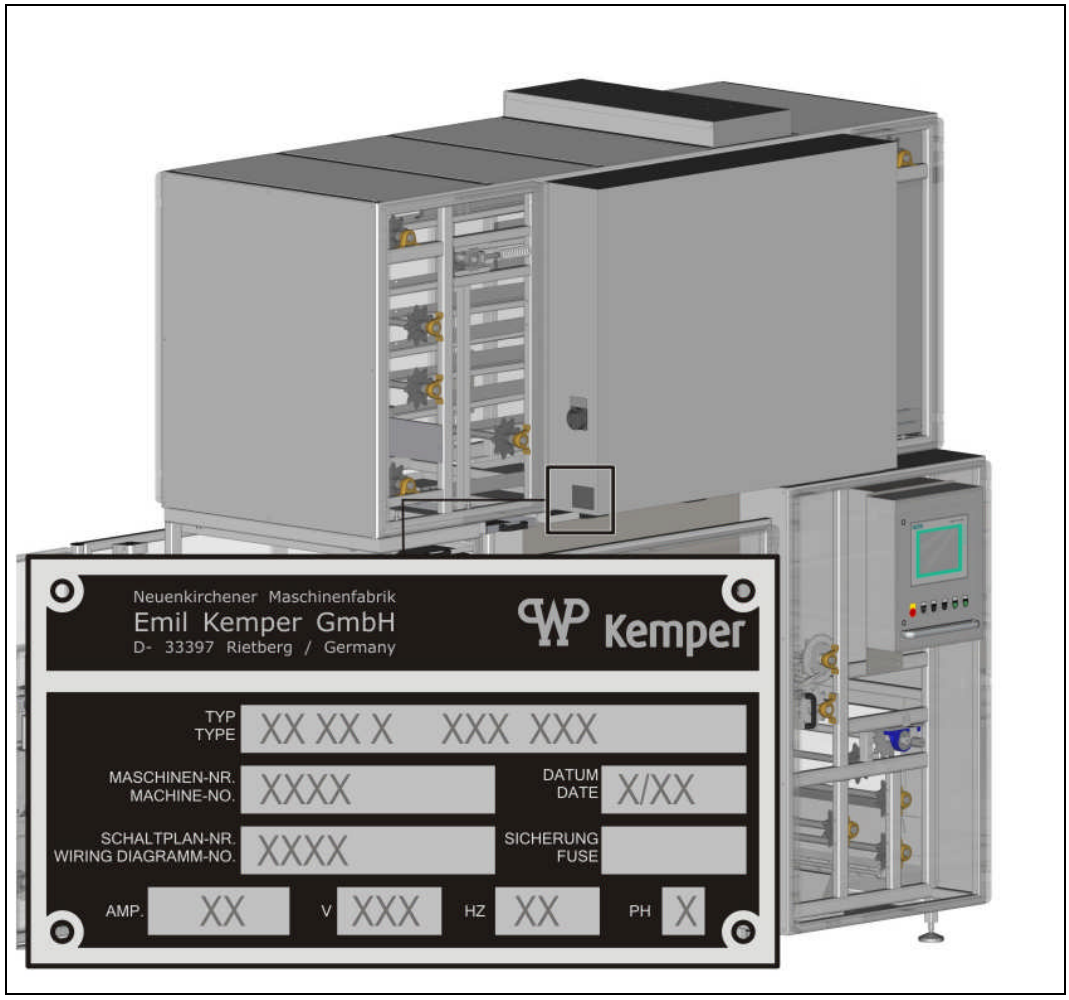
3.4.2 Rating plate

The following sections specify the position of rating plates on the assemblies and line modules.

3.4.2.1 Line

> ***Note!***
>
> *The illustration below contains optional assemblies and line modules which may not be included in the line's scope of delivery.*

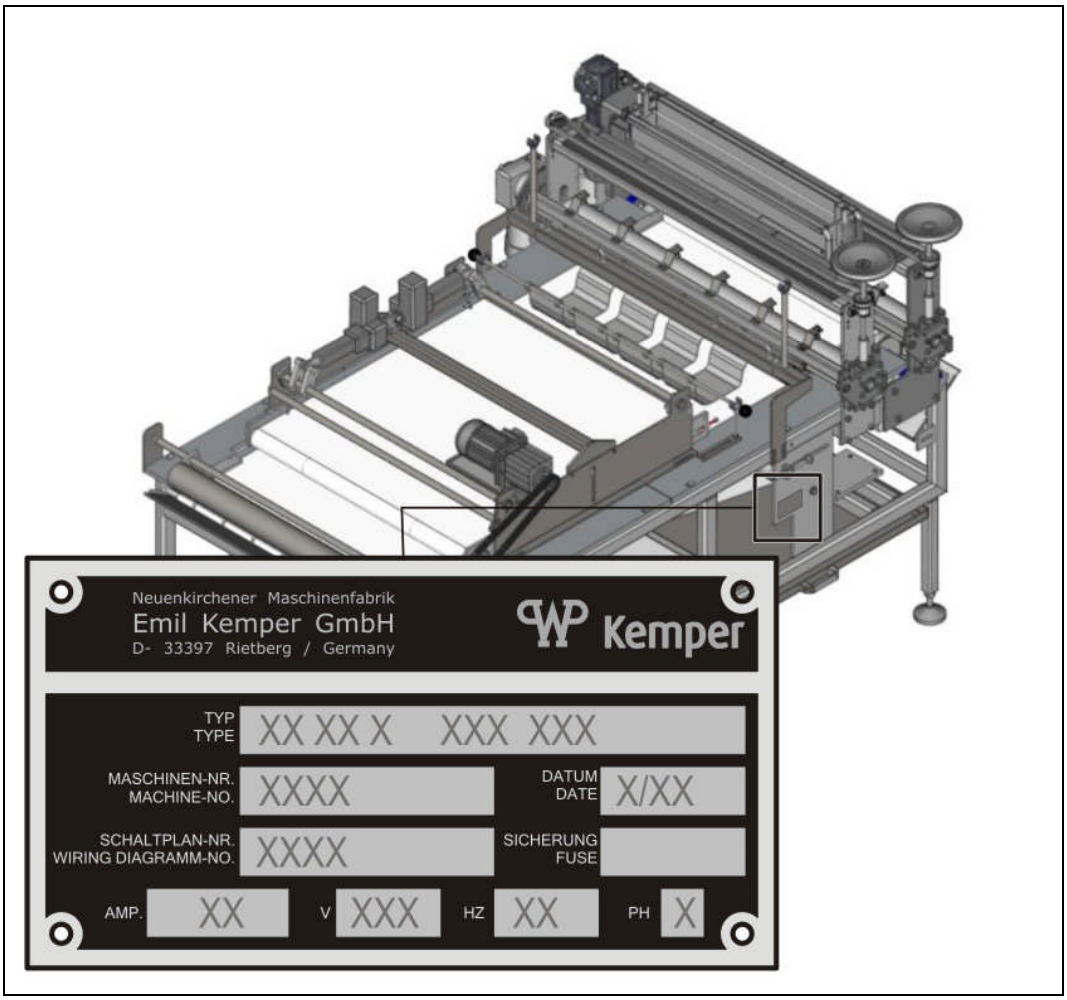
- Make sure that existing electrical equipment corresponds to the values shown on the rating plate (see illustration below).



3.4.2.2 Roll-out station

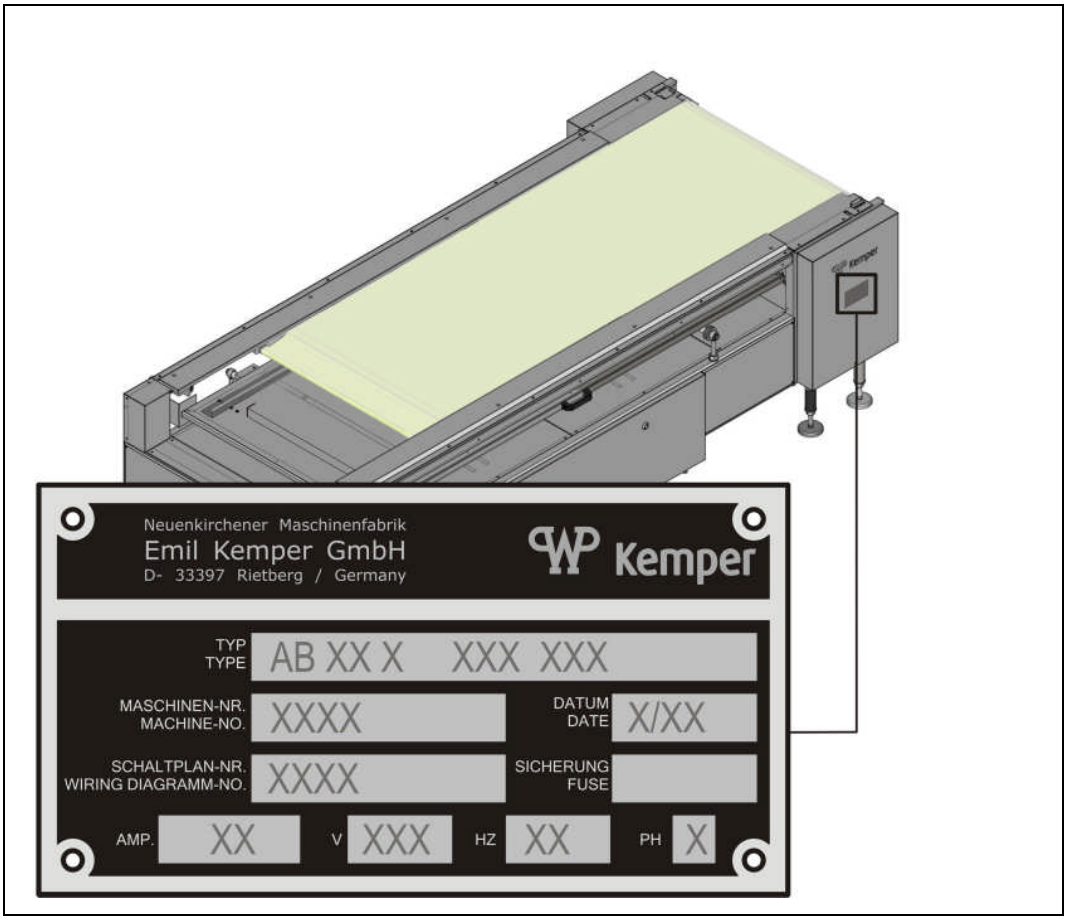
Configuration of the assembly Roll-out station in the line is displayed in chapter "5 Overview of the line".

- Make sure that existing electrical equipment corresponds to the values shown on the rating plate (see illustration below).



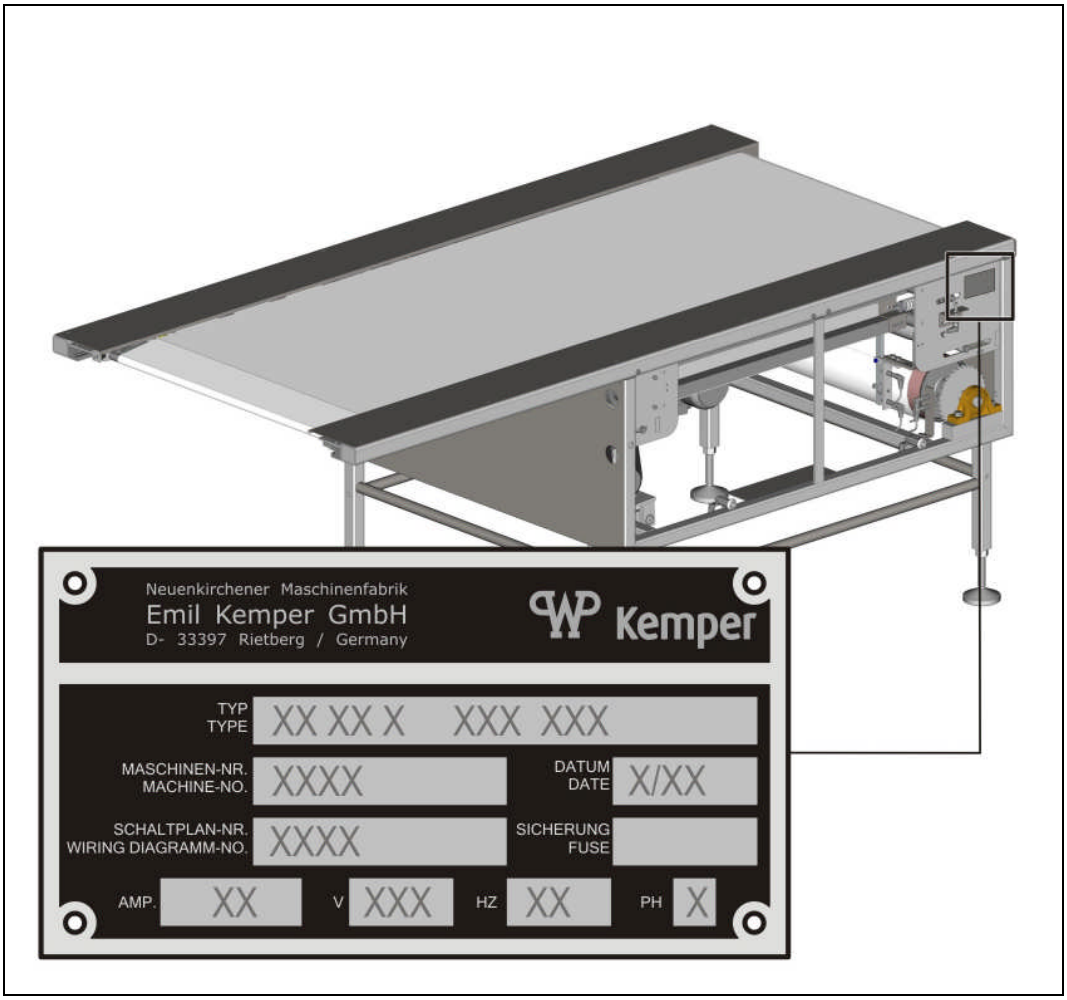
3.4.2.3 Reciprocating belt

- Make sure that existing electrical equipment corresponds to the values shown on the rating plate (see illustration below).



3.4.2.4 Reciprocating belt AB60.1

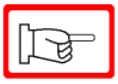
- Make sure that existing electrical equipment corresponds to the values shown on the rating plate (see illustration below).



4 Commissioning

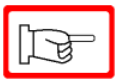
It is important to use trained Kemper or Kemper-authorised personnel to commission the line for various reasons. This should not only be done for warranty reasons as the process includes steps to

- check the line,
- present the line according to its intended use,
- determine optimum handling,
- instruct operating personnel and
- pass on additional advice for maintenance and servicing.



Note!

When the line is commissioned by Emil Kemper GmbH, the demonstrator will give you additional information about setting the line.
The operator can make other fine settings while the line is in operation to cope with fluctuating dough properties (see chapter "7 Operation").



Note!

Please refer to the separate line documentation provided by Emil Kemper GmbH to see more information about this section.

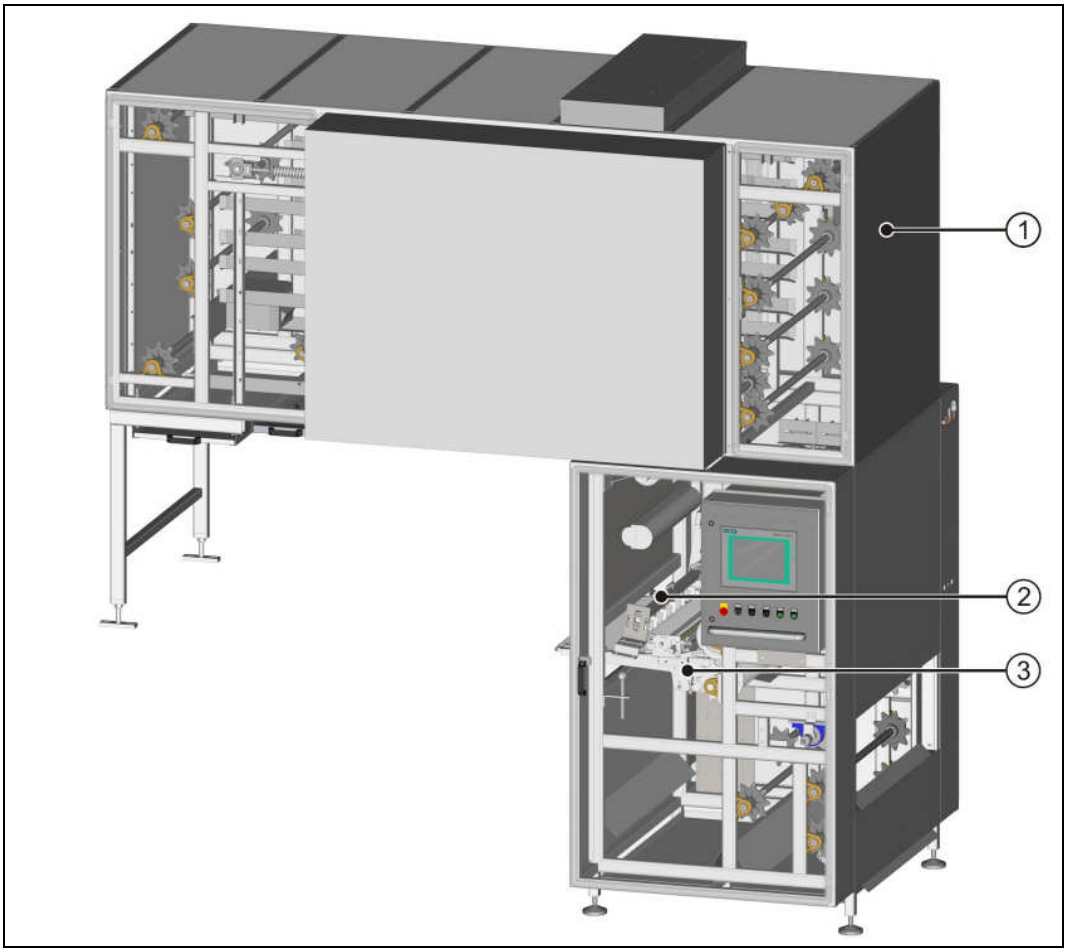
5 Overview of the line

This chapter presents the assemblies with their modules as well as the line's function elements and operator controls.

> ***Note!***
>
> *For the head machine, details about this chapter can be found in the separate user manual of the head machine.*

5.1.1 Overview of the basic module assembly

The following illustration displays configuration of the assembly modules
Basic module on the left in running direction:



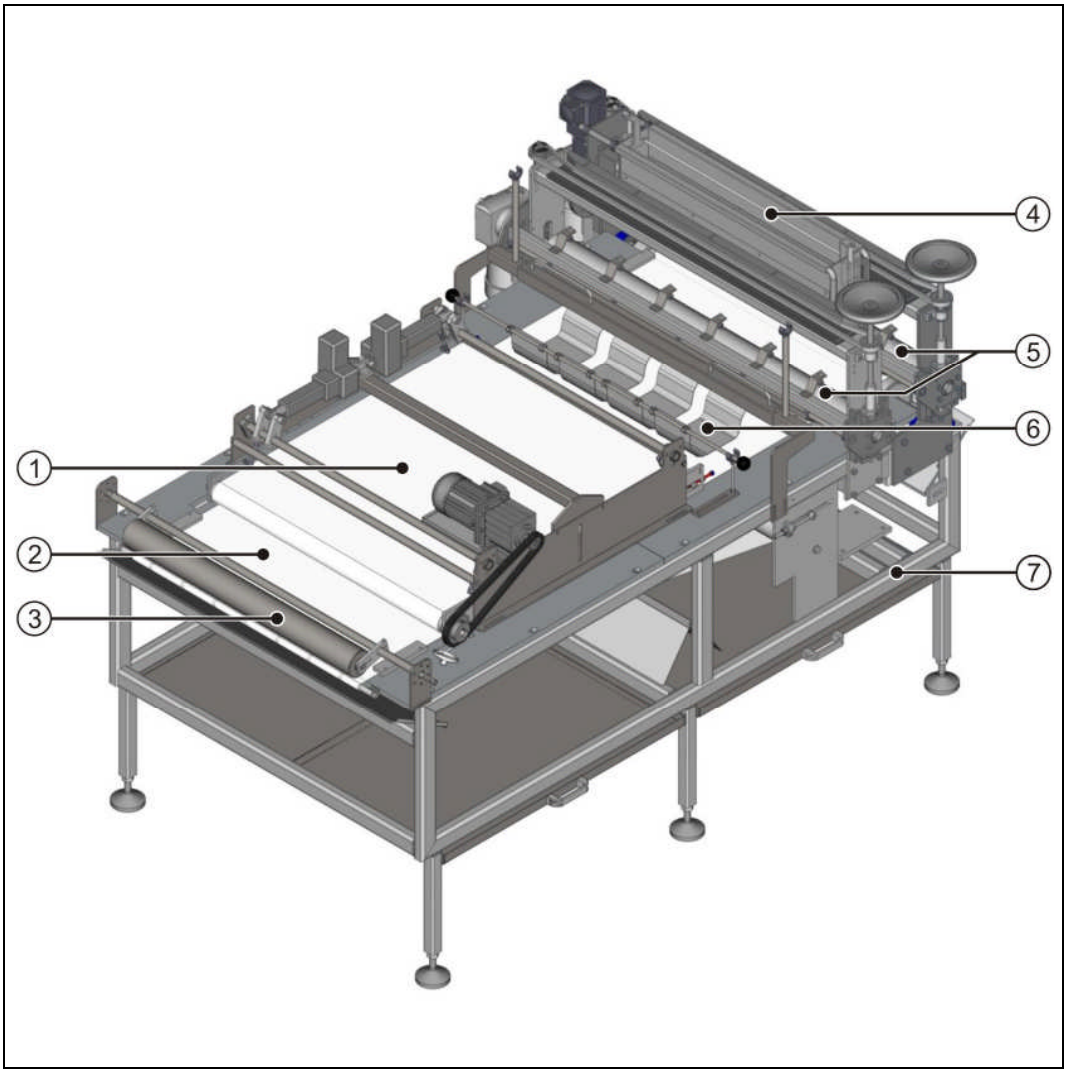
1 Drive frame and intermediate proofer
2 Centring unit (optional)
3 Discharge belt with pressure roller

5.1.2 Overview of the roll-out station assembly

Note!

The illustration below contains optional line modules which may not be included in the line's scope of delivery.

The following illustration displays configuration of the line modules and components of the roll-out station assembly on the left in running direction:



1 Long-moulding belt
2 Conveyor belt
3 Alignment and pressure roller (timing roller)
4 Flour duster with flour break-up shaft (optional)
5 Roll-out roller (optional)
6 Folding mats (optional)
7 Frame with collecting trays

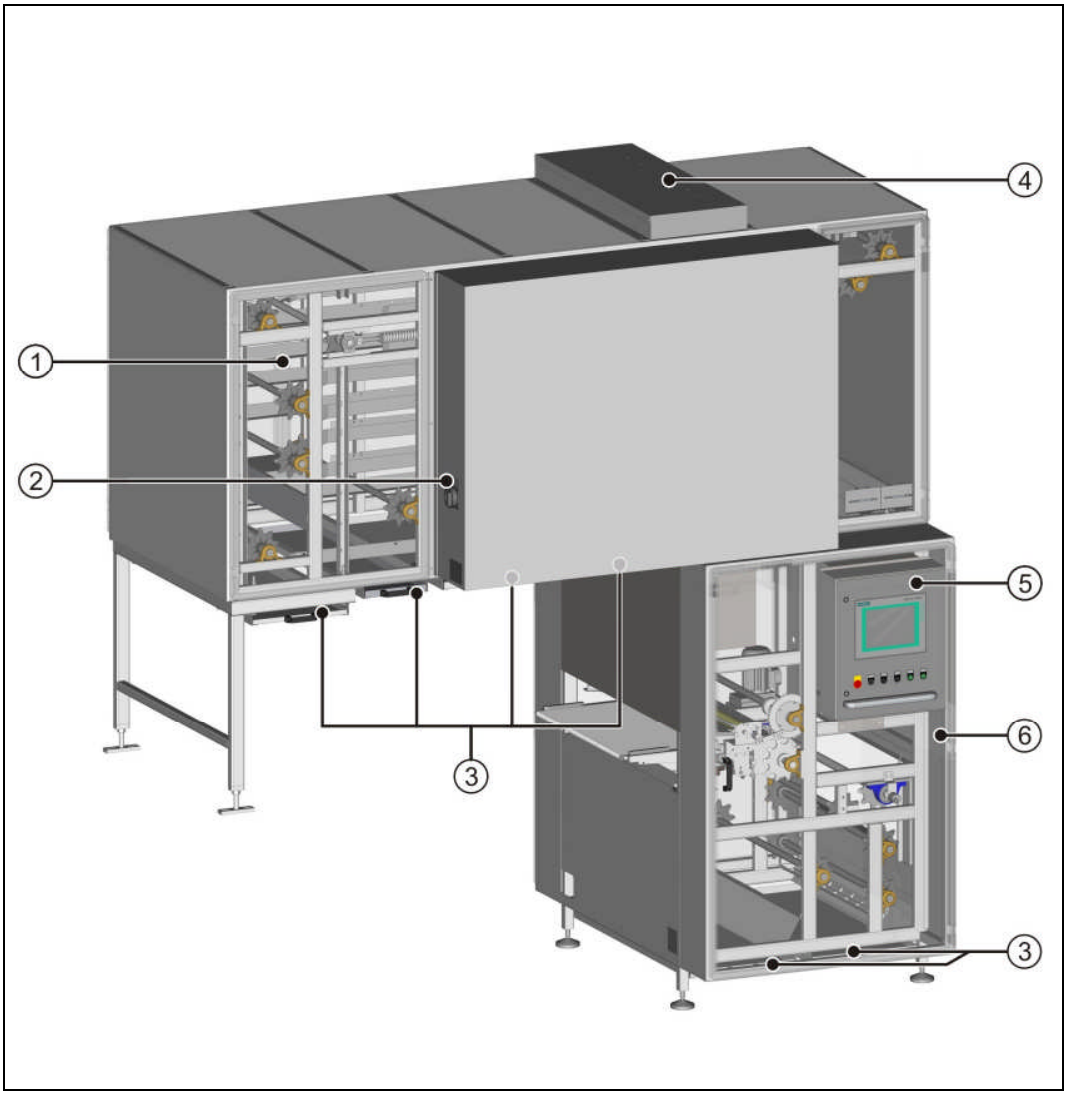
5.2 Overview of the lines modules' function elements

The sections below give an overview of the line modules' function elements.

5.2.1 Function elements of the basic module

Note!

The illustration below contains optional line modules which may not be included in the line's scope of delivery.



1 Intermediate proofer
2 Switchbox with main switch
3 Collecting trays
4 Hygiene station
5 Touch panel
6 Drive frame

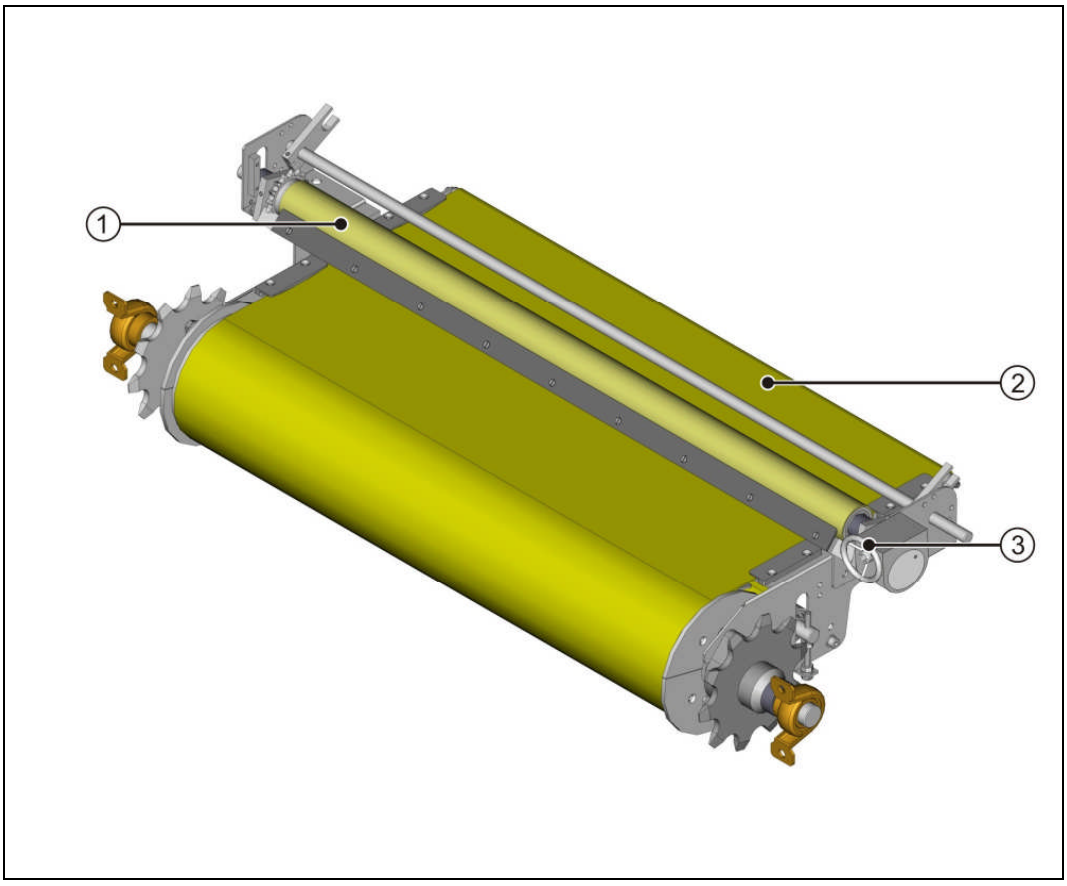
5.2.2 Function elements of the discharge belt 1

Note!

The illustration of the discharge belt includes the pressure roller line module.

Note!

The illustration of the pressure roller line module resembles the version that is delivered. The version that is delivered may include a hand guard and a flexible shaft to move the adjusting wheel to operate the adjustment mechanism, which are not shown here.



1 Pressure roller (line module)
2 Belt
3 Adjustment mechanism (for the pressure roller height)

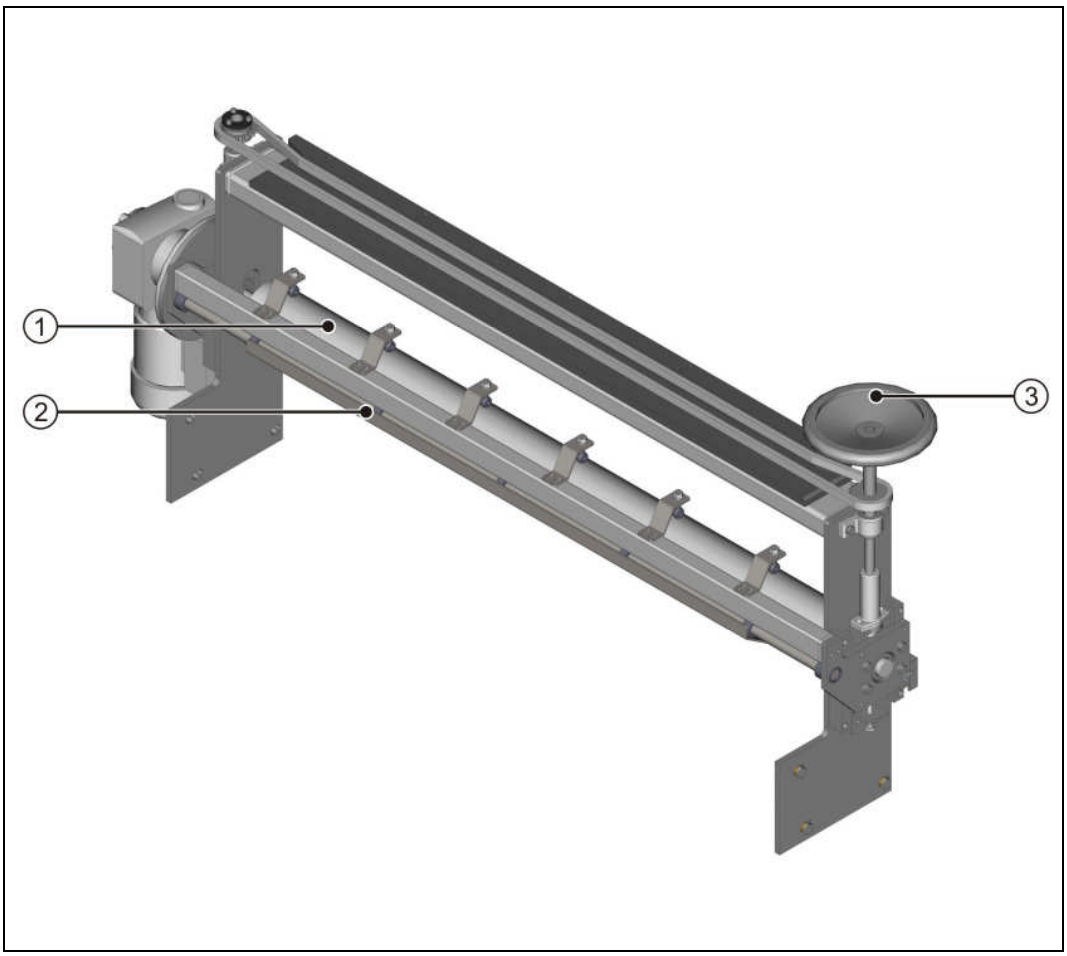
5.2.3 Function elements of the pressure roller

Note!

The illustration of the pressure roller line module resembles the version that is delivered. The version that is delivered may include a hand guard and a flexible shaft to move the adjusting wheel to operate the adjustment mechanism, which are not shown here.

1 Holder
2 Pressure roller
3 Pressure roller adjustment mechanism

5.2.4 Function elements of the roll-out roller

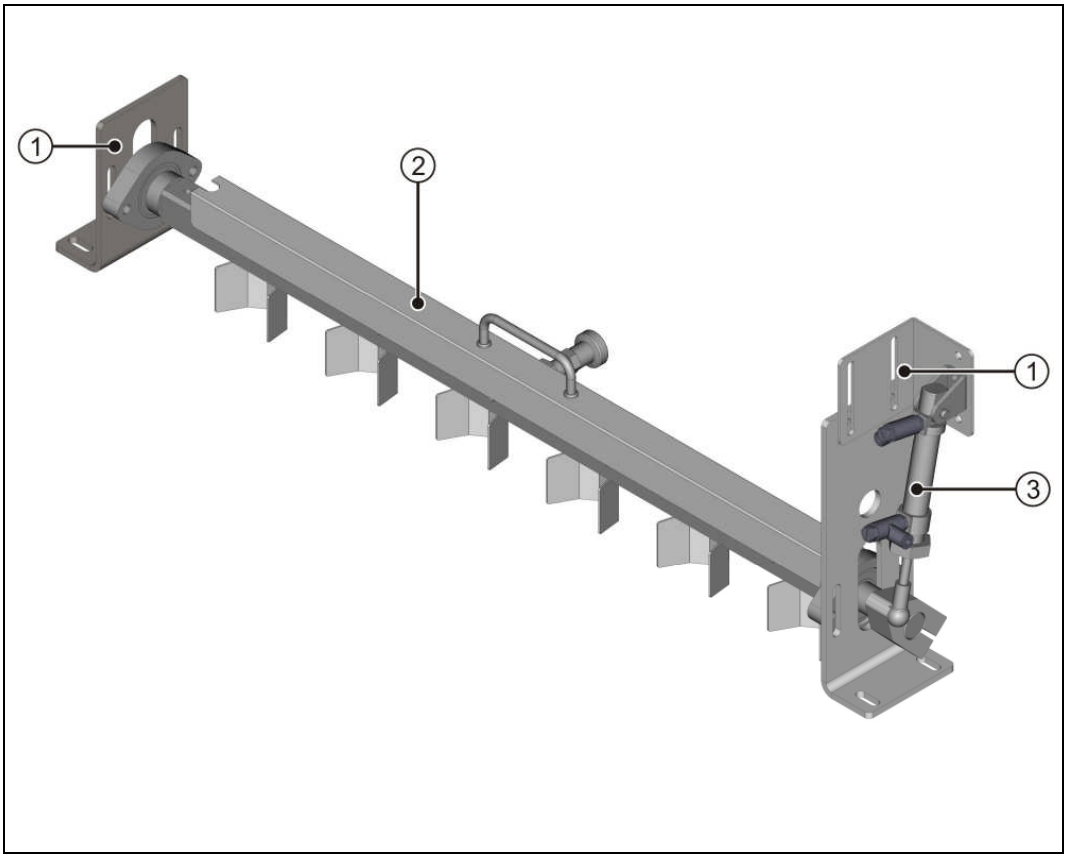


1 Roll-out roller
2 Scraper
3 Adjusting wheel for the roll-out roller

5.2.5 Function elements of the centering unit

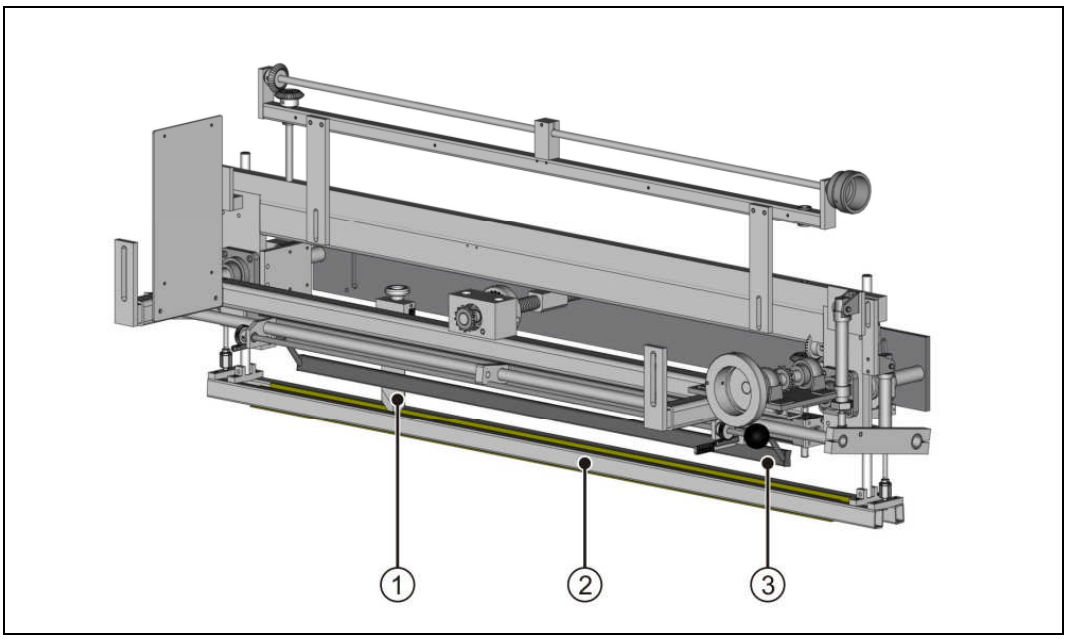
Note!

The schematic diagram below describes the centering unit. The version that is delivered may differ from the version shown here.



1 Holder
2 Centering flap / centering bar
3 Pneumatic drive

5.2.6 Function elements of the cutting station

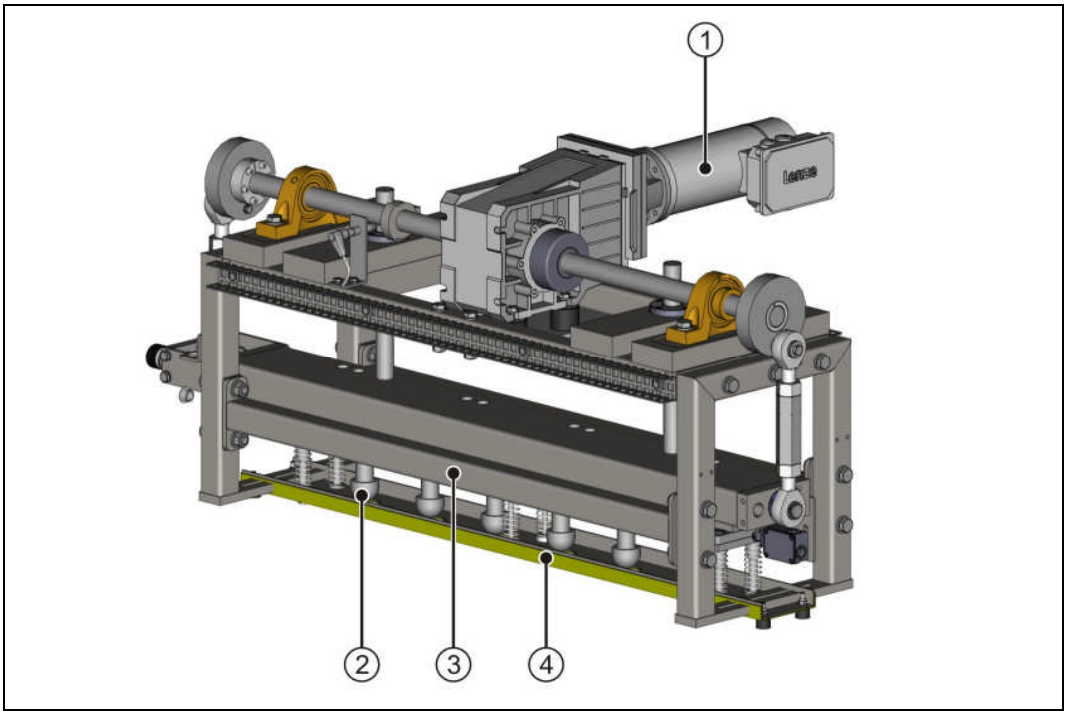


1 Triangular knife
2 Hold-down
3 Centering unit

5.2.7 Function elements of the pre-pressing station

Note!

The schematic diagram below describes the pre-pressing station line module. The version that is delivered may differ from the version shown here.

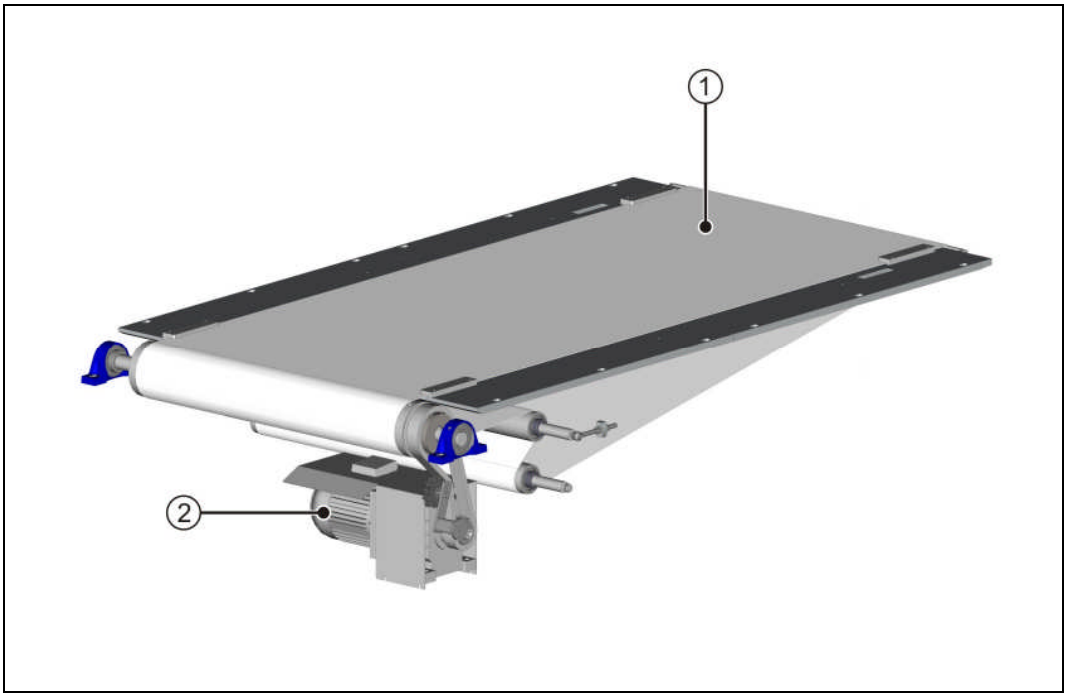


1 Drive
2 Pre-pressing tool
3 Pre-pressing tool holder
4 Hold-down

5.2.8 Function elements of the conveyor belt

Note!

The schematic diagram below describes the conveyor belt. The version that is delivered may differ from the version shown here.



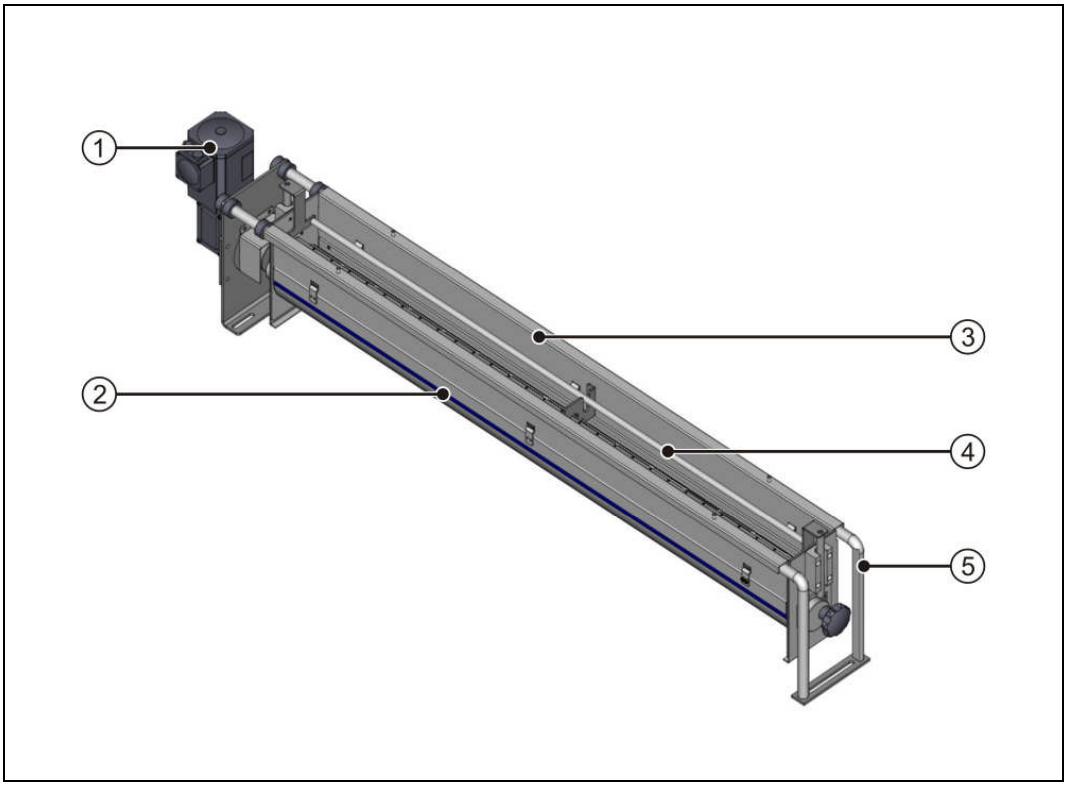
1 Conveyor belt

2 Drive

5.2.9 Function elements of the flour duster with flour break-up shaft

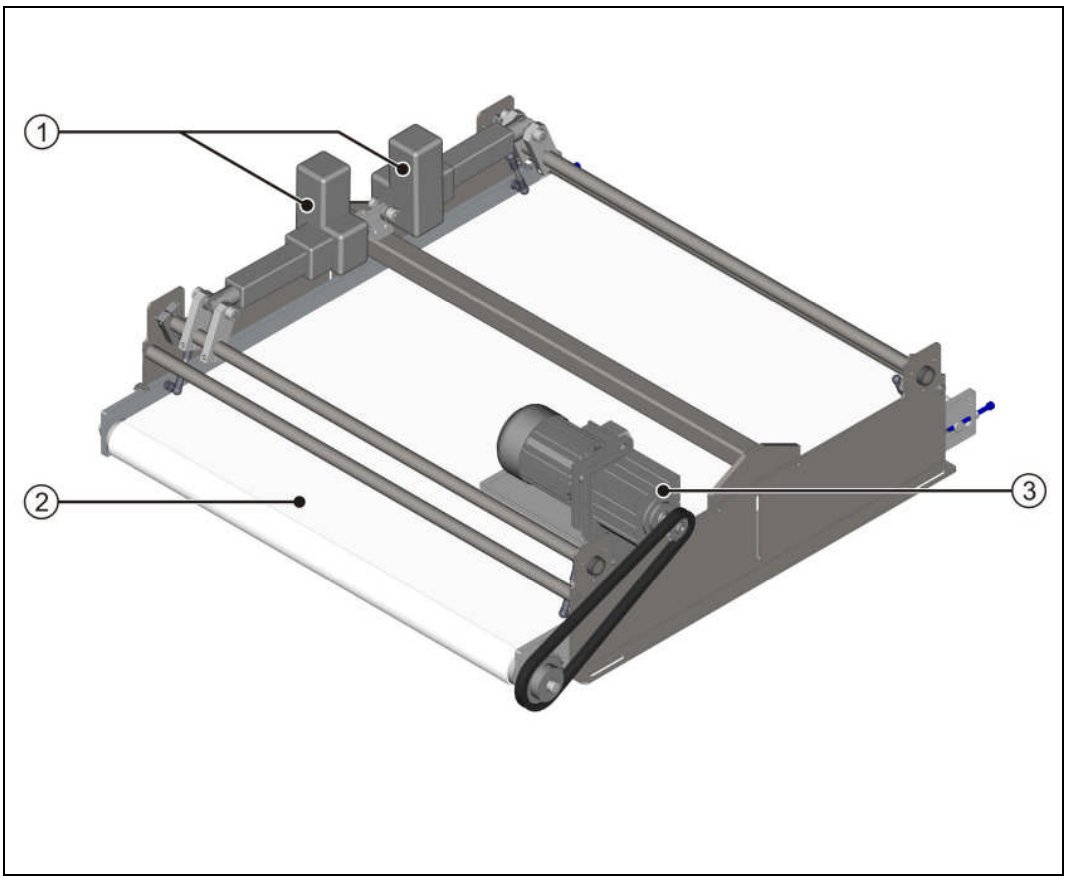
Note!

The schematic diagram below describes the flour duster with break-up shaft. The version that is delivered may differ from the version shown here.



1 Drive
2 Flour cloth
3 Flour container
4 Flour break-up shaft
5 Holder

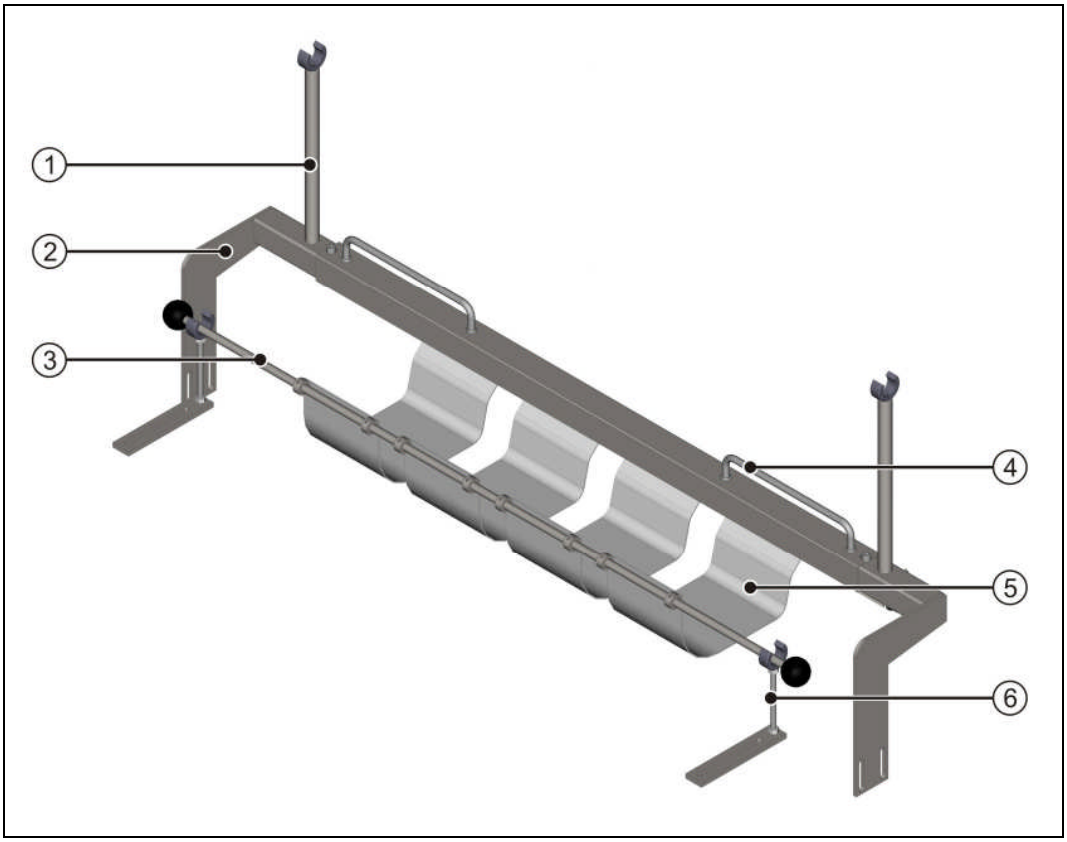
5.2.10 Function elements of the long-moulding belt



1 Linear drive (adjustment)
2 Top belt
3 Conveyor belt drive

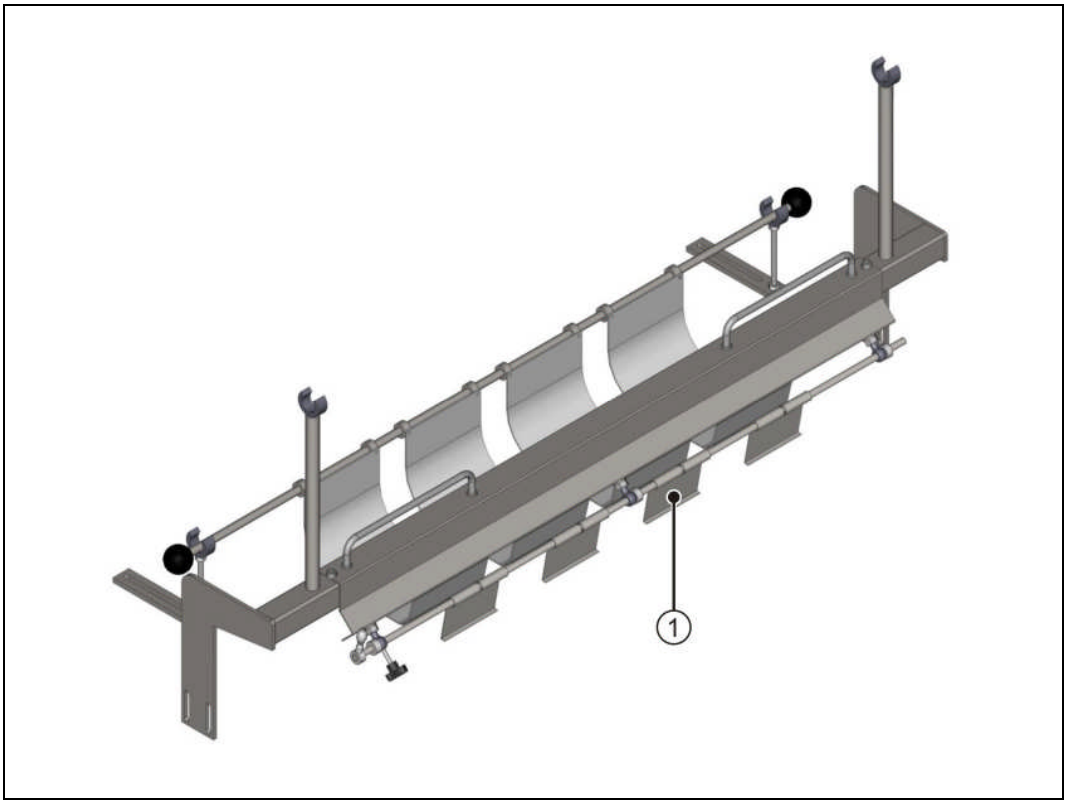
5.2.11 Function elements of the folding mats

Illustration on the left in running direction:



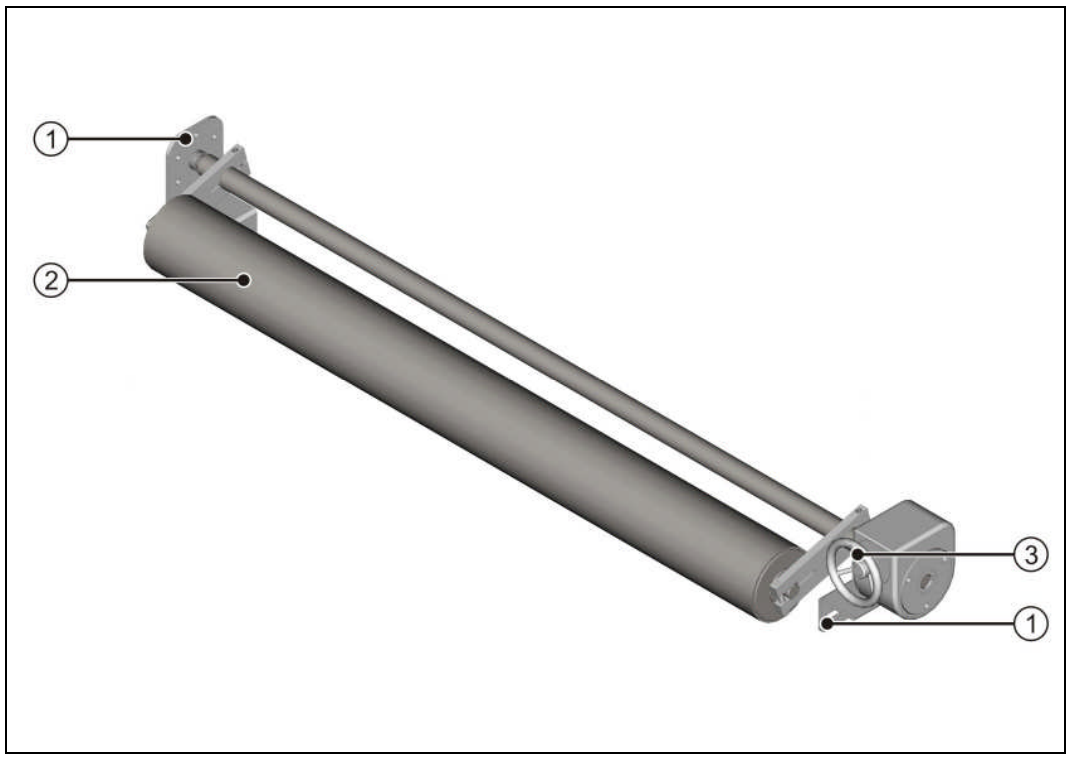
1 Top receiver (x2)
2 Receiver side rail
3 Receiving shaft for the wire mesh belts
4 Handle (x2)
5 Wire mesh belt (x4)
6 Bottom receiver (x2)

Illustration on the right in running direction:



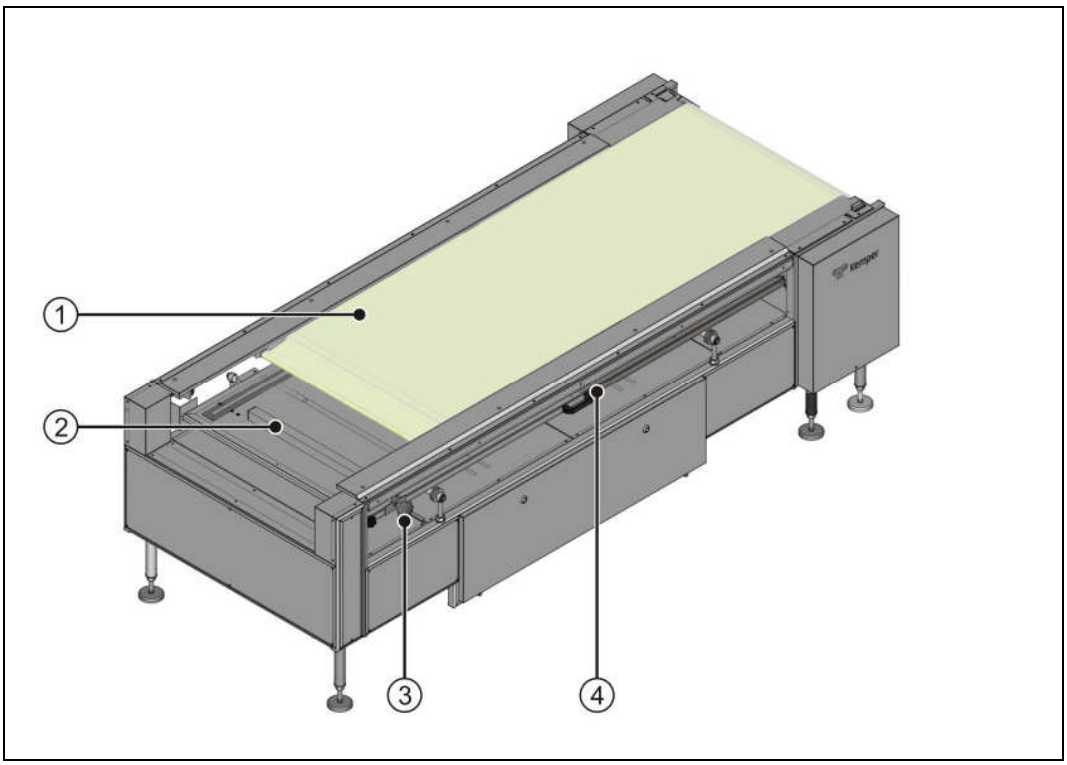
1 Folding flap (x4)

5.2.12 Function elements of the alignment and pressure roller (timing roller)



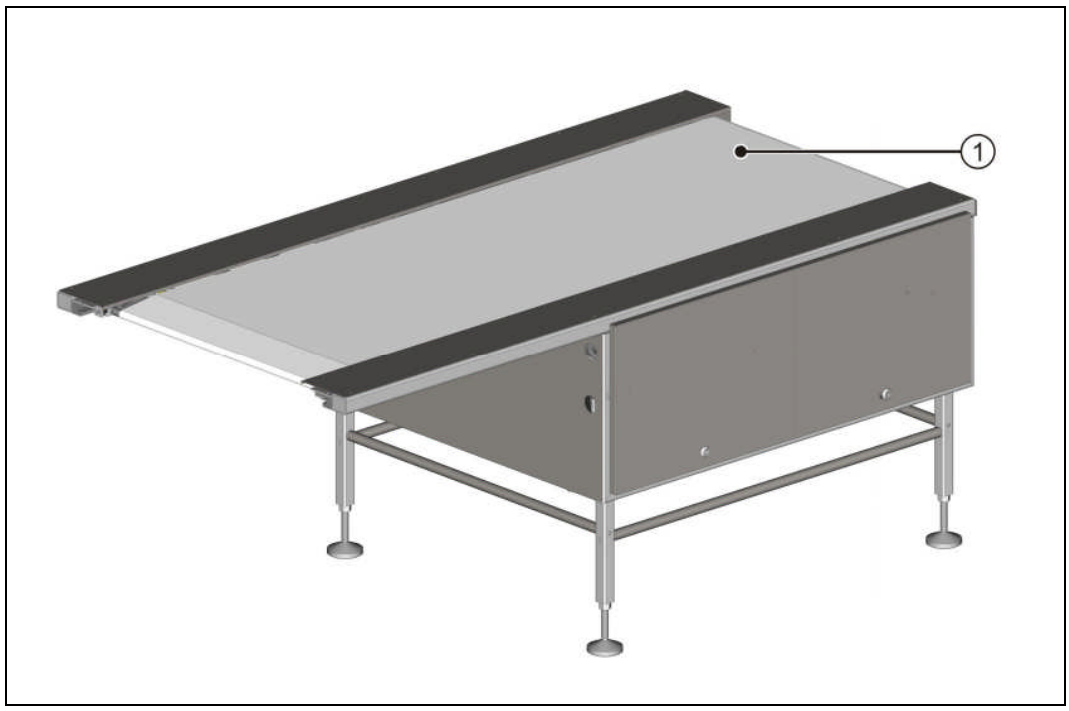
1 Holder
2 Pressure roller (drum motor)
3 Pressure roller adjustment mechanism

5.2.13 Function elements of the reciprocating belt



1 Belt
2 Baking tray side stop
3 Baking tray discharge table

5.2.14 Function elements of reciprocating belt AB60.1



1 Belt

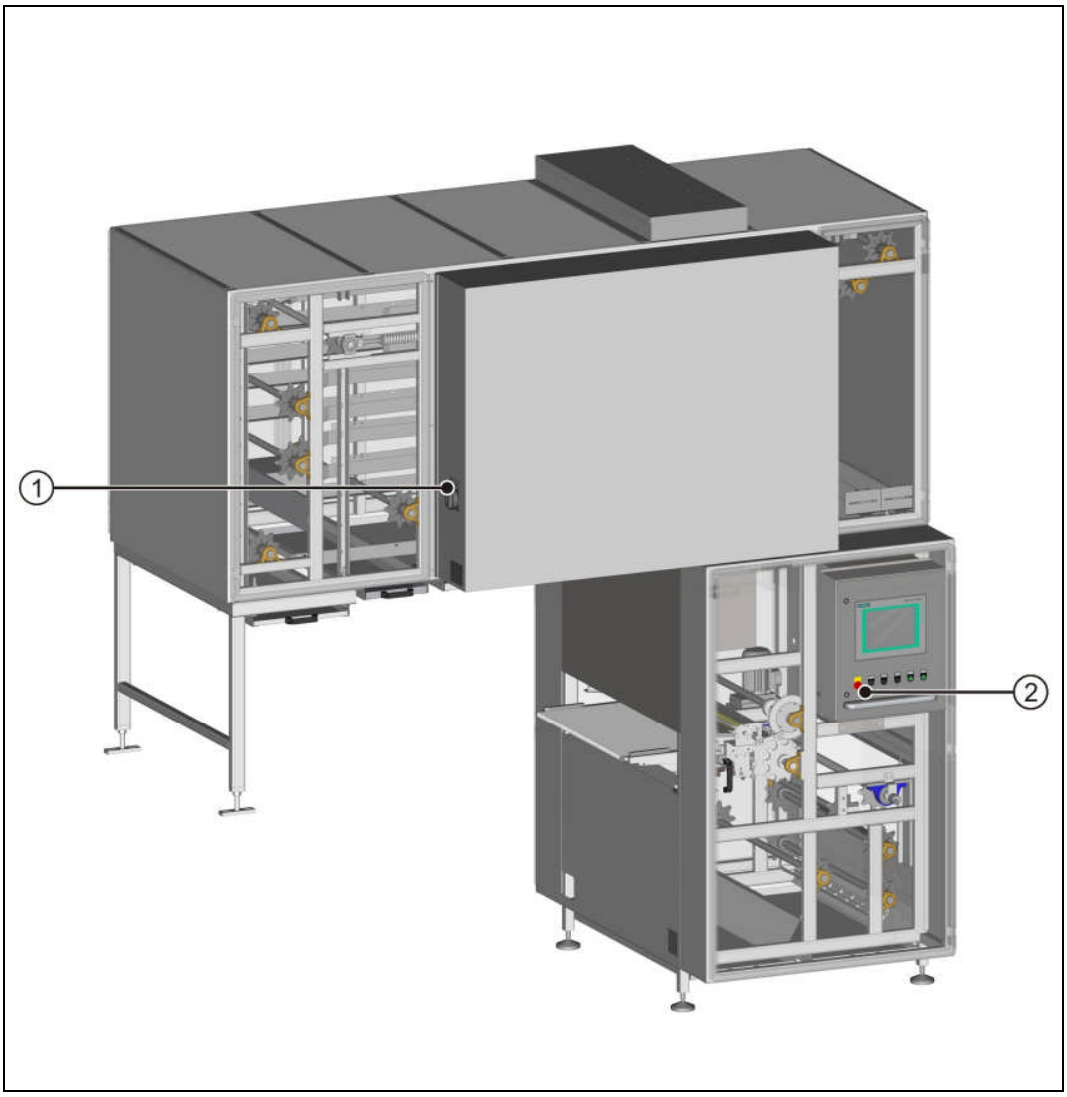
5.3 Overview of the operator controls

The following sections provide an overview of the operator controls of the individual line modules.

5.3.1 Operator controls of the basic module

On the left in running direction

The following illustration displays the basic module on the left in running direction:

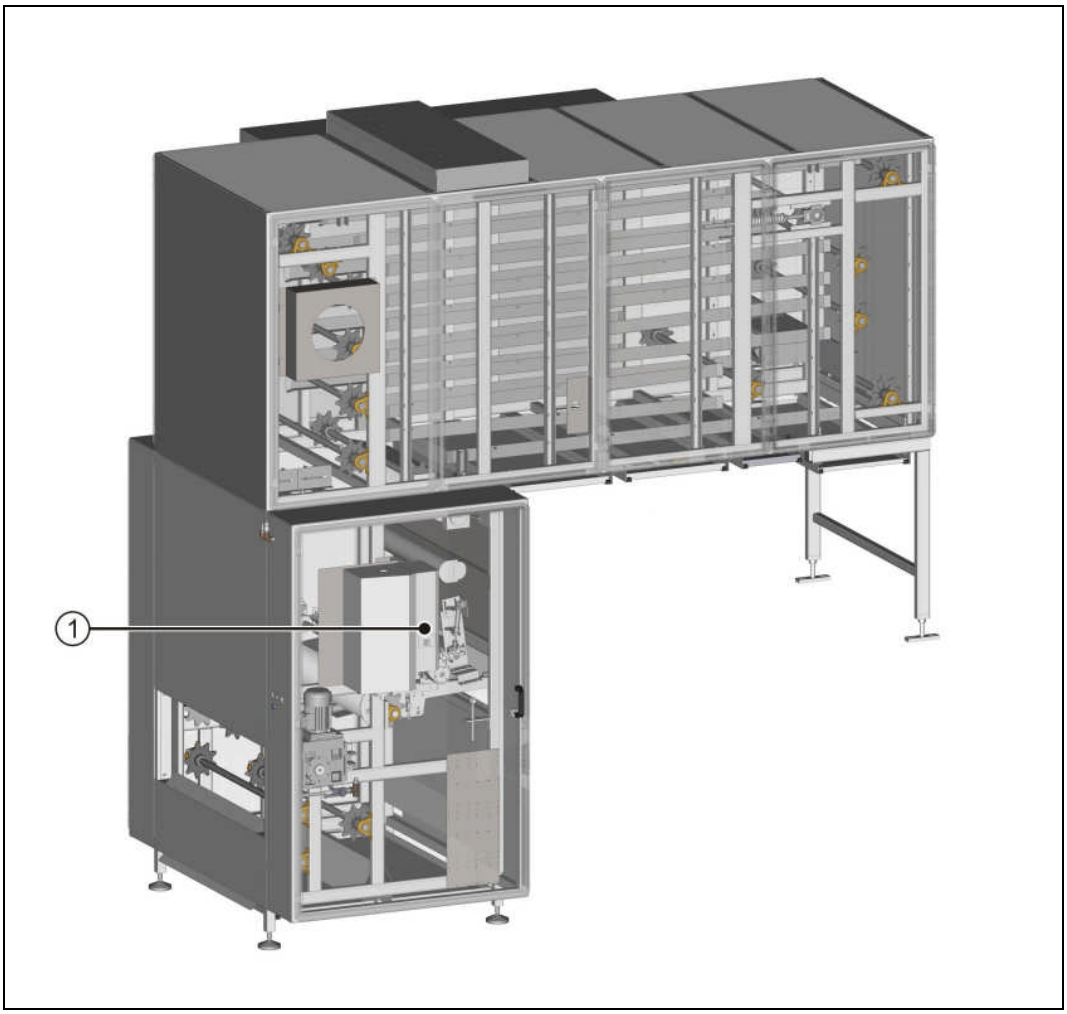


1 Main switch

2 Touch panel with EMERGENCY STOP button

On the right in running direction

The following illustration displays the basic module on the right in running direction:



1 Operator panel of the steam generator system

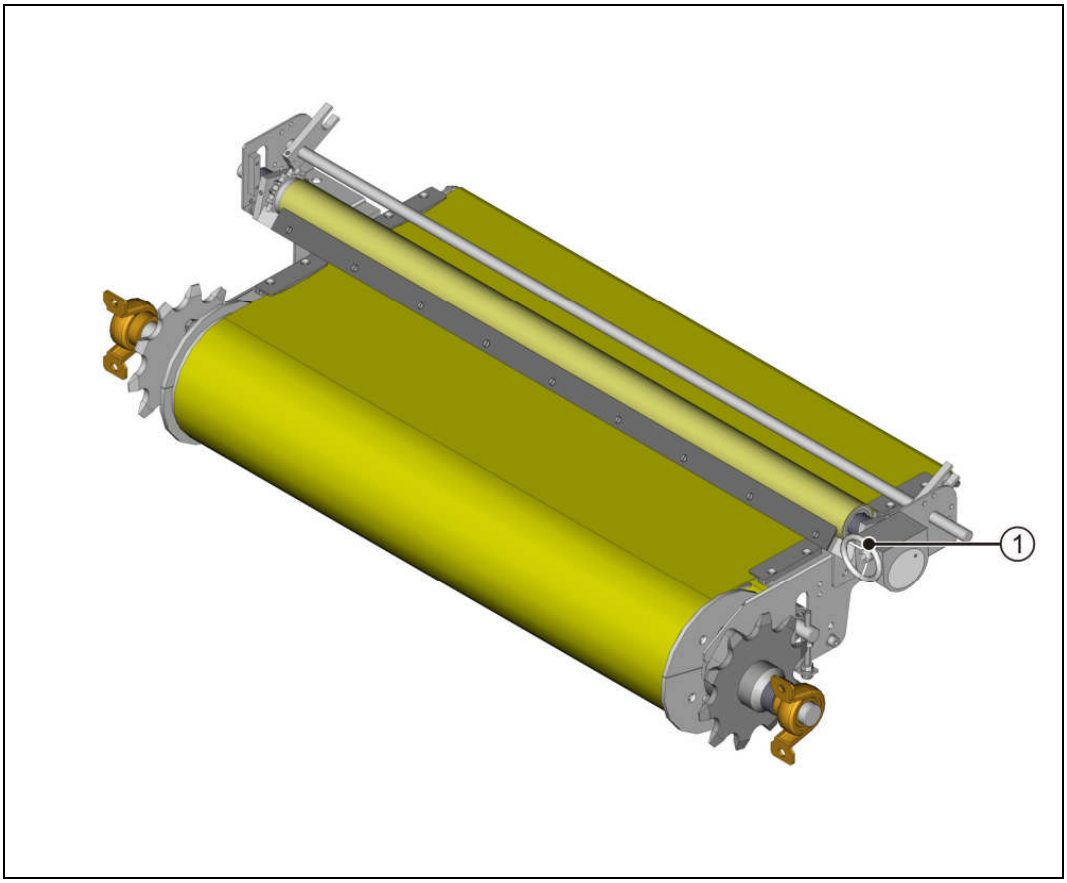
5.3.2 Operator controls of the discharge belt 1

Note!

The illustration of the discharge belt includes the pressure roller line module.

Note!

The illustration of the pressure roller resembles the version that is delivered. The version that is delivered may include a hand guard and a flexible shaft to move the adjusting wheel to operate the adjustment mechanism, which are not shown here.

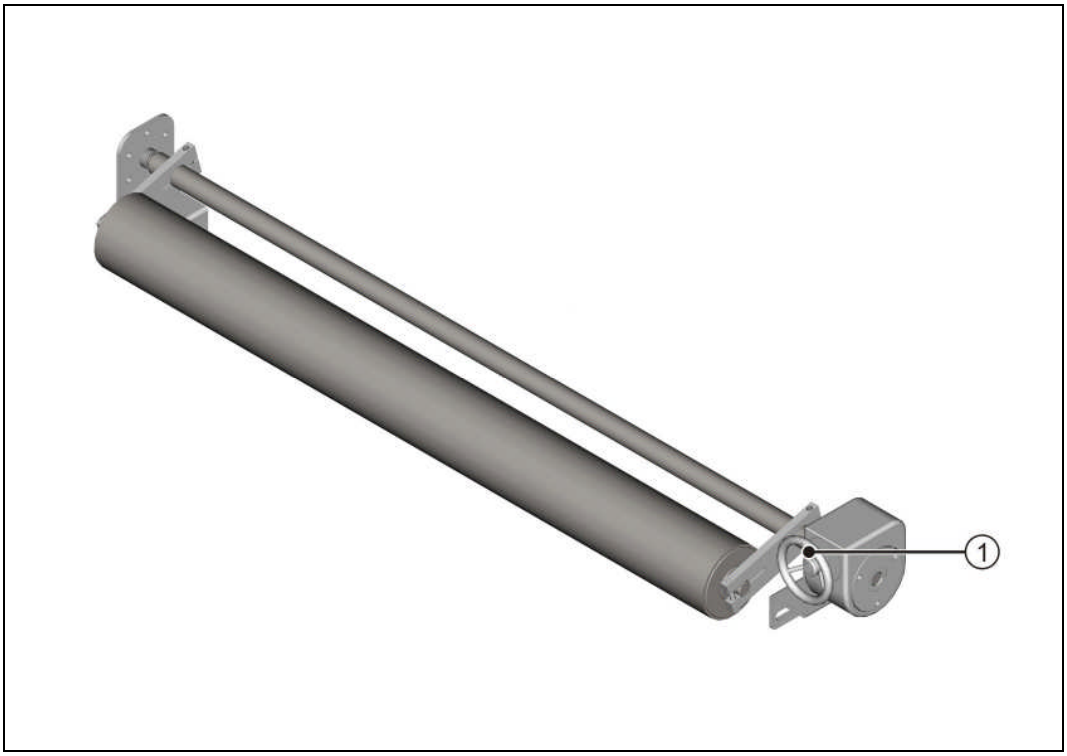


1 Adjusting wheel on the pressure roller line module (height adjustment)

5.3.3 Operator controls of the pressure roller

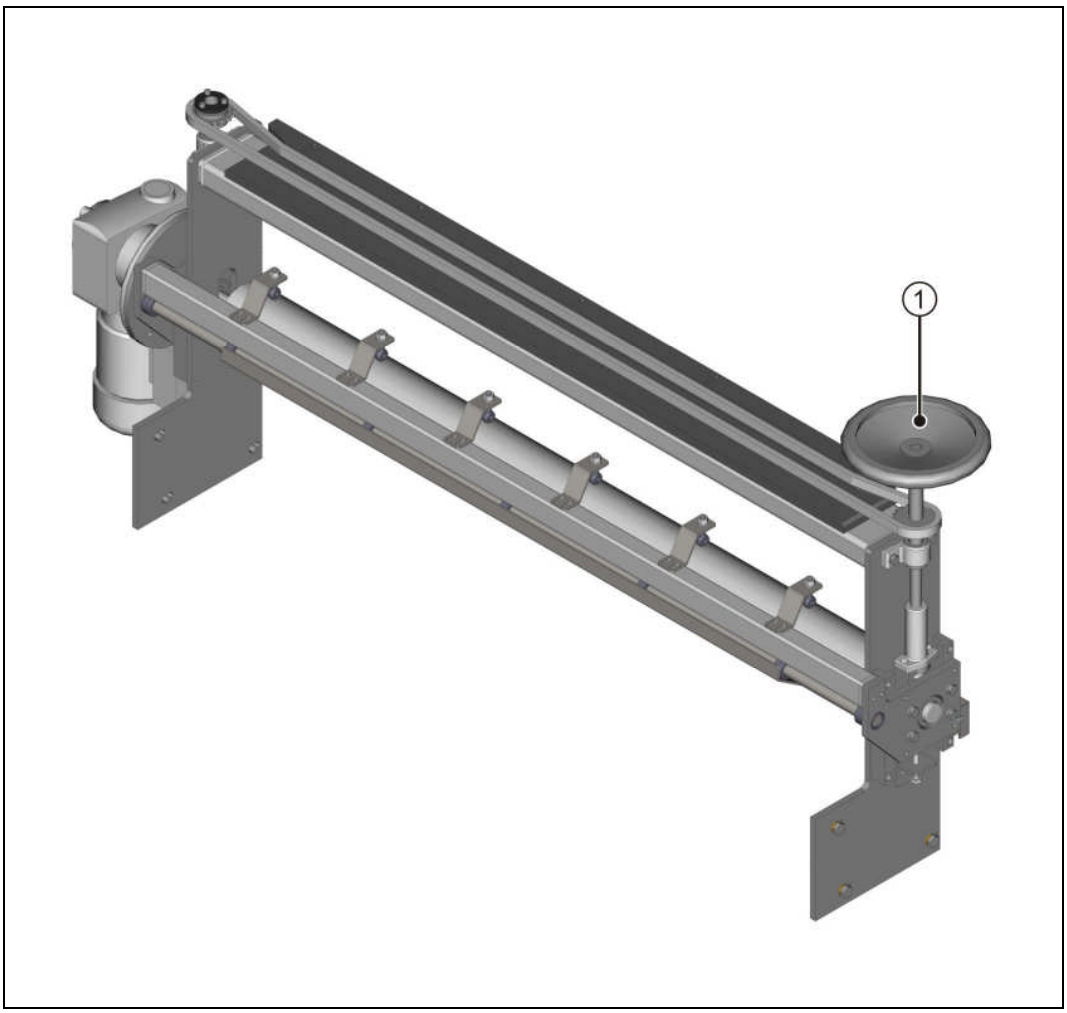
Note!

The illustration of the pressure roller line module resembles the version that is delivered. The version that is delivered may include a hand guard and a flexible shaft to move the adjusting wheel to operate the adjustment mechanism, which are not shown here.



1 Pressure roller adjusting wheel (optional via a flexible shaft)

5.3.4 Operator controls of the roll-out roller

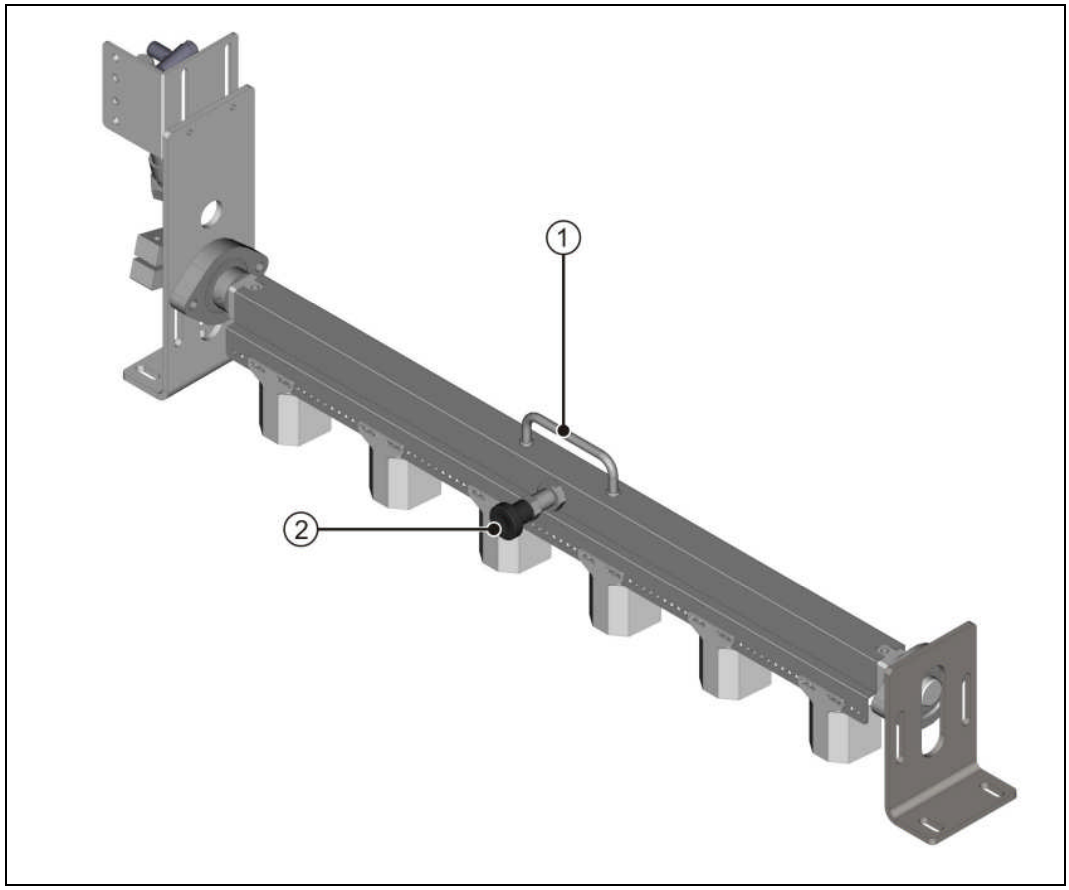


1 Adjusting wheel for the pressure roller

5.3.5 Operator controls of the centering unit

Note!

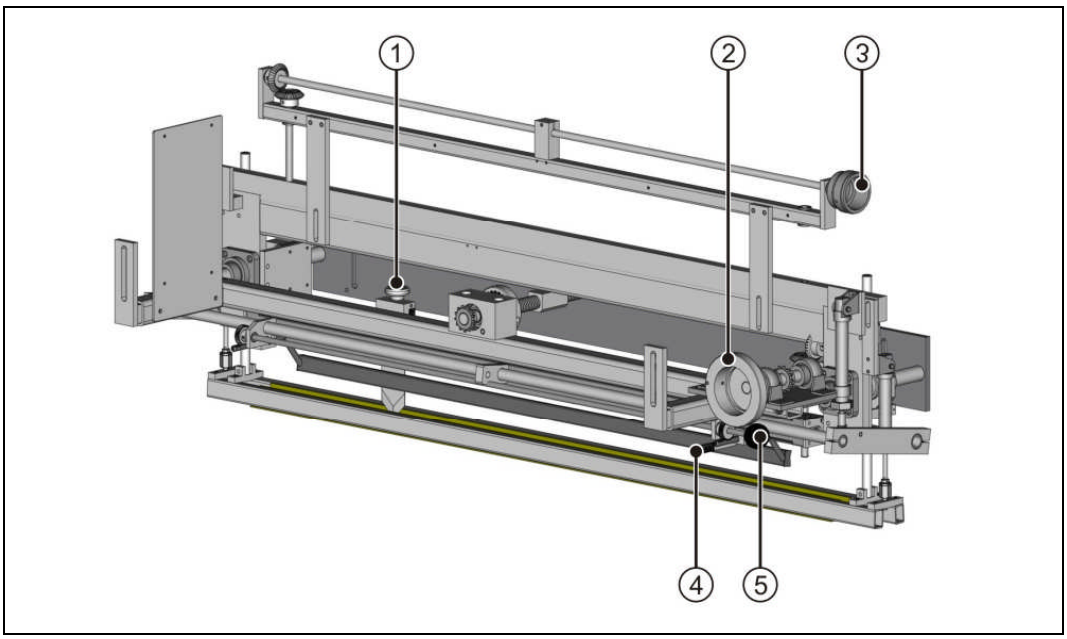
The schematic diagram below describes the centering unit. The version that is delivered may differ from the version shown here.



1 Handle of the centering flaps

2 Index pin of the centering flaps

5.3.6 Operator controls of the cutting station

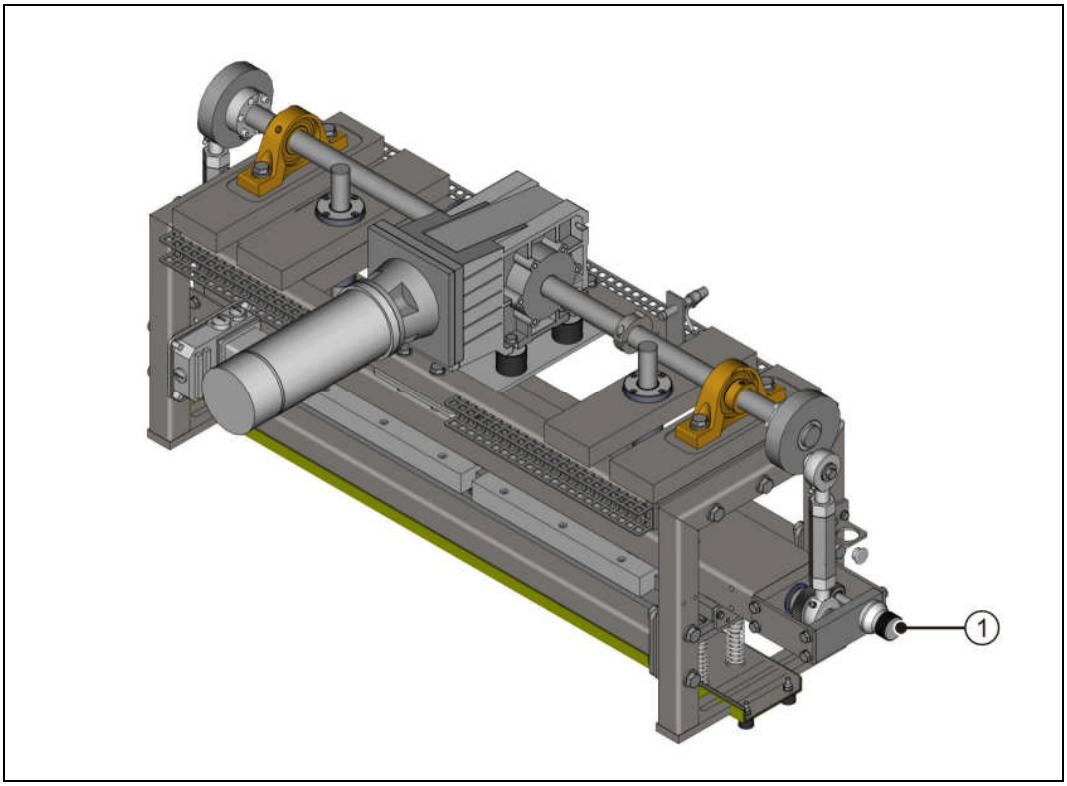


1 Triangular knife adjusting wheel
2 Timing adjusting wheel
3 Hold-down adjusting wheel
4 Centering unit arrester lever
5 Centering unit adjusting ball

5.3.7 Operator controls of the pre-pressing station

Note!

The schematic diagram below describes the pre-pressing station line module. The version that is delivered may differ from the version shown here.

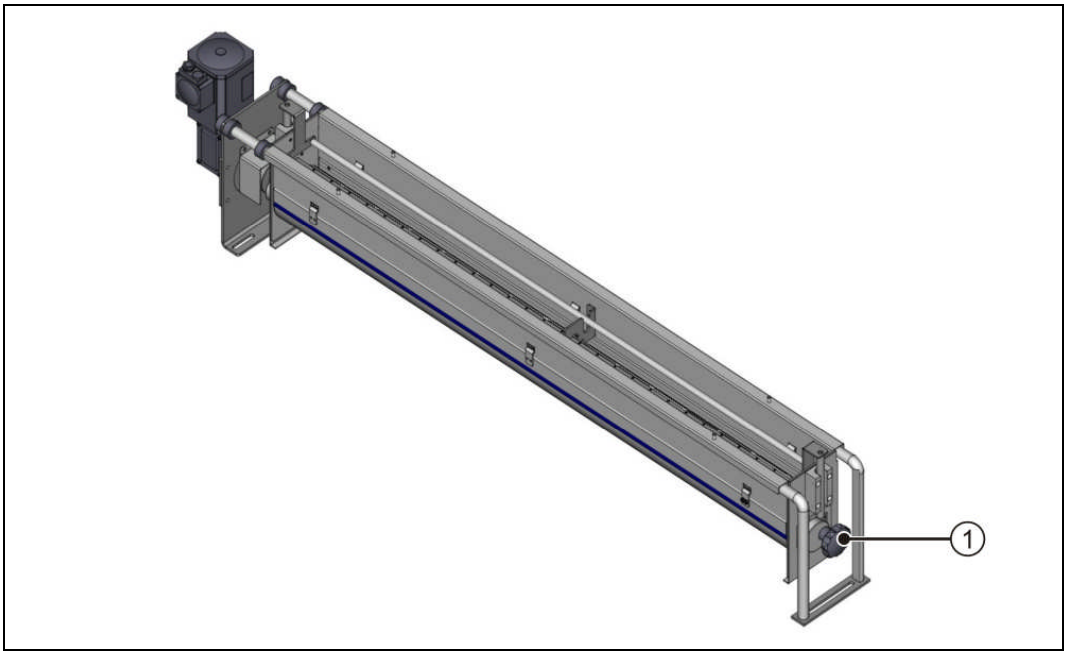


1 Pre-pressing depth adjusting wheel

5.3.8 Operator controls of the flour duster with flour break-up shaft

Note!

The schematic diagram below describes the flour duster with break-up shaft. The version that is delivered may differ from the version shown here.

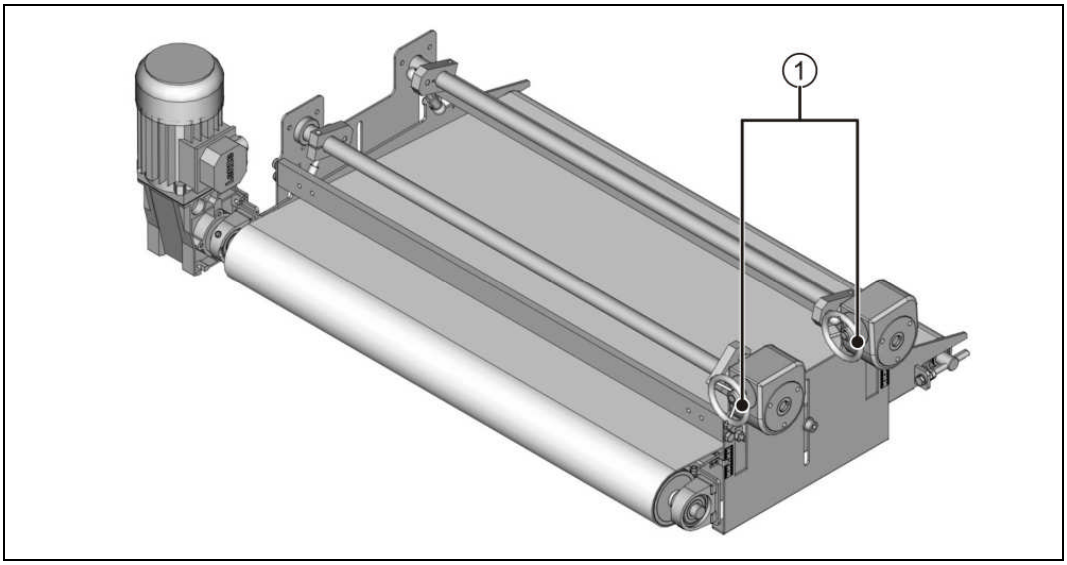


1 Star-shaped handle (insertion of the drive)

5.3.9 Operator controls of the long-moulding station top belt

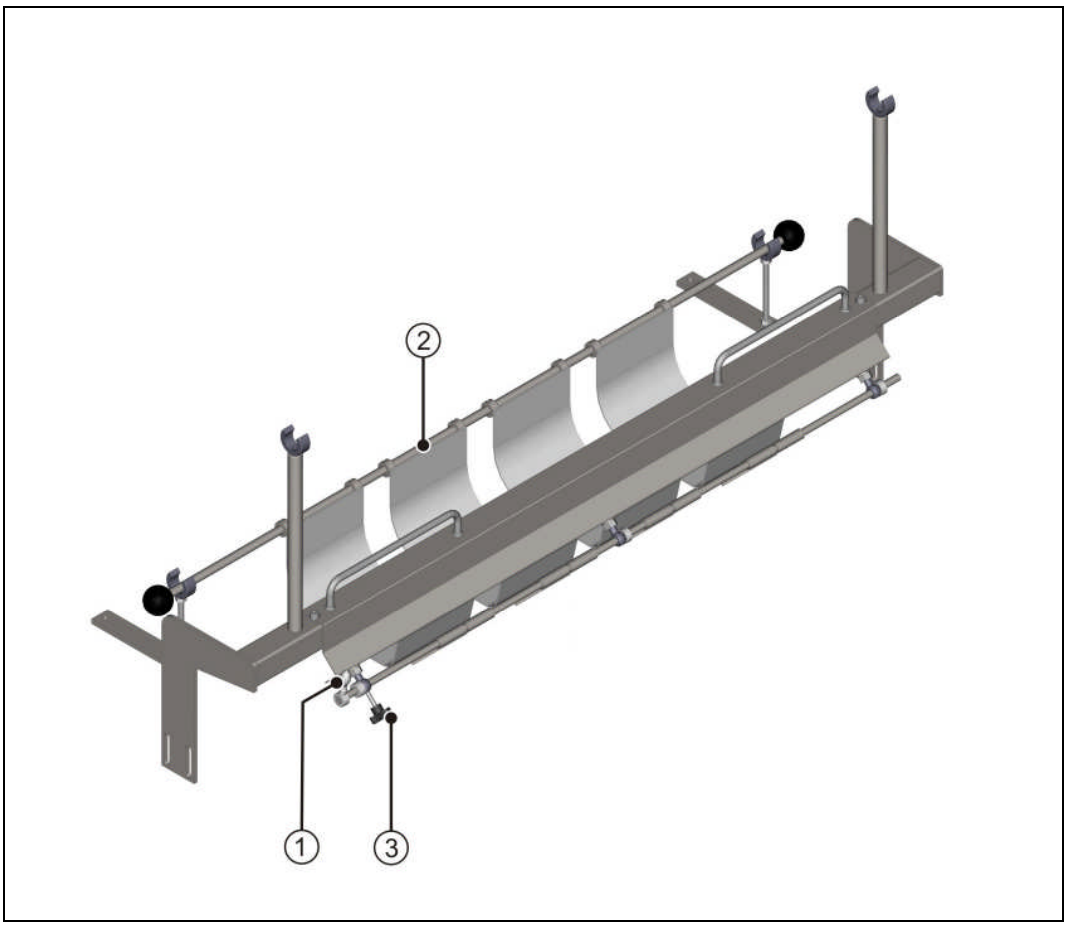
Note!

The schematic diagram below describes the long-moulding station top belt. The version that is delivered may differ from the version shown here.



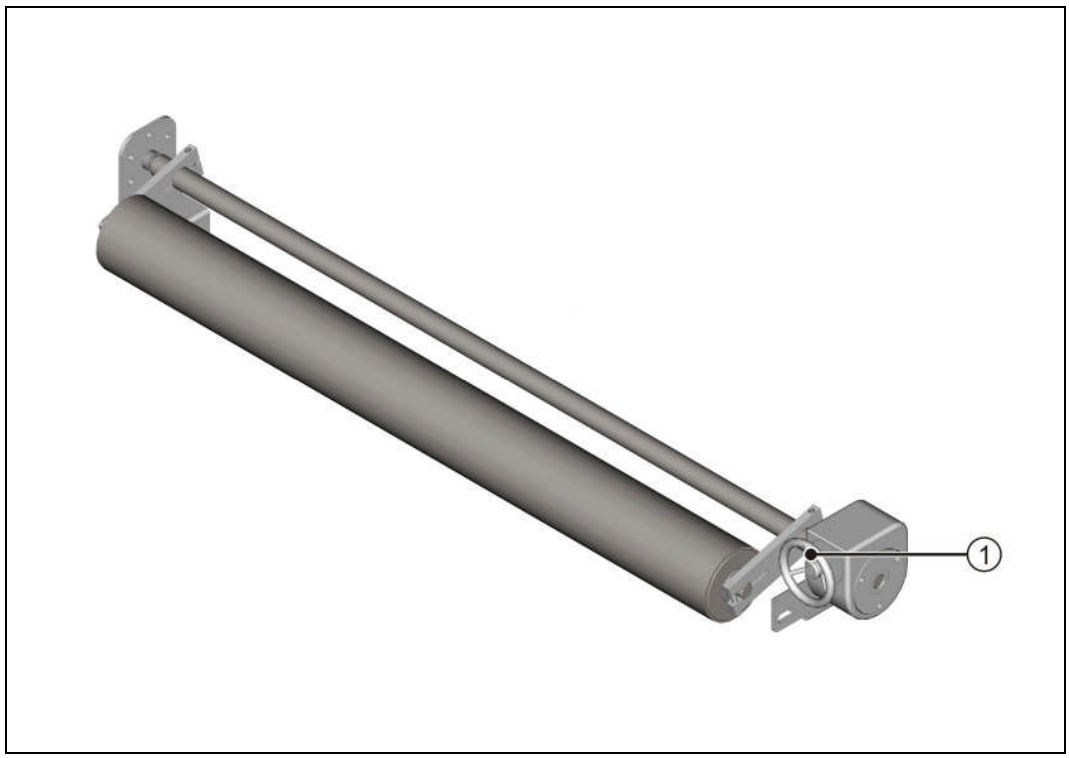
1 Pressure table adjusting wheels (height adjustment)

5.3.10 Operator controls of the folding mats



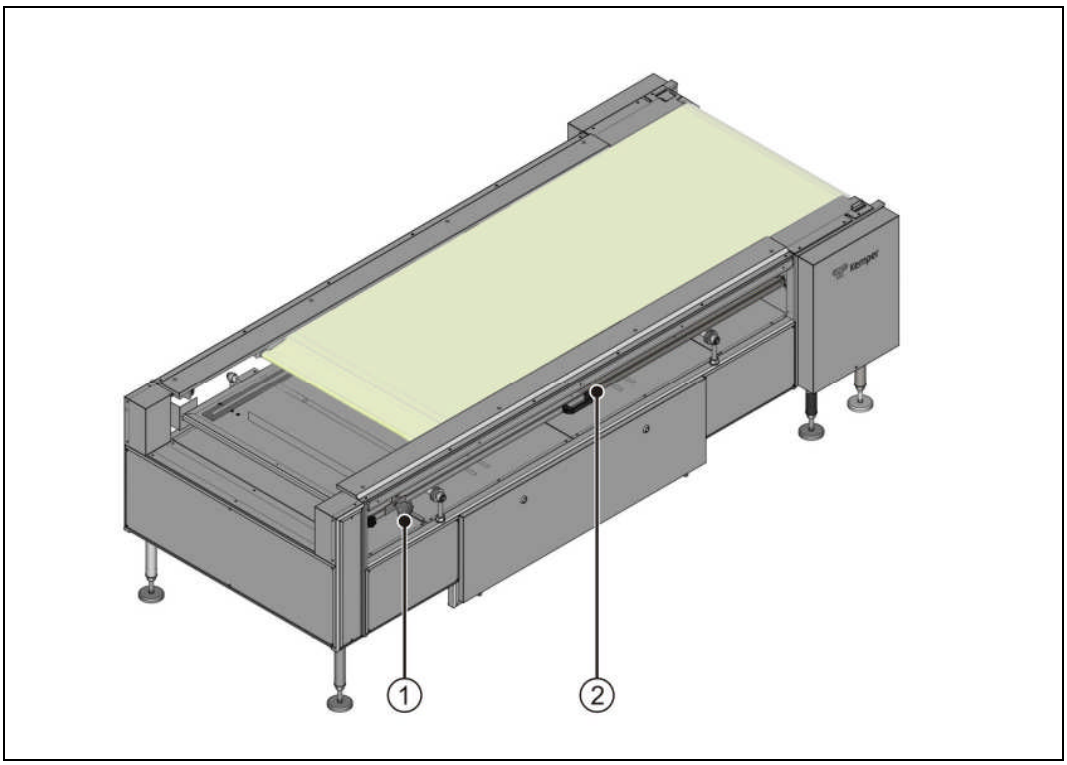
1 Adjusting lever for the folding flaps
2 Receiving shaft for the wire mesh belts
3 Star-shaped handle (lock)

5.3.11 Operator controls of the alignment and pressure roller (timing roller)



1 Adjusting wheel for the pressure roller

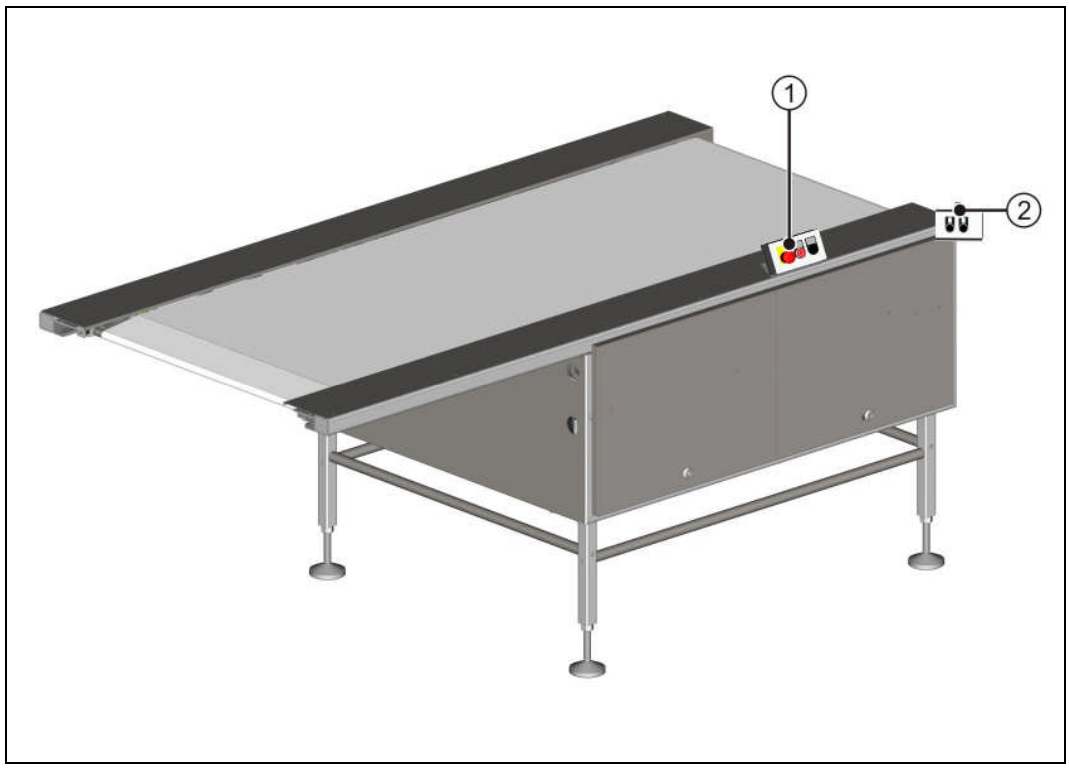
5.3.12 Operator controls of the reciprocating belt



1 Adjusting wheel for baking tray side stop

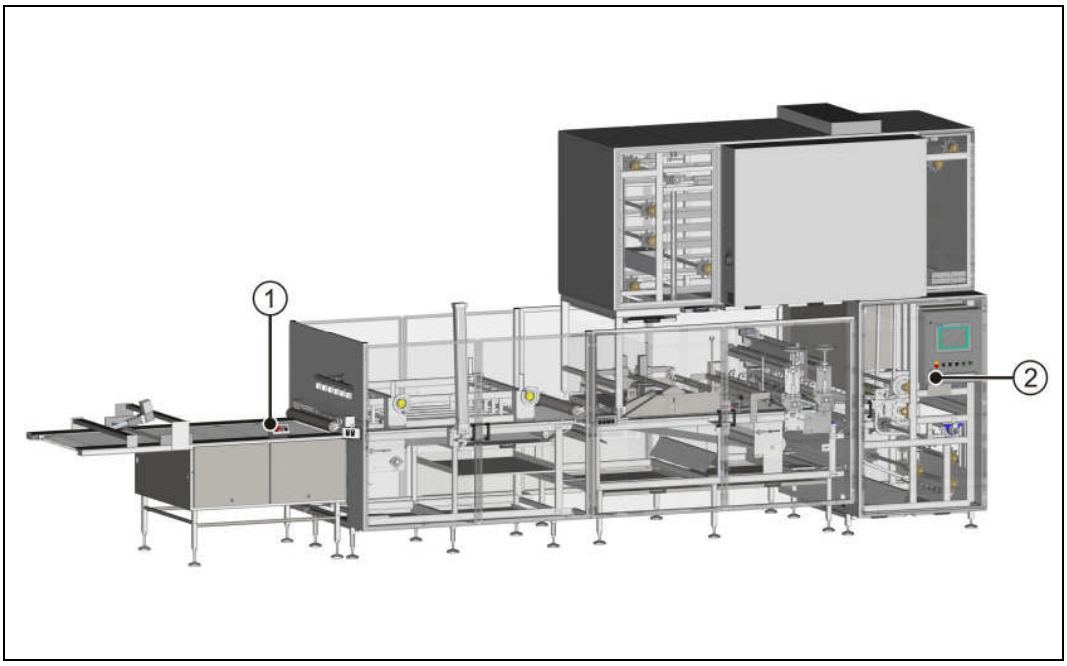
2 Baking tray discharge table

5.3.13 Reciprocating belt AB60.1



1 Operator panel (EMERGENCY STOP) 2 Row of buttons (optional)

5.4 Overview of safety devices



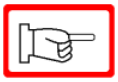
1 EMERGENCY STOP button on the operator panel
2 EMERGENCY STOP button on the touch panel

Note!

All the doors are secured with limit switches.

6 Description of the line

The structure and functioning of the assemblies and line modules are described below.



Note!

Details of the head machine are given in the separate operating manual.

6.1 Basic module

The basic module consists of the intermediate proofer and the drive frame. The purpose of the drive frame is to protect and support the electric drive. The intermediate proofer contains the proofing frame transport and the switchbox.

The proofing frame transport consists of the cup chains, the cups and the deflection and drive axles. The cups are lined differently depending on the hygiene requirements for the respective pieces of dough.

The intermediate proofer is used to hold and for intermediate proofing of the pieces of dough. They are transported through the intermediate proofer via the proofing frame. The pieces of dough remain there for a bespoke period of time. A steam generator system guarantees a moist climate in the intermediate proofer. The intermediate proofer contains standard UV sterilization for proofing frame transport via TUV lamps. The moist lining of the cups is dried via infra-red radiators. A heater with fan warms the air inside the intermediate proofer. Relevant positions inside the proofer are illuminated using several lamps.

The basic module can be switched to green dough. The pieces of dough are then discharged from the head machine into a lower infeed at the basic module. The pieces of dough are subsequently transported through the entire system and output.

6.2 Discharge belt 1

The discharge belt is used for transportation of the pieces of dough between the line modules. A manually height adjustable pressure roller slightly flattens the pieces of dough.

The drive occurs via the cup chain.

6.3 Pressure roller

The pressure roller slightly flattens the ball-shaped dough pieces for further processing in the downstream line modules. This stabilises the dough pieces during transport to the line modules. At the same time the dough pieces are pre-formed into the shape of the final product. The height of the pressure roller is manually adjusted via an adjustment mechanism.

The pressure roller is fitted to the frame of the assembly or to the line module.

The pressure roller can be optionally switched off and on via the head machine's control system.

6.4 Roll-out roller

The roll-out roller uses a chrome roller to roll out the pieces of dough into an adjustable, flat shape. The stainless steel roller is adjusted manually. A double arrangement of the roll-out roller is used to process the pieces of dough.

The roll-out roller is switched on and off via the line control unit. The roll-out roller is mounted onto the frame of an assembly.

6.5 Centring unit

The centring unit aligns the pieces of dough on a conveyor belt of a line module.
When using a centring flap with metal jaws, the pieces of dough are positioned in a row and the actual row is aligned. When using a centring flap with centring bar, only the row is aligned.

Alignment of the pieces of dough on the conveyor belt is extremely important for exact transfer to a subsequent line module. It ensures that the pieces of dough are processed correctly in the following line module.

Operation of the centring unit occurs via the line control unit. The centring unit is driven pneumatically.

6.6 Cutting station

The dough pieces are processed into slit rolls in the cutting station. The dough pieces are given the characteristic slit in the middle via an adjustable triangular knife for which the cutting depth can be set.

A clocked correction unit ensures exact cutting. An adjustable stop is available for adjustment to the conveyor's timing. The triangular knife is driven via a pneumatic linear drive.

The cutting station is controlled via the line's touch panel.

6.7 Pre-pressing station

The pre-pressing station is used to produce stamped rolls. The exchangeable pre-pressing tool impresses its pattern into the dough pieces.

The pre-pressing station consists of a mount for the pre-pressing tool and a drive. The pre-pressing depth can be adjusted slightly via an adjusting wheel. A hold-down fixes the dough pieces during pre-pressing on the timing belt.

Control is via the line's or head machine's touch panel.

6.8 Conveyor belt

The conveyor belt transports the pieces of dough through an assembly and then on to the next line assembly.
The conveyor belt supports the line modules of an assembly when transporting, pressing, moulding, aligning, cutting and stamping the pieces of dough.

The speed of the conveyor belt is set via the line control unit. The conveyor belt dimensions have been adapted to the various assemblies and the belt is mounted onto the frame of the assembly.

6.9 Flour duster with flour break-up shaft

The flour duster with flour break-up shaft dusts the pieces of dough and the conveyor belt with flour. A driven round brush transports the flour from the openings in the flour container. An eccentric system drives the flour break-up shaft in the flour container to prevent flour build-up.

To limit the dusting width, a flour cloth can be fastened beneath the openings of the flour duster.

Application of the flour duster and the dusting quantity is set via the line control unit. The flour duster is mounted onto the frame of the assembly.

6.10 Long-moulding belt

The long-moulding belt uses an top belt to flatten the pieces of dough.

The running direction of the top belt can be set as synchronous, parallel or opposite. Depending on the setting, the top belt of the moulding plate forms the pieces of dough into a corresponding shape. The speed of the top belt can be additionally adjusted to improve the shape of the pieces of dough.

The height of the top belt is adjusted electrically via a row of buttons on the assembly. All the other settings are carried out via the line's control unit. The long-moulding belt is mounted onto the frame of the assembly.

6.11 Folding mats

The folding mats roll up flattened pieces of dough. Manually adjustable folding flaps use a leading edge to raise the flattened pieces of dough, thus creating a fold in them.

The pieces of dough are subsequently moved underneath the wire mesh belts. The wire mesh belts wind the pieces of dough at the fold, forming a roll.

The folding mats are applied and operated manually. The folding mats are mounted onto the frame of the assembly.

6.12 Alignment and pressure roller (timing roller)

The alignment and pressure roller can align the pieces of dough in a row or flatten them.

In order to align the pieces of dough, the pressure roller rotates in the opposite direction to the running direction. The pieces of dough are stopped by the pressure roller and rotate until all the pieces of dough have reached the pressure roller. The pressure roller is raised, thus releasing the aligned row of pieces of dough.

In order to flatten the pieces of dough, the pressure roller rotates in the running direction and flattens the pieces of dough. The height of the pressure roller is manually adjusted via an adjustment mechanism.

All the other settings are carried out via the line's control unit. The alignment and pressure roller is mounted onto the frame of the assembly.

6.13 Reciprocating belt

The reciprocating belt is a device for automatic depositing of dough pieces on wooden trays and baking trays. A non-contact limit switch controls the depositing of dough pieces.

The pieces of dough are positioned precisely lengthwise and widthwise in the programmed sequence. This ensures that the edges of the baking trays and wooden trays can be considered during programming. Programming occurs via the line's control unit.

6.14 Reciprocating belt AB60.1

The reciprocating belt AB60.1 is a device for the subsequent, automatic placement of pieces of dough onto a transport system. A non-contact limit switch controls the placement of the pieces of dough.

The pieces of dough are positioned precisely lengthwise and widthwise in the programmed sequence. This ensures that the edges of the baking trays and the wooden boards can be considered during programming. Programming occurs via the line's control unit.

If desired by the customer, the reciprocating belt AB60.1 can also be equipped with an electrically-driven hinged belt. Part of the belt for discharging the pieces of dough can be raised, thus creating space for special customer applications. In order to operate this special equipment, a row of buttons at the reciprocating belt AB60.1 can be activated via the line's control unit.

6.15 Electrical equipment

The electrical equipment is completely pre-installed, including internal wiring, a switchbox with main switch, a touch panel and an additional operator panel.

The work process is normally controlled via the touch panel. The following settings can be carried out:

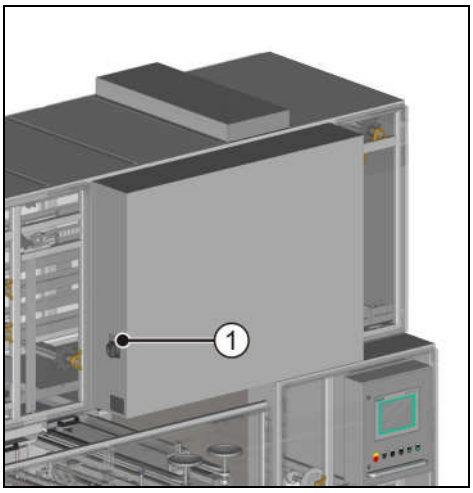
- Switching the head machine on and off
- Switching the line modules on and off
- Changing the parameters for operating the line modules
- Changing the service parameters

6.16 Switchbox

The switchbox contains the switching components of the electrical equipment and the circuit boards.

Warning – electrical hazard!

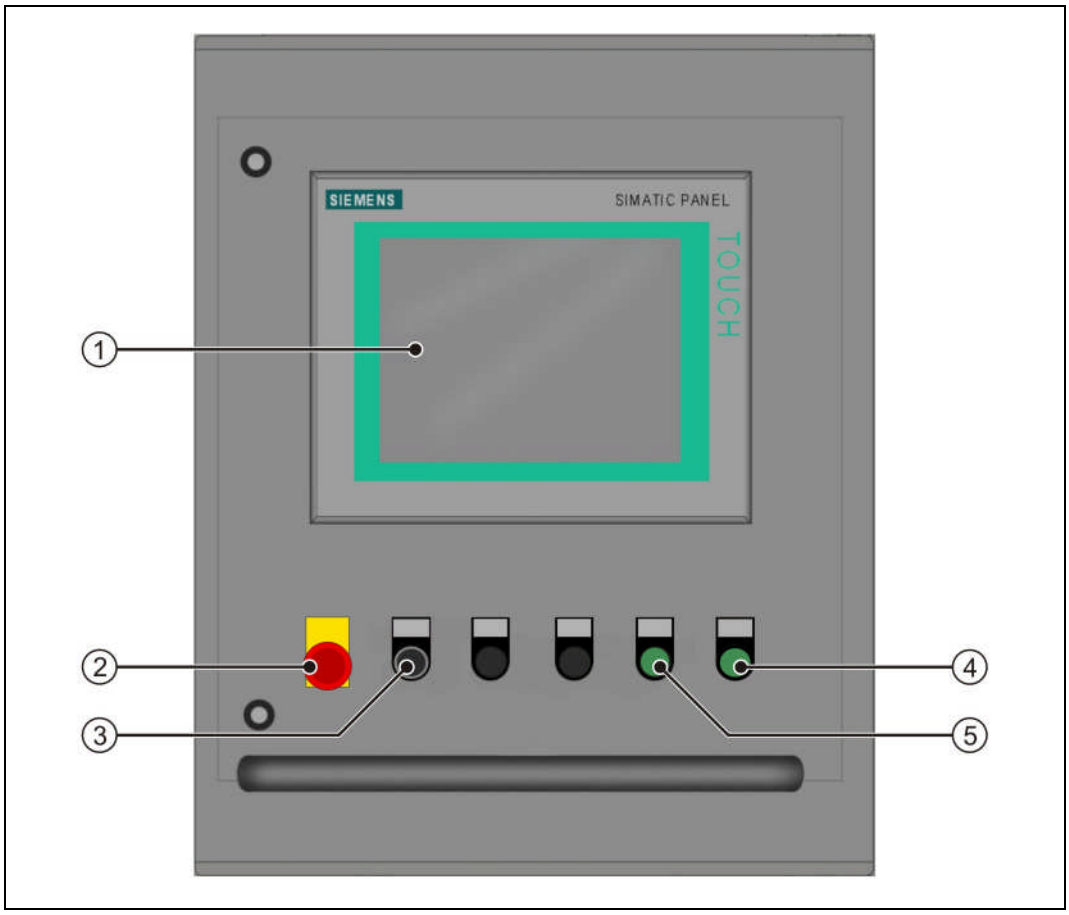
Live parts: Danger of electric shock! Always disconnect the line before carrying out work in the switchbox. Work at the switchbox should only be carried out by a qualified electrical specialist! It is necessary to obey VDE regulations and local accident prevention regulations.



The line is switched on and off via the main switch (1).

A padlock can be used to lock the main switch to prevent accidental reconnection.

6.17 Touch panel



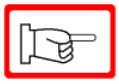
1	Touch screen	The touch screen is used to set and execute line functions.
2	EMERGENCY STOP button	Stops the line immediately.
3	CONTROL VOLTAGE ON button	Switches the line control voltage on.
4	Control lamp control voltage doors	Extinguishes when opening a door.
5	Control lamp control voltage emergency stop	Extinguishes when pressing the EMERGENCY STOP button on the touch panel.

The sections below describe the individual menus that can be opened via the touch panel.

6.17.1 Password levels

Various menus are password-protected against unauthorized access.

The plant operator will be notified of the passwords when the line is handed over.



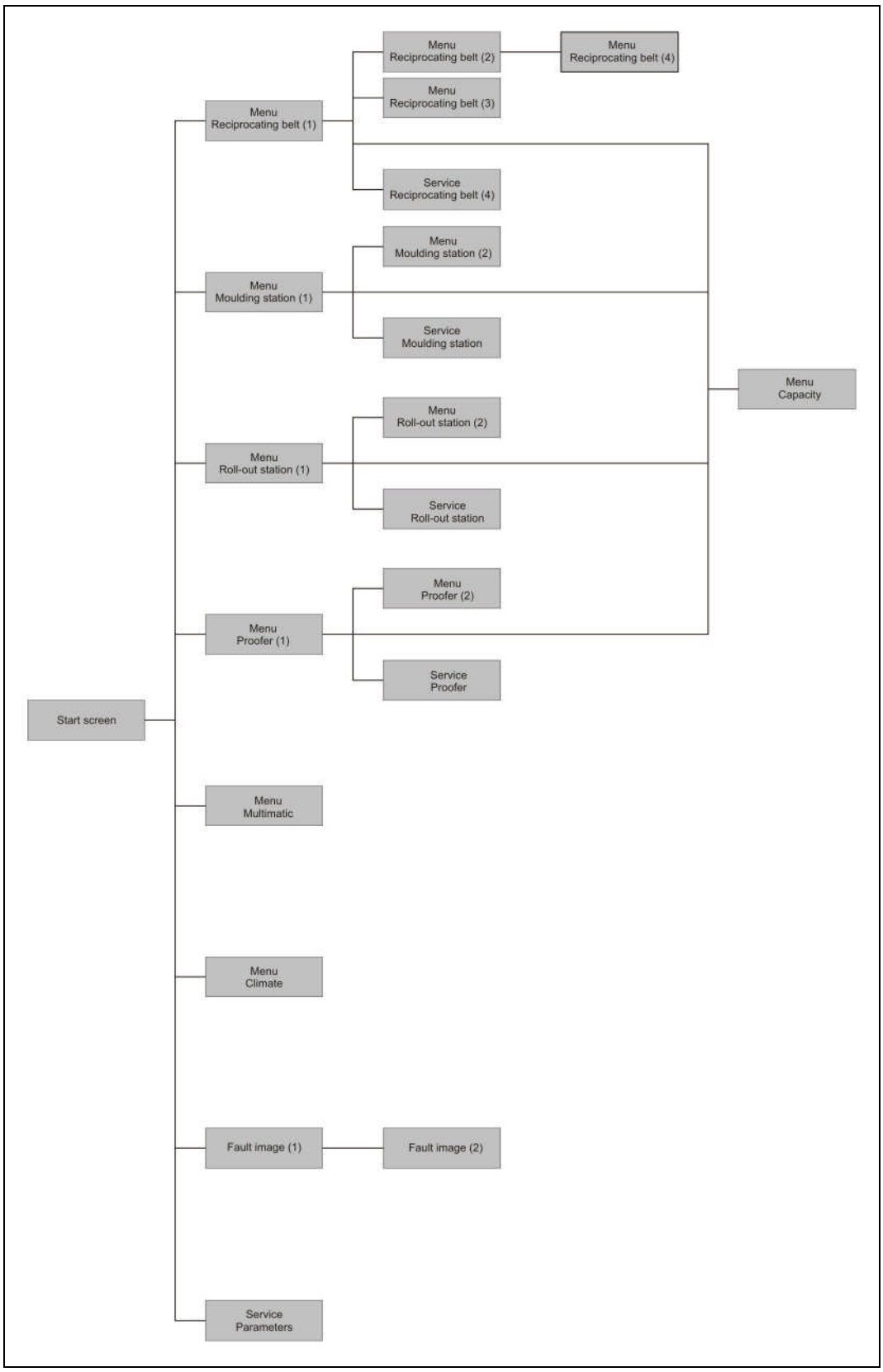
Note!

Password-protected menus should only be accessed by experienced persons or after consultation with competent employees at Emil Kemper GmbH.

The menus are protected by different passwords, depending on the users' level of knowledge (see table below).

Password levels	User	Comments
1	User	Trained machine operator
7	Foreman	With extended knowledge
8	Service	Service technician with sound knowledge of the line
9	Administrator	Plant operator/Supervisor with sound knowledge of the line and the control system

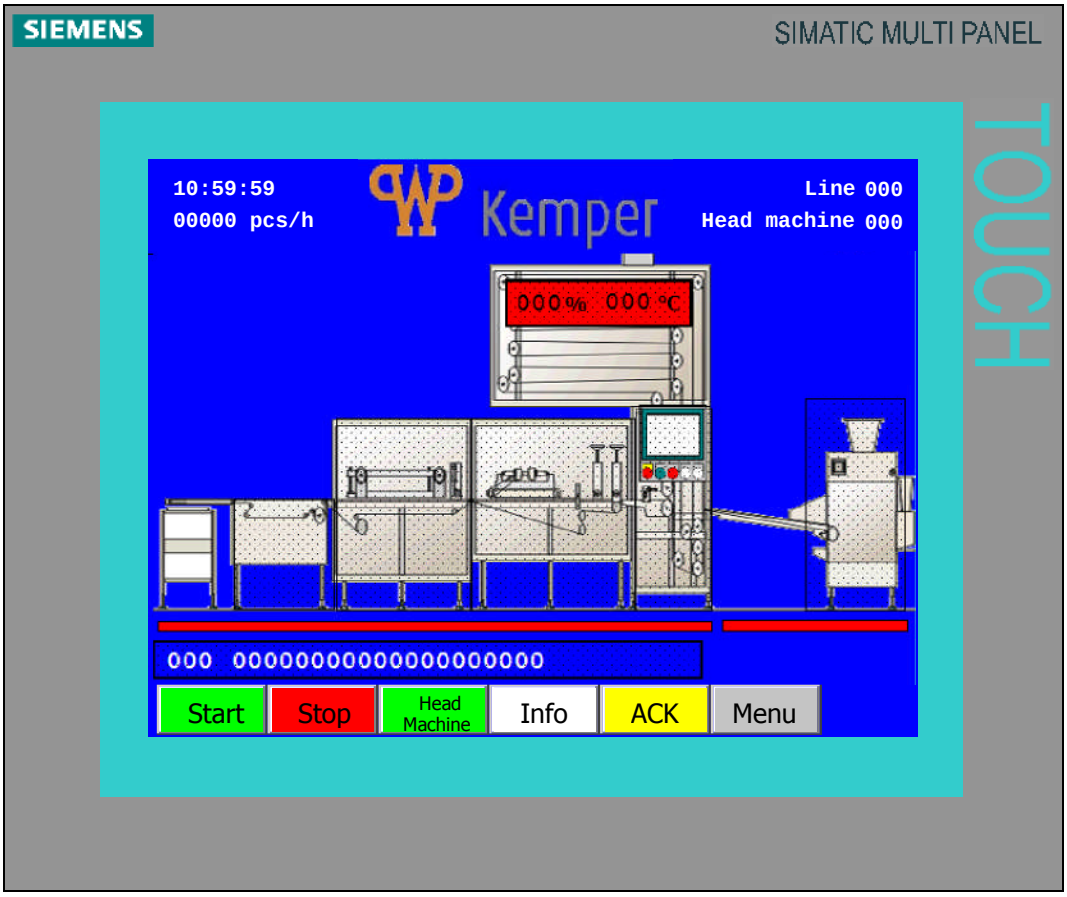
6.17.2 Structure of the main and sub-menus



6.17.3 Start screen

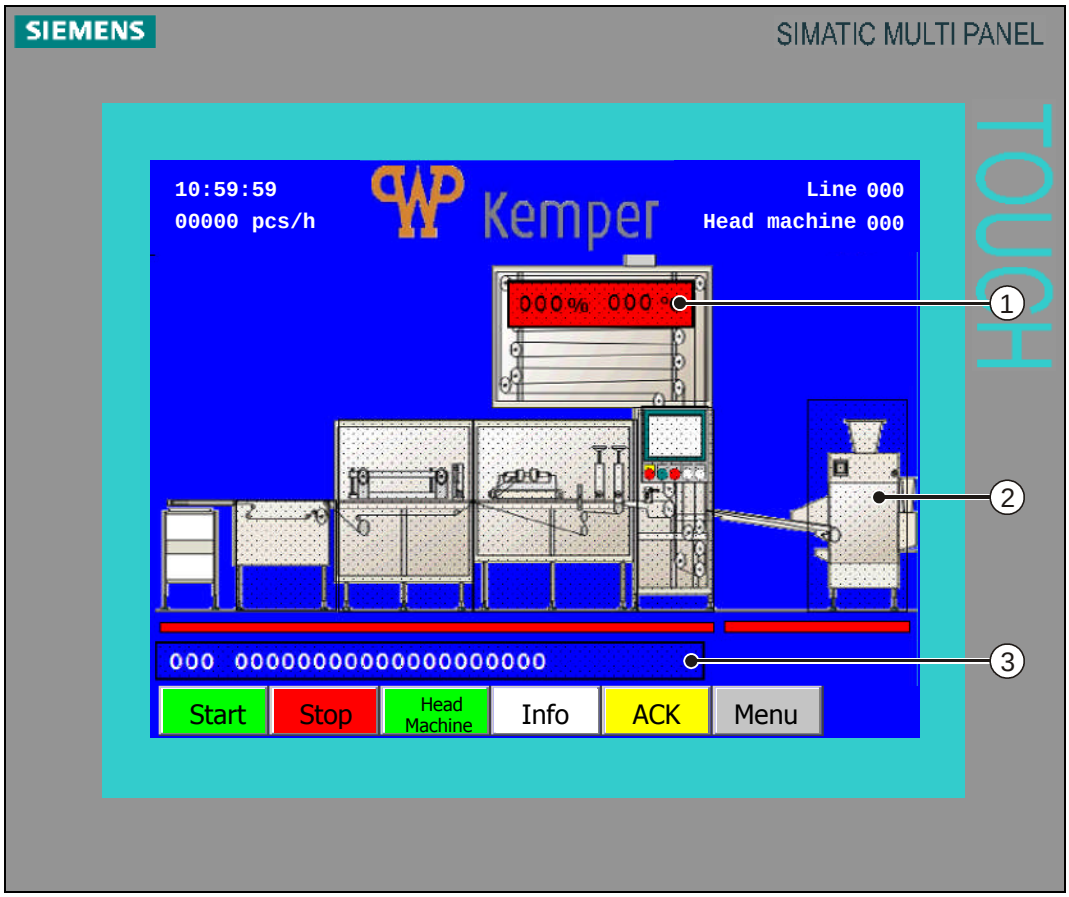
> ***Note!***
>
> *The illustration below contains optional assemblies and line modules which may not be included in the line's scope of delivery.*

The start screen appears after switching on the control voltage. The line is then ready for operation.



6.17.3.1 Displays

The following illustration describes the displays on the start screen:



The relative humidity and the temperature in the intermediate proofer are displayed in the red box.

There are respective status displays for the operating status (green: On, red: Off) underneath the illustrations of the line and the head machine.

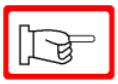
The time is shown at the top left on each touch panel display, the currently set line output is displayed beneath the time.

The recipe numbers of the line and the head machine are displayed at the top right.

6.17.3.2 Buttons and illustrations

The following actions are executed when pressing and touching the buttons and illustrations of the line modules listed below on the start screen:

Display humidity and temperature button (1)	Open the 'Climate menu' password (see section "6.17.1 Password levels")
Assembly button (illustration)	Open the assembly menu by touching the respective illustration
Head machine button (illustration) (2)	Open the menu of the head machine by touching the illustration (optional)
Recipe button (3)	Display and select the recipe. Input of new recipe names, for example 5. Cut rolls
START button	Start the system
STOP button	Stop the system
HEAD MACHINE button	Activate or deactivate the head machine in the system
Button INFO (flashes)	Open the fault image when the button flashes
ACK button	Acknowledge a fault message
MENU button	Open the service parameters



Note!

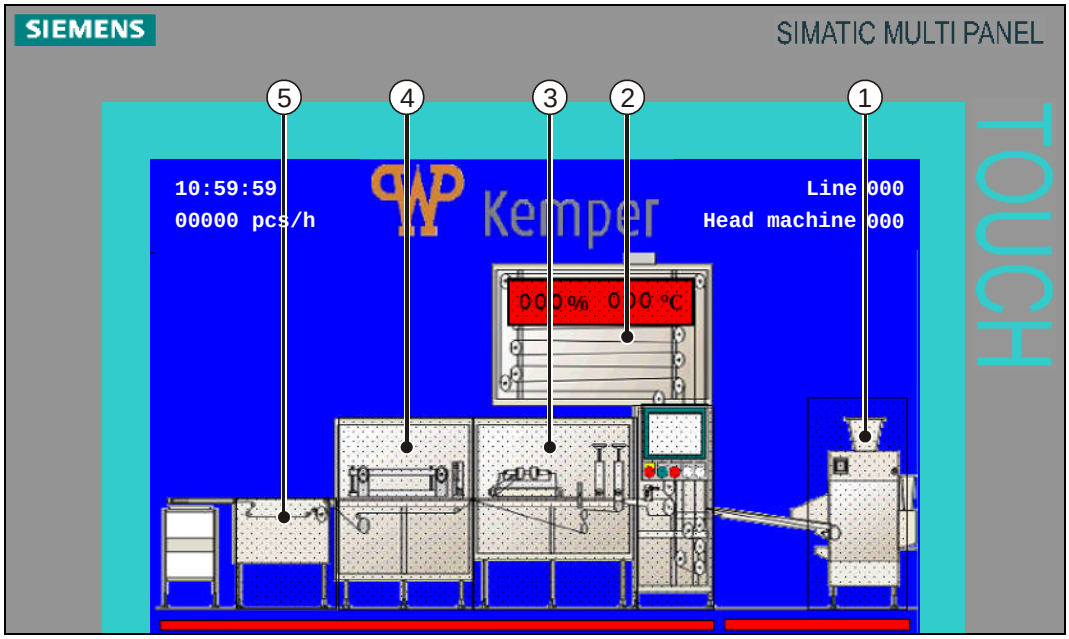
For the head machine, details about this chapter can be found in the separate user manual of the head machine.

The buttons and illustrations on the start screen (START and STOP see table above) are described below.

6.17.4 Illustration of the assemblies and line modules

Note!

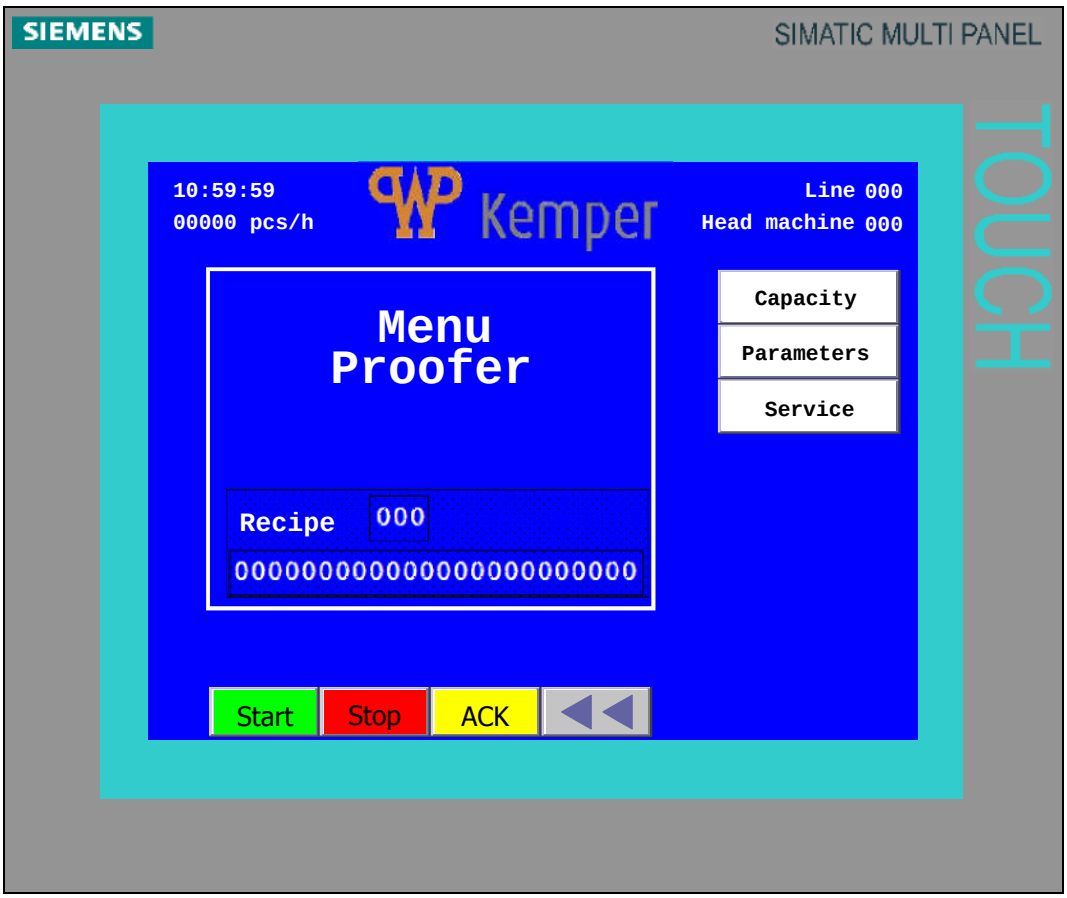
The illustration below contains optional assemblies and line modules which may not be included in the line's scope of delivery.



The corresponding assembly menus open after touching the illustration of a desired assembly on the start screen:

Illustration of the head machine (1)	'Multimatic menu'
Illustration of the basic module (2)	'Proofer menu'
Illustration of the roll-out station (3)	'Roll-out station menu'
Illustration of the channel moulding station (4)	'Moulding station menu'
Illustration of the reciprocating belt AB60.1 (5)	'Reciprocating belt menu’

6.17.4.1 'Proofer menu'

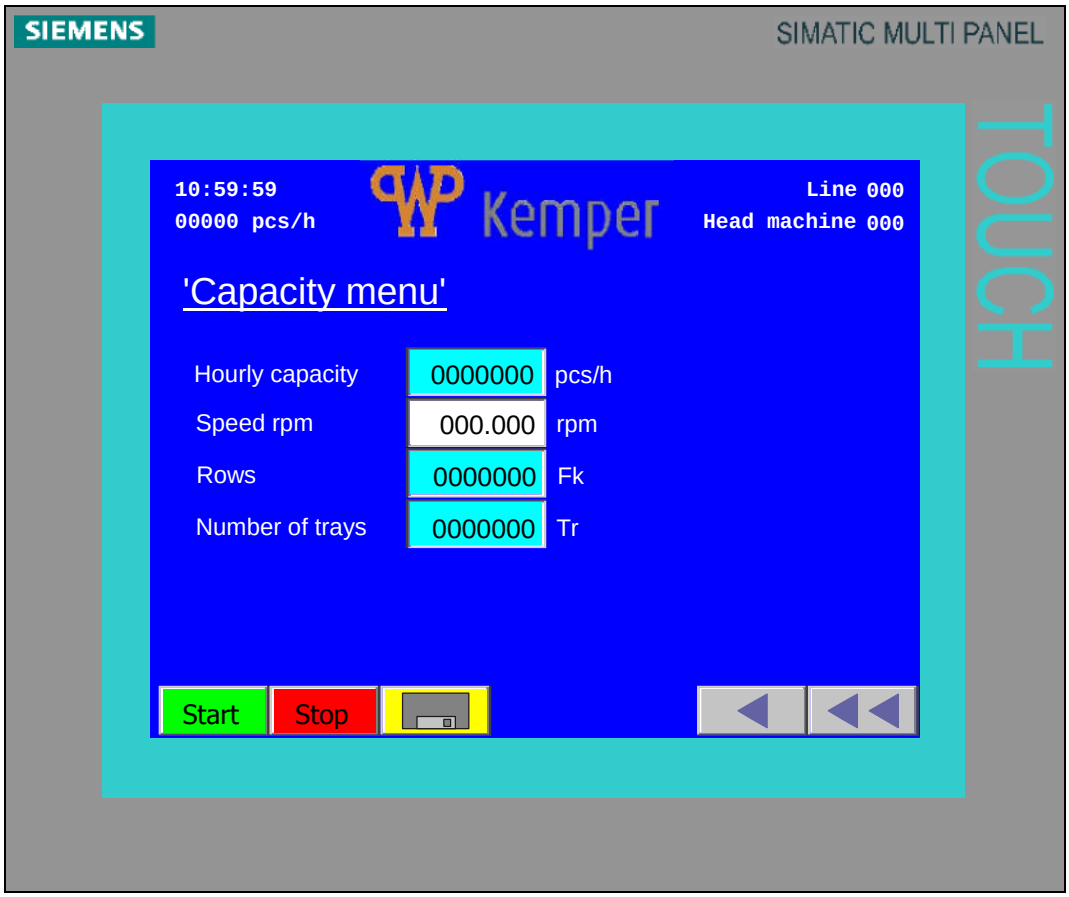


In the 'Proofer menu', you can access and change the parameters of the proofer by pressing the buttons.

CAPACITY button	'Capacity menu'
PARAMETER button	'Proofer menu'
SERVICE button	'Service proofer menu'
PROGRAM button	Display and select recipes
START button	Start the line
STOP button	Stop the line
ACK button	Acknowledge a fault message
	BACK button to return to the start screen

CAPACITY button

The following display appears after pressing the CAPACITY button:



Note!

The 'Capacity menu' is also used in other menus of the touch panel. It is always identical.

You can enter the capacity values by touching the respective input boxes and pressing the buttons in the 'Capacity menu':

HOURLY CAPACITY	Input of the hourly capacity of pieces of dough. The control then calculates the cycle in rpm for the proofing frames. The calculated value is displayed.
SPEED RPM	Display of the calculated value in rpm.
ROWS	Input of the desired rows between 4 and 10.
NUMBER OF TRAYS	Input of the number of occupied trays between 1 and 5.
START button	Start the line
STOP button	Stop the line

Finally, the buttons for saving and navigation:

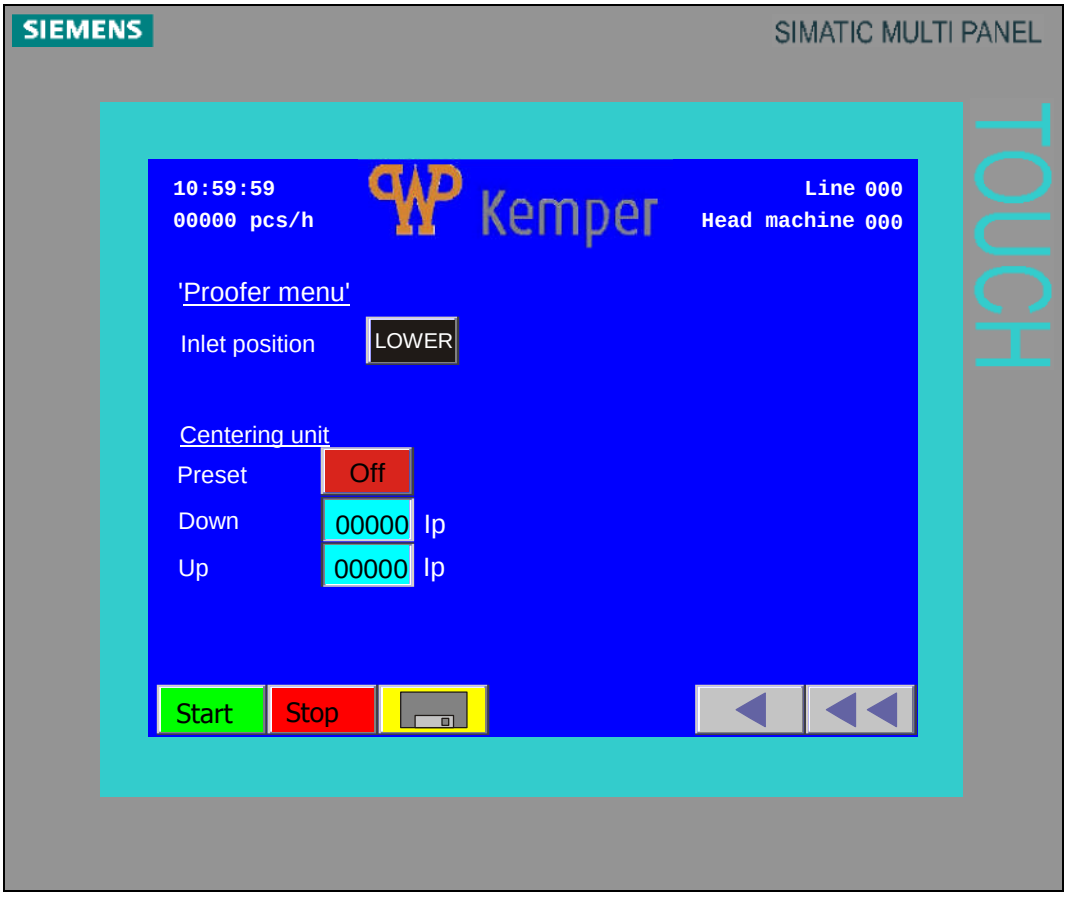
SAVE button to save inputs. Password level 7 is required for saving.

BACK button to return to the 'Proofer menu'

BACK button to return to the start screen

PARAMETER button

The 'Proofer menu' appears after pressing the PARAMETER button:



In the sub-menu 'Proofer menu', you can change the operating mode of the proofer:

INLET POSITION	Selection of 'Lower' or 'Upper'. Green dough is set when 'Lower' is selected. The pieces of dough are guided into the proofer when 'Upper' is selected.

In the optional menu item 'Centring unit', you can enter the values for centring in the proofer by touching the input boxes:

PRESET	Selection of 'On' or 'Off'. Centring of the pieces of dough on the bottom belt can be switched on or off.
UP	The interval period under 'Up' of the centring unit can be set between 5 and 12 pulses.
DOWN	The interval period under 'Down' of the centring unit can be set between 1 and 17 pulses.
START button	Start the line
STOP button	Stop the line

Finally, the buttons for saving and navigation:

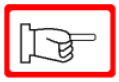

SAVE button to save the inputs. Password level 7 is required for saving.


BACK button to return to the 'Proofer menu'


BACK button to return to the start screen

Service button

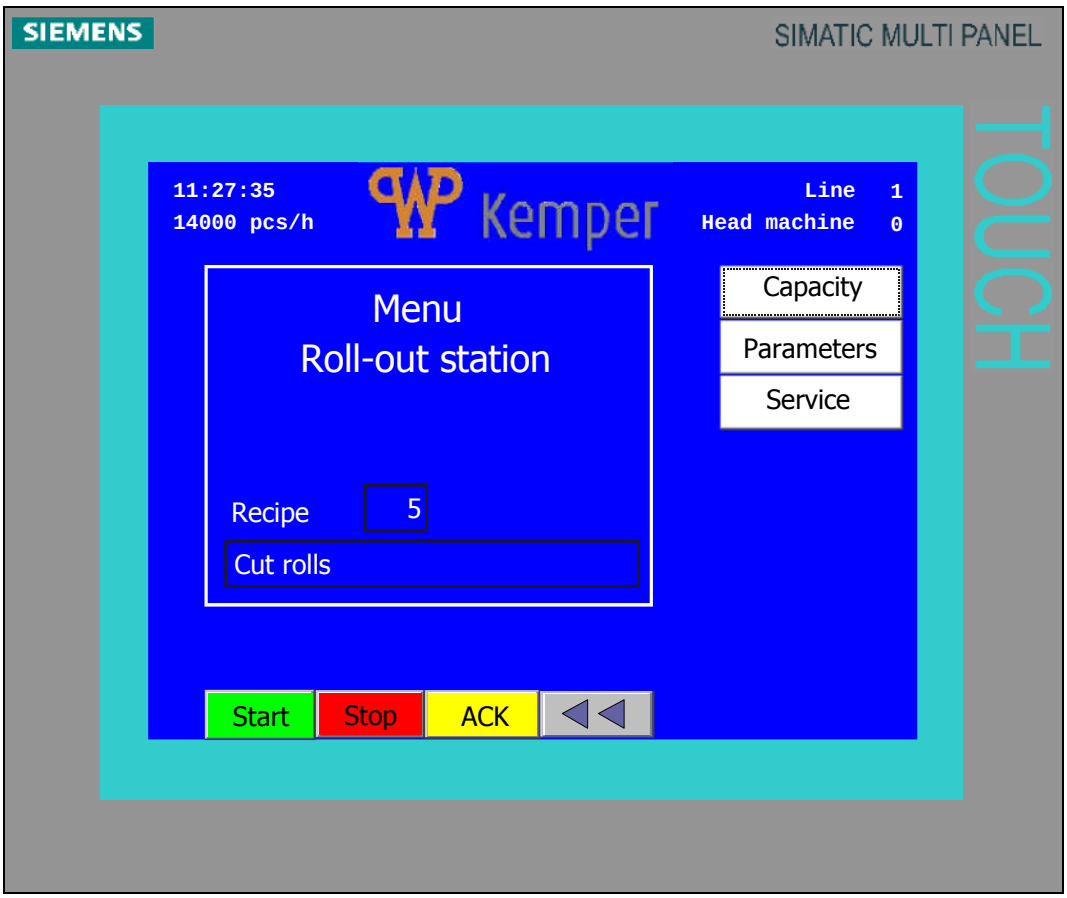
This button is password protected.



Note!

Password-protected menus should only be accessed by experienced persons or after consultation with competent employees at Emil Kemper GmbH.

6.17.4.2 Roll-out station menu

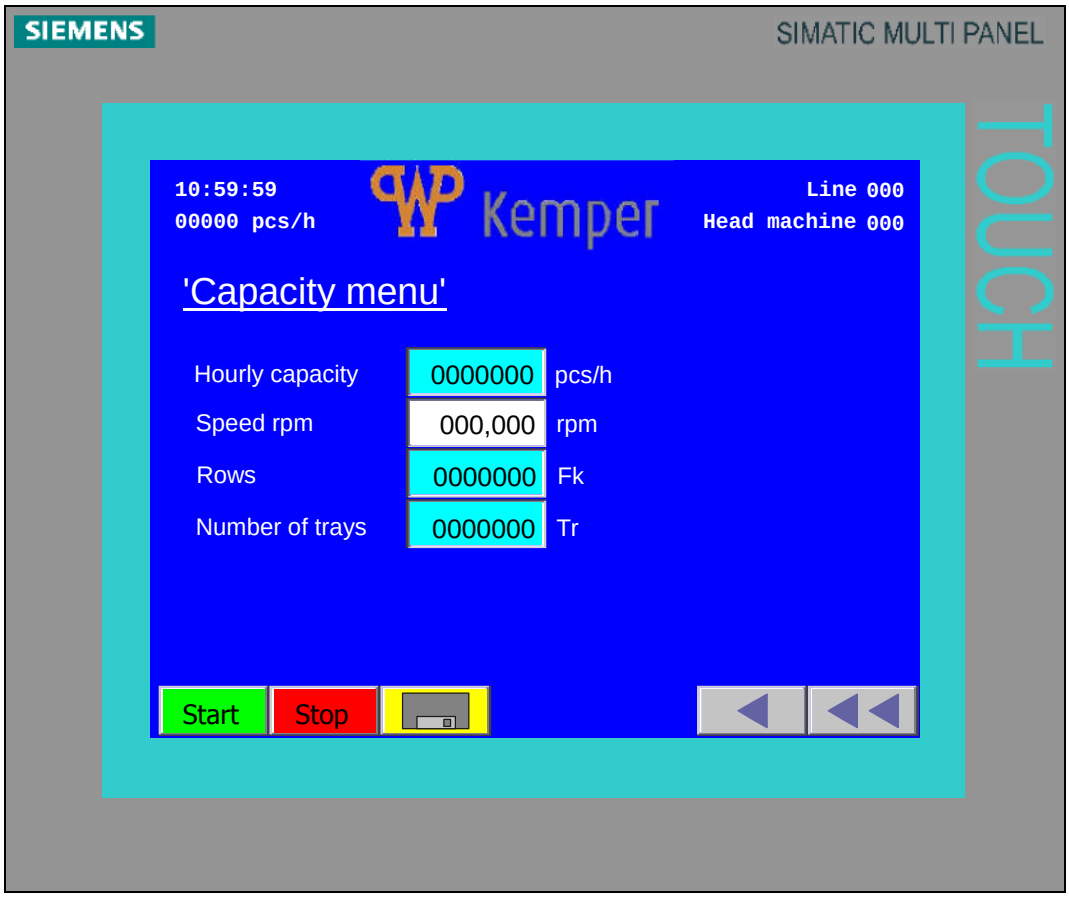


In the 'Roll-out station' menu, you can access and change the parameters of the roll-out station by pressing the buttons.

CAPACITY button	'Capacity menu'
PARAMETER button	'Roll-out station menu'
SERVICE button	Roll-out station service
PROGRAM button	Display and select recipes
START button	Start the line
STOP button	Stop the line
ACK button	Acknowledge a fault message
	BACK button to return to the start screen

CAPACITY button

The following display appears after pressing the CAPACITY button:



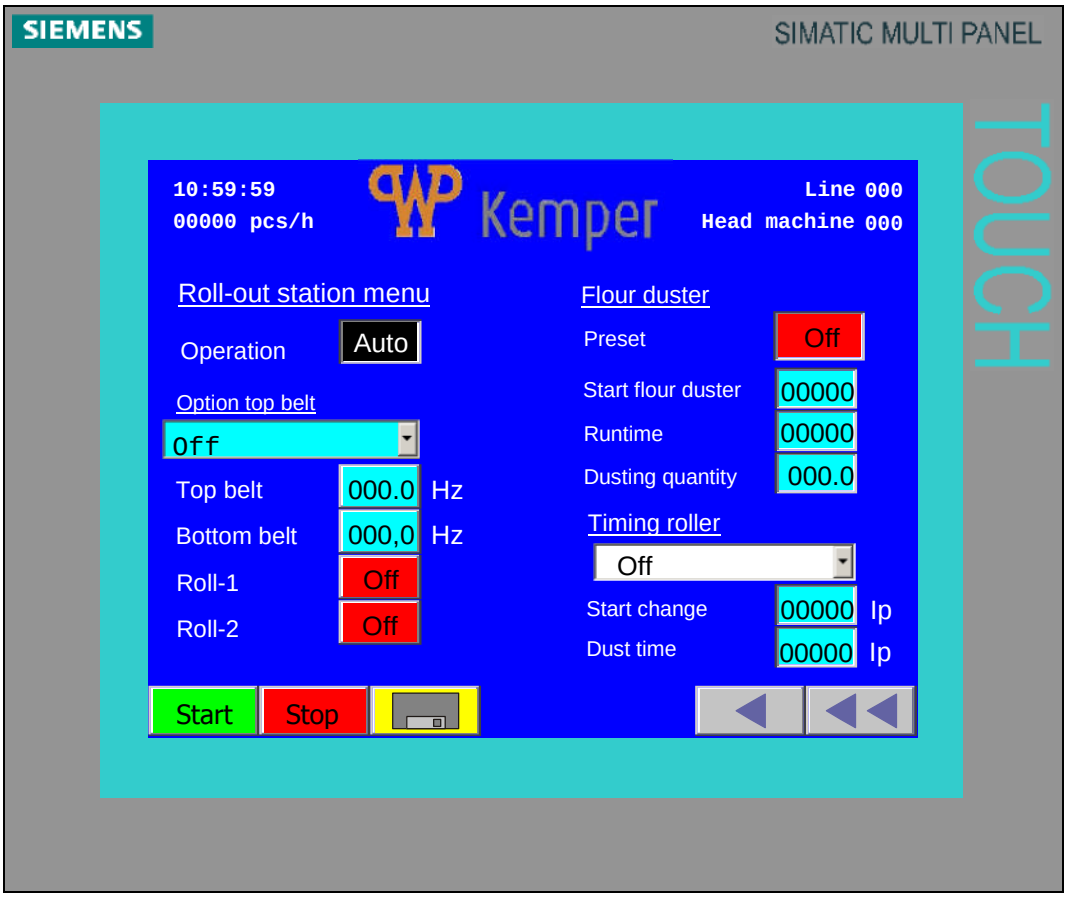
You can change the capacity values of the line by touching the respective input boxes in the 'Capacity menu'.

Note!

The 'Capacity menu' is also used in other menus.
It is always identical (see section "6.17.4.1 'Proofer menu'").

PARAMETER button

The following display appears after pressing the PARAMETER button:



In the sub-menu 'Roll-out station menu', you can change the operating mode of the roll-out station:

OPERATION	Selection of 'Auto' or 'Manual'. If 'Auto' is selected, the roll-out station starts when the first pieces of dough arrive. If 'manual' is selected, the roll-out station runs continuously.

In the sub-menu 'Roll-out station menu', touch the drop-down menu in the optional menu item 'Top belt option' (long-moulding belt) to select between four settings:

OFF	The top belt drive is switched off
SYNCHRONOUS	The top belt and the bottom belt run in the same direction, but the speed is different and adjustable.
OPPOSITE	The top belt and the bottom belt run in opposite directions, the speed is adjustable.
PARALLEL	The direction and speed of the top and bottom belt are the same.

Moreover, by touching the other input boxes you can change the operation of the top belt (long-moulding belt):

TOP BELT	Input of the top belt speed from 15 to 75 Hertz.
BOTTOM BELT	Input of the bottom belt (conveyor belt) speed from 15 to 75 Hertz.
ROLL-1	Selection of 'On' or 'Off'. Operation of the first roll-out roller can be switched on or off.
ROLL-2	Selection of 'On' or 'Off'. Operation of the second roll-out roller can be switched on or off.

In the optional menu item 'Flour duster', you can enter the values for operating the flour duster by touching the input fields:

PRESET	Selection of 'On' or 'Off'. Operation of the flour duster can be switched on or off.
START FLOUR DUSTER	Input of the start time of the flour duster between 1 and 17 pulses. The flour duster starts at this time.
DUST TIME	Input of the dust time of the flour duster as from the start time between 2 and 10 pulses.
DUSTING QUANTITY	Input of the speed of the round brushes in the flour duster in Hertz.

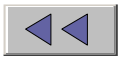
In the optional menu item 'Timing roller', use the drop-down menu
to select between the following four alignment and pressure roller settings:

OFF	The timing roller is out of operation. The timing roller is manually set via the adjusting wheel of the transport route (see section "7.4.12 Setting the alignment and pressure roller (timing roller)").
SYNCHRONOUS	The timing roller rotates in running direction to flatten the pieces of dough.
SYNCHRONOUS - OPPOSITE	The timing roller rotates in the opposite direction to the running direction to align the pieces of dough . The timing roller subsequently changes to synchronous.
OPPOSITE /STOP	The timing roller rotates in the opposite direction to the running direction and subsequently stops.

Moreover, you can change operation of the timing roller by touching the other input fields START CHANGE and RUNTIME:

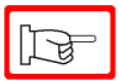
START CHANGE	Input of the start time between 1 and 17 pulses after which the timing roller returns to synchronous.
RUNTIME	Input of the synchronous runtime from a start time of between 3 and 12 pulses.

Finally, the buttons for saving and navigation:

START button	Start the line
STOP button	Stop the line
	SAVE button to save the inputs. Password level 7 is required for saving.
	BACK button to return to the 'Moulding station menu'
	BACK button to return to the start screen

SERVICE button

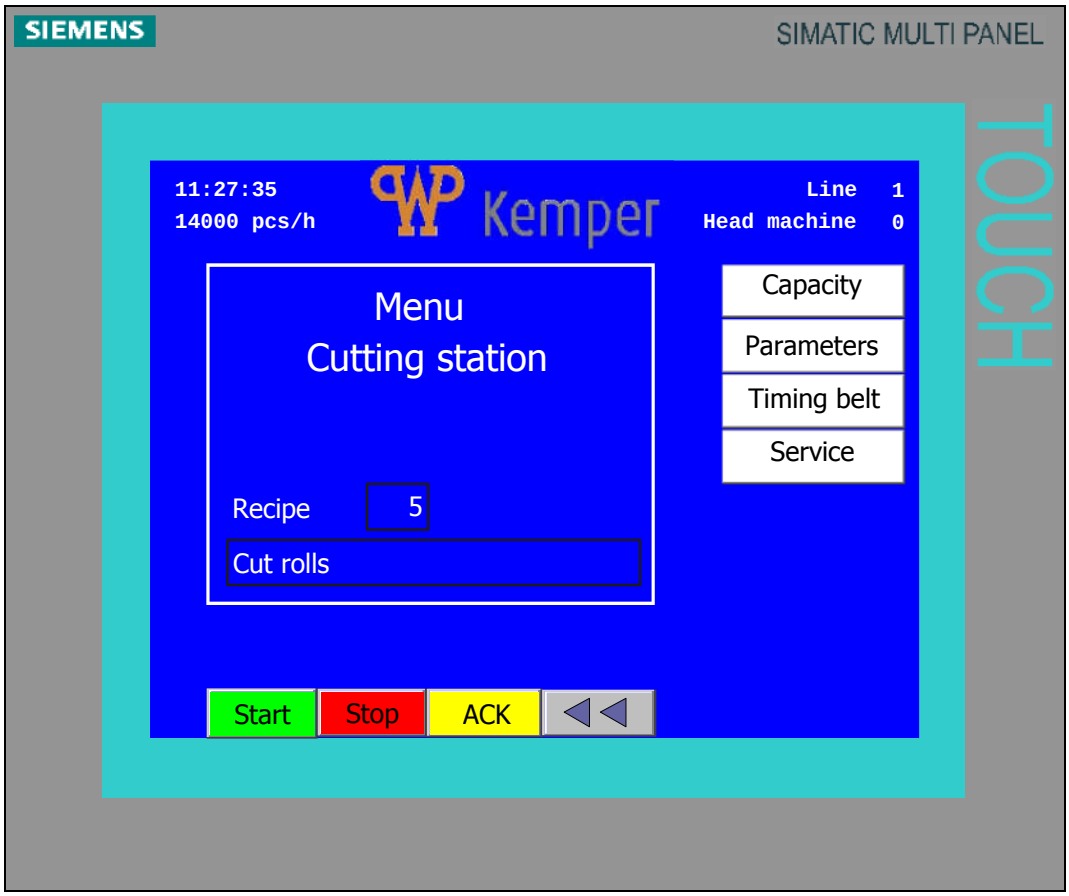
This button is password protected.



Note!

Password-protected menus should only be accessed by experienced persons or after consultation with competent employees at Emil Kemper GmbH.

6.17.4.3 'Cutting station menu'

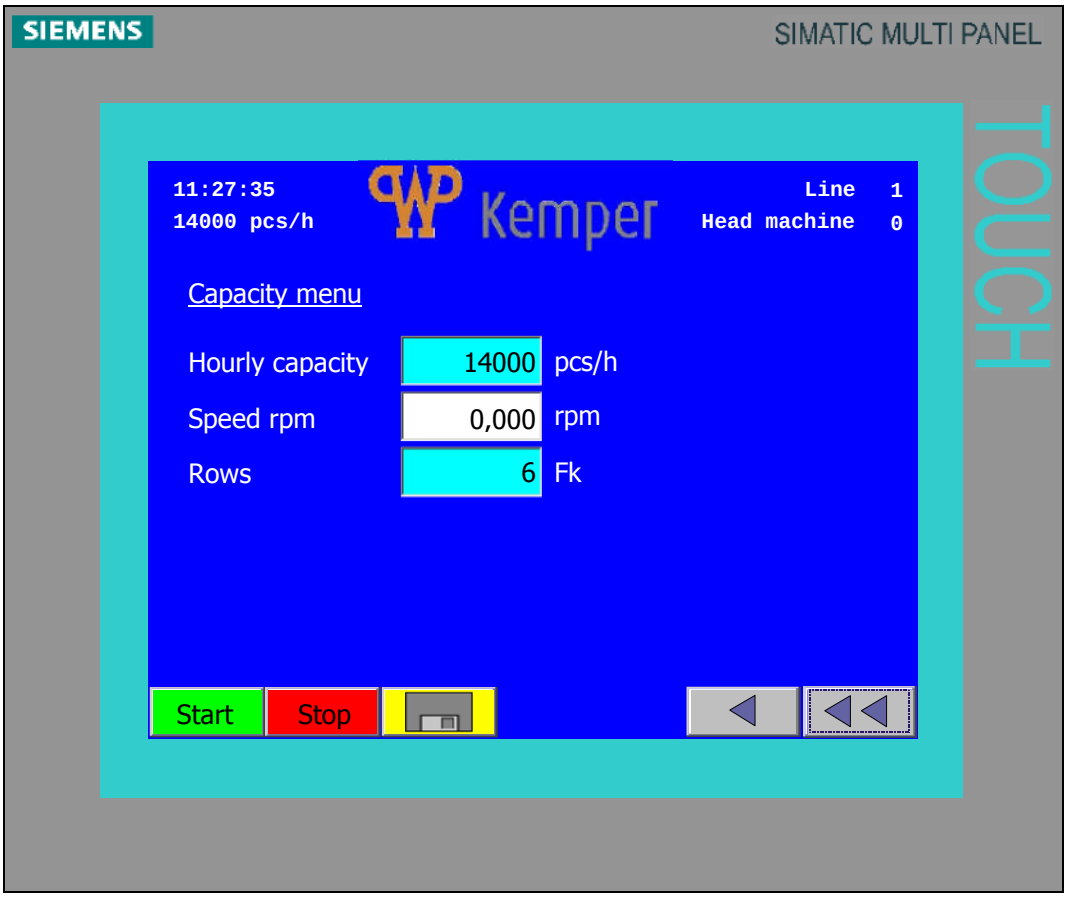


In this menu you can retrieve and change the data for controlling the cutting station.

CAPACITY button	'Capacity menu'
PARAMETER button	'Cutting station' menu
TIMING BELT button (= multistation)	'Conveyor belt' / 'Centering unit' / 'Belt stamp' menu
SERVICE button	Not assigned
Recipe number button	Display and select recipes
START button	Start the line
STOP button	Stop the line
ACK button	Acknowledge a fault message
	BACK button to return to the start screen

CAPACITY button

The following display appears after pressing the CAPACITY button:



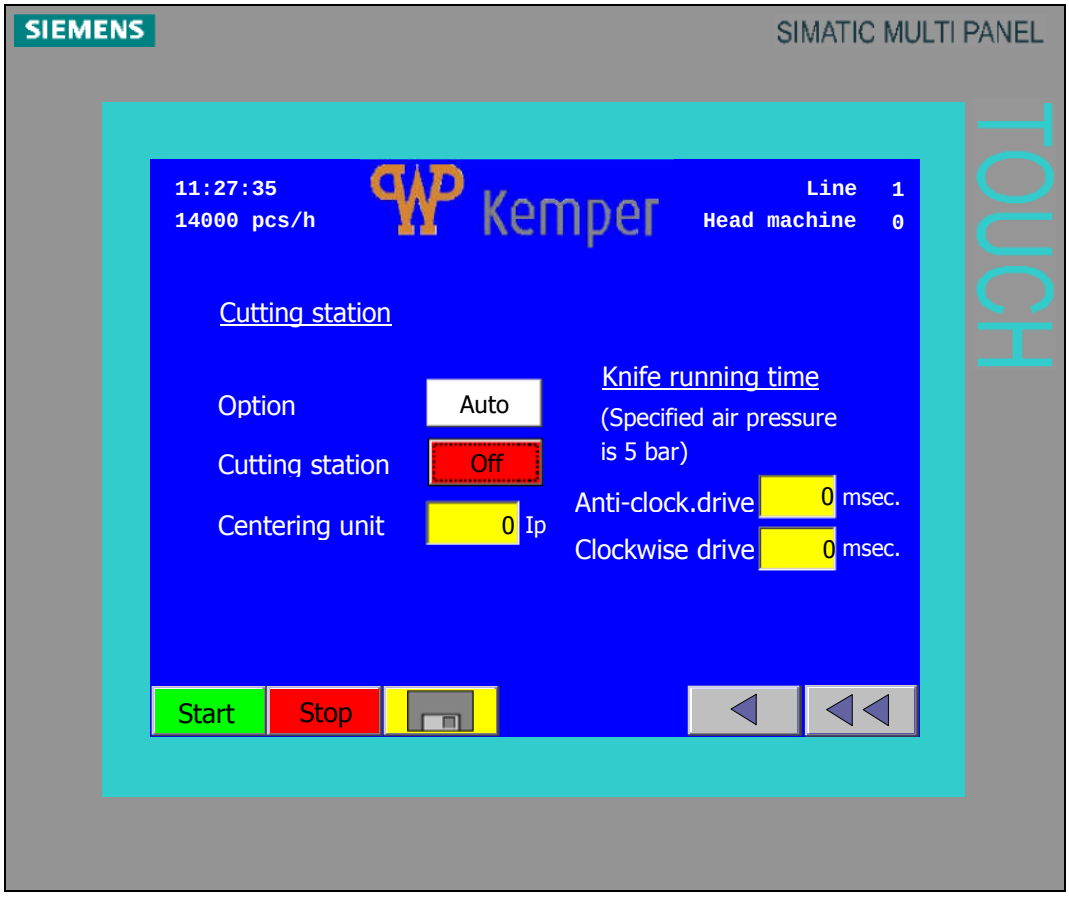
You can change the capacity values of the line by touching the respective input boxes in the 'Capacity menu'.

Note!

The 'Capacity menu' is also used in other menus.
*It is always identical (see section "**Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.**").*

PARAMETER button

The 'Cutting station' menu appears after pressing the PARAMETER button:



In the 'Cutting station' sub-menu you can change the data for controlling the cutting station by touching the input boxes:

OPTION	Selection of 'Auto' or 'Manual'. 'Auto' means that the cutting station starts to run when the first dough pieces arrive. 'Manual' means that the cutting station runs constantly.
CUTTING STATION	'On' or 'Off' in the 'Cutting station' box causes the line module to be switched on or off.
CENTERING UNIT	A value between 5 and 200 pulses can be entered in the 'Centering unit' box to set the timing.

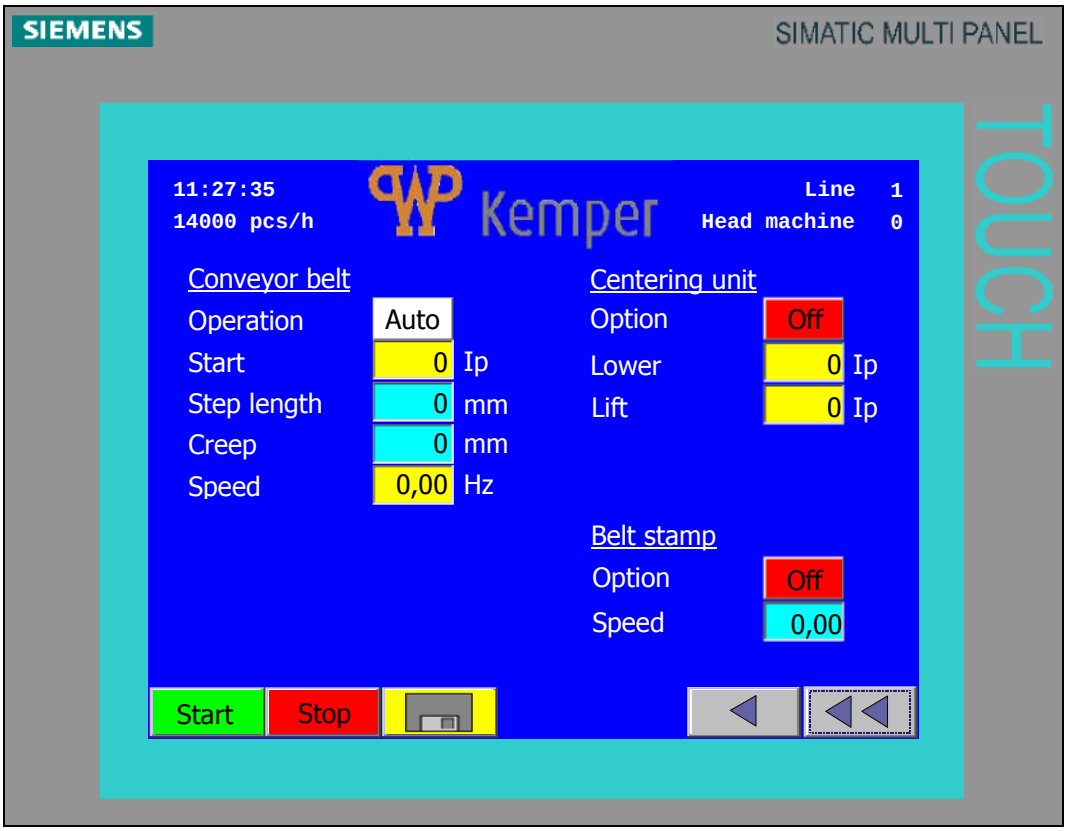
In the 'Knife running time' submenu you can compensate for the triangular knife's different running times during the outward and return strokes. Password level 1 is required for this input.

ANTI-CLOCKWISE DRIVE	An input between 100 and 200 milliseconds to compensate for the triangular knife's different running times.
CLOCKWISE DRIVE	An input between 100 and 200 milliseconds to compensate for the triangular knife's different running times.

TIMING BELT button (multistation)

The 'Multistation' menu is opened under TIMING BELT. The timing belt, belt stamp and centering unit are combined here.

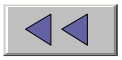
The following display appears after touching the TIMING BELT button:



Note!

The menu under the TIMING BELT button is also used in the 'Proofer menu' under the MULTISTATION button.
*It is always identical (see section "**Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.**").*

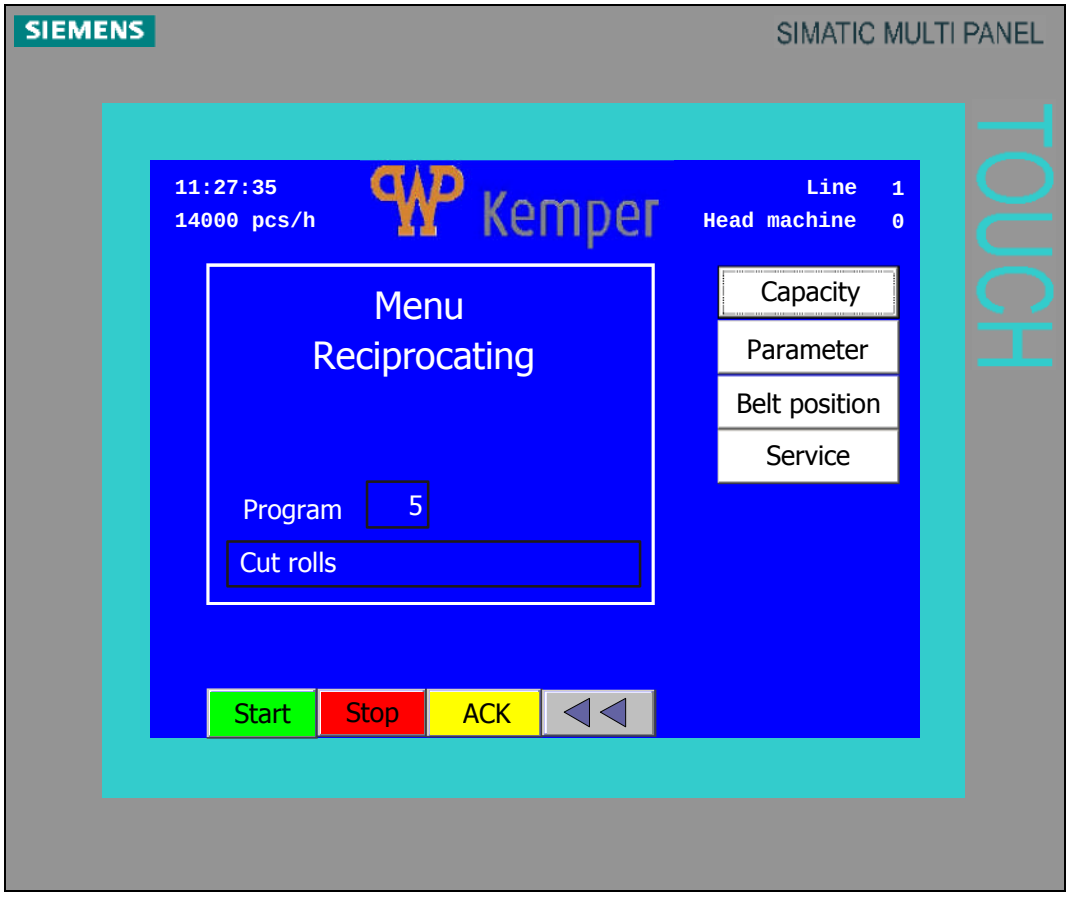
Finally, the buttons for operation, saving and navigation:

START button	Start the line
STOP button	Stop the line
	SAVE button to save inputs. Password level 1 is required for saving.
	BACK button to return to the 'Cutting station menu'
	BACK button to return to the start screen

6.17.4.4 'Reciprocating belt menu'

Note!

The 'Reciprocating belt menu' contains the optional BELT POSITION button.

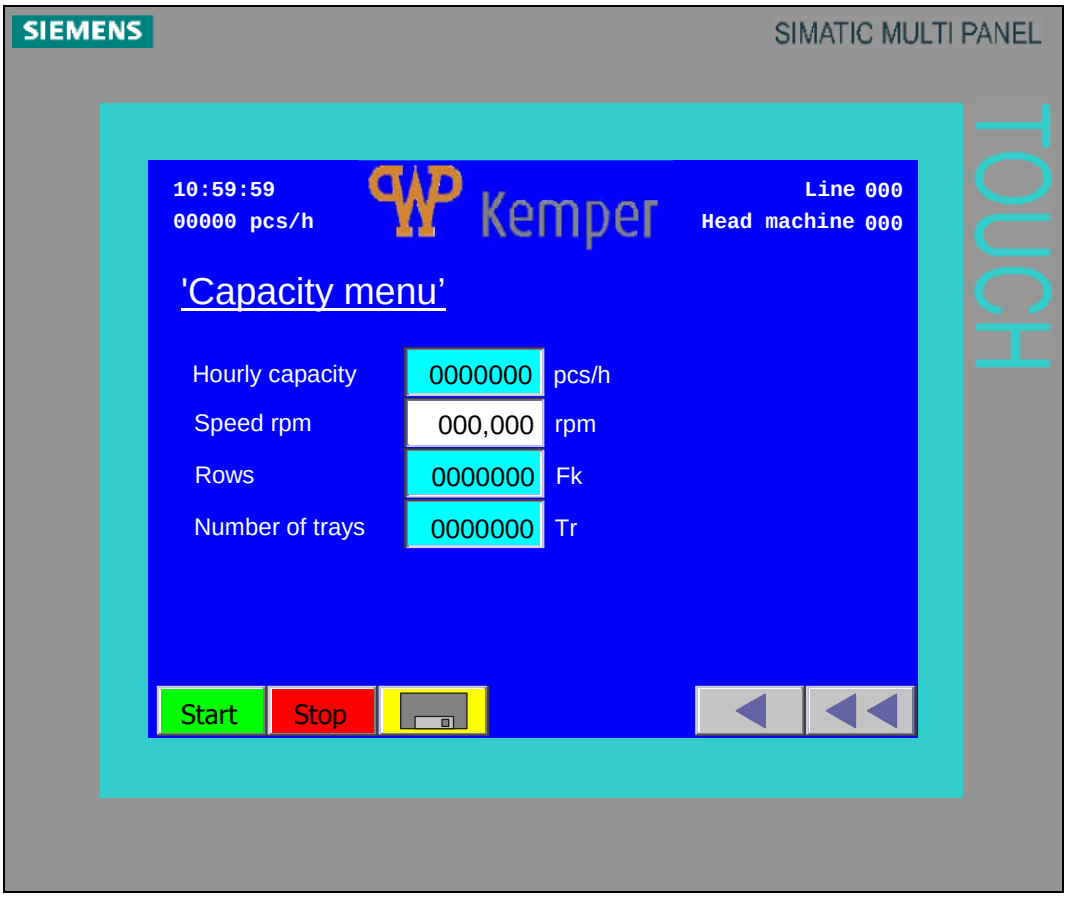


The data for controlling the reciprocating belt can be retrieved and changed in this menu:

CAPACITY button	'Capacity menu'
PARAMETER button	'Reciprocating belt menu'
BELT POSITION button (option)	'Reciprocating belt menu'
SERVICE button	Service 'reciprocating belt'
Program button	Display and select recipes
START button	Start the line
STOP button	Stop the line
ACK button	Acknowledge a fault message
	BACK button to start screen

CAPACITY button

The following display appears after pressing the CAPACITY button:



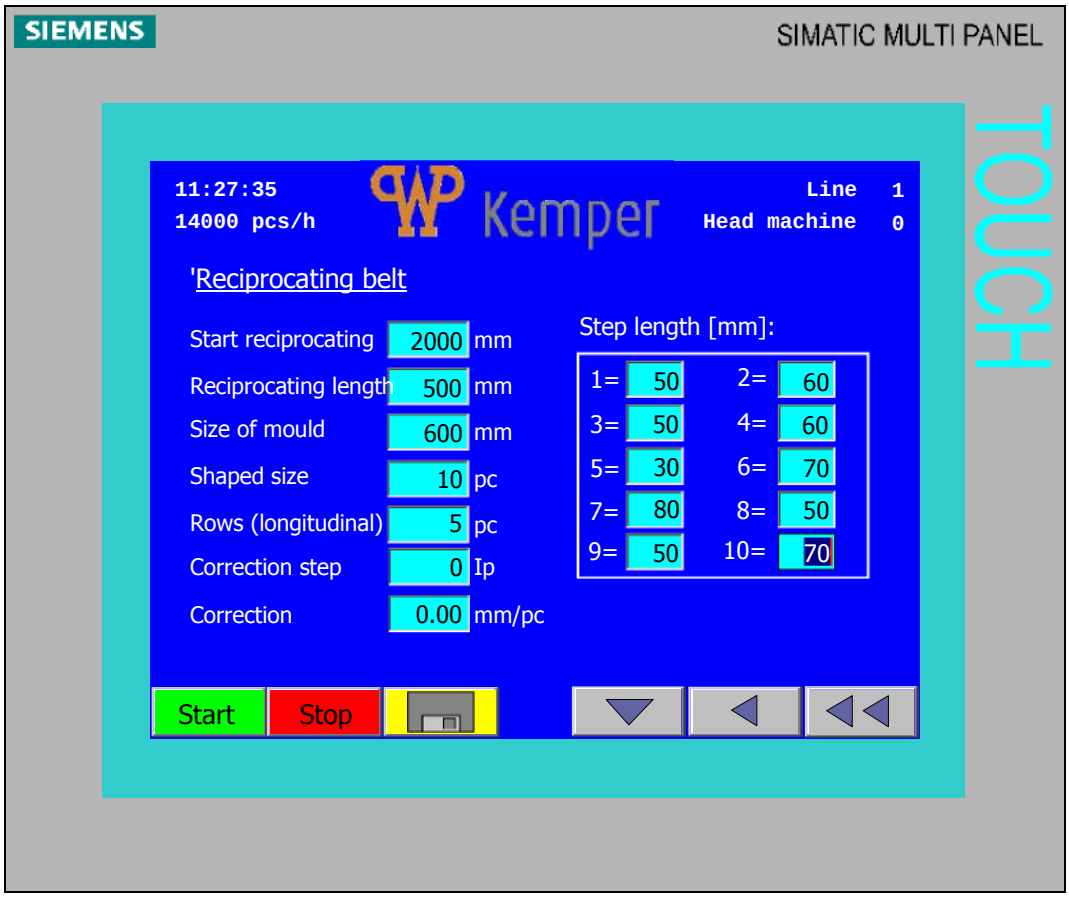
You can change the capacity values of the line by touching the respective input boxes in the 'Capacity menu'.

Note!

The 'Capacity menu' is also used in other menus.
It is always identical (see section "6.17.4.1 'Proofer menu'").

PARAMETER button

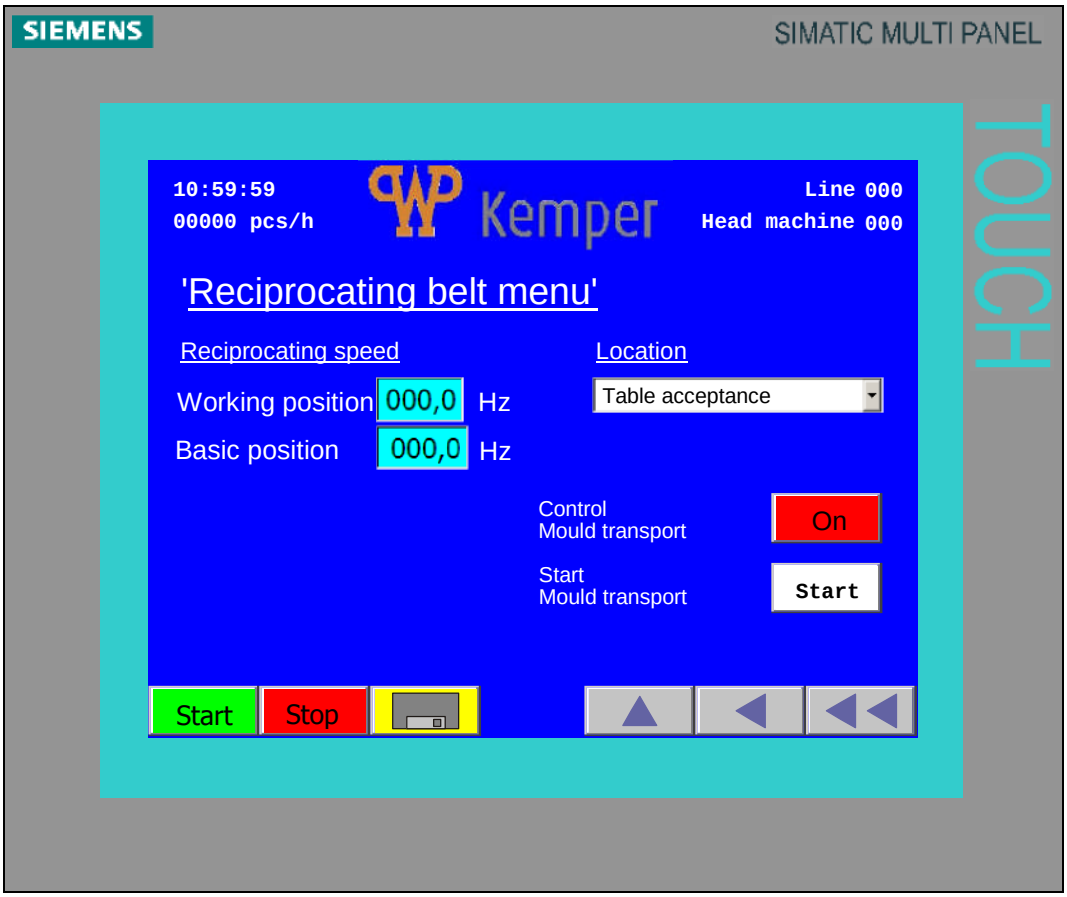
The following menu appears after pressing the PARAMETER button:



In the 'Reciprocating belt menu', touch the respective input boxes to change the control values for the reciprocating belt:

START RECIPROCATING BELT	Input of the distance in millimetres from the first row of pieces of dough to the desired row.
RECIPROCATING LENGTH	Input of the reciprocating length of the reciprocating belt in millimetres.
SIZE OF MOULD	Input of the size of the wooden board/baking tray in millimetres.
SHAPED SIZE	Input of the shaped sizes located on the extending table.
ROWS (LONGITUDINAL)	Input of the number of rows of pieces of dough located on the wooden board/baking tray.
CORRECTION STEP	Input of a correction value for the step of the reciprocating belt between the pulsed placement images.
CORRECTION PLACEMENT	Input of a correction value. The calculated speed of the control unit for the placement can be adjusted here if it is not correct.
STEP LENGTH	Input of ten step lengths for the realization of various placement images.

It is possible to access further input boxes in the 'Reciprocating belt menu' by pressing the  button. A continuation of the 'Reciprocating belt menu' appears:



In the continuation of the 'Reciprocating belt menu', touch the input boxes in the menu item 'Reciprocating speed' to change the control values of the reciprocating belt:

WORKING POSITION	Input of the reciprocating speed between 25 and 50 Hertz.
BASIC POSITION	Input of the return speed to the basic position between 15 and 30 Hertz.

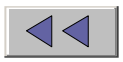
In the menu item 'Location', touch the drop-down menu to select the following three settings:

TABLE ACCEPTANCE	Normal operation of the reciprocating belt.
MOULD TRANSPORT	Automatic mould transport with optionally available mould conveyor belt.
MANUAL HAUL-OFF	Reciprocating belt transports the pieces of dough, no reciprocating function.

Moreover, the following can be changed by touching the other input boxes:

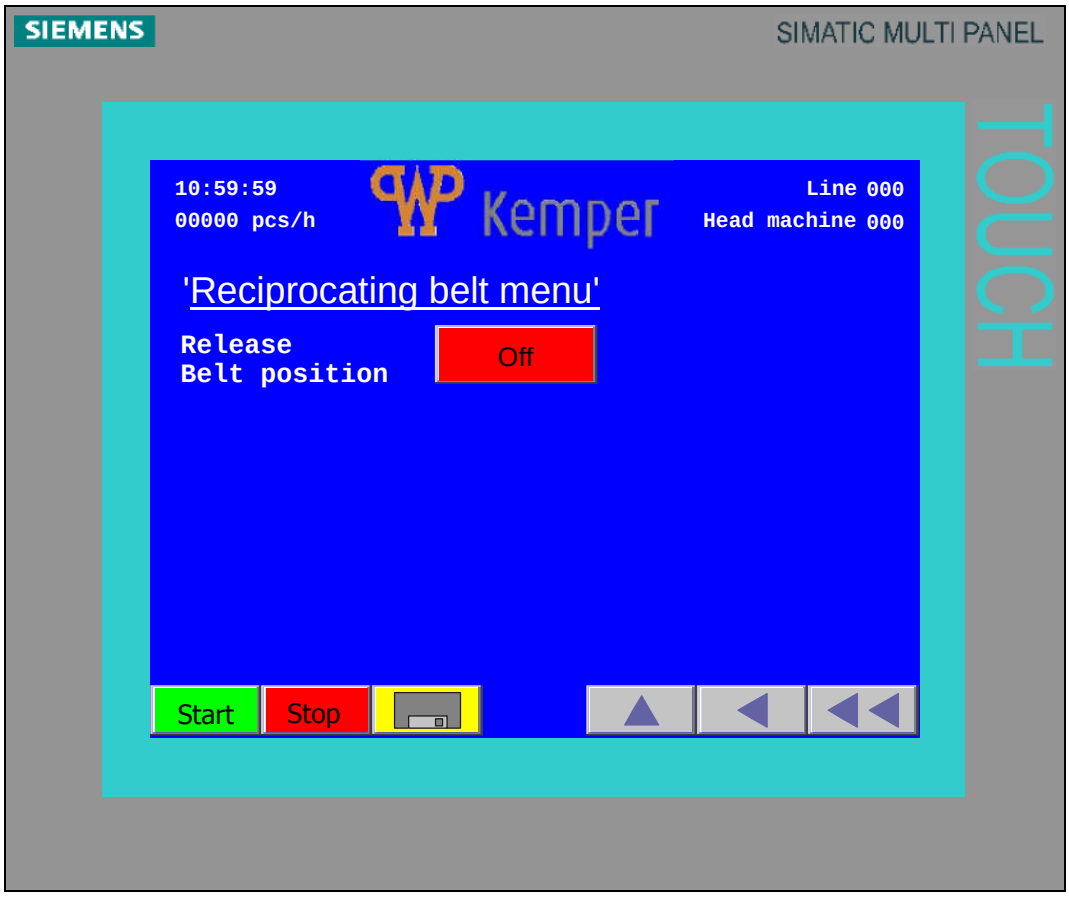
CONTROL MOULD TRANSPORT	Selection of 'On' or 'Off''. Monitoring of the extending table can be switched on or off. Reciprocation only occurs when the wooden board/baking tray has been released.
START MOULD TRANSPORT	Use the Start' button to manually release mould transport. Release is issued automatically after each stroke.

Finally, the buttons for operation, saving and navigation:

START button	Start the line
STOP button	Stop the line
	SAVE button to save inputs. Password level 7 is required for saving.
	UP button to return to the first page of the 'Reciprocating belt menu'
	BACK button to return to the 'Reciprocating belt menu'
	BACK button to return to the start screen

BELT POSITION button (optional)

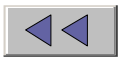
The following menu appears after pressing the optional BELT POSITION button:



The function of the row of buttons can be selected in the 'Reciprocating belt menu':

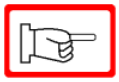
RELEASE BELT POSITION	Selection of 'Off' or 'Release'. The row of buttons for starting the conveyor belt is activated under 'Release'. If 'Off' is displayed, the row of buttons is used to operate the line module Centring unit (see section "**Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.**").

Finally, the buttons for operation, saving and navigation:

START button	Start the line
STOP button	Stop the line
	SAVE button to save inputs. Password level 7 is required for saving.
	UP button to return to the second page of the 'Reciprocating belt menu'
	BACK button to return to the 'Reciprocating belt menu'
	BACK button to return to the start screen

SERVICE button

This button is password-protected.

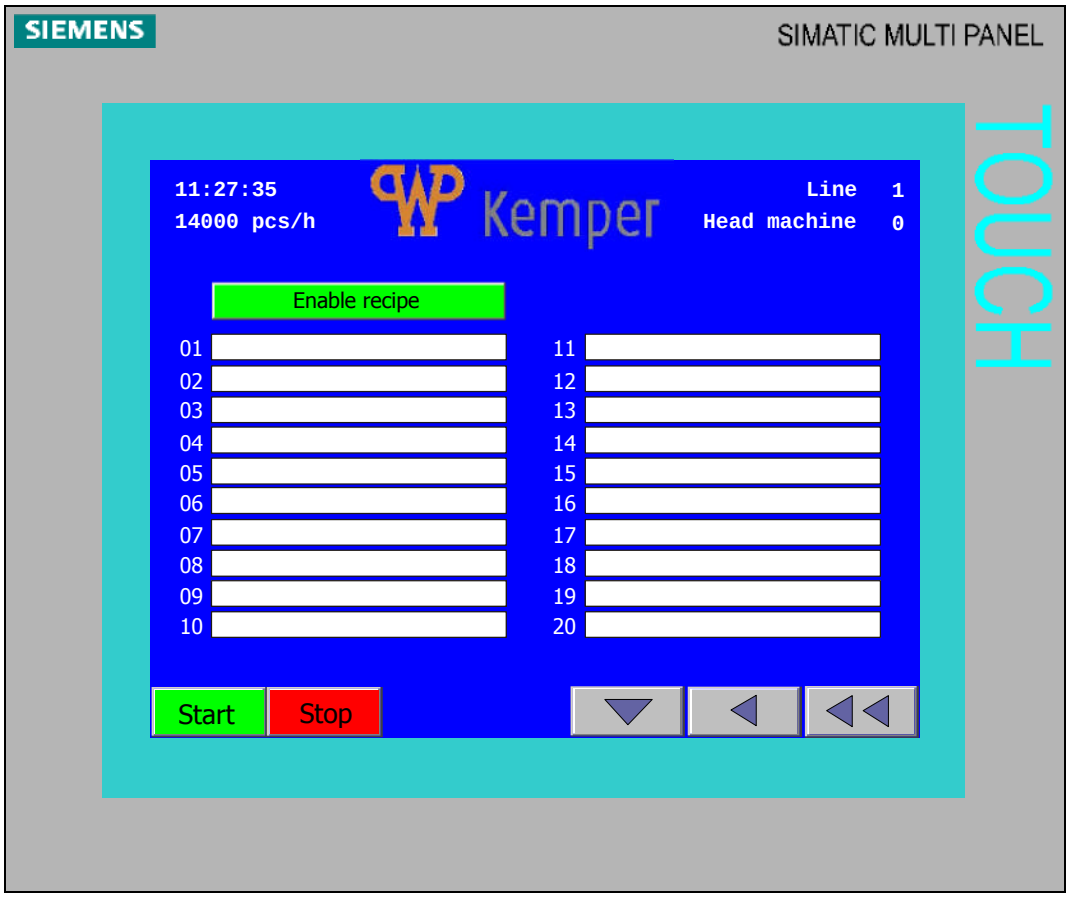


Note!

Password-protected menus should only be accessed by experienced persons or after consultation with competent employees at Emil Kemper GmbH.

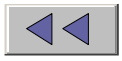
6.17.5 RECIPE button

The following display appears after pressing the button with the current recipe name:



Recipe selection

In this display, recipes can be selected by touching the name boxes (1-50).

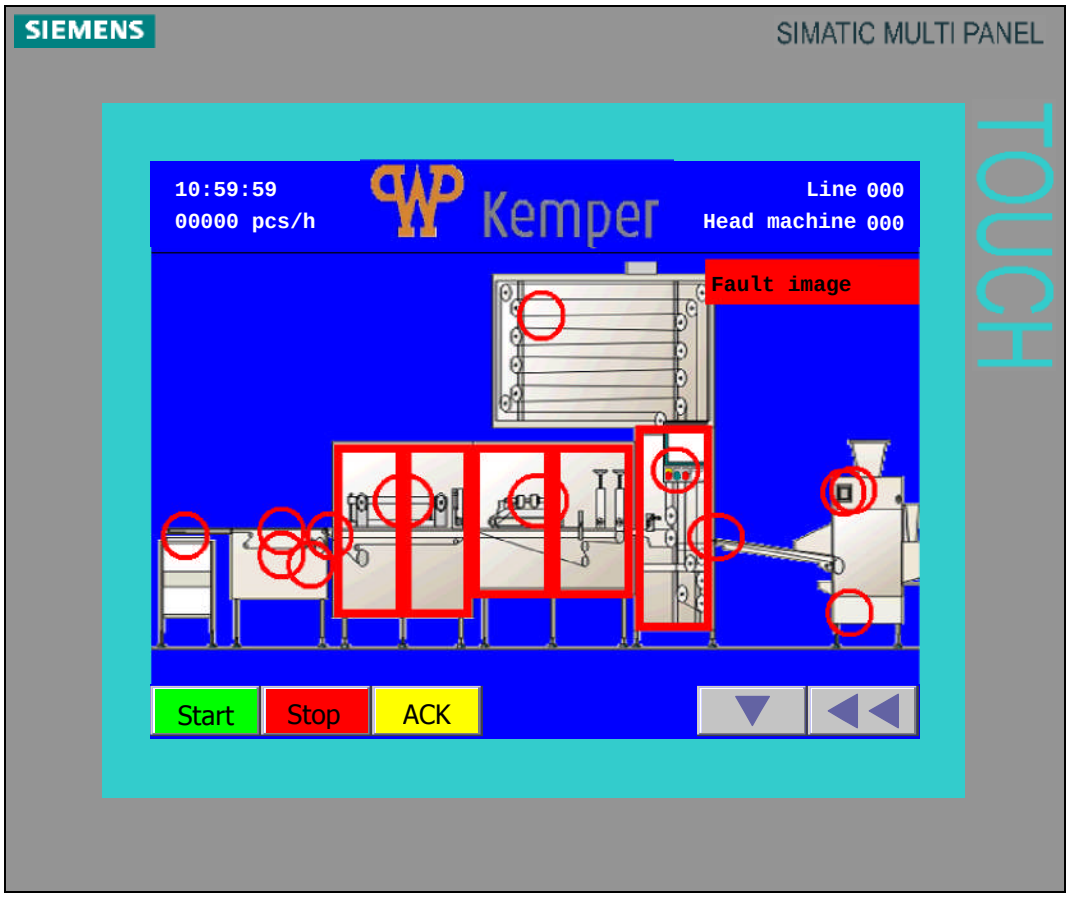
ENABLE RECIPE button	Text input of a new recipe. Colour of the button changes to red, button displays TEXT INPUT. The ENABLE RECIPE button is password protected. In this menu, it is possible to select an existing recipe or to assign a new recipe name. Up to 50 recipes can be saved, 20 recipes on each page. Press the Enable recipe button to enter a new recipe name, a window and a keypad appear for password input. After entering this data, the Enable recipe button switches to Text input. The Text input button then flashes red. Touch a name box to assign a new recipe name. Press the arrow buttons ( , ) to access the following pages. Select an existing recipe by touching its name. The recipe number is subsequently displayed on all the pages. After pressing the START button, all the saved settings of this recipe are executed by the line.
START button	Start the line
Name boxes 1-50	Display of the recipe name and input of a new recipe name
STOP button	Stop the line
	Down button to open further recipe lists
	Back button to return to the last menu
	Back button to return to the start screen

6.17.6 INFO button

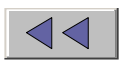
Note!

The INFO button flashes when there is a line fault.

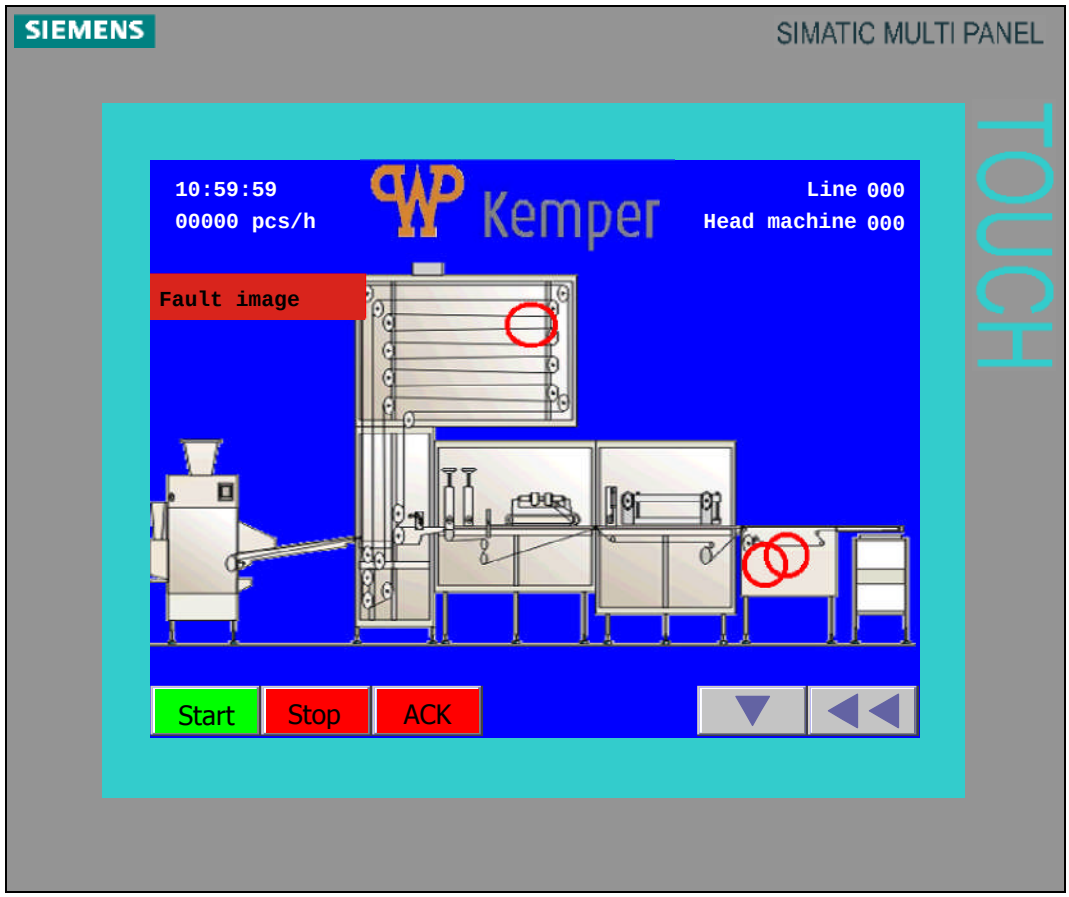
A line fault image (on the left in running direction) appears on the start screen after pressing the flashing Info button:



The error source is marked red in the line fault image.

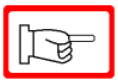
START button	Start the line
STOP button	Stop the line
ACK button	Acknowledge a fault message
	Line fault image on the right in running direction
	Back button to return to the start screen

Another line fault image (on the right in running direction) appears after pressing the  button:



The fault must be acknowledged once it has been eliminated within a line module. See the following section:

6.17.7 ACK BUTTON



Note!

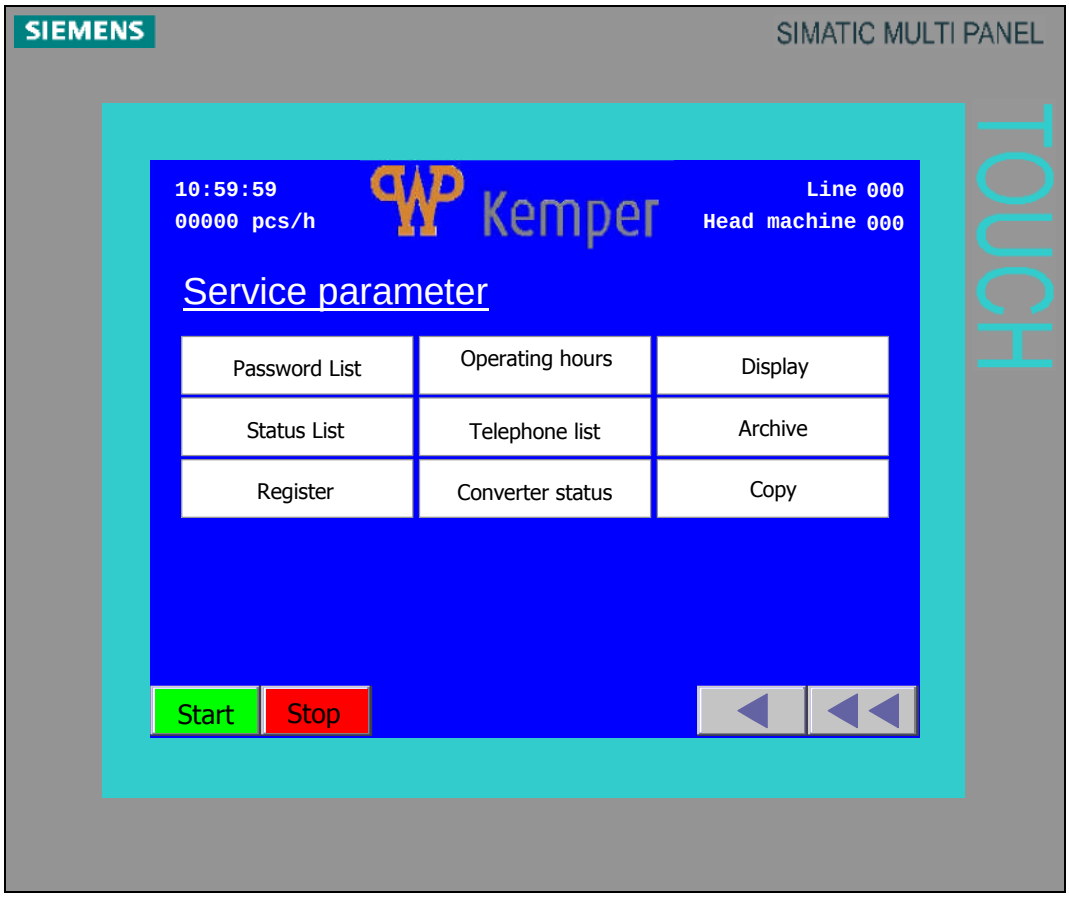
Not all error sources have to be acknowledged.

If the fault in the line module has been eliminated, press the ACK button on the start screen to acknowledge the fault and to set the control unit to normal operation.

ACK button	Acknowledge a fault message

6.17.8 MENU button

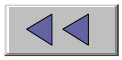
The following display appears after pressing the MENU button on the start screen:



All the buttons in this menu are password protected except START, STOP and TELEPHONE LIST.

> ***Note!***
>
> *Password-protected menus should only be accessed by experienced persons or after consultation with competent employees at Emil Kemper GmbH.*

PASSWORD LIST button	List of users and passwords (administrator)
OPERATING HOURS button	Display of 'operating hours' with value
DISPLAY button	Display of service parameters (cleaning image, runtime, language, calibrating, time/date)
STATUS LIST button	Display of status list
TELEPHONE LIST button	Display of telephone numbers of the Kemper Service department
ARCHIVE button	List of all previous faults

REGISTER button	Symbolic presentation of cup placement
CONVERTER STATUS button	Display of the status (frequency converter)
COPY button	Display of the 'Copy menu' (copying of recipes)
START button	Start the line
STOP button	Stop the line
	Back button to return to the last menu
	Back button to return to the start screen

6.18 Safety devices and guards

The line is equipped with the following safety devices (also see chapter "5 Line overview"):

- EMERGENCY STOP button on the touch panel
- EMERGENCY STOP button on the operator panel
- Limit switches at access doors

6.18.1 EMERGENCY STOP button

Pressing the EMERGENCY STOP button on the touch panel immediately stops the line.

Hazard!

The line is not de-energized after pressing the EMERGENCY STOP button. The line is still under power.

See section "7.7 Behaviour after triggering safety devices".

6.18.2 EMERGENCY STOP button on the operator panel

Pressing the EMERGENCY STOP button on the operator panel immediately stops the line.

Hazard!

The line is not de-energized after pressing the EMERGENCY STOP button. The line is still under power.

See section "7.7 Behaviour after triggering safety devices".

6.18.3 Limit switches

If an access door is opened while the line is running, the respective limit switch immediately stops the line.

Hazard!

Tripping of the limit switch does not de-energize the line. The line is still under power.

See section "7.7 Behaviour after triggering safety devices".

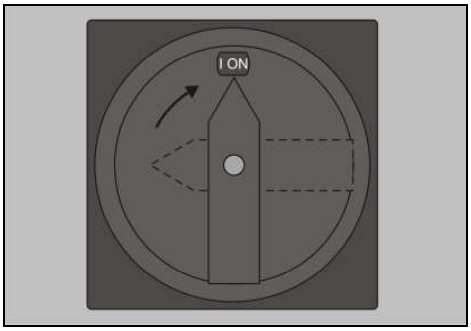
7 Operation

Operation of the line is described in the following sections.

Note!

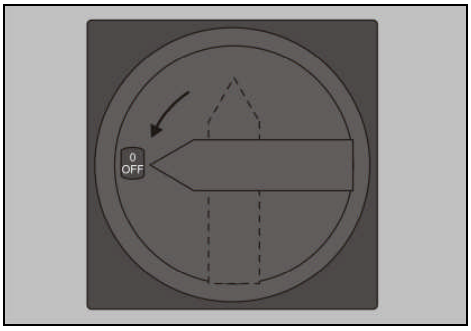
For the head machine, details about this chapter can be found in the separate user manual of the head machine.

7.1 Switching the line on and off



Switching on

Turn the main switch on the switchbox to I / ON.

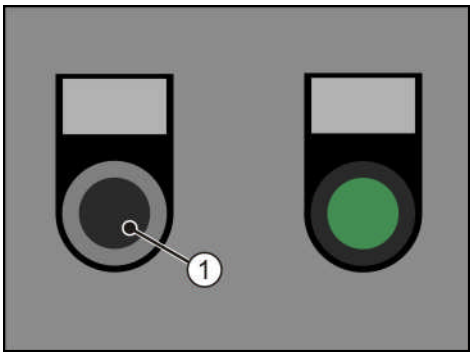


Switching off

Turn the main switch on the switchbox to 0 / OFF.

7.2 Switching the control voltage on

The CONTROL VOLTAGE ON button is located on the line's touch panel.



Press the CONTROL VOLTAGE ON button (1).

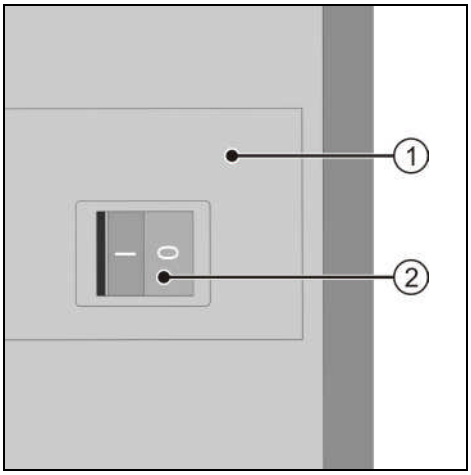
7.3 Setting assemblies

The following sections describe operation of the assemblies.

7.3.1 Basic module

7.3.1.1 Switching on the steam generator system

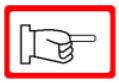
The operator panel of the steam generator system is located on the right in running direction.



Press the button (2) on the operator panel (1) to switch the steam generator system on and off.

7.3.1.2 Setting the heating, convection, sterilization and drying

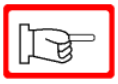
The settings of the air conditioning of the basic module are adjusted via the touch panel. Password required (see section "6.17.3 Start screen").



Note!

Password-protected menus should only be accessed by experienced persons or after consultation with competent employees at Emil Kemper GmbH.

7.3.1.3 Setting a recipe at the basic module



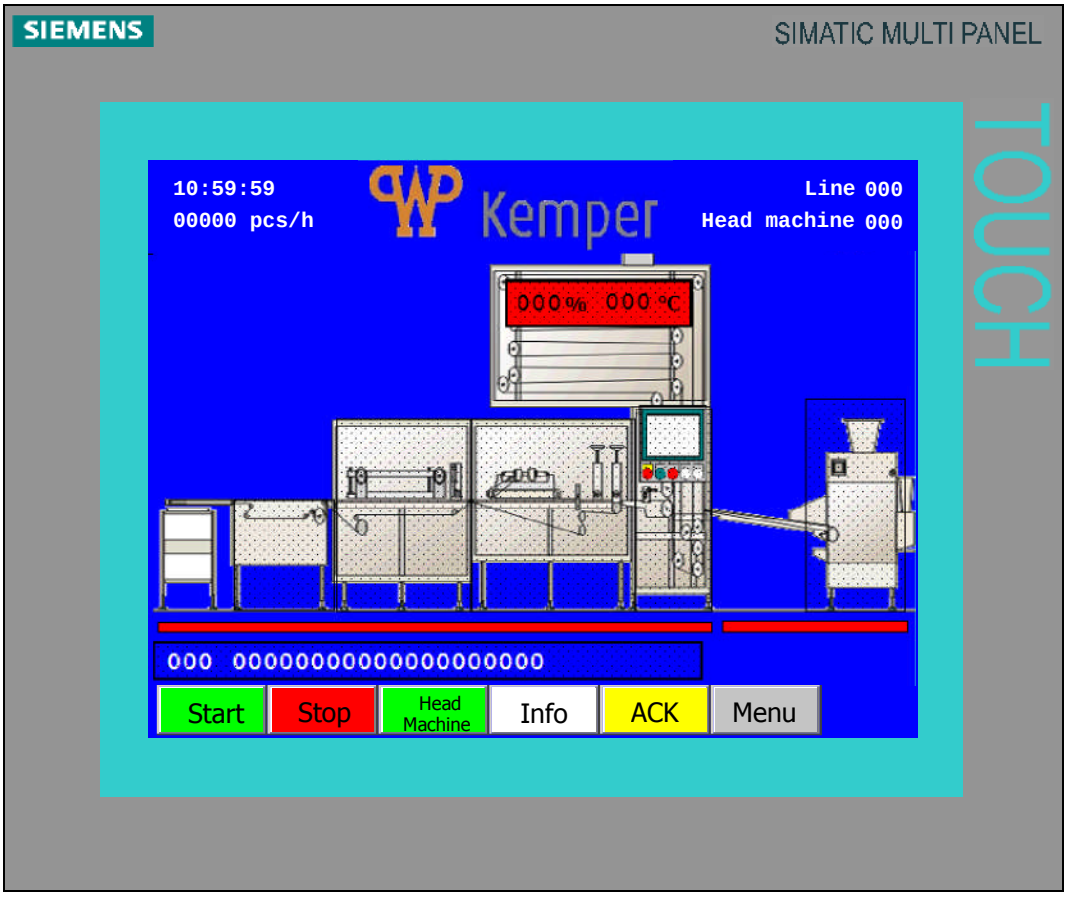
Note!

The touch control contains recipes which have been set by Emil Kemper GmbH according to your wishes.

This section describes all the necessary working steps to carry out changes to your recipes at the basic module.

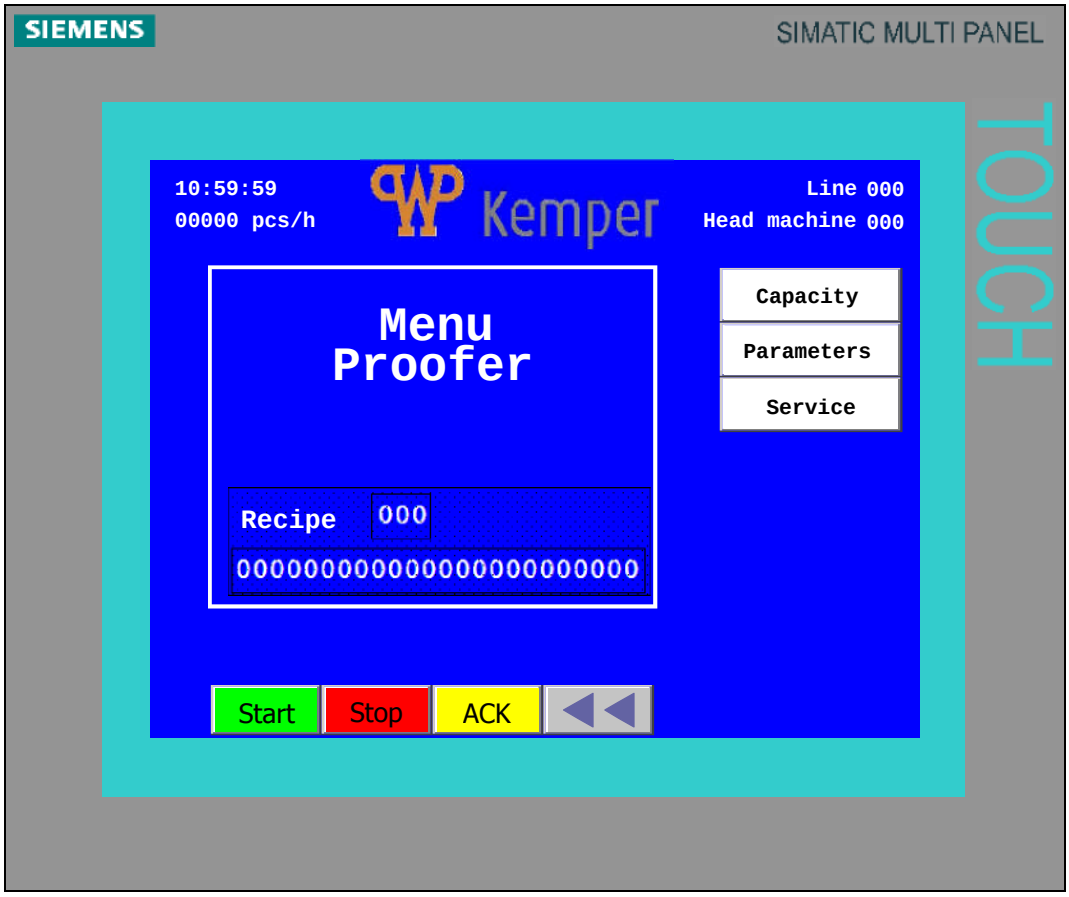
- Switch the line on (see section "7.1 Switching the line on and off").
- Switch the control voltage on (see section "7.2 Switching the control voltage on").
- Open the desired recipe (see section "7.5 Selecting a recipe via the touch panel").

After a few seconds, the start screen appears with illustrations of the line's assemblies on the touch screen:



- Touch the illustration of the basic module on the start screen.

The 'Proofer menu' opens after touching the illustration of the basic module on the start screen:

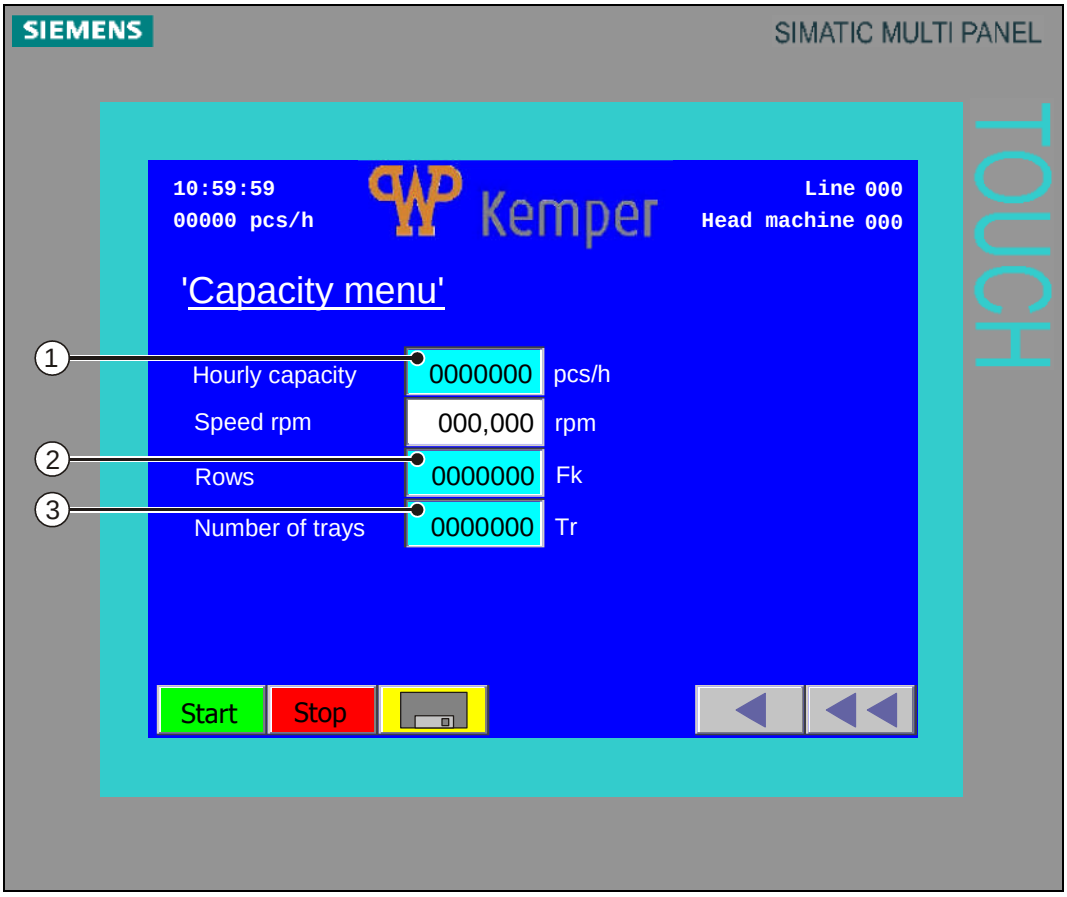


- Press the CAPACITY button in the 'Proofer menu' to change the proofer settings.

The 'Capacity menu' opens after pressing the CAPACITY button:

Note!

The 'Capacity menu' can be opened from the menu of all the assemblies. It is always identical.



Note!

After touching the input boxes, a keypad appears for entering numbers. Confirm your entry via the keypad

- Touch the input box HOURLY CAPACITY (1).
- Enter the desired number of pieces of dough in pcs/h.

Attention!

The rows in the 'Capacity menu' should only be changed after retooling the assemblies to the corresponding rows!
Otherwise components may be damaged!

- Touch the input box ROW (2).
- Enter the desired rows of the line.
- Touch the input box NUMBER OF CUPS (3).

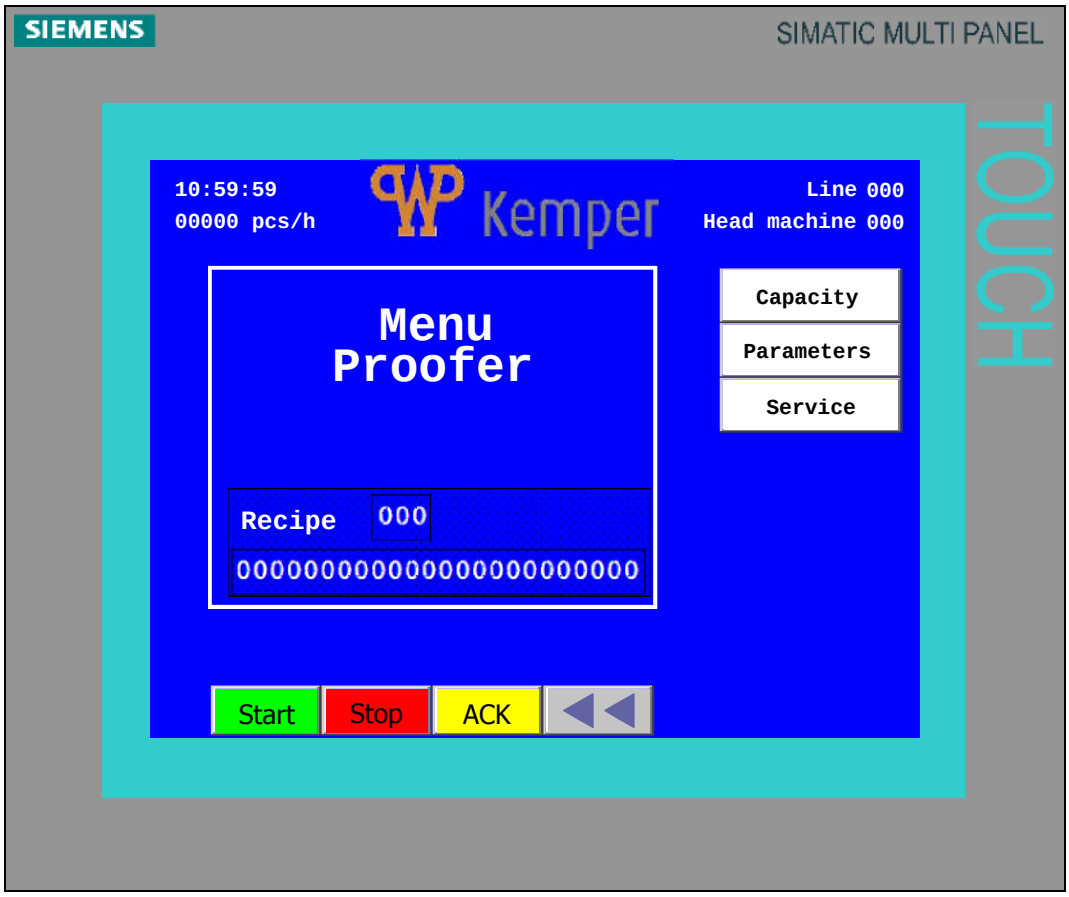
A keypad appears for entering numbers.

- Enter the number of cups of the line.
- Press the  button to save your settings in the displayed recipe.

Password level 7 is required for saving.

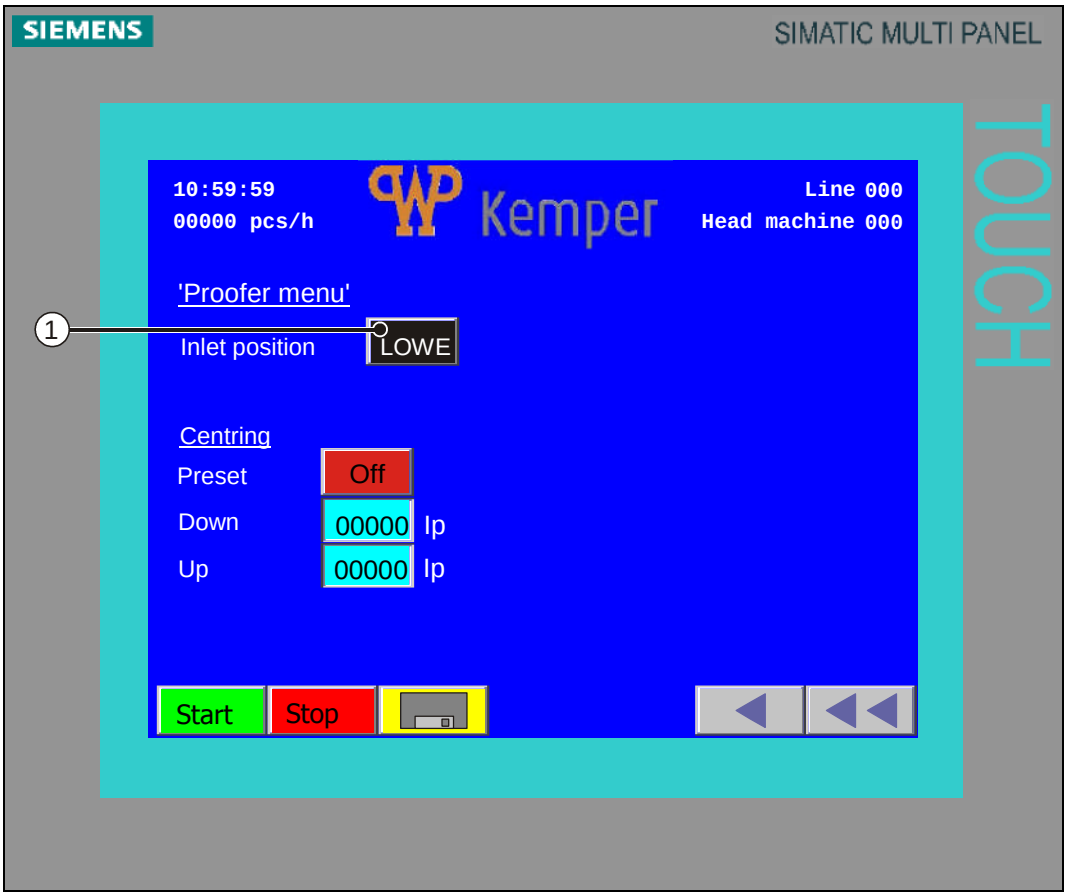
- Press the  button.

Pressing the  button opens the 'Proofer menu'.



- In the 'Proofer menu', press the PARAMETER button to change the proofer settings.

The following menu opens after pressing the PARAMETER button:



In the sub-menu 'Proofer menu', you can set operation to green dough for direct transport of the pieces of dough through the line.

- In the sub-menu 'Proofer menu', press the INLET POSITION (1). button

Touch the display to toggle between 'Lower'. (green dough) and 'Upper' (intermediate proofer).

> ***Note!***
>
> *Operation of the menu item 'Centring' is described in secSetting the centering unittion "7.4.5 Setting the centering unit".*

- Press the button to save your settings in the displayed recipe.

Password level 7 is required for saving.

- Press the button to open the 'Proofer menu' or press the button to open the start screen.

7.3.2 Roll-out station

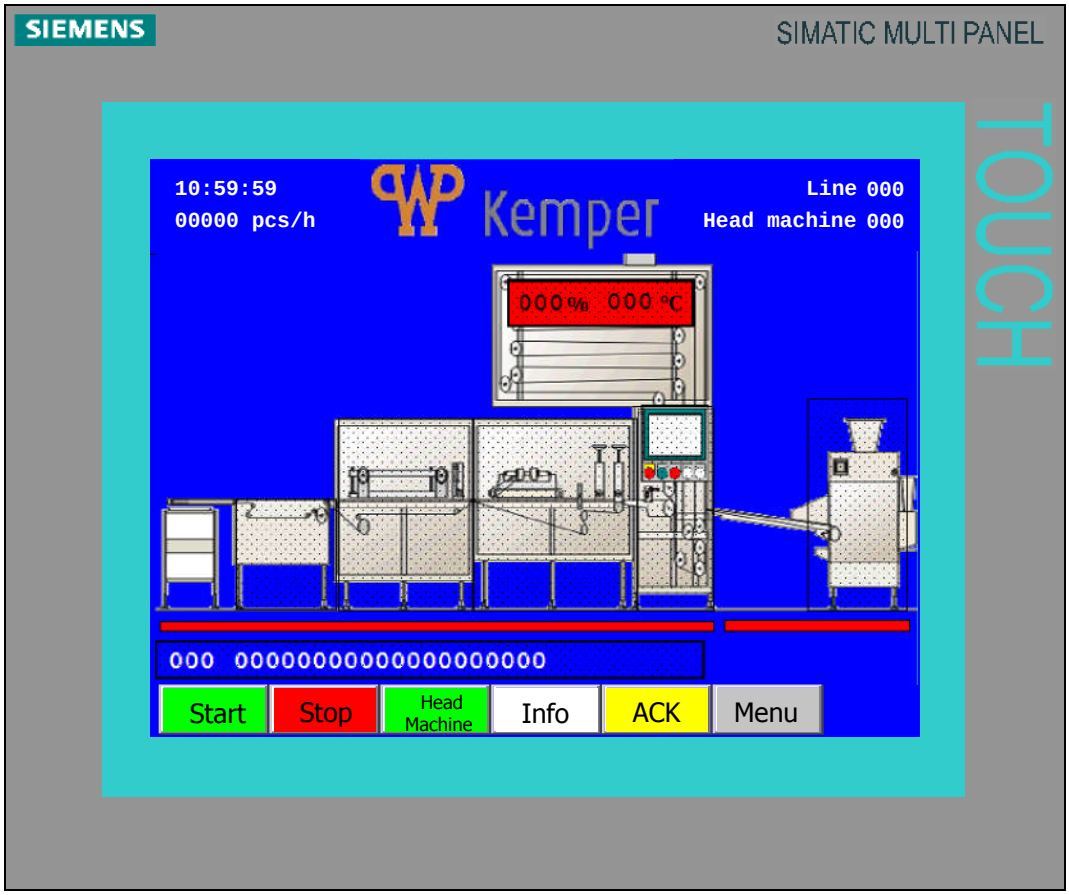
7.3.2.1 Setting a recipe at the roll-out station

> ***Note!***
>
> *The touch control contains recipes which have been set by Emil Kemper GmbH according to your wishes.*

This section describes all the necessary working steps to carry out changes to your recipes at the roll-out station assembly.

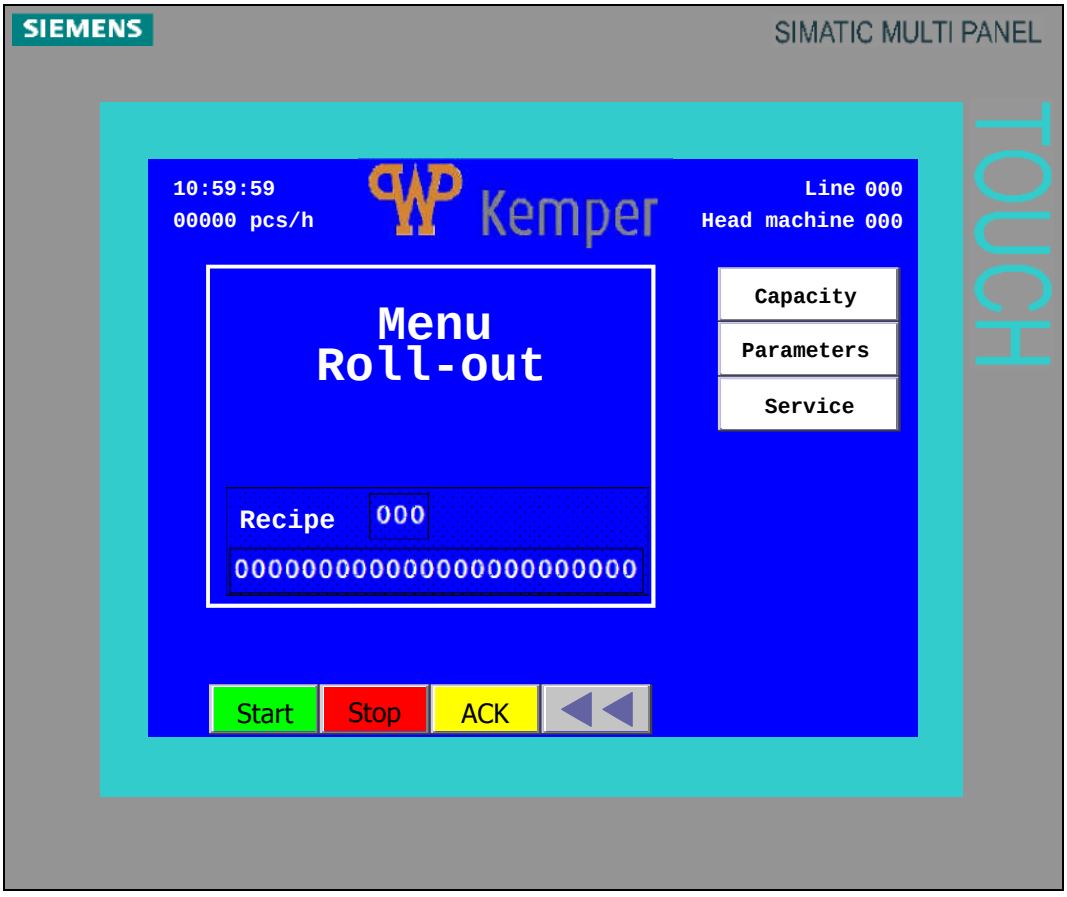
- Switch the line on (see section "7.1 Switching the line on and off").
- Switch the control voltage on (see section "7.2 Switching the control voltage on").
- Open the desired recipe (see section "**7.5 Selecting a recipe via the touch** panel").

After a few seconds, the start screen appears with illustrations of the line's assemblies on the touch screen:



- Touch the illustration of the roll-out station on the start screen.

The 'Roll-out station menu' opens after touching the illustration of the roll-out station on the start screen:

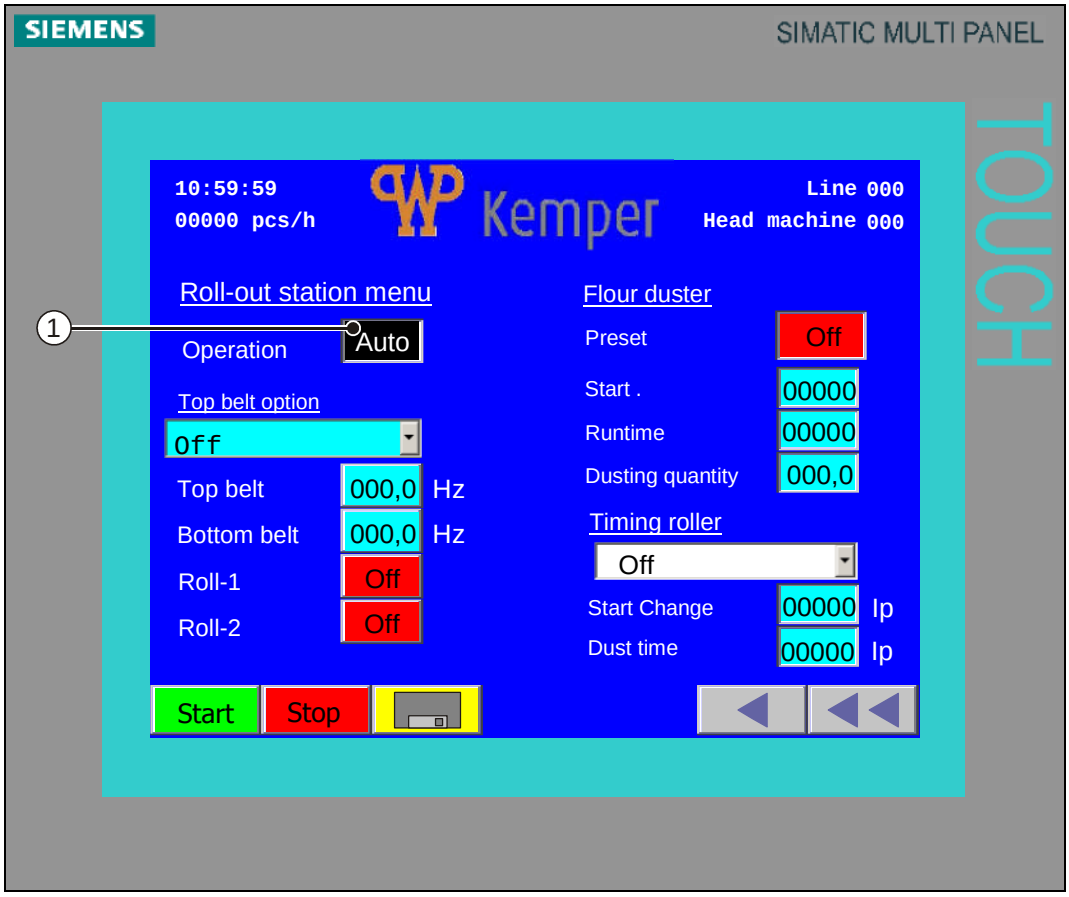


Note!

The CAPACITY 'button is available in the menus of all the assemblies (see section "7.3.1 Basic module").

- In the 'Roll-out station menu', press the PARAMETER button to change the settings of the roll-out station.

The following menu appears after pressing the PARAMETER button:



In the sub-menu 'Roll-out station menu', you can set the operation of the roll-out station assembly with the line modules long-moulding belt, flour duster and alignment and pressure roller (timing roller).

- In the sub-menu 'Roll-out station menu', press the OPERATION (1). button

The display toggles between 'Auto' (start after the first pieces of dough arrive) and 'Manual' (continuous operation) when touched.

Note!

*Operation of the menu item 'Top belt option' is described in section "**Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.**".*

Note!

Operation of the menu item 'Flour duster' is described in section "7.4.9 Setting the flour duster with flour break-up shaft".

Note!

Operation of the sub-menu 'Timing roller" is described in section „7.4.12 Setting the alignment and pressure roller (timing roller)".

- Press the button to save your settings in the displayed recipe.

Password level 7 is required for saving.

- Press the button to open the 'Roll-out station menu' or press the button to open the start screen.

7.4 Setting the line modules

The following sections describe operation of the line modules of the assemblies.

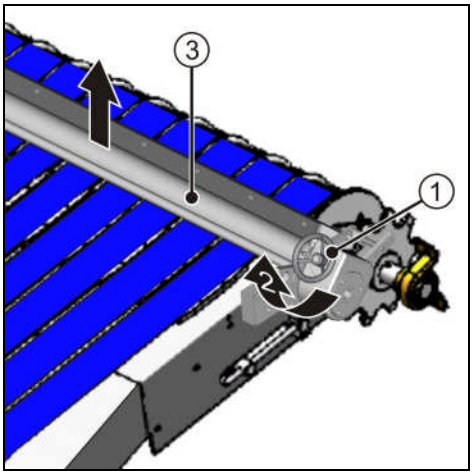
7.4.1 Setting the discharge belt

Configuration of the line module Discharge belt 1 in the line is displayed in section "5 Overview of the line".

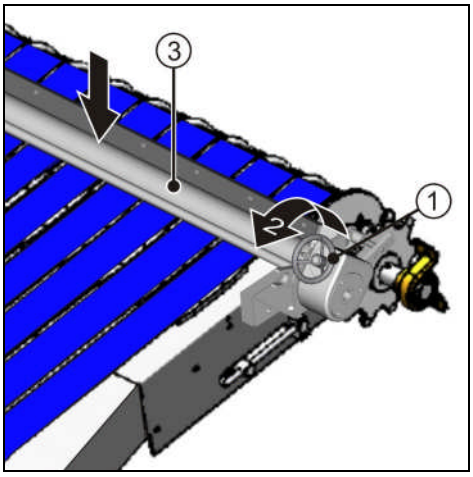
7.4.1.1 Adjusting the height of the pressure roller

Note!

The illustration of the discharge belt includes the pressure roller line module.



Turn the adjusting wheel (1) in the direction of the arrow (2) to increase the height of the pressure roller (3) (see arrow).



Turn the adjusting wheel (1) in the direction of the arrow (2) to reduce the height of the pressure roller (3) (see arrow).

7.4.2 Setting the discharge belt 1

Configuration of the line module Discharge belt 1 in the line is displayed in section "5 Overview of the line".

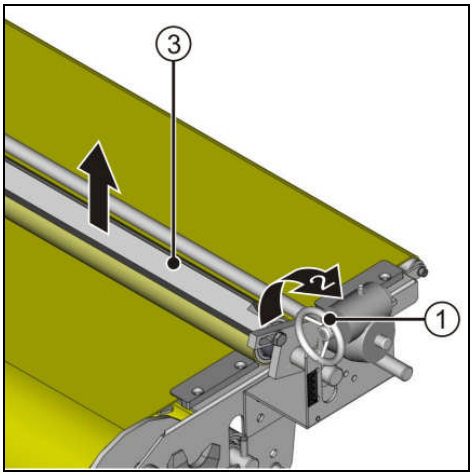
7.4.2.1 Setting the pressure roller height on the pressure roller line module

Note!

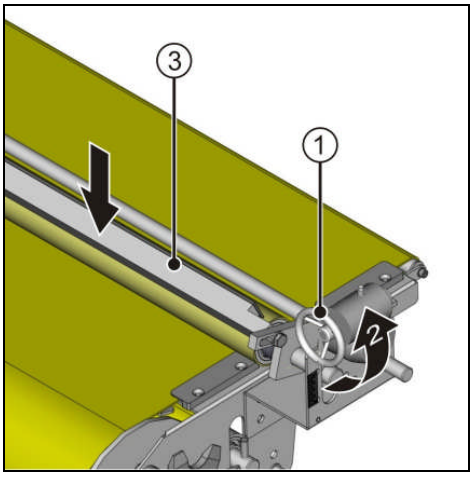
The illustration of the discharge belt includes the pressure roller line module.

Note!

The illustration of the pressure roller line module resembles the version that is delivered. The version that is delivered may include a hand guard and a flexible shaft to move the adjusting wheel to operate the adjustment mechanism, which are not shown here.



Turn the adjusting wheel (1) in the direction of the arrow (2) to increase the height of the pressure roller (3) (see arrow).



Turn the adjusting wheel (1) in the direction of the arrow (2) to reduce the height of the pressure roller (3) (see arrow).

7.4.3 Setting the pressure roller

Configuration of the line module Alignment and pressure roller in the line is displayed in section "5 Overview of the line".

7.4.3.1 Adjusting the height of the pressure roller

Note!

The illustration of the pressure roller line module resembles the version that is delivered. The version that is delivered may include a hand guard and a flexible shaft to move the adjusting wheel to operate the adjustment mechanism, which are not shown here.

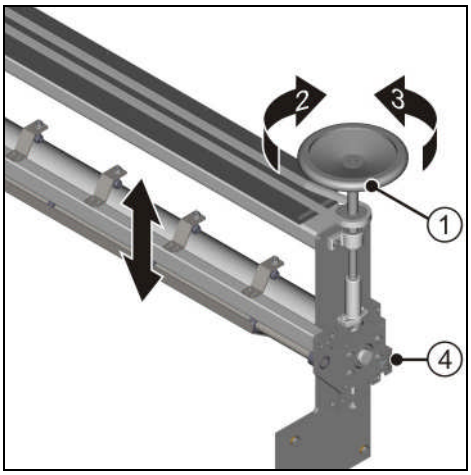
Turn the adjusting wheel (1)

- anti-clockwise(2) to lower the pressure roller,
- clockwise (3) to raise the pressure roller.

7.4.4 Setting the roll-out roller

Configuration of the line module Roll-out roller in the line is displayed in section "5 Overview of the line".

7.4.4.1 Adjusting the height of the roll-out roller



Turn the adjusting wheel (1)

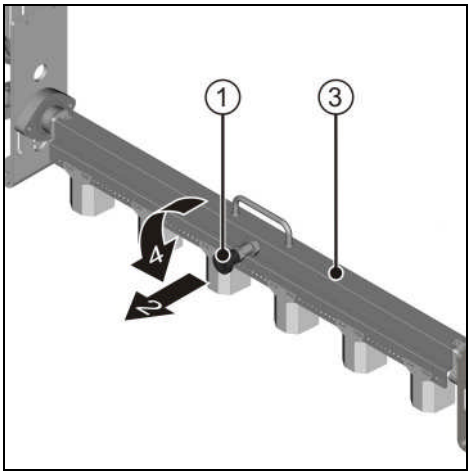
- clockwise (2) to increase the height of the roll-out roller,
- anti-clockwise (3) to decrease the height of the roll-out roller.

The setting can be read on the scale (4).

7.4.5 Setting the centering unit

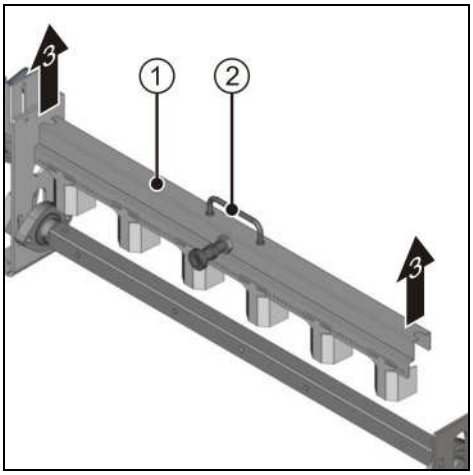
Configuration of the line module Centering unit in the line is displayed in section "5 Overview of the line".

7.4.5.1 Replacing the centering flap

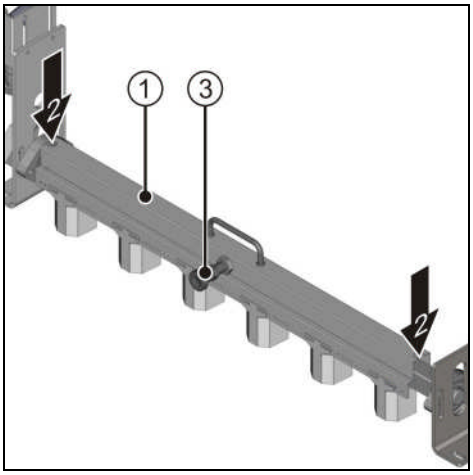


Pull the index pin (1) from the centering flap (3) in the direction of the arrow (3).

Turn the index pin (1) 90 degrees in the direction of the arrow (4).



Pull the centering flap (1) off the holder by the handle (2) in the direction of the arrow (3).



Fit the new centering flap (1) in the holder in the direction of the arrow (2), ensuring that the slots in the centering flap engage in the holder.

Ensure that the index pin (3) engages in the holder.

7.4.5.2 Setting a recipe at the centering unit

Note!

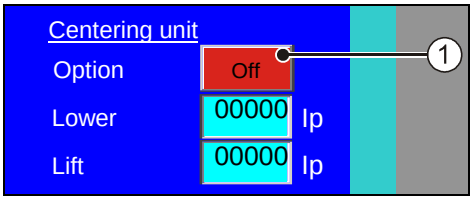
The menu-item "Centering unit" can be accessed in the main menu of the respective assembly after pressing the PARAMETER button (see section "7.3 Setting assemblies")!

In the menu item 'Centering unit' , you can change the settings of the centering unit in the respective assembly.

Note!

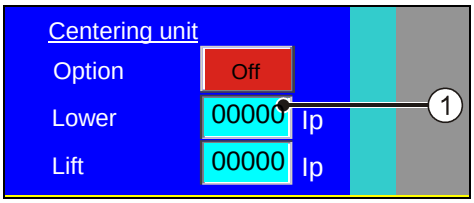
After touching the input boxes, a keypad appears for entering numbers. Confirm your entry via the keypad

The following illustration displays the menu excerpt of an assembly with the menu item 'Centering unit':



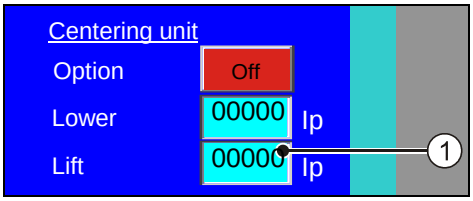
Press the Option button (1).

Touching causes the display to toggle between 'Off' (centering unit moves out of the transport area) and 'On' (centering unit switched on).



Touch the input box LOWER (1).

- Enter the number of pulses (time span) during which the centering unit is to be lowered.



Touch the input box Lift (1).

- Enter the number of pulses (time span) during which the centering unit is to be raised.
- Press the  button to save your settings in the displayed recipe.

Password level 7 is required for saving.

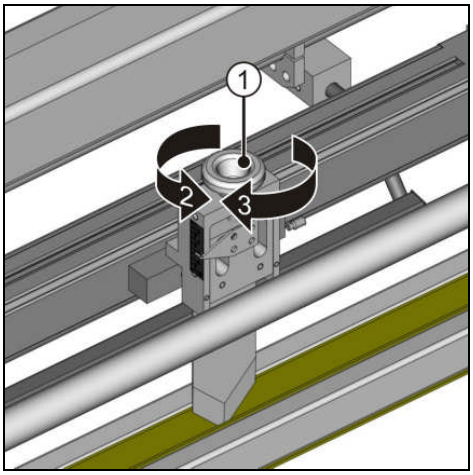
- Press the  button to open the start screen.

7.4.6 Setting the cutting station

Configuration of the line module Cutting station in the line is displayed in section "5 Overview of the line".

7.4.6.1 Setting the cutting depth

The cutting depth can be set via an adjusting wheel directly above the triangular knife. The setting can be read on a scale.

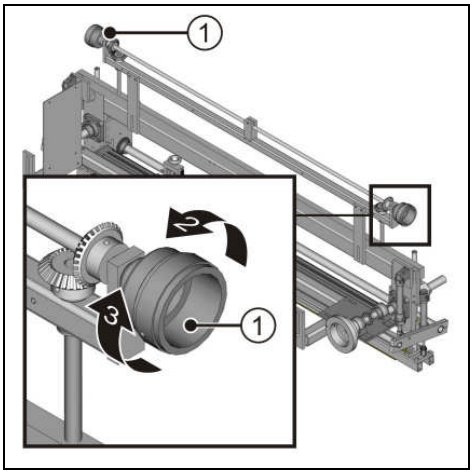


Turn the adjusting wheel (1) in the direction of the arrow (2) to increase the cutting depth.

Turn the adjusting wheel (1) in the direction of the arrow (3) to reduce the cutting depth.

7.4.6.2 Setting the hold-down

The hold-down is set via adjusting wheels on both sides of the cutting station. The setting can be read on a scale at the adjusting wheels.

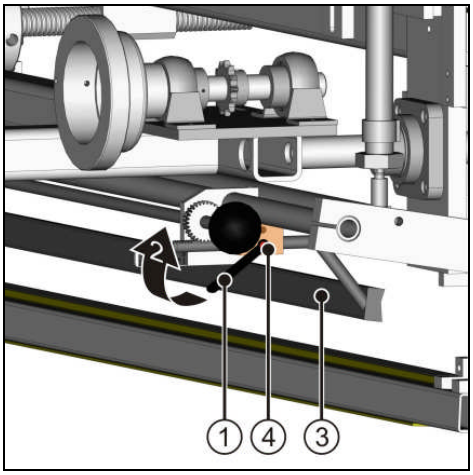


Turn the adjusting wheels (1) in the direction of the arrow (2) to move the hold-down up.

Turn the adjusting wheels (1) in the direction of the arrow (3) to move the hold-down down.

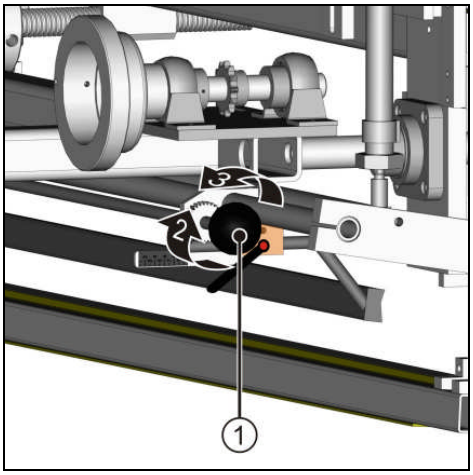
7.4.6.3 Setting the centering unit

The centering unit positions the dough pieces beneath the triangular knife. If the setting is right, the cut runs through the middle of the dough pieces.



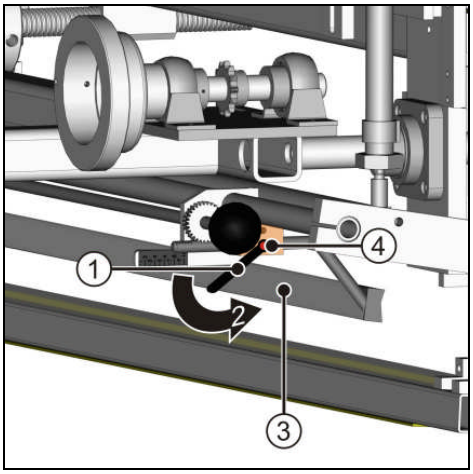
Turn the arrester lever (1) in the direction of the arrow (2) to loosen the centering unit (3).

Press the red button (4) with your thumb to be able to use the ratchet function of the arrester lever (1) if necessary.



Turn the knob (1) in the direction of the arrow (2) to increase the gap between the centering unit and the triangular knife.

Turn the knob (1) in the direction of the arrow (3) to reduce the gap between the centering unit and the triangular knife.

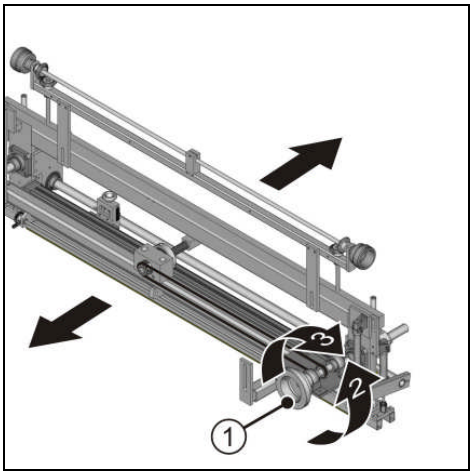


Turn the arrester lever (1) in the direction of the arrow (2) to secure the centering unit (3).

Press the red button (4) with your thumb to be able to use the ratchet function of the arrester lever (1) if necessary.

7.4.6.4 Setting the timing adjustment

The cut is adjusted to the timing of the belt by moving the position of the cutting station. If the setting is right, the cut is performed when the dough pieces are at a standstill.



Turn the adjusting wheel (1) in the direction of the arrow (2) to move the cutting station to the right.

Turn the adjusting wheel (1) in the direction of the arrow (3) to move the cutting station to the left.

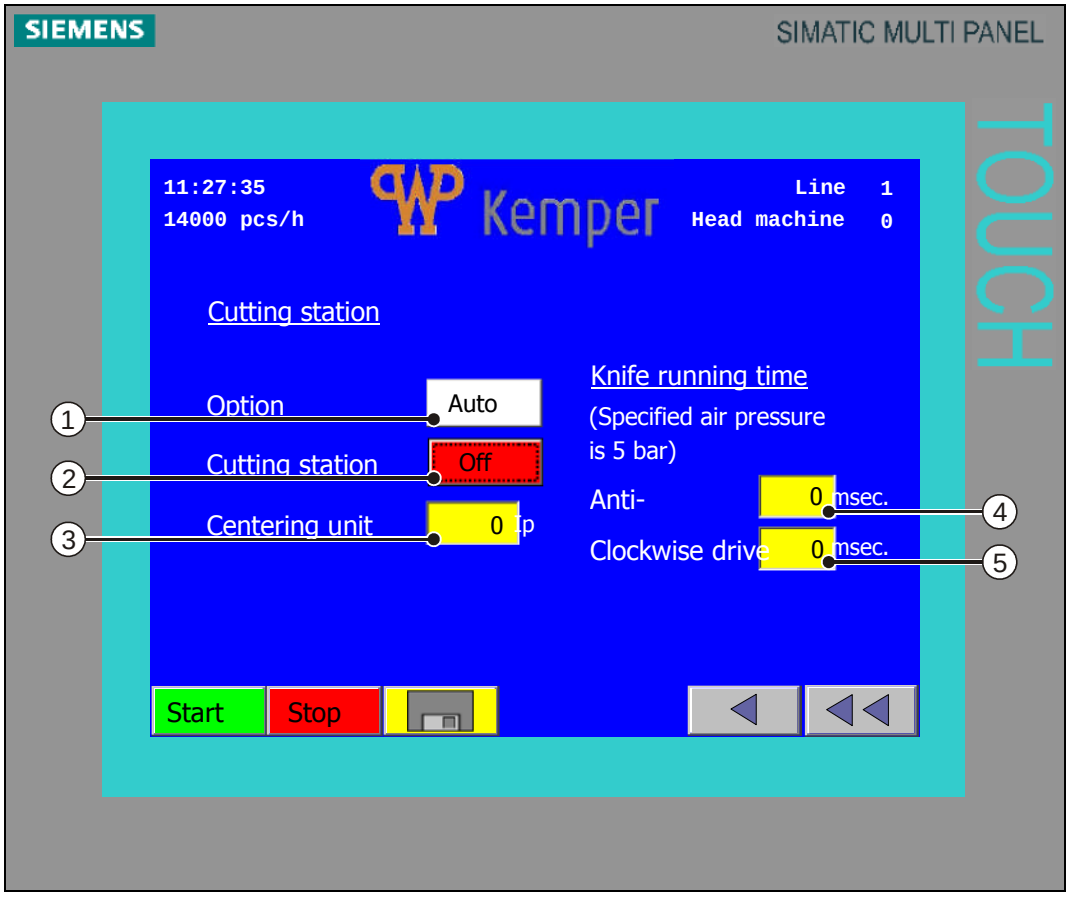
7.4.6.5 Setting a recipe at the cutting station

Note!

The menu item 'Cutting station' can be accessed in the main menu of the respective assembly after pressing the PARAMETER button (see section "7.3 Setting assemblies")!

In the menu item 'Cutting station' , you can change the settings of the cutting station in the respective assembly.

The illustration below shows an example of the menu for an assembly with the 'Cutting station' menu item:



- Press the OPTIONS button (1).

When touched, the display toggles between 'Auto' (running when the first dough pieces arrive) and 'Manual' (running constantly).

- Press the CUTTING STATION button (2).

When touched, the display toggles between 'On' and 'Off'. You can switch the cutting station on or off.

- Touch the CENTERING UNIT input box (3).

A keypad appears for entering numbers.

- Enter the number of pulses between 5 and 200 to adjust the centering unit to the timing.

In this way you can coordinate the cutting and centering of the dough pieces.

- Confirm your entry via the keypad.

'Knife running time' sub-menu

In the 'Knife running time' sub-menu you can compensate for the different speeds of the triangular knife's anti-clockwise and clockwise modes.

- Touch the ANTI-CLOCKWISE DRIVE input box (4).

A keypad appears for entering numbers.

- Enter a time between 100 and 200 milliseconds to correct the anti-clockwise drive speed.
- Confirm your entry via the keypad.
- Touch the CLOCKWISE DRIVE input box (5).

A keypad appears for entering numbers.

- Enter a time between 100 and 200 milliseconds to correct the clockwise drive speed.
- Confirm your entry via the keypad.
- Press the  button to save your settings in the displayed recipe.

Password level 7 is required for saving.

- Press the  button to open the start screen.

7.4.7 Setting the pre-pressing station

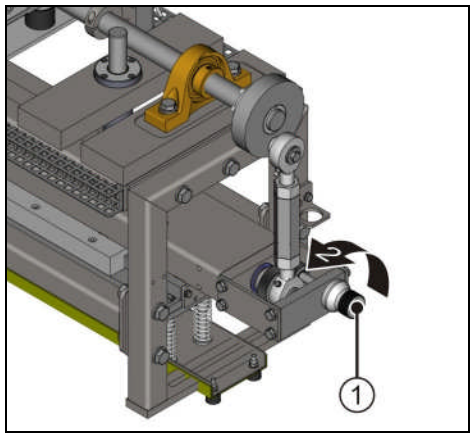
Configuration of the line module Pre-pressing station in the line is displayed in section "5 Overview of the line".

Note!

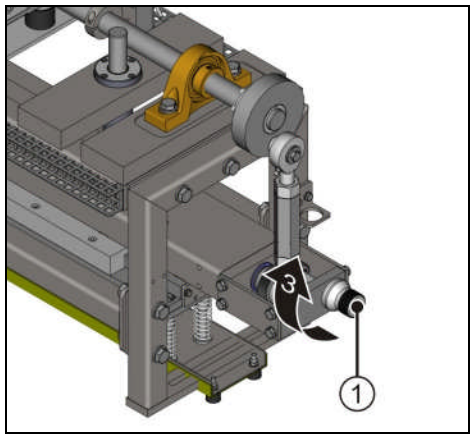
The schematic diagrams below describe the pre-pressing station line module. The version that is delivered may differ from the version shown here.

7.4.7.1 Setting the pre-pressing depth

The pre-pressing depth can be adjusted directly via an adjusting wheel in a range of millimeters. The setting can be read on a scale.



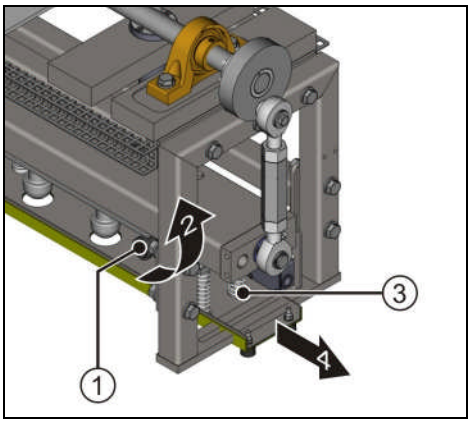
Turn the adjusting wheel (1) in the direction of the arrow (2) to increase the pre-pressing depth.



Turn the adjusting wheel (1) in the direction of the arrow (3) to decrease the pre-pressing depth.

7.4.7.2 Replacing the pre-pressing tool

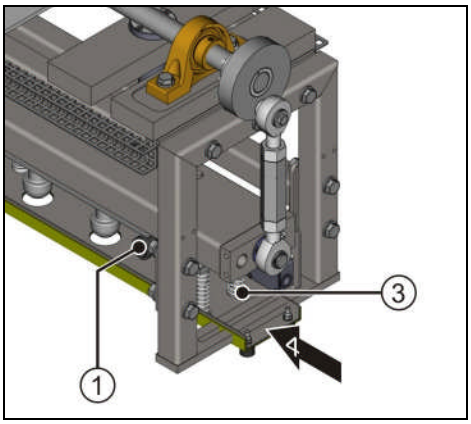
The corresponding pre-pressing tool must be inserted to produce different stamped rolls.



Removal

Turn the arresting pin (1) 90 degrees in the direction of the arrow (2).

Pull the pre-pressing tool (3) out of the holder in the direction of the arrow (4).



Fitting

Push the pre-pressing tool (3) into the holder in the direction of the arrow (4).

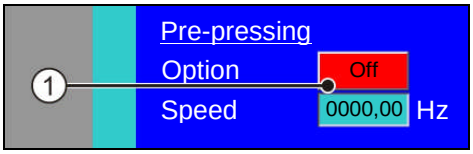
Ensure that the arresting pin (1) engages in the holder.

7.4.7.3 Setting a recipe at the pre-pressing station

> ***Note!***
>
> *The menu-item 'Pre-pressing unit' can be accessed in the main menu of the respective assembly after pressing the PRESSING STATION button.*

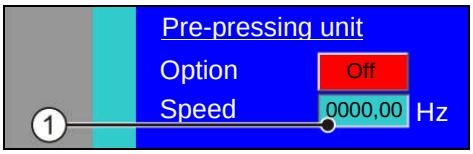
In the menu item 'Pre-pressing unit', you can change the settings of the centering unit in the respective assembly.

The following illustration displays the menu excerpt of an assembly with the menu item 'Pre-pressing unit':



Press the OPTION button (1).

When touched, the display toggles between 'On' and 'Off'. You can switch the pre-pressing station on or off.



Touch the input box SPEED (1).

A keypad appears for entering numbers.

- Enter the speed of the timing belt in Hertz.

The timing belt speed may thus be adapted to the pre-pressing station.

- Confirm your entry via the keypad.
- Press the  button to save your settings in the displayed recipe.

Password level 7 is required for saving.

- Press the  button to open the start screen.

7.4.8 Setting the conveyor belt

Configuration of the line module Conveyor belt in the line is displayed in section "5 Overview of the line".

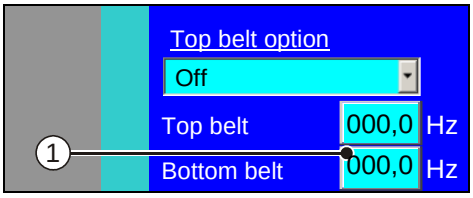
7.4.8.1 Setting a recipe at the conveyor belt

Note!

The input box BOTTOM BELT is accessible after pressing the PARAMETER button in the main menu of the respective assembly (see section "7.3 Setting assemblies")!

In the input box BOTTOM BELT, you can change the speed of the conveyor belt in the respective assembly:

The following illustration displays a menu excerpt of an assembly with the input box BOTTOM BELT:



Touch the input box BOTTOM BELT (1).

A keypad appears for entering numbers.

- Enter the speed (rotary frequency).
- Confirm your entry via the keypad.
- Press the  button to save your settings in the displayed recipe.

Password level 7 is required for saving.

- Press the  button to open the start screen.

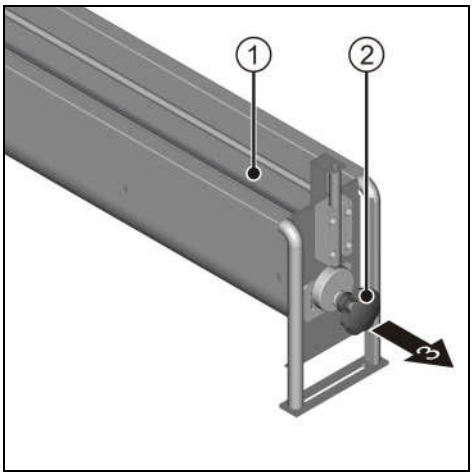
7.4.9 Setting the flour duster with flour break-up shaft

Configuration of the line module flour duster with flour break-up shaft in the line is displayed in section "5 Overview of the line".

Note!

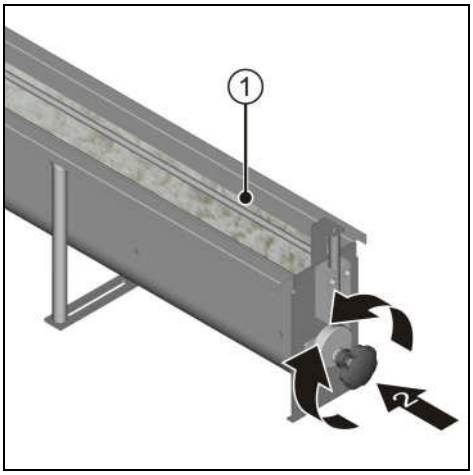
The schematic diagrams below describe the flour duster with break-up shaft. The version that is delivered may differ from the version shown here.

7.4.9.1 Filling the flour duster with flour break-up shaft



Pull the adjusting handle (2) in the direction of the arrow (3) to extract the flour duster (1) from the holder.

Fill the container with flour.



Push the flour duster (1) back into the holder in the direction of the arrow (2).

Turn the adjusting handle until the drive engages.

7.4.9.2 Setting a recipe at the flour duster with break-up shaft

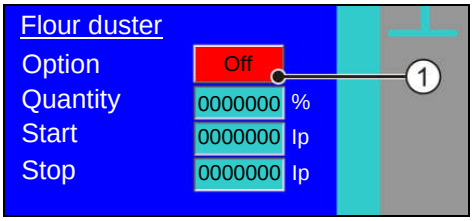
> ***Note!***
>
> *The menu-item 'Flour duster' can be accessed in the main menu of the respective assembly after pressing the PARAMETER button.*

In the menu item 'Flour duster', you can change the settings of the flour duster in the respective assembly.

> ***Note!***
>
> *Operation of the flour duster is automatically linked to operation of the assembly.*
> *Operation of the flour duster can also be switched on and off via the menu item 'Flour duster'!*

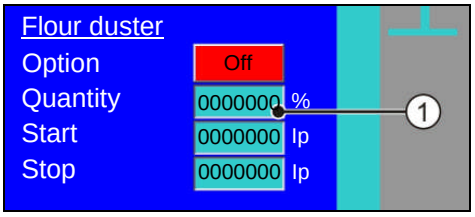
> ***Note!***
>
> *After touching the input boxes, a keypad appears for entering numbers. Confirm your entry via the keypad.*

The following illustration displays the menu excerpt of an assembly with the menu item 'Flour duster':



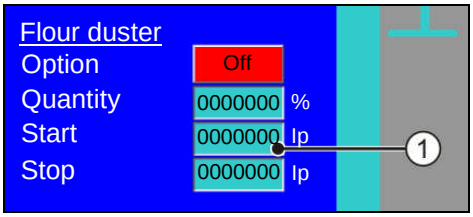
Press the OPTION (1) button.

The display toggles between 'Off'' (dusting off) and 'On' (dusting on) when touched.



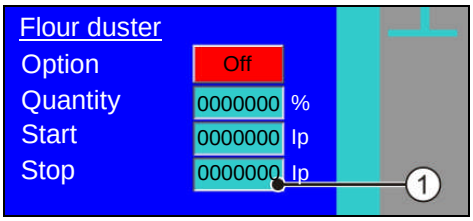
Touch the input box QUANTITY (1).

- Enter the dusting quantity in percent.



Touch the input box START (1).

- Enter the number of pulses before the flour duster is due to start (starting point).



Touch the input box STOP (1).

- Enter the number of pulses while the flour duster is in operation (time span).
- Press the  button to save your settings in the displayed recipe.

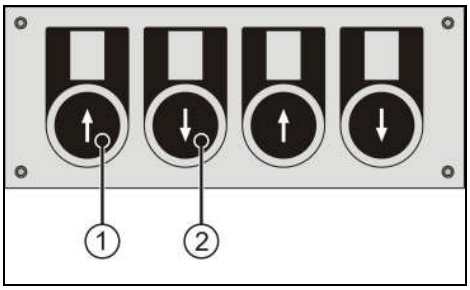
Password level 7 is required for saving.

- Press the  button to open the start screen.

7.4.10 Long-moulding belt

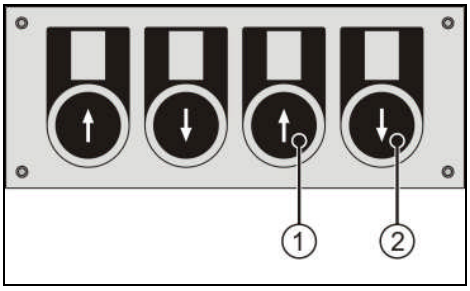
Setting the top belt via the row of buttons

> ***Note!***
>
> *The height of the top belt can be set separately for the left and right-hand side.*



Press the arrow button (1) to raise the top belt on the left-hand side.

Press the arrow button (2) to lower the top belt on the left-hand side.

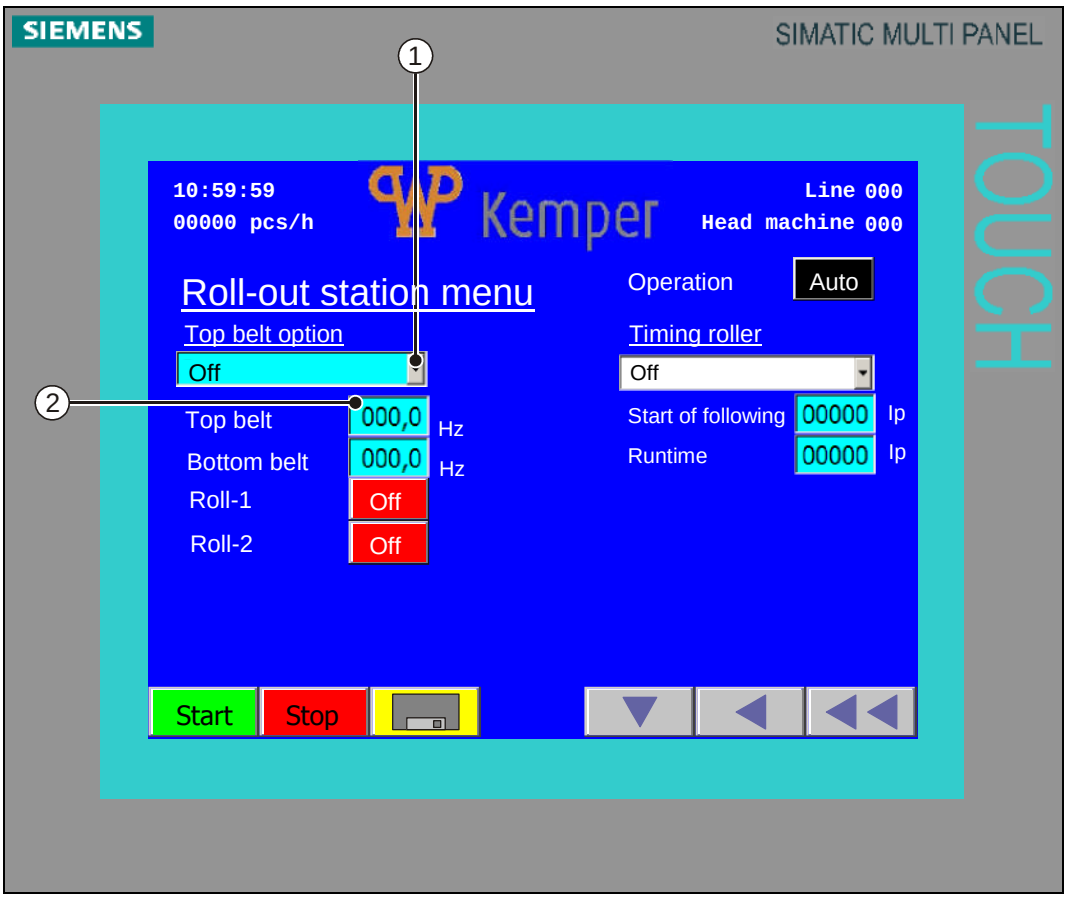


Press the arrow button (1) to raise the top belt on the right-hand side.

Press the arrow button (2) to lower the top belt on the right-hand side.

Setting the long-moulding belt via the touch panel

The illustration below shows the menu for an assembly with the long-moulding belt as an example:



Under 'Top belt option' you can change the settings of the respective long-moulding belt in the assembly:

- Touch the triangle (1) in the drop-down menu.

The drop-down menu opens. You can choose between three settings (Off, Following and Opposite).

- Touch your chosen setting.

The drop-down menu closes, your selection is entered.

- Touch the TOP BELT input box (2).

A keypad appears for entering numbers.

- Enter the speed (rotary frequency).

- Press the  button to save your settings in the displayed recipe.

Password level 7 is required for saving.

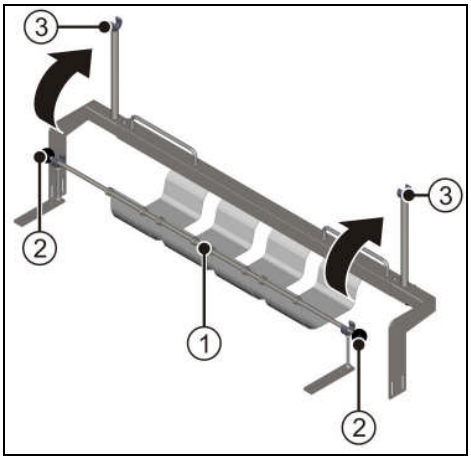
- Press the  button to open the start screen.

7.4.11 Setting the folding mats

Configuration of the line module Folding mats in the line is displayed in section "5 Overview of the line".

7.4.11.1 Lifting folding mats out of the transport area

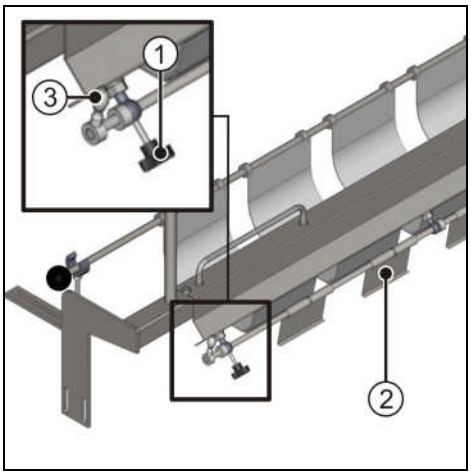
The function of the wire mesh belts can be deactivated by lifting them out of the transport area. The folding flaps remain functional.



Take hold of the supporting shaft (1) for the wire mesh belts with both hands at the ball handles (2).

Place the supporting shaft for the wire mesh belts (1) in the holder (3).

7.4.11.2 Setting the folding flaps



Use the star-shaped handle (1) to loosen the clamp of the folding flaps.

Use the adjusting lever (3) to set the folding flaps (2) to the desired position.

Retighten the star-shaped handle (1).

7.4.12 Setting the alignment and pressure roller (timing roller)

Configuration of the line module Alignment and pressure roller in the line is displayed in section "5 Overview of the line".

7.4.12.1 Setting the height of the alignment and pressure roller

Turn the adjusting wheel (1)

- anti-clockwise(2) to lower the pressure roller,
- clockwise (3) to raise the pressure roller.

7.4.12.2 Setting a recipe at the alignment and pressure roller

Note!

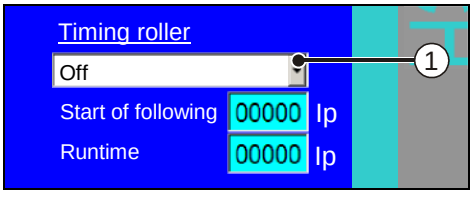
The menu item 'Timing roller' can be accessed in the main menu of the respective assembly after pressing the PARAMETER button (see section "7.3 Setting assemblies")!

In the menu item 'Timing roller', you can change the settings of the alignment and pressure roller in the respective assembly.

Note!

After touching the input boxes, a keypad appears for entering numbers. Confirm your entry via the keypad

The following illustration displays the menu excerpt of an assembly with the menu item 'Timing roller':

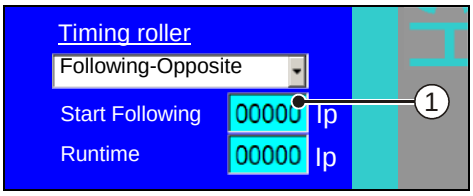


Touch the triangle (1) in the drop-down menu in the menu item 'Timing roller'.

The drop-down menu opens. You can select between four settings (Off, Following, Following-Opposite and Opposite/Stop).

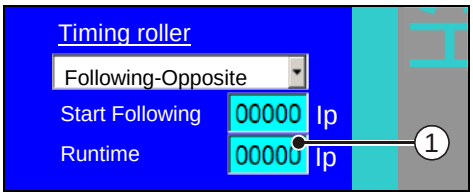
- Touch the desired setting.

The drop-down menu closes, your selection is entered (e.g. Following-Opposite).



Touch the input box START FOLLOWING (1).

- Enter the starting point in pulses (time span) during which the alignment and pressure roller should be switched to following.



Touch the input box RUNTIME (1).

- Enter the runtime for following in pulses from the start time.
- Press the  button to save your settings in the displayed recipe.

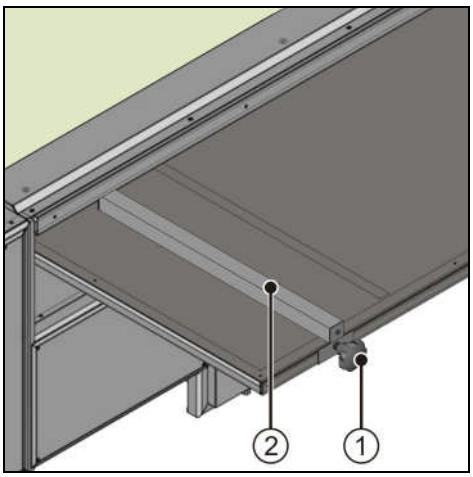
Password level 7 is required for saving.

- Press the  button to open the start screen.

7.4.13 Setting the reciprocating belt

Configuration of the line module Reciprocating belt in the line is displayed in section "5 Overview of the line".

7.4.13.1 Setting the wooden tray stop



Loosen the arrester wheel (1).

Move the stop bar (2) to the required position.

Retighten the arrester wheel (1).

7.4.13.2 Setting a recipe at the reciprocating belt

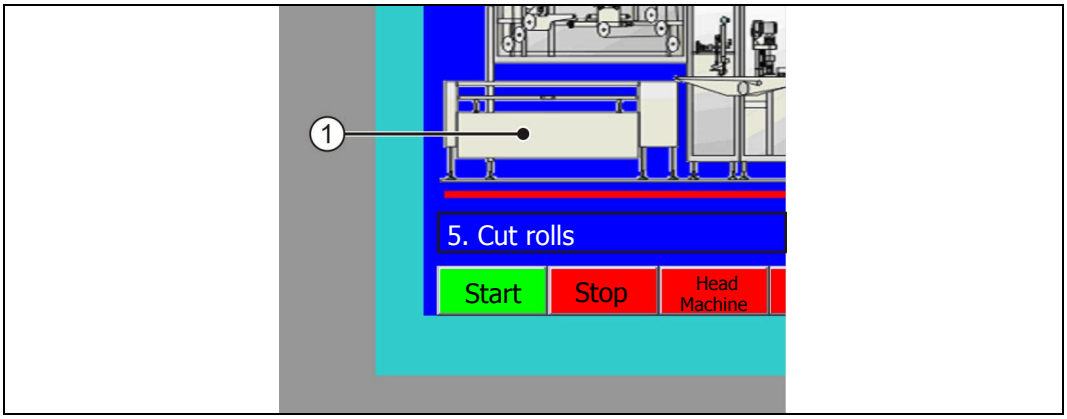
Note!

The touch control contains recipes which have been set by Emil Kemper GmbH according to your wishes.

This section describes all the necessary working steps to carry out changes to your recipes at the line module reciprocating belt.

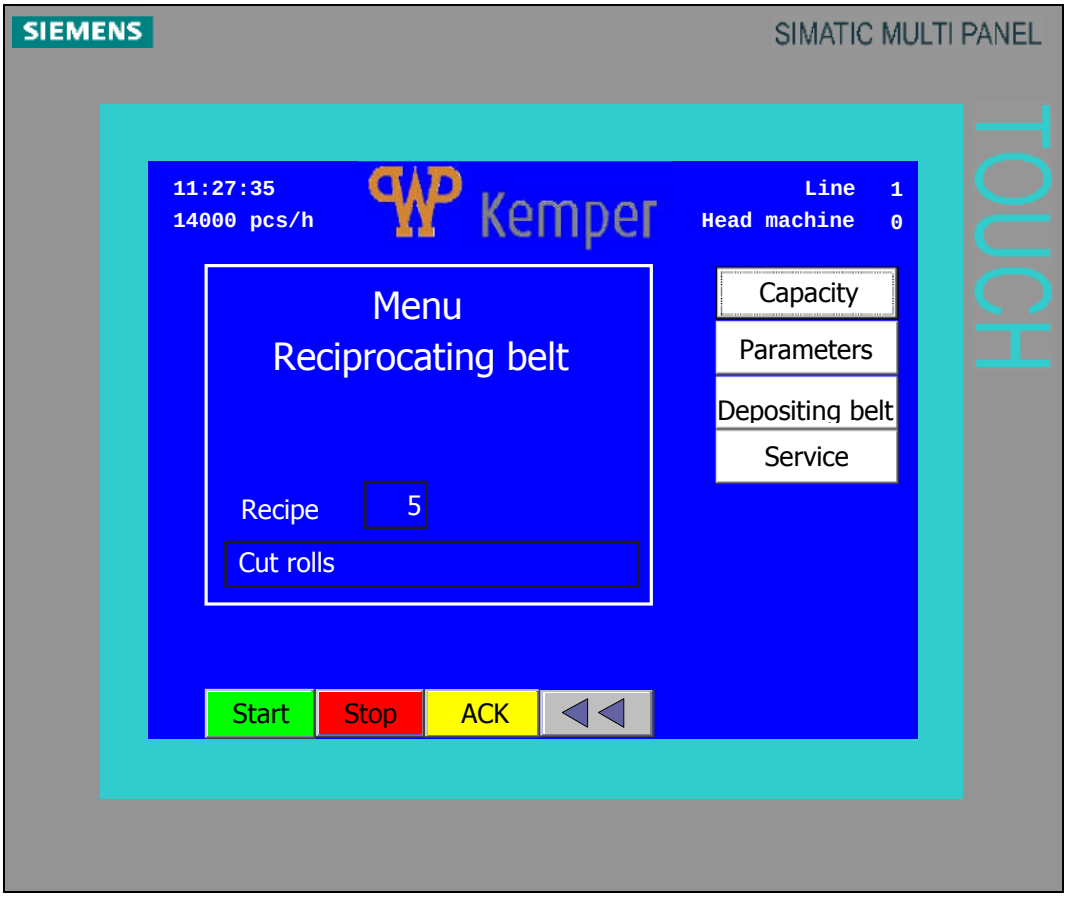
- Switch the line on (see section "7.1 Switching the line on and off").
- Switch the control voltage on (see section "7.2 Switching the control voltage on").
- Open the desired recipe (see section "7.5 Selecting a recipe via the touch panel").

After a few seconds, the start screen appears with illustrations of the line's assemblies on the touch screen. See section below:



- Touch the illustration of the reciprocating belt on the start screen (1).

The 'Reciprocating belt menu' opens after touching the illustration on the start screen:

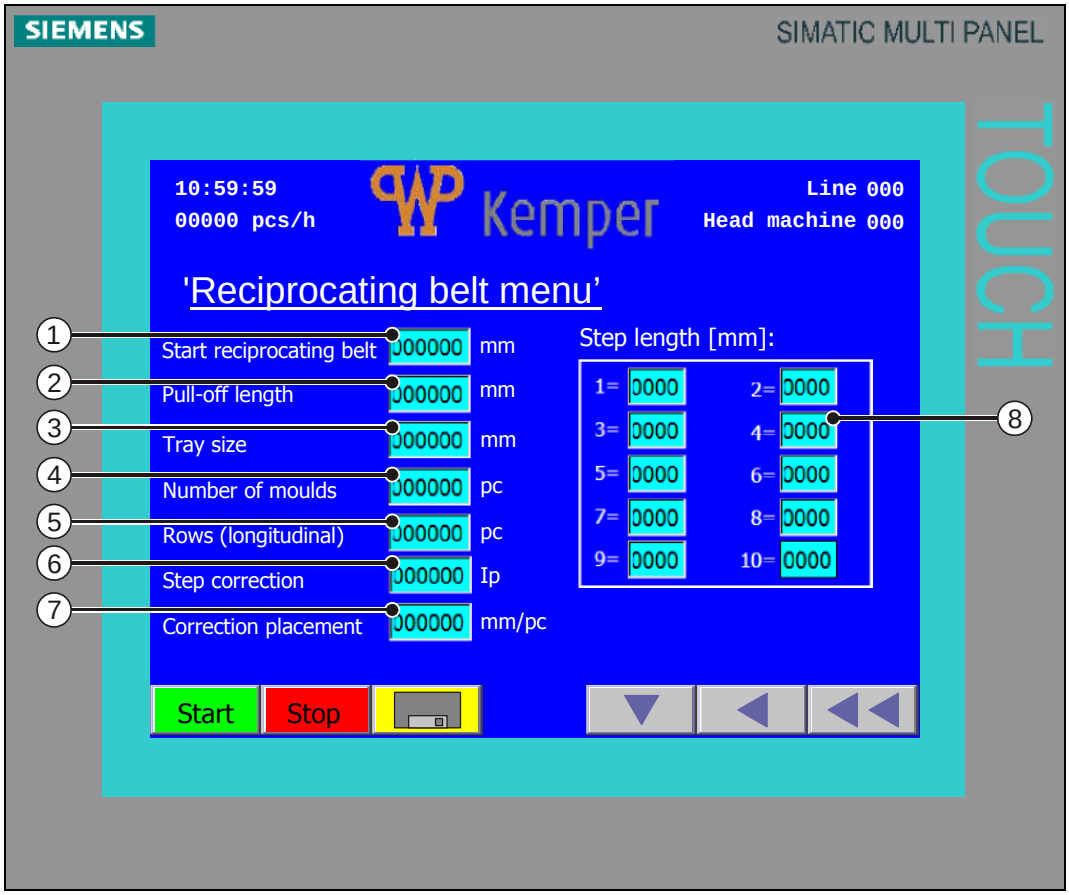


Note!

*The 'CAPACITY ' button is available in the menus of all the assemblies (see section "**Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.**").*

- In the 'Reciprocating belt menu', press the PARAMETER button to change the settings of the reciprocating belt.

The following menu appears after pressing the PARAMETER button:



Under 'Reciprocating belt menu' you can change the setting of the reciprocating belt:

> ***Note!***
>
> *After touching the input boxes, a keypad appears for entering numbers. Confirm your entry via the keypad.*

- Touch the START OF RECIPROCATING BELT input box (1) and enter the distance in millimeters from the photoelectric sensor to the required position of the first row of dough pieces on the first baking tray.

- Touch the PULL-OFF LENGTH input box (2) and enter the distance in millimeters that the reciprocating belt pulls off.

- Touch the input box SIZE OF MOULD (3), and enter the size of the wooden board/baking tray in millimetres (in transport direction).

- Touch the input box SHAPED SIZE (4) and enter the shaped size located on the extending table.

- Touch the input box ROWS (LONGITUDINAL) (5) and enter the rows of pieces of dough located on the wooden board/baking tray.

- Touch the input box CORRECTION STEP (6) and enter the start time for the step of the reciprocating belt between the placement images in pulses.

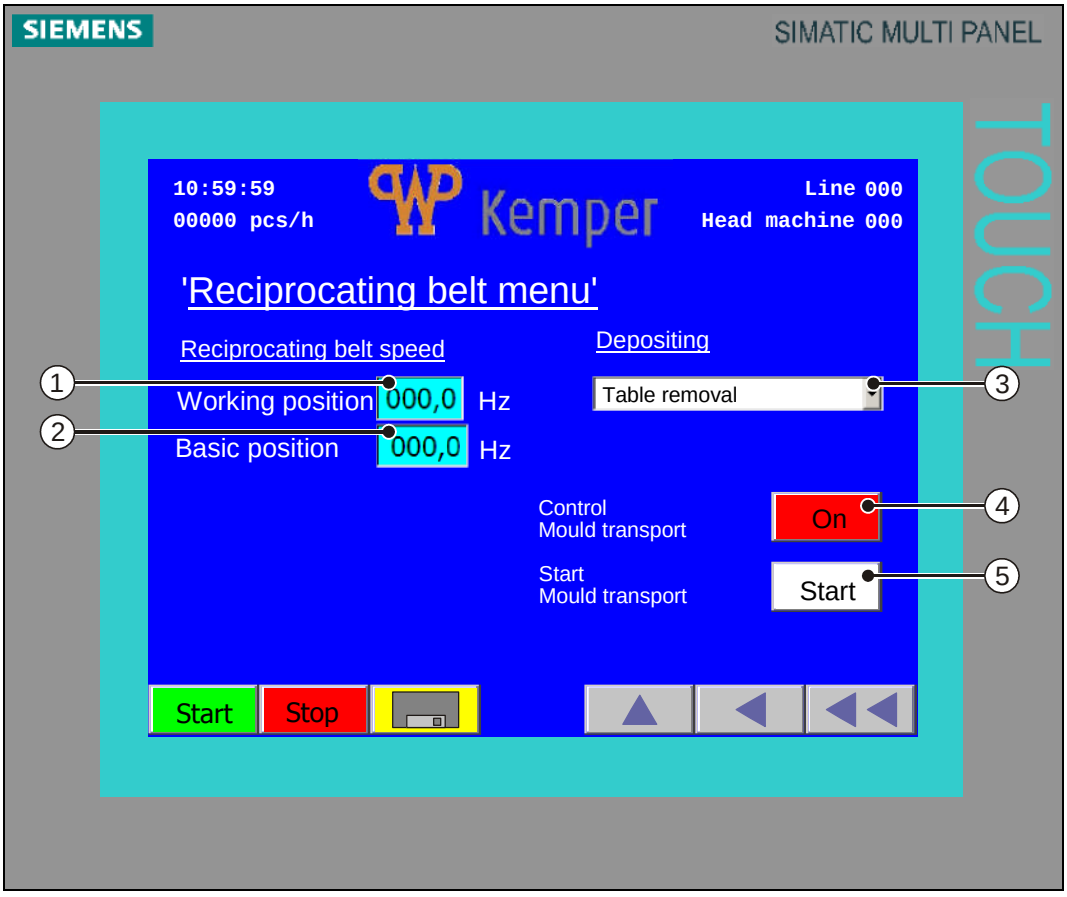
- Touch the input box CORRECTION PLACEMENT (7) and enter a correction value in millimetres per piece if the calculated placement control speed needs to be adjusted.

- Under STEP LENGTH [MM] (8), touch an input box of your choice.

The respective step length is listed for each tray (wooden trays/baking trays) below the STEP LENGTH [MM] input box.

- Enter a new step length in millimetres if you want to change the step length of the respective tray (wooden trays/baking trays).

Press the button to access another sub-menu. A continuation of the 'Reciprocating belt menu' appears:



In the sub/menu 'Reciprocating belt menu', touch the input boxes to change further settings for controlling the reciprocating belt:

> ***Note!***
>
> *After touching the input boxes, a keypad appears for entering numbers. Confirm your entry via the keypad*

- Touch the input box WORKING POSITION (1) and enter the reciprocating speed in Hertz.
- Touch the input box BASIC POSITION (2) and enter the return speed of the reciprocating belt to the basic position in Hertz.
- Touch the triangle (3) in the drop-down menu.

The drop-down menu opens. You can select between three settings (Table acceptance, Mould transport and Manual acceptance).

- Touch the desired setting.

The drop-down menu closes, your selection is entered.

- Press the CHECK MOULD TRANSPORT (4) button

When touched, the display toggles between 'On' (stroke only occurs when the wooden board/baking tray is in the loading position) and 'Off'' (monitoring is switched off).

- Press the START MOULD TRANSPORT (5) button

Use the Start' button to manually release mould transport. Release is issued automatically after each stroke.

- Press the  button to save your settings in the displayed recipe.

Password level 7 is required for saving.

- Press the  button to open the 'Reciprocating belt menu' or press the  button to open the start screen.

7.4.14 Reciprocating belt AB60.1

Setting the reciprocating belt AB60.1 via the touch panel

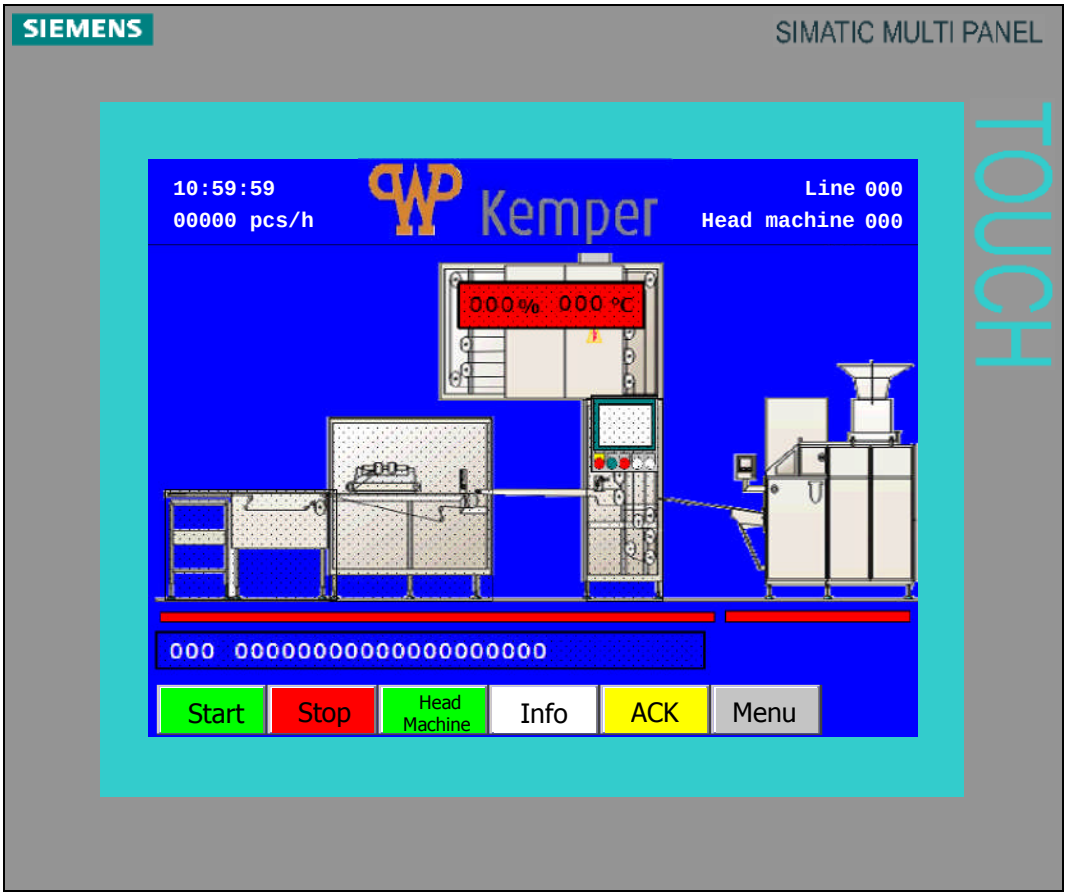
Note!

The touch control contains recipes which have been set by Emil Kemper GmbH according to your wishes.

This section describes all the necessary working steps to carry out changes to your recipes at the reciprocating belt.

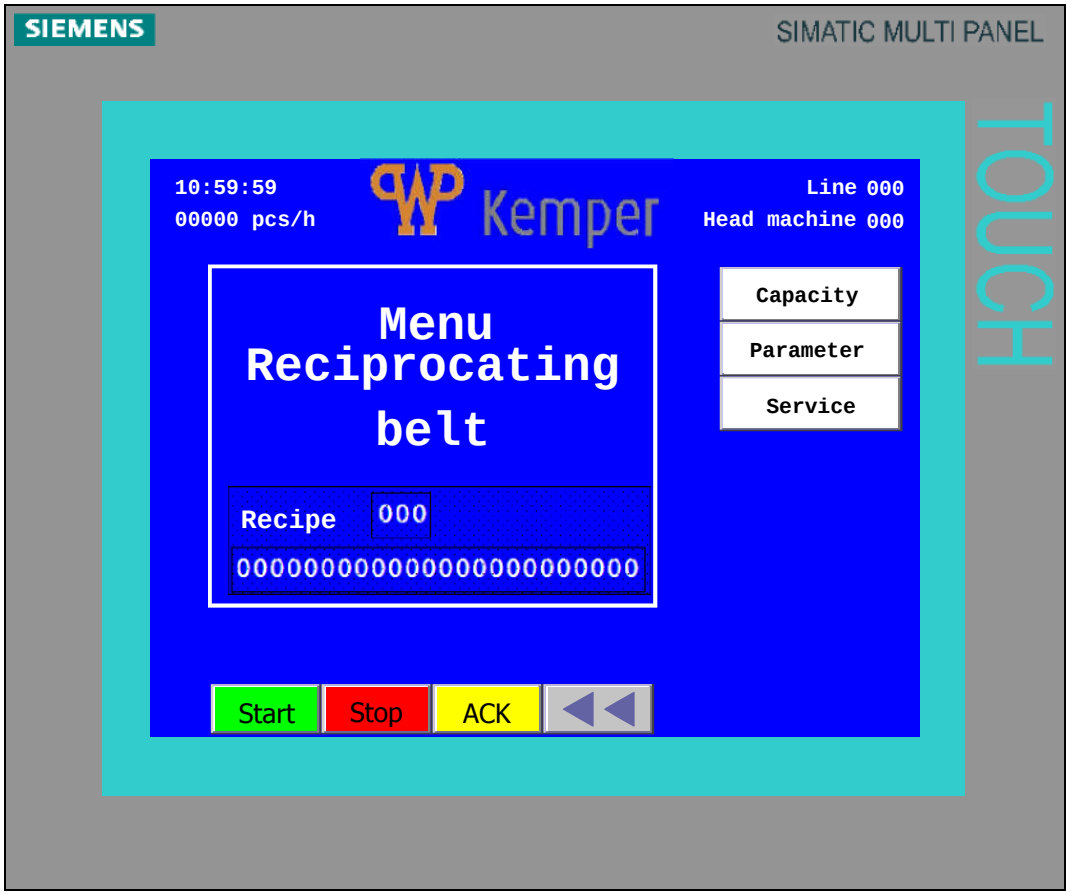
- Switch the line on (see section "7.1 Switching the line on and off").
- Switch the control voltage on (see section "7.2 Switching the control voltage on").
- Open the desired recipe (see section "7.5 Selecting a recipe via the touch panel").

After a few seconds, the start screen appears with the illustrations of the line's assemblies on the touch screen:



- Touch the illustration of the reciprocating belt on the start screen.

The 'Reciprocating belt menu' opens after touching the illustration on the start screen:

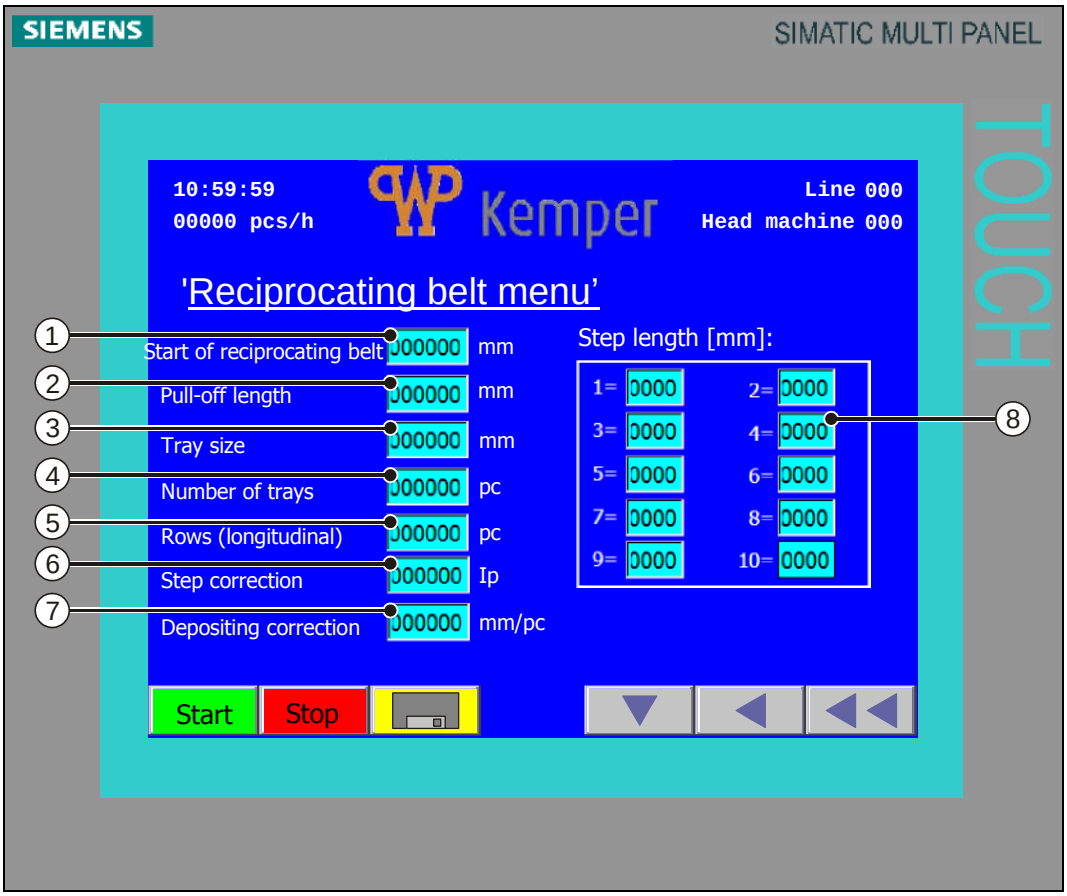


Note!

The CAPACITY button is available in the menus of all the assemblies.

- In the 'Reciprocating belt menu', press the PARAMETER button to change the settings of the reciprocating belt.

The following menu appears after pressing the PARAMETER button:



Under 'Reciprocating belt menu' you can change the setting of the reciprocating belt:

- Touch the START OF RECIPROCATING BELT input box (1).

A keypad appears for entering numbers.

- Enter the distance in millimetres at which the dough pieces have reached the end of the reciprocating belt.

- Touch the PULL-OFF LENGTH input box (2).

A keypad appears for entering numbers.

- Enter the distance in millimetres that the reciprocating belt pulls off.

- Touch the TRAY SIZE input box (3).

A keypad appears for entering numbers.

- Enter the wooden tray/baking tray size in millimetres (in the transport direction).

- Touch the NUMBER OF TRAYS input box (4).

A keypad appears for entering numbers.

- Enter the number of trays on the pull-out table.

- Touch the ROWS (LONGITUDINAL) input box (5).

A keypad appears for entering numbers.

- Enter the number of dough piece rows on the wooden tray/baking tray.

- Touch the STEP CORRECTION input box (6).

A keypad appears for entering numbers.

- Enter the start time in pulses for the reciprocating belt's step between depositing patterns.

- Touch the DEPOSITING CORRECTION input box (7).

A keypad appears for entering numbers.

- Enter a correction value in millimetres per piece if the calculated speed for control of depositing is not correct.

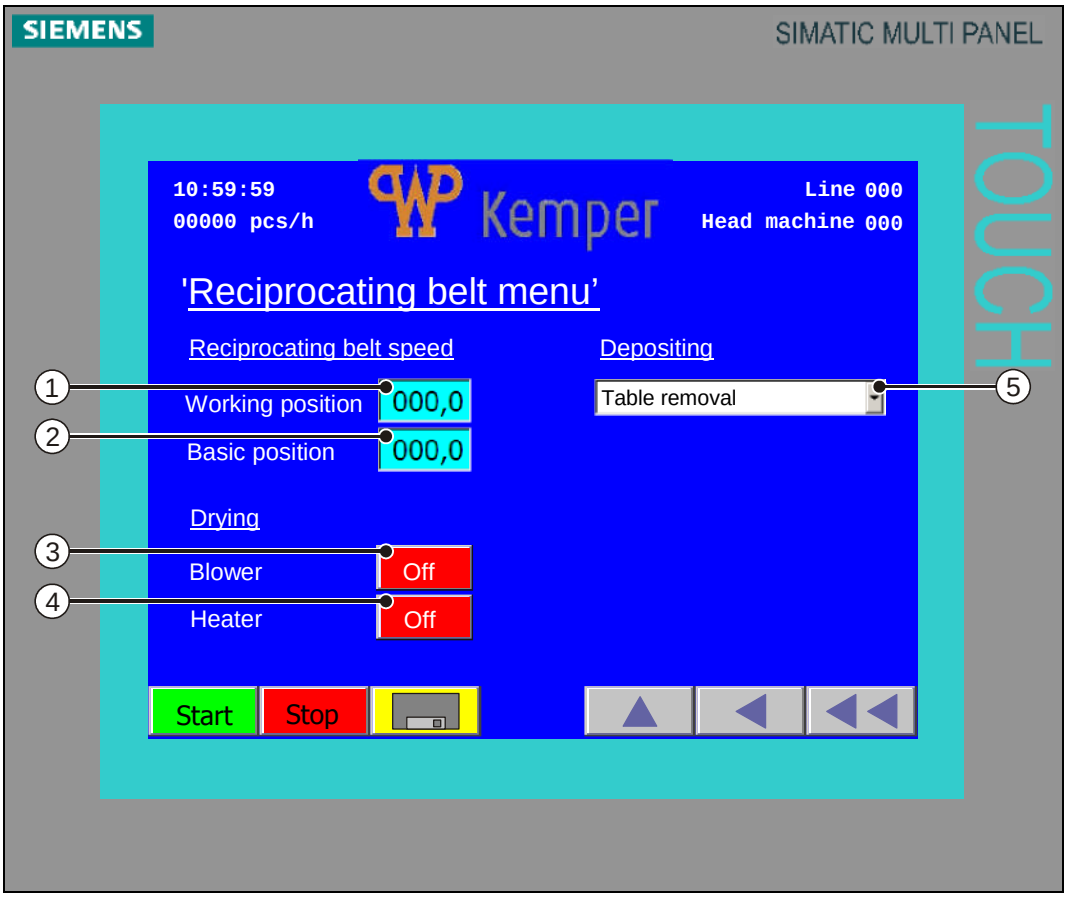
- Under STEP LENGTH [MM] (8), touch an input box of your choice.

A keypad appears for entering numbers.

The respective step length is listed for each tray (wooden trays/baking trays) below the STEP LENGTH [MM] input box.

- Enter a new step length in millimetres if you want to change the step length of the respective tray (wooden trays/baking trays).

Press the  button to access another sub-menu. A continuation of the 'Reciprocating belt menu' appears:



In the continuation of the 'Reciprocating belt menu', touch the input boxes to change further settings for controlling the reciprocating belt:

- Touch the WORKING POSITION input box (1).

A keypad appears for entering numbers.

- Enter the reciprocating belt speed in hertz.

- Touch the BASIC POSITION input box (2).

A keypad appears for entering numbers.

- Enter the reciprocating belt's speed of return to the basic position in hertz.

- Under 'Drying' touch the BLOWER button (3).

Touching causes the display to change to 'Off' (switch blower off) or 'On' (switch blower on).

- Under 'Drying' touch the HEATER button (4).

Touching causes the display to change to 'Off' (switch heater off) or 'On' (switch heater on).

- Under 'Depositing' touch the triangle (5) in the drop-down menu.

  The drop-down menu opens. You can choose between three settings (Table removal, Tray conveyor and Manual removal).

- Touch the desired setting.

The drop-down menu closes, your selection is entered.

- Press the  button to save your settings in the displayed recipe.

Password level 7 is required for saving.

- Touch the  button to open previous menu.

- Press the  button to open the 'Reciprocating belt menu' or press the  button to open the start screen.

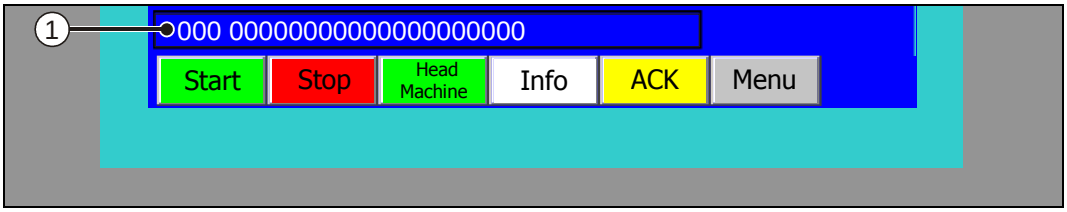
7.5 Selecting a recipe via the touch panel

> ***Note!***
>
> *The touch control contains recipes which have been set by Emil Kemper GmbH according to your wishes.*

This section describes all the required working steps to create the pieces of dough with one of your recipes. All the required settings are saved in your recipes.

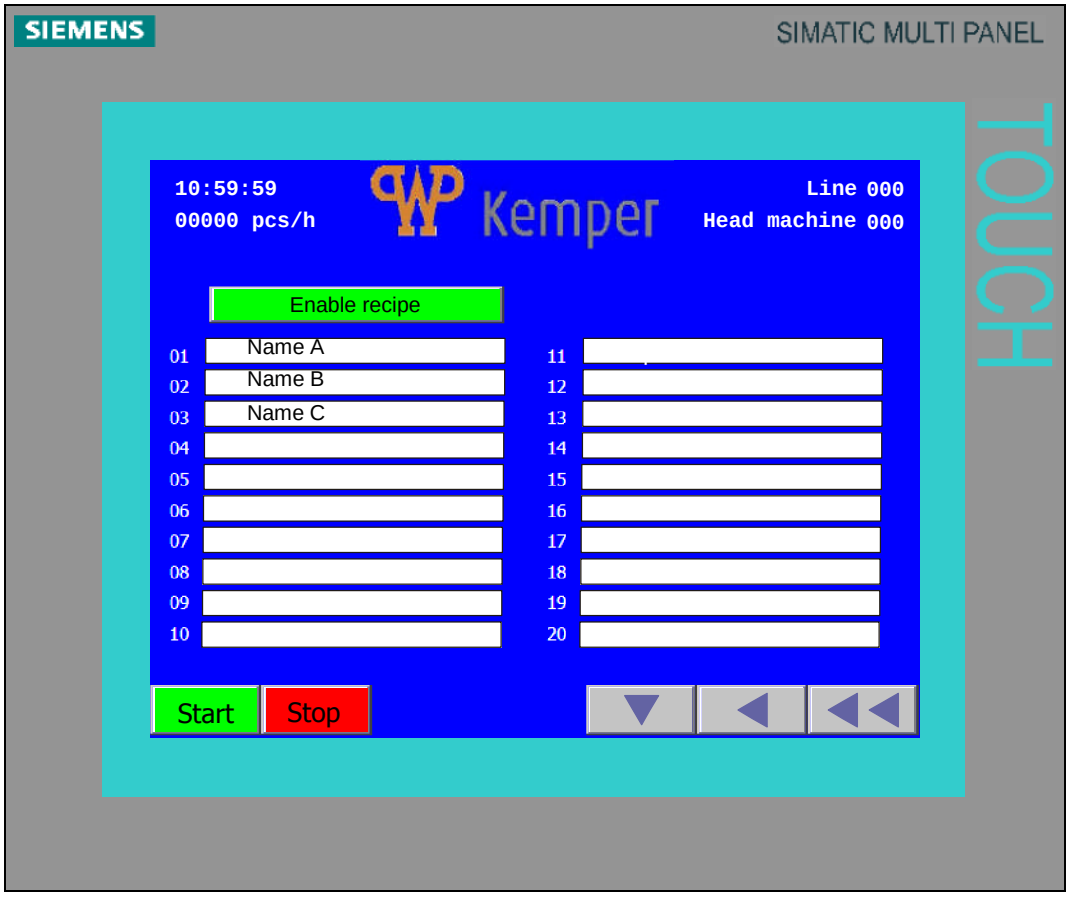
- Switch the line on (see section "7.1 Switching the line on and off").
- Switch the control voltage on (see section "7.2 Switching the control voltage on").

After a few seconds, the start screen appears with illustrations of the line's assemblies on the touch screen. See the following excerpt of the start screen:



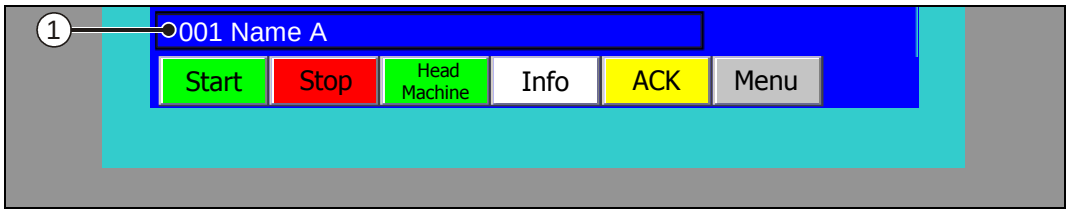
- Press the RECIPE NUMBER (1) button on the start screen.

The 'Enable recipe menu' opens after pressing the Recipe number button (1):



- Touch a desired recipe, e.g. 'Name A'

The start screen appears after touching the desired recipe. See the following excerpt of the start screen:



The recipe number and name are entered in the RECIPE NUMBER (1) button on the start screen.

The line is ready for operation. See the following section.

7.6 Starting/Stopping the line

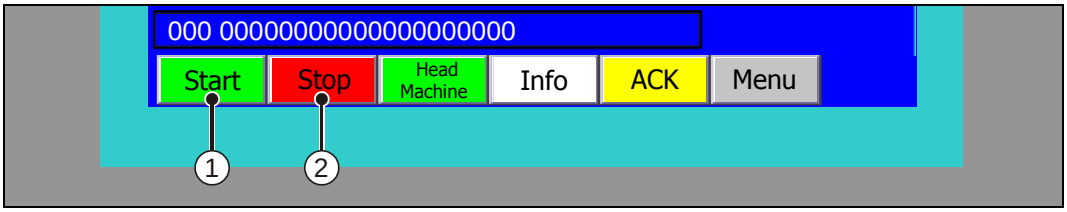
Depending on the position of the operator, the line can optionally started via the touch panel and from the line's operator panel.

Note!

Before starting the line make sure that all access doors and hoods are closed.

7.6.1 Touch panel

The following illustration displays the row of buttons at the bottom of the start screen.



Starting:

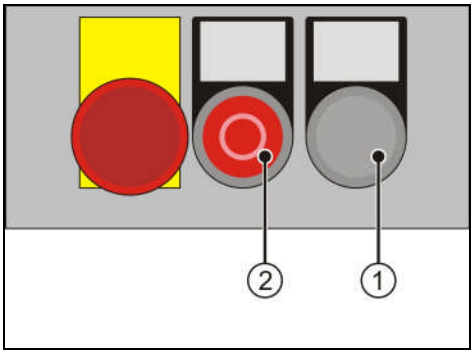
- Press the START button (1).

Stopping:

- Press the STOP button (2).

7.6.2 Operator panel

The operator panel is mounted onto an assembly depending on the customer version (see section "5.3 Overview of the operator controls").



Starting:
Press the START button (1).

Stopping:
Press the STOP button (2).

7.7 Behaviour after triggering safety devices

7.7.1 EMERGENCY STOP button

Hazard!

Pressing the EMERGENCY STOP button does not switch off the line. *The line can only be switched off via the main switch on the switchbox.*
A padlock can be used to lock the main switch to prevent accidental reconnection.

After pressing the EMERGENCY STOP button, you must carry out the following steps to put the line back into operation:

- Rectify the fault that led to the emergency stop.
- Unlock the EMERGENCY STOP button.
- Press the ACK button on the touch screen.
- Press the CONTROL VOLTAGE button on the touch panel.
- Press the START button on the touch panel.

7.7.2 Limit switches

Hazard!

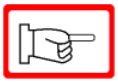
The line's limit switches must not be bypassed.
This poses a hazard through moving parts in the line.

If an access door is opened while the line is running, the respective limit switch immediately stops the line.

After waiting 20 seconds, the following steps must be carried out to put the line back into operation:

- Close the open access door.
- Press the CONTROL VOLTAGE button on the touch panel.
- Press the START button on the touch panel.

8 Cleaning and maintenance



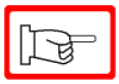
Note!

Details of the head machine are given in the separate operating manual.

8.1 Safety information for cleaning and maintenance

- Follow the safety information in chapter "1 Introduction".
- Notify the operating personnel of this before they start cleaning and maintenance work.
- The cleaning and maintenance personnel must have read and understood the user manual prior to cleaning and maintaining the line.
- Before cleaning and maintaining the line, always shut off its electrical power to prevent it from being turned on again by disconnecting the mains plug or locking the main switch.
- Protect electrical and electronic components from water splashes.
- Only use a pH-neutral (food-grade) cleaning agent.
- Do not use a steam cleaner or water hose to clean the line.
- After cleaning check that all warning signs are complete and legible.
- Do the specified maintenance and inspection work on time.
  Faults caused by inadequate or inappropriate maintenance can cause very high repair costs and long downtimes. If maintenance is neglected during the warranty period, the plant operator bears the resulting costs of recovery.
- For lubrication only use the specified or demonstrably equivalent lubricants.
- Maintenance and inspection work is only allowed to be done by experts observing all safety precautions.
- Workshop equipment appropriate to the maintenance and inspection work is essential.
- Maintenance and lubrication rules for additional devices are given in the corresponding user manuals.

8.2 Cleaning and maintenance intervals



Note!

To ensure perfect operation of the line and to satisfy hygiene requirements in the food industry, you must clean the line at least once a day.
Depending on the type of dough, you may have to clean the line at shorter intervals, e.g. dough with high fruit or sugar content.
Also clean the line when there is a change of product.

8.2.1 Every 10 operating hours or daily

8.2.1.1 Basic module

Cleaning point	Cleaning agent	Comment
Collecting trays	Vacuum cleaner, clean cloth	Remove residual dough and flour.

Further explanations can be found in section "8.3.2 Basic module".

8.2.1.2 Roll-out station

Cleaning point	Cleaning agent	Comment
Collecting trays	Vacuum cleaner, clean cloth	Remove residual dough and flour.

Further explanations can be found in section "8.3.3 Roll-out station".

8.2.1.3 Centring unit

Cleaning point	Cleaning agent	Comment
Centring bar	Clean cloth	Remove residual dough and flour.
Maintenance point	**Lubricant**	**Comment**
Pneumatic equipment		Check the pneumatic equipment for leaks and the correct pressure setting.

Further explanations can be found in section "8.3.7 Centering unit".

8.2.1.4 Conveyor belt

Cleaning point	Cleaning agent	Comment
Belt	Plastic scraper, clean cloth	Remove residual dough and flour.

Further explanations can be found in section "8.3.10 Conveyor belt".

8.2.1.5 Flour duster with flour break-up shaft

Cleaning point	Cleaning agent	Comment
Flour container	Brush	Remove residual dough and flour.

Further explanations can be found in section "8.3.11 Flour duster with flour break-up shaft".

8.2.1.6 Long-moulding belt

Cleaning point	Cleaning agent	Comment
Top belt	Plastic scraper, clean cloth	Remove residual dough and flour.
Maintenance point	**Lubricant**	**Comment**
Top belt		Check the belt tension. If necessary, retension the belt.

Further explanations can be found in section "8.3.12 Long-moulding belt".

8.2.1.7 Folding mats

Cleaning point	Cleaning agent	Comment
Wire mesh belts	Soft brush, clean cloth	Remove residual dough and flour.
Folding flaps	Clean cloth	Remove residual dough and flour.

Further explanations can be found in section "8.2.1.7 Folding mats".

8.2.1.8 Alignment and pressure roller (timing roller)

Cleaning point	Cleaning agent	Comment
Pressure roller	Plastic scraper, clean cloth	Remove residual dough and flour.

Further explanations can be found in section "8.3.14 Alignment and pressure roller".

8.2.1.9 Reciprocating belt

Cleaning point	Cleaning agent	Comment
Belt	Plastic scraper, clean cloth	Remove residual dough and flour.

Further explanations can be found in section "8.3.15 Reciprocating belt".

8.2.1.10 Reciprocating belt AB60.1

Cleaning point	Cleaning agent	Comment
Belt	Plastic scraper, clean cloth	Remove residual dough and flour.
Pneumatic equipment		Check the pneumatic equipment for leaks and the correct pressure setting.

Further explanations can be found in section "8.3.16 Reciprocating belt AB60.1".

8.2.2 Every 50 operating hours or weekly

8.2.2.1 Basic module

Maintenance point	Lubricant	Comment
Cup chains	OKS 371	Check the cup chain tension. If necessary, retension the cup chain. Lubricate the cup chains if they cause running noise.
Transfer point		Check the transfer points

Further explanations can be found in section "8.3.2 Basic module".

8.2.2.2 Discharge belt 1

Cleaning point	Cleaning agent	Comment
Chain wheels	Brush	Remove residual dough and flour.

Further explanations can be found in section "8.3.4 Discharge belt 1".

8.2.2.3 Conveyor belt

Maintenance point	Lubricant	Comment
Belt		Check the conveyor belt for damage. Check the belt tension. If necessary, retension the belt.

Further explanations can be found in section "8.3.10 Conveyor belt".

8.2.2.4 Reciprocating belt

Cleaning point	Cleaning agent	Comment
All chain drives	Brush, clean cloth	Remove residual dough and flour.
Maintenance point	**Lubricant**	**Comment**
Belt		Carry out a test run with pieces of dough and check placement. Check the belt for damage. Check the belt tension. If necessary, retension the belt.
All chain drives	OKS 371	Check the chain tension. If necessary, retension the chains. Lubricate the chains.

Further explanations can be found in section "8.3.15 Reciprocating belt".

8.2.2.5 Reciprocating belt AB60.1

Cleaning point	Cleaning agent	Comment
All chain drives	Brush, clean cloth	Remove residual dough and flour.
Maintenance point	**Lubricant**	**Comment**
Belt		Carry out a test run with pieces of dough and check placement. Check the conveyor belt for damages. Check the belt tension. If necessary, retension the belt.
All chain drives	OKS 371	Check the chain tension. If necessary, retension the chains. Lubricate the chains.

Further explanations can be found in section "8.3.16 Reciprocating belt AB60.1".

8.2.3 Every 200 operating hours or monthly

8.2.3.1 Basic module

Maintenance point	Lubricant	Comment
Transfer points		Check the transfer points. If necessary, readjust the transfer points.

Further explanations can be found in section "8.3.2 Basic module".

8.2.3.2 Discharge belt 1

Maintenance point	Lubricant	Comment
Belt		Check the belt for damage. If necessary, replace the belt.

Further explanations can be found in section "8.3.4 Discharge belt 1".

8.2.3.3 Long-moulding belt

Cleaning point	Cleaning agent	Comment
Top belt	Plastic scraper, clean cloth	Remove residual dough and flour.
Maintenance point	**Lubricant**	**Comment**
Top belt		Check the belt tension. If necessary, retension the belt.

Further explanations can be found in section "8.3.12 Long-moulding belt".

8.2.3.4 Reciprocating belt

Maintenance point	Lubricant	Comment
Belt		Check correct functioning of the belt. If necessary, readjust the belt.
Brake of the reciprocating motor*		Check correct functioning of the brake. If necessary, readjust the brake.
Bearing of the deflection carriages		Check the bearing. If necessary, replace the bearing.
Chain drive for belt advance motor	OKS 371	Check the chain tension. If necessary, retension the chain. Lubricate the chain.

* Special equipment

Further explanations can be found in section "8.3.15 Reciprocating belt".

8.2.3.5 Reciprocating belt AB60.1

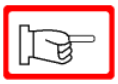
Maintenance point	Lubricant	Comment
Belt		Check correct functioning of the belt. If necessary, readjust the belt.
Brake of the reciprocating motor*		Check correct functioning of the brake. If necessary, readjust the brake.
Bearing of the deflection carriages		Check the bearing. If necessary, replace the bearing.

* Special equipment

Further explanations can be found in section "8.3.16 Reciprocating belt AB60.1".

8.2.4 Every 700 operating hours or every three months

8.2.5 Inspection every 1400 operating hours or every half-year



Note!

To ensure perfect sterilisation of the proofing racks, the TUV lamps in the intermediate proofer must be replaced after one year at the latest (on the basis of ten hours of operation a day).

Have the entire line inspected by Kemper Service every 1400 hours.

8.3 Cleaning and maintenance tasks

Configuration of the assemblies and line modules in the line is displayed in chapter "5 Overview of the line ".

8.3.1 Preparations

Hazard!

Always disconnect the power supply before carrying out any cleaning and maintenance work at the line.

- Switch the line off (see section "7.1 Switching the line on and off").
- Prevent the line from being accidentally reconnected by disconnecting the mains plug or locking the main switch.

8.3.2 Basic module

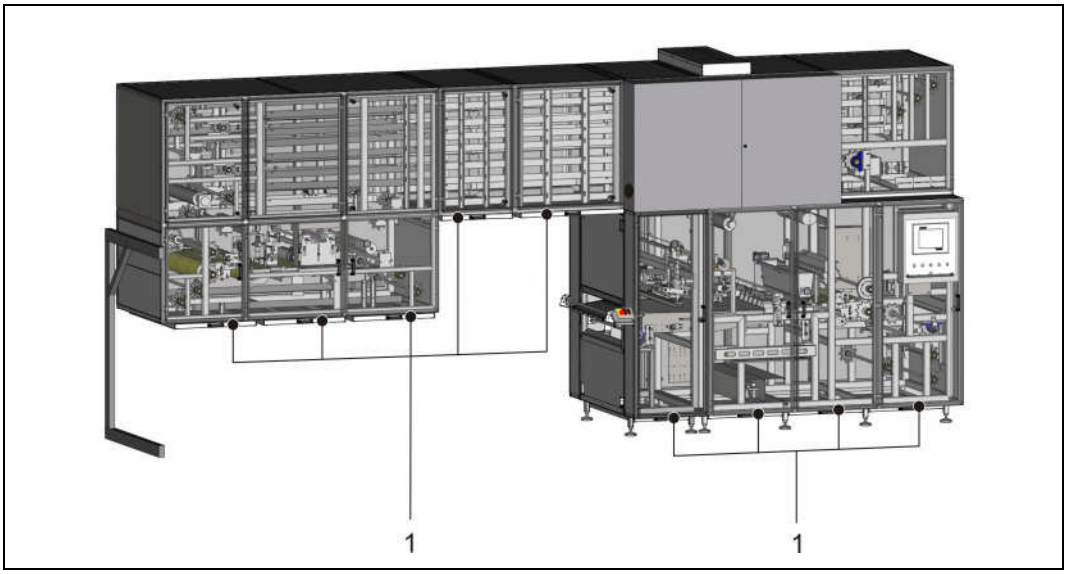
Note!

The illustration below contains optional assemblies and line modules which may not be included in the line's scope of delivery.

8.3.2.1 Cleaning the collecting trays

- Carry out the preparations (see section "8.3.1 Preparations").

The extractable cleaning trays (1) are located beneath the basic module and the further line modules:



- Use a vacuum cleaner and a clean cloth to clean residual dough and flour from the collecting trays (1).

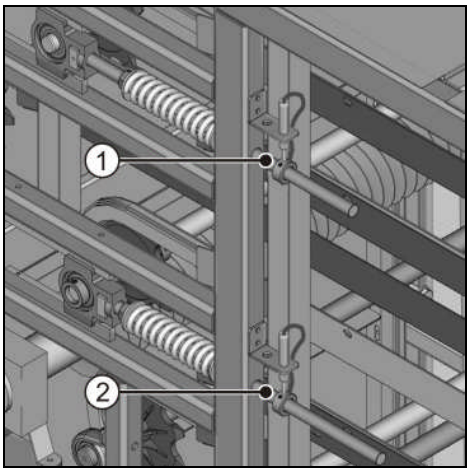
8.3.2.2 Tensioning the cup chains

If the chains are not retensioned regularly, the chains may jump, resulting in incorrect transfer points. The cup chain tension is monitored by a proximity switch. If the proximity switch is activated, a message appears on the touch panel and the line registers a fault.

- Carry out the preparations (see section "8.3.1 Preparations").

> ***Note!***
>
> *Make sure the cup chain is tensioned equally on both sides.*
> *If this is not the case, the cups will travel through the loading device at an incorrect angle, resulting in possible faults.*

> ***Note!***
>
> *These maintenance tasks should be carried out by a trained and qualified Kemper employee.*

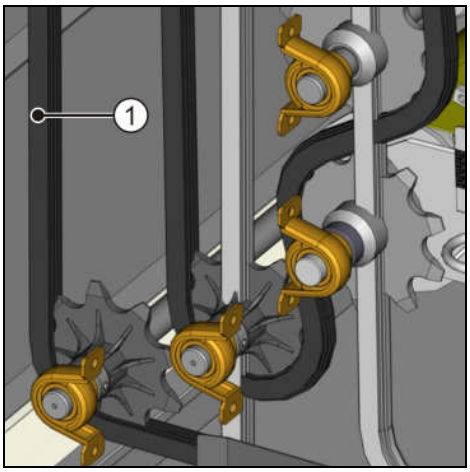


If necessary, adjust the chain tensioner (1, 2) to tension the chain.

Tension the chain equally on both sides of the line.

8.3.2.3 Lubricating the cup chains

- Carry out the preparations (see section "8.3.1 Preparations").



Lubricate the cup chain (1) on both sides of the line with the specified oil (see section "8.4.2 Greases").

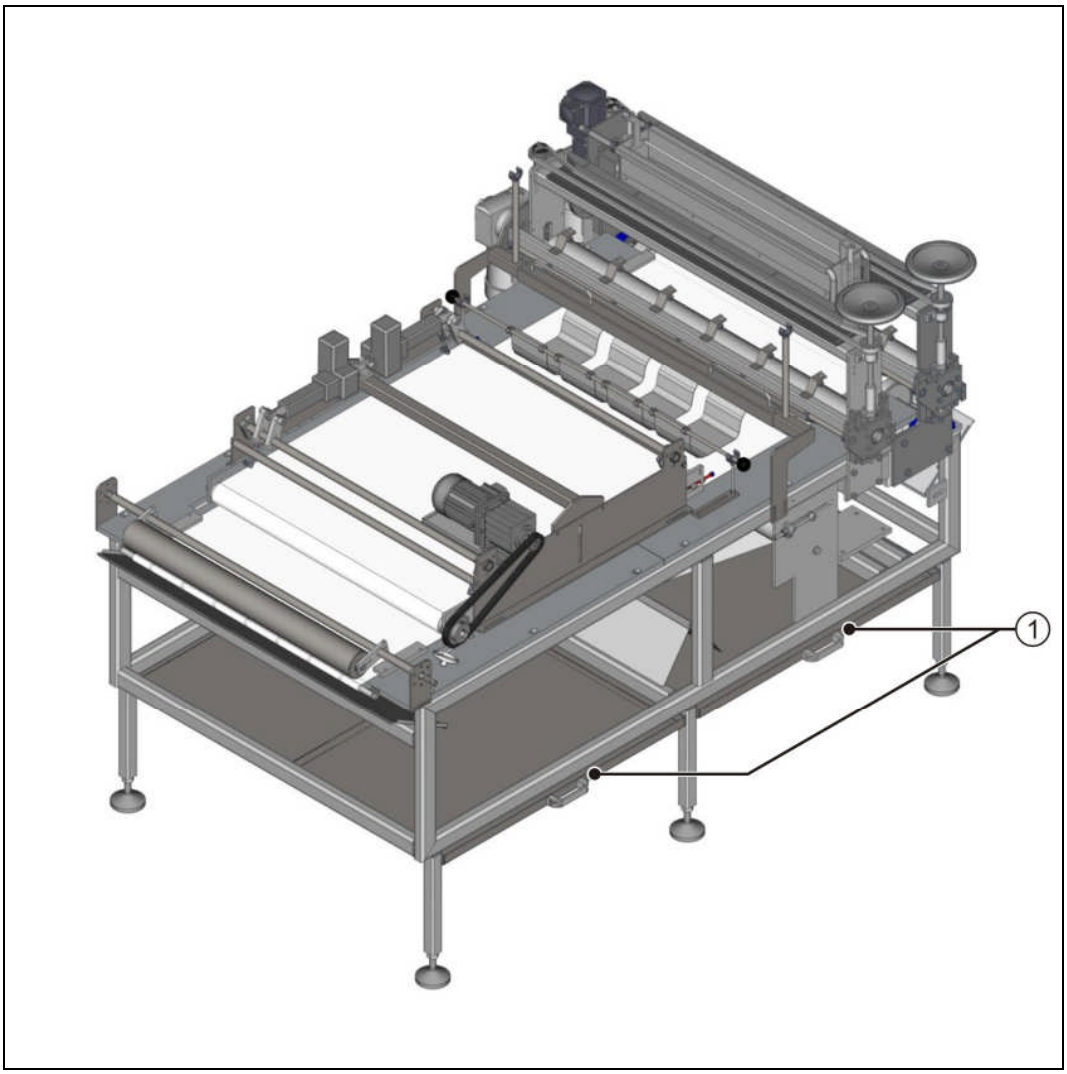
8.3.3 Roll-out station

> ***Note!***
>
> *The illustration below contains optional line modules which may not be included in the line's scope of delivery.*

8.3.3.1 Cleaning collecting trays

- Carry out the preparations (see section "8.3.1 Preparations").

The extractable collecting trays (1) are located beneath the roll-out station:



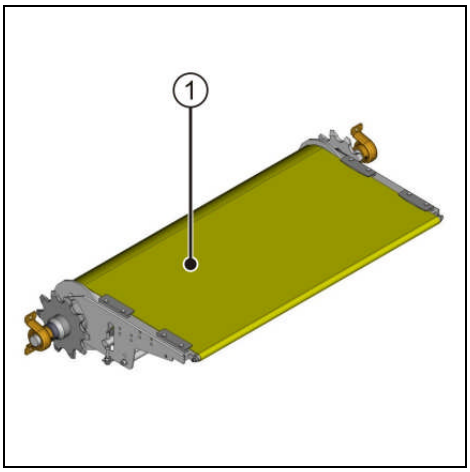
- Use a vacuum cleaner and a clean cloth to clean residual dough and flour from the collecting trays (1).

8.3.4 Discharge belt 1

Configuration of the line module Discharge belt 1 in the line is displayed in section "5 Overview of the line".

8.3.4.1 Cleaning the belt

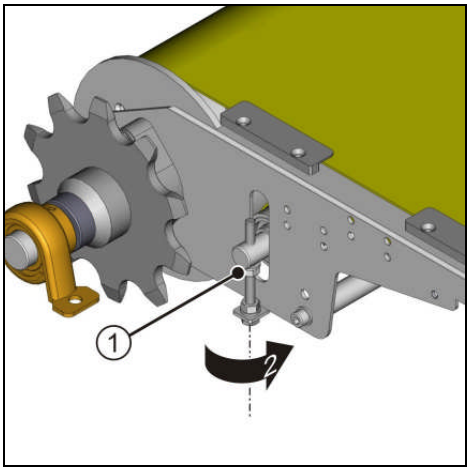
- Carry out the preparations (see section "8.3.1 Preparations").



Use a plastic scraper and a clean cloth to clean the belt (1).

8.3.4.2 Tensioning the belt

- Carry out the preparations (see section "8.3.1 Preparations").



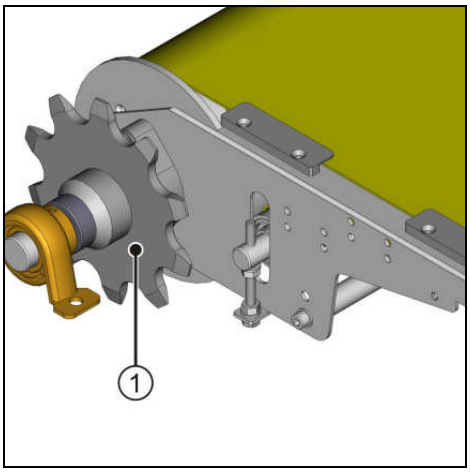
Check the belt tension.

Turn the hexagon nut (1) in the direction of the arrow (2) to tension the belt.

Tension the belt equally on both sides.

8.3.4.3 Cleaning the chain wheels

- Carry out the preparations (see section "8.3.1 Preparations").



Use a brush to clean the chain wheel (1).

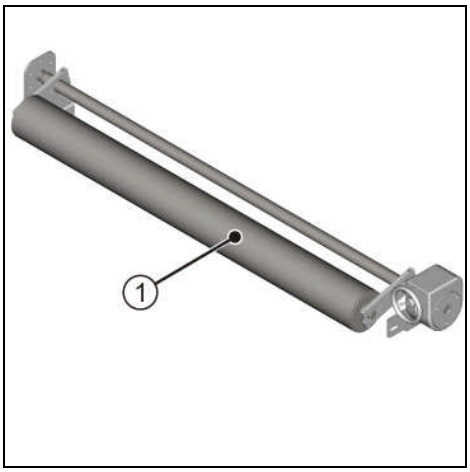
Clean the chain wheels on both sides.

8.3.5 Pressure roller

Configuration of the line module Pressure roller in the line is displayed in section "5 Overview of the line".

8.3.5.1 Cleaning the pressure roller

- Carry out the preparations (see section "8.3.1 Preparations").



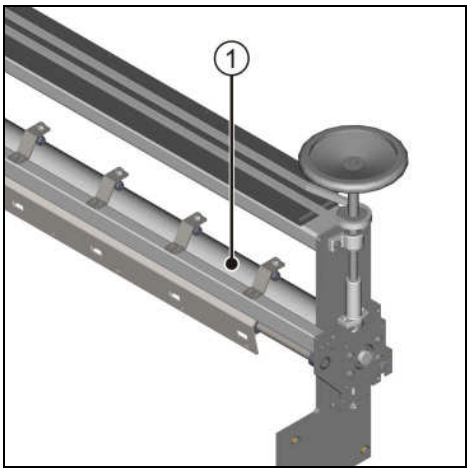
Use a clean cloth to clean the pressure roller (1).

8.3.6 Roll-out roller

Configuration of the line module Roll-out roller in the line is displayed in section "5 Overview of the line".

8.3.6.1 Cleaning the roll-out roller

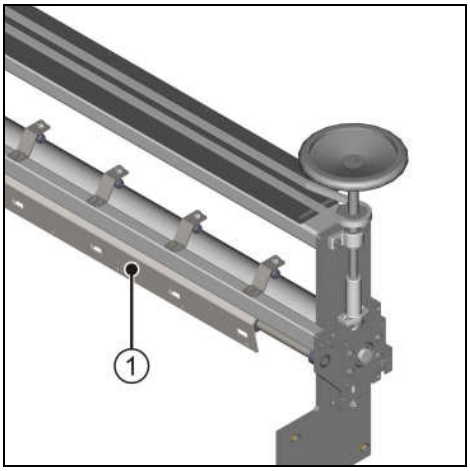
- Carry out the preparations (see section "8.3.1 Preparations").



Use a clean cloth to clean the roll-out roller (1).

8.3.6.2 Cleaning the scraper

- Carry out the preparations (see section "8.3.1 Preparations").



Use a clean cloth to clean the scraper (1).

8.3.7 Centering unit

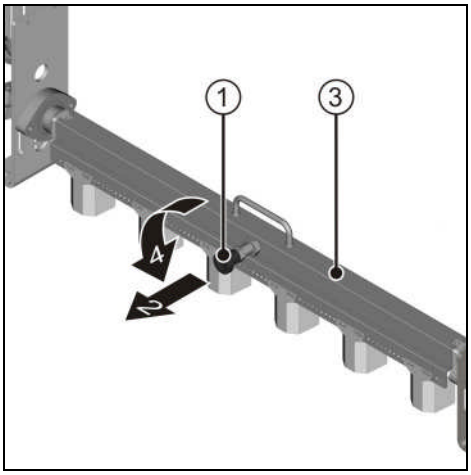
Note!

The schematic diagram below describes the centering unit. The version that is delivered may differ from the version shown here.

Configuration of the line module Centering unit in the line is displayed in section "5 Overview of the line".

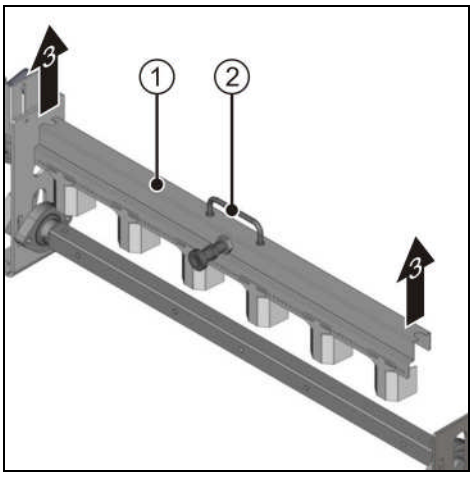
8.3.7.1 Cleaning the centering flap

- Carry out the preparations (see section "8.3.1 Preparations").

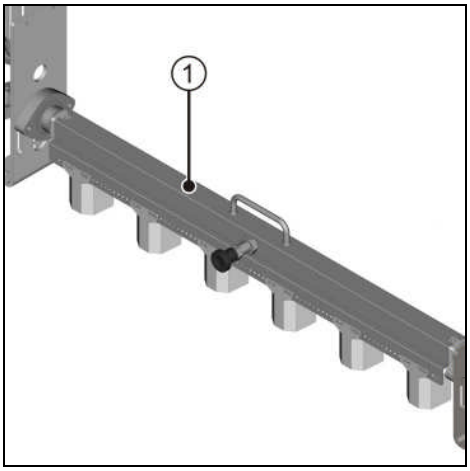


Pull the index pin (1) from the centering flap (3) in the direction of the arrow (3).

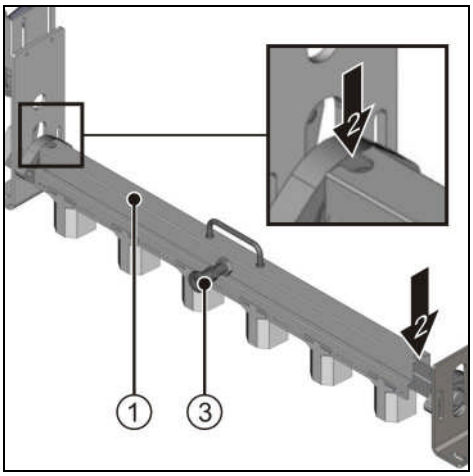
Turn the index pin (1) 90 degrees in the direction of the arrow (4).



Pull the centering flap (1) off the holder by the handle (2) in the direction of the arrow (3).



Use a clean cloth to clean the centering flap (1).



Fit the cleaned centering flap (1) in the holder in the direction of the arrow (2), ensuring that the slots in the centering flap engage in the holder.

Ensure that the index pin (3) engages in the centering flap.

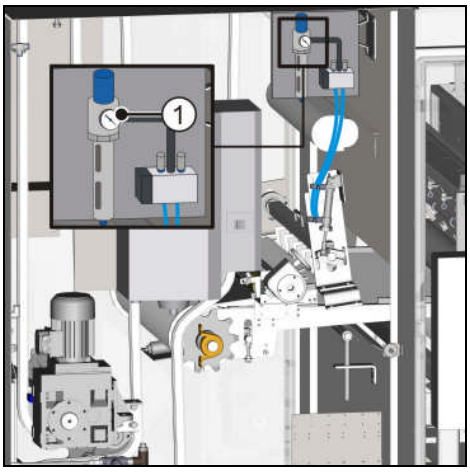
8.3.7.2 Checking the pneumatic equipment

Note!

The schematic diagrams below describe the centering unit's pneumatic equipment. The version that is delivered may differ from the versions shown here.

- Carry out the preparations (see section "8.3.1 Preparations").

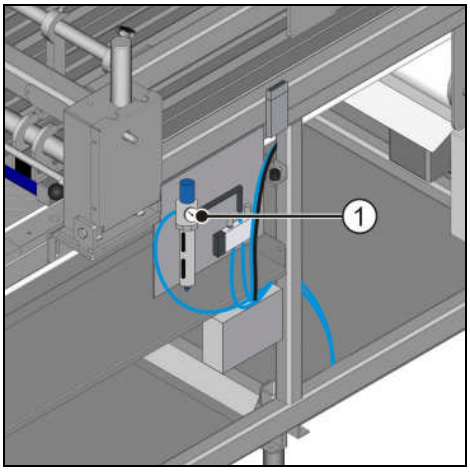
A compressed air maintenance unit of the centering unit in the basic module is located on the right in running direction in the basic module.



Check the pressure setting (5 bar) at the compressed air maintenance unit (1).

Inspect all the pneumatic hoses and connection points for leaks.

Another compressed air maintenance unit of the centering unit in the channel moulding station is located on the right in running direction in the channel moulding station.



Check the pressure setting (5 bar) at the compressed air maintenance unit (1).

Inspect all the pneumatic hoses and connection points for leaks.

8.3.8 Cutting station

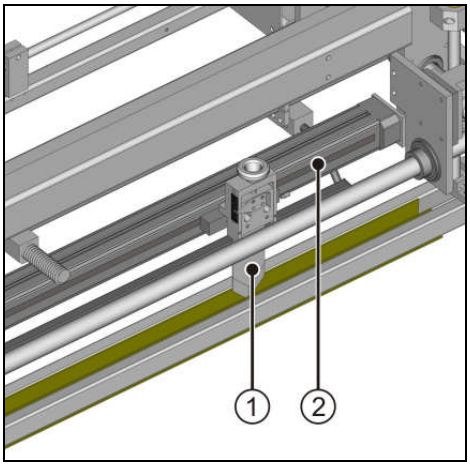
Configuration of the line module Cutting station in the line is displayed in section "5 Overview of the line".

8.3.8.1 Lubricating the triangular knife and knife guides

- Carry out the preparations (see section "8.3.1 Preparations").

Cutting hazard

Pay attention to the triangular knife during maintenance work. There is the risk of hand injuries.



Remove any dough deposits from the triangular knife (1) and knife guides (2).

Lubricate the knife guides (2) with the specified oil (see section "8.4.2 Greases").

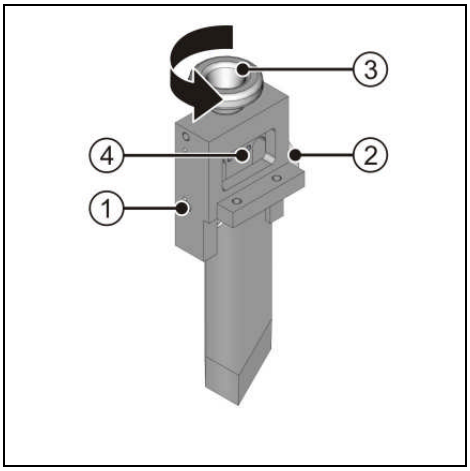
8.3.8.2 Inspecting and replacing the triangular knife

- Carry out the preparations (see section "8.3.1 Preparations").

Cutting hazard

Pay attention to the triangular knife during maintenance work. There is the risk of hand injuries.

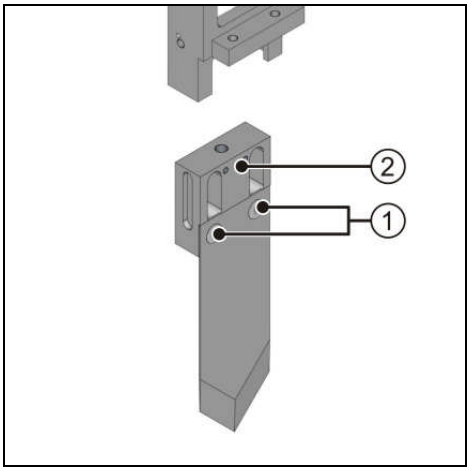
- Inspect the triangular knife for damage. Replace it if applicable.



Loosen the setscrew (1).

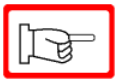
Loosen the locking screw (2).

Turn the adjusting screw (3) in the direction of the arrow until the knife holder (4) can be removed.



Loosen the two countersunk screws (1) to be able to remove the triangular knife from its holder (2).

- Fit the triangular knife in reverse order.

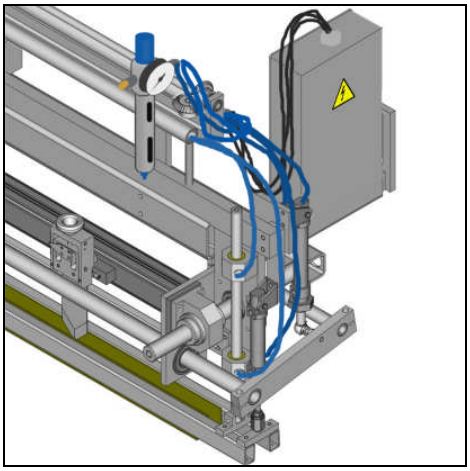


Note!

Check the cutting position after replacing the triangular knife. Adjust the cutting position if applicable.

8.3.8.3 Checking the pneumatic equipment

- Carry out the preparations (see section "8.3.1 Preparations").



Check the pressure setting (5 bar).

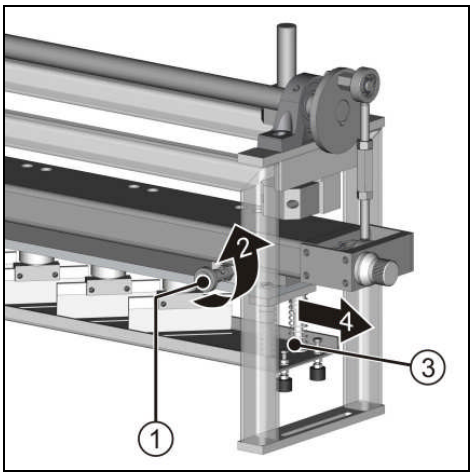
Inspect all the pneumatic hoses and connection points for leaks.

8.3.9 Belt stamp

Configuration of the line module Belt stamp in the line is displayed in section "5 Overview of the line".

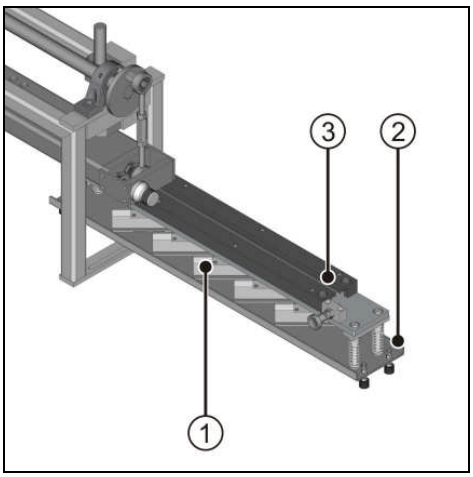
8.3.9.1 Cleaning the belt stamp

- Carry out the preparations (see section "8.3.1 Preparations").

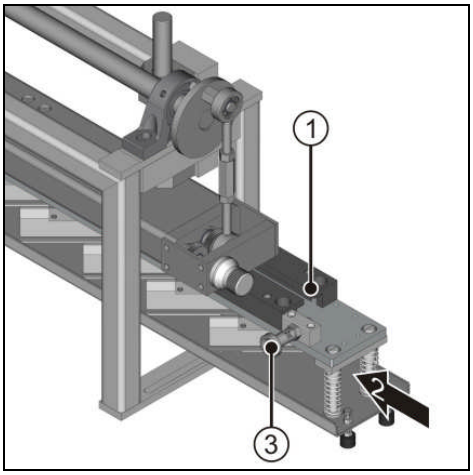


Turn the arresting pin (1) 90 degrees in the direction of the arrow (2).

Pull the stamping tool (3) out of the holder in the direction of the arrow (4).



Clean the knives (1) and guides (2) of the stamping tool (3) with a clean cloth.



Push the stamping tool (1) into the holder in the direction of the arrow (2).

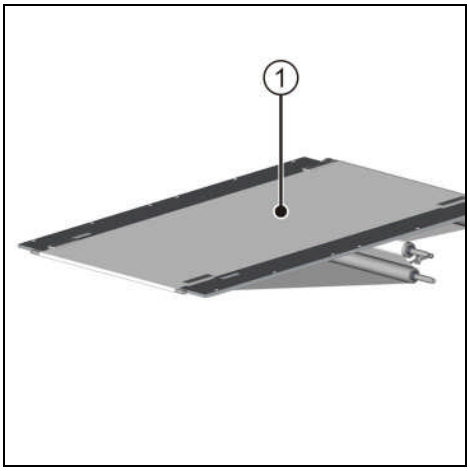
Ensure that the arresting pin (3) engages in the holder.

8.3.10 Conveyor belt

Configuration of the line module conveyor belt in the line is displayed in chapter "5 Overview of the line ".

8.3.10.1 Cleaning the conveyor belt

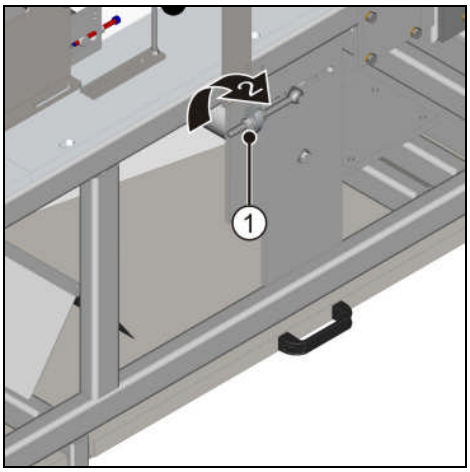
- Carry out the preparations (see section "8.3.1 Preparations").



Use a plastic scraper and a clean cloth to clean the belt (1).

8.3.10.2 Tensioning the conveyor belt

- Carry out the preparations (see section "8.3.1 Preparations").



Check the belt tension.

Turn the hexagon nut (1) in the direction of the arrow (2) to tension the belt.

Tension the belt equally on both sides.

8.3.11 Flour duster with flour break-up shaft

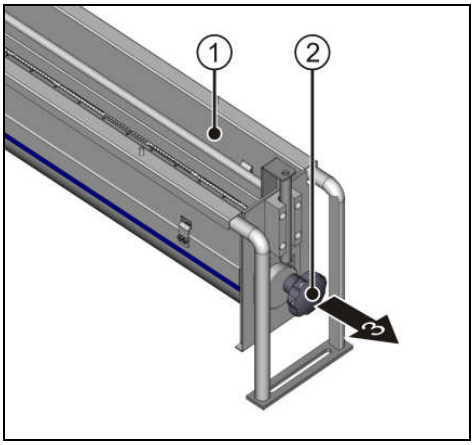
Configuration of the line module flour duster with flour break-up shaft in the line is displayed in section "5 Overview of the line".

Note!

The schematic diagrams below describe the flour duster with break-up shaft. The version that is delivered may differ from the version shown here.

8.3.11.1 Cleaning the flour container

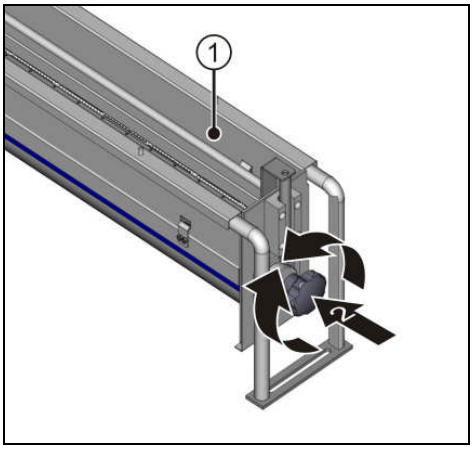
- Carry out the preparations (see section "8.3.1 Preparations").



Pull the adjusting handle (2) in the direction of the arrow (3) to extract the flour duster (1) from the holder.

Empty the flour duster (1).

Use a brush to clean any residual flour from the flour duster (1).

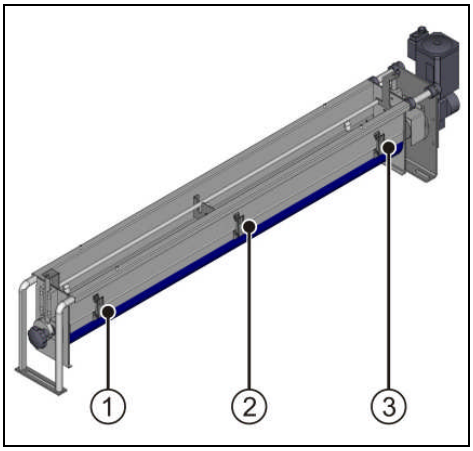


Push the flour duster (1) back into the holder in the direction of the arrow (2).

Turn the adjusting handle until the drive engages.

8.3.11.2 Cleaning the flour cloth

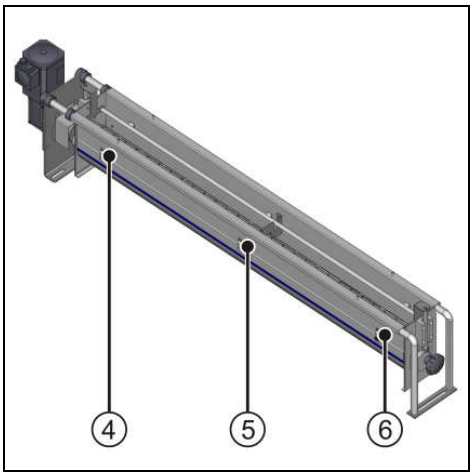
- Carry out the preparations (see section "8.3.1 Preparations").



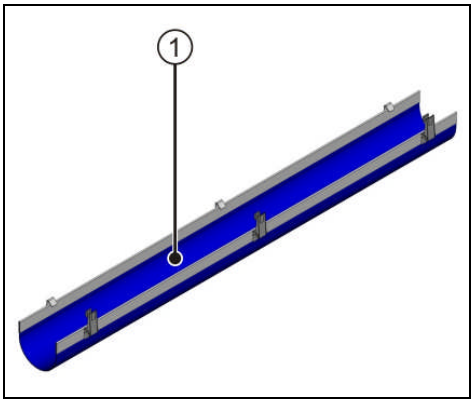
Open the quick fixtures (1) to (3).

Remove the quick fixtures from the flour duster.

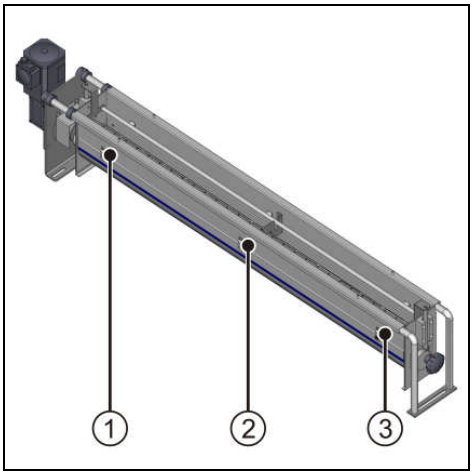
- Guide the flour cloth under the flour duster.



Remove the hooks (4) to (6) from the flour duster.

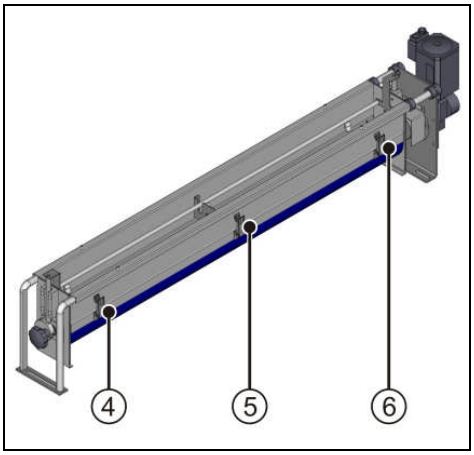


Clean the flour cloth (1) with a soft brush.



Fit the flour cloth into the flour duster with the hooks (1) to (3).

- Guide the flour cloth under the flour duster.



Open the quick fixtures (4) to (6) if applicable.

Fit the quick fixtures into the flour duster.

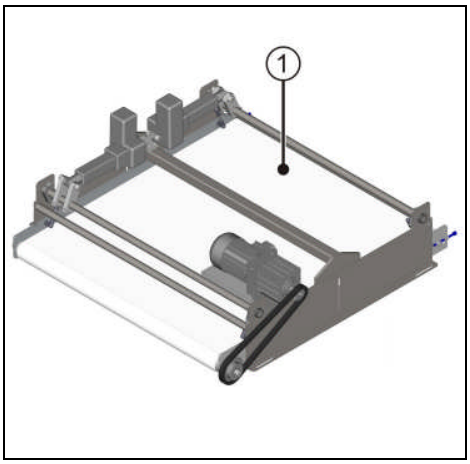
Close the quick fixtures (4) to (6).

8.3.12 Long-moulding belt

Configuration of the line module long-moulding belt in the line is displayed in chapter "5 Overview of the line ".

8.3.12.1 Cleaning the top belt

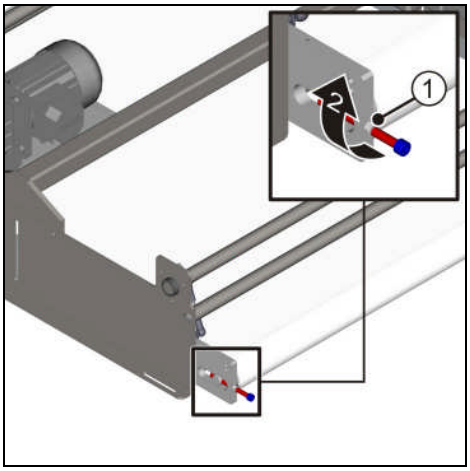
- Carry out the preparations (see section "8.3.1 Preparations").



Use a plastic scraper and a clean cloth to clean the belt (1).

8.3.12.2 Tensioning the top belt

- Carry out the preparations (see section "8.3.1 Preparations").



Check the belt tension.

Turn the hexagon nut (1) in the direction of the arrow (2) to tension the belt.

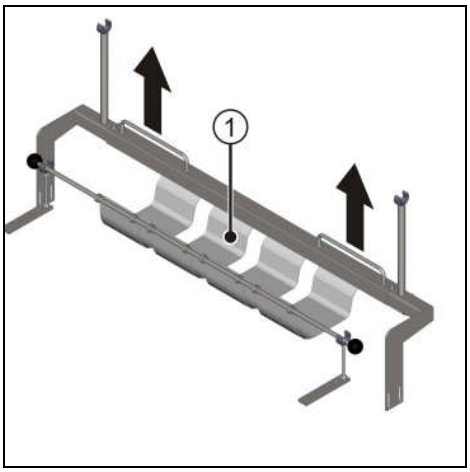
Tension the belt equally on both sides.

8.3.13 Folding mats

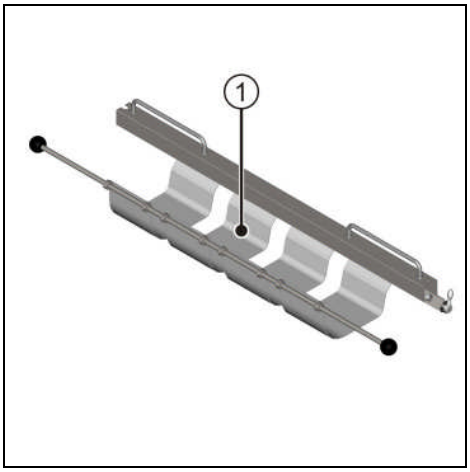
Configuration of the line module Folding mats in the line is displayed in section "5 Overview of the line".

8.3.13.1 Cleaning the wire mesh belts

- Carry out the preparations (see section "8.3.1 Preparations").



Use the handles (see arrows) to remove the folding mats (1) from the holder.

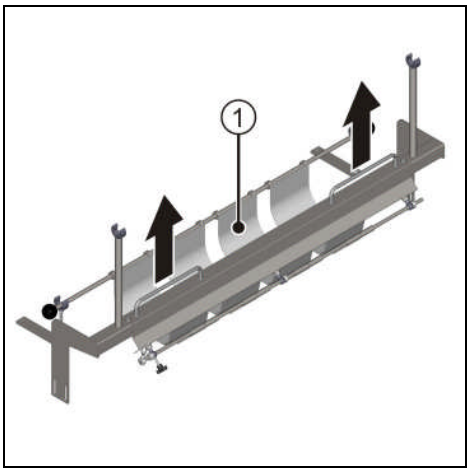


Use a soft brush to remove residual dough and flour from the wire mesh belts (1).

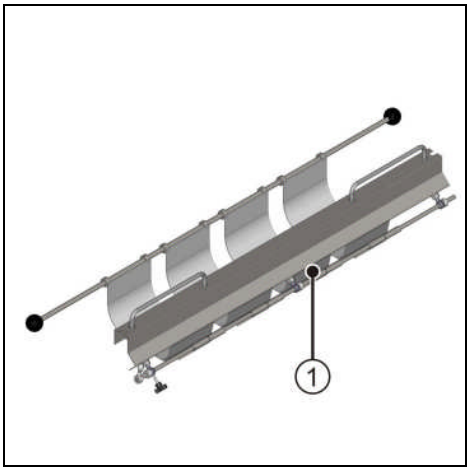
- Reinsert the folding mats in the holder.

8.3.13.2 Cleaning the folding flaps

- Carry out the preparations (see section "8.3.1 Preparations").



Use the handles (see arrows) to remove the folding mats (1) from the holder.



Use a clean cloth to remove residual dough and flour from the folding flaps (1).

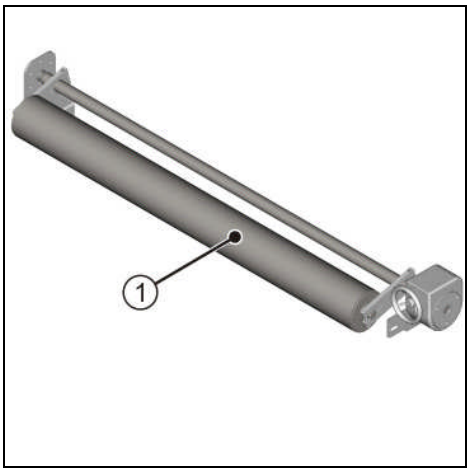
- Reinsert the folding mats in the holder.

8.3.14 Alignment and pressure roller

Configuration of the line module alignment and pressure roller in the line is displayed in chapter "5 Overview of the line ".

8.3.14.1 Cleaning the alignment and pressure roller

- Carry out the preparations (see section "8.3.1 Preparations").



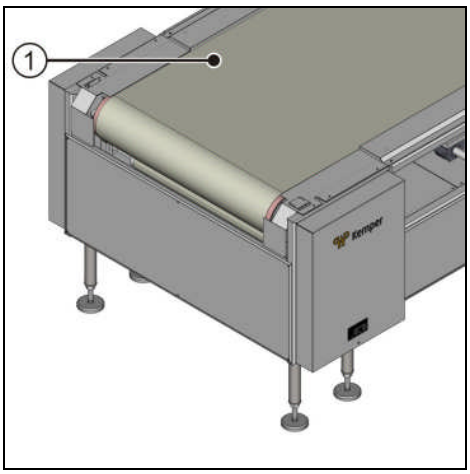
Use a clean cloth to clean the alignment and pressure roller (1).

8.3.15 Reciprocating belt

Configuration of the line module Reciprocating belt in the line is displayed in section "5 Overview of the line".

8.3.15.1 Cleaning the belt

- Carry out the preparations (see section "8.3.1 Preparations").

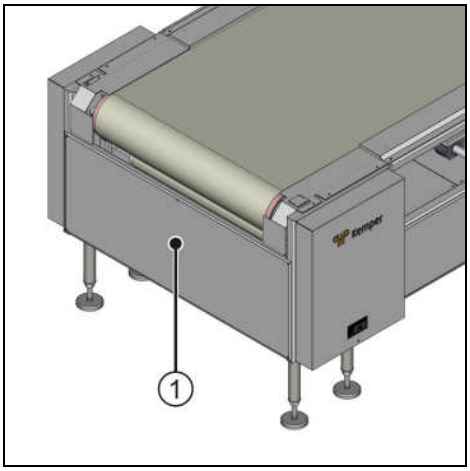


Use a plastic scraper and a clean cloth to clean the belt (1).

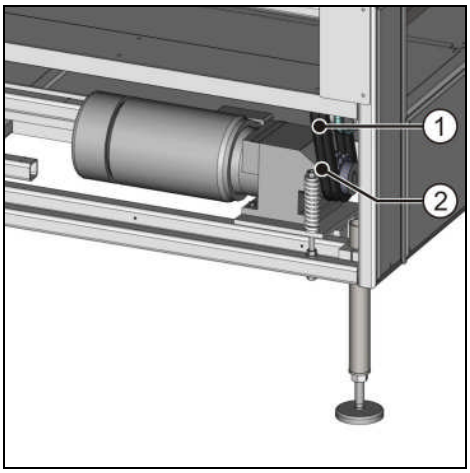
8.3.15.2 Tensioning and lubricating the drive chain of the conveyor belt stroke

- Carry out the preparations (see section "8.3.1 Preparations").

The chain tension is retained for a period of time by a coil spring. The chain must be retensioned after this period.



Remove the panel (1) by unscrewing the fastening screw.



Check the correct chain tension (1).

If necessary, adjust the hexagon nut (2) at the chain tensioner to tension the chain (1).

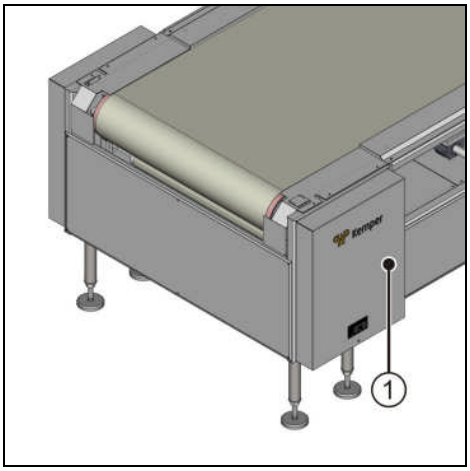
Lubricate the chain with the specified oil (see section "8.4.2 Greases").

- Reinsert the panel.

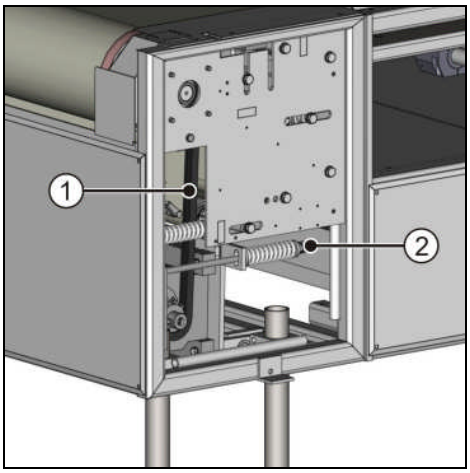
8.3.15.3 Tensioning and lubricating the drive chain conveyor belt drive

- Carry out the preparations (see section "8.3.1 Preparations").

The chain tension is retained for a period of time by a coil spring. The chain must be retensioned after this period.



Remove the panel (1) by unscrewing the fastening screw.



Check the correct chain tension (1).

If necessary, adjust the hexagon nut (2) at the chain tensioner to tension the chain (1).

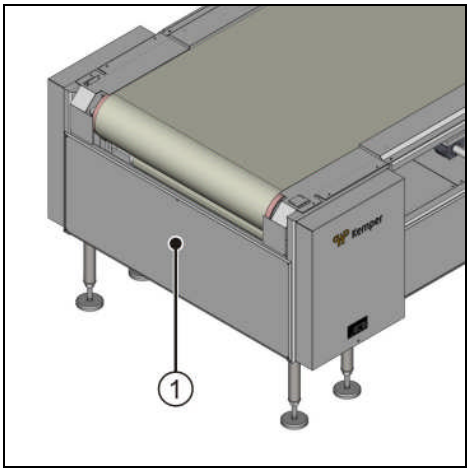
Lubricate the chain with the specified oil (see section "8.4.2 Greases").

- Reinsert the panel.

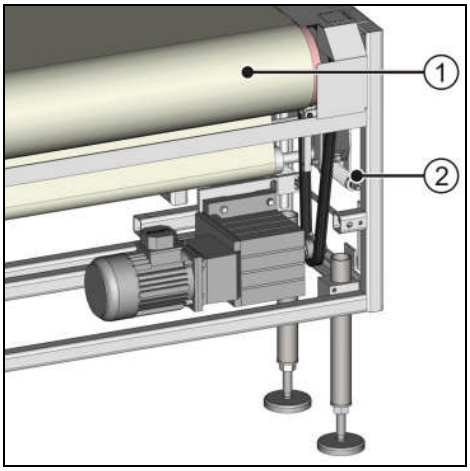
8.3.15.4 Tensioning the conveyor belt

- Carry out the preparations (see section "8.3.1 Preparations").

> ***Note!***
>
> *This setting influences the tension of the conveyor belt chains.*
> *If necessary, also tension the conveyor belt chains (see next page).*



Remove the panel (1) by unscrewing the fastening screw.



Check the correct tension of the conveyor belt (1).

If necessary, adjust the hexagon nut (2) at the belt tensioner to tension the conveyor belt (1).

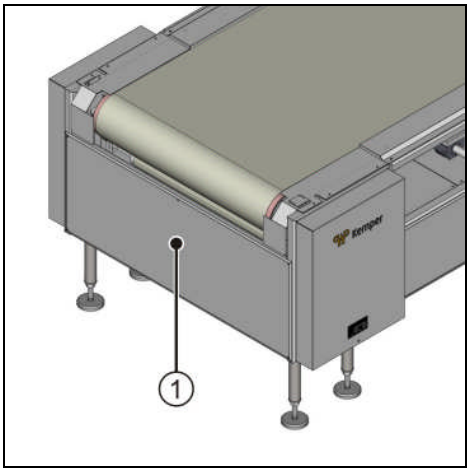
Tension the conveyor belt equally on both sides.

- Reinsert the panel.

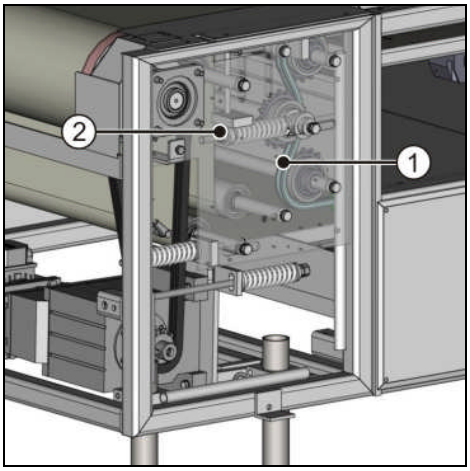
8.3.15.5 Tensioning and lubricating the conveyor belt chains

- Carry out the preparations (see section "8.3.1 Preparations").

> ***Note!***
>
> *This setting influences the tension of the conveyor belt .*
> *If necessary, also tension the conveyor belt (see previous page).*



Remove the panel (1) by unscrewing the fastening screw.



Check the correct tension of the chain (1).

If necessary, adjust the hexagon nut (2) at the chain tensioner to tension the chain (1).

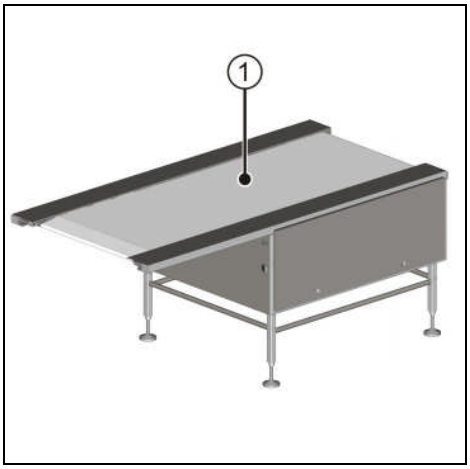
Tension the chains equally on both sides.

- Lubricate the chains with the specified oil (see section "8.4.2 Greases").
- Reinsert the panel.

8.3.16 Reciprocating belt AB60.1

8.3.16.1 Cleaning the belt

- Carry out the preparations (see section "8.3.1 Preparations").

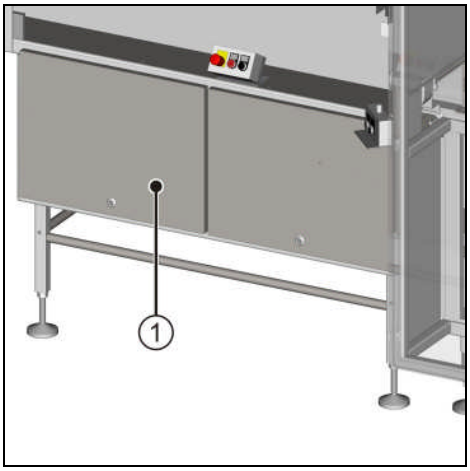


Use a plastic scraper and a clean cloth to clean the belt (1).

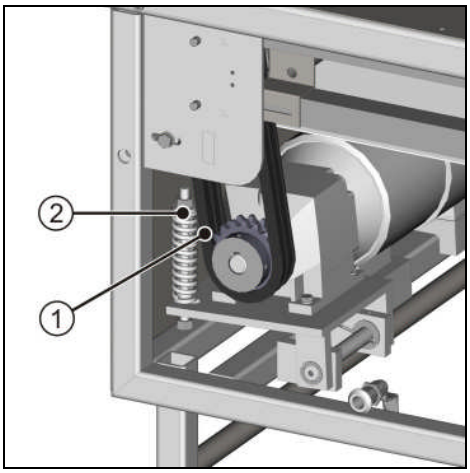
8.3.16.2 Tensioning the drive chain of the conveyor belt pull-off

- Carry out the preparations (see section "8.3.1 Preparations").

The chain tension is retained for a period of time by a coil spring. The chain must be retensioned after this period.



Remove the panel (1) by unscrewing the fastening screw.



Check the correct chain tension (1).

If necessary, adjust the hexagon nut (2) at the chain tensioner to tension the chain (1).

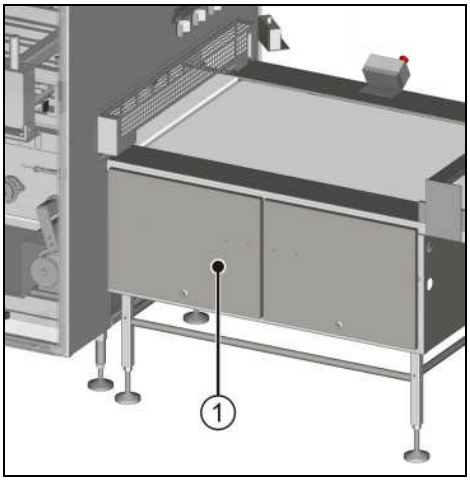
Lubricate the chain with the specified oil.

- Reinsert the panel.

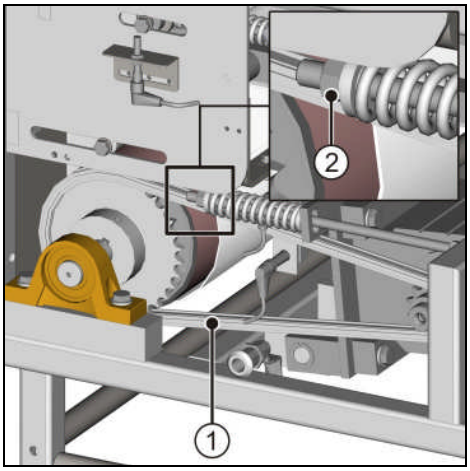
8.3.16.3 Tensioning the drive chain of the conveyor belt drive

- Carry out the preparations (see section "8.3.1 Preparations").

The chain tension is retained for a period of time by a coil spring. The chain must be retensioned after this period.



Remove the panel (1) by unscrewing the fastening screw.



Check the correct chain tension (1).

If necessary, adjust the hexagon nut (2) at the chain tensioner to tension the chain (1).

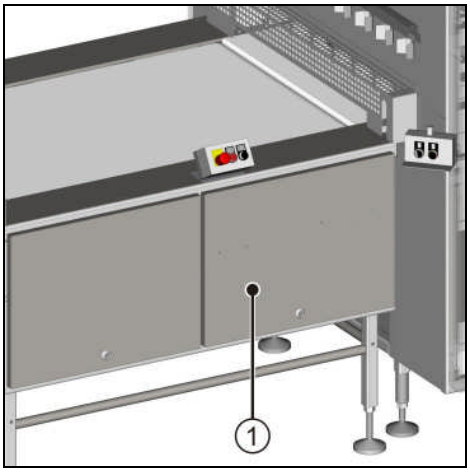
Lubricate the chain with the specified oil.

- Reinsert the panel.

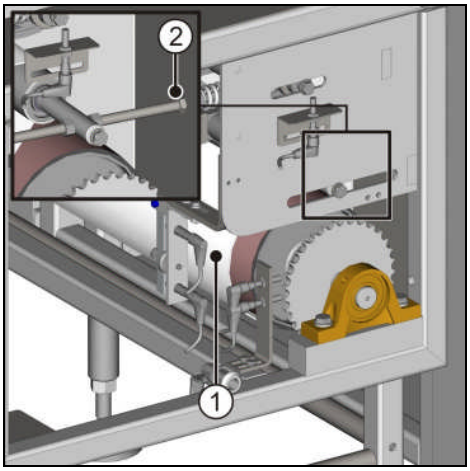
8.3.16.4 Tensioning the conveyor belt

- Carry out the preparations (see section "8.3.1 Preparations").

> ***Note!***
>
> *This setting influences the tension of the conveyor belt chains.*
> *If necessary, also tension the conveyor belt chains (see next page).*



Remove the panel (1) by unscrewing the fastening screw.



Check the correct tension of the conveyor belt (1).

If necessary, adjust the hexagon nut (2) at the belt tensioner to tension the conveyor belt (1).

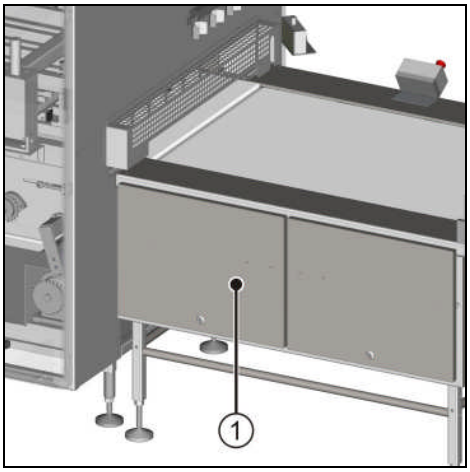
Tension the conveyor belt equally on both sides.

- Reinsert the panel.

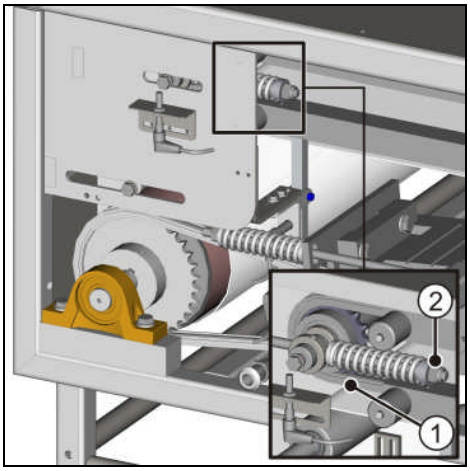
8.3.16.5 Tensioning the conveyor belt chains

- Carry out the preparations (see section "8.3.1 Preparations").

> ***Note!***
>
> *This setting influences the tension of the conveyor belt .*
> *If necessary, also tension the conveyor belt (see previous page).*



Remove the panel (1) by unscrewing the fastening screw.



Check the correct tension of the chain (1).

If necessary, adjust the hexagon nut (2) at the chain tensioner to tension the chain (1).

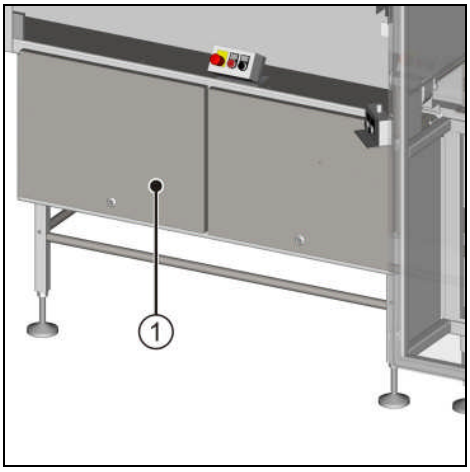
Tension the chains equally on both sides.

Lubricate the chains with the specified oil.

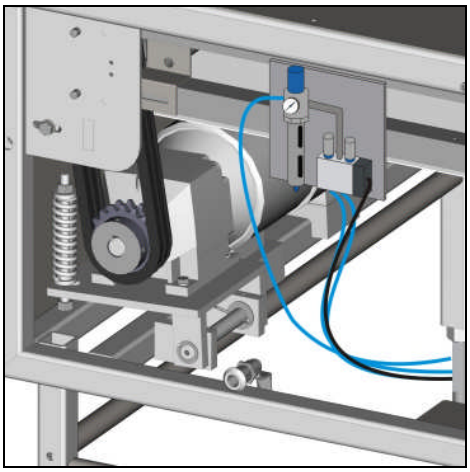
- Reinsert the panel.

8.3.16.6 Checking the pneumatic equipment

- Carry out the preparations (see section "8.3.1 Preparations").



Remove the panel (1) by unscrewing the fastening screw.



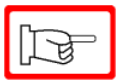
Check the pressure setting (5 bar).

Check the pneumatic hoses and the connection points for leaks.

- Reinsert the panel.

8.4 Operating materials, lubricants and cleaning agents

8.4.1 Lubricant recommendations



Note!

Only use lubricants that are recommended for food processing machines.

Approval for use with foods

If used as intended and direct contact between product and lubricant can be ruled out, as in the case of enclosed gearing or chains beneath conveyors, a food-grade lubricant is not required by law. In these cases, however, not just any lubricant should be used but only special ones that are suitable and approved for general use in the food industry.

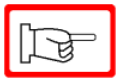
USDA approval

Viewed globally, the US has the strictest rules and regulations for foods. US approvals for lubricants that are allowed to be used in the food and pharmaceutical industries are therefore recognized internationally.
Approval as a food-grade lubricant is granted by the USDA (United States Department of Agriculture).
A condition for certification as a food-grade lubricant is proof that it only contains substances that satisfy the high purity requirements of the Guidelines of Security 21 CFR 178.3570 of the FDA (Food and Drug Administration).

USDA approval for lubricants is in two categories:

H1 is the designation for food-grade lubricants, i.e. lubricants that are allowed to be used at all friction points in machines and lines in the food and pharmaceutical industries where there is some possibility of incidental contact between product and lubricant.

H2 is the designation for lubricants that can be used generally in the food and pharmaceutical industries where there is no possibility of contact with the product.



Note!

Wherever contact with the product is not ruled out and where direct contact with a lubricant is possible due to production reasons (e.g. dough dividing mechanism, Emil Kemper GmbH specifies lubricants in category H1.

Lubrication instructions

The information and maintenance intervals given in section "8.2 Cleaning and maintenance intervals" must be followed in all cases. This also applies to the use of lubricants specified by Emil Kemper GmbH for the respective application cases.

If lubricants of another quality are used or if the specified lubrication intervals are not observed, no liability will be accepted by Emil Kemper GmbH in the event of damage.

8.4.2 Greases

Designation	**OKS 371**
Manufacturer:	OKS Spezialschmierstoffe GmbH D-80993 München
Product:	Suitable as a food-grade universal lubrication and separating agent. Highly effective due to excellent creep resistant and water repellent properties. Versatile application, since it is transparent and physiologically safe. Approved as lubricant and separating agent for the foodstuff and drinks industry. Complies with the regulations of DAB 10. Registered by NSF in category H1 under number 124384.
Product form:	Spray (500ml)
Characteristics:	
Appearance:	Transparent
Temperature range for use:	- 10 °C to + 180 °C
Base oil viscosity (+ 40 °C):	14 mm²/s
Applications:	Lubrication of valve seals, sleeves, O-rings, drives, piston rods and guides of slides, hinges and roller chains and mechanisms for the entire foodstuffs, beverages and drinks industry, of knives in the paper and cardboard industry as well as needles and blanks of knitting machines, etc. even under the influence of water. Removal of oily soiling due to excellent creep characteristics. Protect against moisture.
Approvals, specifications:	Food technology OKS 371: NSF H1 reg. no. 124384 according to DAB 10

8.4.3 Storage of lubricants

Lubricants such as oil and grease must be stored in clean closed containers, such as tins or cans, so that dust and moisture cannot enter and the oxidation effect of the air is kept to a minimum. The storage location should be dry and cool.

8.5 Stocking spare parts / Customer Service

8.5.1 Stocking spare parts

It is important to stock the most important spare and wear parts at the installation site to keep the line running and ready for operation.

To order spare parts, please use the separate spare parts and wear parts lists. Always specify the line number when ordering parts. The line number is specified on the rear of the title page of this user manual.

Only use original spare parts as only they guarantee perfect functioning.

It is not normally necessary to keep spare parts for the line but, if needed, this can be arranged with our customer service.

8.5.2 Accessories

The line's scope of delivery does not contain accessories.

8.5.3 Customer Service

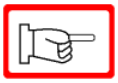
Here is how to contact the Customer Service department at Emil Kemper GmbH:

8.6 Maintenance contracts

Kemper is pleased to assist you with maintenance and servicing of the line. For this purpose we offer maintenance contracts which the plant operator can negotiate and sign with Kemper according to different operating hours.

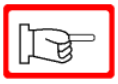
We would like to point out, however, that maintenance and servicing of the line is always the responsibility of the plant operator and the maintenance contract can only serve to increase the service life and operational reliability of the line.

9 Faults



Note!

General faults are described below.
If a fault cannot be rectified or if a fault occurs that is not listed here, please contact Customer Service.



Note!

Details of the head machine are given in the separate operating manual.

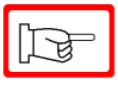
9.1 Behaviour in case of faults

Hazard!

Irrespective of the information given below, local safety regulations apply in all cases when it comes to rectifying faults.

- Switch the line off before starting to rectify any faults (see chapter "7 Operation").
- Prevent the line from being switched on again by disconnecting the mains plug or locking the main switch.

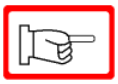
9.2 Safety shutdown



Note!

We strongly recommend the installation of a lockable local switch. Such a local switch prevents the line from being switched on unexpectedly during cleaning, fault or repair work and allows the line to be disconnected from the mains if necessary.

9.3 Start-up after a fault



Note!

If repairs are required after a fault, make sure that all the safety devices are reinstalled according to the delivery condition.

If the fault was caused by a safety device triggering, eliminate the fault and press the ACK button on the start screen of the touch panel (see section "6.17.7 ACK BUTTON").

9.4 Troubleshooting

All line processes are monitored by the PLC control.

Faults in the line are displayed at the touch screen and via lamps on the touch panel. This relates to faults in the drive or in the safety chain.

Fault	Cause	Remedy
Lamp 'Control voltage emergency stop' illuminates, since a motor protection circuit breaker has been triggered.	Motor is overloaded or defective	Check whether the system that drives the motor is stiff. If this is not apparent, have the power consumption of the motor that triggered the circuit breaker checked by an electrical specialist. From the power consumption during operation it is possible to infer the state of the motor regarding stiffness or a defective motor or motor protection circuit breaker. If the motor is defective, always replace the motor and the motor protection relay. Press the black knob on the motor protection circuit breaker. This reactivates the motor protection circuit breaker.
Lamp 'Control voltage emergency stop' illuminates.	Emergency stop has been triggered	Check whether a cup is trapped in the guides.
	Limit switch triggered (chain is stuck or trapped)	A poorly cleaned or poorly lubricated chain can cause this fault. In this case, clean and lubricate the chain.
Lamp 'Control voltage doors' illuminates.	Doors are not closed properly	Close the doors. Check the limit switch for soiling. Clean the limit switch.
Pieces of dough fall between the cups.	Transfer points are incorrect.	Check the transfer points. Reset the transfer points.
Conveyor belts drag.	Belts loose or defective	Retension the conveyor belts. If necessary, replace the conveyor belts.
The flour dusters are not delivering flour.	No flour in the dusters or motors defective	Replenish flour or inspect the motors and motor protection circuit breakers.

10 Decommissioning, dismantling and disposal

10.1 Decommissioning the line

- Switch the line off (see chapter "7 Operation").
- Shut off the electric power supply.

Warning – electrical hazard!

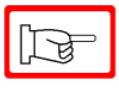
Work on the electric system should only be carried out by an electrical specialist.

10.2 Dismantling the line

Please contact our Service department if you wish to dismantle the line.

10.3 Disposing of the line

- Dispose of the line in an environmentally friendly manner, separating the various materials.

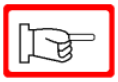


Note!

Obey national regulations when disposing of the line.
Electronic components may be subject to special waste disposal regulations.

11 Appendix

11.1 Technical data



Note!

Please refer to the separate line documentation provided by Emil Kemper GmbH to see more information about this section.

11.2 Compliance with laws, standards and directives

The line complies with the respective version of the following directives and standards:

- Machinery Directive 2006/42/EC, Appendix I
- Low-voltage directive 2006/95/EC
- EMC directive 2004/108/EC
- EN 60204-1 Safety of Machinery - Electrical Equipment of Machines - Part 1: General Requirements