QUICK SIX S2+ BARFEED

Operating Instructions

For CNC machine tool peripherals,
it's *LNS*, then all the rest

IMPORTANT

READ CAREFULLY BEFORE USE
AND KEEP FOR FUTURE REFERENCE.

Published: 09/2022

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1 GENERAL INFORMATION

1.1 ABOUT THESE OPERATING INSTRUCTIONS

These instructions describe the intended use of the bar feeder :

- They are part of the machine
- They apply to all models mentioned

If you encounter errors or would like improvements to be made, please contact our after-sales service.

1.2 OTHER APPLICABLE DOCUMENTS

The machine contains integrated components from other manufacturers.
For these purchased parts, the respective manufacturers have carried out a risk assessment and declared their parts to be in conformity with applicable European standards.

The correct use of these integrated components is described in the instructions from their respective manufacturers.

The bar feeder complies with the European standards indicated in the declaration of conformity or incorporation.

1.3 DAMAGE DURING TRANSPORT

LNS is not liable for any damage that occurs during transport.

In the event of damage, contact the last carrier.

1.4 TARGET AUDIENCES

These instructions contain information for different audiences.

OPERATOR

Operators are authorized to:

- Use the machine for production
- Amend programs to produce parts
- Clean the machine
- Carry out certain maintenance tasks

ADMIN

Administrators (ADMIN) have the same rights as operators, but in addition they are authorized to:

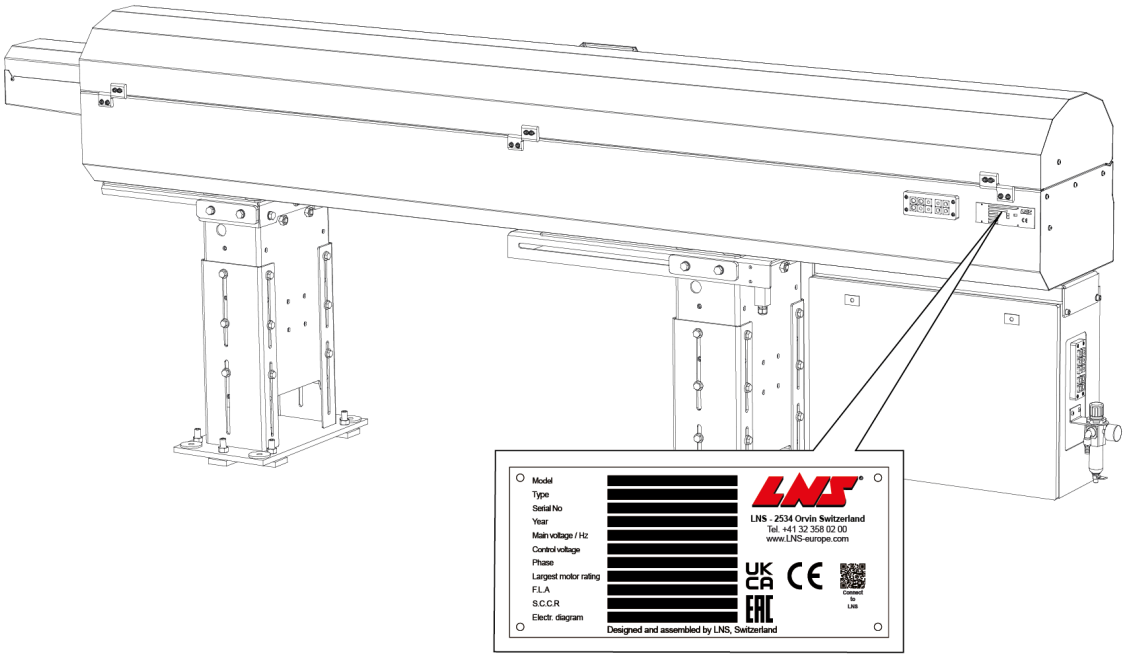
- Modify the machine's operating parameters
- Modify the machine's software
- Repair the machine
- Dispose of the machine

A service manual is delivered separately.

1.5 COPYRIGHT

1.6 NAMEPLATE

The nameplate is located at the back of the bar feeder.



2 SAFETY INFORMATION

2.1 PROPER USE

The QUICK SIX S2+ is an automatic bar feeder for short bars designed for fixed headstock lathes. Any other use of the bar feeder is considered as unintended. LNS accepts no liability for any damage resulting from unintended use.

The QUICK SIX S2+ is an industrial machine to be operated in an industrial environment, indoors.

Adhere to these operating instructions to properly use the bar feeder.

2.2 LIMITATION OF LIABILITY

LNS and its subsidiaries cannot be held liable for the debts, losses, expenses, or damage incurred, or suffered, by the buyer of this product, or a third party, following an accident, incorrect use, or misuse, or stemming from modifications, repairs, or transformations not authorized by LNS.

LNS and its subsidiaries cannot be held responsible for damage and problems arising from the use of options and products other than LNS products, or products approved by LNS.

2.3 SYMBOLS AND WARNING LABELS

Warning labels and consequences in the event they are ignored.

DANGER

Type and source of danger!

Consequences of ignoring the warning.

What to do to avoid danger.

Warning of immediate danger which, if ignored, will lead to death or severe physical injury.

WARNING

Type and source of danger!

Consequences of ignoring the warning.

What to do to avoid danger.

Warning of potential danger which, if ignored, may lead to death or severe physical injury.

CAUTION

Type and source of danger!

Consequences of ignoring the warning.

What to do to avoid danger.

Warning of a potentially dangerous situation which, if ignored, could lead to minor physical injury.

NOTICE

Type and source of danger!

Consequences of ignoring the warning.

What to do to avoid danger.

Warning of a potentially dangerous situation which, if ignored, could lead to property damage.

INFO

Type and source of danger!

Consequences of ignoring the warning.

What to do to avoid danger.

Information, comment

IMPORTANT

Type and source of danger!

Consequences of ignoring the warning.

What to do to avoid danger.

Warning of danger which, if ignored, could lead to: environmental damage.

2.4 TERMS AND STANDARD SYMBOLS

The terms and standard symbols used in this instruction manual are the following:

General information

Electrocution

Crushing

Environmental damage

Property damage

Information, notes

→ Return

1), 2) Instructions for individual actions in several steps

The drawings of the plates illustrated make no distinction between the different models. They are applicable to all models covered in the present operating instructions.

The following terms are used in the present operating instructions to indicate the position of an object in space (positioning): "left", "right", "front" and "rear" always refer to the position viewed in the direction of movement.

2.5 PERSONNEL

DANGER

Risk of death from operation of unqualified personnel!

Possible death or injuries from improper operation.

Keep unqualified persons out of the working area.

- Non-qualified personnel, children, and persons under the influence of alcohol or medication should not handle the equipment.
- The personnel must have knowledge of the safety instructions and the instructions for use. The safety instructions for the bar feeder, as well as the CNC lathe, must be strictly observed.

2.6 BASIC SAFETY REGULATIONS

2.6.1 MAINTENANCE OBLIGATION

All given instructions regarding the maintenance of the bar feeder must be followed.

2.6.2 MODIFICATIONS

- Modifications of the bar feeder related to additions and alterations are prohibited.
- For the use and maintenance of the bar feeder, only use parts provided by or recommended by LNS.
- It is strictly prohibited to jump wire or remove circuit breakers, master switches, and especially safety switches.

2.6.3 SAFETY DEVICES

- Check the safety devices and the safety guards before every operation.
- Do not remove any safety covers while the bar feeder or the lathe are under electrical power.
- If certain safety shields or safety covers are removed to conduct maintenance, they must be reinstalled as soon as the maintenance work is completed.

EMERGENCY STOP BUTTON

The emergency stop button is located on the remote control of the bar feeder. In a dangerous situation, the emergency stop button enables a safe shutdown of the bar feeder’s operation.

2.7 SAFETY REQUIREMENTS

NOTICE

The manufacturer is not liable for any damage due to non-compliance with the documentation

2.7.1 OWNER'S OBLIGATIONS

To comply with:

- Accident prevention laws
- National safety instructions
- Legal regulations concerning occupational safety and environmental protection

2.7.2 REQUIREMENTS REGARDING PERSONNEL

Only qualified personnel may:

- Install the machine
- Perform maintenance work and repairs
- Perform work on electrical equipment

2.8 SPECIFIC RISKS

If the bar feeder is operated by unqualified personnel or operated incorrectly, specific risks can arise.

2.8.1 ELECTRICAL HAZARDS

DANGER

Risk of death from electric shock!

Do not carry out any servicing on the interface or inside the electrical cabinet while the bar feeder or the lathe are powered on.

DANGER

Risk of death from electric shock!

Do not place the machine in a damp area and make sure that water or oil does not come into contact with the electrical equipment.

DANGER

Risk of death from electric shock!

Do not move the bar feeder while it is electrically powered on.

DANGER

Risk of death from electric shock!

Do not attempt to recharge the batteries of the PLC.

2.8.2 MECHANICAL HAZARDS

WARNING

Crushing and cutting hazard from moving components!

Do not grasp moving or rotating objects, or nearby elements.

WARNING

Crushing and cutting hazard from moving components!

Do not reach into the bar feeder while it is in operation.

WARNING

Crushing and cutting hazard from moving components!

Tie back long hair and do not wear loose garments or jewelry while operating.

2.8.3 RISK OF TRIPPING AND FALLING

WARNING

Risk of falling from lack of safety measures!

Keep the work area surrounding the bar feeder clear of objects and well lit.

WARNING

Risk of falling from lack of safety measures!

Keep the floor clean on a regular basis, the presence of oil on the ground could cause falls.

2.8.4 RISK OF DAMAGE

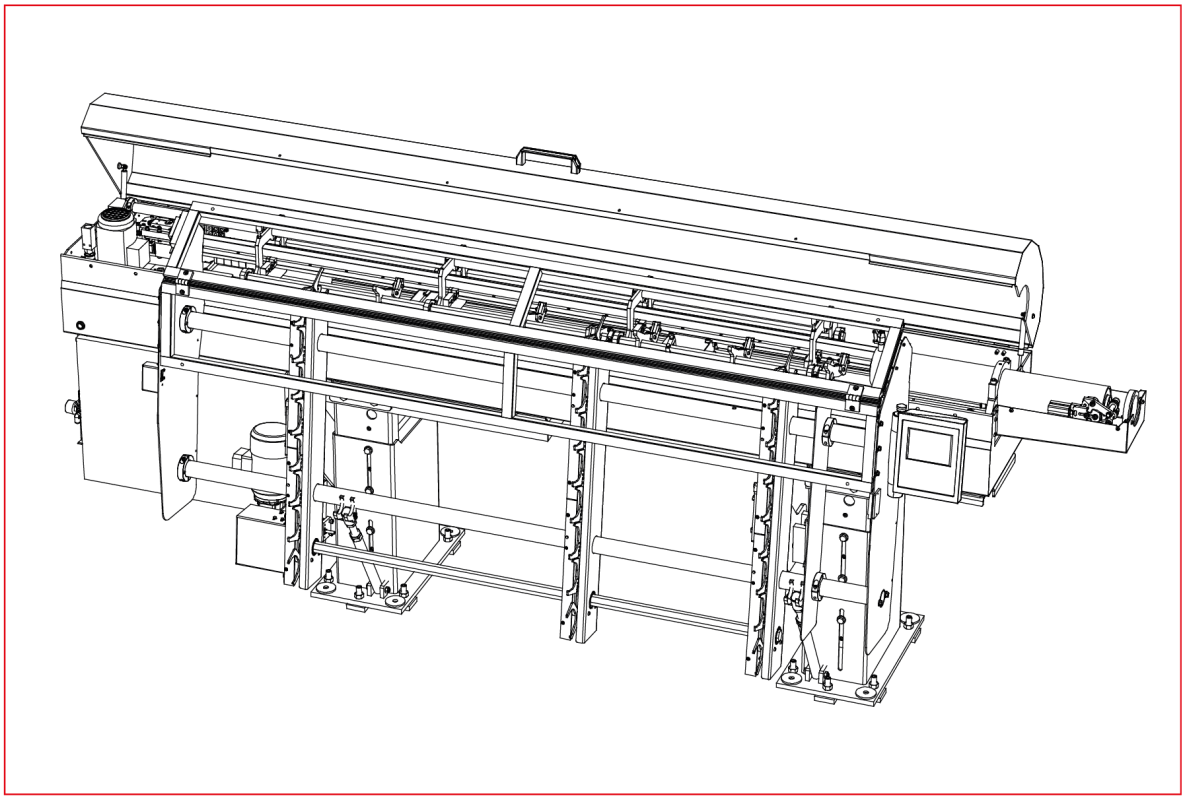
NOTICE

Risk of damage to the lathe or the bar feeder!

Respect the limitations given for the bar stock length and diameter.

2.9 DANGER ZONES

The entire area surrounding the bar feeder is considered the danger zone.



Working range

During operation, adhere to the following:

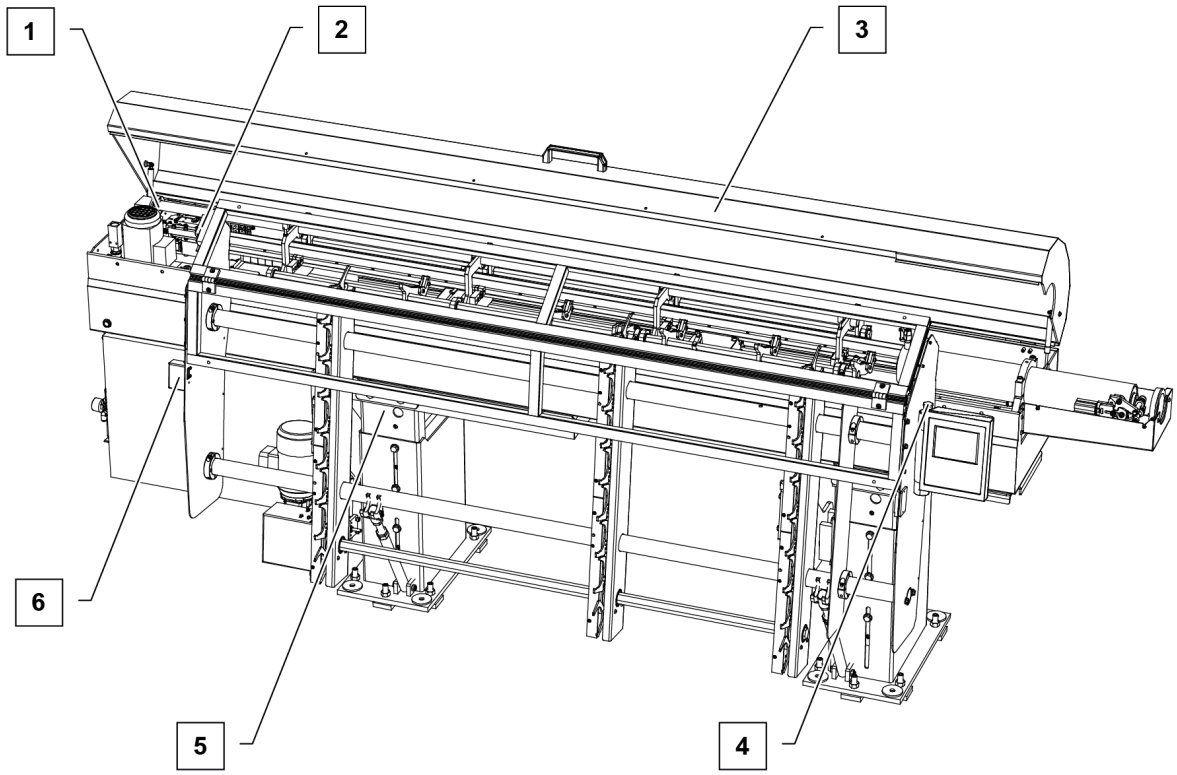
- Do not reach into the bar feeder when machine components are moving.
- Only qualified personnel can operate the bar feeder.

2.10 SAFETY DEVICES

The bar feeder has been designed with a focus on maximum safety during its handling and complies with all EC requirements.

Safety covers and devices make access to the moving parts of the bar feeder impossible. Safety switches keep the bar feeder from operating when these protections are open. The design of switches, and their integration on the bar feeder, makes their exclusion almost impossible.

LNS or its local representative may not be held responsible for possible accidents or property damage, whether caused directly or not, by any means whatsoever, if certain safety devices have not been included.

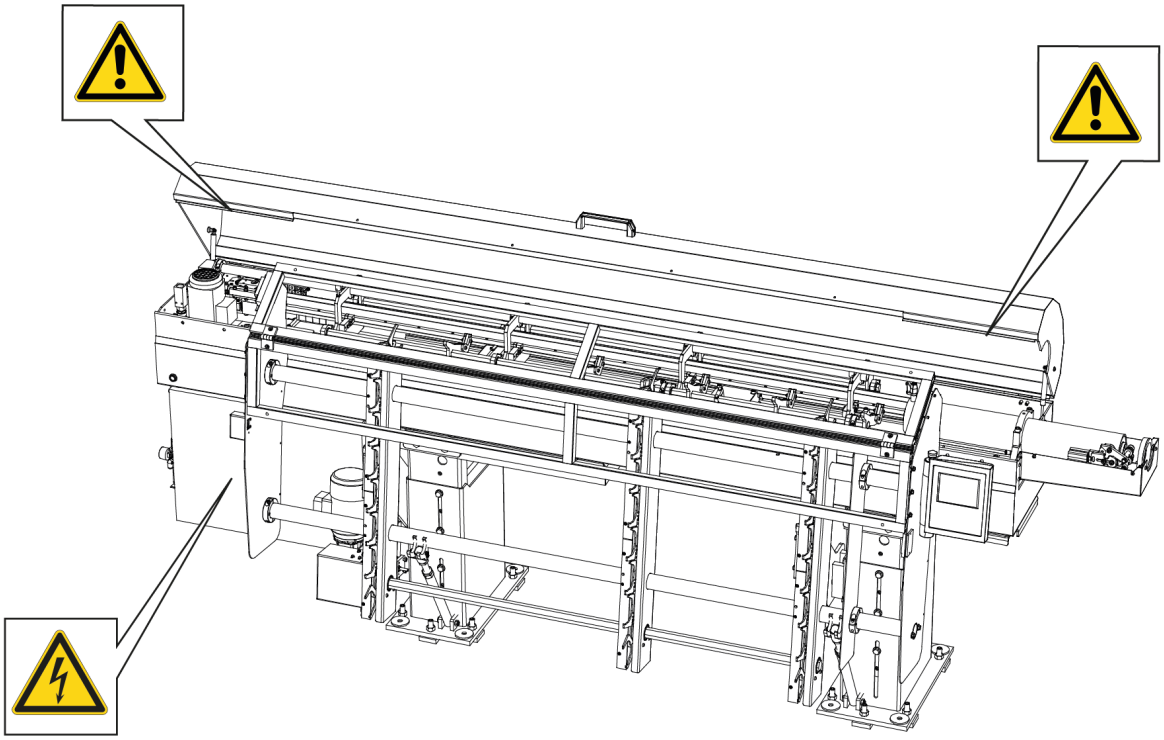


Designation	Description
1	Safety switch of the main access cover
2	Safety switch of the retractable guard
3	Main access cover
4	Emergency stop button
5	Safety switch of the retraction system (optional)
6	Optical safety switch of the bar loader

2.11 SAFETY SIGNS

Safety signs mark hazard points on the bar feeder.

The signs must always be kept clean and must not be covered. If a sign is missing or damaged, replace it immediately.



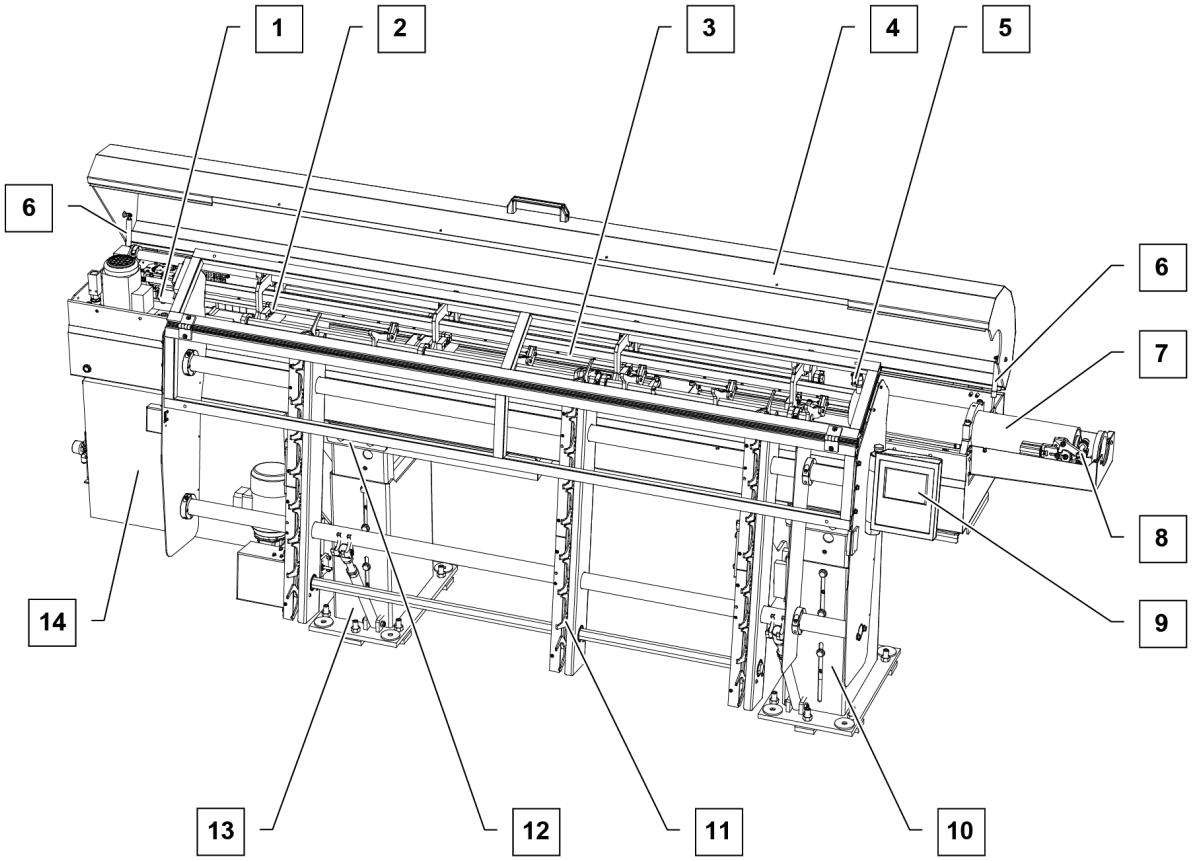
2.12 SAFETY ANALYSIS CONCERNING APPROPRIATE INTEGRATION

Before installing the machine, it is necessary to consider the following points:

- Consider safety strategies to reduce hazards to an acceptable level;
- Define the tasks required for applications to predict and assess the need of access and/or for the approach;
- Identify sources of hazards, including failures and failure modes associated with each task. Hazards may arise from:
  - machine in which the bar feeder is integrated,
  - its association with other equipment,
  - people's interaction with the machine.
- Evaluate and assess the risks associated by using the bar feeder:
  - programming risks
  - operation risks
  - risks of use
  - maintenance risks
- Choose methods of protection:
  - the use of protective devices
  - the introduction of signals
  - compliance with safe work procedures

3 MACHINE DESCRIPTION

3.1 OVERVIEW OF MACHINE COMPONENTS



Designation	Description
1	Pusher belt drive
2	Pusher guiding element
3	Pusher
4	Main access cover
5	Measuring cell
6	Main access cover lift support cylinders
7	Guiding channel / guiding element
8	Pusher holding rollers
9	Remote control
10	Front stand
11	Bar loader
12	Retraction system (optional)
13	Rear stand
14	Electrical cabinet

3.2 LOADING SYSTEM

WARNING

Crushing, cutting, dismemberment hazard from moving components of the bar loader!

Do not approach or introduce hands in the loading system during operation. Stay clear of and do not grasp moving or rotating objects of the loading system, such as the support hooks, the bar, the chain drive during the loading process.

WARNING

Crushing hazard from falling main access cover!

Do not introduce hands into the bar feeder under the main access cover while manually opening or closing it to avoid crushing should it fall shut.
Do not introduce hands into the bar feeder under the main access cover while the machine is in automatic mode as the main access cover may close automatically.
Ensure that the main access cover lift support cylinders firmly support the main access cover. If they are worn out, it is a crushing hazard and they must be replaced. Contact LNS or its local representative.

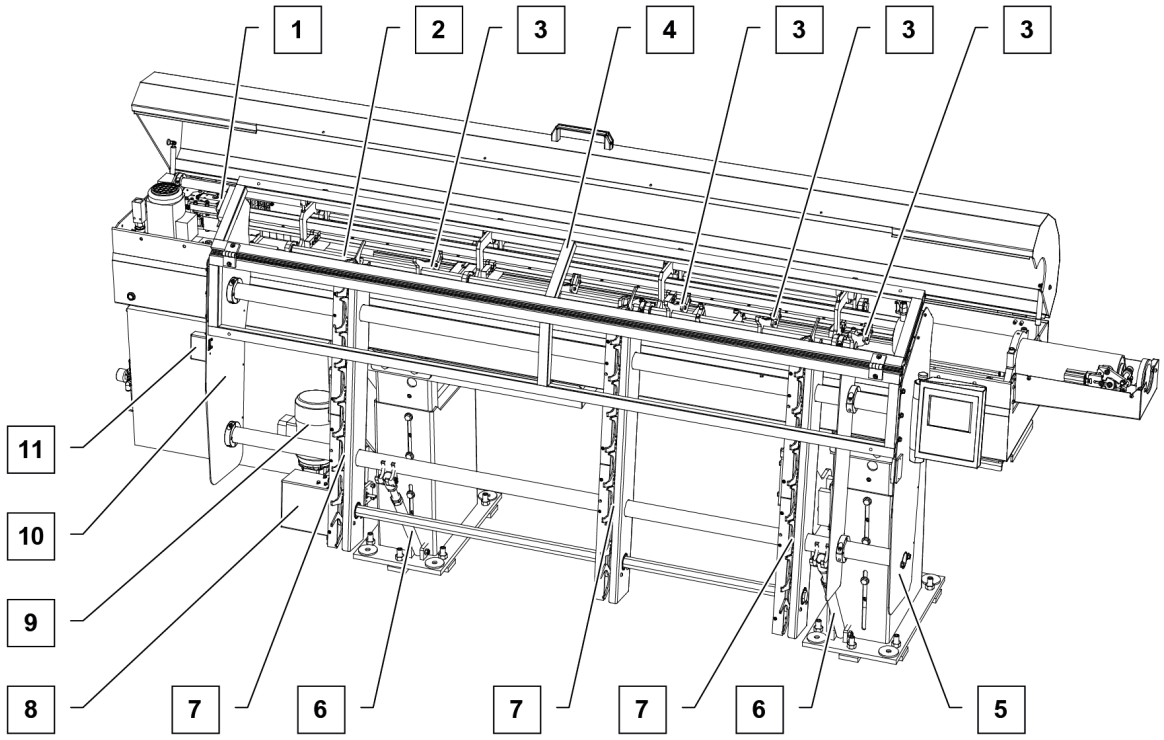
WARNING

Crushing, hazard from falling bars!

Handle the bars with extreme care while loading the bar loader with new bars.
Make sure the bars are properly resting on the bar loader support hooks and the rear limiter at the back.
Security work boots must be worn by the user while loading new bars.

The bar feeder loading system consists of a chain drive bar loader. For all lengths of bar feeders the bar loader comprises of 3 supports, each with a series of bar support hooks, on which the bars rest as they are lifted to the feeding system and dropped into the guiding channel. The bars are placed on the bar loader support hooks manually. A drive motor then lifts the bars into the bar feeder. A sensor prevents any erroneous movement of the bar loader. A retractable guard, fitted with its own sensor, controls access into the bar feeder. When bars are placed on the bar loader, the bars must rest against the rear limiter.

3.2.1 LAYOUT OF THE ELEMENTS



Designation	Description
1	Retractable guard safety switch
2	Material presence check sensor
3	Dropping fingers
4	Retractable guard
5	Front limiter
6	Bar loader fixation stands
7	Bar loader lift supports and support hooks
8	Bar loader drive
9	Bar loader motor
10	Rear limiter
11	Bar loader optical safety switch

3.2.2 DROPPING FINGERS

WARNING

Crushing, cutting, dismemberment hazard from automatically moving components of the bar loader!

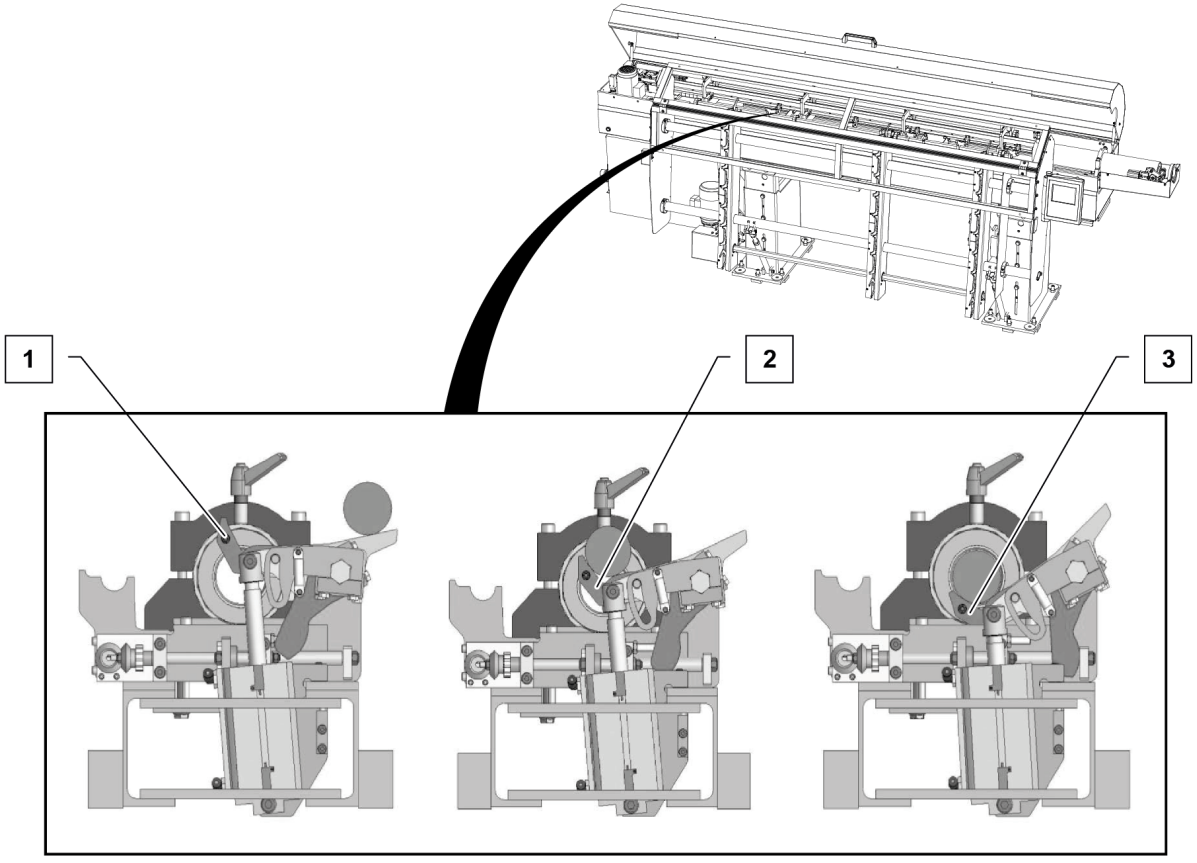
Parts of the bar feeder loading and feeding systems open and close automatically or move automatically such as the dropping fingers and pusher assembly.
Do not introduce hands into the bar feeder during operation. Do not grasp any parts or objects while the bar feeder is in operation.

Once the bar reaches the top of the bar loader, it is placed onto the dropping fingers. The dropping fingers move down and accurately position the bar at the correct guiding axis. If a drift is detected by the user, a positioning correction is necessary. Although the dropping fingers are actuated by the pneumatic system, the accurate positioning of the bar is set electronically and mechanically locked.

When the bar diameter is changed in the remote control, the dropping fingers positioning height is automatically adjusted.

For instructions on setting up and adjusting the dropping finger, see (→ ADJUSTING THE DROPPING FINGERS HEIGHT on page 42)

3.2.2.1 LAYOUT OF THE ELEMENTS



Designation	Description
1	Dropping fingers lifted to receive the new bar
2	Dropping fingers lowering the bar down to the guiding axis height
3	Dropping fingers lowered to the axis height ready for feeding

3.3 GUIDING SYSTEM

The guiding system consists of a guiding tube located at the front of the bar feeder. The guiding element in which the bar rests during part feeding is located inside the guiding tube.

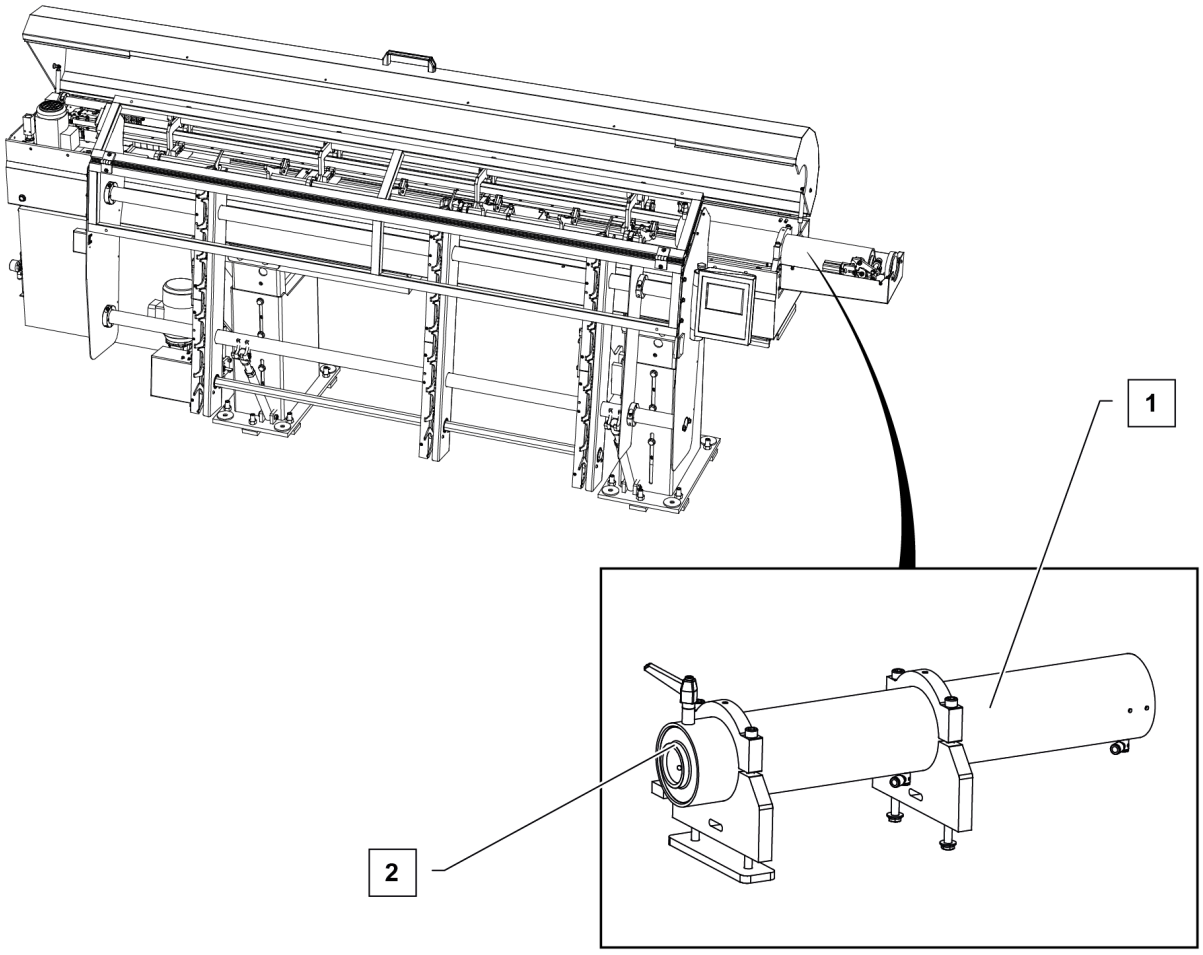
Hydraulic oil is injected into the guiding element, which allows the bar to rotate while keeping it at the center of the guiding axis.

The functions of the guiding system are:

- to keep the bar at the center of the guiding channel axis,
- to support the moving/rotating components in an oil bath.

Depending on the bar diameter, a guiding element changeover may be necessary. For instructions on how to change the guiding element, see (→ CHANGING THE GUIDING ELEMENT on page 36)

3.3.1 LAYOUT OF THE ELEMENTS



Designation	Description
1	Guiding tube
2	Guiding element

3.4 FEEDING SYSTEM

WARNING

Crushing, cutting, dismemberment hazard from automatically moving components of the bar loader!

Parts of the bar feeder loading and feeding systems open and close automatically or move automatically such as the dropping fingers and pusher support assembly.
Do not approach or introduce hands into the bar feeder during operation. Stay clear of and do not grasp any part of the bar feeder while it is in operation.

WARNING

Crushing hazard from falling main access cover!

Do not introduce hands into the bar feeder under the main access cover while manually opening or closing it to avoid crushing should it fall shut.
Do not introduce hands into the bar feeder under the main access cover while the machine is in automatic mode as the main access cover may close automatically.
Ensure that the main access cover lift support cylinders firmly support the main access cover. If they are worn out, it is a crushing hazard and they must be replaced. Contact LNS or its local representative.

The feeding system consists of the pusher assembly and belt transmission device. Driven by the servo motor, the feeding system moves the pusher forward and backward to achieve the following functions:

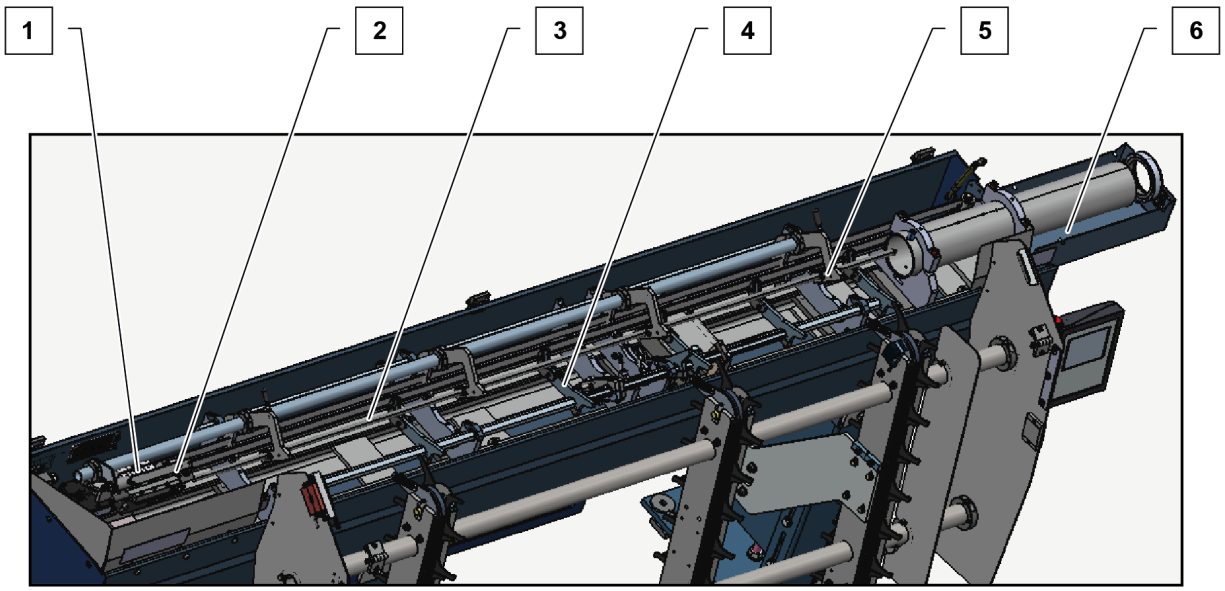
- Bar insertion
- Bar feeding and movement
- Remnant retraction

Depending on the bar diameter, a pusher changeover may be necessary. A standard pusher of ø 15 mm is delivered with the bar feeder, but an optional pusher ø 8 mm for smaller bar diameters is available upon request.

Bar Ø (mm)		Pusher Ø (mm)
from	to	
8	19	8
20	80	15

For instructions on how to change the pusher, see (→ CHANGING THE PUSHER on page 38)

3.4.1 LAYOUT OF THE ELEMENTS



Designation	Description
1	Flag
2	Pusher locking support
3	Pusher
4	Dropping fingers
5	Pusher guides
6	Pusher rollers

3.5 REMNANT EJECTION

The bar feeder calculates the remaining length of the bar being machined and starts the reloading cycle accordingly. The remnant length always depends on the part length and the clamping length of the machined bar. If the remaining material length is shorter than the part length and the clamping length, a new bar stock is loaded into the guiding system and the remnant is pushed out by the newly loaded bar and ejected into the part catcher of the lathe.

3.6 RETRACTION SYSTEM

WARNING

Injury and property damage hazard from unsecured bar feeder!

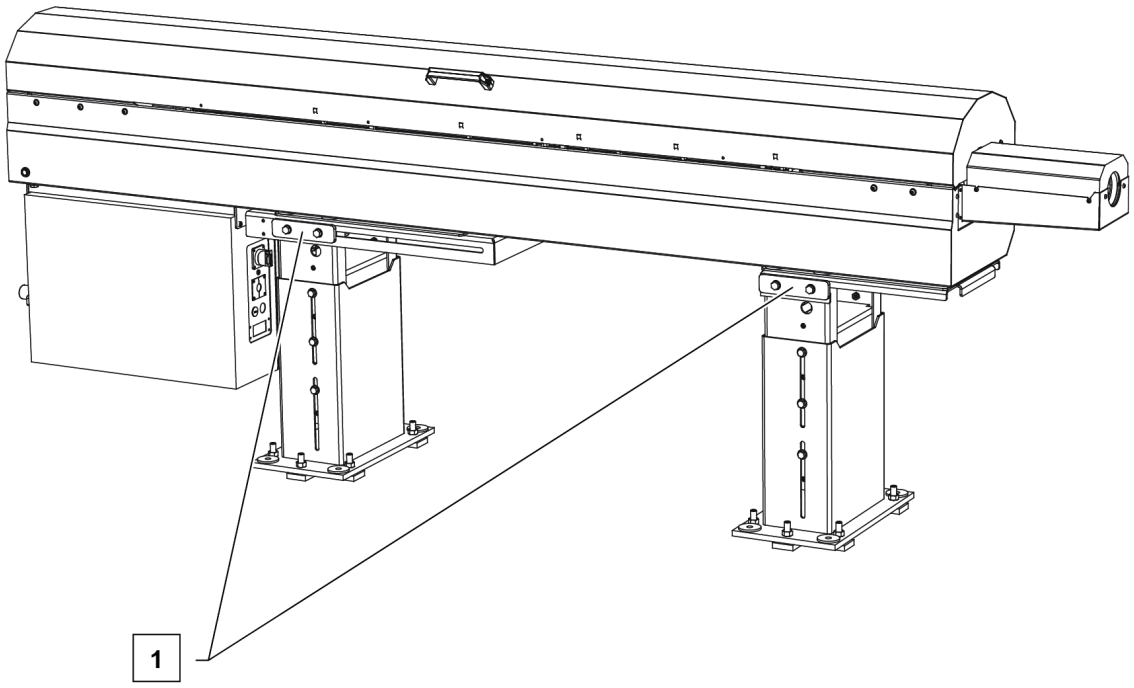
Do not use the retraction system before the bar feeder is anchored to the ground.

Read the safety instructions at the beginning of this document before handling the following devices. Make sure that the interface cables between the lathe and the bar feeder are long enough before handling the retraction system.

To facilitate maintenance tasks, the bar feeder can be equipped with a retraction system which allows to move the bar feeder back and forth. The rigidity of the retraction system guarantees perfect alignment when the bar feeder is in working position. A safety switch impedes any handling of the retraction system as long as the bar feeder is not in operational position.

For instructions on how to operate the retraction system, see (→ RETRACTING THE BAR FEEDER on page 46)

3.6.1 LAYOUT OF THE ELEMENTS



Designation	Description
1	Screws of the retraction system that allow movement and locking of the bar feeder

3.7 ELECTRICAL EQUIPMENT

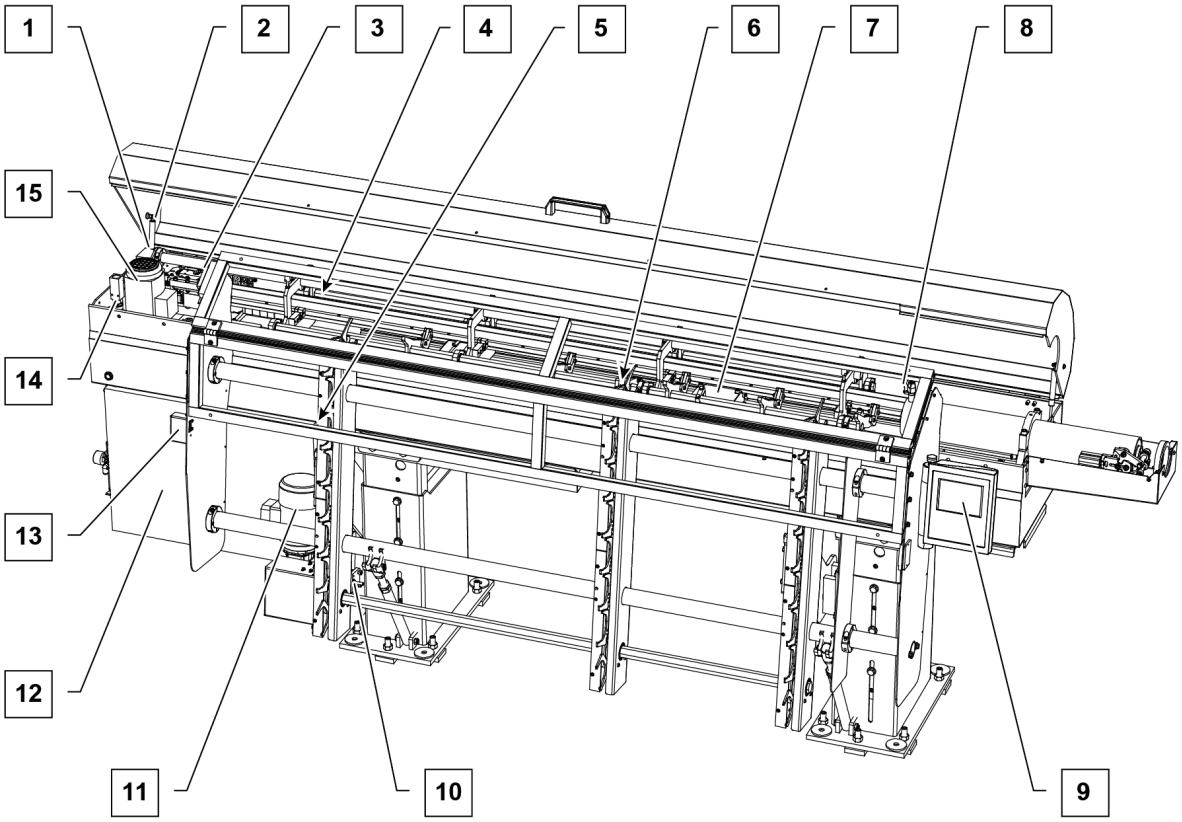
DANGER

Danger of death by electrocution!

Work on the electrical system must only be performed by a qualified electrician. In the case of a fault that may be electrical in origin, please contact LNS or its local representative.

The electrical elements and groups of elements that may require adjustments at some point are described in this section.

3.7.1 LAYOUT OF THE ELEMENTS



Designation	Description
1	Servo motor
2	Main access cover switch
3	Safety switch of the retractable guard
4	Air pressure switch
5	Retract system safety switch
6	Material presence check switch
7	Diameter setup motor for dropping fingers
8	Main disconnect switch
9	Remote control
10	Bar loader indexing switch

Designation	Description
11	Hydraulic pump motor
12	Electrical cabinet
13	Optical safety switch of the bar loader
14	Hydraulic pressure switch
15	Hydraulic pump motor

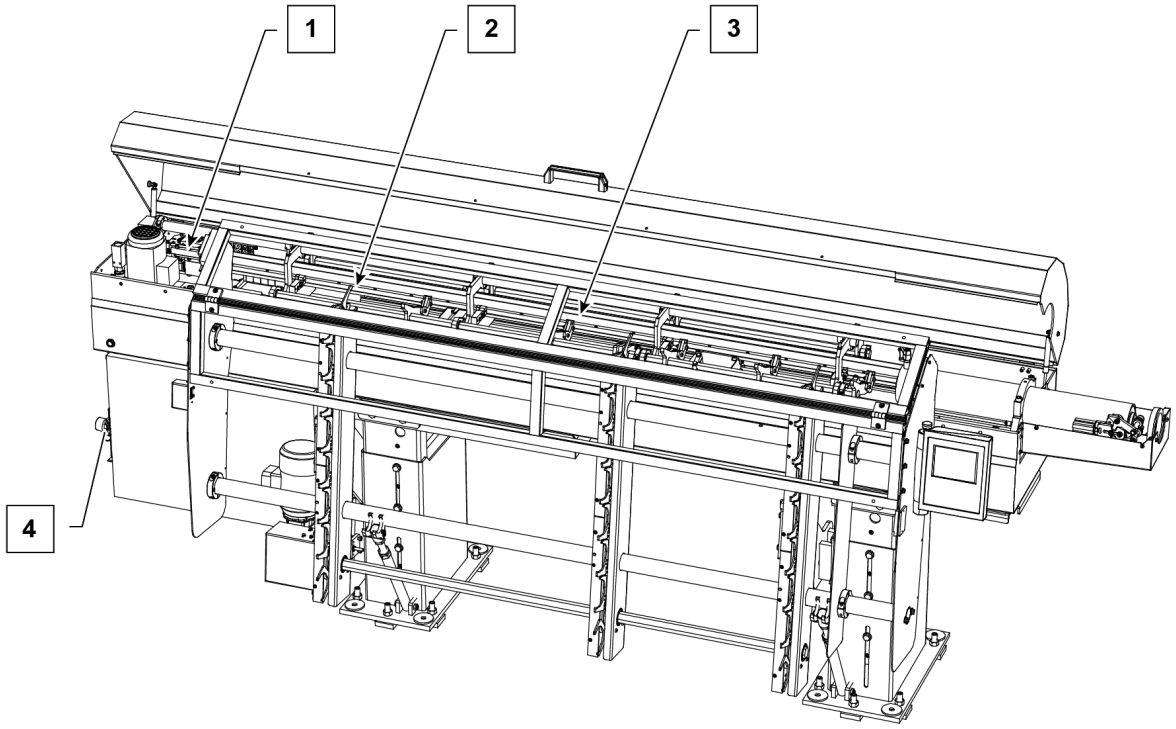
3.8 PNEUMATIC EQUIPMENT

The following automatic movements are activated by the pneumatic system:

- Dropping fingers
- Pusher retraction
- Air blast

To guarantee optimal operation of the bar feeder, a minimum pressure of 0.5 MPa (5 bar), and a maximum pressure of 0.6 MPa (6 bar) is mandatory.

3.8.1 LAYOUT OF THE ELEMENTS



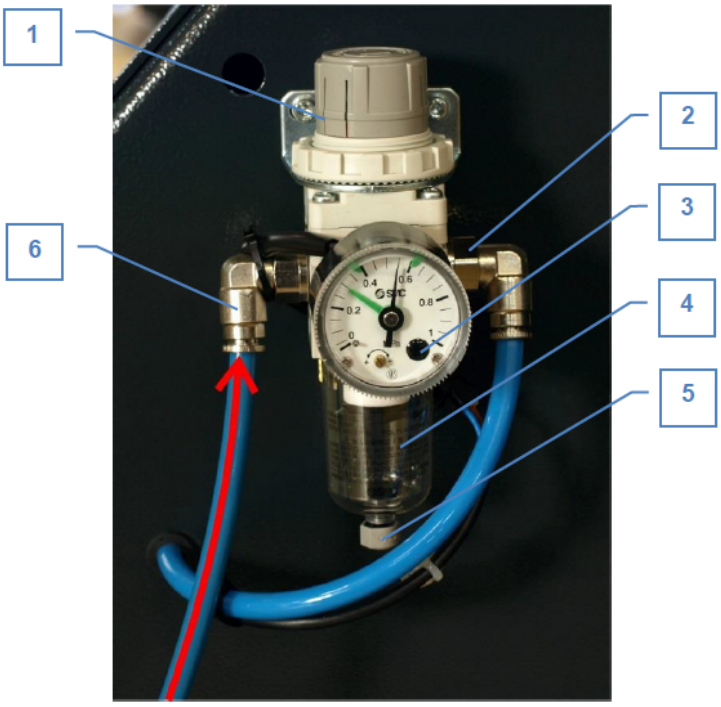
Designation	Component	Description
1	Pneumatic battery	Includes the control and monitoring components of the pneumatic circuit
2	Pneumatic cylinder of the pusher support	Activates the pusher retraction for bar loading
3	Pneumatic cylinder of the dropping fingers	Activates the dropping fingers for bar loading and positioning
4	Air treatment unit	Filters, lubricates and regulates the air pressure

3.8.2 AIR TREATMENT UNIT

The air treatment unit filters and regulates the compressed air before it enters the pneumatic system.

The compressed air must be free from oil and water.

LAYOUT OF THE ELEMENTS



Designation	Description
1	Air pressure regulation
2	Air outlet
3	Manometer
4	Decanter
5	Screw for discharging
6	Air inlet

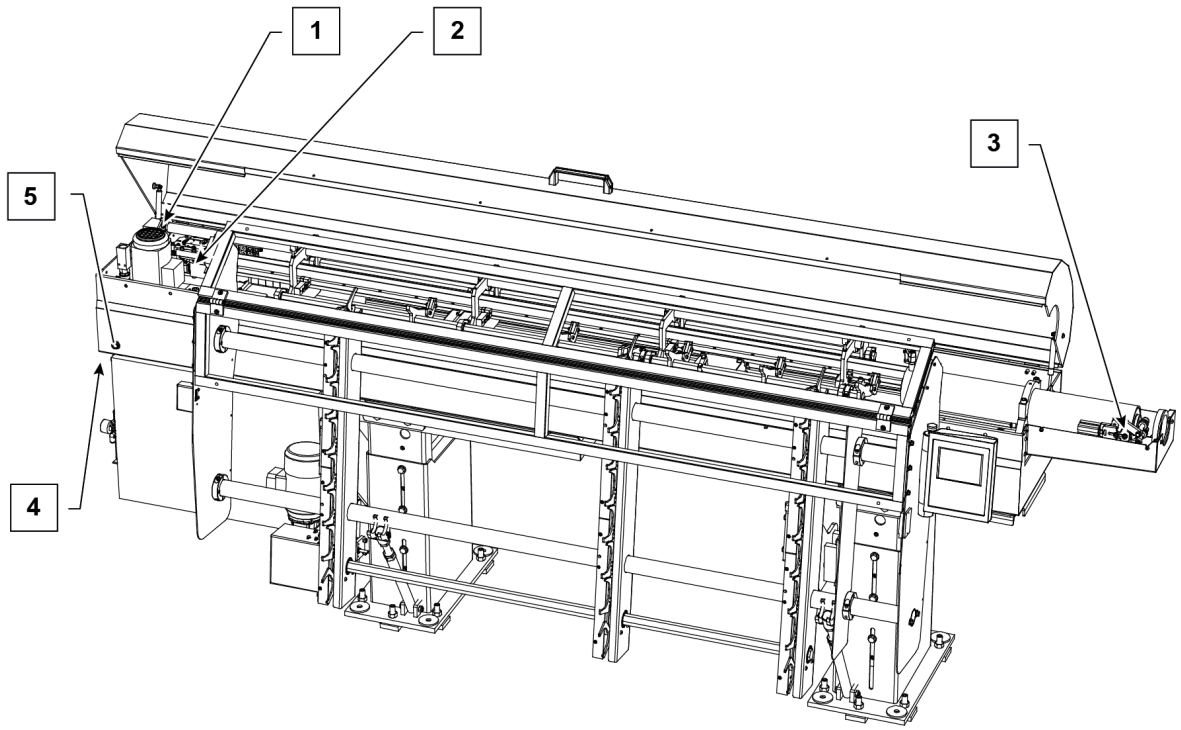
3.9 HYDRAULIC EQUIPMENT

During operation, the bar is suspended in an oil bath in the guiding element at the front of the bar feeder. The hydraulic oil is contained in the bar feeder. Aspirated by a pump motor, it is injected into the guiding element.

The functions of the hydraulic equipment are:

- to keep the bar positioned at the center of the guiding channel,
- to reduce friction between the rotating bar and the guiding channel,
- to absorb the vibration created during machining.

3.9.1 LAYOUT OF THE ELEMENTS



Designation	Description
1	Hydraulic pump motor
2	Pressure control switch
3	Guiding element oil supply
4	Drain plug
5	Oil level indicator

3.9.2 HYDRAULIC PUMP

The hydraulic pump powers on immediately when the following conditions are fulfilled:

- The bar feeder is in automatic mode.
- The guiding system is closed.

A pressure switch detects the pressure at the outlet of the hydraulic pump.

The hydraulic pump stops immediately when one of the following conditions is fulfilled:

- The bar feeder is switched to manual mode.
- The guiding system is opened.

3.9.3 HYDRAULIC PRESSURE SWITCH

A pressure switch continuously monitors the hydraulic pressure. Whenever the hydraulic pressure is lower than the required value, an alarm is triggered, and the bar feeder will be interrupted with the next chuck opening.

4 TECHNICAL DATA

Note: Depending on the country and current standards, certain technical data such as mains voltage may vary. Please refer to the data sheet attached to the device.

	Unit	QUICK SIX S2+
Total weight	kg	700
Total height	mm	900 - 1,200
Total length	mm	3,342
Total width	mm	880
Min. bar Ø (round bar)	mm	8
Min. bar Ø (square bar)	mm	6
Min. bar Ø (hexagonal bar)	mm	14
Max. bar Ø (round bar)	mm	80
Max. bar Ø (square bar)	mm	38
Max. bar Ø (hexagonal bar)	mm	46
Min. bar length	mm	700
Max. bar length	mm	1,900
Max. longitudinal retraction (optional)	mm	470
Bar loader max. load capacity (standard)	bars	7
Max. pusher stroke	mm	1,390
Max. feed rate	m/min	> 100
Loading cycle	s	30 - 40
Mains voltage	V	3x 200 - 480
Mains frequency	Hz	50/60
Hydraulic oil (ISO 100)	l	60
Pneumatic pressure	MPa bar	0.5 5
Air consumption (per loading cycle)	l	10
Noise emission	dBA	

5 SYSTEM STARTUP

5.1 TRANSPORT

WARNING

Risk of injury due to heavy parts!

Take into account the weight of the parts.
Use an appropriate materials-handling machine to lift and transport heavy parts.

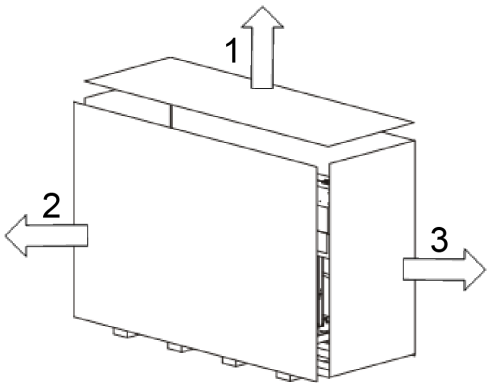
5.2 UNPACKING

Depending on its destination, the Quick Six S2 bar feeder may be delivered either on a pallet, or packed in a wooden crate. When sea or air transports it, the second solution is recommended. Regardless of the type of packaging, the uncrating and lifting instructions recommended by LNS must be observed in order to prevent any injuries to persons and damages to objects. These instructions are stapled to the crate of the bar feeder.

For practical and safety reasons, the bar feeder should be unpacked in a spacious and well-lit area.

If the bar feeder arrives in a crate, follow the steps below to unpack it:

1. Unscrew the top panel.
2. Remove the front panel.
3. Remove the sidewalls.



5.3 SCOPE OF DELIVERY

The scope of the delivery depends on the customer's order.

In general, the bar feeder is delivered with the following items:

- Pusher and guiding elements
- Remote control
- Interfacecable/plug
- Lifting bars
- Accessory box including documentation

5.4 LIFTING

WARNING

Heavy object. Danger associated with the hoist!

Make sure that the hoist or lift truck has the appropriate lifting capacity before handling the bar feeder.
Maintain a safe distance from the action radius of the hoist, the lift truck, or any other lifting and transportation equipment.

WARNING

Heavy object. Hanging load hazard!

To avoid any harm to persons or damage to components, only use the indicated points to lift and move the bar feeder.

NOTICE

Risk of damage to the bar feeder!

If it is necessary to move the bar feeder after it has been commissioned, LNS or its local representative must be contacted before any attempt to restart it.

NOTICE

Risk of damage to the lathe of the bar feeder!

Do not knock the bar feeder while moving it.

INFO

The distance between the lathe and the bar feeder should not exceed 20 mm. Should an obstacle impose a greater distance, contact LNS or its local representative.

The area around the lathe and the bar feeder must be cleared to allow for maintenance and handling. The are around the bar feeder must remain clear after the installation is completed.

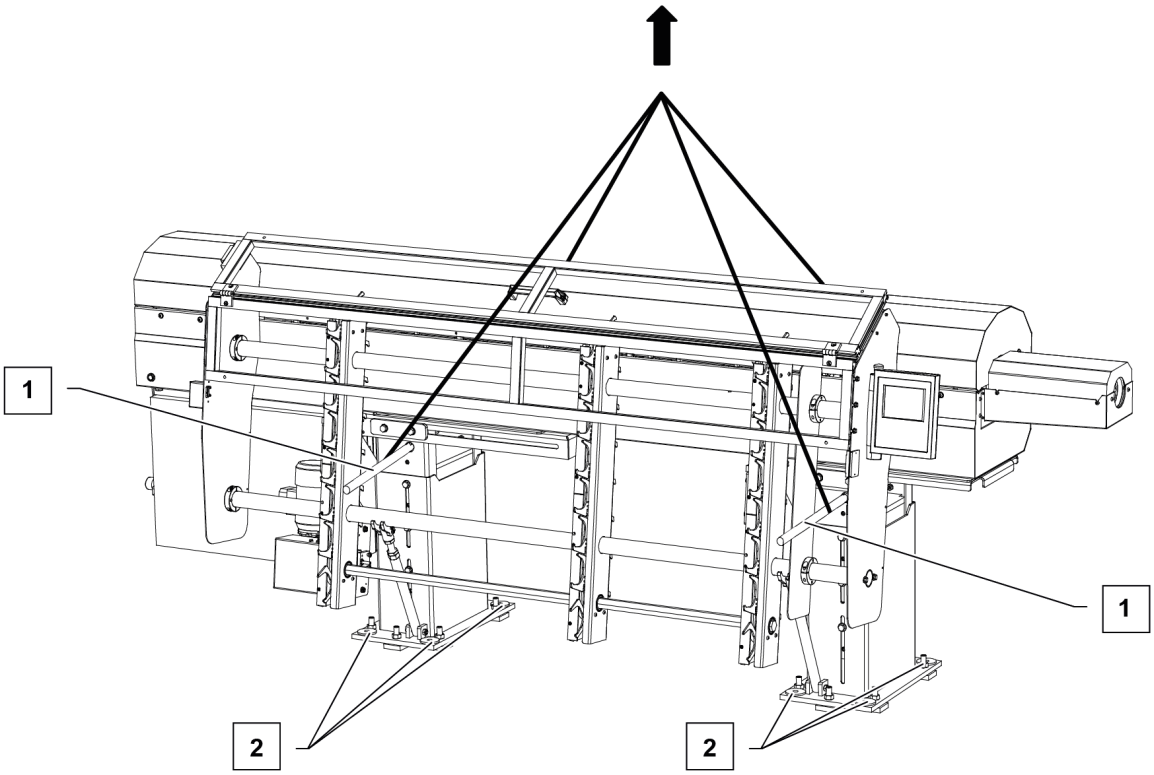
We advise customers to have the bar feeder assembled and installed by LNS or its local representative. We accept no liability for malfunctions attributable to an improper installation in which we were not involved.

The following accessories are required to lift the bar feeder:

- Two carrying straps of 2 m in length (not supplied)
- Two carrying straps of 1.5 m in length (not supplied)
- Two lifting bars

Procedure:

1. Insert a lifting bar (1) into the hole at the top of each stand. Make sure to insert the lifting bar from the front side (operator side), so that it protrudes from the stand at the back.
2. Place the hoist vertically above the bar feeder.
3. Secure the straps at the ends of the bars (1).
4. Attach the straps to the hoist.
5. Raise the hoist to tighten the straps.
6. Remove the screws (2) that attached the bar feeder to the pallet during transportation.
7. Lift the bar feeder and remove the pallet. Ensure that the bar feeder is balanced.



INFO

Place the bar feeder behind the lathe, as close as possible and in approximate alignment with the spindle. The stationary and mobile space requirements for the lathe and the bar feeder should be taken into account. When placing the bar feeder, insert leveling plates under each stand.

5.5 MOUNTING

The bar feeder is delivered completely assembled. Once in place behind the lathe, the bar feeder can be aligned.

5.5.1 ALIGNMENT

WARNING

Injury hazard or damage from unsecured heavy object!

Before proceeding with the alignment of the bar feeder, make sure that the lathe is stable and preferably leveled.
The bar feeder must be positioned as close as possible to the lathe spindle.

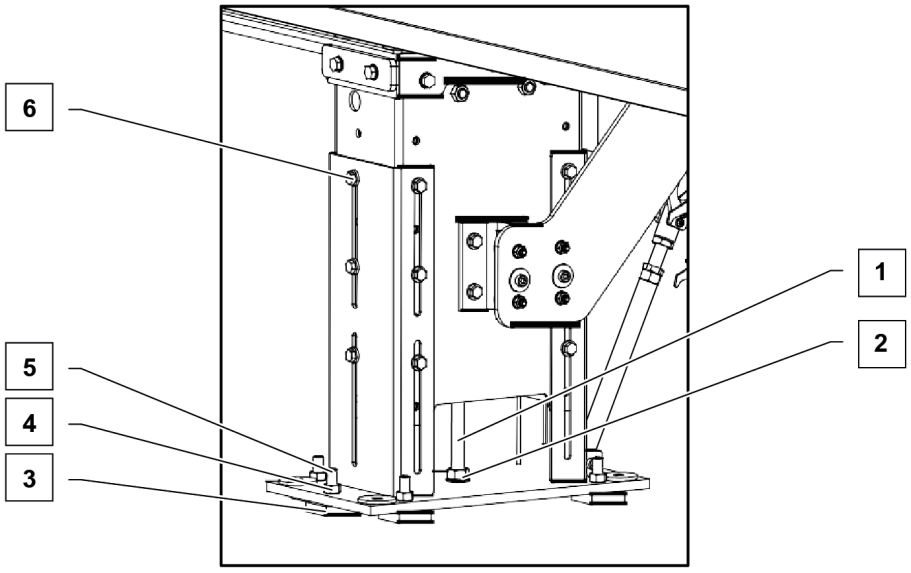
NOTICE

Risk of damage to the reduction tube!

During alignment, make sure that there is no reduction tube in the spindle.
Do not tighten the lock nuts of the leveling screws before it is anchored to the ground.

The alignment may be carried out using an optical tool. If you do not have any alignment tools, please contact LNS or their local representative so they may take care of the bar feeder installation.

1. For both stands, place a leveling plate (3) under each leveling screw (5).
2. Loosen the nuts (4) of the leveling screws (5).
3. Make sure that the weight of the bar feeder is evenly distributed over the leveling plates (3).
4. Loosen the screws (6) that lock the height position.
5. Make sure that the threaded pins (1) of the front and rear stand are supported.
6. Open the guiding system and place a level crosswise on the lower part.
7. Adjust the leveling screws (5) to set the lateral level of the bar feeder.
8. Adjust the nuts (2) on the threaded pins (1) to set the height of the bar feeder. Normally, when the reference point is known, this adjustment is made at the factory.
9. Shift the bar feeder to align it laterally. If you do not have the needed material to perform this operation, please contact LNS or its local representative.
10. When the alignment is satisfactory, tighten all the screws (6) to lock the height position.
    Wait until after the anchoring of the bar feeder to tighten the nuts (4) of the leveling screws (5).
11. Check the alignment and, if necessary, correct it by adjusting the leveling screws (5).



5.6 ANCHORING

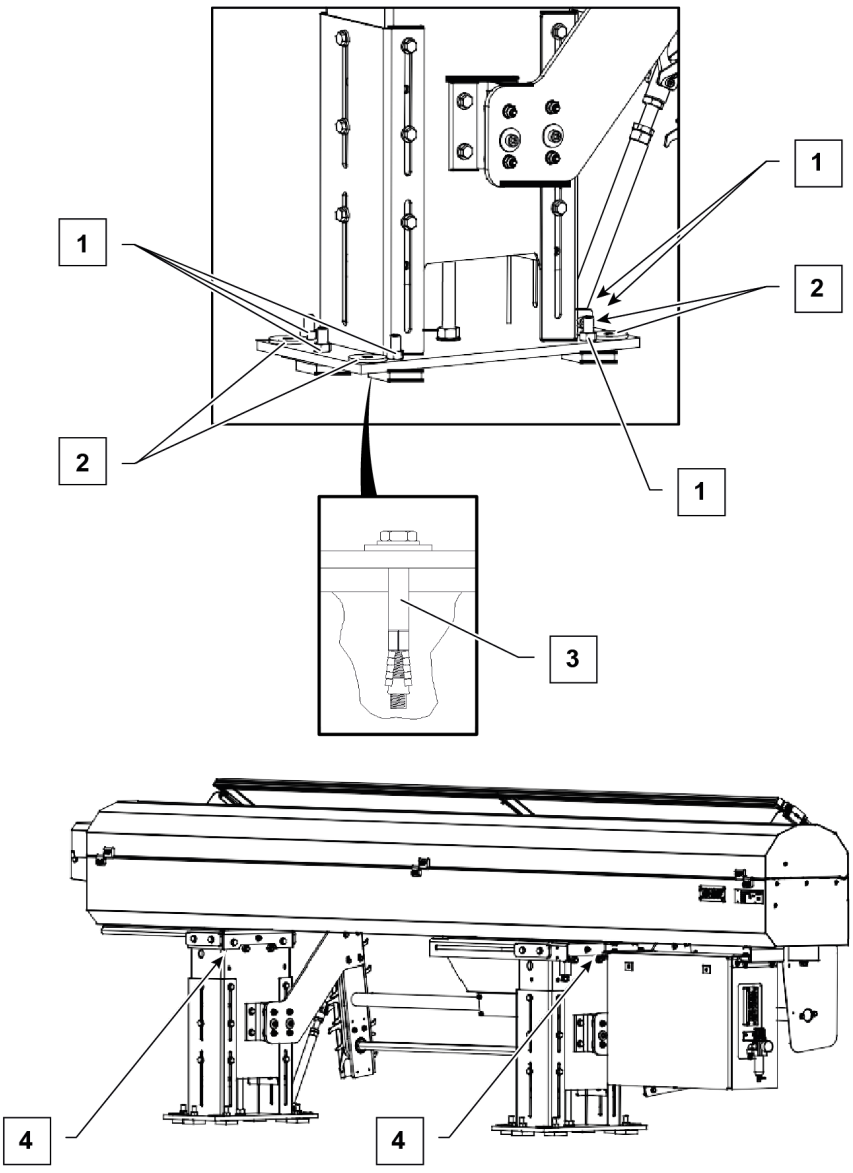
Once the bar feeder is in place and perfectly aligned, it should be anchored to the ground to ensure stability. To do so, four anchorage points are provided at the bottom of both stands. The anchorage bolts must be furnished by the customer (min. M10 x 100 mm).

INFO

Anchoring: use heavy duty anchors.
Minimum M10 x 100

Procedure:

1. Use an anchorage bolt (3) at each anchorage point (2) on each stand to anchor the bar feeder to the ground. There are four anchorage points on each stand.
2. Once the bolts are tightened, check the alignment again, and correct it if necessary.
3. Tighten the nuts of the leveling screws (1) to lock in the position.
4. Remove the two screws (4) at the top of each stand that retain the bar feeder in position for transport.



5.7 SETTING UP THE AIR INTAKE FOR THE PNEUMATIC SYSTEM

5.7.1 CONNECTING THE COMPRESSED AIR

NOTICE

Material damage from incorrect adjustments!

Incorrect line pressure can damage the bar feeder.

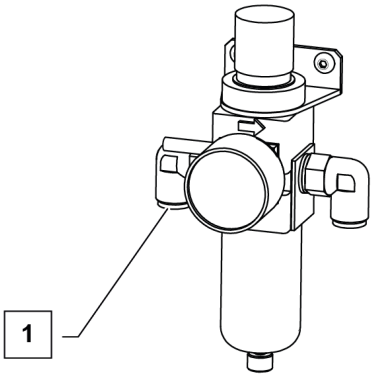
Ensure the line pressure is correct before using the bar feeder.

The air treatment unit, to which the compressed air must be connected, is located behind the electrical cabinet.

To connect the compressed air to the air treatment unit, the customer must provide an 8 mm (5/16") diameter air hose. The hose must be long enough to allow the complete travel of the retraction system (500 mm). When the hose is connected, it should not trail on the ground as it could be damaged.

Procedure:

1. Make sure that the factory air pressure is not above 0.5 MPa (5 bar).
2. Connect one end of the hose to the site's compressed air source.
3. Connect the other end of the hose to the air treatment unit inlet (1).



5.7.2 SETTING THE AIR PRESSURE

NOTICE

Material damage from incorrect adjustments!

Incorrect line pressure can damage the bar feeder.

Ensure the line pressure is correct before using the bar feeder.

Procedure:

1. Pull the air pressure regulation up to unlock it.
2. Turn the air pressure regulation until the manometer indicates the correct value:
   To increase the air pressure: turn the air pressure regulation counterclockwise
   To decrease the air pressure: turn the air pressure regulation clockwise

INFO

The operating pressure must remain at 0.5 MPa (5 bar).

3. Push the air pressure regulation down to lock it.

5.8 CONNECTION

Once the bar feeder is correctly aligned and anchored to the ground, its interface with the lathe and the compressed air must be connected. The hydraulic reservoir can be filled.

- For the electrical connection (→ ELECTRICAL EQUIPMENT).
- For the pneumatic connection (→ PNEUMATIC EQUIPMENT).
- For the hydraulic connection (→ HYDRAULIC EQUIPMENT on page 25).

5.9 FACTORS AFFECTING PERFORMANCE

5.9.1 INSTALLATION

Proper installation is crucial for the correct functioning of the bar feeder. Improper installation can seriously compromise the operation of the bar feeder. The following parameters must be taken into account:

Distance	The distance between the bar feeder and the lathe directly affects the quality of the bar feeder's guiding performance. The further the bar feeder is from the spindle, and therefore from the clamping system, the larger the non-guided part of the bar will be.
Alignment	The guide channel of the bar feeder serves, by definition, to guide the bar outside the lathe. Although the bar rotates in an oil bath inside the guide channel, the alignment of the channel with the axis of the spindle must be perfect. It is essential that the bar feeder is aligned in accordance with the instructions indicated in (→ ALIGNMENT on page 31)
Spindle length	In some cases, the length of the spindle may influence the quality of the bar feeder's guiding performance.

5.9.2 CLEARANCE BETWEEN THE GUIDING CHANNEL AND THE BAR

The best results are achieved when the bar is guided with precision. The smaller the clearance between the guiding channel and the bar, the higher the rotational speeds can be.

When the clearance between the bar and the guiding channel becomes too great, a rupture of the oil film occurs which results in the reduction of the permitted rotation speeds.

The correctly sized guiding elements should always be used in relation to the diameter of bar stock being fed.

5.9.3 CLEARANCE BETWEEN THE SPINDLE AND THE BAR

With the rear of the bar maintained by the bar feeder pusher collet and the front by the lathe collet or mandrel, it is possible that the section of the bar inside the spindle may oscillate if the play is too great. It is therefore highly recommended that a spindle liner be used to reduce the clearance.

5.9.4 MATERIAL

The following factors regarding the material used affect the bar feeder's performance:

Bars	To ensure the bar is inserted into the bar feeder collet perfectly, it is essential that the bars are chamfered (at the rear), concentrically, at 30°. It is recommended that the bars are deburred at the front, to prevent them from catching when the bar is inserted into the spindle as it is fed.
Tubes	To prevent oil from the bar feeder and coolant from the lathe from mixing, it is recommended that tubes are capped at the rear when machined.
Profiled bars	Round and hexagonal bars are relatively easy to guide. Square bars or bars with other special profiles increase the risk of the oil film to rupture.
Bar straightness	Performances may vary depending on the material machined, the length of the bar, etc. To obtain optimum output, the bars must be straight. If the torsion of the bars exceeds 0.5 mm/m, performance will automatically be reduced in terms of rotation speed, and vibrations will increase accordingly.
Material composition	In general, the difficulty increases with the specific weight of the bar. Steel bars are relatively easy to guide. However brass bars, due to their great flexibility and specific weight, are relatively difficult to guide at high speeds. Aluminum bars on the other hand are very easy to guide.

6 ADJUSTMENTS BEFORE OPERATION

This section covers the steps to take prior to production. This may include the configuration of the bar feeder, the machine tool, and the related adaptations and settings.

INFO

The bar feeder adjustment must be amended when the following settings change:

- Bar diameter
- Bar profile
- Length of the parts executed

6.1 BAR FEEDER ADJUSTMENTS

6.1.1 CHANGING THE GUIDING ELEMENT

Depending on the bar diameter, a changeover of the guiding elements may be necessary.

WARNING

Crushing, cutting, dismemberment hazard from moving components of the guiding system!

Do not introduce hands in the loading system during operation. Do not grasp moving or rotating objects of the bar loader, guidance and feeding system.

WARNING

Crushing, cutting, dismemberment hazard from automatic closing/opening of the pusher support assembly!

Do not introduce hands into or near the feeding channel to avoid crushing during operation.

WARNING

Crushing hazard from falling main access cover!

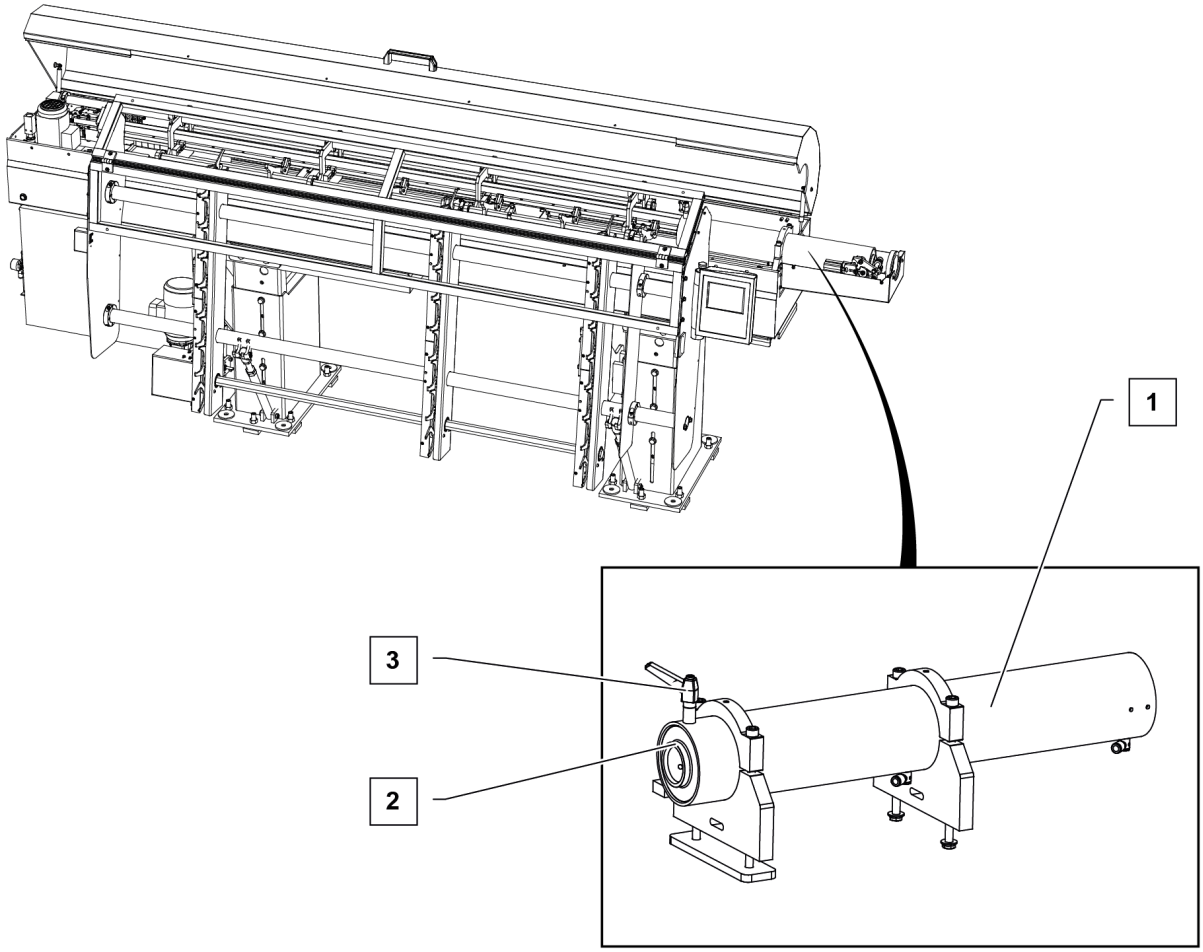
Do not introduce hands into the bar feeder under the main access cover while manually opening or closing it to avoid crushing should it fall shut.
Do not introduce hands into the bar feeder under the main access cover while the machine is in automatic mode as the main access cover may close automatically.
Ensure that the main access cover lift support cylinders firmly support the main access cover. If they are worn out, it is a crushing hazard and they must be replaced. Contact LNS or its local representative.

Prerequisite:

- The bar feeder is in STOP mode.
- There is no bar on the bar loader, in the guiding/feeding system.
- The pusher is in the home position.

Procedure:

1. On the remote control, enter manual mode.
2. Select the part changeover function. This will move down the dropping fingers; the bar feeder will then wait for the user confirmation.
3. Open the main access cover.
4. Loosen the quick screw (3) on the guiding tube (1).
5. Pull out and remove the guiding element (2) from the guiding tube (1).
6. Insert the new guiding element into the guiding tube.
7. Secure the new guiding element by tighten the quick screw (3).
8. On the remote control, confirm the end of the part changeover function. Note: the screen that follows will present other parameters that may need changing such as new pusher, bar dimension, etc.



6.1.2 CHANGING THE PUSHER

WARNING

Crushing, cutting, dismemberment hazard from moving components of the feeding system!

Do not introduce hands in the feeding system during operation. Do not grasp moving or rotating objects during the feeding process.

WARNING

Crushing, cutting, dismemberment hazard from the linear and rotating movement of the pusher and flag!

Do not introduce hands in the feeding system during operation. Do not grasp the pusher, the flag while in operation.

WARNING

Crushing, cutting, dismemberment hazard from automatic closing/opening of the pusher support assembly!

Do not introduce hands into or near the feeding channel to avoid crushing during operation.

WARNING

Crushing, hazard from falling main access cover!

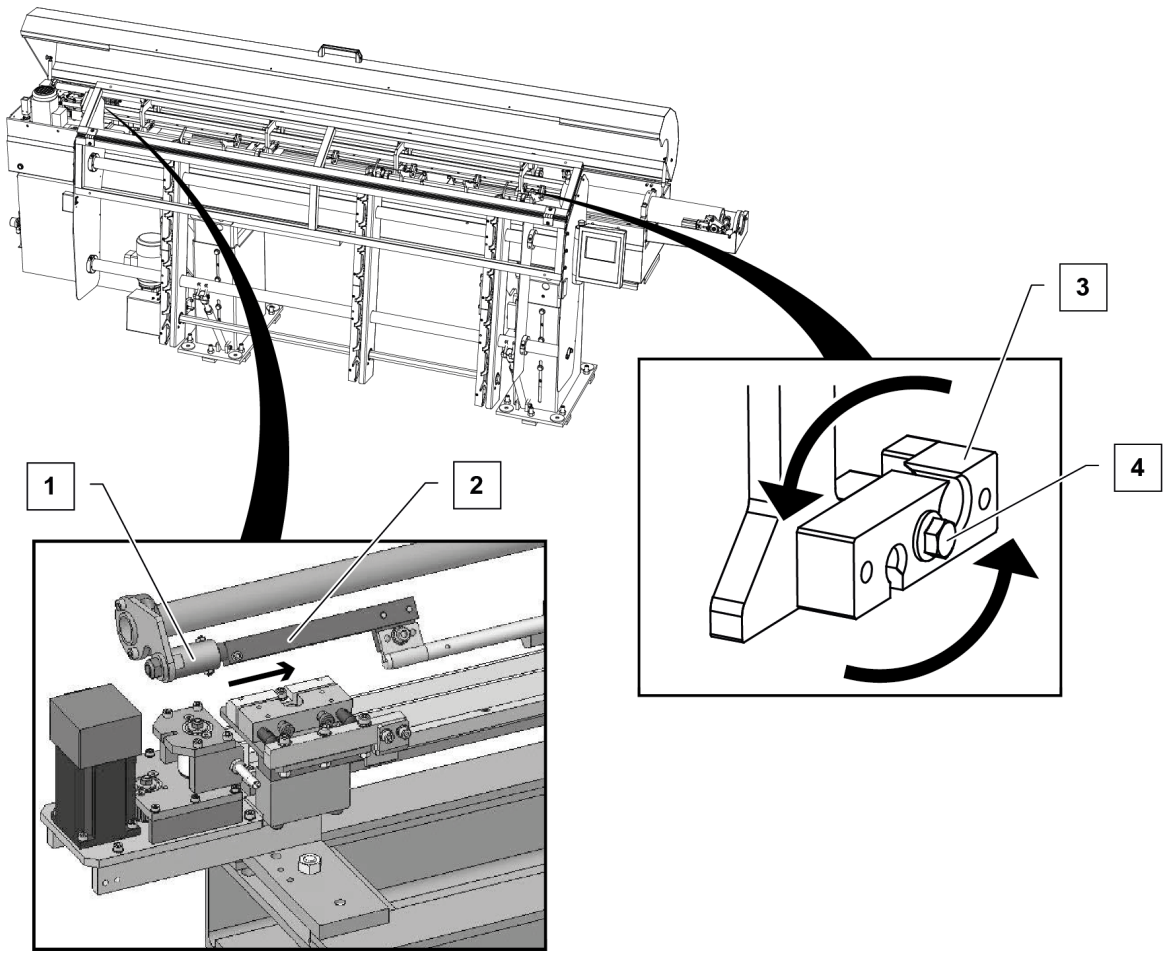
Do not introduce hands into the bar feeder under the main access cover while manually opening or closing it to avoid crushing should it fall shut.
Do not introduce hands into the bar feeder under the main access cover while the machine is in automatic mode as the main access cover may close automatically.
Ensure that the main access cover lift support cylinders firmly support the main access cover. If they are worn out, it is a crushing hazard and they must be replaced. Contact LNS or its local representative.

Prerequisite:

- The bar feeder is in Manual or STOP mode.
- There is are no bars on the bar loader.

Procedure:

1. On the remote control, enter manual mode.
2. Select the part changeover function. The pusher moves back to its reference lifted position. The bar feeder will then wait for the user confirmation.
3. Unclip the pusher (2) by pulling it towards the front of the bar feeder out from the pusher locking support (1).
4. Remove the pusher entirely by sliding it out to the back of the bar feeder.
5. Loosen the screw (4) on each pusher guide element (3) (four in total), turn the pusher guide element 180°, tighten the screw (4).
6. Put the new pusher in all the pusher guides from the back of the bar feeder.
7. Reattach the pusher (2) to the pusher locking support (1).
8. On the remote control, confirm the end of the changeover function and the new pusher diameter.



6.1.3 CHANGING THE PUSHER ROLLERS

WARNING

Crushing, cutting, dismemberment hazard from moving components of the feeding system!

Do not introduce hands in the feeding system during operation. Do not grasp moving or rotating objects during the feeding process.

WARNING

Crushing, cutting, dismemberment hazard from the linear and rotating movement of the pusher and flag!

Do not introduce hands in the feeding system during operation. Do not grasp the pusher, the flag while in operation.

WARNING

Crushing, cutting, dismemberment hazard from automatic closing/opening of the pusher support assembly!

Do not introduce hands into or near the feeding channel to avoid crushing during operation.

WARNING

Crushing, hazard from falling main access cover!

Do not introduce hands into the bar feeder under the main access cover while manually opening or closing it to avoid crushing should it fall shut.
Do not introduce hands into the bar feeder under the main access cover while the machine is in automatic mode as the main access cover may close automatically.
Ensure that the main access cover lift support cylinders firmly support the main access cover. If they are worn out, it is a crushing hazard and they must be replaced. Contact LNS or its local representative.

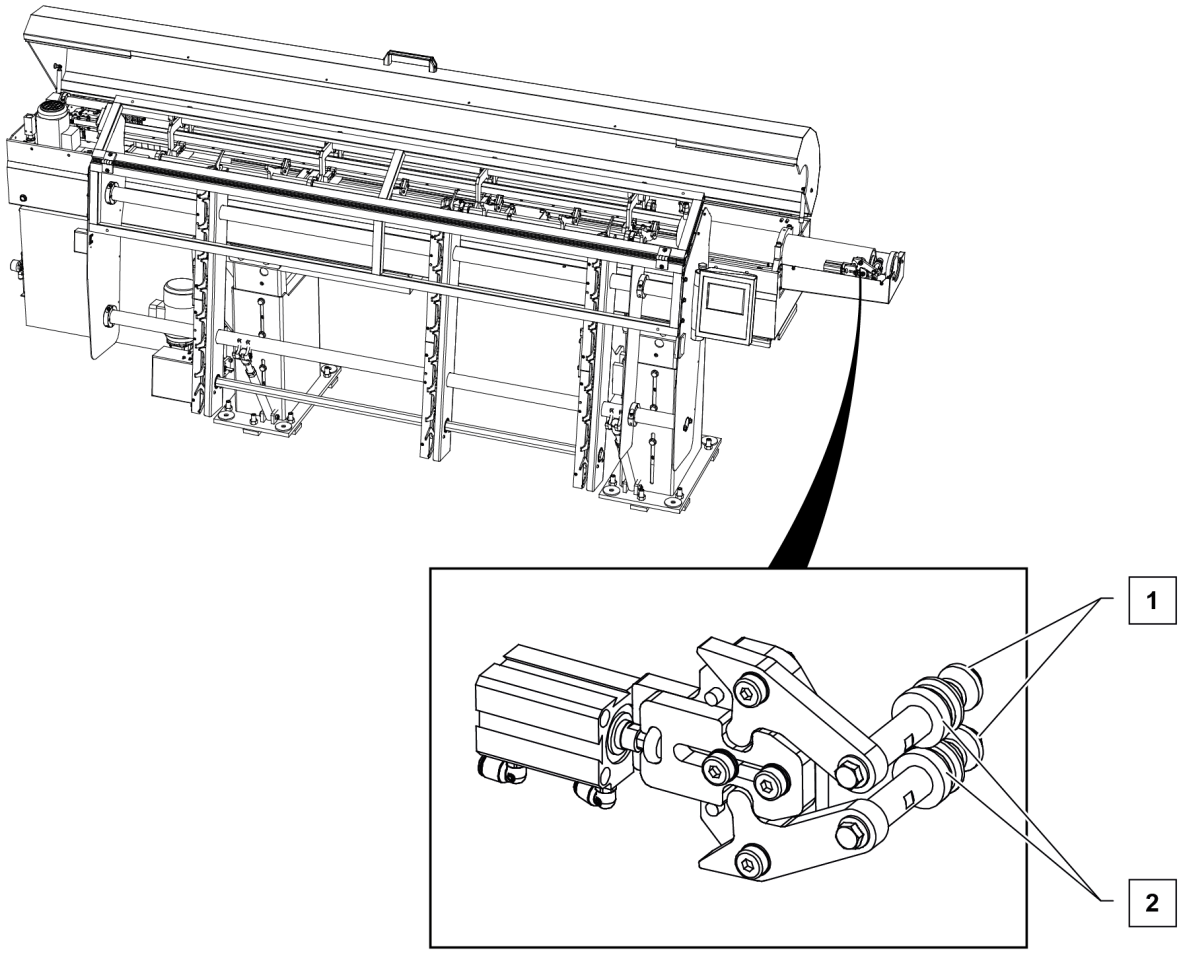
When worn out, the pusher rollers must be replaced

Prerequisite:

- The bar feeder is in Manual or STOP mode.
- There is are no bars on the bar loader.

Procedure:

1. Open the main access cover and remove the rest cover located at the front of the bar feeder.
2. Loose the screws (1).
3. Remove the pusher rollers (2).
4. Attach the new pusher rollers ones.
5. Tighten the screws (1).
6. Put back the rest cover.



6.1.4 ADJUSTING THE DROPPING FINGERS HEIGHT

WARNING

Crushing, cutting, dismemberment hazard from moving components of the feeding system!

Do not introduce hands in the feeding system during operation. Do not grasp moving or rotating objects during the feeding process.

WARNING

Crushing, cutting, dismemberment hazard from the linear and rotating movement of the pusher and flag!

Do not introduce hands in the feeding system during operation. Do not grasp the pusher, the flag while in operation.

WARNING

Crushing, cutting, dismemberment hazard from automatic closing/opening of the pusher support assembly!

Do not introduce hands into or near the feeding channel to avoid crushing during operation.

WARNING

Crushing, hazard from falling main access cover!

Do not introduce hands into the bar feeder under the main access cover while manually opening or closing it to avoid crushing should it fall shut.
Do not introduce hands into the bar feeder under the main access cover while the machine is in automatic mode as the main access cover may close automatically.
Ensure that the main access cover lift support cylinders firmly support the main access cover. If they are worn out, it is a crushing hazard and they must be replaced. Contact LNS or its local representative.

NOTICE

Material damage from incorrect adjustments!

Incorrect alignment of the dropping fingers to the guiding tube can damage the bar feeder and its parts.

When adjusting the height of the dropping fingers, ensure that they perfectly center the bar in the guiding tube before operation to avoid damage to the bar feeder.

The dropping fingers position the bar at the guiding axis. If a drift is detected by the user, a positioning correction is necessary.

Prerequisite:

- The bar feeder is in Manual or STOP mode.
- There is are no bars on the bar loader.

Procedure:

1. On the remote control, enter the maintenance menu.
2. Select the diameter calibration function.
3. The dropping fingers height position can be adjusted in two ways:
   - Use the dropping finger up or down keys to adjust the height and confirm the adjustment by pressing the check mark key.

   or
   - Directly enter the height adjustment value in the dedicated field on the screen with the numerical keypad. Note: after entering the height adjustment value, a full reference cycle is needed for the dropping fingers to be adjusted to the new height value. Press the reference position down key. Then press the reference position up key. Confirm with the check mark key.
4. Before operating the bar feeder after adjusting the dropping fingers height, double check visually by loading a bar that the fingers new position center the bar in the guiding element. Make further adjustments if needed. **Do not operate the bar feeder if the loading fingers do not perfectly center the bar into the guiding element!**

6.1.5 ADJUSTING THE HEIGHT AND ANGLE OF THE BAR LOADER

Depending on the loading method and the dimensions of the bars to be machines, the bar loader angle and height might need to be adjusted.

WARNING

Injury and property damage hazard from unsecured bar feeder!

Ensure the bar feeder is secured, anchored before adjusting the bar loader to avoid injuries and damage to the equipment. Read the safety instructions at the beginning of this document before handling the following devices.

WARNING

Crushing, cutting, dismemberment hazard from moving components of the bar loader!

Do not approach or introduce hands in the loading system during operation. Stay clear of and do not grasp moving or rotating objects of the loading system, such as the support hooks, the bar, the chain drive during the loading process.

WARNING

Crushing hazard from falling main access cover!

Do not introduce hands into the bar feeder under the main access cover while manually opening or closing it to avoid crushing should it fall shut.
Do not introduce hands into the bar feeder under the main access cover while the machine is in automatic mode as the main access cover may close automatically.
Ensure that the main access cover lift support cylinders firmly support the main access cover. If they are worn out, it is a crushing hazard and they must be replaced. Contact LNS or its local representative.

WARNING

Crushing, hazard from falling bars!

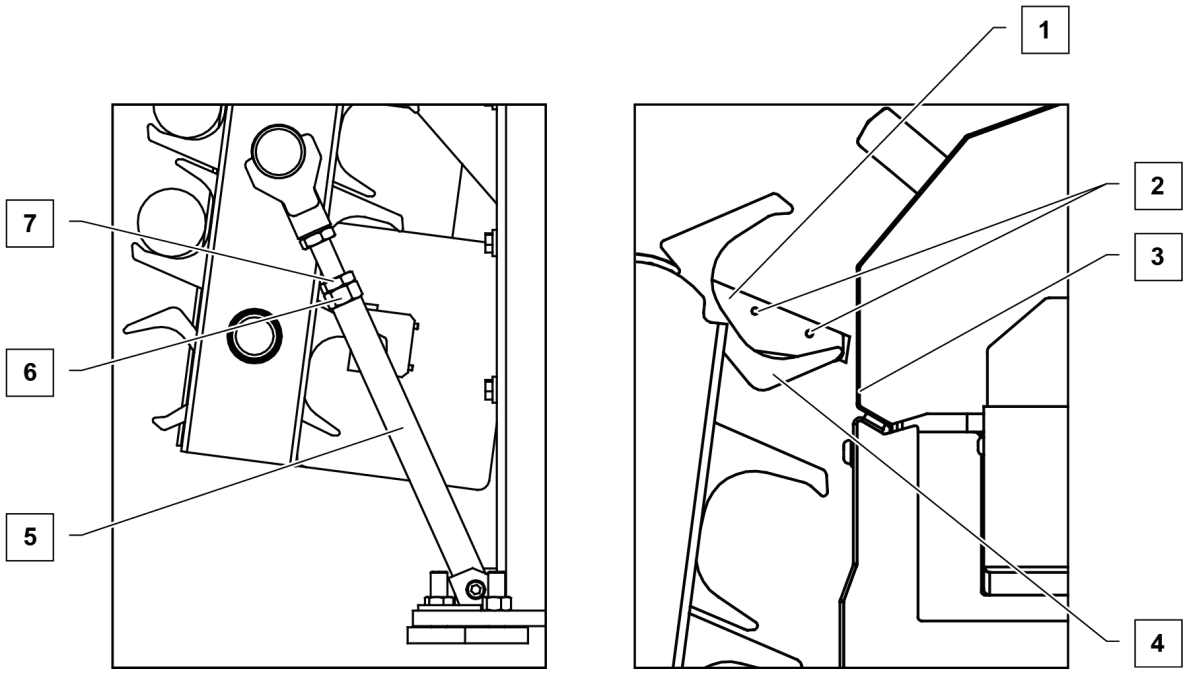
Handle the bars with extreme care while loading the bar loader with new bars.
Make sure the bars are properly resting on the bar loader support hooks.
Security work boots must be worn by the user while loading new bars.

Prerequisite:

- The bar feeder is in Manual or STOP mode.
- There is are no bars on the bar loader.
- The bar feeder is secured and anchored to the floor.
- The area around the bar feeder has been cleared.

Procedure:

1. Loosen the top nut (7) on both bar loader supports (5).
2. Adjust the height and angle of the bar loader with nut (6).
   Note: Check that a 10 mm gap remains between the chain loader side plates and the main access cover. The cover (3) must be able to open and close freely without coming into contact with the bar loader support hooks (4) or the loading ramps (1) .
3. Lock the chosen height and angle position by tightening nut (7).
4. Adjust the overhang of the loading ramps (1) by loosening the two screws (2) on each loading ramp.
5. Extend the overhand of the loading ramps as far as possible without impeding the opening and closing of the main access cover (3).
6. Lock the loading ramp overhang position by tightening the screws (2).



6.1.6 RETRACTING THE BAR FEEDER

WARNING

Injury and property damage hazard from unsecured bar feeder!

Do not use the retraction system before the bar feeder is anchored to the ground.

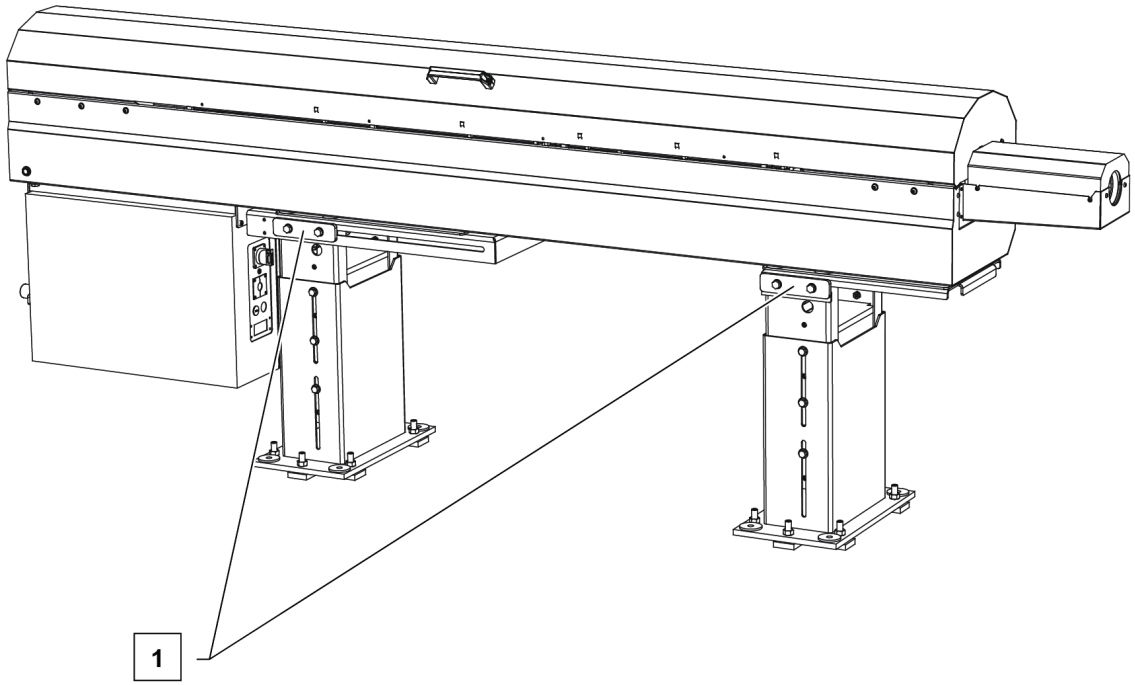
Read the safety instructions at the beginning of this document before handling the following devices. Make sure that the interface cables between the lathe and the bar feeder are long enough before handling the retraction system.

Prerequisite:

- The bar feeder is in Manual or STOP mode.
- There is no bar between the bar feeder and the lathe.
- The pusher is located inside the bar feeder.
- The area around the bar feeder has been cleared.

Procedure:

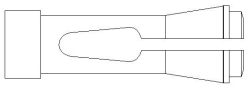
1. Loosen the retraction screws (1) (twelve in total) on the front and back side of each stand.
2. Pull the bar feeder backwards.
3. Perform the required maintenance task.
4. Move the bar feed system back to the working position.
5. Tighten the retraction screws (1) to lock the bar feeder position.



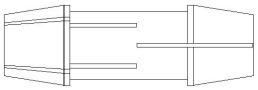
6.2 LATHE ADJUSTMENTS

6.2.1 CLAMPING DEVICE

COLLET

Single cone collet	Effectiveness: good to very good
The bar is gripped at about 350° over a length of 0.5 to 7 times its diameter.	

Biconical collet	Effectiveness: very good to excellent
The bar is gripped at 1 or 2 times 350° over a length of around 1.2 times the diameter.	

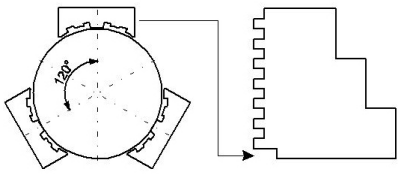
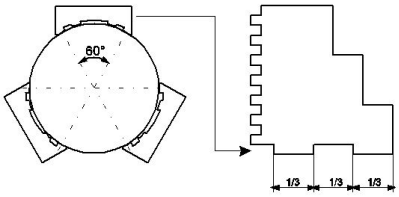
Double cone collet	Effectiveness: excellent
The double cone collet has the significant advantage of gripping the bar at two distant points of around 1.5 times the diameter with gripping of 2 times 350° over around 0.5 times the diameter.	

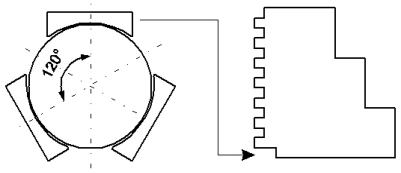
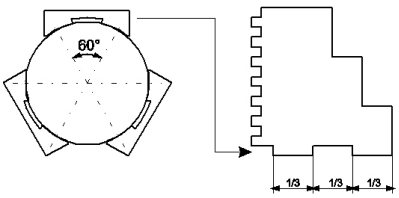
3-JAWS CHUCK

INFO

If the bar is not correctly fixed, the risk of vibrations significantly increases.

Frequent errors and possibilities for improving the effectiveness of the clamping grip.

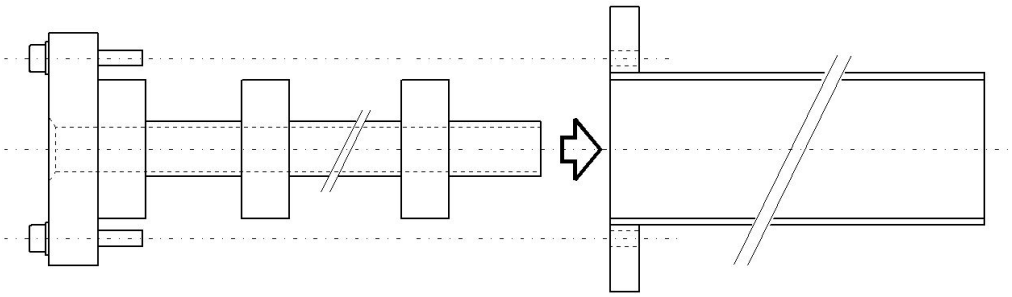
Hard jaws	
Incorrect: the radius of the jaws is larger than the radius of the bar. The jaws only touch at 3 points at 120°.	
Correct: release the center of the jaws so that there are 2 x 6 contact points at 60°.	

Soft jaws	
Incorrect: the radius of the jaws is larger than the radius of the bar. The jaws only touch at 3 points at 120°.	
Correct: release the center of the jaws so that there are 2 x 6 contact points at 60°.	

6.3 BAR FEEDER/LATHE CONNECTION

6.3.1 SPINDLE LINERS

The quality of the guiding of the bar in the lathe is determined by the clearance between the boring of the spindle and the bar in rotation. The larger the clearance, the more vibrations there are. Using a spindle liner reduces this clearance. Guiding is thus improved and it is much easier to insert the bar into the lathe chuck.



INFO

The inner diameter of the spindle liners must be chosen depending on:

- the diameter of the bar (Ø of the bar + 1 mm)
- the diameter of the pusher (diameter must always be larger than that of the pusher)

Spindle liners are available from the spare parts catalog. For more information, please contact LNS or its local representative.

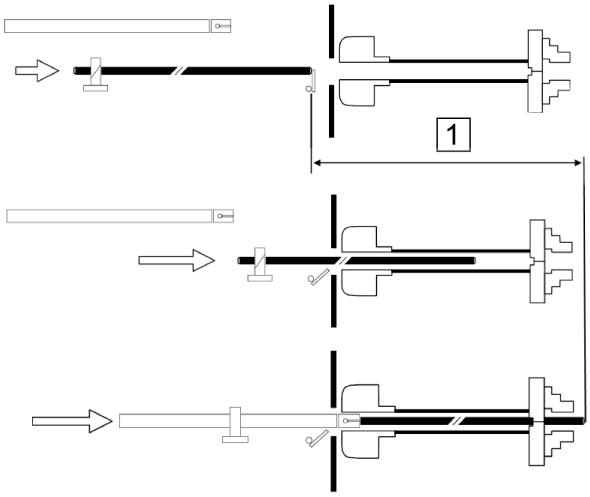
To insert and extract the spindle liners, move the bar feeder using the retraction device if needed (→ RETRACTING THE BAR FEEDER on page 46).

6.4 TOP-CUT POSITION

6.4.1 DESCRIPTION

At feed out, the bar is inserted into the spindle, then automatically positioned in the lathe's clamping device.

This positioning corresponds to a value (1) programmed by the operator, which is equivalent to the distance between the light sensor and the position of the bar in the clamping device of the lathe.



In the case of a Swiss style sliding head lathe the top cut position should be set approximately ¼" behind the guide bushing. On a fixed head lathe the top cut position should be set so that the bar is positioned outside the lathe collet the same amount it would have a part off in the main program occurred.

Thanks to this system, the adjustment is always the same irrespective of the length of the bars.

The top-cut position can be adjusted at any time in one of two ways:

- By offset correction
- By teaching (Teach-In)

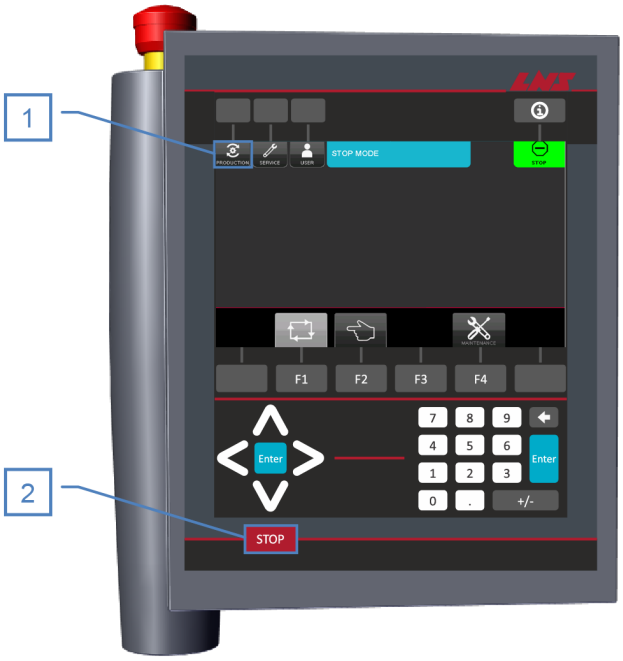
6.4.2 ADJUSTMENT

NOTICE

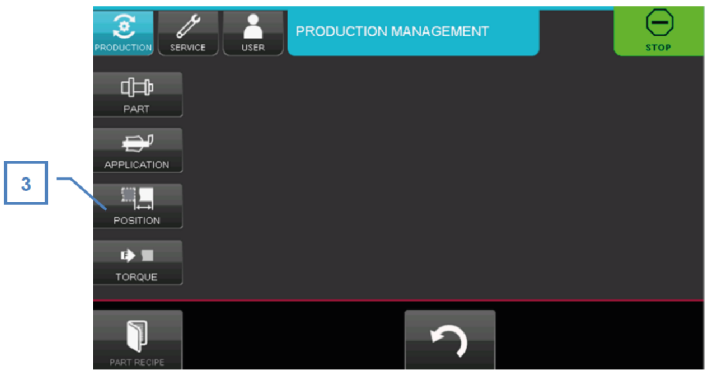
Risk of damage to the lathe!

Stop the lathe at the end of the part.
Put the bar feeder in STOP mode.

1. Press the STOP key (2).
2. Press the PRODUCTION key (1).



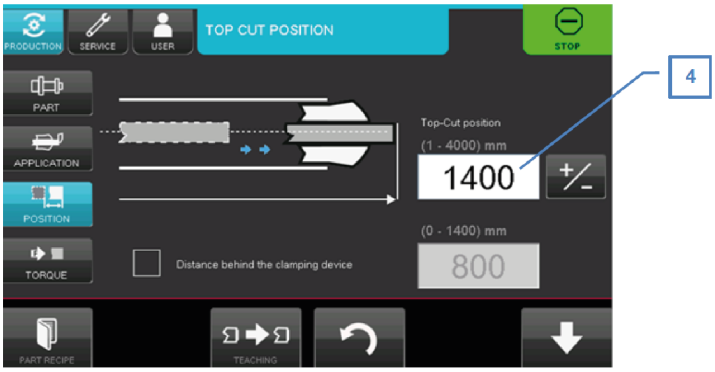
3. Press the POSITION key (3).



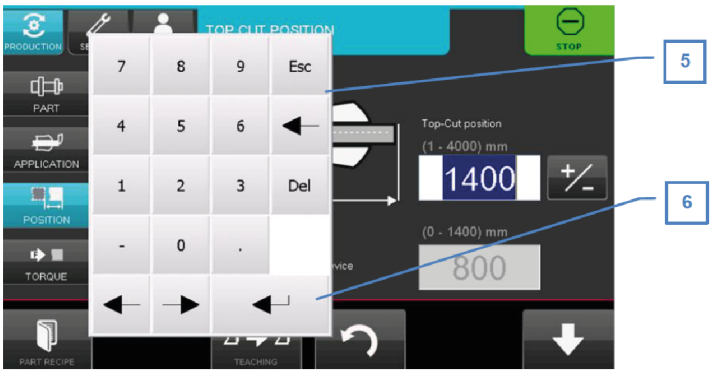
There are two options:

Use the keypad to enter the value directly

1. Press the field (4).

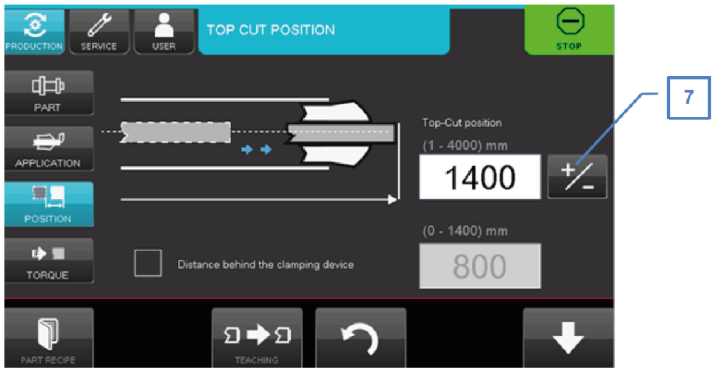


2. Use the keypad (5) to enter the new value.
3. Press the Enter key (6) to confirm the value.

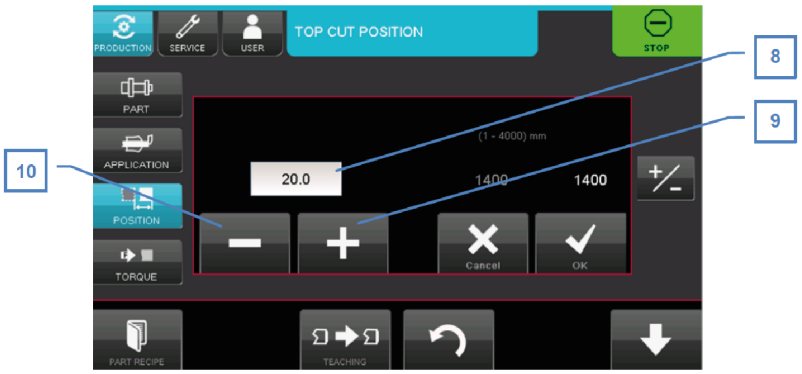


Use the +/- key to enter the value by adding/substracting

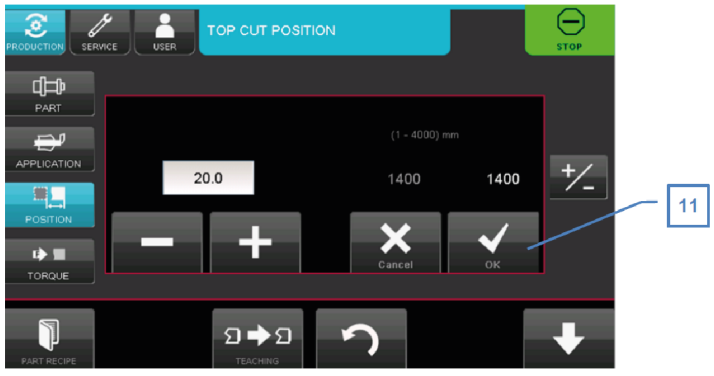
1. Press the +/- key (7).



2. Enter the value to be added/subtracted in the field (8).
3. Press the key:
   (9) to add the value
   (10) to subtract the value
   When you press one of the keys, the value is immediately displayed on the right.



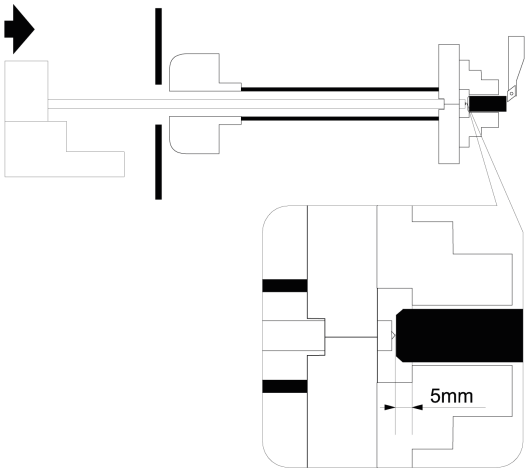
4. Press the OK key (11) to confirm.



6.5 END OF BAR

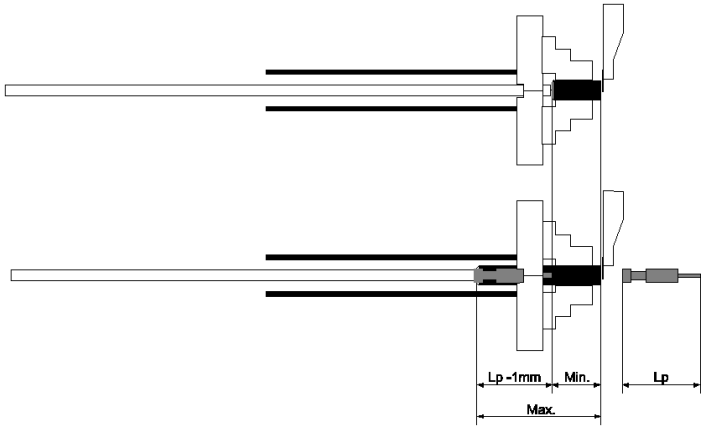
6.5.1 DESCRIPTION

The time when the bar feeder enters the loading cycle is determined by the position of the end of bar signal.



In principle, the end of bar signal position is set as close as possible behind the clamping device of the lathe (around 5 mm) so that the bar remnants are as short as possible.

Irrespective of the bar or part length, the end of bar signal position is always the same.



The length of the bar remnants can vary:

- The minimum bar remnant (min) is obtained when the pusher is behind the clamping device when the last part is being machined.
- The maximum bar remnant (max) is obtained when there is not quite enough bar stock to machine an additional part (Lp -1 mm).

Maximum bar remnant = Lp - 1 mm + min

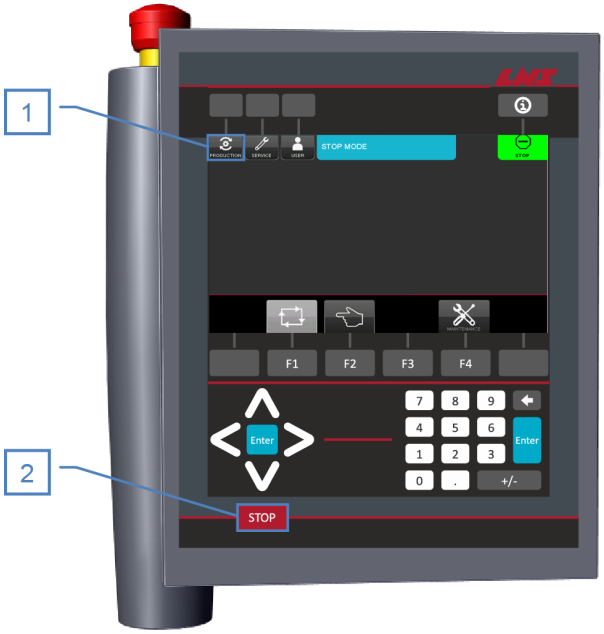
6.5.2 ADJUSTMENT

NOTICE

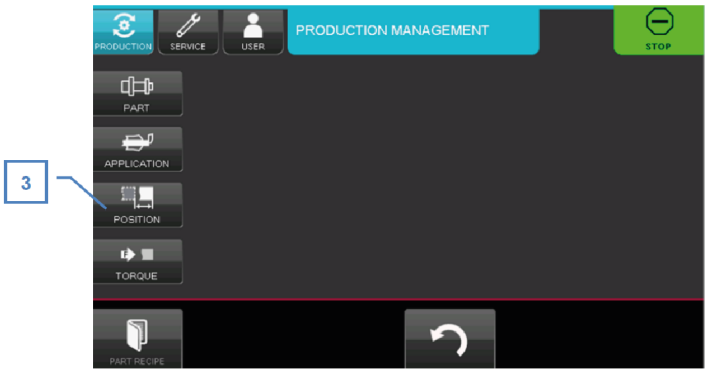
Risk of damaging the lathe!

Stop the lathe at the end of the part.
Put the bar feeder in STOP mode.

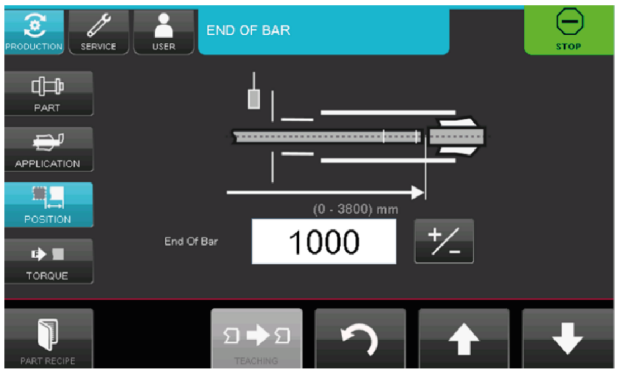
1. Press the STOP key (2).
2. Press the PRODUCTION key (1).



3. Press the POSITION key (3).



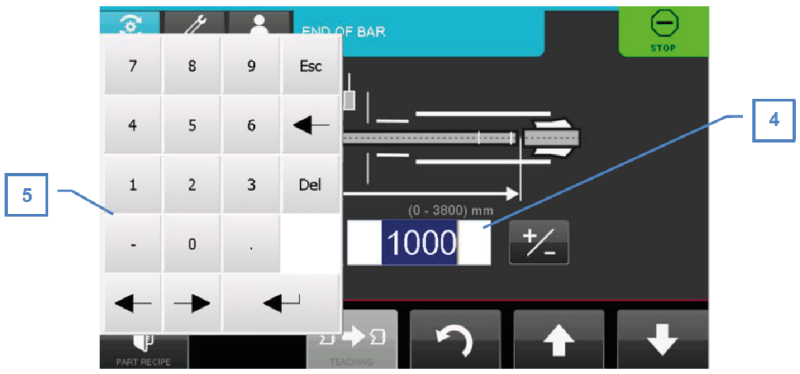
4. Press the downwards-arrow key on the bottom right.
   The following screen appears:



There are two options:

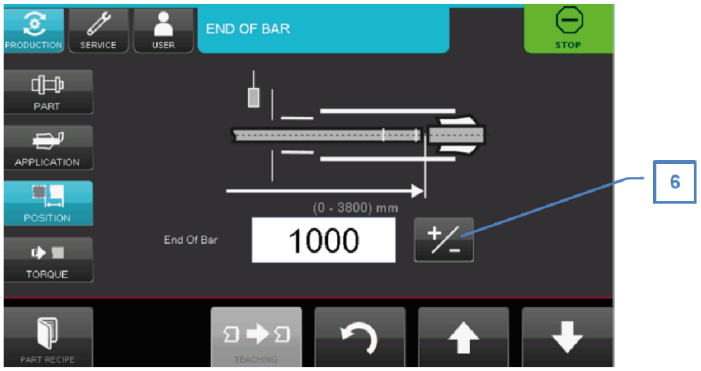
Use the keypad to enter the value directly

1. Press the field (4).
2. Use the keypad (5) to enter the new value.
3. Press the Enter key to confirm the value.

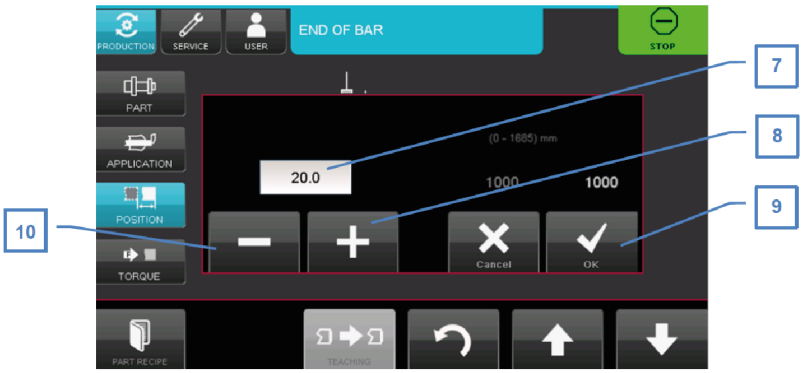


Use the +/- key to enter the value by adding/substracting

1. Press the +/- key (6).



2. Enter the value to be added/subtracted in the field (7).
3. Press the key:
   (8) to add the value
   (10) to subtract the value
   When you press one of the keys, the value is immediately displayed on the right.
4. Press the OK key (9) to confirm.



7 OPERATION

NOTICE

Risk of damage to the lathe or bar feeder!
Do not open the main access cover during operation.

7.1 SWITCHING ON/OFF

The servo motor of the bar feeder is equipped with a built-in absolute encoder that continuously controls the position of the pusher.
When the bar feeder is switched off or there is a power failure, this position is stored on the servo drive. When powering on, the saved position value is immediately taken into account, thus avoiding any referencing position.

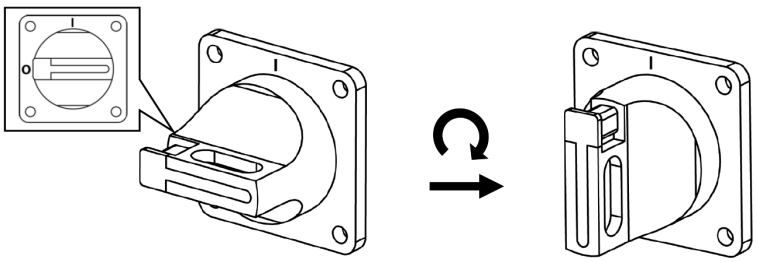
DANGER

Danger of death by electrocution!
Work on the electrical system must only be performed by a qualified electrician.
Always lock the electrical cabinet again after opening it.
In the case of a fault that may be electrical in origin, please contact LNS or its local representative.

Main switch

Switch on:

1. Turn the main switch on the electrical cabinet clockwise to the I- position (on).



Switch off:

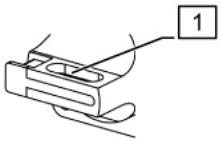
1. Turn the main switch counterclockwise to the O-position (off).

INFO

The main switch can be locked using a padlock. It is then impossible to start the bar feeder.

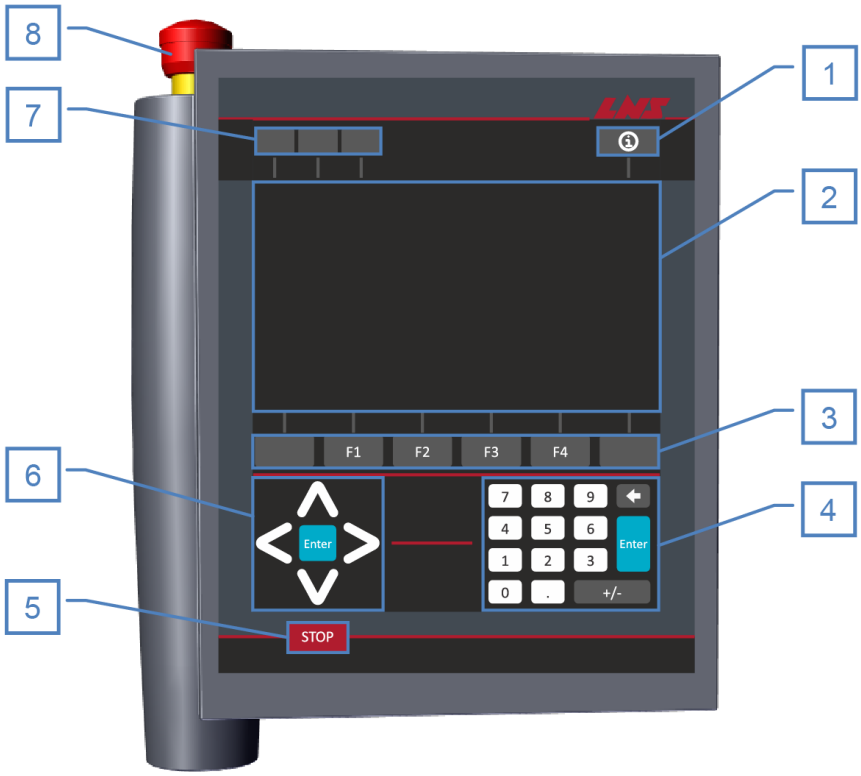
Lock the main switch in off-position:

1. Push in the main switch and insert a padlock into the opening (1).
2. Close the padlock.



7.2 REMOTE CONTROL

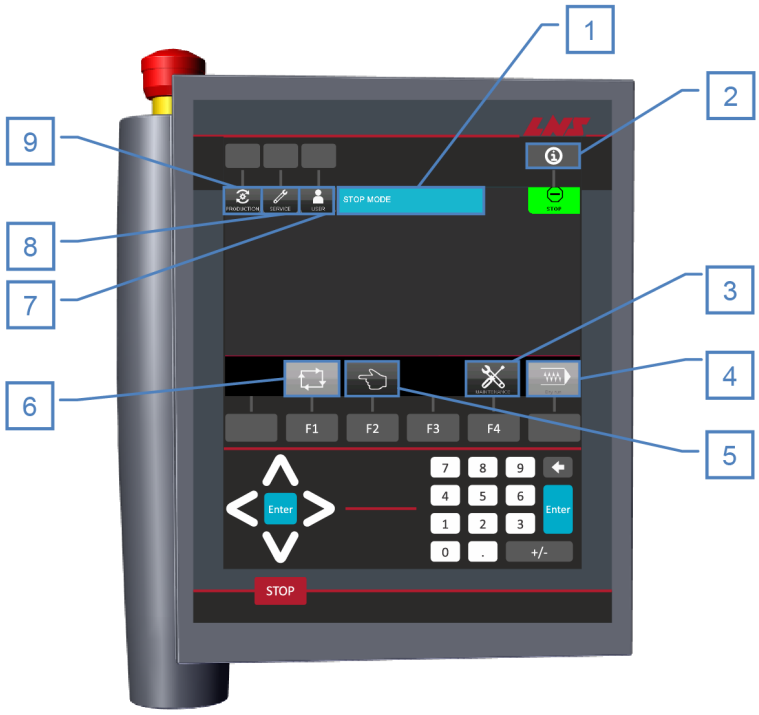
The screen on the remote control continuously shows the status of the bar feeder and its production. This allows the function, diagnostics, and error signals to be checked or analyzed at any time.
The latest error messages are stored in a register and can be called up to establish the diagnostics.



Designation	Description
1	Information key
2	Screen
3	Function keys
4	Keypad
5	STOP key
6	Direction keys
7	Function keys
8	Emergency stop button

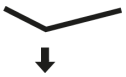
7.3 DISPLAY

The display provides the operator with all the information they need for both use and maintenance of the bar feeder.



Designation	Description
1	Current status or mode
2	More information
3	Maintenance
4	Dry run
5	Manual mode
6	Auto mode
7	User login
8	Service menu
9	Production menu

7.4 ICONS

Icon	Meaning	Icon	Meaning
	Referencing position		Validate
	Change to automatic mode		Cancel
	Stop after one bar		Part recpies
	Change to manual mode		Maintenance
	Forwards (the image can be inverted depending on the bar feed-out side)		Part changeover
	Backwards (the image can be inverted depending on the bar feed-out side)		Exchange bar (for manual removal of a bar)
	In top-cut-position (Top-Cut)		Open the pusher support assembly
	Position teaching		Close the pusher support assembly
	Exiting function		Manually load a bar with the bar loader
	Previous page		Incremental height adjustment increase of the dropping fingers
	Next page		Incremental height adjustment decrease of the dropping fingers
	Progress speed - Normal/Quick		Reference cycle upward of the dropping fingers
	Toggle page		Reference cycle downward of the dropping fingers
	Dry run		

7.5 KEYS

WARNING

Emergency stop. Use the emergency stop button!

The STOP key is not an emergency stop button.
In an emergency, always use the emergency stop button located on the top of the remote control.

	**STOP key** The STOP key is used to interrupt the sequence under way. **Important: the automatic cycle of the lathe must first be interrupted.** The STOP key can be pressed to exit setting mode, regardless of the level reached, and return to the work screen.
	**Function keys** The multi-function keys are located right below the screen. The function attributed to them is indicated on the display by icons. As the operator advances through the handling operations, the functions of the buttons are automatically reassigned.
	**Info key** The info key is used to display information about the software version, the firmware version, and the status of the inputs and outputs of the system.

7.6 EMERGENCY STOP

In an emergency, use the emergency stop button to interrupt the operation of the bar feeder.

To activate the emergency stop button:

1. Press firmly on the emergency stop button (1).

- The AL01 alarm appears on the HMI.
- The operation of the bar feeder is interrupted.

To deactivate the emergency stop button:

1. Turn the emergency stop button (1) counterclockwise until it returns to its original position.
2. Press the STOP key (2).

- The AL01 alarm is cleared.
- The operation of the bar feeder restarts.

7.7 OPERATION SETTINGS

NOTICE

Damage to lathe or bar feeder from incorrect settings!

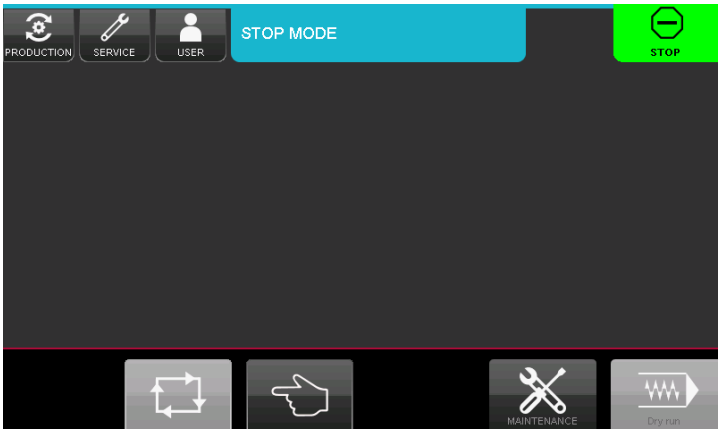
The operation settings are the most commonly modified settings for controlling the bar feeder when it is in automatic mode.
Read this section before making any changes.

INFO

The images in this section are exemplary and may show slight deviations from the screen on the remote control. However, the described functions are the same.

7.7.1 ACCESS

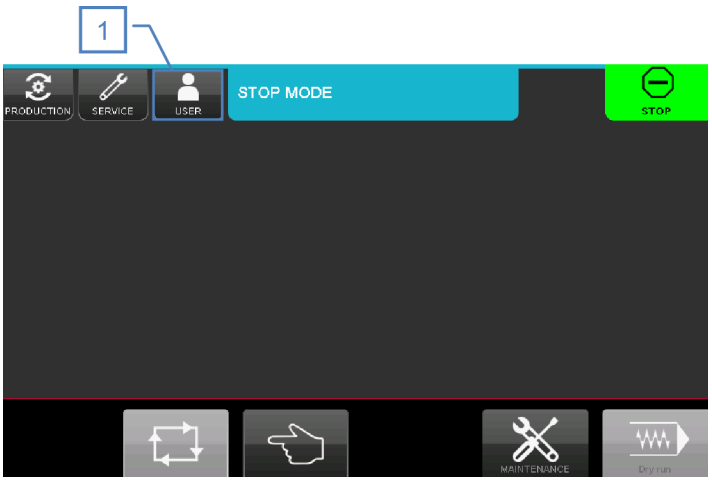
1. Turn the bar feeder on with the main switch.
   The welcome screen appears.



INFO

You must log in before you can work with the bar feeder.

2. Press the USER key (1).



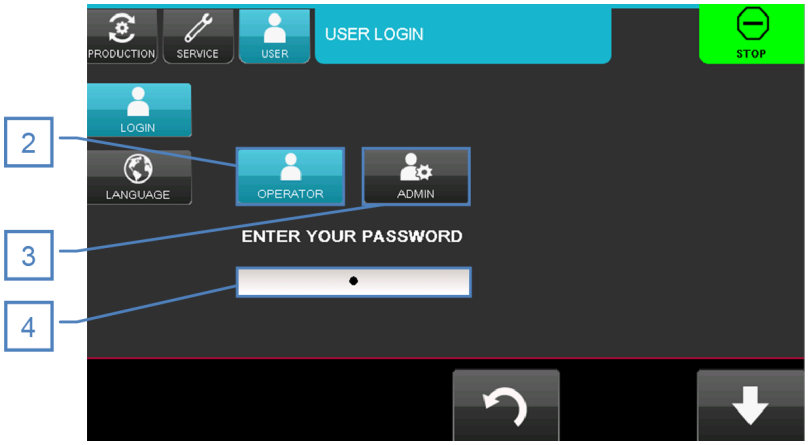
To log in as:

OPERATOR

3. Press the OPERATOR key (2).

ADMIN

3. Press the ADMIN key (3).
4. Enter your password (4).

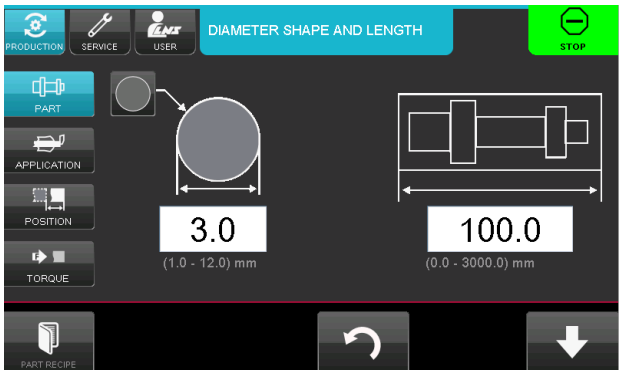


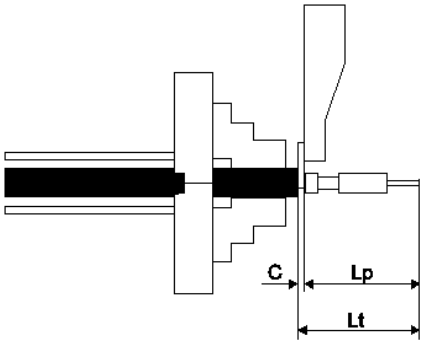
INFO

The USER key (1) indicates who is logged in.

7.7.2 PART (STANDARD) WITH FIXED SPINDLE

Shape and diameter of the bar, length of the part, variable face-off distance





Enter the diameter, shape and length of the bar stock according to the bar stock currently loaded.

Shape of the bar

Round bar:

- External diameter

Hexagonal/square bar:

- Size on flat sides
- Size on pointed sides

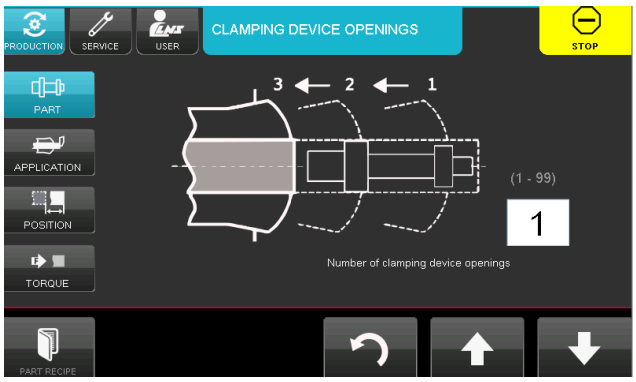
During the bar feed-out cycle, the bar feeder repeatedly (50 times) tries to insert the bar into the lathe collet or mandrel. The precision of positioning is also ensured by means of a procedure that was expressly developed for profiled bars.

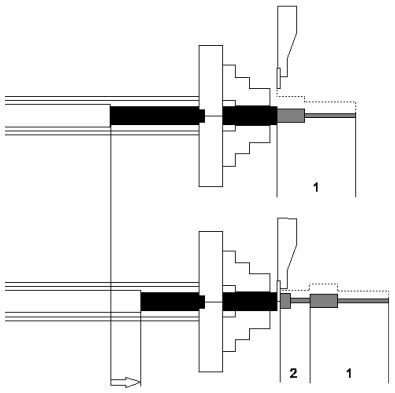
Total feed-out length

The total feed-out length (**Lt**) includes:

- the length of the part to be executed (**Lp**)
- the thickness of the cut-off tool (**C**)
- the thickness of the facing (not represented in the image, depends on the part program)

Number of times clamping device opens per part



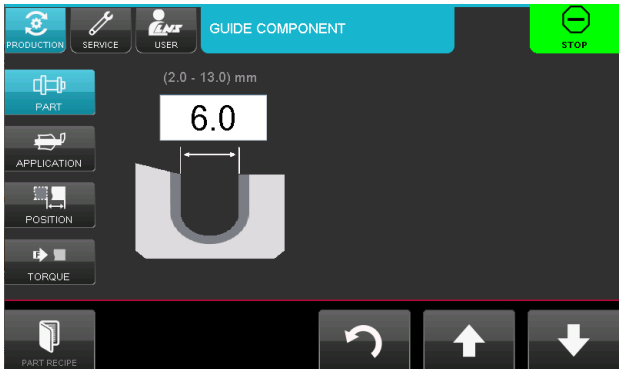


When machining a part requires the collet to open several times (for example a long piece or rework of the part on the second spindle), interface conflicts can occur during feed out.

It is therefore important to enter on the HMI the number of times that the collet must open to machine a part.

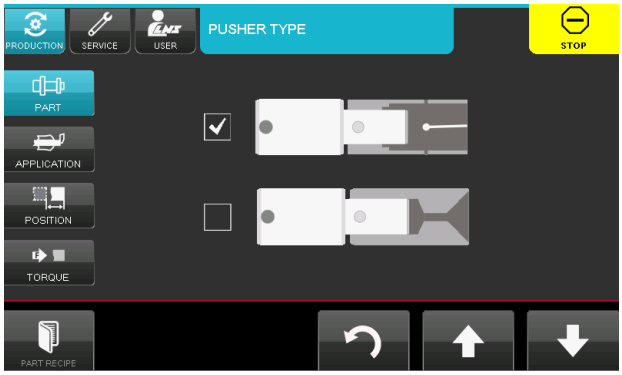
The bar feeder only takes into account the first position for the same part. The following positions (if there are any) must be performed using the turret.

Diameter of guide component



After a pusher changeover cycle, a diameter change of the guide components is always proposed.
Enter the new diameter of the guide component and choose the corresponding diameter of the front rest guiding elements.

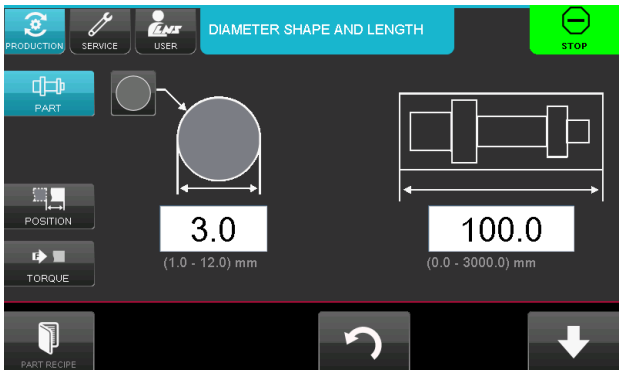
Pusher type

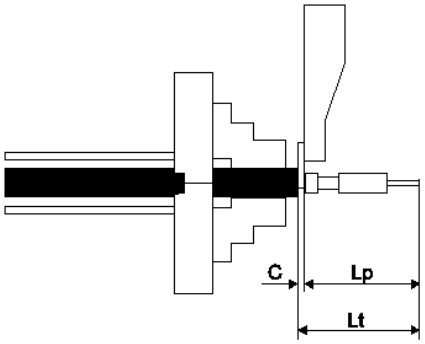


After a pusher changeover cycle, the pusher type needs to be selected accordingly on the HMI.

7.7.3 PART (STANDARD) WITH SLIDING SPINDLE

Shape and diameter of the bar, length of the part, variable face-off distance





Enter the diameter, shape and length of the bar stock according to the bar stock currently loaded.

Shape of the bar

Round bar:

- External diameter

Hexagonal/square bar:

- Size on flat sides
- Size on pointed sides

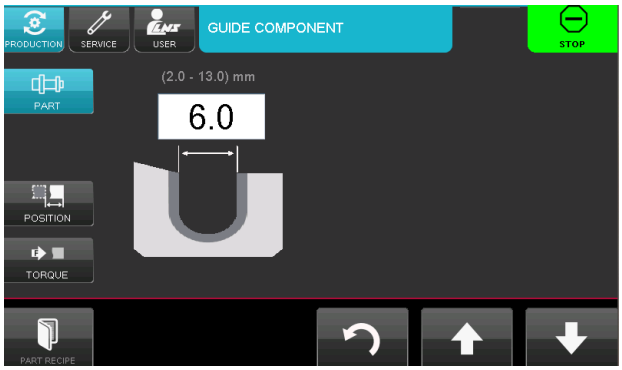
During the bar feed-out cycle, the bar feeder repeatedly (50 times) tries to insert the bar into the lathe collet or mandrel. The precision of positioning is also ensured by means of a procedure that was expressly developed for profiled bars.

Total feed-out length

The total feed-out length (**Lt**) includes:

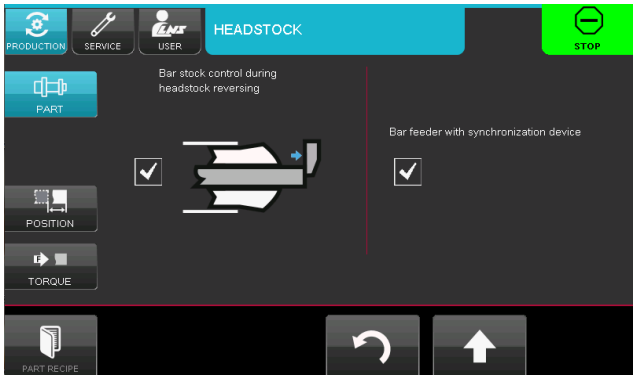
- the length of the part to be executed (**Lp**)
- the thickness of the cut-off tool (**C**)
- the thickness of the facing (not represented in the image, depends on the part program)

Diameter of guide component



After a pusher changeover cycle, a diameter change of the guide components is always proposed.
Enter the new diameter of the guide component and choose the corresponding diameter of the front rest guiding elements.

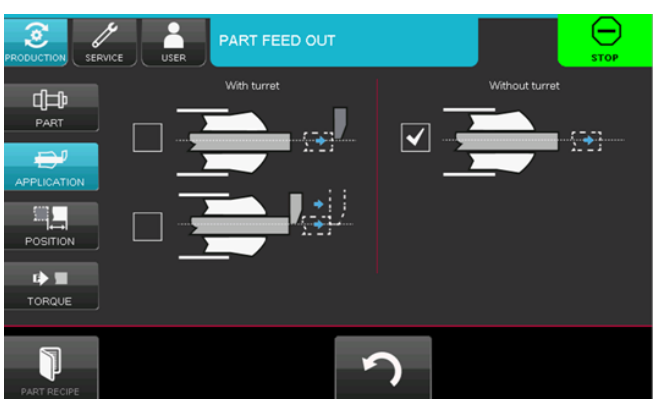
Headstock

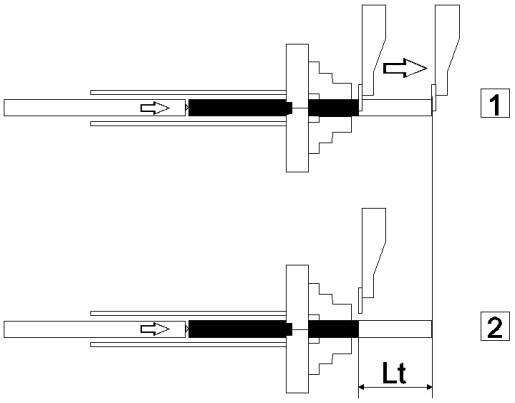


Select the bar stock control during a headstock reversing. If the bar feeder is equipped with a synchronization device, select the checkbox accordingly.

7.7.4 APPLICATION

Part feed out with/without a turret





Part feed out with a turret

This setting makes it possible to set the lathe as the part feed out controller. In this case, a special loop must be provided in its program.

Additional setting:

a. The turret waits in position:
   The turret moves to the bar stock arrival point and waits for the bar feeder to push the bar stock to it.
b. The turret accompanies the feed out:
   The turret moves to the end of the bar stock; the bar feeder starts feeding and pushes the bar stock against the turret. The turret then moves to the bar stock arrival point with the bar feeder still pressing the bar stock against the turret.

Feed out without a turret

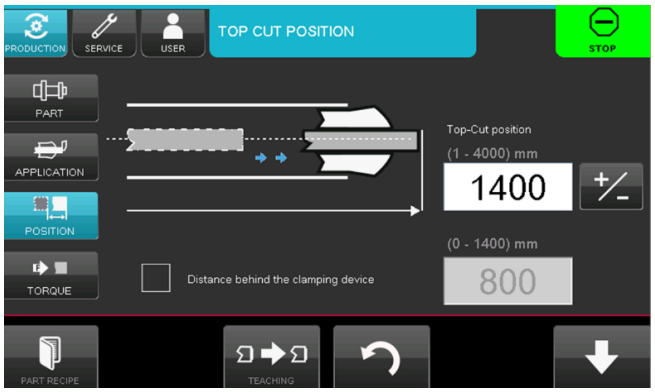
The bar feeder feeds the part. When the collet opens, the pusher moves the bar from the value entered in the setting “total part feed-out length.” The bar feeder cannot feed the part if the manufacturing program provides for the collet to open several times.

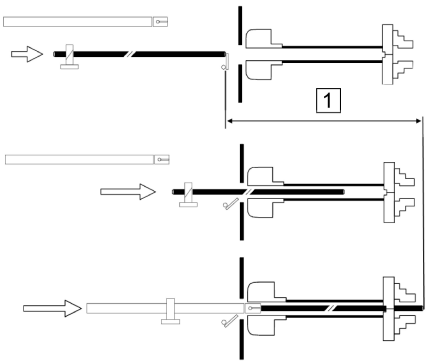
Release of the turret with the “M” function

This setting deactivates the release of the turret using an “M” function if it is not present in the lathe interface. In this case, a delay can be used to start the release.

7.7.5 POSITIONS

Top-cut position

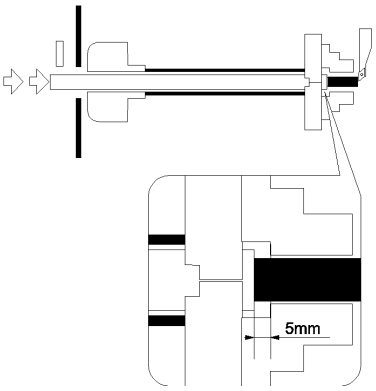




At feed out, the bar is entered into the spindle then automatically positioned in the clamping device of the lathe.

This positioning corresponds to a value (1) programmed by the operator, which is equivalent to the distance between the light sensor and the position of the bar stock in the clamping device of the lathe.
Thanks to this system, the adjustment is always the same irrespective of the length of the bars.

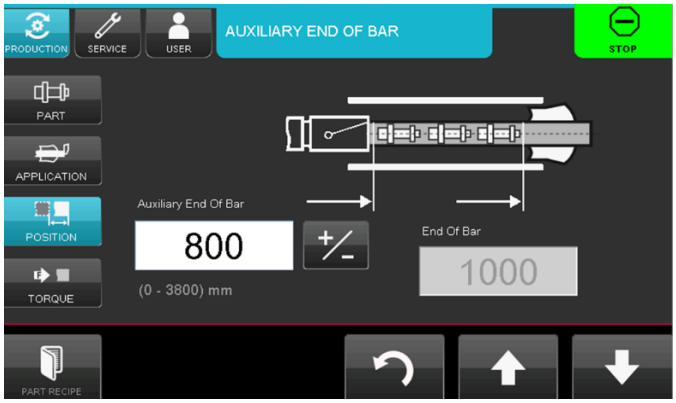
End of bar signal position

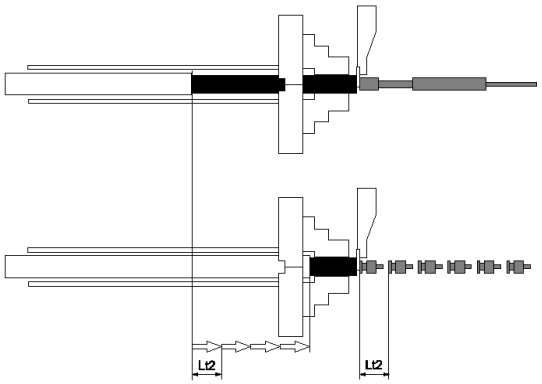


The time at which the bar feeder enters the loading cycle is determined by the position of the end of bar signal.

In principle, the end of bar position is set as close as possible behind the clamping device of the lathe (around 5 mm) so that bar remnants are as short as possible.
Irrespective of the bar or part length, the end of bar signal position is always the same. Nevertheless, certain specific cases may require a different end of bar signal adjustment.

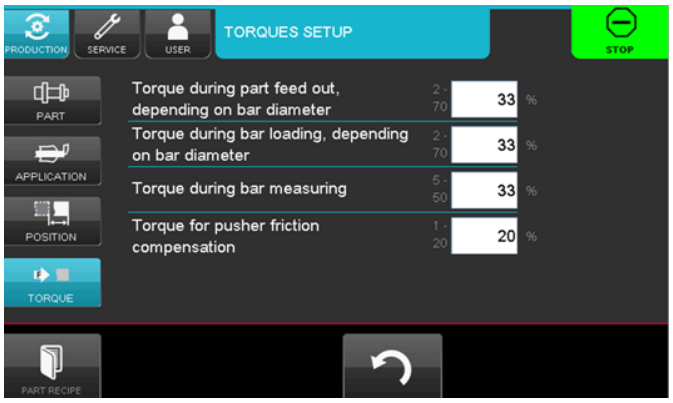
Auxiliary end of bar signal position





Depending on the lathe and the options it has, the auxiliary bar end signal may be used in several ways. For example, to open an additional guiding front rest installed behind the lathe spindle. The adjustment is the same as for the bar end signal.

7.7.6 TORQUE



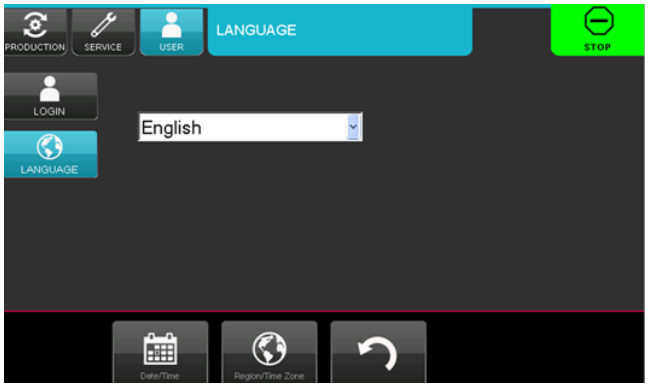
Torque adjusted depending on the diameter for part feed-out (%)
Depending on the diameter of the bar, the bar feeder suggests an appropriate pushing torque. If they wish the operator can modify this torque. When the bar stock to be loaded has a specific high weight, the torque must be significant. The inverse is true if the specific weight of the bars is low.

Torque adjusted depending on the diameter of the bar stock in quick operation (%)
The same principle applies for the part feed out torque, this time applied in quick operation.

Torque during bar measuring (%)
During the bar measuring process, the bar feeder suggests an appropriate pushing torque.

Torque adjusted for compensating the pusher friction (%)
Depending on the friction caused by the pusher, the bar feeder suggests an appropriate pushing torque.

7.7.7 LANGUAGE



The language menu enables the user to choose the HMI language of the bar feeder.

INFO

The bar feeder does not necessarily have to be in the STOP position to select the language.

7.7.8 PART RECIPES

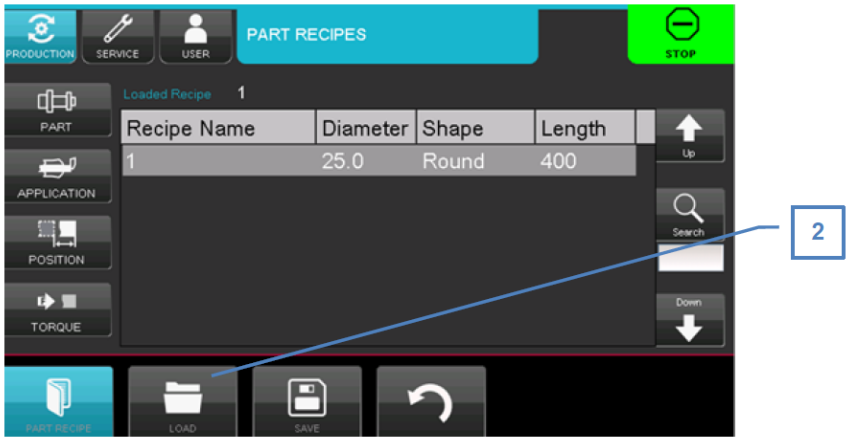
INFO

Part recipes only function if an extension memory card (optional) is installed on the machine.

Please contact LNS or its local representative for more information.

The main screen of the part recipe displays the current status of the library.
The recipe that is currently used is indicated in the “Loaded recipe” field (1).

Loading a part



This screen makes it possible to call and load settings for a part that is in the library to the part settings.

1. Select the part recipe by selecting the line that you want.

- The recipe is highlighted.

2. Press the LOAD key (2).

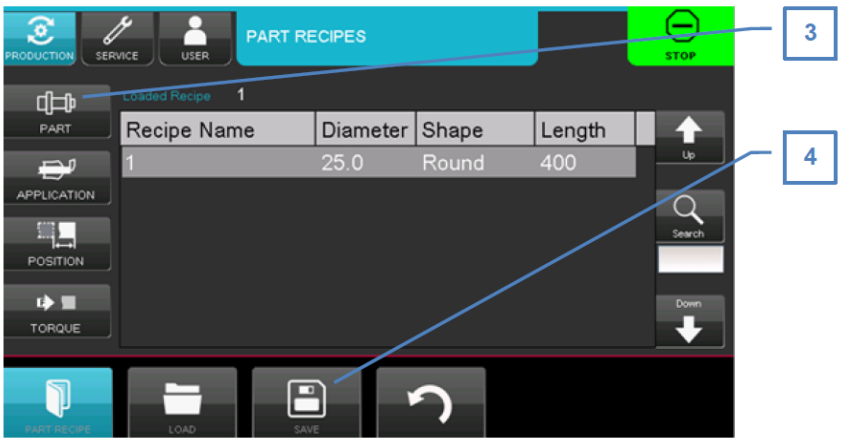
- The recipe is loaded.

Adding a part/saving a part

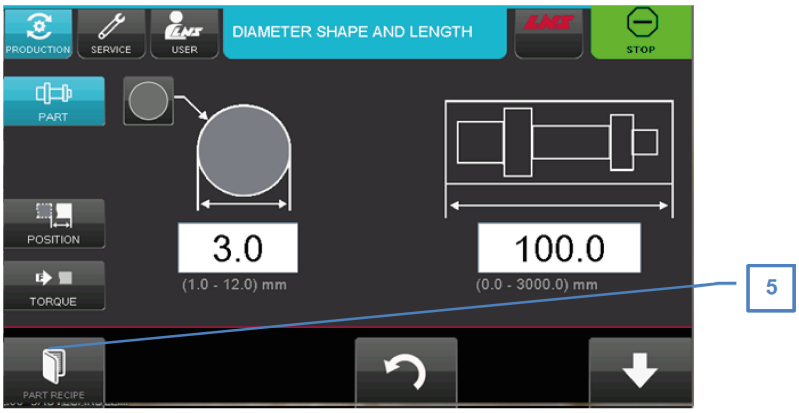
This screen makes it possible to add a new part to the library by saving all the current settings.

To add a part:

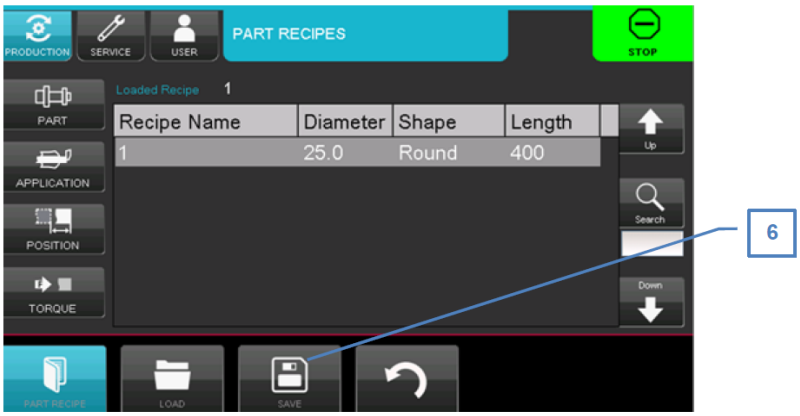
1. Load the part recipe.
2. Press the SAVE key (4).
   Press the PART key (3) to make the changes to the part settings.



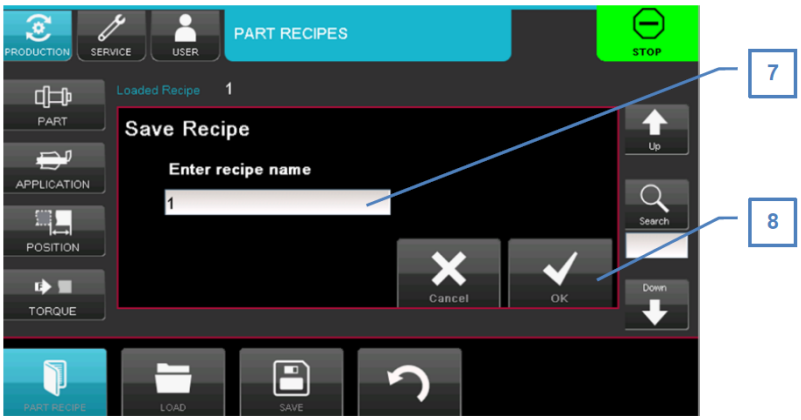
3. Press the PART RECIPE key (5).



4. Press the SAVE key (6).



5. Enter the name of the recipe into the field (7).
6. Press the OK button (8) to confirm.



INFO

Entering and confirming an existing name will delete the existing data!

The previous settings will be deleted.

Use another name before confirming the save.

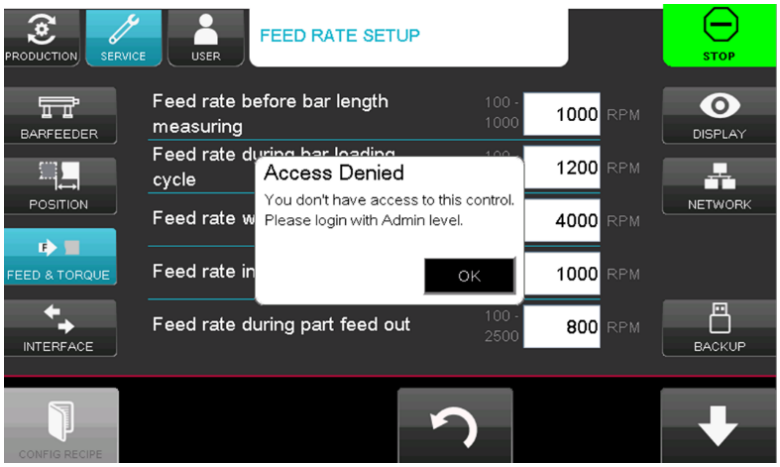
7.7.9 SERVICE

The service settings make it possible to:

- Configure the bar feeder in its environment.
- Adapt the interface that connects it to the lathe.

INFO

Changing the service settings can damage the machine and create operator safety issues.
Therefore, these settings can only be accessed by an ADMIN.
Only an LNS (or certified) technician is authorized to change them.
Details of these settings are described separately in the 🕮 *Service Manual*.



7.7.10 INFORMATION PAGE

1. Press the INFO key (1) to display the options available on the information page.

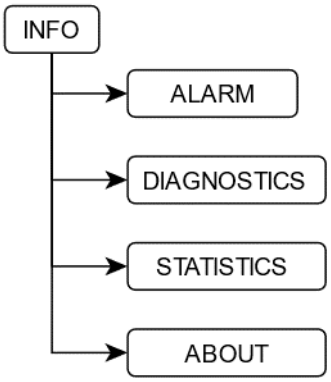
INFO

To facilitate navigation, you can view the diagram designed for this purpose (→ INFORMATION on page 78).

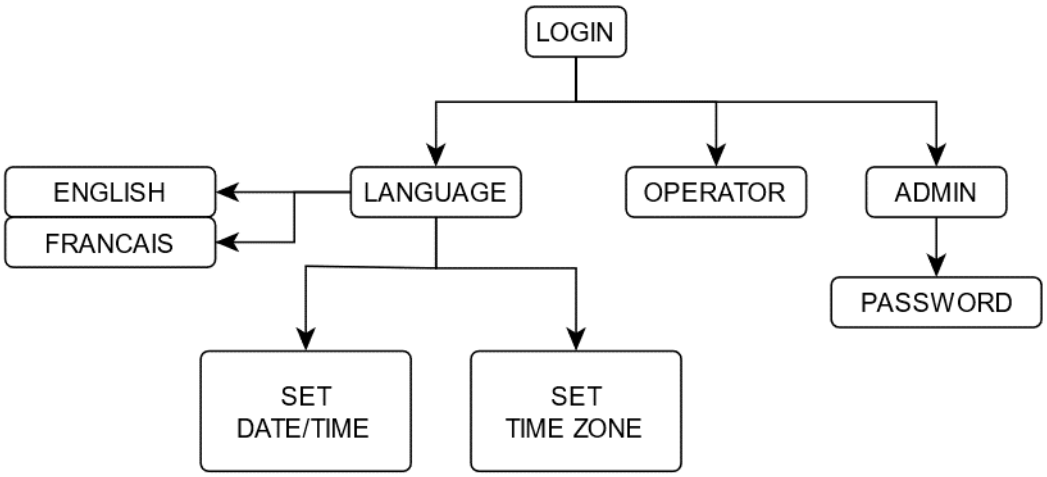
7.7.11 AUTOMATIC CYCLE

7.8 MENU STRUCTURE

7.8.1 INFORMATION

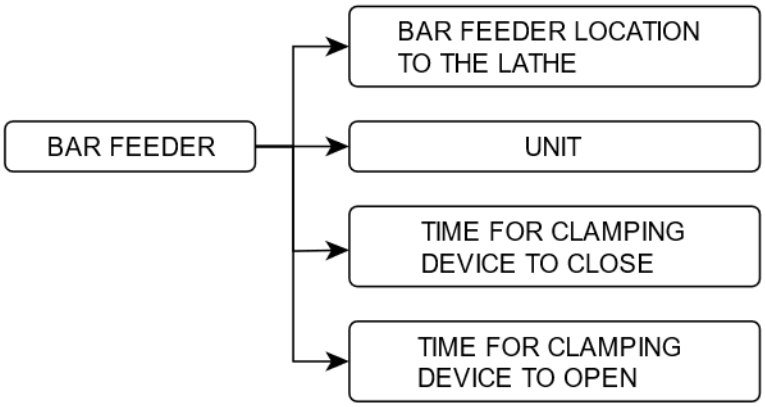


7.8.2 LOGIN

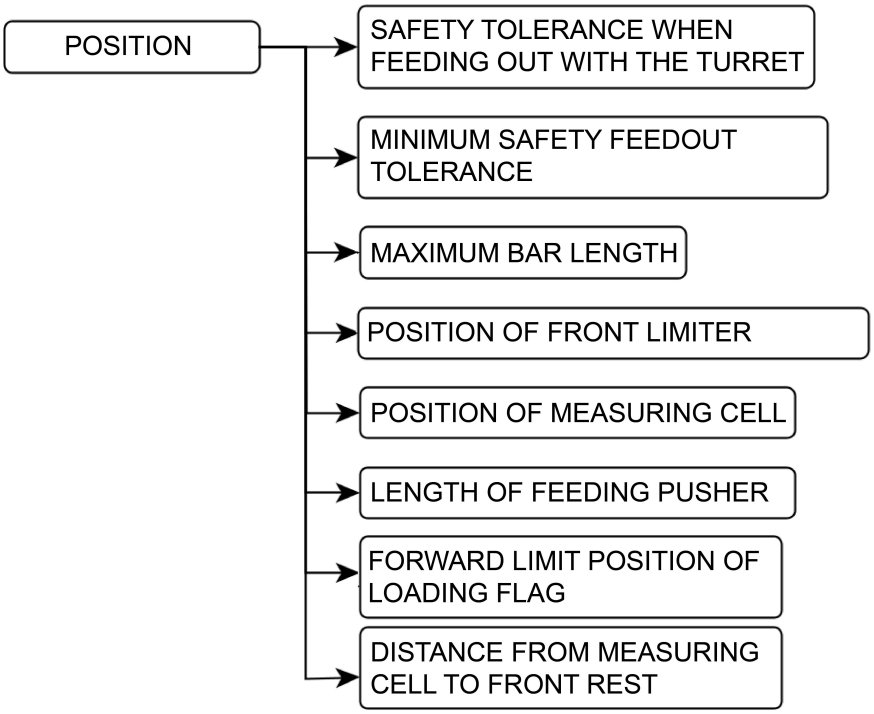


7.8.3 SERVICE

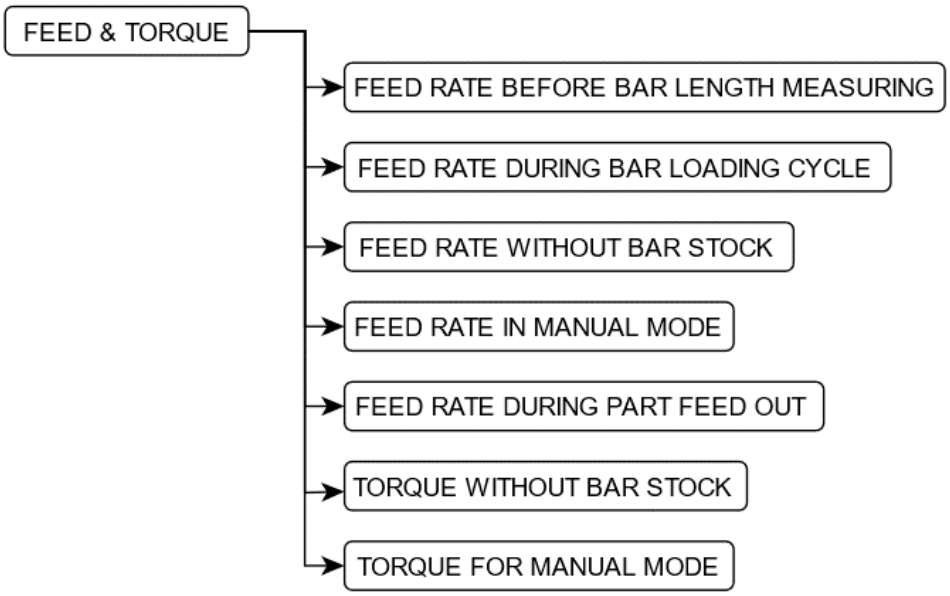
BAR FEEDER



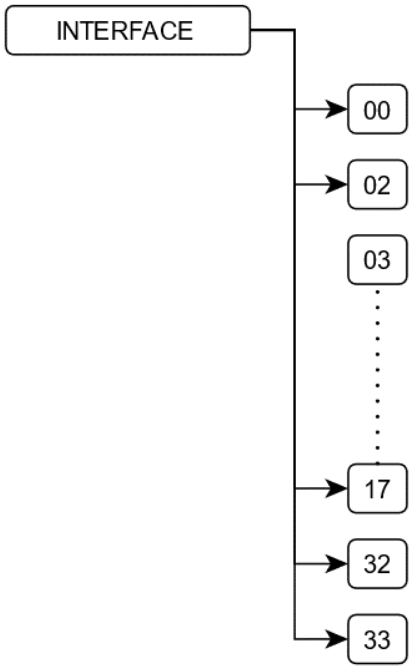
POSITION



FEED RATE/TORQUE



INTERFACE



8 MAINTENANCE

This chapter describes simple maintenance work that needs to be carried out on a regular basis.
The maintenance work can be carried out by operating personnel.

WARNING

Risk of injury from moving parts!

Crushing hazard.

Stop the machine before carrying out any maintenance work.

8.1 INSPECTIONS

8.1.1 INTERVALS

Component	Maintenance operation	Every day	Every week	Every month	Every six months	Every year
Emergency stop button	Check that the component is working properly.	X				
Safety systems controls	Check that all safety systems are operating correctly.				X	
Battery	Check the condition of the component and replace it if necessary. Replace at least once a year.			X		
Pneumatic equipment	Check the operating pressure.	X				
Main access cover lift support cylinders	Check that the cylinders are still in working order and are not worn out from use. See (→ MAIN ACCESS COVER LIFT SUPPORT CYLINDERS on the next page)					
Pneumatic equipment	Check the air valves block control, air conditioning unit purge					X
Hydraulic equipment	Check the oil quality and level in the hydraulic tank. Check for excessive dirt deposit at the base of the bar feeder. Change the oil if necessary.			X		
Hydraulic equipment	Change the oil. See (→ DRAINING AND FILLING THE HYDRAULIC OIL on page 83)			X		

Component	Maintenance operation	Every day	Every week	Every month	Every six months	Every year
Bar feeder	Clean the bar feeder.					X
Feeding system	Check the pusher supports		X			
Feeding system	Check the pusher belt drive, pusher guides, chain loader, guiding elements, pusher holding rollers			X		
Mounting system	Check the bar feeder anchoring and alignment					X

INFO

The maintenance intervals only serve as a guideline. They must be adapted according to the application, environment and the air quality.

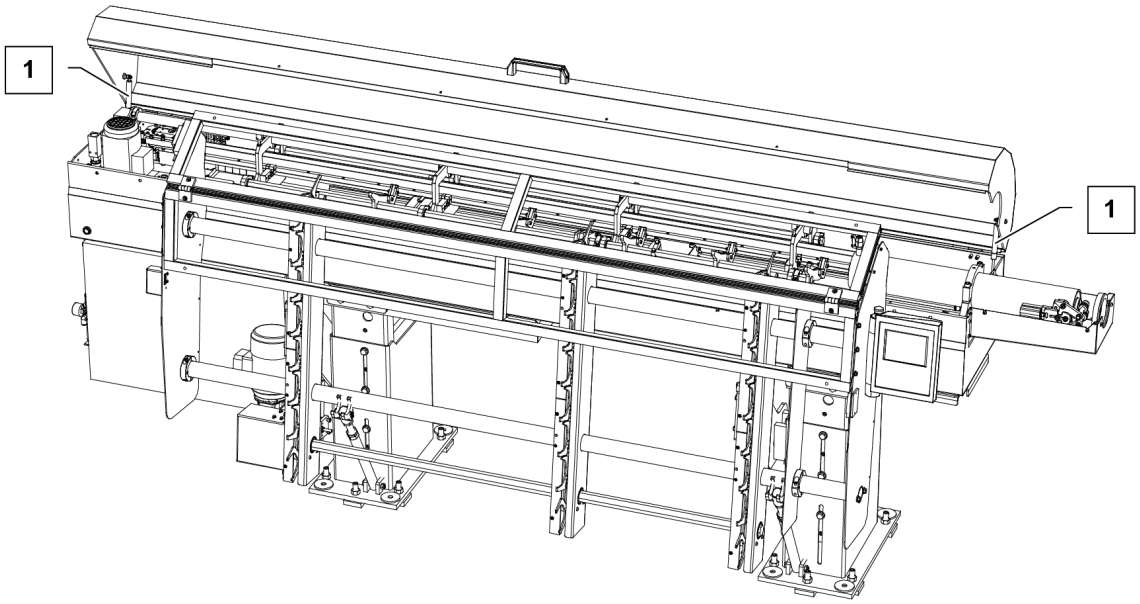
8.2 MAIN ACCESS COVER LIFT SUPPORT CYLINDERS

WARNING

Crushing, hazard from falling main access cover!

Ensure that the main access cover lift support cylinders firmly support the main access cover. If they are worn out, it is a crushing hazard and they must be replaced. Contact LNS or its local representative.

The main access cover lift support cylinders may become worn out over time. If the main access cover lift support cylinders become weak and do not support the main access cover firmly, they need to be replaced. Contact LNS or its local representative.



8.3 DRAINING AND FILLING THE HYDRAULIC OIL

The bar feeder is supplied without oil.

Hydraulic oil type	Viscosity index (CST at 40°C/104°F)	Quantity (l)
ISO VG 100	100	60

INFO

A thicker oil (ISO VG 150) may, in certain cases, produce better results when guiding profiled bars.

Follow the steps below to drain the hydraulic tank:

1. Turn the bar feeder off.
2. Place a container with sufficient capacity underneath the drain plug.
3. Unscrew the drain plug. The oil drains into the container.

Follow the steps below to fill the hydraulic tank:

1. Turn the bar feeder off.
2. Open the main access cover and pour the oil directly into the bottom of the bar feeder.

IMPORTANT

Harmful to the environment!

Used oil is a pollutant and must not be disposed of in drains or outdoors.

Bring used oil to a recycling center.
Otherwise, have it recycled by an authorized local service.

8.4 CLEANING

NOTICE

Risk of machine disruption from lack of cleanliness!

Clean the bar feeder regularly.

NOTICE

Risk of damage to the bar feeder and its components!

At no time should solvents, such as acetone or thinners be used for cleaning the bar feeder. At no time should cleaning products come into contact with electrical components.

8.4.1 BAR FEEDER

Cleaning the bar feeder can only serve to improve its operation and prolong its useful life.

To clean the outside of the bar feeder, use a soft cloth and a regular detergent. For the inside, use a cloth or a brush soaked in petrol or benzine. However, make sure that the rollers and parts made of synthetic materials do not come into contact with these products.

The use of compressed air for cleaning is not advisable, because particles could become lodged in sensitive areas and compromise the operation of the bar feeder.

CAUTION

At no time should solvents, such as acetone or thinners be used for cleaning the bar feeder. At no time should cleaning products come into contact with electrical components.

CAUTION

The guiding element is sensitive to corrosive products. Use a soft cloth to clean it.

8.4.2 BARS

It is important to clean the bars, even briefly, before loading them onto the loading ramp. Excessive dirt can form a deposit at the base of the bar feeder, which can in turn slow the oil return.

8.5 BATTERIES

In the event of a power failure, a backup battery saves the data contained in the PLC. It is possible that with time this battery will slowly drain; in this case a message will be displayed on the remote control. The battery must be replaced as soon as possible with a battery of the same type. The same applies to the servo amplifier.

INFO

Switching off the bar feeder when the message “Battery low” is displayed may wipe the parameters.
Do not switch off the power until the battery has been replaced.

9 DISPOSAL

At the end of its service life, the machine will be permanently decommissioned and deposited at a recycling collection point.

IMPORTANT

Harmful to the environment!

Improper disposal of the machine may result in serious environmental damage.

Drop off the machine at a recycling collection point.
Otherwise, have it recycled by an authorized local service.

Procedure:

1. Clean the machine.
2. Allow the machine to air dry.
3. Lightly lubricate the moving parts.
4. Turn the machine on.
5. Empty the lubricant from the system.
6. Depressurize the pneumatic circuit.
7. Bring all components to the recycling point, sorted according to their materials.

10 ALARMS

DANGER

Electrical hazard!

Danger of death by electrocution.

Work on the electrical system must only be performed by a qualified electrician. In the case of a fault that may be electrical in origin, please contact LNS or its local representative.

10.1 ALARMS

AL00 – NO PLC SOFTWARE!

Description

Only the PLC Boot software is installed.

Solutions

1. Load the correct PLC application software.

AL01 – SAFETY LINE OPEN!

Description

The emergency stop has been activated on the bar feeder and the lathe. This alarm is generated every time the emergency line is open.

Solutions

1. Check the emergency stop button condition on the bar feeder and on the lathe.
2. Check the wiring according to the wiring diagram.
3. Check the PLC connection.

AL02 – MAIN ACCESS COVER OPEN!

Description

The controller does not detect the entry (X11 – SQ11) of the safety sensor of the main access cover. This alarm is generated when the main access cover of the bar feeder is open, exposing moving mechanical parts

Solutions

1. Close the main access cover.
2. Check the sensor SQ11.

AL03 – PROTECTION GRID OPEN!

Description

The PLC is not detecting the safety detector input (I3 – SQ11) on the protection grid. This problem is generated when the grid is open, exposing automated mechanical parts.

Solutions

1. Close the protection grid.
2. Check the SQ11 switch.

AL04 – BAR FEEDER NOT IN WORKING POSITION!

Description
The controller does not detect the entry (X10 – SQ10) of the safety sensor on the retraction device. The problem arises when the device has not been put back in the working position.

Solutions

1. Check the bar feeder position.
2. Check the switch SQ10.

AL06 – AIR PRESSURE FAILURE!

Description
The controller does not detect the entry (X27 – SP1). The problem arises whenever the air pressure is lower than 3 bar or 45 psi.

Solutions

1. Check the air level (min. 3 bar, max. 6 bar).
2. Adjust the pressure switch SP1.
3. Replace the pressure switch SP1.

AL07 – PLC ERROR :{0}!

Description
The controller has generated an internal error.

Solutions

1. Press the STOP button.
2. Re-start the machine.

AL12 – FAILURE WHILE LOADING TABLE MOVING UP!

Description
A mechanical blockage is preventing the movable crosshead from moving up.

Solutions

1. Check that no mechanical obstruction is preventing the loading table from moving up.

AL13 – FAILURE SWITCH SQ1!

Description
The PLC is not detecting the input (I8 – SQ1).

Solutions

1. Check the switch SQ1.

AL14 – FAILURE SWITCH SQ2!

Description
The PLC is not detecting the input (I9 – SQ2).

Solutions

1. Check the switch SQ2 .

AL15 – FAILURE WHILE LOADING TABLE MOVING DOWN!

Description
A mechanical blockage is preventing the movable crosshead from moving down.

Solutions

1. Check that no mechanical obstruction is preventing the loading table from moving down

AL16 – FAILURE SWITCH SQ3!

Description
The controller does not detect the entry (X2 – SQ3).

Solutions

1. Check the sensor SQ3.

AL17 – FAILURE SWITCH SQ4 OR MOTOR M2!

Description
The controller does not detect the entry (X3 – SQ4).

Solutions

1. Check the sensor SQ4.
2. Check the motor M2.

AL18 – FAILURE GUIDING CHANNEL 1

Description
The guiding channel 1 can not open or close.

Solutions

1. Check the SQ17 sensor.
2. Check the cylinder.
3. Check the pneumatic valve YV06

AL19 – SWITCH SQ01 STILL ACTIVATED!

Description
The sensor SQ1 is still activated.

Solutions

1. Check the sensor SQ1.
2. Check the bar stock presence in front of the sensor.

AL21 – FAILURE SWITCH SQ5!

Description
The controller does not detect the entry (X4 – SQ5).

Solutions

1. Check the sensor SQ5.
2. Check the toothed belt tension.
3. Carry out homing.

AL22 – SIGNAL A2 INTERRUPTED!

Description
Signal A2 (automatic cycle) has been lost.

Solutions

1. Check the lathe <-> bar feeder connection.
2. Check the signal A2 wiring “lathe in automatic cycle”.
3. Check the part program in the lathe.

AL23 – LOADING TIME ELAPSED!

Description
The allotted time for reaching the position has elapsed.

Solutions

1. Remove the bar from the spindle.
2. Re-launch the cutting-off cycle.
3. Check the part settings.

AL24 – PART FEED OUT TIME ELAPSED!

Description
The allotted time for reaching the position has elapsed.

Solutions
Signal A1 missing

1. Check if there is a signal when the chuck is closed.
2. Check the wiring of the chuck signal.

AL25 – LATHE DID NOT START IN PRODUCTION CYCLE!

Description
The alarm “LATHE DID NOT START IN PRODUCTION CYCLE” is generated if the bar feeder does not receive the lathe chuck signal (X30 – A1) within a minute of having reached the top-cut position.

Solutions

1. Press the STOP button on the remote control to cancel the alarm.
2. Re-start the lathe and the bar feeder in an automatic cycle.

AL26 – CLAMPING DEVICE HAS CLOSED DURING PART FEED OUT!

Description
Signal A1 (lathe chuck) has been lost before the end of positioning

Solutions

1. Check the part program in the lathe.
2. Check the interface wiring.

AL29 – BAR STOCK NOT AGAINST CUT-OFF TOOL!

Description
The bar stock is not against the cut-off tool.

Solutions

1. Check the lathe clamping system.
2. Check the end of bar position.

AL35 – BAR STOCK MAGAZINE EMPTY!

Description
No bar has been detected in the bar feeder

Solutions

1. Check the presence of bars on the ramp.
2. Load new bars to continue with production.

AL36 – BAR STOCK DETECTED IN BAR FEED SIMULATION MODE!

Description
A bar has been detected in the bar feeder in simulation mode, which poses a danger.

Solutions

1. Check that there are no bars in the bar feeder.

AL37 – BAR STOCK POSITION CONTROL FAILURE!

Description
An obstacle is preventing the pusher from progressing.

Solutions

1. Look for a mechanical obstruction such as an incorrectly loaded bar, tools forgotten in the device, or an incompatibility between the dimensions of the pusher and the spindle liner.

AL38 – LATHE CHUCK OPENED DURING PRODUCTION CYCLE!

Description
Signal A1 (lathe chuck) has been detected at an inopportune moment.

Solutions

1. Check the part program in the lathe.

AL41 – SERVO COMMUNICATION FAILURE!

Description
There is a communication problem between the controller and the servo amplifier.

Solutions

1. Check the connection between the controller and the amplifier.
2. Check that the 24 V power supply is not fluctuating.

AL42 – ALARM SERVO AMPLIFIER!

Description
An alarm is generated on the servo amplifier in the electrical cabinet.

Solutions

1. Contact LNS or its local representative.

AL43 – AMPLIFIER BATTERY IS LOW!

Description
The servo amplifier battery is low.

Solutions

1. The state of charge of the amplifier battery is low. Replace the battery as soon as possible.
   Do not switch off the bar feeder until the battery has been replaced.

AL44 – SERVO DRIVE NOT READY!

Description
There is a communication problem between the controller and the servo amplifier.

Solutions

1. Check that the CN1B cable is correctly connected to the servo amplifier.
2. Check that the SOUND outlet on the controller is activated in manual or automatic mode.

AL45 – POSITIONING COULD NOT BE REACHED!

Description
An obstacle is preventing the pusher from progressing.

Solutions

1. Look for a mechanical obstruction such as an incorrectly loaded bar, tools forgotten in the device, or an incompatibility between the dimensions of the pusher and the spindle liner.

AL46 M-CODE PART BEGIN NOT IN SYNC!

Description
The parts counter and the number of chuck openings do not match.

Solutions

1. Check the part program in the lathe.
2. Check the number of chuck openings in the parts settings.

AL47 – SQ1 SENSOR ACTIVATED TOO SOON!

Description
The controller detects the entry (X1 – SQ1) before the safety distance has been reached when measuring the bar.

Solutions

1. Press the STOP button on the remote control to cancel the message.
2. Press the SERVICE button.
3. Press the POSITION button.
4. Search for the value corresponding to the text “MAX LENGTH OF BAR”.
5. This value cannot exceed that of the spindle length. Correct this value, if necessary.
6. Measure the bar to be loaded. This bar must not exceed the value entered above.

AL48 – A21 ABSENT!

Description
Loading or unloading cycle is interrupted due to the lathe signal A21 being missing.

Solutions

1. Switch on the signal A21 “lathe in function”.

AL49 – DEFAULT WITH TELESCOPIC PUSHER SYSTEM!

Description
The telescopic pusher system has caused an error.

Solutions

1. Contact LNS or its local representative.

AL50 – PART ID DOES NOT EXIST!

Description
An invalid part ID has been requested.

Solutions

1. Check the part ID. If necessary, create it before use.

AL52 – SERVO MOTOR REBOOT REQUESTED!

Description
The servo motor reboot has been requested.

Solutions

1. Contact LNS or its local representative.

AL53 – PUSHER SIGNAL MISSING!

Description
The pusher signal is missing.

Solutions

1. Contact LNS or its local representative.

AL55 – FEED PART TOO SHORT!

Description
The feed part is too short.

Solutions

1. Check the length of the bar.

AL56 – STOP AFTER A BAR!

Description
The operator has chosen to stop loading when the bar is changed.

AL57 – FILE STORAGE COMPLETE!

Description
The maximum number of stored parts has been reached.

Solutions

1. Delete parts in the library.

AL58 – INCORRECT PART CONFIGURATION!

Description
The part ID requested does not match the current settings.

Solutions

1. Check the diameter and shape of the bar.

AL59 – FILE READ ERROR!

Description
File cannot be read.

Solutions

1. Check the file (by loading the part). If it cannot be read, delete it and re-create it.

AL64 – PART LOADING FAULT!

Description
M-Code request setting deactivated.

Solutions

1. Check that the M-Code request is active.

AL66 – CUT OFF FEED FAULT!

Description
The values do not correspond to the specifications.

Solutions

1. Check if the value is greater than 0 mm, with a maximum of 50 mm.
2. Check if the value is shorter than the length of the remnant.
3. Check if the part ID in the library is within the range 9990 - 9999.

AL67 – ECONNECT COMMUNICATION FAULT!

Description
There is a communication problem between the lathe and the bar feeder.

Solutions

1. Please contact LNS.

AL80 – ECONNECT – NO RECIPE NAME!

Description
The recipe part name is empty in the eConnect register.

Solutions

1. Check the value loading register.

AL81 – ECONNECT – NO CORRESPONDING RECIPE!

Description
There is no corresponding recipe name in the part library.

Solutions

1. Check the recipe name in the eConnect register.
2. Check the library

AL82 – ECONNECT – DATABASE CONNECTION ERROR!

Description
Database System Error

Solutions

1. Contact LNS or its local representative.

AL83 – ECONNECT – RECIPE CHANGE FORBIDDEN!

Description
The recipe cannot be loaded for the following reason:

- The new recipe has a different diameter or shape as the current one.

- The machine is not in stop mode and in safe position.

Solutions

1. Change the diameter or the shape.
2. Put the barfeeder in stop mode and in safe position

AL84 – ECONNECT – NO COMMUNICATION WITH LATHE!

Description
The lathe Life-Bit is not functioning.

Solutions

1. Check communication between gateway and lathe controller.
2. Check lathe controller life bit configuration.

AL85 – MOTOR TABLE OVERLOAD!

Description
The loading table cannot move upwards due to blockage/surcharge.

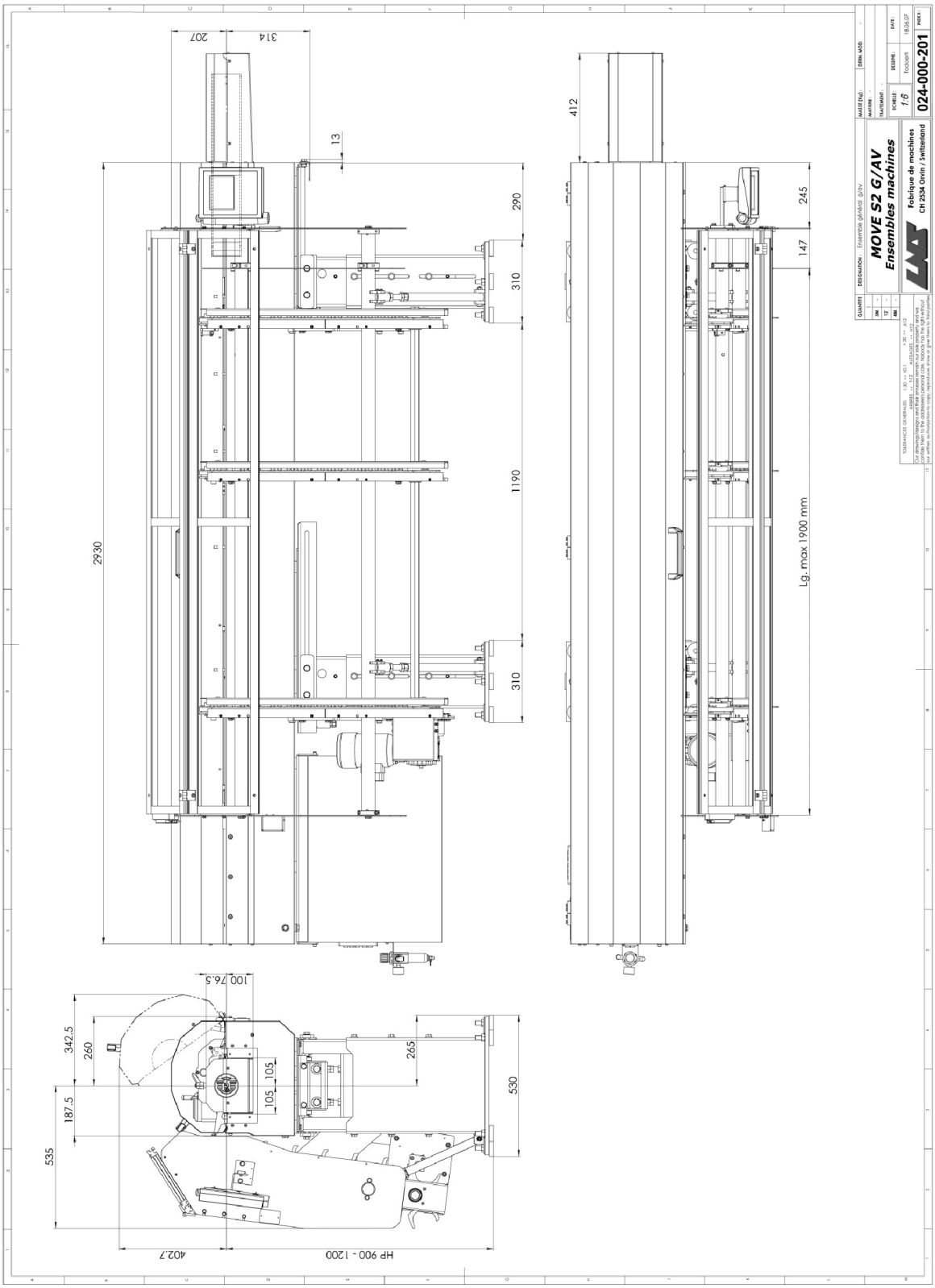
Solutions

1. Remove the overload/blockage.
2. Check sensors SQ41 and SQ03.
3. Check if the table motor direction is erroneously inverted.
4. Contact LNS or its local representative to restart operation.

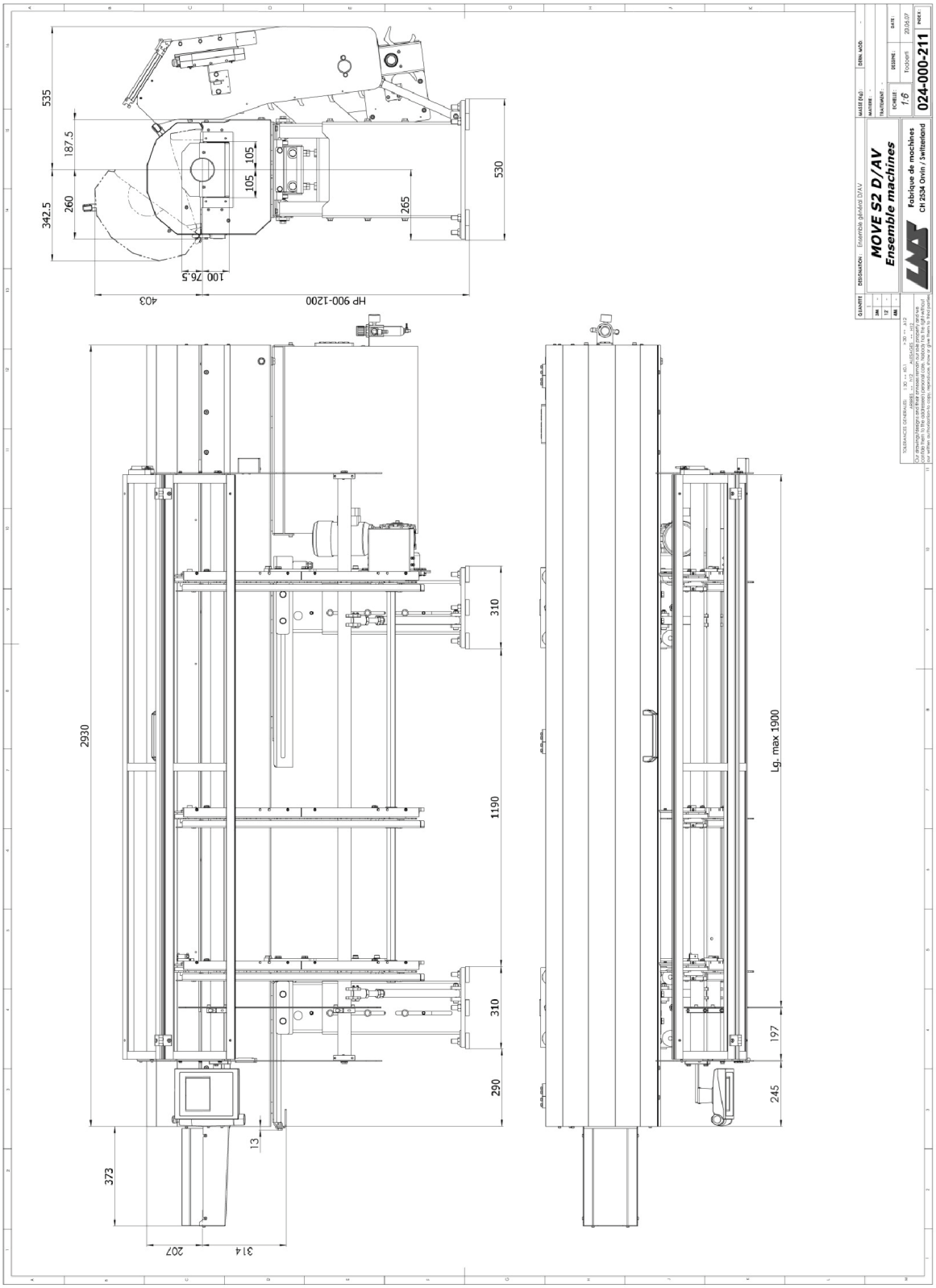
11 APPENDICES

11.1 DIMENSIONAL DRAWING

11.1.1 LEFT/FRONT LOADING



11.1.2 RIGHT/FRONT LOADING



11.2 GLOSSARY

Bearing	Machine component in which a shaft or other elements turn.
Collet	Secures the bar stock and connects it to the pusher.
Drive	Transforms electrical energy into mechanical energy.
Front rest	The last guide element in contact with the bar stock before the entrance of the lathe spindle. Stabilizes the bar movement.
Informed persons	Persons sufficiently informed or supervised by qualified personnel to enable them to avoid the dangers posed by electricity (maintenance or operating staff).
Motor	Equipment transforming electrical energy into mechanical energy.
PLC	Programmable Logic Controller: Digital computer used for process automation. The PLC controls the machine's operation.
Pusher	Controls the movement of the bar stock inside the bar feeder and lathe spindle.
Remnant vice	Fixes the bar stock for insertion or retraction.
Rotating sleeve	Connects the pusher to the collet.
Shaft	Steel bar for supporting rotating elements or to transfer power.
SD card	Removable memory card (Secure Digital).
Qualified personnel	Persons with technical knowledge or experience sufficient to enable them to avoid the dangers posed by electricity (engineers and technicians).

11.3 SPARE PARTS CATALOGUE

A spare parts catalogue is available for this bar feeder.
The catalogue is among the technical documents provided with the machine

11.4 AFTER-SALES SERVICE

LNS Sàrl

Route de Frinvillier

2534 Orvin

Switzerland

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Tel.: +41 (0) 32 358 02 00

Fax: +41 (0) 32 358 02 01

11.5 EC DECLARATION OF CONFORMITY

EC DECLARATION OF CONFORMITY

In accordance with Annex II 1 A of the directive 2006/42/EC

We hereby declare that the machine below meets the requirements of the following directives:

- Machinery directive: 2006/42/EC
- Low voltage directive: 2014/35/EU
- EMC directive: 2014/30/EU

Manufacturer:	**LNS Sàrl** **Route de Frinvillier** **2534 Orvin** **Switzerland**
Authorized Representative:	**LNS Sàrl** **Route de Frinvillier** **2534 Orvin** **Switzerland**
Creation of the relevant technical documents in accordance with Annex VII Section A of the machinery directive 2006/42/EC:	**PLASECO** **Kurt De Pauw** **Route de Payerne 11** **CH-1752 Villars-sur-Glâne** **Switzerland**
Description of machine:	Bar Feeder
Type:	QUICK SIX S2+
Serial number:	

The following national and harmonized standards have been applied:

In relation to the machinery directive:
EN ISO 12100:2010; EN ISO 13855:2010; EN ISO 13857:2019; EN ISO 14120:2015; EN ISO 13849-1:2015; EN ISO 13850:2015; EN ISO 14118:2018; EN ISO 14119:2013; EN ISO 4414:2010; EN 60204-1:2018

In relation to the low voltage directive:
EN IEC 61439-1:2021; EN IEC 61439-2:2021; EN 61439-3:2012/2019-04

In relation to the EMC directive:
EN IEC 61000-6-4:2019; EN IEC 61000-6-2:2019

Place and date
Orvin, April 13th, 2022

(Seal and signature)
Katja Hiltbrunner
Export Manager