EXPRESS 332+ BARFEED

Operations Manual

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

IMPORTANT

READ CAREFULLY BEFORE USE
AND KEEP FOR FUTURE REFERENCE.

Published: 03/2022

TABLE OF CONTENTS

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:

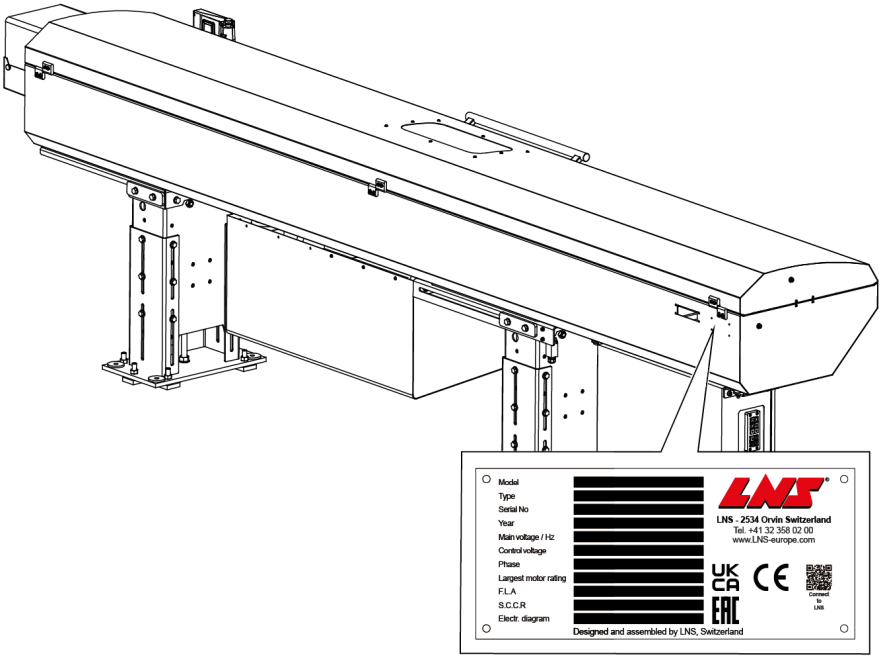
- Modify the machine's operating parameters
- Modify the machine's software
- Repair the machine
- Dispose of the machine

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 EXPRESS 332 S2+ is an automatic bar feeder for long 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 EXPRESS 332 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

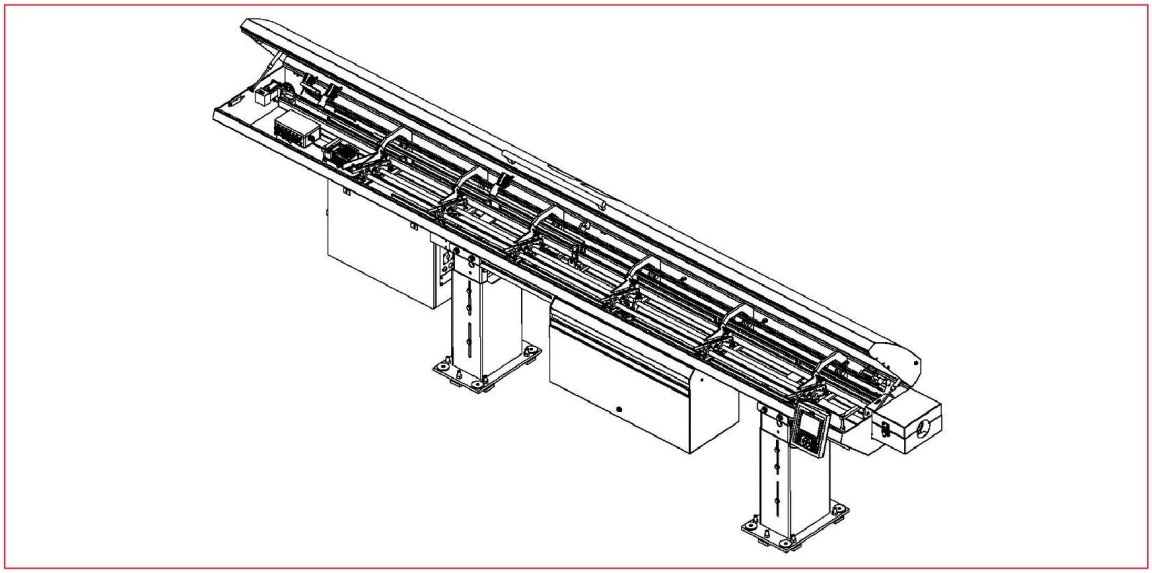
NOTICE

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:

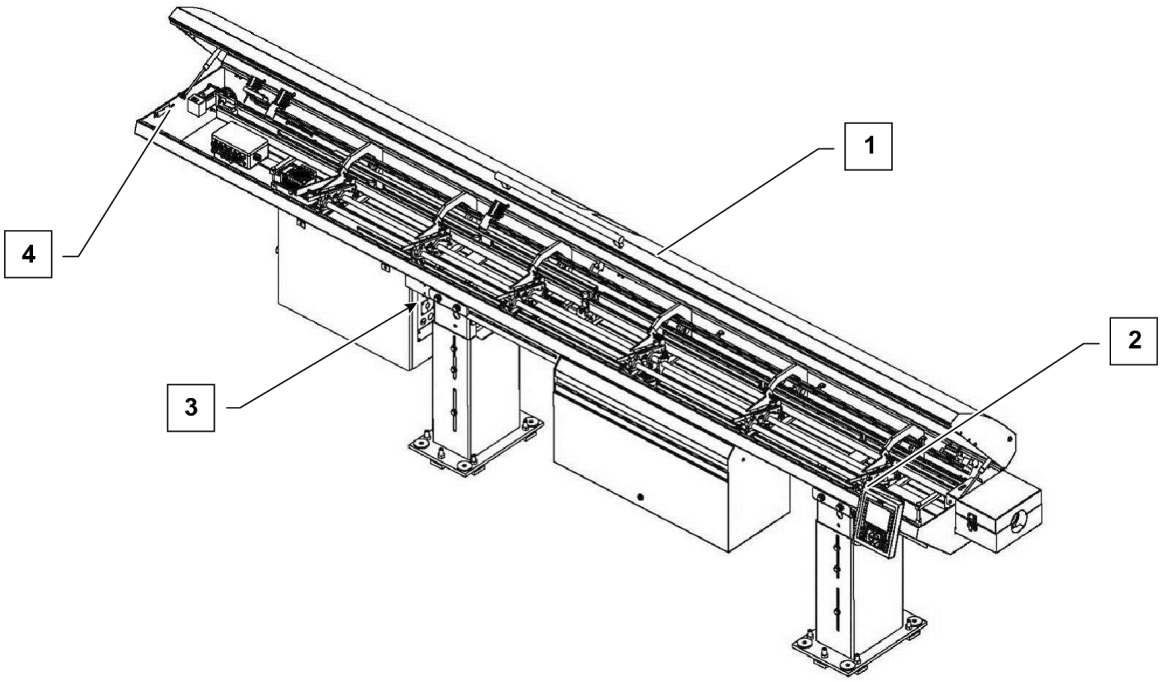
- Do not reach into the bar feeder when machine components are moving.
- Only qualified personnel can operate the bar feeder.

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.

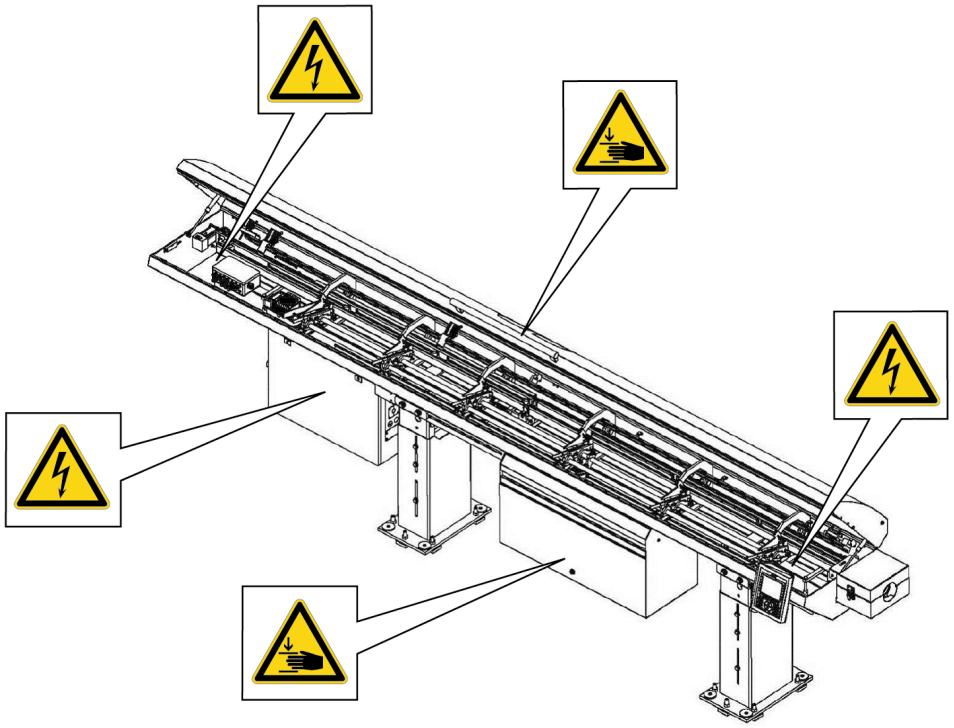


Designation	Description
1	Main access cover
2	Emergency stop button
3	Safety switch of the retraction system (optional)
4	Safety switch of the main access cover

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.



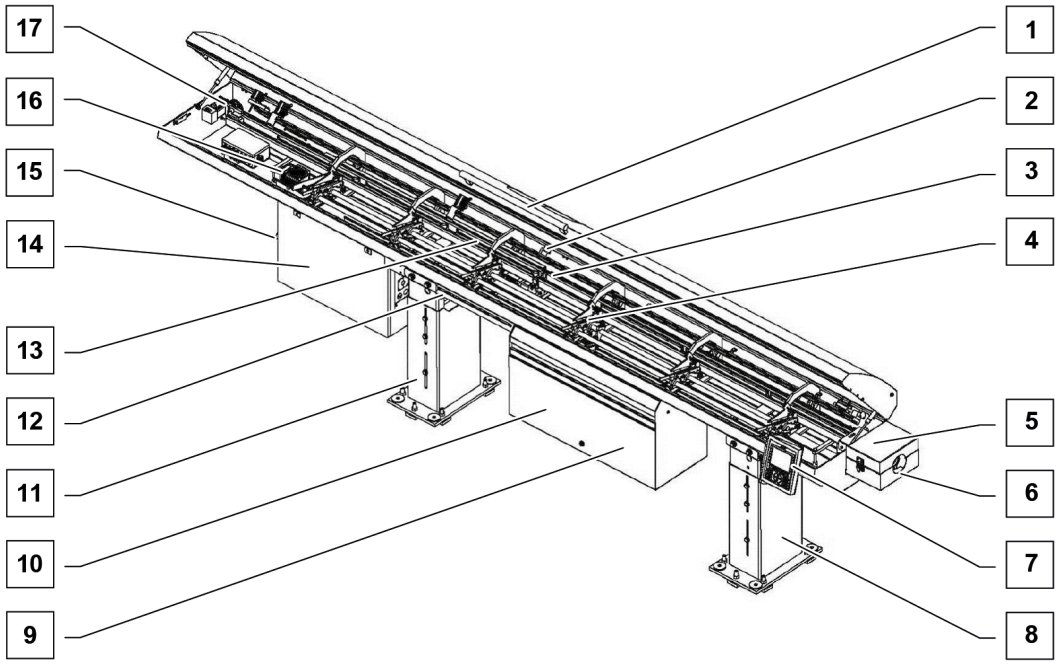
2.12 SAFETY ANALYSIS CONCERNING APPROPRIATE INTEGRATION

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



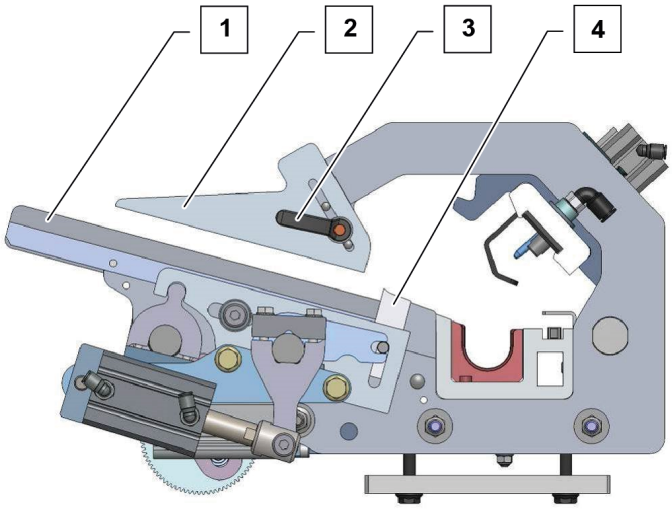
Designation	Description
1	Main access cover
2	Remnant control
3	Remnant extraction
4	Loading ramp / bar magazine
5	Front rest
6	Air blast
7	Remote control
8	Front stand
9	Hydraulic tank
10	Remnant box
11	Rear stand
12	Retraction system (optional)
13	Guiding channel / guiding elements
14	Electrical cabinet
15	Air treatment unit
16	Pneumatic assembly
17	Chain drive

3.2 LOADING SYSTEM

The bar feeder loading system consists of a bar magazine in the form of a loading ramp and an air-actuated bar selection system. The loading system serves to store bars and load them individually into the guiding system. In order to load the bars smoothly, the loading system must be properly set up according to the bar diameter. The bar diameter must be entered into the remote control and the diameter limiters must be manually adjusted.

For instructions on how to adjust the diameter limiters, see (→ ADJUSTING THE DIAMETER LIMITERS OF THE BAR MAGAZINE on page 38)

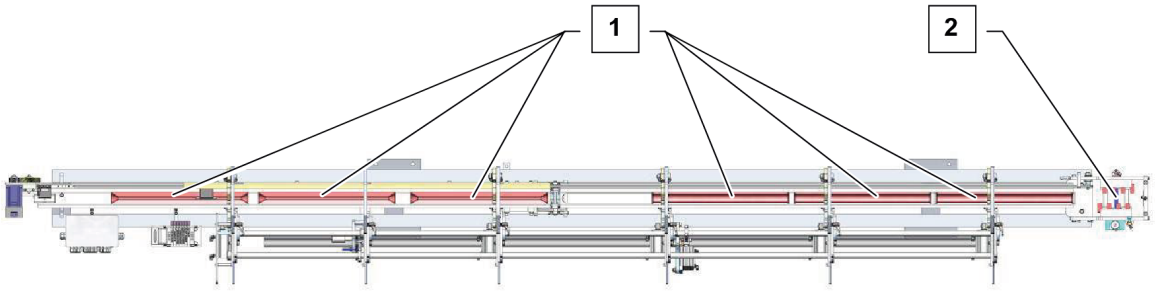
3.2.1 LAYOUT OF THE ELEMENTS



Designation	Description
1	Loading ramp
2	Diameter limiter
3	Locking lever
4	Bar selector

3.3 GUIDING SYSTEM

The guiding system consists of a guiding channel which houses the guiding elements (1) in which the bar rests and rotates, and an automatic front rest (2) located at the front of the bar feeder. The guiding channel is closed by an automated movable cover when the bar feeder is in operation. Hydraulic oil is injected into the channel and distributed all along the bar, which keeps it at the center of the guiding axis. At the front of the bar feeder, the automatic front rest which is also supplied with hydraulic oil, maintains and further guides the bar towards the lathe for optimal performance.



3.3.1 GUIDING CHANNEL AND GUIDING ELEMENTS

The guiding channel cover can be opened or closed on the remote control in manual mode. The cover seals the guiding elements between the remnant vice and the top cut measuring device. The pusher assembly and bar are then completely located inside the channel. The hydraulic oil is injected into the space between the guiding elements and the pusher/bar.

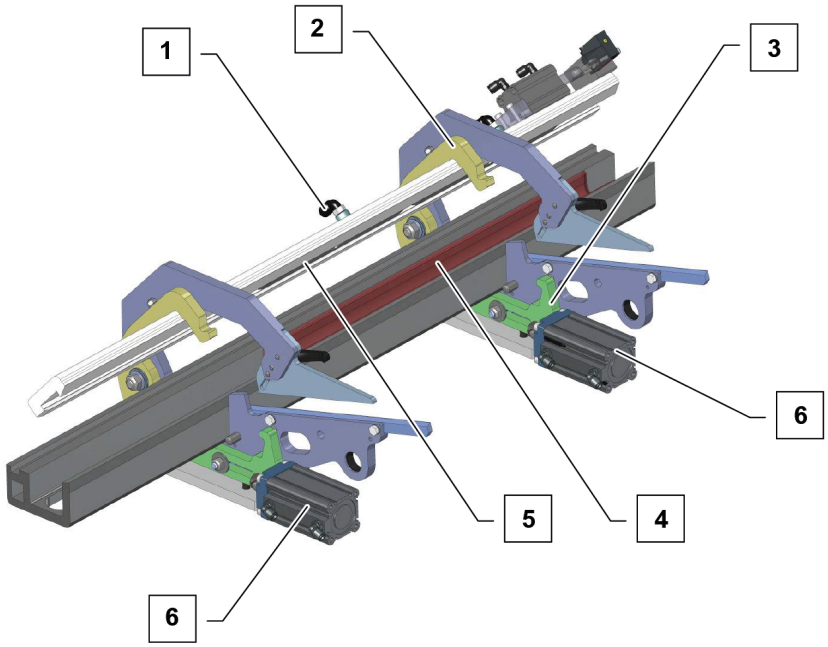
The functions of the guiding system are:

- to keep the pusher at the center of the guiding channel axis,
- to house the moving/rotating components inside,
- to seal the section of the guiding channel into which oil is injected, thereby maintaining the hydraulic system's working performance.

Sets of guiding elements specific to different bar diameter ranges are available in the spare parts catalog.

For instructions on how to change the guiding channel guiding elements, see (→ CHANGING THE GUIDING ELEMENTS OF THE GUIDING CHANNEL on page 39)

3.3.1.1 LAYOUT OF THE ELEMENTS



Designation	Description
1	Hydraulic oil supply
2	Upper locking of the guiding system
3	Lower locking of the guiding system
4	Guiding elements
5	Damping plate
6	Pneumatic cylinders of the for opening/closing of the channel

3.3.2 FRONT REST AND FRONT REST GUIDING ELEMENTS

Located at the front of the bar feeder, the front rest stabilizes the rotating bar before entering the lathe.

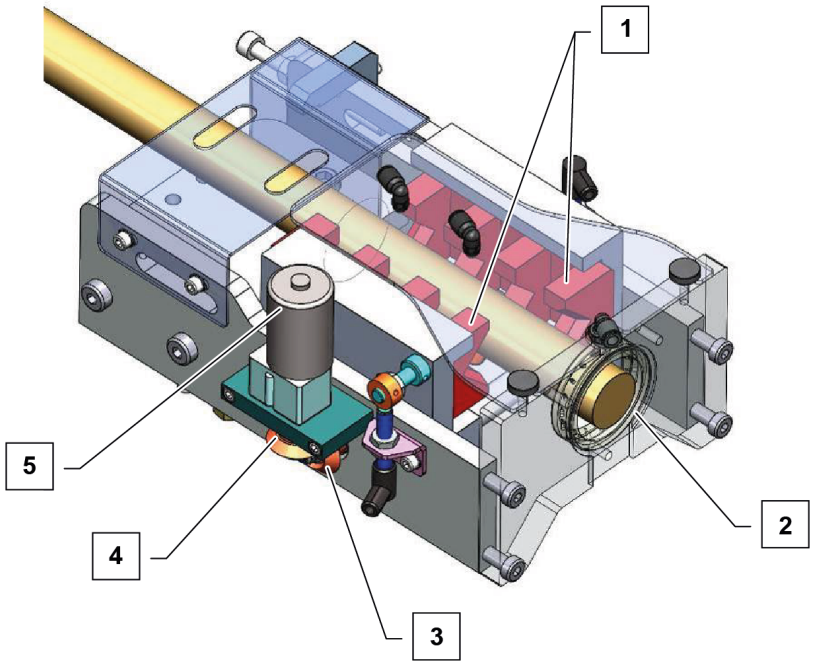
The guiding elements of the front rest can be in a closed or open position.

- Closed position: holding and guiding the bar
- Open position: holding and guiding the pusher

The closed and open positions are automatically set up by entering the pusher and bar stock diameter in the parameters. Each time the guiding system is opened, the front rest searches for its referencing position.

For instructions on how to change the front rest guiding elements, see (→ CHANGING THE GUIDING ELEMENTS OF THE FRONT REST on page 40)

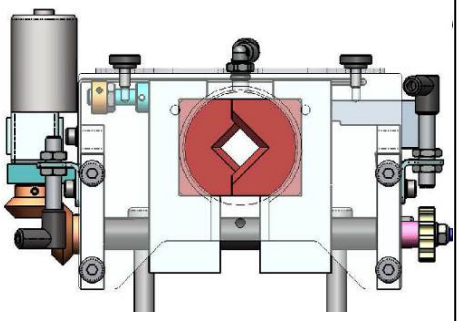
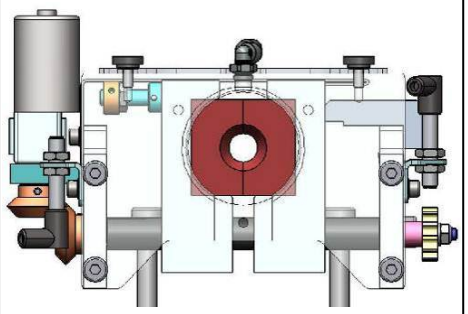
3.3.2.1 LAYOUT OF THE ELEMENTS



Designation	Description
1	Front rest guiding element for round/profiled bar
2	Air blast
3	Pinion
4	Pinion drive
5	Motor

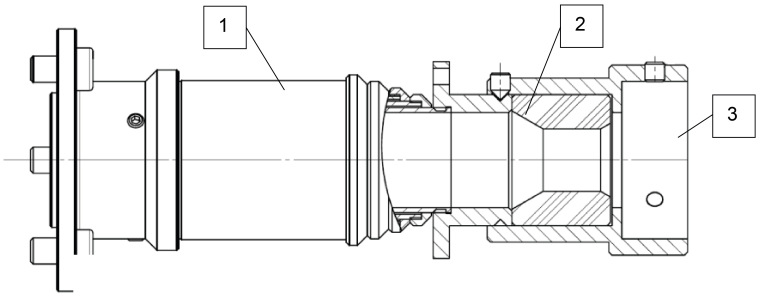
3.3.2.2 FRONT REST GUIDING ELEMENTS FOR ROUND/PROFILED BARS

Depending on the shape of the machined bar, different sets of front rest guiding elements are available.

Guiding element shape	Use
	**Round bars** For round bars, the standard guiding elements are automatically set to the best position.
	**Profiles bars** For profiled bars, the best performance is reached with special guiding elements adapted to the bar stock outer diameter. The best guiding quality is determined by guiding elements 1 mm bigger than bar stock diameter. Hexagonal : 25 mm across flats Square : 20 mm across flats Drilling : 29 mm max

3.3.3 CONNECTING PARTS TO THE LATHE

Several components connect the bar feeder to the lathe.



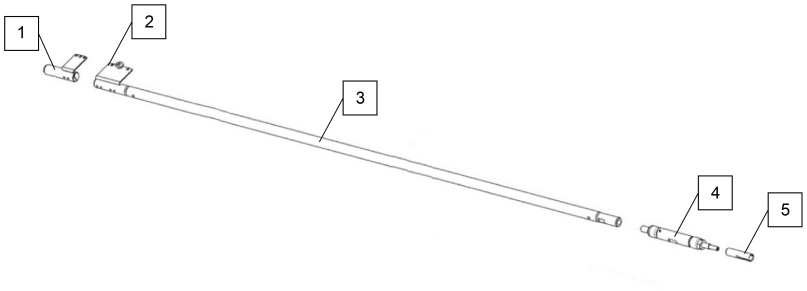
Designation	Description
1	Telescopic tube
2	Adaptation parts
3	Guiding bushing

3.4 FEEDING SYSTEM

The feeding system consists of the pusher assembly and chain 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

3.4.1 LAYOUT OF THE ELEMENTS



Designation	Description
1	Loading finger
2	Flag
3	Pusher
4	Rotating sleeve
5	Collet (and adapter)

In relation to the channel diameter, various sizes of flags, pushers, rotating sleeves, adapters, and collets are available from the spare parts catalog.

3.4.2 PUSHER

The pusher assembly is composed of the loading finger and the pusher. They are carried by a belt. The loading finger, which is always connected to the belt, mainly serves to move the bar to the collet insertion position.

The pusher controls the bar movement either inside the bar feeder or lathe spindle. When the guiding system is open, the pusher is not connected to the belt. When the guiding system is closed, the pusher is connected to the belt.

In order to produce the shortest remnant possible, the pusher tip must be able to reach the rear end of the lathe chuck.

For the selection of available pusher sets, please refer to the spare parts catalog of the EXPRESS 332 S2+.

INFO

Performance loss due to vibrations!

For best performance, keep a 1 mm gap between the guiding system and the pusher.

For instructions on how to change the pusher, see (→ CHANGING THE PUSHER on page 41)

3.4.3 ROTATING SLEEVE

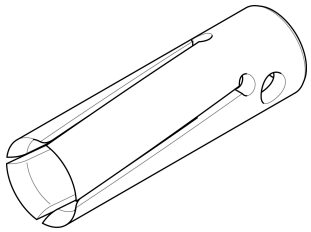
The rotating sleeve is mounted on the tip of the pusher and connects the static part (pusher) to the rotating part (collet). Therefore, both ends of the bar rotate at the same speed.
Because of its function, the rotating sleeve is the most critical component for the bar feeder performance. A poorly working rotating sleeve could result in vibrations and loud operating noises. To keep the bar feeder running at its best performance, it is strongly recommended to inspect the rotating sleeve regularly.

3.4.4 COLLET

The collet connects the bar and the pusher. When the lathe spindle is rotating, the bar is secured by the lathe chuck and the collet.
To ensure that the bar is secured well during machining, the collet must be selected according to the bar dimension.

Standard type

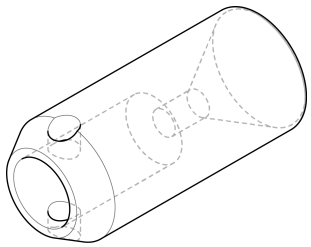
The standard type collet is a cylinder with flexible jaws that clamp the tip of the bar. Each collet matches a specific bar dimension only.
To ensure that the bar is secured well during machining, the collet must be selected according to the bar dimension.



Chuck cone

The chuck cone collet supports the tip of the bar with a corn-shaped recess instead of clamping it. This enables to fit the bar and guiding elements closer together.

When this type of collet is selected, the service parameter must be set up accordingly.



3.4.5 ADAPTER

Adapters may be needed to connect the collet and the rotating sleeve.
Four standard adapters are available with each purchased bar feeder.

3.4.6 CHAIN DRIVE

The chain drive is controlled by a servomotor piloting all of the forward and backward movements of the pusher assembly as well as the insertion and extraction movements of the bar in the collet.

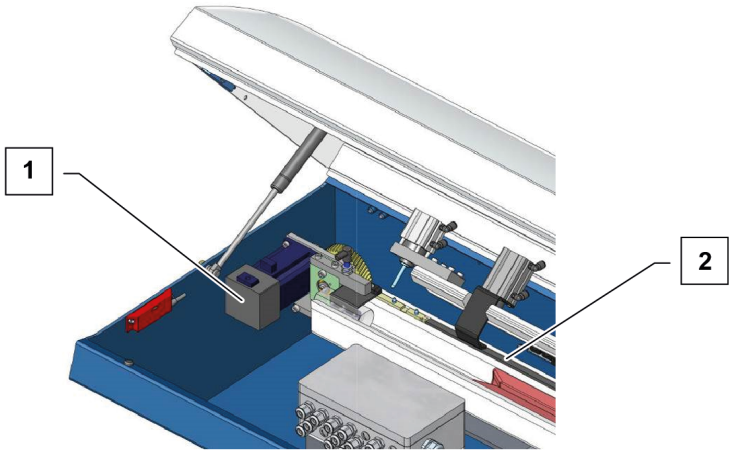
Depending on the use of the machine, the chain may need to be retentioned. If the tension of the toothed belt needs to be adjusted or replaced, please contact your LNS service representative.

NOTICE

In operation, the chain must always remain taut. If the chain and the wheels are misaligned, the drive will lose its reference points. In this case, the drive's original reference points must be reloaded.

If the chain needs to be retentioned or replaced, contact LNS or its local representative.

3.4.6.1 LAYOUT OF THE ELEMENTS

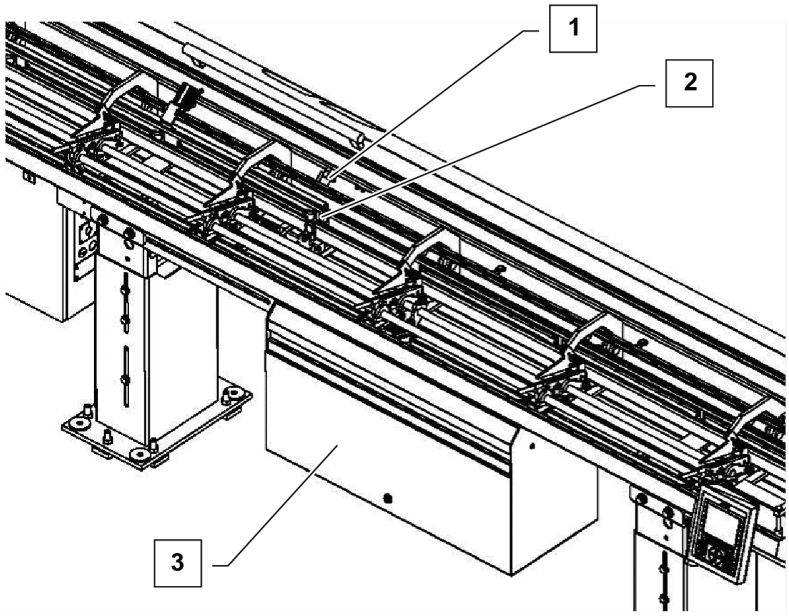


Designation	Description
1	Servo motor
2	Chain

3.5 REMNANT VICE

The vice serves to hold the bar/remnant in order to insert a new bar into the collet when loading a new bar, and to extract it from the collet during remnant extraction.
Irrespective of the material, bar diameter, or bar profile, the clamping blades remain the same and do not require any adjustment.
The remnant vice allows the extraction of remnants lengths from 100 – 400 mm (300 mm for the 2 m version).

3.5.1 LAYOUT OF THE ELEMENTS



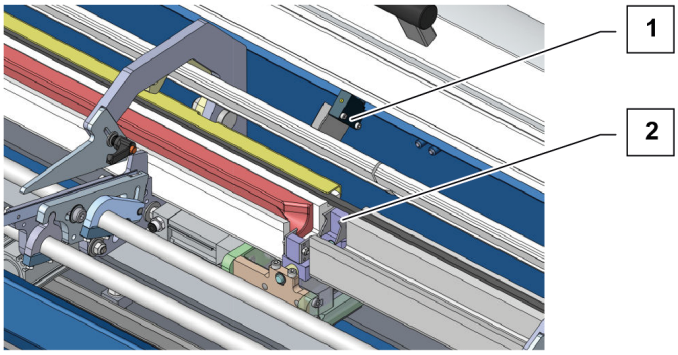
Designation	Description
1	Material presence check sensor
2	Remnant vice
3	Remnant box

3.5.2 MATERIAL PRESENCE CHECK

Depending on the sequence of the bar feeder and in order to prevent damages to material, a control system verifies that there is no material in the collet.

The bar presence check consists of an optical cell (1) located in front of the remnant vice (2). The material presence check is carried out as follows:

- The optical switch first determines if the remnant has been extracted out of the spindle.
- The optical switch then determines if the remnant has been properly ejected out of the bar feeder.

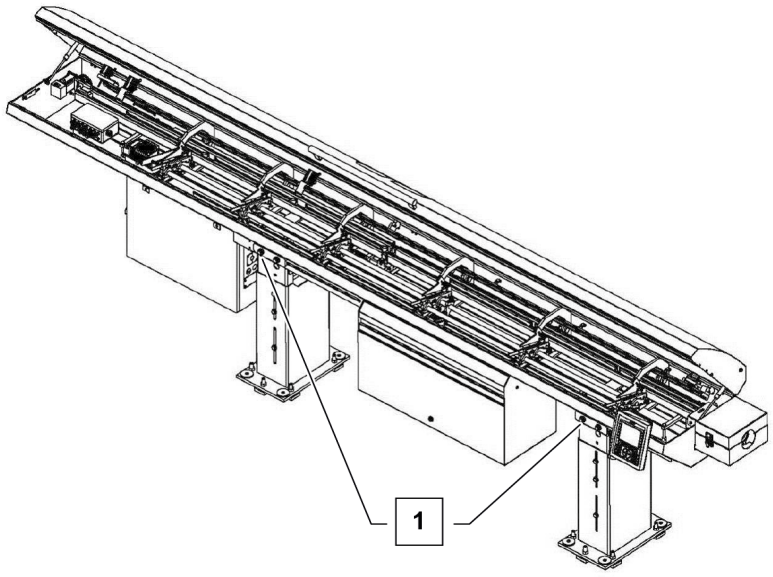


3.6 RETRACTION SYSTEM

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 41)

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

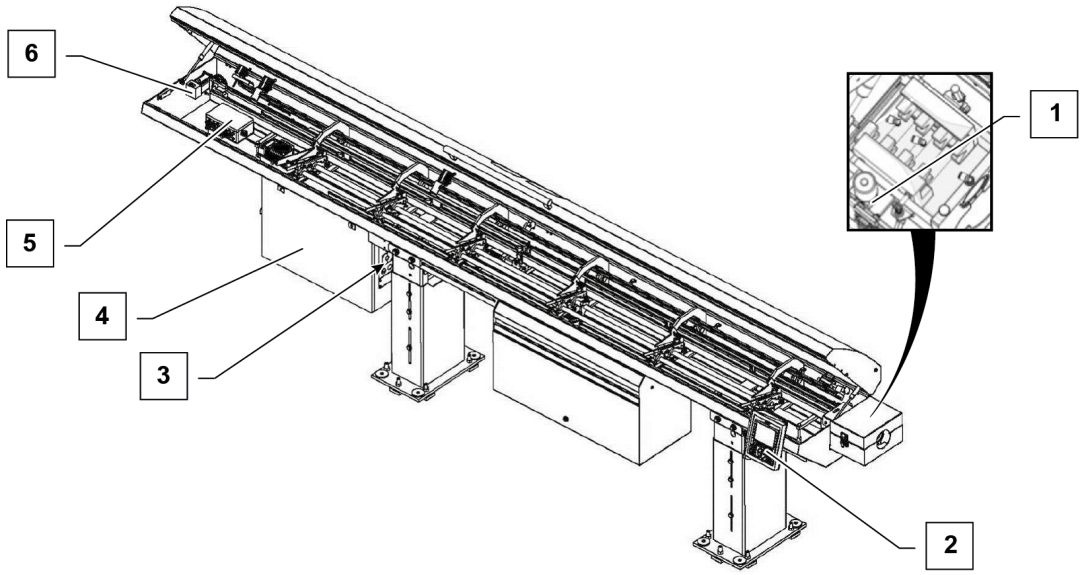
DANGER

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 electronic equipment of the bar feeder complies with the EN 60204-1 standards. 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	Component	Description
1	Front rest motor	Powers the automatic front rest
2	Remote control	Enables the operation of the bar feeder
3	Main switch	Powers the bar feeder on/off
4	Electrical cabinet	Supplies the bar feeder with electricity
5	Electrical junction box	Houses the electrical connections (inputs and outputs)
6	Servo motor	Powers the servo drive, which controls the movement of the pusher

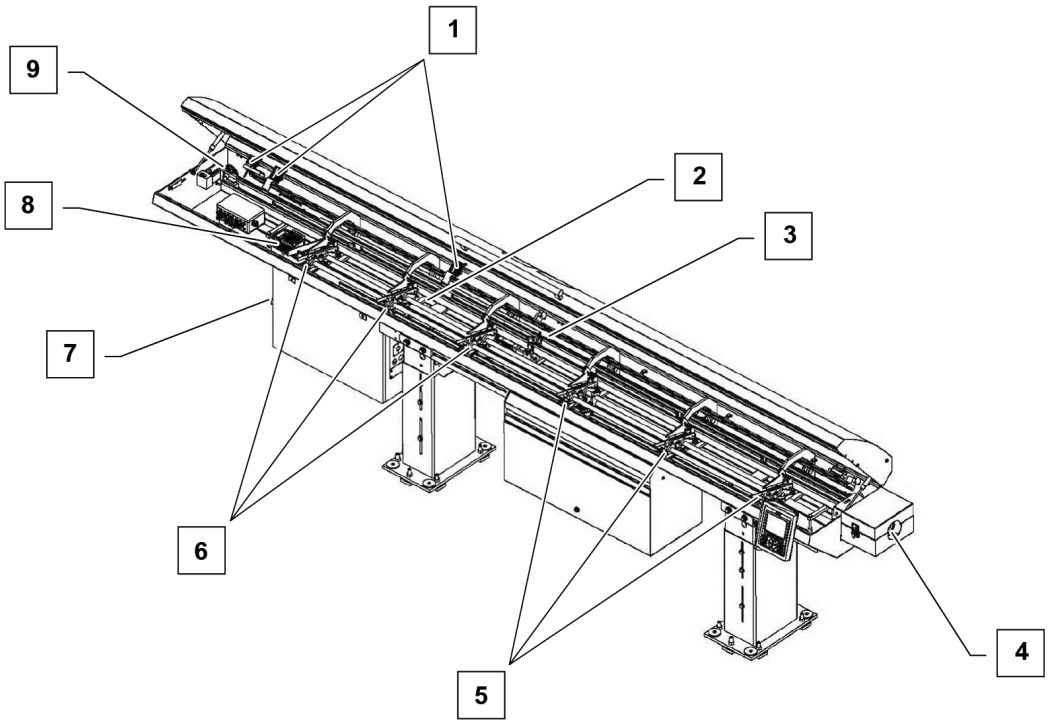
3.8 PNEUMATIC EQUIPMENT

The following automatic movements are activated by the pneumatic system:

- Bar loading mechanism
- Guiding channel and pusher support opening and closing
- Material clamping (bar insertion/remnant extraction)
- 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



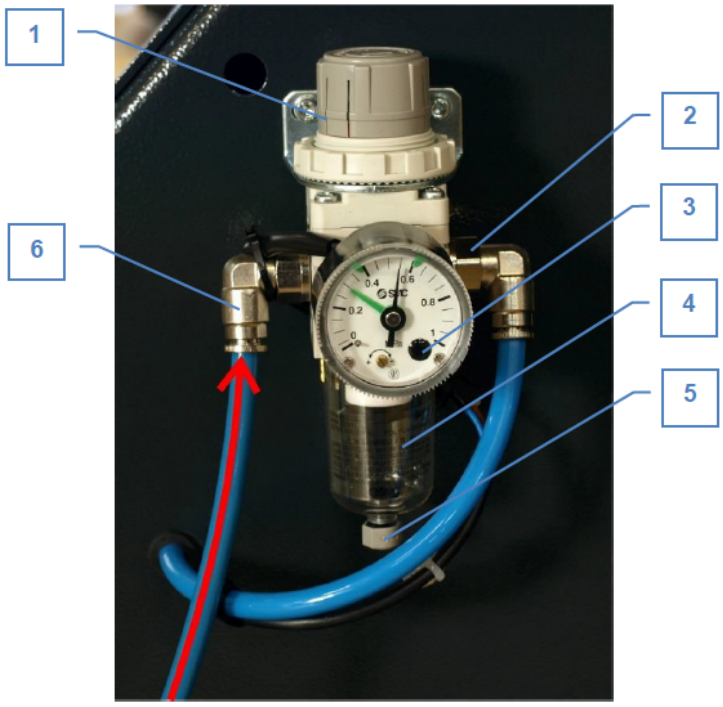
Designation	Component	Description
1	Pneumatic cylinders of push locked/released	Activate the pusher locking/relase mechanism
2	Pneumatic cylinder of bar loading	Activates the bar loading mechanism
3	Pneumatic cylinder of material clamping	Activates the remnant device
4	Air blast	Removes resting oil at the front rest
5	Pneumatic cylinders of guiding system opening/closing	Activate the opening/closing mechanism of the guiding system
6	Pneumatic cylinders of opening/closing push bracket	Activate the opening/closing mechanism of the push bracket
7	Air treatment unit	Filters, lubricates and regulates the air pressure
8	Pneumatic battery	Includes the control and monitoring components of the pneumatic circuit
9	Pneumatic pusher cylinder lock to the reference position	Activates the pusher lock in reference position

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

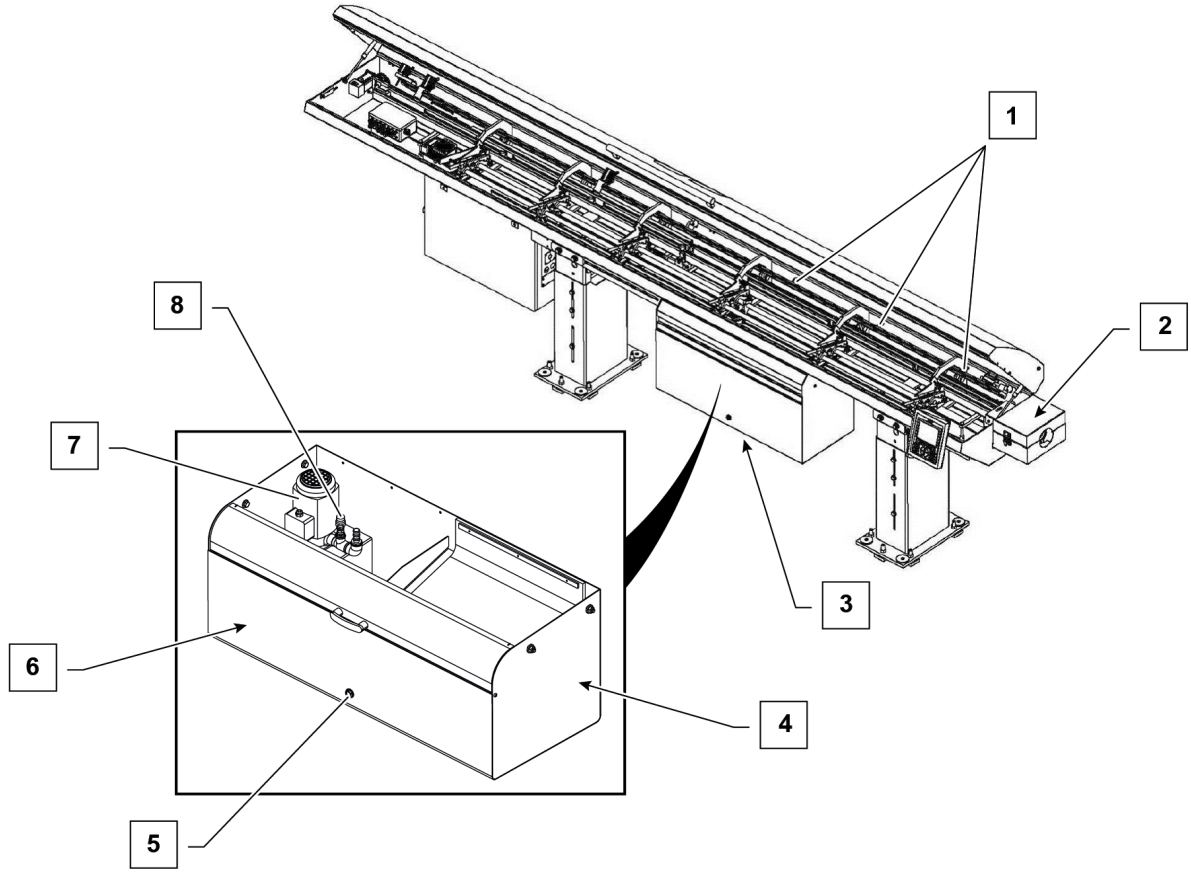
During operation, the bar is suspended in an oil bath in the guiding channels and front rest. The hydraulic oil is contained in the hydraulic tank under the bar feeder. Aspirated by a pump motor, it is injected into the front rest and the guiding channel.

A pressure control unit measures the pressure at the outlet of the pump. The hydraulic pump injects oil at 0.3 MPa (3 bar) into the guiding channel. A level allows the fill rate of the hydraulic tank to be monitored.

The functions of the hydraulic equipment are:

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

3.9.1 LAYOUT OF THE ELEMENTS



Designation	Description
1	Oil supply to the guiding channel
2	Oil supply to the front rest
3	Drain plug
4	Remnant box
5	Oil level indicator
6	Hydraulic tank
7	Hydraulic pump
8	Hydraulic pressure switch

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 REMNANT BOX

The remnant box stores the remnants after ejection from the guiding channel. The available capacity of the remnant box depends on the remnant diameters and lengths.

WARNING

Crushing hazard from falling remnants!

Crush injury from falling remnants.

Only open the cover of the remnant box when the bar feeder is stopped.

NOTICE

Risk of material damage from overfilling!

Check and empty the remnant box regularly to prevent overfilling.

An overfilled remnant box might cause one of the following problems:

- The oil recycling is interrupted and oil spills out.
- The remnants lie in the remnant vice space and interrupt the next bar insertion.
- The remnant box becomes too heavy to be moved.

3.9.4 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	2 m	3 m	12'	4 m
Total weight	kg	550	650	700	750
Total height	mm	1,388 - 1,738			
Total length	mm	3,391	4,391	4,991	5,391
Max. retraction distance (optional)	mm	500			
Min. round bar Ø	mm	3			
Max. round bar Ø	mm	32 (34)			
Min. bar length	mm	700			
Max. bar length	mm	2,200	3,200	3,800	4,200
Min. remnant length	mm	100			
Max. remnant length	mm	300	400		
Bar magazine loading capacity	mm	270			
Pneumatic pressure	MPa bar	0.5 5			
Air consumption (per loading cycle)	l	10			
Mains voltage	V	3x 220 - 480			
Mains frequency	Hz	50/60			
Max. pushing force	N	550			
Max. feed rate	m/min	> 100			
Loading cycle	s	30 - 35	35 - 40		
Hydraulic oil (ISO 100)	l	50	60		
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.

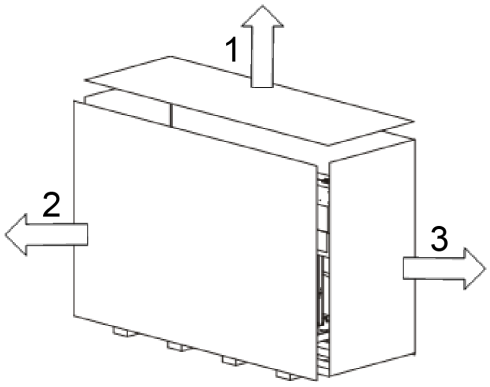
5.2 UNPACKING

The bar feeder may be delivered either on a pallet or packed in a wooden crate, according to customer requirements. Follow the unpacking and lifting instructions recommended below in order to prevent any injuries to people and damage 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 their 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.

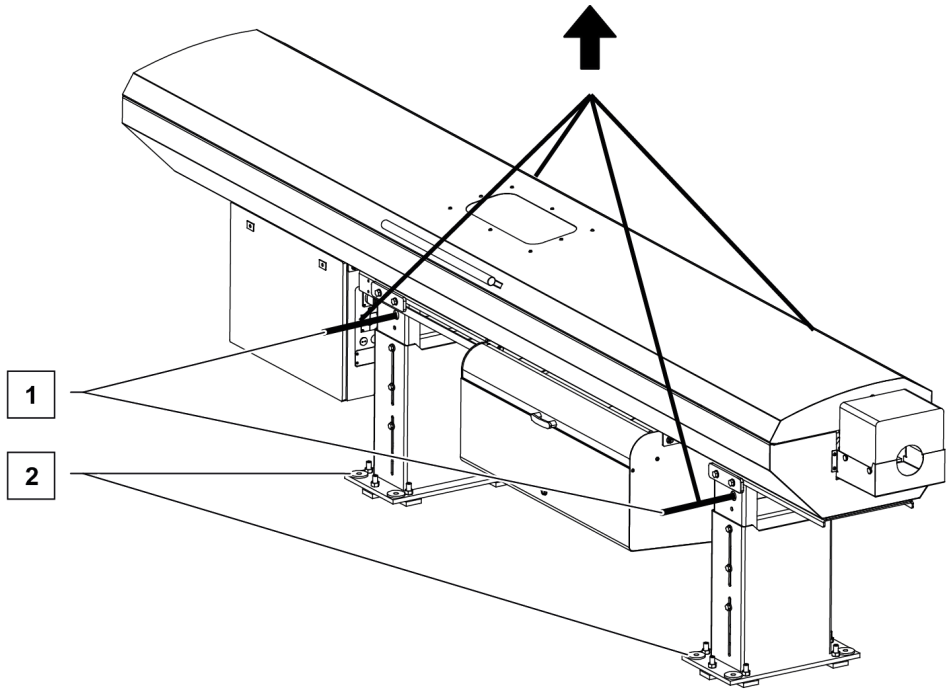
We advise customers to have the bar feeder assembled and installed by LNS or by a local LNS representative. We accept no liability for malfunctions attributable to an improper installation in which we were not involved.

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.



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.

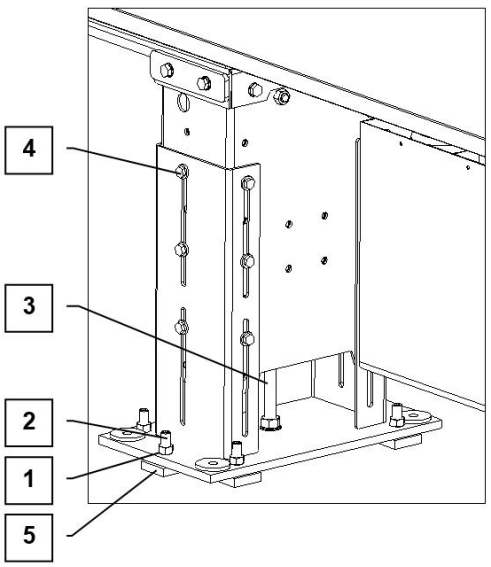
NOTICE

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 (5) under each leveling screw (2).
2. Loosen the lock nuts (1) of the leveling screws (2).
3. Make sure that the weight of the bar feeder is evenly distributed over the leveling plates (5).
4. Loosen the screws (4) that lock the height position.
5. Make sure that the threaded pins (3) 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 (2) to set the lateral level of the bar feeder.
8. Adjust the nut on the threaded pins (3) 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 (4) to lock the height position.
    Wait until after the anchoring of the bar feeder to tighten the lock nuts (1) of the leveling screws (2).
11. Check the alignment and, if necessary, correct it by adjusting the leveling screws (2).



5.6 ANCHORING

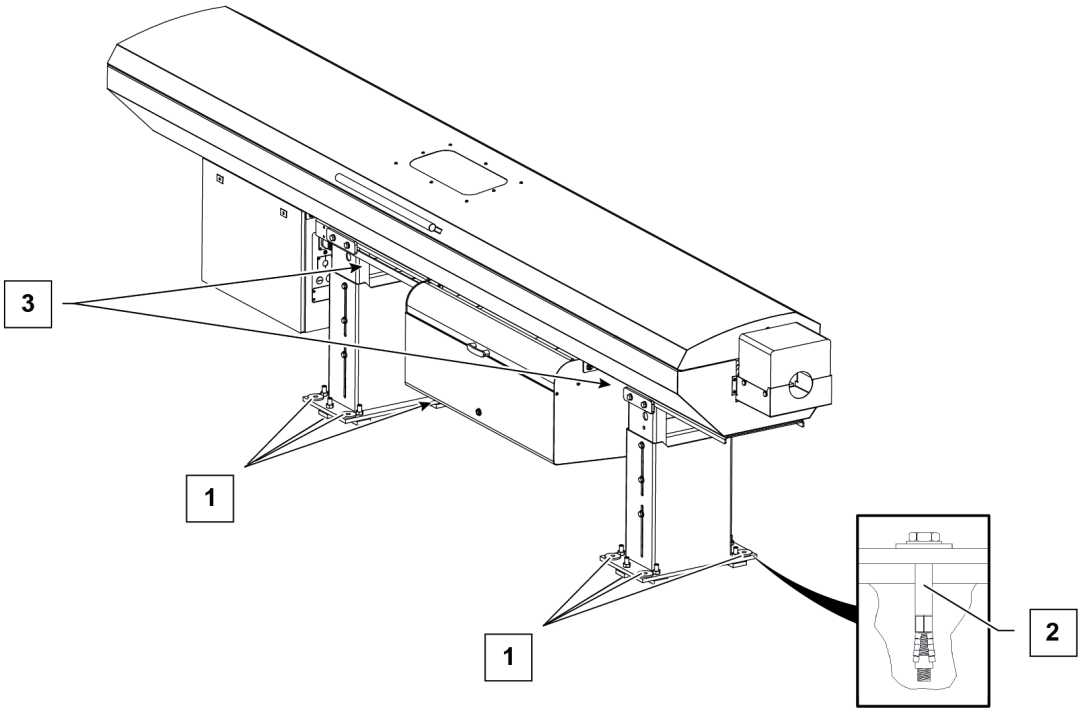
Once the bar feeder is in place and perfectly aligned, it should be anchored to the ground to ensure stability. To do so, four anchorage points are provided at the bottom of both stands. The anchorage bolts must be furnished by the customer (min. M10 x 100 mm).

INFO

Anchoring: use heavy duty anchors.
Minimum M10 x 100

Procedure:

1. Use four bolts (2) on each stand to anchor the bar feeder to the ground.
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 (3) 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.

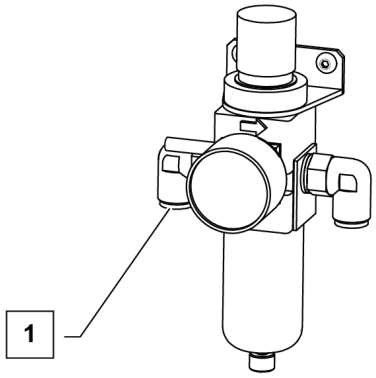
Ensure the line pressure is correct before using the bar feeder.

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 27).

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 33)
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

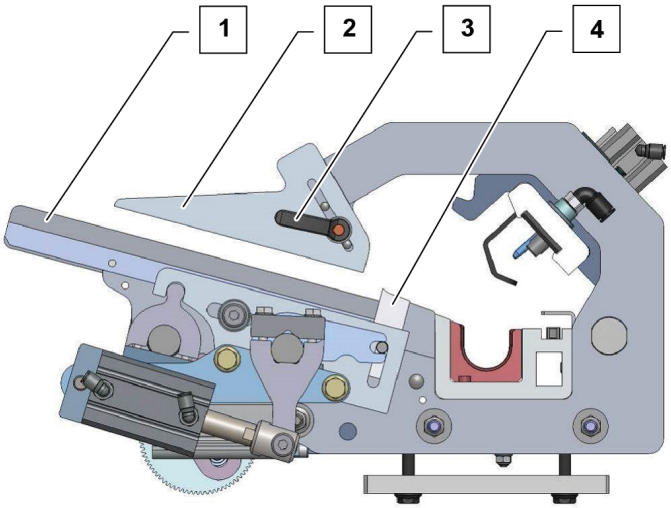
6.1 BAR FEEDER ADJUSTMENTS

6.1.1 ADJUSTING THE DIAMETER LIMITERS OF THE BAR MAGAZINE

When loading bars with small diameters into the bar feeder, the diameter limiters need to be adjusted. This prevents bars from rolling over each other.

To adjust the diameter limiters, follow these steps:

1. Enter the new bar diameter on the remote control when asked.
   The bar selectors (4) are relocated according to the new bar diameter.
2. Take a bar and place it on the loading ramp (1) under the diameter limiter (2).
3. Turn the locking lever (3) on the diameter limiter counterclockwise to loosen it.
4. Adjust the diameter limiter (2) until there is space for only one bar under it.
5. Make sure that the space is not too narrow to prevent the bar from clamping.
6. Turn the locking lever (3) clockwise to tighten it again.
7. Repeat the steps 1 to 5 for each diameter limiter.



6.1.2 CHANGING THE GUIDING ELEMENTS OF THE GUIDING CHANNEL

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

NOTICE

The guiding elements of the cover must only be replaced if they are worn or damaged.

The guiding elements may be damaged by corrosive products.
Only use a soft cloth to clean the guiding elements.

INFO

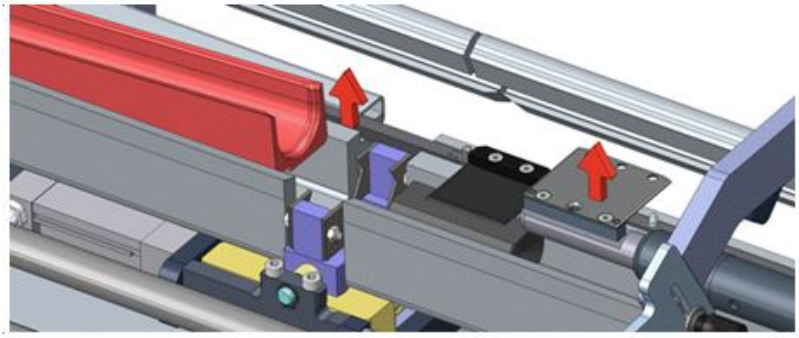
On 4 m bar feeders, the shortest guiding element must be installed in the rear.
The order of the other guiding elements is not important.

Prerequisite:

- The guiding system is open.
- There is no bar in the bar magazine.
- The pusher is in the home position.

Procedure:

1. Press the STOP key.
2. Press the pusher changeover key. "READY TO START PUSHER CHANGEOVER CYCLE" is displayed on the screen.
3. Press the START key. The pusher moves to its changeover position.
4. Follow the instructions on the remote control screen and enter the new bar stock diameter.
5. Once the pusher is in the changeover position, open the main access cover.
6. Remove the pusher. (→ CHANGING THE PUSHER on page 41)
7. Remove the guiding elements by sliding and pulling them upwards out of the guiding channel.
8. Insert the new guiding elements into the guiding channel.



9. Install the new pusher and place it in the guiding channel.
10. Close the main access cover.
11. Validate the pusher modification.
12. Press the STOP key to enter manual mode.
13. Follow the instructions on the remote control screen. Change the guiding system diameter if necessary.
14. Press the START key. The pusher is engaged in its home position.

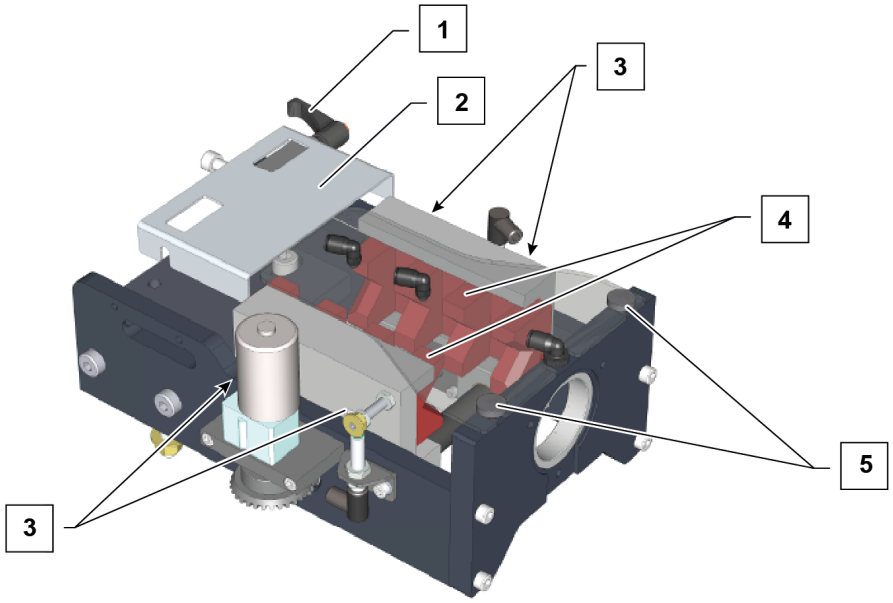
Once the bar feeder has completed the pusher changeover cycle, the bar feeder is ready for operation. At this point, it is necessary to check and change parameters such as the bar diameter or feeding length.

6.1.3 CHANGING THE GUIDING ELEMENTS OF THE FRONT REST

To guide profiled bars of a certain diameter, the standard guiding elements in the front rest must be changed. In this case, the round guiding elements must be installed. Their aperture diameter must be approximately 0.5 mm greater than the bars on their corners.

Procedure:

1. Loosen the lever (1) of the small top cover.
2. Remove the small top cover (2).
3. Remove the screws (5) of the main cover.
4. Remove the main top cover on the front rest (not displayed in the image below).
5. Press the function key F3.
6. Press the function key F2.
7. Loosen the four screws (3) with a hex to free up the guiding elements.
8. Remove the guiding elements (4).
9. Place the new guiding elements inside the front rest.
10. Tighten the four screws (3) to secure the guiding elements in place.
11. Put the main top cover back on.
12. Tighten the screws (5) of the main cover.
13. Put the small top cover (2) back on.
14. Tighten the lever (1) to secure the small top cover.
15. Press the STOP key to leave the adjustment mode.



6.1.4 CHANGING THE PUSHER

NOTICE

The pushers for the EXPRESS 332 can be used in the EXPRESS 332 S2+. However in this case the usable length of the pusher is limited to 1,220 mm instead of 1,470 mm and a mechanical modification is required. Please contact LNS or its local representative for further information.

1. Move the movable crosshead to the operation position (low).
2. Press the STOP key.
3. Select the pusher changeover key. The pusher moves to its changeover position.
4. Open the main access cover.
5. Remove the pusher.
6. Enter the new pusher diameter on the remote control.
7. Place the new pusher into the guiding system.
8. Close the main access cover.
9. Validate the pusher modification.

6.1.5 RETRACTING THE BAR FEEDER

WARNING

Injury 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.

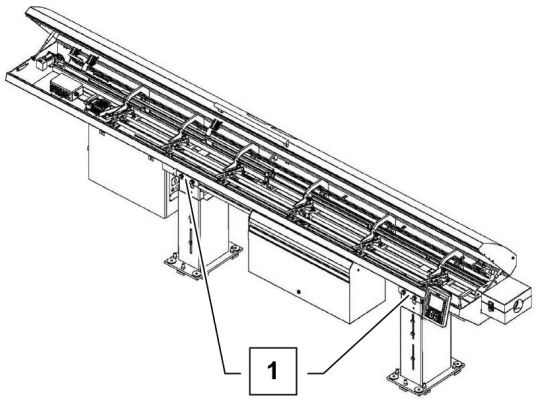
STANDARD RETRACTION

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:

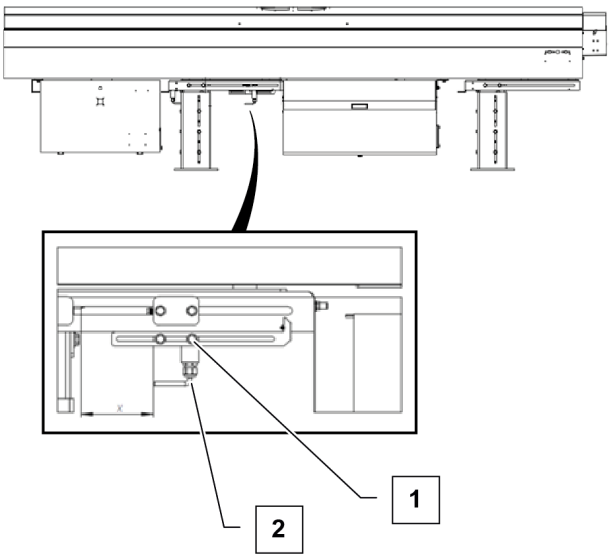
1. Loosen the four screws (1) above the front side of the rear and front stand.
2. Pull the bar feeder backwards.
3. Perform the required maintenance task.
4. Move the bar feed system back to the working position.
5. Tighten the four screws (1) to lock the bar feeder position.



2-POSITION RETRACTION (OPTIONAL)

When the bar feeder must be adapted to a lathe which has no guide bush, the 2-position option (1) allows the bar feeder to be moved forward in the direction of the lathe so that it can be connected directly to the spindle. The software takes the position into account, and saves the end of bar and the top cut positions in a separate memory zone.

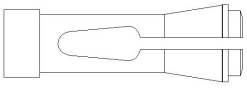
Control mechanism of the 2 positions
Adjust both retraction positions with the screws (1) and (2).



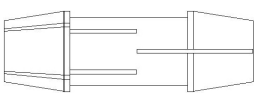
6.2 LATHE ADJUSTMENTS

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.	

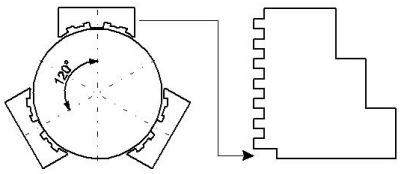
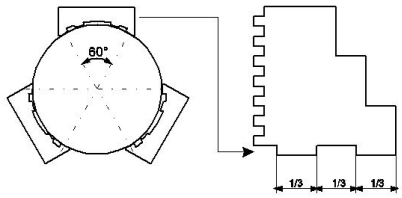
Double cone collet	Effectiveness: excellent
The double cone collet has the significant advantage of gripping the bar at two distant points of around 1.5 times the diameter with gripping of 2 times 350° over around 0.5 times the diameter.	

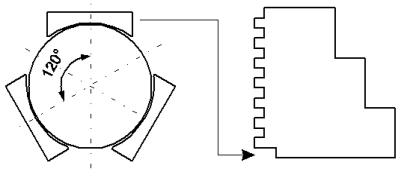
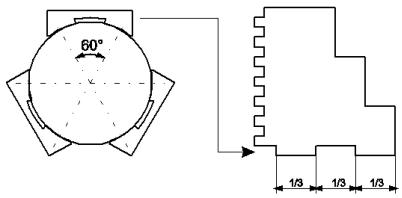
3-JAWS CHUCK

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.

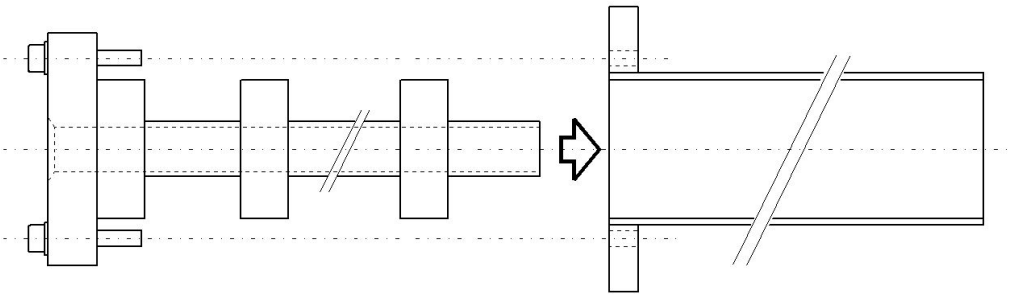
Hard jaws	
Incorrect: the radius of the jaws is larger than the radius of the bar. The jaws only touch at 3 points at 120°.	
Correct: release the center of the jaws so that there are 2 x 6 contact points at 60°.	

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.

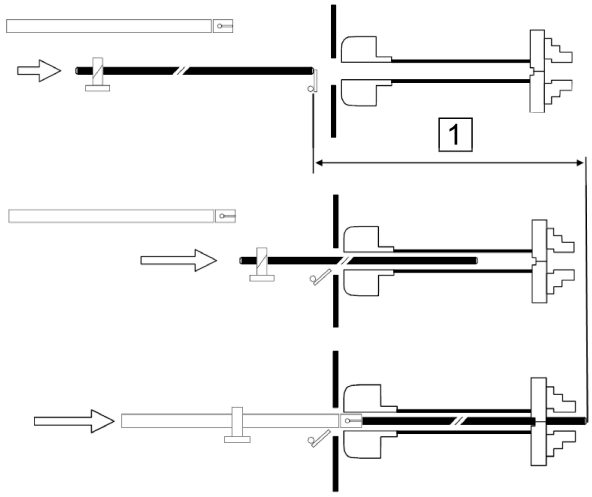
To insert and extract the spindle liners, move the bar feeder using the retraction device if needed (→ RETRACTING THE BAR FEEDER on page 41).

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)

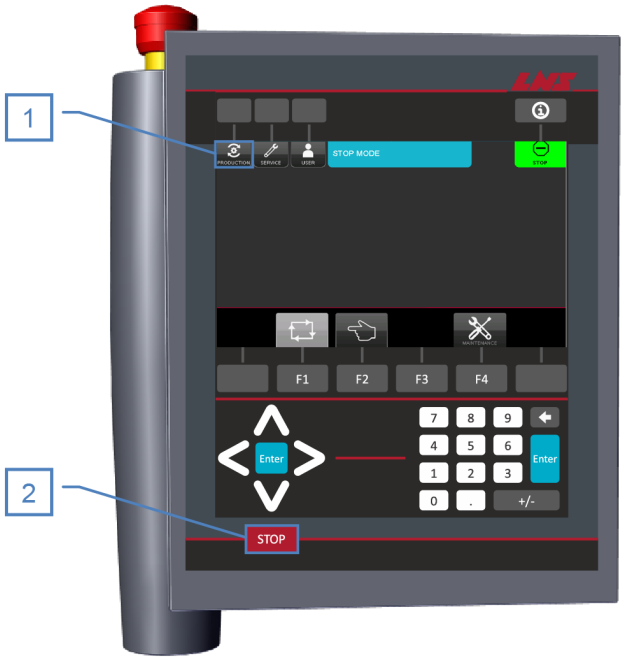
6.4.2 ADJUSTMENT

NOTICE

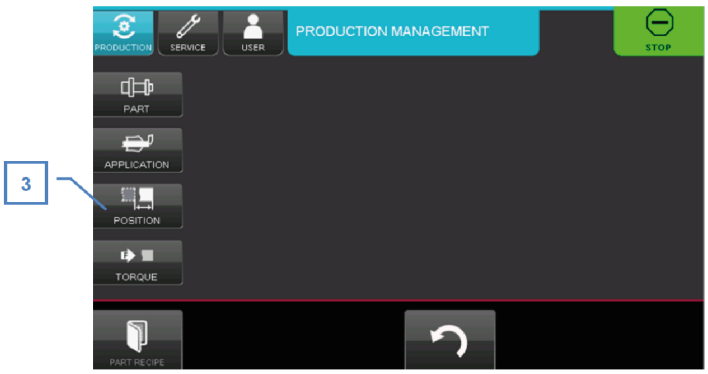
Risk of damage to the lathe!

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).



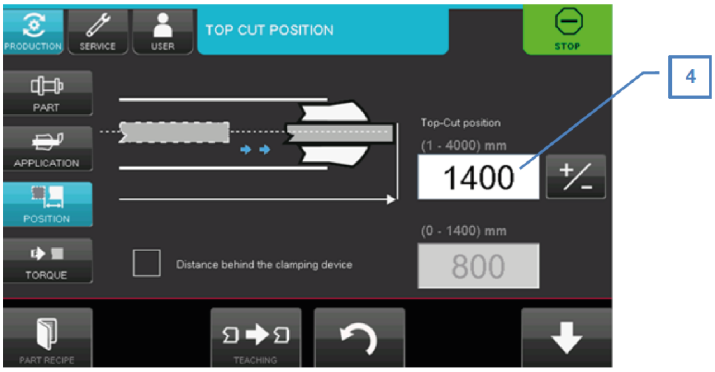
3. Press the POSITION key (3).



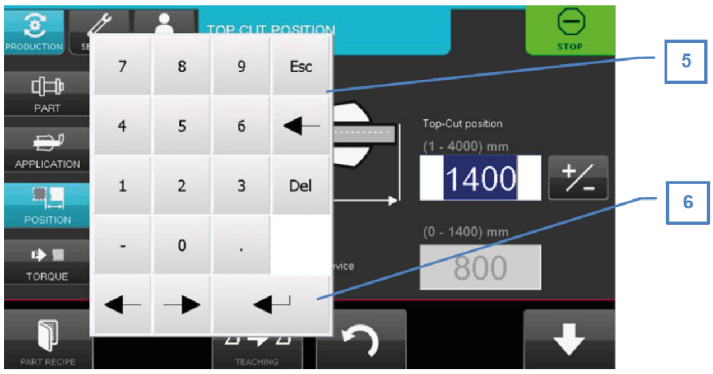
There are two options:

Use the keypad to enter the value directly

1. Press the field (4).

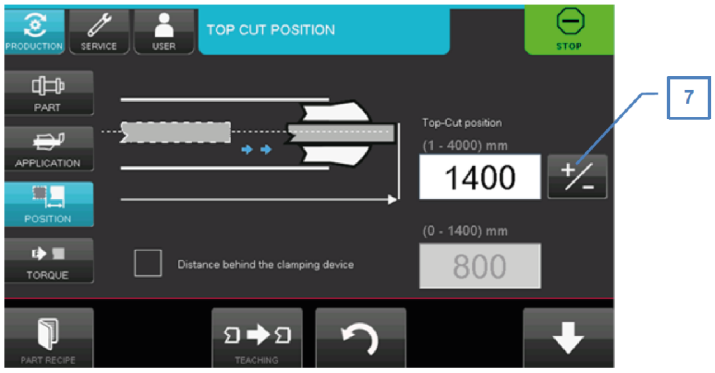


2. Use the keypad (5) to enter the new value.
3. Press the Enter key (6) to confirm the value.

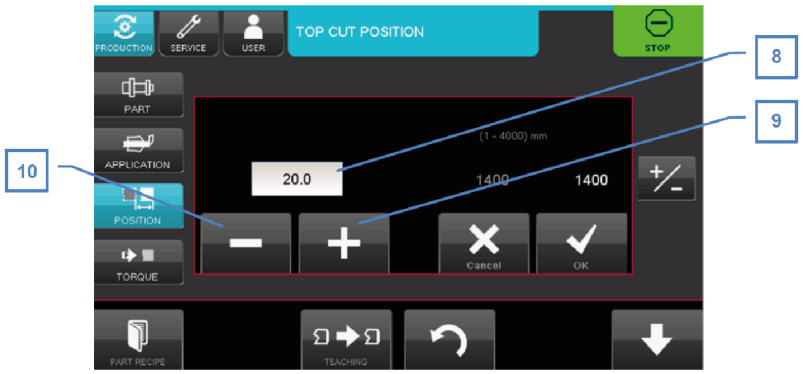


Use the +/- key to enter the value by adding/substracting

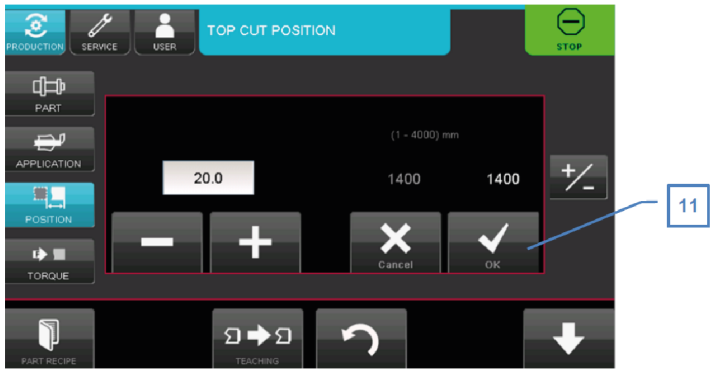
1. Press the +/- key (7).



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.



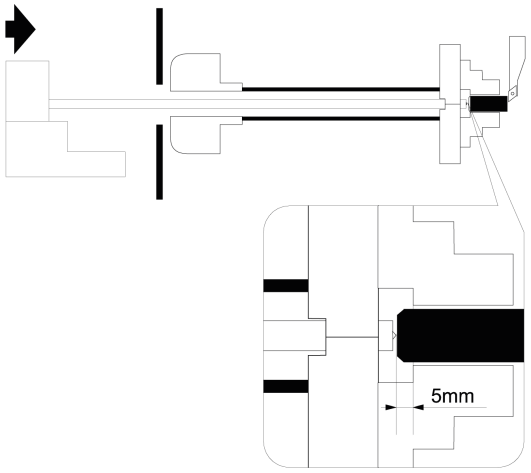
4. Press the OK key (11) to confirm.



6.5 END OF BAR

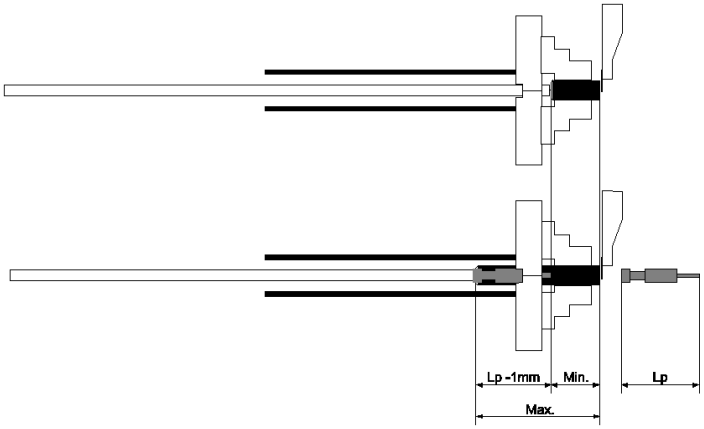
6.5.1 DESCRIPTION

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

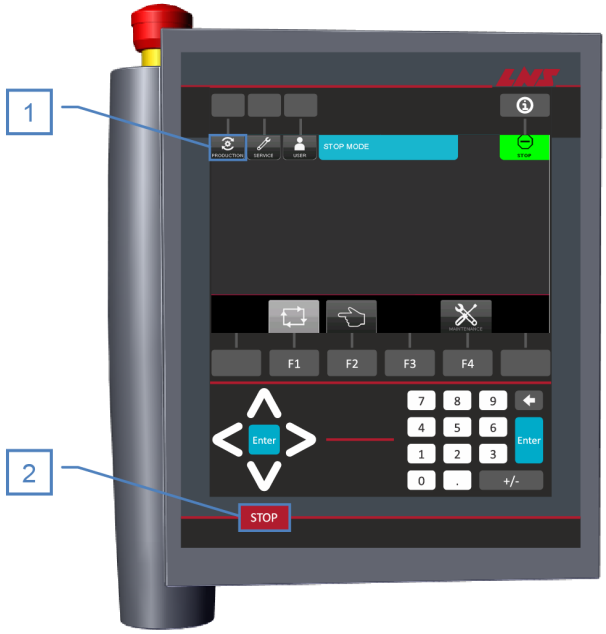
6.5.2 ADJUSTMENT

NOTICE

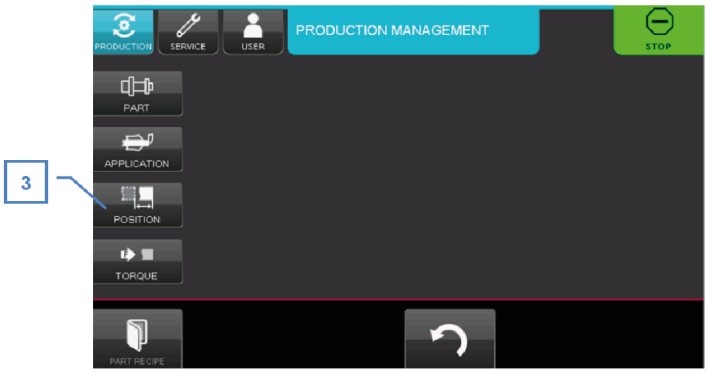
Risk of damaging the lathe!

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

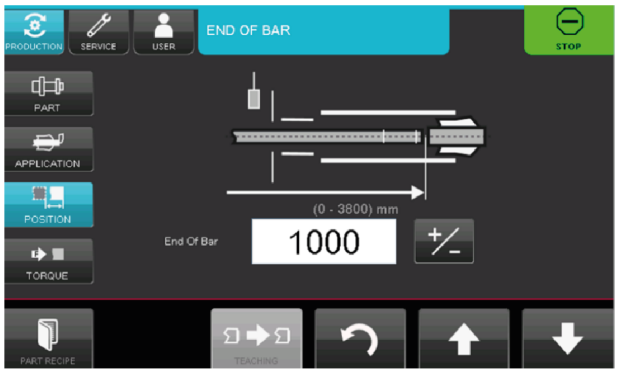
1. Press the STOP key (2).
2. Press the PRODUCTION key (1).



3. Press the POSITION key (3).



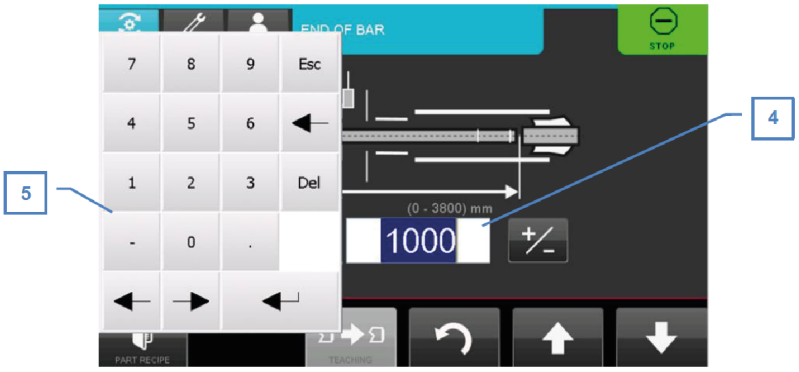
4. Press the downwards-arrow key on the bottom right.
   The following screen appears:



There are two options:

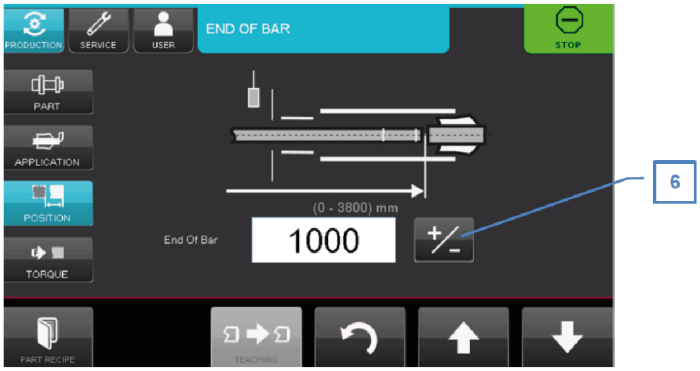
Use the keypad to enter the value directly

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

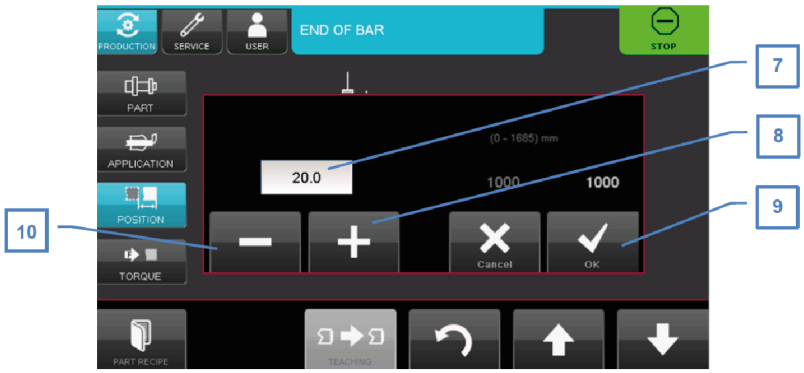


Use the +/- key to enter the value by adding/substracting

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.

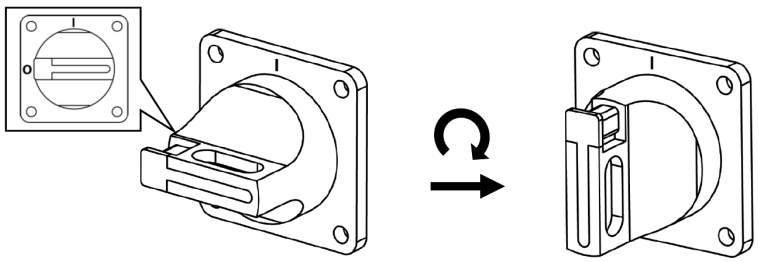
DANGER

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:

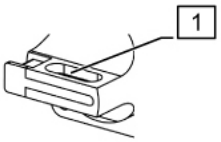
1. Turn the main switch counterclockwise to the O-position (off).

INFO

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

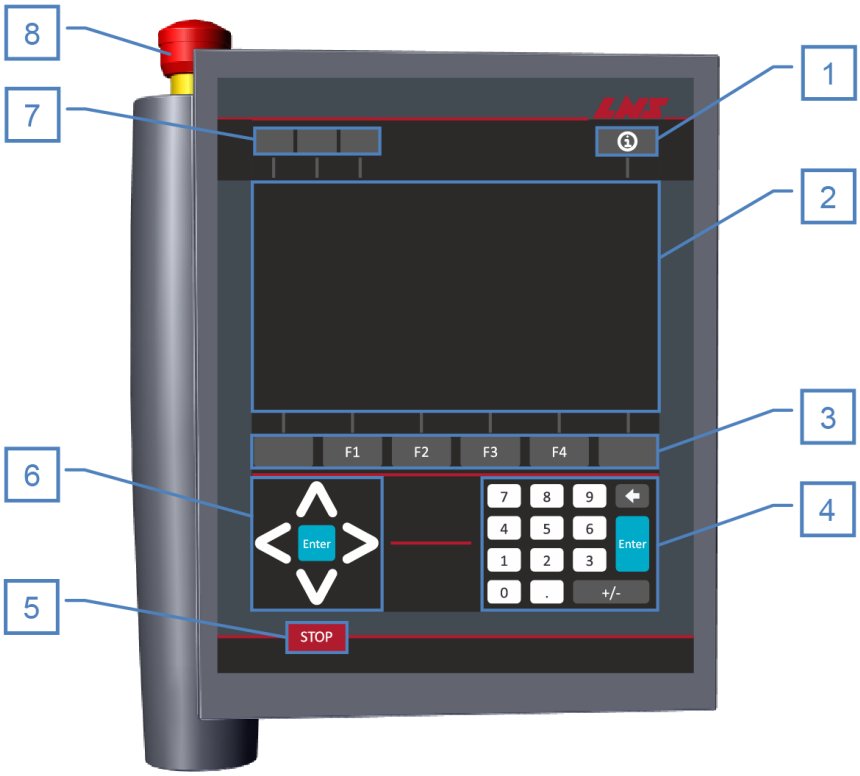
Lock the main switch in off-position:

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



7.2 REMOTE CONTROL

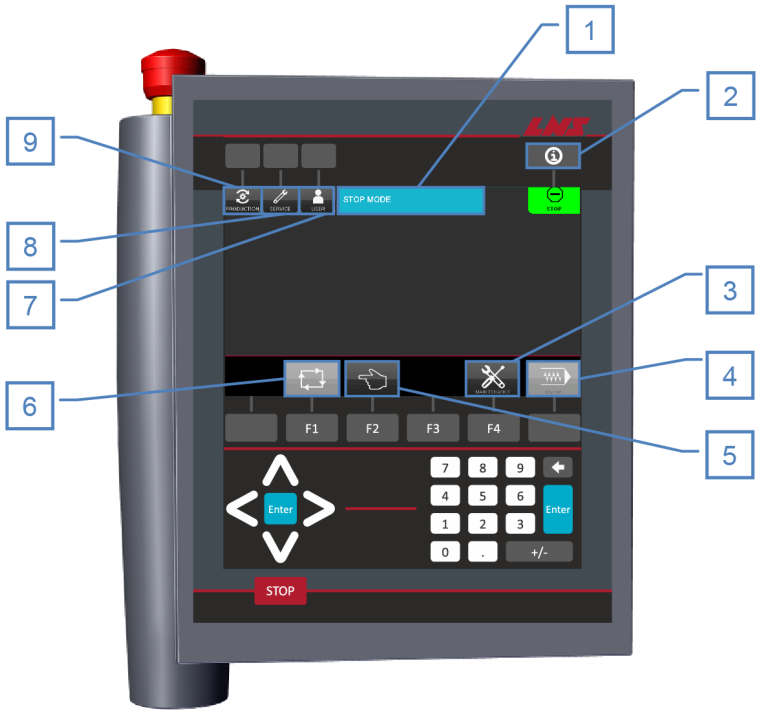
The screen on the remote control continuously shows the status of the bar feeder and its production. This allows the function, diagnostics, and error signals to be checked or analyzed at any time.
The latest error messages are stored in a register and can be called up to establish the diagnostics.



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)		Position teaching
	Backwards (the image can be inverted depending on the bar feed-out side)		Change pusher type
	In top-cut-position (Top-Cut)		Exchange bar
	Exiting function		Load bar
	Previous page		Toggle page
	Next page		Dry run
	Progress speed - Normal/Quick		

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!

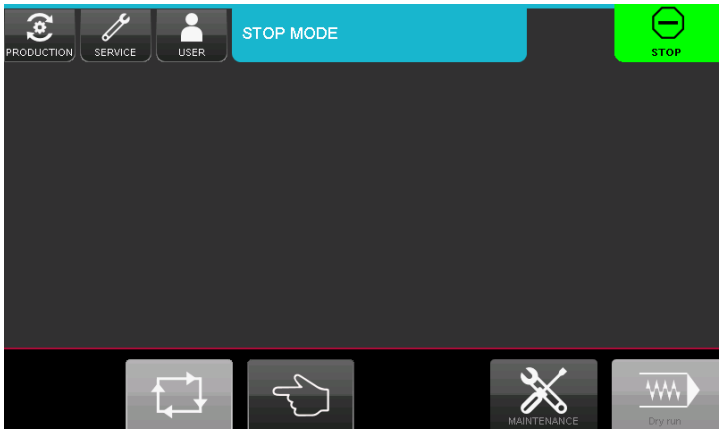
The operation settings are the most commonly modified settings for controlling the bar feeder when it is in automatic mode.
Read this section before making any changes.

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

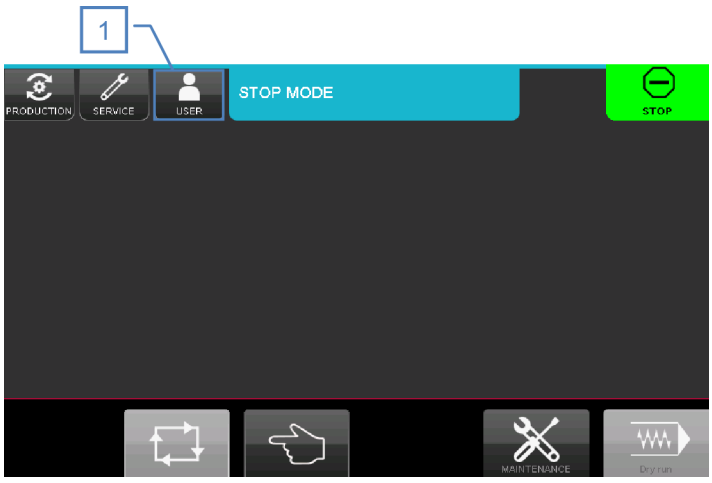
1. Turn the bar feeder on with the main switch.
   The welcome screen appears.



INFO

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

2. Press the USER key (1).



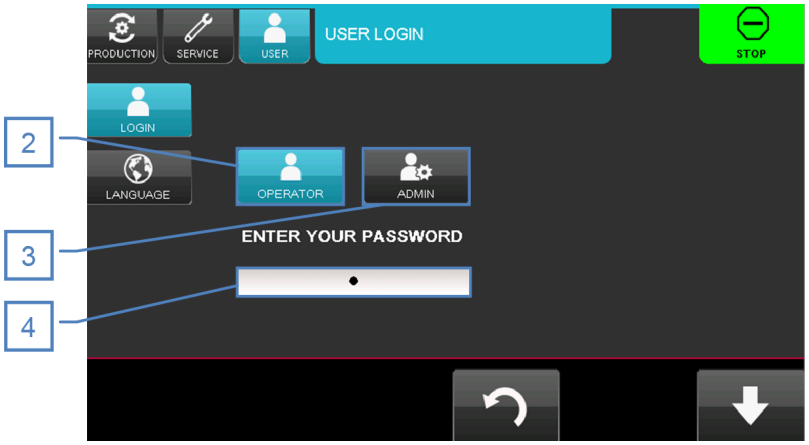
To log in as:

OPERATOR

3. Press the OPERATOR key (2).

ADMIN

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

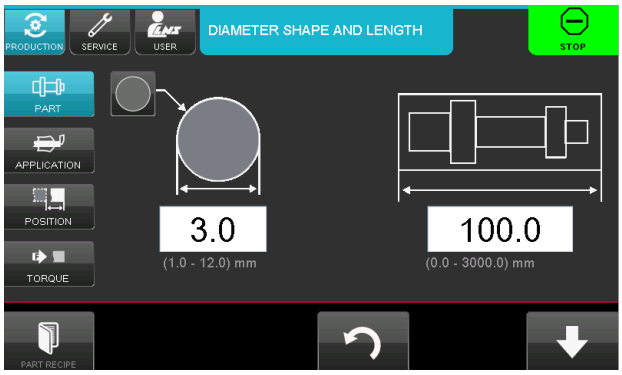


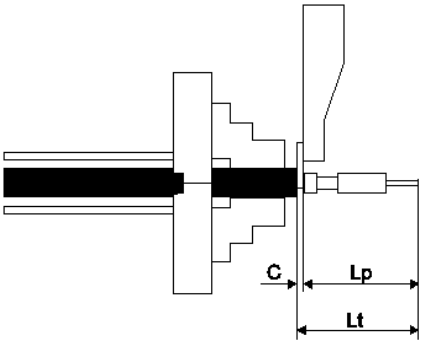
INFO

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

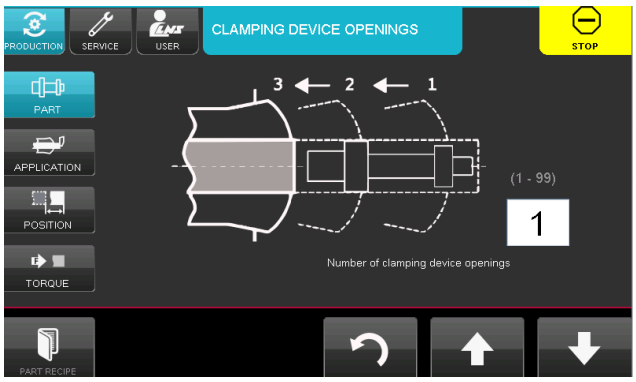
During the bar feed-out cycle, the bar feeder repeatedly (50 times) tries to insert the bar into the lathe collet or mandrel. The precision of positioning is also ensured by means of a procedure that was expressly developed for profiled bars.

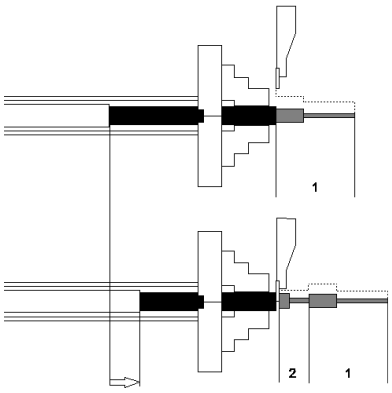
Total feed-out length

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



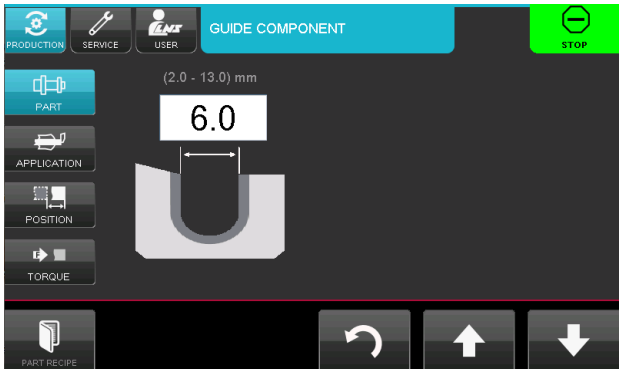


When machining a part requires the collet to open several times (for example a long piece or rework of the part on the second spindle), interface conflicts can occur during feed out.

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

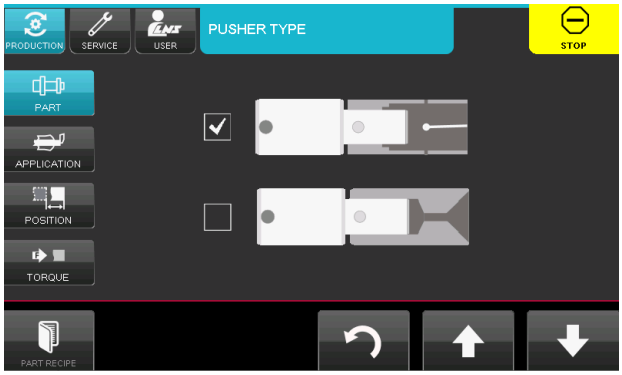
The bar feeder only takes into account the first position for the same part. The following positions (if there are any) must be performed using the turret.

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.

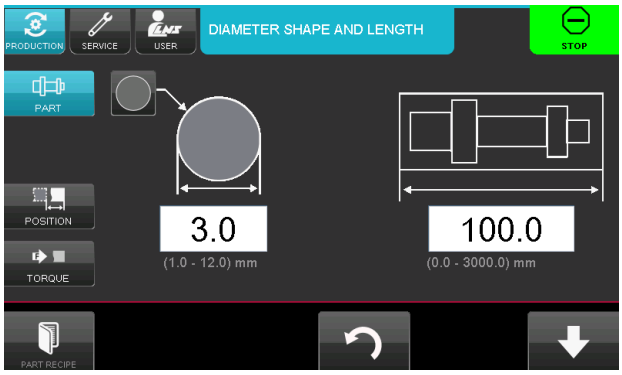
Pusher type

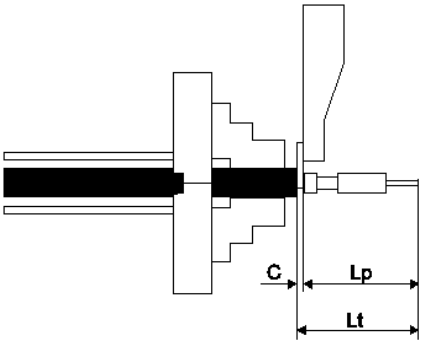


After a pusher changeover cycle, the pusher type needs to be selected accordingly on the HMI.

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

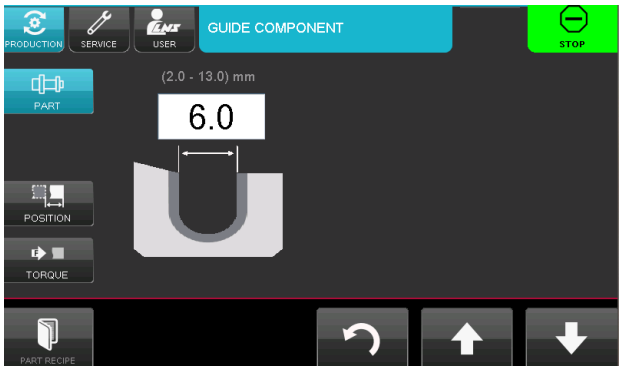
During the bar feed-out cycle, the bar feeder repeatedly (50 times) tries to insert the bar into the lathe collet or mandrel. The precision of positioning is also ensured by means of a procedure that was expressly developed for profiled bars.

Total feed-out length

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

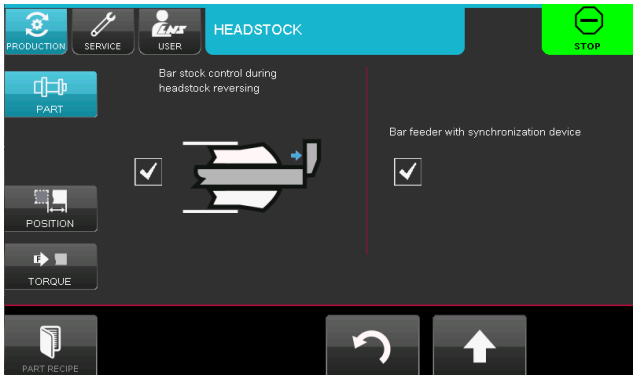
- the length of the part to be executed (**Lp**)
- the thickness of the cut-off tool (**C**)
- the thickness of the facing (not represented in the image, depends on the part program)

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.

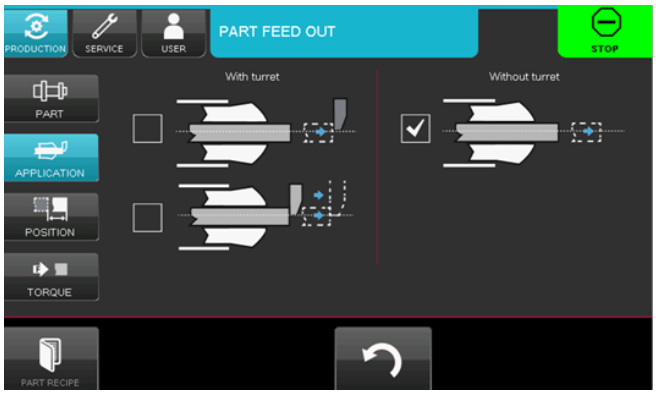
Headstock

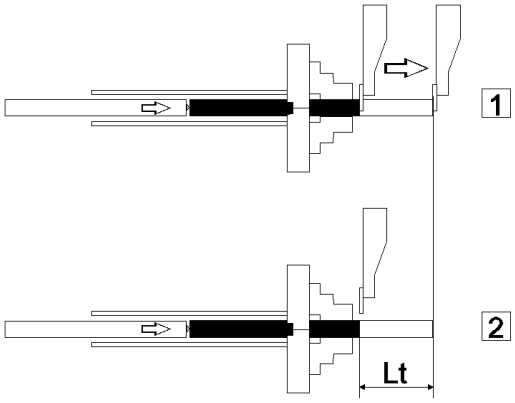


Select the bar stock control during a headstock reversing. If the bar feeder is equipped with a synchronization device, select the checkbox accordingly.

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

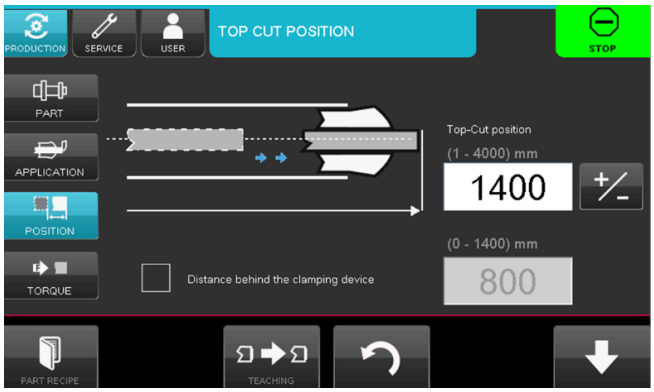
The bar feeder feeds the part. When the collet opens, the pusher moves the bar from the value entered in the setting “total part feed-out length.” The bar feeder cannot feed the part if the manufacturing program provides for the collet to open several times.

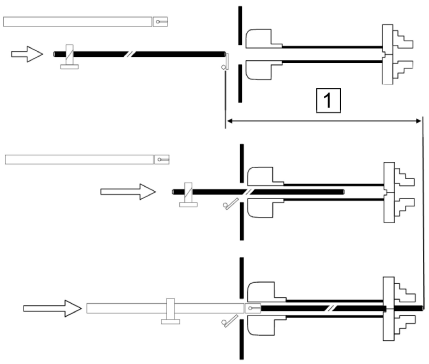
Release of the turret with the “M” function

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

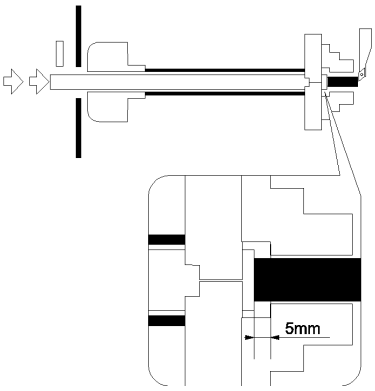




At feed out, the bar is entered into the spindle then automatically positioned in the clamping device of the lathe.

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.

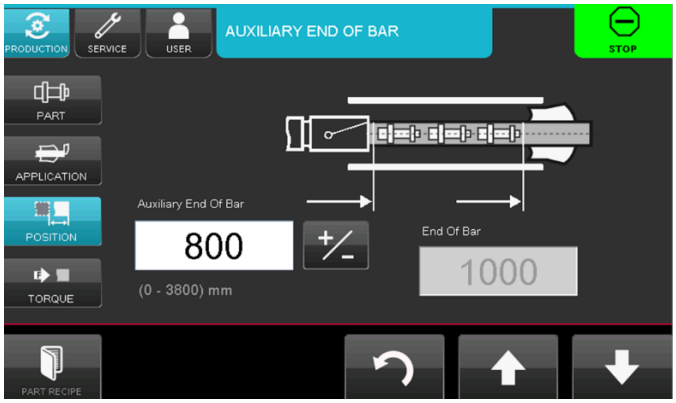
End of bar signal position

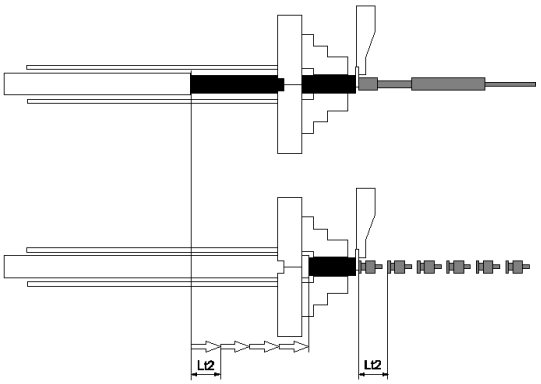


The time at which the bar feeder enters the loading cycle is determined by the position of the end of bar signal.

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.

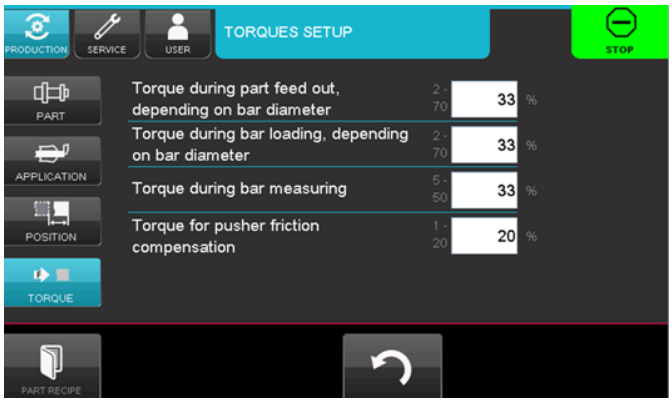
Auxiliary end of bar signal position





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



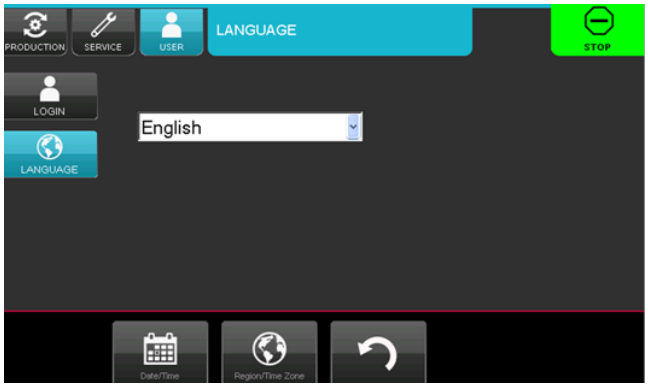
Torque adjusted depending on the diameter for part feed-out (%)
Depending on the diameter of the bar, the bar feeder suggests an appropriate pushing torque. If they wish the operator can modify this torque. When the bar stock to be loaded has a specific high weight, the torque must be significant. The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

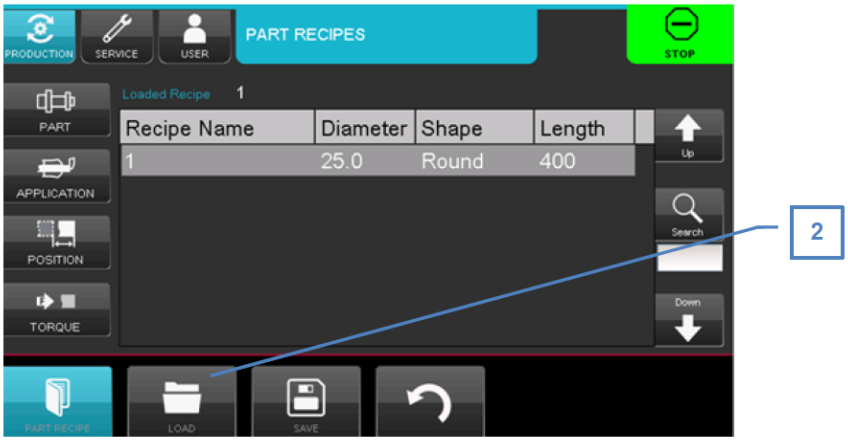
INFO

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).

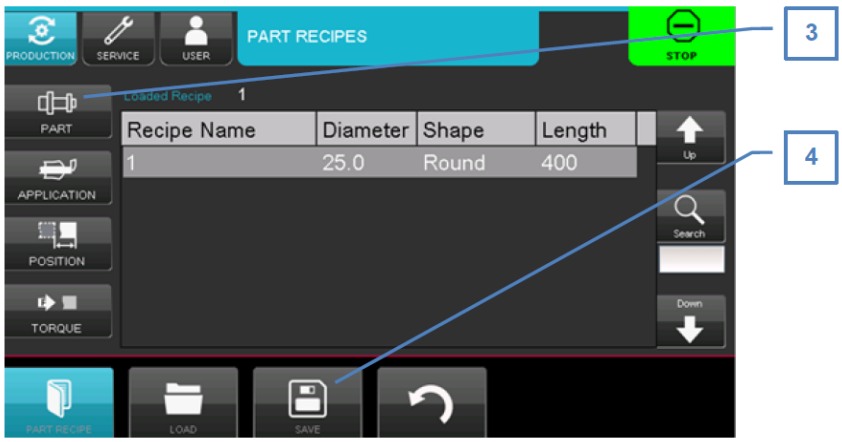
- The recipe is loaded.

Adding a part/saving a part

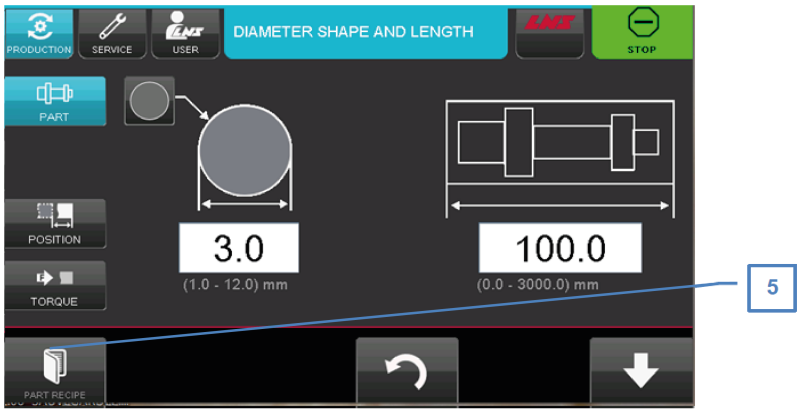
This screen makes it possible to add a new part to the library by saving all the current settings.

To add a part:

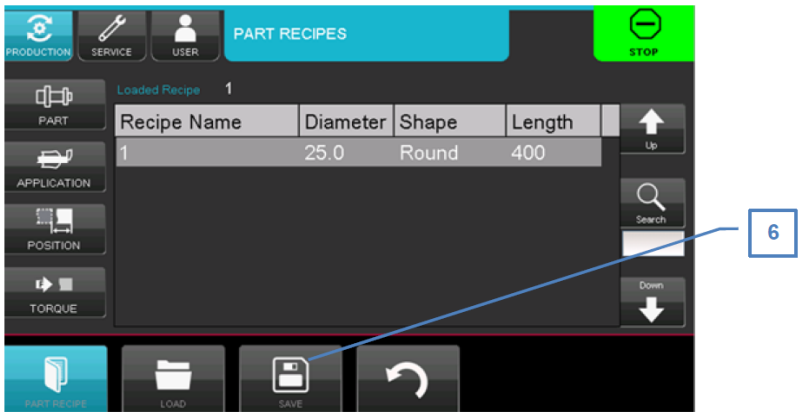
1. Load the part recipe.
2. Press the SAVE key (4).
   Press the PART key (3) to make the changes to the part settings.



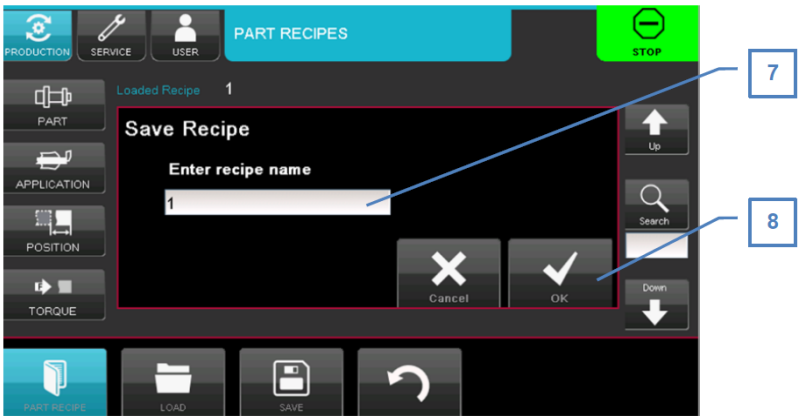
3. Press the PART RECIPE key (5).



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.

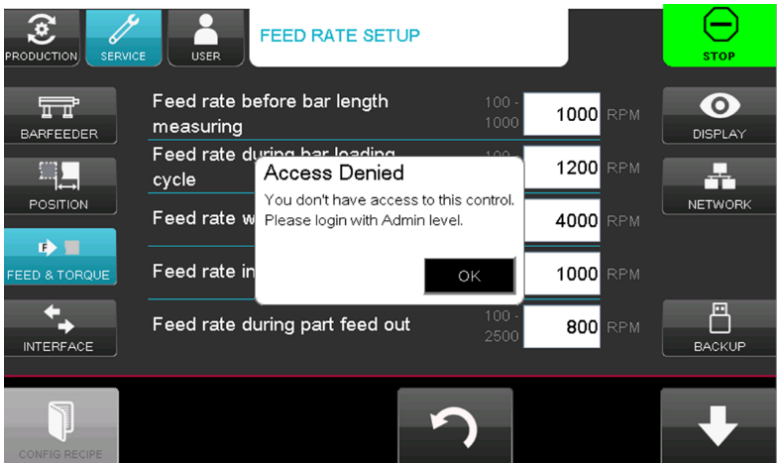
7.7.9 SERVICE

The service settings make it possible to:

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

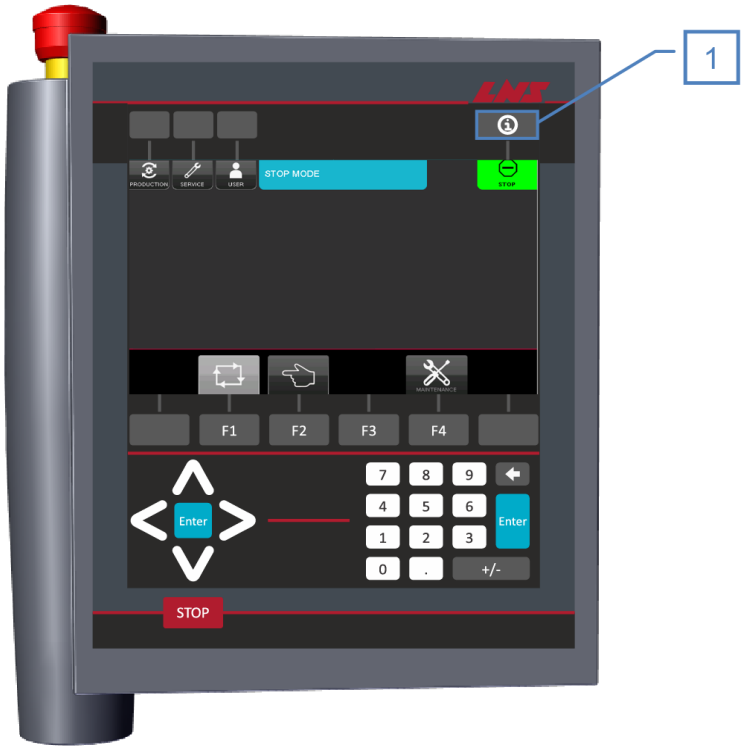
INFO

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 🕮*Maintenance Manual*.



7.7.10 INFORMATION PAGE

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



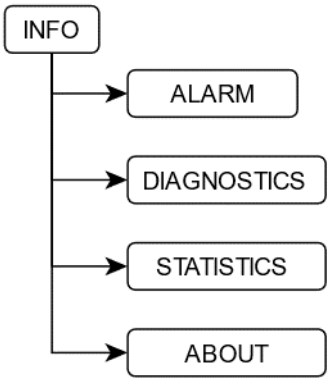
INFO

To facilitate navigation, you can view the diagram designed for this purpose (→ INFORMATION on page 73).

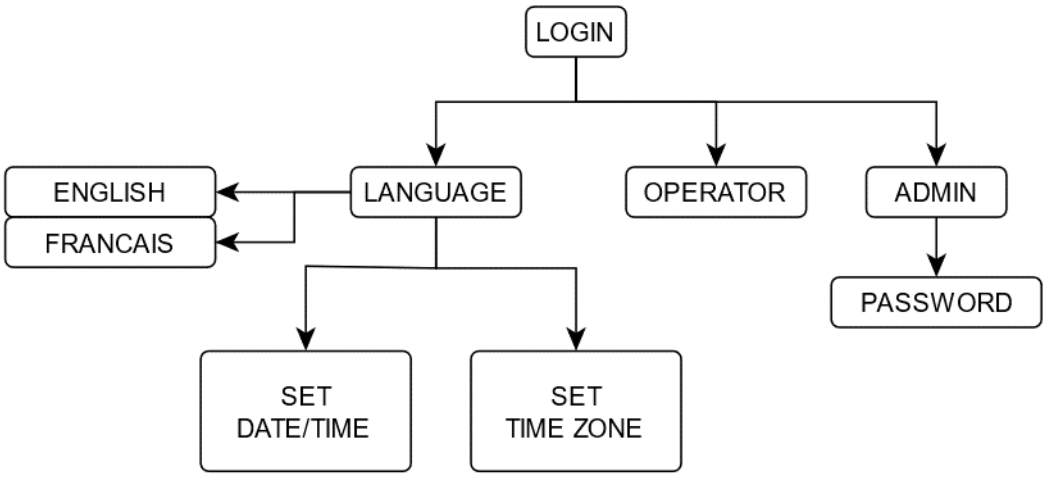
7.7.11 AUTOMATIC CYCLE

7.8 MENU STRUCTURE

7.8.1 INFORMATION

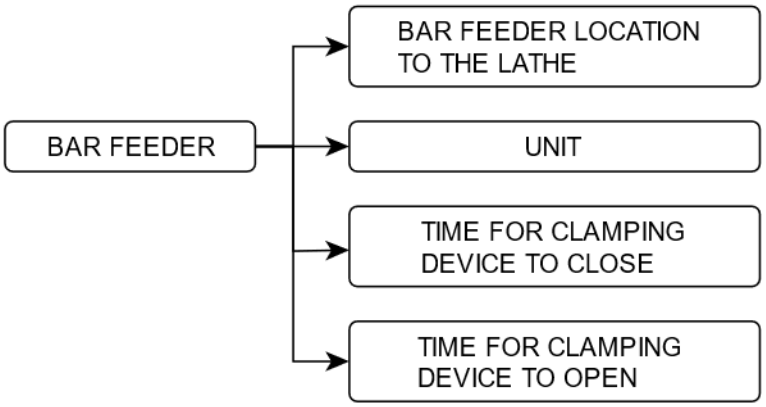


7.8.2 LOGIN

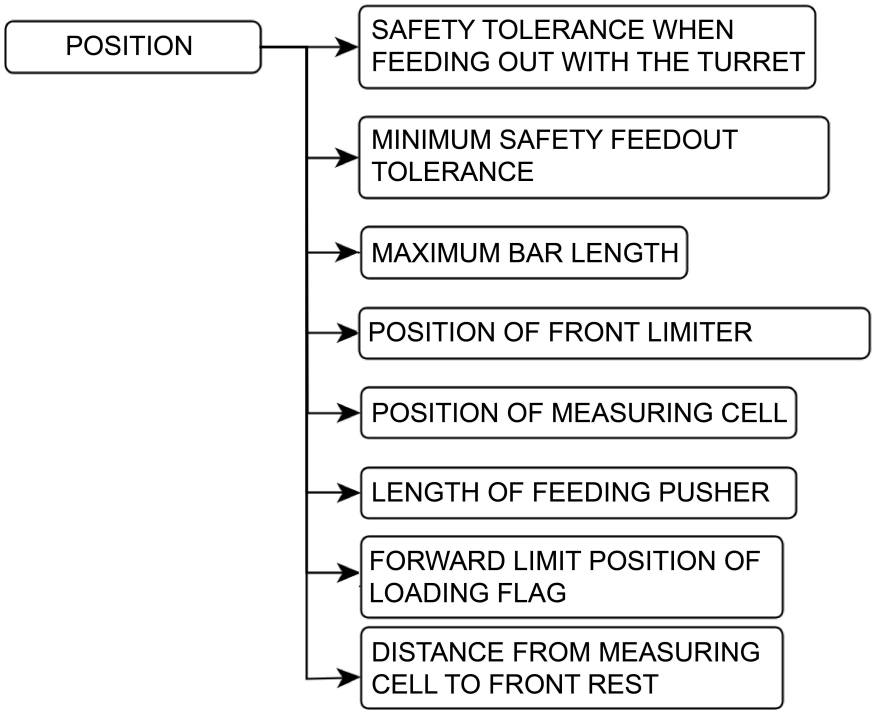


7.8.3 SERVICE

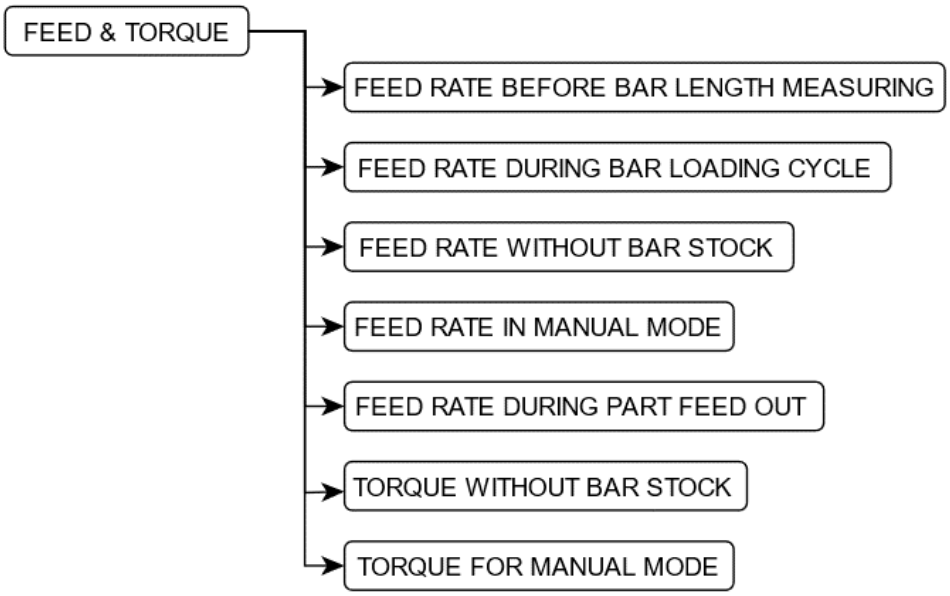
BAR FEEDER



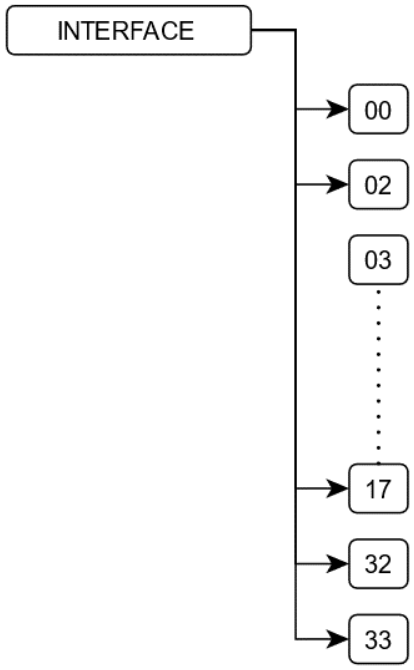
POSITION



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				
Battery	Check the condition of the component and replace it if necessary.					X
Pneumatic equipment	Check the operating pressure.	X				
Hydraulic equipment	Check the oil level in the hydraulic tank.		X			
Hydraulic equipment	Drain the hydraulic tank (→ DRAINING AND FILLING THE HYDRAULIC TANK on the facing page).				X	
Bar feeder	Clean the bar feeder.					X
Rotating sleeve	Check that the component rotates without friction. If a defect is present, contact your local agent.			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 DRAINING AND FILLING THE HYDRAULIC TANK

The bar feeder is supplied without oil. The oil level must be at the H-mark (2) when the hydraulic pump is off.

Bar feeder version		2 m	3 m	12'	4 m
Hydraulic oil quantity	(l)	50	60		

Hydraulic oil type	Viscosity index (CST at 40°C/104°F)
ISO VG 100	90.0 ~ 110

INFO

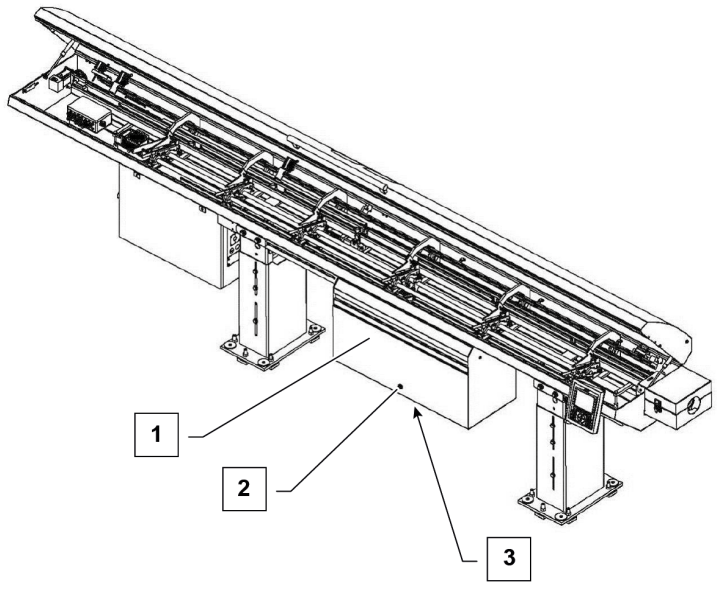
A thicker oil (ISO VG 150) may, in certain cases, produce better results when guiding profiled bars.

Follow the steps below to drain the hydraulic tank:

1. Turn the bar feeder off.
2. Make sure that most of the oil has returned to the hydraulic tank (1).
3. Place a container with sufficient capacity underneath the hydraulic tank (1).
4. Unscrew the drain plug (3).
   The oil drains into the container.

Follow the steps below to fill the hydraulic tank:

1. Turn the bar feeder off.
2. Make sure that most of the oil has returned to the hydraulic tank (1).
3. Pour the oil into the hydraulic tank (1) until it reaches the H-mark (2).



CAUTION

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.

8.3 CLEANING

NOTICE

Risk of machine disruption from lack of cleanliness!
Clean the bar feeder regularly.

8.3.1 BAR FEEDER

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 channels are sensitive to corrosive products. Use a soft cloth to clean them.

8.3.2 HYDRAULIC TANK

With the continuous running of the bar feeder, the quality of the hydraulic oil worsens over time. Cutting chips and sludge accumulate at the bottom of the hydraulic tank and are pumped into the hydraulic system. Those substances damage the hydraulic pump, guiding elements as well as the bar surface.

Therefore, it is recommended to drain and clean the hydraulic tank at least once every 6 months.

Drain the hydraulic tank before cleaning and fill it again afterward. To do so, follow the instructions in the associated section (→ DRAINING AND FILLING THE HYDRAULIC TANK on the previous page).

1. When the hydraulic tank is empty, wipe away the sludge inside it and the bar feeder.
2. Clean the drain plug.
3. Put a seal on the drain plug and screw it back in the hydraulic tank.

8.3.3 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.

8.4 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 PLC ALARMS

AL00 – NO PLC SOFTWARE!

Description

No PLC software can be detected. 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 anytime the safety line open.

Solutions

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

AL02 – MAIN ACCESS COVER OPEN!

Description

The PLC does not detect the input (X13 – SQ11) of the safety switch on the main access cover.
This alarm is generated when the main access cover on the bar feeder is open, exposing automated mechanical parts.

Solutions

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

AL04 – BAR FEEDER NOT IN WORKING POSITION!

Description

The PLC does not detect the input (X12 – SQ10) , and with the 2-position option input (X11-SQ10a), of the safety switch on the retraction device. The problem is generated when the bar feeder has not been brought into working position.

Solutions

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

AL05 – OIL PRESSURE FAILURE!

Description
The controller does not receive a signal (X26 - SP2) when using the hydraulic pump motor after a period of 30 s. The problem occurs whenever there is insufficient oil pressure (0.5 bar factory setting).

Solutions

1. Check the oil level.
2. Adjust or replace the pressure switch SP2.

AL06 – AIR PRESSURE FAILURE!

Description
The PLC does not detect input (X27 – SP1). The problem occurs whenever the air pressure is not sufficient, below 3 bar or 45 psi.

Solutions

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

AL07 – PLC ERROR!

Description
The PLC has generated an internal error.

Solutions

1. Press the STOP button.
2. Restart the bar feeder.

AL11 – PUSHER SUPPORT MALFUNCTION!

Description
The SQ3 sensor and/or SQ4 is poorly adjusted or defective.

Solutions

1. Check the setting sensors SQ3 and SQ4 or replace the faulty sensor.

AL13 – FAILURE SWITCH SQ1!

Description
The PLC does not detect the entry SQ1..

Solutions

1. Check or replace the switch SQ1.

AL16 – FAILURE ON SWITCH SQ3!

Description
The PLC does not detect the entry (X2-SQ3).

Solutions

1. Check the switch SQ3.

AL17 – FAILURE ON SWITCH SQ4!

Description
The PLC does not detect the entry (X3-SQ4).

Solutions

1. Check the sensor SQ4.

AL18 – FAILURE GUIDING CHANNEL!

Description

Guiding channel 1 cannot close or open.

Solutions

1. Check the switches SQ17 and SQ18.
2. Check the cylinder.
3. Check the pneumatic valve YV06.

AL19 – SWITCH SQ1 STILL ACTIVATED!

Description
The switch SQ1 is still activated.

Solutions

1. Check the presence of bars in front of the switch.
2. Check the switch SQ1.

AL20 – FAILURE SWITCH SQ1!

Description
The PLC does not receive the signal (X1 – SQ1). The problem appears when the pusher is not in park position or if the switch does not provide a signal.

Solutions

1. Check the switch SQ1.
2. Check for correct functioning of the protection mechanism of the sensor.

AL21 – FAILURE SWITCH SQ5!

Description
The PLC does not receive the signal (X5 – SQ5). The problem appears when the pusher is not in park position or if the switch does not provide a signal.

Solutions

1. Check the switch SQ5.
2. Check the chain tension.
3. Move the pusher manually back to home position.

AL22 – SIGNAL A2 INTERRUPTED!

Description
Signal A2 (automatic cycle) has been lost.

Solutions

1. Check the connection between the lathe and bar feeder.
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. Start the top-cut cycle again.
3. Check the part settings.
4. If the problem persists, please contact LNS.

AL24 – PART FEED OUT TIME ELAPSED!

Description
This alarm is generated when the bar feeder has not received any clamping device closing signal within the determined timeframe (30s.).

Solutions
Signal A1 missing

1. Check if there is a signal when the chuck is closed.
2. Check the wiring of the signal A1.

AL25 – LATHE DID NOT START IN PRODUCTION CYCLE!

Description
The PLC has not received the lathe chuck signal (X30 - A1) within a minute of heaving reached the top-cut position.

Solutions

1. Press the STOP key on the remote control to cancel the alarm.
2. Restart the lathe and bar feeder in automatic cycle.

AL26 – CLAMPING DEVICE HAS CLOSED DURING PART FEED OUT!

Description
The signal A1 (lathe chuck) has been lost before the end of the positioning.

Solutions

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

AL27 – BAR STOCK MOVING DURING HEADSTOCK REVERSING!

Description
While the headstock is reversing, the bar feeder is maintaining the bar stock against the turret, stop or tool. This problem occurs if the bar moves forward during this operation.
This means that the turret, stop or tool is defective, broken or at the wrong place.

Solutions

1. Check the status and position of the turret, stop or tool.

AL28 – PUSHER DID NOT FOLLOW THE BAR!

Description
The pusher could not translate on the distance programmed in the parameter “total loading length”.

Solutions

1. Check that the "Total feed length” value is equal to the distance made by the spindle, and not to the finished workpiece.
2. Check the pusher’s gripper. It could be worn, broken, or of incorrect size.
3. Check if the pusher was seized in the channel.
4. Check that the guiding shells are well sit, and remove any chips.
5. If this issue persists, please contact LNS.

AL29 – BAR STOCK NOT AGAINST CUT-OFF TOOL!

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

Solutions

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

AL30 – BAR STOCK LOST DURING PUSHER REVERSE!

Description
The PLC does not receive a signal (X14 - SQ12).
The problem occurs if:

- The chuck is too big,
- A too large burr hinders the remnant being picked
- A mechanical flaw hinders the fall of the remnant
- The sensor is maladjusted or faulty.

Solutions

1. Check that the pusher chuck is the right size for the current bar.
2. Check the condition of the pusher chuck.
3. Check that the bar does not have a big burr that could prevent it from being properly inserted into the pusher chuck.
4. Check the setting of the sensor SQ12.
5. Check that the lathe correctly chamfers the end of the remnant before the changing bar cycle begins.
6. If issue persists, please contact LNS.

AL31 – FAILURE IN BAR STOCK INSERTION!

Description
The diameter of the chuck or bar is not correct.

Solutions

1. Check the chuck diameter.
2. Check the bar diameter.
3. Check that the bar does not have a big blunder that could prevent the proper bar insertion.
4. Check the belt tension.

AL32 – FAILURE IN REMNANT EXTRACTION!

Description
The signal (X14 - SQ12) is not detected after the bar has been extracted from the chuck. Before the guiding shells open for the loading of a new bar, the material presence check confirms that the remnant has been extracted from the chuck.

Solutions

1. Check the operation of the extraction device.
2. Check the condition of the clamping jaws.

AL33 – REMNANT TOO LONG!

Description
The measured remnant length is too long to be removed by the bar feeder.

Solutions

1. Remove the remnant manually.

AL34 – WRONG PUSHER LENGTH!

Description
The length of the inserted pusher is incorrect.

Solutions

1. Check the stack of the pusher slopes.

AL35 – BAR STOCK MAGAZINE EMPTY!

Description
No bar has been detected in the bar feeder.

Solutions

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

AL36 – BAR STOCK DETECTED IN BAR FEED SIMULATION MODE!

Description
A bar has been detected during simulation mode, which is not allowed.

Solutions

1. Check for a bar inside the bar feeder.
2. Remove the bar.

AL37 – BAR STOCK POSITION CONTROL FAILURE!

Description
An obstacle is preventing the pusher from progressing.

Solutions

1. Check for a mechanical obstruction (incorrectly loaded bar, tool inside the bar feeder, incompatibility between the pusher and spindle liner dimensions).

AL38 – LATHE CHUCK OPENED DURING PRODUCTION CYCLE!

Description
The lathe chuck has openend (Signal A1) at an inopportune moment.

Solutions

1. Check the part program in the lathe.

AL39 – FRONT REST FAILURE!

Description
The front rest is blocked when opening or closing.

Solutions

1. Check that nothing blocks the operation of the front rest.
2. Check that the bar diameter corresponds to the front rest.
3. Check the sensors SQ13 and SQ14 and replace if necessary.
4. Check the front rest motor.
5. Check relays KA5 and KA6.

AL40 – AUTOMATIC BAR SELECTION FAILURE!

Description
The automatic bar selection is faulty.

Solutions

1. Check the switch SQ20.
2. Check the motor M7.
3. Check the relay KA7.

AL41 – SERVO COMMUNICATION FAILURE!

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

Solutions

1. Check the connections between the PLC and servo amplifier.
2. Check that the 24V power supply is stable.

AL42 – ALARM ON SERVO AMPLIFIER!

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

Solutions

Please refer to the section “Servo amplifier alarms".

(→ MAINTENANCE, 🕮 *Troubleshooting guide*).

AL44 – SERVO DRIVE NOT READY!

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

Solutions

1. If the issue persists, please contact LNS.

AL45 – POSITIONING COULD NOT BE REACHED!

Description
An obstacle is preventing the pusher from progressing.

Solutions

1. Check for a mechanical obstruction (incorrectly loaded bar, tools inside the bar feeder, incompatibility between the pusher and spindle liner dimensions).
2. Check the alignment between the bar feeder and lathe.
3. If issue persists, please contact LNS.

AL46 – M-CODE PART BEGIN NOT IN SYNC!

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

Solutions

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

AL47 – SQ1 SENSOR ACTIVATED TOO SOON!

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

Solutions

1. Press the STOP key on the remote control.
2. Select " Service".
3. Select "Position".
4. Search for the value corresponding to the text "Max length of bar" (this value cannot exceed that of the spindle length).
5. Correct the value, if necessary.
6. Measure the bar to be loaded. The bar length must not exceed the entered value.

AL48 – A21 SIGNAL MISSING!

Description
The loading or unloading cycle is interrupted due to lathe signal A21 missing.

Solutions

1. Switch on the signal A21 "lathe in function ".

AL52 – SERVO MOTOR REBOOT REQUESTED!

Description
It is requested to reboot the servo motor.

Solutions

1. Reboot the servo motor.

AL53 – PUSHER SIGNAL MISSING!

Description
An interface input signal does not indicate the correct status.

Solutions

1. Check the A2, A4, A7 and A8 signal on the interface.
2. Check the bar feeder interface parameters.
3. Check the lathe interface parameters.

AL55 – FEED PART TOO SHORT!

Description
The feed part is too short.

Solutions

1. Check the length of the bar.

AL58 – INCORRECT PART CONFIGURATION!

Description
The bar stock diameter or material shape is incorrect.

Solutions

1. Check the bar diameter.
2. Check the material shape.
3. Check the part number to load.

AL67 – ECONNECT COMMUNICATION FAULT!

Description

The communication between the lathe and bar feeder cannot be established.

Solutions

1. Check the network configuration.
2. Check the ethernet cable for defects.
3. Check the gateway configuration.

AL80 – ECONNECT - NO RECIPE NAME!

Description

The recipe part name in the eConnect register is missing.

Solutions

1. Check the register value loading.

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 part library.

AL82 – ECONNECT - DATABASE CONNECTION ERROR!

Description

There is a database system error .

Solutions

1. Contact LNS.

AL83 – ECONNECT - RECIPE CHANGE FORBIDDEN!

Description

The recipe cannot be loaded for one of the following reasons:

- The new recipe has a different diameter or shape than the current one.
- The bar feeder is not in stop mode and a safe position.

Solutions

1. Change the bar diameter or shape.
   or
2. Put the bar feeder in stop mode and in a safe position.

AL84 – ECONNECT - NO COMMUNICATION WITH LATHE!

Description

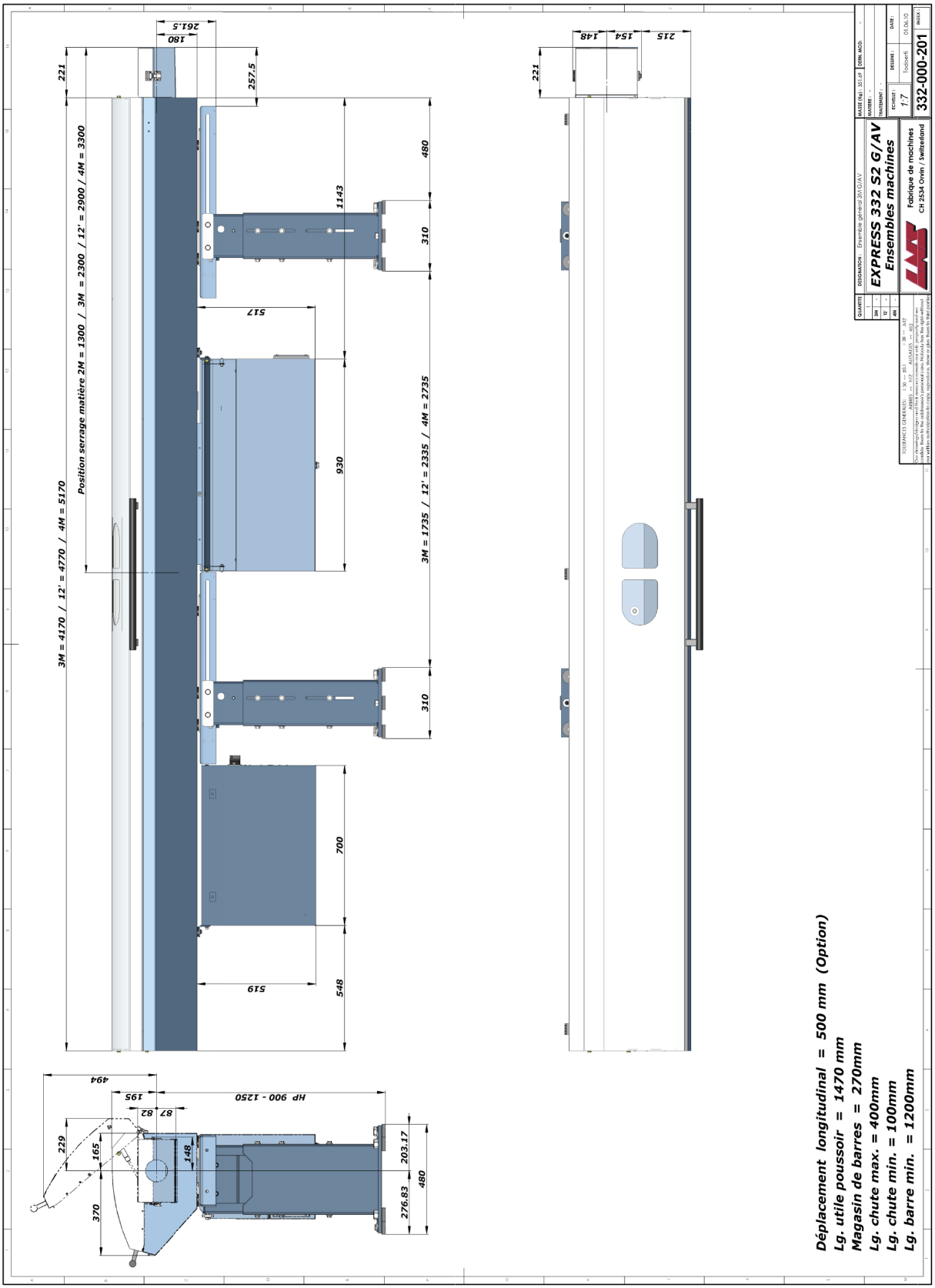
The lathe Life-Bit is not functioning.

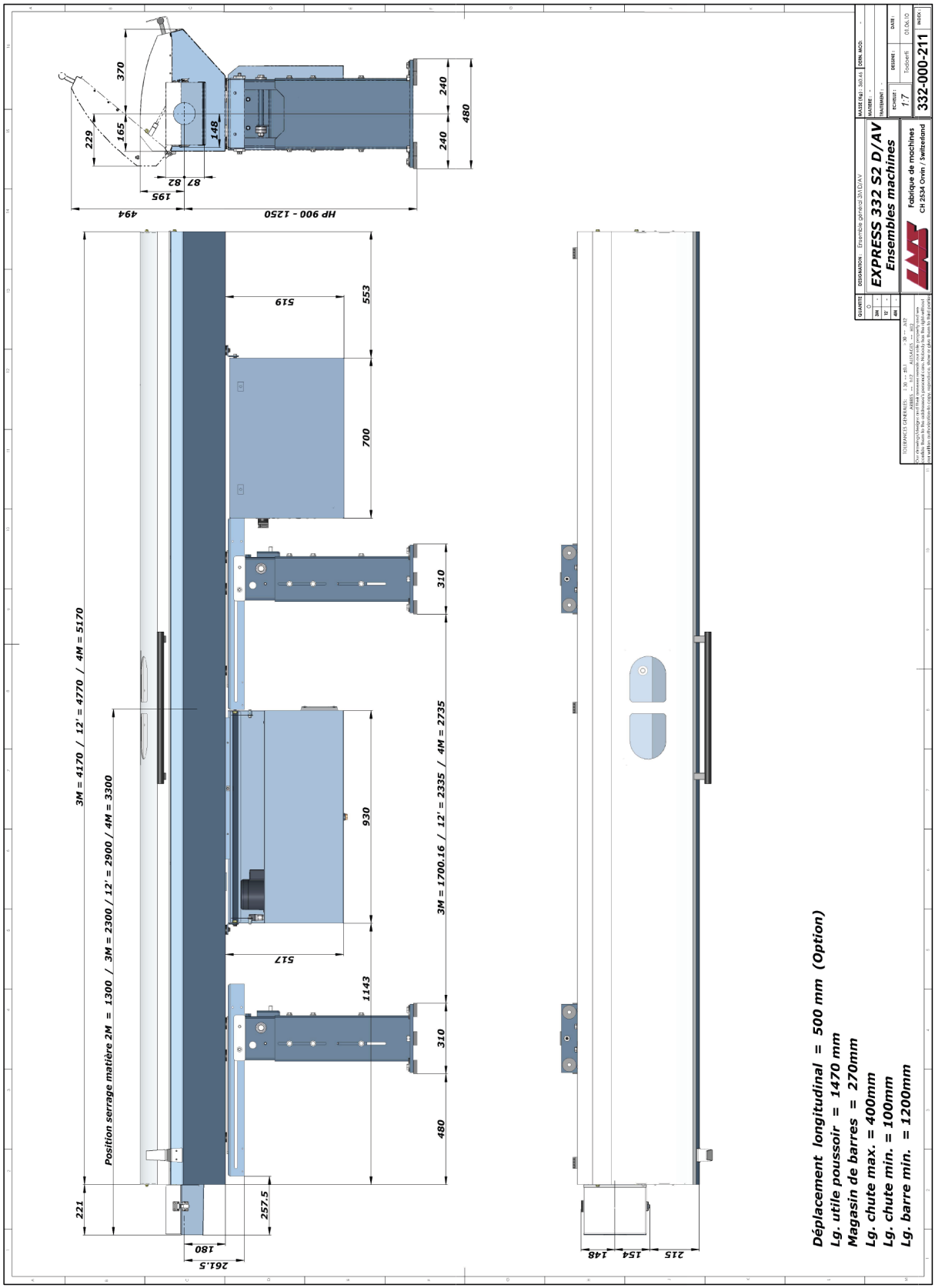
Solutions

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

11 APPENDICES

11.1 DIMENSIONAL DRAWING




HP 900 - 1250
494
195
87
82
148
165
229
370
240
480
240
519
553
700
310
930
517
1143
310
480
3M = 4170 / 12' = 4770 / 4M = 5170
Position serrage matière 2M = 1300 / 3M = 2300 / 12' = 2900 / 4M = 3300
3M = 1700.16 / 12' = 2335 / 4M = 2735
221
257.5
180
261.5
215
154
148
Déplacement longitudinal = 500 mm (Option)
Lg. utile poussoir = 1470 mm
Magasin de barres = 270mm
Lg. chute max. = 400mm
Lg. chute min. = 100mm
Lg. barre min. = 1200mm
EXPRESS 332 S2 D/AV
Ensembles machines
Fabrique de machines
CH 2534 Orvin / Switzerland
332-000-211
1:7

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

service@lns-europe.com

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

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11.5 EC DECLARATION OF CONFORMITY

EC DECLARATION OF CONFORMITY

According to Annex II 1 A of the Directive 2006/42/EC

We declare that the following machinery complies with the next 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**
Representative:	**LNS Sàrl** **Route de Frinvillier** **2534 Orvin** **Switzerland**
Compiling relevant technical information according to Annex VII Part A, MD 2006/42/EC:	**Plaseco** **Kurt De Pauw** **Route de Payerne 11** **CH-1752 Villars-sur-Glâne** **Switzerland**
Description of the machine:	Bar Feeder
Type:	EXPRESS 332 S2+
Serial number:	

The machinery meets the following essential requirements applicable in accordance with Directive 2006/42/EC: 1.1.2, 1.1.3, 1.1.5, 1.1.6, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.2.5, 1.2.6, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.5, 1.3.6, 1.3.7, 1.3.8, 1.3.9, 1.4.1, 1.4.2, 1.4.3, 1.5.1, 1.5.3, 1.5.4, 1.5.8, 1.5.9, 1.6.1, 1.6.2, 1.6.3, 1.7.1, 1.7.2, 1.7.3, 1.7.4.

The following transposed harmonized standards have been used:

Concerning 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

Concerning the Low Voltage Directive:
EN 61439-1:2019; EN 61439-2:2020; EN 61439-3:2019

Concerning the EMC Directive:
EN 61000-6-4:2020; EN 61000-6-2:2019

Place and date
Orvin, January 11th, 2022

(Seal and signature)
Katja Hiltbrunner
Export Manager