AUTOMATIC BAR FEEDER

ATTACHMENTS LIST
MANUAL FOR USE AND MAINTENANCE
KEYBOARD INSTRUCTION MANUAL
SPARE PARTS BOOK
SCHEMATICS
EC CONFORMITY DECLARATION FOR MACHINE

VIP80E-II
VIP80Er-II

EN **MANUAL FOR USE AND MAINTENANCE**

Rel. 1 **Date** 01/09/2008 **Cod.** 807015410

S/N

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TYPE OF DOCUMENT:	**MANUAL FOR USE AND MAINTENANCE**
PRODUCT:	**AUTOMATIC BAR FEEDER**
MODEL:	**VIP80E-II** **VIP80Er-II**

IEMCA S.p.A.
Via Granarolo, 167
Tel. 0546/698000 - Fax. 0546/46224
TLX 550879

General Description of Supply

The bar feeder you bought is a machine designed to feed machine tools properly prepared for bar machining. It consists of:

A basic unit made up of a metal structure, a control panel, safety devices and protections in compliance with the EU regulations governing this sector.

A set of format parts related to the specific machining processes that the machine will perform. According to the terminology used by Iemca these parts are named: guide channels, bar pushers, revolving tips, collets, bushes and sleeves. Because of the kind of use, these parts are subject to wear.

Any additional parts can be supplied upon request.

Applicable Safety Regulation

According to Directive 2006/42/EC article 2B, the bar feeder is an interchangeable equipment and is supplied with the appropriate safety devices.

Together with the supply you will find the EC declaration of conformity in compliance with the above-mentioned Directive.

The list of the safety devices is shown in section 2, paragraph 2.3, of this manual.

The bar feeder should be installed according to the manufacturer's instructions which are highlighted in the supplied check list.

Should the bar feeder be used together with machine tools that do not have the CE marking, Iemca reminds to their clients that they should assess if the device is in compliance with Directive 2009/104/EC and subsequent amendments even after installing the bar feeder.

Safety warning. Only qualified and properly trained personnel can work with machine tools and the related interchangeable equipments.

EC CONFORMITY DECLARATION
(2006/42/ EC Regulation, Enclosure II, Part A)

Mr. TOMASO TAROZZI, acting as MANAGING DIRECTOR CEO and delegated by the company I G M I S.p.A. DIVISIONE IEMCA with legal office and establishment in Via Granarolo, 167 – 48018 FAENZA (RA) as manufacturer,

DECLARES

on his own responsibility that the machine:

AUTOMATIC BAR FEEDER

VIP 80e-II	
(type/model)	(registration number)

- is in compliance with the requirements of 2006/42/ EC regulation and with the national implementing regulations,

- is in compliance with the following European regulations:

    - 2006/95/ EC regulation (low tension);
    - 2004/108/ EC regulation (electromagnetic compatibility).

Otherwise he declares that the person in charge for the technical issue editing is Mr. Giampaolo Morandi, General director of the a.m. company.

TOMASO TAROZZI – Managing Director CEO

FAENZA, 01/01/2010

…….
(delegate signature)

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1.1 WARRANTY CONDITIONS

The applicable warranty period is subordinated to a correct assembly and coupling of the bar feeder to the lathe. In particular, prior to the first start-up, accurately make sure that the bar feeder is correctly aligned with the lathe and fixed with expansion plugs as shown in chapter 4.

The product warranty is valid only if the bar feeder is installed by an authorized technician with Original Installation Certificate.
Please ask the technician, who will make the installation, to show the certificate, in order to ascertain the quality of the technical operations being carried out.
The warranty shall begin from the date on the “Installation Certificate” duly filled in and signed.
The document must be sent by mail to:
TECHNICAL SERVICE DEPARTMENT
IEMCA division of IGMI spa
48018 Faenza (Ra) ITALY - Via Granarolo, 167


IEMCA CERTIFICATO DI INSTALLAZIONE N° 0517 /02

Installazione e training eseguito da:

Ditta		Data	
Tecnico Installatore		N° Rapporto di Intervento	

Presso:

Cliente		Partecipanti
Nazione		
Caricatore		
Matricola		
Macc./Tipo		

A R G O M E N T O

Errori - Cause - Rimedi, spiegazione dei principali allarmi riportati sul manuale.

Presa visione della manualistica e delle indicazioni di manutenzione preventiva.
Modalità per contattare l'assistenza tecnica autorizzata IEMCA.

Timbro e firma del cliente

IGMI s.p.a.

1.2 PURPOSE OF THE MANUAL

This manual, which is an integral part of the bar feeder, has been carried out by the manufacturer in order to provide all necessary information for those who are authorised to interact with it.
Besides adopting a good use technique, the receivers must carefully read this information and rigorously follow it.
This information has been carried out by the manufacturer in his mother tongue language (Italian) and can be translated into other languages in order to satisfy any legal and/or commercial needs.
Some time devoted to reading such information will enable the users to avoid any risk to the health and safety of people as well as economic damage.
In the event that, in this manual there is some additional information regarding the effective equipment of the bar feeder, it does not interfere with the reading.
Keep this manual for the whole life of the bar feeder in a well-known and easily accessible place in order to have it always available when it is necessary to consult it.
The manufacturer reserves the right to make any changes without the obligation to notify them in advance.
In order to underline some very important parts of the text or to indicate some important specifications, some symbols have been adopted. Their meaning is described below:

DANGER - WARNING:

indicates some situations of great danger that, if neglected, can seriously put the health and safety of people at risk.

WARNING - CAUTION:

indicates that it is necessary to adopt suitable behaviours so as to avoid jeopardising the health and safety of people and causing any economic damage.

INFORMATION:

these are technical instructions of particular importance.

For a quick search of the topics, see the table of contents.
This manual, which contains all the instructions for the bar feeder operation and maintenance, is supplied with: the "Keyboard instruction manual".
The "Keyboard instruction manual" contains all the instructions on how to use the installed software.

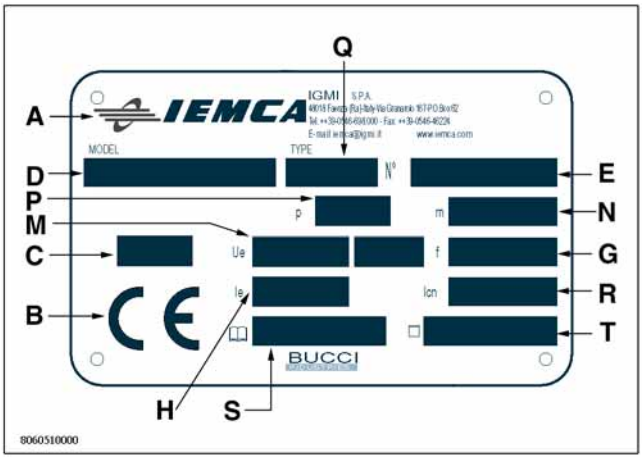
INFORMATION:

The data included in this publication are only given as an example.

IEMCA may apply changes to the model described in this publication at any time for any technical or business reason. Contact IEMCA service department for further information.

1.3 MANUFACTURER AND BAR FEEDER IDENTIFICATION

The identification plate shown in the figure, is directly applied onto the bar feeder. It contains any reference and all the indications indispensable for operating the machine safely.



A Manufacturer identification.
B EC mark of conformity.
C Year of manufacture.
D Bar feeder model.
E Serial number.
G Mains frequency.
H Power consumption.
M Supply voltage.
N Bar feeder weight.
P Pneumatic system pressure.
Q Bar feeder and bar pusher length.
R Interrupting power.
S Base Wiring Diagram Number.
T Interface Wiring Diagram Number.

INFORMATION:

always provide the manufacturer with the above mentioned specifications when requesting information or ordering spare parts, etc.

1.4 ASSISTANCE REQUEST MODE

For any need apply to an authorised service centre.
For any request of technical assistance concerning the bar feeder, indicate the data on the identification plate, the approximate hours of use and the kind of defect found.

1.5 GLOSSARY AND TERMINOLOGY

Some recurrent words in the manual are here described in order to provide a more complete understanding of their meaning.
Routine maintenance: set of operations necessary to ensure the appropriate operation and efficiency of the bar feeder. Usually these operations are programmed by the manufacturer who defines the necessary competence and the assistance procedures.
Extraordinary maintenance: set of operations necessary to ensure the appropriate operation and efficiency of the bar feeder. These operations are not programmed by the manufacturer and must be carried out by the maintenance technician.
Expert technician: authorized person chosen among those who have the requirements, competence and information needed for the installation, operation and unscheduled maintenance of the bar feeder.
Expert operator: authorized person chosen among those who have the requirements, competence and information needed for the installation, operation and scheduled maintenance of the bar feeder.
Loading axis: axis of the bar coinciding with the spindle axis of the lathe.
Remnant: final ejection portion of the machined bar.
Facing position: position of the bar in the lathe, during the facing phase.

1.6 ATTACHED DOCUMENTS

Together with this manual, the customer receives the following documents.
- Keyboard instruction manual; it contains all the operation instructions for the operational parameter setting.
- Wiring diagram.
- Spare parts catalogue.
- CD-Rom containing all the above-mentioned documents, inclusive of the Brochure with all the technical requirements of the bar feeder, the wiring diagram and the collet selection manual.

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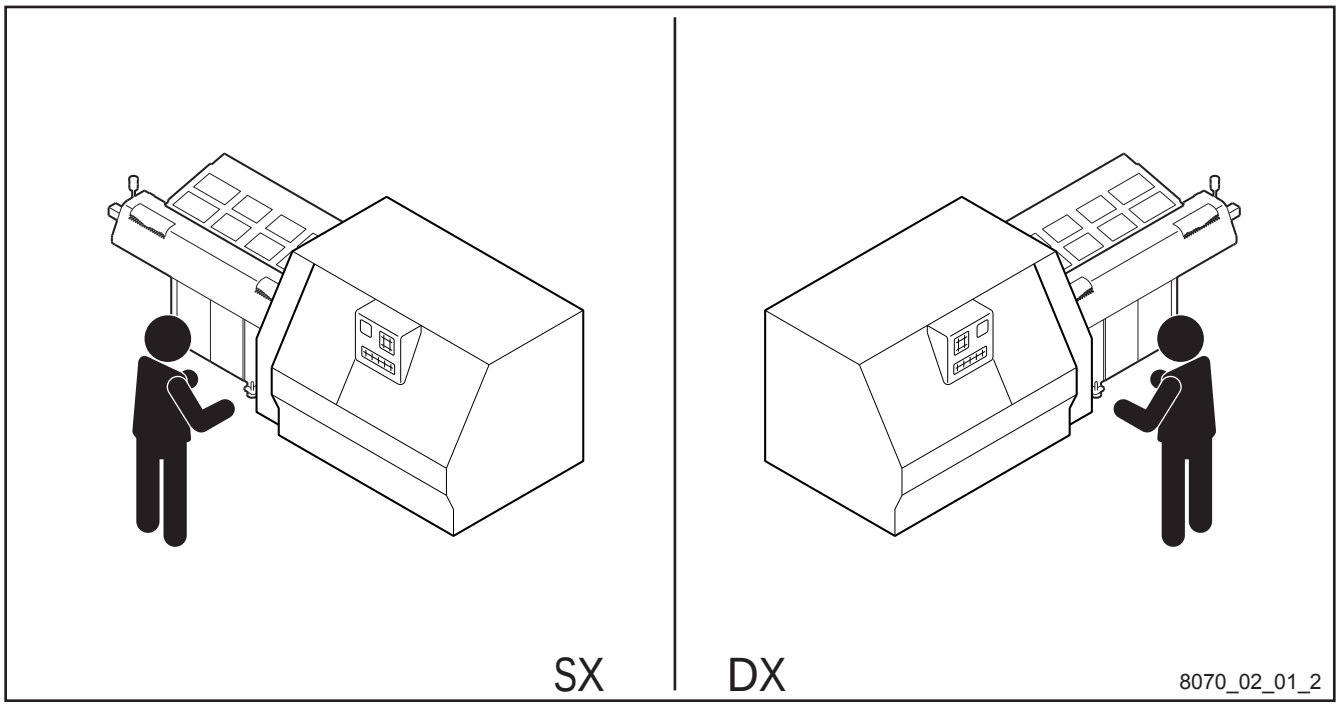
2.1 BAR FEEDER GENERAL DESCRIPTION



The bar feeder in question has been designed and manufactured in order to automatically feed the bars to be machined on the lathe.
It has been manufactured in two versions:
- VIP80E-II (left version – lathe on the right of the bar feeder)
- VIP80rE-II (right version – lathe on the left of the bar feeder)

The figure represents the two versions.

IMPORTANT:

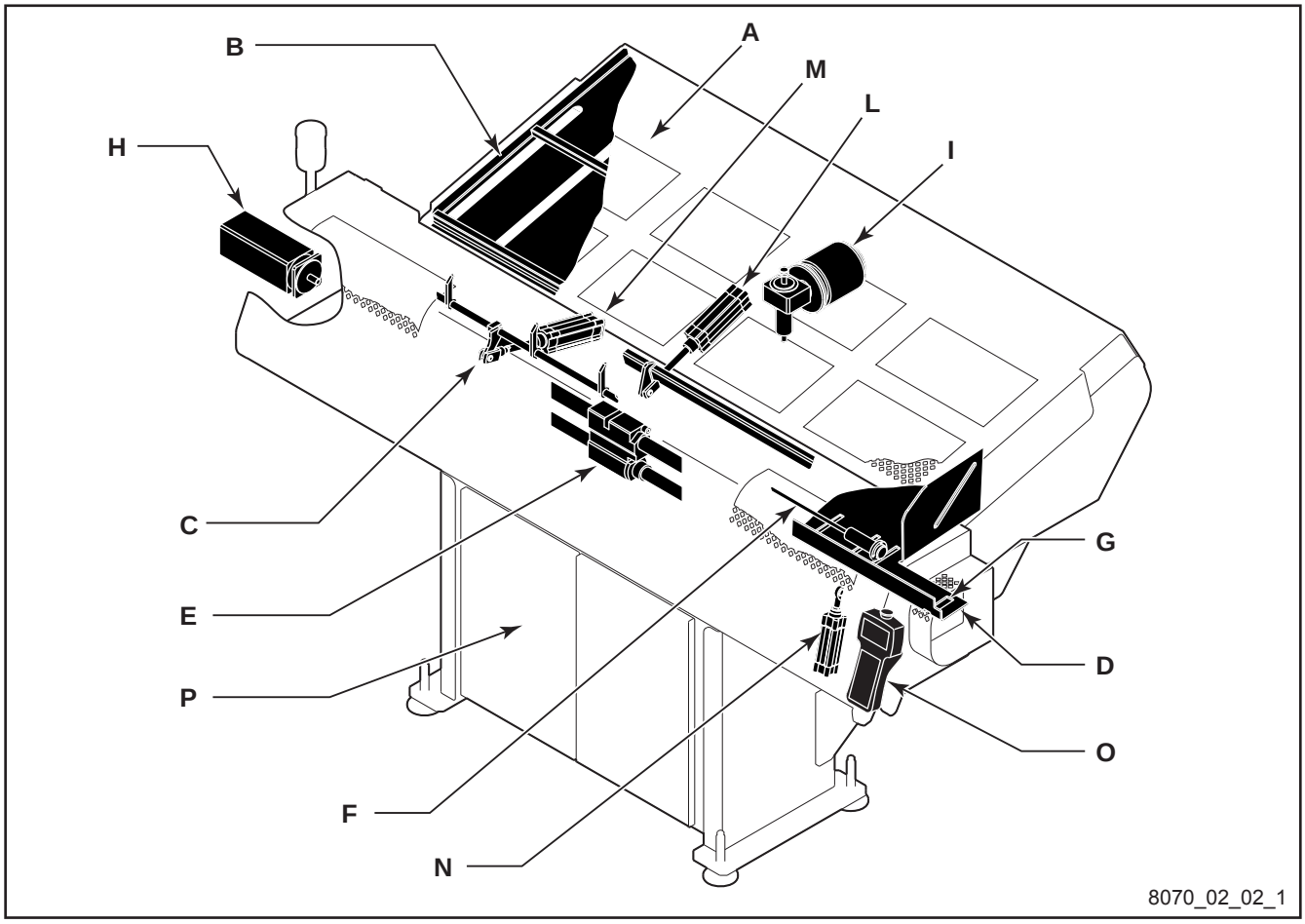
the information in this manual (texts, tables, and illustrations) refer, unless otherwise specified, to the left version (VIP80E-II).

The bar feeder can feed bars with different (round, square, hexagonal) sections and of maximum length equal to that of the spindle liner.
The operating cycle is directed by a PLC, integrated in the electrical control panel, which interacts with the lathe controls.
It is equipped with a handheld keyboard that enables the operator to interact with all the controls without forcing him to leave his work station.
The preparation and tooling phase of the machining change (diameters or different sections) is extremely easy and quick.
Remnant ejection can take place with the feeding either of the bar pusher or of the following bar.

IMPORTANT:

carry out the bar feeder installation in a place which is sheltered from bad weather.

2.1.1 MAIN PARTS



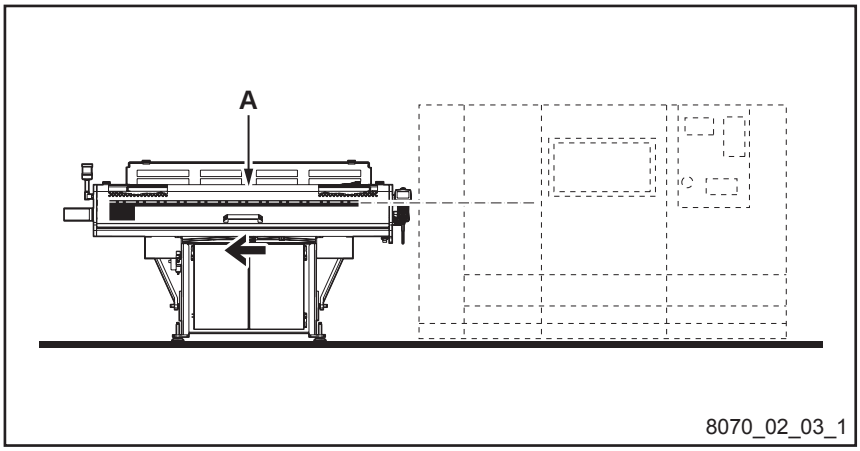
A Magazine; contains the bars to be loaded supporting the bar drop control devices.
B Bar selection table; through lowering onto the second bar all the previous bars present in the magazine are blocked, leaving the first bar free.
C Bar drop control device unit; accompanies the bar onto the guide.
D Guide channel; this device drives the bar and centres it correctly into the lathe.
E Carriage unit; this device introduces the bar into the lathe.
F Bar pushing unit; this device pushes the bar inside the lathe until it has been completely machined.
G Flag device; this device is activated by the arrival of the bar fore end.
H Bar feeding motor; thanks to a trapezoidal screw, motions are transmitted to the carriage and to the bar pusher.
I Guide channel/magazine driving system: transmits the motion to the guide channel/magazine.
L Piston for bar selection table; it starts the upstroke and downstroke of the selection table.
M Piston for bar drop control devices: controls the upstroke and downstroke of the bar drop control devices.
N Piston for bar pushing unit: controls the upstroke and downstroke of the bar pushing unit.
O Handheld keyboard; sets the programming and activates the operative phases of the bar feeder.

P Electric cabinet; houses the electrical control panel.

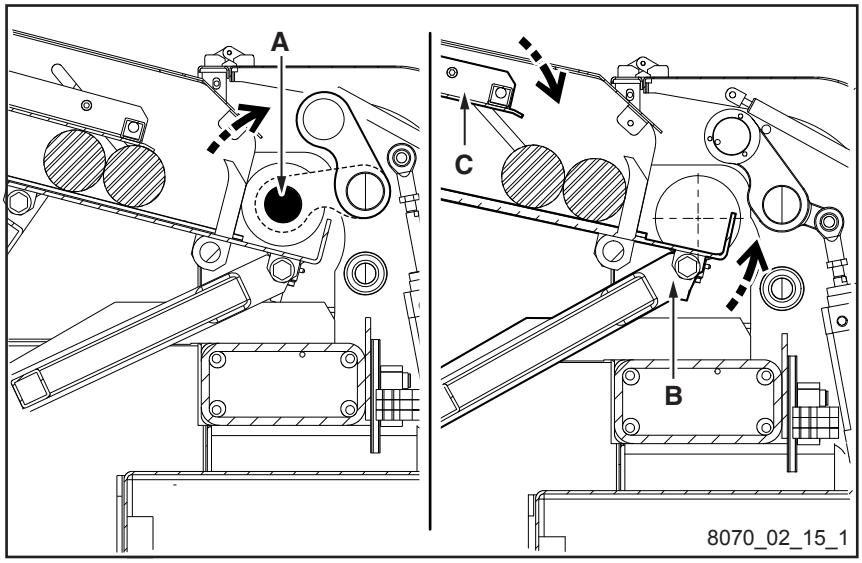
2.2 OPERATING CYCLE

The phases of the bar feeder operating cycle are represented and described below.

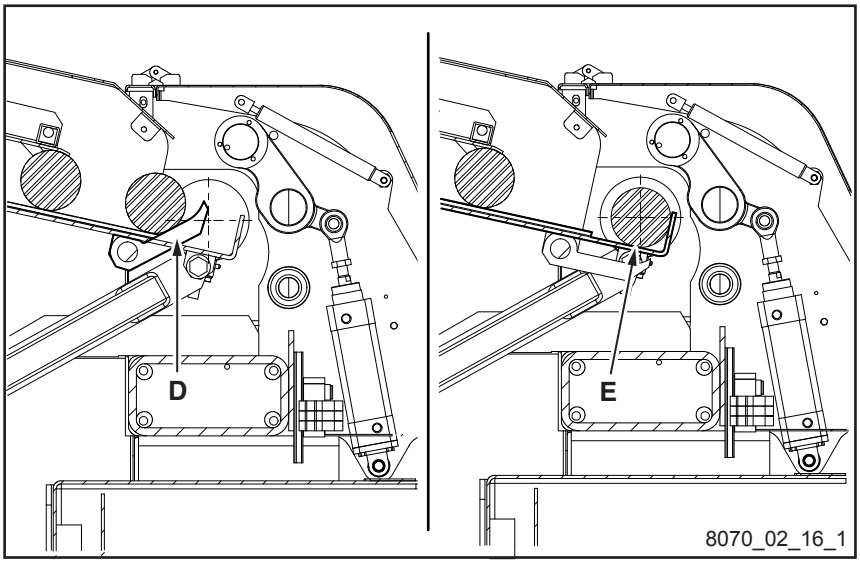
- At the stop of the lathe working cycle, the bar pusher (A) moves to the back limit stop position.



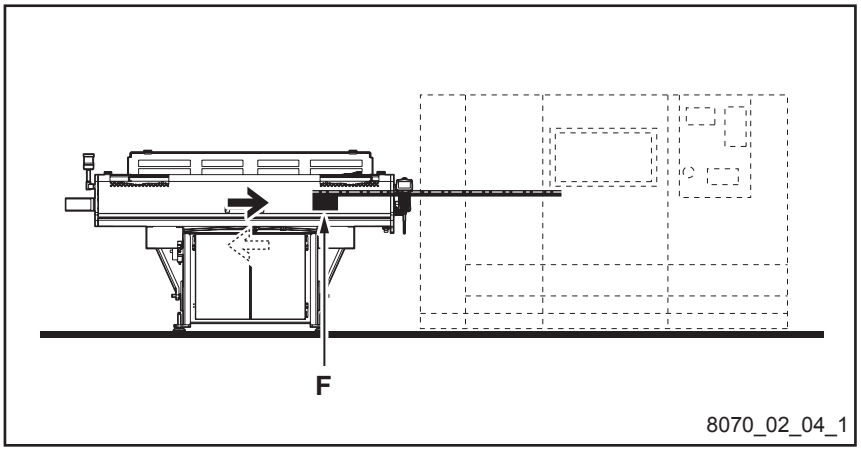
- The bar pusher (A) is lifted.
- At the same time, the guide channel/magazine (B) is lifted and the bar selection table (C) is lowered (the bars before the bar which is to be loaded are blocked).



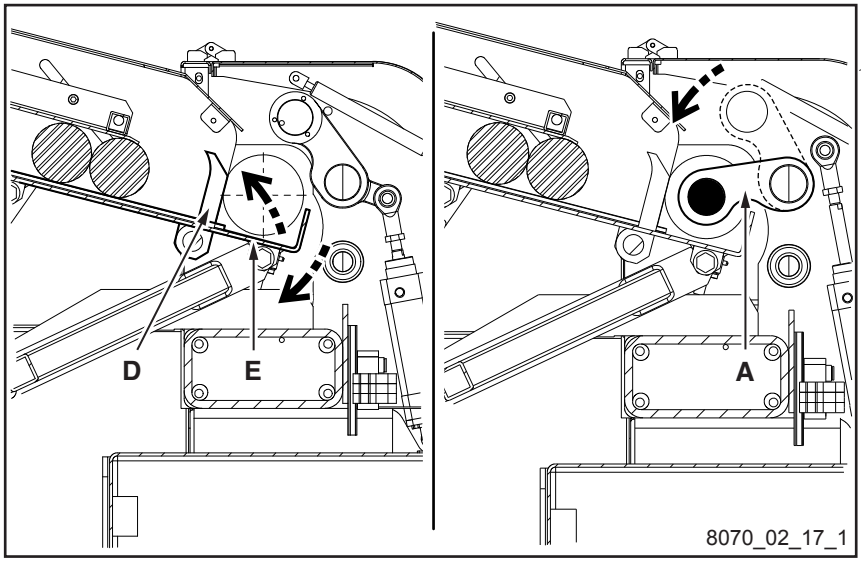
- The "bar drop control device" unit (D) is lowered and accompanies the first bar into the guide channel (E). The bar is already in line with the loading axis.



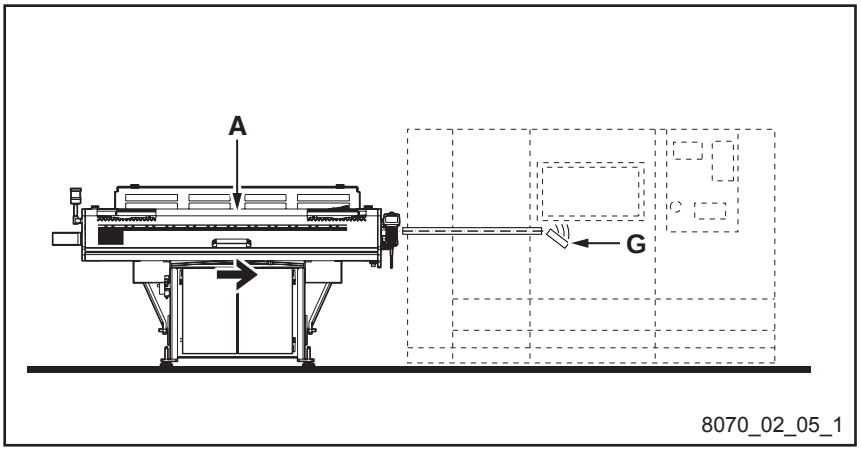
- The bar is inserted into the carriage lathe (F) that then goes back to its initial position.



- The guide channel (E) is lowered and at the same time the "bar drop control device" unit (D) is lifted. The bar pusher (A) is lowered and lines up with the loading axis of the lathe spindle.



- The bar pusher (A) inserts the bar into the spindle liner. The bar ejects the remnant (G) which is a residual of the previous machining, and is positioned for the facing.



The lathe operating cycle starts with the beginning of the bar facing phase.
At this point the bar moves forward in order to be worked until the piece is completed.
The last phase is repeated until the bar is finished, and a new operating cycle then starts.

2.2.1 SUB-SPINDLE MODE OPERATING CYCLE

The SUB-SPINDLE MODE function allows measuring the length of the loaded bar and, without carrying out any feeding with the bar pusher, allows detecting the end of the material by using the interface signals.

INFORMATION:

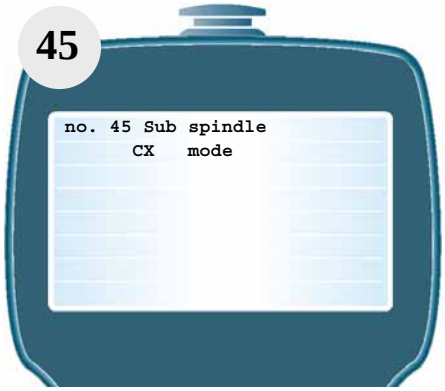
To enable the Sub Spindle mode it is necessary to enable parameter 45 and to set all the subparameters; if one of these values is not set, when trying to set the automatic mode, the corresponding signals will appear. See paragraph 2.13 Errors-Causes-Solutions from no.36 to 40.

Obligatory subparameters to be set in parameter 45.:

A Torque start-up
B Piece length
C Tool thickness
D Piece facing
E Collet opening no. (for piece)
F 0-K37/1=K15b

	DEFAULT VALUE	PROGRAMMABLE VALUE
	VIP80E-II	**VIP80E-II**
A	**0**	**/**
B	**0**	**/**
C	**0**	**/**
D	**0**	**/**
E	**0**	**/**
F	**1**	**/**

CX Read-only parameter showing the condition that implements the bar measurement (Start-up); can range from C1 to C4. When a request from C1 to C4 is present, it is possible to see which condition is active in the position of the display in the identification point like Cx.



DEFAULT VALUE	PROGRAMMABLE VALUE
VIP80E-II	**VIP80E-II**
0	**0/1**

C1= start
C2= changeover from manual to automatic.
C3= when the collet closes after the bar change phase.
C4= if the lathe opens the collet manually when the bar feeder is in automatic mode.

Conditions C1 and C3 do not need any Start-up signal from lathe.
Conditions C2 and C4 need a Start-up signal from lathe (the bar pusher moves backwards to the 0-axis sensor and the bar to be machined is measured).

INFORMATION:

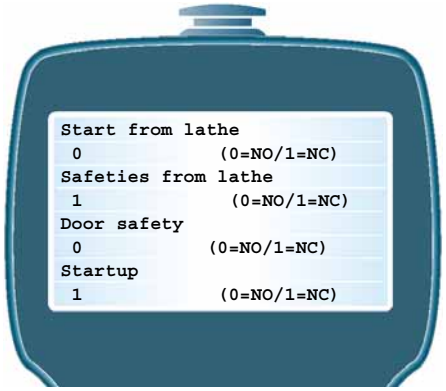
All four conditions from C1 to C4 need a closed collet signal from lathe to begin with Start-up procedure.

Example of bar feeder start in automatic mode (detection of C2 condition)

Press the key AUT.,
if the lathe collet is open the display shows:
41 Close the collet!

To begin with Start-up procedure it is necessary to receive a Start-up signal from lathe. If that does not happen the display will show: "Waiting for Start-up from lathe".

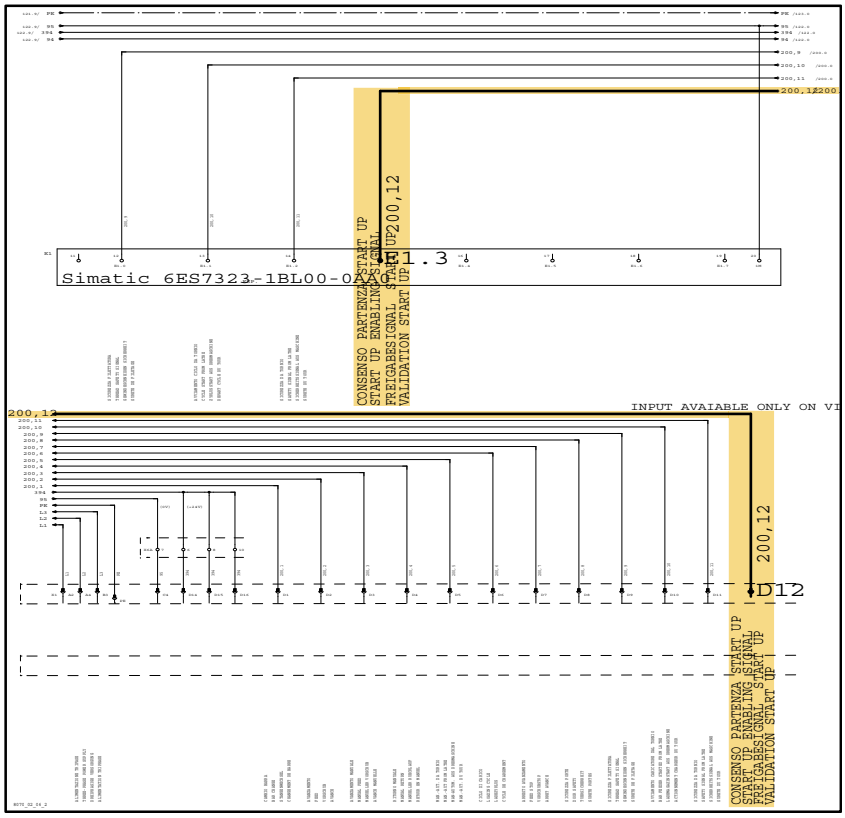
Operation only allowed to authorized personnel.
In case the lathe does not manage the signal, just set Start-up subparameter to 1 in parameter 85.

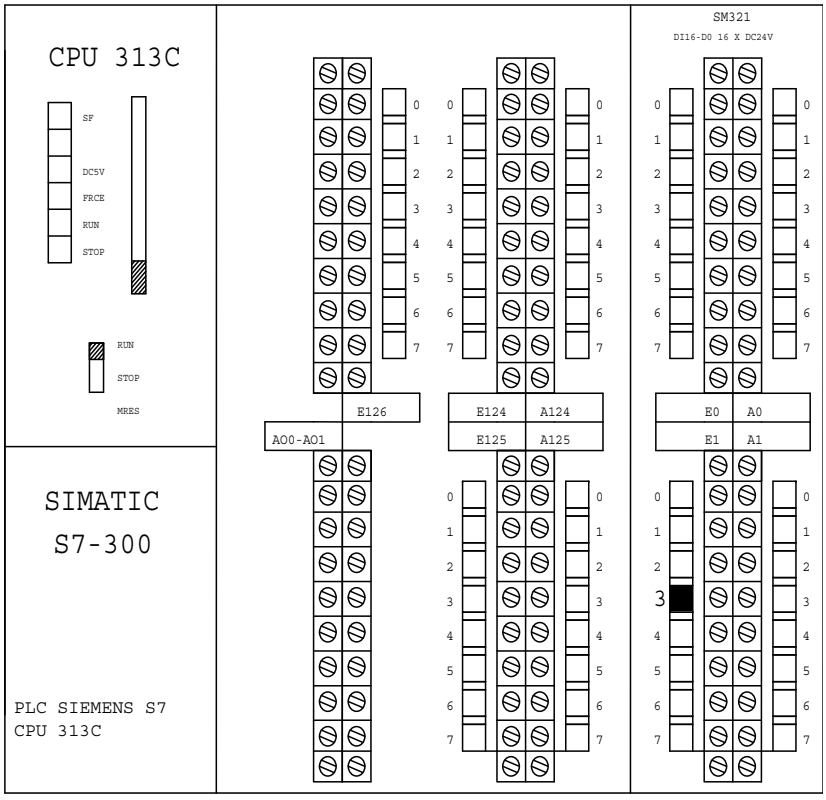


INFORMATION:

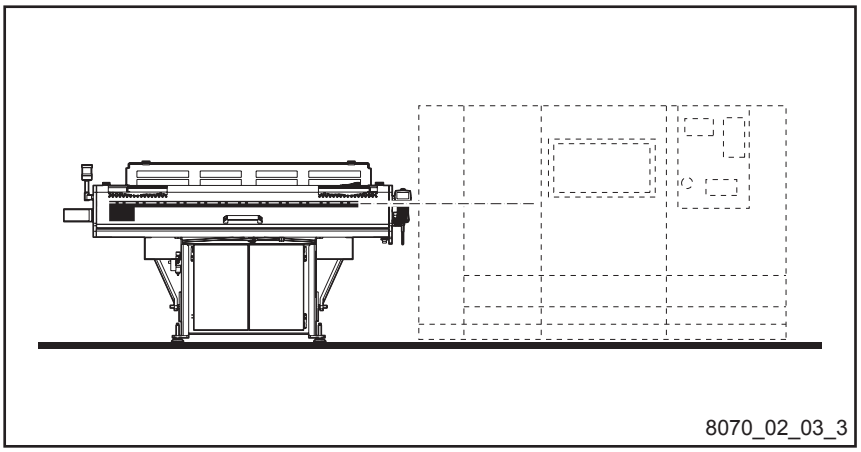
The messages described above appear in all four conditions from C1 to C4 depending on the characteristics described for each one.

The lathe sends a Start-up signal to the bar feeder and waits for the K15b signal.

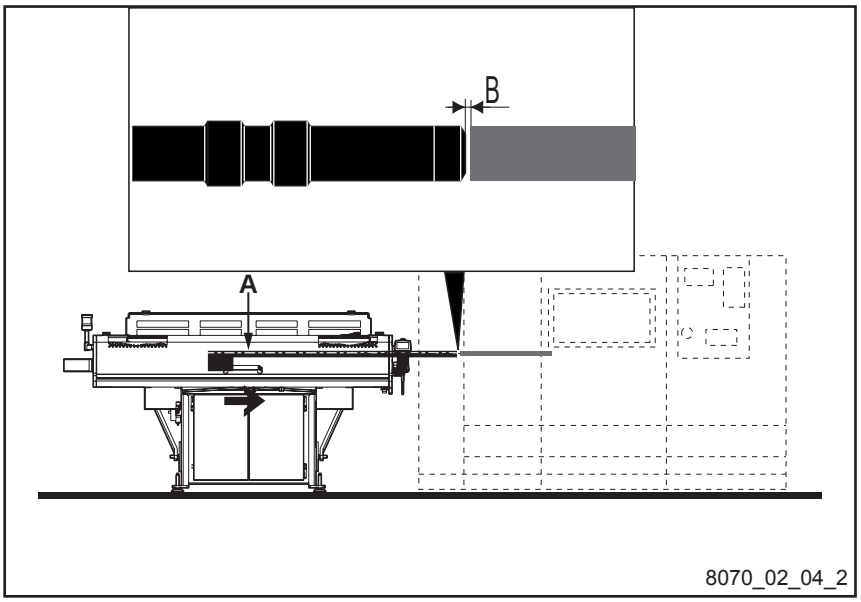




Here follow the phases performed by the bar feeder during Start-up procedure:
Zero axis search
The bar feeder performs the zero axis search to prepare for a correct bar measurement. If the feeding carriage is already positioned on the Zero Axis it will perform a short feeding and then move backwards to the 0 sensor.
In the C3 Start-up condition (at collet closing after bar change phase) the zero axis search is not performed and the procedure goes directly to the next step.


8070_02_03_3

Bar measurement
The bar pusher (A) moves forwards until the mechanical stop (B) determined by the bar to be machined. The bar feeder carries out a calculation, according to the values set in subparameters of Par. 45, to determine the collet opening number before detecting the end of the bar being machined and thus sending the bar end signal to the lathe (K1).



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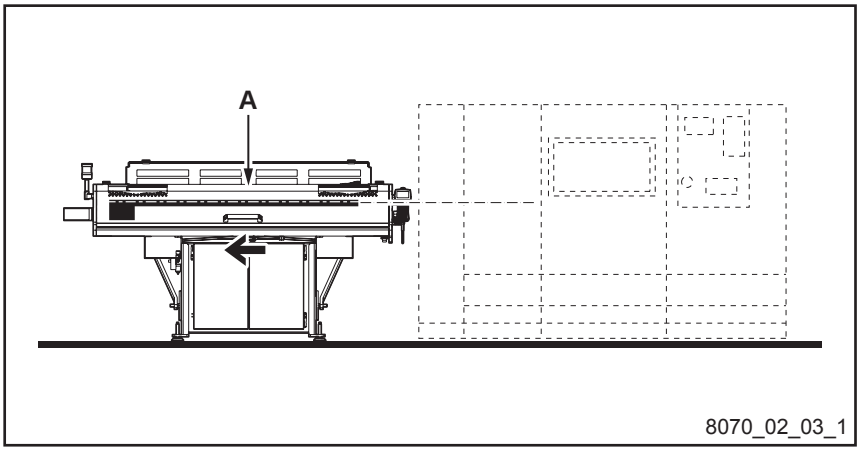
Return to zero
The bar pusher (A) moves to its back limit stop not to hamper the bar machining.



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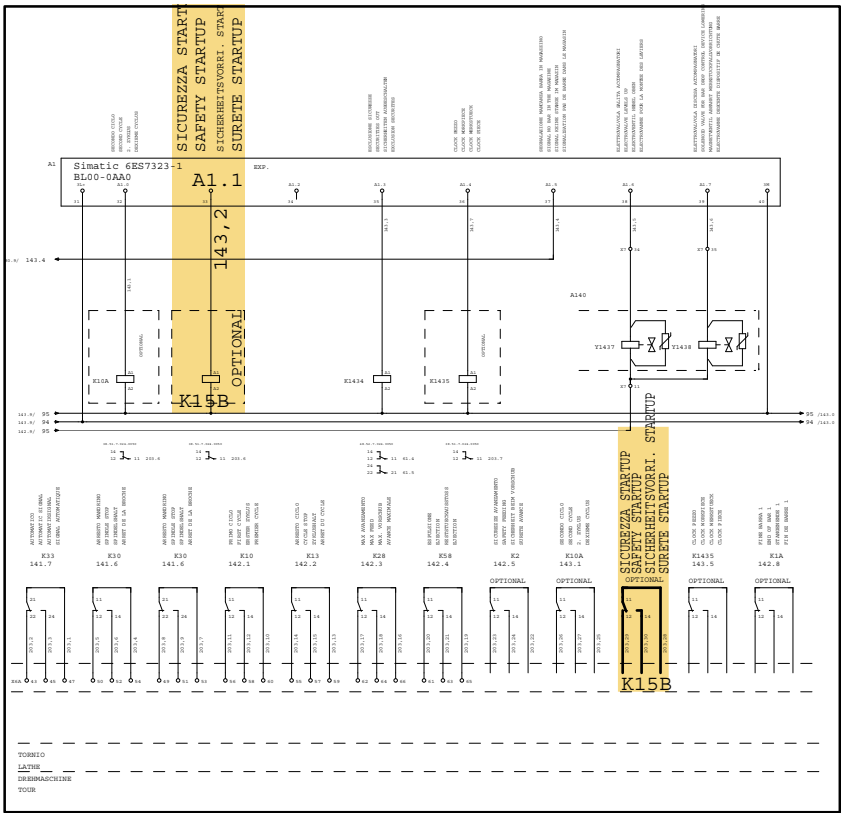
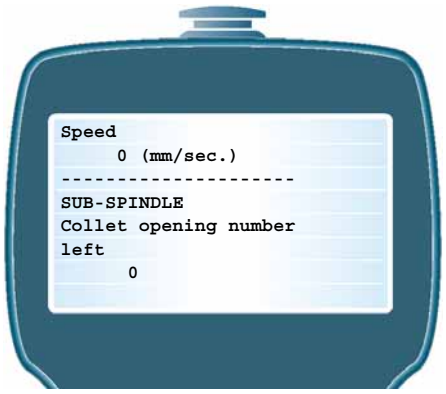
The bar feeder sends a cycle start signal via K15b to the lathe when the return stroke is completed.



INFORMATION:

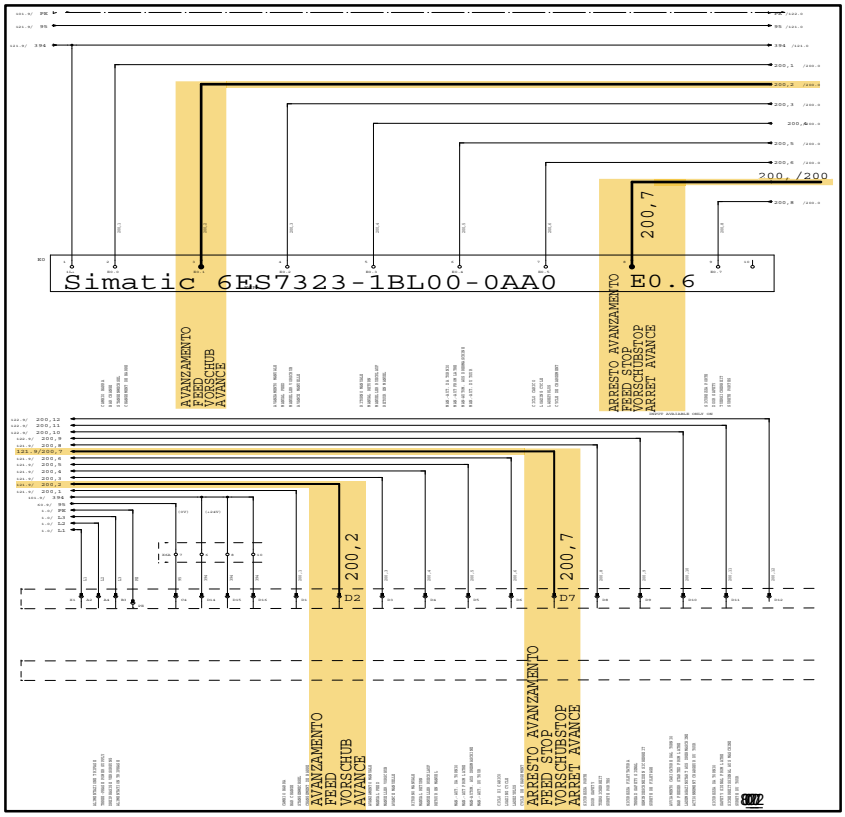
If the bar feeder does not need to carry out the Start-up procedure (see conditions from C1 to C4) it immediately sends the K15b signal as soon as it receives the Start-up signal.

The bar feeder calculates the collet opening number performed by the lathe for each piece, until it gets to the bar end condition (signalled on the display via K1). The lathe then enters in the bar change subprogram.



A special electric interface is designed for machining in SUB-Spindle MODE.
Such interface allows the bar feeder to work when the lathe carries out a collet opening in manual mode or during automatic cycle.
More in detail:

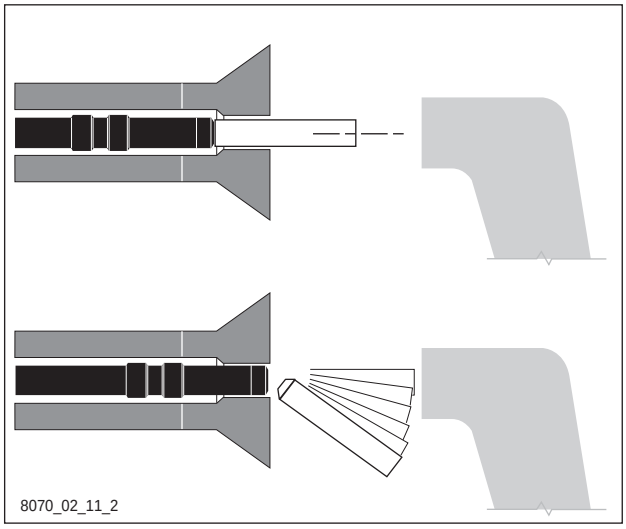
- The feed enabling signal (feeding M, that signals the condition at which the counterspindle grips the material and carries out the piece feeding). This signal is connected to the bar feeder input "Feeding stop".
- The open collet signal (signals the mechanical opening of the collet). To produce this signal, a relay parallel to the collet opening solenoid valve will be assembled during installation. This signal is connected to the bar feeder input called "Feeding".



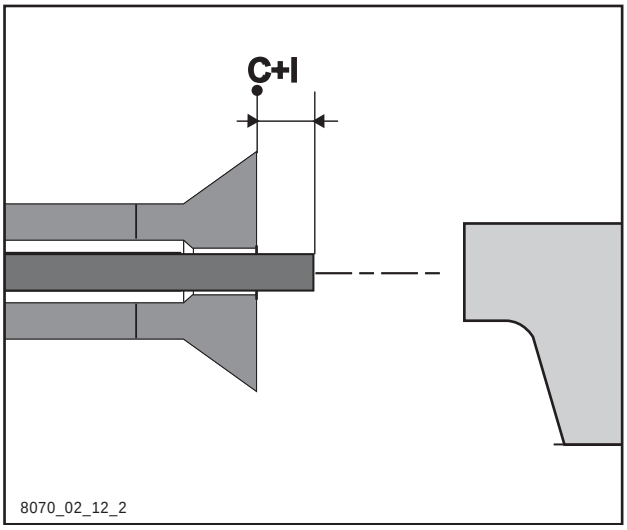
The bar feeder moves forwards until it drives out the remnant, with parameter 21 set to Ejection.

INFORMATION:

With parameter 45 (Sub-spidle mode) enabled, parameter 21 (Remnant handling) can work in mode 1 Ejection, 2 Bar change advance (no first feeding), 3 Bar change advance (no facing), according to the lathe program.



The bar feeder loads the new bar and moves it to the facing position C+I. The lathe starts machining the new bar. The bar feeder sends the K15 signal to the lathe.

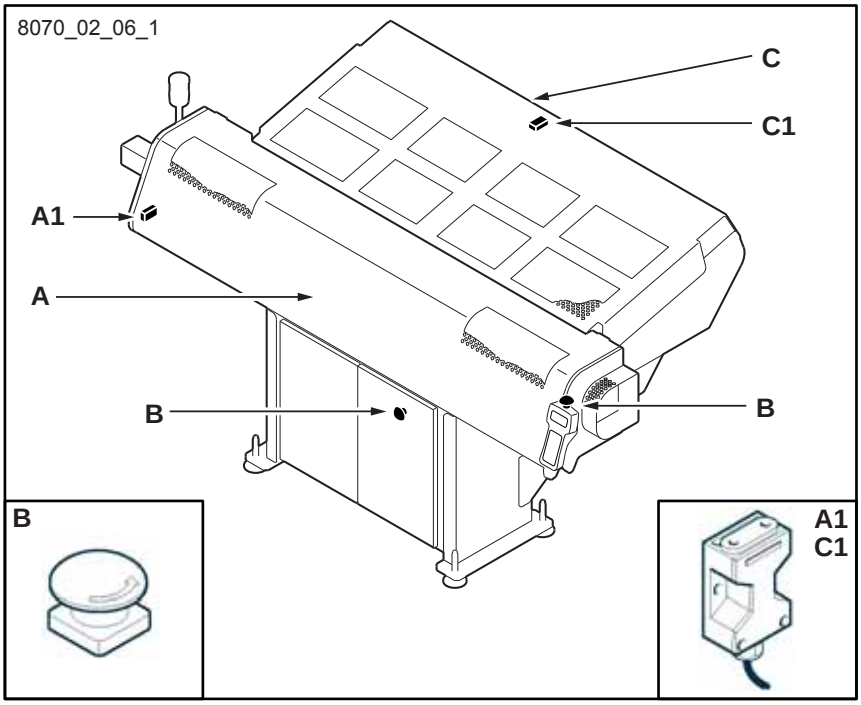


INFORMATION:

II K15 in this case performs a standard cycle start. When making the interface, signals K15 and K15b are wired in parallel and managed as a single signal to be sent to the lathe.

2.3 SAFETY DEVICES

The figure indicates the position of the devices on the bar feeder.



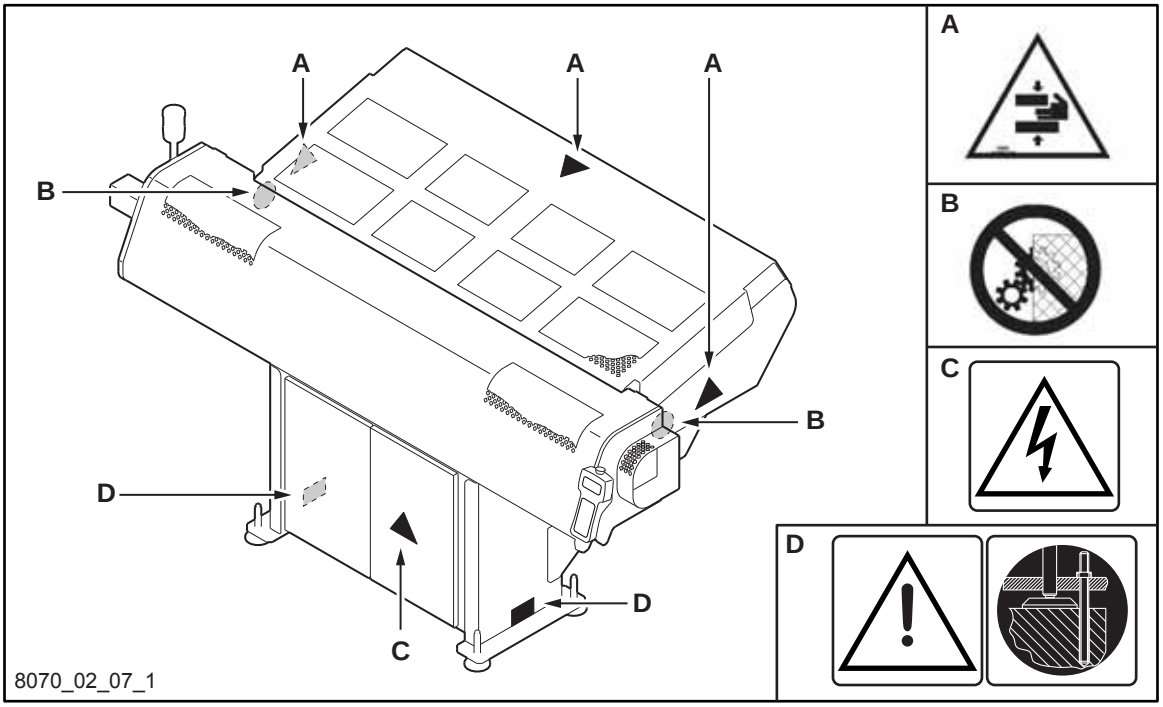
A- Sliding guard: it is associated to a microswitch (A1). At the opening of the guard, in emergency conditions, all the bar feeder and lathe functions stop. At the guard closing, it is possible to start the operating cycle again. It is equipped with two grids allowing the visual inspection of the main components of the bar displacement system.

B- Emergency stop button: if activated, every component of the bar feeder and of the lathe immediately stops. After having normalised the operating conditions it is required to release the button, with a voluntary action, in order to authorise the bar feeder and lathe setting into operation again.

C- Sliding guard: it is associated to a microswitch (C1). Only during the bar change phase, if the guard is opened, all the bar feeder and lathe functions are stopped in emergency conditions; during all the other work phases of the bar feeder, it is possible to open the guards without causing any stopping.
At the guard closing, it is possible to start the operating cycle again. The guard has a grid so as to allow visual inspection of the bar magazine.

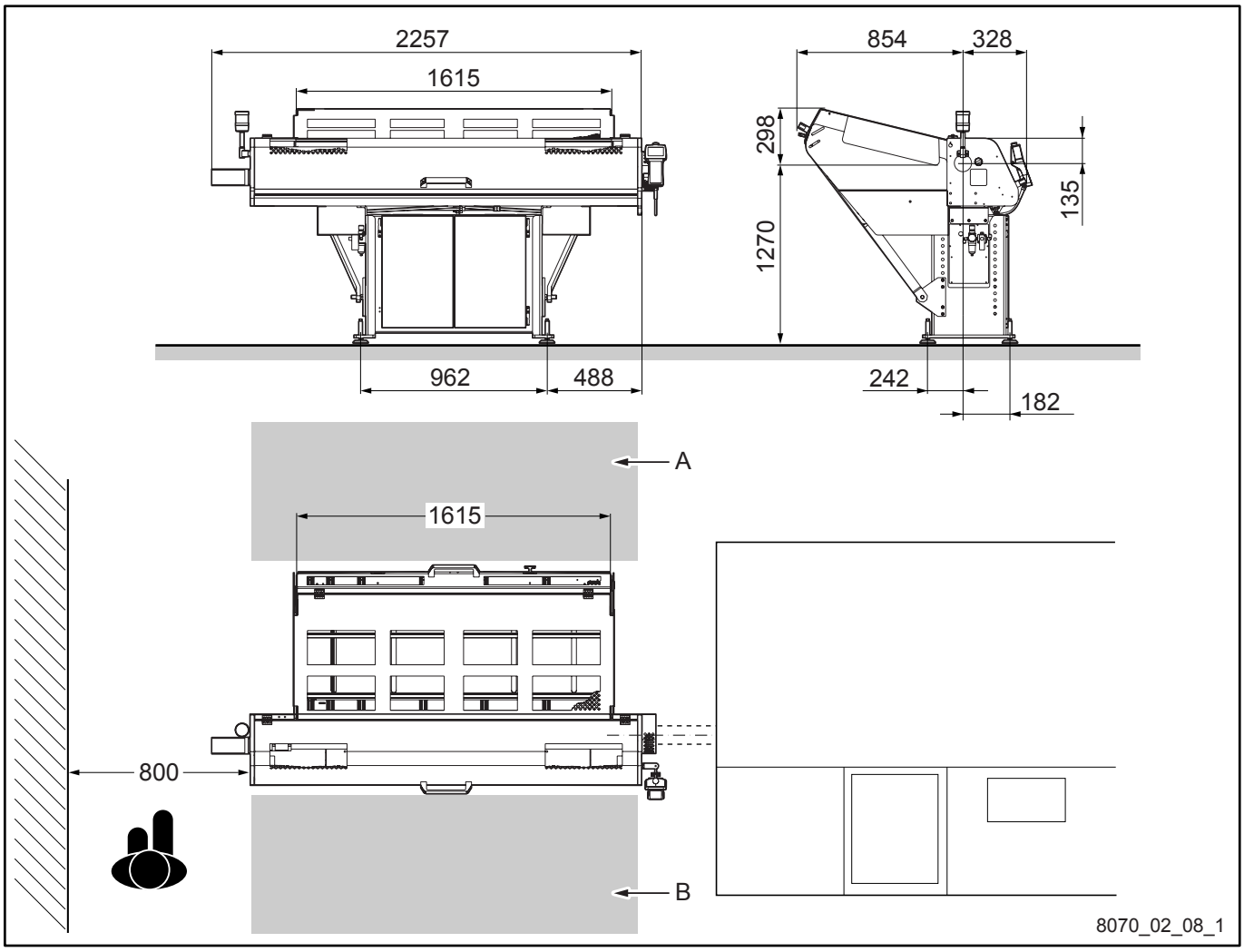
2.4 SAFETY AND INFORMATION SIGNALS

The figure indicates the position of the signals put on the bar feeder.



A- Risk of crushing your arms: do not put hands inside when there are components in motion.
B- Do not remove guards: it is forbidden to use the bar feeder without the guards installed and in operating conditions.
C- Electrocution hazard: do not enter the powered elements.
D- Risk of inopportune movements: before carrying out the first start make sure that the bar feeder is adequately anchored to the ground.

2.4.1 BAR FEEDER DIMENSIONS



A BAR LOADING AREA
B WORK AREA

2.4.2 Noise levels

During the machining, the bar feeder is not noisy.
The only phase where there can be some short-lasting peaks (85 dbA), is the bar loading one.
This measurement has been made in conformity with the regulations in force.

2.5 TECHNICAL DATA AND PERIMETRAL AREAS

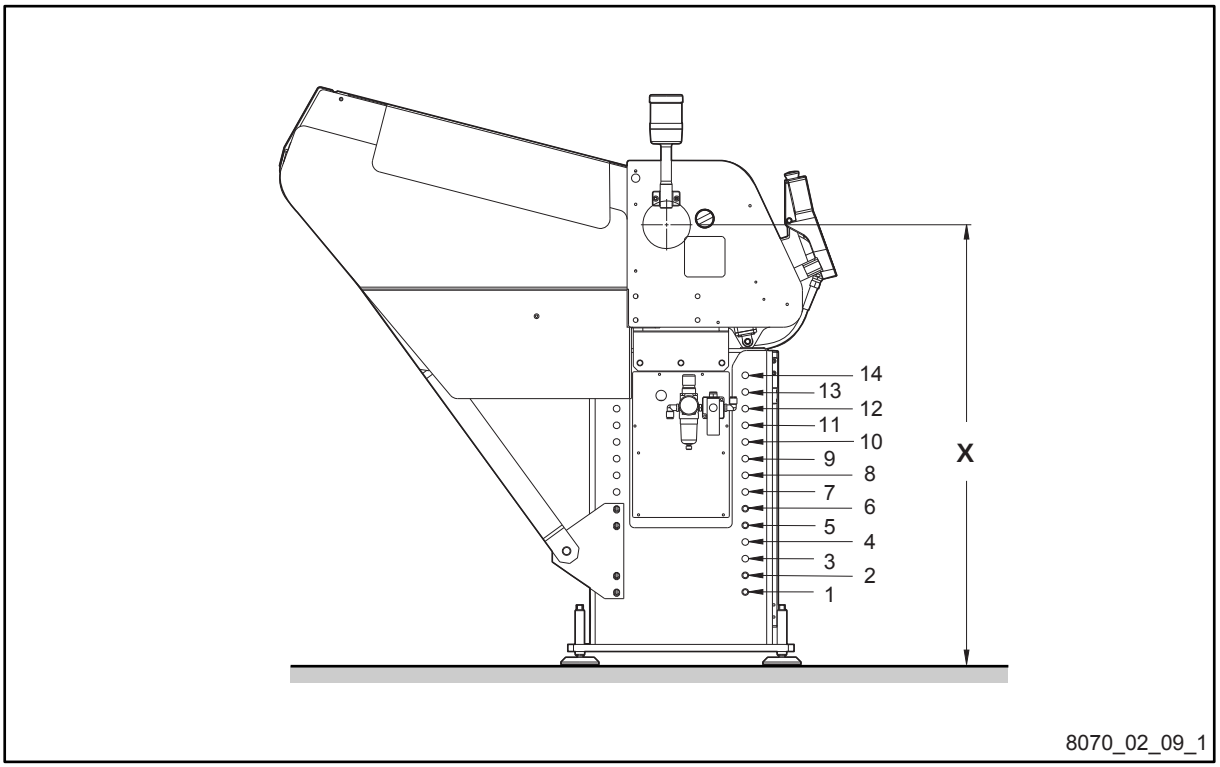
Technical data table

	VIP 80 AND II	
Round bar size	Ø Min 5 mm (3/16")	Ø Max 80 mm (2")
Hexagonal bar size (key socket)	Min 5 mm (3/16")	Max 65 mm (2" 3/16)
Square bar side	Min 5 mm (3/16")	Max 55 mm (2" 3/4)
Bar minimum length	210 mm (3,3 ft)	
Bar maximum length	1615 mm (6,2 ft)	
Magazine capacity (working width)	650 mm (no. 65 bars of Ø 10 mm)	
Magazine capacity (weight in Kg)	250 kg	
Feeding speed (adjustable)	0-1200 mm/sec	
Return speed (adjustable)	1200 mm/sec	
Bar change time (L=1,600mm)	27 sec (bar ø=80) 37 sec (bar ø=5 - 10)	
Power supply voltage	230 / 400 Volt	
Mains frequency	50 / 60 Hz	
Control voltage	24 Volt	
Installed power	1 kW	
Air pressure	6 bar	
Air consumption	10,56 Nl/bar change	
Bar feeder weight	550 kg	

Note: the maximum length is valid for a lathe that can contain it. This means that the bar length should never exceed that of the lathe head and spindle.

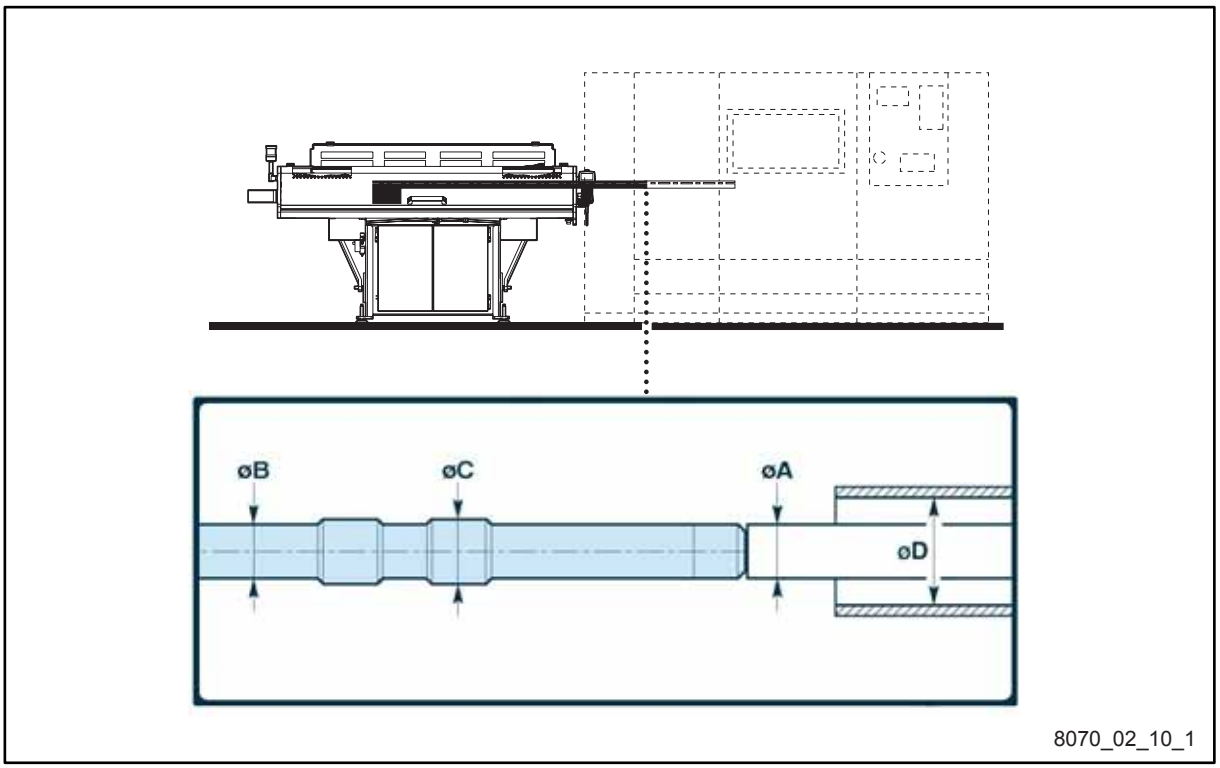
Loading axis height table

X – Loading axis height	Screw position		Reinforcement
	Threaded holes on the base	Slots on the supports	
923 ÷ 957	**A**	1 - 5	-
958 ÷ 992	**A**	2 - 6	-
993 ÷ 1027	**A**	3 - 7	-
1028 ÷ 1062	**A**	4 - 8	-
1063 ÷ 1097	**A**	5 - 9	-
1098 ÷ 1132	**A**	6 - 10	-
1133 ÷ 1167	**A**	7 - 11	✓
1168 ÷ 1202	**A**	8 - 12	✓
1203 ÷ 1237	**A**	9 - 13	✓
1238 ÷ 1272	**A**	10 - 14	✓



Bar and bar pusher diameter table

Ø A Bar diameter (mm)	Ø B Bar pusher rod diameter (mm)	Ø C Bar pusher bearing diameter (mm)	Ø D Spindle liner (mm)
5÷12	10	12	14
10÷19	12	15	16÷22
16÷60	18	21	22÷62
24÷80	24	26	28÷82

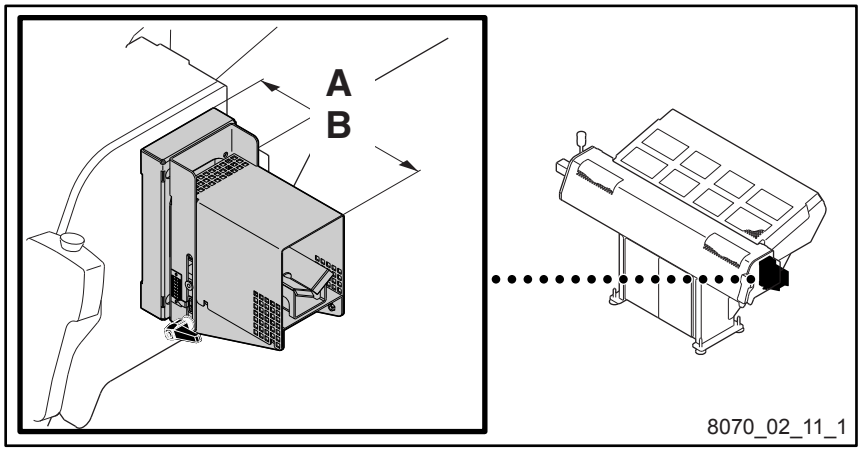


2.6 EQUIPMENT DESCRIPTION (optional)

In order to increase the performances and the versatility of the bar feeder, the manufacturer puts the equipment indicated below at the customer's disposal.

2.6.1 FRONT BAR FEEDER-LATHE EXTENSION

Directs the bar in the section between the bar feeder and the lathe. It proves extremely necessary when this section exceeds 100 mm.
A 220("short" version)
B 470("long" version)



2.6.2 AXIAL/TRANSVERSAL DISPLACEMENT

BAR FEEDER AXIAL DISPLACEMENT DEVICE: to move away the bar feeder from the lathe with an axial movement. This facilitates the lathe tooling and maintenance.

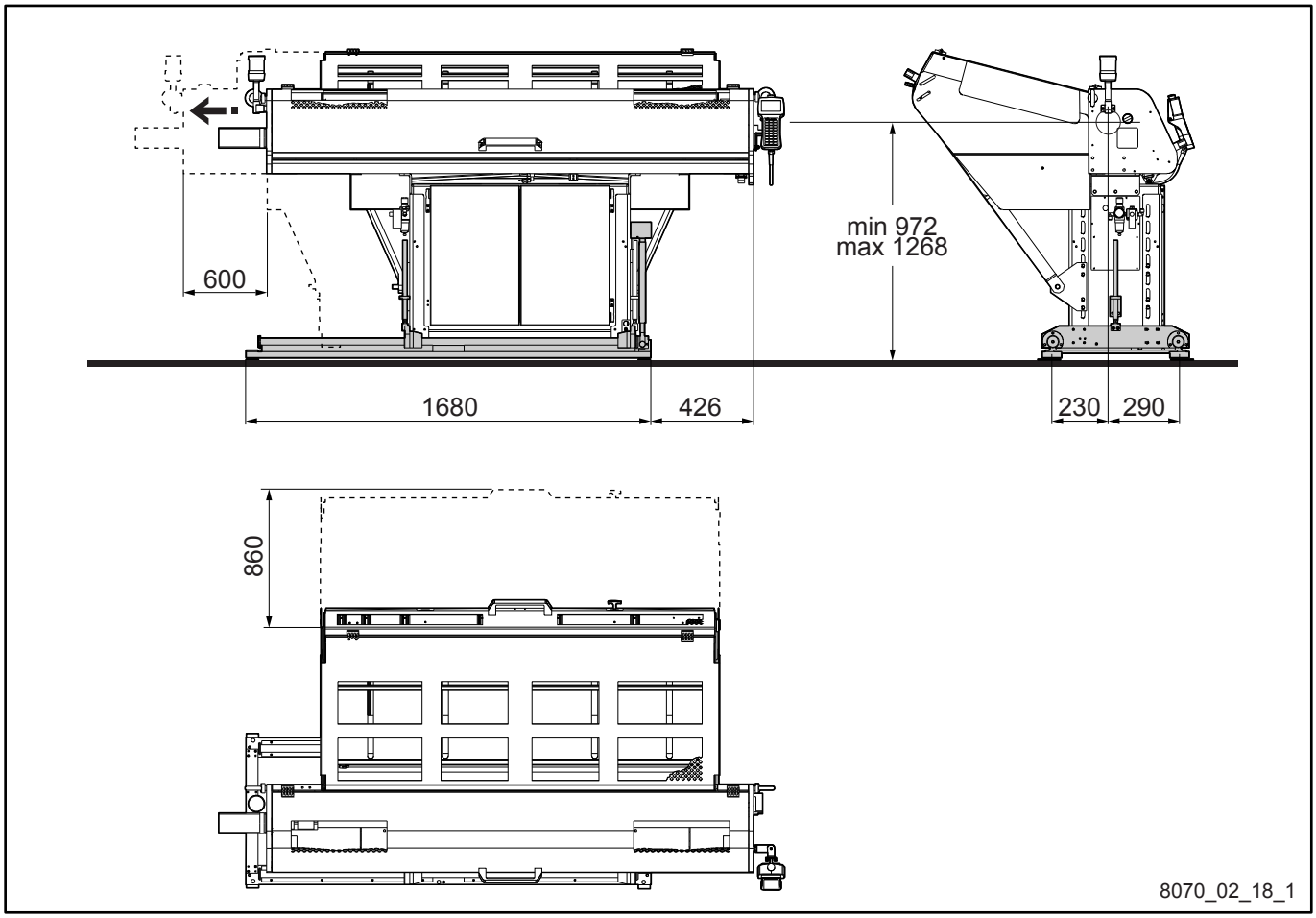
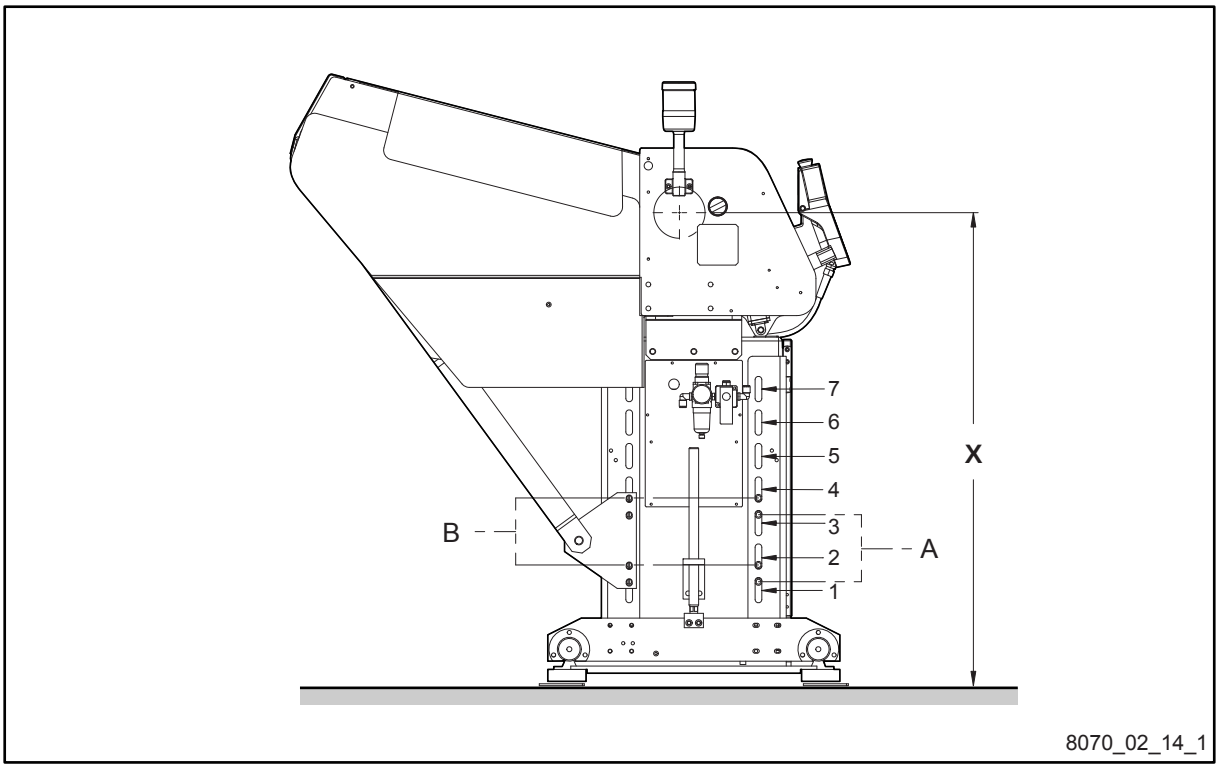


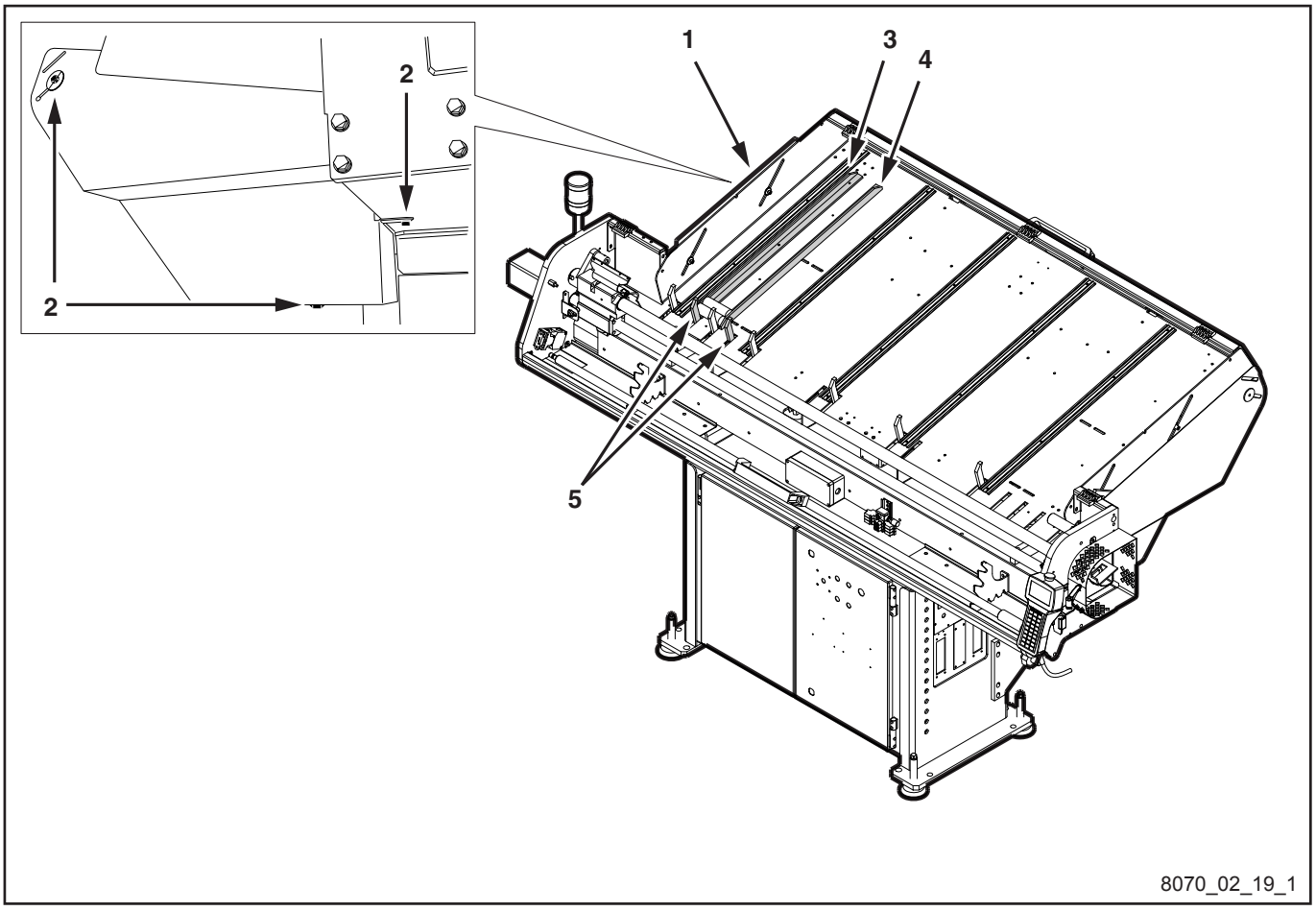
Table of the loading axis height with axial-transversal displacement

X – Loading axis height	Screw position		Reinforcement
	Threaded holes on the base	Slots on the supports	
972 ÷ 988	**A**	1 - 3	-
989 ÷ 1023	**B**	2 - 4	-
1024 ÷ 1058	**A**	2 - 4	-
1059 ÷ 1093	**B**	3 - 5	-
1094 ÷ 1128	**A**	3 - 5	-
1129 ÷ 1163	**B**	4 - 6	✓
1164 ÷ 1198	**A**	4 - 6	✓
1199 ÷ 1233	**B**	5 - 7	✓
1234 ÷ 1268	**A**	5 - 7	✓



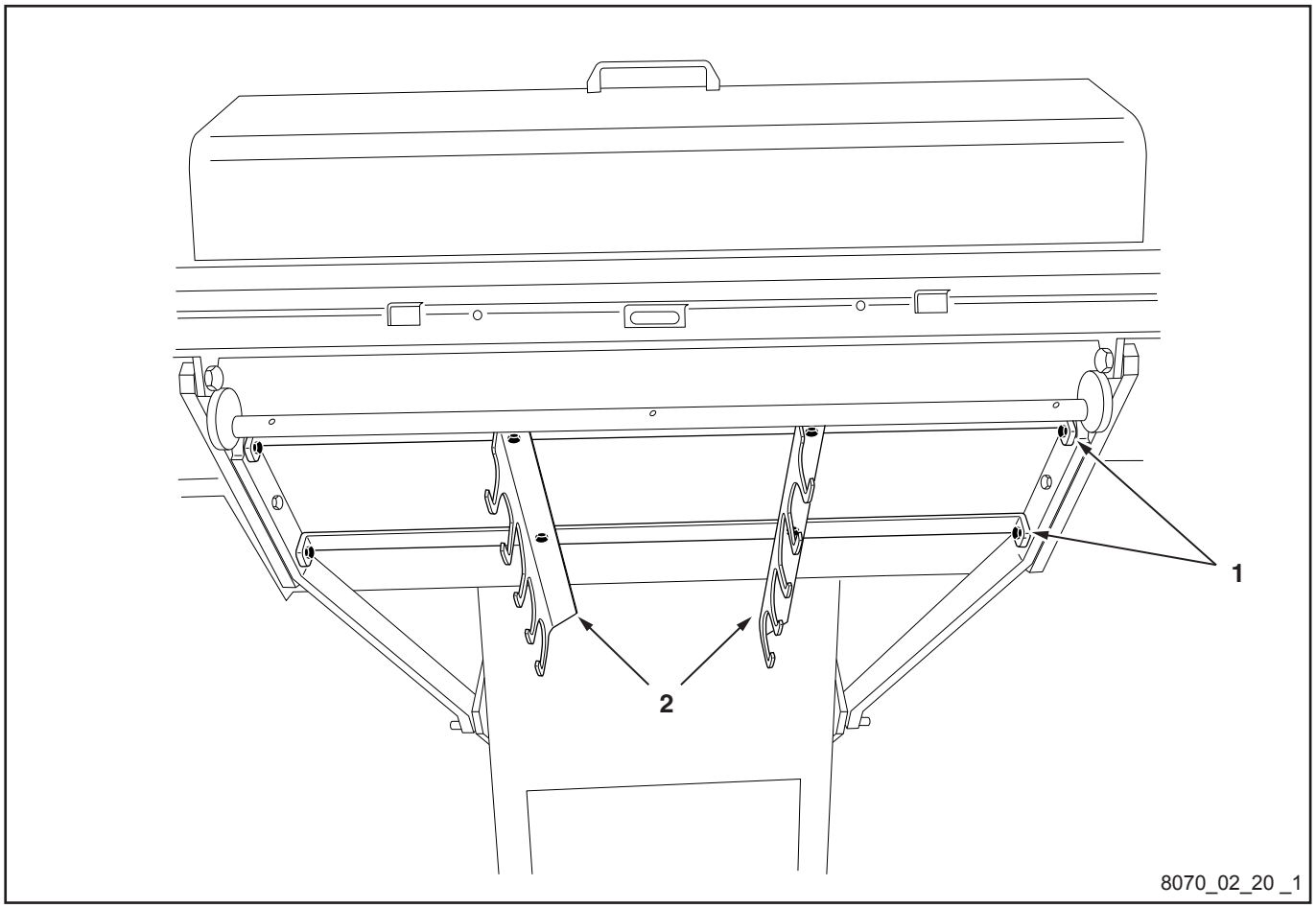
2.6.3 SHORT BAR LOADING UNIT

This unit is necessary for being able to machine bars of length between 90 mm and 210 mm.
The unit to install is made up of two bar containment guides and two bar drop control devices.
To install the unit, proceed as follows:
- remove the side guard (1) by removing the screws (2);
- position the guide (3) and fix it with the relative screws;
- according to the dimension of the bar to be machined, position the guide (4) and fix it with the relative screws;
- install the two bar drop control devices (5).



2.6.4 SUPPORTS FOR SPINDLE LINER

This unit is necessary for placing the spindle liners.
The unit to be installed is made up of two transversal supports (1) and two vertical supports (2).



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3.1 GENERAL SAFETY REGULATIONS

It is of the utmost importance to read this manual carefully before installing, using, servicing the bar feeder or performing any other work on it. The constant compliance with the instructions in this manual ensures the operator safety.

- The user and expert operator must perform the specified duties only.
- Do not tamper with the safety devices for any reason whatsoever.
- Comply strictly with the health and safety regulations at work issued by the relevant authorities in each country.
- IEMCA declines any liability whatsoever for injury to persons or damage to property if the relevant safety regulations are disregarded.
- The bar feeder must only be used for the procedures indicated by IEMCA: No other improper use is allowed.
- During operation, the bar feeder will release small amounts of oil mist. Install the bar feeder in a suitably ventilated area.
  The bar feeder has not been designed for use in an explosive atmosphere.
- Do not use the bar feeder in places subject to extreme temperatures: The bar feeder must work in closed environments at temperatures which are also accessible to the operator.

3.2 HANDLING AND INSTALLATION - Safety

- The bar feeder must be handled using suitable means and methods only.
- People must not stand or transit underneath a suspended load, or within the range of action of the crane, lift truck or other suitable lifting and transport means.
- The bar machining and loading area must be delimited to prevent collisions between the operator and the means of transport or handling of the material to be machined or of other kinds.
- Correct positioning of the bar feeder, lighting and cleanliness of the working environment are of the utmost importance as far as personal safety is concerned.
- The electric system connection must be carried out by skilled personnel only.
- Make sure the electric system is connected to an efficient earthing system by means of an appropriate cable.

3.3 ADJUSTMENTS AND SETUP - Safety

- Carry out the adjustments as described in the operation manual.
- Do not change the working parameters to obtain performances other than those envisaged in the design and testing phases.
- Do not adjust the bar feeder when running unless expressly requested in the manual.
- Do not feed the machine with bars having dimensions other than those recommended by the manufacturer.
- Do not use flexible pipes as handholds.

3.4 USE AND OPERATION - Safety

- The working area around the bar feeder must always be kept clean and uncluttered and its surface must be slip resistant in order to allow immediate access to the emergency devices and bar loading to be performed without creating obstructions or danger.
- Perform the starting sequence of the working cycle as recommended.
- Do not put hands or anything else near or inside the moving parts or parts in tension.
- Remove bracelets, watches, rings and ties.
- If necessary, use strong work gloves with five fingers, which do not reduce the grip sensitivity or power.
- Wear work shoes as well as personal protection devices provided for by the safety regulations in force in all countries.
- Inform the maintenance personnel of any operating anomalies.
- Before starting the bar feeder, make sure that there is no personnel engaged in servicing or cleaning the machine.

3.5 BAR FEEDER MAINTENANCE - Safety

- Do not allow unauthorized personnel to carry out maintenance operations.
- Read this manual carefully before carrying out maintenance operations.
- Do not lubricate, repair or adjust the bar feeder while running, unless expressly indicated in the manual.
- Stop the bar feeder in accordance with the foreseen procedures before carrying out the lubrication or other operations.
- Do use matches, lighters or torches as lightning means during operations with inflammable fluids.
- Keep drain oil in suitable containers and deliver it to companies specialized in the storage and disposal of polluting waste products.
- Avoid environmental pollution.
- Use original IEMCA spare parts only.

3.6 RESIDUAL RISKS

- There is a residual risk due to the presence of pneumatic energy in the supply system to the machine actuators.

DANGER - WARNING:

Before doing regular maintenance or any other service on the machine actuators it is essential to stop the pneumatic energy supply by disconnecting the supply hose or by using the pressure adjustment device.

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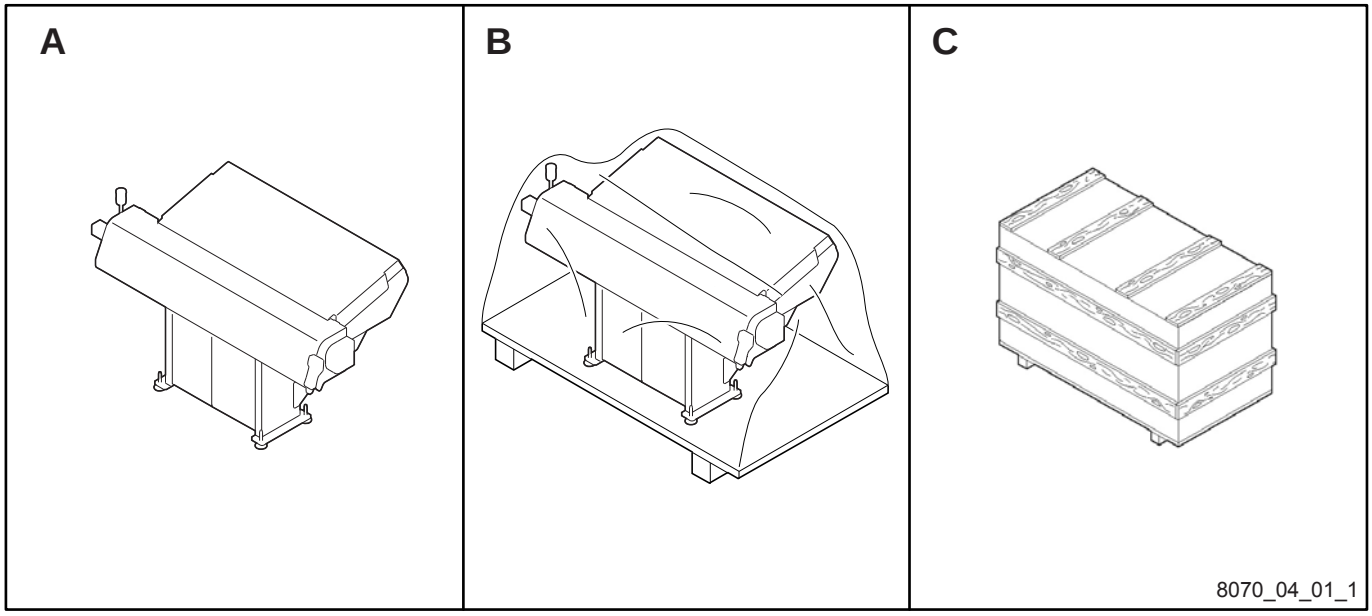
4.1 PRELIMINARY NOTE ON MOVEMENT AND INSTALLATION

INFORMATION:

move and install the machine by respecting the information provided by the manufacturer, which is directly written on the package, the machine and in the operation instructions. The person who is authorized to carry out these operations shall prepare, if necessary, a "safety plan" to safeguard those who are directly involved in them.

4.2 PACKAGING AND UNPACKAGING

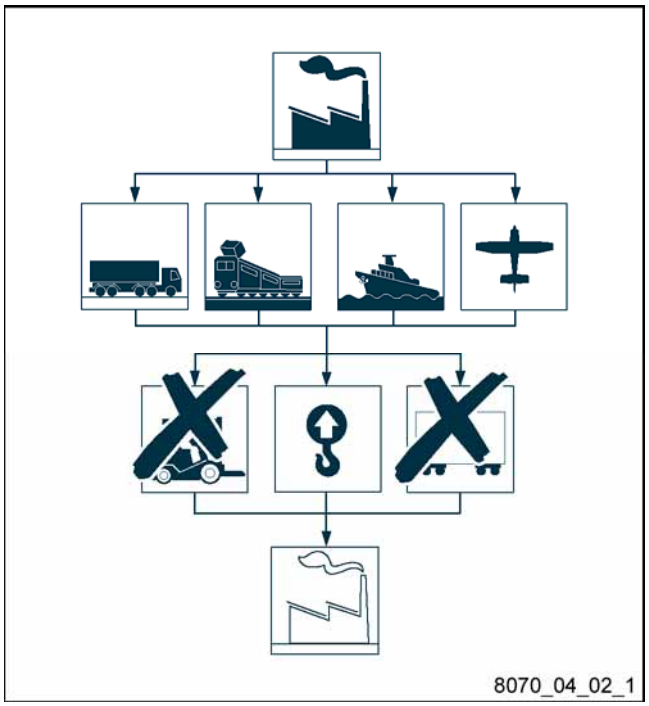


A WITHOUT PACKAGING
B PACKAGING ON PALLET
C PACKAGING IN CRATE

By reducing its dimensions, the packaging is made according to the type of transport required.
In order to make the transport easier, the shipping can be made with some disassembled components being adequately protected and packaged.
Some parts, especially the electrical ones, are protected by anti-moisture nylon.
On the packaging all necessary information for loading and unloading is provided.
While unpacking, check the integrity and exact quantity of components.
The packaging material must be adequately disposed of in observance of the laws in force.

4.3 TRANSPORT

The transport can be carried out by different means, also according to the destination. The diagram represents the most frequently used solutions.
In the transport phase, in order to avoid untimely movements, provide an adequate anchorage to the means of transport.



4.4 LIFTING

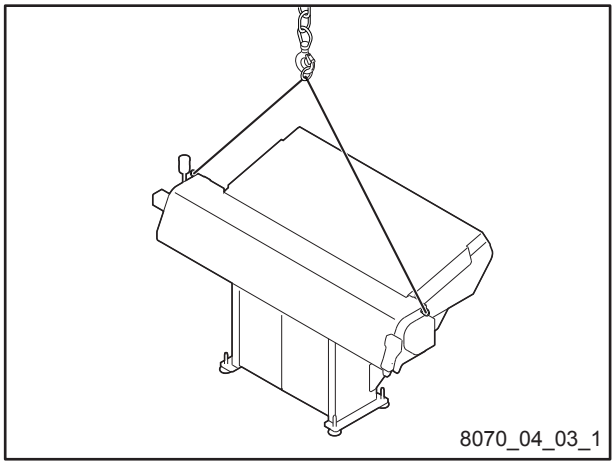
DANGER - WARNING:

handling and lifting operations should be carried out with suitable equipment (see weight table in paragraph 2.5.) and by specially trained and experienced personnel.

According to the packaging choice, lifting is carried out as shown in the next page.

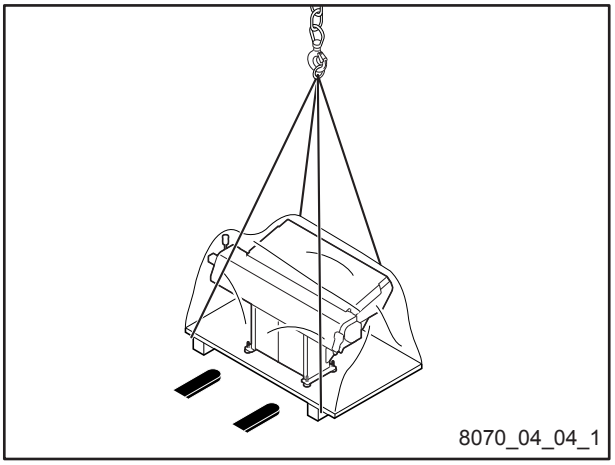
LIFTING WITH NO PACKAGING

- Install the two eyebolts in the positions indicated in the figure.
- Use a hook type lifting device of suitable capacity.
- Use lifting belts of suitable capacity.
- Use lifting belts of suitable length so that the angle between them is not greater than 60°.



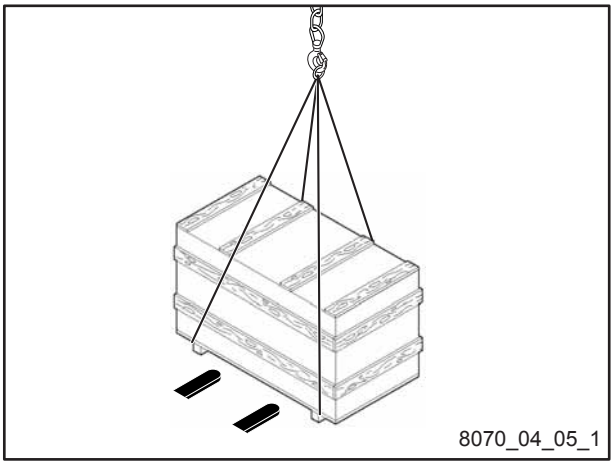
LIFTING WITH PALLET

- Use a hook (or fork) type lifting device of suitable capacity (see information on packaging).



LIFTING WITH CRATE

- Use a hook (or fork) type lifting device of suitable capacity (see information on packaging).



DANGER - WARNING:

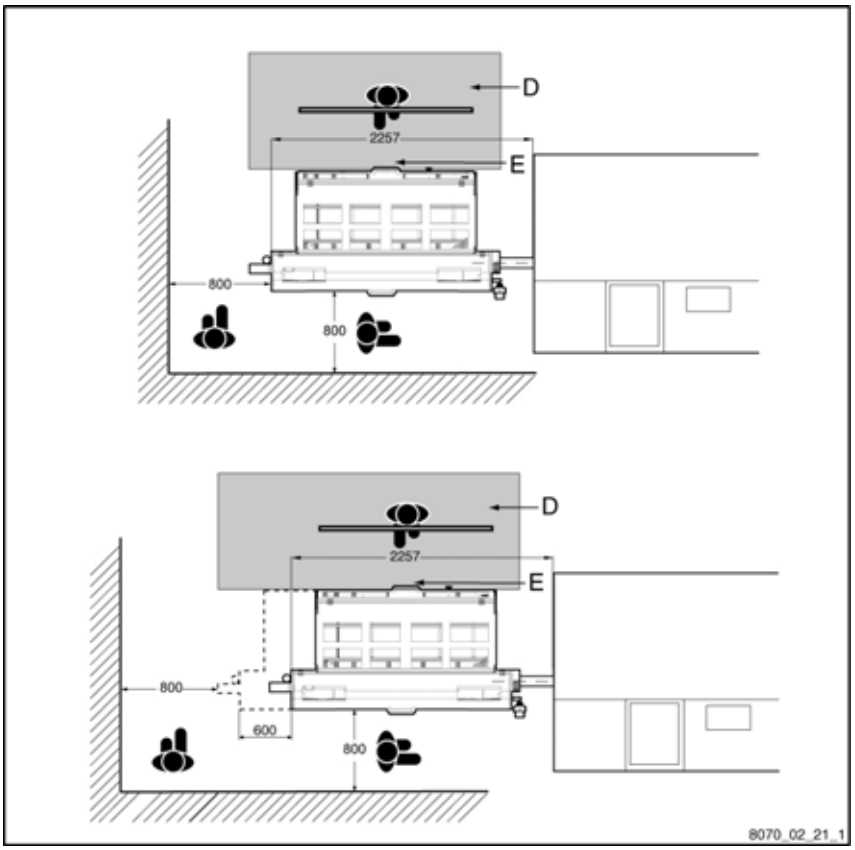
never use any lifting systems or devices different from the ones above.

4.5 BAR FEEDER INSTALLATION (without displacement)

WARNING - CAUTION:

the installation and connections must be carried out according to the indications provided by the manufacturer. The responsible person will also take into account all regulative and law requirements, carrying out all the installations and connections workmanlike. Once the installation has been completed, and before the operating phases, he will check if the above-mentioned requirements have been fulfilled.

The floor should be stable and levelled to guarantee good fastening to the ground.
Provide an area of suitable dimensions according to the type of bar feeder used.
The areas "D" (work area) and "E" (bar feeding area) should be properly delimited to prevent collisions between the operator and any handling equipment or transport vehicles travelling near the bar feeder.
The selected area should be illuminated and provided with an electric and pneumatic power supply socket.
During operation, the bar feeder will release small amounts of oil mist. Install the bar feeder in a suitably ventilated area.
The bar feeder has not been designed for use in an explosive atmosphere.



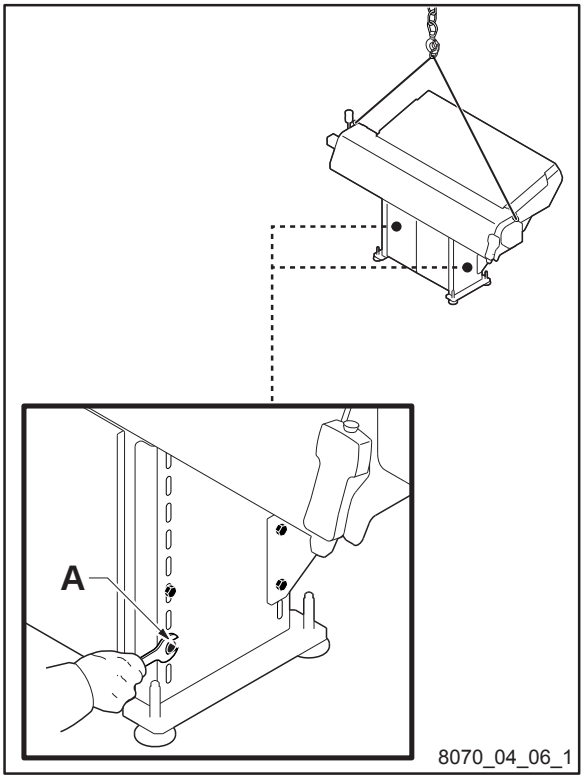
4.6 INSTALLATION PHASES

Before carrying out the bar feeder installation, check the lathe stability; make sure that it is firmly fixed to the ground and that the spindle axis is perfectly in horizontal position.

4.6.1 Loading axis height variation

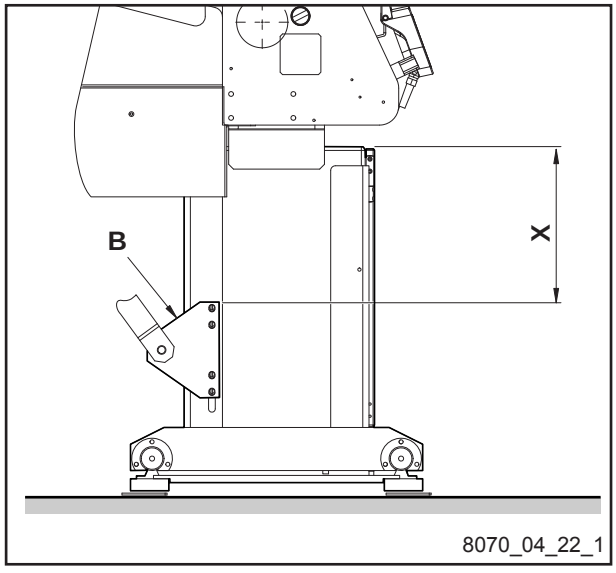
The bar feeder is generally supplied with the loading axis height suitable for that of the lathe spindle. If you need to change it, proceed as follows:

- Prepare the bar feeder for lifting (paragraph 4.4).
- Tension the ropes.
- Remove the screws (A).
- Bring the bar feeder to the loading axis height (see paragraph 2.5 "Loading axis height" table).
- Reassemble the screws (A).



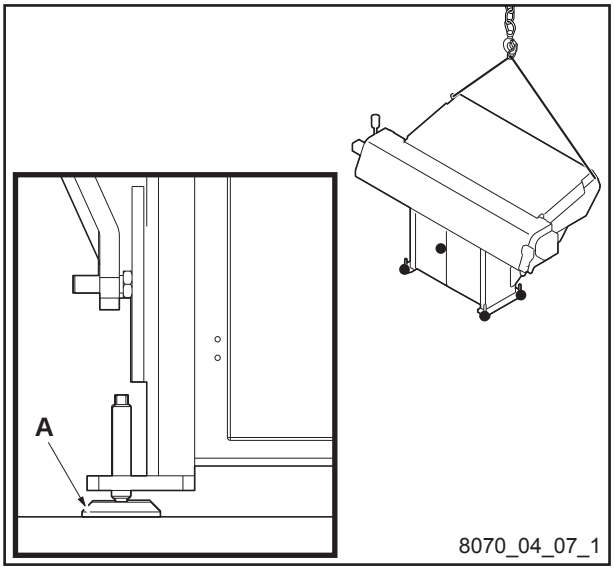
DANGER - WARNING:

Once the variation operations of the loading axis are finished, it is necessary to check that value X, the distance between the plate (B) and the end part of the base, is equal to 325 mm.



4.6.2 Support feet assembly.

- Lift the bar feeder (paragraph 4.4).
- Install the support feet (A).
- Lower the bar feeder again to the ground.



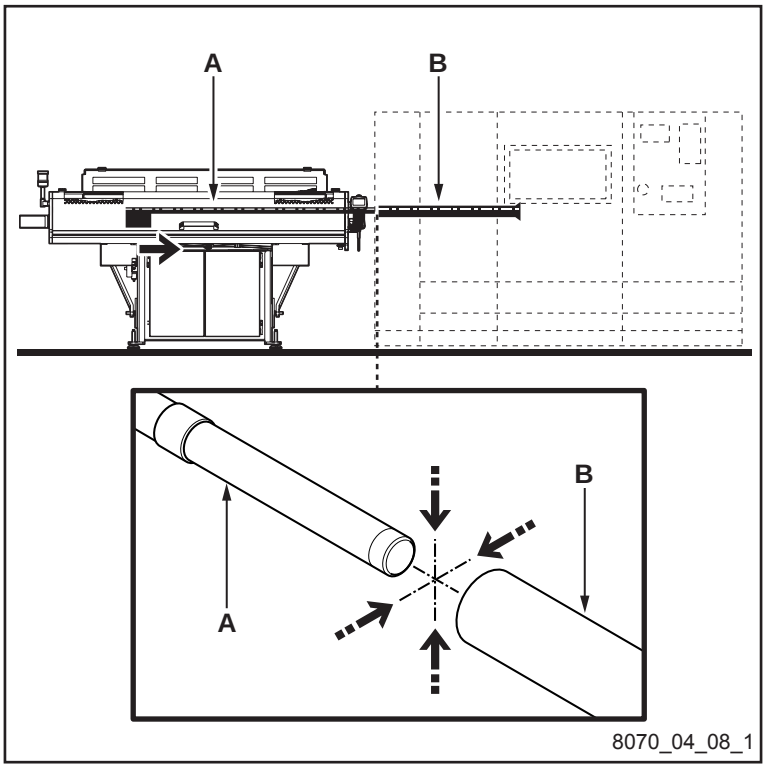
4.6.3 Alignment and levelling

INFORMATION:

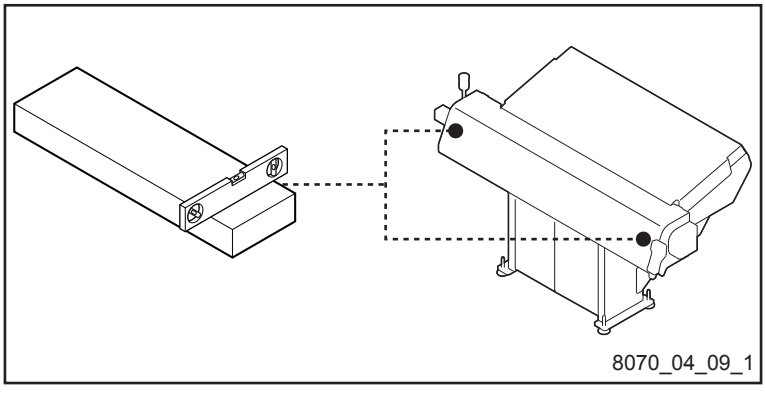
not only alignment and levelling are fundamental for the correct running of the bar feeder and for the WARRANTY VALIDITY, but also they must be carried out only by a SKILLED STAFF WITH PRECISE TECHNICAL COMPETENCE.

For the positioning proceed as follows.

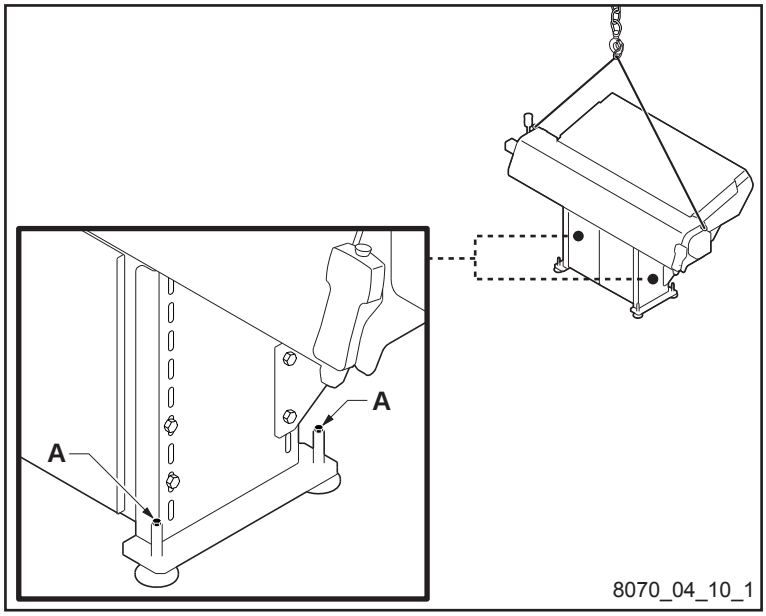
- Position the bar feeder near the lathe (see figure).
- Manually shift the bar pusher (A) until the end of it is close to the spindle head (B).



- Use the beam surface for checking the levelling.
- Verify the bar feeder levelling and the alignment of both axes.



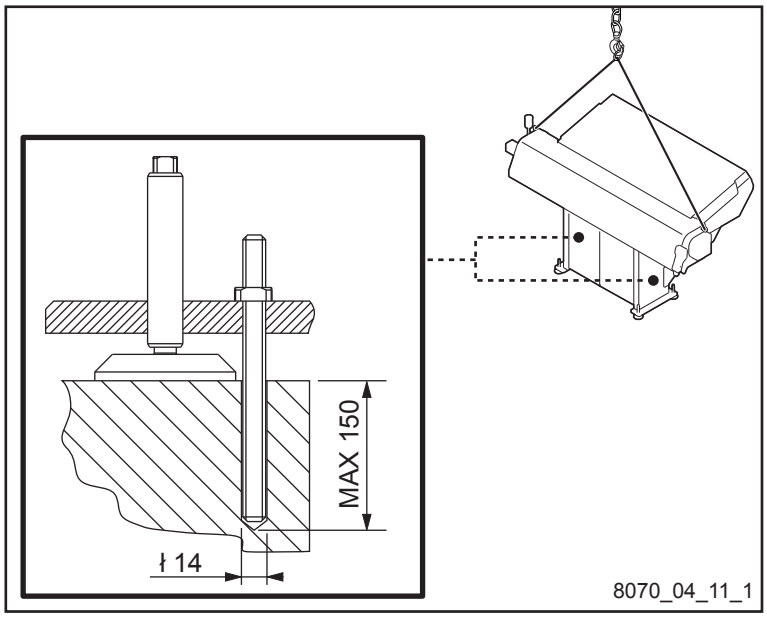
- Carry out the required modifications by turning the screws (A) on the support feet.



4.6.4 Bar feeder fastening

GROUND FASTENING

- Drill the floor and fix the lifting foot with expansion plugs.
- Check the levelling and alignment once more.
- Remove all the equipment used for the levelling and alignment phases and restore the initial bar feeder conditions.



4.7 BAR FEEDER INSTALLATION (with displacement)

WARNING - CAUTION:

the installation and connections must be carried out according to the indications provided by the manufacturer. The responsible person will also take into account all regulative and law requirements, carrying out all the installations and connections workmanlike. Once the installation has been completed, and before the operating phases, he will check if the above-mentioned requirements have been fulfilled.

The installation area must be in adequate environmental conditions (luminosity, ventilation, etc.).
The floor must be steady and leveled in order to allow a correct fastening of the bar feeder.
If necessary locate the exact position by drawing the coordinates.

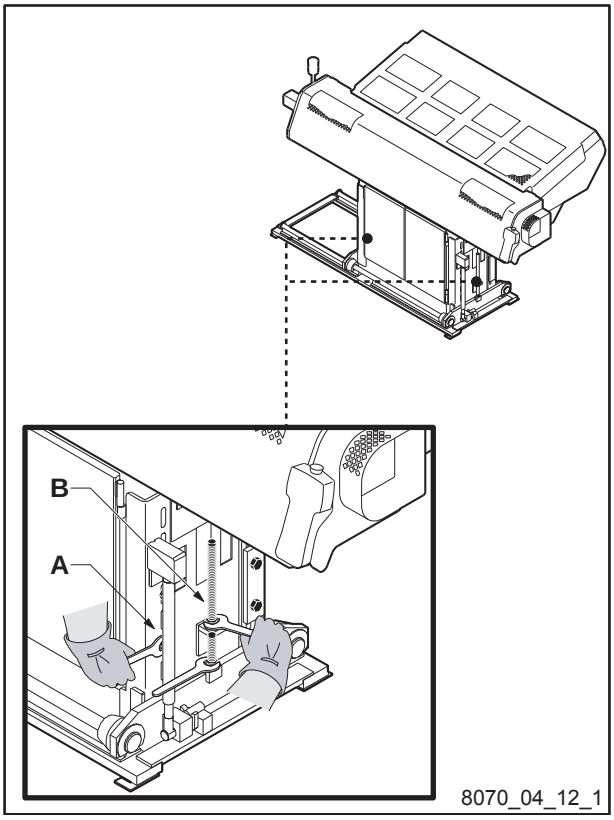
4.8 INSTALLATION PHASES

Before carrying out the bar feeder installation, check the lathe stability; make sure that it is firmly fixed to the ground and that the spindle axis is perfectly in horizontal position.

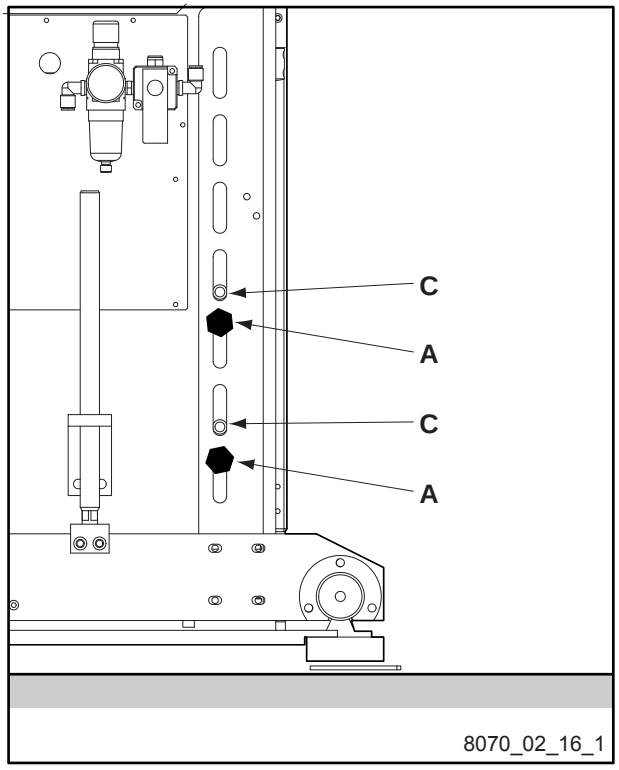
4.8.1 Loading axis height variation

The bar feeder is generally supplied with the loading axis height suitable for that of the lathe spindle. If you need to change it, proceed as follows:

- Loosen the screws (A) on both sides.
- Bring the bar feeder to the loading axis height (see paragraph 2.6 "Loading axis height" table) by using the screws (B).



- Should the use of the slots on the base not be sufficient for carrying out this adjustment, it is possible to increase the mobility by removing the screws (A) and positioning them in the special holes (C).



WARNING - CAUTION:

For carrying out this procedure it is necessary to remove JUST ONE screw (A) at a time.

It is absolutely forbidden, for safety reasons, to remove all the screws (A).

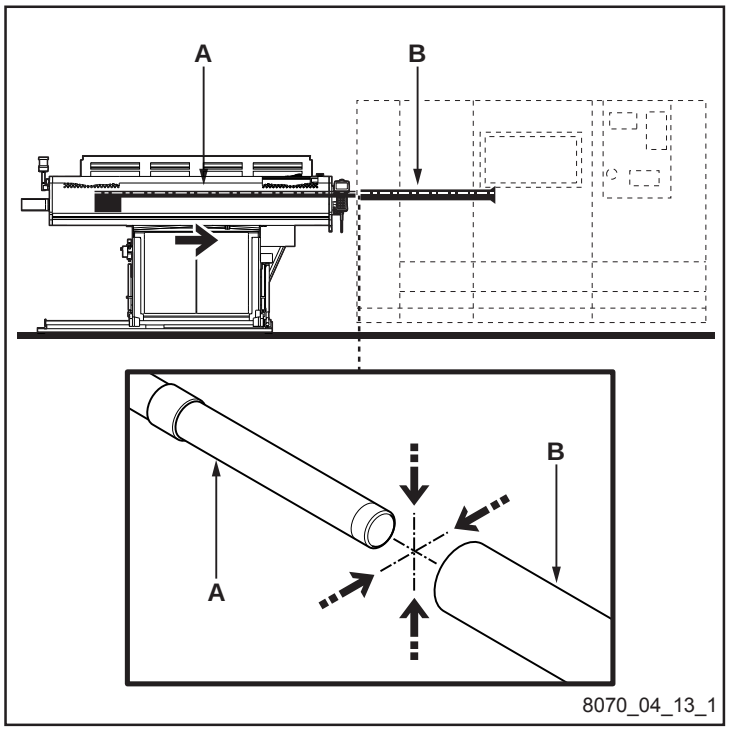
4.8.2 Alignment and levelling

INFORMATION:

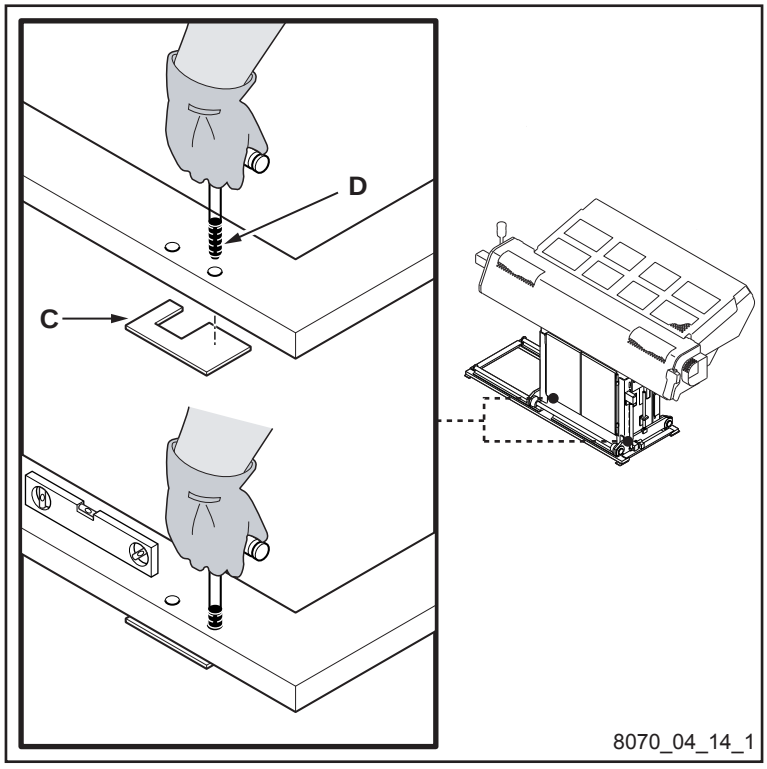
not only alignment and levelling are fundamental for the correct running of the bar feeder and for the WARRANTY VALIDITY, but also they must be carried out only by a SKILLED STAFF WITH PRECISE TECHNICAL COMPETENCE.

For these operations proceed as follows.

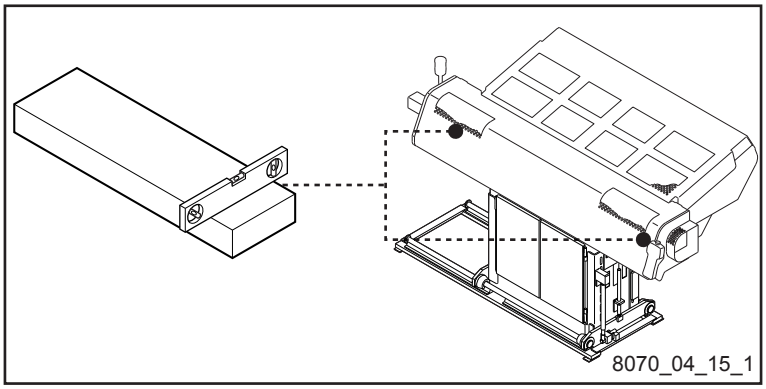
- Position the bar feeder near the lathe (see figure).
- Manually shift the bar pusher (A) until the end of it is close to the spindle head (B).



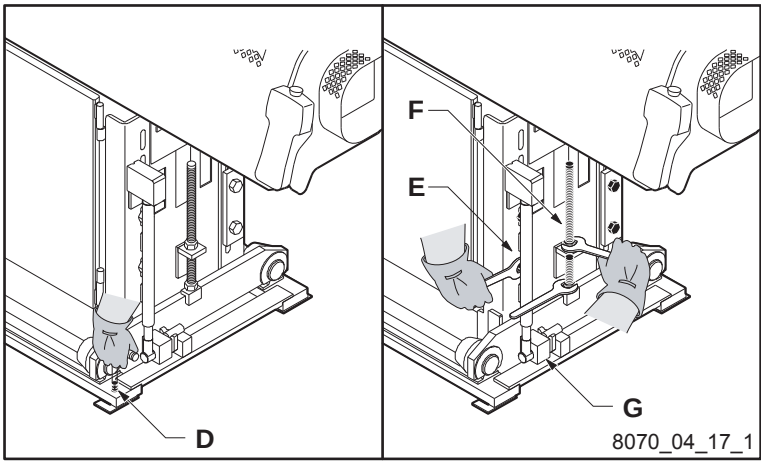
- Position the four plates (C) under the end points of the frame (see figure).
- Tighten the socket head screws (D).



- Use the beam surface for checking the levelling.
- Verify the alignment of both bar feeder axes and levelling.



- Use the screws (D) for the vertical adjustment of the loading axis.
  This adjustment can also be carried out by loosening the screws (E), and also the screws (F).
- Use the sides of the frame (G) for the necessary horizontal adjustments of the loading axis.



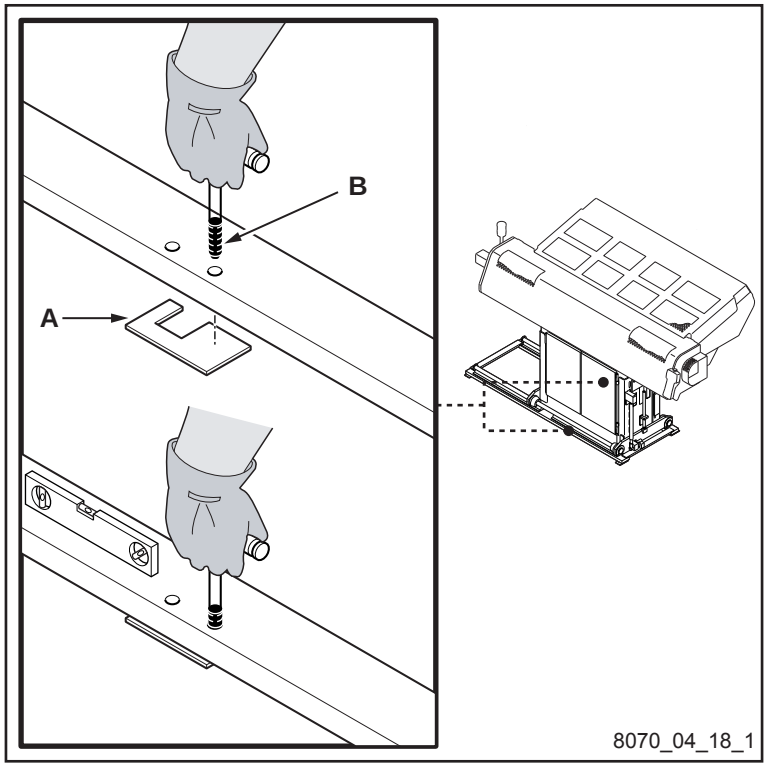
4.8.3 Bar feeder fastening

INFORMATION:

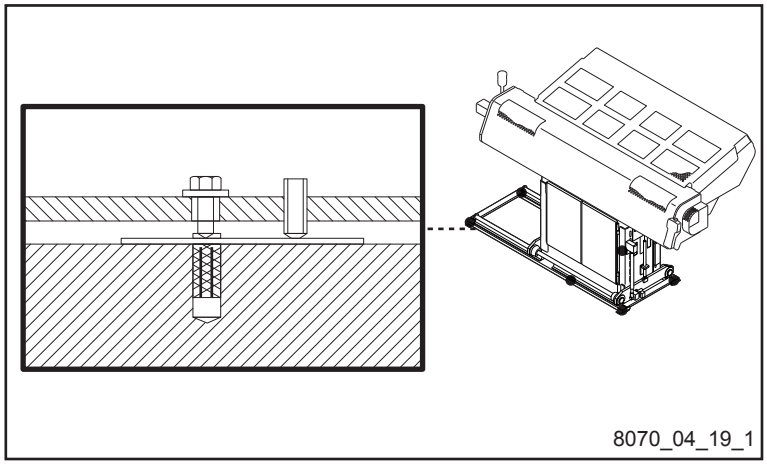
considering that this operation is fundamental to assure the bar feeder stability over time and the WARRANTY VALIDITY, the person who is authorised to carry it out, will have to take extreme care of it.

For the fastening proceed as follows:

- Put the two remaining plates (A) under the frame and fasten them with socket head screws (B).



- Drill the floor in the direction of the frame holes.
- Fasten the frame with the expansion plugs.



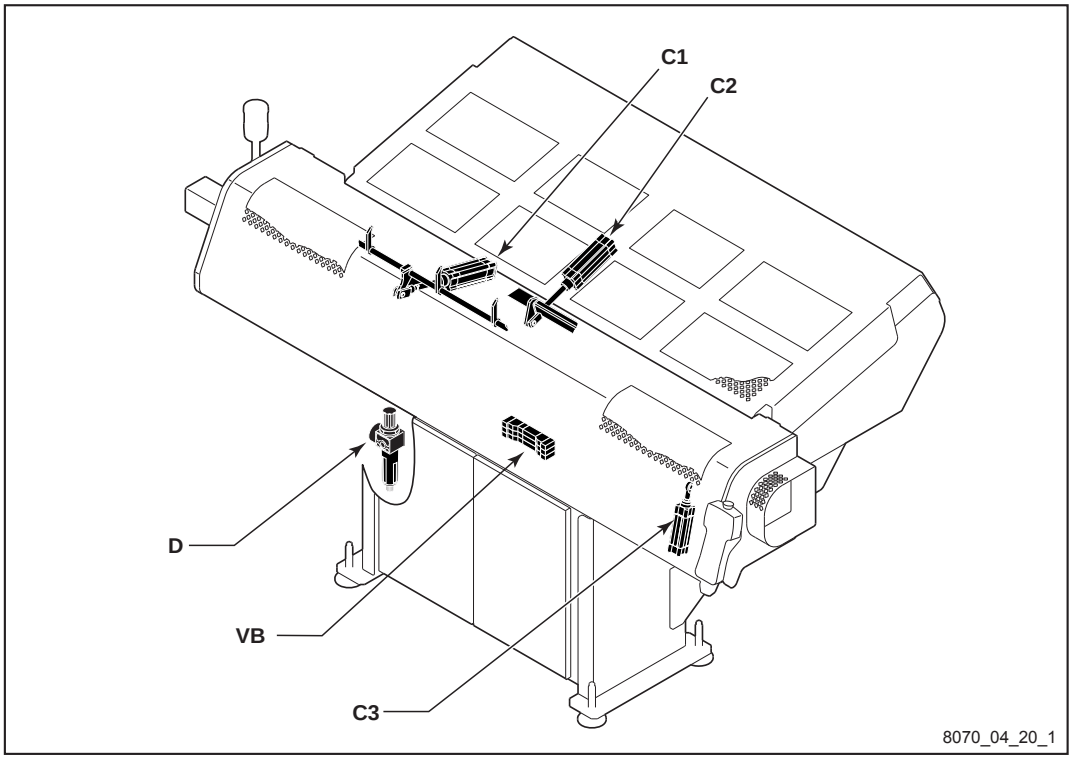
4.9 ELECTRIC CONNECTION

INFORMATION:

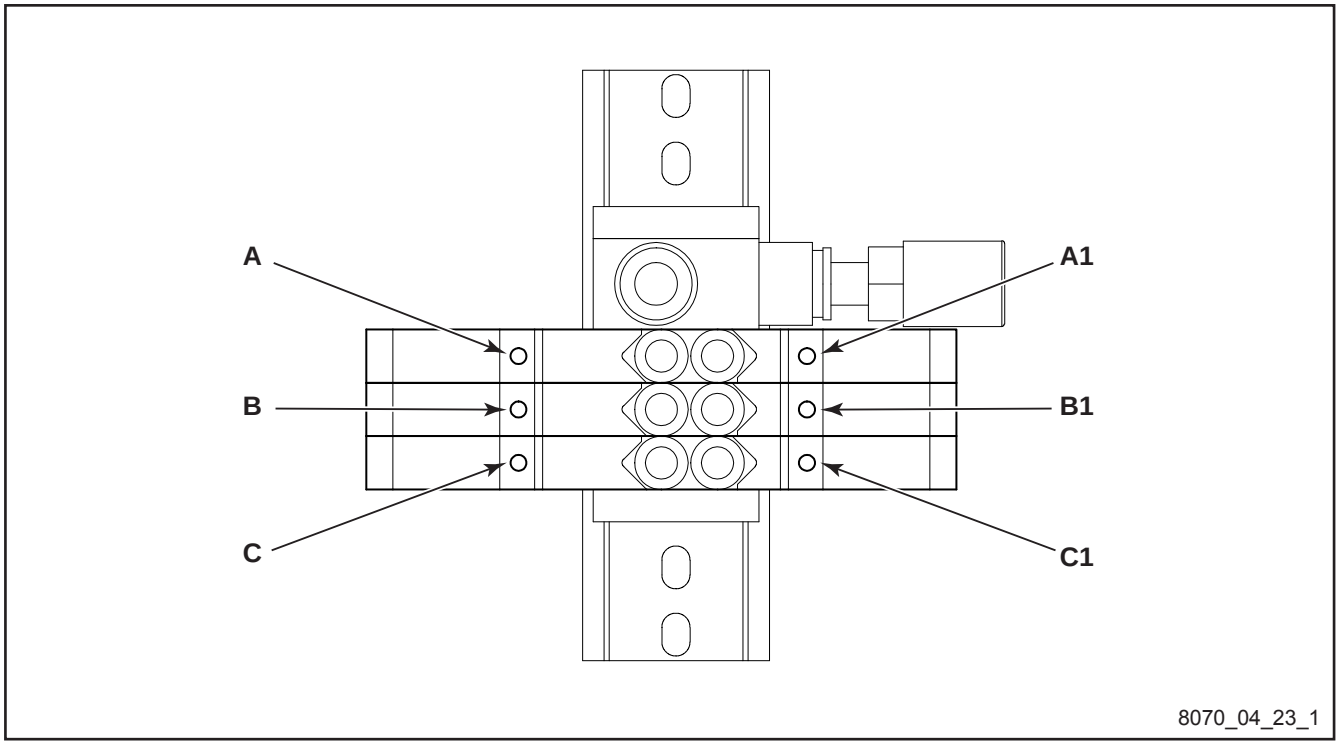
the connections to the power supply must be carried out following the indications on the wiring diagram provided by the manufacturer.

The person who is authorized to carry out this operation, shall have special skills and experience acquired and recognized in the specific area. He shall carry out the connection to the power supply workmanlike, taking into account all regulative and law requirements, not only concerning the bar feeder but also the connection to the lathe.
When the connection to the power supply is completed, before starting the bar feeder, inspect if the above-mentioned requirements have been fulfilled.
Connect the multipolar connector provided with the bar feeder to the lathe socket.

4.10 PNEUMATIC DEVICE LAYOUT



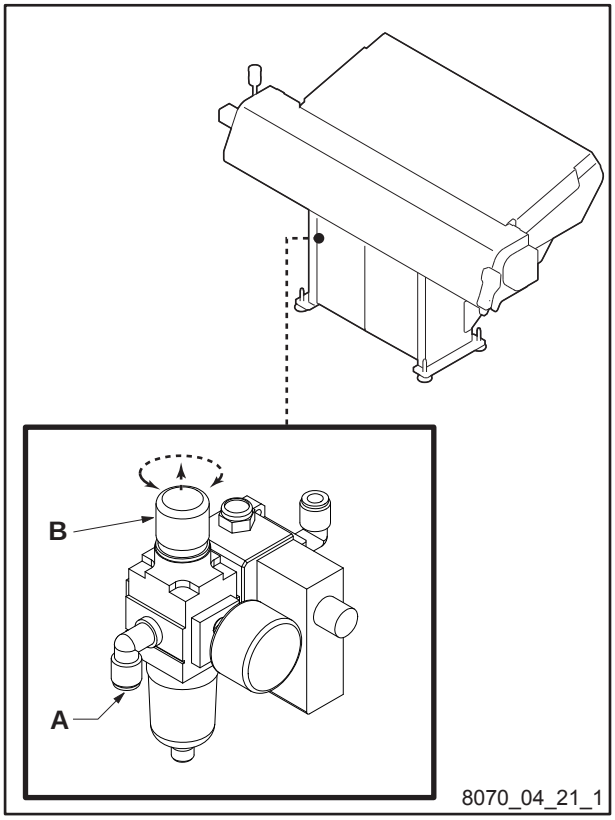
ABBREVIATION	DESCRIPTION	FUNCTION
C1	Cylinder	Controls the upstroke and downstroke of the bar drop control devices
C2	Cylinder	Controls the upstroke and downstroke of the bar selection table
C3	Cylinder	Controls the upstroke and downstroke of the bar pushing unit
D	Pressure switch + Distributor	Dispenses and adjusts the supply flow inside the pneumatic system
VB	Solenoid valve unit	Cylinder or piston control device (see Solenoid valve box description)



ABBREVIATION	DESCRIPTION	FUNCTION
A	Bar pusher control solenoid valve	Bar pushing unit downstroke
A1	Bar pusher control solenoid valve	Bar pushing unit upstroke
B	Magazine selection control solenoid valve	Magazine selection unit downstroke
B1	Magazine selection control solenoid valve	Magazine selection unit upstroke
C	Bar drop control device solenoid valve	Bar drop control unit downstroke
C1	Bar drop control device solenoid valve	Bar drop control unit upstroke

4.10.1 PNEUMATIC CONNECTION

- Connect the pipe with Ø 8 of the pneumatic network to the quick coupling connection (A). Install an upstream 3-way cock to perform the sectioning and the pressure release. With knob (B), adjust the pressure at 6 bar.



IMPORTANT:
the supply air must be filtered.

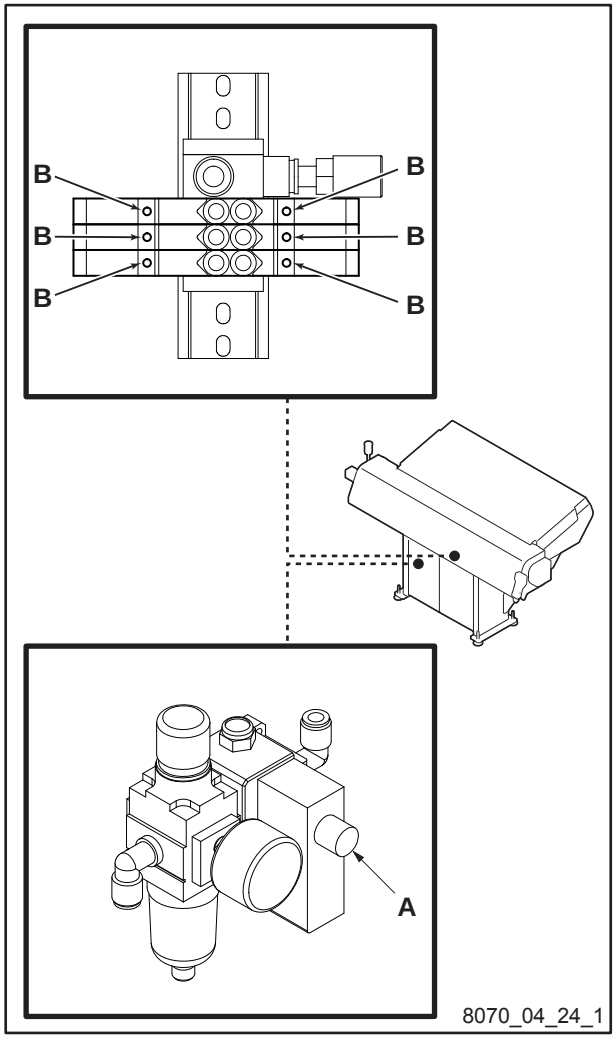
4.10.2 BAR FEEDER HANDLING WITHOUT POWER SUPPLY

Without power supply or in case of an emergency it is possible to move the pneumatic units using the solenoid valves manually:

- keep button (A) pressed;
- using a small screwdriver press the buttons (B), present on the individual solenoid valves, to move the unit.

INFORMATION:

For the movement description of each solenoid valve, refer to paragraph 4.10 "Pneumatic device layout".



4.11 WORKING PARAMETERS SETTING

By means of a handheld keyboard you can assign the different parameter values according to the operating characteristics of lathe - bar feeder coupling and to the working needs.
See the "Keyboard instruction manual" to assign adequate values.

4.12 BAR FEEDER TESTING

INFORMATION:

the bar feeder testing must be carried out following a preset procedure, which is possibly indicated and authorized by the manufacturer.

During the bar feeder testing phase, check if the safety conditions are adequate and start it only if this requirement is in conformity with the standards required.

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5.1 PRELIMINARY NOTE ON ADJUSTMENT

INFORMATION:

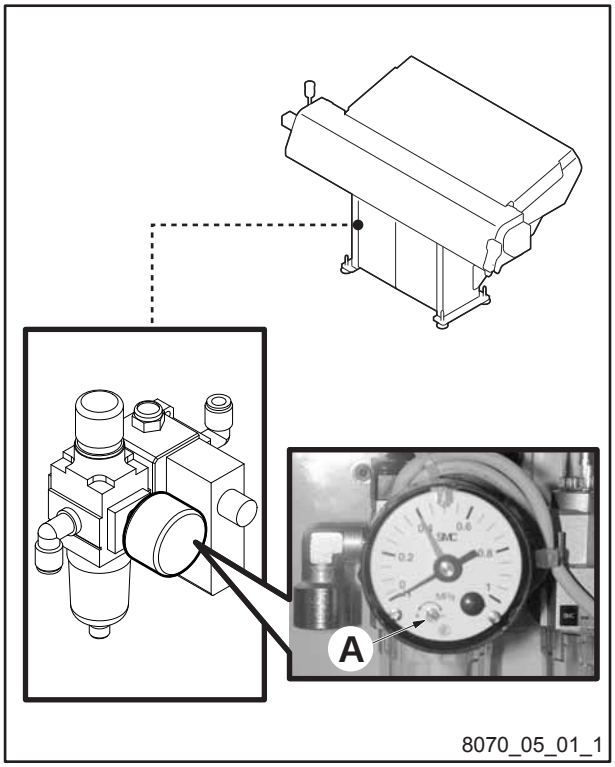
before carrying out any adjustment, activate all safety devices provided and check if it is necessary to inform the operators using the machine and people working close to the area. In particular, it is recommended to adequately signal the adjacent areas and to prevent anyone from approaching any of the devices that, if activated, could cause unexpected dangerous situations and injure people.

5.2 Pressure switch – Minimum threshold adjustment

After unscrewing the glass protection, the pressure switch can be adjusted by turning the relevant adjusting screw (A). Proper setting is 4.5 bar (0.45 MPa).

WARNING – CAUTION:

Do not further turn counterclockwise when the green pointer is on 0, as this may cause damage to the pressure switch.



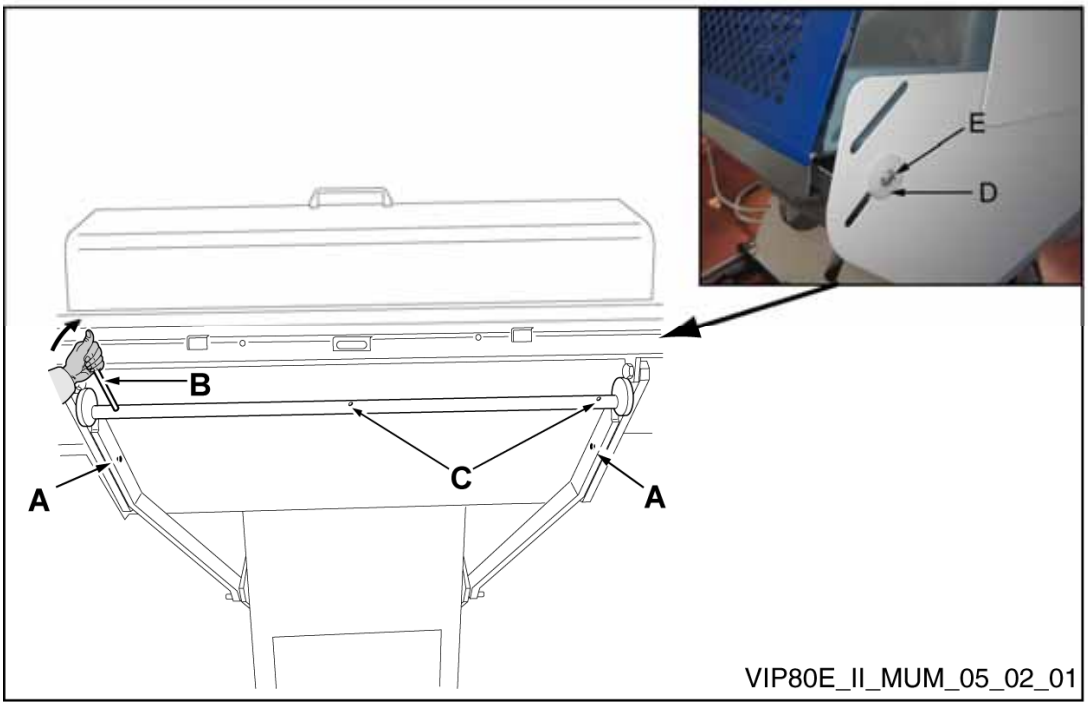
5.3 MAGAZINE ADJUSTMENT (HEXAGONAL BARS)

For using hexagonal bars, the following adjustments are necessary:
- mechanical adjustment of the magazine;
- setting the parameters using the push button panel.

Mechanical adjustment of the magazine
In order to machine hexagonal bars it is necessary to modify the magazine position. Adjust as follows:
- Unscrew the screws which fasten the Teflon washers (D)
- Remove the Teflon washers (E)
- insert the lever (B) in the special holes in the hub (C);
- remove the screws (A);
- rotate the hub in order to modify the magazine position;
- Based on the type of bar to be machined, insert screws and Teflon washers in the special slot:
  higher in the case of machining hexagonal bars (steeper slope)
  lower in the case of machining round or square bars (less steep slope)
- reassemble the screws (A).

INFORMATION:

At the end of this operation, the magazine will have a greater inclination. This is essential to make the hexagonal bars slide along correctly.



Parameter setting

Once the mechanical adjustments have been completed, it is necessary to modify the following parameters using the push-button panel.

- enter value 2 in the "Bar Type" parameter 16
- enter the value of the bar size in the "Bar Size" parameter 8.

INFORMATION:

For further information on the modification methods of parameters, refer to the "Instruction manual" which you can find attached.

INFORMATION:

Once the machining of hexagonal bars has finished, it is ABSOLUTELY NECESSARY to reposition the magazine in its normal working condition (less steep slope).

To carry out this adjustment refer to the previous procedure taking care, when removing the screws (A), to move the lever (B) slowly backwards until the correct positioning of the magazine.

5.4 MAGAZINE ADJUSTMENT (SQUARE BARS)

Parameter setting

- from the operator panel access parameter 16 "Bar Type" and enter value 3, corresponding to the square bar;
- access parameter 8 "Bar Diameter" and set the diameter of the bar to be machined.

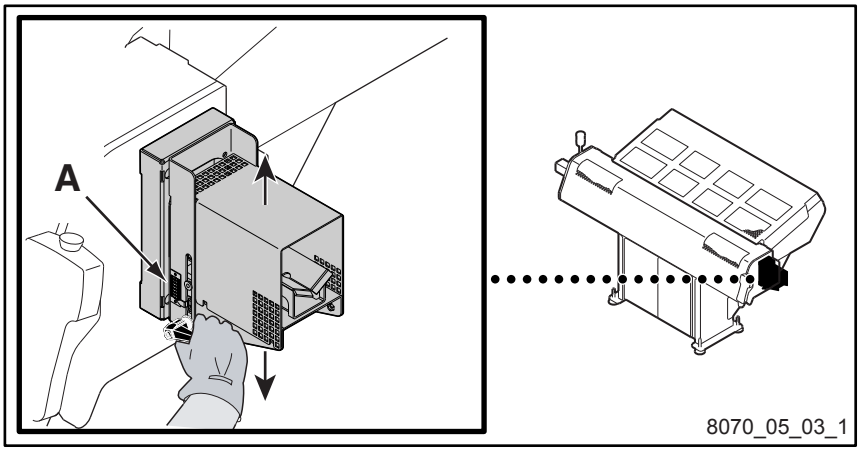
INFORMATION:

For further information on the modification methods of parameters, refer to the "Instruction manual" which you can find attached.

5.5 FRONT BAR FEEDER-LATHE EXTENSION ADJUSTMENT

The adjustment is carried out according to the bar to be machined.

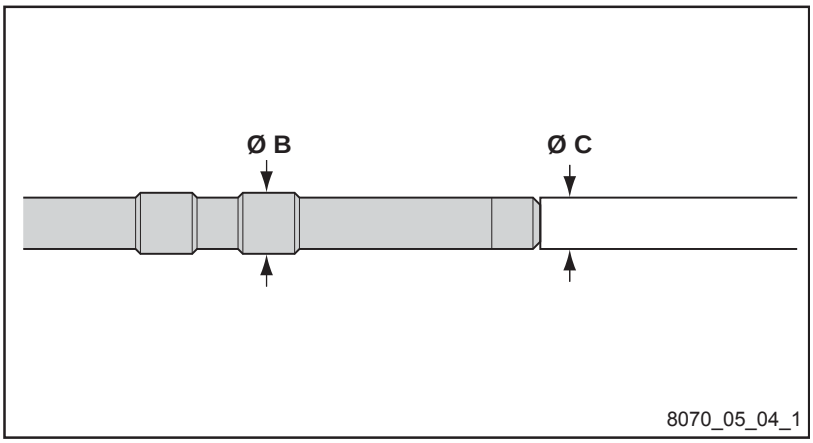
- Adjust the guide height, displayed on the graduated rod (A), in order to respect the values reported in the table.



Bar feeder-lathe guide height table

Ø B Bar pusher bearing diameter (mm)	Ø C Bar diameter (mm)	Bar guide channel height
12	5÷16	12÷16 (*)
15	15÷24	15÷24 (*)
21	21÷60	21÷60 (*)
26	26÷80	26÷80 (*)

(*) The height must be equal to the bar diameter (ø C).



5.6 LOADING AXIS ADJUSTMENT

The adjustment of the loading axis takes place automatically according to the diameter of the bar to be machined set from the push-button panel.
This adjustment includes:
- modification of parameter 16 "BAR TYPE";
- modification of parameter 8 "BAR SIZE".

INFORMATION:

For further information on the modification methods of parameters, refer to the "Instruction manual" which you can find attached.

INFORMATION:

In order to machine hexagonal bars modify the inclination of the magazine (see par. 5.3 "Magazine adjustment (Hexagonal bars)").

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6.1 PRELIMINARY NOTE ON USE AND OPERATION

INFORMATION:

the incidence of injuries caused by the use of machines depends on many factors that cannot always be prevented and controlled. Some accidents can depend on some unpreventable environmental factors, others can be especially due to the operators' behavior. The operators, apart from being authorized and appropriately informed, at the first use will have to carry out some manoeuvres to test the controls and the main functions. Exclusively use the machine according to the instructions provided by the manufacturer and do not tamper with any devices to obtain different performances. Before use, make sure that the safety devices are perfectly installed and efficient. Besides satisfying the above-mentioned requirements, users must enforce and follow all safety regulations and carefully read the control description and the commissioning.

6.2 CONTROL DESCRIPTION

INFORMATION:

From the keyboard it is possible to start automatically the bar feeder, even when lathe 'MAN/AUT' signal is in Manual mode.

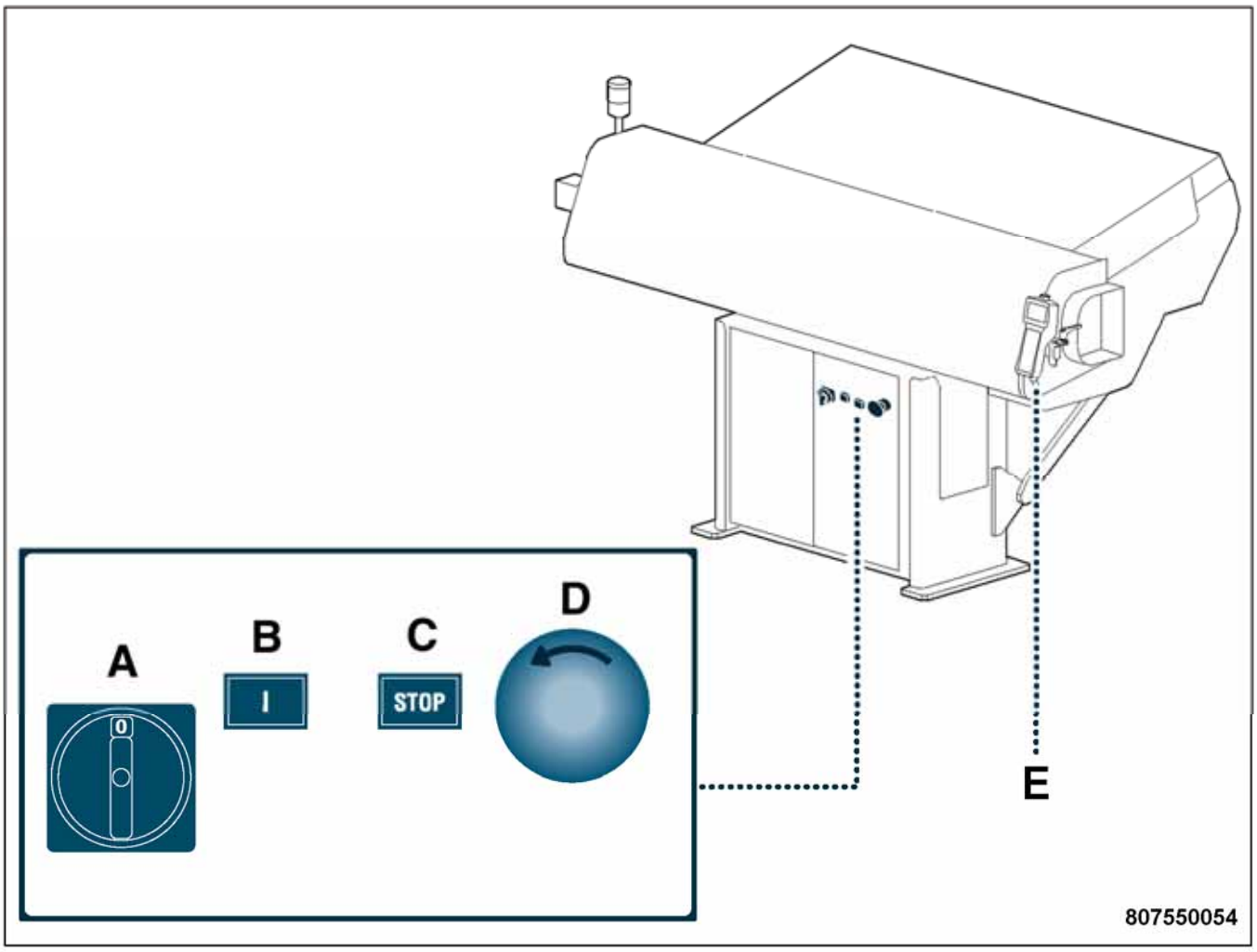
INFORMATION:

When the Bar feeder is in Automatic mode, the bar feeding is possible only when the Lathe 'MAN/AUT' signal is in Automatic mode.

INFORMATION:

Pressing Manual mode button it is possible to prevent the bar feeder automatic start by the lathe.

The figure represents the control position on board the machine.



A MAIN SWITCH: turns the power supply on and off.
- Position 0 (OFF) the machine is not powered.
- Position I (ON) the machine is powered.

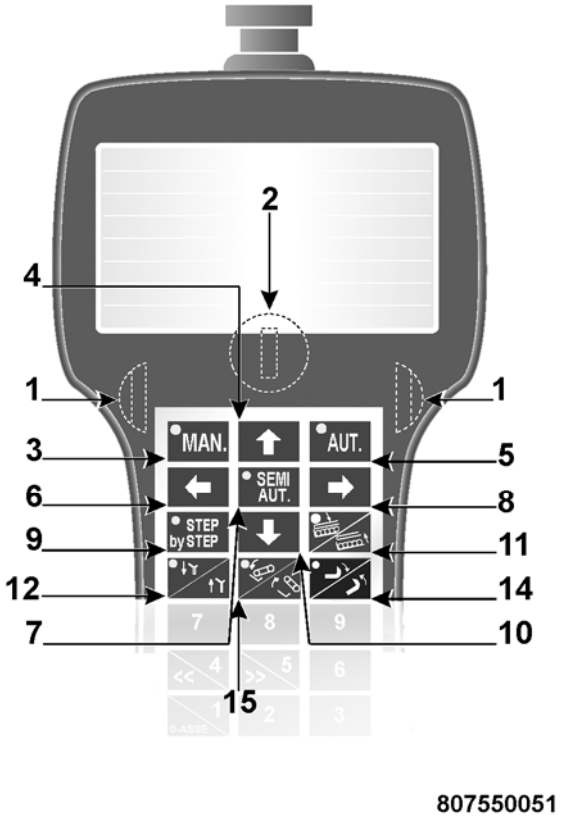
B BAR FEEDER START BUTTON (green light): to start the bar feeder hold down the button until it lights up.

C BAR FEEDER STOP BUTTON (red): press this button to stop the bar feeder and to reset the "Errors".

D EMERGENCY STOP BUTTON: press this button to stop the bar feeder in an emergency situation. Manually release the button to restart.

E KEYBOARD: display and main controls

6.3 KEYBOARD MANUAL CONTROL DESCRIPTION



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1 - Start buttons; opposite buttons enabling the keys for some functions. Press both buttons and simultaneously the button corresponding to the desired function.

2 - Selects the keyboard modes;
- in position ; "see messages" mode.
- in position ; "see parameters" mode.

3 - Selects the manual function. The LED switched on signals the manual bar feeder mode.

4 - Multifunction key
- Allows scrolling the page upwards.
- Moves the selection cursor upwards.
- Increases by one the value set in the date and time programming mode.

5 - Selects the automatic function. The LED switched on signals the automatic bar feeder mode.

6 - Multifunction key
- Selects the previous parameter.
- Moves the selection cursor leftwards.

7 - Selects the semiautomatic function. Press the button to select the mode and press again to deselect it. The LED switched on signals the presetting for the semiautomatic cycle.

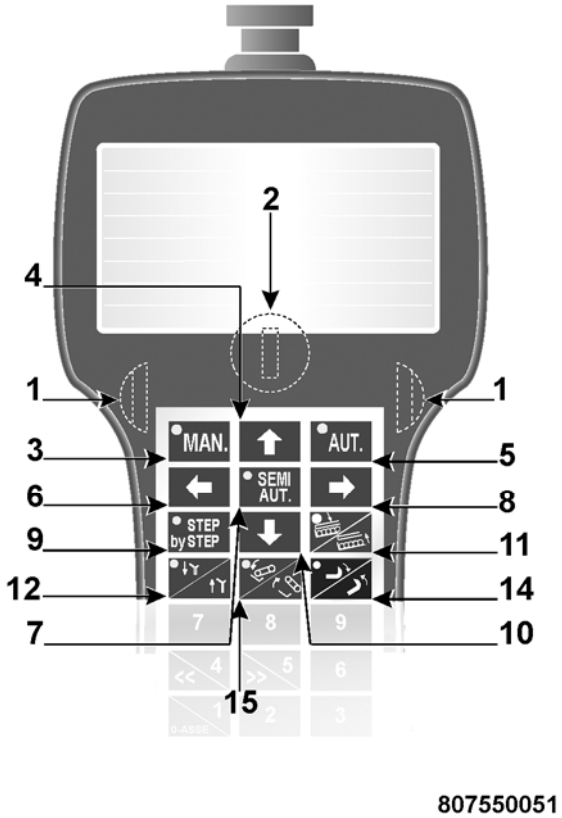
8 - Multifunction key
- Selects the next parameter.
- Moves the selection cursor rightwards

9 - Activates the "step-by-step" operating cycle: performs a cycle step each time the key is pressed. The flashing LED means the bar feeder in semiautomatic mode is ready to carry out the Step by Step mode.

10 - Multifunction key
- Allows scrolling the page downwards.
- Moves the selection cursor downwards.
- Decreases by one the value set in the date and time programming mode.

11 - Allows the selection plate of the magazine bars to be raised and lowered. The LED switched on signals that the selection plate is low.

12 - Raises/Lowers the guide to V, the LED switching on corresponds to the guide position right down.
The key must be pressed until the movement has finished.
If the key is released whilst the guide is being raised, before the movement has been completed, the guide will stop in its current position.
Subsequent pressing of the key will take the guide back to its "zero" position (guide lowered)



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14 - Raises/Lowers the bar drop control devices. The LED switched on signals the bar drop control devices are low.

15 - Raises/Lowers the bar pusher. The LED switched on signals the bar pusher is low.

18 - Multifunction key
- Sets the numerical value.
- Moves the bar pusher in manual mode.

19 - Multifunction key
- Sets the numerical value.
- Resets the carriage "BAR FEEDER ZERO SETTING": press the two start buttons (1) and then the key; release them when the carriage starts moving towards the "BAR FEEDER ZERO SETTING" position.

20 - Sets the numerical value.

21 - Recalls the main menu (MAIN MENU).

22 - Multifunction key
- Sets the numerical value.
- Recalls the selection cursor.

23 - Multifunction key
- Stops the selection function.
- Restores the value prior to the non-confirmed modification.

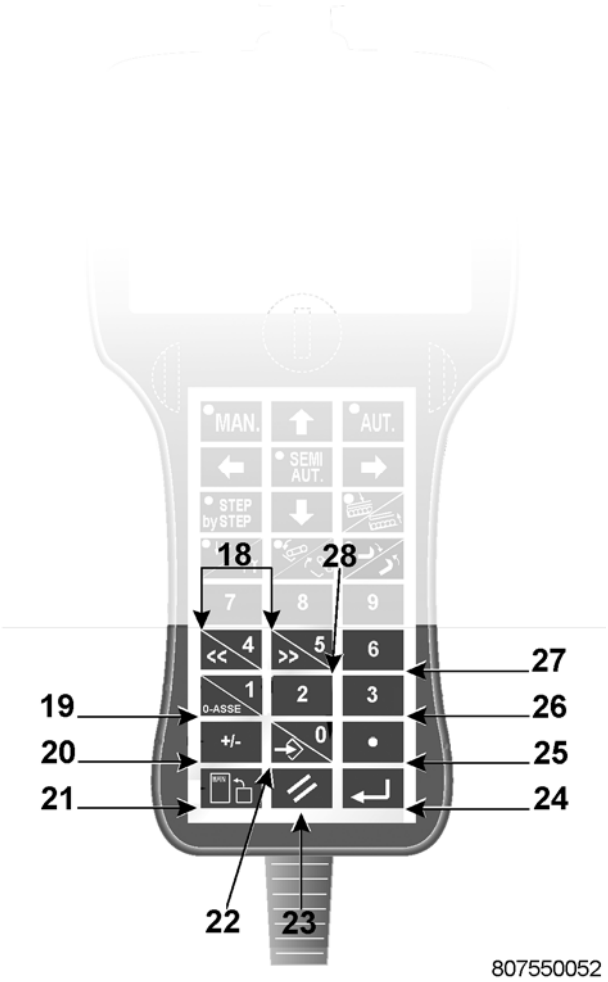
24 - Confirms the entered data.

25 - Sets the "comma".

26 - Sets the numerical value.

27 - Sets the numerical value.

28 - Sets the numerical value.



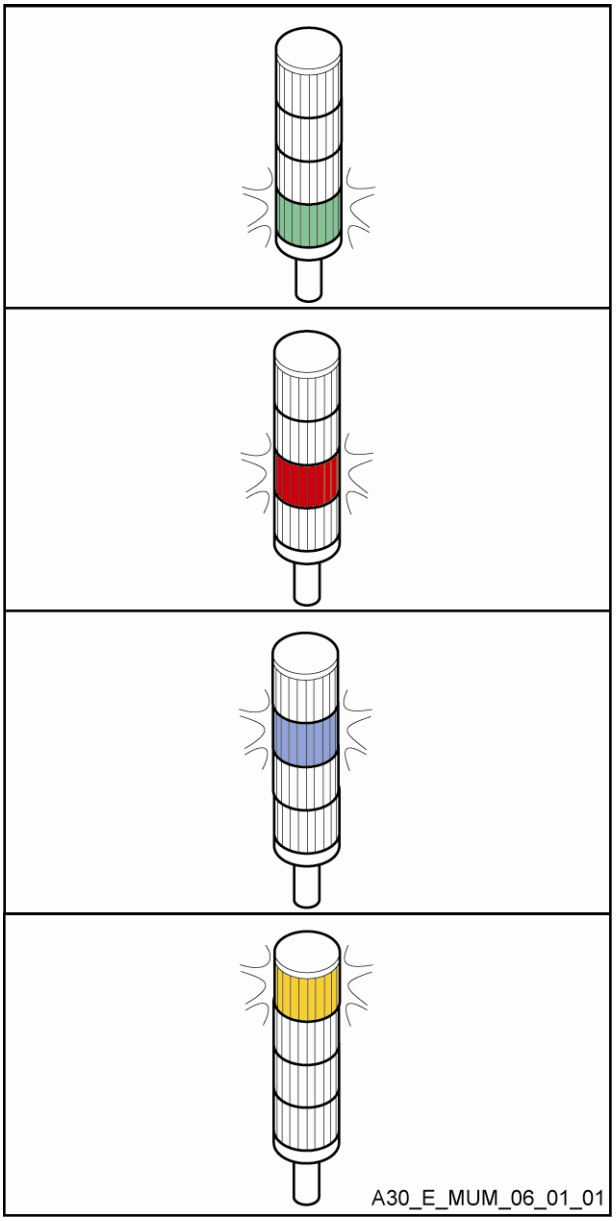
6.4 LIGHT INDICATOR DESCRIPTION

Green light: Signals that the bar feeder is working in automatic mode.

Red light (OPT): signals that the bar feeder is in stopping conditions, or that it is working in manual mode.

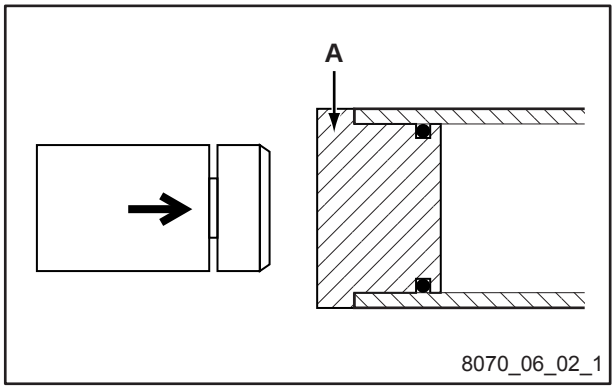
Blinking blue light (OPT): indicates that the bar feeder is carrying out the bar change.

When the orange light (OPT) blinks, it signals that there is only one bar in the magazine. This signal will continue until the bars in the magazine have run out.



6.5 BAR PREPARATION (sections and pipes)

On the bars, before they are loaded into the magazine, it is necessary to carry out a chamfer in the end of the entrance to the lathe in order to facilitate the bar's entrance in the collet.
In the case of pipes, insert a plug (A) at the rear end in order to create a bearing surface for the bar pusher and to prevent the coolant coming out.



6.6 MAGAZINE LOADING

WARNING - CAUTION:

magazine loading must be carried out using only personal safety garments and, if necessary, appropriate tools. The person who is authorized to carry out these operations shall prepare all the necessary conditions to guarantee his/her own safety and that of the people directly involved. In particular, follow the workplace health and safety regulations in force.

WARNING - CAUTION:

Put the bars down so as not to damage the bar feeder parts.

WARNING - CAUTION:

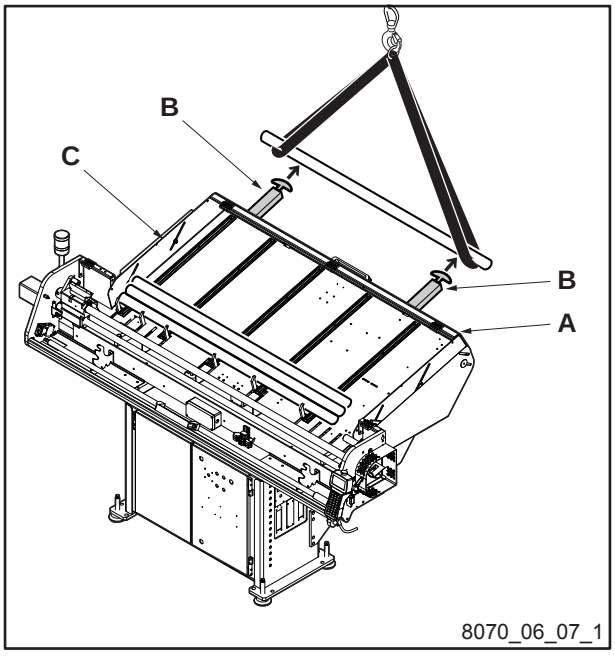
When loading very heavy bars, it is necessary to accompany them up to the end of the magazine in order to prevent abrupt blows and consequent damage to the parts of the bar feeder.

INFORMATION:

The maximum capacity of the magazine is 250 kg.

For the loading proceed as follows.

- Using the push-button panel lift the bar selection table;
- Open the rear guard (A);
- Extract the relative supports (B) in order to facilitate loading the bars into the magazine;
- Load the bars into the magazine so that they are resting on the rear surface (C) of the magazine.



INFORMATION:

When filling up the magazine with bars that have reduced diameter dimensions, take care to ensure that the bars are not overlapping each other.

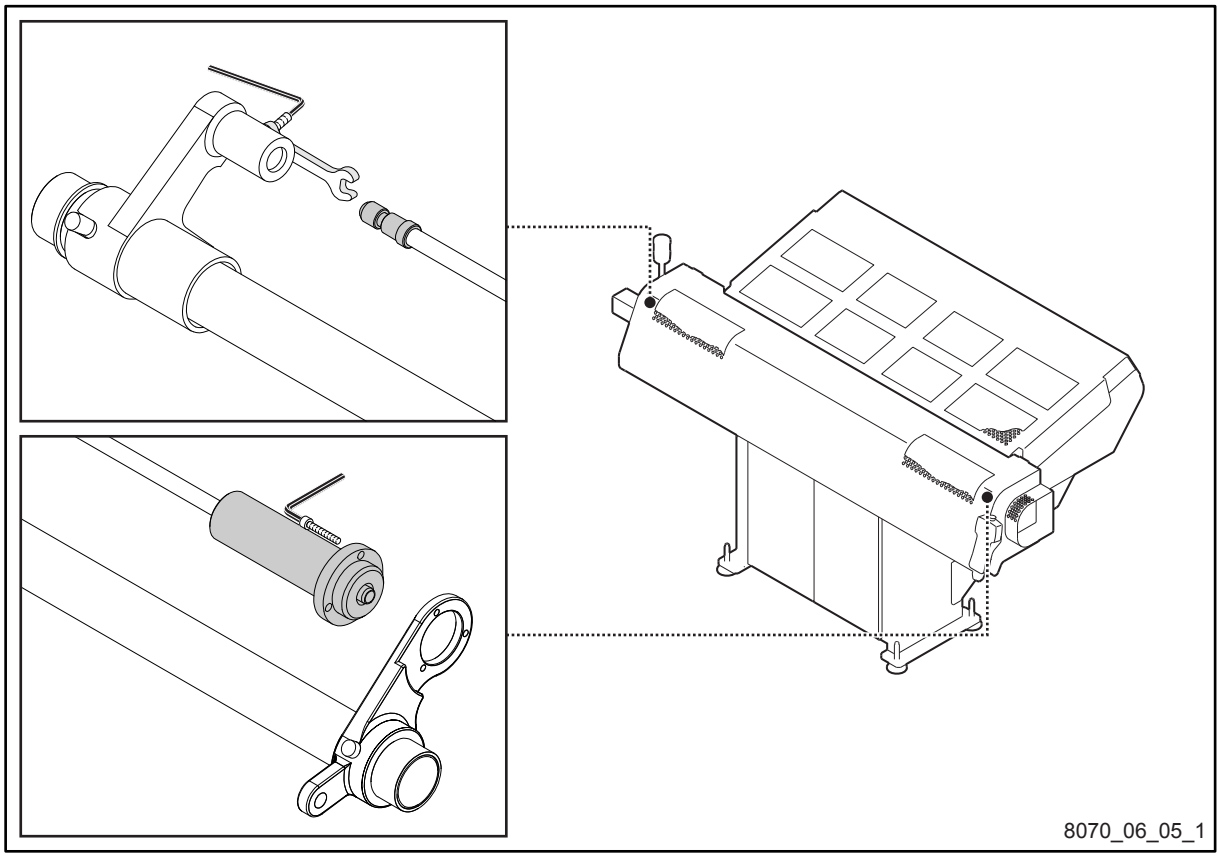
6.7 BAR FEEDER TOOLING

Before starting machining bars with features different from the previous ones, it is necessary to tool the bar feeder proceeding as follows.

- If necessary, replace the bar pusher (see table on bar diameters and bar pusher paragraph 2.5 and paragraph 6.8 Bar pusher change).
- If necessary, replace the lathe spindle liners (see paragraph 6.9).
- Adjust the loading axis (see paragraph 4.6.1).
- Prepare the bars and load them on the magazine (see paragraph 6.5. and 6.6).
- Reset the work parameters (see "Instruction manual").

6.8 BAR PUSHER CHANGE

For this operation, proceed as follows.
- Put the bar pusher in work position (lowered) (see "Operative guide").
- Remove the upper guard.
- Adjust screw (A) and lock nut in order to uncouple the bar pusher rear end.
- Disassemble the bushing (B) in order to uncouple the bar pusher fore end.
- Assemble the new bar pusher, with the bushing (B) fitted, in its seat in the rear end.
- Put the bushing (B) in its seat and fasten it.
- Close the upper guard back.

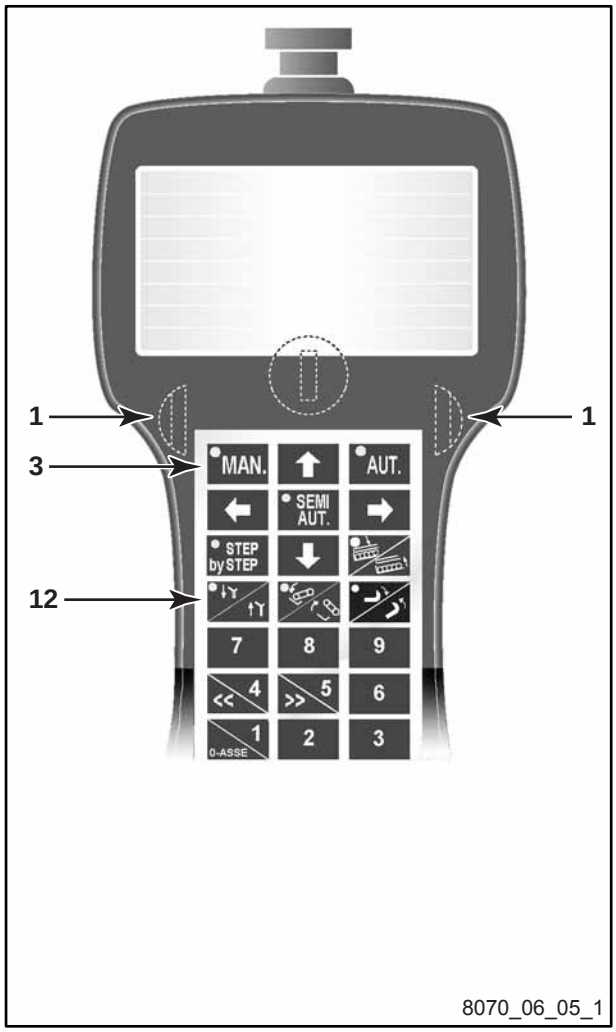


6.9 LATHE SPINDLE LINER CHANGE

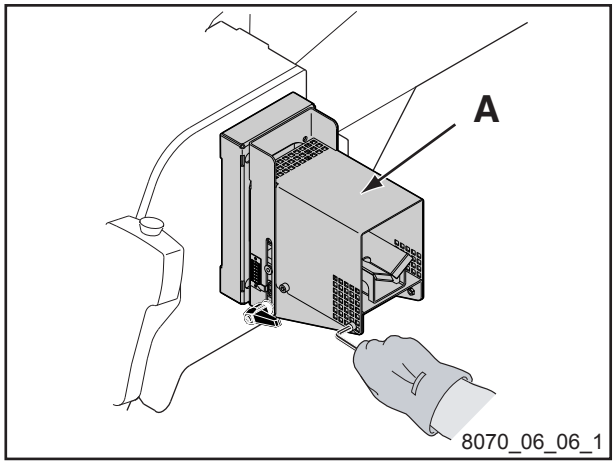
We recommend using a spindle liner in order to guide the bar correctly into the lathe. The internal diameter of the liner must be at least a millimetre more than the external diameter of the bar pusher bearings or the diameter of the bar to be machined (see table "Bar and bar pusher diameters" paragraph 2.5.).
The replacement has to be made in the area between the lathe and the bar feeder. If equipped with the shifting device (see paragraph 7.5.), remove the bar feeder. Otherwise proceed as follows.

- Press the key (3) to select the manual mode.

- Press the start buttons (1) and at the same time key (15) to lift the bar pusher;
- Press the button (12) to lower the guide channel.



- Press the emergency stop button in order to stop the bar feeder in safe conditions.
- Remove safety device (A) (if the bar feeder is provided with a bar feeder-lathe guide).
- Open the upper guard.
- Remove the liner (from bar feeder side) and replace it.
- Reset the bar feeder to its initial operating conditions.

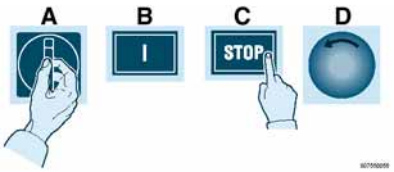


6.10 AUTOMATIC CYCLE START

The bar feeder starting procedure varies according to the selected operating cycle.
- NORMAL
- SUB-SPINDLE MODE

The specific procedure for each of the possible cycles is described in the following paragraphs.

6.11 NORMAL STOP



Follow the instructions given hereunder to stop the bar feeder after machining stop.

1. Wait until piece machining has been completed and the relative automatic cycle has stopped.
2. Press button (C) on board the machine to stop the bar feeder.
3. Stop the lathe.
4. Rotate the bar feeder main switch to O (OFF) to disconnect the power supply.

INFORMATION:

Press no emergency buttons for normal stop.

6.12 EMERGENCY STOP AND RESTART

WARNING - CAUTION:

Press lathe or bar feeder emergency button in case of impending danger only. Bar feeder and lathe operations will stop immediately. Restore ordinary operation conditions then release button to start again the unit.

The bar feeder starting procedure after an emergency stop varies according to the selected operating cycle.
- NORMAL
- SUB-SPINDLE MODE

The specific procedure for each of the possible cycles is described in the following paragraphs.

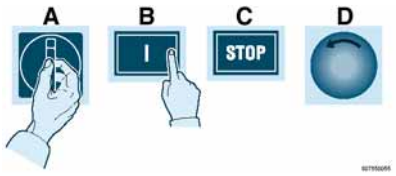
6.13 "STEP-BY-STEP" CYCLE

Foreword

This mode may be used for many reasons, as for instance:

- to check the general working conditions of the bar feeder;
- to check a complete bar change cycle;
- to check the bar feeder mechanics;
- to load a single bar so as to check the facing;
- et cetera.

Procedure



1. Power on the lathe.

2. To power on, turn the main switch (A) of the bar feeder to position I (ON).

3. Press the button (B) on the machine to start the bar feeder and hold it down until the indicator-light on the button lights up. In order to start the Step by Step cycle the bar feeder must be in the low bar pusher position (work position).

4. Press 

and then 

.

5. Press 

to carry out the first "step".

6. Press 

repeatedly, waiting for the components to stop in order to carry out the subsequent steps.

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7.1 PRELIMINARY NOTE ON MAINTENANCE

INFORMATION:

before carrying out any maintenance, activate all the required safety devices and check if it is necessary to warn the operating staff and people close to the area. In particular, it is recommended to adequately signal the adjacent areas and to prevent anyone from approaching any of the devices that, if activated, could cause unexpected dangerous situations and injure people.

7.2 SCHEDULED MAINTENANCE

IMPORTANT:

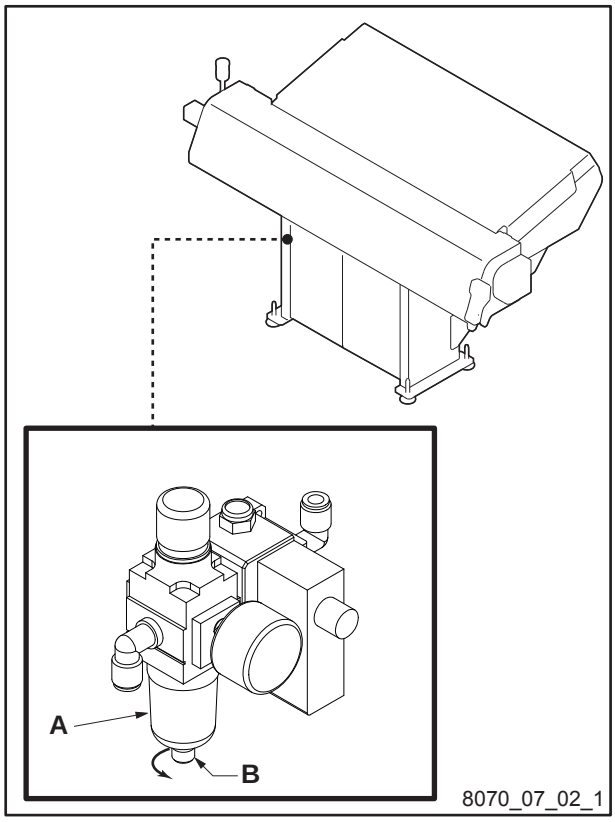
keep the bar feeder in maximum efficiency conditions, carrying out the programmed maintenance operations as scheduled by the manufacturer. Good maintenance will allow the best performances, a longer service life as well as constant adhering to safety requirements.

Component	Type of intervention	Frequency				
		Hours				Yearly
		200	500	1250	2500	
Revolving tip	Test its wear (par. 7.3). If necessary, replace it (par. 9.2)	•				
Carriage unit	Grease the trapezoidal screw (par.7.4)		•			
	Grease the carriage		•			
Magazine	Grease the magazine movement screw (par. 7.4)		•			
Selection table	Grease the selection table displacement guide slots	•				
Bar drop control devices	Grease the rotation joints			•		
Handheld keyboard	Replace battery (par. 9.5)					•

7.2.1 Air filter unit - Check

FILTER A

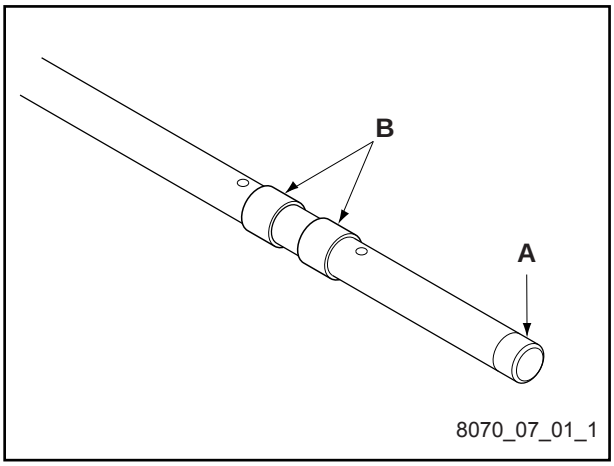
- Check that the cup (A) does not contain condensation. If necessary, bleed by turning knob (C).
- Check pressure switch adjustment, see paragraph 5.2.



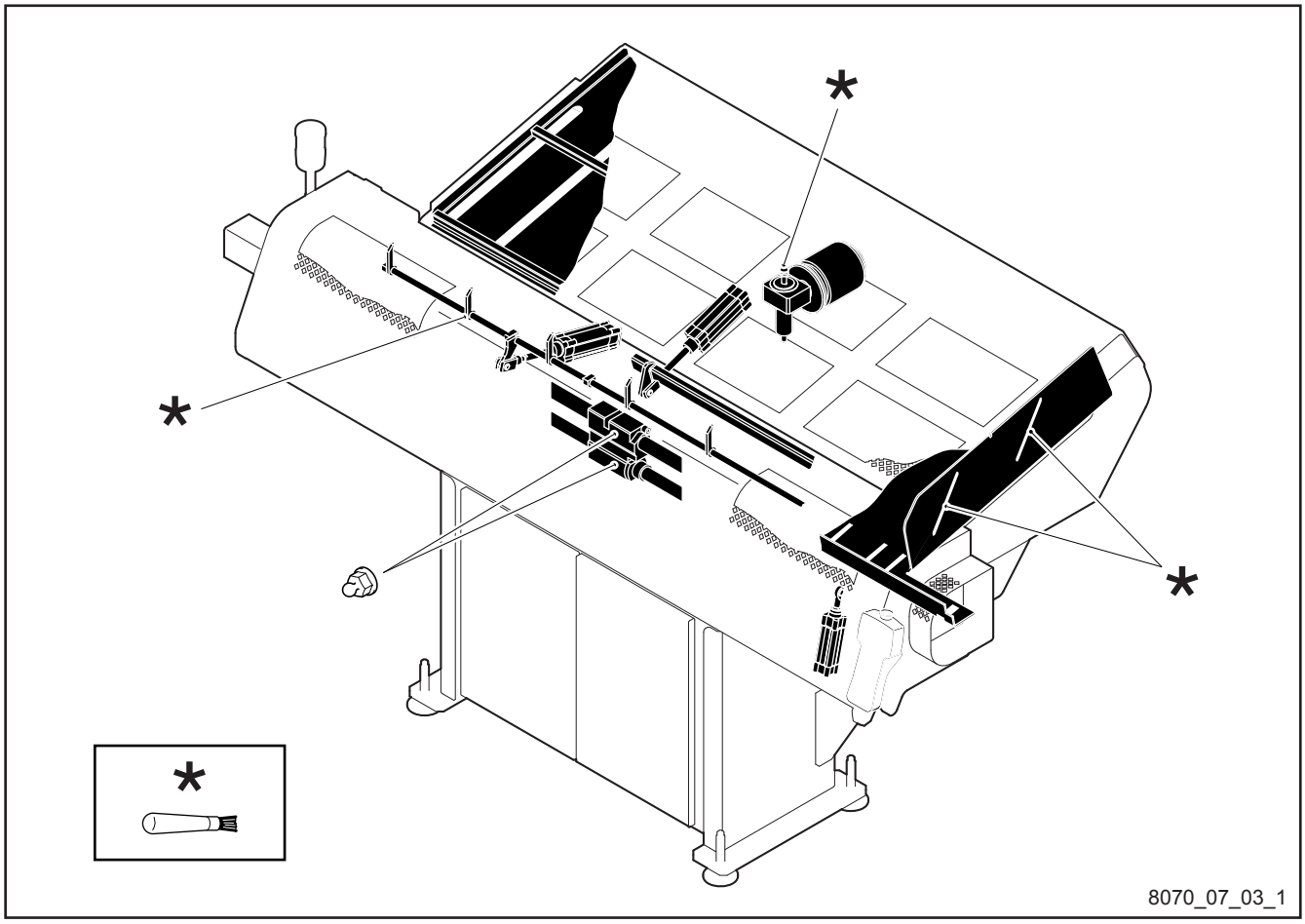
7.3 REVOLVING TIP CHECK

For checking proceed as follows:

- Disassemble the bar pusher, (see paragraph 6.8).
- Check that the push-rod (A) and the bearings (B) of the unit move freely and without any excessive play.
- If necessary, replace the revolving tip (see paragraph 9.2).
- Install the bar pusher again.



7.4 GREASING POINTS



Grease

Grease

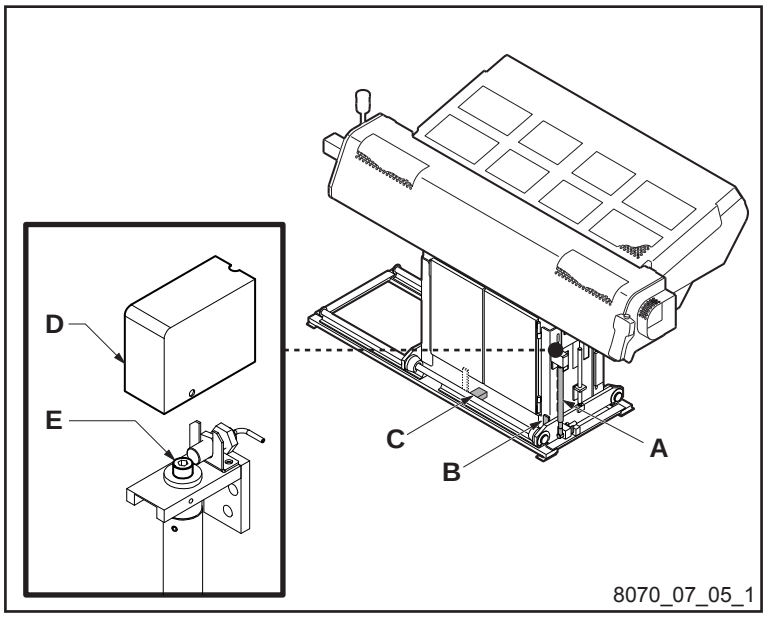
7.5 DISPLACEMENT DEVICE USE

WARNING - CAUTION:

before carrying out this intervention, disconnect the bar feeder power supply. During the intervention take extreme care so as not to damage the connection cables.

Perform this operation following the instructions given hereunder:

- Disconnect the bar feeder-lathe fastening unit (if installed).
- Remove the protection guard (D).
- Remove the safety screw (E).
- Lower the lever (A) until it releases, then rotate it forward.
- Move the bar feeder until the bar stop (B) exceeds the stop (C).
- Carry out all lathe tooling and/or maintenance operations required.
- Lift the bar stop (B) and put the bar feeder again in its initial position.
- Put the lever (A) in position.



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8.1 GENERIC TROUBLESHOOTING

TROUBLES	CAUSES	SOLUTIONS
The bar feeder will not start	Blackout	Check the electrical connection.
	Guard open	Close the guard.
	Incorrect bar feeder programming or magazine out of position	Disconnect the emergency devices.
	Motor thermal switch tripped.	Reset the thermal circuit breaker with the special buttons.
	Lack of compressed air	Check the pneumatic connection
The bar feeder has been reset but the automatic cycle will not start.	No lathe signal.	Check the electrical connection with the lathe.

8.2 BAR MAGAZINE TROUBLESHOOTING

TROUBLES	CAUSES	SOLUTIONS
During loading the bar does not enter into the lathe correctly.	The loading axis is not correct.	Within parameter 80 adjust the subparameter “Correction” in Magazine adjustment. For further information on the parameter modification methods refer to the “Instruction manual” attached.
The bars are not selected correctly	If working with small bars, check that they are not overlapping each other	Check and remove any overlapping bars (par. 6.6)
The hexagonal bars do not run smoothly in the magazine	Incorrect bar feeder programming or magazine out of position	Adjust the magazine position (par. 5.2) and check that the position of the magazine is correct (par. 5.2)
The square bars do not run smoothly in the magazine	Incorrect bar feeder programming or kit for square bars not installed	Check that the set programme is correct (par 5.3) and check that the kit for square bars has been installed correctly and that the TK parameter has been modified (par. 5.3)
Difficulty introducing the bar into the spindle line of the lathe	Guide channel not centred with the spindle line of the lathe	Set the value of the ø close to the bar being used, in Parameter 8

8.3 TROUBLESHOOTING DURING BAR FEEDING

TROUBLES	CAUSES	SOLUTIONS
The pre-feeding and feeding are stopped unexpectedly	Motor thermal switch tripped.	Reset the thermal circuit breakers with the appropriate buttons.
The bar hardly enters the lathe spindle.	The guides are not well adjusted.	Adjust the guides (see par. 5.3.).
	The bar feeder - lathe guide is not well adjusted.	Adjust the guide (par.5.4).
	The bar feeder is not aligned with the lathe.	Check and correct the alignment.
The carriage cannot complete the pre-feeding stroke.	The bar is too long.	The maximum length cannot exceed lathe spindle length.
The bar hardly enters the lathe collet.	Excessive burr at the bar end.	Trim rag before feeding.

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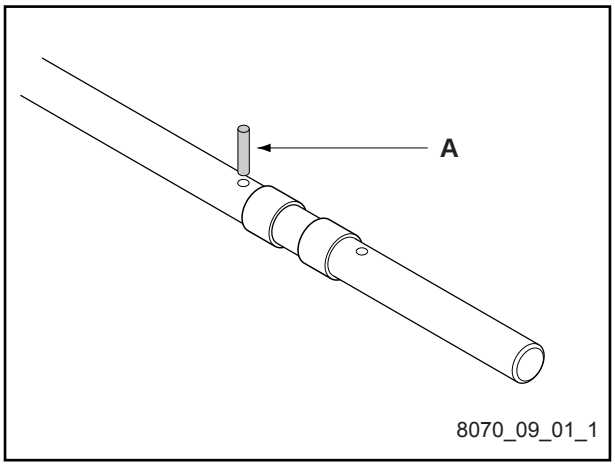
9.1 PRELIMINARY NOTE ON PARTS REPLACEMENT

Before carrying out any replacement, start all safety devices provided and check if it is necessary to inform the staff operating around and people close to the area. In particular, it is recommended to adequately signal the adjacent areas and to prevent anyone from approaching all the devices that, if started, could cause unexpected damage and harm to people.
If it proves necessary to replace worn components, use only original spare parts.
We disclaim any responsibility for damages to components and injury to people derived from the use of non-original spare parts and from any repair carried out without the manufacturer's authorisation.
For spare parts ordering, follow the indications reported on the spare parts catalogue.

9.2 REVOLVING TIP REPLACEMENT

For replacement proceed as follows:
- Put the bar pusher in work position (lowered) (see "Instruction manual").
- Open the upper guard.
- Disassemble the bar pusher, see paragraph 6.8.
- Remove the pin (A) in order to disassemble the revolving tip.
- Assemble the new revolving tip and insert the new pin.
- Install the bar pusher again.
- Close the top guard again.

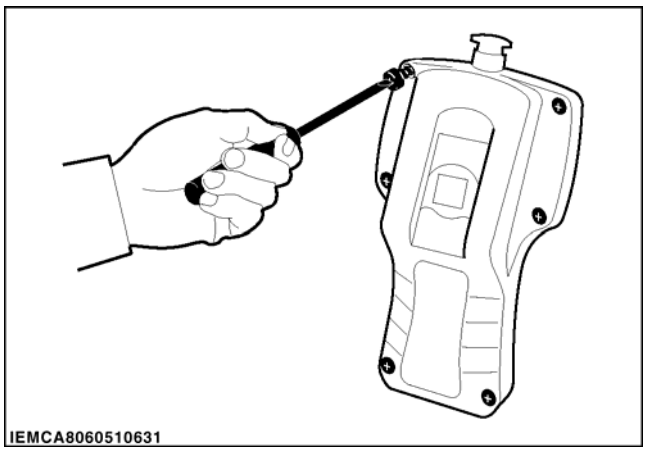


9.3 KEYBOARD BATTERY REPLACEMENT

Replace the battery once a year.

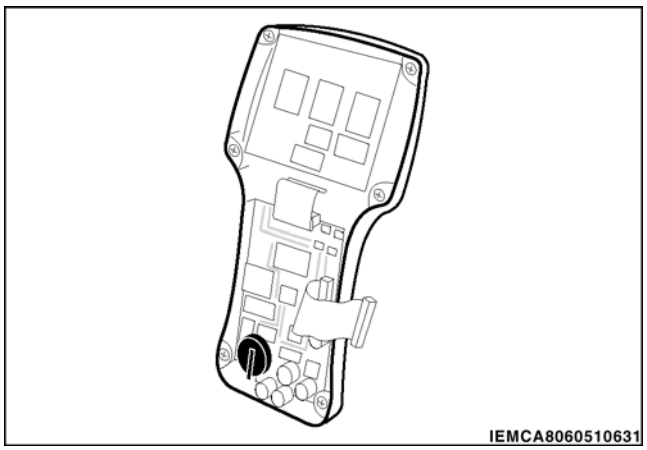
INFORMATION:

failure to replace the battery can cause the calendar - clock memory to be deleted.



For replacement proceed as follows.
- Turn off the electrical supply.
- Tighten the six screws and disassemble the cover.

- Extract the battery (A) and insert the new battery (DURACELL DL2430 type), paying attention not to invert polarities.
- Assemble the cover and tighten the six screws again.
- Reconnect the electrical supply.



9.4 RECOMMENDED SPARE PARTS

INFORMATION:

replace the too worn parts by using original spare parts. Use only oil and grease recommended by the manufacturer. All the above hints will assure the good performance of the bar feeder as well as its safety.

Below is a list of the recommended spare parts to have in stock.

Code	Name	Features	Notes	Qty
32210013	Sensor	BERO 3RG4012-0AG33 BERO		1
	Bar pusher		Specify diameter	1
	Revolving tip		Specify diameter	1
31214122	Microswitch	OMRON V-165-1c5		1
31210103	Sensor	DF330 UNIVER		2

9.5 BAR FEEDER DISMANTLING

INFORMATION:

this activity must be carried out by specialized operators, in accordance with the laws in force on safety at work. Do not throw non-biodegradable products, lubricating oils and non-ferrous components (rubber, PVC, resins, etc.) in the environment. Carry out their disposal in compliance with the laws in force.