

AUTOMATIC BAR FEEDER

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

KID 80 - IV Pupa

EN

MANUAL FOR USE AND MAINTENANCE

Rel. 0

Date 07/04/2015

Cod.



S/N

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This manual is a translation of the original document

MANUFACTURER **IEMCA A BUCCI AUTOMATIONS DIVISION**

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TYPE OF DOCUMENT **MANUAL FOR USE AND MAINTENANCE**

PRODUCT **AUTOMATIC BAR FEEDER**

MODEL **KID 80 - IV Pupa**

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Iemca reserves the right to make changes to the products described herein at any time.

Thus, this document may not not exactly match the product.

The data contained herein relate to a product range and are not specific to the serial number appearing on the cover.



The operations described in the sections that are preceded by this symbol must be performed by qualified and skilled personnel with specific abilities and precise technical competence only.

Any other operation can be performed either by qualified personnel and/or by professional bar feeder operators.



Before carrying out any operation on the bar feeder, it is of the utmost importance to read this manual carefully.

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 the expansion plugs as shown in section 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 A BUCCI AUTOMATIONS DIVISION
48018 Faenza (Ra) ITALY - Via Granarolo, 167**

IEMCA CERTIFICATO DI INSTALLAZIONE N° 0517 /02

IMPORTANTE il presente modulo, compilato in ogni sua parte, deve essere spedito in IEMCA Italia per dare corso al periodo di garanzia.

Installazione e training eseguito da:

Ditta		Data	
Tecnico Installatore		N° Rapporto di Intervento	
Presso:			
Cliente		Partecipante/i <small>(Scrivere stampatello i nomi)</small>	
Nazione			
Caricatore			
Matricola			
Macc./Tipo			

ARGOMENTO

Descrizione generale del caricatore e del suo funzionamento, spiegazione del ciclo di lavoro.	<input type="checkbox"/>
Istruzioni per attrezzare il caricatore e come eseguire il cambio di lavorazione.	<input type="checkbox"/>
Descrizione e cambio di: guide, spingibarra, pinze, semiboccole, canotto anteriore e di riduzione.	<input type="checkbox"/>
Spiegazione tastiera operatore; Spiegazione dei parametri e loro utilizzo.	<input type="checkbox"/>
Procedure di programmazione in base al tipo di lavorazione da eseguire.	<input type="checkbox"/>
Errori - Cause - Rimedi; spiegazione dei principali allarmi riportati sui manuali.	<input type="checkbox"/>
Presenza visione della manualistica e delle indicazioni di manutenzione preventiva; Modalità per contattare l'assistenza tecnica autorizzata IEMCA.	<input type="checkbox"/>
Presenza visione della manualistica e delle indicazioni di manutenzione preventiva; Modalità per contattare l'assistenza tecnica autorizzata IEMCA.	<input type="checkbox"/>

Gli argomenti contrassegnati sono stati trattati in modo completo ed esauritivo. I partecipanti si dichiarano completamente soddisfatti del Training effettuato. Firma a lato per accettazione.

NOTA - l'erogazione del periodo di garanzia è subordinata a:
 - installazione eseguita da un tecnico autorizzato IEMCA
 - svolgimento del sopraccitato "training"

La decorrenza della garanzia si intende valida per 12 mesi dalla data di installazione e comunque, non oltre i 18 mesi dalla data di consegna. La validità della garanzia entra in vigore dalla data di sottoscrizione incondizionata del presente modulo che dovrà essere restituito alla IEMCA, completo di ogni sua parte via posta entro 15 giorni, o tramite il tecnico installatore.

Timbro e firma del cliente

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 behaviour 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.

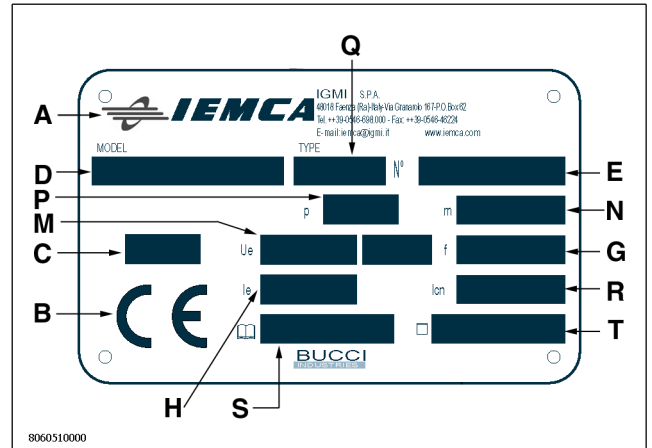
This manual, which contains all the instructions for the bar feeder operation and maintenance, is supplied with: the "Keyboard instruction manual".

The "Keyboard instruction manual" contains all the instructions on how to use the installed software.

1.3 MANUFACTURER AND BAR FEEDER IDENTIFICATION

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

- 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.

Scheduled 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.

Unscheduled 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

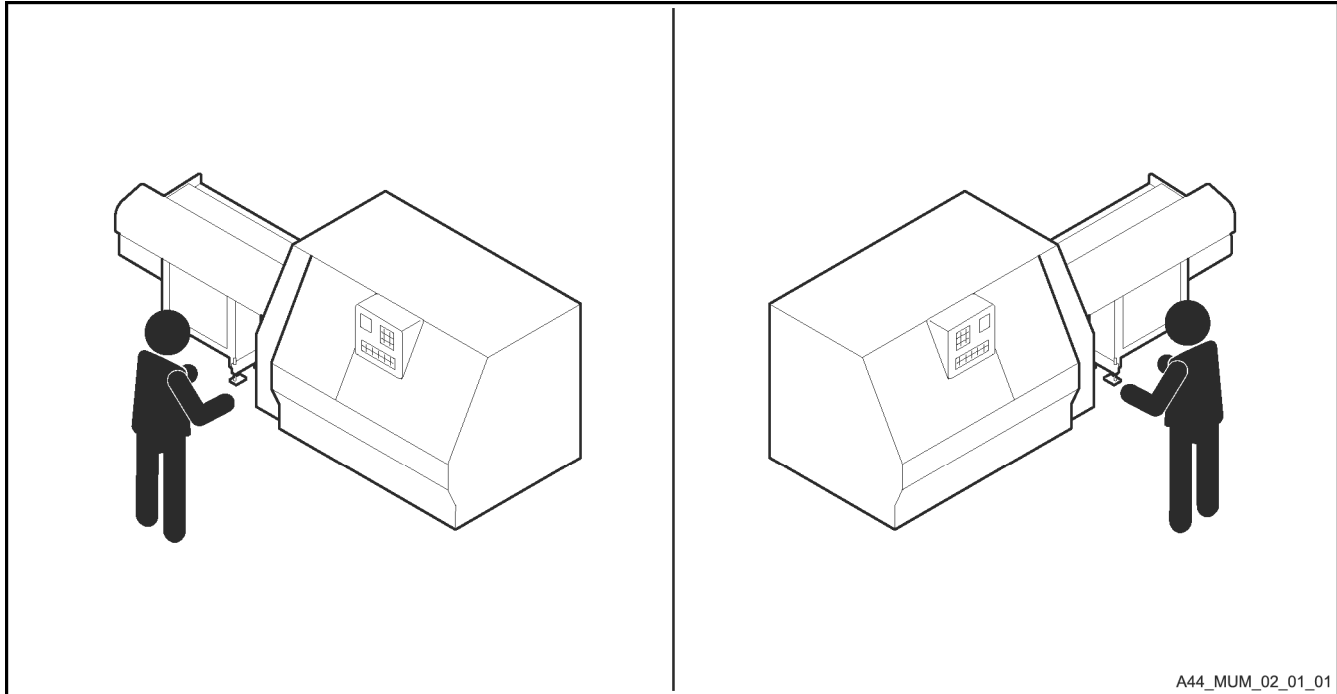
Together with this manual, the customer receives the following documents.

- 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.

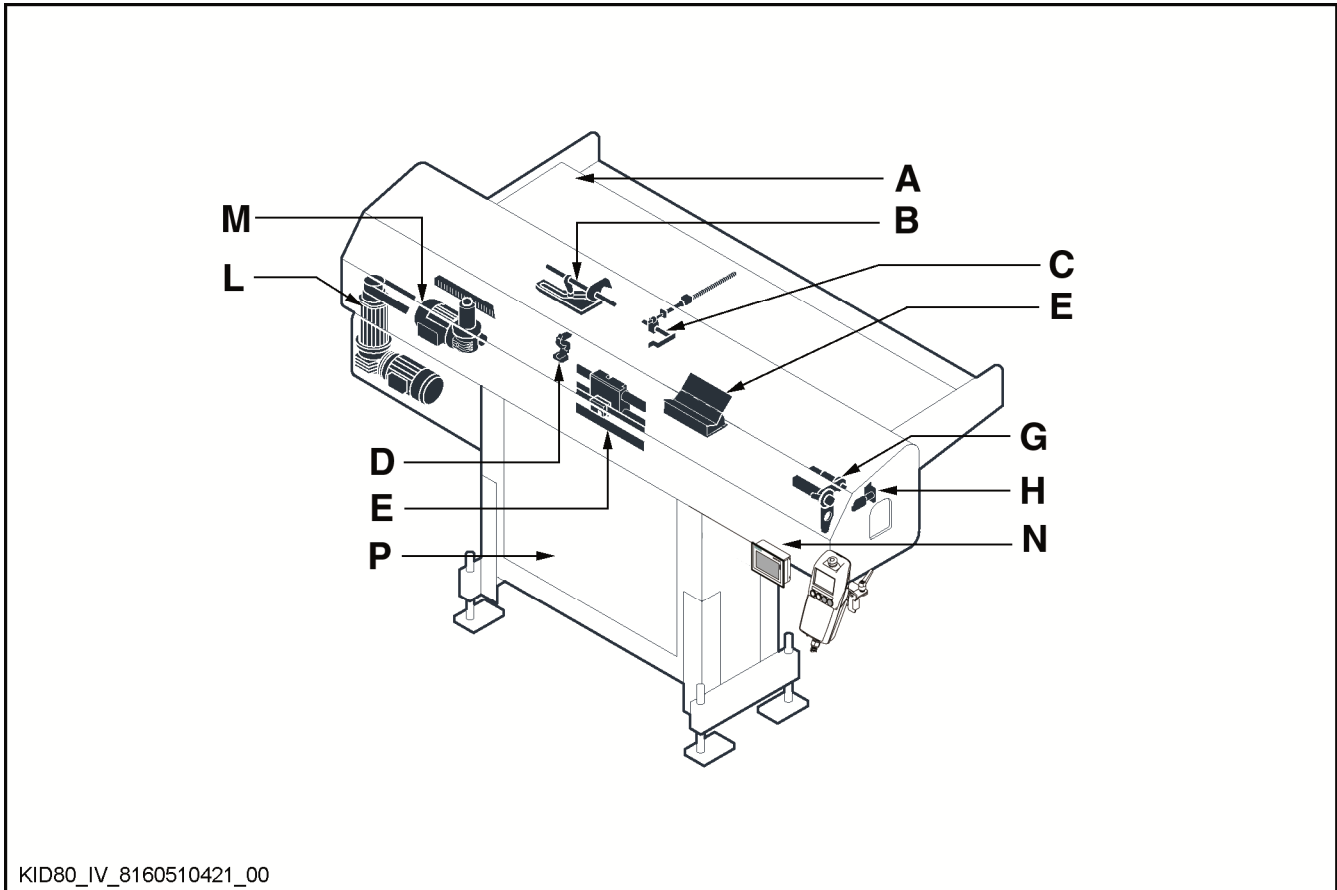
It can feed bars with different (round, square, hexagonal) sections and of maximum length equal to that of the spindle liner.

The operating cycle is directed by a PLC, integrated in the electrical control panel, which interacts with the lathe controls.

The bar feeder is provided with a remote push-button panel allowing the operator to perform operations in manual mode (tooling phase) without leaving the working area.

The phase of preparation and tooling of the working 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.

2.1.1 MAIN PARTS


KID80_IV_8160510421_00

- A Magazine; contains the bars to be loaded.
- B Bar selecting device; it takes the first bar out of the magazine and lays it on the "bar drop control device".
- C Bar limit stop device; it regulates correctly the position of the first bar inside the magazine, before it is lifted by the bar selecting device.
- D Bar drop control device; puts the bar onto the guide.
- E Guide channel; this device drives the bar and introduces it correctly into the lathe.
- F Carriage unit; this device introduces the bar into the lathe.
- G Bar pushing unit; this device pushes the bar inside the lathe until it has been completely machined.
- H Flag device; this device is activated by the arrival of the bar fore end.
- L Bar feeding motor; thanks to a toothed belt, motions are transmitted to the carriage and to the bar pusher.
- M Cam drive unit; it starts the cams of the bar selecting and bar drop control devices as well as the bar limit stop cams.
- N Side keyboard; thanks to this keyboard it is possible to set up programming and to start bar feeder working phases.
- P Electric cabinet; houses the electrical control panel.
- Q Remote control; this device allows the operator to control operations remotely in manual mode.

2.2 OPERATING CYCLE

The possible working cycles are listed hereunder:

- REGULAR CYCLE; the bar is fed by the bar feeder until it reaches the lathe "bar stop".
- FIXED-PIECE FEEDING; the bar feeding is exact and accurate (no lathe bar stop is needed).

In the following sections you will find a concise description of the phases in this working cycle.

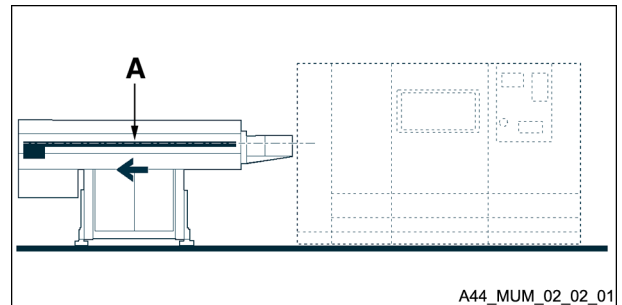


INFORMATION:

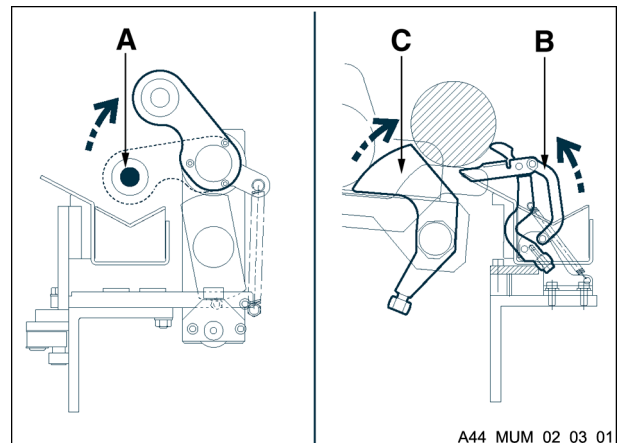
for further detailed information about working cycle selection and setting, please see the keyboard instruction manual, in particular parameter 29.

2.2.1 REGULAR CYCLE

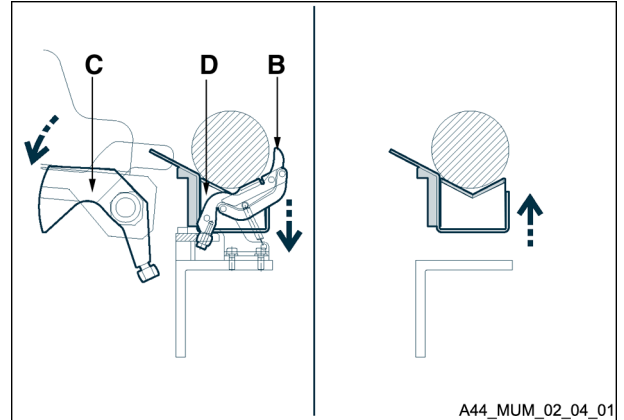
- At the stop of the lathe working cycle, the bar pusher (A) moves to the back limit stop position.



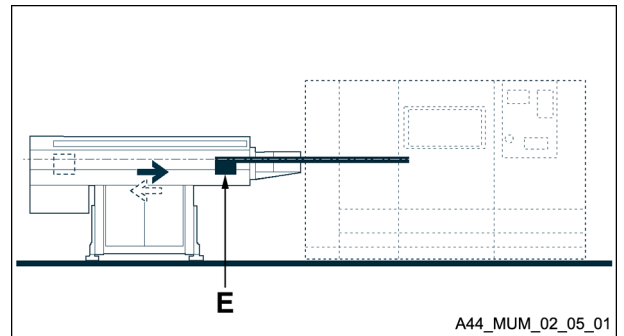
- The bar pusher (A) and the "bar drop control" unit (B) are lifted. At the same time, also the "bar selecting" unit (C) that loads the first bar on the "bar drop control" unit is lifted.



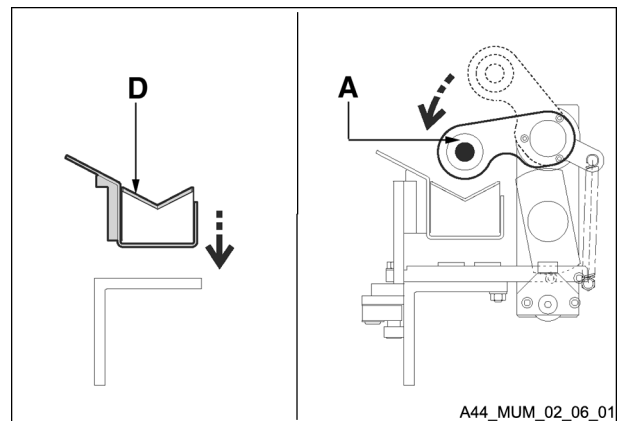
- The "bar drop control" unit (B) returns to its initial position enabling bar insertion into the guide (D). At the same time, the "bar selector" unit (C) returns to its initial position. Subsequently, the guide lifts and sets the bar in line with the loading axis.



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



- The guide (D) returns to its low position. The bar pusher (A) lines up with the loading axis of the lathe spindle.



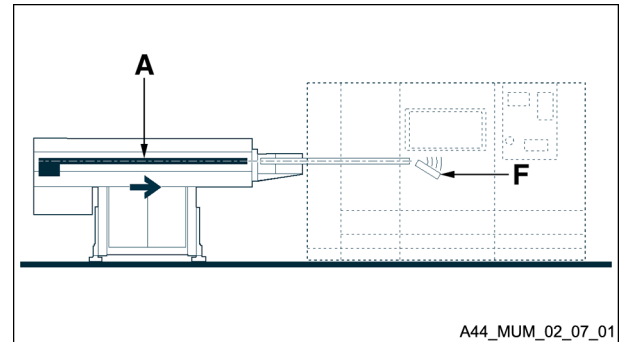
- The bar pusher (A) inserts the bar into the spindle liner. The bar ejects the remnant (F) as a residual of the previous machining, and is positioned for the facing.

The lathe working cycle starts with the beginning of the bar facing phase.

At this point the bar is fed till it reaches the lathe "bar limit stop", then machining phase takes place until one piece has been fully machined.

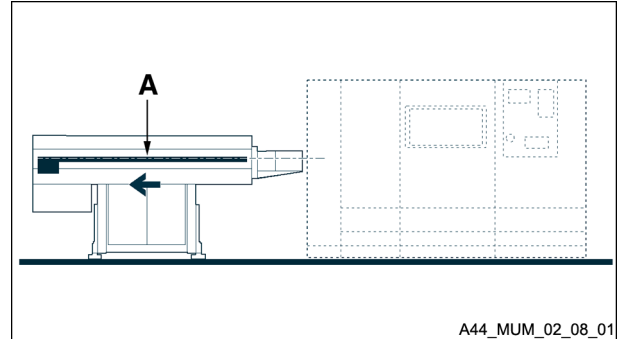
The latter phase is repeated several times till the bar has been completely machined.

NOTE: in order to save time, it is possible to start the bar change phase when the lathe is machining the last piece.

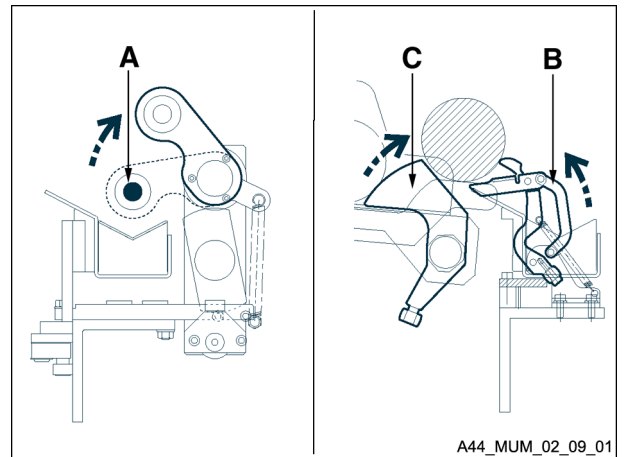


2.2.2 "FIXED-PIECE FEEDING" CYCLE

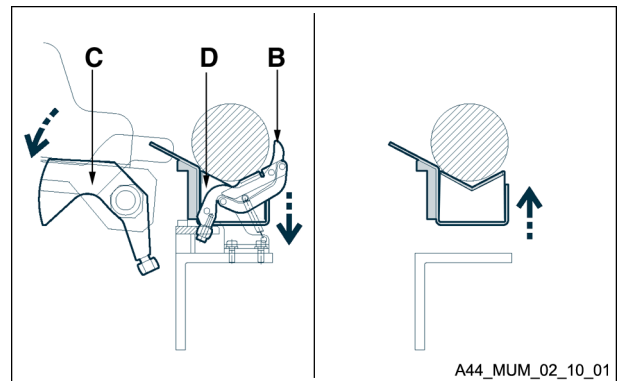
- At the stop of the lathe working cycle, the bar pusher (A) moves to the back limit stop position.



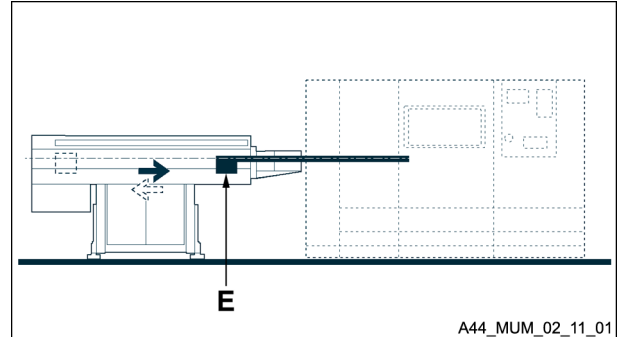
- The bar pusher (A) and the "bar drop control" unit (B) are lifted. At the same time, also the "bar selecting" unit (C) that loads the first bar on the "bar drop control" unit is lifted.



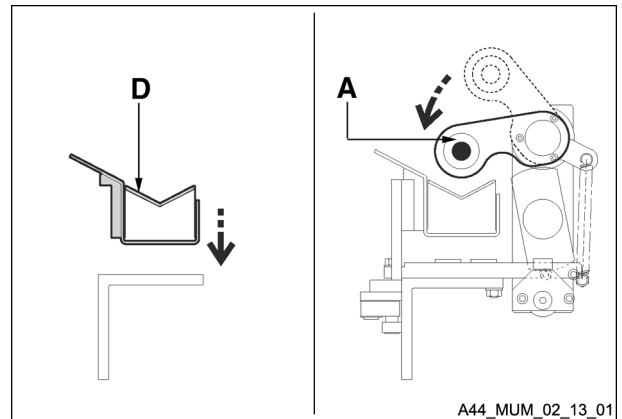
- The "bar drop control" unit (B) returns to its initial position enabling bar insertion into the guide (D). At the same time, the "bar selector" unit (C) returns to its initial position. Subsequently, the guide lifts and sets the bar in line with the loading axis.



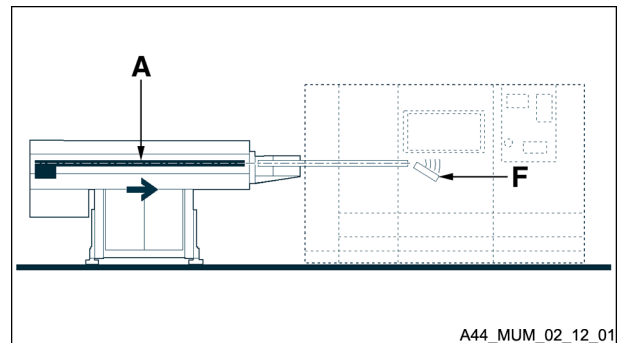
- The bar is inserted into the carriage lathe (E) that then goes back to its initial position.



- The guide (D) returns to its low position. The bar pusher (A) 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 (F) as a residual of the previous machining, and is positioned for the facing.



The lathe working cycle starts with the beginning of the bar facing phase.

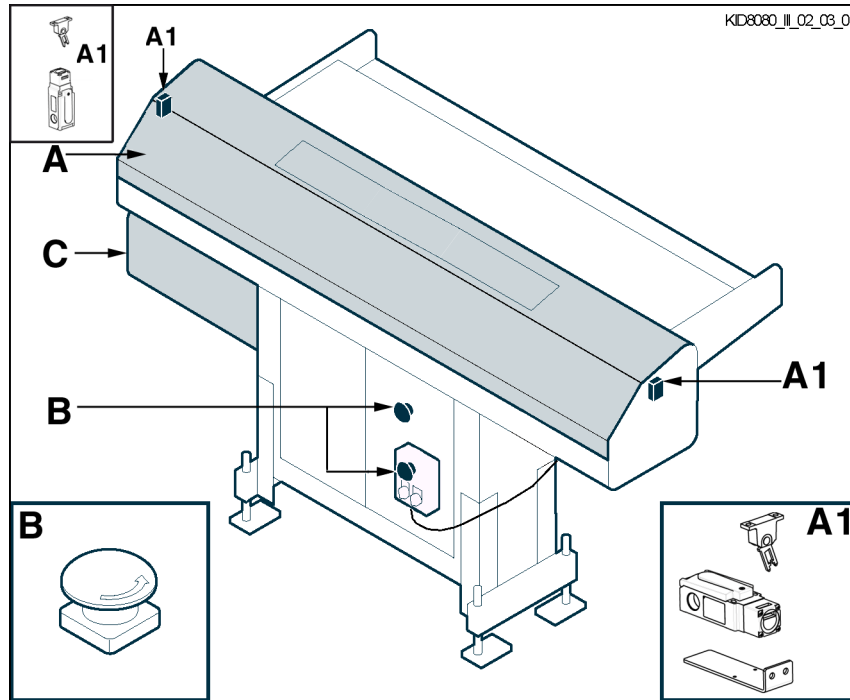
At this point the bar is precisely fed according to the value which has been set, then the machining phase takes place until one piece has been fully machined.

The latter phase is repeated several times till the bar has been completely machined.

NOTE: in order to save time, it is possible to start the "bar change" phase when the lathe is machining the last piece.

2.3 SAFETY DEVICES

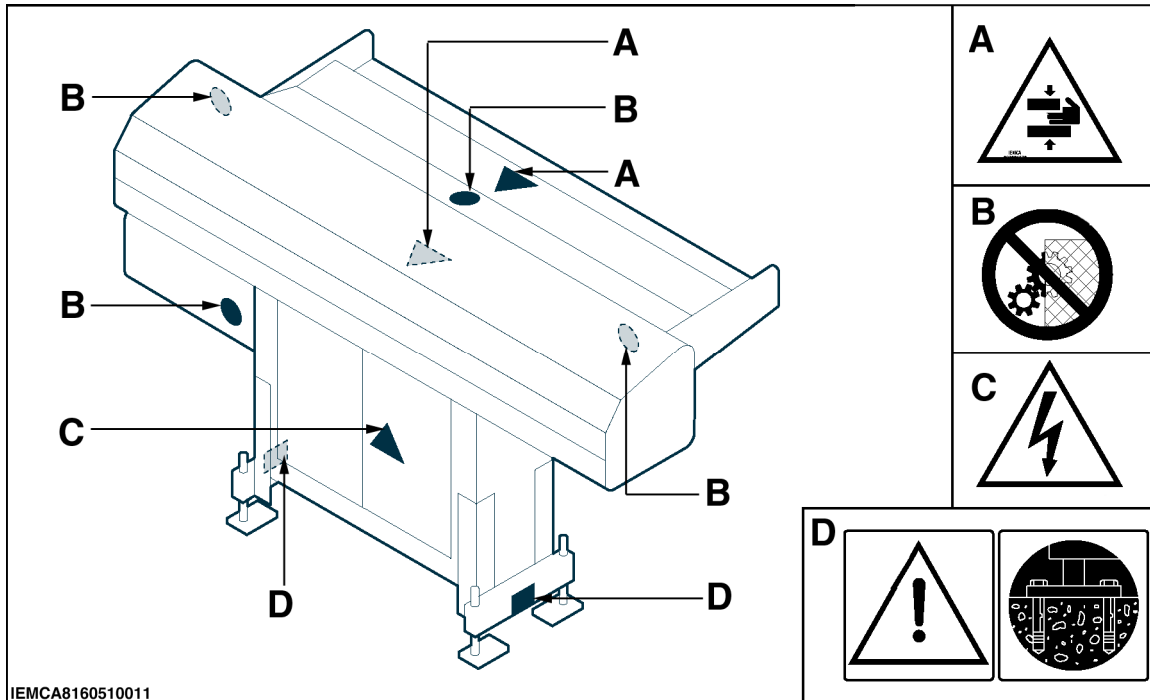
The figure indicates the position of the devices on the bar feeder.



- A- Sliding guard: associated with an interlock device (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. This one is endowed with a porthole allowing the visual inspection of the bar handling main components.
- B- Emergency stop button: if activated, every bar feeder and lathe component 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- Drive fixed guard: prevents the access to the components in motion.

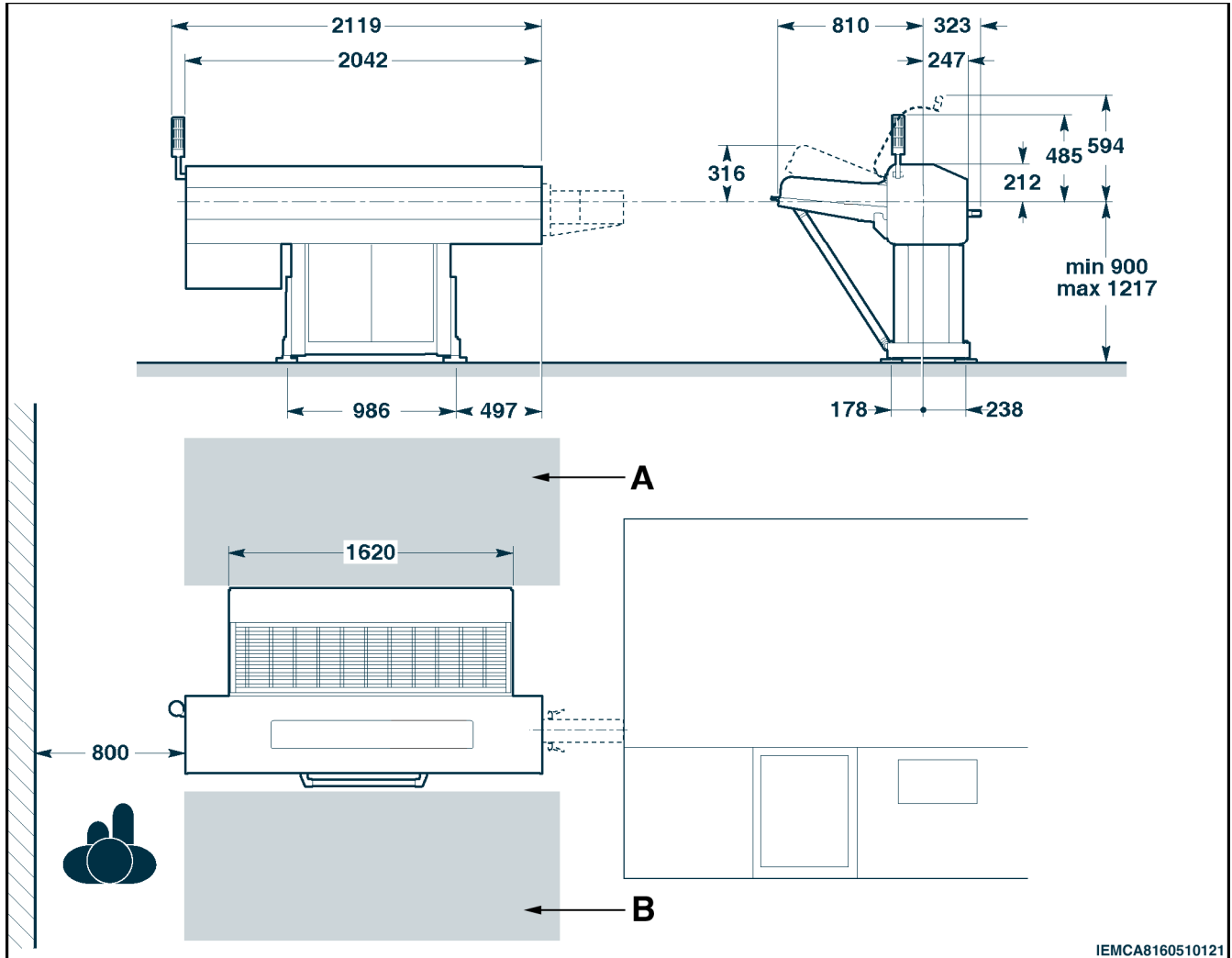
2.4 SAFETY AND INFORMATION SIGNALS

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.

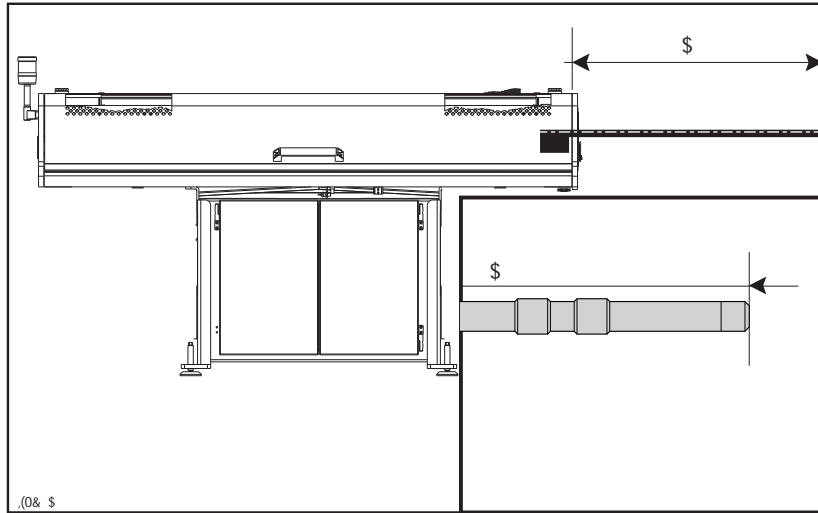
2.5 TECHNICAL DATA AND PERIMETRAL AREAS

Technical data table

	KID 80	
Round bar diameter	Ø min. 5 mm (3/16")	Ø max 80 mm (3"5/32)
Square bar side	min.5 mm (3/16")	max50 mm (2")
Hexagonal bar height (key socket)	min.5 mm (3/16")	max60 mm (2 1/4")
Minimum bar length	500 mm	
Maximum bar length	1615 mm	
Short bar loading kit	90÷500 mm	
Magazine capacity (Kg.)	250 Kg (N. 60 barre da Ø 10 mm)	
Bar change time (with 1,000 mm bar)	30 sec.	
Feeding speed	0-500 mm/sec.	
Return speed	1000 mm/ sec.	
Power supply voltage	230/400 Volt	
Control voltage	24 Volt	
Installed power (kW)	2 kW	
Weight	580 Kg	

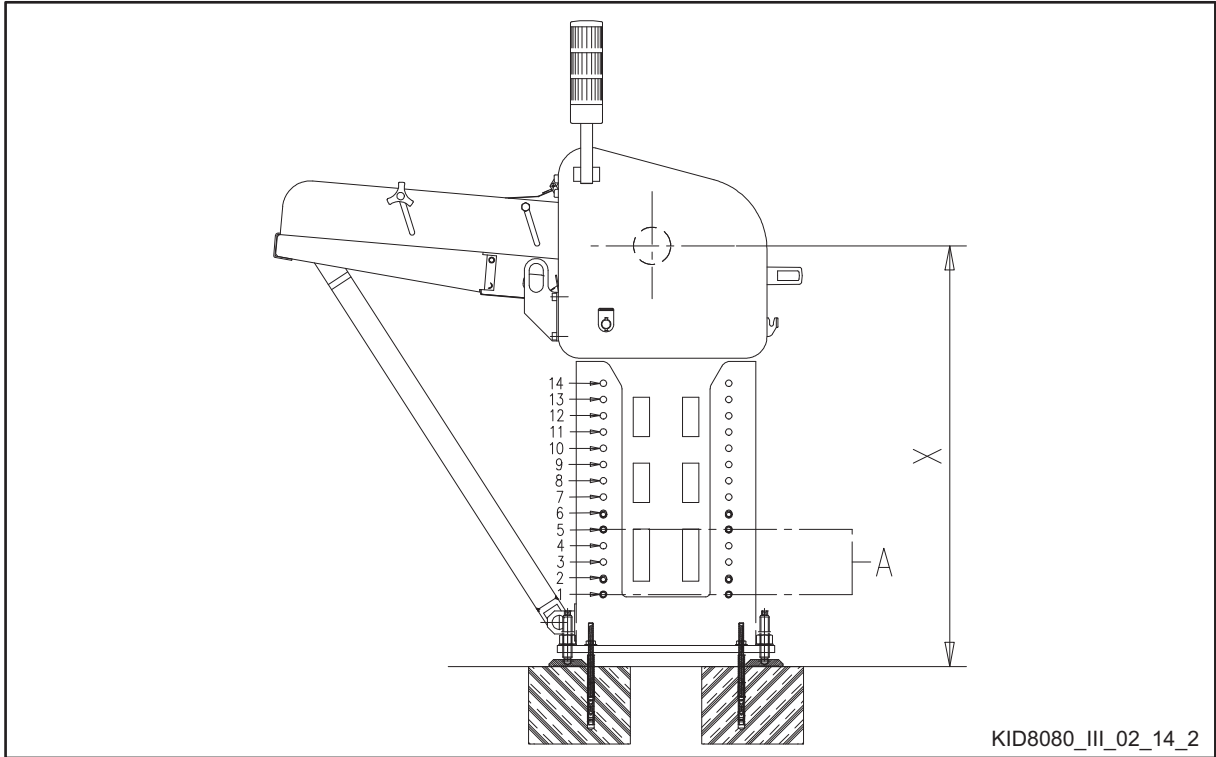
Note: the maximum length is valid for a lathe that can contain it. This means that the bar length should never exceed that of the lathe head and spindle.

Maximum bar pusher A extension = 1710 mm



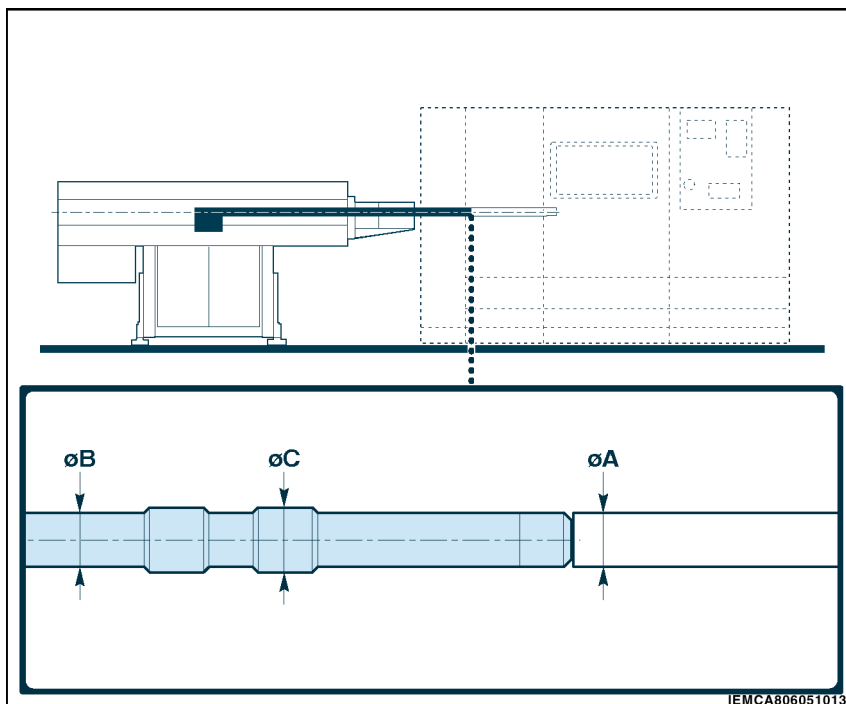
Loading axis height table

X – Loading axis height	Screw position		Reinforcement
	Threaded holes on the base	Slots on the supports	
905 ÷ 937	A	1 - 5	-
938 ÷ 972	A	2 - 6	-
973 ÷ 1007	A	3 - 7	-
1008 ÷ 1042	A	4 - 8	-
1043 ÷ 1077	A	5 - 9	-
1078 ÷ 1112	A	6 - 10	-
1113 ÷ 1147	A	7 - 11	✓
1148 ÷ 1182	A	8 - 12	✓
1183 ÷ 1217	A	9 - 13	✓
1218 ÷ 1252	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
16÷60	18	21	22
24÷80	24	26	28



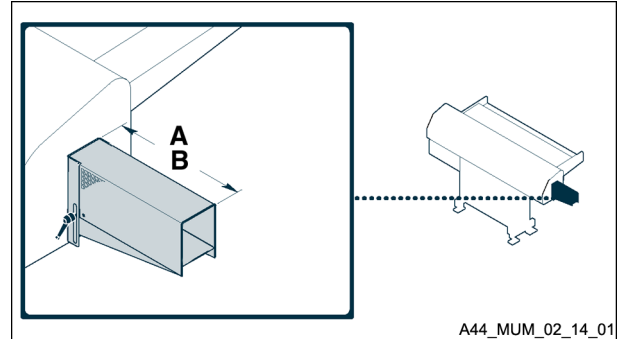
IEMCA8060510131

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.

BAR FEEDER-LATHE GUIDE CHANNEL: directs the bar in the section between the bar feeder and the lathe. It proves extremely necessary when this section exceeds 100 mm.

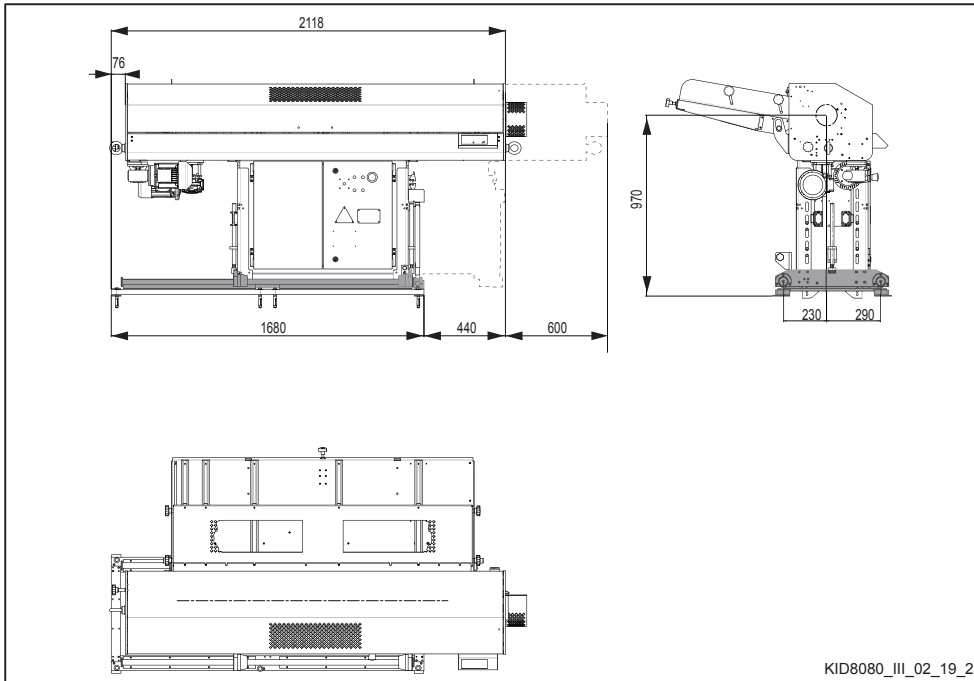
- A 220("short" version)
- B 470("long" version)



2.6.1 AXIAL/TRANSVERSAL DISPLACEMENT

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

Axial displacement



Transverse displacement

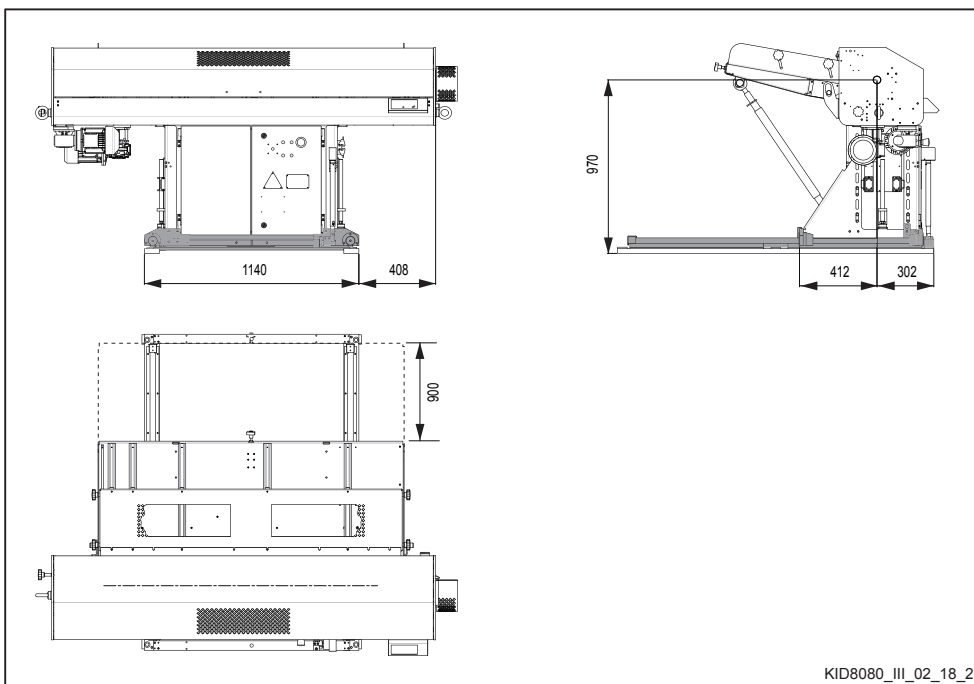
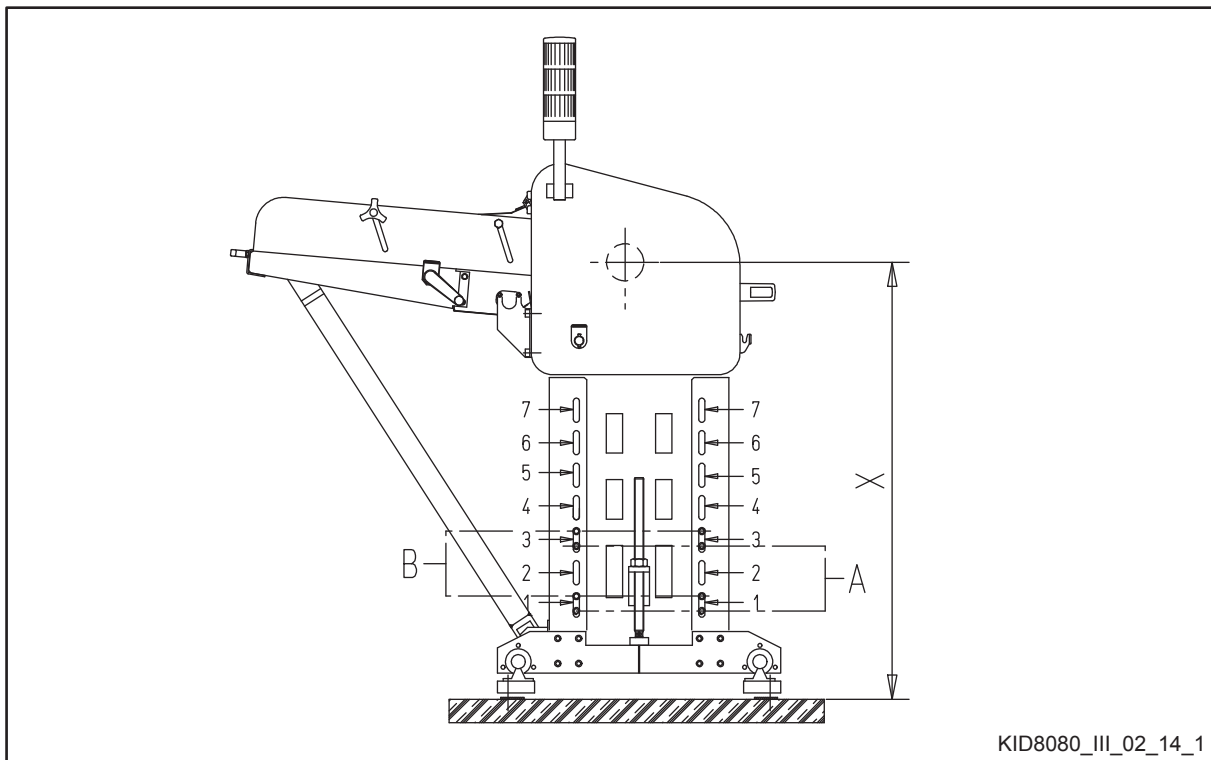


Table of the loading axis height with axial-transversal displacement

X – Loading axis height	Screw position		Reinforcement
	Threaded holes on the base	Slots on the supports	
/	A	1 - 3	-
970 ÷ 999	B	2 - 4	-
1000 ÷ 1037	A	2 - 4	-
1038 ÷ 1069	B	3 - 5	-
1070 ÷ 1107	A	3 - 5	-
1108 ÷ 1139	B	4 - 6	-
1140 ÷ 1177	A	4 - 6	✓
1178 ÷ 1209	B	5 - 7	✓
1210 ÷ 1247	A	5 - 7	✓



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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.

3.2 HANDLING AND INSTALLATION - Safety

- The bar feeder must be handled using suitable means and methods only.
- Persons 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 kind.
- 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 not 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 environment pollution.
- Use original IEMCA spare parts only.

3.6 EC CONFORMITY DECLARATION

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A BUCCI AUTOMATIONS Division
Sede operativa
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48018 Faenza (RA) Italy
Tel. +39 0546 698000 - Fax. +39 0546 46224
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Cod. Op. CEE IT 00082790395 - Cap. Soc. € 11.000.000 i.v.
Pec: bucciautomations@legalemail.it
Società soggetta all'attività di direzione e coordinamento di
Roberto Bucci e C.S.p.A.

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

Dr. Ing. GIAMPAOLO MORANDI, acting as GENERAL MANAGER and delegated by the company IEMCA A BUCCI AUTOMATIONS S.p.a. DIVISION 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

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

Otherwise he declares that is the person in charge for the technical issue at IEMCA A BUCCI AUTOMATIONS S.p.a. DIVISION – Via Granarolo, 167 – 48018 Faenza (RA).

Dr. Ing. GIAMPAOLO MORANDI – General Manager

FAENZA,

~~~~~  
(delegate's signature)

### **3.7 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 front noses. 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.

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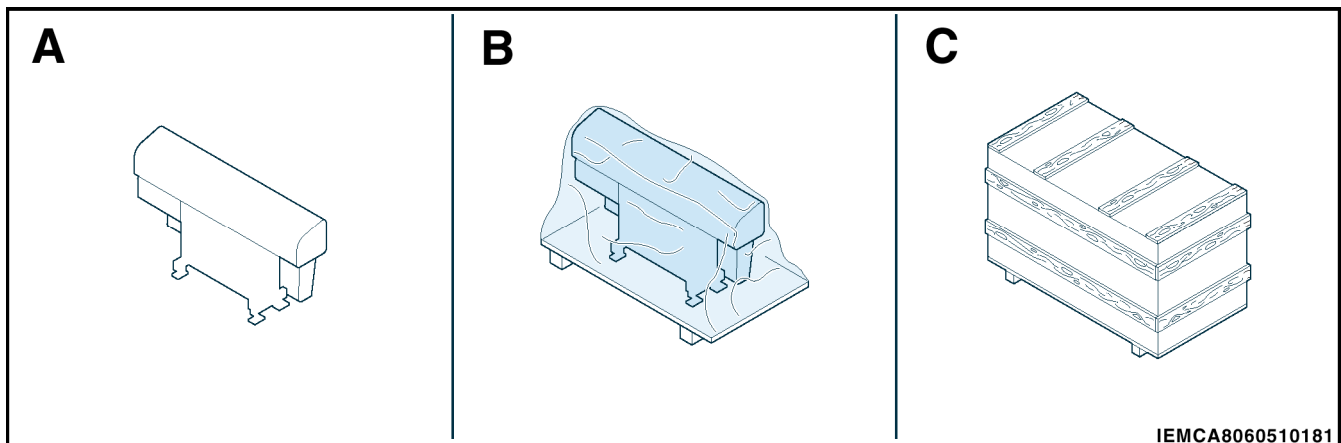
## 4.1 PRELIMINARY NOTE ON MOVEMENT AND INSTALLATION



### INFORMATION:

*move and install the machine-tool by respecting the information provided by the manufacturer, which is directly written on the package, machine and in the operation instructions. The person who is authorised 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.

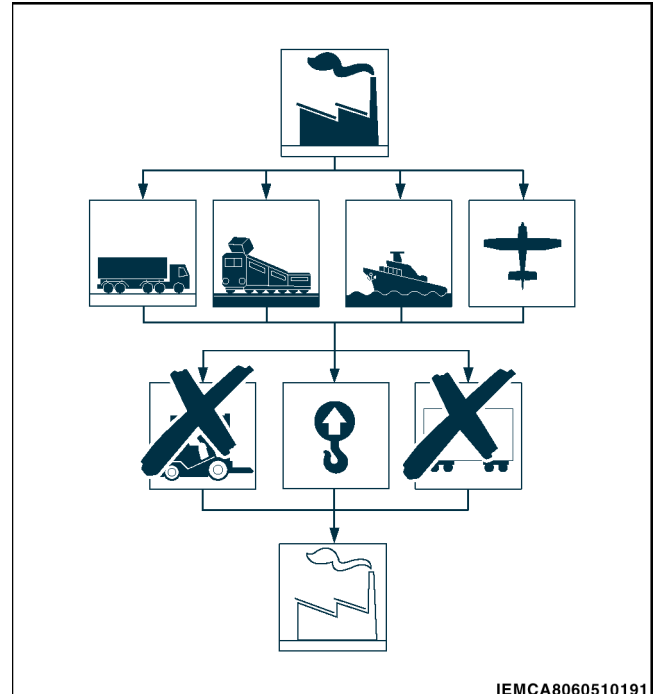
The packaging material must be adequately disposed of in observance of the laws in force.



### 4.3 TRANSPORT

The transport can be carried out by different means, according to the destination. The diagram represents the most used solutions.

In the transport phase, in order to avoid untimely movements, provide an adequate anchorage to the means of transport.

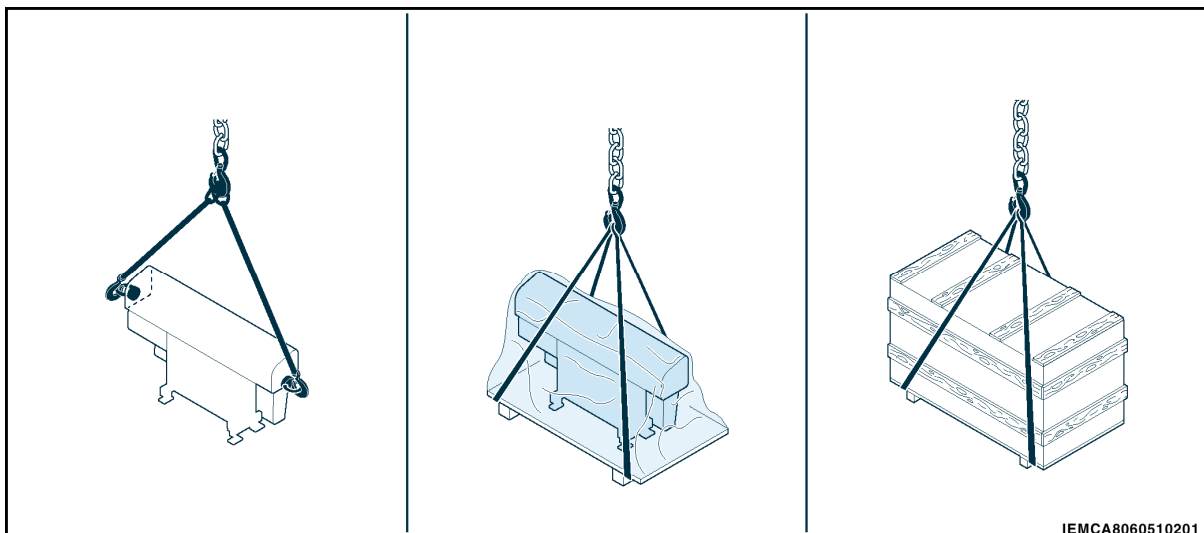


### 4.4 MOTION AND LIFTING

The bar feeder can be handled by a device provided with suitable lifting hook of adequate lifting capacity.

Before carrying out this operation, check the position of the load centre.

The figure represents the rope positioning.



#### 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 installation area must be in adequate environmental conditions (luminosity, ventilation, etc.).

The floor must be steady and levelled in order to allow a correct fastening of the bar feeder. If necessary locate the exact position by drawing the coordinates.

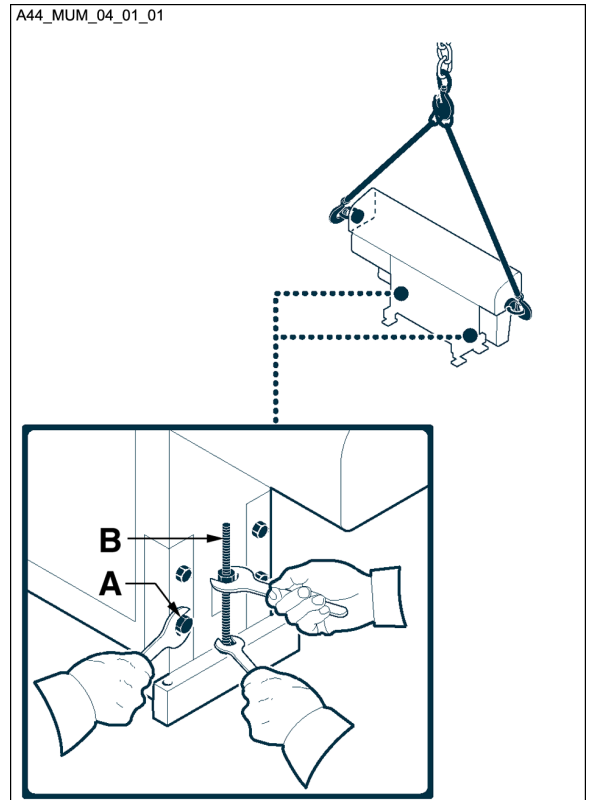
## 4.6 INSTALLATION PHASES

All the installation phases to be followed in sequence are described in the following paragraphs.

### 4.6.1 Loading axis height variation

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

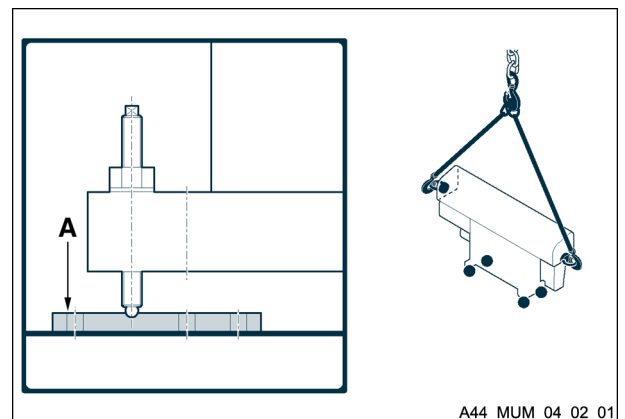
- Prepare the bar feeder for lifting
- Stretch the ropes.
- Loosen, on both sides, the screws (B) and remove the screws (A).
- Bring the bar feeder to the loading axis height (see chapter 2 "Loading axis height" table).
- Refit the screws (A) and temporarily adjust the screws (B).



### 4.6.2 Assembling the backing plates

- Lift the bar feeder.
- Place the plates (A) at the same level as the feet, with the longer part inwards (see figure).
- Lower the bar feeder again to the ground.

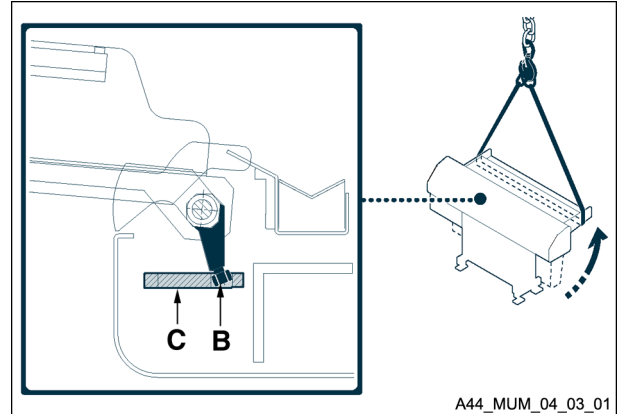
Note: fastening is made at the end.



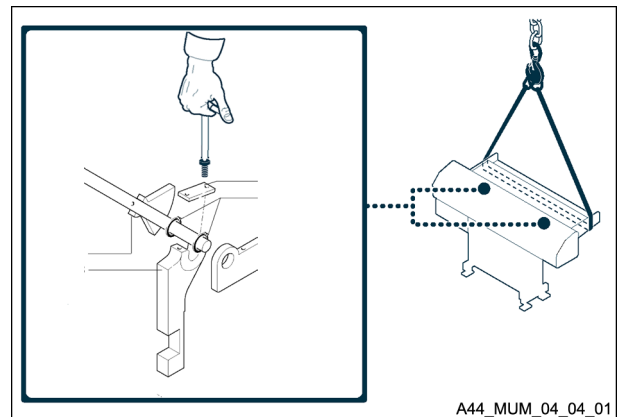
### 4.6.3 Magazine positioning

For the positioning proceed as follows.

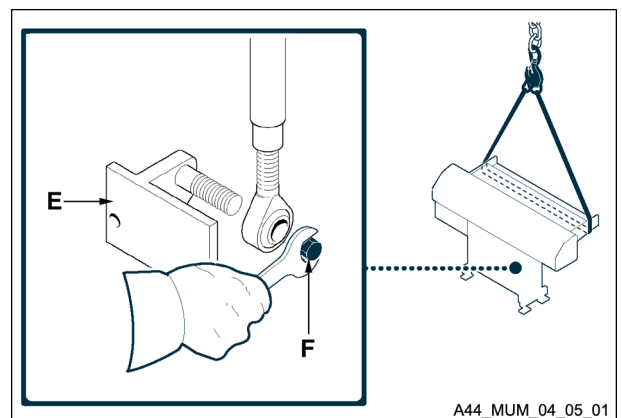
- Lift the magazine with the help of a lifting device. Make sure that during lifting, the pin (B) is correctly inserted in the cam housing (C).



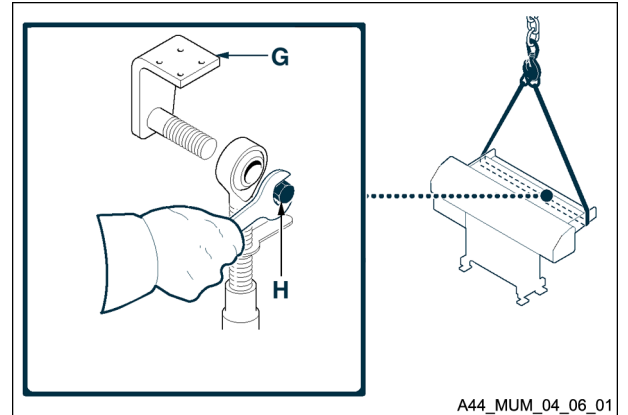
- Connect the bar magazine to the bar feeder body making sure the bearings (A) fit in their slots (D).
- Fix the support (C) on the bearing slots (D) by means of two screws.



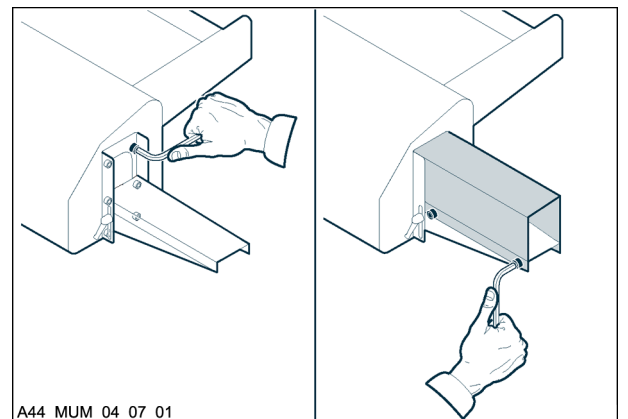
- By means of a self-locking nut (F) fix the lower end of the rod on the plate (E) that is fastened to the basement.



- Fix the upper end of the rod to the block (G) by means of a self-locking nut (H).



- Install the bar feeder-lathe guide (if provided).
- Install the safety grid (fixed guard).



#### 4.6.4 Alignment and levelling

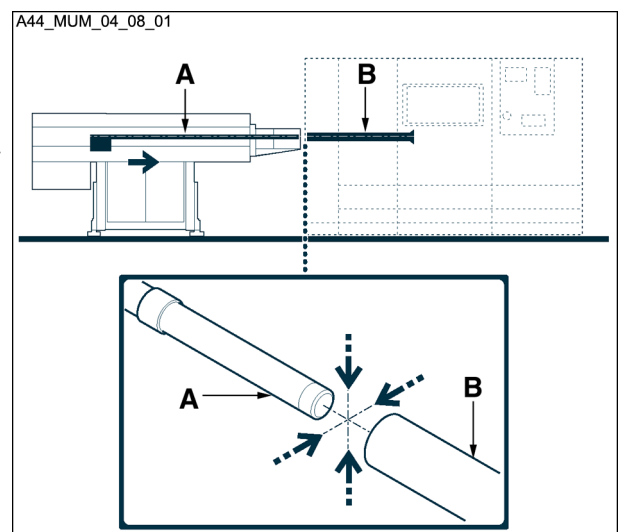


##### **INFORMATION:**

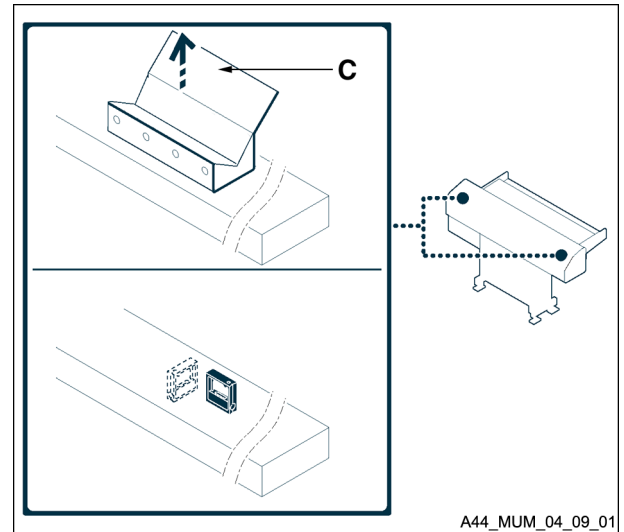
*not only alignment and levelling are fundamental for the correct running of the bar feeder and for the WARRANTY VALIDITY, but also they must be carried out only by a SKILLED STAFF WITH PRECISE TECHNICAL COMPETENCE.*

For the positioning proceed as follows.

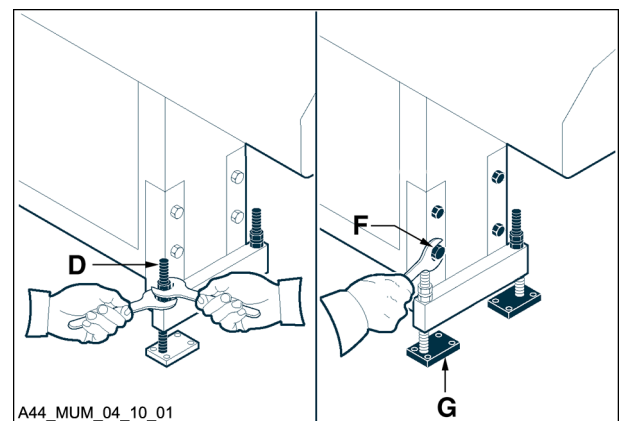
- Position the bar feeder near the lathe (see figure).
- Open the upper guard and manually transfer the bar pusher (A) until you bring the ends close to the spindle head (B).



- Remove two sections (C) from the guide channel in order to use the beam plane to check the levelling
- Verify the alignment of both bar feeder axes and levelling.



- Adjust the loading axis vertically through screws (D).
- Hit both sides of the plates (G) with a mallet for the adjustment of the loading axis horizontally.



#### 4.6.5 Bar feeder fastening

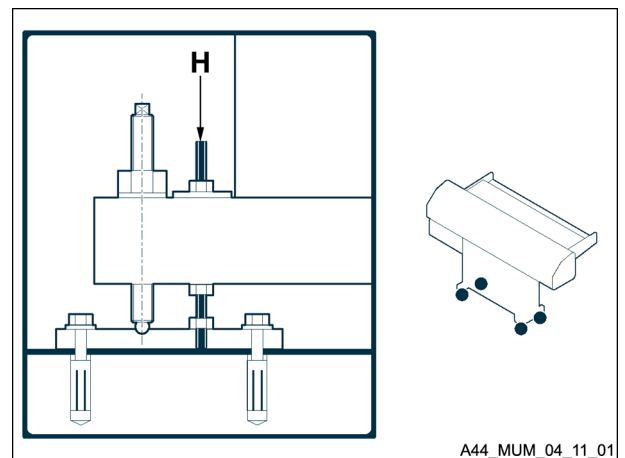


##### **INFORMATION:**

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

For the positioning proceed as follows.

- Drill the floor in the direction of the plate holes. Connect the bar feeder to the plates with the tie rods (H).
- Fasten the plates with expansion plugs.
- Fasten the bar feeder structure to the plates with the tie rods (H) fastening them with their relative check nuts.
- Reinstall the two guide sections after making sure that alignment, levelling and fastening are carried out correctly.



#### 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 levelled in order to allow a correct fastening of the bar feeder. If necessary locate the exact position by drawing the coordinates.

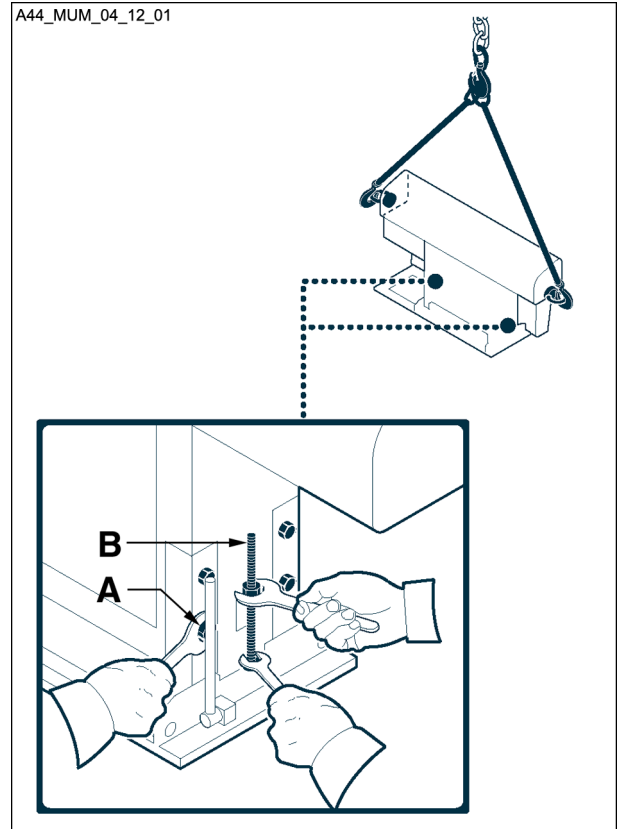
## 4.8 INSTALLATION PHASES

All the installation phases to be followed in sequence are described in the following paragraphs.

### 4.8.1 Loading axis height variation

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

- Prepare the bar feeder for lifting.
- Stretch the ropes.
- Loosen, on both sides, the screws (B) and remove the screws (A).
- Bring the bar feeder to the loading axis height (see chapter 2 "Loading axis height" table).
- Refit the screws (A) and temporarily adjust the screws (B).

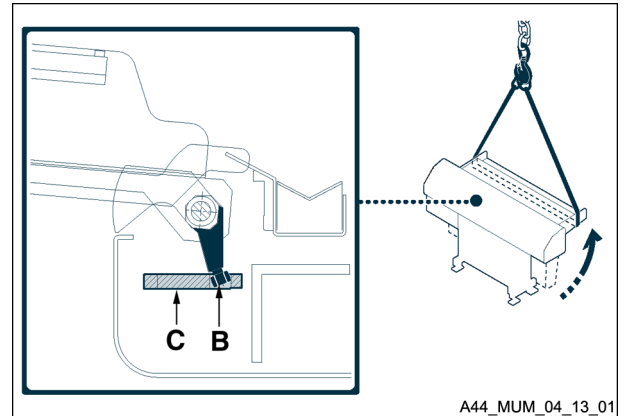




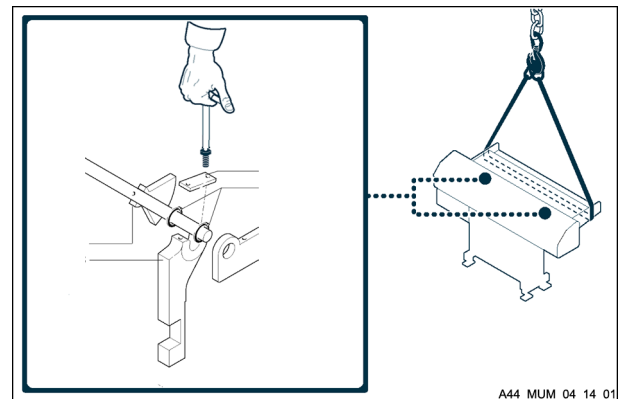
### 4.8.2 Magazine positioning

For the positioning proceed as follows.

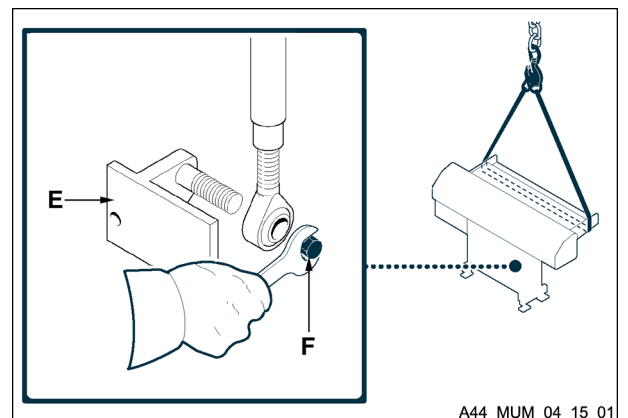
- Lift the magazine with the help of a lifting device. Make sure that during lifting, the pin (B) is correctly inserted in the cam housing (C).



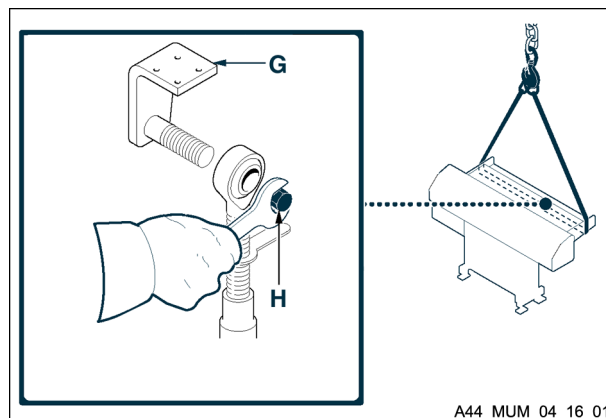
- Connect the bar magazine to the bar feeder body making sure the bearings (A) fit in their slots (D).
- Fix the support (C) on the bearing slots (D) by means of two screws.



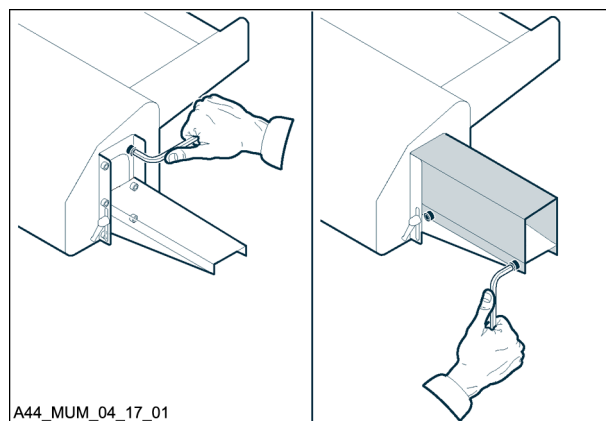
- By means of a self-locking nut (F) fix the lower end of the rod on the plate (E) that is fastened to the basement.



- Fix the upper end of the rod to the block (G) by means of a self-locking nut (H).



- Install the bar feeder-lathe guide (if provided).
- Install the safety grid (fixed guard).



### 4.8.3 Alignment and levelling

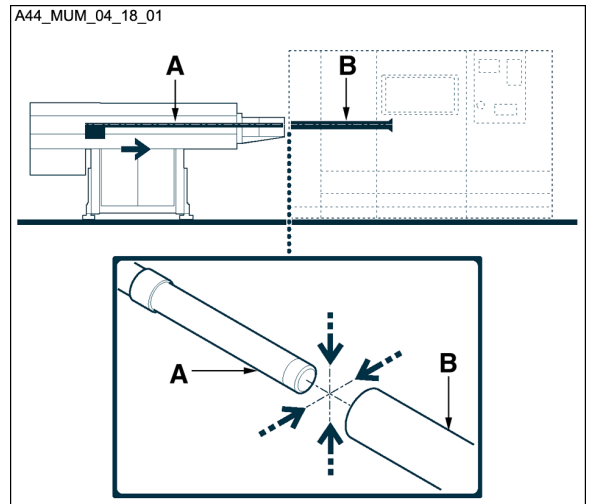


**INFORMATION:**

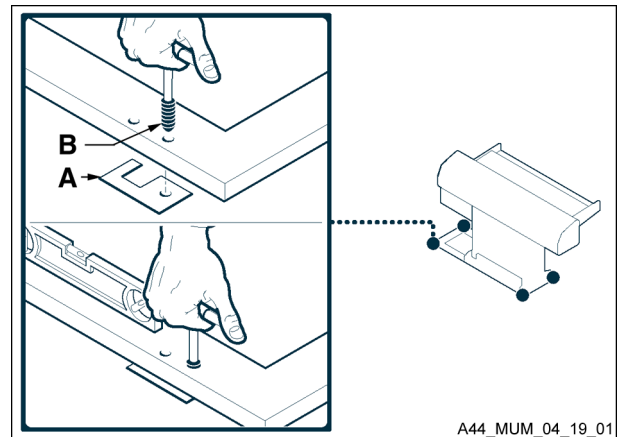
*not only alignment and levelling are fundamental for the correct running of the bar feeder and for the WARRANTY VALIDITY, but also they must be carried out only by a SKILLED STAFF WITH PRECISE TECHNICAL COMPETENCE.*

For these operations proceed as follows.

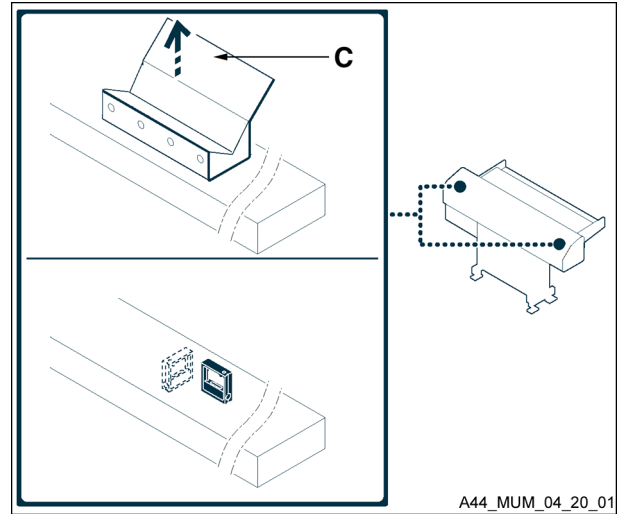
- Position the bar feeder near the lathe (see figure).



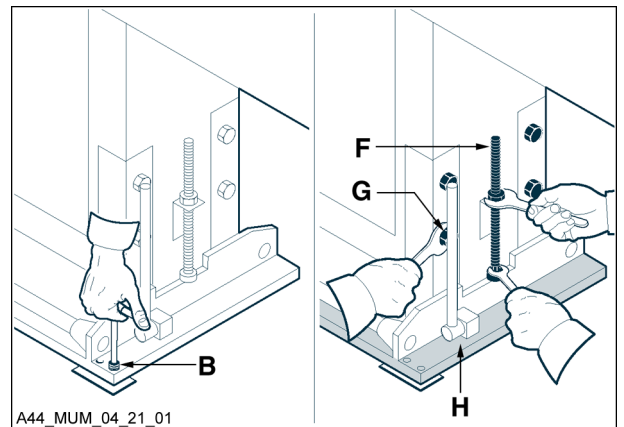
- Put the four plates (A) under the end points of the frame (see figure).
- Tighten the socket head screws. (B)
- Open the upper guard and manually shift the bar pusher (C) until you bring its end close to the spindle head (D).



- Remove two sections (C) from the guide channel in order to use the beam plane to check the levelling.
- Verify the alignment of both bar feeder axes and levelling.



- Adjust the loading axis vertically through screws (B). This adjustment can also be carried out by means of the screws (F), after loosening the screws (G).
- Hit both sides of the frame (H) with a mallet for the adjustment of the loading axis horizontally.



#### 4.8.4 Bar feeder fastening

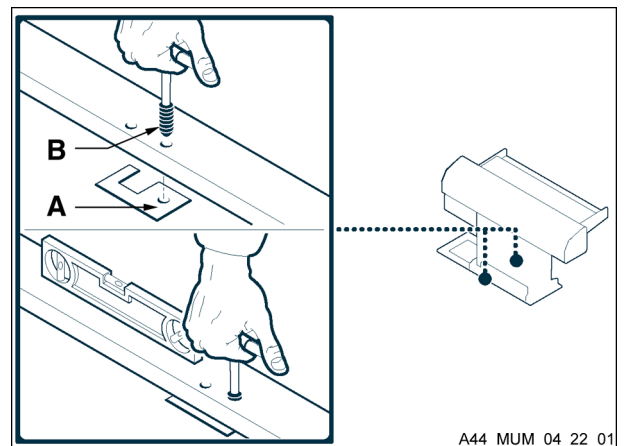


##### **INFORMATION:**

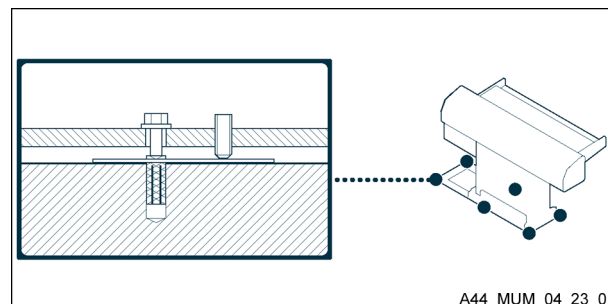
*considering that this operation is fundamental to assure in time the bar feeder stability and the **WARRANTY VALIDITY**, the person who is authorised to carry it out, will have to take extreme care of it.*

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.
- Reinstall the two guide sections after making sure that alignment, levelling and fastening are carried out correctly.



## 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 authorised to carry out this operation, shall have special skills and experience acquired and recognised 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 WORKING PARAMETERS SETTING

By means of a hand-held 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 "Hand-held control instruction manual" in order to assign adequate values.

## 4.11 BAR FEEDER TESTING



### **INFORMATION:**

***the bar feeder testing must be carried out following a preset procedure, which is possibly indicated and authorised 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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| 5.5 | FEEDING BELT ADJUSTMENT .....              | 6 |

## 5.1 PRELIMINARY NOTE ON ADJUSTMENT



### **INFORMATION:**

***before carrying out any adjustment, 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.***

## 5.2 MAGAZINE ADJUSTMENT AND BAR SELECTION

Magazine adjustment must be carried out according to the section of the bars to be machined. The inclination of the bar magazine can be carried out while adjusting the bar magazine support.

It is possible to further increase magazine inclination in order to simplify the downstroke of square or hexagonal bars.

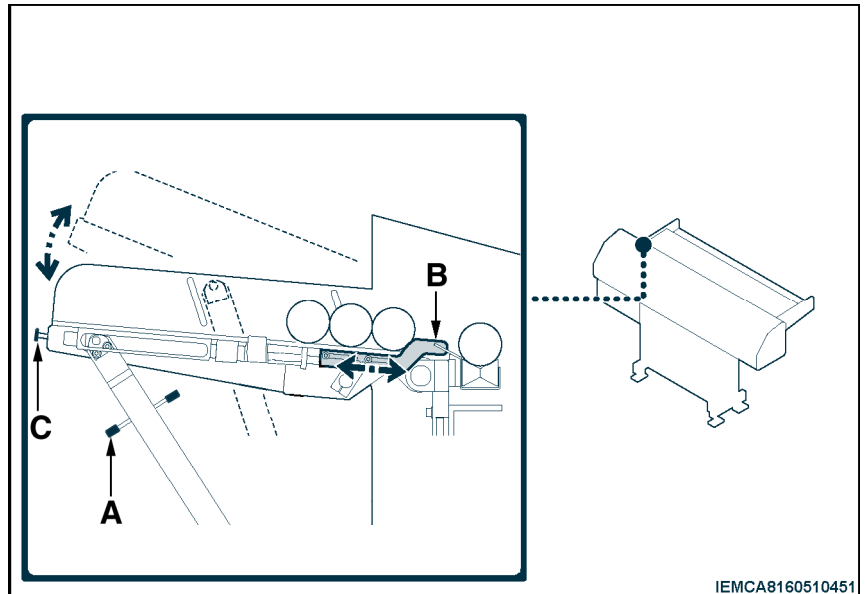
Please follow these instructions to adjust selecting device and bar magazine inclination.



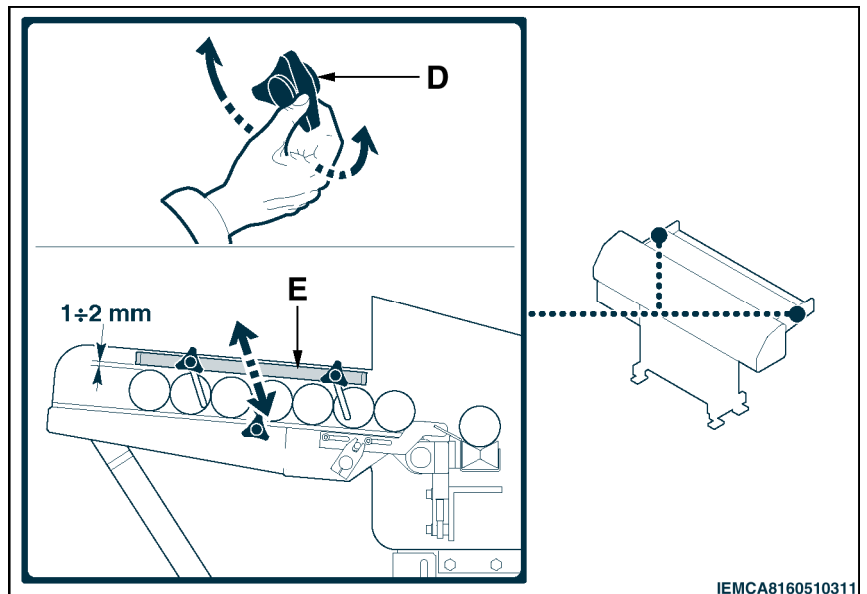
The adjustment must be carried out according to the diameter of the bar to be loaded.

For the adjustment proceed as follows:

- Turn lever (A) to adjust bar magazine inclination according to the type of the bars to be machined.
- Turn knob (C) to adjust the bar stop device (B).



- Loosen the knobs (D), adjust the frame (E) at about 1- 2 mm from the bars (see figure) and tighten the knobs.



### 5.3 LOADING AXIS ADJUSTMENT

Carry out guide channel height adjustment according to the section of the bars to be machined. Please carry out guide channel height adjustment following these instructions.

[kid\_simb1] Round bars: set the bar diameter measurement on the millimetre-counter.

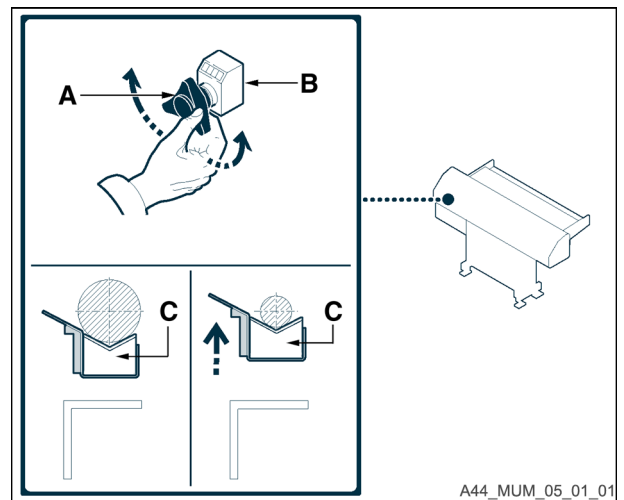
[kid\_simb2] Hexagonal bars: set the measurement of the wrench on the millimetre-counter.

[kid\_simb3] Square bars: set the measurement (X) obtained from the following table on the millimetre-counter:

| L = mm | X  |
|--------|----|
| 5      | 5  |
| 8      | 8  |
| 10     | 10 |
| 12     | 12 |
| 15     | 15 |
| 18     | 18 |
| 20     | 20 |
| 22     | 22 |
| 25÷55  | 40 |

The adjustment has to be carried out according to the diameter of the bar to be machined. For the adjustment proceed as follows:

- Rotate the knob (A) until displaying the diameter of the bar to be machined, on the millimetre counter (B).
- Check that with the lifted guide (C), the bar is aligned with the loading axis.



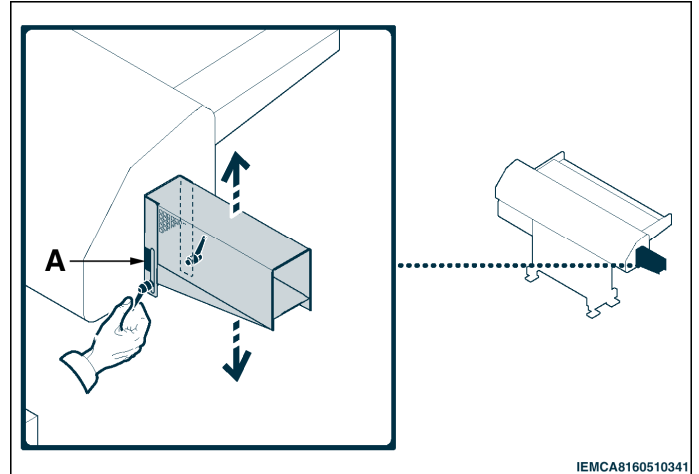
#### **INFORMATION:**

**Setting bar diameters lower than  $\varnothing 10$  (between  $\varnothing 10$  and  $\varnothing 5$ ) the guides do not move any further upwards: the bar may hence not be centred with the spindle axis and could cause vibrations.**

### 5.4 BAR FEEDER-LATHE GUIDE ADJUSTMENT

The adjustment must be carried out according to the diameter of the bar pusher bearings and bar to be machined.

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



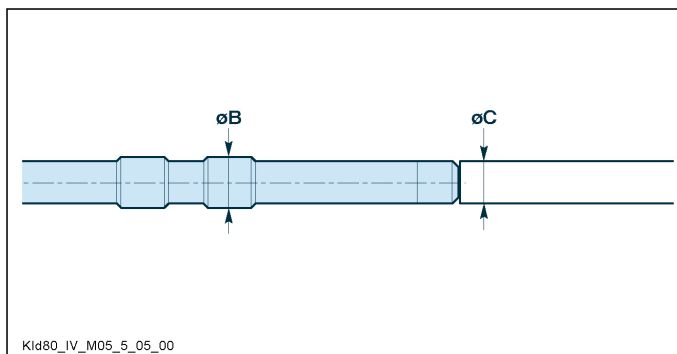
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Bar feeder-lathe guide height table

| Ø B<br>Bar pusher bearing<br>diameter(mm) | Ø C<br>Bar diameter(mm) | Bar guide channel<br>height |
|-------------------------------------------|-------------------------|-----------------------------|
| 12                                        | 5÷12                    | 12(**)                      |
| 15                                        | 10÷15                   | 15                          |
|                                           | 16÷19                   | 16÷19 (*)                   |
| 21                                        | 16÷21                   | 21                          |
|                                           | 22÷80                   | 22÷80 (*)                   |

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

(\*\*) Adjust the indicator at the bar guide channel height (example in table) Ø12 mm and use it for the bar diameter range Ø C (example in table) 5÷12 mm.



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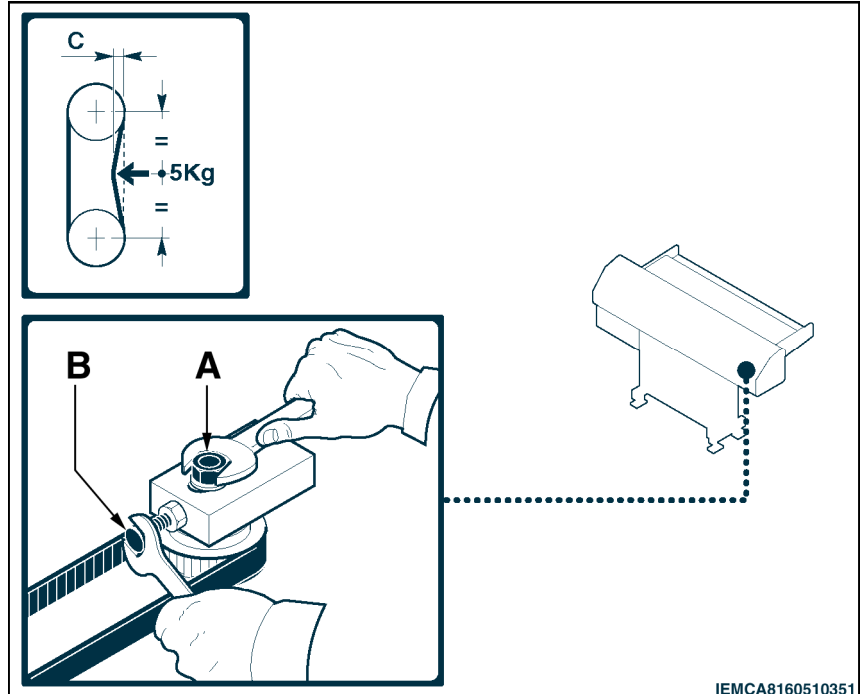
**WARNING - CAUTION:**

*it is forbidden to carry out the adjustment while the bar feeder is in motion.*

## 5.5 FEEDING BELT ADJUSTMENT

For the adjustment proceed as follows:

- Remove the upper guard. To check the belt tension, adopt the method indicated in the figure. The resulting value (C) must be be 10 to 15 mm.
- Loosen nut (A).
- Adjust the belt tension through the screw (B) and lock nut.
- Tighten the nut (A), check the tightening of the screw (B) and of the lock nut and close the guard again.



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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 checked. Some accidents can depend on some unpreventable environmental factors, others can be especially due to the operators' behaviour. The operators, apart from being authorised 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 hand-held keyboard it is possible to automatically start the bar feeder, even when the 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:**

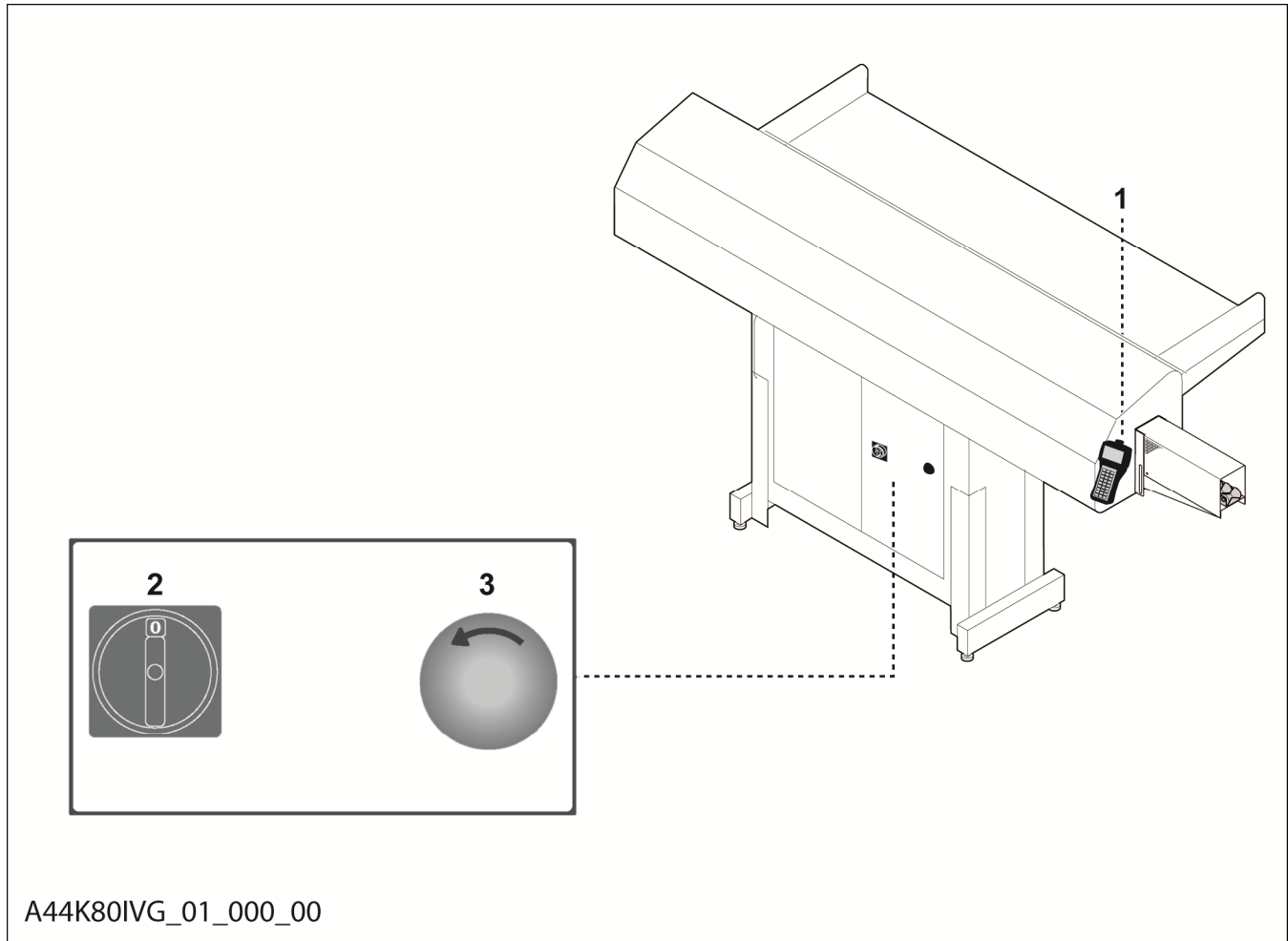
*By pressing the Manual mode button on the handheld keyboard it is possible to prevent the bar feeder Automatic start by the lathe.*



**INFORMATION:**

*Manual control by keyboard is displayed on the screen. if the control is not correct, in the keyboard screen a message describing the correct procedure is displayed.*

The figure indicates the positions of both the electrical and handheld keyboard "1" controls.



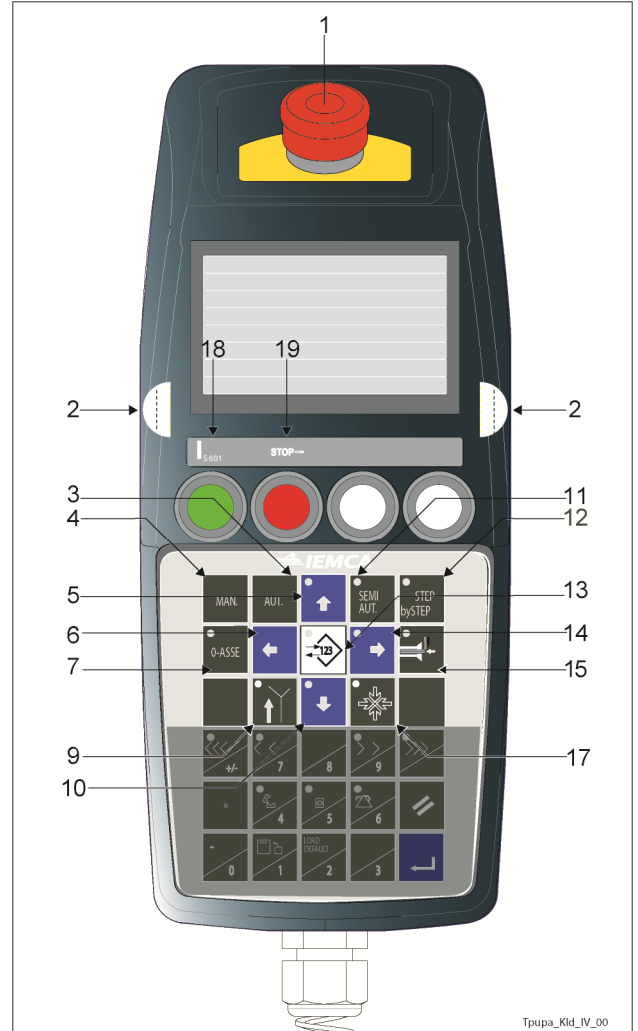
- 2 MAIN SWITCH: turns the power supply on and off.
  - Position 0 (OFF) the machine is not powered.
  - Position I (ON) the machine is powered.
- 3 EMERGENCY STOP PUSH-BUTTON: stops the bar feeder in case of emergency. For restart release the push-button manually.





### 6.3 KEYBOARD CONTROL DESCRIPTION

- 1 Stops the bar feeder: manually release the push-button in order to restart.
- 2 Start buttons: opposite buttons enabling the keys for some functions. Press both buttons and simultaneously the button corresponding to the desired function.
- 3 Selects the automatic mode.
- 4 Selects the manual mode.
- 5 Multifunction
  - Allows scrolling the page upwards.
  - Moves the selection cursor upwards.
  - Increases by one the value set in the date and time programming mode.
- 6 Multifunction
  - Selects the previous parameter.
  - Moves the selection cursor leftwards.
- 7 It resets the "BAR FEEDER ZERO SETTING" of the carriage. Hold down both start buttons and then the key; release both buttons and the key when the carriage starts moving towards the "BAR FEEDER ZERO SETTING" position.



**WARNING - CAUTION:**

*List of causes that require to carry out the 0-Axis in manual mode.*

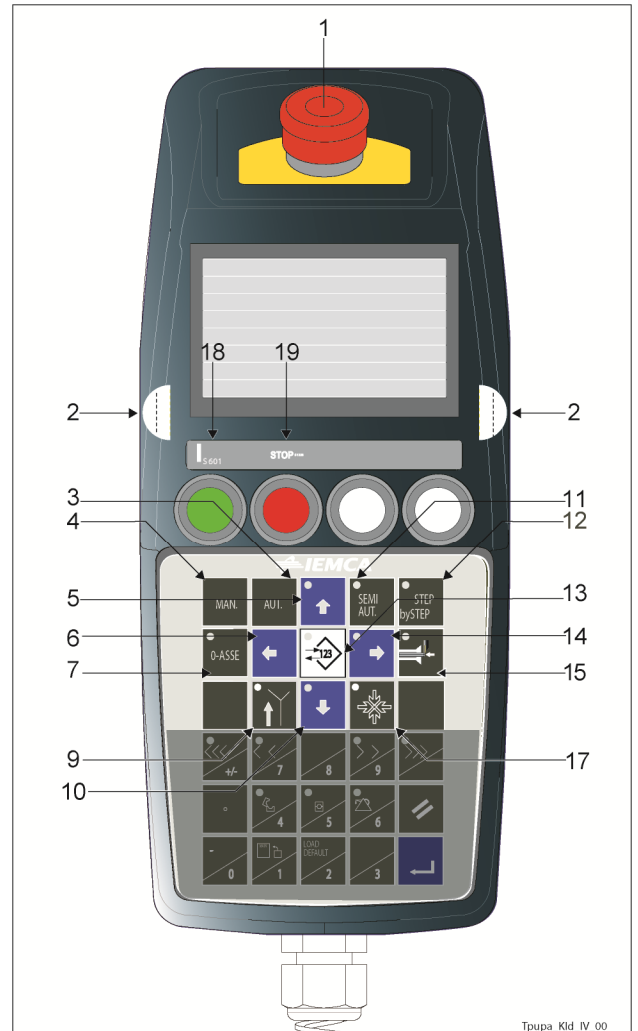
*Carrying out the manual 0-Axis periodically is recommended.*

*If the bar pusher axis is moved by means of the crank with the bar feeder powered off (no power supply).*

*If the feeding belt is tightened (by means of the mechanical belt tightener, see Operation and Maintenance Manual, "Feeding belt - Adjustment").*

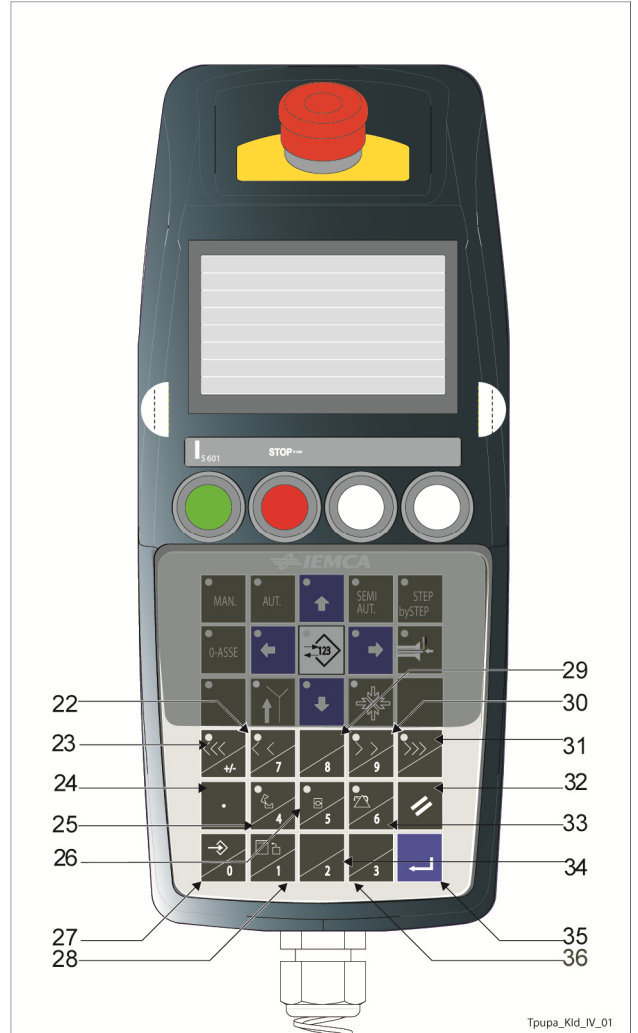
- 9 Selects the guide channel lifting function:
  - Push both opposite start buttons and then press the key; the procedure starts no matter what phase the bar feeder is in and ends with the guide channel in high position.
- 10 Multifunction
  - Allows scrolling the page downwards.
  - Moves the selection cursor downwards.
  - Decreases by one the value set in the date and time programming mode.
- 11 Selects the semiautomatic mode. Press the button to select a mode and press again to deselect it.
- 12 Activates the "step by step" operating cycle: every time the button is pressed, one step is performed.

- 13 Selects the keyboard modes:
- with LED off [pupa\_kid\_barra\_vert-dx]; selects the "message display" mode.
  - with LED on [pupa\_kid\_barra\_oriz-sx]; selects the "parameter display" mode.
- 14 Multifunction
- Selects the next parameter
  - Moves the selection cursor rightwards.
- 15 Selects the feeding of a new bar until the facing position is reached.
- Press both opposite start buttons; you can release the keys from the beginning of the feeding. The procedure will continue until the facing position is reached.
- 17 Selects the reset function after a new tooling:
- Press both opposite start buttons and then the key; press and hold the keys until the procedure is completed.
- 18 "Errors" reset button.
- 19 Bar feeder stop button (red); press this button to stop the bar feeder.
- In "Manual" mode, when the bar feeder is in the required position, the half-bushes will close when this button is pressed. If pressed again, the half-bushes will open.
  - In "Automatic" mode, if pressed, the half-bushes will open and close, according to the preset sequence. If pressed again, the half-bushes will remain open during the entire operating cycle.

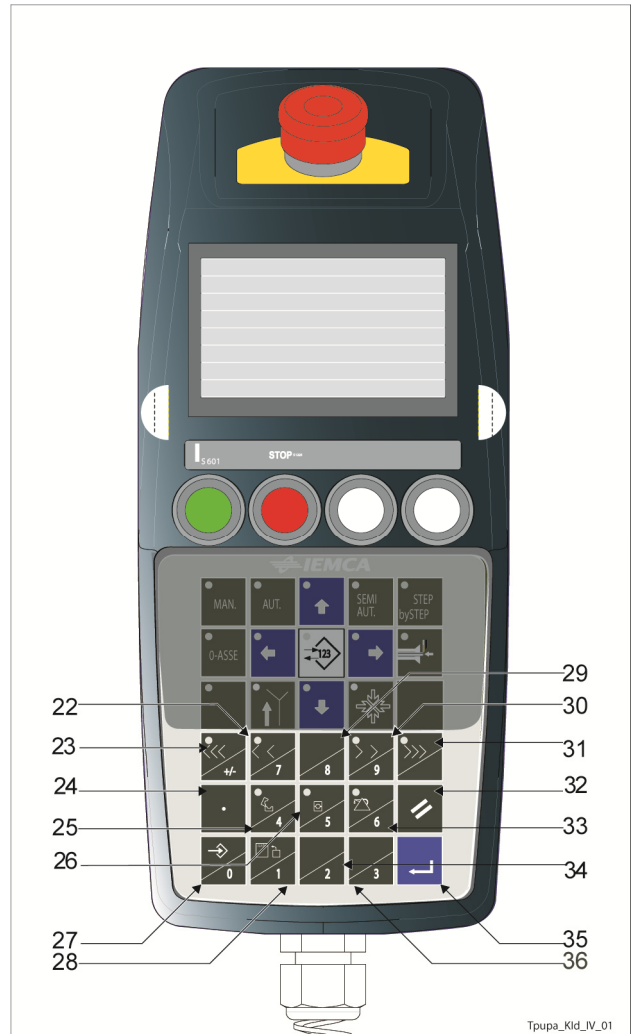


Tpupa\_Kid\_IV\_00

- 22 Multifunction
  - Sets the numerical value.
  - Moves the bar pusher at a low speed.
- 23 Multifunction
  - Sets the font.
  - Moves the bar pusher at a high speed.
- 24 Sets the comma.
- 25 Multifunction
  - Sets the numerical value.
  - Opens the guide channels.
  - Push both start buttons and then the key; release both buttons and the key only when the movement is finished.
- 26 Multifunction
  - Sets the numerical value.
  - Closes the guide channels.
  - Push both start buttons and then the key; release both buttons and the key only when the movement is finished.
- 27 Multifunction
  - Sets the numerical value.
  - Recalls the selection cursor.



- 28 Multifunction
- Sets the numerical value.
  - Recalls the main menu (MAIN MENU).
- 29 Sets the numerical value.
- 30 Multifunction
- Sets the numerical value.
  - Moves the bar pusher at a low speed.
- 31 It moves the bar pusher at high speed.
- 32 Multifunction
- Stops the selection function.
  - Restores the value prior to the non-confirmed modification.
- 33 Multifunction
- Sets the font.
  - Turns on/off the oil pump.  
Press to turn on the pump and press again to turn it off.
- 34 Sets the numerical value.
- 35 Confirms the entered data.
- 36 Sets the numerical value.



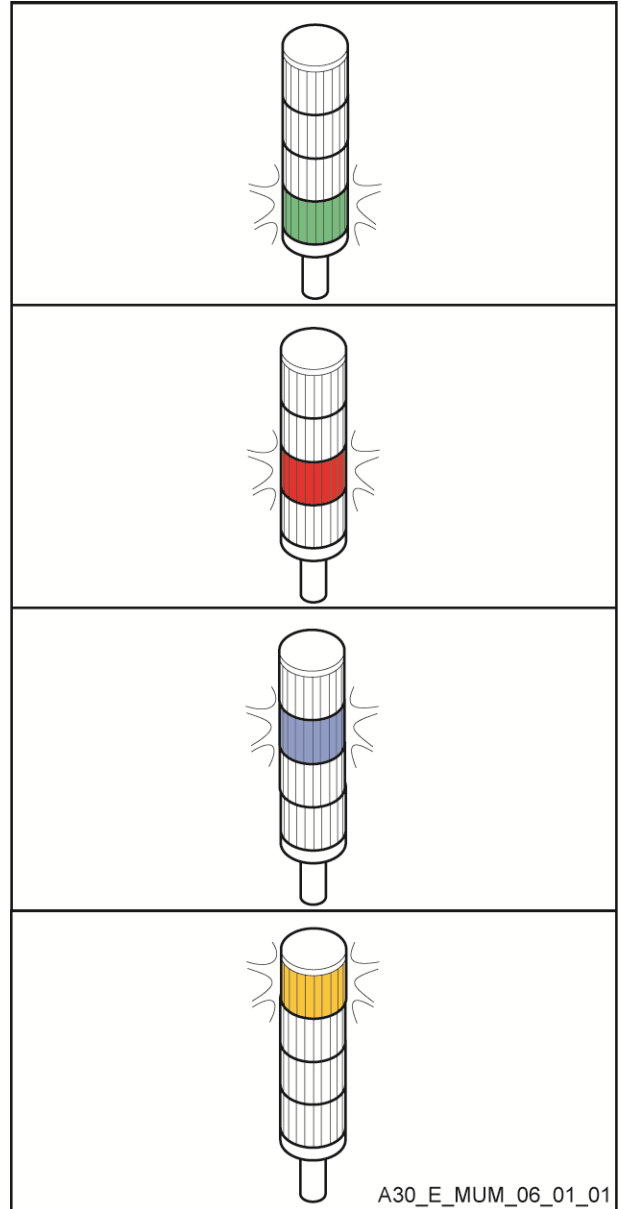
## 6.4 LIGHT INDICATOR DESCRIPTION

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.

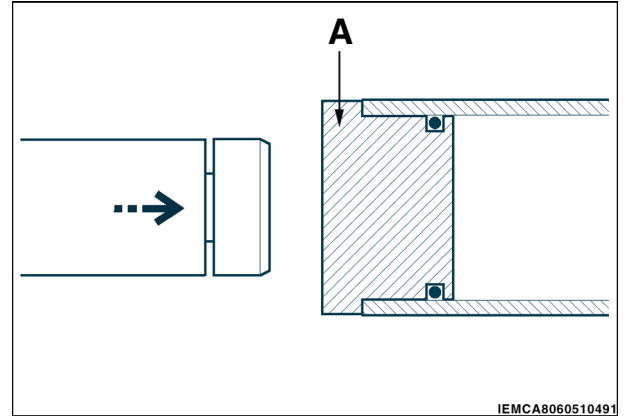
Orange light (OPT): signals that there is only one bar in the magazine. This signal will continue until the bars in the magazine have run out.



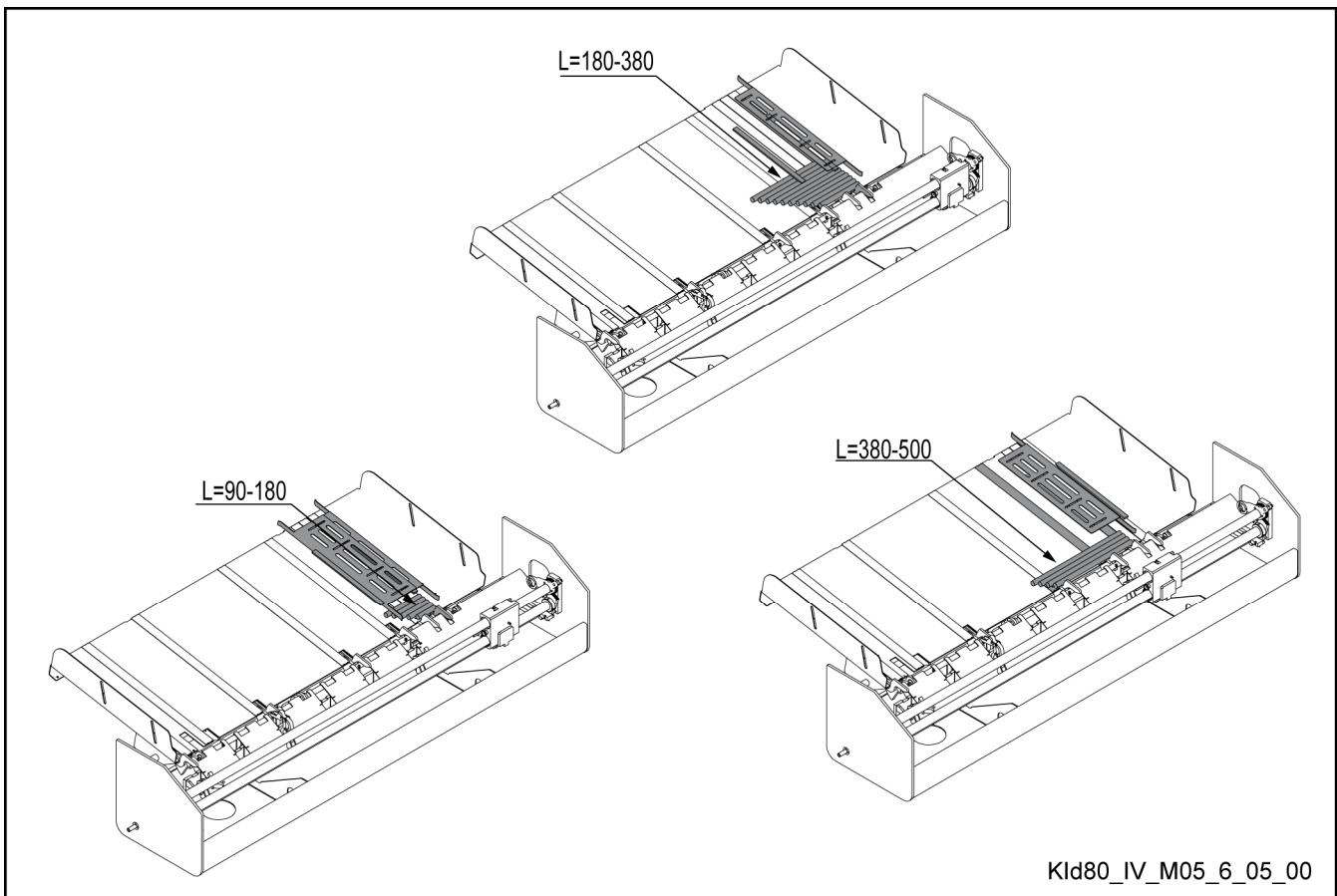
### 6.5 BAR PREPARATION (sections and pipes)

The bars, before being loaded in stock, must be chamfered in their lathe inlet end, in order to remove any excessive burrs.

In the case of tubes, insert a plug (A) in order to create a bearing surface for the bar pusher and to prevent the coolant coming out.



### 6.6 90 ÷ 500mm SHORT BAR LOADING



## 6.7 MAGAZINE LOADING

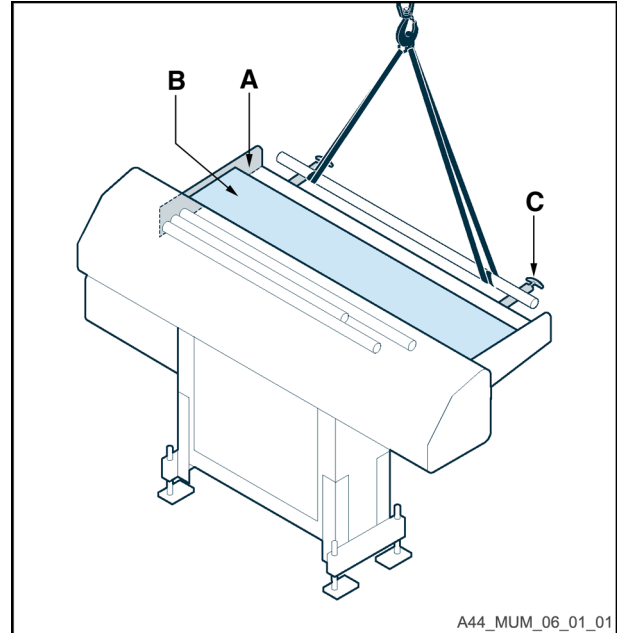


### **WARNING - CAUTION:**

*magazine loading must be carried out using only personal safety garments and, if necessary, appropriate means. The person who is authorised 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, comply with the workplace health and safety regulations in force.*

For the loading proceed as follows.

- Load the bars on the magazine resting them on the bulkhead (A).



Note: put the bars down so as not to damage the bar feeder parts.

- For correct loading, adjust the frame (B). Use, if necessary, supplementary extractable racks (C).

## 6.8 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.

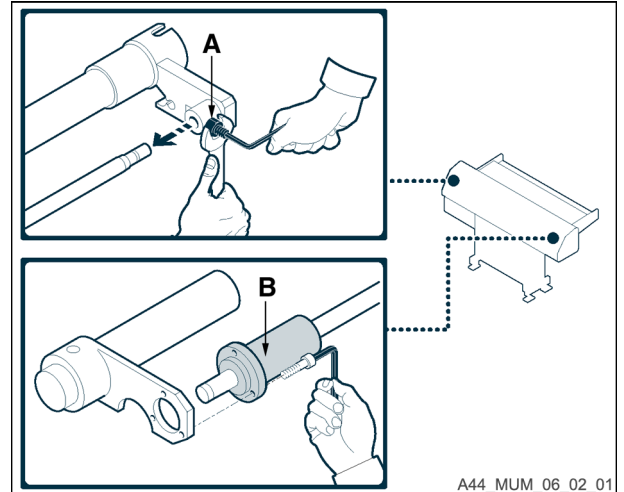
- Replace, if necessary, the bar pusher (see bar and bar pusher diameter table in chapters 2 and 6)
- Replace, if necessary, the lathe reduction noses.
- Adjust the magazine and the bar pushing frame.
- Adjust the loading axis.
- Adjust the bar feeder-lathe guide (OPTIONAL)
- Prepare the bars and load them on the magazine.
- Reset, if necessary, the machining parameters (see "Keyboard instruction manual").



## 6.9 BAR PUSHER CHANGE

For this operation, proceed as follows.

- 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.



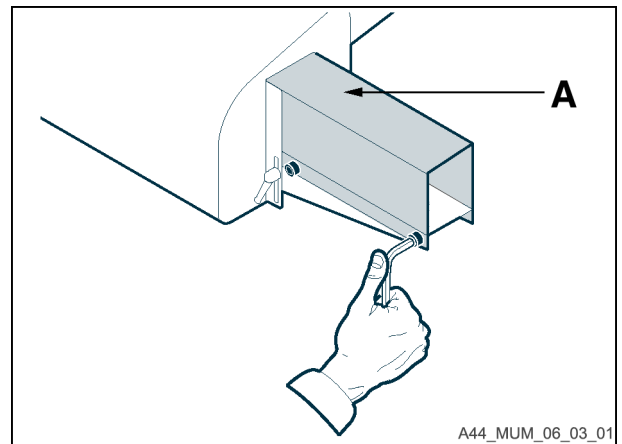
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## 6.10 LATHE SPINDLE LINER CHANGE

We recommend using a spindle liner in order to guide the bar correctly into the lathe. The inner diameter of the front nose must be one millimetre larger than the outer diameter of the bar pusher bearings (see "Bar and bar pusher diameter table", chapter 2).

The replacement must be carried out in the area between the lathe and the bar feeder; move the bar feeder away if it is equipped with a displacing device, otherwise proceed as indicated:

- See section 6.13 "Cycle performing mode in the step-by-step function" until the bar pusher high position is reached;
- Press the bar feeder emergency stop button [kid\_EMERGENZA] to stop bar feeder operation 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 reduction nose (from bar feeder side) and replace it.
- Reset the bar feeder to its regular operating conditions.



## 6.11 AUTOMATIC CYCLE START

1. Power on the lathe.



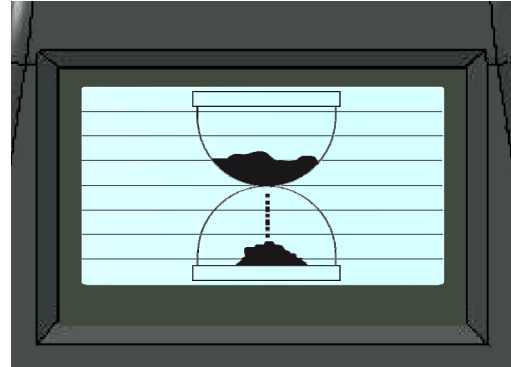
2. Power on the bar feeder by turning the main switch to position I (ON) .

**The hourglass appearing on the display shows the synchronization of data among electronic components.**

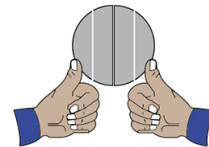


**DANGER - WARNING:**

*it is absolutely forbidden to move the bar pusher before the above-mentioned procedure has been completed. The bar pusher can be moved only after pressing the start button (see point 3 Starting the bar feeder). For example: when starting the bar feeder, the +Z -Z axis of the lathe headstock is moved with the collet closed. This manoeuvre can cause serious damages to the bar feeder and the lathe.*



3. Select the manual mode:



4. Select the "BAR FEEDER ZERO SETTING" of the carriage:

If the top guide channels are not in a low position, the carriage will not move; to lower the guide channels, follow the operational messages which will appear on the screen. Follow instructions given above and reset the carriage to "BAR FEEDER ZERO SETTING":



5. Bring the bar fore end close to the cutting tool:



6 Start the closing of the lathe collet and start working by selecting the automatic mode:

## **6.12 0-AXIS PROCEDURE (MANUAL MODE)**

### **List of causes requiring the 0-Axis in manual mode:**

- carrying out the manual 0-Axis periodically is recommended;
- if the bar pusher axis is moved by means of the crank or the lathe headstock is moved with the bar feeder powered off (no power supply).
- if the feeding belt is tightened (by means of the mechanical chain tightener, see Operation and Maintenance Manual, "Feeding chain - Adjustment").

### 6.13 CYCLE PERFORMING MODE IN THE STEP-BY-STEP FUNCTION

#### Foreword

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

- to lift the guide channels;
- to check a complete bar change cycle;
- to check the bar feeder mechanics;
- to load a single bar so as to check the facing;
- to remove the spindle liner;
- etc.

#### Procedure

1. Power on the lathe.



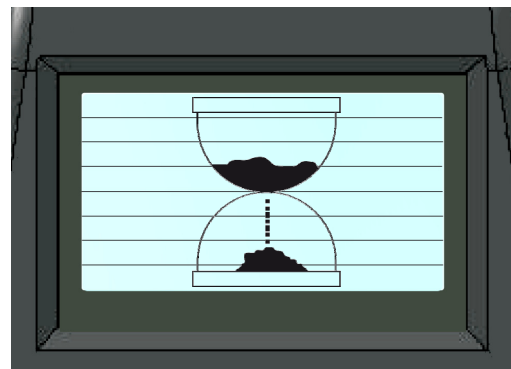
2. Power on the bar feeder by turning the main switch to position I (ON) .

**The hourglass appearing on the display shows the synchronization of data among electronic components.**




**DANGER - WARNING:**

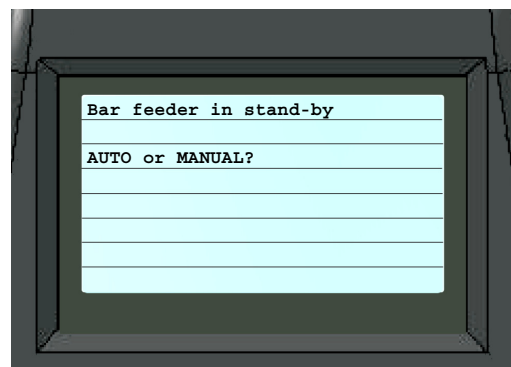
*it is absolutely forbidden to move the bar pusher before the above-mentioned procedure has been completed. The bar pusher can be moved only after pressing the start button (see point 3 Starting the bar feeder). For example: when starting the bar feeder, the +Z -Z axis of the lathe headstock is moved with the collet closed. This manoeuvre can cause serious damages to the bar feeder and the lathe.*




- check that the guide channels of the bar feeder are closed. If not, close the guide channels in manual mode.

1. press  and then  to select the semiautomatic function;

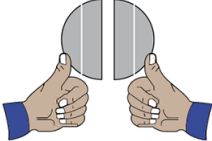

2. press , the bar feeder performs the first step (bar pusher return);



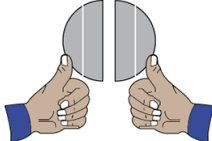

3. press , the bar feeder performs the second step, and so on.

### 6.13.1 BAR LOADING CYCLE - FACING PROCEDURE

The following procedure describes the feeding of a new bar until the facing position is reached:

Press the  buttons with the  key for 6 seconds.

The bar feeder starts the bar loading cycle, which stops when the new bar is positioned. The loading cycle of the new bar takes into account parameter 3 (facing mode) and parameter 2 (facing position).

If the operator releases the  buttons or the  key, the cycle goes on until it is completed.



#### **INFORMATION:**

***Without the open collet signal from lathe, the bar feeder carries out the above mentioned procedure, but the bar stops before entering the lathe collet (waiting for the open collet signal). With the open collet signal from lathe, the bar is loaded and positioned past the lathe collet according to parameters 2 and 3.***



#### **WARNING - CAUTION:**

***Check that the bar to be loaded in the magazine is present.***

## 6.14 BAR FEEDER STOP

### Bar feeder stop in emergency.

1. Press the emergency button to stop the bar feeder.



#### **WARNING - CAUTION**

*If the emergency stop is activated whilst the lathe is working, before restarting the working cycle, check that no dangerous conditions have been created due to the sudden stop. For example: if the tool was removing chips, move the tool away from the work piece before restarting the lathe.*

### Stopping the bar feeder at the end of the machining cycle.



#### **WARNING - CAUTION**

*When stopping the machine normally, do not use the emergency buttons.*


1. Complete the operations of your working schedule.



2. Stop the bar feeder:
3. Stop the lathe.
4. Turn off the electrical supply of the bar feeder by turning the main switch to the 0 (OFF) position.



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| 7.3 | GREASING POINTS                                                                                                   | 5 |
| 7.4 | DISPLACEMENT DEVICE USE                                                                                           | 6 |

## 7.1 PRELIMINARY NOTE ON MAINTENANCE



### **INFORMATION:**

***before carrying out any maintenance, 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.***



### **DANGER - WARNING:**

***carry out the cleaning and maintenance operations when the bar feeder is off.***

Regular cleaning and maintenance are essential to ensure a correct operation and a long bar feeder service life.

A regular and effective cleaning of the bar feeder, its accessories and working area, is recommended as it increases the operator safety as well.

Do not use petrol or solvents which may damage transparent parts, cable sheaths, etc.

The outer surface of the bar feeder IEMCA is protected with epoxy resin and polyester paint which ensure product lastingness and resistance to weather conditions that may occur in mechanic workshop.

Anyway, in order to preserve the features of the paint, it is necessary to follow some important advice:

- avoid direct exposure to UV radiation (the paint will rapidly lose its brightness, the colour will fade and it will no longer protect from oxidation);
- in case of dirty (though not greasy) parts it is recommended to clean using a damp cloth;
- in case of stubborn dirt, clean the surfaces using a soft cloth, without exerting strong pressure, and avoid using products containing:
  - pure alcohol
  - paint thinners (synthetic, nitro, acrylic, epoxy, polyurethane thinners, etc.)
  - acetone
  - solvents
  - soda



### **INFORMATION:**

***oxidation can damage metal parts and electric equipment.***

To protect the bar feeder during long inactivity periods, disconnect it from the mains voltage, remove the compressed air and cover it with a cloth of suitable material.  
Any protection should not be completely closed or sealed at the base; it should be equipped with ventilation holes so as to ensure that humidity may not condense due to lack of circulation.

## 7.2 SCHEDULED MAINTENANCE

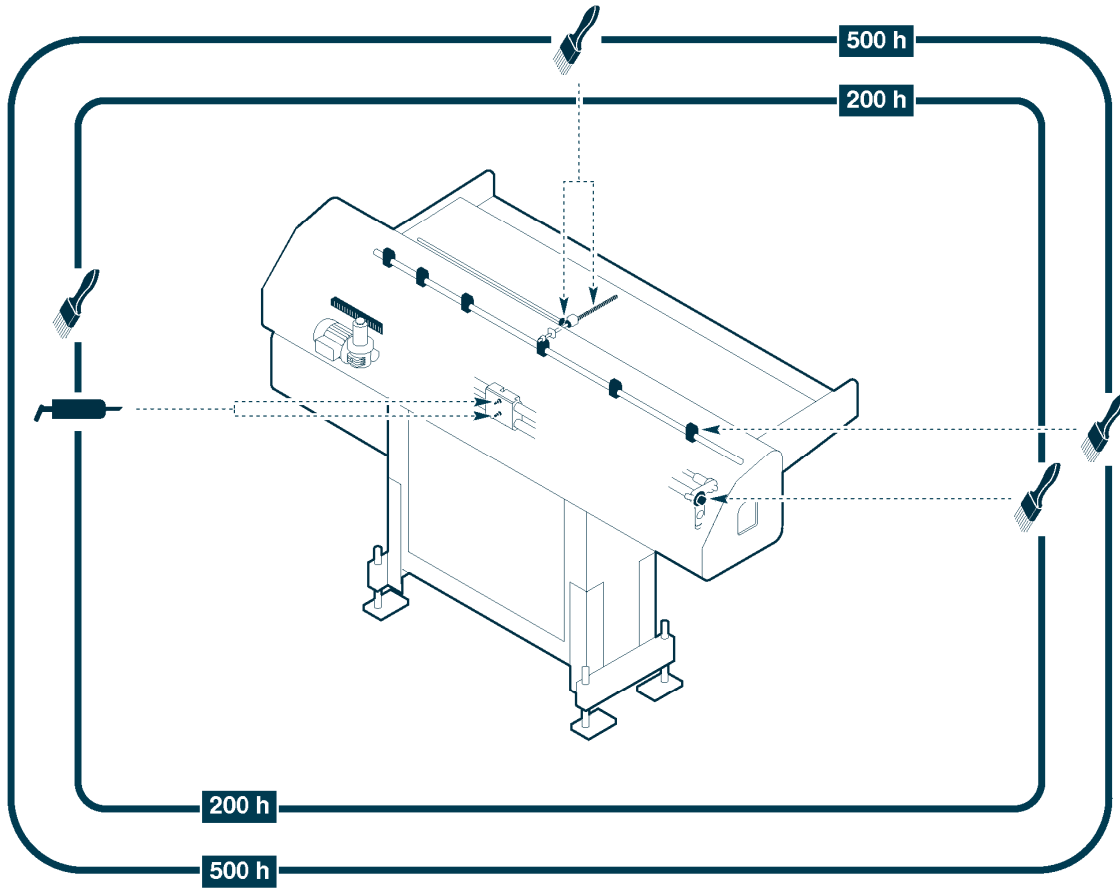


**INFORMATION:**

*keep the bar feeder in conditions of maximum efficiency, carrying out the programmed maintenance operations provided 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     |     |      |      | Yearl<br>Y |
|                  |                                                  | 200       | 500 | 1250 | 2500 |            |
| Feeding belt     | Check wear and, if necessary, adjust the tension |           |     | •    |      |            |
|                  | Test wear. If necessary, replace it.             |           |     |      | •    |            |
| Fixed tip        | Test wear. If necessary, replace it.             | •         |     |      |      |            |
| Carriage unit    | Lubricate the sliding guides                     | •         |     |      |      |            |
| Rack             | Lubricate                                        | •         |     |      |      |            |
| Magazine         | Lubricate the bevel gear pair                    |           | •   |      |      |            |
| Stop device      | Lubricate forks and pins                         |           | •   |      |      |            |
| Bar pushing unit | Lubricate the lifting toothed wheels             | •         |     |      |      |            |
| PLC              | Replace the battery                              |           |     |      |      | •          |

7.3 GREASING POINTS



[grasso] Grease [olio] Grease

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## 7.4 DISPLACEMENT DEVICE USE

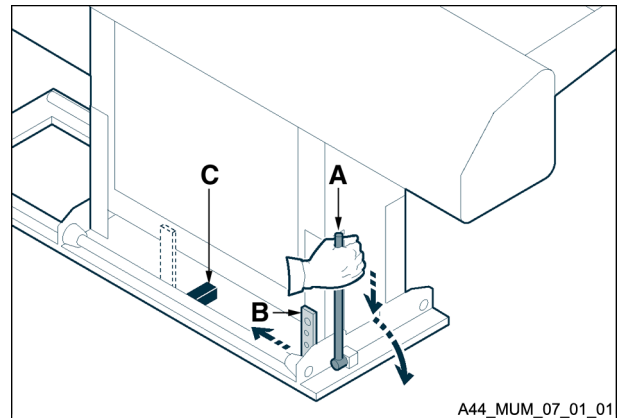


### **WARNING - CAUTION:**

***before carrying out this intervention, disconnect the bar feeder power supply. During this operation, 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).
- 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

| <b>TROUBLES</b>                                                              | <b>CAUSES</b>         | <b>SOLUTIONS</b>                                |
|------------------------------------------------------------------------------|-----------------------|-------------------------------------------------|
| <b>The bar feeder will not start</b>                                         | Blackout.             | Check the electrical connection                 |
|                                                                              | Open guard.           | Close the guard.                                |
|                                                                              | Emergency devices on. | Disconnect the emergency devices.               |
| <b>The bar feeder has been reset but the automatic cycle will not start.</b> | No lathe signal.      | Check the electrical connection with the lathe. |

### 8.2 BAR MAGAZINE TROUBLESHOOTING

| <b>TROUBLES</b>                                                          | <b>CAUSES</b>                                                                   | <b>SOLUTIONS</b>                                                                        |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| <b>During the loading phase, the bar does not enter the magazine.</b>    | The bar pushing frame is too low.                                               | Adjust the bar pushing frame position (see par. 5.2.).                                  |
| <b>The first bar in magazine is not lifted.</b>                          | The limit stops are not well adjusted.                                          | Adjust the stops (see par. 5.2.).                                                       |
| <b>The second bar in the magazine lifts together with the first one.</b> | The limit stops are not well adjusted and/or the bar pushing frame is too high. | Adjust the stops (see par. 5.2.) and/or the bar pushing frame position (see par. 5.2.). |

### 8.3 TROUBLESHOOTING DURING BAR FEEDING

| <b>TROUBLES</b>                                 | <b>CAUSES</b>                                      | <b>SOLUTIONS</b>                   |
|-------------------------------------------------|----------------------------------------------------|------------------------------------|
| <b>The bar hardly enters the lathe spindle.</b> | 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 (see par. 5.4.).  |
|                                                 | The bar feeder is not aligned with the lathe.      | Check and correct the alignment.   |
| <b>The bar hardly enters the lathe collet.</b>  | 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.

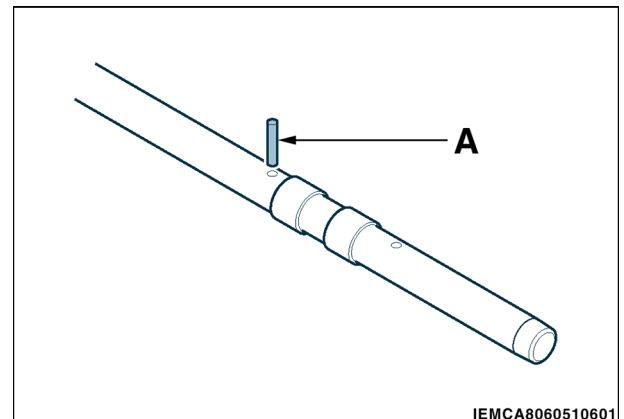
We disclaim any responsibility for damages to components and injury to people derived from the use of non-original spare parts and from any repair carried out without the manufacturer's authorisation.

For spare parts ordering, follow the indications reported on the spare parts catalogue.

## 9.2 REPLACEMENT OF THE FIXED TIP

For replacement proceed as follows:

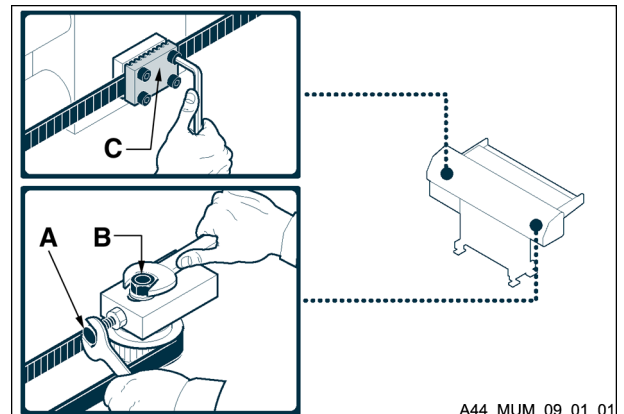
- Remove the upper guard.
- Disassemble the bar pusher.
- Pull off the pin (A) to remove the fixed tip.
- Install the new fixed tip and fasten it by means of a new pin.
- Install the bar pusher again.
- Close the upper guard back.



## 9.3 FEEDING BELT REPLACEMENT

Follow the instructions given hereunder to perform this operation:

- Remove the upper guard.
- Loosen nut (B).
- Loosen the belt through screw (A) and lock nut.
- Disassemble the plate (C) and replace the belt.
- Assemble the plate again (C).
- Adjust the tension of the belt.
- Close the upper guard back.



## 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 |                  | 2   |
| 806002431 | Roller conveyor guide unit |                         |                  | 1   |
| 24373000  | Feeding belt               | HTD 8 M20 479 PA        |                  | 1   |
|           | Bar pusher                 |                         | Specify diameter | 1   |
|           | Fixed tip                  |                         | Specify diameter | 1   |

## 9.5 BAR FEEDER DISMANTLING



### **INFORMATION:**

***this operation 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. Dispose of them in compliance with the laws in force.***

