AUTOMATIC BAR FEEDER

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

VIP80 Evolution
VIP80r Evolution

GB **MANUAL FOR USE AND MAINTENANCE**

Rel. 1 **Date** 21/10/02 **Cod.** 806005400

S/N

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	TLX 550879
TYPE OF DOCUMENT:	**MANUAL FOR USE AND MAINTENANCE**
PRODUCT:	**AUTOMATIC BAR FEEDER**
MODEL:	**VIP80 Evolution**
	VIP80r Evolution

IEMCA S.p.A.
Via Granarolo, 167
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TLX 550879

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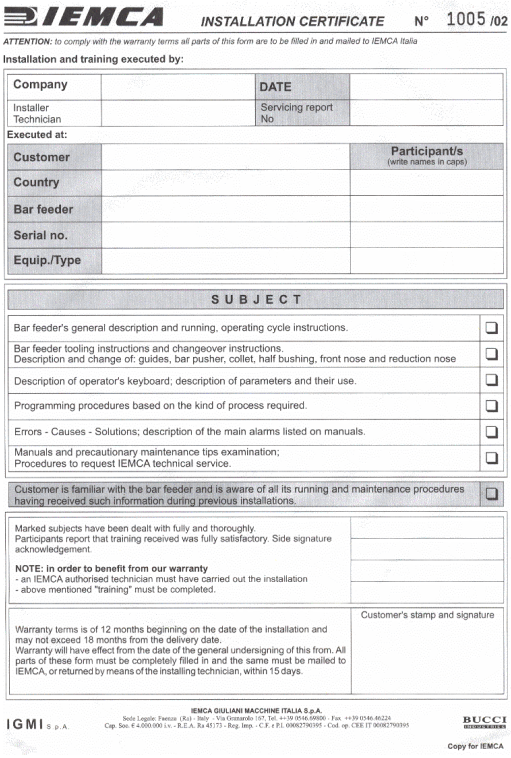
1.1 TERMS OF WARRANTY

The warranty validity is subordinated to a correct assembly and coupling of the bar feeder to lathe. In particular, before the first start-up, carry out an accurate check to make sure the bar feeder is correctly aligned with the lathe and fastened with the expansion plugs as shown in section 4.

The product warranty is valid only if the bar loader 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 works being carried out.
The warranty shall begin from the date on the Installation Certificate duly filled in and signed.
The document must be sent per mail to:
CUSTOMER SERVICE
IEMCA division of IGMI spa
48018 Faenza (Ra) ITALY - Via Granarolo,167



IEMCA INSTALLATION CERTIFICATE N° 1005 /02

ATTENTION: to comply with the warranty terms all parts of this form are to be filled in and mailed to IEMCA Italia

Installation and training executed by:

Company		DATE	
Installer Technician		Servicing report No	

Executed at:

Customer		Participant/s (write names in caps)
Country		
Bar feeder		
Serial no.		
Equip./Type		

SUBJECT	
Bar feeder's general description and running, operating cycle instructions.	❑
Bar feeder tooling instructions and changeover instructions. Description and change of: guides, bar pusher, collet, half bushing, front nose and reduction nose	❑
Description of operator's keyboard; description of parameters and their use.	❑
Programming procedures based on the kind of process required.	❑
Errors - Causes - Solutions; description of the main alarms listed on manuals.	❑
Manuals and precautionary maintenance tips examination; Procedures to request IEMCA technical service.	❑
Customer is familiar with the bar feeder and is aware of all its running and maintenance procedures having received such information during previous installations.	❑

Marked subjects have been dealt with fully and thoroughly.
Participants report that training received was fully satisfactory. Side signature acknowledgement.

NOTE: in order to benefit from our warranty
- an IEMCA authorised technician must have carried out the installation
- above mentioned "training" must be completed.

Warranty terms is of 12 months beginning on the date of the installation and may not exceed 18 months from the delivery date.
Warranty will have effect from the date of the general undersigning of this from. All parts of these form must be completely filled in and the same must be mailed to IEMCA, or returned by means of the installing technician, within 15 days.

Customer's stamp and signature

IEMCA GIULIANI MACCHINE ITALIA S.p.A.
Sede Legale: Faenza (Ra) - Italy - Via Granarolo 167, Tel. ++39 0546.69800 - Fax. ++39 0546.46224
Cap. Soc. € 4.000.000 i.v. - R.E.A. Ra 45173 - Reg. Imp. - C.F. e P.I. 00082790395 - Cod. op. CEE IT 00082790395

IGMI S.p.A. BUCCI

Copy for IEMCA

1.2 MANUAL PURPOSE

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 read this information carefully and apply it rigorously.
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 the reading of such information will enable the users to avoid any risk to the health and safety of people as well as economic damages.
If in this manual there is some information supplementary to 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:

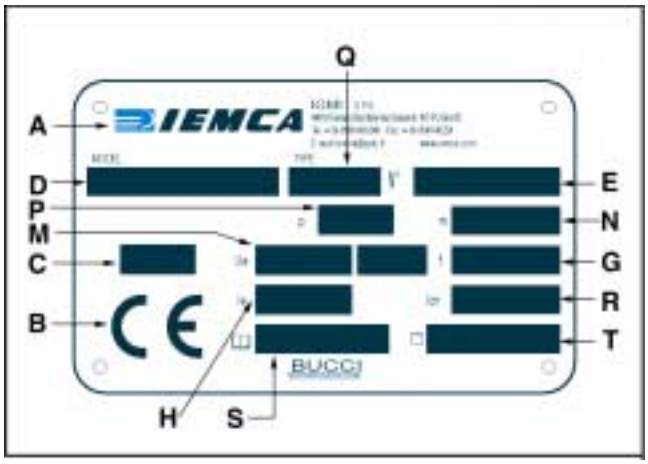
indicates that it is necessary to adopt suitable behaviours in order not to put the health and safety of people at risk and not to cause any economic damage.

IMPORTANT:

indicates some technical information of great importance that must not be neglected.

1.3 MANUFACTURER AND BAR FEEDER IDENTIFICATION

The nameplate shown in the figure, is directly put on the bar feeder. It contains any references and all the indications indispensable for the operating safety.



A Manufacturer's identification
B CE conformity marking
C Year of manufacture
D Bar feeder model
E Serial number
G Mains frequency
H Absorption power
M Feeding voltage
N Direct driving voltage
P Air pressure
Q Bar feeder and pusher length
R Breaking capacity
S Number of base wiring diagram
T Number of interface wiring diagram

INFORMATION:

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

1.4 INSTRUCTIONS APPLICATION FOR SERVICE

For any need apply to an authorised service centre.
For any application for technical service concerning the bar feeder, indicate the data inserted on the nameplate, the approximate hours of use and the kind of defect found.

1.5 GLOSSARY AND TERMINOLOGY

Some recurrent words present in the manual are here described in order to provide a more complete understanding of their meaning.
Scheduled maintenance: the complex of the operations necessary to keep the convenient operation and the efficiency of the bar feeder. Usually these operations are programmed by the manufacturer who defines the necessary competences and the intervention procedures.
Unscheduled maintenance: the complex of the operations necessary to keep the convenient operation and the efficiency of the bar feeder. These operations are not programmed by the manufacturer and must be carried on by the maintenance technician.
Expert technician: the authorised person chosen among those who have the requirements, competences and information needed for the installation, use and unscheduled maintenance of the bar feeder.
Expert operator: the authorised person chosen among those who have the requirements, competences and information needed for the installation, use 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 worked bar.
Facing position: position of the bar in the lathe, in the facing phase.

1.6 ANNEXED LITERATURE

Together with this manual, the customer is given the following literature.
- Keyboard instruction manual; it contains all the operating instruction for the setting of the operating parameters.
- Wiring diagram.
- Spare parts catalogue.

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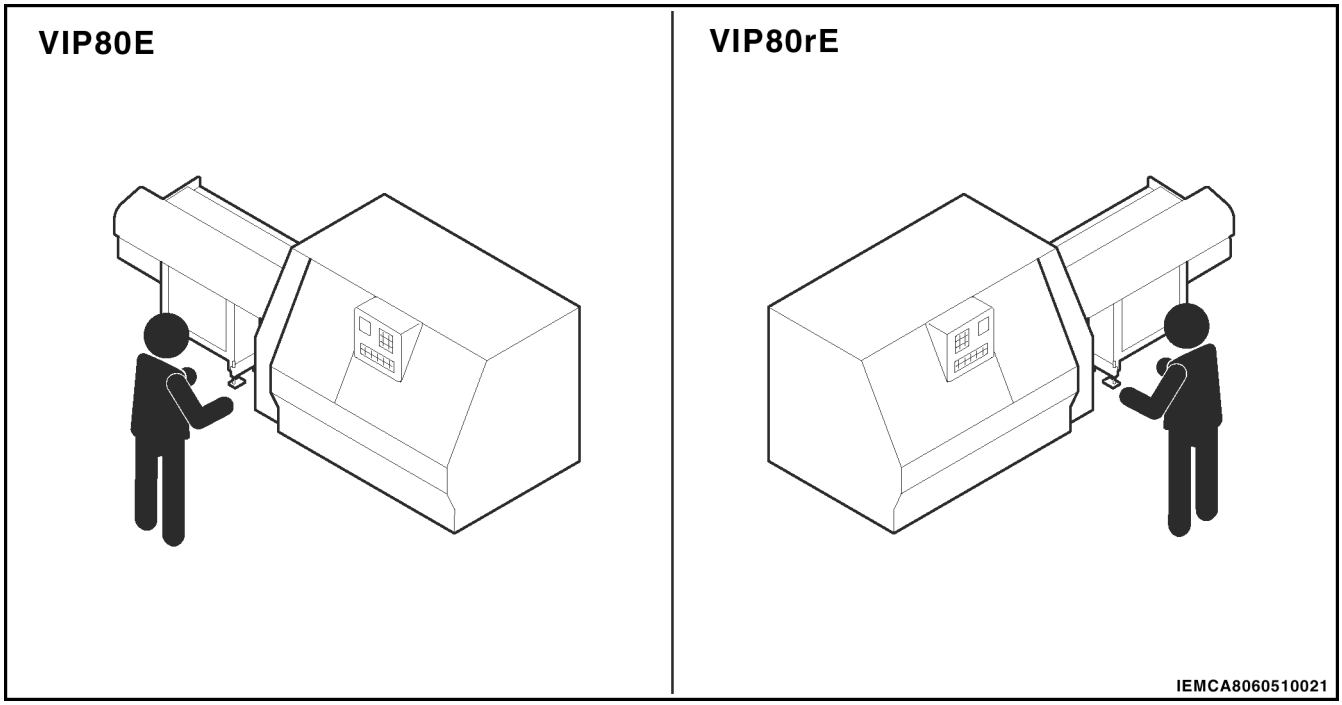
2.1 BAR FEEDER GENERAL DESCRIPTION



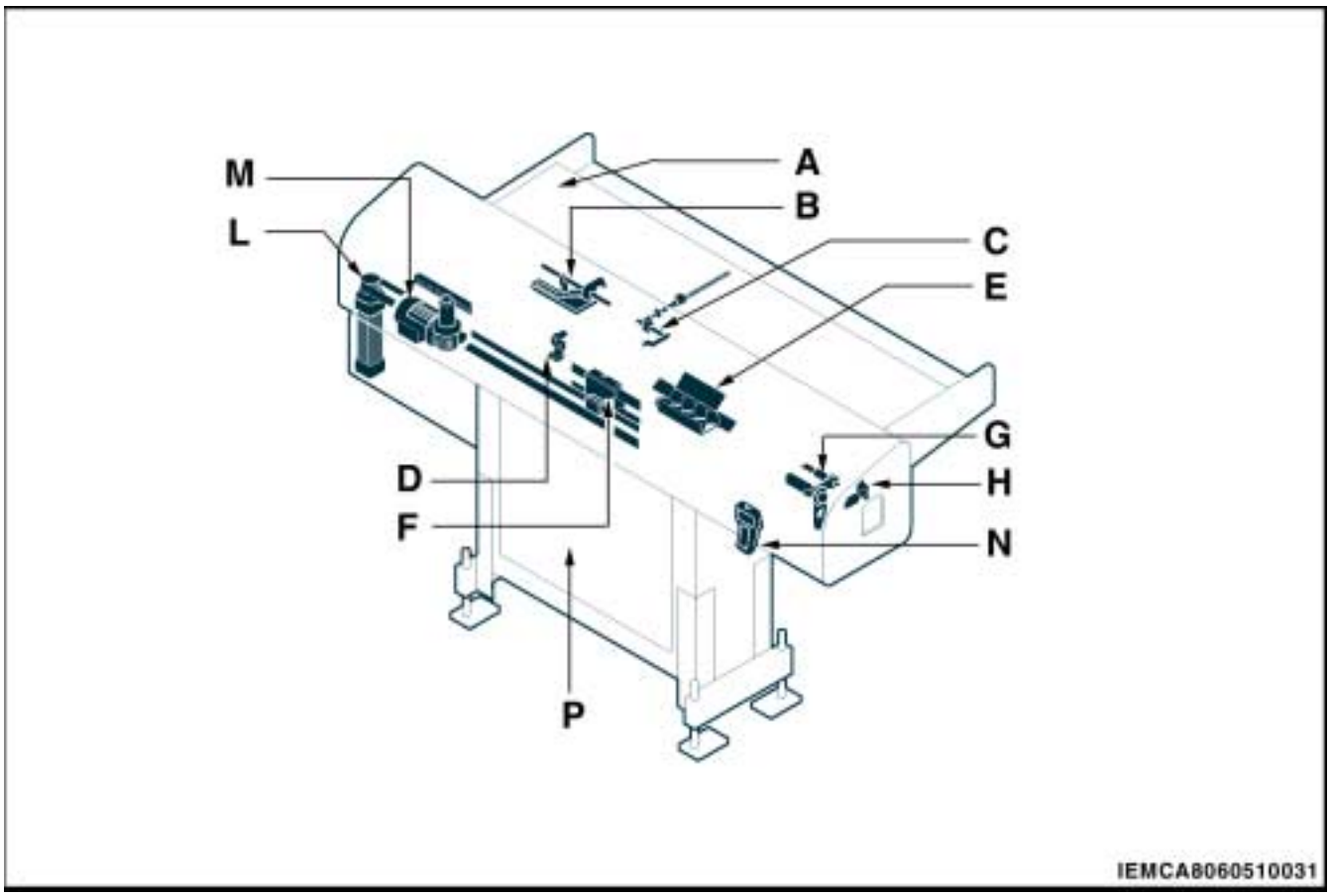
The bar feeder in question has been planned and manufactured in order to automatically feed the bars to be turned on the lathe.
It has been manufactured in two versions:
- VIP 80 E (standard version - the lathe on the right of the bar feeder)
- VIP 80r E (reversed version - the lathe on the left of the bar feeder)

The figure represents the two versions.

IMPORTANT:
this manual information (texts, tables, and figures) is referred to the standard version (VIP 80 E), if not otherwise specified.

It can feed bars with different (round, square, hex) 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 hand-held control that enables the operator to interact with all the controls without forcing him to leave his work station.
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 feed either of the bar pusher or of the following bar.

2.1.1 MAIN COMPONENTS

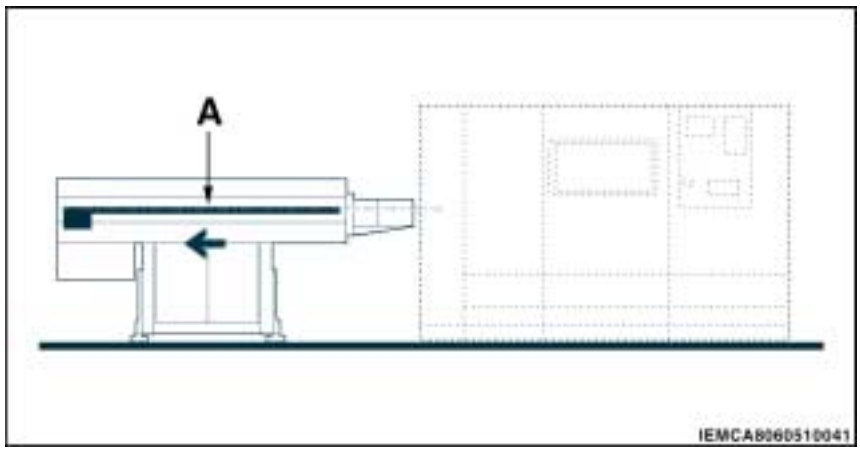


A Magazine; contains the bars to be loaded.
B Sorter unit; lifts the first bar, from the magazine, and unloads it on the "bar drop control device".
C "Limit stop" device; correctly positions the first bar, within the magazine, before it is lifted by the bar selector unit.
D Bar drop control unit; inserts the bar onto the guide.
E Guide unit; directs the bar and inserts it correctly in the lathe.
F Carriage unit; inserts the bar in the lathe.
G Bar-pushing unit; moves the bar forward in the lathe, until its completion.
H Feathering device; is started by the arrival of the bar fore end.
L Drive feeding unit; transmits, by means of a toothed belt, the motions to the carriage and to the bar pusher.
M Drive cam unit; drives the cams of the limit stop, bar drop control and bar selecting units.
N Hand-held control; sets the programming and starts the operative phases of the bar feeder.
P Electric cabinet; houses the electric control panel.

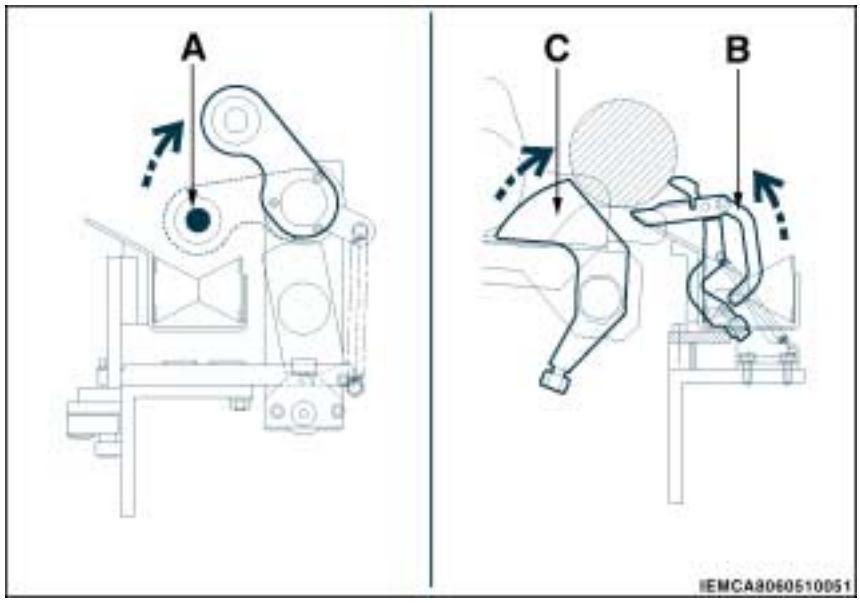
2.2 OPERATING CYCLE

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

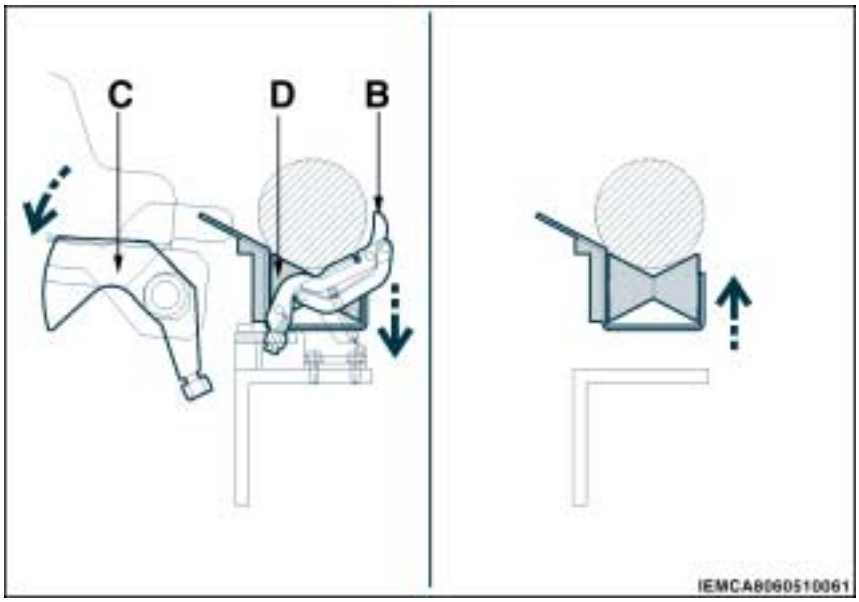
- At the stop of the lathe operating cycle, the bar pusher (A) moves back to the limit stop position.



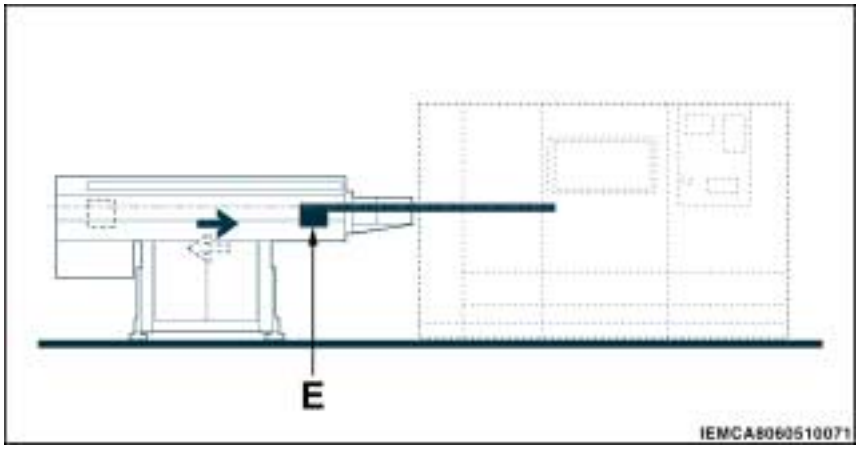
- The bar pusher (A) and the "bar drop control" unit (B) are lifted. At the same time, also the bar selecting unit (C) that loads the first bar on the "bar drop control" unit is lifted.



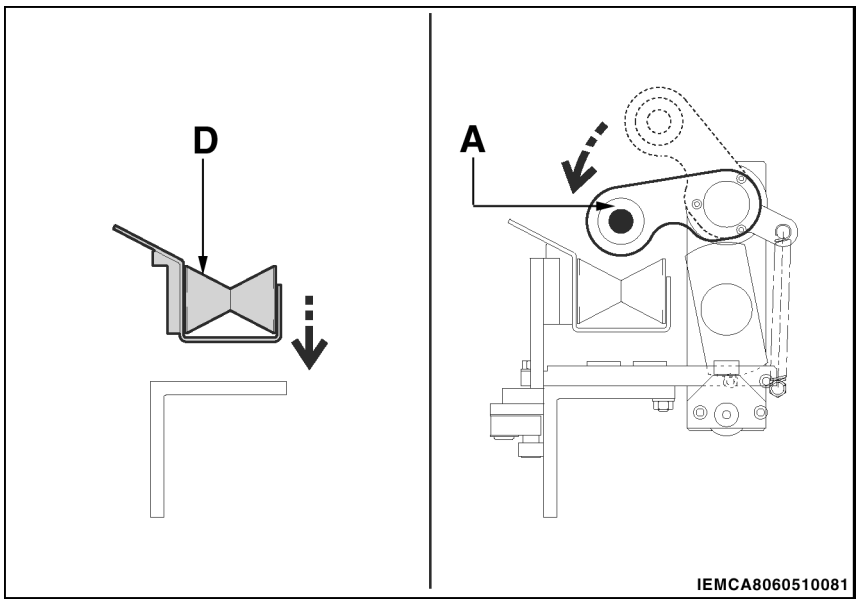
- The "bar drop control" unit (B) returns to its initial position enabling bar insertion into the guide (D). At the same time, the bar selector unit (C) returns to its initial position. Subsequently, the guide lifts and sets the bar in line with the loading axis.



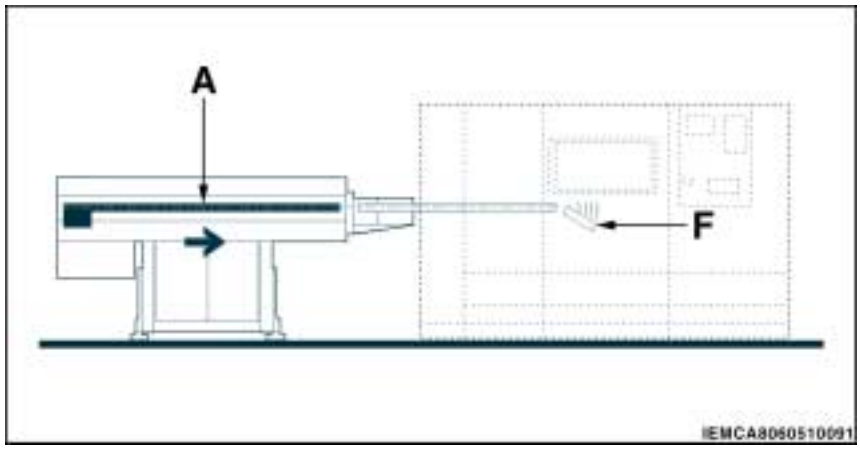
- The bar is inserted into the carriage lathe (E) that then goes back to its initial position.



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



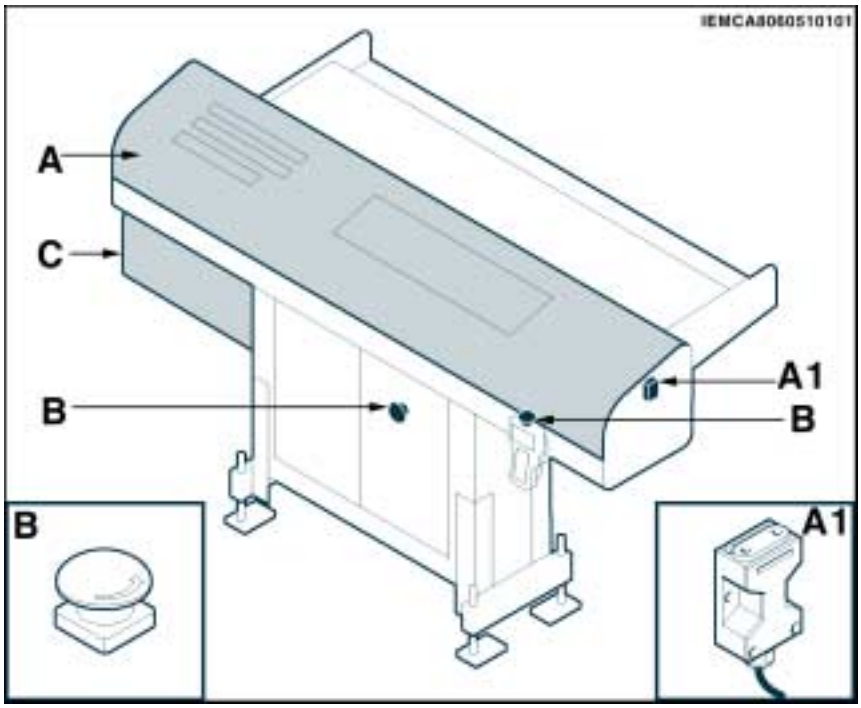
- The bar pusher (A) inserts the bar into the spindle liner. The bar ejects the remnant (F) as a residual of the previous machining, and is positioned for the facing.



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

2.3 SAFETY DEVICES

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



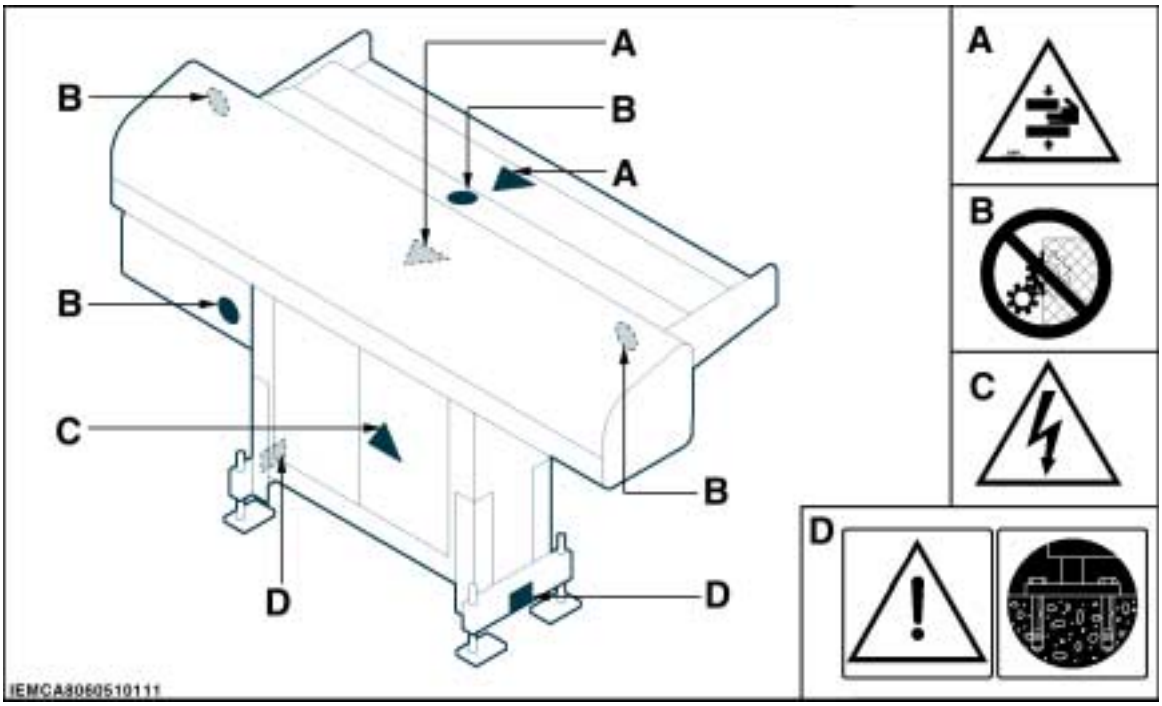
A- Interlocked sliding guard: is associated with an interlock device (microswitch A1). At the opening of the guard, in emergency condition, all the bar feeder and lathe functions stop. At the closing of the guard it is possible to start the operating cycle again.
This one is endowed with a porthole allowing the visual inspection of the bar handling main components.

B- Emergency push button: if started, each 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 again the bar feeder and lathe setting into operation.

C- Drive fixed guard: prevents the access to the components in motion.

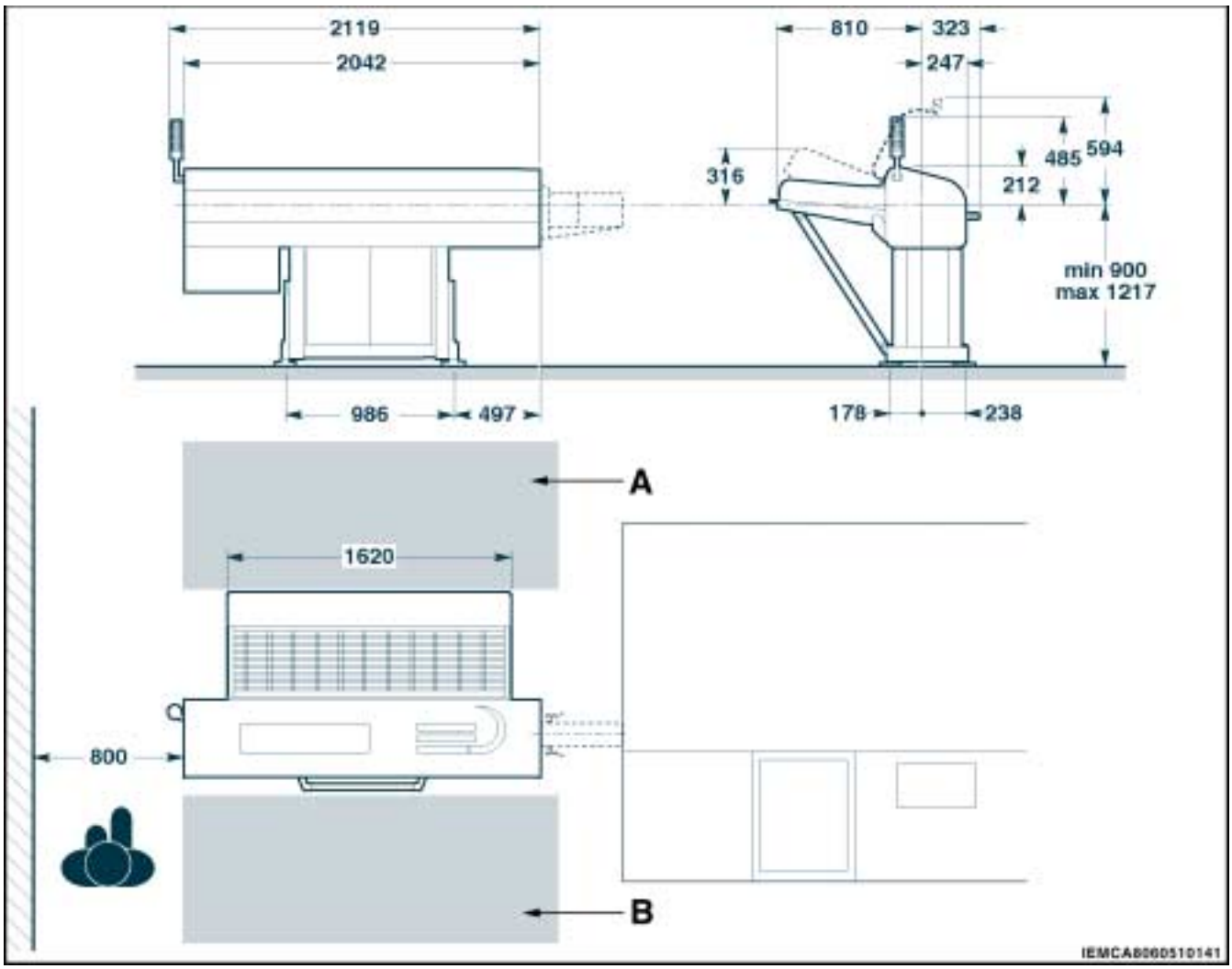
2.4 SAFETY AND INFORMATION SIGNALS

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



A- Danger of crushing upper limbs: do not put hands inside when there are components in motion.
B- No guard removal: it is forbidden to use the bar feeder without the guards installed and in operating conditions.
C- Danger of electrocution: do not enter the powered elements.
D- Danger of untimely shifting: 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 regulation in force.

2.5 TECHNICAL DATA AND PERIMETRAL AREAS

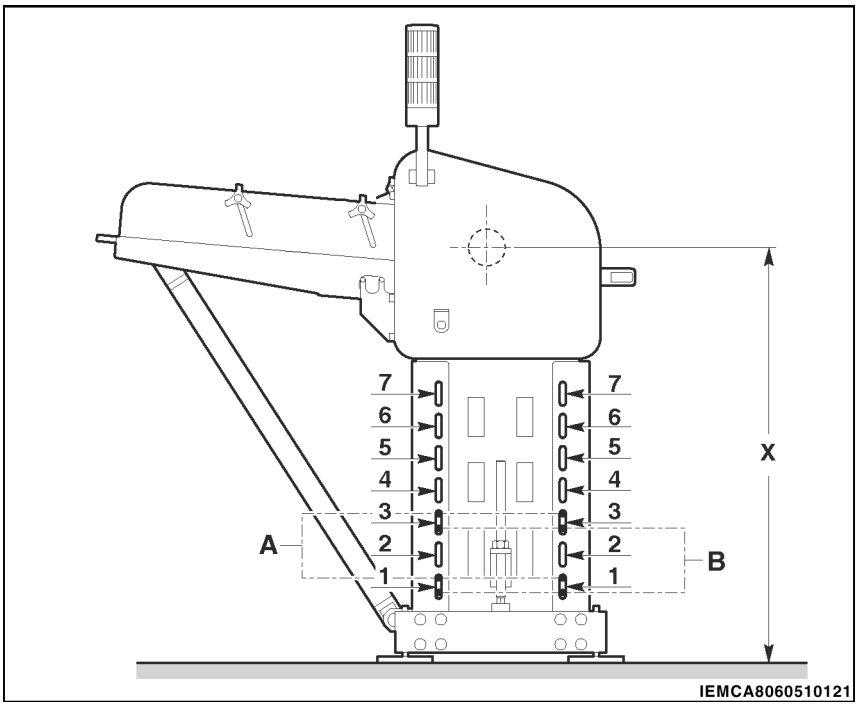
Technical data table

	VIP 80 E
Bar min. diameter	Ø 5 mm
Bar max. diameter	Ø 80 mm
Bar min. length	250 mm
Bar max. length	1615 mm
Magazine capacity	n.60 Bars Ø 10 mm
Max. weight loadable on the magazine	250 Kg.
Supply voltage	230/400 Volt
Control voltage	24 volt D.C.
Installed power	2 kW
Weight	500 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 cylinder head and of the lathe spindle.

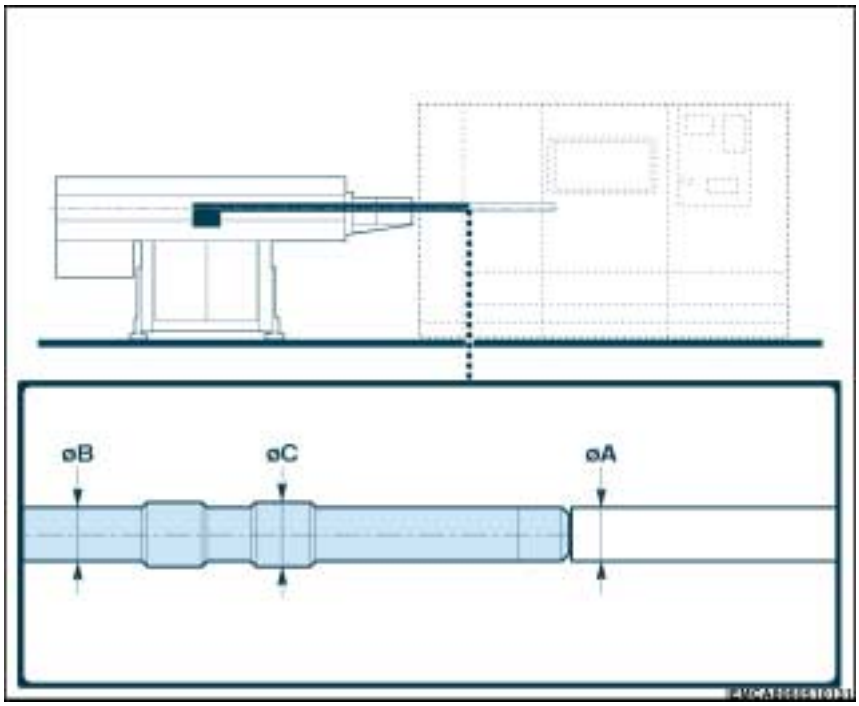
Loading axis height table

X - Loading axis height	Screw position	
	Threaded holes on the base	Slots on the supports
900÷937	B	1 - 3
938÷969	A	2 - 4
970÷1007	B	
1008÷1039	A	3 - 5
1040÷1077	B	
1078÷1109	A	4 - 6
1110÷1147	B	
1148÷1179	A	5 - 7
1180÷1217	B	

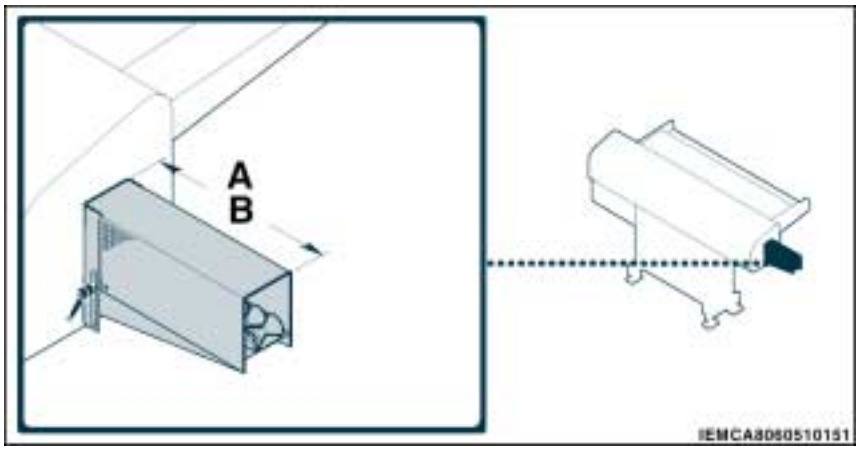


Bar and bar pusher diameters table

ø A - Bar diameter (mm)	Ø B - Bar pusher diameter (mm)	ø C - Bar pusher bearing diameter (mm)
5÷12	10	12
10÷19	12	15
16÷80	18	21

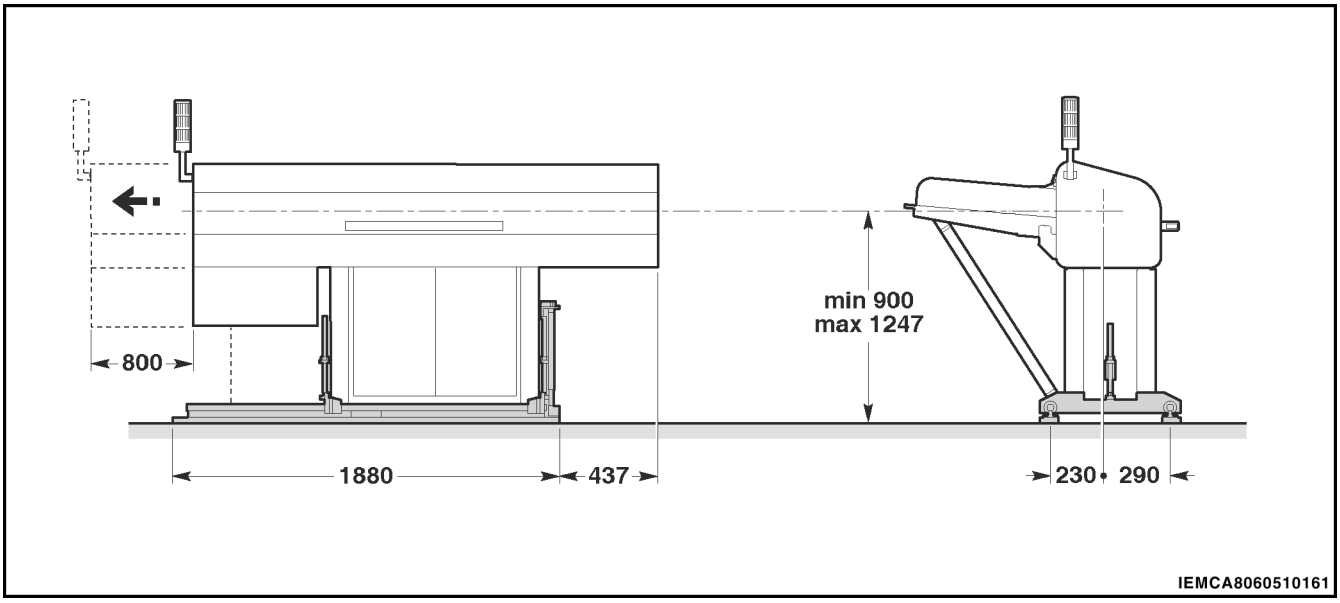


2.6 EQUIPMENT DESCPRIPTION (optional)



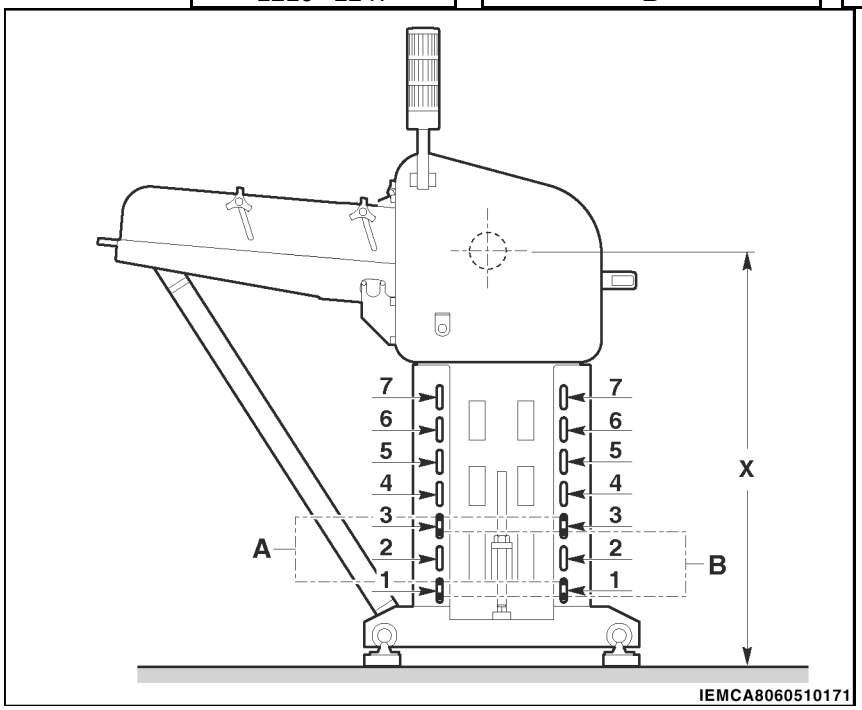
In order to increase the performances and the versatility of the bar feeder, the manufacturer puts the equipment indicated below at the customer's disposal.

Bar feeder-lathe guide: 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)
BAR FEEDER DISPLACING DEVICE: to remove the bar feeder from the lathe with an axial displacement. This facilitates the lathe tooling and maintenance.



Loading axis height table

X - Loading axis height	Screw position	
	Threaded holes on the base	Slots on the supports
930÷967	B	1 - 3
968÷999	A	2 - 4
1000÷1037	B	
1038÷1069	A	3 - 5
1070÷1107	B	
1108÷1139	A	4 - 6
1145÷1177	B	
1178÷1209	A	5 - 7
1210÷1247	B	



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3.1 GENERAL SAFETY PRESCRIPTIONS

It is of the utmost importance to read this manual carefully before installing, using or servicing the bar feeder or performing any other work . Constant compliance with the instructions in this manual is a guarantee of protection against injury.

- The operator and skilled engineer must perform only their specified duties.
- Do not tamper with the safety devices for any reason whatsoever.
- Comply strictly with the work health and safety regulations issued by the relevant authorities in the country of installation of the machine.
- IEMCA declines any liability whatsoever for injury to persons or damage to property if the relevant safety prescriptions are disregarded.

3.2 HANDLING AND INSTALLATION - Safety

- The bar feeder must be handled using suitable means and methods.
- Persons must not stand or transit underneath a suspended load, or within the range of action of the crane, lift truck or other suitable means of lifting and transportation.
- The working area and bar loading area must be cordoned off to prevent collisions between the operator and machines used to transport or handle the barstock or other materials.
- Correct positioning of the bar feeder, adequate lighting and a clean working environment are of the utmost importance as far as personal safety is concerned.
- The electric system connection must be made exclusively by skilled electricians.
- Make sure the electrical system is connected to an efficient earth circuit by means of a dedicated wire.

3.3 ADJUSTMENTS AND SETTING UP - Safety

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

3.4 USE AND OPERATION - Safety

- The working area around the bar feeder must always be kept clean and uncluttered in order to allow immediate access to the emergency devices and bar loading to be performed without creating obstructions or danger.
- Perform the cycle starting sequence as prescribed.
- Keep hands and other parts of the body well clear of moving parts or live electrical parts.
- Remove bracelets, watches, rings and neckties.
- Whenever necessary, use strong work gloves with 5 fingers, which do not reduce the sensitivity or power of your grip.
- Wear working shoes as well as personal protection devices provided for by the accident prevention regulations in force in the country in which the machine is installed.
- Inform maintenance personnel of all operating anomalies that come to your attention.
- Before starting the bar feeder, make sure that there are no personnel engaged in servicing or cleaning the machine.

3.5 BAR FEEDER MAINTENANCE - Safety

- Do not allow unauthorized persons to carry out maintenance.
- Read this manual carefully before carrying out maintenance.
- Do not lubricate, repair or adjust the bar feeder while it is running, unless expressly indicated to do so in the manual.
- Stop the bar feeder in accordance with the prescribed methods before carrying out lubrication or other work.
- Do use matches, lighters or torches when servicing the machine in the presence of inflammable fluids.
- Keep spent oil in suitable containers and consign it to companies specialized in the storage and disposal of polluting waste products.
- Do not pollute the environment.
- Use original IEMCA spare parts only.

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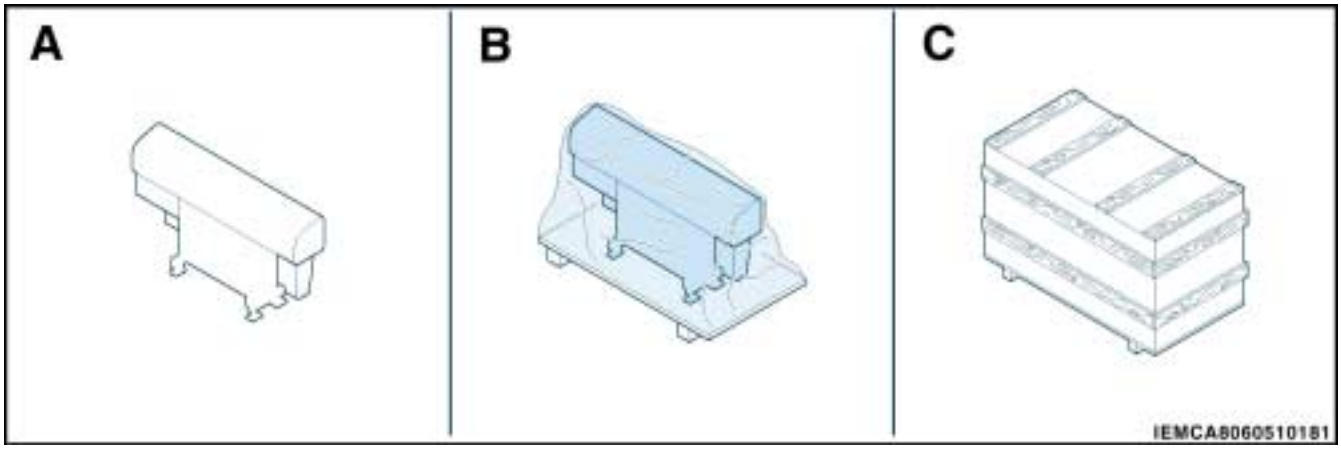
4.1 PRELIMINARY NOTE ON MOTION AND INSTALLATION

IMPORTANT:

move and install the machine-tool by respecting the information provided by the manufacturer, which are directly written on the package, bar feeder 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

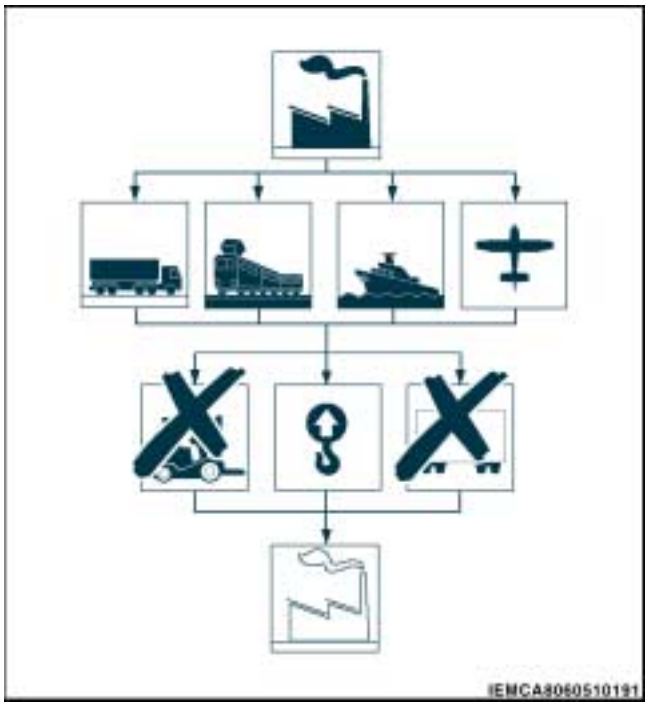


A NO PACKAGING
B PACKAGING ON PALLET
C PACKAGING IN CRATE

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 are 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.

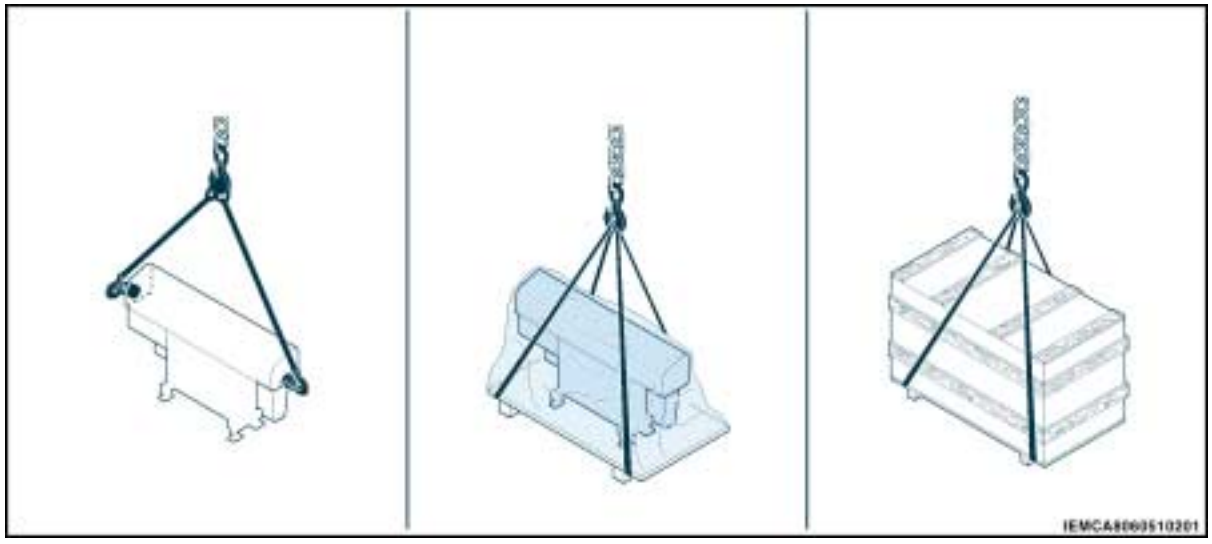
4.3 TRANSPORT

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 LIFLTING

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:

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 bar feeder anchoring.
If necessary locate the exact position by drawing the coordinates.

4.6 INSTALLATION PHASES

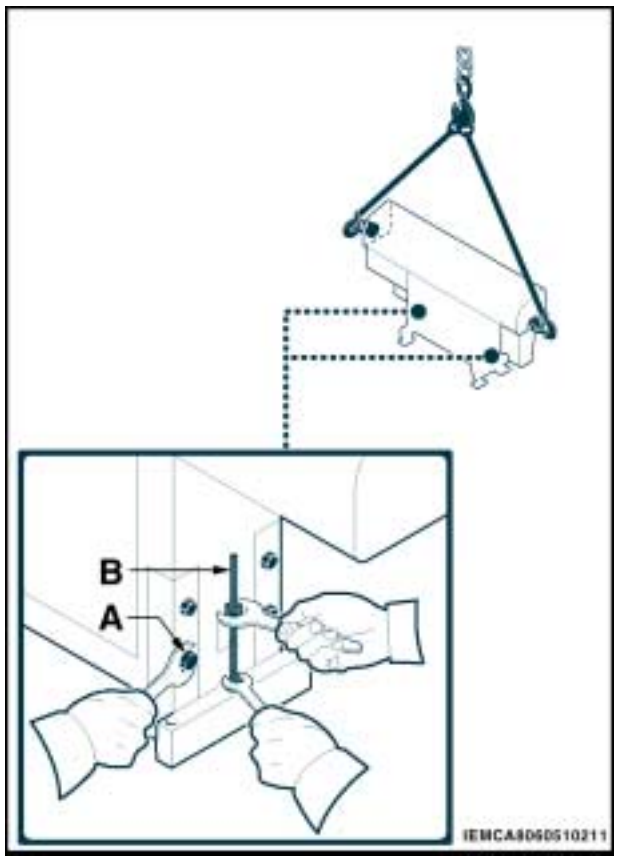
Below are listed the installation steps. For further details see the relating sections.

Loading axis height variation (sect. 4.6.1)
Assembling the backing plates (sect. 4.6.2)
Magazine positioning (sect. 4.6.3)
Alignment and levelling (sect. 4.6.4)
Bar feeder fastening (sect. 4.6.5)

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:

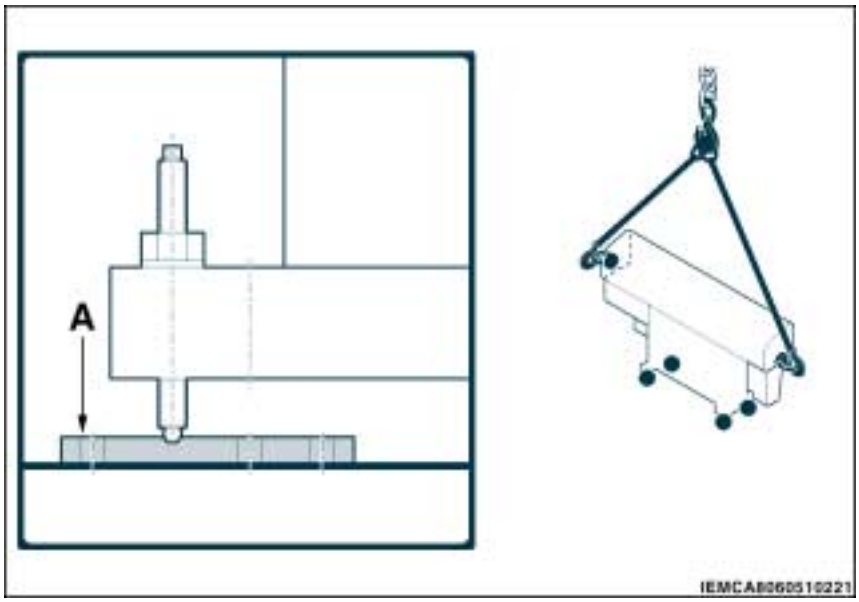
- Prepare the bar feeder to be lifted (sect. 4.4.).
- Stretch the ropes.
- Loosen, on both sides, the screws (B) and remove the screws (A).
- Bring the bar feeder to the loading axis height (see section 2.6. "Loading axis height" table).
- Refit the screws (A) and temporarily adjust the screws (B).



4.6.2 Assembling the backing plates

- Lift the bar feeder (section 4.4.).
- Place the plates (A) at the same level of feet, with the longer part inwards (see figure).
- Lower again the bar feeder to the ground.

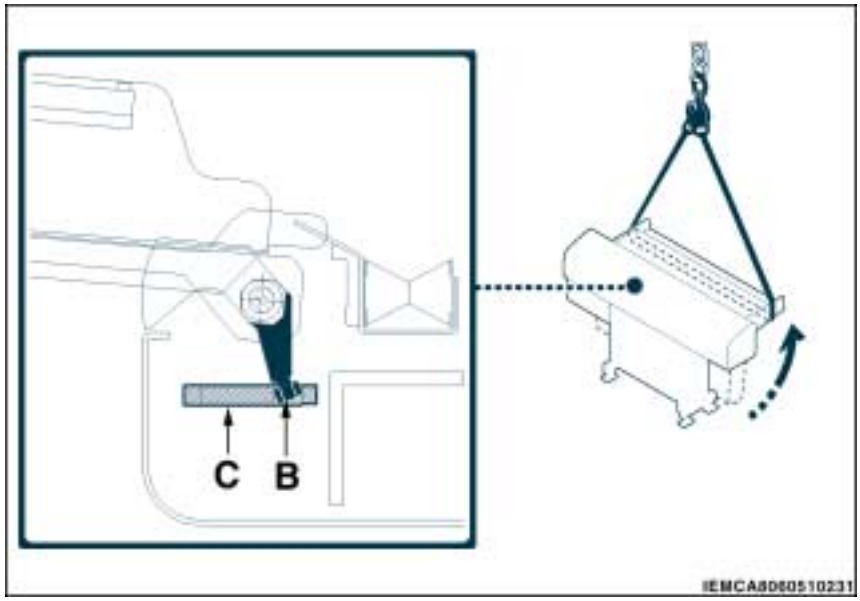
Note: fastening is made in the end.

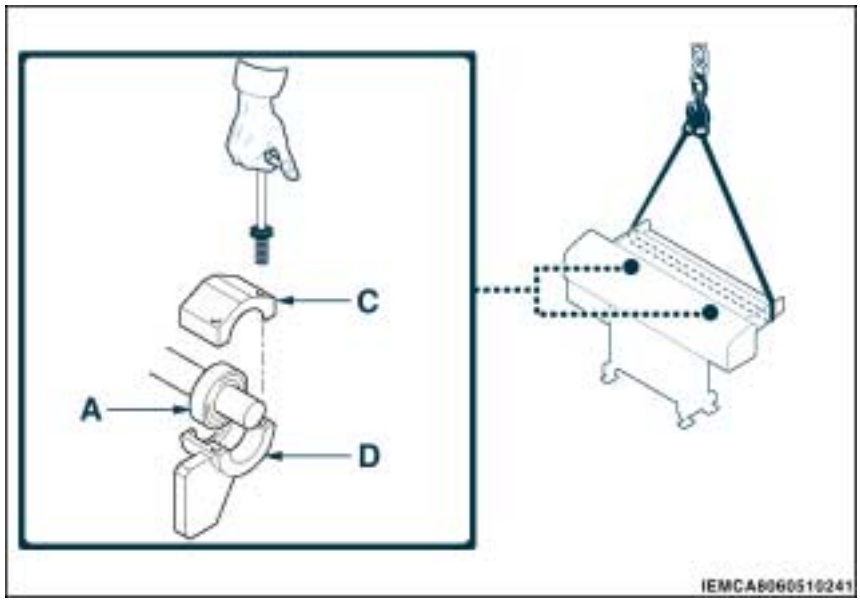


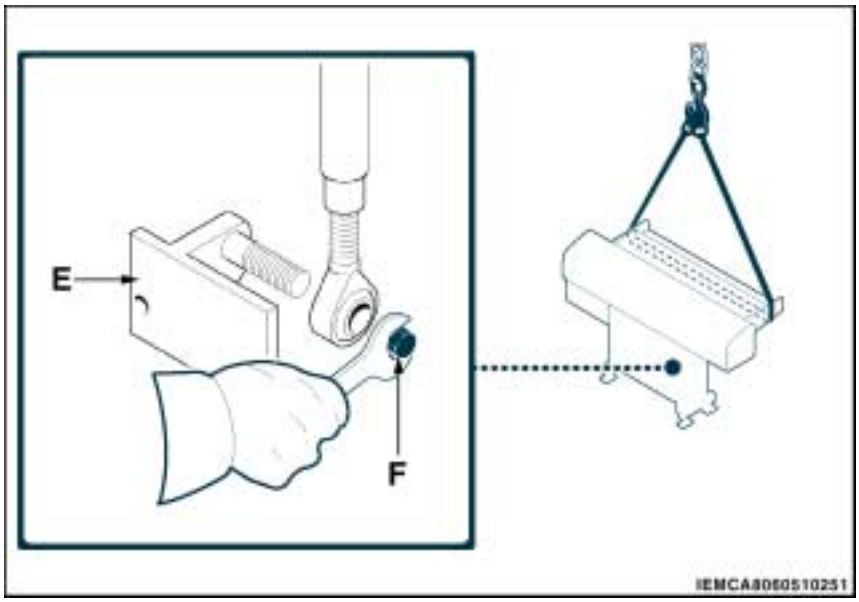
4.6.3 Magazine positioning

For the positioning proceed as follows.

- Lift the magazine with the help of a lifting device. Check that during the lifting, the pin (B) is correctly inserted into the cam seat (C).



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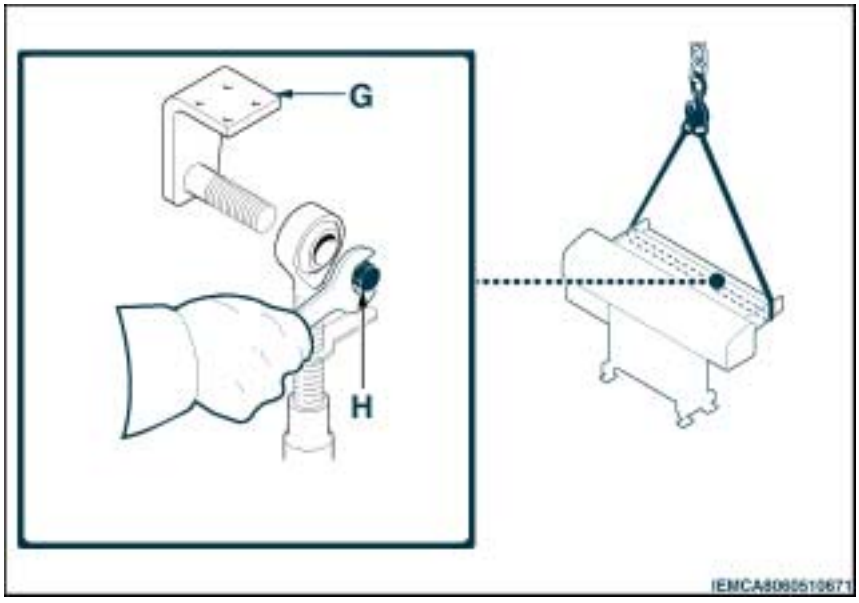
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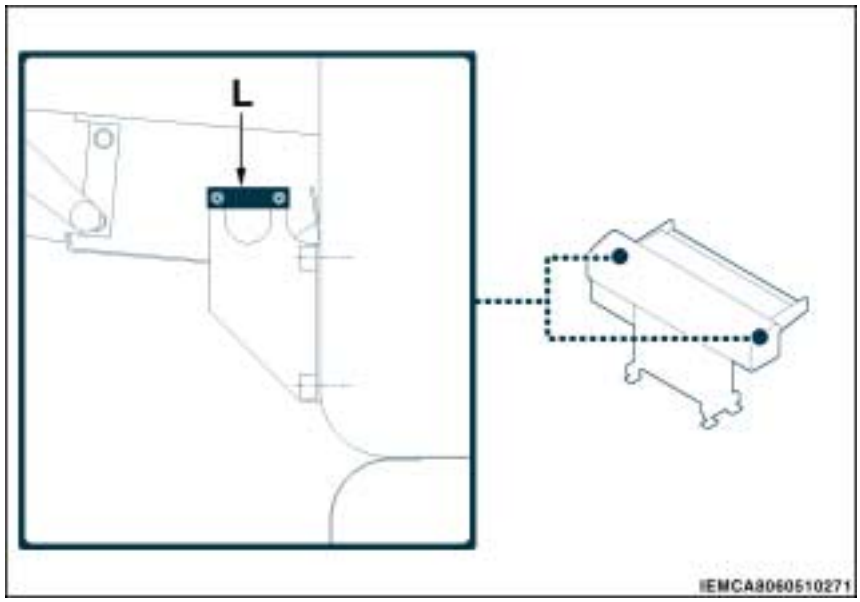
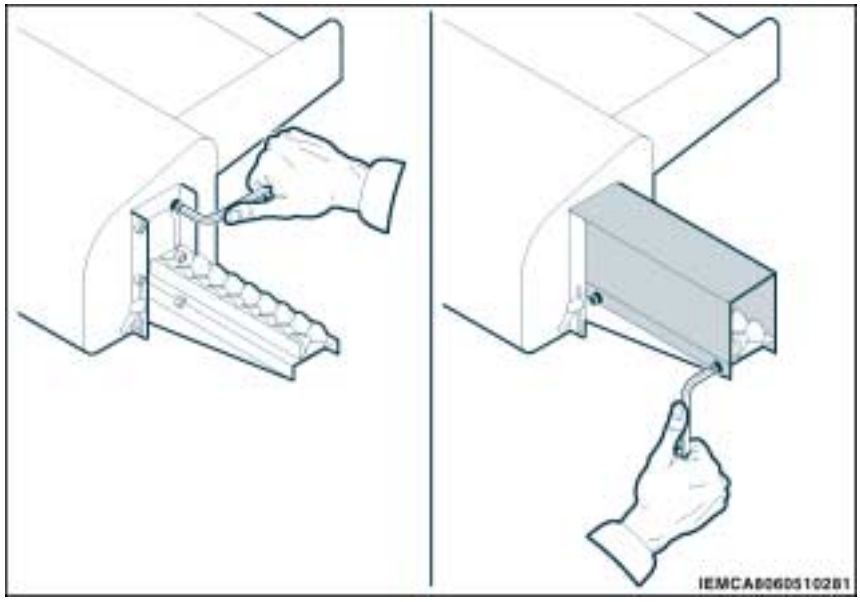
- Remove the safety brackets (L) and keep them for future removal.



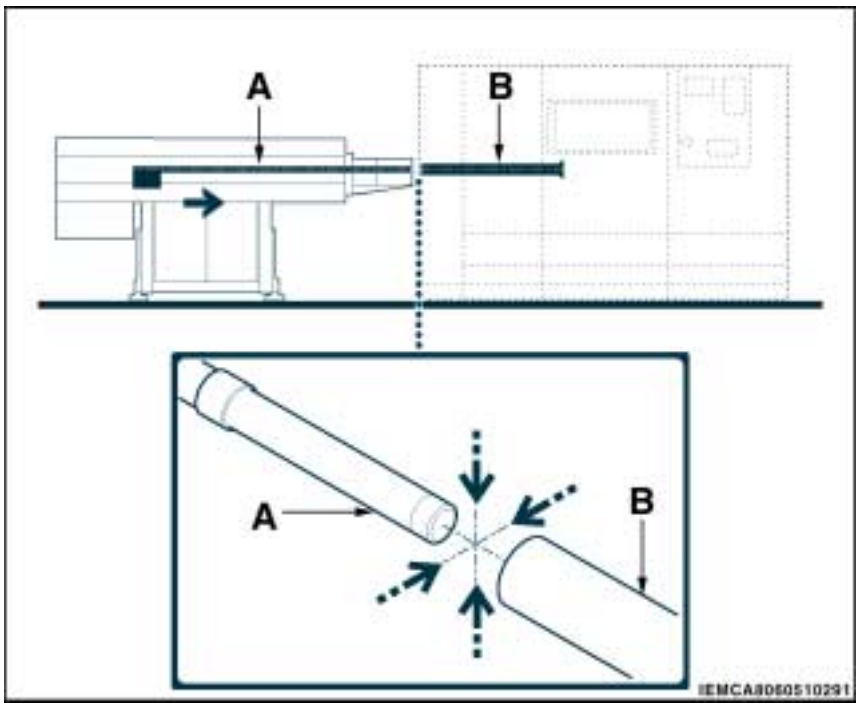
- Install the bar feeder-lathe guide (if provided).
- Install the safety grid (fixed guard).



4.6.4 Alignment and levelling

IMPORTANT:

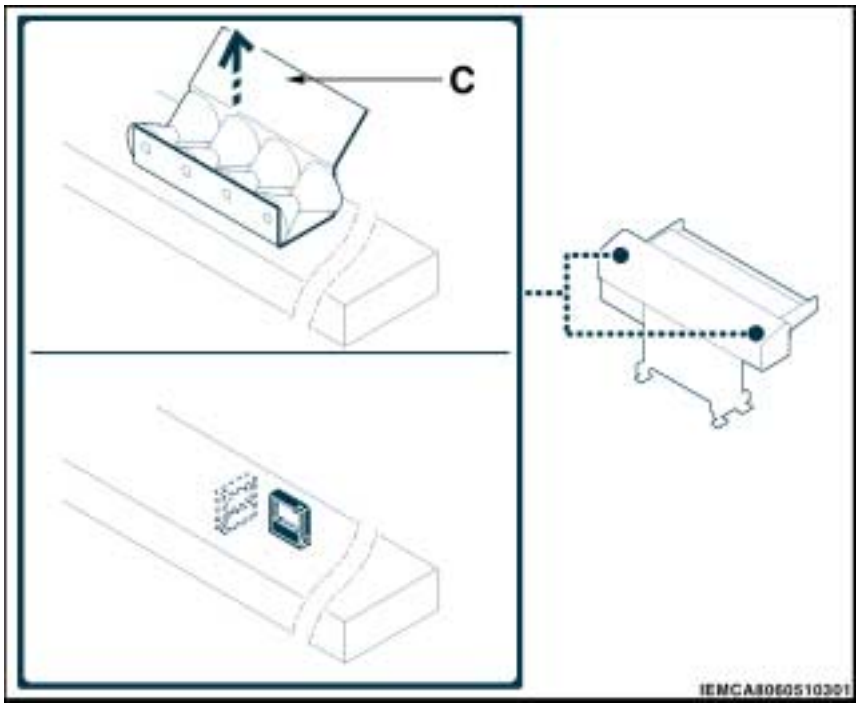
not only alignment and levelling are fundamental for the correct running of the bar feeder and for the WARRANTY VALIDITY, but also they must be carried out only by a SKILLED STAFF WITH PRECISE TECHNICAL COMPETENCE.



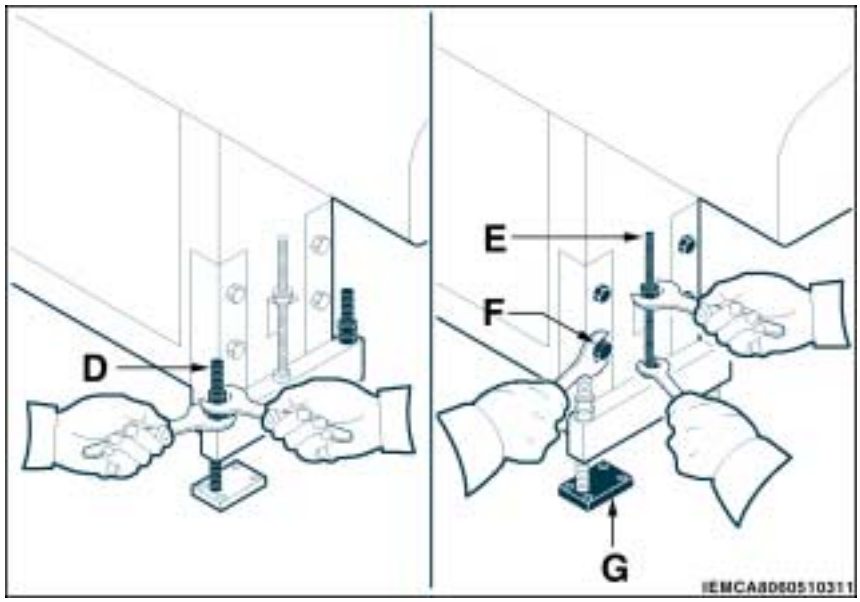
For these operations proceed as follows.

- Position the bar feeder near the lathe (see figure).
- 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).
  This adjustment can also be carried out by means of the screws (E), after loosening the screws (F).
- Hit both sides of the plates (G) with a mallet for the adjustment of the loading axis horizontally.



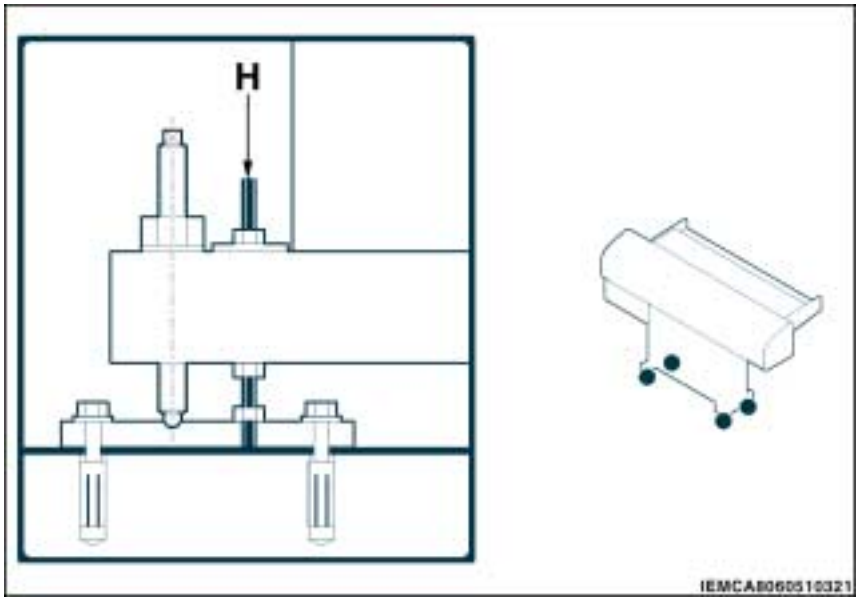
4.6.5 Bar feeder fastening

IMPORTANT:

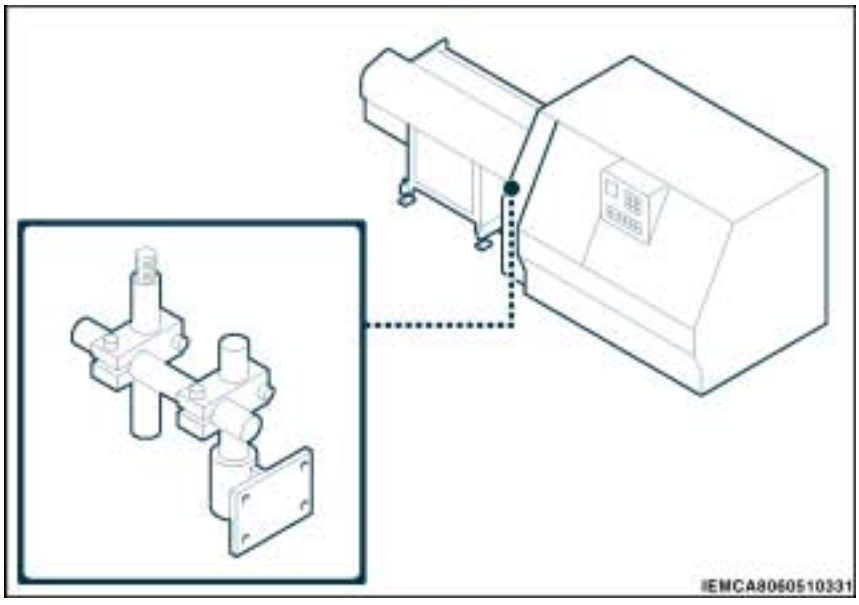
considering that this operation is vital to assure in time the bar feeder stability and the WARRANTY VALIDITY, the person who is authorised to carry it out, will have to take extreme care of it.

For the fastening proceed as follows.

- 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 drawrods (H) fastening them with their relating check nuts.
- Reinstall the two guide sections after making sure that the alignment, the levelling and the fastening are carried out correctly.



Note: the manufacturer recommends to fasten the bar feeder to the lathe by means of the appropriate unit in the figure. The figure has a merely indicative purpose; for further details contact a service centre (see service centre list).



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

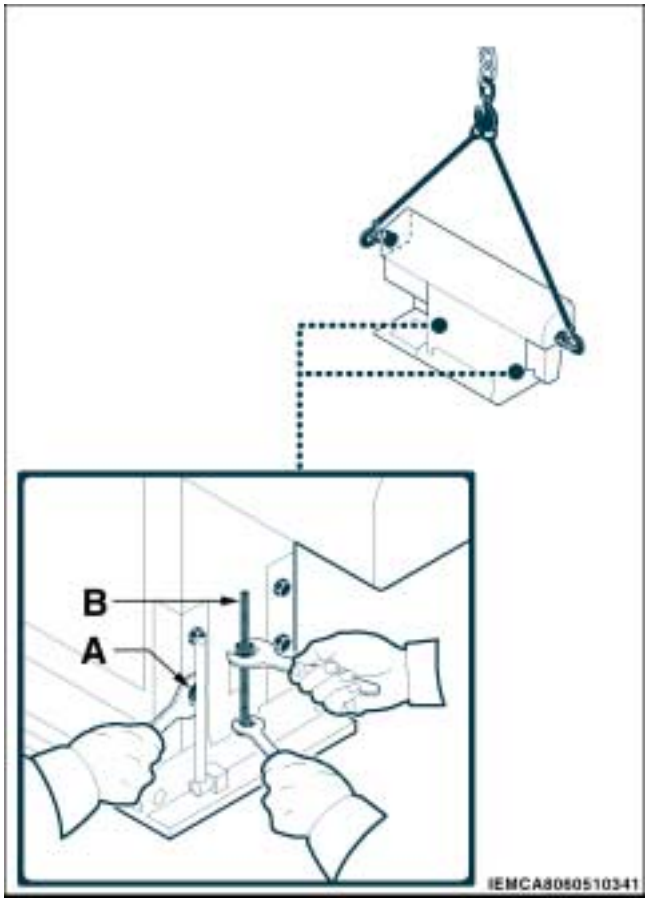
Below are listed the installation steps. For further details see the relating sections.

Loading axis height variation (section 4.8.1)
Magazine positioning (section 4.8.2)
Alignment and levelling (section 4.8.3)
Bar feeder fastening (section 4.8.4)

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:

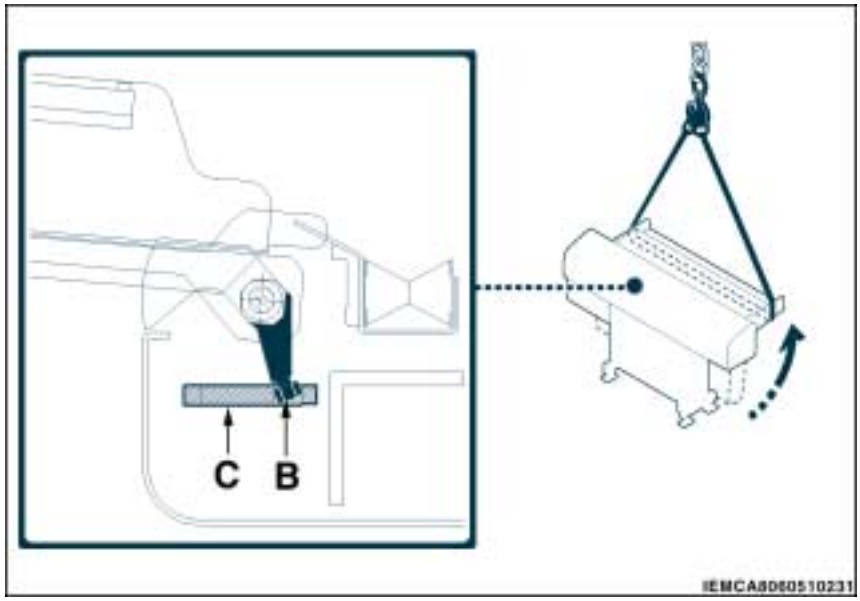
- Prepare the bar feeder to be lifted (sect. 4.4.).
- Stretch the ropes.
- Loosen, on both sides, the screws (B) and remove the screws (A).
- Bring the bar feeder to the loading axis height (see section 2.6. "Loading axis height" table).
- Refit the screws (A) and temporarily adjust the screws. (B).

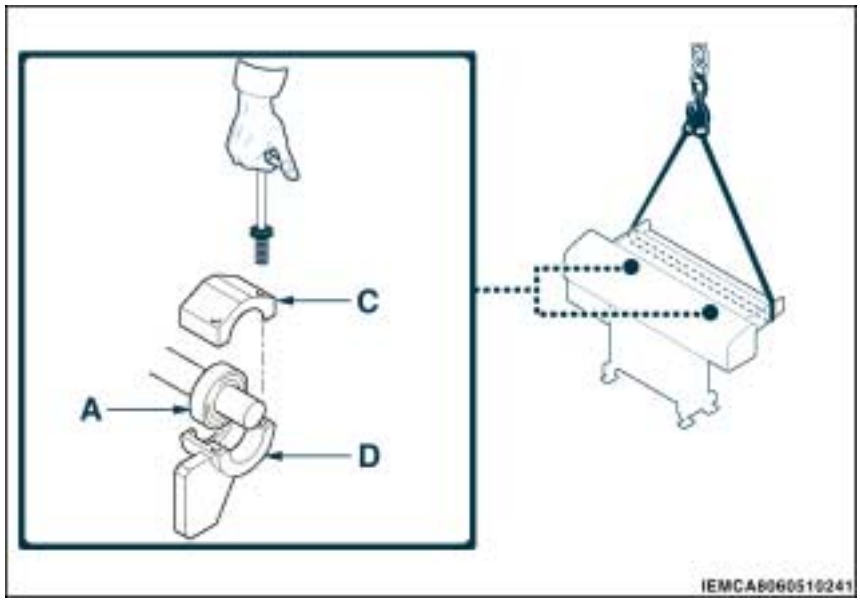


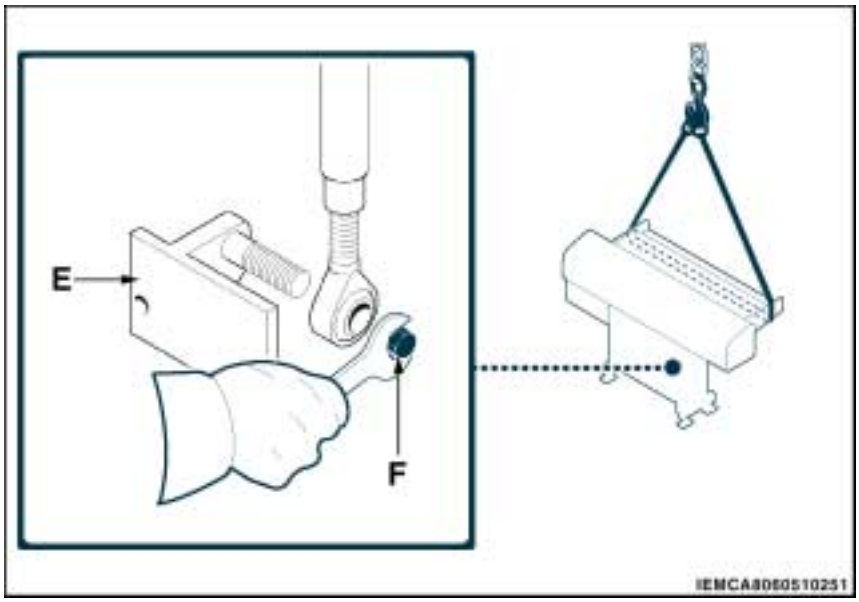
4.8.2 Magazine positioning

For the positioning proceed as follows.

- Lift the magazine with the help of a lifting device. Check that during the lifting, the pin (B) is correctly inserted into the cam seat (C).



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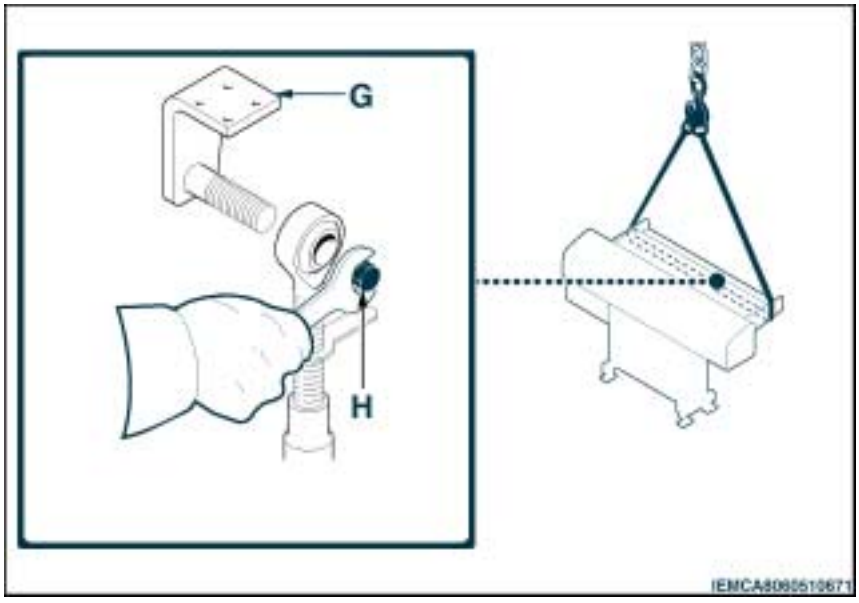
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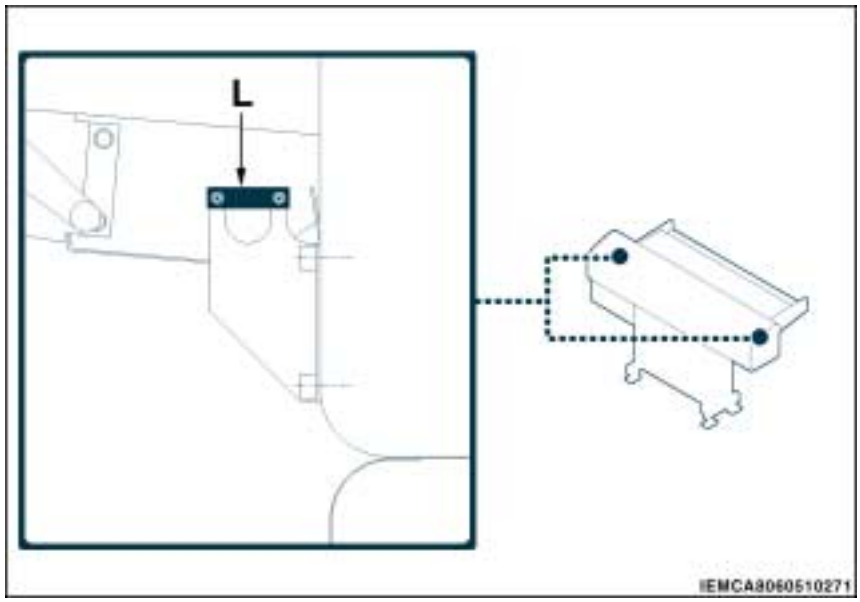
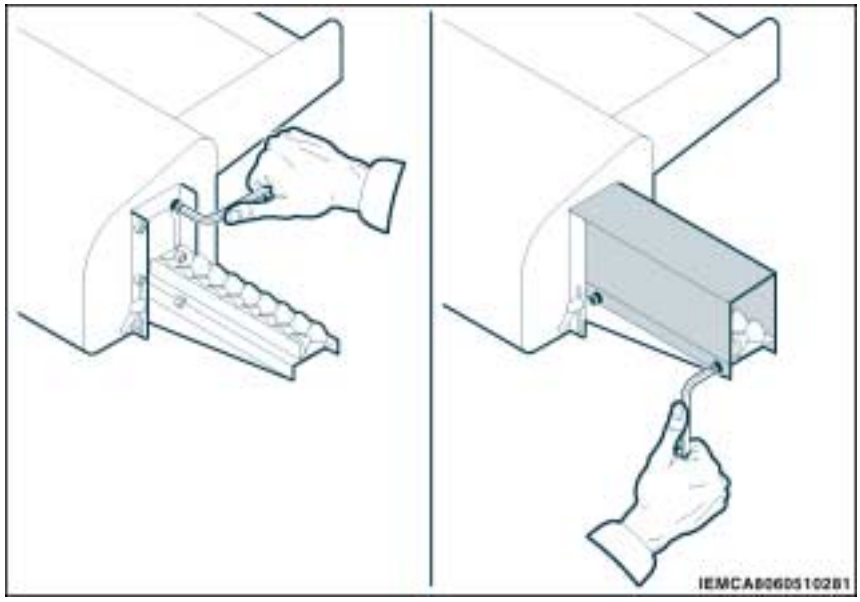
- Remove the safety brackets (L) and keep them for future removal.



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



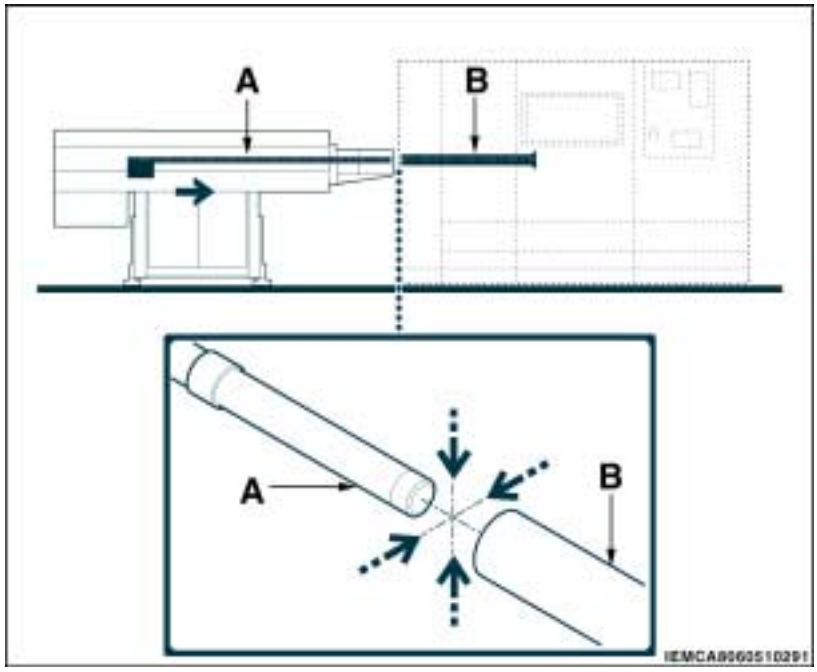
4.8.3 Alignment and levelling

IMPORTANT:

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.

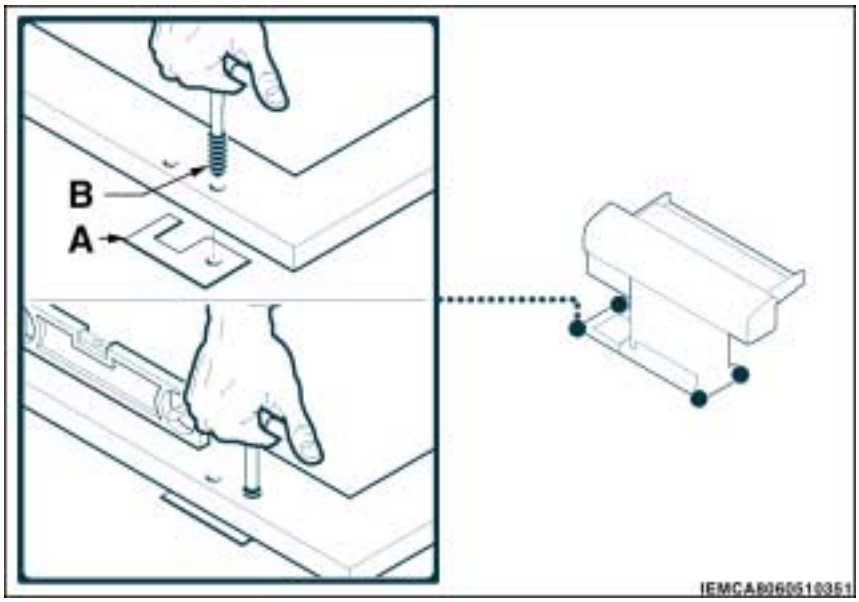
For these operations proceed as follows.

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

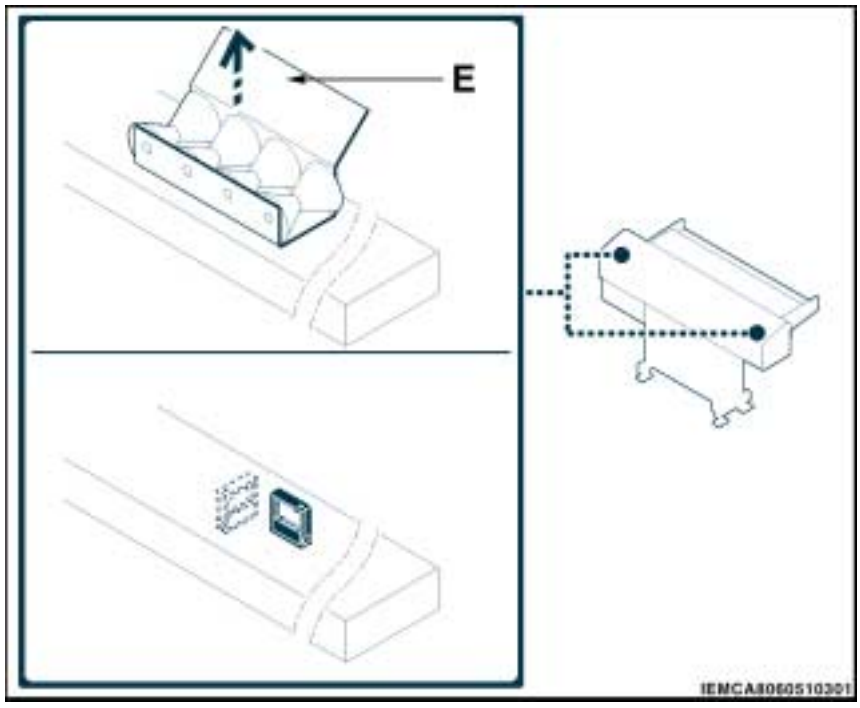


- Put the four plates (A) under the end points of the frame (see figure).
- Tighten the socket head screws. (B)

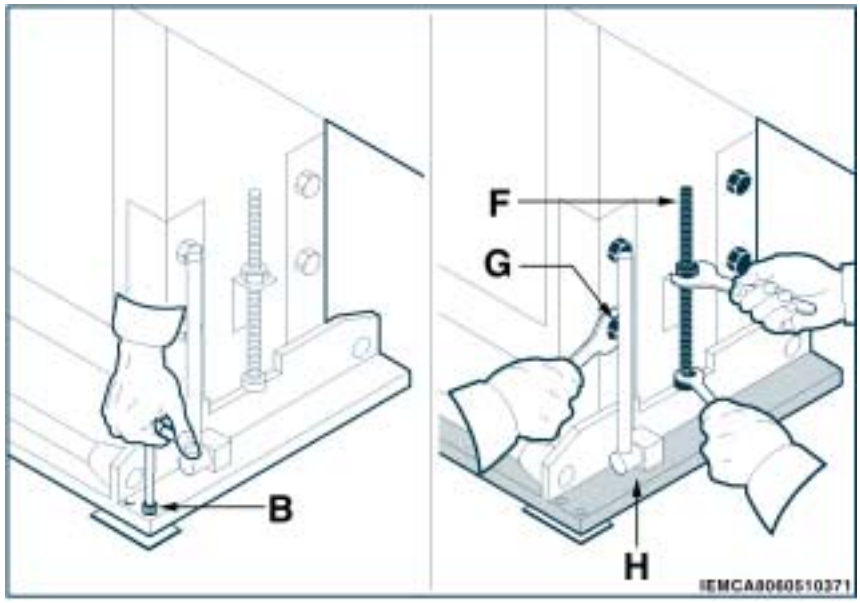
- Open the upper guard and manually shift the bar pusher (C) until you bring its end close to the spindle head (D).



- Remove two sections (E) 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.



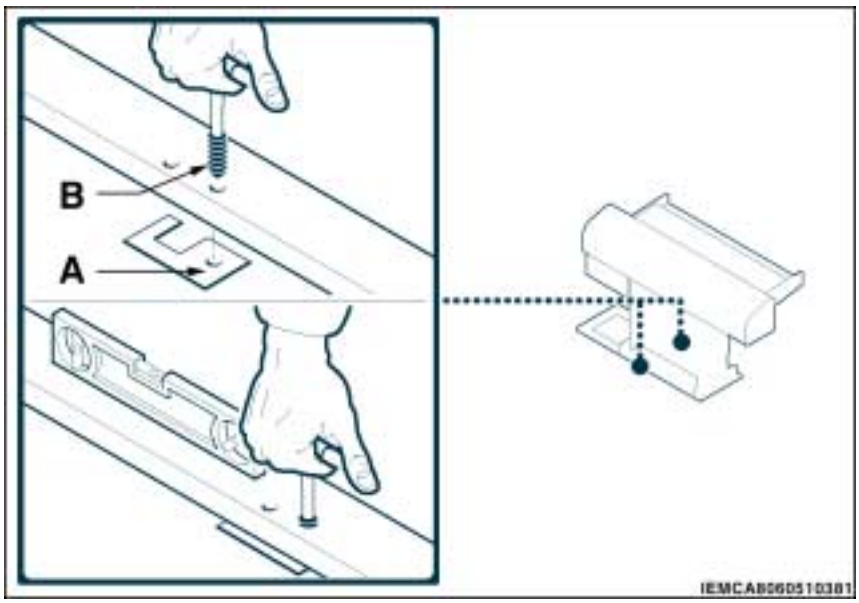
- Adjust the loading axis vertically through screws (B).
  This adjustment can also be carried out by means of the screws (F), after loosening the screws (G).
- Hit both sides of the frame (H) with a mallet for the adjustment of the loading axis horizontally.



4.8.4 Bar feeder fastening

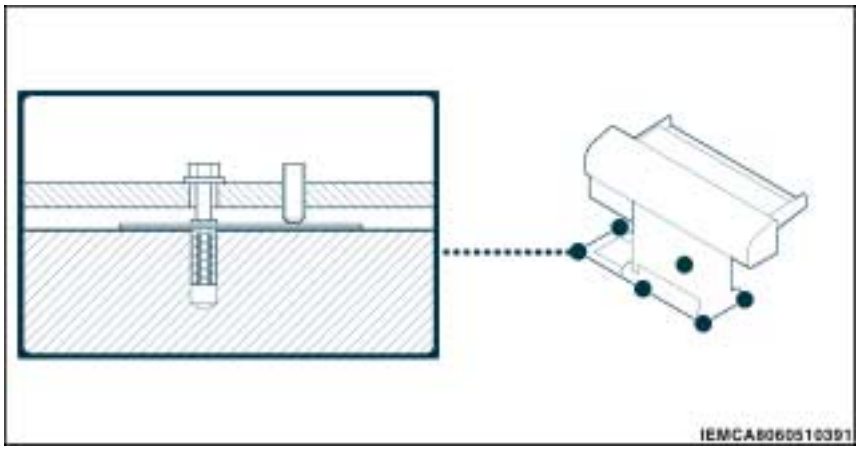
IMPORTANT:

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.



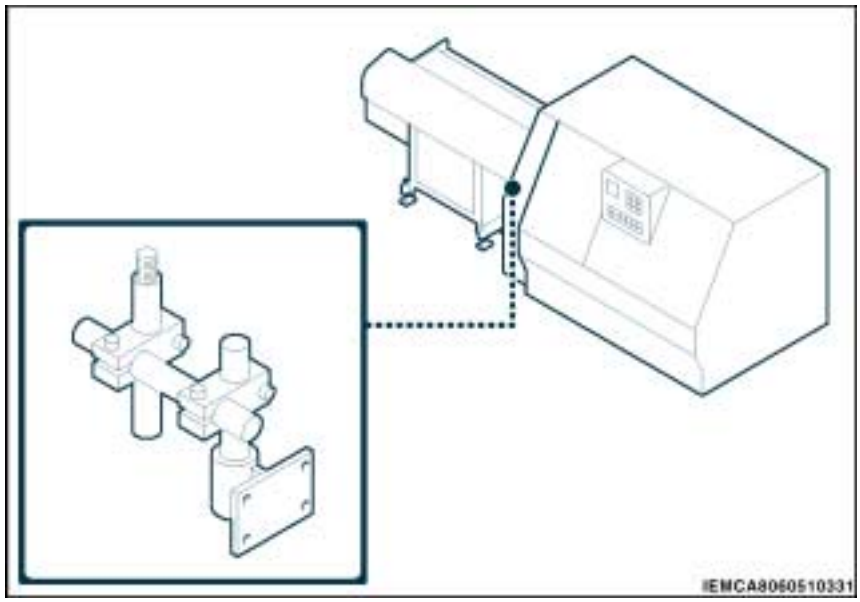
For the fastening proceed as follows:

- 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.

Note: the manufacturer recommends to fasten the bar feeder to the lathe by means of the appropriate kit in the figure. The figure has a merely indicative purpose; for further details contact a service centre (see service centre list).



4.9 CONNECTION TO THE POWER SUPPLY

IMPORTANT:

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 to carry out the connection to the power supply workmanly, 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 multipole connector provided with the bar feeder to the lathe socket.

4.10 WORKING PARAMETERS SETTING

By means of a hand-held control 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

IMPORTANT:

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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5.1 PRELIMINARY NOTE ON ADJUSTMENT

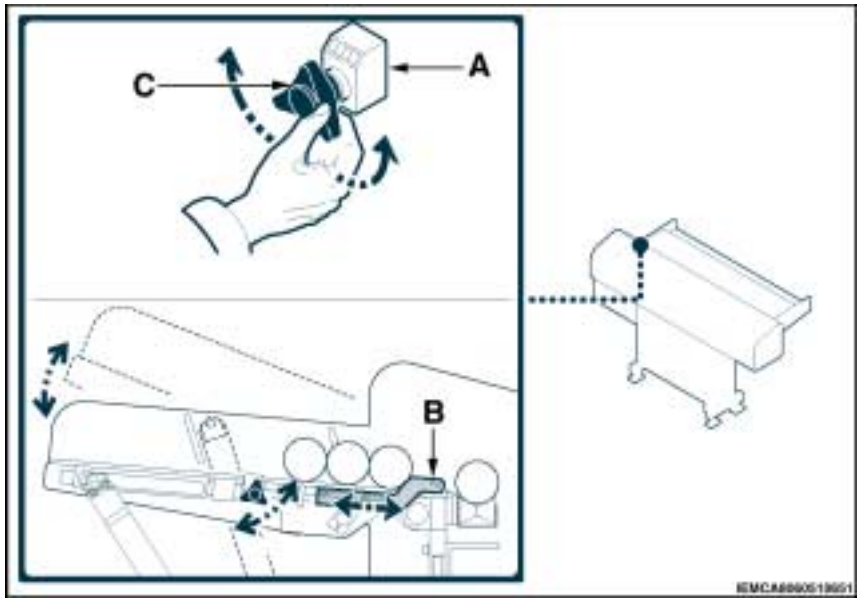
IMPORTANT:

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 damages and harm to people.

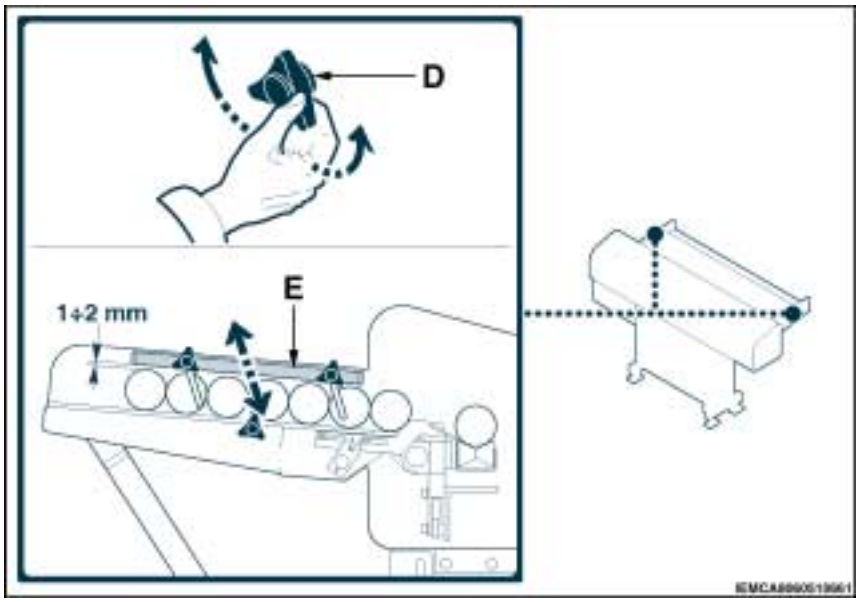
5.2 MAGAZINE ADJUSTMENT

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

- Rotate the knob (C) until displaying the diameter of the bar to be loaded, on the millimetre counter (A). At the same time the magazine inclination and the adjustment of the "stop" device (B) is obtained.



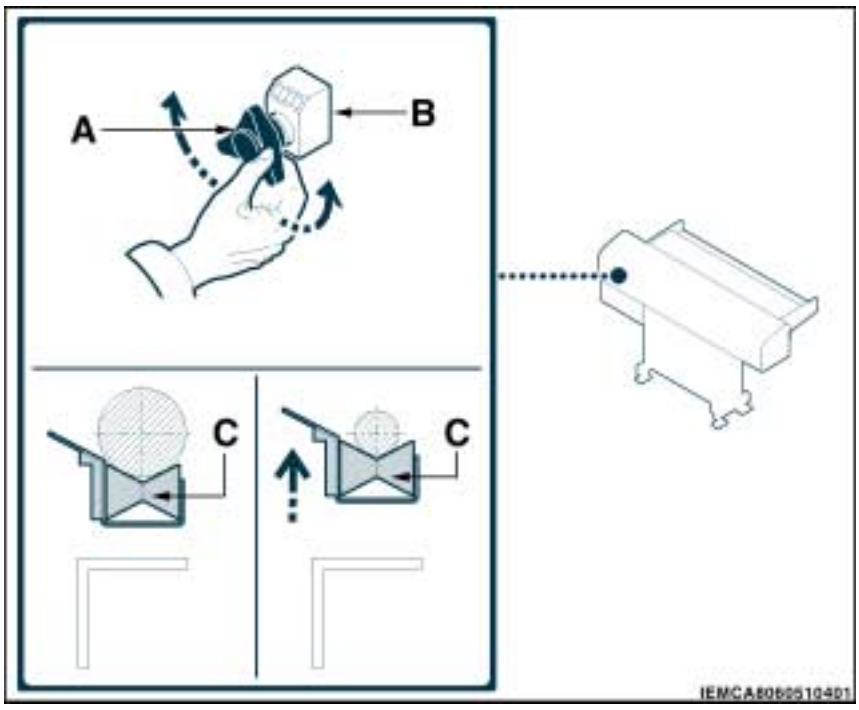
- Loosen the knobs (D), adjust the frame (E) at about 1- 2 mm from the bars (see figure) and tighten the knobs.



5.3 LOADING AXIS ADJUSTMENT

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

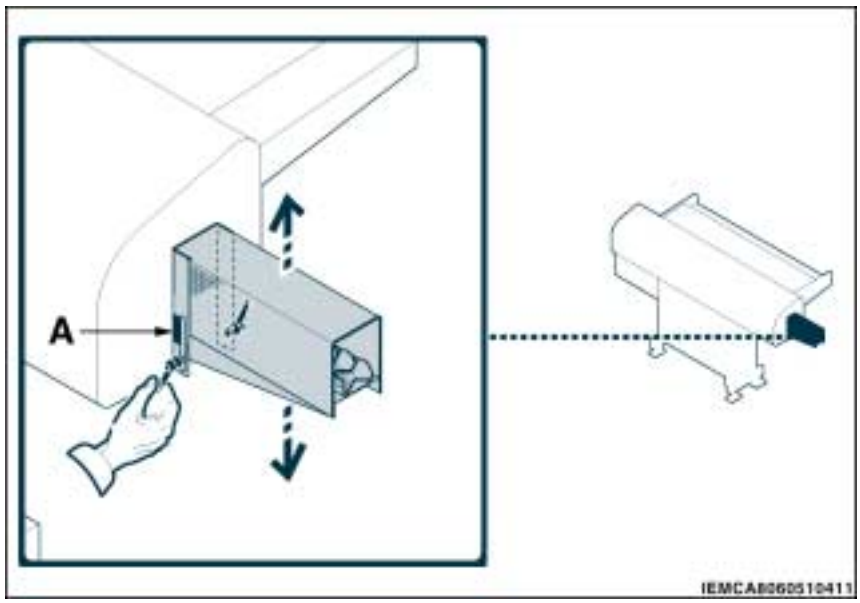
- Rotate the knob (A) until displaying the diameter of the barstock, on the millimetre counter (B).
- Check that with the lifted guide (C), the bar is aligned with the loading axis.



5.4 BAR FEEDER-LATHE GUIDE ADJUSTMENT

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

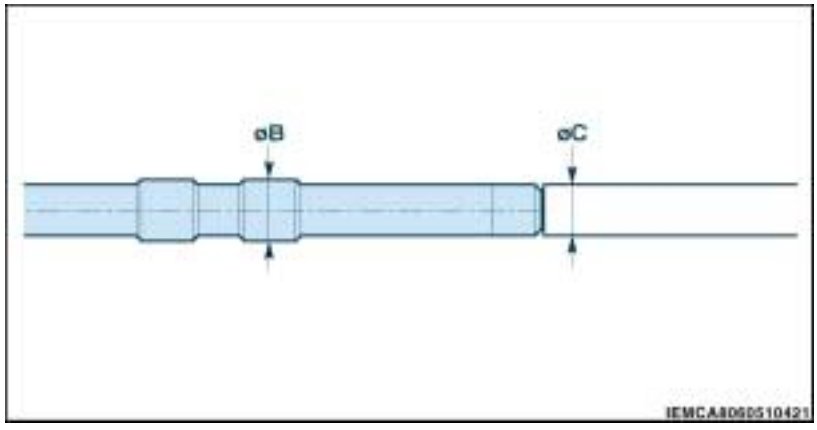
- Adjust the guide height, displayed on the graduated rod (A), in order to respect the values reported in the table.



Bar feeder-lathe guide height table

ø B - Bar pusher bearing diameter (mm)	ø C - Barstock diameter (mm)	Barstock guide channel height
12	5÷12	12
15	10÷15	15
	16÷19	16÷19 (*)
21	16÷21	21
	22÷80	22÷80 (*)

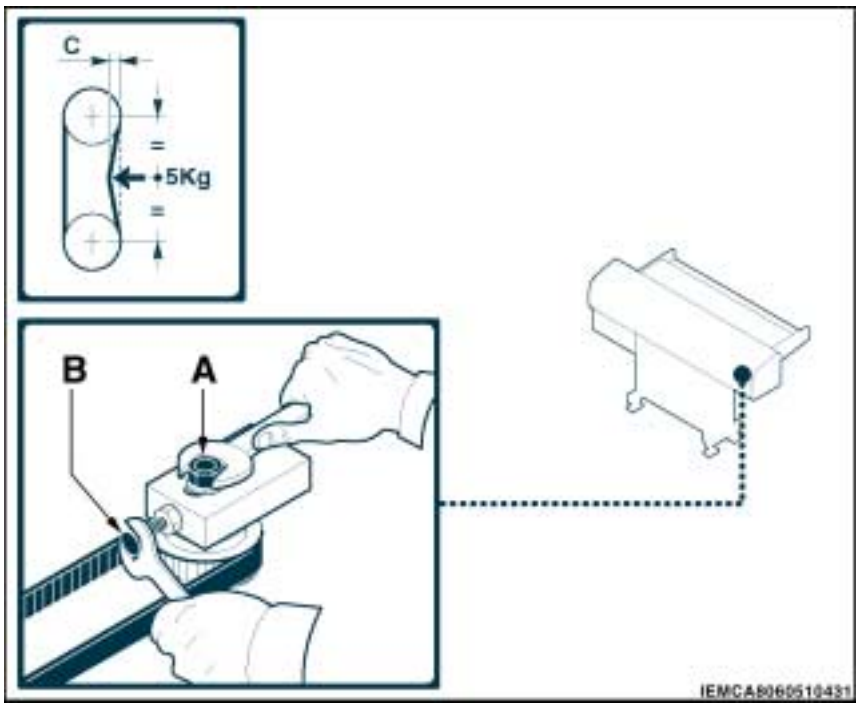
(*) The height must be equal to the barstock diameter (ø C).



5.5 FEED BELT ADJUSTMENT

For the adjustment proceed as follows:

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



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6.1 PRELIMINARY NOTE ON USE AND OPERATION

IMPORTANT:

the incidence of injuries cased 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' behaviours.

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.

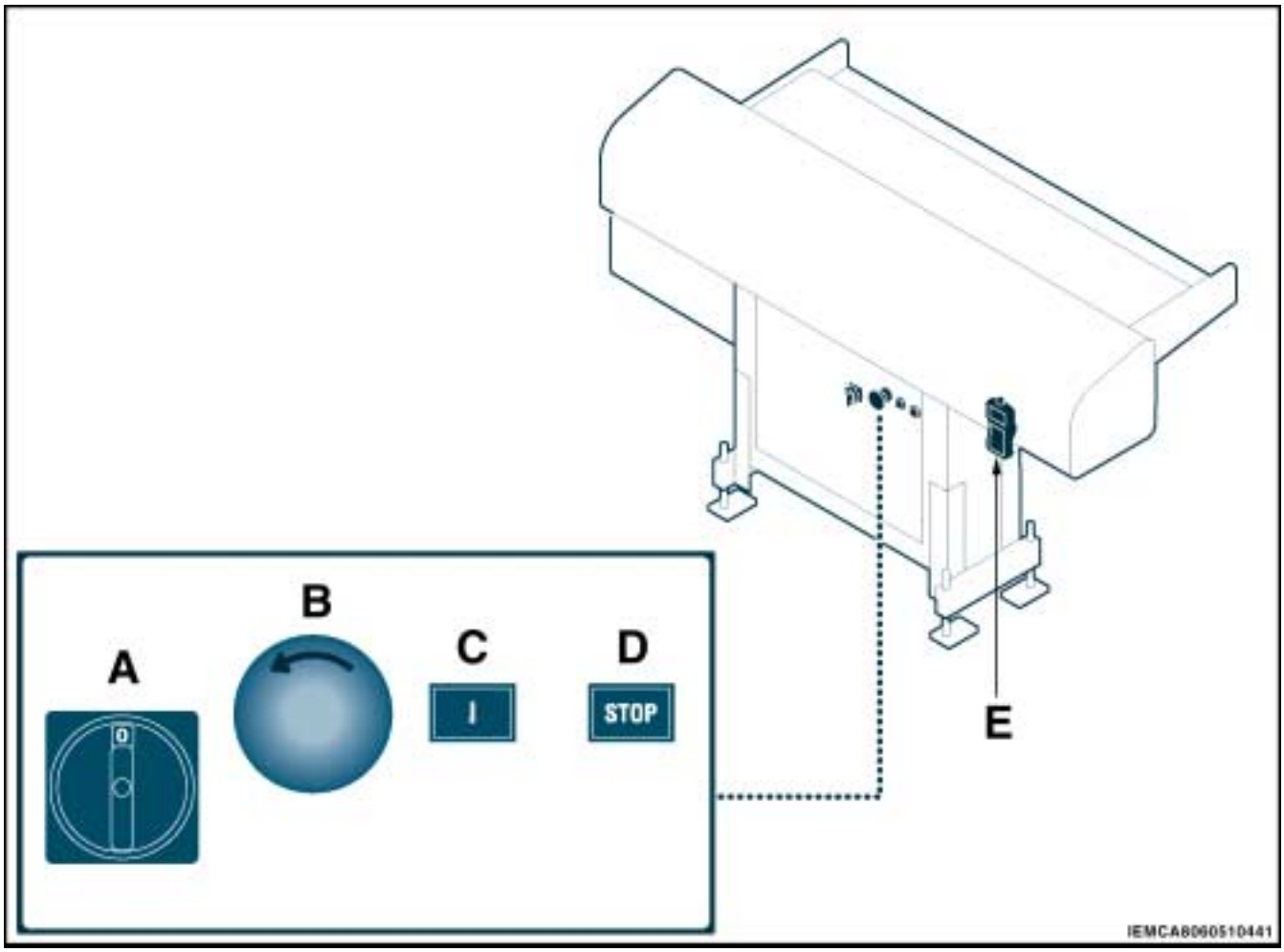
Exclusively use the machine according to the instructions provided by the manufacturer and do not tamper with any devices to obtain different performances.

Before use, make sure that the safety devices are perfectly installed and efficient.

The users, besides satisfying the above-mentioned requirements, must enforce all safety regulations and carefully read the control description and the commissioning.

6.2 CONTROL DESCRIPTION

The figure represents the control position on board the machine.



A -Main switch; for switching power supply on and off.
- 0 (OFF) power off.
- I (ON) power on.

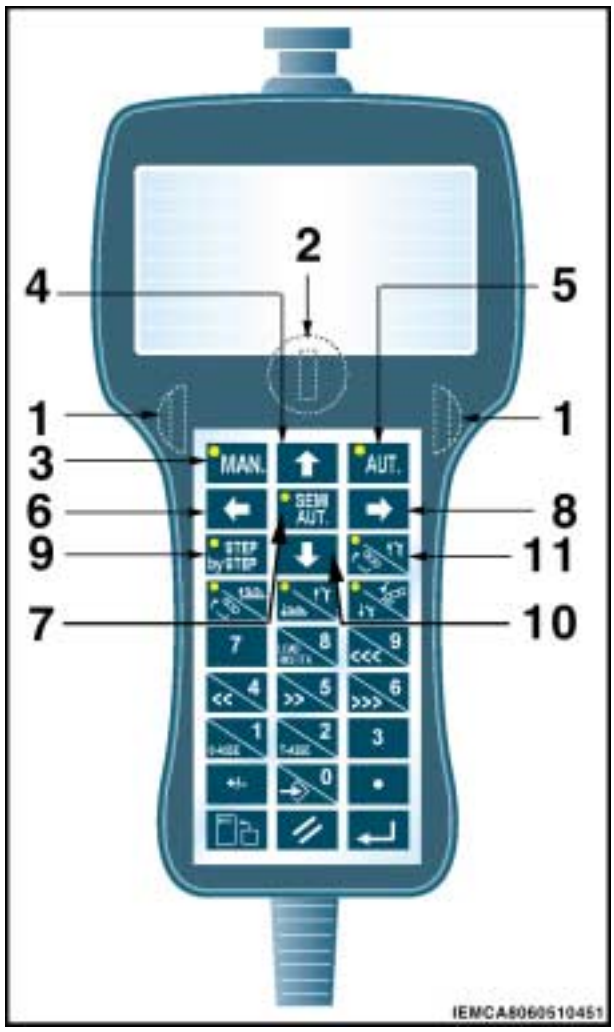
B -Emergency stop push-button; stops the bar feeder in case of emergency. For restart release the push-button manually.

C -Bar feeder start push-button (luminous green); press this push-button to start the bar feeder. Keep it pressed until it lights on.

D -Bar feeder stop push-button (red); press it stop the bar feeder. If an error occurs, eliminate the failure and press to reset.

E -Hand-held control; to activate bar feeder and lathe controls at a distance.

6.3 KEYBOARD MANUAL CONTROLS DESCRIPTION



1 - Start push-buttons; opposite push-buttons enabling the keys for some functions. Press both push-buttons and the key for the function to be selected simultaneously.

2 - It selects the keyboard modes;
- position A; 'message displaying' mode.
- position B; 'parameter displaying' mode.

3 - It selects the manual mode.

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

5 - It selects the automatic mode.

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

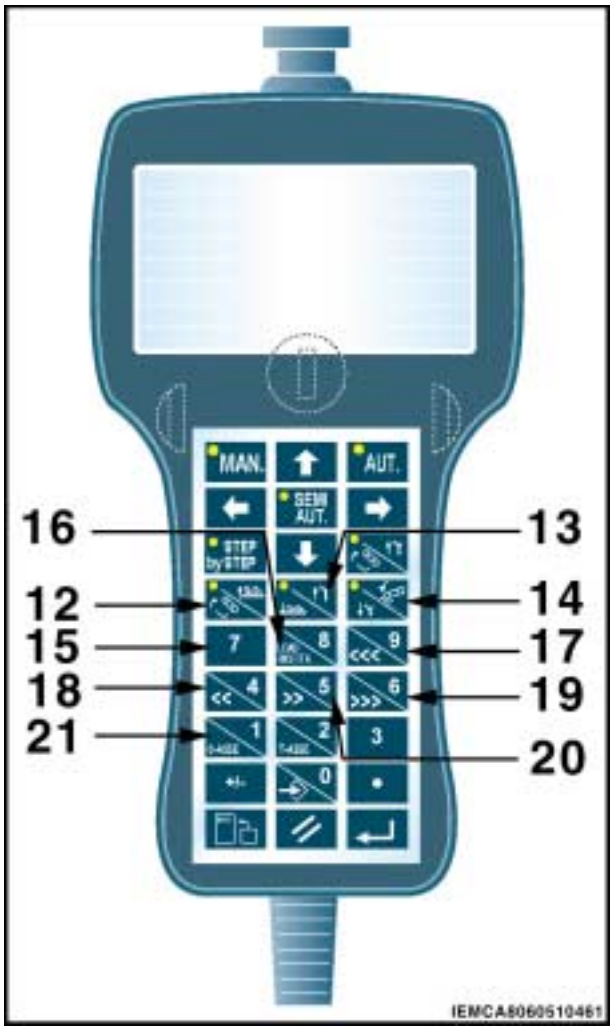
7 - It selects the semiautomatic mode.
Press to select, press again to deselect.

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

9 - It activates a 'step-by-step' operating cycle: a cycle step is carried out every time the key is pressed.

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

11 - It lifts the guide and bar pusher units.
It can be activated only after enabling the start push-buttons (1) (keep them pressed). Release when the led signalling that the movement ended lights up. Activate only if a failure occurs and the bar must be removed from the spindle (bar feeder side).



12 - It lifts the bar pusher, bar drop control devices and selector units. It can be activated only after enabling the start push-buttons (1) (keep them pressed). Release when led signalling that the movement ended lights up.

13 - It lifts the guide channel unit and lowers the bar drop control devices and selectors units. It can be activated only enabling the start push-buttons (1) (keep them pressed). Release when led signalling that that the movement has ended lights up.

14 - It lowers the guide channel and bar pusher units. It can be activated only after pressing the key (26) and enabling the start push-buttons (1) (keep them pressed). Release when led signalling that that the movement has ended lights up.

15 - It sets the numerical value.

16 - Multifunction key
- Sets the numerical value.
- Loads the PLC program. (input of default values in parameters)

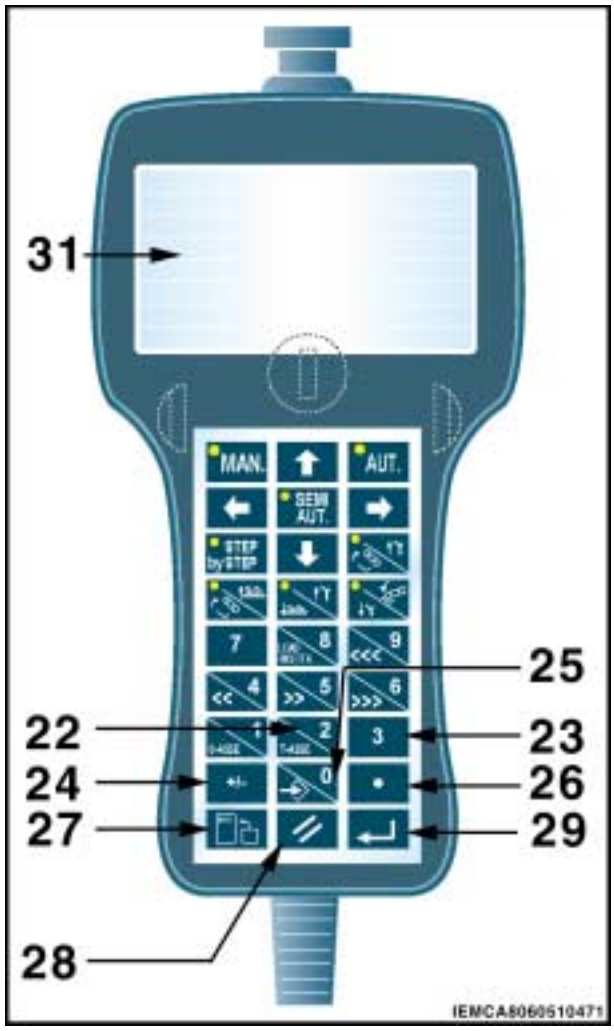
17 - Multifunction key
- Sets the numerical value.
- Moves the carriage unit at high speed.

18 - Multifunction key
- Sets the numerical value.
- Moves the carriage unit at slow speed.

19 - Multifunction key
- Sets the numerical value.
- Moves the carriage unit at slow speed.

20 - Multifunction key
- Sets the numerical value.
- Moves the carriage at high speed.

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



22 - Multifunction key
- Sets the numerical value.
- Sets the carriage motor.

This function must never be used in bar feeder everyday operation.

23 - It sets the numerical value.

24 - It sets the numerical value.

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

26 - Multifunction key
- Sets the 'point'.

It is also a further safety when enabling the key (14) function.

27 - It recalls the MAIN MENU.

28 - Multifunction key
- Stops the selection function.
- Resets the value before the non-confirmed modification.

29 - It confirms the set data.

30 - It stops the bar feeder; for restart manually release the push-button.

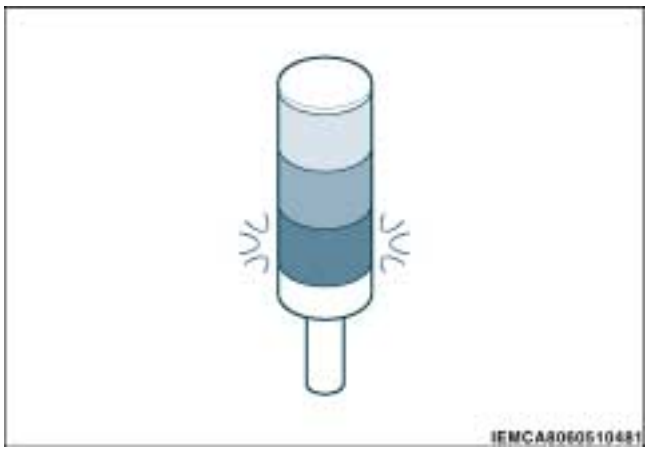
31 - Display; displays information concerning the service conditions (see "Keyboard instruction manual").

6.4 LUMINOUS SIGNAL DESCRIPTION

Red light ; signals that the bar feeder is in stop mode, or that it is in manual mode.

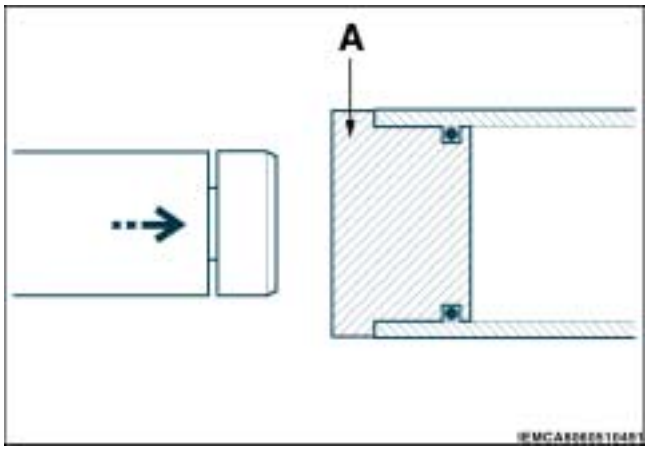
Green light; signals that the bar feeder is in automatic mode.

Blue light; signals that the bar feeder is carrying out the bar change.



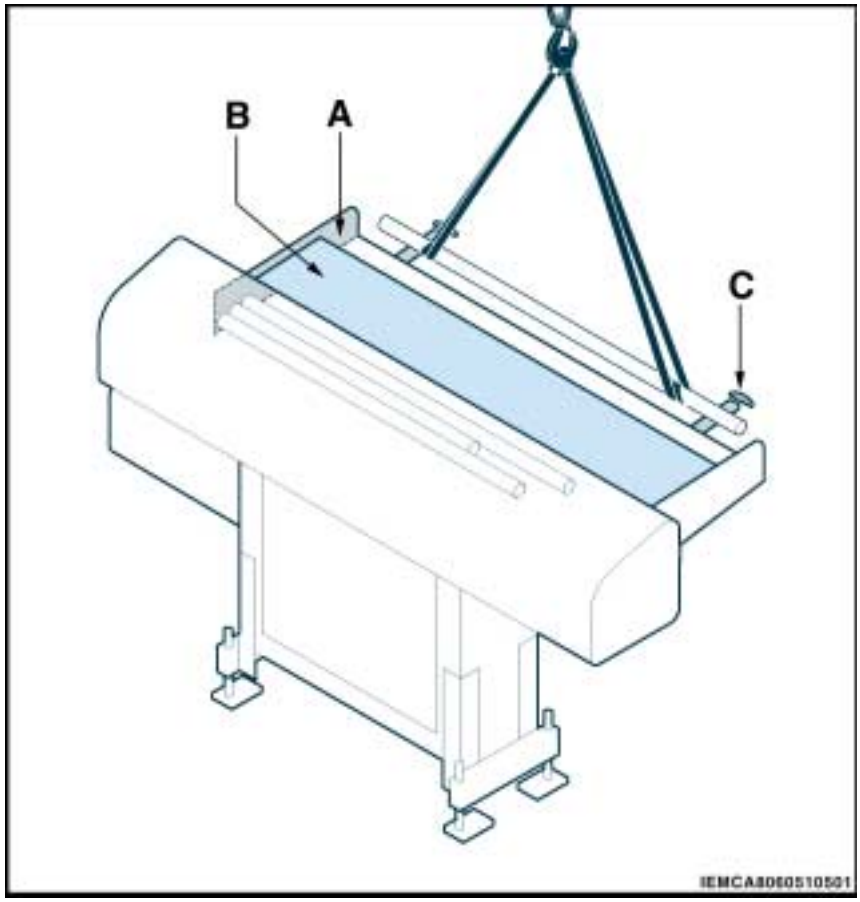
6.5 BAR PREPARATION (sections and tubes)

The bars, before being loaded in stock, must be chamfered in their lathe inlet end, in order to remove any exceeding burrs.
In the case of tubes, insert a plug (A) in order to create a bearing surface for the bar pusher and to avoid that the coolant comes out.



6.6 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 will have to prepare all necessary conditions to safeguard himself and those who are directly involved in them.It is extremely important to respect the regulation in force on the subject of labour safety.



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.

- Adjust the frame (B) (see section 5.2.), for a correct loading. Use, if necessary, supplementary extractable racks (C).

6.7 BAR FEEDER TOOLING

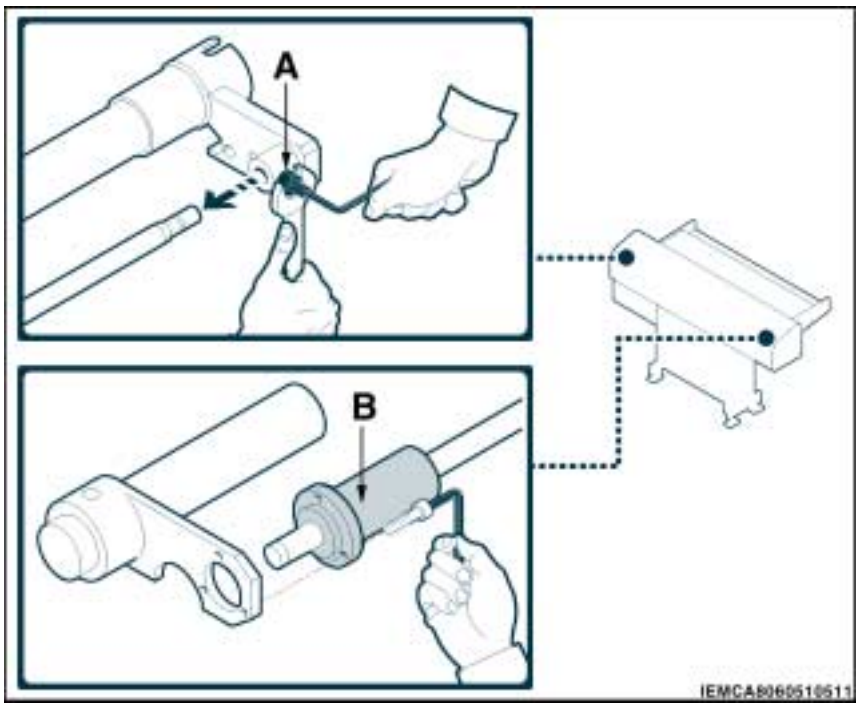
Before starting machining bars with features different from the previous ones, it proves necessary to tool the bar feeder proceeding as follows.

-Replace, if necessary, the bar pusher (see bar and bar pusher diameters table section 2.5. and 6.8.).
-Replace, if necessary, the lathe spindle liners (see section 6.9.).
-Adjust the magazine and the bar pushing frame (see section 5.2.).
-Adjust the loading axis (see section 5.3.).
-Adjust the bar feeder-lathe guide (OPTIONAL see section 5.4.).
-Prepare the bars and load them on the magazine (see section 6.5. e 6.6.).
-Reset, if necessary, the work parameters (see "Keyboard instruction manual").

6.8 BAR PUSHER CHANGE

For this operation, proceed as follows.

- Open the top cover.
- 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 top cover again.

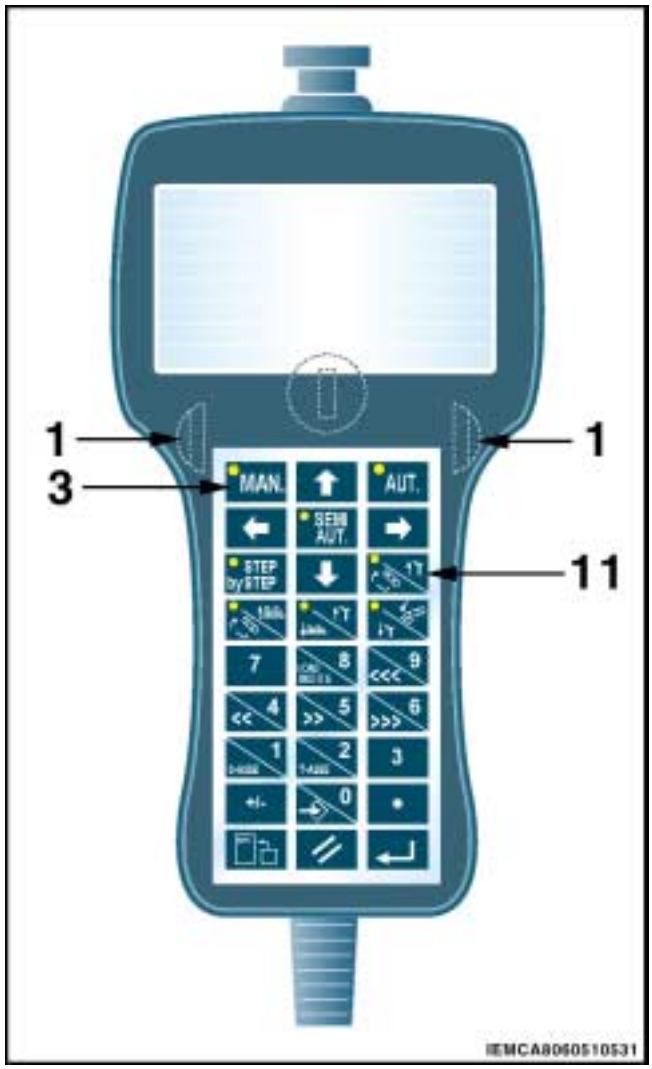


6.9 LATHE SPINDLE LINER CHANGE

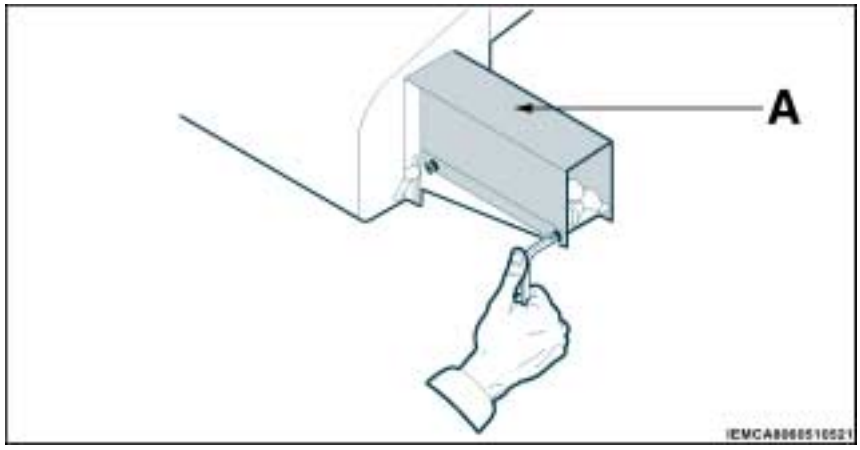
In order to insert the bar correctly, it is recommended to insert the spindle liner in the lathe head. The internal diameter must be a millimetre longer than the bar pusher bearing outside diameter (see "Bar and bar pusher diameters table" section 2.5.).
The replacement has to be made in the area between the lathe and the bar feeder. If equipped with the shifting device (see section 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 the key (11) at the same time in order to lift the guide and the bar pusher units.



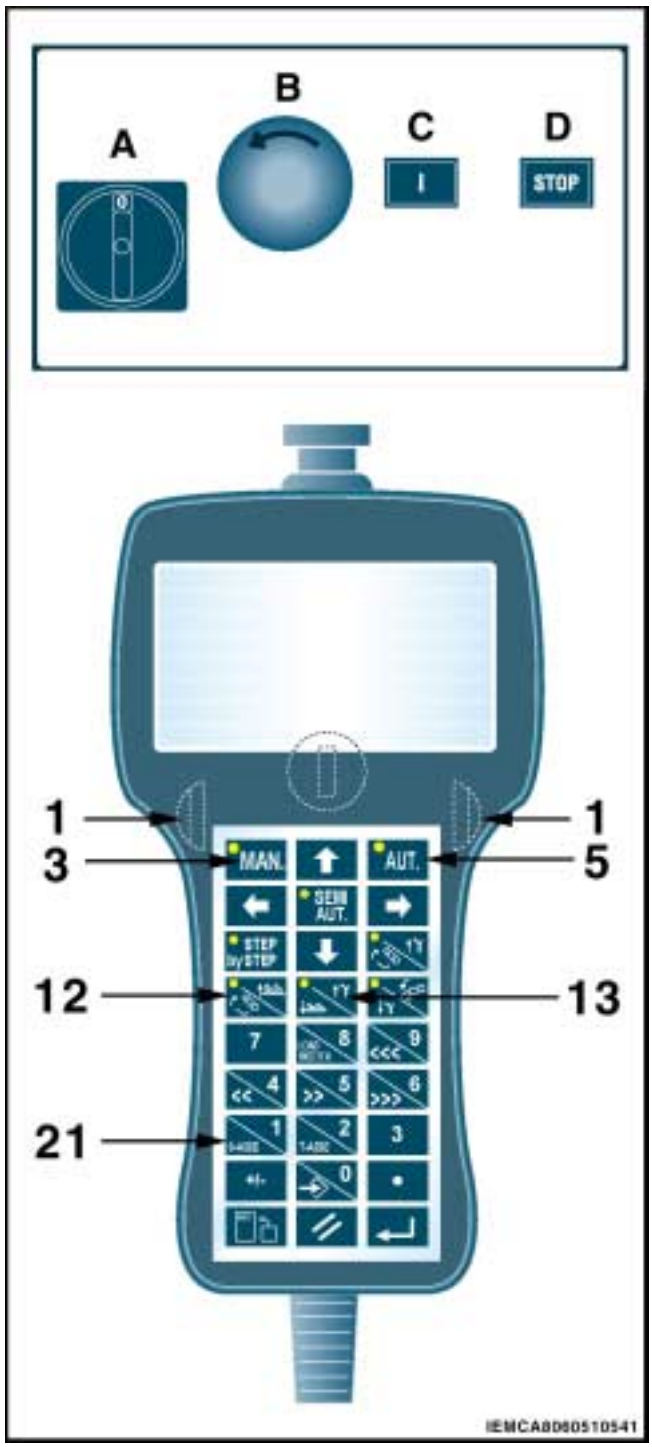
- Press the emergency stop key in order to stop the bar feeder in safety conditions.
- Disassemble the safety guard (A) (if the bar feeder is equipped with bar feeder-lathe guide).
- Open the top cover.
- Remove the sleeve (bar feeder side) and replace it.
- Reset the bar feeder to its initial conditions.



6.10 AUTOMATIC CYCLE START

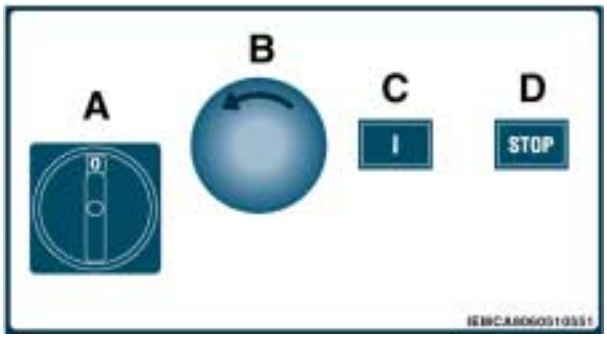
For this operation proceed as follows.

- Connect the lathe power supply.
- Rotate the bar feeder main switch in I (ON) position to connect the power supply.
- Press the pushbutton (C) on board the machine to start the bar feeder.
- Press the key (3) to select the "manual mode".
- Press the start buttons (1) and the key (21) at the same time to carry out the bar feeder "Zero Setting".
- Press the start buttons (1) and the key (12) at the same time to load the first magazine bar.
- Press the start buttons (1) and the key (13) at the same time to lift the guide unit and lower the bar drop control device unit.
- Press, for at least five seconds, the key (5) to start the automatic cycle.



6.11 ORDINARY STOP

To stop the end working proceed as follows.



IMPORTANT:

for ordinary stop do not use emergency pushbuttons.

- Wait for workpiece machining and automatic cycle end.
- Press the pushbutton (D) on board the machine to stop the bar feeder.
- Stop the lathe.
- Rotate the bar feeder main switch into O (OFF) position to disconnect the power supply.

6.12 EMERGENCY STOP

IMPORTANT:

press the bar feeder or the lathe emergency pushbutton in impending danger conditions. Their functions stop instantaneously. After having normalised the running conditions, release the pushbutton to authorise its operation.

6.13 STEP-BY-STEP" CYCLE

In order to check the bar feeder general running conditions, it may be necessary to carry out a "step-by-step" cycle.
For this operation, proceed as follows.

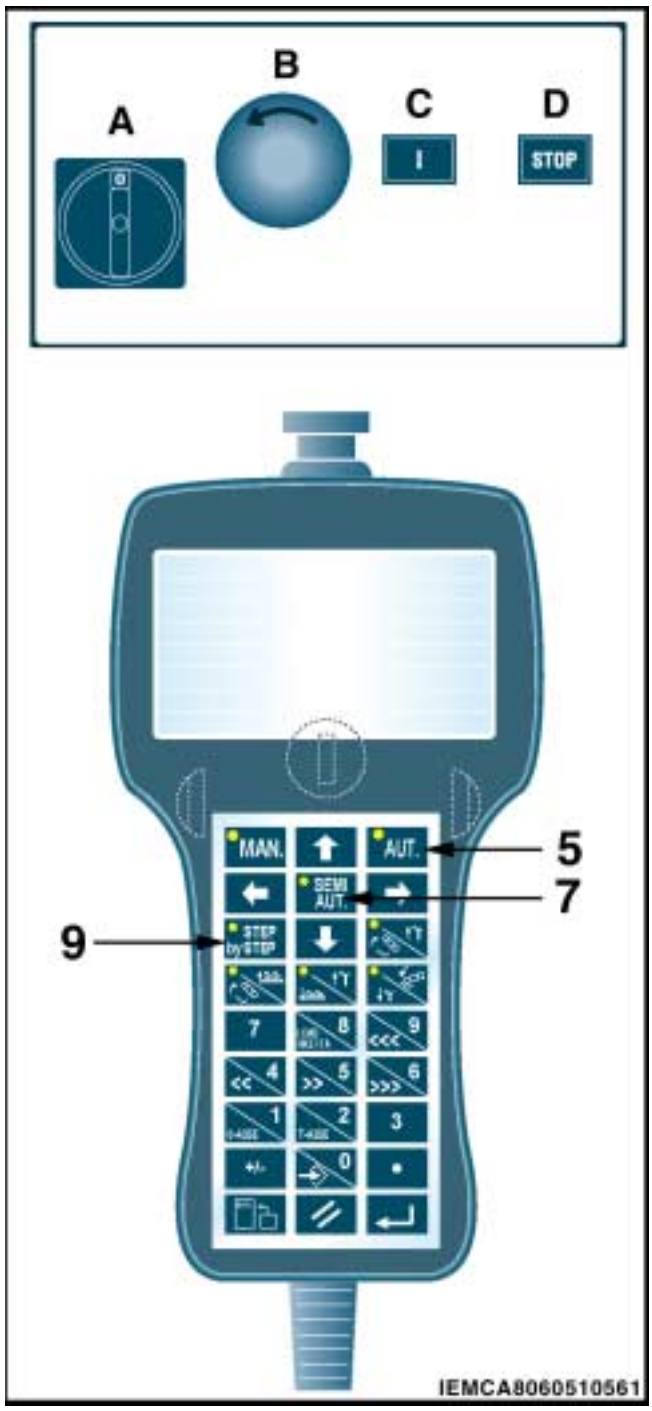
- Press the pushbutton (C) on board the machine to start the bar feeder.

Check that on the display appears the message "BAR FEEDER IN POSITION"; the bar feeder is ready for the "step-by-step" cycle.

- Press the key (7) and, then, the key (5).

- Press the key (9) in order to carry on the first "step".

- Press several times the key (9), waiting for the components stop, in order to carry out the subsequent steps.



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7.1 PRELIMINARY NOTE ON MAINTENANCE

IMPORTANT:

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 damages and harm to people.

7.2 SCHEDULED MAINTENANCE

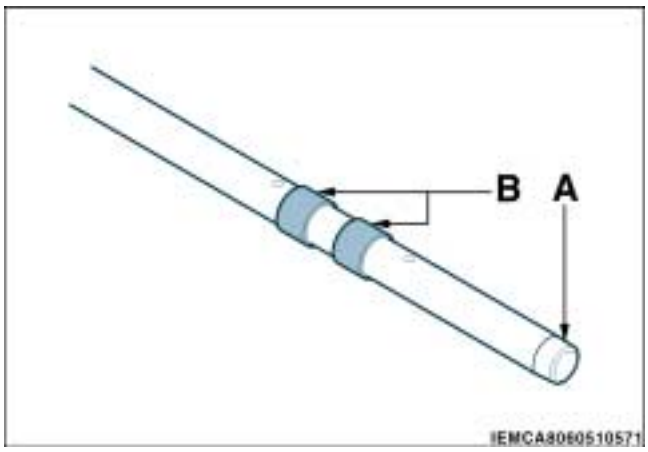
IMPORTANT:

keep the bar feeder in conditions of maximum efficiency, carrying out the programmed maintenance operations provided by the manufacturer. A good maintenance will allow the best performances, a longer service life as well as a constant keeping of safety requirements.

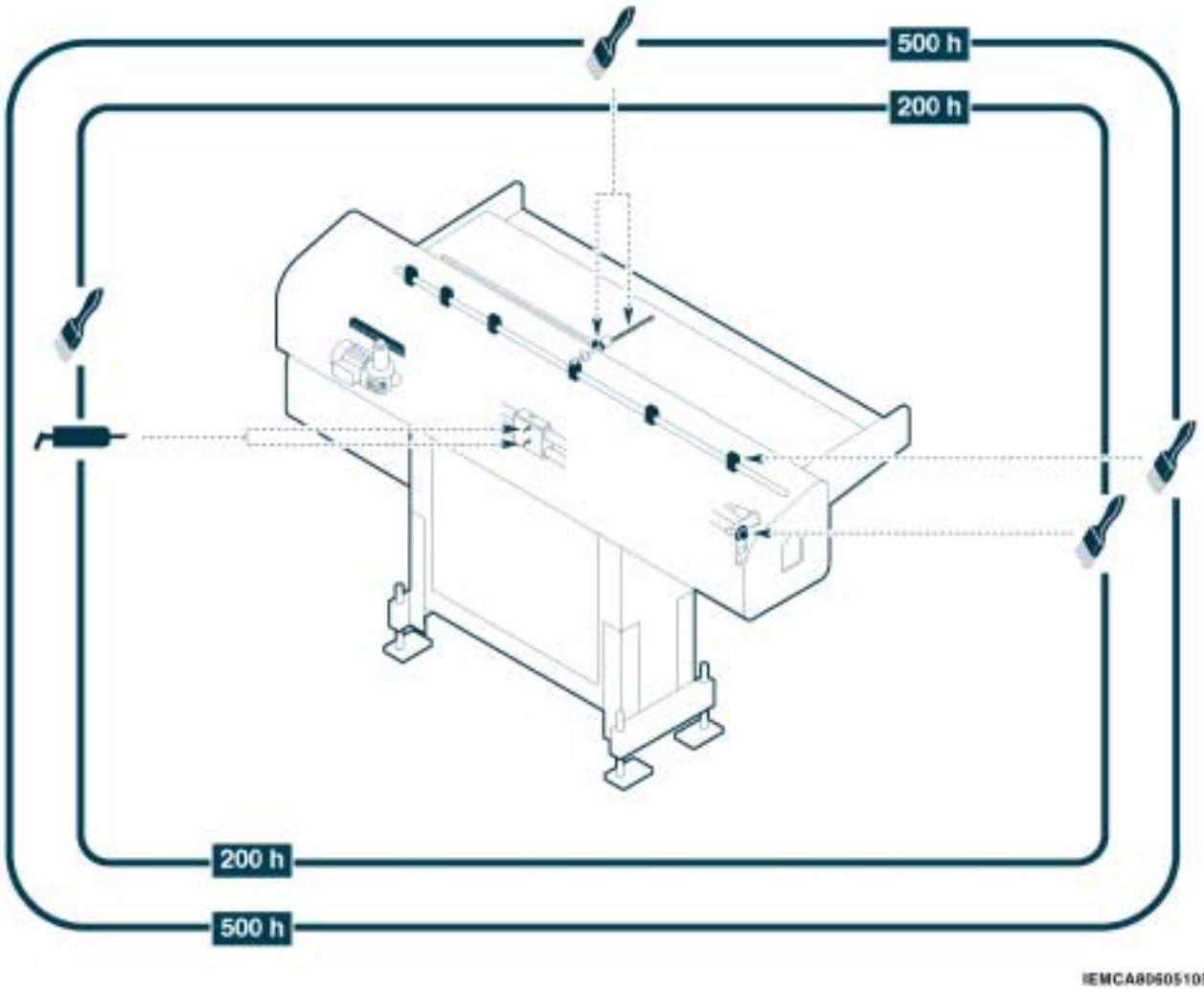
Component	Kind of intervention	Frequency				
		Hours				Yearly
		200	500	1250	2500	
Feed belt	Check and possibly adjust tension (section 5.5.)			•		
	Test wear. If necessary replace it (section 9.3.)				•	
Revolving tip	Test wear (section 7.3.). If necessary replace it (sec.9.2.).	•				
Carriage unit	Lubricate the sliding guides (section 7.4.)	•				
Rack	Lubricate (section 7.4.)	•				
Magazine	Lubricate the bevel gear pair (section 7.4.)		•			
Stop device	Lubricate forks and pins (section 7.4.)		•			
Bar-pushing unit	Lubricate the lifting toothed wheels (section 7.4.).	•				
PLC	Replace battery (section 9.4.)					•
Hand-held control	Replace battery (section 9.5.)					•

7.3 REVOLVING TIP CHECK

For checking proceed as follows:
- Disassemble the bar pusher, (see section 6.8.).
- Check that the push-rod (A) and the bearings (B), of the revolving tip, move freely and without any excessive play.
- If need be, replace the revolving tip (see section 9.2.).
- Assemble the bar pusher again.



7.4 GREASING POINTS



 Grease  Grease

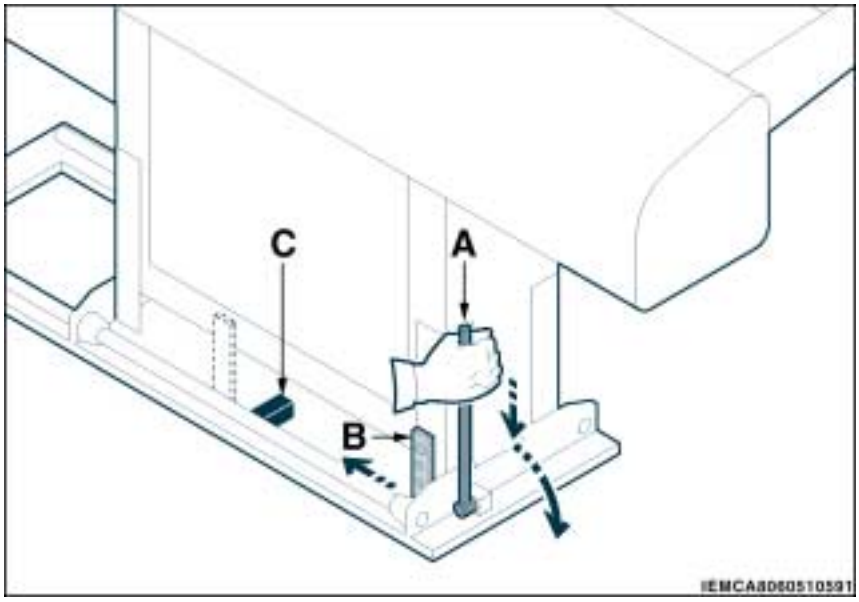
7.5 DISPLACEMENT DEVICE USE

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.

For this operation proceed as follows.

- 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

TROUBLES	CAUSES	RIMEDIES
The bar feeder does not start.	Blackout.	Check the electrical connection.
	Open carter.	Close the carter.
	Emergencies on.	Disable emergencies.
	Burnt motor thermal cutout.	Reset the thermal cutout with the appropriate pushbuttons.
The bar feeder is in start conditions but the automatic cycle does not start.	No lathe signal.	Check the electrical connection with the lathe.

8.2 BAR MAGAZINE TROUBLESHOOTING

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

8.3 TROUBLESHOOTING DURING BAR FEEDING

TROUBLES	CAUSES	RIMEDIES
The 1st feeding and feeding are stopped unexpectedly.	Burnt motor thermal cutout.	Reset the thermal cutout with the appropriate pushbuttons.
The bar hardly enters lathe spindle.	The guides are not well adjusted.	Adjust the guides (see section 5.3.).
	The bar feeder - lathe guide is not well adjusted.	Adjust the guide (see section 5.4.).
	The bar feeder is not aligned with the lathe.	Check and correct the alignment.
The carriage cannot complete 1st feeding stroke	The bar is too long.	The maximum length cannot exceed lathe spindle length.
The hardly enters the lathe collect.	Excessive burr at the bar end.	Before loading, remove any burrs from bars.

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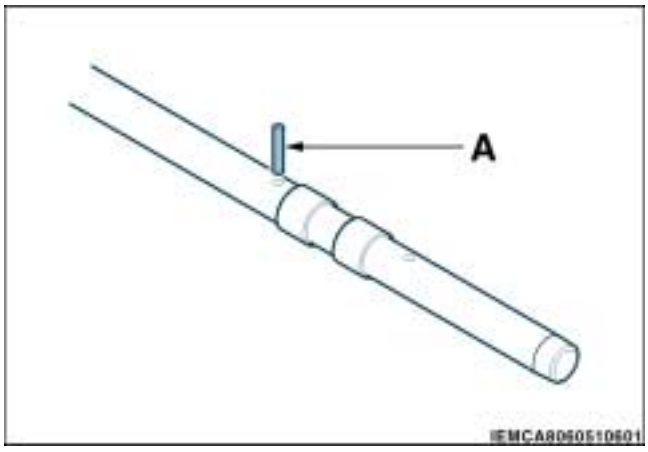
9.1 PRELIMINARY NOTE ON PARTS REPLACEMENT

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 damages 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.

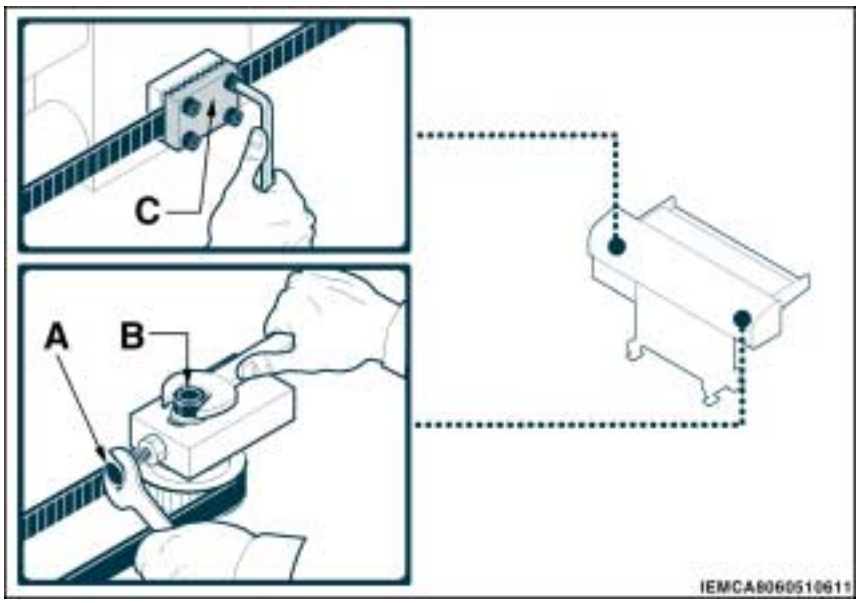
9.2 REVOLVING TIP REPLACEMENT

For replacement proceed as follows:
- Open the top cover.
- Disassemble the bar pusher, see section 6.8.
- Remove the pin (A) in order to disassemble the revolving tip.
- Assemble the new revolving tip and insert the new pin.
- Assemble the bar pusher again.
- Close the top cover.



9.3 FEED BELT REPLACEMENT

For this operation proceed as follows:
- Open the top cover.
- Loosen the 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 belt tension (see section 5.5.).
- Close the top cover again.

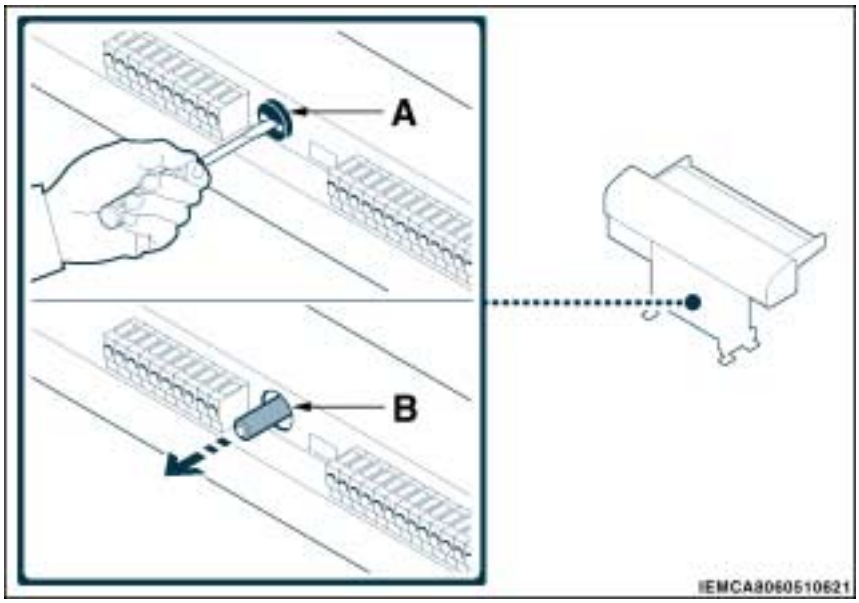


9.4 PLC BATTERY REPLACEMENT

Replace the battery when on the hand-held control appears the message "PLC battery exhausted" or once a year.

IMPORTANT:

when this message is displayed, it is necessary to replace the battery within a day, in order to prevent data from being erased from the "PLC/CN Software".



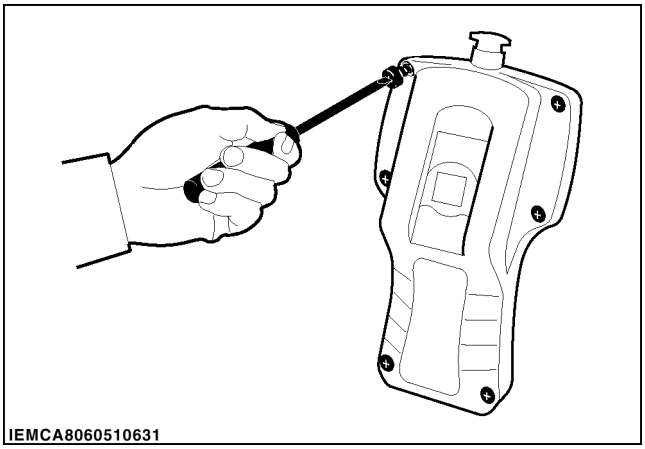
For replacement proceed as follows.
- unscrew the plug (A) and extract the battery (B);
- insert a new battery (AA 3.6 Volt Lithium type), take care of inserting it in the correct way and screw the plug (A) again.

9.5 KEYBOARD BATTERY REPLACEMENT

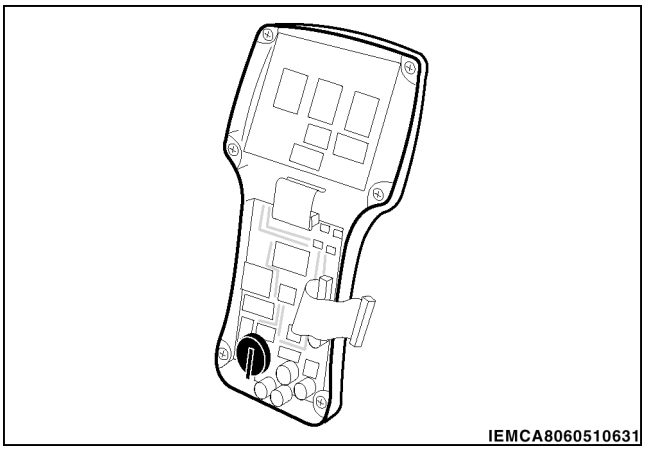
Replace battery once a year.

IMPORTANT:
the non-replacement implies the clock-dater memory erasure.

For replacement proceed as follows.
- Disconnect the power supply.
- Tighten the six screws and disassemble the cover.


IEMCA8060510631

- 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.
- Restore the power supply.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9.6 RECOMMENDED SPARE PARTS

IMPORTANT:

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 are listed the recommended spare parts to have in stock.

Code	Denomination	Features	Notes	Quantity
32210013	Sensor	BERO 3RG4012-0AG33 BERO		2
806002286	Roller conveyor guide unit			1
24373000	Feed belt	HTD 8 M20 479 PA		1
	Bar pusher		Specify the diameter	1
	Revolving tip		Specify the diameter	1

9.7 BAR FEEDER DISMANTLING

IMPORTANT:

this activity must be carried out by expert operators, respecting the laws in force on the subject of labour safety. Do not disperse in the environment products that are not decomposable into organic substances, lubricating oil and nonferrous components: e.g. rubber, PVC, resins, etc. Carry out their disposal by respecting the laws in force on the subject.

UK :	Kitagawa Europe Ltd.	7 Dolphin Industrial Estate, Southampton Road SP12NB Salisbury	Phone ++44 1722 421155 Fax ++44 1722 421071 www.kitagawaeurope.com
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GERMANY: *(Neue Länder)*	Heyde Maschinen Service	Albin-Trommler-Str. 3 D-08297 Zwönitz	Tel. ++49 037754 / 5090 Telefax ++49 037754 / 50920 - Email Heyde-maschinen-service@t-online.de Heyde-zwoenitz@t-online.de
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