

# GENIUS 226

Ⓒ MANUAL FOR USE AND MAINTENANCE

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S/N





# GENIUS 226

## AUTOMATIC HYDRAULIC SUSPENSION BAR FEEDER

Ⓒ MANUAL FOR USE AND MAINTENANCE

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 Operations described in paragraphs showing this symbol, must be performed by qualified and skilled personnel only. Any other operation can be performed either by qualified personnel or by professional bar feeder operators.



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

## 1.1. WARRANTY CONDITIONS

---

The warranty validity is conditional on good alignment between the bar feeder and the lathe and the subsequent bar feeder fixing to the ground with expansion plugs, as explained in the sections “Levelling and alignment” and “Feeder fastening”.

## 1.2. MANUAL PURPOSE

---

This manual has been written and supplied by the manufacturer and is integral part of the bar feeder and of its equipment.

The compliance with the instructions contained herein ensures the operator and bar feeder safety as well as a running economy and a longer life of the bar feeder itself.

In order to allow a quick search of contents, consult the descriptive index.

Particularly important parts of this manual have been highlighted in bold type and preceded by the following symbols:



**DANGER - WARNING:** shows impending danger which might cause serious harm, hence it is necessary to pay the greatest attention.



**CAUTION:** in order to avoid accidents or damages to property, suitable measures shall be adopted.



**INFORMATION:** Information: technical instructions having particular importance.

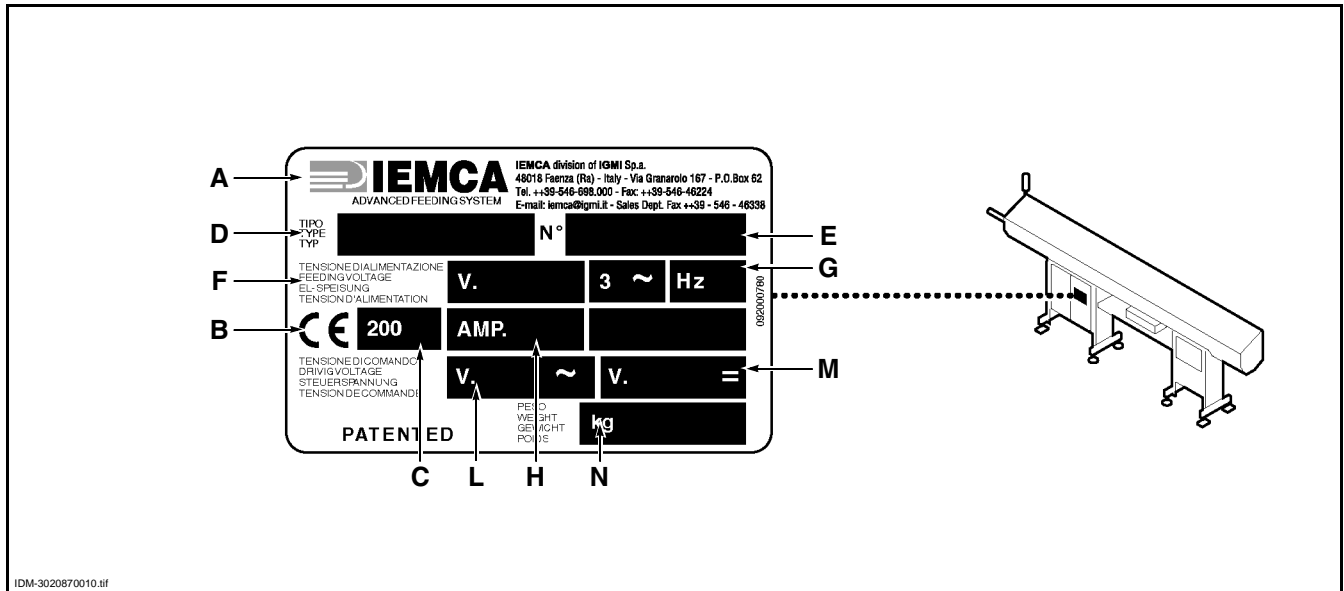
For a quick search according to subjects, consult the table of contents and/or the index.

Two more manuals are supplied along with this manual, which contains all the operating instructions and maintenance instructions for the bar feeder: the “Keyboard instruction manual” and the “Quick procedure” manual.

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

The “Quick procedure” manual contains all the minimum required instructions to use the bar feeder and its software.

### 1.3. MANUFACTURER AND BAR FEEDER IDENTIFICATION



- A - Manufacturer's identification
- B - CE conformity marking
- C - Year of manufacture
- D - Bar feeder model
- E - Serial number
- F - Feeding voltage
- G - Mains frequency
- H - Amperage

- L - Alternate driving voltage
- M - Direct driving voltage
- N - Bar feeder weight.

**i** **INFORMATION:** Always provide the Manufacturer with the above mentioned specifications in order to obtain information or whenever ordering spare parts, etc.

### 1.4. TECHNICAL ASSISTANCE

For any requirement, contact one of the centres listed in our "CUSTOMER SERVICE CENTRE LIST".

**i** **INFORMATION:** As far as technical servicing relevant to the bar feeder is concerned, always specify the technical data printed nameplate.

### 1.5. ANNEXES ENCLOSED

- Keyboard instruction manual.
- Quick-reference guide.
- GUIDE CHANNELS – BAR PUSHER – REVOLVING TIPS – COLLETS. Choice manual.
- Wiring diagram.
- Lathe coupling instructions.



## 2.1. GENERAL BAR FEEDER DESCRIPTION

---

The **GENIUS** automatic bar feeder is used in the machine-tool industry and in particular, for automatic lathe feeding. It is particularly suitable for feeding fixed or sliding headstock lathes, numerical control or cam lathes.

The working cycle is controlled by a control panel with built-in PLC, which is able to dialogue with the lathe control.

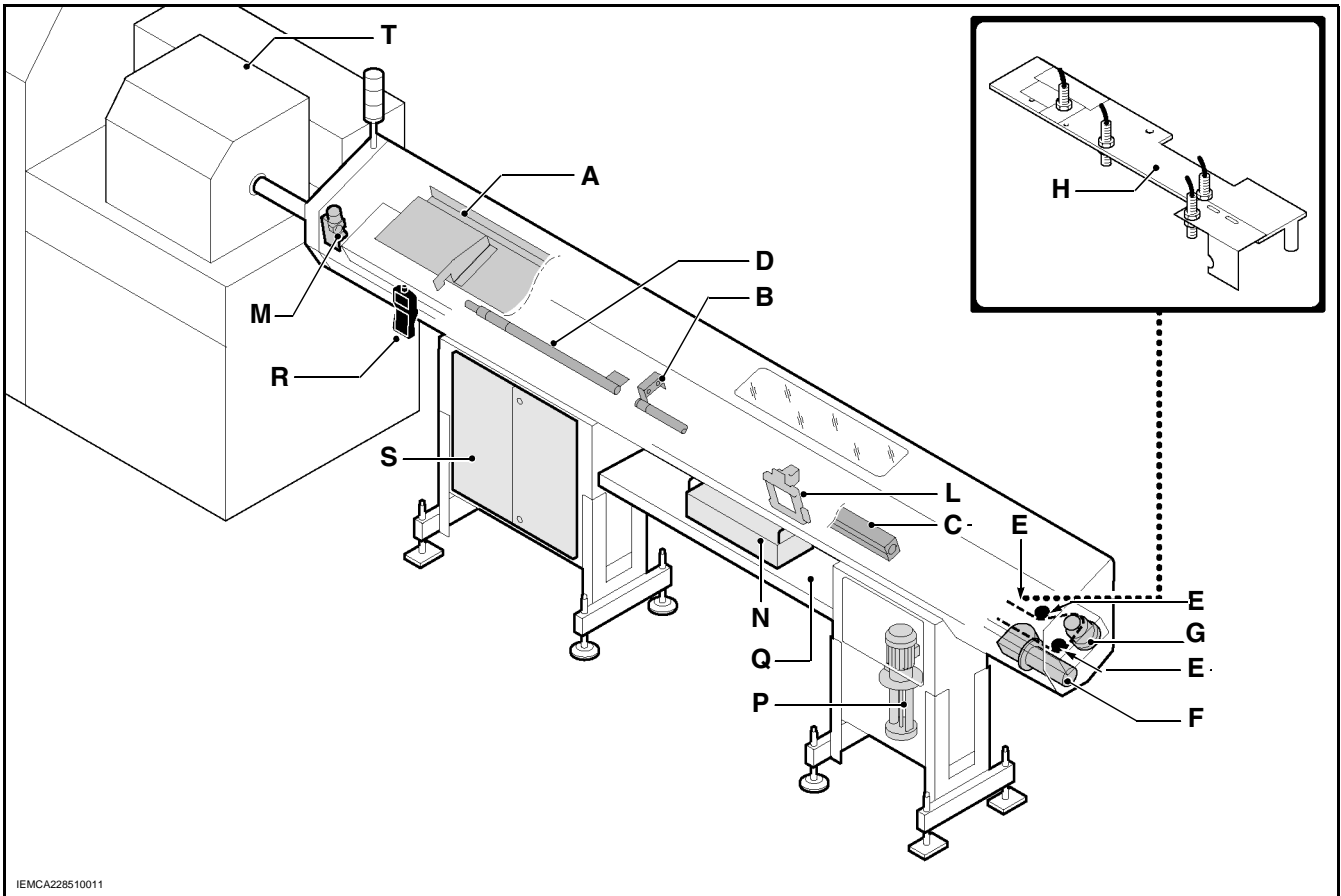
The hand-held keyboard facilitates programming and enables to control bar feeder functions without having to leave the lathe

The bar feeder can be used to feed bars, pipes and various sections.

The guide channel is fully closed during machining; a pump is provided to maintain a continuous oil flow inside the channel, creating a hydrodynamic support effect; these characteristics allow the bar to rotate at a high r.p.m. number, with no vibrations and no surface damaging.

The use of a d.c. motor and adjustable clutch make it possible to adjust feed speed and thrust to optimum values at every moment of the working cycle.

## □ Main parts



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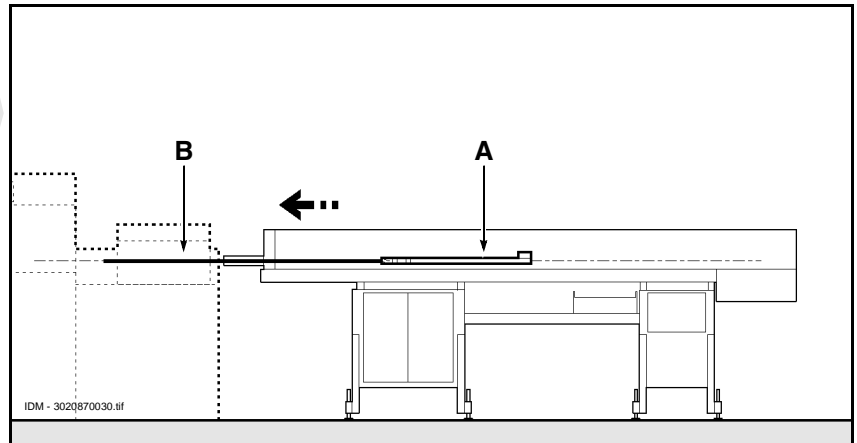
- A - Magazine;** where bars are stored.
- B - Bar selection device;** it allows the first bar to be lowered into the guides and holds back the remaining bars in the magazine.
- C - Guides;** they guide the bars during machining.
- D - Bar-pusher;** it pushes the bar during machining.
- E - Feed chain;** it transmits motion from the drive system to the bar-pusher.
- F - Drive system;** it drives the bar-pusher and the bar feeder parts controlling bar insertion into the collet and subsequent bar remnant extraction. It also drives the bar feeder parts controlling guide opening/closing and bar selection.
- G - Clutch;** it transmits motion from the drive system to the feed chain. It can be set to obtain thrust adjustment.
- H - Sensors unit;** enable control and command of bar feeder movements.
- L - Clamps;** they hold the bar during bar introduction in and extraction from the bar-pusher collet.
- M - Facing device;** it sends a signal at bar passage.
- N - Remnant collection box;** bar remnants are dropped into this box after extraction from the bar-pusher collet.
- P - Lubricating pump;** it delivers oil to the guides.
- Q - Oil recovery device;** it collects oil flowing out of the guides.
- R - Hand-held keyboard;** it allows bar feeder programming and function actuation.
- S - Electric cabinet;** it contains the electric switchboard.
- T - Lathe**

## 2.2. OPERATING CYCLE - General description

In the automatic operation mode, bar feeder movements are controlled in the sequence described below:

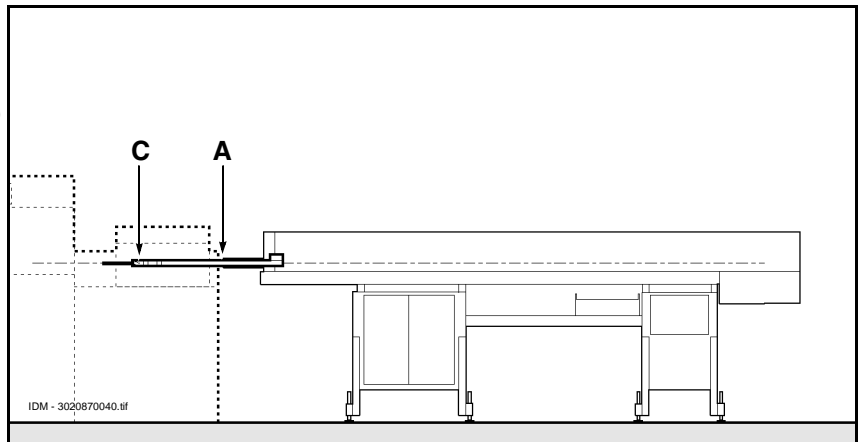
### Phase 1

The bar-pusher **A** feeds bar **B** in the lathe by following lathe impulses until bar end.



### Phase 2

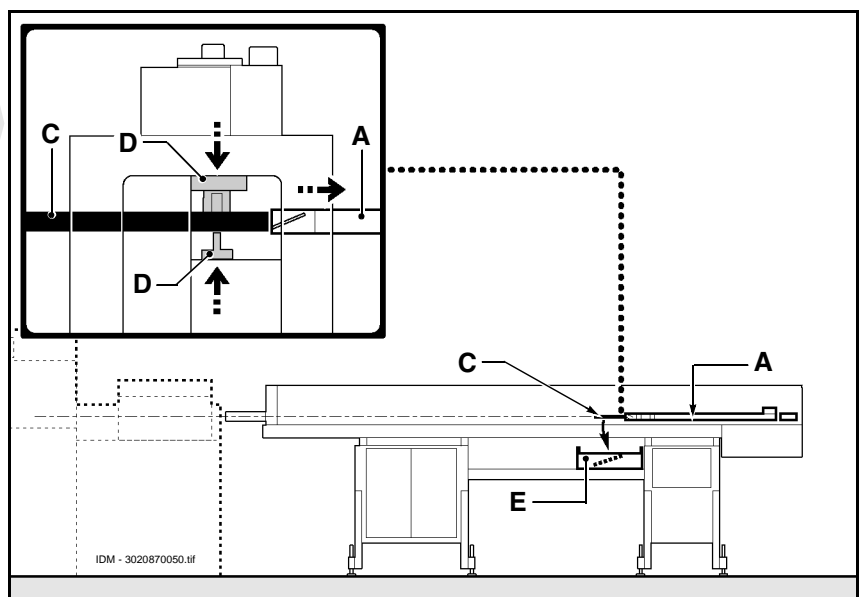
The bar-pusher **A** and remnant **C** are in their forwards limit stop position.



### Phase 3

The bar-pusher **A** and remnant **C** reach their backwards limit stop position.

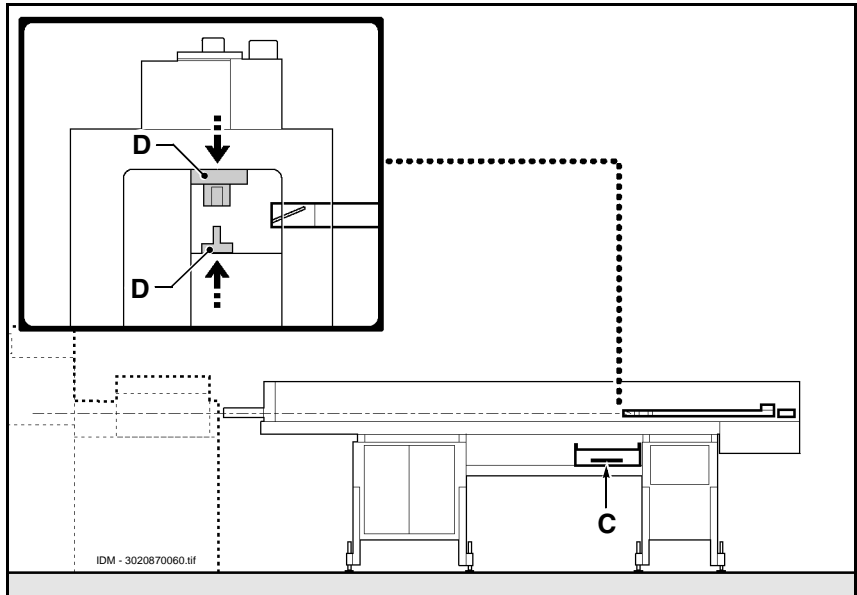
The clamps **D** close and the bar-pusher moves back; the remnant is extracted from the collet. The clamps open and the remnant is dropped into the box **E**.



**Phase 4**

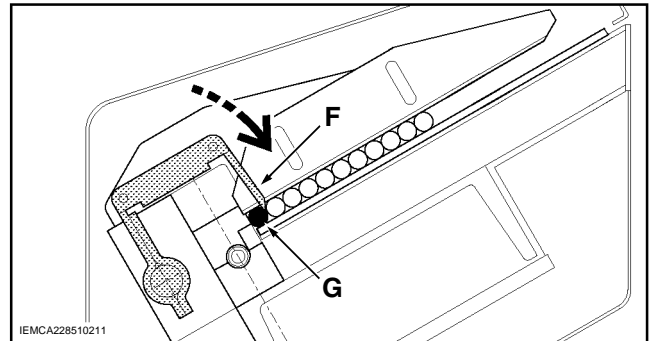
Clamps **D** close again to perform remnant **C** extraction check.

If the remnant is still inserted in the bar-pusher collet, the feeder stops; otherwise, it continues its cycle.



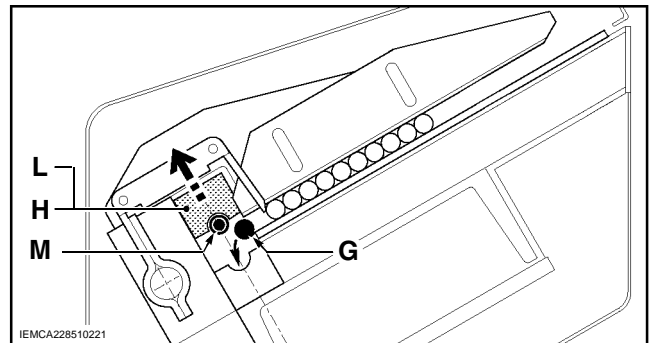
**Phase 5**

The bar selector **F** is lowered, and all the bars in the magazine are held back except for the first bar **G**.



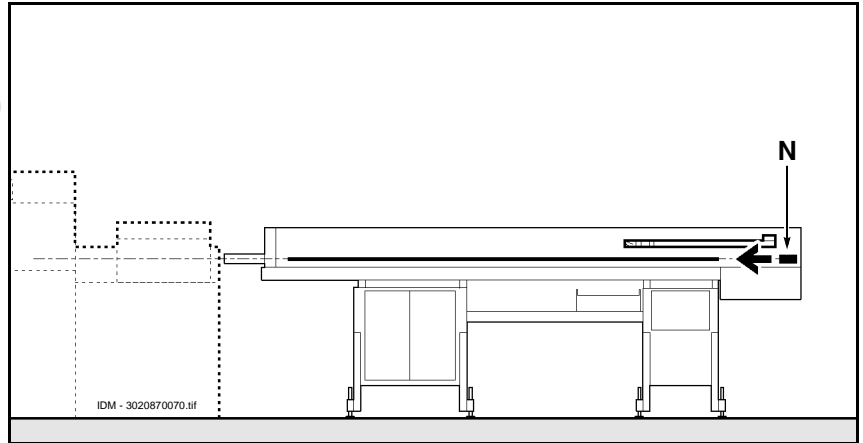
**Phase 6**

The front top guide channels **H** and rear top guide channels **L** rise up together with the bar pusher **M**, and bar **G** falls into the lower guide.



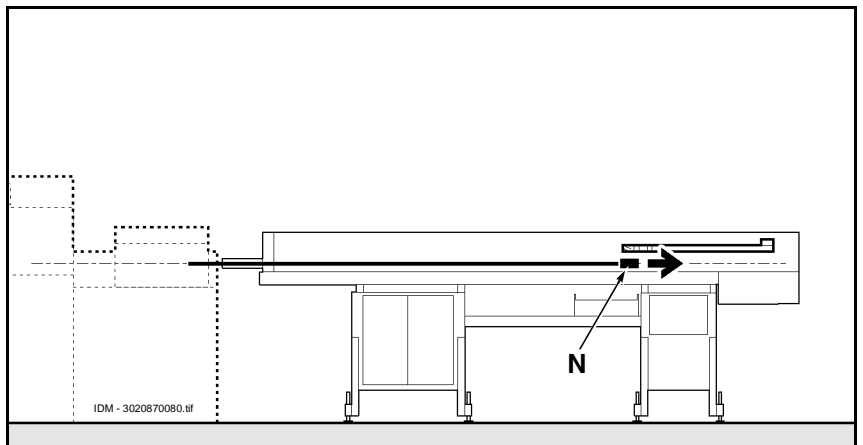
**Phase 7**

The small pusher truck **N** starts its stroke.



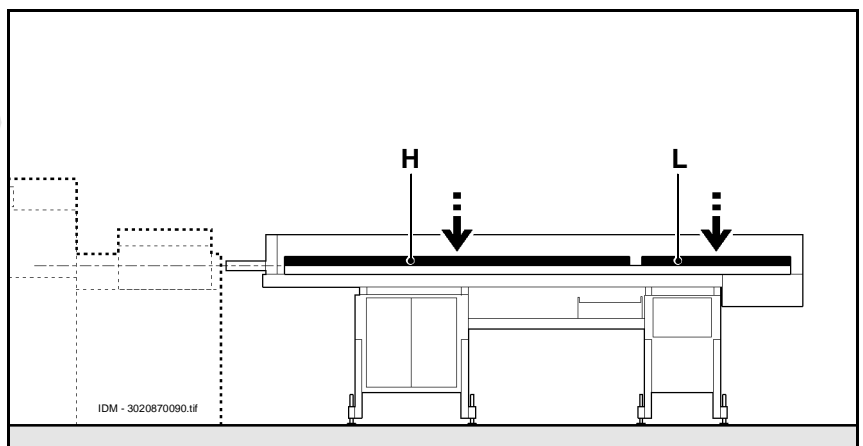
**Phase 8**

When the small pusher truck **N** completes its stroke, the required space has been created for bar-pusher insertion. The small pusher truck executes its return stroke.



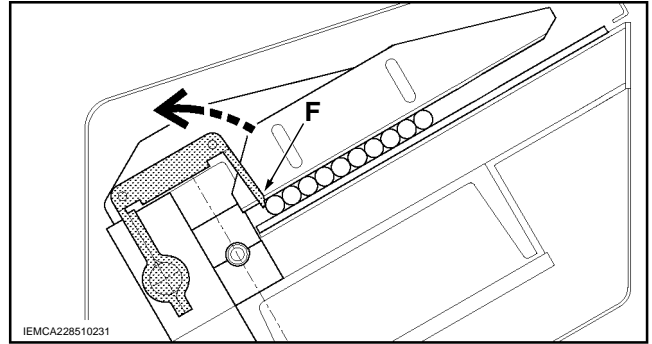
**Phase 9**

The front top guide channels **H** and rear top guide channels **L** close; the bar pusher places itself along the bar axis.

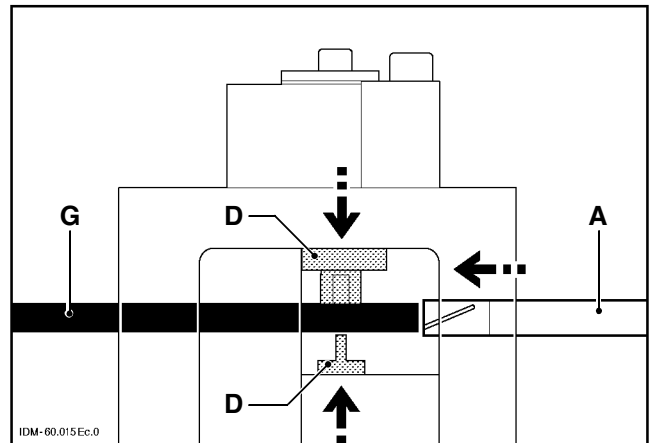


**Phase 10**

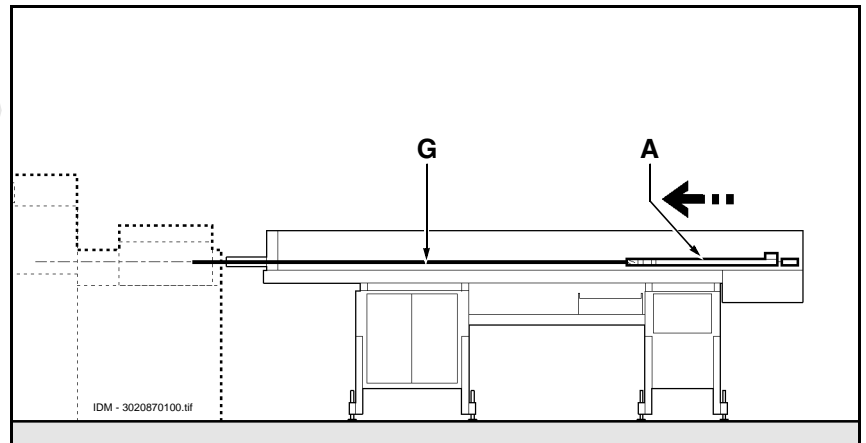
The bar selector **F** rises.

**Phase 11**

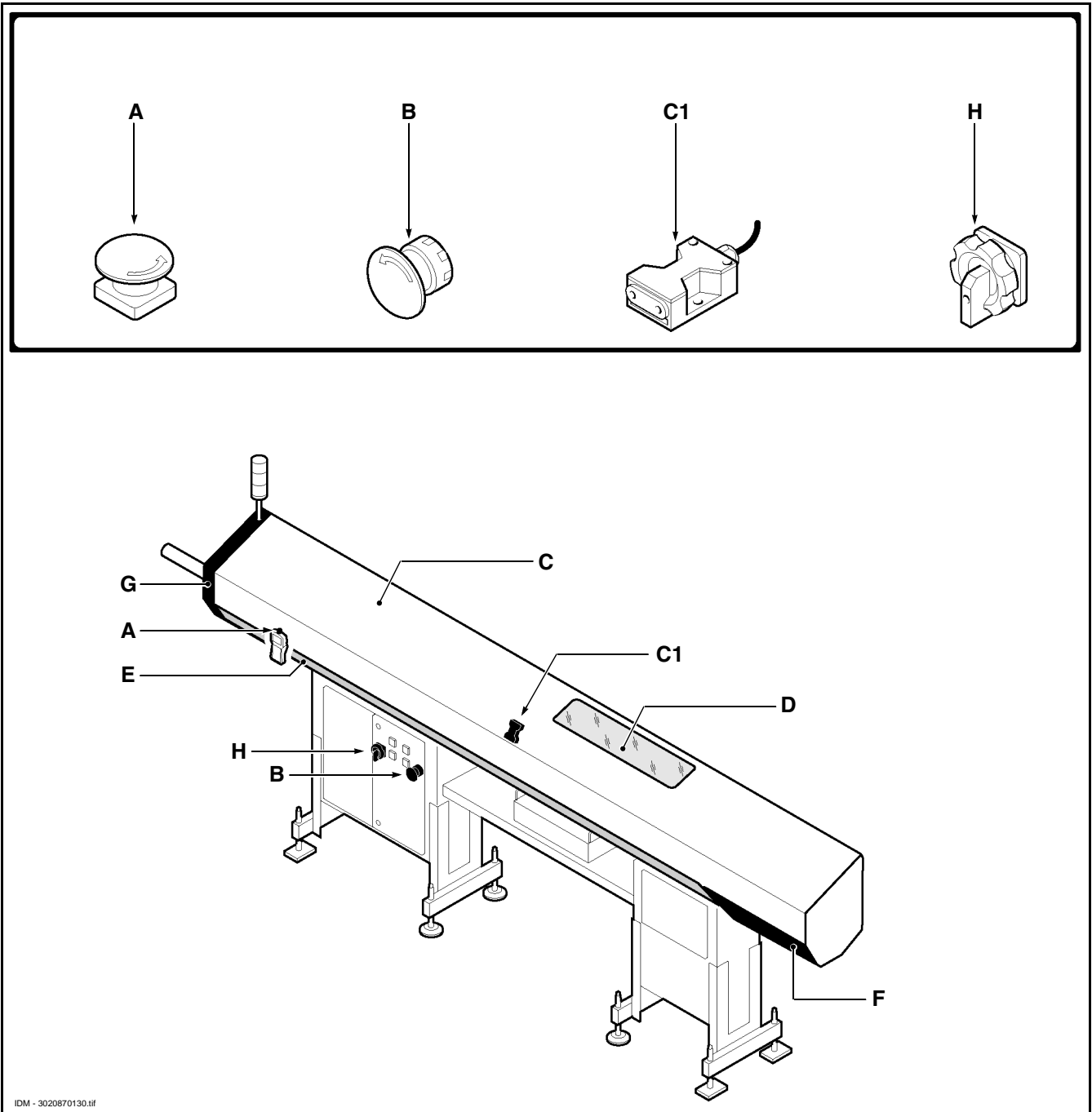
The clamps **D** close, the bar-pusher **A** moves forwards; the bar **G** is inserted into the bar-pusher collet.

**Phase 12**

The bar-pusher **A** and bar **G** execute their facing stroke. A new automatic work cycle is started.



## 2.3. SAFETY DEVICES - Position and description



**A B-Emergency button;** by working it, all feeder and lathe functions are stopped in an emergency situation.

**C - Interlocked sliding guard:** connected with the microswitch **C1**.

When this guard is opened, the bar feeder and lathe will stop.

Only if this guard is opened during the feeding phase will the bar feeder and lathe continue to work without this implying any risks for the operator.

**D - Fixed guard:** made of transparent material to allow

visual inspection of the bar magazine area and the terminals.

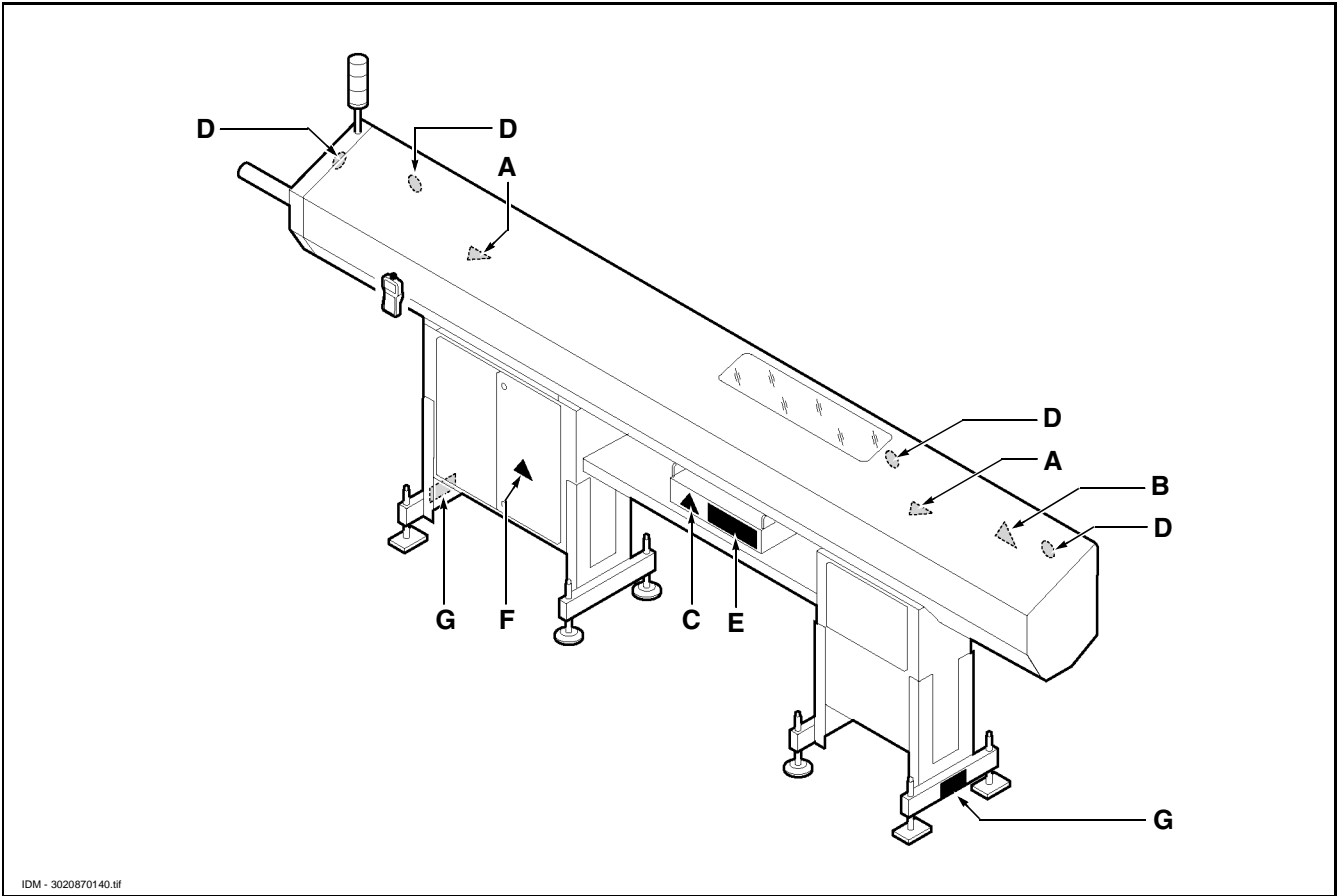
**E - Fixed guard:** prevents unintentional access to moving parts.

**F - Fixed guard:** it prevents accidental access to the drive area.

**G - Fixed guard:** prevents unintentional access to moving parts.

**H - Main switch:** disconnects the electric supply source when operations are being performed on the electric panel, and when the feeder is not in use.

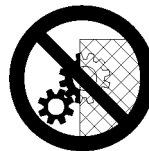
**2.4. SAFETY PLATES - Position and description**



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**A** - Danger of arm crushing.



**D** - Do not remove safety barriers.



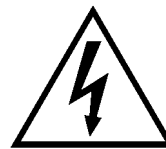
**B** - Beware of running parts.



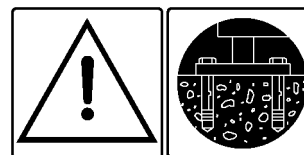
**E** - Wear working gloves and shoes.  
Do not lift manually loads exceeding 15 kg.



**C** - Danger of material fall.



**F** - Danger of electric shock.



**G** - Warning: fix the bar feeder to the ground.



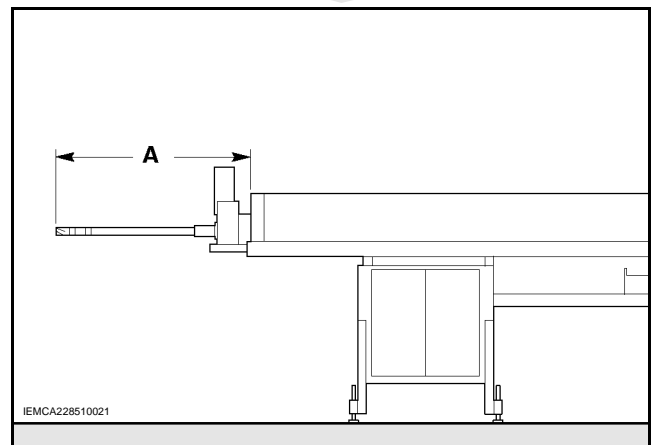
## 2.5. VERSION DESCRIPTION

**Table 1.** Maximum bar length

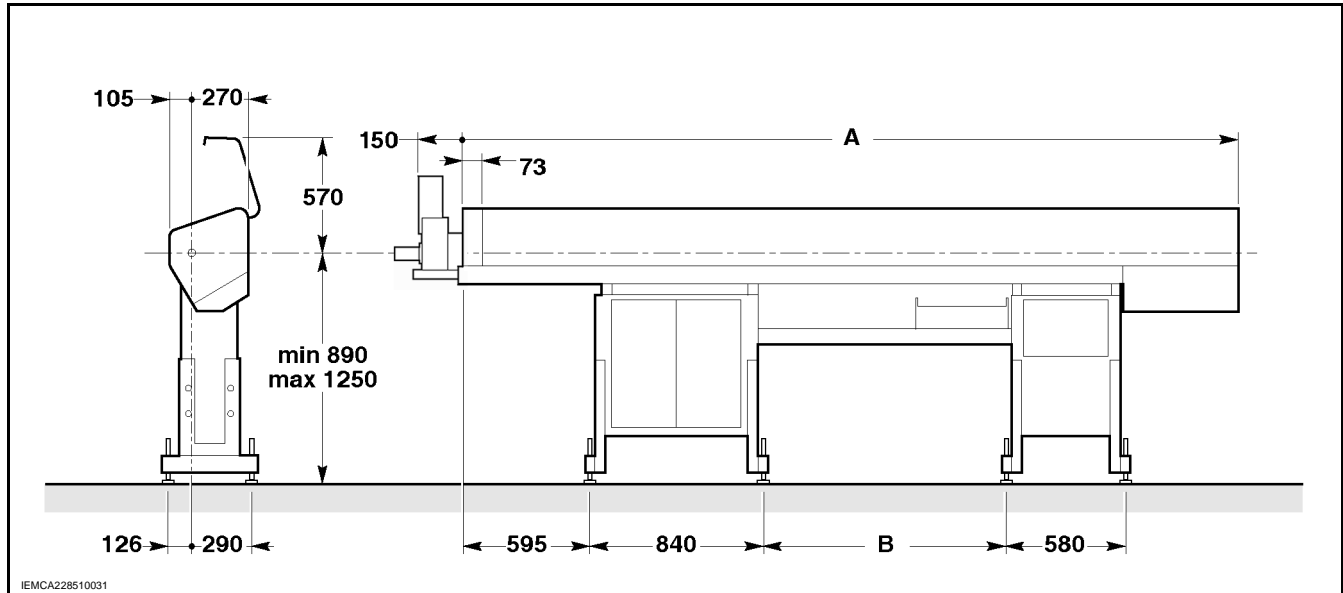
<i>Version</i>	<i>Max. length mm (ft)</i>
32	3210 (10,5)
37	3730 (12,2)
42	4250 (13,9)

**Table 2.** Max. bar-pusher extension

<i>Version</i>	<i>A - Max extension (mm)</i>
N	958
L	1218
LL	1478



**2.6. TECHNICAL SPECIFICATIONS**



**Table 3.** Overall dimensions

<i>Version</i>	<b>A (mm)</b>	<b>B (mm )</b>
32	3755	1185
37	4275	1705
42	4795	2225

**Table 4.** General technical data

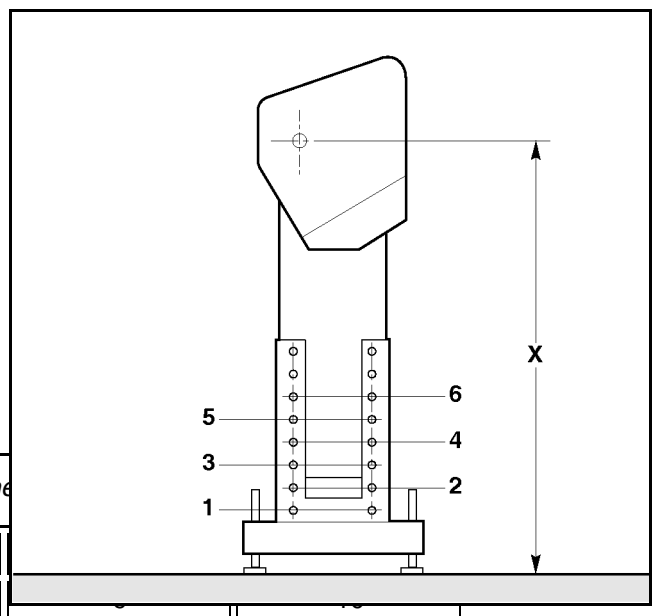
Round bar diameter	min 2 mm (5/64")	max 26 mm (1")
Square bar side	min 2 mm (5/64")	max 18 mm (45/64")
Hexagonal bar height (key socket)	min 2 mm (5/64")	max 22 mm (7/8")
Minimum bar length	1500 mm	
Maximum bar length	mod 32 - 3210 mm (10,5 ft) mod 37 - 3730 mm (12,2 ft) mod 42 - 4250 mm (13,9 ft)	
Magazine capacity (working width)	265 mm (es: 22 barre da ø 12 mm)	
Maximum bar remnant length	400 mm	
Bar change time	30 sec	
Maximum feed speed	1250 mm/sec	
Supply voltage	230/400 Volt	
Control voltage	24 Volt	
Installed power	1.5 kW	
Air pressure	6 bar	
Quantity of oil	40 l	
Dry weight	mod 32 - 650 kg mod 37 - 700 kg mod 42 - 750 kg	

**Table 5.** Working axis height

Position of bottom screws	X (mm)
1	890÷949
2	950÷1009
3	1010÷1069
4	1070÷1129
5	1130÷1189
6	1190÷1250

**Table 6.** Diameters of guides, bar-pusher, bars and pipes

Guide diameter (mm)	Bar-pusher diameter (mm)	Bar diameter (mm)
8	7,5	2
11	10	3



**Table 6.** Diameters of guides, bar-pusher, bars and pipes

<i>Guide diameter (mm)</i>	<i>Bar-pusher diameter (mm)</i>	<i>Bar diameter (mm)</i>		<i>Largest pipe diameter (mm) (*)</i>
13	12	4	11	12
18	15	5	13,5	17
22	20	5	18,5	20
26	25	8	23	25
28	27	8	25	26
30	29	8	26	26

(\*) valid also for prepared bars or normal bars machined with front remnant ejection



**CAUTION:** Barstock diameters for any guide channel are only given as an example. A barstock diameter approximately 5 mm smaller than the guide channel diameter may cause vibration and failure to the bar feeder. Therefore, it may be necessary to slow down the bar rotation speed or to change the guide channel diameter in order to obtain the best performance for a specific application.

**Table 7.** Guides lubricating oils

<i>ISO/UNI rating</i>	<i>Make</i>	<i>Name</i>
CLASSE C CKB 100	Agip	Acer 100
	Api	Api Cis 100
	BP	Energol CS 100
	Castrol	Magna 100
	Chevron	Circulating Oil 100
	Elf	Movixa 100
	Esso	Nuto 100
	Fina	Solna 100
	IP	IP Hermea 100
	Klüber	Crucolan 100
	Mobil	Vactra Oil Heavy
	Olio Fiat	Daphne LPN 100
	Roloil	Arm V 100
	Shell	Vitrea 100
		Tellus C 100
	Tamoil	Industrial Oil 100
	Texaco	Omnis 100
Total	Cortis 100	
	Azolla ZS 100	
Q8	Verdi 100	

**Table 8.** Air lubricator oils

<i>ISO/UNI rating</i>	<i>Make</i>	<i>Name</i>
ISO 3448-32	BP	Energal HLP32
	CASTROL	Hyspin AWS32
	CENTURY	PWLA
	ELF	Elfolna 32
	ESSO	Nuto H32
	GULF	Harmony 32
	MOBIL	SHC 524
	MOBIL	DTE 24
	MOBIL	DTE Oil Light
	SHELL	Tellus 32
	TEXACO	Rondo 32

## 2.6.1 Noise levels

Bar feeder does not cause acoustic noise.

Noise occurs when lathe, connected to the bar feeder, is working and the bar is rotating into bar feeder guides.

In such a case, noise level emitted depends on the following conditions:

- perfect alignment and levelling of the lathe-bar feeder unit;
- proper fastening to the floor both of lathe and bar feeder;
- suitable bar gripping device fitted on lathe;
- dimensions of guide channel and bar-pusher suited to the bar stock;
- front guide bush of suitable diameter (if supplied);
- bar with a straightness within prescribed limits (max. arrows equal to 0.5 ‰ mm of the bar length);

- spindle liner having the same diameter as the bar feeder guide channel diameter;
- spindle rotation speed suitable for the material to be machined;
- as to the bar feeder, use of oil having features suitable for the diameter of the bar to be machined;
- all bar feeder panels must be closed.

Should the above mentioned conditions be met, the noise level emitted during bar rotation into the guide channel, measured in compliance with the international standards, will be within the following limits:

- brass and steel round bars within 80 dbA
- hexagonal steel bars within 83 dbA
- brass hexagonal bars within 85 dbA

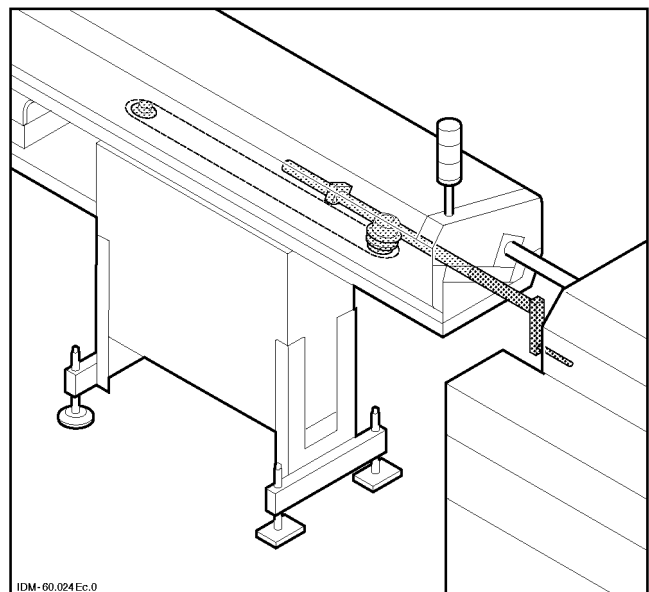
## 2.7. ACCESSORIES - Description

To improve the feeder performance and increase its versatility, a few optional devices are available which are listed and then described below.

- 2.7.1 Precision facing device - Description
- 2.7.2 Axial displacement device - Description
- 2.7.3 Bush-holder device - Description

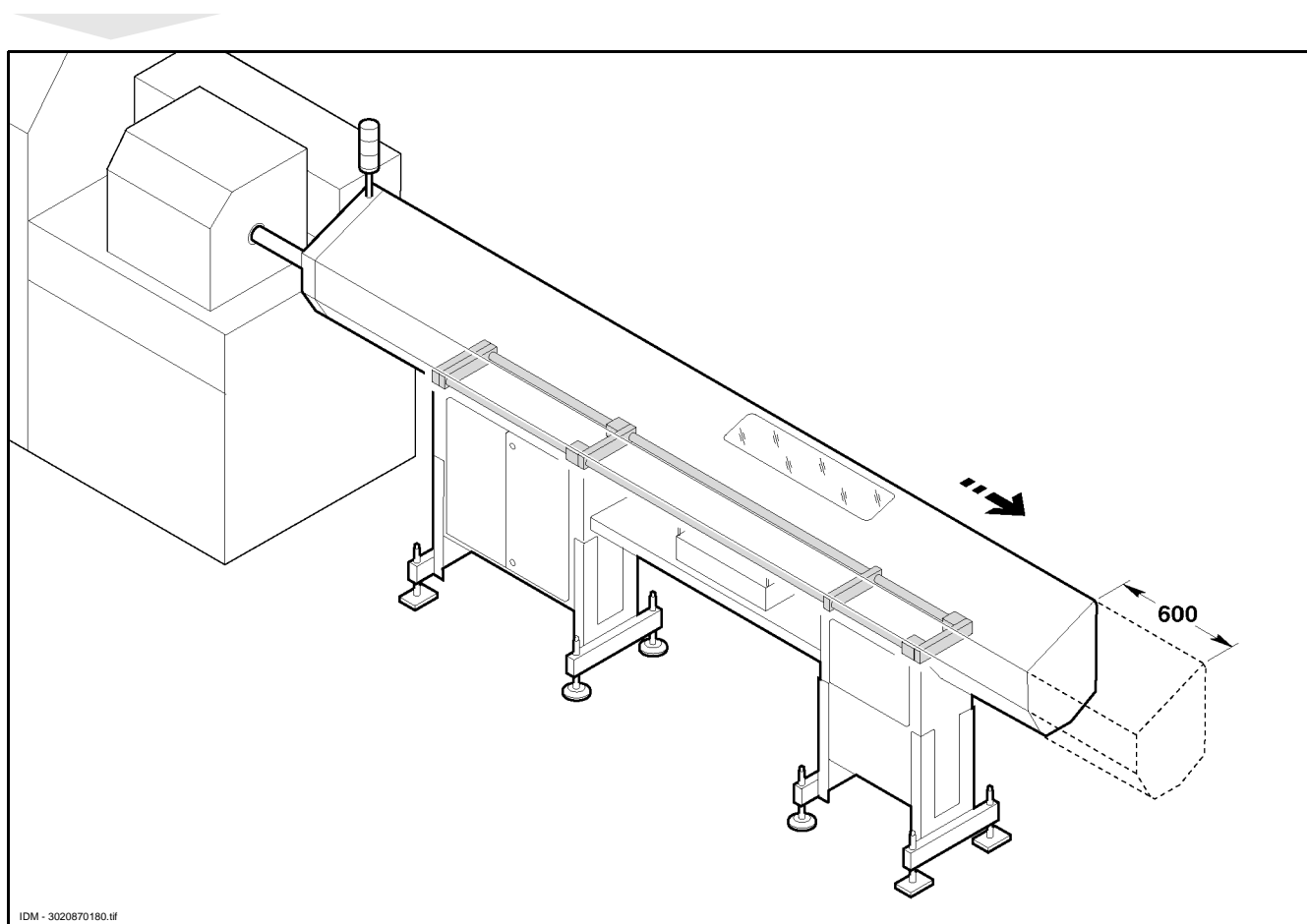
### 2.7.1 Precision facing device - Description

Used where it is necessary to ensure precise positioning of the bar at the beginning of the working cycle. Can be applied in all operations using a sliding head-



## 2.7.2 Axial displacement device - Description

It allows the feeder to be moved away from the lathe to allow maintenance, cleaning or any other servicing of the lathe



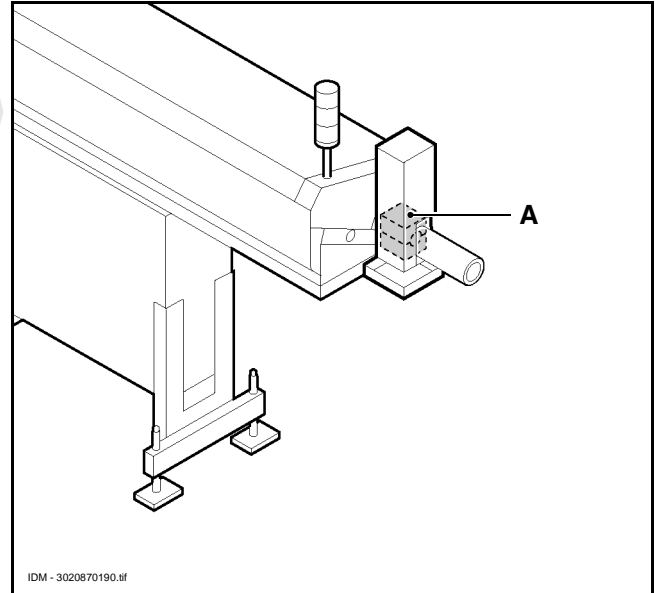
### 2.7.3 Bush-holder device - Description

It is attached to the front part of the bar feeder. Its function is to reduce bar vibrations to a minimum, by keeping the bar centered during rotation through two half bushes **A**, which are coupled to form a round channel with a diameter just slightly larger than that of the bar being machined.

In many cases, this device can be used (by only changing the diameter of the half bushes) to greatly extend the range of diameters which can be machined without having to replace the guide channel.

#### Operation

- When the bar is dropped into the guide channel, the two half bushes are open.
- Closure is controlled by a pneumatic cylinder after the feeder has completed the bar feeding cycle. Closure also controls lubricating oil flow for lubrication and machined bar support purposes.
- When the bar-pusher approaches the device, the half bushes open up to allow its passage; oil flow is then discontinued.



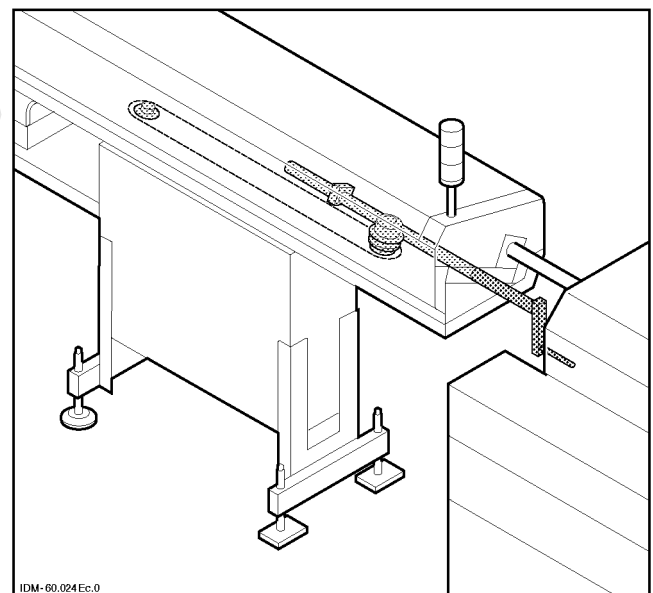
## 2.8. DEVICES FOR SLIDING HEADSTOCK LATHE - Description

To improve the feeder performance and increase its versatility, a few optional devices are available which are listed and then described below.

- 2.8.1 Bar/headstock synchronizing device - Description
- 2.8.2 Telescopic nose - Description

### 2.8.1 Bar/headstock synchronizing device - Description

It is used to connect the bar-pusher (and consequently, the bar) to the lathe headstock, to obtain their synchronized forwards/backwards movement.



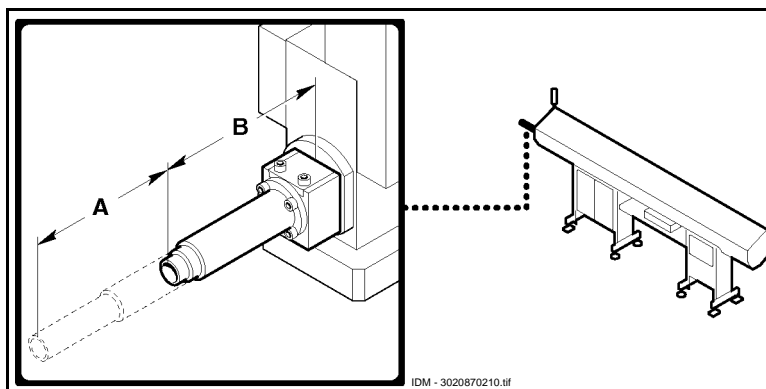


## 2.8.2 Telescopic nose - Description

It is used to optimize bar guiding between the bush-holder device and the lathe spindle.

**Table 9.** Max stroke and overall dimensions

<i>Max stroke A (mm)</i>	<i>Overall dimensions B (mm)</i>
200	270
210	270
230	300
280	430
330	480



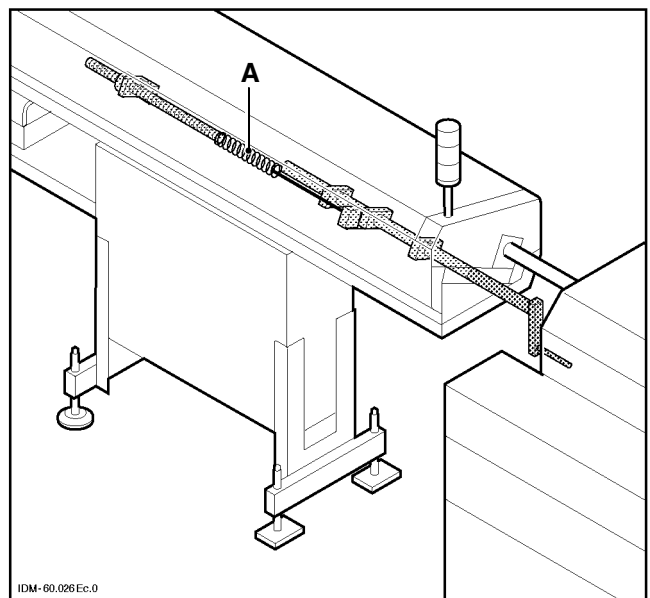
## 2.9. DEVICES FOR CAM LATHES - Description

This feeder has been designed and manufactured to be coupled to cam lathes too. To do this, special devices are available which are listed and then described below:

- 2.9.1 Headstock return device - Description
- 2.9.2 Cam box- Description
- 2.9.3 Camshaft release device - Description

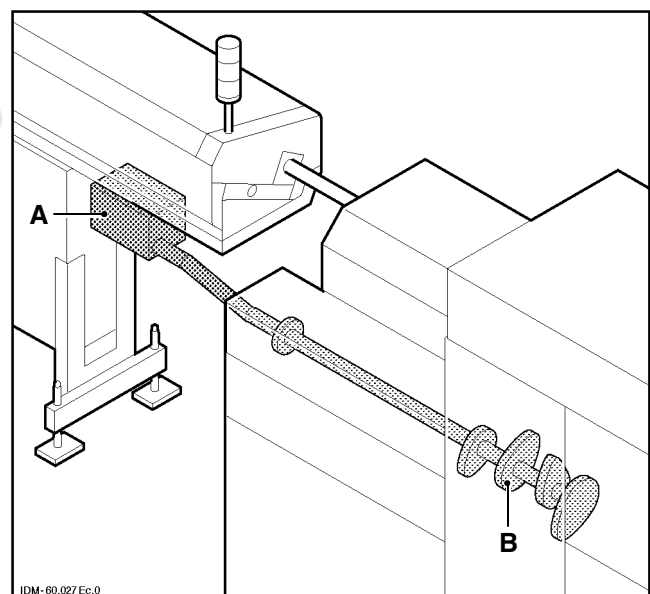
### 2.9.1 Headstock return device - Description

Necessary when the lathe headstock return spring size hinders feeder installation. The original lathe spring **A** is then installed inside the feeder.



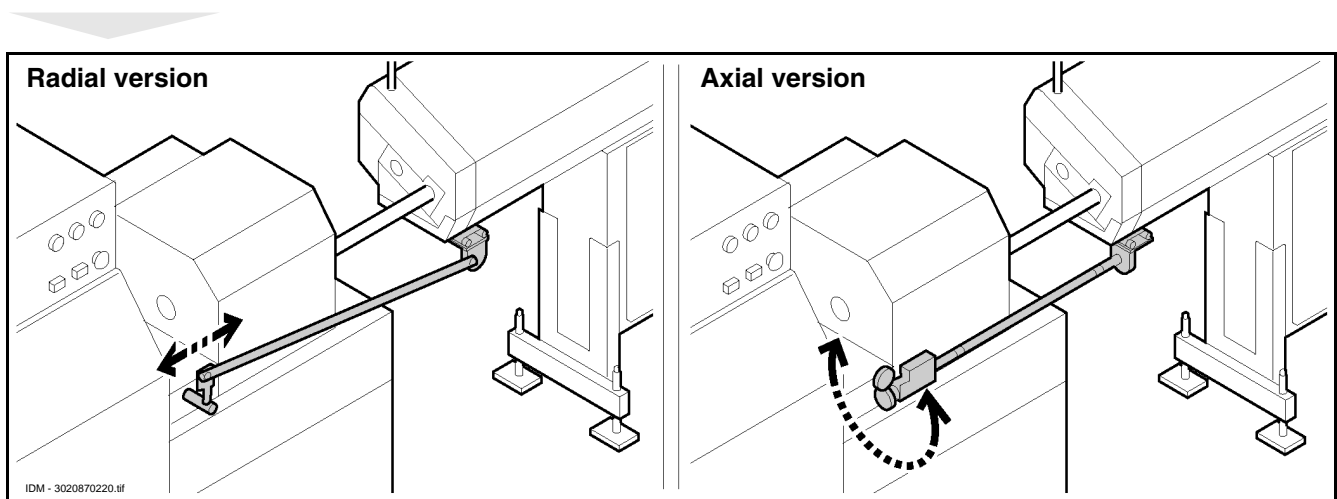
### 2.9.2 Cam box - Description

Used to synchronize the feeder and cam lathe movements. The cams located in the box **A** are connected to the lathe camshaft **B**.



### 2.9.3 Camshaft release device - Description

Used to release and engage the camshaft during bar changeover. A **radial version** and an **axial version** of this device are available.



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### 3.1. SAFETY GENERAL INSTRUCTIONS

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**It is of the utmost importance to read carefully this manual before carrying out any installation, use, maintenance or other servicing on the bar feeder. The compliance with the instructions contained herein ensures safety both of man.**

Both the operator and skilled engineer in charge shall keep to their task.

Do not tamper with the safety devices for any reason whatsoever.

Safety labour regulations issued by each country authority shall be strictly complied with.

IEMCA declines any liability whatsoever for damages to people or property due to the non-observance of the above mentioned regulations.

### 3.2. HANDLING AND INSTALLATION - Safety procedures

---

Bar feeder shall be handled using suitable means and methods.

People shall not stand underneath a suspended load, within the crane, lift truck or other suitable means of lifting or transportation operating range.

The working and bar feeding area shall be delimited in order to prevent collisions between the operator and transportation or handling means, if any, either of the materials to be machined or other material.

A proper bar feeder installation, as well as lighting and cleaning of the area, are of the utmost importance as far as personal safety is concerned.

The electric system connection shall be carried out by skilled personnel only.

Make sure the electric system is earth connected through a suitable cable.

### 3.3. ADJUSTMENTS AND SETTING UP - Safety procedures

---

Carry out the adjustments according to the use and maintenance manual.

Do not change the working parameters to obtain performances different from those designed and tested.

Do not adjust the bar feeder when it is running unless otherwise specified in the use and maintenance manual.

Do not feed the machine with barstocks having dimensions different from those recommended by the manufacturer.

Do not use hoses as grips.

### 3.4. USE AND OPERATION - Safety procedures

---

The working area around the bar feeder shall always be kept clean and empty in order to allow an immediate access to the emergency devices, thus allowing the bar feeding operations without causing danger and hindrance.

Carry out the starting cycle sequence as recommended.

Do not introduce hands or other parts near or inside running parts or energised parts.

Take off bracelet, watch, ring and tie.

Whenever necessary, use strong working 5 finger gloves, which do not reduce sensitivity and gripping.

Use working shoes as well as personal protections as provided for by the accident prevention regulations in force in every country.

Personnel in charge of maintenance shall be informed should the machine fail to work properly.

Before starting the bar feeder, make sure that there is no personnel carrying out maintenance or cleaning operations.

### 3.5. BAR FEEDER MAINTENANCE - Safety procedures

---

Non-authorized people are not allowed to carry out maintenance.

Read carefully this manual before carrying out any maintenance whatsoever.

Do not lubricate, repair or adjust the bar feeder during its working cycle, unless otherwise specified by this manual.

Stop the bar feeder in accordance with the safety procedures before carrying out lubrication.

Do not light the working area with matches, lighters or torches when servicing the machine using inflammable fluids.

Preserve the exhausted oil in suitable containers and deliver it to stocking and disposal of polluting wastes companies.

Do not pollute environment.

Use original IEMCA spare parts only.

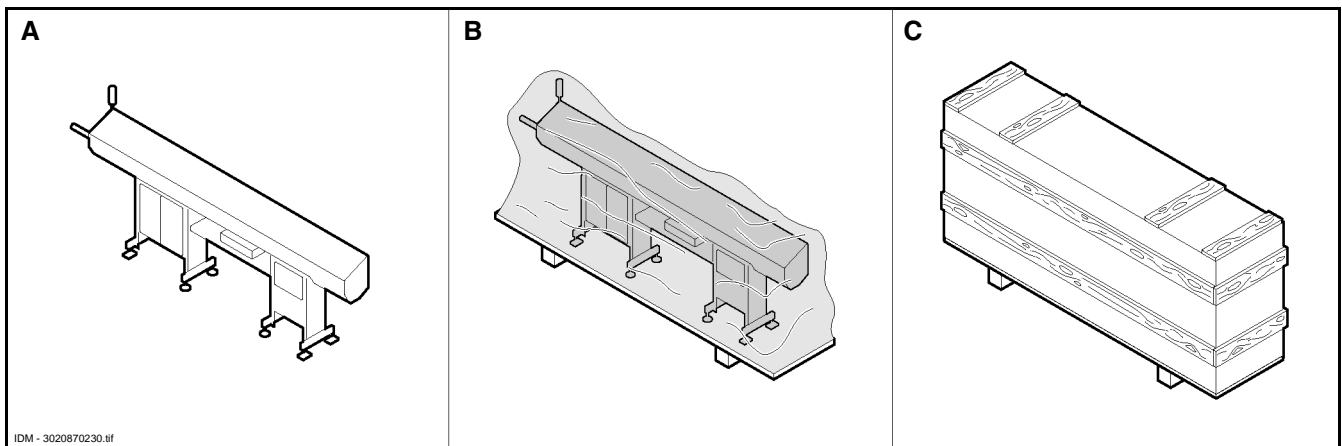
## 4.1. PACKAGING

There are three possible bar feeder packagings:

**A - With no packaging.**

**B - With pallet:** the feeder is placed on a pallet and wrapped in protective film.

**C - With crate:** the feeder is placed in a crate wrapped in protective film.



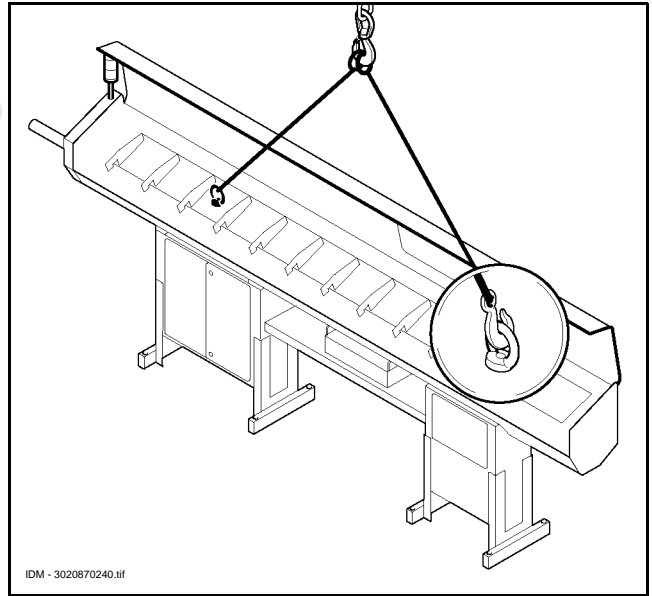
## 4.2. LIFTING

**⚠ DANGER - WARNING:** handling and lifting operations should be carried out with suitable equipment (see weight table in paragraph 2.6.) by specially trained and experienced personnel.

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

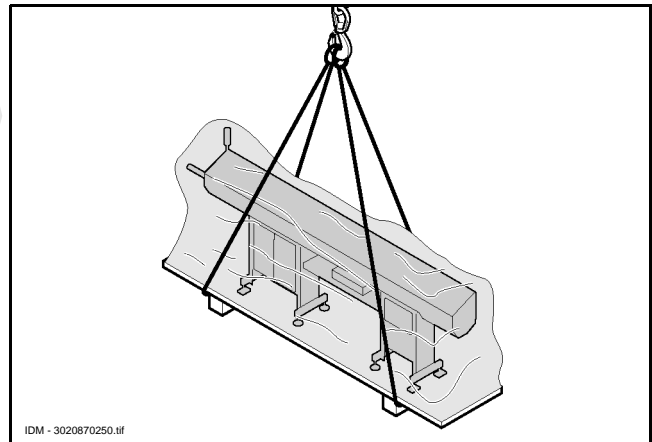
**☐ Lifting with no packaging**

- Insert the two eyebolts with threaded shanks **A** (type 1 UNI - ISO3266 M20).
- Use a hook type lifting device of suitable capacity.



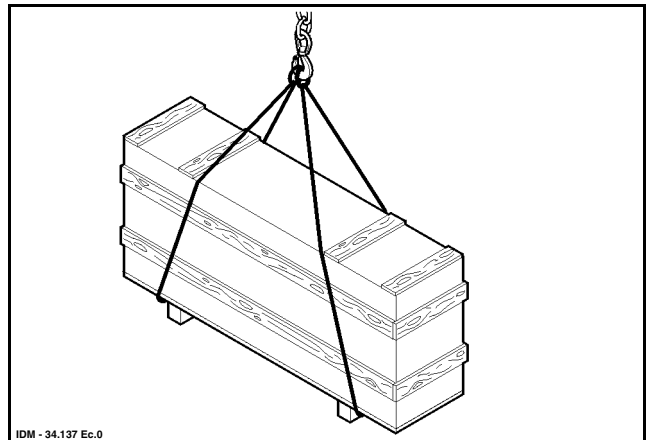
**☐ Lifting with pallet**

- Use a hook type lifting device of suitable capacity.



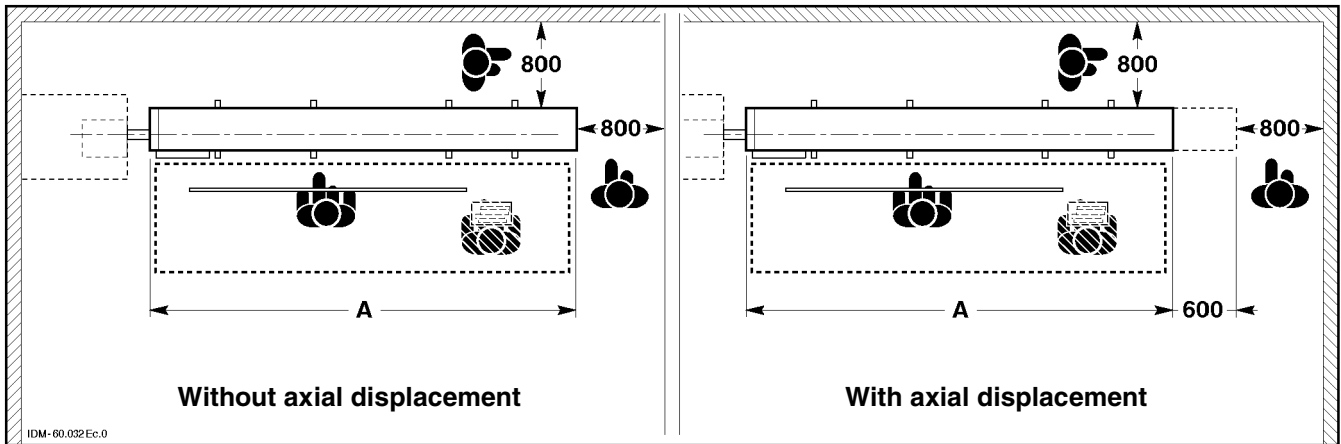
**☐ Lifting with crate**

- Use a hook type lifting device of suitable capacity.





### 4.3. INSTALLATION AREA - Characteristics



The floor should be stable and levelled to guarantee good fastening to the ground.

Provide an area of suitable dimensions according to the type of feeder use.

The areas: **B** (work area), **C** (bar feeding area) and **D** (remnant discharge area) should be properly delimited to prevent collisions between the operator and any handling equipment or transport vehicles travelling near the bar feeder.

The selected bar feeder setting should be suitably lit and provided with an electric power and air outlets.

During operation, the feeder will release small amount of oil vapors. Make sure that the premises where the feeder is installed are suitably ventilated.

The feeder has not been designed and built for use in an explosive atmosphere.

**Table 1.** Overall dimensions

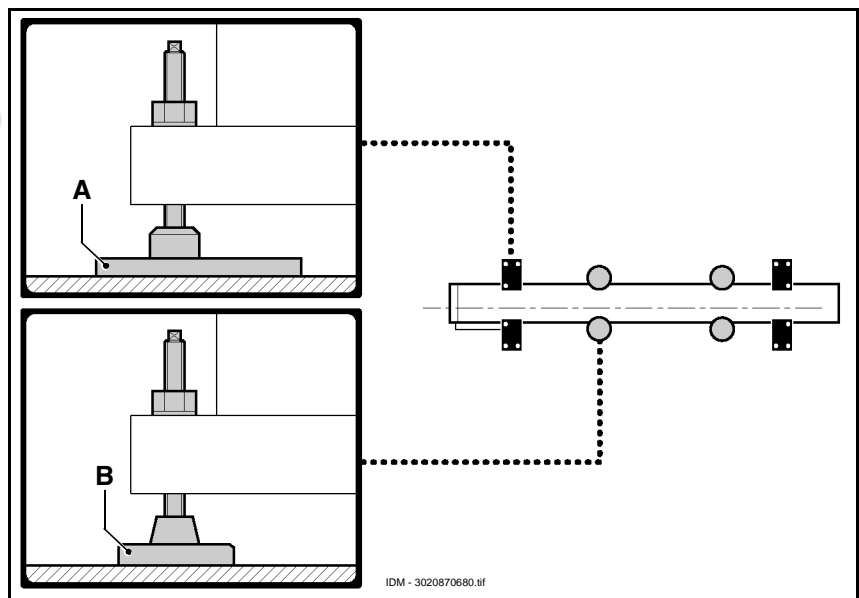
Version	A (mm)
32	3755
37	4275
42	4795

## 4.4. INSTALLATION OF BAR FEEDER - Introduction

Before carrying out feeder installation, check lathe stability; make sure that it is firmly fastened to the ground and with a horizontal spindle axis.

### 4.4.1 Support plates and feet - Installation

- Position the feeder next to the lathe.
- Keep it lifted and install the plates **A** and feet **B** in the positions shown in the figure.

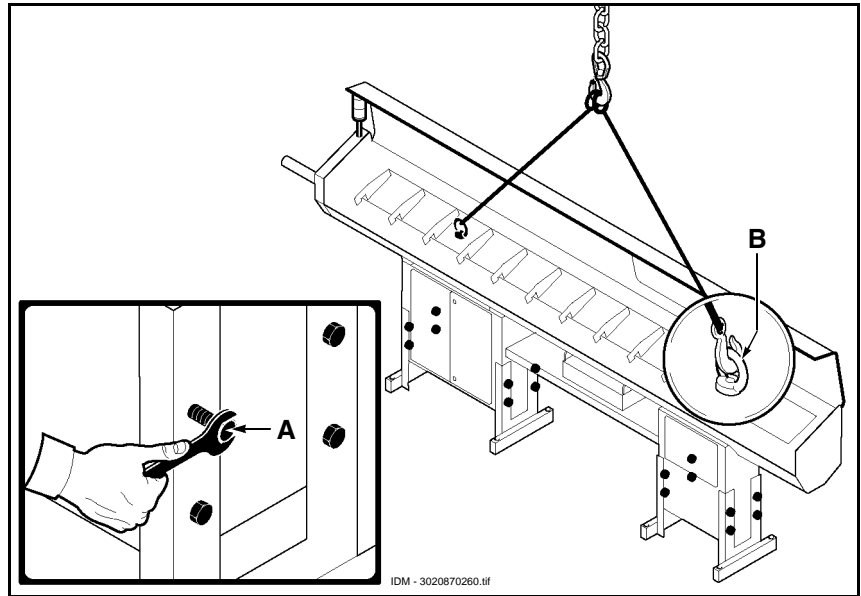


### 4.4.2 Height - Adjustment

The feeder is normally factory-pre-set to have a working axis height adjusted to lathe height.

However, if feeder height needs adjustment, proceed as follows:

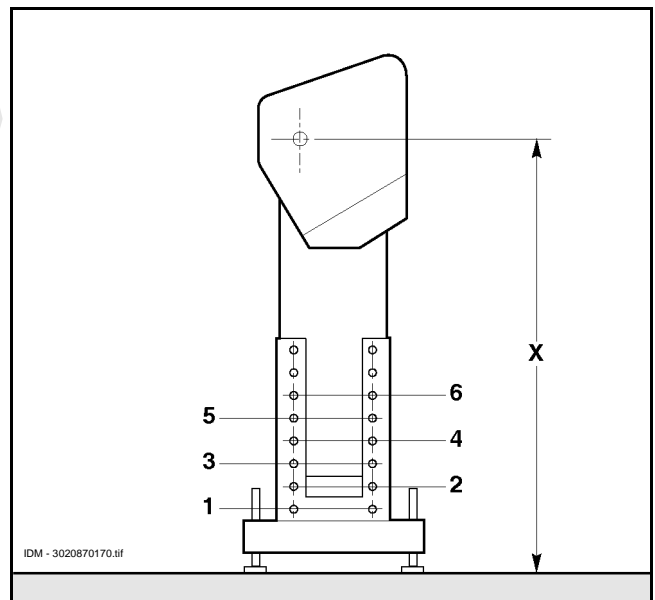
- *tighten the lifting chains and remove the 16 screws A.*



- *lift the feeder according to the required dimension X (see table):*

**Table 2.** Working axis height

Lower screws position	X (mm)
1	890÷949
2	950÷1009
3	1010÷1069
4	1070÷1129
5	1130÷1189
6	1190÷1250



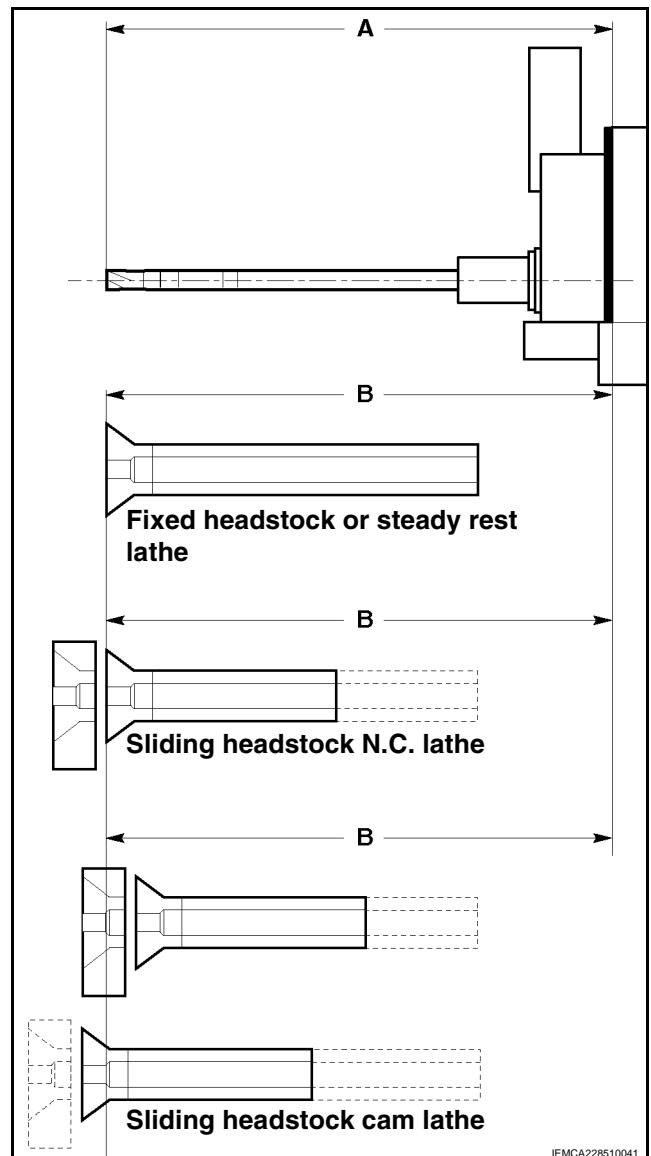
- *screw down the screws A and remove the eyebolts B.*

### 4.4.3 Preliminary positioning

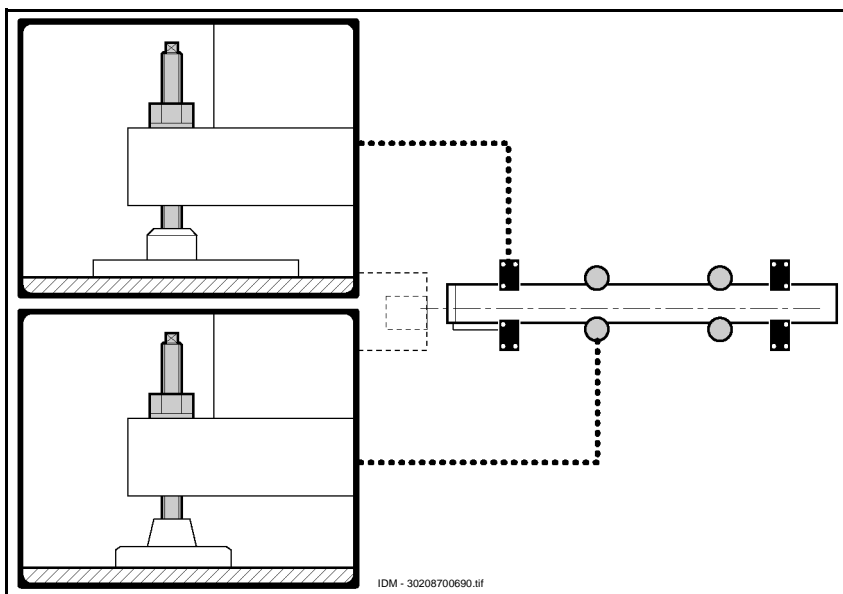
- Position the feeder behind the lathe, by taking into account the overall dimensions and side plays of both machines. The coupling distance **B** should not exceed the bar-pusher max. extension **A**.

**Table 3.** Max. bar-pusher extension

Version	A - Max extension (mm)
N	698
L	958
LL	1218
N	958
L	1218
LL	1478



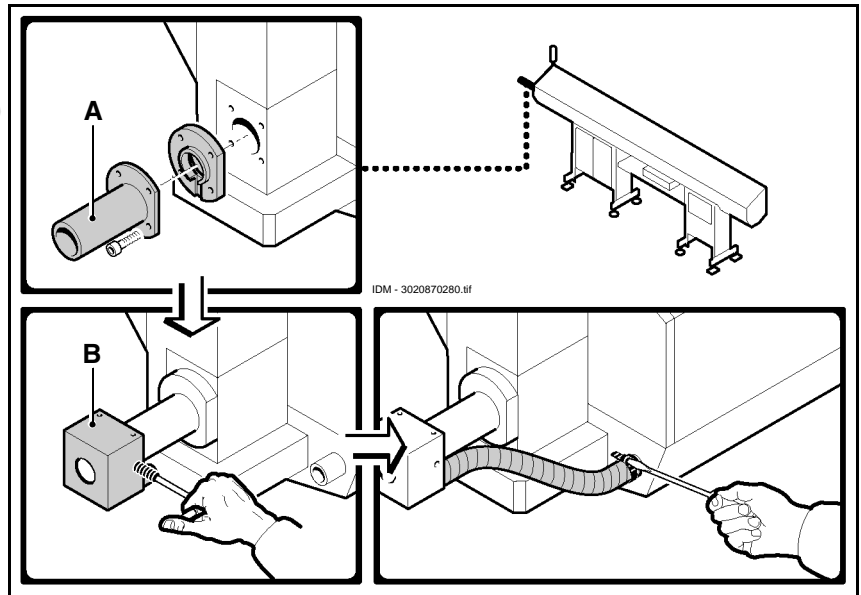
IEMCA228510041



- Roughly adjust the working axis height to obtain alignment with the lathe by turning the feet screws.

### 4.4.4 Nose - Installation

- Install the sleeve **A** in the bush holder device.
- Install the oil recovery device **B**.
- Connect the drain pipe to the tank.



## 4.4.5 Levelling and alignment

### □ Foreword

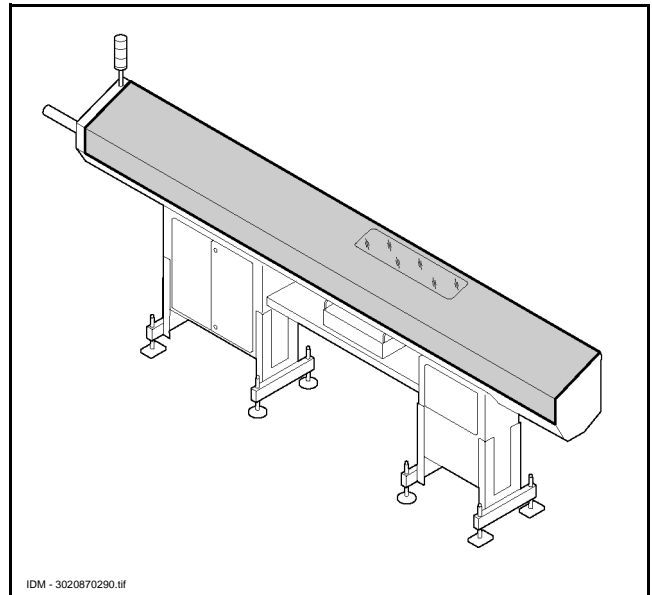
Alignment between the feeder and lathe is the most critical installation phase; therefore, this operation should be carried out by experienced personnel with the greatest accuracy.



**CAUTION:** bad alignment can be the main cause of feeder malfunction and resulting damage.

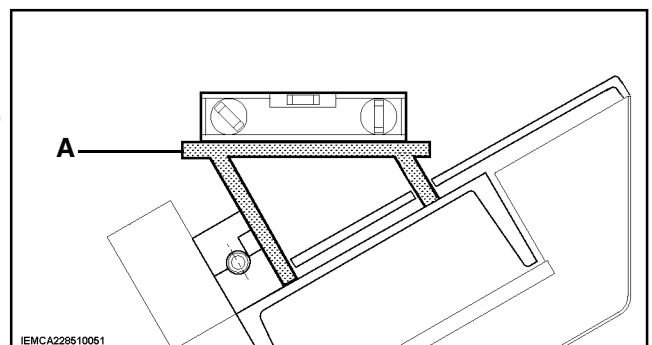
### □ Preliminary procedure

- *Open the top cover.*

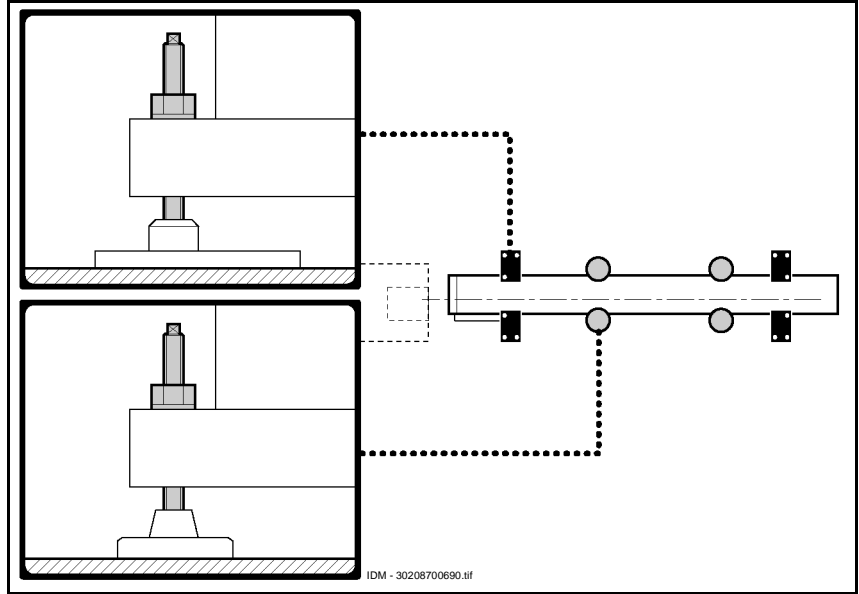


### □ Levelling

- *Position template A in the pre-set housings.*
- *Check the levelling by placing the level transversally and longitudinally.*

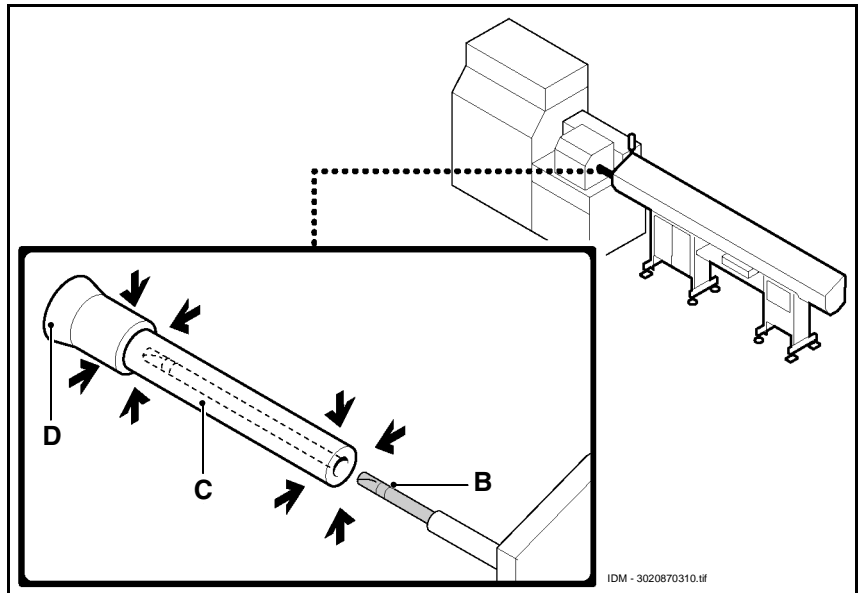


- Make the necessary corrections by adjusting the feet screws.



**□ Alignment**

- Position the bar pusher **B** at the inlet of spindle **C** of the lathe and check the alignment.
- Position the bar pusher in the forward end-of-travel position, close to collet **D** of the lathe, and check the alignment.

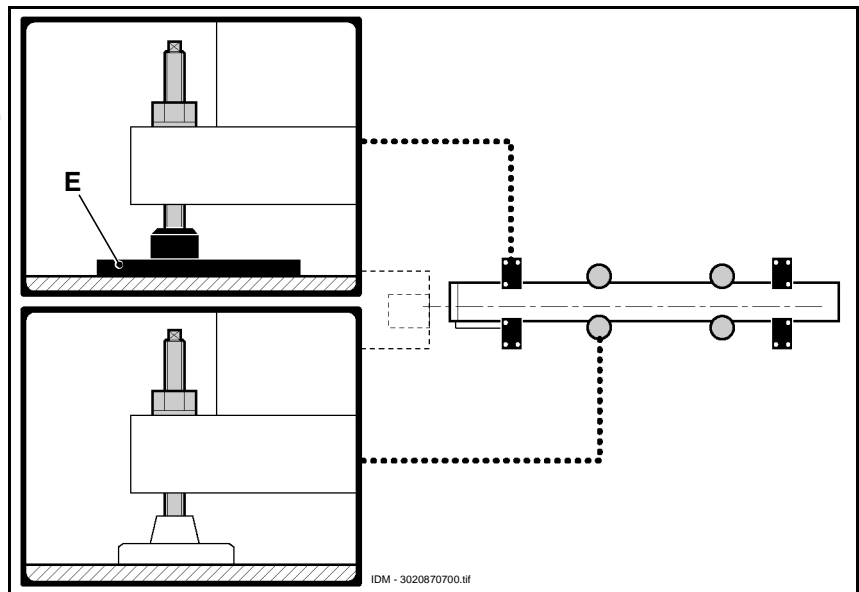


**□ Positioning adjustments**

Make the necessary corrections after checking alignment of the bar feeder.

Adjust height by turning the screws in the support feet; carry out lateral adjustment with calibrated mallet blows on the sides of plates **E**.

During this phase, any adjustment carried out during levelling should be preserved; therefore, in most cases, feeder positioning will be the result of a good adjustment compromise.



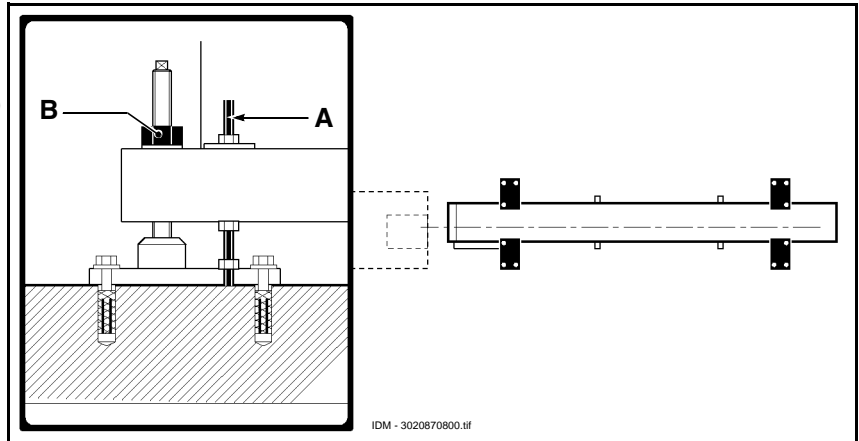
## 4.4.6 Feeder fastening

### □ Ground fastening



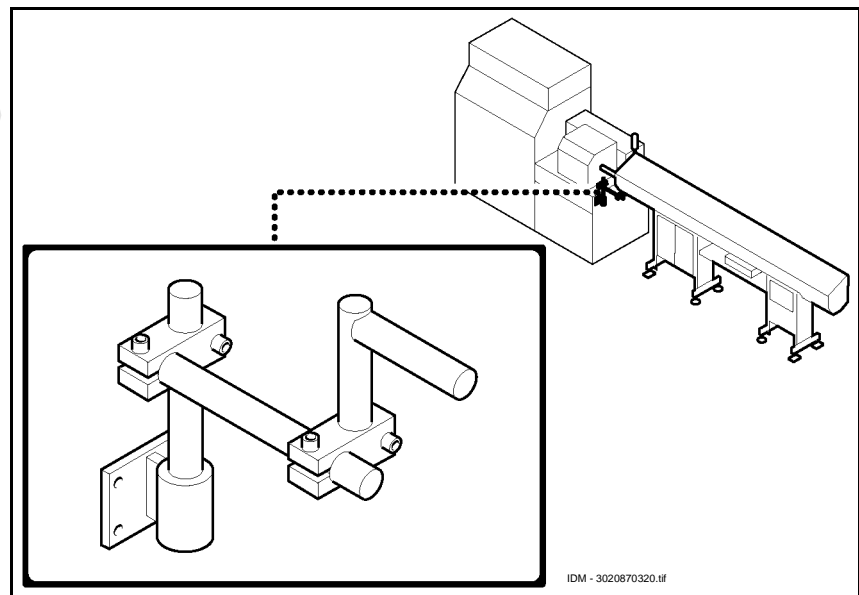
**CAUTION:** failure to fix the bar feeder to the ground or bad bar feeder fixing to the ground can be the main cause of bar feeder bad operation and resulting damaging.

- Drill the floor and fix the backing plates with expansion plugs.
- Fix the feeder to the plates through the tie-rods **A** and lock with nuts **B**.
- Perform another levelling and alignment check.
- Remove all the equipment used for levelling and alignment and restore initial feeder conditions.



### □ Fastening to the lathe

Wherever possible, the feeder should be fastened to the lathe through the suitable coupling unit according to lathe make and type. The figure shows a general example of fastening; contact IEMCA service department for more information.

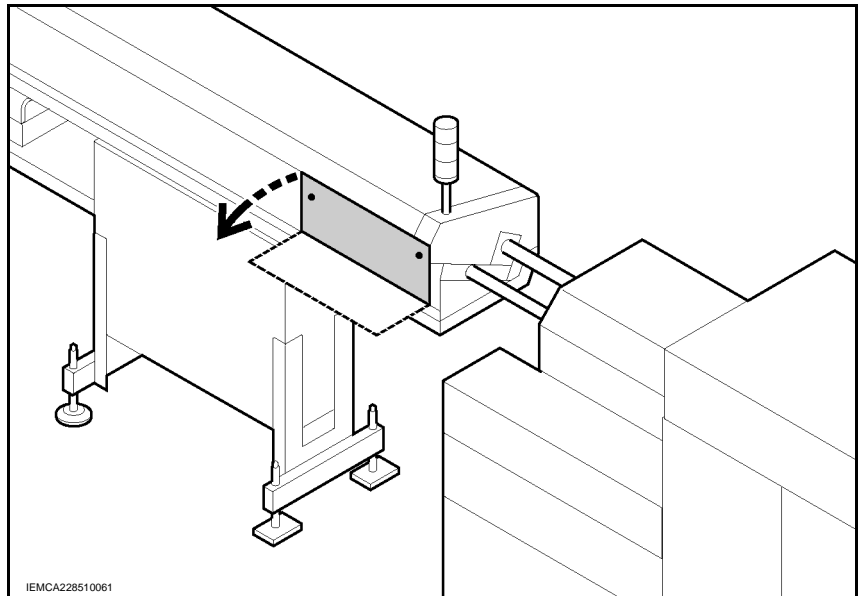




## 4.5. ACCESSORIES - Installation

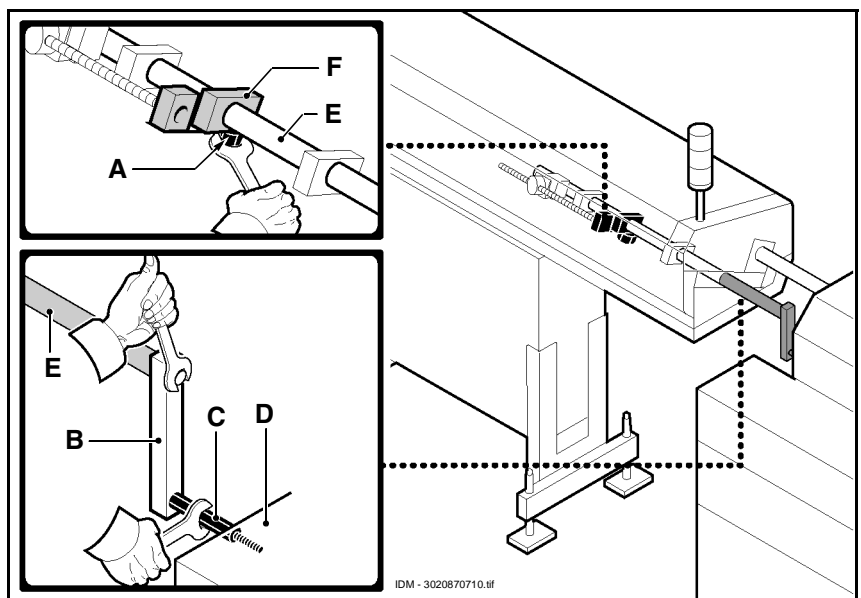
### 4.5.1 Precision facing device - Installation

- Remove the screws and open the front cover.



**i** **INFORMATION:** the figure shows a general example of installation; contact IEMCA service department for more information.

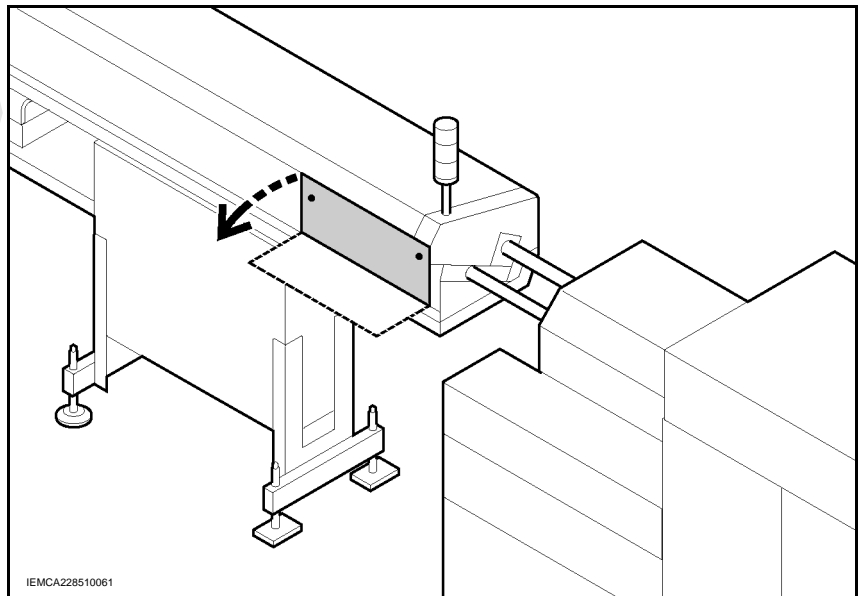
- Screw out the screw **A**
- Install the bar **B** and tie-rod **C** and make sure that the headstock **D** can run freely throughout its stroke together with shaft **E**.
- Position the support **F** in such a way as not to hinder the headstock stroke and tighten the screw **A**.
- Refit the guard previously removed.



## 4.6. DEVICES FOR SLIDING HEADSTOCK LATHES - Installation

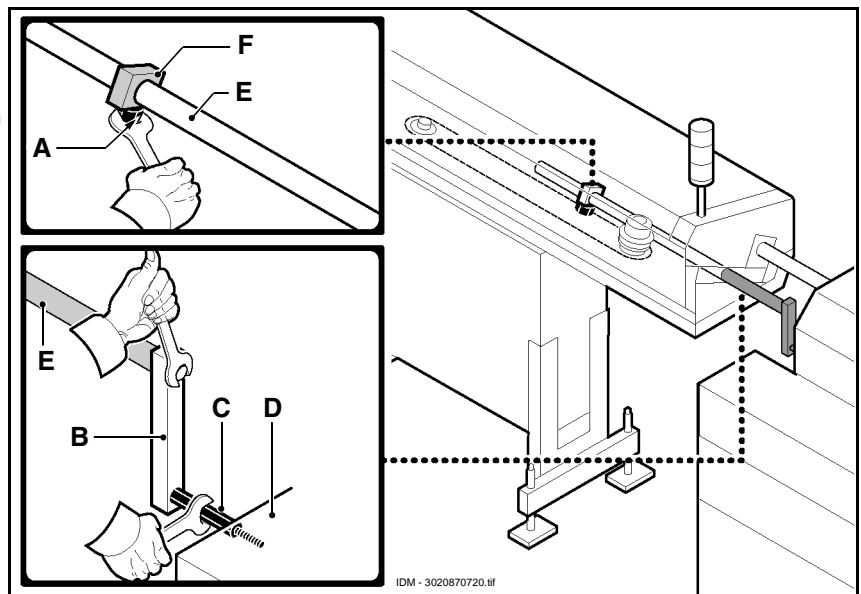
### 4.6.1 Bar-headstock synchronisation device- Installation

- Remove the screws and open the front cover.



**i** **INFORMATION:** the figure shows a general example of installation; contact IEMCA service department for more information.

- Screw out the screw **A**
- Install the bar **B** and tie-rod **C** and make sure that the headstock **D** can run freely throughout its stroke together with shaft **E**.
- Position the support **F** in such a way as not to hinder the headstock stroke and tighten the screw **A**.
- Refit the guard previously removed.

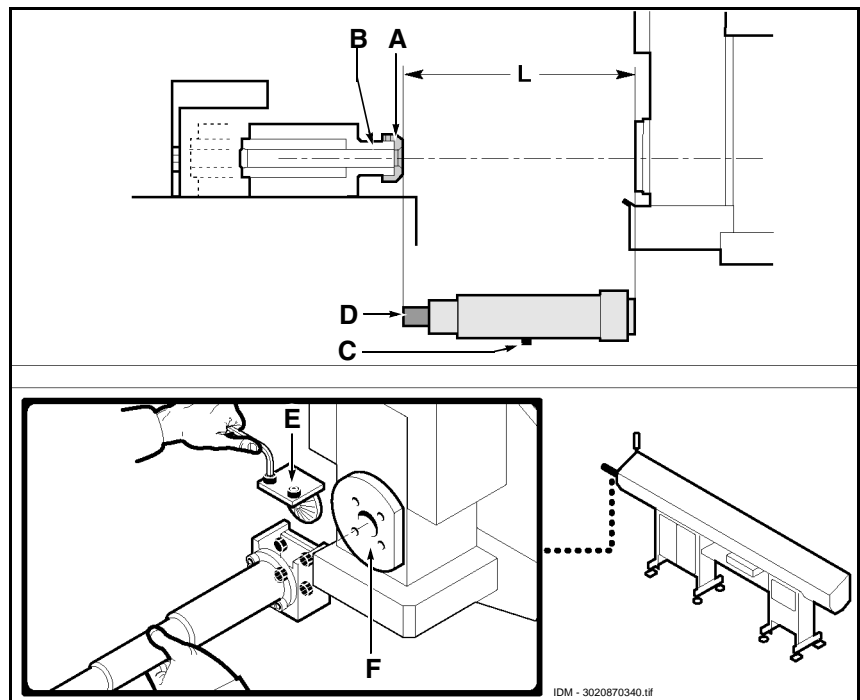


## 4.6.2 Telescopic front nose - Installation

- Remove the fixed sleeve that had been installed to obtain alignment between the feeder and the lathe.
- Fix the flange **A** (a general example is shown in the figure).

**i** **INFORMATION:** the lathe spindle nose **B** should not turn. If it does, a bearing or another similar device should be mounted to prevent telescopic nose turning after it has been installed.

- Move the headstock to its “all the way back” position and measure the dimension **L**. Take out the grub screw **C**, compress the telescopic nose to its limit stop minus 5 mm and cut the pipe **D** to the measured dimension.
- Move the headstock to its “all the way forwards” position. Remove the cover **E**, install the sleeve in the flange **F** and place back the cover **E**.
- Check smooth sliding of the telescopic nose by moving the headstock forwards and backwards.

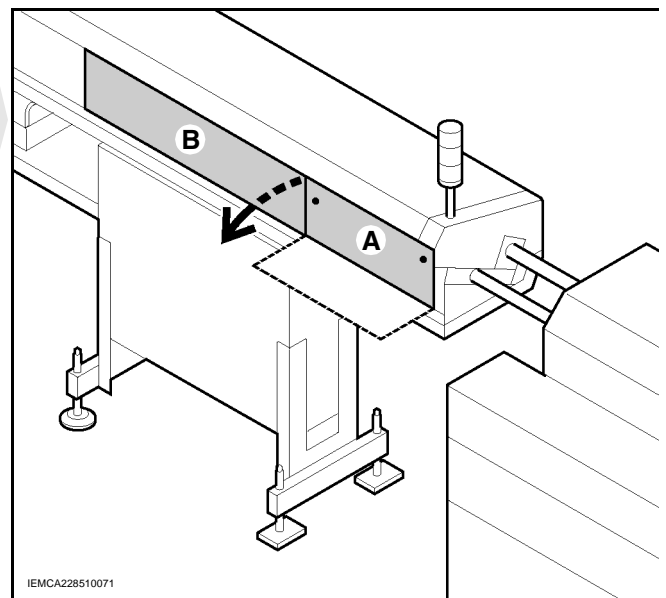


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## 4.7. DEVICES FOR CAM LATHES - Installation

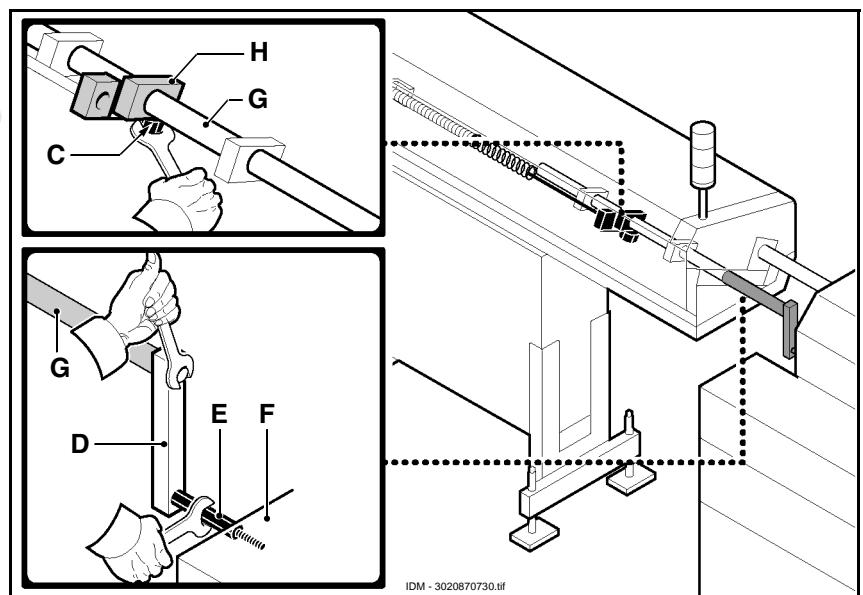
### 4.7.1 Headstock return device - Installation

- Remove the screws and open front cover **A**. Then remove back cover **B**.

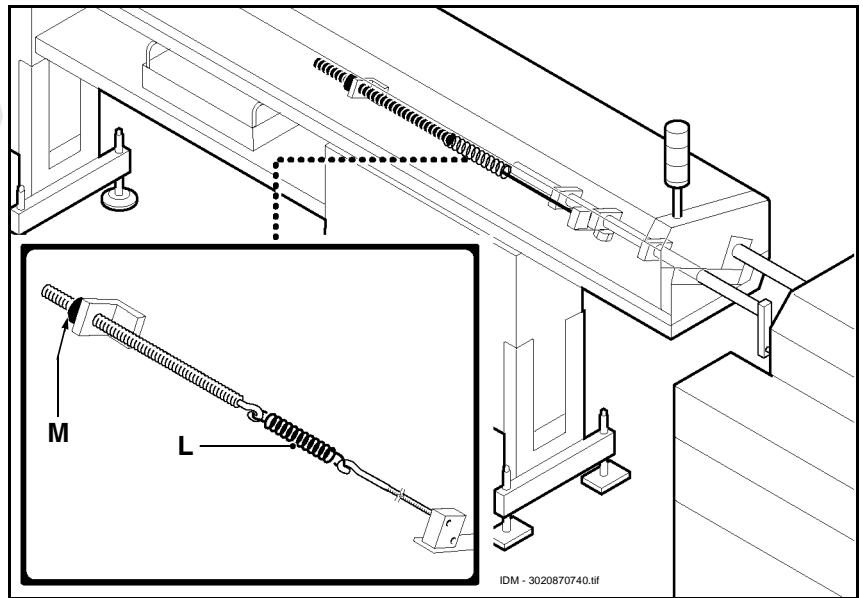


**i** **INFORMATION:** the figure shows a general example of installation; contact IEMCA service department for more information.

- Remove the original headstock return unit from the lathe.
- Screw out the screw **C**
- Install the bar **D** and tie-rod **E** and make sure that the headstock **F** can run freely throughout its stroke together with shaft **G**.
- Position the support **H** in such a way as not to hinder the headstock stroke and tighten the screw **C**.



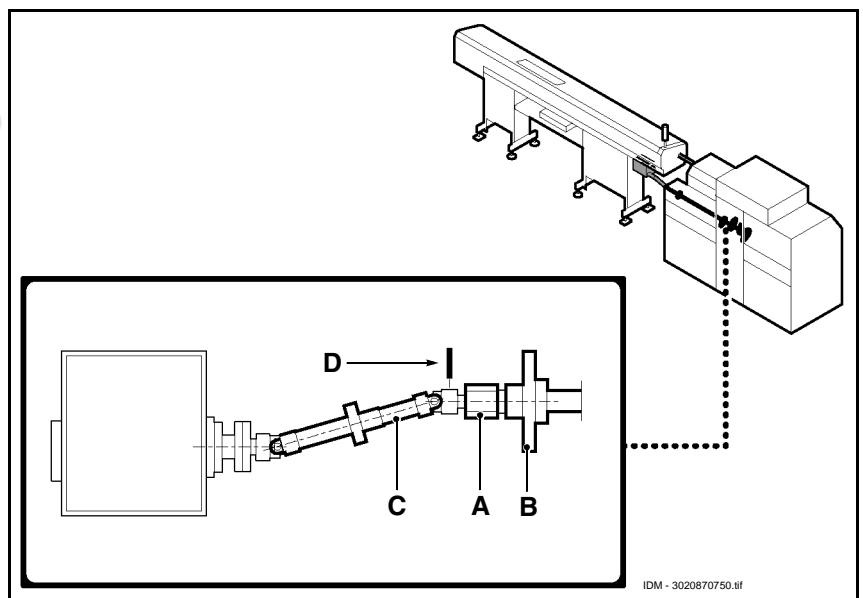
- Install the (original lathe) spring **L** and adjust its tension through the ring nut **M**.
- Refit the guard previously removed.



## 4.7.2 Cam box - Installation

**i** **INFORMATION:** the figure shows a general example of installation; contact IEMCA service department for more information.

- Install the sleeve **A** on the lathe camshaft **B**.
- Connect the shaft **C** to the sleeve through the pin **D**.

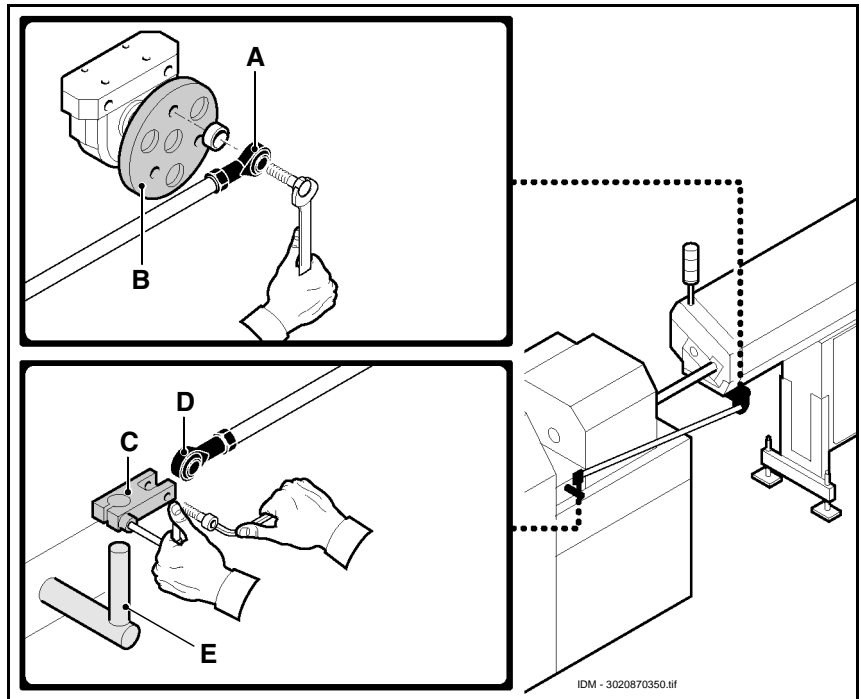


### 4.7.3 Camshaft release device

**i** **INFORMATION:** the figures show a general example of installation; contact IEMCA service department for more information.

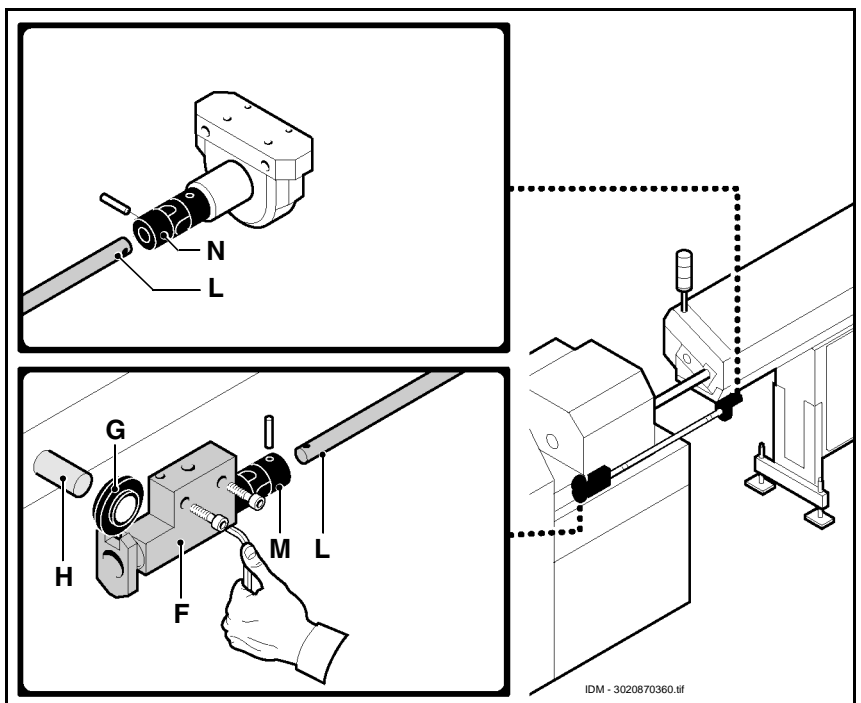
#### □ Radial version

- Mount the articulation **A** in the flange **B**.
- Mount the joint **C** in the articulation **D** and in the lathe control **E**.



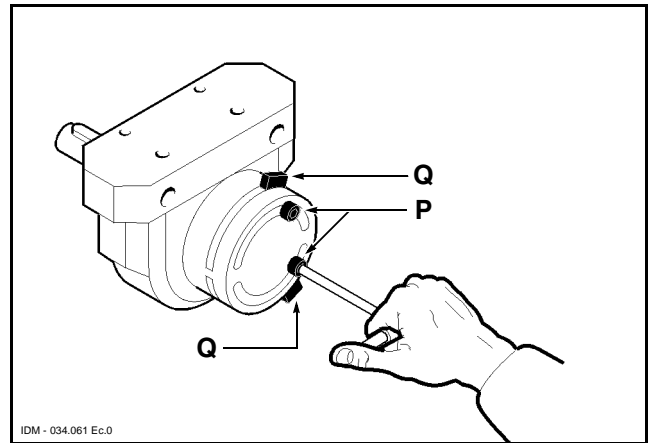
#### □ Axial version

- Cut a hole and thread in the lathe casing to fix the transmission unit **F** and mount the disk **G** in the control **H**.
- Insert the shaft **L** in the joint **M** and lock with a pin; insert the other end of shaft **L** in joint **N** and lock with a pin.



After completing the above-described operations, the actuator rotation stroke should be adjusted (this operation is necessary for both the radial version and the axial version).

- Loosen the screws, move the slides **Q**, retighten the screws **P**.



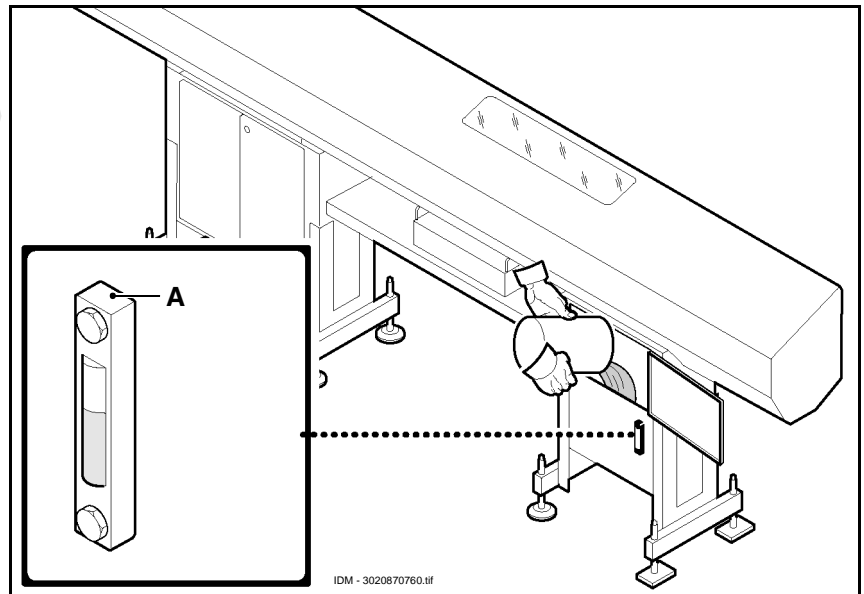
## 4.8. LUBRICANT OIL - Filling

**CAUTION:** wear personal protections according to the regulations in force.

- Open the door.
- Pour the oil directly into the tank and check the level on indicator **A**.

Oil characteristics: *ESSO-NUTO 100*, quantity 40 l.

For the comparative table, see paragraph 2.6.



## 4.9. ELECTRIC CONNECTION

**DANGER - WARNING:** this type of operation should only be entrusted to skilled technical staff to comply with the applicable standards and statutory regulations in force.

The feeder must be electrically connected to the lathe, which in turn, must be connected to the plant wiring system in compliance with the applicable regulations in force.

The feeder is normally provided with a multiple plug to plug into the special lathe outlet; refer to the "Wiring diagram" if necessary.

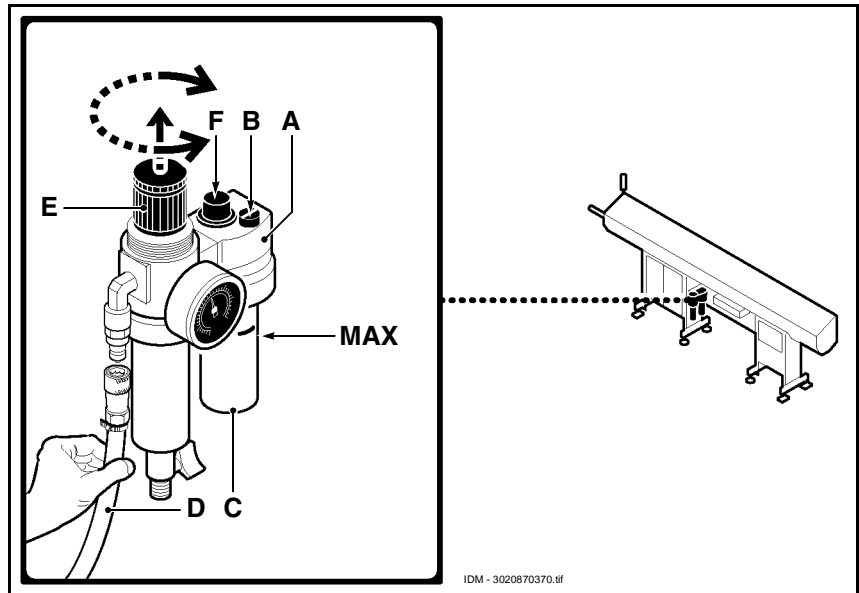
## 4.10. PNEUMATIC CONNECTION

**i** **INFORMATION:** the operations described below refer only to bar feeders fitted with pneumatic devices.

- Fill the tank of lubricator **A** removing plug **B** or cup **C**; the oil level must reach the **MAX.** reference.

See section 2.6. for the oil comparison table.

- Connect pipe **D** to the compressed air ductwork system as shown in the figure. With knob **E**, adjust the pressure at 6 bar.
- Check air lubrication (1-12 drops per 1000 l. of air); adjust by turning the screw **F**.



## 4.11. SELF-LEARNING DIMENSIONS - Programming

Self-learning data depend on the type and size of the lathe to which the feeder is coupled.


This operation is necessary because these dimensions will determine bar movements.

For information on how to carry out this operation, check the "Keyboard instruction manual".



## 5.1. ADJUSTMENT AND SETTING-UP - Foreword

---

 **DANGER - WARNING: do not perform any adjustment while the feeder is in motion unless explicitly requested in the manual.**

In addition to normal adjustments throughout its service life, this bar feeder also needs set-up according to the type of operation. According to bar size and type of machining, setting up may also include replacement of a few components.

These operations are listed and then described below:

- 5.2. **General adjustments - Foreword**
- 5.3. **Setting-up the bar feeder according to the bar to be machined**
- 5.4. **Precision facing device - Adjustment**
- 5.5. **Cam box - Timing**

## 5.2. GENERAL ADJUSTMENTS - Foreword

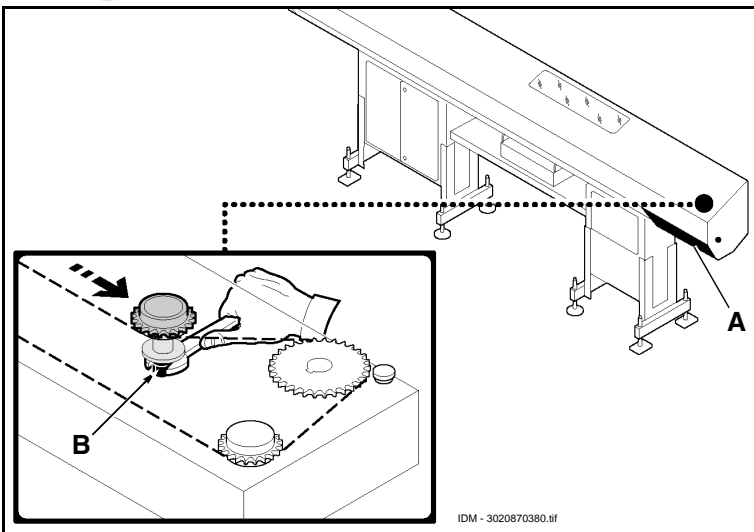
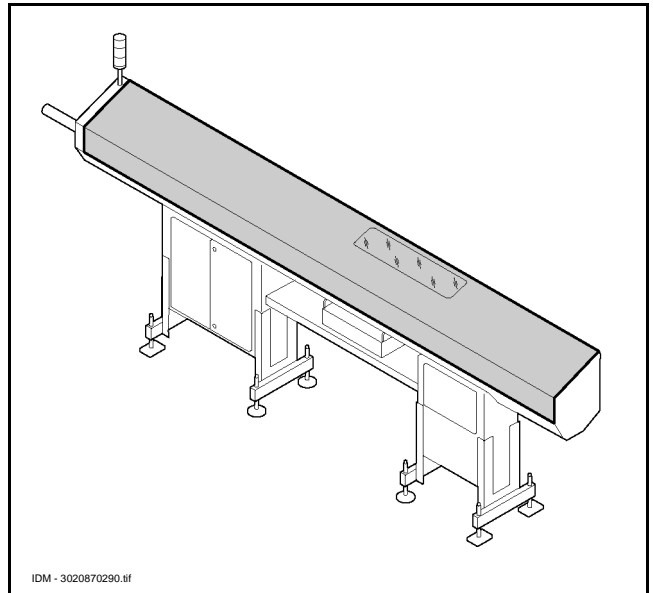
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Including all the necessary adjustments for good feeder operation. They may become necessary after maintenance, trouble fixing or component replacement.

- 5.2.1 **Feed chain - Adjustment**
- 5.2.2 **Drive belt - Adjustment**

## 5.2.1 Feed chain - Adjustment

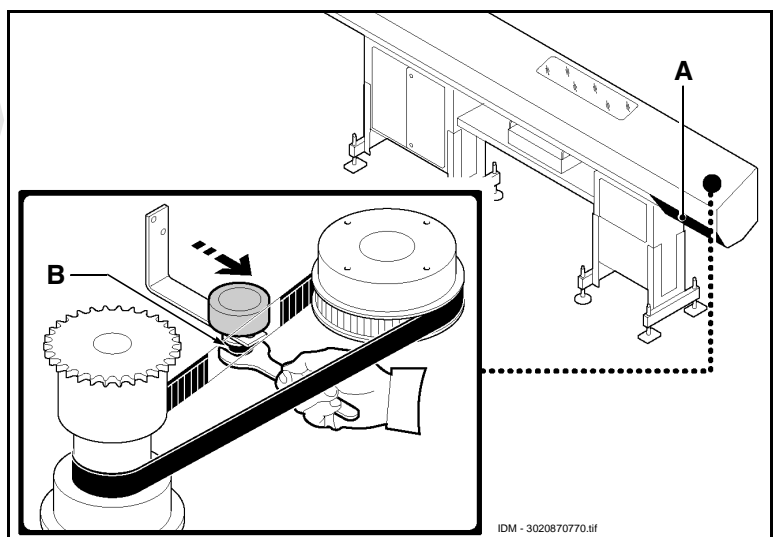
- *Open the upper guard.*



- *Remove guard A.*
- *Loosen nut B.*
- *Stretch the chain, moving the pinion in the direction of the arrow and lock nut B.*
- *Refit the guard previously removed.*

## 5.2.2 Drive belt - Adjustment

- *Remove guard A.*
- *Loosen nut B.*
- *Stretch the chain, moving the roller in the direction of the arrow and lock nut B.*
- *Refit the guard previously removed.*



### 5.3. SETTING-UP THE BAR FEEDER ACCORDING TO THE BAR TO BE MACHINED

Depending on the diameter of the bar previously machined and that of the new cycle, various set-up operations have to be performed.

It is possible to establish the type of operation to be carried out with the aid of the following table.

**Table 1.** Diameters of guides, bar-pusher, bars and pipes

Guide diameter (mm)	Bar-pusher diameter (mm)	Bar diameter (mm)		Largest pipe diameter (mm) (*)
		MIN	MAX	
8	7,5	2	6,5	7,5
11	10	3	9	10
13	12	4	11	12
18	15	5	13,5	17
22	20	5	18,5	20
26	25	8	23	25
28	27	8	25	26
30	29	8	26	26

(\*) valid also for prepared bars or normal bars machined with front remnant ejection



**CAUTION:** Barstock diameters for any guide channel are only given as an example. A barstock diameter approximately 5 mm smaller than the guide channel diameter may cause vibration and failure to the bar feeder. Therefore, it may be necessary to slow down the bar rotation speed or to change the guide channel diameter in order to obtain the best performance for a specific application.

### □ Example 1

The previous machining cycle had been carried out under these conditions:

Guide diameter (mm)	Bar-pusher diameter (mm)	Bar diameter (mm)
8	7,5	2

The new machining cycle requires feeding of 2 mm bars. The operations to be carried out are as follows:

- replacing the bar pusher collet;
- replacing the half-bushings;
- adjusting the bar magazine;
- adjusting the bar selection device;
- adjusting the terminals;
- adjusting the clutch thrust.

### □ Example 2

The previous machining cycle had been carried out under these conditions:

Guide diameter (mm)	Bar-pusher diameter (mm)	Bar diameter (mm)
8	7,5	2

The new machining cycle requires feeding of 8 mm bars. The operations to be carried out are as follows:

- replacing the guide channels ( $\varnothing$  6 mm to  $\varnothing$  11 mm);
- replacing the bar pusher ( $\varnothing$  5.5 mm to  $\varnothing$  10 mm);

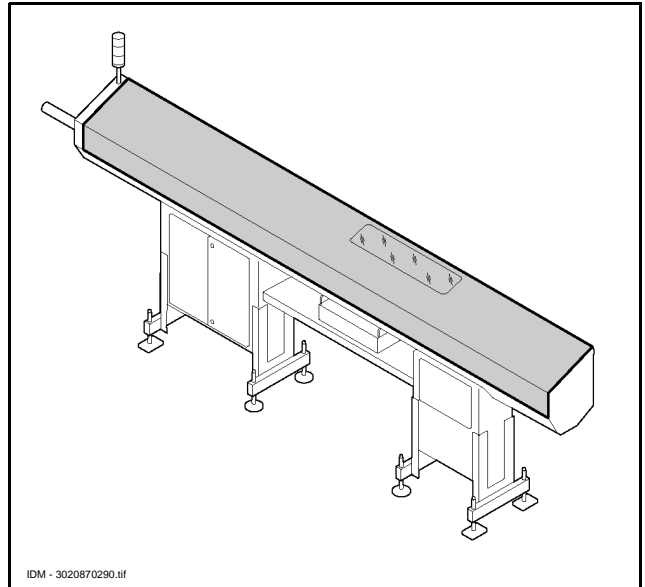
- replacing the bar pusher collet;
- replacing the half-bushings;
- setting up the guide channel closing mode;
- replacing the nose;
- adjusting the bar magazine;
- adjusting bar selection device;
- adjusting the terminals;
- adjusting clutch thrust;

The information regarding these operations is contained in the paragraphs listed below, followed by the description

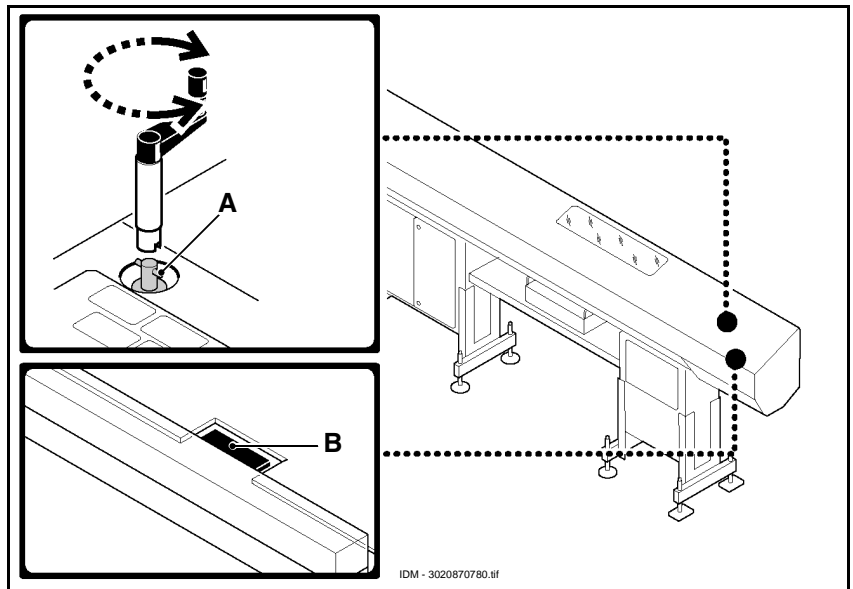
- 5.3.1 Guide channels, bar pusher and collet - Replacement**
- 5.3.2 Half-bushing - Replacement**
- 5.3.3 Nose - Replacement**
- 5.3.4 Bar magazine - Adjustment**
- 5.3.5 Bar selection device - Adjustment**
- 5.3.6 Clamps - Adjustment**
- 5.3.7 Clutch thrust - Adjustment**

### 5.3.1 Guide channels, bar pusher and collet - Replacement

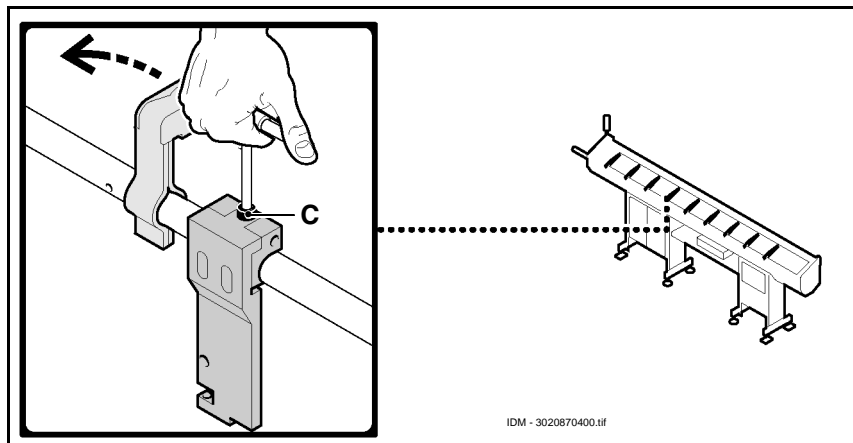
- Bring the bar pusher “completely backwards” to the “BAR FEEDER ZERO SETTING” position.
- Open top guard.



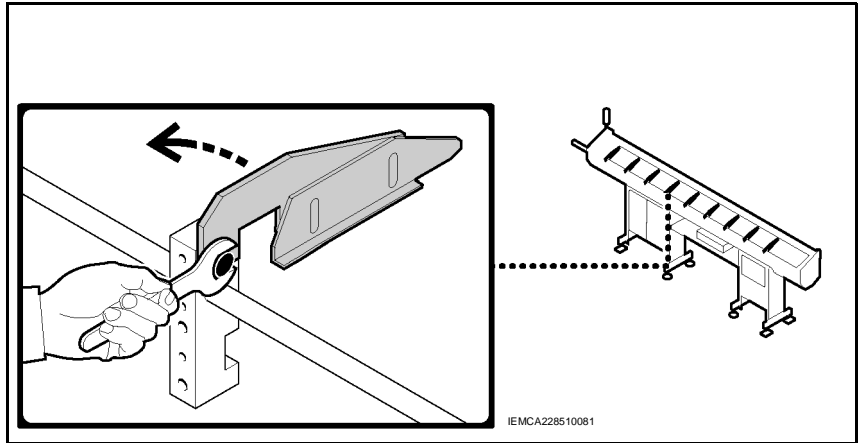
- Insert the crank (supplied) in shaft **A** and move flag **B** of the bar pusher to the opening.



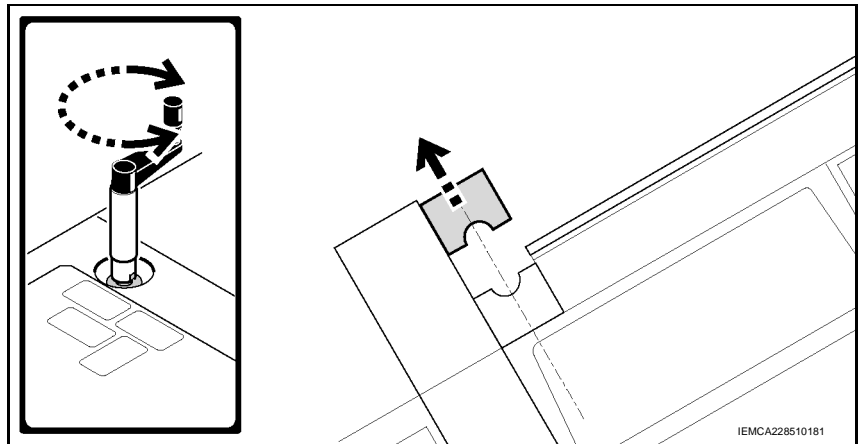
- Remove screws **C** and turn all the selectors over backwards.



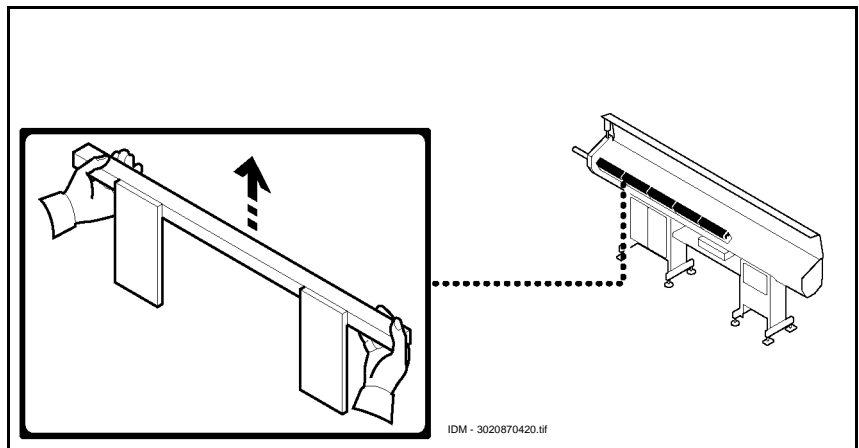
- Loosen the screws and turn all the supports over backwards.



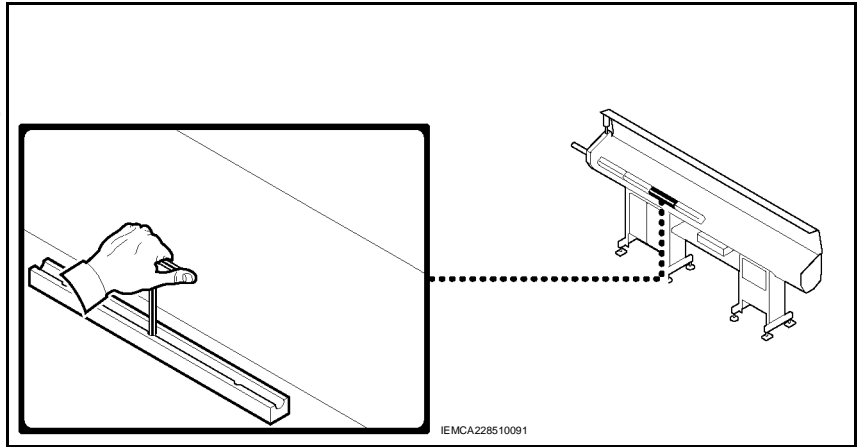
- Lift the upper guide channels.



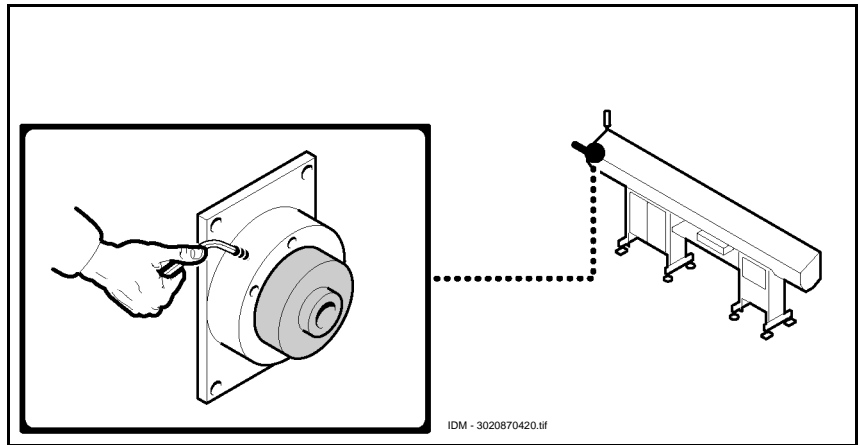
- Remove the upper guides.



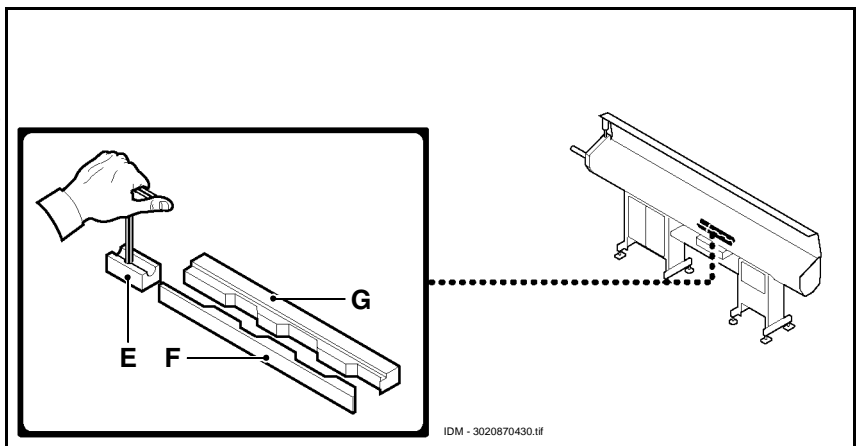
- Remove the bottom guides.



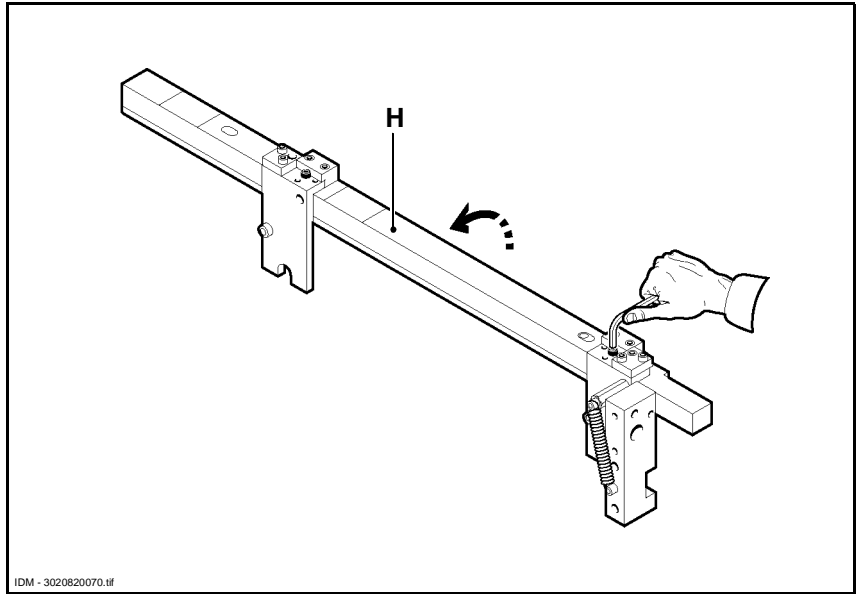
- Remove the inner sleeve and replace it with another sleeve suitable for the bar to machine.



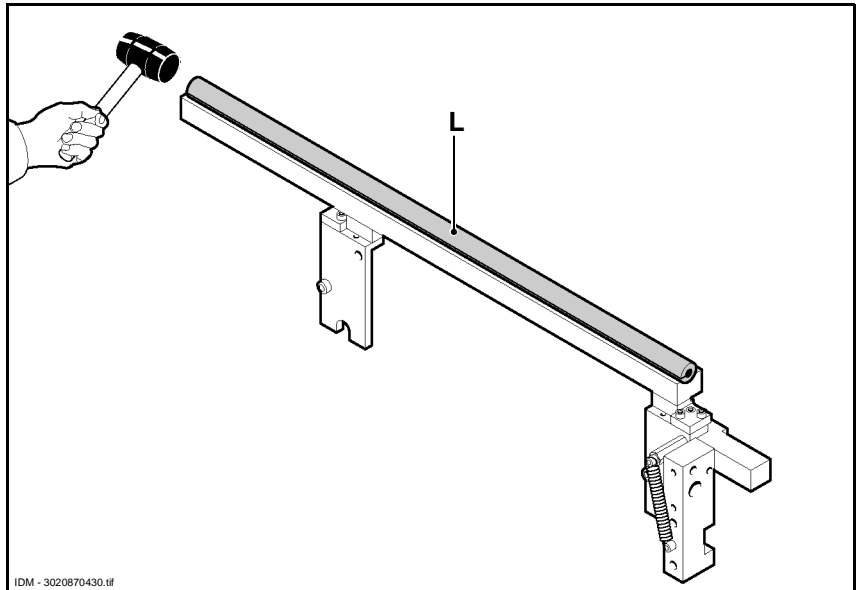
- Replace the parts **E**, **F** and **G** with other parts suitable for the bar.
- Install lower guides and top guides suitable for the bar.



- Turn the guide channel **H** over backwards, after screwing out the screws.



- Remove the tube **L** (with the bar pusher inside).



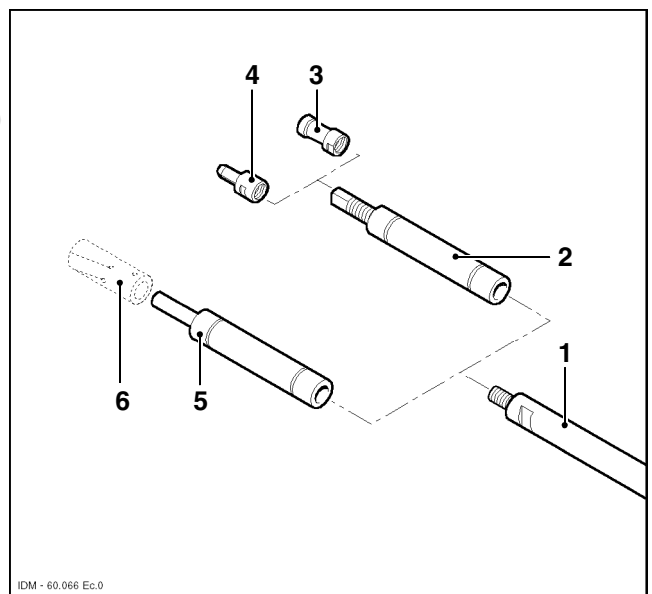
- Choose a suitable collet for the bar; check the "GUIDE CHANNELS - BAR PUSHER - REVOLVING TIPS - COLLETS - Choice manual".

**i** **INFORMATION:** for more information contact IEMCA Service Dept.

Legend:

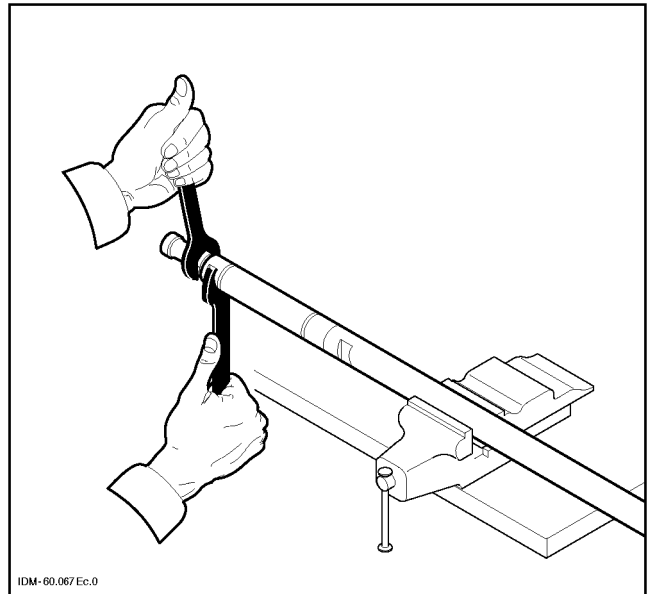
- 1 - Bar pusher.
- 2 - "IEMCA" collet rotating unit
- 3 - "IEMCA" collet for bars.
- 4 - "IEMCA" collet for tubes.
- 5 - "SCHLENKER" collet rotating unit.
- 6 - "SCHLENKER" collet.

**⚠ CAUTION:** The external diameter of the collet must be at least 0.5 mm less than the bar pusher external diameter.

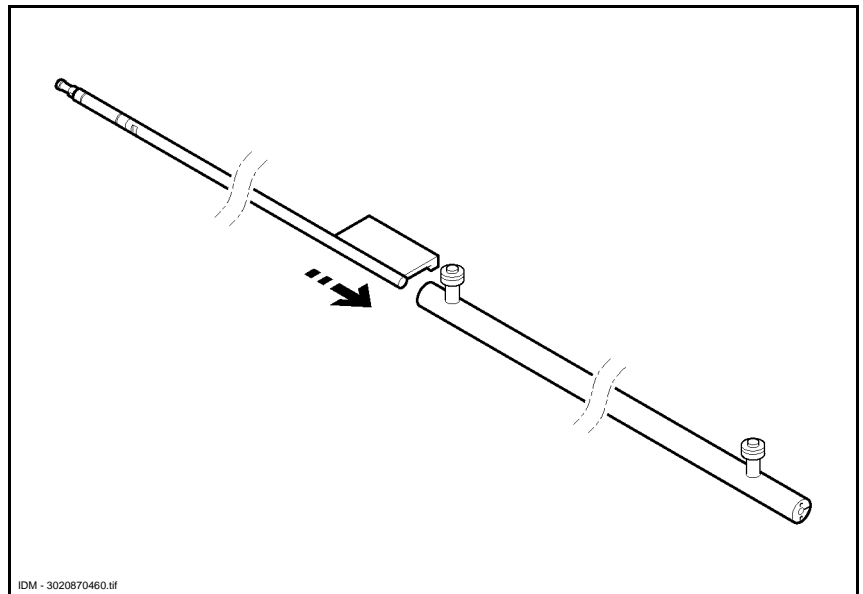




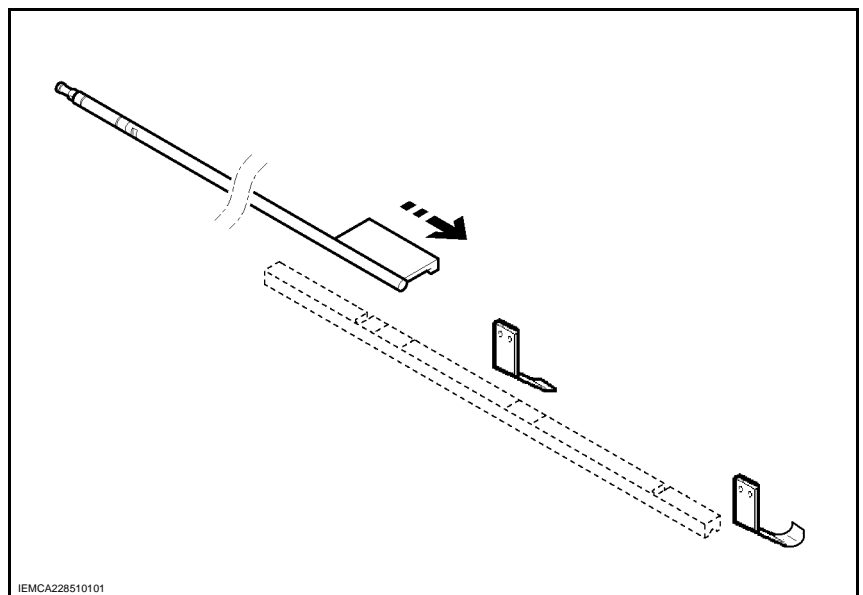
- Screw the collet into a bar pusher suitable for the bar.



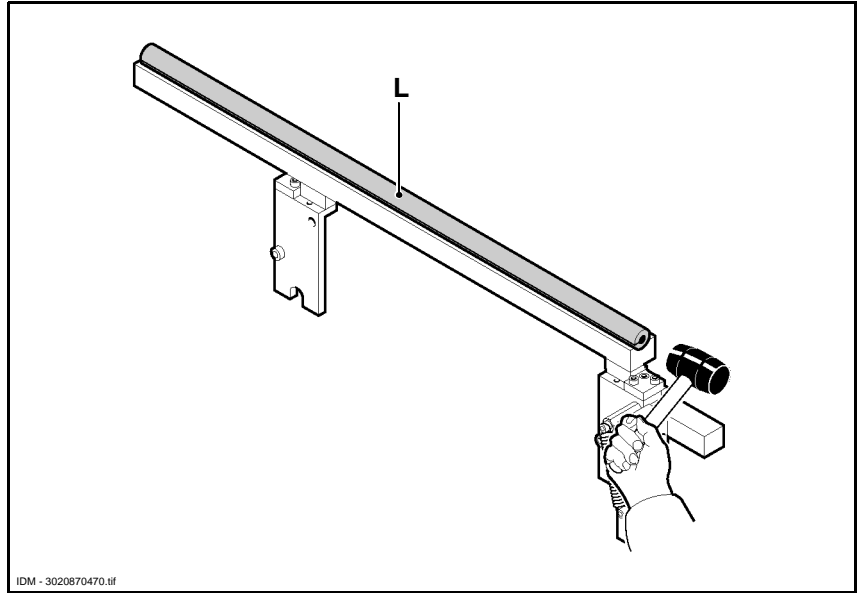
- Insert the bar pusher in a tube suitable for the bar ( $\varnothing < 26 \text{ mm}$ ).



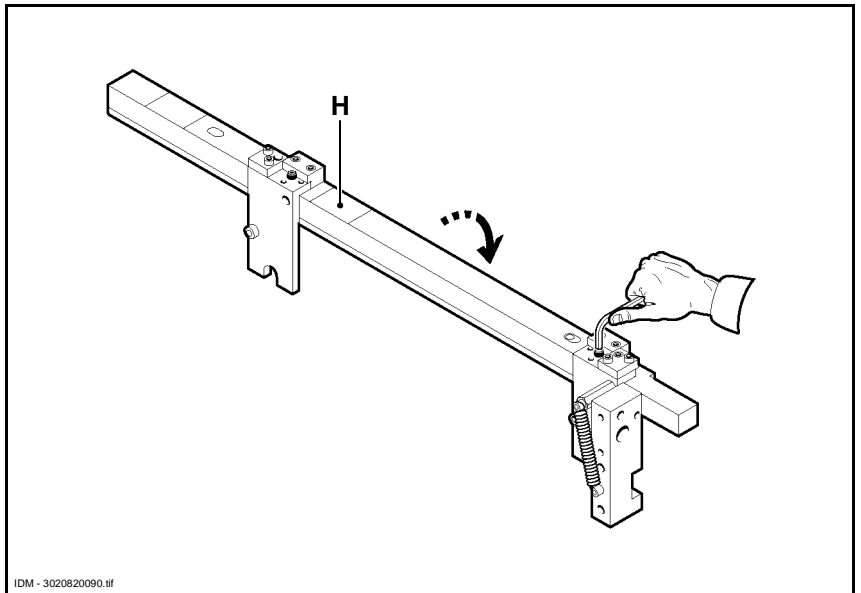
- For bars with  $\varnothing > 26 \text{ mm}$ , rest the bar pusher on the relevant supports.



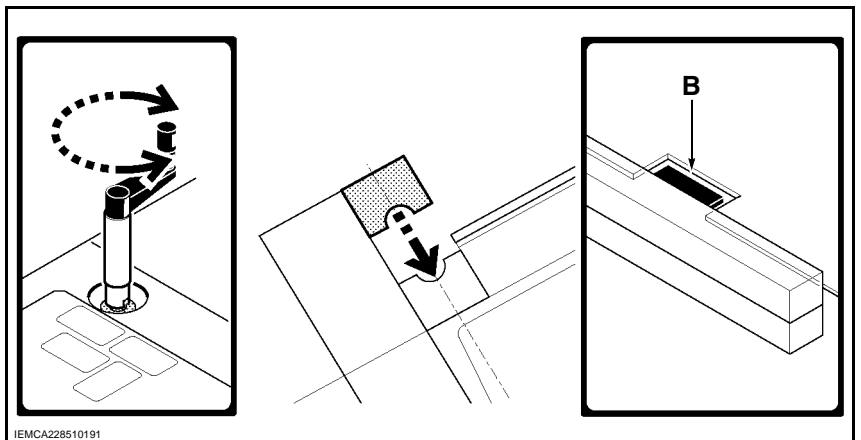
- Install the tube **L**.



- Turn the guide channel **H** over forwards and screw down the screws.

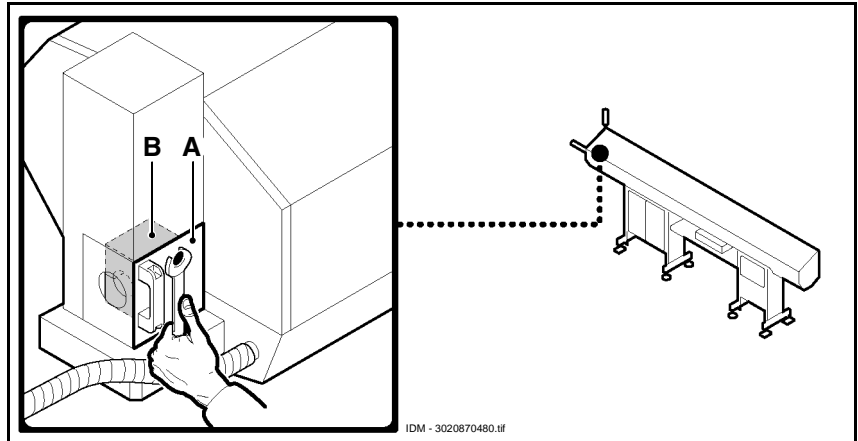


- Close the top guides and make sure that the flag **B** is inserted well into the carriage seat.
- Restore the initial bar feeder conditions.



### 5.3.2 Half-bushings - Replacement

- Remove the cover **A**, replace the two half-bushings **B** with other half-bushings suitable for the bar.
- Put the cover back in place.

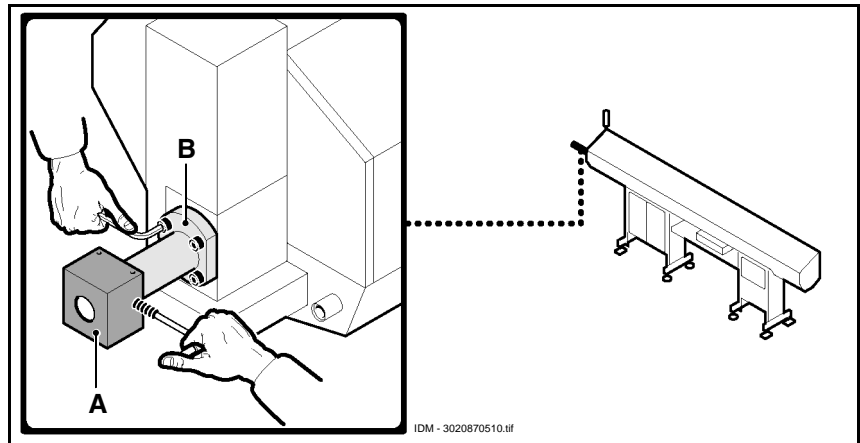


### 5.3.3 Nose - Replacement

**i** **INFORMATION:** after removing the nose, replace the spindle liner.

#### □ Fixed nose

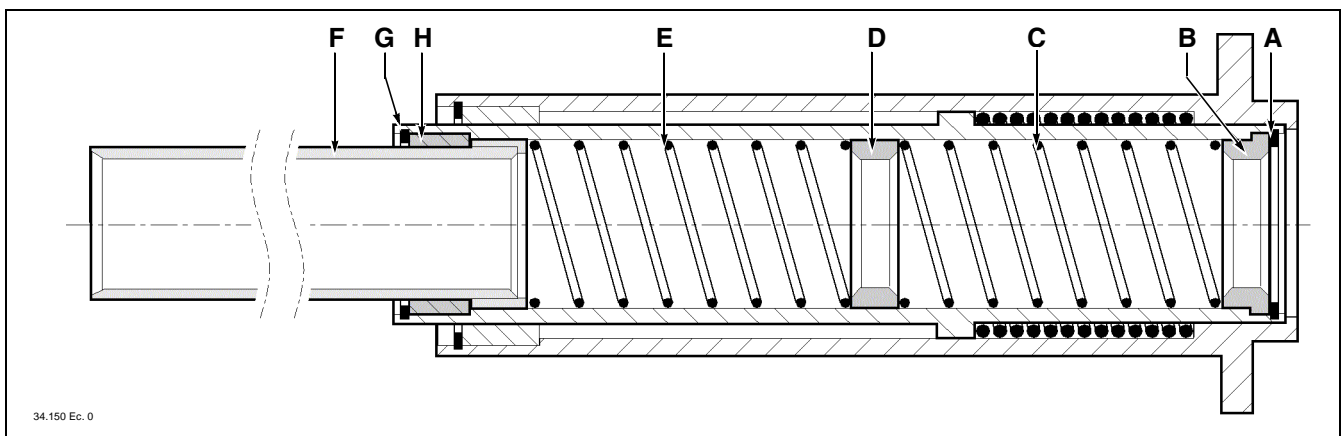
- Remove the oil recovery **A**.
- Replace the sleeve **B** with the sleeve suitable for the bar.
- Fit the oil recovery and position the drain pipe inside the tank.



#### □ Telescopic nose

It is not necessary to change the whole telescopic nose assembly: only a few components supplied as a spare part kit need to be changed.

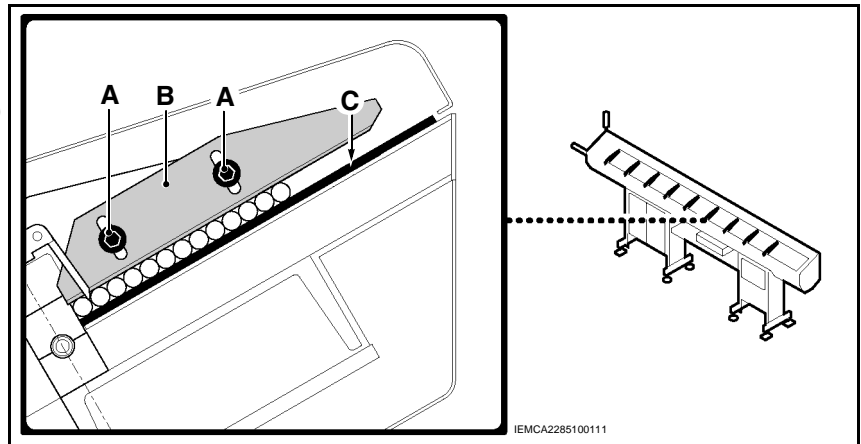
- Compress the intermediate stage to the end of its stroke and remove the ring **A**. Extract the bush **B**, the spring **C**, the bush **D**, the spring **E** and the sleeve **F**.
- Remove the ring **G**, replace the bushing **H** with the bushing suitable for the bar and put the ring **G** back in place.
- Put back in place the sleeve **F**, the spring **E**, the bushing **D**, the spring **C** and the bushing **B**. The sleeve **F** and the bushings **D** and **B** must be suitable for the bar.
- Reassemble ring **A**.



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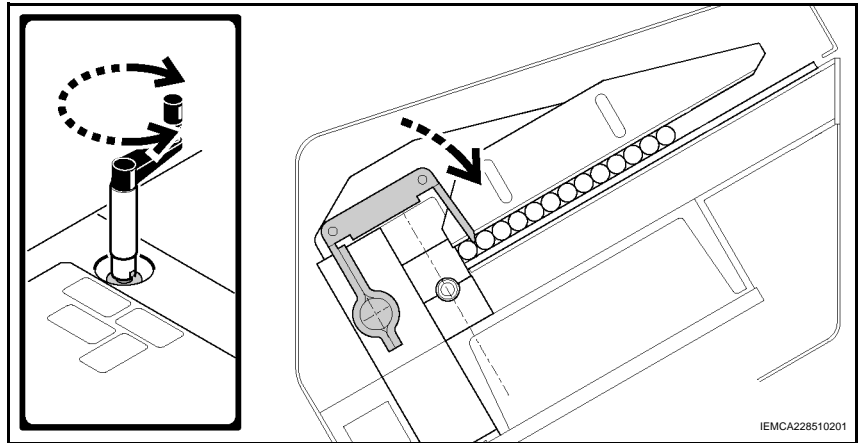
### 5.3.4 Bar magazine - Adjustment

- Loosen screws **A** and lift the plates **B**.
- Insert a few bars.
- Adjust the height of the plates. The distance between the plates and shim **C** must be slightly greater than the bar diameter.
- Lock the screws.

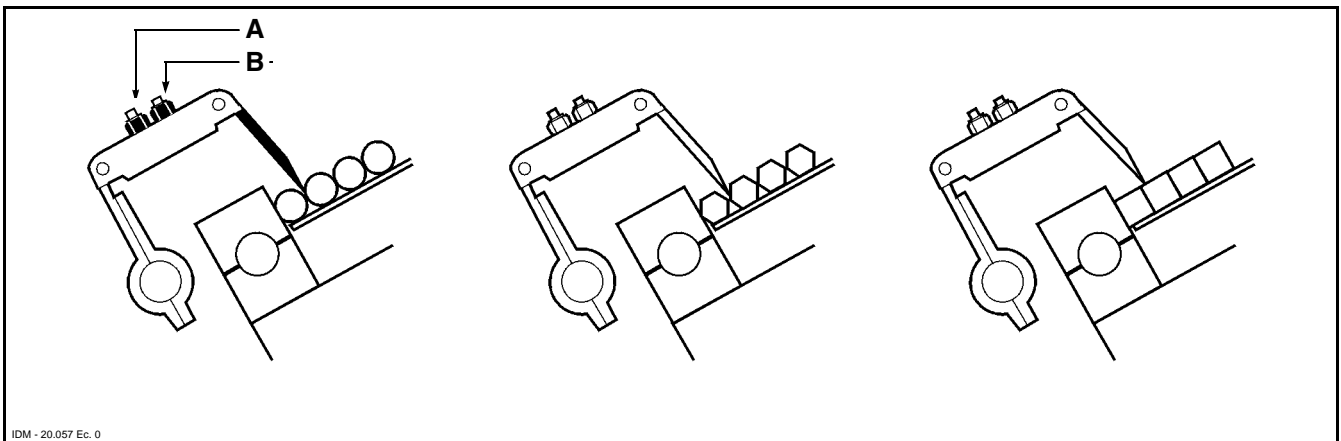


### 5.3.4 Bar selection device - Adjustment

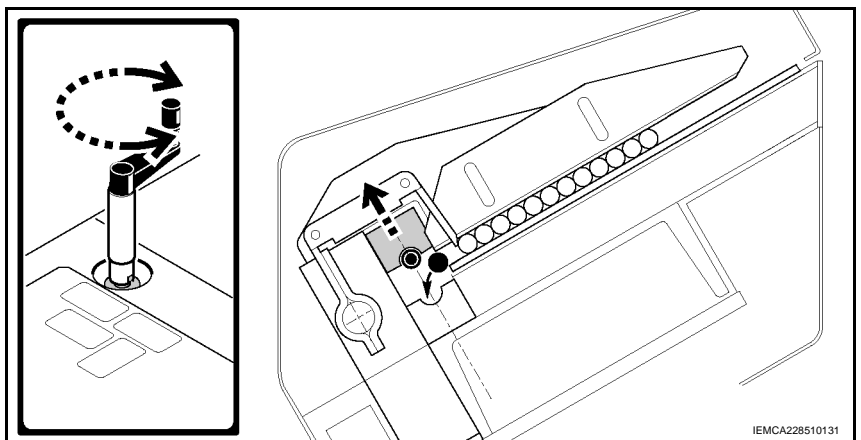
- Lower the selectors to the lowest point of descent.



- Adjust the position of the selectors by using nuts **A** and **B** alternately. Nut **A** is used for adjusting the height, the nut **B** for transverse adjustments.

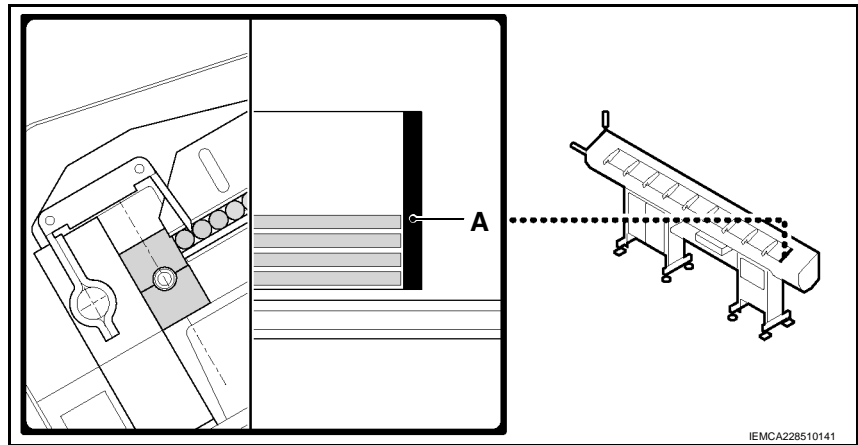


- Open the top guide channels; the first bar must fall into the guide channel, while the others must be held back in the magazine.

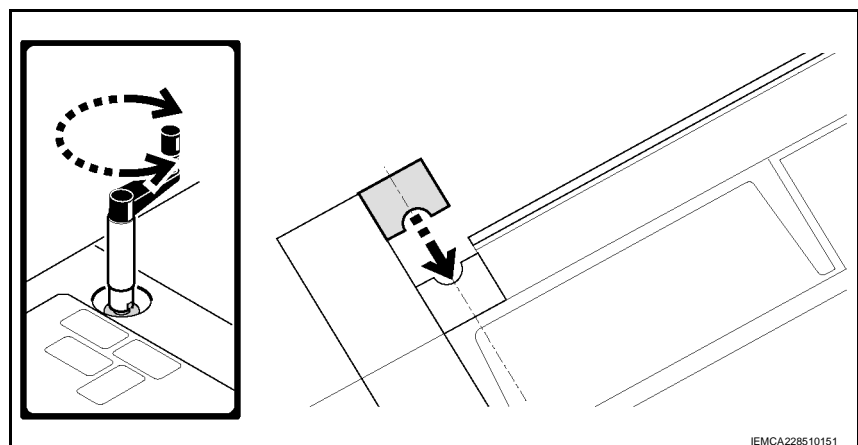


### 5.3.5 Clamps - Adjustment

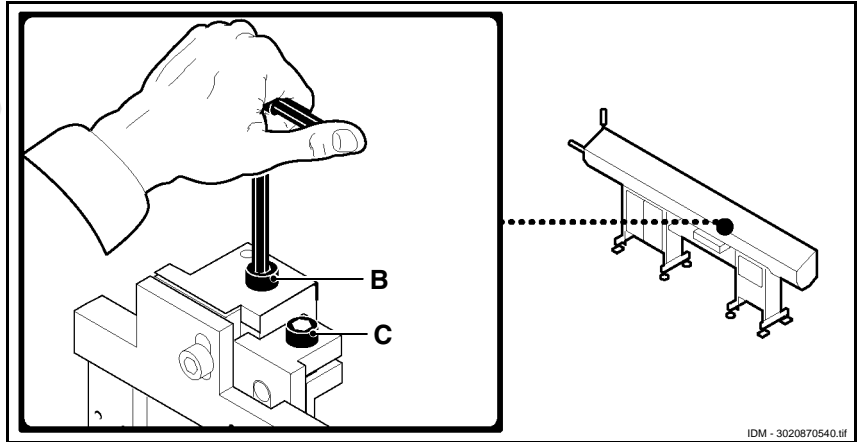
- The bar feeder guide channels must be closed and the bars contained in the magazine must be aligned with the plate A.



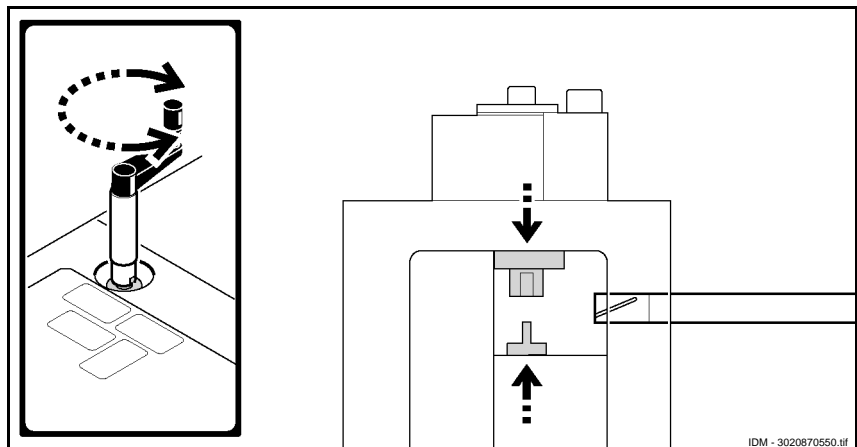
- Close the upper guard.
- Press to start the bar feeder.
- Press to select the manual function.
- Hold down for a few seconds to move the carriage a little forwards starting from the “ZERO SETTING” position.
- Press and to select the semiautomatic function, then press several times until the message “1<sup>ST</sup> FEEDING RETURN” is displayed; the bar feeder guide channels must be open and the bar must be in its feeding into collet position.
- Press and open the top cover.
- Close the guide channels.



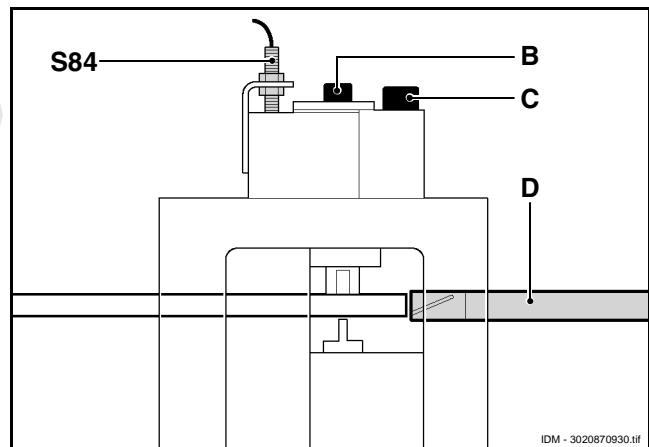
- Lift the top clamp all the way up via the screw **B**. Lower the bottom clamp via the screw **C**.


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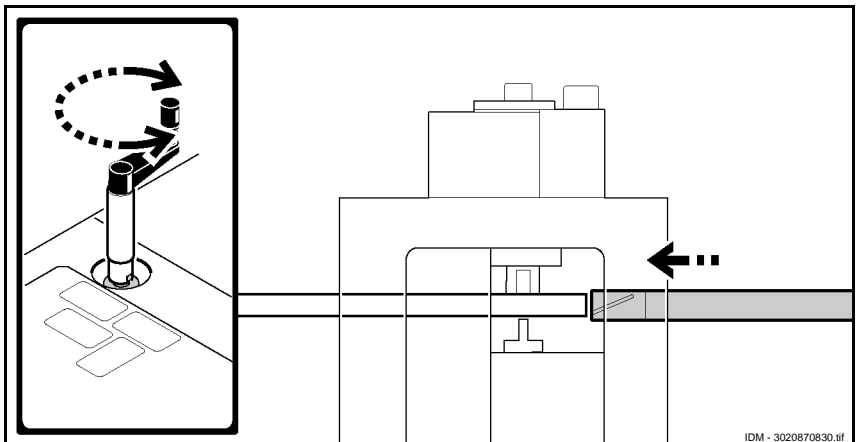
- Close the clamps.


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- Lift the bottom clamp using screw **C**, until the bar axis is lifted by about 2 mm above the bar pusher **D** axis. Lower the top clamp using screw **B**, until the bar axis is in line with the bar pusher axis; the sensor **S84** must not be energised.


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- Turn the crank vigorously to obtain bar introduction into the bar-pusher collet. During this operation, make sure that the bar does not slip out of the clamp grip and that the sensor **S84** is not energised. Repeat this operation two or three times to make sure that good adjustment has been obtained.
- Turn the crank to reach the end of its travel.


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### 5.3.6 Clutch thrust - Adjustment

The feeding thrust received by the bar via the clutch must be adjusted according to the diameter of the bar itself.

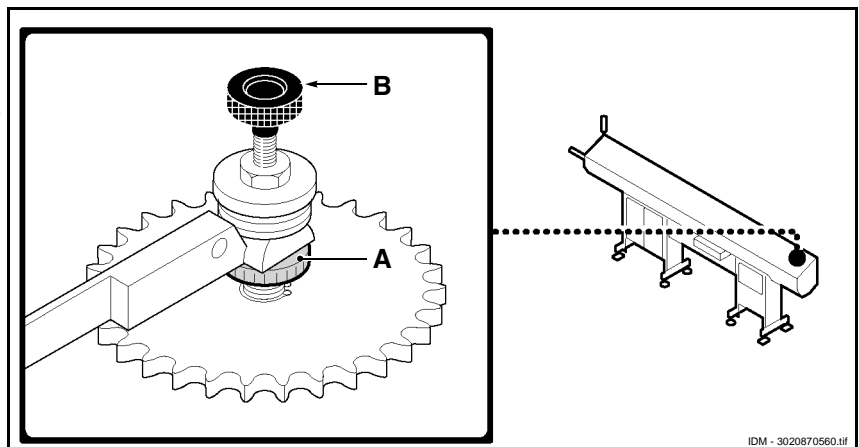
Adjustment can be carried out in three different ways: electronic adjustment, mechanical adjustment and adjustment by changing the clutch pack configuration

For the electronic adjustment, the values of a few parameters must be changed; check the "Keyboard instruction manual".

For the mechanical adjustment, turn the ring nut **A** by checking the effect obtained during the earliest machining phases.

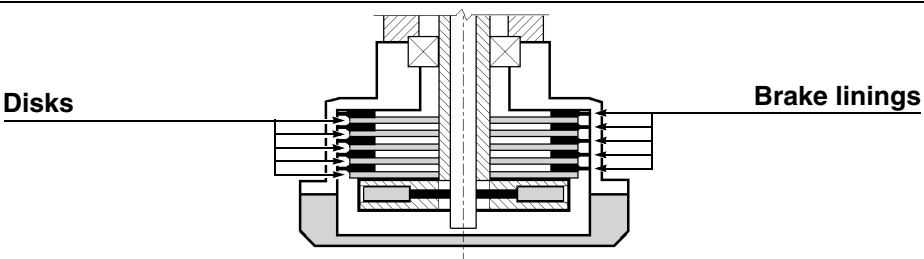

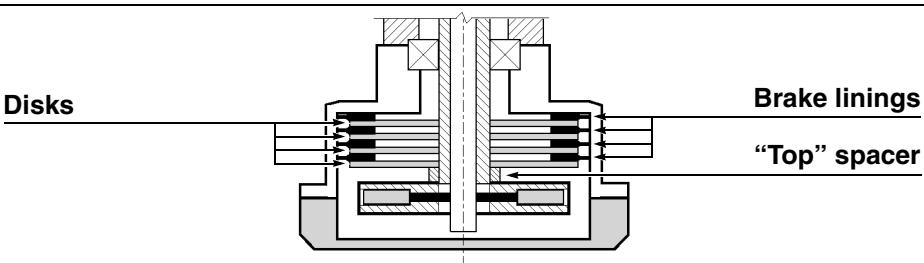
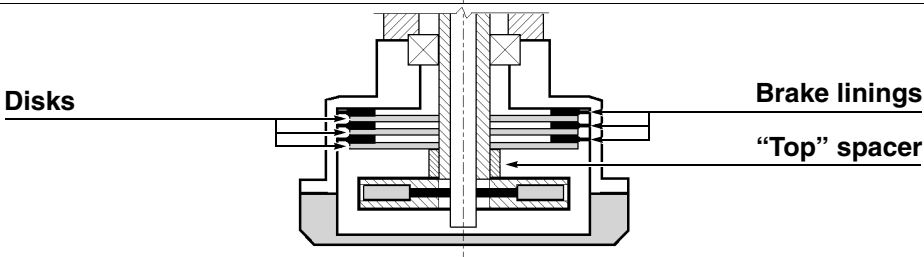


**CAUTION:** the knob (B) can be used to manually move the feed chain. If it is turned when the power is switched off, control a "MACHINE ZERO SETTING" before restarting the bar feeder.



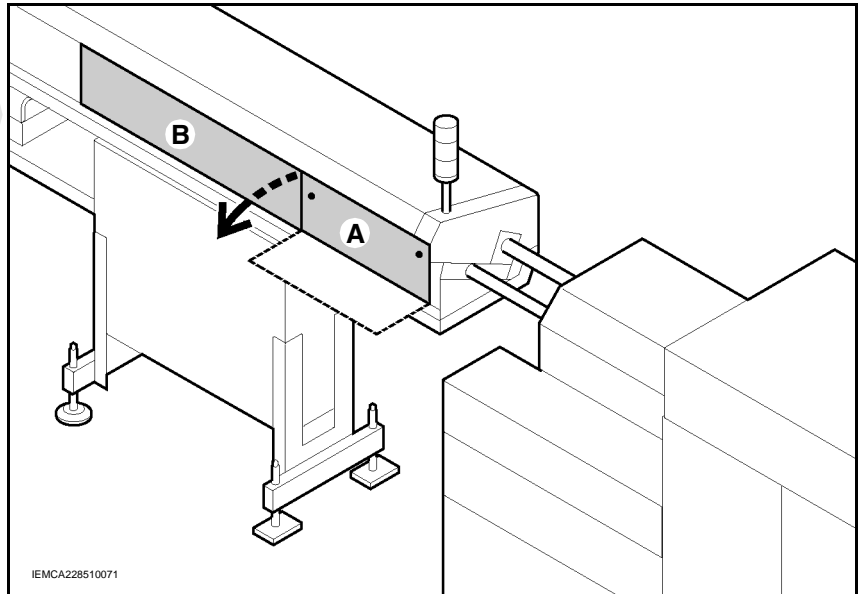
To modify the clutch pack configuration proceed as follows, bearing in mind that the more removed brake disks and linings, the smaller the obtained thrust.

- Remove the clutch, see section 7.2.6.
- Make up the clutch pack by choosing one of the "Possible configurations" shown in the table
- Reassemble the clutch, see section 7.2.6.

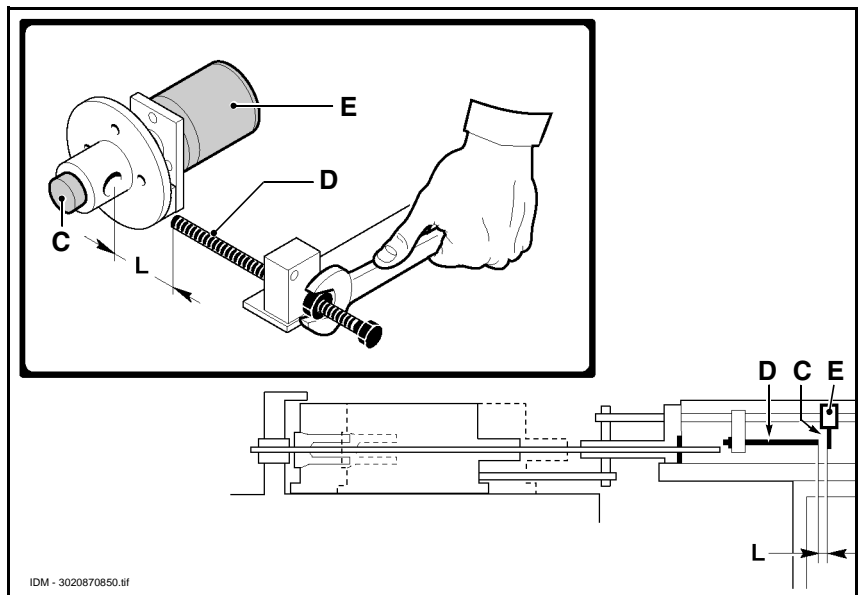
<p>First equipment configuration</p>	
<p>Supplied parts</p>	
<p>Possible configurations</p>	
	

## 5.4. PRECISION FACING DEVICE - ADJUSTMENT

- Remove the screws and open front cover **A**. Then remove back cover **B**.



- Move the headstock forward to the maximum point of the working stroke.
- Close latch **C** manually and position screw **D** at distance **L**, corresponding to the section of the bar to be faced.
- Validate the special parameter, see the "Keyboard instruction manual".
- While machining the last work-piece, the micro S90, located in the cam box, activates the electromagnet **E** preventing the passage of screw **D**. After bar change, the headstock moves backwards only by distance **L**.
- In the early machining, check the position of the bar during the facing; to increase or decrease section **L** of the faced bar, adjust screw **D**.



## 5.5. CAM BOX - Timing

If the feeder is equipped with a cam box, each cam should be timed to its own microswitch. The timing procedure is as follows.

### □ Microswitch function

#### **S90 - Ar feeding control**

Controls the bar feeding motor start and stop and must be activated whenever the collet opens.

Furthermore controls the bar-headstock synchronising device and controls the activation of precision facing device in sliding headstock lathes, during the bar change-over.

#### **S91 - Bar change-over enabling**

It signals lathe collet opening/closing to the feeder.

It determines the camshaft stop position at bar end.

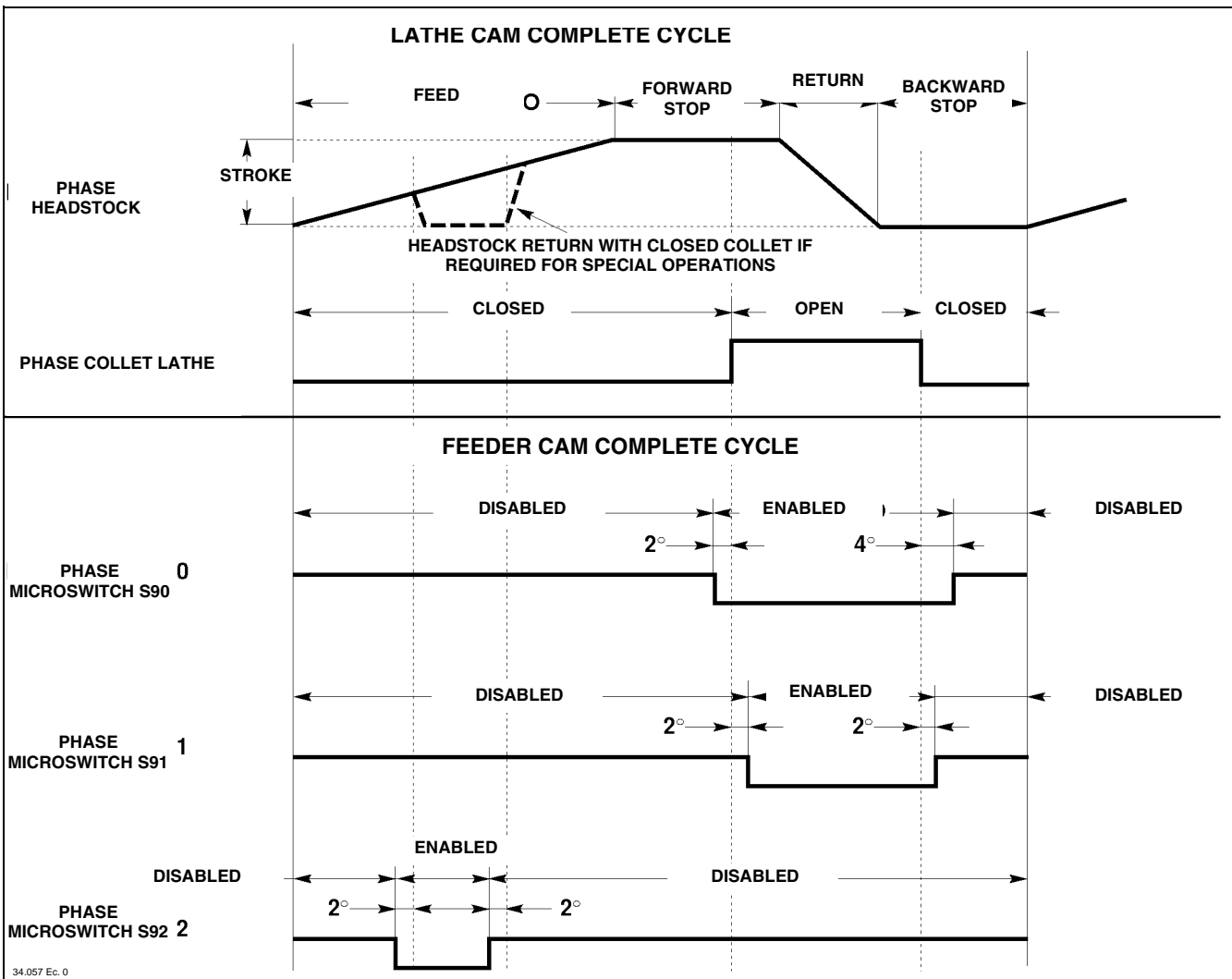
#### **S92 - Feed stop enabling**

Only used in sliding headstock lathes. It disables the feeding thrust during any operations requiring headstock return with a closed collet.

#### **S99 - Camshaft stop**

It determines the camshaft stop position when there is no thread (connected in series with a microswitch or relay located on the lathe).

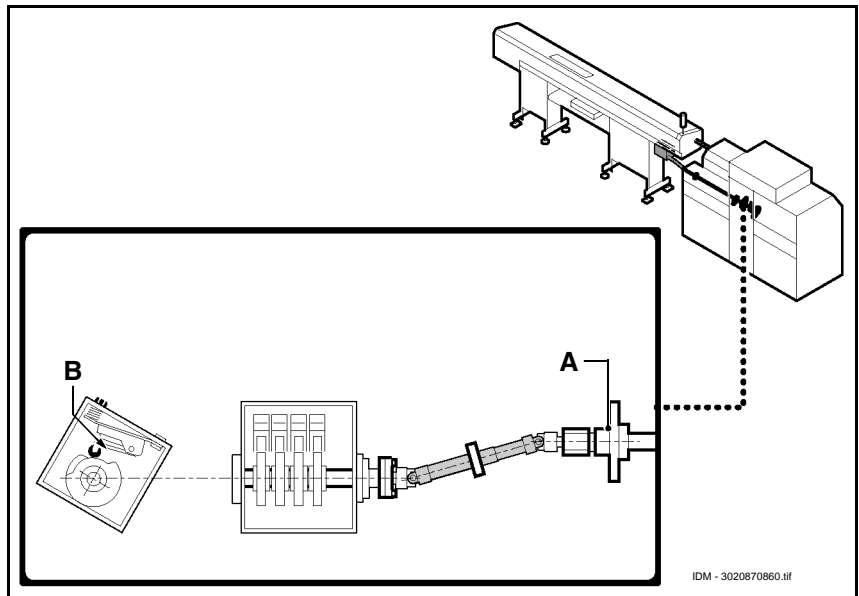
### □ Cam setting



**Microswitches S90 and S91**

- Rotate manually shaft **A** up to a distance of 10° approx. from the collet opening, then **S90** microswitch cam until wheel **B** is released.
- Turn shaft **A** until the collet opens.
- Turn **S91** microswitch cam to release the wheel.
- Rotate shaft **A** until the collet closes.
- Turn the cam to lift **S91** microswitch cam.
- Rotate shaft **A** of 10° approx., then lift **S90** microswitch wheel.

**I** **INFORMATION:** S90 and S91 microswitch wheels must lower when the headstock is in a forward position and lift when the headstock is backwards, in any case before the following feeding.

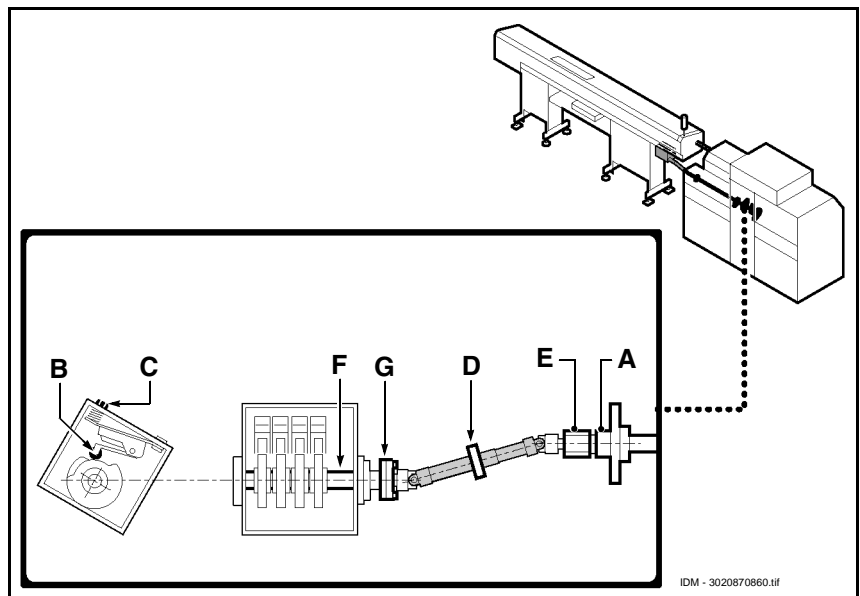

**Microswitch S92**

- Rotate manually shaft **A** until the headstock starts its return stroke with closed collet.
- Release **S92** microswitch wheel.
- Continue rotation until the headstock has completed its return stroke.
- Lift wheel **S92**.

**Microswitch S99**

When the threading tool starts its return stroke, lower **S99** microswitch wheel and lift it before the stroke is over.

Should microswitch **S99** be fitted on lathe, setting adjustments are to be performed on lathe cam.

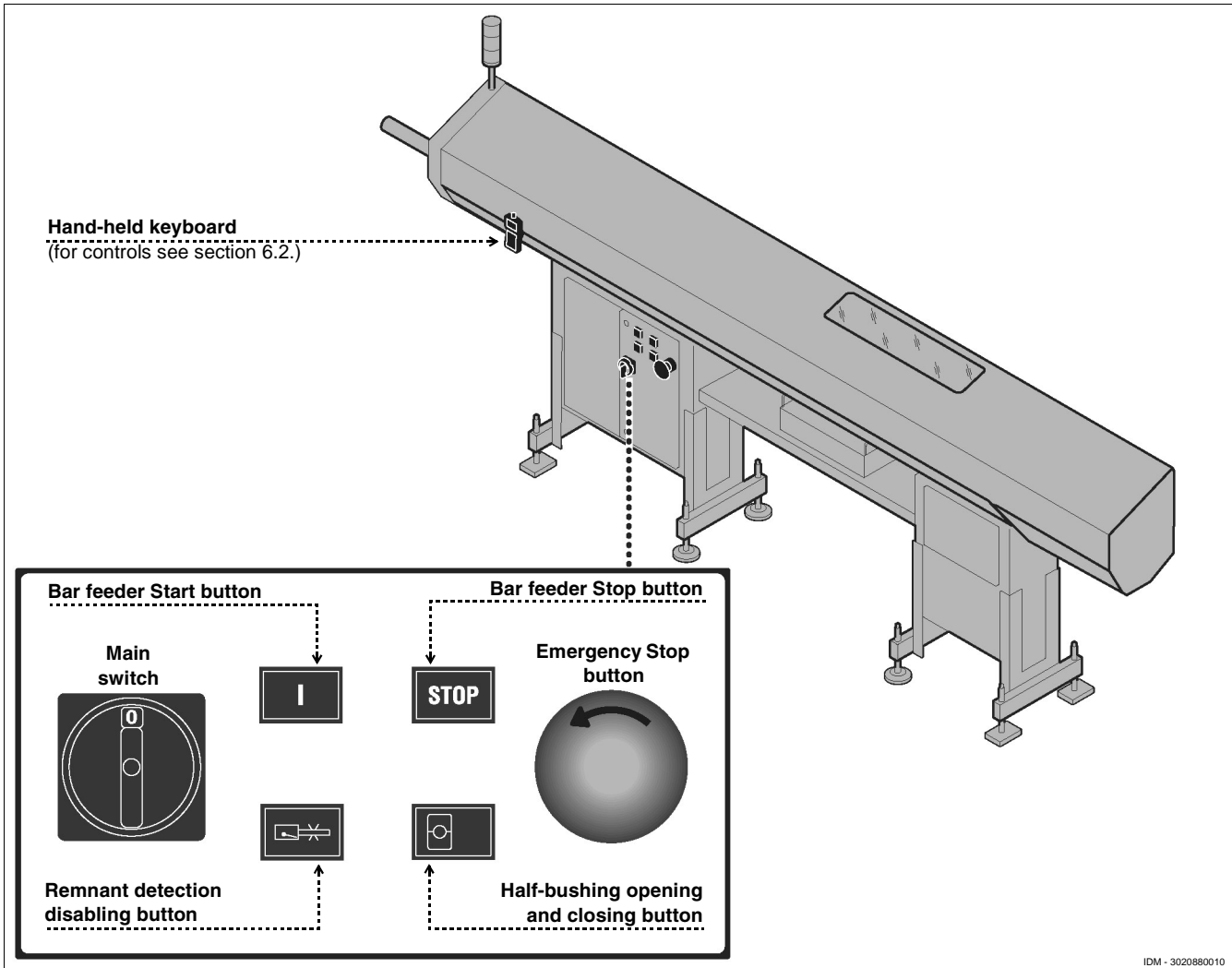

**□ General remarks**

- Microswitch activation can be either delayed or advanced through screw **C**.
- Whenever servicing the camshaft, disconnect the cam box, according to the following procedure:
  - loosen clamp **D** and unscrew sleeve **E**;
  - service the lathe camshaft;
  - screw sleeve **E** and tighten clamp **D**;
  - should shaft **F** be out of phase, loosen sleeve **G** screws, rotate it and tighten the screws.

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## 6.1. DESCRIPTION OF THE CONTROLS

The illustration shows the positions of both the electrical controls and hand-held keyboard.



IDM - 3020880010

- Main switch:** turns the power supply on and off.
- Position **0** (OFF) the machine has no power supply.
  - Position **I** (ON) the machine has power supply.

**Half-bushing opening and closing button** (white light)

- During the “*Manual*” mode, when the bar feeder is in the required position, the half-bushings will close when this button is pushed. If pushed again, the half-bushing will open.
- During the “*Automatic*” mode, if pushed, the half-bushings will open and close, according to the selected sequence. If pressed again, the half-bushings will remain open during the entire operating cycle.

**Bar feeder Stop button** (red): to stop the bar feeder and to reset “Errors”.

**Emergency Stop button:** this button stops the bar feeder in an emergency situation. To restart, first you must manually unlock the button

**Bar feeder Start button** (green light): to start the bar feeder, hold down the button until the button itself lights up.

**Remnant detection disabling button** (green light)  
Press the button to feed a “new” bar without the detection of bar remnant in the bar pusher collet.



## 6.2. DESCRIPTION OF KEYBOARD CONTROLS

– Start buttons: opposite buttons that when pushed together will start some procedures. Press the two buttons, and at the same time, the key corresponding to the required function.

– Selects the automatic mode.

– Stops the bar feeder: to restart you must manually un-lock the button.

Selects the keyboard modes:

- in the  position; the “messages display” mode is selected.
- in the  position; the “parameters display” mode is selected.

*Multifunction*

- Allows you to scroll the page upwards.
  - Moves the cursor upwards.
- Increases the preset data programming of date and time, by one unit.

– Selects the manual mode.

– Selects the semi-automatic mode.  
Push to select, press again to unselect.

*Multifunction*

- Selects the previous parameter.
- Moves the cursor towards the left.

– Starts “step-by-step” movement of an operation cycle: every push of the key initiates a step in the cycle.

– Number setting.

*Multifunction*

- Number setting.
- Loads the programme from the PLC (entering default settings in the parameters).

*Multifunction*

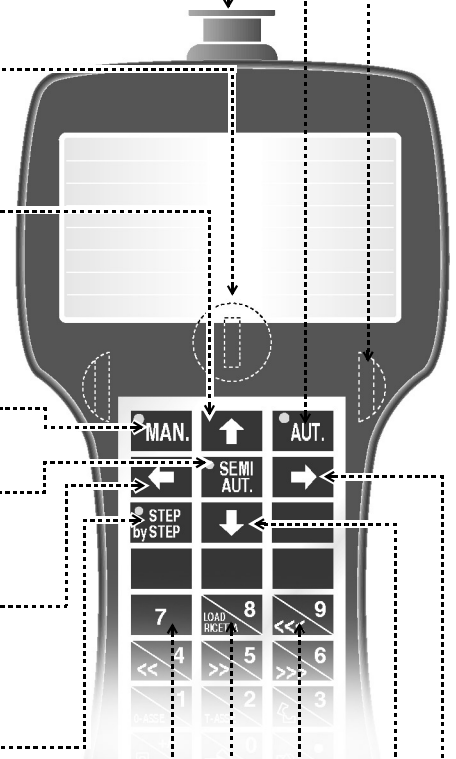
- Number setting.
- Moves the bar pusher to a high speed.

*Multifunction*

- Allows the downwards scrolling of the page.
  - Moves the cursor downwards.
- Decreases the programming mode of date and time by one unit

*Multifunction*

- Selects the next parameter
- Moves the cursor towards the right





*Multifunction*

- Number setting.
- Opens the guide channels.

Hold down the two start buttons and then the key; release the two buttons and the key only when the movement has terminated.

*Multifunction*

- Number setting.
- Moves the bar pusher to a high speed.

*Multifunction*

- Number setting.
  - Sets the carriage movement motor.
- During the daily use of the bar feeder this function must never be used.

*Multifunction*

- Number setting.
- Moves the bar pusher to a low speed.

*Multifunction*

- Number setting.
  - Resets the "BAR FEEDER ZERO SETTING" of the carriage.
- Hold down the two start buttons and then the key; release the two buttons and the key when the carriage starts moving towards the "BAR FEEDER ZERO SETTING".

*Multifunction*

- Number setting.
  - Closes the guide channels.
- Push the two start buttons and then the key; release the two buttons and the key only when the movement has terminated.

- Goes to the MAIN MENU.

*Multifunction*

- Number setting.
- Recalls the cursor.

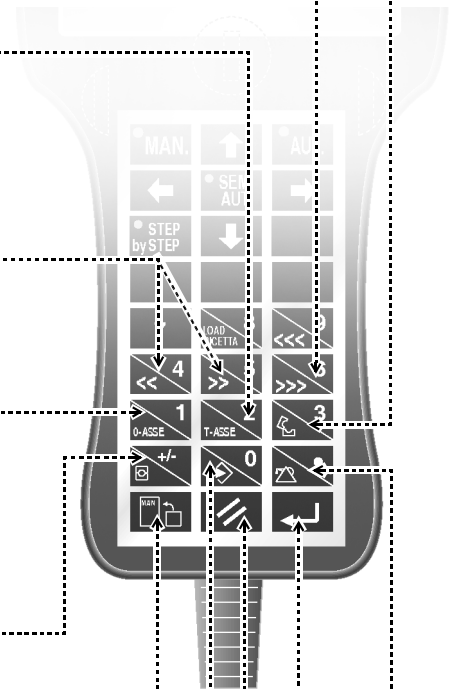
*Multifunction*

- Interrupts the selection mode.
- Resets the values held before the modifications, which were not confirmed.

- Confirms the data entered.

*Multifunction*

- Sets the font.
  - Starts and turns off the oil pump.
- Push to start the pump and push again to turn it off.



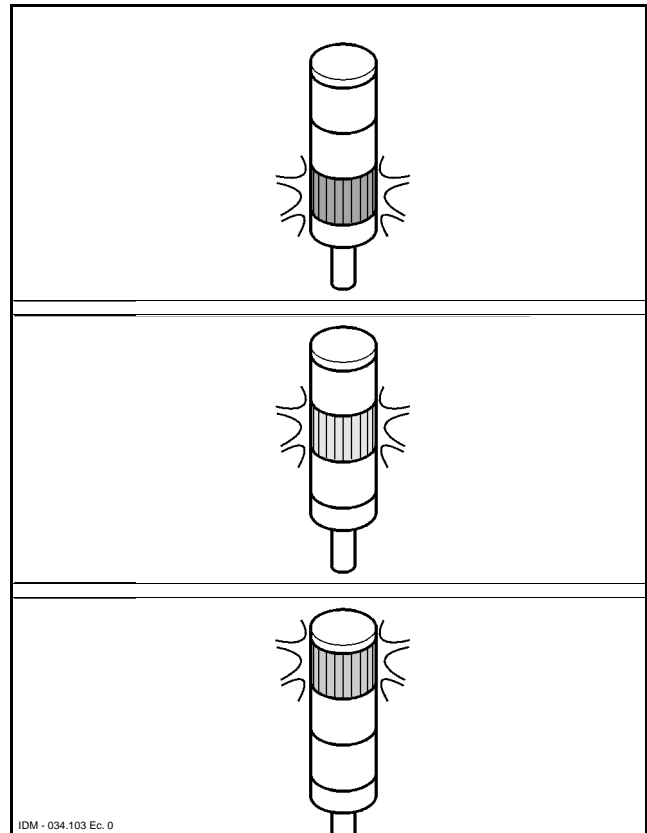
### 6.3. INDICATOR LIGHTS - Description of indications

**i** **INFORMATION:** The indicator light can also be placed on the rear part of the bar feeder where you find holes prepared for fixing and a slot to fit the cable.

**Red light;** signals that the bar feeder is not operating, or that it is in the manual mode.

**Green light;** it indicates that the bar feeder is in the automatic mode.

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



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### 6.4. BARS TO BE MACHINED - Characteristics and preparation

**⚠ CAUTION:** do not feed bars having different sizes than the manufacturer's prescribed sizes.

**Table 1.** Minimum and maximum length of bars

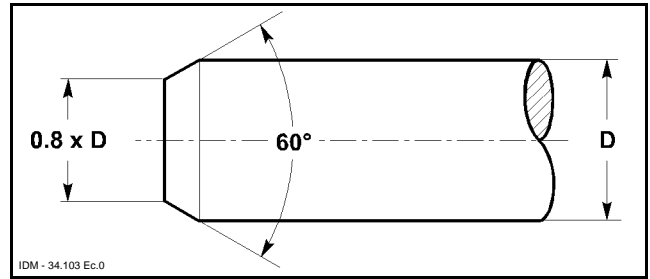
Version	Minimum length mm (ft)	Maximum length mm (ft)
32	700 (2,3)	3210 (10,5)
37		3730 (12,2)
42		4250 (13,9)

Bar must not present a straightness defect above 0.5 per 1000.

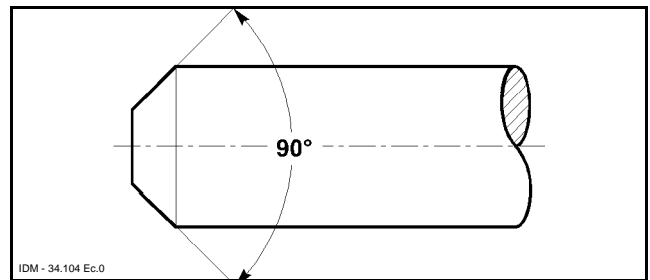
### □ Solid bars

Check that there is not too much rag on bar head, which might hinder insertion in the lathe collet.

Check that there is not too much rag on bar rear end, which might hinder insertion in the bar-pusher collet. In any case, to improve operation during this phase, we advise to chamfer the bar as shown in the figure.

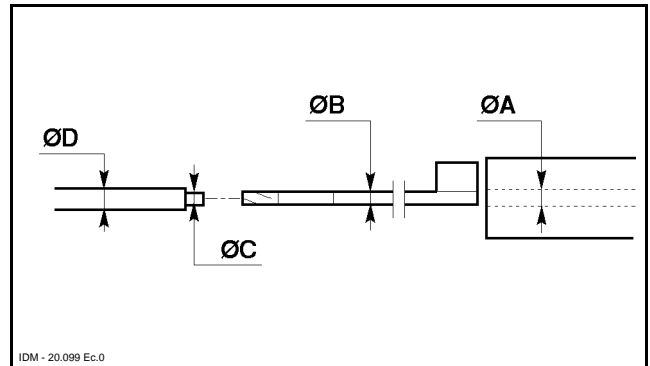


If bars with front remnant ejection have to be machined, we advise to chamfer the bar rear end as shown in the figure.



If you wish to machine bars with diameter equal to or slightly less than the bar pusher diameter without replacing the guide channels and bar pusher, the rear end must be turned to allow gripping by the collet.

**i** **INFORMATION:** if guides and bar pusher of suitable diameter are installed, the rear end of the bars does not require turning.



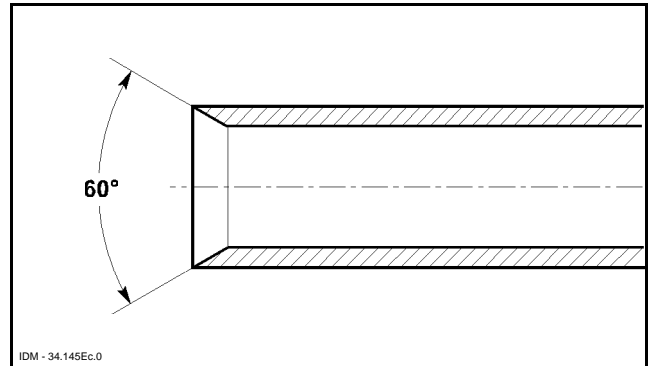
**Table 2.** Guide channel, bar pusher, turning and bar diameters

Guide diameter Ø A (mm)	Bar pusher diameter Ø B (mm)	Maximum turning diameter Ø C (mm)	Bar diameter Ø D (mm)
8	7,5	6,5	7,5
11	10	9	10
13	12	11	12
18	15	13,5	17
22	20	18,5	20
26	25	23	25
28	27	25	26
30	29	/(*)	26

(\*) it is not necessary to turn the rear end of the bar

## □ Pipes

If pipes have to be machined, their rear ends should be chamfered as shown in the figure.



## 6.5. FEEDER SET-UP AND AUTOMATIC CYCLE START

The following list is a sequence of feeder set-up and automatic cycle start operations required if the feeder has to be started up for the first time.

- Carry out the software parametering (check the "Keyboard instruction manual")
- Set-up the bar feeder depending on the bar to be machined (paragraph 5.3.)
- Adjust the precision facing device, only if installed. (paragraph 5.4.)
- Prepare the bar to be machined (paragraph 6.4.)
- Load the bar magazine (paragraph 6.5.1).
- Adjust lubricant oil flow (paragraph 6.5.2).
- Start the automatic cycle (paragraph 6.5.3).

## 6.5.1 Bar magazine - Filling

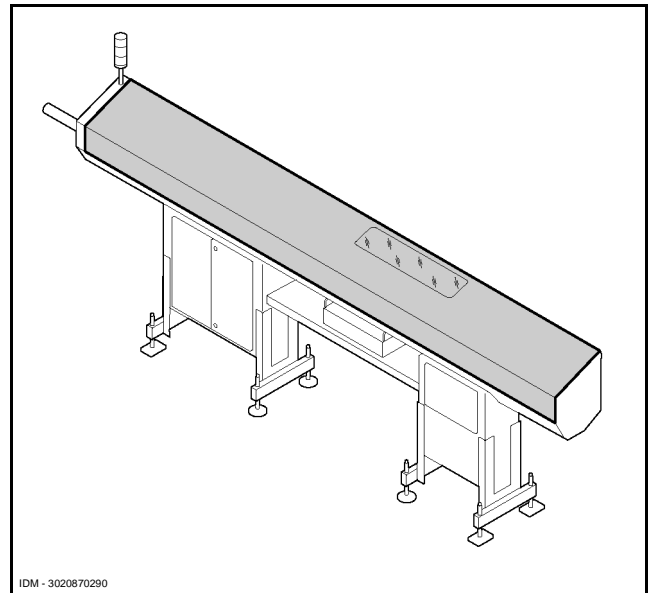


**CAUTION:** do not manually lift loads with weights exceeding those prescribed by the applicable regulations in force; ask for another worker's help if necessary.

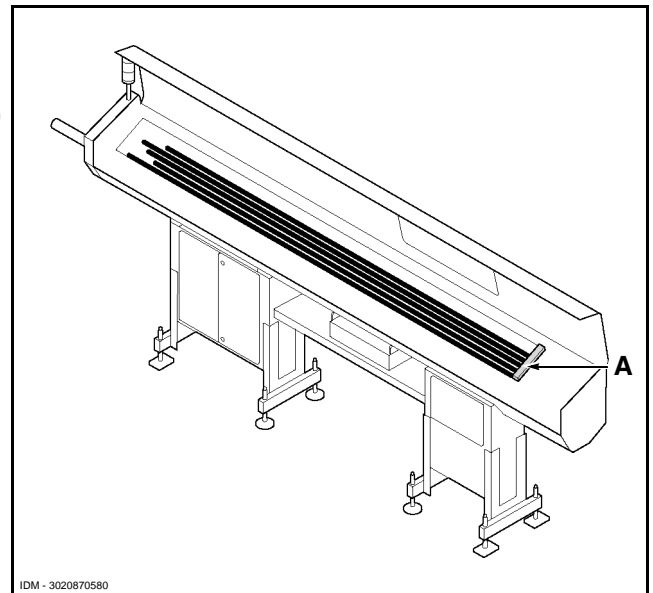
Wear personal protections prescribed by the applicable regulations in force.

Follow these instructions to load bars:

- open the upper guard;



- place bars against the plate **A** and close the upper guard.

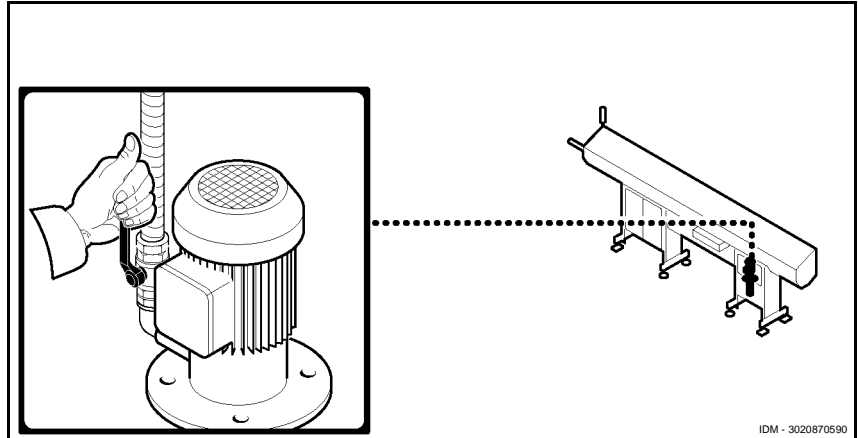


## 6.5.2 Lubrication oil - Flow adjustment

The oil flow in the guide channels is automatically activated during the bar feeder automatic cycle.


The pump starts up after the bar feeder has performed a bar change and stops when the bar pusher comes close to the nose.


Oil flow should be adjusted according to bar diameter and profile through the valve located upstream from the installation.








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## 6.5.3 Starting the automatic cycle

- Connect electric power from the lathe.
- Turn the main electric switch to position I (ON).
- Press  and keep it pressed until the indicator light on the button lights up. This indicates that the starting process has been carried out correctly.

 **CAUTION:** use the procedure described above also each time the bar feeder is switched on, after deactivating and then activating the electric supply.

- Select the manual function by pressing .
- Control a "ZERO SETTING" by pressing the start buttons and .
- Bring the bar to its facing position by pressing .
- Press  and start the automatic cycle following the instructions shown on the display.
- If the magazine is to be reloaded during the machining, adopt the procedure described in paragraph 6.5.1.

 **INFORMATION:** do not carry out reloading during the bar change phase.

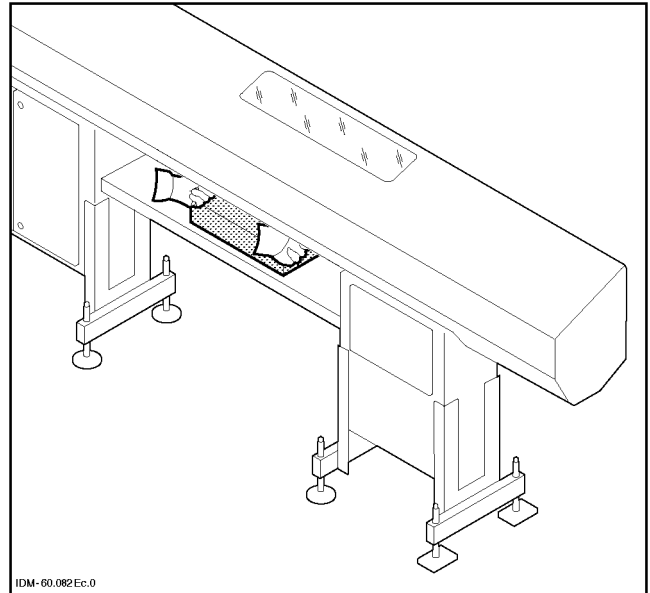
- Empty the remnant collection box during machining.



**CAUTION:** do not manually lift weights exceeding those prescribed by the applicable regulations in force; ask for another worker's help if necessary.

Wear personal protections prescribed by the applicable regulations in force.

- Place the box back under the remnant outlet.




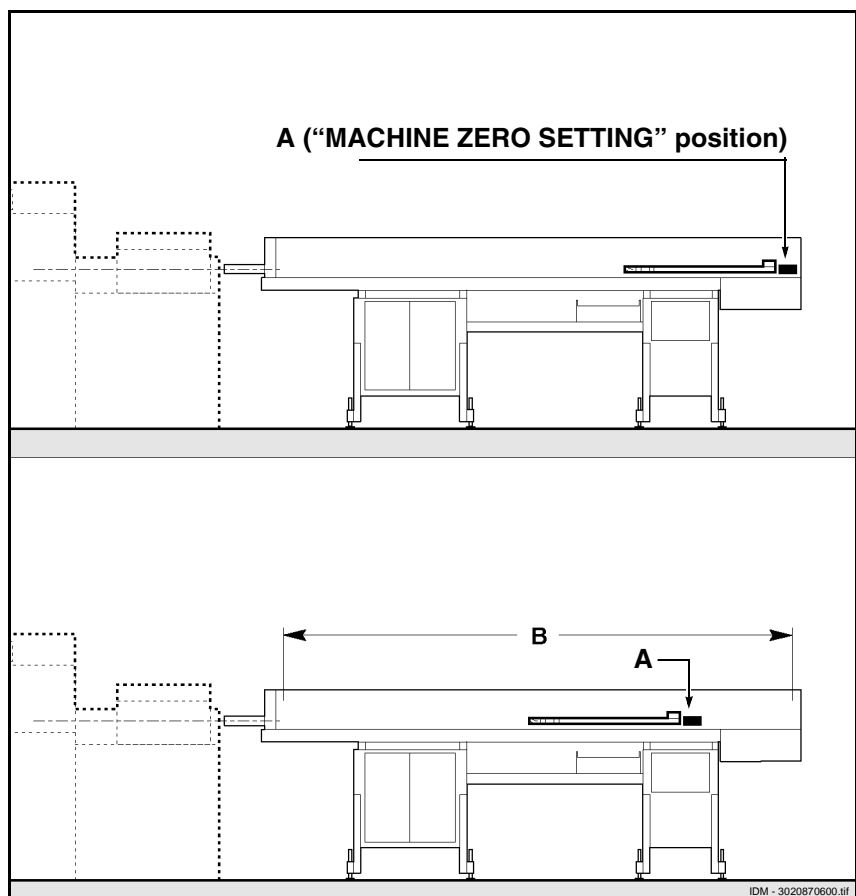
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## 6.5.4 Guide channel opening/closing mode

The guide channel opening and closing modes in the manual function are described below.



### □ Opening mode

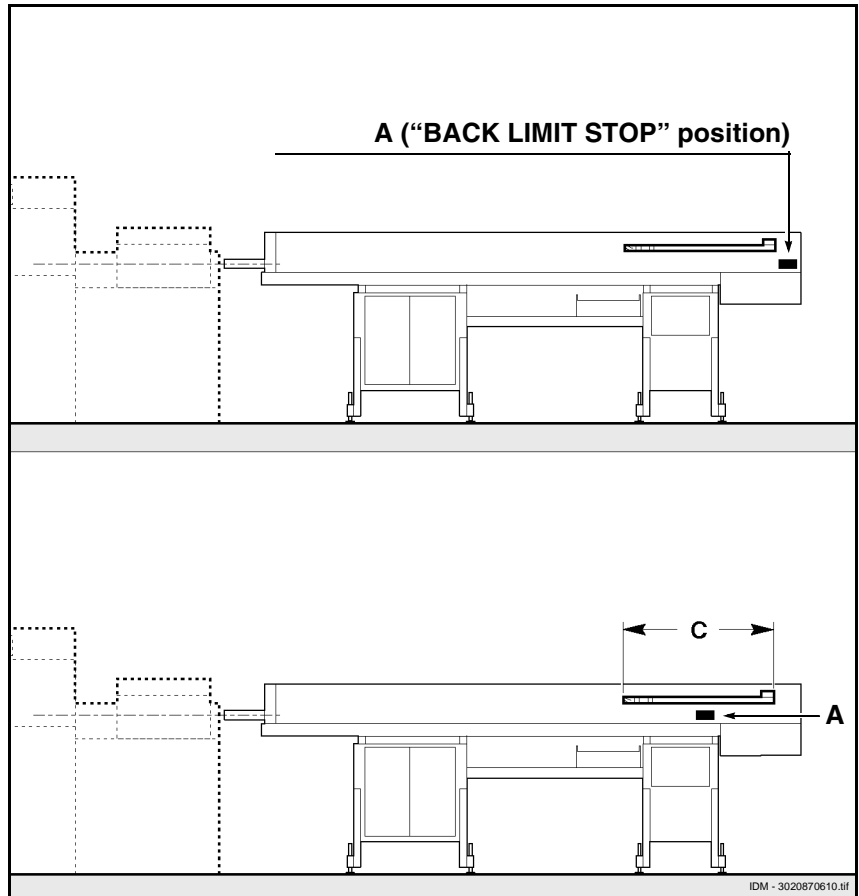
- Open the guide channels by pressing the start buttons and ; if the carriage **A** is in the "ZERO SETTING" position, the guide channels will open immediately. If the carriage is at any point beyond the "ZERO SETTING" position (area **B**), the guide channels will open after the carriage has automatically moved to that position.




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### ❑ Closing mode

- If the carriage **A** is in its "BACK LIMIT STOP" position, close the guide channels by pressing the start buttons and .
- If the carriage is at any point of its 1<sup>st</sup> feeding stroke (area C), move it to its "BACK LIMIT STOP" position by pressing .



When the carriage reaches that position, the message displayed is:

- Close the guide channels by pressing the start buttons and .










## 6.5.5 Cycle actuation mode in the “STEP-BY-STEP” function

### Introduction

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

- to check a complete bar change cycle;
- to check the bar feeder mechanics;
- to load a single bar with the intent of checking the facing;
- eccetera.

### Procedure

- Press  to start the bar feeder;
- check that the bar feeder is in its closed guide channels position;
- press  and  to select the semiautomatic function;
- Press , the bar feeder performs the first step;
- Press , the bar feeder performs the second step, and so on.

## 6.6. FEEDER STOP

### ☐ Feeder emergency stop




**CAUTION:** if the emergency stop is used during lathe machining, before resuming work make sure that the sudden stop has not created any hazardous condition (e.g., if the tool was cutting chips, move the tool away from the workpiece before restarting the lathe).

- To stop the feeder in an emergency, press an emergency push-button, either that of the lathe or that of the feeder.

### ☐ Feeder stop at work end



**CAUTION:** do not use emergency buttons for normal machine stop.

- Complete the operations in your work schedule.
- Stop the feeder by pressing the button .
- Stop the lathe.
- Turn the main electric switch to position **O** (OFF).

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## 7.1. MAINTENANCE - General rules

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**DANGER - WARNING:** carry out machine maintenance and cleaning while the machine is off.

Regular cleaning and maintenance are critical to ensure smooth operation and longer machine service life. It is recommended to regularly and effectively clean the machine, its accessories and work area, which also increases operator's safety.

Do not use petrol or solvents which would damage the painted and transparent parts, the cable sheaths etc.



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

To protect the bar feeder when you expect not to use it for long periods of time, disconnect it from mains voltage and from compressed air supply and cover it with a suitable protective sheet.

Any protection used should not be fully closed or sealed at the base; it should have ventilation holes to make sure that air within the envelope cannot condense due to lack of circulation.

## 7.2. SCHEDULED MAINTENANCE

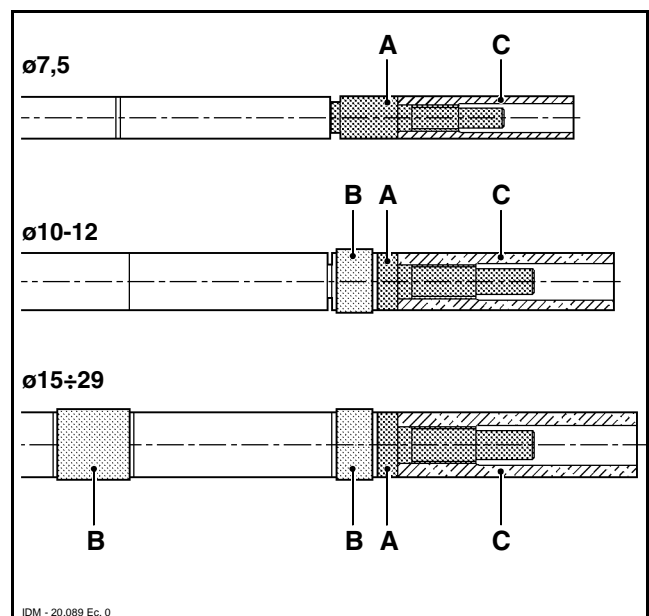
**Table 1.** Scheduled maintenance

Bar feeder part	Operation to carry out	Frequency				
		Hours			Every year	Periodically
		200	1250	2500		
Revolving tip and collet	Wear check	•				
Half-bushing	Wear check	•				
Lubrication system	Oil level check	•				
	Oil change			•		
Guides	Repair and cleanness check		•			
Clutch	Oil level check	•				
	Oil change			•		
	Disk wear check		•			
Control rack	Greasing		•			
Feed chain	Lubrication	•				
	Tension check	•				
Driving motor brushes	Wear inspection		•			
Drive belt	Tension check	•				
Air filter (*)	Check					•
PLC Battery	Replacement				•	
Keyboard battery	Replacement				•	

(\*) Only if installed.

### 7.2.1 Revolving tip and collet - Check

- Remove bar-pusher as described in paragraph 5.3.1.
- Make sure shaft **A** and bushes **B** turn freely and are not excessively worn out.  
Make sure collet **C** is in proper working conditions.



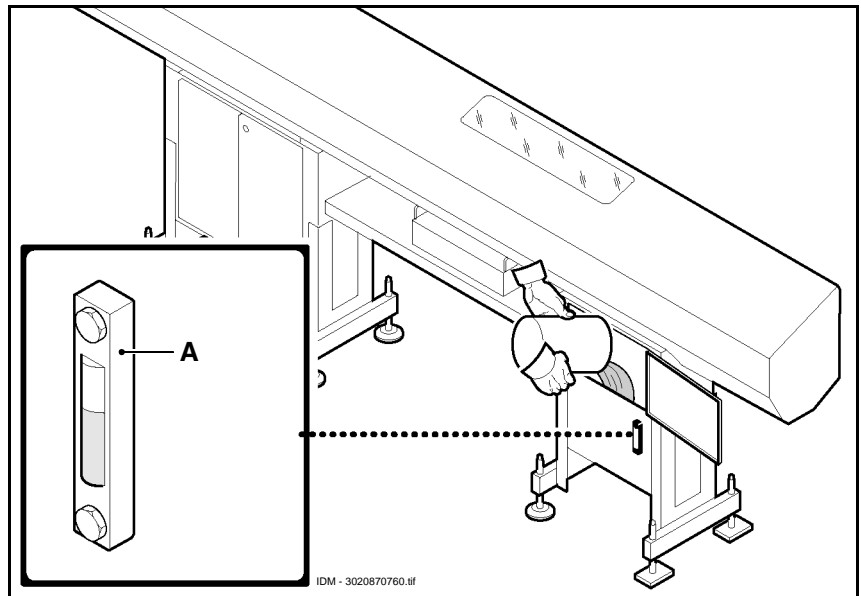
## 7.2.2 Lubricating oil - Level check

**CAUTION:** use the personal protection devices prescribed by regulations in force.

- Wait until the bar feeder has been switched off for at least six hours.
- Check the level on indicator **A**.
- Oil characteristics: class **C** CKB32.
- Wait until the bar feeder has been switched off for at least six hours.
- To fill, pour the oil directly into the tank and check the oil level on indicator **A**.

Oil characteristic: class **C** CKB100, quantity 40l.

See paragraph 2.6. for the comparative table.



## 7.2.3 Lubricating oil - Change

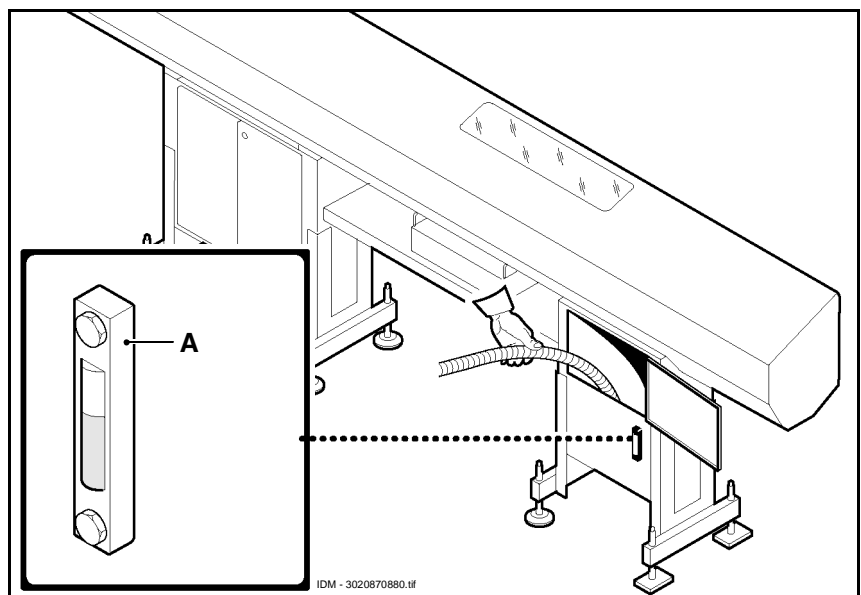
**CAUTION:** wear the personal protections prescribed by the applicable standards in force.

**INFORMATION:** store spent oil in special containers to be delivered to companies specialized in pollutant disposal and storage. Do not pollute the environment.

- Wait until the bar feeder has been switched off for at least six hours.
- Drain the tank using an auxiliary pump. Clean the tank bottom and pump suction system.
- Fill up by pouring oil directly into the tank and Check the level on indicator **A**.

Oil characteristic: class **C** CKB100, quantity 40l.

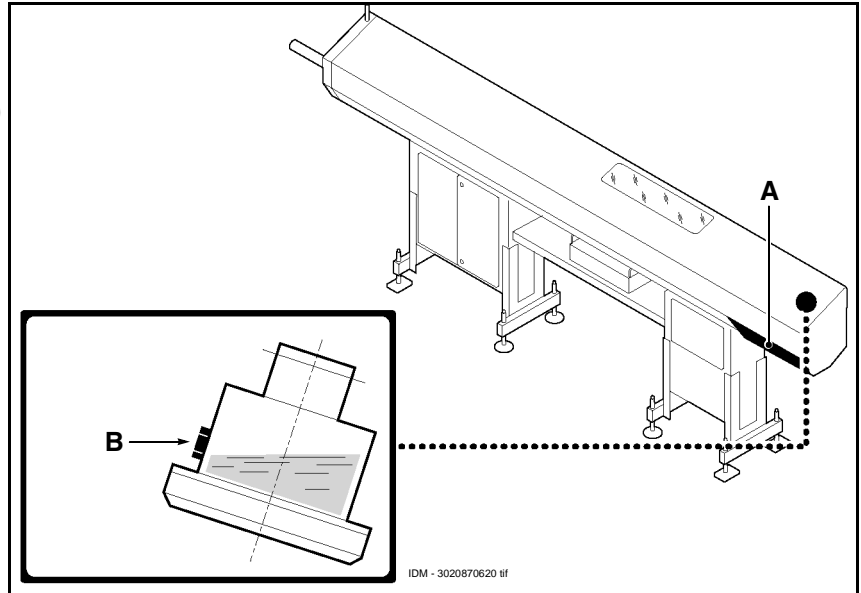
See paragraph 2.6. for the comparative table.



### 7.2.4 Clutch oil - Checking

**CAUTION:** use the personal protection devices prescribed by regulations in force.

- Remove guard **A**.
- Position the clutch so that cap **B** is at the highest point.
- Remove the cap. The oil level must reach the hole.
- For topping up, if necessary, use BP Energol HLP-D32 type oil.
- Screw the cap on and refit the guard previously removed.

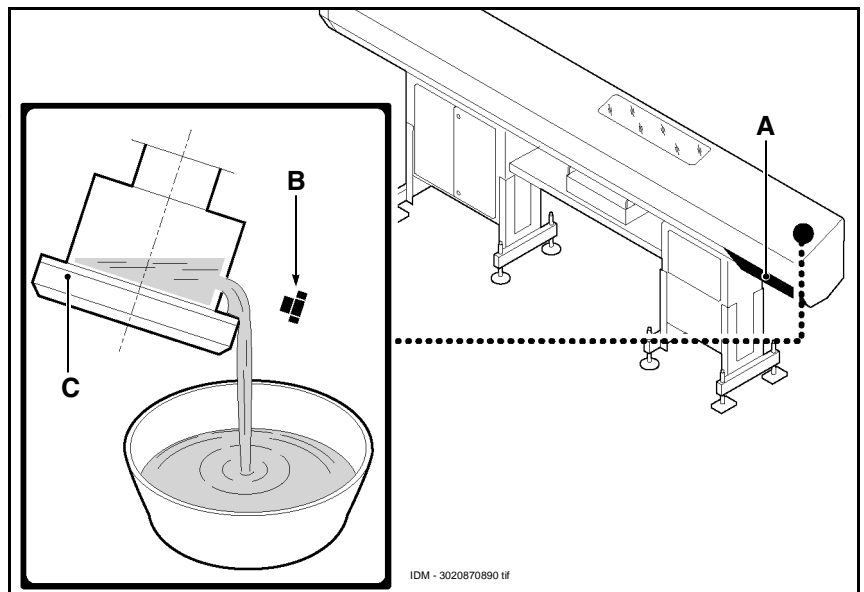


### 7.2.5 Clutch oil - Change

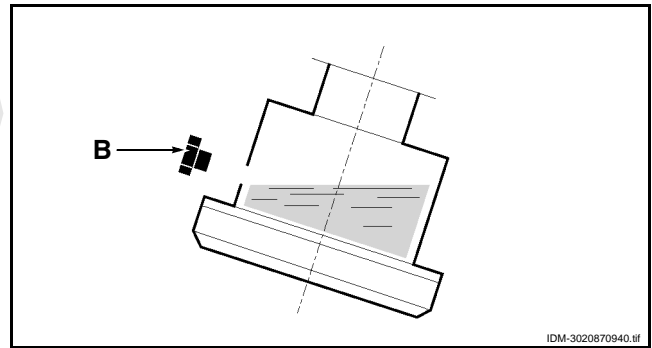
**CAUTION:** wear the personal protections prescribed by the applicable standards in force.

**INFORMATION:** store spent oil in special containers to be delivered to companies specialized in pollutant disposal and storage. Do not pollute the environment.

- Remove guard **A**.
- Position the clutch so that cap **B** is at the lowest point. Remove the plug and let the oil flow out.
- Remove the cover **C** to drain oil completely, clean it and put it back.



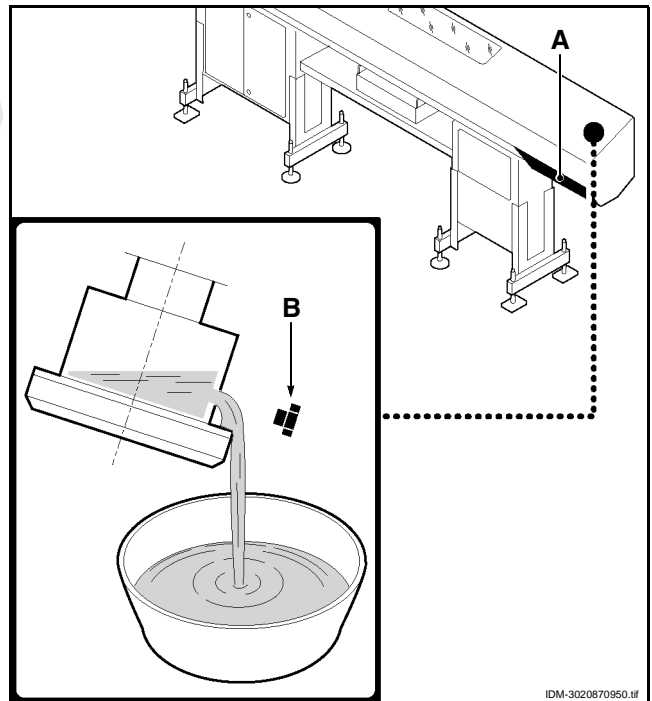
- Position the clutch so that the hole in the cap is at the highest point.  
Pour in BP Energol HLP-D32 type oil; the oil level must reach the hole.
- Screw the cap on and refit the guard previously removed.


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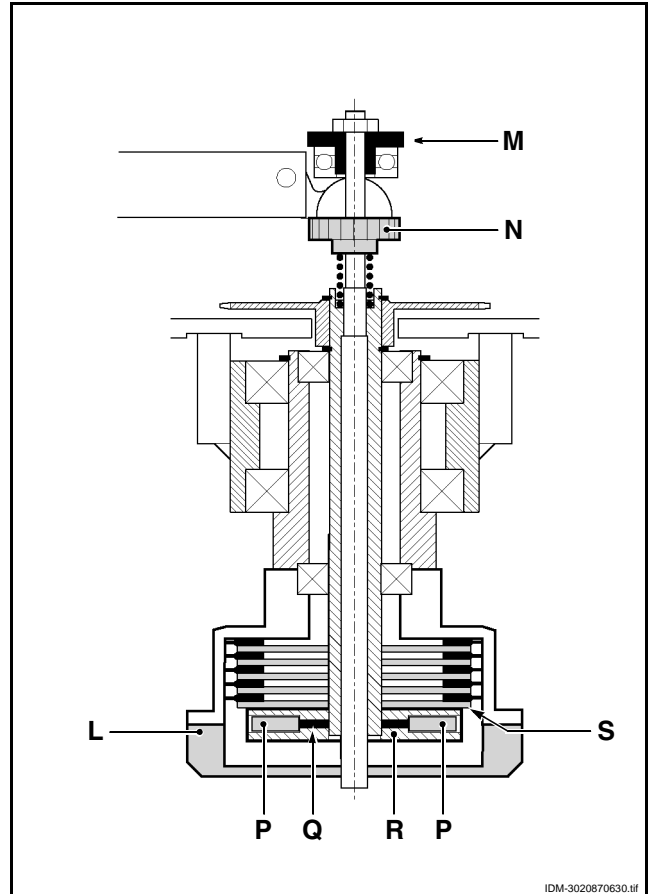
## 7.2.6 Clutch disks - Checking for wear

**CAUTION:** wear the personal protections prescribed by the applicable standards in force.

- Remove guard **A**.
- Position the clutch so that cap **B** is at the lowest point.  
Remove the cap and let the oil flow.

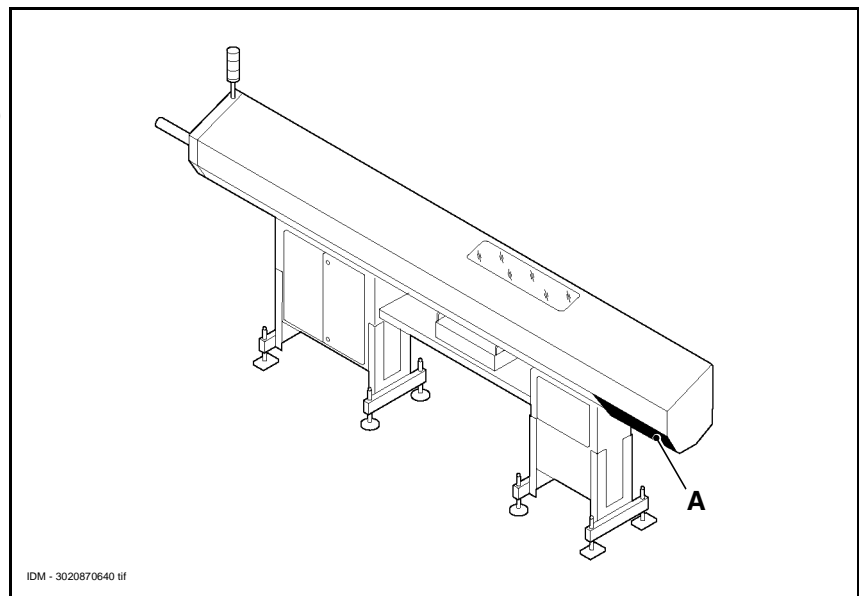

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- Remove cover **C**.
- Loosen the ring nuts **M** and **N** to lower the clutch shaft and be able to remove the screws **P** and the pin **Q**.
- Remove the plate **R** and the disks **S** with their brake linings.
- Clean the inside of housing and the clutch shaft carefully.  
Clean the disks and linings, check for wear, and refit or replace.
- Refit the parts previously removed.
- Restore the oil level as described in paragraph 7.2.5.
- Refit the guard previously removed.



### 7.2.7 Feed motor brushes - Checking for wear

- Remove guard **A**.





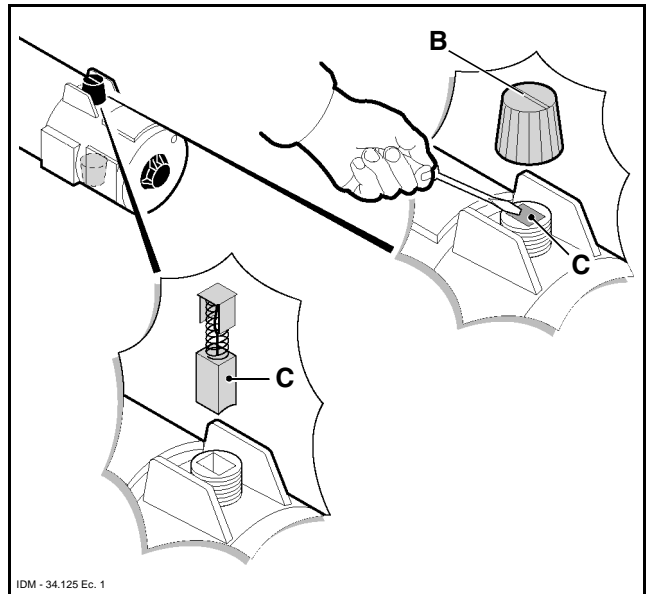
- Remove covers **B** and the brushes **C**.
- Blow air inside to remove dust produced by wearing of the brushes.



**CAUTION:** remove both plugs so that air blown into a hole can come out of the second hole.

If only one cap is removed, dust will expand inside the motor and damage the motor.

- Check thickness. If it is less than 9 mm, replace the brushes.
- Refit the covers and the guard previously removed.



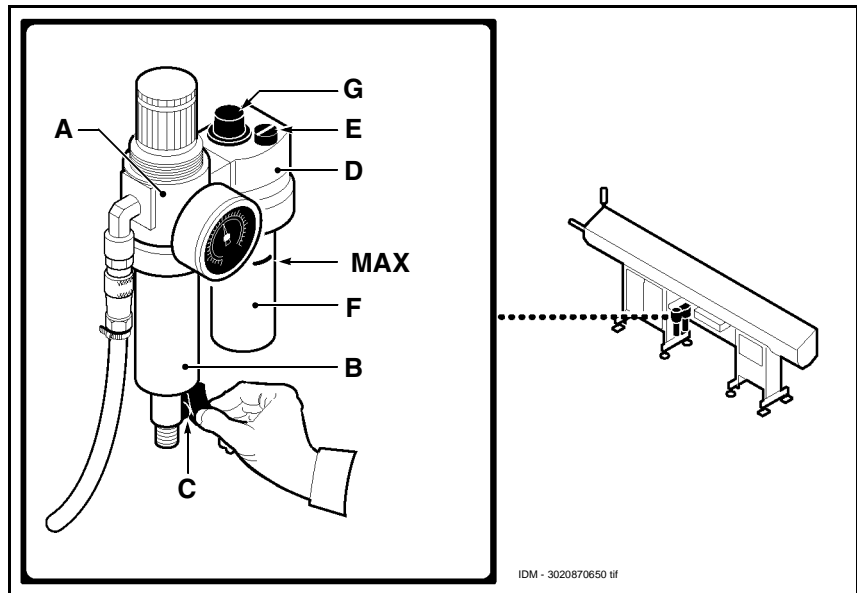
## 7.2.8 Air filter unit - Check

### ☐ Filter A

- Make sure that cup **B** is not full of condensate. If need be, bleed the condensate by valve **C**.

### ☐ Lubricator D

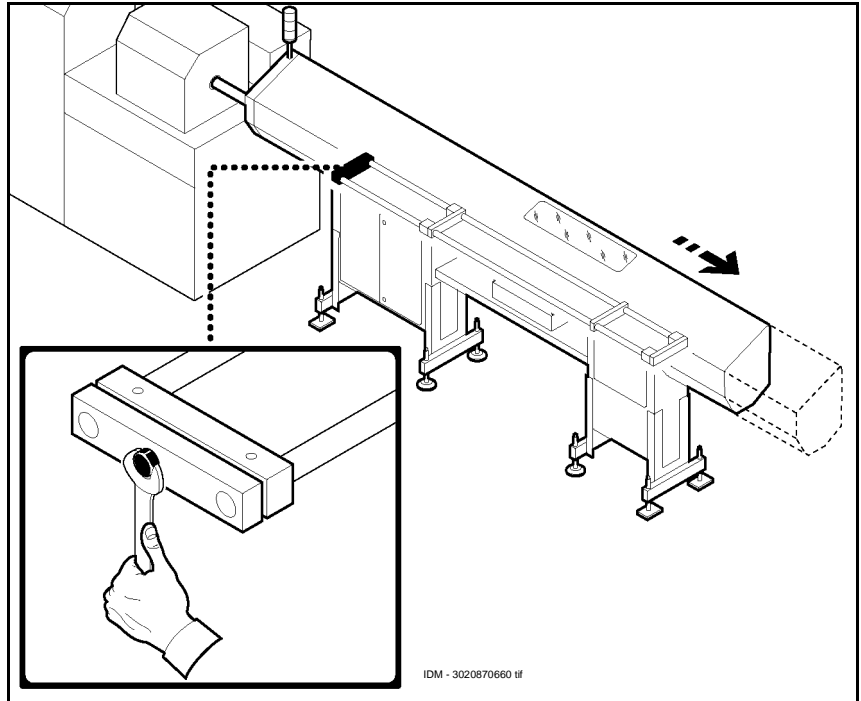
- Check that the oil level is not under the suction level.
  - If need be, top up as follows:
    - disconnect the compressed air supply.
    - fill the tank removing plug **E** or cup **F**; the oil level must reach the **MAX.** reference.
- 9÷11 Cst at 40°C ISO VG 10.  
See paragraph 2.6. for the comparative table.
- Reset the compressed air supply.



- Check air lubrication (1-12 drops every 1000 l. of air), adjust by turning the screw **G**.

### 7.3. AXIAL DISPLACEMENT DEVICE - Use

- If the feeder is fixed to the bar, release it. Disconnect any installed devices (e.g. the bar/headstock synchronizing device, the cam box, the camshaft release device etc.).
- Loosen the screw completely.
- Move the bar feeder backwards taking care to avoid damaging the connecting cables (example: electric cable interfacing with the lathe, cable of the camshaft disconnecter device, pneumatic connection tube, etc.).
- Carry out all the maintenance operations on the lathe.
- Move the bar feeder forwards and restore the initial conditions.



## 8.1. GENERAL FAULTS

---

<i>TROUBLE</i>	<i>CAUSES</i>	<i>CURES</i>
<b>The bar feeder will not start.</b>	No power.	Check the electric connections.
	Open guard.	Close the guard.
	Actuated emergency devices.	Disconnect the emergency devices.
	Motor thermal switch tripped	Reset the motor overload cut-out with the special push-buttons.
<b>The bar feeder has been reset but the automatic cycle will not start.</b>	No lathe signal.	Check electric connection to the lathe.
<b>The pneumatic devices will not respond to controls.</b>	No air.	Check the air system.
<b>The pre-feed and feed suddenly stop.</b>	Motor thermal switch tripped.	Reset the motor overload cut-out with the special push-buttons.

## 8.2. BAR MAGAZINE - Faults

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<i>TROUBLES</i>	<i>CAUSES</i>	<i>CURES</i>
<b>The bar will not enter the magazine during feeding.</b>	The bar plates are too low.	Adjust the plates position.
<b>The first magazine bar is not dropped into the guides.</b>	Wrong adjustment of the bar selectors.	Adjust the bar selectors.
<b>All the magazine bars are dropped into the guides.</b>	Wrong adjustment of the bar selectors.	Adjust the bar selectors.

### 8.3. INSERTION IN THE COLLET - Faults

---

TROUBLES	CAUSES	CURES
<b>The bar will not be inserted in the collet.</b>	Bad clamps adjustment.	Adjust the clamps.
	Collet diameter not suitable for bar diameter.	Change the collet.
	Too much rag on bar rear end.	Trim bar rag before feeding.

### 8.4. BAR FEEDING - Faults

---

<i>TROUBLES</i>	<i>CAUSES</i>	<i>CURES</i>
<b>Difficult bar introduction in the lathe spindle</b>	The bar feeder is not aligned with the lathe.	Check and correct alignment.
<b>Difficult bar introduction in the lathe collet</b>	Excessive rag on bar rear ends.	Trim bar rag before feeding.

## **9.1. FEED CHAIN - Replacement**

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Replacement of the feed chain is a highly complex operation; call IEMCA after-sales service.

## **9.2. CLUTCH DISKS - Replacement**

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To replace, follow the procedure described in paragraph 7.2.6.

## **9.3. FEED MOTOR BRUSHES - Replacement**

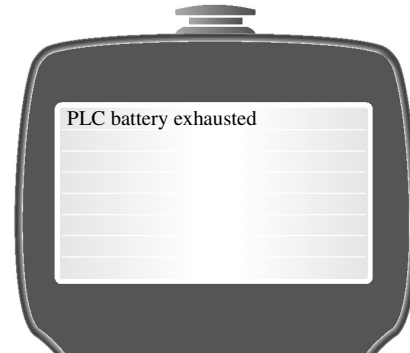
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To replace, follow the procedure described in paragraph 7.2.7.

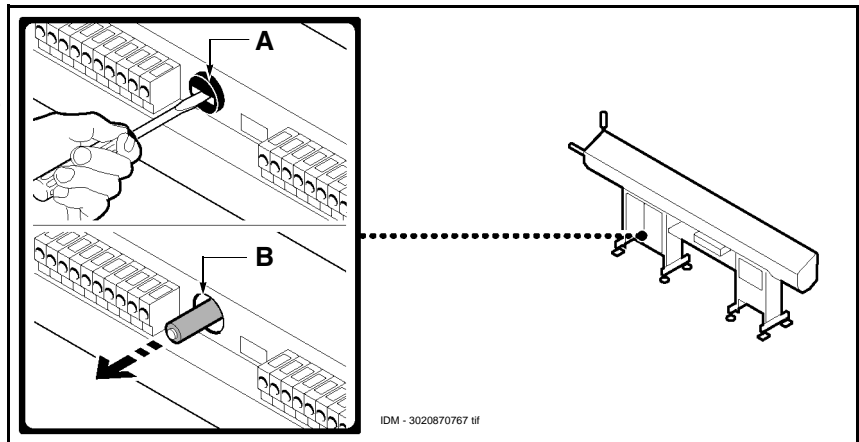
## 9.4. PLC BATTERY - Replacement

Replace the battery at least every year, and when the following message is displayed:

**i** **INFORMATION:** when this message is displayed, the battery should be replaced within one day, otherwise, the “PLC/NC Software” data will be deleted.



- Unscrew cap **A** and pull out battery **B**;
- insert a new battery (AA 3.6 volts lithium-type battery) and make sure that it is introduced correctly, then tighten the cap **A**.

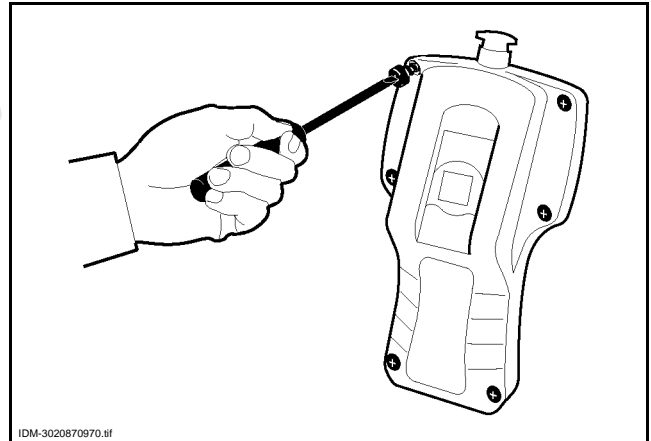


## 9.5. KEYBOARD BATTERY - Replacement

The keyboard battery should be replaced every year.

**i** **INFORMATION:** failure to replace the battery can cause the calendar – clock memory to be deleted.

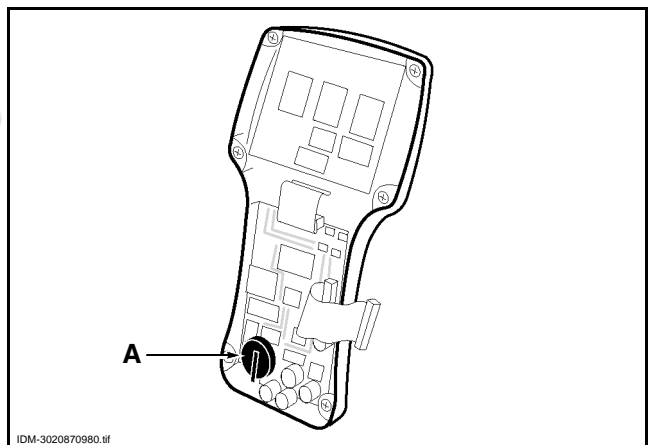
- *Disconnect power.*
- *Screw out the six screws and remove the two half-shells.*



- *Remove the battery **A** from its housing.*
- *Insert a new battery (type DURACELL DL2430).*

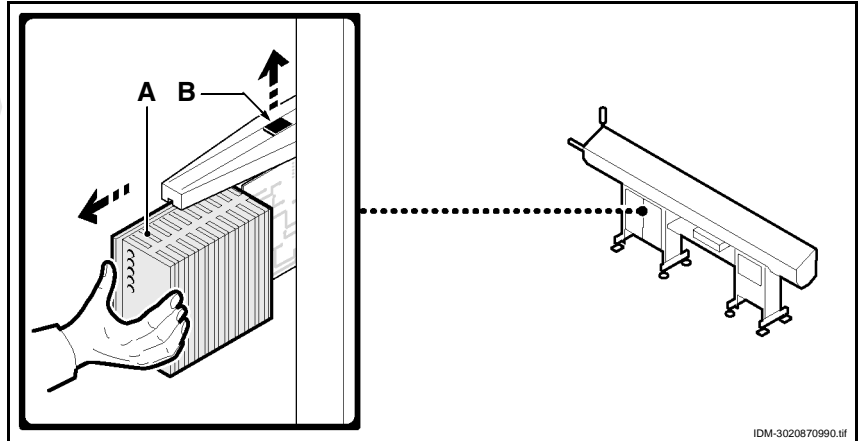
**!** **DANGER - WARNING:** danger of battery explosion if the battery is mounted with inverted poles.

- *Put the two half-shells back in place and screw down the six screws.*
- *Connect electric power again.*



## 9.6. FEED MOTOR DRIVE - Replacement

- Disconnect electric power, open the electrical switchboard doors.
- Remove the drive **A** from its seat by lifting the lever **B**, and insert the new drive.



- Close the doors and connect electric power again.
- Control motor setting ("Offset" function) in the following way.  
Move the bar pusher to a position where it is free to move back and forth.

Press the key  . The display must read:



When the message goes off on the display, setting is completed.



## 9.7. RECOMMENDED SPARE PARTS - List

The heavy-wear parts or easily broken parts are listed below (this list refers to bar feeder requirements for a two year's period of normal use).

**Table 1.** Original spares table

Code	Name	Characteristics	Notes	Quantity
24150243	Clutch lining	15 L81 D97		3
	Clutch oil	BP ENERGOL HP - D32		300 gr.
220030120	Facing device electromagnet	24 V cc		1
33180002	Clutch reinforcement electromagnet	S60M - 24V DC		1
24371342	Toothed belt	345 L 075		1
24371182	Toothed belt	187 L 075		1
34320043	Feed motor brush	12x7x18 L59 MPC		2
32210401	Sensor	M8 3RG4011-OAG12 Siemens		1
24290602	Link	P8		2
	Bar pusher		Specify diameter and length	1
	Rotary unit		Specify diameter	1
	Collet		Specify internal and external diameter	2

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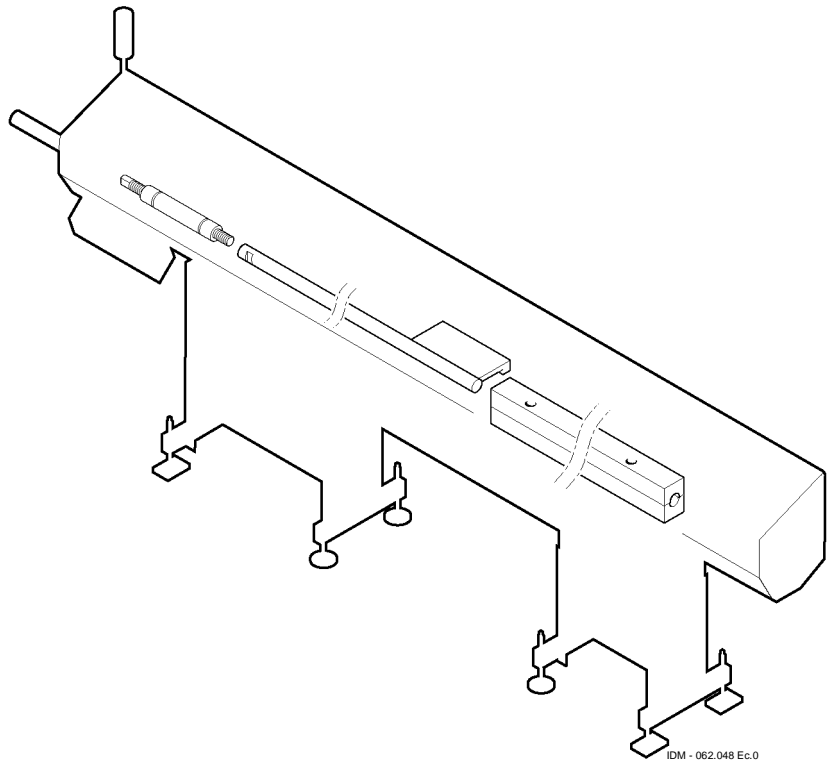
## LIST OF AFTER-SALES CENTERS

<b>ENGLAND:</b>	CSJ Enterprises	Unit 96 Springhill Farm Salters Lane, Lower Moor Nr. Pershore, Worcs WR10 2PE	Tel. +44 01386 861777 Fax +44 01386 861666 Email: <a href="mailto:CSJENT@AOL.com">CSJENT@AOL.com</a>
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**GUIDE CHANNELS**  
**GUIDE-BARRES**  
**BAR PUSHER**  
**POUSSETTE**  
**REVOLVING TIPS**  
**EMBOUTS TOURNANTS**

**GENIUS 226**





Read this introductory section carefully; it will help you easily trace the data you require. This manual is divided into a number of parts which are in turn divided into a number of sections (see contents page). These contain detailed information relative to the equipping of the bar feeders depending on the cross-section of the barstock, its diameter, the type of collet to be used, etc.

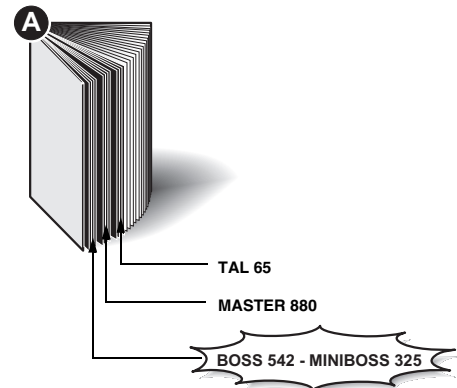
An example of the method of consultation described below refers to equipping of a BOSS 542 model bar feeder; the procedure described may vary for other bar feeder models.

Nous recommandons de lire attentivement cette partie introductive ; vous pourrez ainsi retrouver plus facilement les données qui vous intéressent. Ce manuel est composé de plusieurs fascicules subdivisés en différentes sections (voir index). Il contient une série d'informations articulées, relatives au montage des chargeurs en fonction de la barre à usiner, de son diamètre, du type de pinces à utiliser, etc.

L'exemple de consultation ci-dessous concerne le montage du chargeur modèle BOSS 542; la procédure qui y est décrite peut subir des variations selon les modèles de chargeurs.

**A** Select and consult the specific section concerning the bar feeder you are interested in.

**A** Sélectionner et consulter le fascicule correspondant au modèle du chargeur qui vous intéresse.



**B** Consult the "GUIDE CHANNELS AND BAR PUSHER - Table" section of the selected section, select the guide channels and bar pushers suitable for the diameter of the barstock. While ordering these, specify the code, which is to be found in the "Spare parts catalogue".

**B** Consulter la section "GUIDE-BARRES ET POUSETTE - Tableau" du fascicule sélectionné, choisir les guide-barres et la poussette en fonction du diamètre de la barre à usiner. Pour toute commande, spécifier le code, indiqué dans le "Catalogue des pièces détachées".

**B**

**BOSS 542 - BOSS 542 r**      **BOSS 542 - BOSS 542 r**

Bar diameter - eA (mm) Diamètre barre - eA (mm)		eA (mm) Maximum sub-diameter (-) Diamètre maximum des tubes (-)	eB (mm) Guide bar diameter Diamètre des guide-barres	eC (mm) Bar pusher diameter Diamètre de la poussette
Min	Max			
5	13	15	17	15

**C** Consult the "REVOLVING TIP - Table" section to select the revolving tip according to the diameter of the guide channel and that of the bar pusher, and the collet model to be used<sup>(1)</sup>.

**C** Consulter la section "EMBOUOT Tournant - Tableau" pour choisir l'embout tournant en fonction du diamètre des guide-barres, de celui de la poussette et de la version pince à utiliser<sup>(1)</sup>.

**BOSS 542 - MINIBOSS 325 002**

**REVOLVING TIP - Table**      **EMBOUOT Tournant - Tableau**

Le diamètre du guide et le diamètre de la poussette et de la version de l'encochement de la pince.

øB (mm) Guide channel diameter Diamètre des guide-barres	øC (mm) Bar pusher diameter Diamètre de la poussette	Collet version - D (see section) Version pince - D (par encochement)	øGR (mm) Revolving tip diameter Diamètre embout tournant	Revolving tip code Code embout tournant	See section Voir section BOSS 542 - MINIBOSS 325
10	10	Threaded (IEMCA) Fileté (IEMCA)	10	D71151000	003
13	12	Weldon (SCHL) Avec goupille	12	D71151201	004
17	15	Threaded (IEMCA) Fileté (IEMCA)	15	D71151500	003
16	16	Weldon (SCHL)	16	D71151601	004

**D** Consult the "REVOLVING TIP øGR 10÷27 - Table" section to select the type of collet<sup>(2)</sup>.

This section contains the dimensions of the revolving tip and a series of drawings of collets, with reference to the corresponding sections in which you will find the code number of the collet to be used.

**D** Consulter la section "EMBOUOTS Tournants øGR 10÷27 - Tableau" pour choisir le type de pince<sup>(2)</sup>.

Cette section présente un tableau des dimensions de l'embout tournant et une série d'illustrations des pinces accompagnée des références aux différents fascicules dans lesquels retrouver le code de la pince à utiliser.

**BOSS 542 - MINIBOSS 325 003**

**REVOLVING TIPS øGR 10÷27**      **EMBOUOTS Tournants øGR 10÷27**

**Table**      **Tableau**

Collet - Pince 011

● mm See section - Voir fascicule 011  
● mm See section - Voir fascicule 001  
● inch / mm - puis 011

øGR (mm)	Revolving tip code Code embout tournant	øF (mm)	øB (mm)	GP (mm)	G1 (mm)	C (mm)	A1 (mm)	øSP (mm)	P (mm)
10	D71151000	M8x1	10.5	160	30	8	6	3	24.5
15	D71151500	M8x1	15.5	160	35	12	6	3	26.5
18	D71151800	M8x1	18.5	160	35	12	6	4	28.5
19	D71151900	M8x1	19.5	160	35	12	6	4	28.5
20	D71152000	M10x1	20.5	172.5	35	14	6	4	38.5
23	D71152300	M10x1	23.5	172.5	35	14	6	4	38.5
25	D71152500	M10x1	25.5	172.5	35	17	6	5	38.5
27	D71152700	M10x1	27.5	172.5	35	17	6	5	38.5

(1) Collet model; identifies the type of collet-revolving tip coupling (e.g. threaded coupling, pin coupling, etc.).

Version pince; indique le type d'accouplement (par ex. accouplement fileté, avec goupille, etc.).

(2) Type of collet; identifies the cross-section of the barstock and the type of machining.

Type de pince; indique la section de la barre à usiner et le type d'usinage à adopter.



E Consult the "001 - Conversion Tables" section which contains the conversion tables for defining the internal diameter of the collet depending on the:

- profile and cross-section of the barstock
- the unit of measurement of the section dimensions (in millimetres for square and hexagonal sections, and in inches for round and hexagonal sections).

E Consulter le fascicule "001 - Tableaux de conversion" contenant les tableaux de conversion pour établir le diamètre interne de la pince en fonction:

- du profil et de la section de la barre à usiner
- de l'unité de mesure de la dimension de la section (en millimètres pour les sections carrées et hexagonales et en pouces pour les sections rondes et hexagonales).

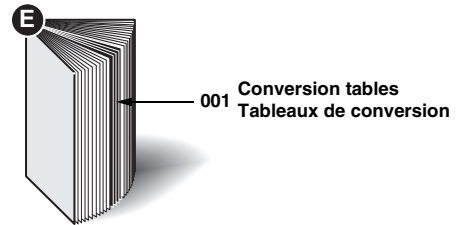


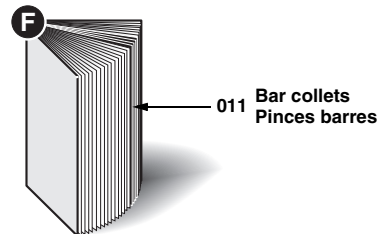
Table titled 'CONVERSION TABLES 001 TABLEAUX DE CONVERSION 001' showing conversion data for hexagonal bars. It includes a diagram of a hexagonal bar with dimensions and two tables: one for 'HEXAGONAL BARS (unit of measurement "millimetres") - Table' and another for 'BARRÉS HEXAGONALES (unité de mesure "millimètres") - Table'. Both tables list diameters in mm and inches.

F Consult the "011 - Bar collets" section to identify the code number of the collet selected.

For identifying this code, use the data obtained from previous consultations.

For example:

- coupling diameter with revolving tip
- internal diameter of collet corresponding to diameter of the round section bar (in millimetres); for profiles of bars which do not have these characteristics, consult the references found in the "001 - Conversion Tables" section.



F Consulter le fascicule "011 - Pincas barres" pour identifier le code de la pince sélectionnée.

Pour l'identification de ce code, utiliser les données déjà obtenues au cours des consultations précédentes.

Par exemple :

- diamètre d'accouplement avec l'embout tournant
- diamètre interne de la pince correspondant au diamètre de la barre avec section ronde (en millimètres); pour les profils de barres ne présentant pas les mêmes caractéristiques, consulter les références indiquées précédemment dans le fascicule "001 - Tableaux de conversion".

Table titled 'IEMCA 011' showing bar collet codes. It includes a diagram of a bar with dimensions and a large table with columns for 'eA', 'eF M12x1', 'eF M8x1', 'eF M10x1', and 'eF M12x1'. The table lists various codes corresponding to different bar diameters and internal diameters.

## ☐ Symbols

Parts of the text which are of considerable importance are highlighted in bold and are preceded by the following symbols:



**CAUTION:** indicates that it is necessary to adopt suitable measures for preventing accidents and damage to objects.



**INFORMATION:** these are technical instructions of considerable importance.

The symbols used in the tables and figures are as follows:

- bars with round section
- bars with square section
- ◆ bars with hexagonal section
- bars with tubular section

## ☐ Abbreviations

- CH key socket
- GR revolving tip
- SP hole for pin

The abbreviations in the drawings, which are easy to interpret, are not included in this list.

## ☐ Symboles

Les parties les plus importantes du texte sont mises en relief en caractères gras et sont précédées des symboles :



**PRECAUTION:** indique qu'il s'avère nécessaire d'adopter les comportements adéquats afin d'éviter accidents et dommages.



**AVERTISSEMENT:** il s'agit d'indications techniques particulièrement importantes.

Dans les tableaux et figures, les symboles suivants peuvent apparaître:

- barre à section ronde
- barre à section carrée
- ◆ barre à section hexagonale
- barre à section tubulaire

## ☐ Abréviations

- CH prise de clé
- GR embout tournant
- SP orifice pour goupille

Les abréviations faciles à interprétées reportées dans les illustrations, ne font pas partie de cette liste.

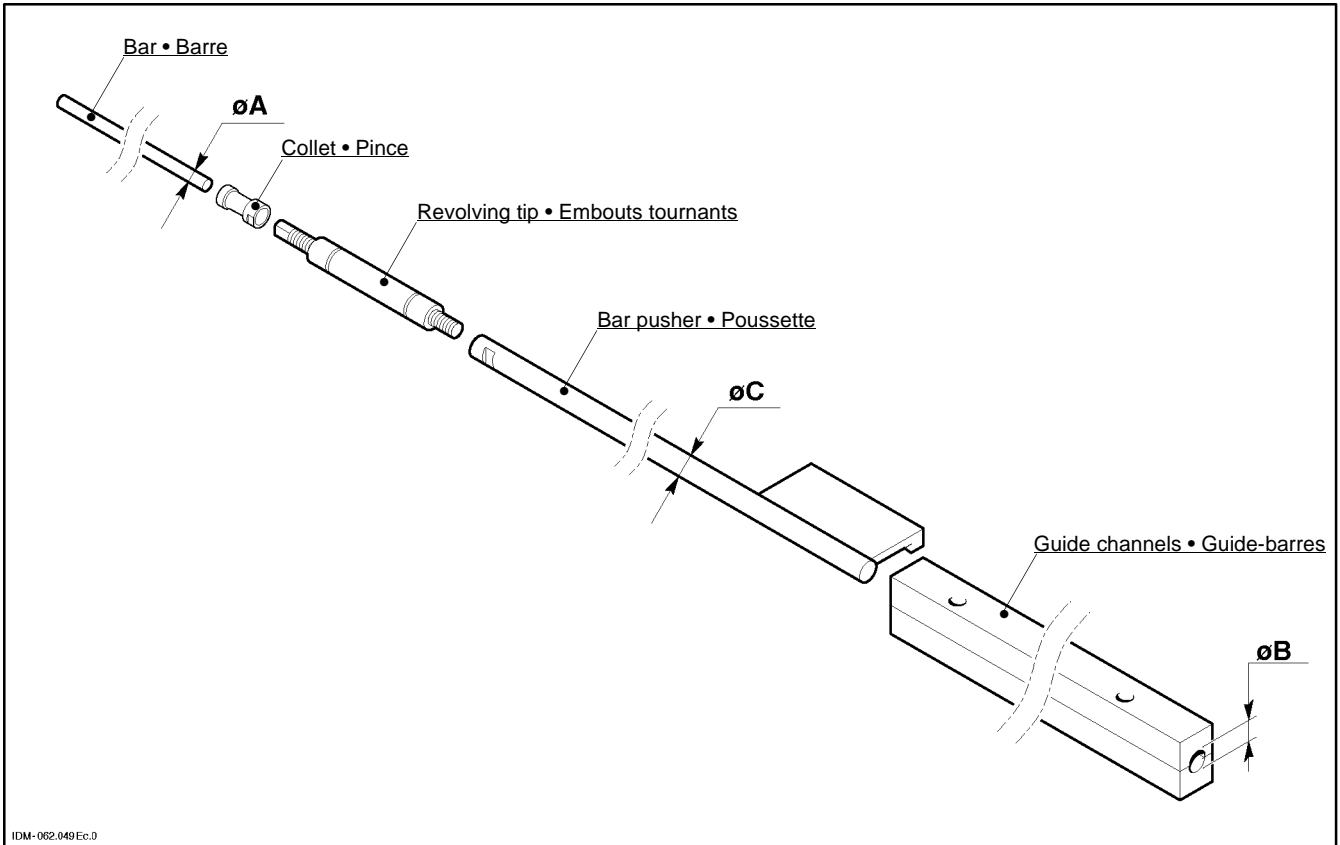
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## GUIDE CHANNELS AND BAR PUSHER - Table


The choice of guide channels and bar pusher must be made according to the diameter of the barstock. The bar feeder is usually supplied with a bar pusher whose diameter is equal to the maximum bar passage of the lathe. In certain cases, to be able to work in the best possible conditions, it may also be necessary to use a bar pusher with smaller diameter.


## GUIDE-BARRES ET POUSSETTE - Tableau

Le choix des guide-barres et de la poussette doit être fait en fonction du diamètre de la barre à usiner. Le chargeur est en principe fourni avec une poussette d'un diamètre équivalent au passage maximum de la barre du tour. Dans certains cas, pour de meilleures conditions de travail, il peut s'avérer nécessaire d'utiliser une poussette de diamètre inférieur.





## □ GENIUS 226

 **CAUTION:** the field of application of collets for machining specific bar diameters in the different guide channels are indicated in the table. If the bar diameter is smaller by about 10 mm with respect to the guide channel diameter, vibrations and failures could arise in the bar feeder. Therefore, in order to optimise operation, the bar rotation speed should be reduced or the guide channel diameter should be changed.

 **INFORMATION:** upon request also non standard collets with reduced thickness (which are not mentioned in the a.m. table) are available. Their durability is however below the durability of standard collets.

## □ GENIUS 226

 **PRECAUTION:** le champ d'application des pinces pour les diamètres des barres usinables dans chaque guide-barre est celui qui est indiqué sur le tableau. Lorsque ce diamètre est plus petit de 10 mm que le diamètre du guide-barre, peuvent se créer des vibrations et des défaillances sur le chargeur. Il faut donc considérer la possibilité de réduire la vitesse de rotation de la barre ou bien de changer le diamètre du guide-barre pour optimiser l'application.

 **AVERTISSEMENT:** sur demandes spécifiques des clients, nous pouvons fournir des pinces pas standard (pas indiquées sur le tableau), avec des épaisseurs plus minces, qui évidemment ne garantissent pas la même durée que celles de dotation.

Bar diameter - $\varnothing A$ (mm) Diamètre barre - $\varnothing A$ (mm)		$\varnothing A$ (mm) Maximum tube diameter (*) Diamètre maximum des tubes (*)	$\varnothing B$ (mm) Guide channel diameter Diamètre des guide-barres	$\varnothing C$ (mm) Bar pusher diameter Diamètre de la poussette
Min	Max			
2	6.5	7.8	8	7.5
3	8	10	11	10
4	10	12	13	12
4	13	15	18	15
4	14	16	18	16
4	15	17	18	17
4	16	18	22	18
5	17	19	22	19
5	18	20	22	20
5	19	21	22	21
6	20	22	26	22
6	21	23	26	23
6	23	25	26	25
7	23	25	28	25
7	25	26	28	27
8	26	26	30	29

(\*) Also valid for prepared bars and normal barstock with front ejection of bar remnant.

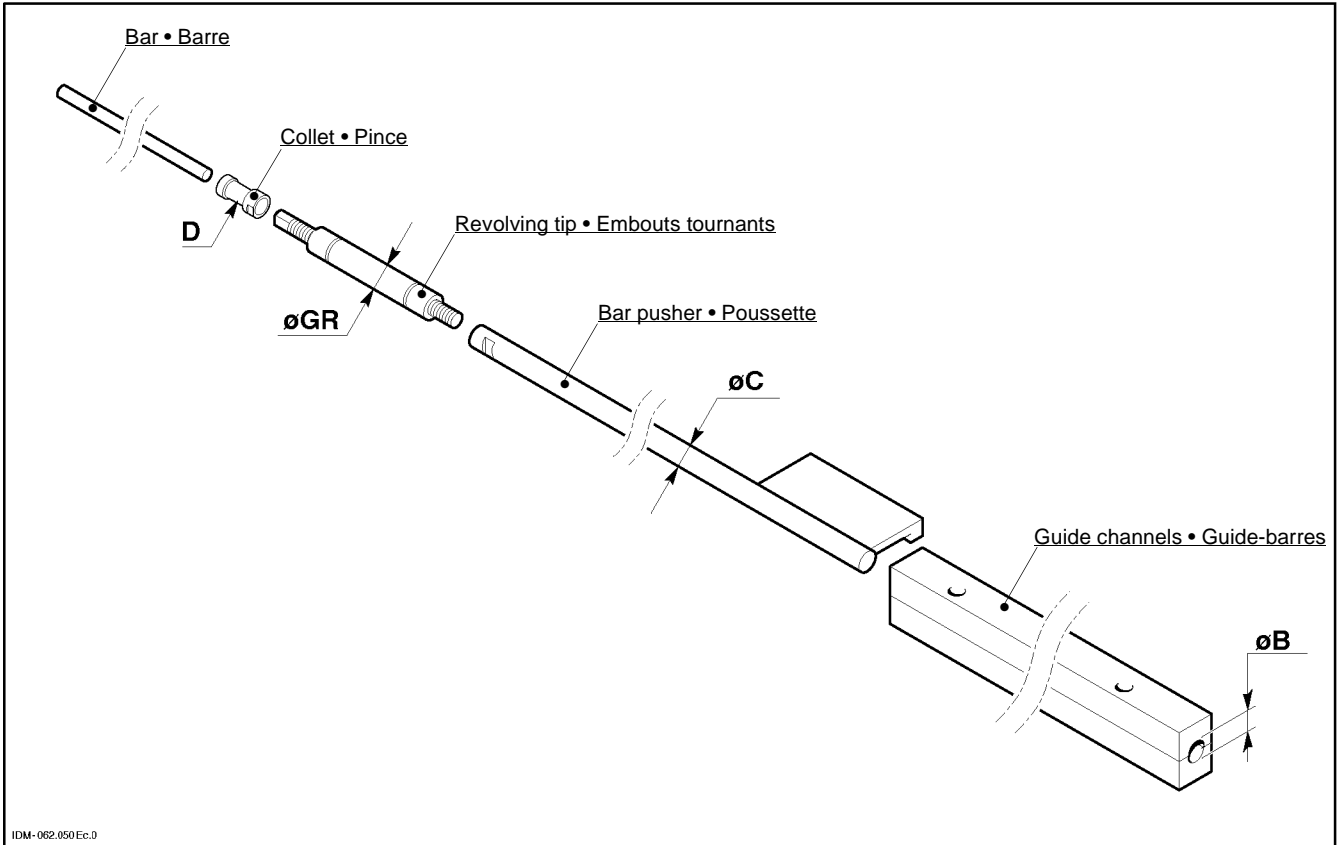
(\*) Valable également pour les barres préparées ou les barres normales pour un usinage avec éjection antérieure de la chute.

## REVOLVING TIP - Table

The choice of the revolving tip depends on the diameter of the guide channel, that of the bar pusher and the collet coupling version.

## EMBOUT TOURNANT - Tableau

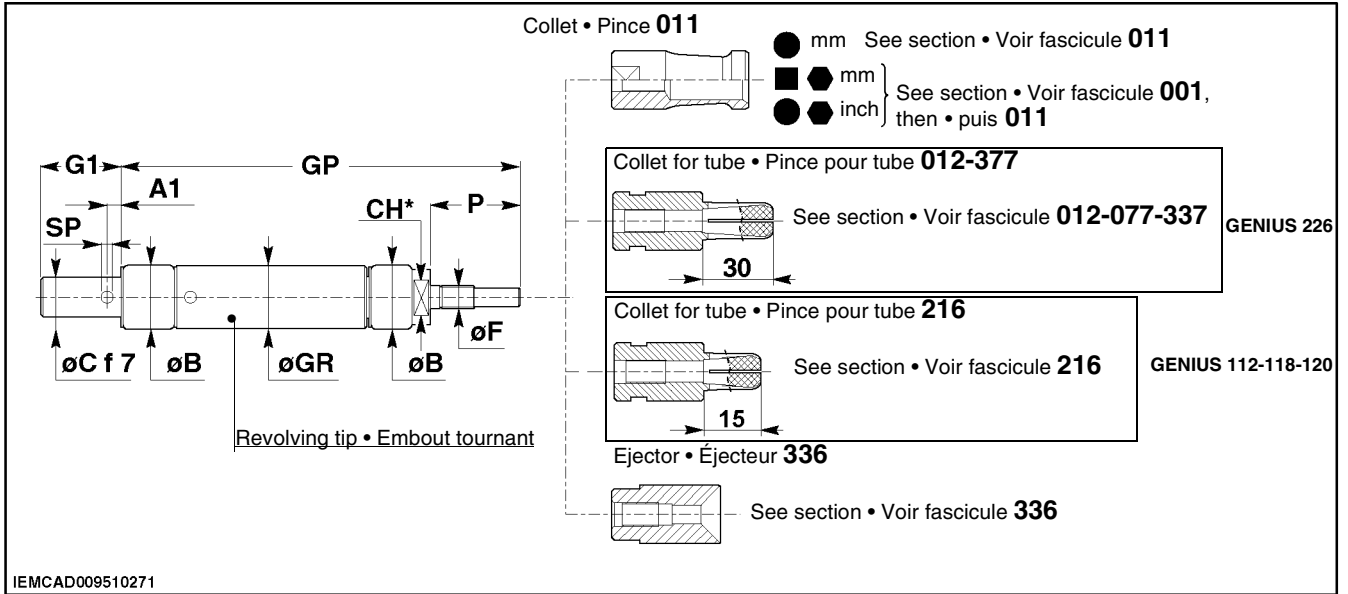
Le choix de l'embout tournant doit être fait en fonction du diamètre des guide-barres, de celui de la poussette et de la version de l'enclenchement de la pince.



**□ GENIUS 226**
**□ GENIUS 226**

$\varnothing B$ (mm) Guide channel diameter Diamètre des guide-barres	$\varnothing C$ (mm) Bar pusher diameter Diamètre de la poussette	Collet version - <b>D</b> (type of coupling) Version pince - <b>D</b> (type d'accouplement)	$\varnothing GR$ (mm) Revolving tip diameter Diamètre embout tournant	Revolving tip code Code embout tournant	See section Voir section GENIUS 112 - GENIUS 226
8	7.5	Threaded (IEMCA) Fileté (IEMCA)	7.5	D73150705	306
11	10	Threaded (IEMCA) Fileté (IEMCA)	10	D73151000	307
		With pin (SCHL) Avec goupille (SCHL)		D73151001	308
13	12	Threaded (IEMCA) Fileté (IEMCA)	12	D73151200	307
		With pin (SCHL) Avec goupille (SCHL)		D73151201	308
18	15	Threaded (IEMCA) Fileté (IEMCA)	15	D71151500	303
			16	D71151600	
			17	D71151700	
		With pin (SCHL) Avec goupille (SCHL)	15	D71151501	304
			16	D71151601	
			17	D71151701	
22	18	Threaded (IEMCA) Fileté (IEMCA)	18	D71151800	303
			19	D71151900	
	20	With pin (SCHL) Avec goupille (SCHL)	20	D71152000	304
			18	D71151801	
	20		19	D71151901	
			20	D71152001	
26	22	Threaded (IEMCA) Fileté (IEMCA)	22	D71152200	303
			23	D71152300	
	25	With pin (SCHL) Avec goupille (SCHL)	25	D71152500	304
			25	D71152501	
28	25	Threaded (IEMCA) Fileté (IEMCA)	25	D71152500	303
	27		27	D71152700	
	25	With pin (SCHL) Avec goupille (SCHL)	25	D71152501	304
	27		27	D71152701	
30	27	Threaded (IEMCA) Fileté (IEMCA)	27	D71152700	303
	29		29	D71152900	
	27	With pin (SCHL) Avec goupille (SCHL)	27	D71152701	304
	29		29	D71152901	

**REVOLVING TIPS  $\varnothing$ GR 15÷29 -  
Table**
**EMBOUTS TOURNANTS  $\varnothing$ GR 15÷29 -  
Tableau**
 For collet with threaded coupling (IEMCA)

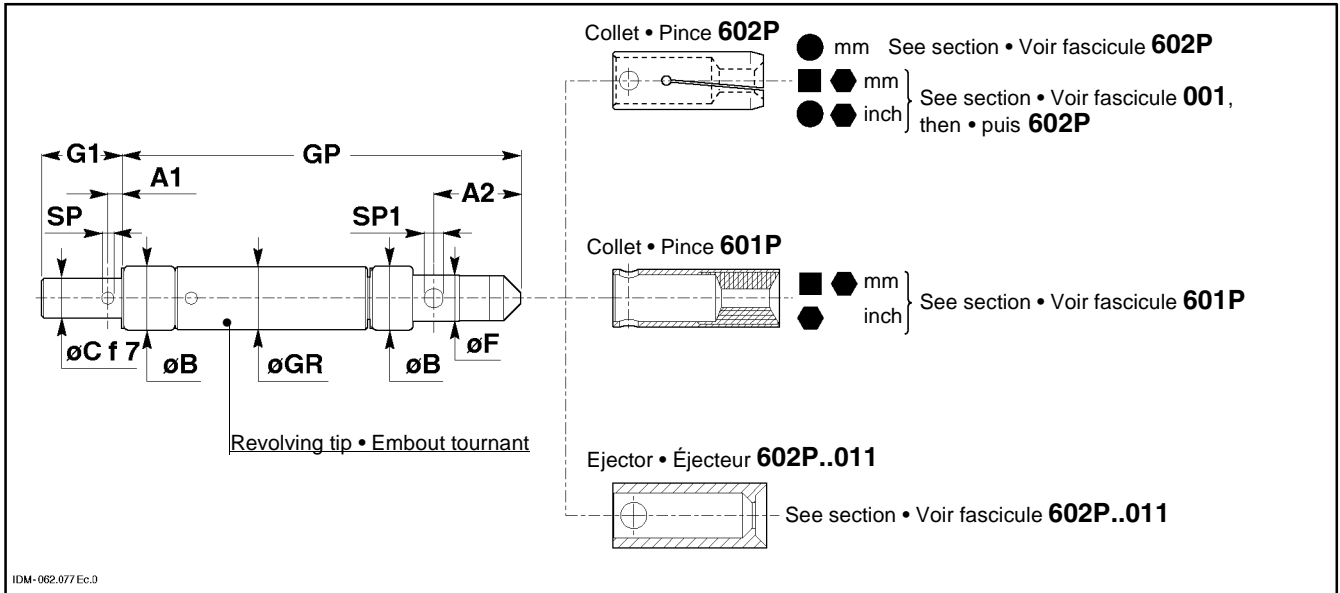
 Pour pinces à accouplement fileté (IEMCA)


$\varnothing$ GR (mm)	Revolving tip code Code embout tournant	$\varnothing$ F	$\varnothing$ B (mm)	GP (mm)	G1 (mm)	C (mm)	A1 (mm)	$\varnothing$ SP (mm)	P (mm)	CH (mm)
15	D71151500	M8x1	15.5	160	35	12	6	3	26.5	13
16	D71151600	M8x1	16.5	160	35	12	6	3	26.5	13
17	D71151700	M8x1	17.5	160	35	12	6	3	26.5	13
18	D71151800	M8x1	18.5	160	35	12	6	4	26.5	13
19	D71151900	M8x1	19.5	160	35	12	6	4	26.5	13
20	D71152000	M10x1	20.5	172.5	35	14	6	4	38.5	15
21	D71152100	M10x1	21.5	172.5	35	14	6	4	38.5	15
23	D71152300	M10x1	23.5	172.5	35	14	6	4	38.5	15
25	D71152500	M10x1	25.5	172.5	35	17	6	5	38.5	21
27	D71152700	M10x1	27.5	172.5	35	17	6	5	38.5	21
29	D71152900	M10x1	29.5	172.5	35	17	6	5	38.5	21

(\*) CH: double-ended fork wrench DIN3110

(\*) CH: Clé à forche double DIN3110

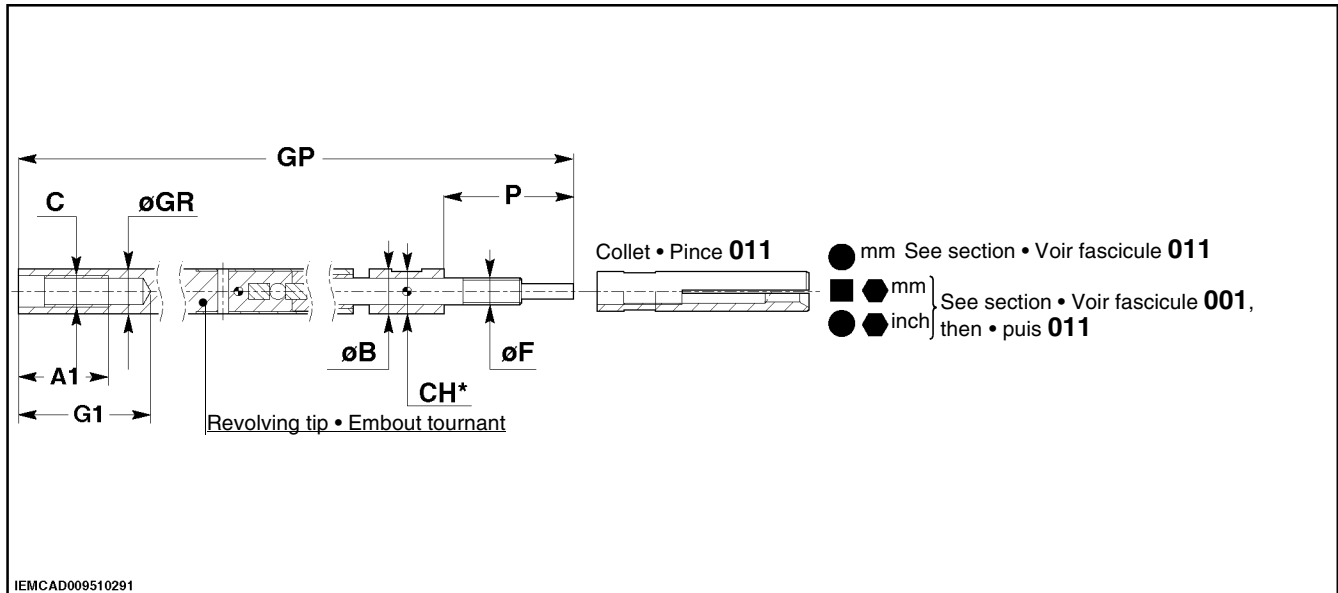
**REVOLVING TIPS  $\varnothing$ GR 15÷29 -  
Table**
**EMBOUTS TOURNANTS  $\varnothing$ GR 15÷29 -  
Tableau**
 For collet with pin coupling (SCHL)

 Pour pinces à accouplement avec goupille (SCHL)


$\varnothing$ GR (mm)	Revolving tip code Code embout tournant	$\varnothing$ F (mm)	$\varnothing$ B (mm)	GP (mm)	G1 (mm)	C (mm)	A1 (mm)	$\varnothing$ SP (mm)	A2 (mm)	$\varnothing$ SP1 (mm)
15	D71151501	11	15.5	160	35	12	6	3	18.5	6
16	D71151601	11	16.5	160	35	12	6	3	18.5	6
17	D71151701	11	16.5	160	35	12	6	3	18.5	6
18	D71151801	11	18.5	160	35	12	6	4	18.5	6
19	D71151901	11	19.5	160	35	12	6	4	18.5	6
20	D71152001	14	20.5	172.5	35	14	6	4	37.5	8
21	D71152101	14	21.5	172.5	35	14	6	4	37.5	8
23	D71152301	14	23.5	172.5	35	14	6	4	37.5	8
25	D71152501	20	25.5	172.5	35	17	6	5	37.5	8
27	D71152701	20	27.5	172.5	35	17	6	5	37.5	8
29	D71152901	20	29.5	172.5	35	17	6	5	37.5	8



**REVOLVING TIPS  $\varnothing$ GR 7,5÷8,5 -  
Table**
**EMBOUTS TOURNANTS  $\varnothing$ GR  
7,5÷8,5 - Tableau**
 For collet with threaded coupling (IEMCA)

 Pour pinces à accouplement fileté (IEMCA)


$\varnothing$ GR (mm)	Revolving tip code Code embout tournant	$\varnothing$ F (mm)	$\varnothing$ B (mm)	GP (mm)	G1 (mm)	C (mm)	A1 (mm)	P (mm)	CH (mm)
7.5	D73150705	M5x0.5	7.5	151	25	M6x0.75	17	24.5	7
8.5	D73150805	M5x0.5	8.5	151	25	M6x0.75	17	24.5	7

(\*) CH: double-ended fork wrench DIN3110

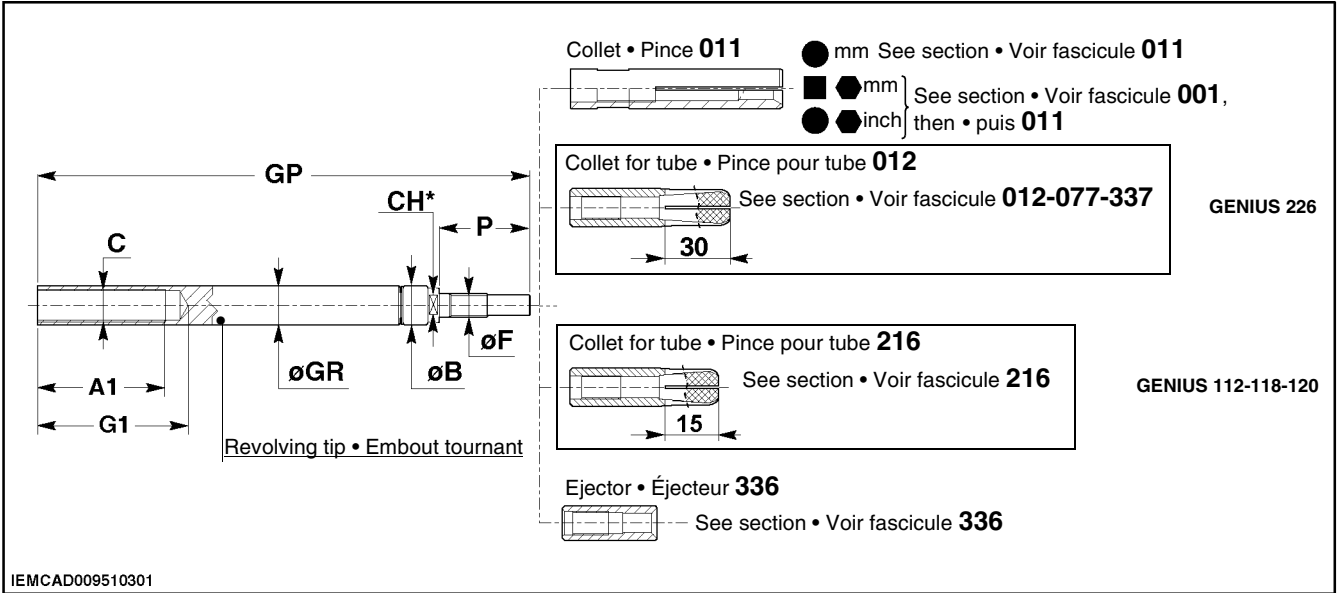
(\*) CH: Clé à forche double DIN3110

**REVOLVING TIPS  $\varnothing$ GR 10÷12 - Table**

**EMBOUTS TOURNANTS  $\varnothing$ GR 10÷12 - Tableau**

For collet with threaded coupling (IEMCA)

Pour pinces à accouplement fileté (IEMCA)



$\varnothing$ GR (mm)	Revolving tip code Code embout tournant	$\varnothing$ F (mm)	$\varnothing$ B (mm)	GP (mm)	G1 (mm)	C (mm)	A1 (mm)	P (mm)	CH (mm)
10	D73151000	M6x0.5	10.5	137	30	M8x1	24	24.5	8
12	D73151200	M7x0.5	12.5	143	30	M10x1	24	26.5	10

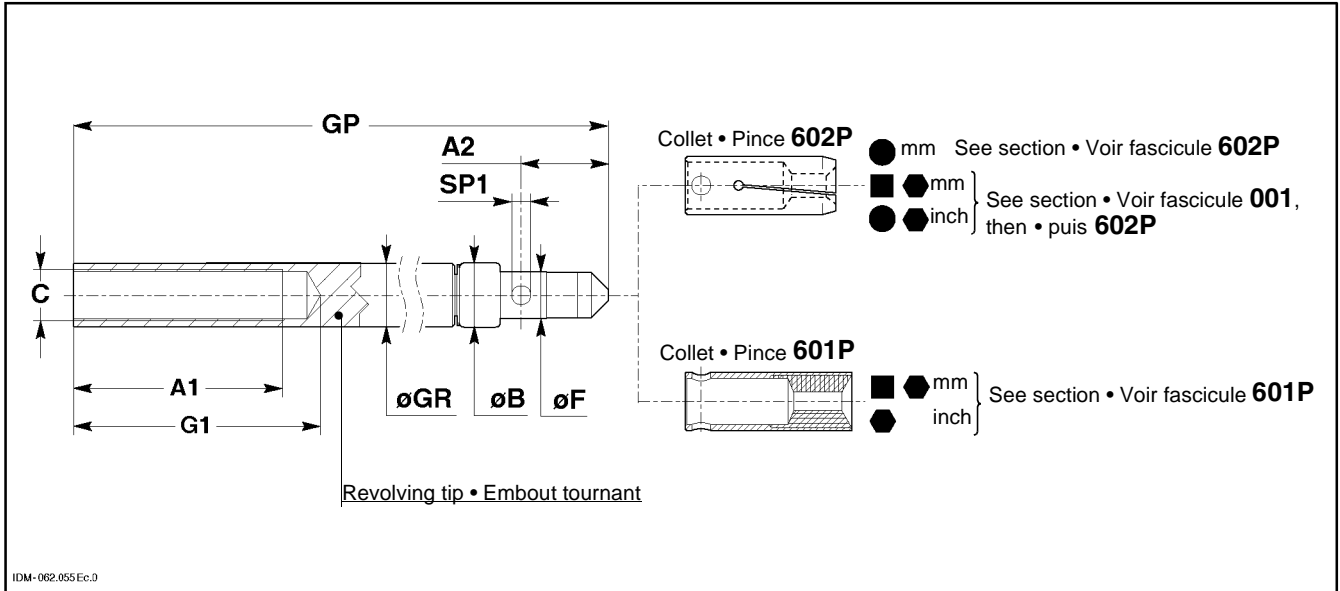
(\*) CH: double-ended fork wrench DIN3110  
 (\*) CH: Clé à forche double DIN3110

**REVOLVING TIPS  $\varnothing$ GR 10÷12 -  
Table**

**EMBOUTS TOURNANTS  $\varnothing$ GR 10÷12 -  
Tableau**

□ For collet with pin coupling (SCHL)

□ Pour pinces à accouplement avec goupille (SCHL)



IDM-062.055Ec.D

$\varnothing$ GR (mm)	Revolving tip code Code embout tournant	$\varnothing$ F (mm)	$\varnothing$ B (mm)	GP (mm)	G1 (mm)	C (mm)	A1 (mm)	A2 (mm)	$\varnothing$ SP1 (mm)
10	D73151001	7	10.5	137	30	M8x1	24	18	4
12	D73151201	8	12.5	143	30	M10x1	24	18	4



# 001

## CONVERSION TABLES TABLEAUX DE CONVERSION

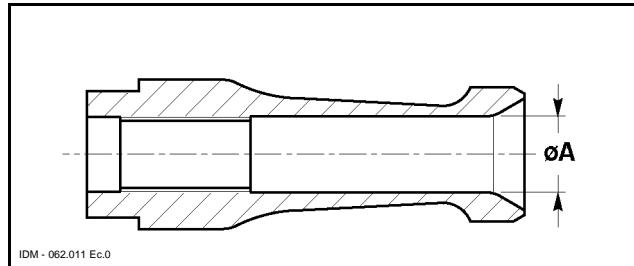


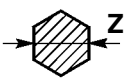
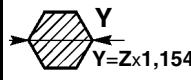
## HEXAGONAL BARS (unit of measurement "millimetres") - Table

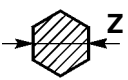
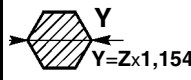
Before selecting the steel collet, define the internal diameter  $\phi A$  by consulting the table below.

## BARRES HEXAGONALES (unité de mesure "millimètres") - Tableau

Avant de procéder au choix de la pince en acier, il est nécessaire d'établir son diamètre interne  $\phi A$ , après consultation du tableau suivant.



		$\phi A$
mm	mm	mm
1.5	1.73	1.7
2	2.31	2.2
2.5	2.89	2.8
3	3.48	3.25
3.5	4.04	3.8
4	4.61	4.5
4.5	5.19	5
5	5.77	5.5
5.5	6.35	6.2
6	6.92	6.8
6.5	7.50	7.3
7	8.08	7.8
7.5	8.66	8.5
8	9.23	9
9	10.39	10.2
10	11.54	11.3
11	12.70	12.5
12	13.85	13.5
13	15.02	14.8
14	16.16	16
15	17.32	17.2
16	18.47	18.3
17	19.62	19.5
18	20.78	20.6
19	21.93	21.8
20	23.09	22.8
21	24.24	24
22	25.40	25.2
23	26.55	26.2
24	27.71	27.5
25	28.86	28.5
26	30.02	29.8
27	31.17	31

		$\phi A$
mm	mm	mm
28	32.33	32
29	33.48	33.2
30	34.64	34.5
31	35.79	35.5
32	36.95	36.8
33	38.10	37.8
34	39.25	39
35	40.41	40.2
36	41.56	41.3
38	43.87	43.5
39	45.03	44.8
40	46.18	46
41	47.34	47
42	48.49	48.2
43	49.65	49.5
44	50.80	50.5
45	51.96	51.8
46	53.11	52.8
48	55.42	55
50	57.73	57.5
52	60.04	59.5
55	63.50	63
57	65.78	65.25
60	69.24	68.75
62	71.55	71
65	75	74.5
67	77.3	76.75
70	80.78	80.25
72	83.08	82.5
75	86.55	86
80	92.32	91.75
85	98.1	97.5



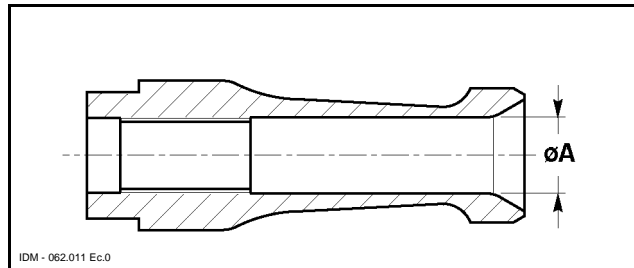


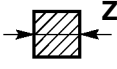
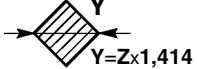
## SQUARE BARS (unit of measurement "millimetres") - Table

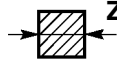
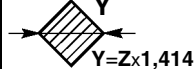
Before selecting the steel collet, define the internal diameter  $\varnothing A$  by consulting the table below.

## BARRES CARRÉES (unité de mesure "millimètres") - Tableau

Avant de procéder au choix de la pince en acier, il est nécessaire d'établir son diamètre interne  $\varnothing A$ , après consultation du tableau suivant.



		$\varnothing A$
mm	mm	mm
1	1.41	1.3
1.5	2.12	2
2	2.82	2.7
2.5	3.53	3.4
3	4.24	4
4	5.65	5.5
4.5	6.36	6.2
5	7.07	6.8
5.5	7.77	7.5
6	8.48	8.3
6.5	9.19	9
7	9.89	9.7
8	11.31	11
8.5	12.01	11.8
9	12.72	12.5
10	14.14	13.8
10.5	14.84	14.5
11	15.55	15
12	16.97	16.5
12.5	17.67	17
13	18.38	18
14	19.79	19.5
15	21.21	20.8
16	22.62	22
17	24.04	23.5
18	25.52	25
19	26.86	26

		$\varnothing A$
mm	mm	mm
20	28.28	27.5
22	31.10	30.5
23	32.52	32
24	33.93	33
25	35.35	34.5
26	36.76	36
27	38.17	37.5
28	39.59	38.5
30	42.42	41.5
32	45.24	44.5
34	48.07	47
35	49.49	48.5
36	50.90	50
37	52.31	51.5
38	53.73	52.5
39	55.15	54.5
40	56.56	55.5
41	57.97	57
42	59.38	58.5
43	60.08	59
44	62.21	61
45	63.63	62.5
46	65.04	64
50	70.7	69.5
55	77.77	76.75
60	84.84	83.75
65	91.91	91

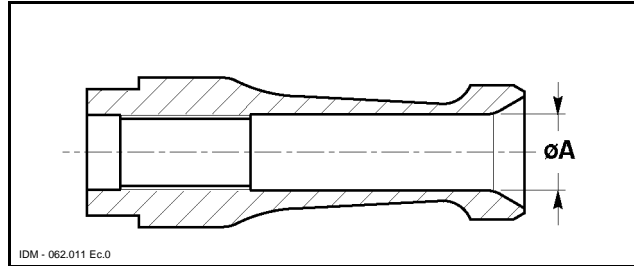


## HEXAGONAL BARS (unit of measurement "inches") - Table

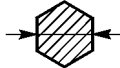
Before selecting the steel collet, define the internal diameter  $\phi A$  by consulting the table below.

## BARRES HEXAGONALES (unité de mesure "pouces") - Tableau

Avant de procéder au choix de la pince en acier, il est nécessaire d'établir son diamètre interne  $\phi A$ , après consultation du tableau suivant.



	$\phi A$	
	mm	inch
1/8	3.5	9/64
3/16	5.25	13/64
1/4	7	9/32
5/16	8.75	11/32
3/8	10.75	27/64
7/16	12.5	31/64
1/2	14.25	9/16
9/16	16.25	41/64
5/8	18	45/64
11/16	19.75	25/32
3/4	21.75	55/64
13/16	23.5	59/64
7/8	25.25	63/64
15/16	27.25	1"5/64
1"	29	1"9/64
1"1/16	30.75	1"13/64
1"1/8	32.5	1"9/32
1"3/16	34.25	1"11/32
1"1/4	36.25	1"27/64
1"5/16	38	1"1/2

	$\phi A$	
	mm	inch
1"3/8	39.75	1"9/16
1"7/16	41.75	1"41/64
1"1/2	43.5	1"23/32
1"9/16	46.5	1"53/64
1"5/8	47.25	1"55/64
1"11/16	49	1"15/16
1"3/4	50.75	2"
1"13/16	52.75	2"5/64
1"7/8	54.5	2"9/64
1"15/16	56.25	2"7/32
2"	58	2"9/32
2"1/16	59.75	2"11/32
2"1/8	61.5	2"27/64
2"3/16	63.5	2"1/2
2"1/4	65.25	2"37/64
2"1/2	72.5	2"55/64
2"3/4	79.75	3"9/64
3"	87	3"27/64
3"1/4	94.25	3"23/32

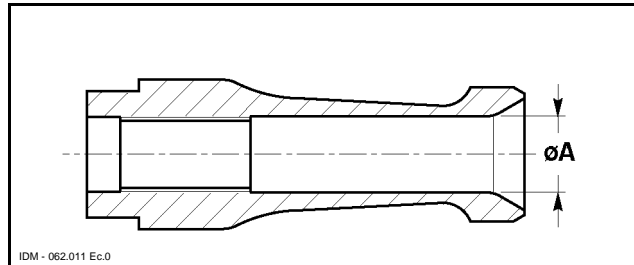


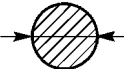
## ROUND BARS (unit of measurement "inches") - Table

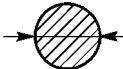
Before selecting the steel collet, define the internal diameter  $\varnothing A$  by consulting the table below.

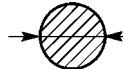
## BARRES RONDES (unité de mesure "pouces") - Tableau

Avant de procéder au choix de la pince en acier, il est nécessaire d'établir son diamètre interne  $\varnothing A$ , après consultation du tableau suivant.



	$\varnothing A$
<i>inch</i>	<i>mm</i>
1/32	0.8
3/64	1.2
1/16	1.6
5/64	2
3/32	2.4
7/64	2.8
1/8	3.2
9/64	3.6
5/32	4
11/64	4.4
3/16	4.8
13/64	5.2
7/32	5.6
15/64	6
1/4	6.4
17/64	6.8
9/32	7.2
19/64	7.6
5/16	8
21/64	8.4
11/32	8.8
23/64	9.1
3/8	9.6
25/64	10
13/32	10.4
27/64	10.8
7/16	11.25
29/64	11.5
15/32	12
31/64	12.5
1/2	12.75
33/64	13.25

	$\varnothing A$
<i>inch</i>	<i>mm</i>
17/32	13.5
35/64	14
9/16	14.25
37/64	14.75
19/32	15
39/64	15.5
5/8	16
41/64	16.25
21/32	16.75
43/64	17
11/16	17.5
45/64	18
23/32	18.25
47/64	18.75
3/4	19
49/64	19.5
25/32	19.75
51/64	20.25
13/16	20.75
53/64	21
27/32	21.5
55/64	21.75
7/8	22.25
57/64	22.75
29/32	23
59/64	23.5
15/16	24
61/64	24.25
31/32	24.75
63/64	25
1	25.5
1"1/16	27

	$\varnothing A$
<i>inch</i>	<i>mm</i>
1"1/8	28.5
1"3/16	30.25
1"1/4	31.75
1"5/16	33.25
1"3/8	35
1"7/16	36.25
1"1/2	38
1"9/16	39.75
1"5/8	41.25
1"11/16	43
1"3/4	44.5
1"13/16	46
1"7/8	47.75
1"15/16	49.25
2"	50.75
2"1/16	52.5
2"1/8	54
2"3/16	55.5
2"1/4	57.25
2"5/16	58.75
2"3/8	60.5
2"7/16	62
2"1/2	63.5
2"9/16	65
2"5/8	66.75
2"11/16	68.25
2"3/4	70
2"13/16	71.5
2"7/8	73
2"15/16	74.75
3"	76.25



**INCH/MM CONVERSION TABLE**  
**TABLE DE CONVERSION POUCES / MILLIMÈTRES**

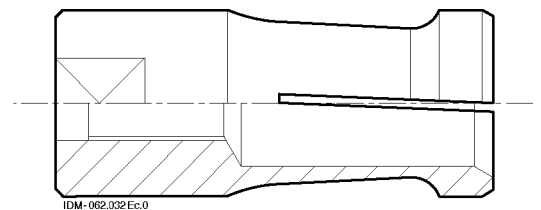
Inch fraction Fraction de pouce		Inch/pouces			
		0	1	2	3
		MM/millimètres			
0	0	0	25,400 0	50,800 0	76,200 0
1/64	0,015 625	0,396 9	25,796 9	51,196 9	76,596 9
1/32	0,031 25	0,793 8	26,193 8	51,593 8	76,993 8
3/64	0,046 875	1,190 6	26,590 6	51,990 6	77,390 6
1/16	0,062 5	1,587 5	26,987 5	52,387 5	77,787 5
5/64	0,078 125	1,984 4	27,384 4	52,784 4	78,184 4
3/32	0,093 75	2,381 2	27,781 2	53,181 2	78,581 2
7/64	0,109 375	2,778 1	28,178 1	53,578 1	78,978 1
1/8	0,125	3,175 0	28,575 0	53,985 0	79,375 0
9/64	0,140 625	3,571 9	28,971 9	54,371 9	79,771,9
5/32	0,156 25	3,968 8	29,368 8	54,768 8	80,168 8
11/64	0,171 875	4,365 6	29,765 6	55,165 6	80,565 6
3/16	0,187 5	4,762 5	30,162 5	55,562 5	80,962 5
13/64	0,203 125	5,159 4	30,559 4	55,959 4	81,359 4
7/32	0,218 75	5,556 2	30,956 2	56,356 2	81,756 2
15/64	0,234 375	5,953 1	31,353 1	56,753 1	82,153 1
1/4	0,25	6,350 0	31,750 0	57,150 0	82,550 0
17/64	0,265 625	6,746 9	32,146 9	57,546 9	82,946 9
9/32	0,281 25	7,143 8	32,543 8	57,943 8	83,343 8
19/64	0,296 875	7,540 6	32,940 6	58,340 6	83,740 6
5/16	0,312 5	7,937 5	33,337 5	58,737 5	84,137 5
21/64	0,328 125	8,334 4	33,734 4	59,134 4	84,534 4
11/32	0,343 75	8,731 2	34,131 2	59,531 2	84,931 2
23/64	0,359 375	9,128 1	34,528 1	59,928 1	85,328 1
3/8	0,375	9,525 0	34,925 0	60,325 0	85,725 0
25/64	0,390 625	9,921 9	35,321 9	60,721 9	86,121 9
13/32	0,406 25	10,318 8	35,718 8	61,118 8	86,518 8
27/64	0,421 875	10,715 6	36,115 6	61,515 6	86,915 6
7/16	0,437 5	11,112 5	36,512 5	61,912 5	87,312 5
29/64	0,453 125	11,509 4	36,909 4	62,309 4	87,709 4
15/32	0,468 75	11,906 2	37,306 2	62,706 2	88,106 2
31/64	0,484 375	12,303 1	37,703 1	63,103 1	88,503 1
1/2	0,5	12,700 0	38,100 0	63,500 0	88,900 0
33/64	0,515 625	13,096 9	38,496 9	63,896 9	89,296 9
17/32	0,531 25	13,493 8	38,893 8	64,293 8	89,693 8
35/64	0,546 875	13,890 6	39,290 6	64,690 6	90,090 6
9/16	0,562 5	14,287 5	39,687 5	65,087 5	90,487 5
37/64	0,578 125	14,684 4	40,084 4	65,484 4	90,884 4
19/32	0,593 75	15,081 2	40,481 2	65,881 2	91,281 2
39/64	0,609 375	15,478 1	40,878 1	66,278 1	91,678 1
5/8	0,625	15,875 0	41,275 0	66,675 0	92,075 0
41/64	0,640 625	16,271 9	41,671 9	67,071 9	92,471 9
21/32	0,656 25	16,668 8	42,068 8	67,468 8	92,868 8
43/64	0,671 875	17,065 6	42,465 6	67,865 6	93,265 6
11/16	0,687 5	17,462 5	42,862 5	68,262 5	93,662 5
45/64	0,703 125	17,859 4	43,259 4	68,659 4	94,059 4
23/32	0,718 75	18,256 2	43,656 2	69,056 2	94,456 2
47/64	0,734 375	18,653 1	44,053 1	69,453 1	94,853 1
3/4	0,75	19,050 0	44,450 0	69,850 0	95,250 0
49/64	0,765 625	19,446 9	44,846 9	70,246 9	95,646 9
25/32	0,781 25	19,843 8	45,243 8	70,643 8	96,043 8
51/64	0,796 875	20,240 6	45,640 6	71,040 6	96,440 6
13/16	0,812 5	20,637 5	46,037 5	71,437 5	96,837 5
53/64	0,828 125	21,034 4	46,434 4	71,834 4	97,234 4
27/32	0,843 75	21,431 2	46,831 2	72,231 2	97,631 2
55/64	0,859 375	21,828 1	47,228 1	72,628 1	98,028 1
7/8	0,875	22,225 0	47,625 0	73,025 0	98,425 0
57/64	0,890 625	22,621 9	48,021 9	73,421 9	98,821 9
29/32	0,906 25	23,018 8	48,418 8	73,818 8	99,218 8
59/64	0,921 875	23,415 6	48,815 6	74,215 6	99,615 6
15/16	0,937 5	23,812 5	49,212 5	74,612 5	100,012 5
61/64	0,953 125	24,209 4	49,609 4	75,009 4	100,409 4
31/32	0,968 75	24,606 2	50,006 2	75,406 2	100,806 2
63/64	0,984 375	25,003 1	50,403 1	75,803 1	101,203 1





# 011

## COLLETS FOR BARS PINCES POUR BARRES





## 011 COLLETS FOR BARS - Table

**CAUTION:** the external diameter of the collet must be at least 0.5 mm less than the external diameter of the bar pusher.

### Note for consultation

Codes on a grey background refer to the "USE RANGE" for completing a set of collets while working with the larger channel, and coupling  $\phi F$  on the revolving tip is the same.

### Note for ordering

- Collets with codes in bold characters are available from stock.
- Collets with codes in italics have longer delivery times.

## 011 PINCES POUR BARRES - Tableau

**PRECAUTION:** le diamètre externe de la pince doit être inférieur d'au moins 0,5 mm au diamètre externe de la poussette.

### Note pour la consultation

Les codes sur fond gris indiquent le "GROUPE D'UTILISATION" pour compléter un jeu de pinces quand l'usinage a lieu sur le guide-barre le plus important, et que l'enclenchement  $\phi F$  sur l'embout tournant est le même.

### Remarque pour la commande

- Les pinces qui ont les codes en gras sont disponibles dans le magasin.
- Les pinces qui ont les codes en italique ont un délai de livraison plus long.

Collet • Pince

IEMCAD000610031

(\*)CH: Double-ended fork wrench DIN3110  
(\*)CH: Clé à fourche double DIN3110

### Code structure

#### Structure du code

011

12

030

0

$\phi A$  Bar diameter  
 $\phi A$  Diamètre de la barre  
 Exemple 0.8 mm = 008  
 Exemple 3 mm = 030  
 12.25 mm = 122  
 12.5 mm = 125

$\phi D$

Family to which it belongs  
Groupe d'appartenance

$\phi A$		$\phi F$ M5x0.5 CH6	$\phi F$ M6x0.75 CH8	$\phi F$ M7x0.75 CH10			
		$\phi D$ 7.5	$\phi D$ 10	$\phi D$ 12			
mm	in						
0.8	1/32"	011070080					
0.9		011070090					
1		<b>011070100</b>	011100100	011120100			
1.2	3/64"	<b>011070120</b>	011100120	011120120			
1.3		<b>011070130</b>	011100130	011120130			
1.4		<b>011070140</b>	011100140	011120140			
1.5		<b>011070150</b>	011100150	011120150			
1.6	1/16"	<b>011070160</b>	011100160	011120160			
1.7		<b>011070170</b>	011100170	011120170			
1.8		<b>011070180</b>	011100180	011120180			
1.9		<b>011070190</b>	011100190	011120190			

øA		øF M5x0.5 CH6	øF M6x0.75 CH8	øF M7x0.75 CH10	øF M8x1 CH13	øF M10x1 CH17	
mm	in	øD 7.5	øD 10	øD 12	øD 15	øD 20	
2	5/64"	011070200	011100200	011120200			
2.1		011070210	011100210	011120210			
2.2		011070220	011100220	011120220			
2.3		011070230	011100230	011120230			
2.4	3/32"	011070240	011100240	011120240			
2.5		011070250	011100250	011120250			
2.6		011070260	011100260	011120260			
2.7		011070270	011100270	011120270			
2.8	7/64"	011070280	011100280	011120280			
2.9		011070290	011100290	011120290			
3		011070300	011100300	011120300	011150300		
3.1		011070310	011100310	011120310	011150310		
3.2	1/8"	011070320	011100320	011120320	011150320		
3.3		011070330	011100330	011120330	011150330		
3.4		011070340	011100340	011120340	011150340		
3.5		011070350	011100350	011120350	011150350		
3.6	9/64"	011070360	011100360	011120360	011150360		
3.7		011070370	011100370	011120370	011150370		
3.8		011070380	011100380	011120380	011150380		
3.9		011070390	011100390	011120390	011150390		
4	5/32"	011070400	011100400	011120400	011150400	011200400	
4.1		011070410	011100410	011120410	011150410	011200410	
4.2		011070420	011100420	011120420	011150420	011200420	
4.3		011070430	011100430	011120430	011150430	011200430	
4.4	11/64"	011070440	011100440	011120440	011150440	011200440	
4.5		011070450	011100450	011120450	011150450	011200450	
4.6		011070460	011100460	011120460	011150460	011200460	
4.7		011070470	011100470	011120470	011150470	011200470	
4.8	3/16	011070480	011100480	011120480	011150480	011200480	
4.9		011070490	011100490	011120490	011150490	011200490	
5		011070500	011100500	011120500	011150500	011200500	
5.1		011070510	011100510	011120510	011150510	011200510	
5.2	13/64"	011070520	011100520	011120520	011150520	011200520	
5.3		011070530	011100530	011120530	011150530	011200530	
5.4		011070540	011100540	011120540	011150540	011200540	
5.5		011070550	011100550	011120550	011150550	011200550	
5.6	7/32"	011070560	011100560	011120560	011150560	011200560	
5.7		011070570	011100570	011120570	011150570	011200570	
5.8		011070580	011100580	011120580	011150580	011200580	

øA		øF M5x0.5 CH6	øF M6x0.75 CH8	øF M7x0.75 CH10	øF M8x1 CH13	øF M10x1 CH17	
mm	in	øD 7.5	øD 10	øD 12	øD 15	øD 20	
5.9		011070590	011100590	011120590	011150590	011200590	
6	15/64"	011070600	011100600	011120600	011150600	011200600	
6.1		011070610	011100610	011120610	011150610	011200610	
6.2		011070620	011100620	011120620	011150620	011200620	
6.3		011070630	011100630	011120630	011150630	011200630	
6.4	1/4"	011070640	011100640	011120640	011150640	011200640	
6.5		011070650	011100650	011120650	011150650	011200650	
6.6		011070660	011100660	011120660	011150660	011200660	
6.7		011070670	011100670	011120670	011150670	011200670	
6.8	17/64"		011100680	011120680	011150680	011200680	
6.9			011100690	011120690	011150690	011200690	
7			011100700	011120700	011150700	011200700	
7.1			011100710	011120710	011150710	011200710	
7.2	9/32"		011100720	011120720	011150720	011200720	
7.3			011100730	011120730	011150730	011200730	
7.4			011100740	011120740	011150740	011200740	
7.5			011100750	011120750	011150750	011200750	
7.6	19/64"		011100760	011120760	011150760	011200760	
7.7			011100770	011120770	011150770	011200770	
7.8			011100780	011120780	011150780	011200780	
7.9			011100790	011120790	011150790	011200790	
8	5/16"		011100800	011120800	011150800	011200800	
8.1			011100810	011120810	011150810	011200810	
8.2			011100820	011120820	011150820	011200820	
8.3			011100830	011120830	011150830	011200830	
8.4	21/64"		011100840	011120840	011150840	011200840	
8.5			011100850	011120850	011150850	011200850	
8.6			011100860	011120860	011150860	011200860	
8.7			011100870	011120870	011150870	011200870	
8.8	11/32"		011100880	011120880	011150880	011200880	
8.9			011100890	011120890	011150890	011200890	
9			011100900	011120900	011150900	011200900	
9.1	23/64"			011120910	011150910	011200910	
9.2				011120920	011150920	011200920	
9.3				011120930	011150930	011200930	
9.4				011120940	011150940	011200940	

øA		øF M7x0.75 CH10	øF M8x1 CH13	øF M8x1 CH13	øF M8x1 CH13	øF M8x1 CH16	øF M10x1 CH17
mm	in	øD 12	øD 15	øD 16	øD 17	øD 18	øD 20
9.5		011120950	011150950				011200950
9.6	3/8"	011120960	011150960				011200960
9.7		011120970	011150970				011200970
9.8		011120980	011150980				011200980
9.9		011120990	011150990				011200990
10	25/64"	011121000	011151000				011201000
10.1		011121010	011151010				011201010
10.2		011121020	011151020				011201020
10.3		011121030	011151030				011201030
10.4	13/32"	011121040	011151040				011201040
10.5		011121050	011151050				011201050
10.6		011121060	011151060				011201060
10.7		011121070	011151070				011201070
10.8	27/64"	011121080	011151080				011201080
10.9		011121090	011151090				011201090
11		011121100	011151100				011201100
11.25	7/16"		011151120	011161120			011201120
11.5			011151150	011161150			011201150
11.75	13/64"		011151170	011161170			011201170
12			011151200	011161200			011201200
12.25			011151220	011161220			011201220
12.5	31/64"		011151250	011161250		011181250	011201250
12.75	1/2"		011151270	011161270		011181270	011201270
13			011151300	011161300		011181300	011201300
13.25			011151320	011161320		011181320	011201320
13.5			011151350	011161350		011181350	011201350
13.75			011151370	011161370		011181370	011201370
14			011151400	011161400	011171400	011181400	011201400
14.25	9/16"			011161420	011171420	011181420	011201420
14.5				011161450	011171450	011181450	011201450
14.75				011161470	011171470	011181470	011201470
15				011161500	011171500	011181500	011201500
15.25					011171520	011181520	011201520
15.5					011171550	011181550	011201550
15.75					011171570	011181570	011201570
16	5/8"				011171600	011181600	011201600
16.25						011181620	011201620
16.5						011181650	011201650

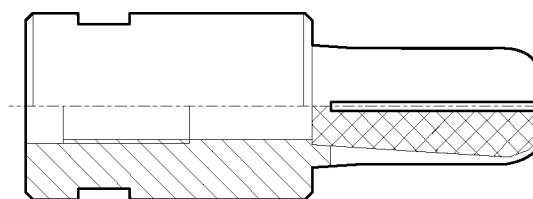
øA		øF M8x1 CH16	øF M10x1 CH17	øF M10x1 CH19	øF M10x1 CH22	øF M10x1 CH24	øF M10x1 CH28
mm	in	øD 19	øD 20	øD 23	øD 25	øD 27	øD 30
14			011201400	011231400			
14.25			011201420	011231420			
14.5			011201450	011231450			
14.75			011201470	011231470			
15			011201500	011231500			
15.25			011201520	011231520			
15.5			011201550	011231550			
15.75			011201570	011231570			
16	5/8"		011201600	011231600			
16.25	41/64"	011191620	011201620	011231620			
16.5		011191650	011201650	011231650			
16.75		011191670	011201670	011231670			
17		011191700	011201700	011231700	011251700		
17.25		011191720	011201720	011231720	011251720		
17.5	11/16"	011191750	011201750	011231750	011251750		
17.75		011191770	011201770	011231770	011251770		
18	45/64"	011191800	011201800	011231800	011251800		
18.25				011231820	011251820		
18.5				011231850	011251850		
18.75				011231870	011251870		
19	3/4"			011231900	011251900	011271900	
19.25				011231920	011251920	011271920	
19.5				011231950	011251950	011271950	
19.75	25/32"			011231970	011251970	011271970	
20				011232000	011252000	011272000	
20.25				011232020	011252020	011272020	
20.5				011232050	011252050	011272050	
20.75	13/16"			011232070	011252070	011272070	
21				011232100	011252100	011272100	
21.25					011252120	011272120	
21.5					011252150	011272150	
21.75	56/64"				011252170	011272170	
22					011252200	011272200	
22.25	7/8"				011252220	011272220	
22.5					011252250	011272250	
22.75					011252270	011272270	
23					011252300	011272300	011302300
23.25						011272320	011302320
23.5	59/64"					011272350	011302350

<b>øA</b>		<b>øF M10x1 CH24</b>	<b>øF M10x1 CH24</b>	<b>øF M10x1 CH28</b>	<b>øF M10x1 CH30</b>		
<i>mm</i>	<i>in</i>	<b>øD 27</b>	<b>øD 29</b>	<b>øD 30</b>	<b>øD 32</b>		
23.75		<b>011272370</b>		<b>011302370</b>			
24	15/16"	<b>011272400</b>	<i>011292400</i>	<b>011302400</b>			
24.25		<b>011272420</b>	<i>011292420</i>	<b>011302420</b>			
24.5		<b>011272450</b>	<i>011292450</i>	<b>011302450</b>			
24.75		<b>011272470</b>	<i>011292470</i>	<b>011302470</b>			
25		<b>011272500</b>	<i>011292500</i>	<b>011302500</b>			
25.25	63/64"		<i>011292520</i>	<b>011302520</b>			
25.5	1"		<i>011292550</i>	<b>011302550</b>			
25.75			<i>011292570</i>	<b>011302570</b>			
26			<i>011292600</i>	<b>011302600</b>	<b>011322600</b>		
26.25				<b>011302620</b>	<b>011322620</b>		
26.5				<b>011302650</b>	<b>011322650</b>		
26.75	1"1/16			<b>011302670</b>	<b>011322670</b>		
27	1"5/64			<b>011302700</b>	<b>011322700</b>		
27.25				<b>011302720</b>	<b>011322720</b>		
27.5				<b>011302750</b>	<b>011322750</b>		
27.75				<b>011302770</b>	<b>011322770</b>		
28				<b>011302800</b>	<b>011322800</b>		
28.25	1"1/8				<b>011322820</b>		
28.5					<b>011322850</b>		
28.75					<b>011322870</b>		
29					<b>011322900</b>		
29.25					<b>011322920</b>		
29.5					<b>011322950</b>		
29.75					<b>011322970</b>		
30					<b>011323000</b>		



# 012 - 077 - 377

**COLLETS FOR TUBES  
PINCES POUR TUBES**



IDM-062.033 Ec.0



## 012-077-377 COLLETS FOR TUBES - Table

**CAUTION:** the external diameter of the collet must be at least 0.5 mm less than the external diameter of the bar pusher.

**INFORMATION:** Collets 377... with  $\phi F$  M10x1 are designed for being mounted on revolving tips under  $\phi 28$ . When mounted on revolving tips  $< \phi 30$  and nipples 078800030, the 1st feeding value shall be increased by 7.5 mm.

## 012-077-377 PINCES POUR TUBES - Tableau

**PRECAUTION:** le diamètre externe de la pince doit être inférieur d'au moins 0,5 mm au diamètre externe de la poussette.

**AVERTISSEMENT:** Les pinces 377 avec  $\phi F$  M10x1 ont été projetées pour être installées sur des embouts tournants inférieurs à  $\phi 28$ . En cas que celles-ci soient installées sur des embouts tournants  $< \phi 30$  et avec des nipples type 078800030, il faudra étendre la cote de préavancement de 7,5 mm.

**012** Collets for tubes (type AS)  $\phi F$  M7x0.75 - M8x1  
Pincés pour tubes (type AS)  $\phi F$  M7x0.75 - M8x1

**377** Collets for tubes (type BOSS)  $\phi F$  M10x1  
Pincés pour tubes (type BOSS)  $\phi F$  M10x1

**077** Collets for tubes (type T560)  $\phi F$  M17x1 - M25x1  
Pincés pour tubes (type T560)  $\phi F$  M17x1 - M25x1

**377** Collets for tubes (type T560)  $\phi F$  M25x1.5  
Pincés pour tubes (type T560)  $\phi F$  M25x1.5

### Code structure

### Structure du code

377

29

100

0

$\phi A$  Bar diameter  
 $\phi A$  Diamètre de la barre

Example: 5 mm = 060  
Exemple: 10 mm = 100  
12.5 mm = 125

$\phi D$

Family to which it belongs • Groupe d'appartenance

**012** Collets for tubes (type AS)  $\phi F$  M7x0.75 - M8x1  
Pincés pour tubes (type AS)  $\phi F$  M7x0.75 - M8x1

**077** Collets for tubes (type T560)  $\phi F$  M17x1 - M25x1  
Pincés pour tubes (type T560)  $\phi F$  M17x1 - M25x1

**377** Collets for tubes (type BOSS)  $\phi F$  M10x1  
Pincés pour tubes (type BOSS)  $\phi F$  M10x1

**377** Collets for tubes (type T560)  $\phi F$  M25x1.5  
Pincés pour tubes (type T560)  $\phi F$  M25x1.5

(\*)CH: Double-ended fork wrench DIN3110

(\*)CH: Clé à collier de serrage DIN3110

$\phi A$		$\phi F$ M7x0.75 CH10	$\phi F$ M8x1 CH13	$\phi F$ M10x1 CH17	$\phi F$ M17x1 CH22	$\phi F$ M10x1 CH22	$\phi F$ M10x1 CH24	$\phi F$ M25x1.5 CH27
mm	in	$\phi D$ 12	$\phi D$ 15	$\phi D$ 20	$\phi D$ 24	$\phi D$ 25	$\phi D$ 27	$\phi D$ 29
5		012120500	012150500					
5.5		012120550	012150550					
6	15/64"	012120600	012150600	377200600	077240600			
6.5		012120650	012150650	377200650	077240650			
7		012120700	012150700	377200700	077240700			
7.5		012120750	012150750	377200750	077240750			
8	5/16"	012120800	012150800	377200800	077240800			
8.5		012120850	012150850	377200850	077240850			
9		012120900	012150900	377200900	077240900			
9.5		012120950	012150950	377200950	077240950			
10	25/64"		012151000	377201000	077241000			377291000
10.5			012151050	377201050	077241050			377291050





<b>øA</b>		<b>øF M25x1.5 CH36</b>	<b>øF M25x1.5 CH38</b>	<b>øF M25x1.5 CH41</b>	<b>øF M25x1.5 CH46</b>	<b>øF M25x1.5 CH50</b>		
<i>mm</i>	<i>in</i>	<b>øD 40</b>	<b>øD 42</b>	<b>øD 44-45</b>	<b>øD 49</b>	<b>øD 54-55</b>		
34		377403400						
35	1"3/8	377403500						
36		377403600						
37		377403700						
38	1"1/2		377423800					
39			377423900					
40			377424000	377444000				
40.5				377444050				
41				377444100				
41.5				377444150				
42				377454200				
42.5				377454250				
43	1"11/16				377494300			
43.5					377494350			
44					377494400			
44.5	1"3/4				377494450			
45					377494500			
45.5					377494550			
46					377494600			
46.5						377544650		
47						377544700		
47.5						377544750		
48						377544800		
48.5						377544850		
49						377544900		
49.5						377544950		
50						377545000		
50.5						377545050		
51						377545100		
51.5						377545150		
52						377555200		

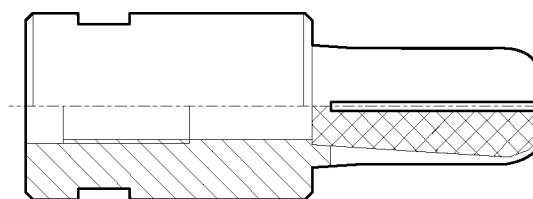
<b>øA</b>		<b>øF M25x1.5 CH55</b>	<b>øF M25x1.5 CH60</b>	<b>øF M25x1.5 CH60</b>
<i>mm</i>	<i>in</i>	<b>øD 59</b>	<b>øD 64</b>	<b>øD 68</b>
52.5		377595250		
53		377595300		
53.5		377595350		
54	2"1/8	377595400		
54.5		377595450		
55		377595500		
55.5		377595600		
56		377595600		
56.5			377645650	
57			377645700	
57.5			377645750	
58			377645800	
58.5			377645850	
59			377645900	
59.5			377646000	
60			377646000	
60.5			377646050	
61			377646100	
61.5				377686150
62				377686200
62.5				377686250
63				377686300
63.5				377686350
64				377686400
64.5				377686450
65				377686500
65.5				377686550
66				377686600





# 216

## COLLETS FOR TUBES PINCES POUR TUBES





## 216 COLLETS FOR TUBES - Table



**CAUTION:** the external diameter of the collet must be at least 0.5 mm less than the external diameter of the bar pusher.

### Note for ordering

- Collets with codes in bold characters are available from stock.
- Collets with codes in italics have longer delivery times.

## 216 PINCES POUR TUBES - Tableau



**PRECAUTION:** le diamètre externe de la pince doit être inférieur d'au moins 0,5 mm au diamètre externe de la poussette.

### Remarque pour la commande

- Les pinces qui ont les codes en gras sont disponibles dans le magasin.
- Les pinces qui ont les codes en italique ont un délai de livraison plus long.

IEMCA 0005510051

(\*) CH: Double-ended fork wrench DIN3110  
(\*) CH: Clé à fourche double DIN3110

### Code structure

#### Structure du code

216

29

100

0

øA Bar diameter  
 øA Diamètre de la barre  
 Example: 5 mm = 060  
 Exemple: 10 mm = 100  
 12.5 mm = 125

øD

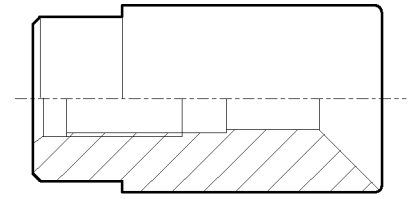
Family to which it belongs • Groupe d'appartenance  
**216** Collets for tubes (type CH)  
*216* Pinces pour tubes (type CH)

øA		øF M5x0.5	øF M6x0.75	øF M7x0.75	øF M8x1			
		CH6	CH8	CH10	CH13			
mm	in	øD 7.5	øD 10	øD 12	øD 15			
5		<b>216070500</b>	<b>216100500</b>	<b>216120500</b>	<b>216150500</b>			
5.1		<b>216070510</b>	<b>216100510</b>	<i>216120510</i>	<i>216150510</i>			
5.2	13/64"	<b>216070520</b>	<b>216100520</b>	<i>216120520</i>	<i>216150520</i>			
5.3		<b>216070530</b>	<b>216100530</b>	<i>216120530</i>	<i>216150530</i>			
5.4		<b>216070540</b>	<b>216100540</b>	<i>216120540</i>	<i>216150540</i>			
5.5		<b>216070550</b>	<b>216100550</b>	<b>216120550</b>	<b>216150550</b>			
5.6	7/32"	<b>216070560</b>	<b>216100560</b>	<i>216120560</i>	<i>216150560</i>			
5.7		<b>216070570</b>	<b>216100570</b>	<i>216120570</i>	<i>216150570</i>			
5.8		<b>216070580</b>	<b>216100580</b>	<i>216120580</i>	<i>216150580</i>			
5.9		<b>216070590</b>	<b>216100590</b>	<i>216120590</i>	<i>216150590</i>			
6	15/64"	<b>216070600</b>	<b>216100600</b>	<b>216120600</b>	<b>216150600</b>			
6.1		<b>216070610</b>	<b>216100610</b>	<i>216120610</i>	<i>216150610</i>			
6.2		<b>216070620</b>	<b>216100620</b>	<i>216120620</i>	<i>216150620</i>			
6.3		<b>216070630</b>	<b>216100630</b>	<i>216120630</i>	<i>216150630</i>			
6.4	1/4"	<b>216070640</b>	<b>216100640</b>	<i>216120640</i>	<i>216150640</i>			
6.5			<b>216100650</b>	<b>216120650</b>	<b>216150650</b>			

øA		øF M6x0.75 CH8	øF M7x0.75 CH10	øF M8x1 CH13	øF M10x1 CH17	øF M10x1 CH22		
mm	in	øD10	øD 12	øD 15	øD 20	øD 25		
6.6		216100660	216120660	216150660				
6.7		216100670	216120670	216150670				
6.8	17/64"	216100680	216120680	216150680				
6.9		216100690	216120690	216150690				
7		216100700	216120700	216150700				
7.1		216100710	216120710	216150710				
7.2	9/32"	216100720	216120720	216150720				
7.3		216100730	216120730	216150730				
7.4		216100740	216120740	216150740				
7.5		216100750	216120750	216150750				
7.6	19/64"	216100760	216120760	216150760				
7.7		216100770	216120770	216150770				
7.8		216100780	216120780	216150780				
7.9		216100790	216120790	216150790				
8	5/16"	216100800	216120800	216150800				
8.5		216100850	216120850	216150850				
9			216120900	216150900				
9.5				216150950				
10	25/64"			216151000				
10.5				216151050				
11				216151100	216201100			
11.5				216151150	216201150			
12				216151200	216201200			
12.5	31/64"			216151250	216201250			
13				216151300	216201300			
13.5					216201350			
14					216201400			
14.5					216201450			
15					216201500			
15.5					216201550			
16					216201600	216251600		
16.5						216251650		
17						216251700		
17.5						216251750		
18						216251800		
18.5						216251850		
19						216251900		
19.5						216251950		
20						216252000		

**336**

**EJECTOR  
ÉJECTEUR**



IDM-062.040 Ec.0



### 336 EJECTORS - GUIDES Ø<30 - TABLE

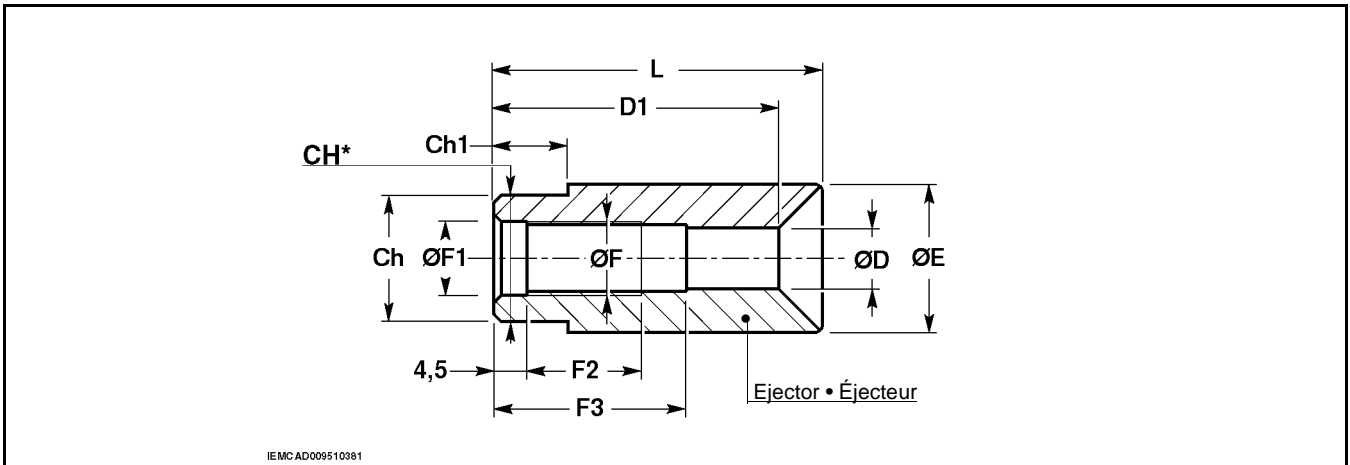
### 336 ÉJECTEURS - GUIDES Ø<30 - TABLEAU



**CAUTION:** the external diameter of the collet must be at least 0.5 mm less than the external diameter of the bar pusher.



**PRECAUTION:** le diamètre externe de l'éjecteur doit être inférieur d'au moins 0,5 mm au diamètre externe de la poussette.


IEMCAD009510381

(\*) CH: Double-ended fork wrench DIN 3110

(\*)CH: Clé à fourche double DIN 3110

ØF	F1 (mm)	F2 (mm)	F3 (mm)	ØE (mm)	L (mm)	ØD (mm)	D1 (mm)	Ch (mm)	Ch1 (mm)	N. code Numero code
M7x0.75	7	12	18	12	29.75	5.5	26.5	10	6	336803120
M8x1	8	12	18	15	30.75	6.5	26.5	13	10	336803150
M8x1	8	12	18	18	32	6.5	26.5	15	10	336803180
M10x1	10	15.5	26	20	44.4	8.2	38.5	17	10	336803200
M10x1	10	15.5	26	23	46	8.2	38.5	19	10	336803230
M10x1	10	15.5	26	25	47	8.2	38.5	22	12	336803250
M10x1	10	15.5	26	27	48	8.2	38.5	24	12	336803270
M10x1	10	15.5	26	29	49	8.2	38.5	27	12	336803290



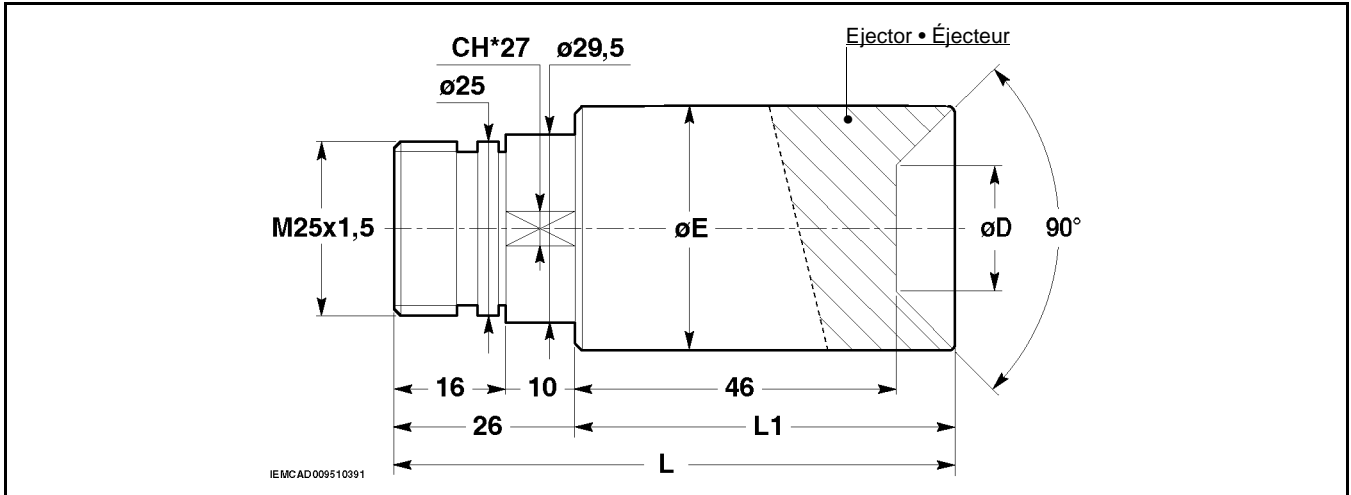


### 336 EJECTORS - GUIDES $\varnothing > 32$ - TABLE

**CAUTION:** the external diameter of the collet must be at least 0.5 mm less than the external diameter of the bar pusher.

### 336 ÉJECTEURS - GUIDES $\varnothing > 32$ - TABLEAU

**PRECAUTION:** le diamètre externe de l'éjecteur doit être inférieur d'au moins 0,5 mm au diamètre externe de la poussette.



(\*) CH: Double-ended fork wrench DIN 3110

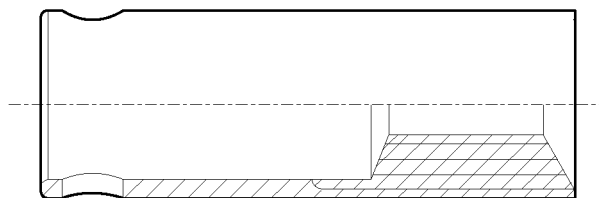
(\*)CH: Clé à fourche double DIN 3110

$\varnothing E$ (mm)	$\varnothing D$ (mm)	L (mm)	L1 (mm)	N. code Numero code
31	10	82.5	56.5	336803310
32	14	81	55	336803320
35	18	80.5	54.5	336803350
40	18	83	57	336803400
42	18	84	58	336803420
45	21	84	58	336803450
50	23	84	58	336803500



# 601P

**“UNILOCK” COLLETS FOR BARS**  
**PINCES “UNILOCK” POUR CARRÉES**



IDM-062.042Ec.0

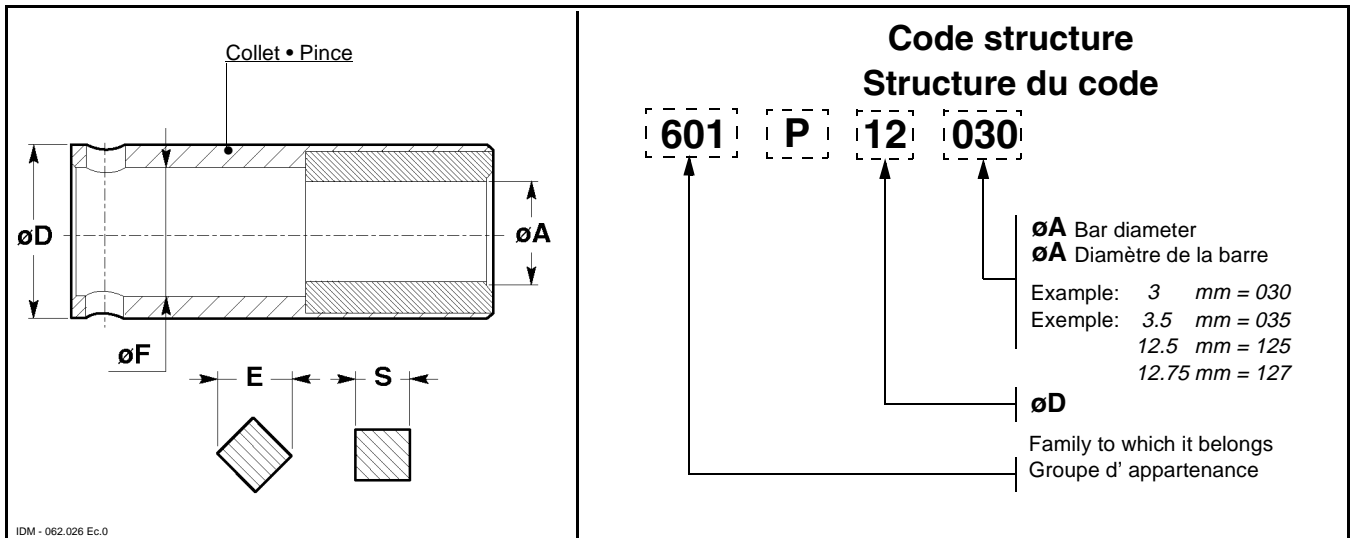


## 601P “UNILOCK” COLLETS FOR SQUARE BARS - Table

## 601P PINCES “UNILOCK” POUR BARRES CARRÉES - Tableau

**i** **INFORMATION:** for defining the internal diameter  $\phi A$  do not consult “001 - Conversion Tables” document, but directly consult the table below.

**i** **AVERTISSEMENT:** pour définir le diamètre interne  $\phi A$  ne pas consulter le fascicule “001 - Tableaux de conversion”, mais consulter directement le tableau suivant.



S	E E=Sx1.414	$\phi A$ <sup>+0.1</sup> <sub>0</sub>	$\phi F$ M5x0.5	$\phi F$ $\phi 8$ G6	$\phi F$ $\phi 11$ G6	$\phi F$ $\phi 14$ G6	$\phi F$ $\phi 20$ G6
mm	mm	mm	$\phi D$ 7.5	$\phi D$ 12	$\phi D$ 18	$\phi D$ 21	$\phi D$ 25
3	4.24	3.8	601P08038				
4	5.65	5.1		601P12051			
5	7.07	6.6		601P12066			
6	8.48	8		601P12080	601P18080		
7	9.90	9.2			601P18092	601P21092	
8	11.31	10.3			601P18103	601P21103	
9	12.73	11.7			601P18117	601P21117	
10	14.14	13.1			601P18131	601P21131	601P25131
11	15.55	14.5				601P21145	601P25145
12	16.97	15				601P21150	601P25150

<b>S</b>	<b>E</b> <b>E=Sx1.414</b>	<b>øA</b> <sup>+0.1</sup> 0	<b>øF M5x0.5</b>	<b>øF ø8 G6</b>	<b>øF ø11 G6</b>	<b>øF ø14 G6</b>
<i>mm</i>	<i>mm</i>	<i>mm</i>	<b>øD 25</b>	<b>øD 29</b>	<b>øD 32</b>	<b>øD 36</b>
13	18.38	17.4	<b>601P25174</b>			
14	19.80	18.8	<b>601P25188</b>			
15	21.21	20.2	<b>601P25202</b>			
16	22.62	21.6		<b>601P29216</b>		
17	24.04	23		<b>601P29230</b>		
18	25.45	24.5			<b>601P32245</b>	
19	26.87	25.9			<b>601P32259</b>	
20	28.28	27.3			<b>601P32273</b>	
21	29.69	28.7				<b>601P36287</b>
22	31.11	30.1				<b>601P36301</b>
23	32.52	31.5				<b>601P36315</b>

## 601P “UNILOCK” COLLETS FOR HEXAGONAL BARS - Table

**i** **INFORMATION:** for defining the internal diameter  $\phi A$  do not consult “001 - Conversion Tables” document, but directly consult the table below.

### Note for consultation

The Codes on a grey background refer to the “USE RANGE” to for complete a set of collets while working with the larger channel, and coupling  $\phi F$  on the revolving tip is the same.

### Note for ordering

- Collets with codes in bold characters are available from stock.
- Collets with codes in italics have longer delivery times.

## 601P PINCES “UNILOCK” POUR BARRES HEXAGONALES - Tableau

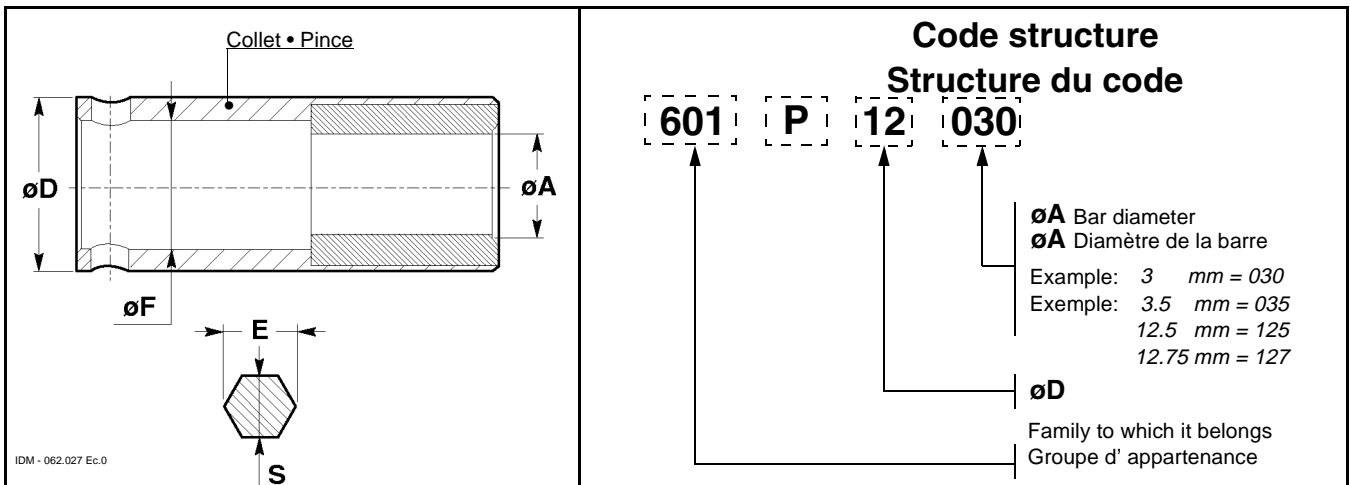
**i** **AVERTISSEMENT:** pour définir le diamètre interne  $\phi A$  ne pas consulter le fascicule “001 - Tableaux de conversion”, mais consulter directement le tableau suivant.

### Note pour la consultation

Les codes sur fond gris indiquent le “GROUPE D'UTILISATION” pour compléter un jeu de pinces quand l'usinage a lieu sur le guide-barre le plus important, et que l'enclenchement  $\phi F$  sur l'embout tournant est le même.

### Remarque pour la commande

- Les pinces qui ont les codes en gras sont disponibles dans le magasin.
- Les pinces qui ont les codes en italique ont un délai de livraison plus long.



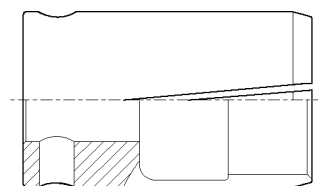
S		E	$\phi A$	$\phi F$	$\phi F$	$\phi F$	$\phi F$	$\phi F$
E= SX1.154		$^{+0.1}_0$	M5 x0.5	$\phi 8$ G6	$\phi 11$ G6	$\phi 14$ G6	$\phi 20$ G6	
mm	in	mm	$\phi D$ 7.5	$\phi D$ 12	$\phi D$ 18	$\phi D$ 21	$\phi D$ 25	
3		3.46	3.1	<b>601P08031</b>				
	1/8"	3.66	3.3	<b>601P08033</b>				
4		4.62	4.1	<b>601P08041</b>				
	3/16"	5.5	5		<b>601P12050</b>			
5		5.77	5.2		<b>601P12052</b>			
6		6.92	6.2		<b>601P12062</b>			
	1/4"	7.33	6.6		<b>601P12066</b>	<i>601P18066</i>		
7		8.08	7.3		<i>601P12073</i>	<b>601P18073</b>		
	5/16"	9.16	8.3			<b>601P18083</b>	<b>601P21083</b>	
8		9.23	8.4			<b>601P18084</b>	<b>601P21084</b>	
9		10.39	9.5			<b>601P18095</b>	<b>601P21095</b>	
	3/8"	10.99	10			<b>601P18100</b>	<b>601P21100</b>	
10		11.54	10.6			<b>601P18106</b>	<b>601P21106</b>	
11		12.7	11.7			<b>601P18117</b>	<b>601P21117</b>	
	7/16"	12.82	11.8			<b>601P18118</b>	<b>601P21118</b>	
12		13.85	12.8			<b>601P18128</b>	<b>601P21128</b>	<b>601P25128</b>

<b>S</b>		<b>E</b> <b>E=SX1.154</b>	<b>øA</b> <sup>+0.1</sup> <sub>0</sub>	<b>øF 14 G6</b>	<b>øF 20 G6</b>	<b>øF 20 G6</b>	<b>øF 20 G6</b>	<b>øF 20 G6</b>
<i>mm</i>	<i>in</i>	<i>mm</i>	<i>mm</i>	<b>øD 21</b>	<b>øD 25</b>	<b>øD 29</b>	<b>øD 32</b>	<b>øD 36</b>
	1/2"	14.65	13.7	<b>601P21137</b>	<b>601P25137</b>			
13		15	14	<b>601P2140</b>	<b>601P25140</b>			
14		16.16	15.2	<b>601P21152</b>	<b>601P25152</b>			
	9/16"	16.49	15.5	<b>601P21155</b>	<b>601P25155</b>			
15		17.31	16.3	<b>601P21163</b>	<b>601P25163</b>			
	5/8"	18.32	17.3		<b>601P25173</b>			
16		18.46	17.5		<b>601P25175</b>			
17		19.62	18.6		<b>601P25186</b>			
	11/16"	20.15	19.2		<b>601P25192</b>	<i>601P29192</i>		
18		20.77	19.8		<b>601P25198</b>	<i>601P29198</i>		
19	3/4"	21.93	21			<b>601P29210</b>		
20		23.08	22.1			<b>601P29221</b>		
	13/16"	23.81	22.8			<b>601P29228</b>		
21		24.24	23.2			<b>601P29232</b>	<i>601P32232</i>	
22		25.39	24.4				<b>601P32244</b>	
	7/8"	25.65	24.7				<b>601P32247</b>	
23		26.54	25.5				<b>601P32255</b>	
	15/16"	27.48	26.5				<b>601P32265</b>	
24		27.7	26.7				<b>601P32267</b>	<i>601P36267</i>
25		28.85	27.9					<b>601P36279</b>
	1"	29.31	28.3					<b>601P36283</b>
26		30	29					<b>601P36290</b>
	1-1/16"	31.14	30.2					<b>601P36302</b>
28		32.31	31.3					<b>601P36313</b>



# 602P

**COLLETS FOR BARS  
PINCES POUR BARRES**



IDM-062.043Ec.0



**602P COLLETS FOR BARS - Table**
**602P PINCES POUR BARRES - Tableau**


**CAUTION:** the external diameter of the collet must be at least 0.5 mm less than the external diameter of the bar pusher.



**PRECAUTION:** le diamètre externe de la pince doit être inférieur d'au moins 0,5 mm au diamètre externe de la poussette.

**Note for consultation**

The Codes on a grey background refer to the "USE RANGE" to for complete a set of collets while working with the larger channel, and coupling  $\phi F$  on the revolving tip is the same.

**Note pour la consultation**

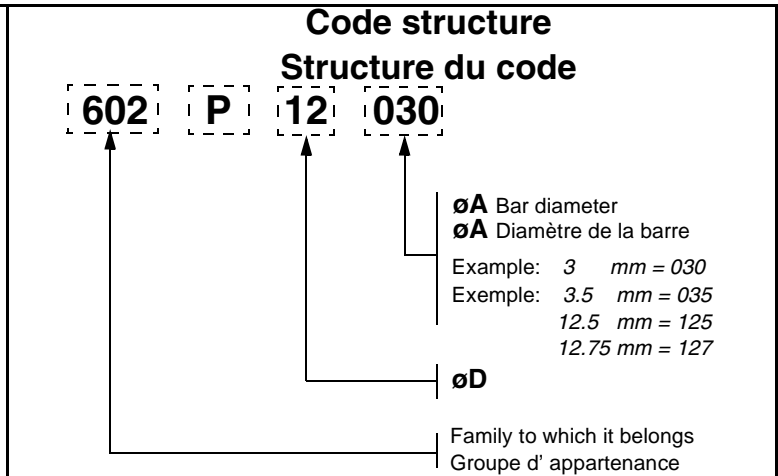
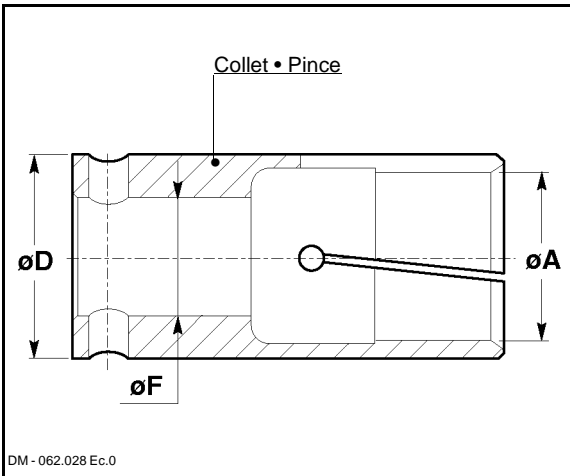
Les codes sur fond gris indiquent le "GROUPE D'UTILISATION" pour compléter un jeu de pinces quand l'usinage a lieu sur le guide-barre le plus important, et que l'enclenchement  $\phi F$  sur l'embout tournant est le même.

**Note for ordering**

- Collets with codes in bold characters are available from stock.
- Collets with codes in italics have longer delivery times.

**Remarque pour la commande**

- Les pinces qui ont les codes en gras sont disponibles dans le magasin.
- Les pinces qui ont les codes en italique ont un délai de livraison plus long.



$\phi A$		$\phi F \phi 8 G6$	$\phi F \phi 11 G6$			
mm	in	$\phi D 12$	$\phi D 15$			
3		<b>602P12030</b>				
3.1		<b>602P12031</b>				
3.2	1/8"	<b>602P12032</b>				
3.3		<b>602P12033</b>				
3.4		<b>602P12034</b>				
3.5		<b>602P12035</b>				
3.6	9/64"	<b>602P12036</b>				
3.7		<b>602P12037</b>				
3.8		<b>602P12038</b>				
3.9		<b>602P12039</b>				
4	5/32"	<b>602P12040</b>	<i>602P15040</i>			
4.1		<b>602P12041</b>	<i>602P15041</i>			
4.2		<b>602P12042</b>	<i>602P15042</i>			
4.3		<b>602P12043</b>	<i>602P15043</i>			
4.4	11/64"	<b>602P12044</b>	<i>602P15044</i>			
4.5		<b>602P12045</b>	<i>602P15045</i>			
4.6		<b>602P12046</b>	<i>602P15046</i>			
4.7		<b>602P12047</b>	<i>602P15047</i>			
4.8	3/16"	<b>602P12048</b>	<i>602P15048</i>			
4.9		<b>602P12049</b>	<i>602P15049</i>			
5		<b>602P12050</b>	<b>602P15050</b>			
5.1		<b>602P12051</b>	<b>602P15051</b>			

<b>øA</b>		<b>øF ø8 G6</b>	<b>øF ø11 G6</b>	<b>øF ø14 G6</b>	<b>øF ø20 G6</b>		
<i>mm</i>	<i>in</i>	<b>øD 12</b>	<b>øD 15</b>	<b>øD 20</b>	<b>øD 25</b>		
5.2	13/64"	602P12052	602P15052				
5.3		602P12053	602P15053				
5.4		602P12054	602P15054				
5.5		602P12055	602P15055				
5.6	7/32"	602P12056	602P15056				
5.7		602P12057	602P15057				
5.8		602P12058	602P15058				
5.9		602P12059	602P15059				
6	15/64"	602P12060	602P15060				
6.1		602P12061	602P15061				
6.2		602P12062	602P15062				
6.3		602P12063	602P15063				
6.4	1/4"	602P12064	602P15064				
6.5		602P12065	602P15065				
6.6		602P12066	602P15066				
6.7		602P12067	602P15067				
6.8	17/64"	602P12068	602P15068				
6.9		602P12069	602P15069				
7		602P12070	602P15070				
7.1		602P12071	602P15071				
7.2	9/32"	602P12072	602P15072				
7.3		602P12073	602P15073				
7.4		602P12074	602P15074				
7.5		602P12075	602P15075				
7.6	19/64"	602P12076	602P15076				
7.7		602P12077	602P15077				
7.8		602P12078	602P15078				
7.9		602P12079	602P15079				
8	5/16"	602P12080	602P15080	602P20080	602P25080		
8.1		602P12081	602P15081	602P20081	602P25081		
8.2		602P12082	602P15082	602P20082	602P25082		
8.3		602P12083	602P15083	602P20083	602P25083		
8.4	21/64"	602P12084	602P15084	602P20084	602P25084		
8.5		602P12085	602P15085	602P20085	602P25085		
8.6		602P12086	602P15086	602P20086	602P25086		
8.7		602P12087	602P15087	602P20087	602P25087		
8.8	11/32"	602P12088	602P15088	602P20088	602P25088		
8.9		602P12089	602P15089	602P20089	602P25089		
9		602P12090	602P15090	602P20090	602P25090		
9.1	23/64"	602P12091	602P15091	602P20091	602P25091		
9.2		602P12092	602P15092	602P20092	602P25092		

<b>øA</b>		<b>øF ø8 G6</b>	<b>øF ø11 G6</b>	<b>øF ø11 G6</b>	<b>øF ø11 G6</b>	<b>øF ø14 G6</b>	<b>øF ø20 G6</b>
<i>mm</i>	<i>in</i>	<b>øD 12</b>	<b>øD 15</b>	<b>øD 16</b>	<b>øD 18</b>	<b>øD 20</b>	<b>øD 25</b>
9.3		602P12093	602P15093			602P20093	602P25093
9.4		602P12094	602P15094			602P20094	602P25094
9.5		602P12095	602P15095			602P20095	602P25095
9.6	3/8"	602P12096	602P15096			602P20096	602P25096
9.7		602P12097	602P15097			602P20097	602P25097
9.8		602P12098	602P15098			602P20098	602P25098
9.9		602P12099	602P15099			602P20099	602P25099
10	25/64"	602P12100	602P15100			602P20100	602P25100
10.1			602P15101			602P20101	602P25101
10.2			602P15102			602P20102	602P25102
10.3			602P15103			602P20103	602P25103
10.4	13/32"		602P15104			602P20104	602P25104
10.5			602P15105			602P20105	602P25105
10.6			602P15106			602P20106	602P25106
10.7			602P15107			602P20107	602P25107
10.8	27/64"		602P15108			602P20108	602P25108
10.9			602P15109			602P20109	602P25109
11			602P15110	602P16110		602P20110	602P25110
11.25	7/16"		602P15112	602P16112		602P20112	602P25112
11.5	29/64"		602P15115	602P16115		602P20115	602P25115
11.75			602P15117	602P16117		602P20117	602P25117
12	15/32"		602P15120	602P16120		602P20120	602P25120
12.25			602P15122	602P16122		602P20122	602P25122
12.5	31/64"		602P15125	602P16125	602P18125	602P20125	602P25125
12.75	1/2"		602P15127	602P16127	602P18127	602P20127	602P25127
13			602P15130	602P16130	602P18130	602P20130	602P25130
13.25	33/64"			602P16132	602P18132	602P20132	602P25132
13.5	17/32"			602P16135	602P18135	602P20135	602P25135
13.75				602P16137	602P18137	602P20137	602P25137
14	35/64"			602P16140	602P18140	602P20140	602P25140
14.25	9/16"				602P18142	602P20142	602P25142
14.5					602P18145	602P20145	602P25145
14.75	37/64"				602P18147	602P20147	602P25147
15	19/32"				602P18150	602P20150	602P25150
15.25					602P18152	602P20152	602P25152
15.5	39/64"				602P18155	602P20155	602P25155
15.75					602P18157	602P20157	602P25157

<b>øA</b>		<b>øF ø11 G6</b>	<b>øF ø14 G6</b>	<b>øF ø14 G6</b>	<b>øF ø14 G6</b>	<b>øF ø20 G6</b>	<b>øF ø20 G6</b>
<i>mm</i>	<i>in</i>	<b>øD 18</b>	<b>øD 20</b>	<b>øD 21</b>	<b>øD 23</b>	<b>øD 25</b>	<b>øD 27</b>
16	5/8"	<b>602P18160</b>	<b>602P20160</b>		<i>602P23160</i>	<b>602P25160</b>	
16.25	41/64"		<b>602P20162</b>		<i>602P23162</i>	<b>602P25162</b>	
16.5			<i>602P20165</i>	<b>602P21165</b>	<b>602P23165</b>	<b>602P25165</b>	
16.75	21/32"		<i>602P20167</i>	<b>602P21167</b>	<b>602P23167</b>	<b>602P25167</b>	
17	43/64"		<i>602P20170</i>	<b>602P21170</b>	<b>602P23170</b>	<b>602P25170</b>	
17.25			<i>602P20172</i>	<b>602P21172</b>	<b>602P23172</b>	<b>602P25172</b>	
17.5	11/16"		<i>602P20175</i>	<b>602P21175</b>	<b>602P23175</b>	<b>602P25175</b>	
17.75			<i>602P20177</i>	<b>602P21177</b>	<b>602P23177</b>	<b>602P25177</b>	
18	45/64"		<i>602P20180</i>	<b>602P21180</b>	<b>602P23180</b>	<b>602P25180</b>	
18.25	23/32"			<b>602P21182</b>	<b>602P23182</b>	<b>602P25182</b>	
18.5				<b>602P21185</b>	<b>602P23185</b>	<b>602P25185</b>	
18.75	47/64"			<b>602P21187</b>	<b>602P23187</b>	<b>602P25187</b>	
19	3/4"			<b>602P21190</b>	<b>602P23190</b>	<b>602P25190</b>	
19.25					<b>602P23192</b>	<b>602P25192</b>	
19.5	49/64"				<b>602P23195</b>	<b>602P25195</b>	
19.75	25/32"				<b>602P23197</b>	<b>602P25197</b>	
20					<b>602P23200</b>	<b>602P25200</b>	
20.25	51/64"				<b>602P23202</b>	<b>602P25202</b>	
20.5					<b>602P23205</b>	<b>602P25205</b>	
20.75	13/16"				<b>602P23207</b>	<b>602P25207</b>	
21	53/64"				<b>602P23210</b>	<i>602P25210</i>	<b>602P27210</b>
21.25						<i>602P25212</i>	<b>602P27212</b>
21.5	27/32"					<i>602P25215</i>	<b>602P27215</b>
21.75	55/64"					<i>602P25217</i>	<b>602P27217</b>

<b>øA</b>		<b>øF ø20 G6</b>	<b>øF ø20 G6</b>	<b>øF ø20 G6</b>	<b>øF ø20 G6</b>	<b>øF ø20 G6</b>	<b>øF ø20 G6</b>
<i>mm</i>	<i>in</i>	<b>øD 25</b>	<b>øD 27</b>	<b>øD 29</b>	<b>øD 32</b>	<b>øD 35</b>	<b>øD 36</b>
22		602P25222	<b>602P27222</b>				
22.25	7/8"	602P25225	<b>602P27225</b>				
22.5		602P25220	<b>602P27220</b>				
22.75	57/64"	602P25227	<b>602P27227</b>	602P29227			
23	29/32"	602P25230	<b>602P27230</b>	602P29230			
23.25			<b>602P27232</b>	602P29232			
23.5	59/64"		<b>602P27235</b>	602P29235			
23.75			<b>602P27237</b>	602P29237			
24	15/16"		602P27240	<b>602P29240</b>			
24.25	61/64"		602P27242	<b>602P29242</b>			
24.5			602P27245	<b>602P29245</b>			
24.75	31/32"		602P27247	<b>602P29247</b>			
25	63/64"		602P27250	<b>602P29250</b>	602P32250		
25.25				<b>602P29252</b>	602P32252		
25.5	1"			<b>602P29255</b>	602P32255		
25.75				<b>602P29257</b>	602P32257		
26				602P29260	<b>602P32260</b>		
26.25				602P29262	<b>602P32262</b>		
26.5				602P29265	<b>602P32265</b>		
26.75				602P29267	<b>602P32267</b>		
27	1"1/16			602P29270	<b>602P32270</b>	602P35270	
27.25					<b>602P32272</b>	602P35272	
27.5					<b>602P32275</b>	602P35275	
27.75					<b>602P32277</b>	602P35277	
28					602P32280	<b>602P35280</b>	602P36280
28.25					602P32282	<b>602P35282</b>	602P36282
28.5	1"1/8				602P32285	<b>602P35285</b>	602P36285
28.75					602P32287	<b>602P35287</b>	602P36287

<b>øA</b>		<b>øF ø20 G6</b>	<b>øF ø20 G6</b>	<b>øF ø20 G6</b>	<b>øF ø20 G6</b>	<b>øF ø20 G6</b>	
<i>mm</i>	<i>in</i>	<b>øD 32</b>	<b>øD 35</b>	<b>øD 36</b>	<b>øD 42</b>	<b>øD 45</b>	
29		602P32290	<b>602P35290</b>	602P36290			
29.25		602P32292	<b>602P35292</b>	602P36292			
29.5		602P32295	<b>602P35295</b>	602P36295			
29.75		602P32297	<b>602P35297</b>	602P36297			
30		602P32300	602P35300	<b>602P36300</b>			
30.25	1"3/16		602P35302	<b>602P36302</b>			
30.5			602P35305	<b>602P36305</b>			
30.75			602P35307	<b>602P36307</b>			
31			602P35310	602P36310	<b>602P42310</b>		
31.25			602P35312	602P36312	<b>602P42312</b>		
31.5			602P35315	602P36315	<b>602P42315</b>		
31.75	1"1/4		602P35317	602P36317	<b>602P42317</b>		
32			602P35320	602P36320	<b>602P42320</b>		
32.25				602P36322	<b>602P42322</b>		
32.5				602P36325	<b>602P42325</b>		
32.75				602P36327	<b>602P42327</b>		
33				602P36330	<b>602P42330</b>		
33.25	1"5/16			602P36332	<b>602P42332</b>		
33.5				602P36335	<b>602P42335</b>		
33.75				602P36337	<b>602P42337</b>		
34				602P36340	<b>602P42340</b>		
34.25					<b>602P42342</b>		
34.5					<b>602P42345</b>		
34.75					<b>602P42347</b>		
35	1"3/8				<b>602P42350</b>		
35.25					<b>602P42352</b>		
35.5					<b>602P42355</b>		
35.75					<b>602P42357</b>		
36					<b>602P42360</b>		
36.25	1"7/16				<b>602P42362</b>		
36.5					<b>602P42365</b>		
36.75					<b>602P42367</b>		
37					602P42370	<b>602P45370</b>	
37.25					602P42372	<b>602P45372</b>	
37.5					602P42375	<b>602P45375</b>	
37.75					602P42377	<b>602P45377</b>	

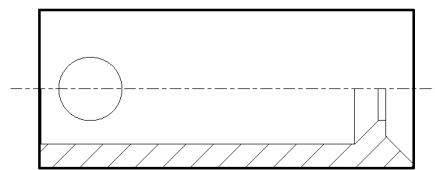


<b>øA</b>		<b>øF ø20 G6</b>	<b>øF ø20 G6</b>	<b>øF ø20 G6</b>			
<i>mm</i>	<i>in</i>	<b>øD 42</b>	<b>øD 45</b>	<b>øD 51</b>			
38		602P42380	602P45380				
38.25		602P42382	602P45382				
38.5		602P42385	602P45385				
38.75		602P42387	602P45387				
39		602P42390	602P45390				
39.25		602P42392	602P45392				
39.5		602P42395	602P45395				
39.75		602P42397	602P45397	602P51397			
40		602P42400	602P45400	602P51400			
40.25			602P45402	602P51402			
40.5			602P45405	602P51405			
40.75			602P45407	602P51407			
41			602P45410	602P51410			
41.25			602P45412	602P51412			
41.5			602P45415	602P51415			
41.75			602P45417	602P51417			
42			602P45420	602P51420			
42.25				602P51422			
42.5				602P51425			
42.75				602P51427			
43	1"11/16			602P51430			
43.25				602P51432			
43.5				602P51435			
43.75				602P51437			
44				602P51440			
44.25				602P51442			
44.5				602P51445			
44.75				602P51447			
45				602P51450			
45.25				602P51452			
45.5				602P51455			
45.75				602P51457			
46				602P51460			
46.25				602P51462			
46.5				602P51465			
46.75				602P51467			
47				602P51470			



# 602P..011


EJECTOR  
ÉJECTEUR




IDM - 062.076 Ec.0

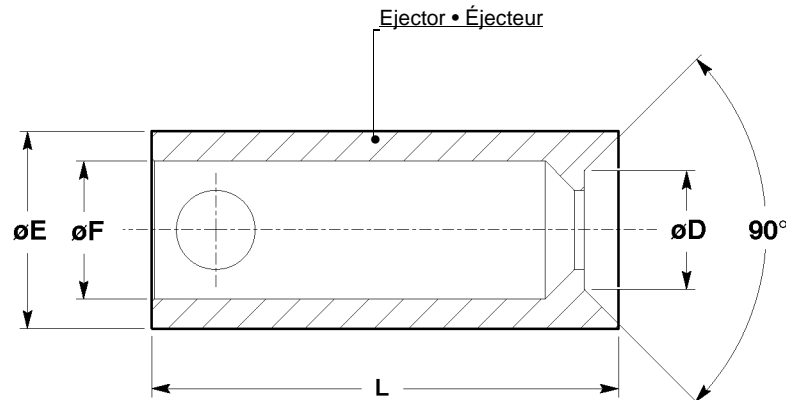


## 602P..011 EJECTORS - GUIDES Ø13÷28 - TABLE

 **CAUTION:** the external diameter of the collet must be at least 0.5 mm less than the external diameter of the bar pusher.

## 602P..011 ÉJECTEURS - GUIDES Ø13÷28 - TABLEAU

 **PRECAUTION:** le diamètre externe de l'éjecteur doit être inférieur d'au moins 0,5 mm au diamètre externe de la poussette.



IDM-062.075Ec.0

øE (mm)	øF (mm)	øD (mm)	øL (mm)	N. code Numero code
12	8	8	24	602P12011
15	11	11	26	602P15011
16	11	12	26	602P16011
18	11	12	27.5	602P18011
19	11	12	28	602P19011
20	14	12	47.5	602P20011
23	14	12	49	602P23011
25	20	12	50.5	602P25011
27	20	12	51.5	602P27011

