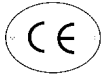


GB OPERATION AND MAINTENANCE



KEEP THIS HANDBOOK FOR FUTURE INFORMATION BESIDES IT  
SHALL ALWAYS BE WITH THE MACHINE.



# FORMULA F1 - F2

SURFACE PLANER

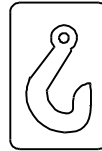
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*MiniMax*



## SYMBOLS ON THE MACHINE

Indicates the point where you have to insert the hooks

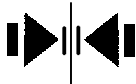


for lifting the machine

Indicates the tool rotation direction



Locking symbol



## WARNING PLATES:

Danger due to electric current



Warning plate



**SYMBOLS USED IN THIS HANDBOOK**

OPTIONAL = devices indicated in list price available only upon request



Symbol for safety notes: **read these safety notes with peculiar attention.**

If such safety instructions are not kept, there is the injury danger for you and other persons.

**AIM OF THE HANDBOOK**

This handbook has been written by the machine manufacturer and is an integrating part of the machine. <sup>(1)</sup>  
The information serves for qualified technicians. <sup>(2)</sup>

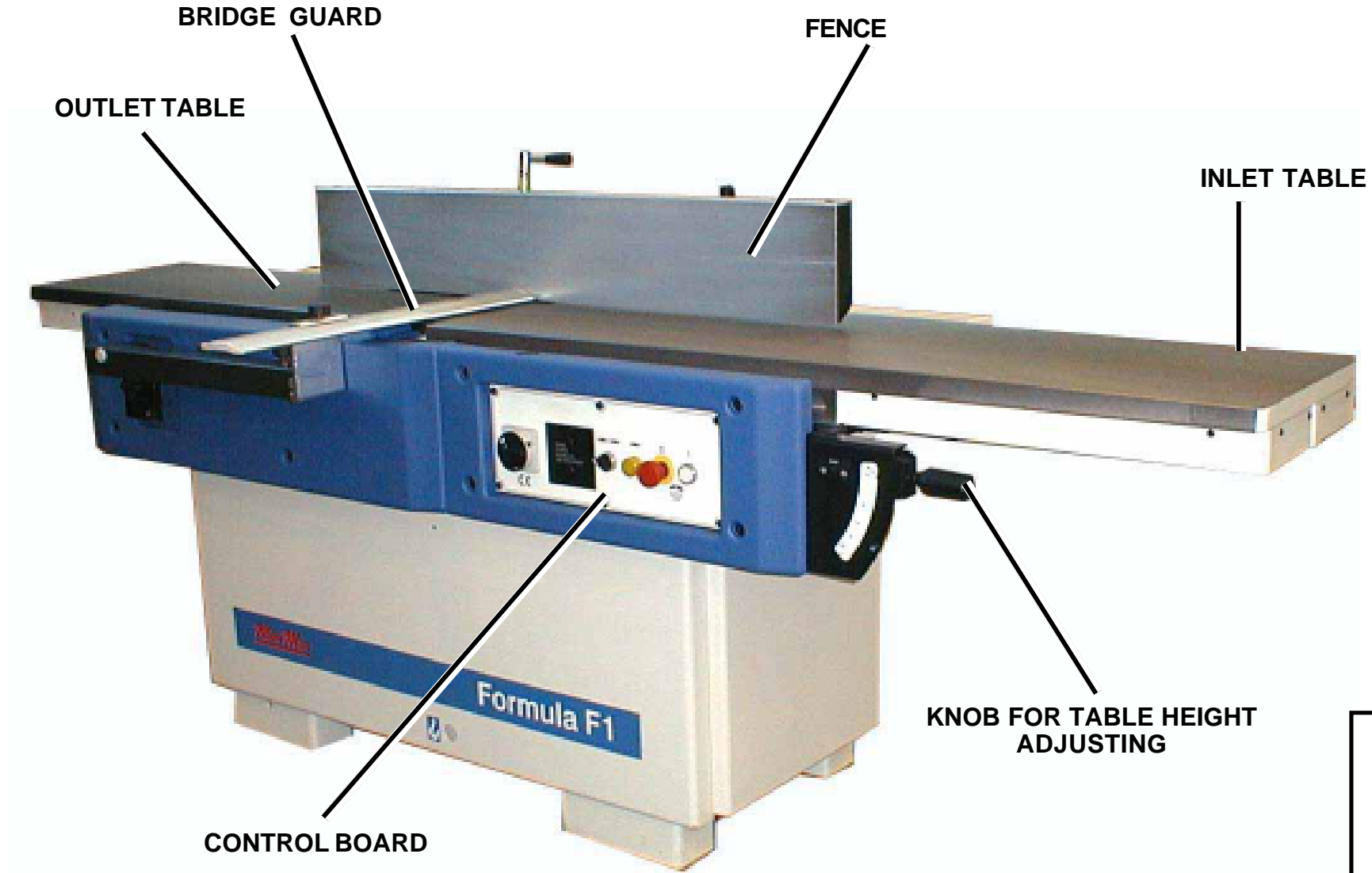
The handbook defines the proper use of the machine and gives all information necessary for:

- right use of the machine
- working economy
- long operation life

If the instructions are always kept, it is possible to guaranty safety conditions for the operator, safe machine operation, service economy and a longer life of the machine.

To make the easier, the handbbok is dived in proper sections.  
To quickly find the subject, see the Contents.

- (1) The definition "machine " replaces Formula F1 or Formula F2 machine name.
- (2) Technicians who, thanks to their technical background and experience, are able to recognize and to avoid any danger during:
  - the machine transport
  - the installation
  - the machine use and maintenance operations



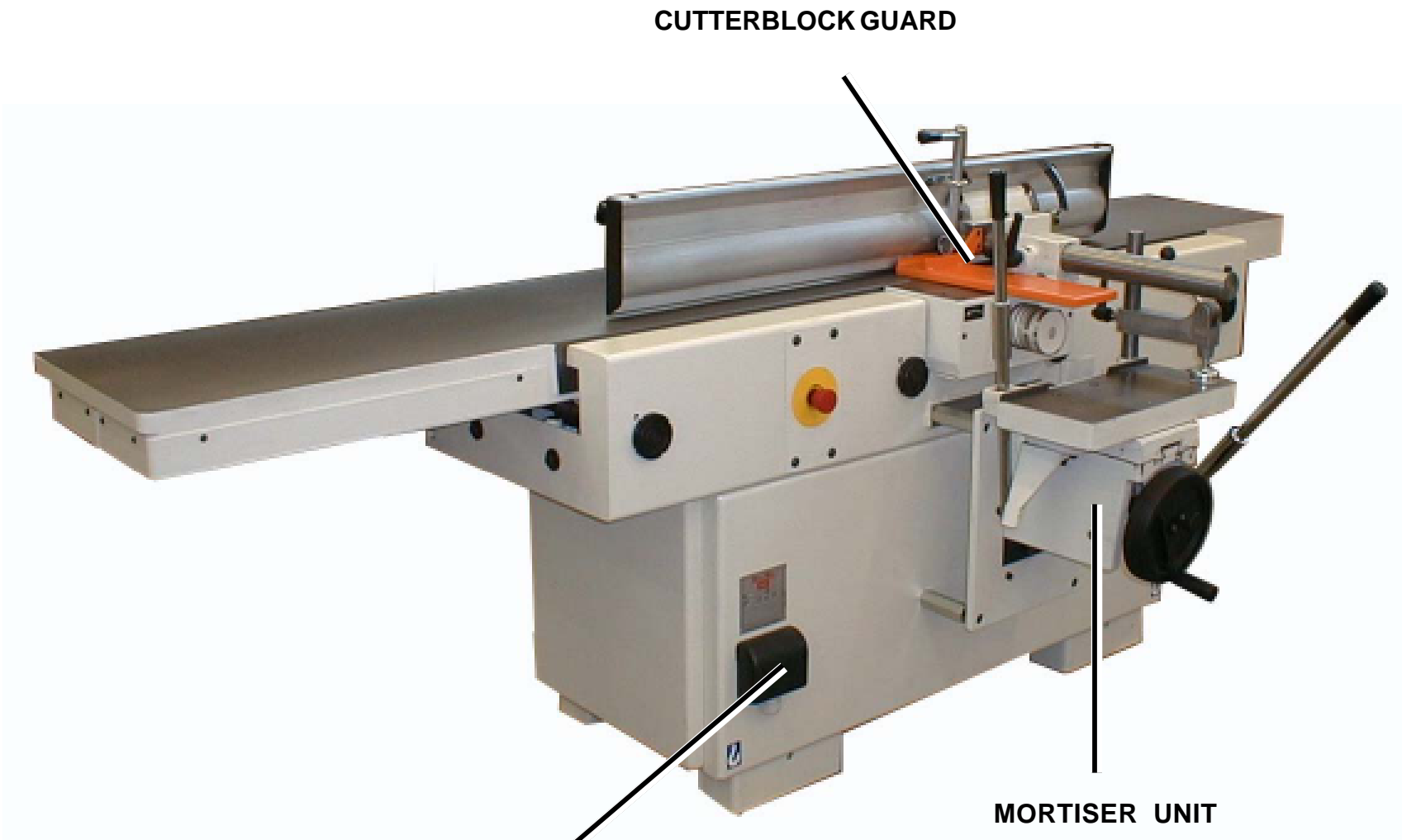
*MiniMax*

**FORMULA F1**

GENERAL INFORMATION

FORMULA F1

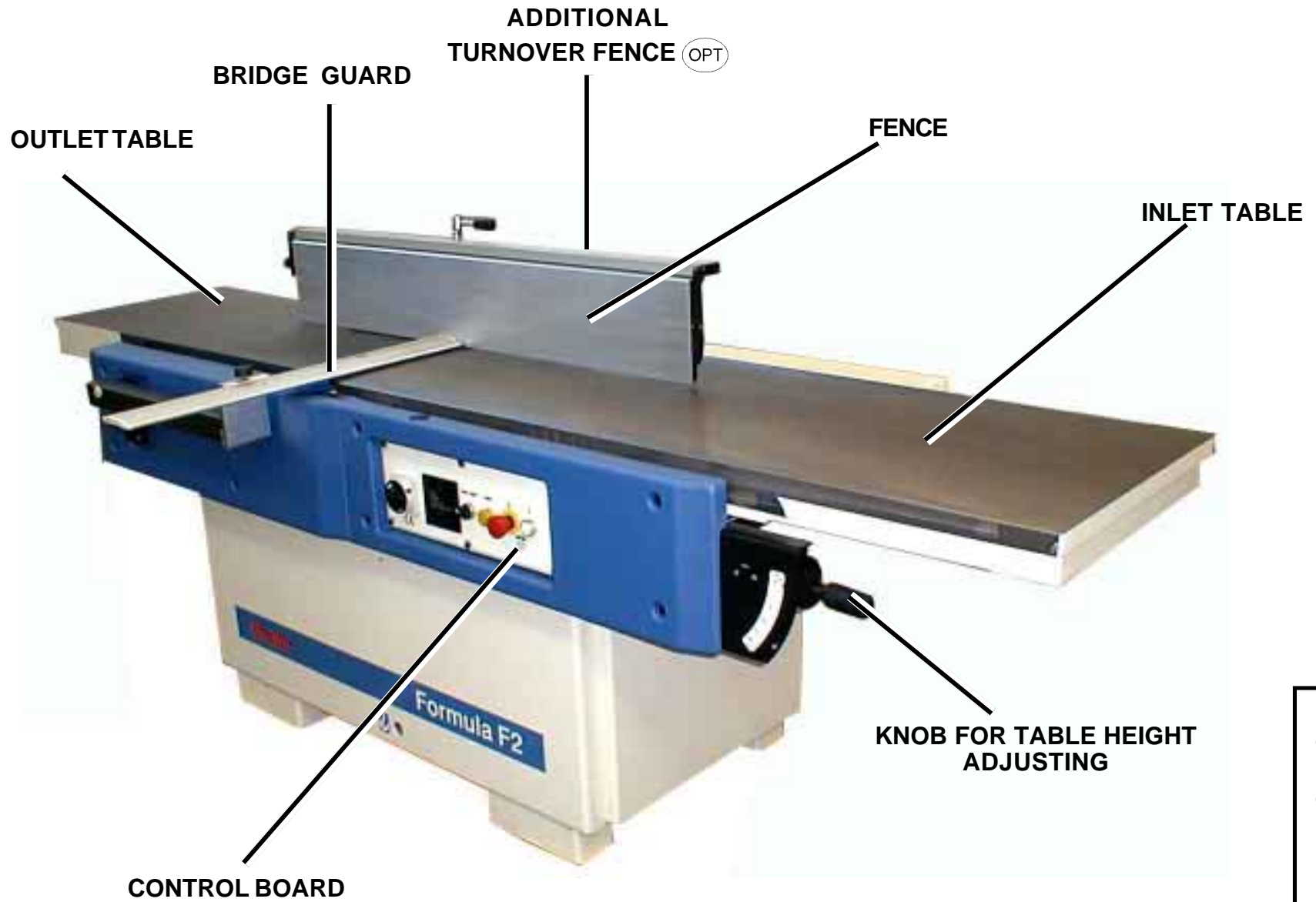
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CUTTERBLOCK GUARD

MORTISER UNIT

TERMINAL BOARD FOR  
ELECTRIC  
CONNECTION

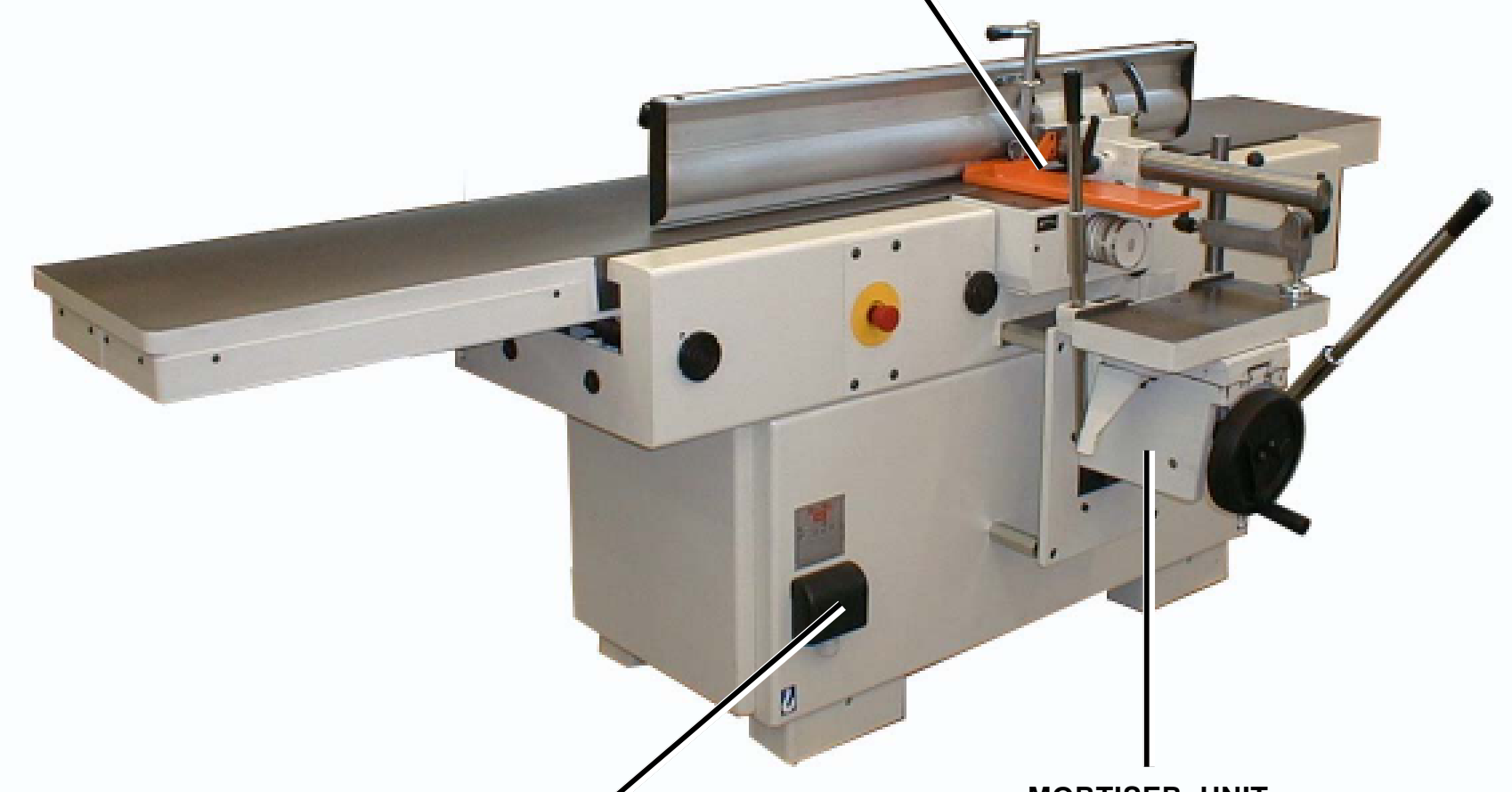
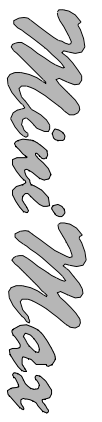


*MiniMax*

GENERAL INFORMATION

FORMULA F2

FORMULA F2




CUTTERBLOCK GUARD

MORTISER UNIT

TERMINAL BOARD FOR  
ELECTRIC  
CONNECTION




<b>GENERAL INFORMATION .....</b>	<b>SECTION 1</b>
Aim of the handbook .....	1.3
1-1 Mail contact .....	1.10
1-2 Notes for the user .....	1.10
1-3 Machine identification .....	1.11
1-4 Conditions foreseen for the use and prohibitions .....	1.11
1-5  Prohibitions .....	1.12
1-6  Residual risks .....	1.13
1-7 Operator's training .....	1.13
1-8  Safety rules .....	1.14
1-9 Specifications .....	1.17
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1-9C Special versions .....	1.18
1-10 Noise level .....	1.19
1-11 Overall dimensions .....	1.20
<b>SAFETY DEVICES .....</b>	<b>SECTION 1A</b>
<b>INSTALLATION .....</b>	<b>SECTION 2</b>
2-1 Machine unloading .....	2.2
2-2 Machine installation and leveling .....	2.2
2-3 Electric connection and grounding .....	2.4
2-4 Connection to suction system .....	2.6
2-5 Fitting the demounted parts .....	2.6
2-5.1 Fitting the mortiser : see SECTION 10 .....	2.6
<b>CONTROLS .....</b>	<b>SECTION 3</b>
3-1 Control board .....	3.2
3-2 Machine start .....	3.2
3-3 Auto - brake motor .....	3.4
<b>SURFACER .....</b>	<b>SECTION 8</b>
8-1 Knife adjusting .....	8.2
8-1a Throw-away knife adjusting  .....	8.4
8-2 Surfacing table adjusting .....	8.6
8-3 Fence .....	8.6
8-4 Turnover additional fence  .....	8.8

**MORTISER ..... SECTION 10**


10-1 Fitting the mortiser ..... 10.2  
 10-2 Fitting the right bit ..... 10.2  
 10-3 Mortiser use ..... 10.4  
     10-3.a Limiting of the slot depth ..... 10.4  
     10-3.b Limiting of the slot width ..... 10.4

**CUTTERBLOCK GUARD ..... SECTION 15**

15-1 Description (fig.15.1) ..... 15.2  
 15-2 Fitting ..... 15.2  
 15-3 Examples of safe operation ..... 15.6  
 15-4  Safety notes ..... 15.14

**AUTO-BRAKE MOTOR ..... SECTION 19**

**MAINTENANCE ..... SECTION 20**

20-1 Machine cleaning ..... 20.2  
 20-2 Lubrication ..... 20.2  
 20-3  Check of safety devices ..... 20.6  
 20-4 Machine removal - storing - demolition ..... 20.7  
 20-5 Emergency conditions ..... 20.7  
 20-6 Belt stretching ..... 20.8  
 20-7 Troubles - causes - what to do ..... 20.10

## 1-1 MAIL CONTACT

Writing or telephoning to the dealer or to SCM for problems concerning your machine, always specify the following information:

- 1) Machine model
- 2) Serial number
- 3) Voltage and frequency
- 4) Purchase date
- 5) Name of the dealer where the machine was bought
- 6) Detailed information about the trouble
- 7) Detailed information about the working to be carried out
- 8) Period of use - number of working hours

SCM Group S.p.A.  
Via Casale, 450  
47827 - VILLA VERUCCHIO - ITALY  
Tel. 0541-674111/674218 — Fax. 0541-674274

## 1-2 NOTES FOR THE USER

The handbook describes all operations required for the normal maintenance of the machine.

do not carry out any operation not described in this handbook.

All operations which require to demount machine members as well as maintenance operations shall be carried out only by authorized technicians.

**For the correct use of the machine carry out the proper instructions given in this handbook.**

**Only trained and authorized technicians may use the machine and carry out maintenance operations.**

**Keep this handbook for future necessity.**

*Note: Use only SCM parts with features equal to the ones of the parts to be replaced.*

*The manufacturer is not responsible for damages due to the use of not original parts.*

*For information concerning the electric system always specify the data indicated on the plate (fig.1.1) arranged in the inside of the door for access to the electric housing.*

FORNIT.	Company that carried out the electric system
DATA	Date of power unit manufacturing
CODICE DISTINTA	Number of electric components bill
N.	Wiring diagram number
VOLT RETE	Mains voltage for machine supply (V)
VOLT AUX	Voltage for auxiliary circuits supply (V)
VOLT FRENO	Voltage for motor brake supply (V)
Hz	Frequency (Hz)
k W	Absorbed power
MACCH.	Machine type

The diagram shows a rectangular identification plate with the following fields:

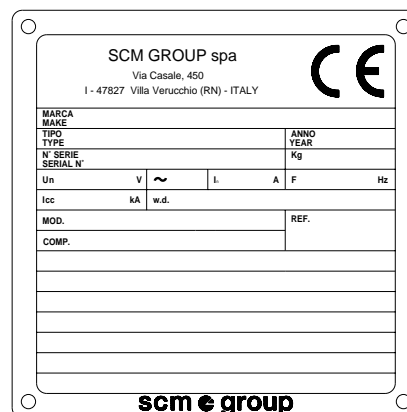
- FORNIT. (Company name)
- DATA (Date)
- CODICE DIST. (Number of components)
- N. (Wiring diagram number)
- VOLT RETE (Mains voltage)
- VOLT AUX (Auxiliary voltage)
- VOLT FRENO (Brake voltage)
- Hz (Frequency)
- kW (Absorbed power)
- MACCH. (Machine type)

1.1

### 1-3 MACHINE IDENTIFICATION

Machine data are punched on the metallic plate applied to the side of the machine frame.

Marca		Merchandise mark
Tipo		Machine type
Anno		Production year
N° Serie		Serial number
kg		Weight (kg)
Un	V	Rated voltage (volt)
~		Phases number (alternate current)
In	A	Rated current (ampere)
F	Hz	Frequency (hertz)
Icc.	kA	Short circuit breaking capacity of the protective device (kA)
w.d.		Wiring diagram number
Mod.		Machine model
Comp.		Machine version
Ref.		Internal references



1.2

### 1-4 CONDITIONS FOREESEN FOR THE USE AND PROHIBITIONS

The machine has been designed for surfacing solid wood pieces, plywood panels and blockboards ; in some cases strips are glued to the edges of the panels.

Materials different from the ones above mentioned may not be cut. The user is responsible for damaged caused by the cutting of materials not permitted.

#### DIMENSIONS OF WORKPIECE TO BE CUT:

Max. thickness	120 mm
Max. length	<b>It may not be defined: in case of pieces of size over 2500 mm we recommend the use of inlet and outlet table extensions the height of which is adjustable (not supplied by Mini Max)</b>
Max. width FORMULA F1	410 mm
FORMULA F2	520 mm
Min. thickness	10 mm
Min. length	150 mm: we recommend the use of pushers (not supplied by Mini Max)
Min. width	10 mm: we recommend the use of additional turnover fence (OPT)

## **TOOLS WHICH MAY BE USED**

The machine has been designed to use only tools in compliance with EN847-1 norm, suitable for manual feed, and suitable for the material to be machined.

By manual feed we mean the piece guidance by means of the hand .

## **WORKING ENVIRONMENT**

The machine can work under these conditions:

- Max. humidity 90%
- Temperature: min. +1° C max. +40° C
- Max. altitude sea level: 1000 m (in case of higher altitude apply to the machine manufacturer)

**Always connect the machine to the suction system (see par. 2-4).**

**The machine may not be used in the open air.**

**The machine was designed for industrial use.**

**The machine may not operate in explosive rooms.**

## **1-5 PROHIBITIONS**

- A different use of the machine is not permitted.
- The machine may not operate without the proper guards foreseen for that working; never remove parts of the guards!
- Never machine pieces of material and dimensions different from the ones mentioned above.
- Tools not in accordance with not EN 847-1 Norm or tools of dimensions not proper for the saw spindle diameter may not be used.
- Modifications on the machine are not permitted.

***NOTE: in case of modifications carried out on the machine , the machine compliance statement is no more valid .***

The user is responsible for the damages caused by the wrong use of the machine

## 1-6 RESIDUAL RISKS

When you use any machine tool some risks rise, do not forget it.  
The safety depends on you.

This machine is equipped with guards which are the best result in the safety field.  
Such guards are efficient if used and kept in good conditions.

**Even if you keep all safety rules and use the machine in the proper way, the following risks may rise:**

- **Contact with the rotating or standstill tool.**
- **Contact the rotating parts (belts, pulleys, chains etc..)**
- **Ejection of the workpiece or its parts (splints): never stop along the trajectory corresponding to the splint ejection.**
- **Ejection of tool inserts: never stop along the trajectory corresponding to the possible ejection.**
- **Dust inhalation in case of operation without suction.**
- **Fulguration due to contact with hot parts.**
- **Danger due to the wrong fitting of the tool.**
- **Reverse rotation of the tool caused by the wrong electric connection.**
- **Danger due to the wrong working position of the operator.**

## 1-7 OPERATOR'S TRAINING

All operators on surfacers shall be properly trained for the use, the set up and the operation of the machine.  
The operators must read this handbook and pay peculiar attention to Safety rules.

In particular the training includes:

- a) The principles of the machine operation, the right use of the machine, the adjusting of the fence and guards as well as the use of special devices for special working .
- b) The handling of the workpiece during the working.
- c) The position of the hands to the cutterblock before, during and after the working.
- d) The workpiece feed to the direction opposite to the tool rotation direction.
- e) The right speed of the cutterblock.

The operators are to be informed of the dangers due to the use of the machine and the proper precautions to be taken.  
Besides they shall be trained to carry out periodical tests on the shields and safety devices.

### **IMPORTANT**

**It is necessary to lock the main switch for power supply by means of a proper padlock.**

**The authorized operator shall keep the key.**

## SAFETY FIRST OF ALL

### 1-8 SAFETY RULES

- 1- Carefully read this handbook before starting the machine.
- 2- Carefully read the warning plates arranged on the machine.
- 3- Only trained operators shall use the machine.
- 4- The training shall include the information concerning the risks due to the machine use and the precautions ..... to be taken.
- 5- The operator shall be trained for the use of guards and safety devices as well as for their periodical check.
- 6- The operator shall never leave the machine during its operation.
- 7- The machine was designed to be used only by one operator.
- 8- This machine has been built to ensure the highest safety degree as well as the best performance.
- 9- The manufacturer is not responsible for damages caused by modifications carried out on the machine.
- 10- Do not use the machine if you are under the influence of alcohol, drugs and medicine.

**THE SAFETY DEPENDS ON YOU, ANY MACHINE TOOL MAY BE POTENTIALLY DANGEROUS, DO NOT FORGET IT.**

#### PERSONAL SAFETY

- 1- Before starting the machine the operator shall already have read the handbook.  
Your eyes are the best safety device you have: carefully look before moving.
- 2- Experience teaches that there are various objects on a person that can cause injuries; take off rings, watches, bracelets; button your sleeves tightly around your wrists, take off ties that could be caught in tight places, keep hair gathered underneath proper nets (cap, elastics, hair pins).  
Use prescribed footwear usually recommended by all countries.

**BEFORE STARTING THE WORKING YOU MUST HAVE ON THE FOLLOWING PERSONAL PROTECTIVE MEANS:**

- A - Leather aprons to protect yourself against eventual split ejection.**
- B - Glasses or protective shields for your eyes.**
- C - Proper means for ear protection.**
- D - Proper means against dust inhalation (masks).**
- E - Gloves for handling the blades.**
- F - Proper shoes with reinforced steel point and rubber sole machine safety**

**MACHINE SAFETY**

- 1- Be extremely careful when starting any working and periodically check the shields and safety devices.
- 2- Never start the machine without having properly closed the cover in the motor area.
- 3- Before starting the machine make sure that the worktable is free from parts which do not relate to the working.
- 4- Do not machine workpieces too small or too big for the machine.  
See relative paragraph **DIMENSIONS OF WORKPIECE TO BE CUT..**
- 5- Do not machine pieces with defects (deflections, clefts, knots, metallic parts, ...)
- 6- Before fitting the knives make sure that each support surface is clean, free from dents and perfectly flat.
- 7- The saw blade shall be fitted and set when the machine is off.
- 8- The fitting and the adjusting of knives shall be carried out when the machine is off.
- 9- Make sure that the knives are perfectly balanced, sharp and well clamped.  
Not sharp knives reduce not only the quality of the finished piece but they increase the piece kickback danger.
- 10- Fit the knives in the right working direction.
- 11- **Use only tools in accordance with EN 847-1 Norm and suitable for manual feed.**
- 12- Work only with all guards properly fitted and efficient.  
**The use of the machine is not permitted if such conditions are not kept.**
- 13- Start working only when the tools have reached the right cutting speed.
- 14- In case of long pieces use roller tables or table extensions.
- 15- It is necessary to connect all suction hoods to the suction system.  
Before starting the working make sure that the suction system is switched on.
- 16- Test workings to check the cutterblock adjusting, may not be carried out without the required guards.
- 17- Never try to remove the wastes or other parts of the workpiece from the working area when the machine is in operation.
- 18- Push the workpiece forwards by using a proper pusher.
- 19- After a given working period the transmission belts get slack: this may cause an increase of the time required to stop the cutterblock : in that case immediately stretch the belts, see par.20-6.
- 20- Periodically remove chips and dust to avoid fire risk: carry out this operation always with the machine off.
- 21- Always fasten the machine to the floor.



## **WORKING AREA SAFETY**

The working area shall have a good lighting and a sufficient room to ensure an easy working and maintenance ( minimum 80 cm) so that the operator is always out of a dangerous area.

The floor shall be well leveled to avoid slipping danger and also free from loose material (e.g. waste, chips).

**Only the authorized operator may stay in the working area.**

**The operator shall never stay in the trajectory where eventual splits or tool inserts are ejected.**

**If along this trajectory there is another work station (that is another machine) or a passage for persons, immediately install proper protective barriers.**

## **SAFETY IN MAINTENANCE**

**DO NOT THINK THAT THE ELECTRIC CURRENT IS SWITCHED OFF DURING THE MAINTENANCE.... CHECK IT PERSONALLY!**

- 1- Stop the machine to carry out adjustments or to demount any machine, turn the main switch to zero and lock it, then indicate it by a sign.  
The operator who carries out the machine set up, maintenance and cleaning shall keep the only key.
- 2- Completely stop the machine before cleaning operations and before removing any guard to carry out the maintenance..
- 3- The general cleaning of the machine (in particular of worktable) and of the surrounding floor is an important safety factor.
- 4- Regularly carry out cleaning and maintenance operations : remove chips and dust to avoid fire risk.
- 5- Use proper gloves for handling the knives.
- 6- The knives require a regular maintenance : when necessary replace them.
- 7- In case of any trouble concerning the machine, the guards and the tools , it is neccessary to immediately take the proper measures.

**1-9 SPECIFICATIONS**

Tables length (Formula F1) .....	2612 mm
Tables length (Formula F2) .....	2721 mm
Inlet table length (Formula F1) .....	1435 mm
Inlet table length (Formula F2) .....	1530 mm
Outlet table length (Formula F1) .....	1135 mm
Outlet table length (Formula F2) .....	1180 mm
Cutterblock length (Formula F1) .....	410 mm
Cutterblock length (Formula F2) .....	520 mm
Cutterblock diameter .....	120 mm
Cutterblock speed .....	5000 rpm
Time required to stop the Cutterblock .....	less than 10 seconds
Dimensions of the 4 knives (Formula F1) .....	35x3x410 mm
Dimensions of the 4 knives (Formula F2) .....	35x3x520 mm
Fence size .....	1200x190 mm
Fence tilting .....	from 90° to - 45°
Standard motor power .....	4 kW
Tables height from the floor .....	845 mm
Suction hood diameter .....	120 mm
Max. depth of cut .....	8 mm
Machine weight without mortiser (Formula F1) .....	approx. 650 kg
Machine weight with mortiser (Formula F1) .....	approx. 700 kg
Machine weight without mortiser (Formula F2) .....	approx. 850 kg
Machine weight with mortiser (Formula F2) .....	approx. 900 kg

**MORTISER** (OPT)

Table size .....	400x185 mm
Longitudinal stroke .....	110 mm
Traverse stroke .....	140 mm
Vertical stroke .....	150 mm
Max. diameter of the right-hand bit .....	16 mm
Suction hood diameter .....	60 mm
Weight .....	about 90 kg

The suction system with air speed of 20 m/s and air consumption of 1600 m<sup>3</sup>/h shall ensure the following values:

- vacuum of the surfacer suction hood under the table .....	428 Pa
- vacuum of the mortiser suction hood .....	830 Pa

## **1-9A STANDARD ACCESSORIES**

Cutterblock guard  
Automatic motor brake  
Tilting fence to rest the workpiece  
Suction hood of 120 mm diameter  
Knife setting device  
Set of wrenches

## **1-9B OPTIONALS**

Mortiser with:

- clamping device
- selfcentering chuck for bits of max. diameter 16 mm
- suction hood diameter 60 mm

Additional turnover fence

Cutterblock with throw-away knives

5,5 kW motor with automatic star-delta starting

## **1-9C SPECIAL VERSIONS**

With 4kW motor manual 0-star-delta starting (standard for Holland)

**1-10 NOISE LEVEL**

Type : F1 Working: surfacing Reference norm: ISO 3744 + ISO/DIS 7960 /B	
	In operation
Sound power level dB W (A) [mW (A)] LW	95,7 [3,72]
Sound pressure level at operator station dB (A) [dB max]	89,0 [<130 dB]
Constant K = 2 [dB] according to pr EN 859 The values refer to the "free field" conditions in accordance with the test modalities foreseen by the reference norm.	

Tipo : FORMULA F2 Condizione di funzionamento: PIALLATURA A FILO Norma di riferimento: ISO 3744 + ISO/DIS 7960 /B	
	In lavoro
Livello della potenza sonora emessa dB W (A) [mW (A)] LW	96,4 [4,37]
Livello della pressione sonora al posto operatore dB (A) [dB max]	88,8 [<130 dB]
Costante K = 2 [dB] secondo pr EN 859 I valori sopraelencati sono riferiti alle condizioni di "Campo libero" nel rispetto delle modalità di prova previste dalla norma di riferimento	

**ATTENTION**

The noise levels which have been measured are emission levels and not levels of safe working.

The relation between emission levels and exposure levels may not be used to determine whether further precautions are required.

Factors which influence the real exposure level for the operator include the exposure time, the room features, further sound sources (as for example number of the adjacent working machines).

Also the exposure levels permitted are not the same for all countries.

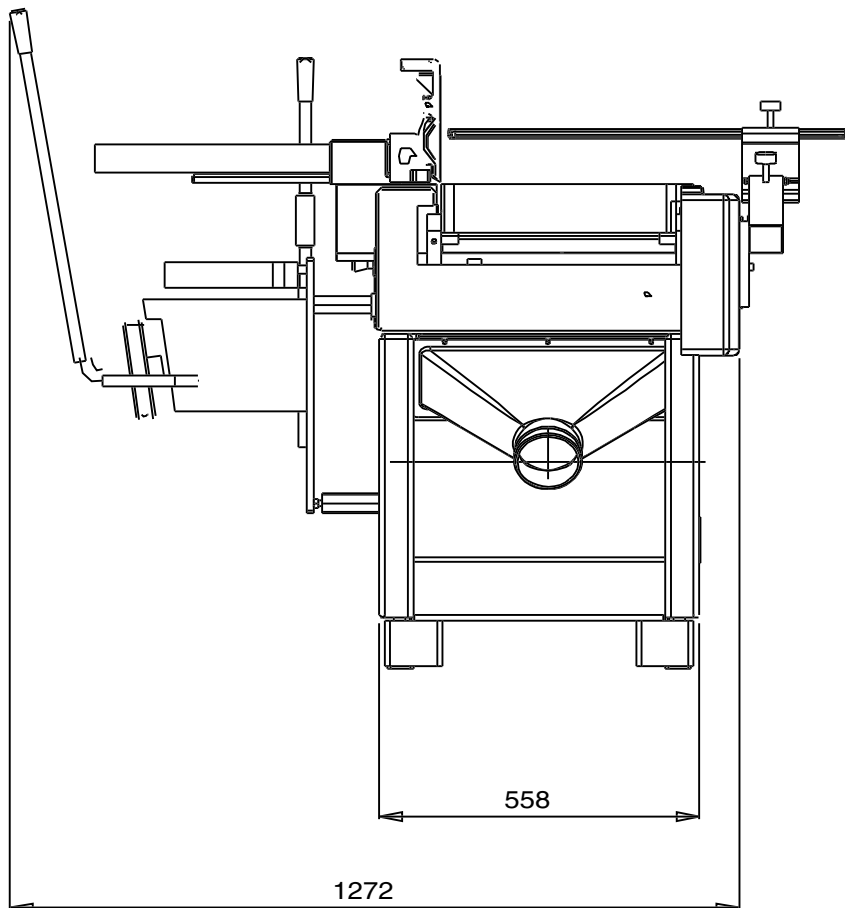
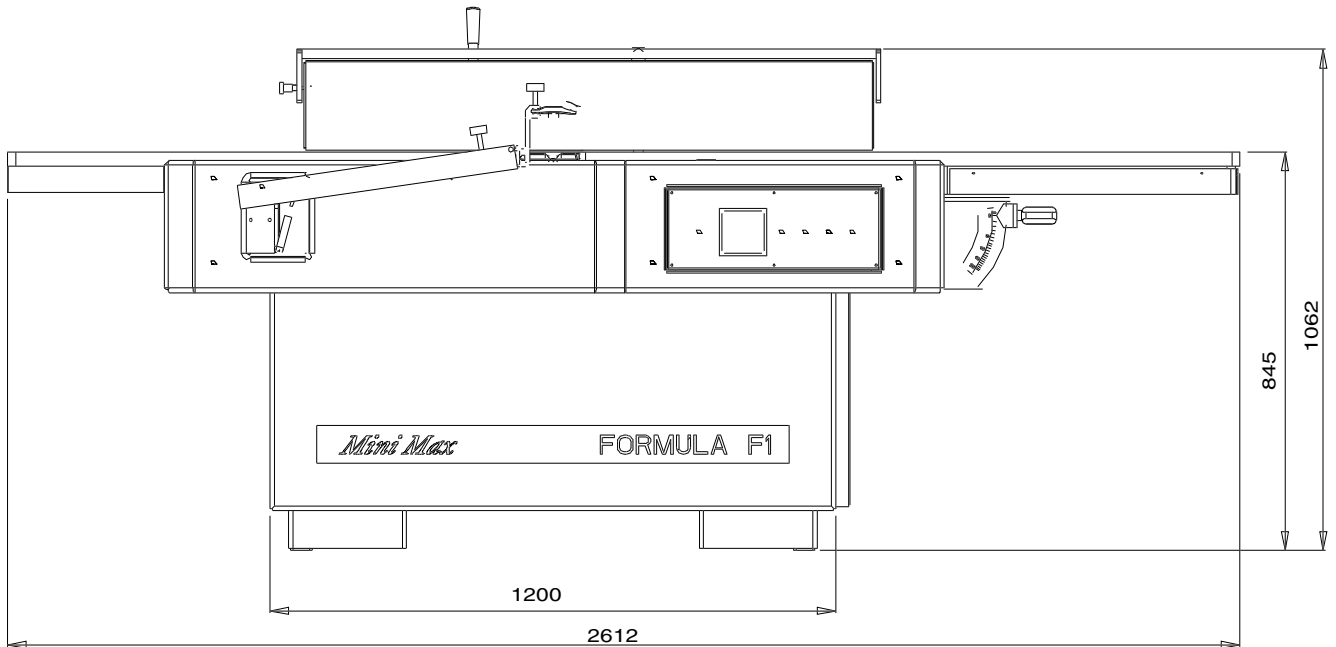
Thank to this information the operator to evaluate the risks and the dangers.

Here are some factors which reduce the exposure to the noise:

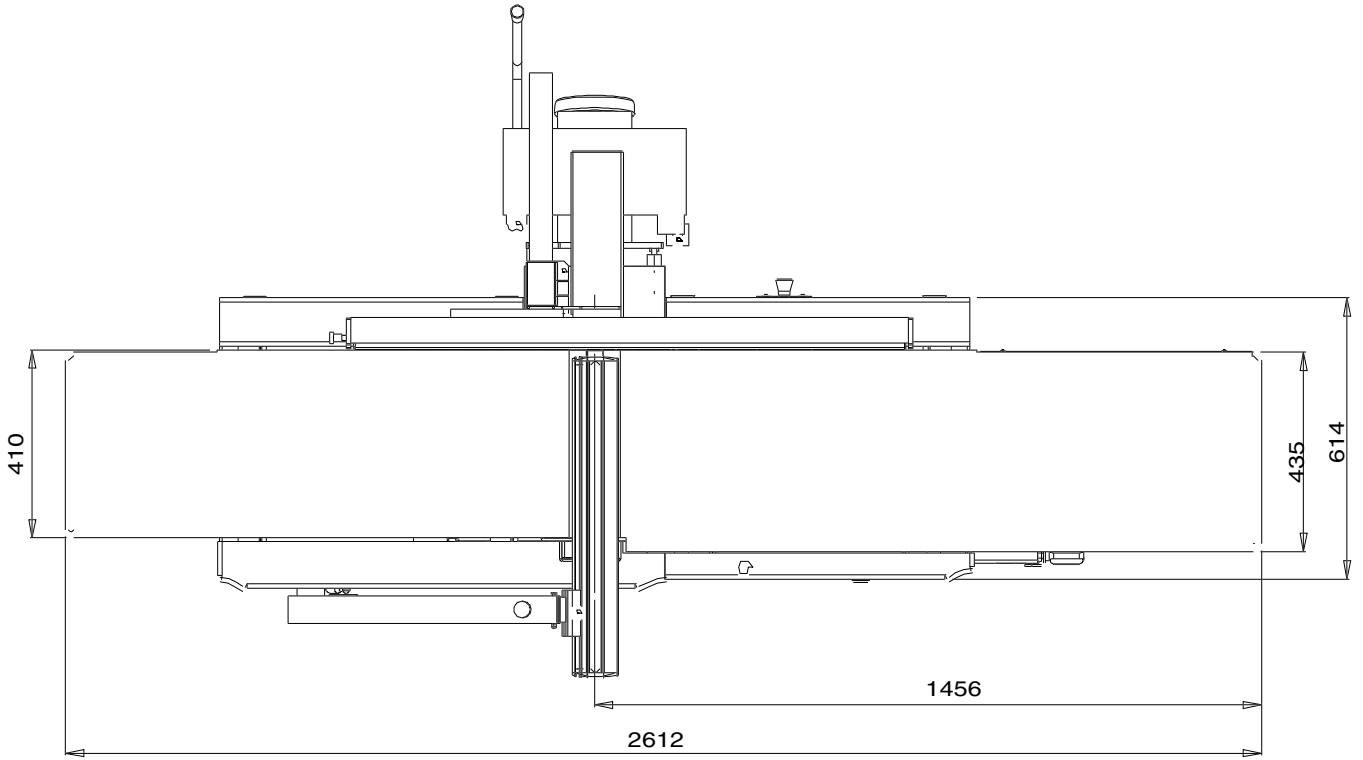
- right tool selection
- machine and tool maintenance
- proper use of ear protective means.

## 1-11 OVERALL DIMENSIONS

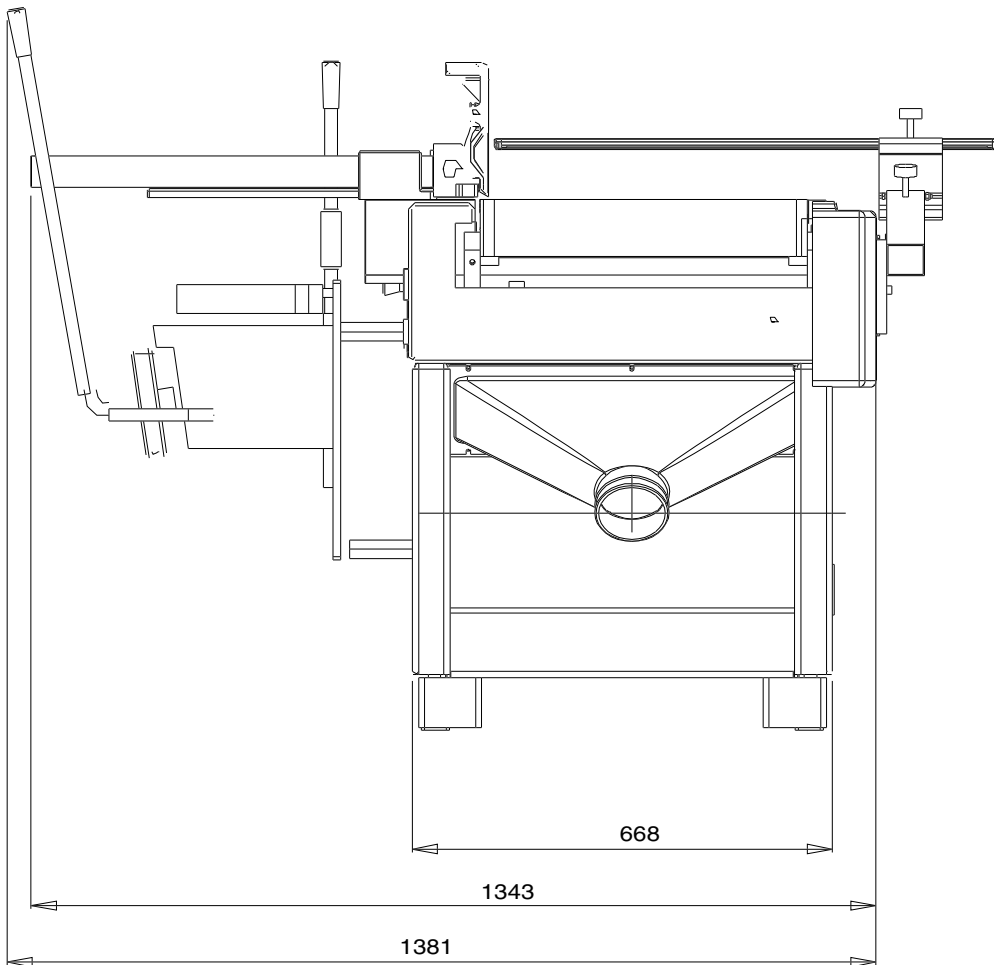
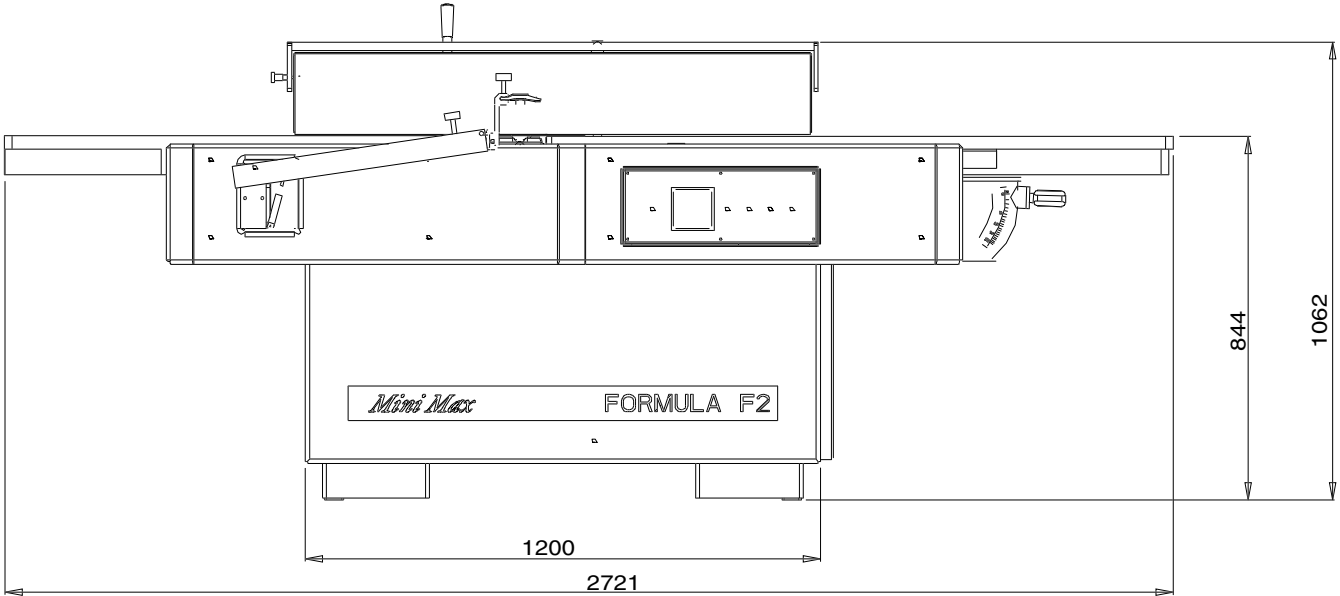
**FORMULA F1**



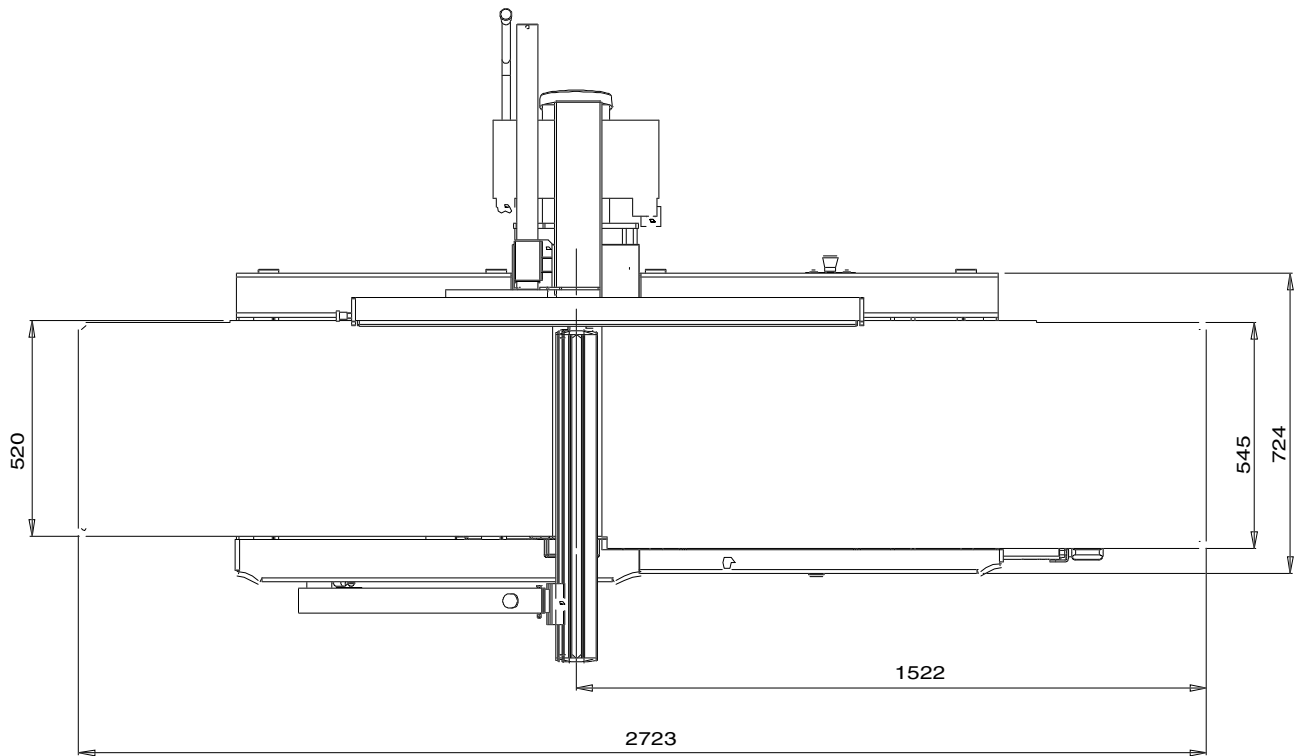
**FORMULA F1**



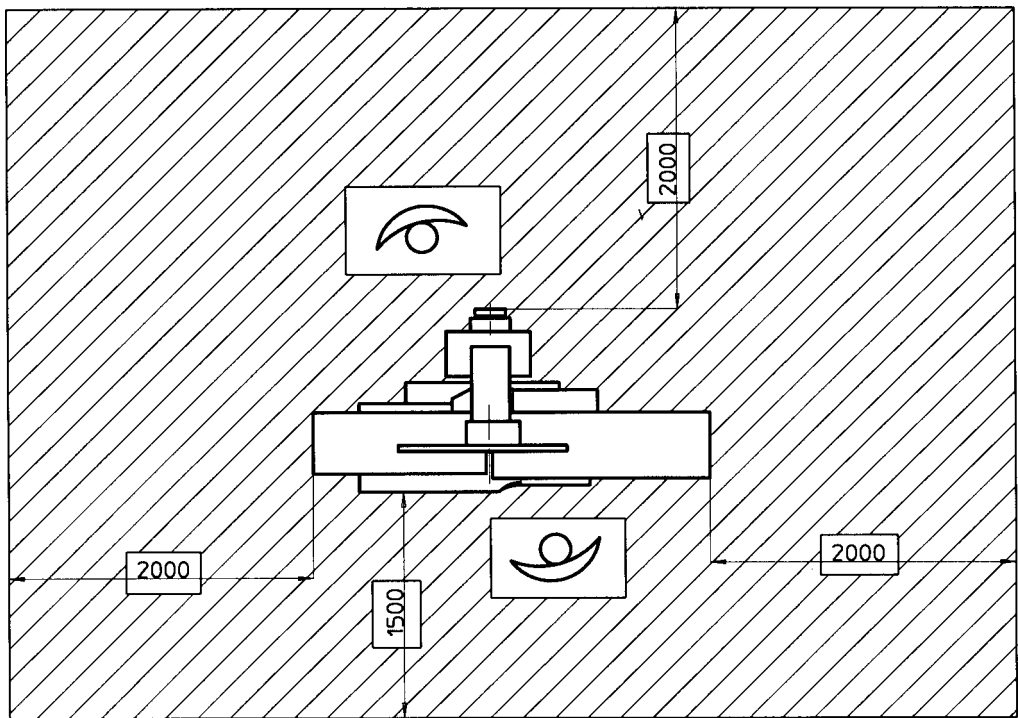
FORMULA F2



**FORMULA F2**







The measures indicated above shall be considered as the free room around the machine.

**SECTION 1A**

**SAFETY DEVICES**

The machine is equipped with safety devices: never remove or switch off them as required by "Direttiva macchine" 98/37/CE

Emergency button on mortiser side (when the mortiser (OPT) is present) (1)

Emergency button on the control board (2)

Guard for mortiser chuck (when mortiser (OPT) is present) (3)

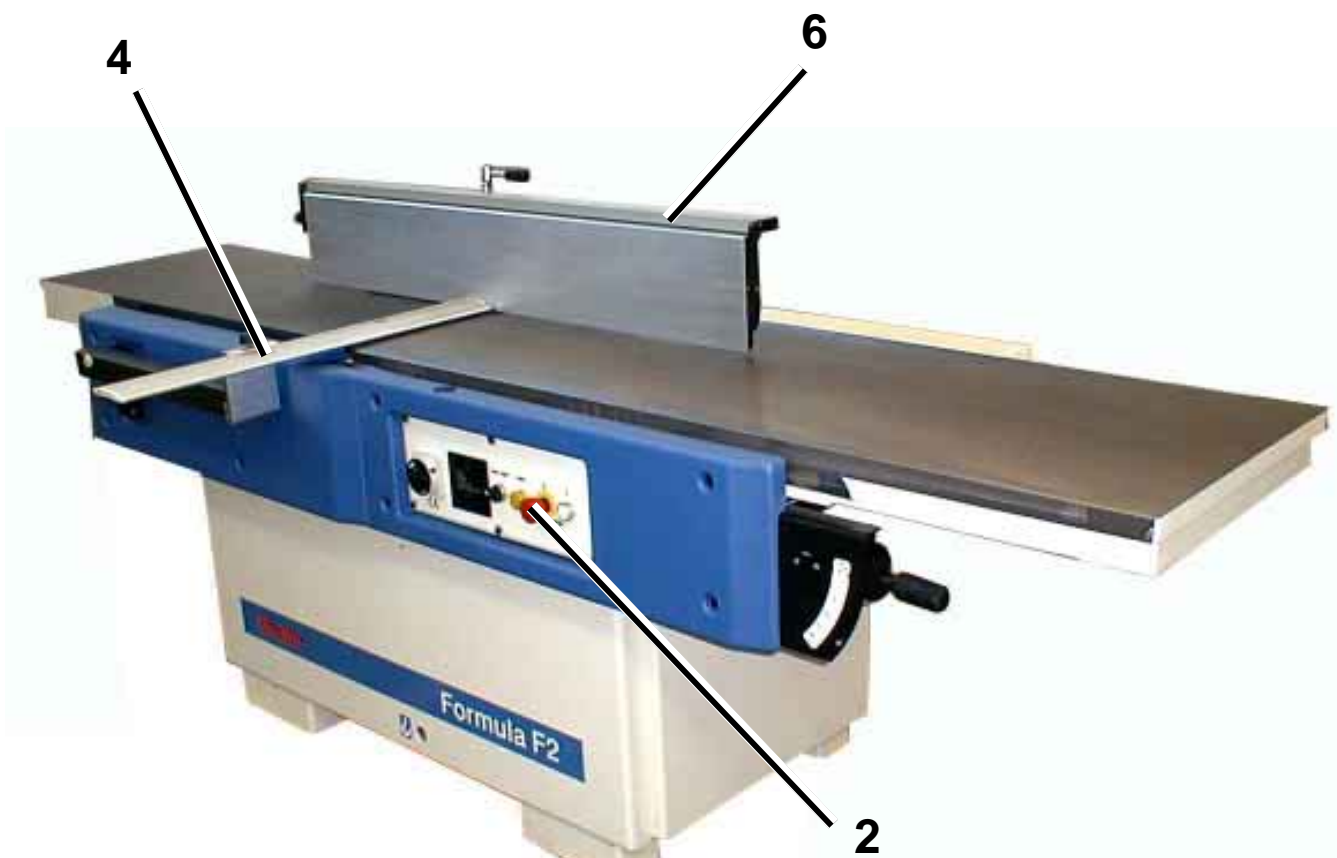
Bridge guard for cutterblock (4)

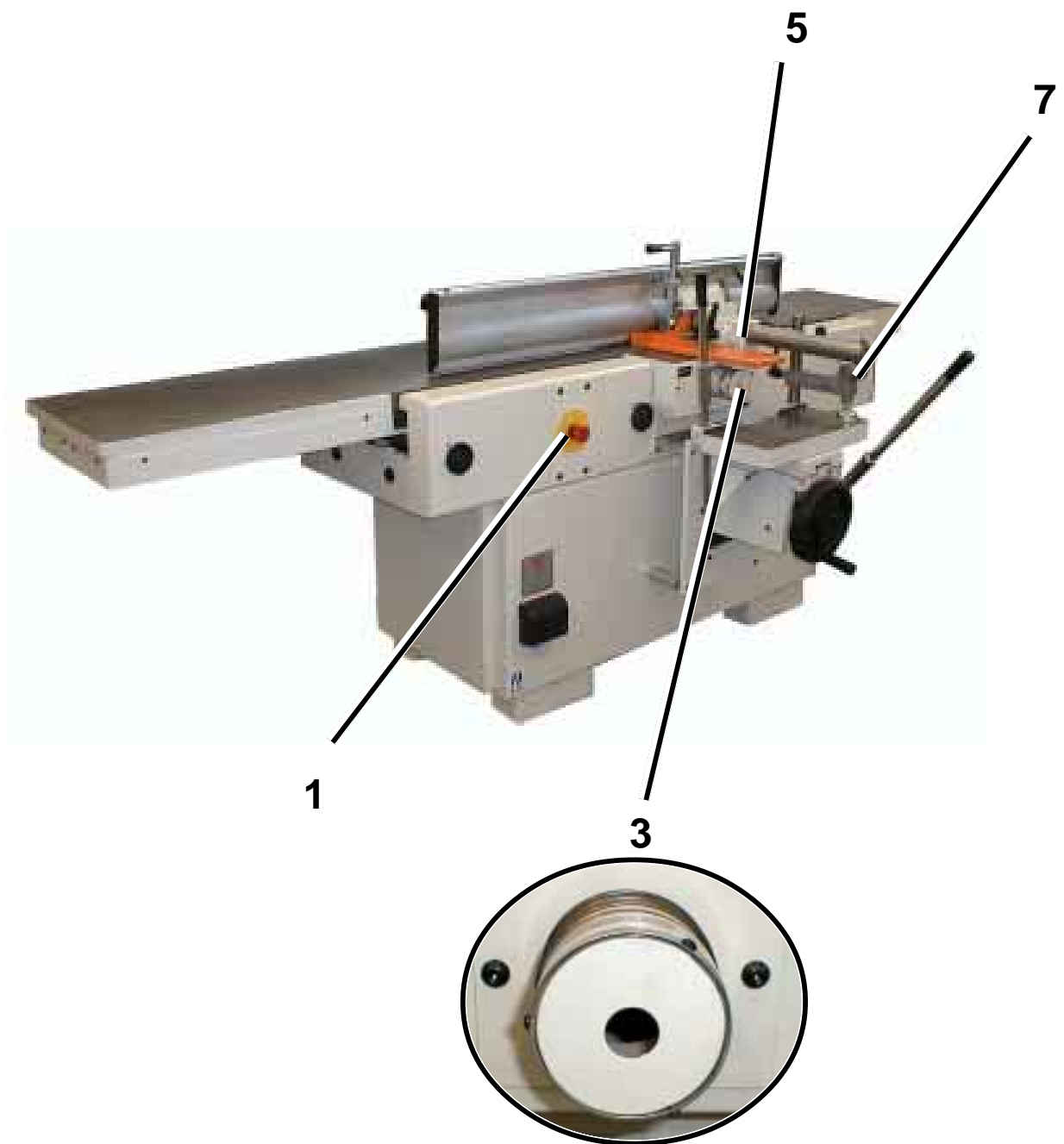
Rear guard for cutterblock (5)

Additional turnover fence (6) ((OPT))

Clamping arm (7) (when mortiser (OPT) is present)

**PERIODICALLY CHECK THAT THE SAFETY DEVICES ABOVE MENTIONED ARE EFFICIENT**







## SECTION 2

### INSTALLATION

2-1	Machine unloading .....	2.2
2-2	Machine positioning .....	2.2
2-3	Electric connection .....	2.4
2-4	Connection to the suction system .....	2.6
2-5	Fitting the parts removed .....	2.6
2-5.1	Fitting the mortiser see SECTION 10 .....	2.6

**The machine packing indicates : the weight and the hooking areas.**

## 2-1 MACHINE LIFTING AND UNLOADING

Before unloading the machine take off all parts which for transport and packing reasons are rested on the machine



**The machine shall be lifted by crane or other raising means by hooking the slings (see fig. 2.1)**

**Make sure that the crane, the slings, the fork truck are proper for lifting the machine.**

During the machine lifting avoid sudden movements .

As an alternative the machine (when equipped with socles or pallets) may be lifted with lift truck: in this case insert the forks under the machine frame: see fig.2.1b; precautions are to be taken to avoid the machine turnover.

## 2-2 POSITIONING AND LEVELING

**Before resting the machine on the floor take off the wood socles screwed under the feet.**

The position where to install the machine shall be well lightened (at least 500 LUX), and proper for the connection to the power line and to the suction system..



**During the machine positioning , you have to consider that in case of longer workpieces you need a sufficient room to avoid squashing points against the walls, columns and so on ... (see page 1.24)**

Check that the floor is firm so that the machine frame may have a uniform rest in the contact points. We recommend a floor made of concrete; an asphalt floor is **not proper**.

We recommend to insert steel plates between the feet and the floor with eventual damping material.



**Always fasten the machine to the floor by inserting the pivots of the 2 brackets (S fig. 2.1c) (supplied in the accessories bag) into the holes of machine , then screw down the M10 screws (the machine is equipped with 1 front hole and 1 rear hole).**

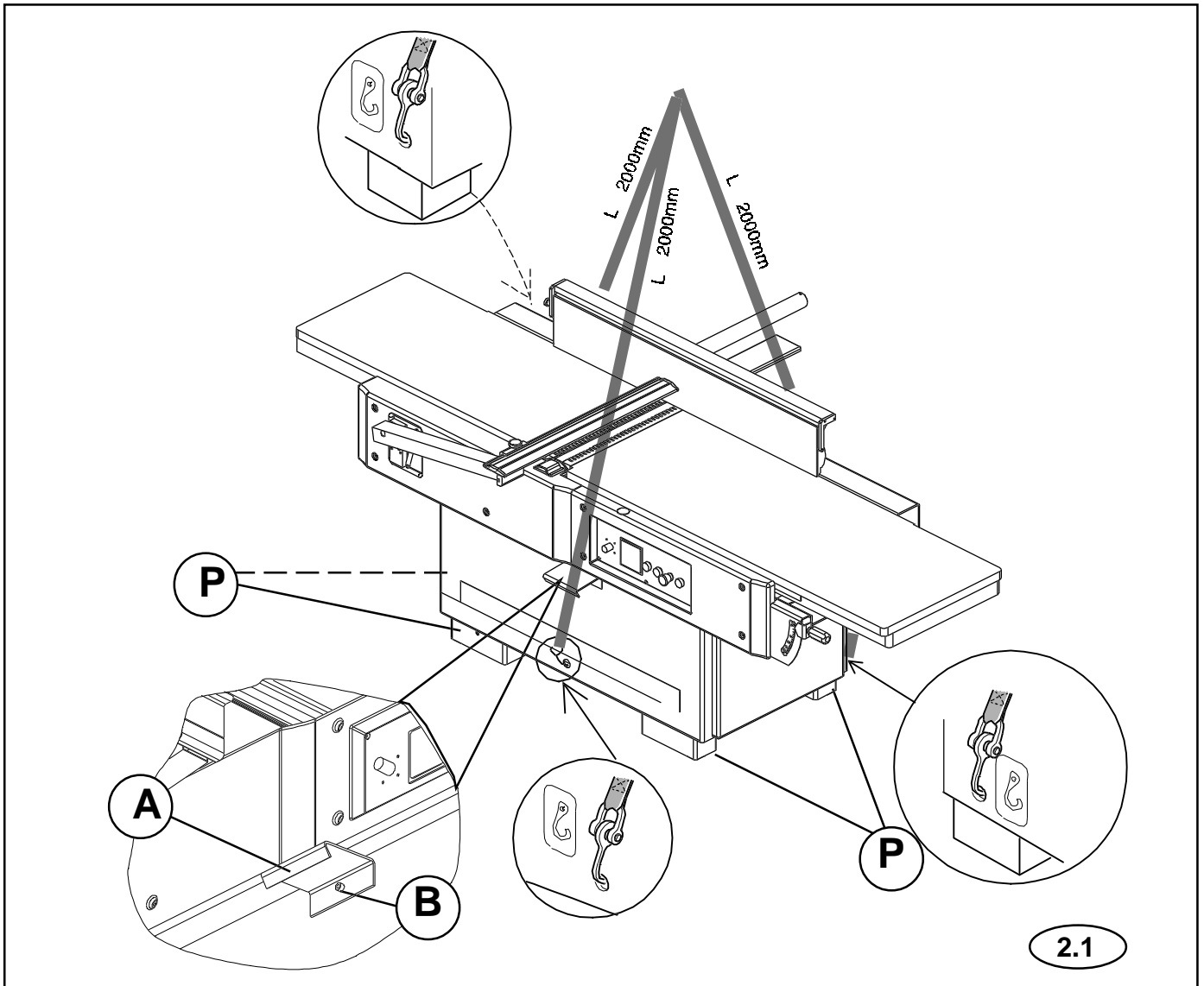
If it is necessary to level the machine insert the 4 screws M12x30 into the proper holes of the machine feet then operate on these screws by using a 19 mm wrench.

**After leveling the machine take off bracket (A fig.2.1) after unscrewing screw (B).**

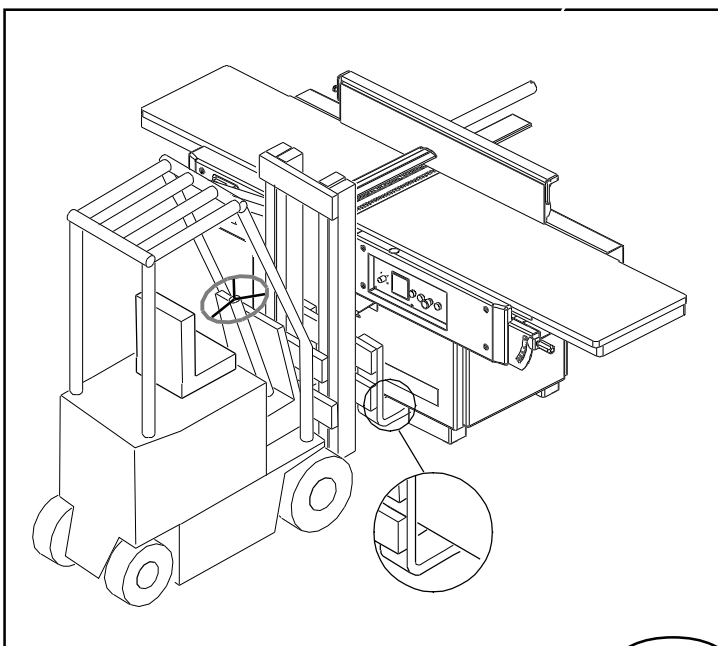
**Keep the bracket as it is useful when it is necessary to move the machine.**

For transport reasons the machine is oiled and greased..

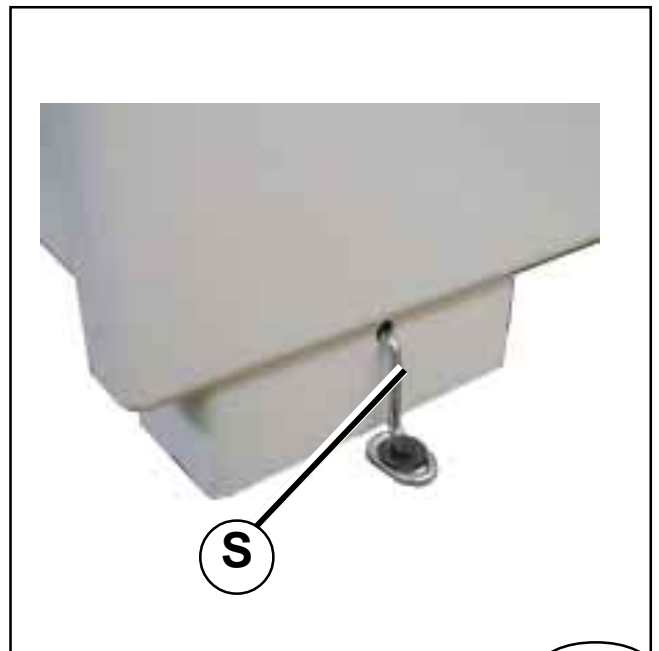
Before starting working, you have to degrease the working areas and the guards with not dangerous solvent.



2.1



2.1b



2.1c



## 2-3 ELECTRIC CONNECTION

The electric connection and the tests listed later on shall always be carried out by a skilled electrician.

Make sure that the power supply system of the workshop is proper for the machine power and that the grounding system is in compliance with the regulations in force.  
 Make sure that the mains voltage corresponds to the machine one.

In the point of machine connection the shortcircuit current shall be lower than 10 kA

*NOTE: The right working voltage for the machine is indicated on plate fig.2.2); tolerance range +/- 5%.  
 For voltage values out of this range you have to set supply voltage.*

Read out the value of total current absorbed (Ampere) on the machine identification plate.

**Use the table below indicated for selecting the cable section and fit “DELAYED INTERVENTION” fuses ahead of the machine.**

AMPERE ASSORBITI ELECTRICAL INPUT (AMPERE) AMPERES ABSORBES STROMAUFNAHME (AMPERE) AMPERE ABSORBIDOS	SEZIONE CAVI CABLE SECTION SECTION CABLE KABELQUERSCHNITT SECCION CABLES	mm2	FUSIBILI AM AM FUSE FUSIBLE AM SICHERUNGEN FUSIBLES AM
fino a/up to/ jusqu'à /bis 10.		2.5	12 A AM
da/from/de/von 10 a/to/à/bis 14		4.0	16 A AM
da/from/de/von 14 a/to/à/bis 18		6.0	20 A AM
da/from/de/von 18 a/to/à/bis 22		6.0	25 A AM
da/from/de/von 22 a/to/à/bis 28		10.0	32 A AM
da/from/de/von 28 a/to/à/bis 36		10.0	40 A AM
da/from/de/von 36 a/to/à/bis 46		16.0	50 A AM
da/from/de/von 46 a/to/à/bis 54		16.0	63 A AM
da/from/de/von 54 a/to/à/bis 76		25.0	80 A AM
da/from/de/von 76 a/to/à/bis 92		35.0	100 A AM
da/from/de/von 92 a/to/à/bis 110		50.0	125 A AM

Shut off the power supply and connect the 3 wires (phases) to terminals L1, L2, L3 (fig.2.2).

Connect the ground wire (yellow-green) to terminal (PE) or marked by symbol  $\perp$  ; if present connect neutral wire to terminal N.

If the machine is connected by a mobile supply cable, use a rubber hose marked by H07RN-F or A07RN-F.  
 The relative socket shall meet DIN 49463 norm or international prescriptions IEC309-1 or IEC309-2.

Tighten terminal screw (P fig.2.2).

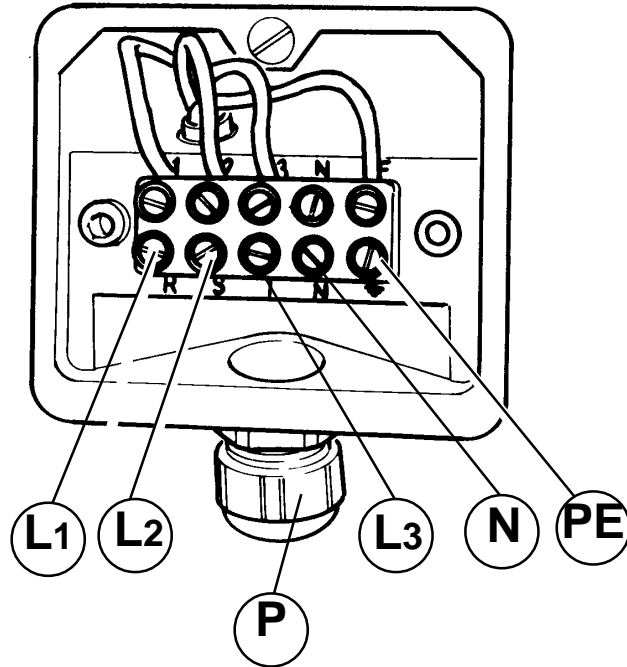
Switch on the machine again and check that the cutterblock rotates in the direction opposite to the piece feed after starting the machine as described later on.

If the cutterblock does not rotate in the right direction proceed as follows:

- Shut off the power supply
- Interchange 2 phases on the terminal board
- Switch on the power supply again
- Check the cutterblock rotation direction again.

*NOTE: a set of fuses is supplied in the accessories bag: the type and diameter are indicated in the wiring diagram enclosed.*

*The documentation including the wiring diagram as well as certificates is inside the accessories bag.*



FS4102-2

SCM GROUP spa		CE	
Via Casale, 450 I - 47827 Villa Verucchio (RN) - ITALY			
MARCA	MAKE		
TIPO	ANNO		
TYPE	YEAR		
N° SERIE	Kg		
SERIAL N°			
Un	V	~	Hz
Icc	kA	w.d.	A F
MOD.	REF.		
COMP.			
scm e group			

FORNIT:		DATA	
CODICE		N.	
DIST.		VOLT	Hz
RETE	VOLT	AUX	VOLT
			FRENO
			MACCH

2.2

## 2-4 CONNECTION TO THE SUCTION SYSTEM

**The connection to the suction system is required to ensure the right machine operation and the operator's health.**

Always work with the main suction system in operation.

In case of plastic hoses they shall be of hardly inflammable material.

Connect hoods (B and D fig.2.3-2.4) to the suction system by hoses of proper diameter.

Suction hood diameters:

- Mortiser: hood (B fig.2.3) of 60 mm diameter (OPT)
- Surfacing unit: hood (D fig.2.4) of 120 mm diameter

The suction system shall ensure a flow equal to 1600 m<sup>3</sup>/h at a flow speed at least of 20 m/s.

The efficient suction system reduces the risks due to dust inhalation and ensures a safe working.

Further factors reducing the dust emission in working environment:

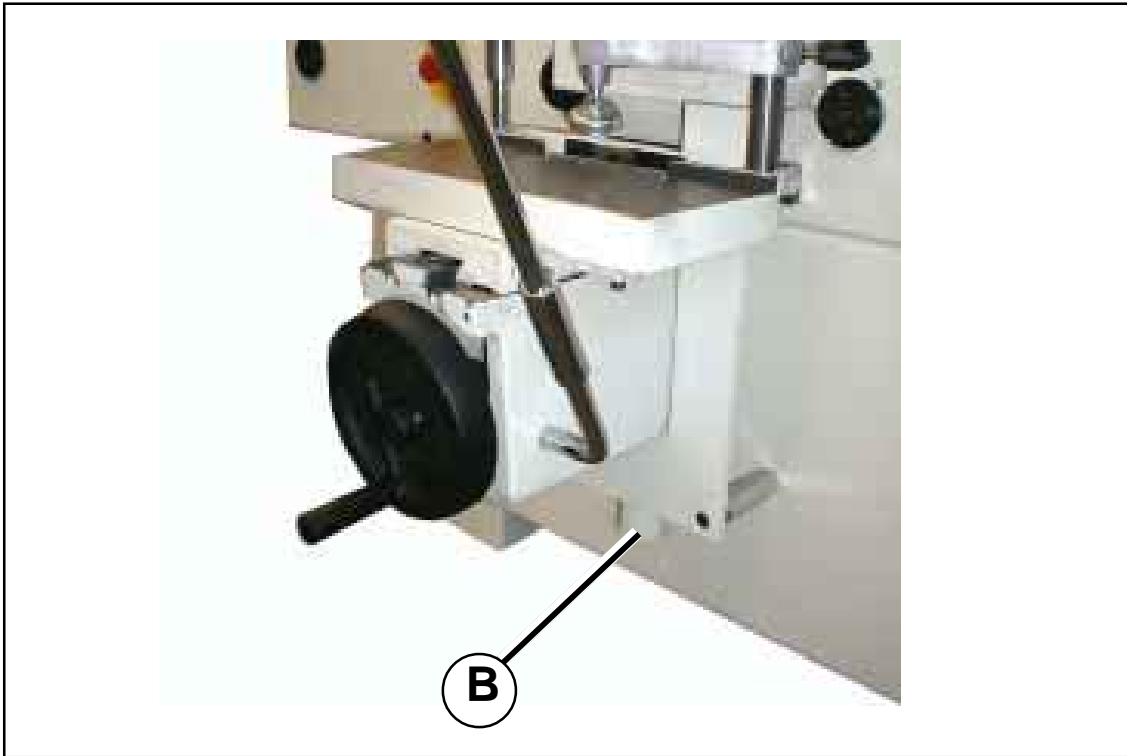
- Maintenance of the tools, machine and suction system
- Right relation between cutting speed and feed speed
- Correct use of dust protectors.

## 2-5 FITTING THE PARTS REMOVED

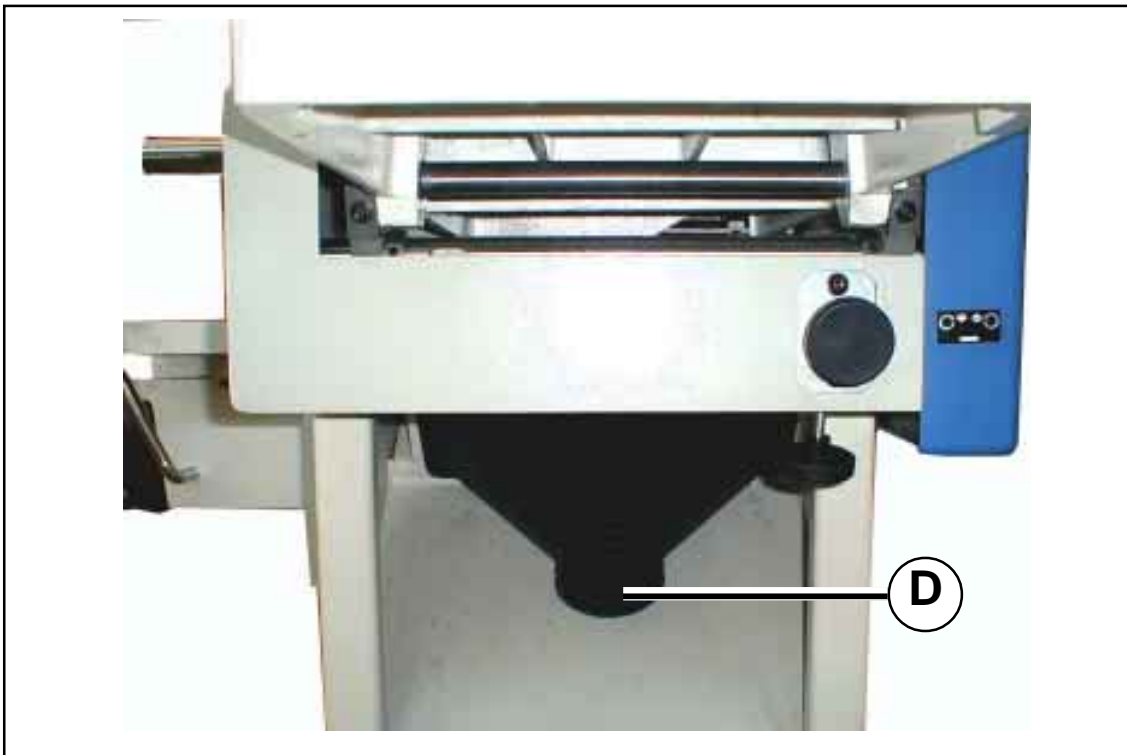
Some machine parts are demounted for transport and packing reasons.

*NOTE: The cutterblock knives are set and fixed with a 1 mm projection from the cutterblock (see par.8-1 KNIFE ADJUSTING)*

### 2-5.1 FITTING THE MORTISER SEE SECTION 10



2.3



2.4



## SECTION 3

## CONTROLS

3-1	Control board .....	3.2
3-2	Machine start .....	3.2
3-3	Auto-brake motor .....	3.4

## 3-1 CONTROL BOARD

According to machine version the components are:

- A) Padlockable thermomagnetic main switch
- B) Selector for locking-releasing the cutterblock brake
- C) Pilot lamp: cutterblock brake released
- D) (OPT) Manual star-delta starter for cutterblock
- E) Fuses (a set of fuses is supplied in the accessories bag)
- H) Emergency button (another one on the rear side when the mortiser (OPT) is fitted)
- M) Button to START the cutterblock .

### MOTOR HOUSING

Only a skilled electrician may reach the internal part of the electric cubicle after turning the main switch to 0 (he must indicate it with a sign) and after unscrewing the screws.

### EMERGENCY BUTTONS

In case of danger by pressing the emergency button all functions of the machine are switched off (D). With (OPT) Manual star-delta starter, to restart the machine turn starter (D) to 0 position.

Emergency buttons arranged on the machine:

- Basic machine: one emergency button on the control board.
- Machine with mortiser (OPT): one emergency button on the rear side of the control board.

Periodically press the emergency buttons to check if they are efficient.

## 3-2 MACHINE START

- 1) Turn main switch (A fig.3.1) to 1
- 2) Make sure that emergency button (s) (H fig.3.1) is (are) released; otherwise turn it (them).
- 3) Make sure that the motor brake is on, pilot lamp (C fig.3.1) is off
- 4) Press button (M fig.3.1)
- 5) Turn starter (D fig.3.1) to star position, then after some seconds turn it to delta position.

With 0-star-delta starter turn starter (D fig.3.1) from 0 to star position, then after 8 seconds turn the starter to delta position.

### TO STOP THE CUTTERBLOCK:

- Press button (H)

(with (OPT) star/delta starter turn starter D to 0)

**It is forbidden to stop the motor by turning selector (B) to ◀(●)▶**

## 3-3 AUTO-BRAKE MOTOR

The cutterblock rotation occurs by electric auto-brake motor.

Under normal condition selector (B fig.3.1) is turned to ▶(●)◀

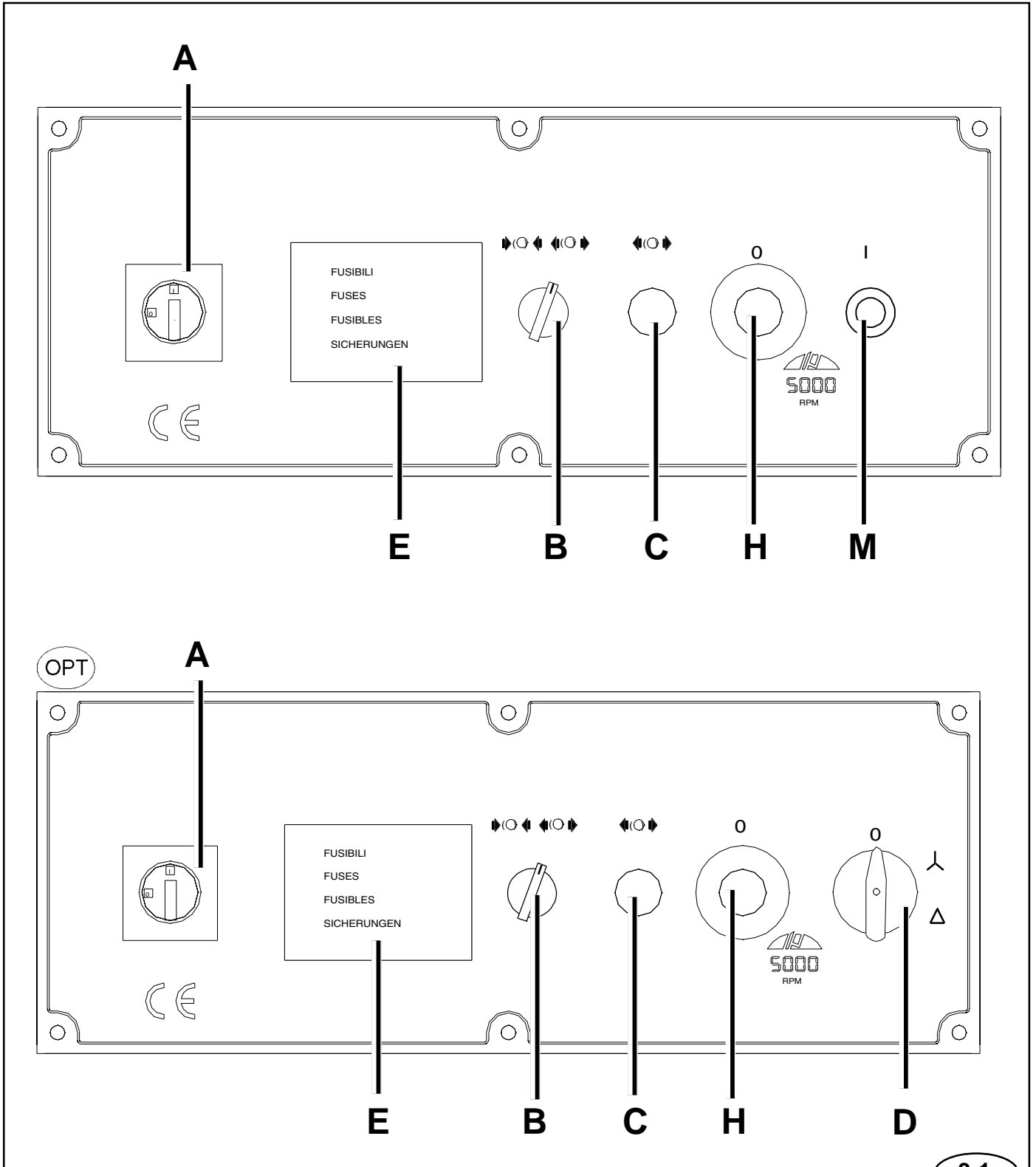
When you shut off the power by turning the cutterblock control switch to 0, the motor automatically brakes and remains braked until the next starting.

In case of adjusting operations as knife fitting etc. for which the cutterblock shall freely rotate, turn selector (B) to ◀(●)▶ pilot lamp (C) lights up. The machine may not be started, therefore you can carry out the adjusting operations under safe conditions.


The motor start is possible only if selector (B) is turned to ▶(●)◀


*NOTE: The brake may be released only 20 seconds after the motor stop.*


*NOTE: The material used for auto-brake motors to get the rapid cutterblock stop does not contain any cancerous components.*



3.1

 BLOCCAGGIO FRENO  
BRAKE LOCKING  
BLOCAGE FREINE  
BLOCKIERUNG DER BREMSE  
BLOQUEO FRENO

 SBLOCCAGGIO FRENO  
UNLOCKING  
DEBLOCAGE FREINE  
LÖSEN DER BREMSE  
DESBLOQUEO FRENO

 ALBERO PIALLA  
CUTTERBLOCK  
RABOT  
MESSERWELLE  
CEPILLO





**SECTION 8****SURFACER**

8-1	Knife adjusting .....	8.2
8-1 a	Throw-away knife adjusting (OPT) .....	8.4
8-2	Surface table adjusting .....	8.6
8-3	Fence .....	8.6
8-4	Additional turnover fence (OPT) .....	8.8

## 8-1 KNIFE SETTING



**Use protective gloves for handling the knives.**

To adjust the knife projection proceed as follows:

- Press the emergency button
- Turn selector (B) to
- Check that the cutterblock is exactly 1 mm under the outlet table
- Lift the bridge guard as much as possible
- Rest knife setting gauge (R fig.8.1) on the outlet table so that stops (S) are against the table lip edge.

**Note:** *Stops (S fig.8.1) and pivot (Q fig.8.1) serve to properly position the cutterblock so that the knife tip is in the highest point.*

- Slowly turn the cutterblock manually so that it is in position after releasing the motor brake: in this way pivot (Q) can fit into slot (A) between gib (U fig.8.2) and cutterblock if you press it lightly.
- By proper 13 mm spanner (supplied in the accessories bag) loosen bolts (T fig.8.2): the knife is pushed against the surface of knife setting gauge (R fig.8.1).
- Now lightly tighten bolts (T fig.8.2) at the ends left uncovered by the knife setting gauge.

**NOTE:** *Max. knife projection from the cutterblock body: 1 mm*

Carry out the same operation for each knife.

- Tighten all bolts beginning from the middle one, then alternately tighten the other ones : do not force and do not use any extensions.

After the adjusting all knives are at the same height of the outlet table.

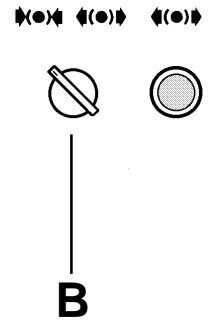
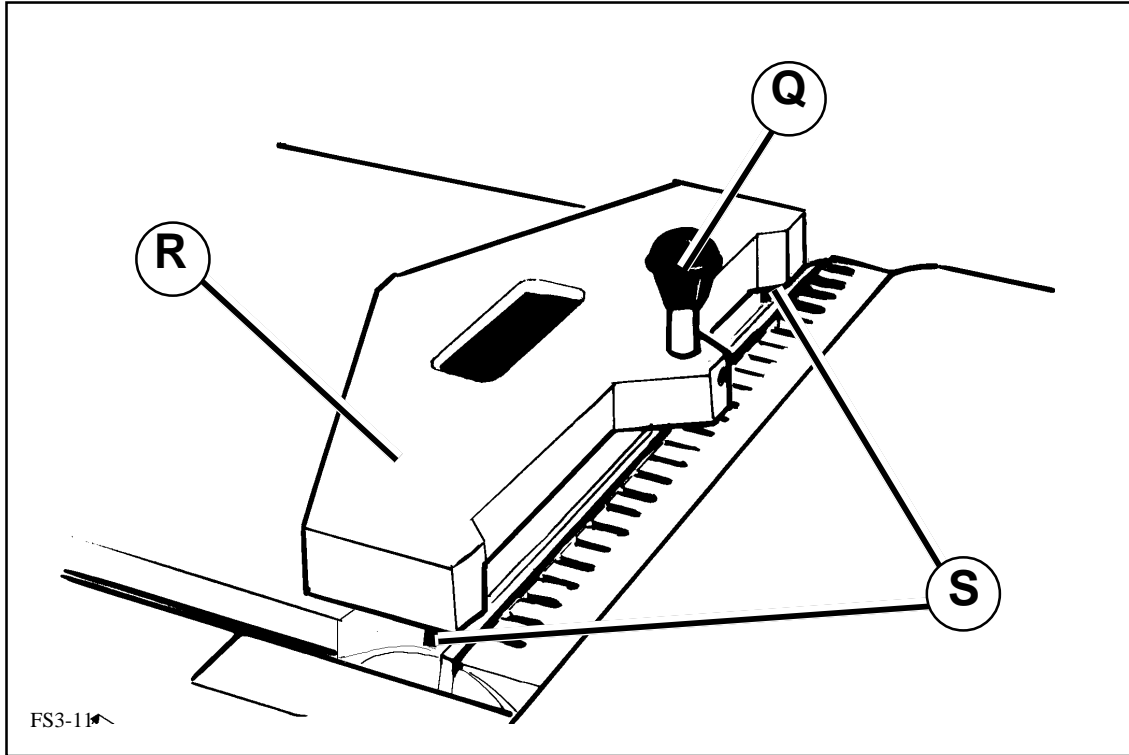
To check the knife adjusting rest a wood ledge on the outlet table first on the right side then on the left side, then manually turn the cutterblock : the knives shall lightly touch the wood ledge uniformly.

- Turn selector (B) to
- Set the bridge guard to right position.
- Release the emergency button.

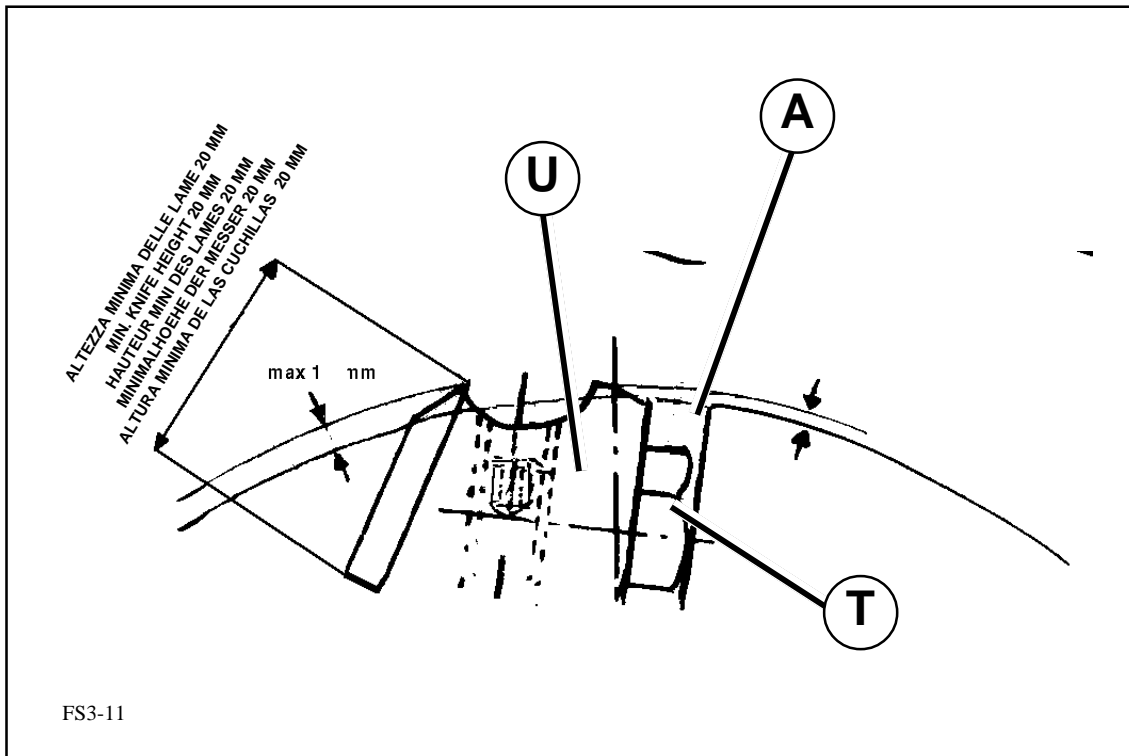
If the knives are well adjusted, the finished pieces are not convex without the step at their rear end.

Constantly keep the knives and gibs clean to ensure a perfect working.

When the knife width is 20 mm you have to replace the knife.



8.1





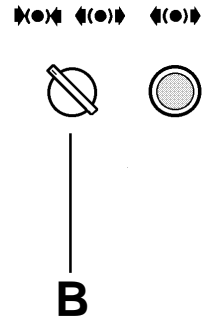
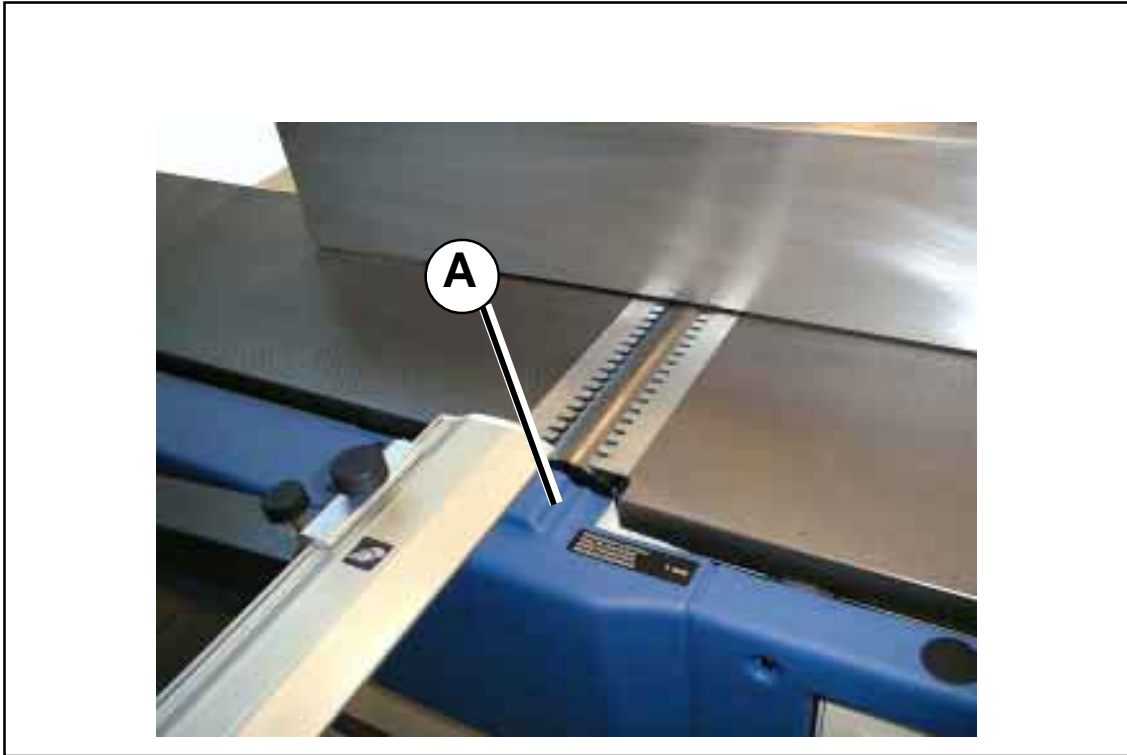
8.2

**8-1A THROW-AWAY KNIFE ADJUSTING** (OPT)

Use gloves for handling the knives

**NOTE: DO NOT START THE CUTTERBLOCK MOTOR WHEN THE KNIVES ARE NOT FITTED**

- Totally lower the inlet table
- Press the emergency button
- Turn selector (B fig.8.2a) to  so that the cutterblock is locked.
- Lift the bridge guard as much as possible.
- Turn the cutterblock in order to bring the knife to be replaced to the top between the 2 surfacing tables.
- Unlock the gibs by exerting a light pressure with a wood or plastic hammer.
- With a screwdriver push the knife outwards.
- Grasp the knife with your hand and take it off.
- Fit the new knife or the old one turned by centering it in the length direction..
- Set the bridge guard to the original position.
- Turn selector (B fig.8.2a) to  .
- Release the emergency button.
- When you start the machine the gibs (U fig.8.2) automatically reach the right position.



8.2a

## 8-2 SURFACING TABLES ADJUSTING



**Do not move the inlet table when the cutterblock is rotating**

### INLET TABLE

- Loosen knob (L fig.8.3)
- Push knob downwards or upwards to reach the position corresponding to the stock removal desired you can see on the graduated scale
- Tighten knob (L).

### OUTLET TABLE

It is adjusted at factory during the machine test.

- Adjust by means of knob (P fig.8.4) after loosening knob (Q).
- After adjusting tighten knob (Q).

## 8-3 FENCE

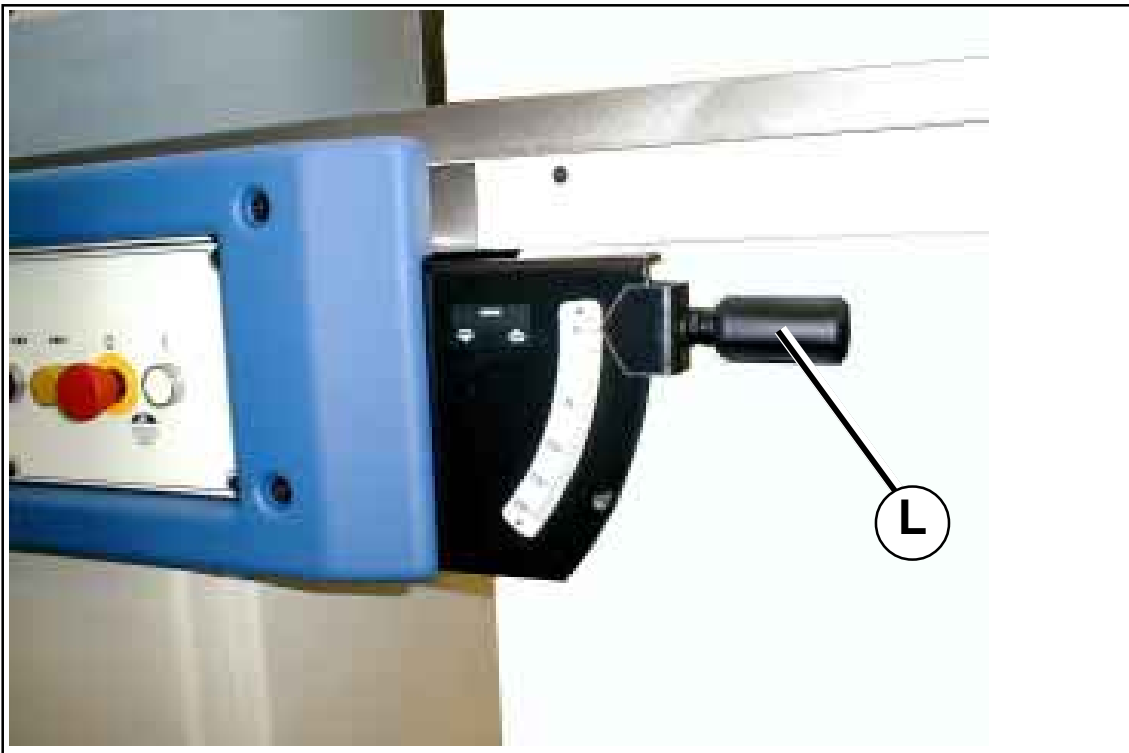
### LONGITUDINAL MOTION

- Release lever (M fig.8.5), move fence to the desired position, then tighten lever (M).

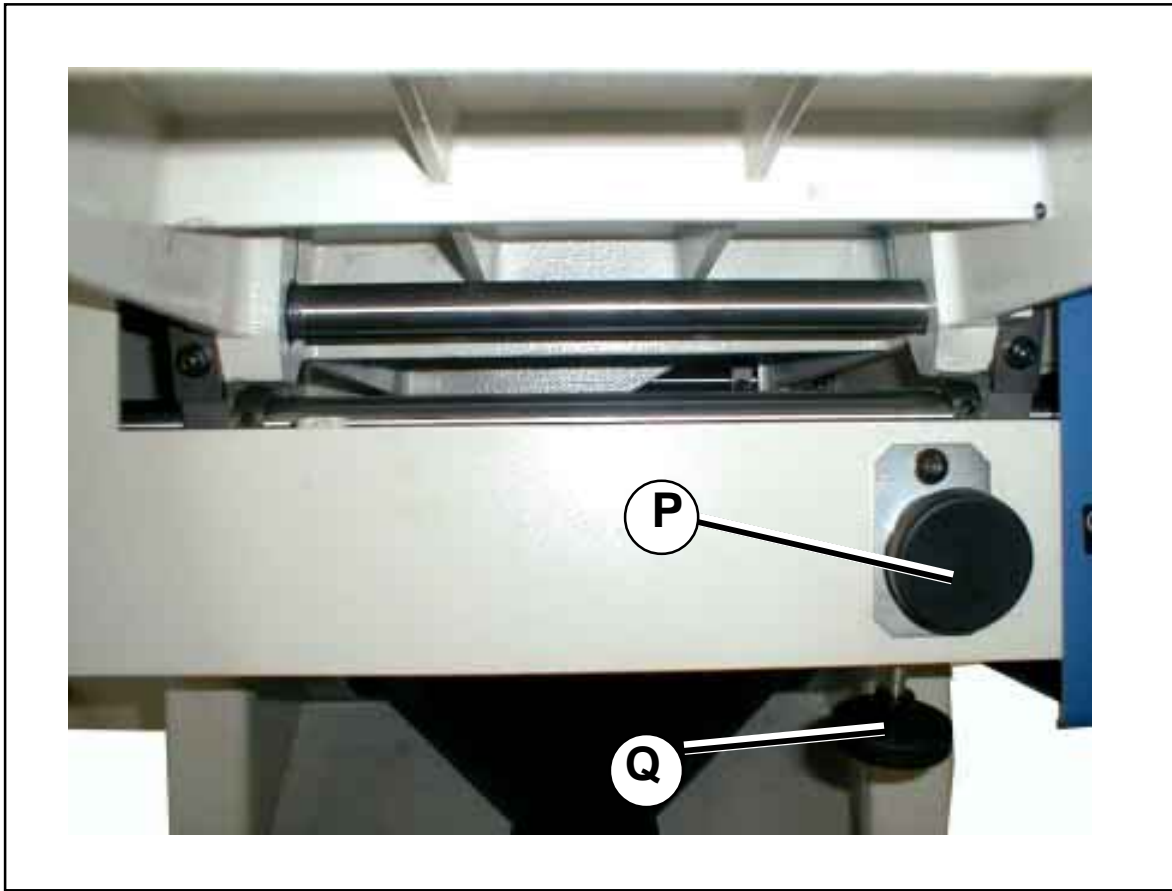
### TILTING

- Loosen lever (R fig.8.5), tilt fence : read out the tilting angle on graduated scale (T fig.8.5), then tighten lever (M).

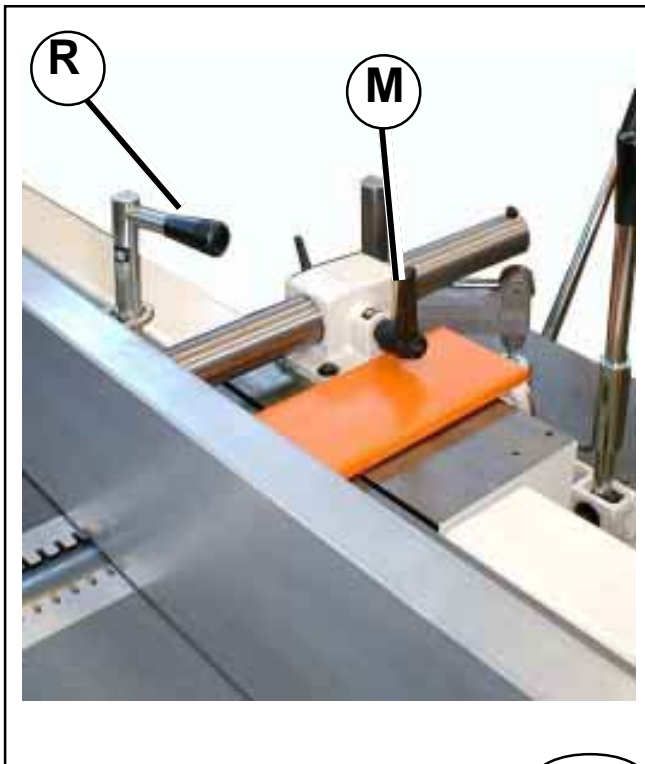
Fence may be tilted from 90° to 45° and to any intermediate position.



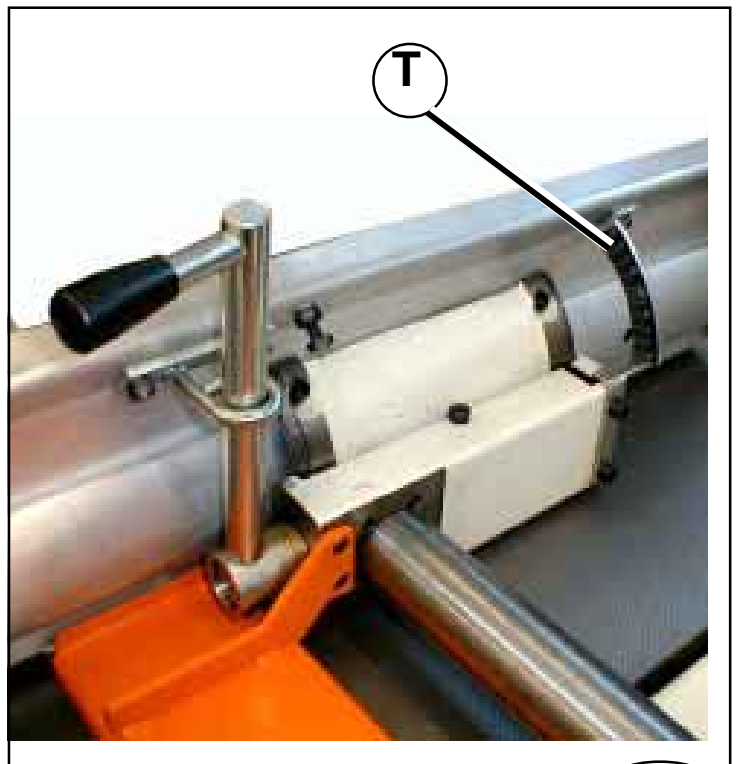
8.3



8.4



8.5



8.5A



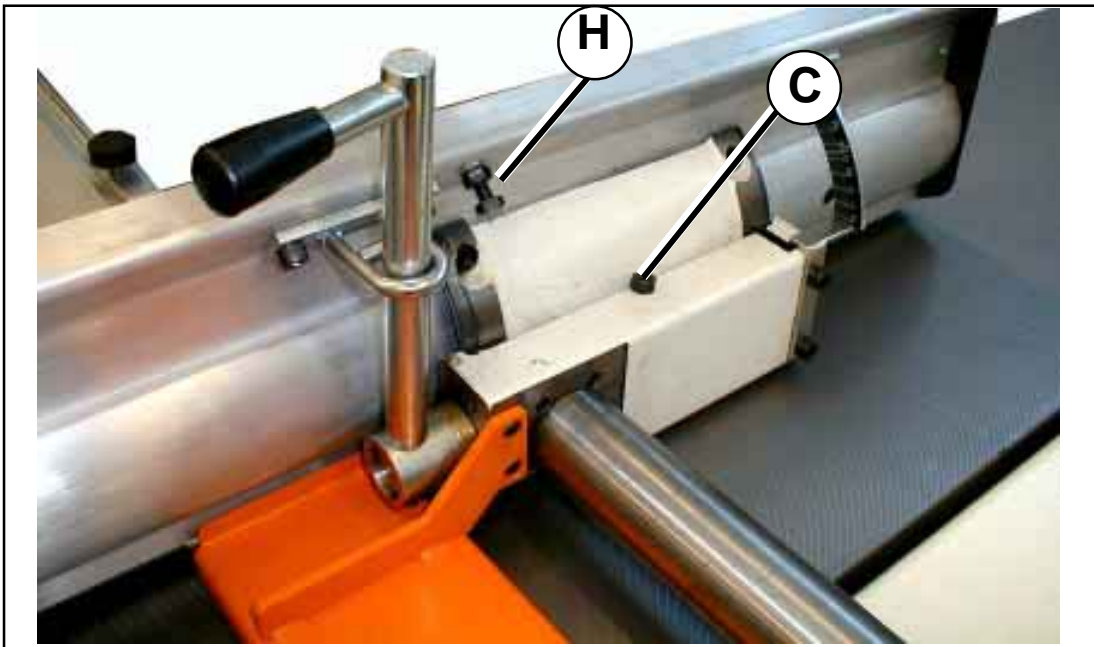
The stops for extreme positions are adjusted by means of screw and conternut (C fig.8.5b) for 90° tilting, screw and conternut (H fig.8.5b) for 45° tilting.

## 8-4 ADDITIONAL TURNOVER FENCE (OPT)

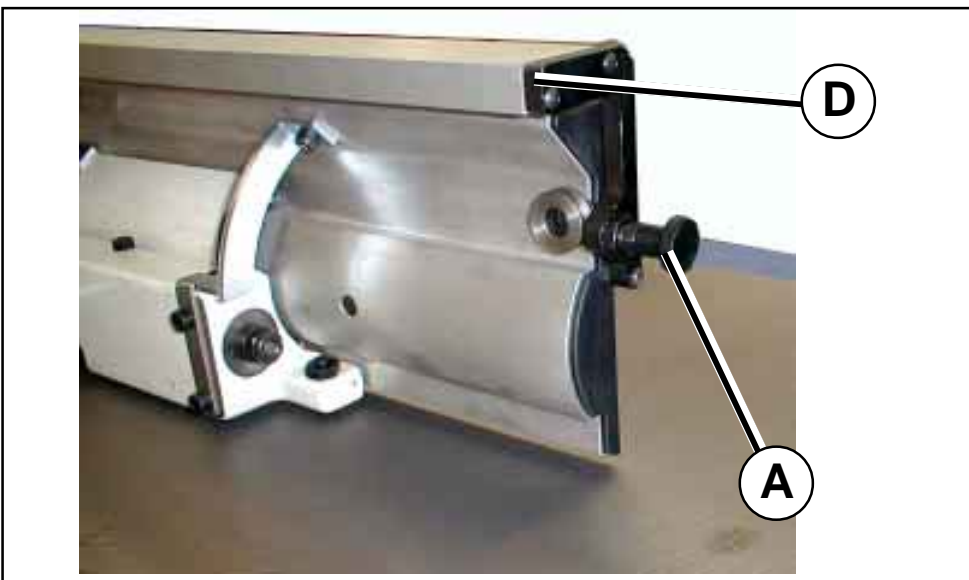
This device is used to make the surfacing of small pieces easy.

To use the additional fence (D fig.8.6), pull knob (A fig.8.6) and by turning the fence set it in front the main fence.

To switch off the additional fence, hold knob (A) pulled and turn the fence until it reaches the position (fig.8.6) (automatic locking).



8.5b



8.6

## SECTION 10

### MORTISER

OPT

10-1	Fitting the mortiser .....	10.2
10-2	Fitting the right bit .....	10.2
10-3	Mortiser use .....	10.4
10-3.a	Limiting of the slot depth .....	10.4
10-3.b	Limiting of the slot width .....	10.4

## 10-1 FITTING THE MORTISER

For packing and transport requirements the mortiser is demounted.

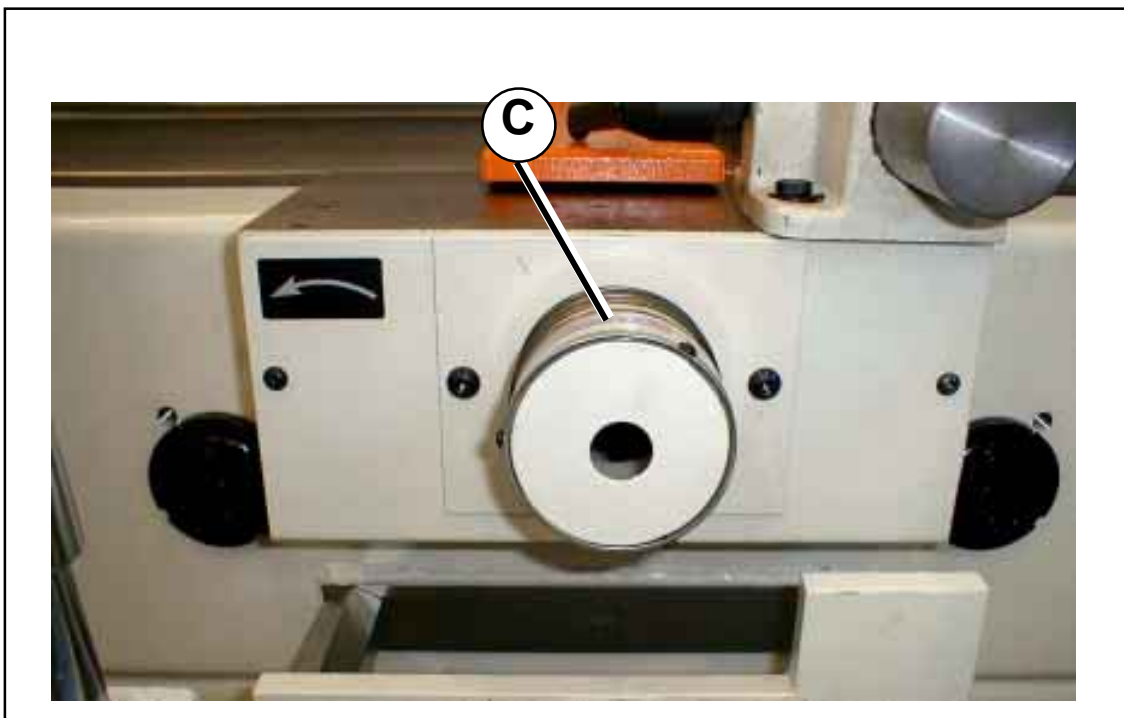
For fitting the mortiser proceed as follows:

- 1 Raise the mortiser unit (weight 35 kg) with a crane or other lifting device: keep the fastening plate parallel to the rear side so that it is possible to insert and to screw down the 4 M8 screws which fasten the entire unit by using a 6 mm wrench .
- 2 The mortiser is equipped with standard collet for right-hand bits with 16 mm cylindric shank.
- 3 Fit control levers (A and B fig.10.2) into their seats.
- 4 As lever (B) might hinder some peculiar workings (e.g. mortising on large door frames) it is possible to move the lever under the worktable after loosening screws (C fig.10.2).

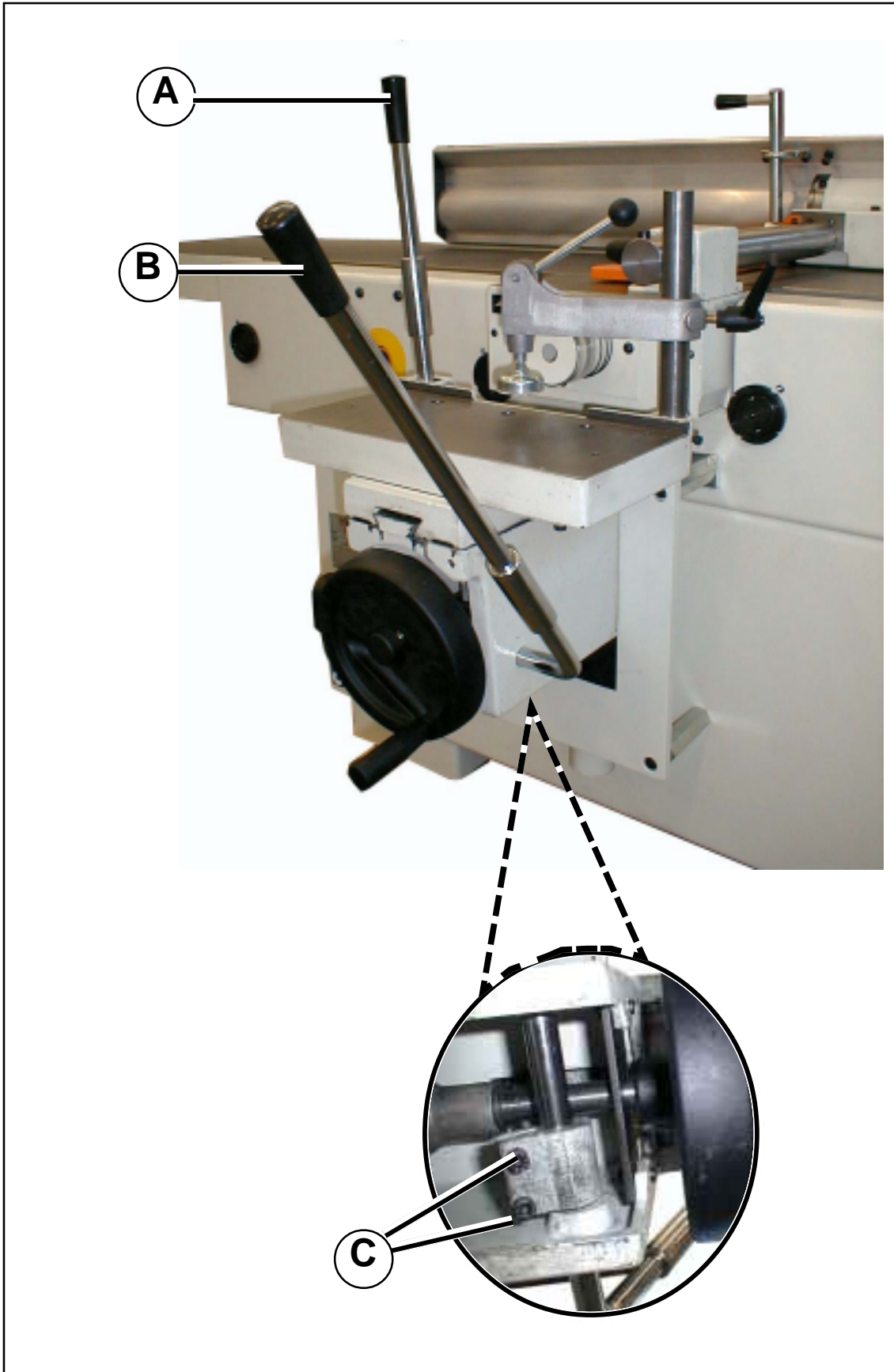
## 10-2 FITTING THE RIGHT-HAND BIT

**For handling the bit use protective gloves.**

Laterally move the polycarbonate ring with spring (C fig.10.1) in order to cover the slots for the wrench passage. Rightly fit the bit into the central chuck opening and make sure that it is well centered before tightening with a 7 mm wrench supplied in the accessories bag.



10.1



10.2

## 10-3 MORTISER USE

**Before starting working make sure that the cutterblock is totally covered by the bridge guard or by the fence and its rear guard moved to the operator as much as possible.**

After adjusting the table stroke, set the wood piece against the table stop and lock it with clamping device (P fig.10.3).. With levers (A and B fig.10.3) start drilling in longitudinal direction with a drilling depth equal to 10 mm, then carry out the drilling in the traverse direction along the entire length of the slot desired.

The milling may be carried out with many adjacent holes, the slot is obtained with a traverse stroke.

This working system avoids the bit rupture and enables the chips exhaust, besides the bit is not damaged by the overheating and the working quality is ensured.

### 10-3.A SLOT DEPTH LIMITATION

#### Adjusting

Move the table by means of lever (B fig.10.3) to the position corresponding to the depth required.

Adjust the stop screw (M) then clamp it with counterring nut (N).

### 10-3.B SLOT WIDTH LIMITATION

#### Adjusting

Loosen screws (D), set the end stops of the table by operating on pivots (E fig.10.3).

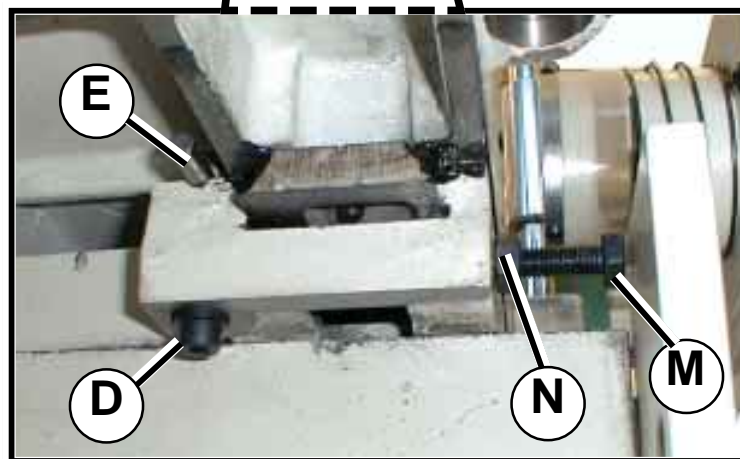
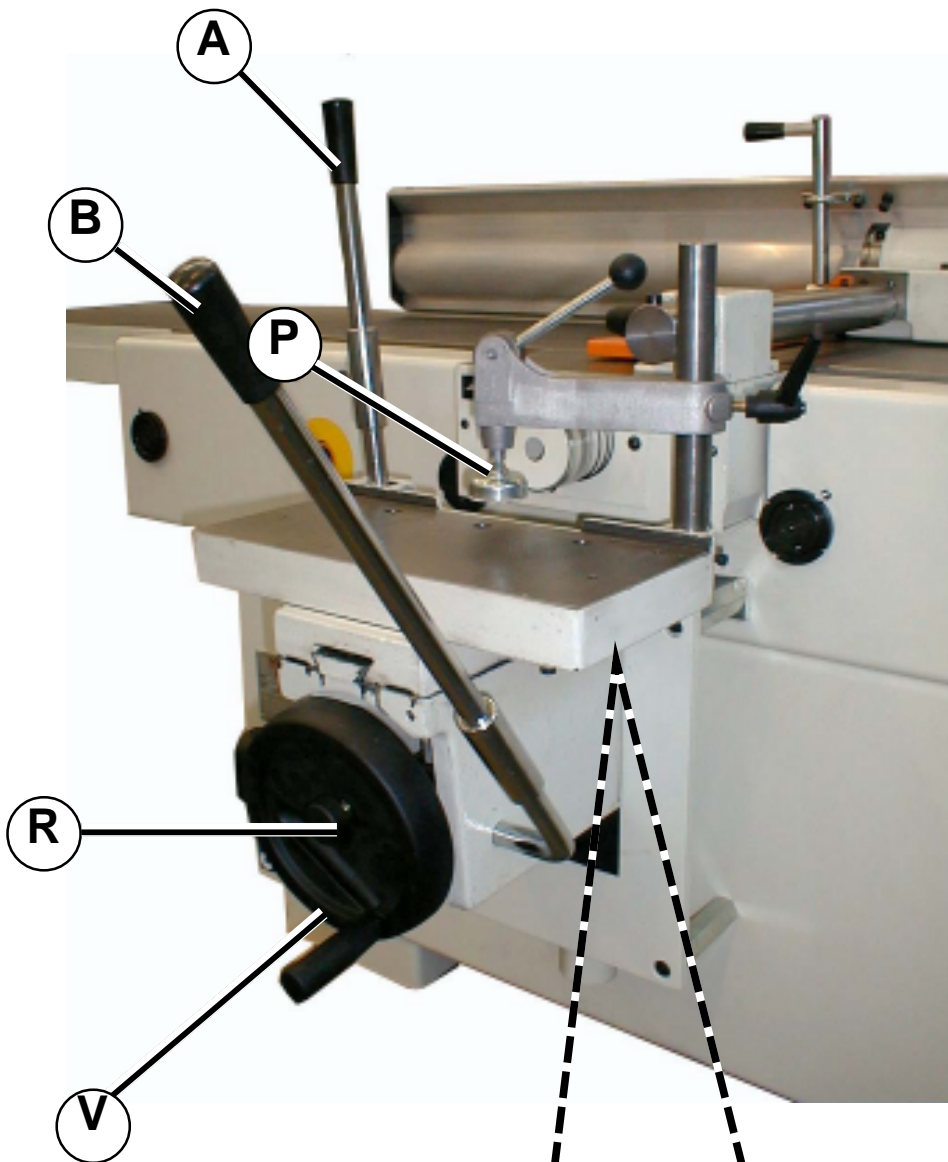
After adjusting tighten screws (D).

#### Height adjusting

Turn handwheel (V fig.10.3): to lock the handwheel operate on knob (R).

## SAFETY NOTES

- Always make sure that the workpiece is well clamped on the table.
- In case of long pieces use a support the height of which may be adjusted; if necessary fit a piece clamping device on the table.
- Work at a moderate feed speed with small strokes as the bit is brittle.
- To ensure the piece clamping set foot (P fig.10.3) 2 mm from the workpiece before lowering the lever.
- **As the bit rotates together with the cutterblock after the mortiser use you have to demount the bit as it is not protected.**
- **Before starting working make sure that the cutterblock is totally covered by the bridge guard or by the fence and its rear guard moved to the operator as much as possible.**




10.3



## SECTION 15

### CUTTERBLOCK GUARD

Bridge guard .....	15.2
15-1 Description (fig.15.1).....	15.2
15-2 Fitting .....	15.2
15-3 Examples of safe operation .....	15.6
15-4  Safety notes .....	15.14



## BRIDGE GUARD

It protects the cutterblock during the surfacing.

It is possible to reduce the overall dimensions of the guard: in that case pull the end and bend it downward as indicated in figure 15.1.

### 15-1 COMPONENTS (FIG.15.1)

- A) Bridge
- B) Knob for locking the bridge
- C) Height adjusting knob (max. height 75 mm)

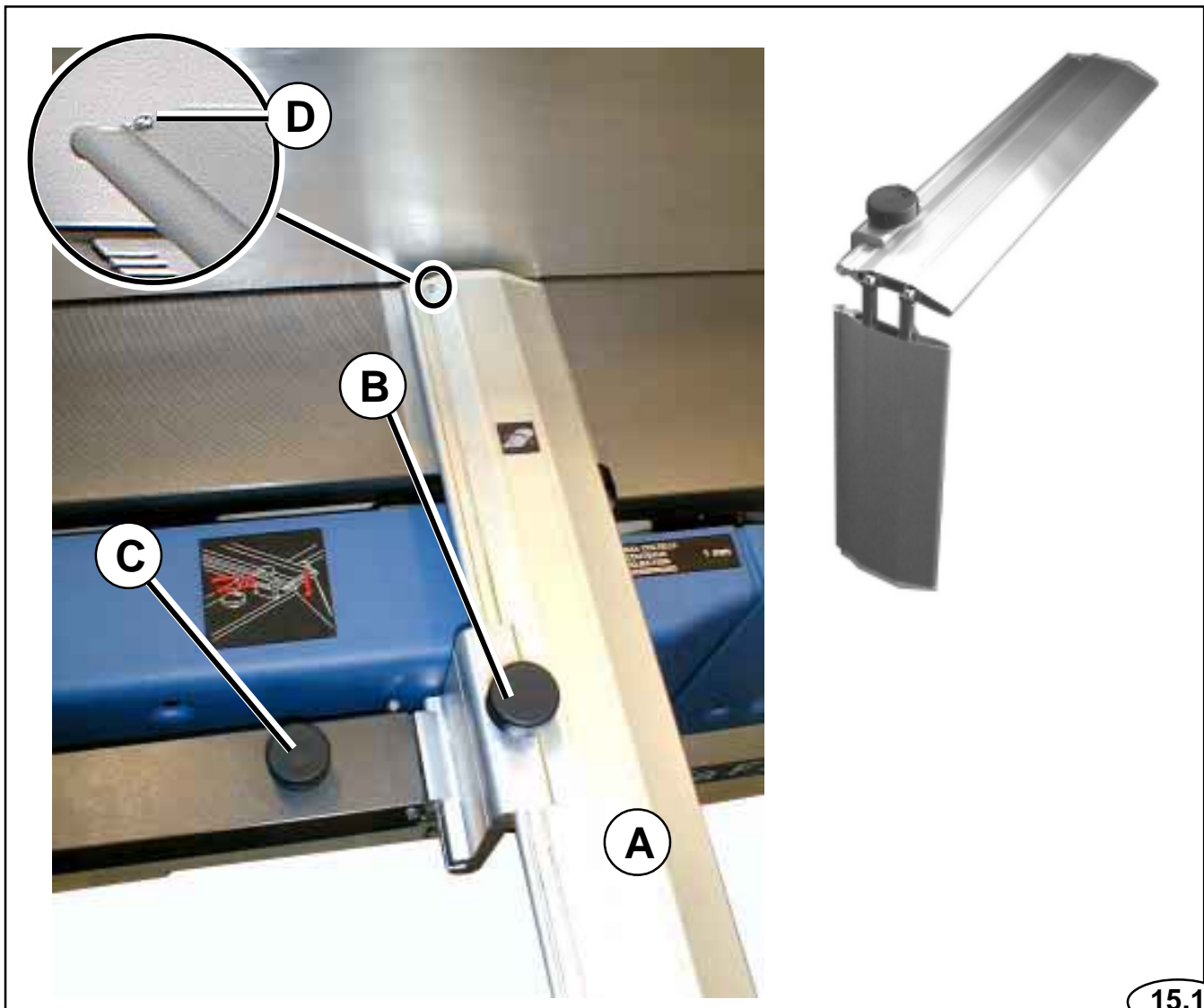
### 15-2 FITTING

For transport requirements the bridge is demounted.

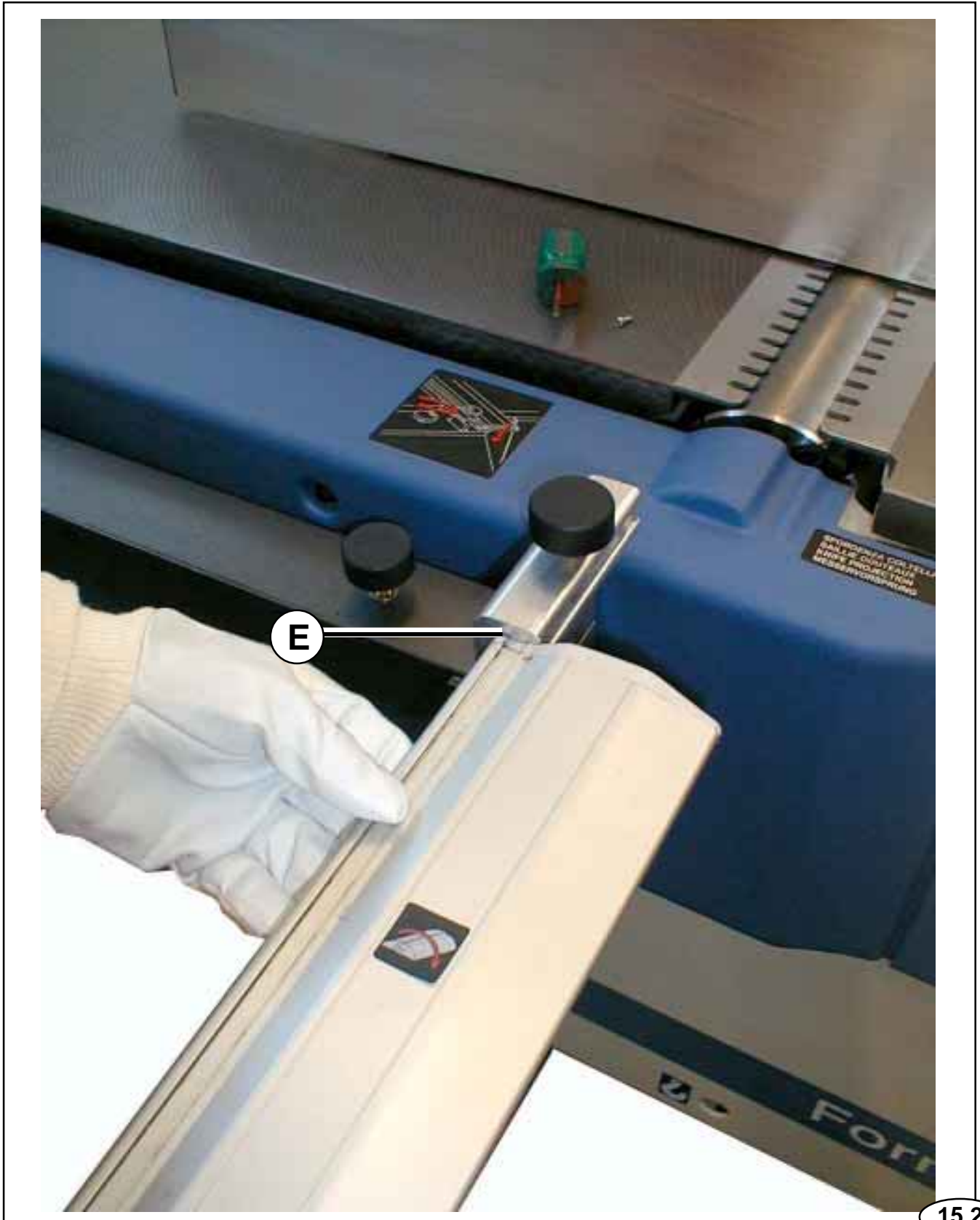
To fit it:

- Loosen knob (B fig.15.1)
- take off screw (D fig.15.1)
- fit the bridge into into support (E fig.15.2) and move it until the cutterblock is covered.
- screw down screw (D fig.15.1)
- tighten knob (B fig.15.1).

The guard has been adjusted at factory during the machine test.



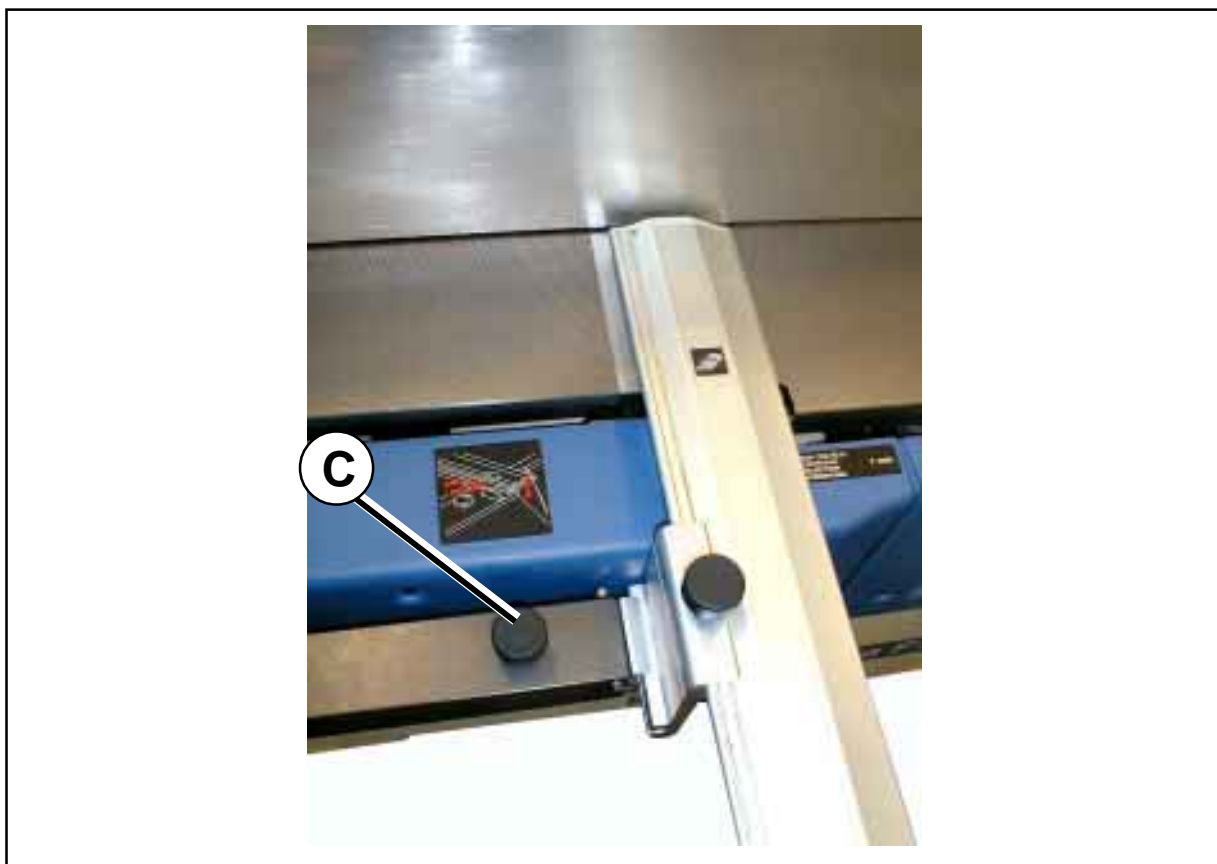
15.1



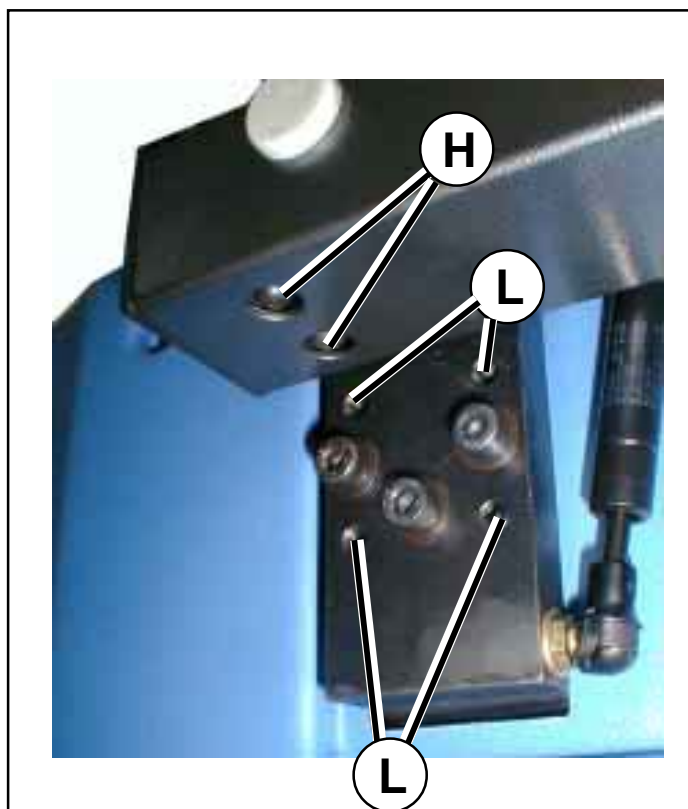
15.2

If a further adjusting is required proceed as follows:

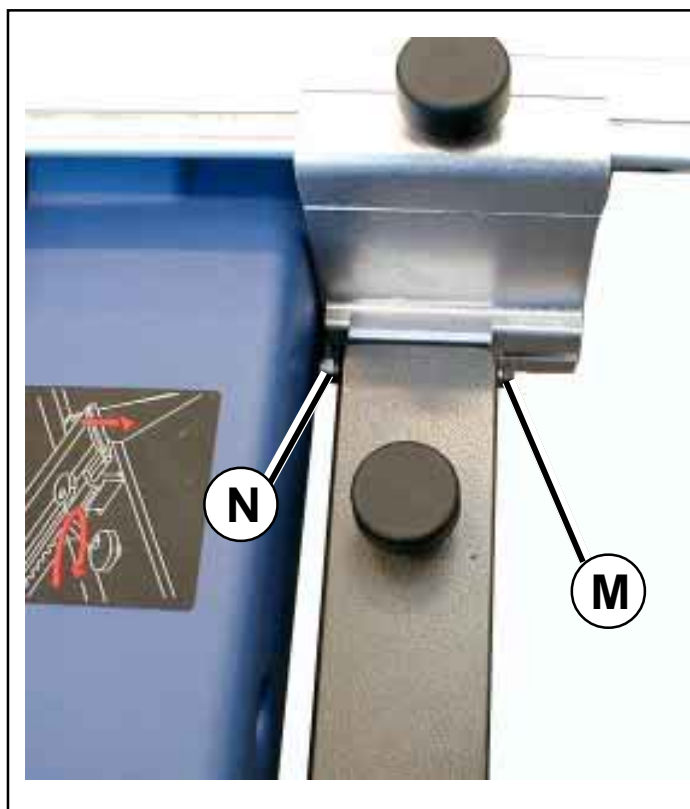
- adjust the bridge with screws (H fig.15.4) so that it remains parallel to the worktable when you raise it by turning knob (C fig.15.3).
- to set the bridge parallel to the worktable operate on grub screws (L fig.15.4)
- with screw (M fig.15.5) and counter nut (N) adjust the bridge parallel to the cutterblock axis.



15.3



15.4



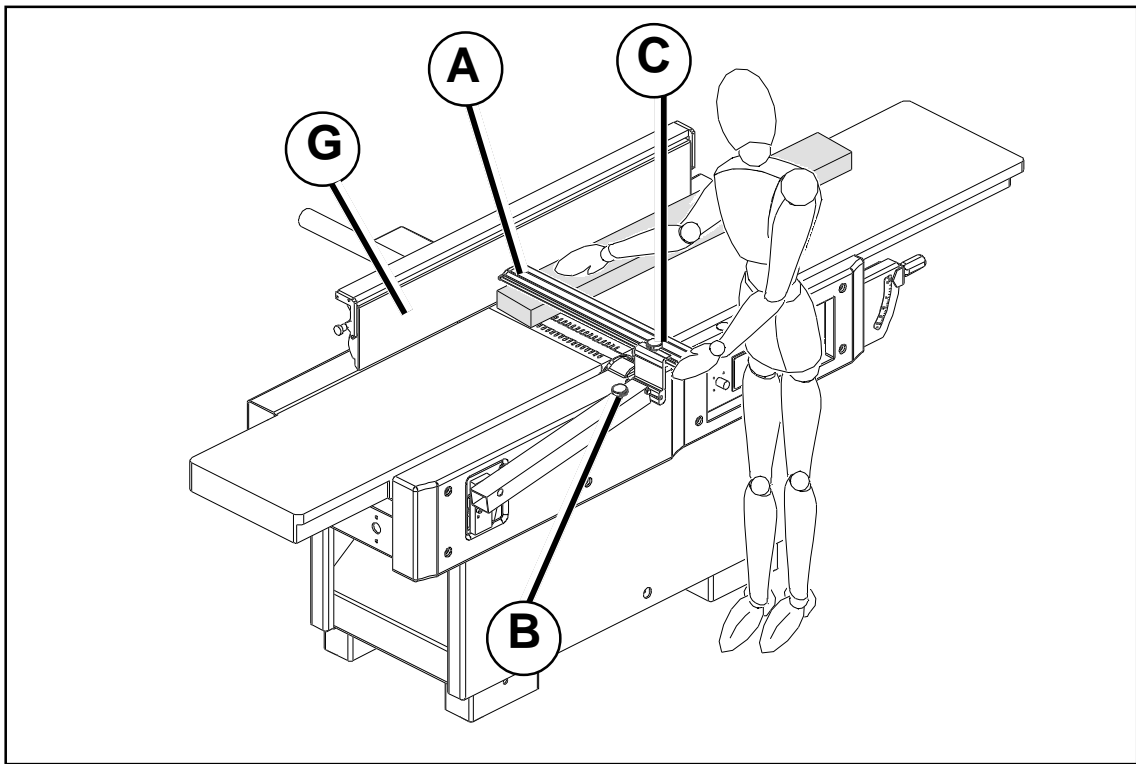
15.5

## 15-3 EXAMPLES OF SAFE WORKING

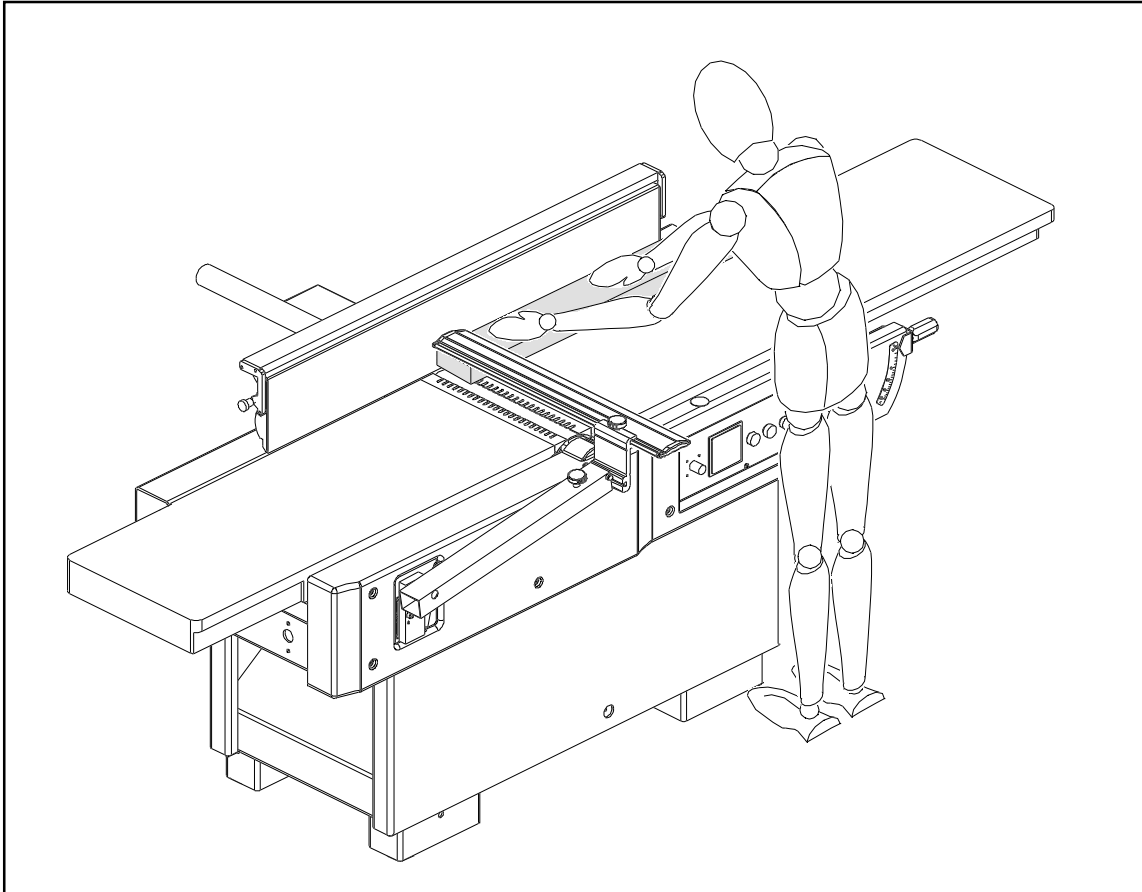
The guard adjusting shall always be carried out with the motor off.

### SURFACING PIECES OF THICKNESS LESS THAN 75 MM

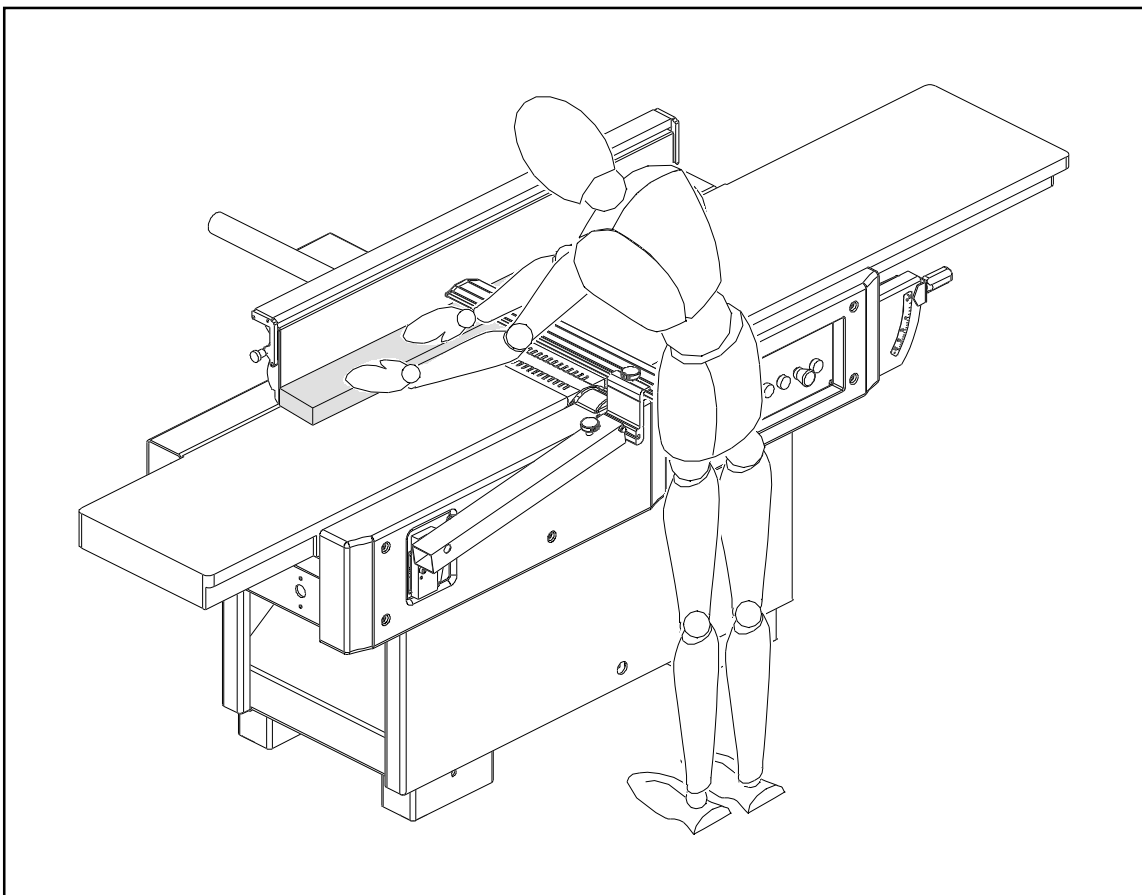
- Loosen knob (C) and rest bridge (A) against fence (G), then lift bridge (A) with knob (B) at the height equal to the piece thickness.
- Rest the piece against the fence and move it forwards with the right hand in order to fit it under the bridge of the guard (fig. 15.6).
- Push the piece forward (from the inlet table) (fig. 15.7) by keeping the hands flat on the piece.
- As soon as possible beyond the guard bridge press the piece with both hands to continue the piece feed (fig. 15.8).



15.6



15.7



15.8

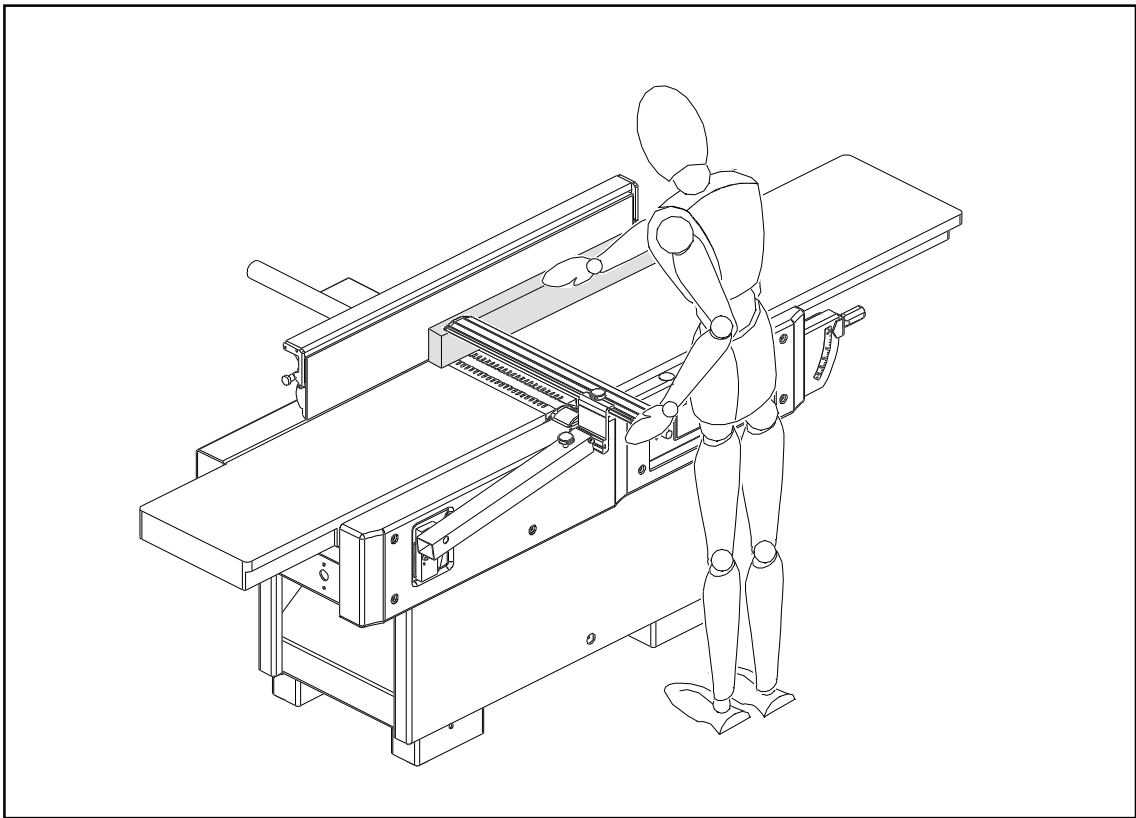
**STRAIGHTENING (FIG.15.9-FIG.15.10)**

- Rest the piece against the fence and move it forwards with the right hand in order to reach the front edge of the inlet table lip.
- With the left hand move the guard bridge so that it touches the piece. The bridge shall rest on the outlet table (fig.15.9).
- Press the piece against the fence towards the outlet table by keeping the left hand for example with the clenched fist and the thumb on the piece.  
With the right hand move the piece forwards in order to get a regular motion (for example clenched fist and thumb on the piece fig.15.10).

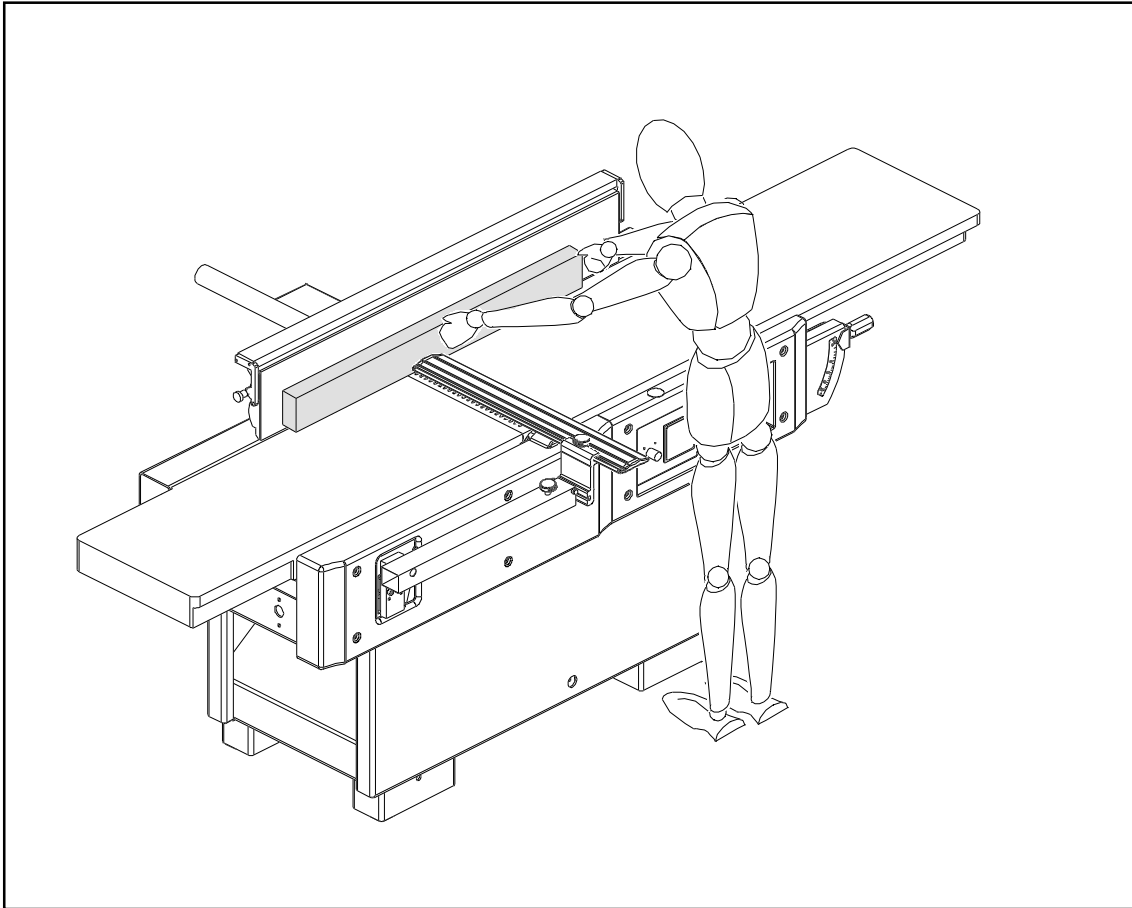
**SURFACING AND STRAIGHTENING PIECES WITH THICNESS OVER 75 MM (FIG.15.14)**

Lower the bridge of the guard on the tables and set it in horizontal position to the work piece.

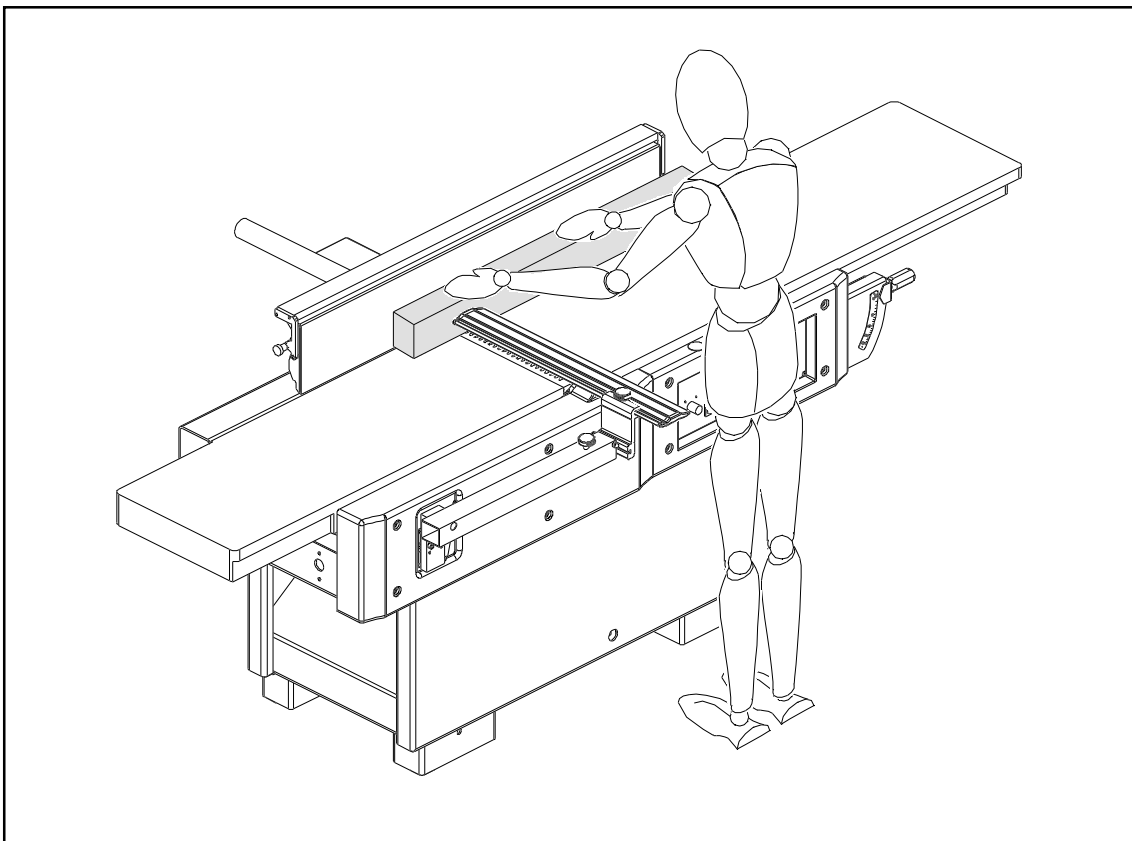
- Move the piece along the fence with regular motion by keeping the hands flat on the work piece: see fig.15.11.



15.9



15.10



15.11



## **SURFACING PIECES OF SQUARE SECTION**

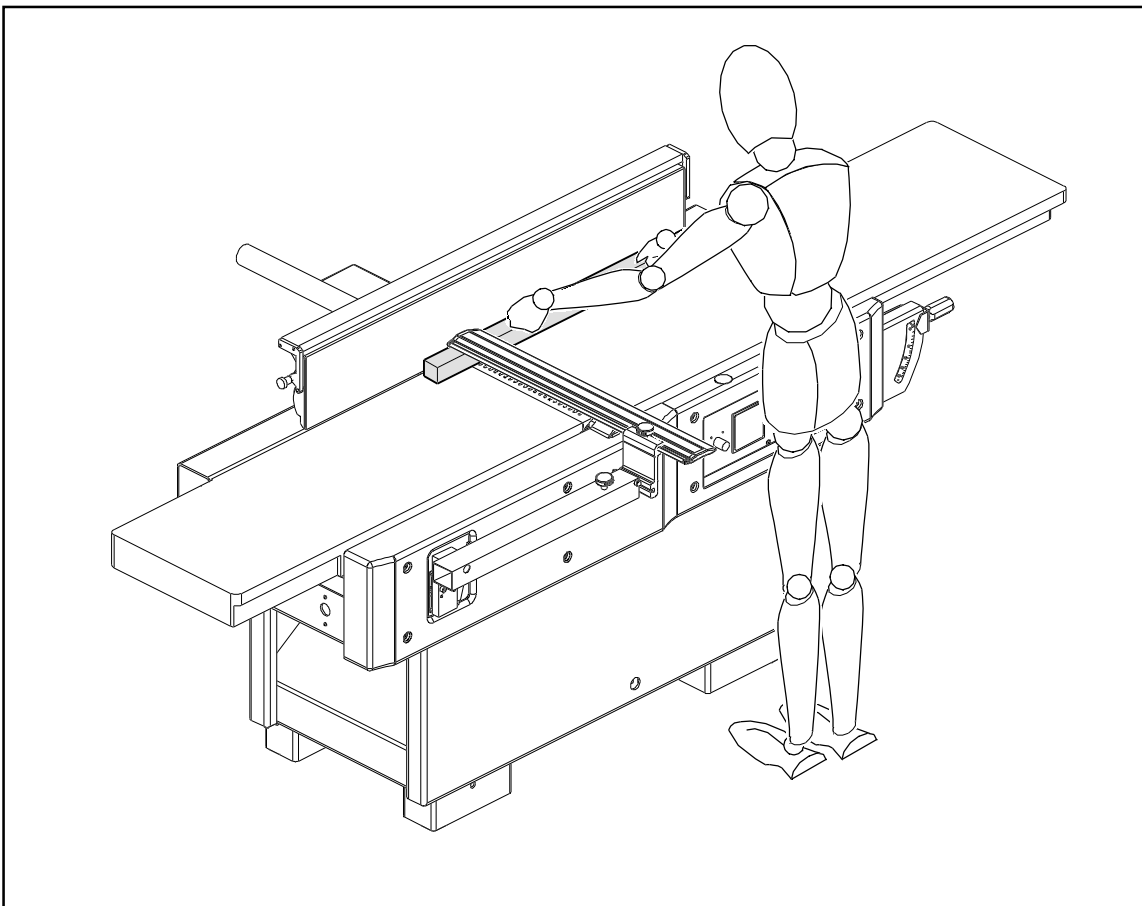
- Rest the guard bridge on the piece (fig. 15.12) and against the fence.
- Move the piece forwards by keeping the fingers bended.

## **SURFACING SHORT PIECES (FIG.15-13)**

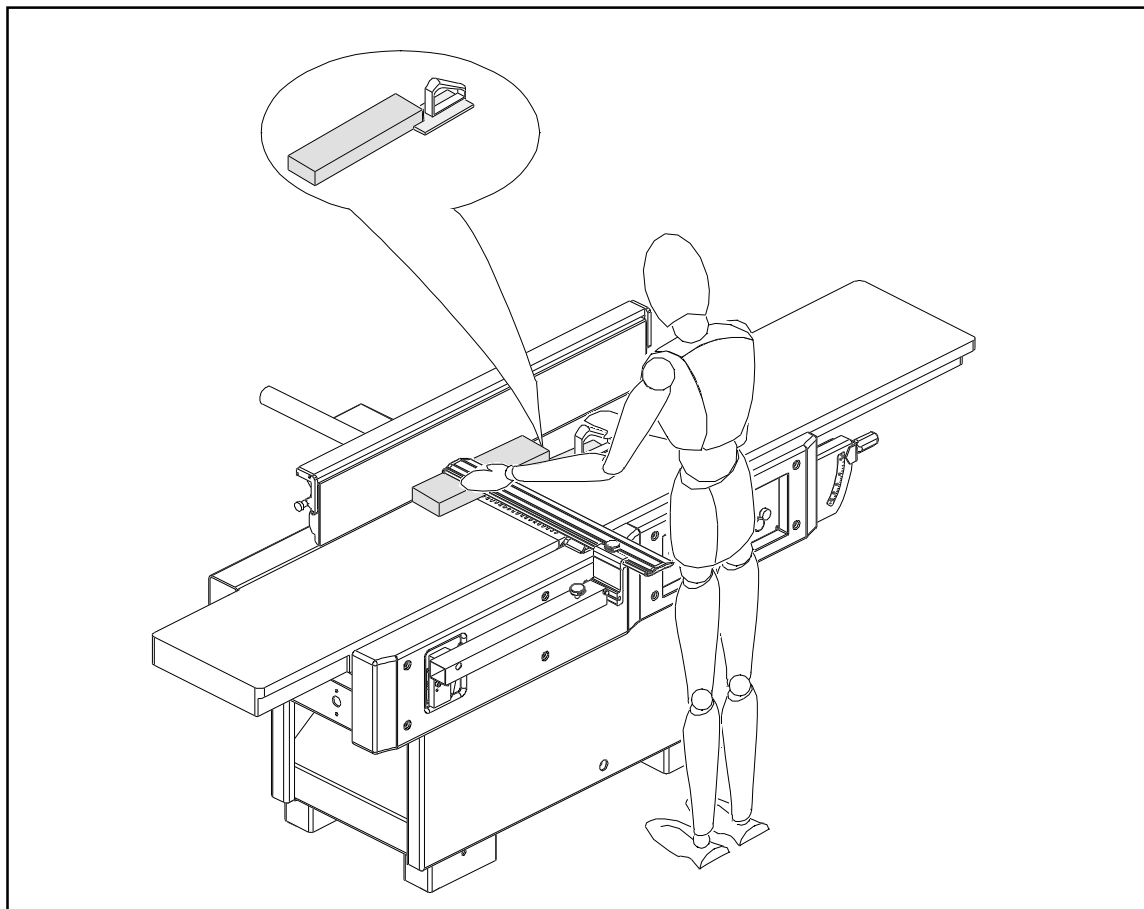
- Press the guard bridge on the piece by keeping the hand flat and move the piece forwards with the right hand by using a pusher.
- Rest the left hand on the guard bridge and as soon as the workpiece rests on the outlet table  
The pusher thickness shall be smaller than the workpiece one.

## **STRAIGHTENING SHORT PIECES (FIG.15.14)**

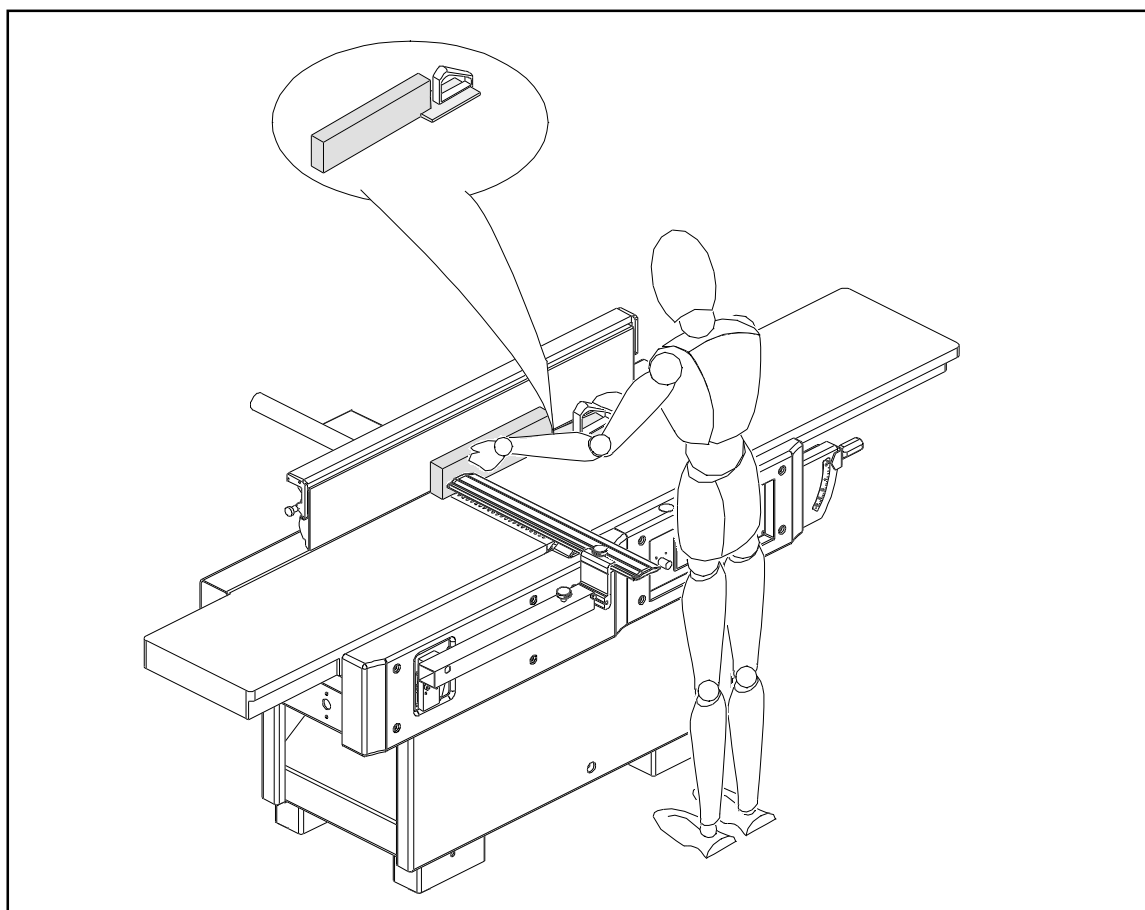
- Move the piece along the fence and towards the outlet table by keeping the left hand with clenched fist, then with the right hand push the workpiece by using a pusher.



15.12



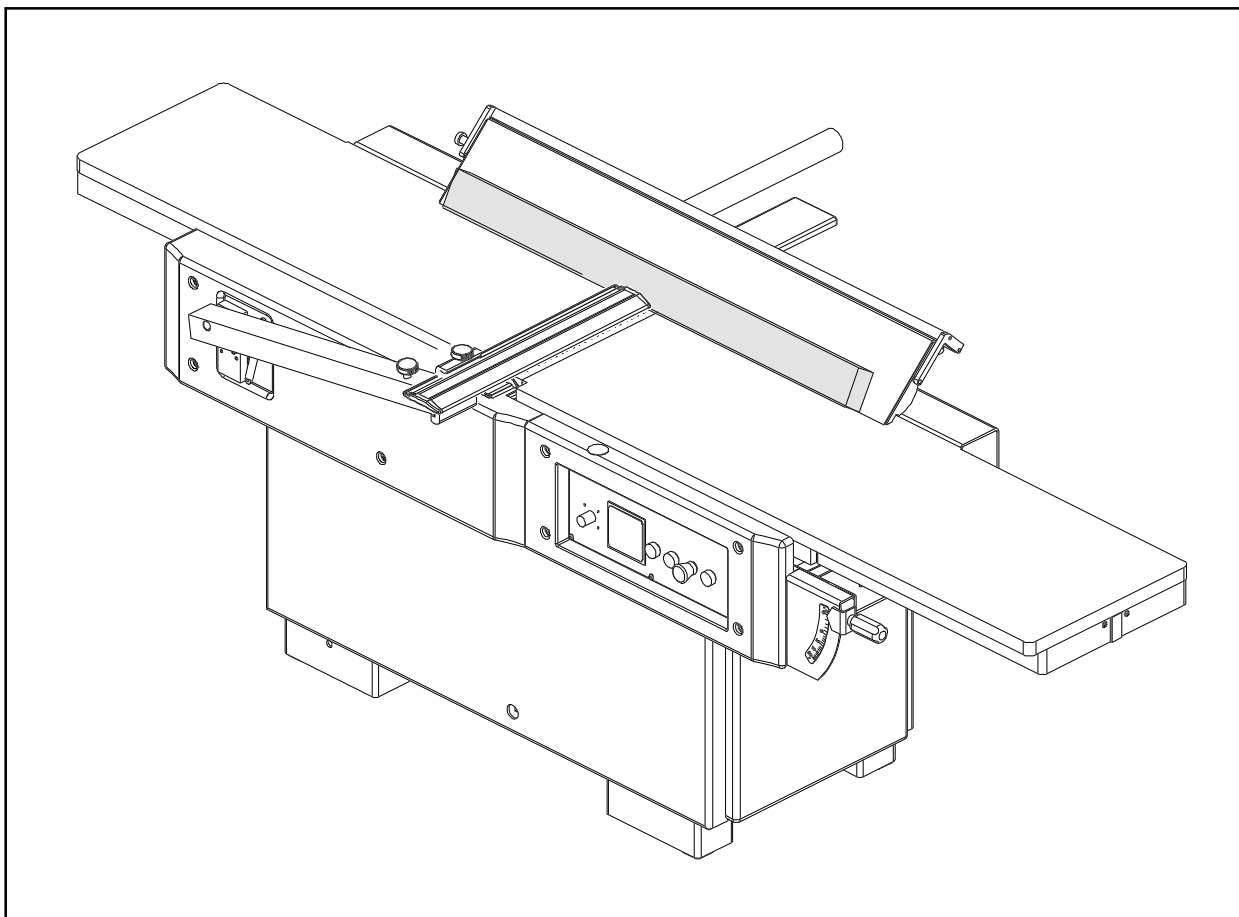
15.13



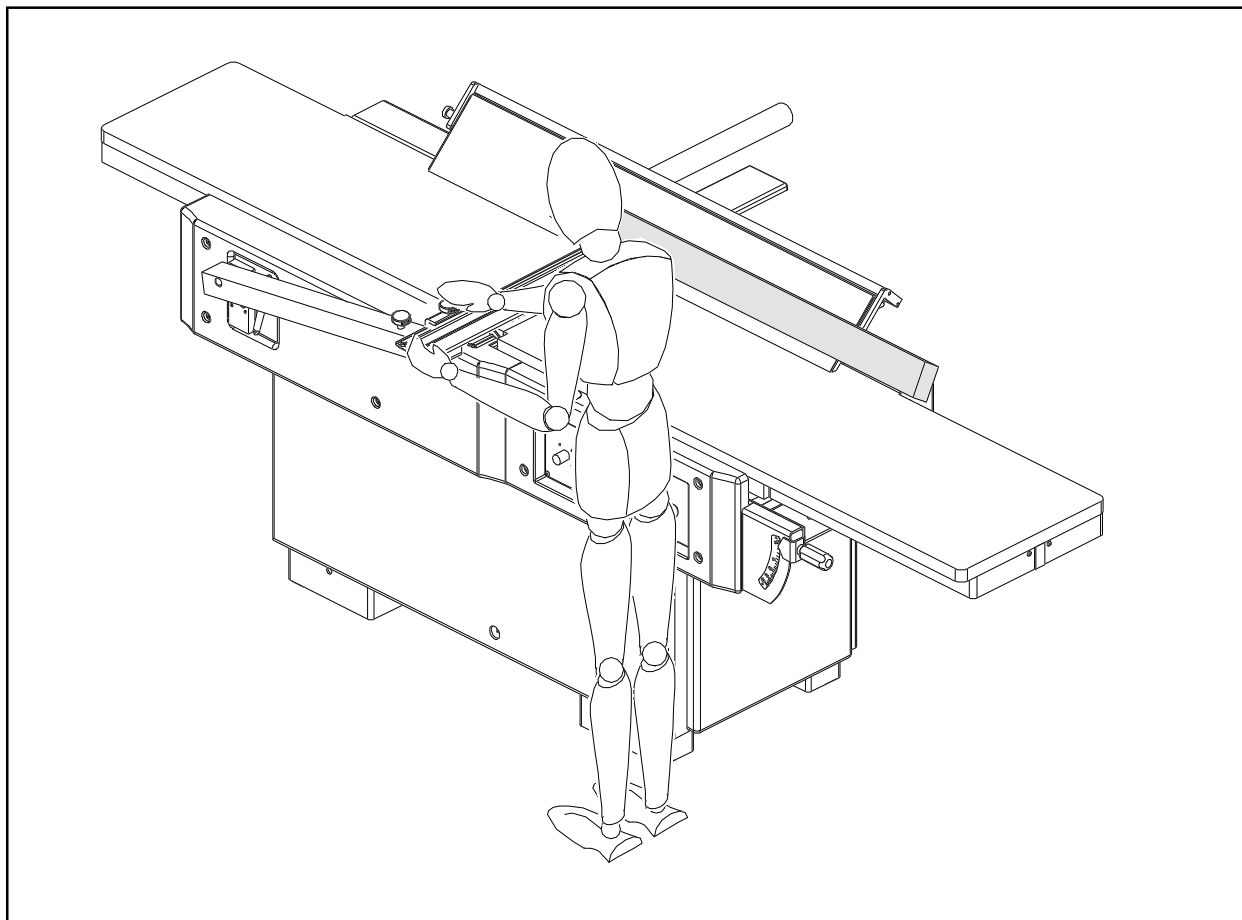
15.14

### **CHAMFERING ALONG THE FENCE**

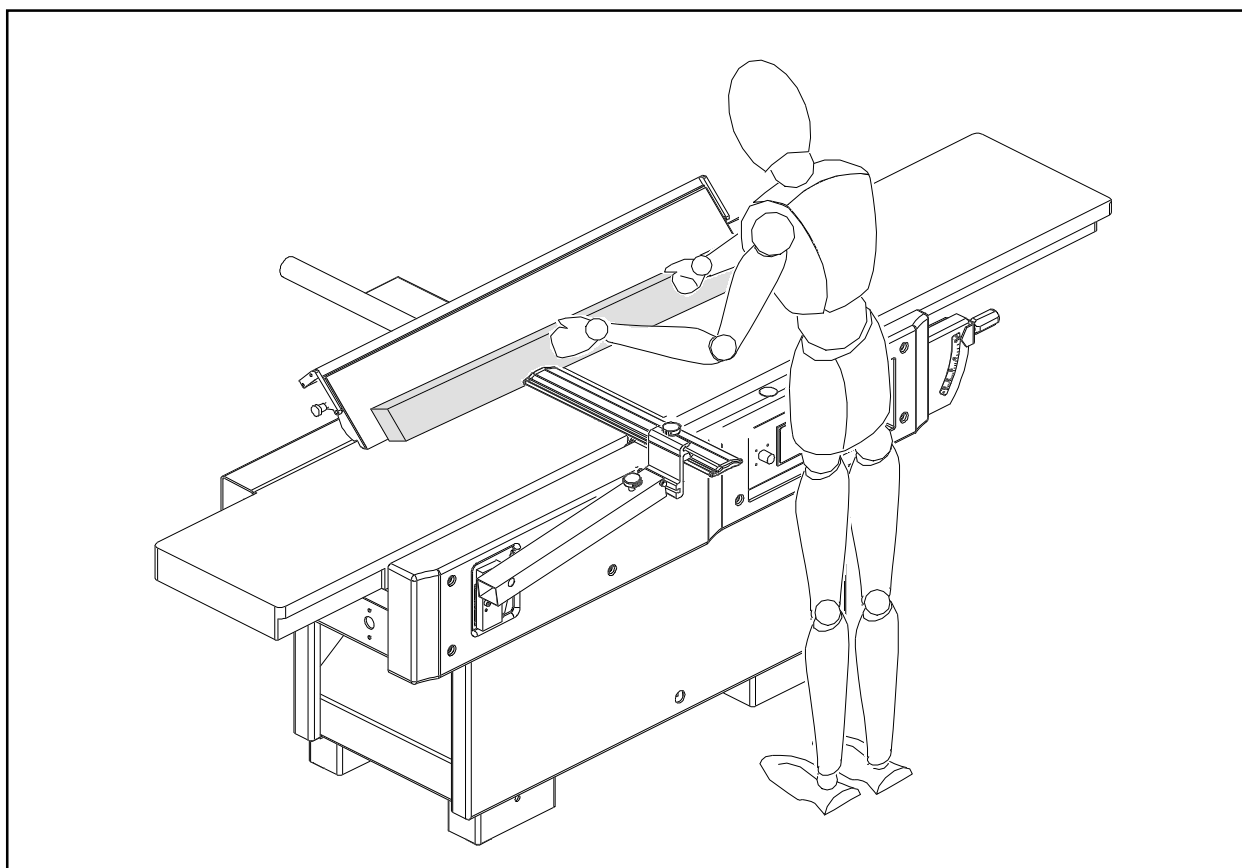
- Rest the workpiece with the right hand against the slanting fence.
- Set the workpiece and the guard: see fig.15.15.
- Adjust the guard bridge in horizontal direction with the left hand so that it touches the workpiece.
- Clamp the locking lever with the right hand: in this way the bridge is laterally locked and the piece can not slide from the fence (fig.15.16).
- Let the workpiece move forward along the fence and the outlet table by keeping the hand with clenched fist, push the workpiece forwards with the clenched right fist (fig.15.17).



15.15



15.16



15.17

## **CHAMFERING WITH TEMPLATE**

The template is necessary for chamfering short edges and may be used also for long edges.

- Fasten the template to the fence (for example by means of clamps).
- Adjust the guard bridge in horizontal direction to the template (fig. 15.18) and laterally clamp the bridge by the proper lever.
- Hold the workpiece firm with the left hand and let it move forwards with the right hand by using a pusher.

## **15-4 SAFETY NOTES**

Keep the machine edges clean and free. Take a safe position to carry out the working.

Remove the chips from the tables by using a wood piece better than your hands.

Set the bridge guard in contact with the tables.

In case of seepage of chips inside the machine or in in the suction hood before intervening switch off the machine and lock the main switch.

To improve the sliding of the pieces treat the tables with paraffin or other proper product.

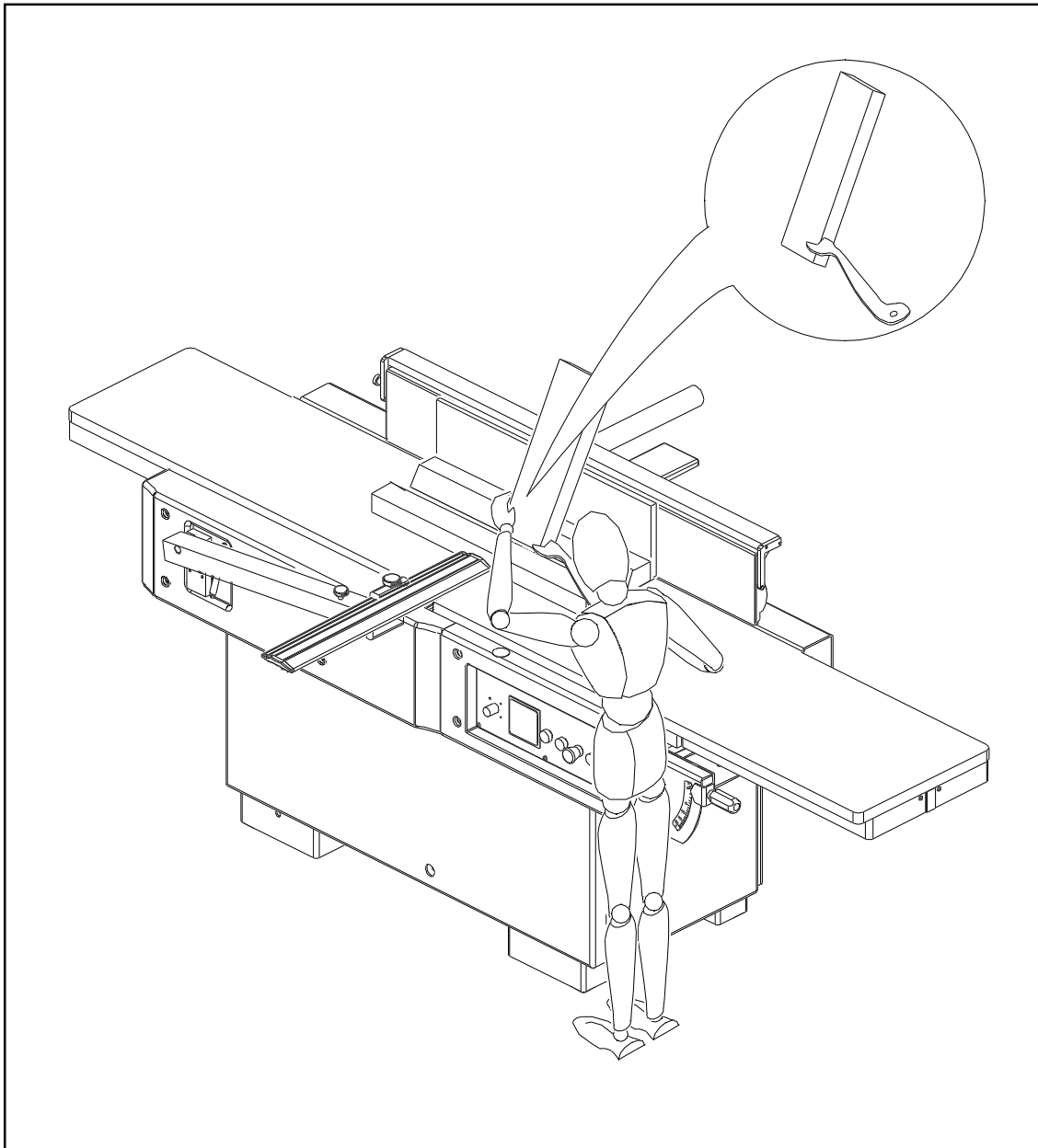
The guard serves as a safety shield: the piece is pressed at the level of the outlet table and not on the guard bridge.

Place the piece with the concave side towards the tables; do not machine pieces with arched shape and other defects (clefts, knots etc.) or foreign elements (nails, clips etc.).

In case of pieces of small section use pushers for the workpiece exit.

Make sure that the pieces are firm and use a support (not supplied by Mini Max ) behind the outlet table for long pieces.

During the working of very thin panels against the fence lock the bridge of the guard as near the panel as possible to hinder the panel turnover.



15.18



# **SECTION 19**

## **AUTO-BRAKE MOTOR**



## 19-1 AUTO-BRAKE MOTOR

At least every 2 months or 500 stop, check and adjust the electromechanic braking device illustrated in fig.19.1. Before carrying out any intervention on the motor, shut off the power by turning the padlockable main switch to 0.

### Electromagnet brake clearance

Distance between electromagnet and mobile core is called “air gap” and is adjusted during device construction. Adjustment is required only in case of replacement of mobile core having glued to its surface a brake disk of friction material being subject to wear .

Wear limit of friction disk is 3 mm.

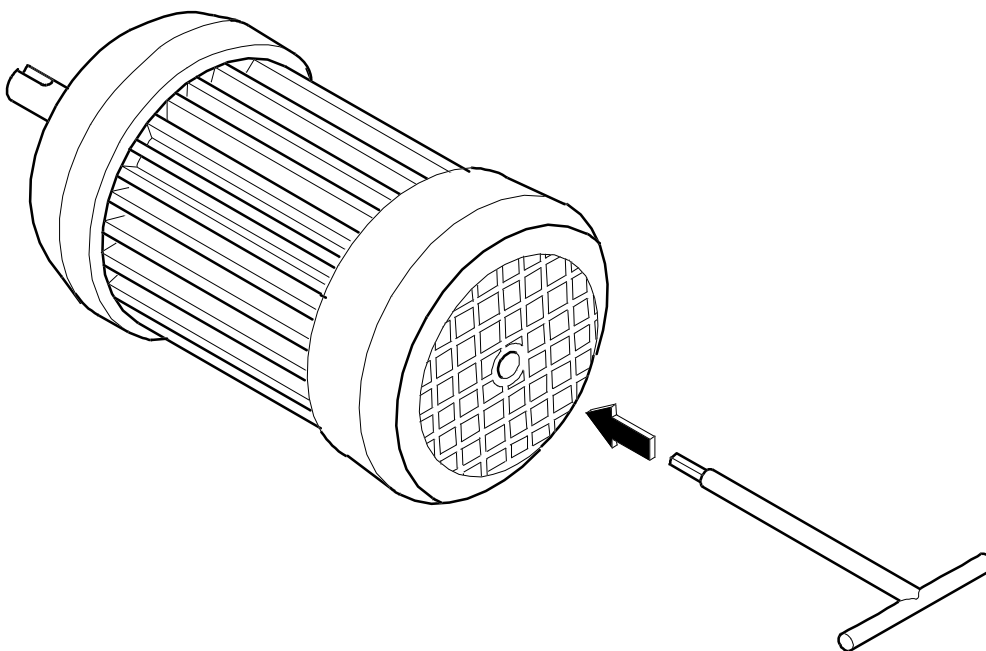
Replacement is to be carried out only by technicians of SCM dealer.

### Adjustment of braking unit

Braking efficacy reduction can be noticed by the increase of the time required to fully stop the cutterblock/spindle (max. time 10 seconds) in case of tool of max. size and at the maximal permitted speed.


To reset the best braking torque proceed as follows:

- insert an 5-6 mm Allen wrench into the hole on cover for the fan in order ot reach the adjusting screw.
- progressively screw down screw in order to join the mobile elements and to eliminate distance (brake clearance).
- unscrew screw by min. 1/4 turn (max. 1/3 turn) (corresponding to about 0.4mm air gap)
- start and stop the motor a few times to check the correct running.




## SECTION 20

### MAINTENANCE

20-1	Machine cleaning .....	20.2
20-2	Lubrication .....	20.2
20-3	 Check of safety devices .....	20.6
20-4	Machine removal - storing - demolition .....	20.7
20-5	Emergency conditions .....	20.7
20-6	Belt stretching .....	20.8
20-7	Troubles - causes - what to do .....	20.10

## 20-1 MACHINE CLEANING

 **Before carrying out cleaning and maintenance operations, adjustments or replacement of any machine member turn the main selector to 0, indicate so with a sign and lock the main switch.**

The periodic cleaning of the machine ensures the long life of the machine and is an important safety factor.

### Here are some rules:

Every evening by using a proper aspirator clean:

- the motor housing to free it from chips.
- the tables and the cavities where you see dust and chips.

Weekly clean all moving parts specially the ones exposed to the resin and dust by using terentine or proper and not dangerous solvent.

- Clean the fence sliding bar (D fig.20.3)
- Clean the slideways (A fig.20.1) of bridge guard

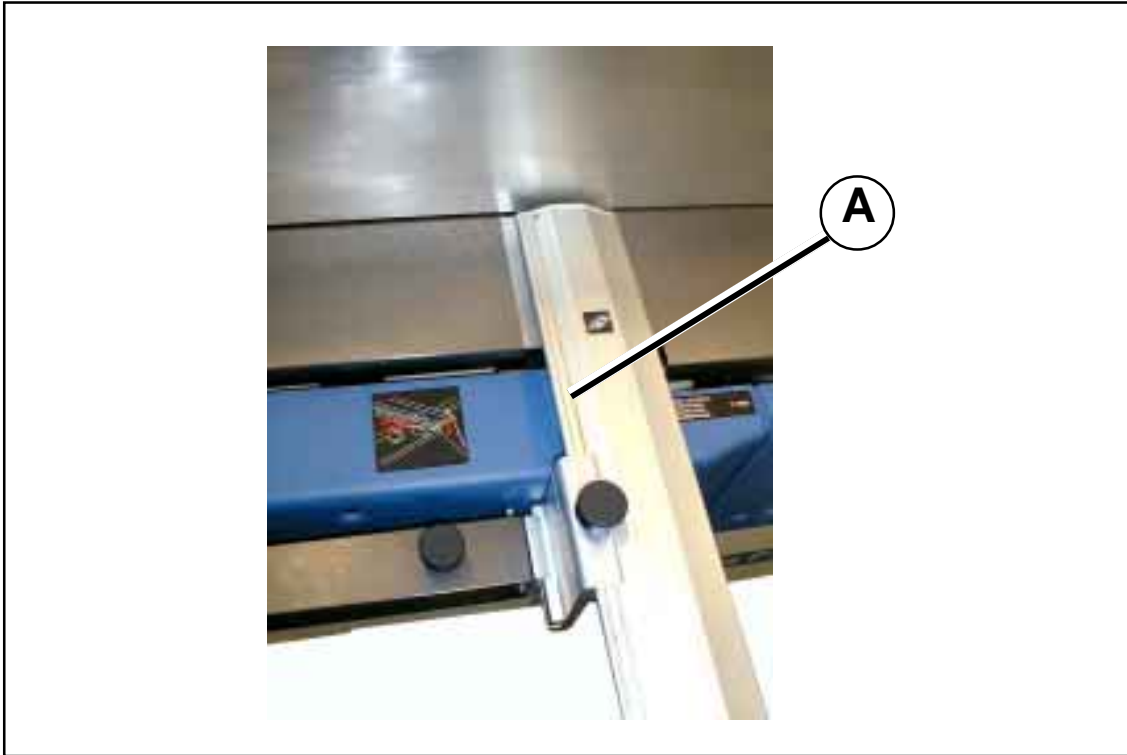
## 20-2 PERIODICAL LUBRICATION

The careful lubrication ensures the long life and the best performance of the machine.

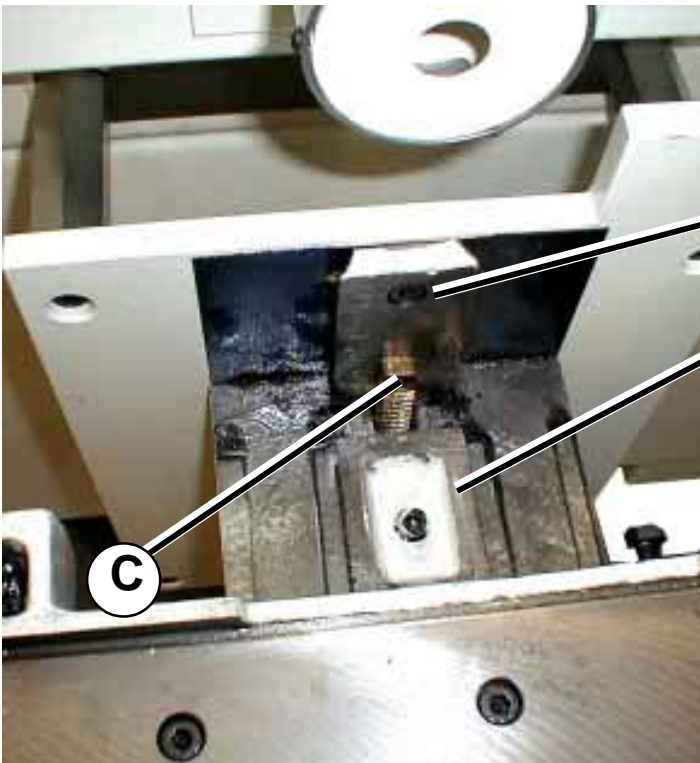
*Weekly lubricate with grease here indicated:*

AGIP	GR MU EP1
ARAL	ARALUB HL1
BP	GREASE LTX1
ESSO	BEACON EP0
KLÜBER	CENTOPLEX 1
MOBIL	MOBILPLEX 46
SHELL	SUPER GREASE EP1

- dovetail elements (B) for sliding of the mortiser (OPT) fig. 20.2
- rack (C) for vertical sliding (OPT) fig.20.2



20.1



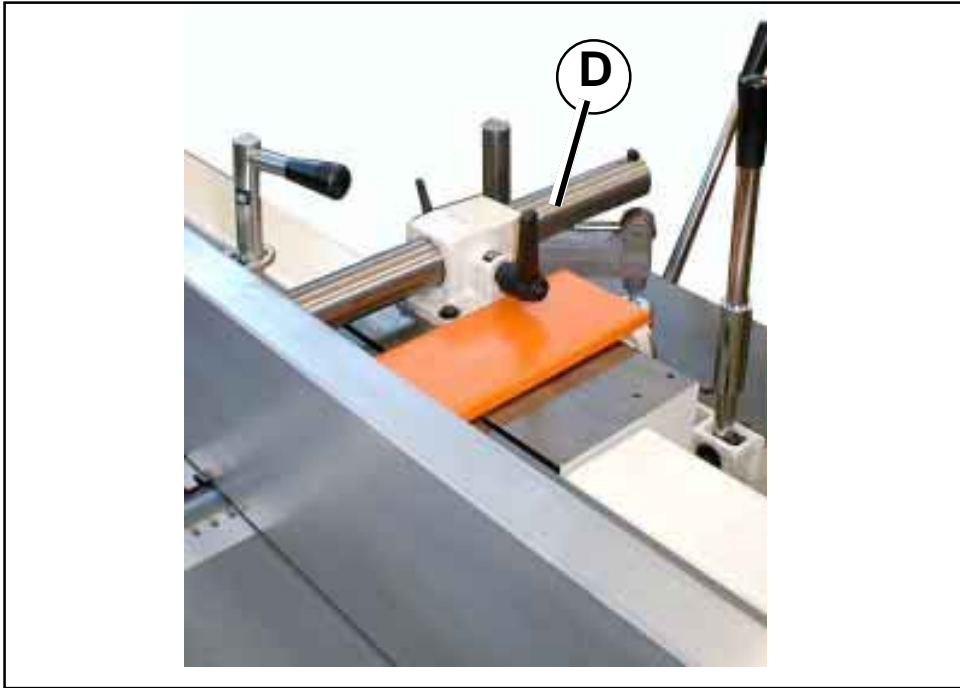
20.2

Lubricate with oil here indicated :

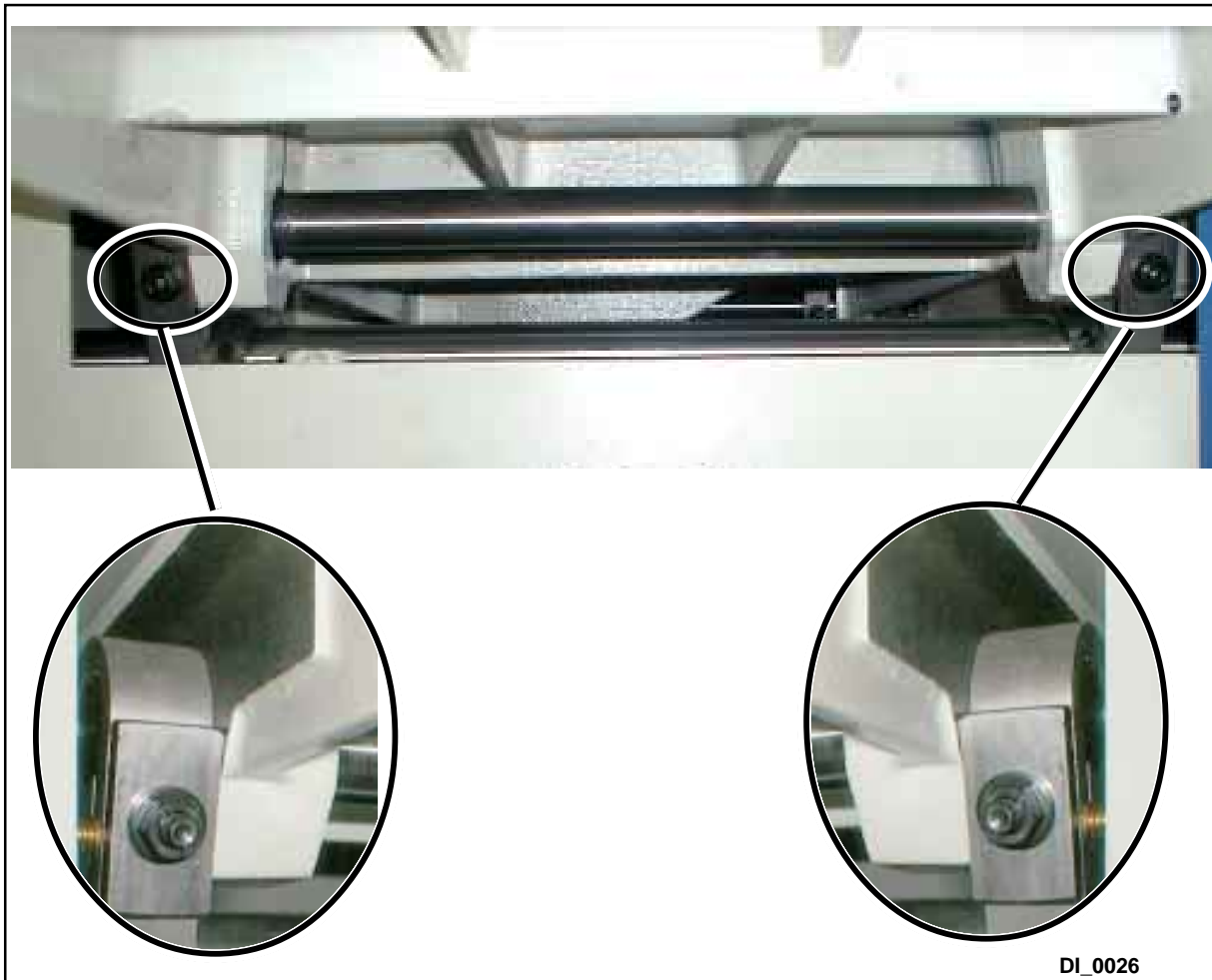
AGIP	EXIDIA 220
ARAL	DEGANIT B 220
BP	ENERGOL GHL 220
ESSO	FEBIS K 220
KLÜBER	LAMORA SUPER POLADD 220
MOBIL	VACTRA OIL N° 4
SHELL	TONNA OIL T220

- the sliding bar (D) of the fence fig.20.3
- the articulated joints of the inlet table arranged under the table fig.20.4

As all bearings of the machine are sealed and lubricated, they do not require any lubrication .



20.3



DL\_0026

20.4

## 20-3 CHECKING THE SAFETY DEVICES

The safe operation of the machine is ensured by the safety devices: see SECTION 2.

**Every 2 weeks:** check the emergency stop control(s) of the emergency stop with a proper test: with the machine under normal operating conditions press emergency button (s): the motor shall stop.

Every 2 months or every 500 stops, check the motor braking time (max. time 10 seconds): for the adjusting see SECTION 19.

At the beginning of each work shift, check that the guards fitted to the machine properly operate and are efficient.

Check the the plates in particular the ones with yellow ground.

The responsible technician is to be informed about eventual troubles noted during the ckecking tests: in that case he shall switch off the machine and apply to Mini Max Technical Service.

## **20-4 MACHINE REMOVAL - STORING - DEMOLITION**

To remove the machine switch off the electric system.

If the machine shall not operate for long time switch off the electric system, carefully clean the machine as previously described then cover the worktable and cutterblock with rust preventer.

Do not store the machine in moist rooms and protect it against the atmospheric agents.

The materials used for the machine manufacturing are neither toxic nor harmful; in case of machine demolition before scrapping the materials separate the ferrous materials from the plastic ones.

## **20-5 EMERGENCY CONDITIONS**

In case of flooding of the room where the machine is installed immediately shut off the power supply.

Before beginning the working again, the machine shall be tested by a skilled technician.

In case of fire shut off the power supply and use extinguishers by spraying towards the flame base.

Even if you think that the machine has not be damaged before starting working the skilled technician shall test the machine.

As already said in par. 1-8 SAFETY RULES the working area around the machine shall be free from obstructions so that the machine operator can rapidly go away in case of danger.

The machine may not be used in explosive rooms.



## 20-6 BELT STRETCHING

At least three times a year check the belts of cutterblock.

To reach the motor housing take off cover (L fig.20.5).

The belt stretching is automatic. If it is necessary to stretch the belts more again operate on screw with nut (V fig.20.6).

The belt tension is right, when by applying a 3 kg force in the middle between 2 pulleys you get a 5 mm flexion.

### **FOR REPLACING THE BELTS:**

- Stop the machine as described in SECTION 3: turn main switch to zero (0), lock it and indicate that with a sign
- Take off the top screw and withdraw door (L fig.20.5)
- Unscrew screws (P fig.20.7)
- Take off cover (S fig.20.7) to reach the cutterblock pulley .
- Loosen screw (V fig.20.6).
- Lift the motor by levering on it.
- Replace the old belts with the new ones
- Set the motor to normal position.
- By means of screw (V fig.20.6) stretch the belts.
- Fit door (L fig.20.5) again and fasten it with the proper screw.
- Fit cover (S fig.20.7) again and fasten it with screws (P).

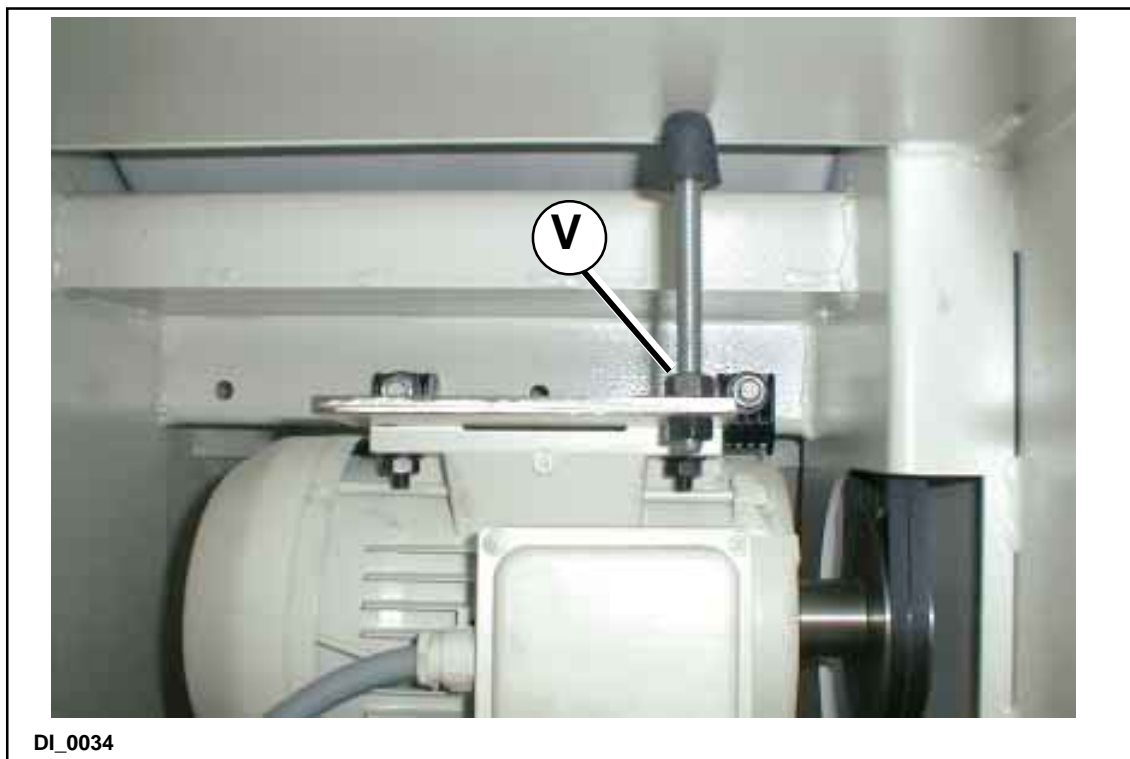
- NOTES:**
- 1) In case of wear or elongation of only one belt , you have to replace both belts. bisogna
  - 2) Never pair belts of different makers.
  - 3) Never use a new belt together with an old one.



After the first period of use or after many working hours the belts may get slack, this may cause an increase of the time required to stop the saw blade.

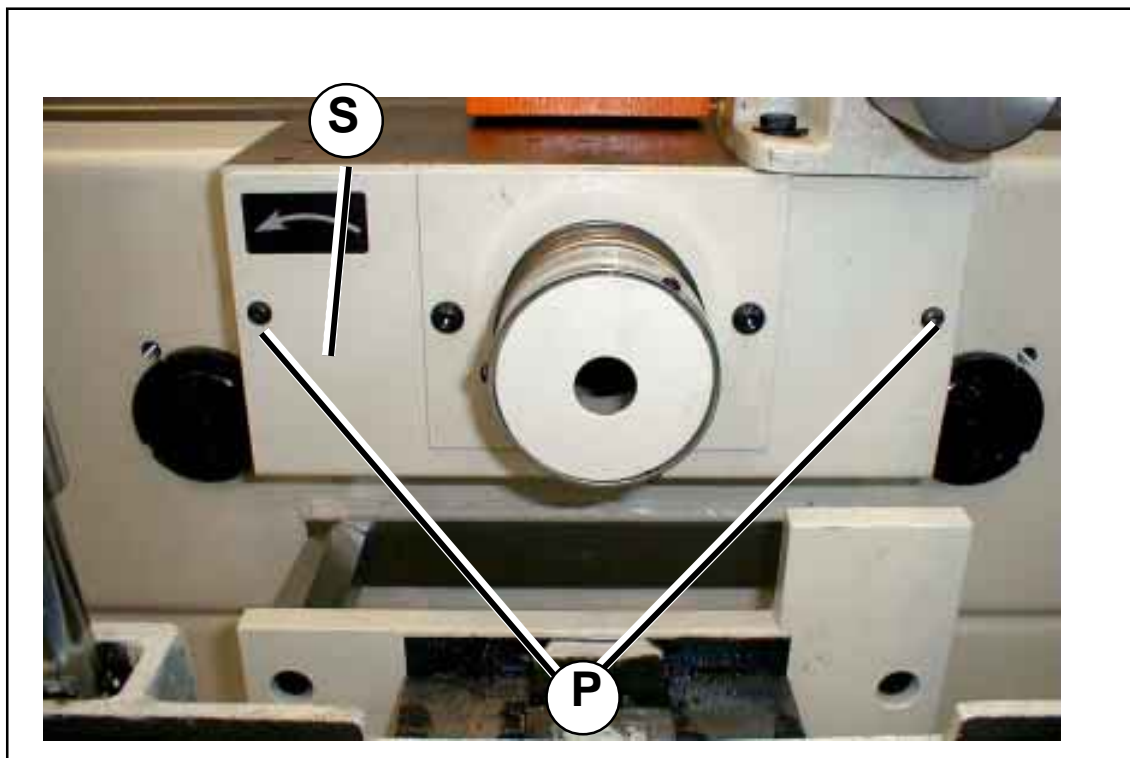


20.5



DI\_0034

20.6



20.7

## 20-7 TROUBLES - CAUSES - WHAT TO DO

This section indicates some of the solutions to faults which may occur during machine operation.

Before you attempt to repair an operating fault, read the fault finding guide and the relevant part of the manual.

For eventual problems not described in this section, contact the MINIMAX Technical Service .

### TROUBLE

The motor does not start

#### CAUSE

Main switch turned to 0

#### WHAT TO DO

Turn the main switch to 1

No power on one phase or more phases

Make sure that the 3 phases are hot


Fuses of auxiliary circuit to protect the transformer interrupted or fuse housing open

Close the fuse housing; if the machine does not start:

- open the fuse housing
- check the fuses, if necessary replace them (a set of fuses is in the accessories bag)

Emergency button pressed

Switch off the emergency button by turning it

Motor brake turned to 

Turn selector for brake release to  .

### TROUBLE

The machine stops during the working

#### CAUSE

No power on one phase or more phases

#### WHAT TO DO

Check that the 3 phases are hot

Fuses of auxiliary circuit interrupted or fuse housing slack

Close the fuse housing; if the machine does not start

- open the fuse housing.
- check the fuses, if necessary replace them (a set of fuses is in the accessories bag)

Too heavy duty working in comparison with the motor power or bad cutting conditions

Wait until the overload cutout is cold.

Reset it after some minutes. by turning the main switch to 0, then to 1.

Check the cutterblock knives, if necessary grind or replace them.

Belts worn or slack

Adjust or replace the belts: see par. 20-5.