

Code	Language
V20.1-202006	English



OPERATION AND MAINTENANCE



SURFACE PLANER



Tungsten 520

IMPORTANT

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



Always wear safety glasses when using woodworking equipment.






Always read the instructions provided before using woodworking equipment.

With this hand book we wish to give you all information regarding to the use and maintenance of the machine: in this way you are sure to protect the production as well as the equipments.



Keep this handbook for future information besides it shall always be with the machine.

Some images in this handbook not always correspond to the real machine version on condition that the information is always valid and the safe use of the machine is ensured.

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	

ABBREVIATIONS USED IN THE HANDBOOK

page	= page
fig.	= figure
par.	= paragraph
chap.	= chapter
i.e.	= example
ref.	= reference

SYMBOLS USED IN THIS HANDBOOK



OPTIONAL = devices indicated in list price available only upon request



Operator position



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. The information serves for qualified technicians.

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

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

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 hand book is dived in proper sections. To quickly find the subject, see the Contents.

GENERAL INFORMATION SECTION 1

1-1	Mail contact	5
1-2	Notes for the user	5
1-3	Machine identification	6
1-4	Conditions foreseen for the use and contrary directions	6
1-5	Use prohibitions	7
1-6	Residual risks	7
1-7	Operator's training	8
1-8	Safety notes	9
1-9	Specifications	12
1-10	Noise level	13
1-11	Overall dimensions	14

SAFETY DEVICES SECTION 1A**INSTALLATION SECTION 2**

2-1	Machine lifting and unloading	18
2-2	Positioning and leveling	18
2-3	Fitting the parts removed	20
2-3A	Fitting the mortiser	20
2-4	Electric connection and earthing	21
2-5	Connection to the suction system	23

CONTROLS SECTION 3

3-1	Control board	25
3-2	Emergency buttons	26
3-3	Electric housing	26
3-4	Machine start and stop	27
3-5	Auto - brake motor	27

SURFACER SECTION 4

4-1	Knife adjusting	29
4-2	Surfacing table adjusting	31
4-3	Fence	31

CUTTERBLOCK GUARD SECTION 5

5-1	Description	33
5-2	Examples of safe operation	33
5-2.1	Surfacing workpieces with thickness lower than 75 mm	33
5-2.2	Surfacing and straightening workpieces with thickness over 75 mm	35
5-2.3	Surfacing workpieces of square section	36
5-2.4	Surfacing short workpieces	36
5-2.5	Straightening short workpieces	36
5-2.6	Chamfering along the fence	37
5-3	Safety notes	39

MAINTENANCE SECTION 6

6-1 Machine cleaning 41

6-2 Lubrication 41

6-3 Check of safety devices 42

6-4 Machine removal - storing - demolition 42

6-5 Emergency conditions 42

6-6 Autobrake motor 43

6-7 Belt repacing 44

6 8 Belt stretching 45

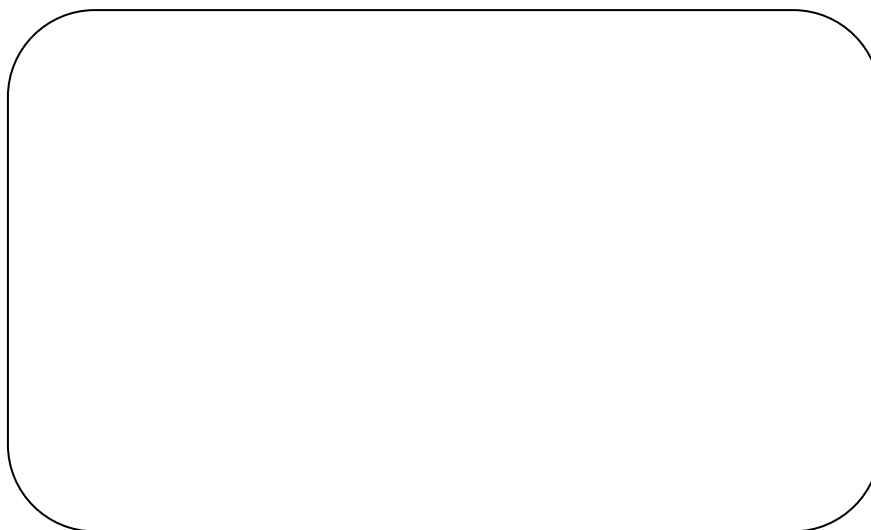
6-9 Troubles - causes - what to do..... 46

1-1 MAIL CONTACT

Writing or telephoning to the dealer 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

Dealer or Manufacturer's information:



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 original 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.*

1-3 MACHINE IDENTIFICATION

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

Macchina <i>Machine</i>	_____
Modello <i>Model</i>	_____
Anno <i>Year</i>	_____
Matricola N° <i>Serial N°</i>	_____
Kg.	_____
Volt.	_____
Hz.	_____
kW.	_____

1.2

1-4 CONDITIONS FOREESEN FOR THE USE AND PROHIBITIONS

The machine has been designed for surfacing solid wood pieces, plywood panels and block boards ; 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 (of the work piece under the guard)	75 mm
Max. length	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 the manufacture)
Max. width	520mm
Min. thickness	10mm
Min. length	150 mm: we recommend the use of pushers (not supplied by the manufacture) (WARNING: never machine workpieces with smaller size)
Min. width	10 mm: we recommend the use of turn over additional fence (WARNING: never machine workpieces with smaller size)

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 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 cutter block 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 cutter block.

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 before starting any working and carry out periodical tests on 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- Never machine pieces too small or too big for the machine.
See relative paragraph "**DIMENSIONS OF WORKPIECE TO BE CUT**".
- 5- Do not machine pieces with evident defects (bending, splittings, knots, metallic parts,...).
- 6- Before fitting the knives make sure that the rest surface on each face are clean, free of dents and perfectly flat.
- 7- The fitting and adjusting of the knives shall be carried out with the machine off.
- 8- The adjusting of the guard and of the fence shall occur with machine off.
- 9- Make sure that the knives are balanced, sharp and well clamped.
- 10- Fit the knives in the right working direction.
- 11- Use tools which are in compliance with EN847-1 norm and proper for manual feed.
- 12- Work only when all guards are in place and efficient.
It is forbidden to use the machine if such conditions are not kept.
- 13- Start working only when the cutter block has 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.
The machine shall operate only with the suction system on.
- 16- Test working to check the cutter block adjustment may not be carried out without the guards required.
- 17- Never try to remove waste or other parts of the piece from the working area while the machine is running.
- 18- For the piece feed use a proper pusher.
- 19- After the first period of the machine use or after many working hours the belts may get slack: this causes an increase of the time required for cutter block stop.
Immediately you have to stretch the belts: see par. 6-5.
- 20- Periodically remove chips and dust to avoid fire risks: carry out this operation always with 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 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 necessary to immediately take the proper measures.

1-9 SPECIFICATIONS

Surfacing tables length (520)	2750 mm
Surfacing tables length (520L)	3000 mm
Inlet table length	1500 mm
Outlet table length	1200 mm
Cutter block length	520 mm
Cutter block diameter	120 mm
Cutter block speed	5000 rpm
Time required to stop the cutter block	lower than 10 seconds (Optional CE)
Dimensions of the 4 knives	30x3x520 mm
Fence size	1200x190 mm
Fence tilting	from 90 ° to - 45 °
Standard motor power	5,5 kW
Tables height from the floor	845 mm
Suction hood diameter	120 mm
Max. depth of cut	8 mm
Machine weight	800 kg

The suction system with air speed of 20 m/s and air consumption of 1000 m³/h shall ensure the following values:

- vacuum inside the surfacer suction hood under the table 500 Pa

STANDARD ACCESSORIES

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

OPTIONALS

Automatic motor brake

1-10 NOISE LEVEL

Type : 520		
Working: surfacing		
Reference norm: ISO 3744 + ISO/DIS 7960 /B		
	Idle working without suction	In operation
Sound power level dB W (A) [mW (A)] LW	91.6 [2.29]	99.2 [10.2]
Sound pressure level at operator station dB (A) [dB max]	81	93.5
Constant K = 2 [dB] according to EN 859 The values refer to the "free field" conditions in accordance with the test modalities foreseen by the reference norm.		

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.

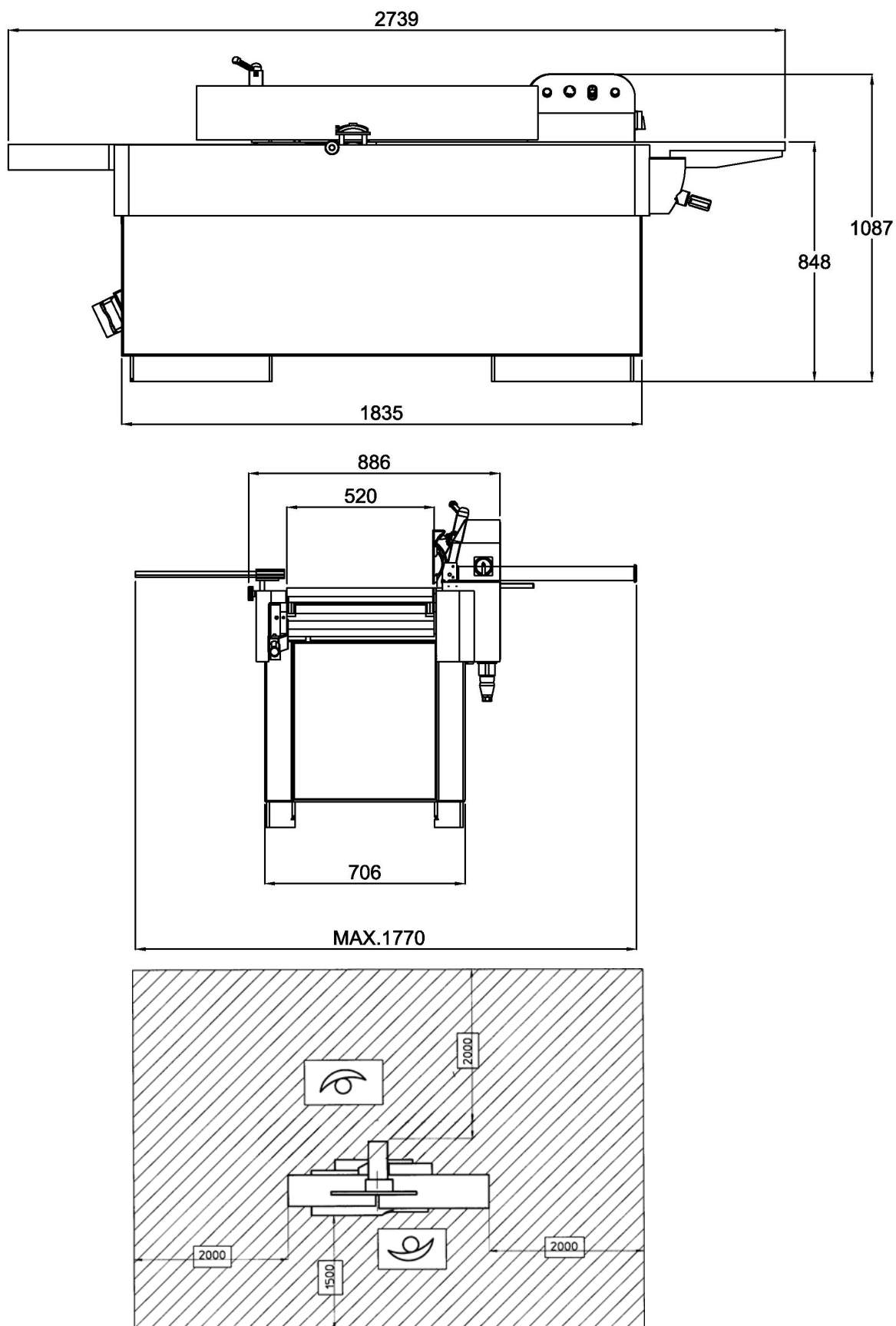
Factors which influence the real exposure level for the operator include the exposure time, the room features, further sound sources (as for example number of the adjacent working machines).

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

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 " Machine Directory " 98/37/CE

Emergency button on the control board

Bridge guard for cutter block

Rear guard for cutter block

PERIODICALLY CHECK THAT THE SAFETY DEVICES ARE EFFICIENT.

SECTION 2

INSTALLATION

	Page
2 1 Machine lifting and unloading	18
2 2 Positioning and leveling	18
2 3 Fitting the parts removed	20
2 3A Fitting the mortiser	20
2 4 Electric connection and earthing	21
2 5 Connection to the suction system	23

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.2.1 A; 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.

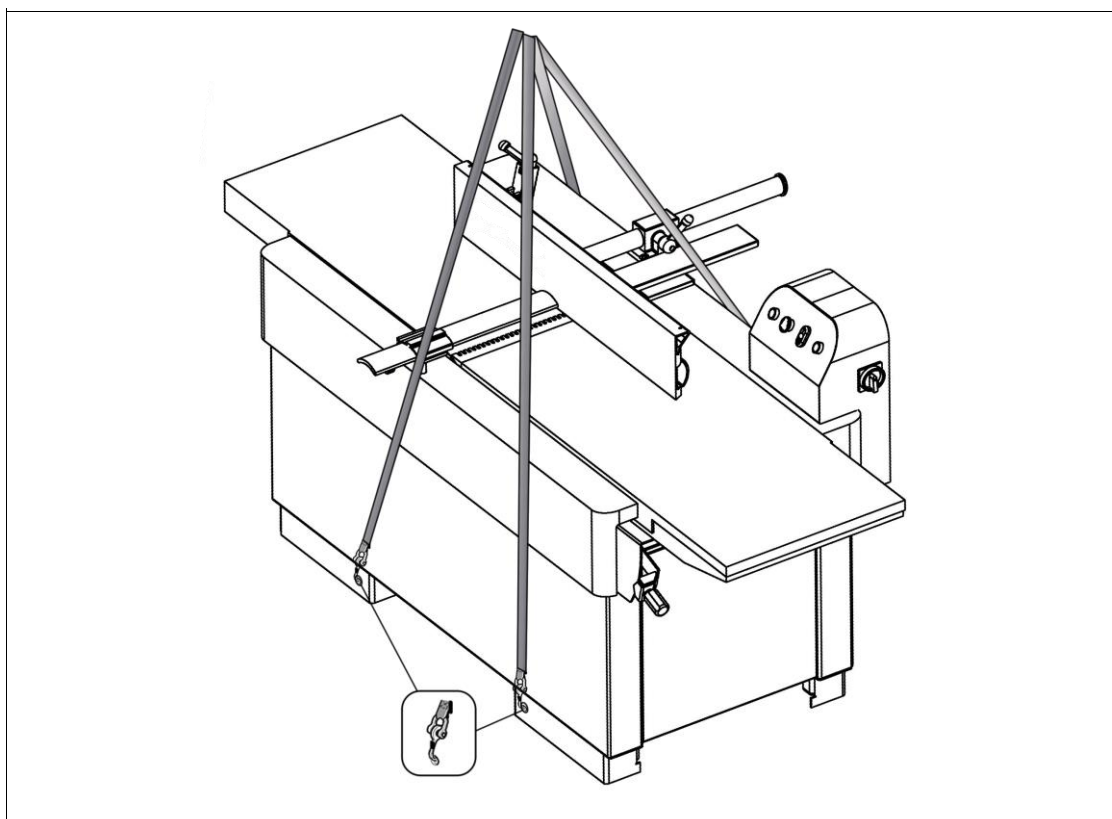
The position where to install the machine shall be well lightened (at least 500 LUX), and proper for the connection to the power line and to the suction system..



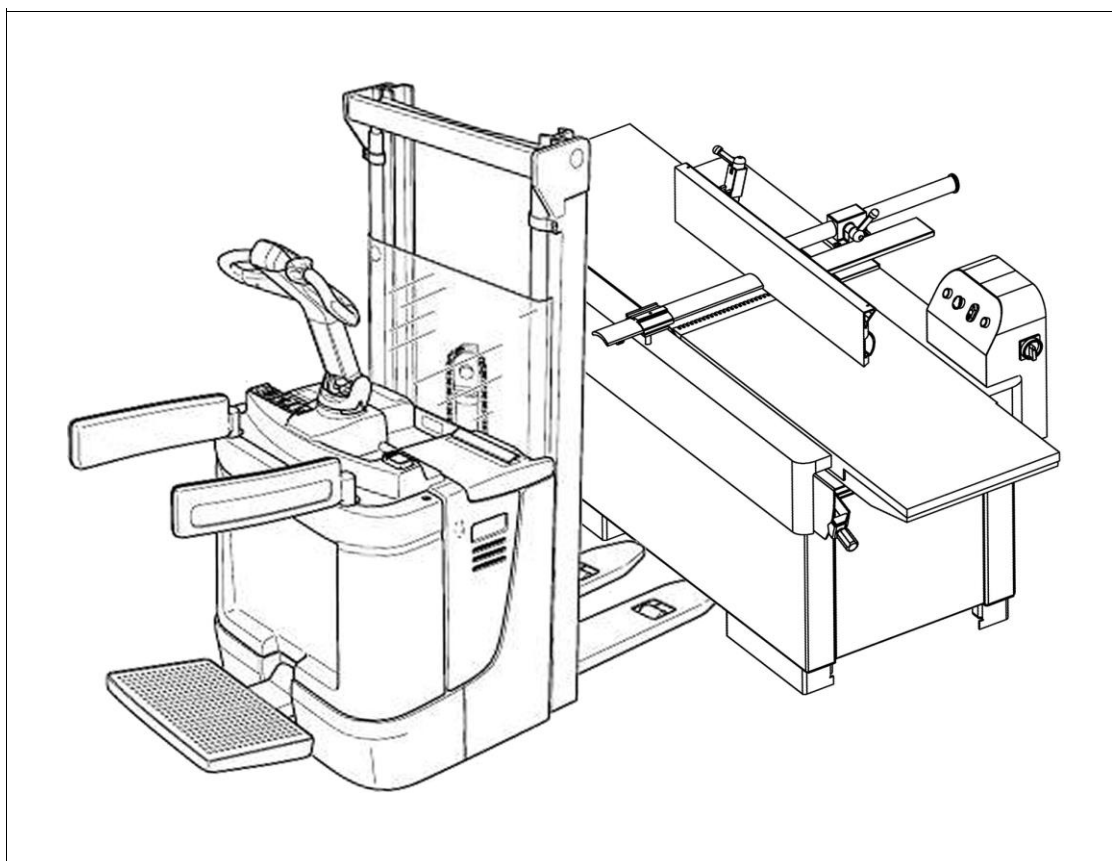
During the machine positioning, you have to consider that in case of longer workpieces you need a sufficient room to avoid squashing points against the walls, columns and soon ... (see figure at part 1-11)

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.



2.1



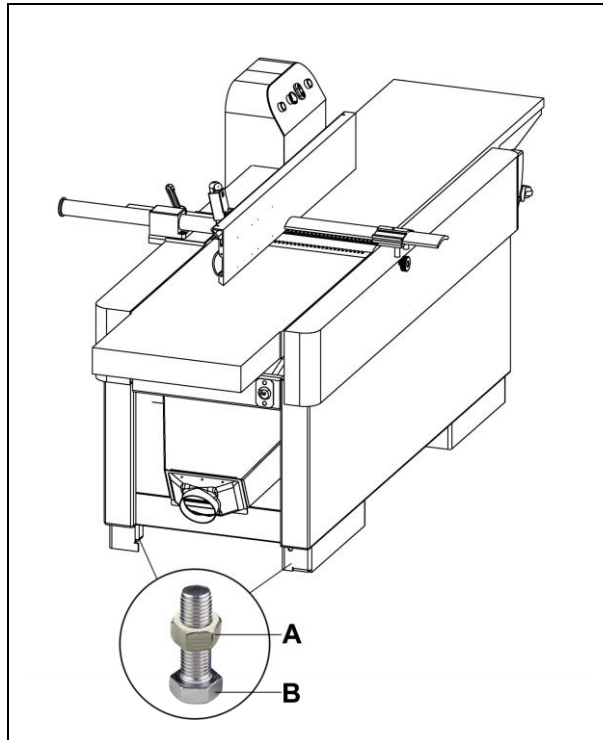
2.1A

IMPORTANT

Screw down the M10 screws (the machine is equipped with 1 front hole and 1 rear hole). After leveling the machine, loosen nut (A fig.2.2) and without forcing, bring the head (B) of the screws arranged in the rear feet, in contact with the floor. Tighten nut (A).

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.

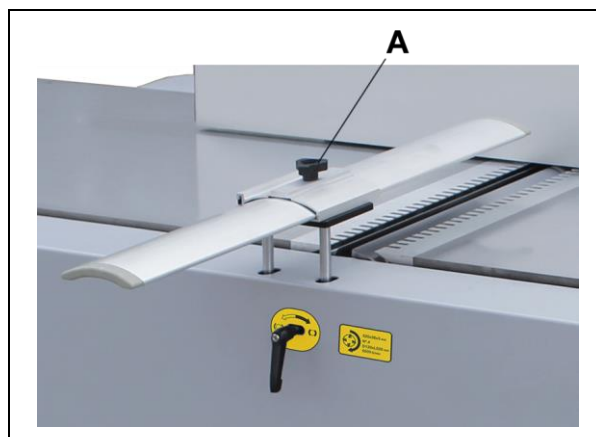
**2.2****2-3 FITTING THE PARTS REMOVED**

Some machine parts are demounted for transport and packing reasons.

2-3A FITTING THE BRIDGE GUARD

Loosen handle (A fig.2.3). Fit bridge into support and move it until the cutler block is covered.

Tighten handle (A fig.2.3).

**2.3**

2-4 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 short circuit current shall be lower than 10 kA

NOTE: The right working voltage for the machine is indicated on plate fig.2.4A); tolerance range +/- 5%.

Macchina
Machine _____

Modello
Model _____

Anno
Year _____

Matricola N°
Serial N° _____

Kg. _____

Volt. _____

Hz. _____

kW. _____

2.4A

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 mm² CABLE SECTION mm² SECTION CABLE mm² KABELQUERSCHNITT mm² SECCION CABLES mm²	FUS BIL AM AM FUSE FUSIBLE AM S CHERUNGEN FUSIBLES AM
0 → 10	2,5	12 A AM
10 → 14	2,5	16 A AM
14 → 18	4,0	20 A AM
18 → 22	6,0	25 A AM
22 → 28	10,0	32 A AM
28 → 36	10,0	40 A AM
36 → 46	16,0	50 A AM
46 → 54	16,0	63 A AM
54 → 76	25,0	80 A AM
76 → 92	35,0	100 A AM
92 → 110	50,0	125 A AM

Shut off the power supply and connect the 3 wires (phases) to terminals L1, L2, L3 (fig.2.4B).

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.2.4B).

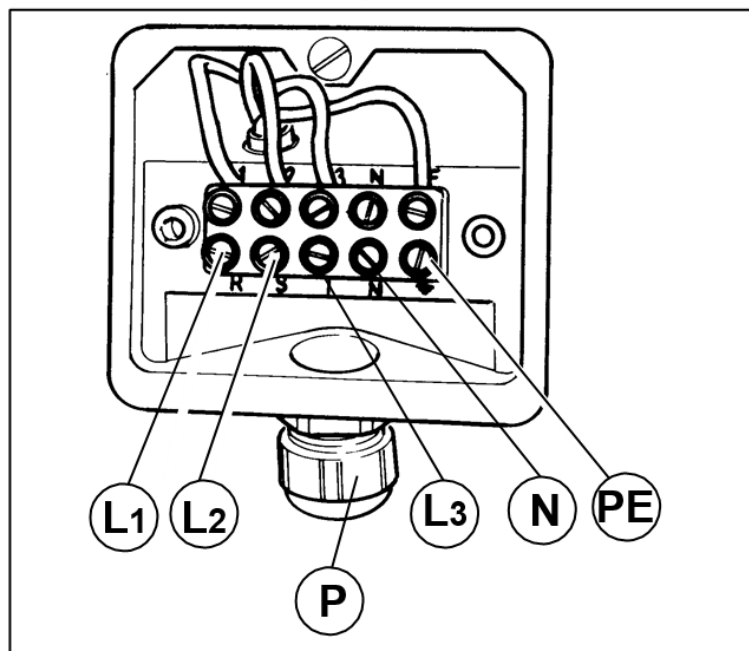
Switch on the machine again and check that the cutterblock rotates in the direction opposite to the piece feed after starting the machine as described later on.

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.



2.4B

2-5 CONNECTION TO THE SUCTION SYSTEM

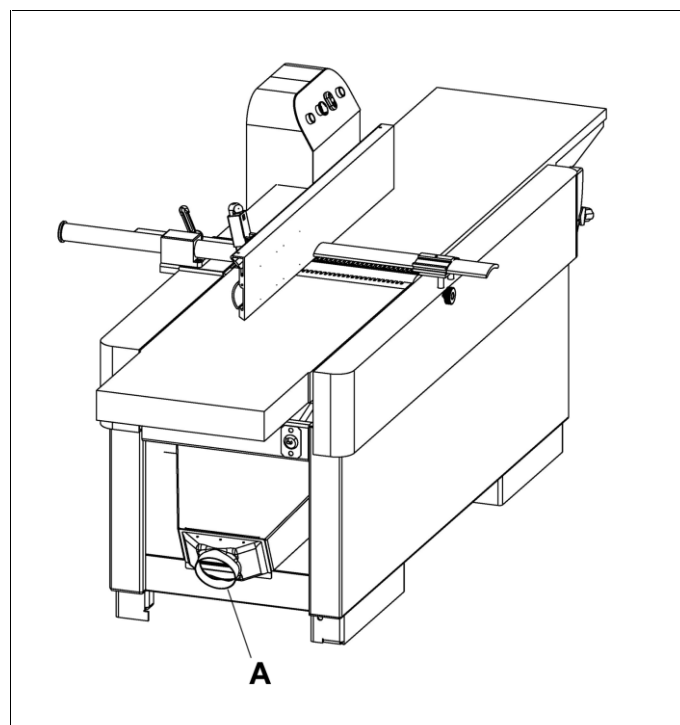
The connection to the suction system is required to ensure the right machine operation and the operator's health.

Always work with the main suction system in operation.

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

Connect hoods (A fig.2.5A) to the suction system by hoses of proper diameter. Suction hood diameter:

- Surfacing unit: hood (A) of 120 mm diameter



2.5A

The suction system shall ensure a flow equal to $1000 \text{ m}^3/\text{h}$ at a flow speed at least of 20 m/s .

These values are to be checked before starting the working.

If other machines are connected to the central suction system, carry out a test when all suction systems are in operation.

The efficient suction system reduces the risks due to dust inhalation. 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.

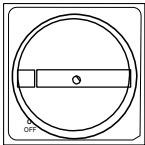


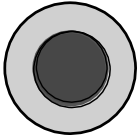
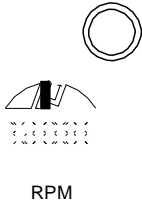
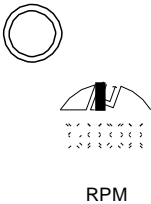
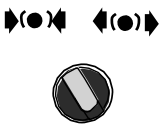


SECTION 3

CONTROLS

	Page
3 -1 Control board	25
3 -2 Emergency buttons	26
3 3 Electric housing	26
3-4 Machine start and stop	27
3-5 Auto - brake motor	27

3-1 CONTROL BOARD

The control board depends on the machine version; the components may be:

Ref.	Image	Description/function	Use and/or indication
1		Padlock able main switch fitted to the control cubicle for switching on/off the voltage for the machine power supply. It may be locked in position "0" by means of padlock	 = on  = off
2		Emergency button To shut off the motor supply voltage with intervention of the brakes when present.	Pressed: machine in emergency conditions Turn to the arrow direction to reset
3	 RPM	Button to start the cutterblock	Press the button to start the cutterblock motor
4	 RPM	Button to stop the cutterblock	Press the button to stop the cutterblock motor
5		2-position selector for locking/releasing the auto brake motor . Selector lit: the motor brake is released	 = Motor brake locked : pilot lamp off  = Motor brake released: pilot lamp lit

3-2 EMERGENCY BUTTONS

In case of danger by pressing the emergency button all functions of the machine are switched off. Emergency buttons arranged on the machine:

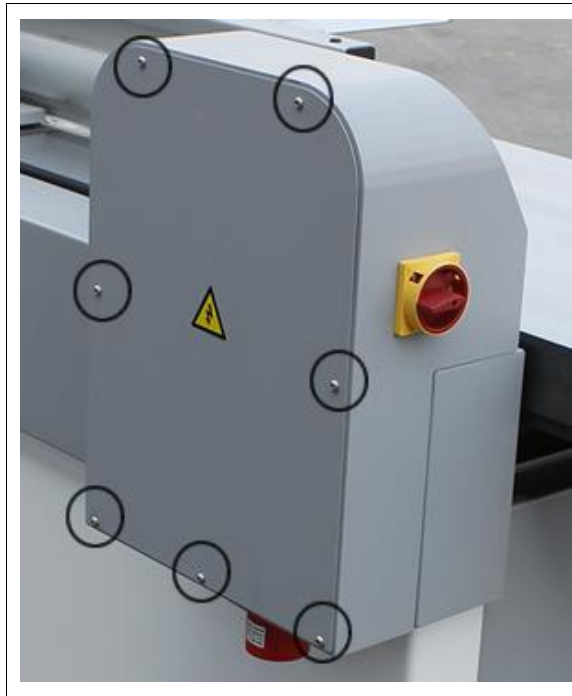
Basic machine: one emergency button on the control board.

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

3-3 ELECTRIC HOUSING

Only a skilled electrician may reach the electric housing.

- Shut off the voltage from the power supply line.
- Turn main switch (1) to 0 (OFF)
- Unscrew the 6 screws (fig.3.1) to open the door




3.1

3-4 MACHINE START - STOP

Make sure that:

The emergency button is released (eventually turn them to the arrow direction)


Selector (3) is turned to , (brake locked: pilot lamp off) main switch(1) is turned to 1 (ON)

Then:

Press button (5)

STOP:


Press button (4)

It is forbidden to stop the motor by turning selector (3) to .


3-5 AUTO-BRAKE MOTOR

The cutterblock rotation occurs by electric auto-brake motor.

Under normal condition selector (3) is turned to .

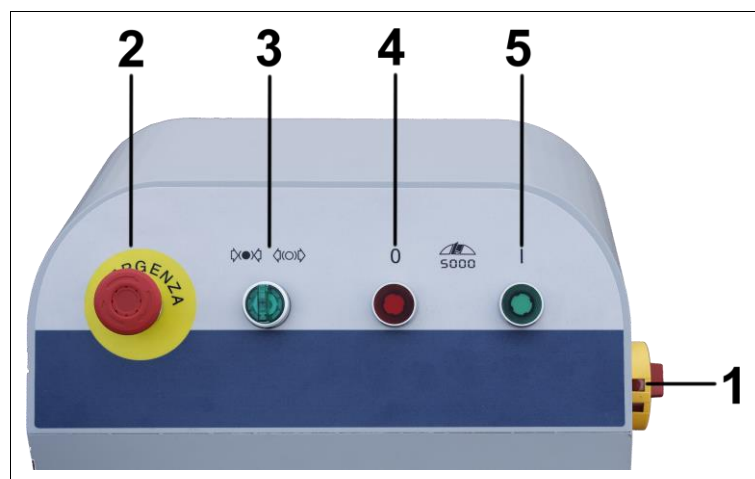
When you shut off the power by turning the starter (4) the motor automatically brakes and remains braked until the next starting. In case of adjusting operations as knife fitting etc. for which the cutterblock shall freely rotate, turn selector (3) to .

The pilot lamp 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(3) 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.



SECTION 4

SURFACER

	Page
4-1 Knife adjusting	29
4-2 Surfacing table adjusting	31
4-3 Fence	31


4-1 KNIFE SETTING



Use protective gloves for handling the knives.

To adjust the knife projection proceed as follows:

Press the emergency button.

- Turn selector (3) to .
- Check that the cutterblock is exactly 1 mm under the outlet table
- Lift the bridge guard as much as possible
- 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.4.1) and cutterblock if you press it lightly.
- By proper 13 mm spanner (supplied in the accessories bag) loosen bolts (T fig.4.1): the knife is pushed against the surface of knife setting gauge (R fig.4.1).
- Now lightly tighten bolts (T fig.4.1) at the ends left uncovered by the knife setting gauge.
- 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.

If the operations mentioned above have been carried out in the right way, the knives must be perfectly aligned with the outlet table.


Otherwise adjust the outlet table as follows:

- 1) Loosen knob (Q)
- 2) By means of knob (P) position the outlet table to the knife
- 3) Tighten knob (Q)

As the motion of the outlet table is limited, every time you change the knives, make sure that the distance between outlet table and cutterblock is 1 mm.

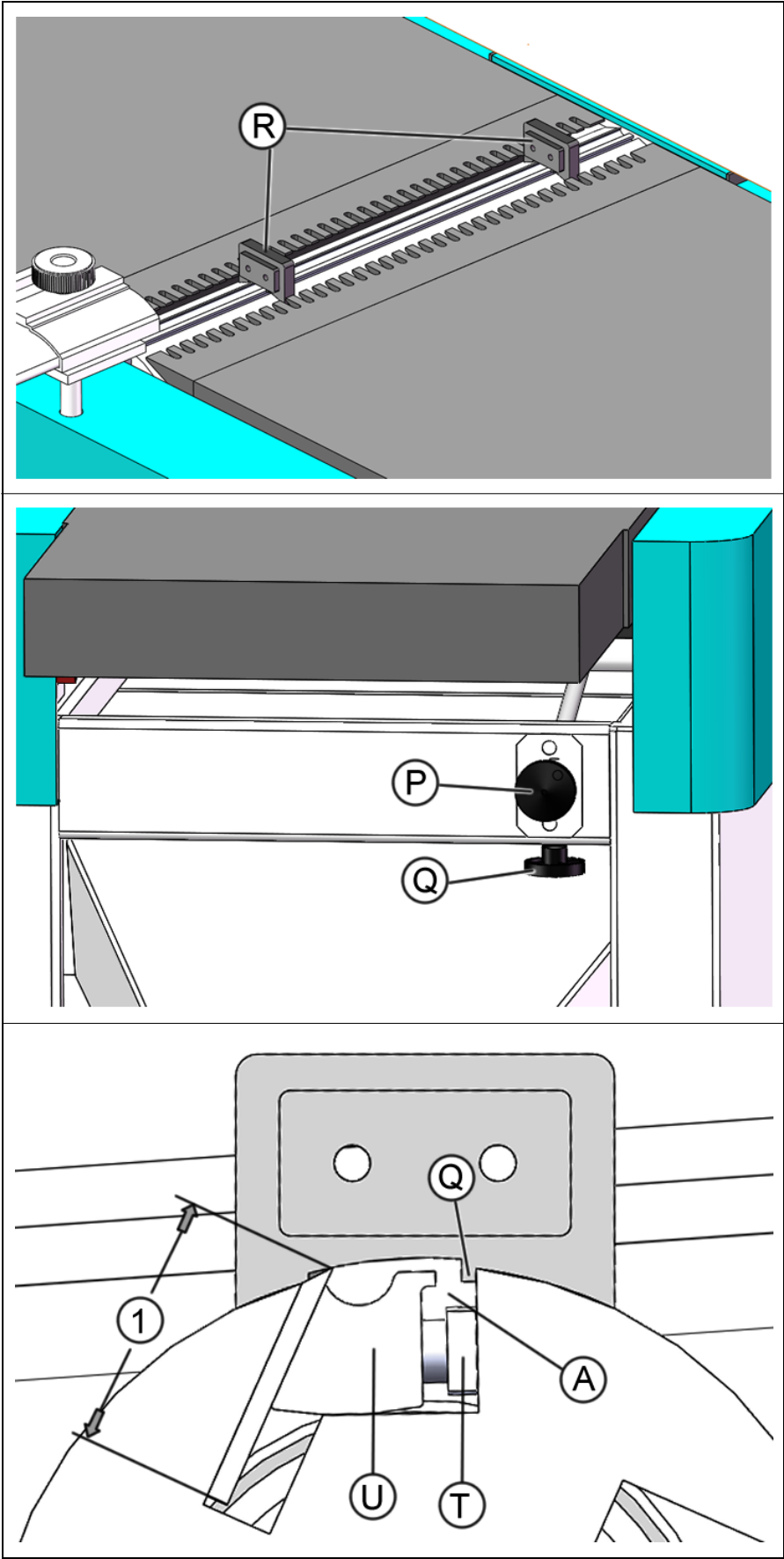
This permits the right adjusting margin.

For adjusting the outlet table position to the cutterblock repeat instructions 1), 2) and 3)

- Turn selector (3) to .
- Position the bridge guard
- 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.



4.1

4-2 SURFACING TABLES ADJUSTING



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

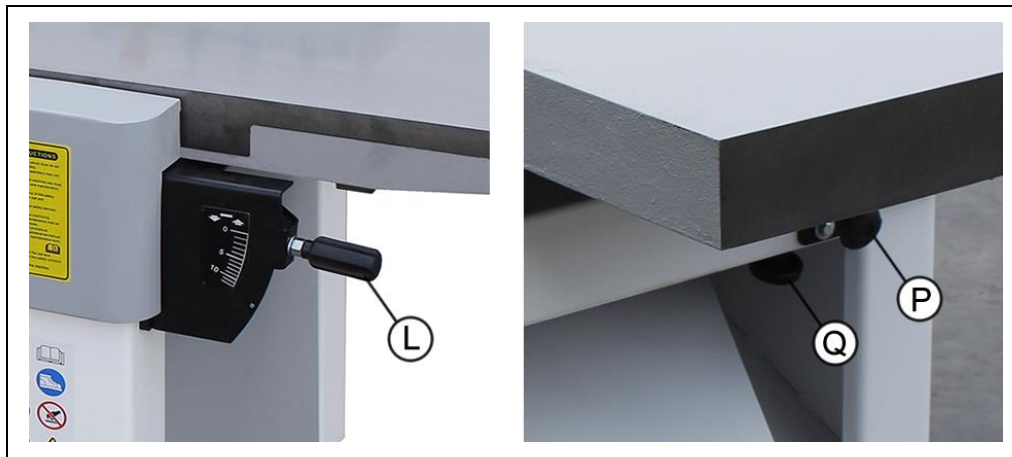
INLET TABLE

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

OUTLET TABLE

It is adjusted at factory during the machine test.

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

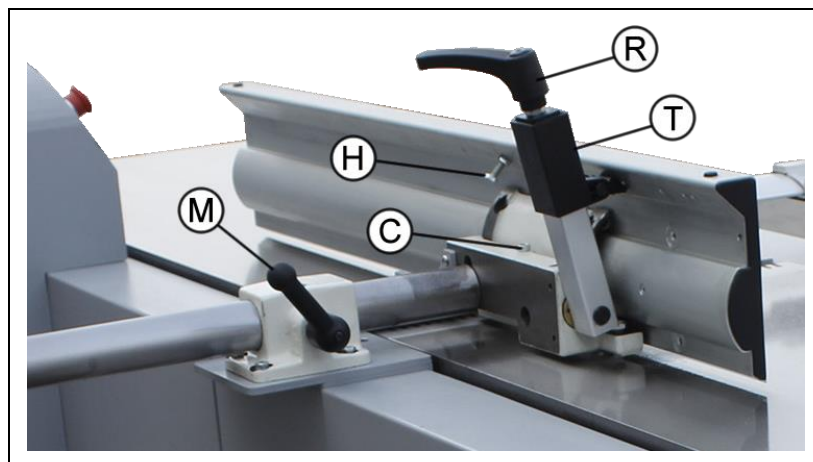


4.2

4-3 FENCE

Longitudinal motion: Release lever (M) move the fence to the desired position, then tighten lever (M).

Tilting: Loosen lever (R), tilt the fence: read out the tilting angle on graduated scale (T).



4.3

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

The stops for extreme positions are adjusted by means of screw and counter nut (C fig.4.3) for 90° tilting, screw and counter nut (H fig.4.3) for 45° tilting.

SECTION 5

CUTTERBLOCK GUARD

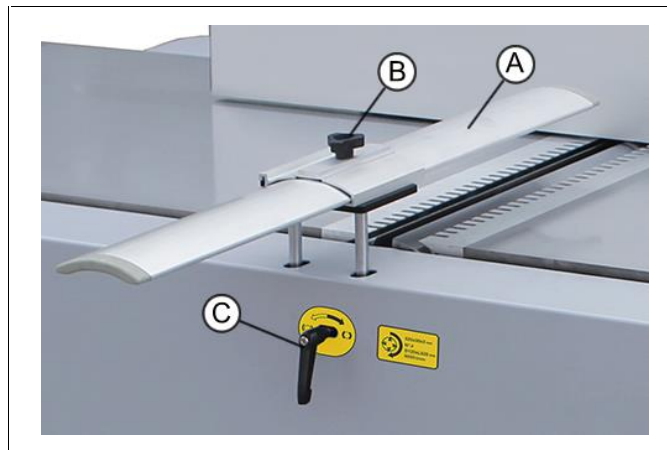
	Page
5-1 Description	33
5-2 Examples of safe operation	33
5-2.1 Surfacing workpieces with thickness lower than 75 mm	33
5-2.2 Surfacing and straightening workpieces with thickness over 75 mm	35
5 2.3 Surfacing workpieces of square section	36
5-2.4 Surfacing short workpieces	36
5-2.5 Straightening short workpieces	36
5 2.6 Chamfering along the fence	37
5-3 Safety notes	39

5-1 DESCRIPTION

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 5.1.

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



5.1

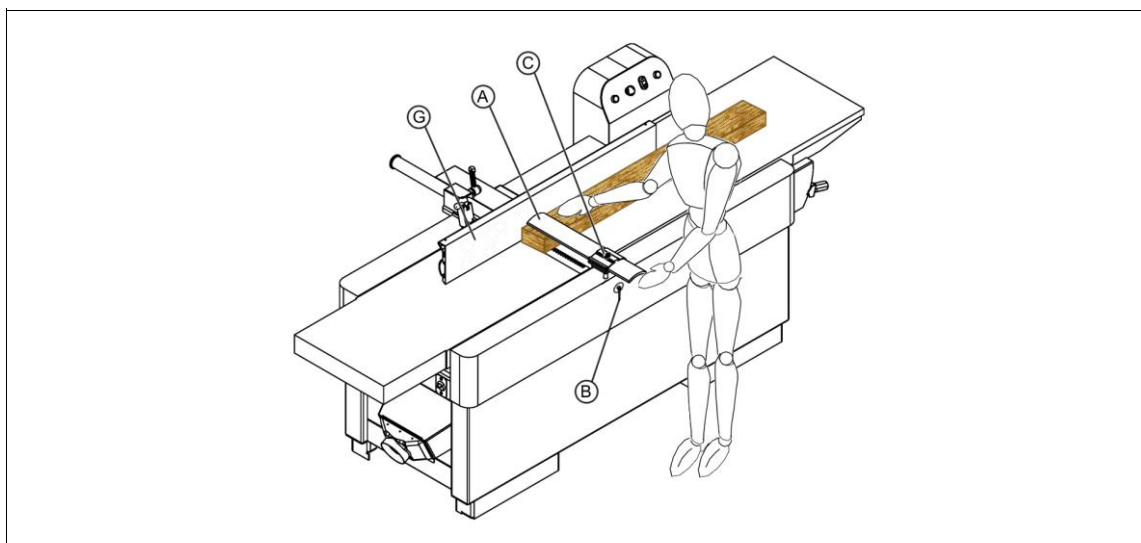
5-2 EXAMPLES OF SAFE WORKING

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

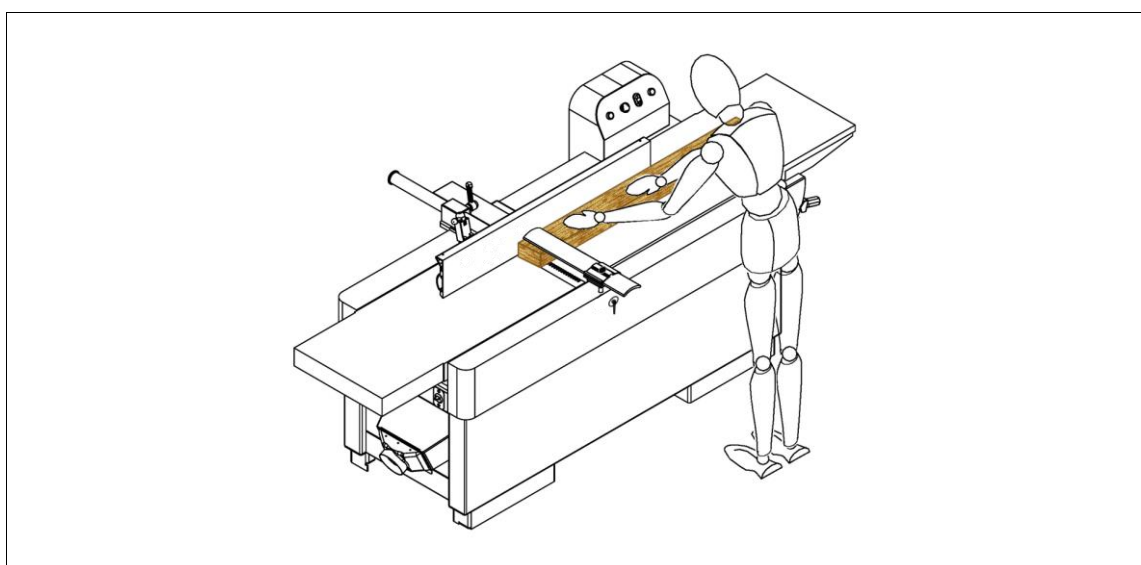
5-2.1 SURFACING PIECES OF THICKNESS LESS THAN 75 MM

Adjusting

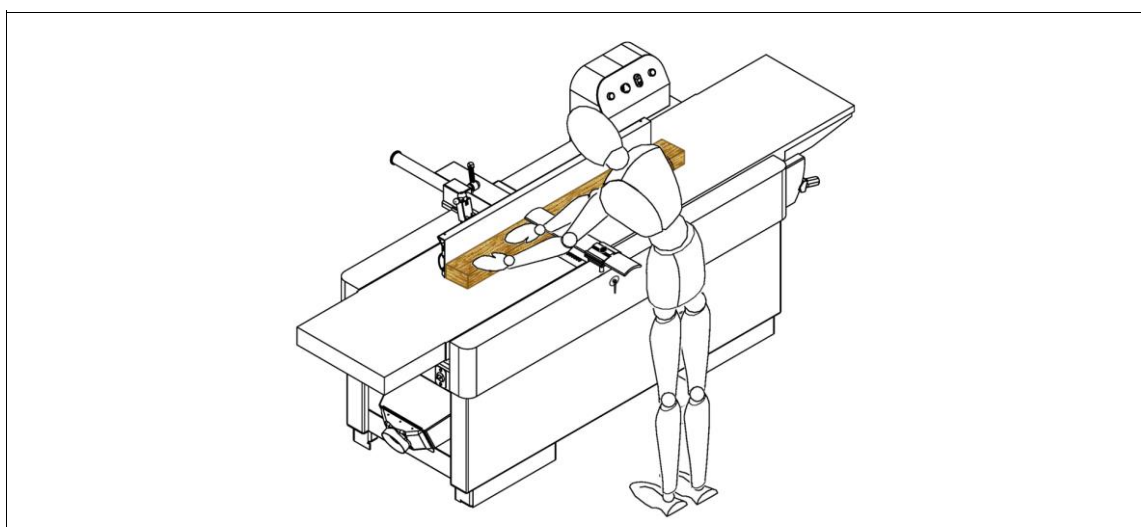
- Loosen knob (C) and rest bridge (A) against fence (G), then lift bridge (A) with knob (B) at the height equal to the piece thickness.
- Rest the piece against the fence and move it forwards with the right hand in order to fit it under the bridge of the guard (fig. 5.5).
- Push the workpiece forward (from the inlet table) (fig. 5.3) 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. 5.4).



5.2



5.3



5.4

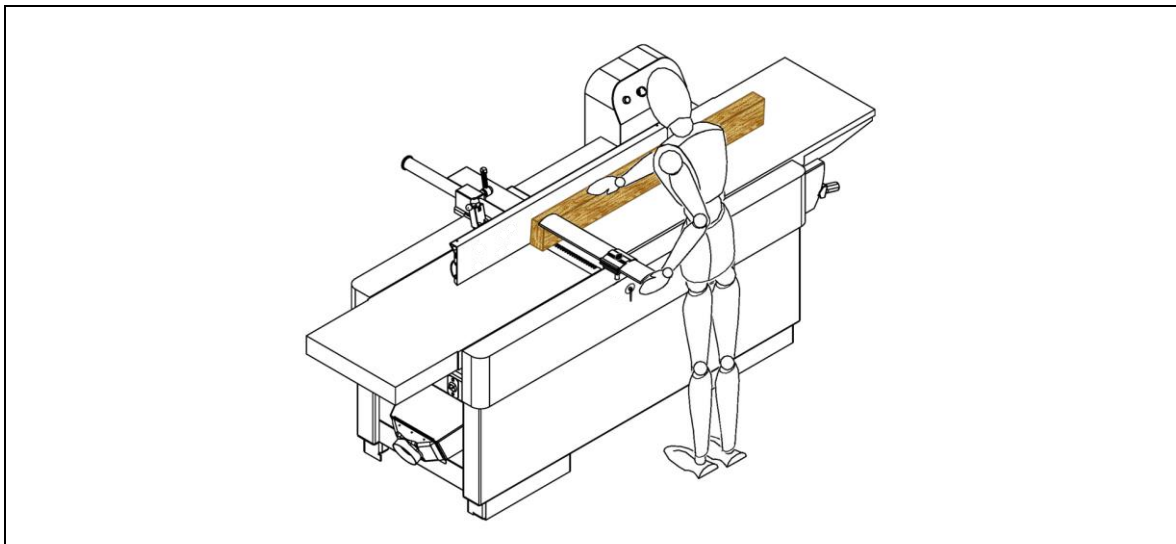
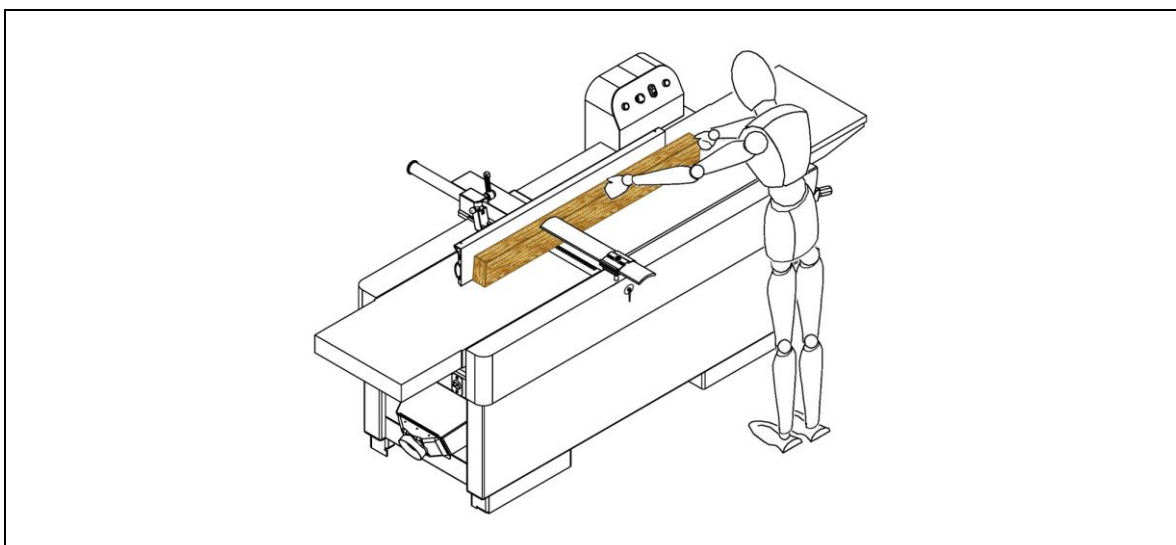
STRAIGHTENING

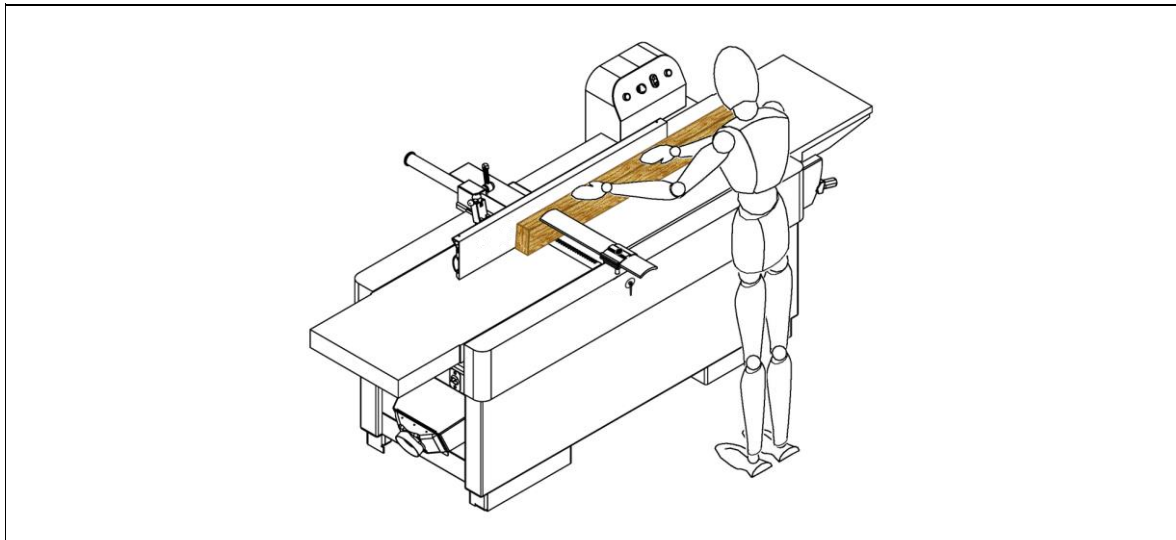
- Rest the workpiece against the fence and move it forwards with the right hand in order to reach the front edge of the inlet table lip.
- With the left hand move the guard bridge so that it touches the piece.
The bridge shall rest on the outlet table (fig.5.8).
- Press the workpiece against the fence towards the outlet table by keeping the left hand for example with the clenched fist and the thumb on the workpiece.
With the right hand move the workpiece forwards in order to get a regular motion (for example clenched fist and thumb on the workpiece (fig.5.6).

5-2.2 SURFACING AND STRAIGHTENING PIECES WITH THICKNESS OVER 75 MM (FIG.5.10)

The bridge of the guard shall be lower on the tables and horizontally adjusted to the piece.

- Move the workpiece along the fence with regular motion by keeping the hands flat on the piece: see fig.5.7.

**5.5****5.6**



5.7

5-2.3 SURFACING WORKPIECES OF SQUARE SECTION

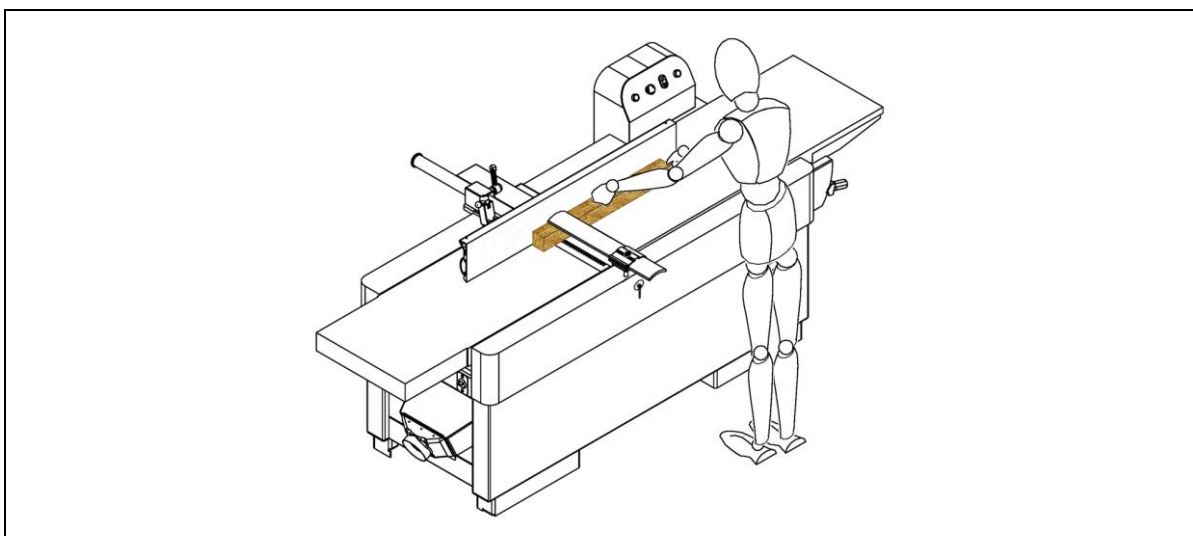
- Rest the guard bridge on the workpiece (fig.5.8) and against the fence.
- Move the workpiece forwards by keeping the fingers bended.

5-2.4 SURFACING SHORT WORKPIECES (FIG.5.9)

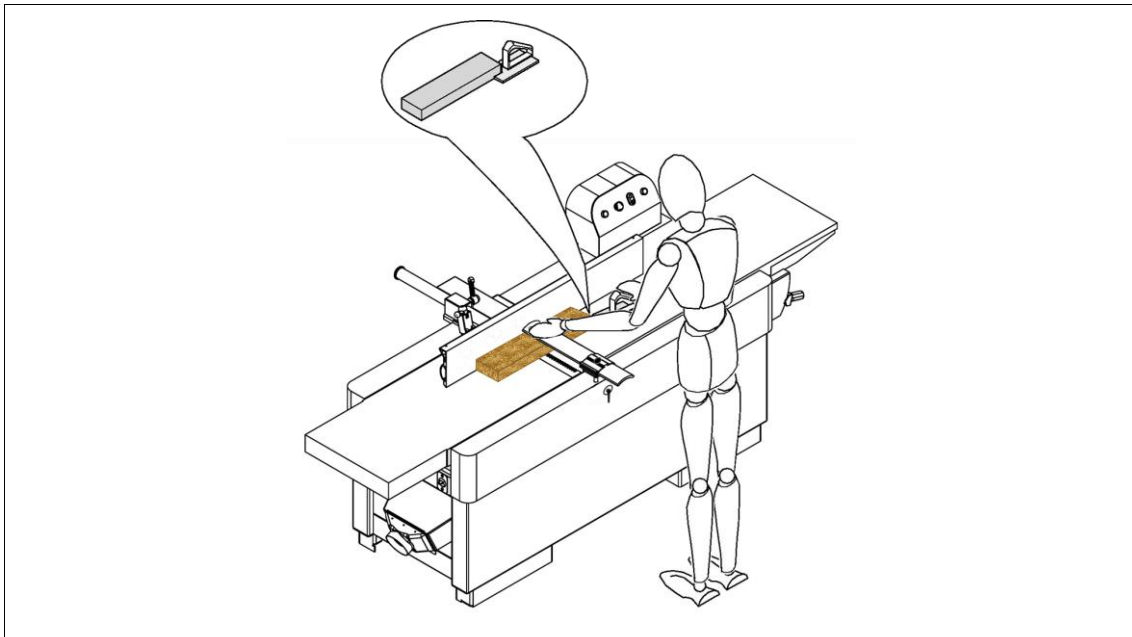
- Press the guard bridge on the workpiece by keeping the hand flat and move the workpiece forwards with the right hand by using a pusher.
- Rest the left hand on the guard bridge and as soon as the workpiece rests on the outlet table
The pusher thickness shall be smaller than the workpiece one.

5.2.5 STRAIGHTENING SHORT PIECES (FIG.5.10)

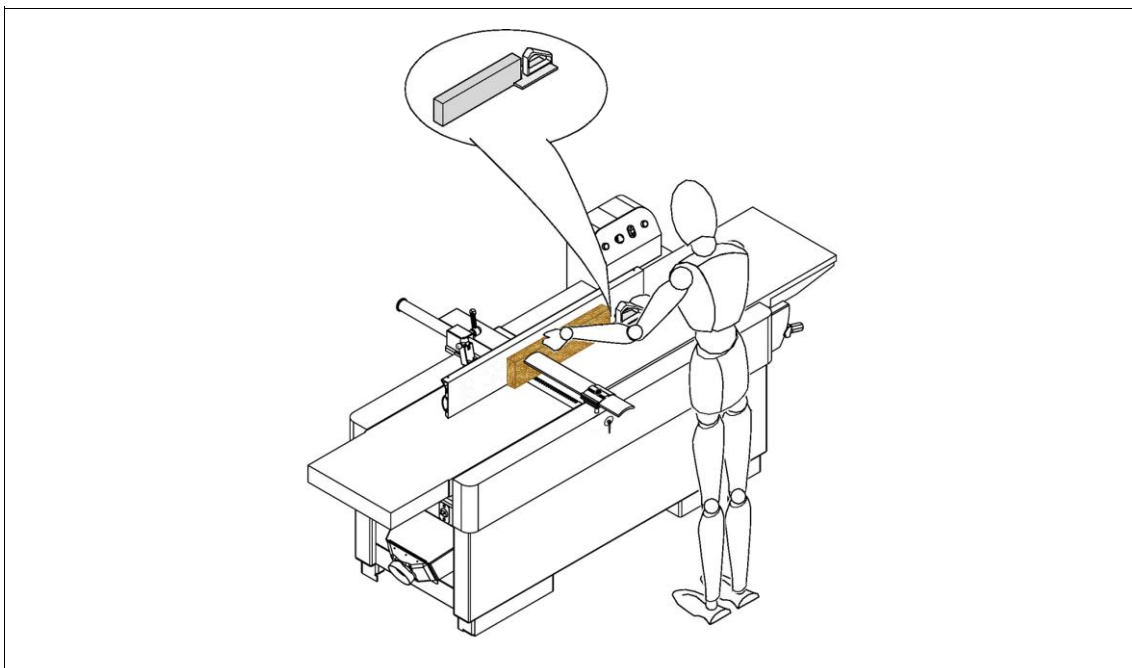
- Move the workpiece along the fence and towards the outlet table by keeping the left hand with clenched fist, then with the right hand push the workpiece by using a pusher.



5.8



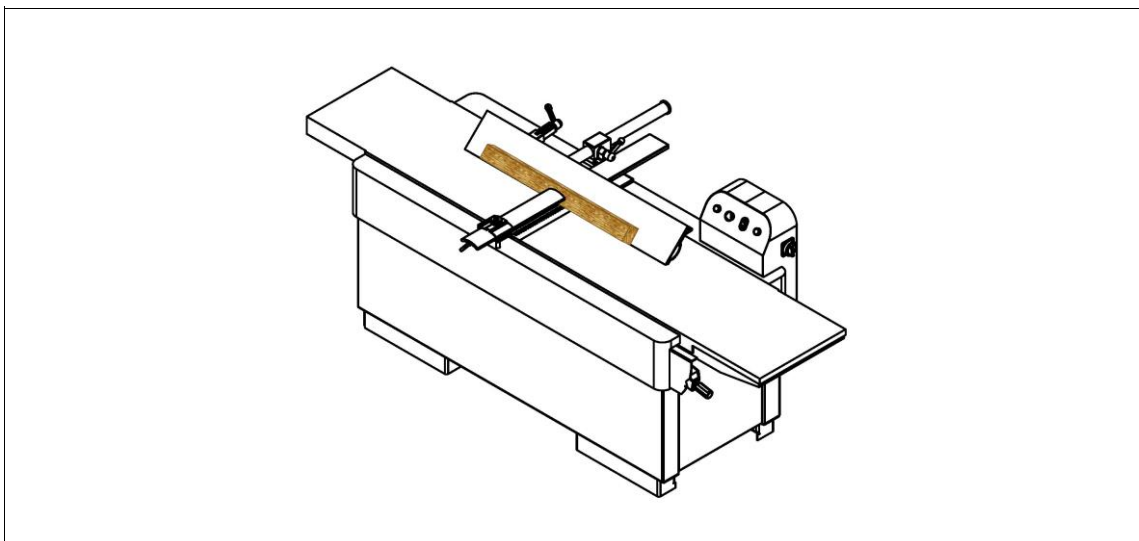
5.9



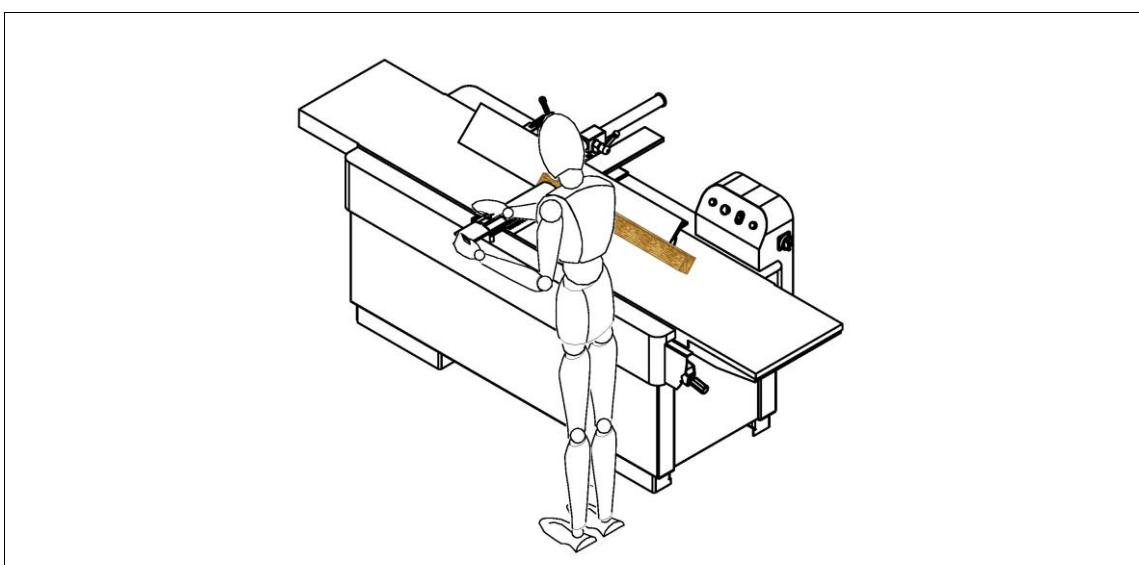
5.10

5-2.6 CHAMFERING ALONG THE FENCE

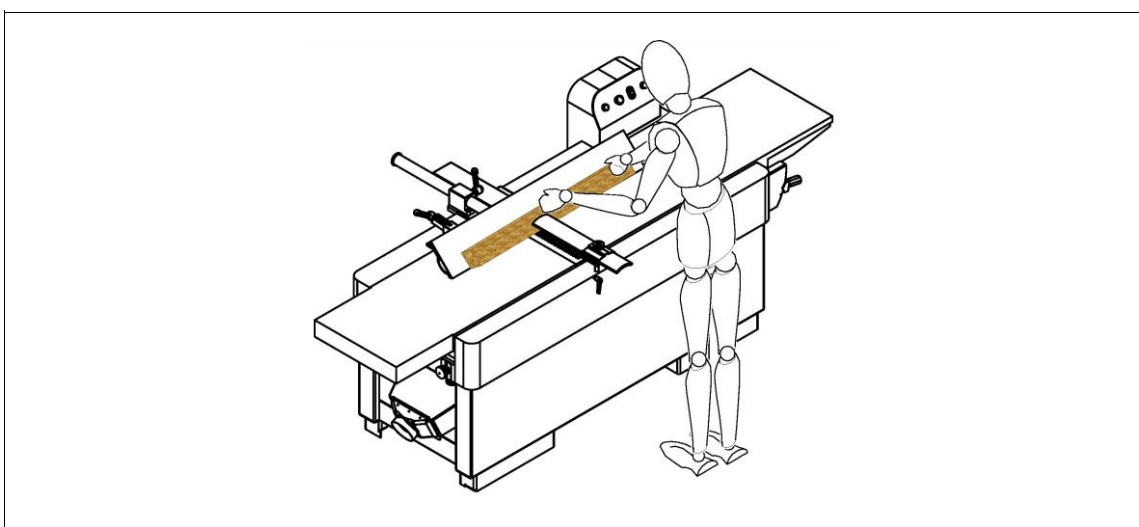
- Rest the workpiece with the right hand against the slanting fence.
- Set the workpiece and the guard: see fig.5.11.
- Adjust the guard bridge in horizontal direction with the left hand so that it touches the workpiece.
- Clamp the locking lever with the right hand: in this way the bridge is laterally locked and the piece can not slide from the fence (fig.5.12).
- Move the workpiece along the fence towards the outlet table by keeping the hand with clenched fist, push the workpiece forwards with the clenched right fist (fig.5.13).



5.11



5.12



5.13

5-3 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 workpiece with its concave side on the tables; do not machine work pieces with arched shape and other defects (clefs, 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 manufacture) behind the outlet table for long pieces.

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

SECTION 6

MAINTENANCE

	Page
6-1 Machine cleaning	41
6-2 Lubrication	41
6-3 Check of safety devices	42
6-4 Machine removal - storing - demolition	42
6-5 Emergency conditions	42
6-6 Autobrake motor	43
6-7 Belt repacing	44
6 8 Belt stretching.....	45
6-9 Troubles - causes - what to do.....	46

6-1 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.

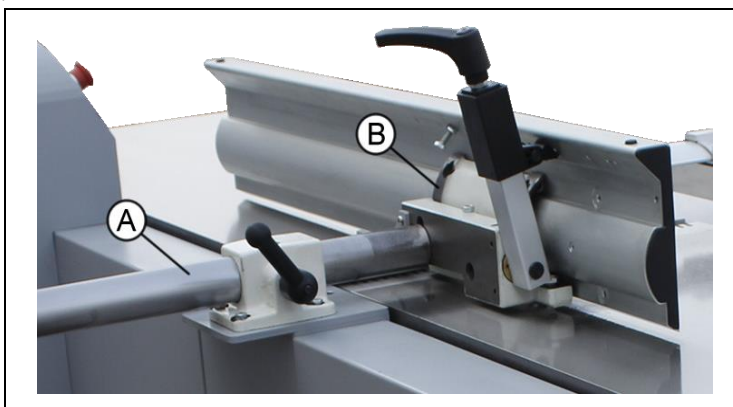
- Clean fence sliding bar (D fig.6.1).
- Clean slide ways (D fig.6.1) and angle guide (B fig.6.1) of bridge guard.

6-2 PERIODICAL LUBRICATION

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

Weekly lubricate with grease here indicated:

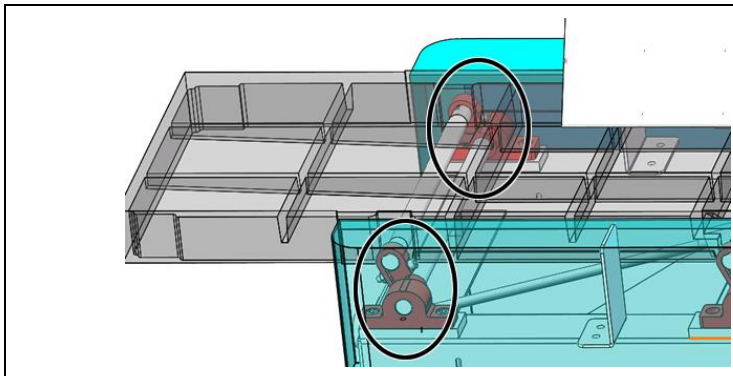
AGIP	GR MU EP1
ARAL	ARALUB HL1
BP	GREASE LTX1
ESSO	BEACON EP0
KLÜBER	CENTOPLEX 1
MOBIL	MOBILPLEX 46
SHELL	SUPER GREASE EP1



6.1

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



6.2

- Sliding bar (A) and Swing track (B) of the fence fig.6.1.
- The articulated joints of the inlet table arranged under the table fig.6.2.

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

6-3 CHECKING THE SAFETY DEVICES

The safe operation of the machine is ensured by the safety devices: see SECTION 1A.

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).

At the beginning of each work shift, check that the guards on the working and non-working side properly operate and are efficient.

Check the plates in particular the ones with yellow ground.

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

6-4 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.

6-5 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.

6-6 AUTO-BRAKE MOTOR

At least every 2 months or 500 stops, check and adjust the electro mechanic braking device illustrated in figure. Before carrying out any intervention on the motor, shut off the power by turning the padlock able main switch to 0 (OFF).

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.

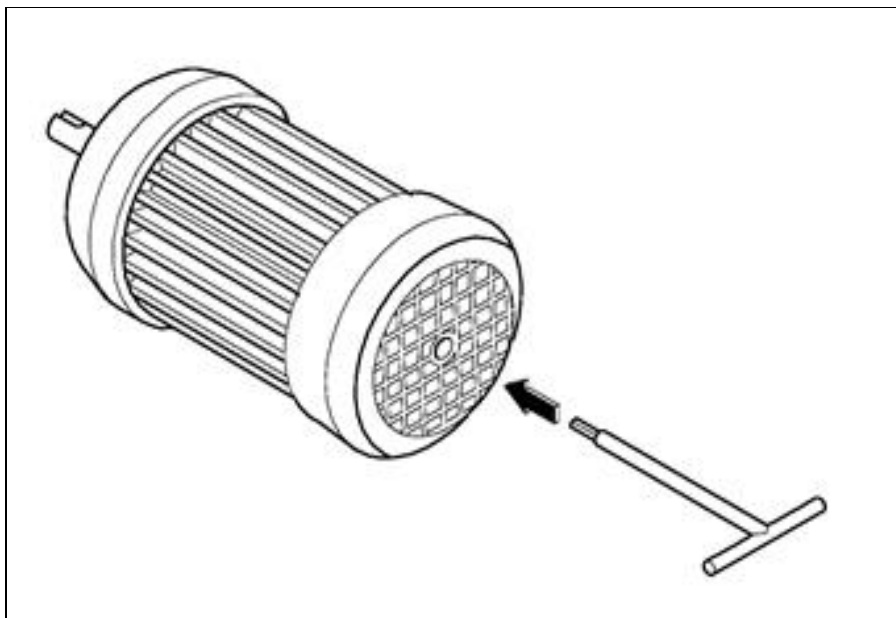
Replacement is to be carried out only by technicians of After-sale service.

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 Allen wrench into the hole on cover for the fan in order to 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.



6-7 BELT REPLACING

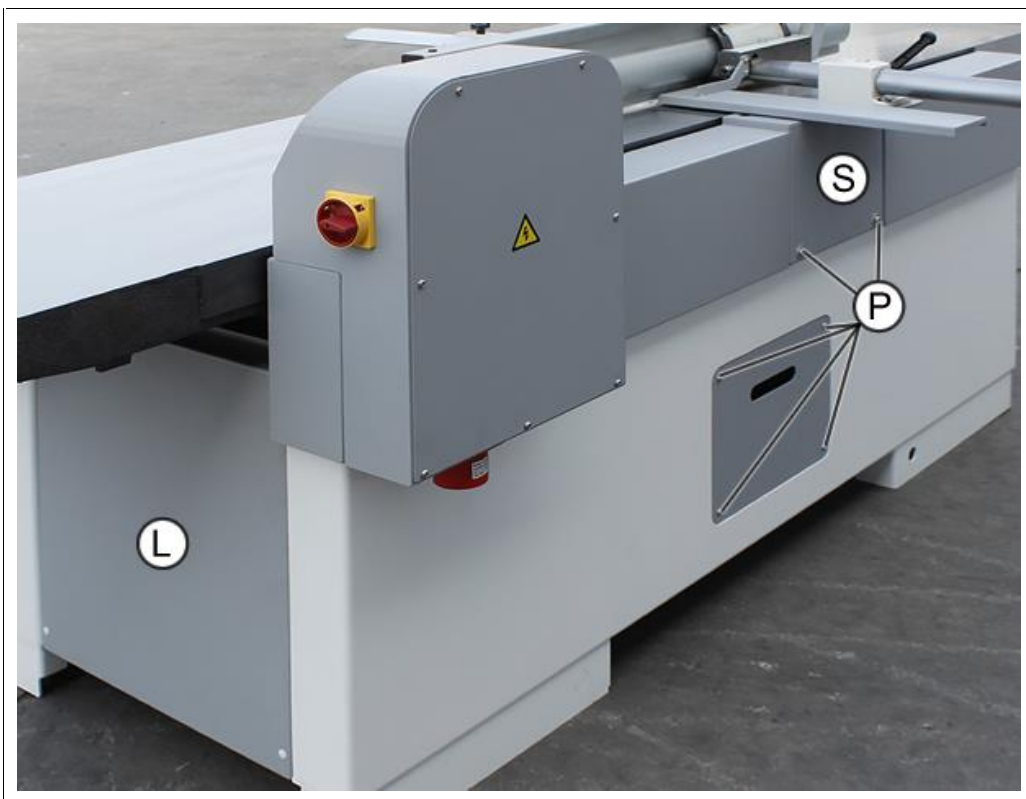
- Stop the machine as described in SECTION 3: turn main switch to zero (0), lock it and indicate that with a sign.
- Take off the top screw and withdraw door (L fig.6.7).
- Unscrew screws (P fig.6.7)
Take off cover (S fig.6.7) to reach the cutterblock pulley .
- Loosen screw (V fig.6.7).
- Lift the motor by levering on it.
- Replace the old belts with the new ones
- Set the motor to normal position.
- By means of screw (V fig.6.7) stretch the belts.
- Fit door (L fig.6.7) again and fasten it with the proper screw.
- Fit cover (S fig.6.7) 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.
2. Never pair belts of different makers.
3. Never use a new belt together with an old one.



After the first settling or after many working hours the belts may get slack: this causes an increase of the time required to stop the cutterblock.



6.7

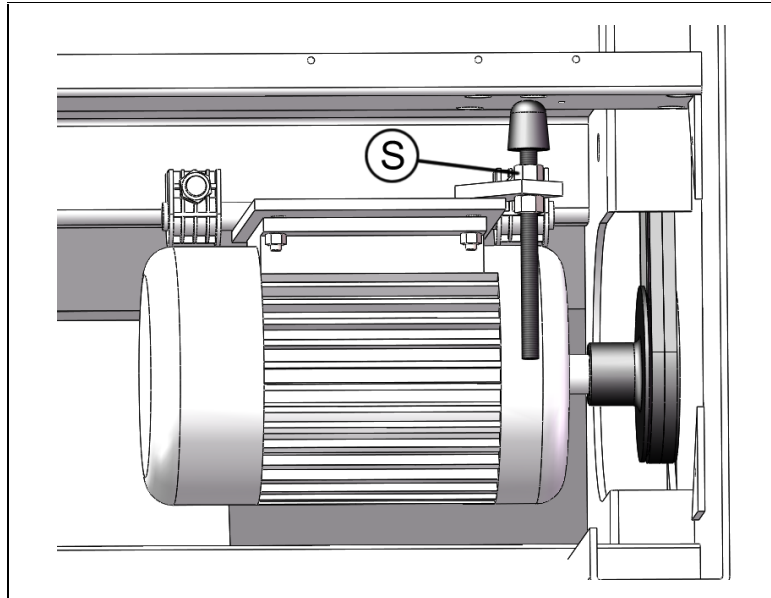
6-8 BELT STRETCHING

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

To reach the motor housing take off cover (L fig.6.7).

The belt stretching is automatic. If it is necessary to stretch the belts more again operate on screw with nut (A fig.6.8).

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



6.8

6-9 TROUBLES - CAUSES - WHAT TO DO

The machine has been tested at factory, therefore it shall ensure a perfect working.

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 any faults not covered in this section, contact the After-sales Service Centre

TROUBLE

The motor does not start

CAUSE

Main switch turned to 0 (OFF)

No power on one phase or more phases

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

Emergency button pressed

Motor brake off

WHAT TO DO

Turn the main switch to I (ON)

Make sure that the 3 phases are hot

Close the fuse housing; if the does not start:

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

Switch off the emergency button by turning it

Turn selector for brake release to  .

TROUBLE

The machine stops during the working

CAUSE

No power on one phase or more phases

Fuses of auxiliary circuit interrupted or slack

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

Belts worn or slack

WHAT TO DO

Check that the 3 phases are hot

Close the fuse housing; if the machine fuses cap does not start

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

Wait until the overload cutout is cold.

Reset it after some minutes. by turning the main switch to 0 (OFF) , then to I (ON) .

Check the cutter block knives, if necessary grind or replace them.

Adjust or replace the belts: see par. 6-8.



Original Instruction