



AMERI-CAN

MACHINERY LTD.

Manual
CR500 Copy Router



INSTALLATION, USE AND MAINTENANCE MANUAL

7. MANUAL USE AND CONSERVATION



WHO IS IT FOR

This manual is intended for the machine user and for the persons in charge of moving, installation, using, surveillance, maintenance and final dismantling of the machine.

AIMS OF THE MANUAL

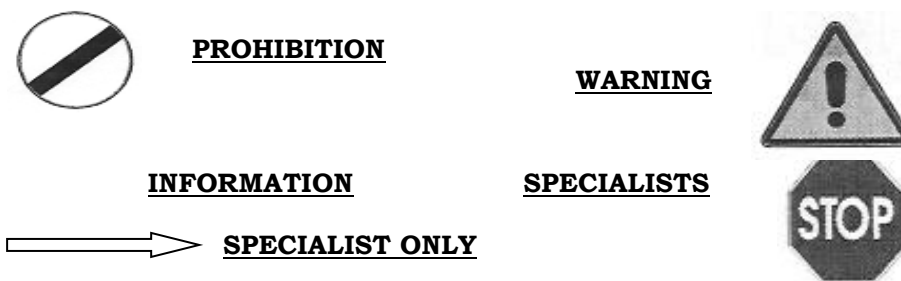
The manual explains the correct use of the equipment, as foreseen at the design stage and in the technical data. It includes instructions for moving the machine as well as for its correct and safe installation, assembly, adjustment and use, as well as supplying information concerning maintenance interventions and how to order replacement parts.

LIMITS OF USE

This manual is valid only for the machine with the code number it expressly mentions. No information contained in this manual may be applied to other machine models from different ranges. All of the necessary indications shall be taken from this manual and not from any similar manuals, similar equipment or from other manufacturers.

SYMBOLS

In order to draw greater attention to certain points, this manual contains the following symbols that are divided as follows:



RESPECT OF LEGISLATION

As well as the regulations specified in this manual, the Customer shall respect the relevant legislative provisions concerning accident prevention in the workplace.

CONSERVATION OF THIS MANUAL

This manual is considered to be an integral part of the machine and as such, must be kept in good condition until the machine is disposed of. This manual must be kept in a safe, dry place, away from direct sunlight and it must always be easily available for consultation in the workplace.



HOW TO REQUEST A FURTHER COPY OF THE MANUAL

In the event that the original copy of the manual is damaged in any way, Customers may, at their own expense, request an additional copy from the Manufacturer.

INFORMATION FOR THE USER

- a) This manual refers to technical conditions at the time of the sale of the machine.
 - The Manufacturer reserves the right to modify products and manuals without the obligation to upgrade previous products or manual.
- b) The characteristics of this manual may be modified at any time in accordance with technical developments and with no prior notification.
- c) In the event that the equipment is sold on, the Manufacturer should be informed of the address of the new owner in order to facilitate the sending of any additional parts to be integrated into the manual.

- d) For further information or clarifications, it is possible to contact the Assistance Service (see section 13.2)

The Manufacturer declines all responsibility in the event of the following:

- Incorrect use of the machine
 - » Use of the machine by untrained personnel
 - » Any use of the machine that contravenes that which is stated in this manual
 - Any use of the machine that contravenes the laws and standards in force
 - » Any use with defect of primary alimentation
 - Exceeded of limits service
 - Excessive mechanicals stress

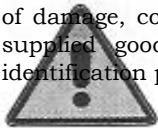
The user is required to guarantee that:

- All operations for transport, connection, use, maintenance and repair will be carried out by qualified personnel
 - Qualified personnel are understood to be (as per IEC 364) persons who, in terms of their training, experience, knowledge of standards, prescriptions, accident prevention provisions and conditions of use and service, are able to carry out all necessary interventions and to recognise and avoid all possible danger and/or damage.
- " These persons will avail of all of the relevant information and training required, including any local prescriptions, to which they will adhere when carrying out any operations,
- Unqualified personnel will be prohibited from carrying out any operation even directly on the machine or equipment.
 - During the stages of installation, any local or special prescriptions and/or in any case, all prevention conditions that have not been discharged will be met using additional safeguards.

2. MARKING DATA AND DELIVERY CHECKS



Ensure that the equipment shows no signs of damage and that no parts are missing. In the event of damage, contact the relevant insurance company or the Manufacturer. In the event that the supplied goods are incomplete, contact the Manufacturer directly. Each machine has an identification plate.

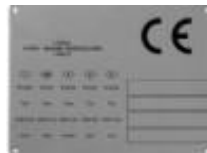


2.1 MACHINE IDENTIFICATION PLATE

This plate contains information about the Manufacturer as well as the model and progressive serial number of the machine. For any communication regarding the machine (problems, interventions under guarantee, replacement parts, etc.) always refer to this plate and to the information it contains.

2.2 CE MARKING

The CE marking on the machine means that it conforms to the European Community Directives with regard to Health and Safety in the workplace.



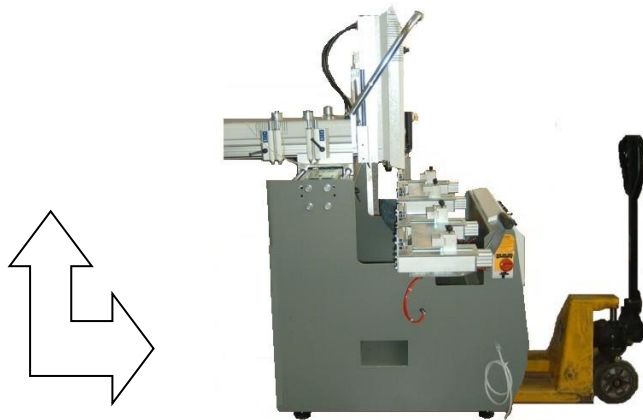
3. HANDLING



Machines are delivered in a protective plastic covering or packed on pallets with crates - wooden crates cardboard coverings, according to the requirement stated at the time of order.

WARNING!!

Once the packing has been removed, the machine may only be moved using a suitable truck.



**4. OPERATION NECESSARY FOR THE
INSTALLATION**



All stages of installation must be carried out by qualified personnel

4.1 POSITIONING

It is necessary to make sure that the machine is correctly positioned in order to guarantee its stability and to ensure the correctness of the operator's working position. The machine must be placed in a sufficiently large area to permit the handling of the material to be machined. The machine must be placed on a flat, horizontal and stable surface that is able to support the weight of the machine adequately. Furthermore, the machine must be situated in a place that allows its entire structure to be lit evenly.

4.2 CONNECTIONS

The sawing machine must be supplied from two sources: electric and pneumatic.

The pneumatic inlet (**FIG.A**) must be connected to a supply of compressed air using a pipe that withstand a minimum working pressure of 7 bar. A filter with an automatic condensation discharge outlet must be installed between pipe and the compressor, as must a tap to intercept the pneumatic supply. The entire supply system must guarantee a minimum internal passage with a diameter of 6mm. The machine is supplied pre-calibrated and if necessary, use the pressure reducing valve (FIG.C) to adjust the pressure from a minimum of 6 bar to a maximum of 7 bar.

The electrical connections (**FIG.B**) must be carried out by specialist personnel. The connection requirements are as follows: double insulation cable of type N1WK-3P+T with a section of 2,5 mm² and a 16 3P+T socket compliant with EC standards with a thermo magnetic cut-out switch 16A and ICC short circuit current that is equal to or more than 10 kA. The electrical connection must be made to a three-phase alternate current, line 50Hz with a voltage of 220 V.



WARNING! BEFORE SUPPLYING POWER TO THE MACHINE, MAKE SURE THAT THE CONNECTIONS HAVE BEEN MADE CORRECTLY IN ORDER TO PREVENT THE OCCURRENCE OF SITUATIONS THAT MAY ENDANGER THE OPERATOR.

WARNING! CHECK THE ROTATION OF THE BLADE. IT MUST BE THE SAME OF THE ARROW IN THE FIG. C. IN CASE THE ROTATION WOULD RESULT ON THE CONTRARY DIRECTION THEN INVERT TWO OF THE THREE CABLES L1/L2/L3



5. MACHINE SAFETY AND INTENDED USE



5. MACHINE SAFETY



WARNING!

Sawing machines, like all other equipment with moving parts, can be sources of serious danger if not correctly used,

protected and maintained.

Safeguards may not be removed under any circumstances

- a) The machine has not been designed, built or tested to operate in damp or wet environments, environments with a high degree of pollution from gaseous chemical substances such as chlorine, ammonia or similar, or in areas at risk from fire or explosion.
- b) The machine has been designed for the use by a single operator.
- c) Simultaneous use of the same machine by more than one operator is not permitted.
- d) During operation people other than the operator are not allowed to remain in the vicinity of the machine.

5.1 INTENDED USE

These CUTTING OFF MACHINES are intended for professional use only, they are specially designed and built to machine light-alloy profiles. Any other type of material is not compatible with the specifications of the machine.

5.2 WORK PLACE

No particular precautions with regard to the physical or chemical safety of the operator are required for the workplace. However, the use of suitable gloves to protect against the burrs of the profiles and the shards that are produced during machining, as well as of safety glasses and head-cuffs, is recommended.

5.3 FORBIDDEN USE

The machine has not been designed and built to carry out any machining other than that described in this manual. The operator must avoid carrying out any unsafe operations or operations that are not foreseen as part of machine use and which could compromise personal safety. Under any circumstances may any machine part (attachments, boring, finishing) be modified or adapted for use with other devices. MEPAL ITALIA S.R.L. declines all liability in the event of any malfunction caused by failure to respect the above. Any modifications must be directly requested to and expressly authorized by MEPAL ITALIA SRL

5.4 SWITCHING OFF AND PUTTING OUT OF SERVICE

The equipment is switched off by cutting off the pneumatic and electric power supplies. The machine is put out of service by removing the air supply pipe and protecting the inlet against dust, shavings, etc... Furthermore, the power cable must also be removed from the mains electricity.

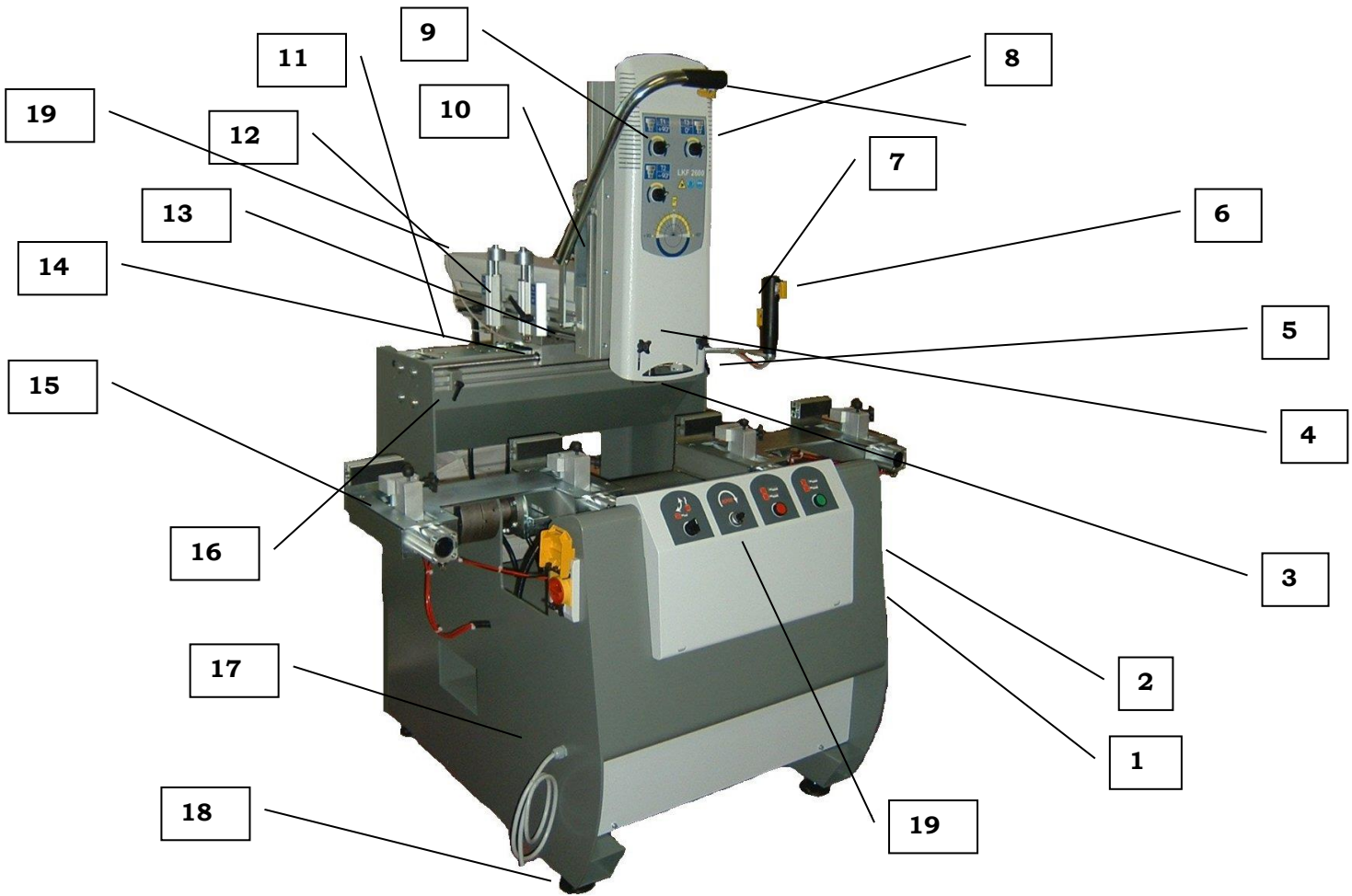
5.5 MACHINE BOARD SAFETY LABELLING

Several labels have been applied to the router to draw the operator's attention to the care to be taken when using the machine.



6.

MACHINE COMPONENTS LIST

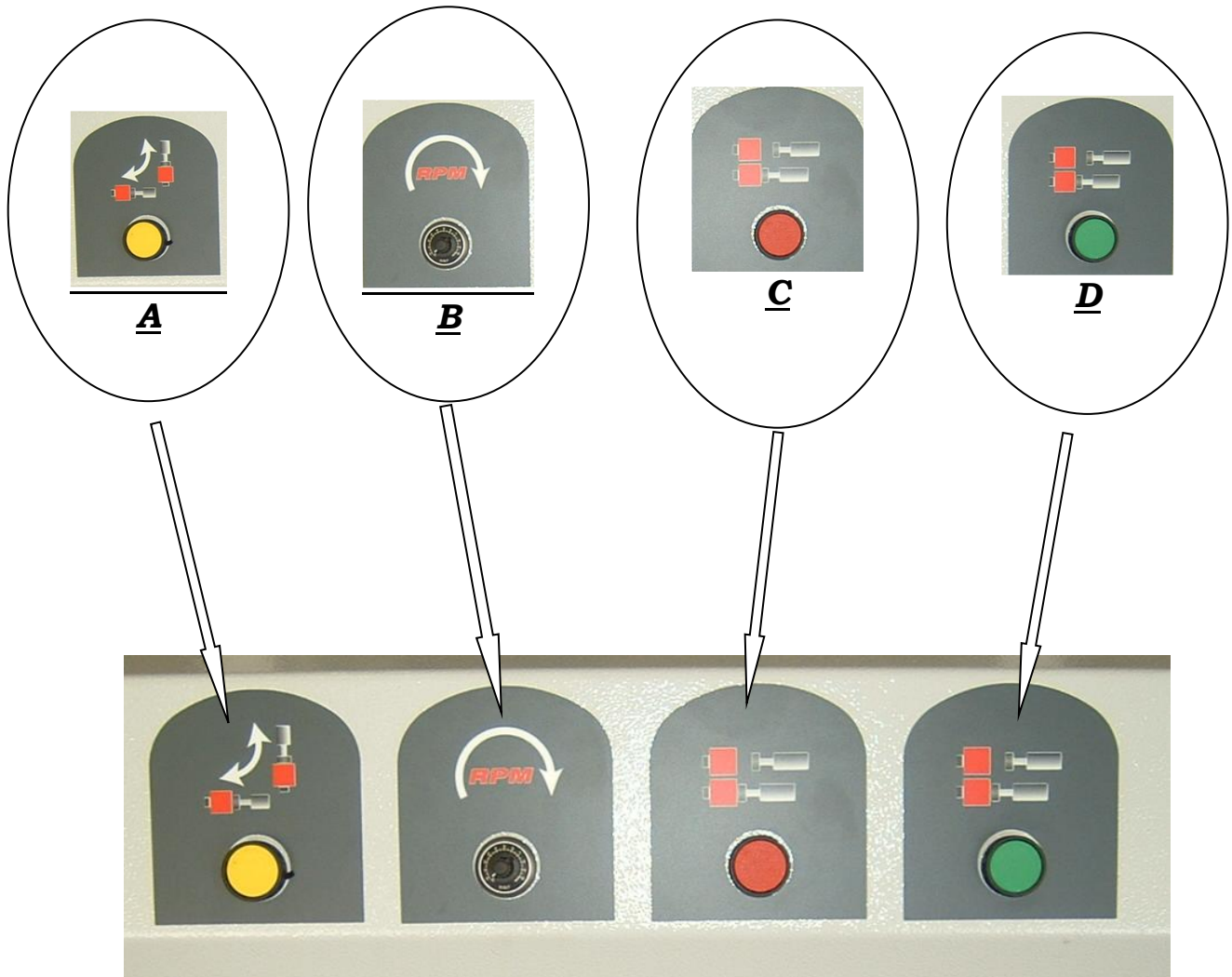


1	AIR SUPPLY
2	AIR GUN
3	SPINDLE
4	MOTOR
5	LUBRICATION
6	Z AXIS UNLOCK
7	MOTOR AND LUBRICATION START BUTTONS
8	RIGHT HAND TRACE POINTER SELECTOR
9	RIGHT HAND TRACE POINTER SELECTORS
10	Z AXIS CARRIAGE
11	LUBRICATION TANK
12	TRACE POINTERS

13	Y AXIS CARRIAGE
14	X AXIS CARRIAGE
15	TURNING WORKING TABLE
16	SIDE MECHANICAL STOP
17	ELECTRIC SUPPLY
18	MACHINES LEGS
19	CONTROL PANEL
20	
21	



6.1 CONTROL PANEL



<u>A</u>	UNLOCK TURNING TABLE
<u>B</u>	POTENTIOMETER TO ADJUST MOTOR SPEED (RPM)
<u>C</u>	CLOSE PNEUMATIC CLAMPS BUTTON
<u>D</u>	OPEN PNEUMATIC CLAMPS BUTTON



7. ISTRUZIONI PER L'USO



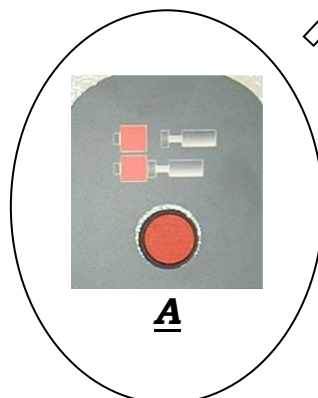
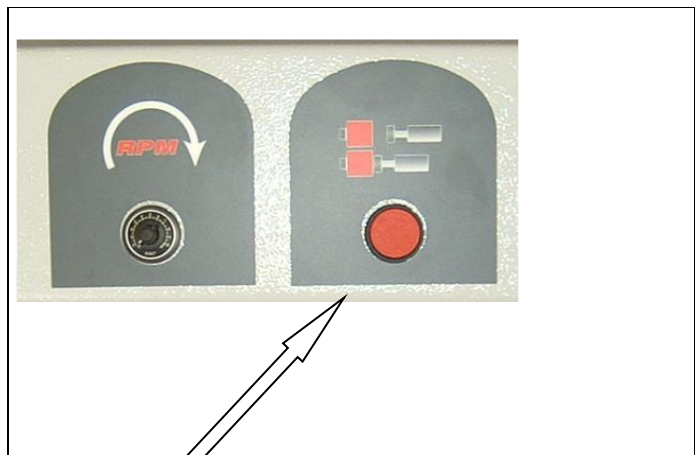
7.1 HOW TO USE

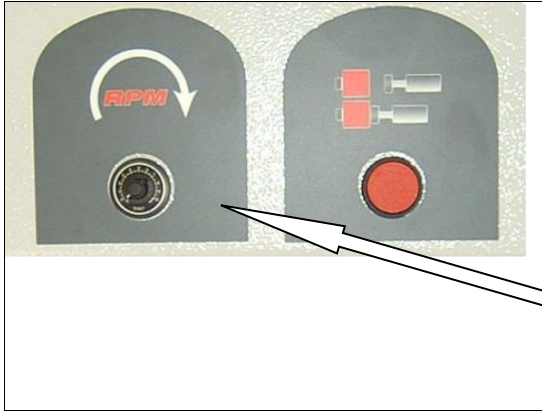


To turn on the copy router the switch must be activated (A)

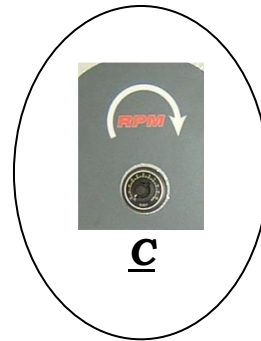
*To close the clamps the **CLAMPS CLOSING BUTTON (A)** must be pressed.*

It is necessary to close the clamps otherwise the blade motor will not run.





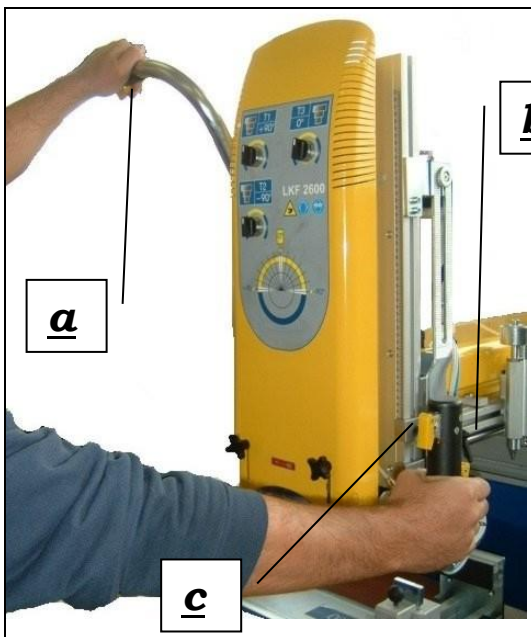
Moving the (C) potentiometer, it is possible to adjust the speed of the motor.



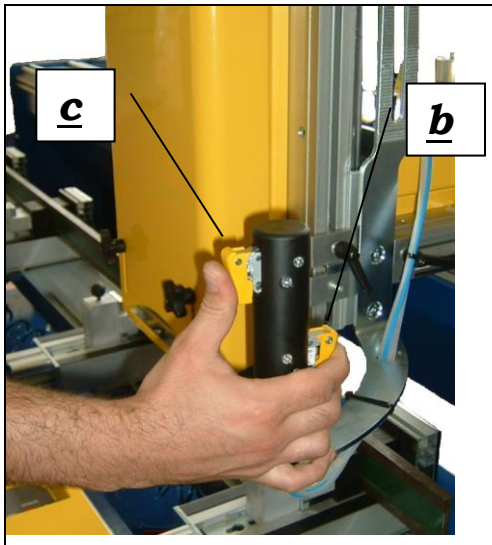
IMPORTANT!!!

Start the work sequences below only after a complete reading of this manual and the consciousness that you understand the correct use of the machine. If the above mentioned conditions are not respected, serious damage can be caused to persons and property.

7.2 WORKING COMMANDS ACTIVATION

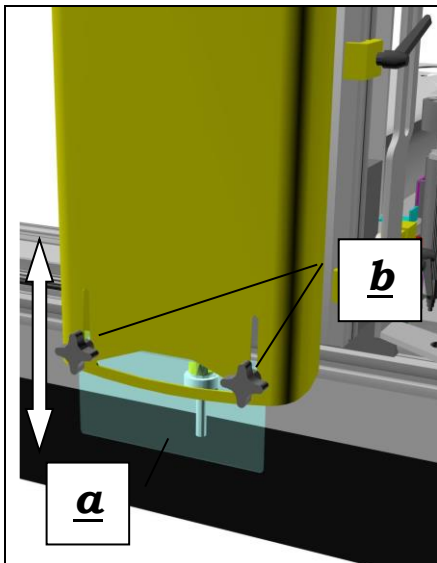


<u>a+b</u>	Buttons for motor and lubrication start
<u>c</u>	Z axis unlock button



After the clamps are closed and the switch is activated, it will be possible to start the blade motor. Press the (B) and (A) buttons to start working. If one of the two buttons is released the motor will stop and return to the original position.

7.3 WORKING CYCLE

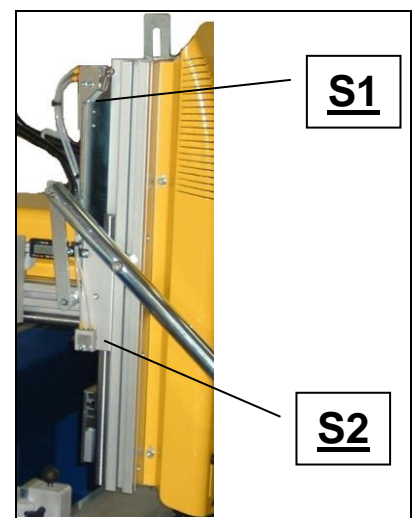


Before starting the machining it is possible to adjust the height of the lexan protection (a). Loosen the 2 knobs (b) and move the protection till the desired level is reached. Tighten the 2 knobs.

To start working switch on the motor, press the (c) button to unlock Z axis and lower the (d) lever till the desired position then move the cutter along X and Y axes. Once the operation is finished, move the copy router head in the original position pressing the (c) button.



If both s1 e s2 micro switch are not pressed at the same time it is not possible to open or close the clamps, nor to move the working table.



Releasing one of the two handles will stop the motor and the lubrication if an emergency occurs or if the working operation is finished.



As previously said, for security reasons, it is not possible to start the machine if the clamps are not closed.

WARNING!!!



BE SURE IN EVERY WAY OF THE CORRECT POSITIONING OF THE PROFILE BETWEEN WORKING TABLE AND CLAMPS.

WARNING!!



All the clamps are equipped with two safety devices necessary to ensure the safety of the user:

- **Non-return valve.** If the air pressure is suddenly low, the clamps do not open till the air pressure is returned to the normal value. This avoids the movement of the locked profile.
- **Double pressure valve.** The clamps close with a low pressure till the working cycle and the buttons on both the handles are pressed. This is to avoid the i unintentional crush of the user hands.



a

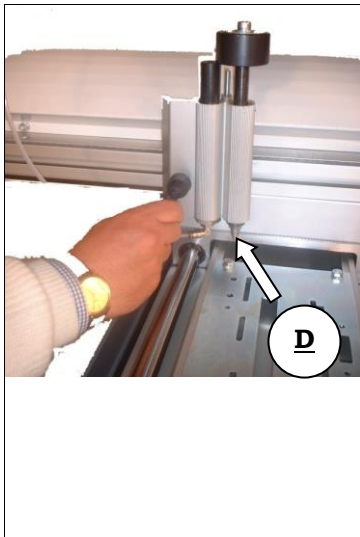
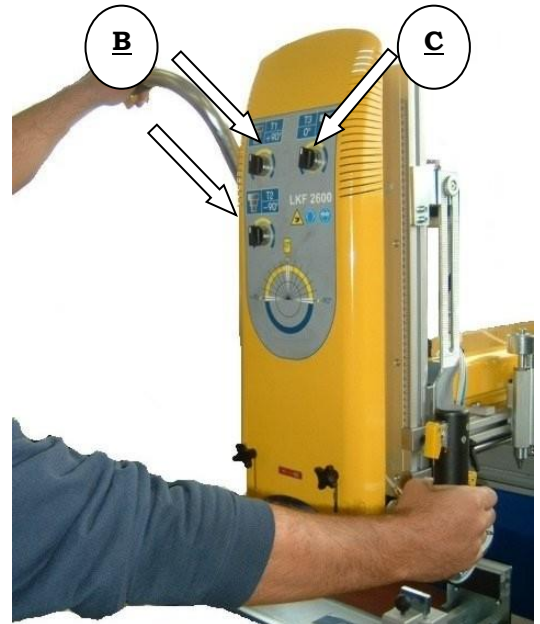
It is possible to turn the working table from 0° to +90° or to -90° following these steps:

- **Hold therotation handle of the working table**
- **Press the a button to unock the turning table**
- **Move the table in the desired position**
- **Release the a button.**

8. TRACER POINTS

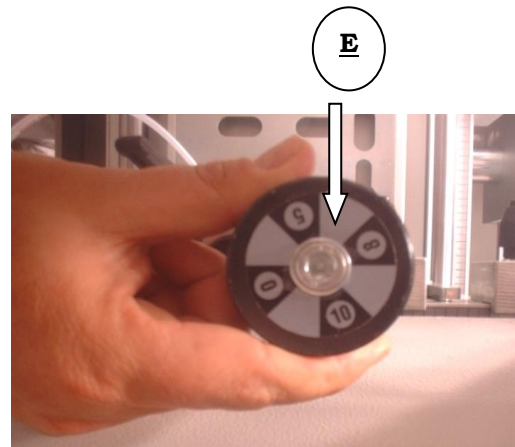


By using the selector buttons as shown in the detail (B), the left tracer points are activated; using the (C) button, the right tracer point is operating.



This operation is used to send compressed air to the pneumatic cylinder of the tracer point, lifting the shaft (detail D) of the tracer point itself. The terminal part of the shaft, which is known as a spigot, emerges from the shape used until now and can be moved into another template for machining. Once the spigot has been moved over the new shape to be copied, it is sufficient to move the mushroom-head button of the tracer point valve back to the idle position. The spigot will then enter the new shape to be copied and it will then be possible to begin machining. Tracer point spigots have one of three diameters: 5/8/10mm. these are three standard diameters of the two-fluted mills that are generally used for router copying operations

These three diameters are shown on the selector cylinder (E) Each time that a mill with a different diameter is to be used, it is necessary after replacing the mill to turn the diameter on the cylinder to the working position. This operation is indispensable since if a mill with a different diameter to that of the spigot is used, a figure with totally different dimensions to those of the template may be realized. To carry out this operation follow the above-mentioned procedures. The position "0" is also indicated on the selector cylinder. Bring the tracer point to this position each time that no template is to be copied but it is necessary to realize a shape or rectangle using the stops guides of the cross and lengthways strokes. Naturally this option ensures that the spigot does not enter the template.



8.1 TRACER POINTS PLACING AND ADJUSTMENT

T3 0°

For operation with the table at 0°.

0 point: the reference point of the tracer point is the 0 of the metric rod (fig.1).

It is the zero point for the template and for the machine.

Move the tracer point of the sum of the zero point for the template and the real measure of the working on the profile

(Fig.1)



T1 +90°

For operation with the table at +90°.

0 point: the reference point of the tracer point is the middle of the metric rod (fig.2).

Move the tracer point near the stops as in fig.3

It is the zero point for the template and for the machine on the profile

For the workings move the trace pointer of the measure necessary for the profile from the zero point .

(Fig.2)



T2 -90°

Serve per le lavorazioni con tavola a -90°.

For operation with the table at +90°.

Follow the same steps of the T1 tracer point.

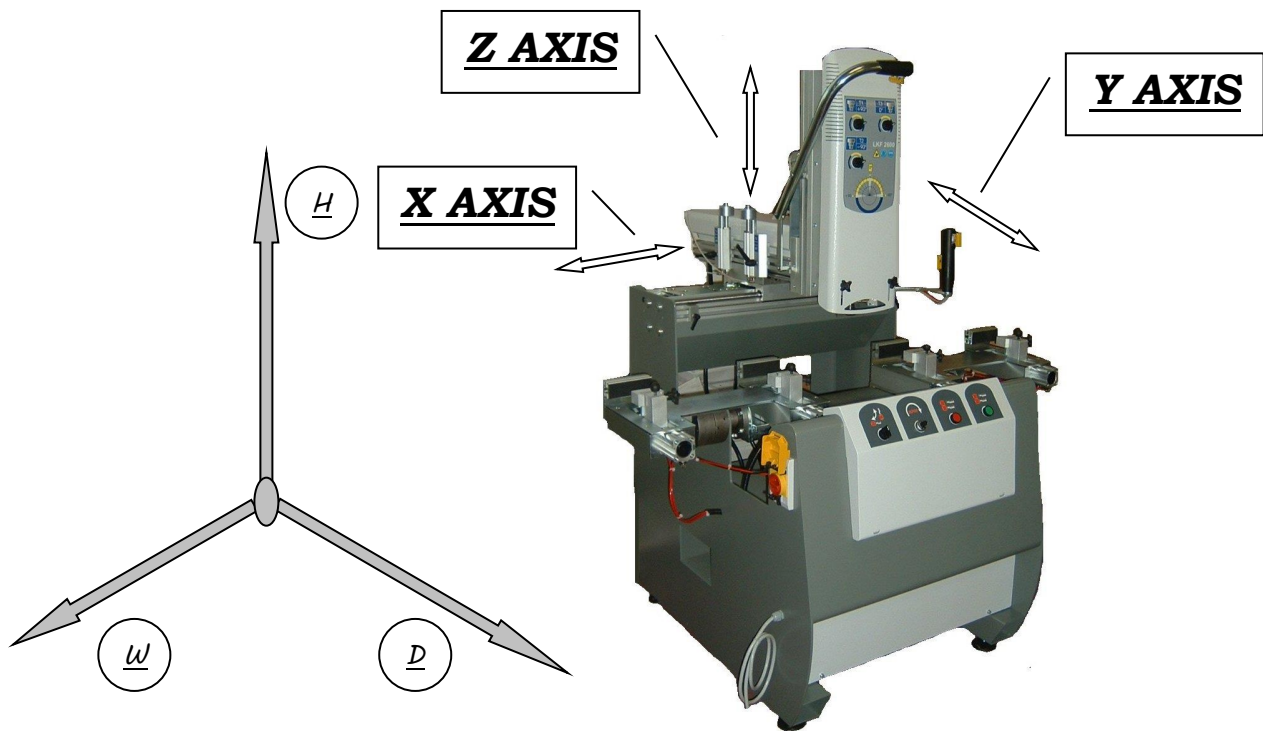
(Fig.3)



9. TECHNICAL DATA



HEIGHT	H	mm	1800	MOTOR POWER		Hp	1,5
WIDTH	L	mm	1431	X AXIS STROKE	A	mm	575
DEPTH	D	mm	950	Y AXIS STROKE	B	mm	350
WEIGHT		kg	620	Z AXIS STROKE	C	mm	200
WORKING TABLE HEIGHT		mm	860	MIN CUTTER DIAMETER		mm	5
TEMPLATE		n°	1	MAX CUTTER DIAMETER		mm	12
WORKING AIR PRESSURE		bar	7				
MIN AIR PRESSURE		bar	6				
MAX AIR PRESSURE		bar	8				
MOTOR SPEED		rpm	2800/ 12000				



10. MAINTENANCE



WARNING!!

It is important that qualified personnel carry out periodical maintenance, inspections and servicing of the unit used in order to avoid those breakdowns that may, directly or indirectly, cause damage to people, animals or property.

11.1 SETTING UP FOR MAINTENANCE

Before proceeding to carry out any maintenance, it is necessary to cut off the electrical and pneumatic supplies to the machine (remove the plug from the mains electricity and remove the pneumatic supply pipe).

11.2 MAINTENANCE PROGRAM

It is important to carry out the following maintenance operations on a regular basis:

- Clean the machine regularly in order to guarantee good working order and paying particular attention to the organs in movement,

WARNING!! DO NOT USE JETS OF WATER TO CLEAN THE MACHINE AND ESPECIALLY ON ELECTRICAL PARTS.

- Lubricate the machine tools with coolant cutting fluid so that these will never operate when dry. In this way the machining finishes are improved and the useful life of the tools is greatly increased..

Variations in normal working conditions (noise, vibration, etc.) are indicative of incorrect machine operation. In the event of problems or the need for repair interventions, contact our assistance service or that of our dealer. In any case, follow the instructions contained in this manual for any type of maintenance and/or repair intervention.

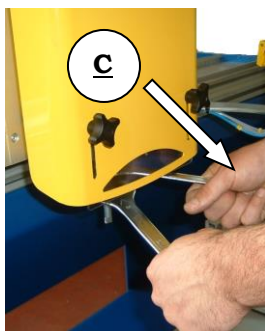
For anything not expressly contained in this manual it is necessary to contact the local Assistance Service (section 13.2).

11.3 SPECIAL MAINTENANCE

Contact the Assistance Service directly (section 13.2)

11.4 ROUTINE MAINTENANCE

Le operazioni di manutenzione ordinaria che generalmente vengono richieste su questa attrezzatura sono le seguenti



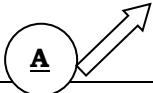
Routine operations that are usually required for this equipment are as follows:

Replacement of the two-fluted mill to be carried out for reasons of wear, breakage or simply due to the need for a mill with a different diameter. This replacement is carried out using one of the service spanners (supplied) as shown in the figure.

- Use the top spanner (c) to lock the motor shaft into position
- Use the bottom spanner (a) to turn the collet ring nut until it loosens
- Replace the cutter as required

WARNING

- Tighten the collet ring nut by turning it anticlockwise



Periodically replace the cooling lubricant that is contained in the relevant tank (B). Failure to observe this rule will invariably cause machining to be rougher and the mills to wear out more rapidly. In the event that increased tool lubrication is required, use the regulator (C) on the control panel of the router head.



11. HOW TO SOLVE ORDINARY PROBLEMS



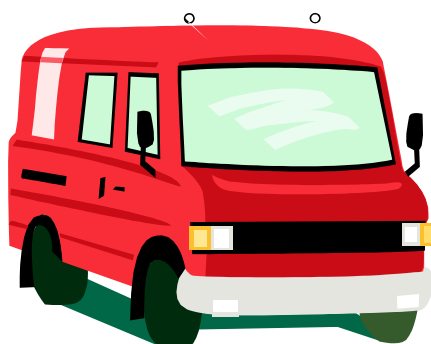
15.1 COMMON PROBLEM LIST

PROBLEMS	CAUSE	SOLUTION
THE MACHINE DOES NOT START	Main switch not enabled	Enable switch
THE MACHINE STOPS DURING OPERATIONS	Missing phase	Enable phase
	Thermal overload	Find the cause and eliminate it
BAD MACHINING	Worn cutter	Replace cutter
	Insufficient lubricant	Add lubricant
THE LUBRICANT DOES NOT ARRIVE	Lubricant finished	Replace lubricant
	Lubricant circuit blocked	Check oil cleanliness or blow compressed air through the atomiser connection
ANOMALOUS WEAR OF PNEUMATIC PARTS	Lack of lubricant in the pneumatic system	Add lubricant
	Compressed air not purified	Replace filter
	Water in the pneumatic system	Check and clean outlets
THE MACHINE DOES NOT CUT PROPERLY AT 90°	Eccentric pin moved	Section 11
THE MACHINE DOES NOT CUT PROPERLY AT 45°	Eccentric pin moved	Section 11

15.2 CUSTOMER CARE



The Assistance Service network is available both nationally and internationally. For specific problems, please contact THESE NUMBERS:



TEL.:



FAX:



WARNING!!

WHEN THE MACHINE IS TO BE DECOMMISSIONED BECAUSE IT HAS BECOME OBSOLETE OR IT HAS IRREMEDIABLY BROKEN DOWN, IT MUST FIRST OF ALL BE PUT OUT OF SERVICE BY BEING RENDERED INOPERATIVE AND ANY DANGERS REMOVED. DISCONNECT THE MACHINE FROM THE MAINS ELECTRICITY, DISCONNECT THE AIR PIPES AND REMOVE ALL TOOLS AND ADDITIONAL PARTS. COVER THESE ELEMENTS WITH PROPERLY SEALED WRAPPING. SEAL THE MACHINE INSIDE STURDY PACKAGING AND PROCEED TO ITS DISPOSAL IN CONFORMITY WITH THAT SPECIFIED IN THE STANDARDS AND REGULATIONS IN FORCE. CONTACT THE RELEVANT LOCAL BODIES FOR THIS OPERATION.

SCHEMA IMPIANTO ELETTRICO

