AMERI-CAN MACHINERY LTD.

Manual
CR105 Copy Router

INSTALLATION, USE AND MAINTENANCE MANUAL

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1. 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 of 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

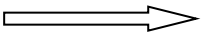
In order to draw greater attention to certain points, this manual contains the following symbols that are divided as follows:

PROHIBITION

WARNING

INFORMATION

RESERVED TO SPECIALIST PERSONNEL



SPECIAL INDICATIONS

RESPECT OF LEGISLATION

As well as the regulations specified in this manual, the Customer shall respect the relevant legislative dispositions 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 cany 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.

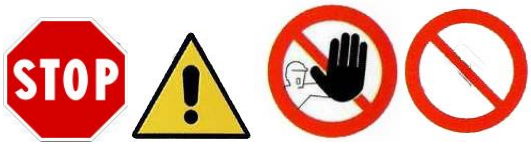
3. HANDLING

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 forklift.

4. OPERATION NECESSARY FOR THE INSTALLATION



All stages of installation must be carried out by qualified personnel

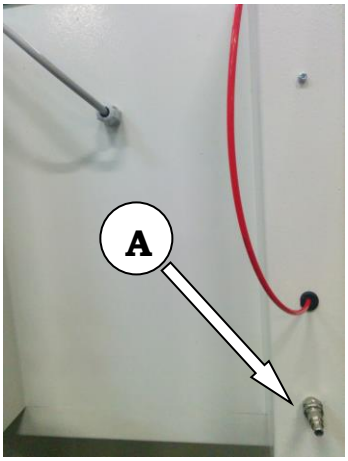
4.1 POSITIONING

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 COPY ROUTER 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+PE with a section of 2,5 mm2 and a 16 3P+PE 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 400 V or 60 Hz with a voltage of 220 V depending form the requested machine.

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 SPINDLE. IT MUST MATCH THE DIRECTION OF THE ARROW (C). IF THE ROTATION RESULTS CONTRARY TO THAT SET, IT IS NECESSARY TO SWAP TWO OF THE THREE LINE CONDUCTORS L1/ L2/ L3.

5. MACHINE SAFETY AND INTENDED USE

5. MACHINE SAFETY

WARNING!

Milling 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 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 safely. Under any circumstances mav anv 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

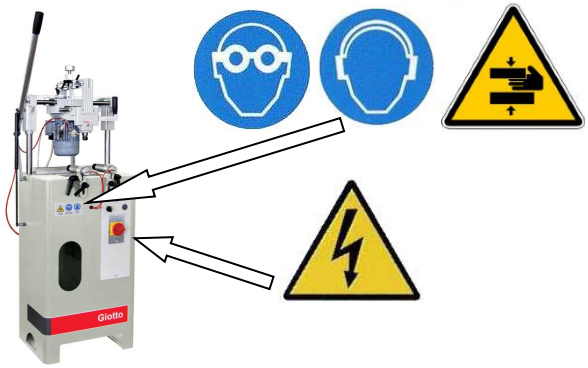
Several labels have been applied to the router to draw the operator's attention to the care to be taken when using the machine.

Electrical socket

Danger crushing arts

Glass use

Headset use



GENERAL SAFETY WARNINGS

The machinery was designed to be used from only one operator that must position himself in front of the machine where is possible to reach easily all machine commands including the emergency commands. Moreover the operator must have the complete control of the work cycle.

The operator must immediately stop the operations in progress if for every reason the blade does not go down in the rest position or if any anomaly is noted.

The operator must stop the operations in progress if other people approach the machine.

The operator must necessarily turn off and lock the main switch and unplug the machine from the air by venting the pressure from the air system if:

-must clean or remove protective casing to make any type of operations, he must wait the time required for the stopping of the blades and their return to the rest position.

-to carry out maintenance work in the machine working areas.

-to carry on whatever operation in correspondence of the machine blade.

-to carry on whatever adjustement operation on the machine.

The machine is equipped with safety devices: it is prohibited any alteration, modification or partial removal of these devices.

Check at the beginning of each work shift their presence and efficiency, otherwise alert immediately the responsible person.

The use of compressed air to clean or to blow up the chips must be carried on only with adequate eyes protection (glass).

The electrical equipments can cause accidents.

The work areas should not be approached with the hands, being present in the machine components with sharp or high pressures and movements unwary can cause injury.

For every reason do not let unauthorized personnel to operate on the machine.

Do not wear jewels, unfastened, loose-fitting and dangling clothes that could catch in the moving parts.

It is advised the use of suitable clothing, safety shoes, safety glass, face maks.

Do not start the machine if there is any anomaly.

The working area must be always clean and dry.

During the assembly and disassembly of casing or other parts, do not align any holes with your fingers but with appropriate tools as there may be danger of crushing.

LIGHTING

Must be provided adequate lighting, natural or artificial in accordance with ISO 8995-89 on lighting at the workplace.

GROUNDING SYSTEM

Must be performed at CEI 64-8.

INTENDED USE

The MILLING machine is adequate to cut light aluminium profiles using appropiate tools.

NOISINESS

average sound vacuum pressure: 71,0 dba

average sound pressure at work: 86,4 dba

vacuum sound pressure: 87,0 dbwa

sound pressure at work: 101,0 dbwa

vacuum lop user place: 81,0 dba

lop user place at work: 97,0 dba

maximum sound pressure level in the user place 119,0db

It is advised the use of individual safety protection devices against noise in the case of prolonged use of the machine.

PACKING

The machine is supplied with a shrink-wrapping.

LEVELLING

The machine has to be levelled transversely and longitudinally.

OPERATNG TEMPERATURE

From 10 °C to 40 °C.

CLEANING

The machine should be cleaned with detergents, non-acids or non-aggressive to paints, we recommend specific industrial products.

Do not use acids, gasoline, paint thinner, turpentine or petroleum.

Use gloves and suitable clothing

SAFETY DEVICES

Pressure switch of minimum pressure, if the pressure is not sufficient the blade will not start.

Valve of low and high pressure: when closing the clamps the pressure is about 2.5 bar only when pressing the two buttons and the work cycle begins then takes over a pressure of about 7 bar, to prevent crushing even if slight of the hands.

One way valves on the clamps: if the pressure is missing the clamps will remain closed and the profile locked.

Command cycle with two hands: you have to press both buttons simultaneously to start the cutting phase, with two-hand safety valve. The working cycle is interrupted releasing one of the two buttons.

Fixed protective casing.

RESIDUAL RISKS

Despite the barriers and safety devices, the machine has the residual risks caused by improper use of the machine or unpredictable situations. These risks are reported with technique symbols:

crushing danger

use eyes glass

use headset

Please be aware that in the electric panel even with main switch off there is electricity.

The pneumatic circuit even if disconnected remains under pressure. If in case of malfunction the blade does not come down, do not put your hands near to the work area until the blade is fully back and stopped. The operator must use precautions and individual devices according to the current legislation: glasses, gloves, headsets and all that is necessary according to the residual risk analysis in the workplace.

The use of compressed air to clean or to blow up the chips must be carried on only with adequate eyes protection (glass).

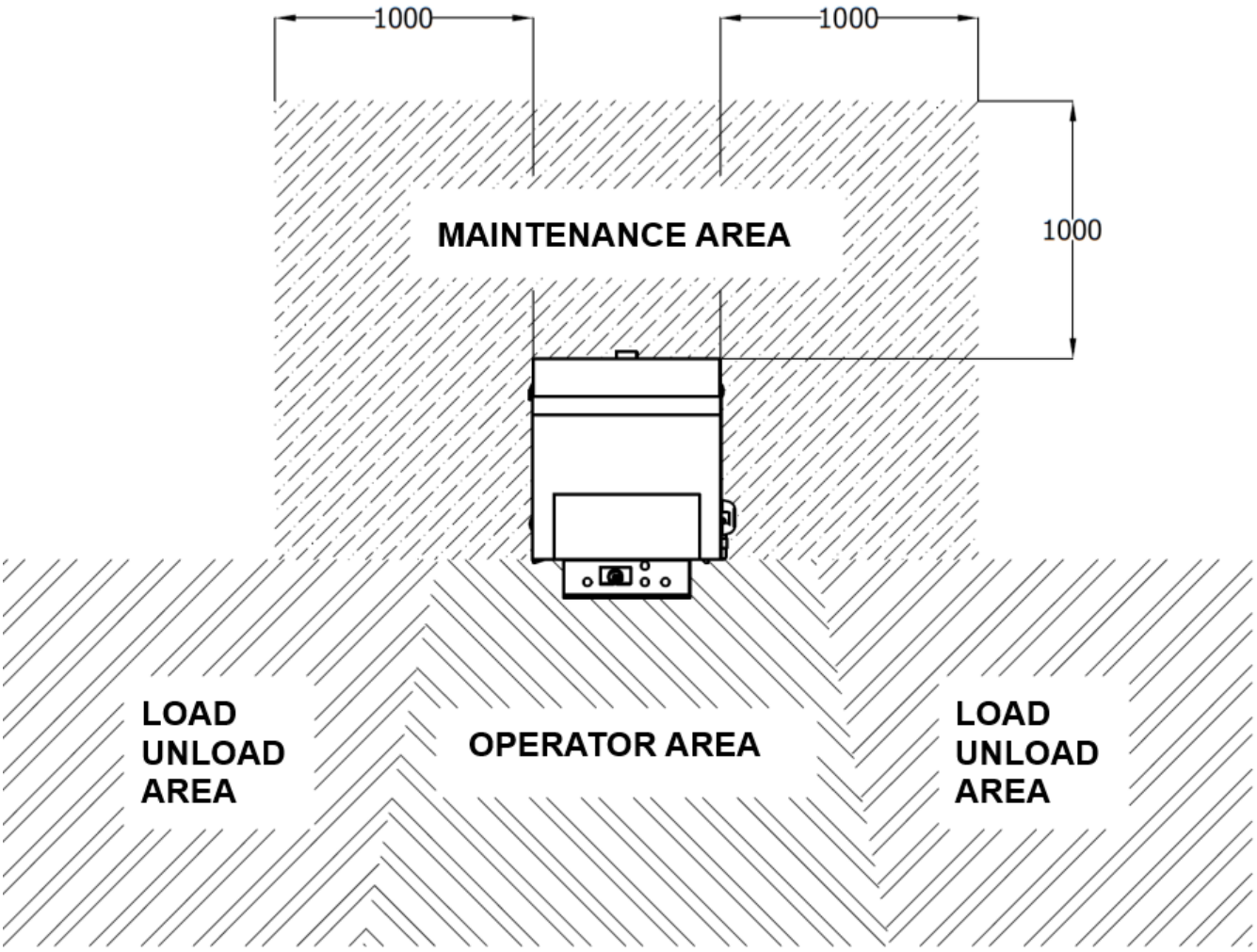
It is advised the use of suitable clothing, safety shoes, safety glass, face maks.

Do not start the machine if there is any anomaly.

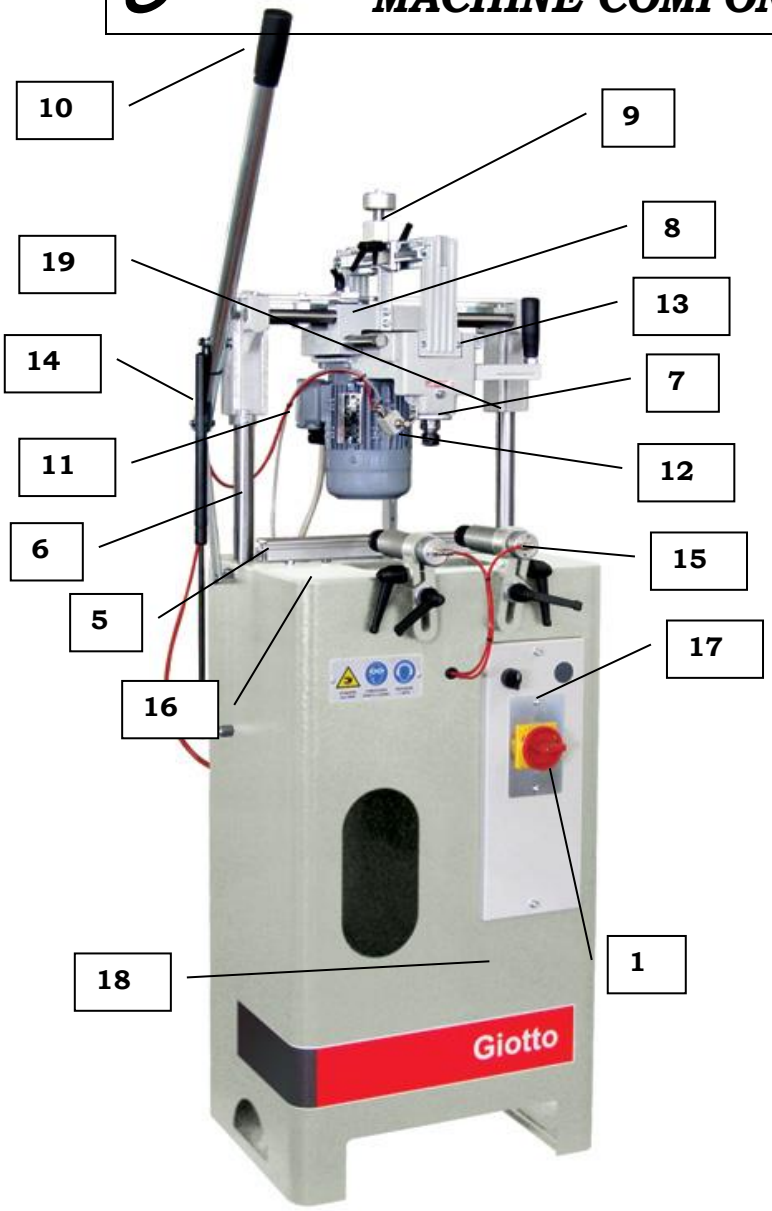
During the assembly and disassembly of casing or other parts, do not align any holes with your fingers but with appropriate tools as there may be danger of crushing.

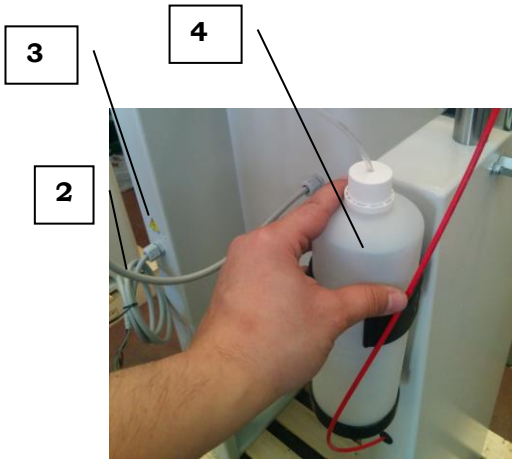
The safe area is the area indicated as ***operator area****, in the rear area indicated as* ***maintenance area*** *must not stay anyone.*

The lateral area indicated as ***load area*** *must be used only for the eventual loading and unloading of profiles, only when the machine is off.*


1000
1000
1000
MAINTENANCE AREA
LOAD
UNLOAD
AREA
OPERATOR AREA
LOAD
UNLOAD
AREA

6. MACHINE COMPONENTS LIST

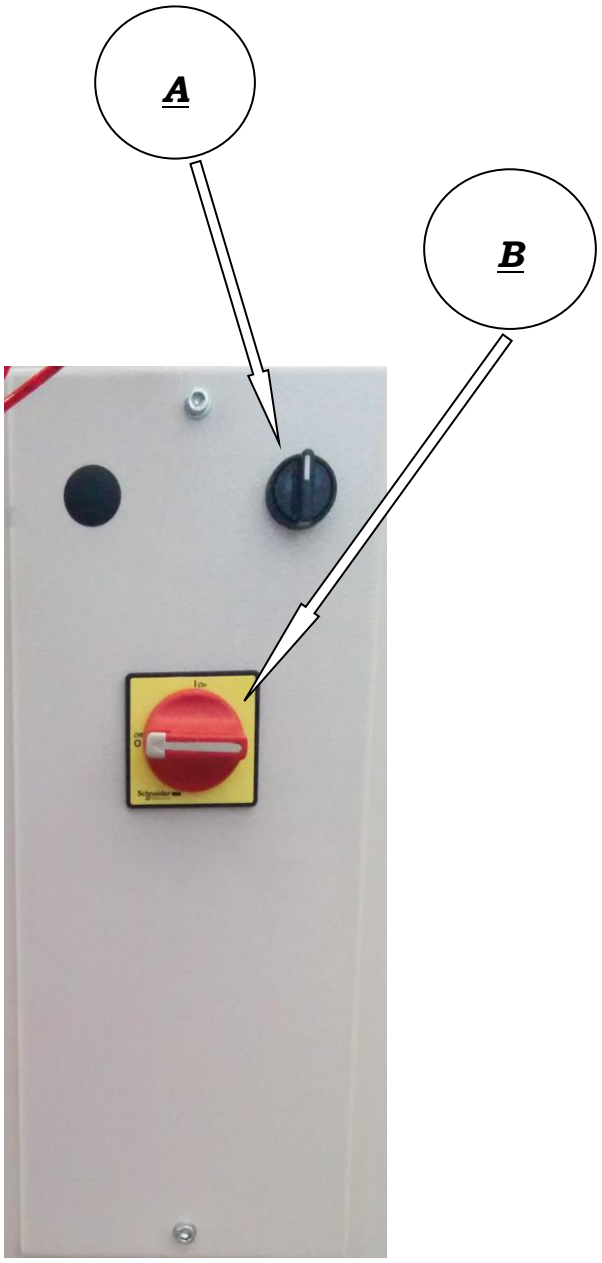




1	POWER SWITCH
2	ELECTRICAL CONNECTION
3	VOLATAGE LABEL
4	COOLANT TANK
5	BATTING SIDE PROFILE
6	VERTICAL MOVEMENT GUIDES
7	SPINDLE
8	LONGITUDINAL MOVEMENT TRUCK
9	TRACER POINT
10	LEFT HANDLE WITH BUTTON
11	MOTOR
12	SPRAYER REGULATOR

13	TRANSVERSAL MOVEMENT TRUCK
14	GAS SPRING
15	CLAMPS
16	WORKTOP
17	CONTROL PANEL
18	BASAMENT
19	
20	

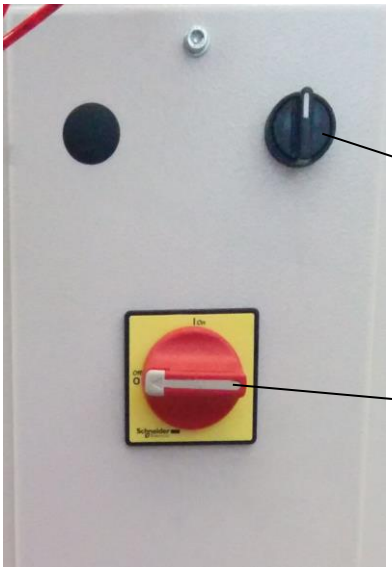
6.1 CONTROL PANEL



A	**OPEN/ CLOSE PNEUMATIC CLAMPS BUTTON**
B	**POWER SWITCH**

7. HOW TO USE

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 (B) must be pressed.
It is necessary to close the clamps otherwise the blade motor will not run.

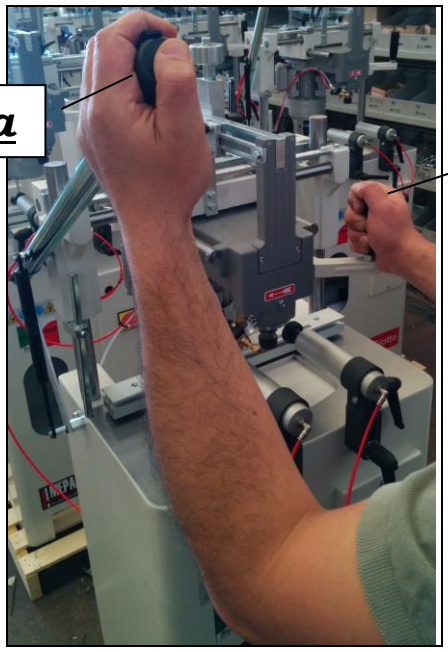
B

A

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.

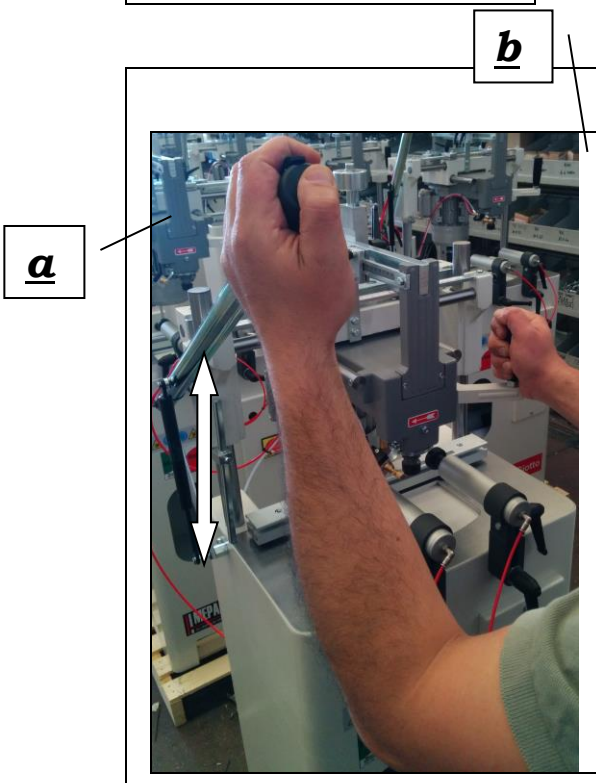
7.2 WORKING COMMANDS ACTIVATION



a+b	***Buttons for motor and lubrication start***

After the clamps are closed and the switch is activated, it will be possible to start the spindle 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



After starting the electric motor, lower the left lever (A) and consequently the head, proceeding to the drilling operation. Once finished reports the copy router at the initial position.
Once working height is reached, grasp both levers while keeping the A and B buttons pressed and proceed with the processing of the template selected previously. At any time you can stop working, simply by releasing one between the A or B button.

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.

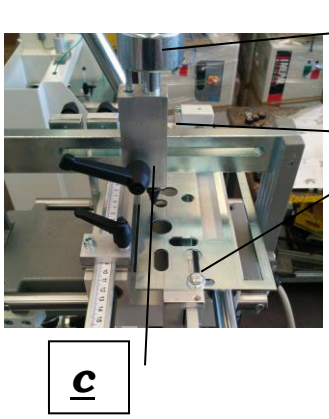
WARNING!!

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 unintentional crush of the user hands.

8. TRACER POINTS

The copy router has standard template with the more used templates. It is possible to request, as optional, special templates. In this case to replace the template proceed as follows:

1. **With a hex wrench remove the two screws (A) securing the template as shown in the particular on the side.**
2. **Remove the standard template and replace it with the one you requested.**
3. **Replace the two screws (A) to its original position and proceed through the same wrench to lock the template.**



The machine comes standard with ONE manual tracer points.

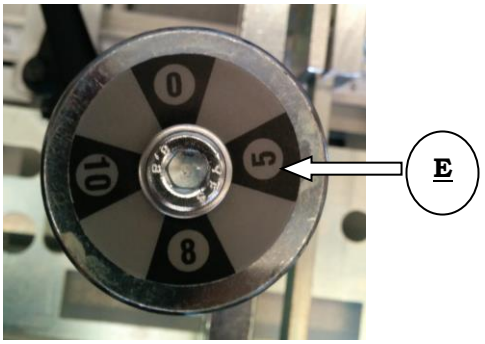
The shank of the tracer point is made of three different diameters: 5/8/10mm.

These are the three mill diameter typically used in copy router copying.

Lifting and turning the switch (B) of the tracer point (C) can place the shaft in four ways:

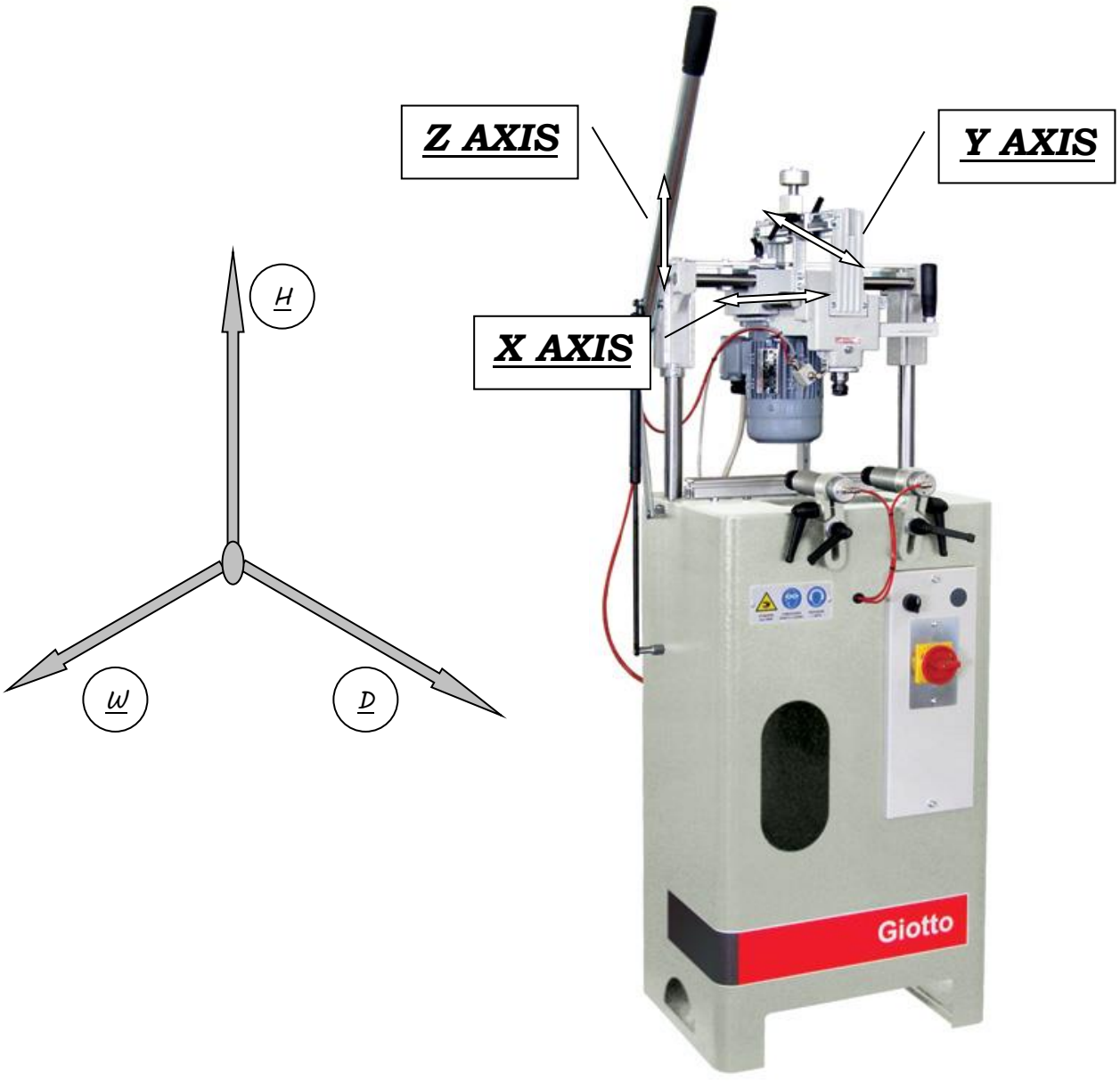
- Diameter: 5 mm / 8 mm / 10 mm / Rest Position
The end of the shaft exit or enter the desired template.

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. This option ensures that the spigot does not enter the template.



9· TECHNICAL DATA

HEIGHT	H	mm	1650	MOTOR POWER		kW	0,37
WIDTH	L	mm	590	X AXIS STROKE	A	mm	200
DEPTH	D	mm	560				
WEIGHT		kg	140	Y AXIS STROKE	B	mm	120
WORKING TABLE HEIGHT		mm	860				
TEMPLATE		n°	1	Z AXIS STROKE	C	mm	110
WORKING AIR PRESSURE		bar	7	MIN CUTTER DIAMETER		mm	5
MIN AIR PRESSURE		bar	2	MAX CUTTER DIAMETER		mm	12
MAX AIR PRESSURE		bar	7				
MOTOR SPEED		rpm	10000				



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 cany 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 ESPECCLALLY 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.

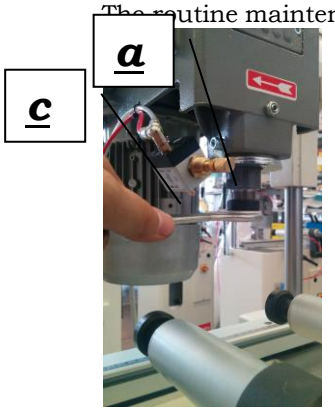
For anything not expressly contained in this manual it is necessary to contact the local Assistance Service (section 13.2).

11.3 SPECIAL MAINTENANCE

Contact the Assistance Service directly (section 13.2)

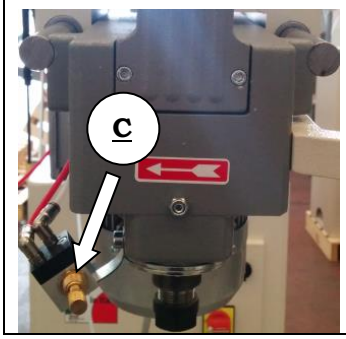
11.4 ROUTINE MAINTENANCE

The routine maintenance operations that are usually requested are:

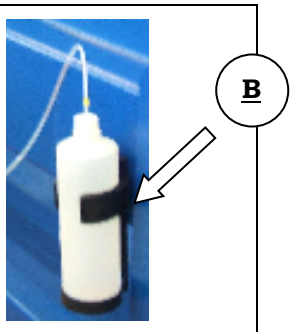


Routine operations that are usually required for this equipment are as follows:
Replacement of the two-fluted mill to be carried out for reasons of wear, breakage or simply due to the need for a mill with a different diameter. This replacement is carried out using one of the service spanners (supplied) 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.



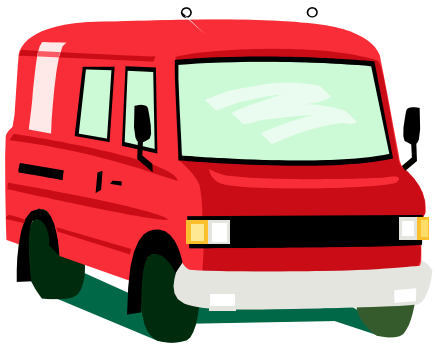
11. HOW TO SOLVE ORDINARY PROBLEMS

15.1 COMMON PROBLEM LIST

PROBLEMS	CAUSE	SOLUTION
THE MACHINE DOES NOT START	Main switch not enabled	Enable switch
	Not enough air pressure	Increase the air pressure
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 cleanness 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

15.2 CUSTOMER CARE

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



TEL.: +905-542-2055

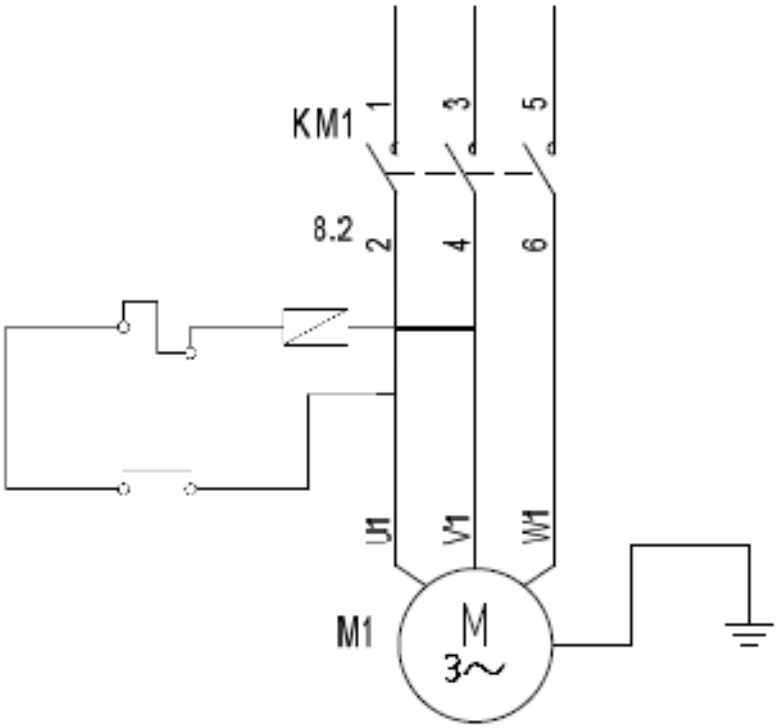
WARNING!!

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.

WARRANTY

The MEPAL ITALIA ensures that the machine purchased, before being delivered to the customer, has been tested with positive result. Warranty is of 12 months and refers to the quality of the material and the lack of manufacturing defects. In case of replacement of defective parts, the customer is required to pay the shipping and packaging. Damages for alterations, drop and non correct use of the machine are excluded from the warranty. The warranty is not valid in case of non compliance with the conditions of pay-ment established at the time of acquisition of the machine.

In assistance cases, expenses related to spare parts, which are not included in the warranty, and other costs incurred, must be paid directly to the technician who will take care of the technical support. For these costs you will receive an invoice.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