INSTRUCTION HANDBOOK

Double Mitre Saw

T 300-T 300/A

T 350-T 350/A

T 400

Alfamacchine

Via dell'Artigiano, 12 - 47100 Forlì - Italy

Tel. +39-0543-482711 - Fax +39-0543-480770

info@alfamacchine.com - www.alfamacchine.com

Index

1. GENERAL INFORMATION

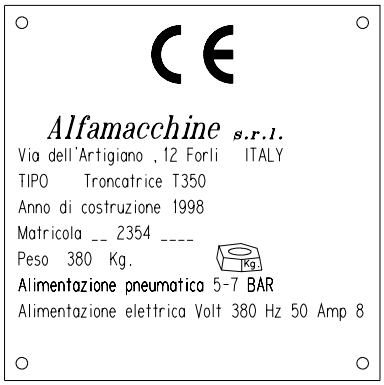
1.1 MANUFACTURER

The firm Alfamacchine can boast more than 10 years of experience in the construction of Double Mitre Saws. It is the acquired technological know-how, developed during years of researches in strict touch with manufacturing department and international commercialization the best warranty that Alfamacchine can grant to its customers.

TEL 39 (0) 543 / 482711	**FAX** 39 (0) 543 / 480770

1.2 SERVICING CENTERS

Alfamacchine is represented both in Italy and Europe by a numerous and prepared selling organization. Contact directly our firm to the over printed numbers to have the indications concerning the local Service organisation.
For every need regarding Use, Maintenance or Request of Spare Parts, the Customer is pleased to address to the authorized service centers or directly to Alfamacchine, specifying the machine's identification data impressed on the plate.



1.3 CERTIFICATION

The machine is produced in conformity to the pertinent European Community Norms in force at the moment of its introduction on the market.

1.4 WARRANTY

The warranty on machine components, counting from the date written on the delivery bill, is so subdivided:
24 months for mechanical part
12 months for electric and electronic parts and motors
The Warranty includes exclusively the replaced spare parts, excepted the workmanship.
Are excluded from the warranty, damages to the machine caused from:

- Shipping and/or Handling
- Operator errors
- Missing of maintenance described on this handbook (see the paragraph 6.5)
- Failures and/or breakage not imputable to machine malfunctioning
- Interventions or variations on the plants effected by unauthorized personnel

1.5 PRE-ARRANGEMENTS CHARGED TO THE CUSTOMER

It is a customer duty, on times agreed with the producer, to execute what is indicated in our documentation (see the attachment 10.3-B)
Are normally charged to the customer:

- Premises predisposition, included building works and/or canalization eventually requested
- Machine power supply, observing the current norms of Country where the machine is installed (see at the paragraph 4.6.2)
- Pneumatic supply of compressed air (see at the paragraph 4.6.1)

1.6 HANDBOOK STRUCTURE

The customer must read very carefully the indications reported on this handbook, because the proper Pre-Arrangement, Installation and Use of the Machine, constitute the basis of customer-manufacturer relationship.

1.6.1 OBJECT AND CONTENTS

This handbook aim is to provide to the customer all necessaries information so that, besides the proper use of the machine, He would be able to run it in complete autonomy and safety. The handbook contains information concerning the technical aspects, machine working and standstill, maintenance, spare parts and safety. Before making any operation on the machine, the qualified technicians and operators must read carefully this handbook instructions. In case of doubt about correct interpretation of a.m. instructions, ask to Alfamacchine the explanations requested.

1.6.2 USERS

This handbook is made both for users and technicians authorized to the machine maintenance.
The operators cannot execute operations reserved to the maintainers or to the qualified technicians.
The producer does not answer of damages derived from not-observance of this prohibition

1.6.3 PRESERVATION

The instruction handbook must be kept very closed to the machine, into a special container protected from liquids and whatever could compromise its legibility

1.6.4 Symbols utilized

	DANGER	it indicates a danger with a mortal risk for the operator
	WARNING	It indicates a warning or a note about key functions or useful information. Pay the maximum attention to the paragraph marked with this symbol.
	OBSERVATION	is requested to take a measurement data, to check a signal,....
	INQUIRY	the utilizer is requested to check the proper positioning of any element of the machine, before operating a certain command
	EXAMINATION	It's necessary to consult the handbook before effecting a certain operation
	ADJUSTMENT	in case of strange working and/or anomalies, can be requested a certain mechanical adjustment and/or electrical setting

2. MACHINE DESCRIPTION

2.1 WORKING PRINCIPLE

The Double Mitre Saw, model T300/350, is a saw at vertical descent with blades at 45 degrees. It has been designed for the cutting of frames for pictures , furniture, windows or looms.
The blades descent is controlled by a pneumatic system that clamps the mouldings on the working bench by means of 4 clamps.
The machine is equipped with a pneumatic device that allows a quick blades backstroke at low air consumption.
The directions of blades movement and rotation are represented on the picture 2.1 A

2.2 MAIN COMPONENTS

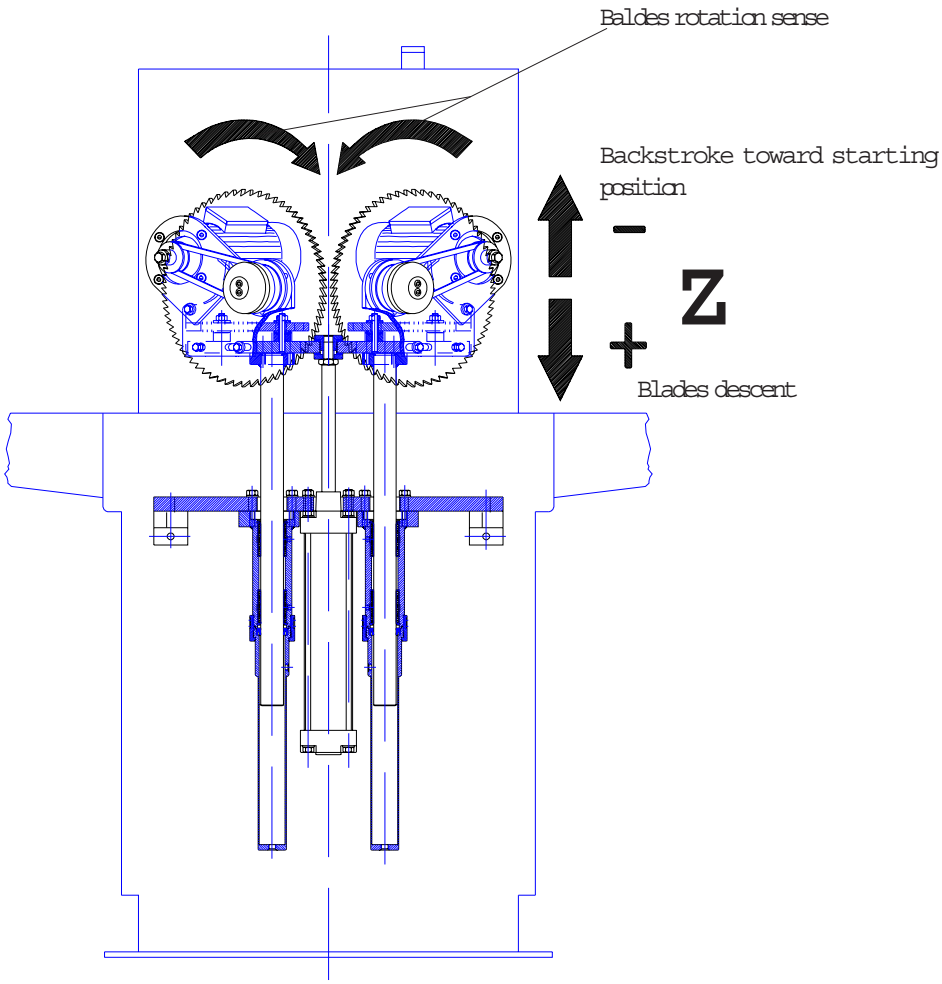
The main components, constituting the machine, are:

- Floor stand and working bench group
- Blades set at vertical descent on Z axis
- Padlockable air filter lubricator set
- Pneumatic system
- Electrical equipment

2.3 MACHINE STRUCTURE

The movement directions during machine's running are: Z axis
Vertical movement of blades group from upside down

Picture 2.1 A - Movement directions



2.4 DIMENSIONS

The overall dimensions are reported on complete drawing of attachment 10.2-A

2.5 SURROUNDING CONDITIONS

The machine does not need special surrounding conditions. It has to be installed inside an industrial building, lit, aired and with a compact and flat floor. The admitted temperatures go from 5° to 40° C, with an humidity not higher than 50% at 40° C or 90% at 20° C.

2.6 LIGHTING

Premises lighting must be conformed to the norms in force in that Country where the machine is installed and has to guarantee a clear visibility, do not create dangerous reflections and allow a clear reading of the control panel and the location of emergency button.

2.7 VIBRATIONS

In standard conditions conformed to the indication of machine proper utilization (the machine is anchored to the ground by 4 fastening points), the vibrations do not create dangerous conditions. The average quadratic weighed level, according to the acceleration frequency to which arms are exposed does not exceed 2,5 m/s2.

2.8 NOISE EMISSIONS

The machine is designed and projected for reducing the noise emission level to its source. Tests have been effected according to the measurement method conformed with Art. 46 D.Lgsl. 277/91.
The T350 Double Mitre Saw , when workings on standard and correct conditions of use, produces a sound level per operator lower than 85 bB (A) even if used continuously.
For this survey has been considered the cut of hardwood type Ramin which can be used for manufacturing of picture frames. The use of softer woods (i.e. Obeche) produces sound levels lower of about 2-3 dB (A).
The noise levels indicated are emission levels and are not representing sure operating levels. In spite of existing a relationship among emission levels and exposure ones, this can not be used in a reliable way to define if further cautions are necessary. The factors determining the exposure level to which the working force is subjected, include exposure lasting, working premises characteristics and other noise sources (number of machines, closed proceeds, etc...). Furthermore, also the allowed exposure levels could change according to the several Countries. At any rate, the information provided, will allow the Machine Operator to achieve a better evaluation of danger and risks he is submitted to.

☞	The indicated noise levels are emission ones measured in standard conditions of use. In case of any machine modification, the above mentioned levels could be changed and should be settled directly on the same machine.

⚠	Use the machine only if equipped with special individual protections for hearing (headphones etc...) .

2.9 TECHNICAL DATA

Here below are indicated Machine technical data and characteristics to which make reference for any eventual contact with Producer Technical Assistance.

Table 2.9 A - DATA AND CHARACTERISTICS

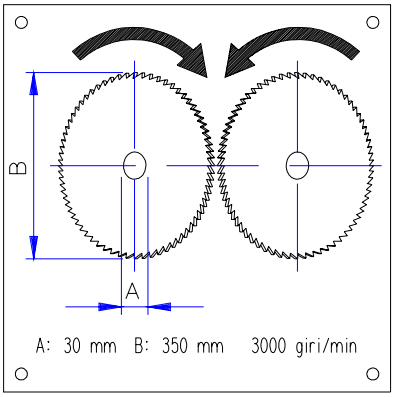
Length of right working bench extension		1200 mm
Length of left working bench extension		1200 mm
Working bench length		800 mm
Working bench height (from the floor)		950 mm
Motors power n.2		1.5 kW
Max revolutions per minute		2800 n/'
Pneumatic feed		5/7 bar
Power Consumption		3 kW
Profiles width (Min/Max)	T300 - T300/A	15/60
	T350 - T350/A	15/80
	T400	15/100
Profiles height (Min/Max)	T300 - T300/A	10/60
	T350 - T350/A	10/80
	T400	10/100
Electric power supplying		400V/230V
Suction holes Ø		80 mm
Total weight		about 380 Kilos

2.10 TOOLS

☞	Blades, conformed to the Norm EN 847-1

Blades, conformed to the Norm EN 847-1, have the following dimensions:

- A =30 mm
- B =300 mm (model T300 - T300/A)
  =350 mm (model T350 - T350/A)
  =400 mm (model T400)
- Thickness =2.50 mm



?	The customer can request different types of blades according to the materials to be cut (light alloys, wood or plastic) .

For cutting light alloys the machine must be equipped with blades cooling system

2.11 EQUIPMENT

The following equipment refers to the standard machines.

Possible special equipment, of course, could request details different from those listed here below.

2.11.1 STANDARD

The machine is supplied complete of:

- N. 1 Allen wrenches set (3/4/5/6 mm)
- N.1 22mm wrench
- N 1 Flanges set 80 mm
- N.1 fixed slide stop
- N.1 swing slide stop
- No. 2 gauged extensions of the working bench
- No. 4 vertical clamps
- No. 2 suction holes Ø 80mm
- N.1 Padlockable Air filter lubricator
- N.1 Instructions Handbook

2.11.2 OPTIONALS ACCESSORIES ON REQUEST

The machine can be supplied with following optionals:

- Single Phase Motors (*)
- Timer and Remote Control Switch for delayed starting of 2nd motor (only for single phase machines) (*)
- Mist-Spray Cooling System to cut aluminum profiles (*)
- 3rd working bench extension 1200 mm (right)
- retractile pneumatic stop
- pneumatic horizontal moulding clamp
- adjustment of blades stroke
- blades for wood
- pneumatic pedal for vertical clamps activation

The options marked with * can be supplied only during 1st equipment.

Any modification and/or addition of accessories, must be expressly approved and executed by the Manufacturer.

2.12 ELECTROMAGNETIC ENVIRONMENT

The Machine is designed to operate properly in an industrial electromagnetic environment, being included in the following Norms about Emission and Immunity:
EN 50081-2 Electromagnetic compatibility-Generic Norm on Emissions-2nd part-Industrial Environment-(1993)
EN 50082-2 Electromagnetic compatibility-Generic Norm on Immunity-2nd part-Industrial Environment-(1995)

3. SAFETY

3.1 GENERAL WARNINGS

The operator must read very carefully the information written on this Handbook, expressly about proper precautions for Safety listed in this chapter.

It is indispensable for the operator to follow the warnings list here below:

- Keep clean and ordered the machine and the working premises
- Provide appropriate containers to stock both just worked pieces and ready to work ones.
- Use the Machine only in perfect psycho physical condition
- Wear an adequate clothing to avoid obstacles and/or dangerous entangles to/from the machine
- Wear the individual protection gears prescribed by instructions handbook, regarding the effected operations
- Do not remove or elude the Machine Safety Systems
- Keep the fingers away from blades working area
- Disconnect pressure distribution and power supplying during any maintenance intervention
- Keep the feet separated from the pedal during Machine regulation

3.2 PROPER USE

The Machine is designed and built for 45° cuts of wooden mouldings and relative derived and similar ones like hard plastic or light alloys

	For cutting light alloys is necessary: • To equip the machine with Mist Spray Cooling System • Use proper blades

3.3 INADVISABLE USE

The machine has not to be used:

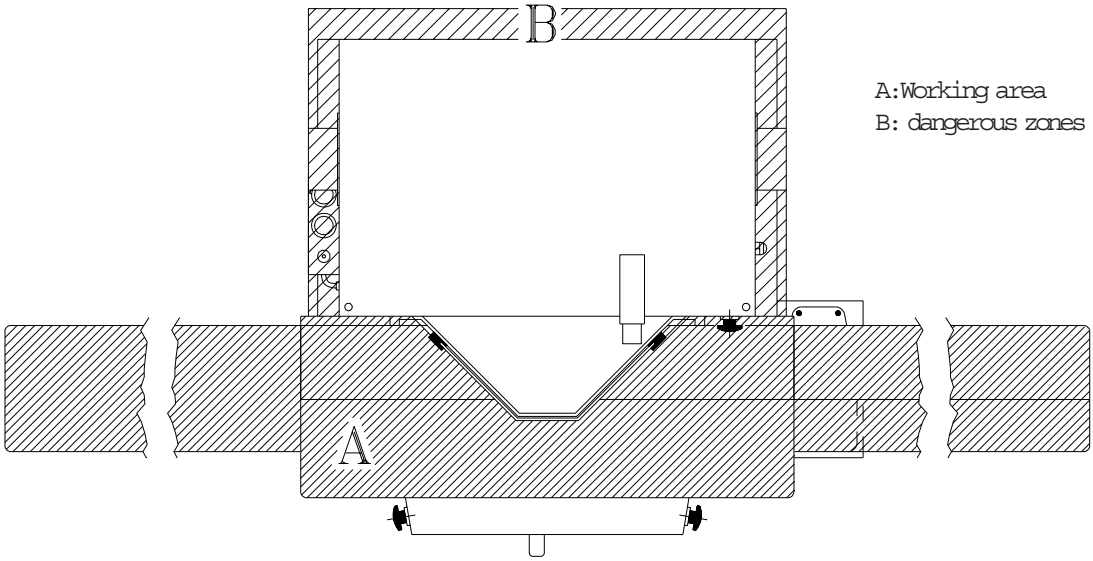
- For uses different from those listed in 3.2 paragraph
- In explosive or aggressive atmosphere, at high density of dust or oily substances suspended in the air
- In flammable atmosphere
- Outside in all weather severity
- With disconnected electromagnetic interblocks
- With electric bridges and/or mechanical instruments leaving out machine parts or functions
- For working materials not suitable with machine characteristics

	it is absolutely forbidden to cut different materials (glass, ceramic. etc..) in particular irony (or similar) materials.

3.4 DANGEROUS AREAS

The area of blades operating, is defined "working area" (A)

The dangerous areas of the machine, include the mobile parts and surrounding zones (B)



Picture 3.4.A - Working area and dangerous zones

3.5 PROTECTION DEVICES

The machine is equipped with adequate protections for persons exposed to the risks due to the of mobile elements of transmission (blades, pulleys, belts, etc....), or mobile members taking part in working (blades) or ejection of wooden pieces, chips, or dust.

3.6 STOP FUNCTIONS

The machine stop functions are the following:

- General Switch (category 0)
- Normal Stop Button (category 1)
- Emergency Button (category 1)

STOP CATEGORY 0

Is obtained taking out power from Machine actuators (uncontrolled stop)

STOP CATEGORY 1

Controlled stop with opening of power supplying for the machine actuators after of such a period allowing the stop of them.

3.7 SAFE WORKING PROCEDURES

The machine is projected and realised with the purpose of eliminating any risk connected with its use.

Owing to the necessity of steering the moulding around blades working area, it is impossible to eliminate the risks related with possible accidental contacts of operator hands with a.m. area.

The other risks related with manual working mode, are:

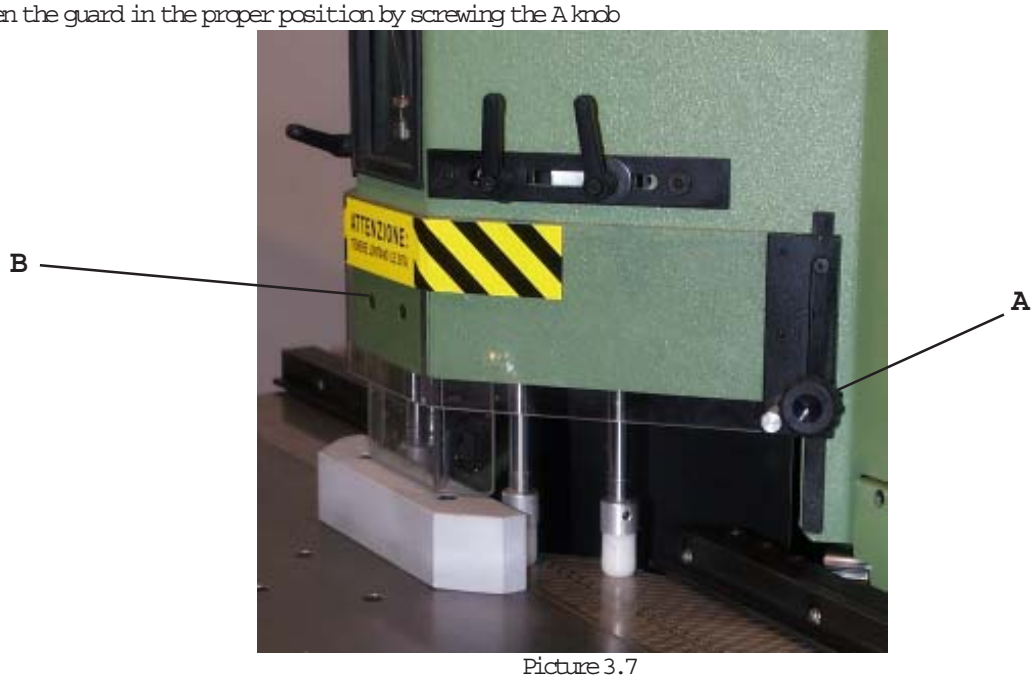
- Cut (due to the contact of the operator hands with the blades)
- Entanglement (due to clothes not properly tight)
- Ejection of worked material chips

To drop down to the minimum the consequences of above mentioned dangers, it is necessary to follow carefully the following instructions:

1. when the hands are working closely to the blades, you have to steer the moulding to be cut using any tool
2. avoid the cutting of moulding pieces smaller than 50 mm
3. never use hands to take out the short pieces and/or cuttings close to the blades, but instead use a tool, i.e. a piece of moulding still to be cut
4. adjust the frontal protection according to the height of cutting pieces and clamp in position

Operate as follows for adjusting the B protection guard of picture 3.7

- unscrew the A knob of picture 3.7
- lift or lower the B guard according to the height of mouldings to be cut
- tighten the guard in the proper position by screwing the A knob



Picture 3.7

	When finished your work, lower completely the protective guard

	Owing to the residual risks related with the machine, it is necessary that at the beginning the user of the machine should be properly trained and assisted by Alfamacchine's qualified personnel

3.8 RESIDUAL RISKS

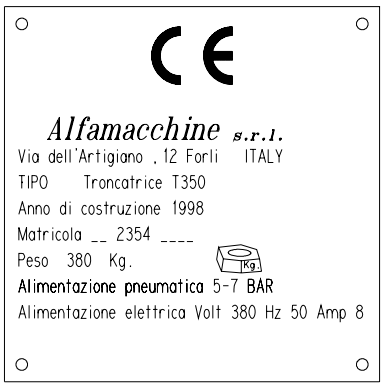
During the normal working cycle and while maintenance, the operators are exposed to several residual risks that, because of operations own nature, can not be totally eliminated.

- Risk of being hit by splinters ejected outside of casing
- Risk of being hit by tool used for manual unlocking of the blades
- Risk of cutting because of accidental contact with blades in motion or stop, i.e. during their replacement
- Error of assembly, i.e. because of blades assembly in opposite sense or mistaken electric connection (rotation in the opposite sense)
- Risk due to the presence of power supply on the machine

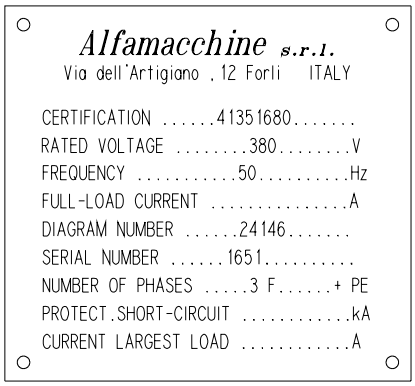
3.9 PLATES

The warning plates carrying out safety functions can not be removed, covered or damaged.
To take vision of plates or adhesive signs location, consult the Fig.10.2-E
Table 3.10 A- Types of plates

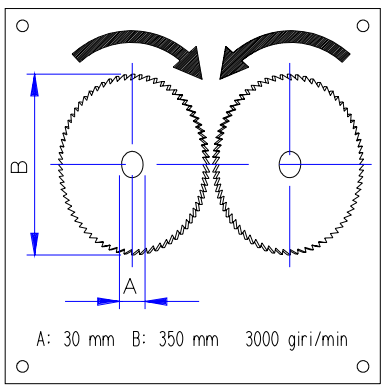
Metal Plate concerning machine characteristics



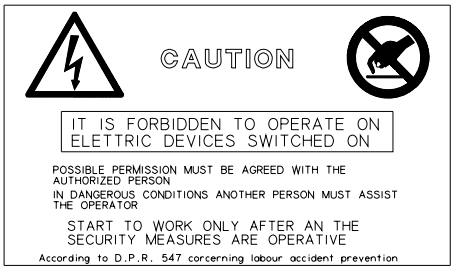
Metal Plate concerning electrical equipment



Metal Plate concerning blades rotation.

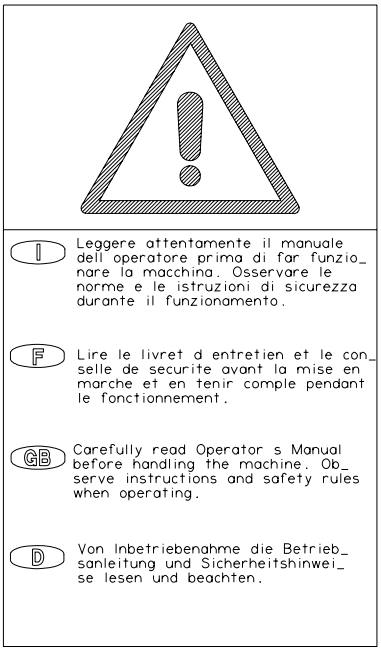


Adhesive sign concerning the electric cabinet



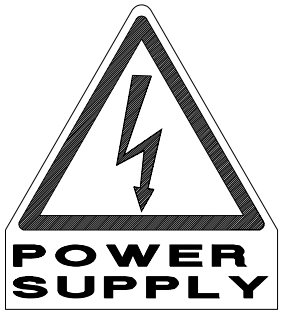
	Only electricians can open the doors and execute maintenance or repairs.

Adhesive sign concerning the instructions observance.



Adhesive sign concerning power supply.

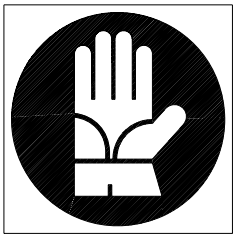
Adhesive sign concerning the entrance area of power supply



Double mitre saw T300-T350- T300/A-T350/A-T400

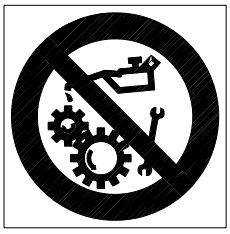
Adhesive sign concerning anti-accidental equipment (headphones use).

Adhesive sign concerning anti-accidental equipment (gloves use).

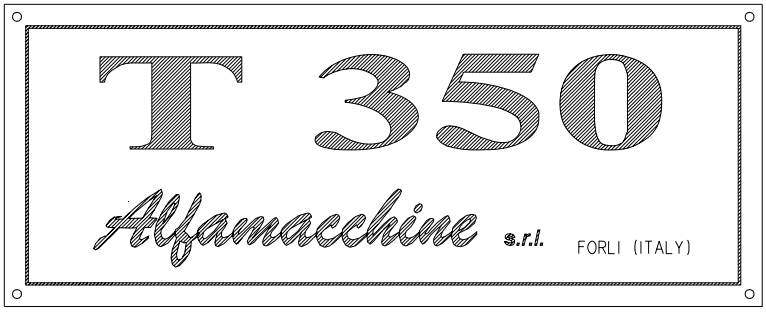


Adhesive sign concerning fingers crushing.

Adhesive sign concerning right behaviour about lubrication.



Adhesive sign concerning identification of machine model



Adhesive sign concerning anti-accidental equipment (glasses use).

Adhesive sign concerning right behaviour about loading runway

It is prohibited to introduce the hands

Adhesive sign concerning main switch

The main switch does not insulate the pneumatic supply

Adhesive sign concerning working pressure

5/7 bar

Adhesive sign concerning the pressure of vertical clamping cylinders

2.5 bar

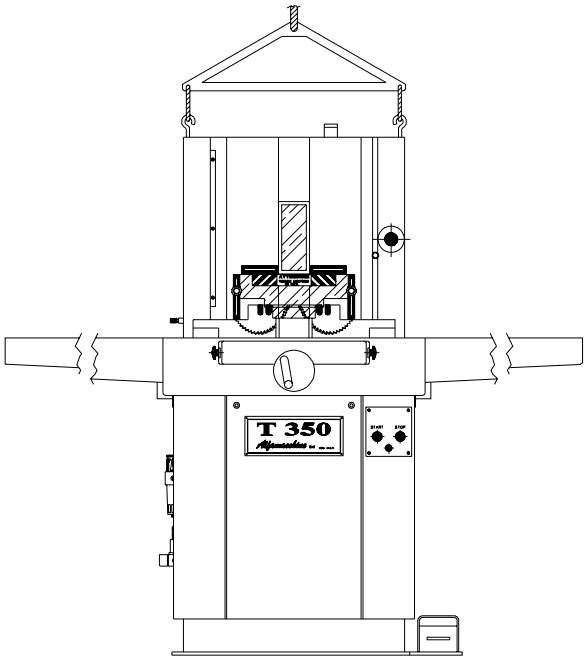
4. INSTALLATION

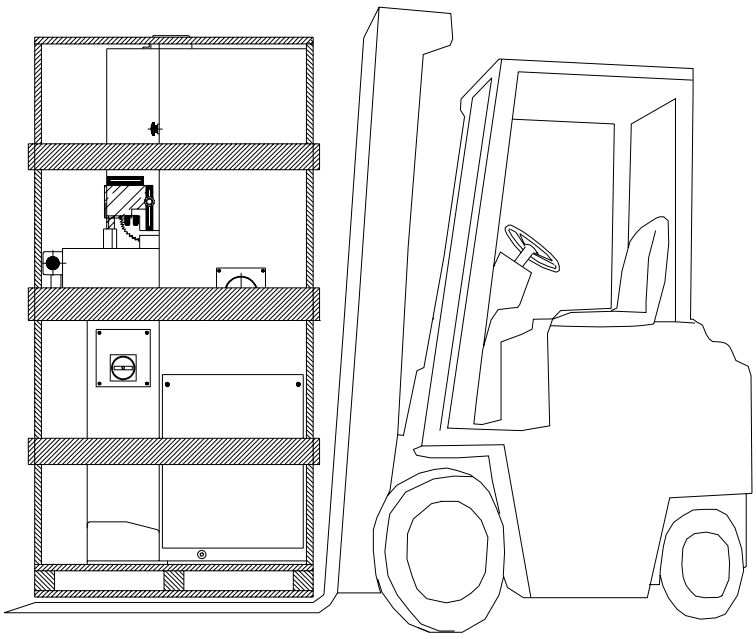
4.1 SHIPPING AND HANDLING

The shipment must be effected by professionally qualified personnel. The machine has to be shipped in a safe way to avoid any damage to its parts.

- All the protections, guard devices and wicket-gates must be properly closed and clamped.
- The machine has to be shipped like positioned for its installation.
- Before the shipment, it is necessary to lubricate the not painted parts to avoid their detriment.
- According to the type of shipment, it is necessary to protect the machine from any jarring impact or stress

Picture 4.1A – machine's handling indications





Machine's total weight: about 380 Kilos

☞	Any damage of the machine occurred because of its shipment or handling is not covered from warranty. Repairs or replacements of damaged parts are charged to the customer.

4.2 STORAGE

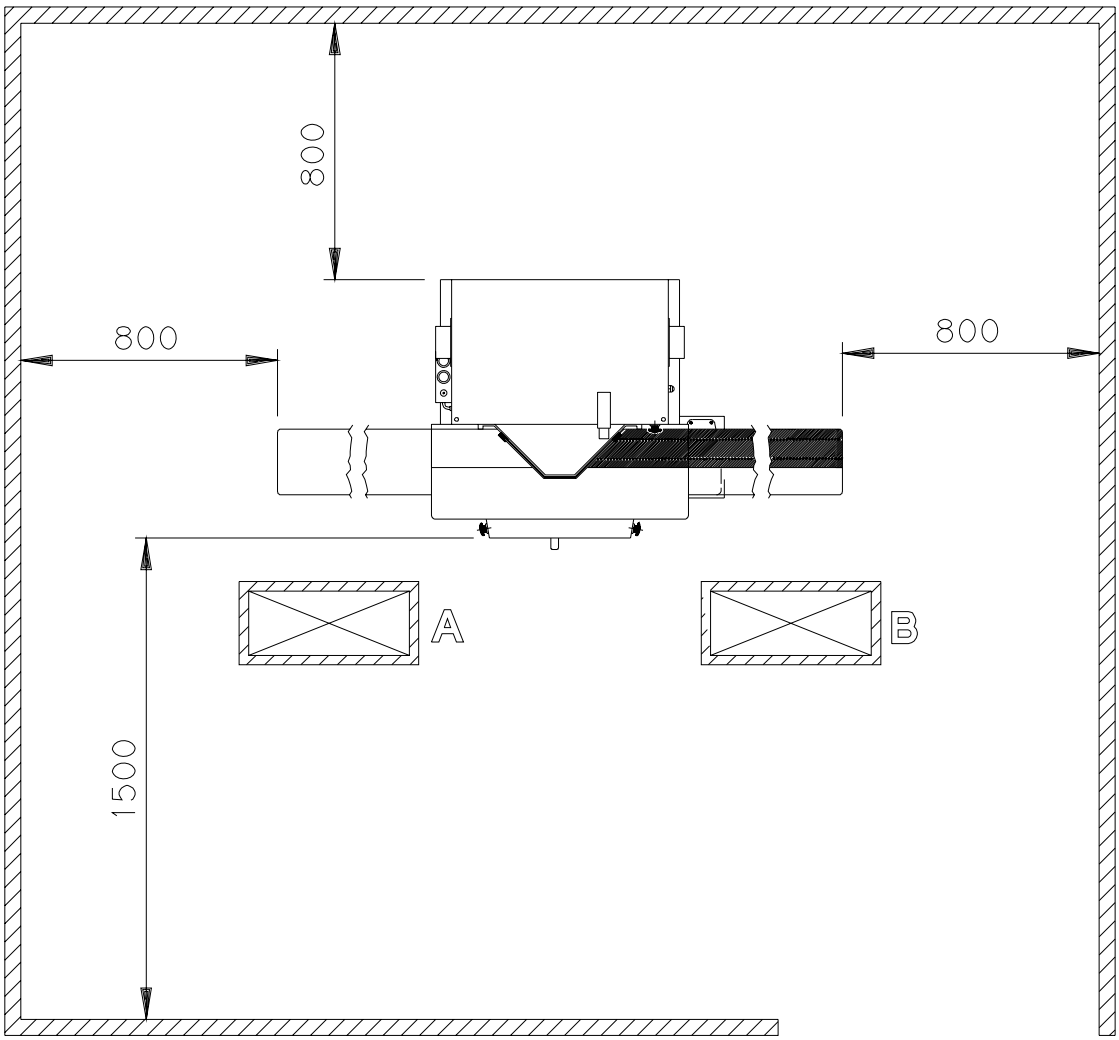
In case of long inactivity, the machine must be stored with cautions concerning storage place and times.

- Store the machine indoor
- Protect the machine from jarring impacts and stresses
- Protect the machine from humidity and high thermic excursion
- Avoid the machine could touch corrosive materials

4.3 PRELIMINARY ARRANGEMENTS

To install the machine it is necessary to arrange a working area adequate to the machine sizes, lifting devices chosen and length of mouldings to be worked.

Picture 4.3 A – minimum distances (expressed in mm) for the installation



A= Container of pieces still to be worked
B= Container of already worked pieces

To answer to the characteristics of accuracy and balance, the double mitre saws must be positioned on a compact concrete foundation in reinforced cement.
The design and arrangement of such a foundation is charged to the customer.
Be sure that a.m. foundation is properly consolidated in order to avoid possible sagging at machine's installation.

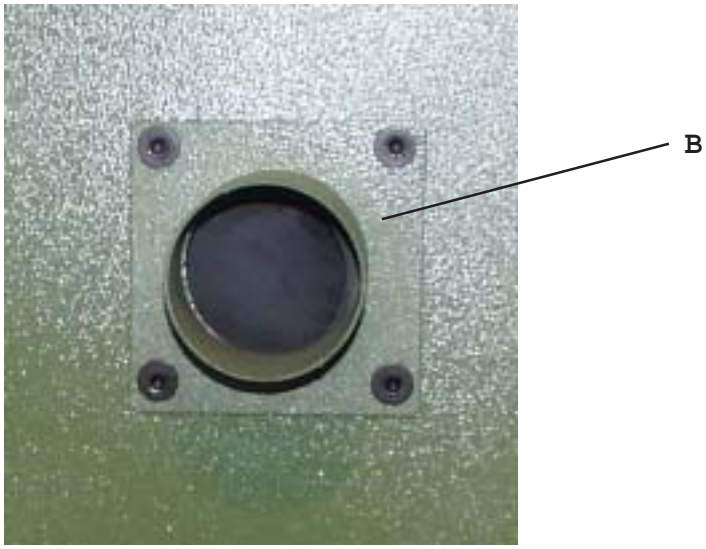
4.4 ASSEMBLY

The machine assembly is executed by the customer following the instructions listed here below:

- Remove by using a lever (i.e. a big screwdriver) the nails fastening the crate to the pallet
- Draw out the crate from the upper side.
- Draw out the transparent packaging from the upper side.
- Keep the external packing for a possible future re-utilization
- Screw the eyebolts in the 2 holes M12 located on machine's top side
- Lift the machine using a lift truck and carry it on its spot.

4.5 POSITIONING

The machine must be positioned on the ground on its assigned area.
Perforate the floor in correspondence of machine base.
Fasten the machine on the ground using n. 4 screws M8x50.
Position on the machine the 2 suction holes B of picture 4.5 and fasten them by means of the provided screws.
Connect the suction holes Ø 80mm with the suction system.



Picture 4.5

- Assembly the working bench extensions using the screws and the taper pins supplied together with working bench extensions in a transparent plastic container.

Picture 4.5.A

4.6 CONNECTIONS

To avoid any problem during machine starting, it is recommended to follow what is described here below.

4.6.1 PNEUMATIC CONNECTION

On machine left side, are located:

1. The padlockable reducer-lubricator filter (B) picture 4.6.1.A
2. The pressure regulator of vertical clamps cylinders (C) picture 4.6.1.A
3. The flux regulator for increasing or reducing the speed of blades (A) descent or ascent.

Connect the compressed-air pipe with the reducer lubricator filter using the fast clutch fitting supplied (or a similar one suitable to the system).

Draw out from machine back wicket-gate the pneumatic pedal (if provided) and connect the pipes with the connectors following this order:

- insert the red pipe into the red marked fitting
- insert the white pipe into the external connector (not marked) operator side.

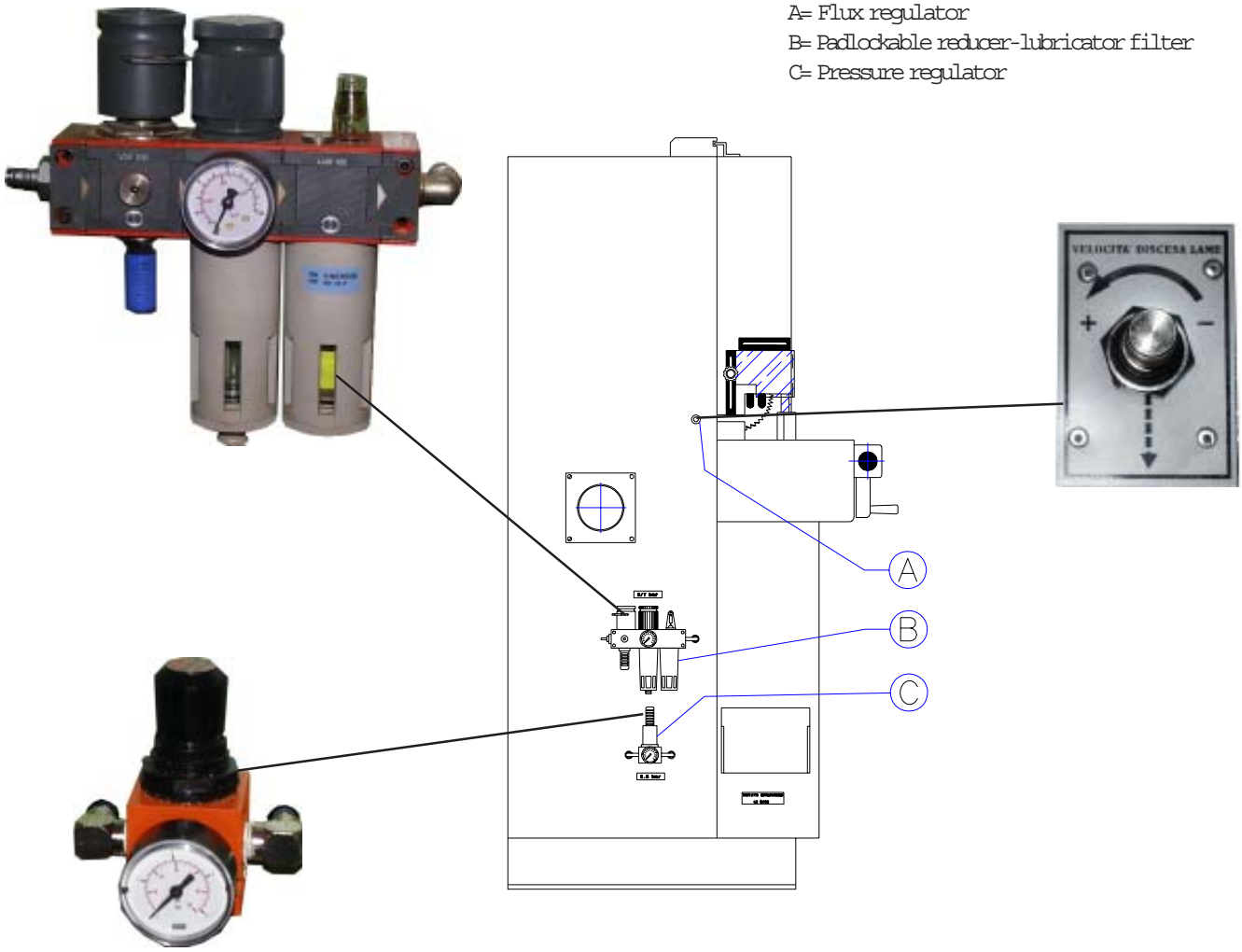
The machine's pneumatic characteristics are:

- Working pressure 7 Kg/cm2
- Maximum pressure 8 Kg/cm2
- Minimum pressure 5 bar
- Nominal consumption 15 NL/cycle

The feeding pipe must have an internal section at least of 10 mm2 if the compressor is placed closer than 5 meters, and higher than 10 mm2 if the compressor is located at a longer distance.

Picture 4.6.1 A-Pneumatic system disposition

A= Flux regulator
B= Padlockable reducer-lubricator filter
C= Pressure regulator



4.6.2 ELECTRIC SYSTEM

The machine electric connection is realized under customer's responsability and care.
Operate as follows for the executing the electric connection:
Connect the yellow-green ground cable with the special terminal marked as PE

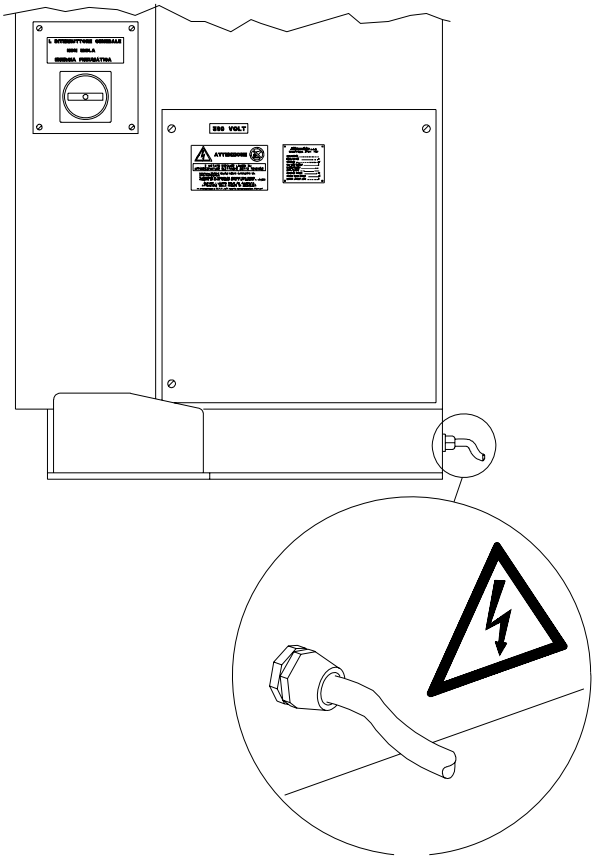
The machine must be connected to the electric line, considering:

- Laws and the technical norms in force in the Country at the moment of installation.
- Data described on metal plate "B" (see at par. 3.9)
- Connect the machine to the electric network paying attention to the correct use of the ground wire

The power supply must have the following requisites:

- Three-phase Voltage 380 Volt +/- 10%
- Nominal frequency 50 Hz +/- 2%

The feeding has not to be interrupted or the Voltage has not to be Zero for a time longer than 3 m/s.
The possible voltage falls have not to be higher than 20% of peak voltage and lasting more than a cycle.



Picture 4.6.2 A – Electric Panel Disposition

4.7 PRELIMINARY CONTROLS

The Machine preliminary operations before the 1st starting, must be executed by a technician charged by the customer. Before machine's setting at work, it is necessary to execute certain verifications and checks to prevent mistakes or accidents during setting at works step.

The verifications to be executed are the followings:

- Verify that machine has not been damaged during assembly step
- Verify with extreme care, the integrity of electric boards, control panels, electric cables, wires and pipes
- Check the proper connection of external power sources

Because of the shipment, both blades and vertical clamps are lowered. To restore the normal position, operate as follows:

- Turn clockwise the main switch (located on machine's right side) on position 1 (see picture 4.7.1).

Picture 4.7.1

Picture 4.7.2

- Turn clockwise the vertical clamp cylinders switch (located under the main switch) on position 1 (see picture 4.7.2)
- Press simultaneously the two "A" push-buttons placed in front of working bench to lift up blades and vertical clamps (see picture 4.7.3).

Picture 4.7.3

4.8 ADJUSTMENTS

Being the machine tested in manufacturer premises, the user must only execute the following adjustments:

4.8.1 Adjustment of blades descent speed

The user can adjust, according to the material to be cut, the blades descent speed. To operate this adjustment, use the flow governor placed on machine's left side (see picture 4.8)

- Turn it clockwise to reduce the blades descent speed
- Turn it counter-clockwise to increase the blades descent speed.

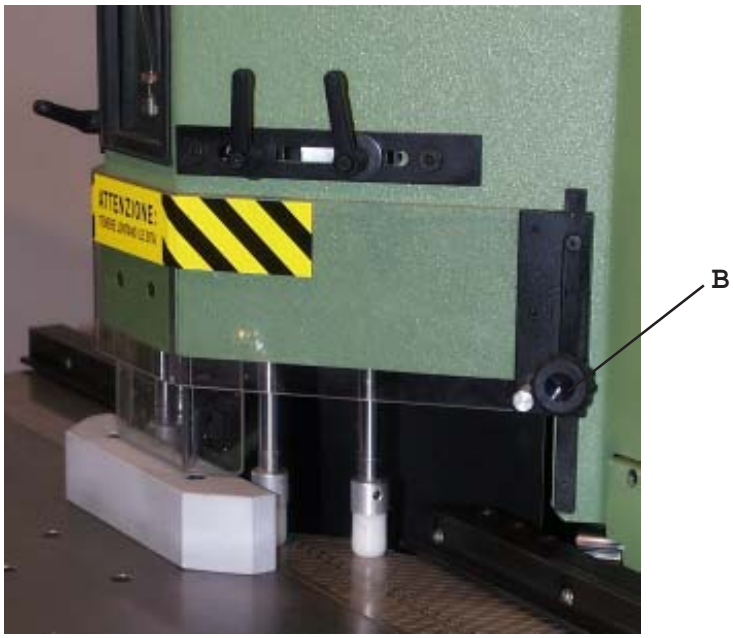
Picture 4.8

4.8.2 Frontal guard adjustment

Operate as follows for adjusting the height of frontal guard:

- Loosen the "B" knobs (see picture 4.8.1)
- Lift or lower the guard according to the size of the moulding to be worked
- Tighten the knobs

	Once finished the working, lower completely the frontal guard.



Picture 4.8.1

To execute the 1st starting it is necessary to operate as follows:

- Press the "C" green button (see at picture 4.8.2) located at side of the main switch side to start the motors running
- Press simultaneously the two "A" push buttons (see picture 4.7.3) to lower the blades

	When the motors are running it is necessary: • Check that right blade rotation sense is counter-clockwise • Check that the left blade rotation sense is clockwise

	It is strongly imprudent to make a cutting test before checking the blades rotation sense. In case of reverse rotation, the operator risks the projection of material on his face and body.

Once finished above test, operate as follows:

Press the "D" red emergency button (see picture 4.8.2) -located on machine's right side- to stop the motors

- Turn counter clockwise the main switch located on machine's right side until reaching position 0 (see picture 4.7.1)
- Turn counter clockwise (position 0), the switches of vertical clamping cylinders (see picture 4.7.2).

Picture 4.8.2

4.8.3 VERTICAL CLAMPS ADJUSTMENT

In order to clamp the moulding during the cut, the machine is equipped with 4 vertical clamping cylinders.

- 2 front vertical clamps
- 2 rear vertical clamps

It is possible, according with moulding shape, to activate the front ones only, or both couples

To activate the front couple only, turn in position 0 the switch of picture 4.8.3.A

For activating all 4 clamps turn in position1 the switch of picture 4.8.3.A

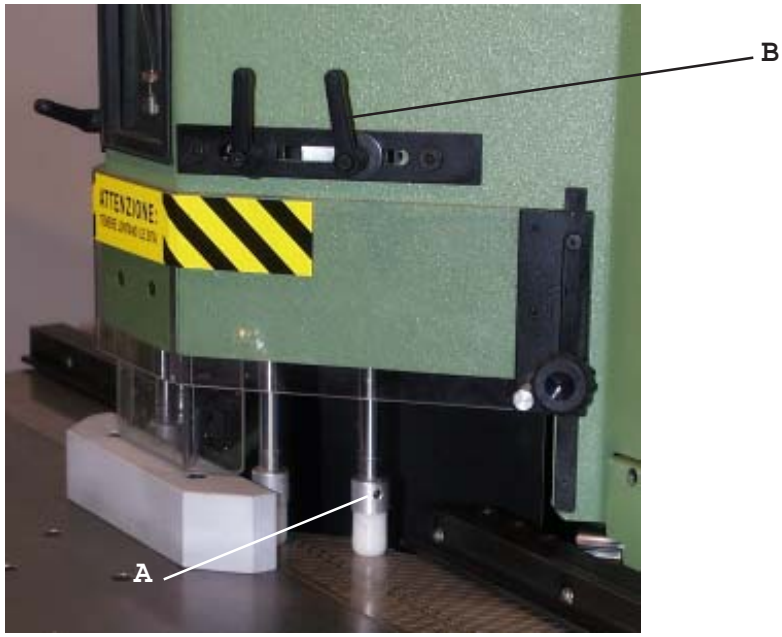
Picture 4.8.3.A

The clamping cylinders can be also horizontally adjusted operating as follows:

- Insert the moulding to cut onto the working bench forwarding it from left toward right
- Adjust the working pressure of the vertical clamping cylinders using the pressure regulator of picture 4.8.3.B.

Picture 4.8.3.B

- Loosen the handle (see picture 4.8.3 part. B) of every single clamping cylinder positioning it in the desired spot.
- Tighten the handles (picture 4.8.3 part. B) to fasten the chosen positions



Picture 4.8.3

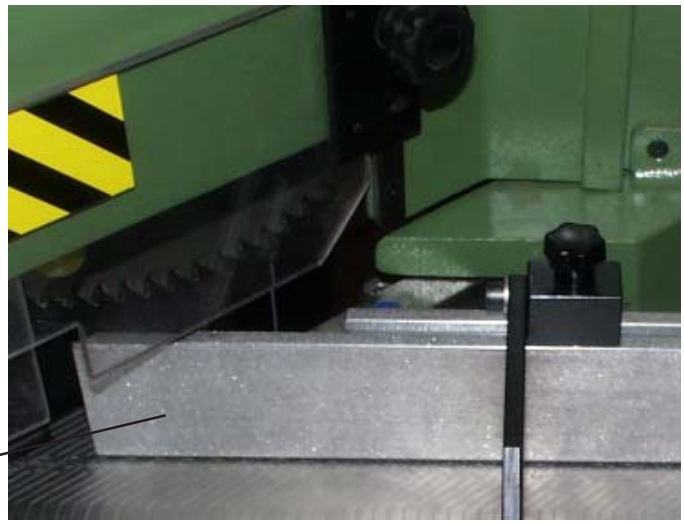
- • Press the foot pedal (picture 4.8.4) to activate the decent of vertical clamps.

Picture 4.8.4

4.8.4 REAR SUPPORT ADJUSTMENT (available on request only for T300/A and T350/A versions)

The machine is equipped with an adjustable rear mobile support (see picture 4.8.4)

Such a rear adjustable support allows a complete fitting to the moulding to be cut, reducing the scrap to the minimum.



Picture 4.8.4

Operate as follows to adjust the rear support:

- Draw out the pin from the hand-wheel (see picture 4.8.4.A)
- Insert the moulding to cut onto the working bench from left side toward right
- Adjust the support distance turning clockwise the hand-wheel to approach the support or counter clockwise to take it away

Picture 4.8.4.A

Picture 4.8.4.B

4.8.5 CUTTING STOPS ADJUSTMENT

The machine is equipped with a gauging scale, over which is leaned the moulding to be cut, showing the right gauging of the moulding length.

To get quicker and more accurate the mouldings length are supplied two stops:

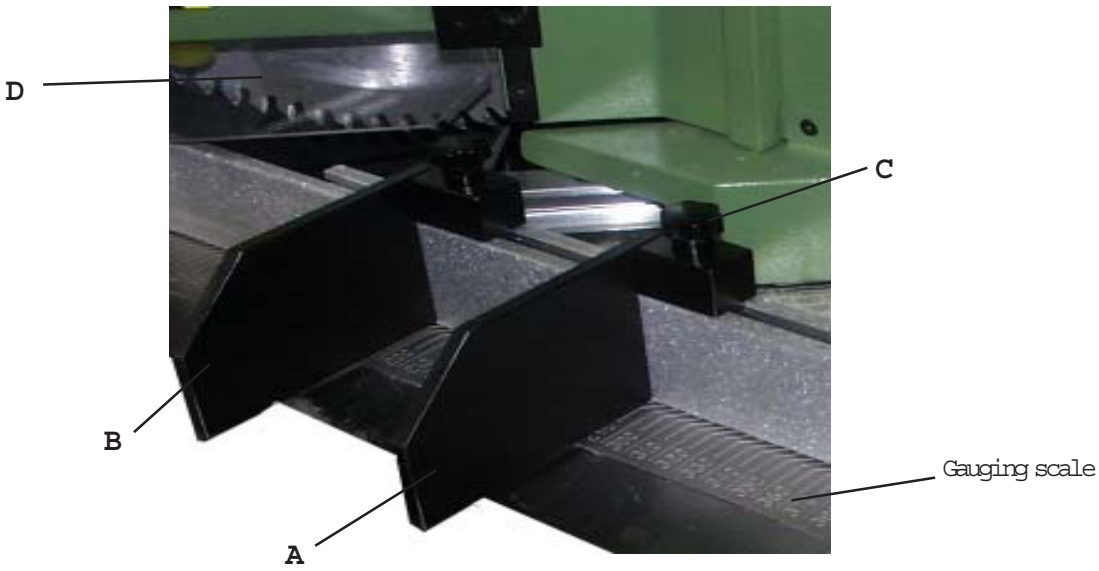
- Fixed stop A (see picture 4.8.5), normally used to measure the "long" side of a frame or to execute with accuracy cuts of the same length in a repeating way
- Swing stop B (see picture 4.8.5), normally used to obtain the "short" side of a rectangular frame.

Operate as follows to adjust the stops:

- Loosen the "C" knob (see picture 4.8.5)
- Shift the "A" stop until reaching the desired distance

	Indicated distances are considered from cutting point of "D" right blade (see picture 4.8.5).

- Tighten the "C" knob once reached the desired spot.



Picture 4.8.5

4.8.6 BLADES ADJUSTMENT

	The machine is shipped with blades adjustment already set. Whenever would be necessary to execute again this type of adjustment, it must be done by technical personnel qualified by Alfamacchine. In case of not obey, further the immediate loss of warranty, Alfamacchine declines any responsibility for any damage possibly caused.
	Before executing the blades adjustment put the machine out of service (as described at chapter 5.8)

4. 8.6.1 CUTTING ANGLE ADJUSTMENT (see picture 4.8.4.A)

Operate as follows to get wider the cutting angle:

1) Check that screw C1 is properly tightened
2) Loosen the A1, A2, A3 nuts
3) Loosen the E2 nut
4) Loosen the D2 screw of a quarter turn (max) or how much you think it is necessary
5) Tighten the E2 nut
6) Tighten the C1 screw.

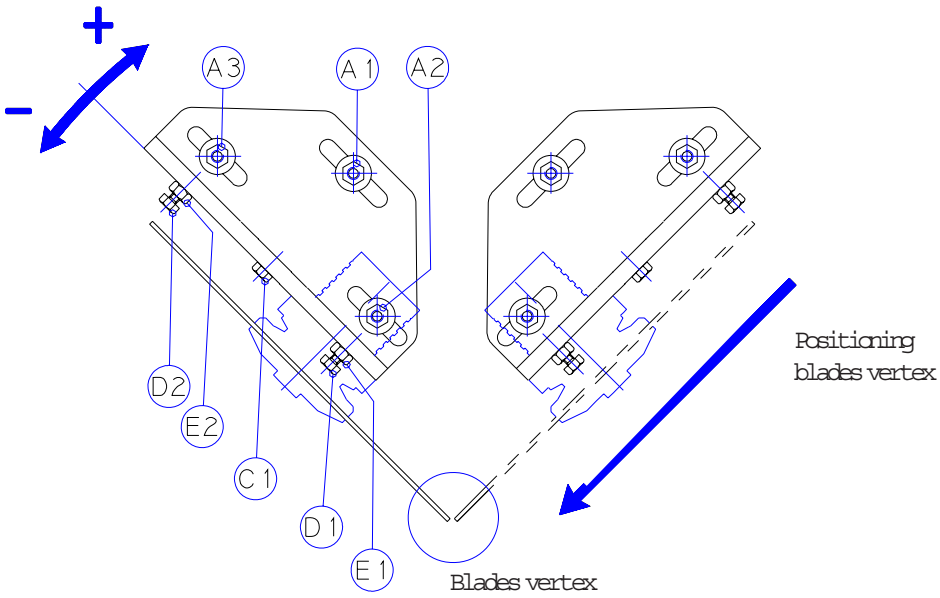
Check by using a comparator if the blade has reached the desired angle, and tighten the A1, A2, A3 nuts.

To reduce the cutting angle:

1) Loosen the A1, A2, A3 nuts.
2) Loosen the E2 nut
3) Loosen just a little bit the C1 screw.
4) Tighten the D2 screw of a quarter turn (max) or how much you think it is necessary
5) Tighten until fastening the E2 nut.
6) Tighten the C1 screw

Check, by using a comparator, if the blade has reached the desired angle, tighten the A1, A2, A3 nuts

	During the adjustment of blades angle there is a change of the room on the top of the blades. The optimal room between the two blades is that represented in picture with a distance between the blades among 1,5 and 2,0 mm. If the position is not correct, operate on blades positioning.



Picture 4. 8. 4 A – CUTTING ANGLE ADJUSTMENT

4.8.6.2 BLADES POSITIONING

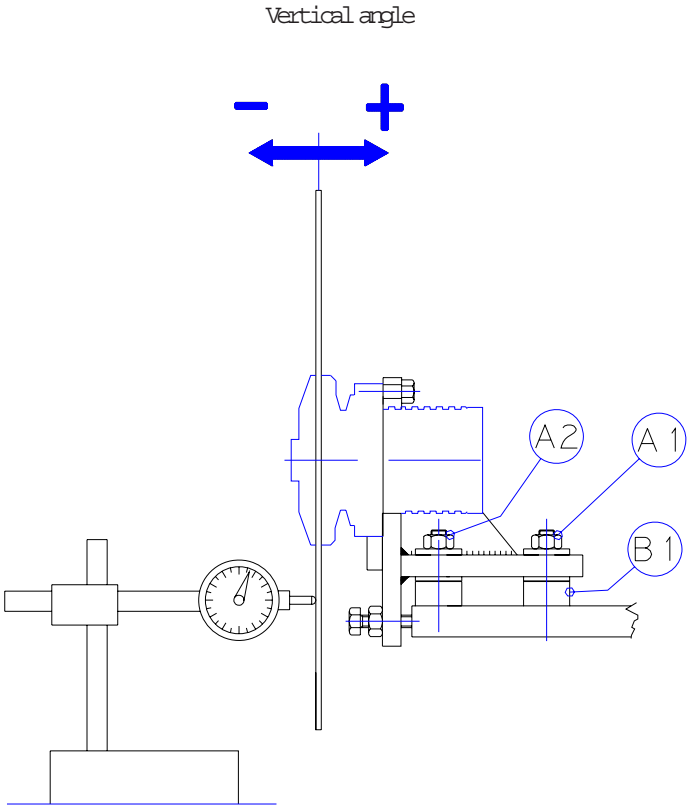
1) Loosen the A1, A2, A3 nuts
2) Loosen the C1 screw.
3) Shift the blades support until reaching the distance of 1,5-2,0 mm. in the vertex between the blades.
4) Tighten the C1 screw and the A1, A2, A3 nuts.

4. 8.6.3 CHECK OF BLADES VERTICAL ANGLE (see the figure 4.8.4 B)

Operate as follows to adjust the blades vertical angle:

1) Loosen the A1 nut
2) To get wider the angle (+ see drawing) tighten a little bit the B1 nut (max 1/8 of turn). To reduce the angle (- see drawing) loosen a little bit the B1 nut (max 1/8 of turn).
3) Tighten the A1 nut
4) Check the vertical angle (using the special centesimal comparator).

Repeat the operations described from step 1 to step 3 until reaching the desired position.



Picture 4.8.4 A- Adjustment of the cutting angle

	The adjustment of cutting angle, like described at steps 1 and 2, is possible until the complete utilization of adjustment slots obtained on the supports.

	Avoid to adjust the cutting angle operating on the right blade : we recommend to operate always and only on the left one.

4.8.6.4 BLADES REPLACEMENT

	Before effecting the blades replacement, the operator must: -Exclude all supply sources of the machine. -Wear means fitting with individual protection (gloves) (see cap. 5.8)

Operate as follows to replace the blades :

- Disconnect the machine from pneumatic and electric systems
- Open the frontal door loosening the special "B" (see picture 4.8.6.4) screw using the supplied hexagonal spanner

Picture 4.8.6.4

- Clean the working area
- Use a 27mm fork spanner to stop the blade rotation (A)
- Unscrew using the 6mm hexagonal spanner 6 the two screws M8 that operate the stop flange-blade-pulley shaft (C) –see picture 4.8.6.4.A
- Draw our the flange and the 2 M8 screws
- Draw out the blade
- Position the new blade
- Put the flange in its right spot and stop the blade rotation using a 27mm fork spanner (picture 4.8.6.4.A part. "A")
- Insert and tighten the two M8 fastening screws using the supplied hexagonal spanner (picture 4.8.6.4.A part."C")
- Operate in the same way for the other blade

Picture 4.8.6.4.A – BLADES REPLACEMENT

	Check that the blades rotation sense is: • Counter clockwise for the blade at user's right • Clockwise for the blade at user's left Check also that the blade rotation sense is corresponding to the rotation sense silk-screen printed onto the blade

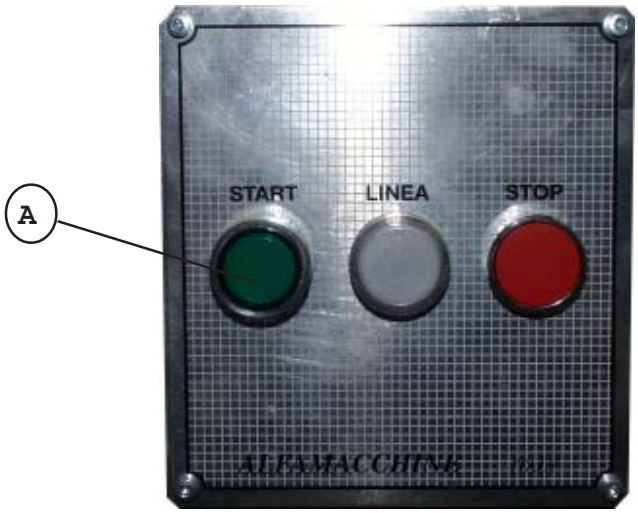
	The replaced blades must be ever conformed to the Norm EN 847-1. For blades assembly and disassembly, use exclusively the supplied tools, never use wrenches extensions or mallets.

4.9 IDLING TESTS

Start the machine by turning the special main switch on position 1 (see picture 4.9)

Picture 4.9

In order to activate the motors press the "A" green button (see picture 4.9.1) of the control panel



Picture 4.9.1

- Press simultaneously the 2 "B" push buttons to operate the cut by lowering the blades and keep them pressed until reaching the end of the stroke

Picture 4.9.2

- Release the buttons to lift up the blades group

Press the red emergency button and verify that all mobile members are stopped.

5. FUNCTIONING

5.1 USERS

The machine has been projected to be used by only one operator.

The staff assigned to operate with the machine, must be in possession (or acquire through an adequate training) the requirements indicated here below, and, in addition, to have the knowledge of this handbook and of every information concerning safety:

- General and technical culture sufficient to comprehend this handbook contents and understand properly drawings and schemes
- Knowledge of main sanitary, technological and anti-accidental norms
- Overall knowledge of line and plant where is inserted the machine
- Specific experience in cut working technologies
- To know how operate in case of emergency, where to find the individual protection means and how to use them properly.

The Maintenance Men/Service Engineer, in addition to the above mentioned characteristics, must be in possession of an adequate technical education.

5.2 CONTROL PANEL

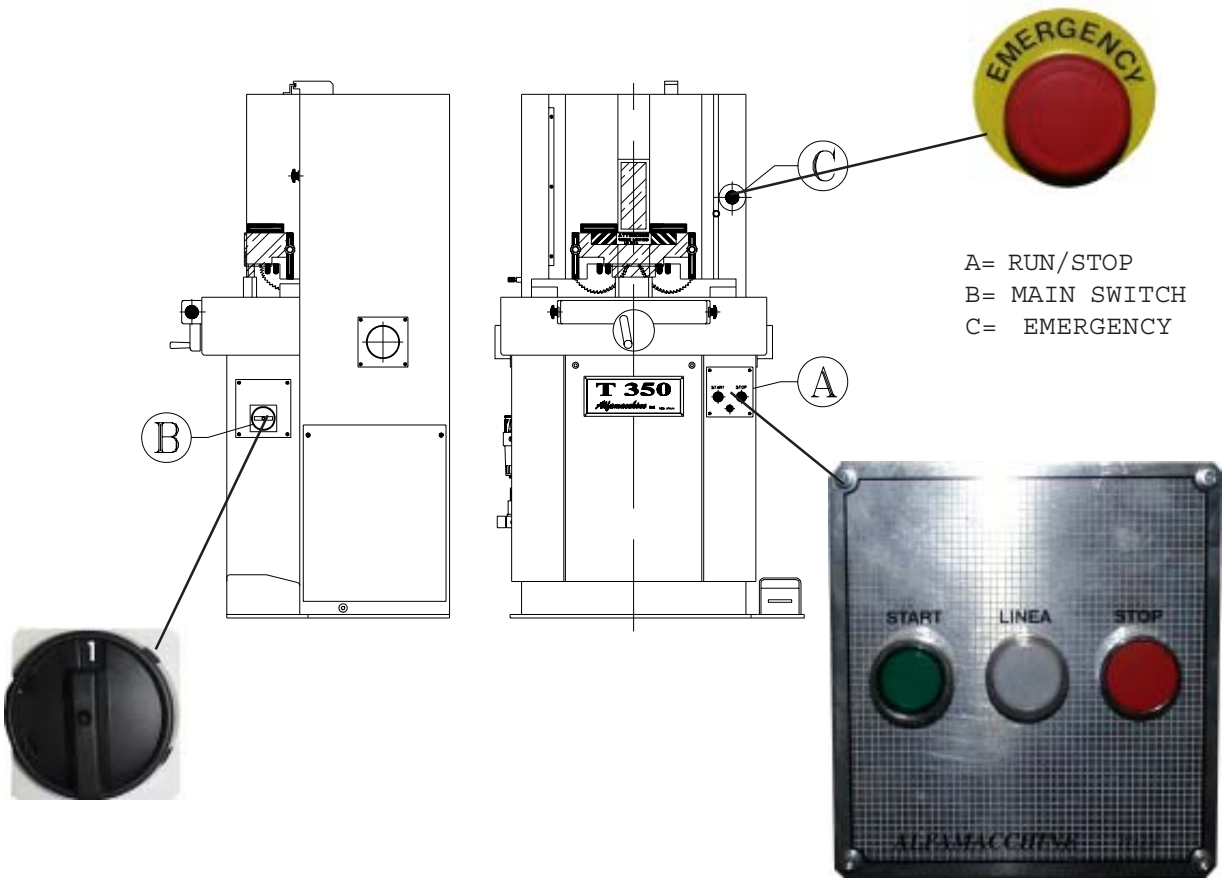
The machine operating control buttons are (see picture 5.2.A):

A= Run control (green button at user's left)
STOP control (Red button at user's right)
White Pilot Light

B= Main Switch (position 1=machine fed; position 0=machine not fed)

C= Emergency Control

The Run/Stop controls are located frontally below the working bench; the "B" Main Switch is located on machine's right side. Onto the working bench, on the right is placed the red "C" emergency button. The emergency control button operates if pressed impulsively. The restoration is effected by turning it about 30° clockwise.



Picture 5.2 A- Control buttons disposition

5.3 MACHINE'S SETTING AT WORK

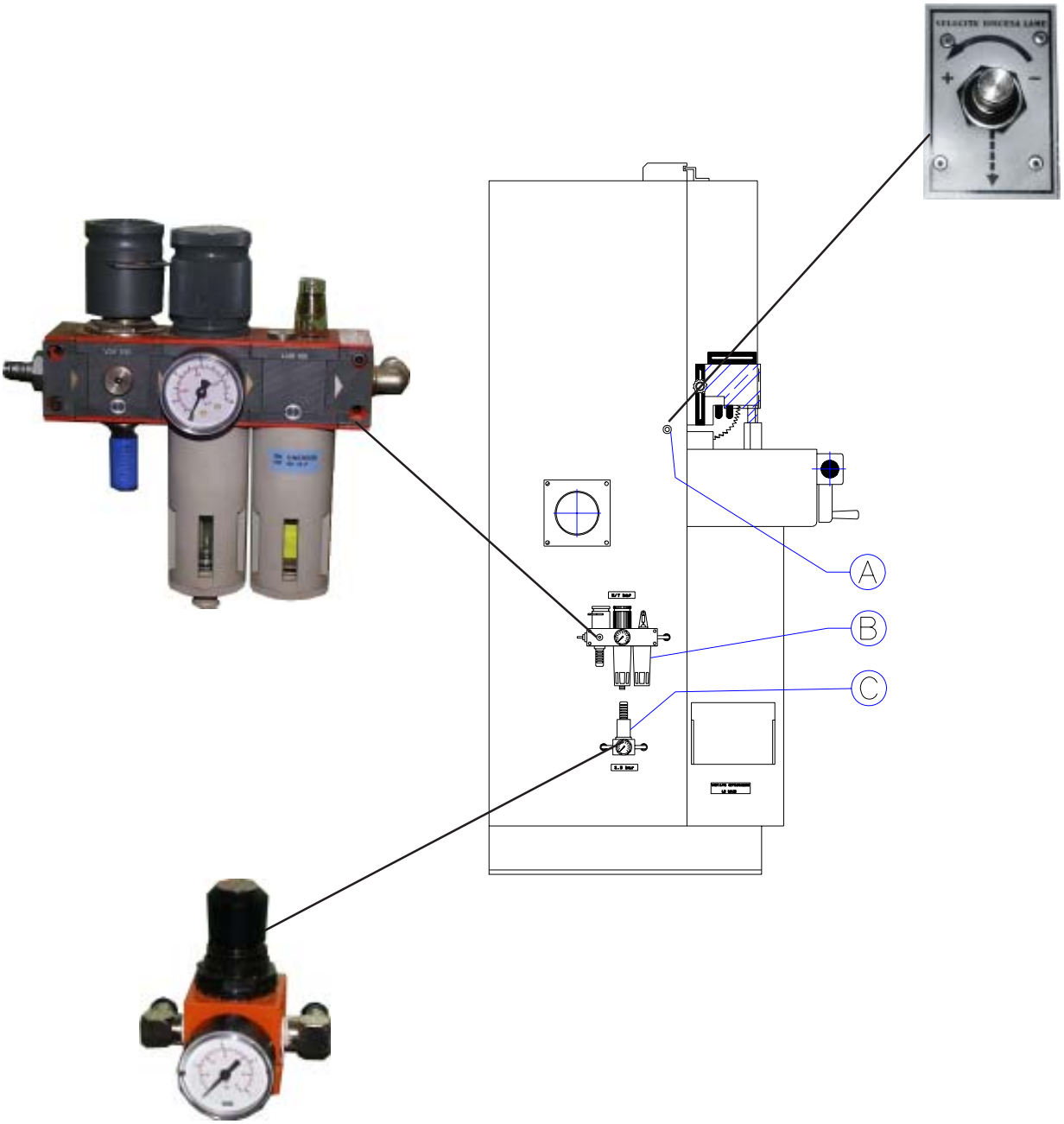
Operate as follows for machine's setting at work:

1- Pneumatic feeding of the machine

- connect the compressed air pipe with the reducer-lubricator filter, indicated like B in the figure 4.6.1 A, using the fast clutch supplied or a fast clutch of a different type.

2- Electric supplying of the machine

- Turn the Main Switch (ref. B of picture 5.2.A) on position "1".
- Verify that the "C" emergency button (picture 5.2.A) is not activated
- Press the motors starting button (green colored) : at this point will illuminate the white pilot light indicating motors running/ power on (ref. A figure 5.2 A).



Picture 4.6.1.A

5.4 FUNCTIONING MODES

After executing the machine's setting at works is possible to use the machine in the manual mode:

1) Introduce the moulding to cut onto the working bench from left toward right
2) Adjust the position of the vertical clamping cylinders like indicated at step 4.8.1 in order to get a proper clamping of the moulding in position
3) Adjust, by means of the hand-wheel placed on machine's front side, the position of the rear support (point 4.8.2) (only for version T300/A and T350/A)
4) Refer to the step 4.8.3 for the adjustment of mouldings stops.
5) (Press the OPTIONAL pneumatic pedal to clamp the moulding) to make a test.
6) Press simultaneously the two control push buttons located frontally and keep them pressed until the complete descent of the blades.
7) Release the buttons for blades group ascent only after that blades have completely lowered.
8) Remove from working bench right side the just cut piece.
9) Forward the moulding from left side toward right until reaching the stop and repeat the above steps from 5 to 9.

5.5 NORMAL STOP

Operate as follows for causing a voluntary Stop:

1) Normal stop press the red button (ref. B Figure 5.2A). It causes the stop of the motors
2) Interruption of compressed-air flow (interceptable/lockable filter) It causes the stop of blades and vertical clamping cylinders descent or ascent

5.6 EMERGENCY STOP

The operation of machine's Emergency Stop, can be executed pressing the red emergency button (ref. C Figure 5.2 A). This action causes the immediate stop of all mobile parts.

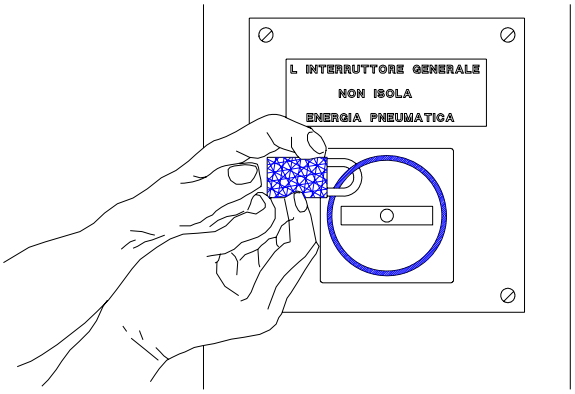
5.7 RESTORATION

After effecting the manual rearmament of emergency button by turning it clockwise for about 30°, the machine can be normally restarted following the procedure described in the paragraph 5.3.

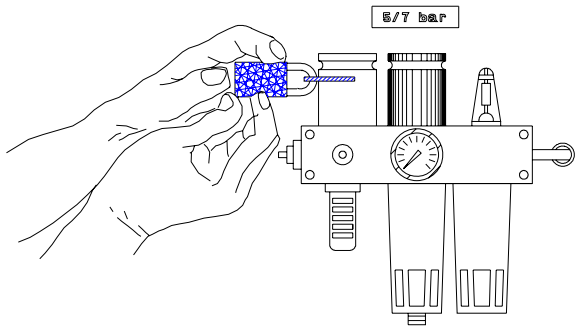
5.8 PUTTING OUT OF SERVICE

During the inactivity periods, with the machine not fed, it is necessary:

1) Open and padlock the electric cut-out switch (see picture 5.8A)
2) Open and padlock the pneumatic cut-out switch B (see picture 5.8 B)



Picture 5.8 A- electric putting out of service padlocked main switch



Picture 5.8 B- pneumatic putting out of service padlocked filter

6 MAINTENANCE

6.1 STATE OF MAINTENANCE

The maintenance operations must be effected with the machine in the conditions described at the voice "state of the machine" of tables 6.6-A and 6.7-A.

6.2 MACHINE INSULATION

Before effecting any type of maintenance or repair , it is necessary to insulate the machine from supplying sources, making the following operations:

1) Open and padlock the electric cut-out switch (see the figure 5.8 A)
2) Open and padlock the pneumatic cut-out switch (see the figure 5.8 B)

6.3 SPECIAL CAUTIONS

During the maintenance or repair operations, it is recommended to apply what indicated here below:

- Before starting any operation, expose a sign board " plant in maintenance" in a well visible spot
- Do not use solvents and flammable materials
- Pay attention of not dispersing in the environment lubricant/refreshing liquids (only for the model T350/M)
- To have access to the machine higher parts, use proper means according with the operations to be effected
- Do not step on the machine members, because they have not been projected to sustain the weight of Persons
- At the end of operations, restore and fasten properly all the protections and guards removed or opened

The repair operations must be executed only by experienced and qualified personnel.

6.4 CLEANING

It is recommended to clean completely the machine every 200 working hours taking special care to the collecting chips duct and to the transparent protective shield.

Exclude all the supplying sources of the machine.
Before effecting the cleaning operations, the operator must equip himself of means suitable with individual protection (gloves, etc..)

6.5 LUBRICATION

The lubrication of mechanic members that contribute to the movement of machine mobile parts, occurs automatically during the normal running.
The ordinary maintenance schedule described on paragraph 6.6, must be anyway followed to keep efficient the machine's functioning.

6.6 ORDINARY MAINTENANCE

The operations described here below, must be executed on the indicated times. The not observance of what requested, relieves the producer from any responsibility concerning the warranty.
The a.m. operations, even if simple, must be executed from qualified personnel.
The scheduled ordinary maintenance, includes inspections, checks and interventions that, to prevent stop or damages, keep under a systematic control:

- The machine's state of lubrication
- Wear and tear parts state
- The proper functioning of all electric and pneumatic components. (In case of malfunctioning, inform the technicians appointed to the maintenance that will provide the replacement of damaged or malfunctioning parts).

TABLE 6.6-A

MAINTENANCE	DESCRIPTION	MACHINE'S STATE
Lubrication of blades descent guides	a) lubricate the guides (Blades ascent and descent) with grease PG21 Molycote every 800÷1000 hours	a) insulation for maintenance
Lubricator (only for model T350 M)	a) oil level check. Fill up with oil type ENERGOL HP 10 or similar	a) insulation for maintenance
Pneumatic system	a) cleaning of filter lubricator (every 30 days) b) fill up the level of oil filter lubricator (*)	a) insulation for maintenance b) opened pneumatic cut-out switch
Electric cabinet	a) verify cables locking (every 12 months) b) verify fuses locking (every 12 months)	a) insulation for maintenance b) insulation for maintenance
Motors stop	a) check and possible adjustment and/ or replacement of brake lining every 150/200 hours	a) insulation for maintenance
Carter di protezione delle lame	a) Check monthy the presence of chips possibly entangled	a) insulation for maintenance
Carter di protezione colonne	a) Check and remove monthly the possible working chips	a) insulation for maintenance

(*) Use oil type CASTROL MAGNA GC 32. Do not use oil for engines, brake fluid, gas oil or other products to avoid irrevocable damages to the gaskets.

6.7 EXTRAORDINARY MAINTENANCE

Here below are listed the operations that need the intervention of Alfamacchine's Qualified Staff authorized from the Manufacturer (see paragraph 1.2)

The extraordinary maintenance, includes interventions effected in case of exceptional events:

- Breakage
- Overhauling

TABLE 6. 7 - A

MAINTENANCE	DESCRIPTION	MACHINE STATE
Driving belt replacement		isolation for maintenance: pneumatic cut-out switch opened main switch on position "0"
Setting up of machine cutting geometry	a) adjustment of motor supports (re-positioning of blades at 45°) b) adjustment of verticality	isolation for maintenance: pneumatic cut-out switch opened main switch on position "0"
Blades replacement	a) blades replacement for re-sharpening	isolation for maintenance: pneumatic cut-out switch opened main switch on position "0"
Valves replacement		isolation for maintenance: pneumatic cut-out switch opened main switch on position "0"
Motor replacement		isolation for maintenance: pneumatic cut-out switch opened main switch on position "0"

7. DIAGNOSTICS

7.1 SAFETY ADVICE

The interventions must be executed by staff adequately instructed and must be followed any caution to avoid accidental starting and electric fulgurations.

7.2 TROUBLE SHOOTING

TABLE 7.2-A

INCONVENIENCE	CAUSE	VERIFICATIONS AND REMEDIES
The control panel is completely off	a) The machine is missing of power supply b) The auxiliary circuits are missing of voltage	a) restore power supply b) check and eventually replace the fuses
Blades stopped at the starting point	c) the machine filter is missing of pneumatic supply	c) restore pneumatic supply

7.3 REQUEST OF SERVICE

For any information regarding Use, Maintenance, Installation, etc.. the Producer remains at disposal of Customer requests. The Customer has to formulate clearly the questions sending by fax a detailed description of troubles met. For eventual explanations we specify to make regard to this handbook and to the instructions listed on the paragraph 1.2.

E_Mail: info@alfamacchine.com

FAX: ++39 (0)543 480770

via Dell'Artigiano, 12 - 47100 Forlì - Italy

8. SPARE PARTS

8.1 SPARE PARTS LIST

Even if the machine has been submitted to several tests and functional checks, we list here below the components and relative amounts (in brackets) that we suggest to have a minimum and sufficient set of spare parts to guarantee possible MACHINE STANDSTILL as short as possible.

TABLE 8.1 - A

COMPONENETE	
Overload cutout (1)	
Remote control switch (1)	
Fuses (5)	n° 3x10A delayed n° 1x3A fast n° 1x1A delayed
Warning light (10)	24/30V 2W
Driving belt (1)	
Blades (2)	

8.2 SPARE PARTS ORDERING

We remind you that only a qualified technician can repair the machine.

We recommend the intervention of Producer's Center of Technical Assistance, which is disposable with qualified staff, proper equipment and tools, and with original spare parts.

To order the above listed spare parts, send by fax/letter/Email (see chapter 7.3) the following data:

- Machine's Model
- Code of mechanic exploded drawing
- Reference number of spare part or group indicated on the mechanic drawing
- Code number of spare part or group

9. DEMOLITION

9.1 DISCHARGE

During the working process, are generated reject parts that should be gathered, recycled or discharged according with current Laws and norms of the Country where the machine is installed.
The substances produced during the working are:

- Raw materials rejects (scraps)

9.2 DEMOLITION

At the act of demolition it is necessary to separate the parts in plastic material from electric components, that must be send to differentiate gatherings respecting the current Norms.
Concerning the machine metallic mass, it is enough the subdivision between the steel parts and those of other metals or alloys, for a proper recycling by smelting.

10. ATTACHMENTS

10.1 DECLARATIONS

You can find here attached the following declarations:

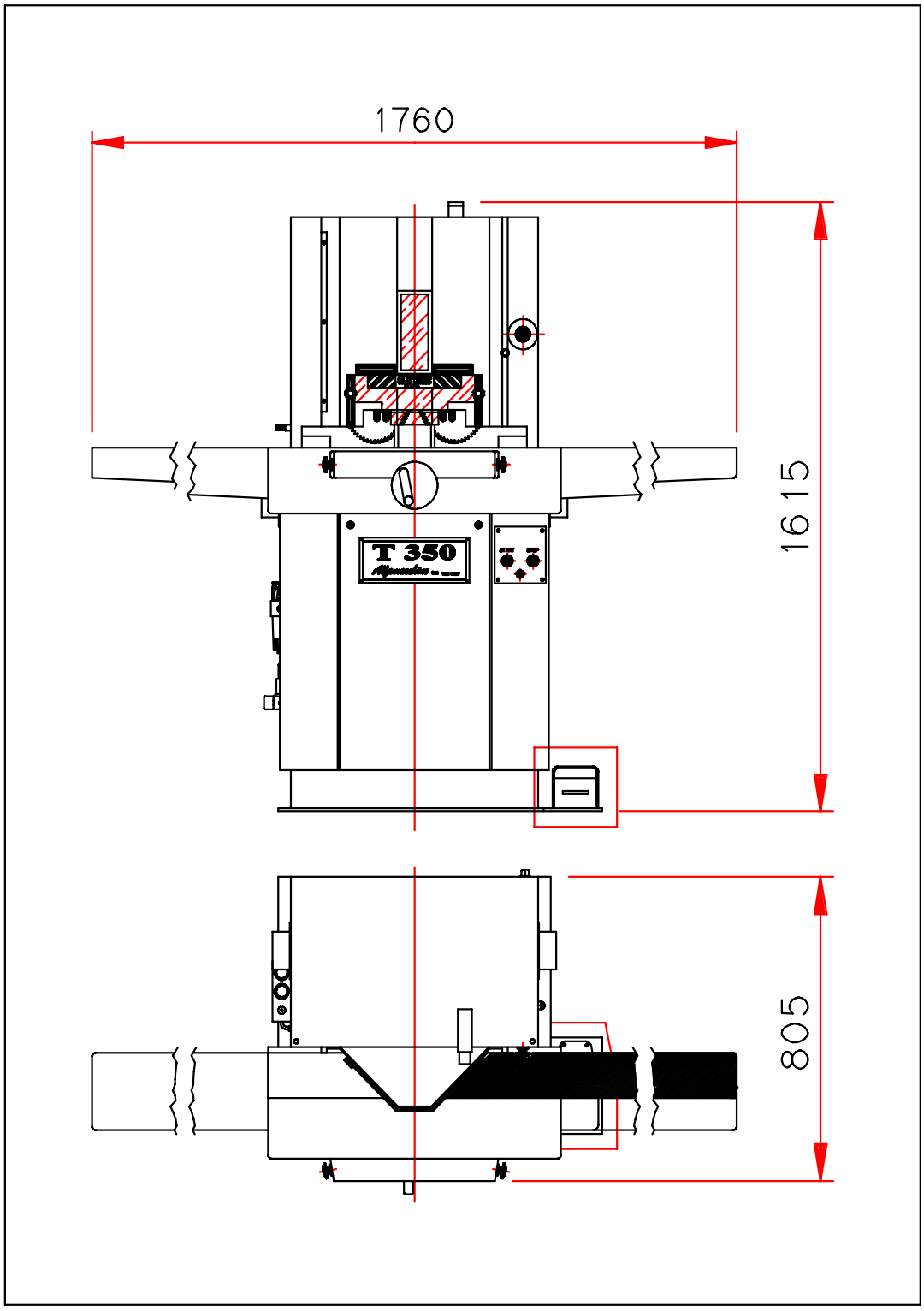
- Declaration of conformity to the Norm 89/392/CEE
- Declaration of conformity to the Norm 89/336/CEE

10.2 SCHEMES

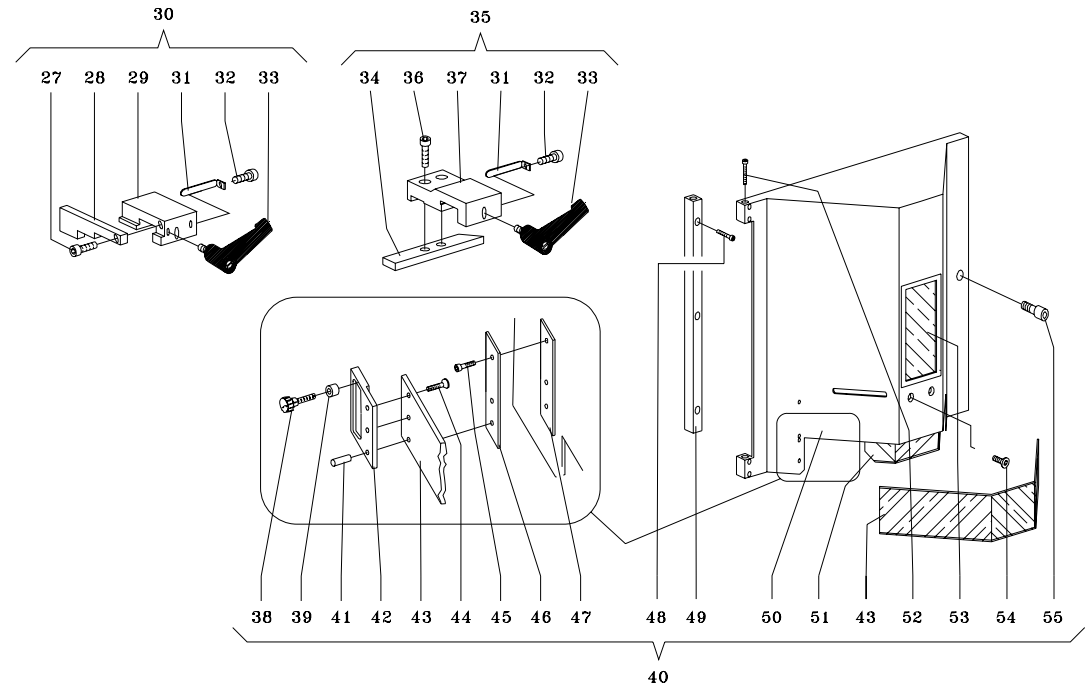
You can find here attached the following schemes:

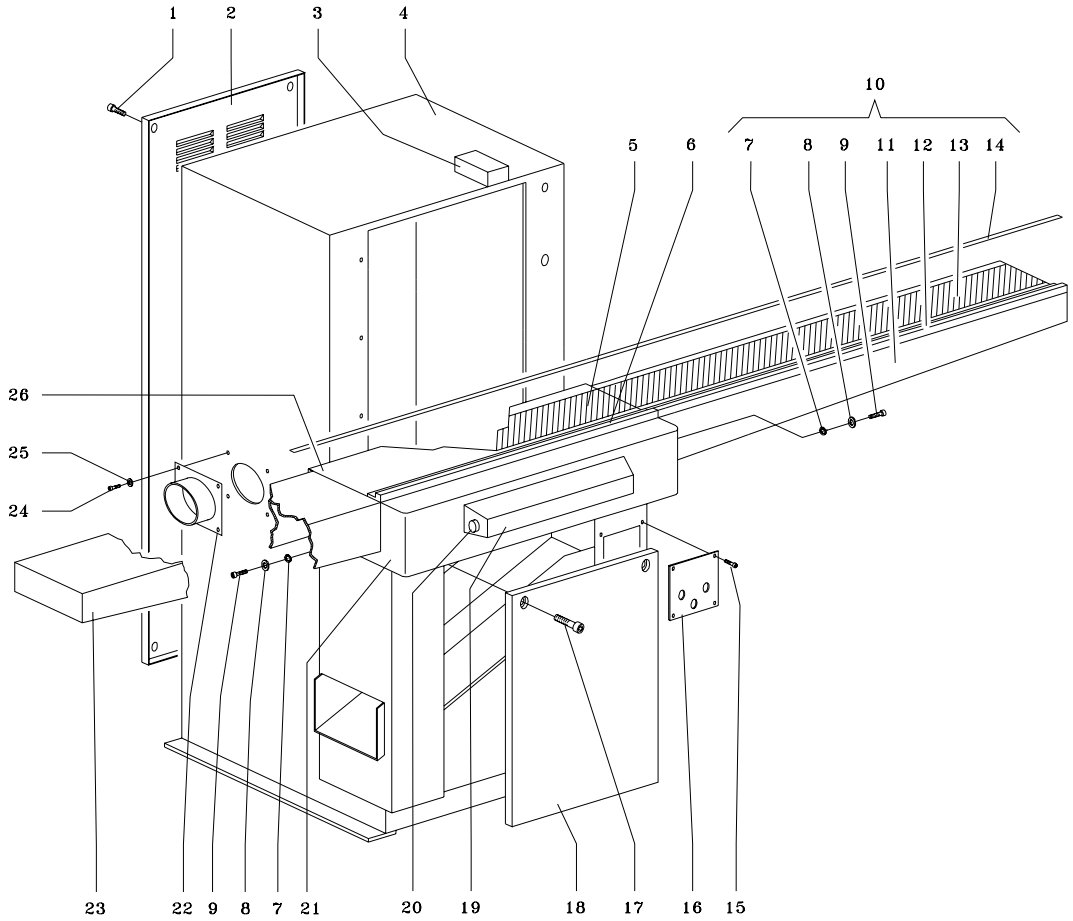
- (A) Machine's overall dimensions
- (B) Mechanic Schemes
- (C) Pneumatic Scheme
- (D) Electric Scheme
- (E) Plates Dislocation

ATTACHMENT A – MACHINE OVERALL DIMENSIONS

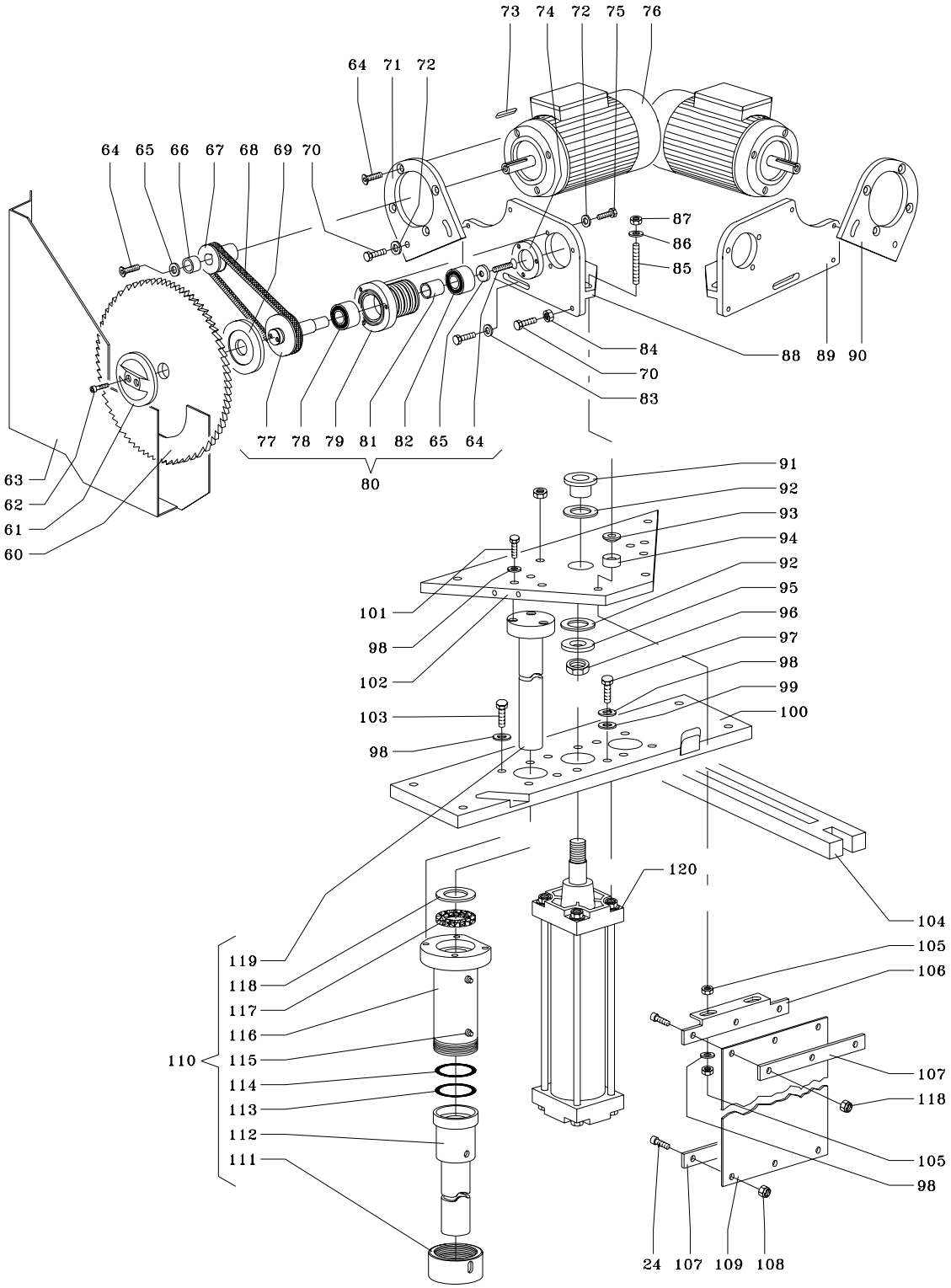


ATTACHMENT B – MECHANIC SCHEMES (type T-350) (code: dwg n° 350.0.100)



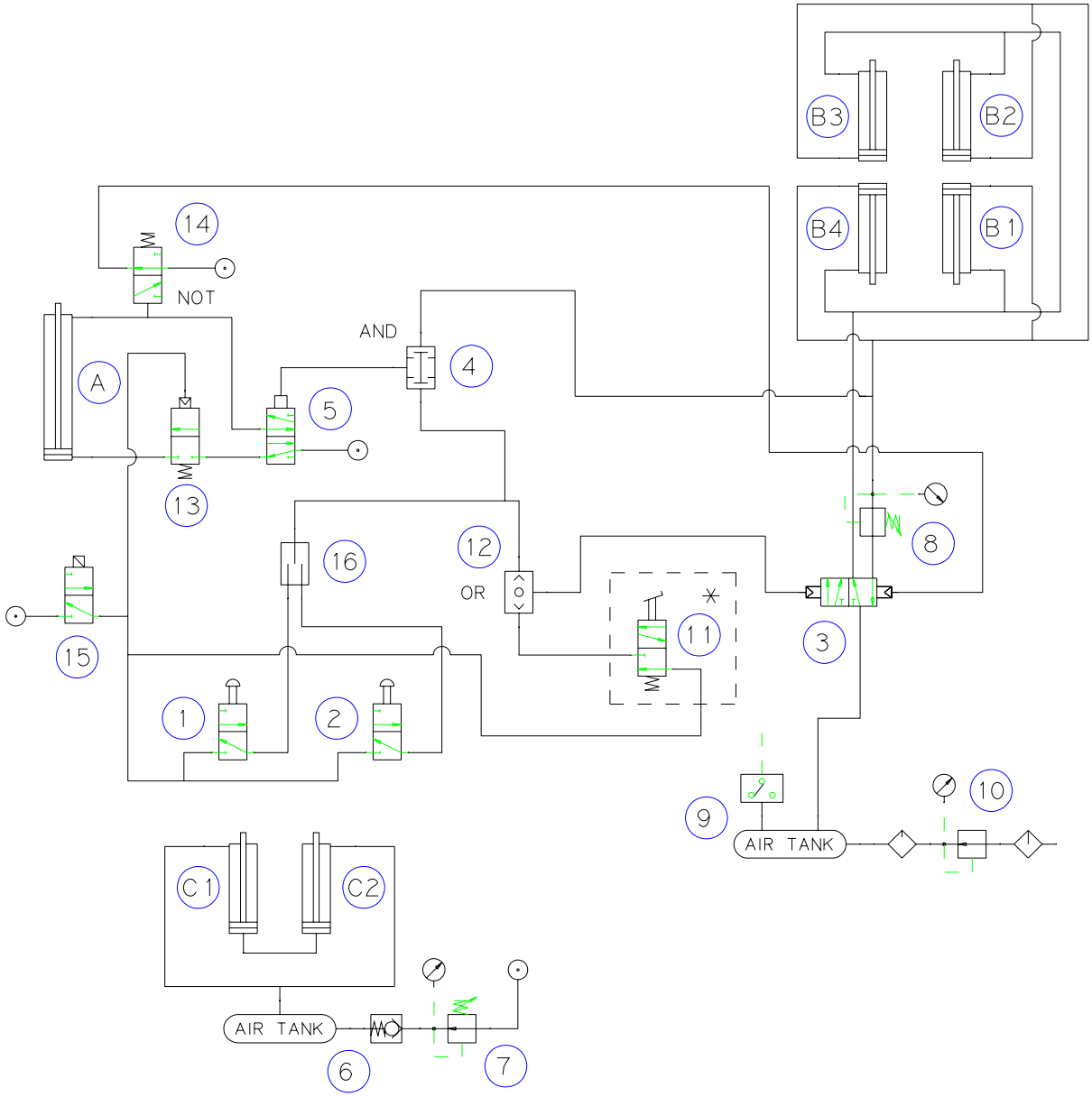


Ref.	***Description***
1	Screw
2	Door
3	Safety micro switch
4	Main frame
5	Measurer plane
6	Support
7	Washer
8	Grower
9	Screw
10	Complete right extension
11	Left extension
12	Slide
13	Measurer plane
14	Inch rule
15	Screw
16	Eletric panel
17	Screw
18	Door
19	Box push button
20*	Push button
21	Central workplane
22	Aspiration pipe
23	Left extension
24	Screw
25	Washer
26	Neutral measurer plane
27	Screw
28	Support
29	Support
30	Flip slide stop
31	Slide spacer
32	Screw
33	Handle
34	Support
35	Fixed slide stop
36	Screw
37	Support
38	Knob
39	Knob
40	Complete guard
41	Spacer
42	Slide support
43	Protection
44	Screw
45	Screw
46	Slide
47	Place
48	Screw
49	Support
50	Guard
51	Protection
52	Screw
53	Protection
54	Screw
55	Special screw


73 74 72 75 76
64 71 72
64 65 66 67 68 69 70
87
86
85
84
70
83
88 89 90
77 78 79 81 82 65 64
80
63
62
61
60
91
92
93
94
92
95
96
97
98
99
100
101
98
102
103
98
120
104
105
106
107
118
105
98
119
118
117
116
110
115
114
113
112
111
24 107 109 108

60* Circolar saw
61 Flange
62 Screw
63 Carter
64 Screw
65 Washer
66 Spacer
67 Pulley
68* Belt
69 Flange
70 Screw
71 Support
72 Washer
73 Key
74 Cover
75 Screw
76* Motor
77 Shaft
78 Bearing
79 Support
80 Complete Hub
81 Spacer
82 Bearing
83 Washer
84 Nut
85 Set screw
86 Washer
87 Nut
88 Support
89 Support
90 Support
91 Bushing
92 Spacer
93 Spacer
94 Spacer
95 Spacer
96 Nut
97 Screw
98 Washer
99 Washer
100 Plate
101 Screw
102 Plate
103 Screw
104 Support
105 Nut
106 Bracket
107 Plate
108 Nut
109 Guard
110 Cylinder
110 Cylinder with bushing
111 Metal ring
112 Head
113 Gasket
114 Washer
115 Grease dispencer
116 Head
117 Washer
118 Washer
119 Piston with stem
120 Cylinder
121 Flou regulator
122 Air filter lubrificator
123 Pressure regulator
124 Straight fitting
125 Complete cylinder
126 “L” fitting
127 Pressure plate

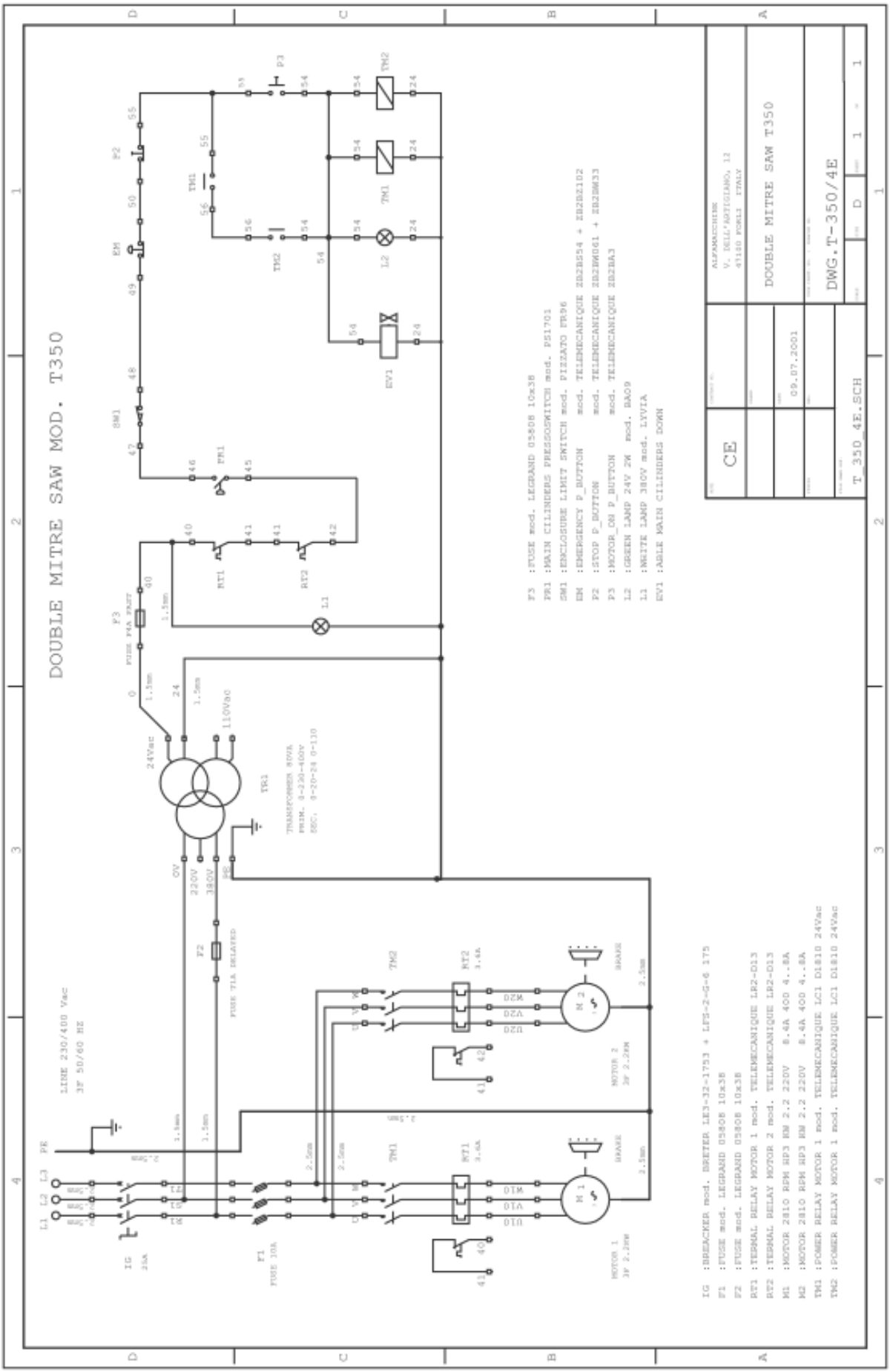
ATTACHMENT C - PNEUMATIC SCHEME



Ref. Description

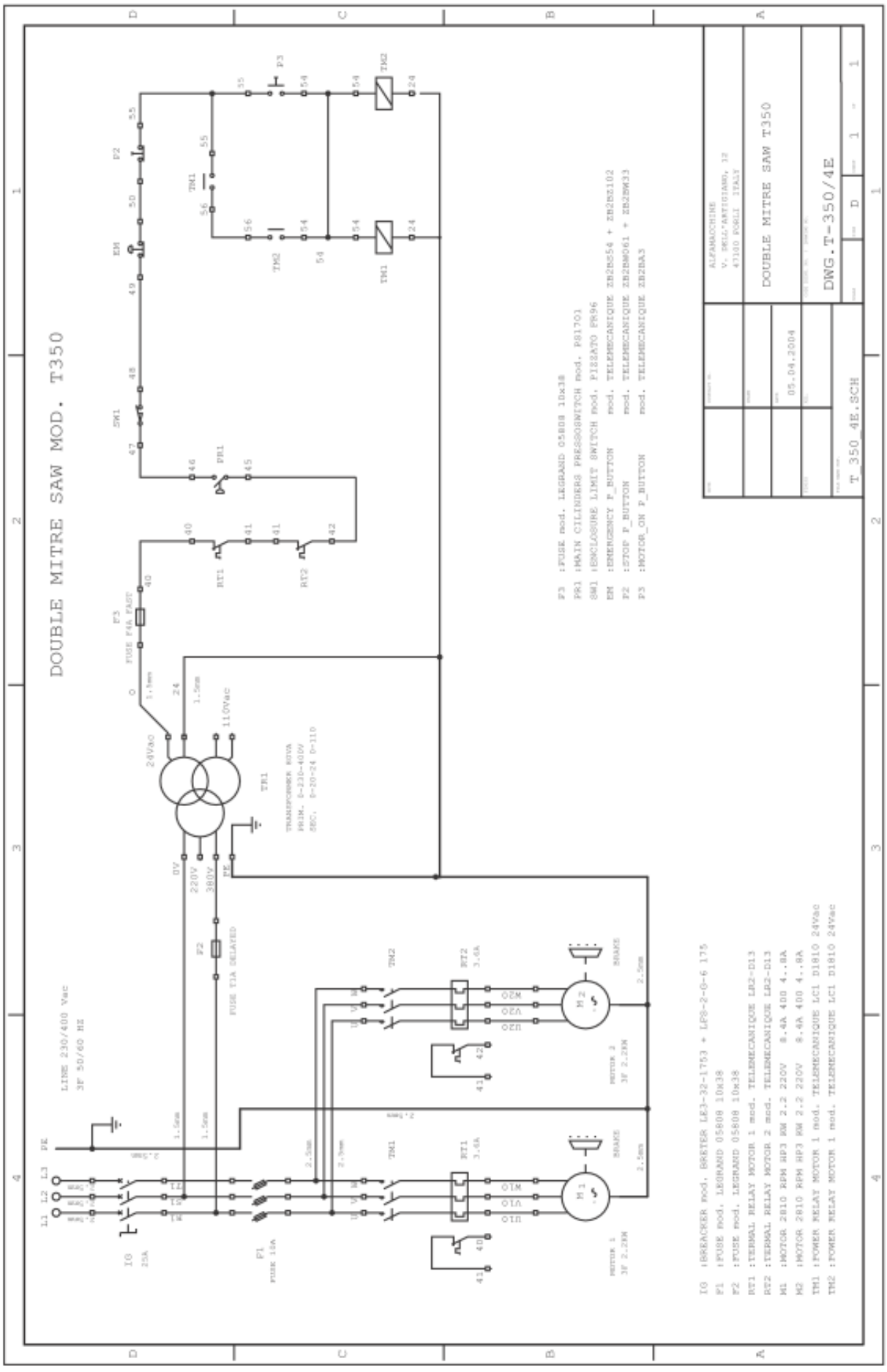
A Main cylinder
B Vertical clamp cylinder
C Balance cylinder
1 Button
2 Button
3 Valve
4 Valve "AND"
5 Valve
6 Valve
7 Air pressure regulator
8 Air pressure regulator
9 Pressure switch
10 Air filter lubrificator
11 Foot pedal (optional)
12 Valve OR
13 Block valve
14 Valve "NOT"
15 Solenoid valve
16 Bimanual modulus

ATTACHMENT D - ELECTRIC SCHEME
CE version



ATTACHMENT D - ELECTRIC SCHEME

not CE version



ATTACHMENT E - PLATES DISLOCATION