

CE



PROFESSIONAL POLISHING BENCH ANGEL DRY



Use and maintenance manual

English translation of the original instructions

EN

REVISION	DATE	NOTES
0.0	23/03/2020	First Issue

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1. DECLARATION OF CONFORMITY

The manufacturer CIMO S.r.l.
with registered office in Corso Novara, 171/B - Vigevano 27029 (PV), Italy

hereby declares that the machine

Model	Angel DRY
Type	Professional polishing bench

complies with the following European Directives

2006/42/EC	Machinery Directive	17 May 2006
2014/30/EU	Electromagnetic Compatibility Directive	26 February 2014
2014/35/EU	Low Voltage Directive	26 February 2014

and has been designed and built according to the following harmonised standards:

UNI EN ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk reduction
IEC EN 60204-1:2018	Safety of machinery - Electrical equipment of machines. Part 1: General requirements
UNI EN ISO 14120:2015	Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards
UNI EN ISO 13850:2015	Safety of machinery - Emergency stop function - Principles for design
UNI EN ISO 13849-1:2016	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design
UNI EN 930:2010	Footwear, leather and imitation leather goods manufacturing machines - Roughing, scouring, polishing and trimming machines - Safety requirements

Person authorised to draw up the technical file: Barettoni Nicolò

Vigevano, 23/03/2020

The Legal Representative

2. GENERAL INFORMATION

This manual contains the description of the machine and refers to its "intended use" as well as to the functional and performance technical specifications.

The instructions in this Manual do not replace, but supplement the obligations for complying with current safety and accident-prevention regulations.

2.1. MANUFACTURER

The machine described in this manual is manufactured by:



C.I.M.O.S.r.l.
Corso Novara, 171/B - Vigevano
27029 (PV) - Italy Tel.
+39 0381 82 193
email: cimob@tin.it
www.cimosrl.it

2.2. MACHINE IDENTIFICATION

When contacting the Manufacturer always provide the serial number of the machine found on the nameplate located on the electrical panel.

1. Manufacturer

CIMO

CORSO NOVARA 171/B
27029 VIGEVANO (PV) ITALY
Tel. +39 038182193 Fax +39

7. CE marking

6. Machine model

Modello - Model

5. Power supply specifications

Caratteristiche elettriche -
electrical features

4. Serial number

Matricola n° -
Serial number

3. Registration number

Anno di fabbricazione -
Year of manufacture

2. Year of manufacture Machine type

Tipo - Type

- | | |
|-------------------------------------|--------------------------------|
| 1. Manufacturer | 5. Power supply specifications |
| 2. Year of manufacture Machine type | 6. Machine model |
| 3. Registration number | 7. CE marking |
| 4. Serial number | |

The nameplate must not be altered as it contains the details that must be provided to the manufacturer should the need arise.

The nameplate, which contains the CE conformity marking, represents the manufacturer recognised means of identifying the machine.

2.3. MANUAL LAYOUT

The information and instructions are organised into chapters and paragraphs, and can be easily found by consulting the table of contents.

The Customer must carefully read all the information contained in this manual, because correct setup, installation and use of the machine are necessary requirements to obtain regular and safe operation.

2.3.1. PURPOSE AND CONTENT

The information contained in the instruction manual serves as guide in the use of the machine and the technical specifications, as well as providing indications for its movement, installation, assembly and use. It also contains instructions for personnel, information for maintenance operations and for the safety of the machine and the workers connected to it.

2.4. RECIPIENTS

This Manual is addressed to both the Operator of the machine and the Technicians authorised to maintain the Machine. For further details on the requirements and minimum knowledge required from machine operators and maintenance personnel, it is recommended to carefully read the paragraph "Professional profiles of users".

In any case, the operators must not carry out operations reserved for maintenance technicians or qualified technicians; the Manufacturer is not liable for damage resulting from failure to abide by this prohibition.

2.5. STORAGE

This use and maintenance manual is an integral part of the machine and must be kept in a suitable place near the machine, so that it is always available for reference and in the best condition. It is recommended that you make a copy of this manual for the operator and keep the original carefully stored away. CIMO S.r.l. reserves the right to make any changes it deems necessary for the purpose of improvement, without any obligation to update this document.

2.6. SYMBOLS USED

Symbols have been used throughout the manual to highlight the texts that provide useful information to avoid dangerous situations for the operator, as well as residual risks. They are also used to highlight general notes that may be important. The symbols used are:



CAUTION! It is placed before certain procedures. Non-compliance can cause damage to the machine.



WARNING! It is placed before certain procedures. Non-compliance can cause injury to the operator, the maintenance technician, the installer or damage to the machine.

2.7. WARRANTY

The Manufacturer guarantees the machine for a period of 12 months from the date of purchase (invoice date), unless the sales contract states a different warranty period.

The Manufacturer guarantees that the machine is produced, packaged and sold in accordance with the technical and construction specifications supplied. The Manufacturer also guarantees that the machine complies with the technical specifications provided by the customer, and its liability will be limited to the non-compliance of the machine with the aforementioned specifications. During the warranty period, the Manufacturer guarantees the complete functioning of the machine.

The Manufacturer's warranty is limited to reimbursement and/or replacement of defective parts caused by production defects or low quality of the material. Parts subject to normal wear and tear are excluded from the aforementioned warranty, as well as failures caused by overload, lack of electrical phase (s), improper use, negligence or failure to comply with the Manufacturer's instructions.

The warranty does not cover damage to the machine caused by:

- Transportation and/or handling;
- Incorrect or improper use of the machine;
- Lack of maintenance as described in this Manual;
- Use of non-original spare parts;
- Failures and/or breakages not attributable to defective parts.

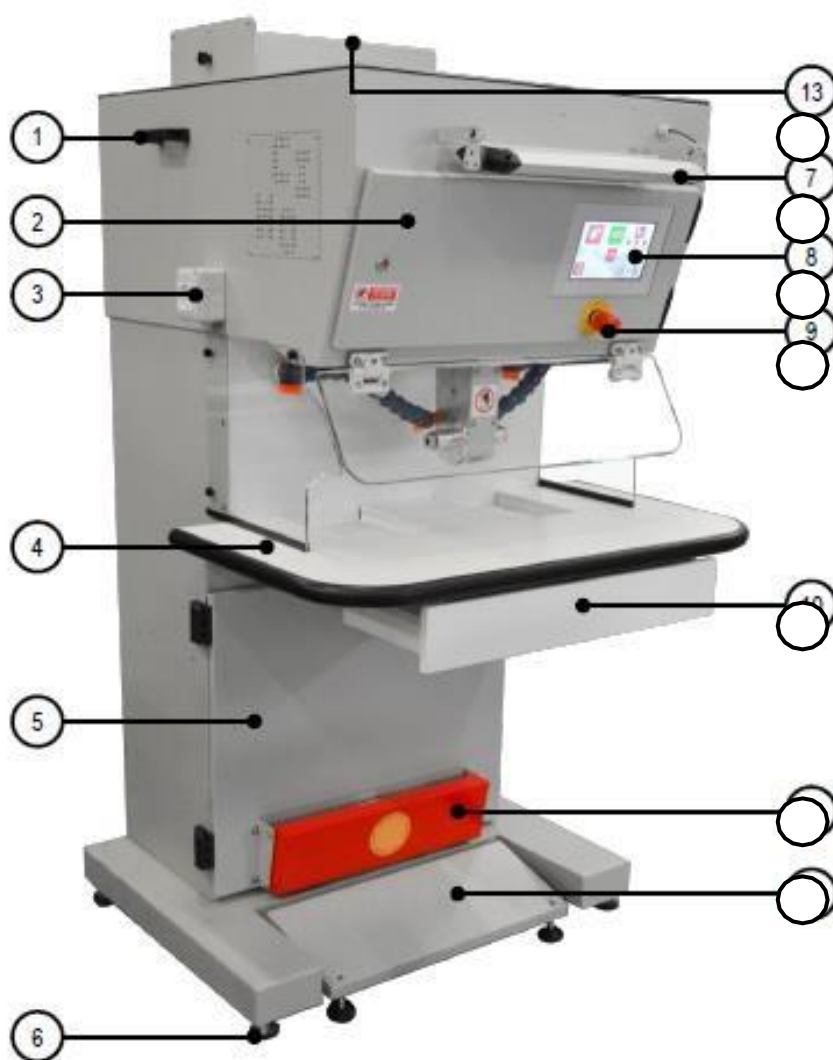
Terms and conditions: defects and any discrepancies with orders must, under penalty of invalidation, be communicated to the Manufacturer within eight days of detection, by sending a letter with recorded delivery to the Manufacturer's office or via registered email (PEC).

The Manufacturer may, at its sole discretion, replace or repair the component found to be defective. Any expenses incurred for call outs of the Manufacturer's personnel will in any case be borne by the buyer. The replaced parts will remain the property of the Manufacturer.

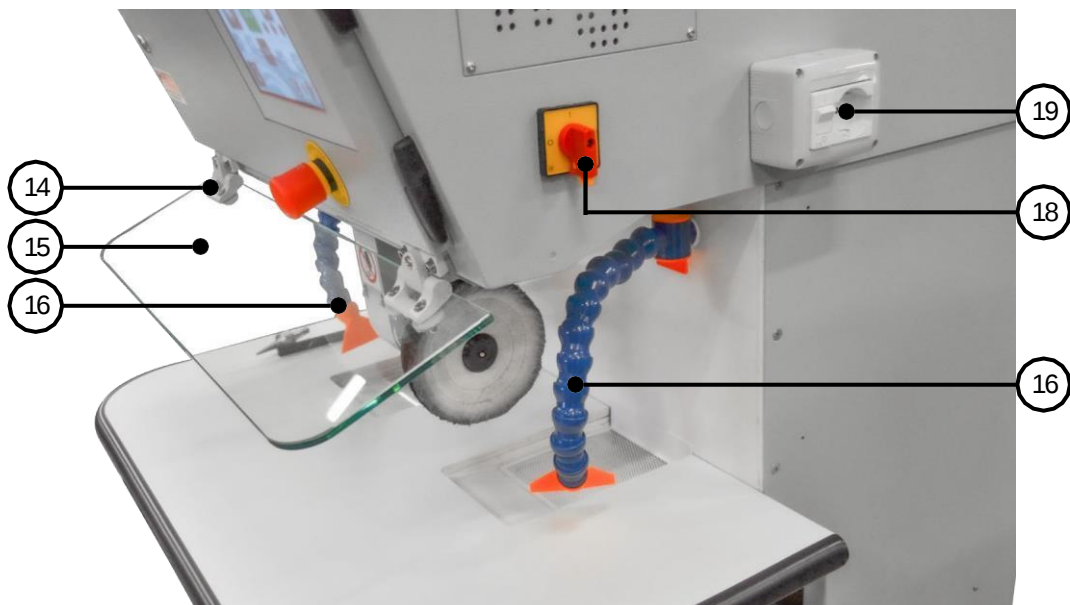
3. MACHINE DESCRIPTION

3.1. GENERAL DESCRIPTION

The machine described in this manual is intended for polishing gold parts; it is equipped with a workbench with two tool holders for polishing discs, a lighting system that allows precision machining and blowers to help convey the dust generated by the processing towards the suction inlets of the filtration system. To protect the operator there is a transparent plexiglass panel that can be tilted accordingly, while on the sides there are two transparent fixed plexiglass panels. The HMI display on the front lets you monitor and control machine operation. Under the workbench there is a drawer that allows the user to house the supports on which to install the discs, the spindle support and the spanners to tighten the supports in the appropriate tool holders. On the lower part of the machine there is the compartment containing the filters for the intake air; on the door that allows access to this compartment there is a foot-activated emergency stop panel.

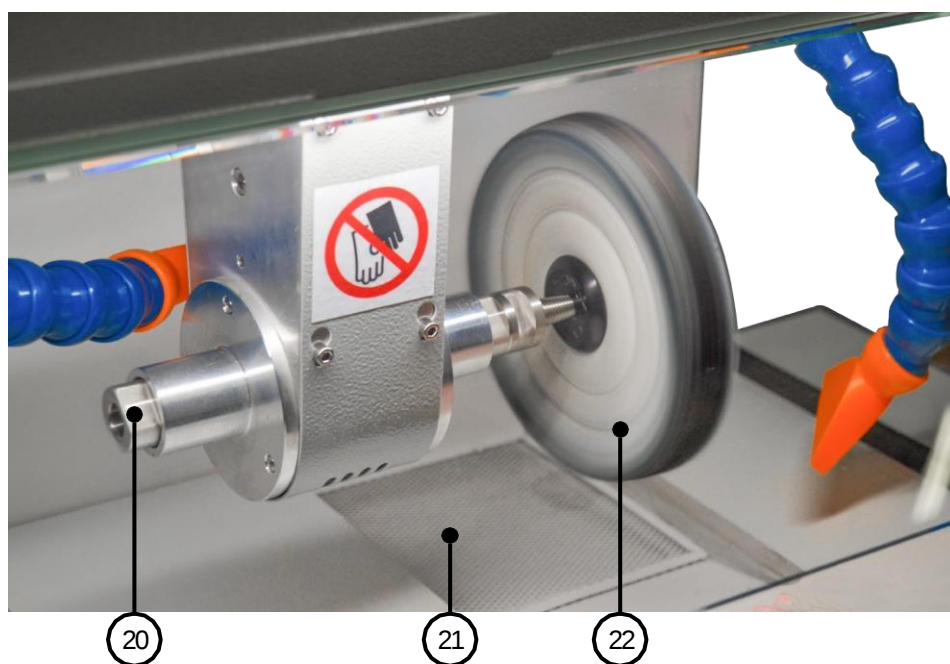


- | | | | |
|----|--------------------------------|-----|-----------------------|
| 1. | Handles for moving the machine | 8. | HMI display |
| 2. | Electrical panel | 9. | Emergency push-button |
| 3. | Auxiliary electrical socket | 10. | Tool drawer |
| 4. | Work surface | 11. | Emergency panel |
| 5. | Filter compartment door | 12. | Footrest platform |
| 6. | Adjustable feet | 13. | Exhaust air outlet |
| 7. | Upper lamp | | |



- 14. Adjustable hinge
- 15. Protective plexiglass panel
- 16. Blowers

- 17. Polishing disc
- 18. Machine disconnect switch
- 19. On/off auxiliary electrical socket



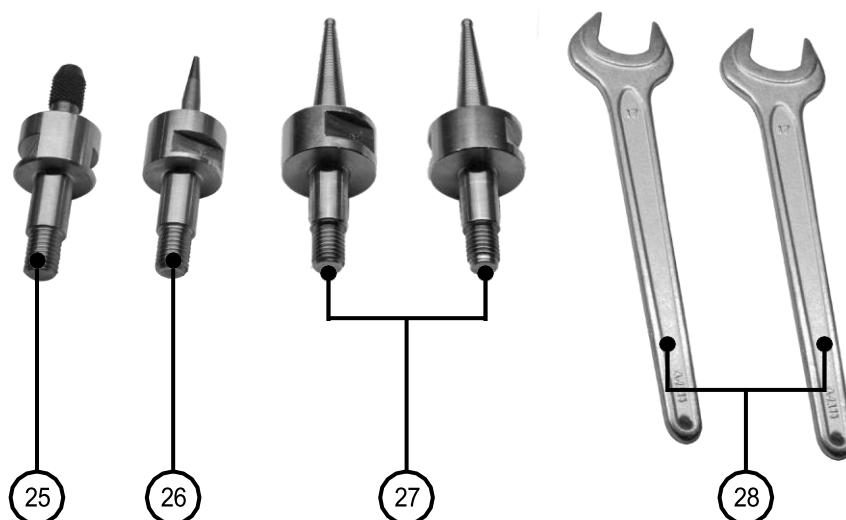
- 20. Tool holder housing
- 21. Dust suction inlet

- 22. Tool



23. Cell filter

24. Pocket filter



25. Spindle

26. Small tool holder

27. Tool holder (right and left)

28. Spanners for fixing tool holder

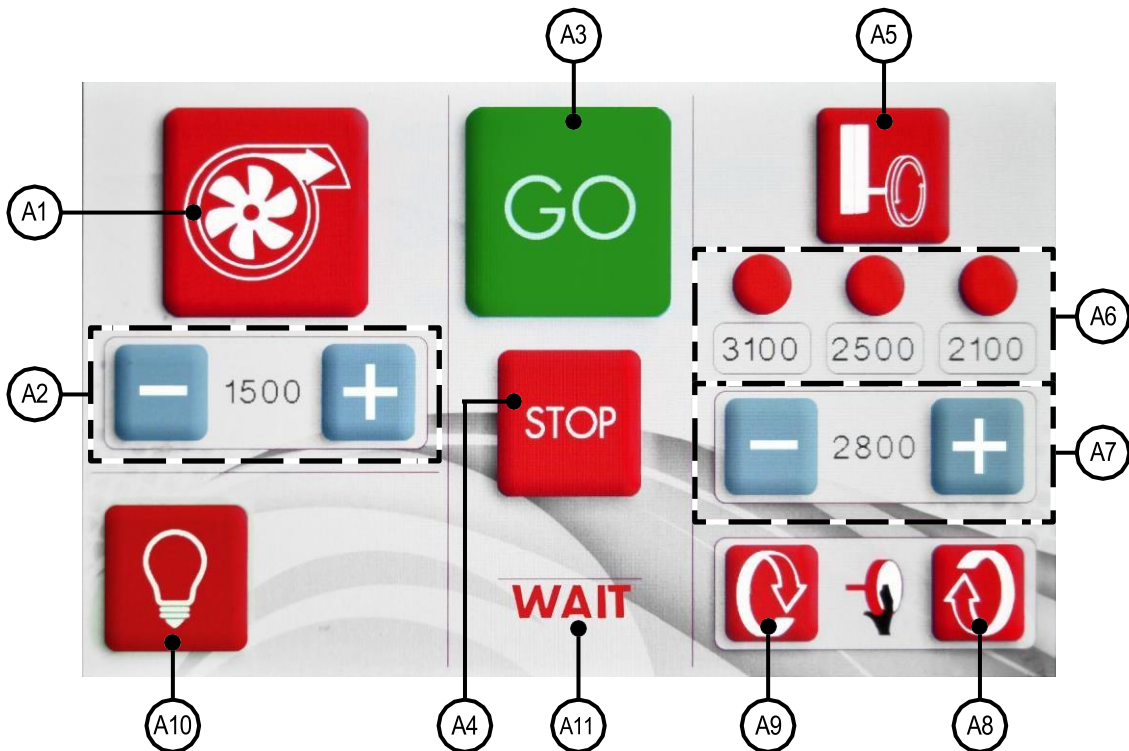
3.2. TECHNICAL SPECIFICATIONS

DATA	UoM	VALUE
Power supply voltage	V	230
Power supply frequency	Hz	50/60
Power consumption	KW	2.5
Current consumption	A	11
Overall dimensions	cm	105 x 80 x 220h
Weighted sound pressure level A	dB	75
Weight (with packaging)	Kg	265
Weight (without packaging)	Kg	255
Exhaust air outlet size	mm	158
Ambient temperature	°C	5 ÷ 40
Relative humidity (non condensing)	%	0÷60
Weighted sound pressure level A	dB	75.6

4. HMI DISPLAY DESCRIPTION

The machine's HMI is arranged on a single page, from which it is possible to start and stop the rotation of the tools for the discs and the suction, adjust the rotation speed of the tools for the discs and suction and switch on and turn off the lighting.

The display groups together the machine commands to make use more intuitive.



- A1. Suction on/off button
- A2. Suction speed adjustment buttons: they allow you to adjust the rotation speed of the suction from a minimum of 1000 rpm to a maximum of 2800 rpm at 100 rpm intervals
- A3. Machine set for processing button
- A4. Machine stop button
- A5. Tool rotation start/stop button
- A6. Tool rotation speed quick buttons: they allow you to quickly select a previously set tool rotation speed
- A7. Tool rotation speed adjustment buttons: they allow you to adjust the rotation speed of the tool from a minimum of 600 rpm to a maximum of 3600 rpm at 100 rpm intervals
- A8. Tool removal button: it allows you to rotate the tool holder in order to remove the tool
- A9. Tool insertion button: it allows you to rotate the tool holder in order to insert the tool
- A10. Lighting on/off button: it allows you to turn the light on the machining area on and off
- A11. Machine not ready warning: message that is shown when the set for processing command has been given but the machine is not ready to start

5. SAFETY

5.1. PROFESSIONAL PROFILES OF USERS

The machine is intended for professional use only; therefore, the operation and maintenance of the machine must be carried out exclusively by personnel duly qualified and trained to do so. Operation of the machine by unqualified or inadequately trained operators can cause serious damage and injuries.

To better define the field of operation and the consequent assumption of responsibility of each OPERATOR, given by the specific training and qualification obtained, the following table of professional profiles with relative pictogram, necessary in every kind of operation, has been drawn up:

	Operator: Qualified person who is authorised to operate the machine using the controls provided with safety systems/guards in place.
	Mechanical maintenance technician: Qualified person who is authorised and capable of installing, repairing and performing extraordinary maintenance of an exclusively mechanical nature.
	Electrical maintenance technician: Qualified person who is authorised and capable of installing, repairing and performing extraordinary maintenance of an exclusively electrical nature.
	CIMO Mechanical technician: Qualified technician authorised to carry out complex and extraordinary mechanical operations.
	CIMO Electrical technician: Qualified technician authorised to carry out complex and extraordinary electrical operations.

The operators assigned to use the machine must:

- be adults according to the law, in any case, not under the age of eighteen;
- possess all the necessary mental-physical abilities;
- be instructed on how to operate the machine and know how to recognize the various operating modes;
- be trained on emergency procedures and how to implement them;
- be deemed suitable by the employer to carry out the task entrusted to them;

Inexperienced operators always require constant monitoring by a qualified and experienced operator who assumes the role of an instructor.

5.2. INTENDED USE

The machine in question is intended for polishing pieces in gold and other metals.

The manufacturer is not liable for damage to property or injury to persons deriving from improper use of the ladle. The machine is intended for use by qualified personnel.

The term "qualified" means personnel who have been instructed and trained by the employer on machine usage and associated risks (Article 73, Chapter I, Title III of Legislative Decree 81/08).

In particular, users must be instructed, also on the basis of the indications in this manual, and the machine must be used exclusively for its intended use, as indicated in the manual.

These obligations also apply to those involved in the transport, installation, maintenance and dismantling of the machine, each for their own area of responsibility.

The machine must not be used in environments with a risk of fire or explosion.

5.3. RESIDUAL RISKS

During the design phase of the machine it was required to eliminate or reduce risks as far as possible. However, there are still some risks that cannot be eliminated and that must be counteracted by adopting specific behaviours and precautions.

- Danger of the machine falling during its lifting due to the use of unsuitable equipment and/or untrained personnel.



WARNING! Loading and unloading operations must be carried out by qualified personnel, who will take care to check the exact weights and lifting points; such personnel will ensure the use of forklifts with adequate lifting capacity. There must be no unauthorised persons in the vicinity of the lifting point.

- Danger of electrocution when connecting the machine to the power supply due to an unqualified operator working on electrical components.



WARNING! Only trained and authorised electricians can connect the machine to the mains.

- Danger of dragging and consequent injury to the upper limbs due to entanglement of gloves, hair or scarves and the like in the rotating tool.



WARNING! Do not wear gloves when operating the machine.



Tie back or gather your hair so that it is impossible to get close to the rotating tool.



Do not wear scarves or other clothing that can come into contact with the rotating tool and that can get entangled.

- Danger of injury during maintenance phases due to insufficient lighting.



WARNING! Additional lighting (e.g. portable lamps) must be used in the event of poor visibility.

5.4. SAFETY SIGNS

Below are described the pictograms on the machine indicating the danger points or warnings to which all operators and maintenance personnel must pay attention.

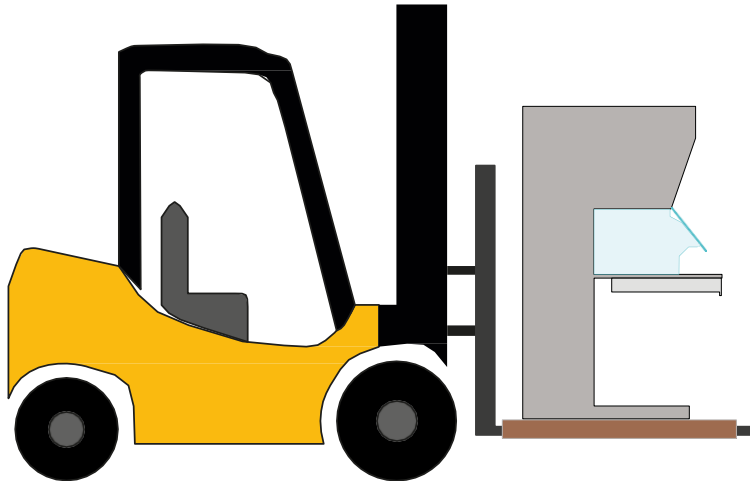
SYMBOL	DESCRIPTION	POSITION
	Do not work on live equipment	Electrical panel door (inside)
	Only authorised electricians are allowed to open the door	Electrical panel door (outside)
	Do not wear gloves	Tool holder for polishing discs
	Warning, live parts enclosed	Electrical panel door (outside)

6. HANDLING



WARNING! Loading and unloading operations must be carried out by qualified personnel, who will take care to check the exact weights and lifting points; such personnel will ensure the use of forklifts with adequate lifting capacity. There must be no unauthorised persons in the vicinity of the lifting point.

The manufacturer packs the machine by placing it inside a special wooden crate or on a Euro pallet to facilitate handling. The weight is indicated on a label or on the delivery note.



There are four wheels fixed to the base to make it easier to move the machine on the floor, and two handles (1), one on each side, for easier handling and movement.



7. INSTALLATION

7.1. ENVIRONMENTAL CONDITIONS OF USE

The machine must be located in an industrial building that is sufficiently lit and has a floor that is flat, level and strong enough to support the weight of the machine. The requirements indicated in the technical specifications table must be respected to ensure correct operation. The installation site must allow an average illuminance on the workstation of at least 1000 Lm, in compliance with current legislation.

7.2. POSITIONING

The machine is equipped with adjustable feet which, after positioning the machine, must be lowered until they come into contact with the ground. To prevent unexpected movement of the machine, lower the feet until the weight of the machine rests on them. Make sure that the machine cannot be moved.



7.3. ELECTRICAL CONNECTION

7.3.1. PRECAUTIONS



WARNING! Do not operate if you have not received clear recommendations and procedures from the manufacturer.

Any operation requiring access to live parts and electrical components must be carried out by qualified personnel and always following the minimum safety procedure reported here:

- completely turn off the machine;
- disconnect the machine from the power supply line;
- carry out the necessary operations.

7.3.2. CONNECTION



WARNING! Only trained and authorised electricians can connect the machine to the mains.

The machine is set up for power supply with a cable without a plug, this must be connected to a suitably sized disconnect switch; extension cords, adapted cables or adapters for multiple sockets cannot be used. The power supply line of the machine must be suitably protected against electrical hazards.

7.3.3. GROUNDING

The user is responsible for the efficiency of the electrical system grounding at the installation site. The grounding of the electrical system must be verified by law and the relevant report sent to the competent body of the country where the machine is installed.

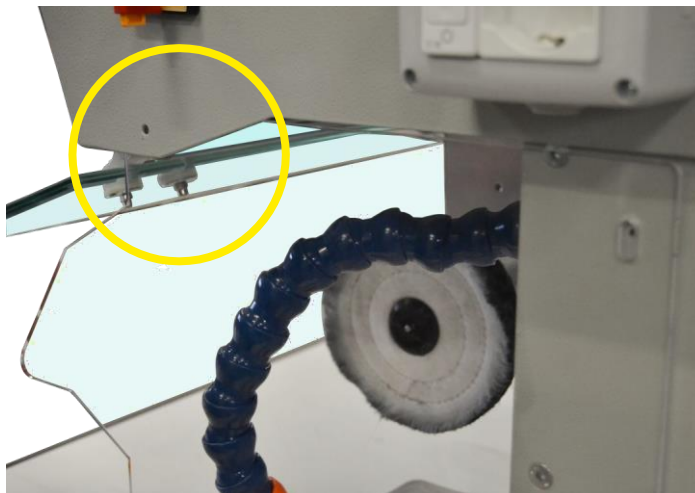
7.4. SUCTION OUTLET CONNECTION

The customer is responsible for connecting the exhaust outlet (7) and it must be carried out in compliance with current legislation. The size of the outlet (7) is indicated in the technical specifications table.

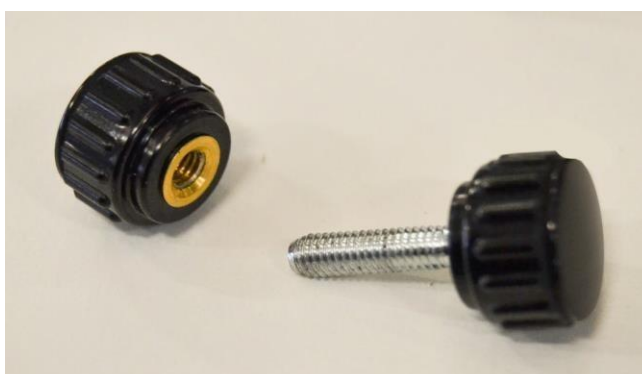
7.5. SIDE PANEL INSTALLATION

The side panels must be installed after the machine has been delivered because they are not mounted so as to avoid damage during transport; follow the instructions for installation:

- insert the panels inside the corner highlighted in the figure;



- fix the panels with the relative knob screws supplied.



8. OPERATION AND USE



WARNINGS AND INSTRUCTIONS FOR USE

Do not wear gloves when operating the machine.

Appropriate PPE such as aprons and safety shoes must be worn.

Tie back or gather your hair so that it is impossible to get close to the rotating tool.

Do not wear scarves or other clothing that can come into contact with the rotating tool and that can get entangled.

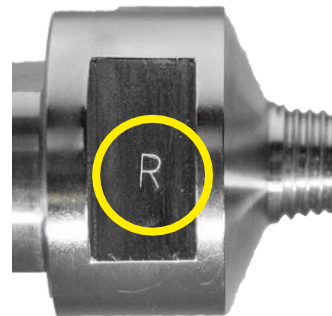
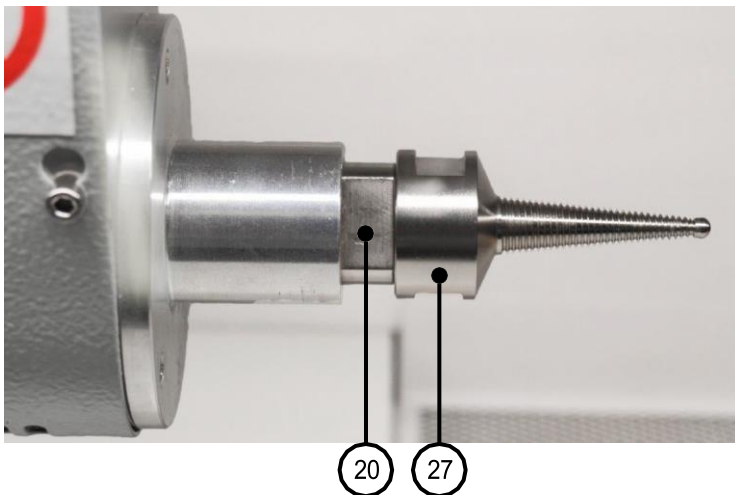
The following operations must be carried out by previously trained personnel.

The following operations must be performed in the order in which they are described.

8.1. PREPARATION FOR USE

Preparing the machine for use includes the fitting of tool holders and tools; to prepare the machine for use, carry out the following operations in sequence:

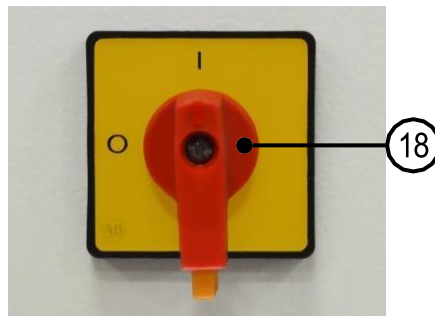
- manually screw the desired tool holder (26 - 27) or spindle (25) into the tool holder housing (20) making sure that, in the case of the tool holder, the letter on the tool holder corresponds to the correct side (R = right; L = left);



- tighten the tool holder using the corresponding spanners (29);



- power up the machine by bringing the disconnect switch (18) to position 1;

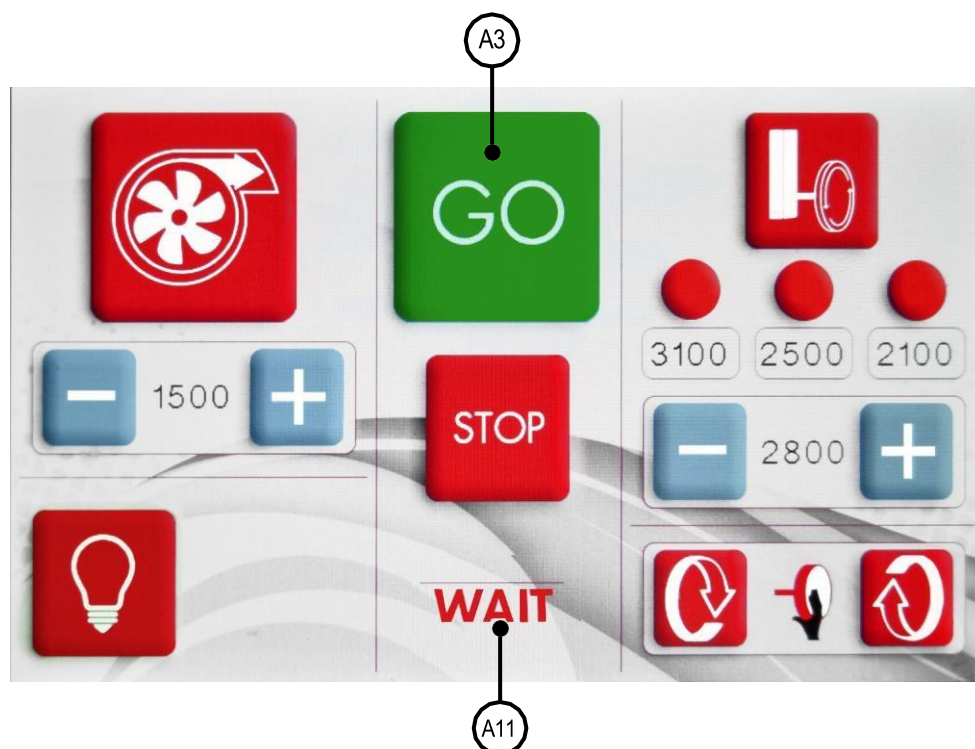


- check that the emergency button (9) of the machine is not pressed;

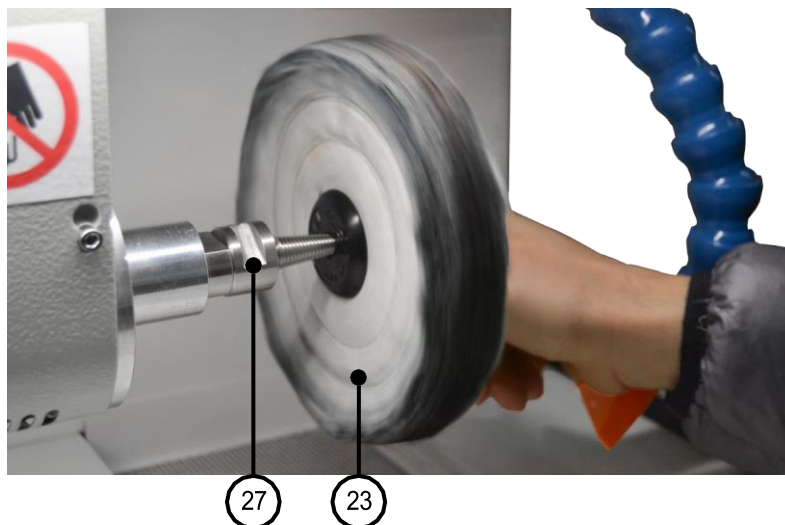


- start the machine by pressing machine set for processing button (A3) and wait until the machine not ready warning (A11) disappears.

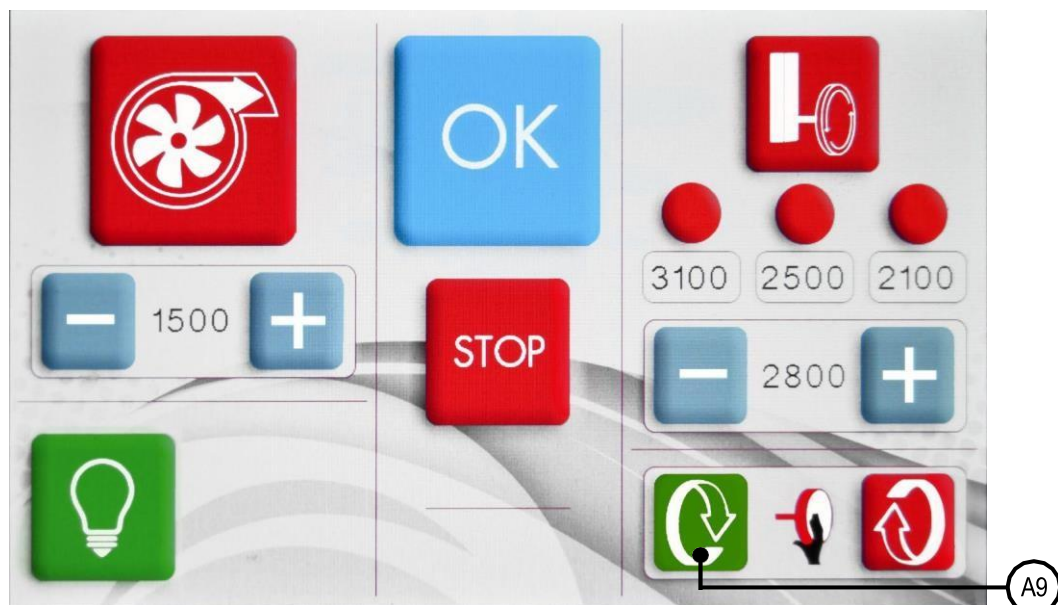
The machine will be ready for operation when the colour of the button (A3) changes from green to blue and the word "GO" changes to "OK". If the machine is not started within a short time, it will return to "GO".



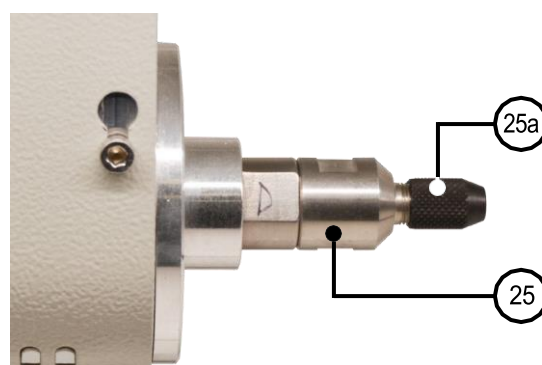
- if a tool holder (26 - 27) has been fitted:
 - position the tool (23) against the tool holder (27) by inserting the tip of the latter into the hole of the tool;



- keeping the tool still with one hand, press the tool insertion button (A9) to screw in the tool



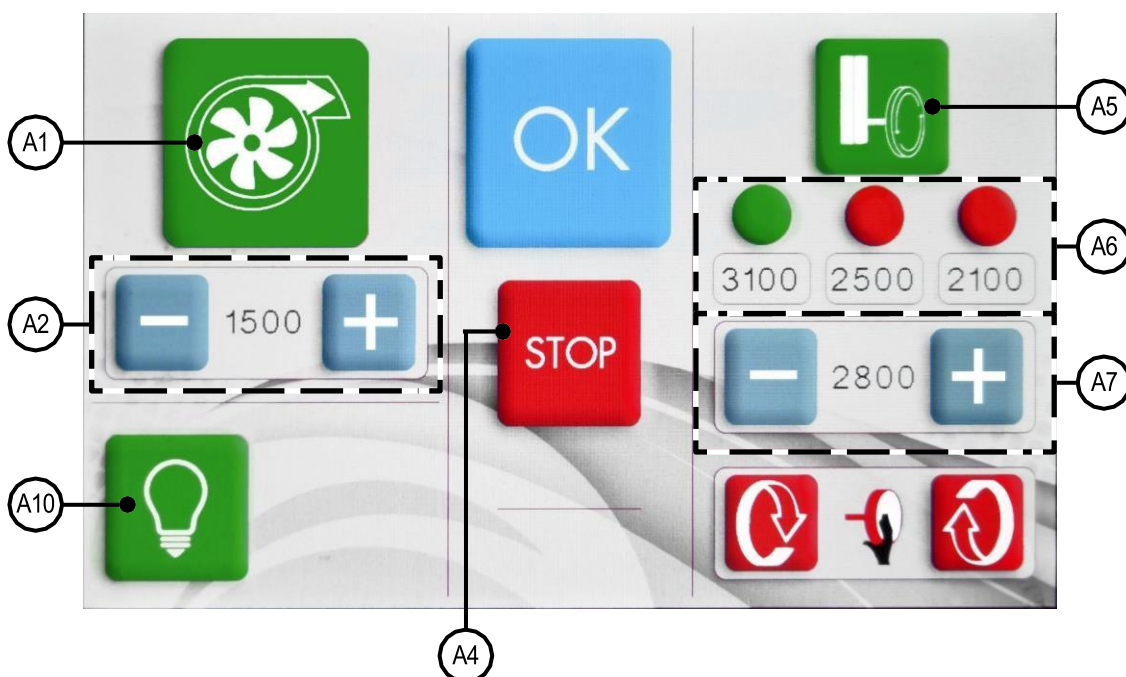
- if the spindle (25) has been mounted,
 - open the ring nut (25a) by turning it anticlockwise;
 - place the tool inside as far as it will go;
 - tighten the tool by turning the ring nut clockwise.



8.2. USE



WARNING! Do not wear gloves when operating the machine.

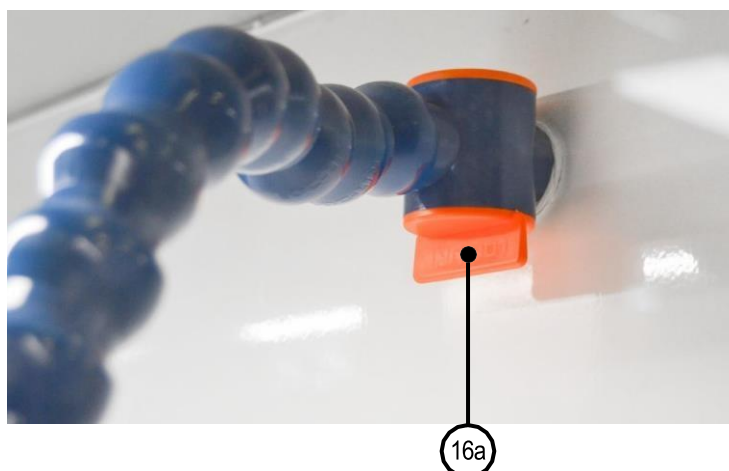


Follow the instructions on how to use the machine:

- switch on the lighting of the work area using the button (A10);
- start suction using the suction on/off button (A1);
- activate tool rotation using the tool rotation start/stop button (A5);
- adjust the rotation speed using the tool speed adjustment buttons (A7),
- if the desired speed is already one of quick buttons (A6), select it by pressing the red button above it;

The pre-set speed can be changed by pressing the button above it and then changing it using the adjustment buttons (A7).

- adjust the suction speed according to processing using the suction speed adjustment buttons (A2);
- adjust the position of the blowers (16) and operate them by opening the relative valve (16a);



- rest the workpiece against the tool (22) in order to polish it;
- once finished, stop the machine using the stop button (A4).

8.3. EMERGENCY STOP

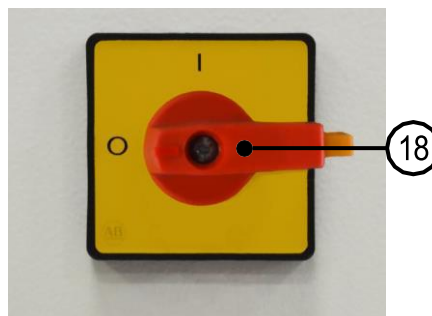
The machine is equipped with an emergency circuit that allows the immediate stop of the machine. The emergency stop can be activated by pressing the emergency button (9) located on the electrical panel or the foot-activated emergency panel (11).



To beginning working after an emergency stop, the emergency button must be released.

8.4. SWITCHING OFF

To switch off the machine, if not in use, disconnect the machine from the power supply by moving the disconnect switch (18) to position 0.



9. MAINTENANCE



WARNING! All maintenance operations must be carried out using the appropriate PPE.



WARNING! Additional lighting (e.g. portable lamps) must be used in the event of poor visibility.

This chapter describes the maintenance operations that can be carried out by the user; for any other operation it is necessary to contact the manufacturer.

9.1. QUALIFICATION OF MAINTENANCE PERSONNEL

To be able to carry out maintenance properly, the personnel in charge must:

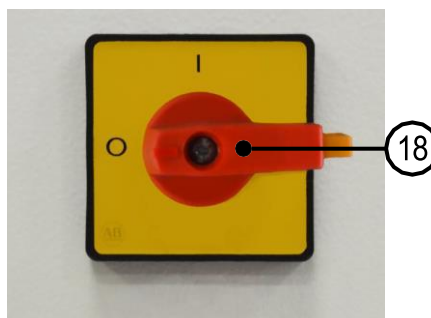
- know the laws in force relating to accident prevention during work carried out on machines with motor drive and be able to apply them;
- have read and understood the "Safety" chapter;
- know how to use and refer to this document;
- be aware of machine operation;

9.2. RECOMMENDATIONS

- Maintenance must be entrusted to qualified personnel with the necessary electrical and mechanical skills, as well as a general understanding of the machine.
- Always wear the personal protective equipment best suited to the operations you are about to carry out.
- Keep the work area tidy and clean. Make sure tools and equipment are kept in an orderly manner so as to prevent them from being left on or in the machine.
- Always ensure there are suitable grounding connections that comply with regulations. Failure to ground electrical equipment may cause serious injury.
- At the end of the maintenance operations, properly refit and secure all the protections, guards and protective devices that may have been removed or opened.

9.3. ISOLATION OF ENERGY SOURCES

Before carrying out any maintenance operations that do not require adjustments to the inverters, the machine must be disconnected from the power supply by placing the disconnect switch (18) in position 0 and locking it with a padlock.



9.4. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Decrease in suction efficiency	Filter compartment door open	Close the door
	Exhaust air duct blocked	Check the duct, if blocked, contact the person in charge
	Issue with the filters	Replace the filters
Tool fault	Loose timing belt	Contact support
	Electrical problem	Contact support

9.5. REPLACING THE FILTERS

Contact the manufacturer to receive replacement filters. Follow the instructions for replacing the filters:

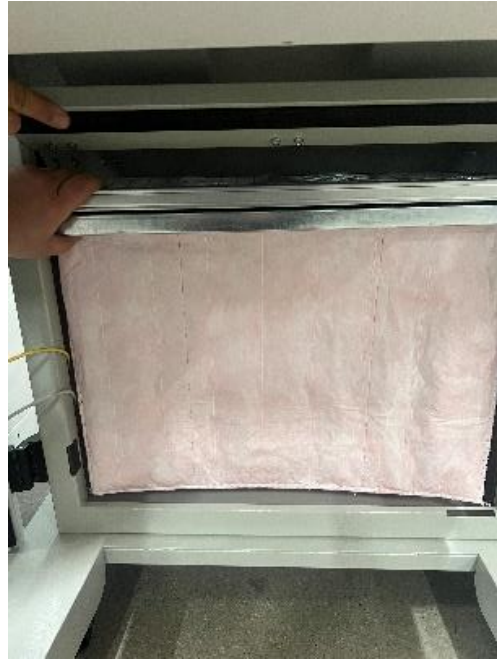
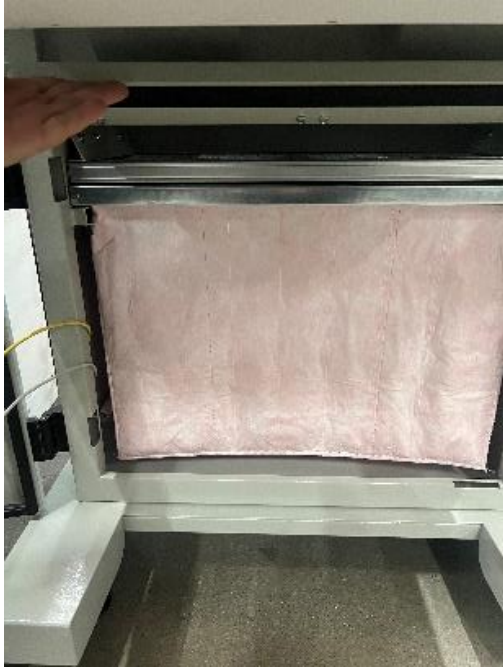
- open the filter compartment door (5) using an electrical panel key;



After opening the front door you will find a filter blocking door.



Lift the door and remove the filters for cleaning



10. DECOMMISSIONING

Machine inactivity indicates the amount of time that passes from the time the machine stops working until it is used again.

For proper storage of the machine, follow the information below:

- you must wear suitable personal protective equipment such as shoes and gloves;
- all persons not directly involved in lifting manoeuvres must be warned to keep away from the area by using acoustic and/or light signals;
- follow all legal provisions to carry out lifting operations.

11. DISMANTLING AND DISPOSAL

At the end of the life cycle of the machine, the user company must proceed with the dismantling and disposal of the machine in compliance with the regulations in force, first of all carrying out the general cleaning of the various parts followed by separating the parts making up the machine into components and electrical material (contactors, sheaths, cables, etc.). The different materials must be divided, for example: electric motors (copper windings), metal parts (metal structure, etc.) plastic materials, etc., for appropriate disposal and/or recycling. When dismantling the machine, keep in mind that:

- you must wear suitable personal protective equipment such as shoes and gloves;
- the work area must be cordoned off with no access to unauthorised persons;
- you must isolate the machine from sources of electricity;
- disconnect all electrical connections to the mains or to other equipment which must also be disconnected from the mains;
- disconnect it from any other systems;
- all persons not directly involved in lifting manoeuvres must be warned to keep away from the area by using acoustic and/or light signals;
- follow all legal provisions to carry out lifting operations.



C.I.M.O.S.r.l.
Corso Novara, 171/B - Vigevano
27029 (PV) - Italy
Tel. +39 038182193
Fax.+39 038170251
email: cimob@tin.it
www.cimosrl.it