

SD9 - SD9B

Manual shot-peening sandblasting machine



USE, MAINTENANCE AND SPARE PARTS MANUAL

SHOT-PEENING / SANDBLASTING MACHINES MANUFACTURING
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Thanks for choosing a NORBLAST shot-peening/sandblasting machine. We congratulate on your purchase.

Remember to strictly follow the instructions provided in this "USER'S MANUAL AND SPARE PART LIST". Becoming fully familiar with the information provided in this manual is a prerequisite for proper installation, operation and maintenance of the machine.

Read this "MANUAL" in all its parts carefully before installing, operating or maintaining the machine.

This manual provides the full information and recommendations concerning the machine, as well as useful tips for optimal operation, that will help you to keep your machine in good condition so as to ensure long-term reliability and efficiency.

Closely follow the maintenance recommendations and operating instructions for proper machine operation in order to ensure long service life and avoid troublesome failures.

When you need to look up the "MANUAL", refer to the TABLE of CONTENTS and locate the SECTION and PARAGRAPH dealing with the topic you are interested in.

This manual forms an integral part of the machine. Preserve it intact and keep it in a safe place over the whole service life of the machine. In case the machine is re-sold, hand the manual over to the new user.

Where dismantling and assembling procedures, special maintenance, repair and installation instructions concerning any accessories, devices or safety items are not discussed in this manual, relevant operations may only be performed by suitably trained engineers or by Norblast authorised technical service staff.

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0.1 PLANT AND MANUFACTURER IDENTIFICATION

This shot-peening / sandblasting system has been designed and manufactured by NORBLAST. NORBLAST will assist its customers during the whole operating life of the system, also giving detailed information in case this manual is not clear enough. Manufacturer's data are indicated on manual cover page.



In case of problems, when contacting our technical service please always precisely communicate the information included on the machine's identification plate, shown on the side.

MANUFACTURER REGISTERED OFFICE CONTACTS

NORBLAST s.r.l.
Via F.lli Carpigiani, 7 40138 Bologna - Italy
Tel.: +39 051.531.037 (4 lines a.s.)
Fax +39 051.53.01.33
E-mail: norblast@norblast.it
<http://www.norblast.it>

AFTER SALES/SPARE PARTS SERVICE E-mail: service@norblast.it

NORBLAST S.R.L. via Carpigiani, 7 40138 Bologna Italy tel. +39 051 531037			
Anno Year	<input type="text"/>	Tensione di linea Line voltage	<input type="text"/>
Matricola Number	<input type="text"/>	N° fasi Phases	<input type="text"/>
Modello Model	<input type="text"/>	Frequenza Frequency	<input type="text"/>
Pressione minima Minimum pressure	<input type="text"/>	Corrente Current	<input type="text"/>
Pressione massima Maximum pressure	<input type="text"/>	Potenza installata Power	<input type="text"/>

CE PLATE





Warning:

The presence of this symbol may indicate:

- **mechanical** servicing to be carried out for system proper operation;
- **general danger** for the operator and the system.



Warning:

The presence of this symbol may indicate:

- **electric** servicing to be carried out for system proper operation;
- **general electric danger** for the operator and the system.

This type of intervention must be carried out by qualified and duly trained operators.



Waste disposal:

The machine must be disposed of at suitable collection centres according to the safety standards in force.

0.2 SYMBOLS USED

It is up to the customer to do what follows according to the time agreed with the manufacturer:

- arrange the premises, including possible masonry works and/or required canalisation;
- power on the machine in compliance with the safety standards in the country of use;
- pneumatically power on the machine in compliance with the safety standards in the country of use.

0.3 ARRANGEMENTS TO BE MADE BY THE CUSTOMER

- The electric system must be connected by qualified personnel, complying with the prevailing standards
- The warranty is effective if the machine is correctly used and maintained as specified in the manual.

0.4 WARRANTY CONDITIONS

For any need regarding use, maintenance, general information or request of spare parts, the Customer is to apply directly to Norblast Srl.



Norblast recommends using original spare parts.

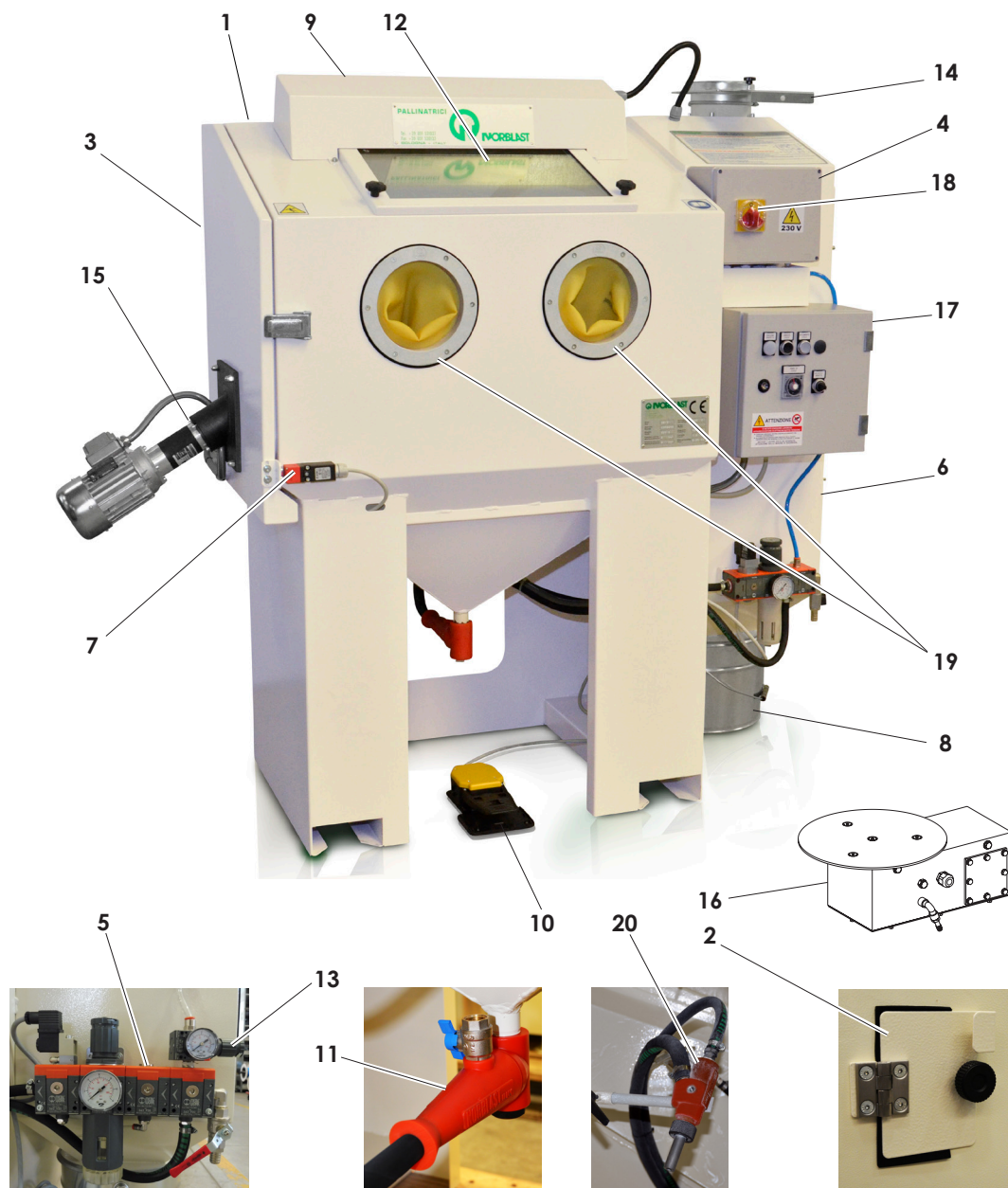
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1.1 MAIN UNIT LIST

- 1 Working cabin
- 2 Rear cleaning door
- 3 Side door
- 4 Power control unit
- 5 Pneumatic system
- 6 Filtering cabinet
- 7 Door microswitch
- 8 Dust collection container
- 9 Cabin lighting lamp
- 10 Blasting device control pedal
- 11 Lug unit
- 12 Cabin sight glass
- 13 Filter cartridge cleaning pressure regulator
- 14 Filtering cabinet shutter
- 15 Tumbler (optional)
- 16 Manual / automatic rotary table (optional)
- 17 Tumbler / Automatic rotary table control unit (optional)
- 18 Main switch
- 19 Gloves
- 20 Grit blasting device gun



1.2 GENERAL DESCRIPTION

The shot-peening/sandblasting system consists of one working cabin (1) and one air filtering system (6).

The working cabin fits one side access-door (3) for loading/unloading operations of the workpieces, and for the use of the rotary table (optional).

The door is sectioned by an electric safety microswitch (7) that stops the blasting job and blocks the pulse of the cleaning solenoid valve from the filtering cartridge in case the door is opened.

The front work station has a two-layer safety window in hardened glass and two flanges on which the gloves (19) are placed.

On the front side of the cabin is the machine power main switch (18) with the pneumatic unit under it (5).

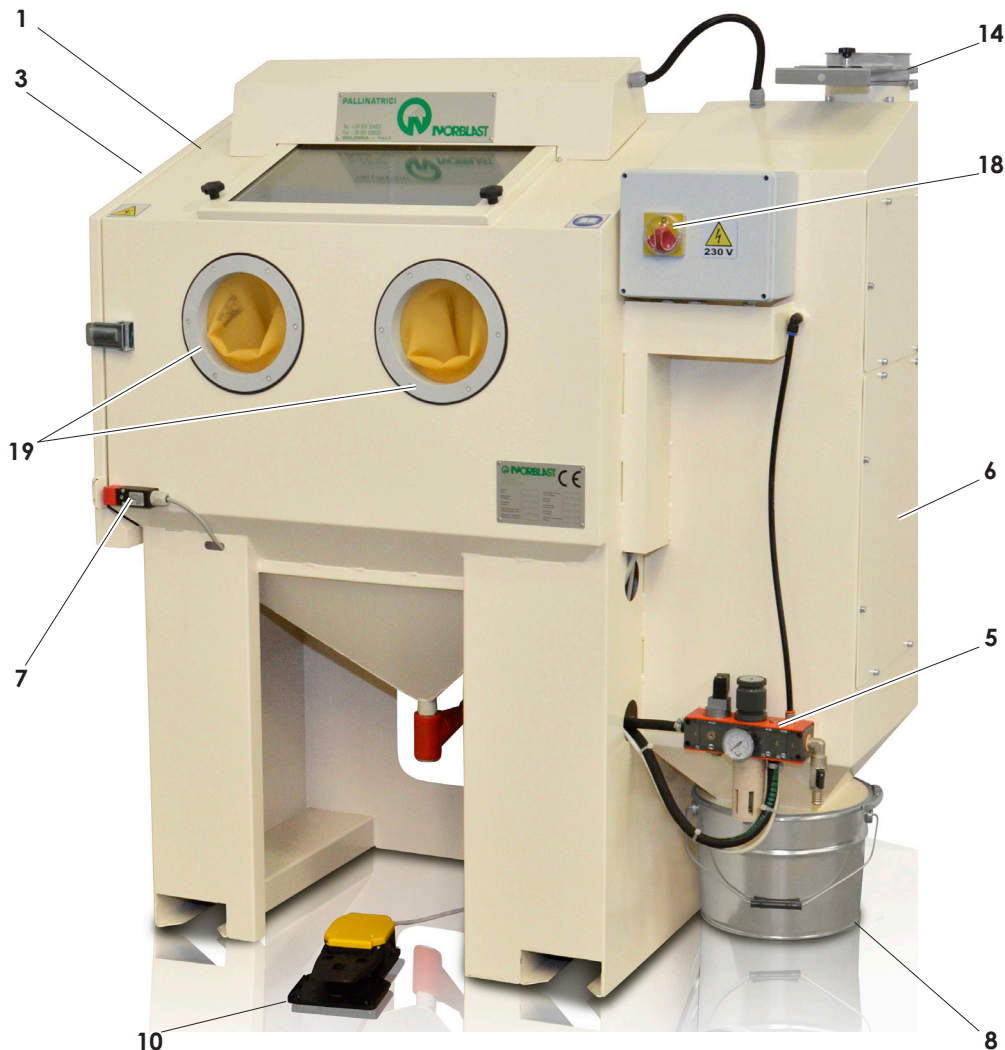
The system features the grit direct recovery function. Press the control pedal (10) to switch the work valve that controls grit ejection from shot-peening gun nozzle.

The ejected grit rests on the bottom of the cabin and is ready to be shot again.

The exhauster inside the filtering system takes up the crushed grit that will be deposited inside the collection container (8).

The filtering system (6) is of the type with cartridge with an automatic air blow contrary to the normal flow.

The contaminated air enters the lower part of the filtering cabinet (6) and exits filtered from the upper inlet (14).



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1.3 INTENDED USE

The system was designed and realised to carry out the monitored shot-peening of workpieces that are not sharp or blunt and not flammable or explosive inside the working cabin.

These pieces must be free from liquid and/or oil polluting material.

Only qualified and duly trained staff is allowed to use the machine. Any use other than the described one and/or not authorised by the manufacturer is forbidden. This system is intended to operate indoor, in areas having favourable working conditions for the operator. It can not be installed in fire and/or explosion risk environments. The system cannot treat explosive and/or flammable components. Residues of specific processes must not be explosive and/or flammable.

We recommend installing this system in premises having a relative humidity under 80%. A high humidity rate might cause troubles as grit will stick.

Compressed air must be dry and oil-free.

As some grit might fall down onto the floor during grit loading/unloading, the floor should be of the corrugated type, otherwise position an anti-skid platform. Operators must wear anti-skid shoes.

1.4 DISPOSAL OF WASTE

The waste produced during the working cycle of the system should be disposed of in compliance with the prevailing rules of the country of use.

A dedicated analysis for each specific work is required.

1.5 NOISE LEVEL

The noise level of the system does not exceed the values of $Leq < 80$ dBA, $Lpk < 135$ dBC under standard working conditions. Depending on the processed workpiece, the noise level of the system could exceed the limit set by the prevailing rules. Should this be the case, all operators must be given suitable soundproof headsets.

1.6 ELECTROSTATIC CHARGES

During the processing, electrostatic charges can be generated.

This is due to the normal grit sliding.

To avoid possible discharges that could interfere with the operator job, we recommend to carry out the processing with the workpieces to be treated in contact with the metallic elements of the system including the rotary table, the grit surface and any required support.

The metal elements of the system are adequately connected to the electric circuit grounded by Norblast.

All the possible workpiece carriers must be grounded as well.

We recommend avoiding placing insulating materials between the workpieces and the metallic elements.



The use of the manual workstations is forbidden to people with pacemakers or similar appliances.

1.7 EMISSION INTO THE ATMOSPHERE

According to process in use, the user shall ensure that all prevailing rules concerning environment protection, health and safety of the workplace are complied with, in particular the local standards in force about emissions into the atmosphere.

During intended use, the work is carried out inside the cabin; it is necessary to pay particular attention to possible microball and/or machining dust, which can cause the risk of slipping. Therefore, it is advised to keep the area surrounding the system clean and clear, and if necessary use an anti-skid platform and wear anti-skid shoes.

1.8 RESIDUAL RISKS



During routine maintenance please be careful of the risks posed by the opening of the power control unit.







RECOMMENDED PERSONAL PROTECTION EQUIPMENT

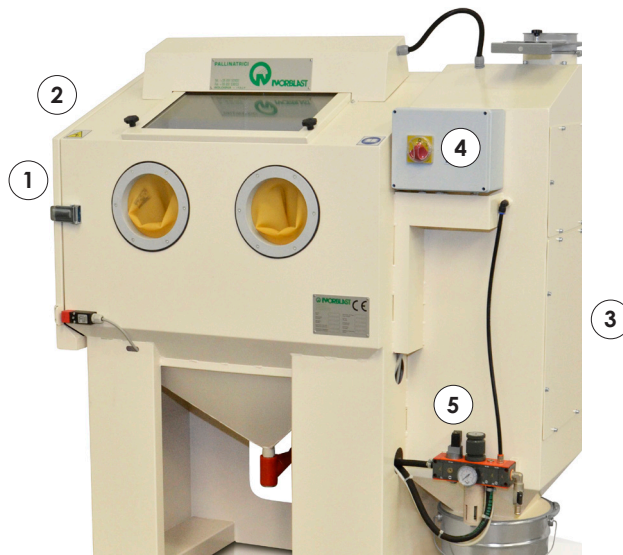
Standard operation

- safety shoes of the S1P type

Routine maintenance, grit refill and replacement

- safety shoes of the S1P type
- dust face mask with FFP2 filter
- general gloves against mechanical risks
- general goggles against mechanical risks

ID	POSITION	RESIDUAL RISK	PICTOGRAM	
1	workpiece loading/ unloading	slippage control/access stations		danger of slippery surface
				refer to the instructions man- ual
2	manual grit refill	slippage and dusts		danger of slippery surface
				safety goggles compulsory
	protective gloves compulsory			
	3		filtering cartridge replacement area	
4		electric cabinets		
	5		pneumatic units	system under pressure



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1.9 DECOMMISSIONING



In compliance with the prevailing standards and in order to reduce the environmental impact, it is forbidden to dispose of the machine as municipal waste. The machine must be disposed of at suitable centres for separate waste collection. Unauthorised and improper disposal of the machine and its components is subjected to a penalty, in compliance with the prevailing standards.

On machine arrival, check for possible damage with the forwarder and inform the supervisor of all possible irregularities. In case of damage, immediately call NORBLAST technical service department.

Only qualified and duly trained operators wearing suitable personal protective equipment are allowed to handle the machine and its parts, either packed or unpacked, with suitable handling means. When handling the machine and its parts, ensure that nobody is within the working area of the handling equipment. Handle with the maximum care, avoid jerks or sudden pulls, and be careful in case of narrow passageways, bumps or gradients.

2.1 GENERAL SAFETY WARNINGS SAFETY DRIVE

The system parts can be shipped with the following packing types:

ON PALLET WITH PLASTIC COVER

The system disassembled parts are secured to the pallet by means of straps.

ON PALLET WITH PLASTIC PROTECTION AND CARDBOARD COVER.

In this case straps will be used to secure the disassembled parts to the pallet and to close the package.

2.2 PACKING OF THE MACHINE

Ensure that all handling and transport means used have a capacity suitable for the total weight of the packed machine.

MACHINE SD9 WITH PACKAGE:	kg 210
MACHINE SD9 WITH PACKAGE AND ACCESSORIES:	kg 210 + 100 max
MACHINE SD9B WITH PACKAGE:	kg 225
MACHINE SD9B WITH PACKAGE AND ACCESSORIES:	kg 225 + 100 max

2.3 TRANSPORT AND HANDLING OF THE MACHINE

Packed machine must be lifted and handled only by qualified operators. If the load size does not allow full visibility, the operator will need the assistance of a second operator giving signals to him/her.

According to the type of packing proceed as follows:

ON PALLET WITH PLASTIC COVER;

ON PALLET WITH PLASTIC PROTECTION AND CARDBOARD COVER;



Use a forklift, place the forks in a suitable position and pay attention to possible tipping due to uneven weight distribution.

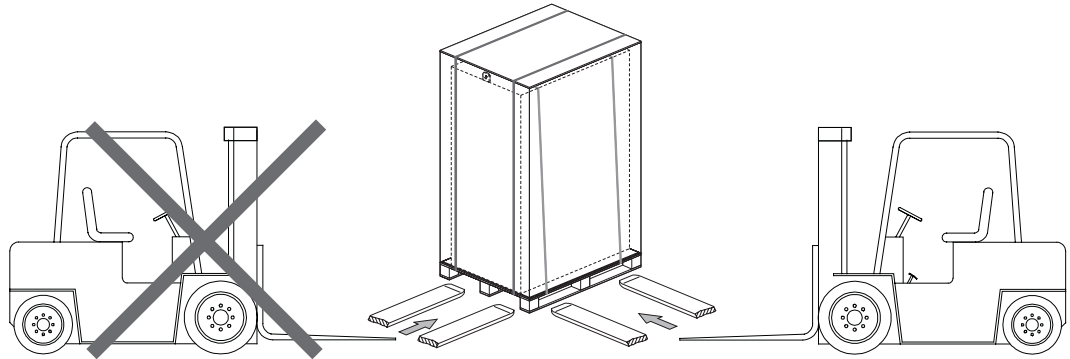
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It is recommended to widen the forks as much as possible.

Before proceeding, ensure that there are no people nearby.



2.4 UNPACKING THE MACHINE

Position all packings as close as possible to the installation place.
According to the type of packing proceed as follows:

ON PALLET (1200X800) WITH PLASTIC PROTECTION

Remove the material having care, in case you use scissors, cutters or any other similar tool, not to damage the system components.

With a suitable tool, cut the straps securing the parts to the pallet.
If present, remove the beams securing the machine to the pallet from the forking base of the machine.

ON PALLET (1600X940 FOR SD9, 1750X1150 FOR SD9B) WITH PLASTIC PROTECTION AND CARDBOARD COVER;

With a suitable tool, cut the straps closing the packing.

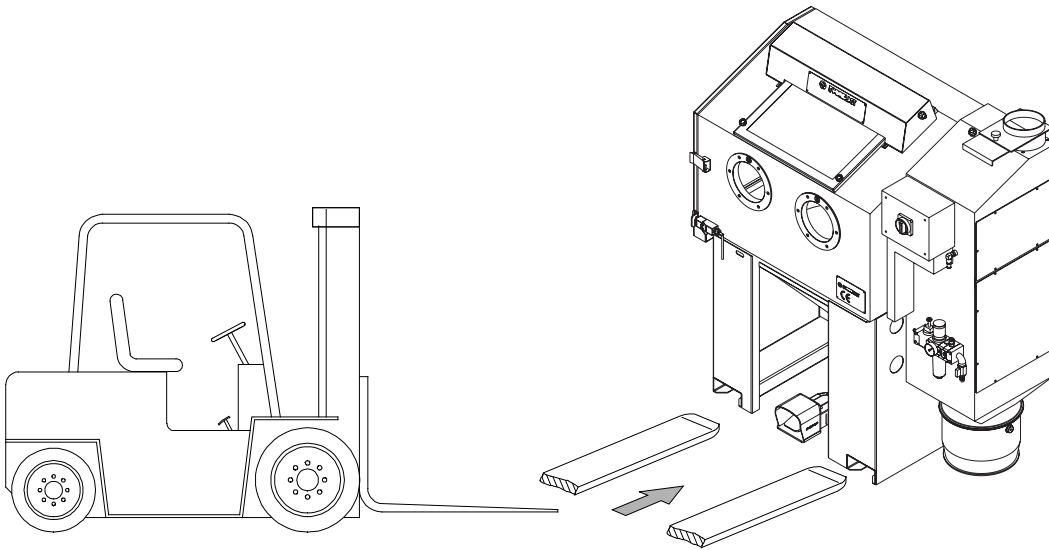
Remove the material (plastic protection and cardboard cover) having care, in case you use scissors, cutters or any other similar tool, not to damage the system components.

With a suitable tool, cut the straps securing the parts to the platform.

The user must dispose of the packing material in compliance with the prevailing laws of the country of use.

Use a forklift with a loading capacity suitable to lift the machine, place the forks in a suitable position and pay attention to possible tipping due to uneven weight distribution.

2.5 HANDLING THE UNPACKED MACHINE



After having lifted the system, it must be perfectly placed. Make sure that bearing feet (if required) are in place and then set the machine in the place where it will be installed. Position a water level onto a horizontal surface of the machine and then level the machine by working on the adjusting screws of the feet (if fitted) until reaching the correct position. Under standard operating conditions, machines do not need to be anchored to the floor.

2.6 PLACING AND LEVELLING

Should the sandblasting machine not be used for a certain period of time, please carry out the following operations:

- empty tubes and cabin from grit;
- disconnect the unit from the power;
- thoroughly clean the whole unit including the accessories from any possible residual grit;
- store the unit in a covered and dry environment.

2.7 MACHINE STORAGE

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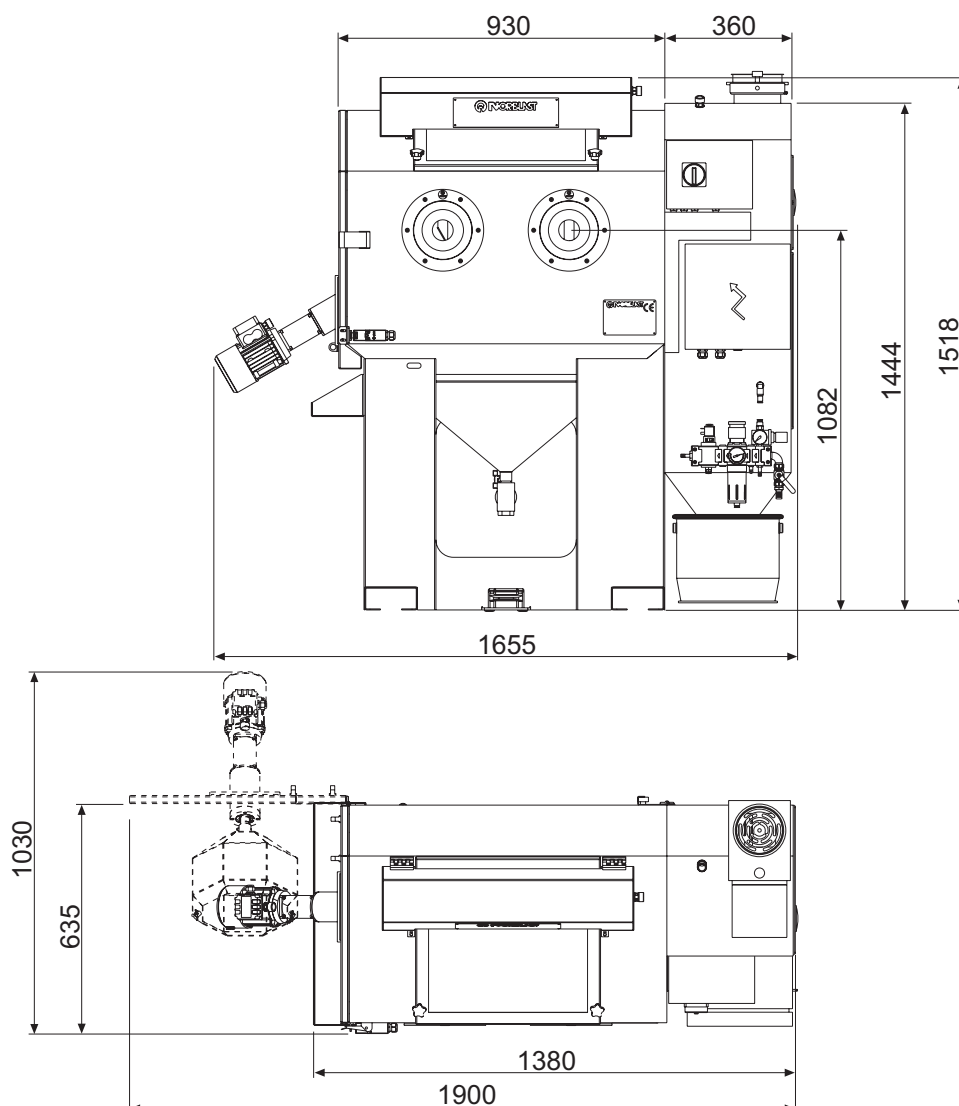
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3.1 TECHNICAL SPECIFICATIONS OF THE SYSTEM

Operating pressure:	min. 2 bar , max 8 bar
Recommended blasting pressure:	min. 1 bar , max 6 bar
Min. cross-section of air line:	int.Ø 16 mm
Types of grit that can be used:	glass microballs, ceramic microballs, aluminium oxide (corundum), melamine granule, and metal grit
Grit size:	min. 40µ max. 500µ (with specific weight not over 4 Kg/cu. dm)
Max. weight which can be loaded onto working surface:	25 kg
Max. weight which can be loaded inside tumbler	kg 10
Weight of empty machine:	SD9-160 kg / SD9B-185 kg
Lighting	23 W
Filtering cartridge	5.35 SQ. M
Filtering cartridge material	Polyester
Useful working dimensions mm	SD9-800x550x530 / SD9B-750x550x530

3.2 OVERALL DIMENSIONS



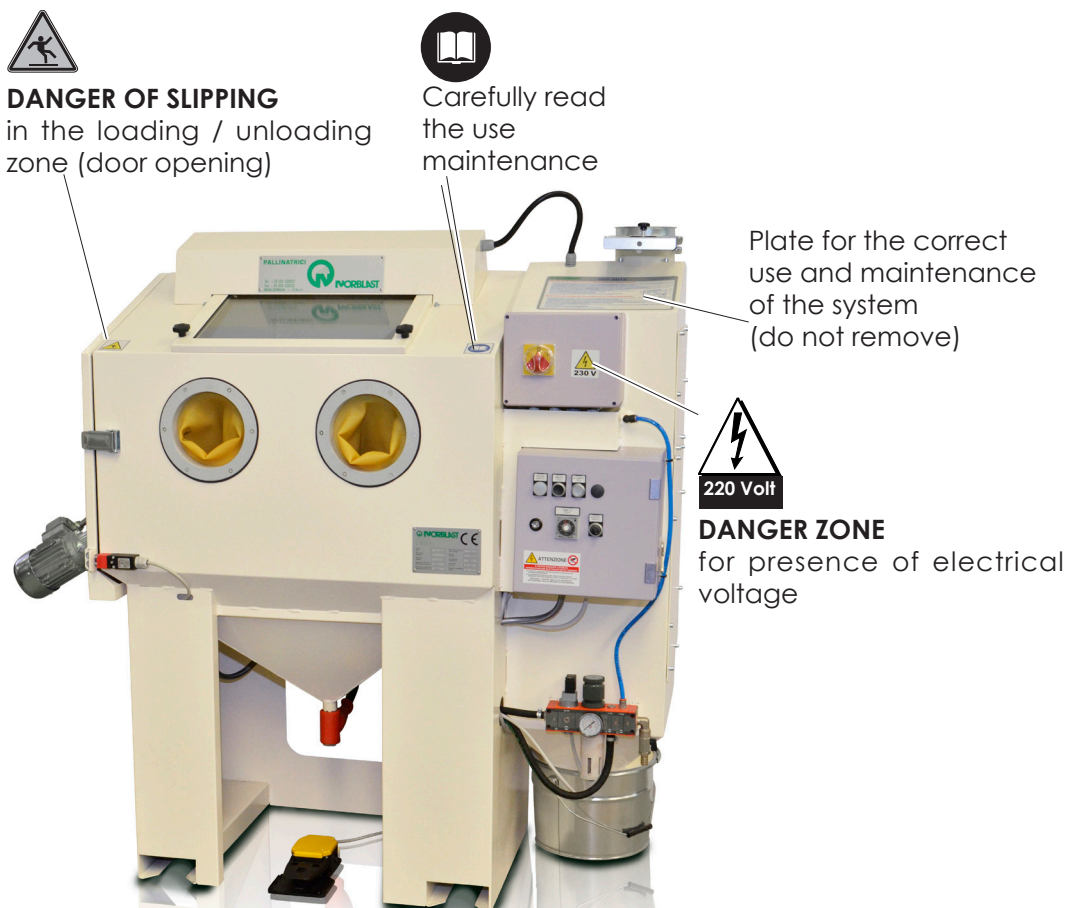
Voltage:	230 V
Frequency:	50/60 Hz
Number of phases:	1+N 16 amp
Minimum protection class of electric equipment:	IP54
Exhauster motor	0.14kW-230V-50/60Hz

3.3 ELECTRICAL POWER SUPPLY

Dry air free from oil and/or grease	air quality level guaranteed in compliance with ISO 8573.1 class 2.4.2
A 6 bar gun with a Ø8 nozzle consumes:	585 NI/min
A 6 bar gun with a Ø10 nozzle consumes:	1350 NI/min
Air tube:	Ø16-23 with 1/2" hose barb
Intake	160 cu.m/h

3.4 PNEUMATIC SUPPLY

3.5 LAYOUT OF IDENTIFICATION PLATES



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Position the system on level ground, as indicated.

Connect the main air supply pipe to the air inlet cock hose barb **(1)** of the pneumatic group, having care to well tighten the clamp so that the pipe inserted fully home does not move.

Open the pneumatic group main cock **(2)** and ensure there are no air leaks.

Connect the machine to the power supply inserting the plug of the power cord **(3)** in the plant socket (complying with the standards).

Close the main switch **(4)** of the electric panel in position "1".

With this operation the cabin light and the exhauster are turned on.

Verify the correct connection of the tubes.

Put max 15 Kg grit inside the cabin.

Verify that the door **(5)** of the machine and the dust collecting bin **(6)** are correctly closed.

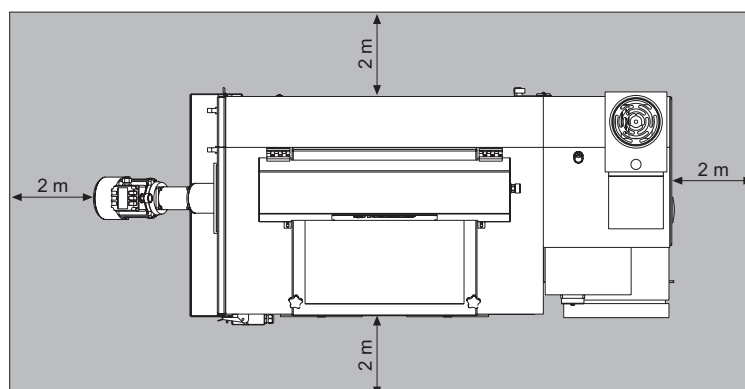
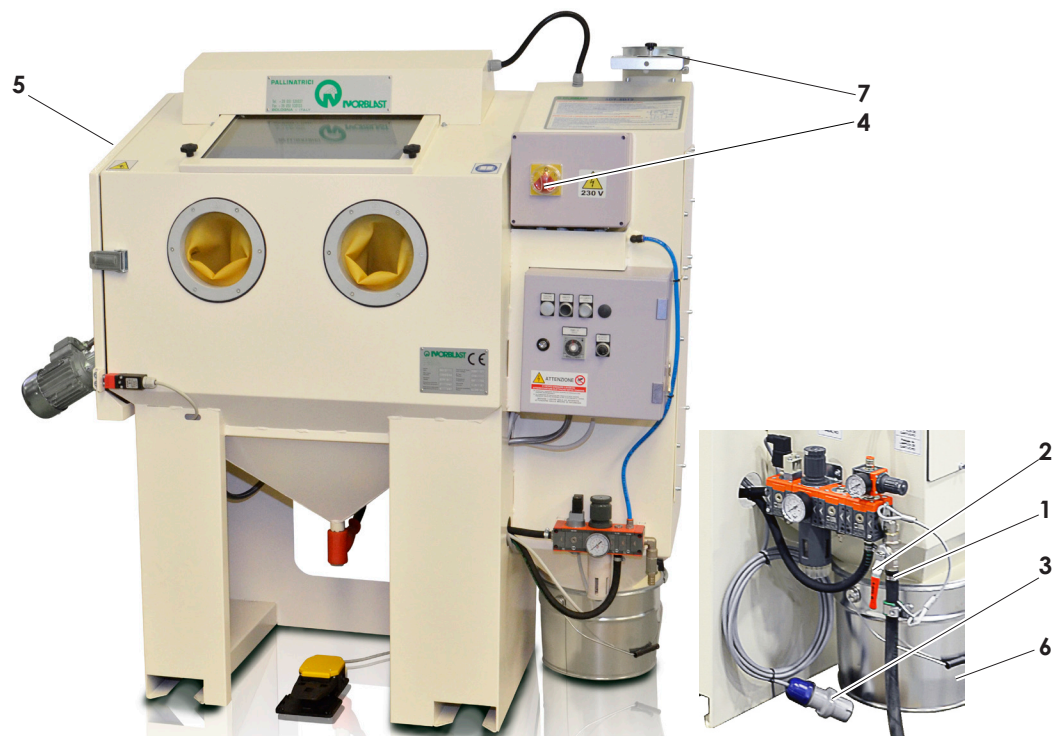
Check gate opening **(7)** on filter outlet inlet.



The system can work only with working exhauster and closed cabin door.



The working area around the machine must be cleared to enable, without any obstacles, the normal operations and the possible maintenance operations.



5.1 OPERATORS

This Manual is addressed to the Installer, Operator and Qualified Personnel in charge of the system maintenance.

With the term "OPERATOR" we mean the person or the persons in charge of the operation, adjustment, cleaning and ordinary maintenance of the system.

With the term "QUALIFIED PERSONNEL" or "QUALIFIED OPERATOR" we mean those people that have attended specialisation courses, training, etc.

and have experience in system installation, start-up, maintenance, repair and transport.

With the term "EXPOSED PERSON" we mean any person that is in a dangerous area of the system, even partially.

The system is for industrial use, therefore only qualified personnel must use it, in particular:

- they must have reached the age of majority;
- they must be physically and psychologically fit to carry out jobs of particular technical difficulty;
- they must be adequately trained on how to use and maintain the system;
- they must be deemed fit by the employer for the task entrusted to them;
- they must be able to understand and interpret the operator's manual and safety indications;
- they must know the emergency procedures and their implementation;
- they should be able to activate the relevant equipment;
- they should be familiar with relevant standards;
- they must understand the operating procedures defined by the system manufacturer.

Moreover, maintenance technicians should also have a further accurate technical preparation.



Carefully read the INSTRUCTIONS listed in this manual.

5.2 BLASTING DEVICE

The blasting device is of the vacuum type and uses dry, oil-free compressed air. Press the control pedal to open the operating solenoid valve **(5)** so that it conveys air inside the working gun **(1)**.

Air is made to flow through a special Venturi system that produces a vacuum inside the gun body so that grit is sucked from the bottom of the cabin.

Grit is then ejected through the nozzle **(2)** of working gun and hits the workpiece. Ejection pressure may be adjusted by means of a pressure regulator **(3)**.

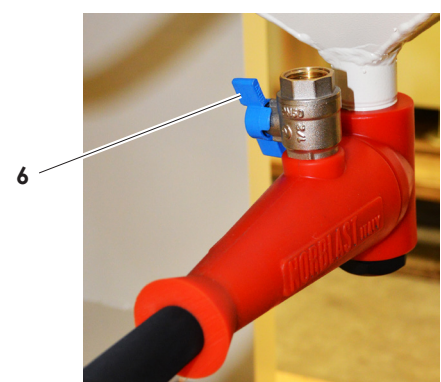
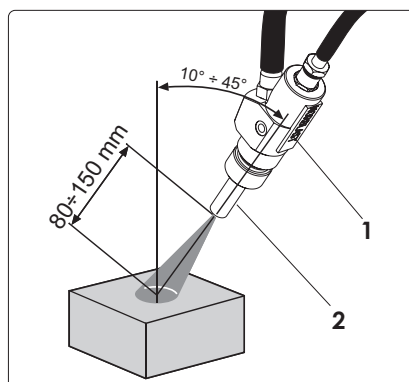
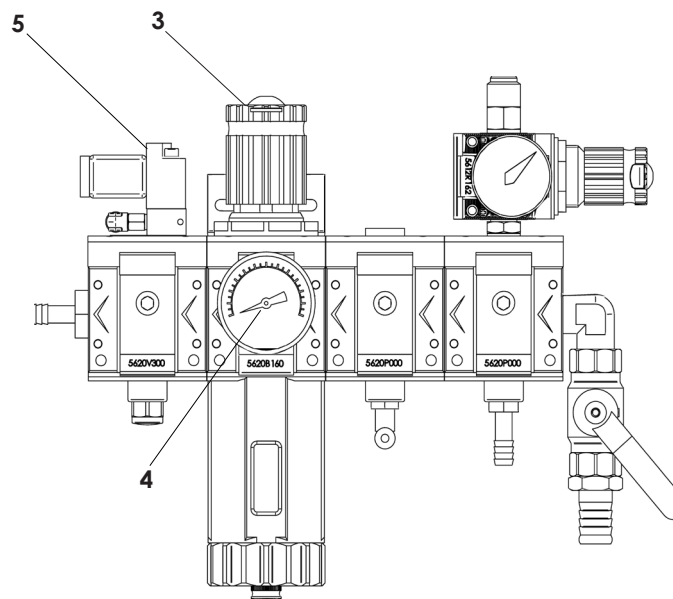
The blasting pressure value is displayed on the pressure gauge **(4)**.

We recommend keeping the nozzle at a distance of 80 to 150 mm from the workpiece surface. The grit jet must not be at a right angle to the workpiece surface and the impact angle must be between 10° and 45°.

To avoid undesired early wear, start the job at low pressure and move the gun to check its effect on the surface.

Do not keep the gun directly aimed at machine parts for too long to avoid early wear of the same.

Opening the cock **(6)** (lever in vertical position) a large quantity of air is mixed with a small quantity of grit for an aggressive action on the workpiece. On the contrary, by closing the cock (lever in horizontal position), a small quantity of air is mixed with a lot of grit for a more delicate action, but with the possibility of jamming the blasting circuit. Therefore it is suggested to operate with the cock lever in a middle position.



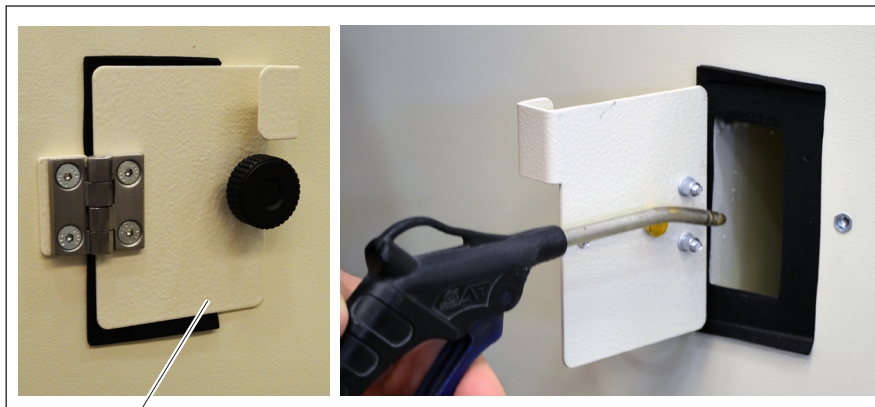
Start the exhauster and thoroughly clean the cabin with a blowing gun so that the grit falls onto the hopper bottom.

Wait a few seconds until the dust is completely sucked from the cabin.

Switch off the machine using the main switch. Place a collection bin under the recycling lug **(1)** from the cabin front side and unscrew the plug **(2)** to collect the grit from the bottom of the cabin. Empty the grit pipe by blowing with the blowing gun inside the nozzle of the working gun **(3)** until grit is no longer coming out of the lug. Open the rear door **(4)** and blast air into it to further clean the stack; close the door. Tighten the plug **(2)**. Open the side door **(5)** and add the chosen grit inside the cabin (max. 15 Kg).

Close the door correctly.

5.3 HOW TO CHANGE GRIT



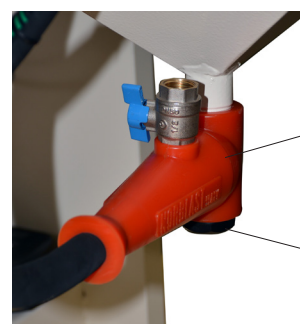
4



5



3



1

2

5.4 FILTERING

The filtering system is of the type with cartridge and automatic cleaning through back flush air jet.

The air mixed with dust enters the lower filtering chamber (1) thanks to the exhauster (2) placed inside the upper chamber (3) going through a first filtering of the heavier particles which will settle on the grit waste container (4). The air flow goes through the filtering cartridge (5) and lets contaminating substances settle on cartridge outer walls, and exists through the catch (6). The cartridge is "washed" with a blow of compressed air acting in the opposite direction to the normal flow. The air jet is controlled by a solenoid valve (7) mounted on a tube connected to the tank (8) under pressure with air charge.

The catch (6) adjusts the suction flow (opening it will increase cabin de-dusting and, in case, dust/grit waste).



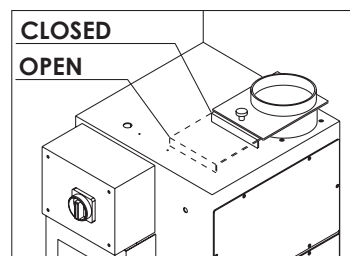
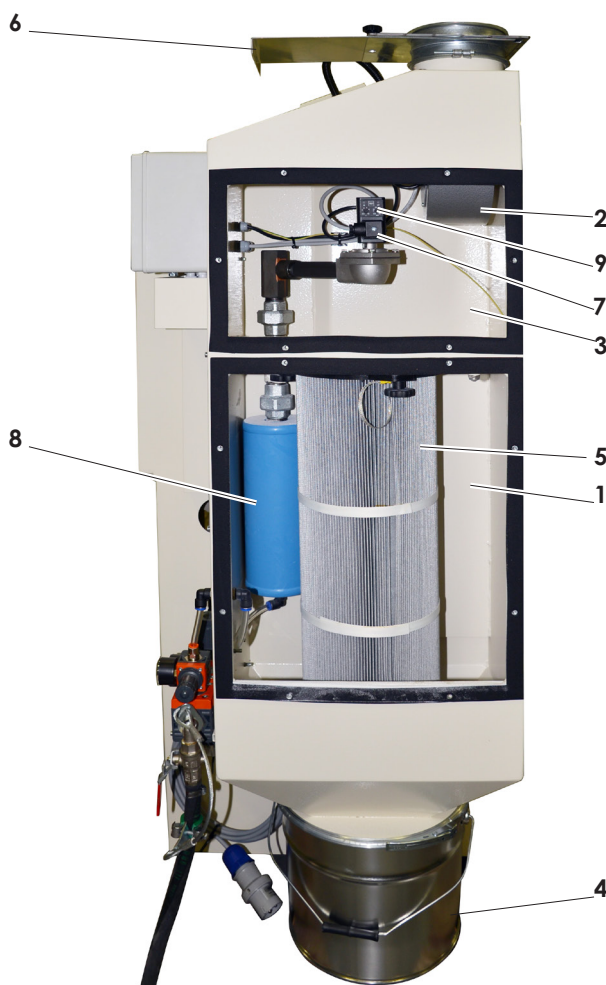
If the door is open the cleaning cycle of the cartridge will not be active.









An air pressure regulator (9) has been installed above the pneumatic unit, with pressure gauge for pressure reading (max. 4 bar).

A dust collection bin (4) has been purposely placed to collect and empty the same. Open the ring release lever (10) and empty the bin. Position the bin back into place and hook it again to the filter cabinet.



Before accessing the upper/lower filtering compartment make sure that there is no electric voltage and that the pneumatic group has no air.



	GATE VALVE SHUTTER POSITION	
RUBBER COATED		
STEEL		
CERAMIC MICROBALL		
	B120.....	B40
GLASS MICROBALL		
	40/70.....	400/800
CORUNDUM		
	220.....	16

Depending on the type of blasting material and its grit size, it is necessary to adjust the shutter of the filtering cabinet to optimise the de-dusting flow inside the cabin. The position of the shutter may also vary during the life cycle of the filter cartridge, depending on its clogging. The more the clogging increases, the more it is necessary to increase the opening of the shutter until it is fully open.

Never go below shutter closing centreline level.

The differential pressure gauge detects the pressure difference between the upper and lower part of the filter cabinet.

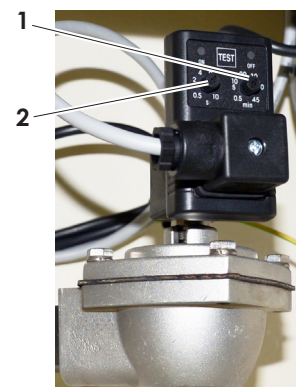
When the pressure value exceeds 30 mm H₂O, it means that the filtering cartridge is clogged and must be replaced.



5.5 DIFFERENTIAL PRESSURE GAUGE

The cleaning of the filtering cartridge is automatically performed with an air blow contrary to the normal flow. The "self-cleaning" operation time can be set based on the components to treat and the quantity of residual waste. The time break is set through timer (1).

Do not change the timer position (2).



5.6 TIMER REGULATION FILTER CLEANING

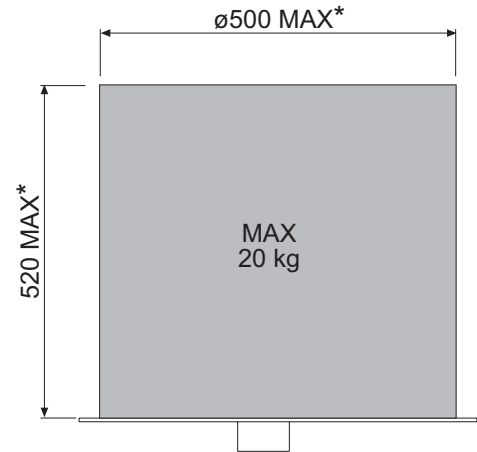
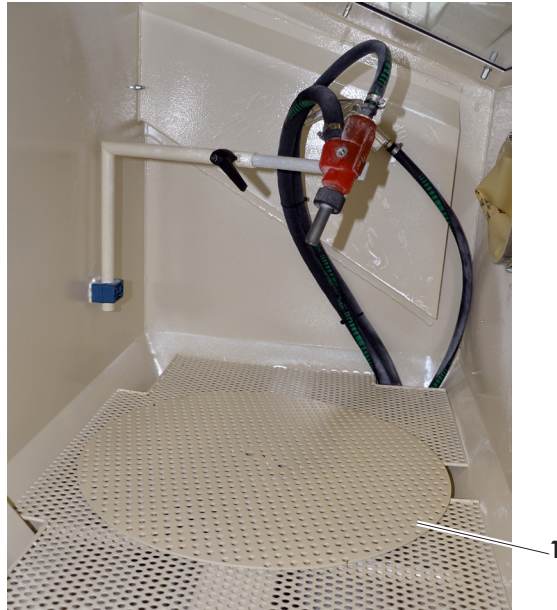
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5.7 MANUAL ROTARY TABLE (OPTIONAL)

The manual rotary table **(1)** can be present inside cabin.
During processing, the workpiece to be processed can be easily rotated by manually rotating the table **(1)**.



* The dimensions indicated allow the workpiece to rotate freely inside the cabin and the operator to operate the shot-peening gun easily.

5.8 AUTOMATIC ROTARY TABLE (OPTIONAL)

Lay the workpiece to be processed at the centre of the table, without exceeding the maximum dimensions indicated in the figure.

Close the side door.

Set table rotation speed and cycle time (blasting time) on the control panel.

Position the working gun at 150÷250 mm from the workpiece.

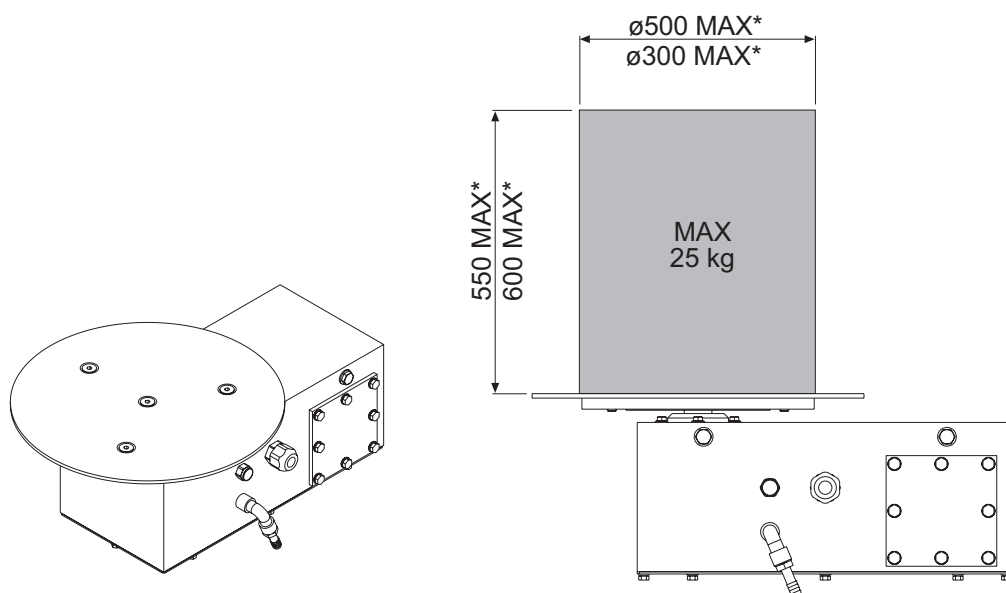
Press the **"CYCLE START"** button to start the processing cycle.

Once the set working time has been reached, the cycle automatically stops; in case cycle has to be stopped in advance, press the **"CYCLE STOP"** button.

Table rotation speed can be varied during processing by turning the potentiometer on the control panel.



WARNING - It is forbidden to process sharp and/or blunt workpieces.



* The dimensions indicated allow the workpiece to rotate freely inside the cabin and the operator to operate the grit blasting device gun easily.



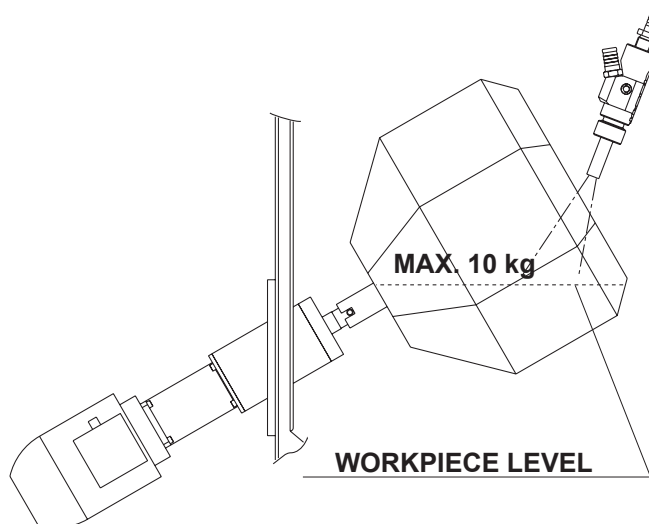
5.9 TUMBLER (OPTIONAL)

Verify that the barrel is properly inserted in its seat.
Put the workpieces to be processed into the barrel, without exceeding the maximum level shown in the figure.
Barrels with cover are available upon request.
Close the side door.
Set barrel rotation speed and cycle time (blasting time for each barrel load) on the control panel.
Position the working guns at 150÷250 mm from the workpieces inside the barrel.
Press the **"CYCLE START"** button to start the processing cycle.
Once the set working time has been reached, the cycle automatically stops; in case cycle has to be stopped in advance, press the **"CYCLE STOP"** button.
Barrel rotation speed can be varied during processing by turning the potentiometer on the control panel.



WARNING - In some cases excessive barrel rotation speed can cause damage to the workpieces.

Gun aiming: upon first work cycle start, check that the grit shot is aimed at the parts rotating in the barrel.



TIMING

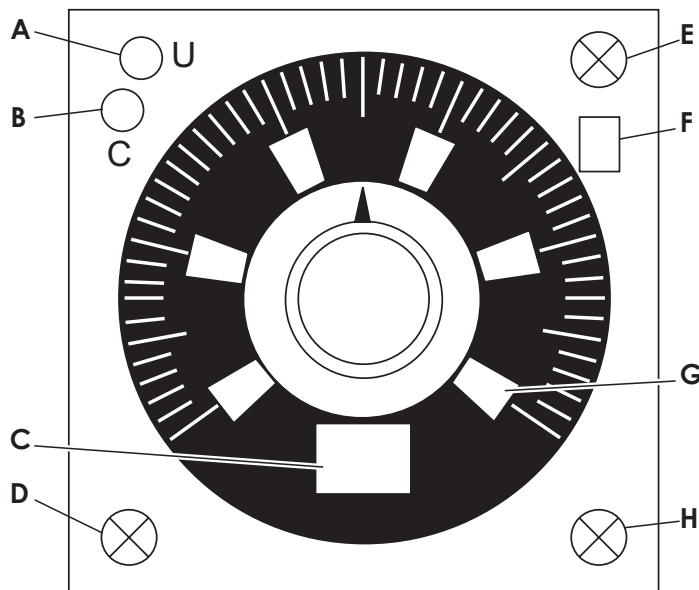
From 0.5 sec. to 100 hours divided into 12 sub-ranges.

5.10

TUMBLER/TABLE TIMER PROGRAMMING

D / H	s	min	h	x10h
0.5	0.5 s	0.5 h	0.5 h	5 h
1	1 s	1 min	1 h	10 h
5	5 s	5 min	5 h	50 h
10	10 s	10 min	10 h	100 h

- A:** yellow LED - power on
- B:** red LED - timing in progress
- C:** unit of time selected
- D:** time scale selector (0.5, 1, 5, 10)
- E:** function selector (AE, AI, BE, DE, HI, SW)
- F:** selected function
- G:** selected time scale
- H:** unit of time selector (s, min, h, 10h)



5.11

SAFETY DEVICES

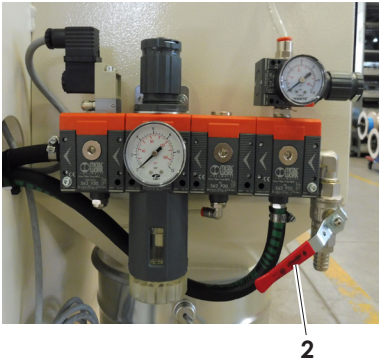
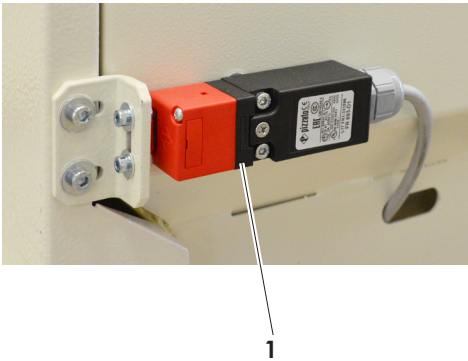
The machine is equipped with the following safety devices:

Electrical safety devices


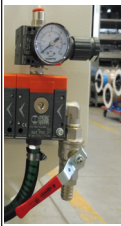
- *Electromechanical microswitch (1).*
Its function is to disable gun blasting and filter cartridge cleaning blow with the door open.

Auxiliary devices

- *Pneumatic system shut-off valve(2).*
It allows main air supply to the system and its bleeding.



Safety device check list					
ID	Device	Position	Effect	How to activate the safety condition	How to reset the device and restore the work condition
1	Electro-mechanical microswitches	Cabin access doors	Door opening/closing control.	Door opening (movement and blasting safety).	Door closing.
2	Device Pneumatic system shut-off device unit	Pneumatic unit	When activated, it allows the air to flow inside air treatment unit.	Manually rotate the valve to close the circuit.	Manually rotate the valve to open the circuit.

Switch		Description and type of energy	Position	Lockout procedure	Energy presence check
1		Power: 230 V	On the cabin.	Place the handle to off position. Lock the switch with a lock. Place the safety plate.	Check with tester the presence of current; try to switch on the machine and check that it does not start.
2		Pneumatic 8 bar	On the pneumatic panel.	Turn to close system pneumatic supply main valve. Place the safety plate.	Make sure that the valve is correctly closed and that the pressure gauge does not indicate any pressure.

5.12 LIST AND POSITION OF SAFETY DISCONNECTING SWITCHES



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Closely follow the maintenance recommendations. This is the key to ensuring long service life and a high efficiency level as well as avoiding troublesome failures. It is recommended to have the maintenance operations carried out by trained and qualified personnel.

Any maintenance operation must be carried out with no pressure in the system, with the sandblasting machine power cut off and after having placed a suitable sign indicating that the machine is being serviced.

All maintenance operations should be carried out by qualified personnel, wearing the suitable safety equipment usually recommended for similar operations, and in compliance with the safety procedures indicated below.

In order to make the sandblasting machine last longer, ensure high safety levels to users and clearly identify the equipment, it is fundamental to keep clean the following parts:

- the sandblasting machine and its accessories;
- the EC identification plate;
- the floor in front of the sandblasting machine;
- the door closing seals.

The main precautions to be taken when servicing the machine are as follows:

6.1 SAFETY RULES DURING MAINTENANCE



- ***the operator must be equipped with the personal protection equipment indicated at paragraph 1.8;***
- ***disconnect power and pneumatic supply and discharge the air in the pneumatic circuit (blow it with a blasting gun or a blowing nozzle), before removing any of the unit parts, replacing any of the components or access the work cabin;***
- ***please pay attention when opening the power control unit;***
- ***do not use open flames;***
- ***do not wear rings, watches, necklaces, bracelets, etc.;***
- ***use only genuine spare parts only;***
- ***do not smoke, drink nor eat.***

6.2 CLEANING

Clean the outer and inner parts of the sandblasting machine at the end of every working day or in any case at the end of every job.

This will keep the system in good working conditions.

In particular, always check the following parts and clean, if necessary:

- the EC identification plate;
- the pressure gauge;
- the regulator filter;
- the pneumatic valve;
- the sight glass;
- the working grid or the rotary table (if fitted);
- the cabin hopper;
- the door closing seals.

To clean the outside of the machine, it is enough to use a soft cloth. Suck possible grit residues on the working area.



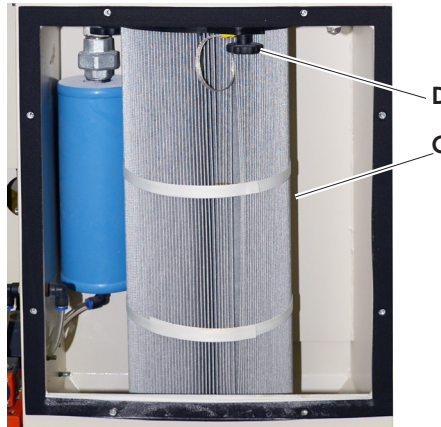
Cut out the power of the machine.
Disconnect the machine from the pneumatic power.
Before proceeding with this operation wear all suitable protection equipment to protect the operator from dust.

6.3 REPLACEMENT OF THE CARTRIDGE

1. Remove the cartridge compartment closing guard **(A)** by loosening the screws **(B)**.



2. Remove cartridge **(C)** by loosening the three knobs **(D)**.
3. Place the filter cartridge in a bag to avoid dispersing dust.
4. Carefully place the new cartridge without damaging it.
5. Tighten the three knobs **(D)**.
6. Close the cartridge compartment closing guard **(A)** by tightening the retaining screws **(B)**.



6.4 REPLACEMENT GLOVES

Loosen the clamps **(A)** and replace the damaged gloves.



6.5 REPLACING THE CABIN INTERIOR SIGHT GLASSES

Open the lamp holder guard **(A)** by loosening the two retaining screws.

Fully loosen the 4 locking knobs **(B)** of the glass holder frame **(C)** and lift it.

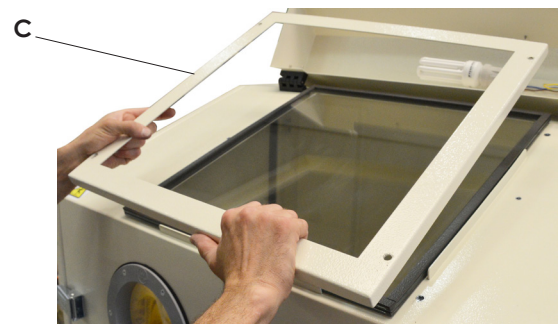
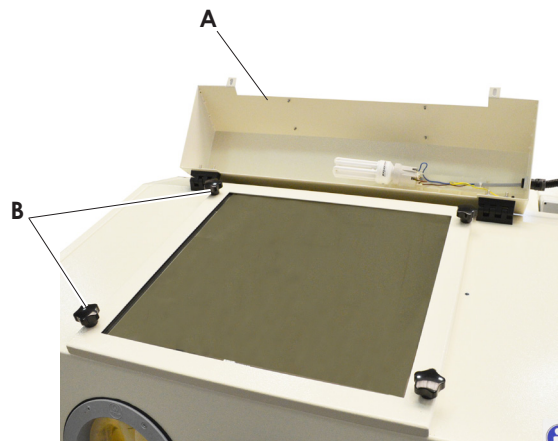
Lift the first glass and lay it in a handy and safe position since it will not have to be replaced.

Lift the second glass **(D)** and replace it with the new one.

Take special care not to damage the existing gaskets **(E)**, otherwise replace them.

Position the upper glass on the new one already resting against the cabin. Lay the glass holder frame and secure it in place with knobs.

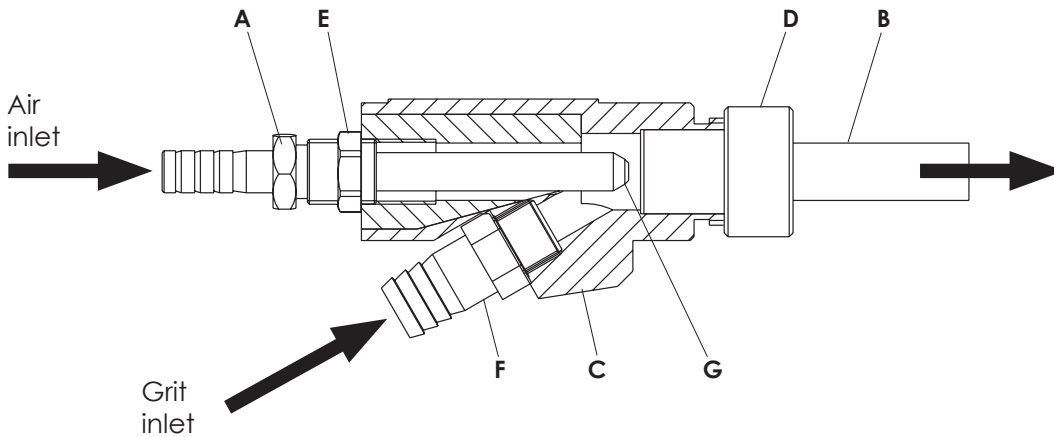
Close the lamp holder guard and lock it in place with the two retaining screws.



Carrying out a correct and periodical maintenance on gun components subject to wear proves useful to keep an optimal efficiency of the blasting device.

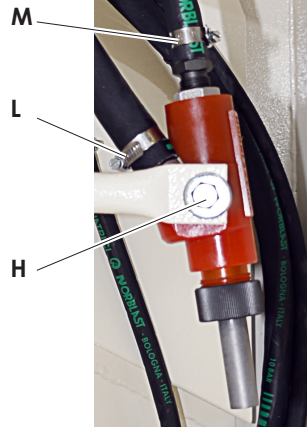
6.6 VENTURI GUN

- A** Delivery jet
- B** Nozzle
- C** Gun body
- D** Nozzle ring nut
- E** Delivery jet locking nut
- F** Grit inlet hose barb
- G** Delivery jet wear point

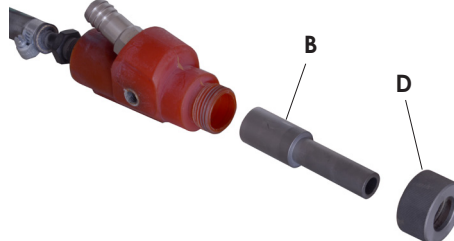


Gun bench maintenance procedure

- 1 Loosen screw **(H)** on gun support (if any), disconnect the air inlet tube **(L)** and the grit inlet tube **(M)**.



- 2 Take gun on bench, loosen ring nut **(D)** and take out nozzle **(B)**.



- 3 Check the integrity and wear status of shot-peening gun nozzle.

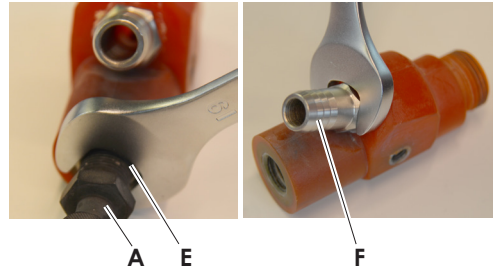
NOTE: The nozzle wall thickness must NOT be lower than 2 mm.



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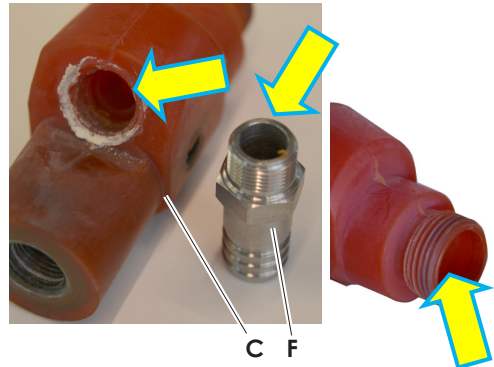


- 4 Loosen nut **(E)** and take out delivery jet **(A)**, loosen grit inlet hose barb **(F)**.

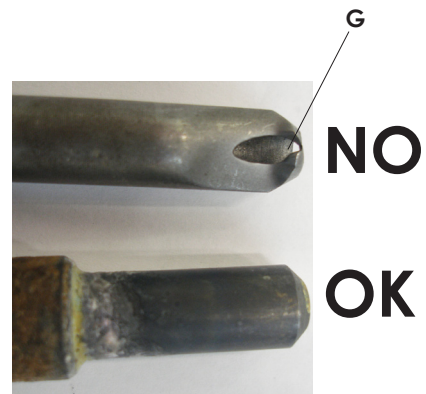


- 5 Visually inspect gun body **(C)** in nozzle and hose barb seats: if it shows excessive signs of wear, replace it.

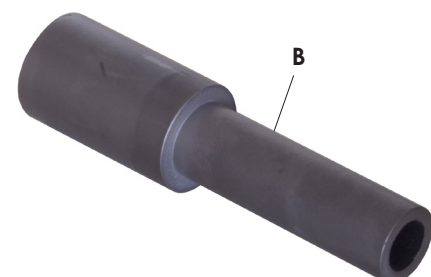
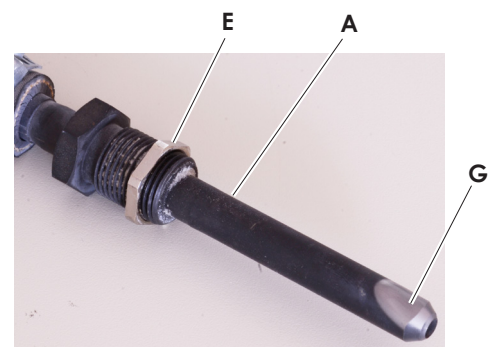
- 6 Visually inspect the hose barb **(F)**: replace it if worn out.



- 7 Check the integrity of the delivery jet: the hole at the end of the delivery jet must be perfectly circular and must not feature side cuts **(G)**.



- 8 If delivery jet **(A)** and nozzle **(B)** are in good conditions, they can be refitted inside the gun body. Refit both of them turned by 180° compared to the starting position to balance the wear points. Upon refitting, screw the delivery jet **(A)** between the 4th and 5th thread, locking it then in place with nut **(E)**.

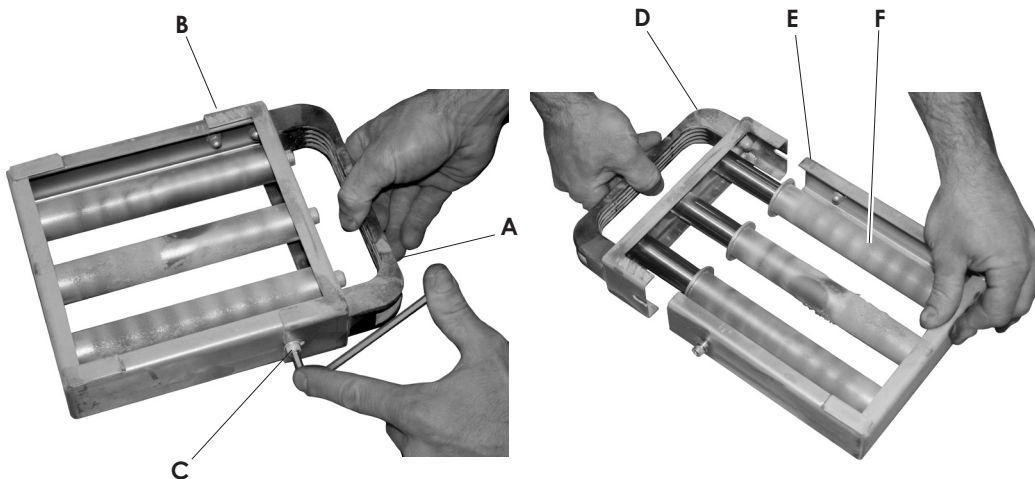









Warning! Handle magnet unit with extreme care, as their high magnetic power could cause sudden shifts and possible hand squashing. The use of working gloves is strongly recommended.

6.7 CLEANING THE MAGNETIC SEPARATOR

Grasp the handle **(E)** and extract the magnetic separator unit **(F)**.
Take components to the bench and slightly undo the two side screws **(C)** to release the magnet unit **(D)**.
Remove magnet unit **(D)** from its stainless steel seat **(E)**.
All metal scraps fall down; carefully clean tubes **(F)** from any dust residues with a cloth and reassemble the unit.



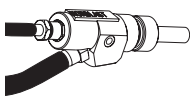



Checks at work shift beginning / end	
	Check integrity of nozzle, check nozzle for wear. Replace if any damage is found
	Check for air leaks in the pneumatic system.
	Check for water and/or oil trapped inside filter-regulator sump. If water is in the sump, drain and check for proper operation of the drying and filtering system.
	Check the dust collector and empty it if necessary.
	Check that the rear door for cleaning is correctly closed

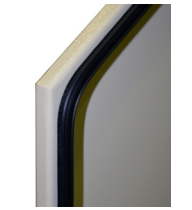

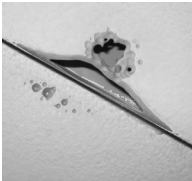

6.8 ROUTINE MAINTENANCE

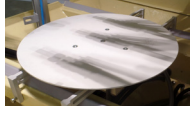
SD9 - SD9B

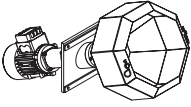
MANUAL SANDBLASTING - SHOT PEENING MACHINE







BLASTING DEVICE		40 h	160 h	1000 h
	Check the wear status of the shot-peening gun assembly: delivery jet, gun body, grit inlet hose barb, nozzle	●		
	Check grit delivery tubes for wear.		●	
	Clean the magnetic separator.	●		
	Visually inspect grit. Look for contamination from foreign particles. Most grit should have a size and shape similar to the original.		●	


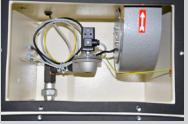

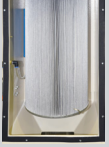
CABIN		40 h	160 h	1000 h
	Check condition of door seals		●	
	Check the status of the tempered glasses	●		
	Check for worn parts inside the cabin. Nozzle jet may have been directed at the same position repeatedly. If needed, apply a 4 - 8 mm thick rubber sheet over concerned area.		●	
	Check clamping force of door closures <i>Turn on cabin light and make sure that no light is filtering through.</i>		●	

ROTARY TABLE		40 h	160 h	1000 h
	Check table surface for wear.		●	
	Make sure that the bearings for table surface rotation are clean and that the table can freely rotate.		●	

TUMBLER		40 h	160 h	1000 h
	Check barrel for wear.		●	
	Make sure that the bearings for barrel rotation are clean and that the barrel can freely rotate.		●	

PNEUMATIC SYSTEM		40 h	160 h	1000 h
	Check for air leaks in the pneumatic system.		●	
	Check for water and/or oil trapped inside filter-regulator sump. If water is in the sump, drain and check for proper operation of the drying and filtering system.		●	

ELECTRIC SYSTEM		40 h	160 h	1000 h
	Check the condition of power control unit door seals.		●	
	Ensure no grit or dust is inside the power control unit.		●	

FILTERING CABINET		40 h	160 h	1000 h
	Check filtering cartridges for clogging, by looking at the differential pressure gauge reading.	●		
	Ensure that in the upper compartment of the filtering cabinet there is no grit.		●	
	Check door seal conditions		●	
	Replace the filtering cartridges		●	

SAFETY DEVICES		40 h	160 h	1000 h
	Check the safety devices for proper operation.	●		

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PRESSING THE PEDAL THE SYSTEM DOES NOT WORK

PROBABLE CAUSE	SOLUTION
door open	close door and check catch clamping force
electrical microswitch malfunction	check locator proper operation and position
air connection cock closed	open the cock
blasting valve malfunction	replace it
blasting pedal malfunction	replace it

GRIT DOES NOT COME OUT OF THE SHOT-PEENING-GUN

PROBABLE CAUSE	SOLUTION
no grit	open cabin door and add grit
not enough air or no air at all	check that there is air in line, that the valve is open and that pressure is equal to or above 1 bar
impurities in the lug, grit delivery tube, gun body	carefully clean
delivery jet wrong position	check that it is screwed by 5 mm
worn delivery jet	replace it
worn nozzle	replace it
pierced gun body	replace it
worn grit delivery tube	replace it

GRIT IS NOT SUCKED FROM HOPPER BOTTOM AND/OR THERE IS A LOT OF DUST INSIDE CABIN

PROBABLE CAUSE	SOLUTION
pierced mixing lug	replace it
hopper bottom obstructed	remove any debris / sticking from hopper bottom
clogged filter tissue of the cartridges	clean or change the cartridge

DUST COMES OUT OF THE FILTERING UNIT

PROBABLE CAUSE	SOLUTION
broken cartridge	replace
cartridge compartment closing door not correctly closed	close it
the dust collection bin is not correctly closed	close it
cartridge compartment closing door gasket is no longer tight	replace it

APPLICATIONS	glass microball	ceramic microball	steel microball	aluminium oxide	plastic grit	steel grit	cast-iron grit
sticker removal				*	o		
anti-reflection finish	o	*		*			
preparation for better adhesion of chemical coating	o	*		*			
art work restoration	*				o		
preparation before gluing			o	*	o	o	
graphite deposits removal	o	*			*		
preparation for rubber to metal bonding				*		o	*
decorative finish	o	o		*			
burr removal	*			*	*		
plastic flash removal	*			*	o		
cleaning	o	o	*	o	*	*	*
glass decoration	o	*		o			
pickling	*	*	*	o		o	o
mould cleaning	o	*			o		
die cleaning	o				o		
paint stripping				o	*	o	o
preparation for painting	o			o		o	o
controlled shot-peening	o	o	o				
cleaning before/after welding	*			o		o	*
uniform surface finish	o	o	o	*			
satfin finish	o	o					
wood surface treatment	*			o			
clean./high roughness				o		o	o
clean./low roughness	o	o		*		*	*
non-ferrous parts	o	o		*			
aluminium	o	o		o			
stainless steel	o	o		*			

o recommended
* possible

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9.1 AIR CONSUMPTION OF SHOT-PEENING GUN/ LANCE FOR PRESSURE/ VACUUM SYSTEMS

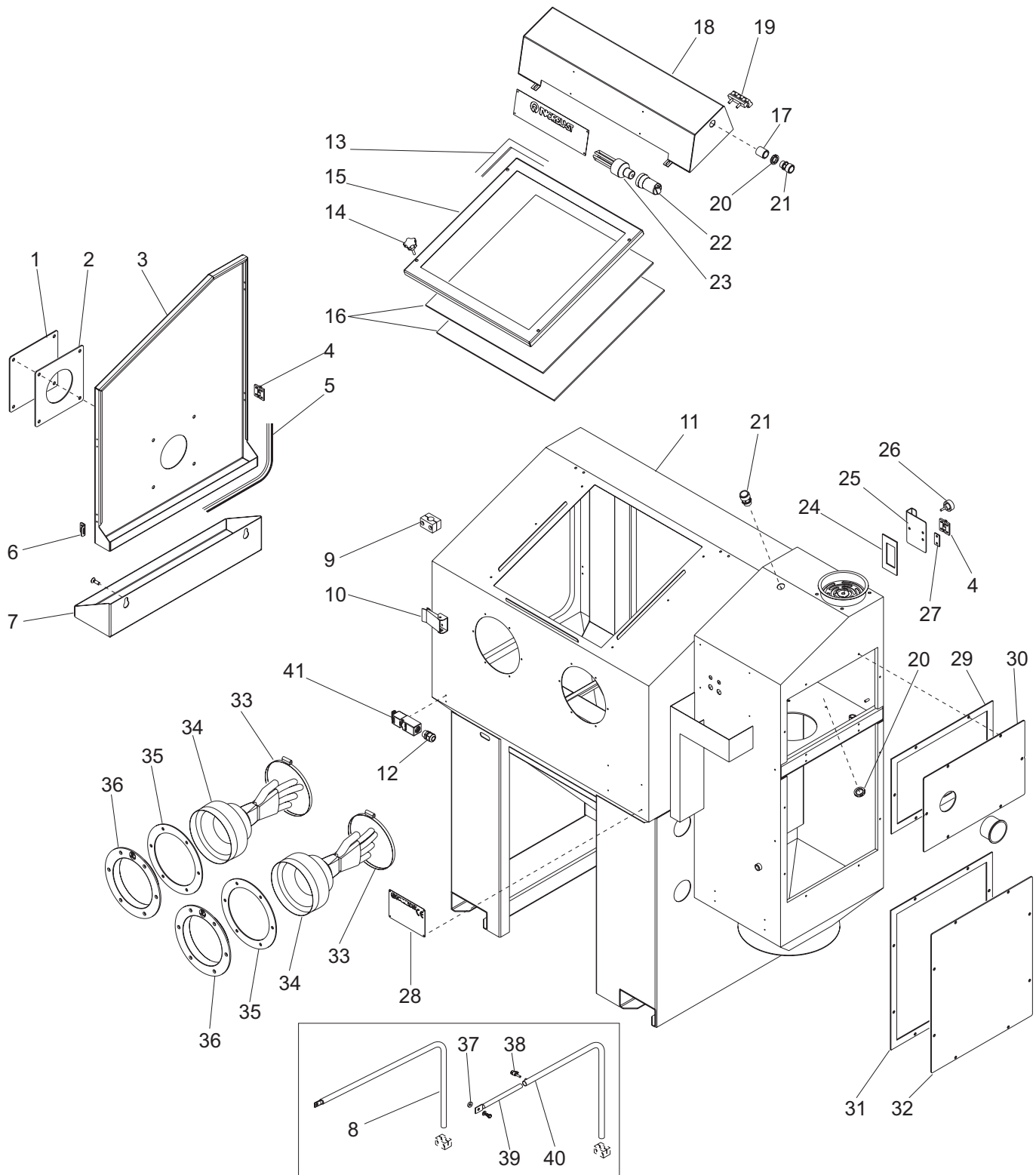
NOZZLE DIAMETER (pressure vers.) DELIVERY JET DIAMETER (vacuum vers.)	WORKING PRESSURE (bar)						
	2	3	4	5	6	7	8
1	28	37	46.5	56	65	74	83.5
2	111	148	185	222	260	296	334
3	251	334	418	501	585	668	752
4	447	595	745	894	1040	1190	1340
5	695	927	1160	1390	1620	1860	2090
6	1000	1340	1670	2010	2340	2680	3010
8	1780	2380	2970	3570	4160	4760	5350

Air consumption values indicated in the table are expressed in NI/min

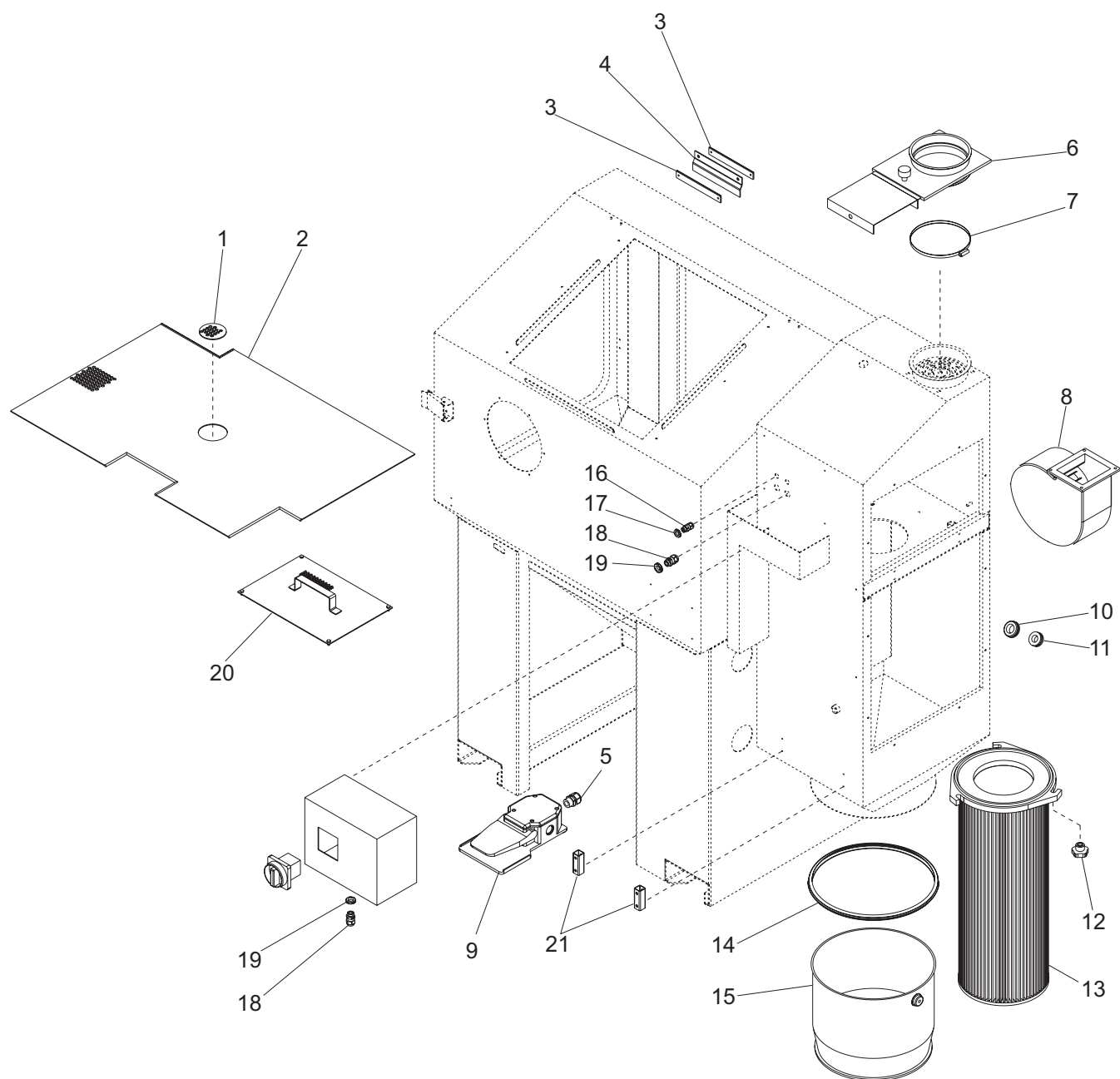
Compressors operating at 7.5 bar will supply approximately 157 NI/min per kW

Compressors operating at 10 bar will supply approximately 141 NI/min per kW

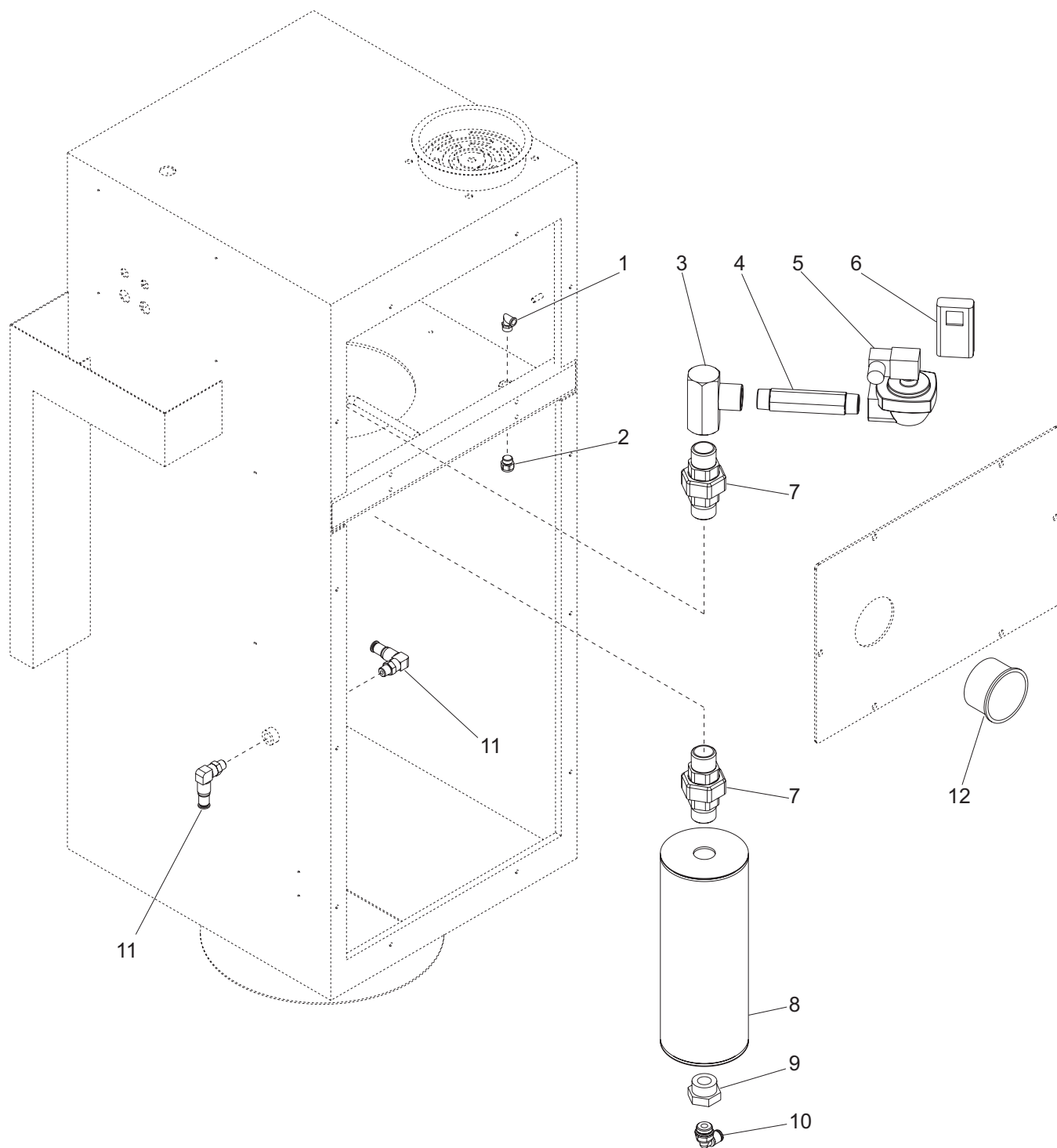




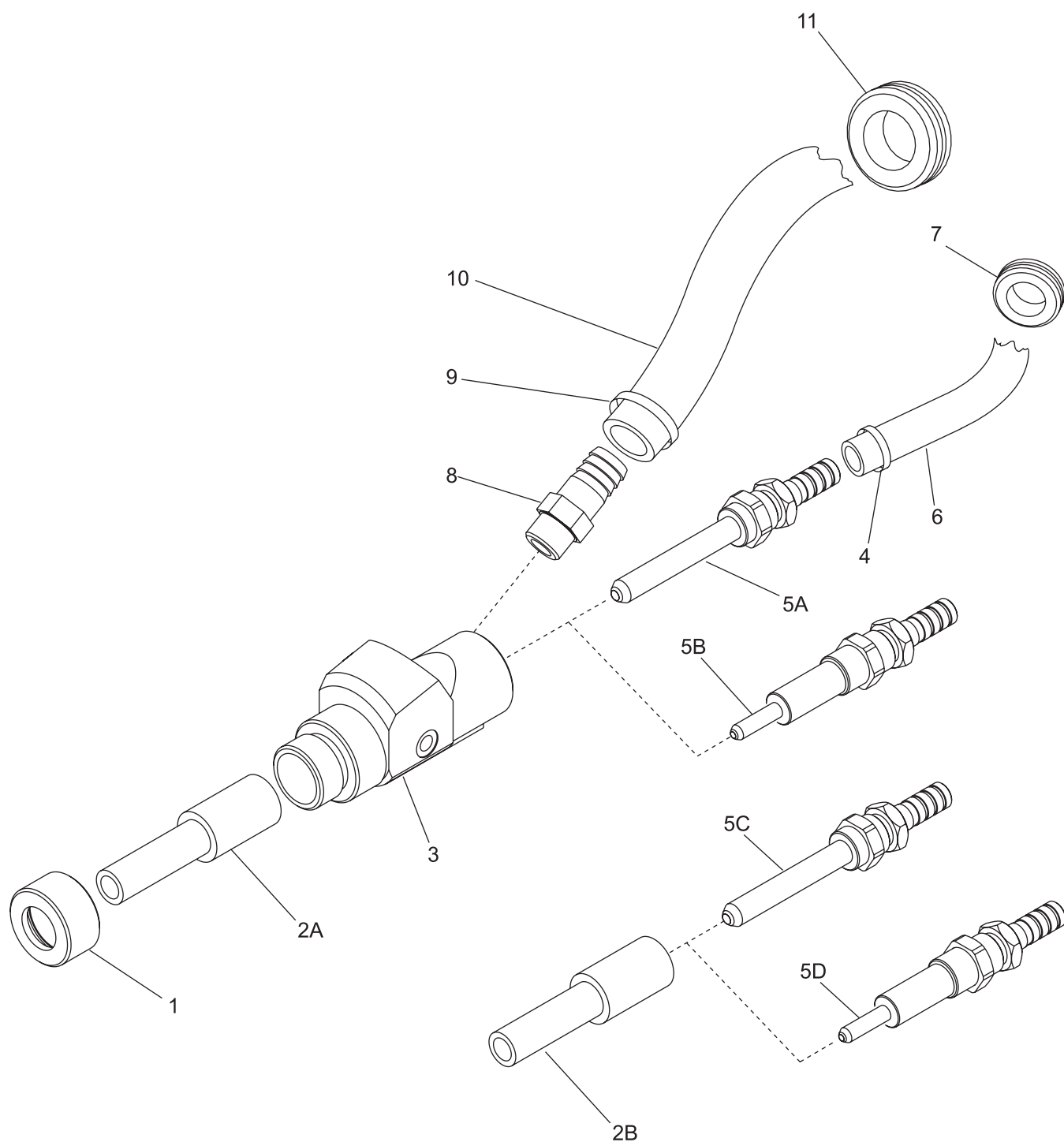
REF.	QTY	CODE	DESCRIPTION	TYPE
1	1	020420	Tumbler hole closure plate	
2	1	020817	Tumbler hole plate seal	
3	1	007009	Tumbler door	
4	3	006509	Hinge	EMKA 1056-U5-PH STAINLESS STEEL
5	2.5 m	005634	Reinforced drawn seal	
6	1	012872	Electric microswitch pusher device support	
7	1	016151	Dust collector	
8	1	005802	Gun support	FN2000
9	1	005800	Tube collar	Ø20 320-PPH STAUFF
10	1	005720	Adjustable closing catch	2.18.00 ZINC-PLATED
11	1	011852	Structural work	
12	1	E00554	Grey cable gland	RAL7035 PG13.5 - UL/CSA
13	6 m	000004	Seal	12x3
14	4	002464	Lobe hand wheel	VC192/40P-M6X30
15	1	005628	Glass frame	490x490 FN2000
16	2	P0084	Tempered glass	490x490 MM
17	1	E04957	Jointing hose	PG13.5
18	1	012900	Ceiling lamp	
19	2	005633	Hinge	CFF.66 P-M6x16 ELESA
20	2	E00549	Polyamide check nut	PG13.5 GREY RAL 7035
21	2	E00750	Black sheath straight fitting	Ø 12 CORRUG.PG13,5
22	1	E00194	Lamp holder	VIMAR E27 °43mm PORC. F/90
23	1	E00835	Lamp	0035011 ML HOME 23W T3 E27
24	1	020442	Stack inspection seal in expanded EPDM	
25	1	011742	Stack inspection door	
26	1	002462	Ashlar-worked knob	MBT.30 P-M5x20
27	1	011743	Hinge spacer	
28	1	P0001	EC plate	
29	1	020431	Filter upper guard seal in EPDM	
30	1	005625	Filter top cover	FN2000
31	1	020434	Filter lower guard seal in EPDM	
32	1	005642	Filter bottom cover	FN2000
33	2	000579	Clamp	No.14 168-188 ZINC-PLATED
34	1	000548	Pair of latex gloves	SIZE 11
35	2	005916	Glove holder flange gasket	
36	2	000577	Glove holder flange	
37	1	020943	Shimmed washers	8X20 SHIM 5 ZINC-PLATED
38	1	001457	Locking handle	MR.63 p-M6x20-C9 code 41451
39	1	007022	Shot-peening gun support extension S9 tumbler	
40	1	009876	Shot-peening gun support bent pipe S12 tumbler	
41	1	E01582	Limit switch with safety device	PIZZATO FR693-D1
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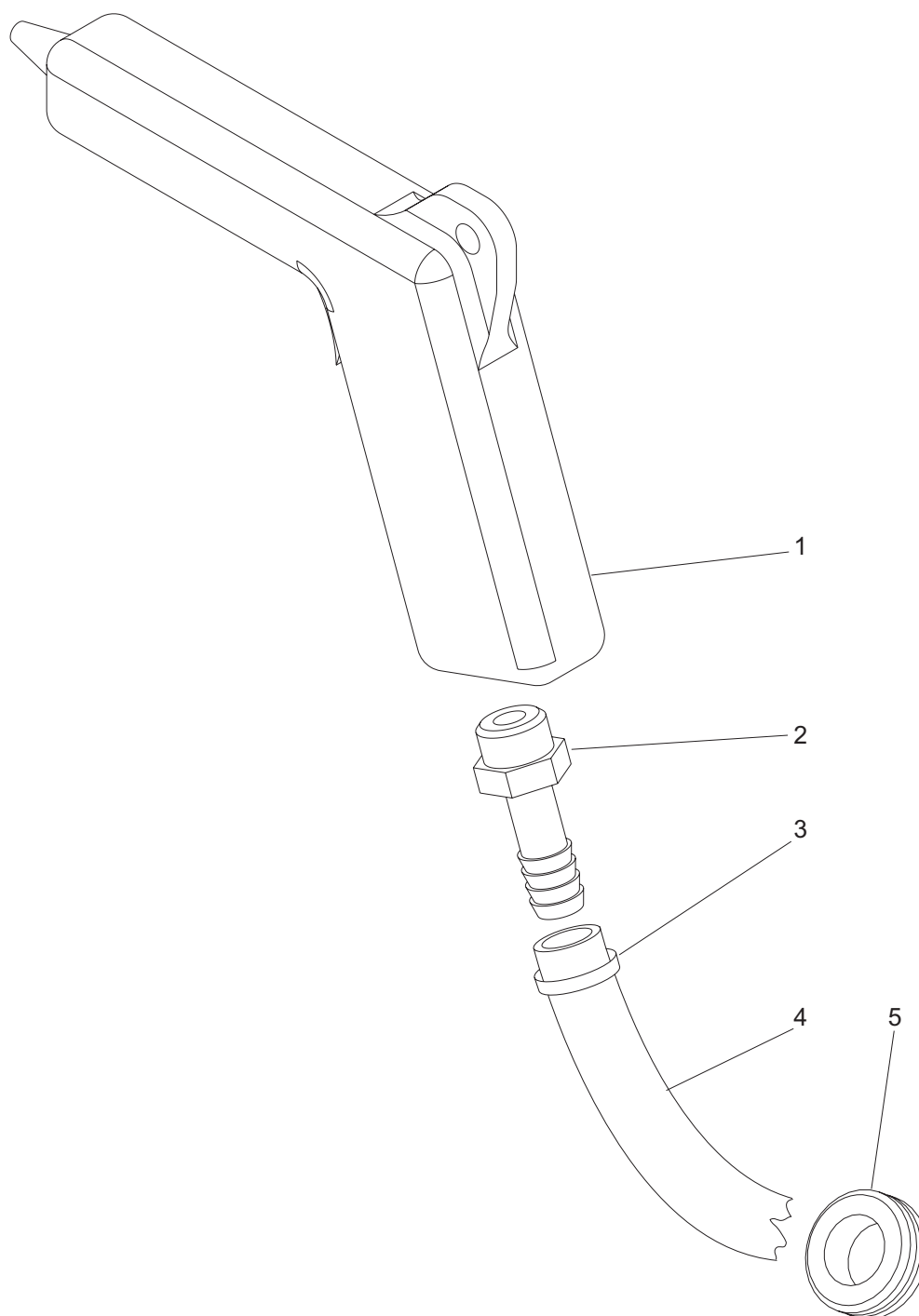
REF.	QTY	CODE	DESCRIPTION	TYPE
1	1	005627	Table seat cap	
2	1	005626	Grid surface	
3	2	011744	Diaphragm trim	
4	1	011745	Intake stack closing diaphragm	
5	1	E00372	Plastic cable gland	M20X1.5 COLOUR RAL 7035
6	1	007171	Moulded gate valve shutter	ITEM NO.169 Ø140
7	1	007172	Single ring	ITEM NO.218 Ø140
8	1	005636	Exhauster	G2E 140 AE77 01
9	1	E01874	Electric pedal without cover	PA 10100
10	1	002220	Rubber wiring grommet	Ø 22.5
11	2	002219	Rubber wiring grommet	Ø 17.5 code 20900017500
12	3	005637	Knob	Ø40 M10 THROUGH HOLE
13	1	005635	Filtering cartridge	Ø218x600 P 5.35 MQ Polyester
14	1	006441	Zinc-plated ring	Ø292
15	1	016478	Dust collecting bin	Ø292xh250 SD7/9/12
16	2	E00666	Cable gland	SKINTOP PG7 GREY 7035
17	2	E00667	Polyamide check nut	PG7 GREY RAL 7035 DP20
18	6	E00552	Grey cable gland	RAL7035 PG9 - UL/CSA
19	6	E00547	Polyamide check nut	PG9 GREY RAL 7035
20	1	020910	Hopper drilled cover	
21	2	006942	Spacer for pneumatic units	
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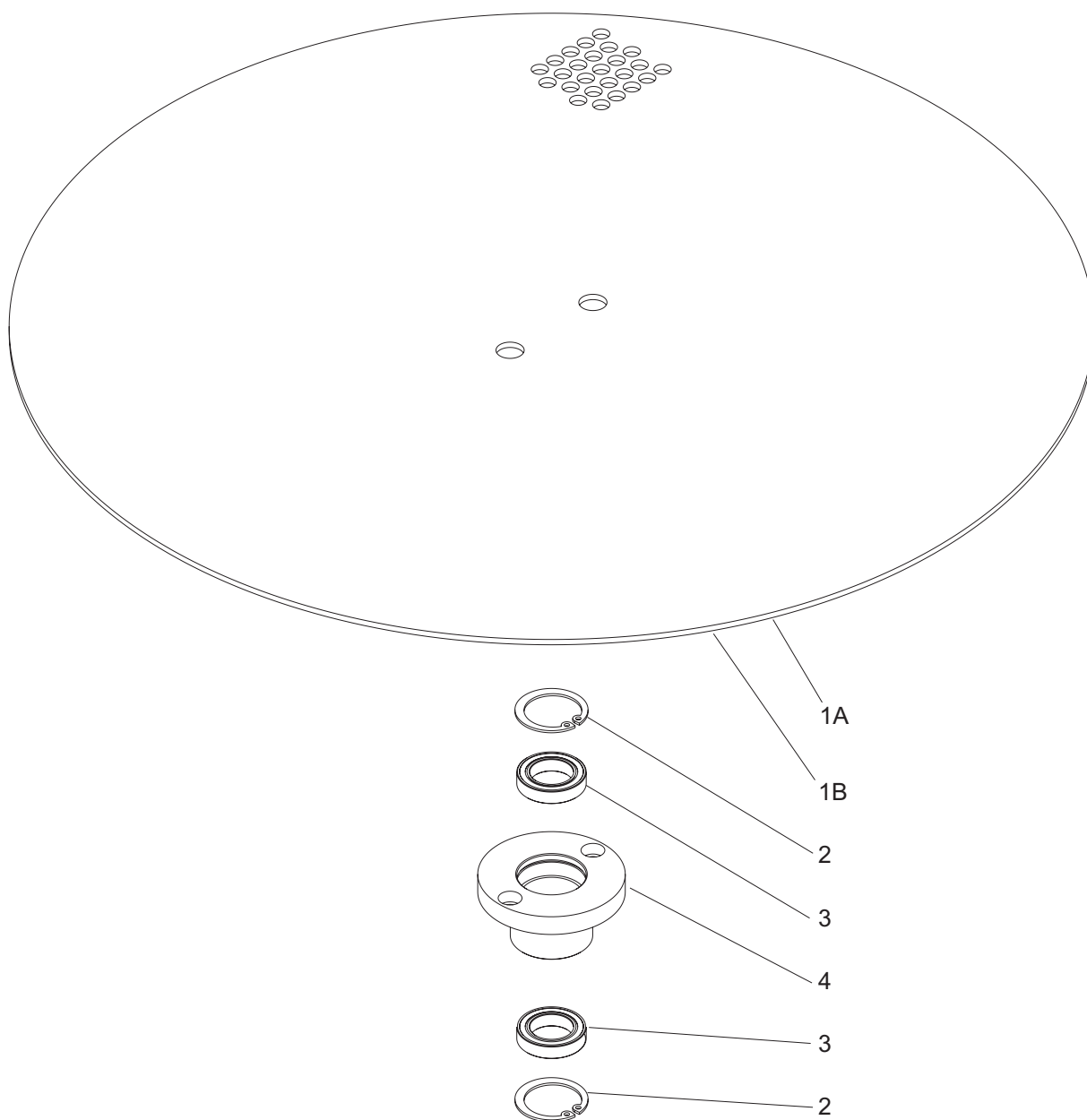
REF.	QTY	CODE	DESCRIPTION	TYPE
1	1	002470	90° fitting	1/4"M-D.8 QUICK PLG0802
2	1	000084	Silencing device	SFE 1/4" W0970530053 K
3	1	021089	Filter air distributor	ECO/9
4	1	021060	Hose	L.135 3/4" NEW ASSY
5	1	005209	Solenoid valve	FP20 3/4"N.C.230V 50/60 Hz
6	1	E03854	Pause/pulse timer	MPM - 24-240V ac/dc RSP22
7	2	002496	Union fitting	1"M/M G.F- TAPERED
8	1	005450	Cleaning tank	4"
9	1	000199	Reducing fitting	1"-1/2" M/F
10	1	001083	90°-Fitting	1/2"M-D.10 QUICK-RELEASE
11	2	005640	90° rotating quick-release fitting	1/4"M-Ø10
12	1	020424	Analogue differential pressure gauge	Mini Helic 5000 0-50 mm
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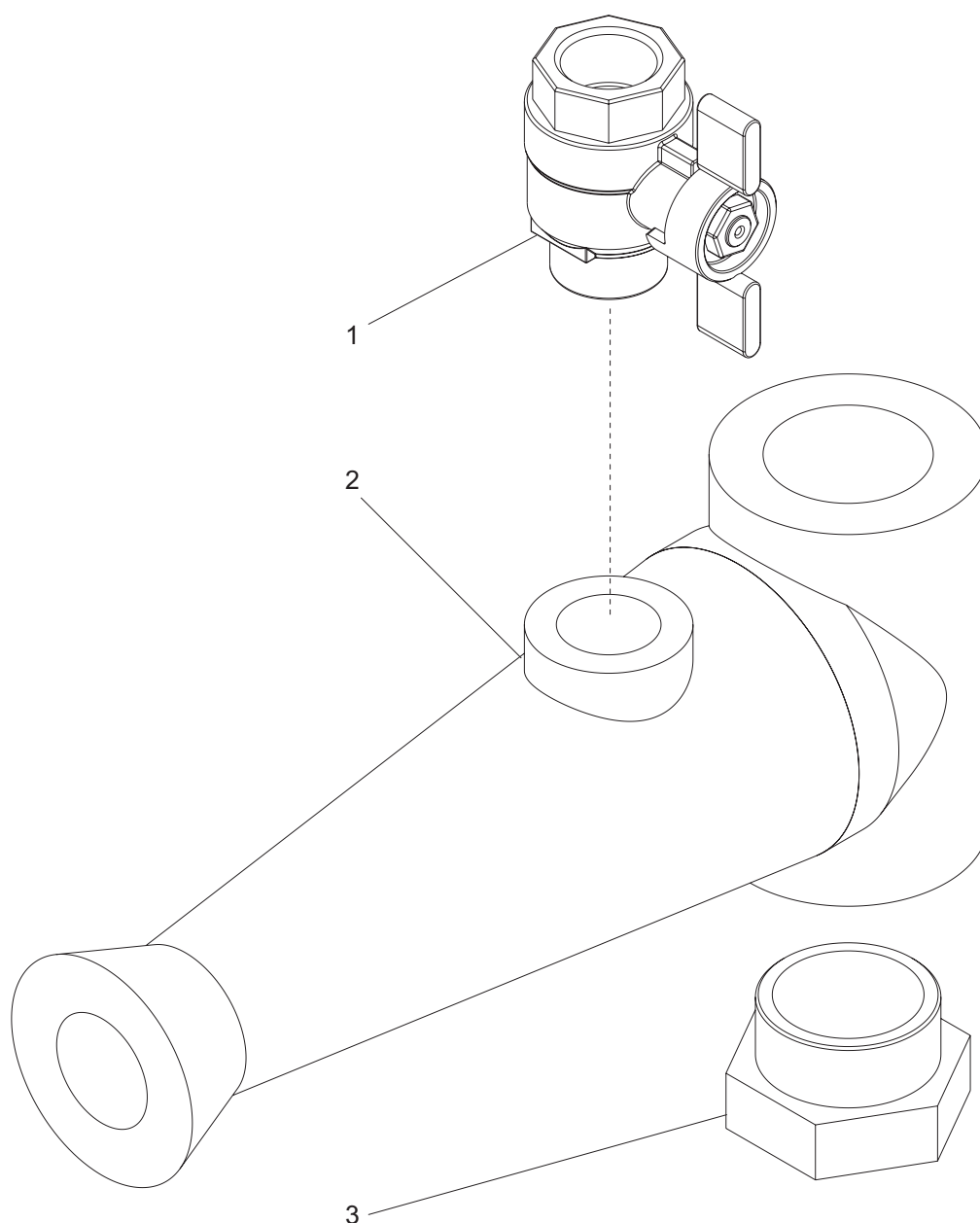
REF.	QTY	CODE	DESCRIPTION	TYPE
1	1	P0055	Vacuum nozzle ring nut	
2A	1	P0056	Vacuum nozzle INSTALLED EQUIPMENT	22x85 Ø8 CARB.TUNGS.
2B	1	P0174	Vacuum nozzle SPECIAL REQUEST EQUIPMENT	22x85 Ø10 CARB.TUNGS.
3	1	004854	Complete gun body in polyurethane with connections	
4	1	000580	Clamp	no. 2 10-18
5A	1	000561	Delivery jet + nut on P0056 INSTALLED EQUIPMENT	DOS. D.3.2
5B	1	000562	Delivery jet + nut on P0056 SPECIAL REQUEST EQUIPMENT	DOS. WIDIA D.3.2
5C	1	000756	Delivery jet + nut on P0174 SPECIAL REQUEST EQUIPMENT	DOS. D.4.5
5D	1	000773	Delivery jet + nut on P0174 SPECIAL REQUEST EQUIPMENT	DOS. WIDIA D.4.5
6	3 m	000018	Tube	ø10x17
7	1	002219	Rubber wiring grommet	ø17.5
8	1	016744	Stainless steel hose barb	3/8"-17 CODE 4GA11G03
9	1	000581	Clamp	no. 3B 17-29
10	2.5 m	000019	Tube	ø16x23
11	1	002220	Rubber wiring grommet	ø22.5
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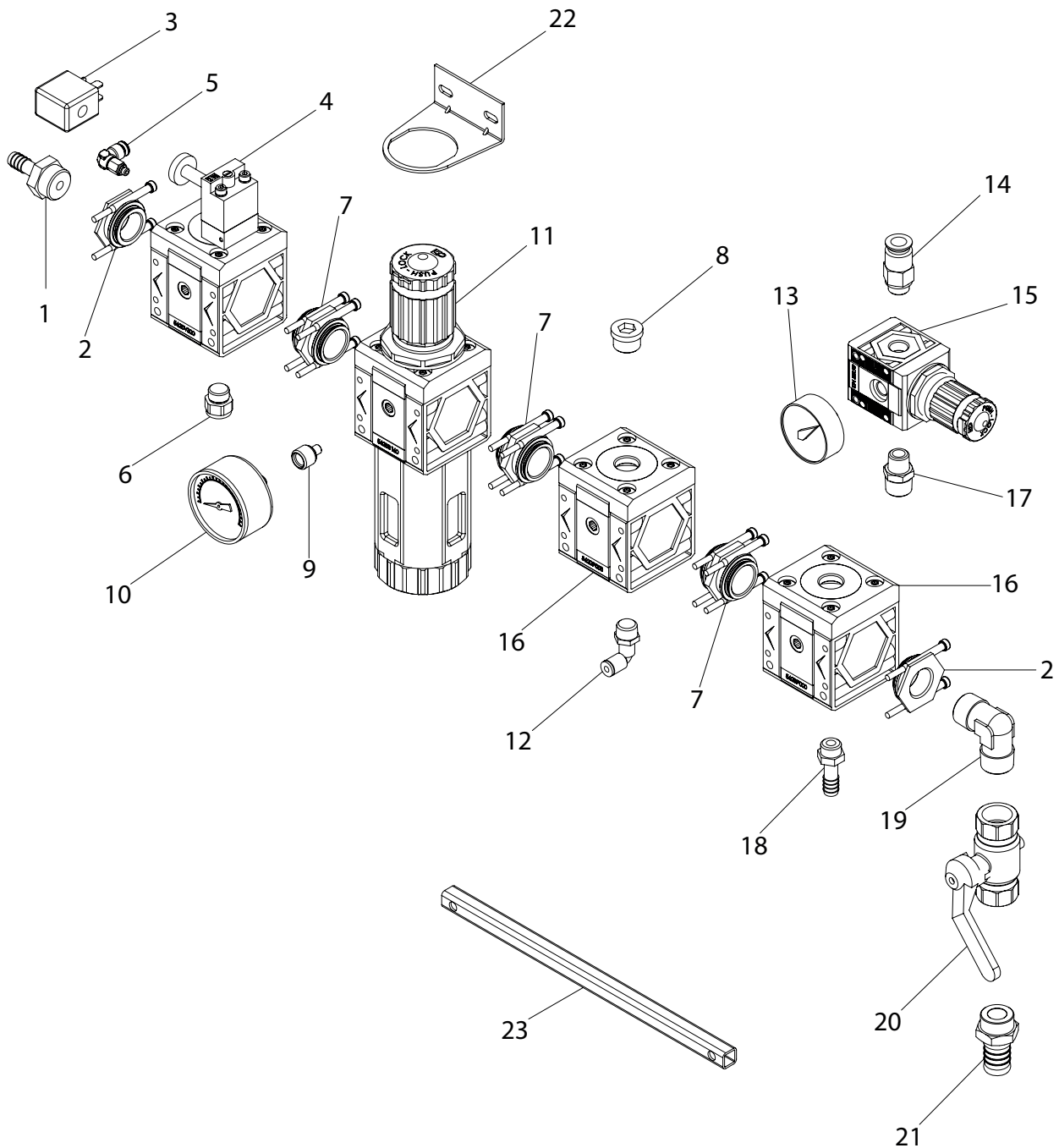
REF.	QTY	CODE	DESCRIPTION	TYPE
1	1	000896	Blowing gun	04-115/1 04-115/1.SR
2	1	000121	Hose barb	DIAM.10 1/4"
3	2	000580	Clamp	No.2 10-18 ZINC-PLATED PIPE 10x17
4	2.5 m	000018	Tube	ø10x17
5	1	002219	Rubber wiring grommet	ø17.5
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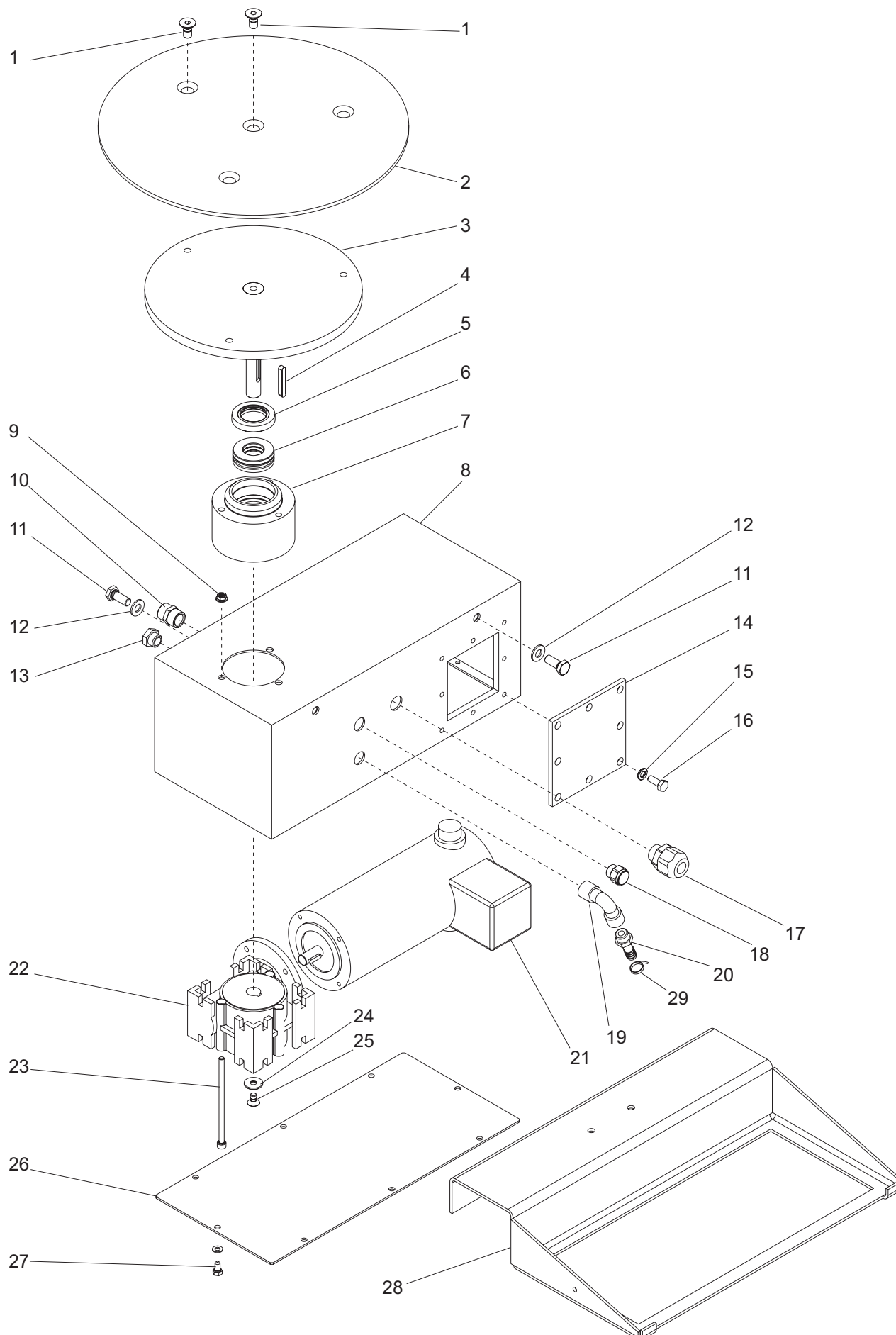
REF.	QTY	CODE	DESCRIPTION	TYPE
1A	1	005792	Plate	Ø500 TGM FN2000
1B	1	005792R	Coated plate	Ø500 TGM FN2000
2	2	001700	Circlip	Ø32 FOR INT. UNI 7437
3	2	005793	Radial ball bearing	61804-2RS1 20x32x7 SKF
4	1	005791	Bearing hub	TGM S9
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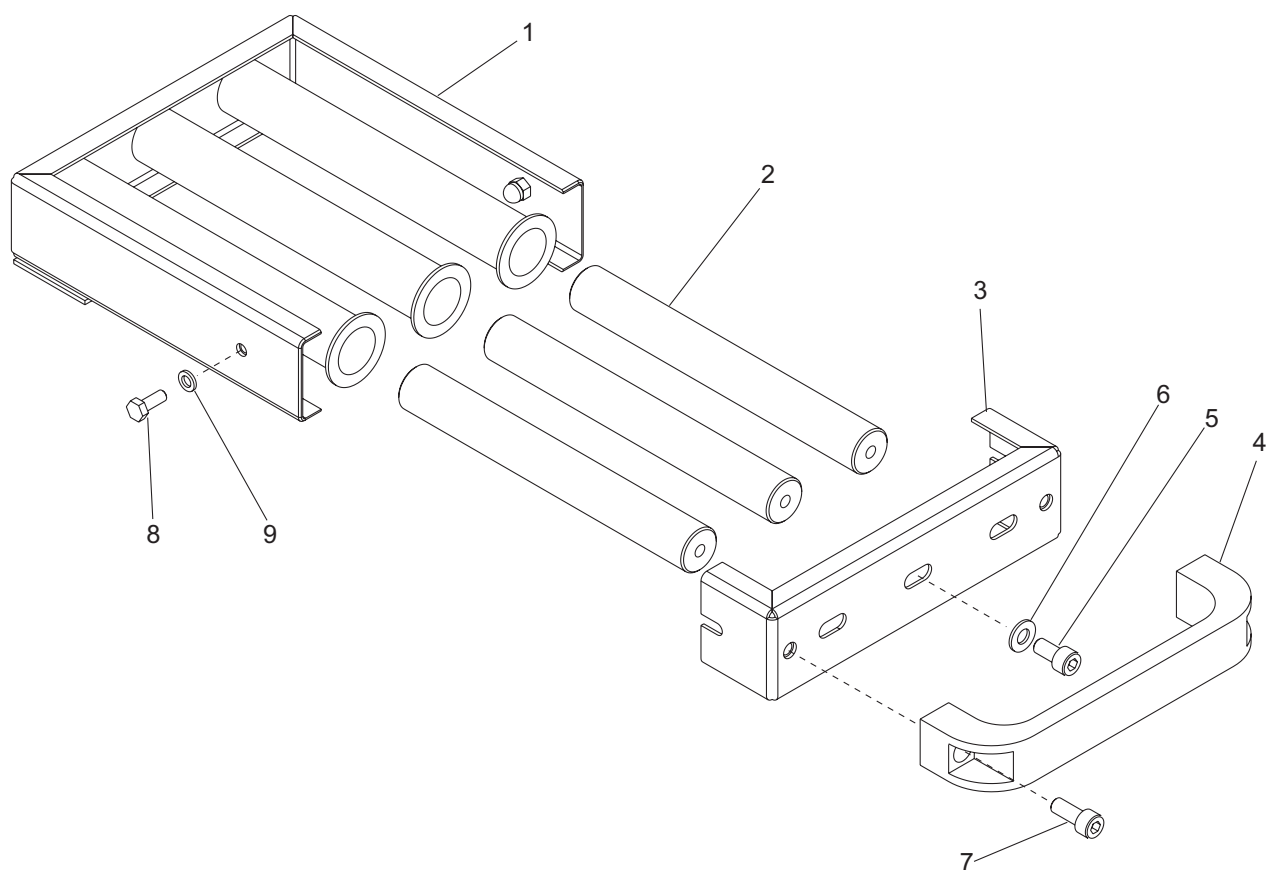
REF.	QTY	CODE	DESCRIPTION	TYPE
1	1	016310	Ball valve	G1/2 M/F ITEM 9250TR12 TIERRE
2	1	013423	Fda polyurethane recirculation composite lug	
3	1	012635	Plug	1" M TN.1 ELES Code 58299
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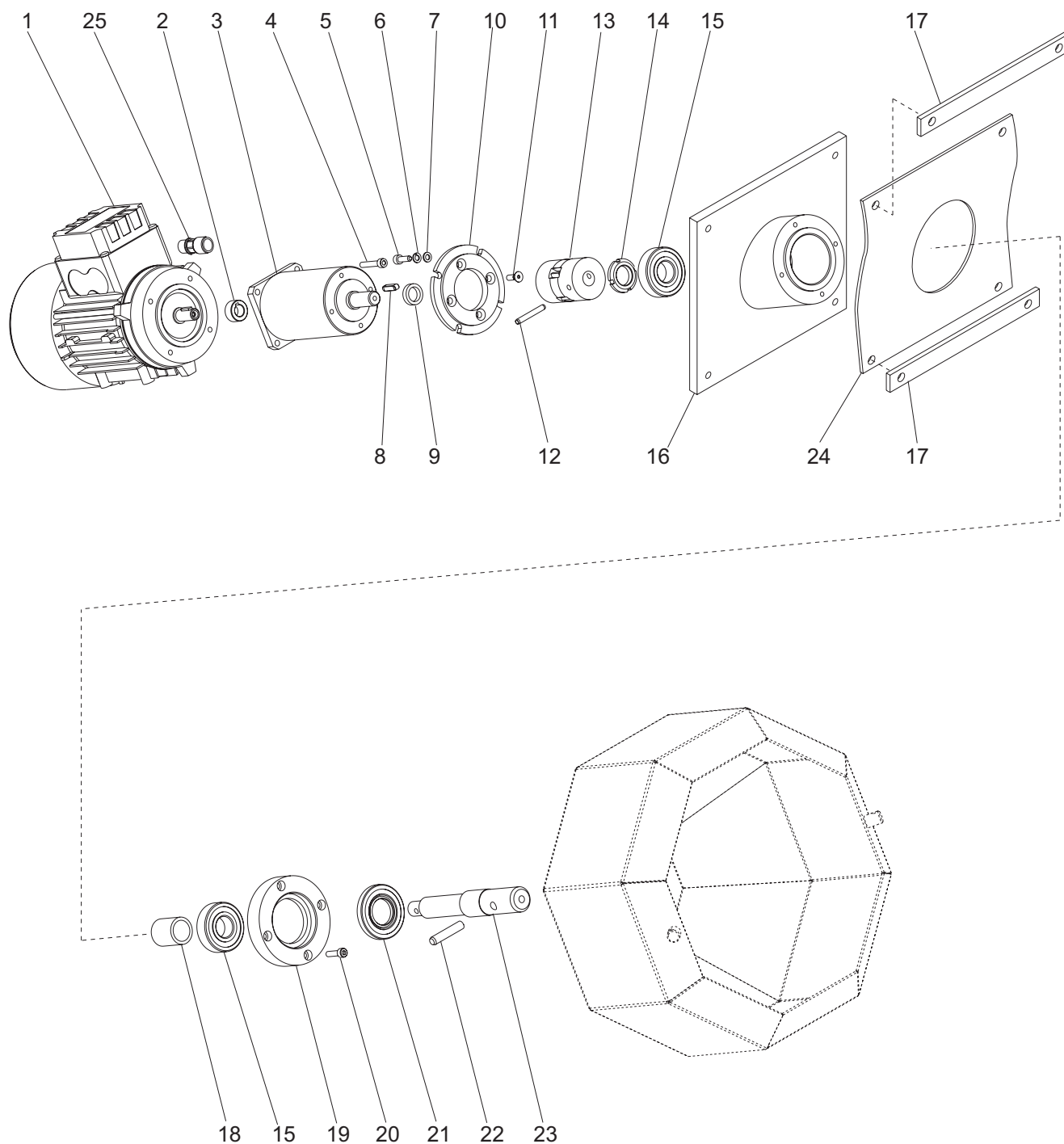
REF.	QTY	CODE	DESCRIPTION	TYPE
1	1	000087	Hose barb	DIA.10 1/2"
2	2	028256	Kit te IN/OUT 1/2 SY2	METALWORK 9210012
3	1	007013	Side coil 22 D8 3.5VA-220VAC 50/60 HZ	METALWORK W0215000131
4	1	028529	Solenoid valve V3V SY2 w/out bushings	METALWORK 5620V300
5	1	009889	Quick-release fitting	90° ROTARY M5M-Ø4
6	1	000084	Silencing device	SFE 1/4" W0970530053
7	3	028258	Connection kit SY2	METALWORK 9210010
8	1	000045	Plug	1/4"M BOSCH 1149TR38
9	1	028266	Pressure gauge adapter for SY2 1/4" 1/8"	METALWORK 9210005
10	1	007043	Pressure gauge	Ø50 0/12 A.P.1/8" 9800101
11	1	028254	Regulator filter assembly FR SY2 5 012 RMSA w/out bushings	METALWORK 5620B160
12	1	001269	90° fitting	1/4"M-D.4 QUICK-RELEASE
13	1	000116	Pressure gauge DIAM.41	1/8" REAR 0 0-12 BAR
14	1	004963	Straight fitting	1/4" Ø10 QUICK-RELEASE
15	1	028748	Pressure regulator G1/4" 0÷12 SY1	METALWORK 5612R162
16	2	028255	4-way air inlet SY2 w/out bushings	METALWORK 5620P200
17	1	002500	Reducing fitting	3/8" 1/4" M/M
18	1	000121	Hose barb	DIAM.10 1/4"
19	1	020825	90° fitting	1/2" M/M
20	1	016811	Ball valve	3/2 1/2" F/F/M5
21	1	000086	Hose barb	Ø16 1/2"
22	1	028747	Regul. filter and regul. fixing bracket 1/2"	METALWORK 9400701
23	1	027567	Spacer for pneumatic unit metalwork SYNTESI2	
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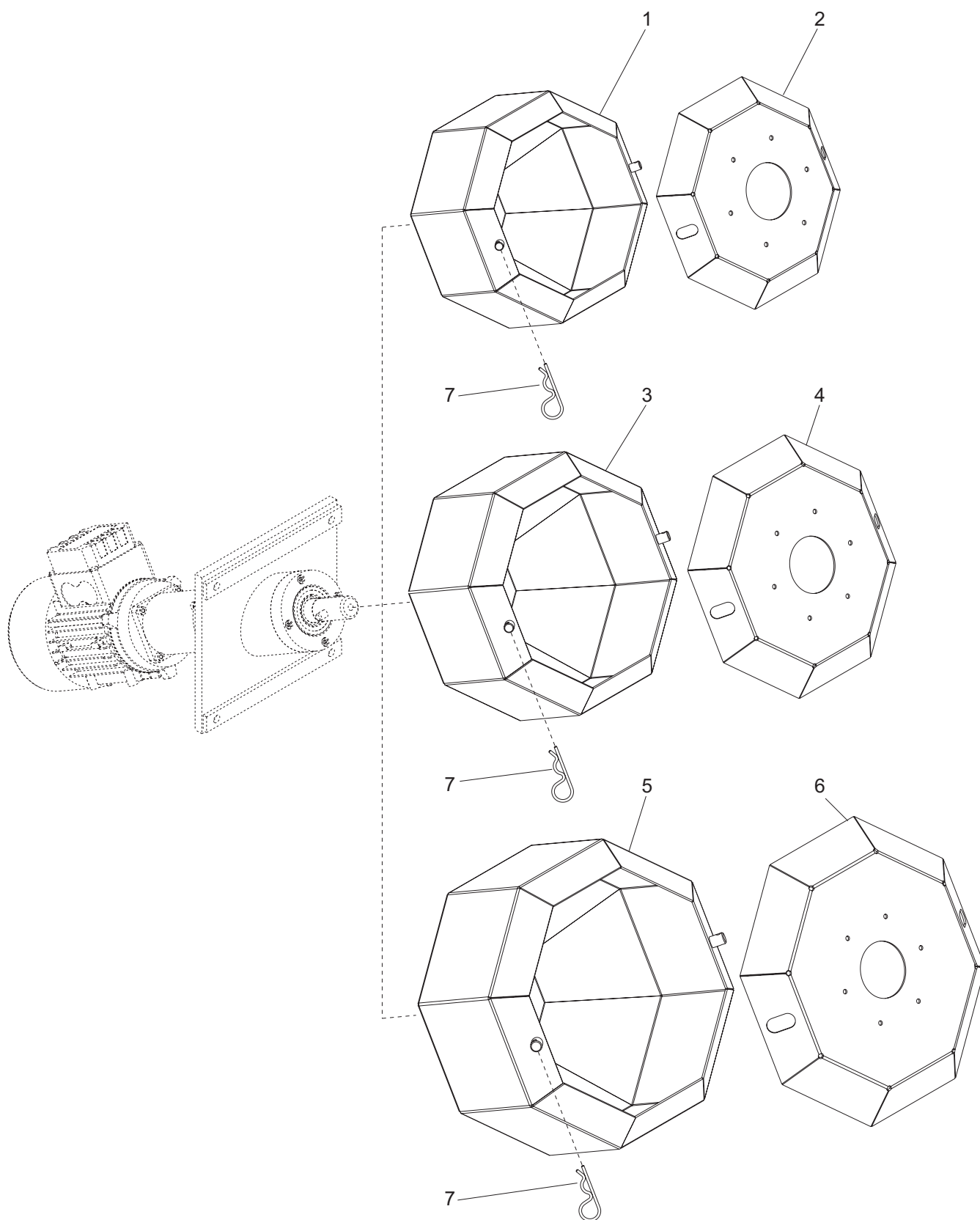
REF.	QTY	CODE	DESCRIPTION	TYPE
1	4	007905	TSEI screw	M8x16 UNI 5933 GALVANISED
2	1	007840	Plate	Ø 300 FOR TGAL S9
3	1	003230	Central shaft	
4	1	000127	Key	5x5x35 UNI 6604-A
5	1	000125	O-ring	AS-25X42X7
6	1	000128	Axial ball bearing	51204 20x40x14 SKF
7	1	017087	Flange	
8	1	003231	Gearmotor box	
9	3	019019	Flanged nut	M5 ISO 4161 ZINC-PLATED
10	1	000930	Union fitting	1/4"
11	4	000005	TE screw	M8x20 UNI EN 24017-ISO 4017
12	4	000168	Flat washer	Ø8.4 UNI 6592
13	1	000888	Fitting	1/4"-1/8" M/F
14	1	003232	Wiring slot cover	
15	8	000123	Flat washer	Ø6.4 UNI 6592
16	8	001255	TE screw	M6x12 UNI EN 24017-ISO 4017
17	1	E00002	Fitting	SERIES 2000 METAL G3/8" Ø12
18	1	000084	Silencing device	SFE 1/4" W0970530053
19	1	002477	90° fitting	1/4" F/F NICKEL PLATED
20	1	000121	Hose barb	DIAM.10 1/4"
21	1	001672	Motor	CC PML B14-M63-2000RPM
22	1	001828	Reducer	MI30-30:1-PAM 63 B14 11/90
23	3	017088	TCEI screw	M5x100 UNI 5931 GALVANISED
24	1	001268	Taper washer	RC 6
25	1	004783	TSEI screw	M6x10 UNI 5933 GALVANISED
26	1	P0083	Gearmotor cover	
27	8	000183	TE screw	M5x10 UNI EN 24017-ISO 4017
28	1	007731	Table support	
29	1	000580	Clamp	no. 12 10-18
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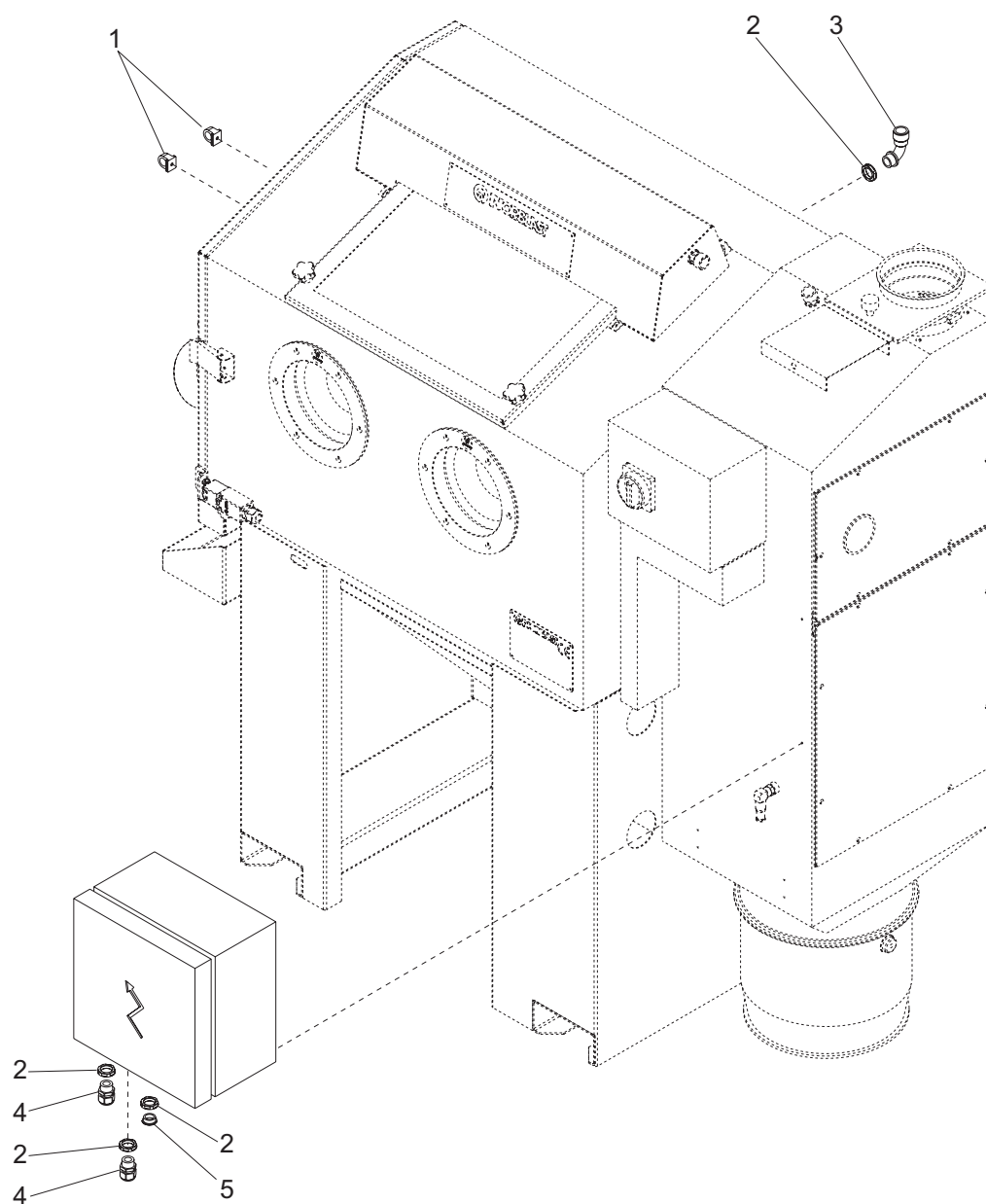
REF.	QTY	CODE	DESCRIPTION	TYPE
1	1	012724	Housing for stainless steel magnet	
2	3	001463	Magnet	ø25x200
3	1	012725	Stainless steel demagnetiser closure cap	
4	1	003886	Fixed handle	224-200 Boteco
5	3	021020	TCEI screw	M8x16 UNI 5931
6	3	021059	Washer	d.8.4 UNI 6593
7	2	021021	TCEI screw	M8x20 UNI 5931
8	2	021013	TCEI screw	M6x10 UNI 5931
9	2	021058	Washer	d.6.4 UNI 6593
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REF.	QTY	CODE	DESCRIPTION	TYPE
1	1	001323	Motor	H63B/4 63B14 180 W
2	1	014530	Reduction unit spacer	
3	1	007016	Reduction unit	RID60-3-120-SK1123 63B14
4	4	006725	TCEI screw	M5x30 UNI 5931
5	4	004467	TCEI screw	M5x16 UNI 5931 GALVANISED
6	4	006898	Spring washer	Ø5.1 UNI 1751
7	4	000807	Flat washer	Ø5.3 UNI 6592
8	1	001365	Key	5X5X20 UNI 6604-69
9	1	006863	Flexible coupling spacer bushing	20x14x5
10	1	006864	Economic tumbler adapting flange	
11	4	006865	TSEI screw	M5x16 UNI 5933 GALVANISED
12	1	006887	Spring pin	5X36 UNI 6874
13	1	006862	Joint	POGGI GH 24/24 Ø14
14	1	002908	Ring nut	KM4 M20X1
15	2	000495	Radial ball bearing	6204-2RS1 20x47x14 SKF
16	1	006877	Economic tumbler bearing holder hub	
17	2	016662	Tumbler gasket support	
18	1	006879	Bearing spacer	
19	1	006878	Seal seat cap	
20	4	000181	TCEI screw	M5x20 UNI 5931 GALVANISED
21	1	006880	Seal	AS 25527
22	1	001231	Parallel pin	Ø8x40 UNI 1707 (m6)
23	1	006881	Economic tumbler shaft with bearings	
24	1	021482	Seal	
25	1	E00754	Black straight fitting	Ø 12 M20X1.5
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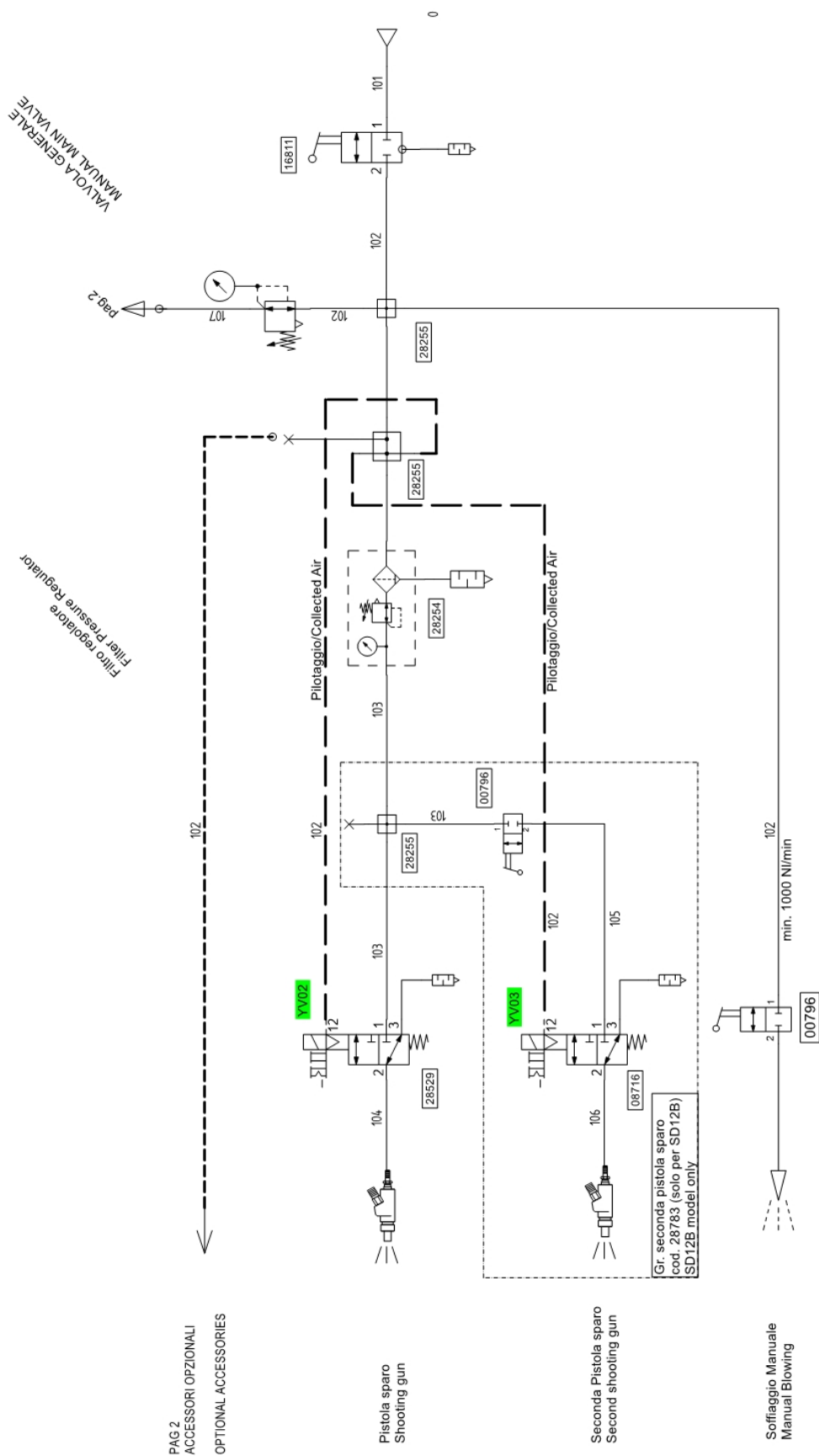
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1	1	015510	Barrel	Ø200 HOLE Ø3 new
2	1	015509	Barrel cover	Ø200 new
3	1	015508	Barrel	Ø250 HOLE Ø3 new
4	1	015507	Barrel cover	Ø250 new
5	1	015506	Barrel	Ø300 HOLE Ø3 new
6	1	015505	Barrel cover	Ø300 new
7	2	017781	Stainless steel R pin	A2 3X61 CODE 705RI03
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REF.	QTY	CODE	DESCRIPTION	TYPE
1	2	E03726	Sheath retainer with integrated safety clip	D.12 BSC 12
2	4	E00549	Polyamide check nut	PG13.5 GREY
3	1	E02553	Fitting	D.12 - 90° PG 13.5
4	2	E00554	GREY cable gland	PG13.5
5	1	E01858	Grey plastic plug	PG13.5
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SD9 - SD9B

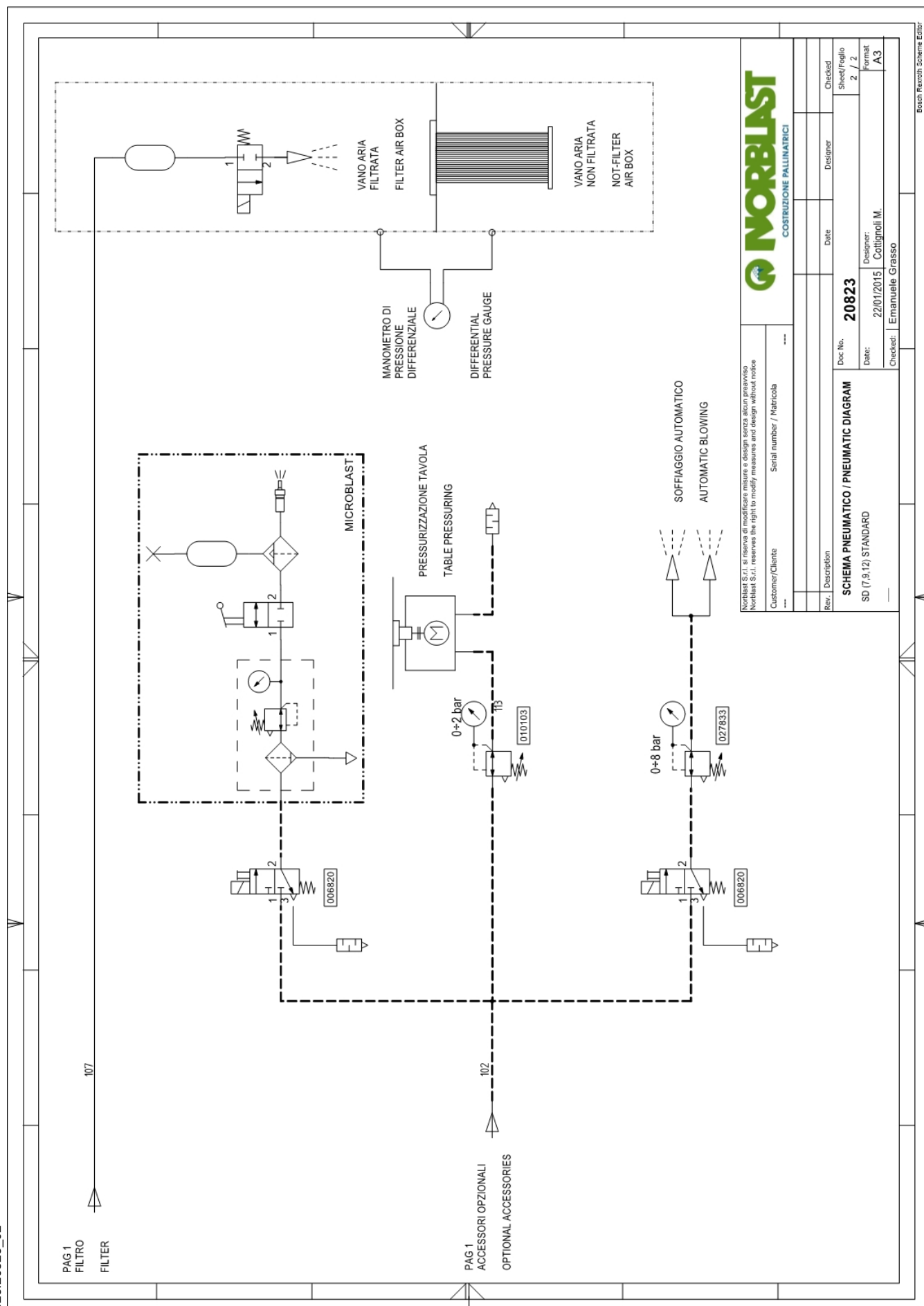
MANUAL SANDBLASTING - SHOT PEENING MACHINE



NORBLAST COSTRUZIONE PALLINATRICI	
Nordblast S.r.l. si riserva di modificare misure e design senza alcun preavviso. Nordblast S.r.l. reserves the right to modify measures and design without notice.	Serial number / Matricola ---
Customer/Cliente ---	Doc No. 20823
Date: 22/01/2015	Designer: Cottignoli M.
Checked: Emanuele Grasso	Format A3
Description SCHEMA PNEUMATICO / PNEUMATIC DIAGRAM SD (7,9,12) STANDARD	Date: 22/01/2015
Designer: Cottignoli M.	Checked: Emanuele Grasso

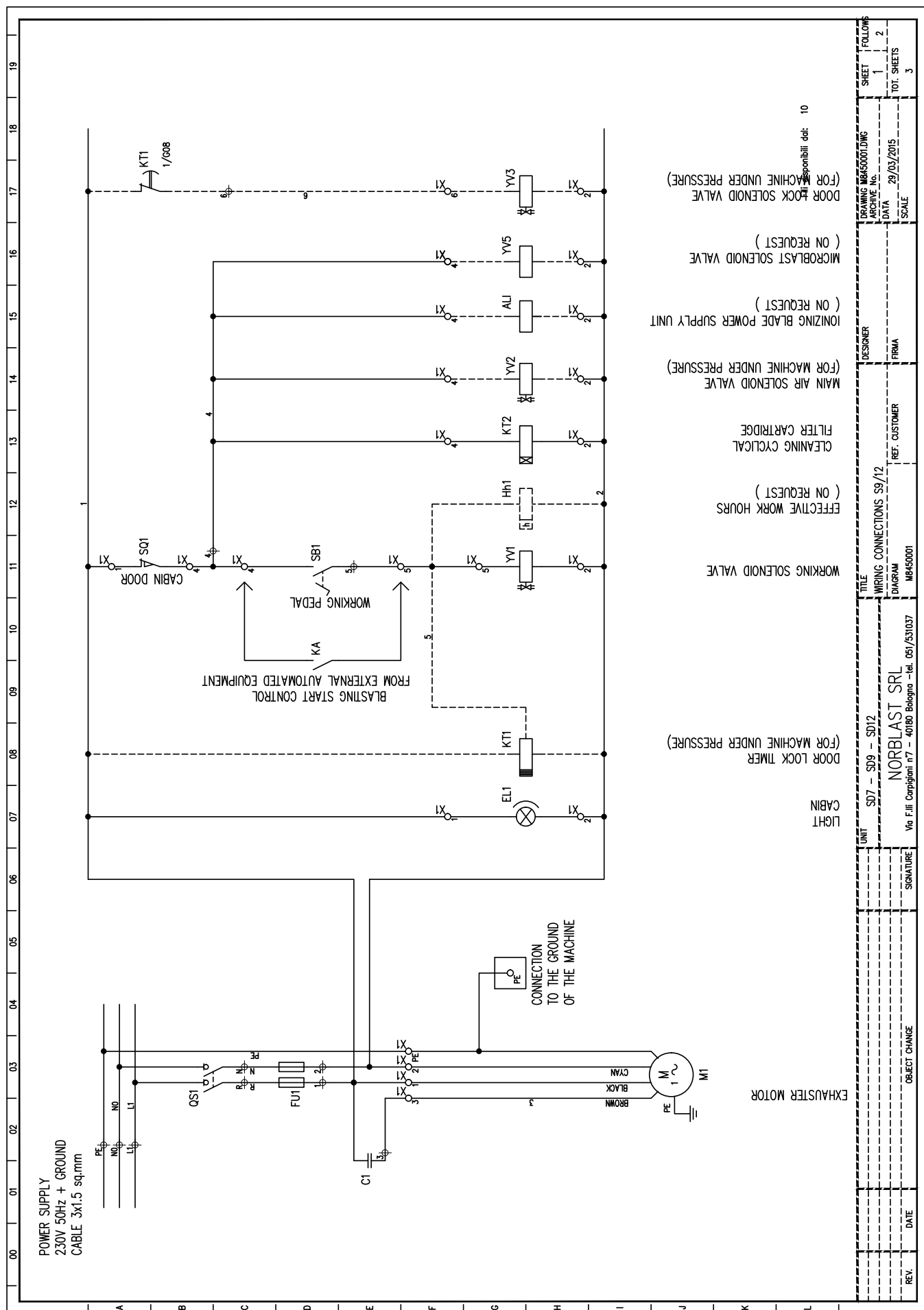
Rev.04 (23/12/2020) M. COTTIGNOLI: Aggiornato schema, aggiunto soffiaggio automatico come gruppo opzionale.
 Rev.04 (23/12/2020) M. COTTIGNOLI: Aggiornato schema con gruppi opzionali
 Rev.03 (09/09/2020) M. COTTIGNOLI: Aggiornato schema con preassemblato SY2
 Rev.02 (06/11/2018) E. GRASSO: aggiunta lingua inglese
 Rev.01 (06/04/2017) M. COTTIGNOLI: aggiunti particolari 03247 distribut. aria (racc. a t rapido Ø4) e 00796 valvola 2/2 (rubinetto) dentro gruppo 17583 PAG. 1

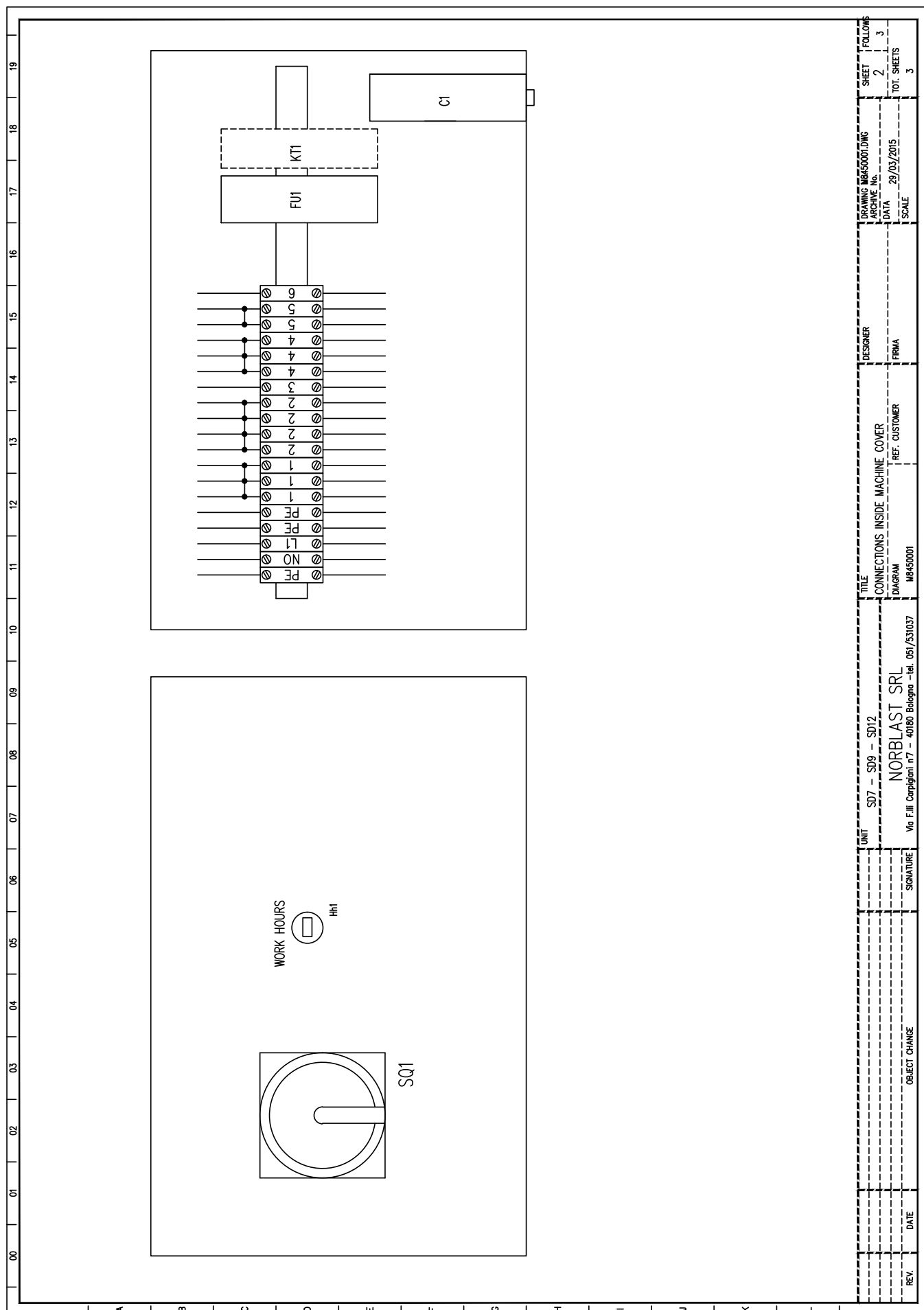
Bosch Rexroth Scheme Editor

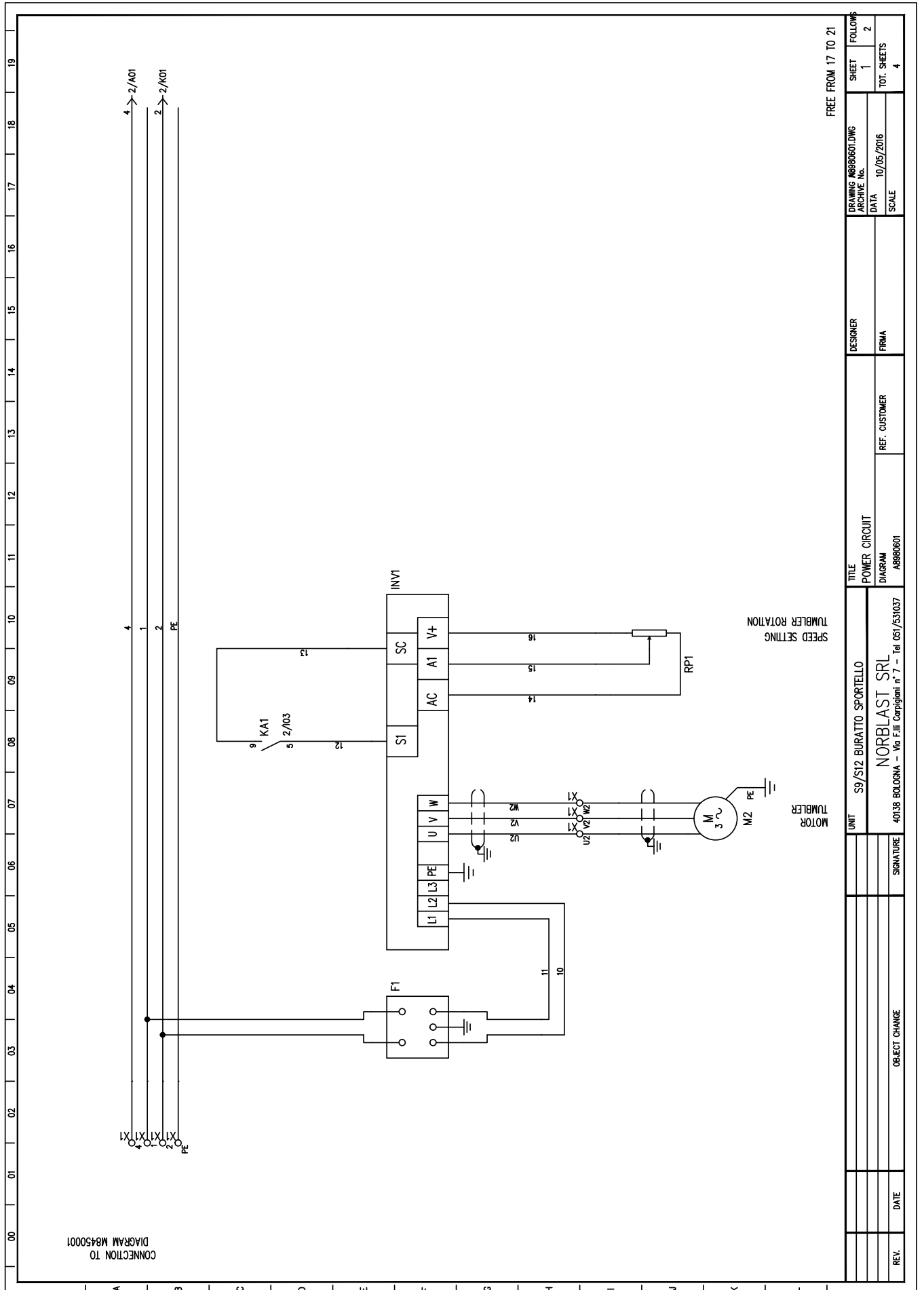


SD9 - SD9B

MANUAL SANDBLASTING - SHOT PEENING MACHINE





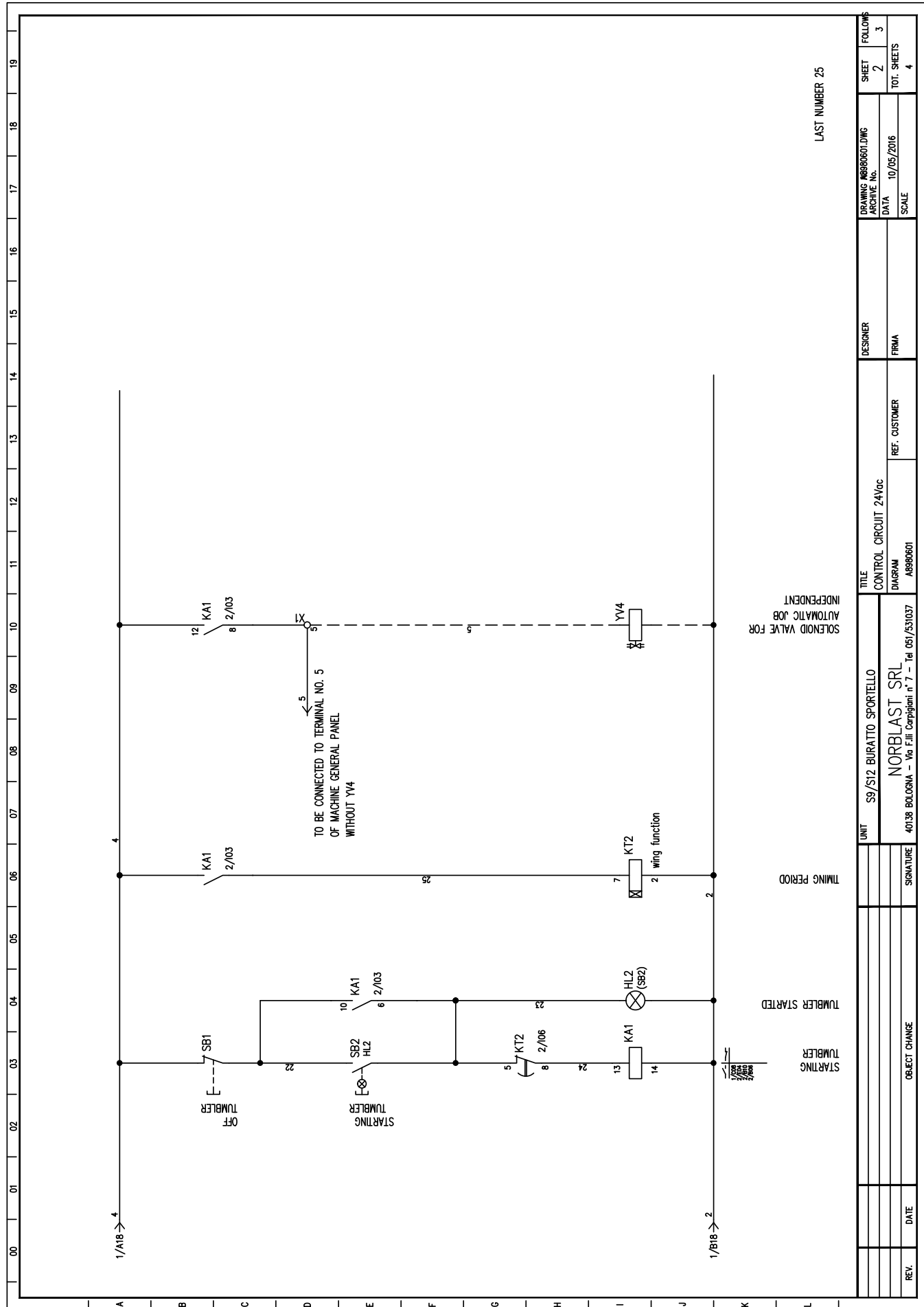


FREE FROM 17 TO 21

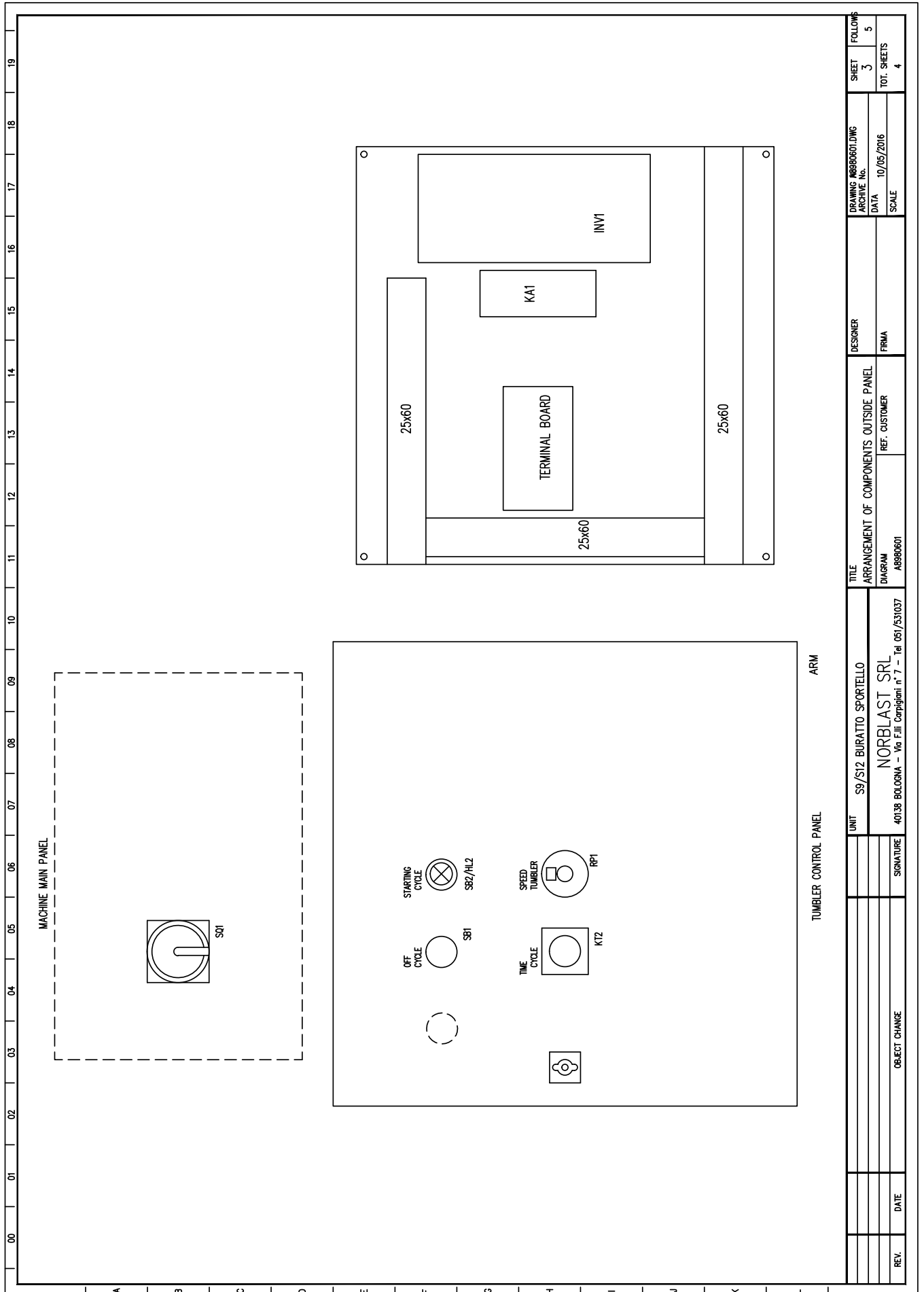
REV.	DATE	OBJECT CHANGE	SIGNATURE	UNIT	TITLE	DESIGNER	REF. CUSTOMER	FRMA	DATA	SCALE	TOT. SHEETS	SHEET	FOLLOWS
					SD9/SD12 BURATTO SPORTELLO				10/05/2016		1	1	2
					NORBLAST SRL						4		
					40138 BOLOGNA - Via F.lli Corbelli n° 7 - Tel 051/531037								

SD9 - SD9B

MANUAL SANDBLASTING - SHOT PEENING MACHINE



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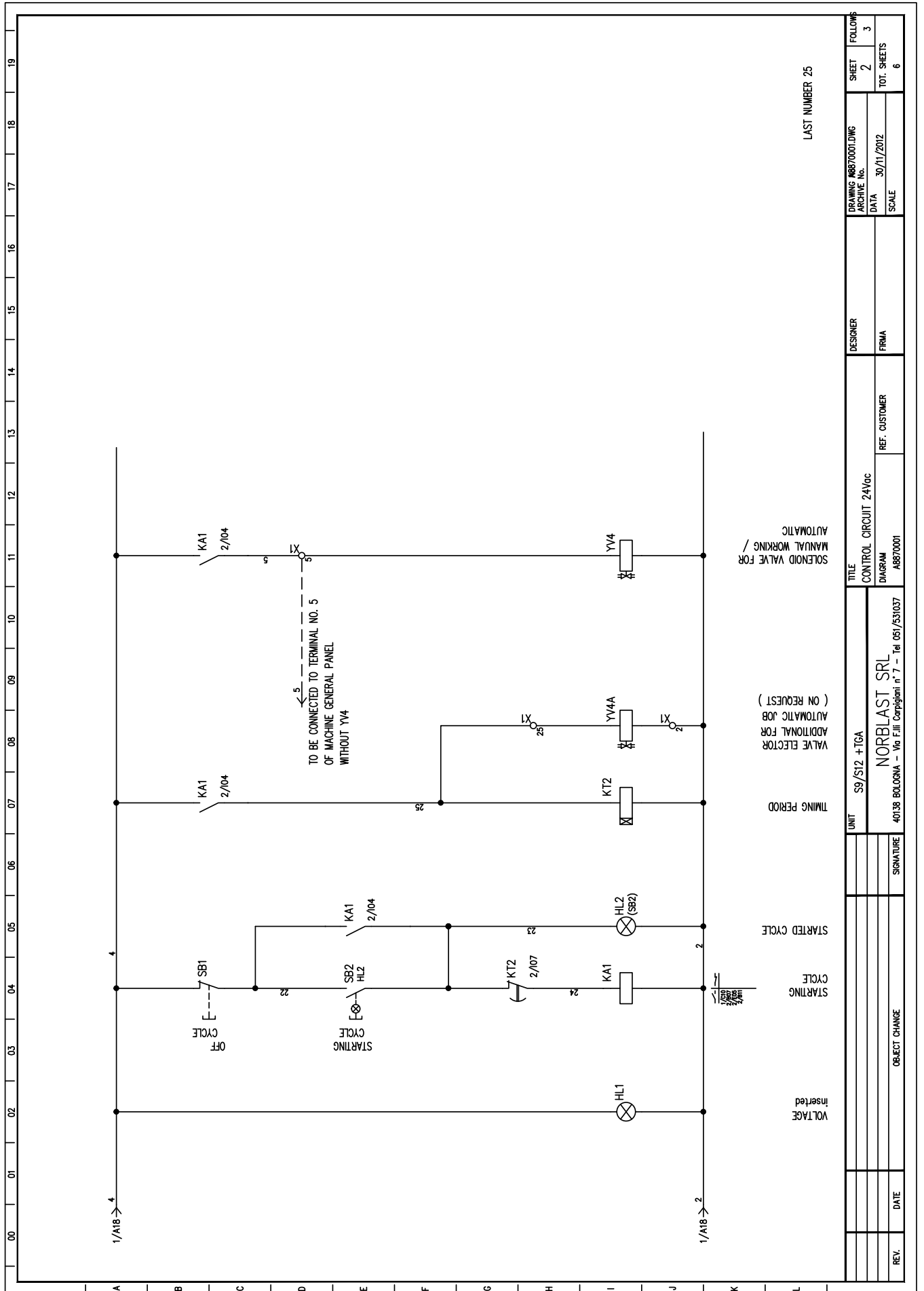


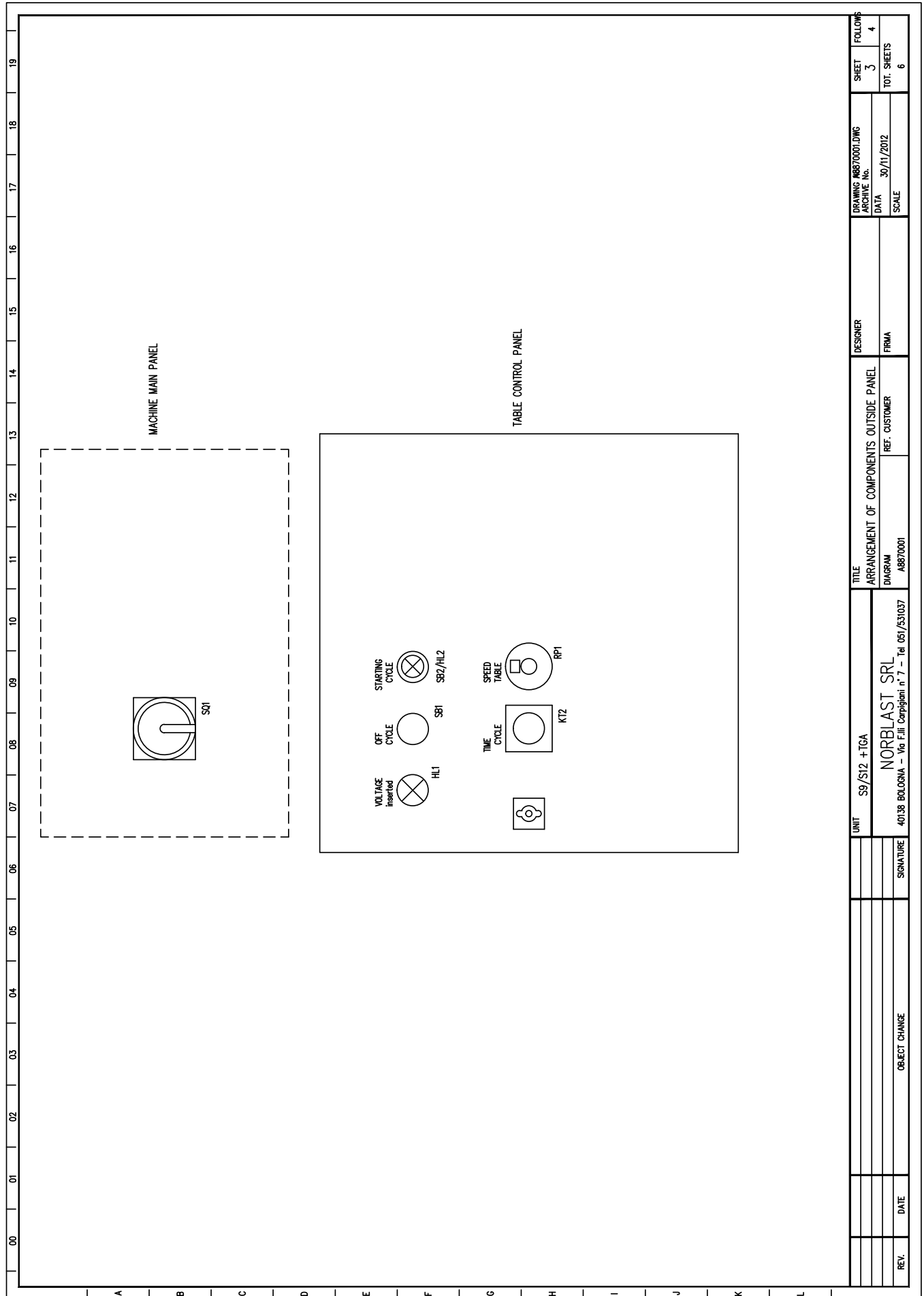
Spare Parts

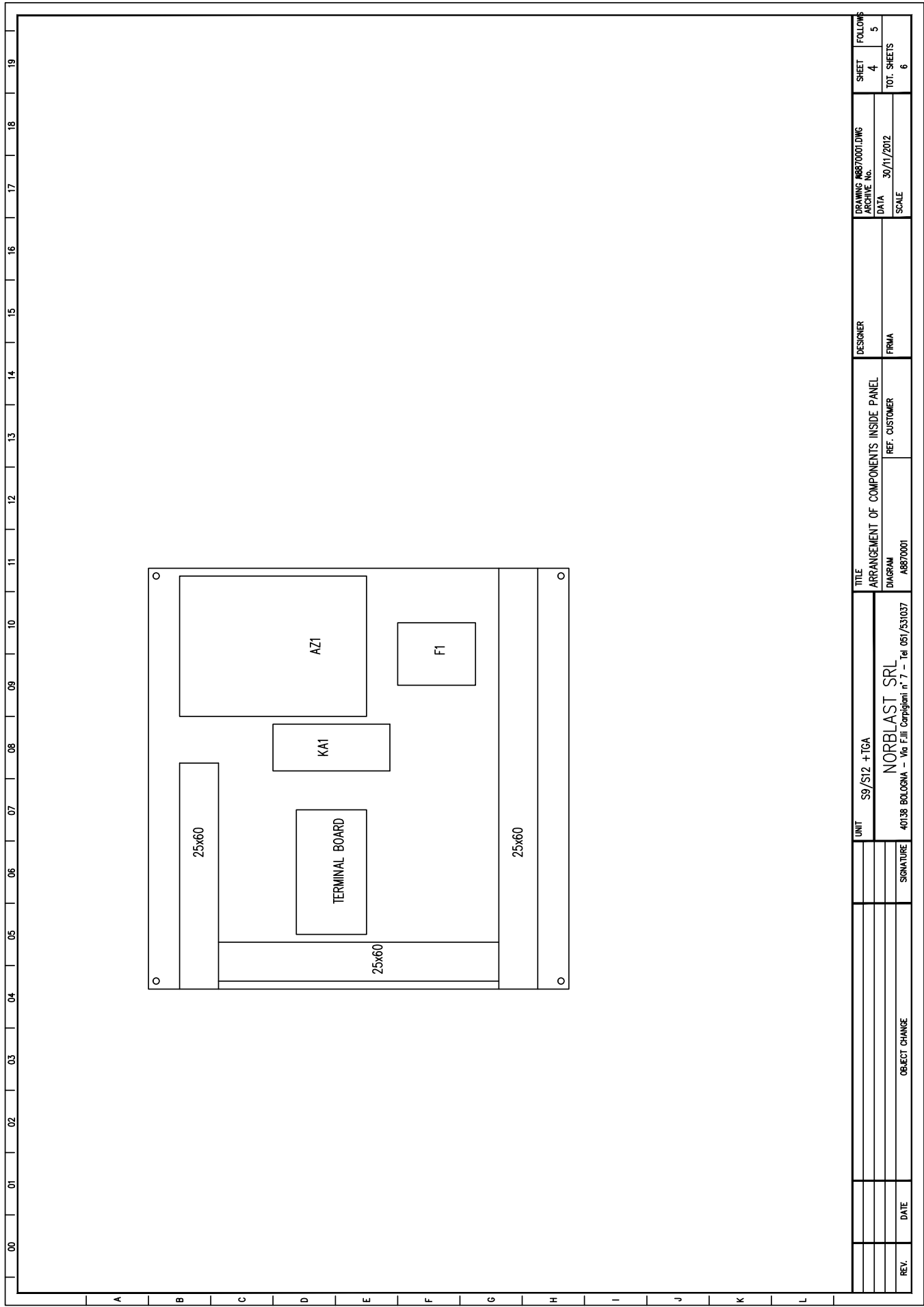
Data: 23/05/2017

Responsabile:

Article description	Ref-mark	Code	Manufacturer	Alternative code	Position	Q.tà	Location
IP55 METAL SHEET BOX 300x300x200	ARM	NSYS3D3320P	SCHNEIDER	E02071	3/E02	1	Quadro
NOISE FILTER FOR INVERTER	F1	A1000-FIV1010-RE	OMRON	E01979	1/E03	1	Quadro
SINGLE-PHASE INVERTER 230V	INV1	CIMR-JC2A0004BAA	OMRON	E02973	1/F05	1	Quadro
4 EXCHANGE GUIDE BASE	KA1	94.04	FINDER SPA	E01159	2/I03	1	Quadro
4-SWITCH SOCKET RELAY 230VAC 7A		55,34,8,230,0054	FINDER SPA	E01665	2/I03	1	Quadro
PLUG-IN TIMER 24/230Vac - 24/48Vdc	KT2	88,12,0,230,0002	FINDER SPA	E01731	2/I06	1	Quadro
BACK SCREWS COUPLING MOVABLE OCTAL BASE		P3G-08	OMRON	E00872	2/I06	1	Quadro
POTENTIOMETER 4.7K D.22	RP1	M22-R4K7	MOELLER ELECTRIC SRL	E01710	1/I10	1	Quadro
BLACK FLUSH PUSH-BUTTON, HEAD ONLY	SB1	ZB4 BA2	SCHNEIDER	E02189	2/B03	1	Quadro
CONTACT 1NC WITH FIXING BASE		ZB4 BZ102	SCHNEIDER	E02202	2/B03	1	Quadro
COMPLETE 1NO+1NC D.22 WHITE LIGHT PUSH-BUTTON	SB2	XB4 BW31B5	SCHNEIDER	E02559	2/E03	1	Quadro







N°	SIGLA	DESCRIZIONE COMPONENTI	MARCA	TIPO	QUANT.	POSIZ.	NOTE
1	HL1	WHITE INDICATOR LIGHT	MOELLER	M22-LW	1		
2		WHITE LED 85-230V	MOELLER	M22-LED230-W	1		
3		ADAPTER FOR LAMP AND BUTTON ASSEMBLING	MOELLER	M22-A	1		
4	HL2	WHITE LED LAMP 85-230V	MOELLER	M22-LED230-W	1		
5		WHITE LED 85-230V	MOELLER	M22-LED230-W	1		
6							
7	KA1	AUXILIARY RELAY 230V 50Hz	FINDER	5534.82300054	1		
8		4 EXCHANGE GUIDE BASE	FINDER	94.04	1		
9							
10	KT2	BACK PANEL TIMER 230V	FINDER	88.12.0.230	1		
11		VOLANT OCTAL BASE	OMRON	P36.08	1		
12							
13	AZ1	DRIVE FOR DC 170V 180W MOTOR	ITE	CH50	1		
14		ANTI-CIRCUIT FILTER	FINMOTOR	FIN 40.005.C FIL 5A	1		
15	RP1	WIRE LINEAR POTENTIOMETER 4.7K	MOELLER	M22-R4K7	1		
16							
17	SB1	BLACK FLUSH PUSH-BUTTON	MOELLER	M22-D-S	1		
18		CONTACT BLOCK 1NC	MOELLER	M22-K01	1		
19		ADAPTER FOR LAMP AND BUTTON ASSEMBLING	MOELLER	M22-A	1		
20	SB2	WHITE LIGHT PUSH-BUTTON	MOELLER	M22-DL-W	1		
21		CONTACT BLOCK 1NO	MOELLER	M22-K10	1		
22		ADAPTER FOR LAMP AND BUTTON ASSEMBLING	MOELLER	M22-A	1		
23							
24		METAL SHEET BOX 300X300X200	ARTEMECANO	.	1		
25							
REV.	DATE	OBJECT CHANGE	UNIT		SIGNATURE		
			SR/S12 +TGA		NORBLAST SRL		
			40138 BOLOGNA - Via F.lli Capriglioni n° 7 - Tel 051/531037		DIAGRAM		
			TITLE		BILL OF MATERIALS		
			DESIGNER		REF. CUSTOMER		
			DRAWING A8870001.DWG		SCALE		
			ARCHIVE No.		30/11/2012		
			SHEET		TOT. SHEETS		
			6		6		



NORBLAST S.R.L.

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