

# A99-INT

## SHOT BLASTING MACHINE

### DS8000

### DUST COLLECTOR



# INSTALLATION, USE AND MAINTENANCE MANUAL

TRANSLATION OF MANUAL IN ORIGINAL LANGUAGE

## ***GENERAL***

### **1. INTRODUCTION**

The unit is made up of two modules:

- ◆ the A99-INT shot-blasting machine
- ◆ the DS8000 dust collector

The shot-blasting machine is used for the abrasion and/or roughcasting of various surfaces, mainly those in concrete, clay, epoxy resin and iron.

Steel shot of varying particle size is used (the size depends on the type of work to be carried out). This is projected at high impact speed towards the surface to be processed.

By exploiting the rebound effect and the dust collector incorporated in the shot-blasting machine, the shot is recovered and recycled, while the abrasive material is sent to a dust collector box.

### **2. NAME AND ADDRESS OF THE AUTHORIZED REPRESENTATIVE**



Made in America Since 1968

## ***NATIONAL FLOORING EQUIPMENT, INC.***

**9250 XYLON AVENUE NORTH  
55445 MINNEAPOLIS MN  
U.S.A.**

tel. 7633155300

[info@nationalequipment.com](mailto:info@nationalequipment.com)

[nationalequipment.com](http://nationalequipment.com)

**A99-INT SHOT-BLASTING MACHINE**  
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- *Dimensions:* mm 2200 x 550 x 1100 h
- *Mass* kg 485
- *Working area* mm 400
- *Shot-blasting motor power* kW 15
- *Shot-blasting motor voltage* 400 V AC 50Hz 3 phase + earth
- *Power absorption during blasting* from 10 amps min to 25 amps max
- *Movement* hydrostatic transmission
- *Movement speed* m/min 0,5 - 26
- *Noise pressure level* dB(A) 88,2 (mean)
- *Noise pressure level* dB(A) 84,8 (operator station)
- *Noise power level* dB(A) 103,6 (mean)
- *Mean quadratic acceleration level at the grip-*
  - fast lateral movement m/sec<sup>2</sup> 3,79
  - slow lateral movement m/sec<sup>2</sup> 2,42

**NB.** The A99-INT shot-blasting machine is connected to the electrical panel fitted on the DS8000 dust collector (from which it receives the power supply current) with a 20 metres electric cable.

**DUST COLLECTOR DS8000**  
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- *Dimension:* mm 1750 x 830 x 1150 h
- *Weight:* kg 450
- *Fan motor power* kW 7,5
- *Fan motor voltage* 400 V AC 50 Hz 3 phase+earth
- *Compressor motor power* kW 1,5
- *Compressor motor voltage* 400 V AC 3 phase+earth
- *Dust collector tank capacity* 133 litres
- *Power supply* 400V AC 63A 3P+T with IEC 309 plug
- *Interchangeable cartridge filters* N.8
- *Noise pressure level* dB(A) 81,8
- *Noise power level* dB(A) 97,5
- *Air pressure (operating)* bar 7
- *Air pressure (maximum)* bar 12

**IMPORTANT**

**Read this manual carefully before carrying out the start-up, operating and maintenance operations, or any other operations on the machine.**

The machine should not be used by unauthorised personnel.

Before using the machine, make sure that there are no safety risk conditions.

Clean the entire working area before starting operations.

Inform the maintenance personnel of any faults discovered during operation.

**TESTING**

The machine is tested in our factory to check the correct operation of all the moving parts and the commands and controls.

**DELIVERY OF THE MACHINE**

All the materials, including the detached parts, is checked before delivery to the carrier.

The machine is protected during transport by a specially designed casing and/or packaging.

When taking delivery of the machine, we recommend paying the maximum care and attention to avoid damage during unpacking.

On receiving the machine check for any damage suffered during transport. The carrier should be informed of any damage found immediately. NFE takes no responsibility for damage of this kind.

**MANUFACTURER'S DECLARATION  
CORRECT USE OF THE MACHINE**

**THIS MACHINE USES ABRASIVE MATERIALS CONSISTING OF SILICOMANGANESE STEEL SHOOTING (MAINLY OF A SPHERICAL TYPE) WITH HARDNESS BETWEEN 40 AND A MAXIMUM OF 45 HRC. HRC,**

**THE MACHINE SHOULD BE USED ONLY FOR ROUGHING, DEOXIDATION, CLEANING, REMOVAL, PICKLING, SHOT-BLASTING AND SIMILAR OPERATIONS ON CONCRETE, CLAY, STONE, EPOXY RESIN AND IRON SURFACES.**

**THESE SURFACES SHOULD BE AS PLANE AS POSSIBLE.**

## **WARNINGS AND GENERAL INSTRUCTIONS**

**1**

**WORK SHOULD NOT  
WHICH ARE NOT**



**BE**



**CARRIED OUT ON SURFACES  
COMPLETELY DRY.**

**AVOID WORKING IN AREAS WITH HIGH LEVELS OF DAMPNES.**

**DO NOT USE THE  
CONTAINING EXPLOSIVE  
SUBSTANCES, AS THE  
SPARKS WHEN STRIKING THE**



**AND/**



**MACHINE IN AREAS  
OR INFLAMMABLE  
ABRASIVE MAY PRODUCE  
WORKING SURFACE.**

**ANY OTHER TYPE OF USE IS INCORRECT AND IS THEREFORE NOT AUTHORISED BY  
NFE.**

### **ABRASIVE**

**The abrasive to be used in the shot-blasting machine should be selected in  
accordance with the type of surface to be treated.**

**NFE has a wide range of pieces and types of abrasives, for the treatment of any type of  
surface.**

**These are supplied in convenient sealed 25 Kg drums.**

*Every machine we produce contains an identity plate attached to a fixed part of the machine. This shows the following information:*

***-A- NAME AND ADDRESS OF THE AUTHORIZED REPRESENTATIVE***

***-B- MACHINE MODEL***

***-C- MACHINE SERIES***

***-D- REGISTRATION NUMBER OF THE MACHINE***

***-E- YEAR OF MANUFACTURE***

***-F- "CE" CONFORMITY SYMBOL***

***N.B. In no circumstances erase or alter the information on the machine.***

***A precise and exact quote of the model number, series and registration number of the machine will enable our technical assistance service to give rapid and precise responses to your requirements, especially when ordering spare parts.***

**3.1 INTRODUCTION**

*This section of the manual contains all the guidelines for the safety of the machines in use.*

*This advice concerns the installation, operation and maintenance, and is repeated in other parts of the manual in line with the subjects covered, together with other specific warnings not included here.*

**3.2 EXPLANATION OF THE SYMBOLS**

*The DANGER (triangular sign) and PROHIBITED (circular sign) signals generally to be found on the NFE machines and instruction and maintenance manuals are shown below.*

*NB. Other symbols, different from those show to the side, will be specified where necessary.*

**GENERAL DANGER**



*This indicates the important points for the personal safety of the operator.*

*If this sign is found on any part of the machine or manual, it means:*

**THE MANUAL MUST BE CONSULTED.**

**WARNING: ELECTRICAL DISCHARGES**



**WARNING:  
PNEUMATIC PRESSURE**



**ATTENZIONE!!  
DO NOT  
OPEN: KEEP YOUR HANDS OUT**



**DO NOT  
REPAIR, RECORD, LUBRICATE  
OR CLEAN WHILE THE  
MACHINE IS IN MOVEMENT**



**FOR USE BY AUTHORISED  
PERSONNEL ONLY**



**SCARPE DI SICUREZZA  
OBBLIGATORIE**

**USE SAFETY GLASSES OR SCREEN**

**DO NOT USE WATER TO PUT OUT  
FIRES**



**USE**

**HEADPHONES AND MASK**

**FOLLOW THE LOADING AND  
UNLOADING INSTRUCTIONS**



**WARNING:  
POSSIBLE DISCHARGE OF ABRASIVE  
MATERIALS**



**WARNING: REMAIN AT A SAFE  
DISTANCE**



**WEAR SAFETY GLOVES AND SHOES**



**LIMITE DI SICUREZZA**



**MACCHINE IN MOVIMENTO**



**3.3 GENERAL SAFETY REGULATIONS**

*Many accidents that occur are caused by failure to observe the most basic safety regulations and exercise proper care.*

*The basic principle of these regulations is:*

**DISCONNECT THE MACHINE FROM THE ELECTRIC POWER SUPPLY BEFORE MAKING ANY ADJUSTMENTS, LUBRICATION, MAINTENANCE AND CLEANING.**

*Remember that the safety devices fitted to the machine are there to prevent accidents.*

*The owner of the machine and all its operators, and the maintenance and repair personnel have the main responsibility for the operating process.*

*The owner of the machine should make sure that:*

- ⇒ *his personnel are trained for the task assigned to them;*
- ⇒ *the safety regulations are always observed*
- ⇒ *the warning signs laid down by the specific safety regulations for the various working areas are installed.*

*With this aim in mind, carefully read the safety regulations set out below and follow them to the letter.*

*The machine should be used by qualified and suitably skilled, reliable personnel.*

- ◇ *The machine should not be used, maintained or repaired by persons who have taken certain medicines or alcoholic drinks.*
- ◇ *The machine is designed to be operated and controlled by a single person.*
- ◇ *All others should remain at a suitable safety distance from the working area.*
- ◇ *Before starting the machine, the operator should ensure that all the safety devices are in efficient working order and check the machine for visible defects.*
- ◇ *Never use any part of the system at a pressure higher than that laid down in the factory specifications.*
- ◇ *In the event of faults, especially if these have an effect on safety, the operator should inform his superior. If the faults have an effect on the safe use of the machine, it should be stopped.*
- ◇ *Before repairing or carrying out any other operations on the machine, duly inform any other operators involved.*
- ◇ *The machine should be used only for the purpose it was designed for, as described in the appropriate section.*

- ◇ **Any operation or technical alteration that affects the operation of the machine or the safety conditions should be carried out only by NFE personnel or with the written approval of NFE.**
  - ⇒ **The area adjacent to the machine is free of personnel.**
  - ⇒ **All the machine parts are fitted correctly and blocked in position.**
- ◇ **NFE will accept no responsibility for unauthorised modifications and damage caused by same.**
  - ⇒ **All other objects, such as cloths, tools and equipment, are removed from the machine and working area.**
- Unauthorised persons should be prohibited from activating or handling the parts and devices for the running of the machine.**
  - ⇒ **Do not use equipment, tools or cleaning items on the machine while it is operating.**
- ◇ **Do not place any manual command or object over the protection and safety devices.**
  - ⇒ **Never use parts of the system at a higher pressure than that laid down in the design specifications (see the technical specifications of the machine).**
- ◇ **Before starting the machine, the operator should ensure that the area surrounding it is free of personnel.**
  - ⇒ **Ensure that the working area is suitably lit.**
- If a recording, maintenance or repair operation requires the elimination or removal of the safety devices, these operations should be carried out only by specifically qualified personnel, who should operate in such a way as to prevent damage to persons and property.**
  - ⇒ **Use the machine within the limits of the technical specification values laid down.**
  - ⇒ **Do not use the machine for purposes other than those for which it has been designed.**
- ◇ **If the machine has to operate in the conditions referred to above, the electrical power supply cable should be connected only for the time strictly necessary for the completion of the work.**

**3-4 SAFETY REGULATIONS  
PRIOR TO START-UP AND DURING  
THE OPERATION OF THE MACHINE**

**Ensure that:**

- ⇒ ***Do not bend, crush or stretch the electrical supply cable, as this could cut off the leads.***
- ⇒ ***Do not insert any part of the body in the machine while it is in operation.***
- ⇒ ***Remain at a safe distance from the moving parts.***
- ⇒ ***When the machine is operating, it should be kept constantly under observation and control.***
- ⇒ ***Do not use the machine if any of its parts (such as warning lamps or controls) are defective.***
- ⇒ ***When the machine is running, pay attention to any unusual or sudden noises.***
- ⇒ ***All the maintenance operations should take place in accordance with the accident prevention regulations in force and the safety conditions contained in this manual, in the section entitled "SAFETY CONDITIONS DURING MAINTENANCE".***

**4.1 INSTRUCTIONS FOR THE RAISING AND TRANSPORT OF THE MACHINE**



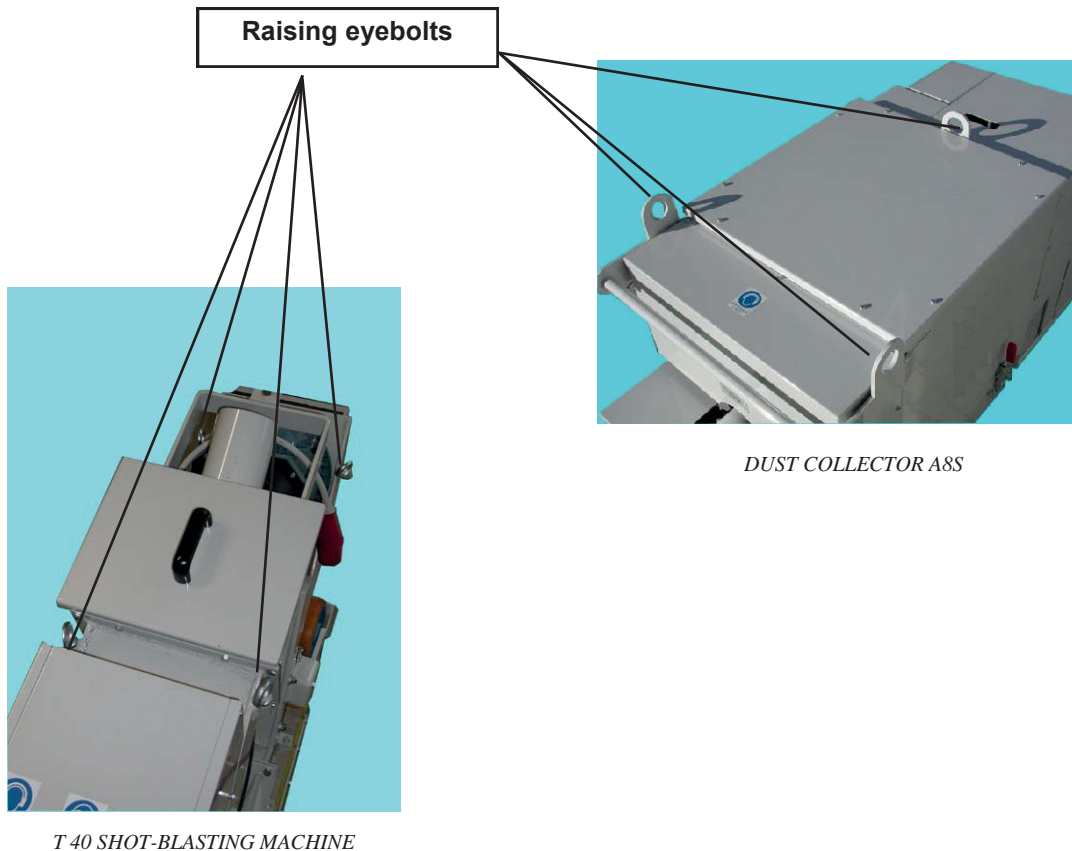
*Ground transport of the machine is aided by the industrial wheels applied to the frame.*

*Ground movement can therefore take place with the manual transport of the shot blasting machine and dust collector.*

*Raising (for loading and unloading, for example) can take place by means of a fork-lift truck or winch, or other lifting equipment.*

*All our machines are fitted with raising eyebolts (see photo below).*

*For the raising operations, make use of these, as well as cables and/or flat plates of suitable load-bearing capacity, and carefully positioned.*



**4.2 PREPARATION FOR RAISING**

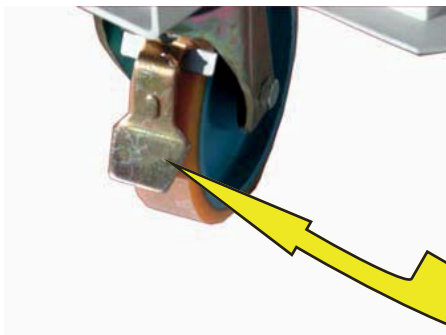


**N.B. THE RAISING AND INSTALLATION PERSONNEL SHOULD CARRY OUT THESE OPERATIONS WITH THE MAXIMUM CARE AND ATTENTION TO AVOID DAMAGE TO PERSONS AND PROPERTY.**

**To raise the shot-blasting machine, make sure that:**

- **the steering command rod is temporarily fixed to an eyebolt, to avoid dangerous lateral slip.**

- **the clutch command lever of the movement motor is in the "RUN" position (see photo).**



**When transporting the machine, make sure that:  
the brake on the front wheel is applied.**

**5.1 SAFETY CONDITIONS FOR CONNECTION TO THE ELECTRICITY SUPPLY**



**WARNING !!!**

**ALL THE OPERATIONS INVOLVING CONNECTION TO AN ELECTRIC POWER SOURCE SHOULD BE CARRIED OUT BY QUALIFIED AND AUTHORISED PERSONNEL, AND IN STRICT ADHERENCE TO THE REGULATIONS IN FORCE.**

**ALL THE ELECTRICAL PANELS SHOULD BE EARTHED (GND - PE - Y) WITH A CABLE OF A SUITABLE SECTION, TO PROTECT THE OPERATOR FROM ACCIDENTAL CONTACT WITH METAL PARTS WITH LIVE LEADS OR PARTS.**

**MAKE SURE THAT THE VALUES SHOWN IN THE TECHNICAL SPECIFICATIONS CORRESPOND TO THE POWER SUPPLY VOLTAGE IN USE.**



**Also consult the**

**WARNING !!!**



**section containing the wiring**

**diagrams of the machines, which specify the characteristics necessary for the correct power supply.**



**NOT WORK ON ELECTRICAL EQUIPMENT WHEN LIVE OR UNDER PNEUMATIC PRESSURE.**

**WARNING DO**



**PERMISSION TO DO SO SHOULD BE OBTAINED FROM SUPERIORS.**

**START WORK ONLY AFTER THE ENVIRONMENTAL AND PERSONAL SAFETY MEASURES HAVE BEEN ACTIVATED.**

**THE FOLLOWING ACCIDENT PREVENTION MEASURES ARE ESSENTIAL:**



**SCARPE DI SICUREZZA OBBLIGATORIE**

**5.2 SAFETY CONDITIONS FOR THE DUST COLLECTOR PNEUMATIC SYSTEM**



**ATTENZIONE!!**

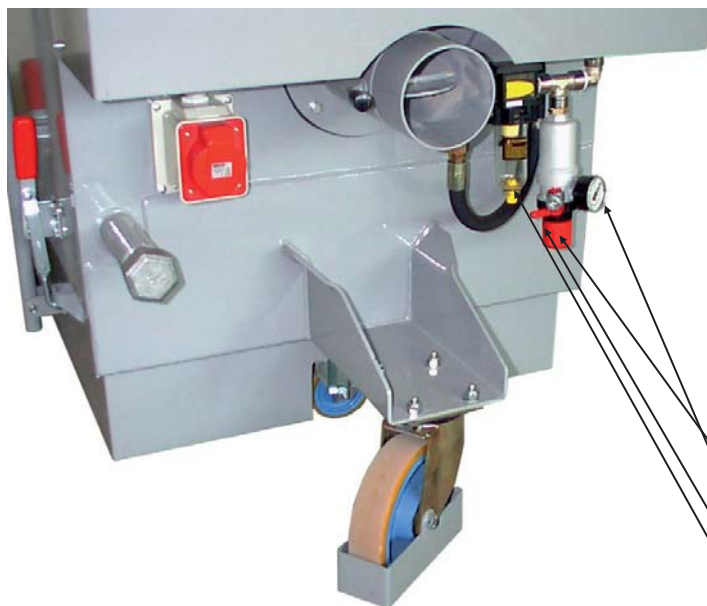
The dust collector module is fitted with a 7 ATA independent compressed air system for the counterflow washing of the dust separation filters.

**ANY OPERATIONS ON THIS SYSTEM SHOULD BE CARRIED OUT BY QUALIFIED AND AUTHORISED PERSONNEL, IN ACCORDANCE WITH THE REGULATIONS IN FORCE.**

**BEFORE CARRYING OUT ANY OPERATION, DISCONNECT THE DUST COLLECTOR MODULE FROM THE ELECTRIC POWER SUPPLY.**



**IT IS IN ANY CASE ADVISABLE TO DEPRESSURISE THE SYSTEM FROM THE AIR DISCHARGE TAP IN THE PRESSURE ADJUSTER GROUP.**



- ⇒ Pressure adjustment body
- ⇒ Pressure gauge
- ⇒ Discharge tap
- ⇒ Condensate separator

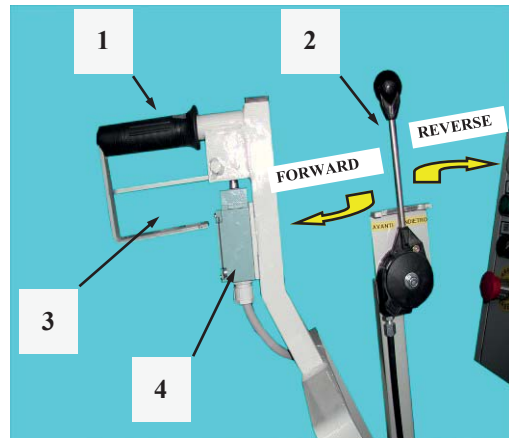
# WORK STATION

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While the shot-blasting machine is working, the operator should move it by means of the steering bar (1).

The following operator commands are available:

- \* micro-activation (4) lever (3) for the machine movement command.
- \* speed control and direction lever (2) (FORWARD) (NEUTRAL) (REVERSE).
- \* movement motor clutch command lever (RUN), (NEUTRAL).



Within the operator's reach is the shot flow open/close valve, as well as all the commands of the main electric panel.



The command layout is structured in such a way as to enable the operator to have a clear view of the working area, and also makes it possible for him to take prompt action on the safety commands in the event of necessity or emergency.

Shot valve lever



THE MACHINE IS DESIGNED TO BE CONTROLLED BY A SINGLE OPERATOR.

OTHER OPERATORS SHOULD REMAIN AT A SAFE DISTANCE.





## 7.1 INTRODUCTION

The first start-up of the two operating units, shot-blasting machine and dust collector, should be carried out by trained, qualified personnel who have taken part in the NFE training course.

- a) Safety footwear
- b) Safety glasses or screen
- c) Anti-noise earphones
- d) Anti-dust mask
- e) Safety gloves

## 7.2 SET-UP AND CHECKS

- ◆ **MAKE SURE THAT THE SURFACE IS COMPLETELY DRY**



Remove all obstacles from the floor:

bolts, nails, stones, metal wires, spheres, etc. should be removed as these could cause serious damage if they are sucked into the machine.

This operation can be aided by using our “Rotating Magnetic Brush” equipment.



- ◆ **ENSURE THAT THE PROTECTION SYSTEMS OF THE TWO UNITS ARE IN EFFICIENT WORKING ORDER.**

- ◆ **ENSURE THAT THE FLOOR IS COMPLETELY PLANE.**



- ◆ **USE THE FOLLOWING SAFETY DEVICES :**

**7.3 PREPARING THE MACHINES****DUST COLLECTOR**

With reference to the electrical panel shown in the following page:

- ◆ Connect the power cord to the Voltage Input
- ◆ Apply power by setting the main switch (3) to 1
- ◆ Turn the direction inverter (2) to 1

**CHECK THAT THE MOTOR IS TURNING IN THE CORRECT DIRECTION IN ACCORDANCE WITH THE ARROW**



- ◆ If the motor is turning in the wrong direction:
  - Cut off the power by turning the main switch (3) to position (0)
  - Adjust the direction inverter (2) to 2
  - Set the main switch (3) to position (1)
  - Check the motor rotation direction again
  - If this is correct, set the main switch temporarily to position 0.
  - **DISCONNECT THE DUST COLLECTOR FROM THE POWER SUPPLY.**

**IMPORTANT**

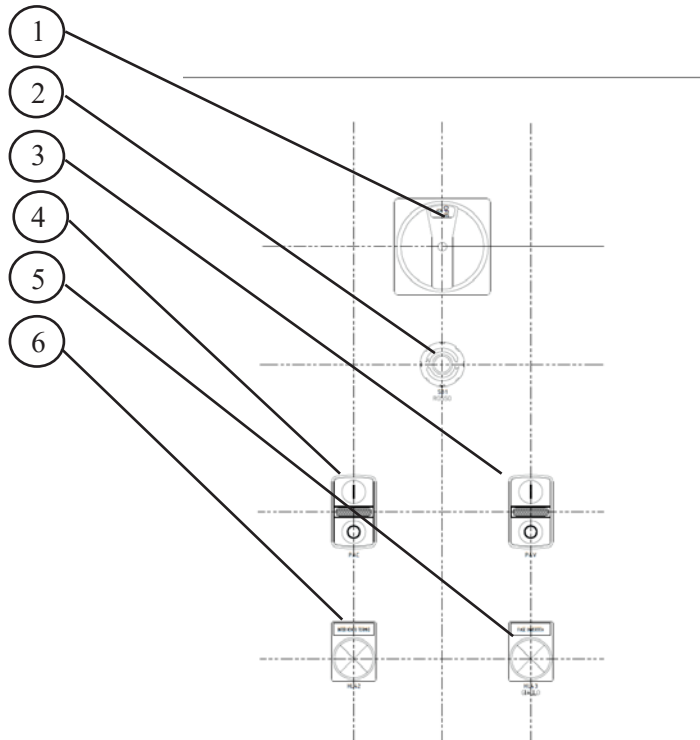
The dust collector command panel contains the main switches and thermal protection systems laid down in the design.

The device also contains the electronic board (Sequencer) that drives the pressurised air jet towards the holding valves for the counterstream washing of the dust separation filters.

**DO NOT ALTER THE CALIBRATION VALUES OR OPERATING PARAMETERS OF THE PARTS CONTAINED IN THE COMMAND PANEL.**

## SET-UP INSTRUCTIONS

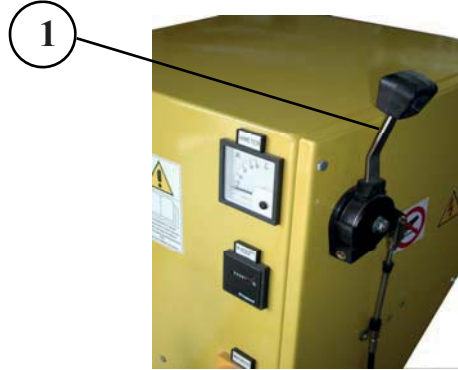
7



POS	DUST COLLECTOR ELECTRICAL
1	MAIN SWITCH AND INVERTER
2	EMERGENCY STOP BUTTON
3	DUST COLLECTOR SWITCH
4	AIR COMPRESSOR CLEANING SWITCH
5	PHASE INVERTED (ORANGE)
6	THERMAL WARNING (RED)

## SHOT-BLASTING MACHINE

- ◆ Ensure that the abrasive start-up butterfly valve (1) is in the closed position (lever at the base).
- ◆ Ensure that in this position there are no leaks of abrasive from the valve.



Make sure that the wire gauze (2) is present within the abrasive tank.

- ◆ Load the tank with a suitable abrasive up to the level of the protective wire gauze.
- ◆ Close the tank, making sure that the screen at the base of the cover (3) has its edges pointed in the direction of the operator (see photo).



**WARNING !!!! POSSIBLE DISCHARGE OF METAL FILINGS**

**NEVER OPEN THE ABRASIVE COVER WHEN THE MACHINE IS RUNNING**

