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

NATIONAL FLOORING EQUIPMENT,INC.

9250 XYLON AVENUE NORTH
55445 MINNEAPOLIS MN
U.S.A.
tel. 7633155300
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A99-INT SHOT-BLASTING MACHINE

• 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/sec2	3,79
- slow lateral movement	m/sec2	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

• 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.

WORK SHOULD NOT  **BE**  **CARRIED OUT ON SURFACES WHICH ARE NOT COMPLETELY DRY.**

AVOID WORKING IN AREAS WITH HIGH LEVELS OF DAMPNESS.

DO NOT USE THE MACHINE IN AREAS CONTAINING EXPLOSIVE OR INFLAMMABLE SUBSTANCES, AS THE ABRASIVE MAY PRODUCE SPARKS WHEN STRIKING THE WORKING SURFACE.

AND/

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.

IDENTIFICATION DATA

2

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 (triagular 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

DO NOT USE WATER TO PUT OUT FIRES

USE SAFETY GLASSES OR SCREEN

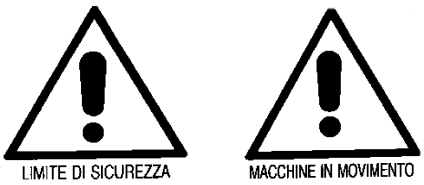
FOLLOW THE LOADING AND UNLOADING INSTRUCTIONS

USE HEADPHONES AND MASK

WARNING: POSSIBLE DISCHARGE OF ABRASIVE MATERIALS

WARNING: REMAIN AT A SAFE DISTANCE

WEAR SAFETY GLOVES AND SHOES



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.*

◊ *NFE will accept no responsibility for unauthorised modifications and damage caused by same.*

Unauthorised persons should be prohibited from activating or handling the parts and devices for the running of the machine.

◊ *Do not place any manual command or object over the protection and safety devices.*

◊ *Before starting the machine, the operator should ensure that the area surrounding it is free of personnel.*

If a recording, maintenance of 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.

◊ *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.*

⇒ *The area adjacent to the machine is free of personnel.*

⇒ *All the machine parts are fitted correctly and blocked in position.*

⇒ *All other objects, such as cloths, tools and equipment, are removed from the machine and working area.*

⇒ *Do not use equipment, tools or cleaning items on the machine while it is operating.*

⇒ *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).*

⇒ *Ensure that the working area is suitably lit.*

⇒ *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.*

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

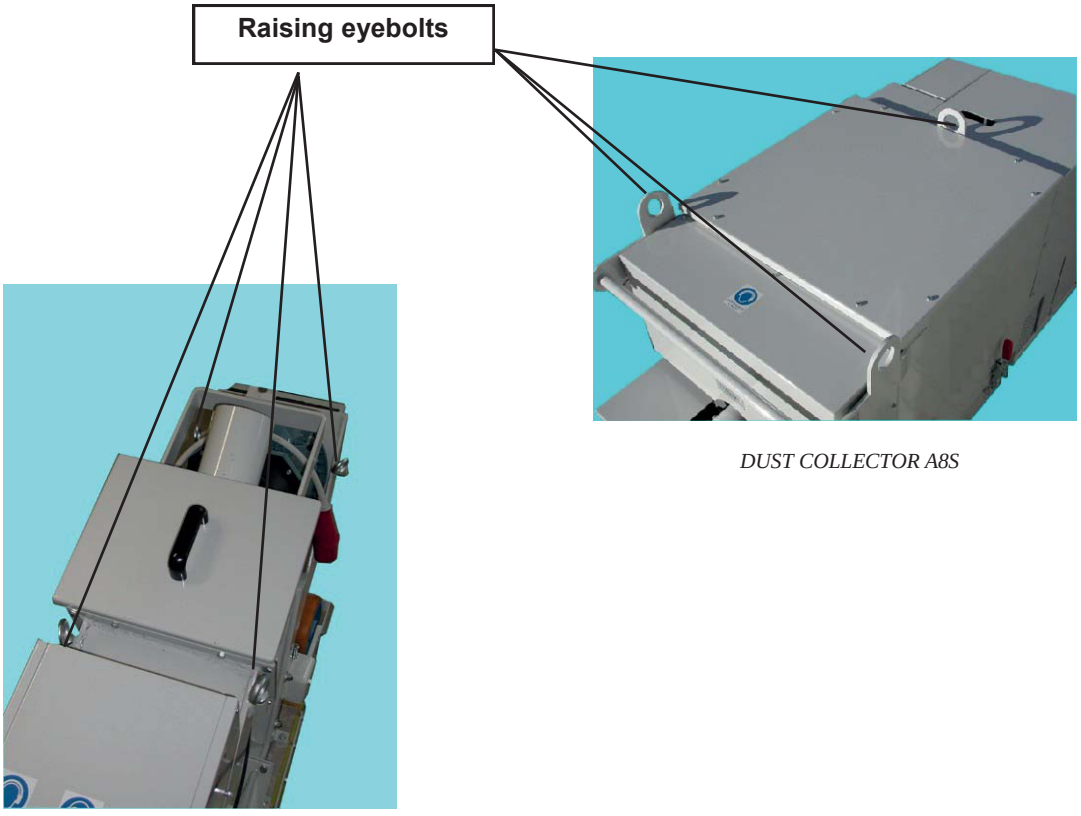
Ground transport of the machine is aided by the industrial wheels applied to the frame.

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.



DUST COLLECTOR A8S

T 40 SHOT-BLASTING MACHINE

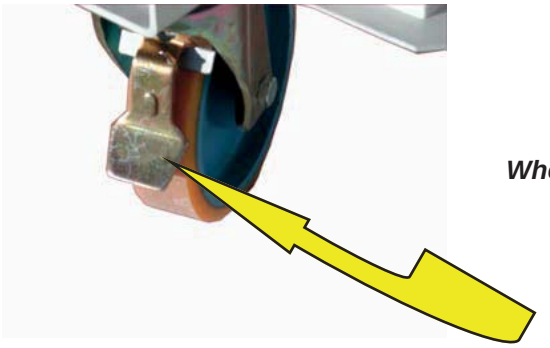
4.2 PREPARATION FOR RAISING

N.B. THE RAISING AND INSTALLATIOIN 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 AUTHORISEDC 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.

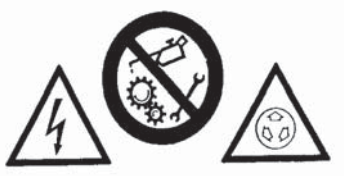
MAKE SURE THAT THE VALUES SHOWN IN THE TECHNICAL SPECIFICATIONS CORRESPOND TO THE POWER SUPPLY VOLTAGE IN USE.

Also consult the

WARNING !!!

section containing the wiring diagrams of the machines, which specify the characteristics necessary for the correct power supply.

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



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:

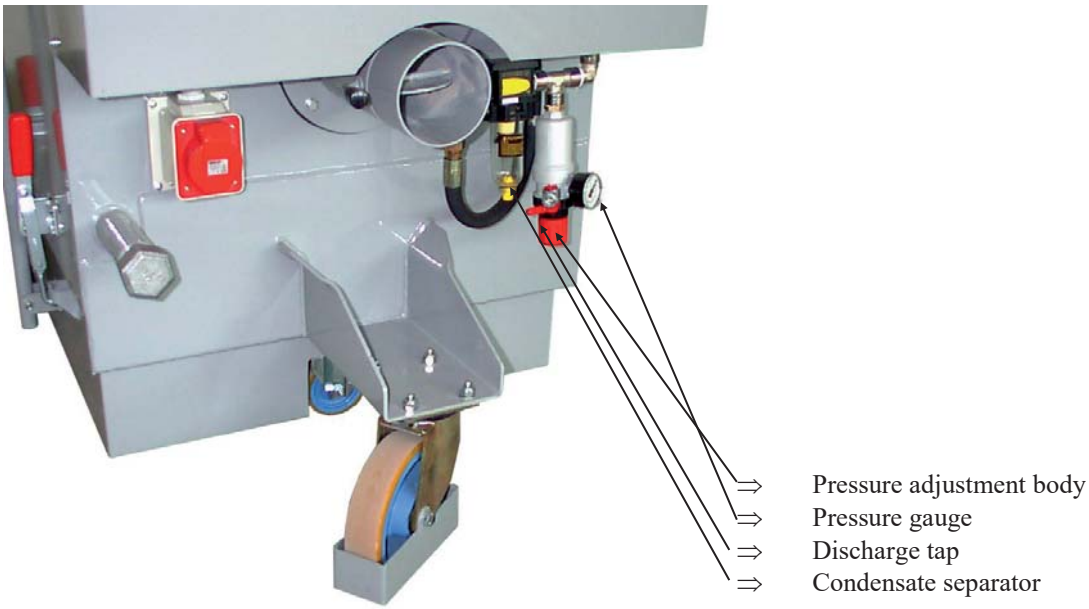
5.2 SAFETY CONDITIONS FOR THE DUST COLLECTOR PNEUMATIC SYSTEM

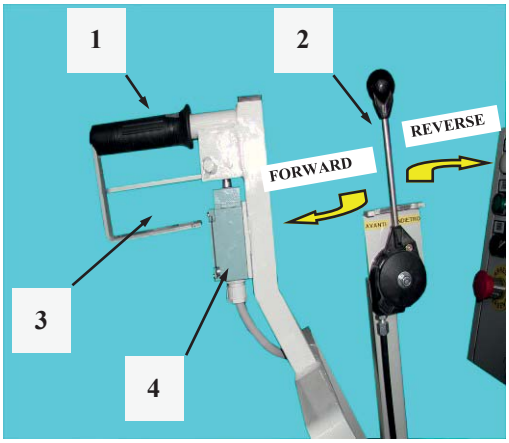
The dust collector module is fitted with a 7 ATA independent compressed air system for the counterflow washing of the dust separation filters.

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 TH EPRESSURE ADJUSTER GROUP.





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.

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 :**

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

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:**

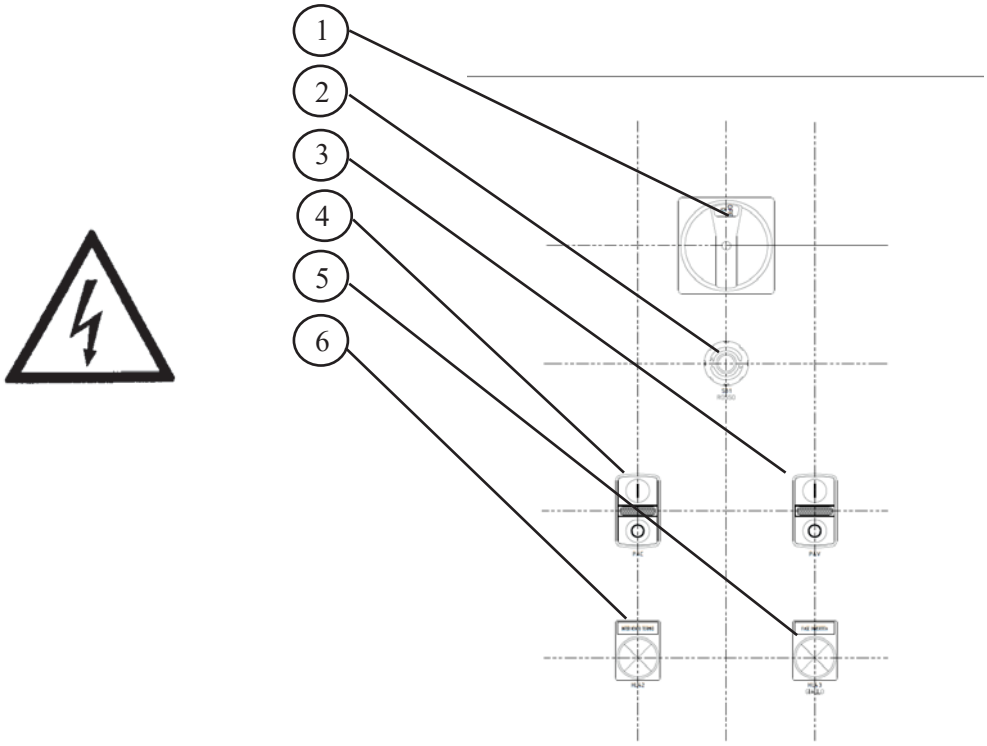
- **Cut off the power by turning the main switch (3) to position (0)**
- **Adjust the direction inverter (2) to 2**
- **Set the main switch (3) to position (1)**
- **Check the motor rotation direction again**
- **If this is correct, set the main switch temporarily to position 0.**
- **DISCONNECT THE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

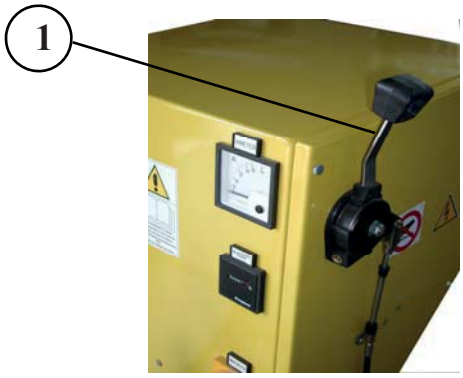


POS	DUST COLLECTOR ELECTRICAL
1	MAIN SWITCH AND INVERTER
2	EMERGENCY STOP BUTTON
3	DUST COLLECTOR SWITCH
4	AIR COMPRESSOR CLEANING SWITCH
5	PHASE INVERTED (ORANGE)
6	THERMAL WARNING (RED)

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.**

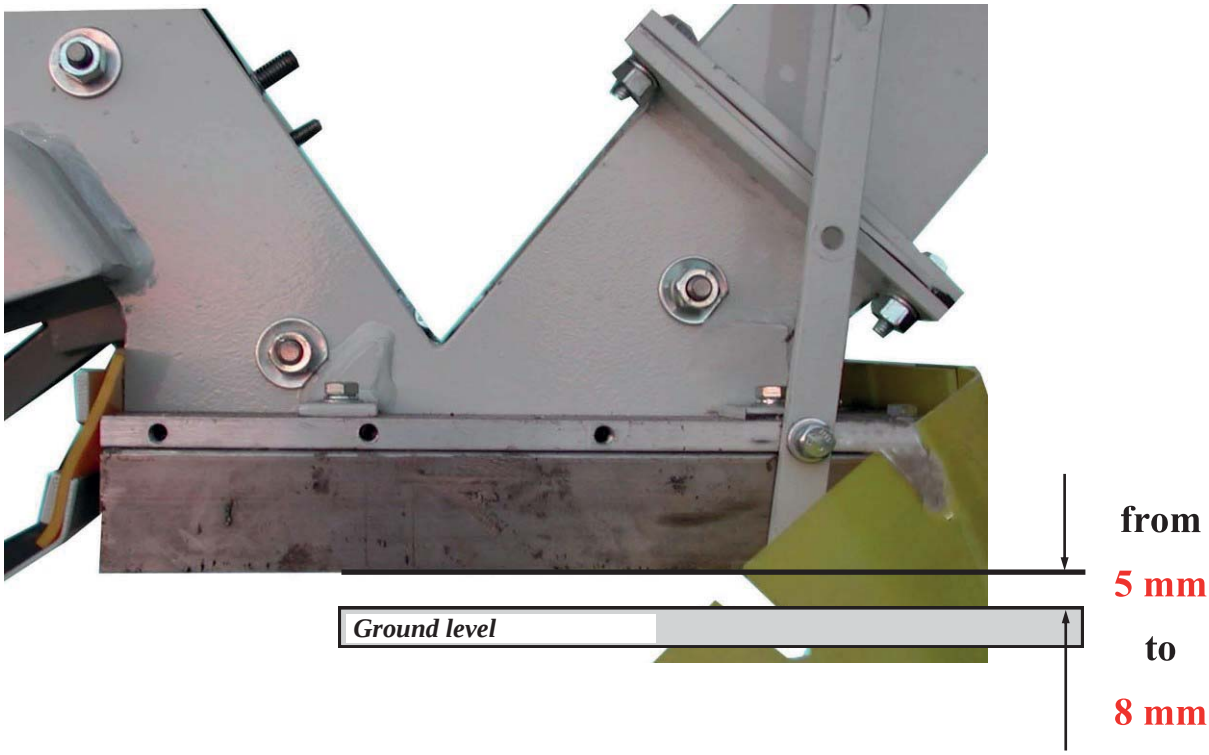
  Make sure that the wire gauze (2) is present within the abrasive tank.
- **Load the tank with a suitable abrasive up to the level of the protective wire gauze.**
- **Close the tank, making sure that the screen at the base of the cover (3) has its edges pointed in the direction of the operator (see photo).**



WARNING !!!! POSSIBLE DISCHARGE OF METAL FILINGS

NEVER OPEN THE ABRASIVE COVER WHEN THE MACHINE IS RUNNING

- Check the distance from the ground (min 5 mm, max 8 mm) of the lower pellet stop brake (see photo).



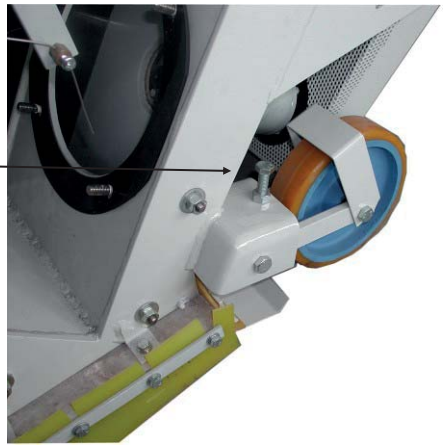
WARNING: Quantities with a form other than the standard not only reduce the shot-blasting depression value, but can also cause uncontrollable leakages of abrasive material.

♦ **If necessary, adjust the ground distance of the pellet braking plate by setting the adjusting screws above the front and the two rear wheels (see photo).**

⇒ Front adjustment screw

⇒ Grease regularly

⇒ Rear adjustment screw



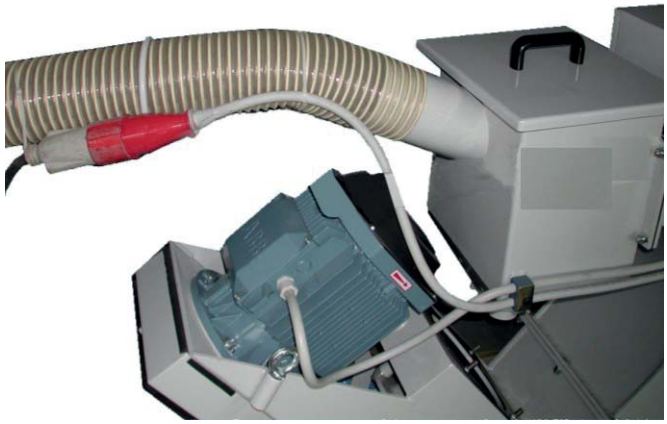
- **Ensure that the clutch command lever of the drive motor is in the "RUN" position.**

- **Make the electrical connections between the shot-blasting machine and the dust collector using the cable supplied.**
- **Use the socket (2) of the dust collector referred to in this section.**

WARNING

The electric power cables should not be cut or scraped, crushed, deformed or cracked.

♦ **Connect the dust collector and shot-blasting machine using the spiral tubing supplied.**



IMPORTANT

⇒ **THE ELECTRICAL CABLE AND SPIRAL TUBING SHOULD BE SUPPORTED BY THE FORK SUPPLIED (see photo).**

NB.

We supply two lengths of tubing of 10 metres each, giving a total length of 20 metres.

The user is free to decide whether or not to connect two tubes, in accordance with the conditions and types of surface to be treated.

The dust collector is mounted on three industrial wheels:

- **two fixed wheels**
- **one hinged wheel with a mechanical brake .**

WARNING

After every manual movement, the dust collector should be blocked in an operating condition by means of the mechanical brake.

AFTER COMPLETING THE OPERATIONS DESCRIBED ABOVE, PROCEED AS FOLLOWS:

- **Connect the dust collector to the electrical power supply using a suitable cable.**
- **Make a connection with the dust collector input socket (1) (see section 7, page 18).**
- **Before of any other operation select the right voltage**
- **Power the dust collector from the main switch (16).**
- **To start, press pushbutton (3).**
- **Ensure that the dust collector motor is turning in the correct direction.**
- **Adjust the inverter (15) if necessary.**
- **Press pushbutton (6) to start the air compressor.**
- **Set selector (9) to position (1) to power the electrovalves.**
- **Power the socket (2) of the shot-blasting machine (see section 7, page 18) by setting selector (12) to position (1).**

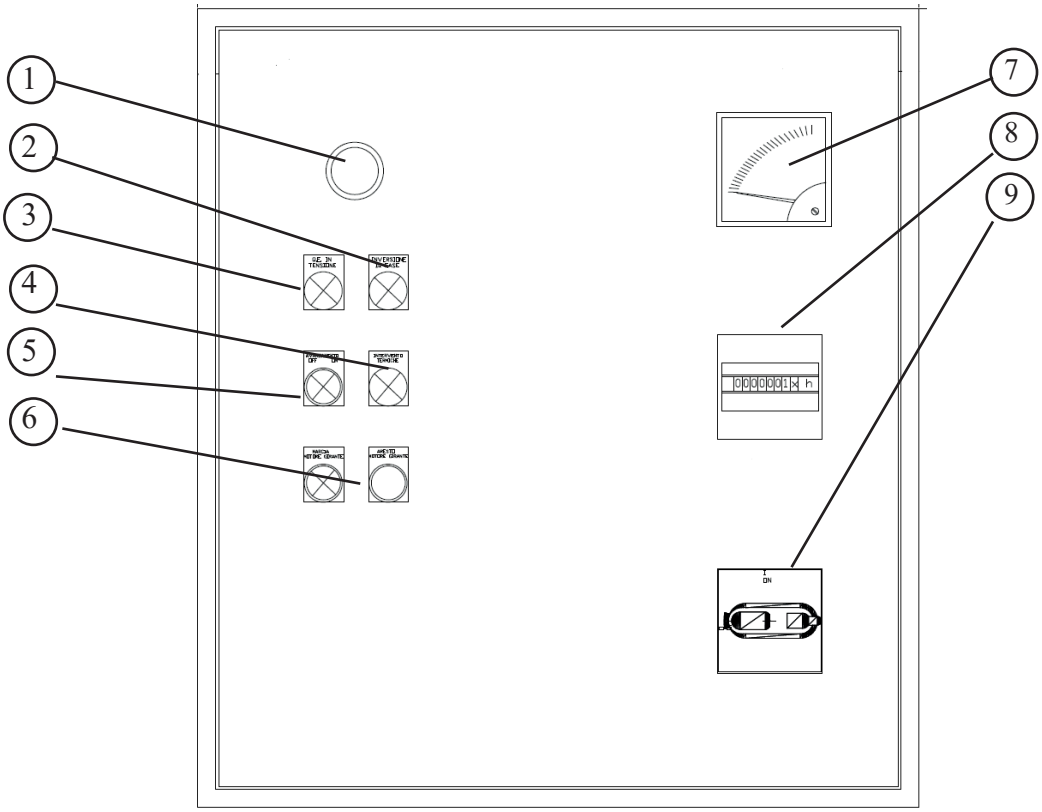
WITH REFERENCE TO THE PHOTOGRAPH ON THE FOLLOWING PAGE :

- **Start the shot-blasting machine by setting the main switch (8) to (1) and pressing pushbutton (2).**
- **Check the correct rotation direction of the shot-blasting machine turbine motor.**

WARNING

IF THE SHOT-BLASTING MACHINE IS USED WITH THE MOTOR TURBINE TURNING IN THE OPPOSITE DIRECTION TO THAT DESIGNED IN THE FACTORY, THIS WILL NOT ONLY MAKE IT IMPOSSIBLE TO OBTAIN THE REQUIRED SURFACE SHOT-BLASTING, BUT WILL ALSO QUICKLY LEAD TO THE SERIOUS DAMAGE OF THE ENTIRE DISTRIBUTION TUNNEL OF THE ABRASIVE MATERIAL AND THE TURBINE

TO AVOID PROBLEMS OF THIS KIND, THE SHOT-BLASTING MACHINE IS FITTED WITH A SAFETY DEVICE WHICH STOPS THE MOTOR FLYWHEEL MOVEMENT AND SHOWS ITS STATUS BY MEANS OF THE “PHASE INVERSION ALARM WARNING LAMP”.



POS	SHOT-BLASTING MACHINE ELECTRICAL
1	EMERGENCY STOP BUTTON
2	PHASE INVERSION ALARM WARNING LAMP
3	POWER ON WARNING LAMP
4	OVERHEATING WARNING LIGHT
5	DRIVE MOTOR POWER SUPPLY SWITCH
6	BLASTING MOTOR ON AND OFF BUTTONS
7	AMMETER
8	CLOCK
9	MAIN POWER SWITCH

ATTENZIONE

DO NOT SUPPLY THE TURBINE WITH ABRASIVE WHEN THE MACHINE IS STOPPED.

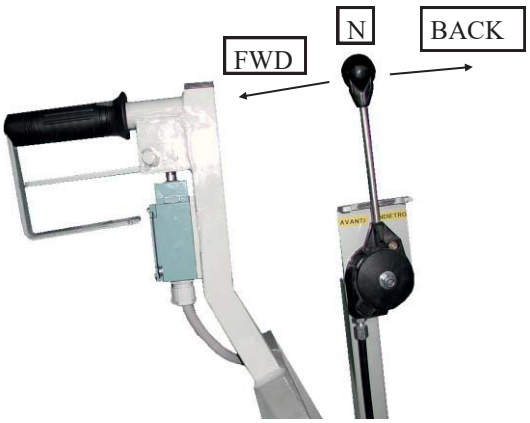
THIS COULD CREATE EXCESSIVE DUST COLLECTIONS ON THE WORKING SURFACE.

- **Set the clutch command lever (5) of the shot-blaster movement motor to "RUN".**
- **Set the speed and running direction control lever (2) to the "OPERATE" position by moving it slightly towards the operator.**
- **Check the movement speed by adjusting the lever (3) on the steering bar handle.**
- **Using the speed and running direction control lever (2), adjust the movement speed in line with the shot-blasting speed required.**

N.B. The lateral movement of the shot-blasting increases in proportion to the lever movements (2).

⇒ Run

⇒ Neutral



⇒ Neutral

⇒ Forward, backward

- **Adjust the shot deflection valve opening in line with the quantity of abrasive to be applied to the surface, as described in the following instructions.**

a] **When the machine is in movement, slowly pull out the black lever.**

b] **Check the level reached by the ammeter needle as the valve progressively opens.**

c] **After reaching the ideal operating speed and abrasion effectiveness, leave the lever in that position.**

WARNING

AS THE POWER ABSORPTION OF THE MOTOR THAT ACTIVATES THE TURBINE IS IN PROPORTION TO THE QUANTITY OF ABRASIVE USED BY THE MACHINE, DO NOT EXCEED A MAXIMUM VALUE OF:
28 AMPS

AS INDICATED ON THE AMMETER.

IMPORTANT NOTE

The shot blasting of a specific surface generally requires movement in both directions.

To reverse the running direction, proceed as follows:

a **release the machine movement command lever (3)**
b **wait for the machine to stop**
c **gently move the speed and running control lever forward**
d **reactivate the machine movement lever (3), and check the speed and running direction**

WARNING

IMPORTANT

NEVER SHOT-BLAST WHILE THE MACHINE IS RUNNING IN REVERSE

DO NOT INVERT THE RUNNING DIRECTION (FORWARD/ REVERSE) WITH THE MACHINE MOVEMENT LEVER (3) ACTIVATED.

WARNING


PAY PARTICULAR ATTENTION DURING THE SEPARATION OF THE ABRASIVE FROM THE DUST AND THE MATERIAL OBTAINED DURING SHOT-BLASTING.

CAREFULLY ENSURE THAT THE RECYCLED ABRASIVE REMAINS PERFECTLY CLEAN WHEN IT RETURNS TO THE CYCLE.

THIS HAS AN EFFECT ON THE DURATION AND THE PERFORMANCE OF THE MACHINE.

WHEN THERE IS AN EXCESSIVE BUILD-UP OF DUST WITHIN THE TANK/SEPARATOR, IT IS NECESSARY TO OPERATE ON THE FILTERING SYSTEM OR THE OPERATING PARAMETERS OF THE SHOT-BLASTING MACHINE

CHECK THE CORRECT POWER SUPPLY VOLTAGE: 380-415V 63 AMPS THREE PHASES + EARTH; 50 HZ

- ***BEFORE OF ANY OTHER OPERATION SELECT THE INPUT VOLTAGE ON BOTH MACHINES!***
- ***CHECK THAT THE EXTRACTOR IS ROTATING IN THE DIRECTION SHOWN BY THE ARROW.***




Select the right input voltage on the electric panel and remember that with the "EXTRACTOR / SHOT-BLASTER" system it is only the extractor rotation direction that has to be checked, as that of the shot-blaster will be correct as a result.

- ***DO NOT USE THE MACHINE IN THE RAIN OR ON PARTICULARLY DAMP GROUND SURFACES.***

- ***BEFORE STOPPING THE FORWARD MOVEMENT OF THE MACHINE, ALWAYS SHUT OFF THE SUPPLY OF ABRASIVE TO THE TURBINE***

- ***DO NOT CARRY OUT ANY OPERATIONS ON THE MACHINE COMPONENTS UNTIL ALL THE MOVING PARTS HAVE COME TO A COMPLETE STOP.***


- ***DISCONNECT THE MACHINE FROM THE ELECTRIC POWER SUPPLY BEFORE CARRYING OUT ANY OPERATIONS.***



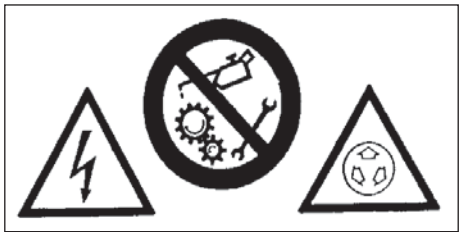

SHOT-BLASTING MACHINE A99-INT

DUST COLLECTOR DS8000

MAINTENANCE AND FAULTS

Safety conditions during the maintenance operations

9



WARNING !!

**UNLESS OTHERWISE INDICATED,
ALL THE MAINTENANCE OPERATIONS
SHOULD BE CARRIED OUT WHEN
THE MACHINE IS STOPPED, DISCONNECTED
FROM THE ELECTRIC POWER SUPPLY AND
WITH THE PNEUMATIC SYSTEM DEPRESSURISED**

NB. BEGIN THE MAINTENANCE OPERATIONS ONLY AFTER ACTIVATING THE SAFETY PRECAUTIONS

9.1 **The maintenance operations on the machines should be carried out only and exclusively by qualified and authorised personnel.**

9.2 Before carrying out repairs or other maintenance operations, always inform other operators involved in the operations of the work taking place.

9.3 If a maintenance, repair or setting operation requires the exclusion or temporary removal of the safety devices, the operator responsible should ensure that no other personnel are in the vicinity of the machine.

9.4 If the machine has to be operated during the maintenance operation, connect it to the electric power supply only for the time strictly necessary.
Pay particular attention in the start-up / stop / restart stages.

9.5 ***BEFORE STARTING THE MACHINE, MAKE SURE THAT:***

b All the spare parts are fitted correctly and blocked in position.
c All other objects (cloths, tools, etc) have been removed from the machine.
c There are no personnel in the risk zone.

9.6 Do not operate on the machine with tools or for cleaning when it is in movement.

9.7 Always shut off the power supply to the machine before removing or opening the protective panels or replacing electrical parts in general.

9.8 Always work on insulated surfaces.

9.9 Do not perform maintenance operations in the presence of water.

9.10 Avoid operations in damp areas.

The machine maintenance area should always be kept clean and dry.
Always remove any oil stains.
<u>Always</u> operate using the appropriate protection systems.

To ensure the best results during shot-blasting, the following instructions should be carried out at the end of each shift:

* **Disconnect the dust collector from the mains power supply.**

* **Remove the connector cable between the shot-blaster and dust collector.**
* **Switch off the dust collector motor.**
* **Press the electrovalve power supply button.**
* **With the shot-blaster stopped, restart the compressor ONLY, and leave it running for roughly 15 minutes.**

* **Remove the dust**

The pneumatic washing system will automatically clean the dust separation filter

collector box and empty it.

* **Completely empty the abrasive container of the shot-blasting machine.**
* **Remove the crusts of any residues which have formed in the tank and adjacent conductors.**
* **With the machine on its side, check the condition and wear and tear of the flywheel and the protection plates of the radiation tunnel.**

WARNING 

Failure to carry out these cleaning operations will quickly lead to corrosion and encrusting of the abrasive material in the tank, with damage to the conductors and the reduction of the operating results and efficiency of the machine.

PERIODIC MAINTENANCE PLANNING

CHECKING FREQUENCY	MACHINE TO BE CHECKED	CHECKS REQUIRED	OPERATION AND EXPLANATORY NOTES	REFERENCE
DAILY	SHOT-BLASTING MACHINE	ABRASIVE TANK AND CONDUCTOR	EMPTY AND DISENCRUST	Chapter 10
DAILY	SHOT-BLASTING MACHINE	TURBINE WEAR AND TEAR	If there are running grooves in the flywheel blades REPLACE THE FLYWHEEL KIT	Chapter 18
DAILY	SHOT-BLASTING MACHINE	PROTECTIVE PLATE WEAR AND TEAR	If there are deep grooves that do not guarantee a constant minimum thickness of 5 mm REPLACE THEM	Chapter 18
DAILY	SHOT-BLASTING MACHINE	EARTH SEALS	If broken or worn REPLACE THE COMPLETE SERIES	Adjust until nearly touching the floor
DAILY	SHOT-BLASTING MACHINE	DISTANCE BETWEEN MAGNET AND FLOOR	If altered ADJUST BY MEANS OF THE WHEELS flat floors: mm 5 disconnected floors: mm 8	Chapter 7
DAILY	DUST COLLECTOR	COMPRESSOR OIL LEVEL	KEEP AT THE MAXIMUM LEVEL REPLACE EVERY 200 WORKING HOURS	
MONTHLY	SHOT-BLASTING MACHINE	STEERING AXLE BOXES	GREASE EVERY 50 WORKING HOURS	Chapter 7
MONTHLY	SHOT-BLASTING MACHINE	FLYWHEEL BELTS	If loosened TIGHTEN If frayed REPLACE	Chapter 18
MONTHLY	DUST COLLECTOR	AIR FILTER	WASH WITH DETERGENT AND GREASE WITH OIL	Chapter 18
MONTHLY	DUST COLLECTOR	CARTRIDGE SERIES	REPLACE IF EXCESSIVELY BLOCKED	Chapter 18

PROBLEM INSUFFICIENT OR INCOMPLETE SHOT-BLASTING

CAUSE Insufficient flow of abrasive to the flywheel
On maximum opening of the abrasive flow valve, the ammeter shows no increase in the maximum current absorption value.

SOLUTION

1) Open the abrasive tank

a)	Low abrasive level	Add
b)	Mesh choked with slag	Clean
c)	Abrasive very dusty	Clean the dust tank; Add new abrasive;
d		Check dust collection
e)	Very damp, heavy dust	Slow down the working operations; The floor may be weak.

2) Check the power supply system

3) Check the shot distribution system

a)	Abrasive flow valve blocked or faulty	Clean or replace
a)	Turbine worn or broken	Replace the flywheel kit
b)	Check the belt tension	Recalibrate
c)	Glass incorrectly set	Recalibrate / Adjust
d)	Turbine blocked due to hardened material or excessive abrasive flow in the supply conductor	Fully disencrust and remove. Follow the instructions on the opening of the abrasive flow valve during machine start-up.
e)	Turning in the reverse direction	Check the dust collector rotation direction.

The dust collector and shot-blaster motors turn in the same direction.
If this is not the case, adjust the connections to the power supply

PROBLEM INSUFFICIENT OR INCOMPLETE SHOT-BLASTING

		sockets, ensuring the correct polarity.
		N.B. CHECK THAT THIS INCORRECT OPERATION HAS NOT CAUSED THE LOOSENING OF THE TURBINE FIXING SCREW.
f)	**Excessive working speed**	**Adjust the speed control lever, pulling it back towards the operator**

PROBLEM **EXCESSIVE ABRASIVE LOSS**

CAUSE **Incorrect adjustment of the gasket height from the ground**

SOLUTION

1) Adjust the gaskets correctly

CAUSE **Series of earth gaskets worn or broken**

SOLUTION

1) Replace completely with a new series

a) Adjust to bring the height close to the ground

CAUSE **Poor quality or incorrect type of abrasive**

SOLUTION

1) Replace with a different type

CAUSE **Turbine worn, cracked or split**

SOLUTION

1) Replace with a new flywheel kit

PROBLEM **EXCESSIVE ABRASIVE LOSS**

CAUSE **Dust collection system blocked, broken or worn**

SOLUTION **1) Check the entire system**

- **a) Connector tubes between dust collector and shot-blaster**
- **b) Holding gaskets**
- **c) Closures and seals**
- **d) Battery of six cartridge filters**

CAUSE **Crumbly, thin, dusty concrete, with loss of pressure in the shot-blasting tunnel**

SOLUTION **1) Reduce the abrasive flow to the minimum and bring the movement speed up to the maximum.**

PROBLEM **DISPERSAL OF DUST TO THE ATMOSPHERE**

CAUSE

Cartridge(s) loosened
Cartridge gaskets hardened or worn
Cartridge(s) with perforated or worn filtering mesh

SOLUTION

1) Open the dust collector cover
Check for dust deposits concentrated in the fixing zone of the filters to the tank

a) Replace the entire filter battery

2) Check the filter countercurrent washing system

PROBLEM **DEPOSITS OF UNFRAGMENTED ABRASIVE IN THE DUST TANK**

CAUSE The dust collector is creating an excessive collection effect

SOLUTION
1) Reduce the collection by partially closing the shutter on the dust inlet to the dust collector tube.
2) Extend the spiral dust collection tube

PROBLEM **POOR SEPARATION OF THE ABRASIVE FROM THE DUST OR FOULED ABRASIVE**

CAUSE Poor ventilation.

SOLUTION
1) Adjust the position of the shutter on the dust collector
2) Check the filters
3) Check for any pressure losses from the gaskets of the dust collector box;
   from the abrasive cover;
   from the tubes.
4) Floor excessively disconnected
5) Magnetic strips too high

PROBLEM **POOR DUST COLLECTION**

CAUSE Filters wet or dirty

SOLUTION
1) Replace the filters

CAUSE Air loss along the line
SOLUTION 1) Check the entire pneumatic circuit. Seal if necessary.

CAUSE Defective pilot valves
SOLUTION 1) Inspect. Clean or replace if necessary.

CAUSE Air loss along the pneumatic line
SOLUTION 1) Inspect the entire compressed air circuit. Seal if necessary.

CAUSE Defective counterwashing filter timer.
SOLUTION 1) Check. Replace the electronic control board if necessary.

CAUSE Insufficient compressor pressure
SOLUTION 1) Correctly set the pressure adjustment valve

PROBLEM **THE MACHINE FAILS TO START**

CAUSE

a) **Thermal/automatic switches deactivated**

SOLUTION

1) **Disconnect the machine from the power supply**
2) **Open the electrical panels**
3) **Set he switches to “ON”**

PROBLEM **MOTOR BUZZ AND START-UP DIFFICULTIES**

CAUSE

a) **Phase missing**

SOLUTION

1) **Disconnect the machine from the power supply**
2) **Have qualified personnel check the power supply to the electrical panel and motors**
3) **Check all the plugs, sockets and cables**

PROBLEM **THE MAIN TURBINE MOTOR OVERHEATS AND THE THERMAL PROTECTION SWITCH IS ACTIVATED (THE WARNING LAMP COMES ON)**

CAUSE
a) Insufficient power supply
b) Excessive amps supplied to the motor

SOLUTION
1) Disconnect the machine from the power supply
2) Wait for a few minutes to allow the motor and thermal switch to cool
3) Re-energise the deactivated switch (lever set to ON)
4) RESTART THE OPERATIONS, MAKING SURE THAT THE MAXIMUM PERMITTED AMP VALUE (18 amps) IS NOT EXCEEDED

PROBLEM **DEFECTIVE TRACTION OR EXCESSIVE TRIPS**

CAUSE
a) Damage to the hydrostatic system motor

SOLUTION
1) Disconnect the machine from the power supply
2) Have a qualified technician check the continuity of the hydrostatic motor winding. In the event of any breaks, replace the motor

CAUSE
a) No oil in the sump or sump damage

SOLUTION
1) Fill with oil up to the "COLD" level (chapter 18, page 60) or replace the sump.

SHOT-BLASTING MACHINE A99-INT

DUST COLLECTOR DS8000

SPARE PARTS LISTS

SPARE PART ORDERING PROCEDURES

15

- ***THE SPARE PARTS ARE SET OUT IN THE PHOTOGRAPHS AND DRAWINGS BELOW, TOGETHER WITH THEIR REFERENCE NUMBER (eg. 7)***

- ***EACH SPARE PARTS CATALOGUE IS PERSONALISED FOR THE SPECIFIC MACHINE ON THE BASIS OF ITS REGISTRATION NUMBER. tHIS IS PRINTED ON THE MACHINE AND IS ALSO TO BE FOUND IN THE DECLARATION OF CONFORMITY WHICH IS SUPPLIED TOGETHER WITH THE INSTALLATION, USE AND MAINTENANCE MANUAL.***

FOR THE CORRECT ORDERING OF THE SPARRE PARTS, PLEASE FOLLOW THE INSTRUCTIONS SET OUT BELOW

-A- ***IDENTIFY THE POSITION OF THE PART CONCERNED IN ONE OF THE PHOTOS OR DRAWINGS BELOW.***

-B- ***AFTER IDENTIFYING THE POSITION NUMBER, FIND THE CODE, NAME AND QUANTITY BY CONSULTING THE BASE PARTS LIST.***

-C- ***WHEN ORDERING, QUOTE THE FOLLOWING:***

(1) ***Machine model and series***
(2) ***Registration number***
(3) ***Year of manufacture***
(4) ***Table number containing the part required***
(5) ***Position number of the part required***
(6) ***Code number found in the base parts list***
(7) ***Quantity***

INFORMATION TO BE FOUND ON THE IDENTITY PLATE OF THE MACHINE

P.S. ***If it is necessary to ask for spare parts or information on parts or groups of parts in the tables, BUT NOT INDICATED in the base parts lists, simply send a fax of the table concerned, indicating the part necessary.***

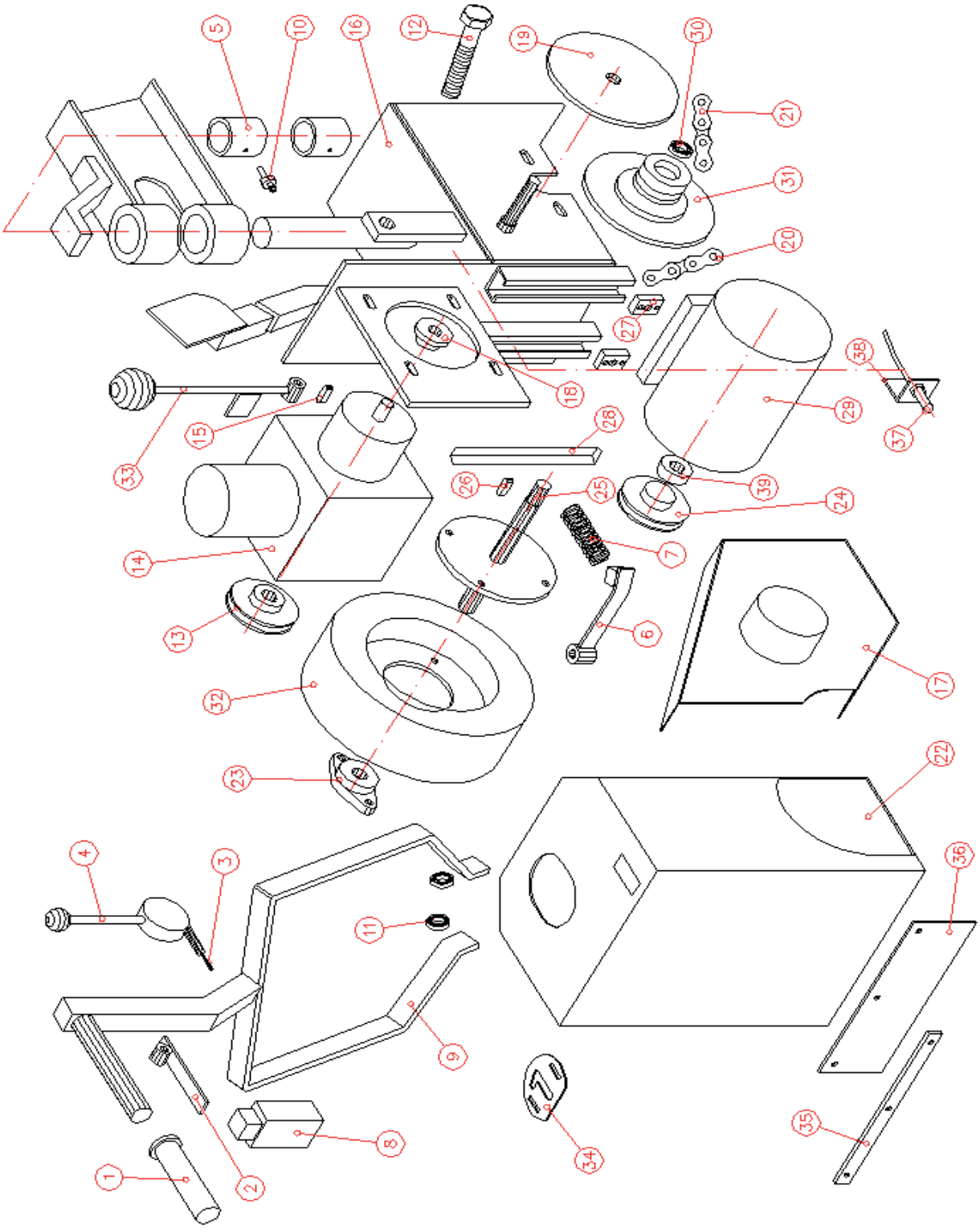
TABLE OF SPARE PARTS LISTS

16

POS.	CODE	DESCRIPTION	QUANT.
1	T25.01.23	GRIP	1
2	T25.01.22	DEAD MAN'S HANDLE	1
3	T30.01.26	SHEATH WITH GEAR CABLE	1
4	T30.01.25	FORWARD/REVERSE COMMAND LEVER	1
5	T30.01.27	BUSHING JOINT	2
6	T30.01.24	GEAR ARM	1
7	T30.01.23	SPRING	1
8	77001160+77001161	LIMIT SWITCH	1
9	T30.01.28	HANDLE	1
10	T25.01.20	GREASERS	2
11	T30.01.22	SLEEVE BEARINGS	2
12	69000107	SLEEVE HINGE	1
13	T30.01.20	PULLEY	1
14	71000004	HYDRAULIC GEARBOX	1
15	71000008	KEYS	2
16	T30.01.01	STEERING BOX	1
17	T30.01.03	SIDE CASING	1
18	T30.01.02	GEARBOX PINION	1
19	41201002	WHEEL PINION	1
20	T30.01.05	GEAR-RETURN CHAIN	1
21	T30.01.06	RETURN-WHEEL CHAIN	1
22	T30.01.13	CENTRAL CASING	1
23	79000005	WHEEL SHAFT SUPPORT	2
24	72000003	MOTOR PULLEY	1
25	41201001	WHEEL SHAFT	1
26	T30.02.14	KEY	1
27	6300116	BLOCKS	4
28	72000018	BELT	1
29	72301013	TRACTION MOTOR	1
30	T30.01.072	REDUCTION BEARINGS	2
31	T30.01.07	REDUCTION	1
32	T30.01.14	FRONT WHEEL	1
33	T30.01.31	CLUTCH LEVER	1
34	21201038	NEUTRAL PLATE	1
35	21201030	FEET GUARD PLATE	1
36	51201001	FEET GUARD	1
37	77001157	PROXIMITY SWITCH	1
38	21201039	SWITCH SUPPORT	1
39	72000011	BUSH	1

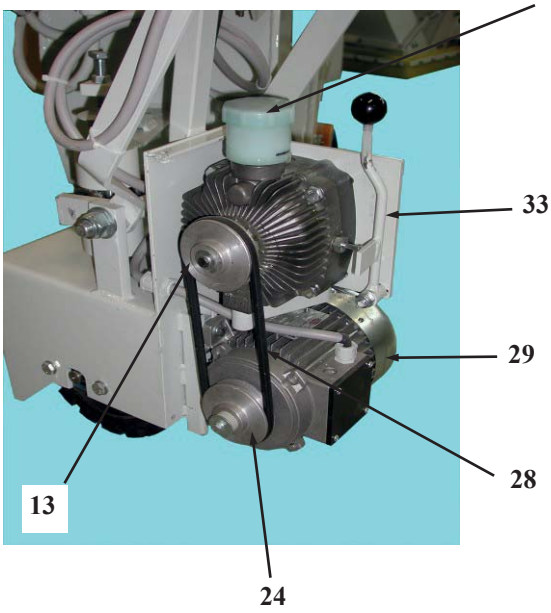
Before ordening the spare parts, consult the "spare parts ordening procedures" section

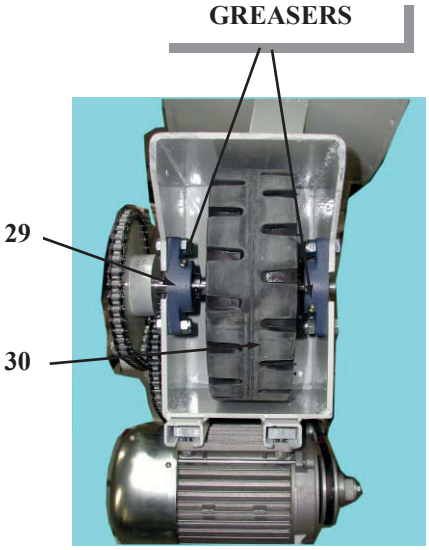
TABLE A99.01

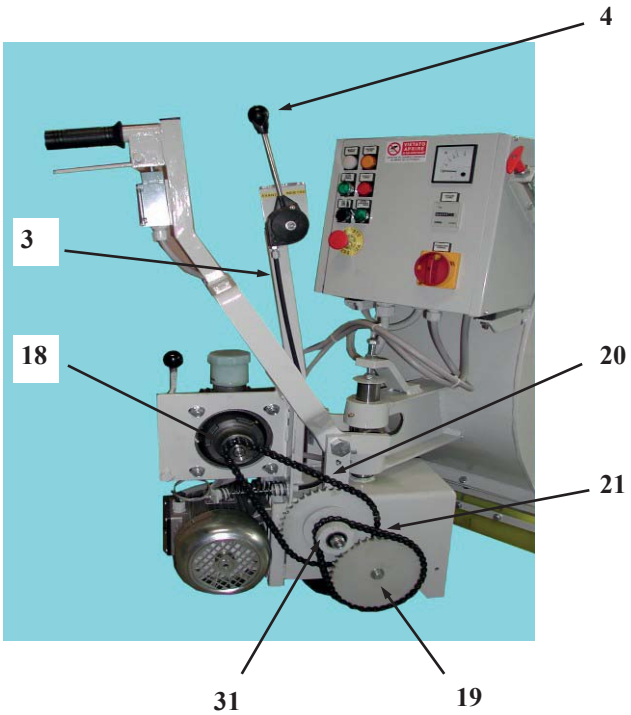


A99-INT SHOT-BLASTING	TABLE A99.01

SHOT-BLASTING A99-INT







NB.

NEVER GREASE THE CHAINS

TABLE A99.01

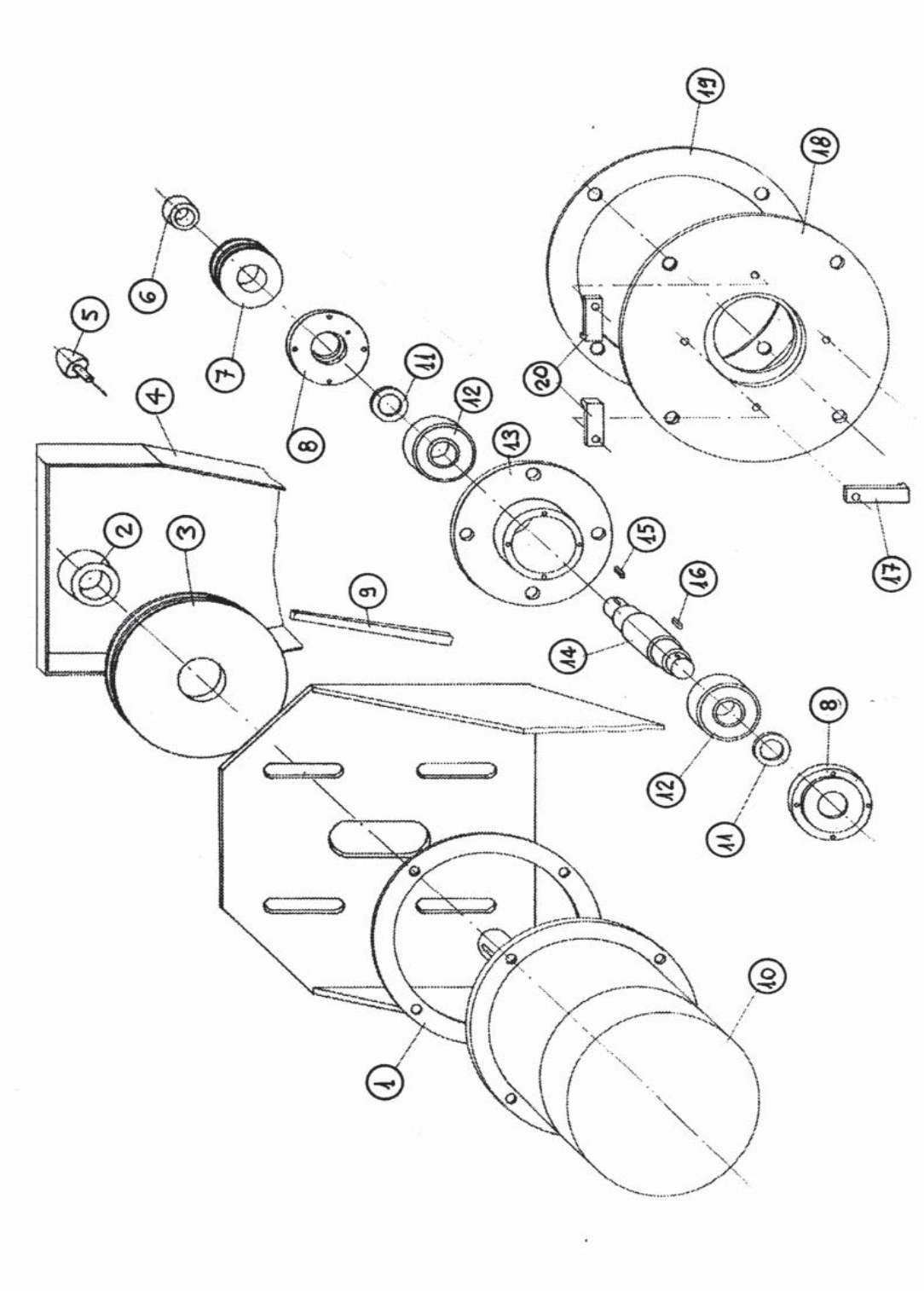
SHOT-BLASTING A99-INT

TABLE no. A99.02

POSIZ.	NUM.CODICE	DESCRIZIONE COMPONENTE	QUANT.
1	T30.02.19	SPACER	1
2	72000097	BUSH	1
3	T40.06.03	PULLEY	1
4	T40.02.22	GUARD	1
5	T30.02.28	PUFFER	2
6	T40.06.04	BUSH	1
7	T40.06.05	PULLEY	1
8	T30.02.08	COVER	2
9	72000099	BELT	3
10	72001015	MOTOR	1
11	T30.02.09B	OIL SEAL	2
12	T30.02.10	BEARING	2
13	T30.02.11	BOX	1
14	T30.02.12	SHAFT	1
15	T30.02.13	KEY	1
16	T30.02.14	KEY	1
17	T30.02.21	RODS	2
18	T30.02.17	FLANGE	1
19	T30.02.18	GASKET	1
20	T30.02.20	RODS	2
26	T300226	DISC	1
29	T300227	BLASTWHEEL BODY	1
#	*T400234*	**KIT SPARES FOR BLASTWHEEL** - MADE BY:	1
21	79000002	O-RING	1
22	T300225	CONTROL CAGE (DIFFUSOR)	1
23	69000067	SCREW M10 x 40	1
24	69000066	WASHER d.10	1
25	T300224	IMPELLER (ALIMENTATOR)	1
27	T400004	BLADES	4
28	69000061	PINS	2

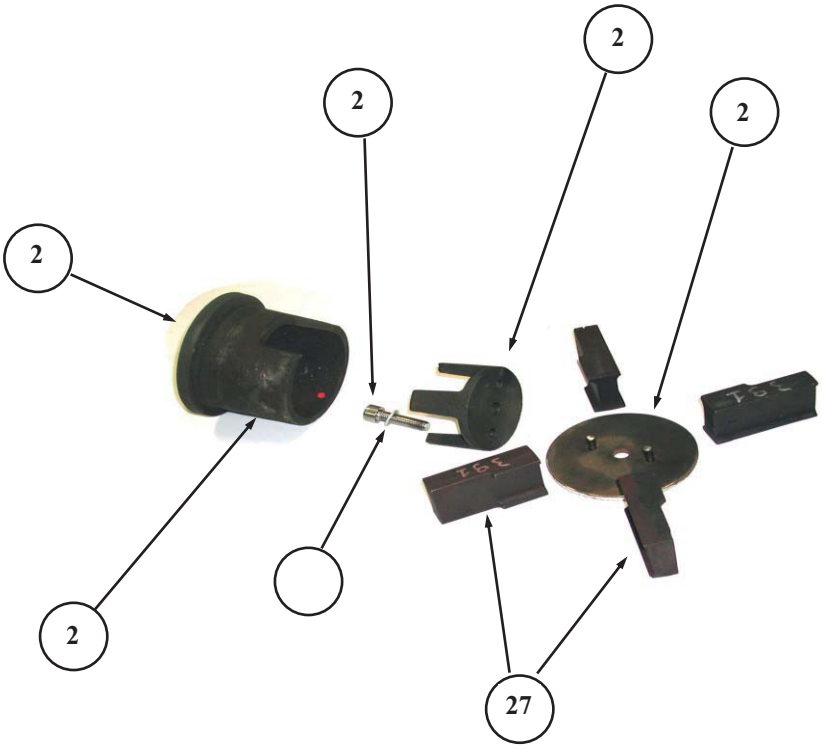
SHOT-BLASTING A99-INT

TABLE no. A99.02



SHOT-BLASTING A99-INT

TABLE no. A99.02



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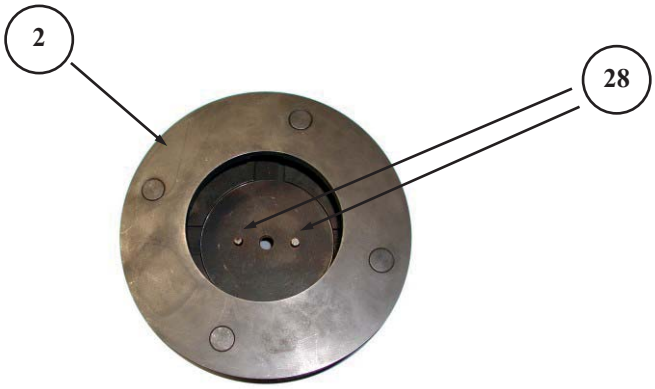


A99-INT SHOT-BLASTING

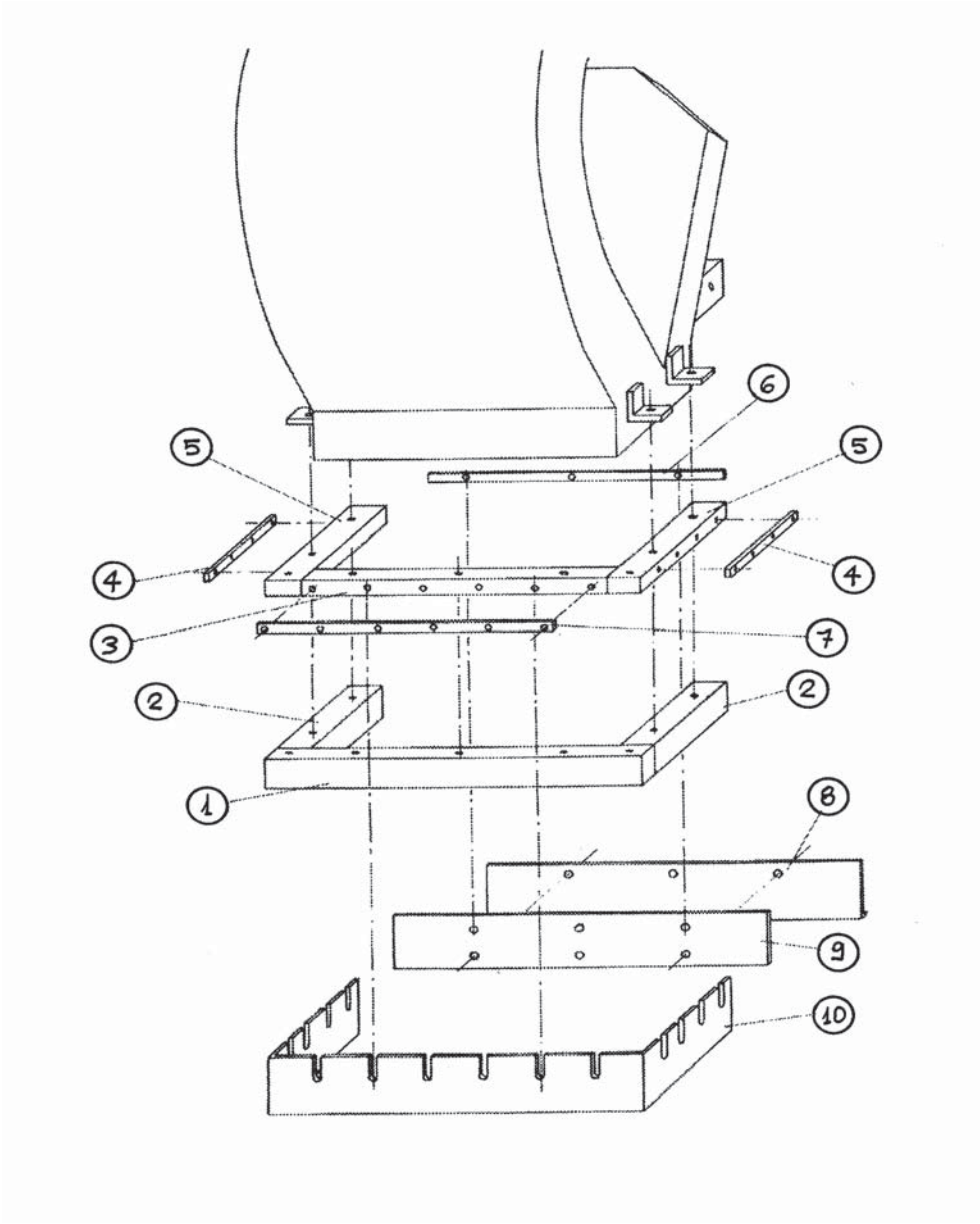
TABLE no. A99.03

POS.	CODE NO.	PART DESCRIPTION	QTY.
1	T40.03.02	FRONT MAGNET	1
2	T30.03.01	SIDE MAGNET	2
3	T40.03.04	FRONT ALUMINIUM PLATE	1
4	T30.03.05	SIDE PLATE	2
5	T30.03.03	SIDE ALUMINIUM PLATE	2
6	T30.03.07	REAR PLATE	1
7	T40.03.06	FRONT PLATE	1
8	T40.03.08	SLIDE	1
9	T40.03.09	REAR GASKET	1
10	T40.03.10	FRONT GASKET	1

NB.Before ordering spare parts, consult section 15, “SPARE PARTS ORDERING PROCEDURES”.

A99-INT SHOT-BLASTING

TABLE no. A99.03



A99-INT SHOT-BLASTING

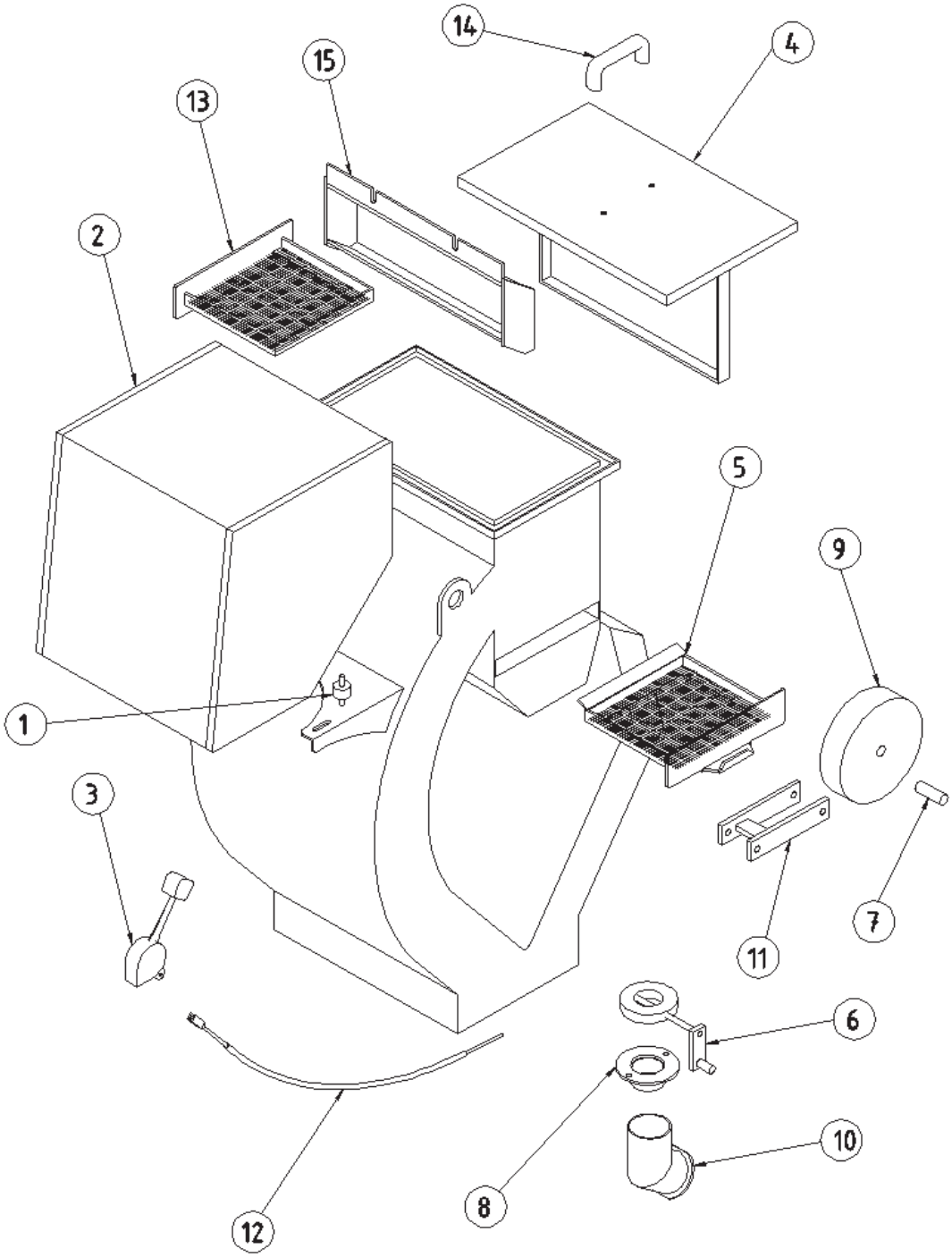
TABLE no. A99.04

POSIZ.	NUM.CODICE	DESCRIZIONE COMPONENTE	QUANT.
1	T25.04.07	ISOLATORS	4
2	07201016	ELECTRIC PANEL	1
3	75201000	ABRASIV VALVE LEVER	1
4	T40.04.01	SEPARATOR COVER	1
5	T40.04.13	SEPARATOR BOX WITH PLATE	1
6	T30.04.03	ABRASIVE VALVE	1
7	T30.04.10	WHEEL AXLE	2
8	T30.04.04	VALVE FLANGE	1
9	T30.04.06	WHEEL	2
10	T40.04.05	ABRASIVE ELBOW	1
11	T30.04.07	WHEEL FORK	2
12	75201006	ABRASIVE CABLE	1
13	T40.04.12	SEPARATORE BOX	1
14	T25.04.011	HANDLE	1
15	T40.04.11	SEPARATOR, INTERNAL PART	1

NB.Before ordering spare parts, consult section 15, “SPARE PARTS ORDERING PROCEDURES”.

A99-INT SHOT-BLASTING

TABLE no. A99.04



A99-INT SHOT-BLASTING

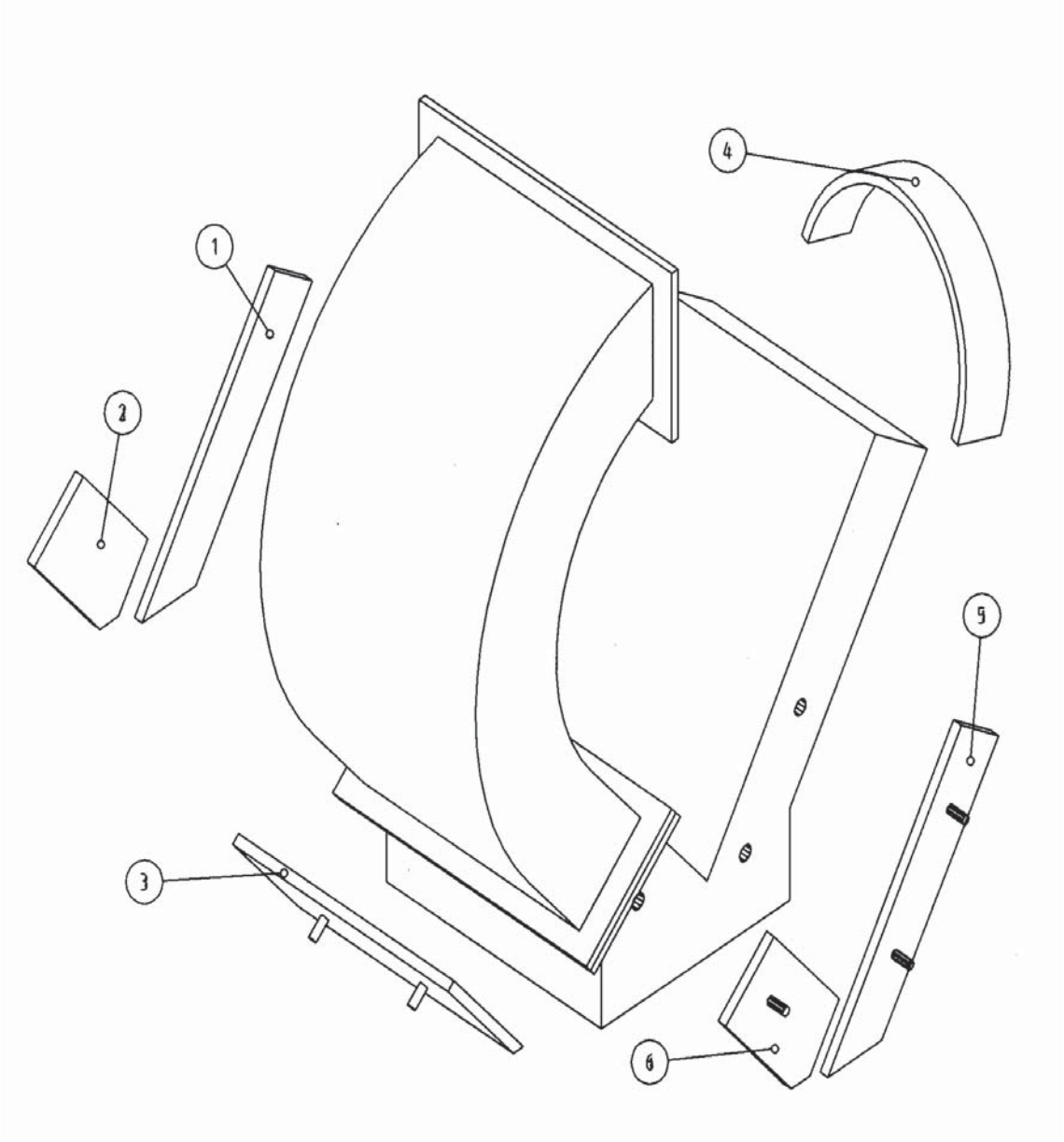
TABLE no. A99.05

POS.	CODE No.	PART DESCRIPTION	QTY.
1	T40.03.25	LEFT BODY PLATING	1
2	T30.03.24	LEFT REBOUND PLATING	1
3	T40.03.28	FRONT REBOUND PLATING	1
4	T40.03.27	UPPER BODY PLATING	1
5	T40.03.26	RIGHT BODY PLATING	1
6	T30.03.23	RIGHT REBOUND PLATING	1

NB.Before ordering spare parts, consult section 15, “PROCEDURES FOR SPARE PARTS ORDERING”

A99-INT SHOT-BLASTING

TABLE no. A99.05



DS8000 DUST COLLECTOR

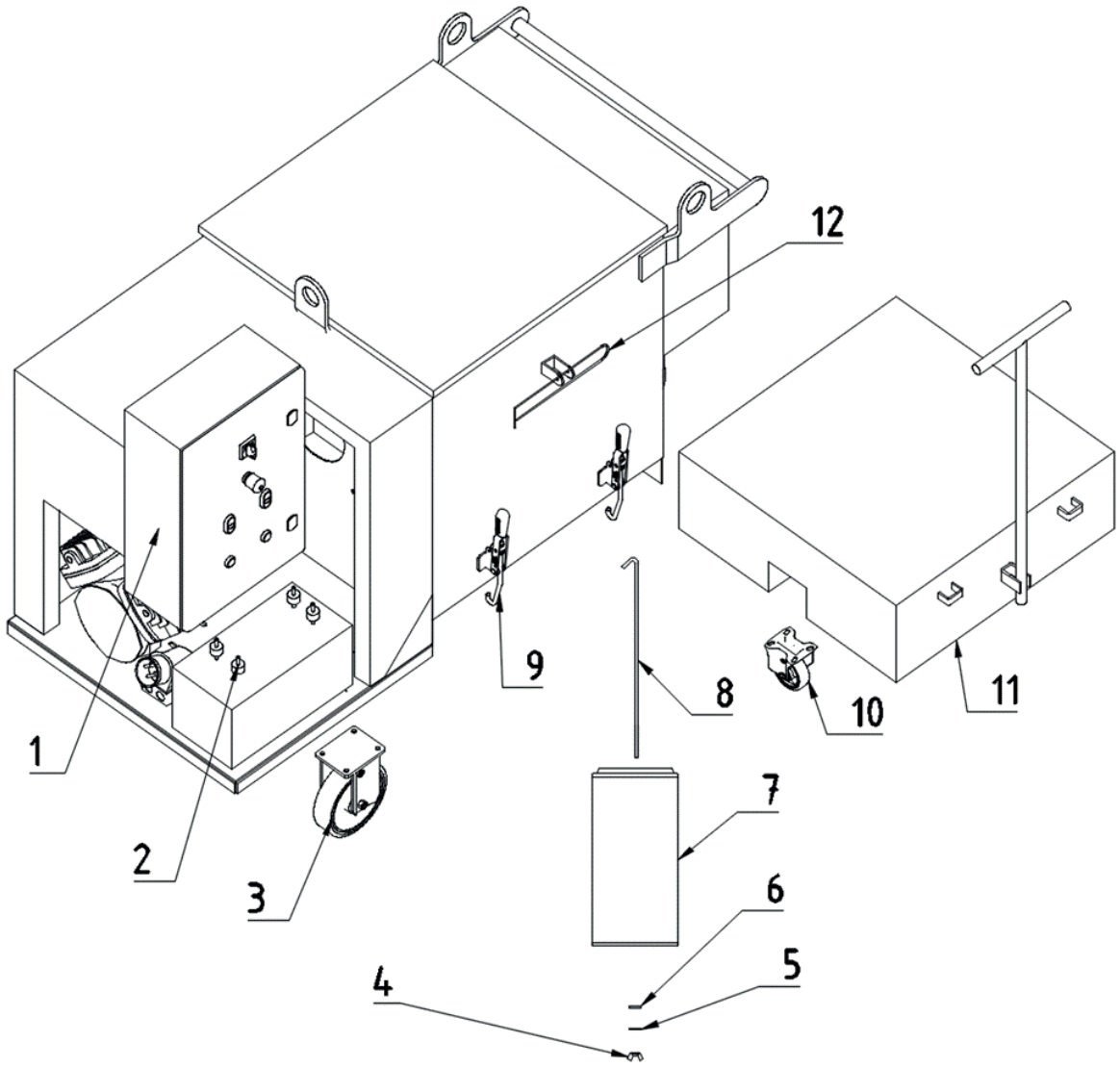
TABLE no. DS8.01

POS.	CODE No.	PART DESCRIPTION	QTY.
1	07101013	ELECTRICAL PANEL CPL. A8S UL+CE 50/60HZ	1
2	T250407	SHOCK ADSORBER M8 D.30x20	4
3	A60107	REAR WHEEL A6/A8	2
4	69000054	WING NUTS	6/8
5	69000717	WASHER 8X32	6/8
6	58101002	RUBBER WASHER CARTRIDGES	6/8
7	A60303	FILTER CARTRIDGE	6/8
8	A60302	CARTRIDGE ROD	6/8
9	A60304	VACUUM CLEANER LOCKING	4
10	A60306	BIN WHEEL	2
11	A60305 A80305	DUST BIN A6 DUST BIN A8	1
12	69000222	CLIP SPRING	1

NB.Before ordering spare parts, consult section 15, "PROCEDURES FOR SPARE PARTS ORDERING".

DS8000 DUST COLLECTOR

TABLE no. DS8.01



DS8000 DUST COLLECTOR

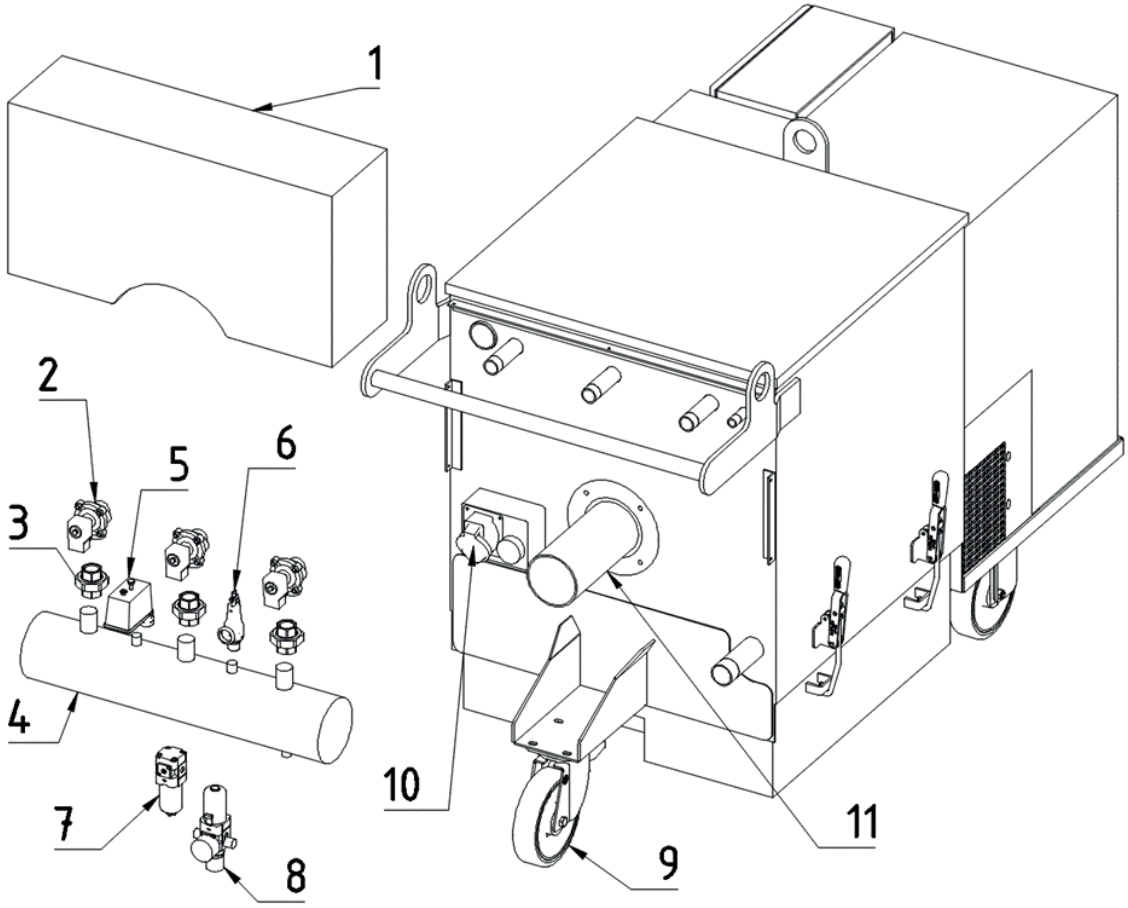
TABLE no. DS8.02

POS.	CODE No.	PART DESCRIPTION	QTY.
1	A60214	FRONT SHELTER	1
2	78101029	ELECTROVALVE	2/3
3	A60210	CHROME PLATED UNION	2/3
4	48100002	TANK COMPLETE WITH SOLENOID VALVES	1
5	A60212	VACUUM PRESSURE SWITCH	1
6	A60213	SAFETY VALVE	1
7	A60208	AIR FILTER	1
8	A60207	PRESSURE REDUCER	1
9	A60204	WHEEL WITH BRAKE	1
10	77001383 77001384	ELECTRICAL SOCKET 32 A SOCKET BOX	1 1
11	23101056 78101021	SUCTION HOSE REDUCTION D.120 SEALING	1 1

NB.Before ordering spare parts, consult section 15, “PROCEDURES FOR SPARE PARTS ORDERING”.

DS8000 DUST COLLECTOR

TABLE no. DS8.02



DS8000 DUST COLLECTOR

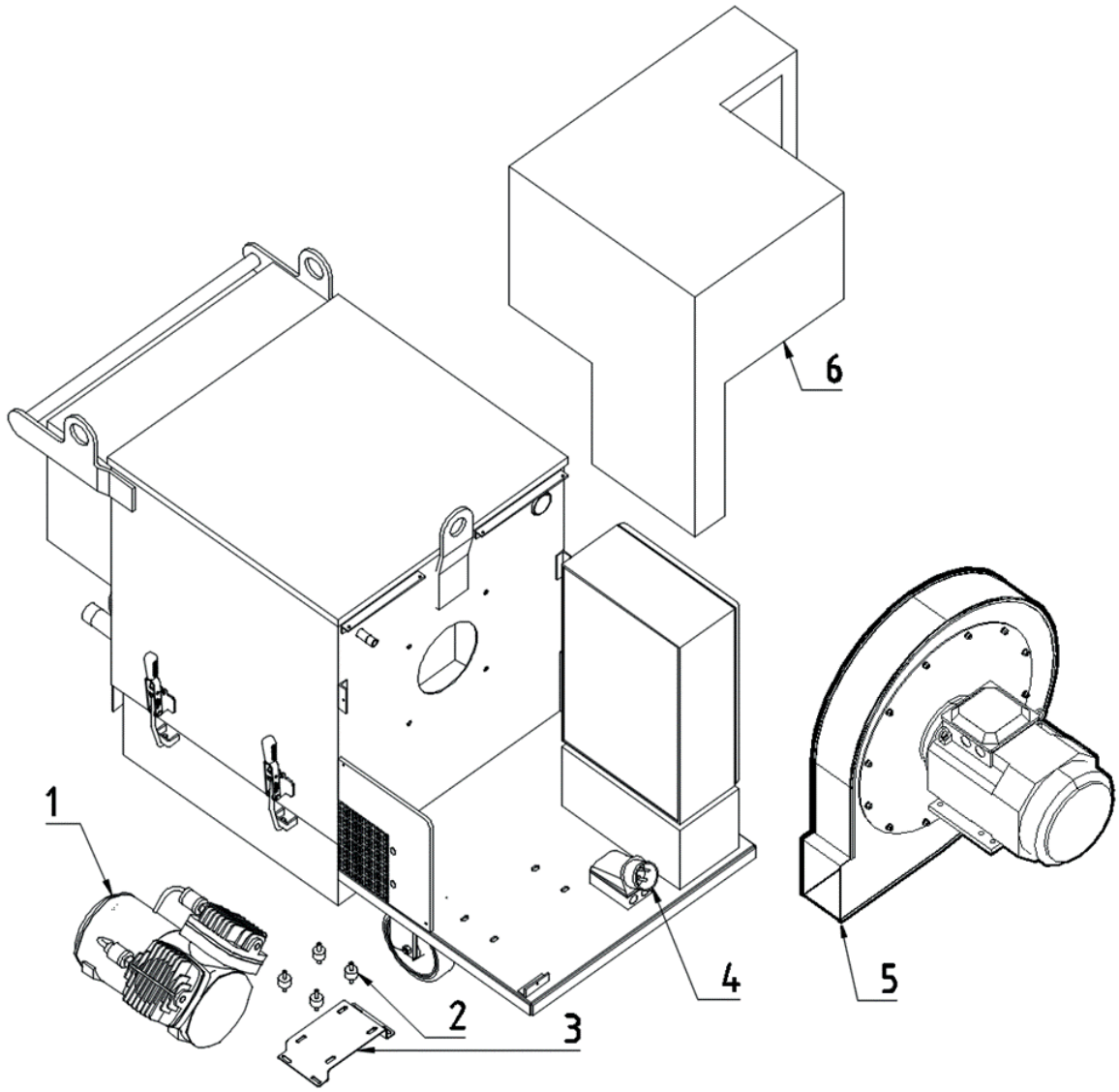
TABLE no. DS8.03

POS.	CODE No.	PART DESCRIPTION	QTY.
1	A60201 78101027	50 HZ TWIN-CYLINDER ELECTRIC COMPRES-SOR 60 HZ TWIN-CYLINDER ELECTRIC COMPRES-SOR	1 1
2	T250407	SHOCK ADSORBER M8 D.30x20	4
3	23101011	COMPRESSOR SHELF	1
4	77001363 77101039	POWER PLUG 32 A POWER PLUG 63 A	1 1
5	78101024 72101004 78101039	FAN 4 KW 50 HZ FAN 7,5 KW 50 HZ FAN 7,5 KW 60 HZ	1 1 1
6	A60106	REAR SHELTER	1

NB.Before ordering spare parts, consult section 15, "PROCEDURES FOR SPARE PARTS ORDERING".

DS8000 DUST COLLECTOR

TABLE no. DS8.03



SHOT-BLASTING MACHINE A99-INT

DUST COLLECTOR DS8000

REPLACEMENT OF PARTS AND ADJUSTMENTS

FLYWHEEL (removal)

This is the most important and delicate part of the shot-blasting machine.
Due to the high speed at which it operates it has to be precisely and perfectly balanced.
Due to the wear and tear of the blades, the material becomes progressively unbalanced, with a consequent increase in noise and vibration.
In addition, the shot-blasted surface will not show even or correct abrasion throughout. (Greater abrasion on one side only).

THIS MEANS THAT THE BLADES OF THE FLYWHEEL HAS TO BE REPLACED.

OPERATING STAGES ***(photos on the following pages)***

- **Disconnect the shot-blasting machine from the electric power supply**
- **Make sure that no part of the machine is in movement**

- **Use the following tools:**

a 19 mm wrench
b 17 mm wrench
c 8 mm hex key
d Large screwdriver
e Punch or marker pen

Move to the left-hand side of the machine (from the driving position)

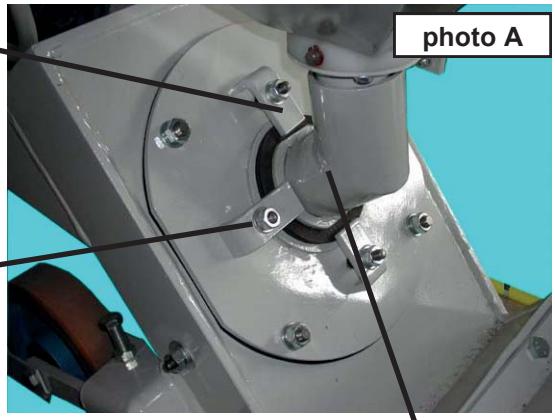
- **Loosen the fixing bolts of the two horizontal rods (photo A) using the 17 mm wrendh.**
- **Remove the left-hand rod.**
- **Remove elbow (1) from its housing by turning it gently in an anticlockwise direction.**
- **Make two marks (X-X) on the flange (2) with a punch or marker pen at the two notches (Y-Y) on the distributor (3) (photo B).**
- **Remove the two vertical rods using the 17 mm wrench, by undoing their fixing bolts (photo A).**
- **Remove the distributor (3) (photo C).**
- **Undo the flange fixing bolts (2) (photo C) with the 19 mm wrench.**
- **Remove the flange (2).**

FLYWHEEL (removal)

Vertical rods

Horizontal rods

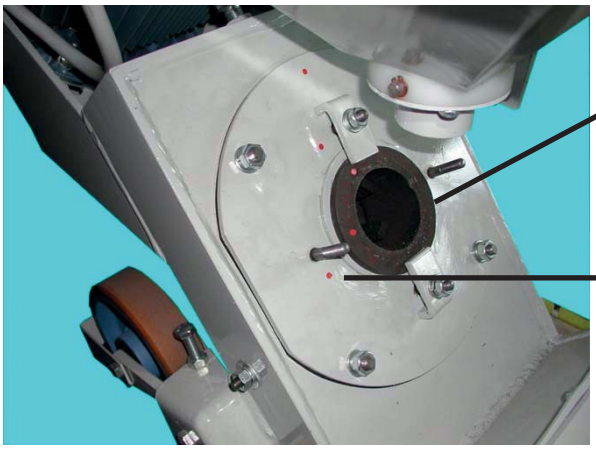
photo A



(1) elbow

photo B

(3) distributor



(2) Flange

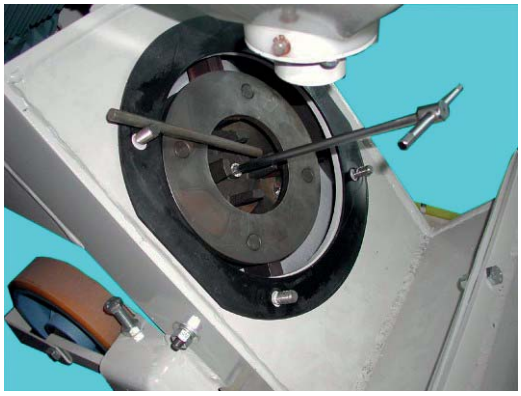
photo C

(2) Flange

(3) distributor

It is now possible to gain complete and easy access to the flywheel.

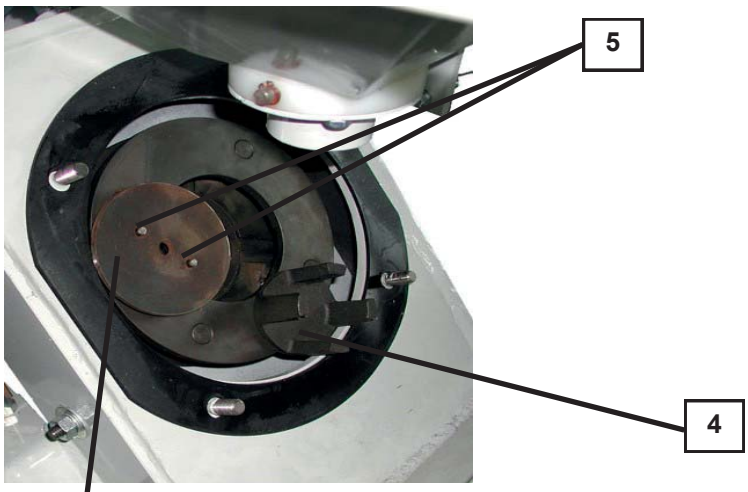
- **Insert the shaft of a screwdriver between the spaces that mark off one of the flywheel blades.**
- **Turn the flywheel in an anticlockwise direction to block the shaft against the outer slot of the machine body.**
- **Using an 8 mm hex key, undo the central bolt by turning it in an anticlockwise direction (photo D).**



Extract the following, in the correct order:

the power supplier (4)

the two lower dragging plugs (5)
the blade-blocking disc (6)



Remove the four blades. (7)

If these parts resist removal from their housings due to the presence of dust, simply give them light blows with a rubber hammer.

IMPORTANT

FLYWHEEL (ASSEMBLY)

The assembly operations should take place using only the new parts supplied with the flywheel kit (photo next page).

All four of the flywheel blades should be replaced at the same time (4 blade kit, NFEcode T400004).

This is important to ensure the ideal operation of the machine in terms of safety and efficiency.

NFE supplies the blades, perfectly balanced, in packs of four.

OPERATING STAGES *(photos on the pages that follow)*

- **Carefully clean the flywheel body (8).**
- **Blow in the threaded housing to remove any shot.**
- **Place the four blades in their housings.**
- **Insert the two plugs (5) in their housings (photo F).**
- **Insert the blade-block disc (6) in its housing.**
- **Upon completion of the assembly, the blades should move freely in their housings.**
- **The true blockage will take place after the first hours of operation, due to the dust released during the shot-blasting.**

- **Replace the following in position, in the order set out below: (photo F)**

  a alimentator (4)
  b split washer (9)
  c hex screw (10)

- **Tighten with a torque wrench (MAX. 5 kgmt)**

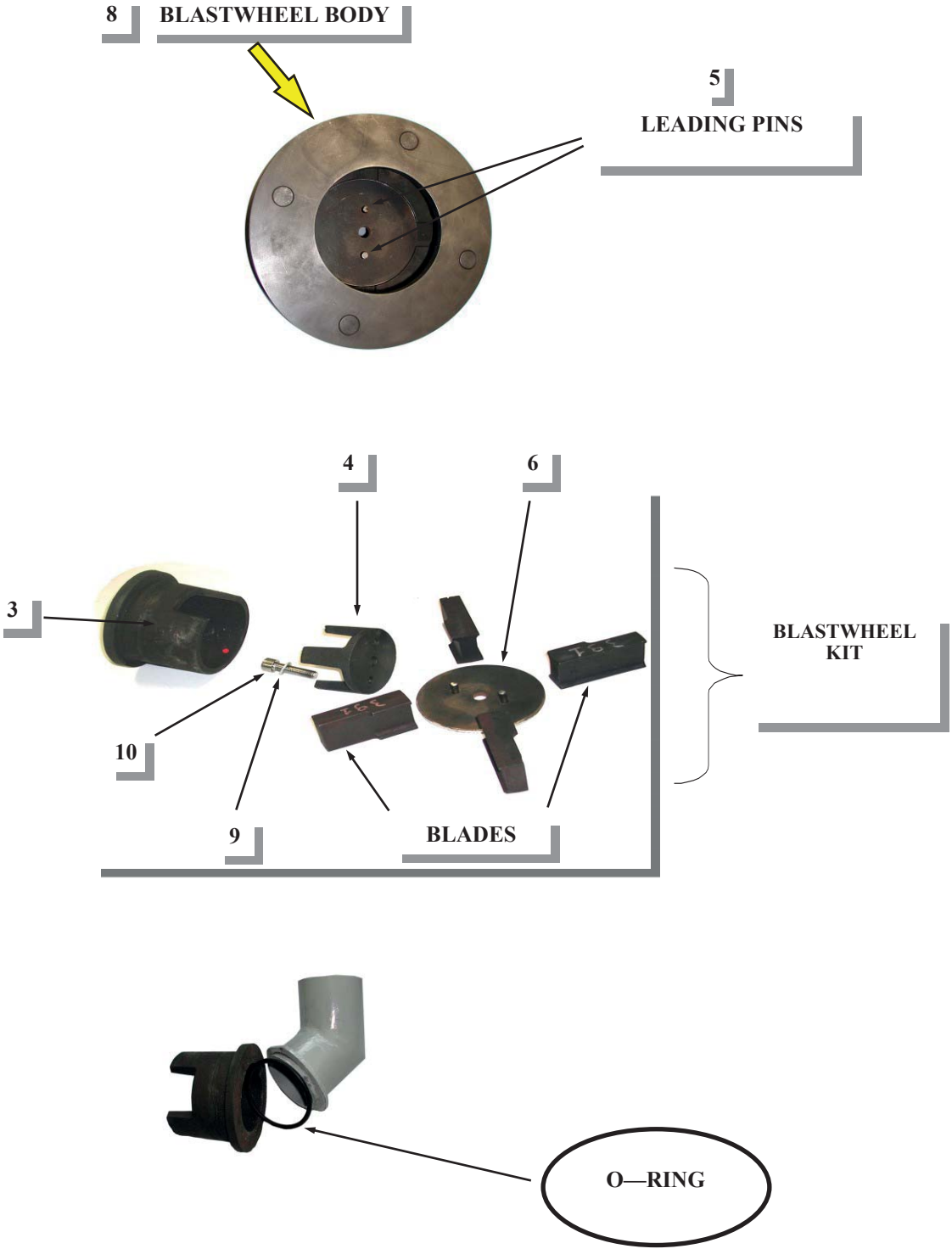
MAKE SURE THAT THE FLYWHEEL IS LAID CORRECTLY ON THE SUPPORT DISC AND ROTATES FREELY IN ITS HOUSING.

- **Position the flange (2) in such a way that the upper pointer (IS) is aligned with the upper reference notch (TR) of the machine body (photo C).**
- **Block the flange (2) with the 4 bolts and washers and tighten them with a torque wrench calibrated to a maximum of 2,5 kgmt.**
- **Fit the distributor (3), making sure that the two notches (Y-Y) coincide with the two marks (X-X) on the flange (2) (photo B).**
- **Using the two vertical rods, block the distributor with the bolts**
- **(MAX. 2,5 kgmt) (photo B)**

DURING THE BLOCKAGE OPERATION, TURN THE FLYWHEEL BACKWARD AND FORWARD BY HAND TO ENSURE THAT IT IS PERFECTLY CENTRED AND THAT THERE ARE NO CONTACTS OR INTERFERENCES BETWEEN THE DISTRIBUTOR AND THE FLYWHEEL.

- **Fit the black rubber holding ring (O-RING) (photo K).**
- **Replace the joint and fix it in place with the horizontal rods using two bolts (max. 10**

FLYWHEEL (ASSEMBLY)



kgmt)

After replacing the flywheel and before using the shot-blasting machine, carry out an operating test as described below:

⇒ **Place the shot-blasting machine on a flat concrete floor or a sheet metal surface with a minimum thickness of 10 m**

⇒ **Start the machine and activate the flywheel.**

OPERATING TEST

⇒ **Check the result of the abrasion on the shot-blasted zone.**

THERE ARE THREE POSSIBILITIES

A **Even abrasion throughout the shot-blasted zone.**

The distributor is correctly positioned and the machine is ready to operate.

B **The abrasion is greater to the right (from the driving position).**

The distributor will have to be recalibrated as described in section 18, "Flywheel Replacement and Adjustments", as well as the following instructions:

⇒ **turn the distributor in its housing in a clockwise direction at intervals of 4/5 mm at a time. Fix it in place, repeat the operating test and then the calibration operation described above to obtain even shot-blasting throughout the surface.**

C **The abrasion is greater to the left (from the driving position).**

The distributor will have to be recalibrated as described in section 18, "Flywheel Replacement and Adjustments", as well as the following instructions:

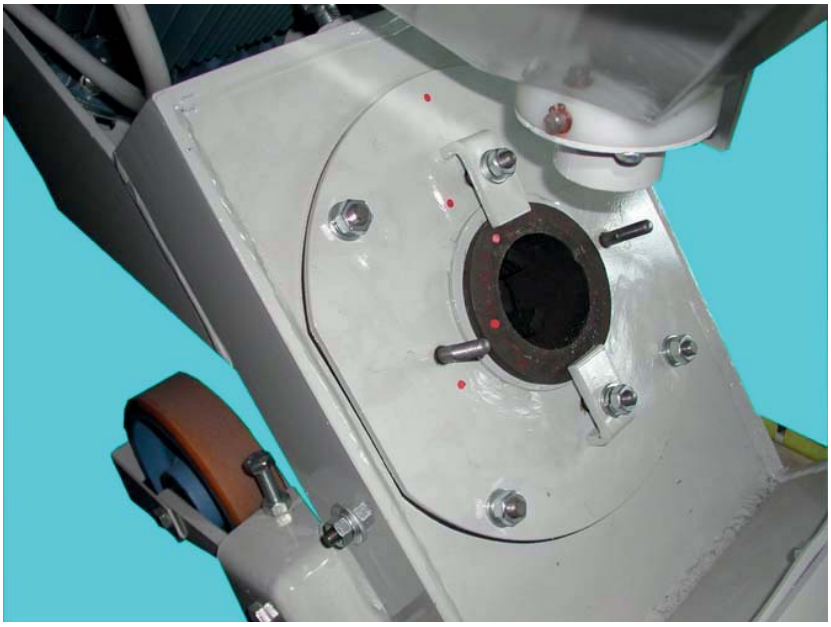
⇒ **turn the distributor in its housing in an anticlockwise direction at intervals of 4/5 mm at a time. Fix it in place, repeat the operating test and then the calibration operation described above to obtain even shot-blasting throughout the surface.**

IMPORTANT.

REMEMBER THAT THE ANGULAR ADJUSTMENT FIELD OF THE DISTRIBUTOR IS THAT DEFINED BY THE SECTOR OF CIRCUMFERENCE, ORIGINATING FROM THE CENTRE OF ROTATION OF THE DISTRIBUTOR. THE SIDES ARE THE RADII THAT JOIN THE CENTRE WITH THE TWO NOTCHES TO THE LEFT OF THE FLANGE (SEE PHOTO).

THE ADJUSTMENT OF THE DISTRIBUTOR IS POSSIBLE ONLY WITHIN THE ABOVE LIMITS.

THE DISTRIBUTOR HAS TO BE ADJUSTED EACH TIME THE FLYWHEEL IS REPLACED



Correct abrasion is important for the efficiency of the machine and the reduction to the minimum of wear and tear to the parts inside the abrasive material launching tunnel (internal plating).

The correct application to the working surface depends on a number of factors, including the following:

a the hardness and size of the abrasive;
b the impact power;
c the cleanliness of the abrasive;
d the wear and tear of the flywheel blades;
e the flooring response.

To obtain the best operating results and machine duration, before each shot-blasting operation it is advisable to carry out the correct adjustment of the distributor.

PLATING (Dismantling)

These are important parts of the shot-blasting machine as they protect the entire conveyor tunnel from abrasion during operation.

- ***WE RECOMMEND CHECKING THE CONDITION OF THE PLATING EVERY 40 / 50 WORKING HOURS FAILURE TO DO SO COULD LEAD TO THE PERFORATION OF THE SHOT -BLASTING TUNNEL, WITH SERIOUS DAMAGE TO THE SHOT-BLASTING MACHINE.***

OPERATING STAGES

(photos on the following pages)

- **Disconnect the shot-blasting machine from the electric power supply**

- **Make sure that no part of the machine is in movement**

- **Use the following tools:**

  a 13 mm wrench
  b 17 mm wrench
  c 27 mm wrench
  d 8 mm hex key
  e Rubber hammer
  f Large screwdriver

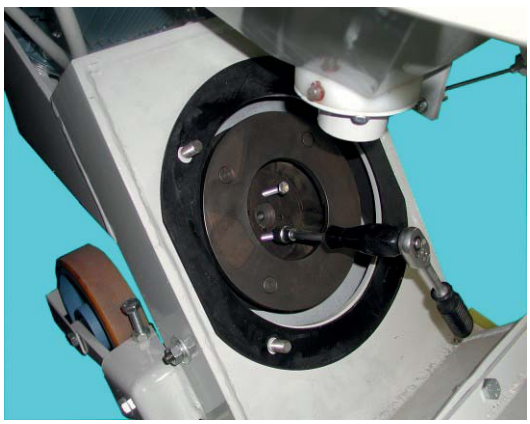
- **Move to the left side of the machine (away from the driving position)**

- ***REMOVE THE FLYWHEEL AS DESCRIBED IN SECTION 18, "REPLACEMENT OF FLYWHEEL AND ADJUSTMENTS***

After removing the flywheel:

- **Undo the upper plate fixing bolt (A) by two turns to remove it slightly from its housing.**

- **Undo the four bolts (B) that fix the plates to the shot-blasting tunnel, and remove them from the four washers a split washers and the four large washers.**

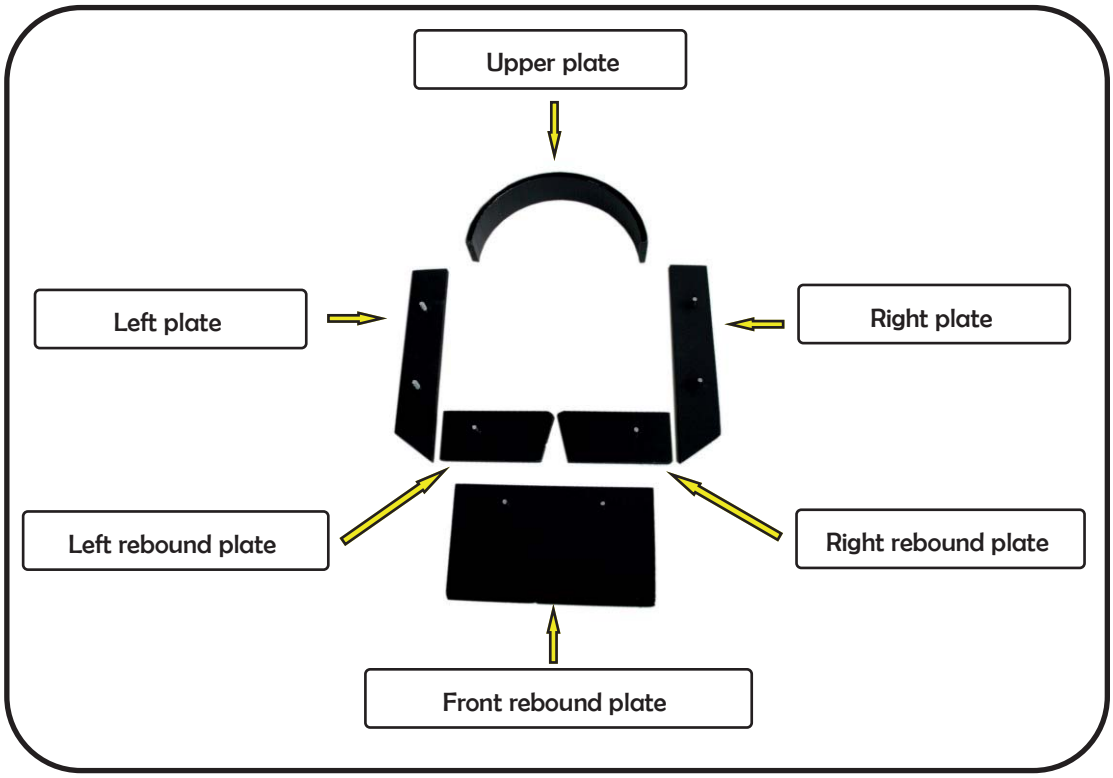


PLACE THE MACHINE ON THE GROUND ON ITS LEFT SIDE. (see photos below)

Use the rubber hammer on the threaded hinges (nn) of the right-hand plate to remove it from its housing. Remove it from the tunnel.
Using the screwdriver as a lever, raise and remove the left-hand plate. Remove the upper plate (curved plate).

- **With a plastic hammer hit on the threaded pins of the right plate, draw out it from the tunnel.**
- **With a big screwdriver draw out the left plate.**
- **Then draw out the superior plate (bend plate).**

PLATES COMPLETE KIT



PLATING (Assembly)

OPERATING STAGES (SEE PHOTOS)

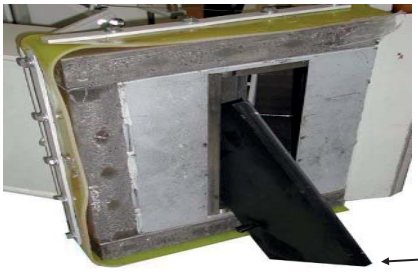
- **Disconnect the shot-blasting machine from the electric power supply**
- **Make sure that no part of the machine is in movement**

PLATING (Assembly)

OPERATING STAGES (SEE PHOTOS)

- **Position the new left-hand plate in its housing by clicking its studs into place**

- **Bring the upper (curved) plate into the tunnel and lay it over the head of the new left-hand plate**
- **Place the new right-hand plate in its housing**
- **Block the plates in place to the tunnel using the bolts and washers**
- **Reassemble by carrying out all the stages described in this section in the reverse order, as set out in the item "PLATING (Dismantling)".**



USUALLY AFTER 4/5 REPLACEMENTS OF THE LEFT RIGHT AND UPPER PLATES, IT IS NECESSARY TO RAPLACE ALSO THE REBOUND PLATES. KEEP THEM CHEC-KED.

HYDRAULIC OIL LEVEL CONTROL

OPERATING STAGES

The A99-INT shot-blasting machine is fitted with a sophisticated hydrostatic transmission that ensures the maximum operating efficiency of the machine during working and movement, with no shaking or shock.

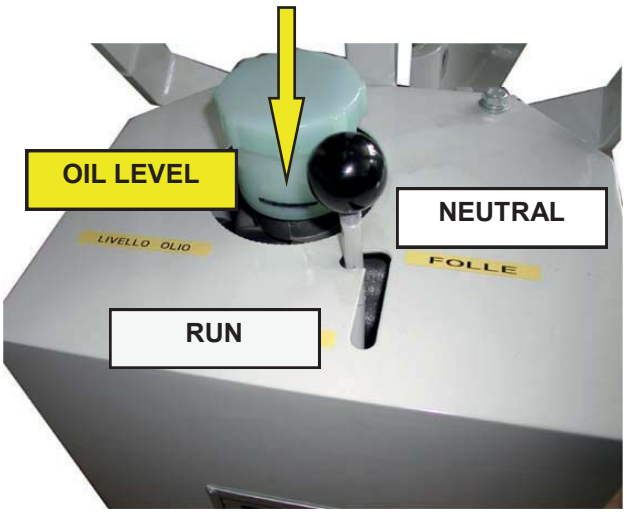
This guarantees ideal movement speed and virtually continual control of the working speed.

The hydraulic transmission requires only an oil level check.

With reference to the photo below:

At least once a week, check the oil in the sump when the machine is cold.

- **The level should be aligned with the "COLD" notch.**



Any top-ups should be carried out with a hydraulic oil of a viscosity of VG 38 (ISO), which ensures a viscosity of at least 11 cST at the maximum operating temperature of the oil (80°C).

REMOVAL

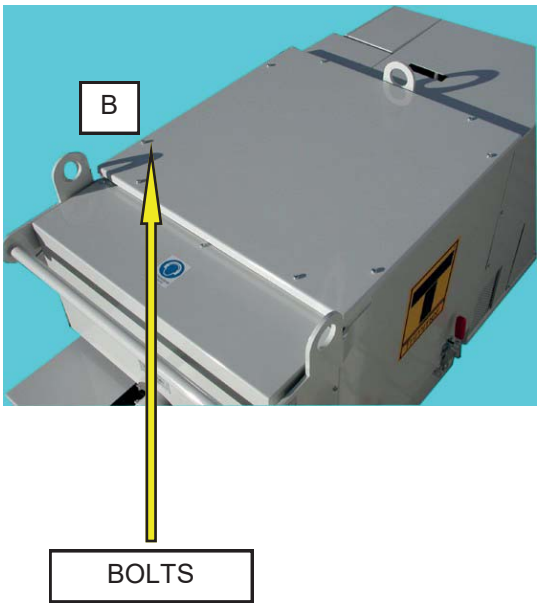
OPERATING STAGES

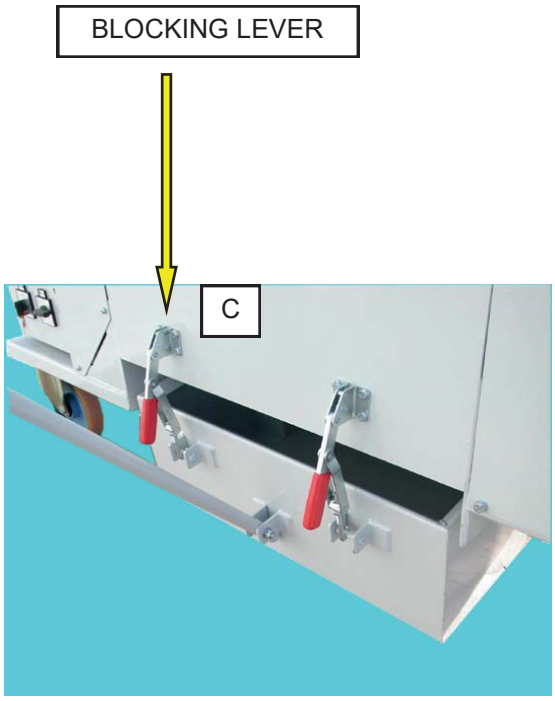
- Disconnect the shot-blasting machine from the power supply
- Make sure that no part of the machine is in movement
  Use a filtering mask for the mouth and nose

- Depressurise the system by opening the air discharge tap in the pressure regulation group.
  (Refer to section 5 on the Pneumatic Connection Safety Regulations)

- Block the dust collector in place by adjusting the brake (A) of the front wheel.

- Remove the bolts (B) that attach the cover to the dust collector.
- Unhook the blocking lever (C) of the dust collector box and remove it completely.
- Undo the filter blocking screws.
- Rotate the tie-rods until they are removed from their housing.
- Extract the cartridges from the bottom, together with their support tie-rods.

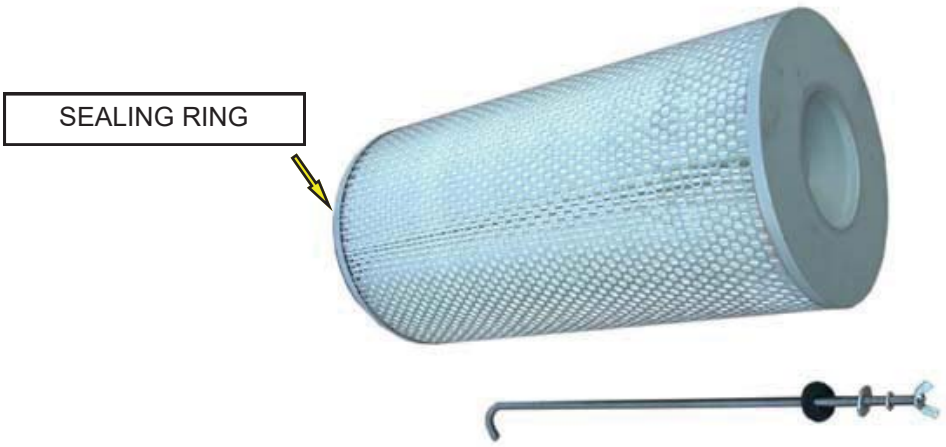




ASSEMBLY

OPERATING STAGES

- **Grease the rubber sealing ring of the new filter**
- **Place the tie-rods within the cartridges**
- **Attach them to the upper housing**
- **Tighten the screws, making sure that the filters are correctly centred in the upper guide housing.**
- **Replace the cover and fix it in place with the bolts that had been removed previously.**
- **Reinsert the dust collector box and fix it in its housing with the blocking levers.**



JET PULSE

The DS8000 dust collector has an electronic device known as the Jet Pulse sequencer. This is specially designed for the control and cleaning of the cartridge filters.

The sequencer is contained within the electrical power supply panel of the dust collector .

This device commands the opening of the electrovalves at intervals that can be programmed by the user, to generate a brief but violent jet of compressed air towards the inner part of the cartridges.
This cleans the dust separation filters in counter-washing.

The operating parameters are already set to the optimum level during the final testing of the machine in Trimmer's factory.

FLYWHEEL BELT REGISTRATION

After many hours of work with the shot-blasting machine, the belts could begin to slip.
If this should happen, the tension has to be tightened.

This maintenance operation should be carried out as follows (see photo on the following page):

OPERATING STAGES

- **Use the following tools:**

  a 8 mm wrench
  b 17 mm wrench

- **Disconnect the slot-blasting machine from the electric power supply.**
- **Ensure that no part of the machine is in movement.**
- **Move to the part of the machine opposite the driving position.**
- **With the 8 mm wrench, undo the protection bolts at mesh A of the crankcase (B).**
- **Remove the protection.**

It is now possible to gain access to the transmission pulley/belt group.

- **With the 17 mm wrench, undo the four bolts (C) that fix the motor to the machine.**
- **With the 17 mm wrench, undo the counterbolt (D).**

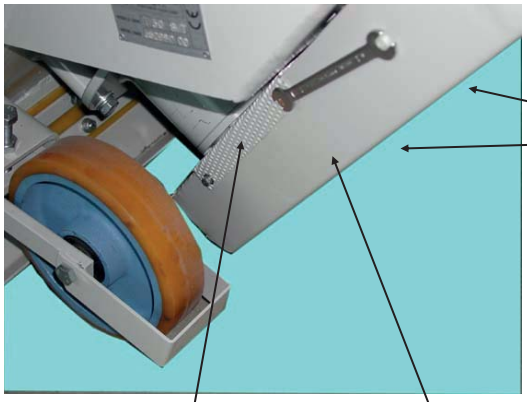
Tighten the central bolt (E) until a centre line distance of roughly 10 mm is obtained under a force of 10 kg.

Retighten the counterbolt (D)

Fix the motor to the machine structure by fully tightening the four bolts (C)

Refit the protection device (B), then (A)

THE BELTS SHOULD BE REPLACED WITH REFERENCE TO NFE CODE (SEE IT AT THE END OF THE MANUAL)



Bolts (C)

Mesh (A)

Protection (B)

Bolts (D)

Central bolt (E)

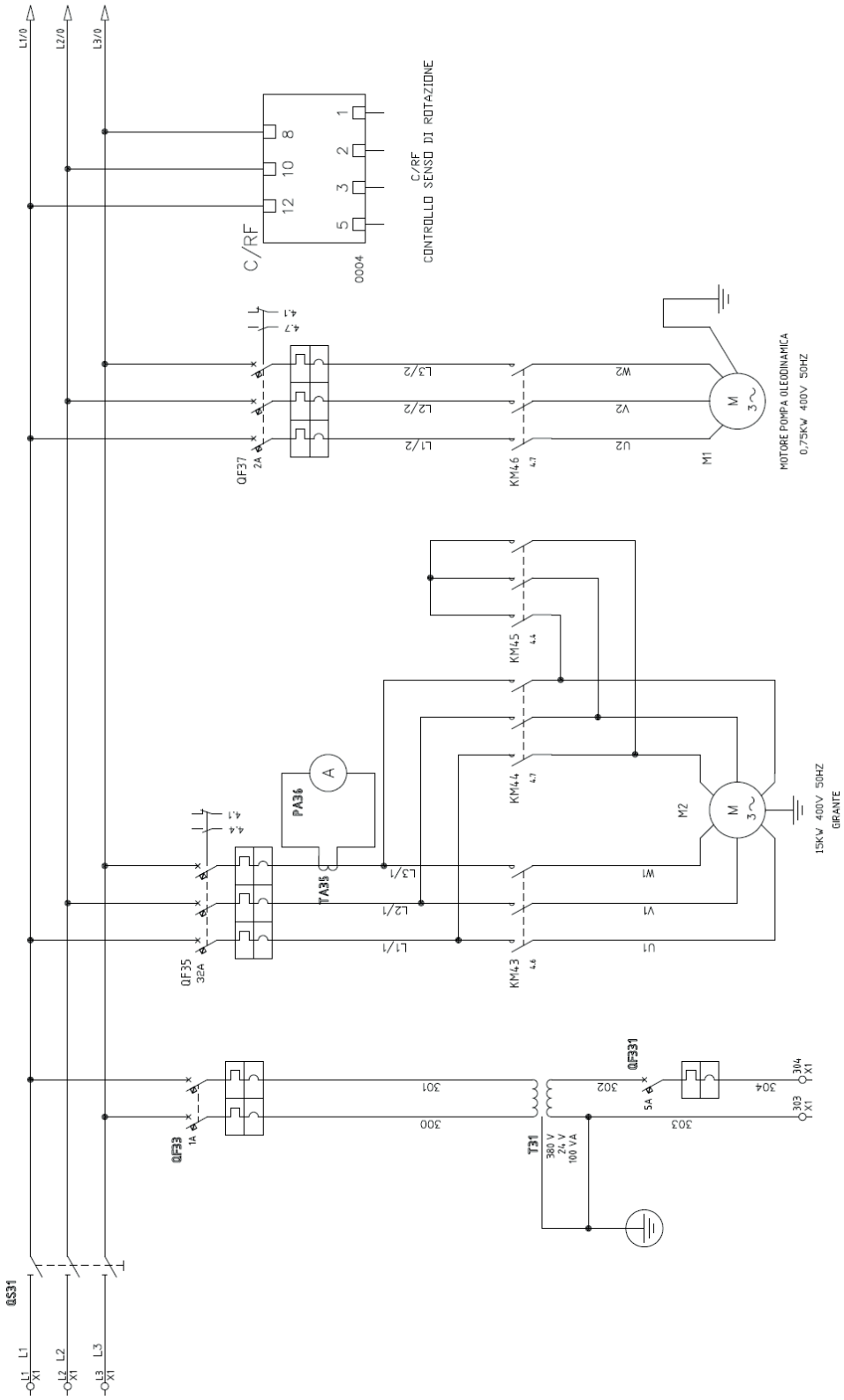
SHOT-BLASTING MACHINE A99-INT

DUST COLLECTOR DS8000

ELECTRICAL SCHEMES

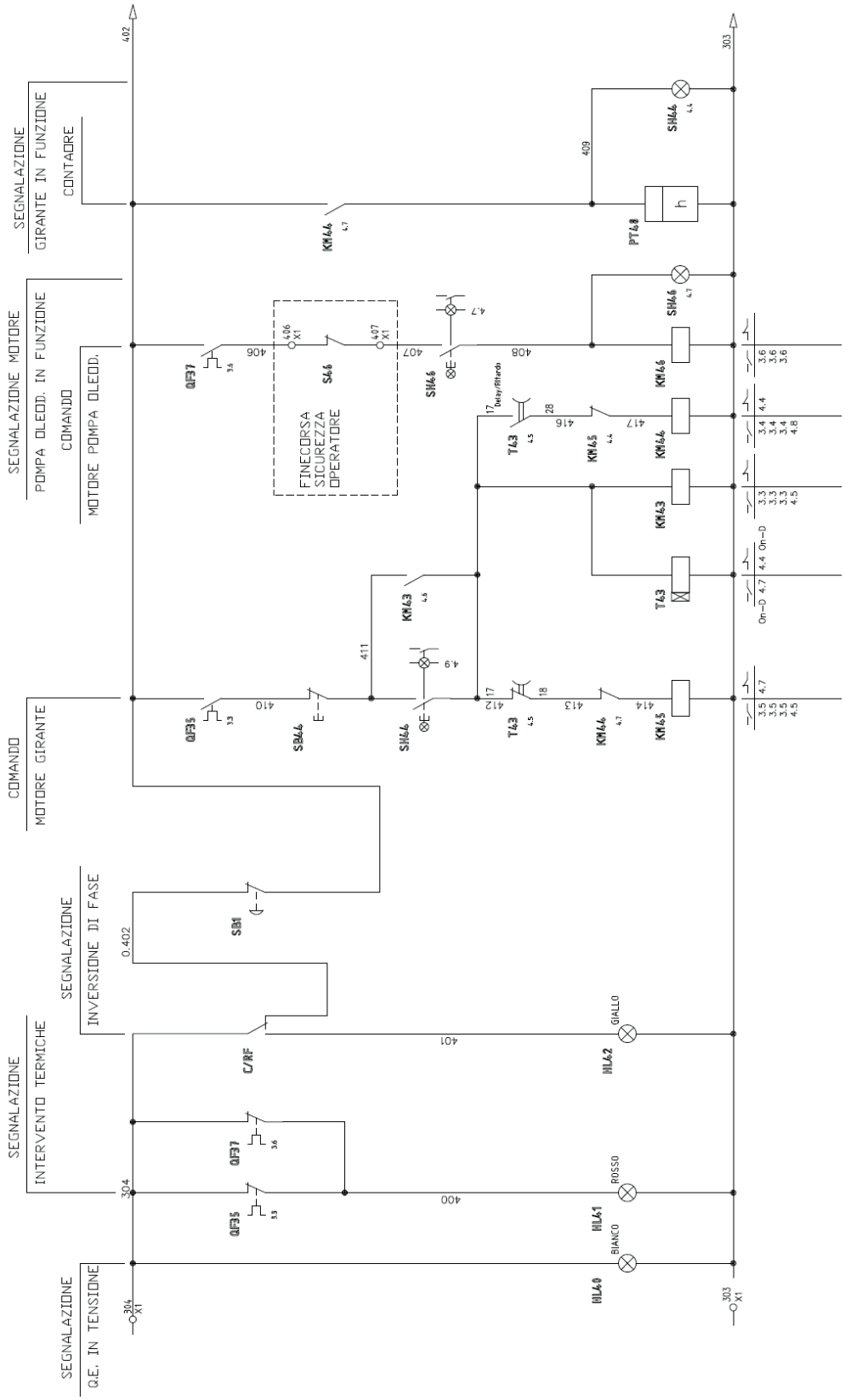
PNEUMATIC SCHEME

SHOT-BLASTER A99-INT



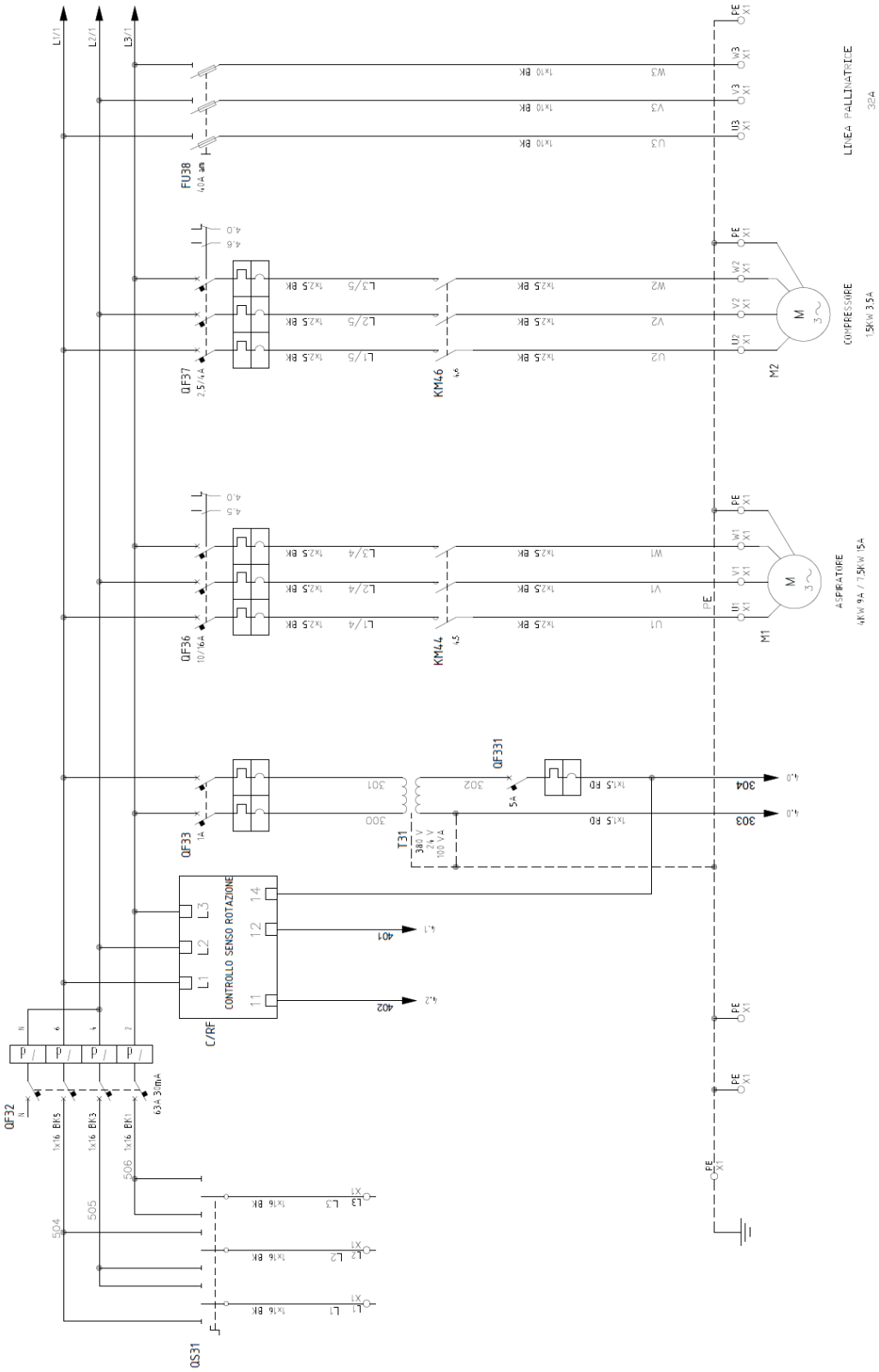
POWER SCHEME

SHOT-BLASTER A99-INT



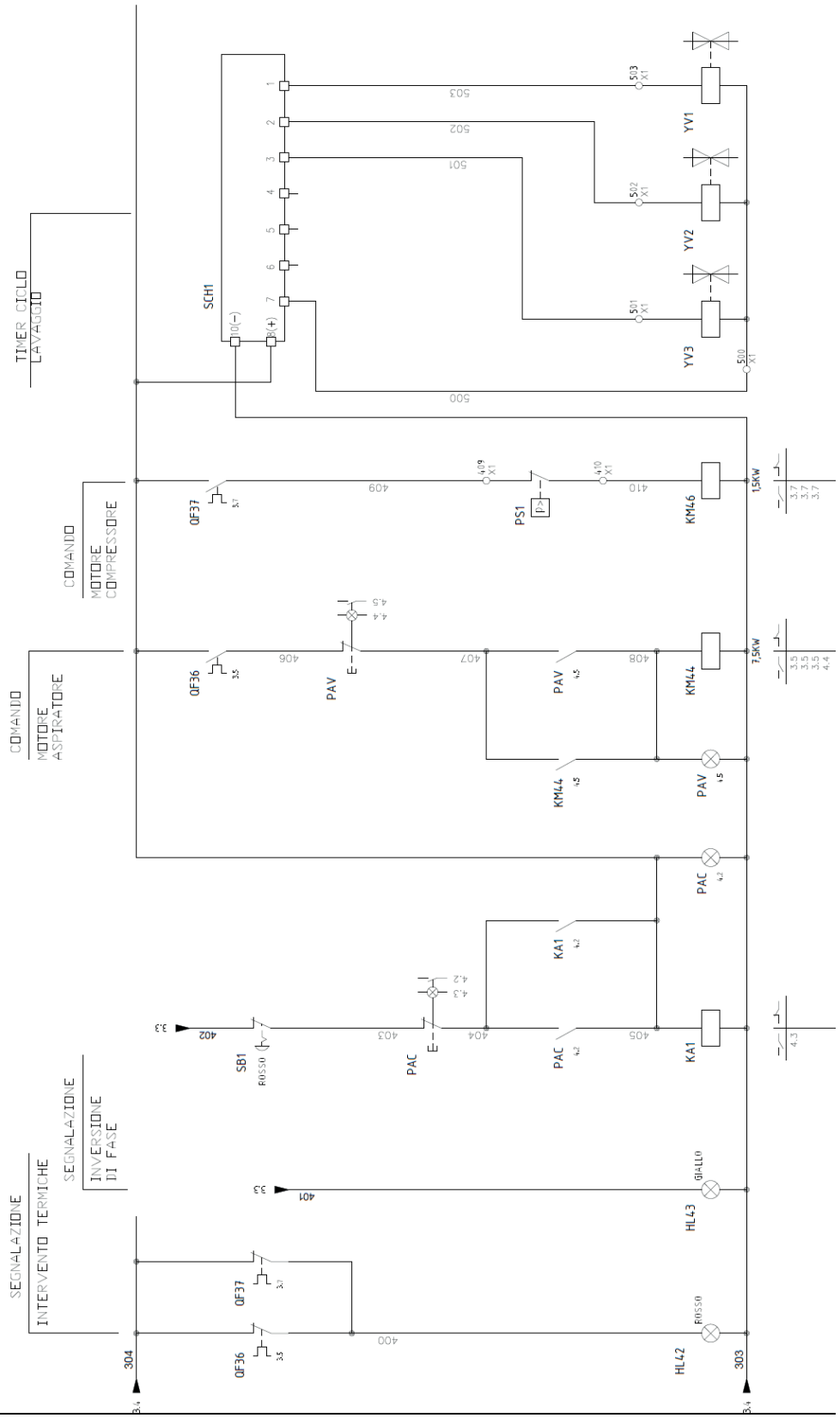
COMMAND SCHEME

DUST COLLECTOR DS8000



POWER SCHEME

DUST COLLECTOR DS8000

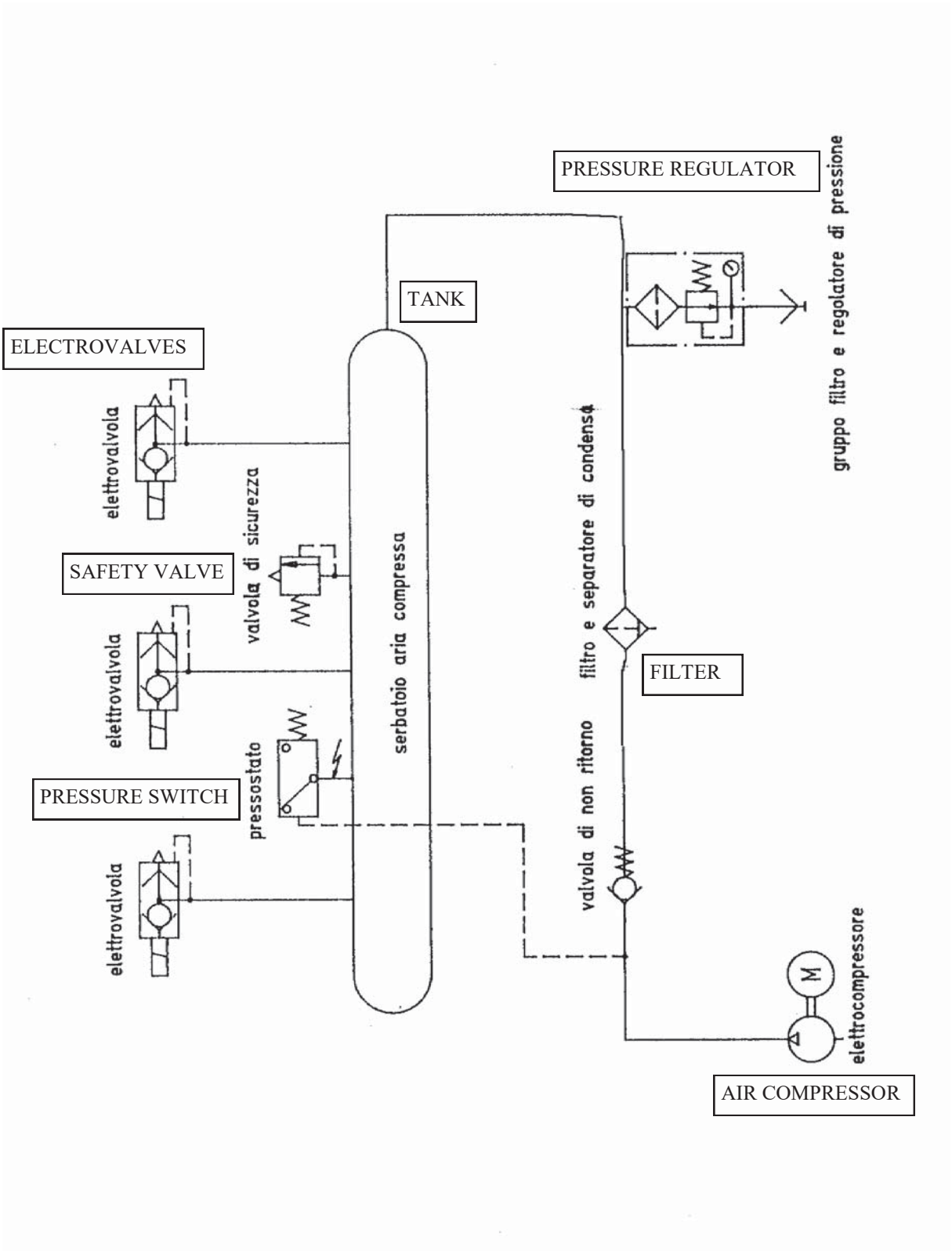


COMMAND SCHEME

DUST COLLECTOR PNEUMATIC SCHEME

19

ASPIRATORE DS8000



PNEUMATIC SCHEME

SCRAPPAGE and DISPOSAL

The raw materials and components used by NFE for the construction of machines is for the most part recyclable.

The majority of the materials are:

- ***Carrying structures***
  - **a) iron**
  - **b) cast iron**
  - **c) aluminium**
  - **d) stainless steel INOX**
- ***Accessories***
  - **a) rubber**
  - **b) plastic/ABS**
  - **c) Vulkolan**
- ***Other parts***
  - **a) electric and electronic components**
  - **b) cables, conductors and copper coil windings**
  - **c) PVC sheathing**

SCRAPPAGE

Scrappage and disposal operations must be carried out by specialized personnel with the necessary ability.

- **Before disposal, metal parts must be separated those in rubber, plastic or electric/electronic materials.**
- **Each different type of material must be disposed of in the proper and indicated disposal collection centers.**

EUROPEAN COMMUNITY: DISPOSAL OF ELECTRIC APPARATUS (RAEE)

According to European Rules, waste materials:

- **Must not be disposed of together with domestic waste**
- **Must be considered as "Separate Waste Collection" in order to promote and facilitate recycling, reuse and other forms of practical and suitable forms of recovery in order to reduce the quantity of waste to be sent to the waste dumps.**
- **Obligation of "*Separate Waste Collection*" is indicated by the symbol:**

OTHER COUNTRIES:

Follow your local rules and regulations.