



ECO-BLASTER IBIX 25



USE AND MAINTENANCE MANUAL

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1 FOREWORD



IMPORTANT NOTE

BEFORE CARRYING OUT ANY OPERATION ON THE MACHINE, THE APPOINTED MACHINE OPERATORS AND TECHNICIANS SHOULD CAREFULLY READ THE INSTRUCTIONS CONTAINED IN THIS MANUAL AND COMPLY WITH THEM IN CARRYING OUT THEIR WORK. SHOULD YOU HAVE ANY DOUBTS CONCERNING THE INSTRUCTIONS PROVIDED, PLEASE CONTACT OUR AFTER-SALES SERVICE FOR THE REQUIRED EXPLANATIONS.

1.1 GENERAL INFORMATION

This is the instruction manual for:

MACHINE TYPE: **BLASTER**
SERIES AND TYPE: **IBIX 25**
YEAR OF CONSTRUCTION:

This user manual contains the main information regarding the machine storage, handling, installation, use, supervision, maintenance and disassembly.

This manual makes an integral part of your machine and should be kept with care until the machine dismantling

at the end of its working life, in order to allow future reference and updating.

Should this copy of your user manual become damaged to the point that it can no longer be used, another copy may be requested from

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by specifying the machine type, serial number or job number indicated on the machine data plate.



This manual refers to the machine condition at the time of its supply and may not be considered inadequate only because later updates have been introduced to reflect newly acquired experience. **IBIX** reserves the right to update its products and manuals without any obligation to inform the users of previously supplied machinery.

However, courtesy notification of any proposed manual and/or machine updating can be expected.

Our Customer care service is however always available to supply on request any information regarding machine updates.

IBIX shall not be held responsible for any incorrect use of its supplied machines, including:

- a) wrong use of the machine or use of the machine by poorly trained personnel;
- b) use of the machine not in compliance with the applicable regulations;
- c) wrong installation;
- d) incorrect power supply;
- e) severely incorrect maintenance;
- f) unauthorised intervention or modifications;
- g) use of non-original spare parts or spare parts not suitable for the machine model concerned;
- h) failure to comply with the supplied instructions, wholly or in part;
- i) unexpected events.

1.2 GENERAL INFORMATION ON MACHINE USE

- This manual has been prepared for the purpose of supplying the user with general information regarding the machine and with the maintenance directions judged necessary for its smooth operation.
- Before carrying out any machine installation, maintenance and repairing operations, thoroughly read this Manual as it contains all the necessary information to correctly use the machine by preventing accidents and injuries.
- The inspection and maintenance schedules prescribed by this manual should always be intended as the minimum required to guarantee the machine efficiency, safety and working life under normal operation conditions. However, constant supervision is recommended to be able to take immediate action in the event of a breakdown.
- All scheduled maintenance, checks and general cleaning should be carried out while the machine is stopped and disconnected from the air supply system.
- Warning: any machine modification or alteration not authorised by the machine manufacturer and any safety system modification or alteration shall cancel any manufacturer's guarantee and safety liabilities.

1.3 GENERAL PRECAUTIONS ON MACHINE USE

The following recommendations are part of the normal behaviour that machine workers should adopt during work. Therefore, when designing and building the machines, the machine manufacturer has assumed that these recommendations are known to the machine workers. **It is the user's responsibility to inform and train the machine workers to make sure that these recommendations become known to the personnel in charge of operating the eco-blaster.**



- Do not allow machine servicing by unauthorised personnel.
- **DO NOT START THE MACHINE IF IT IS OUT OF ORDER.**
- Before using the machine, make sure that any condition likely to affect safety has been removed as required.
- Make sure that all the machine guards and other protections are in place and that all the safety devices are present and in working order.
- Make sure that no unauthorised persons are within the work area.
- All the workers involved in any machine work phase must wear safety goggles, mask, headgear and gloves.
- Always comply with all the prescribed obligations, prohibitions and warnings during machine use.
- Never leave the machine unattended.
- Never use the machine under the influence of alcohol, drugs, medicines or extreme tiredness. A clear head is an essential precondition to operate the machine safely and effectively.

1.4 PICTOGRAMS RELATING TO THE “OPERATOR QUALIFICATION”



- [A] Operator:** worker trained and authorised to operate the machine. In order to understand the instructions ((text and pictures) supplied, the operator must have (or acquire through suitable education and training) the following characteristics:
- sufficiently good general and technical knowledge to read and understand the parts of the manual concerning his or her tasks and to correctly understand its drawings and diagrams;
 - ability to read and understand symbols, pictograms and screen displays;
 - knowledge of the main safety, accident prevention and technological rules;
 - global knowledge of the machine and its setting on the job-site or in the factory to be able to tackle any emergency situation (ways out, fire-fighting systems etc...);
 - specific knowledge of the machine field of application.
- The operator’s tasks are: machine start, machine operation and machine stop.
- [B] Mechanical maintenance engineer:** skilled technician able to operate the machine under normal operating conditions, to operate it with a hold-down control when the machine protections are turned off, and to carry out any required adjustments, maintenance and repairs on mechanical parts.
- [C] Manufacturer’s technician:** skilled technician made available to the manufacturer to carry out complex operations in special situations or according to agreements with the user. The tasks of a manufacturer’s technician are of a mechanical nature.

1.5 PICTOGRAMS RELATING TO SAFETY

The safety pictograms used on the machine and/or in this manual are listed here below:



Note: any parts of text preceded by this symbol contain important information/prescriptions.



Caution: any parts of text preceded by this symbol contain important information/prescriptions concerning safety in particular.



Obligation to wear safety shoes: the presence of this symbol means that the operator must wear protective shoes.



Obligation to wear safety gloves: the presence of this symbol means that the operator must wear protective gloves.



Obligation to wear safety goggles: the presence of this symbol means that the operator must wear safety goggles.



Obligation to wear a face mask: the presence of this symbol means that the operator must wear a protective mask.



Obligation to wear ear protectors: the presence of this symbol means that the operator must wear ear protectors against noise.

1.6 APPLIED STANDARDS

The following is a non-exhaustive list of Standards applied to our Eco-Blaster design, manufacturing and testing.

The IBIX Eco-Blasters are designed and manufactured in CONFORMITY to essential safety requisites in compliance with the following Directives:

- 89/392 CE
- 91/368/CE
- 93/44/CE
- 93/68/CE
- 98/37/CE

Applied Standards:

UNI EN 292/1:	Safety of machinery – Basic concepts, design principles – Terminology, basic methodology
UNI EN 292/2:	Safety of machinery – Basic concepts, design principles – Specifications and technical principles
UNI EN 349:	Safety of machinery – Minimum distance required to prevent body part crushing
EN 574:	Safety of machinery – Control devices
EN 811:	Safety of machinery – Safety distances
PR EN 954:	Safety of machinery – Design principles for safety-related parts of control systems
PR EN 982:	Safety of machinery – Safety requirements for fluid power systems and their components – Hydraulics
EN 1050:	Safety of machinery – Risk Assessment
CEN/TC 122/WG 2:	Safety of machinery – Ergonomic design principles - Part 1: Terminology and general principles - Part 2: Interaction between machine design and end use



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2 PRESENTATION

2.1 GENERAL INFORMATION

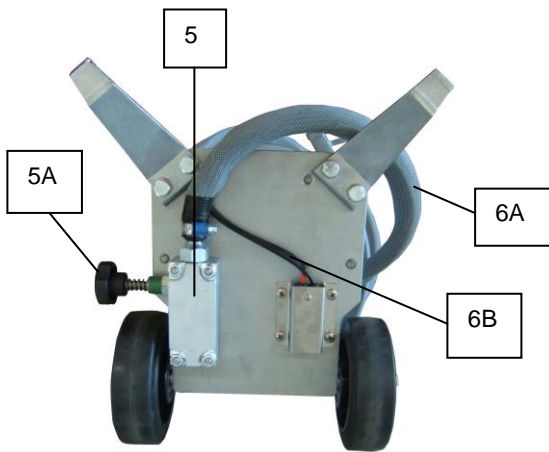
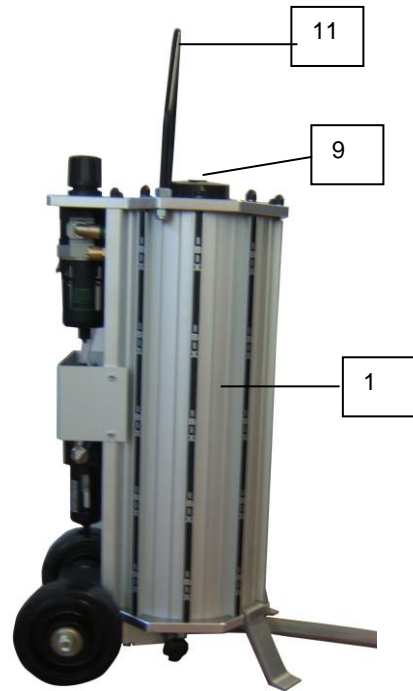
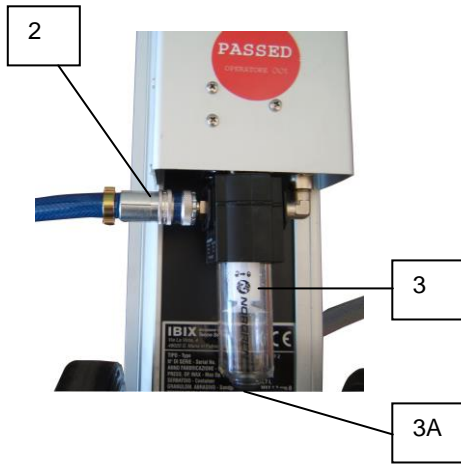
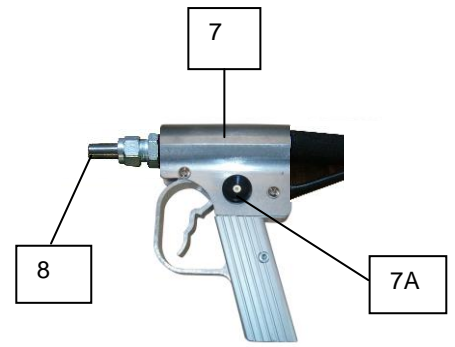
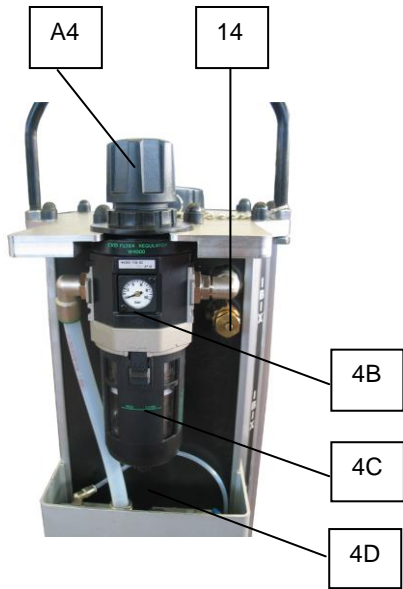


The IBIX eco-blaster has been designed and built to carry out environment-friendly sand-blasting, micro-blasting and cleaning without generating any dust. This machine is extremely versatile and enables to treat several types of surface. Its low weight (obtained thanks to a structure fully made from aluminium) makes it especially easy to handle.



Main units:

- 1] **Blasting material tank**
- 2] **Compressed air connection**
- 3] **Anti-condensate filter** (equipped with a condensate-draining valve [3A])
- 4] **Pressure regulator** (including an adjustment control [4A], pressure gauge [4B], and air filter [4C] with a condensate-draining valve [4D])
- 5] **Blasting material/air mixing valve** (with a screw [5A] to adjust the blasting material out-flow rate)
- 6] **Blasting material hose 1/2" (13x25 mm) [6A] + air twin hose [6B]**
- 7] **Remote-controlled air gun** (equipped with a safety button [7A])
- 8] **Nozzle**
- 9] **Blasting material filler plug**
- 10] **Blasting material filler funnel**
- 11] **Carrying handle**
- 12] **Foot supports**
- 13] **Wheels**
- 14] **Safety valve**
- 15] **Kit H₂O (optional)**
- 16] **Rilsan hose-kit H₂O nozzle fitting (optional)**
- 17] **Mixing nozzle (optional)**



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2.2 DATA PLATE

Please exactly quote your machine **Model**, **Serial number** and **Year of Construction** to facilitate our After-Sales Service accurate and prompt response.

Always quote this information whenever you contact our After-Sales Service or whenever you order spare parts.

This information is contained in the data plate installed on your machine.

For no reason should the information indicated in the plate be altered.

IBIX <i>divisione di</i> Tecno Supply S.r.l. <i>Via La Viola, 4</i> <i>48020 S. Maria in Fabriago (RA) - ITALY</i>	
TIPO - Type	: IBIX 25 P
N° DI SERIE - Serial No.	: 0999
ANNO FABBRICAZIONE - Prod. Year	: 2005
PRESS. OP. MAX - Max Op. Pr.	: 7 BAR
SERBATOIO - Container	: 24,8 L
GRANULOM. ABRASIVO - Sandgrain Size	: MAX 1,8 mm Ø
TEMPERATURA MAX - Max Temperature	: 65 °C
TEMPERATURA MIN - Min Temperature	: 0 °C
PRESSIONE COLLAUDO - Test Pressure	: 10,5 BAR



The figure shows where the data plate is located and what it looks like.

Your machine serial number should be quoted whenever you contact the manufacturer for inquiries or to order spare parts.

2.3 CHARACTERISTICS

It is the designer's duty to fix limits and apply more severe restrictions regarding the presence of personnel and the work area.

The machine should be operated by trained personnel aware of the machine characteristics and of the contents of this manual.

The machine operates in the manual mode and should be worked by a single operator.

2.4 OPERATING PRINCIPLE



The work process can be outlined as follows:
compressed air coming from the air compressor is fed to the eco-blaster after a pneumatic actuator is controlled which enables the main air valve to feed compressed air into the blasting material tank. The pneumatic actuator, receiving air from the twin air hose, is controlled by the remote-controlled gun trigger. Pressure inside the tank will push the blasting material towards the blasting material/air mixing valve. The blasting material/compressed air mix is pushed through the abrasive-proofed hose all the way to the gun, and out of the gun through a tungsten carbide nozzle.

2.5 SPECIFICATIONS

Structure:	fully made from aluminium
Working pressure:	2 ÷ 9 bars
Particle size:	38 µm up to 1,8 mm
Remote control hose length:	10 m
Standard nozzle size:	5.5 mm
Blasting material tank capacity:	24.8 l
Installed machine max height:	940 mm
Installed machine max width:	450 mm
Packaging (box) dimensions:	920 x 530 x 410 mm
Machine weight (empty tank):	~30 Kg
Handle vibrations:	1.157 m/s² (air) and 1.186 m/s² (water)
Cleaning surfaces:	steel, aluminium, stainless steel, wood, marble, glass concrete, masonry, stone, composite materials, etc.

2.6 INFORMATION ON THE MACHINE WORKING NOISE



The operators in charge of operating the machine must always wear hearing protectors while the machine is running (in addition to all the other mentioned personal protection devices).

The machine noise levels depend on the type of air compressor used and on the selected working pressure.

2.7 AIR CONSUMPTION AT NOZZLE

Air consumption is expressed in litres per minute.

Nozzle	4 bar	5 bar	6 bar	7 bar	8 bar
2.5 mm	255	281	305	327	348
3.0 mm	368	406	440	472	502
3.5 mm	502	553	600	644	684
4.0 mm	657	725	786	843	896
4.5 mm	835	920	786	1070	1137
5.0 mm	1036	1141	998	1326	1409
5.5 mm	1262	1390	1237	1614	1714
6.0 mm	1516	1669	1506	1936	2055
6.5 mm	1803	1983	1807	2296	2437
7,0 mm	2264	2478	2145	2851	3019

Calculations performed according to the ISO 5167 standard

The indicated air consumption figures are referred to the maximum theoretical air flow that can be reached. To obtain these figures, a compressor able to deliver these amounts must be used, increased by a precautionary 15-20% usually lost in the passage from the compressor to the nozzle.

For IBIX 25, a minimum 3/4" blasting material hose should be used.

Spot-blasting can be carried out by using much smaller amounts of air than what is indicated in the table here above.

2.8 BLASTING MATERIALS TO USE – TIPS AND SUGGESTIONS

ONLY THE ECO-BLASTERS SOLD BY IBIX SRL ENSURE THE PROPER FUNCTIONING AND ARE THE ONLY RECOMMENDED FOR THEIR SPECIFIC USE.

For most applications, the best results with IBIX machines are obtained by using the natural mineral abrasive material **GARNET**.

Garnet is an Australian natural mineral consisting of extremely hard grains of ALMANDITE which enable the material to be re-used; in addition, this material is not CRUMBLY therefore it will not break up and produce dust, unlike sand.

It undergoes multiple washing cycles to remove any impurities and for this reason it will not produce dust during work (unless it is used on concrete). No special precautions are required during work: oxygen masks are not necessary, although protective masks are useful. This natural mineral does not contain any free silica or ferrite (causing rusting right after iron-blasting). Garnet also offers advantages in the disposal phase as it is compliant with environment protection-regulations and with the ISO 11 626 standard.

Garnet is sold in 25 Kg bags and is available in 6 different particle sizes measured in mesh (from the finest to the coarsest):

Mesh	Grain size
350	(fine)
200	(fine)
120	(medium)
80	(medium)
30/60	(coarse)
20/40	(coarse)



The **GARNET** particle size should be chosen according to the type of work to carry on. Other blasting materials used are sodium bicarbonate and calcium carbonate. To have more information on the characteristics of blasting media and on their suggestions, please refer to the technical sheet of each abrasive, available on our web page www.ibix.it.

Wood - Particle sizes of 80 or 120 mesh are recommended. In certain cases, however, other GARNET particle sizes should be used such as 30/60 or 20/40 mesh or even 200 mesh for restoration and cleaning of very delicate surfaces.

Stone - The particle sizes most commonly recommended for cleaning stone are 120 or 200 mesh to remove graffiti or for soft cleaning. However, other particle sizes (30/60 or 20/40 mesh) can be used for different jobs, such as bush-hammering or polishing of small areas. For the delicate, time-worn stone of statues and other architectural structures, or for polished surfaces which must be left unaltered (e.g. brilliant marble), spherical calcium carbonate (MARMOSOFT®) is recommended.

Marble - GARNET should not be used on polished (brilliant) marble. The recommended products in this case are sodium bicarbonate or spherical calcium carbonate (MARMOSOFT®) to be applied with an optional water sprayer to avoid damaging the treated surface. If the treated surface is naturally matt and graffiti removal is necessary, GARNET can be used in the particle sizes 350/200/120 mesh. GARNET, however, should be used in this case after carrying out low-pressure tests.

Glass - To remove graffiti or dirt from glass surfaces, water-soluble sodium bicarbonate is used, while to opacify a surface and obtain either “positive” or “negative” decorations, the naturally abrasive GARNET mineral can be used. The right particle size should be selected according to the desired type of finish.

Iron - To remove rust or paint, the naturally abrasive GARNET mineral in particle sizes such as 20/40, 30/60 or 80 mesh can be used, to obtain clean surfaces with the ideal degree of roughness to allow good adhesion of the painting product used. The right particle size should be selected according to the desired type of finish.

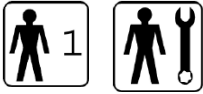


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3 DANGERS AND PROTECTION



3.1 NOT PERMITTED AND NOT RECOMMENDED USES

The IBIX eco-blaster should be used for the applications recommended by the manufacturer (see chapter 2).

In particular, the system should not be even partially used:

- without its protective guards and/or with cut-off, faulty or missing safety devices;
- if it has not been correctly installed;
- in an explosive atmosphere or wherever there is a fire risk;
- to work materials with characteristics different from the specified ones;
- in dangerous conditions or in the event of machine malfunction;
- for uses not recommended for the machine or by untrained personnel;
- for uses against the applicable standards;
- in case of severely inadequate maintenance;
- after carrying out unauthorised modifications or repairs;
- in total or partial disregard of the given instructions.



A SPECIFIC WRITTEN DECLARATION BY IBIX IS NECESSARY FOR ANY DEROGATION TO THE INDICATIONS ABOVE LISTED.



Any modification not explicitly authorised by the manufacturer that modifies the predicted functionality and the risks and/or create additional risk, will be the full responsibility of the person performing.
Any modifications carried out without the manufacturer's authorisation, also imply the loss of validity of any form of guarantee issued by the manufacturer and of the statement of compliance according to the Machine Directive 98/37/CE.

3.2 Accident-preventing devices

To ensure the optimal security conditions for the user, the machine is equipped with the following safety devices:

- [A] **Security button:** this is a security button on the gun which prevents the release of air+inert in case of accidentally pressure on the trigger. Therefore, to run the gun, the operator must press first the security button and then the trigger. This procedure allows the release of air+inert by the nozzle on the gun. The release of the trigger causes the prompt return of the button in its security position and stops the inert release.
- [B] **Security valve:** located next to the pressure reducer, it lets air out of the blasting material tank if pressure becomes too high inside the tank (> 8.5 bar).



IMPORTANT NOTE: ALWAYS VERIFY THE CORRECT FUNCTIONING OF SECURITY DEVICES TO PREVENT THE POSSIBLE RISKS RELATED TO THE MACHINE USE.



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4 LIFTING, HANDLING AND STORAGE

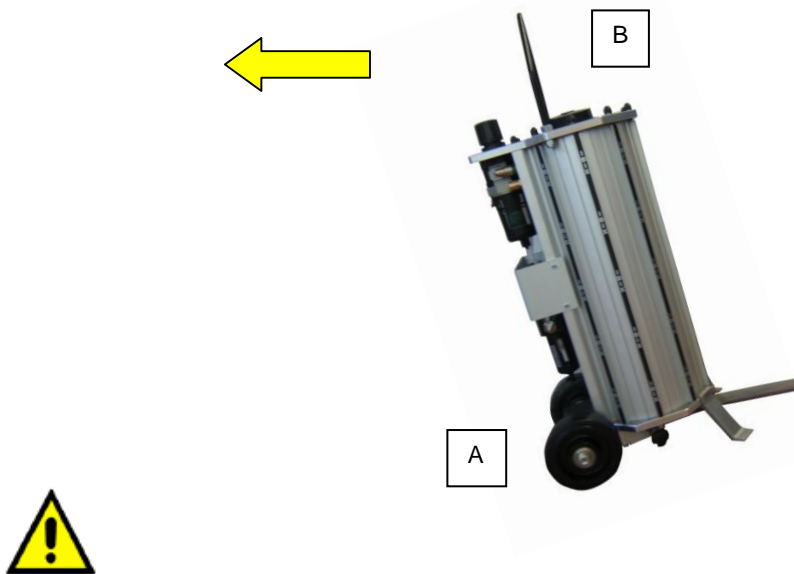


4.1 LIFTING AND HANDLING

Machine lifting and handling must be carried out cautiously to prevent falls or overturning. The machine has been fitted with special wheels (**A**) to allow simple, safe handling. Move the machine by holding it by its special handle (**B**) slightly tilting the machine with caution.



BEFORE MOVING THE MACHINE ON ITS WHEELS, ALWAYS MAKE SURE THAT THE MACHINE IS DISCONNECTED FROM ITS AIR SUPPLY SYSTEM AND THAT THE BLASTING MATERIAL HOSE AND TWIN AIR HOSE HAVE BEEN COILED UP AND ARE SAFELY ANCHORED TO THE MACHINE. IT IS STRICTLY FORBIDDEN TO LET THE BLASTING MATERIAL HOSE AND TWIN AIR HOSE DRAG ON THE FLOOR DURING MACHINE HANDLING.



The machine is purchased by the Customer contained in its special protective packaging (carton). The machine is equipped with a handle for handling purposes which must be fitted by the Customer (see Chapter 5 - paragraph 5.2).

As the machine total weight is higher than 25 Kg. by the terms of the Law Decree 626/94 the machine may not be manually handled by a single operator.



In any case, comply with the work place health and safety regulations in force in the machine Country of use!

4.2 STORAGE

If the machine is not used for prolonged periods of time, we recommend to store it at a covered location sheltered from bad weather and aggressive chemicals.

The machine should be stored away with an empty tank and clean hoses and circuit. Make sure that the anti-condensate filter cups and the pressure reducer do not still contain any liquid. Wrap the hoses in plastic sheeting to protect them against external agents.

We recommend to remove the nozzle and keep it in a safe place wrapped in *pluriball* packaging paper. The machine should be stored indoors at suitable temperature (0°C to 60°C).

4.3 PACKAGING DISPOSAL



To dispose of packaging materials, comply with the applicable standards in the machine country of use.

However, follow these general rules:

- any packaging materials should be collected separately and brought to special recycling bins;
- any metal parts contained in the machine must be removed and sent to a foundry for recycling.



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5 INSTALLATION



5.1 INSTALLATION AREA TO BE SET UP BY THE USER

Before starting to work the user should make sure that:

- there aren't any unauthorised persons within the selected work setting;
- there aren't any foreign objects hindering the installation work or making it unsafe.

5.2 IBIX ECO-BLASTER PACKAGE OPENING



The machine is delivered to the Customer contained in its special packaging (carton) [1] with some disassembled parts (lifting handle and filling lid).



PACKAGE OPENING:

- Place the box on the floor [2], use a cutter to cut the tape joining the bottom flaps.
- Stand up the box again with open flaps and remove the packaging by the special handles [3].
- Release the machine from its preformed wrapping [4].



1



2



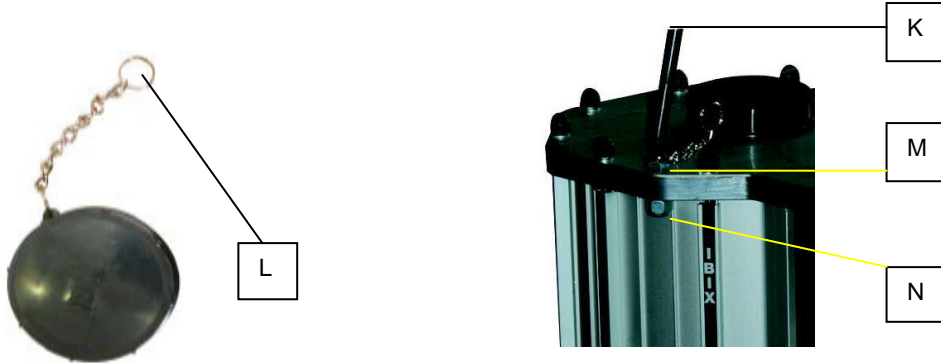
3



4



- To install the transport handle and plug: introduce the handle (**K**) into the safety ring (**L**) provided on the plug chain and in the special nuts (**M**). Introduce the handle into the two holes in the top part of the machine and lock it with the special nuts (**N**). Use a suitably sized hex nut wrench to tighten.



5.3 WARNINGS AND RECOMMENDATIONS BEFORE STARTING UP

1. Before controlling compressed air supply, make sure that the air hose connection is compatible with the coupling on the anti-condensate filter.
2. To check that your IBIX is operating correctly, start it up for the first time with an empty tank.
3. To operate the machine, make sure that the safety spring is inserted in its special housing below the starter trigger.
4. On starting up the machine, the abrasive material adjustment screw control should be kept turned off and then gradually turned on until the required abrasive delivery flow rate is obtained.
5. After work, it is always advisable to empty the machine tank (for more information check chapter 7 - Maintenance).



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6 START-UP



1. Insert the special funnel **(A)** in the hole on top of the machine, open the blasting material bag making sure that there aren't any loose pieces of paper, then fill up the tank until flush with the bottom free edge of the aluminium door kept open by the funnel.



2. Remove the funnel and screw the lid back on **(B)** to stop any air release that could prevent the put on pressure of the tank and to protect the filling hole from any external element entry.



3. Connect the compressed air supply system to the quick coupling **(C)** provided in the anticondensate filter, making sure that the fitting is correctly connected to prevent incidents during the put on pressure of the machine.



4. While keeping the trigger pressed **(D)**, after have pushed the security button **(E)**, adjust your working pressure by lifting the pressure regulator handle **(F)** and cause it to turn clock-wise (to the right) to bring the pressure to the required value. The pressure gauge needle **(G)** will turn to reach that value. To lock the adjuster to the required pressure value, press its control handle **(F)** downwards.



5. Adjust the amount of blast in the mix by adjusting the special control screw **(H)** (turn clockwise to decrease the percentage of blasting material mixed with air; turn counter clockwise to increase the percentage of blasting material mixed with air). A good adjustments of the air/inert mixing is obtained when an continuous and light inert flow comes out from the nozzle.



6. If the optional water kit is installed on the IBIX, engage the water delivery pipe in the quick lock **(W)** installed with the water kit.



7. After reaching the required operating pressure and the required air/blasting material mix, begin operation. If the optional water kit is available, the tap **(Z)** must be turned on.

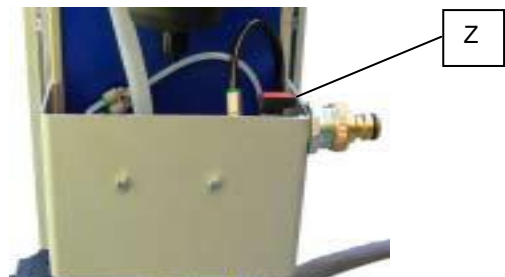
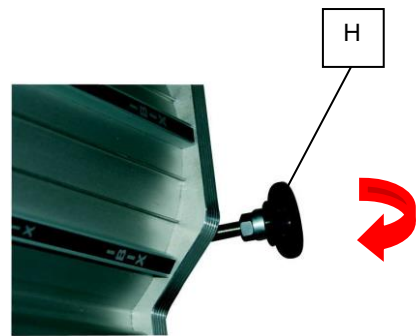
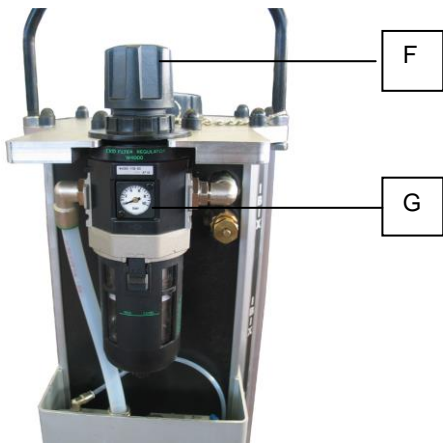
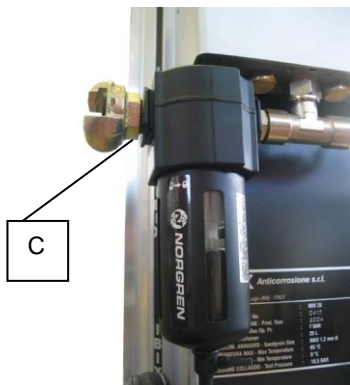
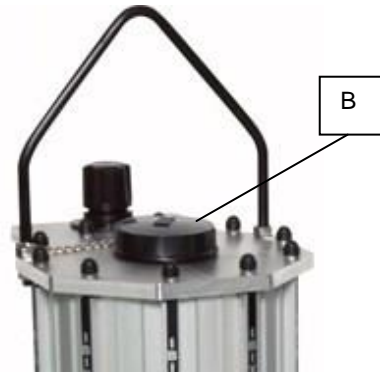
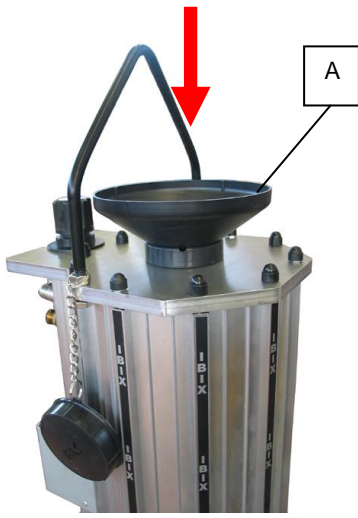


IT IS STRICTLY FORBIDDEN TO WORK WITHOUT THE PRESCRIBED PERSONAL PROTECTION DEVICES.



During work, always keep slightly open the condensate draining valve provided below the anti-condensate filter to eliminate the water in the compressed air collected after filtering.

Do not fill completely the tank to avoid that the inert goes into the pressure regulator, risking to damage it. IBIX suggests to fill the tank at 3/4 of its capacity.





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7 MAINTENANCE

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7 MAINTENANCE



BEFORE CARRYING OUT ANY MAINTENANCE, ALWAYS MAKE SURE THAT THE ECOBLASTER IS UNPLUGGED FROM THE AIR SUPPLY SYSTEM AND DOES NOT STILL CONTAIN COMPRESSED AIR IN ITS CIRCUITS.



Carefully read this section of the manual before carrying out machine maintenance and adjustment operations; this will guarantee better safety conditions for the personnel in charge of maintenance operations and more reliable results.



Please follow our recommendations below during each assembly and disassembly phase.

For safety issues, please refer to chapter 1.

To ensure safe conditions during maintenance, remember that:



1. Machine maintenance should be exclusively carried out by qualified, specially authorised personnel.
2. Any operation should only be carried out after stopping the machine and disconnecting it from the air compressor.



3. Before restarting the machine, make sure that:
 - all the replacement spare parts have been installed;
 - any foreign objects (cloths, tools etc...) have been removed from the machine;
 - all the protection systems have been correctly re-installed.



4. Before restarting the machine, make sure that there aren't any persons within the machine work range.



5. Do not use tools, cleaning equipment etc. while the machine is in operation.
6. Never place any body parts, limbs or fingers in any machine openings or hollow parts while the machine is in operation.



7. Do not alter the machine frame in any way (by drilling holes in it, cutting it etc.) as this might damage mechanical parts which would affect the whole structure.
8. The machine should be regularly inspected and maintained to keep its technical, operating and safety conditions unaltered.
9. It is forbidden to carry out maintenance, cleaning and repairing operations on:
 - a machine in operation;
 - a machine not correctly positioned on the floor.
10. Before carrying out any maintenance, cleaning and repairing operation, remember to wear the prescribed personal protection devices.
11. The protection and safety devices provided on the machine may only be removed for working purposes (i.e. to carry out maintenance and/or adjustments).
12. If whoever is in charge of carrying out maintenance has doubts as to the correct procedure to follow, even after reading the instructions contained in the manual, he or she should contact the Manufacturer or an authorised After-sales centre to obtain the required information.

7.1 TECHNICAL INFORMATION TO ENSURE GOOD MAINTENANCE

To ensure effective maintenance:

- only use original spare parts;
- comply with the (preventive and routine) maintenance schedule prescribed by the manual: the time recommended between one service and the next is the longest acceptable time. Therefore, it should not be exceeded but can be shortened;
- effective preventive maintenance requires constant machine observation and inspections.

7.2 GENERAL POST-MAINTENANCE TIPS



After carrying out machine maintenance and before restarting the machine, always:



- check that any parts that had been replaced and/or the tools used to carry out maintenance have been removed from the machine;



- check that all the guards and protection devices which may have been removed during maintenance are back in place, in working order and correctly positioned and adjusted;
- check that any pneumatic connections disconnected during maintenance have been reconnected;
- check the efficiency of the safety devices.

Only after maintenance completion and after carrying out all the required replacements may the normal machine operating conditions be restored.

7.3 ROUTINE MAINTENANCE

7.3.1 Daily checks



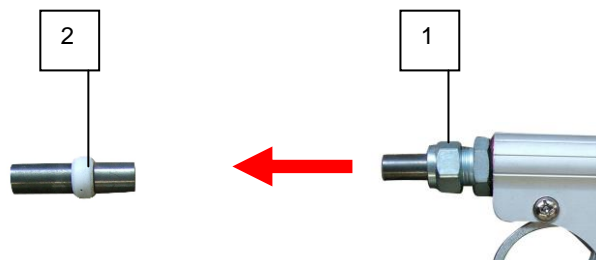
General cleaning: Blow-clean all the machine external parts with compressed air.

Gun cleaning: Blow-clean the trigger section of the gun with compressed air to eliminate any residual grain that could block the mechanism.



Nozzle cleaning: to clean the nozzle, screw out the locking nut (1) at the extremity of the gun or of the lance, extract the nozzle (2), clean it and replace it by making sure that the previously loosened nut is re-tightened hard. To replace the nozzle just repeat the same procedure inserting a new nozzle or a nozzle with a different diameter instead of the other.

Always empty the tank at the end of work and discharge the remaining inert in the gun to avoid blocks in the passages and valves.

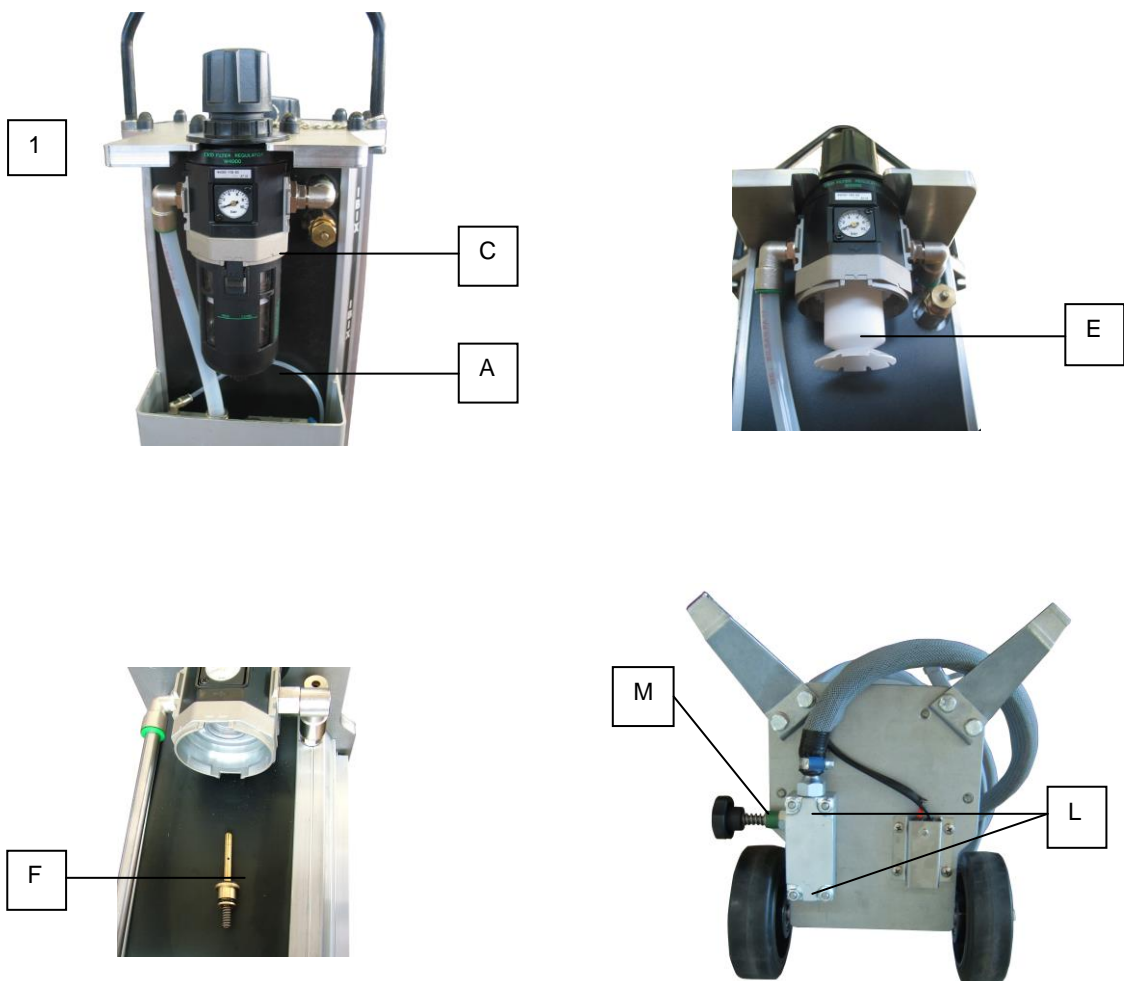


7.3.2 Weekly checks

Anti-condensate filter cleaning: Check for condensate inside the anti-condensate filter (1). If necessary, open the manual-discharge plug (A) placed underneath the cup (C) of the filter. Blow-clean the filter (E) and the internal pin (F) with compressed air from the inside to the outside.

Blast delivery adjustment screw seat cleaning: To clean the seat of the blasting material adjustment screw, screw out and remove the nut (M) to extract the screw with it. Now clean the removed part and the hole accepting the nut (M) with compressed air. Replace the nut (M) and the adjustment screw.

Blasting material/air mixing valve cleaning: To clean the blasting material/air mixing valve, screw out the 4 Allen screws (L). Now screw out the nut (M) and blow-clean the removed part with compressed air. After this, replace the galvanised block being careful not to damage the screw and screw seat threads.

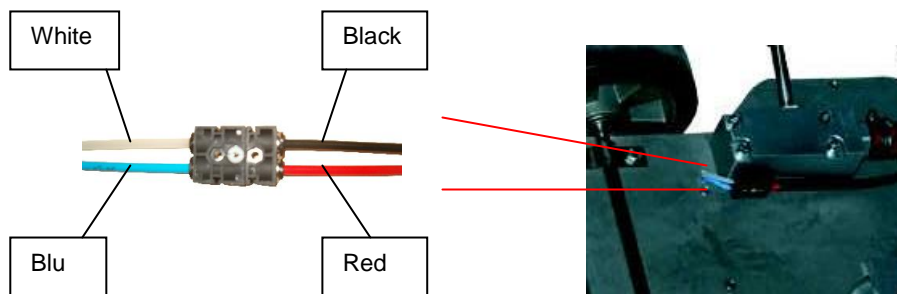


7.3.3 Replacing the twin hose

The twin hose connects the gun to a valve in the lower part of the eco-blaster. Two other hoses go from this valve to the main air valve, located below the protective guard. The figure shows that the 4 hoses in question are in 4 different colours (red and black for the twin hose, white and blue for the main air valve hoses). If one or more of these hoses have to be replaced, the same arrangement and the same colour-coding should be maintained (red to blue, white to black).



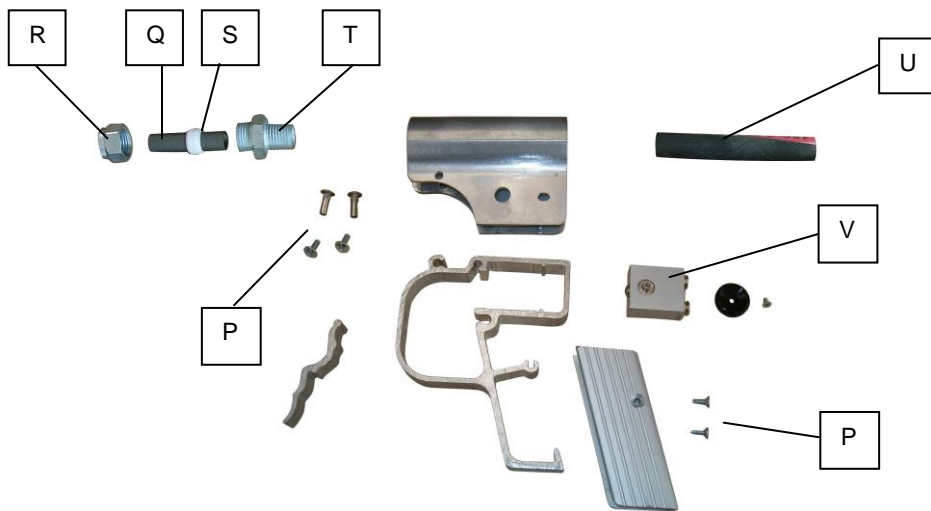
To disconnect the hose without damage the 2 parts, it is necessary to press the valve where the hose enters, then carefully pull the hose.



7.3.4 Gun maintenance

Good maintenance of the gun and all its parts is essentially important to guarantee efficient gun operation.

Disassemble the gun by screwing out its three screws (**P**). Screw out the nozzle locking nut (**R**). Extract the nozzle (**Q**), the teflon ring (**S**), the nut (**R**) and the nozzle-holder (**T**) from the gun. Check the condition of the inert hose (**U**) and of the valve (**V**). Replace the pneumatic valve as required.



7.4 UNSCHEDULED MAINTENANCE



UNSCHEDULED MAINTENANCE SHOULD BE EXCLUSIVELY CARRIED OUT BY THE MANUFACTURER OR SKILLED TECHNICIANS OR BY OTHER PERSONNEL AUTHORISED BY THE MANUFACTURER.

1. In normal operating conditions, the machine does not require any maintenance or servicing other than the routine maintenance recommended in the manual.
2. Any other service is considered “unscheduled maintenance”.
3. Unscheduled maintenance operations must be carried out by personnel with an in-depth, specialised knowledge of the machine and all its parts. In no case may a routine maintenance engineer carry out unscheduled maintenance, either personally or through his/her appointed persons.
4. In any case, the routine maintenance engineer is bound to promptly inform the Manufacturer that an event has occurred which makes unscheduled maintenance necessary, by indicating its cause and action.

7.5 TROUBLESHOOTING

FAULT	POSSIBLE CAUSE	SOLUTION
No air delivery from the nozzle	Compressor disconnected or turned off Pressure reducer control turned fully off Nozzle obstructed by foreign matter Blasting material particle size too	Connect the compressor to the IBIX machine and turn it on Turn on the control to the required setting Clean nozzle Replace nozzle
The nozzle delivers air only without any blasting material	The machine is empty: no more blasting material in the tank The adjustment valve on the lower plate is jammed The blasting material flow adjustment screw is turned off Blasting material particle size too coarse The blasting material is damp or contains foreign matters	Full the tank with blasting material Remove the blast adjustment screw and clean it Turn the adjustment screw until reaching the required amount of blasting material Replace nozzle Empty and clean the machine and fill it with clean, dry blasting material
Discontinuous blasting material flow	Blasting material flow adjustment screw open too wide	Turn off the adjustment screw until reaching the required amount of blasting material
The required cleaning results cannot be obtained	Incorrect air/blasting material mix Blasting material hose punctured or cracked Unsuitable nozzle for the chosen application Unsuitable blasting material or particle size for the chosen application	Adjust the pressure reducer to the required pressure Replace hose Replace nozzle with a suitable one Replace the blasting material used with another material suitable for the required results
Gun air leaking	The air control hoses on the start/stop control have been exchanged (Red must be connected to Blue and Black to White – see chapter 7.3.3)	Disconnect the air control hoses and exchange their positions



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