

The logo for Jo/ke, featuring the word 'Jo/ke' in a stylized white font on a blue background. The 'o' and 'k' are connected, and the 'e' is separate. The background of the entire page is a photograph of a blue industrial machine with a control panel at the top, a circular opening in the middle, and various cables and components on the right side.

Jo/ke

Oberflächentechnik
Surface Technology

Jo/ke

Instruction Manual

mikromat 600 pro and eco

Fine blasting units

Order-no: 0 952 400 and 0 952 000



Oberflächentechnik
Surface Technology



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**DRIVESPOLISHING
GRINDING
DIAMOND/CBN
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BLASTING
WORKPLACE
TRAINING PROGRAMMES**

1 Instruction Manual

1	List of contents	page 03
2	Tips on using the manual	page 03
3	Safety instructions	page 04
4	Warranty	page 06
5	Device overview	page 07
6	First startup	page 07
7	Technical data	page 13
8	Notes concerning blasting shot	page 14
9	Troubleshooting	page 15
10	Care and maintenance	page 17
11	Conformity declaration	page 22

2 Tips on using the manual

We congratulate you on purchasing this device.

This manual has been written for the device user to ensure a problem-free operation, care and maintenance. Important instructions and information concerning safety and operational reliability have been highlighted.

The symbols used in the manual have the following meanings:



Working and operating processes which must be observed to the letter to exclude any risk to persons and avoid damage to the device.



Technical information to which the device operator must give special attention.

The illustrations and diagrams are numbered in sequence within each chapter. Some of these illustrations have keys. References to illustrations within the text e. g. (5.1/2) have the following meaning:

5.1 = Figure 5.1

2 = Position 2 in the key to the figure.

Please feel free to call our customer service department at any time should you encounter technical problems which are not dealt with in this manual:

Telephone	0 22 04 / 8 39 - 0
Telefax	0 22 04 / 8 39 - 62
Mail	sales@joke.de
Web	www.joke.de

Safety instructions

This device has been built according to the latest technical standards and generally accepted safety regulations. Nevertheless, it can constitute a risk to the operator or third parties and a hazard to the device itself or other equipment during use.

1. Only use the device if in perfect working order and for its in-tended purpose. You must always pay attention to the instruction manual and safety instructions therein and be aware of the risks! Repair any faults which could affect the device's safety immediately by yourself or have these repaired.
The device is intended exclusively for fine dry blasting of work-pieces made of metal, non-ferrous metals and plastics. Any other use will be deemed to be contrary to its in-tended purpose. The manufacturer cannot be held liable for any resulting damages. The risk is borne solely by the user. Correct use also includes compliance with the instruction manual and an observation of the care and maintenance conditions.
2. Keep the instruction manual handy at the device's place of use.
3. Pay attention to and observe generally applicable statutory and otherwise binding regulations relating to accident prevention and environmental protection in addition to the information provided in the instruction manual!
4. All personnel commissioned to work on or with the device must have read this instruction manual, and particularly the safety instructions chapter, before starting work. This applies especially for personnel who only work with the device occasionally.
5. Stop the device immediately should you notice changes to the device or its operating behaviour that are relevant to its safety. Have these remedied before restarting work.
6. Observe safety instructions on the device and ensure they remain legible.
7. Stop the device immediately should you notice changes to the device or its operating behaviour that are relevant to its safety. Have these remedied.
8. Do not carry out any modifications, additions or conversions to the device! This also applies to the installation and adjustment of safety equipment.
9. Spare parts must meet the technical requirements specified by the manufacturer. This can only be guaranteed with original joke spare parts.
10. Any work on/with the device may only be carried out by qualified, appropriately trained and authorised personnel. Pay attention to minimum statutory age limits!
11. Personnel undergoing training or in a general apprenticeship should only be allowed to work with the machine under the constant supervision of an experienced operator!
12. Refrain from any type of work that could jeopardise your safety.

13. The device may only be used if all protective and safety equipment is in place and in proper working order.
14. Do not leave the device unattended when switched on!
15. Stop and secure the device immediately in the event of malfunctions! Faults must be remedied at once.
16. Observe processes for switching on and off and control indicators according to the instruction manual!
17. The mains cable, foot switch cable and compressed air line must be laid so as to be tension free and not hinder the user. Nothing must be allowed to stand on the cables.
18. The device must be operated only in dry rooms and must not under any circumstances be exposed to moisture. The device has no explosion protection!
19. It is essential to observe the manufacturer's processing instructions in handling the blasting shot .
20. Working with explosive blasting shots is forbidden.
21. Workpieces that result in explosive dusts must not be processed with this unit.
22. Working with poisonous substances or blasting shots that give off poisonous substances is not allowed.
23. Workpieces that release poisonous substances must not be processed.
24. Do not start the blasting process with the foot pedal until having locked the flap door and reaching with both hands through the hand holes.
25. End the blasting process only using the foot pedal and not by raising the flap door.
26. Do not wear any synthetic clothing on the body, in order to avoid static charge. Wear appropriate conductive working shoes. Depending on the blasting shot and weather, wear antistatic armbands earthed to the unit.
27. Do not remove blasting shot from the unit manually or by compressed air, but exclusively with aid of a tool.
28. Dispose of or replace used blasting shot environment-consciously and in accordance with regulations.
29. Immediately replace windows that are damaged or have become opaque.
30. Replace damaged gloves immediately.

Warranty

joke Technology GmbH warrants the correct manufacture of every joke product which is delivered in accordance with the terms of contract and delivery.

This warranty does not cover damages caused by normal wear and tear, incorrect handling, negligent use, the fitting of non-original spare parts, inadequate care and/or a failure to comply with this technical manual.



The device may only be used by appropriately trained personnel. If it is not, all warranty claims will be forfeited according to the terms of delivery.

Device overview

The device is intended for abrasive material processing by fine blasting with various blasting media. Among others, the following blasting processes are possible:

- Scale removing after hardening.
- Smoothing of plastic and diecasting moulds, compression moulding dies and embossing dies.
- Shot peening of wearing parts
- Derusting and removing of lacquer of/from components.
- Deburring of metal components after machining (e.g. turning, drilling, milling) and of duroplastic mouldings from injection moulding and shaped casting).
- Preparation of surfaces for paint spraying, gluing and electroplating.
- Matting and brightening (decorative blasting).

The application possibilities are versatile by:

- Use of mixed blasting shots
- Use of different grid sizes:

The precisely balanced relationship between the dosing cup and blasting gun in addition to the special filter system allows the use of all commercially available blasting media. Grit sizes of between 1 mm (approx. 20 mesh) and 0.01 mm (approx. 400 mesh) can be processed.

6 Device overview

Installation site

The unit must not be installed in an environment where there is a risk of explosion or in rooms with a risk of explosion. The unit must not be installed in damp rooms or in rooms with high relative humidity.

The base must be firm, flat and horizontal.

Machine connections

Only connect the unit via a plug connector that allows disconnection from the electrical mains. The electrical connection must be made according to the details on the rating plate and this operating manual.

The compressed air supply (input pressure) must **not exceed 8 bar**. The unit operator must provide for a shutoff valve in the compressed air connection line on the customer's side, allowing disconnection of the unit from the supply network.

Device overview

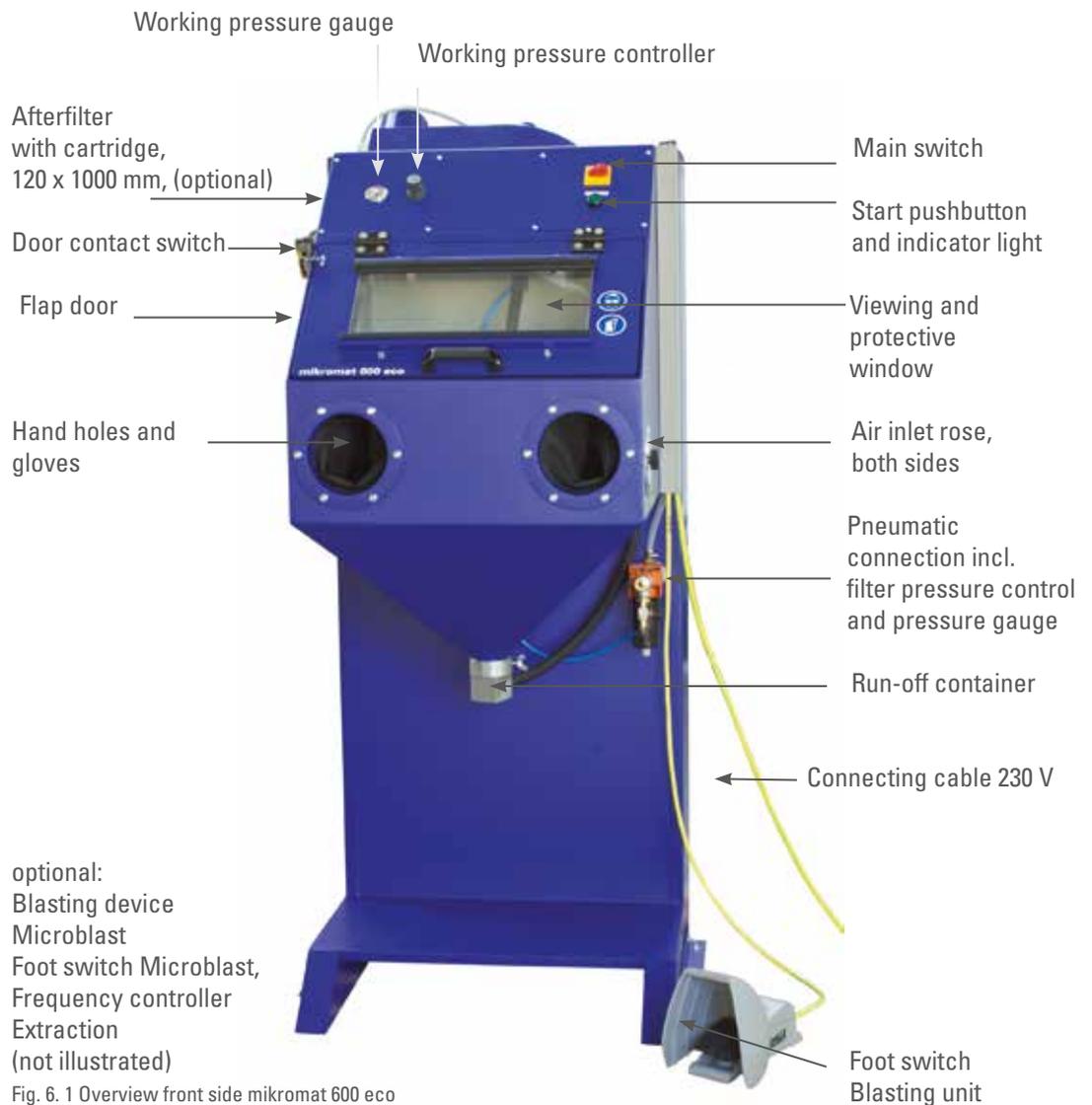


Fig. 6. 1 Overview front side mikromat 600 eco

Device overview

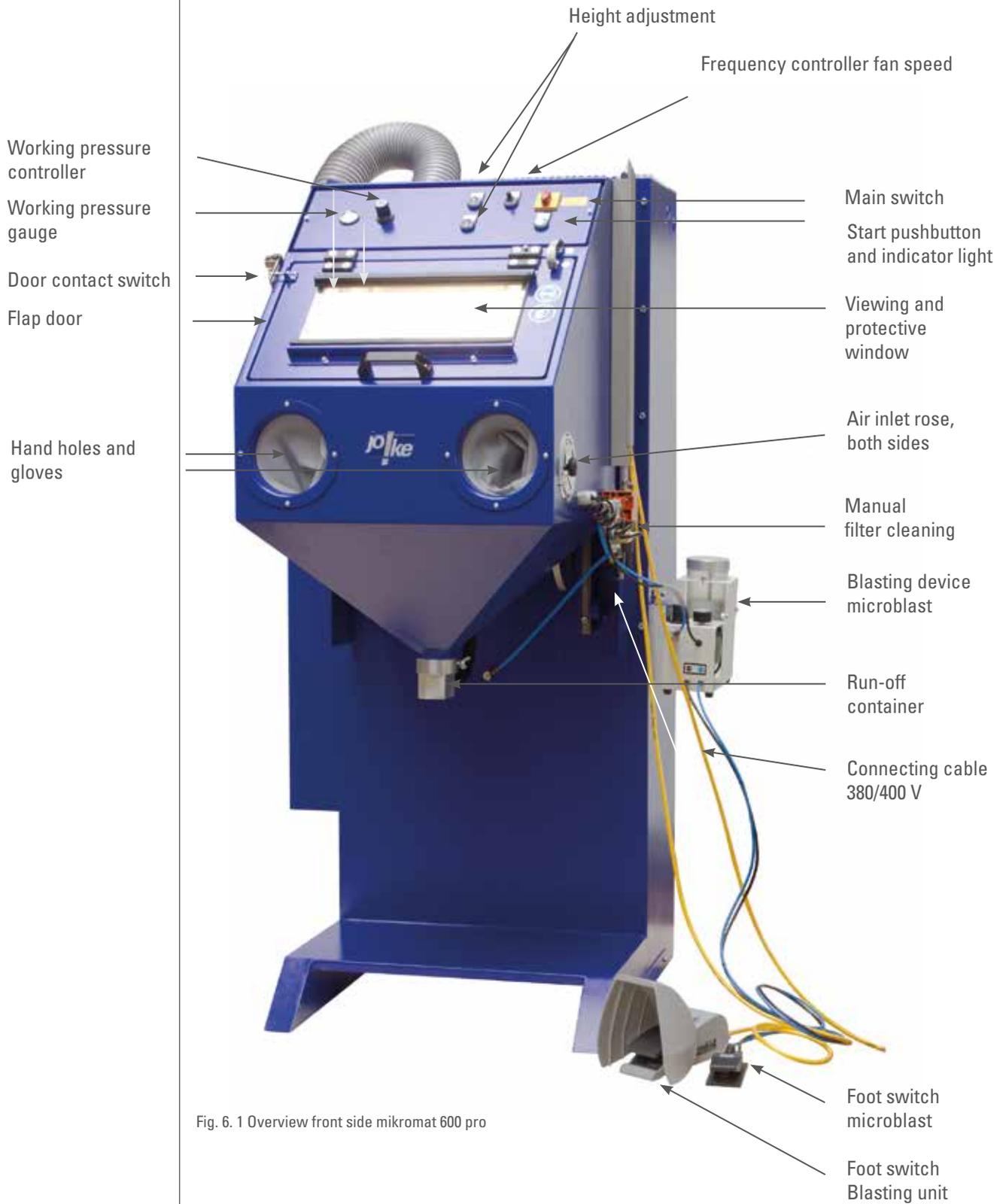


Fig. 6. 1 Overview front side mikromat 600 pro

optional:

Blasting device microblast, frequency control for the extraction system fan speed, afterfilter system, manual filter cleaning and fully automatic filter cleaning

Control elements of the machine

Blasting cabin main switch

The main switch is located on the top right, above the flap door. The main switch is used to switch the power supply of the blasting cabin on and off.



Warning! Electric current!

May cause life-threatening injuries or death!

Only employ trained specialists for all work on the electrical equipment of the blasting cabin!

Only use voltage-insulated tools!

Working pressure gauge

The working pressure gauge indicates the pneumatic pressure of the blasting cabin compressed-air system.

Start pushbutton

The pushbutton is used to switch the work chamber lighting of the blasting cabin, in addition to automatic mode, on and off. The work chamber lighting can only be switched on when the main switch is set to position I.

Foot switch

The foot switch is used to switch the blasting process and extraction system on and off when the power supply is switched on (main switch set to position I). The green indicator light remains permanently illuminated when extraction is switched on.

Installation and starting the unit for the first time

In order to prevent the blasting shot contained in the cabin from absorbing humidity, the unit should always be installed in a dry place. This of course also applies to the storage place of the blasting shot.

1. A water separator is incorporated in the air treatment unit in order to eliminate the water in the compressed air. Care should be taken during installation that the water separator is in the upright position.
2. The pressure gauge is screwed to the air treatment unit. The compressed-air connection is arranged on the right-hand side of the blasting cabin underneath the electrical control box. The air pressure for the blasting cabin can be continuously regulated using the adjustment wheel and read on the pressure gauge.

3. The entire unit is switched on and off using the main switch. In the "0" position, the unit is switched off. In the "1" position, the unit and cabin lighting are switched on simultaneously.
4. The electric foot switch operates the solenoid valve incorporated in the machine, which releases the compressed air to the blasting gun. This only works with the fan running.
5. The safety end switch serves to interrupt the blasting process if the cabin hood is open. If the cabin is opened during blasting, the blasting process is interrupted automatically in order to avoid accidents.
6. The screws on the cabin lid secure the window frame and must be loosened in order to replace the viewing or protection pane. Important: The glass pane is on the inside, the plastic pane on the outside.
7. The dust bag on the rear of the device is located underneath the filter elements and is held firmly closed by the clamping levers. If the machine is in constant use, the dust bag should be checked daily for overfilling.

Filling with blasting shot

1. Open the flap door of the blasting cabin.
2. If necessary, lift the front section of the perforated base plate over the running-off and storage container and place it on the rear perforated base plate (not applicable for devices with a turntable).
3. Now fill the storage container with blasting shot as required.

Starting the blasting process

1. Ensure that blasting shot is present in the running-off and storage container of the blasting cabin according to your requirements. Top up with blasting shot if necessary.



Please refer to the blasting shot chapter for suitability of the blasting shot types of specific blasting tasks.

2. Ensure that the blasting cabin is supplied with compressed-air.
3. Switch on the blasting cabin at the control box using the main switch.

4. Open the flap door of the blasting cabin.
5. Fix the blasting head in the blasting head holder if necessary and tighten the clamping screws.
6. Place the workpiece to be processed in the blasting cabin and close the flap door.



The blasting process cannot be started with the flap door open and with extraction switched off!

7. Check that the viewing window is in perfect condition before beginning blasting work.



**Blasting shot emerging under high pressure may cause extremely severe eye injuries!
Only operate the blasting cabin with an intact viewing window!**

Working with defective blasting protection gloves may cause purulent inflammation of hands and arms!

Only carry out blasting work with perfect, intact authorised blasting protection gloves! Replace damaged blasting protection gloves immediately!

8. Put on blasting protection gloves.
9. Subsequently operate the foot switch to start the blasting process.
10. Adjust the air pressure if required at the adjustment wheel of the compressed-air connection unit and the working pressure at the working pressure controller.

Stopping the blasting process

1. Once blasting work is completed, remove your foot from the foot switch. The blasting process is halted.
2. Wait for a further brief period until the dust-laden air has been sucked out of the blasting chamber (fan afterrun time).
3. Subsequently open the door and remove the processed workpiece.

Switching the blasting cabin off

1. Close the flap door.
2. Switch off the blasting cabin power supply, the interior lighting and the extraction at the control box using the main switch.



Bursting compressed-air lines in case of prolonged blasting cabin shutdown may cause severe damage to the entire works pneumatic system!

Always isolate the compressed-air supply at the main valve at the end of a shift or in case of prolonged blasting cabin shutdown!

3. Isolate the compressed-air supply.

Filter system

The main filter sucks fresh air in through the air supply roses, thereby forming a flow velocity. Suspended matter and broken blasting shot can therefore be aspirated into the two filter cartridges before it emerges again in the work chamber.

The two air supply roses allows the air aspirated by the fan to enter the blasting chamber. Negative pressure results, which prevents the blasting shot from escaping during blasting.



Only clean the filter with the fan switched off.

Frequency-controlled extraction (optional)

With the optionally selectable frequency-controlled extraction, the fan can be preset within a frequency range of 40 to 60 Hz, thereby achieving an increase or decrease in output.

The advantage lies in the fact that the extraction capacity can be adjusted to suit the blasting medium and the degree of soiling of the filter cartridge. The capacity when using walnut shell granulate for example is downgraded in spite of opened air inlet apertures in order to leave the blasting shot in circulation instead of filtering it by aspiration into the dust collection bag. In case of dusty blasting shot or contaminated filter cartridges, it is recommended increasing the extraction capacities in order to maintain optimum visibility in the blasting chamber. Low extraction capacities mean savings in resources.

Work chamber height adjustment ERGOZISE (optional)

With the optionally selectable work chamber height adjustment ERGOZISE, the height of the work chamber can be adjusted by approx. 200 mm by pressing the operating buttons. Height adjustment is only possible with the button depressed.

Semi-automatic filter cleaning (optional)

In order to clean the filter cartridges, the integrated pneumatic vibration cleaning is operated, fixed on a mounting rail under the two filter cartridges.

By a burst of air released by the control valve on the air outlet, the roller vibrator is driven by compressed-air and subsequently automatically cleans the filter cartridges by means of the vibration frequency generated so that free filter surface is created again. This process has the best cleaning effect when the extraction is not operating, as the detached fine dust then precipitates and is able to deposit itself in the dust bag.

7

Technical data

Fine blasting unit mikromat 600 eco and pro	
Working chamber dimensions (B x T x H)	620 x 500 x 400 mm
Unit dimensions (B x T x H)	approx. 700 x 1,000 x 1,750 mm
Weight	approx. 150 kg
Supply voltage	400 V, 50/60 Hz (with frequency control)
	230 V, 50/60 Hz
Connected load	0.55 kW
Grid with loading capacity	approx. 100 kg
Compressed-air connection thread	½"
Compressed-air control range	0.5 to 10 bars
Air consumption	max. 700 l/min. at 7 bars
Fan capacity	approx. 1,000 m³/h
Sound pressure level	72 - 75 dB
Sound pressure level with afterfilter module (optional)	approx. 68 dB
Filter area (main filter)	8 m²
Lighting	11 W

Scope of delivery:

eco: complete with exhaust air connector for connecting an afterfilter system or an exhaust air line, blasting gun with blasting nozzle Ø 7 mm made of hardened steel, blasting gun holder, safety switch (no blasting operation with the flap open) and water separator

pro: blasting nozzle made of hardened steel (Ø 7 mm), safety switch (no blasting shot supply with hood open), compressed-air controller with water separator, foot switch for starting/stopping the blasting process, exhaust air connector for connecting or for an exhaust air line of an afterfilter system, blasting gun holder

Optional equipment:

- Frequency control for the extraction system fan speed (order no. 0 952 003)
- only for micromat 600 pro
- Afterfilter system (order no. 0 952 002)
- Fine blasting unit microblast (order no. 0 951 110-1)
- Manual filter cleaning (order no. 0 952 031)
- Fully automatic filter cleaning (order no. 0 952 082) - only for micromat 600 pro

Notes concerning blasting shot

The suitable blasting shot can be found in the joke catalogue in the "cleaning and blasting equipment" chapter. Take care to use the shot in the dry state and free of lumps.

The suitable blasting shot for the various different requirements can be selected and ordered directly from joke, stating the order number.



Use of silicone-based or quartz-based blasting shot may cause severe damage to the respiratory tract!

**Use of quartz-based blasting shot is forbidden!
Do not use silicone-based blasting shot! Wear breathing protection!**



**Use of damp blasting shot or processing of wet workpieces may cause damage to the blasting cabin! Always use dry blasting shot!
Dry wet workpieces if necessary before starting blasting work!**

Notes on blasting

It is advisable to hold the blasting gun at a distance of approx. 40 - 60 mm from the workpiece and at an angle of 45 - 60°. The gun should be passed evenly over larger areas in order to avoid cloud formation. Under certain circumstances, finally blast the entire surface again, but with a greater gun distance.

Fine profiling and sharp edges must only be blasted with fine grits and at low pressure.

If surface improvement is to be achieved, work must be performed several times with different grit sizes (from coarse to fine). The blasting shots MK 40/90, followed by MK 90/150 and finally MK 245 are recommended for this purpose. Subsequent blasting with GPF fine glass beads results in a silk gloss.

Restoration work is mainly performed at low pressure with the use of glass beads, high-grade corundum and walnut shells.

Workplaces on the blasting cabin

The main workplace for the operating personnel is at the loading and retrieval aperture (flap door) of the blasting cabin.

Malfunction	Possible cause	Remedy
Excessive dust is generated	Worn, damp or lumpy blasting shot	Change blasting shot
	Main filter blocked	Check whether the dust collection chamber is overfilled.
		Check whether the dust collection chamber is overfilled.
No blasting shot emerges from the blasting gun	Too little blasting shot in the cabin	Refill blasting shot
	No air pressure	Set air pressure on the pressure relief valve to at least 1.5 bar
	Foreign body in the unit	Large burrs, scales and lacquer, etc. may deposit themselves in both the dosing cup and in the blasting gun. Both are to be removed by loosening the hose clamps and inspecting for foreign bodies. The air and blasting nozzle must be screwed out if necessary.
Poor visibility in the blasting chamber	Glass pane matted by blasting shot	Replace glass pane
	Interior lighting faulty	Replace the interior lighting bulb

Malfunction	Possible cause	Remedy
Extraction output inadequate	Filter cartridge contaminated	Clean or replace the excessively contaminated filter cartridge. Info: Check the filter cartridge regularly for damage and clean.
Poor blasting performance	No blasting shot or insufficient blasting shot emerges from the blasting nozzle	Initially check for the possible causes.
	Air pressure too low	Adjust the air pressure at the adjustment wheel of the compressed-air connection.
	Air nozzle or blasting nozzle faulty	Replace the air nozzle or blasting nozzle
	Wrong type of blasting shot used	Adapt the blasting shot to the processed material and desired surface effect.

10 Care and maintenance

General

The care and maintenance chapter comprises the areas of care and visible inspection by the operating personnel in addition to cleaning, maintenance and repair of the joke blasting unit by specifically trained maintenance personnel. The subdivision of these areas into various maintenance intervals is intended to facilitate your scheduling of the respective necessary maintenance measures.

The instructions described in this chapter are to be regarded as minimum recommendations. Depending on the operating conditions, extensions may be necessary in order to uphold the function of the blasting cabin. The time intervals indicated refer to single-shift operation.

Please refer to the original documentation of the manufacturers of vendor parts for specific further and supplementary information - particularly regarding the vendor parts.



Danger! Risks to persons and property possible!

Personal injury and material damages occurring directly or consequentially are possible as a result of improper inspection, maintenance or repair.

All servicing and repair work on the blasting cabin may only be performed by qualified specialists with particular observation of the safety instructions chapter.

The regular work for maintenance and servicing must be registered in a log by the maintenance and operating personnel in order to uphold the claim under the warranty.



Only use spare parts approved by joke Technology GmbH and the latter's suppliers!

joke Technology GmbH cannot accept any liability in case of use of non-approved spare or replacement parts and utilities!

Care is to be taken to ensure environment-friendly disposal of the consumables and replacement parts.

Pay attention to proper dismantling and assembly of components in order to avoid material damage and consequential damage to the blasting cabin.

Therefore, during all dismantling and disassembly work, the following basically applies:

- Mark parts that belong together
- Mark and note the installation position and location
- Dismantle, clean and store subassemblies separately.

After repair work, the following basically applies:

- Check all screw connections for a firm seat
- Test all pipe fittings and connections for leaktightness.



If disassembly of protective devices is necessary for maintenance measures, the protective devices must be reapplied and tested immediately after completion of the work.

Operating condition

Depending on the nature and scope of the maintenance measures, the blasting cabin and the area involved must either be shut down or switched completely free of current.

In order to conduct extensive cleaning and repair measures, the blasting cabin and the area involved is to be completely disconnected from the mains power supply.



Danger! High voltage!
Results in death or life-threatening injuries.

Switch the blasting cabin free of current during extensive cleaning and maintenance work. Safeguard against being accidentally switched on again and apply a warning placard on the main switch.

Care

Only clean the device with a soft brush or dry cloth if required.
Clean the inside and outside of the window.



Do not wet clean!

All blasting cabins are exposed to major stresses and heavy soiling to a particular extent. Consequently, they require very close and regular care.

The duty of the operating personnel is to check the blasting cabin daily for wear and/or damage and report this to the competent maintenance personnel.



The inscriptions of control elements may become illegible as a result of unavoidable dirt deposits. This may result in operating errors that may cause material and consequential damages.

Clean all actuating devices and displays free of dust and other contamination once per shift.



Material damage to the blasting cabin as a result of component contamination!

Residues may deposit themselves or penetrate into moving components.
This may cause damage to the blasting cabin!



**Always therefore check the blasting cabin at the beginning of a shift.
Clean heavily contaminated areas daily.
Switch the blasting cabin free of voltage first.
Never reach into moving machine parts with your hands!**

Daily maintenance tasks and inspections

Maintenance point	Maintenance work	Comment
Protective devices	Functional test on the protective devices	Check condition of the locking devices and contacts and clean if necessary
Entire blasting cabin	Check of operating performance	Observe all components of the blasting cabin for normal operating performance, e.g.: <ul style="list-style-type: none"> • running noises, • temperature increase, • odour development. Shut down the blasting cabin in case of irregular operating performance and immediately notify the maintenance personnel.
Entire unit	Check for residues	Check the blasting cabin and surroundings for remains of material and consumables and eliminate if necessary: <ul style="list-style-type: none"> • baked-on residues, • deposits and the like, • blasting shot residues.
Paths of travel, working surfaces, inscriptions	Eliminate contamination	Eliminate blasting shot residues around the blasting cabin.
Compressed-air supply lines, gaskets	Check	Check all movable compressed-air supply lines and gaskets, etc. Have faulty parts replaced if necessary.
Hose lines, piping, fittings, connections	Visual inspection for leaktightness	Particularly perform a control of the blasting hose and the blasting nozzle.
Protective gloves	Visual inspection for integrity	Immediately replace damaged protective gloves with new ones.



Weekly maintenance tasks and inspections

Maintenance point	Maintenance work	Comment
Filter bag	Empty filter bag	-

Monthly maintenance tasks and inspections

Maintenance point	Maintenance work	Comment
Pneumatic fittings	Check for free running	restore free running or replace if necessary
Electrical connections and cables	Check for damage	Have damaged connections and cables renewed by a skilled electrician if necessary

Wearing parts

Wearing parts include all components carrying blasting shot. These are preferably to be kept in stock in order to avoid unit downtimes. The wearing parts are to be separately checked every week and are also to be replaced as a precaution if necessary.

Cleaning the filter cartridges



Warning! Inhalation of respirable dusts!

**May cause extremely severe respiratory tract disorders!
Wear a dust protection mask during all cleaning work!**



Fig. 10. 1 Open filter housing

- Switch off the unit using the main switch and safeguard the unit against being accidentally switched on again.
- Open rear filter housing.
- Next loosen the wing nuts under the filter plate.
- Check the filter surface and check the latter for minute cracks, etc.
Immediately replace the filter cartridge even in case of the most minor damage.
- If the filter cartridge is undamaged, place it at a location where the filter cartridge can be cleaned with compressed-air without endangering third parties and the environment.
- Blow out the filter cartridge with compressed-air from the inside outwards.
- Clean the filter housing. The remaining quantities of blasting material adhering in the filter housing are taken up by the filter bag.
- Empty the filter bag and subsequently secure it again in the funnel aperture of the filter housing using the tightening band.
- Reinsert the filter cartridge in the filter housing. Pay attention to correct seat and seal.
- Secure the filter cartridge again with the wing nuts.
- Subsequently reclose the filter housing using the clamping lever.

Conformity declaration

We, joke Technology GmbH
D-51429 Bergisch Gladbach
Asselborner Weg 14-16,

hereby declare that the design of the product

Fine blasting devices mikromat 600 eco and pro

serial numbers.:

have been developed, designed and manufactured following the EC guidelines/directives

2006/42/EC - Machinery

2014/35/EEC - Low voltage

2014/30/EG - Electromagnetic compatibility

2014/68/EU - Pressure equipment.

The following national regulations have been applied:

BGV 500/chapt. 2.24 - **Blasting work.**

A complete list of applied standards, directives and specifications is available from the manufacturer. Technical documentation is available in full. The operating manual corresponding to the unit exists.

Authorised for documentation:

Kerstin Otto, joke Technology GmbH, Asselborner Weg 14-16, D-51429 Bergisch Gladbach

Authorized signatory:

Udo Fielenbach, joke Technology GmbH, Asselborner Weg 14-16, D-51429 Bergisch Gladbach



Udo Fielenbach, Managing Director

Bergisch Gladbach, 03 July 2018

Place, date

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Order no. for instruction manual: BA2023GB