



Sand Blast

**Fine Blast**



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## Dear Customer

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We thank you for your selectivity and trust in purchasing domestically produced products, and we are pleased that after continuous efforts, we have been able to manufacture Fine Blast device and put it at your disposal.

This product has been designed by our technical and engineering team of experienced and committed people in the fields of mechanical, electronics and computer engineering, and by utilizing updated technology and building upon 25 years of experience in manufacturing dental equipment, this product has reached production of export index quality.

In designing the product, three principles of accuracy, reliability and safety performance and also user friendly have been considered, so in order to correctly and completely utilize product features, we ask you to read the instruction manual carefully and if you have any questions or you need more information, contact the after-sales unit.

The instruction manual is a comprehensive reference for the efficient and safe use of the product. Following the instructions of this manual has a great role in reducing consumable costs, avoiding risks and ultimately increasing product life. The instruction manual should always be kept near the product and the user should periodically read it.

Please impart us with your constructive guidance, so that we can benefit from your comments, recommendations, and gain knowledge about your needs.

**We hope that you will find using Fine Blast to be an enjoyable and successful experience,  
Polaris Engineering and Manufacturing**

**POLARIS** Fine Blast

**Introduction**

### (1-1) How to use the manual

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This manual presents the instructions about use, installation, and maintenance of Fine Blast device made by Polaris Co. It should be noted that:

- The product should be used according to the instructions of this manual. Thus, all parts of it should be read carefully before starting and installing the tool. Special attention should be paid to the highlighted parts. (refer to section 2-1).
- Observing the instructions of the manual assures the health and safe operation of the tool.
- Manual is an integral part of the product. Thus, it should always come with the product and should be used optimally as a reference for use during the operation of the product. It should be available even during the sale of the product, or even when it is not used.
- In case of losing or damaging the manual, get a replacement one from the after-sales service department of Polaris Co.

The following are explained in detail in this manual:

- Installation and start up of the product
- Operation details of the product and its parts
- Maintenance condition
- Primary safety and preventive details

## (1-2) Terminology and signs

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Knowledge of signs meanings is of great importance. A list of signs has been introduced in the following for initial recognition and reference to them if necessary.



**Danger!**

Indicates compulsory warnings.



**Warning!**

Indicates functional recommendations.



**Forbidden!**

Indicates forbidden activities.



**Caution!**

Refers to user instructions of the tool.



[General Information](#)



## (2-1) Company liabilities

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Polaris is not liable for any problem involving the following: Failure to follow the instructions of this manual (incorrect use of the product), repair by an unauthorized person and part replacement without coordination with the after-sales service department, failure due to power fluctuations.

## (2-2) Guarantee

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Guarantee of this product includes repairs, supply, and replacement. If used appropriately, the guarantee of Polaris Co-covers all main parts of the device for 18 month

Following cases and parts are not covered by guarantee:



- power fluctuations
- incorrect transportation of device
- inappropriate and frequent use of device despite having obvious flaws
- not observing the maintenance instructions
- installation by unauthorized persons
- any repair or replacement by unauthorized persons.
- any natural incident like cracking for nozzle explosion
- using recycled or none-standard sand.
- the device's glass
- power cable and key
- nozzle head break
- blow fast connection

## General Information



Commutation fees of company representatives to install or repair during guarantee period will be received from buyer at site.



The device can't be used before installation and insurance of correct operation of protective parts.



It is highly recommended for the user to have a general knowledge of this manual before using this device. The cases which appear to be operation flaws in the device should be registered by user and they should be sent to the after-sale service department.

- Authorized representatives of Polaris Co.

These persons are endorsed by the company to work on the device under any operational circumstances. They are also authorized to do any electrical and mechanical adjustment/repair, maintenance program and authorized parts replacement.



**Device Introduction**

### (3-1) Main parts description

#### Main parts

The main reason of designing Fine Blast Device is to use it in dental laboratories in order to eradicate the oxide layer on different casts and surfaces.

1. Fine blast has two sand reservoirs. The first reservoir is for sands with the dimensions between 25-70 microns and the other reservoir is for sands with the dimensions between 70-250 microns.

2. The device has a nozzle for the sand exit, and the outlet control is done by the user and via pressing the pedal.

3. All of the actions of this device is done in the chamber and to maintain user safety and to protect the glass from breaking, Polaris Co. has devised protective isinglass in the front of the device.



In order to suck the waste produced by the device activity, using a suction device alongside this device is obligatory. Otherwise, there is a chance of particles exhaustion through the gaps of the protective isinglass.



If the user wants or needs a suction device, he or she can purchase and use the multi vac device alongside this device as a suction device.

The sand outlet pressure is adjustable in this device. This issue will be discussed thoroughly in the following sections.



**Technical Features**

#### (4-1) Technical features and operation rules of device

Polaris Co. products are manufactured based on the latest technologies and are of the highest qualities. The most recent design and manufacturing methodologies are employed to increase the lifetime and quality of products.

#### (4-2) Technical information

Technical specifications of Fine Blast are given in Table 1:

##### Technical Information on Product

Power supply	210-240V AC 50/60 Hz
Reservoir capacity	1000 for every reservoir
Device height	285 mm
Device width	405 mm
Device depth	435 mm
Net weight	7 Kg
Unbreakable glass door	—————

**Table 1- The device technical specifications**

##### Accessories

Part	Number
Spare protective isinglass	1
Pneumatic Hose	1
Pedal	1

**Table -2 A list of product accessories**



**Transportation and  
installation**

In order to avoid accidents, it is really important to follow the following instructions during the installation and fixing of equipment. All steps are explained in detail:

### **(5-1) Unboxing**

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Having received the device, make sure that the main box is sealed and intact. Otherwise, inform the after-sales service department of Polaris Co, or its authorized representatives.

### **(5-2) How to move the device**

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The device should be moved as follows:

1. In order to move the device, carefully place it in the box.
2. Reservoir evacuation
3. Disconnecting the pneumatic hose from the device
4. The device should remain in a horizontal position during movement. For more safety and prevention of any injury due to neglecting the technical details, refer to section 4-2.



Failure to follow the aforementioned instructions results in device being damaged, and Polaris Co, won't be held liable.



### (5-3) environmental circumstances

It is important to choose an appropriate environment during installation and operation for personal safety, correct operation and long lifetime. This environment should not only be big enough but should also have proper ventilation and be kept away from dust, direct sunlight and humidity. It should be noted that the device must be placed in a way, so that it could be easily accessible. Workplace temperature: 0-40°C  
Maximum humidity: 25%



The device should not be used in a place where there is danger of explosion or firing

The light of the place should be high enough so that all parts of the device can be seen clearly.



The device should never be exposed directly to sunlight or humidity of rain, etc.

The following should be done before the use of the device:

- 1 Fine blast has been designed to be put on a stable and firm worktable in parallel with the ground. The stability of all parts of the worktable should be checked.
- 2 Plug the device into the outlet after the input power and main electricity are checked (device working voltage is based on AC 220 electricity).



The grid single-phase electricity should match the power supply specifications of device.

### (5-4) device installation

1. Get the device out of its box carefully. To do so, take out all the protective material (Plastofoms) around it, take out the steam cleaner, and put it on a flat and standard laboratory table such that the space within 25 cm radius of the device is empty. Make sure that the surface and legs of the table are not made of metal.



There is a danger of electrocution, if the surface or legs of table are made of metal and they are in contact with the ground. Thus, put your Fine Blast on a wooden table or fiberglass

2. Sand Blast should not be exposed to sunlight directly.
3. An appropriate cord should be used to connect the device to its nearby power supply.
4. An electrical protector must be put on the way of the socket by the user, so overload or indirect currents don't have contact with the protective parts of the device.



**Device Application**

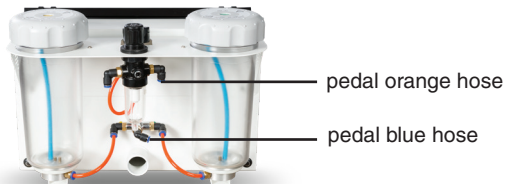
## (6-1) Device initiation

Before using the device, put it on a firm, flat and stable surface and follow these steps:

- 1.Fill device sand reservoir with sands which have been declared authorized by Polaris Company.
- 2.Plug the device into the mains electricity if you need lamp-light inside the device.
- 3.To adjust device pressure, move up the adjustment gage and turn the pressure gage to reach the desired number. Now push down the gage to lock on the adjusted value.
- 4.By pushing the pedal, sand will pour out from the nozzle.

- 1.Put the device on a worktable (refer to section 5-4).
- 2.Plug the device into a socket, and make sure it is connected according to what was said in the section (4-5).
- 3.Remove the air pedal from the chamber.
- 4.Connect the air pedal pneumatic hose to respective connections and assure from complete connection and latching in the connections (pneumatic hose head with a red sign should be connected to a red head hose). (Figure 1)

Figure 1



- 5.Connect the compressor air pneumatic hose to the head hose (Figure 2)

compressor



Figure 2

## (6-1) Device initiation



Avoid bending or twisting the pneumatic hose

6. Adjust the device air pressure in the authorized range (operational pressure between 1-6 Bar) based on your intended application. (Figure 3)



Figure 3

7. If you are using suction, connect the respective hose to the device. (Figure 4)

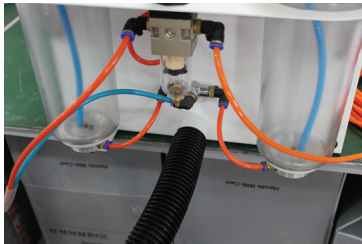


Figure 4

8. Pour the abrasive san in the reservoir. (The minimum authorized limit to fill the reservoir in order to achieve the desired device function is a third of hose inside the reservoir and the maximum is 5 cm below the door line.) (Figure 5)

## (6-1) Device initiation



Make sure that the reservoir is closed and firm before using.



Do not connect the device to electricity until this step

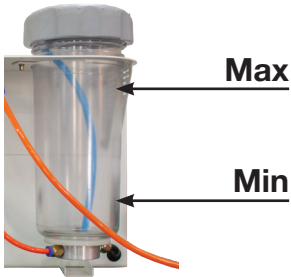


Figure 5

### Device electricity start-up

- 1- Connect the electricity cable to device electricity input jack. Then, connect the electrical cable to urban electricity.
- 2- Turn on the key. (Figure 6)



Figure 6

## (6-1) Device initiation

### Adjusting the device air pressure

- 1- Select the used reservoir (Figure 7).
- 2- Adjusting the operational pressure 1-6 Bars (87-14.5 psi). (Figure 8) show gage pressure and how to adjust pressure, respectively; Adjusted pressure is for both active reservoirs.



Figure 7



Figure 8



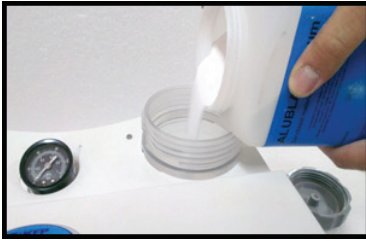
Never use air change switch while using the device.



Even if the pressure gage show the device pressure, Fine Blast reservoirs are involved only when the pressure is applied on the air pedal.

### Filling Fine Blast reservoir

- 1- Open the reservoir door. (Figure 9)
- 2- Pour the abrasive sand in the reservoir; the maximum limit for filling the reservoir is a third of the suction hose inside the reservoir (Figure 10).
- 3- Close the reservoir door (Figure 11).



10



9



11



Always use clean, dry abrasive sand with proper sand size (certified by the Polaris Company).



Before closing the reservoir door, cleaning the door with blow is obligatory.



Make sure that the reservoir is closed properly.



**POLARIS** Fine Blast

**Safety**

### (7-1) general safety

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Users are required to read and always follow the listed suggestions and warnings here; following these instructions will assure a long-term, flawless operation for the product.



Make sure that all parts of the device are installed correctly before using the device.



You should never use the device if its accessories are defected, otherwise, the device operation will be affected, and it will no longer be covered by guarantee. Thus, make sure all parts are flawless before operation.



Never use a defected device.

- The place should be clean and well-lit and free of obstacles.
- If you see any flaws in the device operation, stop operating the device immediately, unplug it, and call the after-sales service department of Polaris Co and inform them.
- Never disassemble the electrical or pneumatic parts.
- Never replace the power supply or parts which are directly related to the plug.
- Operation of this device for applications other than those mentioned is forbidden.
- Make sure the device is disconnected from the main sockets before cleaning.

### Device safety measures

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Polaris Co. makes use of high-quality raw materials for advanced production processes to promote the safety level.

Quality control is performed in three stages of input, middle control, and final control through several control stations, a procedure which minimizes error and defects chances.

## Device safety measures

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To assure that the device works safely, follow all the aforementioned steps.

1. When you are working on the device (filling, cleaning, repairing and maintenance), using protective glasses is necessary for eye protection.
2. Remaining any amount of abrasive material in the washers leads to faster washer leakage and corrosion. After evacuating and cleaning, close the washers and door properly.
3. Solvents and abrasive material can create very small cracks in the power reservoir body (risk of explosion). To clean the reservoir and the door, only use dry fabrics and avoid attaching the tape. Never rub a rough object in the reservoir or on the outside surface.
4. Check the reservoir door periodically and in case of seeing a suspicious instance, replace the suspected part.
5. Checking the proper placement of protective isinglass is necessary before work. Improper closing of the door leads to an unsafe reservoir and the reservoir pressure may increase abruptly.
6. Never use the device without the proper sand. Selection of sand type should be based on the validation of authorities and Polaris Company.
7. Do not place the spinning nozzle towards the eyes and skin. Misuse may result in serious harm to the eyes and skin wounds.
8. It is suggested to use filtered masks while using the device.

**POLARIS** Fine Blast

**Maintenance**

## (8-1) cleaning

Keep the device body clean using dry fabric. Wet the cloth with small amount of water or a non-greasy solution, if needed (only do this for body cleaning).

Users should make sure the device is kept clean and free of dust water and other unexpected solutions.




Cleaning should be done at the end of each operation and when the device is on OFF mode and stable.

If the user decides that the internal parts need cleaning, he/she should contact the after-sales service department.

- Reservoirs and doors should only be cleaned with a dry fabric.
- Pond trap chamber should be periodically inspected and in case of water being in the chamber, chamber evacuation should be done by pressing the button under the chamber (Figure 12).



Figure 12

-  Put the main button on the off position before cleaning external parts of the device. It is forbidden to clean the device while it is plugged.
-  Never use combustible, corrosive, base or toxic solutions for cleaning the device.
-  When using compressed air in cleaning, eye guard and face mask should be used. Do not let anyone stand near the device, because one can be harmed by suspended particles.


## (8-2) periodic maintenance


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Inspection and periodic cleaning of the device depend on the operation level. It is suggested for the user to inform the company experts about the workflow through consultation after installation and learn the appropriate time for an inspection and periodic cleaning from them. If the user detects any damage or exhaustion during periodic inspections, he/she should contact the after-sales department, so that measures are taken for maintenance and compulsory service.

Periodic service should be determined by the user and is performed by the after-sales service department. It is suggested that the maximum time interval for periodic repairs be 12 months.

If a user detects any defects or problems on the device, he/she should place a warning sign on the device to indicate that it is being maintained and it should not be used (EC warning signs can be purchased at the associated stores). Cleaning, periodic maintenance and appropriate use of the device are important factors in lifetime and safety of it.

 Never use combustible, corrosive, base or toxic solutions for cleaning the device.

 Safety and protective parts of the device should never be removed from the device unless for repair and maintenance purposes.

The parts which are removed for repair purposes should be replaced as soon as possible.

## (8-2) periodic maintenance

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After using the device for a while, nozzles should be checked for any remained abrasive sand. Washer O-ring should also be checked. If you find any defect in the hose or other inspected parts, disconnect the connection between the mobile blast device and the compressor and vacate the air flowing in the system. After troubleshooting based on manual, initiate the device. If the device has any defects except the mentioned cases, inform Polaris about the matter and never entrust the device to miscellaneous people.

### (8-3) Troubleshooting

problem	Possible reasons	Corrective actions
Air and abrasive sand do not exit	<ol style="list-style-type: none"> <li>1. Blockage of the beginning of nozzles</li> <li>2. The pneumatic pedal hose has been twisted</li> </ol>	<ol style="list-style-type: none"> <li>1. Opening nozzle-Tungsten separation and cleaning the air exit path</li> <li>2. After bringing out the nozzle from the hose, push the air pedal to determine if there is output</li> </ol>
Only air exits without abrasive sand	<ol style="list-style-type: none"> <li>1. Outlet air nozzles have been blocked</li> <li>2. Outlet nozzle from the reservoir has been blocked</li> <li>3. Abrasive material has impurity or humidity</li> <li>4. Air has humidity</li> </ol>	<ol style="list-style-type: none"> <li>1. Open the chamber door</li> <li>2. Block the end of a blue hose inside the chamber using tape of a piece of fabric</li> <li>3. Close the glass chamber door again.</li> <li>4. Place your finger on the nozzle outlet point and press the air pedal several times</li> <li>5. Open the chamber door, open the blocked hose</li> <li>6. Close the chamber door and initiate the device</li> <li>7. Replacing the abrasive material</li> <li>8. Changing the location of the device</li> </ol>



Constant device function (device sticking)	<ol style="list-style-type: none"><li>1.Connections inside the air pedal are faulty</li><li>2.Outlet valve in air pedal has a defect</li></ol>	<ol style="list-style-type: none"><li>1.Check/fix the air pedal connections</li><li>2.Replacing the air pedal with a new one</li></ol>
Air leakage from air pedal	<ol style="list-style-type: none"><li>1.Air outlet and inlet connections have been connected inversely</li></ol>	<ol style="list-style-type: none"><li>1.Switching the connections</li></ol>
Air pedal doesn't work.	<ol style="list-style-type: none"><li>1.No air pressure enters the system from the compressor</li><li>2.The pneumatic hose has been twisted</li></ol>	<ol style="list-style-type: none"><li>1.Inspect compressed air lines</li><li>2.Inspect compressor air pressure</li><li>3.Hose accumulation</li></ol>
The pneumatic pedal hose does not separate from the system	<ol style="list-style-type: none"><li>1.The connection has not been freed because of the pressure behind the system</li></ol>	<ol style="list-style-type: none"><li>1.Evacuation of the air inside the system</li><li>2.Pressing the blue ring of the fast connection and bringing out the hose from the inside of a fast connection</li></ol>

## Calling the aftersales services Unit of Polaris Co.

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Tel: +49 (0) 21033373500 Fax: +49 (0) 21033373550

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Email: [Service@polarisgmbh.com](mailto:Service@polarisgmbh.com)

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