



# KOUSHA FAN PARS

Engineering and Manufacturing

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## **In the name of God**

### **Dear customer**

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 polish device (Polivac) in Iran 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 on ۲۰ 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 being easy to use 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.

Instruction manual is a comprehensive reference for 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. 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.

**With the hope of enticing your satisfaction,**

**Kousha Fan Pars Engineering and Manufacturing**

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## **Section ۱: Maintenance**

### **(۱-۱) How to use the manual**

**This manual presents the instructions about use, installation and maintenance of Polivac polish device made by Kousha Fan Pars 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 ۲-۱).**
- **Observing the instructions of 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 product. It should be available even during 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 Kousha Fan Pars 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 program**
- **Primary safety and preventive details**

## (١-٢) Terminology and signs

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.**

## Section ۲: General information

### (۲-۱) Company liabilities

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

### (۲-۲) Guarantee

Guarantee of this product includes repairs, supply and replacement. If used appropriately, Kousha Fan Co, guarantee covers all main parts of the device for ۱ year.



**Following cases 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.**



**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 that user has 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 Kousha Fan pars Co.**

**These persons are endorsed by 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.**



## Section ۳: Production Introduction

### (۳-۱) Main parts

Polivac is a polisher device with a suction section and other functional parts and a safety section which complies with standards.

This device is usually used to polish and cut small parts used in dental prosthesis.

Main parts of Polivac are as follows:

۱. Brush holder
۲. Plastic tray
۳. Bag lid
۴. Key A (ON/OFF)
۵. Key B (ON/OFF)
۶. Bag

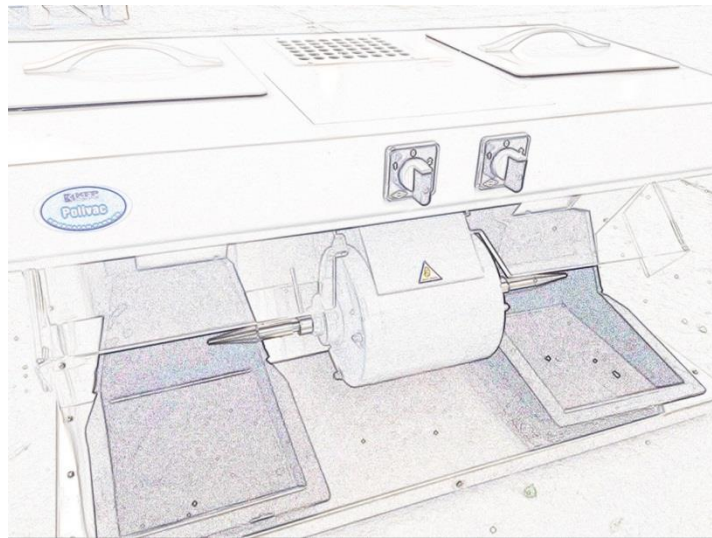


Fig ۱. A view of Polivac Polisher



**Fig 1. A view of Polivac Polisher**

## Section ۴: Technical features

### (۴-۱) Technical features and operation rules of device

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

### (۴-۲) Technical details

Technical specifications of the Polivac are given in Table ۱:

|                     |                       |
|---------------------|-----------------------|
| <b>Power supply</b> | <b>۲۲۰ V-۵۰/۶۰ Hz</b> |
| <b>Height</b>       | <b>۴۵ cm</b>          |
| <b>Width</b>        | <b>۸۱ cm</b>          |
| <b>Depth</b>        | <b>۵۱ cm</b>          |
| <b>Net weight</b>   | <b>۲۰ Kg</b>          |

Table ۱. The device technical specifications

## Section Δ: Transportation and installation

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

### (٥-١) Unboxing

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

### (٥-٢) How to move the device

The device should be moved as follows:

١. In order to move the device, carefully place it in the box.
٢. Unplug it from power source
٣. The device should remain in vertical position during movement. For more safety and prevention of any injury duo to neglecting the technical details, refer to the section ٤-٢.



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

### (٥-٣) Environmental circumstances

It is important to choose an appropriate environment during installation and operation for personal safety, correct operation and long lifetime. This environment not only should be big enough but also should be on enough, have proper ventilation and should be kept

away from dust and direct sunlight. It should be noted that device must be placed in a way, so that the connections may be managed easily.

Workplace temperature:  $15-25^{\circ}\text{C}$

Maximum humidity:  $50\%$



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

The light of place should be high enough so that all parts of 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 use of device:

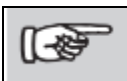
1. Polivac has been designed to be put on a stable and firm worktable in parallel with ground. The stability of all parts of the worktable should be checked.
2. Plug the device into the outlet after input power and mains electricity are checked.



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

### **(3-4) 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  $10$  cm radius of 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 Polivac on a wooden table or fiberglass.**

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



**It is recommended for the electronic system to have a ground connection part.**

## **Installation of brush holder on the motor shaft**

- Put one of the brush holder ends, which has a hole, on the motor shaft, and push it inward slowly.
- Push the other end of the brush holder inward with an plastic hammer until it is fixed properly.
- Rotate the motor shaft and brush holder manually, and make sure it is installed correctly and brush holder axis is in parallel with the shaft. Also, make sure that motor shaft and brush holder axes are aligned with each other.
  
- In order to check the installation of device being correct, turn it on, and if any deviation or problems of this kind are seen, try to fix it. If deviation is more than ١-٢ mm, open that part and install it again.
- Remember that as soon as the device is turned on, the fraction torque help these connections become firmer; so, during the start of the device, begin applying force to the brush holder (for instance, rub a test sample).

- **The protective glass is made of polycarbonate and is not breakable. This glass insures your safety when cutting and polishing.**
- **The glass is retractable which is designed to access the brush holder, motor shaft, or plastic trays, when needed.**

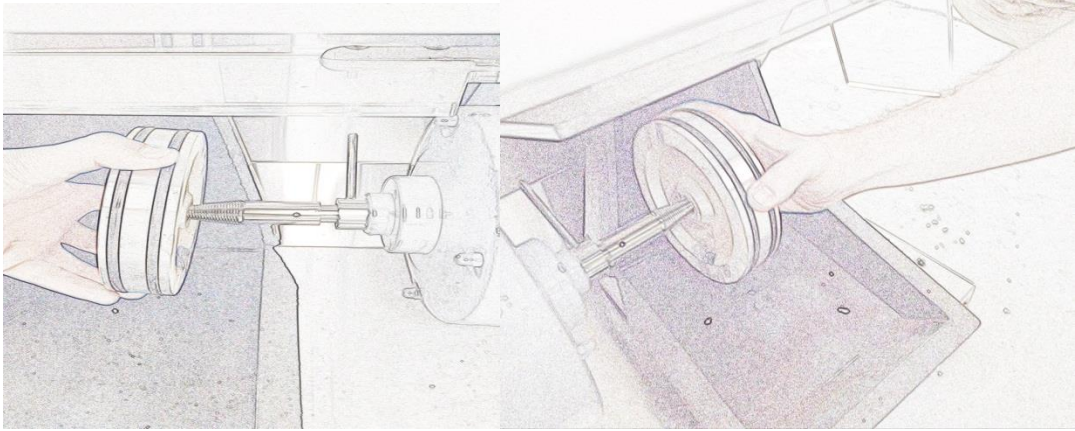
#### **Removing brush holder from motor shaft**

**The device has two clamps which facilitates the removal of brush holder. Rotate the handle counterclockwise slowly for the right side or clockwise for the left side.**

#### **Installing brushes on the brush holder**

**Follow the instructions below to install brushes on the brush holder:**

- **Choose an appropriate brush holder. For the right side brush holder, (the right side faces you when you face the front and glass parts of the device) connect the brush into the brush holder by rotating it clockwise). For the left side brush, rotate it counterclockwise.**
- **The unthreaded part of the brush holder must be placed on the motor shaft to be fastened by a clamp.**
- **Install the brush on the brush holder. When installing, the brush holder axis must be perpendicular to the desired brush.**
- **Rotate the brush on the brush holder as slowly as possible.**
- **Put the brush and its head outside the motor shaft (the brush must be away from the clamp and the motor shaft).**
- **When rotating and fastening any of the mentioned parts, make sure that their surfaces are perpendicular to each other.**



**Figure 1. Installing the brush on brush holder**



## Section 6: Product Application

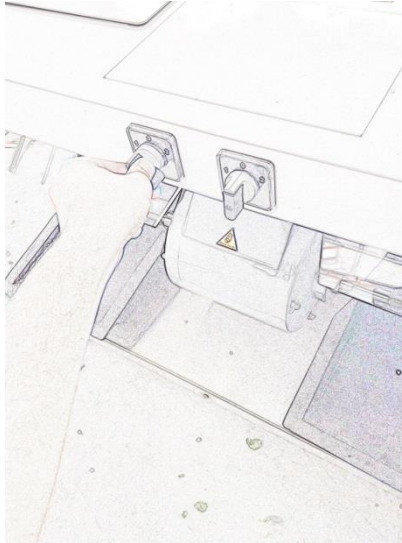
### (6-1) Device start-up

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

1. Unbox the device carefully.
2. Place the device in an environment free of trembling and heat sources.
3. The place should be well-ventilated.
4. Plug the device into a 220V power supply.
5. Install the brush on the brush holder.

### (6-2) Operation

1. Put the device on the worktable according to the section (5-4).
2. Plug the device into an outlet, and make sure it is connected according to what was said in the section (4-5).
3. Pull down the protective plate and make sure that the plastic tray is in its place. The incorrect placement of this part endangers user and device safety.
4. Before polishing or working on the work piece, make sure that the position of the motor is correct. Incorrect placement of the motor could be really hazardous.
5. Turn on the device motor using the left side key facing you (Key A). change the rotational speed of the motor using the same key (zero: OFF position, one: slow rotation, two: fast rotation).



**Figure ٢. Key A is being used.**

٦. Turn on the light and suction of the device using key B (zero: OFF position, one: only light is on, two: both light and suction are on).



**Figure ٣. Key B is being used.**

٧. Turning on the left side for the light without suction mode is only used in rare cases where suction damages the work piece which is being turned. Key B should be on the right side as a rule.
٨. The following safety equipment should be used during operation:
- Goggles
  - Safety gloves
  - Mask

9. **As a general rule, don't polish without suction**
10. **Always clean the protective glass and the plastic tray after operation.**

## Section ۷: Safety

### (۷-۱) General safety

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 product.

- Only those who are trained about the device operation are authorized to use the device.



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



**Never use a defected 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.**

- 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 Kousha Fan Pars Co and inform them about that.
- 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.
- Don't use petrol or other combustibile solvents as cleaning substance. Use only non-combustible, non-corrosive and non-toxic substances.

#### (V-۲) Device safety measures

Kousha Fan Pars Co. make 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 defect chances.



**Follow all instructions above to insure the maximum safety of device.**

۱. Dispose any cracked or impacted brushes and grinding wheels, since these parts could bring about serious incidents during operation.
۲. Make sure brush holders or firmly connected to the motor shaft before operation.
۳. Wear goggles, masks, and safety gloves during operation, turning, or part replacement.
۴. Don't polish or turn toxic substances which spread toxic particles.
۵. Make sure the rotation direction is correct before turning or sharpening work pieces (the direction of the red arrow located on the motor).
۶. Act more carefully when working with the substances which spark while being turned.
۷. If electricity stops flowing into the device suddenly, (such as blackout or unplugging), the polishing motor will shut down, but when current start flowing into the device again, it may start

operating suddenly, and this is hazardous for the device those working on the device or the motor shaft. Follow these instructions to avoid dangers and damages:



**Always put the main key at zero position after the current flow is stopped.**

**After electricity becomes available again, put the key at one position and start polishing.**

## Section 9: Maintenance

### (9-1) Clean-Up

Keep the device body clean using a dry cloth. Wet the cloth with little 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 needs cleaning, he/she should contact the after-sales service department.



**Put the main key 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.**



**You should wear goggles and masks when using compressed air. When doing this, No one should be allowed to stand near the device since there is a danger of getting hurt by suspended particles.**

- **Dust on protective glass and plastic tray should be cleaned off after each operation.**
- **Using a wet cloth with soap and water help clean the device.**
- **Change the bag when it is dirty. High noise of device and the decreased efficiency of device are signs of the bag being dirty.**

### **(٩-٢) periodic maintenance**

**Inspection and periodic cleaning of the device depends on operation level. It is suggested for user to inform the company experts about the workflow through consultation after installation and learn the appropriate time for inspection and periodic cleaning from them. If 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 user and is performed by the after-sales service department. It is suggested that the maximum time interval for periodic repairs be ١٢ months.**

**If 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.**



**It is forbidden to use the device before solving the defect which has occurred.**



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



## **(٩-٣) Maintenance technical instructions:**

### **Suction bag replacement**

**Polivac has a sucker which is designed to absorb the produced particles resulting from polishing. The sucker has ٢ bags. The pollution of these bags reduces the precision of the device and increases the noise of motor. Change the bags as soon as possible:**

- ١. Unplug the device**
- ٢. There are two square lid handles on the device which are easily pulled up.**
- ٣. The bag is in a suspended position. Release it with a screwdriver.**
- ٤. Replace the dirty bag. (It is recommended to get bags from the manufacturer company).**
- ٥. Fasten the lid again. Make sure they are placed correctly.**
- ٦. Place the anti-dust protector.**
- ٧. The device is ready to use.**



**Figure ٤. Placing the bag on the device**

- It is likely that one side of the device is used more than the other side, thus, they are separated bags for left and right sides. This means that sometimes only one bag may need replacing. Check bags regularly for any leakage or blockage.**
- Don't try to clean bags. Always use new bags.**
- It is recommended no to empty the bag filling, because polluted substances are likely stuck to the bag cloth which reduces device efficiency.**

**Thanks for your selectivity**

**Kousha Fan Pars Engineering and Manufacturing**