SO-750 SUCTION UNIT

OPERATION MANUAL

(Please read the operation manual before maintaining or repairing equipment, the manual is only for guidance, our company have the right to improve the design.)

Thank you for choosing to use our company's medical suction machine! If the first time install and use medical suction unit, please make sure to read all the information supplied firstly, in particular the installation information in this manual and other terms mentioned in the note. This will help you to make better use of our products.

Disclaimer

The description of this manual does not mean any description of product specification and configuration. For the product specifications and configuration, please refer to the related products with our manual, packing list, or directly consult the product dealer.

In the preparation for manual process, has sought to correct and complete content, but because of technical and technological advances, relevant laws and regulations changed, our medical suction machine and operation manual will be changed accordingly. Therefore, we have the right to revise this manual description of product and the contents of this manual at any time, without notice. We will continue to constantly improve their products and services.
If you find the actual situation of the products and the instructions are inconsistent when using the operation manual, or you want to get the latest information, or have any questions, please feel free to tell us.

Limited warranty

If the product comes with the details of our service (warranty documents), we will provide you the service according to this detail service. If the product does not come with our company's service rules (warranty file), it indicates that your after-sales service will be executed according to the written agreement of the product provider and the product receiver, it is not suitable for service conditions (warranty documents), and it do not contain any ostensive or implicit warranty, in this situation, you can not get the our after-sales service, if you are willing to accept the our product, you should require the organizations or persons who provides you the products to provide you with their service according to their commitment.
These products are only in accordance with local laws and regulations of the national and regional sales.
The maximum extent permitted by law, we will not bear any responsibility for the company in the following cases:
1, Third-party claims against you;
2, Incidental or indirect damages and economic losses;
3, Due to your own configuration and all damages caused by the economic loss;
4, Because you are not required in the environment in this guide use of this product, or any damage and economic loss caused by the failure of this method of operation under the guidance;

5, all damage and economic loss caused by force Majeure.

You can call the sales person.

Note: The phone may be subject to change because of the communications network or other objective factors without notice.

Copyright

This manual was owned and all rights were reserved by our company. Other accessories of the product or product documentation, the copyright belongs to the corresponding organization or person owned.

Sign flag

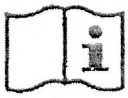


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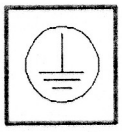


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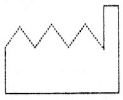
Marginal data



Consult Instructions for use



Protective Earth



Date of Manufacturer

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3. The Equipment Structure
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1. Brief introduction

Thank you for purchasing our dental suction unit. It is our company well-developed multi-purpose mechanical and electrical integration of energy-saving product with small, mobile, good appearance, less power consumption, free maintenance, safe and durable etc. In order to be convenient for you to operate the unit, please read the manual carefully.

1.1 Contents of the manual

The operation manual includes brief introduction, technical data, installation and test, maintenance, split-up drawing of ring blower and so on. You can get help in according to the contents.

1.2 Performance and structure

Medical suction unit consists of drain bottle, filter, box, ring blower, draining pump and electrical board.

1.3 Usage

The suction unit is applied in the process of oral cavity treatment as it can pump foreign objects attached with germina, such as oral secretion and dirty blood, as well as protecting environment since the objects can be dealt with before being pumped. It is mainly used for clinics and hospitals in the treatment of oral health.

1.4 Safety Information

1.4.1 Electric safety

- To make sure that the plug of this unit is three-phase with good grounding.
- Before connecting the power plug, please ensure the rated voltage consistent with the named voltage which this unit required.
- To avoid unsteady voltage, please do not use the power plug together with other electric equipment.
- Before maintaining or repairing the unit, please unplug that electric wire firstly.
- Please check the electric wire and plug regularly to avoid the damage or extrusions.

1.4.2 Cleaning

Please keep the environment around the product clean, and note to unplug that electric wire before cleaning the unit. The process of cleaning as follows: firstly wipe the outer surface with a soft cloth stained with neutral detergent, and then use a soft cloth to clean the machine again.

Notice: Do not use liquid or detergent containing flammable substances.

1.4.3 Other safety information

When using this unit, please strictly operate it in according to the following rules:

1) Please note that the power plug is designed as the safety device, not power switch. It is necessary to ensure the power plug can be unplugged from the plug without extrusions.

Warning: The good grounding is necessary to avoid the risk of electric shock.

2) Equipment cannot be used in flammable mixture environment.

3) Equipment cannot be used in anesthetic and air, oxygen, nitrogen mixture environment.

4) Don't put the equipment together with oxygen cylinder.

5) Please do not operate the equipment or replace the accessories when the following situations occur:

- Damage of the power plug
- Equipment cannot work normally
- Breakdown of the equipment
- Water inlet of the equipment
- Loud or shrill noise, overheated outlet air or foul smells during operation.

When above situations occur, please contact the manufacturer or local agent. In order to be convenient for us to offer after sale service, please offer drawing of electrical circuit, air and water connection diagram, packing list and other useful information when necessary.

6) Please use original or qualified disinfector.

7) Turn off the power when the operator left.

8) Dispose of waste liquid and waste solid according to the local health regulations.

9) Do not use and store the equipment outside the specified environment.

10) Keep accessories from dropping to avoid damages.

11) Keep the electric wire from loosing in the process of treatment.

12) Please use accessories from original manufacturer.

13) Keep the equipment in a solid and horizontal level.

1.5 Product information

Name: Medical Suction Unit

Model: SO××××××

Configuration: refer to enclosed Packing List

1.6 Edition information

Operation Manual Number: SO –750.

2. Technical data

2.1 Product data:

No.	Model	Voltage	Power (VA)	Air flow (L/min)	Maximum negative pressure (Kpa)	Noise(dB)	Specification of overload protector (A)
1.	SO-750	AC110-240V 50/60Hz	800	2000	-17	≤75	20



Warning:
Please operate the unit strictly under the rated supply voltage, because the unsteady current can cause injuries to the unit.

Please install power voltage regulator when supply voltage is unsteady, and the rated power is no less than 4000VA.

2.2 Product Classification

2.2.1 Classification of air flow: High volume suction system

2.2.2 Classification of suction method: semi-dry system

2.2.3 Classification of dental equipments management: Oral equipments and instruments (code6855), Type 1 management

2.2.4 Classification of electric shock protection: Type I equipment.

2.2.5 Degree of Protection against electric shock: Type B equipment.

2.2.6 Classification of waterproof: Normal equipment (IP20).

2.2.7 Classification of working frequency: intermittent duty.

2.3 Transportation, storage and condition of usage

2.3.1 Condition of transportation

The machine should be transported according to specific requirements of signed contract.

2.3.2 Condition of storage

The machine should be stored in the place with relative humidity not greater than 80%.Surrounding area of the machine should be clean, dry, and free of corrective gas, well ventilated and indirect sunlight.

2.3.2 Condition of usage
Ambient temperature: 5℃~40℃
Relative humidity: ≤80%
Atmosphere pressure: 86Kpa ~106Kpa
Warning: The unit can not be used in an area where the air is contaminated with the flammable anaesthetic, which the explosion may occur.

2.4 Condition of installation

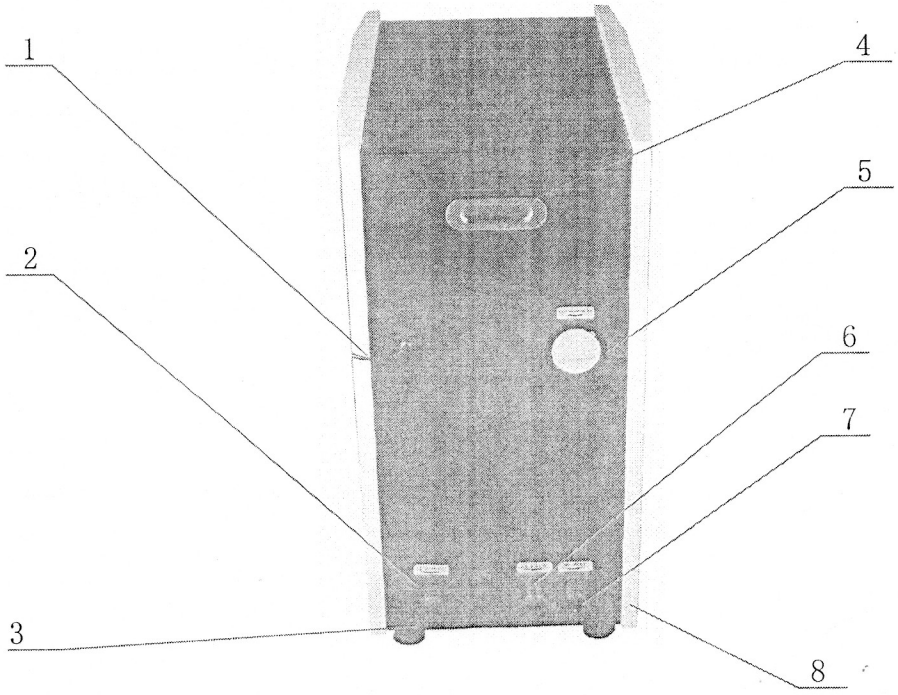
Installing the machine in a solid and horizontal level with, and does not have an incline greater than 2°.

2.5 Condition of power

Voltage range: AC110-220V 50/60Hz

3. The Equipment Structure

3.1. SO-750 structure



1. Connector of Signal Line	2. Drain Port	3. Rubber Foot	4. Handle
5. Cover of Filter	6. Air Outlet	7. Suction Port	8. Cover of Box

Material: PVC or PPR
Inner diameter:φ32
Length: ≤20m
Height of installation: 0.5m higher than bottom of suction unit

(b) Pipe connects air outlet with outdoor pipeline:

Material: PVC or PPR
Inner diameter: φ32

(c) Pipe connects drain water exit with outdoor waste processing pipeline:

Material: PVC or PPR
Inner diameter: φ32

（6） Electrical requirements

Power: when install the power socket; please ensure the power voltage consistent with the rated voltage and frequency which this unit required.

3.2.2、Testing

Check all connections of tubes, voltage and current, and connect drain outlet port into drain pipe. After connected choose valve and signal lines, open power switch, and indicator light of power switch is on. Lift up saliva ejector from rack, and operation of suction unit starts. Water will be sucked by suction port, and pump out from drain port, then put saliva ejector to original place of rack. Suction unit will stop after delay of 10 seconds.



Warning: To avoid unsteady voltage, please do not use the power plug together with other electric equipment.

4. Functions of main parts

4.1 Filter: mainly used to separate solid particles(such as teeth fragments, silver amalgam particles) from dirty blood and oral secretion, as well as protecting environment since they will be collected and dealt with before being pumped.(please clean solid particles inside the filter regularly)

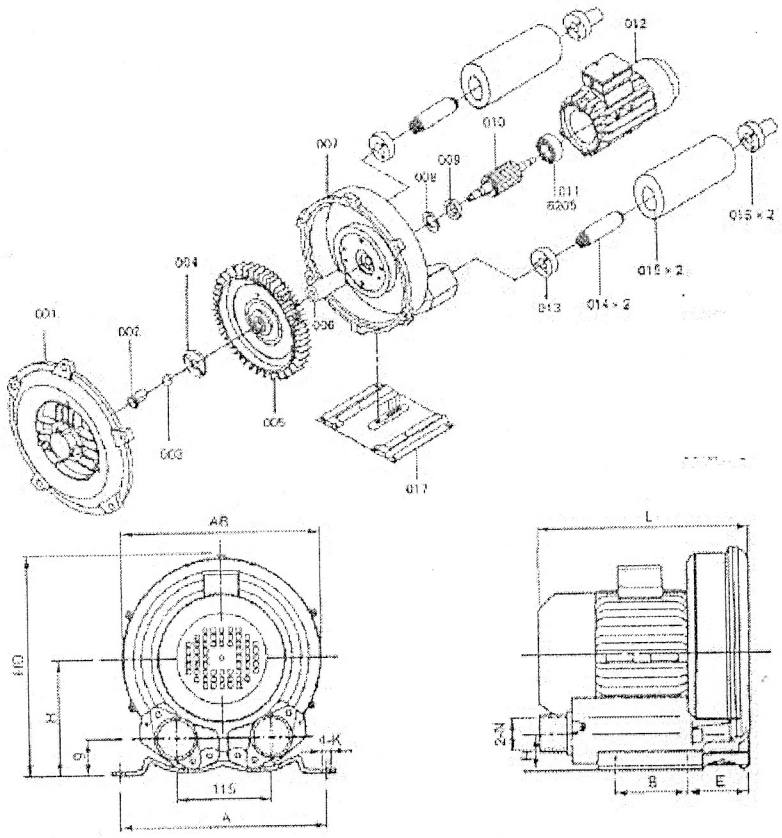
4.2 Drain bottle: used to separate the air from dirty blood and oral secretion, and then collect the left mixture. When mixtures inside bottle reach the named height, the units shut off automatically, and restart as being drained.

5. Maintenance

1. Clean the suction tubes everyday by sucking clean water twice (1 liter each time) after use.
2. Clean the drain bottle and filter weekly.
3. Clean the tubes every three months.

6. Split-up drawing of ring blower

001 Wind cover	006 Bushing block	011 Bearing	016 Connector
002 Screw	007 Wind barrel	012 Electric motor	017 Foot
003 Spring-pad	008 Bearing	013 Rubber gasket	
004 Impeller plate	009 Bearing block	014 Core	
005 Impeller	010 Rotor	015 Flue pipe	



7. Troubleshooting

	Problem	Reason	Check
1	Cannot work with very weak suction	The air inlet is blocked	Check the air inlet
		The filter is blocked	Check the filter

2	Can not start up the compressor with the compressor shaking and noisy	The power pressure is too low.	Make the pressure rise or use manostat.
3	The pump cannot work.	The power is not switched on	Check if the power supply is connected correctly
		A fuse is blown	Check if the fuse is blown
		The overload protector is bounced	Check if the overload protector is bounced
		The wire to the power supply has fallen off or an electronic component is loose	Check the patch board and the electric connection of the compressor

8. Working principle overview

Ring blower working principle: Ring blower's impeller contains numerous blades in its edge and it is special designed for a high air pressure. When the impeller is rotating, air between the impeller would be accelerated along the direction of the fan blades and due to rotating movement, after air enters outside air layer, it comes back to the base of the fan blades due to the effect of the differential pressure, the cycle will repeat several times to make the air run spirally so as to increase the pressure. The air will expel quickly because of the pressure there bigger than the pressure in the system when the air runs through the outlet.

Operating principle: Connect the suction unit with dental treatment unit, take up saliva ejector from clip-on instrument holder of dental treatment unit, and the suction unit will start automatically to suck foreign objects attached with germina (such as oral secretion and dirty blood) into filter, the filter will separate solid particles(such as teeth fragments, silver amalgam particles) from dirty blood and oral secretion(please clean solid particles inside the filter regularly).The filtered dirty blood and oral secretion will be sucked into drain bottle, the air and water separator will separate the air from dirty blood and oral secretion to ensure the air offered for ring blower is clean and prevent the impellers from corrosive damage.

Procedure to adjust delay time

A: RW1;

B: RW2;

C: RW3;

A, Delay of 10-60s after stop using high and low suction

B, Delay of 10-60s after stop ring blower, and no further operation for complete suction unit, and drain pump works with delay.

C, Delay of 10-60s after stop ring blower, and drain water inside bottle is beyond sensor of liquid position, and drain pump works with delay.

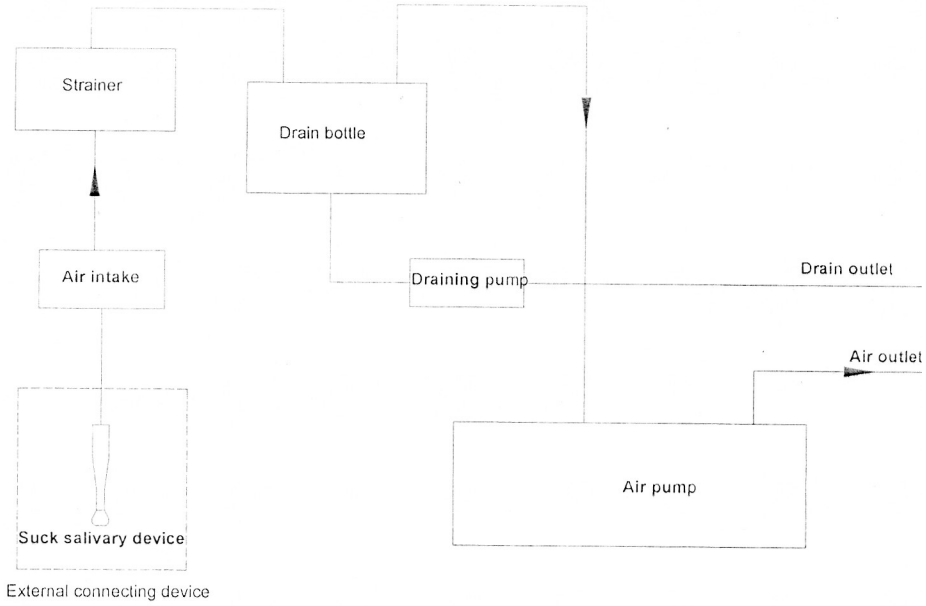
9. Safety precautions

1. When dental suction units working, please make sure that there will be no goods can be touched the air compressor.
2. Clean the filter regularly.
3. To change the electrical parts timely, but must turn off the power.
4. When to clean and maintenance the dental units, please to turn off the power.
5. After setting up the suction units, do not move the machine too often, avoid to affecting its working conditions.
6. To forbid the unprofessional person to use the air compressor, avoiding to operating wrong.
7. When to maintenance the suction units, it must be some person who is very qualified.
8. Do not let the olds, children come into contact with the compressor to avoid resulting harm.
9. When to use the suction units under knowing there will be result of harm, to forbid using the suction units.
10. When the dental suction units are retired, the capacitor and electrical components should be available to the local law and regulation.

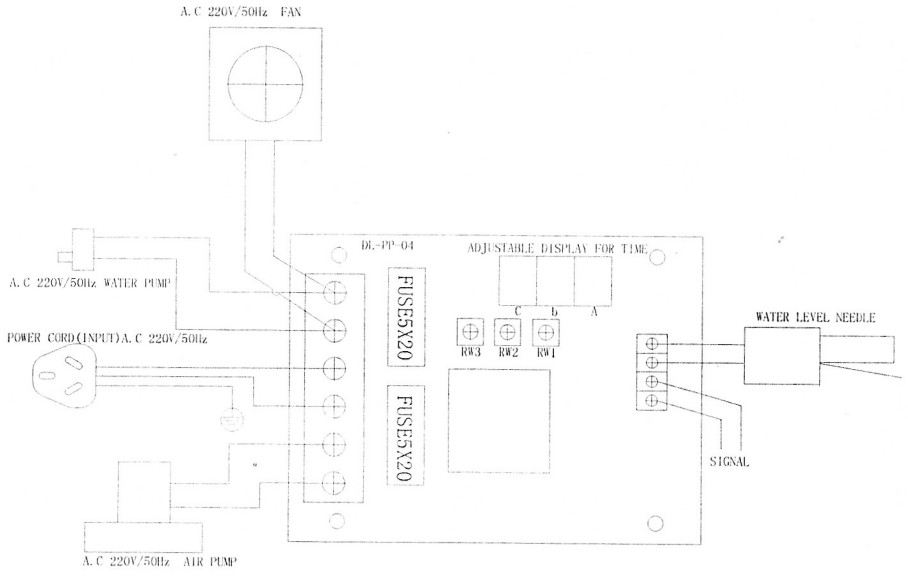
10. Drawing of air connection and electrical circuit

10.1 SO-750 air connection

Note: The arrow says airflow direction.



10.2 SO-750 electrical schematic diagram



11. External mark and content

1. Following are concluded in external packing:

Product name: Suction Unit

2. Model: SO

3. Standard NO.:

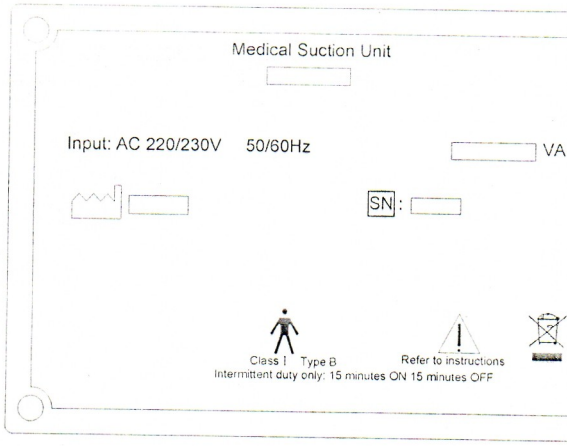
4. Packing dimension:

External size: L×W×H

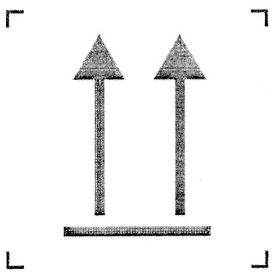
G.W: kg

N.W: kg

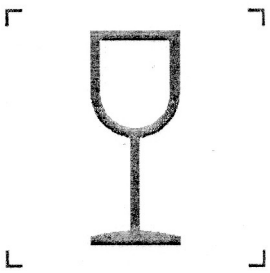
7. Brand:



8、Graph label:



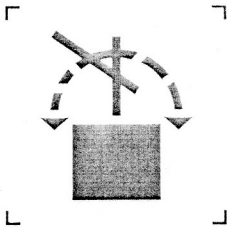
Upward



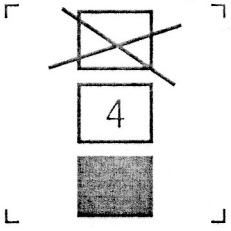
Frangibility



Keep dry



Avoid roll



Avoid superposition

12.Thirteen: Packing list

No	Name	Quantity	Remark
1.	Suction unit	1 pc	SO-750
2.	Spring pipe (diameter: 32m)	3 pcs	SO-750
3.	Metal hoop φ32	6 pcs	SO-750
4.	Power wire	1 pc	SO-750
5.	Operation manual	1 pc	SO-750
6.	Guarantee card	1 pc	SO-750
7.	Qualification certificate	1 pc	SO-750