

# **ELECTRIC SUCTION APPARATUS**

**MODEL : MT-23D·I**

## **INSTRUCTION MANUAL**

(Please read the instruction manual carefully before using this machine.)

## I. Application

DFX-23D·I Electric Suction Apparatus is matched with suction tube for clinical suction.

## II. Structure

- (1) Suction device is made up of the one-way valve, control valve, the main machine and negative pressure bottles.
- (2) This device is equipped with an overflow protection unit to prevent liquid from getting into pump body.
- (3) Filters can reduce the pollution of the surrounding environment.
- (4) Panel power switch and Connectivity panel power switch and foot switch connected in parallel, you can choose one of them as your requirements.
- (5) This device adopts all-plastic ABS enclosure. It's portable.

(6) Safe type: Type B Class I 

(7) Normal Working Conditions: Environment temperature: 5°C~35°C

Relative Humidity: ≤80%

Atmosphere Pressure: 800hpa-1060hpa

Power: AC220V±22V 50Hz±1Hz

Sign: “  ” equipment protection

grounding

“  ” dangerous Voltage

“ | ” means on, “ O ” means off.

(8) Transportation and Storage Conditions : Environment Temperature: -40°C~55°C

Relative Humidity: ≤85%

Atmospheric pressure: 800hpa~1060hpa

## III. Technical features

Pump structure: Diaphragm type

Limit negative pressure value: 0.09MPa

Negative adjustment range: 0.02~0.09MPa

Suction rate: ≥40L/min (terminal: ≥40L/min)

Suction bottle: 2500ml x 2

Input power: 400VA

Fuse: FL5A 250V Φ5×20

Noise:  $\leq 65\text{dB}$

#### IV. Instruction

- (1) Plug in the power cord, press tight vacuum bottle stopper, according to a schematic, check the hose without loss in transit and flattened phenomenon.
- (2) Adjustment of negative pressure and negative valve: turn left the negative pressure knob and plug up the tube. The negative pressure could be  $0.09\text{MPa}$ . For different usage, this control range could be between  $0.02 \sim 0.09\text{MPa}$ .
- (3) Electric control panel and pedal control switch parallel use: If control panel electric power on, the pedal control switch is out of work.
- (4) Working time should be no more than 40 minutes. When it is used continuously, the cooling time shall be no less than 30 minutes.

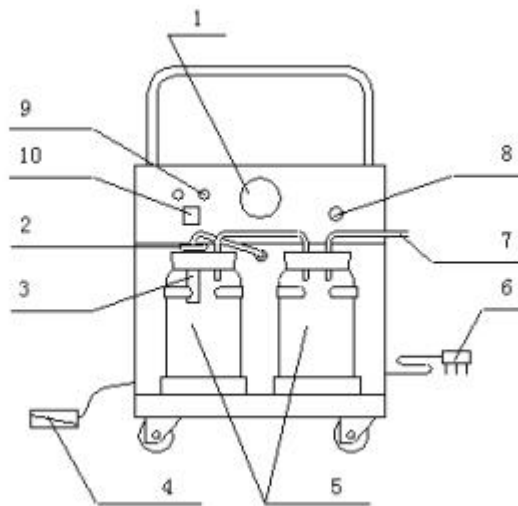


Fig 1 Sketch map

- |                            |                                   |
|----------------------------|-----------------------------------|
| 1. Negative pressure meter | 2. Air filter                     |
| 3. Flooding equipment      | 4. Pedal switch                   |
| 5. Liquid bottle           | 6. Power plug                     |
| 7. Attract interface       | 8. Negative pressure control knob |
| 9. Fuse                    | 10. Power switch                  |

#### V. Attention

- (1) The power socket must be grounded. The power should be cut off during maintenance and stand by.
- (2) If suction negative pressure can't up to the desired pressure, you should check the pipe, fittings, stoppers, whether there is leakage phenomenon.
- (3) In operation, vacuum table values should be observed to prevent the attraction is too large, damage tissue inside the body.
- (4) Because of the bevel angle relationship, the volume of the suction will be reduced.

Due to the vertical overflow protection device designed may occur can not be completely shut down, resulting in attracting into the cylinder. In general, when the bottle is full, it should be cleared up. Please pay attention to it.

- (5) In usage, the bottle may occur bubble, then overflow protection device does not work, it will affect the life of the suction. if this occurs, when one bottle is full, it should be cleared up.
- (6) The air filter should be changed frequently, otherwise it will lead to bacterial infection, this filter is disposable.
- (7) Suction pipeline, negative pressure bottle, overflow protection device under normal circumstances can be detected visually. If there is a failure, you should timely replacement of parts of the same specifications.
- (8) In usage, if the negative pressure can't be up to the maximum values, and the other components are normal. In this conditions, you can suspect that there is something wrong with the unidirectional pump. You can contact with the supplier to solve it.
- (9) If the bottle sucks, the overflow device is in operation. In this condition, you can pour the dirty liquid out, and you can use it after re-connection.
- (10) Suction housing by conventional disinfection of hospital sterilized.
- (11) If the bottle is full, you should pour the dirty liquid out immediately. In usage, if the negative pressure is too much, you should turn off the power in time and make negative pressure adjustment knob forward (forward negative pressure decreases).
- (12) Because of plateau climate and low voltage, the negative pressure may not up to the maximum value. This is a normal phenomenon.
- (13) The wastes left in the process of using this product should be disposed according to the requirements specified by the operating room. The disposal of the equipment after its service life is in accordance with local laws and regulations.
- (14) Contraindications: None

## VI. Maintenance

- (1) Before shutting down, suck in the aspirator with a small amount of water to clean the pipes.
- (2) After shutdown, cut off the power supply to the net, clean the negative pressure bottle, stopper, overflow device and various pipes and disinfect them.
- (3) When cleaning the enclosure housing, the user do not put the water into the interior, to avoid damage to the machine electrical components.
- (4) Put the machine in a dry place. If the device doesn't use for a long time, you should operate it half a year.
- (5) Suction tube aging results in poor sealing performance and should be replaced it in time.
- (6) Malfunction elimination

| Serial No. | Malfunction phenomenon | Malfunction Reason | Elimination | Remark |
|------------|------------------------|--------------------|-------------|--------|
|------------|------------------------|--------------------|-------------|--------|

|   |                                                                                     |                                                                                               |                                                                                                                                           |                                                               |
|---|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| 1 | Max negative value:<br>$\leq 0.090\text{MPa}$                                       | (1)bottle air leakage<br>(2)adjustment knob loose<br>(3)tube leakage<br>(4)suction tube aging | (1)clean bottle neck<br>(2)tighten adjustment know<br>(3)tighten tube connection<br>(4)Replace the suction tube of the same specification | (1) change distorted bottle plug<br>(2) change tube if broken |
| 2 | Max negative value:<br>$\geq 0.04\text{MPa}$ ,while suck pressure in the tube mouth | (1) fluid equipment closed<br>(2) tube jammed<br>(3) air filter jammed                        | (1) lose fluid equipment<br>(2) clean tube<br>(3) change air filter                                                                       |                                                               |
| 3 | Indication light off, motor stops                                                   | (1) power plug disconnected<br>(2) fuse broken<br>(3) Circuit board damage                    | (1) check plug<br>(2) replace the fuse<br>(3) replace new circuit board                                                                   | Contact with supplier or manufacturer                         |
| 4 | Fuse broken after power on                                                          | (1) inside malfunction<br>(2) pump jammed                                                     | (1) check inside lines<br>(2) check pump motor                                                                                            | Maintenance by technician or contact with the manufacturer    |
| 5 | Fluid into pump                                                                     | Fluid valve invalidation                                                                      | Check or change                                                                                                                           | Contact with supplier or manufacturer                         |

## VII. Transportation and storage

(1) Storage Temperature:  $-40\text{--}55^{\circ}\text{C}$

(2) Relative Humidity:  $\leq 95\%$

(3) Atmospheric pressure range: 500 hpa -1060hpa

This product should be stored in a ventilated, dry, non-corrosive room. The

transportation mode is according to the contract. Pay attention to the storage and transportation marks on the product packaging during transportation.

### VIII. Accessories

| Serial No. | Name and specifications            | Units | Quantity |
|------------|------------------------------------|-------|----------|
| 1          | Transparent suction tube Ø7 x 11.5 | piece | 1        |
| 2          | Disposable tube                    | piece | 1        |
| 3          | Fuse F5AL250V/φ5×20                | piece | 2        |
| 4          | Pedal switch                       | piece | 1        |
| 5          | Instruction manual                 | piece | 1        |
| 6          | Warranty card                      | piece | 1        |
| 7          | Certificate                        | piece | 1        |

### IX. Product date and safe life

Product date: see the label

Lifespan: one year from the product date

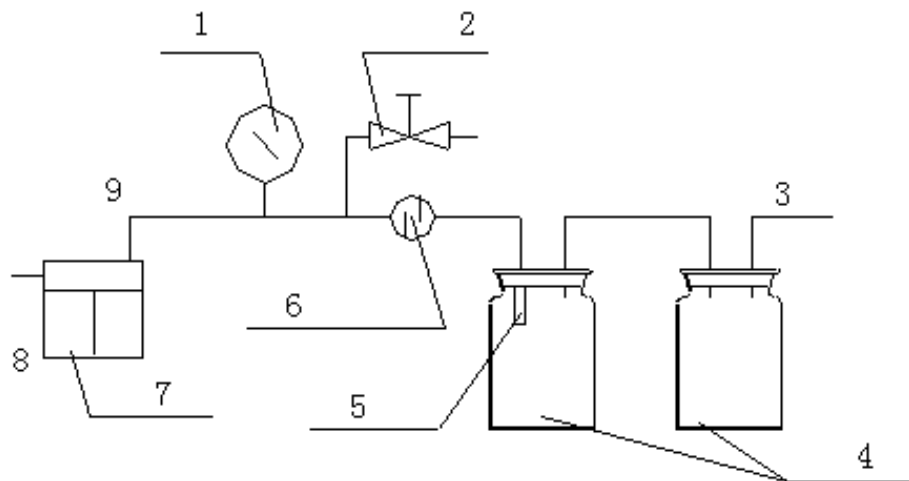


Fig 2 Working principle map

- |                            |                    |
|----------------------------|--------------------|
| 1. Negative pressure meter | 6. Air filter hole |
| 2. Control knob            | 7. Pump            |
| 3. Suction hole            | 8. Exhaust vent    |
| 4. Cushion bottle          | 9. Suction hole    |
| 5. Flooding equipment      |                    |

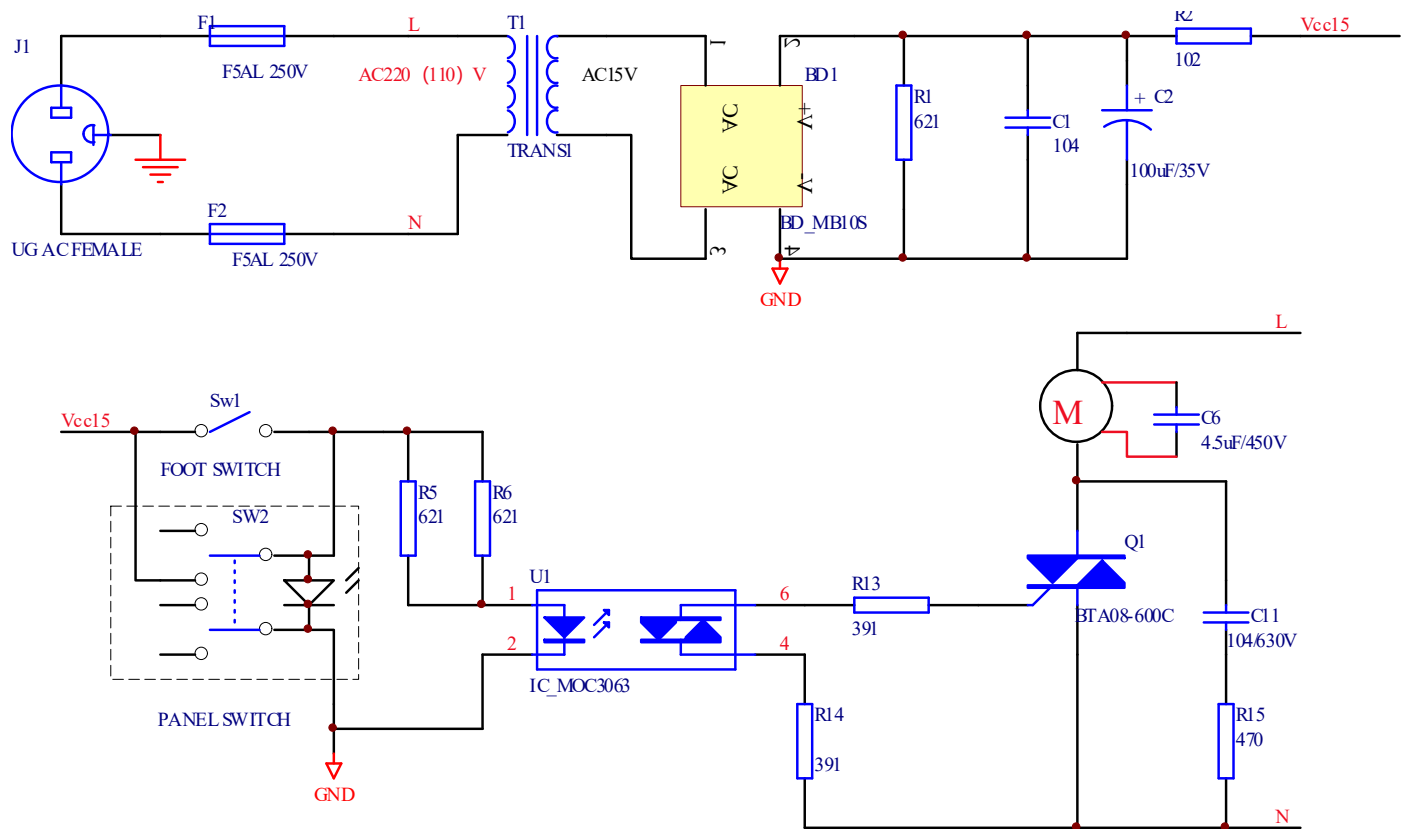


Fig 3 Electric principle map

