

Figure 1 Working Rationale

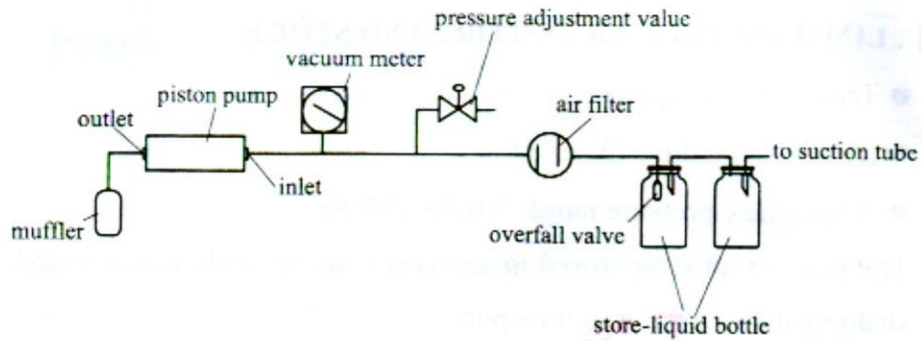
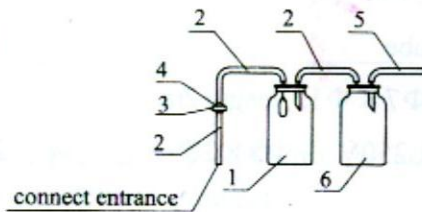


Figure 2 Connect Tubing



- 1. buffer bottle
- 2. soft tube
- 3. air filter
- 4. blue notation
- 5. soft tube
- 6. store-liquid bottle

Figure 3 Electric Rationale
H002

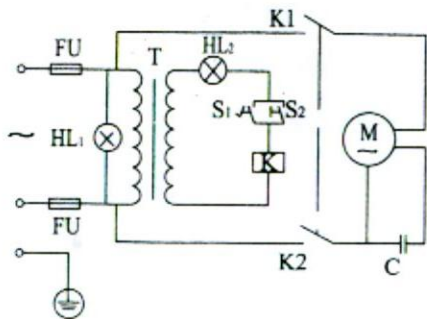
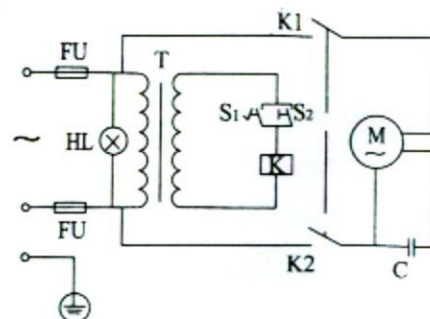


Figure 4 Electric Rationale
H001



ELECTRIC SUCTION APPARATUS

- H001
- H002

OPERATIONAL MANUAL

DO NOT OPERATE THIS PRODUCT WITHOUT FIRST
READING AND UNDERSTANDING THIS MANUAL.

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SAFETY NOTES

WARNING:

The product is precision-made and carefully assembled and wired. Therefore, do not disassemble or attempt to repair the product. All repairs should be done by qualified personnel at an authorized repair center.

IMPORTANT SAFEGUARDS

When using electrical products, especially when children are present, basic safety precaution should always be followed including the following:

- 1) DANGER-To reduce the risk of electrocution:
 1. Always unplug this product immediately after using.
 2. DO NOT use while bathing.
 3. DO NOT reach for product that has fallen into water. UNPLUG IMMEDIATELY.
 4. DO NOT place or store product where it can drop into water or other liquid.
 5. DO NOT come in contact with the suction apparatus while wet.
 6. DO NOT disassemble. Refer servicing to qualified service personnel.
- 2) WARNING-To reduce the risk of burns, electrocution, fire or injury to persons:

SAFETY NOTES

1. A product should NEVER be left unattended when plugged in.
2. Close supervision is necessary when this product is used near children or physically-challenged individuals.
3. Use this product for only intended use as described in this manual. Do not use attachments not recommended by the manufacturer.
4. Never operate this product if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or dropped into water. Return the product to a service center for examination and repair.
5. Keep the cord away from HEATED or HOT surfaces.
6. NEVER block the air openings of the product. Keep the air openings free from lint, hair and the like.
7. NEVER use while sleeping or drowsy.
8. NEVER drop or insert any object into any openings.
9. Do not use outdoors or operate where aerosol (spray) products are being used or where oxygen is being administered.

FEATURES

I. SUMMARY

- The type of electric suction apparatus is designed with safety and reliability in mind providing an efficient performance of vacuum aspiration for most procedures of suction environment in hospitals, nursing homes, clinics, home care, operation theatre room and ect. (Do not use for abortion suction).

II. CHARACTERS

- Piston driven vacuum pump assures steam free and lubrication free prevents bacteria contamination.
- Hand-switch and foot-switch for operating easily.
- Vacuum adjustment system can be adjusted according to required.
- Working rationale (Figure 1).

III. SPECIFICATIONS

1. Max vacuum: ≥ 90 kPa
2. Adjustable vacuum range: 20 kPa \sim Max vacuum
3. Max airflow: ≥ 20 L/min
4. Sound Level: ≤ 60 dB(A)
5. Suction bottle (glass): 2500ml/bottle, 2 bottles in a group
6. Power supply:
 - AC110V $\pm 10\%$ AC220V $\pm 10\%$ AC230V $\pm 10\%$
 - 50Hz 60Hz
 - 2.0 amps
7. Input power: 150VA
8. Dimension: 350 \times 305 \times 795 (mm³) (H001)
360 \times 320 \times 480 (mm³) (H002)

FEATURES

9. Weight: 19.5kg(H001) 15.5kg(H002)

- Not to be used in inflammable or explosive place.
- Working system: Continuous operation with intermittent loading, maximum continuous working time is 30min, duty cycle is 50%.
- Electric classification: I class B type.

IV. NORMAL WORKING CONDITION

- Temperature range: 5℃~40℃
- Relative humidity: 20%~60%
- Atmosphere pressure: 86kPa~106kPa

HANDLING

I . UNPACKING

- Check for any obvious damage to the carton or its contents. If damage is evident, please notify the carrier or local dealer.
- Remove all loose packing from the carton.
- Carefully remove all the components from the carton.

NOTE: Unless suction apparatus is to be used immediately, retain containers and packing materials for storage until use of the apparatus is required.

II . INSPECTION

- Examine exterior of the suction apparatus for nicks, dents, scratches or other damages. Inspect all components.

III . STORAGE

- Store the repackaged suction apparatus in a dry area.
- DO NOT place other objects on top of the repackaged suction apparatus.

ASSEMBLY AND DEBUGGING

I. CONNECT TUBING (Figure 2)

NOTE: The blue point face on the air filter is air entrance, which should connect with exit of store-liquid bottle.

II. CONNECT POWER

Draw back handle, and take out power cord, then connect power.

Caution: This product should be grounded. In the event of electrical short circuit, grounding reduces the risk of electrical shock by providing an escape wire for the electric circuit. This product is equipped with a cord having a grounded wire with a grounding plug. The plug must be plugged into an outlet that is properly ground. DANGER—Improper use of the grounding plug can result in a risk of electric shock.

III. VERIFY TUBING

- Screw pressure regulator knob clockwise, and block up air entrance with fingers or rubbers, or pinch soft tube.
- Starting the unit, without abnormal noise, the needle on the vacuum meter rise to maximum pressure immediately. Unloosening air entrance, the needle will be below 20 kPa. That is to say that tube connections are right.

IV. ADJUST VACUUM PRESSURE

- Block up air entrance, switch on suction apparatus, and adjust pressure regulator. The readings of vacuum meter are changed in the range 20 kPa to maximum pressure.
- Control vacuum with pressure regulator in clinic.
- Pressure changes through circumvolving adjustment valve.

ASSEMBLY AND DEBUGGING

- Reduce pressure below 20 kPa before switching off the machine.

V. EXAMINE, TRY OVERFALL DEVICE

- Open bottle plug, clean valve mouth, and smooth the rubber valve slice on the buoy. The valve slice must be no defects such as warp, crack and so on. The valve slice should connect buoy well with buoy. The buoy should be agile on the buoy frame.
- Carry the bottle plug with hand and make buoy touch surface vertically, then move down the bottle plug and make buoy float.
- Close the bottle plug, connect soft tube, then screw pressure regulator and switch on suction apparatus.
- Make soft tube enter a pure water barrel, and inhale liquid to store liquid bottle with overfall device. The liquid site will rise with buoy.
- Loosen pressure regulator, switch off suction apparatus, open bottle plug, and empty store liquid bottle. When retightening bottle plug, buoy is at the bottom of the buoy frame, and valve mouth is open.

The overfall device that accord with aforesaid conditions can be used in clinic.

CAUTION:

1. After switching off the overfall device, the liquid site still rises, has two reasons:

- 1) One reason is from the remainder vacuum in the store-liquid bottle.
- 2) The valve mouth is incomplete closed up. Go through the reason of the valve mouth is invalidation.

2. When valve is shut off by buoy, the buoy could still be absorbed on the valve mouth.

ASSEMBLY AND DEBUGGING

The reason is vacuum in the tube road. At this time, loosen pressure regulator or switch off suction apparatus to relieve vacuum in the tube road. Under the effect of gravity, buoy will fall from valve mouth. (Strictly prohibit pulling buoy with hand to avoid valve slice come over with buoy.)




3. After stopping the machine, relieving vacuum, then open the bottle plug.

4. After taking down overfall device and draught tubes, strictly prohibit using the suction apparatus.

VI. STOPPING MACHINE

Switch off the suction apparatus first, then pull out power cord from power socket, and cut off net power supply.

VII. SYMBOL AND SIGNIFICATION

Symbol	Signification	Symbol	Signification
	Alternating current		Consult the manual
	Earthing		

OPERATING AND MAINTENANCE

I. OPERATING

1. Before using apparatus, examine it by the process of assembly and debugging. After ensuring good capability, connect disinfected soft tube and abdomen suction tube to store-liquid bottle.
2. When using, adjust vacuum with pressure regulator, and pay attention to the liquid level in the store-liquid bottle.
3. When inhaled liquid is not too much once, do not to allow liquid to enter the second store-liquid bottle. When the first store-liquid bottle rises to prescribed volume (The machine tilted through an angle of 10° is applicable still), you must stop inhaling. After empty and clean the store-liquid bottle, reuse it. Then the second store-liquid bottle is regarded as buffer bottle avoid liquid entering pump body.
4. When inhaled liquid is too much once, liquid will enter the second store-liquid bottle. Empty the store-liquid bottle in time, or else liquid will rise with buoy to cause to close up valve mouth and to auto-stop suction.
5. After shut off overfall device, liquid level still rise, please read "EXAMINE, TRY OVERFALL DEVICE".

II. REPLACE AIR FILTER

If dirt or froth is haled into air filter, the color of filter velum will turn from light to deep, even induce suction power to reduce visibly or disappear, and vacuum on the meter rise beyond 40 kPa. At this time, air filter should be replaced with manufacturer in time.

Air filter should be replaced frequently, and destroyed together.

OPERATING AND MAINTENANCE

III. REPLACE FUSE TUBE

Fuse tube is fixed at the back of the pedestal. Before replacing it, CUT OFF power supply first. Unscrew fuse box counterclockwise, then replace the fuse tube. (Type: RF2AL250V~/Φ5×20)

IV. MAINTENANCE

1. CLEANING CABINET

WARNING: CUT OFF the power supply first. To avoid electrical shock, DO NOT remove cabinet.

Clean the cabinet with a mild household cleaner and non-abrasive cloth or sponge at least one time each month.

2. CLEANING TUBING

Before stopping the machine, suggest to inhale little pure water to suction tube to clean tubing each time.

3. CLEANING COLLECTION CONTAINER

(Include overfall device, and valve slice and bouy must not disconnect.)

- Clean collection container after using each time.
- After stopping the machine, empty store-liquid bottle.
- Clean the dirt on the bottle and bottle cover with soft brush, non-abrasive dishcloth or sponge.
- Rinse them with pure water thoroughly.

4. DISINFECTION

- Disinfect collection container and soft tubing with a solution of ten (10) parts warm water and one (1) part vinegar.
- Disinfect metalline suction tube with $134^{\circ}\text{C} \pm 3^{\circ}\text{C}$ saturated

OPERATING AND MAINTENANCE

steam for 20 minutes.

V. TROUBLESHOOTING GUIDE

Problem	Probable Cause	Solution	Remark
The maximum vacuum is below 90 kPa.	1) Leakage gas of bottle-mouth 2) Leakage gas of tubing joint 3) Pressure regulator is loose.	1) Clean dirt of bottle-mouth, tighten or replace bottle cover. 2) Tighten joints 3) Screw pressure regulator	Repairs by qualified personnel.
Vacuum is beyond 40 kPa, but suction power of tube-mouth reduce visibly or disappear.	1) Overfall device is shut off. 2) Tubing are jammed 3) Air filter is jammed	1) After stopping the machine, relieve pressure and rescrew firmly. 2) Dredge, clean or replace soft tubes 3) Replace air filter	1) Empty store liquid bottle in time
Power voltage is normal, but indicator lamp is not bright.	1) The power socket is loose. 2) Fuse tube is broken. 3) Indicator lamp is damaged.	1) Repair or exchange the power socket 2) Exchange fuse tube 3) Exchange indicator lamp.	Repairs by qualified personnel.

OPERATING AND MAINTENANCE

Problem	Probable Cause	Solution	Remark
Fuse tube is broken	1) Voltage is gone beyond 2) Circuit breakdown 3) Relay breakdown 4) Pump body is jammed	2)Examine circuit, and exclude breakdown 3)Adjust or exchange relay 4)Examine pump body and motor.	Repairs by qualified personnel.

If you have all other problems, TURN OFF the concentrator first, and contact dealer or manufacturer immediately.

OTHERS ATTENTION ITEMS

I . LIMITATION OF TRANSPORT AND STOCK

- Temperature range: $-40^{\circ}\text{C} \sim 55^{\circ}\text{C}$
- Relative humidity: 15%~95%
- Atmosphere pressure range: 50kPa~106kPa

The product must be stored in aeration without erode gas, avoided shaking and inversion in transport.

II . ACCESSORIES LIST

- Abdomen suction tube 1PC
- Suction soft tube $\langle \Phi 7 \times \Phi 12, \text{length } 2\text{m} \rangle$ 1PC
- Fuse tube $\langle \text{RF2AL250V} \sim / \Phi 5 \times 20 \rangle$ 2PCS
- Power cord 1PC
- Foot-switch 1PC
- Air filter 2PCS
- Manual 1PC.

All specifications and product configurations are subject to change without notification.