

Size: 14.5 x 21 cm (Booklet Type Manual)



PORTABLE SUCTION UNIT OPERATION MANUAL

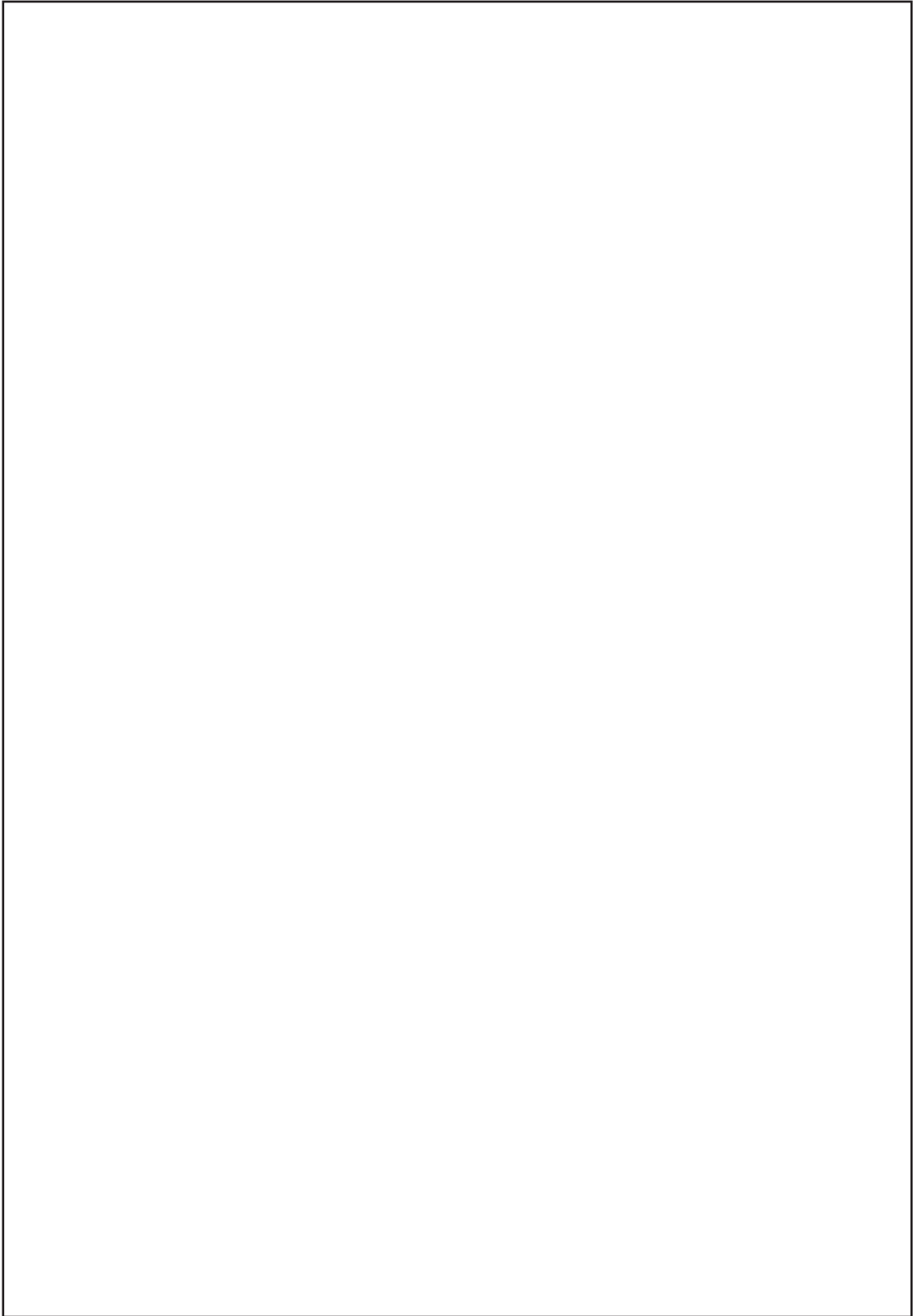


Model T-150



Please read the instructions

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Product Features

I. General

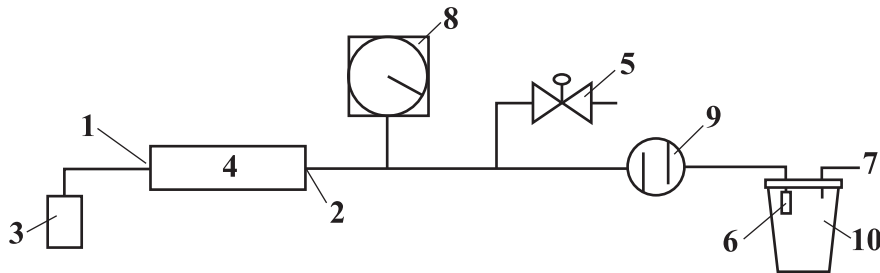
The T-150 Suction Unit is an electrical portable, low suction aspiration pump designed for the suction of phlegm, mucus and body fluids. The aspirator is ideal for use in hospital, nursing homes, home care and clinics. It is an oil-free, diaphragm pump with a low flow rate of 18L/min.

It is designed with safety features. The unit is incorporated with an advanced overflow-protection device that prevents aspirated fluid from going into the machine. The waste fluid is drained into a 1000ml auto-clavable plastic bottle.

The T-150 is intended for use by doctors, medical professionals, nurses and trained personnel for the aspiration of phlegm, mucus and other body fluid in low surgical procedures.

1. Structure & Working Principle

- This unit is an oil-free lubrication pump, thus ensuring a clean environment
- Lower noise
- New style of the embedded liquid holder, square negative pressure meter, and full plastic housing
- No positive pressure will be generated during running, to ensure reliable and safe operation
- Negative pressure regulating system in step-less adjustment knob
- Suitable for first-aid with portable features, due to its low volume, light weight, and compact size
- Systematic diagram shown as follows:



Systematic Diagram

- | | |
|--------------------------------------|---------------------------|
| 1. Exhaust outlet | 6. Overflow valve |
| 2. Suction inlet | 7. To phlegm suction tube |
| 3. Silencer | 8. Vacuum gauge |
| 4. Vacuum pump | 9. Air filter |
| 5. Negative pressure regulating knob | 10. Liquid holder. |

2. Main Technical Performances

Power Supply:	220V±10% 60Hz±2%
Limit negative pressure:	≥0.075 Mpa;
Negative pressure regulating range:	0.02 Mpa ~ limit negative pressure
Suction rate:	≥18 L/min;
Noise:	≤65dB (A)
Liquid holder:	1000 ml/pc, 1 pc
Power source:	AC 220 V ±22V, 50Hz±1Hz
Input power:	90 VA
Fuse tube:	RF1 Φ5X20/1.5A
Weight:	5 kg
Overall size:	280 x 196 x 285 (mm)

- The aspirator is not suitable for use in the place with inflammable & explosive gas;
- Working system: Suitable running time
- Electric safety requirement: Class I, Type B equipment

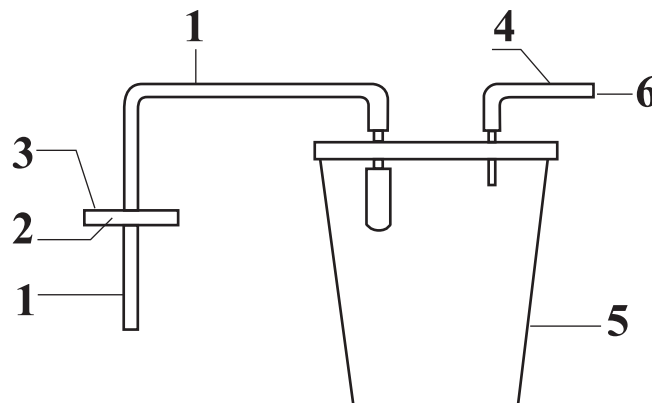
3. Normal Operating Conditions

- Ambient temperature : 5 ~ 40%
- Relative humidity : $\leq 80\%$
- Atmospheric pressure: 86 ~ 106 Kpa

Installing and Commissioning**1. Open Package Inspection**

The customer shall carefully inspect if the appearance of product is good, and the varieties & quantities of the attachments are in conformity with tube as indicated in the attached list before installing and commissioning. Also, the customer should immediately notify the supplier or manufacturer of damage(s) if any;

2. Connecting (See Tube Connecting Diagram, with phlegm suction tube temporarily not connected)

**Tube Connecting Diagram**

- | | |
|-----------------|--------------------------------|
| 1. Suction tube | 4. Suction conductor |
| 2. Air filter | 5. Liquid holder |
| 3. Blue mark | 6. To the phlegm suction tube. |

3. Power line connection

Connect the plug to the power source. Turn on the power supply, and the power indicator will illuminate.

Note: The power plug is used for power shut-off, and the power socket shall be grounded reliably.

4. Connector inspection

- Turn tightly the negative pressure regulating valve clockwise, and block the air suction inlet with the finger or the rubber head of dropper, or fold up and hold the suction tube;
- Start the aspirator to let it run. The pointer on the vacuum gauge will quickly reach the limit negative pressure. Release the suction inlet, the pointer will return to below 0.02 Mpa. This test will determine that the connector is in good connection.
- Attach the phlegm suction tube. The negative pressure in the negative pressure system shall be less than 0.06 Mpa at the time of attaching F6 suction tube, less than 0.04 Mpa when attaching F8 suction tube and less than 0.03 Mpa when attaching F12 suction tube. These tests will determine that the aspirator is in normal condition.

Note: Dredge the suction tube if blocked as per the following method: Bend the suction conductor in "V" form (with no liquid in the holder), and release it to the original status when the negative pressure reaches up to the maximum value. Repeat this procedure several times till the tube is not blocked.

5. Negative pressure regulating

Block the suction inlet, open the aspirator switch and regulate the negative pressure valve, and the readings on the pressure meter shall be within 0.02 Mpa ~ limit negative pressure.

- Control the negative pressure as required for suction by means of the negative pressure valve at the time of clinical practice;
- Increase the negative pressure by turning the valve clockwise;
- Reduce the negative pressure below 0.02 Mpa prior to power shut-off.

6. Inspection & test on the overflow device

- First open the holder plug; clean up the valve mouth, and leveling the rubber valve clack on the float. The valve clack shall not be warped, bent or broken, but well connected with the float. The float shall be able to move freely in its support without any blockage;
- Lift the holder plug with hand to make the float contact the water surface perpendicularly. Gradually lower the holder cover to let the float rise;
- Tighten the hold plug, attach the suction tube conductor at the inlet, and screw firmly the regulating valve, then, actuate the aspirator;
- Put the suction conductor into one clean water pail or attempt to simulate actual application to suction the liquid into the holder of the overflow device. As a result, the float will rise as the liquid level ascends until the valve is closed and suction stops automatically. The final position of liquid level depends on the suction process adopted;
- Release the regulating valve, set the aspirator switch off, open the holder plug and empty the liquid in the holder. The float shall be at the bottom of the support and the valve is in open status in case of re-screwing firmly the hold plug;

If so, the overflow device is considered as being in normal condition, which can be used for clinical practice.

Note:

1. The liquid level still continuously ascends after the overflow device has been shut off, possibly due to:

- (1) Residual negative pressure still in the holder;
- (2) Valve mouth not fully closed.

For Item (1), the liquid level in the holder will not ascend when the suction tube is placed again into the liquid to aspirate, and for Item (2), the liquid level still ascends. Thus, it is required to observe carefully, and lift immediately the suction tube out of the liquid when the holder is close to full, then, switch off the aspirator to stop suction, and examine the possible reason of the valve fault.

2. The float is still adhered on the valve mouth as already closed by the float, possibly due to the negative pressure in the line. At this moment, release the regulating valve or shut off the aspirator (to release the negative pressure in the line), the float will descend from the valve mouth under the action of gravity. (It is forbidden to pull the float with hand, in order to avoid the rubber valve clack being separated from the float);
3. After shut-off, release the negative pressure, then, open the holder plug;
4. Never use the aspirator when the overflow device & the suction hose are dismantled.
5. **Stop running**
Turn off the aspirator switch, and pull the power plug out of the socket to shut off the power supply.
6. **Legends & implication for the sake of safety**

Symbol	Meaning	Symbol	Meaning
~	AC power		Note! Refer to the document on board
	Protection, earthing		B type equipment

Application and Maintenance

1. Application and Maintenance

- Check the aspirator before using as described in the Installing and Commissioning sequence to ensure its good performances, afterwards, start operation by connecting the suction conductor and the phlegm suction tube already sterilized;

Note: Please refer to the instructions before attempting to use the suction tube supplied with the aspirator.

- Regulate the negative pressure as required for suction through the regulating valve, open/close the switch based on the situation, and observe frequently the liquid level in the holder in the process of operation. Stop suction if the liquid level in the holder ascends to the rated capacity (still applicable if slanting the aspirator 10°), and re-use it after empty and clean-up. Otherwise, the float will rise as the liquid level ascends till the valve is closed and suction stops automatically;

Note: Adopt the procedures mentioned in “Inspection & test on the overflow device”, if the liquid level still ascends after the overflow device has been shut off.

- Emergency measures in the process of application:
 - Quickly loosen the negative pressure regulating knob to release the negative pressure if the suction tube is blocked by strong phlegm and mucus, and start suction again after changing the suction tube;
 - Adopt the above method to loosen the negative pressure regulating knob if it is not easy to take out the suction tube after completion of suction or the tube is adhered to human body tissue.

Note 1: Bend the tube in “V” form prior to starting suction, insert the tube into the location of existing phlegm on the patient when the negative pressure reaches the desired range after start-up, then, recover the tube to its original status. This will lead to quicker suction effect.

Note 2: The medical personnel shall select the proper suction tube according to the clinical requirement.

Note 3: The aspirator shall be operated under the medical personnel’s instructions strictly according to the scope of application and the operating sequence listed in the instruction manual. Please contact the supplier or manufacturer if there is any question.

2. Changing air filter

It is required to change air filter if it is filled with foam or dusts resulting in the gradual darkening of the color of filter diaphragm, or a loss of power as shown in the rise of up to 0.04 Mpa in negative power on the vacuum gauge.

Note 1: *The suction force will diminish or disappear, and the negative pressure ascends if the overflow device is closed, and the tube blocked in the process of application. Please refer to "Trouble Shooting".*

Note 2: *Necessary to frequently change of air filter and dispose it according to proper procedure.*

3. Changing the fuse tube

The fuse tube is mounted at the rear of the base. Switch off the power supply, and turn it counterclockwise and open, then, start changing the tube.

4. Maintenance

- It is recommended to have the suction tube suctioned small amount of clean water for cleaning up the inner wall;
- After use, empty the holder, clean up dirt on the holder and plug with soft brush or rag, flush it with water and conduct sterilization. (including the overflow device, the seal ring and various tubes. Unscrew the overflow device, and separate the float from its support to completely clean up, if necessary.

(Note: The rubber valve clack shall not be separated from the float.)

- Use the physiological saline to clean out the residual strong phlegm and mucus in the tube after use. Replace the suction tube if the flow is not smooth. It is recommended to adopt single-use suction tube;
- Place the holder, cover and all tubes into the disinfectant compounded with the Kangweida disinfectant tablets (0.5 g per tablet) in 1:500 concentration for 1 hour

Note: Keep the glass holder away from any sharp utensils to avoid drop in the process of cleaning and application.

- Wipe the case outer surface with lightly wet rag already soaked in the disinfectant, and prevent any liquid seeping into the pump. Never wipe the places marked with letters and patterns;
- Place the machine in dry and clean places, and periodically start running once a time (normally one time every 6 months).

Note: Install the overflow device, conductor and other tubes as per the connecting mode before re-use.

5. Trouble shooting

No.	Problem & Question	Reason	Possible Solution	Remarks
1	Limit negative pressure < 0.075 Mpa	a. Holder mouth leakage; b. Leakage on connecting points; c. Regulating valve loose or released.	a. Remove dirt, tighten or change the holder cover, seal ring, and connector; b. Re-tighten each connection point; c. Turn tightly the regulating valve	b. Change the broken suction tube
2	Negative pressure > 0.04 Mpa, with distinct reduction or disappearing of suction force at tube outlet	a. Overflow device shut-off; b. Tube blockage; c. Air filter blockage	a. After shut-off, turn the regulating valve loose counterclockwise to release negative pressure in tube, then re-screw; b. Dredge, clean or replace the tube; c. Replace it with air filter produced by us.	a. Empty the holder timely; c. The end (in blue mark) of air filter is the air inlet
3	Normal power voltage, but the indicator doesn't illuminate	a. Loose socket; b. Fuse broken; c. Indicator damaged	a. Repair or change the socket; b. Replace the fuse tube; c. Replace the indicator	b. Size: RF1 Φ 5 X 20/1.5A

4	Fuse tube broken	a. Voltage over high; b. Internal line in fault; c. Pump blocked, and current increasing	a. Adjust voltage; b. Check the circuit line, and correct; c. Check the pump body and motor	By the specialized maintenance worker (Refer to Electric Systematic Diagram)
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Note: The dismantling & repair on the pump body if fault shall be conducted by the specialized worker. Please contact the manufacturer if required.

Precautions

1. Handling and storage environment conditions

- Ambient temperature: -40 ~ 55%
- Relative humidity: ≤95%
- Atmospheric pressure: 500 ~ 1060 hPa

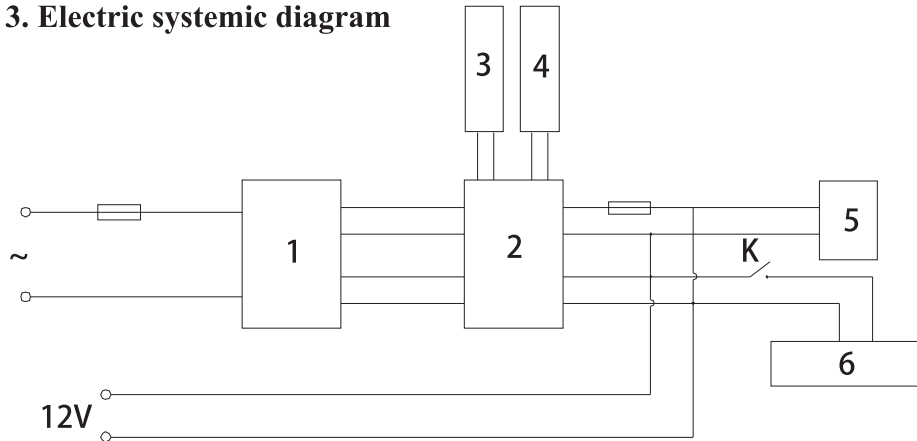
Note: It is required to store the aspirator in the well-ventilated room without corrosive gas, and avoid any violent shock while handling.

2. Electric and magnetic environment guidance

The T-150 Portable Suction Unit uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause interference in nearby electronic equipment.

The Suction Unit is suitable for use in all establishments, Due to the fact that the unit contains no electronic control circuitry, they are deemed to fulfill the relevant immunity requirements without testing.

3. Electric systemic diagram



- | | |
|-----------------------|---------------------|
| 1. Transformer | 4. Refill indicator |
| 2. Circuit board | 5. Battery |
| 3. Charging indicator | 6. DC motor |

Figure 3 Electric theory chart

4. Attachments

- Suction conductor (2m long): one pc
- Air filter: two
- Fuse tube (RF1 Φ5X20/1.5A) two sets
- Suction tube (for child & adult) one pc respectively
- Instruction manual: one copy
- Product warranty card: one copy
- Certificate of quality: one copy

The manufacturer of this suction unit reserves the right to change specifications and product configurations without prior notice.

RECOMMENDED ACCESSORIES:



Simplex Brand
Suction Catheter



Simplex Brand
Connecting Tube

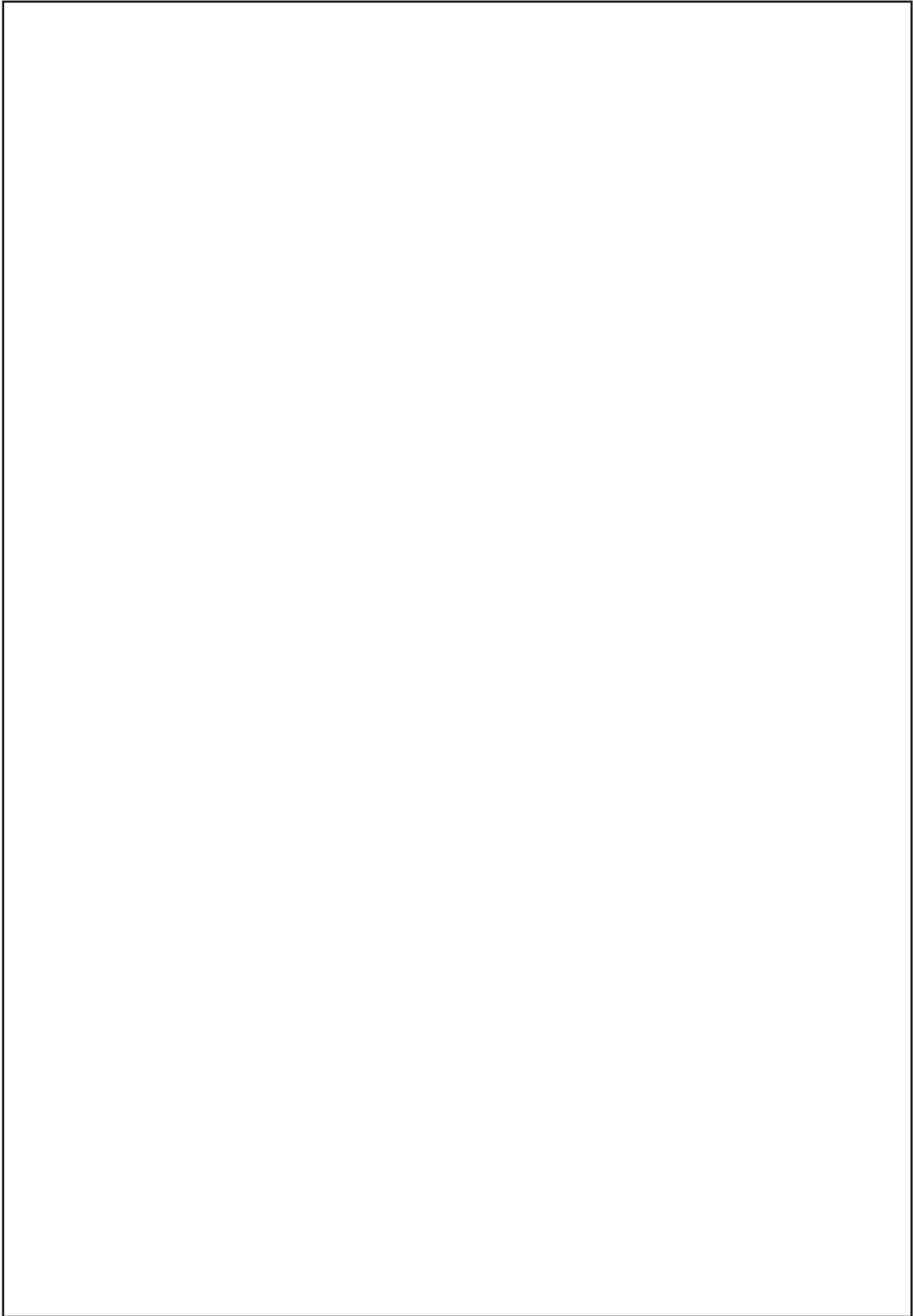


Unimex Brand
Protective Nitrile or Latex Gloves



Mild Disinfectant

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Product Warranty Card

NAME:	DATE OF PURCHASE:
ADDRESS:	PURCHASE FROM:
ITEM PURCHASED: TMS PORTABLE SUCTION UNIT (T-150)	REGISTRATION DATE:

Inmed Corporation warrants this product to be free from defects in material or workmanship within the specified warranty period under normal use. If fault is found, please return the equipment to the store where product was purchased. Inmed Corporation will repair or replace any defective part free of charge subject to the terms and conditions stated herein.

For service, the unit is to be returned freight prepaid to:

Inmed Corporation

5 Calle Industria, Bagumbayan,
Quezon City 1110, Philippines
Tel: 02.8571.1888

Please register your unit online at:

<https://inmed.com.ph/warranty.php>