User Manual

Digital Infusion Warmer

2802671 - 2802672 - 2802673

Version:V1.0

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Please read this user manual carefully before use.

Warnings and Precautions for the Digital Infusion Warmer

Please read this user manual carefully before using the device. If you have any questions, please contact Covetrus.

- Do not carry out maintenance by yourself if the device does not work properly. Please contact the company or the company's authorized maintenance engineers who can obtain the corresponding information from the company.

- Disconnect the power supply before cleaning. When cleaning, try to use a soft brush or cloth to remove dust from the surface and the edge of the panel of the device, or wipe with a soft cloth dipped in neutral detergent/cold disinfectant, 70% ethanol, isopropyl alcohol, etc. Do not let the washing liquid penetrate into the device or the edge of the panel.

- The device is not suitable for working in the environment mixed with oxygen and flammable anesthetics containing nitrogen oxides, otherwise it may cause explosion.

- This product should be suspended or fixed by clamping to a stable infusion stand or rail hanger for use.

- You should stop using the product immediately when a high temperature alarm occurs.

- When using the device, you need to keep the environment clean, avoid vibration, and keep away from corrosive drugs, dust, heat and humidity.

Content

1. Overview

1.1. Structure

The Digital Infusion Warmer is mainly composed of the host shell, main control module, power module, display module, operation module, heating module and alarm module

1.2. Product Specification

Dimensions	183.5*86*57mm
AC power supply	AC 100V～240V，50/60Hz
Input power	≥50VA
Selectable Units	℃/℉
Volume Range	Level 1-8
Abnormal temperature alarm range	1～3℃/℉
Weight	Less than 1kg
Operating environment	Temperature: 5-25℃ Humidity: 15-90%, non-condensable Atmospheric pressure: 57-106kPa
Transport & Storage	Temperature -20℃～60℃; Humidity: 15-95%, non-condensable. Atmospheric pressure: 50-106kPa.

1.3. Application Scope

The Digital Infusion Warmer is used outside the IV set to heat and keep warm the liquid in the tube during the infusion process. It is not directly in contact with the liquid in the tube, but raises the temperature of the liquid to be close to the body temperature in the low-temperature environment.

1.4. Contraindications

Not for heat-sensitive drugs

2. Product Performance

1) Safety measures: For the safe use of the device, this series of products are set up with these prompt functions: high temperature alarm, low temperature alarm and door opening alarm.

2) When the heater temperature reaches 55° C ±4.5° C, the device will cut off the heating power supply automatically.

3) Preheating time: less than 3 minutes (heating from room temperature to a stable temperature of 50±1℃/107.6±1.8℉).

4) Temperature control error: ±0.5℃ (1.8℉).

5) Temperature control range: 30℃ ~ 50℃ (86℉ ~ 122℉).

6) Ingress Protection: IP34. It is anti 60 degree tilt drip device

7) This product has drip rate alarm and empty bottle alarm function (optional).

3. Appearance
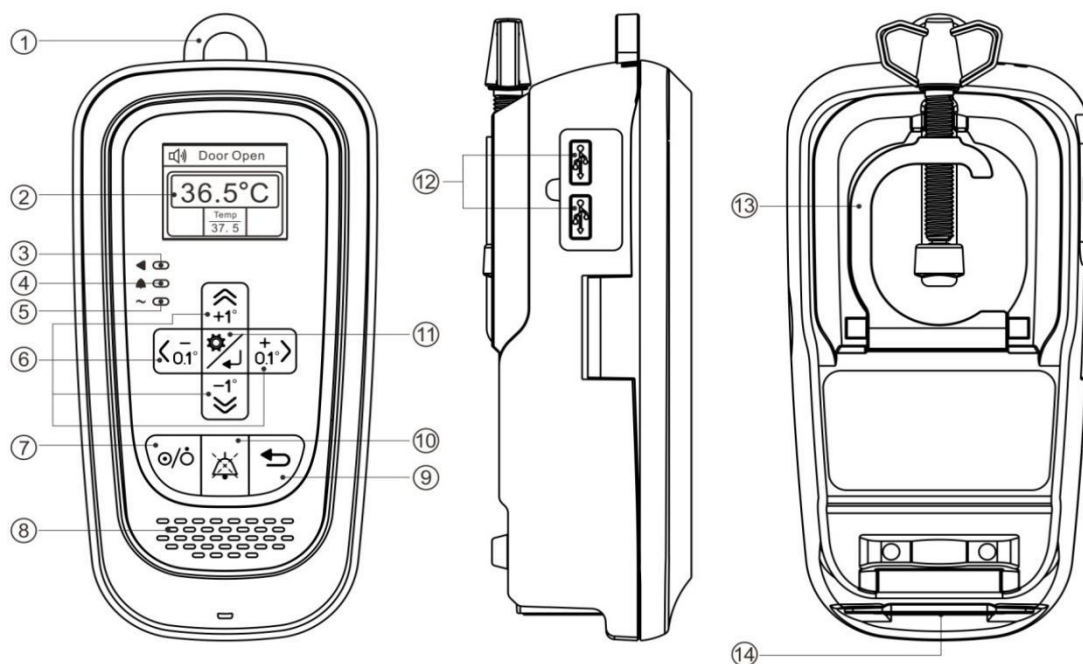
Series Number	Name	Function
①	Ring	To hang the warmer
②	Display Interface	To check current operation of the warmer Display alarm interface, horn status and current operation

③	Running Indicator	Shows that warmer is currently running
④	Alarm Indicator	Shows that warmer is in alarm state. (Red light with advanced level alarms, yellow light with medium level alarm)
⑤	AC Indicator Light	Showing that the warmer is connecting with AC power supply.
⑥	Temperature Adjustment	To adjust to required temperature. Upper key: +1; Lower key: -1; Left key: -0.1; Right key:+0.1
⑦	Power Switch	Pressing and holding for 3 seconds to power on or single click to choose power off.
⑧	Loud Speaker	To alert or alarm with sound.
⑨	Return Button	Return to previous interface or silent alarm.
⑩	Mute Button	To mute or activate sound.
⑪	Setting Confirmation Button	Enter into setting interface and confirm operation.
⑫	Drop Sensor Interface (Optional)	To connect drop sensor.
⑬	Pole Clamp (Hidden)	To fix warmer on pole clamp.
⑭	Power Cord Connector	To connect power cord. External 100-240V 50/60Hz AC

4. Home Interface
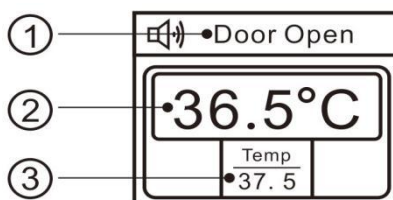
Series Number	Name	Function
①	Alarm Display	When an alarm occurs, it will display the relevant alarm marks and symbols

	Real time temperature	Display the real time temperature of the warmer heating plate
②		
③	Set temperature	Display the set temperature

5. Setting Interface Instructions:

Press the "Settings Confirm" button to enter the following page in sequence:

| Page	Description	Function
First page	Temperature	Set the desired temperature and press "OK" to save setting
	Unit	2 units selectable: ℃ and ℉
	Speaker Sound Volume	Set the speaker sound volume
	Key Sound Volume	Set key sound on or off
Second page	Restore factory setting	Restore all parameters to factory Settings
	Languages	Set language to select the required language
	Alarm of abnormal temperature	Set the difference between abnormal temperature and set temperature value (the default value is 1. When it is greater than or less than 1 ℃, high and low temperature alarms will be triggered)
	device information	View warmer information, version number

6. Installation Instructions：

There are two installation methods: hanging installation (with sling) or fixed pole clamp installation.

1) Hanging installation:
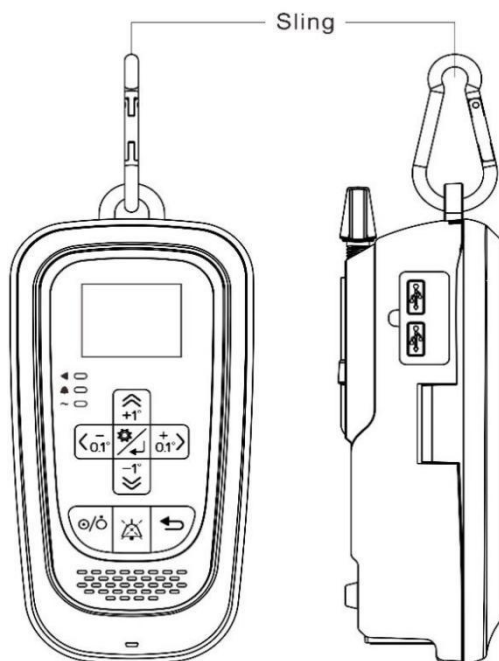
2) Installation with pole clamp :
   Open the hidden pole clamp and rotate 90° as shown in the first photo below.
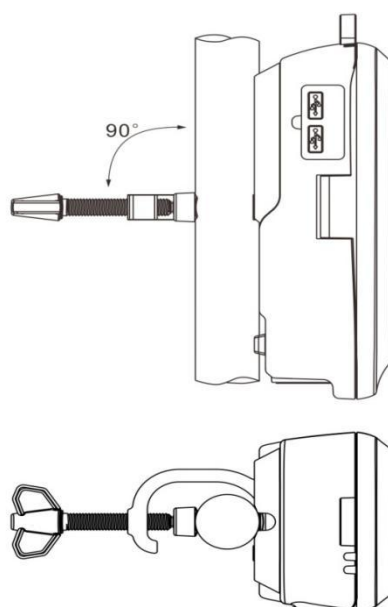
⚠️Note: After performing fixed installation with the pole clamp, the pole clamp can be returned to the hidden state inside the device by twisting the wingnut-shaped knob and rotating the pole clamp back into the slot.
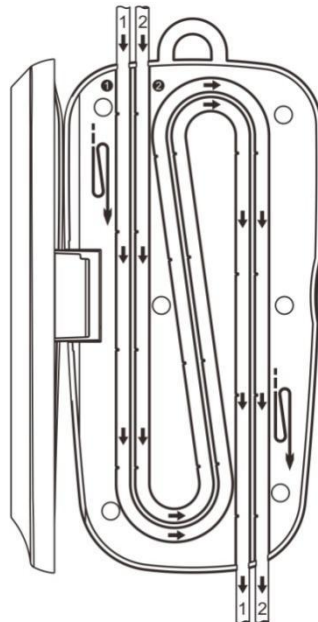
3) Connect the power cable:

Insert one end of the power cable into the power socket of the warmer and the other end into the main socket. The power indicator is on when the power is switched on. Connect the AC power supply: Plug one end of the AC power cable into the warmer outlet and the other end into the power outlet that can be disconnected at any time. After the AC power is connected, the power indicator will be on.

⚠️Note: Do not start the device when the fluid in the IV set is not flowing.

4) IV set installation:
Prepare the IV set, fill the IV set with liquid, and purge the air bubbles from the IV set; The device has two IV sets mounting slots, and one or two IV sets can be installed at the same time.Install the end of the IV set from top down into the heating plate slot of the warmer, as shown in the figure:

1：No.1 IV set slot
2：No.2 IV set slot

7. Use Instructions:

This product is used to heat the IV set's liquid.

1) Fix the product according to the installation diagram, connect the power cord and the power indicator will turn on;

2) Install the IV set into the slot of the heating plate, then close the upper cover, and insert the drop sensor into the corresponding interface of the product (if necessary).

3) Long press the power button and the device will be powered on.

4) After powering on, set the parameter and adjust the temperature.

5) After use, long press the power button for about 3 seconds to turn off the warmer.

★ Pull out the power cord after power off, clean the surface of the warmer, and keep it properly.

8. Alarm and Processing Method:

Description	Alarm reason	Solution
Door opening	If the device is open or did not properly shut, an audible and visual alarm will appear.	Close the door, press mute button or return button to remove the alarm
High temperature	Occurs when the temperature is higher than the set value by 1°C or 32°F. The default is 1°C, and the alarm range can be increased in the setting interface by the user up to 3°C or 37.4°F.	When the temperature goes back to the control range, it automatically eliminates the alarm.Press the mute or return button to remove the alarm.
Low temperature	When the temperature is lower than the set value by 1°C. The default is 1°C, and the alarm range can be increased in the setting interface by user with a max of 3°C lower than the set temperature.	When the temperature goes back to the control range, it automatically eliminates the alarm.Press the mute or return button to remove the alarm.

9. Precautions for product installation and use

● Before installing and using the Digital Infusion Warmer, please perform a visual inspection to check whether the device has any of the following problems: damage to the housing panel,or power supply, spilled fluid or liquid exposure, moisture, etc.

● This device must be operated by trained professional medical care personnel.

● This device is used to warm drugs or blood inside an infusion line or blood transfusion line. Do not use it for other purposes.

● Before installing and using the device, please confirm with a doctor whether the drug can be heated and check appropriate heating temperature.

- Prior to inserting fluid tubing into device, perform standard checks to ensure integrity and condition of line and that it is free of air prior to connection to the animal

- Before installing the device, please refer to this manual for correct installation to prevent the device from falling off the infusion stand. Do not wash the device.

- Please refer to the manual instructions. If alarm sounds, stop use and immediately troubleshoot the error. If necessary, please contact Covetrus for maintenance and testing, and ensure the device is certified to be in working order before resuming use.

- When using the optional drop sensor, please pay attention to the corresponding relationship between the external drop sensor interface and the IV set slot.

- Please do not disassemble the device.

10. Comment Fault and Solution

When the following prompts or instructions appear, it can be considered that the device is faulty, please handle it as follows:

Fault phenomenon	Possible Cause	Methods
AC light is not working.	① No AC power supply ② Control circuit failure	① Check the AC power ② Contact the distributor or manufacturer for repair
device does not heat	①Control circuit failure ②The heating execution device is faulty ③Heater failure	① Contact the manufacturer ② Contact the manufacturer ③ Contact the manufacturer
The information is not displayed completely	LCD displays abnormally	Contact the manufacturer
No sound	1. The loudspeaker is damaged. 2. The cable between the device door and the internal cable of the host falls off. 3.Power failure.	Contact the distributor or manufacturer for repair

Transport and Storage conditions: (Place them according to the number of layers indicated in the packing case)

11. After Sale Service

This product enjoys 1 year free warranty after purchase.

The damages of the device caused by the following shall not enjoy free warranty service:

1) Fault caused by incorrect operation, unauthorized refitting or repair.

2) The damages caused by incorrect operation during the transportation process after purchase.

3) The fault and damages caused by fire, salt injury, toxic gas, earthquake, windstorm, flood, abnormal voltage and other natural disasters.

4) If necessary, the company can provide authorized maintenance personnel with the circuit diagram and the list of components required for maintenance.

For the damages or faults mentioned above, our company provides repair services but chargeable according to the repair cost.

5）The product has a service life of 5 years. Heaters exceeding their service life must be scrapped. Contact our company for further instructions.

Appendix: Installation diagram
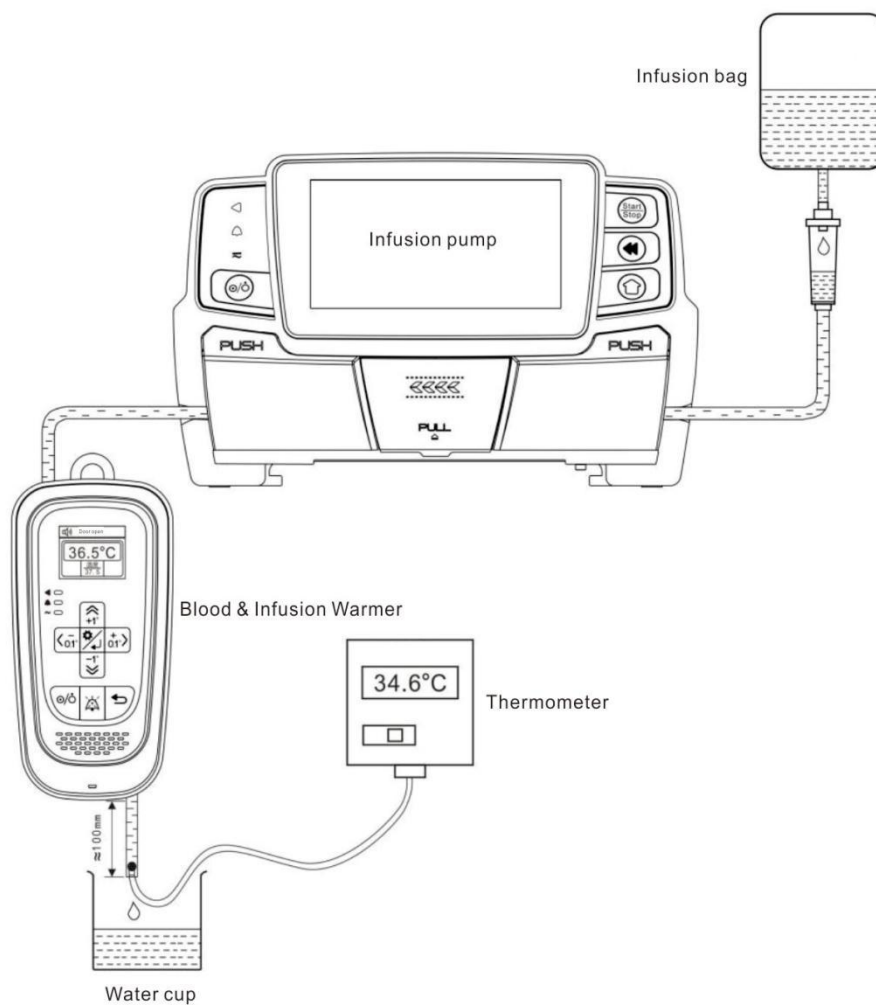
Packing list of Digital Infusion Warmer

Series Number	Material Name	Quantity	Remark
①	Infusion warmer main unit	1 pcs	
②	Power cord	1 pcs	
③	Sling	1 pcs	
④	Manual	1 pcs	

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