

**AniFM I1**

**Veterinary Infusion Pump**

**Operation Manual**

For detailed operation information, please scan the QR code or visit the website:

Pour obtenir des informations détaillées sur le fonctionnement, veuillez scanner le code QR ou visiter le site Web:

Para obtener información detallada sobre el funcionamiento, escanee el código QR o visite e sitio web:

Ayrıntılı işlem bilgileri için lütfen QR kodunu tarayın veya şu web sitesini ziyaret edin:

Para obter informações detalhadas sobre a operação, leia o código QR ou visite o site:

Per informazioni dettagliate sul funzionamento, eseguire la scansione del codice QR o visitare il sito Web:



<https://ims.mindrayanimal.com/pub/detail.aspx?tid=14&rid=12709>

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All pictures shown are for illustration purpose only and may not be an exact representation of the product.

Contents of this manual are subject to change without notice.

## **Introduction**

### **Intended Use**

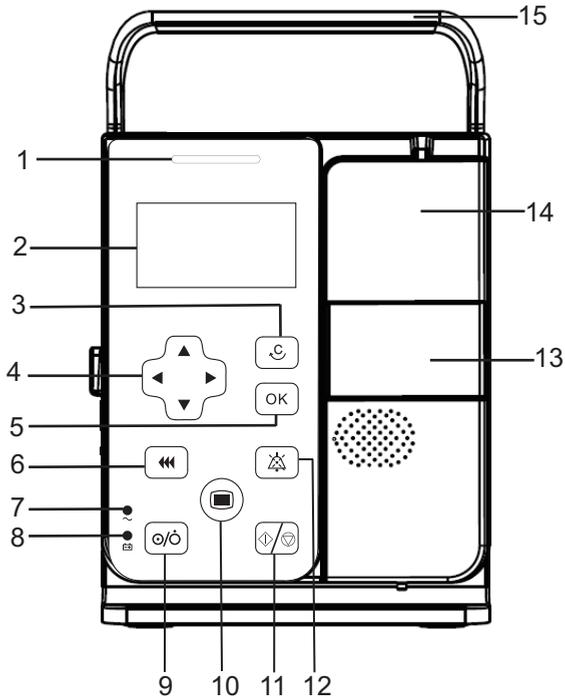
It is intended for use on animals for the delivery of medications for infusion therapy.

It is intended to be used by qualified and trained personnel in animal medical institutions.

## Product Configuration

- Main unit
- Power cord
- Accessories: refer to the packing list

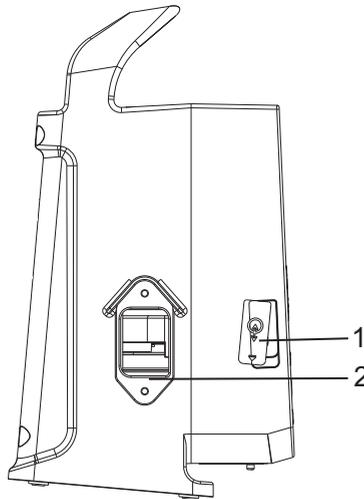
## Main Unit



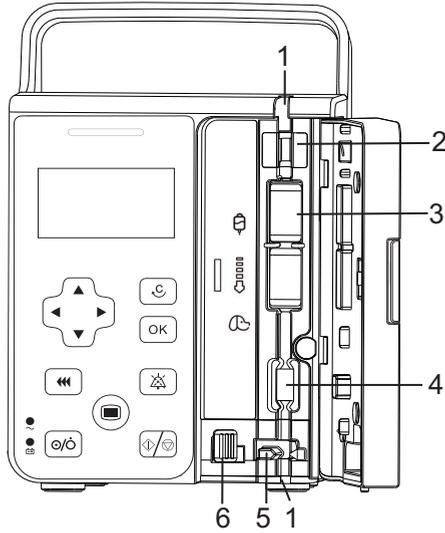
No.	Name	Description
1.	Alarm light	<p>When an alarm occurs, this lamp lights and flashes corresponding with the alarm priority</p> <ul style="list-style-type: none"> <li>• High priority alarms: the lamp quickly flashes red</li> <li>• Low priority alarms: the lamp lights in yellow without flashing</li> </ul>

No.	Name	Description
2.	Display	Used for displaying infusion parameters and relevant content
3.	 (Clear key)	<ul style="list-style-type: none"> <li>Under non-setting status, indicate to return to the previous menu or operation</li> <li>Under the setting status, indicate to clear the current set or cancel the edit</li> </ul>
4.	 (Direction keys)	Used for adjusting value, changing lines and pages
5.	 (OK key)	Used for confirming input operation and saving values
6.	 (Bolus key)	<ul style="list-style-type: none"> <li>During infusion, press this key to enter the bolus settings screen</li> <li>When the infusion is stopped, press this key to enter the purge prompt screen</li> </ul>
7.	External power indicator	<ul style="list-style-type: none"> <li>On: when external power supply is connected</li> <li>Off: when external power supply is not connected</li> </ul>
8.	Battery indicator	<ul style="list-style-type: none"> <li>Green: the battery is being charged</li> <li>Flashing green: the pump runs on battery power</li> <li>Off: no battery is installed, or no external power is connected when the pump is off</li> </ul>
9.	 (Power key)	<ul style="list-style-type: none"> <li>Under powering off status, press this key to power on the pump</li> <li>Under powering on status, press this key to enter standby mode, or hold this key to power off the pump</li> </ul>
10.	 (Menu key)	<ul style="list-style-type: none"> <li>Under non-operation status, used for switching main screen interface and other interfaces.</li> <li>Under operation status, press and hold this key to lock; in locked state, press and hold to unlock</li> </ul>
11.	 (Start/Stop key)	After loading the infusion set correctly and completing setting infusion parameters, press this key to start the infusion. During infusion, press this key to stop the infusion

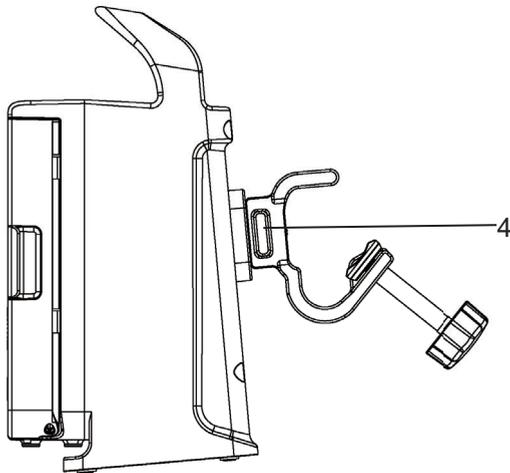
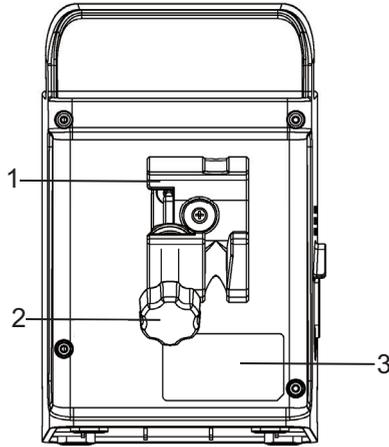
No.	Name	Description
12.	 (Audio paused key)	<ul style="list-style-type: none"> <li>For low priority alarms, press this key to confirm the alarm</li> <li>For high priority alarms, press this key to pause alarm</li> </ul>
13.	Door holder	Pull it to open the door
14.	Door	Open the door to load or unload the infusion set
15.	Handle	/



No.	Name	Description
1.	Multifunctional connector	Connects to the drop sensor
2.	AC power input connector	Connects the AC power cord



No.	Name	Description
1.	Tubing channel notches	Secures the infusion set
2.	Ultrasonic sensor	Detects air in the infusion set
3.	Pumping mechanism (with waterproof membrane)	Includes the pumping fingers and a waterproof membrane covering them to keep fluid from entering the mechanism
4.	Pressure sensor	Detects the pressure in the infusion set
5.	Anti free-flow clamp	Occludes the tubing
6.	Release lever	Used for releasing or closing the anti free-flow clamp



No.	Name	Description
1.	Pole clamp	/

No.	Name	Description
2.	Pole clamp handle	/
3.	Product label	/
4.	Lock block	<ul style="list-style-type: none"> <li>Press the lock block to rotate the pole clamp</li> <li>Loosen the lock block to lock the pole clamp</li> </ul>

## Screen Display

The screen may look slightly different in different infusion modes. The following figure shows the infusion screen of the rate mode:



No.	Name	Description
1.	Title bar	Displays current infusion set mode, alarm information, battery information, and etc.
2.	Parameter area	Displays every parameter and the parameter value of the current screen. Press ◀▶ to adjust the display items for parameters
3.	Prompt bar	Displays run icon and so on. The icon 🏃 indicates normal running. Arrows move from right to left, and the running speed increases as the rate increases

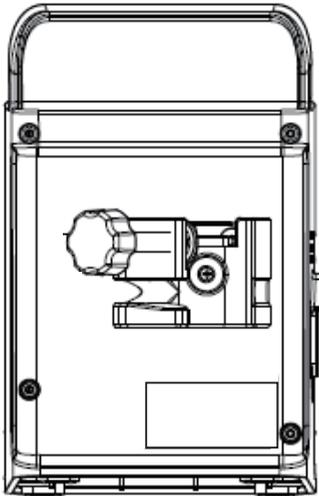
## Equipment Preparation

### Pole Clamp Installation

The pole clamp secures the pump to either a horizontal or vertical bar of the medical supply unit or IV pole, or secures the pump to pet cages.

To secure the pump to a vertical bar of IV pole, follow this procedure:

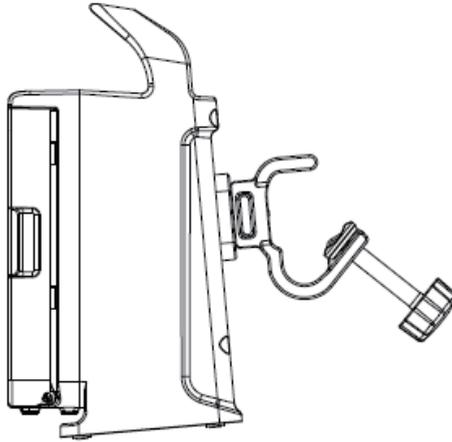
1. Press the lock block of the pole clamp, and then rotate the pole clamp to the horizontal position.



2. Rotate the pole clamp handle counterclockwise, and then loosen the pole clamp handle until the vertical bar of IV pole can be inserted.
3. Rotate the pole clamp handle clockwise to secure the pump to the vertical bar of IV pole.

To secure the pump to the horizontal bar of IV pole, follow this procedure:

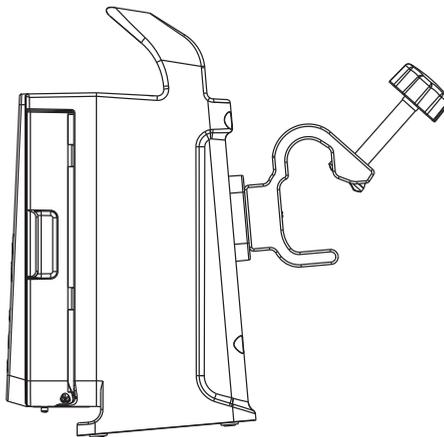
1. Press the lock block of the pole clamp, and then rotate the pole clamp to the vertical position.



2. Rotate the pole clamp handle counterclockwise, and then loosen the pole clamp handle until the horizontal bar of IV pole can be inserted.
3. Rotate the pole clamp handle clockwise to secure the pump to the horizontal bar of IV pole.

To secure the pump to the pet cage, follow this procedure:

1. Press the lock block of the pole clamp, and then rotate the pole clamp to the vertical position, with the pole clamp handle turning upwards.



2. Rotate the pole clamp handle counterclockwise, and then loosen the pole clamp handle to secure the pump to the pet page.

## Setting Up the Equipment

Before getting started, ensure that the pump is properly set up:

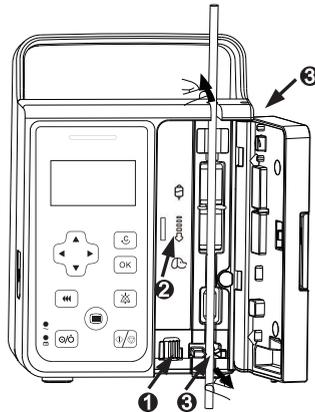
- The pump is placed on a stable surface, or properly mounted to an IV pole or to a pet cage using the pole clamp.
- The pump is plugged into a properly-grounded AC power outlet. When AC mains power is connected, the external power indicator is illuminated in green.
- If the pump is run on battery power, ensure that the battery is adequately charged.
- To ensure the history records are stored correctly, the system date and time should be checked before first use.

## Getting Started

### Turning on the Pump

Press , the system initiates the self-test and the screen displays the **System Self-test** interface: The pump enters the operation interface after successfully completing the system self-test, and you can operate the system through the key board.

### Loading the Infusion Set



To load the infusion set, follow this procedure:

1. Pull the door holder to open the pump door.
2. Pull the release lever ① upward left to release the anti free-flow clamp.
3. Avoiding any slack, insert the infusion line into the slot, following the flow direction indicator ②. Ensure that the infusion set is straightly and firmly clipped into the tubing channel notches ③ on both sides of the casing.
4. Close the pump door.

## Purge

The infusion set should be purged prior to being connected to the animal. If the infusion set is not purged before being loaded into the pump, proceed as follows to purge the line:

1. Ensure that the pump is disconnected from the animal.
2. Under non-running status of any infusion mode, press  to enter **Purge** prompt screen. Hold  to start purge.
3. Release  after the air bubbles are purged.

## Starting Infusion

To start infusion, follow this procedure:

1. Select infusion set brand.  
Press  to enter the main screen, select **General Options** → Select **Infusion Set Selection** to select the infusion set brand.
2. Select infusion mode.  
Press  to enter the main screen, and select **Select Mode**. Press  /  to select infusion mode, and press  for confirmation.
3. Set infusion parameters.  
After selecting infusion mode, the pump enters the infusion parameter setting screen. Under each infusion mode, users can set infusion parameters by pressing direction keys, , and .
4. Start infusion.
  - a. After setting infusion parameters, connect the infusion set to the animal.
  - b. Press  /  to start the infusion.

## Bolus Infusion

### Setting Bolus Mode

To set bolus mode, follow this procedure:

1. Press  to enter the main screen, select **General Options** → select **Bolus Mode**

2. Press **OK** to change the setting, press **◀▶** to select **Manual** or **Auto**, and press **OK** for confirmation.

### Manual Bolus Infusion

To start manual bolus infusion, follow this procedure:

1. In any running screen of the infusion mode, press **⏪** to enter the **Manual Bolus** screen.
2. Set **Bolus Rate**.
3. Hold **⏪** to start manual bolus infusion.
4. Release **⏪** to finish manual bolus infusion and return to the original rate.

### Automatic Bolus Infusion

To start automatic bolus infusion, follow this procedure:

1. In any running screen of the infusion mode, press **⏪** to enter the **Auto** screen.
2. Set **Bolus Rate** and **BolusVTBI**.
3. Press **⏪** to start automatic bolus infusion.
4. The pump automatically exits automatic bolus infusion and continues the original infusion when the configured **BolusVTBI** has been infused. Or you can press **⏩** to exit automatic bolus infusion and continues the original infusion.

### Changing the Rate during Infusion

To change the rate during infusion, follow this procedure:

1. In any running screen of the infusion mode, press **OK** or press **▲▼** to change the value of **Rate** into the adjustable state.
2. Set the expected rate.
3. Press **OK** for confirmation.

The pump starts infusion under the new set rate.

### Completing Infusion

During the infusion, if the remaining infusion time is close to the **Near End** set by the users, the **Near End** alarm will be triggered. If no action has been taken, the alarm will not be cancelled automatically until the infusion is completed, and then switch to **VTBI Done** alarm.

## Setting Keep Vein Open Rate

At the end of infusion, the pump continues to infuse at a very low rate. Keep Vein Open (KVO) is used to keep the animal's vein open, to prevent back flow or vascular occlusion.

To set the KVO rate, follow this procedure:

1. Press  to enter the main screen, select **General Options** → select **KVO Rate**.
2. Set **KVO Rate**.

If **KVO Rate** is zero, the pump will not initiate a KVO infusion when the preset volume is completed.

## Unloading the Infusion Set

To unload the infusion set, follow this procedure:

1. Press  to stop the infusion.
2. Disconnect the animal from the infusion set.
3. Pull the door holder to open the pump door.
4. On the outside of the pump, grasp the tubing on both sides of the pump and pull the tubing straight out of the pumping channel.

## Entering the Standby Mode

To enter or exit the standby mode, follow this procedure:

1. Under non-running status, press  to enter the **Standby** prompt screen.
2. Press  to enter the standby mode, and the screen displays **Standby**.
3. On the **Standby** screen, press any key to exit the standby mode.

## Turning Off the Pump

To turn off the pump, hold  until the **Turn Off** progress bar completes, and the pump turns off.

# Alarms

## Understanding the Alarms

By severity, the alarms are classified into the high priority alarms and low priority alarms. For more information, see the following table:

Alarm priority	Alarm lamp color	Alarm lamp flashing frequency	Alarm sound interval	Alarm priority indicator
High priority alarm	Red	1.5 Hz	10s	!!!
Low priority alarm	Yellow	Not flashing	20s	!

## Alarm Handling Rules

- For high priority alarms (except **Battery Empty**), press  to pause alarm sound for 2 minutes. When the alarm pause time expires or press again within 2 minutes if the alarm condition still exists, the alarm tone will sound.
- For low priority alarms (**Reminder**, **Near End**, and **Battery Low**), the alarms are acknowledged after  is pressed, system will give out a sound for every 5 minutes, and a "" appears in the title bar, indicating that the alarm is acknowledged.
- For other low priority alarms, press  to turn off the alarm sound, the alarm message and alarm light still exist, and a "" appears in the title bar, indicating that the alarm is acknowledged.

## Alarm Countermeasures

When an alarm is triggered, please follow these steps and take appropriate action:

1. Check the animal's condition.
2. Check the alarm type and the parameter which triggered the alarm.
3. Determine the reason for the alarm.
4. Eliminate the reason for the alarm.
5. Check whether the alarm has cleared.

## Customer Service Department

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