Kamoer KPAS100

Kamoer KPAS-100 Peristaltic Pump Stepper Motor User Manual

Model: KPAS-100

1. Introduction

This manual provides essential instructions for the safe and efficient operation of your Kamoer KPAS-100 Peristaltic Pump Stepper Motor. Please read this manual thoroughly before installation and use to ensure proper function and longevity of the device. The Kamoer KPAS-100 is designed for precise fluid transfer in various applications, utilizing a stepper motor for adjustable speed and high accuracy.

2. Safety Information

Observe the following safety precautions to prevent injury and damage to the pump:

- Ensure the power supply matches the pump's voltage requirements (DC 24V).
- Do not operate the pump with damaged tubing or components.
- Avoid contact with moving parts during operation.
- Disconnect power before performing any maintenance or troubleshooting.
- Use appropriate personal protective equipment when handling chemicals.
- This pump is designed for specific fluid transfer; do not use it for purposes other than its intended application.

3. Product Overview

The Kamoer KPAS-100 is a compact peristaltic pump driven by a 24V stepper motor, offering precise control over fluid flow. Its design incorporates a durable Pharmed BPT tube for extended service life and chemical resistance.

3.1 Key Features

- **Voltage:** DC 24V
- **Flow Rate:** 110 mL/min
- **Speed:** 350 rpm
- **Tube Material:** Pharmed BPT (3.2mm ID × 6.4mm OD)
- **Rotor:** 3 rotors
- **Operating Temperature:** 0~40℃
- **Relative Humidity:** <80%
- **Tube Service Life:** >1000 hours
- Suitable for viscous and non-viscous liquids.
- High precision stepper motor.

Figure 1: Kamoer KPAS-100 Peristaltic Pump Stepper Motor. This image shows the compact design of the pump with its blue transparent pump head and integrated stepper motor.

4. Specifications

Parameter	Value
Model Number	KPAS100
Voltage	DC 24V
Flow Rate	110 mL/min
Speed	350 rpm

Parameter	Value
Pharmed BPT Tube ID × OD	3.2mm × 6.4mm
Number of Rotors	3
Working Temperature	0~40℃
Relative Humidity	<80%
Tube Service Life	>1000 hours
Tube Operating Temperature Range	-51℃~132℃
Package Dimensions	5.67 x 4.76 x 3.5 inches
Weight	15.84 ounces

Figure 2: Dimensional drawing of the Kamoer KPAS-100 pump. This diagram provides key measurements of the pump unit, including length, width, and height, useful for installation planning.

5. Setup

5.1 Mounting

Securely mount the pump in a stable location, ensuring adequate ventilation and clearance for tubing connections. Refer to the dimensional drawing in Section 4 for mounting considerations.

5.2 Tubing Connection

1. Connect the inlet tubing to the fluid source and the outlet tubing to the destination.

2. Ensure all connections are secure to prevent leaks.
3. Verify that the tubing is not kinked or obstructed.

5.3 Electrical Wiring

The KPAS-100 uses a stepper motor and requires a compatible stepper motor control board for operation and speed adjustment. Connect the motor wires to your control board according to the pinout diagram. Incorrect wiring can damage the motor or control board.

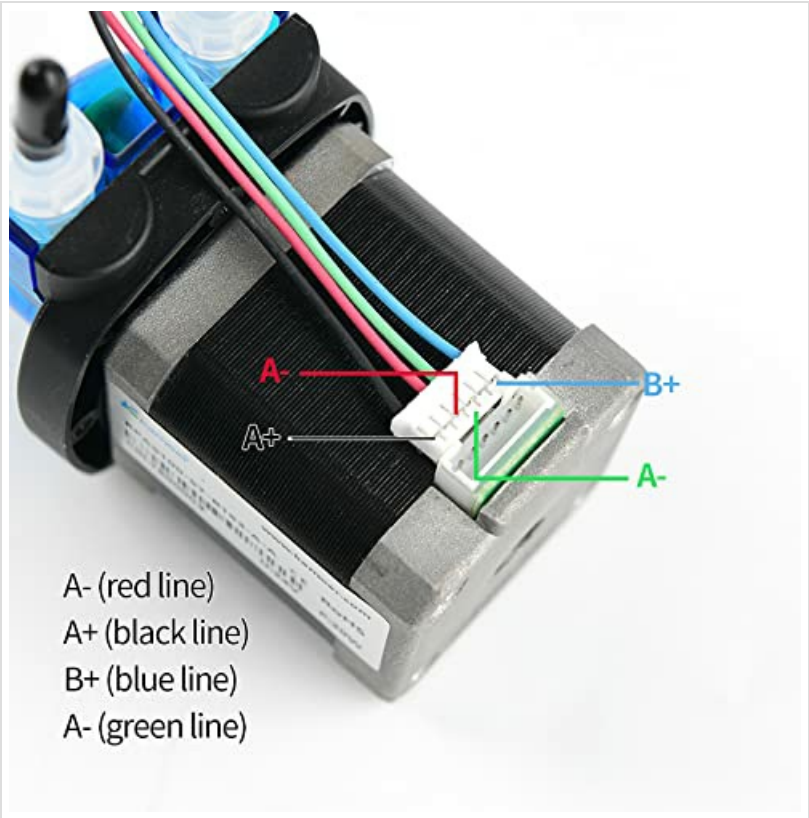

Figure 3: Stepper motor wiring diagram for the Kamoer KPAS-100. This image illustrates the color-coded wires and their corresponding A+/A-/B+/B- connections for the stepper motor.

Typical Wiring (Refer to your specific stepper driver documentation):

- A+: Black Line
- A-: Red Line
- B+: Blue Line
- B-: Green Line

Note: Wire colors may vary. Always cross-reference with the motor's label or manufacturer's specifications. A customer reported their motor having Green, Red, Orange, Yellow wires, which they successfully mapped to A1: Green, A2: Red, B1: Orange, B2: Yellow. This highlights the importance of verifying the specific wiring for your unit.

6. Operation

6.1 Power On

Once the pump is securely mounted and wired to a compatible stepper motor control board, apply DC

24V power to the control board.

6.2 Speed Adjustment

The flow rate and speed of the peristaltic pump are controlled via the connected stepper motor control board. Refer to your control board's manual for instructions on adjusting motor speed and direction.

6.3 Initial Priming

For initial use or after tube replacement, it may be necessary to prime the pump to ensure consistent flow. Run the pump at a moderate speed until fluid flows smoothly through the system without air bubbles.

7. Maintenance

7.1 Tube Replacement

The Pharmed BPT tube has a service life of over 1000 hours. Replace the tube when signs of wear, cracking, or reduced performance are observed. Always use genuine Kamoer replacement tubing to ensure compatibility and optimal performance.

1. Disconnect power to the pump.
2. Carefully open the pump head mechanism.
3. Remove the old tubing.
4. Install the new tubing, ensuring it is properly seated within the pump head.
5. Close the pump head mechanism securely.
6. Reconnect power and prime the pump.

7.2 Cleaning

Regularly inspect the pump head and exterior for any spills or debris. Clean with a damp cloth. Do not immerse the motor in liquid. If the pump is used with corrosive liquids, ensure the exterior is cleaned promptly after any spills.

7.3 Lubrication

Periodically check the rollers within the pump head. If the pump does not roll smoothly, especially at low speeds, a small amount of appropriate lubricant (e.g., silicone grease) may be applied to the rollers or the interior of the pump head, ensuring it does not contaminate the fluid path.

8. Troubleshooting

Problem	Possible Cause	Solution
Pump not running	No power to control board; Incorrect wiring; Faulty control board or motor.	Check power supply; Verify wiring connections (refer to Section 5.3); Test control board and motor if possible.

Problem	Possible Cause	Solution
Inconsistent or no flow	Air in tubing; Kinked or obstructed tubing; Worn pump tube; Incorrect speed setting.	Prime the pump; Check tubing for kinks or blockages; Replace pump tube; Adjust speed on control board.
Pump making unusual noise	Dry rollers; Debris in pump head; Motor issue.	Lubricate rollers (Section 7.3); Inspect and clean pump head; Contact support if motor noise persists.
Pump head cracking	Material incompatibility with fluid; Excessive pressure; Manufacturing defect.	Ensure fluid is compatible with pump head materials; Verify system pressure is within limits; Contact manufacturer for replacement.

9. Applications

The Kamoer KPAS-100 peristaltic pump is suitable for a wide range of applications requiring precise and controlled fluid transfer, including:

- Filling and packaging systems
- Laboratory and experimental research
- Environmental monitoring
- Inkjet and printing systems
- Aquarium dosing
- Smart home fluid management
- Aviation operations (specific fluid transfer tasks)

Figure 4: Examples of Kamoer pump applications. This collage shows various settings where the pump can be utilized, such as experimental research, environmental monitoring, inkjet printing, aquariums, smart homes, and aviation.

10. Warranty and Support

For warranty information, technical support, or replacement parts, please contact Kamoer Fluid Tech (Shanghai) Co., Ltd. or your authorized distributor. Ensure you have your model number (KPAS-100) and purchase details available when contacting support.

Manufacturer: Kamoer Fluid Tech (Shanghai) Co., Ltd.

Contact: For inquiries, please refer to the contact information provided with your product packaging or visit the official Kamoer website.