Precise And Reliable Fluid Transfer

Product Manual

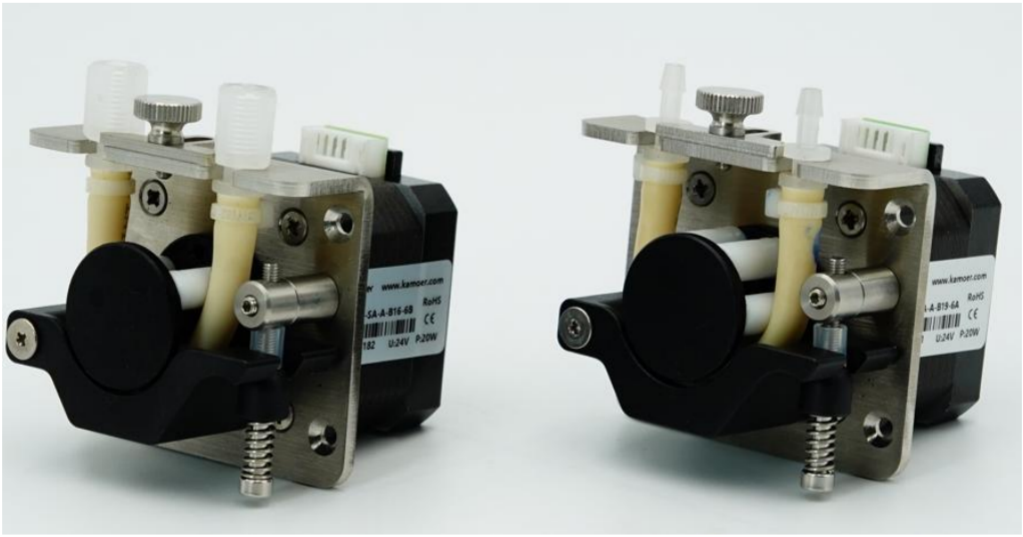
Kamoer Fluid Tech(Shanghai) Co., Ltd.

Version : A/0

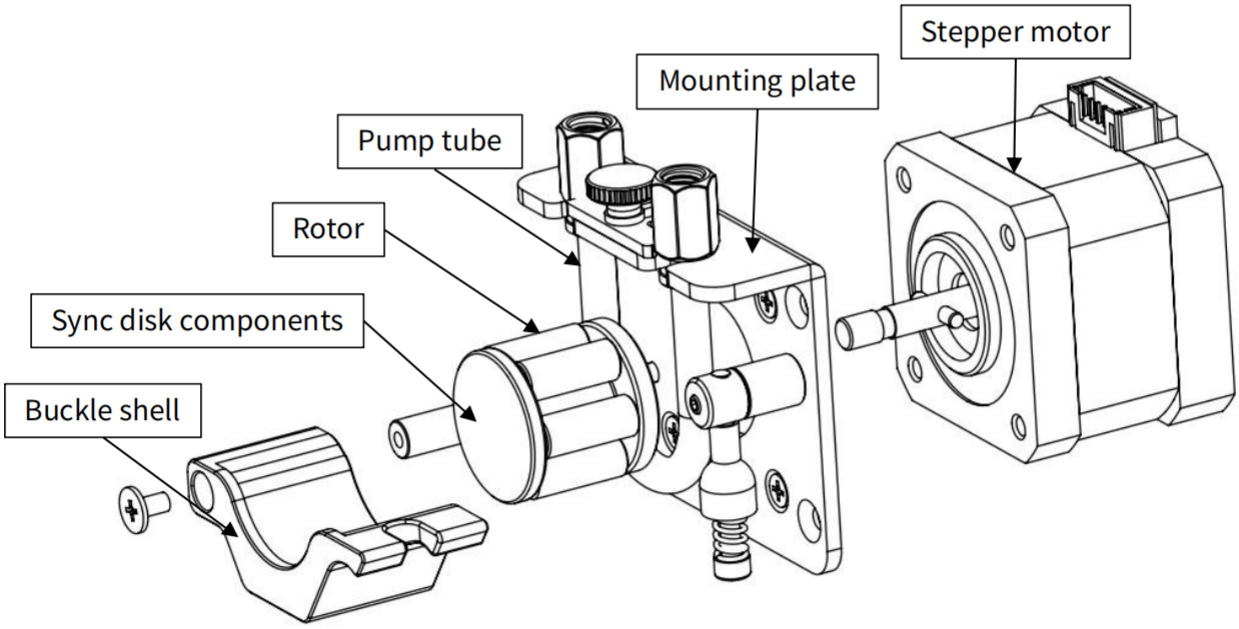
Product name	Micro peristaltic pump
Product model	KCS mini
Execution date	2023.12.15
Company name	Kamoer Fluid Tech (Shanghai) Co.,Ltd.

A、Product Overview

1. Product physical picture



2. Product assembly drawing



3. Model explanation

KSC mini	SA	A	B	16	3	A
Model	Motor model	Installation method	Pump tube material	Pump tube model	Number of rotors	Pagoda connector

3.1 Motor model

SA: 24V stepper motor

3.2 Installation method

A: Panel installation

3.3 Tube type

B: Imported PharMed®BPT S: Silicone tube

3. 4 Tube type

Tube number	14#	16#	19#
Optional materials	B/S	B/S	B/S
Inner diameter x outer diameter	1.6x4.8	3.2x6.4	2.4x5.6

3.5 Number of rotors

3: 3 rotor 6: 6 rotor

3.6 Connector type

A: Pagoda connector B: Hose to hard pipe connector (1/4-28unf)

3.7 Product material

Model	Buckle shell	Motor base	Rotor	Sync disk	Connector
KCSmini	Aluminum alloy	304	PET	Aluminum alloy	PP

4. Performance characteristics, typical applications

4.1 Performance characteristics

◆ The KCS mini series peristaltic pump is a miniature high-precision peristaltic pump driven by a 42 stepper motor.

◆ Pump tube selection - The pump tube uses imported BPT (B) tube, which can be suitable for different transmission liquid selections.

◆ 3、6 rotors are optional to meet different pulsation and precision requirements.

◆ Installation method - The installation method is fixed through the plate, and the pump tube adopts quick-release type.

◆ Suitable for pump tubes with wall thickness of 1.6mm

4.2 Typical applications

- Food and drink
- Medical diagnosis
- Analytical Instruments
- Inkjet printing ink
- Washing cleaning
- Environmental protection equipment
- Experimental research
- Industrial machinery
- White goods
- Biochemical analysis

4.3 Notification of known risks

◆ Hoses that are resistant to liquid media need to check chemical compatibility or conduct immersion experiments. Improper hose selection may cause the hose to be damaged quickly.

◆ The working environment of the product should not exceed 45°C, and the humidity should not exceed 70% (no condensation). Harsh working environment will cause premature damage to the product.

◆ Fluid leakage accidents due to hose rupture depend on the fluid medium and your specific application conditions

◆ High overload may result in premature product damage

5. Product certification, intellectual property

CE certification



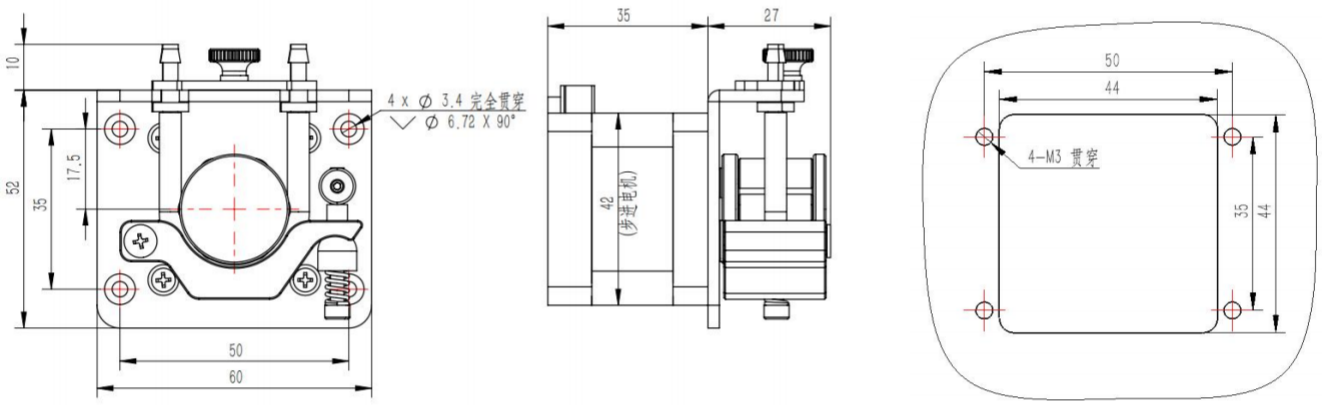
RoHS certification



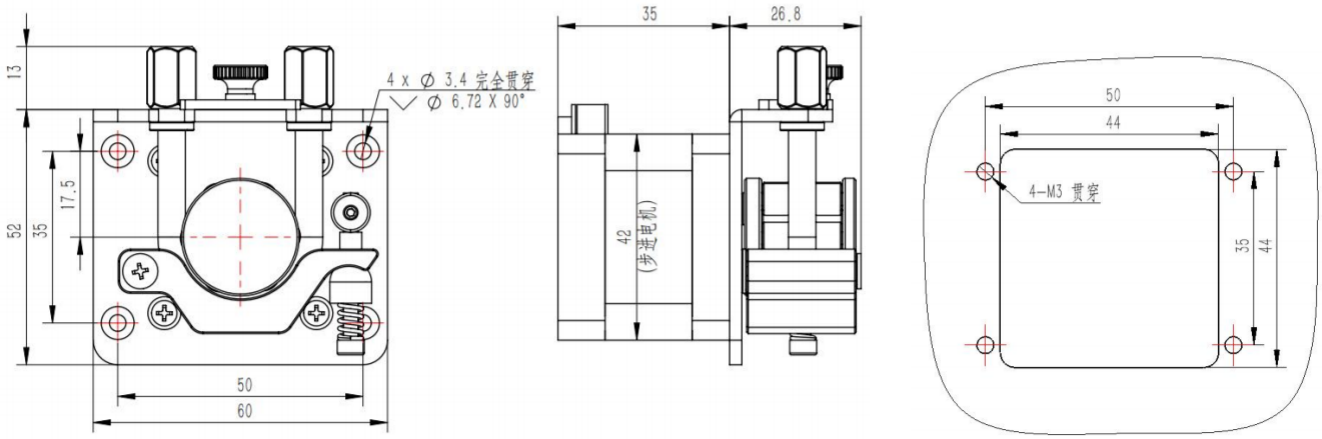
B、Product Specifications

1. Product Size

KCS mini-(SA/SB)-A(Pagoda connector)



KCS mini-(SA/SB)-B (hose to hard tube joint)

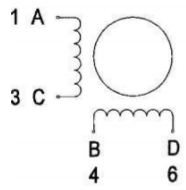


2. Technical Parameters

Project			Technical Parameters		
Basic parameters	Motor type		Stepper motor		
	Flow range		0.01 ml/min- 155 ml/min		
	Noise		⩽ 50dB		
	Power		20W		
	Control method		Stepper Motor Driver		
	Weight		About 560 g		
	Rated voltage		24V		
	Pump tube life		BPT: 1000h S: 200 h		
	Motor life		SA/SB 6000 h		
	Reference noise value		Under ambient noise of 35dB, the actual measurement at a distance of 50cm is less than 50dB		
Pump tube flow	Reference flow rate (unit: ml/min)				
	Pump tube code		14#	19#	16#
	Inner diameter x outer diameter		Metric: 1.6mm x 4.8mm Imperial system: 1/16in x 3/16in	Metric: 2.4mm x 5.6mm Imperial system: 3/32in x 7/32in	Metric: 3.2mm x 6.4mm Imperial system: 1/8in x 1/4in
	Pump tube material		B/S	B/S	B/S
	Rotating speed		450rpm		
	3 rotors	24V	38.5ml/min	80ml/min	155ml/min
	6 rotors	1.2A	33ml/min	60.5ml/min	84ml/min
Additional information			The above parameters are measured with pure water without pressure at room temperature of 20°C and standard atmospheric pressure. In fact, there will be certain errors in flow rate due to different media, different outlet pressures, DC motor speed errors, etc., and the data are for reference only. In addition , other material tube types can be customized according to customer needs ; Due to the material characteristics of the hose , if it is installed in the pump head for a long time without medium and does not work, there will be a small probability that the pipe wall will stick, resulting in the possibility of being unable to absorb liquid. If it is stuck accidentally, you can remove the pump tube and twist it round by hand to restore the elasticity of the pump tube. If left for a long time, liquid needs to be retained in the pump tube, which will prevent the above phenomenon from happening.		

3. Motor control

接线图
Wiring Diagram



连接器针位vs.引线颜色
Pin No. vs. Lead Wire Colour

PHR-6 PIN No.	颜色 Colour	XHP-4 PIN No.
1	棕 BRN	3
3	橙 ORG	4
4	红 RED	1
6	黄 YEL	2

励磁顺序vs.旋转方向
Exciting Sequence vs. Direction of Rotation

STEP	A	B	C	D
1	+	+	−	−
2	−	+	+	−
3	−	−	+	+
4	+	−	−	+

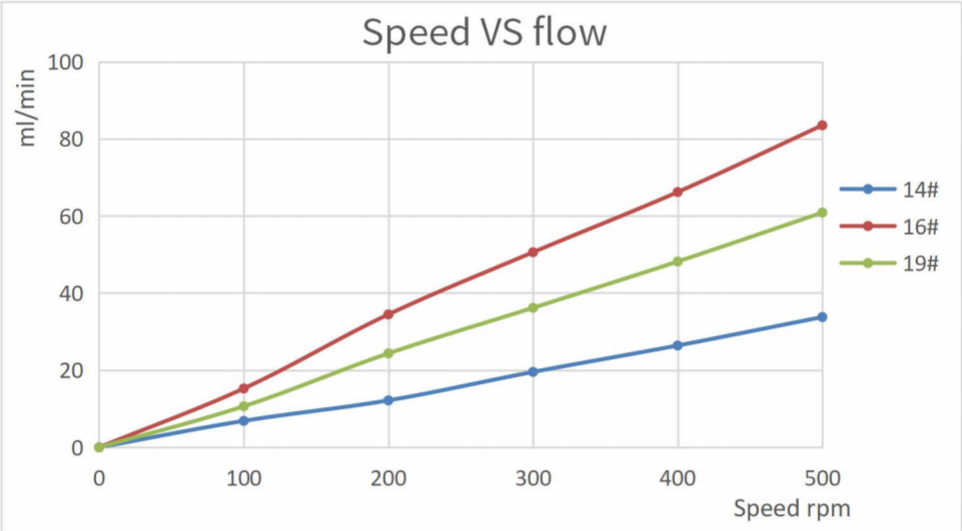
CW ↓ ↑ CCW

从安装面看为顺时针方向
Clockwise view from mouting side

Phase	Rated voltage	Step angle	Rated current	Insulation level	Phase resistance	Phase inductance
2	3.6VDC	1.8°	1.2A	B	1.2Ʊ±10%	4.0mH±20%

4. Flow curve

KCSmini-SA, 6-rotor BPT tube

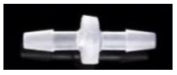


Flow curve is for reference only, and the specific parameters are subject to the actual working condition test.

C、Adapter Hose

Pump tube material	Characteristic	Standards compliant	Tube number
BPT tube (B)	Resistant to common chemicals, acid, alkali and oxidation , with a lifespan of more than 1000 hours	RoHS FDA	14# 16# 19#
Silicone tube (S)	Low adsorption, good temperature resistance, good chemical corrosion resistance, life span exceeds 200 h	RoHS Meets food grade certification (GB 4806.11-2016)	14# 16# 19#

D、Optional Accessories

Name	Specifications and models		Function introduction
Straight through pagoda connector	1/16		Can be connected externally to 1 mm x 3 mm hard tube or similar hose
Straight connector	3/32		Can be connected externally to 2 mm x 4 mm hard tube or similar hose
Straight connector	1/8		Can be connected externally to 3 mm x 5 mm hard tube or similar hose
Soft and hard tube joints	1/16 soft and hard butt joint 3/32 soft and hard butt joint 1/8 soft and hard butt joint		Matching inverted cone connector to connect hose and hard tube (ø3.0/ø3.2 outer diameter), M6 and 1/4 thread optional
Inverted cone joint	Ø3.0 pressure ring Ø3.2 pressure ring		Matching soft and hard tube joints to connect hoses and hard tubes (ø3.0/ø3.2 outer diameter), M6 and 1/4 threads are optional
Anti-floating and sinking head	Diameter 6 mm Diameter 2.5 mm		Place the inlet of the pump tube completely in the liquid to ensure that the peristaltic pump tube can completely absorb the liquid
Peristaltic pump stepper driver	MODBUS-RTU		It can realize speed regulation by built-in or external potentiometer, it can realize MODBUS RS485 communication and 0-10V analog speed regulation, and realize two start and stop modes of electric and trigger, with a maximum subdivision of 32, and the drive current can be set (0.7A, 1.2A , 1.7A, 2.2A, 2.7A, 2.9A, 3.2A, 4.0A)
pulse generating board + Stepper driver board	2802 + KMD-42B-P	 	Supports clockwise and counterclockwise operation, LED 4-digit digital tube display, various control methods: rotary encoder, foot switch, external analog quantity, 485 communication control

Special declaration: The company reserves the right to improve the appearance and technical specifications of the product without prior notice.