

# Digital dosing Pump Quick User Manual

## Fluid metering and delivery workstation

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电微分泵快速使用手册



ZheJiang Wearable Environmental Technology Co., Ltd



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浙江威尔博环保科技有限公司

■ Read the parameters on the equipment nameplate carefully.  
 使用前请仔细阅读设备铭牌信息。

Max 45°C  
 Min 0°C

- Do not transport flammable liquids
- Liquids with a temperature < 0°C cannot be transported
- Liquids with high impurity content cannot be transported

不可输送易燃液体  
 不可输送低于 0°C 液体  
 不可输送杂质含量高的液体。



■ Take protective measures.  
 使用前请做好防护。

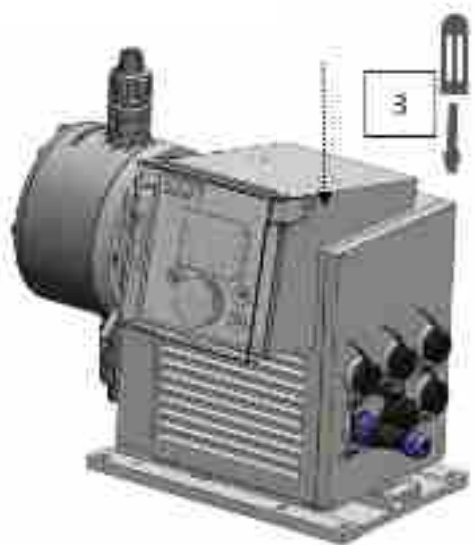
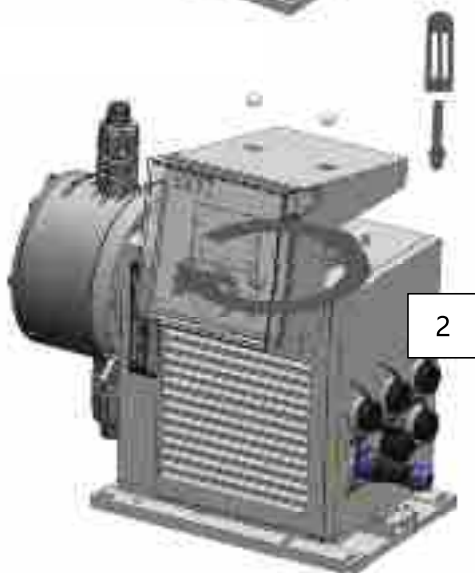
Indoor use 0–45°C 室内使用 0–45°C  
 waterproof level IP65 防水等级 IP65

■ Outdoor use and low temperature use below 0°C are strictly prohibited  
 禁止户外使用，使用温度 0–45°C

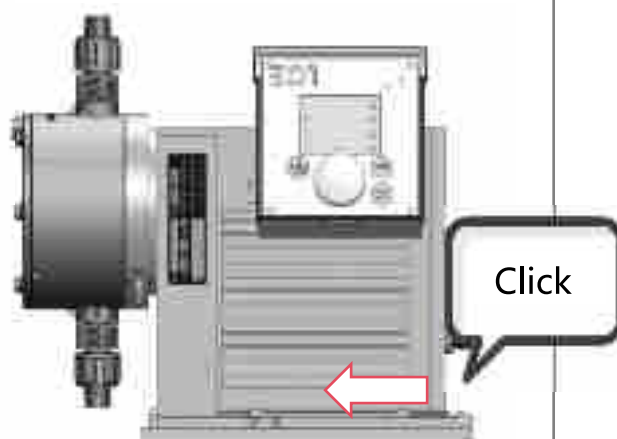
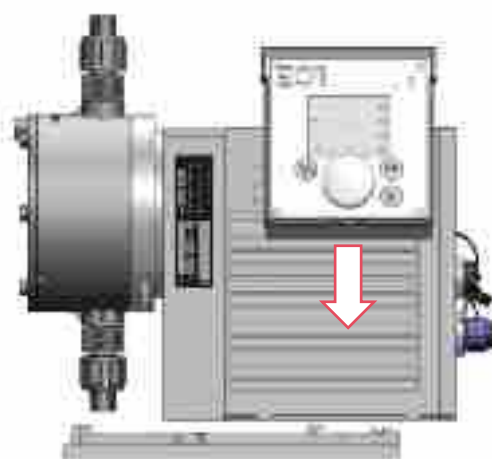
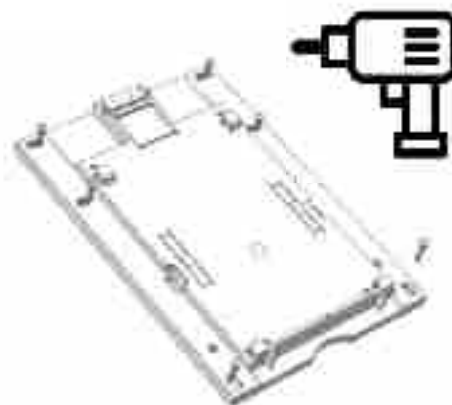
User manual, Training, Maintenance



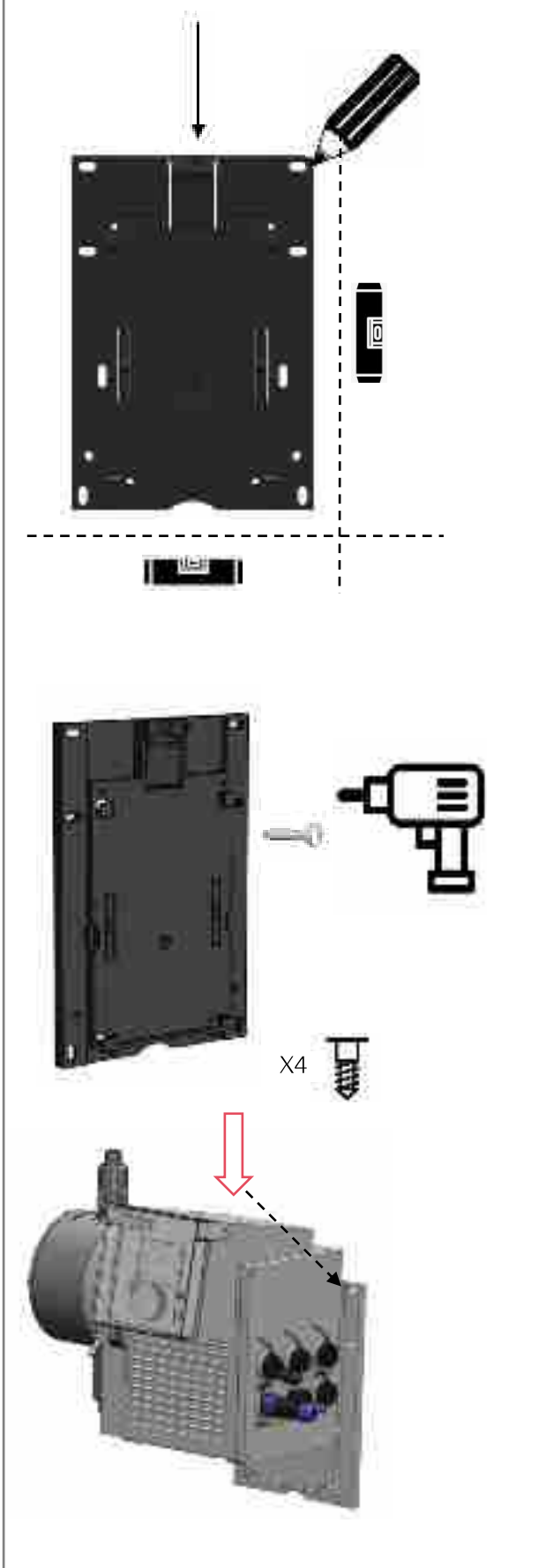
Control block steering 控制块侧装



Fixed block installing 固定块安装



### Wall-mounted installing 壁挂安装



■ Hose connection method 软管连接

■ Bottom valve access 底阀接入

The bottom valve (1) is perpendicular to the bottom of the medicine tank. The bottom valve (1) is >100mm from the bottom of the medicine storage box, use a hard pipe to connect the bottom valve (1), please reserve an inspection slipknot on the hard pipe. 底阀应距离储罐底部 100mm 距离，防止杂质堵塞。

■ Confirm that the takeover is not leaked ■ Plug in  
管道接入处不可泄漏 电源接入

$P_2 - P_1 \geq 1 \text{ bar (15 psi)}$

■ When  $P_2 - P_1 < 1 \text{ bar}$ , a back pressure valve needs to be added at the liquid outlet end  
当  $P_2 - P_1 < 1 \text{ bar}$  时，需要在出液口端增加背压阀

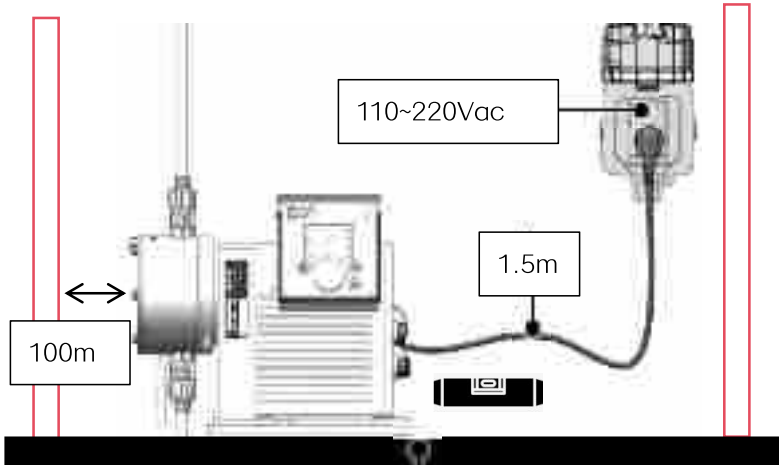


■ The back pressure valve is installed on the liquid outlet check valve or on the pipeline.  
背压阀安装至出液止回阀上或管道上。





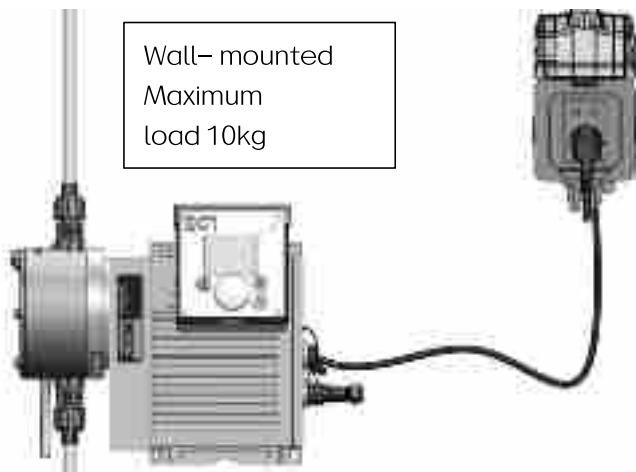
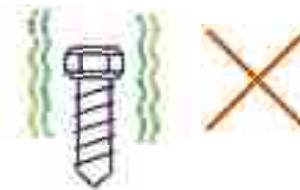
## Fixed considerations 固定注意事项



■ Cracked ground  
地面开裂

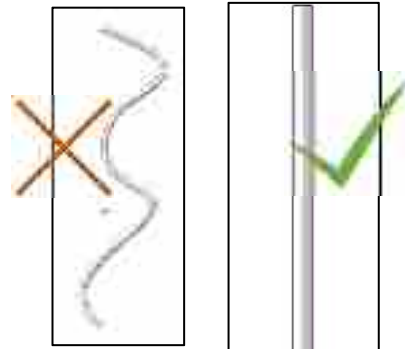
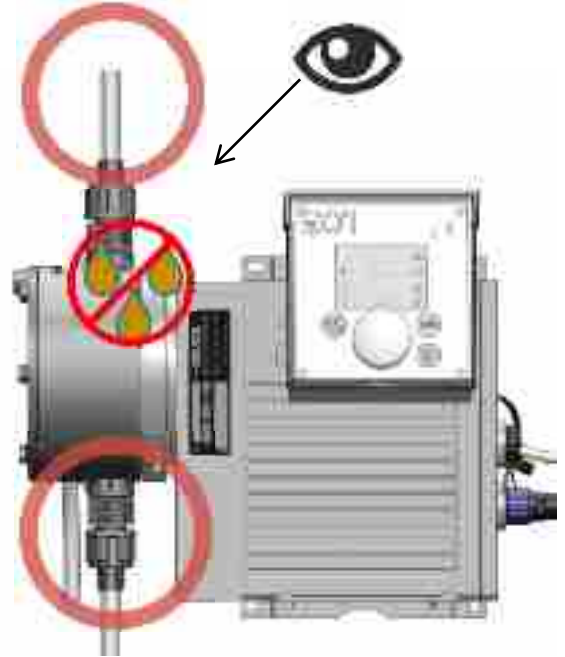


■ Excessive vibration  
震动过大



壁挂式安装最大载荷 10kg。

## Pipe notes 管道连接方法



- If using a hose, please try to keep the pipe as straight as possible 如采用软管, 尽量保持管道平直
- If a hard pipe is used, please minimize the elbows when laying the pipe 如采用硬管, 尽量减少弯头

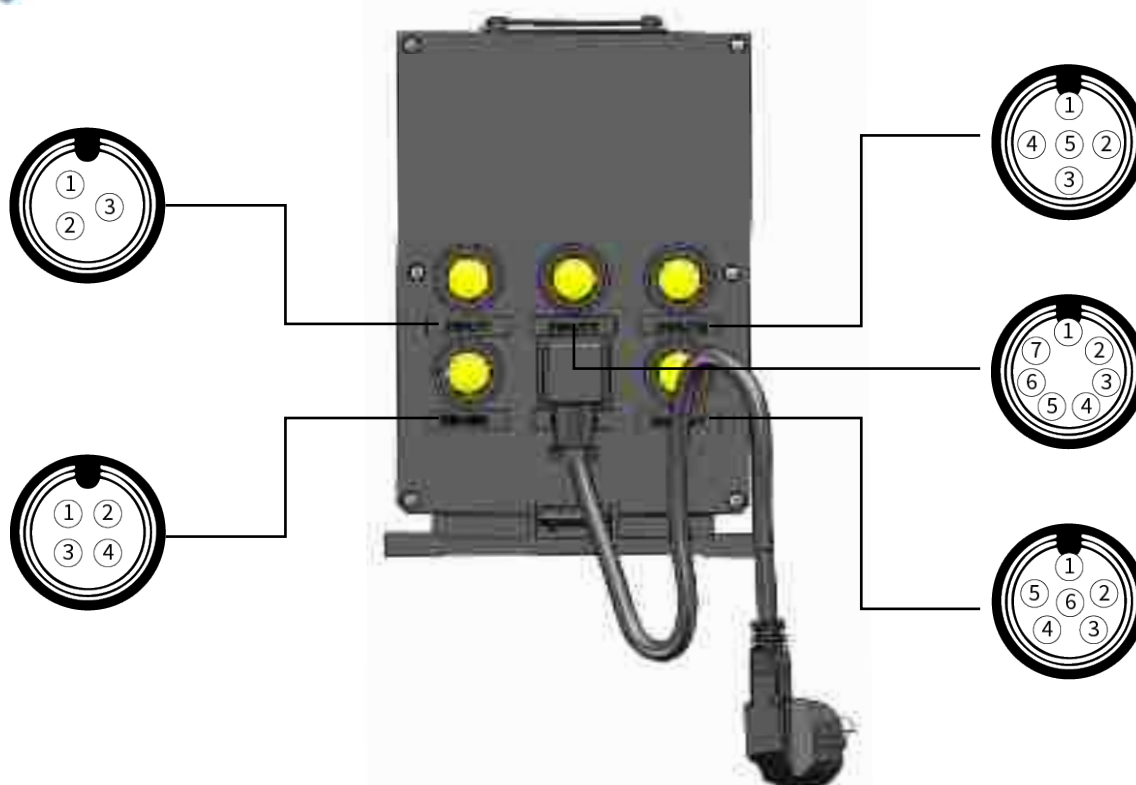


- Do not miss the sealing ring 不可漏装密封





## External Inputs and Programmable Outputs 外部输入和可编程输出



Due to different configurations of the pump, the definitions of individual interfaces described in this manual may vary. If you have any questions, please contact customer service. 泵的配置不同，因此本说明书描述的各接口的定义可能有所不同，如有问题请联系客服人员

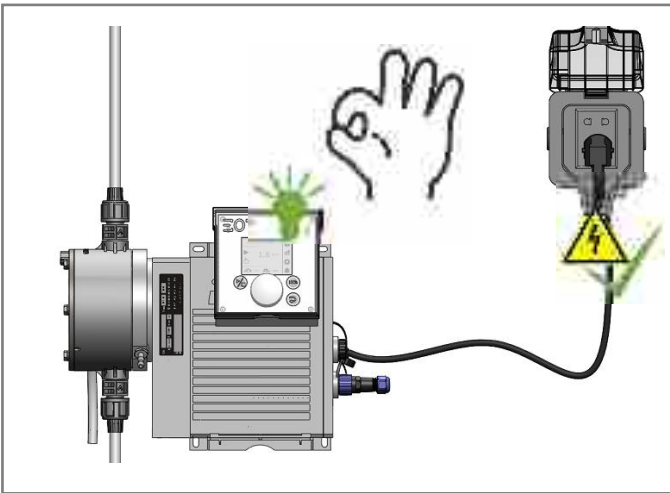
Name	Joint	Function	Distribute							
INPUT1	3cores	leak sensor 漏液传感器	1	2	3					
			5V	Input signal	GND					
INPUT2	7cores	Device remote start and stop 外部启停&模拟量输出	1	2	3	4	5	6	7	
			5V	Input signal	GND	empty	empty	Current output	GND	
INPUT3	5cores	external control 脉冲、电压、电流控制	1	2	3	4	5			
			Pulse+	Pulse-	Current input	GND	Voltage input			
RS485	4cores	Remote Communication control	1	2	3	4				
			485A	485B	GND	null				
OUTPUT	6cores	Programmable output port 可编程输出	1	2	3	4	5	6		
		Relay 1	COM	NO	NC					
		Relay 2				COM	NO	NC		



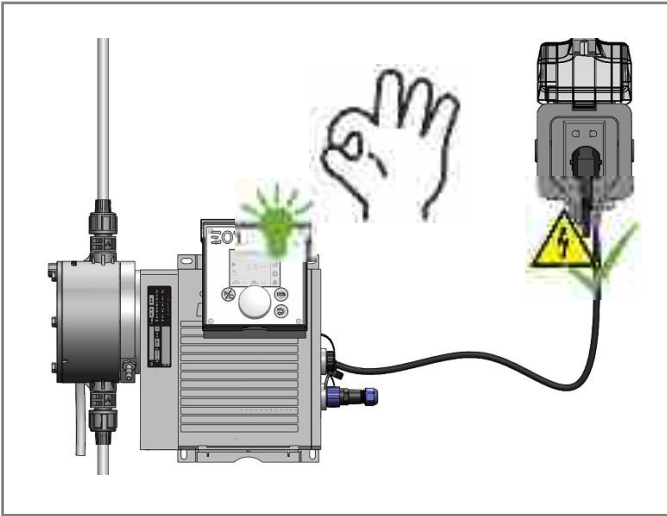
Before using the external control or programmable interface, please read the "E01 DIGITAL DOSING Pump User's Manual" carefully.  
使用外部控制或可编程接口前，请仔细阅读《电液分泵使用手册》



**A** Language switch 语言设定



 **Flow adjustment** 手动流量设定





## Slow speed set 慢速模式

	粘度 Viscosity 800~1500Cp 25%
	粘度 Viscosity 50~800Cp 50%



■ The slow speed mode is suitable for conveying high viscosity liquids.

慢速模式适用于高粘度液体的输送

■ In slow speed mode, the maximum delivery flow will also be reduced accordingly.

本模式下可输送高粘度液体



### Viscosity reference table

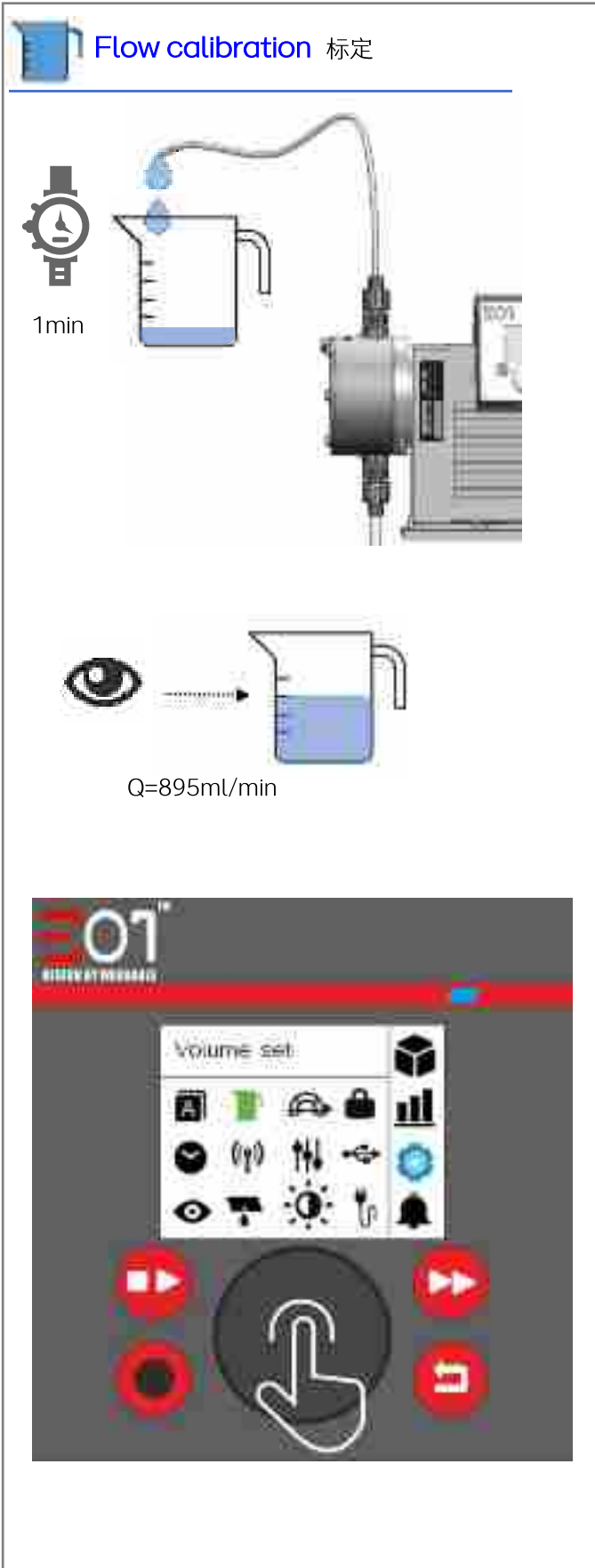
液体粘度参考表

Liquid 液体	Viscosity cp 粘度	Temperature 温度
Water 水	1	20
Milk 牛奶	3	20
Cooking oil 食用油	65	20
Fruit Juice 果汁	105	20
Cough syrup 止咳糖浆	190	29
Orange juice 浓缩果汁	630	20
Tomato Sauc 番茄酱	1000	29



**Pump Venting 排气**





Calibration complete 标定完成

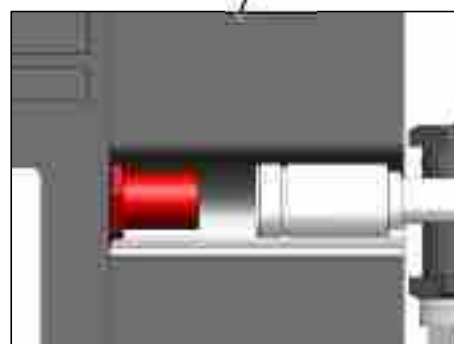
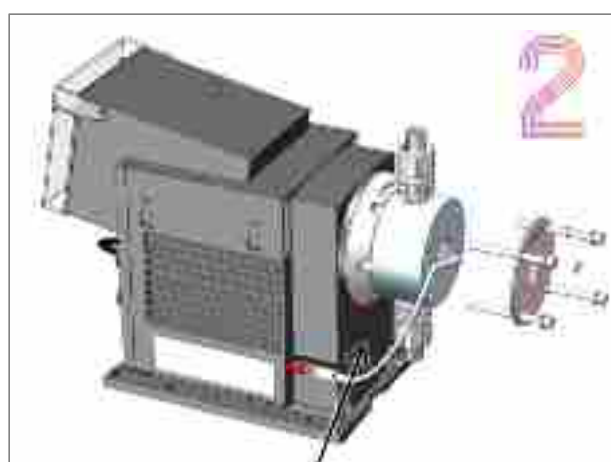


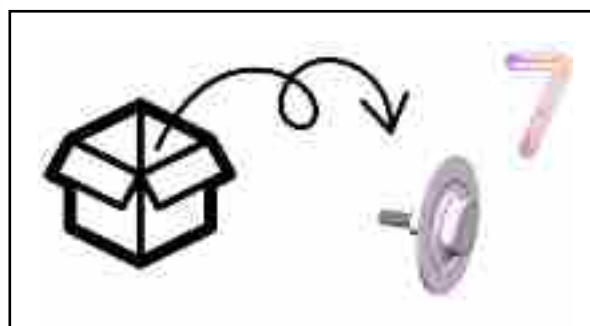
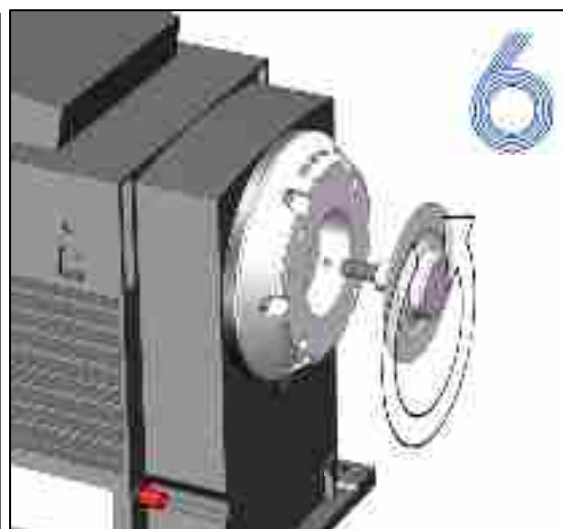
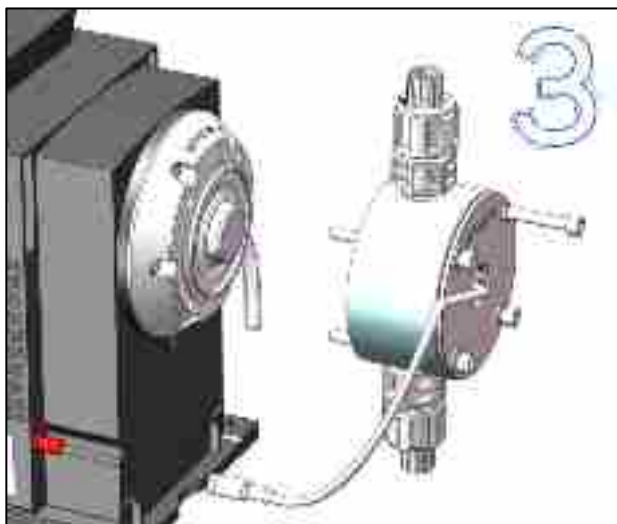
 Clear Alarm Information 报警消除



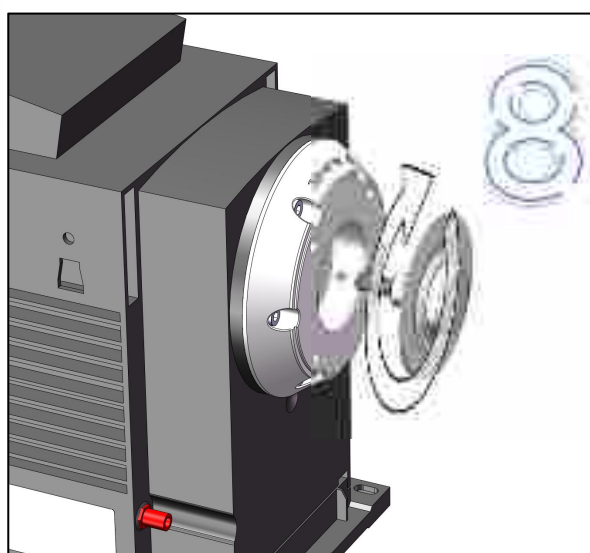
Alarm message confirmation 报警消除

Diaphragm replacement 膜片更换



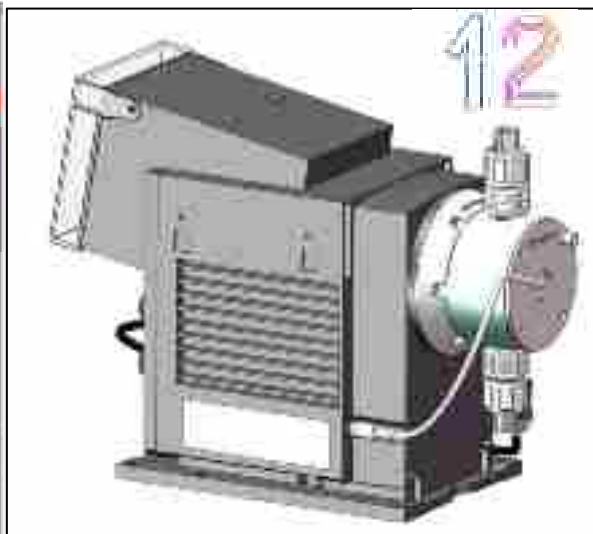


Press and hold the two buttons on the pump for 5 seconds.  
2 个按键长按 5 秒。



The diaphragm push out.  
膜片弹出

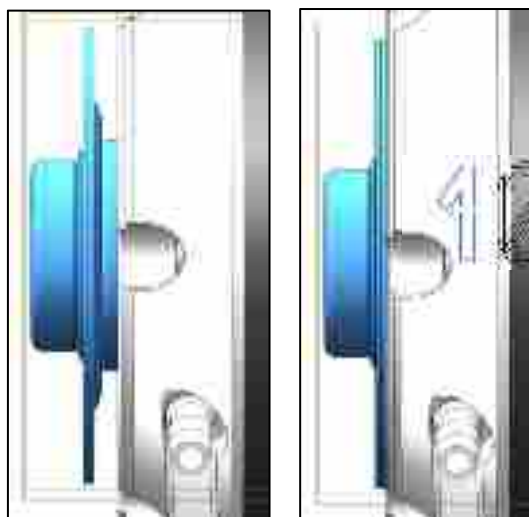




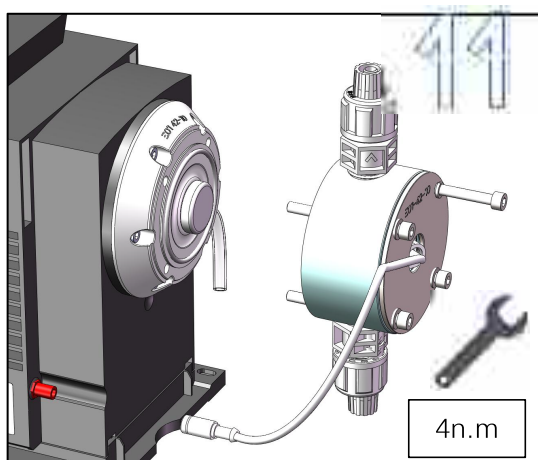
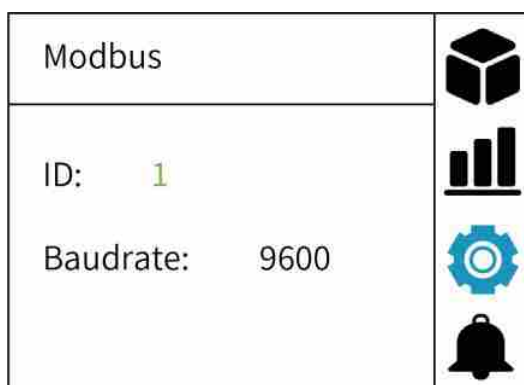
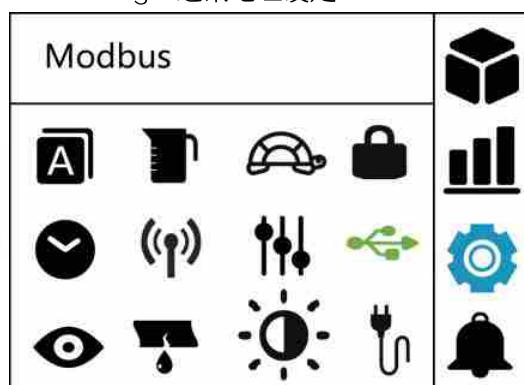
Press and hold the return button for 5 seconds;

长按返回按钮，膜片退回

Complete! 完成



### ID Setting 通讯地址设定



Multiple pumps connected in series within the same network must not have the same ID value, as this will cause network conflicts.

在同一网络下泵的 ID 地址不可重复。



## Modbus RS-485 Communication Specification 485 通讯连接办法

E01 电微分泵支持 Modbus RTU 通讯协议，通讯参数为：

baudrate 波特率：9600

数据位 Data Bits：8

校验位 Parity Bit：N

停止位 Stop Bits：1

The port address of ModBus RTU can be configured within the electric differential pump according to actual needs. For the configuration method, see page 14.

ModBus RTU 的端口地址可根据实际需求在电微分泵内进行设置，设置方法见 14 页

The ModBus communication data address table is as follows ModBus 通讯数据地址表如下：

ModBus Register	Name	Access Type	Range	Unit	Data Type	Description
40013	启动 / 停止 Run/stop	读/写 Read / Write	0 or 1		INT	读取或控制电微分泵的“启动”与“停止”状态。读取/写入数据“0”或“1”，“0”表示停止，“1”表示启动。 Read or control the "start" and "stop" status of the electric differential pump. Read/write data "0" or "1", where "0" indicates stop and "1" indicates start.
40014	流量 Flow	读/写 Read / Write	最大值 0-max	ml /min	INT	读取或写入电微分泵的运行流量值。 Read or write the operating flow rate value of the pump
40015	单容 Pump Head Volume	读 / 写 Read / Write	0-100	ml	INT	读取或写入电微分泵的单容值。读取时需要将读取的数值 ÷ 100，例如当前从电微分泵所读取的数值为 1256，则将读取的数值 $1256 \div 100 = 12.56$ ，即：12.56 为当前实际单容。写入时需将单容 $\times 100$ ，例如当前需将 13.45 写入泵，则将写入的数值 $13.45 \times 100 = 1345$ ，即需写入的值为 1345。 Read or write the pump head volume value. When reading, divide the read value by 100. For example, if the current pump head volume value read from the pump is 1256, then $1256 \div 100 = 12.56$ , meaning 12.56 is the current actual pump head volume. When writing, multiply the pump head volume by 100. For example, if you need to write 13.45 into the pump, then $13.45 \times 100 = 1345$ , meaning the value to be written is 1345.
40016	速度模式 Slow speed set	读/写	0, 1, 2		INT	读取或写入电微分泵的吸液速度。数据对应关系如下 Read or write the suction speed of the pump. The data correspondence is as follows: 0: 100% 1: 50% 2: 25%
40017	报警信息 Alarm Information	读 Read	101-601		INT	见“报警信息代码表” Refer to the "Alarm Information Code Table"
40019	压力	读	0-1M	M.	INT	读取泵的压力。读取时需要将读取的数值 ÷



	pressure	Read	Pa	pa		100, 例如当前从泵所读取的数值为 27, 则将读取的数值 $27 \div 100 = 0.27$ , 即: 当前压力为 0.27Mpa。Read the pressure of the pump. When reading, divide the read value by 100. For example, if the current value read from the pump is 27, then $27 \div 100 = 0.27$ , meaning the current pressure is 0.27 MPa.
40020	累计流量 Total Flow	读 Read	最大值 0-max	L	DWORD	读取电微分泵的累计流量。 Read the total flow of the pump
40022	膜片寿命 Diaphragm Lifespan	读 Read	0-100	%	INT	读取电微分泵的膜片寿命百分比。读取时需要将读取的数值 $\div 100$ , 例如当前从电微分泵所读取的数值为 8512, 则将读取的数值 $8512 \div 100 = 85.12$ , 即: 当前寿命为 85.12%。Read the diaphragm lifespan percentage of the pump. When reading, divide the read value by 100. For example, if the current value read from the pump is 8512, then $8512 \div 100 = 85.12$ , meaning the current lifespan is 85.12%.
40023	电流 amps	读 Read	1-10	mA	INT	读取电微分泵的运行电流。读取时需要将读取的数值 $\div 100$ , 例如当前从电微分泵所读取的数值为 132, 则将读取的数值 $132 \div 100 = 1.32$ , 即: 当前电流为 1.32A。Read the operating current of the electric differential pump. When reading, you need to read the value $\div 100$ , for example, the current value read from the electric differential pump is 132, then read the value $132 \div 100 = 1.32$ , that is: the current current is 1.32A.

报警信息代码表: Alarm Code Read Address: 40017

报警代码读取地址: 40017 Alarm Code Read Address: 40017

代码	含义	
101	霍尔异常	Hall Sensor Malfunction
201	压力过高	Excessive Pressure
202	进液管异常	Inlet Pipe Malfunction
203	吸入阀泄露	Suction Valve Leak
204	吸入阀堵塞	Suction Valve Blockage
301	漏液	Fluid Leak
401	电流电压不足	Insufficient current and voltage
402	电流电压超限	Insufficient Current/Voltage
501	电机过载	Motor Overload
601	易损件寿命到期	Worn Parts Lifespan Expired



## 安全声明 Safety Declaration

请复制、填写此表格，并附加在返修泵上。

Please copy, fill in and sign this sheet and attach it to the pump returned for service.

**型号 (铭牌)**

Model number (nameplate)

**加药介质**

Dosing medium

**故障描述**

请围绕受损部分画圈。若是电气或功能性故障，请标记在外壳上。

Fault description

Please make a circle around the damaged parts. In the case of an electrical or functional fault, please mark the cabinet.

使用者确认签字 User Signature Confirmation

**简要描述问题/问题原因**

Please describe the error/cause of the error in brief.

加药液可能已进入泵体。切勿将泵连接电源！爆炸危险！

Dosing liquid has possibly entered the pump housing. The pump must not be connected to the power supply! Danger of explosion!

我们特此声明，该泵已清洁且完全无化学、生物及放射性物质。

We hereby declare that the pump has been cleaned and is completely free from chemical, biological, and radioactive substances.

Date and signature

Company stamp





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