MED Ring Pump【MED-KTP02】

Quick Guide

1. Product Overview

- This is a perfusion pump designed for brain slice experiments using the MED64 system.
- It consists of two independent motor-driven tube cartridges (MED Ring Pump Head) for supply and waste fluid.
- The flow rate for the supply fluid can be adjusted in five steps.
- MED Perfusion Cap (MED-KCAP01) or MED Pipe Holder (MED-KPK02) is not included with this product; please purchase them separately if needed.

2. Package Contents

Main unit, Power adapter, MED Perfusion Tubing (MED-KTU02)

Note1: MED Perfusion Cap (MED-KCAP01) or MED Pipe Holder (MED-KPK02) is not included with this product; please purchase them separately if needed.

Note2: As its replacement parts, MED Ring Pump Head (MED-KP01IT or MED-KP02OT) and MED Perfusion Tubing (MED-KTU02) are available for purchase separately.

3. Part names and functions of the MED Ring Pump

【Front】 【Back】

❶INPUT ..... A push button to start or stop the supply pump.

❷SPEED ..... A switching dial to change the flow rate of the supply pump in five steps. By turning this dial from left to right, the flow rates for each step will be 1.2 mL/min, 1.5 mL/min, 2.0 mL/min, 2.3 mL/min and 2.7 mL/min.

Note: The flow rate of the waste pump can not be adjusted and is fixed at 5.0 mL/min.

❸OUTPUT ..... A push button to start or stop the waste pump.

❹DC INPUT 12V ..... To connect to a power adaptor cord.

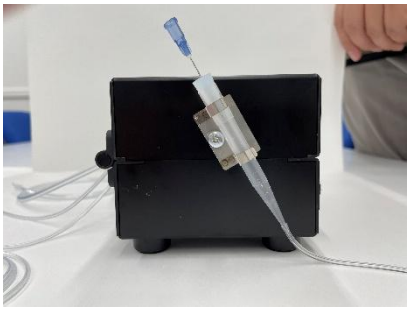
❺GND ..... A ground terminal to connect a lead for grounding.

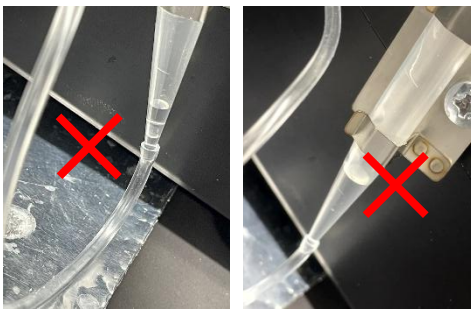
4. Installation and Operation

1) Connect the inlet and outlet pipes according to the diagram of the MED Perfusion Tubings shown on the next page.

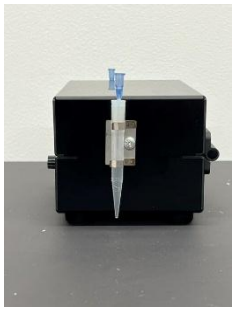
2) To prevent air bubbles generation, slightly lean the inlet dropper whereas stand the outlet dropper vertically.

Note1: The air bubbles entering the MED Probe physically affect the platinum wire and the liquid surface, causing noise.





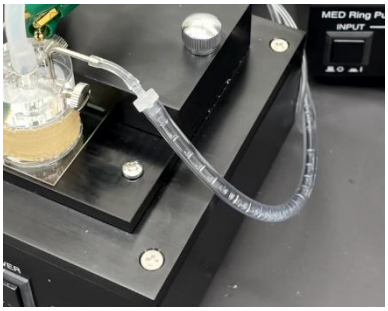
Inlet dropper



Outlet dropper

Note2: The main unit of the perfusion pump connected to a power source generates hum noise (baseline fluctuation in a constat amplitude up to tens of microvolts at 50 or 60 Hz), which is transmitted through aCSF or physiological buffer perfused to the chamber of the MED Probe. The dropper can block the transmission of the hum noise by creating air layer inside it. However, its internal surface becomes more hydrophilic by repeated use. Incoming aCSF droplet bursts one by one and turns into tiny particles inside it. As hydrophilization progresses, those particles are more likely to cause dielectric breakdown and transmit the hum noise. Therefore, we recommend replacing the pipette tip of the dropper with new one on a regular basis. Also, maintain the aCSF level within the inlet dropper low while preventing air bubble from entering the following tubing.

3) Push both INPUT and OUTPUT button to start perfusion. Due to the flow rate difference between supply and waste pump and the slit of the outlet pipe, air bubbles will periodically enter the waste tubing. This serves as how smoothly the aCSF is perfusing.



5. Replacing the head component of the supply pump

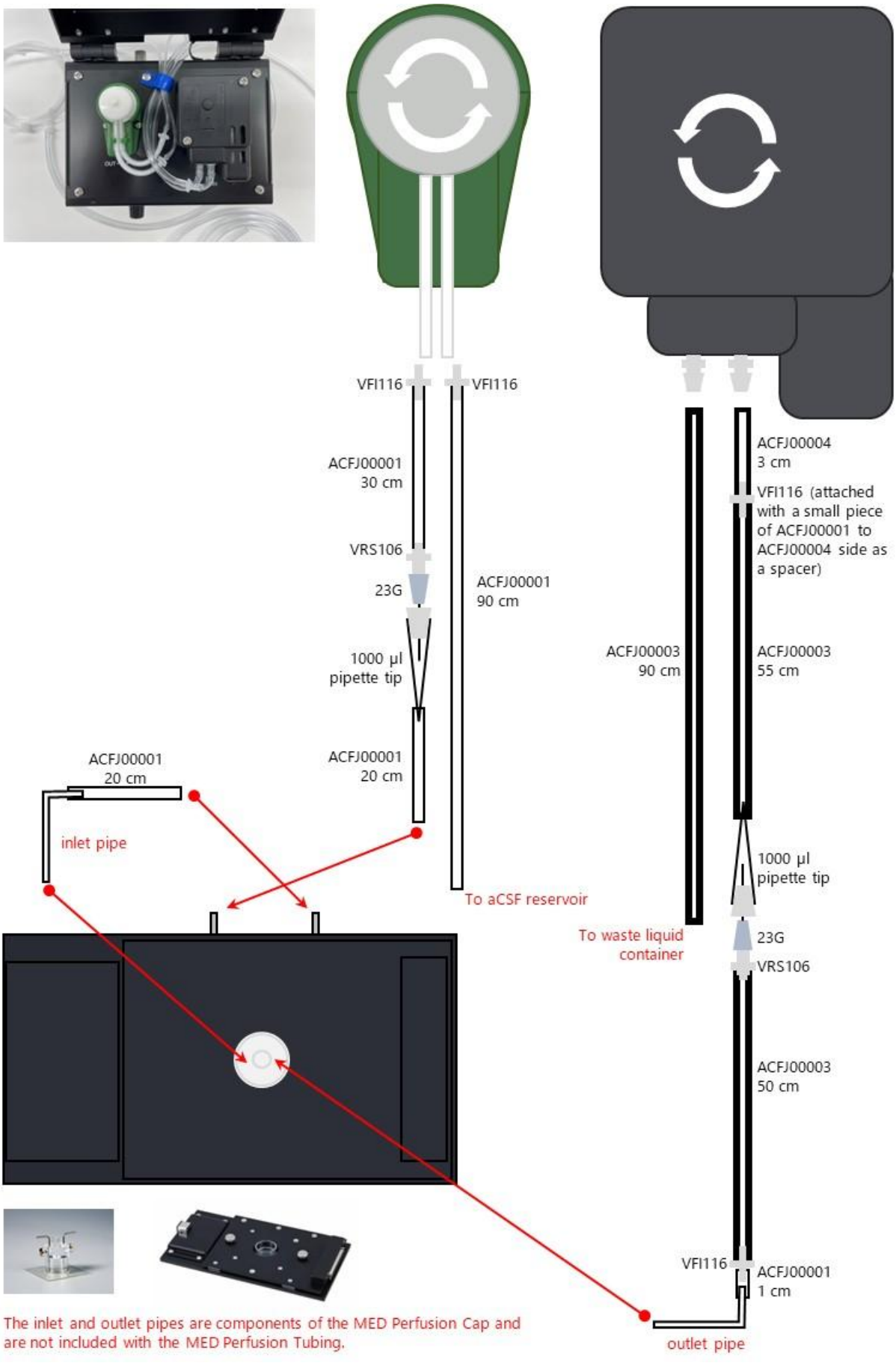
Thanks to its mechanical characteristic, compressing load to the dedicated tubing at the point to generate liquid flow is lower than that in a peristaltic pump, that enables tubing to be deformation-resistant and durable. Therefore, it rarely be necessary to replace the head component incorporated with the compressed tubing due to deformation. However, it is possible to replace the supply pump head if necessary. As for the waste pump, as its head and motor components are integrated, return the entire unit to us for replacement.

The head can be remoed by turning it slightly counterclockwise.

Note1: Do NOT disassemble the head. You can NOT replace the internal tubing manually.

Note2: Prolonged operation may cause a small amount of white wear particles generated from compressing tubing made of silicon to mix into the perfusing solution.

6. Appendix – The configuration diagram of MED-KTU02



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