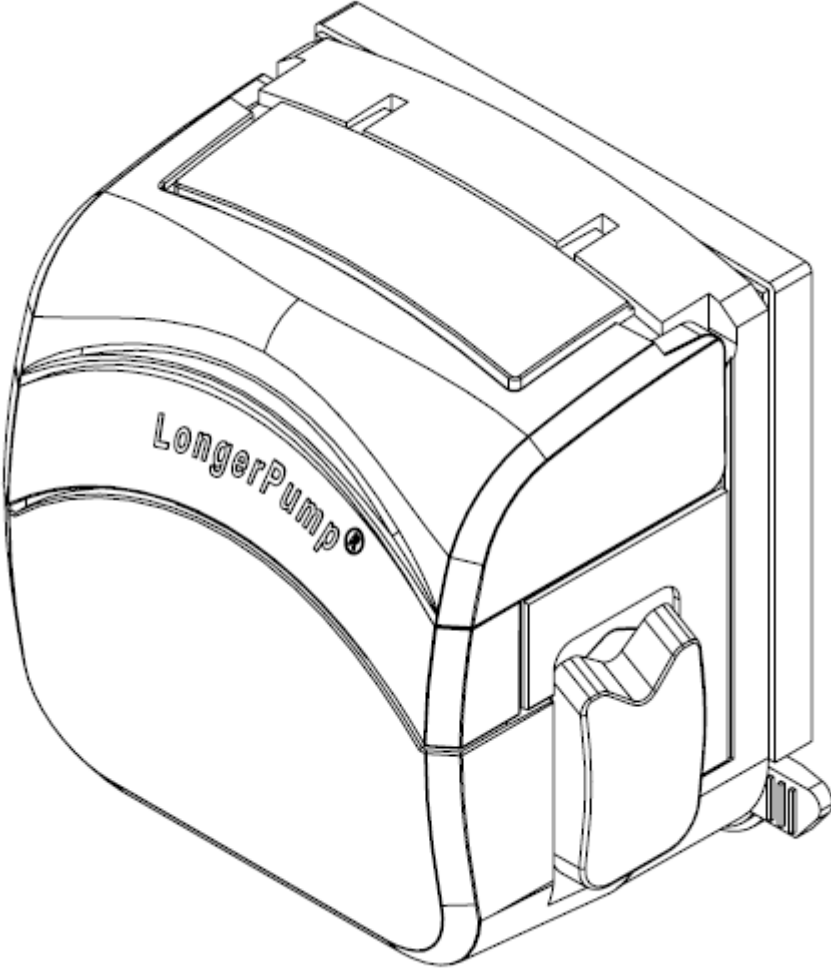


# FG15-13/FG25-13 Pump Head Operating Manual



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## 1 General Information

### 1.1 Precaution

If tubing leaks or bursts, fluid may spray from the tubing and pump head. Take reasonable practicable measures to ensure the operators' safety. Check the tubing frequently and replace the tubing if necessary to protect the operators and device.

Make sure fluid in the tubing has been drained out, no pressure in the pipeline and disconnect pump from mains power, while removing or replacing the tubing.

Do not open the pump head while the pump is running.

Remove the tubing when pump stop running for a long time to avoid tubing deformation caused by squeezing.

Keep the rotor clean and dry to avoid tubing excessive wear and premature failure of pump head or drive.

The pump head housing surface can be scratched easily because of the plastic material. Please clean the pump head by water flushing or a soft cotton cloth wiping.

Do not disassemble, change or repair the pump head by yourself. Please contact Longer Pump or the distributor if the repair is necessary.

### 1.2 Warranty and Service

#### 1.2.1 Warranty Service

(1) Longer, obligation under this warranty is limited to a period of one (1) year from the date of original purchase. Within the 1 year of warranty period, Longer will replace or repair any defective parts free of charge. This warranty doesn't cover consumable part (tubing).

(2) Warranty does not cover:

- The repair or exchange of the entire unit after the warranty period.
- Any damage or failure caused by improper installation, storage, maintenance or usage, not in compliance with operating manual.
- Beyond or violate the conditions listed in contract or technical agreement.
- Any damage or failure caused by attempts by personnel other than authorized Longer representatives to install, repair, modify or remove the product.
- Any damage or failure caused by non-Longer parts, or user-replaceable parts purchased from unauthorized distributors.
- Any damage or failure caused by accidents or human errors (including wrong power supply voltage, corrosion, fall-off, etc.)
- Any damage or failure caused by natural disaster or other irresistible force (earthquake, fire, etc.).
- Other product damage or failure not caused by defects in design, material and workmanship.

### **1.2.2 Maintenance Service**

- Customer will be charged for the repair or replacement of the parts or accessories after warranty period.
- Parts can be replaced within 3 working days. Longer will inform customer of the date in advance if out of 3 working days.

### **1.2.3 Dispute Settlement**

Dispute over product quality or service will be handled according to contract or agreement. If there is no related contract or agreement, it shall be resolved by the disputing parties through consultation. Otherwise, it will be resolved according to relevant national laws and regulations.

### **1.3 Repair Notes**

Please contact Longer or its distributor. Provide the product serial number, customer contact information and product problem before returning the product. Products which has been contaminated with, or exposed to, toxic chemicals or any other substance hazardous to health must be decontaminated before returning to Longer or its distributor. You must ship the product in its original packaging or better, to insure it against possible damage or loss during the transport.

### **1.4 Contacts Information**

Baoding Longer Precision Pump Co., Ltd  
3rd/4th Floor, Building 6B, University Science Park  
High-Tech Industry Development Zone  
Baoding, Hebei, China 071051  
Email: [longer@longerpump.com](mailto:longer@longerpump.com)  
Tel: 86-312-3110087  
Fax: 86-312-3168553  
[www.longerpump.com](http://www.longerpump.com)

## 2 Product Introduction

FG series pump head has single channel. The pump head is mounted on the drive unit easily by using special mounting plate. With the special flip cover design, the tubing can be loaded into or removed from the pump head easily. And the spring loaded tubing clamps can clamp various tubing automatically and tightly. FG15-13 series pump head accepts tubing with wall thickness of 1.6mm, and the range of flow rate is 0-2400ml/min. FG25-13 series pump head accepts tubing with wall thickness of 2.4mm, and the range of flow rate is 0-2200ml/min

Table 1: Product Model Table

Series Model	Product Model	Product Description	Product Code
FG15-13	FG15-13-A	Slot, single channel, three rollers, accepts tubing with wall thickness of 1.6mm	050163A
	FG15-13-B	Tang, single channel, three rollers, accepts tubing with wall thickness of 1.6mm	050163B
FG25-13	FG25-13-A	Slot, single channel, three rollers, accepts tubing with wall thickness of 2.4mm	050164A
	FG25-13-B	Tang, single channel, three rollers, accepts tubing with wall thickness of 2.4mm	050164B

### 2.1 Main Features

- Small size, compact structure, nice appearance, ideal choice for OEM application
- Accepts various tubing with wall thickness of 1.6mm, with a wide range of flow rate.
- Flip cover design for easy tubing loading and removal.
- The tubing and rotor running status can be observed through the transparent window on the flip cover.
- Can be driven by step motor, DC motor and AC motor.
- Good corrosion resistance.

### 2.2 Unpacking

To unpack the pump head, follow below steps:

- 1) Take out the pump head and accessories from the shipping carton.
- 2) Check the packing list to make sure all components are present.
- 3) Contact Longer Pump or distributor for any question.

## 2.3 Structure

### 2.3.1 Outline Drawing

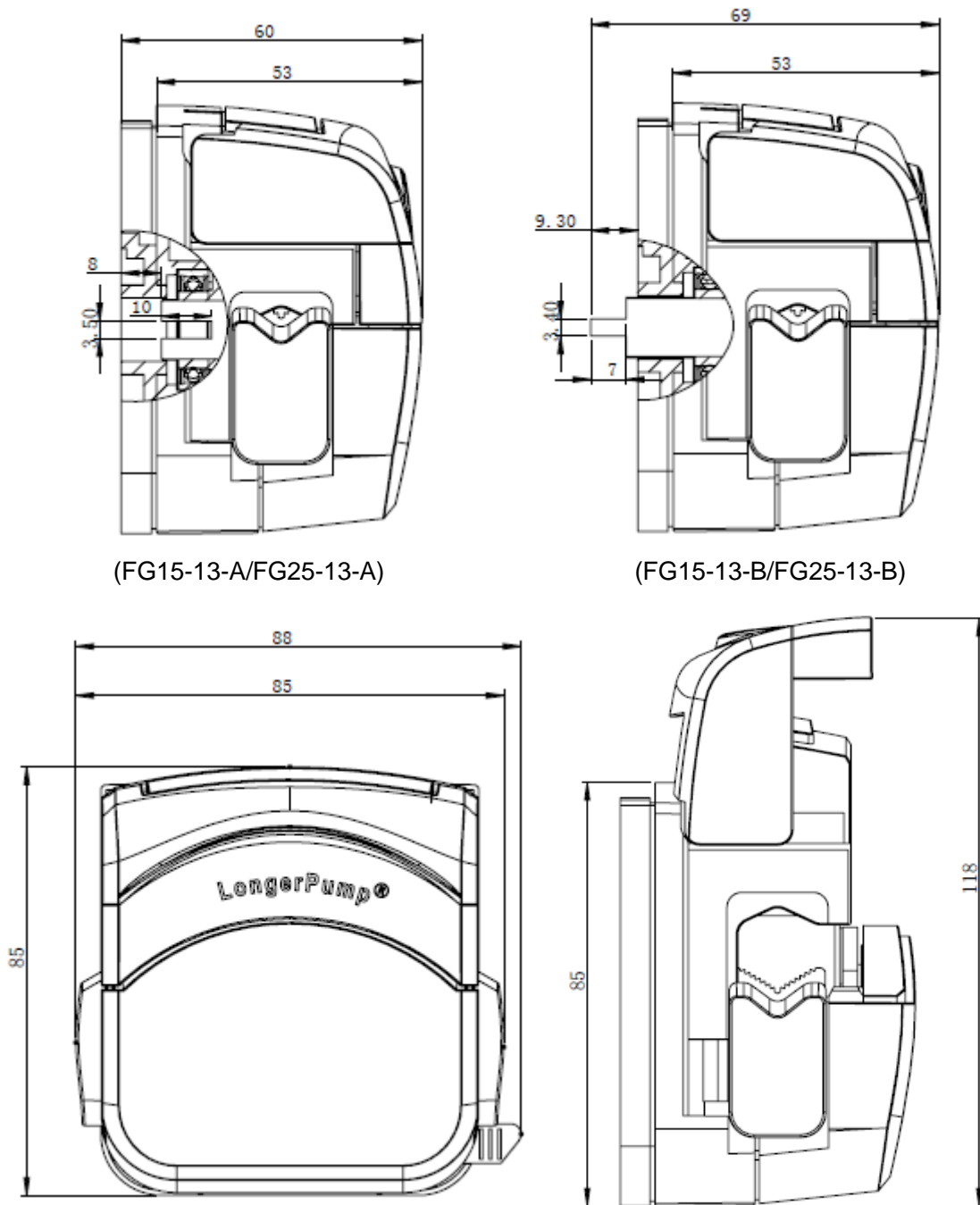


Figure 1 Outline Drawing

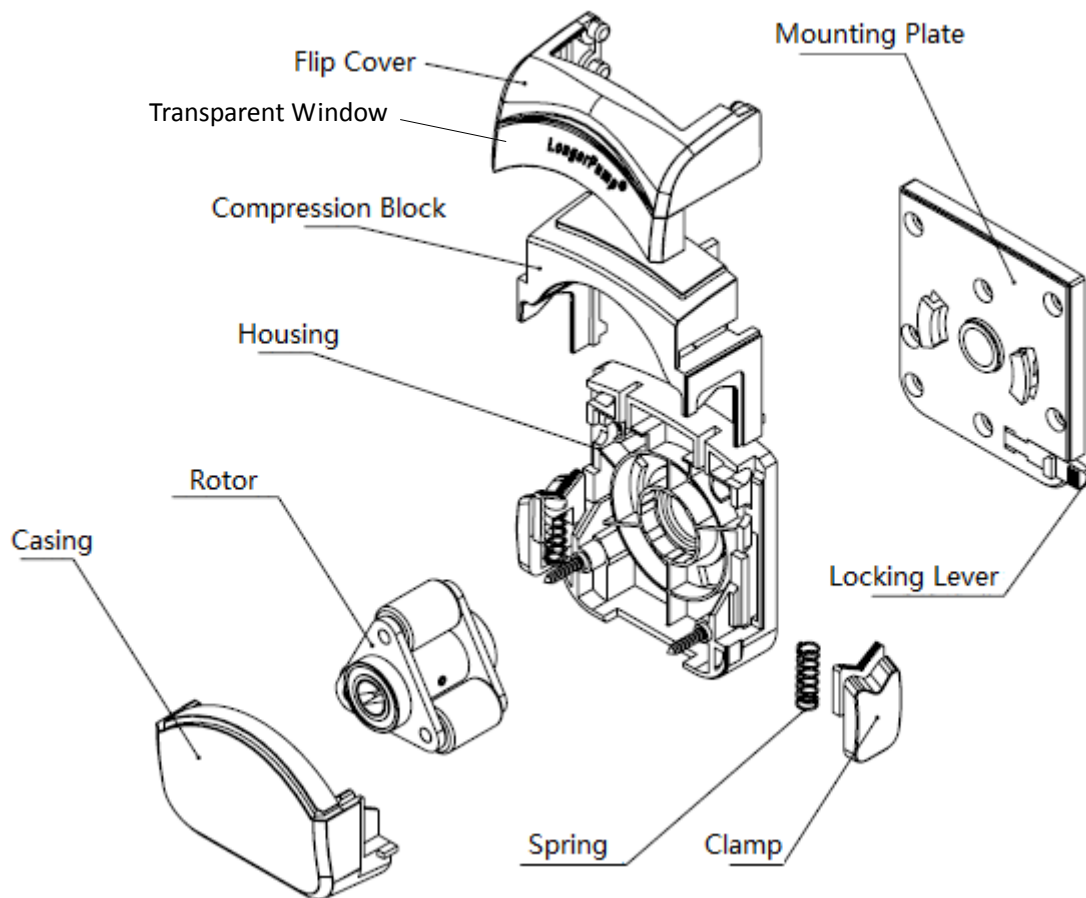


Figure 2 Pump Head Structure

## 2.4 Performance and Capability

### 2.4.1 Pump Head Mounting Capability

The pump head can be mounted on the drive unit through special mounting plate. Pump head shaft is engaged with the drive motor shaft. The pump head can be driven by step motor, DC motor and AC motor.

### 2.4.2 Tubing Loading Capability

Applicable tubing for FG15-13: wall thickness of 1.6mm, ID of 0.8-7.9mm.

Applicable tubing for FG25-13: wall thickness of 2.4mm, ID of 4.8-6.4mm.

Tubing is clamped by spring loaded tubing clamps. The tubing will not move along with rotor running. Tubing can be loaded and replaced easily.

### 2.4.3 FG15-13/FG25-13 Pump Head Specification

- Speed: 0~600rpm
- Channel Number: 1
- Roller Number: 3

- Material: Housing/Casing: IXEF, Roller: PA6
- Holding Pressure: When the pump stops, the holding pressure is higher than 0.14Mpa.
- Flow Rate: Refer to Table 2 and Table 3.

Table 2: FG15-13 Flow rate reference (working temp:20°C, pump speed: 600rpm, unit: ml/min)

Tubing Size		13#	14#	19#	16#	25#	17#	18#
Flow Rate	Silicone	32	181	377	647	1386	2166	2422
	Pharmed	45	193	402	660	1382	2065	2700

Table 3: FG25-13 Flow rate reference (working temp:20°C, pump speed: 600rpm, unit: ml/min)

Tubing Size		15#	24#
Flow Rate	Silicone	1346	2214
	Pharmed	1456	2363

- Starting Torque Requirement: Refer to Table 4 and Table 5.

Table 3: FG15-13 starting Torque Requirement for Different Tubing (unit: N\*M)

Tubing Size		13#	14#	19#	16#	25#	17#	18#
Starting Torque	Silicone	0.25	0.25	0.3	0.3	0.45	0.6	0.55
	Pharmed	0.25	0.4	0.5	0.6	0.9	1	0.85

Table 4: FG25-13 starting Torque Requirement for Different Tubing (unit: N\*M)

Tubing Size		15#	24#
Starting Torque	Silicone	0.32	0.50
	Pharmed	1.05	1.25

## 2.5 Working Condition

Environment Temperature: 0°C-40°C  
Environment Relative Humidity: ≤98%

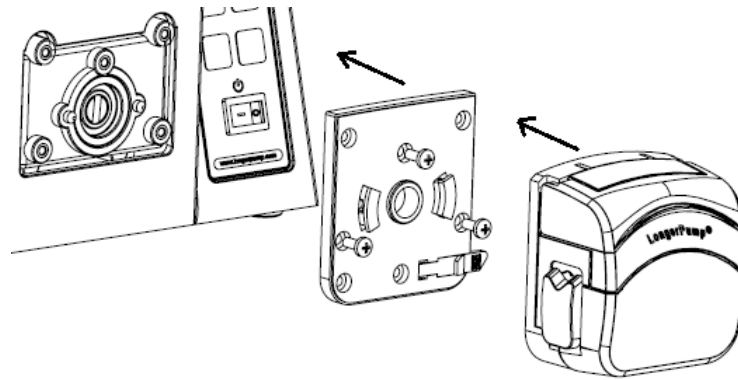
## 3 Installation

### 3.1 Pump Head Mounting

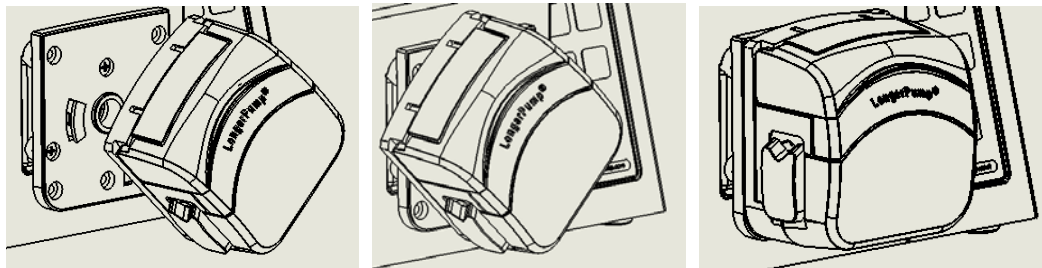
To mount the pump head on the pump drive, follow below steps:

- Mount the mounting plate on the pump drive by tightening three mounting screws.





- b) Insert the tang of the pump head shaft into the slot of the motor shaft. Turn the pump head 45 degree relative to the vertical direction. Engage the bayonet on the mounting plate with the bayonet slot on the back of the pump head. Turn the pump head clockwise until it locks into an upright position.

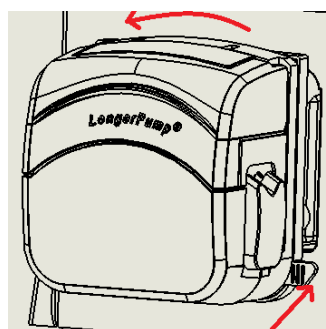


**Note:**

Please disconnect pump from the mains power before mounting the pump head.

### 3.2 Pump Head Removal

Push the locking lever back and turn the pump head anti-clockwise about 45 degree. Then take off the pump head from the mounting plate.



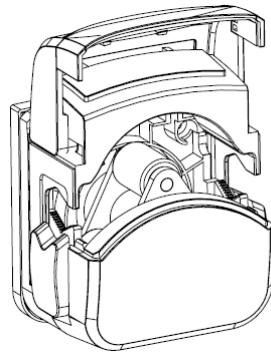
**Note:**

Please disconnect pump from the mains power before removing the pump head.

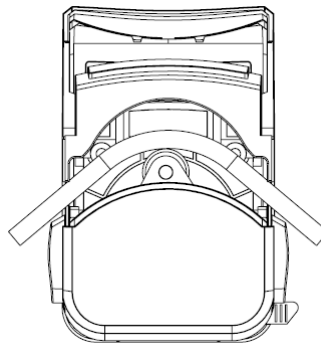
### 3.3 Tubing Loading

To load the tubing, follow below steps:

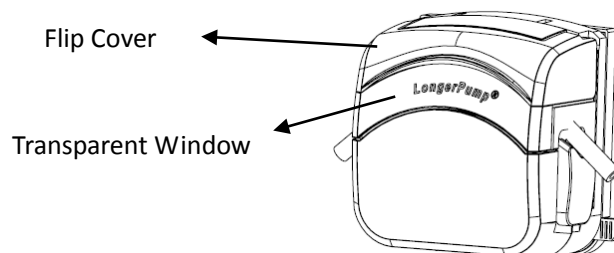
- Lift the flip cover and compression block to fully open the pump head. Turn the rotor and ensure the rotor stops at the position indicated in below drawing.



- Insert the tubing into the opened pump head. Make sure not to twist tubing, lightly stretch it across the roller and locate the tubing in the center of the tubing clamps.



- Carefully close the flip cover and lower the compression block. Make sure the tubing is not crushed in the clamps or over stretched.



Do not press hard on the transparent window. Otherwise, the transparent window maybe damaged or fall off.

#### 4 Transportation and Storage

- In the process of transportation, prevent water, moisture, insect, corrosion, and strong mechanical vibration.
- The pump head should be stored in shipping carton. The environment should keep air

circulation. The environment temperature should be  $-10^{\circ}\text{C}\sim 55^{\circ}\text{C}$  and relative humidity should be  $\leq 85\%$ . Warehouses are not allowed to have all kinds of poisonous, harmful, flammable, explosive and corrosive chemicals.