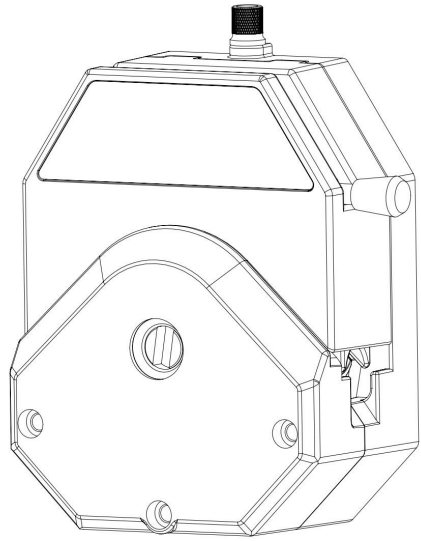
User Manual for
YZ35-II Pump Head



Innofluid Co., Ltd.

Note:

- Please read the manual carefully before operating the product.

Warning:

- Tubing may have crack due to wear. It results in the overflow of fluid from tubing. In that time human body and instruments may be damaged. So user must check usually and change tubing in time.
- When changing the tubing or the position of the tubing, please stop the pump head rotating, otherwise fingers or clothes may be caught.
- The presence of solid substances in the liquid can damage the tubing.
- There are moving parts of the pump head inner, before opening the upper block, it must be carried out according to the following requirements:
  - Ensure the pump is isolated from the main power supply.
  - Ensure there is no pressure in tubing.
  - If the tubing gets mistakes, ensure the liquid in the tubing is discharged to other containers or drain tubing.
  - If transports the dangerous liquid, must wear the protective clothing and eye protection.

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1. Product Introduction

a. YZ35-II pump head housing is produced with high-pressure die-casting aluminum, ensuring high strength and good consistency.

b. Equipped with a standard electromagnetic sensor that outputs a cover-open to stop signal to enable the cover-open to stop function.

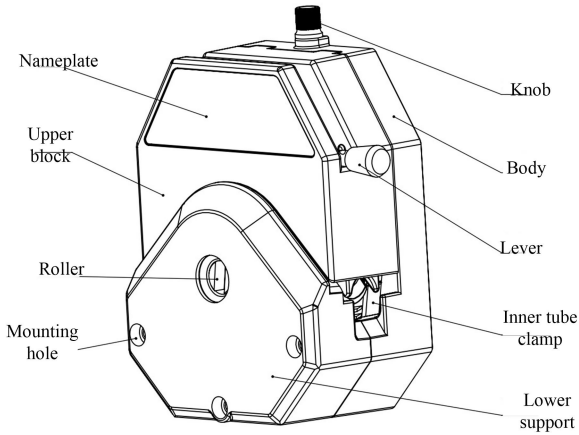
c. The optimized tubing clamp structure allows for easy installation and removal of the tubing, preventing abnormal damage to the tubing.

d. Added a lever limiter to securely fix the lever, preventing loosening due to vibrations.

e. 304 stainless steel roller assembly, resistant to liquid leakage and corrosion.

f. The YZ35-II model has been updated to include an external tube clamp, allowing it to accommodate and use a 26# tube.

2. Instructions



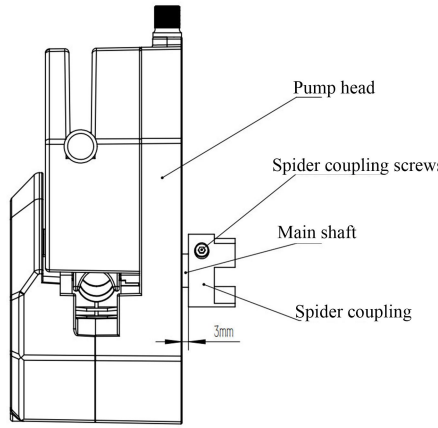
2.1 Pump Head Installation Specification

- Try to install the pump head at or just below the liquid level end of the liquid to be transferred to ensure the most efficient liquid transfer.
- Do not install the pump in a confined location without adequate air circulation around the pump.
- Be sure to keep all moving parts of the pump head clean and free of contamination and debris.
- The tubing diameter used on the suction and delivery ends of the pump must be equal to or larger than the tubing diameter in the pump head. Especially when transporting viscous liquids, the tubing diameter used at the suction end is preferably several times larger than the tubing diameter in the pump head.
- When transferring viscous liquids, be sure to run at low speed.

2.2 Single Pump Head Installation

First, select the appropriate coupling. It is recommended to use a Spider coupling for pump heads with a short cylindrical shaft and a oldham coupling for pump heads with a standard cylindrical shaft. During installation, first mount the coupling onto the main shaft of the pump head. Position the coupling 3mm away from the pump head, then tighten the coupling screws. Afterward, connect the pump head to the driver's main shaft via the coupling.

For example, when installing a Spider coupling on a pump head with a short cylindrical shaft, follow the steps as illustrated in the diagram below



2.3 Multiple Pump Head Installation

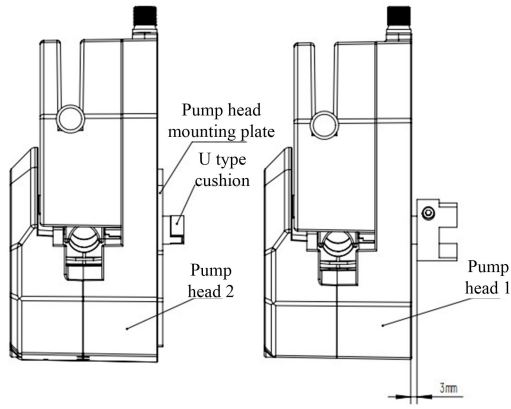
First, select the appropriate coupling. It is recommended to use a Spider coupling for pump heads with a short cylindrical shaft and a oldham coupling for pump heads with a standard cylindrical shaft. When multiple pump heads are connected in series, use extended screws. The following explanation uses a dual-pump head setup as an example:

Install the coupling onto the main shaft of Pump Head 1. Position it according to the dimensions shown in the diagram, then tighten the coupling screws.

Install the U-type cushion onto the shaft of Pump Head 2.

Mount the pump head fixing plate onto the main shaft of Pump Head 2.

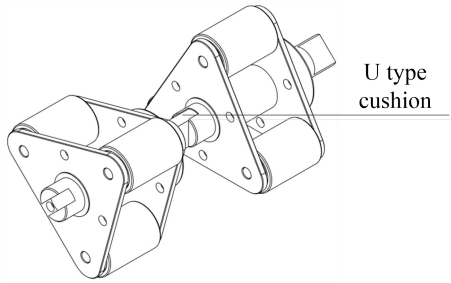
Insert the shaft of Pump Head 2 into the shaft slot of Pump Head 1, as shown in the diagram below.



Note:

When install the pump, the entire pump head is disassembled into two separate pump heads as shown in the picture above. The two pump head rollers assemblies should be staggered and installed in sequence. The roller status is as shown in the figure below.

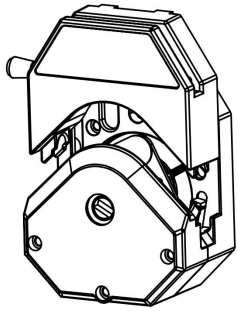
The main shaft connection between two adjacent pump heads needs to install a U-type cushion as shown in the figure. Failure to do so will result in abnormal operation of the pump head.



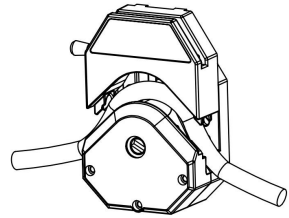
Note: Users need to fasten the screws with similar force, and can't be too tight, to avoid the lower support deform and make working noise.

2.4 Tube Installation

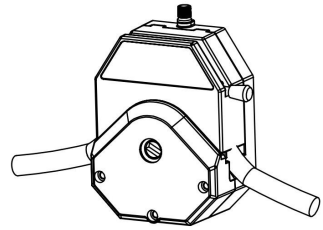
a. Pull the lever anti-clockwise 180°, open the upper block.



b. Put the tube between rollers and upper block.



c. Turn the lever clockwise and slowly press down with force until the upper press block is in place. At this time, the tube is installed in place.



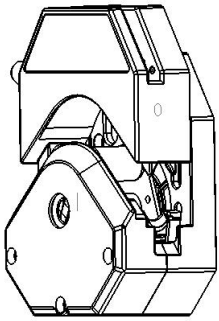
2.5 Special Attention for Tubing Installation

- When installing the tubing, make sure to straighten it before securing the clamp. Failure to do so may cause the tubing to bunch up inside the pump head, leading to misalignment during operation and potential damage to the tubing.
- When installing the tubing, ensure it is aligned in its natural direction without any twists before securing the clamp. Failure to do so may cause the tubing to become misaligned during operation, leading to damage.

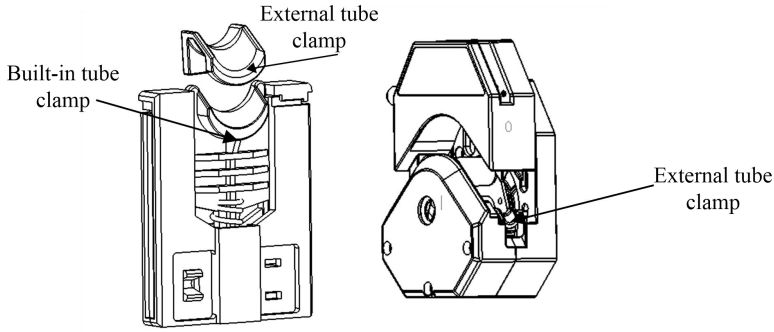
2.6 Installation External Tube Clamp

When a user wants to use a 26# tube, follow the steps below to install the external tube clamp and the tube.

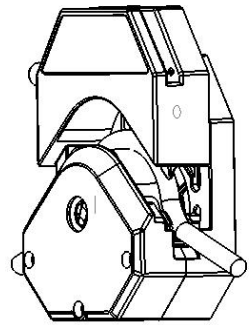
a. Pull the lever anti-clockwise 180°, open the upper block.



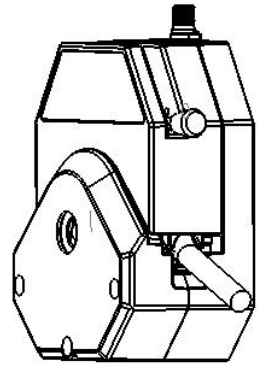
b. Take one external tube clamp and place it on the right side of the pump head, aligning it with the built-in tube clamp, ensure that the external tube clamp is oriented in the same direction as the built-in clamp and is horizontally centered (as shown in the diagram), on the left side of the pump head, install the second external tube clamp.



c. Put the 26# tube between rollers and upper block.

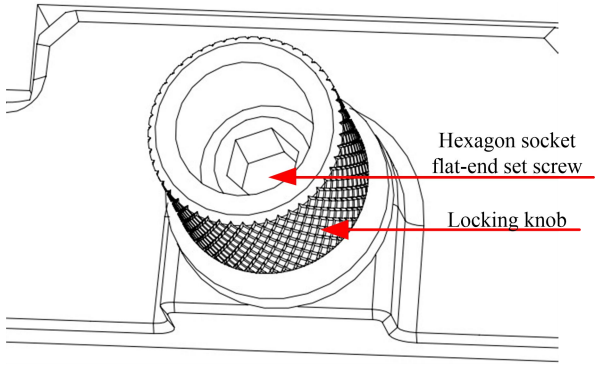


d. Turn the lever clockwise and slowly press down with force until the upper press block is in place. At this time, the tube is installed in place.



2.7 Pressure Regulation

For the YZ35-II series pump heads, the outlet hose pressure can be adjusted by turning the hexagon socket flat-end set screw located on the pump body.



a. Before adjusting the pressure, loosen the locking knob by turning it counterclockwise.

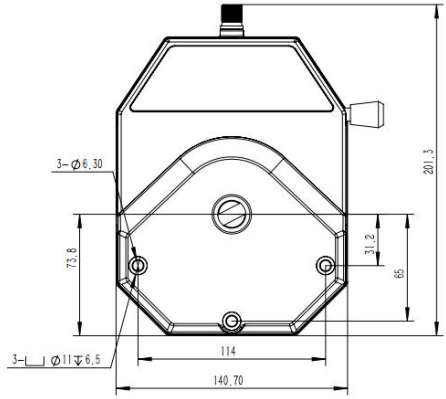
b. Use a 4x114 hex key to adjust the hexagon socket flat-end set screw. Turn counterclockwise to decrease pressure and clockwise to increase pressure.

c. After adjustment, tighten the locking knob by turning it clockwise.

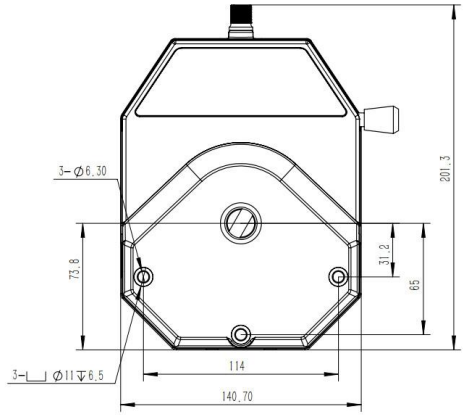
3. Installation Dimension

Unit:(mm)

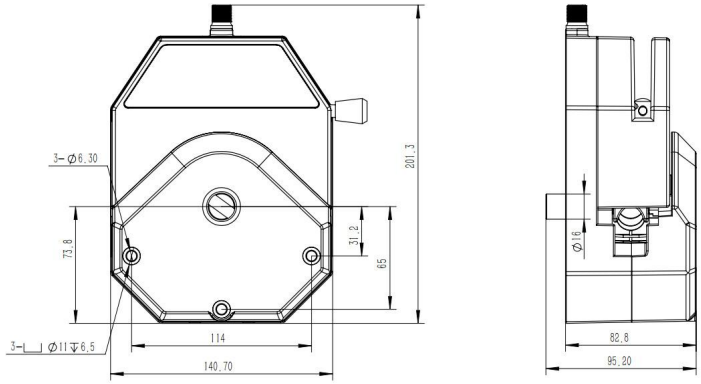
YZ35-II (Round Shaft)



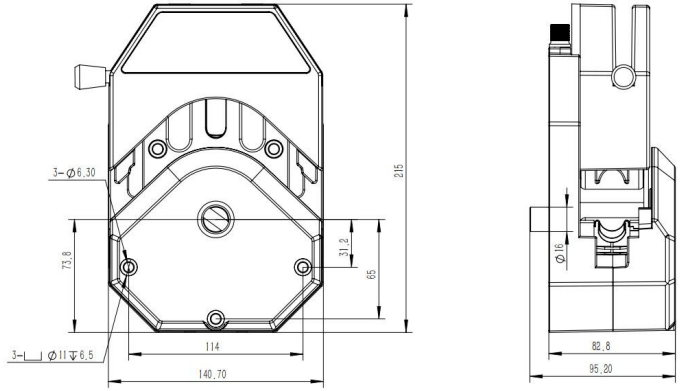
YZ35-II (Flat Shaft)



YZ35-II (Short Round Shaft)



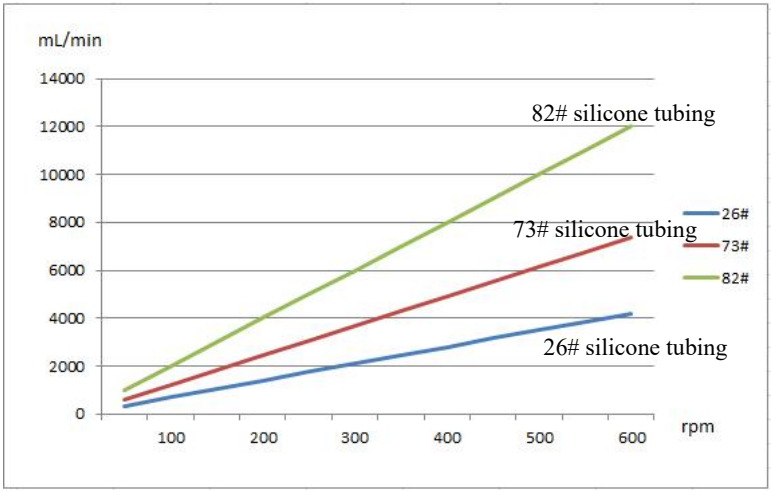
YZ35-II (Opening status)



4. Pump Head Specification

4.1 Pump Head Specification

Pump Head	Tube Type	ID*WT(mm)	mL/rpm	(Speed 0.1-600rpm) Flow range (ml/min)	Tubing pressure		Material	Weight (kg)
					Intermi-ttent	Contin-uous		
YZ35-II	26#	6.4*3.3	6.9	0.69-4200	0.27	0.2	Cast aluminum alloy	2.8
	73#	9.6*3.3	12.3	1.23-7400	0.27	0.2		
	82#	12.7*3.3	20	2-12000	0.14	0.1		



Note: The above-mentioned flow reference data is measured under the conditions of no pressure and no suction lift at room temperature under standard atmospheric pressure with pure water as the transmission medium, In actual use, it is affected by many factors such as transmission medium, inlet and outlet pressure, tube material and error, working environment, etc.The flow rate may vary, this data is for reference only.

4.2 Pump Head Torque

Pump Head	Tubing		Start-up Reference Torque (N·M)			Running Reference Torque (N·M)		
	Size	ID×Wall thickness (mm)	PharMed	E-3603	N-C	PharMed	E-3603	N-C
YZ35-II	26#	6.4x3.3	0.78	0.58	0.88	0.20	0.25	0.22
	73#	9.6x3.3	2.4	1.44	2.63	0.6	0.62	0.65
	82#	12.7x3.3	2.95	1.42	2.67	0.81	0.6	0.85

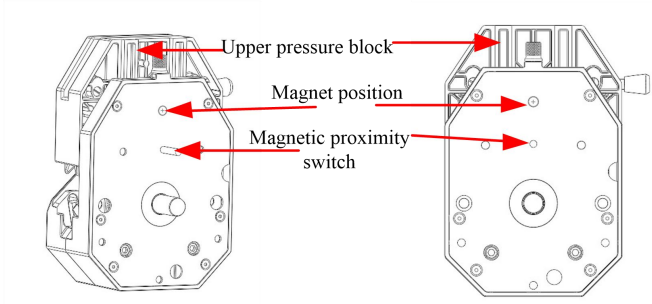
5. Function Instruction

5.1 Open Head Stop Running Function

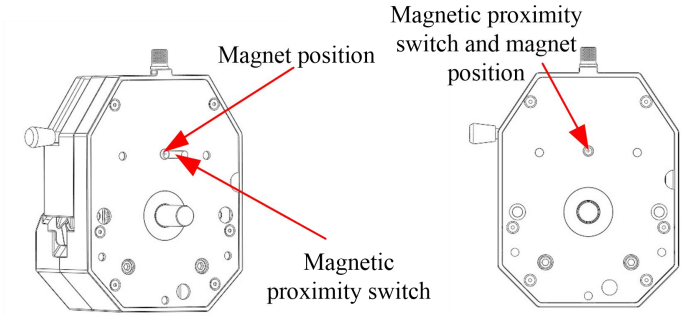
Function Principle: Magnetic proximity switch

Introduction: A magnetic proximity switch is a non-contact electronic component that triggers the opening or closing of a circuit by detecting the presence or change of an external magnetic field. When the lever with cap is toggled to open the upper pressing block, the sensor on the actuator no longer detects the magnetic field, causing the switch to open. When the upper pressing block is closed, the sensor detects the magnetic field again, triggering the switch to close.

Pump Head:

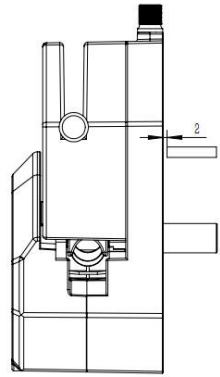


When the upper pressing block is in the open position, it triggers the switch to open (or disconnect).

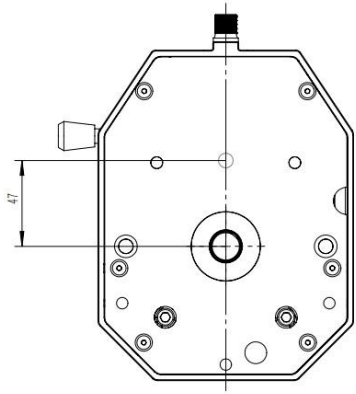


When the upper pressing block is in the close position, it triggers the switch to close (or connect).

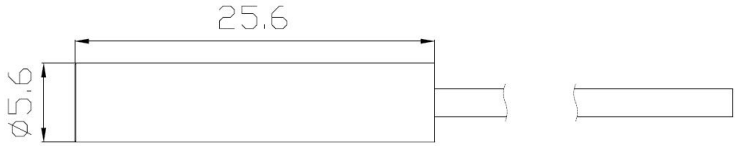
The distance between the pump head rear cover plate and the magnetic proximity switch:



Magnet installation dimensions:



Magnetic proximity switch dimensions:



Precautions:

a. The distance between the magnetic proximity switch and the pump head should be ≤ 2mm.

b. Keep away from devices that shield or conduct magnetism, as well as other magnetic sources.

c. Install the magnetic proximity switch on the customer's own mounting plate.

d. The magnetic proximity switch is a non-standard accessory and must be purchased separately.

Magnetic proximity switch performance:

Maximum contact capacity	10W
Maximum switching voltage	DC200V
Minimum breakdown voltage	DC250V
Maximum switching current	0.5A
Maximum load current	1.0A
Vibration resistance	30G
Vibration resistance	30G (10~50Hz)
Operating temperature range	-30~80℃
Thermal shock resistance	-40~85℃

6. Troubleshooting

If the pump head is running but the flow is small or no flow, please check the following items:

- Check whether the pump is supplied with transmission liquid;
- Detect whether the suction side pipeline of the pump is blocked by suction wall;
- Check if the tube is cracked;
- Check for blockages or kinks in the tube;
- Check whether the wall thickness of the tube used is correct;
- Check whether all valves in the tube are open;
- Check whether the rotation direction of the pump is correct.

7. Maintenance

- When pump does not work, please loose the cartridges of pressing the tubing for avoiding changing the shape of tubing because of longtime extrusion.
- Keep the rollers of pump head clean and dry, otherwise it can quicken the tubing wearing, reduce the useful life of tubing and lead the rollers to damage in earlier.
- Before the peristaltic pump start running each time,check the tubing carefully if it is damage.
- If the pump head in water accidentally, use soft cloth and other absorbent soft cloth to wipe dry to prevent damage to the pump head.
- After replacing the tube, fluid or any connecting tube, must be re-calibrated the pump. It is recommended to re-calibrate the pump regularly to maintain accuracy.
- Pump head can not resist organic solvent (Except for special indication) and strong corrosion liquid, please be attention when use it.

- The inner diameter and wall thickness of tubing may have some deviations due to its tolerance and different batches. That may make influence on product flow accuracy, please leave a margin when choose it.
- It will affect the flow rate, causing decreasing flow when input port and output port change small or there are suction and lift.
- The data tested in a short time in this manual may change for using a long time.
- The company shall not bear the direct and indirect losses caused by the malfunction or improper operation of this product.

8. Warranty and After-sales Service

We support 1 year warranty for the pumps, subject to the exceptions below. Our company shall not be liable for any loss, damage, or expense directly or indirectly related to or arising out of the use of its products. This warranty does not obligate our company to bear any costs of removal, installation, transportation, or other charges which may arise in connection with a warranty claim.

If the pump fails during the warranty period, after confirmation by our technical department, we will provide spare parts free of charge. Customers will need to bear the shipping cost.

Exceptions:

- The warranty shall not apply to repairs or service necessitated by normal wear and tear or for lack of reasonable and proper maintenance.
- All tubing and pumping accessories as consumable items are excluded.
- Electrical surge as a cause of failure is excluded.
- Chemical attack is excluded.
- Improper operation or man-made damage as a cause of failure is excluded.

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