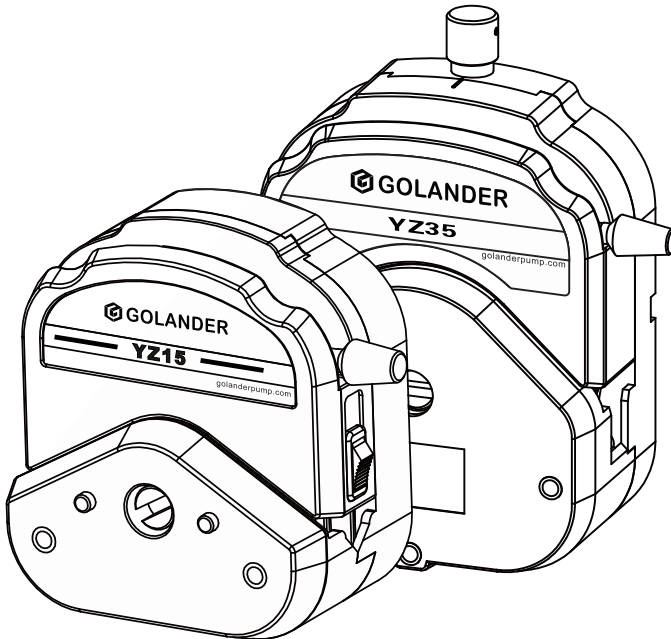




YZ/YT Pump Head

User's Guide



1 Safety Precautions



Warning

- Please read this user's guide carefully before operating the pump head.
- Tubing breakage may result in fluid being sprayed from the pump. Please check and replace the tubing regularly.
- Please power the pump off before installing external control devices.
- This product is not designed for, nor intended for use in patient-connected applications; including, but not limited to, medical and dental use.



Danger

- Remove the power from the pump before mounting or unmounting the pump head to the drive.
- Remove the power from the pump before attempting any maintenance or cleaning operation.
- Turn the drive off before removing or installing the tubing. Fingers or loose clothing could get caught in the drive mechanism.

Note:

- Only use matched tubing with the pump head to ensure optimum performance. Use of other tubing may void applicable warranties.
- Release the tubing loading lever if the drive is not in operation for a longer period to prevent the rollers from squeezing the tubing all the time.
- Change the squeeze section of the tubing in time to extend its lifetime.
- When tubing breakage occurs, please use a mild detergent solution to clean the pump head. Do not immerse nor use excessive fluid. Please check if the rollers can still rotate smoothly. If not, please stop the drive to prevent it from damaging the pump head.
- Fine adjustments can be made to the gap between the roller and the housing for the tubing. If the pump head cannot deliver fluid successfully or the output pressure is too weak, please try to reduce the gap by tightening the occlusion adjustment knob until the pump head delivers fluid as expected.

2 Introduction

YZ/YT series pump heads are designed to provide a simple, easy-to-use fluid transfer experience and can be used with different tubing sizes to meet a wide range of flow rate requirements. The unique over-center cam design and automatic tubing retention allow quick tubing changes and minimize maintenance time.

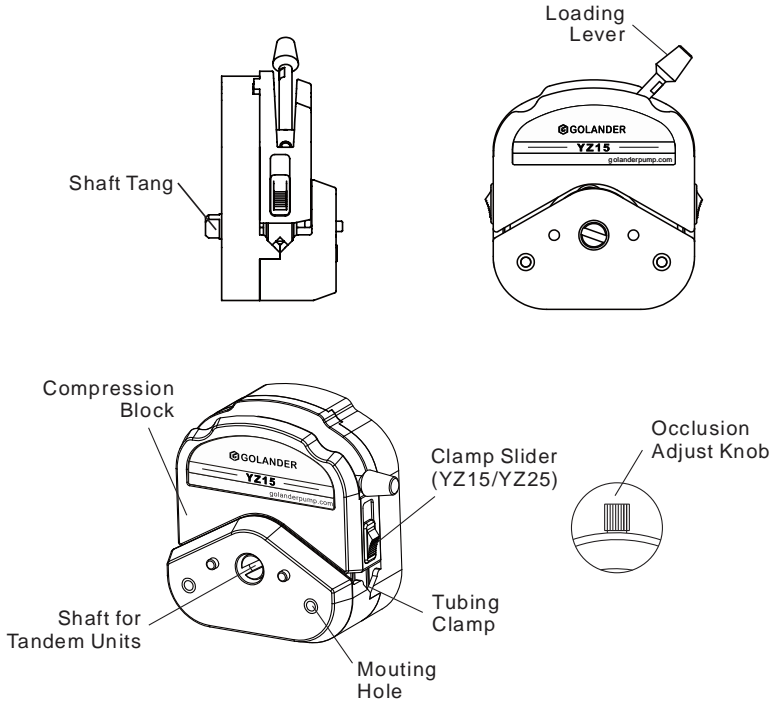


Figure 1. Pump Head

The YZ15/YZ25/YT15/YT25 pump heads are compatible with most GOLANDER BT or WT series drives with a standard tang interface. YZ35 works with WG series drives. Please note that the Occlusion Adjustment Knob is for YT/YZ35 pump head only. The occlusion of YZ15/YZ25 is fixed. Note: Occlusion adjustment will not affect the flow rate.

3 Specifications

YZ15 Pump Head

Suitable Drive	BT, WT series pumps
Suitable Tubing Size	13# 14# 19# 16# 25# 17#, Wall Thickness 1.6mm(1/16inch), ID 0.8-6.4mm
Suitable Tubing type	Silicone, Pharmed, A-60-G, A-60-F, F5500A, 2275, 2475, 3603, Viton
Speed Range	600rpm max
Flow Range	1700mL/min max
No. of Rollers	3 (304 SS)
Case Material	PPS (Black), PES (White)
Occlusion	Fixed
Operating condition	Temperature 0~40 °C, Relative humidity<80%
Dimensions	106x94x54 mm
Weight	0.4 kg (0.9 lb)

YZ25 Pump Head

Suitable Drive	BT, WT series pumps
Suitable Tubing Size	15#, 24#, Wall Thickness 2.4mm(3/32inch), ID 4.8mm, 6.4mm
Suitable Tubing type	Silicone, Pharmed, A-60-G, A-60-F, F5500A, 2275, 2475, 3603
Speed Range	600rpm max
Flow Range	1700mL/min max
No. of Rollers	3 (304 SS)
Case Material	PPS (Black), PES (White)
Occlusion	Fixed
Operating condition	Temperature 0~40 °C, Relative humidity<80%
Dimensions	106x94x54mm
Weight	0.4 kg (0.9 lb)

YT15 Pump Head

Suitable Drive	BT, WT series pumps
Suitable Tubing Size	13# 14# 19# 16# 25# 17# 18#, Wall Thickness 1.6mm(1/16inch), ID 0.8-7.9mm
Suitable Tubing type	Silicone, pharmed, A-60-G, A-60-F, F5500A, 2275, 2475, 3603
Speed Range	600rpm max
Flow Range	2300mL/min max
No. of Rollers	4 (304 SS)
Case Material	PPS (Black)
Occlusion	Adjustable
Operating condition	Temperature 0~40°C, Relative humidity<80%
Dimensions	138.5x103x63 mm
Weight	0.62 kg (1.4 lbs)

YT25 Pump Head

Suitable Drive	BT, WT series pumps
Suitable Tubing Size	15# 24# 35# 36#, Wall Thickness 2.4mm(3/32inch), ID 4.8, 6.4, 7.9, 9.6mm
Suitable Tubing type	Silicone, Pharmed, A-60-G, A-60-F, F5500A, 2275, 2475, 3603
Speed Range	600rpm max
Flow Range	2900mL/min max
No. of Rollers	4 (304 SS)
Case Material	PPS (Black)
Occlusion	Adjustable
Operating condition	Temperature 0~40°C, Relative humidity<80%
Dimensions	138.5x103x63mm
Weight	0.62kg (1.4 lbs)

YZ35 Pump Head

Suitable Drive	WG series pumps
Suitable Tubing Size	73# 82#, Wall Thickness 3.2mm(1/8inch), ID 9.7mm, 13mm

Suitable Tubing type	Silicone, Pharmed, A-60-G, A-60-F, F5500A, 2275, 2475, 3603
Speed Range	600rpm max
Flow Range	13L/min max
No. of Rollers	3 (304 SS)
Case Material	PPS (Black)
Occlusion	Adjustable
Operating condition	Temperature 0~40°C, Relative humidity<80%
Dimensions	203x140x78mm
Weight	1.8kg (4.0lbs)

4 Setup and Operation

4.1 YZ15/YZ25/YT15/YT25 Installation

- 1) Insert the shaft tang of the pump head into the slot of the coupler.
- 2) Insert the two mounting screws into the mounting holes of the pump head.
- 3) Tighten the mounting screws to the mounting holes of a drive.
- 4) For multi-channel mounting, longer mounting screws are required.

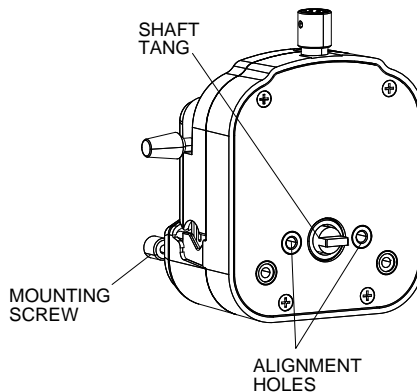


Figure 2. Setup

4.2 YZ35 Installation

- 1) Put the Tang Boot on the shaft tang of the pump head.
- 2) Insert the shaft tang of the pump head into the slot of the coupler, to fit the pump head to the back mounting plate.



Figure 3. Tang Boot

- 3) Tighten the provided 2 screws and 3 mounting screws on the back plate.
- 4) For multi-channel mounting, longer mounting screws are required.

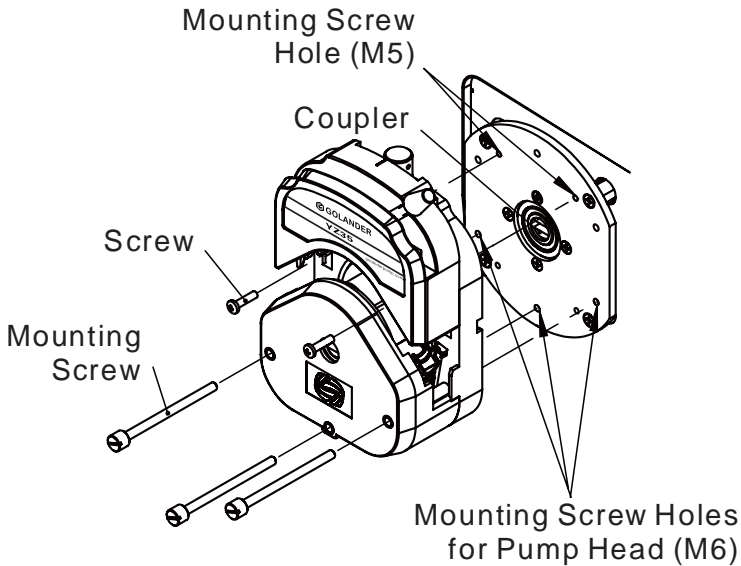


Figure 4. YZ35 Pump Head

4.3 YZ15/YZ25/YT15/YT25 Tube Loading

- 1) Be sure the pump drive is off.
- 2) For YT15/YT25, loosen the occlusion knob by unscrewing it counterclockwise first.
- 3) Rotate the lever to the left to open the pump head.

- 4) For YZ15/YZ25, push the slider upward as shown below on each side to make more room for the tube loading. For YT15/YT25, push the tubing clamp upward directly.
- 5) Load the correct size tubing. Center the tubing between the retainers.

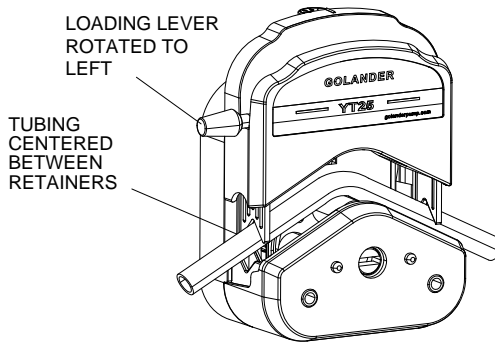


Figure 5. Open and Load

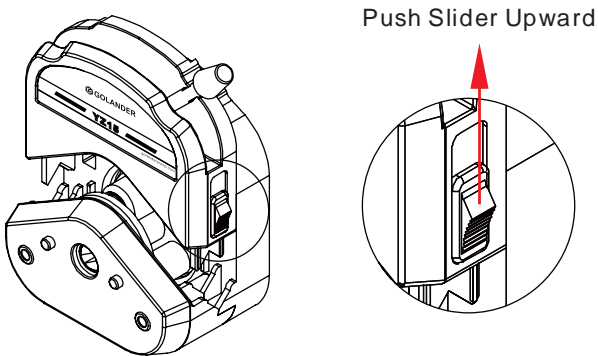


Figure 6. Push Slider upward to load tubing (YZ15/YZ25)

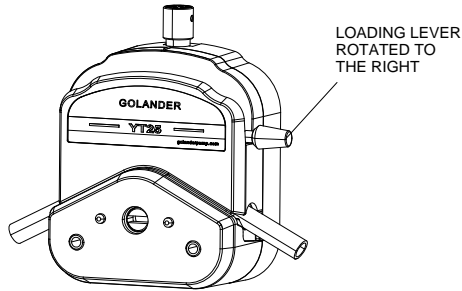


Figure 7 Close Pump Head

- 6) For optimum tubing life, keep the tubing straight where it enters and exits the pump head.
- 7) Rotate the lever to the right to close.
- 8) To adjust the occlusion, set the speed to 1-5rpm, start the drive and adjust the knob until the pump primes and fluid begins to flow, and there is no backflow when the drive stops. If higher output pressure is needed, adjust the knob until the pressure is as expected.

Warning: Stop the drive when changing the tubing or its position in the rotor mechanism. The rotor is partially exposed when the LOADING LEVER is in the open position.

4.4 YZ35 Tube Loading

- 1) Be sure the pump drive is off.
- 2) Loosen the occlusion knob by unscrewing it counterclockwise first.
- 3) Rotate the lever all the way to the left to open the pump head.
- 4) Load the correct size tubing. Center the tubing between the retainers.
- 5) Push the tubing clamp downward as shown below on each side to make more room for the tube loading.
- 6) For optimum tubing life, keep the tubing straight where it enters and exits the pump head.
- 7) Rotate the lever to the right to close.

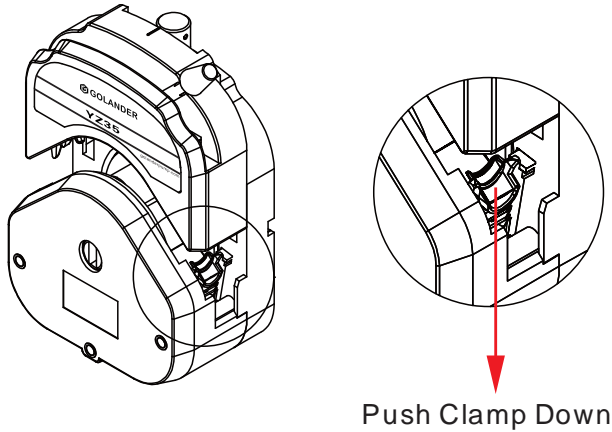


Figure 8 YZ35 Tubing Clamp

- 9) To adjust the occlusion, set the speed to 30rpm, start the drive and adjust the knob until the pump primes and fluid begins to flow, and there is no backflow when the drive stops. If higher output pressure is needed, adjust the knob until the pressure is as expected.
- 10) For optimum tubing life, when occlusion adjustment is done, the compression block surface should be almost on the same level as the base block surface, or slightly higher than the base block surface.

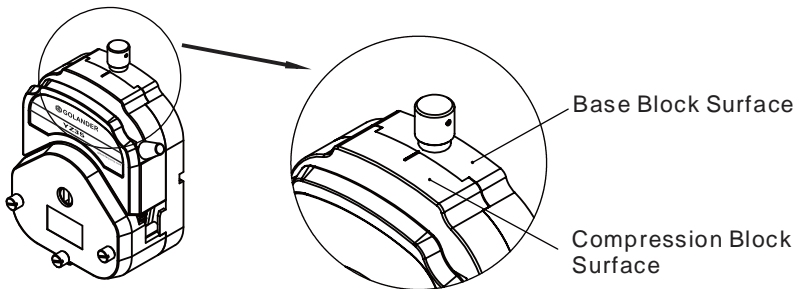


Figure 9 YZ35 Occlusion Adjustment

Note: Decreasing the occlusion will reduce tubing life. Occlusion usually does not need to be readjusted when changing tubing.

4.5 Multiple channel Mounting

Depending on the torque capabilities of the drive, the pump heads can be mounted in tandem. Longer screws are required for multiple pump heads setup. The tubing on the inside can be changed without removing the outside pump head(s) from the drive.

5 Dimensions (mm)

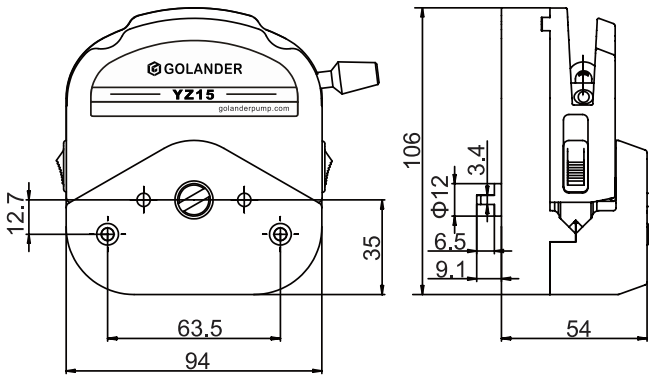


Figure 10. YZ15/YZ25 Dimensions (mm)

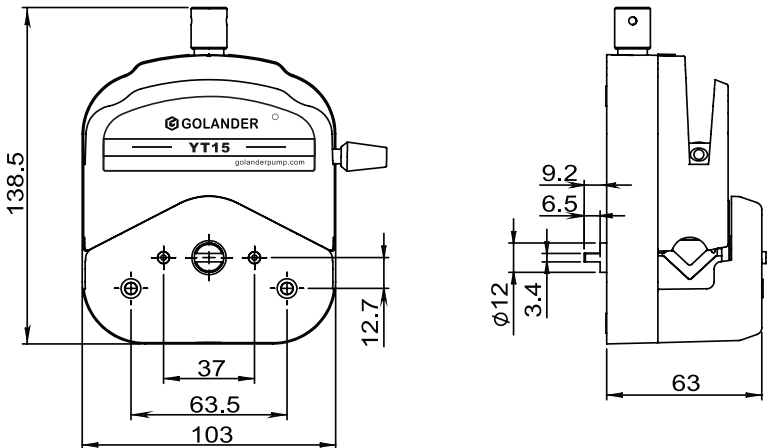


Figure 11. YT15/YT25 Dimensions (mm)

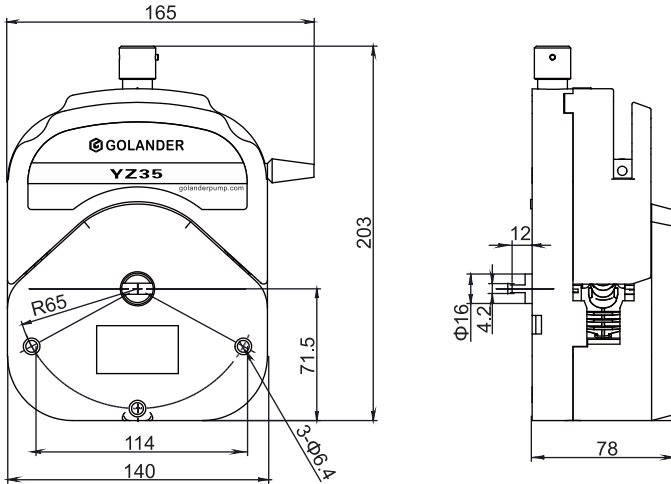


Figure 12. YZ35 Dimensions (mm)

6 Warranty

The product comes with one-year labor and parts warranty. The limited warranty does not cover any damage that is caused by improper usage and handling.

7 Regular Maintenance

- 1) Always check the tubing and connections to make sure there is no leakage. Keep the pump head dry. Do not use chemical solvents to clean the head.
- 2) Do not immerse nor use excessive fluid.
- 3) The occlusion adjustment knob is designed for occlusion adjustment, it will not affect the flow rate. As time goes on, the flow rate will slightly change. Please adjust the drive speed or calibrate the flow rate when necessary.
- 4) There would be a 3-5% difference among the channels for multiple pump heads setup. For higher precision applications, we recommend only using one channel pump head for each pump.

8 Typical Flow, Pressure Data

The rated flow rate below is for 75°F water at standard atmospheric pressure. The tubing length is 1 meter, 0.5m for the inlet and 0.5m for the outlet.

Table 1. YT15 Flow Rate (mL/min)

Speed (rpm)	Tubing						
	13#	14#	19#	16#	25#	17#	18#
0.1	0.0060	0.0217	0.048	0.0800	0.1667	0.2833	0.38
30	1.8	7	14	24	50	85	115
50	3.0	11	24	40	83	142	192
100	6.0	22	48	80	167	283	383
150	9.0	33	73	120	250	425	575
350	21	76	181	280	583	992	1342
600	36	130	286	480	1000	1700	2300

Table 2. YT25 Flow Rate (mL/min)

Speed (rpm)	Tubing			
	15#	24#	35#	36#
0.1	0.17	0.28	0.38	0.48
30	50	85	115	145
50	83	142	192	242
100	167	283	383	483
150	250	425	575	725
350	583	992	1342	1692
600	1000	1700	2300	2900

Table 3. YZ15 Flow Rate (mL/min)

Speed (rpm)	Tubing					
	13#	14#	19#	16#	25#	17#
0.1	0.0060	0.0217	0.048	0.0800	0.1667	0.2833
30	1.8	7	14	24	50	85
50	3.0	11	24	40	83	142
100	6.0	22	48	80	167	283
150	9.0	33	73	120	250	425
350	21	76	181	280	583	992
600	36	130	286	480	1000	1700

Table 4. YZ25 Flow Rate (mL/min)

Speed (rpm)	Tubing	
	15#	24#
0.1	0.17	0.28
30	50	85
50	83	142
100	167	283
150	250	425
350	583	992
600	1000	1700

Table 5. YZ35 Flow Rate (mL/min)

Speed (rpm)	Tubing	
	73#	82#
1	13	22
10	133	217
30	400	650
150	2000	3250
350	4667	7583
600	8000	13000

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