

For Replacement from Tube Pumps and Syringe Pumps

Precise Liquid Transfer with Trace Amounts in Laboratory Processes!

Compatible with acids, bases and solvents

PVC type

PTFE type **NEW**Stainless steel type **NEW**

Smoothflow Pump **Q** Series

Merits

- Pulseless and continuous flow provides excellent fluid transfer precision. (Repeatability: $\pm 1\%$)
- Diaphragm pump that can transfer liquids gently
- Enables precise flow rate settings at 0.01mL units (Setting range : 0.1 to 100mL/min) *This is the weight of the Q-100.
- Lightweight, compact, quiet, low vibration
- Simple operation and easy maintenance
- Long-life consumable parts
- Safe against abnormal pressure increase or dry running.
- Analog & pulse proportional control (QI type) **NEW**
- Interval & gradient control (QT type) **NEW**



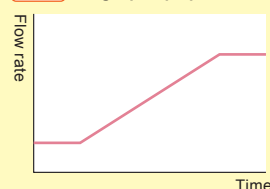
Easy operation



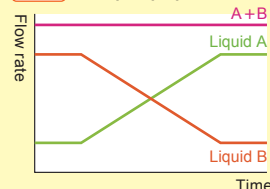
Simple disassembly and assembly

Gradient Operation (QT type)

Case 1 Single pump operation



Case 2 Dual pump operation



Solving the Problems of Laboratory Pumps!

Comparison		Syringe pump	Q Series	Tube pump
Specifications and capabilities	Metering performance	○	Point! ○	△
	Pulse performance	○	○	×
	Continuous operation	×	Point! ○	△
	Contamination	○	Point! ○	△
	Fluid property changes	○	○	△
Usability	Installation space	△	Point! ○	○
	Calibration of initial settings	△	○	○
	Controllability	○	○	○
	Maintenance	○	○	○
	Dry running	△	Point! ○	○
Other	Variety	×	○	○
	Running cost	△	○	×
	Environmental impact	△	○	×

Feel free to contact us with any other questions and comments !

Specifications

Model		Q / Q1 / QT			
Item		100	60	30	10
Maximum flow rate *1	mL/min	100	60	30	10
	G/h	1.58	0.95	0.47	0.15
Flow rate control range		Variable from 0.1 to the maximum flow rate			
Max. discharge pressure	MPa	0.3	0.6	1	2
	psi	43.5	87	145	290
Repeatability		±1% (F.S)			
Connection type		ø4 × ø6			
Ambient temperature	°C	0 to 40 °*2			
Transferable temperature	°C	0 to 40°C (no freezing)			
		0 to 60 for the Q□-100-6T depending on the conditions (no freezing) *3			
Transferable viscosity	mPa・s	200 or less		100 or less	
Environmental resistance		IEC standard: Equivalent to IP65 (dust proofing and waterproofing)			
Power supply	Rated voltage	100 to 240VAC ± 10%			
	Phase/frequency	1ø / 50 Hz or 60 Hz			
	Cord	2 m			
Weight *4 *5	kg	VE / VF: 1.6, TT: 1.7 *6, 6T: 2.5 *7			

*1 Conditions: Clean water at room temperature.

*2 -10 to 50 °C during transportation and storage.

*3 Contact TACMINA for the conditions.

*4 The weight of the stand is excluded.

*5 This is the weight of the Q (standard type).

*6 This is the weight of the Q-100. The Q-60 is 1.8 kg

*7 This is the weight of the Q-100. The Q-60/30 is 2.6 kg. The Q-10 is 2.9 kg

Liquid-end materials

Item	VE *1	VF *1	TT *1	6T
Pump head	PVC	PVC	PTFE	SUS316
Diaphragm	PTFE	PTFE	PTFE	PTFE
Sheet valve and packing	EPDM	Special fluoro rubber	Special fluoro rubber (perfluoro)	Special fluoro rubber (perfluoro)
Joint	PP	PP	PTFE	SUS316

*1 This can only be selected for the Q-100.

It cannot be selected for the Q-60, Q-30, or Q-10.

Model code

Q **□** - **100** - **VE** - **ULP** - **E** **S**

Control type	Model	Liquid-end type	Power code	Language	General
Blank: Standard	(flow rate standard)	VE VF	ULP: UL Plug	E: English	S: Standard
I: I/O signal control	100: 100mL/min	TT 6T	AUP: Australia plug	Blank: Japanese	X: Special
T: Timer control	60: 60mL/min		EUP: EU plug		
	30: 30mL/min		UKP: UK plug		
	10: 10mL/min		JPL: Lead wire		

Control functions

Function	Description	Q	QI	QT
Manual operation	Setting possible in units of 0.1 mL/min or 0.01 mL/min	●	●	●
Auto-stop operation	Operating time: 1 to 9999 seconds or 1 to 9999 minutes Discharge volume: 0.1 to 999.9 mL or 0.1 to 999.9 L	●	—	—
Pulse-input proportional operation	0.1 to 999.9 mL/pulse or 0.1 to 999.9 L/pulse	—	●	—
Analog-input proportional operation	Controllable according to set target value (SV) and max. flow rate (HV)	—	●	—
Interval operation	Flow: 0.1 mL to MAX (0.1 mL units) ON time / OFF time: 1 to 9999 seconds or 1 to 9999 minutes	—	—	●
Gradient operation	Flow: 0.1 mL to MAX (0.1 mL units) Time: 1 to 9999 seconds or 1 to 9999 minutes (Initial retention time, gradient time, final retention time)	—	—	●

Input/output signal specifications (QI and QT only)

Item	QI	QT
Analog	Input	1 port 4 to 20 mA DC Input resistance: Approx. 110 Ω
	Output	—
Digital	Input	2 ports No-voltage contact or open collector Max. number of pulses: 6000 pulse/min Min. pulse width: 5 msec (ON time) Allocatable through selection of the following: Pulse, pause/run, level, or MAX operation
	Output	2 ports 25 VDC, 10 mA or less Allocatable through selection of the following: Unit pulse, alarm, or operation signal

Product designs and specifications are subject to change without notice for product improvement

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