

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**



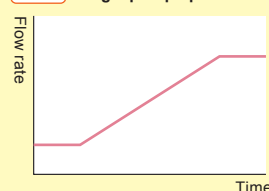
Easy operation



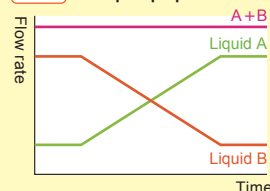
Simple disassembly and assembly

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: X : Special
T: Timer control 60: 60mL/min 30: 30mL/min UKP: UK plug Japanese
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	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	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: Start, pause/run, level, or MAX operation
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	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: Start, 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	2 ports 25 VDC, 10 mA or less Allocatable through selection of the following: Unit pulse, end signal, alarm, or operation signal

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

TACMINA CORPORATION

Head Office:
2-2-14 Awajimachi, Chuo-ku, Osaka 541-0047 Japan
Tel. +81-6-6208-3974 Fax. +81-6-6208-3978
URL <http://www.tacmina.com>
E-mail trade@tacmina.com

ET-026(4)-

2019/8/D--



JQA-A-1274
JQA-EM0637 Production Department