

Easy, Tough and Safe

This stylishly designed safe TACMINA metering pump is easy-to-use and user-friendly developed with excellent utility, functionality and durability.

Easy

Easy handling and maintenance by simple construction





Tough

Durability improved by tough body

Safe

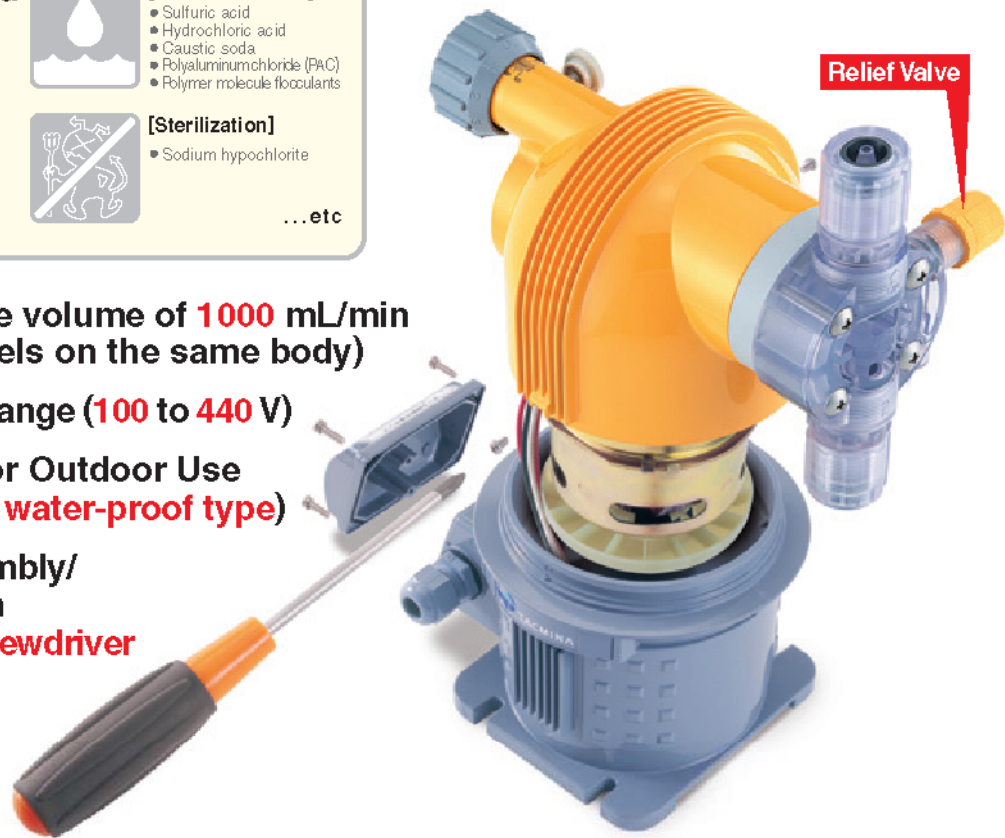
Relief Valve prevents accidents.

Application Examples

 <p>[Air-conditioning]</p> <ul style="list-style-type: none"> Algicides Corrosion/rust inhibitors Slime inhibitors Scale inhibitors 	 <p>[Water Treatment]</p> <ul style="list-style-type: none"> Sulfuric acid Hydrochloric acid Caustic soda Polyaluminumchloride (PAC) Polymer molecule flocculants
 <p>[Boiler]</p> <ul style="list-style-type: none"> Rust inhibitors Deoxidizers pH conditioners Corrosion/rust inhibitors 	 <p>[Sterilization]</p> <ul style="list-style-type: none"> Sodium hypochlorite

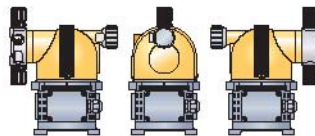
...etc

- Max. discharge volume of **1000 mL/min** (Totally **7** models on the same body)
- Wide Voltage Range (**100 to 440 V**)
- Tough Body for Outdoor Use (**IEC529-IPX3 : water-proof type**)
- Easy Disassembly/ Assembly with Just **Single Screwdriver**



3-directional Pump Head

The pump adopts a swivel head that allows you to change the direction the liquid end section faces to suit the installation site. This is handy when incorporating the pump into other equipment or installing the pump in confined locations.













Easy Flow Rate Adjustment

The CSII is equipped with an easy-to-grip stepless flow rate adjusting dial so that you can easily fine-adjust the flow rate during pump operation.
















Extensive Range of Liquid-end Materials

For Injection of General Chemicals		For Injection of Boiler Chemicals		For Injection of High-viscosity Chemicals		For Injection of Sodium Hypochlorite	
							
VTCE/VTCF Material: PVC Application: Transfer/injection of general chemicals	FTCE/FTCF/FTCT Material: PVDF Application: Transfer/injection of special chemicals (e.g. strong and mixed acids)	STCT/6TCT Material: Stainless steel (SUS304/316) Application: Transfer/injection of solutions/special chemicals	VTCE Material: PVC Application: Transfer/injection of boiler chemicals	VT6E Material: PVC Application: Transfer/injection of high-viscosity chemicals (e.g. polymer coagulants)	ATCF (CLCSII) Material: PMMA Application: Transfer/injection of chemicals that easily cause gas lock (e.g. sodium hypochlorite)		

Model Code

* When selecting the pump model, refer to the "Liquid-end Material & Corrosion-resistance Table".

CSII - **10** - **VTCE** - **HW** - **100V1** - **Y** - **S** - **S**

1 Series name	2 Model (discharge volume standard)	3 Liquid-end material	4 Joint specification	5 Motorspecification (voltage + phases)	6 Paint color	7 Powersupply connection	8 General specification				
For injection of general chemicals											
CSII	w/ Relief Valve 10R : 10 mL 30R : 30 mL 60R : 60 mL 100R : 100 mL 300R : 300 mL		VTCE VTCF	HW: PVC braided hose FW: Flange * Relief Valve is not provided in the flange specification.	Y : Yellow	S : Standard (w/out cable or terminal block) C : w/ cable (2 m) T : w/terminal block	S : Standard				
	w/out Relief Valve 10N : 10 mL 30N : 30 mL 60N : 60 mL 100N : 100 mL 300N : 300 mL 600 : 600 mL 1000 : 1000 mL										
	w/ Relief Valve 10R : 10 mL 30R : 30 mL 60R : 60 mL 100R : 100 mL 300R : 300 mL		FTCE FTCF	HW: FEP tube							
	w/out Relief Valve 10 : 10 mL 30 : 30 mL 60 : 60 mL 100 : 100 mL 300 : 300 mL										
	w/ Relief Valve 10R : 10 mL 30R : 30 mL 60R : 60 mL 100R : 100 mL 300R : 300 mL		FTCT	HW: FEP tube							
	w/out Relief Valve 10 : 10 mL 30 : 30 mL 60 : 60 mL 100 : 100 mL 300 : 300 mL 600 : 600 mL 1000 : 1000 mL										
	w/out Relief Valve 10 : 10 mL 30 : 30 mL 60 : 60 mL 100 : 100 mL 300 : 300 mL		6TCT	HW: PTFE tube							
	w/out Relief Valve 600 : 600 mL 1000 : 1000 mL		STCT	HW: PTFE tube							
	For Injection of Boiler Chemicals										
	CSII	w/ Relief Valve 10R : 10 mL 30R : 30 mL 60R : 60 mL 100R : 100 mL		VTCE				BW: PVC braided hose and Nylon tube			
		w/out Relief Valve 10N : 10 mL 30N : 30 mL 60N : 60 mL 100N : 100 mL									
	For Injection of High-viscosity Chemicals										
CSII	w/out Relief Valve 30N : 30 mL 60N : 60 mL 100N : 100 mL 300N : 300 mL 600 : 600 mL 1000 : 1000 mL		VT6E	HV: PVC braided hose							
For Injection of Sodium Hypochlorite											
CLCSII	w/ Relief Valve 10R : 10 mL 30R : 30 mL 60R : 60 mL 100R : 100 mL		ATCF	HW: PVC braided hose							
	w/out Relief Valve 10N : 10 mL 30N : 30 mL 60N : 60 mL 100N : 100 mL										

Specification

Model		For Injection of General Chemicals w/ Relief Valve									
		10R		30R		60R		100R		300R	
		VTCE/ VTCF	FTCE/ FTCF/ FTCT	VTCE/ VTCF	FTCE/ FTCF/ FTCT	VTCE/ VTCF	FTCE/ FTCF/ FTCT	VTCE/ VTCF	FTCE/ FTCF/ FTCT	VTCE/ VTCF	FTCE/ FTCF/ FTCT
Max. discharge volume* (mL/min)	50 Hz	10		30		60		100		300	
	60 Hz	12		36		72		120		360	
Max. discharge pressure* ¹	MPa	0.7* ²									
Stoke speed (strokes/min)	50 Hz	56				104				102	
	60 Hz	67				125				122	
Stroke length (mm)		0 to 2				0 to 3				0 to 6	
Connection (hose/tube: ID x O.D.)	Discharge side	4 x 9	6 x 8	4 x 9	6 x 8	6 x 11	6 x 8	6 x 11	6 x 8	6 x 11	6 x 8
	Suction side	4 x 6									
Relief Valve/Air Release		100 mPa·s									
Max. allowable viscosity		0 to 40 °C									
Allowable temperature	Ambient	VTCE/VTCF: 0 to 40 °C / FTCE/FTCF/FTCT: 0 to 60 °C (no freezing allowed)									
	Liquid										
Environmental protection		IEC529-IPX3 (water-proof)									
Weight (kg)		5.0	5.2	5.0	5.2	5.0	5.2	5.0	5.2	5.0	5.2

*1 Conditions: Clean water, room temperature *2 Though the max. discharge pressure of the pump is 1.0 MPa, the Relief Valve operates when 0.7 MPa is exceeded. In applications requiring a discharge pressure of 0.7 MPa or more, ask for a model without the Relief Valve, and install a separate relief valve for extra safety.

Model		For Injection of General Chemicals w/out Relief Valve																							
		10N		10		30N		30		60N		60		100N		100		300N		300		600		1000	
		VTCE/ VTCF	FTCE/ FTCF/ FTCT	6TCT	VTCE/ VTCF	FTCE/ FTCF/ FTCT	6TCT	VTCE/ VTCF	FTCE/ FTCF/ FTCT	6TCT	VTCE/ VTCF	FTCE/ FTCF/ FTCT	6TCT	VTCE/ VTCF	FTCE/ FTCF/ FTCT	6TCT	VTCE/ VTCF	FTCF	STCT	VTCE/ VTCF	FTCF	STCT	VTCE/ VTCF	FTCF	STCT
Max. discharge volume* (mL/min)	50 Hz	10		30		60		100		300		600		1000											
	60 Hz	12		36		72		120		360		720		1200											
Max. discharge pressure* ¹	MPa	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5	0.5	0.3										
Stoke speed (strokes/min)	50 Hz	56				104				102															
	60 Hz	67				125				122															
Stroke length (mm)		0 to 2				0 to 3				0 to 6															
Connection (hose/tube: ID x O.D.)	Discharge side	4 x 9	6 x 8	4 x 9	6 x 8	6 x 11	6 x 8	6 x 11	6 x 8	6 x 11	6 x 8	12 x 18	12 x 15	12 x 18	12 x 15										
	Suction side	4 x 6																							
Air Release		4 x 6	—	4 x 6	—	4 x 6	—	4 x 6	—	4 x 6	—	—													
Flange		JIS 10K15A	—	JIS 10K15A	—	JIS 10K15A	—	JIS 10K15A	—	JIS 10K15A	—	JIS 10K15A	—	JIS 10K15A	—	JIS 10K15	—								
Max. allowable viscosity		100 mPa·s								50 mPa·s															
Allowable temperature	Ambient	0 to 40 °C																							
	Liquid	VTCE/VTCF: 0 to 40 °C / FTCE/FTCF/FTCT/6TCT/STCT: 0 to 60 °C (no freezing allowed)																							
Environmental protection		IEC529-IPX3 (water-proof)																							
Weight (kg)	Hose	5.0	5.2	6.3	5.0	5.2	6.3	5.0	5.2	6.3	5.0	5.2	6.3	5.0	5.2	6.3	5.6	5.7	7.3	6.2	6.3	7.9			
	Flange	5.1	—	5.1	—	5.1	—	5.1	—	5.1	—	5.1	—	5.1	—	5.1	—	5.7	—	6.3	—				

* Conditions: Clean water, room temperature

Model		For Injection of Boiler Chemicals								For Injection of High-viscosity Chemicals						For Injection of Sodium Hypochlorite (CLCSII)									
		w/ Relief Valve				w/out Relief Valve				w/out Relief Valve						w/ Relief Valve				w/out Relief Valve					
		10R	30R	60R	100R	10N	30N	60N	100N	30N	60N	100N	300N	600	1000	10R	30R	60R	100R	10N	30N	60N	100N		
Max. discharge volume* (mL/min)	50 Hz	10	30	60	100	10	30	60	100	30	60	100	300	600	1000	10	30	60	100	10	30	60	100		
	60 Hz	12	36	72	120	12	36	72	120	36	72	120	360	720	1200	12	36	72	120	12	36	72	120		
Max. discharge pressure* ¹	MPa	1.5				1.0				0.5		0.3		0.7* ²				1.0							
Stoke speed (strokes/min)	50 Hz	56		104		56		104		56		104		102		56		104		56		104			
	60 Hz	67		125		67		125		67		125		122		67		125		67		125			
Stroke length (mm)		0 to 2		0 to 3		0 to 2		0 to 3		0 to 2		0 to 3		0 to 6		0 to 2		0 to 3		0 to 2		0 to 3			
Connection (hose/tube: ID x O.D.)	Discharge side	4 x 6		6 x 8		4 x 6		6 x 8		12 x 18				19 x 26				4 x 9		6 x 11		4 x 9		6 x 11	
	Suction side	4 x 9		6 x 11		4 x 9		6 x 11		4 x 6				—				4 x 6							
Relief Valve/Air Release		4 x 6								2000 mPa·s* ³				1000 mPa·s* ³				100 mPa·s							
Max. allowable viscosity		100 mPa·s								0 to 40 °C															
Allowable temperature	Ambient	0 to 40 °C																							
	Liquid	0 to 40 °C (no freezing allowed)																							
Environmental protection		IEC529-IPX3 (water-proof)																							
Weight (kg)		5.0								5.0		5.7		6.3		5.1									

*1 Conditions: Clean water, room temperature *2 Though the max. discharge pressure of the pump is 1.0 MPa, the Relief Valve operates when 0.7 MPa is exceeded. In applications requiring a discharge pressure of 0.7 MPa or more, ask for a model without the Relief Valve, and install a separate relief valve for extra safety. *3 When transferring high-viscosity liquids, the max. discharge volume may be lower than the specified volume depending on the characteristics of the liquid and operating conditions. Consult TACMNA separately when transferring high-viscosity liquids.

Liquid-end Material & Corrosion-resistance Table

Part	Model	For Injection of General Chemicals						For Injection of Boiler Chemicals	For Injection of High-viscosity Chemicals	For Injection of Sodium Hypochlorite (CLCSII)	
		VTCE	VTCE/VTCE	FTCE	FTCE/FTCE	FTCT	6TCT	STCT	VTCE	VT6E	ATCF
Pump head		PVC		PVDF			SUS316	SUS304	PVC		Acrylic (PMMA)
Diaphragm		PTFE									
Check ball		Ceramic							SUS316	Ceramic	
O-ring		EPDM	Fluoro-rubber	EPDM	Fluoro-rubber	Special fluoro-rubber Pafulo [®] *1	PTFE		EPDM		Fluoro-rubber
Valve seat		EPDM	Special fluoro-rubber	EPDM	Special fluoro-rubber	—	—	—	EPDM		Special fluoro-rubber
Joint		PVC		PVDF			PTFE	SUS316	SUS304	PVC	
Ball stopper		PVC		PVDF			PTFE	PTFE (valve stopper)		PVC	—
Ball guide		—		—			—	—	PVC		—
Compressed coil spring		—		—			—	—	SUS304	PVC	
Corrosion-resistance Table (0 to 40 °C)											
Hydrochloric acid	HCl	—	to 20 %	—	to 20 %	to 38 %	—		—		
Sulfuric acid	H ₂ SO ₄	to 60 %	to 80 %	to 60 %	to 80 %	to 98 %	98 %		—		
Acetic acid	CH ₃ COOH	—	to 20 %	—	to 20 %	to 80 %	—				
Sodium hydroxide	NaOH	○	—	○	—		○		—		
Aqueous ammonia	NH ₄ OH	○	—	○	—		○		—		
Sodium hypochlorite	NaClO	—	to 12 %	—	to 12 %		—		to 12 %		
Hydrogen peroxide	H ₂ O ₂	—	to 30 %	—	to 30 %		to 90 %		—		
Poly-aluminum chloride (PAC)		○		○			—		○		—
Aluminum sulfate	Al ₂ (SO ₄) ₃	○		○			—		—		
Polymer coagulants		—							to 2000 mPa·s ^②		—

*1 PTFE for 600/1000 *2 To 1000 mPa·s for 1000 When transferring high-viscosity liquids, the maximum discharge volume may be lower than the specified volume depending on the characteristics of the liquid and operating conditions. Consult TACMINA separately when transferring high-viscosity liquids. * The corrosion resistance of materials is greatly affected by temperature, concentration, UV rays, and other environmental conditions. For this reason, this selection table does not completely guarantee safety. * The above figures are the corrosion resistance for pump liquid-end materials. Consult TACMINA separately regarding the corrosion resistance of hoses and tubes.

Motor Specification

		1-phase											
Item	Model	50 Hz						60 Hz					
		100 V	120 V	200 V	220 V	230 V	240 V	100 V	110 V	115 V	120 V	200 V	220 V
Output		10 W						10 W					
Rated motor current		0.62 A	0.52 A	0.30 A	0.35 A	0.26 A	0.28 A	0.62 A	0.65 A	0.59 A	0.61 A	0.30 A	0.32 A
Starting current		1.22 A	1.00 A	0.59 A	0.67 A	0.51 A	0.54 A	1.12 A	1.26 A	0.92 A	0.97 A	0.56 A	0.64 A
Number of poles		4						4					
		3-phase											
Item	Model	50 Hz					60 Hz						
		200 V	346 V	380 V	400 V	415 V	200 V	220 V	230 V	380 V	400 V	440 V	
Output		10 W							10 W				
Rated motor current		0.23 A	0.14 A	0.15 A	0.16 A	0.17 A	0.19 A	0.21 A	0.22 A	0.13 A	0.13 A	0.15 A	
Starting current		0.56 A	0.33 A	0.36 A	0.38 A	0.40 A	0.53 A	0.58 A	0.61 A	0.34 A	0.36 A	0.40 A	
Number of poles		4							4				

Accessory

Item	Model	For Injection of General Chemicals				For Injection of Boiler Chemicals	For Injection of High-viscosity Chemicals	For Injection of Sodium Hypochlorite (CLCSII)			
		VTCE/VTCE	FTCE/FTCE	FTCT	6TCT/STCT	VTCE	VT6E	ATCF			
Hose/Tube*		PVC braided hose (3 m) * Not available on flange model	FEP tube (3 m)	FEP tube (3 m) * PTFE on 600/1000	PTFE tube (3 m)	PVC braided hose (1 m) Nylon tube (2 m)	PVC braided hose (3 m)	PVC braided hose (3 m)			
Soft PVC hose for Relief Valve/Air Release		1 m (installed only on w/ Relief Valve) * Not available on 600/1000			—	1 m (installed only on w/ Relief Valve)	1 m * Not available on 600/1000	1 m (installed only on w/ Relief Valve)			
Anti-siphonal check valve		1 set (R1/2)			1 set (R1/2 or R3/8)	1 set (R1/2)	—	1 set (R1/2)			
Foot valve		1 set			—	1 set	—	1 set			
Ceramic weight		1 set			—	—	—	—			
Hose pump for Air Release		—			1 piece * Not available on 600/1000	—	—	—			
INSULOK for Relief Valve/Air Release hose		1 m (w/ Relief Valve only)			—	1 m (w/ Relief Valve only)	—	1 m (w/ Relief Valve only)			
Pump installation nut/bolt		4 sets (M5 x 30: w/ spring washer, plain washer, flange nut)									
Operation Manual		1 set									
Performance curve sticker		1 sheet									

* For details on hose/tube aperture, see 'Connection' for the respective model in 'Specification' table.