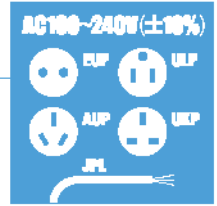


# PZ

## Manual Setting

### Wide Voltage Range Power Supply

There is no need to worry about site power supply voltage or voltage fluctuations since it can be used with AC100 to 240 V ( $\pm 10\%$ ) power supplies. You can also keep it in stock safely since it can be used for a variety of sites and applications.



### Adjusting Dial for Easy Operation

Manual adjustment from 15 to 300 pulses per minute



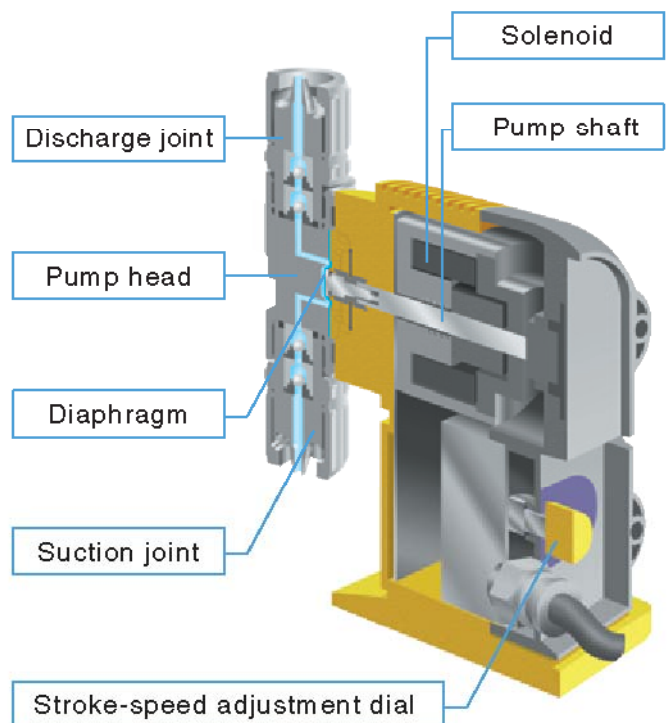
### Water- & Dust-proof Specifications

IEC standard: IP65 or equivalent  
● Avoid condensation and immersion in water.



### Simple Structure

Minimum number of parts allows easy maintenance.



### No-Input



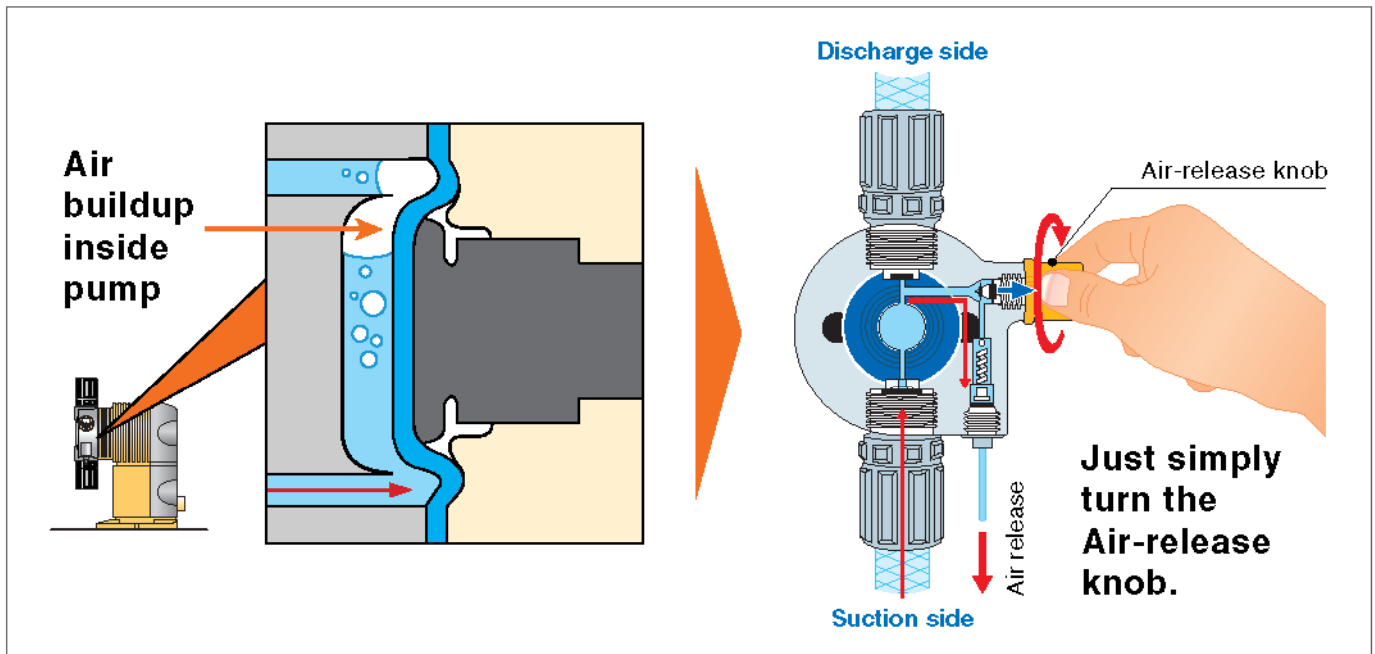
S-size only  
(30R/60R/100R)



S-size only  
(30/60/100)

## Simple, Safe, Air Release

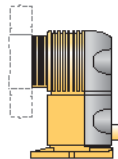








"Gas-lock" is the phenomenon that air enters the pump head and prevents chemicals from being discharged. The PZ Series is equipped with Air-release valve as standard. Even if air gets into the pump head, you can simply and safely release the air just by lightly turning the Air-release knob.



\* Illustration shows the model with Relief Valve.

## Extensive Range of Liquid-end Materials

\* For details, refer to the 'Liquid-end Material' table on the following page.

Pump Head	Pump Body	Anti-siphon Check Valve	Foot Valve
<p><b>VTCE/VTCF</b> Material: PVC Application example: Transfer/injection of general chemicals</p> <p><i>w/ Relief Valve *</i></p>	 <b>S-size only</b> (30R/60R/100R/30/60/100)	 <b>VTCE/VTCF</b>	 <b>VTCE/VTCF</b>
<p><b>FTCE/FTCF/FTCT</b> Material: PVDF Application example: Transfer/injection of special chemicals (e.g. strong and mixed acids)</p> <p><i>w/ Relief Valve *</i></p>		 <b>FTCE/FTCF/FTCT</b>	 <b>FTCE/FTCF/FTCT</b>
<p><b>VTCE</b> (for injection of boiler chemicals) Material: PVC Application example: Transfer/injection of boiler chemicals</p> <p><i>w/ Relief Valve *</i></p>		 <b>VTCE</b> (for injection of boiler chemicals)	 <b>VTCE</b> (for injection of boiler chemicals)
<p><b>6TCT</b> Material: Stainless steel (SUS316) Application example: Transfer/injection of solutions/special chemicals</p>		 <b>6TCT</b>	 <b>6TCT</b>

\* For a detailed explanation of the Relief Valve, see 'Relief Valve Function' on page 25.

## Specification: PZ w/ Relief Valve

Model		30R					60R					100R									
		VTCE	VTCF	FTCE	FTCF	FTCT	VTCE (for injection of boiler chemicals)	VTCE	VTCF	FTCE	FTCF	FTCT	VTCE	VTCF	FTCE	FTCF	FTCT				
Max. discharge volume <sup>1)</sup>	mL/min	30					28					60					100				
	L/h	1.8					1.68					3.6					6.0				
Max. discharge pressure <sup>1)</sup>	MPa	0.7* <sup>2</sup>					1.5					0.7* <sup>3</sup>					0.4				
	bar	7.0* <sup>2</sup>					15.0					7.0* <sup>3</sup>					4.0				
Stroke speed	15 to 300 strokes/min (dial setting)																				
Stroke length	Fixed at 1.0 mm																				
Connection (hose/tube: ID x OD)	Discharge side	4 x 9 (PVC braided hose)	6 x 8 (PE)	6 x 8 (FEP)	6 x 8 (FEP)	4 x 6 (nylon tube)	6 x 11 (PVC braided hose)	6 x 8 (PE)	6 x 8 (FEP)	6 x 8 (FEP)	6 x 8 (FEP)	6 x 11 (PVC braided hose)	6 x 8 (PE)	6 x 8 (PE)	6 x 8 (PE)	6 x 8 (PE)	6 x 8 (FEP)				
	Suction side	6 x 8 (PE)	1/4" x 3/8" (PE)	1/4" x 3/8" (FEP)	1/4" x 3/8" (FEP)	4 x 9 (PVC braided hose)	6 x 8 (PE)	1/4" x 3/8" (PE)	1/4" x 3/8" (PE)	1/4" x 3/8" (FEP)	1/4" x 3/8" (FEP)	6 x 8 (PE)	1/4" x 3/8" (PE)	1/4" x 3/8" (PE)	1/4" x 3/8" (PE)	1/4" x 3/8" (PE)	1/4" x 3/8" (FEP)				
	Relief /air-release	4 x 6 (soft PVC hose)																			
Max. allowable viscosity	50 mPa·s																				
Allowable temperature	Ambient temperature: 0 to 40°C/Transferring liquid: 0 to 40°C (no freezing allowed)																				
Ambient humidity	35 to 85% RH																				
Environmental protection	IEC standard: IP65 or equivalent (water- and dust-proof)																				
Altitude of installation location	Less than 1,000 m																				
Noise level	Less than 85 dB																				
Operation mode	Manual	Setting stroke speed (15 to 300 strokes/min) w/ manual dial																			
Power supply	Rated voltage	AC 100 to 240 V (±10%)																			
	No. of phases/Frequency	1-phase/50 or 60 Hz																			
	Maximum current	2.0 A																			
	Power consumption	Max.: 200 VA/Ave.: 15 W																			
Weight	1.7 kg																				

\*1 Conditions: Clean water, room temperature \*2 Though the max. discharge pressure of the 30R models is 10 MPa (100 bar), the Relief Valve operates when 0.7 MPa (7.0 bar) is exceeded. In applications requiring a discharge pressure of 0.7 MPa (7.0 bar) or more, ask for a model without the Relief Valve, and install a separate relief valve for extra safety.  
\*3 Though the max. discharge pressure of the 60R models is 0.8 MPa (8.0 bar), the Relief Valve operates when 0.7 MPa (7.0 bar) is exceeded. In applications requiring a discharge pressure of 0.7 MPa (7.0 bar) or more, ask for a model without the Relief Valve, and install a separate relief valve for extra safety.

## Model Code \* Not all model combinations are possible. When selecting the pump model, first check "Specification" and "Liquid-end Material".

**PZ - 30R - VTCE - 4x9PVC - W - S - JPL**

1                      2                      3                      4                      5                      6

1 Model (discharge volume standard) 2 Liquid-end material 3 Hose standard (size/material) 4 Joint specification 5 Applicable standard 6 Power plug

[for injection of general chemicals]		30R : 30 mL/min (w/ Relief Valve)	VTCE	4 x 9 PVC	W : Standard	S : Standard	EUP : Euro plug
		60R : 60 mL/min (w/ Relief Valve)	VTCF	6 x 11 PVC		CE : CE marking-compatible	ULP : UL plug
		100R : 100 mL/min (w/ Relief Valve)	FTCE	6 x 8 PE/FEP/PTFE			AUP : Australia plug
		30 : 30 mL/min	FTCF	1/4" x 3/8" PE/FEP			UKP : UK plug
		60 : 60 mL/min	FTCT				JPL : Japan lead wire
		100 : 100 mL/min	6TCT				
[for injection of boiler chemicals]		30R : 30 mL/min (w/ Relief Valve)	VTCE	4 x 6 PA	BW : Boiler		
		30 : 30 mL/min					

## Accessory

\* Power cable (2 m) is attached.

Item	Model		30R/60R/100R													
	w/ Relief Valve		30/60/100													
	VTCE	VTCF	FTCE	FTCF	FTCT	VTCE (for injection of boiler chemicals)	VTCE	VTCF	FTCE	FTCF	FTCT	6TCT	VTCE (for injection of boiler chemicals)			
Hose/Tube <sup>1)</sup>	3 m					Discharge side : 2 m Suction side : 1 m	3 m					Discharge side : 2 m Suction side : 1 m				
Relief /air-release hose <sup>1)</sup>	1 m (installed)						1 m					—	1 m			
Anti-siphon check valve	1 set (R1/2)		1 set (R1/2 or R3/8)		1 set (R1/2)		1 set (R1/2)		1 set (R1/2 or R3/8)		1 set (R1/2)					
Foot valve	1 set						1 set									
Ceramic weight	1 set* <sup>2</sup>		1 set		—		1 set* <sup>2</sup>		1 set		—					
Hose pump for air-release	—						—					1 set	—			
INSULOK for Relief /air-release hose	1 piece						—									
Pump mounting nuts/bolts	2 sets (M5 x 30)															
Operation manual	1 set															

\*1 For details on the hose/tube aperture, see "Connection" for the respective model in "Specification" table above. \*2 Only when PE tube is selected

## Specification: PZ

Model		30						60						100							
		VTCE	VTCF	FTCE	FTCF	FTCT	6TCT	VTCE (for injection of boiler chemicals)	VTCF	FTCE	FTCF	FTCT	6TCT	VTCE	VTCF	FTCE	FTCF	FTCT	6TCT		
Max. discharge volume*	mL/min	30				27	28	60				55	100				95				
	L/h	1.8				1.6	1.68	3.6				3.3	6.0				5.7				
Max. discharge pressure*	MPa	1.0				0.5	1.5	0.8				0.5	0.4								
	bar	10.0				5.0	15.0	8.0				5.0	4.0								
Stroke speed	15 to 300 strokes/min (dial setting)																				
Stroke length	Fixed at 1.0 mm																				
Connection (hose/tube: I.D. x O.D.)	Discharge side	4 x 9 (PVC braided hose) 6 x 8 (PE)	6 x 8 (PE)	6 x 8 (FEP)	6 x 8 (PTFE)	6 x 8 (nylon tube)	4 x 6 (nylon tube)	6 x 11 (PVC braided hose) 6 x 8 (PE)	6 x 8 (PE)	6 x 8 (FEP)	6 x 8 (PTFE)	6 x 8	6 x 11 (PVC braided hose) 6 x 8 (PE)	6 x 8 (PE)	6 x 8 (FEP)	6 x 8 (PTFE)	6 x 8	6 x 11 (PVC braided hose) 6 x 8 (PE)	6 x 8 (PE)	6 x 8 (FEP)	6 x 8 (PTFE)
	Suction side	1/4" x 3/8" (PE)	1/4" x 3/8" (PE)	1/4" x 3/8" (FEP)	1/4" x 3/8" (PTFE)	4 x 9 (PVC braided hose)	4 x 9 (PVC braided hose)	1.4" x 3/8" (PE)	1.4" x 3/8" (PE)	1.4" x 3/8" (FEP)	1.4" x 3/8" (PTFE)	1.4" x 3/8" (PE)	1.4" x 3/8" (PE)	1.4" x 3/8" (PE)	1.4" x 3/8" (PE)	1.4" x 3/8" (PE)	1.4" x 3/8" (PE)	1.4" x 3/8" (PE)	1.4" x 3/8" (PE)	1.4" x 3/8" (PE)	1.4" x 3/8" (PE)
	Air-release	4 x 6 (soft PVC hose)																			
Max. allowable viscosity	50 mPa·s																				
Allowable temperature	Ambient temperature: 0 to 40°C/Transferring liquid: 0 to 40°C (no freezing allowed)																				
Ambient humidity	35 to 85% RH																				
Environmental protection	IEC standard: IP65 or equivalent (water- and dust-proof)																				
Altitude of installation location	Less than 1,000 m																				
Noise level	Less than 85 dB																				
Operation mode	Manual	Setting stroke speed (15 to 300 strokes/min) w/ manual dial																			
Power supply	Rated voltage	AC 100 to 240 V (±10%)																			
	No. of phases/Frequency	1-phase/50 or 60 Hz																			
	Maximum current	2.0 A																			
	Power consumption	Max.: 200 VA/Ave.: 15 W																			
Weight	1.7 kg																				

\* Conditions: Clean water, room temperature

## Liquid-end Material

\* Also refer to the "Corrosion-resistance Table" on page 26.

Part	Model	VTCE	VTCF	FTCE	FTCF	FTCT	VTCE (for injection of boiler chemicals)	6TCT	
Pump head		PVC			PVDF			PVC	SUS316
Diaphragm		PVC			PTFE				
Check ball		Ceramic							
O-ring		EPDM	Fluoro-rubber	EPDM	Fluoro-rubber	Special fluoro-rubber Patulo	EPDM	PTFE	
Valve seat		EPDM	Special fluoro-rubber	EPDM	Special fluoro-rubber	PTFE	EPDM	—	
Joint		PVC			PVDF			PVC	SUS316
Ball stopper		PVC			PVDF	PTFE (valve stopper)		PVC	PTFE (valve stopper)

## External Dimension (mm)

w/ Relief Valve								30/60/100								30/60/100(6TCT)							
30R/60R/100R																							
Model	(A)	B	C	D	E	(F)	G	Model	(A)	B	C	D	E	(F)	G	Model	(A)	B	C	D	E	(F)	G
VTCE/VTCF	206	152	76	76	16.5	150.5	70	VTCE/VTCF	206	152	76	76	16.5	150.5	70	VTCE/VTCF	206	152	76	76	16.5	150.5	70
FTCE/FTCF/FTCT	227.5	195	97.5	97.5	17.5	142	69.5	FTCE/FTCF/FTCT	227.5	195	97.5	97.5	17.5	142	69.5	FTCE/FTCF/FTCT	227.5	195	97.5	97.5	17.5	142	69.5
VTCE(for injection of boiler chemicals)	193	139	76	63	16.5	150.5	70	VTCE(for injection of boiler chemicals)	193	139	76	63	16.5	150.5	70	VTCE(for injection of boiler chemicals)	193	139	76	63	16.5	150.5	70

\* The shape and dimensions differ slightly depending on the liquid-end material and connection type.  
 ● The mounting pitch allows mounting from 87 to 110 mm.