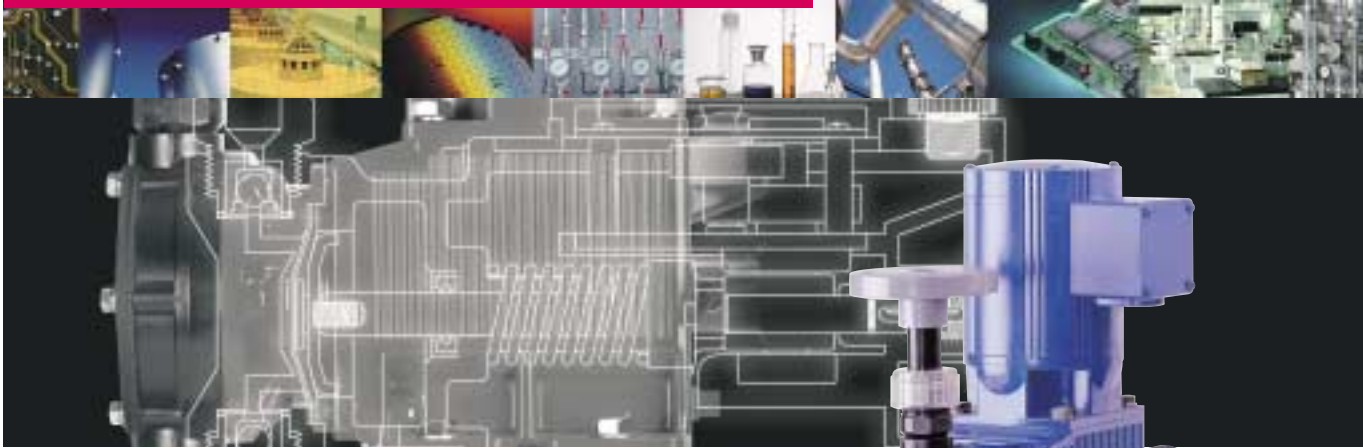


Metering pumps SK series



Answer to wide-range application from inclusion into a system to plant facilities.



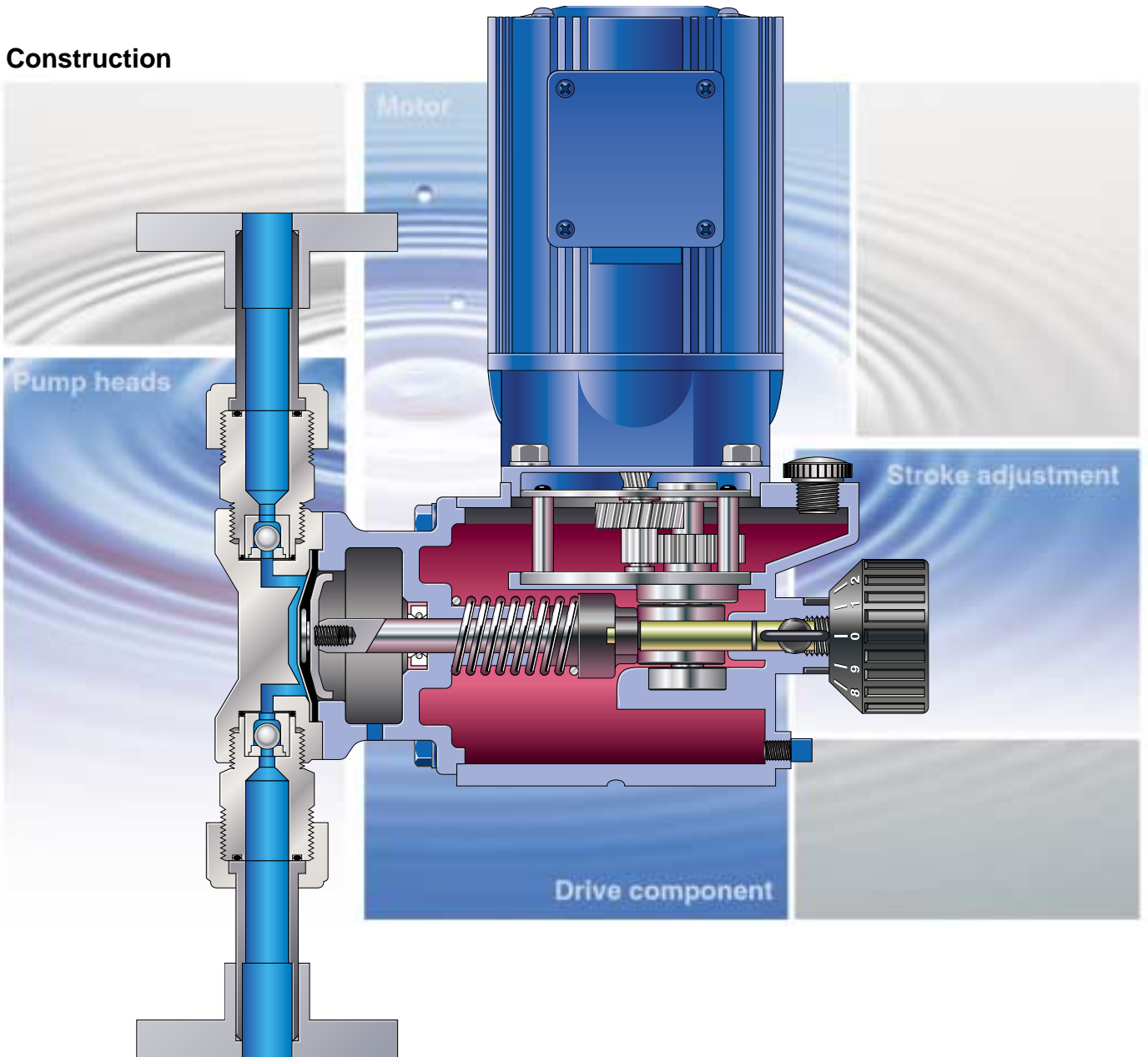
The SK Series are small-sized diaphragm metering pumps suitable for most chemical feeding purposes including water treatment of up to 1 l/min. capacity.

Designed to be light-weight and compact in size, the pumps in SK series are not only most suitable for inclusion into a system, but are also very durable and can withstand severe operating environments such as plant facilities as they have a fully closed structure for outdoor applications.



Note: Base shown on photos is optional accessory.

Construction



Pump heads

Three types of pump head materials are available, PVC for acid and alkaline, PVDF for strong acid, and stainless steel for solvent. For the connection of the most widely used PVC type pump head, a flange and a tube are available. Another type of applicable tube besides PVC braided tube, is polyethylene.

Motor

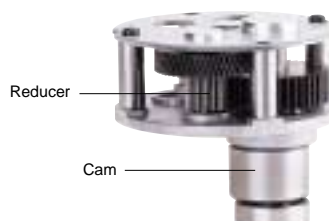
Available in two types: SK-S type for the original motor and SK-E type for IEC motor. SK-S type motors come in two models: a 65W 3 phase outdoor use and single phase indoor use. An IEC motor can be set up. (SK-E type driving unit)



Drive component

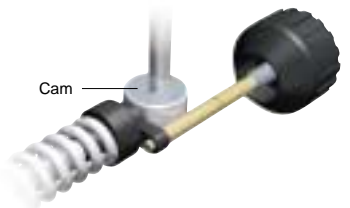
Driving unit components including the reducer, cam, etc., are built in a small but rigid sealed housing made of diecast. Oil bath lubrication is employed inside the driving unit.

Reducer : Noise is extremely low with the use of high-precision helical gears, and durability is extremely high.



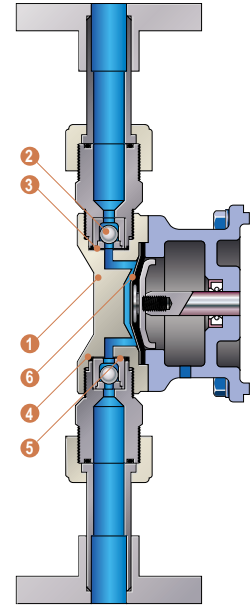
Stroke adjustment

With the micrometer style stroke adjustment system employed, the stroke rate can be set from 0 to 100% in increments of 2.5%.



Wet-end materials

	PVC type			PVDF type	SUS type
	VC	VH	VS	TC	S6
	For acid	For alkaline	For viscous liquid/slurry	For strong acid	For solvent
1 Pump head	PVC	PVC	PVC	PVDF	SUS316
2 Valve	Ceramic	HC	HC	Ceramic	HC
3 Valve seat	FKM	EPDM	SUS316	FKM	SUS316
4 O ring	FKM	EPDM	EPDM	FKM	-
5 Valve gasket	PTFE				
6 Diaphragm	PTFE+EPDM (EPDM is not to be subject to liquid contact)				
Liquid examples	Hydrochloric acid, sulfuric acid, sodium hypochlorite	Caustic soda, coagulant (of low viscosity)	Calcium hydroxide, high-molecular coagulant	Concentrated sulfuric acid, hydrofluoric acid	Organic solvent
Material symbols					
PVC	: Vinyl chloride resin		HC	: Hastelloy C276	
PVDF	: Vinylidene fluoride resin		FKM	: Fluoro rubber	
SUS	: Stainless steel		EPDM	: Ethylene propylene rubber	
				PTFE	: Polytetrafluoroethylene



Pump identification

1 2 3 4 5 6 7
SK-S32VC-33S

- | | | | |
|--|--|--|--|
| <p>1. Series name
Metering pump SK series</p> <p>2. Driving unit type
S: For original motor
E: For IEC motor</p> | <p>3. Pump head size
1: Model 1 2: Model 2
3: Model 3 4: Model 4</p> <p>4. Reduction rate
1: 1/27 2: 1/15</p> | <p>5. Material symbol
VC, VH, VS, TC, S6
(See the material table.)</p> <p>6. Motor
32, 33, 34, 11, 12
(See the motor spec. table.)</p> | <p>7. Special arrangement symbol
S: Special version</p> |
|--|--|--|--|

Specifications

Pump model	Discharge L/min		Max. discharge pressure MPa		Stroke speed spm		Flange	Connection		Motor output W	Mass kg	
	50Hz	60Hz	PVC / PVDF	SUS	50Hz	60Hz		Tube			PVC / PVDF	SUS
								PVC	PE			
SK-11	0.022	0.026	1.0	1.5	53	64	15A JIS10K JIS16K in the case of SUS	ø4 x ø9	ø4 x ø6 or ø6 x ø8	65	8	10
SK-21	0.055	0.066	1.0	1.5	53	64					9	
SK-22	0.10	0.12	1.0	1.5	96	116		ø8 x ø13.5 or ø8 x ø14	ø9 x ø12		9	11
SK-31	0.26	0.31	0.4	1.0	53	64					ø12 x ø18 or ø13 x ø20	ø12 x ø16
SK-32	0.46	0.55	0.4	0.7	96	116						
SK-41	0.61	0.73	0.5	0.5	53	64						
SK-42	1.10	1.32	0.3	0.3	96	116						






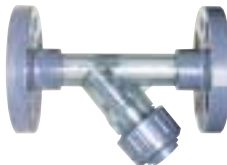


- The discharge amount is based on pump operation at the max. stroke speed using clean water at room temperature.
- The max. discharge pressure of the SK-41 tube style connection is 0.3 MPa.
- Performance specifications:
Quantitative accuracy : within ±2% (at FS), **Self-priming** : within 2 m (at FS),
Liquid temperature : 0 - 50°C for PVC/PVDF type, 0 - 80°C for SUS type, **Ambient temperature** : 0 - 40°C
- The discharge amount of VS type may be approx. 15% less than the above shown.
- For viscous liquid or slurry liquid, please contact IWAKI.

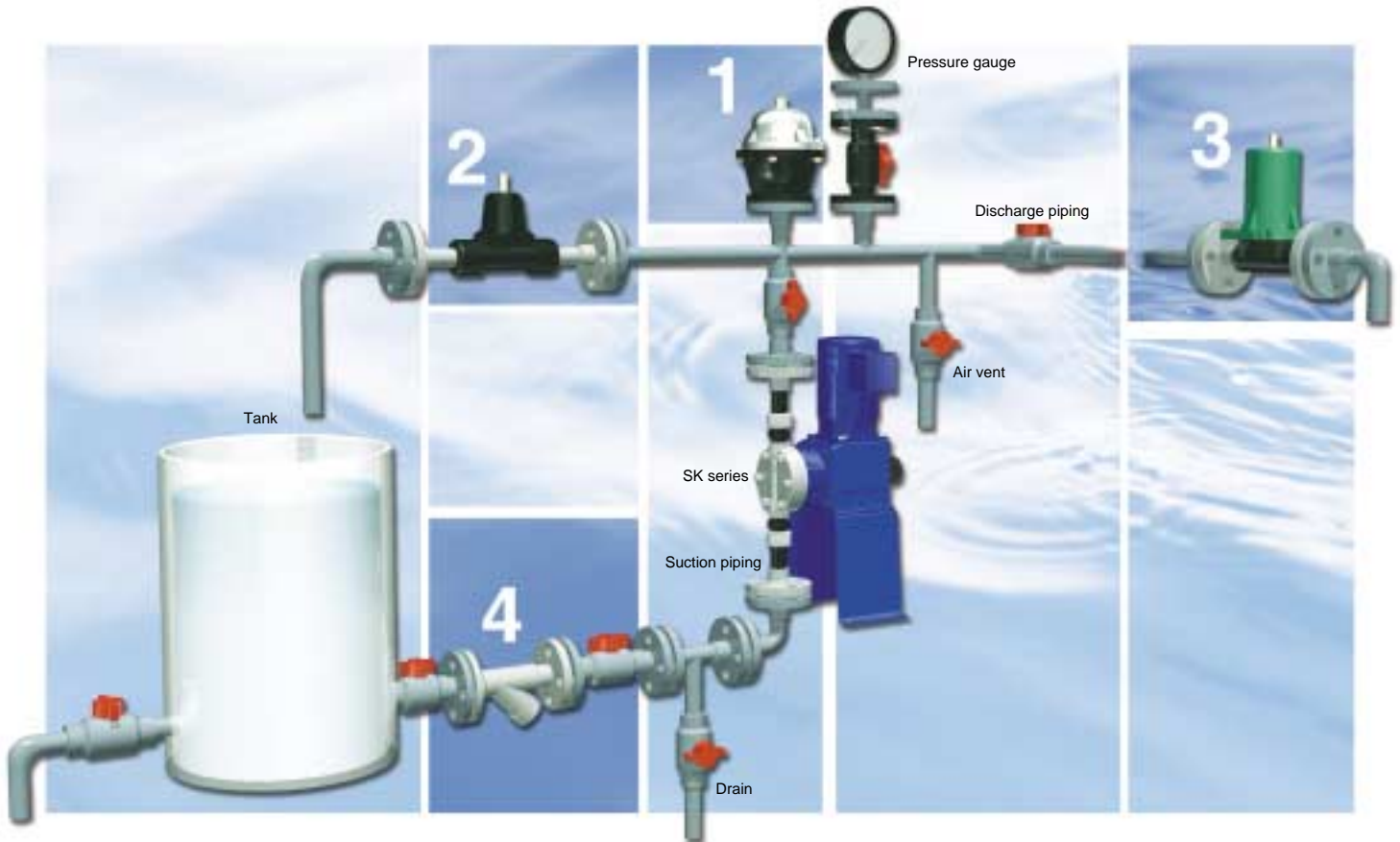
Specifications of original motor for SK-S type

Code	Motor type	Output, phase, polarity, and insulation class	Voltage and frequency
32	Totally enclosed outdoor type	65W, 3 phase, 4 pole, B class	200 / 200 / 220V 50 / 60 / 60HZ
33			380 / 380 / 415V 50 / 60 / 50HZ
34			400 / 400 / 440V 50 / 60 / 60HZ
11	Single-phase indoor type	65W, 1 phase, 4 pole, B class	100 / 100 / 110V 50 / 60 / 60HZ
12			220 / 220 / 230V 50 / 60 / 50HZ

Note : SK-S type is a pump with a original flanged motor.

Optional accessories / example of piping

<p>1. Air chamber Model A</p>  <p>PVC type</p>  <p>SUS type</p>	<p>2. Relief valve Model RV</p>  <p>PVC flange type</p>  <p>PVC tube type</p>	<p>3. Back pressure valve Model BV</p>  <p>PVC flange type</p> <p>4. Y-shaped strainer</p>  <p>PVC type</p>	<p>Tube flange</p>  <p>Flow checker Model FC</p> 
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Specifications of optional accessories

Air chamber

Material	Model	Capacity L/min	Max. pressure MPa	Connection	
PVC	A-1V□	1.0	0.5	15A - 25A (Common)	Flange
SUS	A-05S6-15	0.5	0.9	JIS10K15A	
	A-1S6-15	1.5	0.9		

Back pressure valve

Material	Model	Max. capacity L/min	Setting pressure MPa	Connection			
PVC	BV-1P□L-4H	1.0	0.05 - 0.3	ø4 x ø9	Tube (PVC)		
	BV-1P□-4H	1.0	0.3 - 0.8	ø4 x ø9			
	BV-1P□L-8H	1.0	0.05 - 0.3	ø8 x ø13.5			
	BV-1P□-8H	1.0	0.3 - 0.8	ø8 x ø13.5			
	PVC	BV-3P□-12H	3.0	0.1 - 0.8	ø12 x ø18	Tube (PE)	
		BV-1P□L-4P	1.0	0.05 - 0.3	ø4 x ø6		
		BV-1P□-4P	1.0	0.3 - 0.8	ø4 x ø6		
		BV-1P□L-9P	1.0	0.05 - 0.3	ø9 x ø12		
		SUS	BV-1P□-9P	1.0	0.3 - 0.8	ø9 x ø12	Flange
			BV-3P□-12P	3.0	0.1 - 0.8	ø12 x ø16	
			BV-1P□L-15	1.0	0.05 - 0.3	JIS10K15A	
			BV-1P□-15	1.0	0.3 - 0.8	JIS10K15A	
BV-3P-15	3.0		0.1 - 0.8	JIS10K15A			
BV-2S6-15	2.0		0.05 - 0.8	JIS10K15A			
PVDF	BV-1TV-15	1.0	0.05 - 0.8	JIS10K15A	Flange		
	BV-7T□-15	7.0	0.05 - 0.8	JIS10K15A			

Relief valve

Material	Model	Max. capacity L/min	Setting pressure MPa	Connection		
PVC	RV-1P□-4H	1.0	0.3 - 0.8	ø4 x ø9	Tube (PVC)	
	RV-1P□-8H	1.0	0.3 - 0.8	ø8 x ø13.5		
	RV-3P□-12H	3.0	0.1 - 0.3	ø12 x ø18		
	PVC	RV-1P□-4P	1.0	0.3 - 0.8	ø4 x ø6	Tube (PE)
		RV-1P□-9P	1.0	0.3 - 0.8	ø9 x ø12	
		RV-3P□-12P	3.0	0.1 - 0.3	ø12 x ø16	Flange
		RV-1P□-15	1.0	0.3 - 0.8	JIS10K15A	
SUS	RV-3P-15	3.0	0.1 - 0.3	JIS10K15A	Flange	
	RV-2S6-15	2.0	0.3 - 0.8	JIS10K15A		
PVDF	RV-2S6B-15	2.0	0.8 - 1.5	JIS16K15A	Flange	
	RV-1TV-15	1.0	0.3 - 0.8	JIS10K15A		
	RV-7T□-15	7.5	0.3 - 0.8	JIS10K15A		

Tube flange

Material	Model	Connection	
PVC	15F x 4 (4 x 9)	ø4 x ø9	Tube (PVC)
	15HF □ x 8	ø8 x ø13.5	
	15HF x 12H	ø12 x ø18	
	15F x 4 (4 x 6)	ø4 x ø6	Tube (PE)
	15HF □ x 9P	ø9 x ø12	
	15HF x 12P	ø12 x ø16	

Note

- : Symbol for material of O-Ring ("V" for FKM or "E" for EPDM)
- Material of diaphragm of RV/BV is PTFE except RV/BV-1P type used synthetic rubber.
- Rigid PVC chamber may be deteriorated by ultraviolet ray or the applied chemical liquid over a long period of time. The chamber should be replaced every three years to guarantee safety.
- Symbol of tube size
- 8H : PVC tube ø8 x ø13.5 12H : PVC tube ø12 x ø18 13E : PVC tube ø13 x ø20 9P : PE tube ø9 x ø12 12P : PE tube ø12 x ø16

Standard accessories



Back pressure valve with check valve



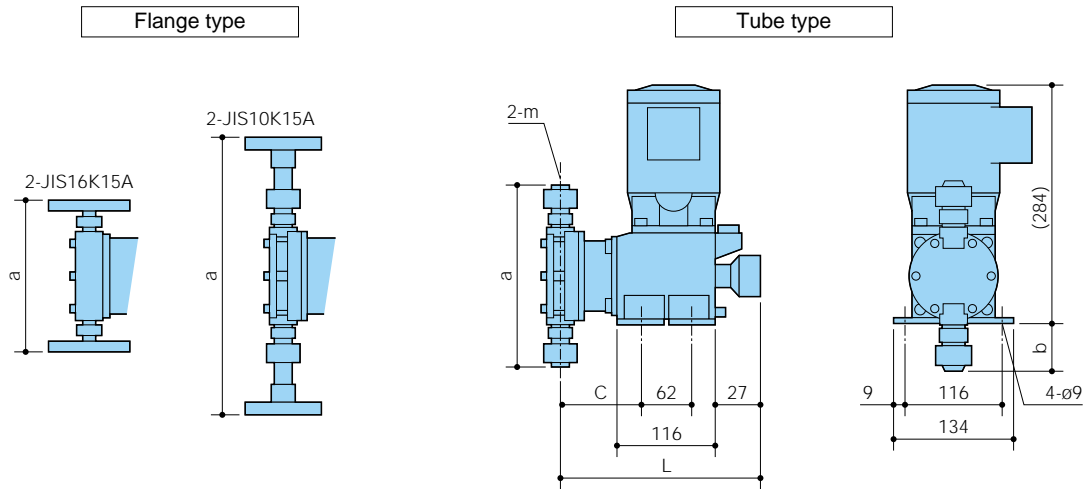
Strainer

- Pump installation bolt (SUS) X 4
- PVC tube of 4 m length, provided with PVC tube type only
- Standard accessories is not available for SK-E except installation bolts.

Models	SK-11, 21, 22	SK-31, 32	SK-41, 42	Applicable pump
Pump installation bolt (SUS)		M8 x 25L x 4		All models
Back pressure valve with check valve	BVC-1P□L-4H	BVC-1P□L-8H	BVC-1P□L-12H	PVC tube type
Strainer	S-V4H	S-V8H	S-V12H	
PVC tube	ø4 x ø9 4m	ø8 x ø13.5 4m	ø12 x ø18 4m	Polyethylene tube type
Back pressure valve with check valve	BVC-1P□L-4P	BVC-1P□L-9P	BVC-1P□L-12P	
Strainer	S-V4P	S-V9P	S-V12P	

- : Symbol for material of O-Ring ("V" for FKM or "E" for EPDM)

Dimensions in mm



Type	Flange type											Tube type							
	PVC,PVDF						SUS					PVC							
	a	b	c	d	e	L	a	b	c	d	e	L	a	b	c	d	e	L	m
SK-1	256	73	92	102	66	237	186	38	89	137	63	234	146	18	92	157	66	237	*
SK-2	273	82	93	94	67	239	151	21	90	155	64	236	164	27	93	148	67	239	
SK-3	309	99	96	76	70	244	168	29	96	146	70	244	199	44	96	131	70	244	
SK-4	335	112	96	63	70	244	184	37	96	138	70	244	225	57	96	118	70	244	

* Refer to the specifications table for "m" dimension (connection)

Note : For the dimension of stainless steel type, please contact IWAKI.