

Electromagnetic metering pumps **ES series**



Precise chemical injection at low cost

The ES Series electromagnetic metering pump offers precise chemical injection at an economical cost.

Manual or on/off control for simple addition applications. Sophisticated engineering to provide effective, reliable performance.

High speed operation

Up to 360 strokes per minute results in high resolution chemical feed, elimination of slug-feed effects.

Compact size

Ideal for OEM specifications, ES pumps are small, quiet, and lightweight.

Double ball check valves

The ball, seat and guide assembly ensures a tight seal to prevent loss of prime.

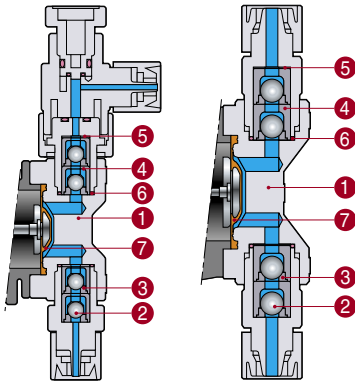
Long lasting diaphragm

PTFE laminate over EPDM is molded onto a solid core. A retainer plate is provided to minimize flow rate changes as pressure varies.



B11/16/21, C16/21

B31, C31/36



Wet-end part materials

Material symbol	VC	VH	PC	PH	TC
1 Pump head	PVC		GFRPP		PVDF
2 Valve	Alumina ceramic	Hastelloy C276	Alumina ceramic	Hastelloy C276	Alumina ceramic
3 Valve seat	FKM	EPDM	FKM	EPDM	FKM
4 Valve guide	PVC		GFRPP		PVDF
5 Gasket	PTFE				
6 O-ring	FKM	EPDM	FKM	EPDM	FKM
7 Diaphragm	PTFE coated EPDM				

Pump identification

ES - B 16 VC - 3 - □□
 ① ② ③ ④ ⑤ ⑥

- ① Series name
- ② Drive unit symbol
 B : 16W
 C : 22W
- ③ Diaphragm effective diameter
 11 : 10mm 16 : 15mm
 21 : 20mm 31 : 30mm
 36 : 35mm
- ④ Wet-end part material symbol
 VC, VH, PC, PH, TC
- ⑤ Power-supply voltage symbol
 3 : AC230V, 50Hz
- ⑥ Special version code

Specifications

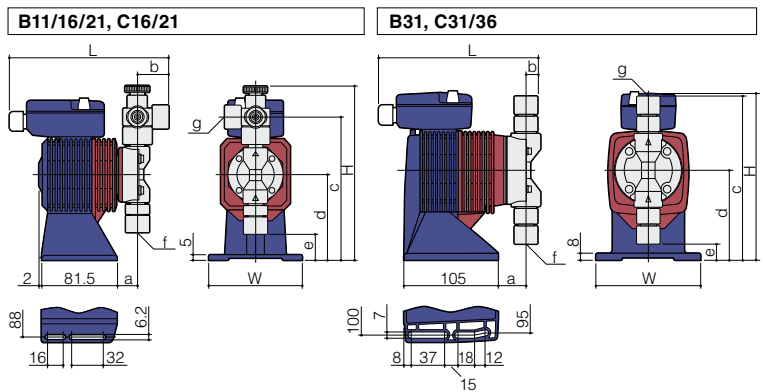
Model		B11	B16	B21	B31	C16	C21	C31	C36
Max.capacity	L/hr	2.28	3.9	5.7	12	4.8	7.8	16.2	24
	mL/min	38	65	95	200	80	130	270	400
	mL/shot	0.11	0.18	0.26	0.56	0.23	0.37	0.76	1.13
Max. discharge pressure	MPa	1.0	0.7	0.4	0.2	1.0	0.7	0.35	0.2
Stroke rate		0 - 360 spm							
Power supply		AC230V, single phase, 50Hz							
Insulation type, etc.		B type insulation and built-in thermal protector, with a 2.0m power cable, with plug							

- Note:
- The max. discharge value in the table above represents the performance measured with clean water at max. discharge pressure. Actual discharge may increase if operation is conducted at a lower pressure.
 - Set the discharge pressure at 0.12 MPa or higher to prevent over-feeding trouble. (0.05 MPa or higher in the case of B31, C36.) If the pressure is to be lower than these levels, make sure to use a check valve or a back pressure valve, which is supplied as an optional item.
 - Range of liquid temperature : VC/VH : 0-40 °C, PC/PH/TC : 0-60 °C.
 - Range of the ambient temperature : 0-40°C.
 - Max. viscosity : Up to 50mPa·s. If the viscosity exceeds 50mPa·s, please contact us.

Dimensions in mm

Model	W	H	L	a	b	c	d	e	f & g Tubing
ES-B11	100	(184)	(178)	(25)	(37)	(150)	90	(26)	4 X 6
ES-B16		(172)	(159)	(27)	16	-		(8)	9 X 12 ^{Note}
ES-B21		(194)	(196.5)	(27)	(37)	(160)		(36)	4 X 6
ES-B31	116	(177.5)	(29)	(16)	(182)	100	(18)	9 X 12	
ES-C16		(186.5)	(177)	(28.5)	(181.5)		(18.5)	9 X 12	
ES-C21		(186.5)	(177)	(28.5)	(181.5)		(18.5)	9 X 12	
ES-C31	116	(186.5)	(177)	(28.5)	(181.5)	100	(18.5)	9 X 12	
ES-C36		(186.5)	(177)	(28.5)	(181.5)		(18.5)	9 X 12	

Note : ES-B31TC is 10 x 12



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Caution for safety use: Before use of pump, read instruction manual carefully to use the product correctly. Actual pumps may differ from the photos. Specifications and dimensions are subject to change without prior notice. For further details please contact us.