



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 provides effective, reliable performance.



### High speed operation

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



### Double ball check valves

The precision ball, seat and guide assembly ensure tight sealing to prevent loss of prime.



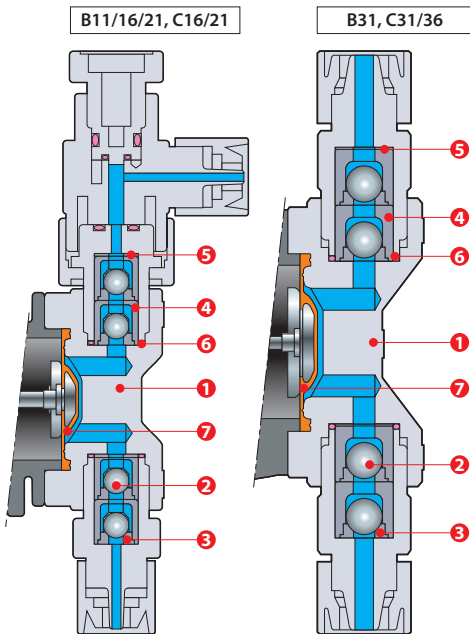
### Compact size

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



### Long lasting diaphragm

PTFE coated EPDM is molded onto a solid core. A retainer plate is used to prevent diaphragm deformation and flow rate variation at higher pressures.



Wet-end materials

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

ES - B 16 VC - 230N 1

1 2 3 4 5

Pump identification

- 1 Drive unit symbol  
B : 16W  
C : 22W
- 2 Diaphragm effective diameter  
11 : 10mm 16 : 15mm  
21 : 20mm 31 : 30mm  
36 : 35mm
- 3 Wet-end part material symbol  
VC, VH
- 4 Power-supply voltage symbol
- 5 Hose connection (in mm)  
1 : 4x9  
2 : 4x6  
3 : 6x8  
4 : 8x13  
5 : 9x12

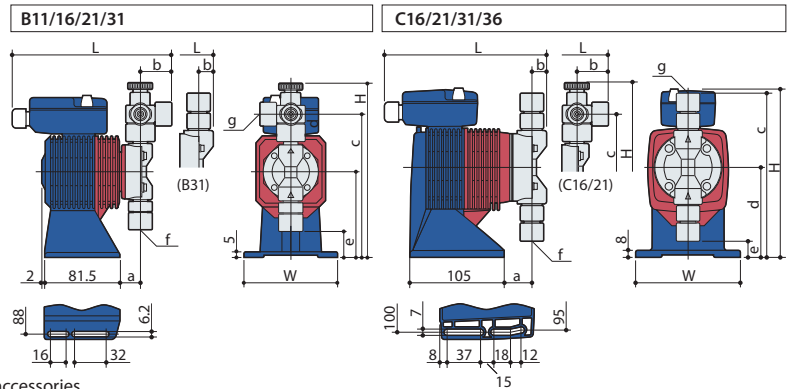
Specifications

Model	B11	B16	B21	B31	C16	C21	C31	C36
Max. discharge capacity	L/hr	2.28	3.9	5.7	12	4.8	7.8	24
	mL/min	38	65	95	200	80	130	400
	mL/shot	0.11	0.18	0.26	0.56	0.23	0.37	1.13
Max. discharge pressure	MPa	1.0	0.7	0.4	0.2	1.0	0.7	0.35
Stroke rate	0 - 360 spm				0 - 353 spm			
Power supply	230VAC, 50/60Hz, single phase							
Current (Input)	0.5A				0.6A			
Insulation type, etc.	B type insulation and built-in thermal protector, with a 2.0m power cable, without plug							

Note: \*The max. discharge capacity in the table above represents the performance measured with clean water at max. discharge pressure, ambient temperature, and rated voltage. 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 : 0-40°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)	4x9
ES-B16									4x6
ES-B21									6x8
ES-B31	116	(172)	(159)	(27)	16	—	100	(8)	8x13
ES-C16									9x12
ES-C21									4x9
ES-C31	(186.5)	(196.5)	(27)	(37)	(160)	(182)	100	(18)	4x6
ES-C36									6x8
									8x13
		(177)	(28.5)	(16)	(181.5)			(18.5)	9x12



Optional accessory

\*Please contact us for details and other accessories.

Check valve

Mount the check valve at the end of discharge hose for the prevention of over feeding, backflow, and siphon action.



Strainer with a foot valve

Mount the strainer at the end of suction hose. The strainer with a foot valve prevents backflow and foreign matter interfusion. Inlet bore can be selected according to hose bore.



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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.

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