

## Electromagnetic metering pumps **EHN** series



# The latest electromagnetic metering pump equipped with digital controller & multi-voltage

EHN Series is the latest electromagnet drive & diaphragm type metering pump. Pump head and driving mechanism employ those of experienced EH-R Series pumps while control unit is newly developed. Multi-voltage from 100 to 240V and digitized EHN Series pump is easy to operate in a variety of chemical feeding application.





### Multi-voltage power source

Multi-voltage power source from AC100 to 240V for all models. You are now free from worrying about power voltage.

### High resolution

Thank to digitized controller, stroke speed can be adjusted by 1 spm step from 1 to 360 spm. Combined with stroke length adjustment, you can do the fine adjustment from very small flow to maximum flow rate.



Stroke length adjusting dial



Control panel

### Pump head variation

Wide variety of standard pump head (VC/VH), automatic air bleeding type (NAE) and high compression type (55 model).

Note : Refer to page 5 for details of NAE and 55.



### Air vent valve

Small flow capacity models (EHN-11, 16 & 21) equip air vent valve. Air in the pump chamber can be easily released by turning knob.



### Water/dust-proof

Each unit such as driving unit and control unit is sealed to make the pump IP66 equivalent water/dust-proof.

Note : Do not install pump outdoor.

# Basic type EHN-R series

The basic model of the EHN series. Key lock function prevents erroneous operation after controller programming. The mounted controller provides EXT and STOP functions. Multiply and dividing operations becomes newly available by EXT functions and allows you to delicate pump control.



## Controller function

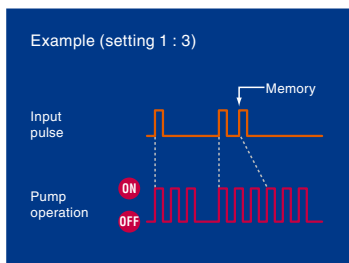
### Manual operation

Pump run/stop and stroke rate setting (1 to 360 spm) can be done by keys. Stroke rate can be set either when pump is running or stopped.

### EXT operation

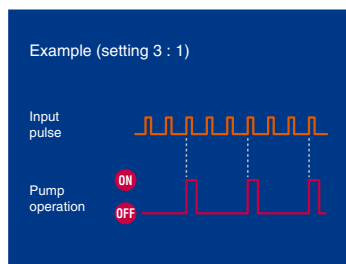
#### Multiply (1 : n)

Pump makes multiply operation by external pulse signal. Pump makes "n" times shots against one pulse signal input. "n" can be set from 1 to 999. Pulses which came while operation are put in memory up to 255 pulses.



#### Dividing (n : 1)

Pump makes dividing operation by external pulse signal. Pump makes one shot against "n" times pulse input. "n" can be set from 1 to 999.

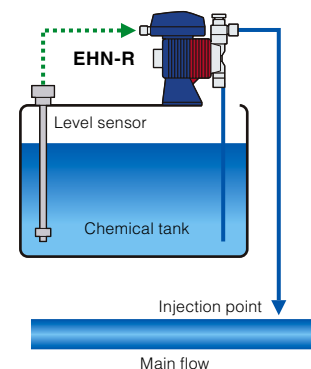


Note : If "n" is set at 1, pump makes synchronous operation. If pump is connected to optionally available EH controller, please use this function.

### STOP function

Pump stops by external contact signal. Pump operates when stop signal input is released. This function enables pump ON/OFF control. This is convenient function when used in combination with level sensor.

Note : It is possible to operate pump while STOP signal comes in (Change over with keys). In this case, when pump is operated in EXT mode, pump operates synchronous with EXT signal input while STOP signal is coming in.



Level sensor watches water level in tank, and stops pump when water level comes to lower limit.

# Digital/Analogue correspondence EHN-Y type

Analogue input operation is also available as well as Manual and EXT (Multiply and dividing) operation. STOP function is also provided to control the pump via an external contact signal.

DC 12V built-in sensor power is a standard feature.



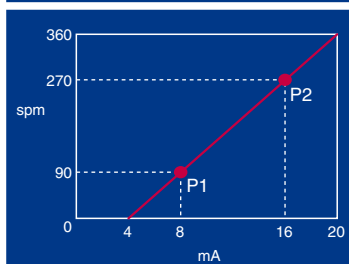
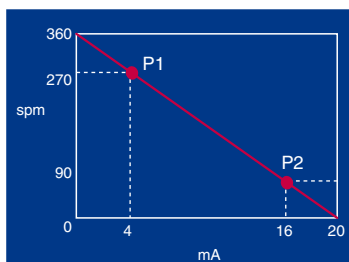
## Controller function

### Manual operation

Pump run/stop and stroke rate setting (1 to 360 spm) can be done by keys. Stroke rate can be set either when pump is running or stopped.

### Analogue input operation

Proportional control of spm by programming 2 points between 0-20mA



### EXT operation

#### Multiply (1 : n)

Pump makes multiply operation by external pulse signal. Pump makes "n" times shots against one pulse signal input. "n" can be set from 1 to 999. Pulses which came while operation are put in memory up to 255 pulses.

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### STOP function

Pump stops by external contact signal. Pump operates when stop signal input is released. This function enables pump ON/OFF control. This is convenient function when used in combination with level sensor.

Note : It is possible to operate pump while STOP signal comes in (Change over with keys). In this case, when pump is operated in EXT mode, pump operates synchronous with EXT signal input while STOP signal is coming in.

# Additional products

## Automatic air vent EHN-NAE

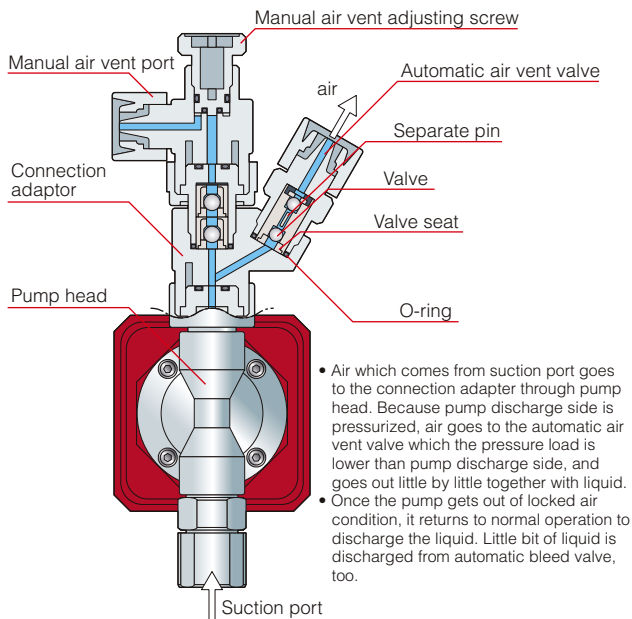
This type equips automatic air vent mechanism. An air vent valve built-in pump chamber enables reliable air venting. Also equipped manual air vent valve enables easy pressure release in discharge piping. Gaseous liquid such as sodium hypochlorite or hydrogen peroxide can be injected without gas locking.



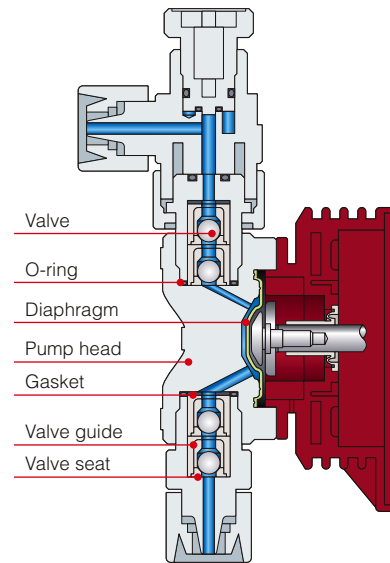
## High compression head type EHN-55

Increased compression ratio due to minimized dead volume in pump chamber. Suitable for injection of boiler chemicals such as hydrazine or so.

### Principle of operation (NAE type)



### Construction (55 type)



#### Wet-end material

Material code	VC	VH
Pump head		PVC
Connection adaptor		PVC
Separate pin	Titanium	Hastelloy C276
Valve	Alumina ceramic	Hastelloy C276
Valve seat	FKM	EPDM
O-ring	FKM	EPDM

#### Specification

Model	EHN-B11-NAE	EHN-B16-NAE	EHN-C21-NAE
Max. discharge capacity	35	55	110
Discharge capacity per shot	0.05 - 0.10	0.08 - 0.15	0.12 - 0.31
Max discharge pressure	0.5		
Stroke length adjustable range	50 - 100	40 - 100	
Stroke rate	1 - 360		
Connection (Hose dia.)	Ø4 × Ø9		
Power voltage	AC100 - 240V 50/60Hz single phase		
Accessory	Check valve CA-1, PVC braided hose 3m		

Operating condition : Liquid temperature 0 - 40 °C. Ambient temperature 0 - 40 °C

Note 1 : Max. discharge capacity represents the figure when pumping clear water at ambient temperature at max. discharge pressure. Pump discharges more liquid than shown above if it runs at lower discharge pressure. If discharge pressure is 0.12MPa or lower, be sure to use check valve to avoid over-feeding.

Note 2 : Please contact us when you need discharge pressure of 0.5MPa or higher.

#### Wet-end material

Material code	VC
Pump head	PVC
Valve	Alumina ceramic
Valve seat	FKM
Valve guide	PVC
Gasket	PTFE
O-ring	FKM
Diaphragm	PTFE coated EPDM

#### Specification

Model	EHN-B11VC-55	EHN-B21VC-55
Max. discharge capacity	38	100
Discharge capacity per shot	0.05 - 0.11	0.14 - 0.28
Max discharge pressure	1.0	0.4
Stroke length adjustable range	50 - 100	
Stroke rate	1 - 360	
Connection (Hose dia.)	Ø4 × Ø9	
Power voltage	AC100 - 240V 50/60Hz single phase	
Accessory	Check valve CA-1, PVC braided hose 3m	

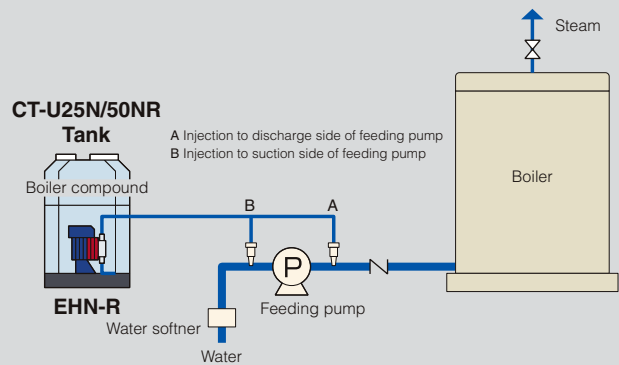
Operating condition: Liquid temperature 0 - 40 °C. Ambient temperature 0 - 40 °C

Note 1 : Max. discharge capacity represents the figure when pumping clear water at ambient temperature at max. discharge pressure. Pump discharges more liquid than shown above if it runs at lower discharge pressure. If discharge pressure is 0.12MPa or lower, be sure to use check valve to avoid over-feeding.

# Examples of application

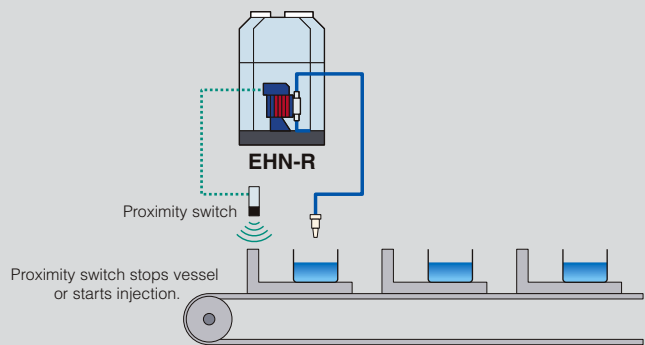
## Injection of boiler compound into through flow boiler

Because the pump can inject very small capacity, pure boiler compound can be injected without diluting.



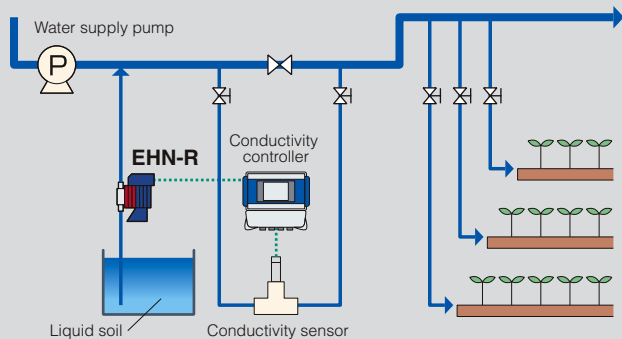
## Metering dose

Pump operates at pre-set number of shots by receiving signal from proximity switch. Number of shot can be set from 1 - 999.



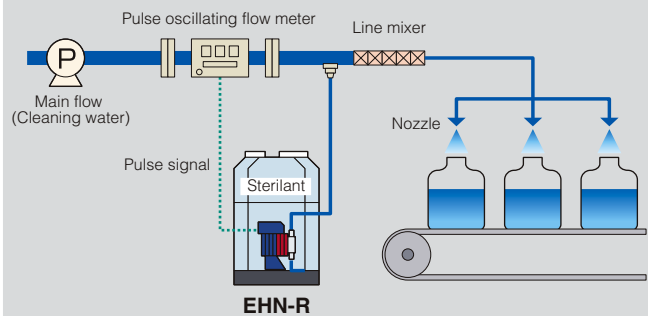
## Soil culture cultivation (Liquid fertilizer concentration control)

Concentration of liquid fertilizer is kept at set value.



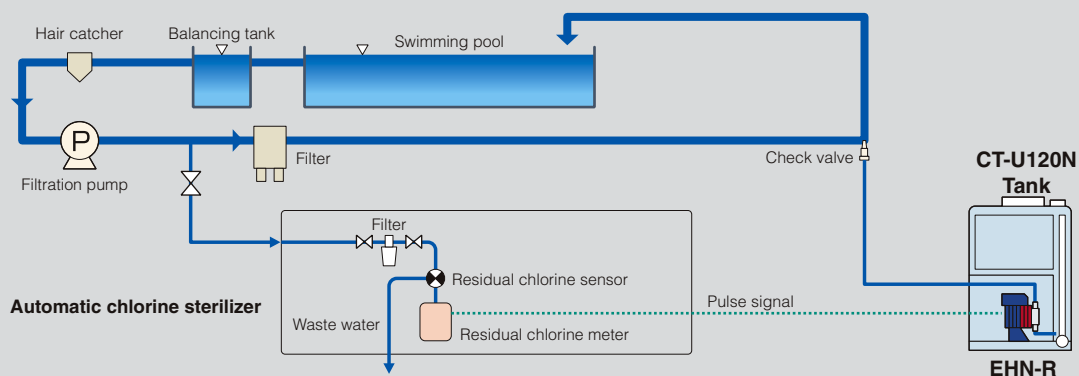
## Sterilizing of distilled water (Proportional mixing of cleaning water and sterilizing agent)

Pump injects sterilizing agent in proportion to the flow rate of cleaning water by the signal from pulse oscillating flow meter. Same mixing concentration can be kept regardless of the change of cleaning water flow rate.

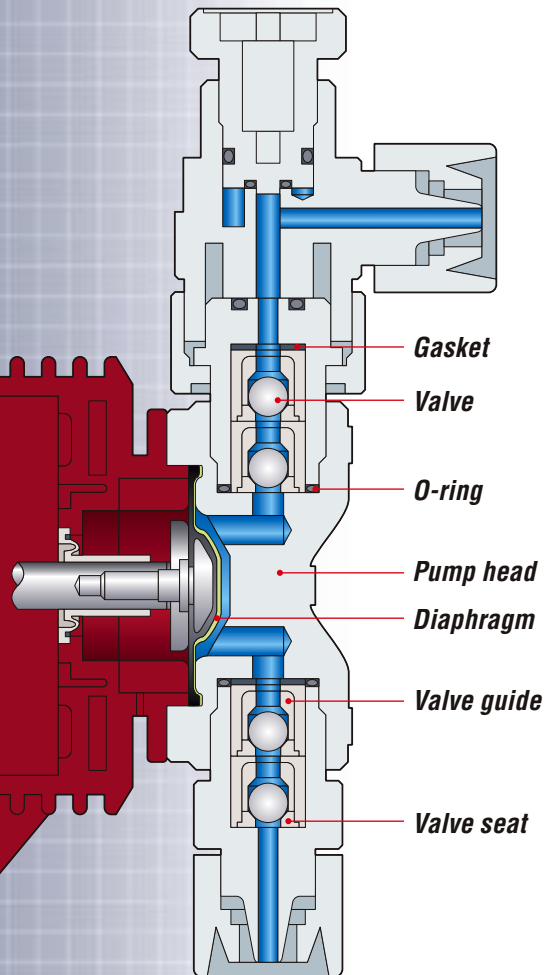


## Sterilizing of swimming pool water (Residual chlorine concentration control)

Continuous injection of sodium hypo-chlorite. Combined with Chlorine sterilizer, residual chlorine concentration can be controlled precisely.



# Technical data



## Construction and materials

Material symbol	<b>VC</b>	<b>VH</b>	<b>FC</b>	<b>SH</b>
Pump head	PVC	PVC	PVDF	SUS316
Valve	Alumina ceramic	Hastelloy C276	Alumina ceramic	Hastelloy C276
Valve seat	FKM	EPDM	PCTFE	SUS316
Valve guide	PVC	PVC	PVDF	SUS316
Gasket	PTFE			
O-ring	FKM	EPDM	-	-
Diaphragm	PTFE+EPDM (EPDM of diaphragm is not wet-end.)			

PVC: Transparent polyvinyl chloride  
 FKM: Fluor rubber  
 EPDM : Ethylene-propylene-diene-methylene  
 PCTFE: Polychlorotrifluoroethylene  
 PTFE : Poytetrafluro ethylene  
 PVDF: Poly vinylidene fluoride

## Pump identification

**EHN - B 11 VC 1 R - □□**  
 (VC/VH)                      1                      2                      3                      4                      5                      6

1	Drive unit code (Average power consumption)	<b>B:</b> 20W <b>C:</b> 24W
2	Diaphragm effective diameter	<b>11:</b> 10mm <b>16:</b> 15mm <b>21:</b> 20mm <b>31:</b> 30mm <b>36:</b> 35mm
3	Wet-end material code	<b>VC, VH</b>
4	Connection hose dia. (in mm)	<b>1:</b> Ø4 × Ø9    * <b>2:</b> Ø4 × Ø6    * <b>3:</b> Ø6 × Ø8 <b>4:</b> Ø8 × Ø13    * <b>5:</b> Ø9 × Ø12 PVC braided hose (Standard) * Teflon or pdyethylene hose (Special specification)
5	Controller	<b>R:</b> Standard <b>Y:</b> Digital/Analogue correspondence
6	Special configuration	<b>NAE:</b> Automatic air vent <b>55:</b> High compression pump head, etc.

**EHN - B 11 FC 2 R - □□**  
 (FC/SH)                      1                      2                      3                      4                      5                      6

1	Drive unit code (Average power consumption)	<b>B:</b> 20W <b>C:</b> 24W
2	Diaphragm effective diameter	<b>11:</b> 10mm <b>21:</b> 20mm <b>31:</b> 30mm <b>36:</b> 35mm
3	Wet-end material code	<b>FC, SH</b>
4	Connection hose dia. (in mm)	Pump type
		FC <b>2:</b> Ø4 × Ø6 <b>5:</b> Ø10 × Ø12
		SH <b>9:</b> Rc 1/4
5	Controller	<b>R:</b> Standard <b>Y:</b> Digital/Analogue correspondence
6	Special configuration	-



## Specifications of pump

### (VC/VH)

Model		EHN-B11	EHN-B16	EHN-B21	EHN-B31	EHN-C16	EHN-C21	EHN-C31	EHN-C36
Max. discharge capacity	mL/min	38	65	100	230	80	130	270	450
	mL/shot	0.05 - 0.11	0.09 - 0.18	0.14 - 0.28	0.32 - 0.64	0.09 - 0.22	0.14 - 0.36	0.30 - 0.75	0.50 - 1.25
Max. discharge pressure	MPa	1.0	0.70	0.40	0.20	1.0	0.70	0.35	0.20
Stroke rate	spm	1 - 360							
Stroke length		50 - 100% (0.5 - 1.0mm)				40 - 100% (0.5 - 1.25mm)			
Connection (Hose dia.)	mm	Ø4 × Ø9		Ø8 × Ø13		Ø4 × Ø9		Ø8 × Ø13	
Power voltage		AC100 - 240V 50/60Hz single phase							
Air vent valve		○		×		○		×	
Accessory	Check valve	CA-1		CA-2-L		CA-1		CA-2   CA-2-L	
	Blade hose	Ø4 × Ø9 or Ø8 × Ø13 made in PVC/3 m (PP type is EVA hose)							

Note 1: The maximum discharge capacity of each model represents the figure when the pump is pumping clean water at maximum discharge pressure.

If the discharge pressure is low, the flow exceeds the maximum discharge capacity.

Note 2: 0.12MPa or more discharge pressure is needed to prevent over feeding (0.05MPa or more for the EHN-B31 and C36).

If the discharge pressure is at or below the required MPa, install a check valve or back pressure valve.

Note 3: B21 and C16 of PP type (for slime control agent) are not available.

Operating condition: Liquid temperature range is 0 - 60 °C(0 - 40 °C for VC/VH)

Ambient temperature range is 0 - 40 °C

### (FC/SH)

Model		EHN-B11	EHN-B21	EHN-C21	EHN-C31	EHN-C36
Max. discharge capacity	mL/min	38	100	130	270	410
	mL/shot	0.05 - 0.11	0.14 - 0.28	0.14 - 0.36	0.30 - 0.75	0.46 - 1.14
Max. discharge pressure	MPa	1.0	0.40	0.70	0.35	0.20
Stroke rate	spm	1 - 360				
Stroke length		50 - 100% (0.5 - 1.0mm)		40 - 100% (0.5 - 1.25mm)		
Connection	FC	Ø4 × Ø6			Ø10 × Ø12	
	SH	Rc 1/4				
Power voltage		AC100 - 240V 50/60Hz single phase				
Air vent valve		SH: ○		FC: ×		
Accessory		FC: BVC(Back pressure valve)			SH: CS-1S(Check valve)	

Note 1: The maximum discharge capacity of each model represents the figure when the pump is pumping clean water at maximum discharge pressure,

rated voltage, ambient temperature, and 360 spm with stroke length 100%.

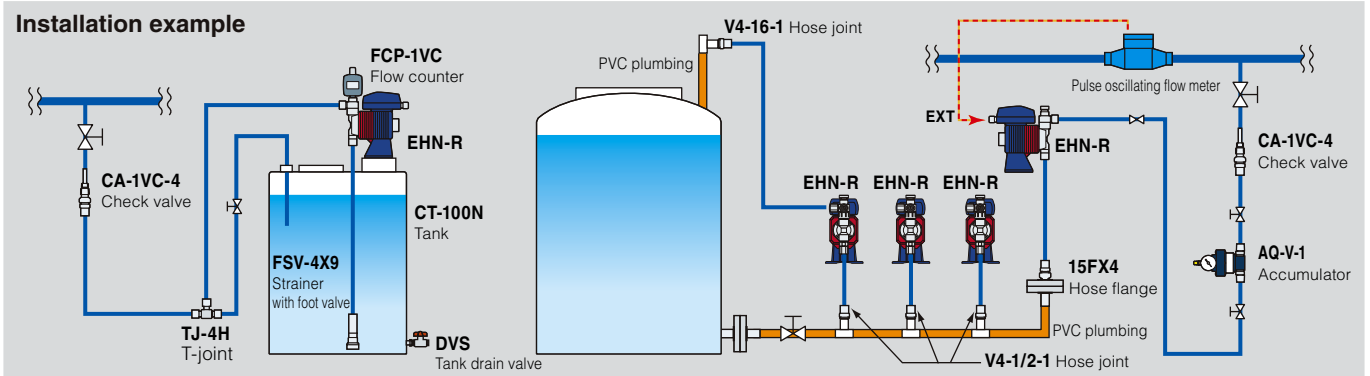
Operating condition: Liquid temperature range is 0 - 60 °C (on condition that liquid quality is not changed by freezing, viscosity change, or slurry interfusion).

## Specifications of controller

Model		R	Y
Operation mode	Mode	EXT (Pulse dividing or multiply)	
	Mode selection	EXT & START/STOP keys	
Control	Setting	<ul style="list-style-type: none"> <li>Manual stroke rate 1 - 360spm</li> <li>EXT               <ul style="list-style-type: none"> <li>Digital input operation                   <ul style="list-style-type: none"> <li>Multiply 1 : n n=1 - 999</li> <li>Dividing n : 1 n=1 - 999</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Manual stroke rate 1 - 360spm</li> <li>EXT               <ul style="list-style-type: none"> <li>Digital input operation                   <ul style="list-style-type: none"> <li>Multiply 1 : n n=1 - 999</li> <li>Dividing n : 1 n=1 - 999</li> </ul> </li> <li>Analogue input operation                   <ul style="list-style-type: none"> <li>Set point 1 Amperage: 0 - 20 mA</li> <li>Stroke rate: 0 - 360 spm</li> <li>Set point 2 Amperage: 0 - 20 mA</li> <li>Stroke rate: 0 - 360 spm</li> </ul> </li> </ul> </li> </ul>
	Setting method	3 operating keys	4 operating keys
	Stop	No voltage contact (Make off/Make on can be selected by changing controller setting)	
Display		4-digit LCD	
Input	Pulse	No voltage contact, Open collector	
	Stop	No voltage contact, Open collector	
Output	Sensor power	-	DC 12V 20mA or less
Power voltage		AC100 - 240V 50/60Hz single phase	

# Optional accessories

## Installation example



## Check valve

Mount the check valve at the end of discharge hose for the prevention of over feeding, backflow, and siphon action. Note: CB type is an option.

**CA type:** Standard accessory



**CB type:** In-line type check valve. Install it between hoses.



**CS type:** Stainless type for high liquid temperature. General model and boiler model are available.



Model	Connection		Set press. MPa	Body	Material Spring	Material O-ring	Applicable pump	Wet end material code
	IN	OUT						
CA-1VC-4	ø4xø9	R3/8, R1/2 Thread	0.17 ±0.04	PVC	Hastelloy C276	FKM	B11 · 16 · 21	VC
CA-1VE-4	Hose					EPDM	C16 · 21	VH
CA-1VC-4x6	ø4xø6					FKM		VC
CA-1VE-4x6	Hose					EPDM		VH
CA-2VC-8	ø8xø13	R3/8, R1/2 Thread	0.05 +0.04 -0.03	PVC	Hastelloy C276	FKM	C31	VC
CA-2VE-8						EPDM		VH
CA-2VCL-8						FKM	B31	VC
CA-2VEL-8						EPDM	C36	VH
CA-1VCH-4	ø4xø9	ø4xø9	0.34 ±0.04	PVC	Hastelloy C276	FKM	B11 · 16 · 21	VC
CA-1VEH-4						EPDM	C16 · 21	VH
CA-1VH-4						EPDM		VH
CB-1VC-4	ø4xø9	ø4xø9	0.17 ±0.04	PVC	Hastelloy C276	FKM	B11 · 16 · 21	VC
CB-1VE-4	Hose	EPDM				C16 · 21	VH	
CB-2VC-8	ø8xø13	ø8xø13				FKM	C31	VC
CB-2VE-8						EPDM		VH
CB-2VCL-8	ø8xø13	ø8xø13	0.05 +0.04 -0.03	PVC	Hastelloy C276	FKM	B31	VC
CB-2VEL-8						EPDM	C36	VH
CB-1VCH-4	ø4xø9	ø4xø9	0.34 ±0.04	PVC	Hastelloy C276	FKM	B11 · 16 · 21	VC
CB-1VEH-4						EPDM	C16 · 21	VH
CS-1S	Rc1/4	Rc1/4	0.2 ±0.03	SUS316	Hastelloy C276	—	B11 · 21	SH
CS-1SL	Thread	Thread					C21 · 31	
CS-1E	ø4xø6	R3/8	0.12 ±0.04	SUS304	Hastelloy C276	EPDM	B11 · 16 · 21	VH
CS-1E-2		Thread					R1/2	

## Backflow prevention valve

Mount the backflow prevention valve at the end of discharge hose for the prevention of backflow.



Model	Connection		Material Body	Material Rubber	Applicable pump	Wet end material code
	IN	OUT				
CV-1VC-1	ø4xø9	R3/8, R1/2 Thread	PVC	FKM	B11 · 16 · 21	VC
CV-1VE-1	Hose			EPDM	C16 · 21	VH
CV-1VC-2	ø4xø6			FKM		VC
CV-1VE-2	Hose			EPDM		VH
CV-2VC-4	ø8xø13	Hose	PVC	FKM	B31	VC
CV-2VE-4				EPDM	C31 · 36	VH

## Back pressure valve

The back pressure valve enhances the dosing accuracy and prevents backflow. Set pressure is adjustable.



Model	Connection		Set press. MPa	Material Body	Material Valve	Material O-ring	Applicable pump	Wet end material code
	IN	OUT						
BVC-1TV-4H	ø4xø6	R3/8, R1/2 Thread	0.2 ±0.02	PVDF	FKM	Note	B11 · 21	FC
BVC-1TV-10H	ø10xø12						C21	
BVC-1TV-8H	Hose						C36	
BVC-1PVL-8H	ø8xø13	R3/8, R1/2 Thread	0.2 ±0.02	PVC	FKM	FKM	C31	VC
BVC-1PEL-8H							EPDM	EPDM

Note: Gasket (made in PTFE)

## Accumulator

Mount the accumulator on discharge side hose to reduce vibration comes from pulsation.



Model	Connection		Capacity ml	Material Body	Material O-ring	Applicable pump	Wet end material code	
	IN	OUT						
AQ-V-1	ø4xø9	ø4xø9	66	PVC	FKM	FKM	VC	
AQ-E-1	Hose	Hose			EPDM	EPDM	B11 · 16 · 21	VH
AQ-V-2	ø4xø6	ø4xø6			FKM	FKM	C16 · 21	VC
AQ-E-2					Hose	Hose	EPDM	EPDM
AQ-V-4	ø8xø13	ø8xø13			FKM	FKM	B31	VC
AQ-E-4			Hose	Hose	EPDM	EPDM	C31 · 36	VH

### Hose flange

The hose flange is the adapter for connecting hose to flange. Hose flange with the check valve is also available.



Model	Connection		Material		Applicable pump	Wet end material code
	Hose	Flange	Body	Check valve model		
15FCA-1VC	ø4×ø9	JIS10K15AFF	PVC	CA-1VC	B11 · 16 · 21	VC
15FCA-1VE				CA-1VE	C16 · 21	VH
15FCA-2VC	ø8×ø13	JIS10K15AFF	PVC	CA-2VC	C31	VC
15FCA-2VE				CA-2VE	—	VH
15Fx4	ø4×ø9	JIS10K15A	PVC	—	B11 · 16 · 21	—
15FSx4				—	C16 · 21	—
15Fx8	ø8×ø13	JIS10K15AFF	PVC	—	B31	—
20FCA-1VC	ø4×ø9	JIS20K20AFF	PVC	CA-1VC	B11 · 16 · 21	VC
20FCA-1VE				CA-1VE	C16 · 21	VH
20FCA-2VC	ø8×ø13	JIS20K20AFF	PVC	CA-2VC	C31	VC
20FCA-2VE				CA-2VE	—	VH
20Fx4	ø4×ø9	—	—	—	B11 · 16 · 21	—
20Fx8	ø8×ø13	—	—	—	B31	—

Note: Please ask us for ø4×ø6, ø9×ø12 connection.

### Hose joint

The hose joint offers a secure connection between hose and pipe.



#### Thread connection

Model	Connection		Material Body	Applicable pump	Wet end material code
	Hose	Thread			
V4-3/8-1	ø4×ø9	3/8	PVC	B11 · 16 · 21	VC
V4-1/2-1		1/2		C16 · 21	
V8-3/8-4	ø8×ø13	3/8	PVC	B31	VH
V8-1/2-4		1/2		C31 · 36	

#### VP plumbing connection

Model	Connection		Material Body	Applicable pump	Wet end material code
	Hose	VP plumbing			
V4-16-1	ø4×ø9	VP16	PVC	B11 · 16 · 21	VC
V4-20-1		VP20		C16 · 21	
V8-16-4	ø8×ø13	VP16	PVC	B31	VH
V8-20-4		VP20		C31 · 36	

Note: ø4×ø6, ø9×ø12 connection is prepared.

### Air vent valve

Use the air vent valve for the B31, C31, and C36 types as necessary.



Model	Connection		Material		Applicable pump	Wet end material code
	Hose	Body	Body	Rubber		
AV-E30/35VC-4	ø8×ø13	PVC	PVC	FKM	B31 · C31 · 36	VC
AV-E30/35V6-4				EPDM	—	VH

Note: Please contact to Iwaki for 9x12 connection.

### Multifunction valve

The multifunction valve functions as a back pressure valve, air vent valve, and relieve valve. The set pressure of the back pressure valve is fixed to 0.2MPa.



Model	Connection		Material			Applicable pump	Wet end material code
	Hose	Body	Diaphragm	Rubber	Rubber		
MFV-SVC-1	ø4×ø9	PVC	PTFE+EPDM	FKM	B11 · 16 · 21	VC	
MFV-SVH-1				EPDM	C16 · 21	VH	

### 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.



Model	Connection		Material			Applicable pump	Wet end material code
	Hose	Strainer	Body	Valve ball	Rubber		
FSV-4x9	ø4×ø9	Aflon	PVC	Alumina ceramic	FKM	B11 · 16 · 21, C16 · 21	VC
FSV-8x13	ø8×ø13			Alumina ceramic	FKM	B31, C31 · 36	
FSE-4x9	ø4×ø9			Hastelloy C276	EPDM	B11 · 16 · 21, C16 · 21	VH
FSE-8x13	ø8×ø13	—	—	B31, C31 · 36			

Note1: For ø4×ø6 and ø9×ø12, contact us.

Note2: PVDF strainers (FSTC type) are also available.

Note3: Mesh size is 20 mesh.

### Foot valve with a strainer

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



Model	Connection		Material			Applicable pump	Wet end material code
	Hose	Strainer	Body	Valve ball	Rubber		
FSC-4x6	ø4×ø6	PE	PVC	Alumina ceramic	FKM	B11 · 16 · 21	VC
FSC-4x9	ø4×ø9						
FSC-8x13	ø8×ø13					B31, C31 · 36	

Note1: For ø9×ø12, contact us.

Note2: Mesh size is 150 mesh.

### Reducing joint

Use the reducing joint to a connection between different bore hoses.



Model	Connection		Material		Applicable pump	Wet end material code
	Hose	Hose	Body	O-ring		
HJ-1/2V	ø4×ø9	ø4×ø6	PVC	FKM	B11 · 16 · 21	VC
HJ-1/18V		ø6×ø11				
HJ-2/3V	ø4×ø6	ø6×ø8	—	—	—	—

Note1: VH type is available as option.

Note2: Same bore hoses are available as option.

### T-joint

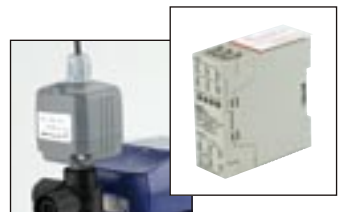
Use T-joint for a branch pipe.



Model	Connection		Material Body	Applicable pump	Wet end material code
	Hose	Body			
TJ-4H	ø4×ø9	PVC	PVC	B11 · 16 · 21, C16 · 21	VC, VH
TJ-8H	ø8×ø13			B31, C31 · 36	

### Flow counter/Controller

The pressure sensor detects pulsation to monitor the flow. Air lock and hose disconnection are also can be detected.



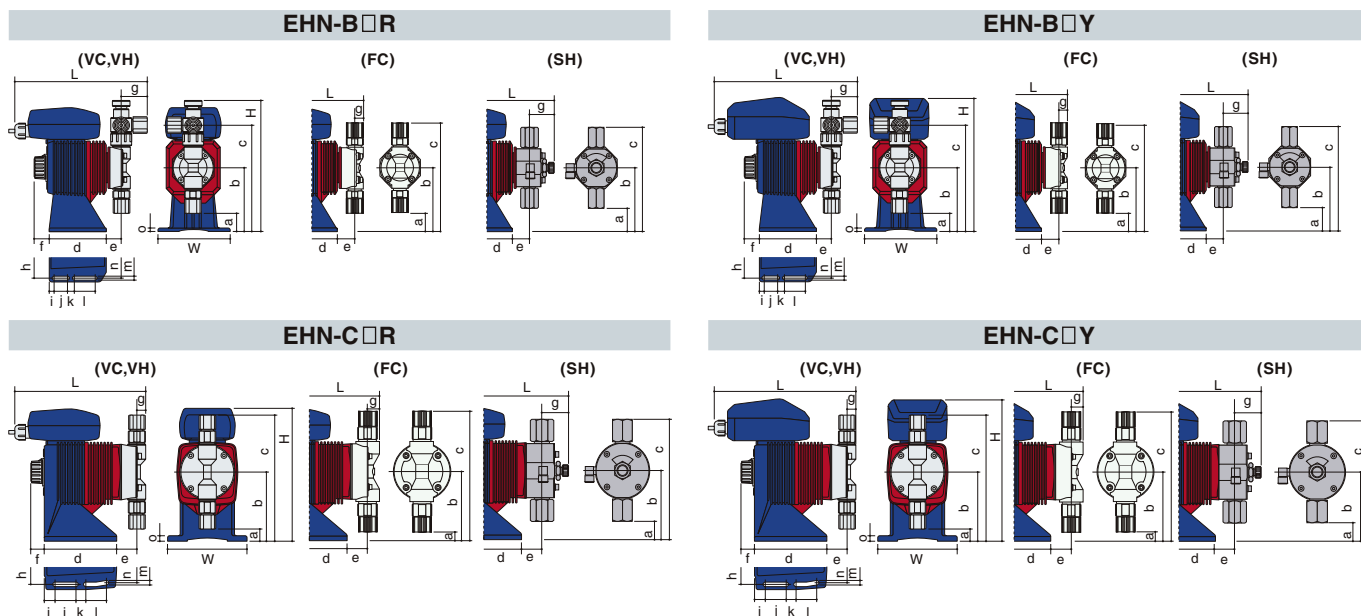
#### Flow counter

Model	Material			Applicable controller	Applicable pump	Wet end material code
	Sensor	Body	Rubber			
FCP-1VC	Alumina ceramic	PVC	FKM	FCU-01	B11 · 16 · 21	VC
FCP-1VE	Alumina ceramic		EPDM	S3D2-CK	C16 · 21	VH

#### Controller

Model	Electric specification				Applicable pump	Note
	power voltage	setting method	Output	Warning time		
FCU-01	AC100/200V	DIN Rail	open collector (3 output)	1 - 20 min	B11 · 16 · 21	Iwaki product.
S3D2-CK	AC100 - 240V		relay output (1c)	0.1 - 1/1 - 10s	C16 · 21	Omron product.

## Dimensions (mm)



### EHN-R (VC,VH)

Model	W	H	L	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
EHN-B11,16,21	100	(184)	(192)	(26)	90	(150)	81.5	(25)	(21)	(37)	88	7	16	10	32	6.2	88	5
EHN-B31	100	(174)	(174)	(8)	90	(172)	81.5	(27)	(21)	(16)	88	7	16	10	32	6.2	88	5
EHN-C16,21	116	(194)	(210.5)	(36)	100	(160)	105	(27)	(18)	(37)	100	8	37	15	30	7	95	8
EHN-C31	116	(189)	(191.5)	(17.5)	100	(182.5)	105	(29)	(18)	(16)	100	8	37	15	30	7	95	8
EHN-C36	116	(189)	(191)	(18)	100	(182)	105	(28.5)	(18)	(16)	100	8	37	15	30	7	95	8

### EHN-R (FC,SH)

Model	W	H	L	a	b	c	d	e	f	g
EHN-B11,21FC	100	(174)	(167)	(27)	90	(153)	81.5	(25)	(21)	(12)
EHN-C21FC	116	(189)	(185.5)	(37)	100	(163)	105	(27)	(18)	(12)
EHN-C31FC	116	(189)	(191.5)	(18.5)	100	(181.5)	105	(29)	(18)	(16)
EHN-C36FC	116	(189)	(191)	(18.5)	100	(181.5)	105	(28.5)	(18)	(16)
EHN-B11,21SH	100	(174)	(188)	(34)	90	(146)	81.5	(24)	(21)	(34)
EHN-C21SH	116	(189)	(209)	(44)	100	(156)	105	(26)	(18)	(36.5)
EHN-C31SH	116	(189)	(209)	(34)	100	(166)	105	(28)	(18)	(34.5)
EHN-C36SH	116	(189)	(208.5)	(31)	100	(169)	105	(28)	(18)	(34)

### EHN-Y (VC,VH)

Model	W	H	L	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
EHN-B11,16,21	100	(191)	(208.5)	(26)	90	(150)	81.5	(25)	(21)	(37)	88	7	16	10	32	6.2	88	5
EHN-B31	100	(191)	(189.5)	(8)	90	(172)	81.5	(27)	(21)	(16)	88	7	16	10	32	6.2	88	5
EHN-C16,21	116	(206.5)	(227)	(36)	100	(160)	105	(27)	(18)	(37)	100	8	37	15	30	7	95	8
EHN-C31	116	(206.5)	(208)	(17.5)	100	(182.5)	105	(29)	(18)	(16)	100	8	37	15	30	7	95	8
EHN-C36	116	(206.5)	(207.5)	(18.5)	100	(181.5)	105	(28.5)	(18)	(16)	100	8	37	15	30	7	95	8

### EHN-Y (FC,SH)

Model	W	H	L	a	b	c	d	e	f	g
EHN-B11,21FC	100	(191)	(183.5)	(27)	90	(153)	81.5	(25)	(21)	(12)
EHN-C21FC	116	(206.5)	(202)	(37)	100	(163)	105	(27)	(18)	(12)
EHN-C31FC	116	(206.5)	(208)	(18.5)	100	(181.5)	105	(29)	(18)	(16)
EHN-C36FC	116	(206.5)	(207.5)	(18.5)	100	(181.5)	105	(28.5)	(18)	(16)
EHN-B11,21SH	100	(191)	(204.5)	(34)	90	(146)	81.5	(24)	(21)	(34)
EHN-C21SH	116	(206.5)	(225.5)	(44)	100	(156)	105	(26)	(18)	(36.5)
EHN-C31SH	116	(206.5)	(225.5)	(34)	100	(166)	105	(28)	(18)	(34.5)
EHN-C36SH	116	(206.5)	(225)	(31)	100	(169)	105	(28)	(18)	(34)

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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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