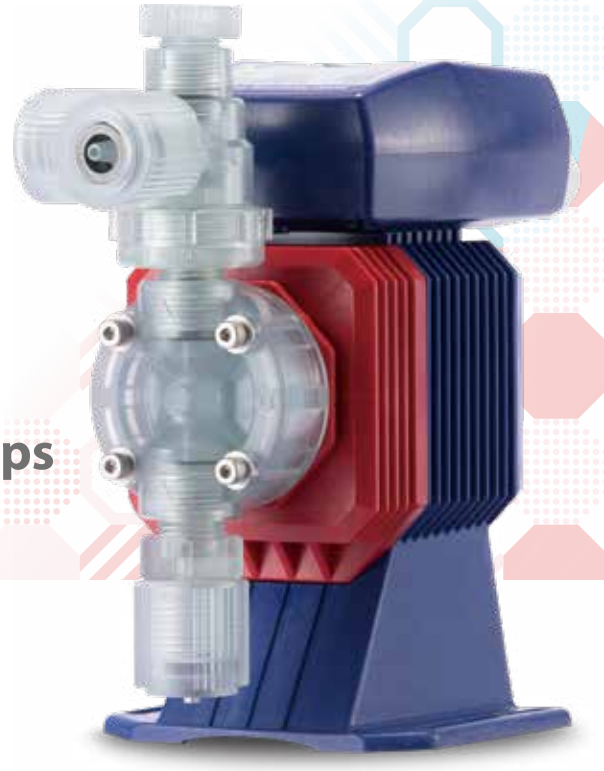
IWAKI

IWAKI Electromagnetic metering pumps

EHN



Extensive product range
Highly reliable, best selling pumps

The Heart of Industry

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

Pump head variation

Wide variety of standard pump head (VC/VH/PC/PH/PP/FC/SH), automatic air vent type (NAE) and high compression type (55 type).

• Refer to page 5 for details of NAE and 55.

VC/VH type | PC/PH/PP type | FC type | SH type

High resolution

Thanks 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

Control unit

The highly-functional EHN-YN which is equipped with digital and analogue inputs are added to the standard production line as well as EHN-R.

Multi-voltage power source

Multi-voltage power source from 100 - 240VAC for all models. You are now free from worrying about power voltage.

Air vent valve

Standard pump head models (VC/VH/PC/PH/PP) 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.

• Do not install pump outdoor.

Multi hose connection

The use of a new hose stopper eliminates a twist in tube connection.

• Except for the following
Wet-end material: FC type, SH type
Controller: EHN-R/YN Flow Checker corresponding type

Accessories: Check valve CS type,
Backflow prevention valve,
Back pressure valve, Flow checker, T-joint

Various combinations of the controller and the pump head meet a wide range of application requirement.

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

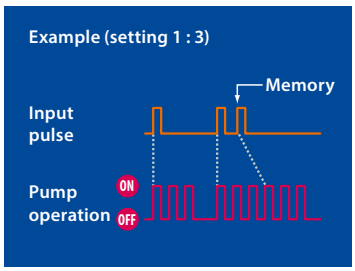
Manual operation

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

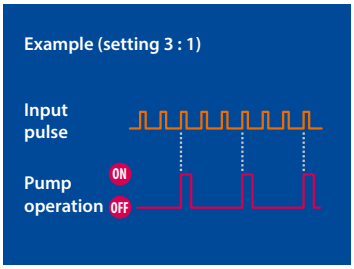
Multiply (1 : n)

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 64535 shots.



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.

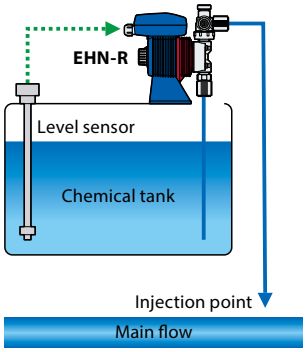


- If “n” is set at 1, pump makes synchronous operation. If pump is connected to optionally available EH controller, please use this function.

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.

- 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.

Advanced type

EHN-YN series

- The features of both the EHN-Y and the FCM flow checker are integrated into the EHN-YN.
- Auxiliary functions including keypad lock and priming operation (max operation with the up and down keys depressed) are provided to support users.
- The FCM flow checker is optionally available.
- The pump gives an alarm and starts running at full speed(360spm), removing entrained air or clogging, when the FCM does not detect a suction line flow. Operation at a set speed or programmed behaviour will be restored after the problems are removed.
- The following three behavioural patterns are available. PA mode/PA+AL mode/PA+AL+RE mode
- Monitoring/alarming a suction-line flow ensures safer pump operation.

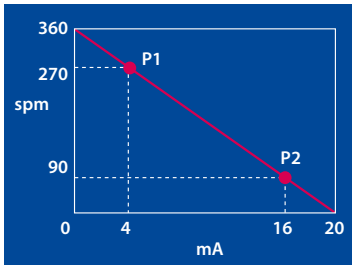
Controller function

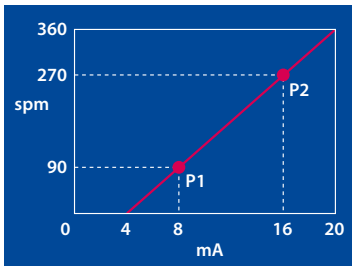
Manual operation

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 65535 shots.

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.

- 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

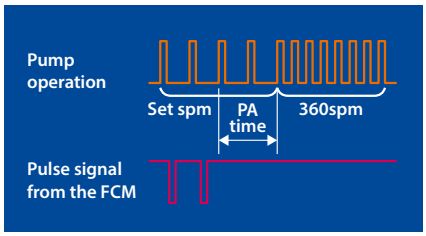
Pump stops by external contact signal. Pump operates when stop signal input is released. This function enables pump ON/OFF control. This is convenient function when used in combination with level sensor.

- 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.

Auto restoration

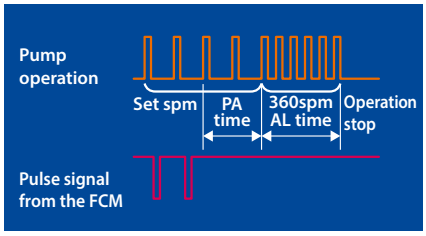
PA mode

When the FCM does not detect a suction-line flow for the PA time, the pump starts to run at full speed (360spm).



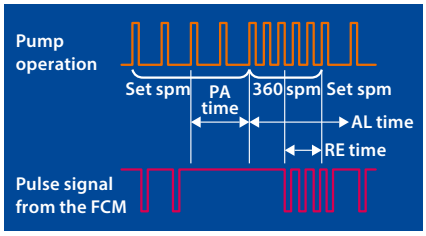
PA+AL mode

When the FCM does not detect a suction-line flow for the PA time, the pump starts to run at full speed (360spm) for the AL time and stops afterward.



PA+AL+RE mode

When the pump starts to run at full speed (360spm) for the AL time and the FCM keeps detecting a suction-line flow over the RE time, operation at a set speed or programmed behaviour will be restored.



The pump can be specialized for the need of a special chemical transfer.

The optimum for gaseous liquid feeding

Automatic air vent type
EHN-NAE

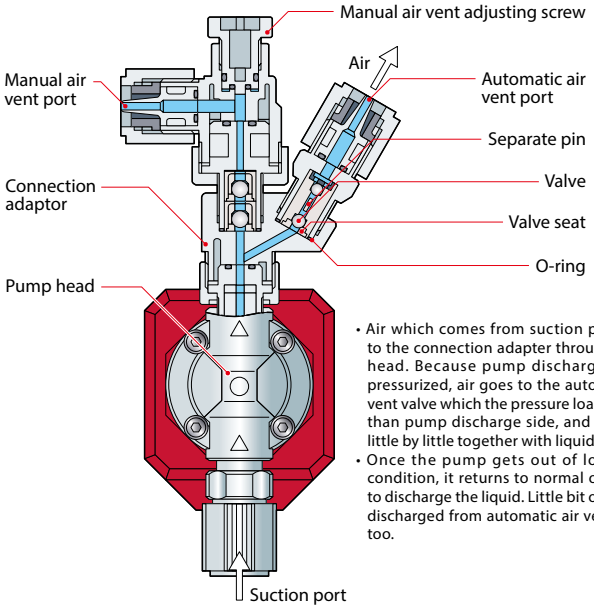
This type equips automatic air vent mechanism. An air vent valve built-in pump chamber enables reliable air venting. Also equipped manual air vent valve enables easy pressure release in discharge piping. Gaseous liquid such as sodium hypochlorite can be injected without gas locking.

The optimum for sodium hypochlorite feeding

High compression head type
EHN-55

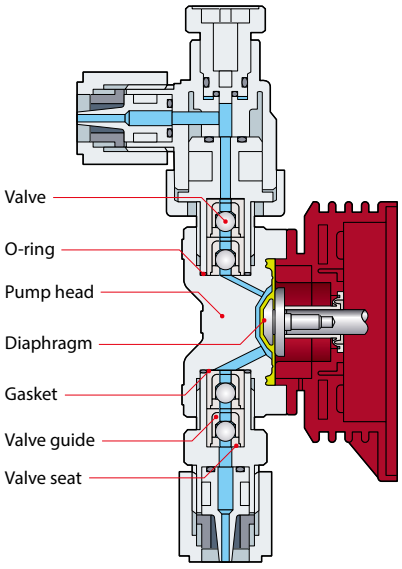
Increased compression ratio due to minimized dead volume in pump chamber.

Principle of operation



- Air which comes from suction port goes to the connection adapter through pump head. Because pump discharge side is pressurized, air goes to the automatic air vent valve which the pressure load is lower than pump discharge side, and goes out little by little together with liquid.
- Once the pump gets out of locked air condition, it returns to normal operation to discharge the liquid. Little bit of liquid is discharged from automatic air vent valve, too.

Construction



Wet-end material

Material code	VC	VC-S6	VC-HC	VH
Pump head	PVC			
Connection adaptor	PVC			
Separate pin	Titanium	SUS316	Hastelloy C276	
Valve	Alumina ceramic			Hastelloy C276
Valve seat	FKM			EPDM
O-ring	FKM			EPDM

Note: Automatic air vent valve is zirconia ceramic.
• VH type is a C16 type only.

Specification

Model		EHN-B11-NAE	EHN-B16-NAE	EHN-C16-NAE	EHN-C21-NAE
Max. discharge capacity	mL/min	30	55	65	110
Discharge capacity per shot	mL/shot	0.04 - 0.08	0.08 - 0.15	0.07 - 0.18	0.12 - 0.31
Max. discharge pressure	MPa	1.0	0.7	1.0	0.7
Stroke length adjustable range	%	50 - 100		40 - 100	
Stroke rate	spm	1 - 360			
Connection (Hose dia.)		Ø4×Ø9, Ø4×Ø6			
Power voltage		100 - 240VAC 50/60Hz single phase			
Accessory		Check valve CAN-1, PVC braided hose 3m			

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

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	mL/min	38	100
Discharge capacity per shot	mL/shot	0.05 - 0.11	0.14 - 0.28
Max. discharge pressure	MPa	1.0	0.4
Stroke length adjustable range	%	50 - 100	
Stroke rate	spm	1 - 360	
Connection (Hose dia.)		Ø4×Ø9, Ø4×Ø6	
Power voltage		100 - 240VAC 50/60Hz single phase	
Accessory		Check valve CAN-1, PVC braided hose 3m	

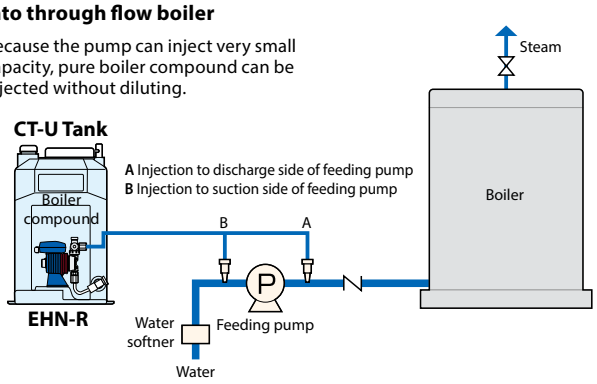
Operating condition : Liquid temperature 0 - 40°C. Ambient temperature 0 - 40°C
• Max. discharge capacity represents the figure when pumping clear water at ambient temperature at max. discharge pressure. Pump discharges more liquid than shown above if it runs at lower discharge pressure. If discharge pressure is 0.12MPa or lower, be sure to use check valve to avoid over-feeding.

The EHN series meets the needs of various chemical feeding in water treatment fields.

Injection of boiler compound into through flow boiler

EHN-R

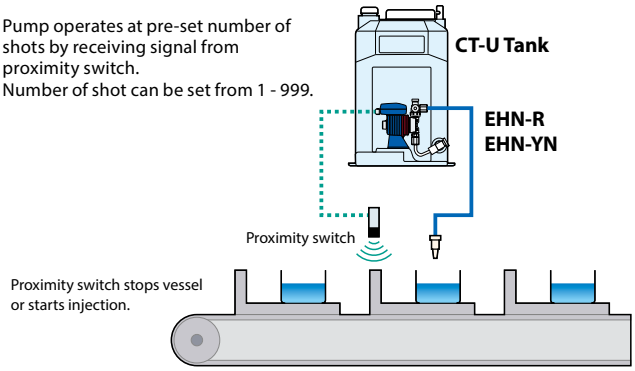
Because the pump can inject very small capacity, pure boiler compound can be injected without diluting.



Metering dose

EHN-R EHN-YN

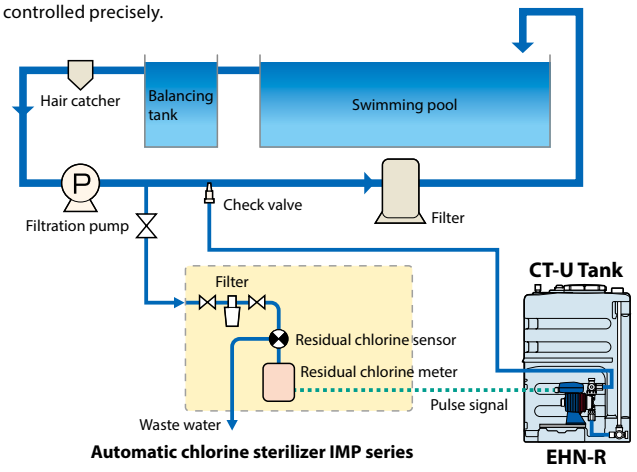
Pump operates at pre-set number of shots by receiving signal from proximity switch.
Number of shot can be set from 1 - 999.



Sterilizing of swimming pool water (Residual chlorine concentration control)

EHN-R

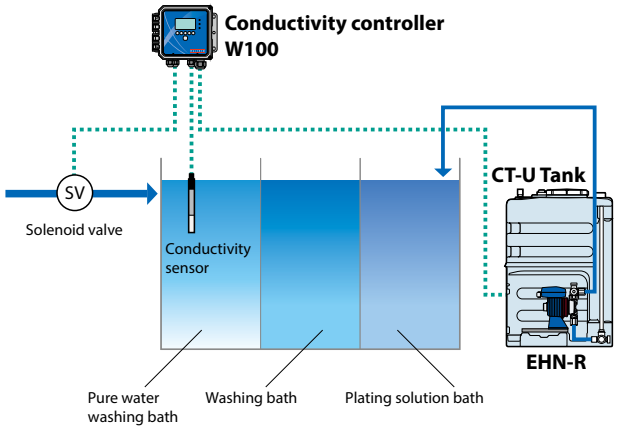
Continuous injection of sodium hypochlorite.
Combined with Chlorine sterilizer, residual chlorine concentration can be controlled precisely.



• Please refer to the single goods catalog of the separate volume for details of the IMP series.

Electroless plating system (Planting solution supply/ Conductivity control of cleaning water)

EHN-R

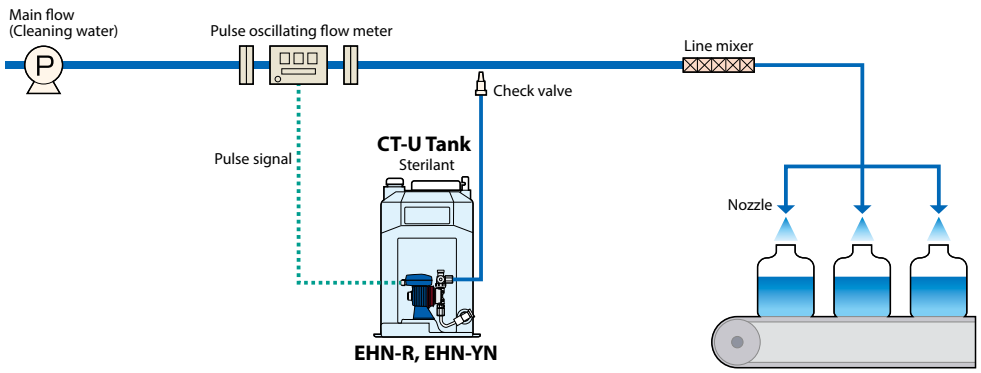


• Please refer to the single goods catalog of the separate volume for details of the TC-300.

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

EHN-R EHN-YN

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 leaning water flow rate.



Optional accessories

Check valve

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

CAN type : Standard accessory

CBN 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		Material			Applicable pump	Wet end material code
	IN	OUT	MPa		Body	Spring	O-ring		
CAN-1VC-M	Ø4×Ø9 Ø4×Ø6	R3/8, R1/2 Thread	0.17	±0.04	PVC	Hastelloy C276	FKM	B11, 16, 21 C16, 21	VC
CAN-1VC-3	Ø6×Ø8								
CAN-1VC-23	Ø6×Ø12								
CAN-1VE-M	Ø4×Ø9 Ø4×Ø6						EPDM		VH
CAN-1VE-3	Ø6×Ø8								
CAN-1VCL-M	Ø4×Ø9 Ø4×Ø6		0.05	+0.04 −0.03			FKM		VC
CAN-1VEL-M							EPDM		VE
CAN-2VCL-M	Ø8×Ø13 Ø9×Ø12						FKM	B31, C36	VC
CAN-2VEL-M							EPDM		VH
CAN-2VC-M			0.17	±0.04			FKM	C31	VC
CAN-2VE-M							EPDM		VH
CAN-1V-M	Ø4×Ø9 Ø4×Ø6			+0.05 −0.04	GFRPP CFRPP		FKM	B11, 16, 21 C16, 21	PC
CAN-1E-M							EPDM		PH
CAN-2VL-M	Ø8×Ø13 Ø9×Ø12		0.05	+0.04 −0.03			FKM	B31, C36	PC
CAN-2EL-M							EPDM		PH
CAN-2V-M			0.17	±0.04			FKM	C31	PC
CAN-2E-M							EPDM		PH
CAN-1VCH-M	Ø4×Ø9 Ø4×Ø6		0.34	±0.04	PVC		FKM	B11, 16, 21 C16, 21	VC
CAN-1VCH-23	Ø6×Ø12								
CAN-1VEH-M	Ø4×Ø9 Ø4×Ø6						EPDM		VH
CAN-1VH-M					GFRPP CFRPP		FKM		PC
CAN-1EH-M							EPDM		PH
CBN-1VC-M	Ø4×Ø9 Ø4×Ø6	Ø4×Ø9 Ø4×Ø6	0.17	±0.04	PVC	Hastelloy C276	FKM	B11, 16, 21 C16, 21	VC
CBN-1VC-3	Ø6×Ø8	Ø6×Ø8							
CBN-1VC-23	Ø6×Ø12	Ø6×Ø12							
CBN-1VC-24	Ø5×Ø8	Ø5×Ø8							
CBN-1VE-M	Ø4×Ø9 Ø4×Ø6	Ø4×Ø9 Ø4×Ø6					EPDM		VH
CBN-1VE-3	Ø6×Ø8	Ø6×Ø8							
CBN-2VCL-M	Ø8×Ø13 Ø9×Ø12	Ø8×Ø13 Ø9×Ø12	0.05	+0.04 −0.03			FKM	B31, C36	VC
CBN-2VEL-M							EPDM		VH
CBN-2VC-M			0.17	±0.04			FKM	C31	VC
CBN-2VE-M							EPDM		VH
CBN-1V-M	Ø4×Ø9 Ø4×Ø6	Ø4×Ø9 Ø4×Ø6		+0.05 −0.04	GFRPP CFRPP		FKM	B11, 16, 21 C16, 21	PC
CBN-1V-3	Ø6×Ø8	Ø6×Ø8							
CBN-1E-M	Ø4×Ø9 Ø4×Ø6	Ø4×Ø9 Ø4×Ø6					EPDM		PH
CBN-1E-3	Ø6×Ø8	Ø6×Ø8							
CBN-2VL-M	Ø8×Ø13 Ø9×Ø12	Ø8×Ø13 Ø9×Ø12	0.05	+0.04 −0.03			FKM	B31, C36	PC
CBN-2EL-M							EPDM		PH
CBN-2V-M			0.17	±0.04			FKM	C31	PC
CBN-2E-M							EPDM		PH
CBN-1VCH-M	Ø4×Ø9 Ø4×Ø6	Ø4×Ø9 Ø4×Ø6	0.34	±0.04	PVC		FKM	B11, 16, 21 C16, 21	VC
CBN-1VCH-3	Ø6×Ø8	Ø6×Ø8							
CBN-1VCH-23	Ø6×Ø12	Ø6×Ø12							
CBN-1VCH-24	Ø5×Ø8	Ø5×Ø8							
CBN-1VEH-M	Ø4×Ø9 Ø4×Ø6	Ø4×Ø9 Ø4×Ø6					EPDM		VH
CBN-1VEH-3	Ø6×Ø8	Ø6×Ø8							
CBN-1VH-M	Ø4×Ø9 Ø4×Ø6	Ø4×Ø9 Ø4×Ø6		+0.05 −0.04	GFRPP CFRPP		FKM		PC
CBN-1VH-7	Ø1/4"xØ3/8"	Ø1/4"xØ3/8"							
CBN-1EH-M	Ø4×Ø9 Ø4×Ø6	Ø4×Ø9 Ø4×Ø6					EPDM		PH
CBN-1EH-7	Ø1/4"xØ3/8"	Ø1/4"xØ3/8"							
CCA-1FC-4×6	Ø4×Ø6 Hose	R3/8, R1/2 Thread	0.04	or more	PVDF	Hastelloy C276	FKM	B11, 16, 21 C16, 21	FC
CS-1S	R1/4 Thread	R1/4 Thread	0.2	±0.03	SUS316		–	B11, 16, 21 C21, 31	SH
CS-1SL			0.05	±0.03				C36	
CS-1E	Ø4×Ø6	Ø4×Ø6	0.12	±0.04	SUS304		EPDM	B11, 16, 21 C16, 21	VH/PH
CS-1E-2									

Back pressure valve

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

Model	Connection		Set Press		Material Note			Applicable pump	Wet end material code
	IN	OUT	MPa		Body	Valve	O-ring		
BVC-1TV-4H	Ø4×Ø6 Hose	R3/8, R1/2 Thread	0.2	±0.02	PVDF	FKM	–	B11, 21 C21	FC
BVC-1TV-10H	Ø10×Ø12 Hose		0.1	±0.02				C36	
BVC-1TV-10H			0.2	±0.02				C31	
BVC-1PVL-4H	Ø4×Ø9 Hose	R3/8, R1/2 Thread	0.2	±0.02	PVC	FKM	FKM	B11, 16,21 C16,21	VC
BVC-1PEL-4H						EPDM	EPDM		VH
BVC-1PVL-8H(8×13)	Ø8×Ø13 Hose	R3/8, R1/2 Thread				FKM	FKM	C31	VC
BVC-1PEL-8H(8×13)						EPDM	EPDM		VH

Note: Gasket made in PTFE.

Dampner

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

Model	Connection	Capacity	Material			Allowable liquid/ dampner pressure	Use
	Hose		Body	Vladar	O-ring		
AQ-10TV	Ø4×Ø9 Ø4×Ø6	164mL	PVDF	FKM	FKM	0.05 - 0.5 MPa	Acid
AQ-10TE				EPDM	EPDM		Alcaline
AQ-10TV-4	Ø8×Ø13			FKM	FKM		Acid
AQ-10TE-4				EPDM	EPDM		Alcaline

Flow checker

The FCM flow checker monitors the suction-line flow and sends a signal to the pump at each shot. Its mounting position is beneath the pump inlet, so the FCM can detect a system upset under any piping or operating condition.

Model		FCM-VC-1	FCM-VC-2	FCM-VH-1	FCM-VH-2
Power voltage		5-24VDC			
Output		NPN open collector			
Max. power consumption (Load capacity)		8mA (15mA)			
Materials	Wet ends	PVC			
	O-ring	FKM		EPDM	
Min. discharge capacity		0.1 mL/shot (Max. capacity varies with pump spec.)			
Min. discharge pressure		0.2 MPa (Max. pressure varies with pump spec.)			
Applicable pumps		EHN-B11, 16, 21, / C16, 21			
Connection		Ø4×Ø9	Ø4×Ø6	Ø4×Ø9	Ø4×Ø6
Environ-mental condition	Liquid temp.	0 - 40°C			
	Relative humidity	35 - 85%RH			
	Ambient temp.	0 - 40°C			
	Max viscosity	20mPa·s or below			

- Run the pump with 100% stroke length when the FCM is installed.
- Install a check valve to observe the minimum discharge pressure of 0.2MPa.
- Loosen the hex socket head screw(M3) and adjust the adjusting screw (remove it as necessary) when the pulse output from the FCM is unstable.

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 S3D2-CK	B11, 16, 21 C16, 21	VC
FCP-1VE			EPDM			VH
FCP-1PC		GFRPP	FKM			PC
FCP-1PE			EPDM			PH

- Pulse output range: 0.3~1.0 MPa

Controller

Model	Material				Applicable pump	Note
	Power voltage	Setting method	Output	Warnig time		
S3D2-CK	100 - 240VAC	DIN Rail	Relay output (1c)	0.1 - 1/1 - 10s	B11, 16, 21 / C16, 21	Omron product

T-joint

Use T-joint for a branch pipe.

Model	Connection	Material	Applicable pump	Wet end material code
	Hose	Body		
TJ-4H	Ø4×Ø9	PVC	B11, 16, 21 / C16, 21	VC, VH
TJ-8H	Ø8×Ø13		B31 / C31, 36	

Degassing joint

Mount at the pump inlet in order to prevent gas lock by degassing the gas bubbles generated in the suction line. (e.g. sodium hypochlorite application)

Model	Connection		Material		Applicable pump
	Joint inlet	Gas vent	Body	O-ring	
DG-VC	Ø4×Ø6 Ø4×Ø9	Ø8×Ø13 Ø9×Ø12	PVC	FKM	B11, 16, 21 C16, 21
DG-VH				EPDM	

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	O-ring	Check valve model		
15FCAN-1VC-M	Ø4×Ø9 Ø4×Ø6	JIS10K 15AFF	PVC	FKM	CAN-1VC	B11, 16, 21 C16, 21	VC
15FCAN-1VE-M				EPDM	CAN-1VE		VH
15FCAN-2VC-M	Ø8×Ø13 Ø9×Ø12			FKM	CAN-2VC	C31	VC
15FCAN-2VE-M				EPDM	CAN-2VE		VH
15FVN×MS	Ø4×Ø9 Ø4×Ø6			FKM	–	B11, 16, 21 C16, 21	VC
15FEN×MS				EPDM			VH
15FVN×ML	Ø8×Ø13 Ø9×Ø12			FKM		B31 C31, 36	VC
15FEN×ML				EPDM			VH
20FCAN-1VC-M	Ø4×Ø9 Ø4×Ø6	JIS10K 20AFF	PVC	FKM	CAN-1VC	B11, 16, 21 C16, 21	VC
20FCAN-1VE-M				EPDM	CAN-1VE		VH
20FCAN-2VC-M	Ø8×Ø13 Ø9×Ø12			FKM	CAN-2VC	C31	VC
20FCAN-2VE-M				EPDM	CAN-2VE		VH
20FVN×MS	Ø4×Ø9 Ø4×Ø6			FKM	–	B11, 16, 21 C16, 21	VC
20FEN×MS				EPDM			VH
20FVN×ML	Ø8×Ø13 Ø9×Ø12			FKM		B31 C31, 36	VC
20FEN×ML				EPDM			VH
25FVN×MS	Ø4×Ø9 Ø4×Ø6	JIS10K 25AFF		FKM	–	B11, 16, 21 C16, 21	VC
25FEN×MS				EPDM			VH
25FVN×ML	Ø8×Ø13 Ø9×Ø12			FKM	–	B31 C31, 36	VC
25FEN×ML				EPDM			VH

Reducing joint

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

Model	Connection		Material		Applicable pump	Wet end material code
	IN	OUT	Body	O-ring		
HJVN-1/2	Ø4×Ø9	Ø4×Ø6	PVC	FKM	B11, 16, 21 / C16, 21	VC
HJVN-1/18		Ø6×Ø11				
HJVN-2/3	Ø4×Ø6	Ø6×Ø8				
HJVN-4/5	Ø8×Ø13	Ø9×Ø12			B31 / C16, 21	
HJEN-1/2	Ø4×Ø9	Ø4×Ø6		EPDM	B11, 16, 21 / C16, 21	VH
HJEN-1/18		Ø6×Ø11				
HJEN-2/3	Ø4×Ø6	Ø6×Ø8				
HJEN-4/5	Ø8×Ø13	Ø9×Ø12			B31 / C16, 21	

Same bore hoses are available as option.

A mount dedicated for the EHN Series

This dedicated mount elevates the pump to connect to the suction piping, when said piping is too high.

Model	Material	Application	Height	Note
EHN-B-M	PVC	For replacing an existing pipe	12mm	EHN-B type only
	SUS304		70mm	
EHN-C-M	PVC		12mm	EHN-C type only
	SUS304		70mm	
EHN-B/C-M	PVC	For installing a new pipe	12mm	EHN-B/C type shared
	SUS304		70mm	

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.

Model	Connection	Material			Wet end material code
	Hose	Body	Diaphragm	O ring	
MFV-HTC	Ø4×Ø6, Ø6×Ø8, Ø9×Ø12, Ø10×Ø12, Ø1/4×Ø3/8, Ø3/8×Ø1/2, Ø6×Ø12, Ø5×Ø8	PVDF	PTFE+EPDM	FEPM	TC
MFV-MTC					
MFV-LTC					

Hose joint

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

Thread connection

Model	Connection		Material		Applicable pump	Wet end material code
	Hose	Thread	Body	O-ring		
V4VN-3/8-M	Ø4×Ø9 Ø4×Ø6	R3/8	PVC	FKM	B11, 16, 21 C16, 21	VC
V4EN-3/8-M				EPDM		VH
V4VN-1/2-M		R1/2		FKM		VC
V4EN-1/2-M				EPDM		VH
V8VN-3/8-M	Ø8×Ø13 Ø9×Ø12	R3/8	PVC	FKM	B31 C31, 36	VC
V8EN-3/8-M				EPDM		VH
V8VN-1/2-M		R1/2		FKM		VC
V8EN-1/2-M				EPDM		VH

VP plumbing connection

Model	Connection		Material		Applicable pump	Wet end material code
	Hose	VP plumbing	Body	O-ring		
V4VN-13-M	Ø4×Ø9 Ø4×Ø6	VP13	PVC	FKM	B11, 16, 21 C16, 21	VC
V4EN-13-M				EPDM		VH
V4VN-16-M		VP16		FKM		VC
V4EN-16-M				EPDM		VH
V4VN-20-M		VP20		FKM		VC
V4EN-20-M				EPDM		VH
V8VN-13-M	Ø8×Ø13 Ø9×Ø12	VP13	PVC	FKM	B31 C31, 36	VC
V8EN-13-M				EPDM		VH
V8VN-16-M		VP16		FKM		VC
V8EN-16-M				EPDM		VH
V8VN-20-M		VP20		FKM		VC
V8EN-20-M				EPDM		VH

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	O-ring	Valve ball		
FSCN-1	Ø4×Ø9	PE	PVC	FKM	Alumina ceramic	B11, 16, 21 C16, 21	VC
FSCN-2	Ø4×Ø6						
FSCN-3	Ø6×Ø8						
FSCN-4	Ø8×Ø13					B31 C31, 36	
FSCN-5	Ø9×Ø12						

Mesh size is 150 mesh.

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	O-ring	Valve ball		
FSVN-1	Ø4×Ø9	Aflon	PVC	FKM	Alumina ceramic	B11, 16, 21 C16, 21	VC
FSVN-2	Ø4×Ø6						
FSVN-3	Ø6×Ø8						
FSVN-4	Ø8×Ø13					B31 C31, 36	
FSVN-5	Ø9×Ø12						
FSEN-1	Ø4×Ø9			EPDM	Hastelloy C276	B11, 16, 21 C16, 21	VH
FSEN-2	Ø4×Ø6						
FSEN-3	Ø6×Ø8						
FSEN-4	Ø8×Ø13					B31 C31, 36	
FSEN-5	Ø9×Ø12						
FSPEN-1	Ø4×Ø9		GFRPP			B11, 16, 21 C16, 21	PH
FSPEN-2	Ø4×Ø6						
FSPEN-3	Ø6×Ø8						
FSPEN-4	Ø8×Ø13					B31 C31, 36	
FSPEN-5	Ø9×Ø12						
FSPVN-1	Ø4×Ø9			FKM	Alumina ceramic	B11, 16, 21 C16, 21	PC
FSPVN-2	Ø4×Ø6						
FSPVN-3	Ø6×Ø8						
FSPVN-4	Ø8×Ø13					B31 C31, 36	
FSPVN-5	Ø9×Ø12						

Mesh size is 20 mesh.

Technical data

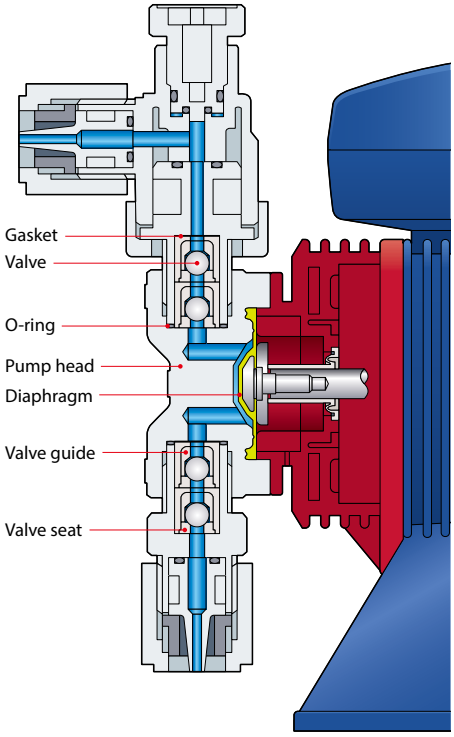
Construction and materials (VC/VH/PC/PH/PP)

Material symbol	VC	VH	PC	PH	PP
Pump head	PVC		GFRPP		
Valve	Alumina ceramic	Hastelloy C276	Alumina ceramic	Hastelloy C276	Alumina ceramic
Valve seat	FKM	EPDM	FKM	EPDM	PCTFE
Valve guide	PVC		GFRPP		
Gasket	PTFE				
O-ring	FKM	EPDM	FKM	EPDM	FKM
Diaphragm	PTFE+EPDM (EPDM of diaphragm is not wet-end.)				

Construction and materials (FC/SH)

Material symbol	FC	SH
Pump head	PVDF	SUS316
Valve	Alumina ceramic	Hastelloy C276
Valve seat	PCTFE	SUS316
Valve guide	PVDF	SUS316
Gasket	PTFE	
O-ring	–	
Diaphragm	PTFE+EPDM (EPDM of diaphragm is not wet-end.)	

PVC: Transparent polyvinyl chloride
GFRPP: Glass fiber reinforced polypropylene
FKM: Fluor rubber
EPDM : Ethylene propylene rubber
PCTFE: Polychlorotrifluoroethylene
PTFE : Polytetrafluoroethylene
PVDF: Poly vinylidene fluoride



Pump identification (VC/VH/PC/PH/PP)

EHN - B 11 VC M K R - NAE
1 2 3 4 5 6 7 8

1 Series name
EHN series

2 Drive unit code
(Average power consumption)
B : **20W**
C : **24W**

3 Diaphragm effective diameter
11 : 10mm
16 : 15mm
21 : 20mm
31 : 30mm
36 : 35mm

4 Wet-end material code
VC, **VH**, **PC**, **PH**, **PP**

5 Connection
M : Multi tube connection

Connection hose dia. (in mm)
Ø4 × Ø9, Ø4 × Ø6 (11/16/21)
Ø8 × Ø13, Ø9 × Ø12 (31/36)
PVC braided hose (Standard)
• Teflon or polyethylene hose
(Special specification)

6 Air vent
Blank : Provided
K : Not provided
• 31/36 (VC/VH)R only

7 Controller
R : Standard
YN : Digital/Analogue correspondence

8 Special configuration
NAE : Automatic air vent
55 : High compression pump head, etc.

Pump identification (FC/SH)

EHN - B 11 FC 2 R
1 2 3 4 5 6

1 Series name
EHN series

2 Drive unit code
(Average power consumption)
B : **20W**
C : **24W**

3 Diaphragm effective diameter
11 : 10mm
21 : 20mm
31 : 30mm
36 : 35mm

4 Wet-end material code
FC
SH

5 Connection hose dia. (in mm)
Pump type
FC 2 : Ø4 × Ø6 **6** : Ø10 × Ø12
SH 9 : Rc 1/4

6 Controller
R : Standard
YN : Digital/Analogue correspondence

Specifications of pump

(VC/VH/PC/PH/PP)

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, Ø4×Ø6			Ø8×Ø13, Ø9×Ø12	Ø4×Ø9, Ø4×Ø6		Ø8×Ø13, Ø9×Ø12	
Power voltage		100 - 240VAC 50/60Hz single phase							
Air vent		Provided			Provided/Not Provided	Provided		Provided/Not Provided	
Accessory	Check valve	CAN-1			CAN-2-L	CAN-1		CAN-2-L	
	Braided hose	Ø4×Ø9 or Ø8×Ø13, made in PVC / 3m							

- 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%.
- 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.

Operating condition: Liquid temperature range is 0 to 60 °C(0 to 40 °C for VC/VH)
Ambient temperature range is 0 to 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) mm	Ø4×Ø6			Ø10×Ø12	
	(SH) inch	Rc 1/4				
Power voltage		100 - 240VAC 50/60Hz single phase				
Air vent valve		SH: Standard accessories, FC: Not included				
Accessory		FC: BVC (Back pressure valve), SH: CS-1S (Check valve)				

- 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 to 60 °C (on condition that liquid quality is not changed by freezing, viscosity change, or slurry interfusion).

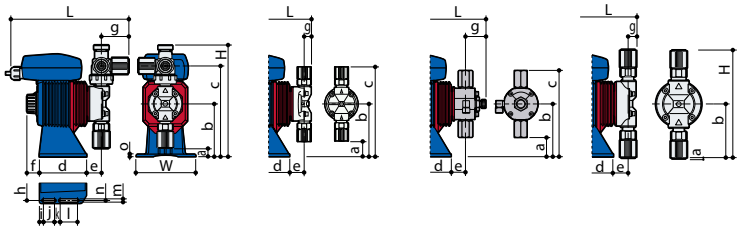
Specifications of controller

Model		EHN-R	EHN-YN
Operation mode		Manual EXT (Pulse multiply or dividing)	Manual EXT (MULT/DIV/ANA)
Control function	Setting	· Manual stroke rate 1 - 360spm · External ·Digital input operation Multiply 1:n n=1 - 999 Dividing n:1 n=1 - 999	· Manual stroke rate 1 - 360spm · External ·Digital input operation Multiply 1:n n=1 - 999 Dividing n:1 n=1 - 999 ·Analogue input Input single 0 - 20mA: Two points setting · Alarm setting(When using FCM)
	Setting method	3 operating keys	4 operating keys
	Stop	The pump stops while receiving the stop signal (Make off/Make on can be selected by changing controller setting)	
Display		4-digit LCD, Operating condition or set value or so	
Input	Pulse	No voltage contact, Open collector	
	Stop	No voltage contact, Open collector	
	Analogue	–	0 - 20mA
	FCM	–	Open collector
Alarm output		–	No voltage contact
Sensor Power voltage		–	12VDC at 20mA
Power voltage		100 - 240VAC 50/60Hz single phase	

Dimensions (mm)

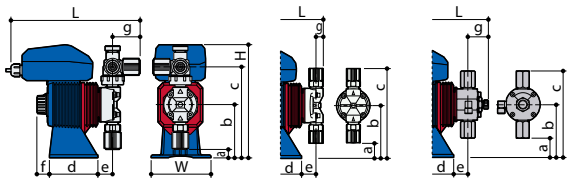
EHN-B□MR

• VC, VH, PC, PH, PP • FC • SH • KR



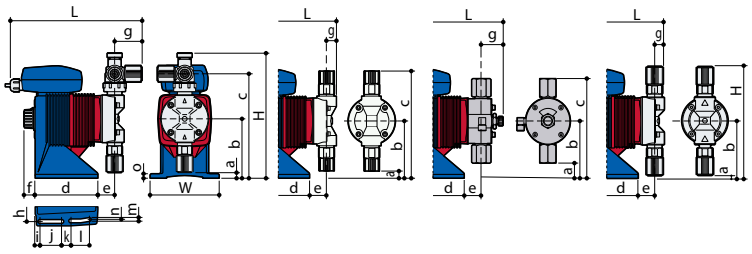
EHN-B□MYN , EHN-B□MYT

• VC, VH, PC, PH, PP • FC • SH



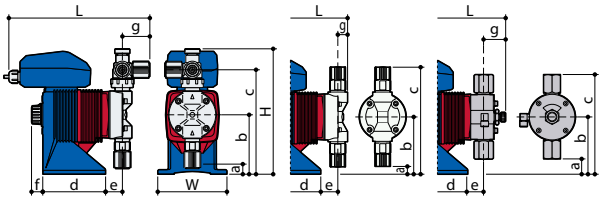
EHN-C□MR , EHN-C□KR

• VC, VH, PC, PH, PP • FC • SH • KR



EHN-C□MYN , EHN-C□MYT

• VC, VH, PC, PH, PP • FC • SH



EHN-R (VC, VH, PC, PH)

Model	W	(H)	(L)	(a)	b	(c)	d	(e)	(f)	(g)	h	i	j	k	l	m	n	o
EHN-B11, 16, 21	100	189	202	14	90	154	81.5	25	21	47	88	7	16	10	32	6.2	-	5
EHN-B31		201	204	-		166		27										
EHN-C16, 21	116	199	220	25[Note1]	100	164	105	27	18	47	100	8	37	15	30	7	95	8
EHN-C31, 36		211[Note2]	222	9[Note3]		176[Note4]		29										

Note1: PC, PH type is 24mm. Note2: EHN-C36 (PC, PH type) is 210mm. Note3: EHN-C36 (PC, PH type) is 10mm. Note4: EHN-C36 (PC, PH type) is 175mm.

EHN-KR (VC, VH)

Model	W	(H)	(L)	(a)	b	(c)	d	(e)	(f)	(g)	h	i	j	k	l	m	n	o
EHN-B31	100	181	173	1	90	-	81.5	27	21	16	88	7	16	10	32	6.2	-	5
EHN-C31	116	191	192	9	100		105	29	18		100	8	37	15	30	7	95	8
EHN-C36			191															

EHN-R (PP)

Model	W	(H)	(L)	(a)	b	(c)	d	(e)	(f)	(g)	h	i	j	k	l	m	n	o
EHN-B11, 16	100	190	202	14	90	155	81.5	25	21	47	88	7	16	10	32	6.2	-	5
EHN-B31		202	203	2		167		27										
EHN-C21	116	200	220	24	100	165	105	27	18	47	100	8	37	15	30	7	95	8
EHN-C31		212	222	8		177		29										
EHN-C36		211		9		176												

EHN-R

Model	W	(H)	(L)	(a)	b	(c)	d	(e)	(f)	(g)
EHN-B11, 21	100	174	167	27	90	153	81.5	25	21	12
EHN-C21	116	189	185.5	37	100	163	105	27	18	12
EHN-C31			191.5	18.5		181.5		29		16
EHN-C36			191					28.5		

EHN-R (SH)

Model	W	(H)	(L)	(a)	b	(c)	d	(e)	(f)	(g)
EHN-B11, 21	100	174	188	34	90	146	81.5	24	21	34
EHN-C21	116	189	209	34	100	156	105	26	18	36.5
EHN-C31						166		28		34.5
EHN-C36			208.5	31		169				34

EHN-YN, EHN-YT (VC, VH, PC, PH)

Model	W	(H)	(L)	(a)	b	(c)	d	(e)	(f)	(g)
EHN-B11, 16, 21	100	191	218	14	90	154	81.5	25	21	47
EHN-B31		201	220	1		166		27		
EHN-C16, 21	116	199	220	25[Note1]	100	164	105	27	18	47
EHN-C31, 36		211[Note2]	239[Note3]	9[Note4]		176[Note5]		29		

Note1: PC, PH type is 24mm. Note2: EHN-C36 (PC, PH type) is 210mm. Note3: EHN-C36 is 238mm. Note4: EHN-C36 (PC, PH type) is 10mm. Note5: EHN-C36 (PC, PH type) is 175mm.

EHN-YN, EHN-YT (PP)

Model	W	(H)	(L)	(a)	b	(c)	d	(e)	(f)	(g)
EHN-B11, 16	100	190	202	14	90	155	81.5	25	21	47
EHN-B31		202	203	2		167		27		
EHN-C21	116	200	220	24	100	165	105	27	18	47
EHN-C31		212	222	8		177		29		
EHN-C36		211		9		176				

EHN-YN, EHN-YT (FC)

Model	W	(H)	(L)	(a)	b	(c)	d	(e)	(f)	(g)
EHN-B11, 21	100	191	183.5	27	90	153	81.5	25	21	12
EHN-C21	116	206.5	202	37	100	163	105	27	18	12
EHN-C31			208	18.5		181.5		29		16
EHN-C36			207.5					28.5		

EHN-YN, EHN-YT (SH)

Model	W	(H)	(L)	(a)	b	(c)	d	(e)	(f)	(g)
EHN-B11, 21	100	191	204.5	34	90	146	81.5	24	21	34
EHN-C21	116	206.5	225.5	44	100	156	105	26	18	36.5
EHN-C31				34		166		28		34.5
EHN-C36			225	31		169				34

IWAKI CO., LTD. 6-6 Kanda-Sudacho 2-chome Chiyoda-ku Tokyo 101-8558 Japan TEL : (81)3 3254 2935 FAX : 3 3252 8892

IWAKI has global net work. Please find your distributor location at **www.iwakipumps.jp**

European office	**: IWAKI Europe GmbH**	TEL: (49)2154 9254 0	FAX: 2154 9254 48
Germany	**: IWAKI Europe GmbH**	TEL: (49)2154 9254 50	FAX: 2154 9254 55
Holland	**: IWAKI Europe GmbH** (Netherlands Branch)	TEL: (31)74 2420011	FAX: (49)2154 925448
Italy	**: IWAKI Europe GmbH** (Italy Branch)	TEL: (39)0444 371115	FAX: 0444 335350
Spain	**: IWAKI Europe GmbH** (Spain Branch)	TEL: (34)93 37 70 198	FAX: 93 47 40 991
Belgium	**: IWAKI Belgium N.V.**	TEL: (32)13 67 02 00	FAX: 13 67 20 30
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Norway	**: IWAKI Norge AS**	TEL: (47)23 38 49 00	
Sweden	**: IWAKI Sverige AB**	TEL: (46)8 511 72900	

( )Country codes

U.S.A.	**: IWAKI America Inc.**	TEL: (1)508 429 1440	FAX: 508 429 1386
Argentina	**: IWAKI America Inc.** (Argentina Branch)	TEL: (54)11 4745 4116	
Brasil	: IWAKI Do Brasil Comercio De Bombas Hidraulicas LTDA.	TEL: (55)19 3244 5900	FAX: 19 3244 5900
Singapore	**: IWAKI Singapore Pte Ltd.**	TEL: (65)6316 2028	FAX: 6316 3221
Indonesia	**: IWAKI Singapore** (Indonesia Office)	TEL: (62)21 6906606	FAX: 21 6906612
Malaysia	**: IWAKIm Sdn. Bhd.**	TEL: (60)3 7803 8807	FAX: 3 7803 4800
Australia	**: IWAKI Pumps Australia Pty Ltd.**	TEL: (61)2 9899 2411	FAX: 2 9899 2421
Hong Kong	**: IWAKI Pumps Co., Ltd.**	TEL: (852)2607 1168	FAX: 2607 1000
China	**: GFTZ IWAKI Engineering & Trading Co., Ltd.**	TEL: (86)20 84350603	FAX: 20 84359181
	: IWAKI Pumps (Shanghai) Co., Ltd.	TEL: (86)21 6272 7502	FAX: 21 6272 6929
Korea	**: IWAKI Korea Co.,Ltd.**	TEL: (82)2 2630 4800	FAX: 2 2630 4801
Taiwan	**: IWAKI Pumps Taiwan Co., Ltd.**	TEL: (886)2 8227 6900	FAX: 2 8227 6818
Thailand	**: IWAKI (Thailand) Co.,Ltd.**	TEL: (66)2 322 2471	FAX: 2 322 2477

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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