



Electromagnetic metering pumps

HRP

High resolution & ultra compact



The Heart of Industry

High resolution & ultra compact



DC power voltage / vertically- or horizontally-oriented pump head

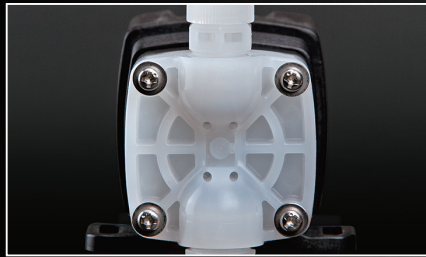
The HRP series is powered by 12VDC or 24VDC and offers an ideal fit for built-in applications. Select vertically- or horizontally-oriented pump head to get optimum mounting position in various host machines.



High resolution

Digitally-controlled spm range is 0-720spm. The minimum flow of 0.055ml per shot offers a constant micro-injection.

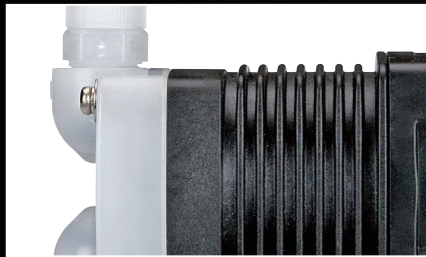
- The stop control type does not allow variable control of the number of strokes.



Waterproof and dustproof structure

The sealed drive unit and control unit are enclosed to a water/dust-proof rating of IP65.

- This pump is not completely water proof. Protect the pump with a cover when installing it out of doors.



Wet end materials

	Materials
1 Pump head	PVDF
2 Valve seat	FKM
3 Valve	Alumina ceramic
4 Gasket	PTFE
5 O ring	FKM
6 Diaphragm	PTFE+EPDM
7 Valve spring ^{Note}	PEEK

Note : Valve spring is HRP-54H only.

• EPDM is not a wet end.

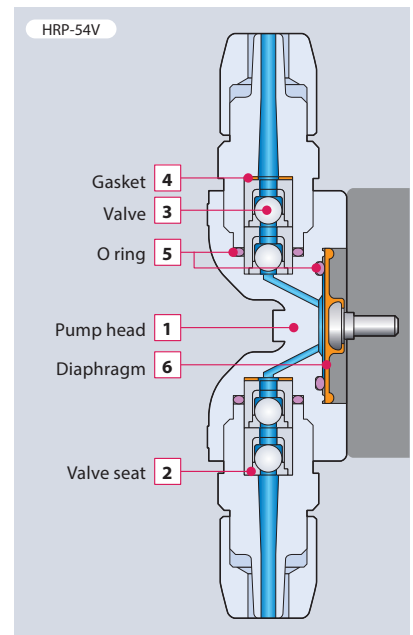
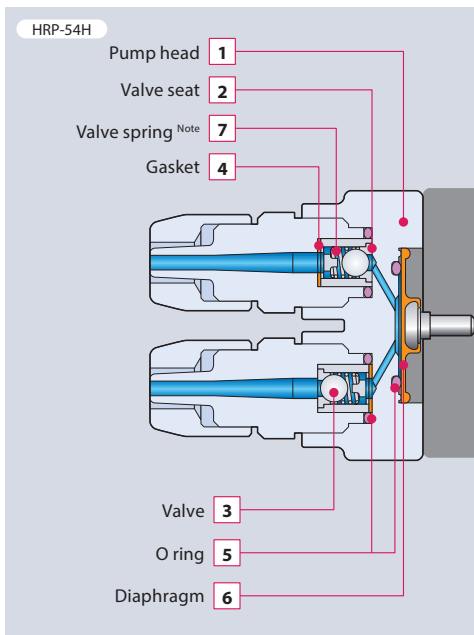
• Contact us for other valve seat, valve and O ring materials.

Material code

PVDF : Polyvinylidene difluoride

FKM : Fluorine-contained rubber

PTFE : Polytetrafluoroethylene





HRP-54H



HRP-54V

Operational function

HRP pumps are controlled by an external signal and are available in the following types.

Pulse control type

A pulse signal input controls pump operation (stroke rate). The pump makes one shot per pulse synchronously.

- An input signal is required to enable operation in addition to power activation for this type.
- The pump can not exceed a maximum of 720spm, even if the external signal input instructs the pump to run beyond that speed.

4-20mA control type

The input of 4-20mA proportionally controls the pump operation (stroke rate).

- An input signal is required to enable operation in addition to power activation for this type.

1-5V control type

The input of 1-5V proportionally controls the pump operation (stroke rate).

- An input signal is required to enable operation in addition to power activation for this type.

Stop control type

The input of the stop signal suspends the pump operation.

- The pump starts to run at 720spm upon power activation for this type.

Specifications

Pump & Drive units

Model	Max. discharge capacity mL/min	Max. discharge pressure MPa	Stroke rate spm	Tubing connection bore	Power voltage V	Power consumption W	Current value A	Mass kg
HRP-54V/H-1	38	0.2	0 - 720	Ø3mm×Ø6mm Ø4mm×Ø6mm Ø1/8"×Ø1/4" 1/4-28 UNF(Special order)	DC12	5.6	1.5	0.5
HRP-54V/H-2					DC24		1.0	

• This specification is based on pumping clean water at rated voltage.

• Flow rate is collected at the maximum discharge pressure and 720spm. The flow rate increases as a discharge pressure decreases.

• 0.12MPa or more discharge pressure is needed to prevent over feeding. If the discharge pressure is at or below the required MPa, install a check valve (option) or back pressure valve (option).

• Allowable ambient temperature: 0 - 40 °C • Allowable liquid temperature: 0 - 40 °C • Allowable voltage deviation: ±5% of the rated voltage **12VDC: 11.4V - 12.6V, 24VDC: 22.8V - 25.2V**

Integrated control options

Control type	Parameter	Value
Pulse control type	Upper limit spm	720spm
	Operation	One shot per signal (Synchronous operation) ^{Note2}
	Input signal	No-voltage contact or open collector ^{Note1}
4 - 20mA control type	Upper limit spm	720spm
	Operation	4-20mADC proportional operation to 0-720spm
	Input signal	Current: 4-20mADC
1 - 5V control type	Upper limit spm	720spm
	Operation	1-5VDC proportional operation to 0-720spm
	Input signal	Voltage: 1-5VDC (Current capacity of 25mA or more)
Stop control type	Upper limit spm	720spm (Fixed)
	Operation	The pump stops during contact input.
	Input signal	No-voltage contact or open collector ^{Note1}

Note1: The maximum applied voltage to the contact is 12V at 5mA. When using a contact type relay, the minimum application load should be 5mA or below.

Note2: If the frequency of the external signal exceeds the upper limit spm, the excess signal will be cancelled.

Power cable

Conduction section area	0.32mm ² (Triplex cable)	Standard	UL3265
Length	600mm	Terminal treatment	Bared

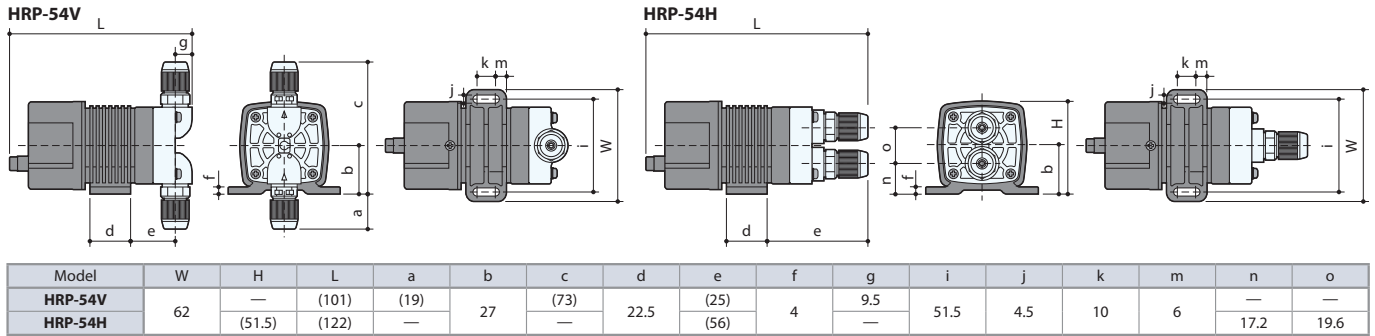
Identification

HRP - 5 4 V - 1 P 1 - □ □

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① Series name
HRP series
- ② Drive unit
(Average power consumption)
5 : 5.6W
- ③ Discharge capacity
4 : 38mL/min
- ④ Pump head
V : Vertically oriented
H : Horizontally oriented
- ⑤ Power voltage
1 : 12VDC
2 : 24VDC
- ⑥ Control method
P : Pulse control
A : 4 - 20mA control
V : 1 - 5V control
S : Stop control
- ⑦ Connection bore
1 : Ø3mm×Ø6mm
2 : Ø4mm×Ø6mm
3 : Ø1/8"×Ø1/4"
4 : 1/4-28 UNF (Special order)
- ⑧ Special version

Dimensions in mm (normal)



Accessories (Option)

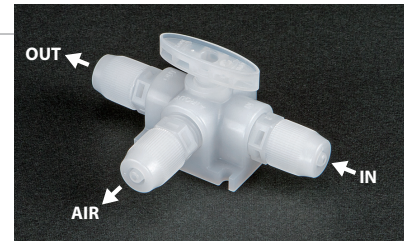
IWAKI check valve with an air vent

AVC

Specifications

Set pressure	0.1±0.03 MPa ^{Note1}
Function change between checking and bleeding	Checking or bleeding can be selected by rotating the air vent valve(knob) 270 degrees. The rotation limit is determined by stoppers. ^{Note2}
Checking	Rotate the air vent valve clockwise as far as it will go.
Bleeding	Rotate the air vent valve counter clockwise as far as it will go. (Limited by a stopper)
Applicable pump	HRP

Note1 : The set pressure is based on operation at 720spm with the applicable pump and clean water.
 Note2 : A stopper screw is provided to determine the rotation limit of the valve.
 Do not apply much stress to the stopper screw, otherwise it may break.



Identification

AVC - FC 1

① Series name
AVC

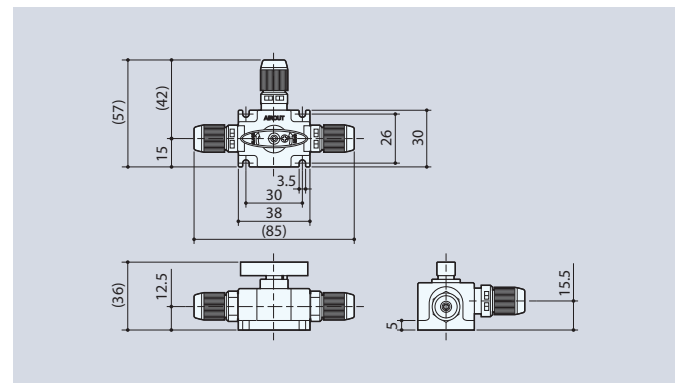
② Materials
F (Wet ends : PVDF)
C (Spring : HC276)

③ Connection bore
1 : Ø3mm×Ø6mm
2 : Ø4mm×Ø6mm
3 : Ø1/8"×Ø1/4"
4 : 1/4-28 UNF (Special order)

Wet end materials

Part names	Body	Fitting	Air vent valve	Poppet valve	O ring	Spring
Material	PVDF	PVDF	PVDF	PVDF	FKM	HC276

Dimensions in mm (normal)



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 network. Please find your distributor location at www.iwakupumps.jp

Europe office : IWAKI Europe GmbH
 Germany : IWAKI Europe GmbH
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 TEL: (358)9 2745810
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TEL: (1)508 429 1440 FAX: 508 429 1386
 TEL: (54)11 4745 4116
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Caution for safety use:
 Before use of pump, read instruction manual carefully to use the product correctly.

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