

IWAKI
ELECTROMAGNETIC
METERING PUMPS

HRP



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 imperceptible injection.



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 resistant. 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.

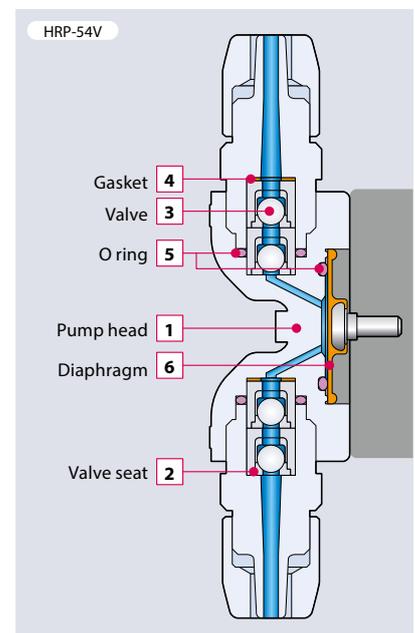
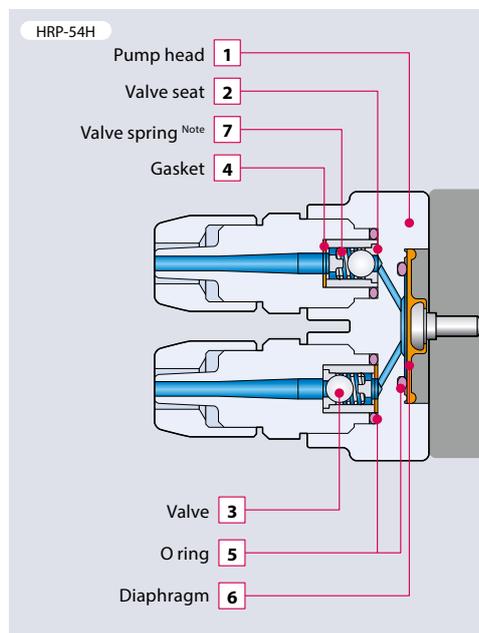
• Contact us for other valve seat, valve and O ring materials.

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 type of pump starts to run at 720spm upon power activation.

Specifications

Pump & Drive units

Model	flow rate mL/min	Max. discharge pressure MPa	Stroke rate spm	Tube connection bore	Power voltage V	Power consumption W	Current value A	Weight kg
HRP-54V/H-1	38	0.2	0 - 720	3mm×6mm, 4mm×6mm, 1/8"×1/4"	12DC	5.6	1.5	0.5
HRP-54V/H-2					24DC		1.0	

• This specification is based on pumping ambient 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 or back pressure valve.

• Allowable room 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**

Control unit

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

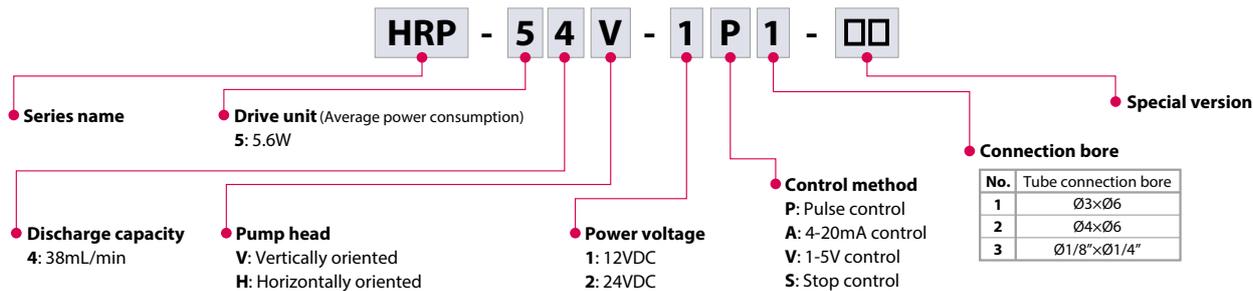
Note1: The maximum applied voltage to the contact is 12V at 5mA. When using a contact type relay, the minimum application load should be 5mA or below.

Note2: The external pulse signal is entered to run the pump over the upper limit spm, the signal is cancelled.

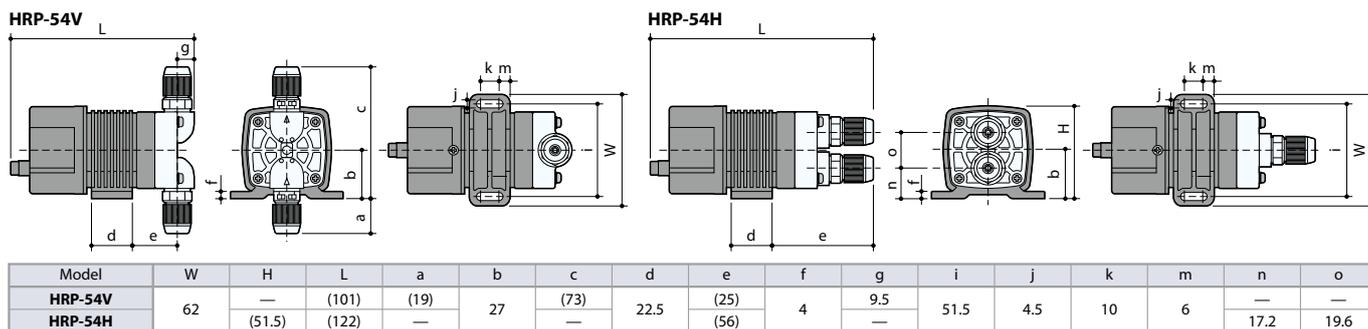
Power cable

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

Identification



Dimensions in mm



Accessories

IWAKI check valve with an air vent

AVC

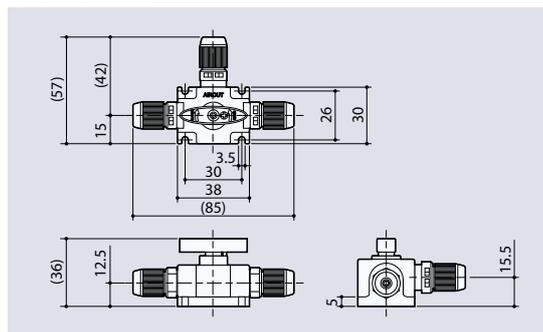
Specifications

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

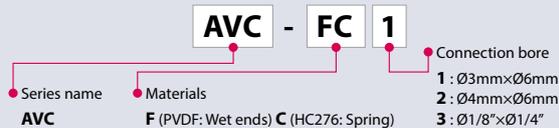
Note1: The set pressure is based on operation at 720spm with the applicable pump and clean water.
 Note2: A stopper screw is provided to determine the rotation limit of the valve.
 Do not apply much stress to the stopper screw, otherwise it may break.



Dimension in mm



Identification



Wet end materials

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

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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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