

Direct drive pumps Easy-to-install canned motor pumps



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Our RD series design features small canned motor centrifugal pumps powered by brushless DC motors. They are designed to be cool, quiet, compact and lightweight. A variety of features, including a seal-less design to prevent leakage, enables the pumps to meet a full spectrum of user needs, with emphasis on ease of installation, operation and maintenance.

Note: RD series is only exclusive for machine-installing application.



RD-05

RD-05H



RD-20/30



RD-12/12Z
Hose type

RD-12/12Z
Thread type

RD-12/12Z
Quick fastener type

Specifications

Model	Tube Connection (IN x OUT) mm	Max. capacity L/min	Max. head m	Motor					Ambient temperature °C	Liquid temperature range °C	Mass kg
				Output W	Power consumption W	Revolution speed min ⁻¹	Power voltage VDC	Operating condition			
RD-05	14 x 8	4.7	3.6	4.4	9.6	3500	24	continuous	0 - 40	0.4	
RD-05H		7.9	11	18	39	6000				0.5	
RD-20	18 x 18	19.5	9.3	28	60	3200				0 - 40	1.3
RD-30		23.5	11.5	45	77	3500			0 - 50		0 - 80
RD-30TV24-HV		23.5	11.5	45	77	3500				1.3	

• Operating voltage: 14 V to 24 V (Excluding RD-30TV24-HV) • An optional 500 mm cable is available. (Excluding RD-05H)

• The RD-30TV24-HV can be controlled by 1-5V external control signals. Its performance data above is based on operation with a 5V external control signal.

Model	Connection sizes (IN x OUT)			Max. capacity L/min	Max. head m	Motor			Ambient temperature °C	Liquid temperature range °C	Mass kg
	Quick fastener	Thread	Hose mm			Power consumption W	Rated voltage VDC	Operating condition			
RD-12	P16 x P14	NPT3/8 x NPT3/8	18 x 18	12.7	6.8	24	24	continuous	0 - 50	0 - 75	0.4
RD-12Z	P16 x P10	NPT3/8 x NPT1/4	18 x 10	3.8	10.5	28.8				0 - 60	

• The RD-12/12Z can be controlled by 1-5V external control signals. Its performance data above is based on operation with a 5V external control signal.

• An optional 500 mm cable is available.

Caution



- The specification above shows the average performance at 24VDC power voltage in our shipping inspection. There may be individual deviation up to 10% at each product. Pump performance changes with power voltage fluctuation.
- Pump performance changes when s.g. exceeds 1.0 or viscosity exceeds 1mPa·s. Contact us for detail.
- Contact us for operation out of the standard specification range.
- Avoid frequently turning on/off a pump. Operating life may be adversely affected by load increment.

Typical applications

- Medical care: Biochemical analysis, cooling devices, poultice/low temperature therapeutic machines, cooling for laser treatment
- Physical/chemical analysis: Thermostatic devices, demineralizers, a variety of analyzers
- Automatic vending machine: Dispensers • Photography: Automatic film developers, x-ray film developers
- Semiconductors: Cooling devices • Surface treatment: Small-scale plating machines
- Solar power systems: Electric water heaters, solar battery collectors • Electric cars: Radiators, heaters

Compact and lightweight with a seal-less structure

The canned motor type products in our RD series are light and compact. Unlike conventional magnetic drive pumps, they do not require a large amount of space for installation. Their seal-less structure eliminates leaks and problems involving seal replacement.

Long life

A DC brushless motor is employed as the pump drive. This type of motor reduces concerns over brush abrasion, ensuring a service life as long as that of an AC motor.

Facilitating standard compliance

The RD series pumps power source voltage is classified as safety voltage (50 V or less), which allow the user to easily comply with international standards such as UL, CSA, CE and GS.

Standardized models

Unlike AC power sources, which require different voltages and frequencies depending on the country in which they are used, DC power sources use the same voltage in all areas. Because the RD series has a DC motor, the user is not troubled by motor voltage.

Flow adjustment feature

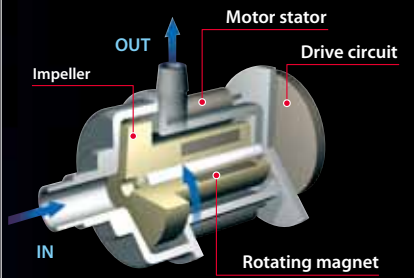
Easy flow adjustment by changing power supply voltage. For the RD-12/12Z, the external variable signal of 1-5VDC makes flow adjustment.

Built-in drive circuit

All you have to do is connecting the power supply to run the pump.
(Note) The external variable signal is required as well as the power supply for the RD-12/12Z.

Operating principle

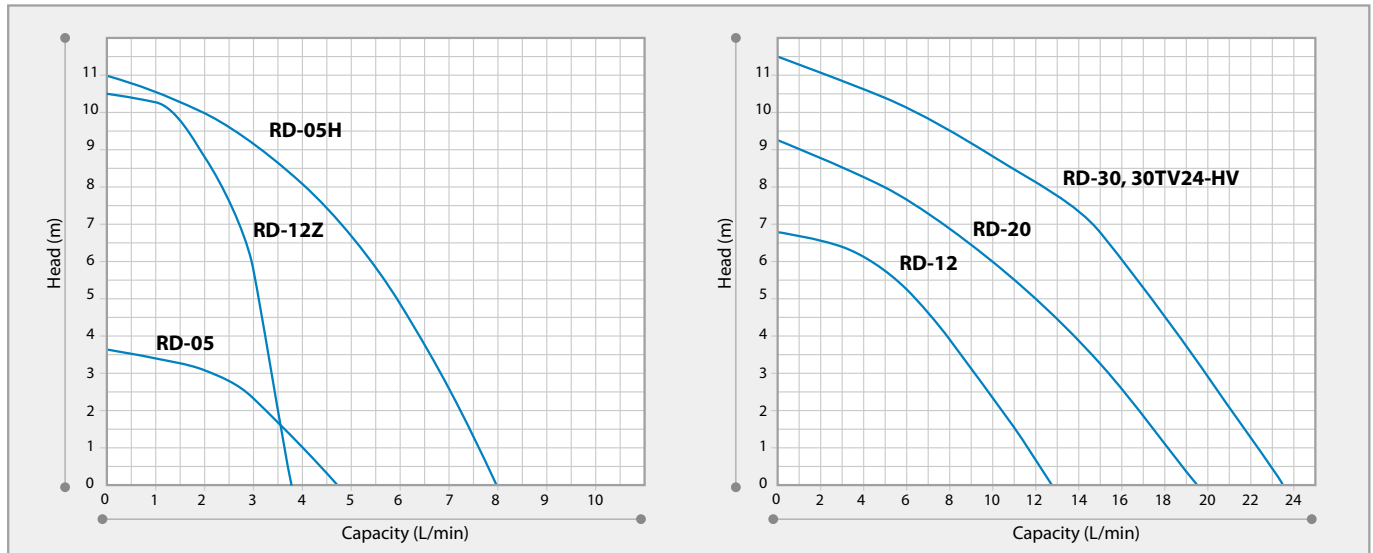
These canned centrifugal pumps directly drive the rotor magnet incorporating an impeller. The pump chamber is completely sealed from the exterior by a casing. The impeller, driven by a rotating magnetic field, requires no shaft seal. In addition, these products have a simpler and more compact structure than pumps which have external drive magnet.



Construction and material

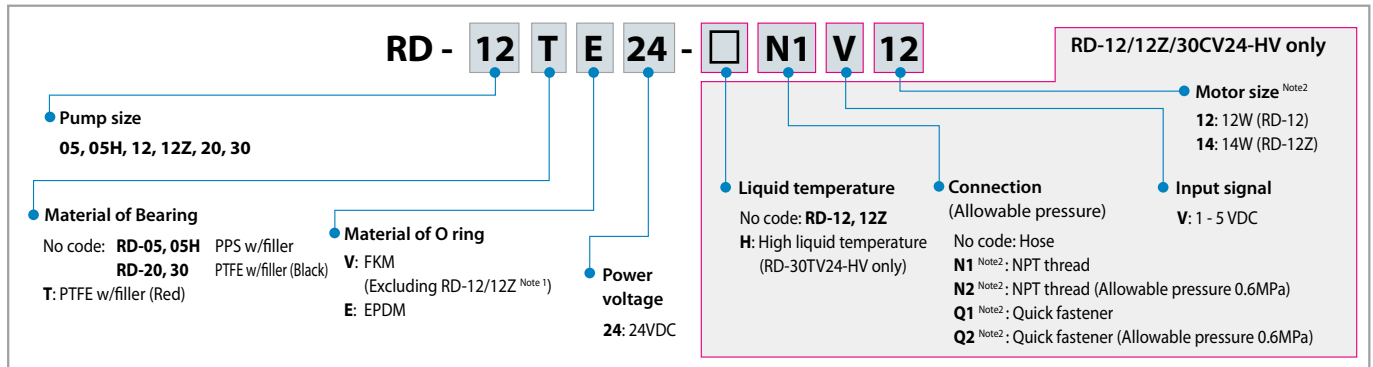
	RD-05, 05H	RD-12, 12Z	RD-20, 30
1 Casing	PPE	GFRPPS	PPE
2 Rear casing			
3 Impeller	GFRPP	GFRPPS	GFRPP
4 Spindle		Alumina ceramic	
5 Bearing	PPS w/filler or PTFE w/filler (Red)	PTFE w/filler (Red)	PTFE w/filler (Black) or PTFE w/filler (Red)
6 Thrust ring		Alumina ceramic	
7 O ring	FKM or EPDM	EPDM	FKM or EPDM

Performance curves



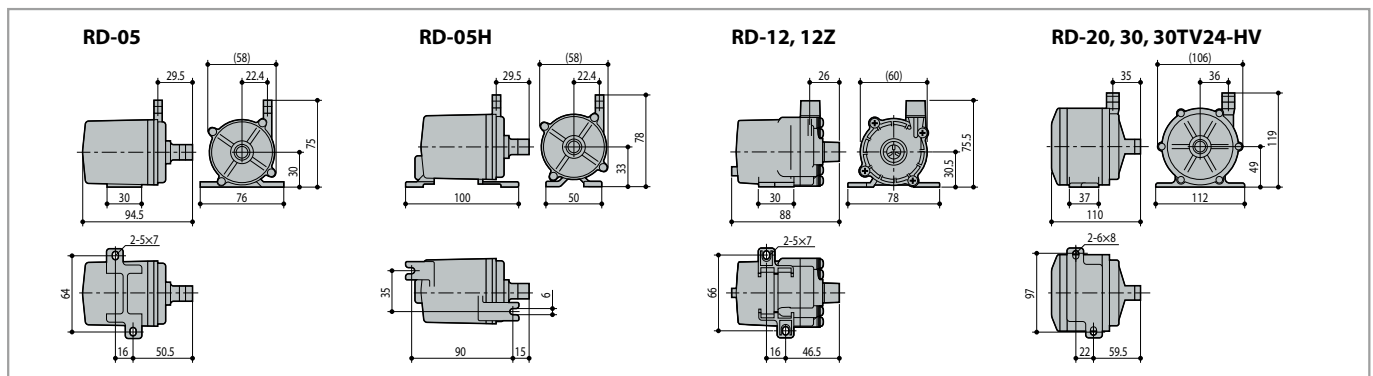
• Performance curves are the average obtained at our shipping inspection. There may be individual deviation up to 10% at each product.
 • The above performance curves of the RD-12, /-12Z and /-30TV24-HV are based on operation with a 5V external control signal.

Pump identification



Note 1: FKM O rings of the RD-12/-12Z are available as an option. Contact us for detail. Note 2: Excluding RD-30TV24-HV

Dimensions (mm)



• RD-12, 12Z illustration shows thread type. Please contact us for details.

www.iwakipumps.jp

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

EUROPE / U.S.A.

European office : IWAKI Europe GmbH
 Holland : IWAKI Europe (NL Branch)
 Austria : IWAKI (Austria) GmbH
 Belgium : IWAKI Belgium N.V.
 Denmark : IWAKI Nordic A/S
 Finland : IWAKI Suomi Oy
 France : IWAKI France S.A.
 Germany : IWAKI Europe GmbH
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 Spain : IWAKI Iberica Pumps, S.A.
 Sweden : IWAKI Sverige AB
 Switzerland : IWAKI (Schweiz) AG
 U.K. : IWAKI Pumps (UK) Ltd.
 U.S.A. : IWAKI America Inc.
 Argentina : IWAKI America Inc. (Argentina Branch)

TEL: (49)2154 9254 0 FAX: 2154 9254 48
 TEL: (31)547 293 160 FAX: 547 292 332
 TEL: (41)26 674 93 00 FAX: 26 674 93 02
 TEL: (32)13 67 02 00 FAX: 13 67 20 30
 TEL: (45)48 24 2345 FAX: 48 24 2346
 TEL: (358)9 2745810 FAX: 9 2742715
 TEL: (33)1 69 63 33 70 FAX: 1 64 49 92 73
 TEL: (49)2154 9254 50 FAX: 2154 9254 55
 TEL: (39)0444 371115 FAX: 0444 335350
 TEL: (47)66 81 16 60 FAX: 66 81 16 61
 TEL: (34)943 630030 FAX: 943 628799
 TEL: (46)8 511 72900 FAX: 8 511 72922
 TEL: (41)26 674 93 00 FAX: 26 674 93 02
 TEL: (44)1743 231363 FAX: 1743 366507
 TEL: (1)508 429 1440 FAX: 508 429 1386
 TEL: (54)11 4745 4116

ASIA / OCEANIA

Australia : IWAKI Pumps Australia Pty Ltd.
 China : IWAKI Pumps (Shanghai) Co., Ltd.
 Hong Kong : IWAKI Pumps Co., Ltd.
 Shanghai : IWAKI Pumps (Shanghai) Co., Ltd.
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 Indonesia : IWAKI Singapore (Indonesia Branch)
 Taiwan : IWAKI Pumps Taiwan Co., Ltd.
 Thailand : IWAKI (Thailand) Co., Ltd.
 Vietnam : IWAKI Pumps Vietnam Co., Ltd.

TEL: (61)2 9899 2411 FAX : 2 9899 2421
 TEL: (852)2607 1168 FAX: 2607 1000
 TEL: (86)21 6272 7502 FAX: 21 6272 6929
 TEL: (86)20 8435 0603 FAX: 20 8435 9181
 TEL: (86)10 6442 7713 FAX: 10 6442 7712
 TEL: (82)2 2630 4800 FAX: 2 2630 4801
 TEL: (60)3 7803 8807 FAX: 3 7803 4800
 TEL: (65)6316 2028 FAX: 6316 3221
 TEL: (62)21 6906606 FAX: 21 6906612
 TEL: (86)21 8227 6900 FAX: 2 8227 6818
 TEL: (86)2 322 2471 FAX: 2 322 2477
 TEL: (84)613 933456 FAX: 613 933399

()Country codes

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.

Legal attention related to export.
 Our products and/or parts of products fall in the category of goods contained in control list of international regime for export control.
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