



IWAKI  
MAGNETIC  
DRIVE  
PUMPS

**MD**

Main material  
**GFRPP**



Solutions for chemical handling applications

# A worldwide best-seller, our high-quality compact magnetic drive pumps

Our MD series leak-free compact magnetic pumps are a worldwide best-seller and are used in medical equipment, analyzers, constant-temperature baths and surface treatment equipment for chemical feeding in more than thirty countries worldwide.

## Leak free

Magnetic drive seal-less pumps are free from leakage problems and the need for seal replacement. This feature and their compact nature make them ideal for built-in applications.

## Large selection

The MD series comprises 50 models. The high-head type (MD-Z), the high flow type (MD-X) and threaded connection type (MD-M) are available as well as a standard type. The MD series offers the largest selection in the world.



MD-6



MD-10

### MD-6•10

- Max Discharge capacity **5.5/6.0 - 11/12** L/min
- Max Discharge head **1.0/1.4 - 2.1/2.7** m



MD-15R



MD-20R



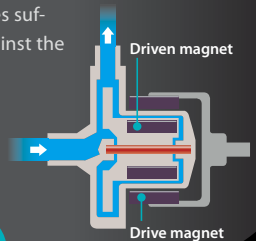
MD-30R

### MD-15•20•30•40

- Max Discharge capacity **10/11 - 75/85** L/min
- Max Discharge head **1.8/2.5 - 11.5/13.5** m



The centrifugal pump is driven by a pair of magnets which are incorporated in the impeller and motor shaft. The sealless pump structure eliminates shaft seals such as conventional mechanical seals because the pump chamber is shielded by the casings and the impeller is operated by the magnets. The combined coupling torque of the drive magnet and impeller magnet gives sufficient driving power against the motor torque.



**Operating Principle**

## High corrosion-resistance

GFRPP(Glass fiber reinforced polypropylene) wet ends of the MD series handle a wide range of chemicals.

## Easy maintenance

The pump unit is comprised of a small number of integrated parts, so maintenance is greatly simplified.



MD-40R



MD-55R



MD-70R



MD-100R

### MD-55·70·100



- Max Discharge capacity **40/43 - 135/135** L/min
- Max Discharge head **5.6/8.2 - 14.3/20.3** m

# Wide variation Easy maintenance

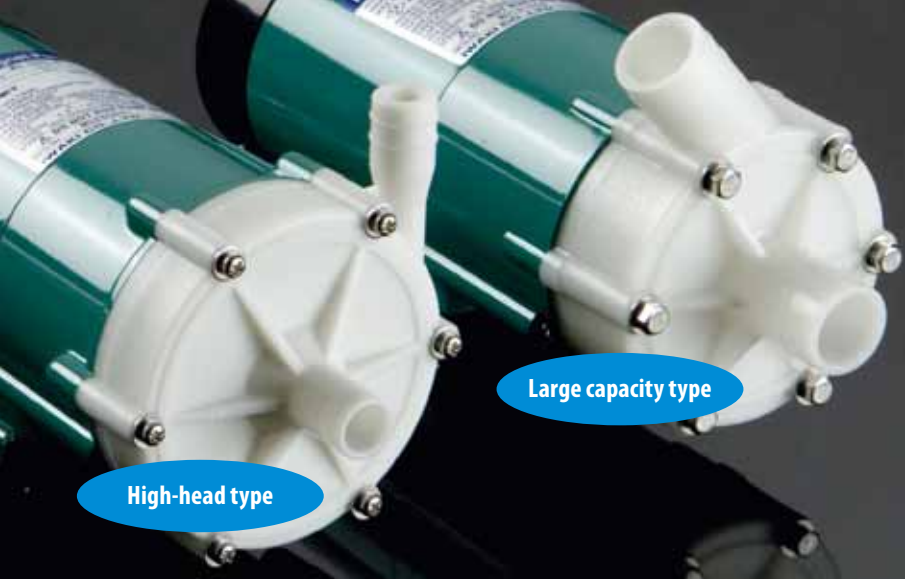
The MD series has GFRPP wet ends. Hose connections, threaded connections and flange connections (only 70-100 size) are available. A large selection of models offer a wide flow range of 8.0-135L/min.



## Outline of the series

Main Material	Models	Max. discharge capacity (L/min)						Max. discharge head (m)				Limit of specific gravity	
		20	40	60	80	100	120	140	5	10	15		20
GFRPP	<b>MD-6</b> Standard type	50Hz	8.0						1.0				1.2
		60Hz	9.0						1.4				
	<b>MD-6Z</b> High head type	50Hz	5.5						2.1				1.1
		60Hz	6.0						2.7				
	<b>MD-10</b> Standard type	50Hz	11						1.5				1.1
		60Hz	12						2.1				
	<b>MD-15R</b> Standard type	50Hz	16						2.4				1.3
		60Hz	19						3.4				
	<b>MD-20R</b> Standard type	50Hz	27						3.1				1.1
		60Hz	31						4.3				
	<b>MD-20RX</b> Large capacity type	50Hz	46						1.8				1.3
		60Hz	52						2.5				
	<b>MD-20RZ</b> High head type	50Hz	10						4.6				1.1
		60Hz	11						6.9				
	<b>MD-30R</b> Standard type	50Hz	32						3.8				1.3
		60Hz	38						5.4				
	<b>MD-30RX</b> Large capacity type	50Hz	62						2.9				1.1
		60Hz	72						4.1				
	<b>MD-30RZ</b> High head type	50Hz	15						8.0				1.0
		60Hz	17						11				
<b>MD-40R</b> Standard type	50Hz	45						4.6				1.1	
	60Hz	52						6.5					
<b>MD-40RX</b> Large capacity type	50Hz	75						3.3				1.1	
	60Hz	85						4.7					
<b>MD-40RZ</b> High head type	50Hz	22						10				1.0	
	60Hz	22						13.5					
<b>MD-40RZ-5</b> 50Hz only	50Hz	11						11.5				1.0	
<b>MD-55R</b> Standard type	50Hz	60						5.6				1.2	
	60Hz	70						8.2					
<b>MD-55R-5</b> 50Hz only	50Hz	70						8.2				1.2	
<b>MD-70R</b> Standard type	50Hz	86						6.7				1.0	
	60Hz	97						9.7					
<b>MD-70RZ</b> High head type	50Hz	40						14.3				1.0	
	60Hz	43						20.3					
<b>MD-100R</b> Standard type	50Hz	120						8.6				1.2	
	60Hz	135						11.9					
<b>MD-100R-5</b> 50Hz only	50Hz	135						11.7				1.1	

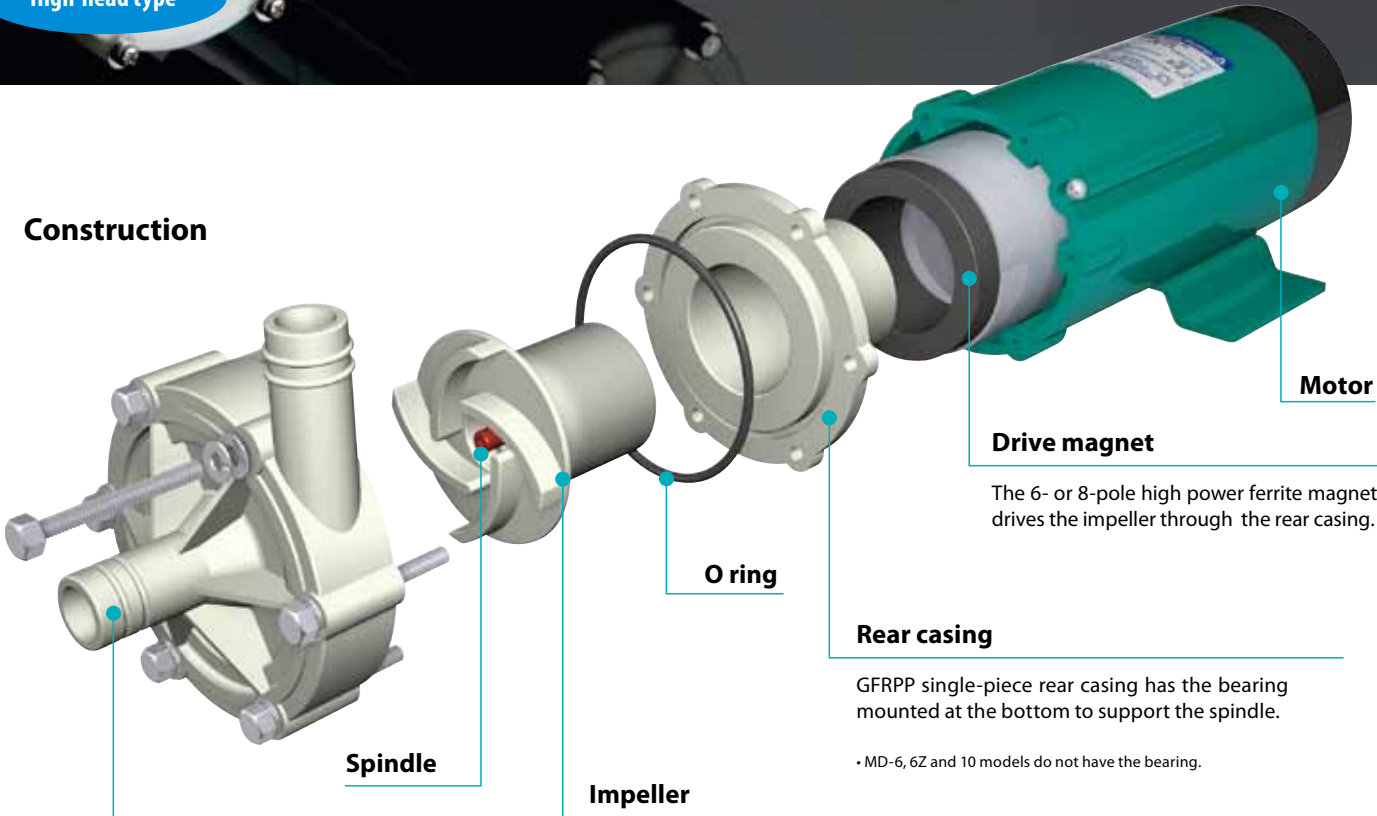




High-head type

Large capacity type

### Construction



Motor

Drive magnet

The 6- or 8-pole high power ferrite magnet drives the impeller through the rear casing.

O ring

Rear casing

GFRPP single-piece rear casing has the bearing mounted at the bottom to support the spindle.

• MD-6, 6Z and 10 models do not have the bearing.

Impeller

The ferrite magnet is encapsulated into the impeller. For rotating spindle models, an alumina ceramic spindle is integrally molded with the impeller. Open, closed or semi-open type impellers can be selected according to performance requirements.

• MD-6, 6Z and 10 models use a fixed spindle design.

Front casing

Hose or threaded connections can be selected according to application. Also flanges or union joints can be installed on threaded connection models.

• MD-6, 6Z and 10 models do not have thread connection type.



Hose connection type



Thread connection type



Standard type R



High-head type RZ



Large-capacity type RX

# MD-6·10

**GFRPP**  
50/60 Hz

- Range of Max. discharge capacity: 5.5/6.0 - 11/12 L/min
- Range of Max. discharge head: 1.0/1.4 - 2.1/2.7 m



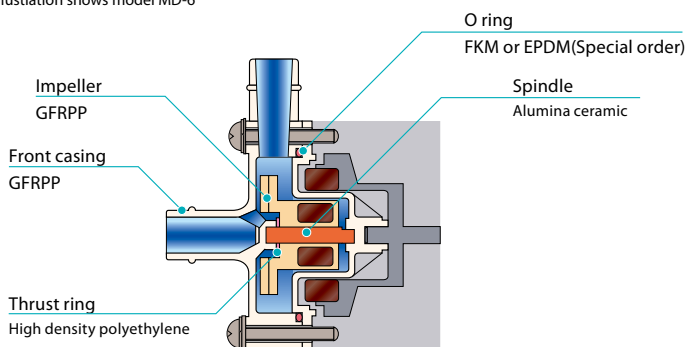
## Specifications (50/60Hz)

Model	Hose connection		Max. Capacity L/min	Max.Head m	S.G.	Output W	Input W	Phase	Mass kg
	Inlet (mm)	Outlet (mm)							
MD-6	14	14	8.0 / 9.0	1.0 / 1.4	1.2	3 / 3	22 / 22	100V Single phase	0.9
MD-6Z			5.5 / 6.0	2.1 / 2.7	1.1		32 / 35		
MD-10			11 / 12	1.5 / 2.1	6 / 6				

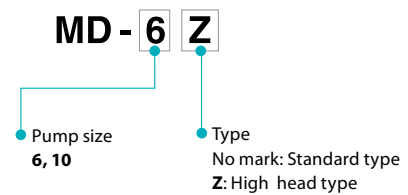
• Temperature range: 0 - 80°C (Contact us for applications below zero.) • Limit of viscosity: 30 mPa·s (at 1 S.G.) • Ambient temperature: 0 - 40°C  
 • Motor type: Capacitor-run induction motor • MD-6, 6Z and 10 do not have thread connection type.

## Construction and materials

Illustration shows model MD-6

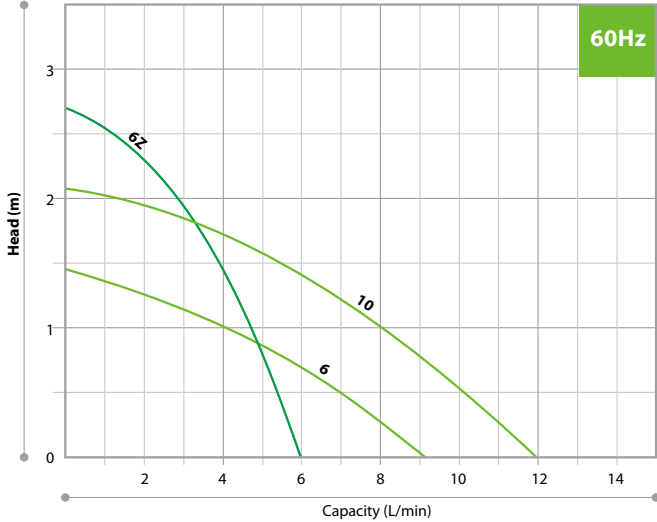
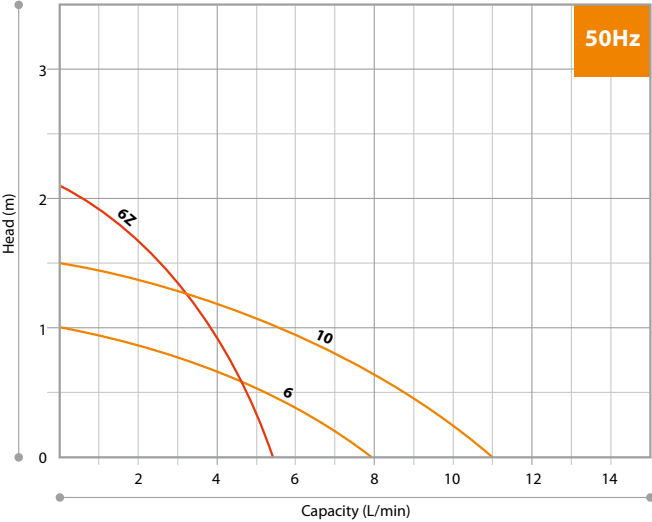


## Pump identification



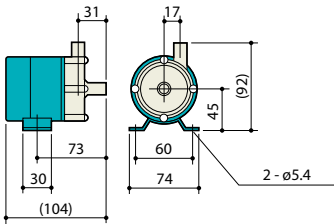


Performance curves

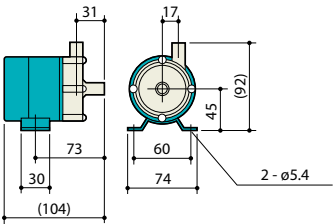


Dimensions (mm)

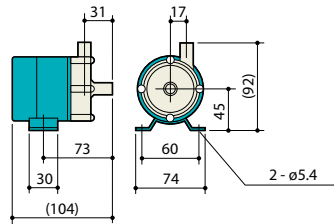
MD-6



MD-6Z



MD-10



# MD-15·20·30·40

**GFRPP**  
50/60 Hz

- Range of Max. discharge capacity: **10/11 - 75/85 L/min**
- Range of Max. discharge head: **1.8/2.5 - 11.5/13.5 m**



## Specifications (50/60Hz)

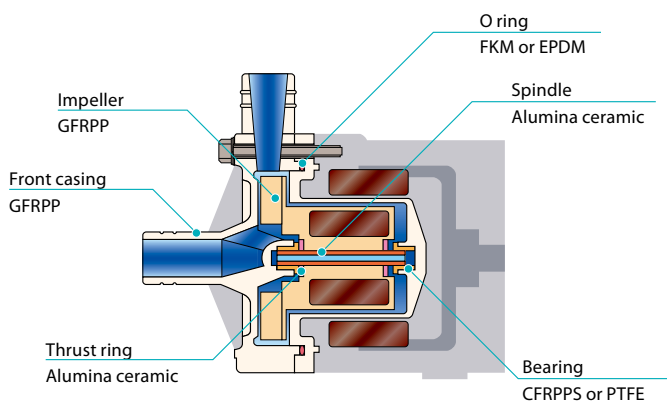
Model	Hose connection		Thread connection		Max. Capacity (L/min)	Max. Head (m)	S.G.	Output (W)	Input (W)	Power source	Mass (kg)
	R · RZ · RX	Inlet (mm) / Outlet (mm)	R-M · RZ-M · RX-M	Inlet/Outlet / Union (mm) <sup>(Note1)</sup>							
MD-15R		14 / 14	G3/4	13	16 / 19	2.4 / 3.4	1.3	10 / 10	26 / 31	100V/200V Single phase 220V - 240V Single phase	1.6
MD-20R		18 / 17	G3/4	16	27 / 31	3.1 / 4.3	1.1	20 / 20	40 / 50		2.0
MD-20RX		26 / 26	G1	20	46 / 52	1.8 / 2.5	1.3				
MD-20RZ		17.5 / 17	G3/4	13	10 / 11	4.9 / 6.9	1.1				
MD-30R		20 / 20	G3/4	16	32 / 38	3.8 / 5.4	1.3	45 / 45	60 / 80		3.5
MD-30RX		26 / 26	G1	20	62 / 72	2.9 / 4.1	1.1		70 / 90		
MD-30RZ		17.5 / 17	G3/4	13	15 / 17	8.0 / 11	1.0	65 / 65	90 / 130		3.9
MD-40R		20 / 20	G3/4	16	45 / 52	4.6 / 6.5	1.1		85 / 120		
MD-40RX		26 / 26	G1	20	75 / 85	3.3 / 4.7					
MD-40RZ		20 / 20	G3/4	16	22 / 22	10 / 13.5	1.0	115 / 160	103 / -		
MD-40RZ-5					11 / -	11.5 / -					

• Temperature range: 0 - 80°C (Contact us for applications below zero.) • Limit of viscosity: 30 mPa·s (at 1 S.G.) • Ambient temperature: 0 - 40°C  
• Motor type: Capacitor-run induction motor

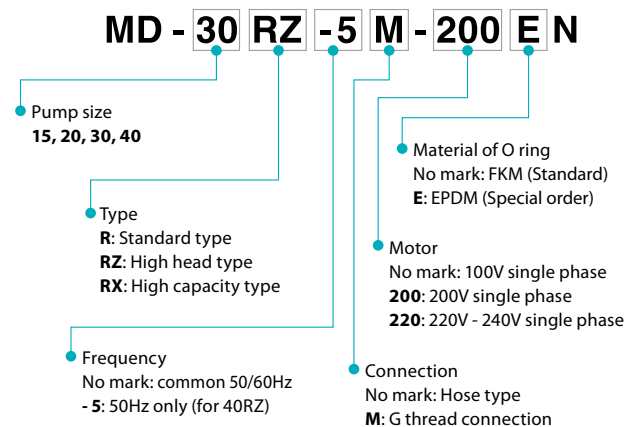
Note 1: The union field shows the nominal diameter of the applicable VP vinyl chloride hose. Heat resistance of the standard union is 0 - 55°C and that of the heat resistant union is 0 - 80°C.  
Note 2: Single phase of 200V model is special order. Please contact us for details.

## Construction and materials

Illustration shows model MD-30R-N



## Pump identification





30

MD-30R

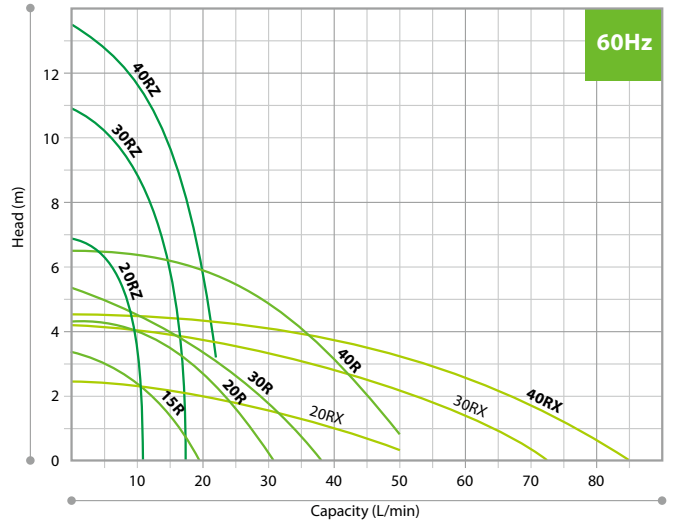
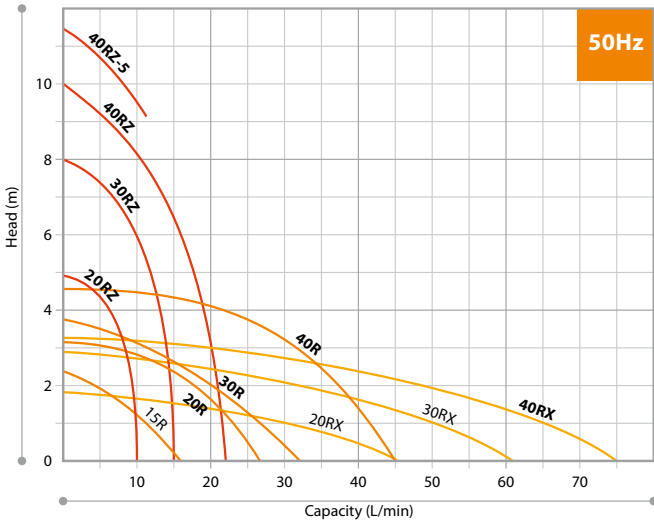


40

MD-40R



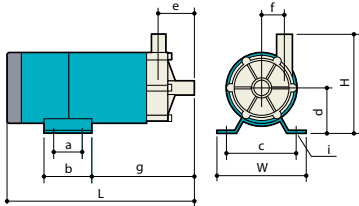
Performance curves



Dimensions (mm)

MD-15R-20R-30R-40R

Illustration shows MD-30R-N

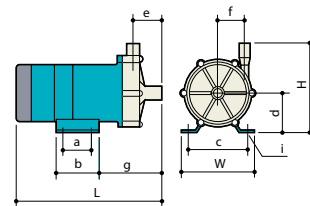


Model	W	H	L	a	b	c	d	e	f	g	i
MD-15R	95	109 (114)	180 (179)	-	50	68	55	39	22	92	2 - $\phi$ 5.6
MD-20R	106	105 (106.3)	209 (203)	44	60	90	45	39 (33)	29	94 (88)	4 - 6 $\times$ 10
MD-30R	120	130	248	40	64	100	60	48	31	137	4 - $\phi$ 9
MD-40R			244								

\* Dimension of the ( ) inside are thread connection type.

MD-20RZ-30RZ-40RZ

Illustration shows MD-20RZ-N



Model	W	H	L	a	b	c	d	e	f	g	i
MD-20RZ	106	125	211	44	60	90	55	40	39	98	4 - 6 $\times$ 10
MD-30RZ			130	230							
MD-40RZ	120	150	235	40	64	100	60	39	45	128	4 - $\phi$ 9
MD-40RZ-5											
MD-20RX	106	119 (122)	220	44	60	90	45	47	-	105	4 - 6 $\times$ 10
MD-30RX			137 (140)	254							
MD-40RX	120	137 (141)	250	40	64	100	60	50		143	4 - $\phi$ 9

\* Dimension of the ( ) inside are thread connection type.

\* RZ type (Hose connection) and RZM type (Thread connection type) are the same dimensions.

# MD-55.70.100

GFRPP  
50/60 Hz

- Range of Max. discharge capacity: 40/43 - 135/135 L/min
- Range of Max. discharge head: 5.6/8.2 - 14.3/20.3 m



MD-55R

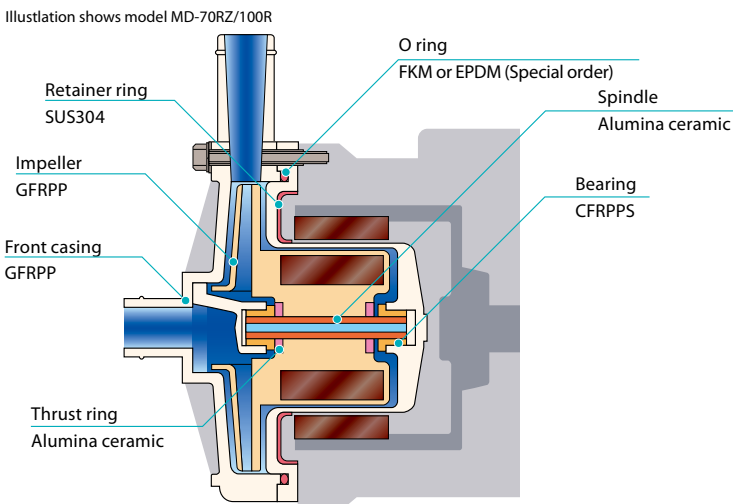
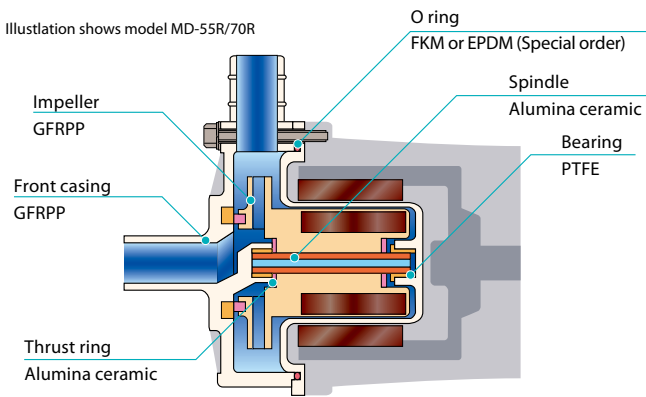
## Specifications (50/60Hz)

Model	Hose connection		Thread connection		Diameter of flange	Max. Capacity (L/min)	Max. Head (m)	S.G.	Output (W)	Input (W)	Power source (Note2)		Mass (kg)
	R · RZ		R-M · RZ-M								Single phase	Three phase	
	Inlet (mm)	Outlet (mm)	Inlet/Outlet	Union (mm) (Note1)									
MD-55R	26	26	G1	20	-	60 / 70	5.6 / 8.2	1.2	90 / 90	130 / 170	-	5.4	
MD-55R-5					-	70 / -	8.2 / -		90 / -	170 / -			
MD-70R	26	26	G1	20	20A	86 / 97	6.7 / 9.7	1.0	150 / 180	235 / 365	100V/200V/ 220V-240V	6.0	
MD-70RZ	20	20	G3/4	16	-	40 / 43	14.3 / 20.3		180 / 216	275 / 395			220V/380V/ 400V/440V
MD-100R	26	26	G1	20	25A	120 / 135	8.6 / 11.9	1.2	260 / 265	245 / 365		8.5	
MD-100R-5						135 / -	11.7 / -	1.1	260 / -	365 / -			

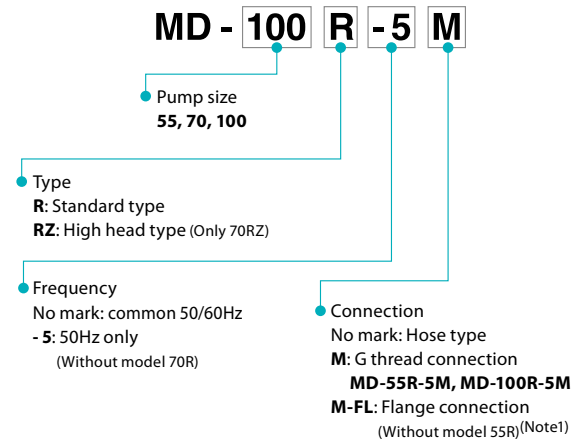
• Temperature range: 0 - 80°C (Contact us for applications below zero.) • Limit of viscosity: 30 mPa·s (at 1 S.G.) • Ambient temperature: 0 - 40°C  
• Motor type: Capacitor-run induction motor

Note 1: The union field shows the nominal diameter of the applicable VP vinyl chloride hose. Heat resistance of the standard union is 0 - 55°C and that of the heat resistant union is 0 - 80°C.  
Note 2: Single phase of 200V model is special order. Please contact us for details.

## Construction and materials



## Pump identification



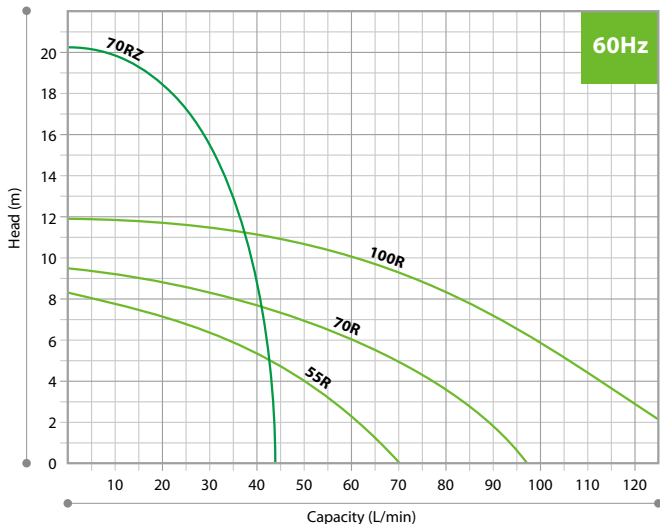
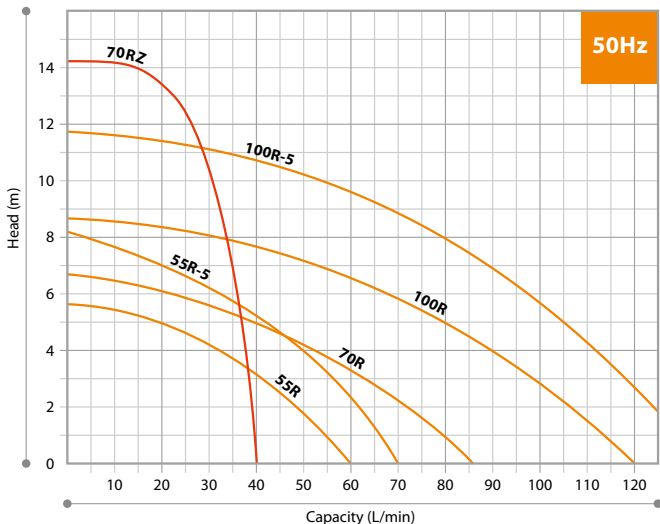
• Specify the pump model and power specification at an inquiry phase.  
Note1: For the MD-100 of 50Hz flange connection type, the model code is different from others. **MD-100RM-5-FL**

0 100

MD-70R

MD-100R

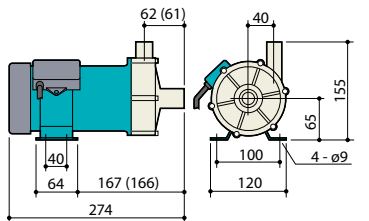
Performance curves



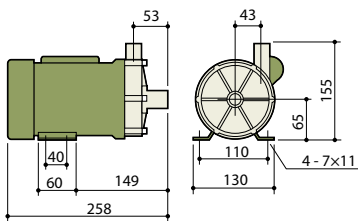
Dimensions (mm)

MD-55R-55R-5

Illustration shows MD-55R

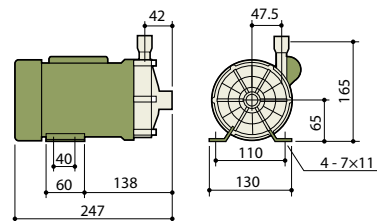


MD-70R

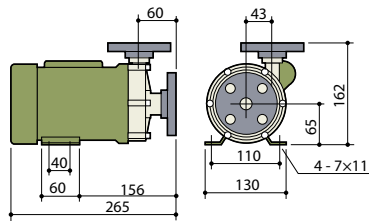


MD-70RZ

( ): Thread connection type

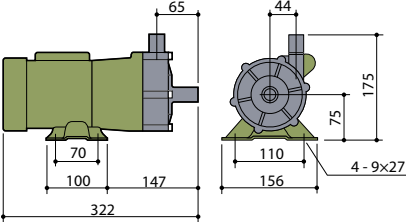


MD-70RM-FL

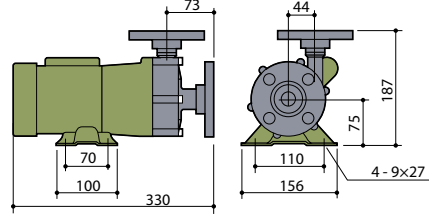


MD-100R-100R-5

Illustration shows MD-100R



MD-100RM-FL-100RM-5-FL



## Special accessories

### • Union joint

Special-purpose union joints are available to cope with three types (13mm, 16mm and 20mm dia.) of piping. Tight sealing O-rings are used to prevent thread damage caused by over tightening.



#### Specifications

Model	13A	H13A	16A	H16A	20A	H20A
Material	PVC	HT-PVC	PVC	HT-PVC	PVC	HT-PVC
Range of temp.	0 - 55°C	0 - 80°C	0 - 55°C	0 - 80°C	0 - 55°C	0 - 80°C
Material of O ring	FKM or EPDM					

### • Self-priming chamber

Once fill up liquid, repriming is not required. It is very easy to use MD pump with self-priming chamber.



#### Specifications

Model	SC-4V	SC-4E	SC-7V	SC-7E
Material of O ring	FKM	EPDM	FKM	EPDM
Connection	G3/4		G1	
Suction limit	0.8 m		1.2 m	
Range of tank	0.8 L		1.3 L	
Applicable pump	MD-30RM-N, MD-40RM-N		MD-70RM	

Note: Self-priming height depends on liquid temperature and characteristics.

## Compact & Lightweight

The canned motor pump offers a solution for built-in application

### Direct drive pumps RD series

- Lightweight & sealless structure
- Plastic canned motor pump
- DC 24 V brushless motor
- Employ built-in type driver for the motor
- The variable flow and pressure control by DC 1 to 5 V signal
- Corresponds to high temperature range Max. 80°C
- The connection of three types can be chosen, thread, hose and quick fastener.

#### Specifications

RD-05, RD-05H, RD-20, RD-30

Model	Tube Connection (IN x OUT)	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 <sup>-1</sup>	Power voltage VDC	Operating condition			
RD-05	14 x 8	4.7	3.6	4.4	9.6	3500	24	continuous	0 - 40	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	24	continuous	0 - 40	0 - 40	1.3
RD-30		23.5	11.5	45	77	3500				0.4	
RD-30TV24-HV		23.5	11.5	45	77	3500				0.4	

- 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.

RD-12, RD-12Z (Power source 24 VDC Input signal 5.0 VDC)

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.

RD-40, RD-40X

Model	Connection (IN x OUT)	Max. capacity L/min	Max. head m	Max. SG	Motor		Mass kg
					Output W	Power source VDC	
RD-40	Ø26 mm x Ø19 mm, R1 x R1/2, NPT1 x NPT1/2	25	15	1.0	85	24	1.5
RD-40X	Ø26 mm x Ø26 mm, R1 x R3/4, NPT1 x NPT3/4	70	8		72		

- The data is collected from operation with clean water at room temperature.
- The maximum capacity is obtained based on the presumption that delivery head is at 0 m. The maximum head is obtained based on the presumption that discharge capacity is at 0 L/min.
- The maximum viscosity is 1 mPa·s when the maximum specific gravity is 1.0.
- Operating condition Ambient temperature: 0 - 40°C, Liquid temperature: 0 - 80°C, Ambient humidity: 35 - 90%RH



RD-12



RD-30



RD-40 (High head type)



RD-40X (High flow type)

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

( ) Country codes

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European office : IWAKI Europe GmbH  
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Sweden : IWAKI Sverige AB  
U.K. : IWAKI Pumps (UK) Ltd.

TEL: (49)2154 9254 0 FAX: 2154 9254 48  
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TEL: (1)508 429 1440 FAX: 508 429 1386  
TEL: (54)11 4745 4116  
TEL: (65)6316 2028 FAX: 6316 3221  
TEL: (62)21 6906606 FAX: 21 6906612  
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- ⚠ Caution for safety use: Before use of pump, read instruction manual carefully to use the product correctly.
- ⚠ Legal attention related to export.

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