

Main material  
**GFRPP**

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



# 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.



## Extensive product range

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-6K



MD-10K

### 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

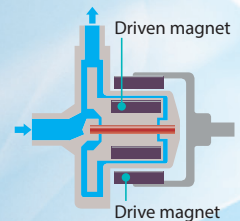


- Max Discharge capacity **10/11 - 75/85** L/min
- Max Discharge head **1.8/2.5 - 11.5/13.5** m



### Operating Principle

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.



### High corrosion-resistance

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



### Ease of 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 GFRPP 50/60Hz

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

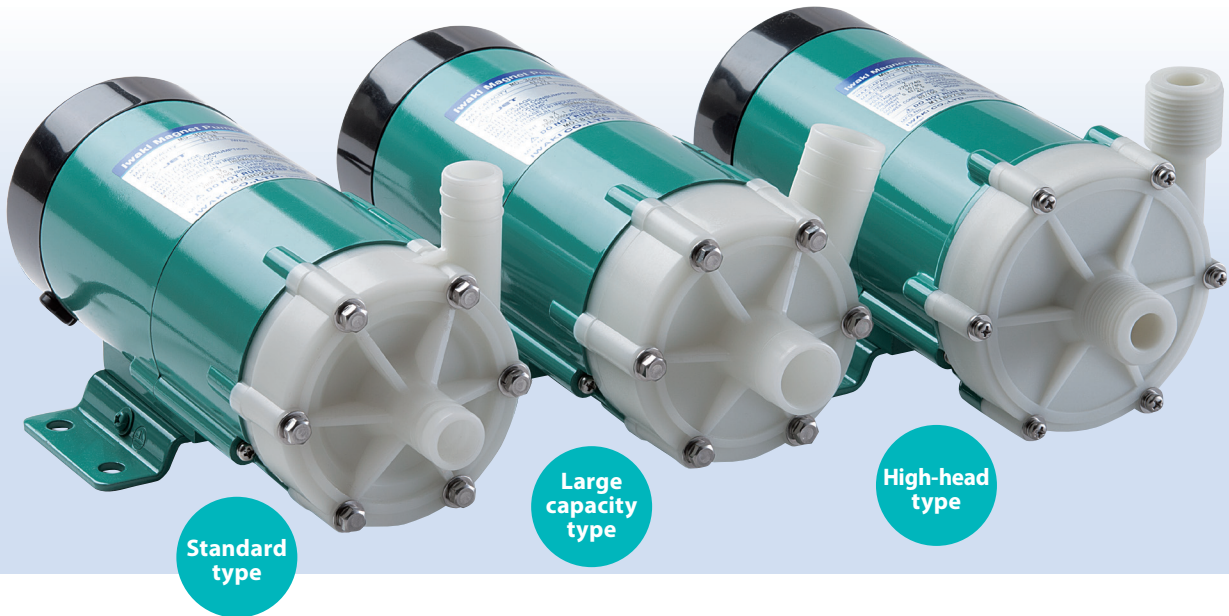
# Extensive product range

## Ease of maintenance

The MD series has GFRPP wet ends. Hose connections, thread 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	MD-6K Standard type	50Hz	8.0							1.0				1.2
		60Hz	9.0							1.4				
	MD-6ZK High head type	50Hz	5.5							2.1				1.1
		60Hz	6.0							2.7				
	MD-10K Standard type	50Hz	11							1.5				1.1
		60Hz	12							2.1				
	MD-15R Standard type	50Hz	16							2.4				1.3
		60Hz	19							3.4				
	MD-20R Standard type	50Hz	27							3.1				1.1
		60Hz	31							4.3				
	MD-20RX Large capacity type	50Hz	46							1.8				1.3
		60Hz	52							2.5				
	MD-20RZ High head type	50Hz	10							4.6				1.1
		60Hz	11							6.9				
	MD-30R Standard type	50Hz	32							3.8				1.3
		60Hz	38							5.4				
	MD-30RX Large capacity type	50Hz	62							2.9				1.1
		60Hz	72							4.1				
	MD-30RZ High head type	50Hz	15							8.0				1.0
		60Hz	17							11				
	MD-40R Standard type	50Hz	45							4.6				1.1
		60Hz	52							6.5				
	MD-40RX Large capacity type	50Hz	75							3.3				1.1
		60Hz	85							4.7				
MD-40RZ High head type	50Hz	22							10				1.0	
	60Hz	22							13.5					
MD-40RZ-5 50Hz only	50Hz	11							11.5				1.0	
MD-55R Standard type	50Hz	60							5.6				1.2	
	60Hz	70							8.2					
MD-55R-5 50Hz only	50Hz	70							8.2				1.2	
MD-70R Standard type	50Hz	86							6.7				1.0	
	60Hz	97							9.7					
MD-70RZ High head type	50Hz	40							14.3				1.0	
	60Hz	43							20.3					
MD-100R Standard type	50Hz	120							8.6				1.2	
	60Hz	135							11.9					
MD-100R-5 50Hz only	50Hz	135							11.7				1.1	

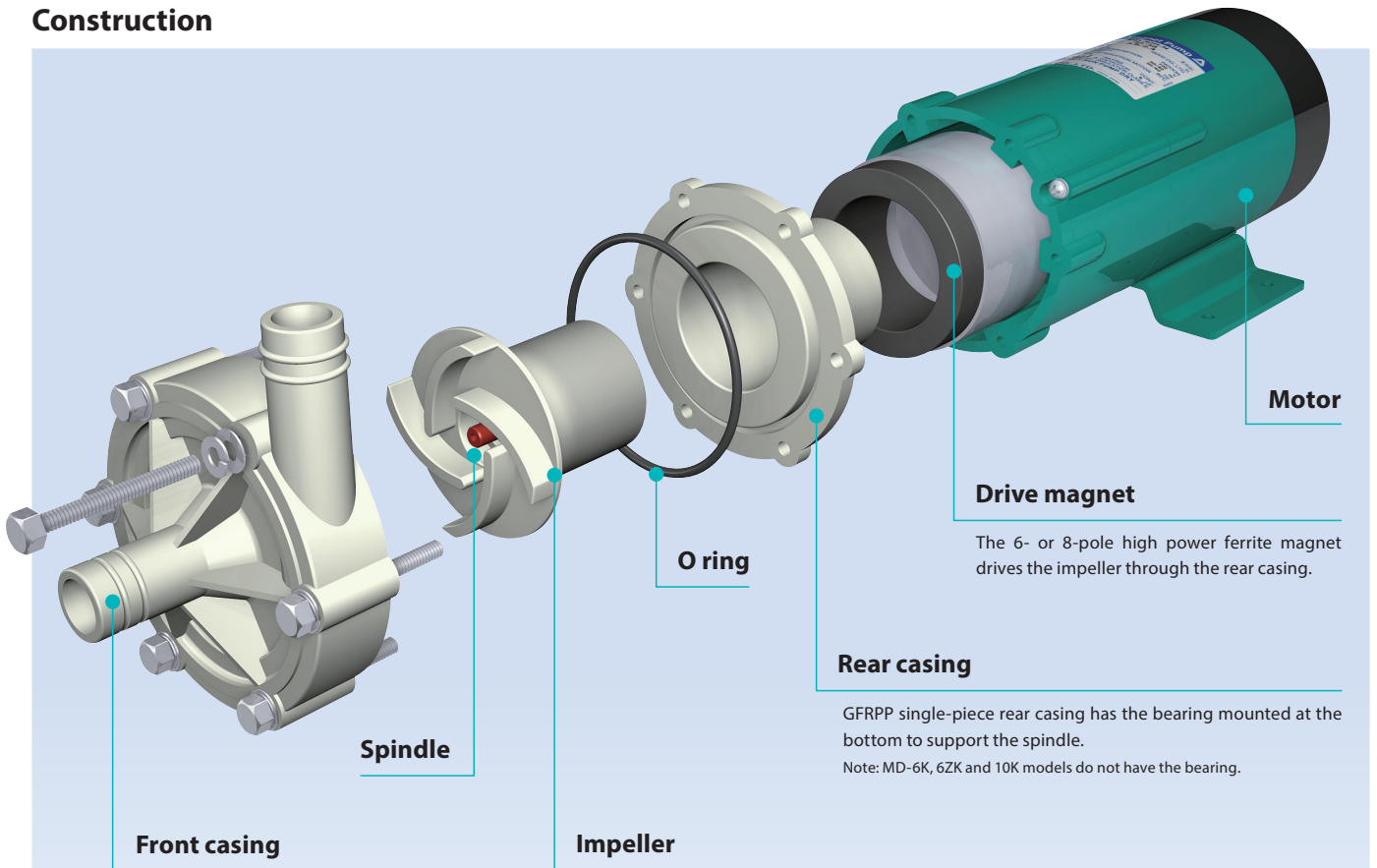


Standard type

Large capacity type

High-head type

### Construction



Motor

Drive magnet

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

Rear casing

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

Note: MD-6K, 6ZK and 10K models do not have the bearing.

O ring

Impeller

The ferrite magnet is encapsulated into the impeller. For rotating spindle models, an alumina ceramic spindle is integrally molded with the impeller.

Open, semi-open or closed type impellers can be selected according to performance requirements.

Note: MD-6K, 6ZK and 10K models use a fixed spindle design.

Spindle

Front casing

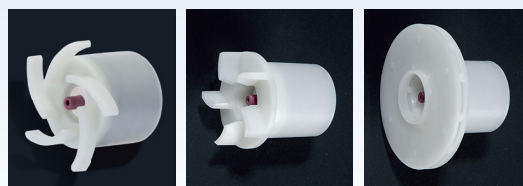
Hose or thread connections can be selected according to application. Also union joints can be installed on threaded connection models.

Note: MD-6K, 6ZK and 10K models do not have thread connection type.



Hose connection type

Thread connection type



Open type

Semi-open type

Closed type

# MD-6K·6ZK·10K

**GFRPP**  
50/60 Hz

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



MD-6K



MD-10K

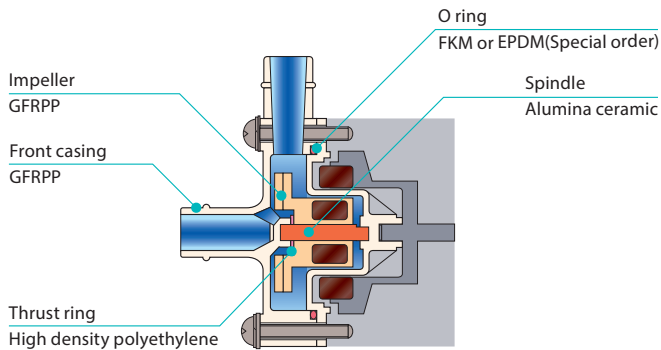
## Specifications (50/60Hz)

Model	Hose connection		Max. Capacity L/min	Max. Head m	S.G.	Output W	Inlet W	Power source	Mass kg
	Inlet (mm)	Outlet (mm)							
MD-6K	Ø14	Ø14	8.0/9.0	1.0/1.4	1.2	5/5	12/12	100V Single phase	0.9
MD-6ZK			5.5/6.0	2.1/2.7	1.1				
MD-10K			11/12	1.5/2.1	1.1				

• 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-6K, 6ZK and 10K do not have thread connection type.

## Construction and materials

Illustration shows model MD-6K



- GFRPP Glass fiber reinforced polypropylene
- FKM Fluorine rubber
- EPDM Ethylene propylene rubber

## Pump identification

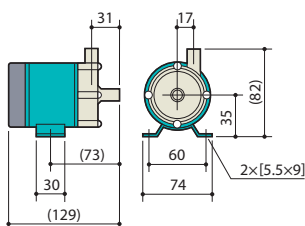
**MD - 6 ZK - E N**

1 2 3

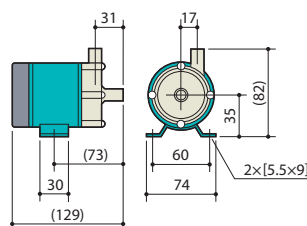
- 1 Pump size  
**6, 10**
- 2 Type  
**K** : Standard type  
**ZK** : High head type
- 3 Material of O ring  
No mark : FKM  
**E** : EPDM (Special order)

## Dimensions (mm)

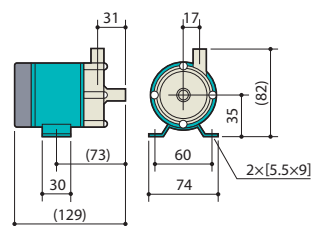
MD-6K



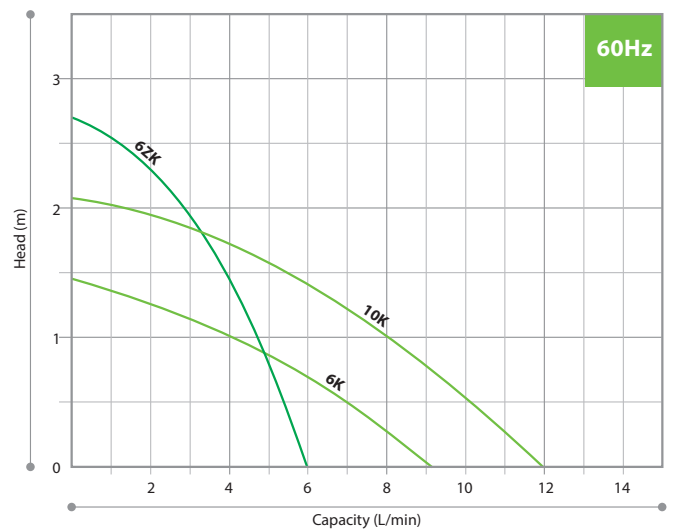
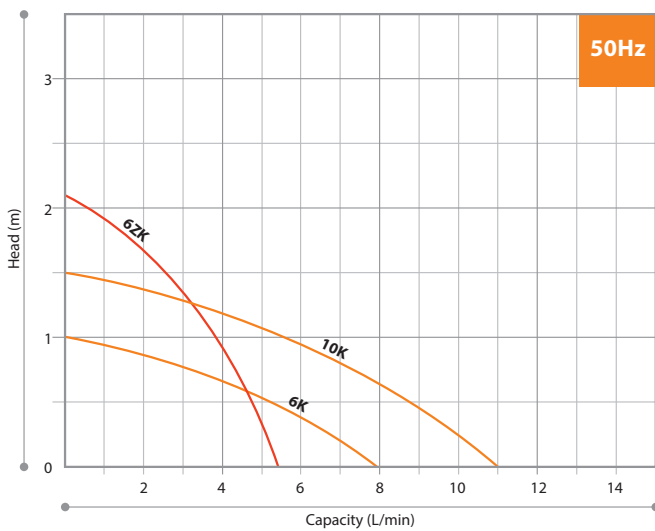
MD-6ZK



MD-10K



### Performance curves



### MD-6•MD-6Z•MD-10



#### Specifications (50/60Hz)

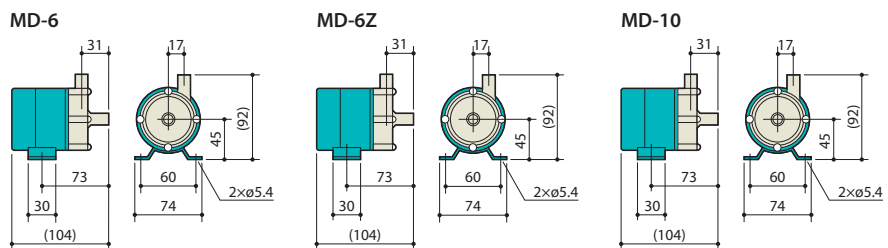
Model	Hose connection		Max. Capacity L/min	Max. Head m	S.G.	Output W	Input W	Power source	Mass Kg
	Inlet (mm)	Outlet (mm)							
MD-6	14	14	8.0 / 9.0	1.0 / 1.4	1.2	3 / 3	22 / 22	100V Single phase	0.9
MD-6Z			5.5 / 6.0	2.1 / 2.7	1.1				
MD-10			11 / 12	1.5 / 2.1					

- 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: Shaded pole motor • MD-6, 6Z and 10 do not have thread connection type.

#### Pump identification

- MD - 6 Z**
- 1 2
- Pump size  
**6, 10**
  - Type  
No mark : Standard type  
**Z** : High head type

#### Dimensions (mm)



# MD-15·20·30·40

**GFRPP**  
50/60 Hz

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



## Specifications (50/60Hz)

Model	Hose connection <b>R · RZ · RX</b>		Thread connection <b>R · M · RZ · M · RX · M</b>		Max. Capacity (L/min)	Max. Head (m)	S.G.	Output (W)	Input (W)	Power source Note2	Mass (kg)
	Inlet(mm)	Outlet(mm)	Inlet/Outlet	Union <sup>Note1</sup>							
MD-15R	Ø14	Ø14	G3/4	13A	16/19	2.4/3.4	1.3	10/10	26/31 <sup>Note3</sup>	100V/200V Single phase	1.6
MD-20R	Ø18	Ø17	G3/4	16A	27/31	3.1/4.3	1.1	20/20	40/50		2.0
MD-20RX	Ø26	Ø26	G1	20A	46/52	1.8/2.5	1.3	45/45	60/80	220V - 240V Single phase	3.5
MD-20RZ	Ø17.5	Ø17	G3/4	13A	10/11	4.9/6.9	1.1				
MD-30R	Ø20	Ø20	G3/4	16A	32/38	3.8/5.4	1.3	65/65	90/130 <sup>Note3</sup>		3.9
MD-30RX	Ø26	Ø26	G1	20A	62/72	2.9/4.1	1.1			85/120	
MD-30RZ	Ø17.5	Ø17	G3/4	13A	15/17	8.0/11	1.0	1.1	115/160	3.9	
MD-40R	Ø20	Ø20	G3/4	16A	45/52	4.6/6.5	1.1				103/-
MD-40RX	Ø26	Ø26	G1	20A	75/85	3.3/4.7	1.0	65/-	103/-	3.9	
MD-40RZ	Ø20	Ø20	G3/4	16A	22/22	10/13.5					
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

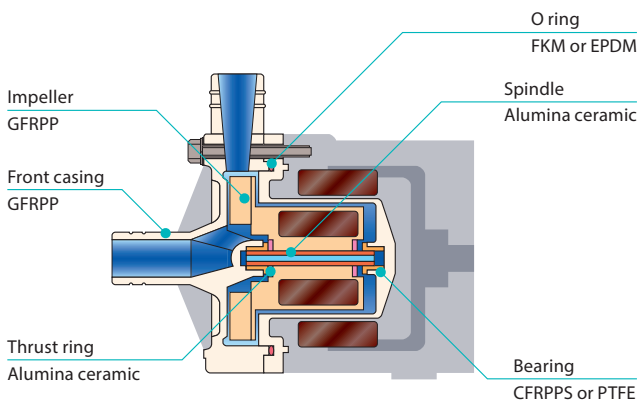
Note 1: The union field shows the nominal diameter of the applicable VP vinyl chloride hose. Heat resistance of the standard union is 0 - 55°C and that of the heat resistant union is 0 - 80°C.

Note 2: Single phase of 200V model is special order. Please contact us for details.

Note 3: The above values are for single phase of 100V model.

## Construction and materials

Illustration shows model MD-30R



- **GFRPP** Glass fiber reinforced polypropylene
- **CFRPPS** Carbon fiber reinforced polyphenylene sulfide
- **PTFE** Polytetrafluoroethylene ("Teflon", etc.)
- **FKM** Fluorine rubber
- **EPDM** Ethylene propylene rubber

## Pump identification

**MD - 30 RZ - 5 M - 200 E N**

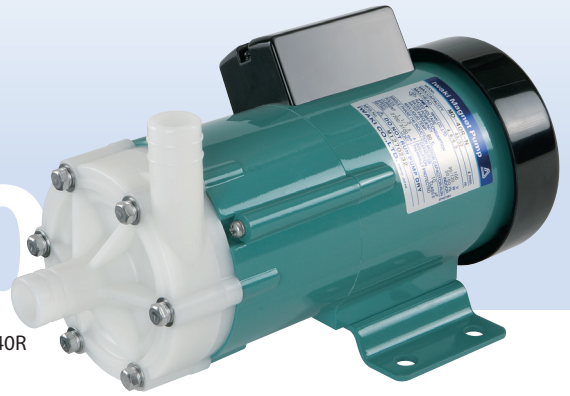
1    2    3    4    5    6

- Pump size**  
15, 20, 30, 40
- Type**  
R : Standard type  
RZ : High head type  
RX : Large capacity type
- Frequency**  
No mark : common 50/60Hz  
-5 : 50Hz only (for 40RZ)
- Connection**  
No mark : Hose type  
M : G thread connection
- Motor**  
No mark : 100V single phase  
200 : 200V single phase  
220 : 220V - 240V single phase
- Material of O ring**  
No mark : FKM (Standard)  
E : EPDM (Special order)



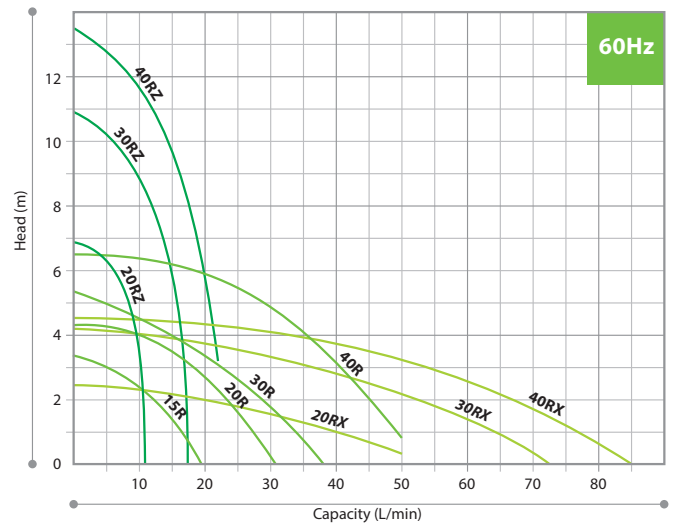
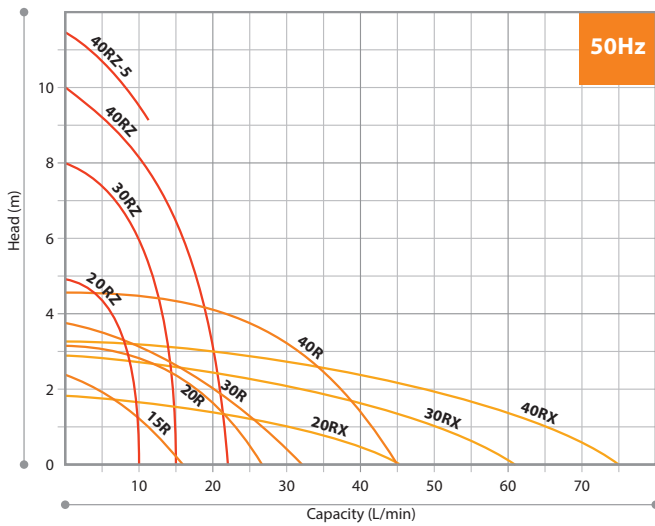


MD-30R



MD-40R

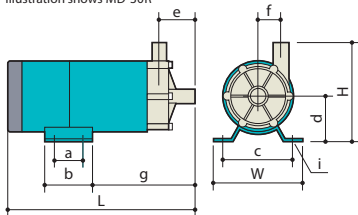
Performance curves



Dimensions (mm)

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

Illustration shows MD-30R

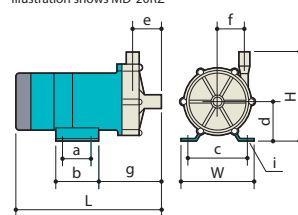


Model	W	H	L	a	b	c	d	e	f	g	i
MD-15R	95	109 (114)	179.5 (179)	—	50	68	55	39	22	117 (116.5)	2 × Ø5.6
MD-20R	106	105 (106.3)	208.5 (203)	44	60	90	45	39 (33)	29	123.5 (118)	4 × [6×10]
MD-30R	120	130	248	40	64	100	60	48	31	169	4 × Ø9
MD-40R			244								

- Dimension of the ( ) inside are thread connection type.
- The number is rounded up to the nearest whole number.

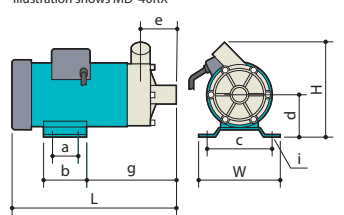
MD-20RZ-30RZ-40RZ

Illustration shows MD-20RZ



MD-20RX-30RX-40RX

Illustration shows MD-40RX



Model	W	H	L	a	b	c	d	e	f	g	i		
MD-20RZ	106	125	211	44	60	90	55	40	39	128	4 × [6×10]		
MD-30RZ		130	230	40	64	100	60			39	45	152	4 × Ø9
MD-40RZ		150	235									160	
MD-40RZ-5													
MD-20RX	106	119 (122)	220	44	60	90	45	47	—	135	4 × [6×10]		
MD-30RX	120	137 (140)	254	40	64	100	60	50		175	4 × Ø9		
MD-40RX		137 (140.5)	250										

- Dimension of the ( ) inside are thread connection type.
- RZ type (Hose connection) and RZM type (Thread connection type) are the same dimensions.
- The number is rounded up to the nearest whole number.

# MD-55·70·100

**GFRPP**  
50/60 Hz

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

# 55 7

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 <sup>Note2</sup>		Mass (kg)
	R · RZ		R · M · RZ · M								Single phase	Three phase	
	Inlet(mm)	Outlet(mm)	Inlet/Outlet	Union <sup>Note1</sup>									
MD-55R	Ø26	Ø26	G1	20A	-	60/70	5.6/8.2	1.2	90/90	130/170	100V/200V/ 220V - 240V	-	5.4
MD-55R-5					70/-	8.2/-	90/-		170/-				
MD-70R	Ø20	Ø20	G3/4	16A	20A	86/97	6.7/9.7	1.0	150/180	235 <sup>Note3</sup> /365 <sup>Note3</sup>	100V/200V/ 220V - 240V	220V/380V/ 400V/440V	6.0 <sup>Note3</sup>
MD-70RZ					-	40/43	14.3/20.3		180/216	275 <sup>Note3</sup> /395 <sup>Note3</sup>			
MD-100R	Ø26	Ø26	G1	20A	25A	120/135	8.6/11.9	1.2	260 <sup>Note3</sup> /260	245/365	100V/200V/ 220V - 240V	220V/380V/ 400V/440V	8.5
MD-100R-5					135/-	11.7/-	1.1		260 <sup>Note3</sup> /-	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.

Note 3: The above values are for single phase of 100V model.

## Construction and materials

Illustration shows model MD-55R/70R

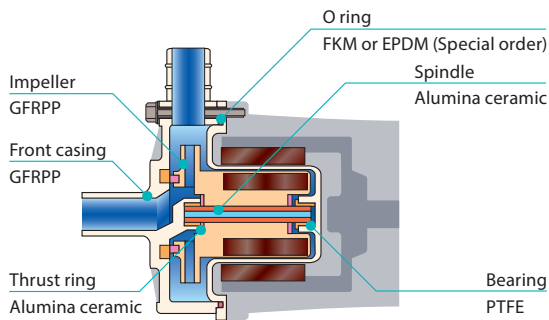
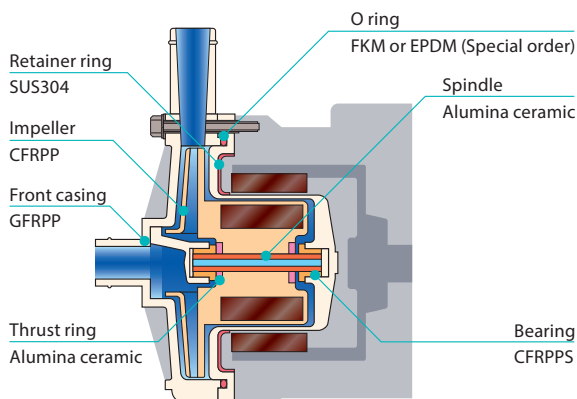


Illustration shows model MD-70RZ/100R



## Pump identification

**MD - 100 R - 5 M**

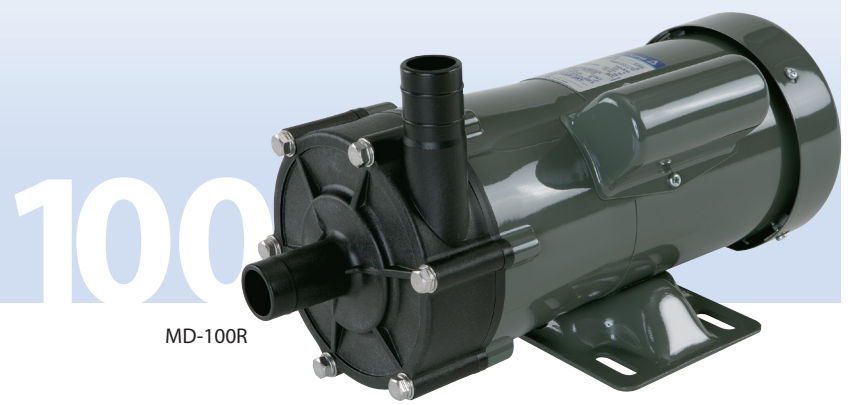
1 2 3 4

- 1 Pump size**  
55, 70, 100
- 2 Type**  
R : Standard type  
RZ : High head type (Only 70RZ)
- 3 Frequency**  
No mark : common 50/60Hz  
-5 : 50Hz only (Without model 70)
- 4 Connection**  
No mark : Hose type  
M : G thread connection  
MD-55R-5M, MD-100R-5M  
M-FL : Flange connection  
(Without model 55, 70RZ)<sup>Note</sup>

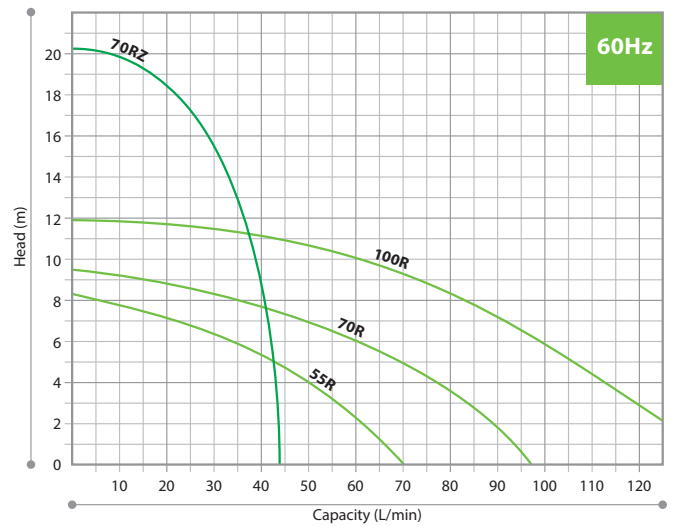
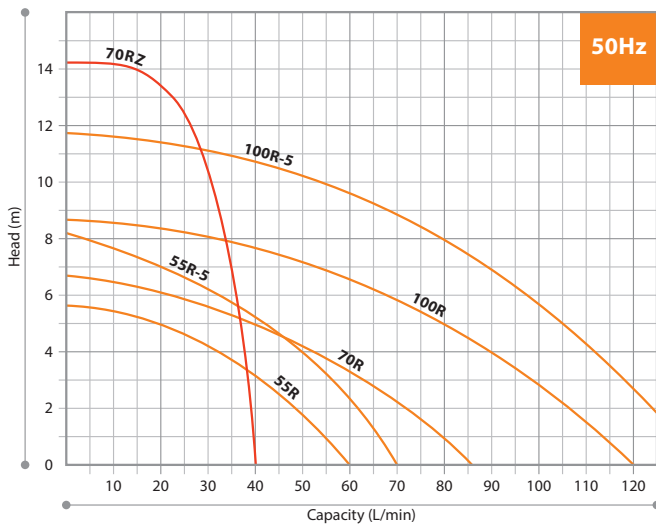
• Specify the pump model and power specification at an inquiry phase.

Note : For the MD-100 of 50Hz flange connection type, the model code is different from others. **MD-100RM-5-FL**

- **GFRPP** Glass fiber reinforced polypropylene
- **CFRPP** Carbon fiber reinforced polypropylene
- **CFRPPS** Carbon fiber reinforced polyphenylene sulfide
- **PTFE** Polytetrafluoroethylene ("Teflon<sup>®</sup>" etc.)
- **FKM** Fluorine rubber
- **EPDM** Ethylene propylene rubber



Performance curves

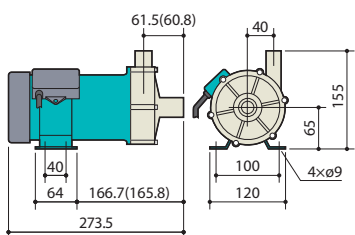


Dimensions (mm)

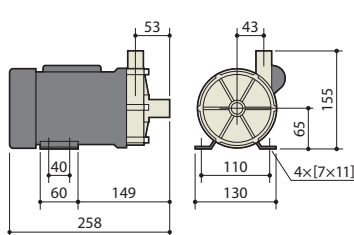
( ) : Thread connection type

MD-55R-55R-5

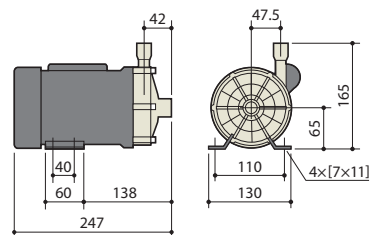
Illustration shows MD-55R



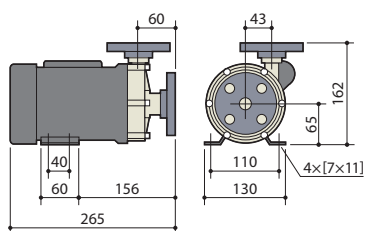
MD-70R



MD-70RZ

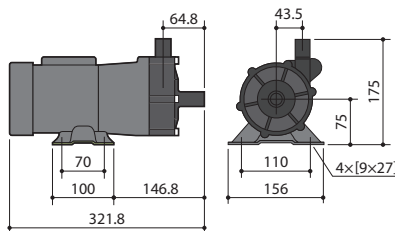


MD-70RM-FL

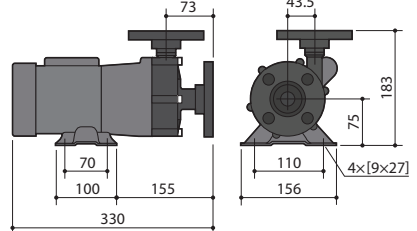


MD-100R-100R-5

Illustration shows MD-100R



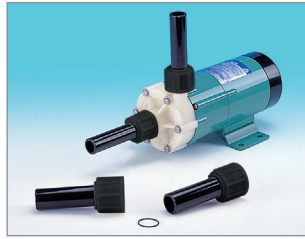
MD-100RM-FL-100RM-5-FL



## 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					

Please specify the type and the O-ring material at the time of arrangements.

### • 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	0.8m		1.2m	
Range of tank	0.8L		1.3L	
Applicable pump	MD-30RM-N, MD-40RM-N		MD-70RM	

Self-priming height depends on liquid temperature and characteristics. Please contact us for details. A union fitting is required for use.

## Precautions for pump selection

- The performance curves shown in this catalog are data for fresh water at 20 °C. The maximum discharge amount is the discharge amount when the lift is 0 m. The maximum head indicates the total head.
- The magnet pump cannot be operated continuously due. Be sure to plan to secure the minimum flow rate. Minimum pump flow rate = Maximum pump flow rate x 0.1 (Please contact us for details)
- Pump pressure limit = Pump maximum head x 1.5 (Please contact us for details.)
- The temperature range of the handling liquid is 0 to 80 °C. However, it depends on the conditions such as the heat cycle of the liquid to be handled. (Frozen liquid cannot be used.)

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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.

**Legal attention related to export.**

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