IWAKI

Magnetic Drive Pumps
MD

Main material
GFRPP

A Worldwide Best-Seller, our High-Quality Compact Magnetic Drive Pumps

The Heart of Industry

A Worldwide Best-Seller, our High-Quality Compact Magnetic Drive Pumps

The 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.

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 GFRPP 50/60 Hz

- Max. Capacity **5.5/6.0–11/12** L/min
- Max. Head **1.0/1.4–2.1/2.7** m

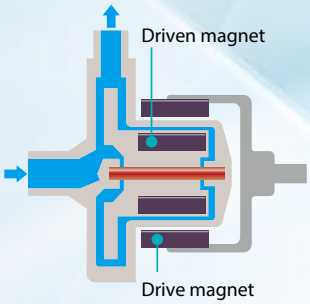
MD-15R MD-20R MD-30R

MD-15, 20, 30, 40 GFRPP 50/60 Hz

- Max. Capacity **10/11–75/85** L/min
- Max. 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(Grass 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 50/60 Hz

- Max. Capacity **40/43–135/135** L/min
- Max. Head **5.6/8.2–14.3/20.3** m

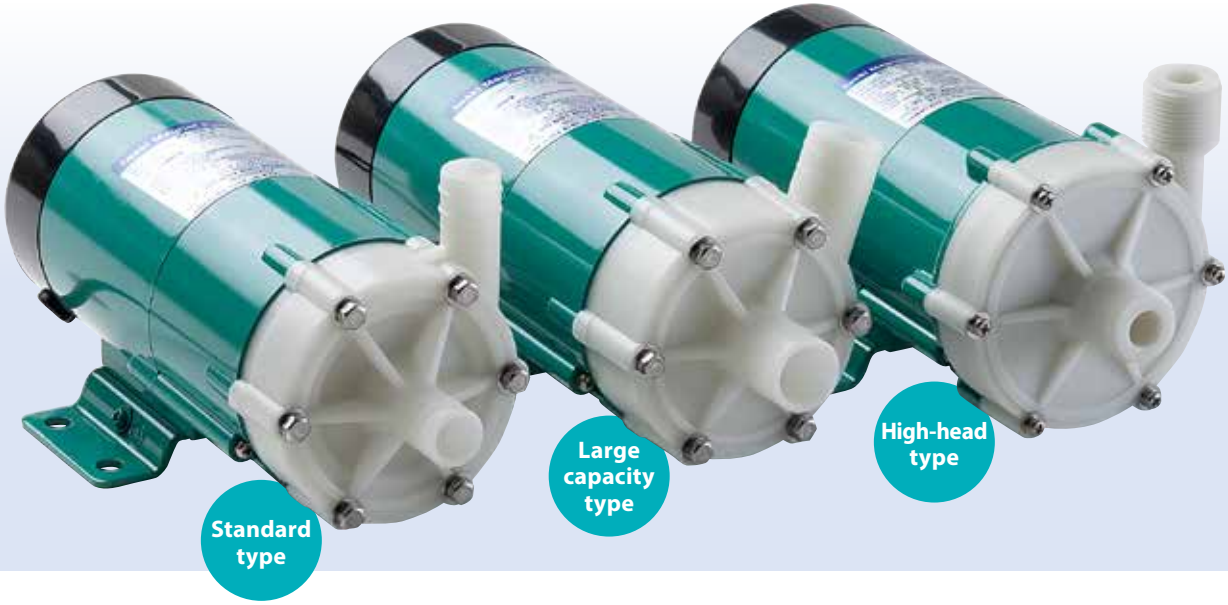
Extensive Product Range
Ease of Maintenance

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

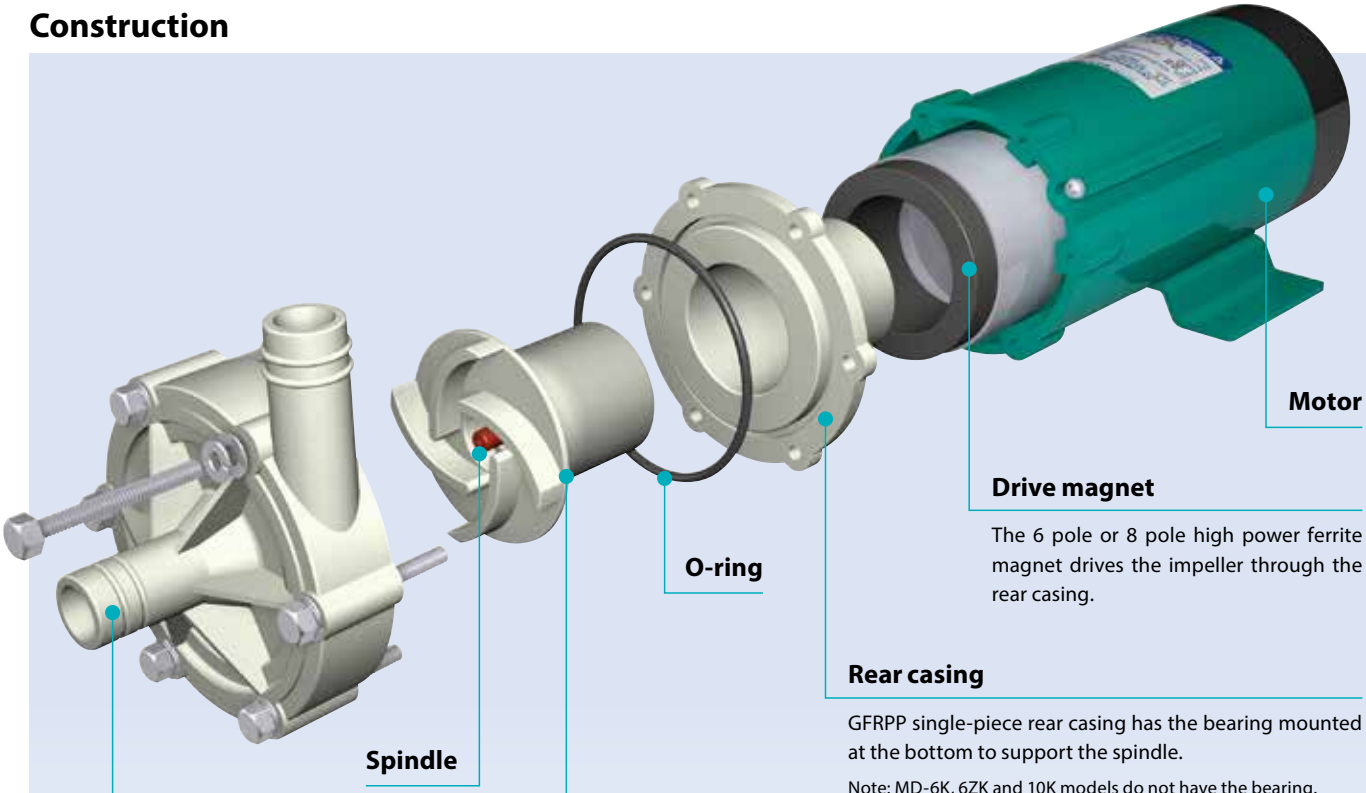
Note: For MD-70 size and MD-70RM type only.

Outline of the Series

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



Construction



Drive magnet

The 6 pole 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.

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

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.


Open type


Semi-open type


Closed type

MD-6K, 6ZK, 10K

GFRPP
50/60 Hz

- Max. Capacity **5.5/6.0–11/12** L/min
- Max. Head **1.0/1.4–2.1/2.7** m


MD-6K


MD-10K

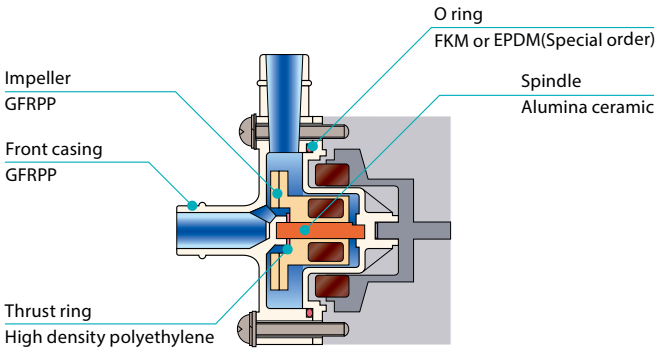
Specifications (50/60 Hz)

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-6K	Ø14	Ø14	8.0/9.0	1.0/1.4	1.2	5/5	12/12	100 V Single phase	0.9
MD-6ZK			5.5/6.0	2.1/2.7	1.1		13/16		
MD-10K			11/12	1.5/2.1	1.1		13/15		

• Temperature range: 0–80˚C (Contact us for applications below zero.) • Limit of viscosity: 30 mPa·s (at 1.0 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)

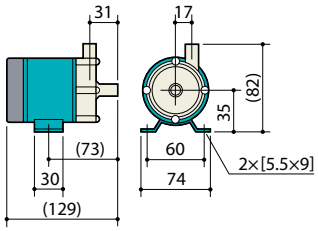
(1) Pump size
6, 10

(2) Type
K : Standard type
ZK : High head type

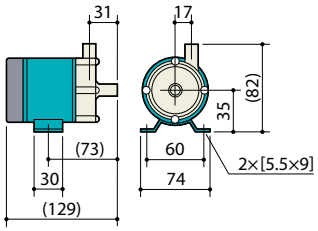
(3) Material of O-ring
No mark : FKM
E : EPDM (Special order)

Dimensions in mm

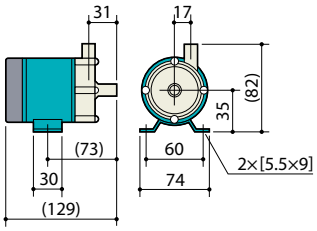
MD-6K



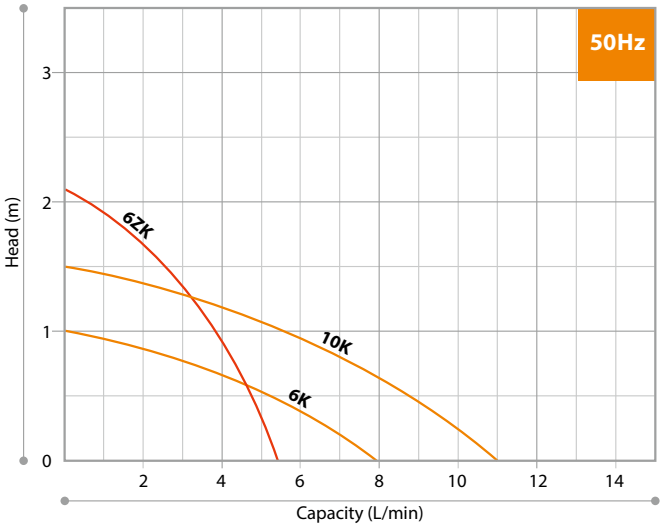
MD-6ZK

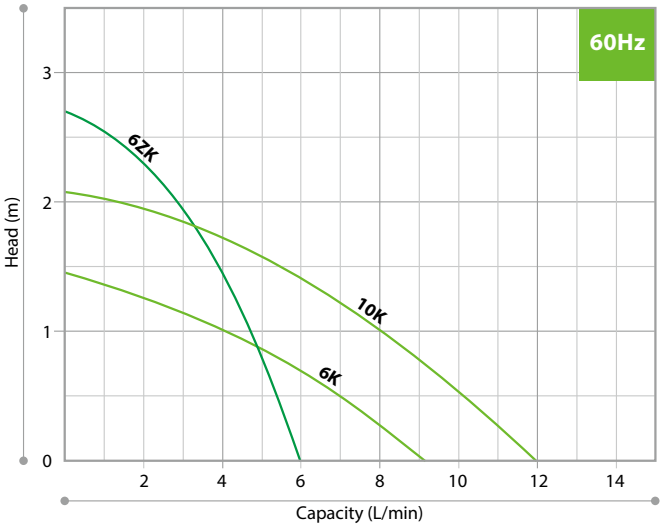


MD-10K



Performance Curves





MD-6, 6Z, 10


MD-6


MD-10

Specifications (50/60 Hz)

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	0.8
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 1.0 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

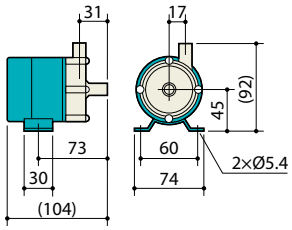
MD - 6 Z
1 2

1 Pump size
6, 10

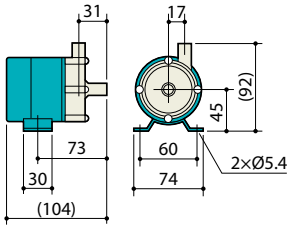
2 Type
No mark : Standard type
Z : High head type

Dimensions in mm

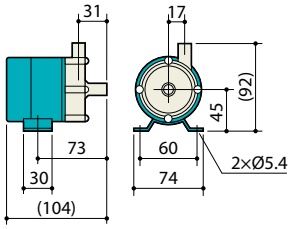
MD-6



MD-6Z



MD-10



MD-15, 20, 30, 40

GFRPP
50/60 Hz

- Max. Capacity **10/11–75/85** L/min
- Max. Head **1.8/2.5–11.5/13.5** m


MD-15R


MD-20R

Specifications (50/60 Hz)

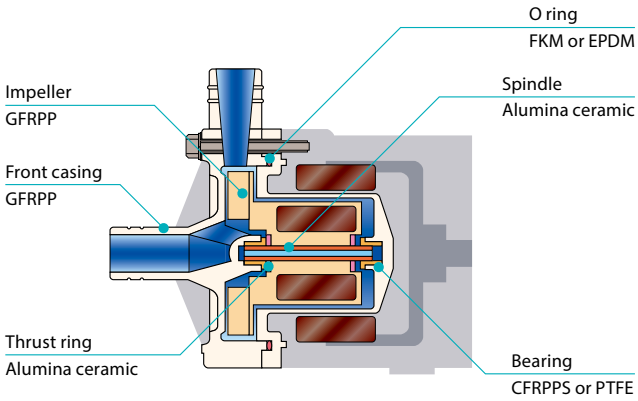
Model	Hose connection R • RZ • RX		Thread connection RM • RZM • RXM		Max. Capacity (L/min)	Max. Head (m)	S.G.	Output (W)	Input (W)	Power source Note2	Mass (kg)
	Inlet(mm)	Outlet(mm)	Inlet/Outlet	Union Note1							
MD-15R	Ø14	Ø14	G3/4	13A	16/19	2.4/3.4	1.3	10/10	26/31 Note3	220 V–240 V Single phase	1.6
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				
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	45/45	60/80		3.5
MD-30RX	Ø26	Ø26	G1	20A	62/72	2.9/4.1	1.1		70/90		4.0
MD-30RZ	Ø17.5	Ø17	G3/4	13A	15/17	8.0/11	1.0				3.5
MD-40R	Ø20	Ø20	G3/4	16A	45/52	4.6/6.5	1.1	65/65	90/130 Note3		3.9
MD-40RX	Ø26	Ø26	G1	20A	75/85	3.3/4.7			85/120		
MD-40RZ	Ø20	Ø20	G3/4	16A	22/22	10/13.5	1.0		115/160		
MD-40RZ-5					11/–	11.5/–		65/–	103/–		

- Temperature range: 0–80˚C (Contact us for applications below zero.) • Limit of viscosity: 30 mPa·s (at 1.0 S.G.)
- Ambient temperature: 0–40˚C
- Motor type: Capacitor-run induction motor

Note1: 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.
Note2: Single phase of 200 V model is special order. Please contact us for details.
Note3: The above values are for single phase of 100 V 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 - 220 E N
1 2 3 4 5 6

1 Pump size
15, 20, 30, 40

2 Type
R : Standard type
RZ : High head type
RX : Large capacity type

3 Frequency
No mark : common 50/60 Hz
-5 : 50 Hz only (for 40RZ)

4 Connection
No mark : Hose type
M : G thread connection

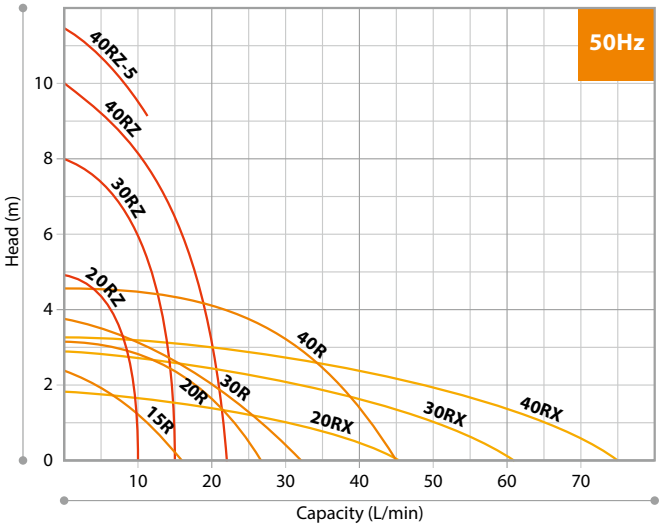
5 Motor
220 : 220V–240V single phase

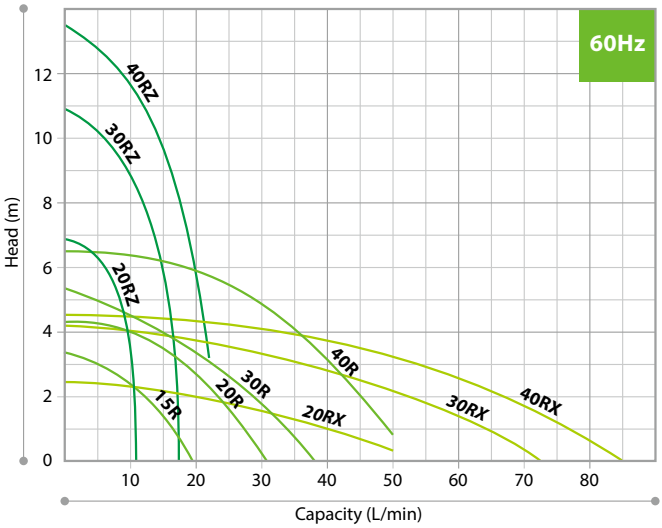
6 Material of O-ring
No mark : FKM (Standard)
E : EPDM (Special order)

MD-30R

MD-40R

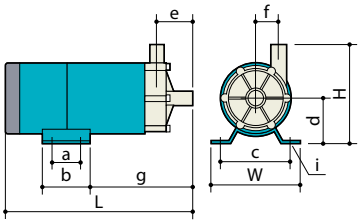
Performance Curves





Dimensions in mm

MD-15R, 20R, 30R, 40R
Illustration shows MD-30R

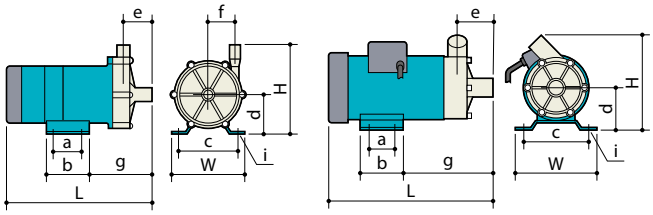


Model	W	H	L	a	b	c	d	e	f	g	i
MD-15R	95	109 (114)	179.5 (179)	–	50	68	55	(38.5)	21.5	92 (91.5)	2 × Ø5.6
MD-20R	85	115 (106.3)	208.5 (203)	44	60	90	45	38.5 (33)	28.5	101.5 (96)	4 × [6×10]
MD-30R	120	130	248	40	64	100	60	48	31	137	4 × Ø9
MD-40R			244							129	

• 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	39.5	38.5	98	4 × [5.7×8]
MD-30RZ	120	130	230	40	64	100	60	38.5	44.5	120	4 × Ø9
MD-40RZ		150	235							128	
MD-40RZ-5											
MD-20RX	106	119 (122)	220	44	60	90	45	46.5	–	105	4 × [5.7×8]
MD-30RX	120	137 (140)	254	40	64	100	60	50		143	4 × Ø9
MD-40RX			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. Capacity **40/43–135/135** L/min
- Max. Head **5.6/8.2–14.3/20.3** m

MD-55R

Specifications (50/60 Hz)

Model	Hose connection R · RZ		Thread connection RM · RZM		Diameter of flange	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[Note1]							Single phase	Three phase	
MD-55R	Ø26	Ø26	G1	20A	–	60/70	5.6/8.2	1.2	90/90	130/170	220 V–240 V	–	5.4
MD-55R-5						70/–	8.2/–		90/–	170/–			
MD-70R					20A	86/97	6.7/9.7	1.0	150/180	235[Note3]/365[Note3]		220 V/380 V 400 V/440 V	6.0
MD-70RZ	Ø20	Ø20	G3/4	16A	–	40/43	14.3/20.3		180/216	275[Note3]/395[Note3]			
MD-100R	Ø26	Ø26	G1	20A	25A	120/135	8.6/11.9	1.2	260[Note3]/260	245/365			8.5
MD-100R-5						135/–	11.7/–	1.1	260[Note3]/–	365/–			

- Temperature range: 0–80˚C (Contact us for applications below zero.)
- Limit of viscosity: 30 mPa·s (at 1.0 S.G.) • Ambient temperature: 0–40˚C
- Motor type: Capacitor-run induction motor

Note1: 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.
Note2: Single phase of 200 V model is special order. Please contact us for details.
Note3: The above values are for single phase of 100 V model.

Construction and Materials

Illustration shows model MD-100R

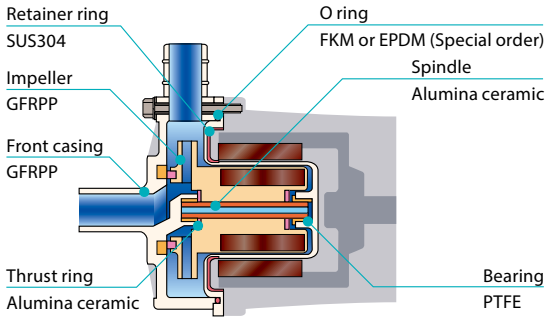
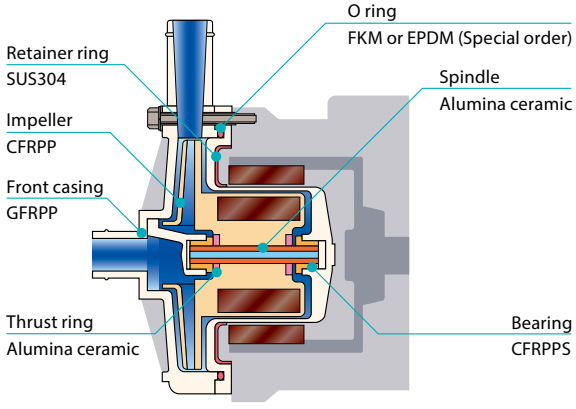


Illustration shows model MD-70RZ



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 50/60 Hz
-5 : 50 Hz 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)[Note]

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

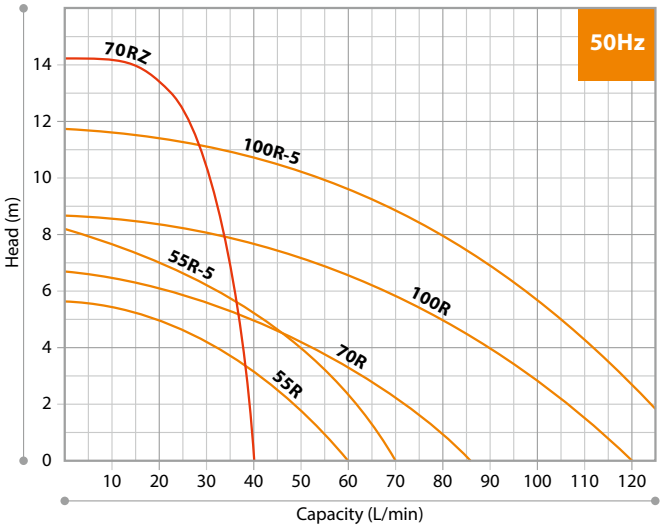
Note: For the MD-100 of 50 Hz flange connection type, the model code is different from others. **MD-100RM-5-FL**

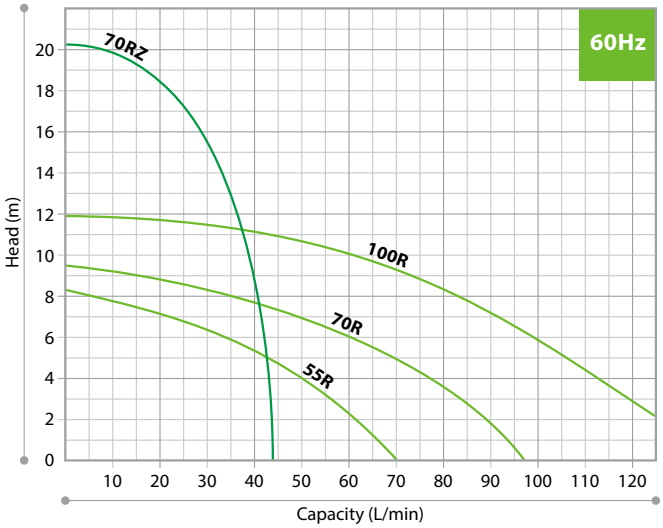
- **GFRPP** Glass fiber reinforced polypropylene
- **CFRPP** Carbon fiber reinforced polypropylene
- **CFRPPS** Carbon fiber reinforced polyphenylene sulfide
- **PTFE** Polytetrafluoroethylene ("Teflon®," etc.)
- **FKM** Fluorine rubber
- **EPDM** Ethylene propylene rubber

MD-70R

MD-100R

Performance Curves

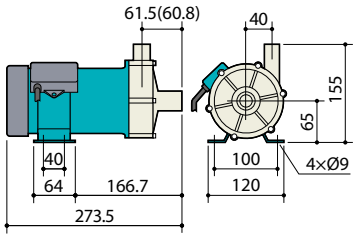




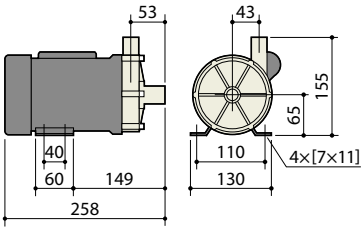
Dimensions in mm

( ) : Thread connection type

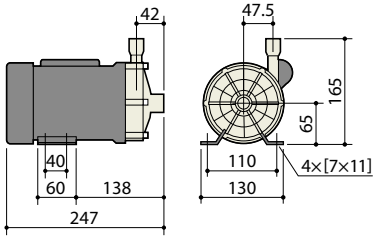
MD-55R, 55R-5
Illustration shows MD-55R



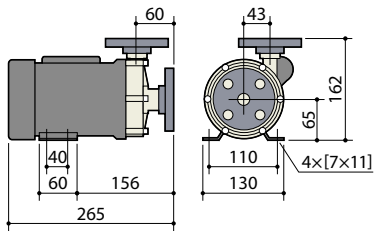
MD-70R



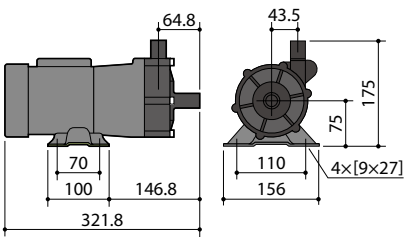
MD-70RZ



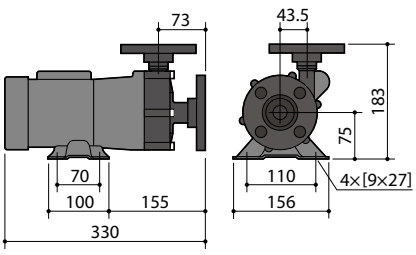
MD-70RM-FL



MD-100R, 100R-5
Illustration shows MD-100R



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



Optional 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 consult us for more 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 capacity is the capacity when the head is 0 m. The maximum head indicates the total head.
- The magnetic drive pump cannot be operated under a valve closed continuously. Be sure to secure the minimum capacity. The Minimum pump capacity = Maximum pump capacity x 0.1 (Please consult us for more details)
- Maximum allowable working pressure = Maximum pump head x 1.5 (Please consult us for more details.)
- The temperature range of the handling liquid is 0 to 80 ° C. However, it depends on the conditions such as a heat cycle of the liquid to be handled. (Frozen liquid cannot be used.)

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Korea	**IWAKI Korea Co.,Ltd.**	TEL: (82)2 6238 4800	FAX: (82)2 6238 4801
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Thailand	**IWAKI (Thailand) Co.,Ltd.**	TEL: (66)2 322 2471	FAX: (66)2 322 2477
Australia	**IWAKI Pumps Australia Pty Ltd.**	TEL: (61)2 9899 2411	FAX: (61)2 9899 2421

( )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. Please be reminded that export license could be required when products are exported due to export control regulations of countries.