



The Heart of Industry

IWAKI

Main material
GFRPP

IWAKI
MAGNETIC
DRIVE
PUMPS

MD



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-6K

MD-10K

MD-6•10 GFRPP 50/60Hz

- 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

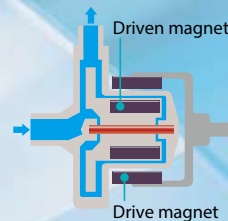
MD-15•20•30•40 GFRPP 50/60Hz

- 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.

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	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	

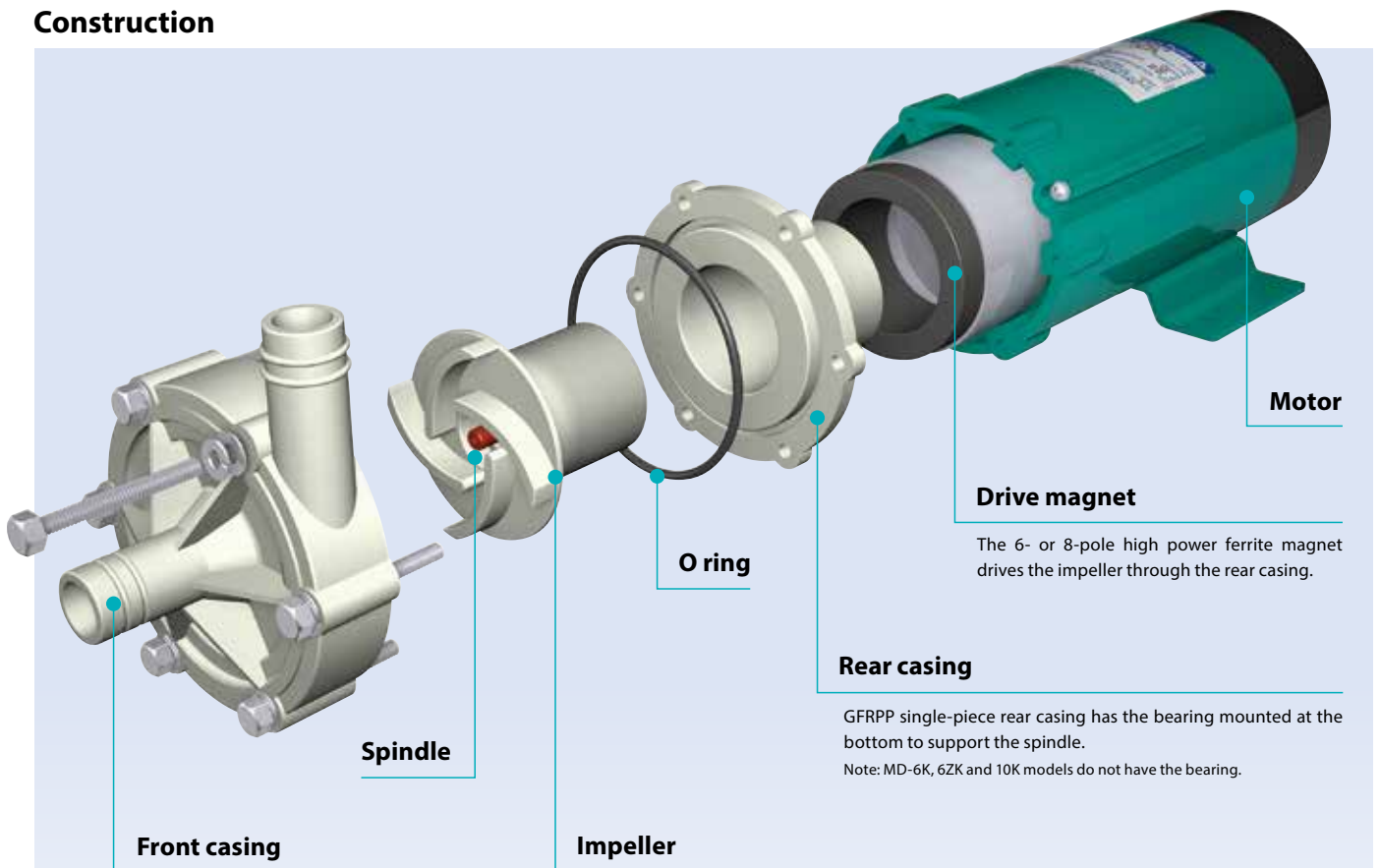


Standard type

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.

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, closed or semi-open 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 threaded 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



Standard type

High-head type RZ

Large-capacity type RX

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

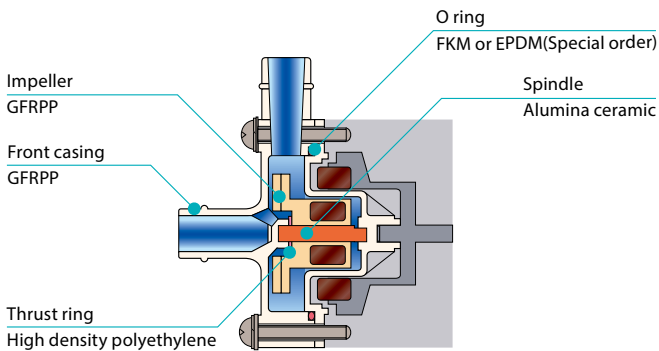
Specifications (50/60Hz)

Model	Hose connection		Max. Capacity L/min	Max.Head m	S.G.	Output W	Input W	Power source	Mass kg
	Inlet (mm)	Outlet (mm)							
MD-6K	14	14	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					

- 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.

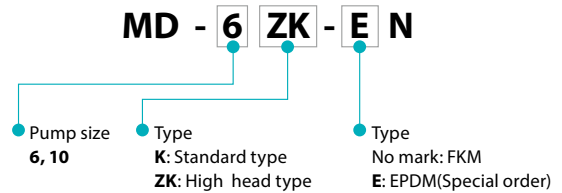
Construction and materials

Illustration shows model MD-6K



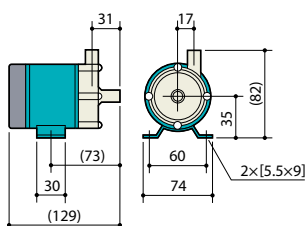
- GFRPP Glass fiber reinforced polypropylene
- FKM Fluorine rubber
- EPDM Ethylene propylene rubber

Pump identification

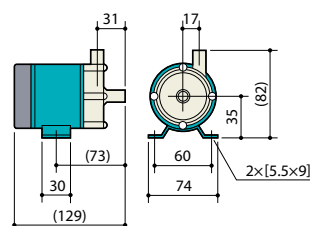


Dimensions (mm)

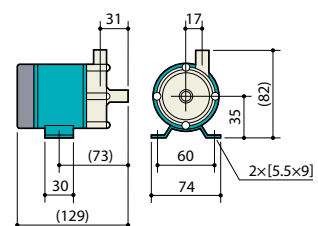
MD-6K



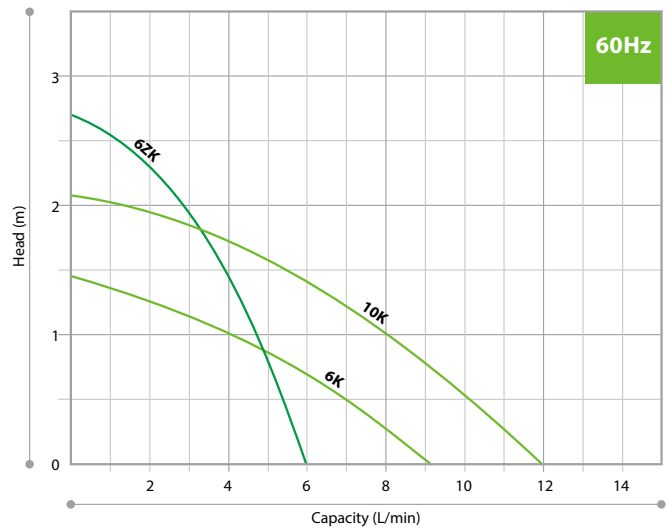
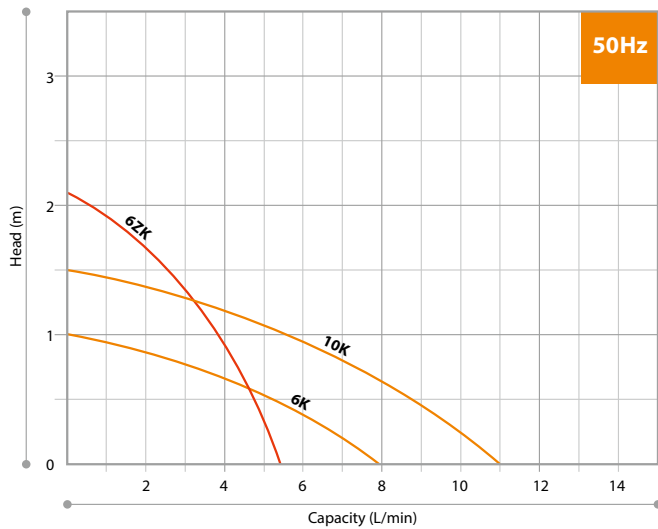
MD-6ZK



MD-10K



Performance curves



MD-6·MD-6Z·MD-10

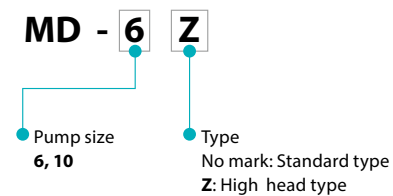


Specifications (50/60Hz)

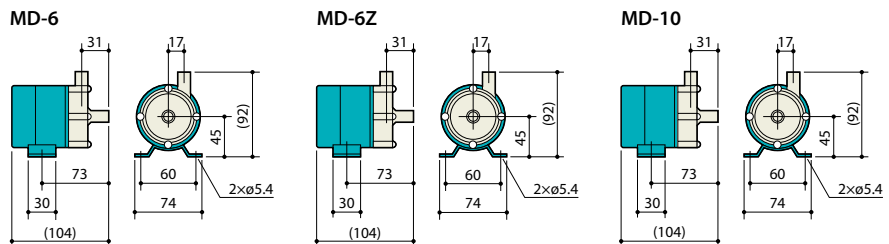
Model	Hose connection		Max. Capacity L/min	Max. Head m	S.G.	Output W	Input W	Power source	Mass Kg
	Inlet (mm)	Outlet (mm)							
MD-6	14	14	8.0 / 9.0	1.0 / 1.4	1.2	3 / 3	22 / 22	100V Single phase	0.9
MD-6Z			5.5 / 6.0	2.1 / 2.7	1.1				
MD-10			11 / 12	1.5 / 2.1					

- 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



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**



MD-15R

MD-20R

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		R-M · RZ-M · RX-M								
	Inlet (mm)	Outlet (mm)	Inlet/Outlet	Union (mm) ^(Note1)							
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				
MD-30RZ	17.5	17	G3/4	13	15 / 17	8.0 / 11	1.0	65 / 65	85 / 120		4.0
MD-40R	20	20	G3/4	16	45 / 52	4.6 / 6.5	1.1				
MD-40RX	26	26	G1	20	75 / 85	3.3 / 4.7	1.0	65 / -	103 / -		3.9
MD-40RZ	20	20	G3/4	16	22 / 22	10 / 13.5	1.0				
MD-40RZ-5					11 / -	11.5 / -	1.0	65 / -	103 / -		

• 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

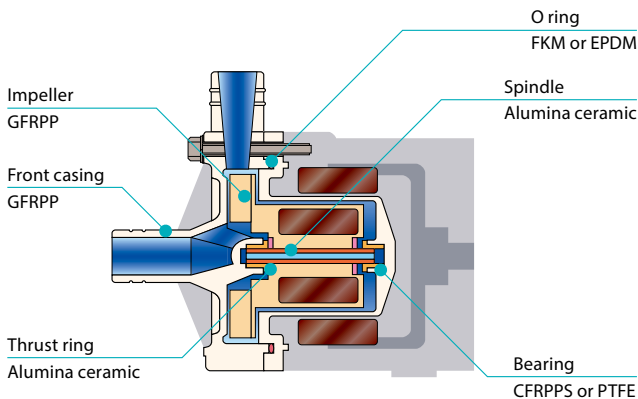
• Motor type: Capacitor-run induction motor

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.

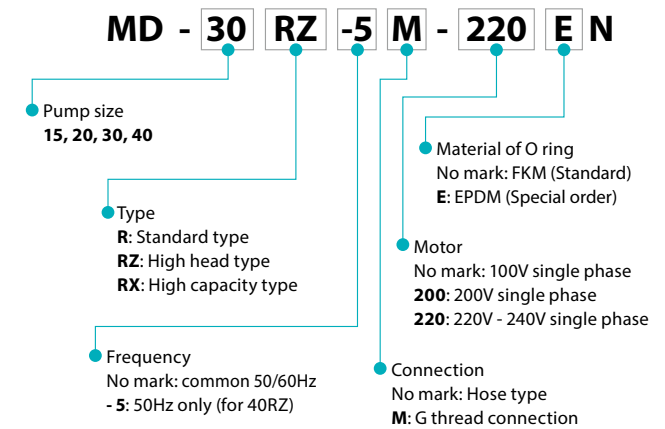
Construction and materials

Illustration shows model MD-30R



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

Pump identification



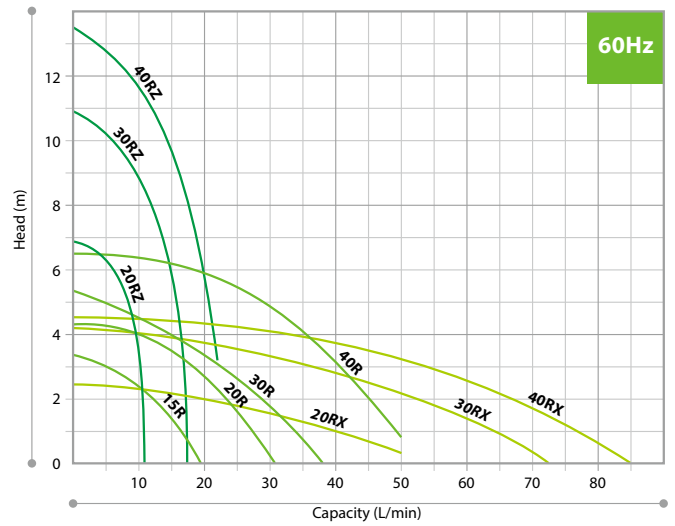
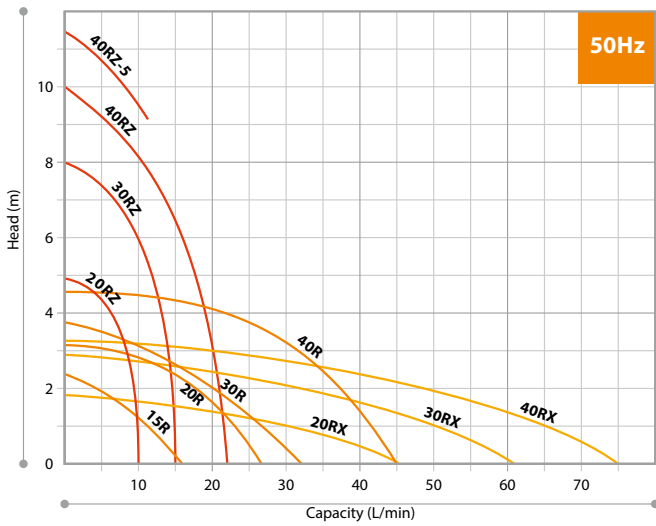


MD-30R



MD-40R

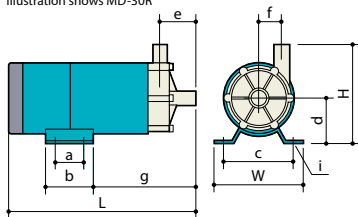
Performance curves



Dimensions (mm)

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

Illustration shows MD-30R

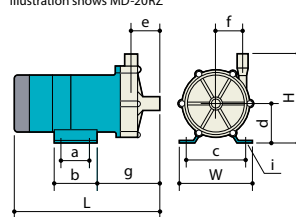


Model	W	H	L	a	b	c	d	e	f	g	i
MD-15R	95	109 (114)	179.5 (179)	-	50	68	55	39	22	92	2×ø5.6
MD-20R	106	105 (106.3)	208.5 (203)	44	60	90	45	39 (33)	29	94 (88)	4×[6×10]
MD-30R	120	130	248	40	64	100	60	48	31	137	4×ø9
MD-40R			244								

• Dimension of the () inside are thread connection type.

MD-20RZ-30RZ-40RZ

Illustration shows MD-20RZ



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×[6×10]										
MD-30RZ			230																		
MD-40RZ			235																		
MD-40RZ-5	120	150	235	40	64	100	60	38.5	44.5	128	4×ø9										
MD-20RX												119 (122)	220	44	60	90	45	47	105	4×[6×10]	
MD-30RX												137 (140)	254	40	64	100	60	50	-	143	4×ø9
MD-40RX												137 (140.5)	250	40	64	100	60	50	-	143	4×ø9

• 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

- Max Discharge capacity **40/43 - 135/135 L/min**
- 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	100V/200V/ 220V-240V	–	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	220V/380V/ 400V/440V	6.0	
MD-70RZ	20	20	G3/4	16	–	40 / 43	14.3 / 20.3		180 / 216	275 / 395			
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

Illustration shows model MD-55R/70R

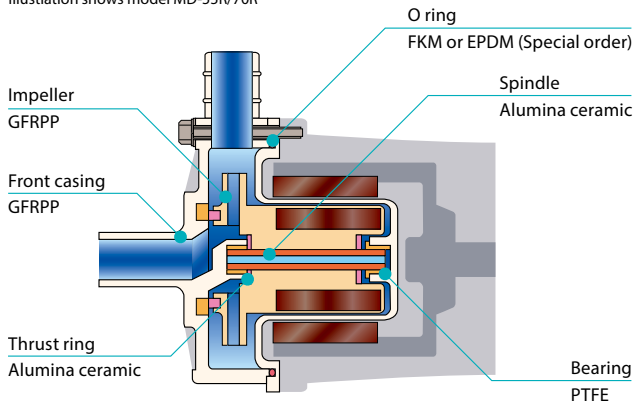
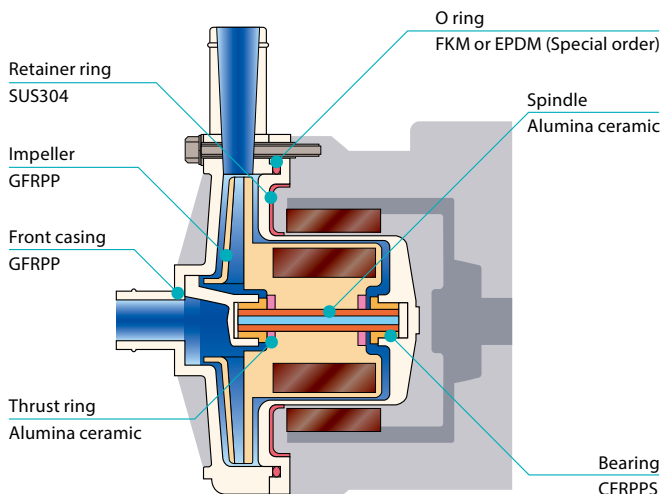
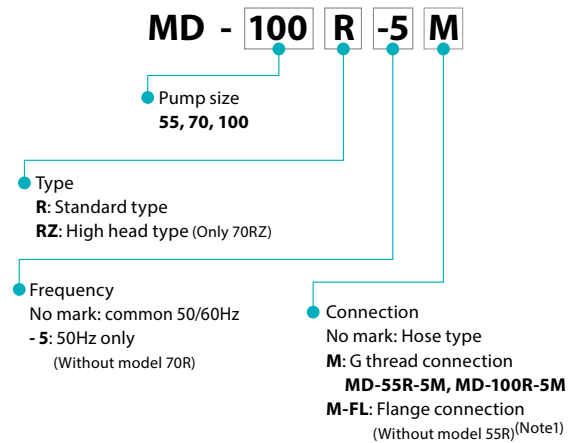


Illustration shows model MD-70RZ/100R



Pump identification



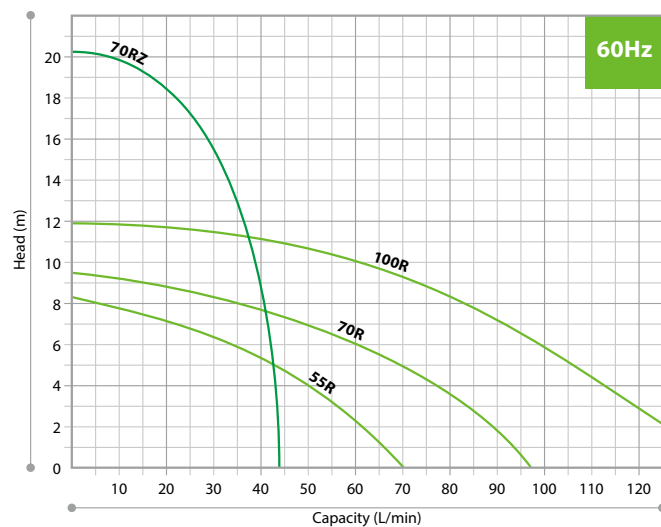
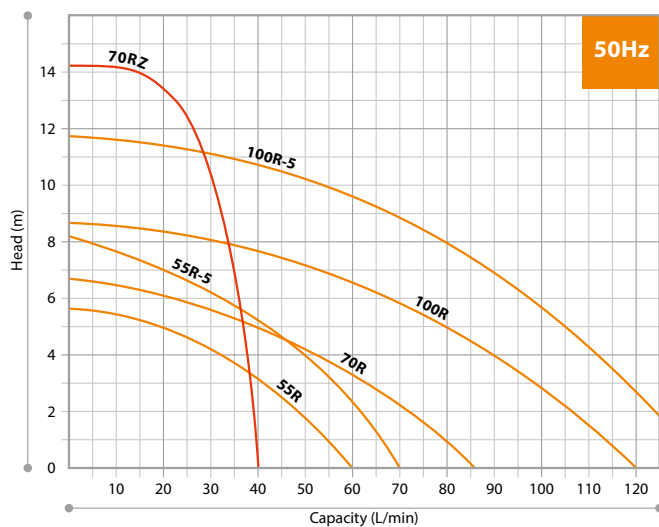
• Specify the pump model and power specification at an inquiry phase.

Note1: For the MD-100 of 50Hz flange connection type, the model code is different from others. **MD-100RM-5-FL**

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



Performance curves

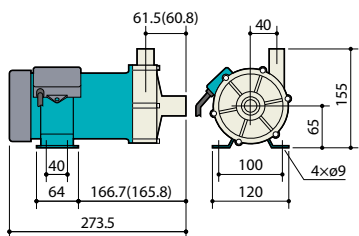


Dimensions (mm)

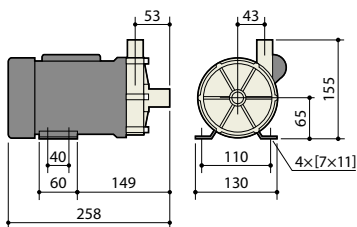
(): Thread connection type

MD-55R-55R-5

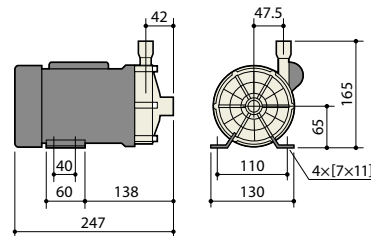
Illustration shows MD-55R



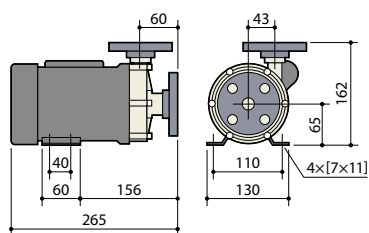
MD-70R



MD-70RZ

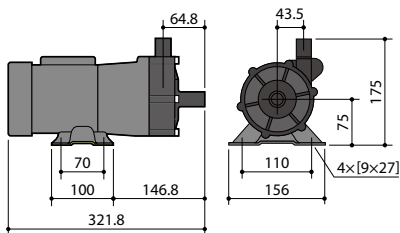


MD-70RM-FL

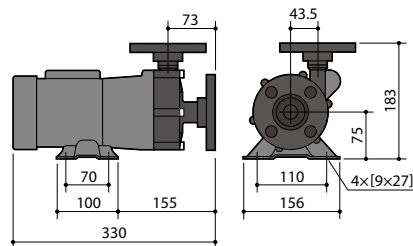


MD-100R-100R-5

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					

• 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.

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 Holland : **IWAKI Europe GmbH** (Netherlands Branch)
 Italy : **IWAKI Europe GmbH** (Italy Branch)
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 Belgium : **IWAKI Belgium N.V.**
 Denmark : **IWAKI Nordic A/S**
 Finland : **IWAKI Suomi Oy**
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 Norway : **IWAKI Norge AS**
 Sweden : **IWAKI Sverige AB**
 U.K. : **IWAKI Pumps (UK) Ltd.**

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 TEL: (34)93 37 70 198 FAX: 93 47 40 991
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 TEL: (33)1 69 63 33 70 FAX: 1 64 49 92 73
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 Vietnam : **IWAKI Pumps Vietnam Co., Ltd.** TEL: (84)613 933456 FAX: 613 933399

Caution for safety use:
 Before use of pump, read instruction manual carefully to use the product correctly.

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.

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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