



The Heart of Industry

**IWAKI**

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-6K

MD-10K

### MD-6•10 GFRPP

- Max Discharge capacity **5.5 - 11** L/min
- Max Discharge head **1.0 - 2.1** m



MD-15R



MD-20R



MD-30R

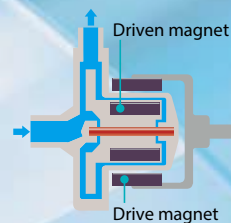
### MD-15•20•30•40 GFRPP

- Max Discharge capacity **10 - 75** L/min
- Max Discharge head **1.8 - 11.5** 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 GFRPP

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

# Wide variation

## Easy maintenance

The MD series has GFRPP wet ends. Hose connections and threaded connections are available. A large selection of models offer a wide flow range of 5.5-135L/min.

### Outline of the series (50Hz)

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-6K</b> Standard type	8.0									1.0				1.2
	<b>MD-6ZK</b> High head type	5.5									2.1				1.1
	<b>MD-10K</b> Standard type	11									1.5				1.1
	<b>MD-15R</b> Standard type	16									2.4				1.3
	<b>MD-20R</b> Standard type	27									3.1				1.1
	<b>MD-20RX</b> Large capacity type	46									1.8				1.3
	<b>MD-20RZ</b> High head type	10									4.6				1.1
	<b>MD-30R</b> Standard type	32									3.8				1.3
	<b>MD-30RX</b> Large capacity type	62									2.9				1.1
	<b>MD-30RZ</b> High head type	15									8.0				1.0
	<b>MD-40R</b> Standard type	45									4.6				1.1
	<b>MD-40RX</b> Large capacity type	75									3.3				1.1
	<b>MD-40RZ</b> High head type	22									10				1.0
	<b>MD-40RZ-5</b>	11									11.5				1.0
	<b>MD-55R</b> Standard type	60									5.6				1.2
	<b>MD-55R-5</b>	70									8.2				1.2
	<b>MD-70R</b> Standard type	86									6.7				1.0
	<b>MD-70RZ</b> High head type	40									14.3				1.0
	<b>MD-100R</b> Standard type	120									8.6				1.2
	<b>MD-100R-5</b>	135									11.7				1.1

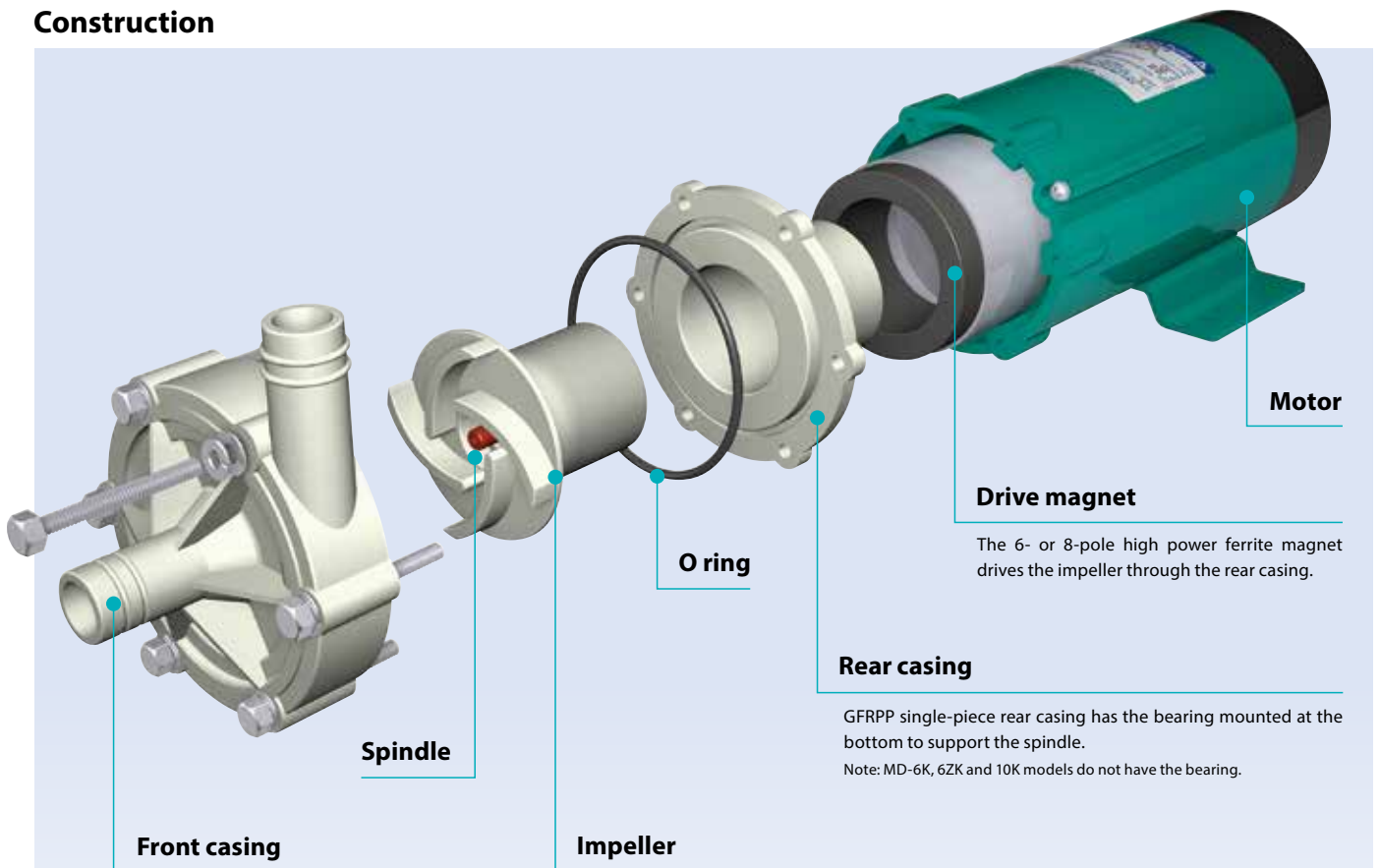


Standard type

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.

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

- Max Discharge capacity **5.5 - 11 L/min**
- Max Discharge head **1.0 - 2.1 m**



MD-6K



MD-10K

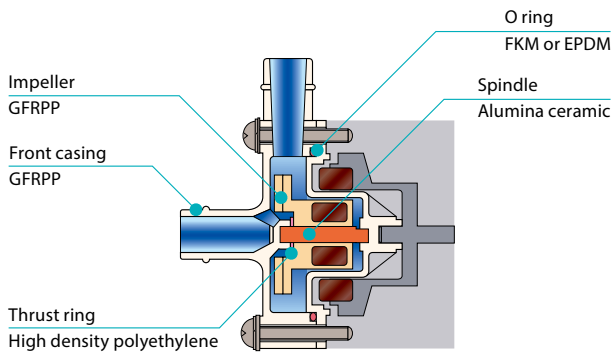
## Specifications (50Hz)

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	1.0	1.2	5	12	220 - 240V Single phase	0.9
MD-6ZK			5.5	2.1	1.1		14		
MD-10K			11	1.5			15		

• 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.

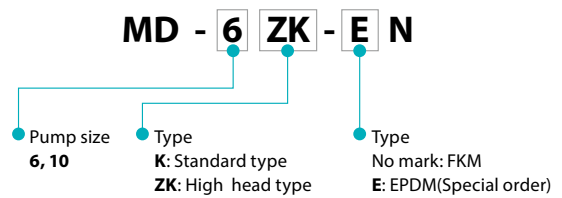
## Construction and materials

Illustration shows model MD-6K



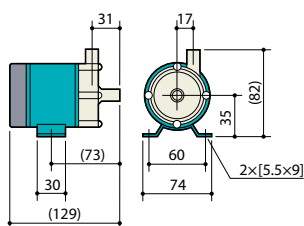
- GFRPP Glass fiber reinforced polypropylene
- FKM Fluorine rubber
- EPDM Ethylene propylene rubber

## Pump identification

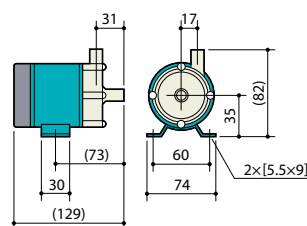


## Dimensions (mm)

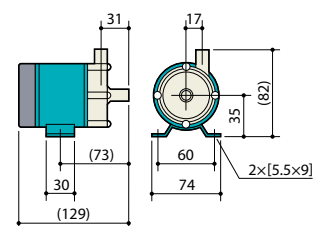
MD-6K



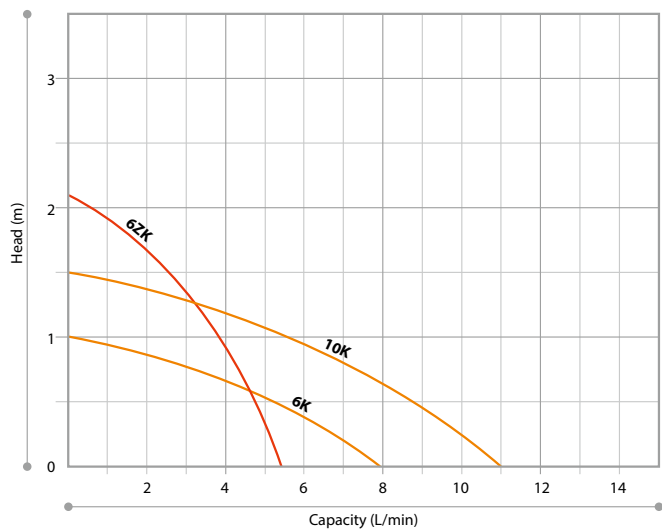
MD-6ZK



MD-10K



**Performance curves** (50Hz)



**MD-6·MD-6Z·MD-10**



**Specifications** (50Hz)

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	1.0	1.2	3	22	220 - 240V Single phase	0.9
MD-6Z			5.5	2.1					
MD-10			11	1.5	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: Shaded pole motor • MD-6, 6Z and 10 do not have thread connection type.

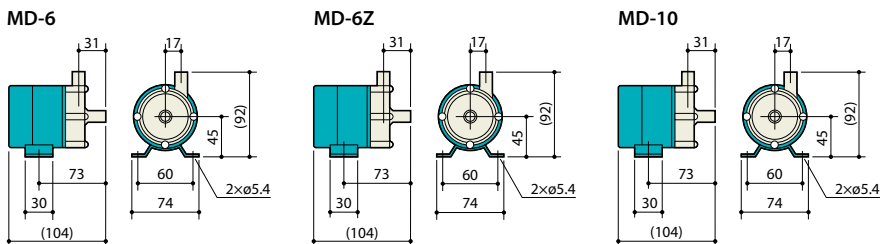
**Pump identification**

**MD - 6 Z**

Pump size  
**6, 10**

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

**Dimensions** (mm)



# MD-15·20·30·40 GFRPP

- Max Discharge capacity **10 - 75 L/min**
- Max Discharge head **1.8 - 11.5 m**



MD-15R

MD-20R

## Specifications (50Hz)

Model	Hose connection		Threaded 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) <sup>(Note1)</sup>							
MD-15R(M)	14	14	G3/4	13	16	2.4	1.3	10	26	220V - 240V Single phase	1.6
MD-20R(M)	18	17	G3/4	16	27	3.1	1.1	20	40		2.0
MD-20RX(M)	26	26	G1	20	46	1.8	1.3				
MD-20RZ(M)	17.5	17	G3/4	13	10	4.9	1.1	45	60		3.5
MD-30R(M)	20	20	G3/4	16	32	3.8	1.3		70		
MD-30RX(M)	26	26	G1	20	62	2.9	1.1		80		
MD-30RZ(M)	17.5	17	G3/4	13	15	8.0	1.0	65	90		3.9
MD-40R(M)	20	20	G3/4	16	45	4.6	1.1		85		
MD-40RX(M)	26	26	G1	20	75	3.3			140		
MD-40RZ(M)	20	20	G3/4	16	22	10	1.0	140	140		
MD-40RZ-5(M)					11	11.5		65		140	

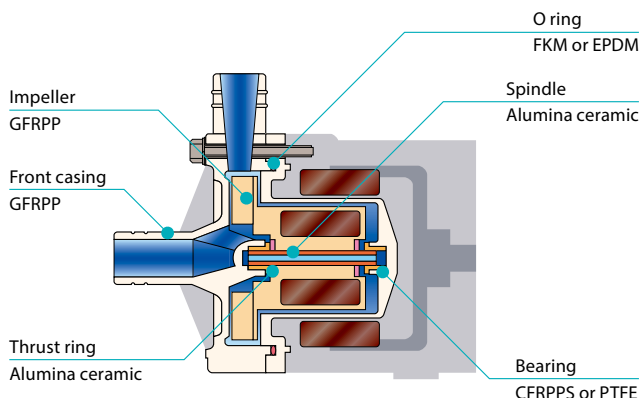
• Temperature range: 0 - 80°C (Contact us for applications below zero.) • Limit of viscosity: 30 mPa·s (at 1 S.G.) • Ambient temperature: 0 - 40°C

• Motor type: Capacitor-run induction motor

Note 1: The union size on above table shows the nominal diameter of the applicable PVC pipe. Heat resistance of the standard union is 0 - 55°C and that of the heat resistant union is 0 - 80°C.

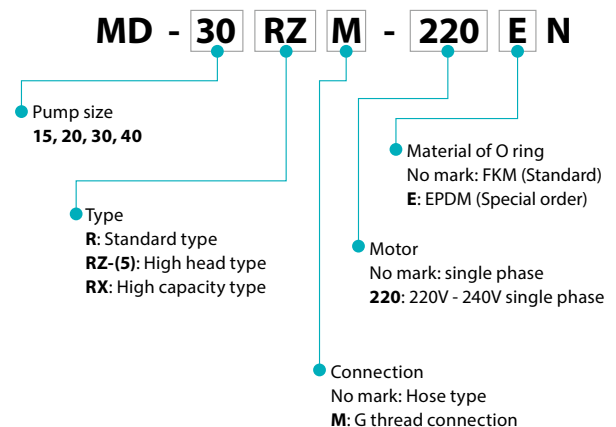
## Construction and materials

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





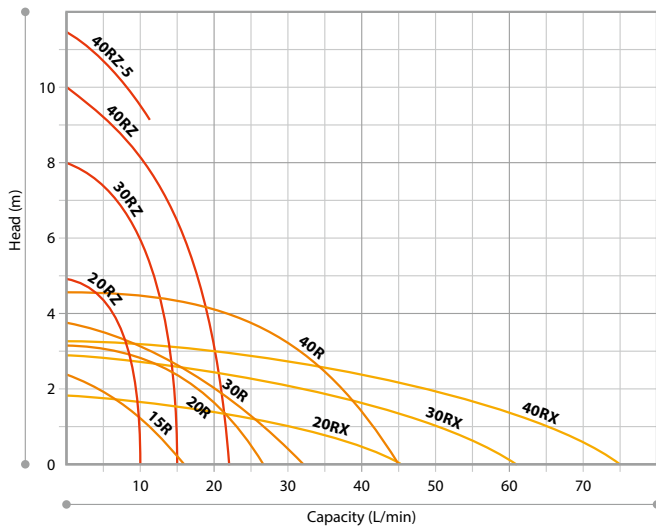


MD-30R



MD-40R

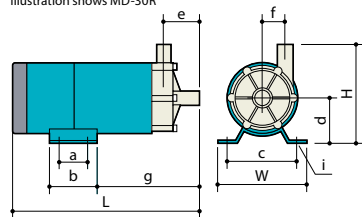
**Performance curves** (50Hz)



**Dimensions** (mm)

**MD-15R(M)-20R(M)-30R(M)-40R(M)**

Illustration shows MD-30R

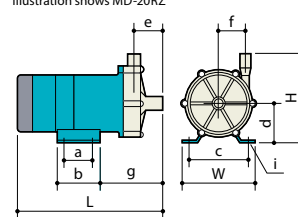


Model	W	H	L	a	b	c	d	e	f	g	i
MD-15R(M)	95	109 (114)	179.5 (179)	-	50	68	55	39 (38.5)	21.5	92 (91.5)	2×ø5.6
MD-20R(M)	85	115 (116.3)	208.5 (203)	30	50	68	55	38.5 (33)	28.5	101.5 (96)	4×[6×10]
MD-30R(M)	120	130	248	40	64	100	60	48	31	137	4×ø9
MD-40R(M)			244							129	

Note1: Dimension of the ( ) inside are thread connection type.

**MD-20RZ(M)-30RZ(M)-40RZ(M)**

Illustration shows MD-20RZ



Model	W	H	L	a	b	c	d	e	f	g	i
MD-20RZ(M)	85	125	211	30	50	68	55	39.5	38.5	104	4×[5.7×8]
MD-30RZ(M)			230							120	
MD-40RZ(M)			235							128	
MD-40RZ-5(M)			235							128	
MD-20RX(M)	120	130	220	40	64	100	60	46.5	-	118	4×[5.7×8]
MD-30RX(M)			254							143	
MD-40RX(M)			250							143	

Note1: Dimension of the ( ) inside are thread connection type.

Note2: RZ type (Hose connection) and RZM type (Thread connection type) are the same dimensions.

# MD-55·70·100

GFRPP

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



MD-55R

## Specifications <sup>(50Hz)</sup>

Model	Hose connection		Threaded connection		Max. Capacity (L/min)	Max. Head (m)	S.G.	Output (W)	Input (W)	Power source		Mass (kg)	
	R · RZ		R · M · RZ · M							Single phase	Three phase		
	Inlet (mm)	Outlet (mm)	Inlet/Outlet	Union (mm) <sup>(Note1)</sup>									
MD-55R(M)	26	26	G1	20	60	5.6	1.2	90	130	220V - 240V	-	5.4	
MD-55R-5(M)					70	8.2		90	170				
MD-70R(M)	26	26	G1	20	86	6.7	1.0	150	235		400V/440V		6.0
MD-70RZ(M)	20	20	G3/4	16	40	14.3		180	275				
MD-100R(M)	26	26	G1	20	120	8.6	1.2	260	245	8.5			
MD-100R-5(M)					135	11.7	1.1	260	365				

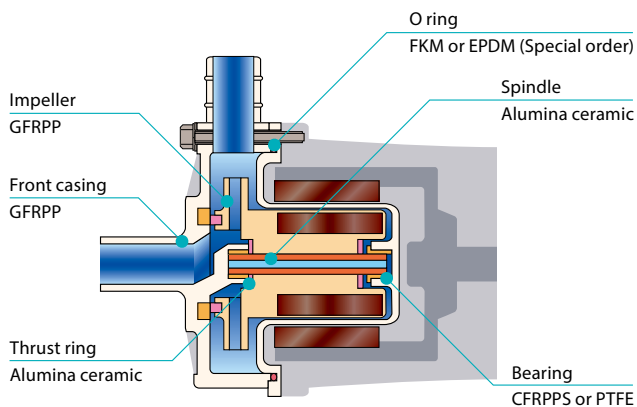
• Temperature range: 0 - 80°C (Contact us for applications below zero.) • Limit of viscosity: 30 mPa·s (at 1 S.G.) • Ambient temperature: 0 - 40°C

• 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.

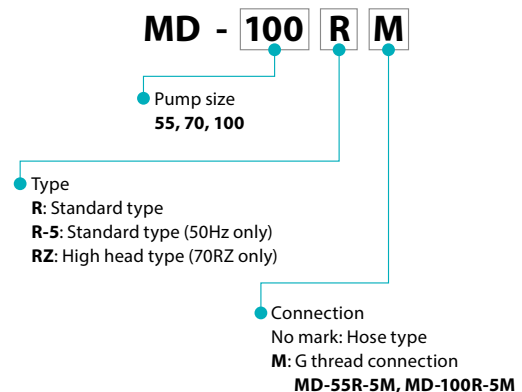
## Construction and materials

Illustration shows model MD-100R



- GFRPP: Glass fiber reinforced polypropylene
- CFRPPS: Carbon fiber reinforced polyphenylene sulfide
- FKM: Fluorine rubber
- EPDM: Ethylene propylene rubber

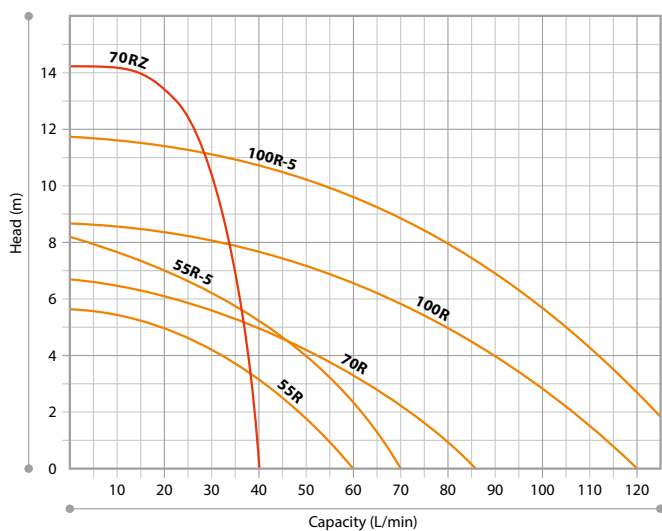
## Pump identification



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



**Performance curves** (50Hz)

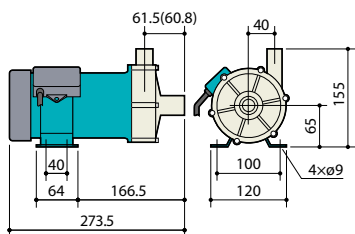


**Dimensions** (mm)

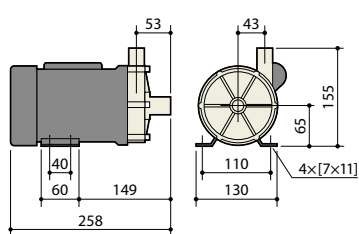
( ): Thread connection type

**MD-55R(M)-55R-5(M)**

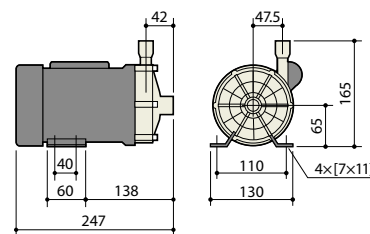
Illustration shows MD-55R



**MD-70R(M)**

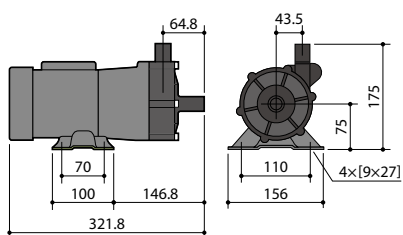


**MD-70RZ(M)**



**MD-100R(M)-100R-5(M)**

Illustration shows MD-100R



## 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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**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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