

## Magnetic drive pumps

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



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.



# 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 - 11** l/min
- Max Discharge head **1.0 - 2.1** m



MD-15R



MD-20R



MD-30R

### MD-15·20·30·40

- Max Discharge capacity **10 - 75** l/min
- Max Discharge head **1.8 - 11.5** 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(Grass 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

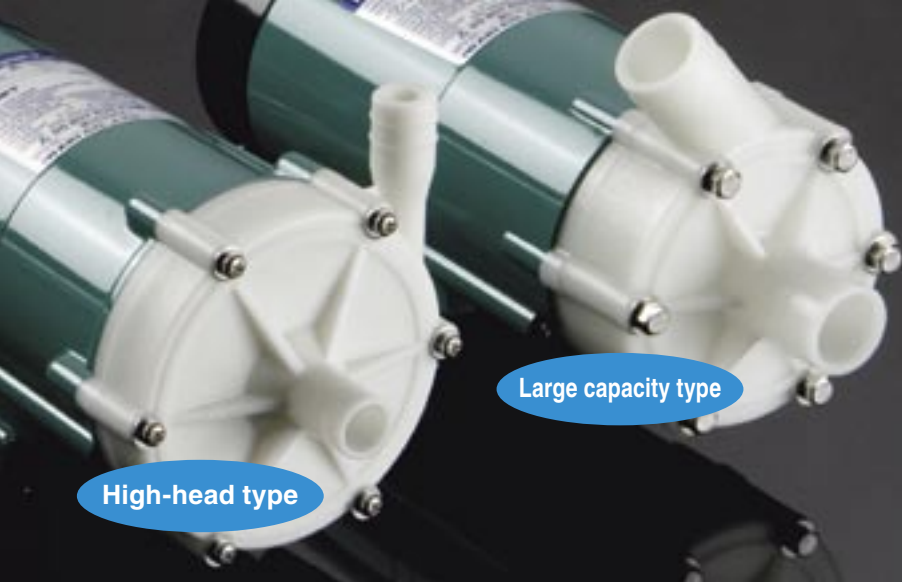
# Wide variation Easy maintenance

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)

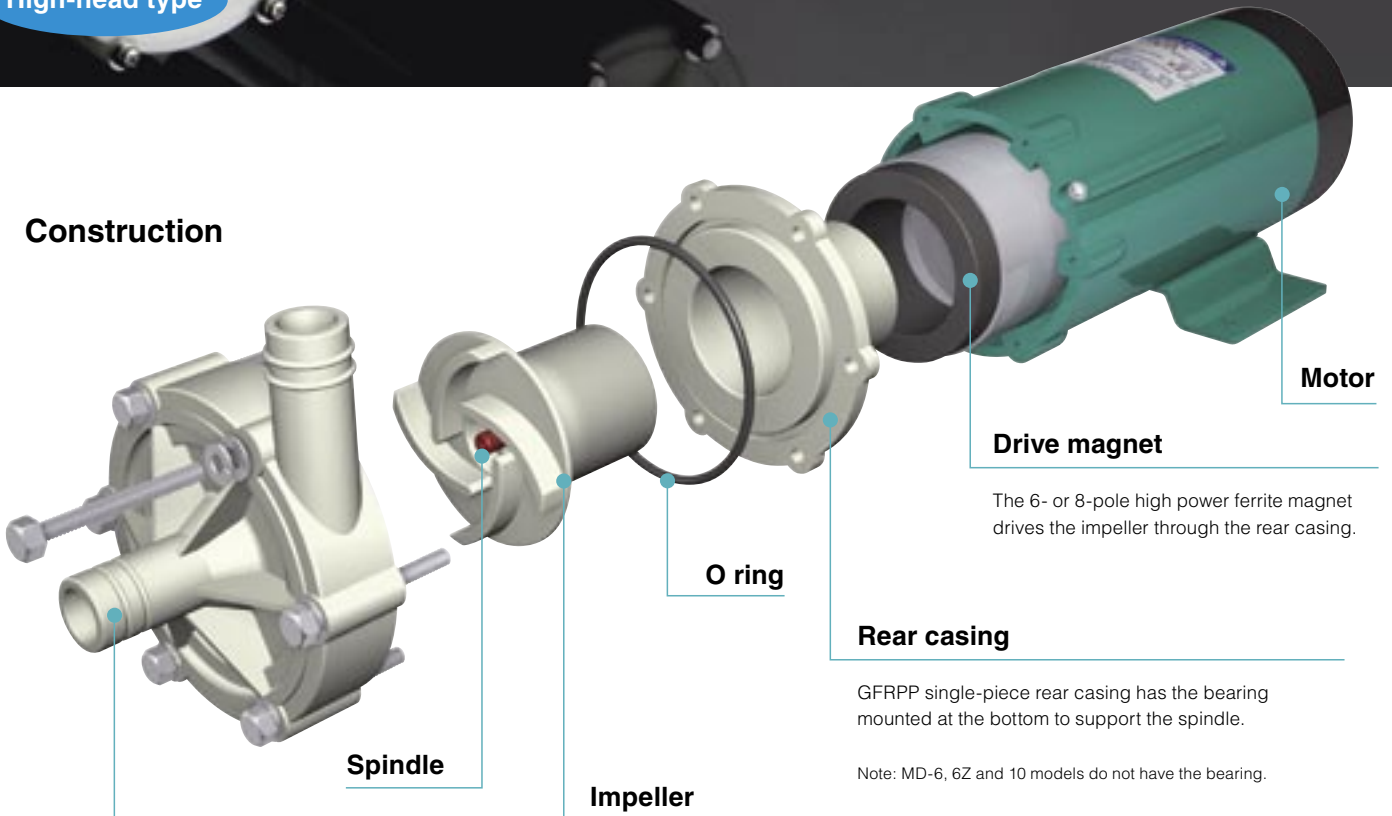
Main Material	Models	Max. discharge capacity (l/min)							Max. discharge head (m)				Limit of specific gravity		
		20	40	60	80	100	120	140	5	10	15	20			
GFRPP	<b>MD-6</b> Standard type	8.0									1.0				1.2
	<b>MD-6Z</b> High head type	5.5									2.1				1.1
	<b>MD-10</b> Standard type	11									1.5				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	



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



Hose connection type



Thread connection type



Standard type



High-head type RZ



Large-capacity type RX

# MD-6.10 GRRPP

- Range of Max. discharge capacity: **5.5 - 11 L/min**
- Range of Max. discharge head: **1.0 - 2.1 m**



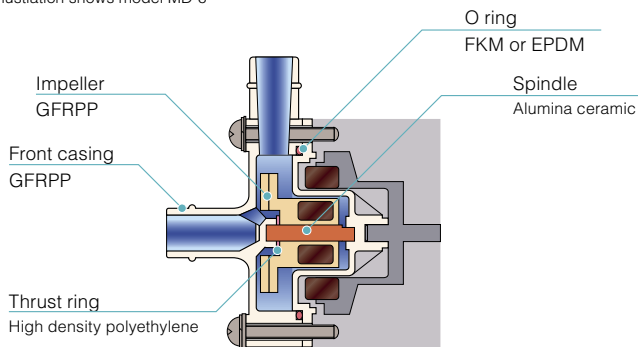
## Specifications (50Hz)

Model	Hose connection		Max. Capacity L/min	Max. Head m	S.G.	Output W	Input W	Phase	Mass kg
	Inlet (mm)	Outlet (mm)							
<b>MD-6</b>	14	14	8.0	1.0	1.2	3	22	220 - 240V Single phase	0.9
<b>MD-6Z</b>			5.5	2.1	1.1	3	24		
<b>MD-10</b>			11	1.5	1.1	6	35		

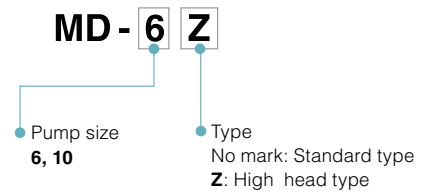
- Temperature range: 0 - 80°C (Contact us for applications below zero.)
- Limit of viscosity: 30 mPa·s (at 1 S.G.)
- Ambient temperature: 0 - 40°C
- Motor type: Shaded pole motor
- MD-6, 6Z and 10 do not have thread connection type.

## Construction and materials

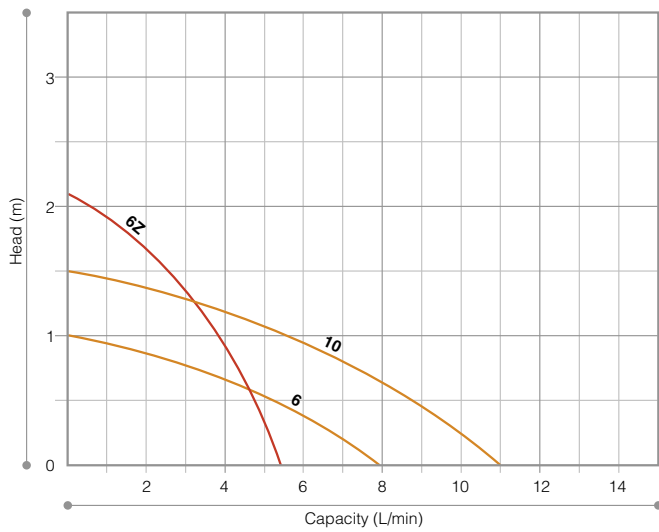
Illustration shows model MD-6



## Pump identification

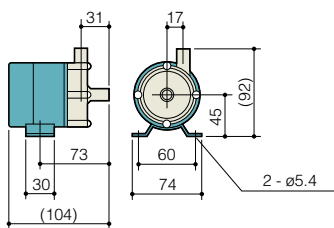


**Performance curves** (50Hz)

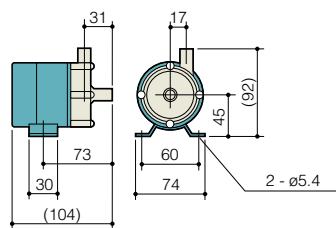


**Dimensions** (mm)

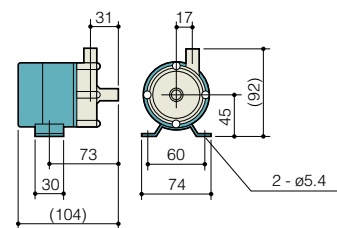
**MD-6**



**MD-6Z**



**MD-10**



# MD-15·20·30·40 GRRPP

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



MD-15R

MD-20R

## Specifications (50Hz)

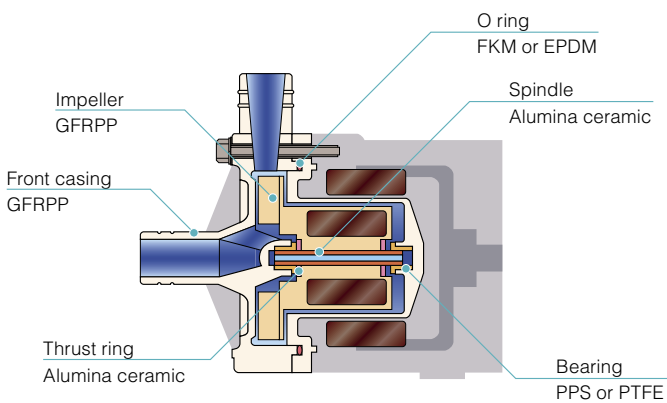
Model	Hose connection		Threaded connection		Max. Capacity (L/min)	Max. Head (m)	S.G.	Output (W)	Input (W)	Power source	Mass (kg)	
	R · RZ · RX		R-M · RZ-M · RX-M									
	Inlet (mm)	Outlet (mm)	Inlet/Outlet	Union (mm) <sup>(Note1)</sup>								
<b>MD-15R(M)</b>	14	14	G3/4	13	16	2.4	1.3	10	26	220V - 240V Single phase	1.6	
<b>MD-20R(M)</b>	18	17	G3/4	16	27	3.1	1.1	20	40		2.0	
<b>MD-20RX(M)</b>	26	26	G1	20	46	1.8	1.3					
<b>MD-20RZ(M)</b>	17.5	17	G3/4	13	10	4.9	1.1	45	60		3.5	
<b>MD-30R(M)</b>	20	20	G3/4	16	32	3.8	1.3					
<b>MD-30RX(M)</b>	26	26	G1	20	62	2.9	1.1					
<b>MD-30RZ(M)</b>	17.5	17	G3/4	13	15	8.0	1.0	65	70		3.9	
<b>MD-40R(M)</b>	20	20	G3/4	16	45	4.6	1.1					90
<b>MD-40RX(M)</b>	26	26	G1	20	75	3.3						
<b>MD-40RZ(M)</b>	20	20	G3/4	16	22	10	1.0					140
<b>MD-40RZ-5(M)</b>					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.

## Construction and materials

Illustration shows model MD-30R



**MD - 30 RZ M - 220N E**

• Pump size  
**15, 20, 30, 40**

• Type  
**R**: Standard type  
**RZ-(5)**: High head type  
**RX**: High capacity type

• Material of O ring  
No mark: FKM (Standard)  
**E**: EPDM (Special order)

• Motor  
No mark: single phase  
**220N**: 220V - 240V single phase

• Connection  
No mark: Hose type  
**M**: G thread connection



30

MD-30R

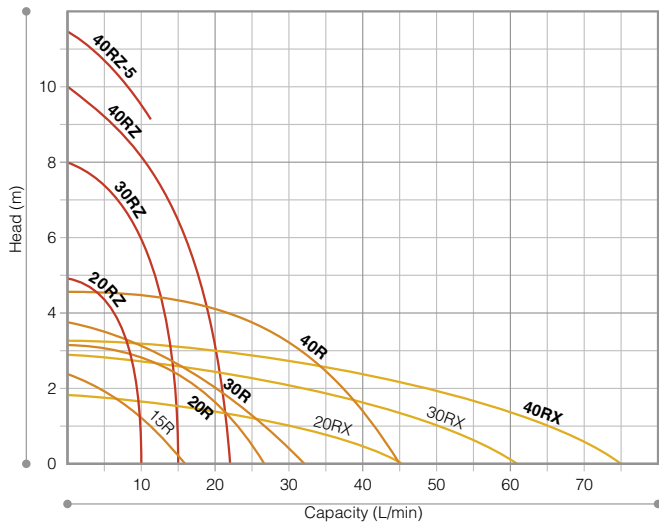


40

MD-40R



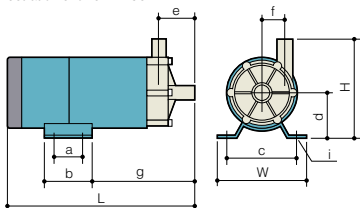
**Performance curves** (50Hz)



**Dimensions** (mm)

**MD-15R(M)·20R(M)·30R(M)·40R(M)**

Illustration shows MD-30R

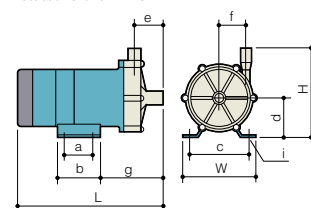


Model	W	H	L	a	b	c	d	e	f	g	i
MD-15R(M)	95	109 (114)	180 (179)	-	50	68	55	39	22	92	2 - $\phi$ 5.6
MD-20R(M)	106	105 (107)	209 (203)	44	60	90	45	39 (33)	29	94 (88)	4 - 6×10
MD-30R(M)	120	130	248	40	64	100	60	48	31	137	4 - $\phi$ 9
MD-40R(M)			250								

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)	106	125	211	44	60	90	55	40	39	98	4 - 6×10
MD-30RZ(M)		130	230							120	
MD-40RZ(M)	120		241	40	64	100	60	39	45	128	4 - $\phi$ 9
MD-40RZ-5(M)		150									
MD-20RX(M)	106	119 (122)	220	44	60	90	45	47		105	4 - 6×10
MD-30RX(M)		137 (130)	254	40	64	100	60	50	-	143	4 - $\phi$ 9
MD-40RX(M)	120	137 (141)	256								

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

GRRPP

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

# 55

MD-55R



# 7

## Specifications (50Hz)

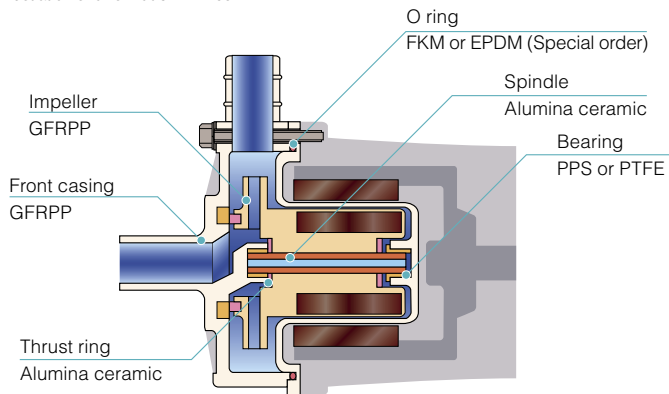
Model	Hose connection		Threaded connection		Max. Capacity (L/min)	Max. Head (m)	S.G.	Output (w)	Input (w)	Power source		Mass (kg)		
	R · RZ		R-M · RZ-M							Single phase	Three phase			
	Inlet (mm)	Outlet (mm)	Inlet/Outlet	Union (mm) <sup>(Note1)</sup>										
MD-55R(M)	26	26	G1	20	60	5.6	1.2	90	130	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

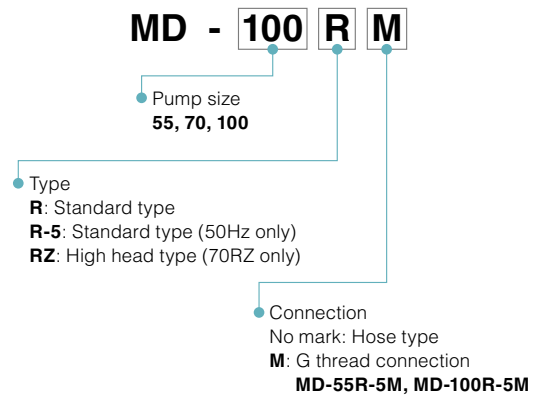
Note 1: The union size on above table shows the nominal diameter of the applicable PVC pipe.  
Heat resistance of the standard union is 0 - 55°C and that of the heat resistant union is 0 - 80°C.

## Construction and materials

Illustration shows model MD-100R



## Pump identification



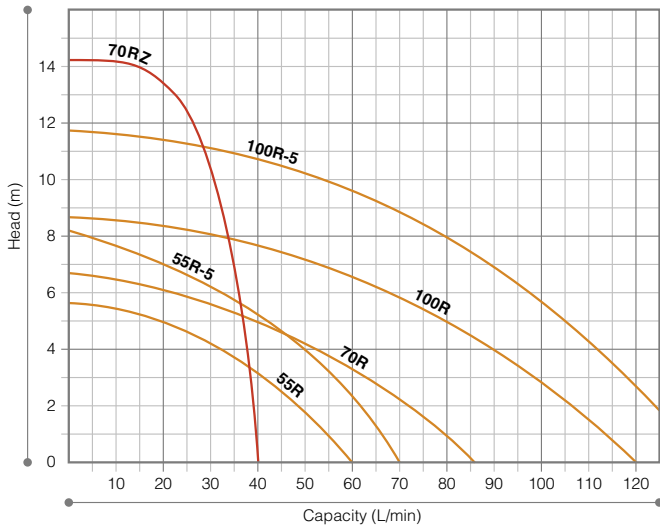
Note3: Specify the pump model and power specification at an inquiry phase.

0 100

MD-70R

MD-100R

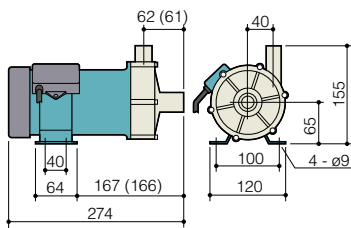
**Performance curves** (50Hz)



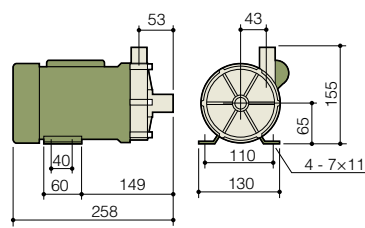
**Dimensions** (mm)

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

Illustration shows MD-55R

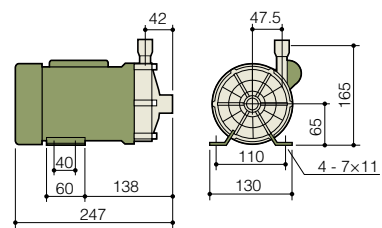


**MD-70R(M)**



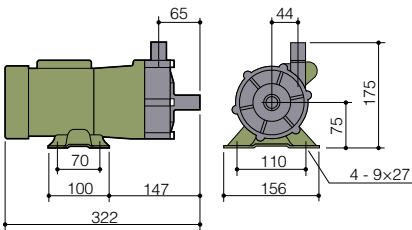
**MD-70RZ(M)**

( ): Thread connection type



**MD-100R-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.



### • 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	13A	16A	20A
Material	PVC	PVC	PVC
Range of temp.	0 - 55°C	0 - 55°C	0 - 55°C
Material of O ring	FKM or EPDM		

### 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, MD-40RM		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.



RD-12



RD-30

### MD-55R-(5)(M), 70R(Z)(M), 100R-(5)(M)

Available with IEC frame motors



This type of unit allows the pumps to be supplied with numerous motor options.

### MD-6Z-D2 (DC24V type)

Capable of flow adjustment by changing power supply voltage (and allows the user to easily comply with international standards such as CE, UL and CSA.)  
Max. discharge capacity: 6 l/min.  
Max. discharge head: 2.7 m  
Temperature range: 0 to 50°C  
Supplied power: DC8V to 24V



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( )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.