

## Magnetic drive pumps MR series



# MR series - small magnetic drive pumps for OEM

The MR series features small magnetic drive pumps developed specially for OEM. To keep up with a current demand for size reduction in photo processor and various other equipments, we successfully attained a further decrease in size coupled with higher reliability in this compact-type magnetic drive pump series.

## Compactness

To keep up with a trend toward smaller sizes in equipment, we have made our MR pumps more compact. Notably, in designing the MR-15/20 pumps, the lengths were reduced by 14 to 16% as compared to the MD series counterparts as a result of the integration of a disc-magnet drive system.

## High performance

Despite their compactness, the basic properties of the MR series pumps such as quietness, minimal vibration and temperature resistance, as well as product quality, are equal to those exemplified by the MD series, one of our best sellers.

## Sealing efficiency

As a result of our modification of the sealing structure of the casing, a higher sealing efficiency has been achieved.

## Facility in air venting

As the MR-15/20 pumps are of the disc-magnet drive type, air in the pump chamber easily vents.

## Certified as meeting UL and CE standards

All the types (100V, 115V and 230V) are certified as products meeting UL standards and CE marking is also available for 230V type.

Note: Pump model is different between UL type and CE type.



MR-4



MR-6Z



MR-10



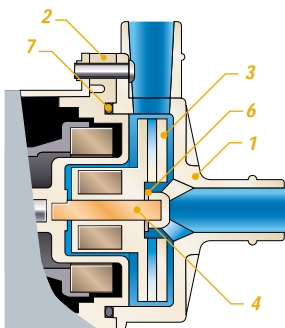
MR-15



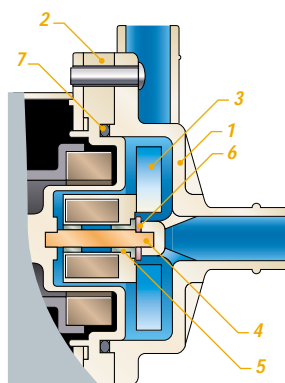
MR-20

## Construction and materials

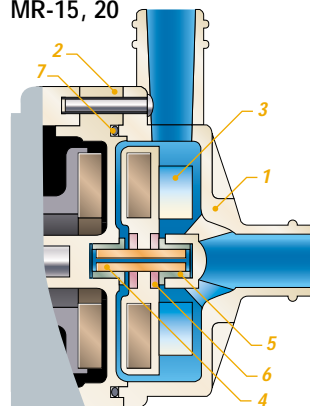
MR-4, 6, 6Z



MR-10



MR-15, 20



Model	MR-4, 6, 6Z	MR-10, 15, 20
<b>1 Front casing</b>	GFRPP	
<b>2 Rear casing</b>	GFRPP	
<b>3 Impeller</b>	GFRPP	
<b>4 Spindle</b>	Alumina ceramic	
<b>5 Bearing</b>	-	PPS
<b>6 Thrust</b>	High density polyethylene	Alumina ceramic
<b>7 O ring</b>	FKM (or EPDM)	

## Pump identification

**MR - 15 M - 115 E L 01**

**Pump size**

4, 6, 6Z, 10, 15, 20

**Connection**

No mark: Hose connected type  
M: G thread type  
T: NPT thread type

**Motor**

No mark: 1 phase 100V  
115: 1 phase 115V  
200: 1 phase 200V  
230: 1 phase 230V

Note: Both UL type and CE type are available for 230V.

**Material of O ring**

No mark: FKM  
E: EPDM

**Customers suffix number**

01, 02, 03...

**Standard**

No symbol: CE (except 100, 115 and 200V)  
L: UL

## Specifications

50Hz / 60Hz

Model	Hose connected		Max. Capacity L/min	Max. Head m	S. G. (Note 4)	Motor (Single phase, 2 poles condenser motor)			Mass kg
	Inlet	Outlet				Output W	Input W	Voltage	
MR-4	12mm	12mm	4.5 / 5.5	0.85 / 1.1	1.2	3	12 / 11	AC100V, 115V, 200V, 230V	0.8
MR-6	14mm	14mm	8.0 / 9.0	1.0 / 1.4	1.2	3	13 / 15		0.8
MR-6Z	14mm	14mm	5.5 / 6.0	2.1 / 2.7	1.1	3	13 / 15		0.8
MR-10	14mm	14mm	11 / 12	1.5 / 2.1	1.1	5	16 / 17		1.0
MR-15	14mm	14mm	16 / 19	2.4 / 3.4	1.3	10	26 / 31		1.5
MR-20	18mm	18mm	27 / 31	3.1 / 4.3	1.1	20	40 / 50		1.8

Note1: The maximum discharge is at normal temperature utilizing clear water.

Note2: It is possible to make the MR15/20 pumps as screw connection types. MR-15: 1/2NPT or G3/4; MR-20: 3/4 NPT or G3/4

Note3: As the MR series pumps are lot-manufacture products, they are not available as an individual item.

Cost estimation will be made upon receipt of specifications and the quantity as requested by you.

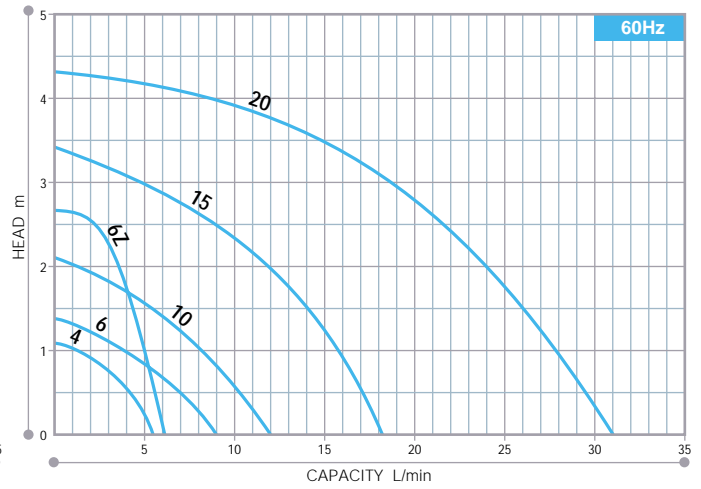
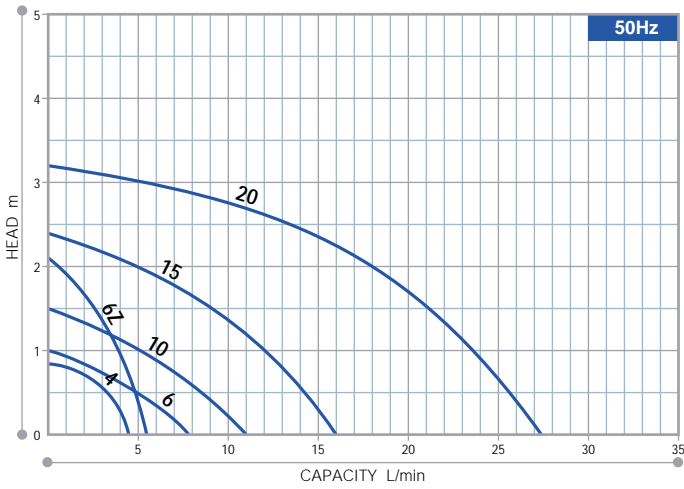
Note4: Limit of specific gravity shows maximum flow and viscosity of fluid 1mPas.

**Common specifications**

Range of temperatures of liquids to be handled: 0 to 80°C (without freezing)

Range of ambient temperatures: 0 to 40°C

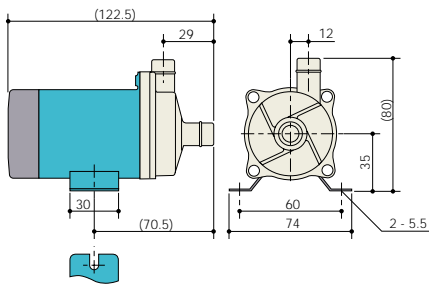
## Performance curves



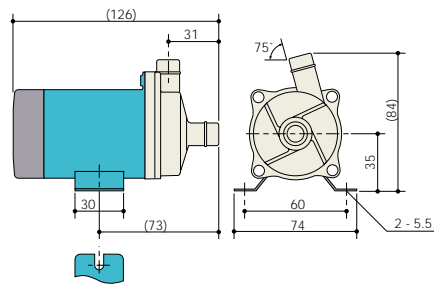
## Dimensions

in mm

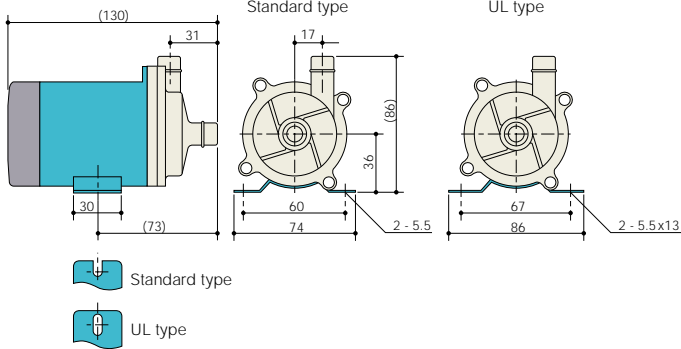
MR-4



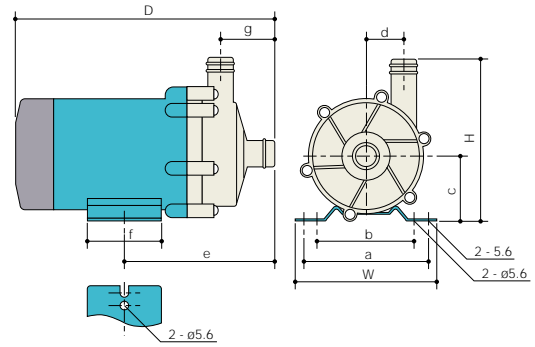
MR-6, 6Z



MR-10



MR-15, 20



	W	H	D	a	b	c	d	e	f	g
MR-15	95	(109)	(155)	85	68	45	23	100	50	37
MR-20	95	(110)	(176)	85	68	45	25	102	50	37