



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



- 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

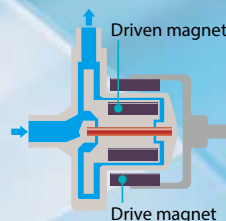


- Max Discharge capacity **10/11 - 75/85** L/min
- Max Discharge head **1.8/2.5 - 11.5/13.5** m



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 GFRPP 50/60Hz

- 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 | |

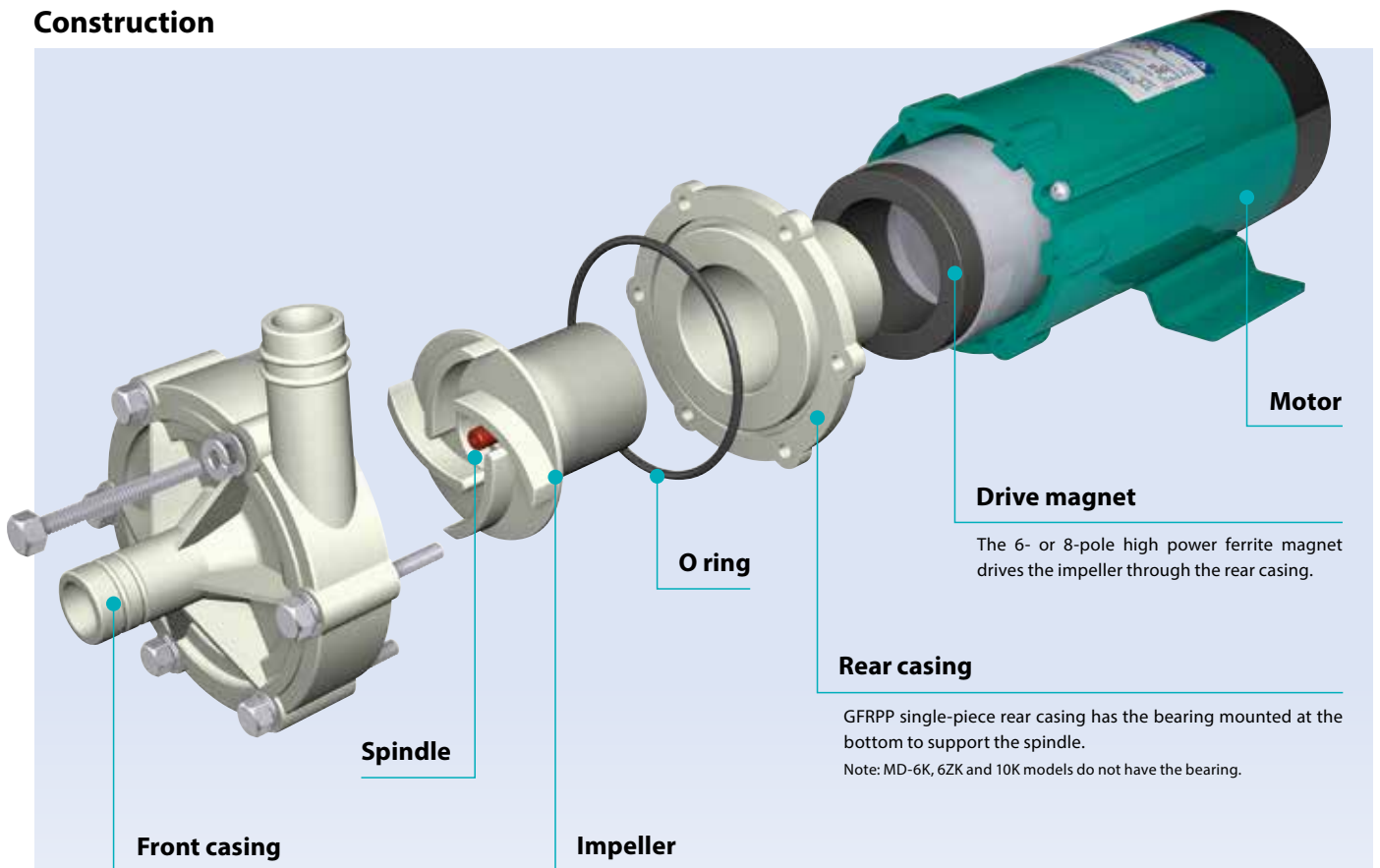


Standard type

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.

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

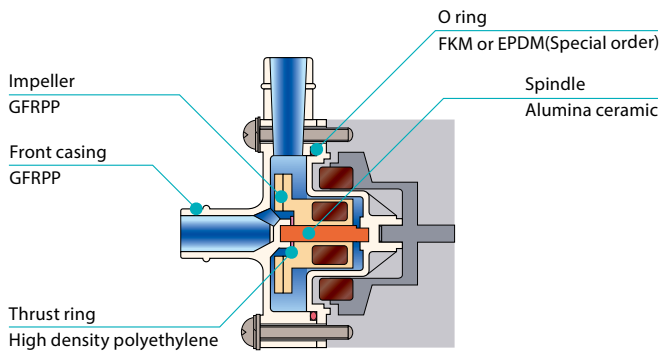
Specifications (50/60Hz)

| 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.

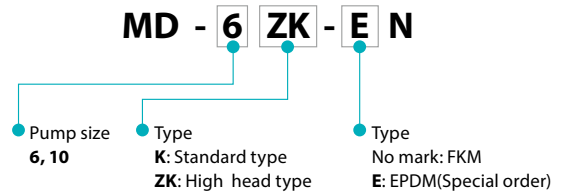
Construction and materials

Illustration shows model MD-6K



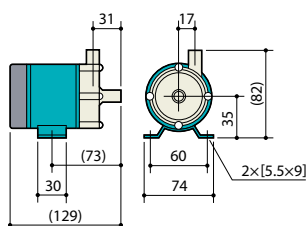
- GFRPP Glass fiber reinforced polypropylene
- FKM Fluorine rubber
- EPDM Ethylene propylene rubber

Pump identification

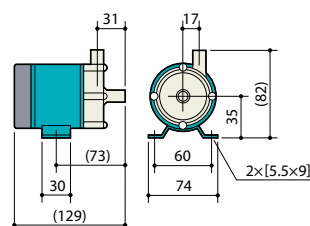


Dimensions (mm)

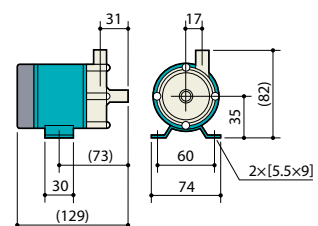
MD-6K



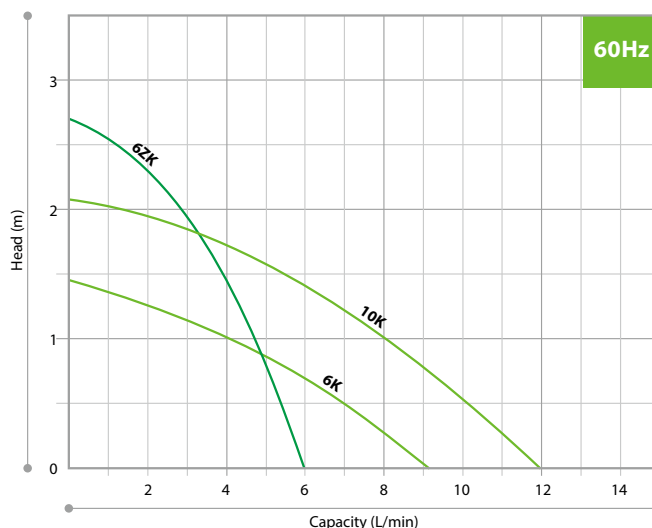
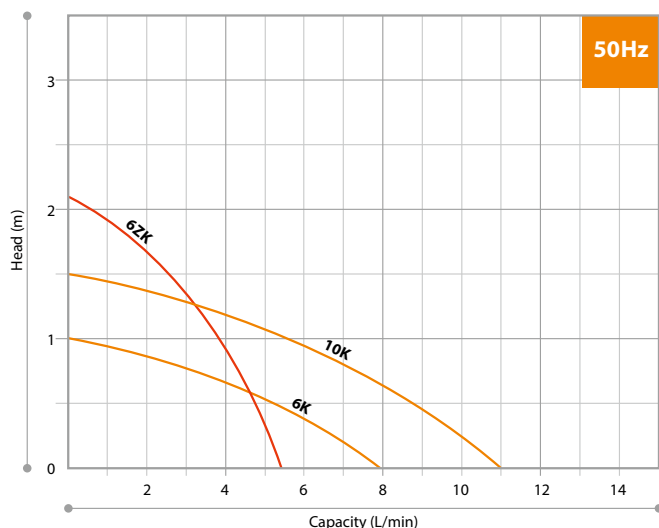
MD-6ZK



MD-10K



Performance curves



MD-6·MD-6Z·MD-10

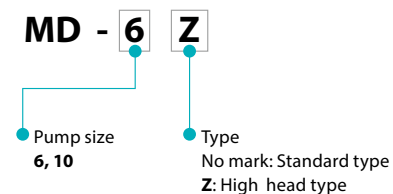


Specifications (50/60Hz)

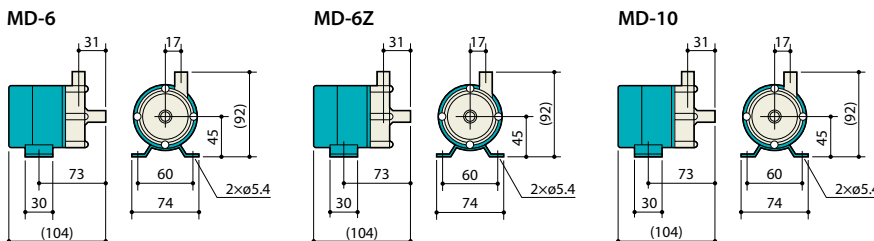
| Model | Hose connection | | Max. Capacity L/min | Max. Head m | S.G. | Output W | Input W | Power source | Mass Kg |
|-------|-----------------|-------------|------------------------|----------------|------|-------------|------------|-------------------------|------------|
| | Inlet (mm) | Outlet (mm) | | | | | | | |
| 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 | | | | 10 / 11 |
| MD-20RZ | 17.5 | 17 | G3/4 | 13 | 10 / 11 | 4.9 / 6.9 | 1.1 | 20 / 20 | 4.9 / 6.9 | | |
| MD-30R | 20 | 20 | G3/4 | 16 | 32 / 38 | 3.8 / 5.4 | 1.3 | | | | 45 / 45 |
| MD-30RX | 26 | 26 | G1 | 20 | 62 / 72 | 2.9 / 4.1 | 1.1 | 45 / 45 | 70 / 90 | | |
| MD-30RZ | 17.5 | 17 | G3/4 | 13 | 15 / 17 | 8.0 / 11 | 1.0 | | | | 65 / 65 |
| MD-40R | 20 | 20 | G3/4 | 16 | 45 / 52 | 4.6 / 6.5 | 1.1 | 65 / 65 | 90 / 130 | | |
| MD-40RX | 26 | 26 | G1 | 20 | 75 / 85 | 3.3 / 4.7 | 1.0 | | | | 65 / 65 |
| MD-40RZ | 20 | 20 | G3/4 | 16 | 22 / 22 | 10 / 13.5 | 1.0 | 65 / - | 103 / - | | |
| MD-40RZ-5 | | | | | 11 / - | 11.5 / - | | | | | |

• 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

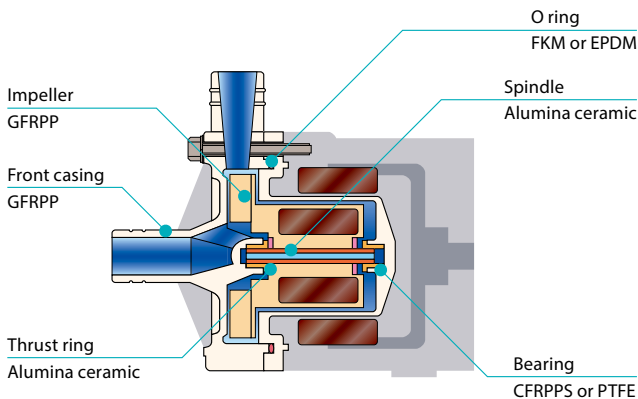
• Motor type: Capacitor-run induction motor

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.

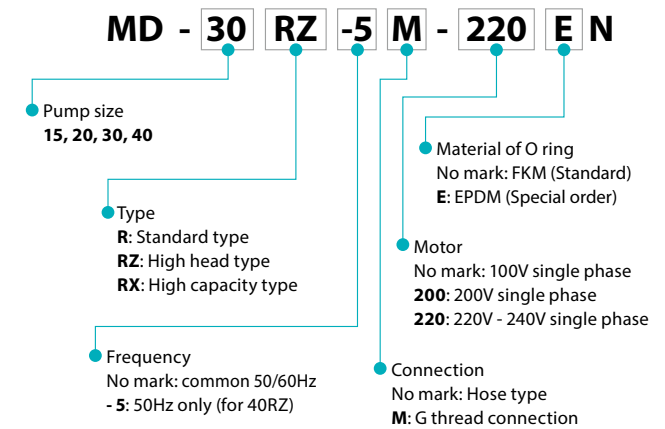
Construction and materials

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



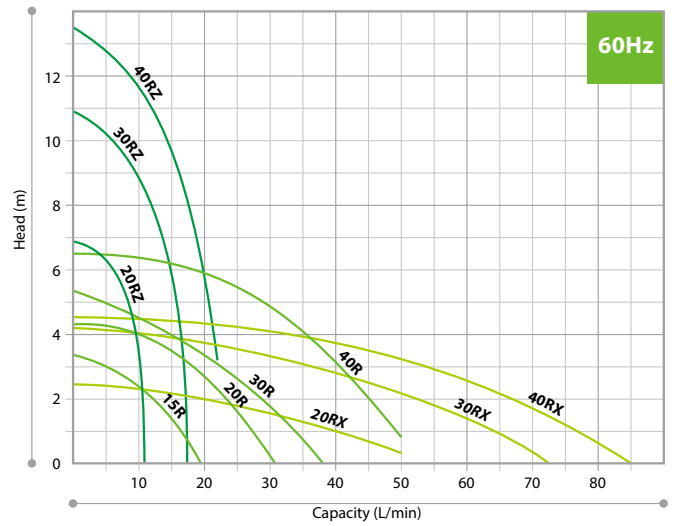
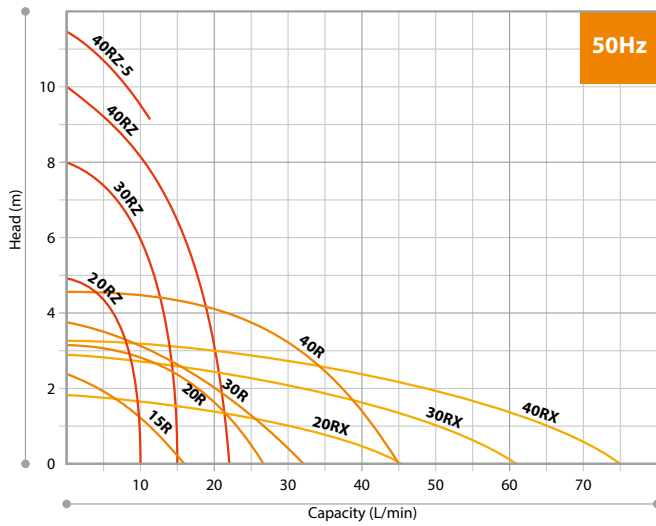


MD-30R



MD-40R

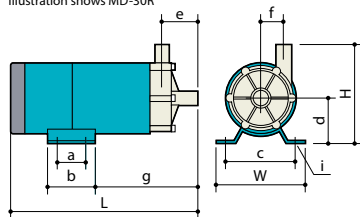
Performance curves



Dimensions (mm)

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

Illustration shows MD-30R

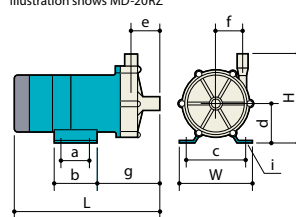


| Model | W | H | L | a | b | c | d | e | f | g | i |
|--------|-----|----------------|----------------|----|----|-----|----|------------|----|------------|----------|
| MD-15R | 95 | 109 (114) | 179.5 (179) | - | 50 | 68 | 55 | 39 | 22 | 92 | 2×ø5.6 |
| MD-20R | 106 | 105 (106.3) | 208.5 (203) | 44 | 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 | – | 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 | 100V/200V/ 220V-240V | 6.0 | |
| MD-70RZ | 20 | 20 | G3/4 | 16 | – | 40 / 43 | 14.3 / 20.3 | | 180 / 216 | 275 / 395 | | | 220V/380V/ 400V/440V |
| 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

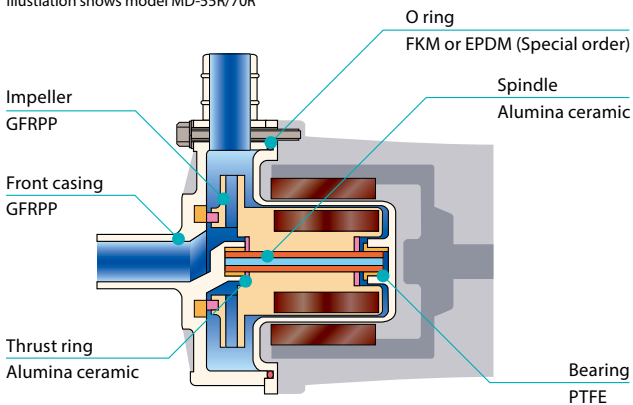
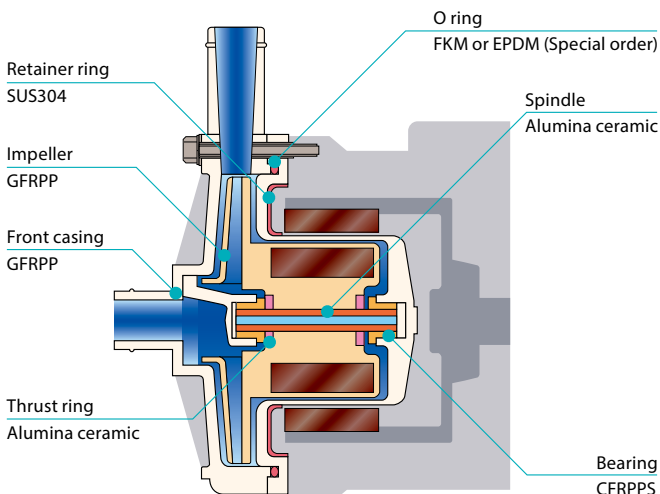
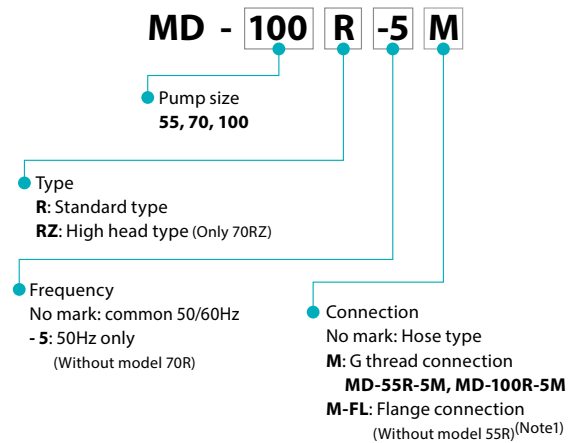


Illustration shows model MD-70RZ/100R



Pump identification



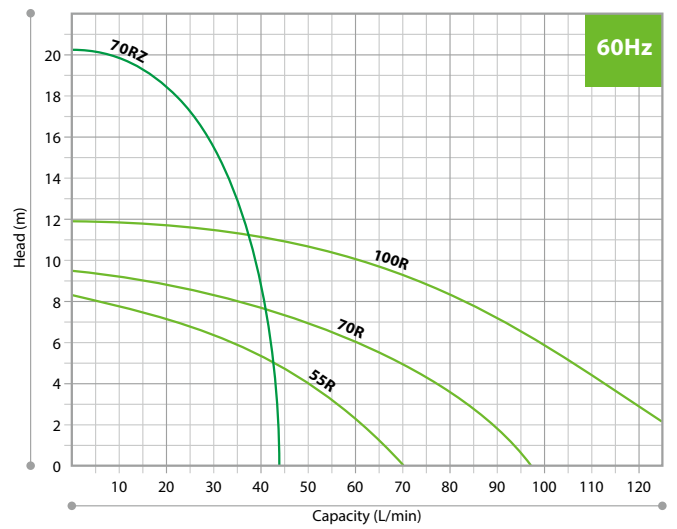
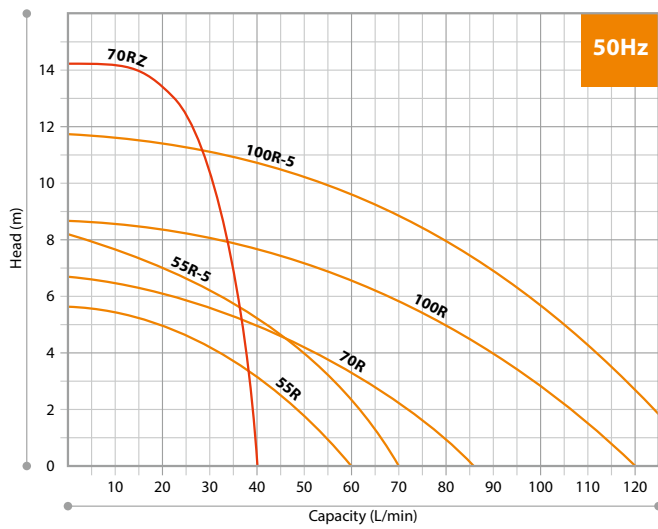
• Specify the pump model and power specification at an inquiry phase.

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

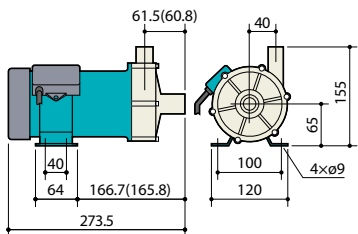


Dimensions (mm)

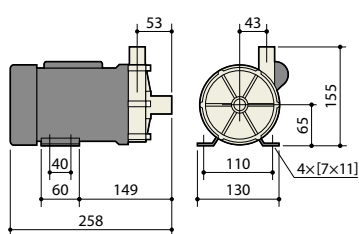
(): Thread connection type

MD-55R-55R-5

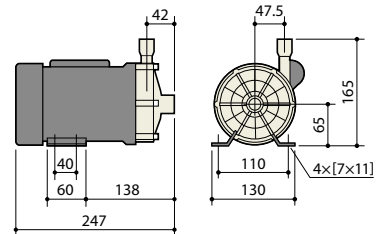
Illustration shows MD-55R



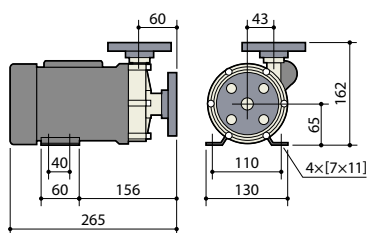
MD-70R



MD-70RZ

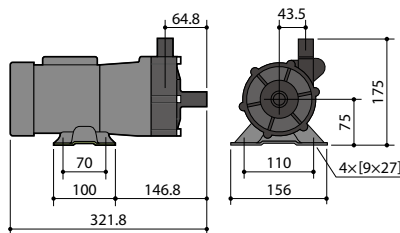


MD-70RM-FL

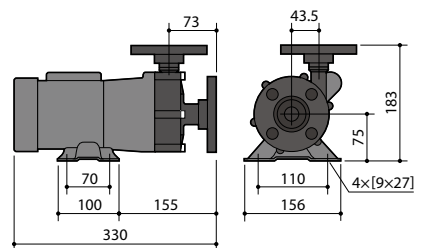


MD-100R-100R-5

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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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.

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