

Magnetic drive pumps

Magnetic drive pumps with an excellent balance of features and performance



The MXM series of pumps have now been added to the line-up of Iwaki's magnetic drive process pumps, which have earned high acclaim and the trust of users all around the world.

Patent

JAPAN / U.S.A. / TAIWAN / EU / CHINA





Better withstanding difficult operating conditions

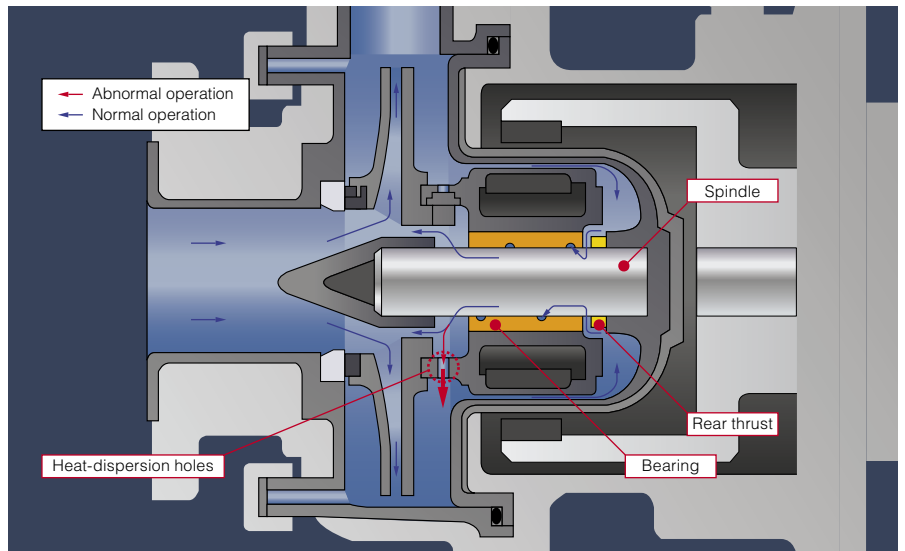
The proven non-contact system and self-radiating bearing structure deliver substantial improvements in tolerance of dry running and poor suction conditions.

Non contact system

Unlike conventional magnetic drive pumps, the MXM series are designed to prevent contact between the bearing and the rear thrust faces, even during dry running. By preventing contact, the rear thrust ring minimizes heat generation to prevent melting of plastic parts.

Self radiation structure (PAT.)

Through heat-dispersion holes provided in the fixed portions of the impeller and the magnet capsule, the liquid around the spindle and the bearing is forced to circulate so that heat generated by sliding can be reduced effectively. Thus, thermal deformation and melt are prevented.



Magnetic drive pumps with an excellent balance of features and performance

The MXM series of pumps have now been added to the line-up of Iwaki's magnetic drive process pumps, which have earned high acclaim and the trust of users all around the world. The new MXM series feature an excellent balance of the characteristics required of chemical pumps, including corrosion resistance, durability and safety. They employ a non-contact, self-radiating bearing structure to better withstand difficult operating conditions. The advent of the MXM series has further expanded the array of choices offered by Iwaki's process magnetic drive pumps.

Exceptional corrosion resistance

The MXM series employ optimum anti-corrosive materials such as carbon fiber reinforced ETFE (CFRETFE), fine ceramic and carbon for parts that come in contact with liquid. The most suitable impeller size and motor output can be selected for the required liquid property.



Impeller+Magnet capsule



Spindle+ Bearing

Robust structure

The pumps have an external armour of high strength ductile cast iron for use in heavy duty chemical process applications. The sealing performance between the front casing and the rear casing is drastically enhanced by our original structure (patent pending), offering high reliability.



Cover+Front casing

Enhanced safety

The MXM features a unique rear casing shape designed to prevent stress concentration. This increases both the pump's pressure resistance and the mechanical strength of the spindle support. The high temperature model uses a dual structure incorporating an FRP rear casing cover. In addition to further increasing the pump's pressure resistance, it improves safety with dual containment preventing liquid leakage in the event of unexpected damage to the rear casing.



Rear casing+Rear casing cover (Option)



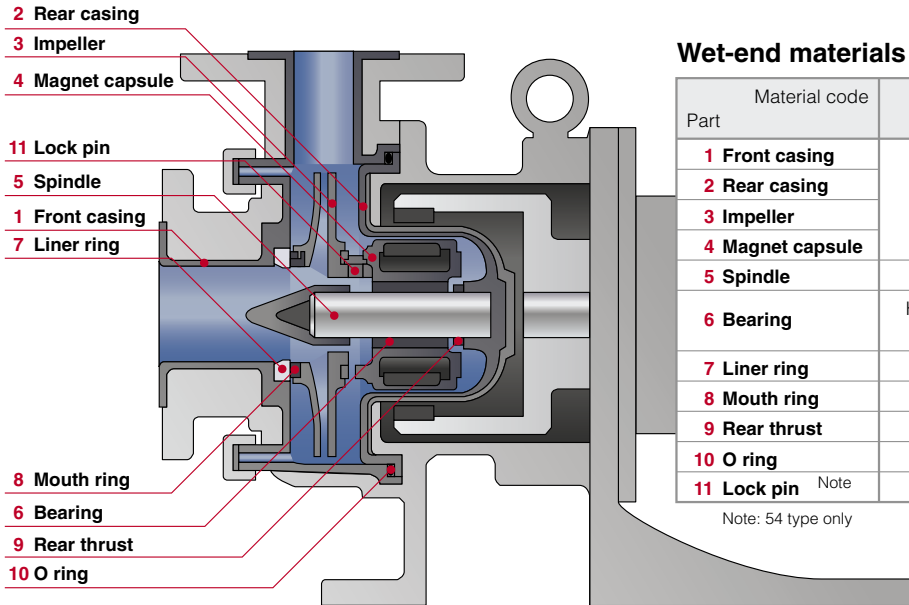
MXM545



MXM542



Construction and materials



Wet-end materials

| Part | Material code | CF | FF | KK | |
|------------------|-----------------------------------|---------|----|----|-----------------------------|
| 1 Front casing | CFRETFE | | | | |
| 2 Rear casing | | | | | |
| 3 Impeller | | | | | |
| 4 Magnet capsule | | | | | |
| 5 Spindle | High-purity alumina ceramic | SiC | | | |
| 6 Bearing | High-density carbon | | | | High-purity alumina ceramic |
| 7 Liner ring | High-purity alumina ceramic | | | | |
| 8 Mouth ring | PTFE with filler | | | | |
| 9 Rear thrust | MXM22/44: CFRETFE, MXM54: CFRPFA | | | | |
| 10 O ring | FKM/EPDM/AFLAS®/ DAI-EL PERFLUOR® | | | | |
| 11 Lock pin | Note | CFRETFE | | | |

Note: 54 type only

Specifications

50Hz

| Model | Pump size Suction × Discharge | Impeller size | Capacity L/min | Head m |
|---------------------------------|----------------------------------|---------------------------------|-------------------|-----------|
| MXM22 (Impeller range 1) | 25mm × 25mm | 100 | 150 | 7.5 |
| | | 090 | 150 | 5.5 |
| | | 070 | 150 | 3 |
| MXM22 (Impeller range 2) | | 105 | 150 | 8 |
| | | – | – | – |
| | | MXM44 (Impeller range 1) | 40mm × 40mm | 115 |
| 110 | 200 | | 8 | |
| 100 | 200 | | 6 | |
| 090 | 200 | | 5 | |
| – | – | | – | |
| MXM44 (Impeller range 2) | 130 | 200 | 12 | |
| MXM54 (Impeller range 1) | 50mm × 40mm | 150 | 200 | 18 |
| | | 140 | 200 | 18.5 |
| | | 120 | 200 | 14.5 |
| MXM54 (Impeller range 2) | | – | – | – |
| | | – | – | – |
| | | MXM54 (Impeller range 3) | 150 | 300 |
| 140 | | | 300 | 19.5 |
| 130 | | | 300 | 17 |
| MXM54 (Impeller range 4) | | | 150 | 400 |
| | | 140 | 400 | 20.5 |
| | | 125 | 400 | 15.5 |
| | | 110 | 400 | 9.5 |

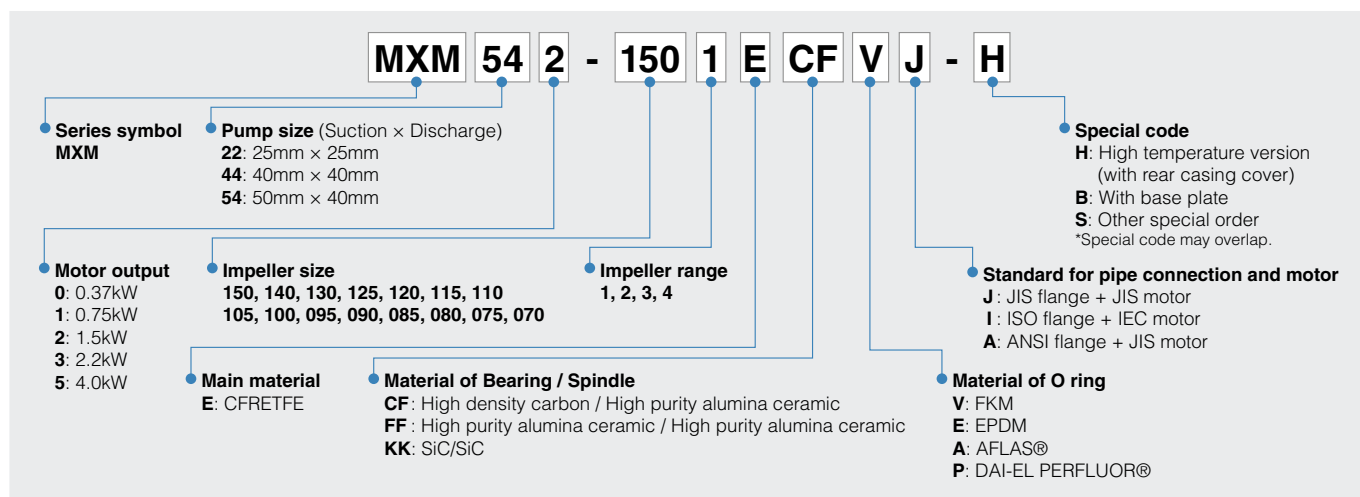
Note1: Liquid temp. range

Standard: -10 to 90 °C High temp. version (with rear casing cover): -10 to 105 °C (10 to 105 °C when AFLAS® O ring is used)

Note2: Max allowable pressure range

Standard MXM22: 0.2MPa, MXM44: 0.3MPa, MXM54: 0.45MPa High temp. version (with rear casing cover): 0.7MPa

Pump identification



Notes for selection

(1) The performance curves in this catalogue represent the data measured using clear water at 20 °C.

(2) Choose the pump model suited to the liquid gravity.

Make sure that the motor output is at least five to ten percent higher than theoretically required.

$$\text{Shaft power (Sp)} \times \text{liquid gravity} \times 1.1 < \text{Motor output}$$

(Note) The shaft power (Sp) increases in proportion to the liquid gravity.

As the viscosity rises, the shaft power is higher while the head and the discharge are lower.
The power and the performance need to be adjusted.

(3) No magnetic drive pump supports continuous closed running. Be sure to ensure the minimum flow volume.

- Minimum flow volume
MXM22/44 : 10 L/min.
MXM54 Impeller range 1, 2 and 3 : 20 L/min.
Impeller range 4 : 50 L/min.

(4) The pressure resistance of the pump is as follows.

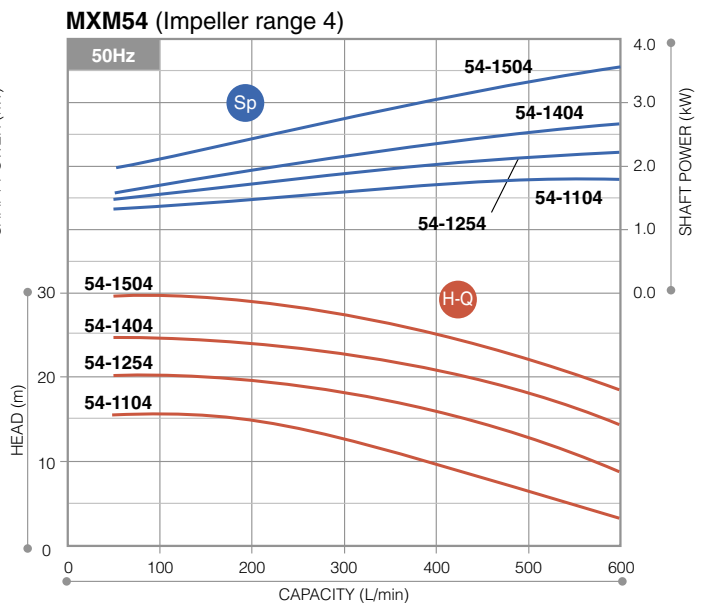
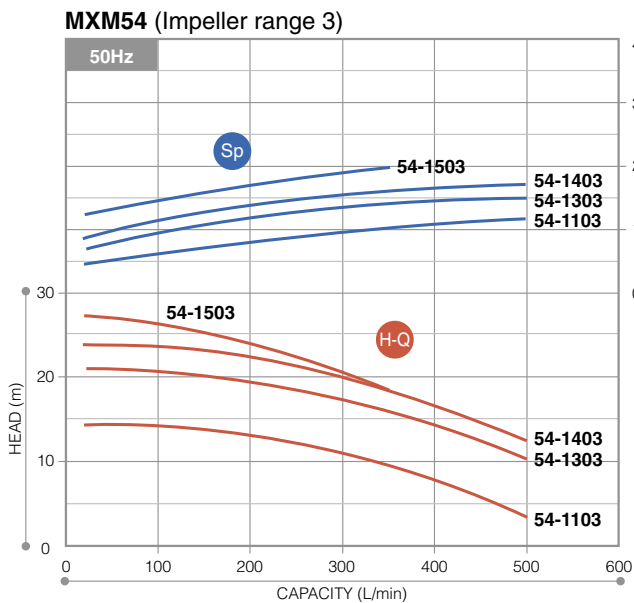
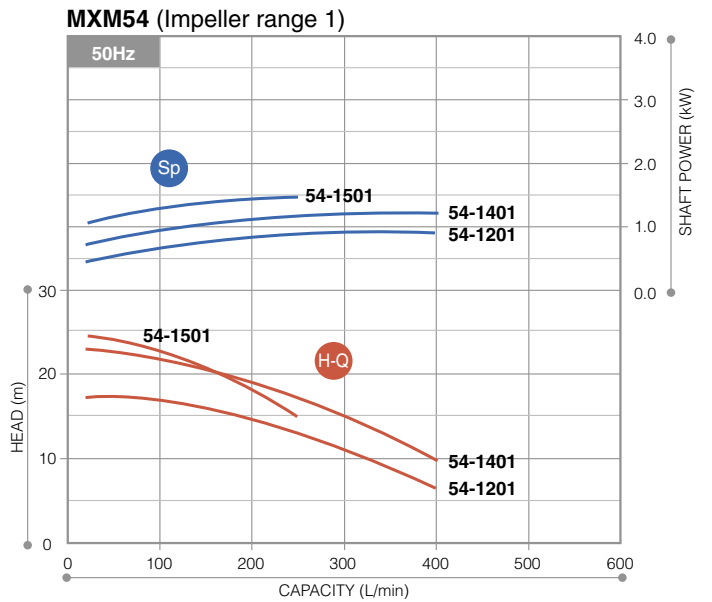
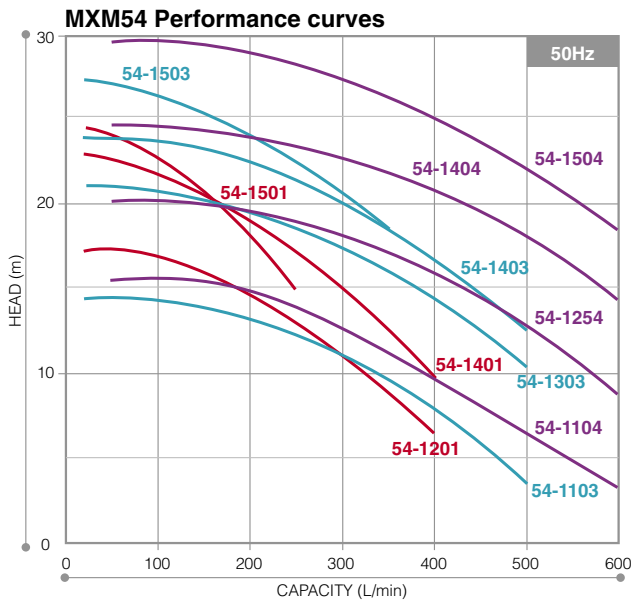
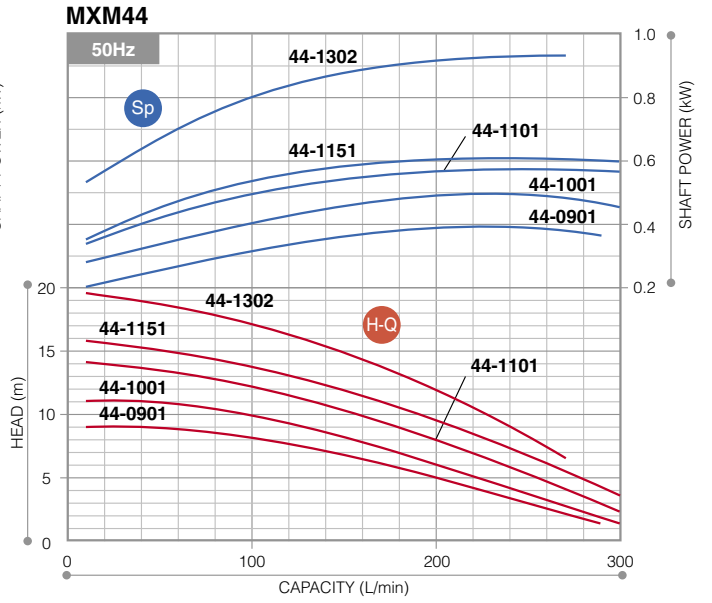
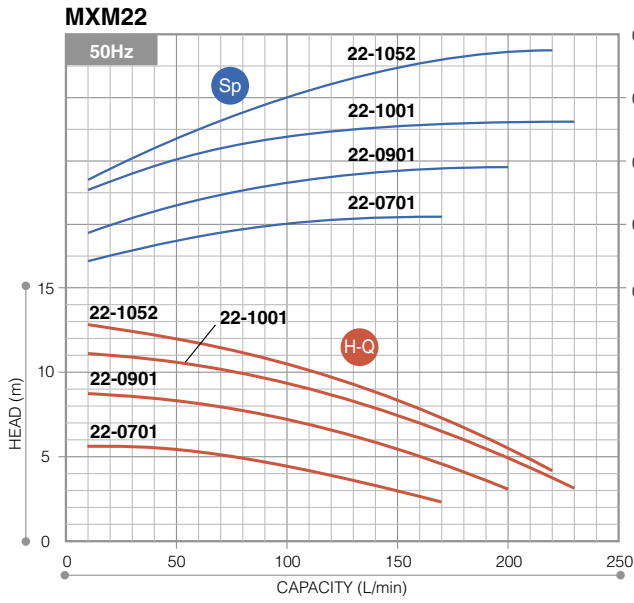
Be sure to ensure that the internal pressure of the pump does not exceed the value specified below.

- Standard model -10 °C to 90 °C (without rear casing cover)
MXM22: 0.2MPa, MXM44: 0.3MPa, MXM54: 0.45MPa
- High temperature version -10 °C to 105 °C (with rear casing cover)
: 0.7MPa

(5) FF material models

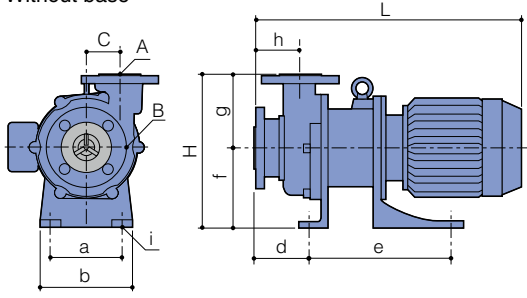
- Liquid should be 1m Pa·s (cP) or more.
- HQ performance is somewhat different from CF/KK models.
If you need to know the detail, please contact with us.
- FF material models are prohibited to run under dry running or air sucking operation.

Performance curves

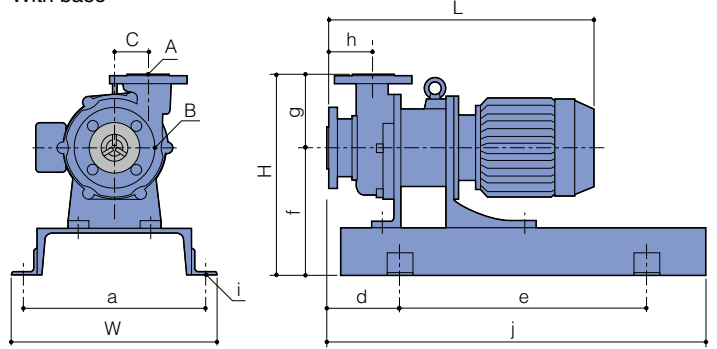


Dimensions in mm

Without base



With base



Without base

| Model | (H) | (L) | A | B | a | (b) | c | (d) | e | f | g | h | i | Mass kg Less motor | | |
|----------|-----|-----|-----|-----|-----|-----|----|-----|-----|-----|-----|-----|-------|-----------------------|--|----|
| MXM220 | 237 | 453 | 25A | 25A | 110 | 150 | 51 | 95 | 143 | 115 | 122 | 88 | 4-ø14 | 15 | | |
| MXM220-H | | 475 | | | | | | | 165 | | | | | 20 | | |
| MXM221 | | 467 | | | | | | | | | | | | | | |
| MXM221-H | | | | | | | | | | | | | | | | |
| MXM441 | 275 | 482 | 40A | 40A | 130 | 150 | 58 | 113 | 250 | 135 | 140 | 106 | 4-ø14 | 25 | | |
| MXM441-H | | 495 | | | | | | | | | | | | | | |
| MXM442 | | 537 | | | | | | | | | | | | | | |
| MXM442-H | | | | | | | | | | | | | | | | |
| MXM542 | 295 | 517 | 40A | 50A | 140 | 180 | 65 | 106 | 275 | 155 | 140 | 87 | 4-ø14 | 25 | | |
| MXM543 | | | | | | | | | | | | | | | | |
| MXM545 | | 589 | | | | | | | | | | | | | | 30 |

With base

| Model | (W) | (H) | (L) | A | B | a | c | d | e | f | g | h | i | j | Mass kg Less motor | | |
|----------|-----|-----|-----|-----|-----|-----|----|-----|-----|-----|-----|-----|-------|-----|-----------------------|--|----|
| MXM220 | 300 | 317 | 453 | 25A | 25A | 250 | 51 | 140 | 200 | 195 | 122 | 88 | 4-ø19 | 450 | 30 | | |
| MXM220-H | | | 475 | | | | | | | | | | | | | | 35 |
| MXM221 | | | 467 | | | | | | | | | | | | | | |
| MXM221-H | | | | | | | | | | | | | | | | | 30 |
| MXM441 | 350 | 365 | 482 | 40A | 40A | 300 | 58 | 140 | 240 | 225 | 140 | 106 | 4-ø19 | 489 | 40 | | |
| MXM441-H | | | 495 | | | | | | | | | | | | | | |
| MXM442 | | | 537 | | | | | | | | | | | | | | |
| MXM442-H | | | | | | | | | | | | | | | | | |
| MXM542 | 400 | 385 | 517 | 40A | 50A | 350 | 65 | 140 | 480 | 245 | 140 | 87 | 4-ø19 | 735 | 55 | | |
| MXM543 | | | | | | | | | | | | | | | | | |
| MXM545 | | | 589 | | | | | | | | | | | | | | 60 |

Note: The dimensions may differ with the type of motor installed.

Optional accessories

Iwaki dry running protector DR series

Model DR is electric current sensing type dry running protector. It detects the decreased load current (lower limit) to stop the pump when it runs dry or runs with air sucking in. It can detect over-load, too.

- Current figure to be set is indicated on LCD.
- Both top/bottom figures can be set.

Top: Over-load

Bottom: Dry running, air sucking-in operation, operation with suction side closed

- Built-in current transformer
- DIN rail mounting
- It is unable to use DR when inverter is employed in the system.



DR-20

Specification

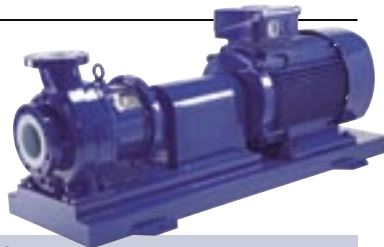
| Model | | DR-20 |
|-------------------------|-------|-------------------------------|
| Motor power | | 380 to 440V three phase |
| Applied motor | | 0.75 to 15kW |
| Power control | | 100 to 240V single phase |
| Power | V | 200 to 240V ±10% single phase |
| | Input | 3.5W |
| Detective current | | 0.5 to 32.0A |
| Current transformer(CT) | | Built-in |
| Outer dimension | | D80 X W153 X H122 |

50Hz

IWAKI Process Magnetic Drive Pump Series

MDW SERIES

The world largest class fluoroplastic magnetic drive pump



Specifications

- Max. discharge capacity: 300 m³/hr
- Max. discharge head: 80 m
- Main materials: ETFE, PFA, SiC
- Liquid temp. range: -10 to 105 °C (MDW80/100)
-10 to 120 °C (MDW50)

MDE SERIES

The most reliable, large-sized magnetic drive pump designed for process use



Specifications

- Max. discharge capacity: 240 m³/hr
- Max. discharge head: 55 m
- Main materials: ETFE, PFA, SiC
- Liquid temp. range: 0 to 100 °C

MDM SERIES

Magnetic drive process pumps with dry running capability



Specifications

- Max. discharge capacity: 84 m³/hr
- Max. discharge head: 74 m
- Main materials: CFRETFE/PFA
- Liquid temp. range: -20 to 105 °C (CFRETFE),
-20 to 150 °C (PFA)

MX/MX-F SERIES

Withstands difficult operating conditions and offers high efficiency



Specifications

- Max. discharge capacity: 500 L/min
- Max. discharge head: 35 m
- Main materials: GFRPP, CFRETFE
- Liquid temp. range: 0 to 80 °C

SMX/SMX-F SERIES

Versatile self-priming magnetic drive pump with enhanced durability under abnormal operation



Specifications

- Max. discharge capacity: 440 L/min
- Max. discharge head: 25 m
- Main materials: GFRPP, CFRETFE
- Liquid temp. range: 0 to 80 °C

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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.

⚠ Legal attention related to export.

Our products and/or parts of products fall in the category of goods contained in the Export Trade Control Order Attachment List 1 of Japanese export control regulations, which includes complementary export control items. Please be reminded that export license, which is issued by the Ministry of Economy, Trade, and Industry in Japan could be required when products are exported from Japan.