IWAKI MAGNETIC DRIVE PUMPS

MX

Solutions for chemical handling applications
**Self-radiating structure** *(PAT.)*

Through heat-dispersion holes provided in the fixed portions of the impeller and the magnet capsule, liquid is circulated under pressure between the spindle and bearing to reduce friction heat transmission and prevent thermal deformation.

**Volute casing divided into two sections** *(PAT.)*

The MX series is the first resin magnet pump which uses the pump casing divided into the front casing and the rear casing to form a vortex chamber as an ideal form. Therefore, internal leakage is kept to a minimum and overall hydraulic efficiency is enhanced.

*(Except MX-70, 400, 505)*

**Non-contact structure**

The drive magnet and driven magnet are carefully positioned so that their strong magnetic field limits rear thrust contact of the magnet capsule parts, even during dry running. As a result, heat generation is greatly reduced and liquid circulation is maintained.

*(Except MX-70, 100)*

**Robust structure**

All stress bearing portions, such as the front and rear casings, are reinforced by means of ribs to improve the pressure resistance and the mechanical strength of the pump.

The bearing is not only fixed by conventional press fit but is also sandwiched between the abutting portion in the depth of the magnet capsule and the rear end of the impeller to improve its reliability under high temperature.

*(Except MX-70, 100)*

MX-402(H), 403(H) and 505 models: an unplugging preventive lock pin is adopted for ensuring more steady securing.
The MX Series represents the latest state of the art design in plastic magnetic drive pumps to meet the most severe of operating conditions. When fitted with a carbon bearing, the MX will allow for brief periods of dry running. The new "self radiating structure" (PAT.) in addition to the existing proven non contact principle and front and rear supported spindle greatly improves the pumps ability to withstand some cavitation and running against closed discharge valve. Our innovative design has achieved higher efficiency. MX series pumps are highly recommended for use in various production processes such as filtering, spraying, washing and etching in surface treatment processes.

- An improved mechanical strength design allows operation under abnormal conditions and results in reduction of running cost and maintenance cost.
- The split-volute casing significantly improves efficiency over previous versions.
- Simple yet robust construction allows easy maintenance.
- Enhanced intake features and pump efficiency (PAT.) (MX-505)
- Lap joint construction

Illustration shows MX-250

Volute casing divided into two sections

Abnormal operation
Normal operation

Self-radiating structure
Non-contact structure
Robust structure
Wet end materials

<table>
<thead>
<tr>
<th>Mark</th>
<th>MX-70</th>
<th>MX-100</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Front casing</td>
<td>GFRPP</td>
<td>GFRPP</td>
</tr>
<tr>
<td>2 Impeller</td>
<td>CFRPP</td>
<td>CFRPP</td>
</tr>
<tr>
<td>3 Rear casing</td>
<td>GFRPP</td>
<td>GFRPP</td>
</tr>
<tr>
<td>5 O ring</td>
<td>FKM(EPDM)</td>
<td>PTFE(with filler)</td>
</tr>
<tr>
<td>6 Spindle</td>
<td>Alumina ceramic</td>
<td>Alumina ceramic</td>
</tr>
<tr>
<td>7 Bearing</td>
<td>CFRPPS</td>
<td>PTFE(with filler)</td>
</tr>
<tr>
<td>9 Mouth ring</td>
<td>-</td>
<td>PTFE(with filler)</td>
</tr>
<tr>
<td>10 Thrust/Liner ring</td>
<td>Alumina ceramic</td>
<td>Alumina ceramic</td>
</tr>
</tbody>
</table>

Note: An O-ring made of AFLAS® is also available

---

<table>
<thead>
<tr>
<th>Mark</th>
<th>MX-250 to 505</th>
<th>MX-250 to 401</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Front casing</td>
<td>GFRPP</td>
<td>GFRPP</td>
</tr>
<tr>
<td>2 Impeller</td>
<td>GFRPP</td>
<td>GFRPP</td>
</tr>
<tr>
<td>3 Rear casing</td>
<td>GFRPP</td>
<td>GFRPP</td>
</tr>
<tr>
<td>4 Magnet capsule</td>
<td>PP</td>
<td>PP</td>
</tr>
<tr>
<td>5 O ring</td>
<td>FKM(EPDM)</td>
<td>PTFE(with filler)</td>
</tr>
<tr>
<td>6 Spindle</td>
<td>High purity alumina ceramic</td>
<td>Alumina ceramic</td>
</tr>
<tr>
<td>7 Bearing</td>
<td>Carbon</td>
<td>PTFE(with filler)</td>
</tr>
<tr>
<td>8 Rear thrust</td>
<td>CFRPPS (MX-402 to 505: CFRPEEK)</td>
<td>CFRPEEK</td>
</tr>
<tr>
<td>9 Mouth ring</td>
<td>PTFE(with filler)</td>
<td>PTFE(with filler)</td>
</tr>
<tr>
<td>10 Thrust/Liner ring</td>
<td>Alumina ceramic</td>
<td>Alumina ceramic</td>
</tr>
<tr>
<td>11 Lock pin</td>
<td>GFRPP(Only available type 402 to 505)</td>
<td>-</td>
</tr>
<tr>
<td>12 Inner flange</td>
<td>GFRPP</td>
<td>GFRPP</td>
</tr>
<tr>
<td>13 Outer flange</td>
<td>GFRPP</td>
<td>GFRPP</td>
</tr>
</tbody>
</table>

Note: An O-ring made of AFLAS® is also available
Pump identification

**MX-70 and 100**
- **Pump size**
  - 70: G1 x G1 150W/180W (MX series only available)
  - 100: G1 x G1 260W
- **Series symbol**
  - MX: Material of Casing/GFRPP

**MX-250 to 505**
- **Pump size**
  - 250: 25A x 25A 0.4kW
  - 250: 25A x 25A 0.75kW
  - 400: 40A X 40A 0.4kW
  - 401: 40A X 40A 0.4kW
  - 402, 402H: 50A X 40A 1.2kW
  - 505: 65A X 50A 3.7kW
- **Series symbol**
  - MX: Material of Casing/GFRPP

**Notes**
1) The specific gravity limit values shown above are with maximum discharges. The specific gravity limit varies with the discharge. For details, please contact us.
2) 26mm tube connection option available on the MX-70 and MX-100.
3) AV(AE) type is different in discharge capacity. For details, please contact us.

**Connectors**
- No mark: Tube connection
- Note: Applied to the models MX-70 and MX-100

**Motor**
- No mark: 1 phase 100V
- 11: 1 phase 110V
- 13: 1 phase 220V/240V
- 32: 3 phase 200V/220V
- 34: 3 phase 400/440V

**Flange type**
- No mark: Lap joint type

**Impeller mark**
- MX 5: 50Hz only
- 6: 60Hz only

**Special specification**
- No mark: Standard
- S: Order-made specification

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Connection</th>
<th>Limit of specific gravity</th>
<th>Motor</th>
<th>Mass kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>MX-70M</td>
<td>G1 x G1</td>
<td>1.2</td>
<td>0.15/0.18</td>
<td>6.5</td>
</tr>
<tr>
<td>MX-100M</td>
<td>G1 x G1</td>
<td>1.2</td>
<td>0.26</td>
<td>8.2</td>
</tr>
<tr>
<td>MX-250</td>
<td>25A x 25A</td>
<td>1.0</td>
<td>0.4</td>
<td>13.5</td>
</tr>
<tr>
<td>MX-251</td>
<td>40A x 40A</td>
<td>1.2</td>
<td>0.75</td>
<td>22</td>
</tr>
<tr>
<td>MX-400</td>
<td>50A x 50A</td>
<td>1.2</td>
<td>1.5</td>
<td>38</td>
</tr>
<tr>
<td>MX-505</td>
<td>65A x 50A</td>
<td>1.2</td>
<td>3.7</td>
<td>64</td>
</tr>
</tbody>
</table>

Note 1) The specific limit values shown above are with maximum discharges. The specific gravity limit varies with the discharge. For details, please contact us.
Note 2) 26mm tube connection option available on the MX-70 and MX-100.
Note 3) AV(AE) type is different in discharge capacity. For details, please contact us.

Common specifications
- Range of liquid temperature: 0 to 80°C (10 to 80°C in case AFLAS® O-rings are used.)
- Range of ambient temperature: 0 to 40°C.
Performance curves

**MX-70/100**

- **50Hz**
  - Input (W)
  - Capacity (L/min)
  - Head (m)

- **60Hz**
  - Input (W)
  - Capacity (L/min)
  - Head (m)

**MX-250/251**

- **50Hz**
  - Input (W)
  - Capacity (L/min)
  - Head (m)

- **60Hz**
  - Input (W)
  - Capacity (L/min)
  - Head (m)

**MX-400/401**

- **50Hz**
  - Input (W)
  - Capacity (L/min)
  - Head (m)

- **60Hz**
  - Input (W)
  - Capacity (L/min)
  - Head (m)
Performance curves

IWAKI MAGNETIC DRIVE PUMPS

MX-402/402H

MX-403/403H

MX-505

MX-402/402H

MX-403/403H

MX-505

Sp

H-Q

NPSHr

50Hz

60Hz

CAPACITY (L/min)

HEAD (m)

SHAFT POWER (kW)

NPSHr (m)

CAPACITY (L/min)

HEAD (m)

SHAFT POWER (kW)

NPSHr (m)

CAPACITY (L/min)

HEAD (m)

SHAFT POWER (kW)

NPSHr (m)

CAPACITY (L/min)

HEAD (m)

SHAFT POWER (kW)

NPSHr (m)
Iwaki pump protector DRN series

Detects unusual pump operating conditions including dry-running and overload

The DRN model protects equipment (including pumps) from damage! Minimizes production downtime.

Identifies possible causes of alarms so they can be investigated and addressed.

Multiple Input
Two analog, one digital, one temperature input and one current input

Easy operation
Equipped with EASY setup mode to remember the operation status

Bar graph
Visible indication of current operating status

Logging capability
Data log feature for preventative maintenance scheduling

Communication
RS485 external communication capability

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>DRN-01</th>
<th>DRN-02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amperometric range</td>
<td>0.5-30.00A</td>
<td>5.0-200.0A</td>
</tr>
<tr>
<td>Unit's source voltage</td>
<td>AC100~240V 50/60Hz 10VA</td>
<td></td>
</tr>
<tr>
<td>Operating temperature</td>
<td>0~40ºC</td>
<td></td>
</tr>
<tr>
<td>Operating humidity</td>
<td>35~85%RH</td>
<td></td>
</tr>
</tbody>
</table>

Union joint

Special purpose union joints are available. Material: PVC/Heat resistant PVC

Optional accessories

Iwaki has global network.

Our products and/or parts of products fall in the category of goods contained in control list of international regime for export control.

Please contact us if you need more information.

Before use of pump, read the instruction manual carefully to use the product correctly.

Actual pumps may differ from the photos. Specifications and dimensions are subject to change without notice. For further details please contact us.

Please be reminded that export license could be required when products are exported to export control regulations of countries.

The posting and copying from this catalogue without permission is not accepted.

Iwaki MAGNETIC DRIVE PUMPS MX

IWAKI CO., LTD. 6-6 Kanda-Sudacho 2-chome Chiyoda-ku Tokyo 101-8558 Japan TEL: (81)3 3254 2935 FAX : 3 3252 8892

Your distributor: Please find your distributor location at www.iwakipumps.jp

<table>
<thead>
<tr>
<th>Country</th>
<th>Address</th>
<th>Phone</th>
<th>Fax</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>1455 Avenida Corrientes, 1722 Palermo, Buenos Aires, 1123 Argentina</td>
<td>54 (11) 4749 6000</td>
<td>4749 6001</td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>15/427 Maud St., North Melbourne, Victoria 3051, Australia</td>
<td>61 (3) 9399 0333</td>
<td>9399 0334</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>Rua Cachoeira do Tabuleiro, 68,ビル202, Cidade Jardim, Campo Belo, Sao Paulo, Brazil</td>
<td>55 (11) 5078 3901</td>
<td>5078 3902</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>303, No.4 Rongji Road, Huangpu District, Shanghai, China</td>
<td>86 (21) 6222 8999</td>
<td>6222 8998</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>3/1, Jivan Ram Marg, New Delhi-110001, India</td>
<td>91 (11) 2331 2221</td>
<td>2331 2222</td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>5th Floor, Menara Indocentury, Jl. Asia Afrika No. 8, Kuningan, Jakarta Selatan, Indonesia</td>
<td>62 (21) 7422 8000</td>
<td>7422 8001</td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>Jalan Tun Haji Mat Salleh, Tropicana, Petaling Jaya, Selangor, Malaysia</td>
<td>60 (3) 7973 8888</td>
<td>7973 8889</td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>Paseo de la Reforma No. 220, Colonia Polanco, Mexico, D.F. Mexico</td>
<td>52 (55) 5148 0000</td>
<td>5148 0001</td>
<td></td>
</tr>
<tr>
<td>Netherland</td>
<td>Bloemendaalweg 10, 2132 RD Zandvoort, The Netherlands</td>
<td>31 (0) 70 385 8000</td>
<td>385 8001</td>
<td></td>
</tr>
<tr>
<td>Singapore</td>
<td>25 Raffles Quay, Unit 23-02, UOL Building, Singapore 049413</td>
<td>65 (6) 3300 0000</td>
<td>3300 0001</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>C/Gran Via, 1-2 5º/B, 28014 Madrid, Spain</td>
<td>34 (91) 444 2222</td>
<td>444 2223</td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>3rd Floor, 52/20, Narathiwas Ratchanakarin Road, Bangkok 10300, Thailand</td>
<td>66 (2) 6889 0000</td>
<td>6889 0001</td>
<td></td>
</tr>
<tr>
<td>U.S.A.</td>
<td>666 North First Street, San Jose, CA 95134, U.S.A.</td>
<td>1 (408) 492 0000</td>
<td>492 0001</td>
<td></td>
</tr>
<tr>
<td>Vietnam</td>
<td>4F, Building 5, No. 23, Nghi Tam Street, District, 11, Hanoi, Vietnam</td>
<td>84 (4) 555 0000</td>
<td>555 0001</td>
<td></td>
</tr>
</tbody>
</table>

IWAKI provides net work.

CAUTION FOR USE OF ELECTRIC POWERED MACHINES

Before use, read manual carefully to use the product correctly.

Legal attention related to export.

The posting and copying from this catalogue without permission is not accepted.

CAT-A 0060-18 2017.06.PDF