

## Magnetic drive pumps

Withstands difficult operating conditions and offers high efficiency



The MX Series represents the latest state of the art design in plastic magnetic drive pumps to meet the most severe of operating conditions.

Patent

TAIWAN/EU

Pat.Pend.

JAPAN/U.S.A./CHINA



# Withstands difficult operating conditions and offers high efficiency

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.Pend.) 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.

MX series pumps are highly recommended for use in various production processes such as filtering, spraying, washing and etching in surface treatment processes.

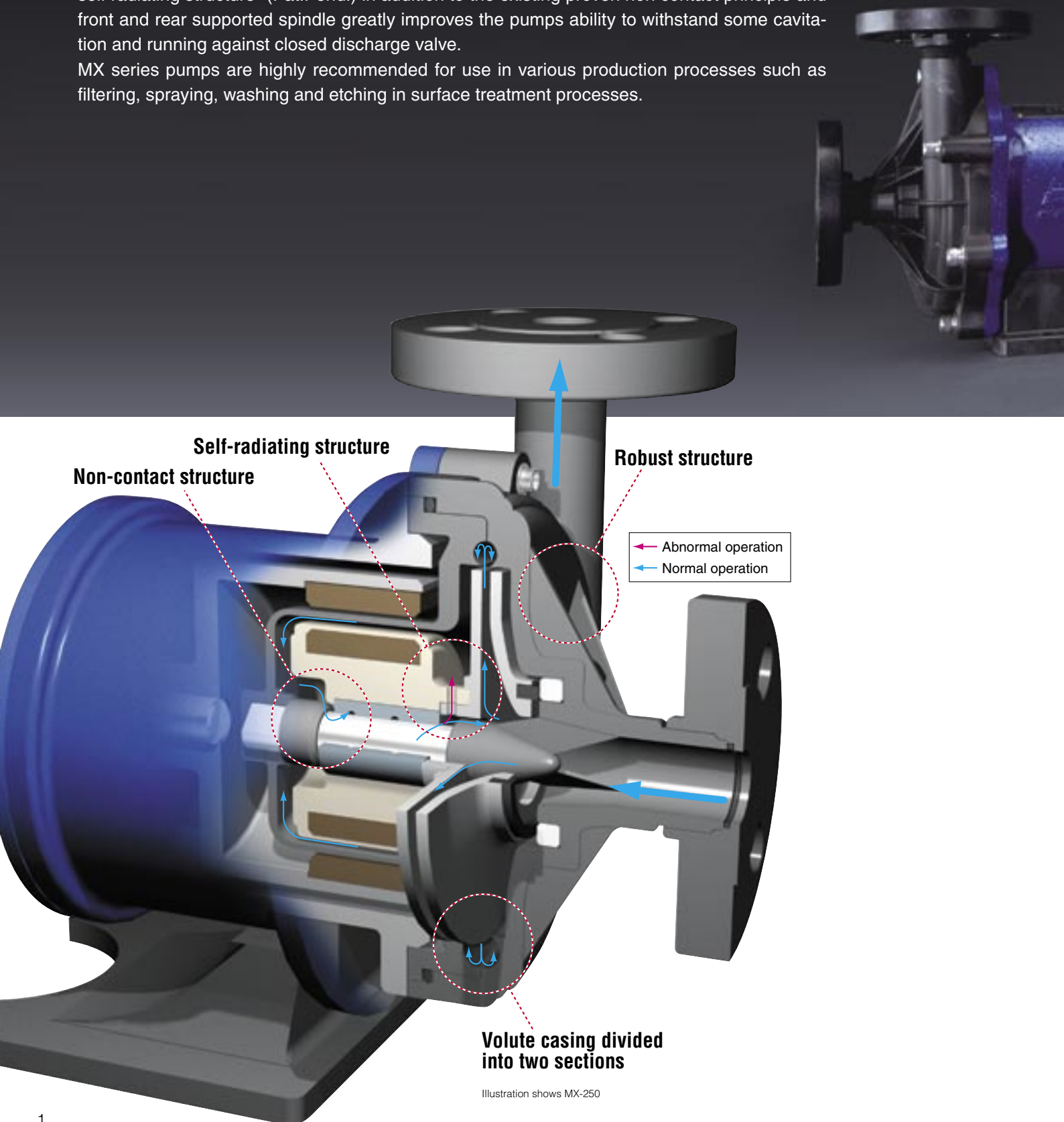


Illustration shows MX-250

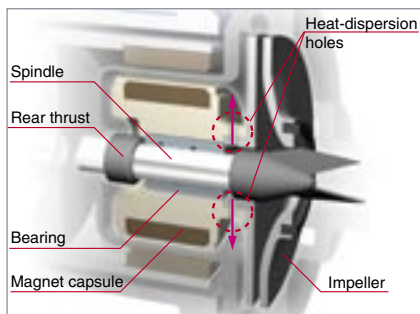
- An improved mechanical strength design allows operation under abnormal conditions and results in reduction of running cost and maintenance cost.
- The adoption of a volute casing divided into two raises efficiency. (Pat.Pend.)
- Simply constructed, it is robust and facilitates maintenance.



### Self-radiating structure

(International patent applied)

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.



### Non-contact structure

By installing the driving magnet and the driven magnet in an inventive way, the movement of the magnet capsule is controlled by magnetic force to

prevent the rear thrust and the rear portion of the bearing coming into contact with each other continuously even during dry running. This structure reduces heat generation and secures lubricant routes.

(Except MX-70, 100)

### Volute casing divided into two sections

(International patent applied)

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, the internal leak phenomenon, which means that the liquid getting out of the impeller returns to the pump casing and is suppressed to a minimum and the liquid is efficiently guided to the discharge port to enhance overall efficiency.



Front casing

Rear casing

### 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) and 403(H) models: an unplugging preventive lock pin is adopted for ensuring more steady securing.



Front casing of type 100 and 402/403

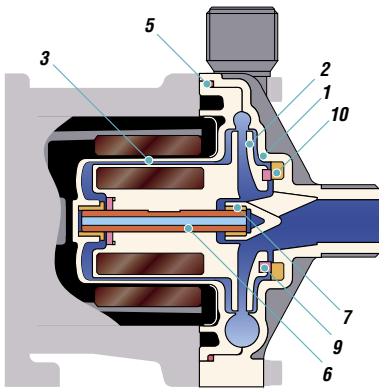


MX-403

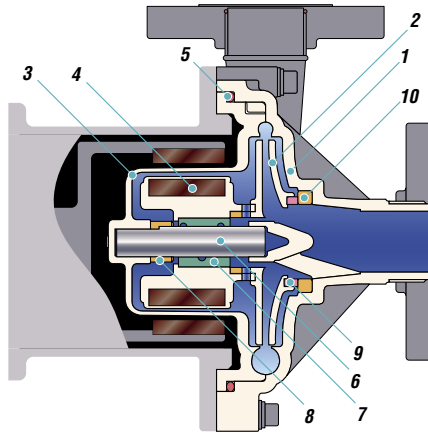
MX-401

## Wet end materials

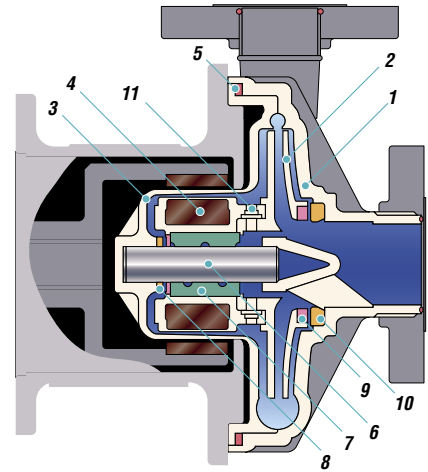
### ■ MX-70,100



### ■ MX-250 to 401



### ■ MX-402 to 403H



| Model                                 | MX-70           |  | MX-100 | MX-250 to 403H                          |                 | MX-250 to 401   |
|---------------------------------------|-----------------|--|--------|---|-----------------|-----------------|
| Mark                                  | V(E)            |  |        | CV(CE)                                  | RV(RE)          | AV(AE)          |
| <b>1</b> Front casing                 | GFRPP           |  |        |   | GFRPP           |                 |
| <b>2</b> Impeller                     | CFRPP           |  |        |   | GFRPP           |                 |
| <b>3</b> Rear casing                  | GFRPP           |  |        |   | GFRPP           |                 |
| <b>4</b> Magnet capsule               | -               |  |        |   | PP              |                 |
| <b>5</b> O ring <small>Note 1</small> | FKM(EPDM)       |  |        |   | FKM(EPDM)       |                 |
| <b>6</b> Spindle                      | Alumina ceramic |  |        |   | Alumina ceramic |                 |
| <b>7</b> Bearing                      | CFRPPS          |  | PTFE   | Carbon                                  | PTFE            | Alumina ceramic |
| <b>8</b> Rear thrust                  | -               |  |        | CFRPPS (MX-402 to 403H: CFRPEEK)        |                 |                 |
| <b>9</b> Mouth ring                   | -               |  | PTFE   |   | PTFE            |                 |
| <b>10</b> Thrust/Liner ring           | Alumina ceramic |  |        |   | Alumina ceramic |                 |
| <b>11</b> Lock pin                    | -               |  |        | GFRPPS(Only available type 402 to 403H) |                 | -               |

Note 1: An O-ring made of AFLAS® is also available

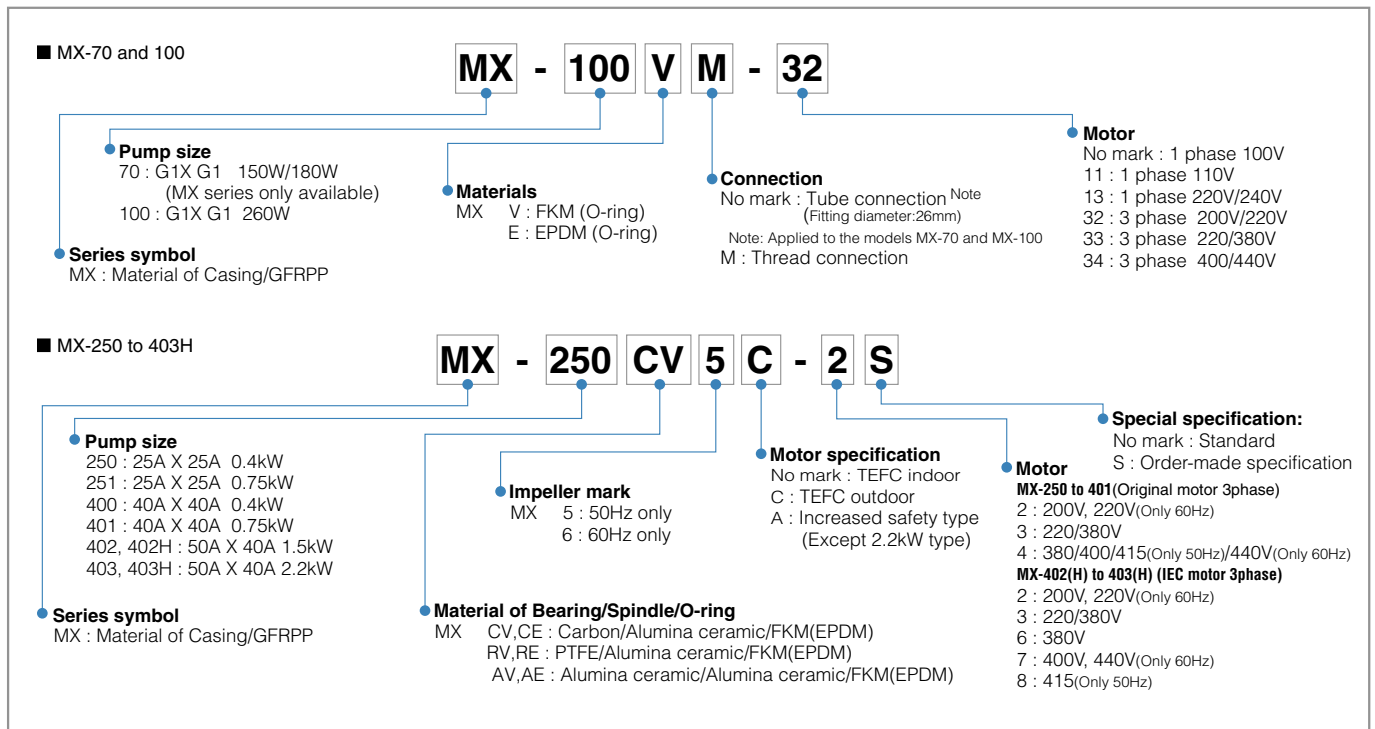


MX-250

MX-100

MX-70

## Pump identification



## Specifications

| Model   | Connection<br>Suction X Discharge | Limit of<br>specific gravity | Standard capacity<br>L/min - m | Maximum capacity<br>L/min | Motor<br>kW | Mass<br>kg |
|---------|-----------------------------------|------------------------------|--------------------------------|---------------------------|-------------|------------|
| MX-70M  | G1 x G1                           | 1.2                          | 50 - 5.4 / 7.8                 | 90 / 100                  | 0.15 / 0.18 | 6.5        |
| MX-100M | G1 x G1                           | 1.2                          | 70 - 6 / 9                     | 110 / 125                 | 0.26        | 8.2        |
| MX-250  | 25A x 25A                         | 1.2                          | 50 - 14 / 13.5                 | 150                       | 0.4         | 13.5       |
| MX-251  | 25A x 25A                         | 1.0                          | 80 - 19                        | 150                       | 0.75        | 18.5       |
| MX-400  | 40A x 40A                         | 1.2                          | 100 - 10.5 / 10                | 280                       | 0.4         | 13.5       |
| MX-401  | 40A x 40A                         | 1.2                          | 150 - 14.5                     | 320                       | 0.75        | 18.5       |
| MX-402  | 50A x 40A                         | 1.2                          | 200 - 20/19.5                  | 450                       | 1.5         | 30.5       |
| MX-402H | 50A x 40A                         | 1.0                          | 100 - 30                       | 160                       | 1.5         | 30.5       |
| MX-403  | 50A x 40A                         | 1.2                          | 250 - 23 / 25                  | 500                       | 2.2         | 33         |
| MX-403H | 50A x 40A                         | 1.0                          | 100 - 35 / 36                  | 300 / 250                 | 2.2         | 33         |

Note 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.

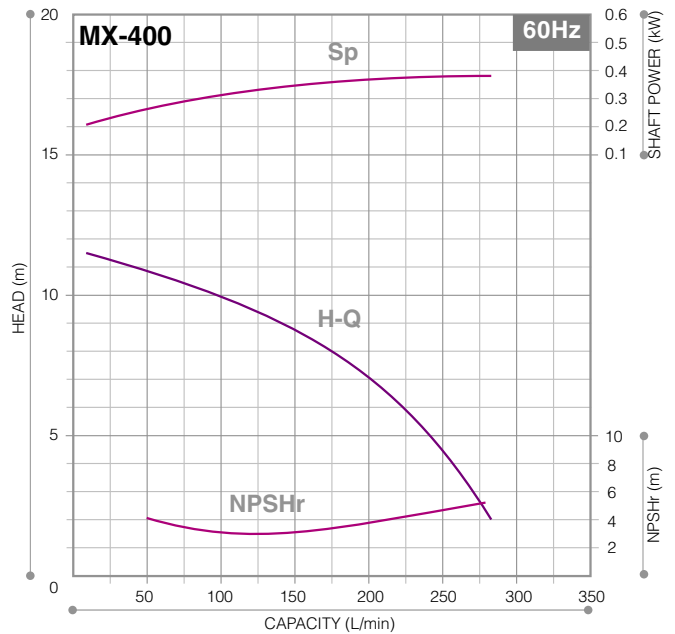
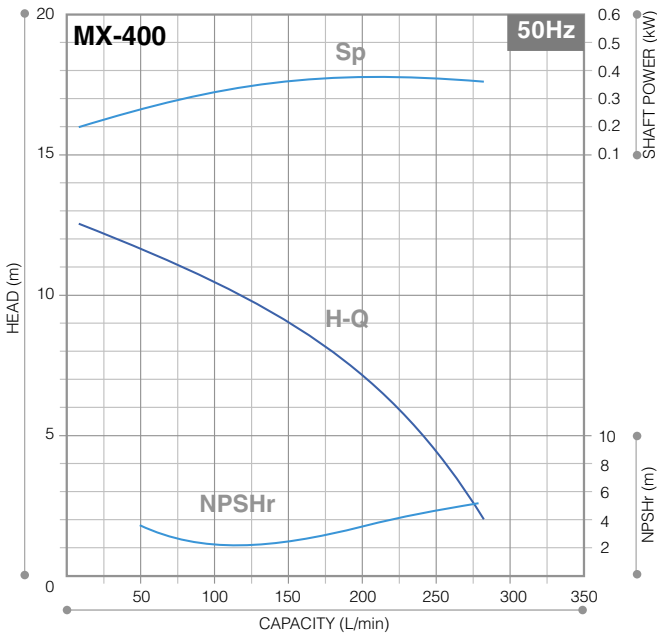
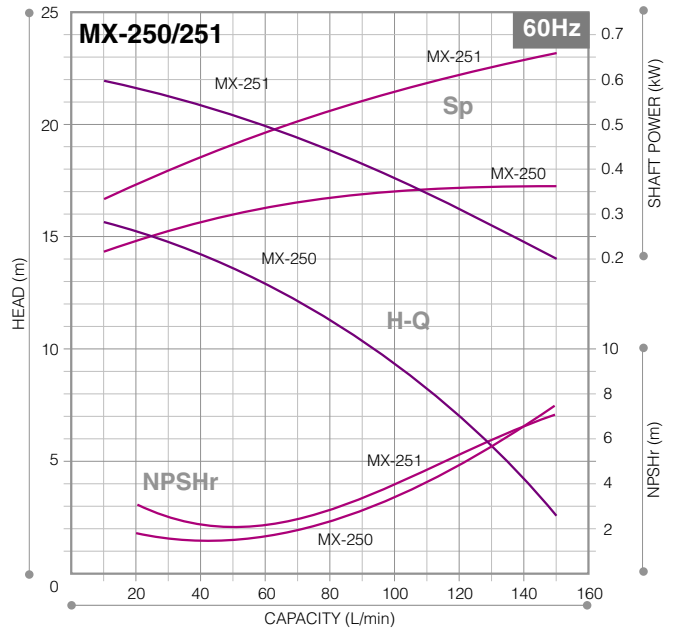
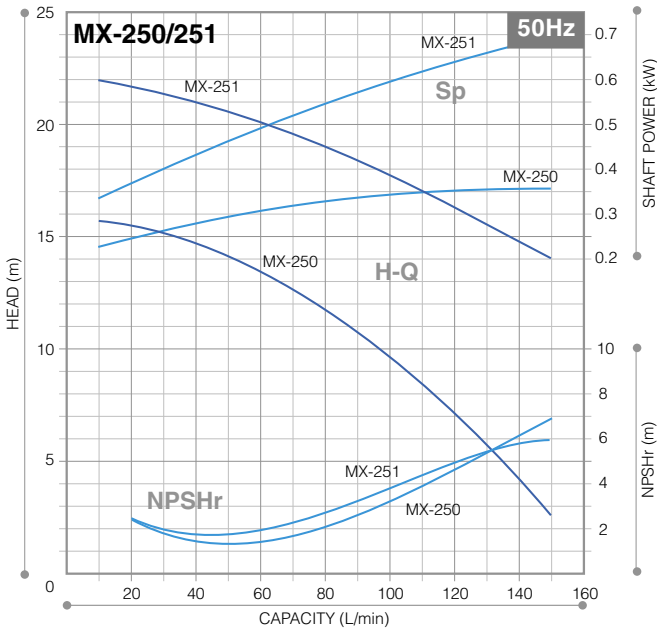
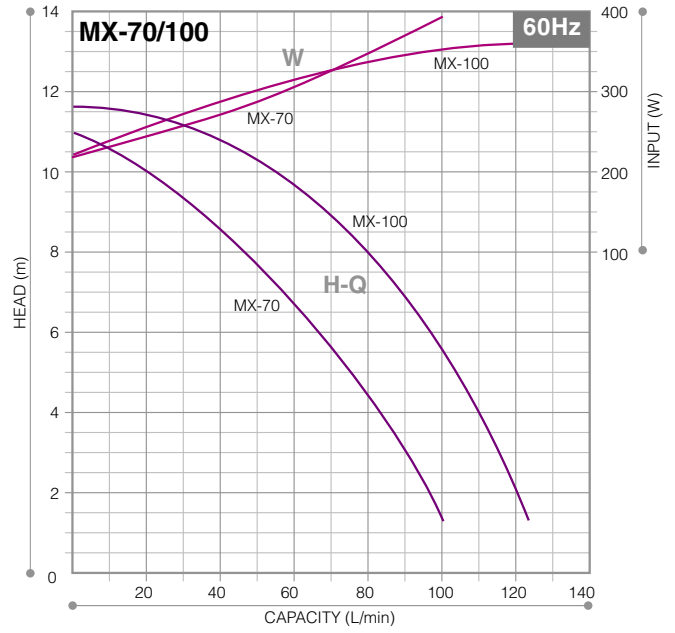
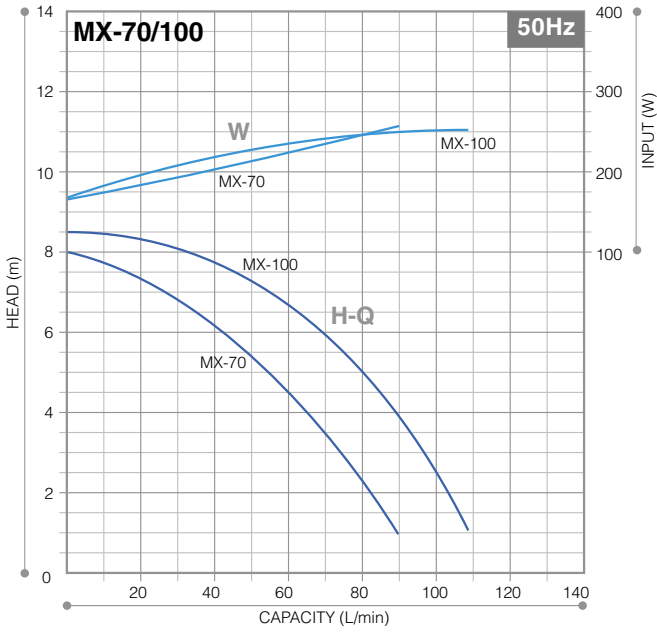
Note 2) 26mm tube connection option available on the MX-70 and MX-100.

Note 3) AV(AE) type is different in discharge capacity. For details, please contact us.

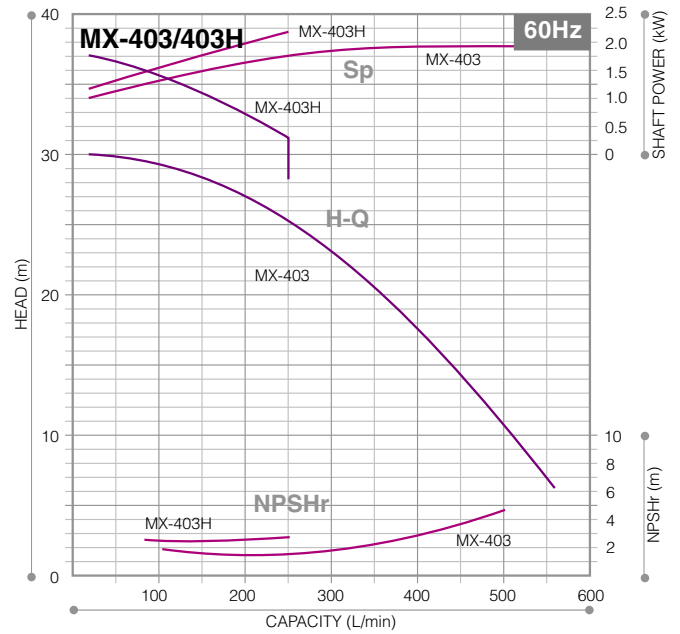
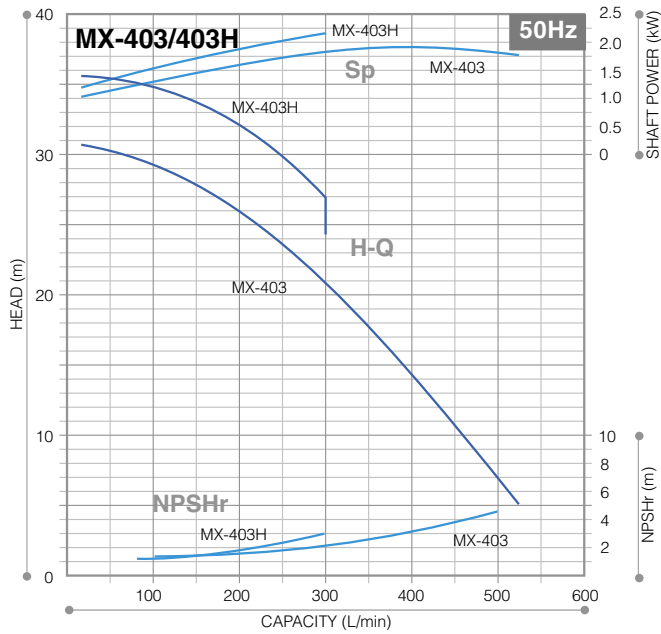
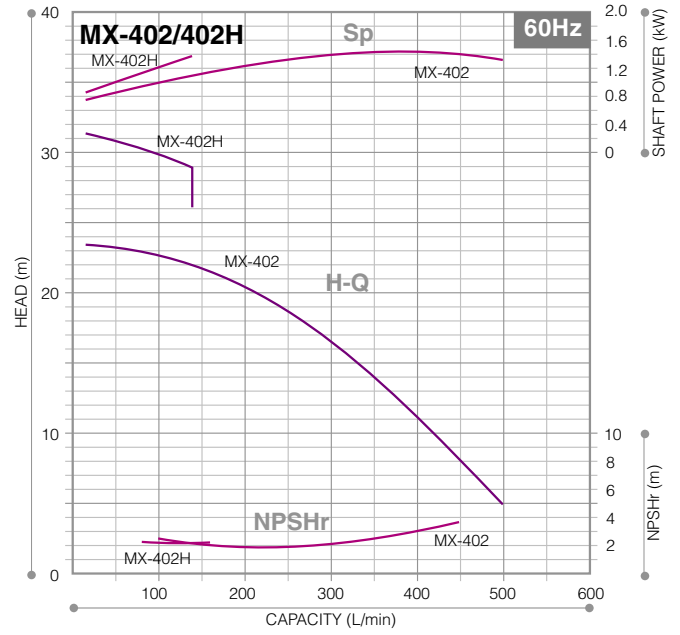
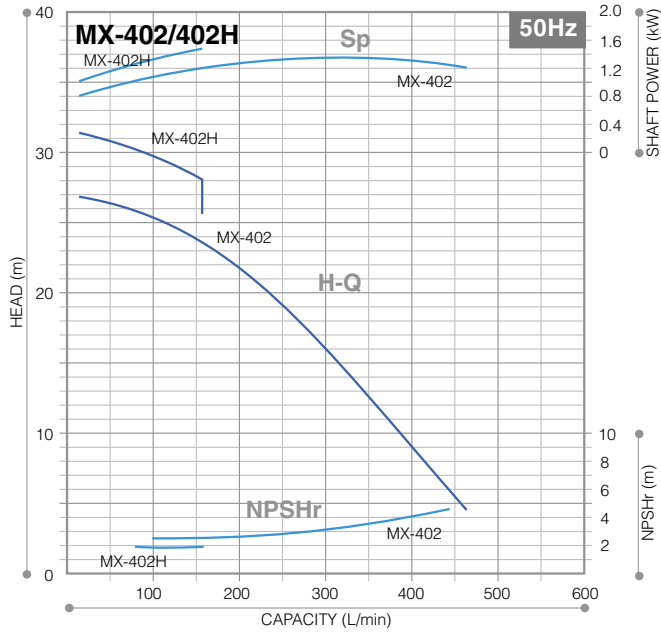
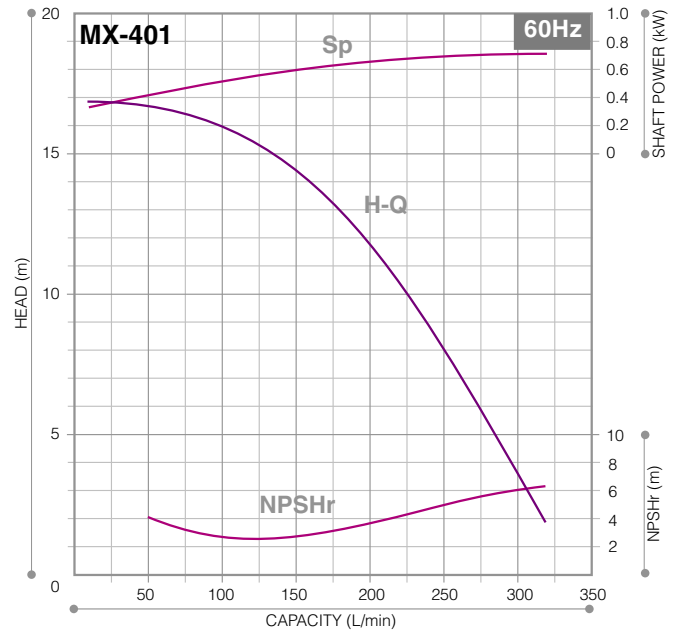
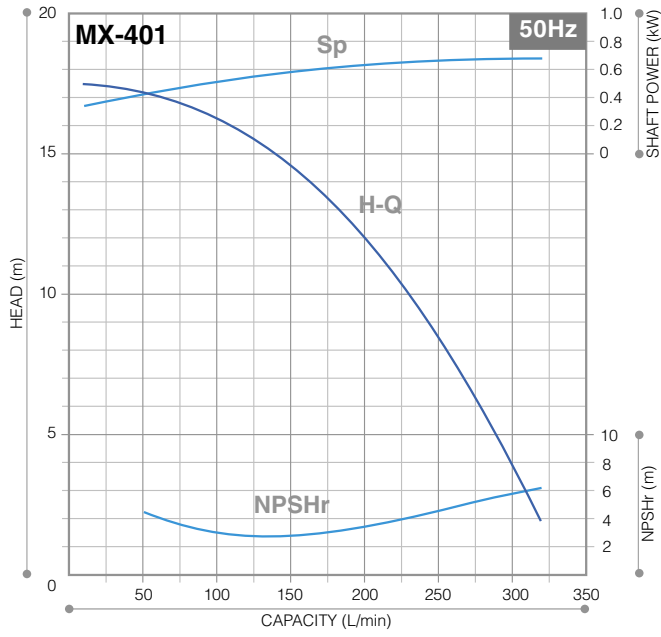
### Common specifications

• 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



**Performance curves**

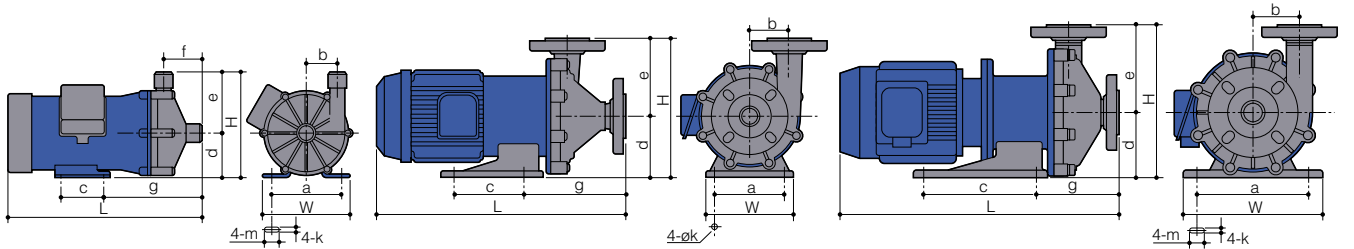


# Dimensions

■ MX-70, 100

■ MX-250 to 401

■ MX-402, 402H, 403, 403H



| Models                  |        | W   | H   | L     | a   | b  | c   | d   | e   | f   | g     | k  | m  |
|-------------------------|--------|-----|-----|-------|-----|----|-----|-----|-----|-----|-------|----|----|
| MX-70                   | Note 1 | 130 | 155 | 258.5 | 110 | 48 | 40  | 65  | 90  | 53  | 159.5 | 7  | 11 |
| MX-100                  | Note 1 | 150 | 175 | 319.5 | 110 | 51 | 70  | 75  | 100 | 65  | 162   | 9  | 27 |
| MX-250                  |        | 160 | 255 | 408   | 130 | 65 | 130 | 115 | 140 | 90  | 163   | 12 | —  |
| MX-251                  |        | 160 | 255 | 444   | 130 | 65 | 130 | 115 | 140 | 90  | 171   | 12 | —  |
| MX-400                  |        | 140 | 225 | 408   | 110 | 54 | 98  | 95  | 130 | 87  | 150   | 12 | —  |
| MX-401                  |        | 160 | 255 | 457   | 130 | 72 | 130 | 115 | 140 | 103 | 184   | 12 | —  |
| MX-402, 402H, 403, 403H |        | 260 | 280 | 516   | 208 | 80 | 200 | 120 | 160 | 89  | 157   | 14 | 36 |

Note 1: MX-70 and MX-100 shows thread type in the above dimensions, Please contact us for tube connection type.

## 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

50/60Hz

| Model                   | DR-10  | DR-20                   |
|-------------------------|--|-------------------------|
| Motor power             | 200 to 240V three phase                            | 380 to 440V three phase |
| Applied motor           | 0.4 to 7.5kW                                       | 0.75 to 15kW            |
| Power control           | 100 to 240V single phase                           |                         |
| Power                   | 100V ±10%single phase 200 to 240V ±10%single phase |                         |
| V Input                 | 3.5W   |                         |
| Detective current       | 0.5 to 32.0A                                       |                         |
| Current transformer(CT) | Built-in   |                         |
| Outer dimension         | D80 X W153 X H122                                  |                         |

### Union joint (Option)

Special purpose union joints are available.

Material : PVC/Heat resistant PVC



www.iwakipumps.jp

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

#### EUROPE / U.S.A.

|                                     |                        |                    |
|-------------------------------------|------------------------|--------------------|
| European office : IWAKI Europe GmbH | TEL: (49)2154 9254 0   | FAX: 2154 9254 48  |
| Austria : IWAKI (Austria) GmbH      | TEL: (41)26 674 93 00  | FAX: 26 674 93 02  |
| Belgium : IWAKI Belgium N.V.        | TEL: (32)13 67 02 00   | FAX: 13 67 20 30   |
| Denmark : IWAKI Nordic A/S          | TEL: (45)48 24 2345    | FAX: 48 24 2346    |
| Finland : IWAKI Suomi Oy            | TEL: (358)9 2745810    | FAX: 9 2742715     |
| France : IWAKI France S.A.          | TEL: (33)1 69 63 33 70 | FAX: 1 64 49 92 73 |
| Germany : IWAKI Europe GmbH         | TEL: (49)2154 9254 50  | FAX: 2154 9254 55  |
| Holland : IWAKI Holland B.V.        | TEL: (31)297 241121    | FAX: 297 273902    |
| Italy : IWAKI Italia S.R.L.         | TEL: (39)02 990 3931   | FAX: 02 990 42888  |
| Norway : IWAKI Norge AS             | TEL: (47)66 81 16 60   | FAX: 66 81 16 61   |
| Spain : IWAKI Iberica Pumps, S.A.   | TEL: (34)943 630030    | FAX: 943 628799    |
| Sweden : IWAKI Sverige AB           | TEL: (46)8 511 72900   | FAX: 8 511 72922   |
| Switzerland : IWAKI (Schweiz) AG    | TEL: (41)26 674 93 00  | FAX: 26 674 93 02  |
| U.K. : IWAKI Pumps (UK) Ltd.        | TEL: (44)1743 231363   | FAX: 1743 366507   |
| U.S.A. : IWAKI America Inc.         | TEL: (1)508 429 1440   | FAX: 508 429 1386  |

#### ASIA / OCEANIA

|  |                       |                   |
|--|-----------------------|-------------------|
| Australia : IWAKI Pumps Australia Pty Ltd.             | TEL: (61)2 9899 2411  | FAX: 2 9899 2421  |
| China  |                       |                   |
| Hong Kong : IWAKI Pumps Co., Ltd.                      | TEL: (852)2607 1168   | FAX: 2607 1000    |
| Shanghai : IWAKI Pumps (Shanghai) Co., Ltd.            | TEL: (86)21 6272 7502 | FAX: 21 6272 6929 |
| Beijing : IWAKI Pumps Co., Ltd. (Beijing office)       | TEL: (86)10 6442 7713 | FAX: 10 6442 7712 |
| Guangzhou : GFTZ IWAKI Engineering & Trading Co., Ltd. | TEL: (86)20 8435 0603 | FAX: 20 8435 9181 |
| Indonesia : IWAKI Singapore (Indonesia Branch)         | TEL: (62)21 6906606   | FAX: 21 6906612   |
| Korea : IWAKI Korea Co.,Ltd.                           | TEL: (82)2 2630 4800  | FAX: 2 2630 4801  |
| Malaysia : IWAKI Sdn. Bhd.                             | TEL: (60)3 7803 8807  | FAX: 3 7803 8800  |
| Philippines : IWAKI Chemical Pumps Philippines, Inc.   | TEL: (63)2 888 0245   | FAX: 2 843 3096   |
| Singapore : IWAKI Singapore Pte Ltd.                   | TEL: (65)6316 2028    | FAX: 6316 3221    |
| Taiwan : IWAKI Pumps Taiwan Co., Ltd.                  | TEL: (886)2 8227 6900 | FAX: 2 8227 6818  |
| Thailand : IWAKI (Thailand) Co.,Ltd.                   | TEL: (66)2 322 2471   | FAX: 2 322 2477   |
| Vietnam : IWAKI Pumps Vietnam Joint Venture Co., Ltd.  | TEL: (84)613 933456   | FAX: 613 933399   |

( )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.