



**Chemically resistant magnetic drive pumps
which can tolerate severe operating conditions**

Chemically resistant magnetic drive pumps which can tolerate severe operating conditions



Self-radiating structure

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. (Except MX-F100)



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-F100)



Volute casing divided into two sections

The MX-F 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-F400)



ETFE available for aggressive chemicals

Carbon fiber reinforced CFRETFE can be used for a variety of application having a superior chemical compatibility.



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-F100)

MX-F402 and F403 models: an unplugging preventive lock pin is adopted for ensuring more steady securing.



Lap joint flanges

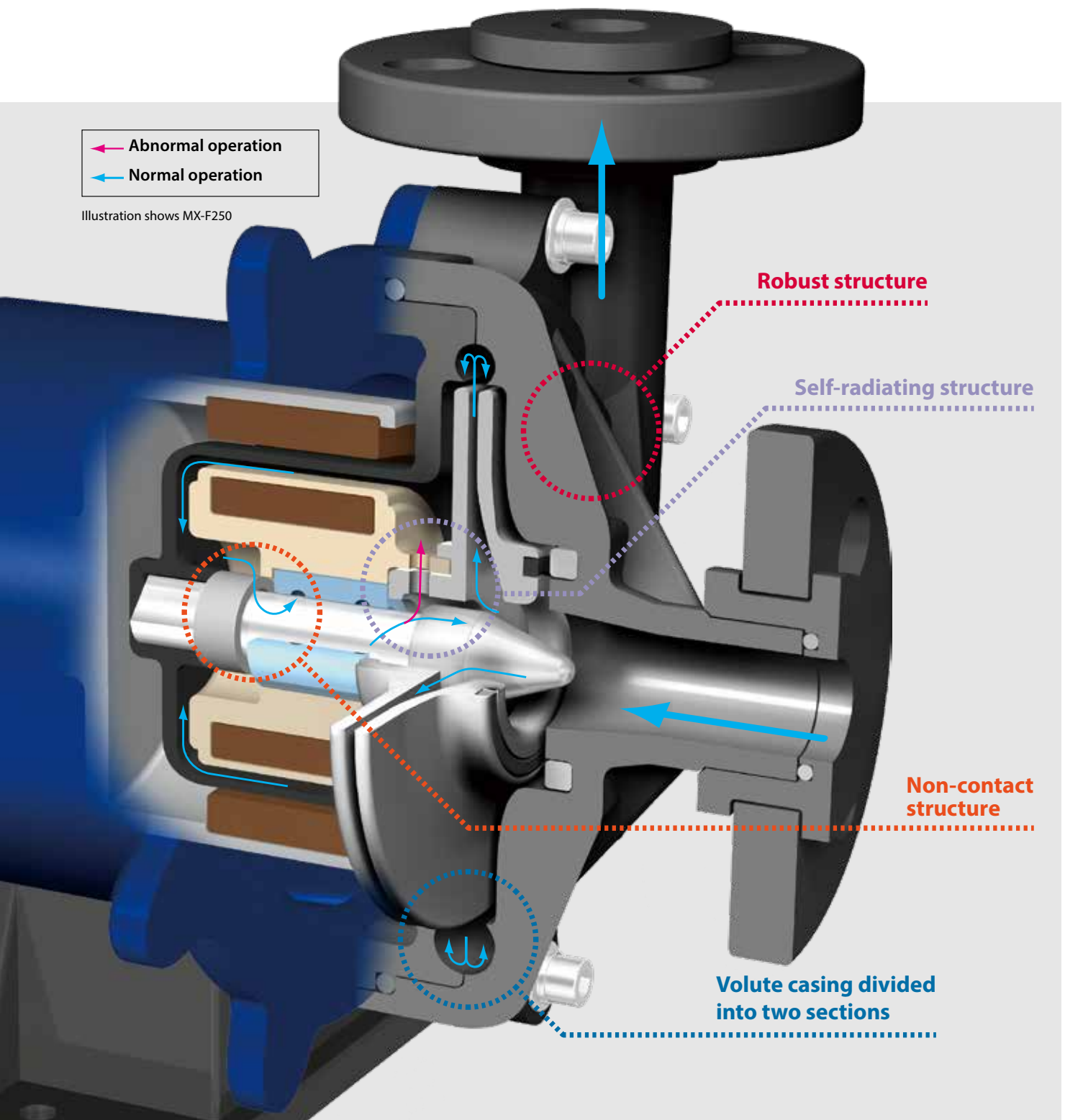
New for this series or size - can be rotated to match the end users piping alignment with ease.



MX-F403



MX-F401



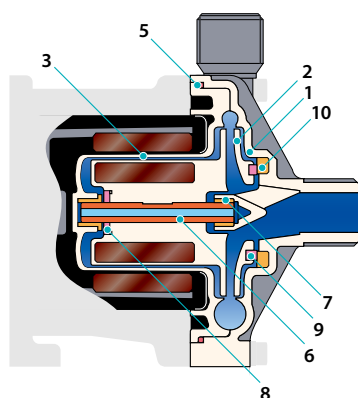
MX-F250



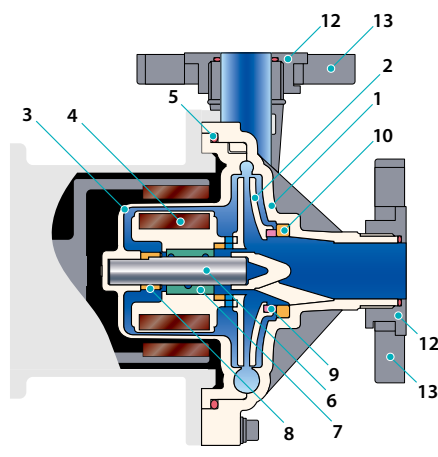
MX-F100

Wet end materials

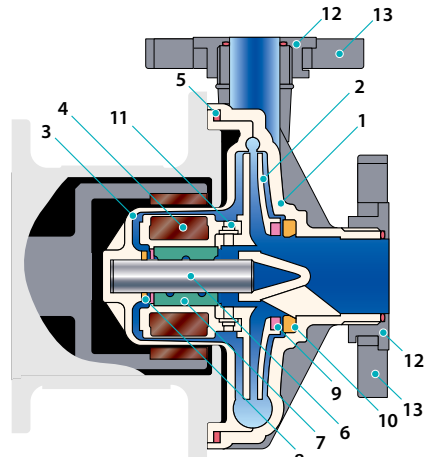
MX-F100



MX-F250 to 401



MX-F402 to 403



Model	MX-F100		MX-F250 to 401			MX-F402 to 403		
Mark	RV/RE	KV/KE	CFV/CFE	RFV/RFE	KKV/KKE	CFV/CFE	RFV/RFE	KKV/KKE
1 Front casing	CFRETFE		CFRETFE			CFRETFE		
2 Impeller								
3 Rear casing								
4 Magnet capsule	FKM(EPDM)		FKM(EPDM)			FKM(EPDM)		
5 O ring ^{Note1}								
6 Spindle	High purity alumina ceramic	SiC	High purity alumina ceramic		SiC	High purity alumina ceramic		SiC
7 Bearing	PTFE(with filler)	SiC	High density carbon	PTFE (with filler)	SiC	High density carbon	PTFE (with filler)	SiC
8 Rear thrust	High purity alumina ceramic	SiC(Front & Rear)	CFRETFE			CFRETFE		
9 Mouth ring	PTFE(with filler)	-						
10 Thrust/Liner ring	High purity alumina ceramic	-	High purity alumina ceramic		SiC	High purity alumina ceramic		SiC
11 Lock pin	-	-	CFRETFE			CFRETFE		
12 Inner flange	-	-						
11 Outer flange	-	-	GFRPP			GFRPP		

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

Pump identification

MX-F100

MX-F 100 RV M Y - 32
 1 2 3 4 5 6

1 Series symbol
MX-F: Material of Casing/
 CFRETFE

3 Materials of Bearing/O-ring
MX-F RV, RE: PTFE(with filler)/FKM(EPDM)
KV, KE: SiC/FKM(EPDM)

5 Impeller mark
MX-F Y: 50Hz / 60Hz **Z**: 60Hz only

2 Pump size
100: G1X G1 260W

4 Connection
M: Thread connection
FL: Flange connection
 Not for Lap joint type

6 Motor
 No mark: 1 phase 100V **32**: 3 phase 200V/220V
11: 1 phase 110V **33**: 3 phase 220V/380V
13: 1 phase 220V/240V **34**: 3 phase 400V/440V

MX-F250 to 403

MX-F 400 CFV T C - L 2 S
 1 2 3 4 5 6 7 8

1 Series symbol
MX-F: Material of Casing/
 CFRETFE

3 Material of Bearing/Spindle/O-ring
MX-F CFV: High density carbon/High purity
 alumina ceramic/FKM
CFE: High density carbon/High purity
 alumina ceramic/EPDM
RFV: PTFE(with filler)/High purity alumina
 ceramic/FKM
RFE: PTFE(with filler)/High purity alumina
 ceramic/EPDM
KKV: SiC/SiC/FKM
KKE: SiC/SiC/EPDM

6 Flange type
L: Lap joint type

2 Pump size
250: 25A X 25A 0.4kW
251: 25A X 25A 0.75kW
400: 40A X 40A 0.4kW
401: 40A X 40A 0.75kW
402: 50A X 40A 1.5kW
403: 50A X 40A 2.2kW

4 Impeller mark
MX-F T, V, W: 50Hz only **X, Y, Z**: 60Hz only

7 Motor
2: 3phase 200/200/220V
3: 3phase 220/380V (Only 250, 251, 400, 401)^{Note1}
4: 3phase 380 to 440V^{Note2} (Only 250, 251, 400, 401)^{Note1}
6: 3phase 380V (Only 402, 403)
7: 3phase 400/400/440V (Only 402, 403)
8: 3phase 415V (Only 402, 403)
9: 3phase 460V

Note1: 3 and 4 are reserved for a dedicated motor, while a general-purpose
 motor is assigned an ID number from among 6 through 8.
 Note2: Frequency 380: 50/60Hz, 400: 50/60Hz, 415: 50Hz, 440: 60Hz

5 Motor specification
 No mark: TEFC indoor
C: TEFC outdoor **A**: Increased safety type
 (Except 2.2kW type)

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

Specifications

50/60Hz

Model	Connection Suction X Discharge	Limit of specific gravity ^{Note1}	Standard capacity L/min - m	Maximum capacity L/min	Motor kW	Mass kg
MX-F100 Y	G1 x G1 ^{Note2}	1.9 / 1.2	70 - 5.8 / 9.0	110 / 125	0.26	8.5
MX-F100 Z		- / 1.8	70 - - / 5.8	- / 110		
MX-F250 T/X	25A x 25A	1.2	50 - 11.7 / 11.8	150 / 160	0.4	13.5
MX-F250 V/Y		1.5	50 - 9.1 / 9.5	145 / 150		
MX-F250 W/Z		1.8 to 2.0	50 - 6.4 / 7.5	126 / 132		
MX-F251 T/X	25A x 25A	1.2	80 - 15.7 / 17.7	150	0.75	22
MX-F251 V/Y		1.5	80 - 12.2 / 14.1	150		
MX-F251 W/Z		1.8 to 2.0	80 - 9.4 / 11.5	120 / 140		
MX-F400 T/X	40A x 40A	1.2	100 - 10.1 / 9.3	250	0.4	13.5
MX-F400 V/Y		1.5	100 - 8.1 / 7.6	230		
MX-F400 W/Z		1.8 to 2.0	100 - 5.5 / 6.3	210		
MX-F401 T/X	40A x 40A	1.2	150 - 12.8 / 12.6	270 / 280	0.75	22
MX-F401 V/Y		1.5	150 - 10.8 / 10.4	260		
MX-F401 W/Z		1.8 to 2.0	150 - 8.1 / 6.9	240 / 230		
MX-F402 T/X	50A x 40A	1.2	200 - 18.3 / 18.5	440	1.5	38
MX-F402 V/Y		1.5	200 - 16 / 15.2	430		
MX-F402 W/Z		1.8 to 2.0	200 - 12.5 / 11.7	410 / 400		
MX-F403 T/X	50A x 40A	1.2	250 - 22.8 / 23.1	510	2.2	43
MX-F403 V/Y		1.5	250 - 19.4 / 19.2	500		
MX-F403 W/Z		1.8 to 2.0	250 - 15.3 / 14.7	470 / 480		

Note1: The specific gravity limit varies with the discharge. For details, please contact us.

Note2: 26mm tube connection option available on the MX-F100.

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.

Precautions for pump selection

1. The performance curves on this catalogue are based on clean water of 20 °C.
Keep a margin (3% of curves) when selecting the pump.

2. For the MX-F250, select a proper impeller size according to specific gravity. Always keep 10% allowance to motor output.

Applicable motor output

$$Sp \times S.G \times (1.1) \leq \text{Motor output}$$

Allowance

3. The magnetic drive pump is not durable for a long time in closed-discharge operation. Always keep the minimum flow.

Minimum flow

MX-F100, 250, 251, 400, 401: 10 L/min
MX-F402, 403: 20 L/min

4. NPSH validation
Observe the following for the prevention of cavitation.

$$NPSHa \geq NPSHr + 0.5 \text{ m}$$

Allowance

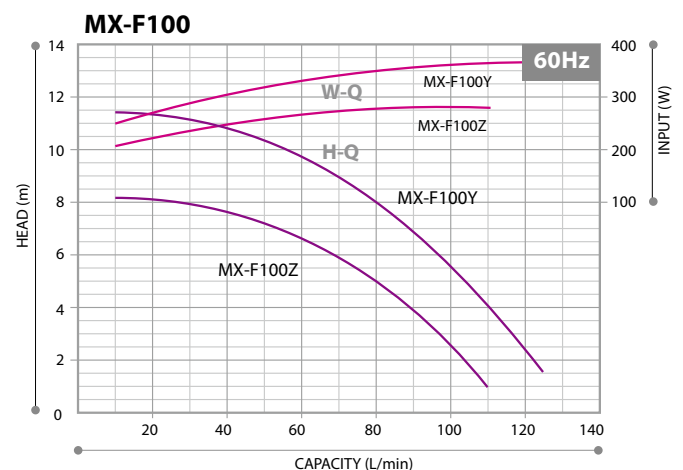
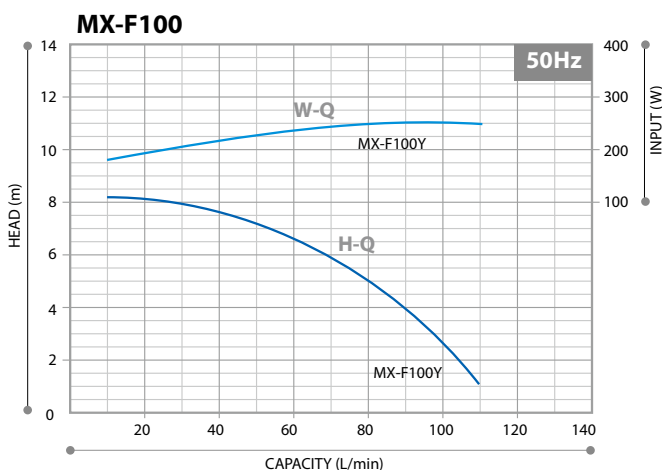
$$NPSHa = \frac{(Pa - Pv) \times 10^6}{\rho g} \pm hs - hfs$$

5. Maximum withstand pressure

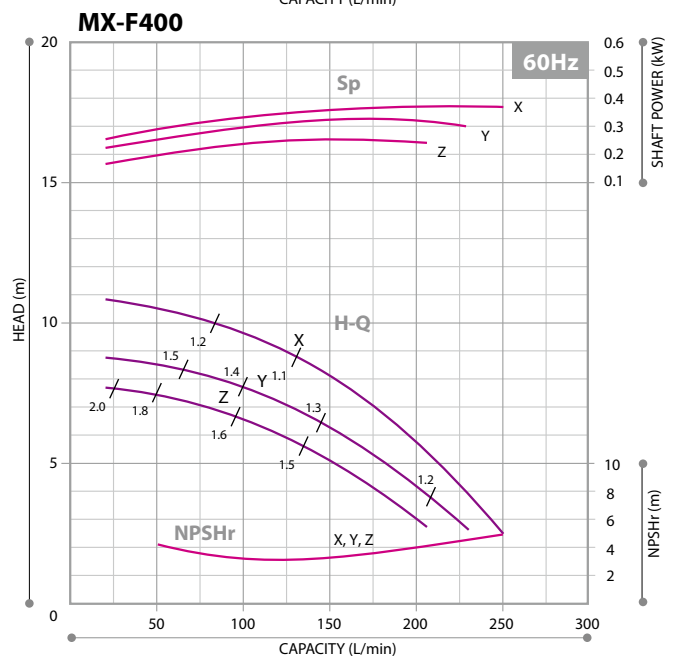
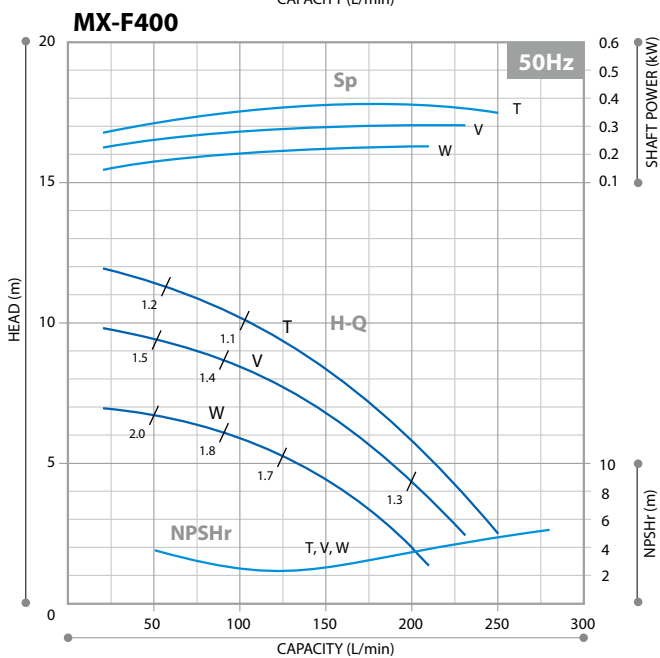
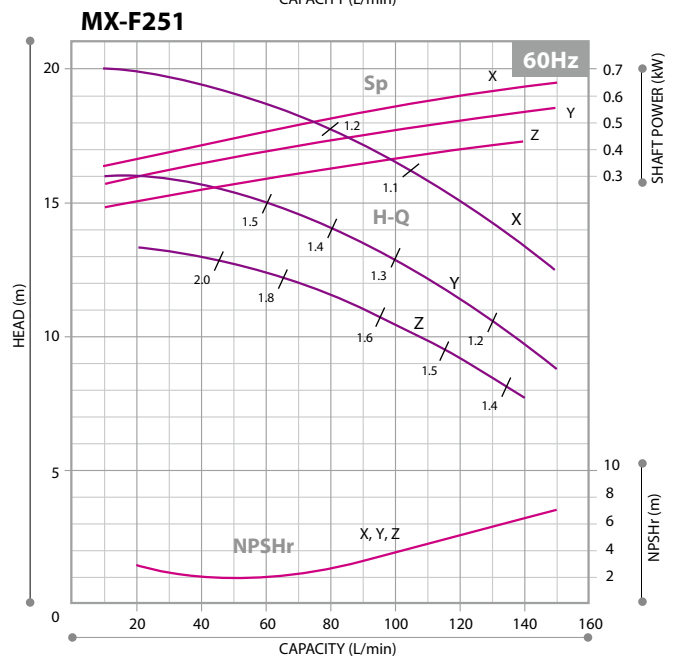
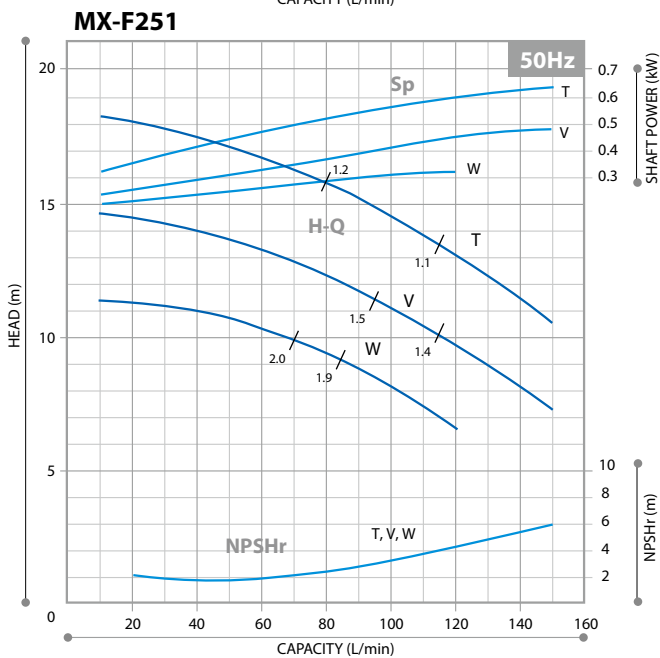
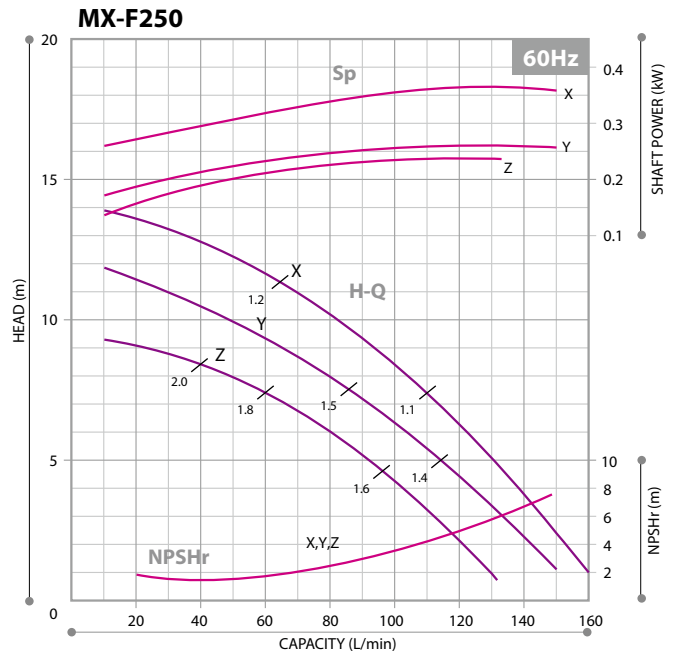
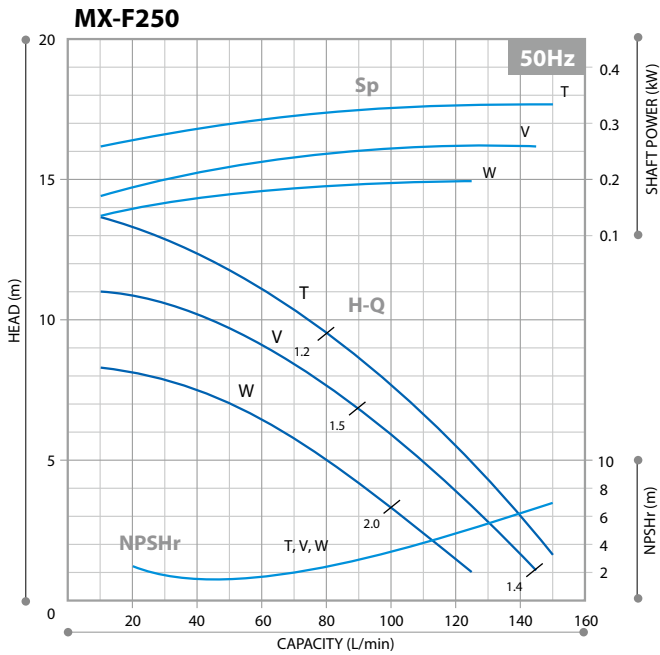
MX-F100: 0.19MPa MX-F400: 0.22MPa
MX-F250: 0.25MPa MX-F401: 0.28MPa
MX-F251: 0.33MPa MX-F402: 0.43MPa
MX-F403: 0.43MPa

NPSHa: Net Positive Suction Head Available (m)
NPSHr: Net Positive Suction Head Required (m)
Pa: Pressure on the suction liquid level (MPa)
(Absolute pressure)
Pv: Pressure of saturated vapor (MPa)
hs: Static suction head (m)
hfs: Suction pipe resistance (m)
 ρ : Liquid density (kg/m³)
g: G-force (9.8m/sec²)

Performance curves

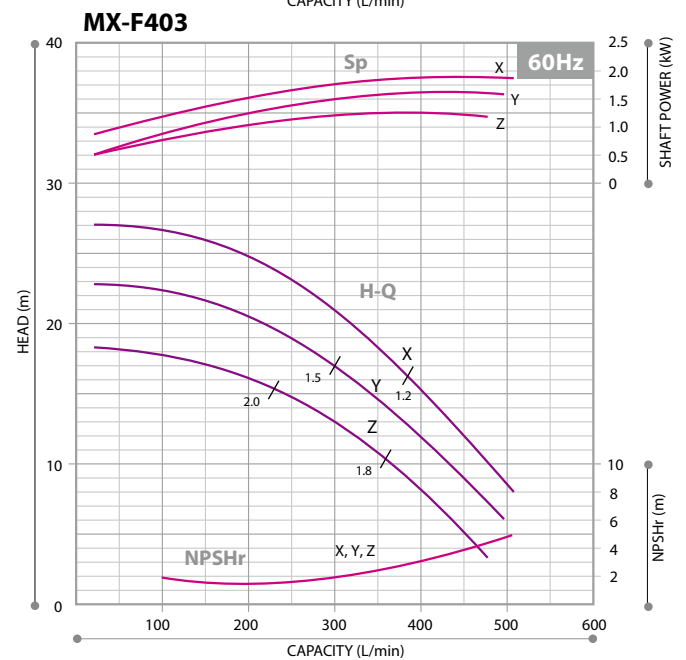
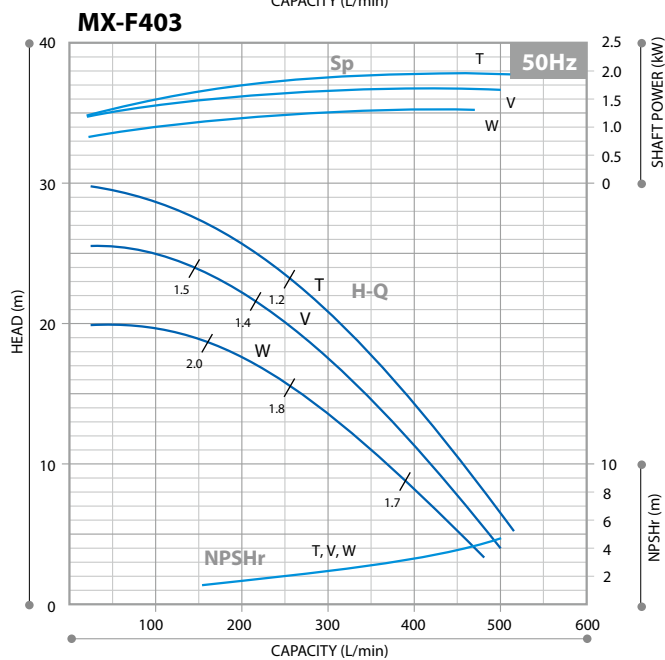
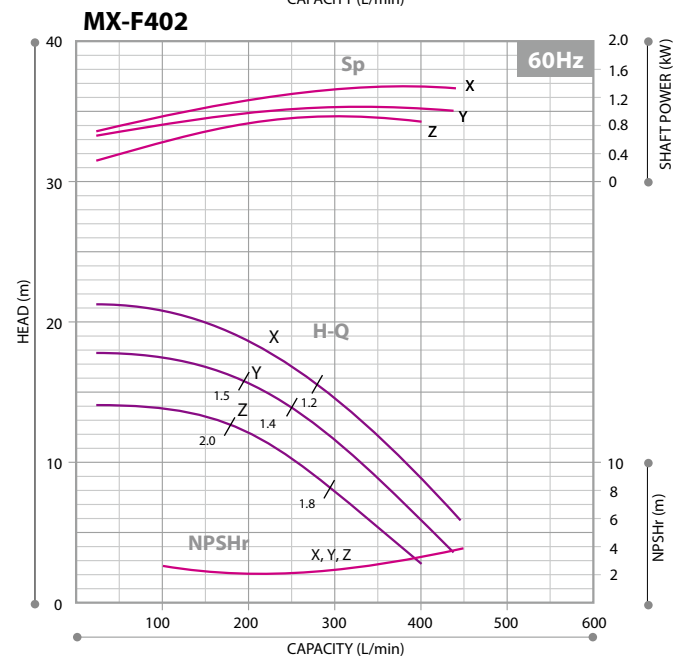
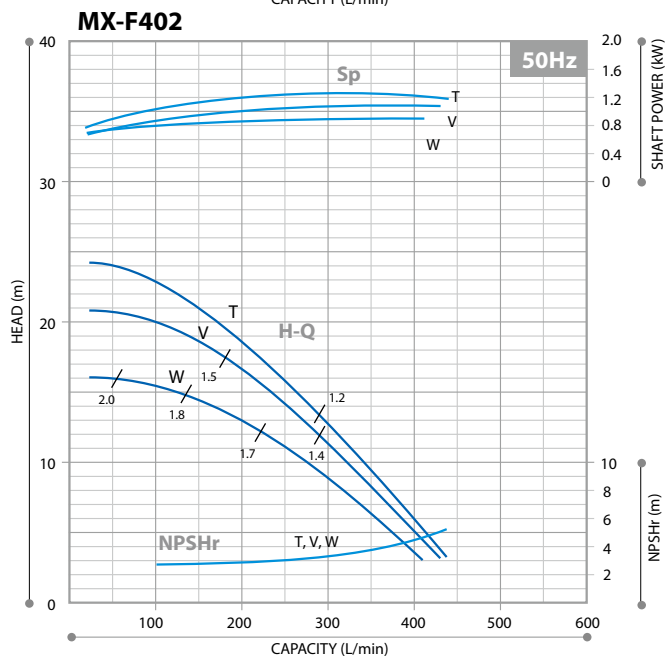
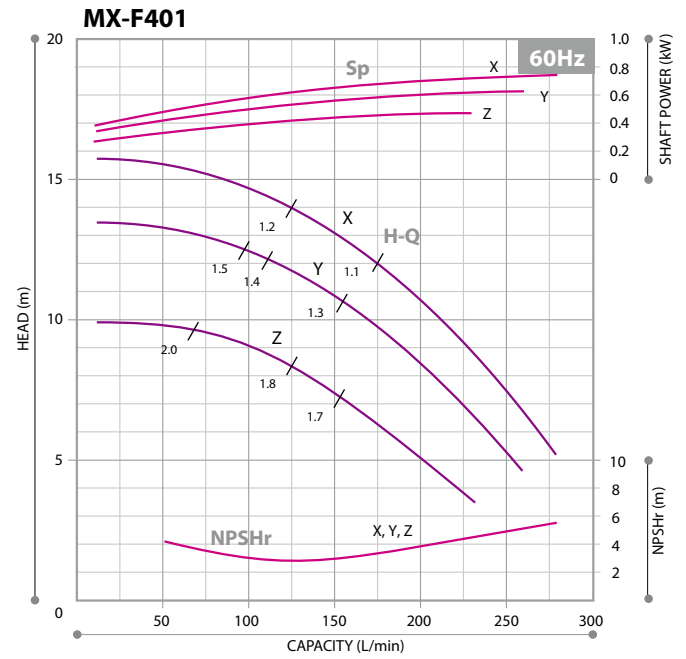
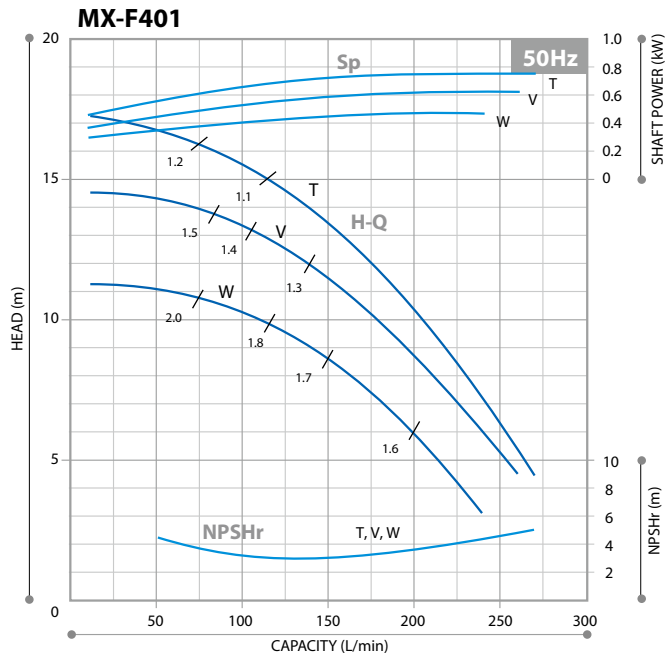


Performance curves



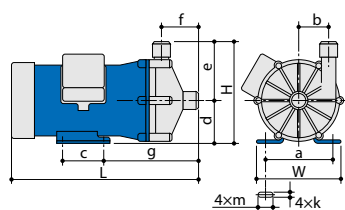
Note: The specific gravity limit described in the head is only a guide and please contact us for details.

Performance curves

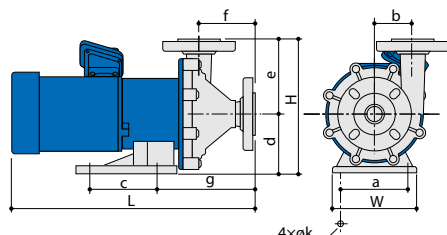


Dimensions (mm)

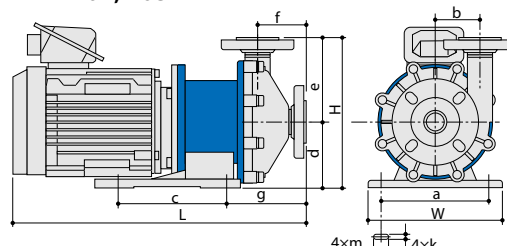
MX-F100



MX-F250 to 401



MX-F402, 403



Models	W	H	L	a	b	c	d	e	f	g	k	m
MX-F100	150	175	319.5	110	51	70	75	100	65	162	9	27
MX-F250	160	255	411	130	65	130	115	140	90	163	12	-
MX-F251	160	255	446	130	65	130	115	140	90	171	12	-
MX-F400	140	225	411	110	54	98	95	130	87	150	12	-
MX-F401	160	255	459	130	72	130	115	140	103	184	12	-
MX-F402	260	280	514	208	80	200	120	160	89	157	14	36
MX-F403	260	280	543	208	80	200	120	160	89	157	14	36

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

Optional accessories

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 and set the lower/upper limit values, as well as AUTO setup mode
Bar graph	Visible indication of current operating status
Logging capability	Data log feature for preventative maintenance scheduling
Communication	RS485 external communication capability

Specifications

Model	DRN-01	DRN-02
Amperometric range	0.5-30.00A	5.0-200.0A
Unit's source voltage	AC100-240V 50/60Hz 10VA	
Operating temperature	0-40°C	
Operating humidity	35-85%RH	



Union joint

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



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

IWAKI has global net work. Please find your distributor location at

www.iwakipumps.jp

European Headquarter : IWAKI Europe GmbH
 Germany : IWAKI Europe GmbH
 The Netherlands : IWAKI Europe GmbH (Netherlands Branch)
 Italy : IWAKI Europe GmbH (Italy Branch)
 Spain : IWAKI Europe GmbH (Spain Branch)
 Poland : IWAKI Europe GmbH (East Europe Branch)
 Belgium : IWAKI Belgium N.V.
 Denmark : IWAKI Nordic A/S
 Finland : IWAKI Suomi Oy
 France : IWAKI France S.A.
 Norway : IWAKI Norge AS
 Sweden : IWAKI Sverige AB

TEL: (49)2154 9254 0 FAX: 2154 9254 48
 TEL: (49)2154 9254 50 FAX: 2154 9254 55
 TEL: (31)74 2420011 FAX: (49)2154 925448
 TEL: (39)0444 371115 FAX: 0444 335350
 TEL: (34)93 37 70 198 FAX: 93 47 40 991
 TEL: (48)12 347 0755 FAX: 13 67 20 30
 TEL: (32)13 67 02 00 FAX: 12 347 0900
 TEL: (45)48 24 2345
 TEL: (358)9 2745810
 TEL: (33)1 69 63 33 70 FAX: 1 64 49 92 73
 TEL: (47)23 38 49 00
 TEL: (46)8 511 72900 ()Country codes

U.S.A. : IWAKI America Inc.
 Argentina : IWAKI America Inc. (Argentina Branch)
 Brazil : IWAKI Do Brasil Comercio De Bombas Hidraulicas LTDA.
 Singapore : IWAKI Singapore Pte Ltd.
 Indonesia : IWAKI Singapore (Indonesia Office)
 Malaysia : IWAKIm Sdn. Bhd.
 Australia : IWAKI Pumps Australia Pty Ltd.
 China (Hong Kong) : IWAKI Pumps Co., Ltd.
 China (Guangzhou) : GFTZ IWAKI Engineering & Trading Co., Ltd.
 China (Shanghai) : IWAKI Pumps (Shanghai) Co., Ltd.
 Korea : IWAKI Korea Co., Ltd.
 Taiwan : IWAKI Pumps Taiwan Co., Ltd.
 Thailand : IWAKI (Thailand) Co., Ltd.

TEL: (1)508 429 1440 FAX: 508 429 1386
 TEL: (54)11 4745 4116 FAX: 19 3244 5900
 TEL: (55)19 3244 5900 FAX: 6316 3221
 TEL: (65)6316 2028 FAX: 21 6906612
 TEL: (62)21 6906606 FAX: 3 7803 4800
 TEL: (60)3 7803 8807 FAX: 2 9899 2421
 TEL: (852)2607 1168 FAX: 2607 1000
 TEL: (86)20 84350603 FAX: 20 84359181
 TEL: (86)21 6272 7502 FAX: 21 6272 6929
 TEL: (82)2 2630 4800 FAX: 2 2630 4801
 TEL: (886)2 8227 6900 FAX: 2 8227 6818
 TEL: (66)2 322 2471 FAX: 2 322 2477

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 control list of international regime for export control. Please be reminded that export license could be required when products are exported due to export control regulations of countries.

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