IWAKI

Magnetic drive pumps

MXM



Magnetic drive process pump
Excellent corrosion resistance, durability, and safety

The Heart of Industry

Excellent for heavy duty chemical process applications and abnormal operation

The MXM series are the fluoroplastic magnetic drive chemical process pumps with all the features of corrosion resistance, durability, and safety required for chemical pumps.
Iwaki unique safety design "Non contact system" and "Self radiation structure" offer the greatly improved resistance to abnormal operation.

Better withstanding difficult operating conditions

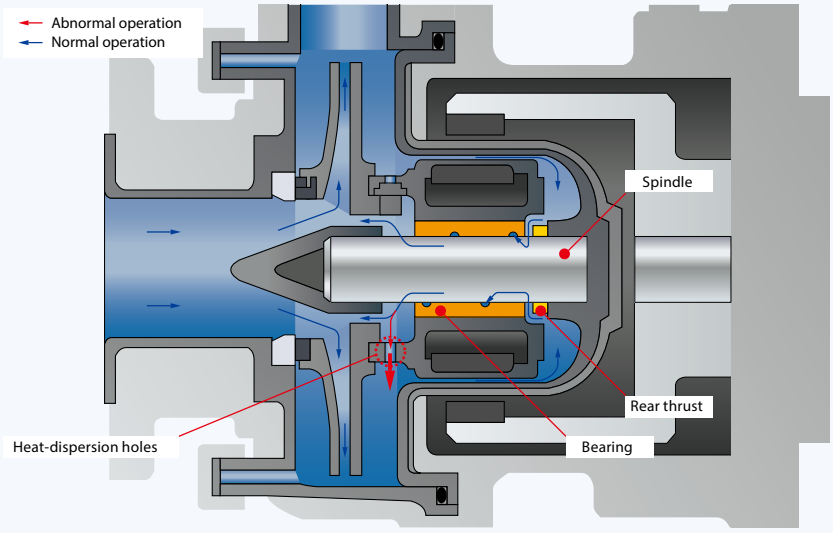
The proven non-contact system and self-radiating bearing structure deliver substantial improvements in tolerance of dry running and poor suction conditions.

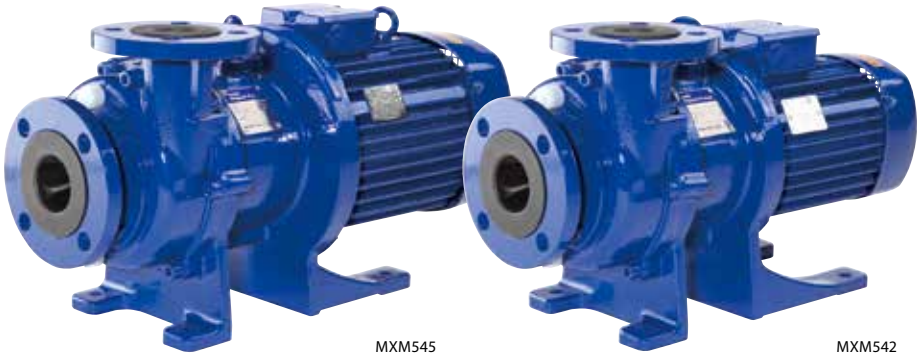
Non contact system

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

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.





MXM545 MXM542



Exceptional corrosion resistance

The MXM series employ optimum anti-corrosive materials such as carbon fiber reinforced ETFE (CFRETFE), high quality 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.



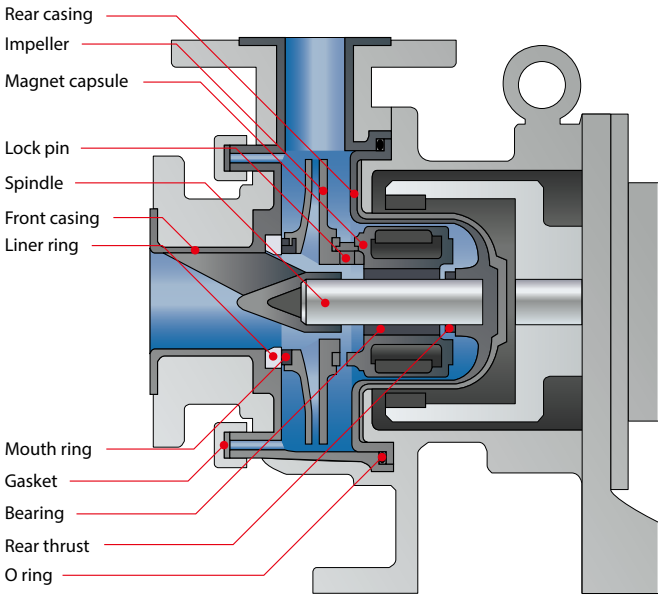
Rear casing+Rear casing cover



Construction and materials

Material code	CF	FF	KK
Front casing	CFRETFE		
Rear casing			
Impeller			
Magnet capsule			
Spindle	High-purity alumina ceramic		SiC
Bearing	High-density carbon	High-purity alumina ceramic	
Liner ring	High-purity alumina ceramic		
Mouth ring	PTFE with filler		
Rear thrust	CFRETFE		
O ring	FKM/EPDM/AFLAS®/ DAI-EL PERFLUORO®		
Gasket			
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	2.5
MXM22 (Impeller range 2)		105	150	8
MXM44 (Impeller range 1)	40mm × 40mm	115	200	9.5
		110	200	8
		100	200	6
		090	200	5
MXM44 (Impeller range 2)		130	200	12
MXM54 (Impeller range 1)	50mm × 40mm	150	200	18.5
		140	200	17
		120	200	13.5
MXM54 (Impeller range 3)		150	300	20
		140	300	18.5
		130	300	16.5
		110	300	10.5
MXM54 (Impeller range 4)		150	400	25
		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 operating pressure
Standard MXM22: 0.2MPa, MXM44: 0.3MPa, MXM54: 0.45MPa High temp. version (with rear casing cover): 0.7MPa

Pump identification

MXM	54	2	-	150	1	E	CF	V	J	-	H
1	2	3		4	5	6	7	8	9		10

1 Series symbol
MXM

2 Pump size (Suction × Discharge)
22 : 25mm×25mm
44 : 40mm×40mm
54 : 50mm×40mm

3 Motor output
0 : 0.37kW **1** : 0.75kW
2 : 1.5kW **3** : 2.2kW
5 : 4.0kW

4 Impeller size
150, 140, 130, 125, 120, 115, 110 105, 100, 095, 090, 085, 080, 075, 070

5 Impeller range
1 or **2** : MXM22
1 or **2** : MXM44
1, **3** or **4** : MXM54

6 Main material
E : CFRETFE

7 Material of Bearing / Spindle
CF : High density carbon / High purity alumina ceramic
FF : High purity alumina ceramic / High purity alumina ceramic
KK : SiC / SiC

8 Material of O ring
V : FKM
E : EPDM
A : AFLAS®
P : DAI-EL PERFLUORO®

9 Standard for pipe connection and motor
J : JIS flange + JIS motor
I : ISO flange + IEC motor
A : ANSI flange + JIS/IEC motor
U : ANSI flange + NEMA motor

10 Standard
H : High temperature version (with rear casing cover)
Special code
B : With base plate
S : Other special order
*Special code may overlap.

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 ten percent higher than theoretically required.

Shaft power (Sp) × liquid gravity × 1.1 < 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

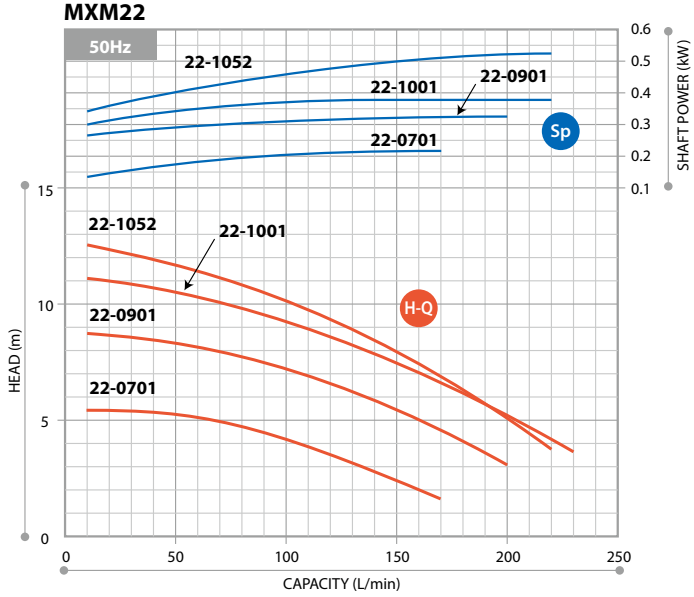
- Liquid should be 1m Pa·s (cP) or more.
- HQ performance is somewhat different from CF/KK models. If you need to know the detail, please contact with us.

(6) Deliberate prolonged dry running or entrained air operation is not recommended.

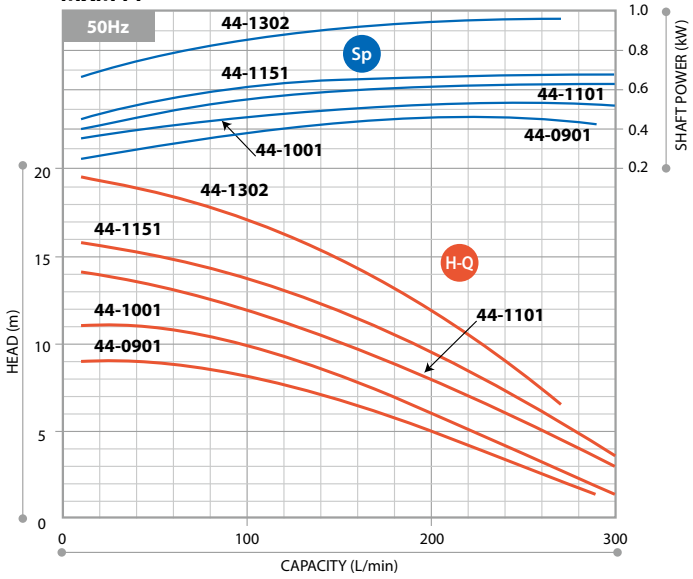
- The CF type has a degree of tolerance to dry running and operation with entrained air in the liquid.
- The KK type has the same degree of tolerance as the CF type under operation with entrained air in the liquid, but not allowed to run dry.
- The FF type is not allowed to run dry or operation with entrained air.

Performance curves

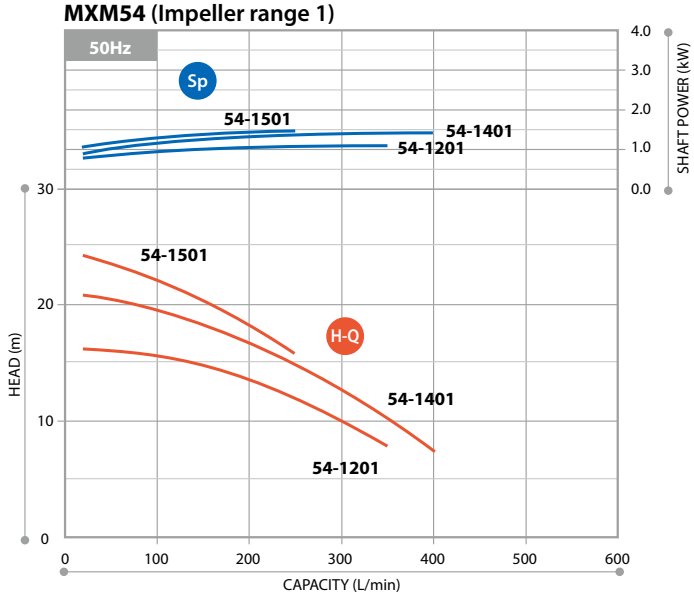
MXM22



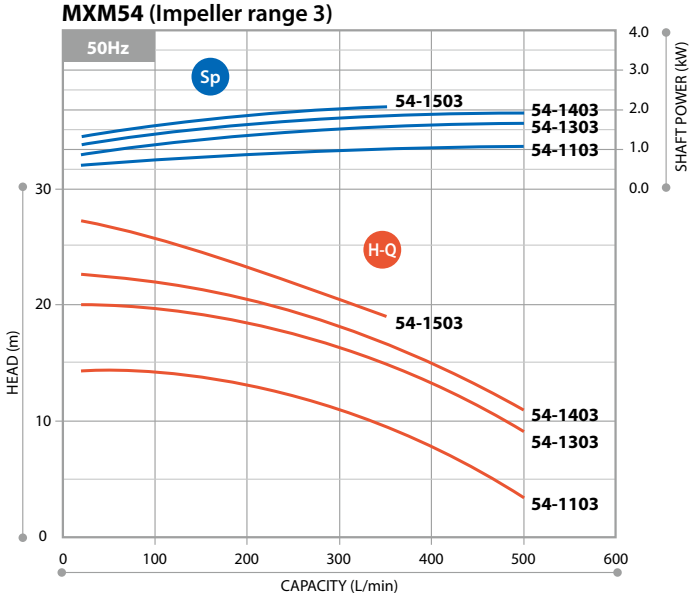
MXM44



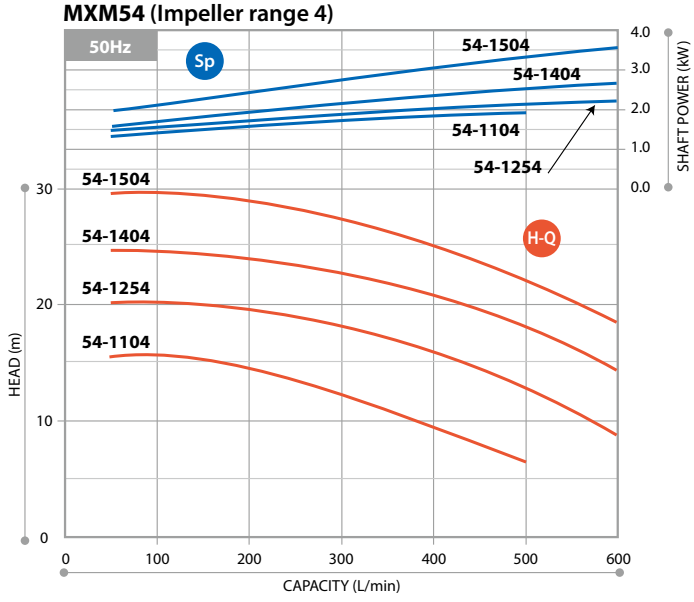
MXM54 (Impeller range 1)



MXM54 (Impeller range 3)



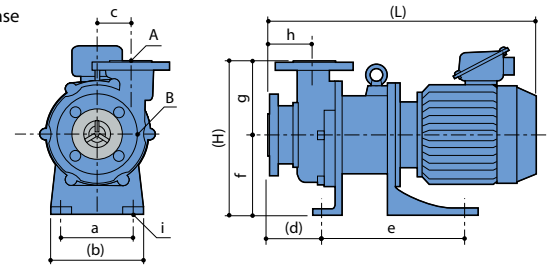
MXM54 (Impeller range 4)



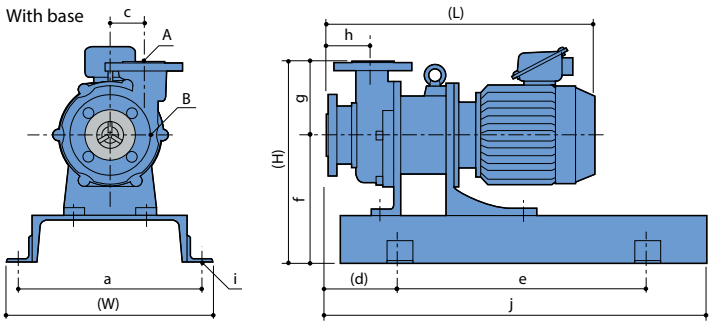
· The shaft power curves shown above are calculated by using our standard test motor. Contact us for detail.

Dimensions in mm

Without base



With base



Without base

Model	(H)	(L)	A	B	a	(b)	c	(d)	e	f	g	h	i
MXM220-H	237	475	25A	25A	110	150	51	95	165	115	122	88	4-Ø12
MXM221-H		470											
MXM441-H	275	498	40A	40A	130	170	58	113	250	135	140	106	4-Ø14
MXM442-H		535											
MXM542-H	295	467	40A	50A	140	180	65	106	275	155	140	87	4-Ø14
MXM543-H		489											
MXM545-H		594											

With base

Model	(W)	(H)	(L)	A	B	a	c	d	e	f	g	h	i	j
MXM220-H	300	317	475	25A	25A	250	51	130	220	195	122	88	4-Ø19	450
MXM221-H			470											
MXM441-H	350	365	498	40A	40A	300	58	130	260	225	140	106	4-Ø19	489
MXM442-H			535											
MXM542-H	400	385	467	40A	50A	350	65	140	480	245	140	87	4-Ø19	735
MXM543-H			489											
MXM545-H			594											

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 50Hz 10VA	
Operating temperature	0–40°C	
Operating humidity	35–85%RH	



IWAKI Process Magnetic Drive Pump Series

MDW SERIES

The world largest-class
fluoroplastic magnetic drive pump



Specifications

- Max.discharge capacity: 5000 m/L
- Max.head: 98 m
- Main materials: ETFE, PFA
- Liquid temp. range: -10 to 105 °C(ETFE)
  -10 to 120 °C(PFA)

MDE SERIES

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



Specifications

- Max.discharge capacity: 4000 m/L
- Max.head: 55 m
- Main materials: ETFE, PFA
- Liquid temp. range: 0 to 100 °C

MDM SERIES

Magnetic drive process pumps
with dry running capability



Specifications

- Max.discharge capacity: 1400 m/L
- Max.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: 510 m/L
- Max.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 m/L
- Max.head: 25.5 m
- Main materials: GFRPP, CFRETFE
- Liquid temp. range: 0 to 80 °C

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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.

⚠ Legal attention related to export.

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