

Magnetic drive pumps

Magnetic drive pumps with an excellent balance
of features and performance



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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

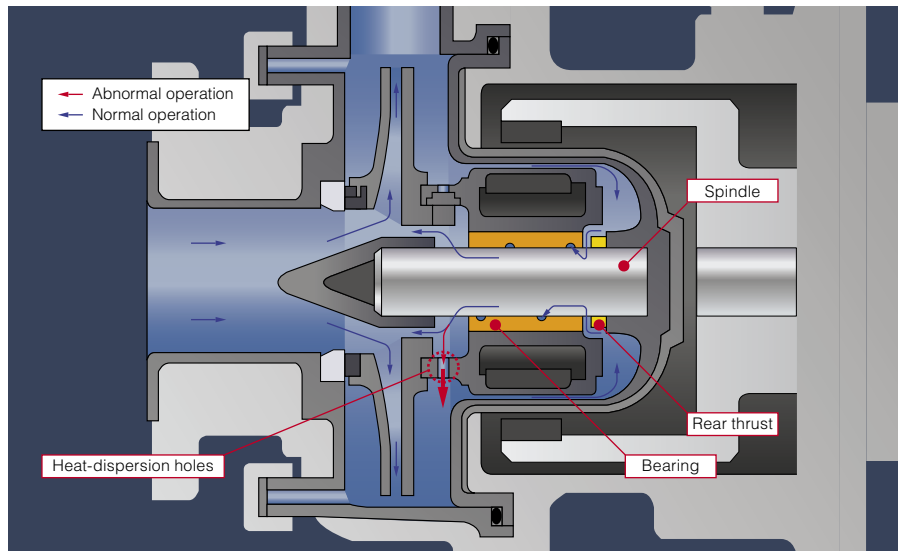
The proven non-contact system and self-radiating bearing structure deliver substantial improvements in tolerance of dry running and poor suction conditions.

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), 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 MXM 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



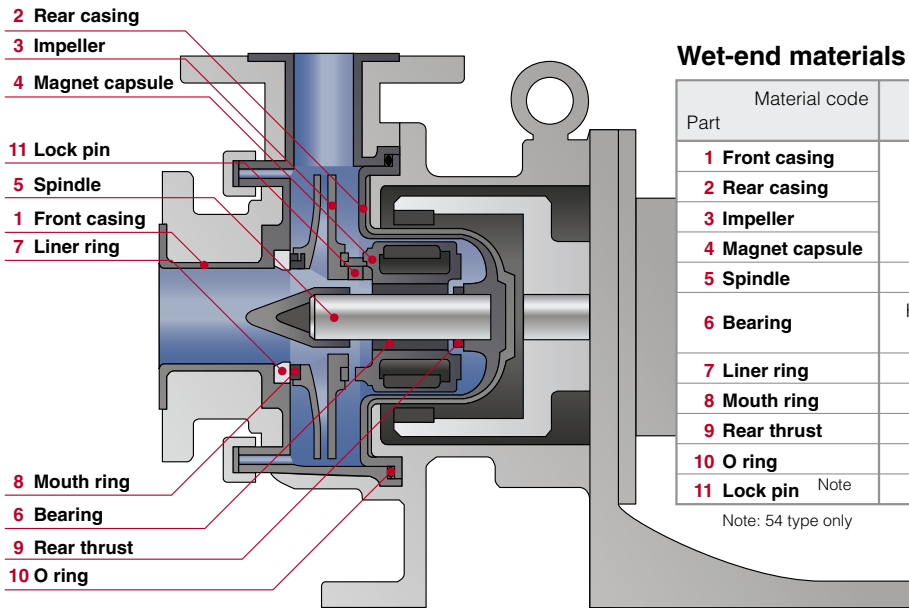
MXM545



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	High-purity alumina ceramic		SiC
6 Bearing	High-density carbon			
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 PERFLUORO®			
11 Lock pin <small>Note</small>		CFRETFE		

Note: 54 type only

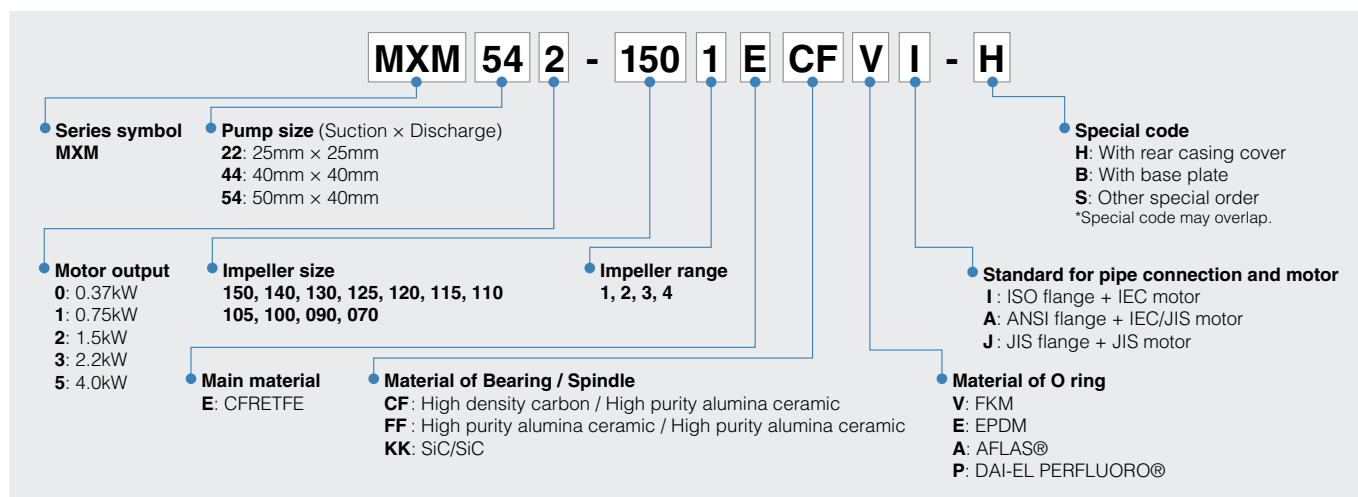
Specifications

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)	40mm × 40mm	105	150	8	
MXM44 (Impeller range 1)		115	200	9.5	
		110	200	8	
MXM44 (Impeller range 2)		100	200	6	
		090	200	5	
MXM54 (Impeller range 1)	50mm × 40mm	130	200	12	
		150	200	18	
		140	200	18.5	
		120	200	14.5	
		MXM54 (Impeller range 3)	150	300	20.5
			140	300	19.5
		MXM54 (Impeller range 4)	130	300	17
			110	300	10.5
150	400		25		
140	400		20.5		
MXM54 (Impeller range 4)	125	400	15.5		
	110	400	9.5		

Note1: Liquid temp. range: -10 to 105 °C (10 to 105 °C when AFLAS® O ring is used)
 Note2: Max allowable pressure range: 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 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 and 3	:	20 L/min.
Impeller range 4	:	50 L/min.

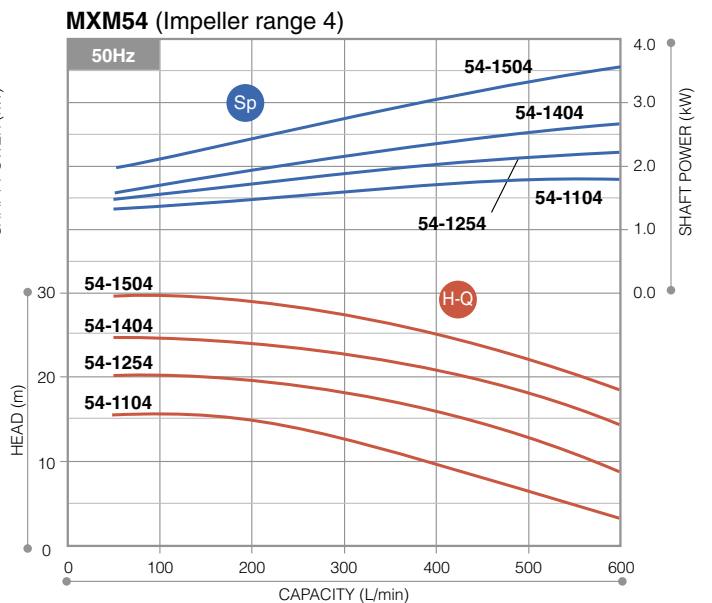
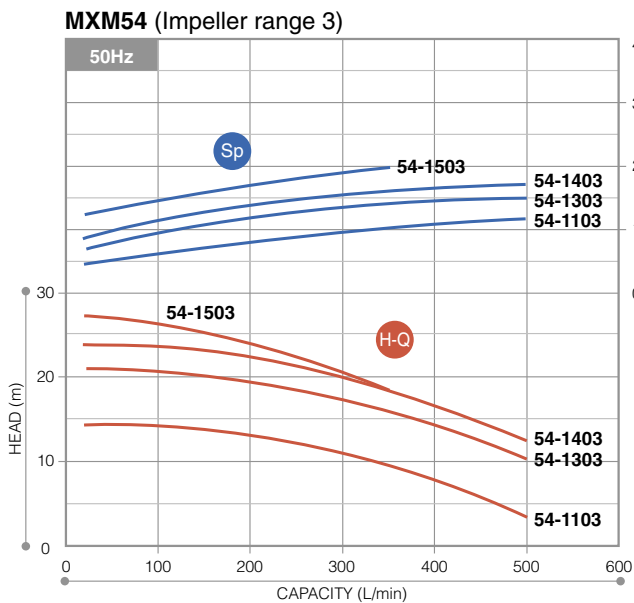
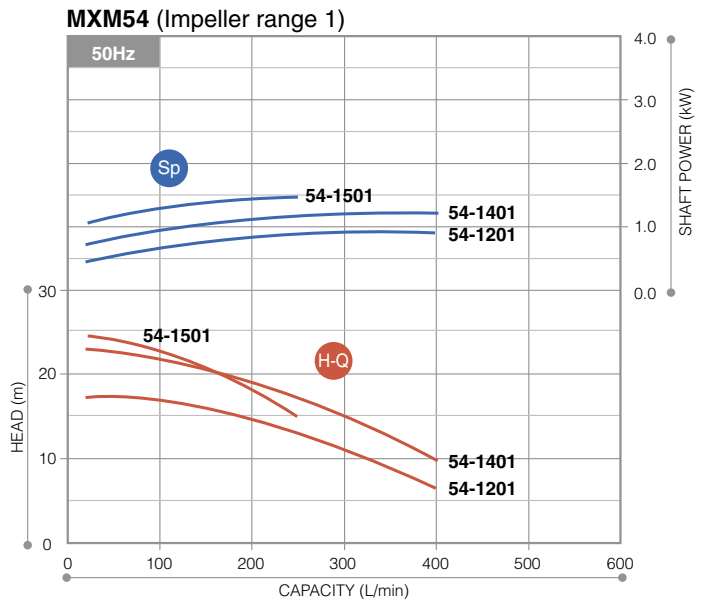
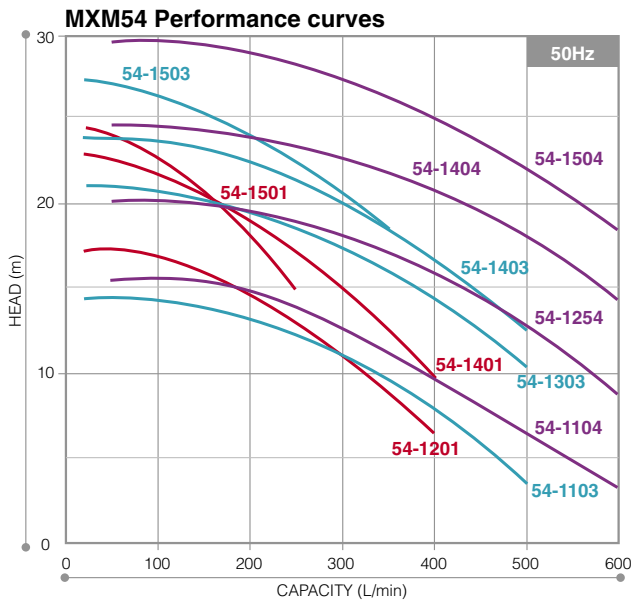
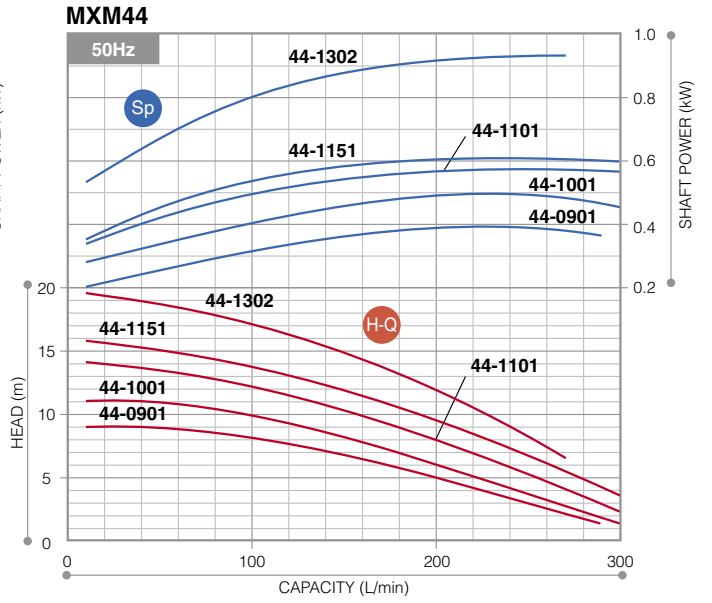
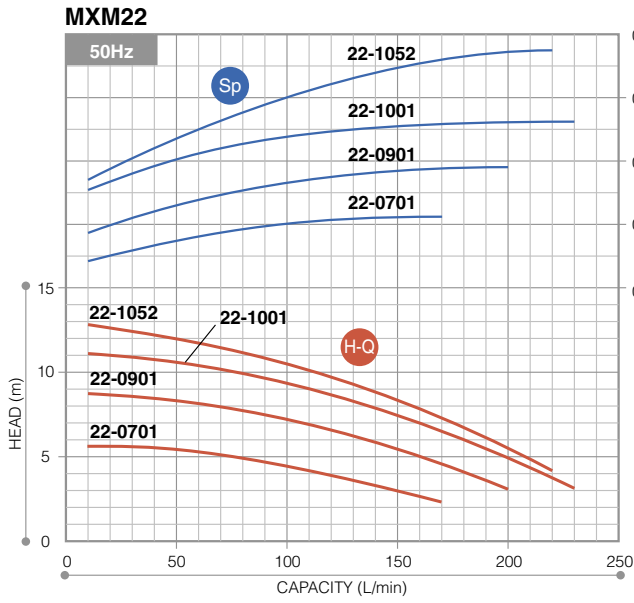
(4) FF material models

- 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.

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

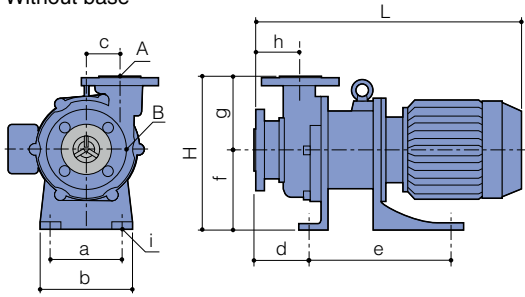
- The CF type has a degree of tolerance to dry running and operation with entrained air in the liquid.
- The KK type has the same degree of tolerance as the CF type under operation with entrained air in the liquid, but not allowed to run dry.
- The FF type is not allowed to run dry or operation with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

Performance curves

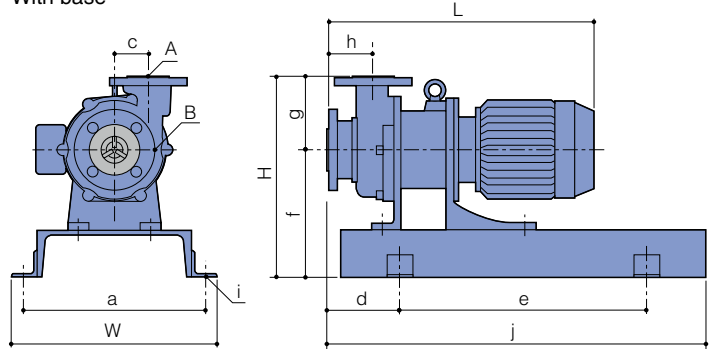


Dimensions in mm

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	420	25	25	110	150	51	95	165	115	122	88	4-ø12	20											
MXM221		443																							
MXM441	275	471	40	40	130	170	58	113	250	135	140	106	4-ø14	25											
MXM442		487																							
MXM542	295	467	40	50	140	180	65	106	275	155	140	87	4-ø14	25											
MXM543																									
MXM545		594																							

With base

Model	(W)	(H)	(L)	A	B	a	c	d	e	f	g	h	i	j	Mass kg Less motor												
MXM220	300	317	420	25	25	250	51	140	200	195	122	88	4-ø19	420	35												
MXM221			443												30												
MXM441	350	365	471	40	40	300	58	140	240	225	140	106	4-ø19	460	40												
MXM442			487																								
MXM542	400	385	467	40	50	350	65	140	480	245	140	87	4-ø19	710	55												
MXM543																											
MXM545			594																								

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

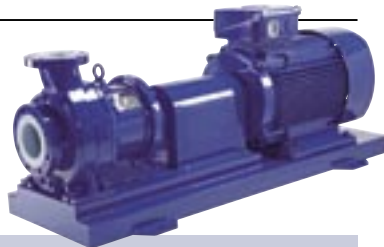
Model		DR-20
Motor power		380 to 440V three phase
Applied motor		0.75 to 15kW
Power control		100 to 240V single phase
Power	V	200 to 240V ±10% single phase
	Input	3.5W
Detective current		0.5 to 32.0A
Current transformer(CT)		Built-in
Outer dimension		D80 X W153 X H122

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. 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: 240 m³/hr
- Max. head: 63 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: 84 m³/hr
- 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: 31.2 m³/hr
- 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: 26.4 m³/hr
- Max. head: 18 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.



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