IWAKI

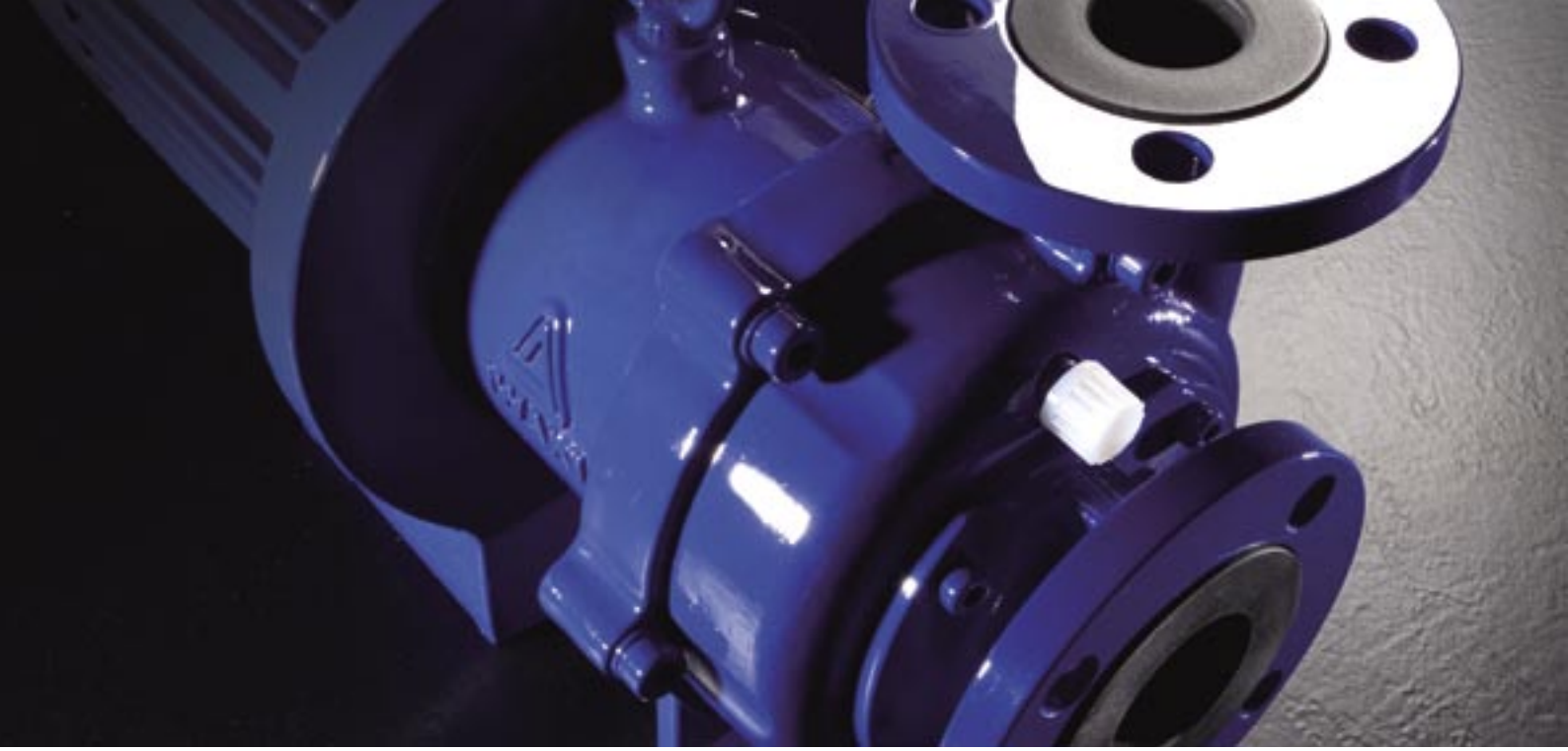
MXM
series

Magnetic drive pumps

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.

Patent
JAPAN / U.S.A. / TAIWAN / EU / CHINA



Better withstanding difficult operating conditions

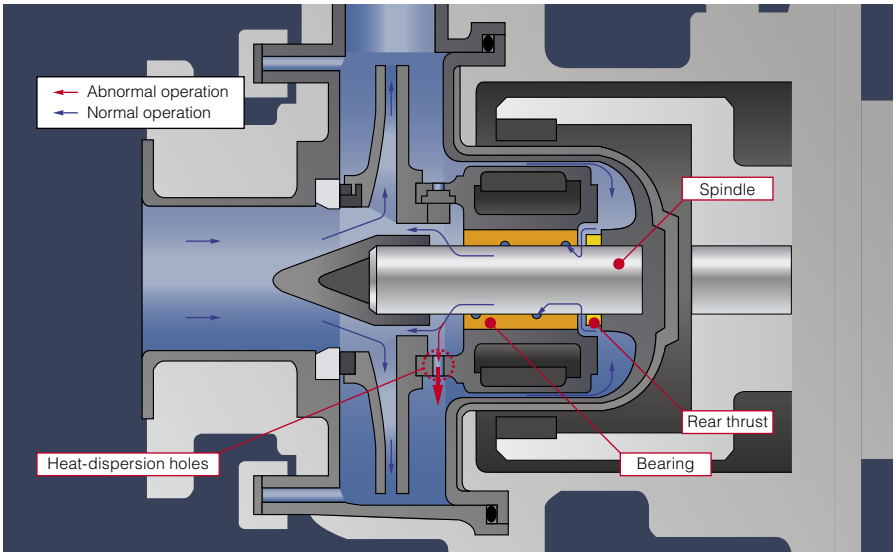
The proven non-contact system and self-radiating bearing structure deliver substantial improvements in tolerance of dry running and poor suction conditions.

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.



MXM545 MXM542

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.

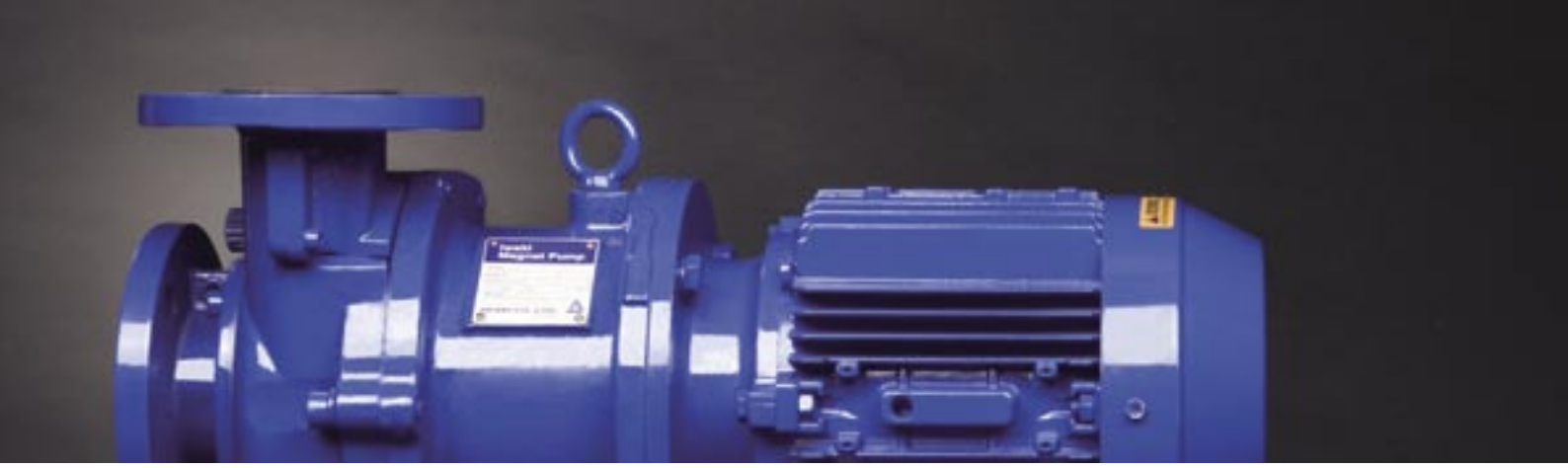
Cover+Front casing

Enhanced safety

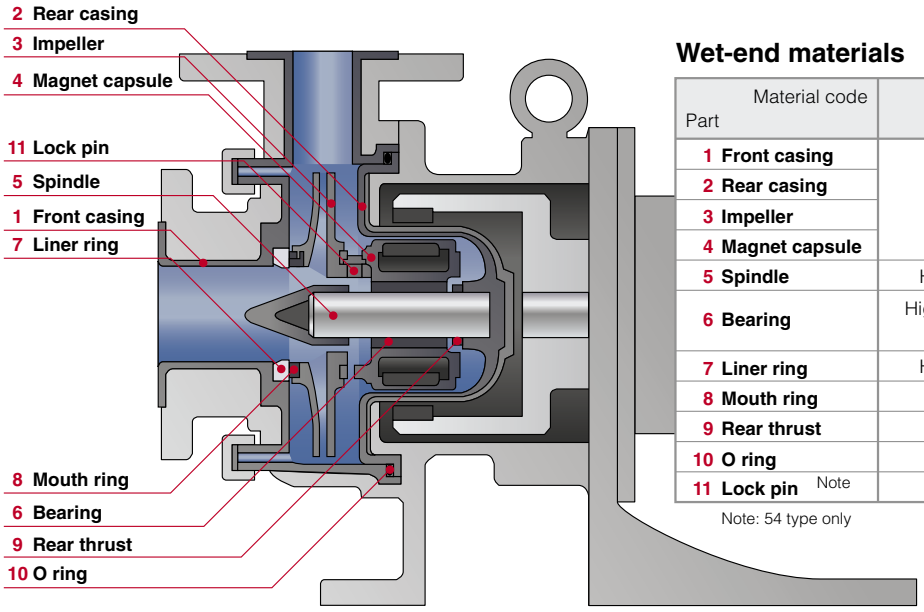
The MXM features a unique rear casing shape designed to prevent stress concentration. This increases both the pump's pressure resistance and the mechanical strength of the spindle support. The high temperature model uses a dual structure incorporating an FRP rear casing cover. In addition to further 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 (Option)

MXM44 MXM22



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		SiC
6 Bearing	High-density carbon	High-purity alumina ceramic	
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 Note	CFRETFE		

Note: 54 type only

Specifications

Model	Pump size Suction × Discharge	50Hz			60Hz		
		Impeller size	Capacity L/min	Head m	Impeller size	Capacity L/min	Head m
MXM22 (Impeller range 1)	25mm × 25mm	100	150	7.5	080	150	6.5
		090	150	5.5	070	150	5
		070	150	3	–	–	–
MXM22 (Impeller range 2)		105	150	8	105	150	14
		–	–	–	090	50	12
MXM44 (Impeller range 1)	40mm × 40mm	115	200	9.5	120	200	17
		110	200	8	105	200	11
		100	200	6	095	200	9.5
		090	200	5	085	200	7.5
		–	–	–	075	200	5
MXM44 (Impeller range 2)		130	200	12	130	100	25
MXM54 (Impeller range 1)	50mm × 40mm	150	200	18	150	200	30.5
		140	200	18.5	140	200	29
		120	200	14.5	–	–	–
MXM54 (Impeller range 2)		–	–	–	130	200	21.5
		–	–	–	110	200	16
MXM54 (Impeller range 3)		150	300	20.5	130	300	26
		140	300	19.5	120	300	21
		130	300	17	–	–	–
MXM54 (Impeller range 4)		150	400	25	150	200	41
		140	400	20.5	140	400	29.5
		125	400	15.5	130	400	26
		110	400	9.5	120	400	21.5

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 allowable pressure range
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**

- **Series symbol**
  MXM
- **Pump size** (Suction × Discharge)
  22: 25mm × 25mm
  44: 40mm × 40mm
  54: 50mm × 40mm
- **Special code**
  H: High temperature version (with rear casing cover)
  B: With base plate
  S: Other special order
  *Special code may overlap.
- **Motor output**
  0: 0.4kW
  1: 0.75kW
  2: 1.5kW
  3: 2.2kW
  5: 3.7kW
- **Impeller size**
  150, 140, 130, 125, 120, 115, 110
  105, 100, 095, 090, 085, 080, 075, 070
- **Impeller range**
  1, 2, 3, 4
- **Standard for pipe connection and motor**
  J : JIS flange + JIS motor
  I : ISO flange + IEC motor
  A: ANSI flange + JIS/IEC motor
- **Main material**
  E: CFRETFE
- **Material of Bearing / Spindle**
  CF: High density carbon / High purity alumina ceramic
  FF : High purity alumina ceramic / High purity alumina ceramic
  KK: SiC/SiC
- **Material of O ring**
  V: FKM
  E: EPDM
  A: AFLAS®
  P: DAI-EL PERFLUORO®

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 five to ten percect 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 mininum 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

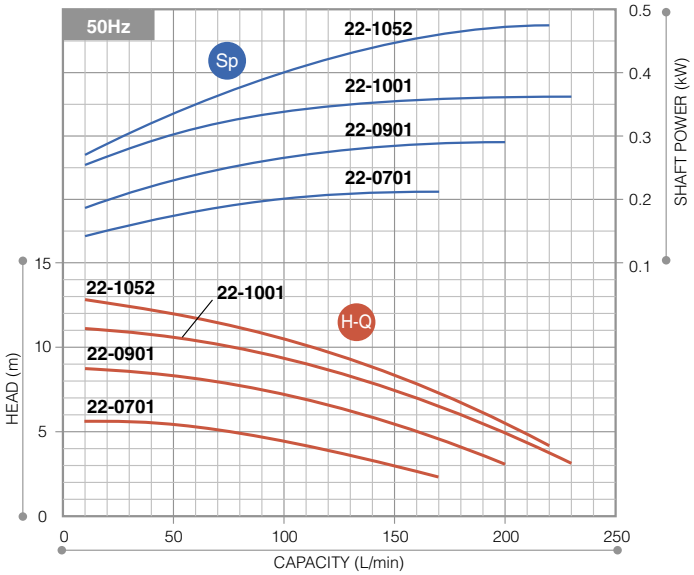
- Liquid should be 1m Pa·s (cP) or more.
- HQ performance is somewhat different from CF/KK models.If you need to know the detail, please contact with us.

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

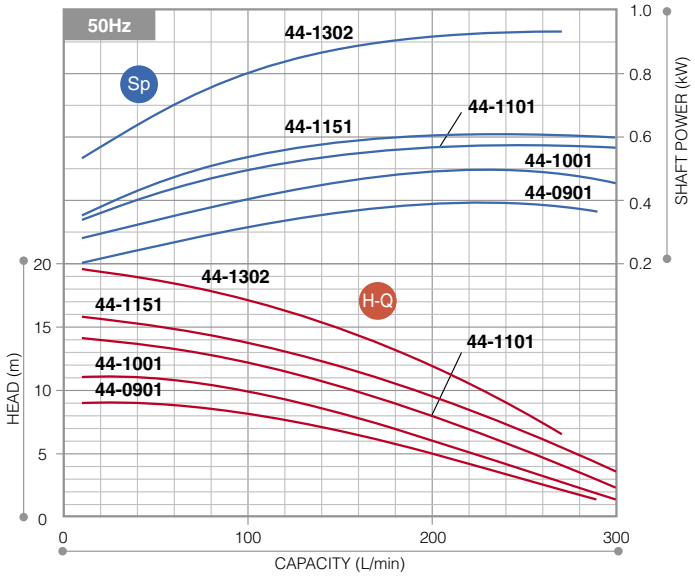
- The CF type has a degree of tolerance to dry running and operation with entrained air in the liquid.
- The KK type has the same degree of tolerance as the CF type under operation with entrained air in the liquid, but not allowed to run dry.
- The FF type is not allowed to run dry or operation with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

Performance curves

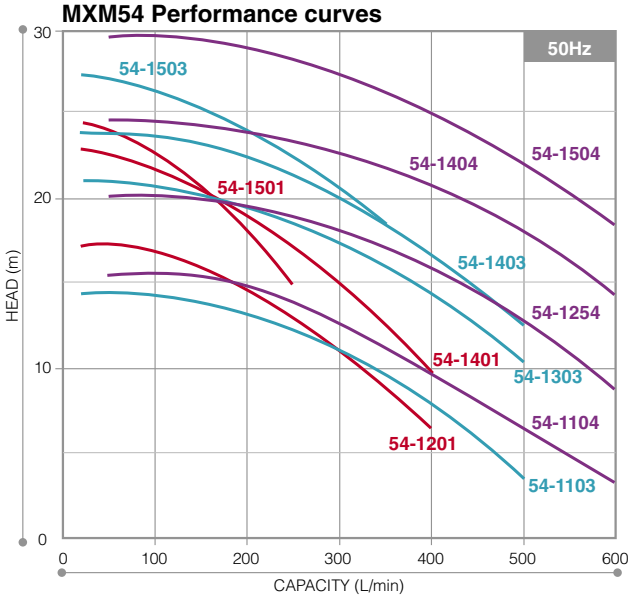
MXM22



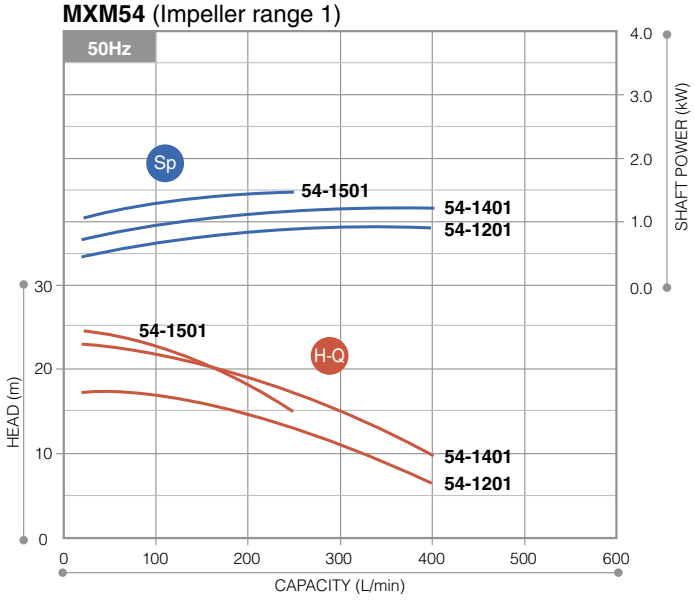
MXM44



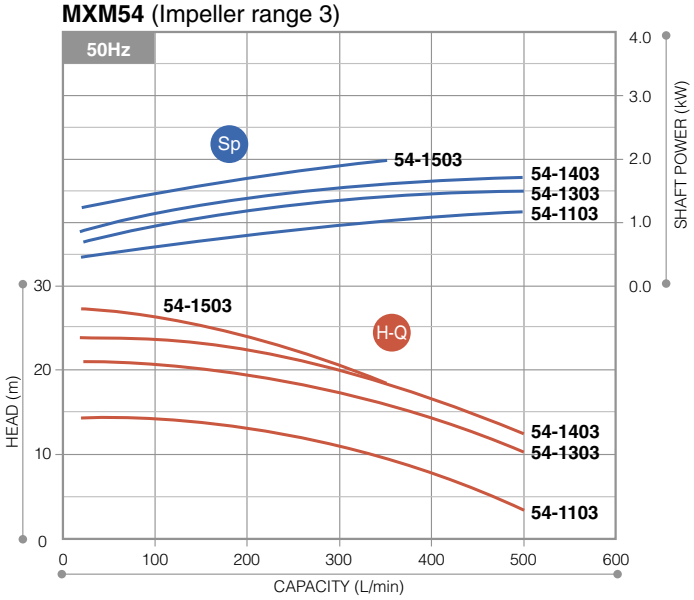
MXM54 Performance curves



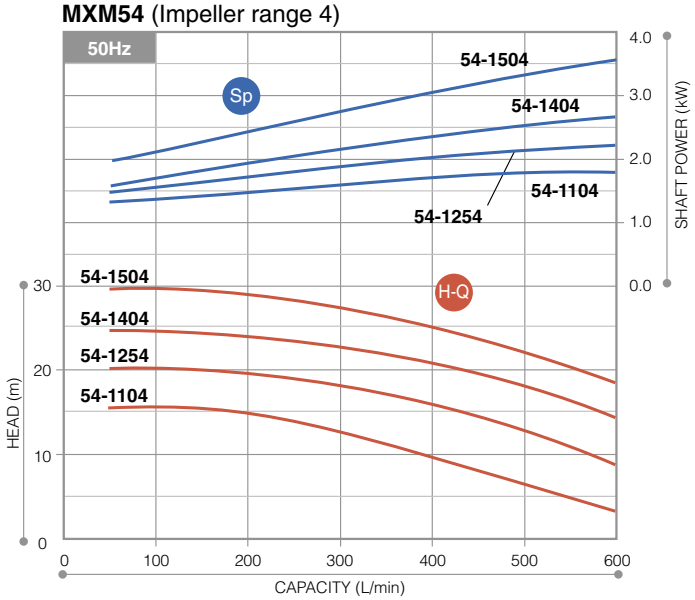
MXM54 (Impeller range 1)



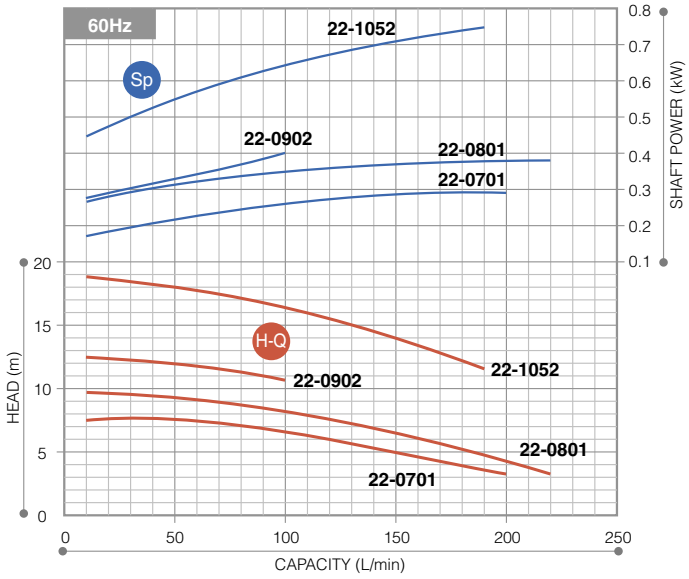
MXM54 (Impeller range 3)



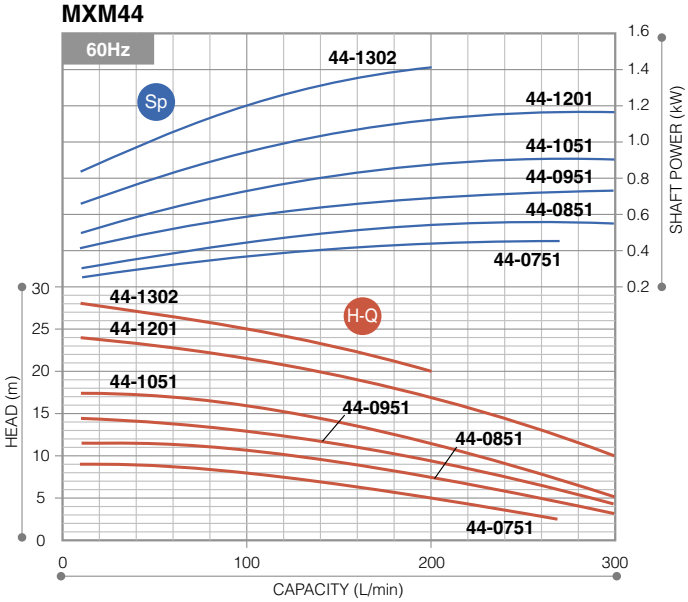
MXM54 (Impeller range 4)



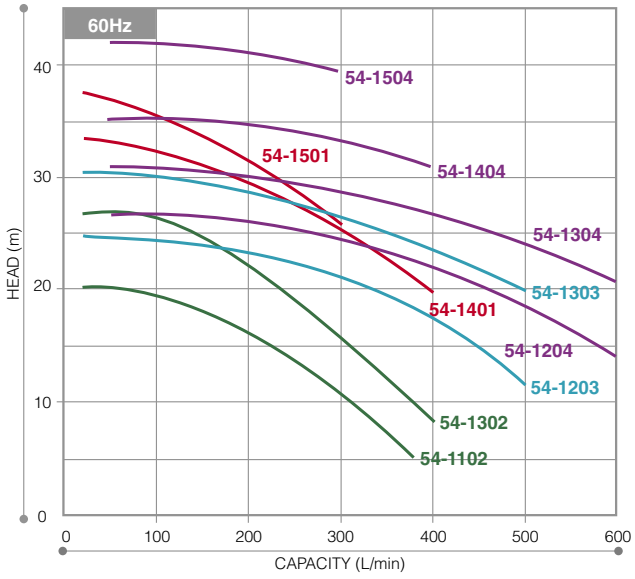
MXM22



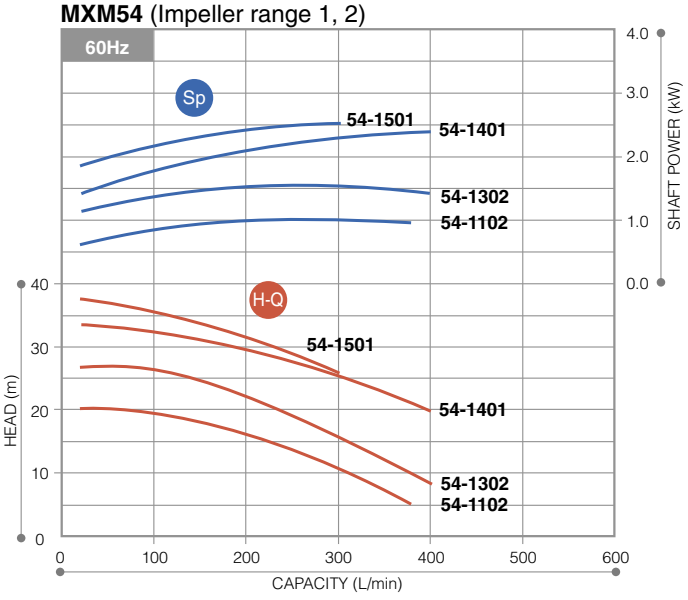
MXM44



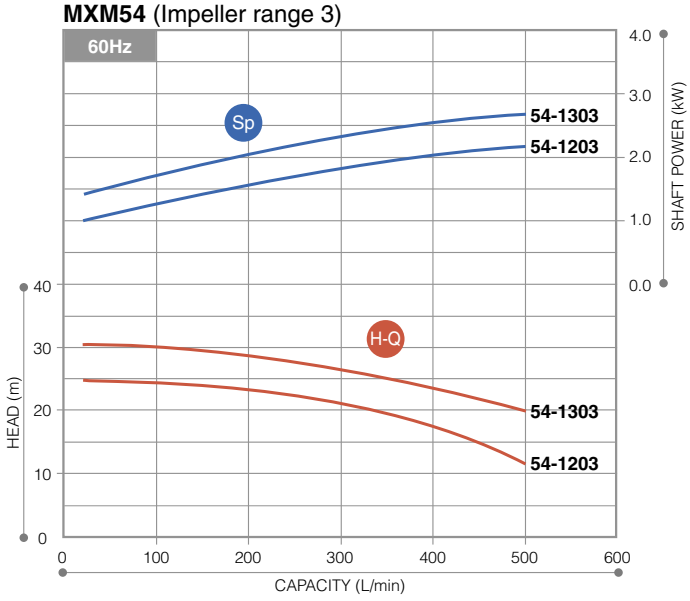
MXM54 Performance curves



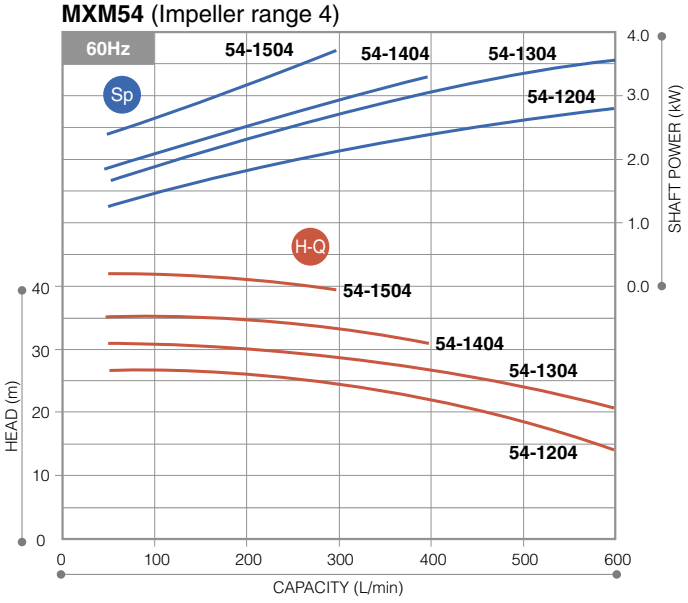
MXM54 (Impeller range 1, 2)



MXM54 (Impeller range 3)

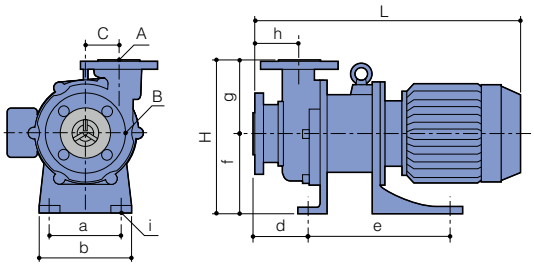


MXM54 (Impeller range 4)

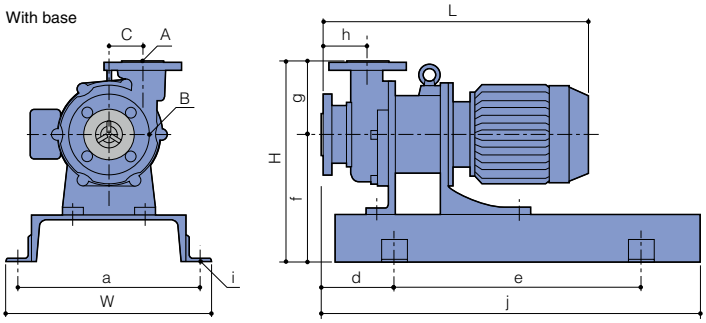


Dimensions in mm

Without base



With base



Without base

Model	(H)	(L)	A	B	a	(b)	c	(d)	e	f	g	h	i
MXM220	237	453	25A	25A	110	150	51	95	143	115	122	88	4-ø12
MXM220-H		475							165				
MXM221		467											
MXM221-H													
MXM441	275	482	40A	40A	130	150	58	113	250	135	140	106	4-ø14
MXM441-H		495											
MXM442		537											
MXM442-H													
MXM542	295	517	40A	50A	140	180	65	106	275	155	140	87	4-ø14
MXM543													
MXM545		589											

With base

Model	(W)	(H)	(L)	A	B	a	c	d	e	f	g	h	i	j
MXM220	300	317	453	25A	25A	250	51	140	200	195	122	88	4-ø19	450
MXM220-H			475											
MXM221			467											
MXM221-H														
MXM441	350	365	482	40A	40A	300	58	140	240	225	140	106	4-ø19	489
MXM441-H			495											
MXM442			537											
MXM442-H														
MXM542	400	385	517	40A	50A	350	65	140	480	245	140	87	4-ø19	735
MXM543														
MXM545			589											

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.

DR-20

- 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.

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	V	100V ±10%single phase	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	

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ASIA / OCEANIA

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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.

Our products and/or parts of products fall in the category of goods contained in the Export Trade Control Order Attachment List 1 of Japanese export control regulations, which includes complementary export control items. Please be reminded that export license, which is issued by the Ministry of Economy, Trade, and Industry in Japan could be required when products are exported from Japan.

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