

Magnetic drive pumps MX series



Withstands difficult operating conditions and offers high efficiency

The MX Series represents the latest state of the art design in plastic magnetic drive pumps. With experience gained from the previous generations of MDH pumps the MX series has been designed 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" (patent pending) 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.

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. (patent pending)

Simply constructed, it is robust and facilitates maintenance.

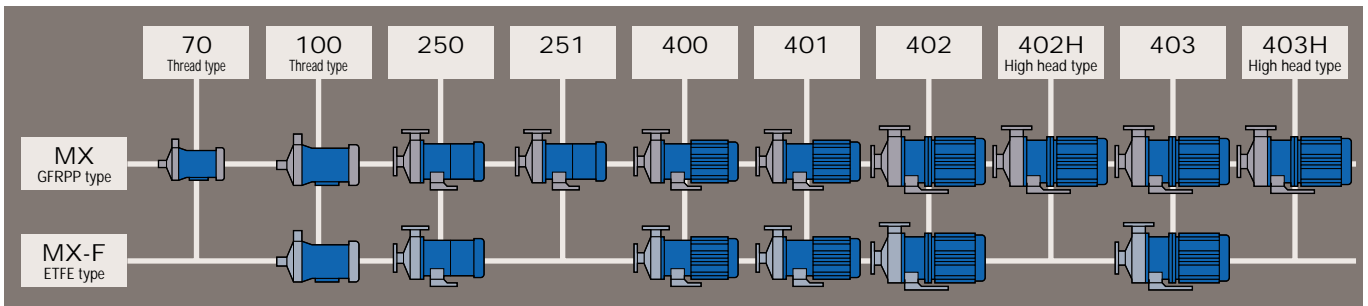
GFRPP and CFRETFE available in standard models.



MX-403

MX-402

MX Series family



Tube connection type for MX-70 and MX-100 are available.



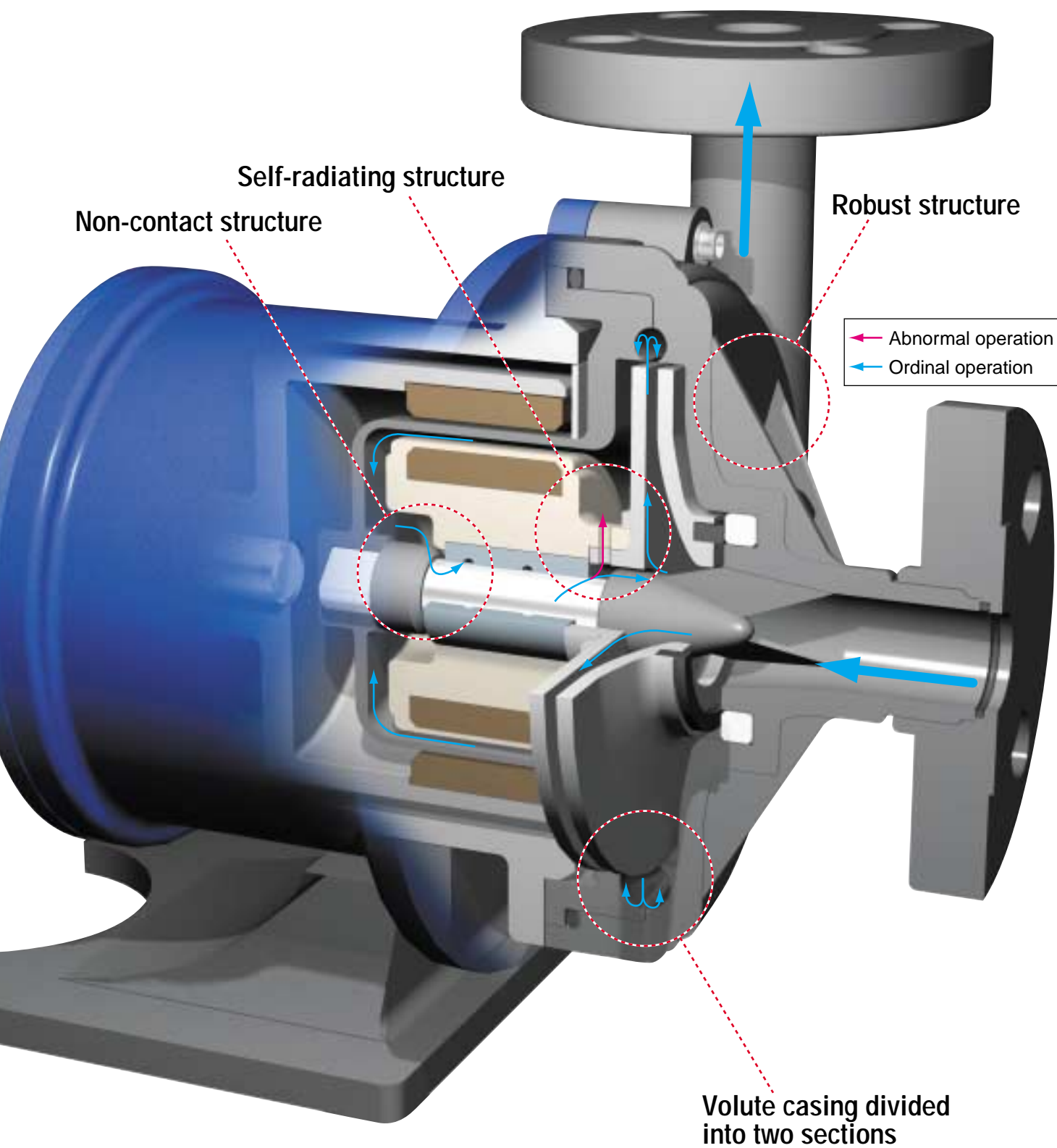
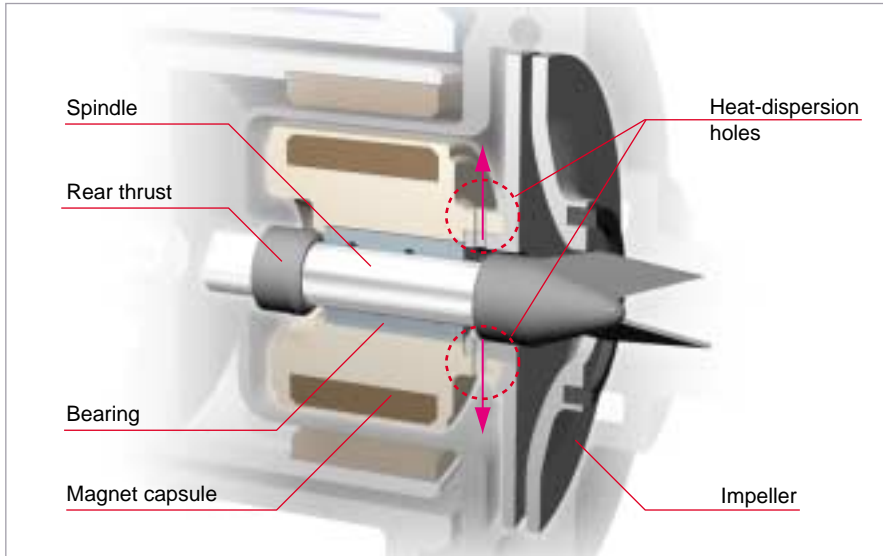


Illustration shows MX-250



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.



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-(F)402(H) and 403(H) models: an unplugging preventive lock pin is adopted for ensuring more steady securing.

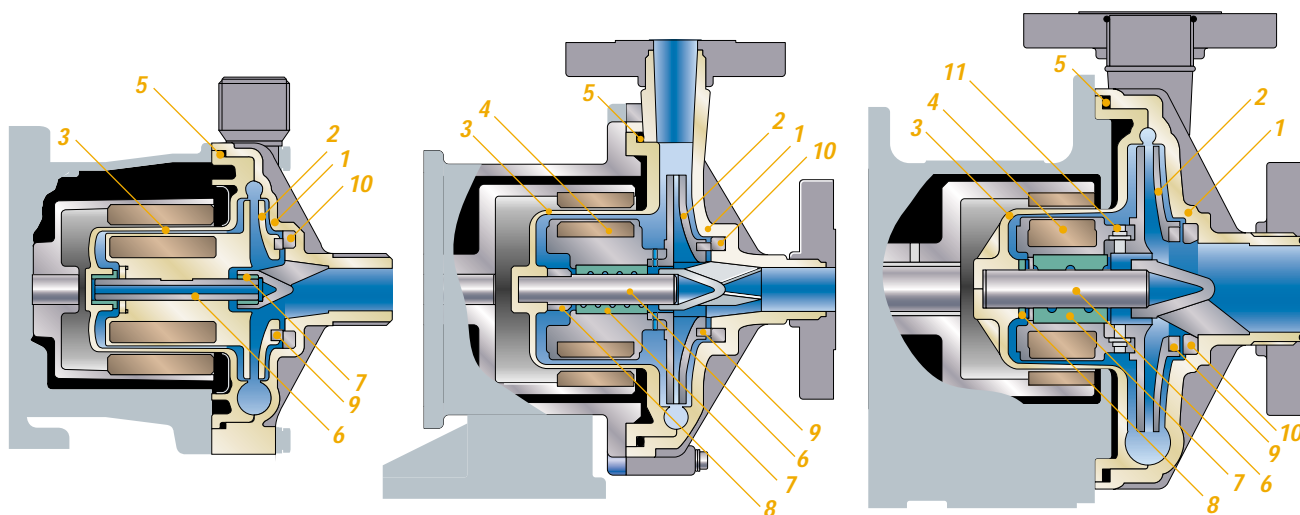


Wet end materials

MX-70,100
MX-F100

MX-250 to 401
MX-F250 to F401

MX-402 to 403H
MX-F402 to F403



Materials of MX series

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

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

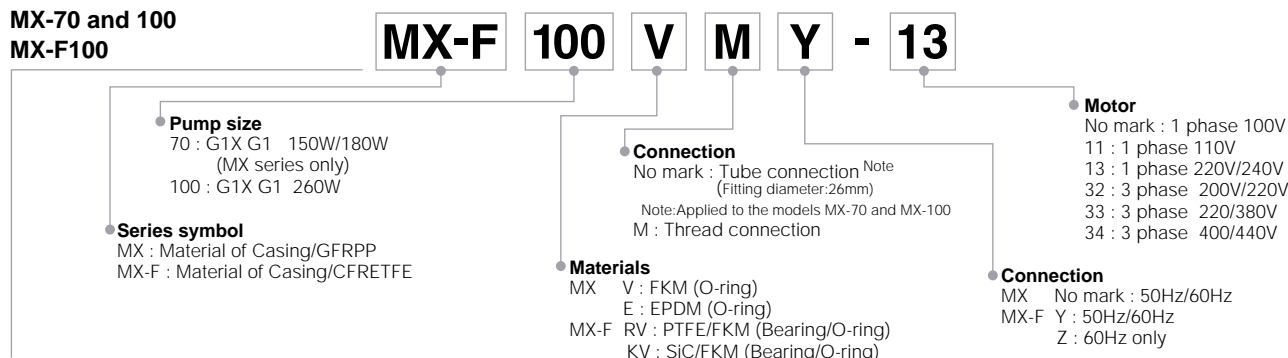
Materials of MX-F series

Model	MX-F100		MX-F250 to F401			MX-F402 to F403		
Mark	RV	KV	CFV	RFV	KKV	CFV	RFV	KKV
1 Front casing	CFRETFE			CFRETFE			CFRETFE	
2 Impeller	CFRETFE			CFRETFE			CFRETFE	
3 Rear casing	CFRETFE			CFRETFE			CFRETFE	
4 Magnet capsule	-			CFRETFE			CFRETFE	
5 O ring <small>Note 1</small>	FKM			FKM			FKM	
6 Spindle	High purity alumina ceramic	SiC	High purity alumina ceramic		SiC	High purity alumina ceramic		SiC
7 Bearing	PTFE	SiC	High density carbon	PTFE	SiC	High density carbon	PTFE	SiC
8 Rear thrust	High purity alumina ceramic	SiC(Front & Rear)	CFRETFE			CFRPFA		
9 Mouth ring	PTFE	-	PTFE		SiC	PTFE		SiC
10 Thrust/Liner ring	High purity alumina ceramic	-	High purity alumina ceramic		SiC	High purity alumina ceramic		SiC
11 Lock pin	-		-			CFRETFE		

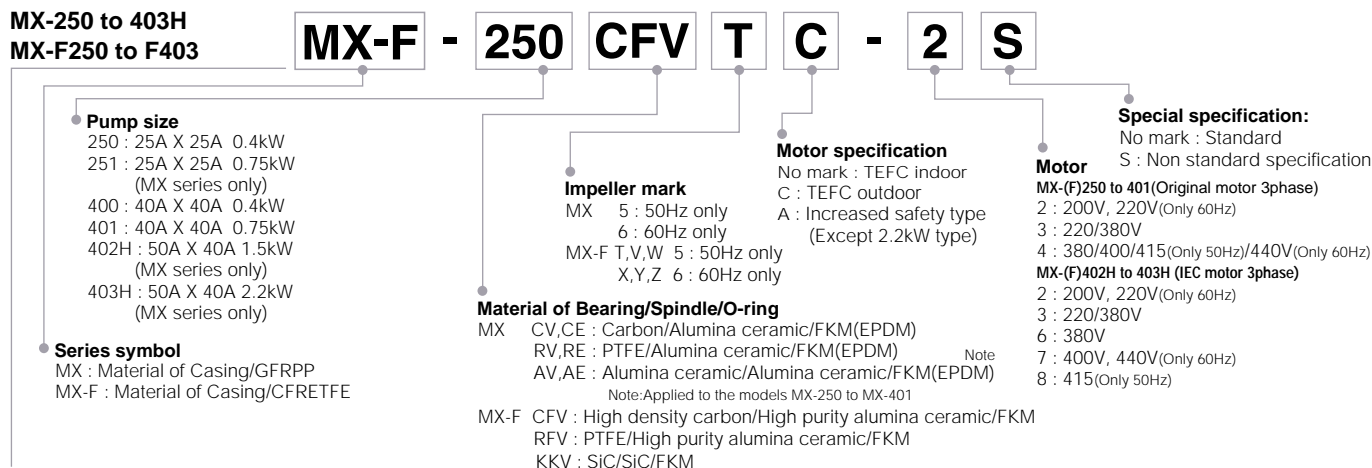
Note 1: O-ring made of AFLAS® and EPDM are also available

Pump identification

MX-70 and 100 MX-F100



MX-250 to 403H MX-F250 to F403



Specifications

50/60Hz

Model	Connection Suction X Discharge	Limit of specific gravity	Standard capacity L/min - m	Maximum capacity L/min	Motor kW	Mass 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	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
MX-F100 Y	G1 x G1	1.9 / 1.2	70 - 5.8 / 9.0	110 / 125	0.26	8.5
MX-F100 Z	G1 x G1	- / 1.8	70 - - / 5.8	1 - / 110	0.26	8.5
MX-F250 T/X	25A x 25A	1.2	50 - 11.3 / 11.8	150	0.4	14.5
MX-F250 V/Y	25A x 25A	1.5	50 - 9.1 / 9.5	140	0.4	14.5
MX-F250 W/Z	25A x 25A	1.8 to 2.0	50 - 6.4 / 7.5	130	0.4	14.5
MX-F400 T/X	40A x 40A	1.2	100 - 10.1 / 9.3	250	0.4	14.5
MX-F400 V/Y	40A x 40A	1.5	100 - 8.1 / 7.6	230	0.4	14.5
MX-F400 W/Z	40A x 40A	1.8 to 2.0	100 - 5.5 / 6.3	210	0.4	14.5
MX-F401 T/X	40A x 40A	1.2	150 - 12.8 / 12.6	270	0.75	19.5
MX-F401 V/Y	40A x 40A	1.5	150 - 10.8 / 10.4	260	0.75	19.5
MX-F401 W/Z	40A x 40A	1.8 to 2.0	150 - 8.1 / 6.9	230	0.75	19.5
MX-F402 T/X	50A x 40A	1.2	200 - 18.3 / 18.5	440	1.5	31.5
MX-F402 V/Y	50A x 40A	1.5	200 - 16 / 15.2	430	1.5	31.5
MX-F402 W/Z	50A x 40A	1.8 to 2.0	200 - 12.5 / 11.7	400	1.5	31.5
MX-F403 T/X	50A x 40A	1.2	250 - 22.8 / 23.1	510	2.2	34
MX-F403 V/Y	50A x 40A	1.5	250 - 19.4 / 19.2	500	2.2	34
MX-F403 W/Z	50A x 40A	1.8 to 2.0	250 - 15.3 / 14.7	480	2.2	34

Note 1) The specific gravity limit values shown above are with maximum flow. The specific gravity limit varies with the discharge. For details, please contact us.

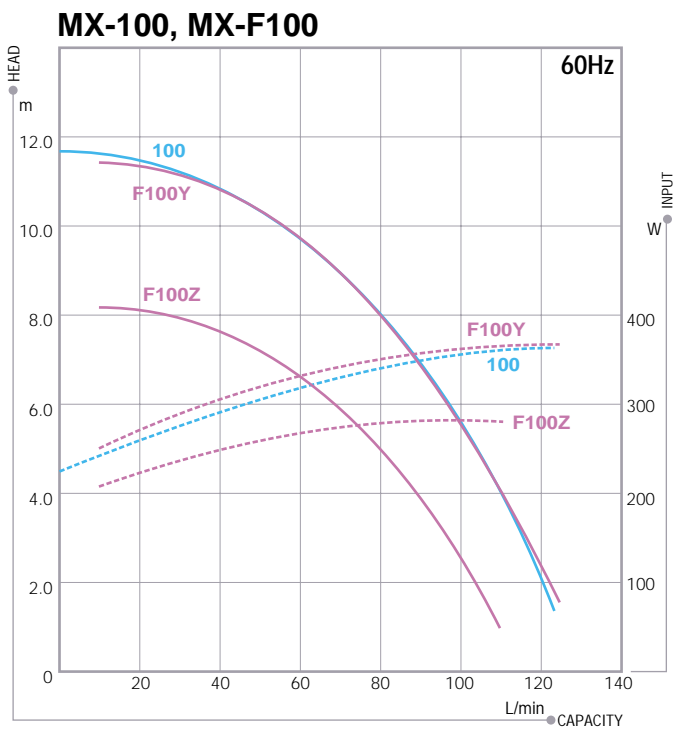
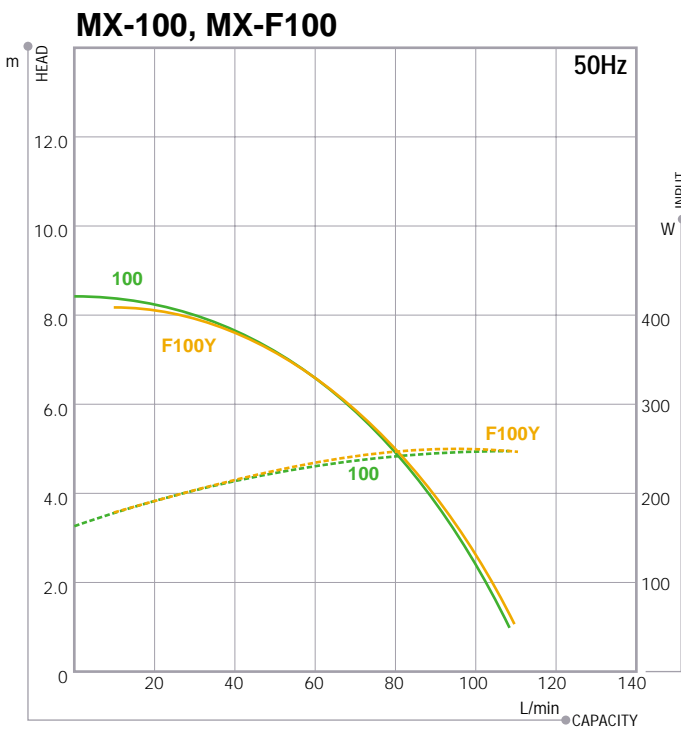
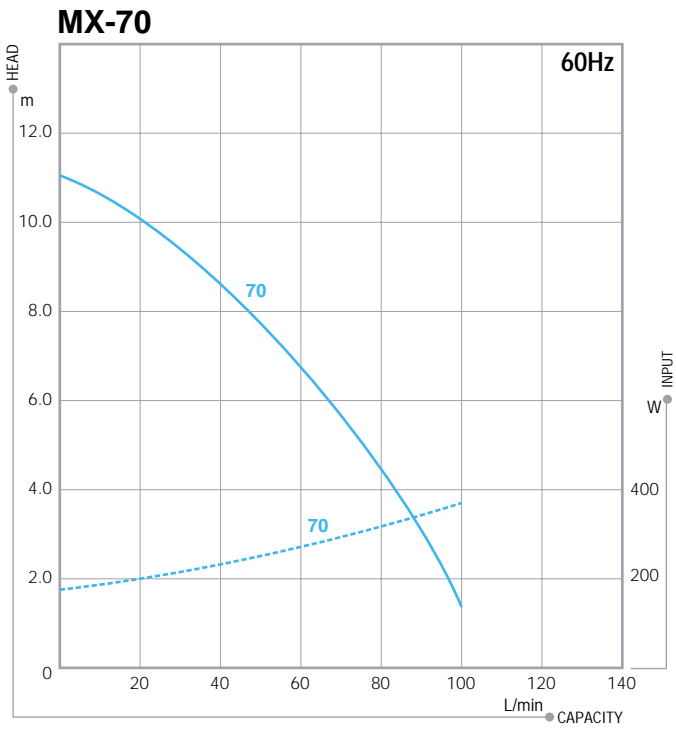
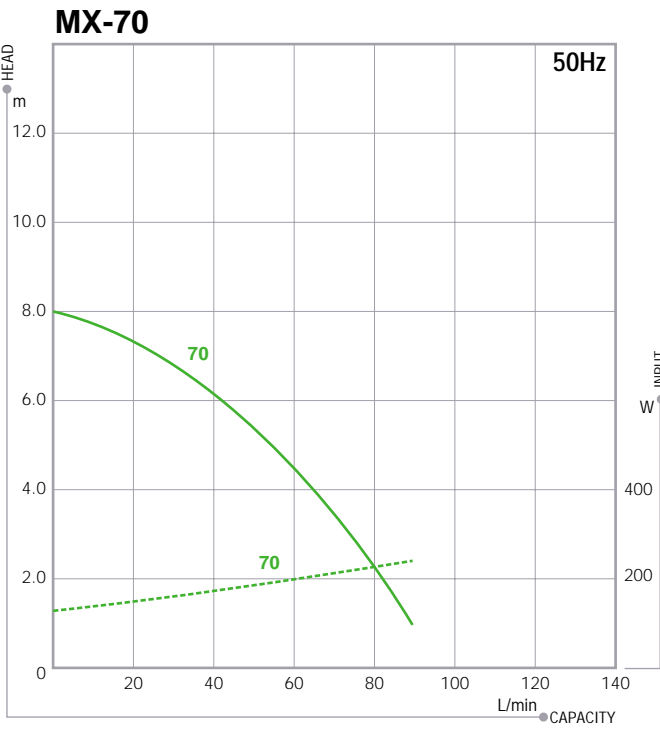
Note 2) 26mm tube connection option available on the MX-70 and MX-100.

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

Common specifications

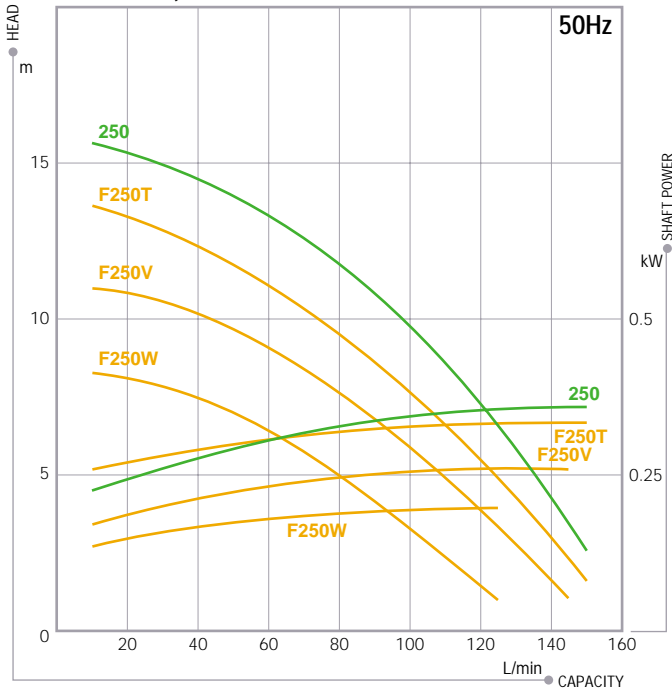
• Range of liquid temperature : 0 to 80°C (10 to 80°C in case AFLAS® O-rings are used.) • Range of ambient temperature : 0 to 40°C.

Performance curves

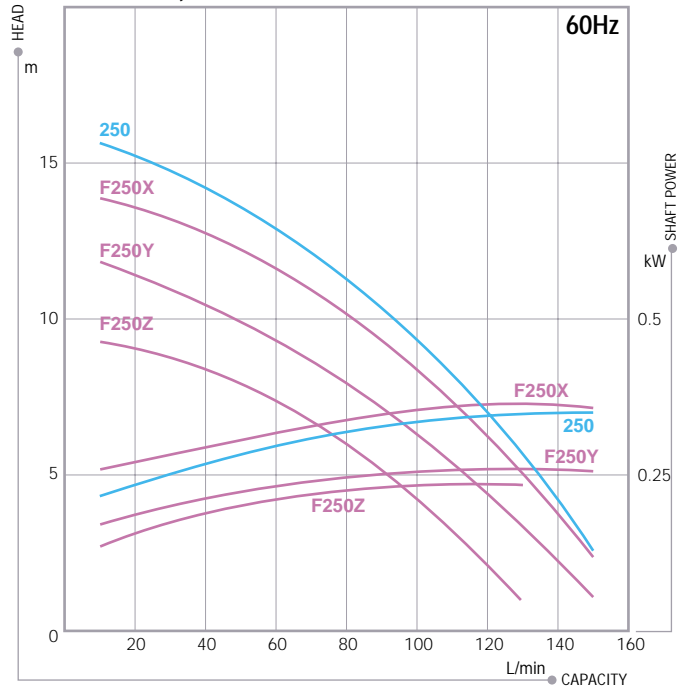


Performance curves

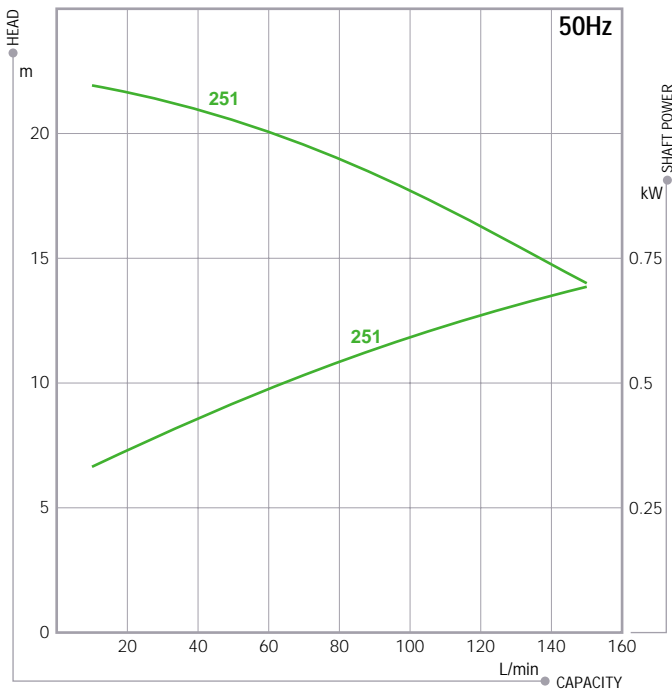
MX-250, MX-F250



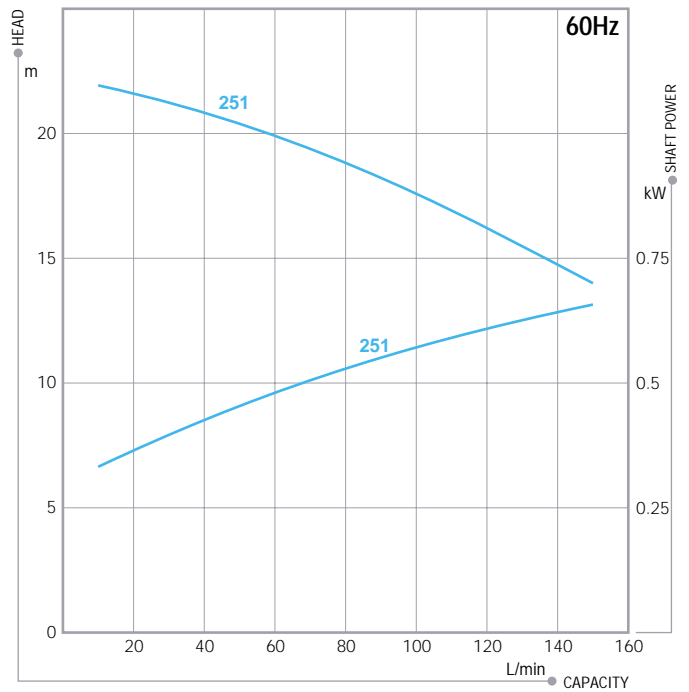
MX-250, MX-F250



MX-251

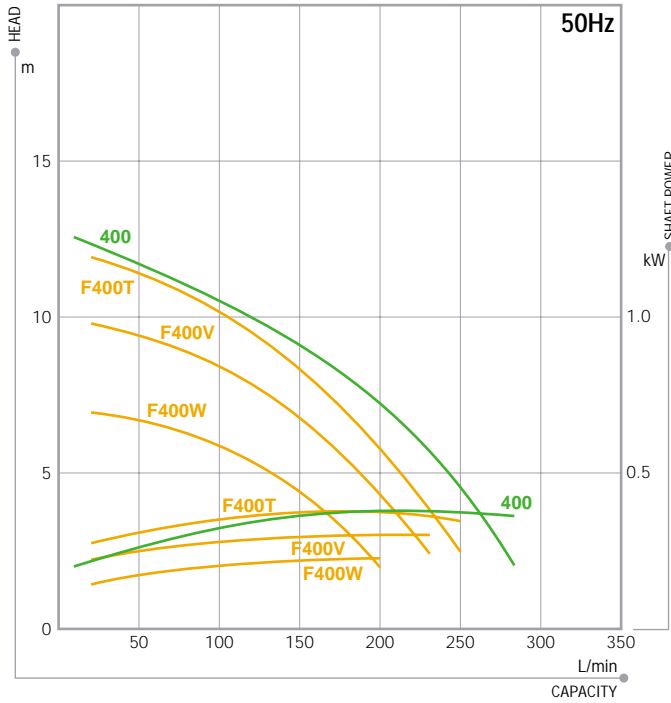


MX-251

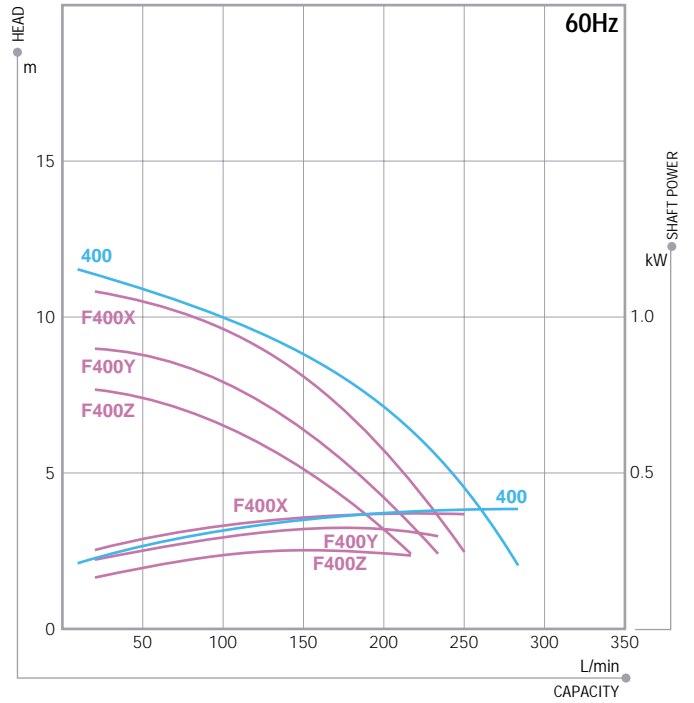


Performance curves

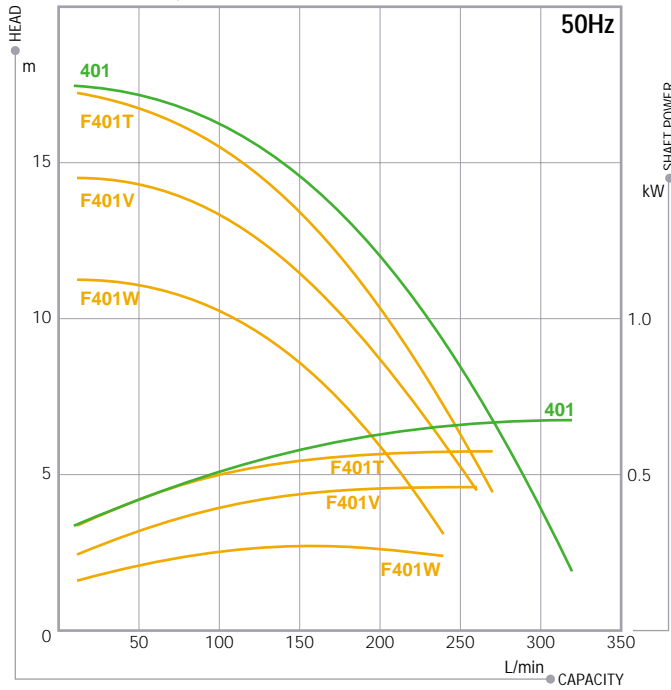
MX-400, MX-F400



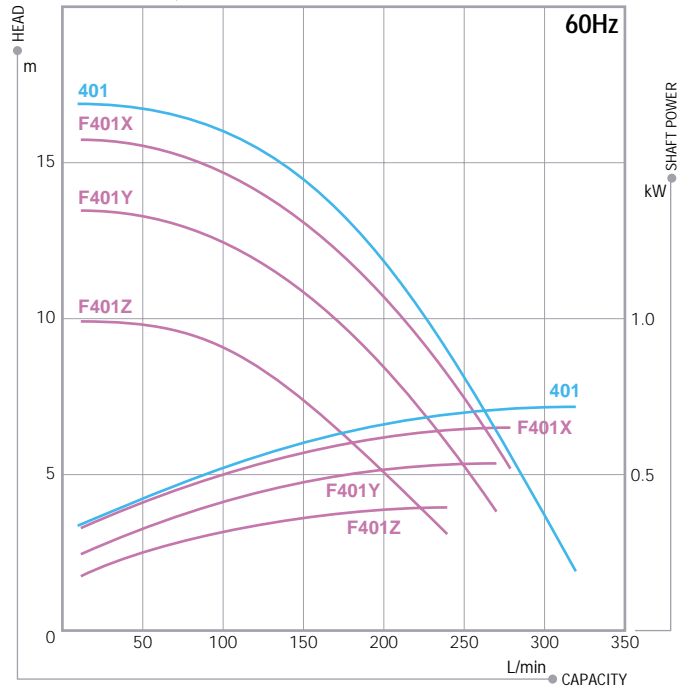
MX-400, MX-F400



MX-401, MX-F401

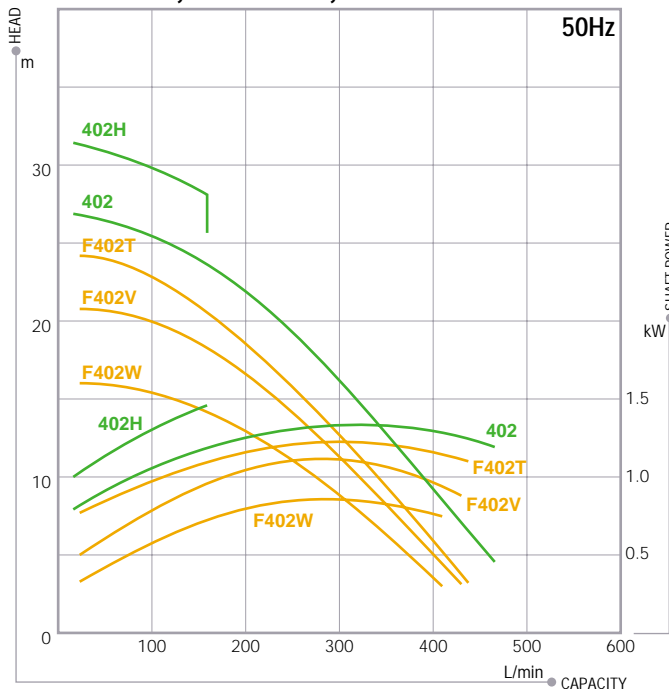


MX-401, MX-F401

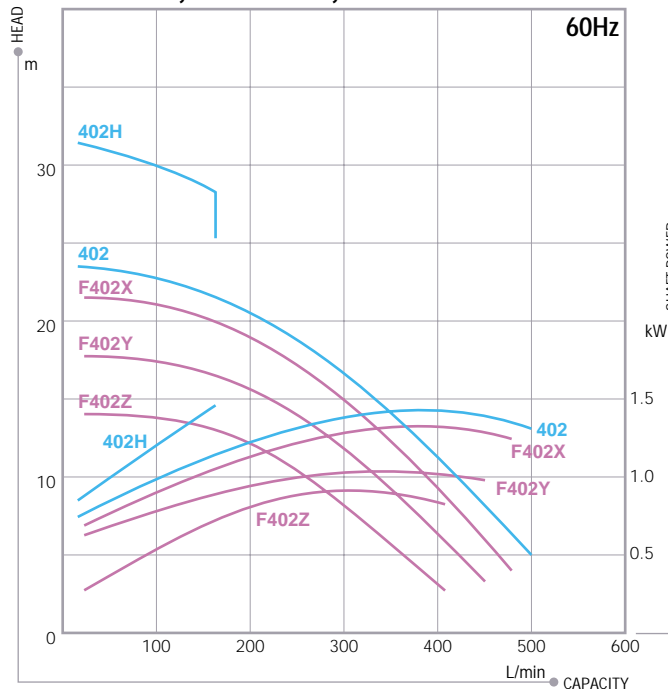


Performance curves

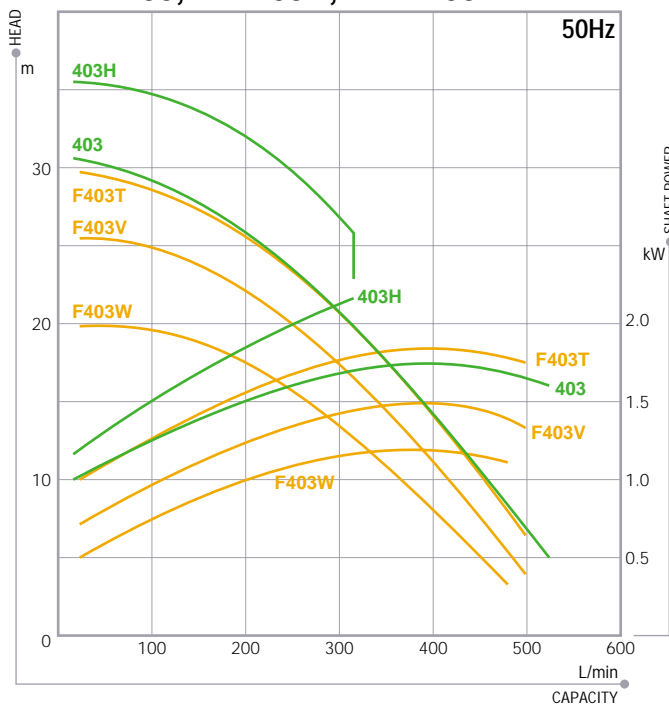
MX-402, MX-402H, MX-F402



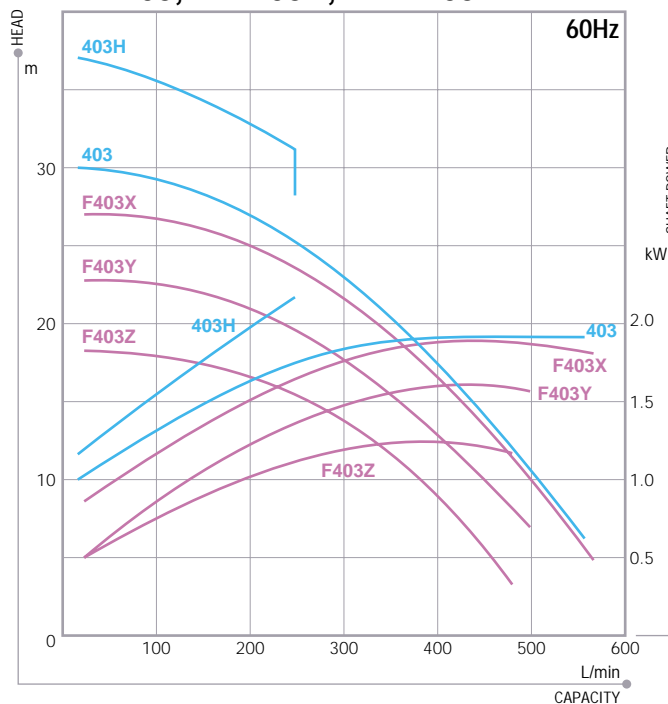
MX-402, MX-402H, MX-F402



MX-403, MX-403H, MX-F403

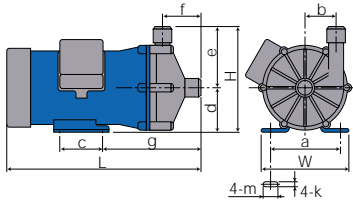


MX-403, MX-403H, MX-F403

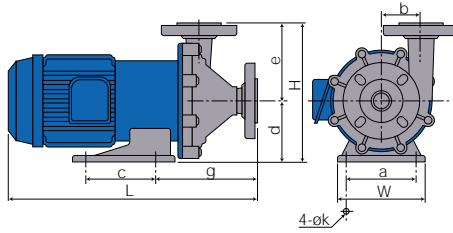


Dimensions

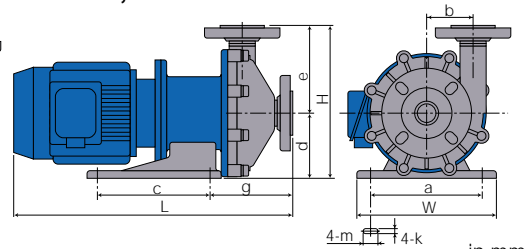
MX-70, 100 MX-F100



MX-250 to 401 MX-F250 to F401



MX-402(H), 403(H) MX-F402, F403



in mm

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, MX-F100	Note 1)	150	175	319.5	110	51	70	75	100	65	162	9	27
MX-250, MX-F250		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, MX-F400		140	225	408	110	54	98	95	130	87	150	12	—
MX-401, MX-F401		160	255	457	130	72	130	115	140	103	184	12	—
MX-402 to 403, MX-F402 to F403		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.

Note : The dimensions L 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

Specification

50/60Hz

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



DR-20

Union joint (Option)

Special purpose union joints are available.

Material : PVC/Heat resistant PVC

