

IWAKI MAGNETIC DRIVE PUMPS





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

Solutions for chemical handling applications



## Self-radiating structure (PAT.)

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.



#### 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-70, 100)

## Volute casing divided into two sections (PAT.)

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, internal leakage is kept to a minimum and overall hydraulic efficiency is enhanced.

(Except MX-70, 400, 505)

## **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-402(H), 403(H) and 505 models: an unplugging preventive lock pin is adopted for ensuring more steady securing.



Front casing

Rear casing



Front casing of type 100 and 402/403

# nce and efficiency than previous models. drive pumps - reliable & energy efficient.

The MX Series represents the latest state of the art design in plastic magnetic drive pumps 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" (PAT.) 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. Our innovative design has achieved higher efficiency. 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 split-volute casing significantly improves efficiency over previous versions.
- Simple yet robust construction allows easy maintenance.
- Enhanced intake features and pump efficiency (PAT.) (MX-505)
- Lap joint construction





## Wet end materials





	Model	MX-70	MX-100	
	Mark	V(E)		
1	Front casing	GF	RPP	
2	Impeller	CFRPP		
3	Rear casing	GFRPP		
5	O ring Note	FKM(EPDM)		
6	Spindle	Alumina ceramic		
7	Bearing	CFRPPS	PTFE(with filler)	
9	Mouth ring	- PTFE(with filler)		
10	Thrust/Liner ring	Alumina ceramic		



	Model	MX-25	MX-250 to 401		
	Mark	CV(CE)	RV(RE)	AV(AE)	
1	Front casing		GFRPP		
2	Impeller		GFRPP		
3	Rear casing		GFRPP		
4	Magnet capsule	РР			
5	O ring Note	FKM(EPDM)			
6	Spindle	High purity alumina ceramic			
7	Bearing	Carbon PTFE(with filler) Alumina ceramic			
8	Rear thrust	CFRPPS (MX-402 to 505: CFRPEEK)			
9	Mouth ring	PTFE(with filler)			
10	Thrust/Liner ring	Alumina ceramic			
11	Lock pin	GFRPPS(Only available type 402 to 505) -			
12	Inner flange	GFRPP			
13	Outer flange	GFRPP			

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## **Pump identification**



## **Specifications**

Martil	Connection	Limit of	Standard capacity	Maximum capacity	Motor	Mass
Model	Suction X Discharge	specific gravity	L/min - m	L/min	kW	kg
MX-70	C1 C1	1.2	50 - 5,4	90	0,15	6,5
MX-100	GIXGI	1,2	70 - 6	110	0,26	8,2
MX-250	$25 \times 25 \text{ or } C1 \times C1$	1.0	50 - 11,7	150	0,37	13,5
MX-251	25 X 25 01 G1 X G1	1,0	80 - 19	150	0,75	22
MX-400	40 40 61 1/2 61 1/2	1.2	100 - 9,5	280	0,37	13,5
MX-401	40 x 40 or G1-1/2 x G1-1/2	Ι,Ζ	150 - 14,5	320	0,75	22
MX-402	$50 \times 40 \propto C_{2} \times C_{1} \frac{1}{2}$	1,2	200 - 20	450	1 5	20
MX-402H	50 X 40 0r G2 X G1-1/2	1,0	100 - 30	160	د,۱	20
MX-403	50 ··· 40 ··· C2 ··· C1 1/2	1,2	250 - 23	500	2.2	42
MX-403H	50 X 40 OF G2 X G1-1/2	1,0	100 - 35	300	2,2	43
MX-505	65 x 50	1,2	500 - 24,5	800	4,0	64

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

Note2: 26mm tube connection option available on the MX-70 and MX-100. Note2: 4V(AE) type is different in discharge capacity. For details, please contact us.

#### **Common specifications**

• Range of liquid temperature : 0 to  $80^{\circ}$ C • Range of ambient temperature : 0 to  $40^{\circ}$ C.

## **Performance curves**



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## Dimensions





													in mm
Models	W	Н	L	а	b	с	d	e	f	g	k	m	i
MX-70	130	155	258,5	110	48	40	65	90	53	159,5	7	11	—
MX-100	150	175	319,5	110	51	70	75	100	65	162	9	27	—
MX-250 (Lap joint type)	160	255	432	130	65	130	115	140	90	163	12	—	221
MX-250 (Thread type)	160	285	462	130	65	130	115	170	120	193	_	—	251
MX-251 (Lap joint type)	160	255	485	130	65	130	115	140	90	171	12	—	233
MX-251 (Thread type)	160	285	515	130	65	130	115	170	120	201	—	—	263
MX-400 (Lap joint type)	140	225	432	110	54	98	95	130	87	150	12	—	221
MX-400 (Thread type)	140	219	426	110	54	98	95	124	81	144	—	—	215
MX-401 (Lap joint type)	160	255	498	130	72	130	115	140	103	184	12	—	246
MX-401 (Thread type)	160	249	492	130	72	130	115	134	97	178	-	—	240
MX-402,402H (Lap joint type)	260	280	538	208	80	200	120	160	89	157	14	36	241
MX-402,402H (Thread type)	260	274	532	208	80	200	120	154	83	151	14	36	235
MX-403,403H (Lap joint type)	260	280	578	208	80	200	120	160	89	157	14	36	241
MX-403,403H (Thread type)	260	274	572	208	80	200	120	154	83	151	14	36	235
MX-505	180	330	—	140	96	220	150	180	95	175	_	_	275

Note: MX-70 and MX-100 show thread type in the above dimensions, Please contact us for tube connection type. • The dimensions may differ with the type of motor installed.

## Accessories

#### Iwaki pump protector DRN series (option)

#### 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.

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Pump Protector	
	CONN CONN

multiple input	rwo analog, c
Easy operation	Equipped wit
	and set the lo
Bar graph	Visible indica
Logging capability	Data log featu
Communication	RS485 externa

Two analog, one digital, one temperature input and one current input Equipped with EASY setup mode to remember the operation status and set the lower/upper limit values, as well as AUTO setup mode Visible indication of current operating status Data log feature for preventative maintenance scheduling RS485 external communication capability

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		

#### Thread connection adapter (MX-250/251-LM)

The In/Outlet adaptors are furnished (G1").





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Caution for safety use: Before use of pump, read instruction manual carefully to use the product correctly. Legal attention related to export.