IWAKI

IWAKI MAGNETIC DRIVE PUMPS

MXM

Patent

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

Solution for chemical handling applications

Better withstanding difficult operating conditions

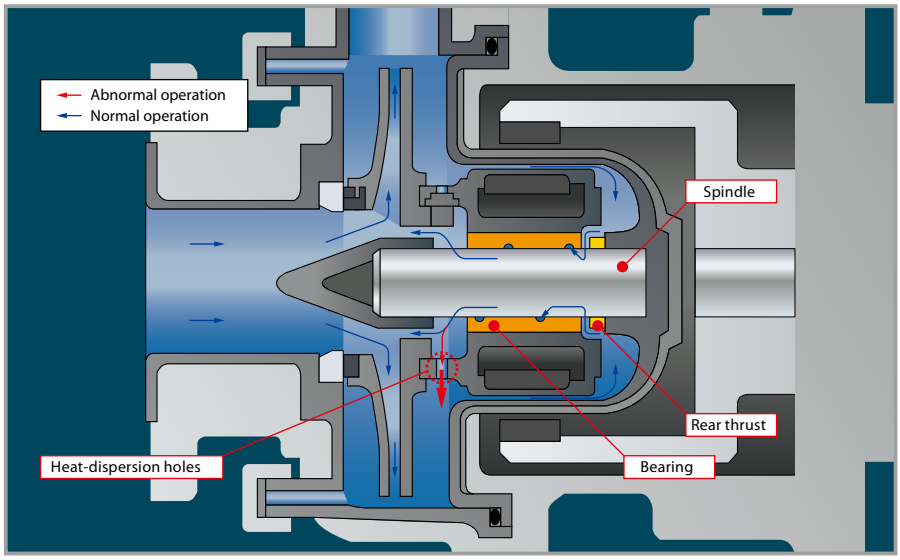
The proven non-contact system and self-radiating bearing structure deliver substantial improvements in tolerance of dry running and poor suction conditions.

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 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)

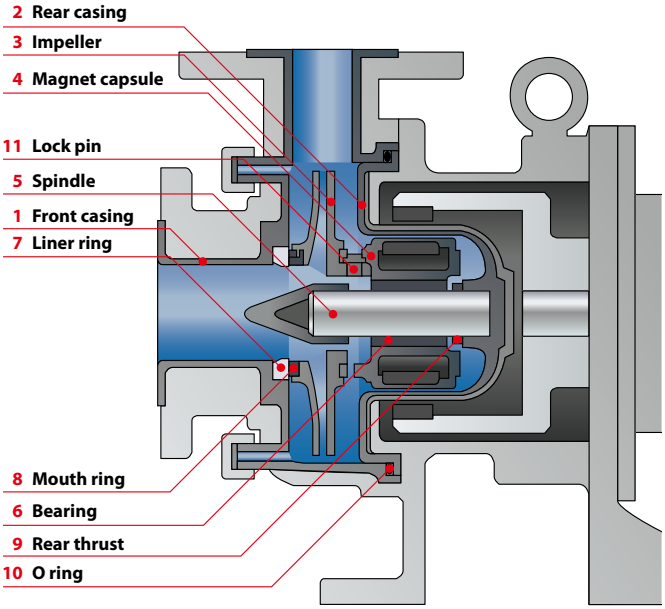
MXM545

MXM542

Construction and 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

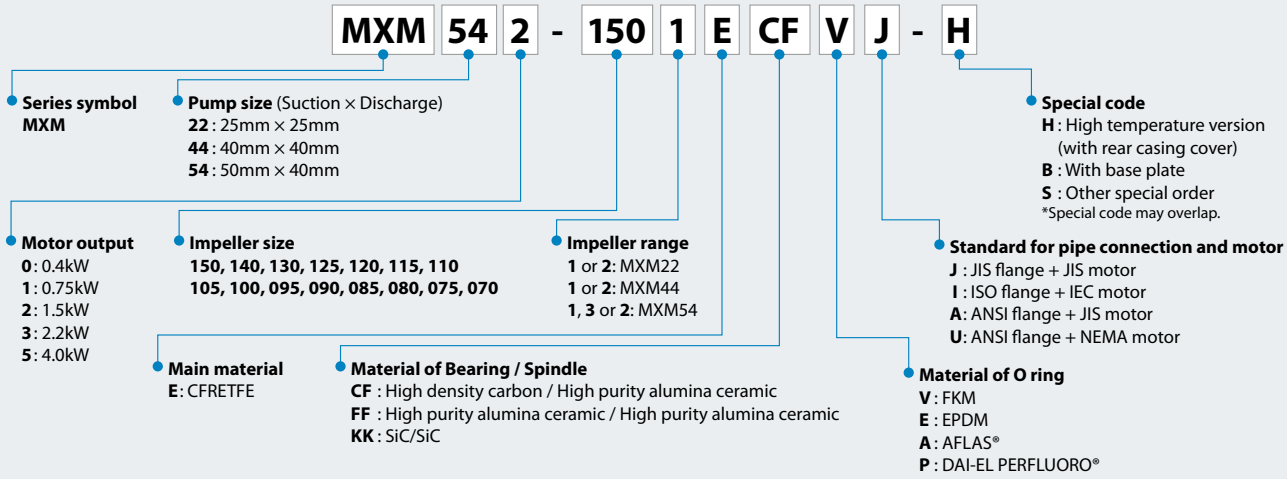


Specifications (50Hz)

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



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

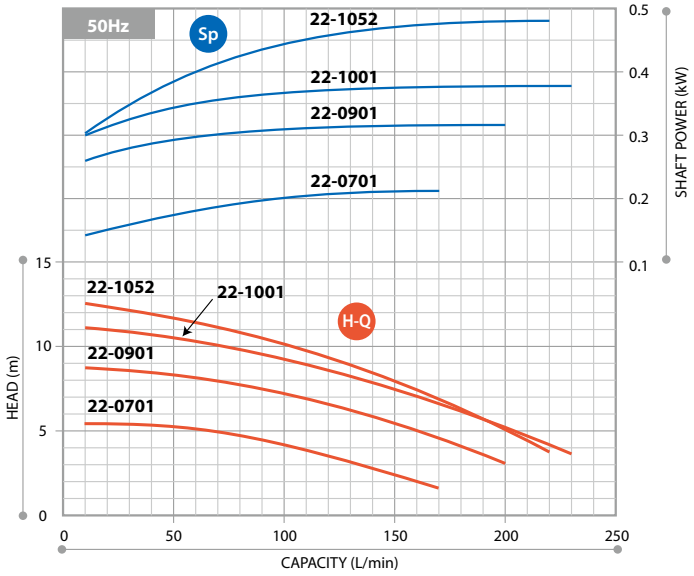
- Liquid should be 1m Pa·s (cP) or more.
- HQ performance is somewhat different from CF/KK models.If you need to know the detail, please contact with us.

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

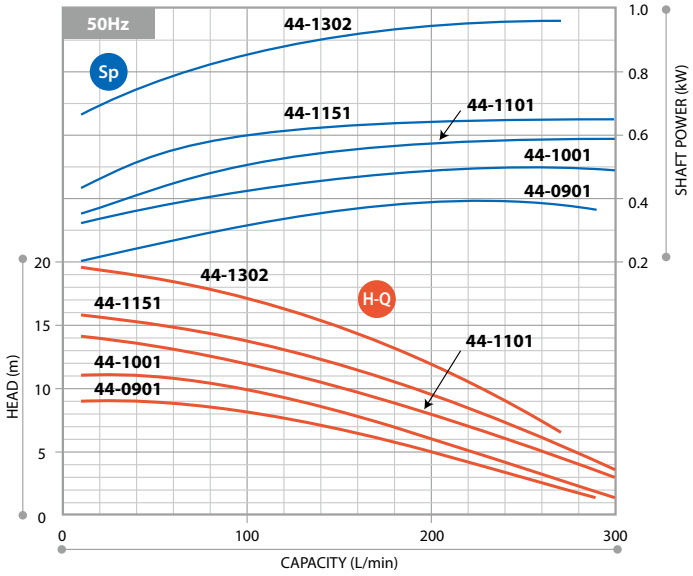
- The CF type has a degree of tolerance to dry running and operation with entrained air in the liquid.
- The KK type has the same degree of tolerance as the CF type under operation with entrained air in the liquid, but not allowed to run dry.
- The FF type is not allowed to run dry or operation with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

Performance curves

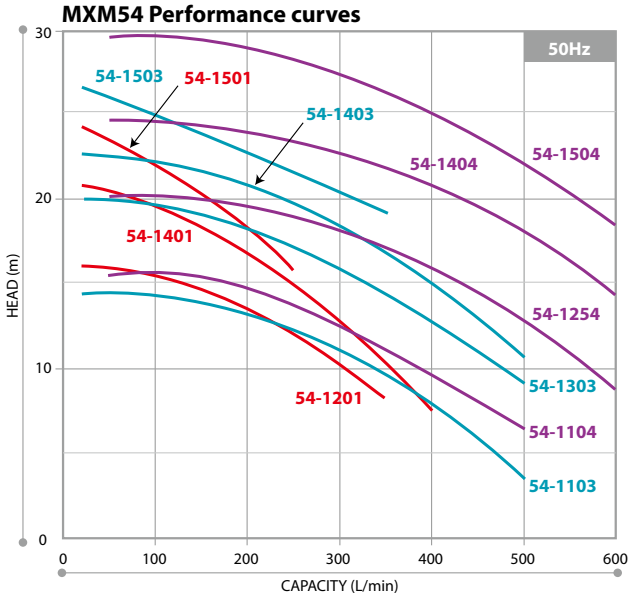
MXM22



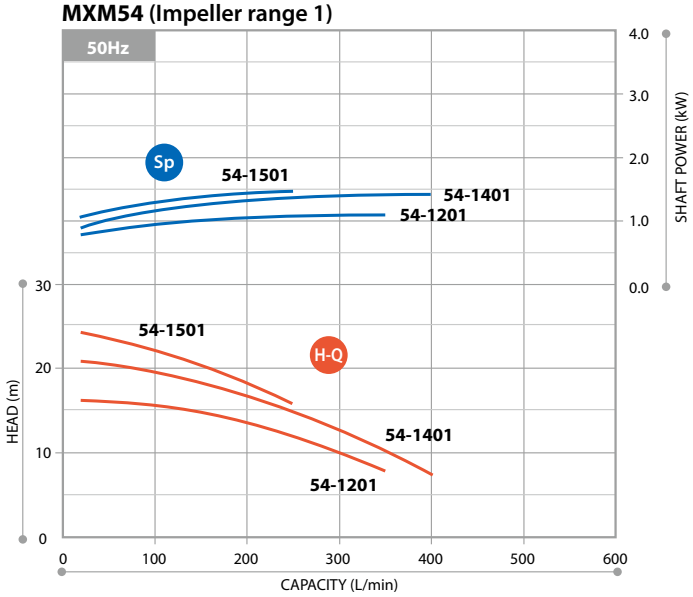
MXM44



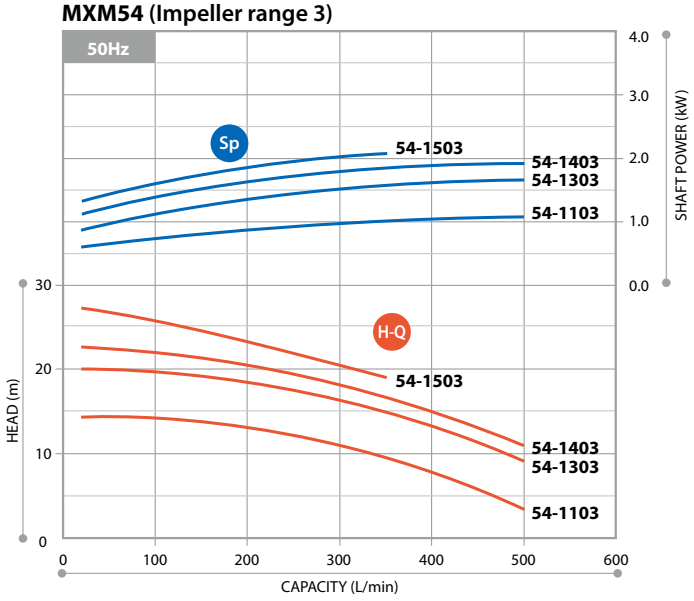
MXM54 Performance curves



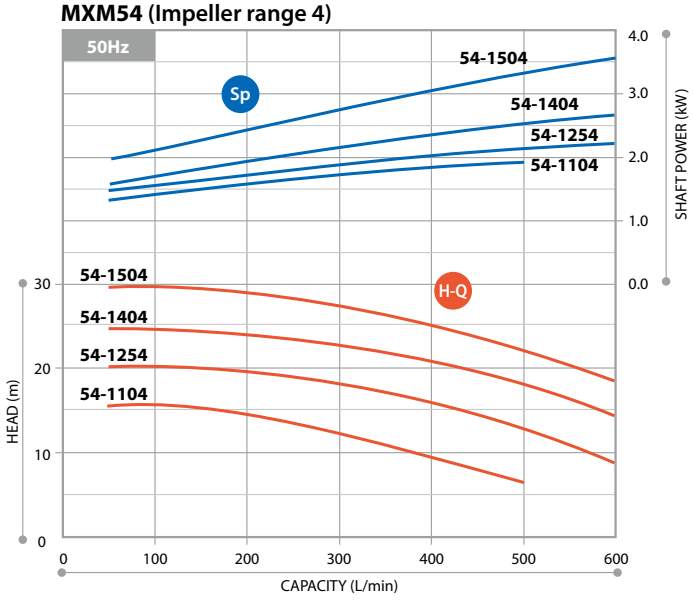
MXM54 (Impeller range 1)



MXM54 (Impeller range 3)



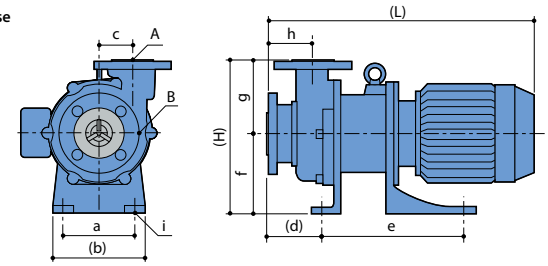
MXM54 (Impeller range 4)



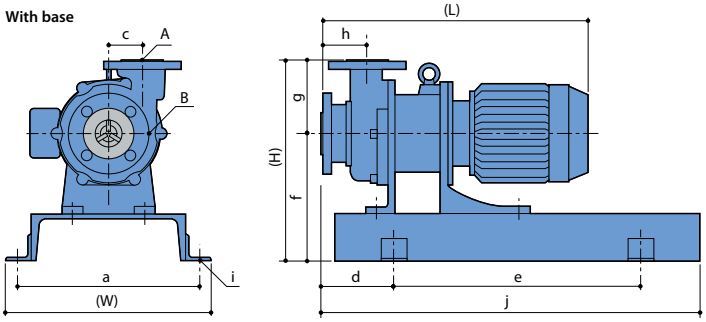
· The shaft power curves shown above are calculated by using our standard test motor. Contact us for detail.

Dimensions in mm

Without base



With base



Without base

Model	(H)	(L)	A	B	a	(b)	c	(d)	e	f	g	h	i
MXM220	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	170	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	130	220	195	122	88	4-ø19	450
MXM220-H			475											
MXM221			467											
MXM221-H														
MXM441	350	365	482	40A	40A	300	58	130	260	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 50Hz

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 in mm		D80 X W153 X H122	

Note: The dry run protector can not be used along with inverter.

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

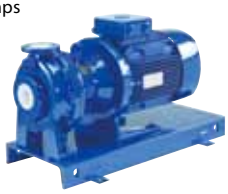
The most reliable,
large-sized magnetic drive pump
designed for process use

Specifications

- Max.discharge capacity: 240 m³/hr
- Max.head: 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: 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: 30.6 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: 25.5 m
- Main materials: GFRPP, CFRETFE
- Liquid temp. range: 0 to 80 °C

IWAKI CO., LTD.
6-6 Kanda-Sudacho 2-chome Chiyoda-ku Tokyo 101-8558 Japan TEL : (81)3 3254 2935 FAX : 3 3252 8892

European office	: **IWAKI Europe GmbH**	TEL: (49)2154 9254 0	FAX: 2154 9254 48
Germany	: **IWAKI Europe GmbH**	TEL: (49)2154 9254 50	FAX: 2154 9254 55
Holland	: **IWAKI Europe GmbH** (Netherlands Branch)	TEL: (31)547 293 160	FAX: 547 292 332
Italy	: **IWAKI Europe GmbH** (Italy Branch)	TEL: (39)0444 371115	FAX: 0444 335350
Spain	: **IWAKI Europe GmbH** (Spain Branch)	TEL: (34)93 37 70 198	
Belgium	: **IWAKI Belgium N.V.**	TEL: (32)13 67 02 00	FAX: 13 67 20 30
Denmark	: **IWAKI Nordic A/S**	TEL: (45)48 24 2345	FAX: 48 24 2346
Finland	: **IWAKI Suomi Oy**	TEL: (358)9 2745810	FAX: 9 2742715
France	: **IWAKI France S.A.**	TEL: (33)1 69 63 33 70	FAX: 1 64 49 92 73
Norway	: **IWAKI Norge AS**	TEL: (47)23 38 49 00	FAX: 23 38 49 01
Sweden	: **IWAKI Sverige AB**	TEL: (46)8 511 72900	FAX: 8 511 72922
Switzerland	: **IWAKI (Schweiz) AG**	TEL: (41)26 674 93 00	FAX: 26 674 93 02
U.K.	: **IWAKI Pumps (UK) Ltd.**	TEL: (44)1743 231363	FAX: 1743 366507

U.S.A.	: **IWAKI America Inc.**	TEL: (1)508 429 1440	FAX: 508 429 1386
Argentina	: **IWAKI America Inc.** (Argentina Branch)	TEL: (54)11 4745 4116	
Singapore	: **IWAKI Singapore Pte Ltd.**	TEL: (65)6316 2028	FAX: 6316 3221
Malaysia	: **IWAKIm Sdn. Bhd.**	TEL: (60)3 7803 8807	FAX: 3 7803 4800
Indonesia	: **IWAKI Singapore** (Indonesia Branch)	TEL: (62)21 6906606	FAX: 21 6906612
Australia	: **IWAKI Pumps Australia Pty Ltd.**	TEL: (61)2 9899 2411	FAX : 2 9899 2421
China	: **IWAKI Pumps Co., Ltd.**	TEL: (852)2607 1168	FAX: 2607 1000
Korea	: **IWAKI Korea Co.,Ltd.**	TEL: (82)2 2630 4800	FAX: 2 2630 4801
Taiwan	: **IWAKI Pumps Taiwan Co., Ltd.**	TEL: (886)2 8227 6900	FAX: 2 8227 6818
Thailand	: **IWAKI (Thailand) Co.,Ltd.**	TEL: (66)2 322 2471	FAX: 2 322 2477
Vietnam	: **IWAKI Pumps Vietnam Co., Ltd.**	TEL: (84)613 933456	FAX: 613 933399

( )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.

Legal attention related to export.
Our products and/or parts of products fall in the category of goods contained in control list of international regime for export control.
Please be reminded that export license could be required when products are exported due to export control regulations of countries.

VEGETABLE OIL INK