

Magnetic drive gear pumps

Compact gear pumps
that completely eliminate leakage problems



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Iwaki MDG Series pumps are small seal-less magnetic drive gear pumps engineered to provide the utmost in quiet and leak-free operation.



Compact gear pumps that completely eliminate

Iwaki MDG Series pumps are small seal-less magnetic drive gear pumps engineered to provide the utmost in quiet and leak-free operation. Owing to their remarkable efficiency and compact design, MDG pumps are in wide use in hundreds of varied applications including some of the most sophisticated medical and laboratory equipment.



MDG-M4T6B

M4

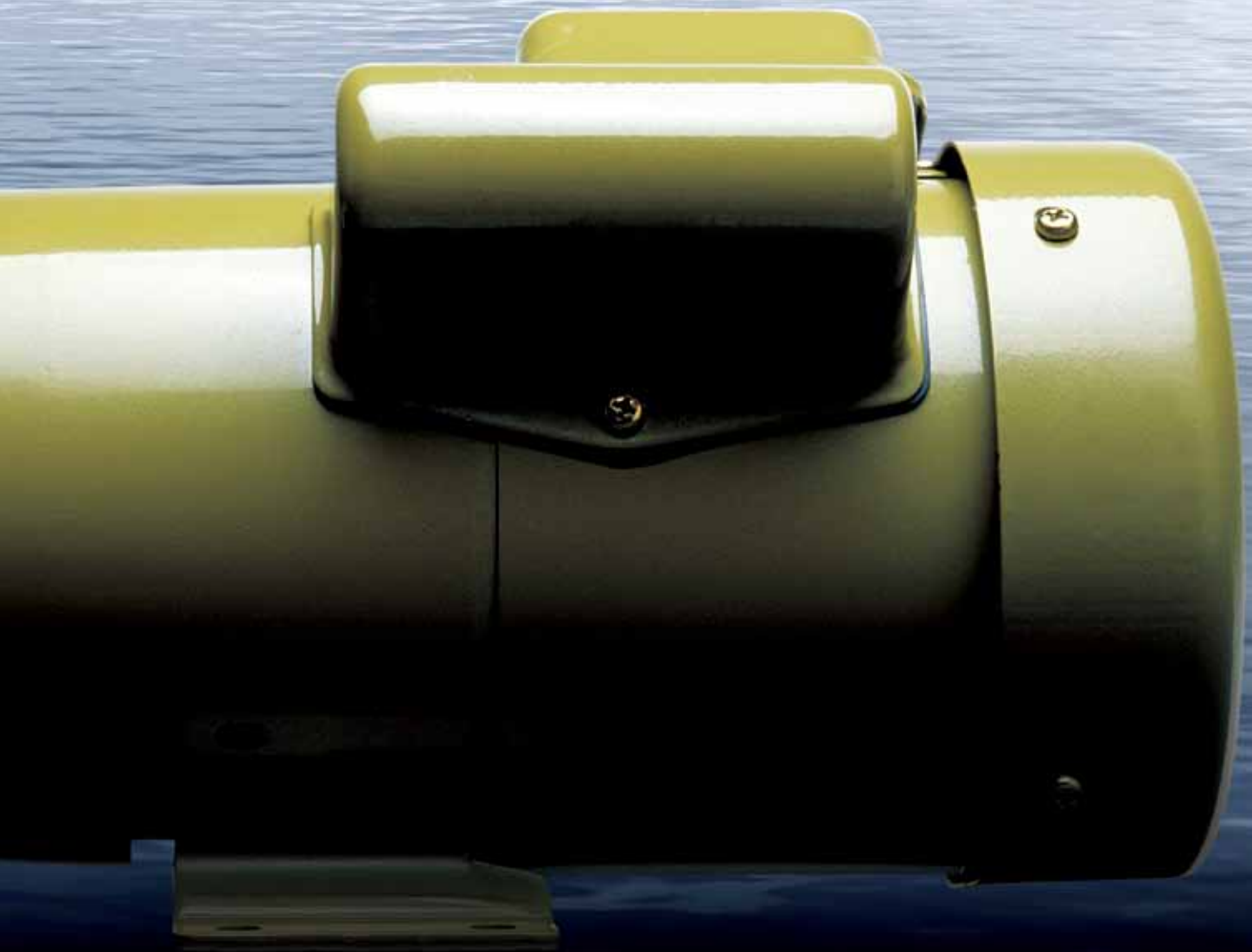
Seal-less Construction Ideal for OEM Applications

Leak free and seal-less, the MDG Series pumps are ideal for incorporation into equipment. The magnet drive mechanism eliminates the troublesome shaft seal replacement.

Outstanding Corrosion Resistance

The liquid end parts are manufactured from SUS316, PTFE, PPS and PEEK. This combination of materials offers extremely high levels of corrosion resistance thus making the MDG pumps capable of transferring many different aggressive chemical solutions.

leakage problems



R2



MDG-R2RVB
(shown with IEC motor)

R2
DC24V type



MDG-R2BB

M2



MDG-M2S6B

R15



MDG-R15

High Pressure Gear Rotary System

MDG pumps are characterized by high pressure and low flow rate. Despite its small size, it can attain high pressure to 0.6MPa and vacuum of 5.3kPa.

Excellent Thermal Resistance

Precision machining coupled with Iwaki's innovative technology is used in the gear and body manufacturing process. Because only the most heat-resistant materials are used, pumping problems due to thermal expansion are eliminated. Standard MDG Series pumps are rated for 95°C operation.

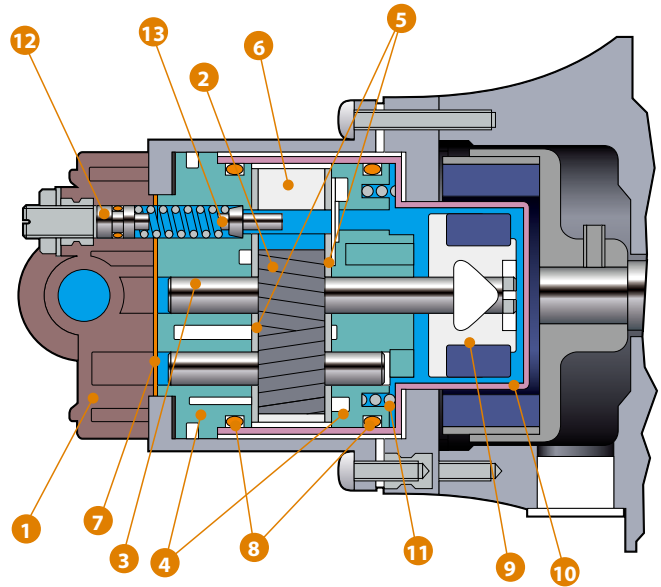
R2



R2RVB230 / R2BVB230

Construction and materials

No.	Name of Part	Materials
1	Pump head	GFRPPS
2	Gear	PPS
3	Shaft	SUS316
4	Bearing	(CF+PTFE) PPS
5	Plate	SUS316
6	Gear case	SUS316
7	Gasket seal	FKM
8	O ring	FKM
9	Magnet capsule	SUS316, GFRPPS
10	Rear casing	SUS316
11	Retaining spring	equivalent to SUS316
12	Adjusting screw	SUS316
13	Valve	(CF+PTFE) PPS



Identification

MDG - **R2** **R** **V** **B** **230**

1. Model	R2
2. Temp. range	R : 0 - 50°C, B : 0 - 95°C
3. Relief valve	V : with relief valve, no symbol : without relief valve
4. Connection	B : 1/8NPT
5. Motor	230 : AC220 - 240V, 115 : AC115V

Specifications

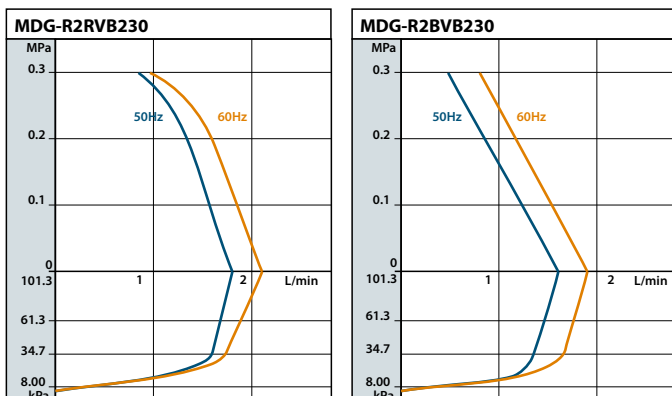
Standard motors fitted are to IWAKI specifications. All models are also available with IEC frame motors.

50/60Hz

Model	Connection size	Max. capacity L/min	Max. discharge pressure MPa	Max. vacuum kPa	Liquid temp. range °C	Viscosity limit mPa·s	Motor	Mass kg
MDG-R2RVB230	1/8NPT	1.8/2.1	0.3	5.3	0 - 50	50	AC220 - 240V, 20W	2.1
MDG-R2BVB230	1/8NPT	1.6/1.9	0.3	5.3	0 - 95	50	AC220 - 240V, 20W	2.1

- Pump performance will change depending on kind of liquid. Further information will be provided on request.
- When handling pure water and solvent, please contact us.
- When viscosity of handling liquid exceeds limitation of pump, please contact us.
- For applications requiring higher operating temperatures, please contact us.
- 115V motor is also available.

Performance curves (Clear water at 25°C)



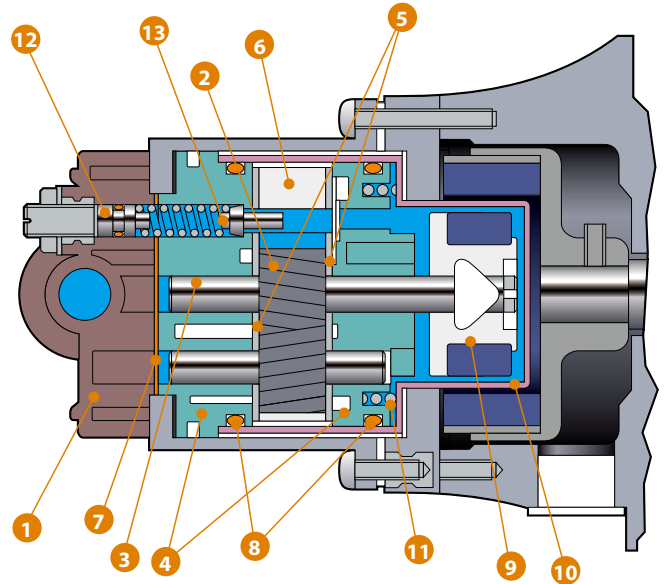
R2 DC24V type



R2BB24 / R2RVA24H / R2RVB24H / R2RVC24H / R2BA24H / R2BB24H / R2BC24H

Construction and materials

No.	Name of Part	Materials
1	Pump head	GFRPPS
2	Gear	PPS
3	Shaft	SUS316
4	Bearing	(CF+PTFE) PPS
5	Plate	SUS316
6	Gear case	SUS316
7	Gasket seal	FKM
8	O ring	FKM
9	Magnet capsule	SUS316, GFRPPS
10	Rear casing	SUS316
11	Retaining spring	equivalent to SUS316
12	Adjusting screw	SUS316
13	Valve	(CF+PTFE) PPS



Identification

MDG - **R2** **R** **V** **B** **24H**

1. Model	R2
2. Temp. range	R : 0 - 50°C, B : 0 - 95°C
3. Relief valve	V : with relief valve, no symbol : without relief valve
4. Connection	B : 1/8NPT <small>Note</small>
5. Motor	24 : DC24V, 10W, 24H : DC24V, 14W

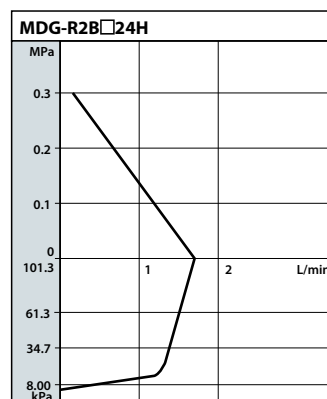
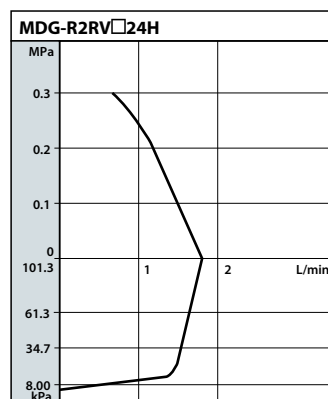
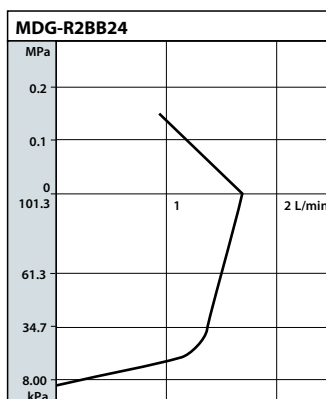
Note: Other connections (Rc1/8, G1/4) are also available on special request but for "24H" models only.

Specifications

Model	Connection size	Max. capacity L/min	Max. discharge pressure MPa	Max. vacuum kPa	Liquid temp. range °C	Viscosity limit mPa·s	Motor	Mass kg
MDG-R2BB24	Rc1/8, 1/8NPT, G1/4	1.7	0.15	5.3	0 - 95	10	DC24V, 10W	1.2
MDG-R2RV□24H*		1.8	0.3		0 - 50		DC24V, 14W	
MDG-R2B□24H*		1.7			0 - 95			

- shows connection size. Please refer above table.
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- Models marked with * are manufactured to order only.

Performance curves (Clear water at 25°C)



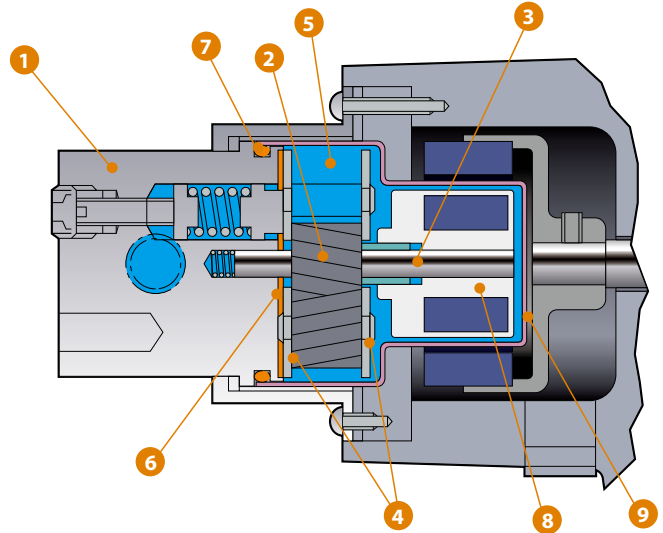
M2 M4



M2S6B220 / M4T6B220 / M4S6B220 / M4T6B220H

Construction and materials

No.	Name of Part	Materials
1	Pump body	SUS316
2	Gear	CFRPEEK
3	Shaft	SUS316
4	Plate	SUS316
5	Gear case	CFRPEEK/PPS
6	Gasket	PTFE
7	O ring	FKM
8	Magnet capsule	SUS316, PPS
9	Rear casing	SUS316



Identification

MDG - **1** M2 **2** S6 **3** B **4** 220

1. Model	M2, M4
2. Flow rate • Pressure	S6, T6
3. Connection	M4 B : 1/4NPT M2S6 B : 1/8NPT
4. Motor	220 : AC220 - 240V, 220H : AC220 - 240V, 115 : AC115V

Specifications

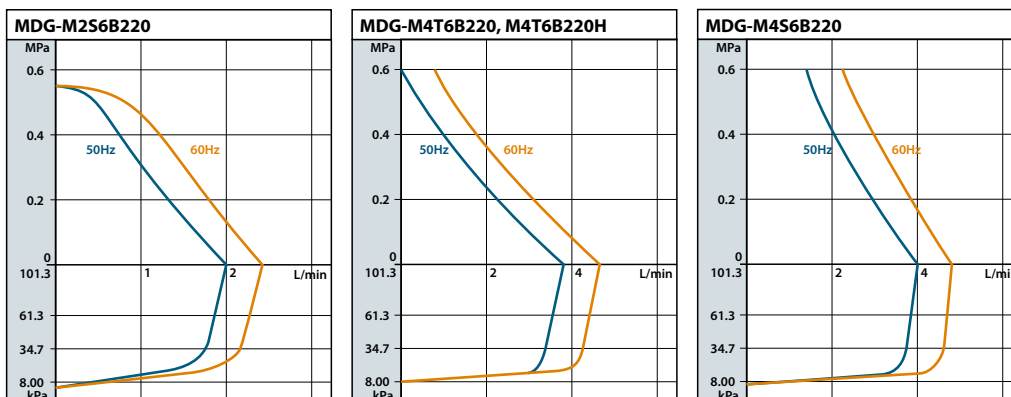
Standard motors fitted are to IWAKI specifications. All models are also available with IEC frame motors.

50/60Hz

Model	Connection size	Max. capacity L/min	Max. discharge pressure MPa	Max. vacuum kPa	Liquid temp. range °C	Viscosity limit mPa·s	Motor	Mass kg
MDG-M2S6B220	1/8NPT	2.0/2.4	0.55	5.3	0 - 65	50	AC220 - 240V, 45/50W	3.6
MDG-M4T6B220	1/4NPT	3.8/4.6	0.6	8.0	0 - 95	30	AC220 - 240V, 100/120W	7.9
MDG-M4S6B220	1/4NPT	4.0/4.8	0.6	5.3	0 - 50	30	AC220 - 240V, 100/120W	7.9
MDG-M4T6B220H	1/4NPT	3.8/4.6	0.6	8.0	0 - 95	200	AC220 - 240V, 150/180W	8.0

- Pump performance will change depending on kind of liquid. Further information will be provided on request.
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- 115V motor is also available.

Performance curves (Clear water at 25°C)



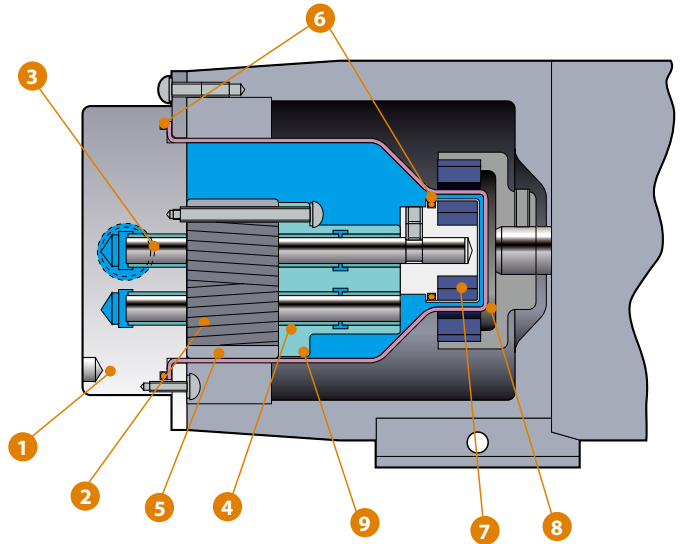
R15



R15T220 / R15P220 / R15K220 / R15C220

Construction and materials

No.	Name of Part	Materials
1	Pump body	SUS316
2	Gear	PTFE/PEEK
3	Shaft	SUS316
4	Bearing	GFRPTFE, (CF+PTFE) PPS
5	Gear case	SUS316
6	O ring	FKM
7	Magnet capsule	SUS316, FKM
8	Rear casing	SUS316
9	Bearing holder	SUS316



Identification

MDG - **R15** **T** **220**

1. Model	R15
2. Material of gear /Temp. range	T : PTFE gear, GFRPTFE bearing/ 0-45°C P : PEEK gear, (CF+PTFE) PPS bearing/ 0-45°C K : PTFE gear, GFRPTFE bearing/ 0-95°C C : PEEK gear, (CF+PTFE) PPS bearing/ 0-95°C
3. Motor	220 : AC220 - 240V, 115 : AC115V

Specifications

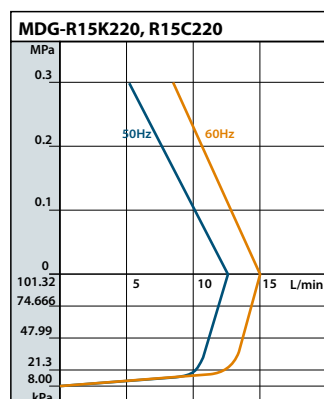
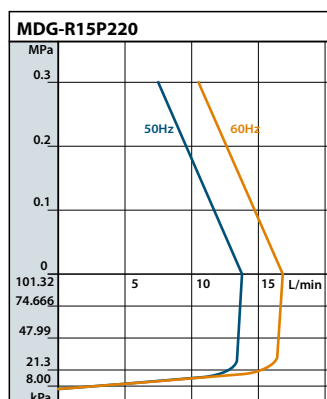
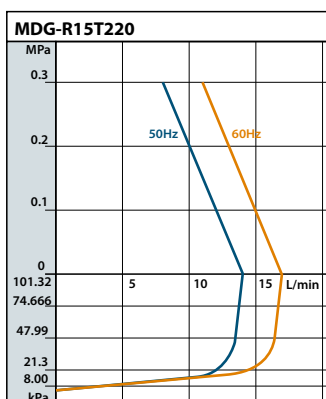
Standard motors fitted are to IWAKI specifications. All models are also available with IEC frame motors.

50/60Hz

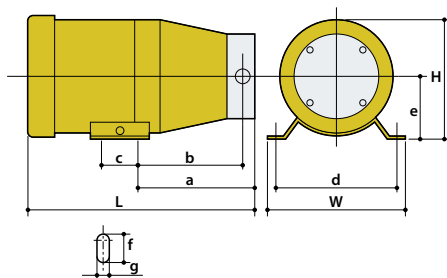
Model	Connection size	Max. capacity L/min	Max. discharge pressure MPa	Max. vacuum kPa	Liquid temp. range °C	Viscosity limit mPa·s	Motor	Mass kg
MDG-R15T220	Rc3/8	14/17	0.3	5.3	0 - 45	30	AC220 - 240V,150/180W	7.8
MDG-R15P220								
MDG-R15K220	Rc3/8	12.5/15	0.3	8.0	0 - 95	30	AC220 - 240V,150/180W	7.8
MDG-R15C220								

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- 115V motor is also available.

Performance curves (Clear water at 25°C)



Dimensions in mm




Model	W	H	L	a	b	c	d	e	f	g
MDG-R2□□□□	106	83	202	101.5	91.3	44	90	45	10	6
MDG-R2BB24	90	80.5	154	81	71	44	75	45	10	6
MDG-R2□V24H*	90	80.5	161	81	71	44	75	45	10	6
MDG-M2S6B□	120	104.5	212.5	113.2	96.2	40	100	60	ø9	-
MDG-M4□6B□	130	122.5	242	120	107	40	110	65	11	7
MDG-M4□6B□H	130	155	239	120	107	40	110	65	11	7
MDG-R15□220	130	155	257	97	84	40	110	65	11	7


Note: Models marked with * are manufactured to order only.

• Dimensions of models fitted with IEC motors differ from above.


Applications in Various Fields



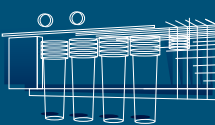
Dialyser



Plasma etching units



Freon recovery and regeneration systems



Deminerizer

- **Medical appliances**
Dialyser • Laser-applied surgical knife and other laser-applied medical treatment units • X-ray film processors
- **Semiconductor or liquid crystal manufacturing equipment**
Laser-applied machining units • Plasma etching units • Pure-water or solvent use washing machines • Soldering machines • IC testing units
- **Printing equipment**
Blanket auto washers • Ink supply and replenishing units • Automatic markers
- **Food processing equipment**
Noodle producing machines • Water coolers • Freshness preservation units for food
- **Waste liquid recovery and processing equipment**
Freon recovery and regeneration systems • Photographic chemical waste processing units • Organic solvent recovery units
- **Others**
Pure-water producing machines • Oil circulation and filtering units • Liquid adding machines for pasturage • Hydroponic systems • Spraying machines for agricultural chemicals • Dye laser units • Fuel cells • Machines applied in physics and chemistry • Laboratories or experimental facilities

www.iwakipumps.jp

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

EUROPE / U.S.A.

European office	: IWAKI Europe GmbH	TEL: (49)2154 9254 0	FAX: 2154 9254 48
Holland	: IWAKI Europe (NL Branch)	TEL: (31)547 293 160	FAX: 547 292 332
Austria	: IWAKI Europe GmbH	TEL: (49)2154 9254 0	FAX: 2154 9254 48
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
Germany	: IWAKI Europe GmbH	TEL: (49)2154 9254 50	FAX: 2154 9254 55
Italy	: IWAKI Italia S.R.L.	TEL: (39)0444 371115	FAX: 0444 335350
Norway	: IWAKI Norge AS	TEL: (47)23 38 49 00	FAX: 23 38 49 01
Spain	: IWAKI Iberica Pumps, S.A.	TEL: (34)943 630030	FAX: 943 628799
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	

ASIA / OCEANIA

Australia	: IWAKI Pumps Australia Pty Ltd.	TEL: (61)2 9899 2411	FAX : 2 9899 2421
China			
Hong Kong	: IWAKI Pumps Co., Ltd.	TEL: (852)2607 1168	FAX: 2607 1000
Shanghai	: IWAKI Pumps (Shanghai) Co., Ltd.	TEL: (86)21 6272 7502	FAX: 21 6272 6929
Guangzhou	: GFTZ IWAKI Engineering & Trading Co., Ltd.	TEL: (86)20 8435 0603	FAX: 20 8435 9181
Beijing	: GFTZ Iwaki Engineering & Trading Co., Ltd. (Beijing office)	TEL: (86)10 6442 7713	FAX: 10 6442 7712
Korea	: IWAKI Korea Co.,Ltd.	TEL: (82)2 2630 4800	FAX: 2 2630 4801
Malaysia	: IWAKIm Sdn. Bhd.	TEL: (60)3 7803 8807	FAX: 3 7803 4800
Singapore	: IWAKI Singapore Pte Ltd.	TEL: (65)6316 2028	FAX: 6316 3221
Indonesia	: IWAKI Singapore (Indonesia Branch)	TEL: (62)21 6906606	FAX: 21 6906612
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.

