

## 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

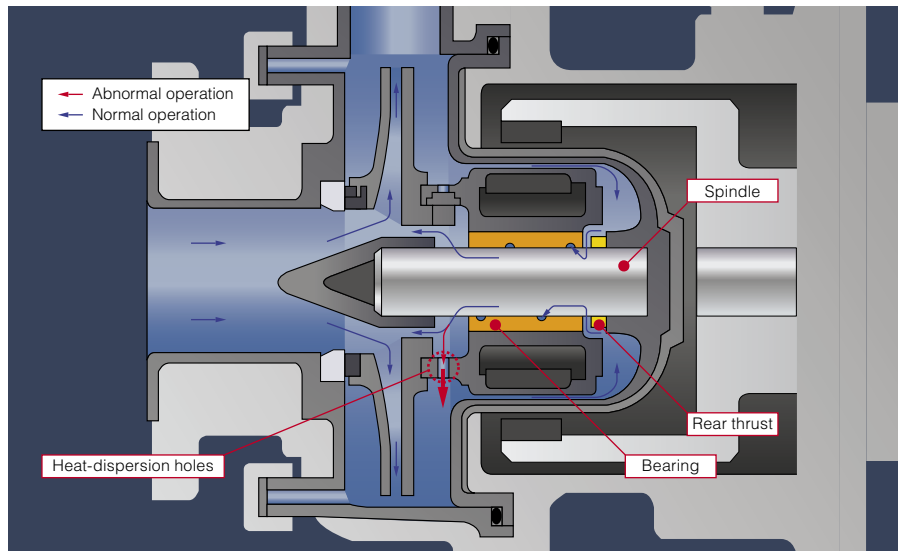
The proven non-contact system and self-radiating bearing structure deliver substantial improvements in tolerance of dry running and poor suction conditions.

#### 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.



# 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), fine 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)



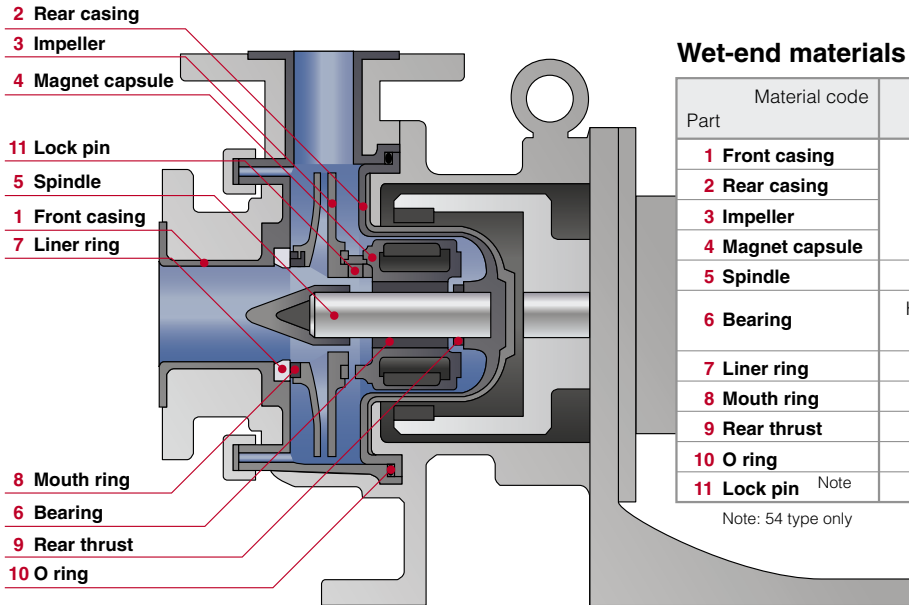
MXM545



MXM542



## Construction and materials



### 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 PERFLUOR®				
11 Lock pin	Note	CFRETFE			

Note: 54 type only

## Specifications

50Hz

Model	Pump size Suction × Discharge	Impeller size	Capacity L/min	Head m
<b>MXM22</b> (Impeller range 1)	25mm × 25mm	100	150	7.5
		090	150	5.5
		070	150	3
<b>MXM22</b> (Impeller range 2)		105	150	8
		–	–	–
		<b>MXM44</b> (Impeller range 1)	40mm × 40mm	115
110	200		8	
100	200		6	
090	200		5	
–	–		–	
<b>MXM44</b> (Impeller range 2)	130	200	12	
<b>MXM54</b> (Impeller range 1)	50mm × 40mm	150	200	18
		140	200	18.5
		120	200	14.5
<b>MXM54</b> (Impeller range 2)		–	–	–
		–	–	–
		<b>MXM54</b> (Impeller range 3)	150	300
140			300	19.5
130			300	17
<b>MXM54</b> (Impeller range 4)			150	400
		140	400	20.5
		125	400	15.5
		110	400	9.5

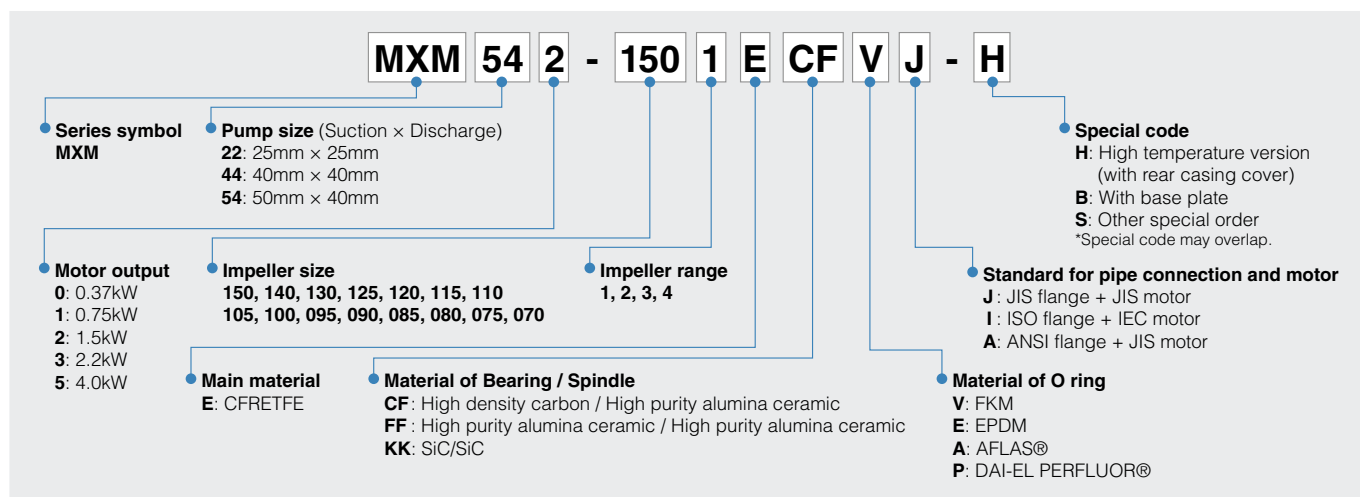
Note1: Liquid temp. range

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 allowable pressure range

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 percent higher than theoretically required.

$$\text{Shaft power (Sp)} \times \text{liquid gravity} \times 1.1 < \text{Motor output}$$

(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 minimum 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.

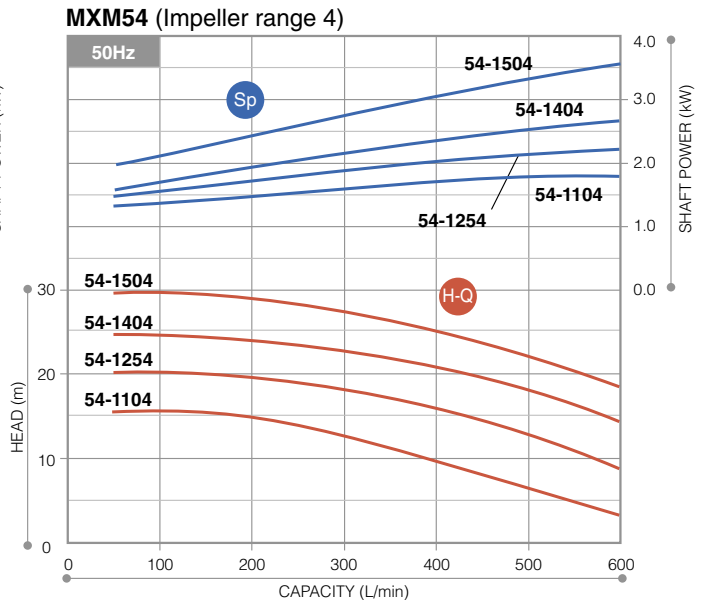
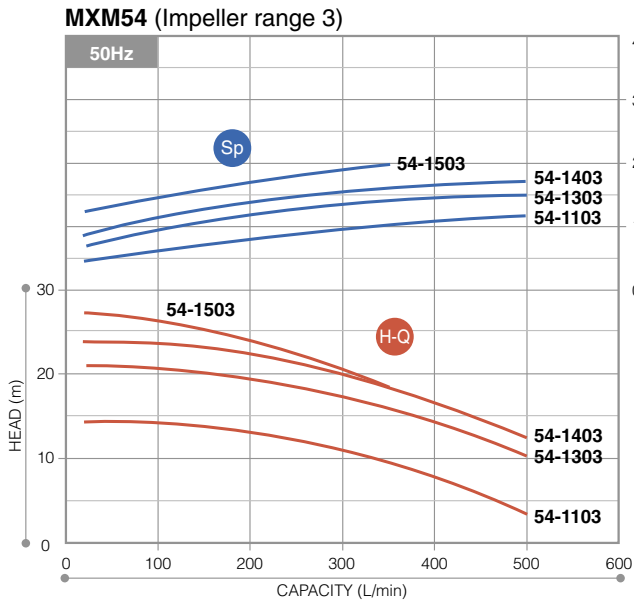
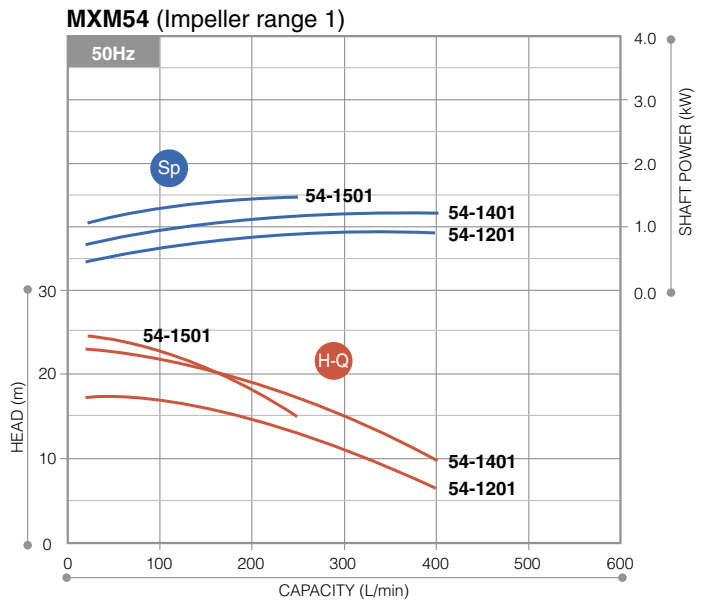
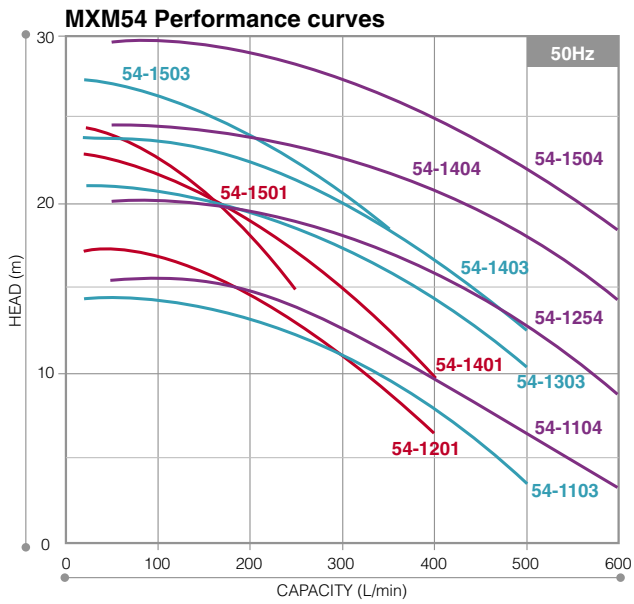
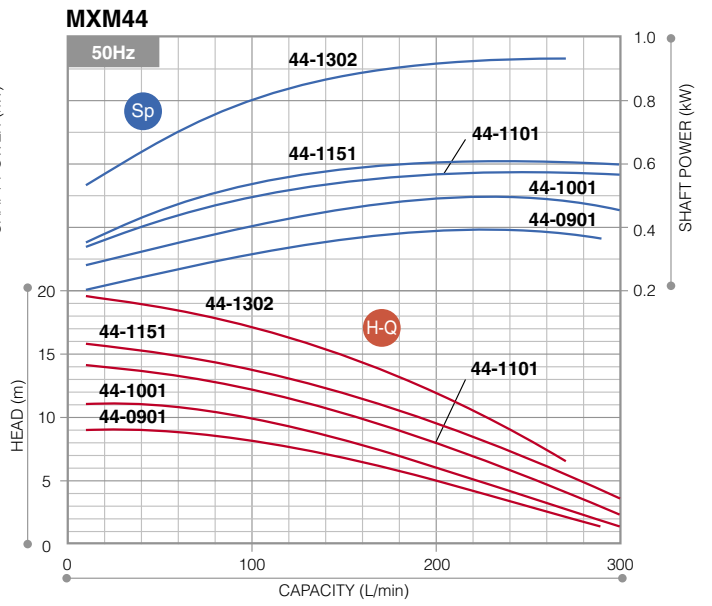
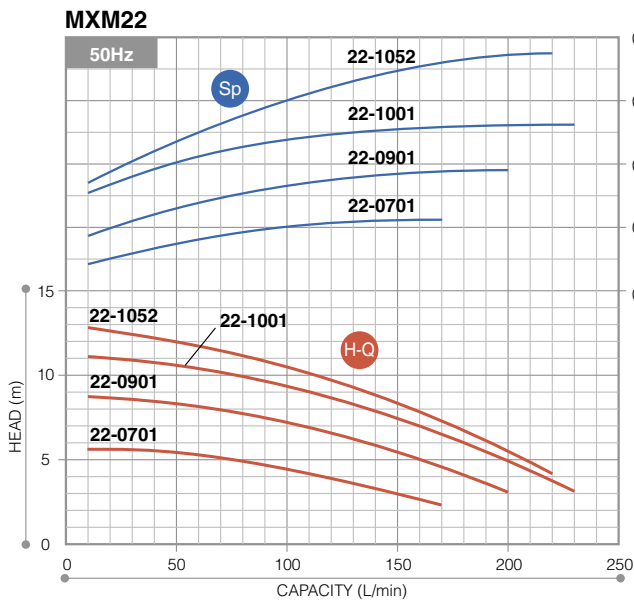
Be sure to ensure that the internal pressure of the pump does not exceed the value specified below.

- 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

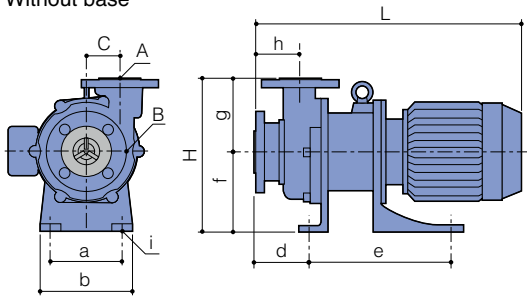
- Liquid should be 1m Pa·s (cP) or more.
- HQ performance is somewhat different from CF/KK models.  
If you need to know the detail, please contact with us.
- FF material models are prohibited to run under dry running or air sucking operation.

# Performance curves

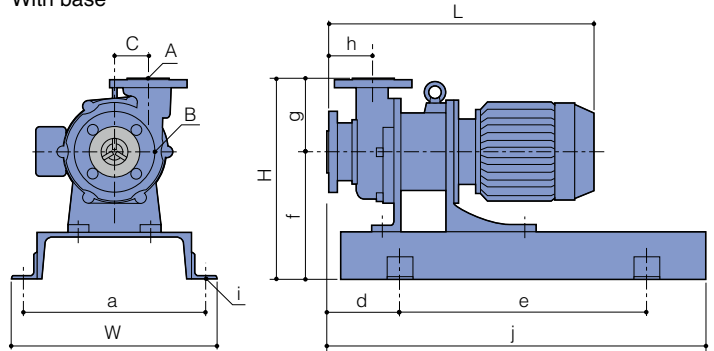


## Dimensions in mm

Without base



With base



Without base

Model	(H)	(L)	A	B	a	(b)	c	(d)	e	f	g	h	i	Mass kg Less motor	
MXM220	237	453	25A	25A	110	150	51	95	143	115	122	88	4- $\varnothing$ 14	15	
MXM220-H		475							165					20	
MXM221		467													
MXM221-H															
MXM441	275	482	40A	40A	130	150	58	113	250	135	140	106	4- $\varnothing$ 14	25	
MXM441-H		495													
MXM442		537													
MXM442-H															
MXM542	295	517	40A	50A	140	180	65	106	275	155	140	87	4- $\varnothing$ 14	25	
MXM543															30
MXM545		589													

With base

Model	(W)	(H)	(L)	A	B	a	c	d	e	f	g	h	i	j	Mass kg Less motor		
MXM220	300	317	453	25A	25A	250	51	140	200	195	122	88	4- $\varnothing$ 19	450	30		
MXM220-H			475														35
MXM221			467														
MXM221-H																	30
MXM441	350	365	482	40A	40A	300	58	140	240	225	140	106	4- $\varnothing$ 19	489	40		
MXM441-H			495														
MXM442			537														
MXM442-H																	
MXM542	400	385	517	40A	50A	350	65	140	480	245	140	87	4- $\varnothing$ 19	735	55		
MXM543																	60
MXM545			589														

Note: The dimensions 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
- It is unable to use DR when inverter is employed in the system.



DR-20

#### Specification

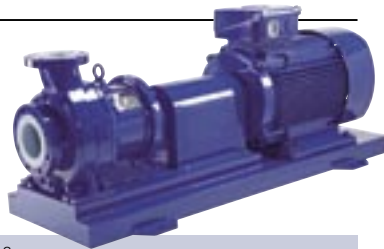
Model		DR-20
Motor power		380 to 440V three phase
Applied motor		0.75 to 15kW
Power control		100 to 240V single phase
Power	V	200 to 240V ±10% single phase
	Input	3.5W
Detective current		0.5 to 32.0A
Current transformer(CT)		Built-in
Outer dimension		D80 X W153 X H122

50Hz

## IWAKI Process Magnetic Drive Pump Series

### MDW SERIES

The world largest class fluoroplastic magnetic drive pump



#### Specifications

- Max. discharge capacity: 300 m<sup>3</sup>/hr
- Max. discharge head: 80 m
- Main materials: ETFE, PFA, SiC
- Liquid temp. range: -10 to 105 °C (MDW80/100)  
-10 to 120 °C (MDW50)

### MDE SERIES

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



#### Specifications

- Max. discharge capacity: 240 m<sup>3</sup>/hr
- Max. discharge head: 55 m
- Main materials: ETFE, PFA, SiC
- Liquid temp. range: 0 to 100 °C

### MDM SERIES

Magnetic drive process pumps with dry running capability



#### Specifications

- Max. discharge capacity: 84 m<sup>3</sup>/hr
- Max. discharge 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: 500 L/min
- Max. discharge 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: 440 L/min
- Max. discharge head: 25 m
- Main materials: GFRPP, CFRETFE
- Liquid temp. range: 0 to 80 °C

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( )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 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.