IWAKI PUMPS

IWAKI Magnetic Drive Gear Pump

MDG-M2 (built-in type)

Instruction Manual

⚠ Read this manual before use of product

Thank you for selecting the Iwaki MDG-M2 magnetic drive gear pump. This instruction manual deals with *"Safety instructions"*, *"Outline"*, *"Installation"*, *"Operation"* and *"Maintenance"* sections. Please read through this manual carefully to ensure the optimum performance, safety and service of your pump.

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This instruction manual should be kept on hand by the end user for quick reference.

Contact us or your nearest dealer if you have any questions.

Important instructions

For the Safe and Correct Handling of the Pump

- "Safety Instruction" section deals with important details about handling of the pump. Before use, read this section carefully for the prevention of personal injury or property damage.
- Observe the instructions accompanied with "WARNING" or "CAUTION" in this manual. These instructions are very important for protecting users from dangerous situations.
- The symbols on this instruction manual have the following meanings:

⚠ **WARNING**	**Nonobservance or misapplication of "Warning" sections could lead to a serious accident which may result in death.**
⚠ **CAUTION**	**Nonobservance or misapplication of "Caution" sections could lead to personal injury or property damage.**

Types of Symbols



Indicates that "Warning" or "Caution" must be exercised. Inside this triangle, a concrete and practical image provided as a warning or caution message is depicted.



Indicates a prohibited action or procedure. Inside or near this circle, a concrete and practical image of the activity to be avoided is depicted.



Indicates an important action or procedure which must be performed or carried out without fail. Failure to follow the instructions herein can lead to malfunction or damage to the pump.

⚠ Export Restrictions

Technical information contained in this instruction manual might be treated as controlled technology in your countries, due to agreements in international regime for export control. Please be reminded that export license/permission could be required when this manual is provided, due to export control regulations of your country.

Safety instructions

⚠ WARNING

- **Turn off power before service**
  Risk of electrical shock. Be sure to turn off power to stop the pump and related devices before service is performed.


Electrical shock

- **Stop operation**
  If you notice any abnormal or dangerous conditions, suspend operation immediately and inspect/solve problems.


Requirement

- **Do not use the pump in any condition other than its intended purpose**
  The use of the pump in any conditions other than those clearly specified may result in failure or injury. Use this product in specified conditions only.


Prohibition

- **Do not modify the pump**
  Alterations to the pump carries a high degree of risk. It is not the manufacturer's responsibility for any failure or injury resulting from alterations to the pump.


Do not remodel

- **Wear protective clothing**
  Always wear protective clothing such as an eye protection, chemical resistant gloves, a mask and a face shield during disassembly, assembly or maintenance work.


Wear protectors

⚠ CAUTION

- **Qualified personnel only**
  This pump should be handled or operated by qualified personnel with a full understanding. Any person not familiar with the product should not take part in the operation or maintenance of the pump.


Requirement

- **Use specified power only**
  Do not apply power other than that specified on the nameplate. Otherwise, failure or fire may result. Ensure the pump is properly grounded.


Prohibited

- **Keep electric parts and wiring dry**
  Risk of fire or electric shock. Install the pump where it can be kept dry.


Prohibited

- **Ventilation**
  Fumes or vapours can be hazardous with certain solutions. Ensure proper ventilation at the operation site.


Caution

- **Spill precautions**
  Ensure protection and containment of solution in the event of plumbing or pump damage (secondary containment).


Requirement

Safety instructions

⚠ CAUTION

- **Do not use a damaged pump**
  Use of a damaged pump could lead to an electric shock or death.


Prohibition

- **Do not use the pump in a wet location**
  The pump is not waterproof. Use of the pump in wet or extremely humid locations could lead to electric shock or short circuit.


Prohibition

- **Do not damage a power cable**
  Do not pull, knot, or crush the power cable. Damage to the power cable could lead to a fire or electrical shock if cut or broken.


Prohibition

- **Do not cover the pump with cloth**
  The motor temperature may build up and a fire or an electric/mechanical failure may result.


Prohibition

- **Grounding**
  Risk of electrical shock! Always properly ground the pump. Conform to local electric codes.


Earthing

- **Install a GFCI (earth leakage breaker)**
  An electrical failure of the pump may adversely affect other devices on the same line. Purchase and install a GFCI (earth leakage breaker) separately.


Electrical shock

- **Damaged power cable**
  Do not use any damaged power cable for the prevention of a fire or electrical shock. The cable is not replaceable, so that the whole pump unit needs to be replaced when the cable is damaged.


Prohibition

- **Do not install/store the pump:**
  - In a flammable/explosive/corrosive atmosphere.
  - In a dusty/humid environment.
  - Where ambient temperature can exceed 0-40ºC.
  - In direct sunlight or wind & rain.


Prohibition

- **Use of hazardous chemicals**
  Risk of personal injury or fire. Check/monitor plumbing system for a leak before or in operation when handling a flammable, corrosive or harmful liquid.


Caution

- **Disposal of a used pump**
  Dispose of any used or damaged pump in accordance with local rules and regulations. See page 26 to comply with the European Directive 2012/19/EU on waste electrical and electronic equipment.


Requirement

1. Unpacking & Inspection



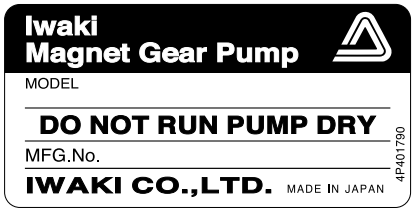
Spec label (pump unit) for the European market



Spec label (pump unit) for any area other than the European market



Spec label (pump with no motor) for the European market



Spec label (pump with no motor) for any area other than the European market

After unpacking the pump, check the following points to see if the product conforms to your order. If you find any problems, contact us or your nearest distributor.

1. Do the model of the pump, discharge, discharge pressure, voltage, and other details on the name-plate correspond to your order?

2. Does the package contain the following accessory?
   hexagonal bar wrench ×1
   (for adjusting the set pressure of the relief valve)

3. Has the product been damaged or nuts and bolts loosened during delivery? Examine visually or by touch.



Hexagonal bar wrench

*The CE marking on our product(s) is for us to market the product(s) into the European market, however, the CE marking does not ensure any safety or conformity of the product(s) outside the European market.
When the pump is incorporated into the equipment marketed in the European market, such equipment must meet all the requirements of applicable directives.
In such a case, any person who places the equipment on the market must carry a CE mark on the equipment as a manufacturer.

2. Principle of Operation

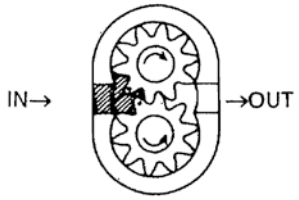


Fig.A

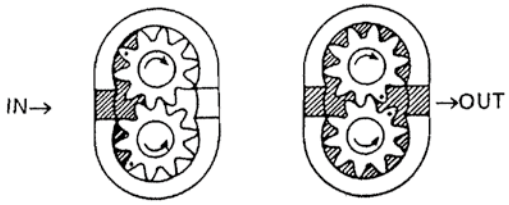


Fig.B Fig.C

The Iwaki magnet gear pump comprises a pair of gears driven by a magnet coupling and casing in which the gears are fitted exactly. (Fig.A)

Liquid introduced from the IN side feeds into the grooves between the teeth of the gears and is transferred to the OUT side by rotation of the gears. (Fig.B)

Then, the liquid is forced out of the grooves between the gear teeth in engagement. (Fig. C)

3. Model Codes

MDG - M 2 S 100 N
a b c f g

MDG - M 2 S 6 B 220
a b c d e f

a. Pump model

M: Pump with a relief valve

b. Discharge capacity

2: 0.7mL/rev

c. Application type

S: For positive-pressured discharge
T: For negative-pressured suction

d. Maximum discharge pressure

No code: 0.3MPa **6:** 0.55MPa

e. Connection

No code or B: 1/8 NPT

f. Line voltage

100: 100VAC **115:** 115VAC **220:** 220 - 240VAC

g. Motor specification

N: N motor is installed

4. Specification

50/60Hz

Model	Max. discharge (L/min)	Max. discharge pressure (MPa)	Attainable degree of vacuum kPa (abs)	Rated speed (min^{-1})	Motor specification		Weight (kg)
					Rated voltage (V)	Rated current (A)	
MDG-M2T100N	1.9/2.2	0.3	8.0	2600/3200	AC100	0.5/0.5	2.7
MDG-M2S100N	2/2.4		5.3				
MDG-M2S6B100		0.55				0.8/0.8	3.5
MDG-M2S6B115					AC115	0.62/0.68	3.6
MDG-M2S6B220					AC220/240	0.4/0.35	

*1 The above is the performance based on a test of clean water at 25ºC. (The discharge changes depending on the temperature of the liquid used. Contact your nearest distributor for additional information.)

*2 The liquid viscosity applicable to:
- the MDG-M2 N pump is 30mPa·s or lower.
- the MDG-M2S6 pump is 50mPa·s or lower.

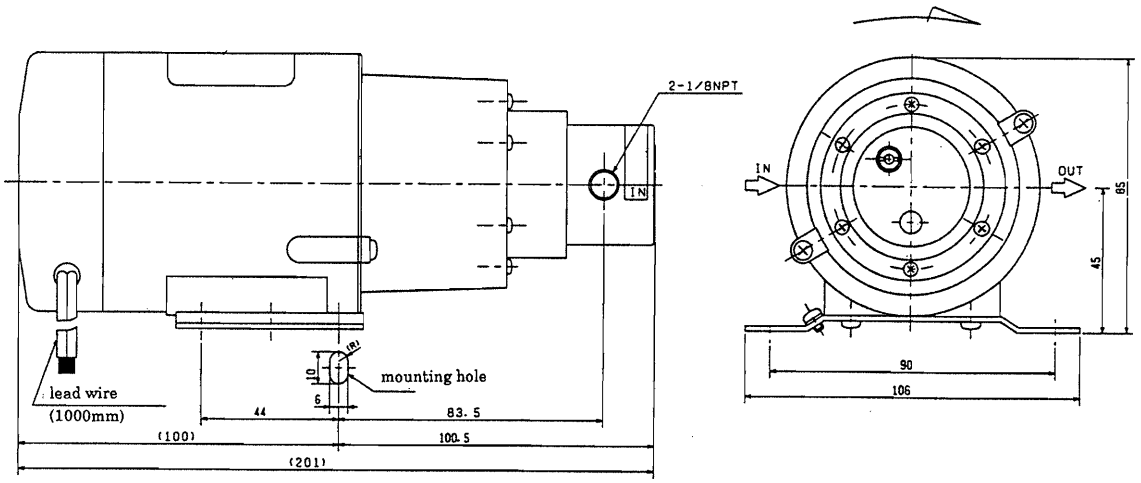
*3 The ambient temperature should be 0 - 40ºC.

*4 The MDG-M2 pump is equipped with a built-in relief valve.

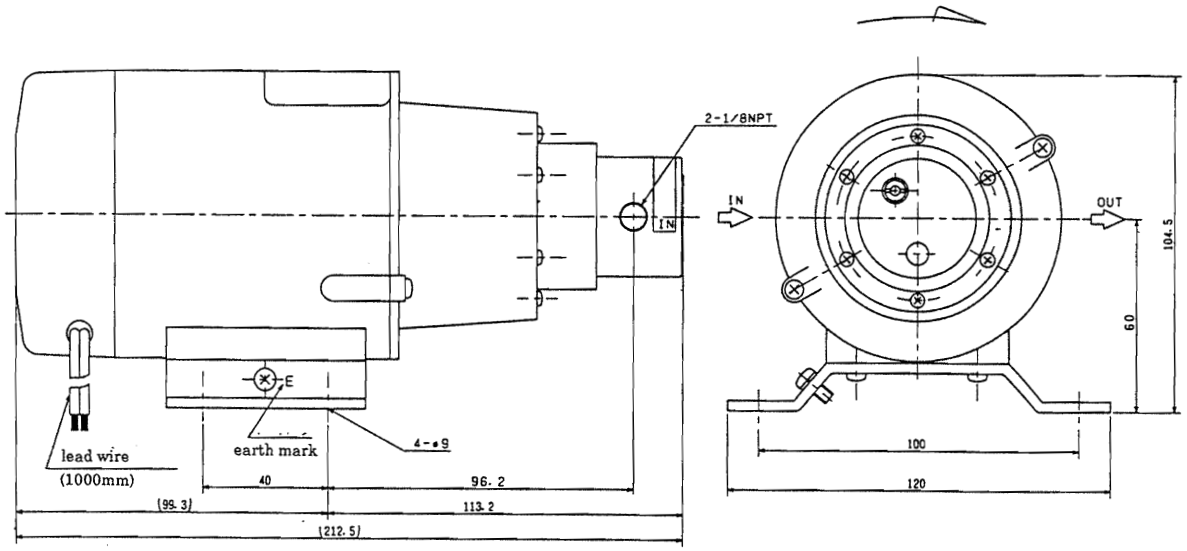
*5 Maximum operating noise is 55dB or below (1m away from the front of a pump, A scale).

5. Outer dimensions

■ MDG-M2T/S N

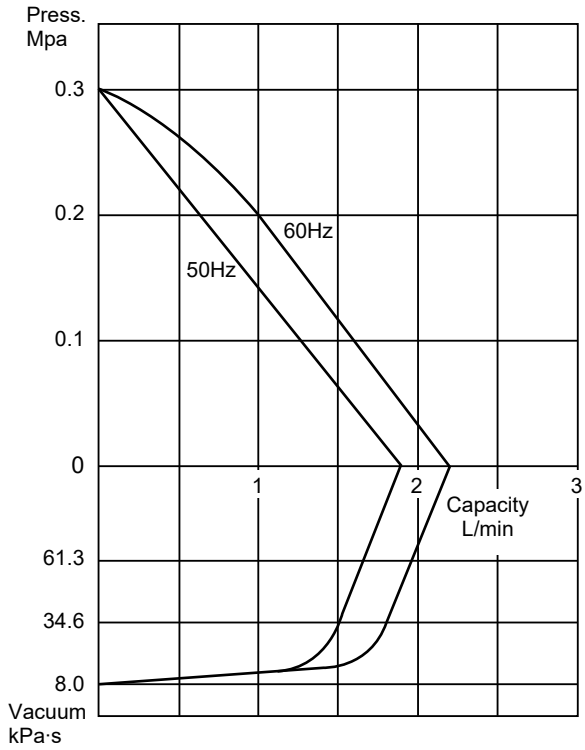


■ MDG-M2S6

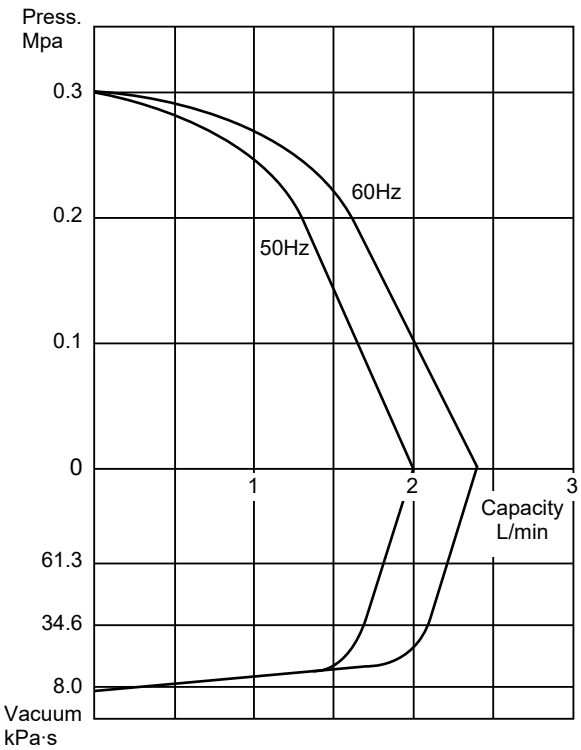


6. Performance curves

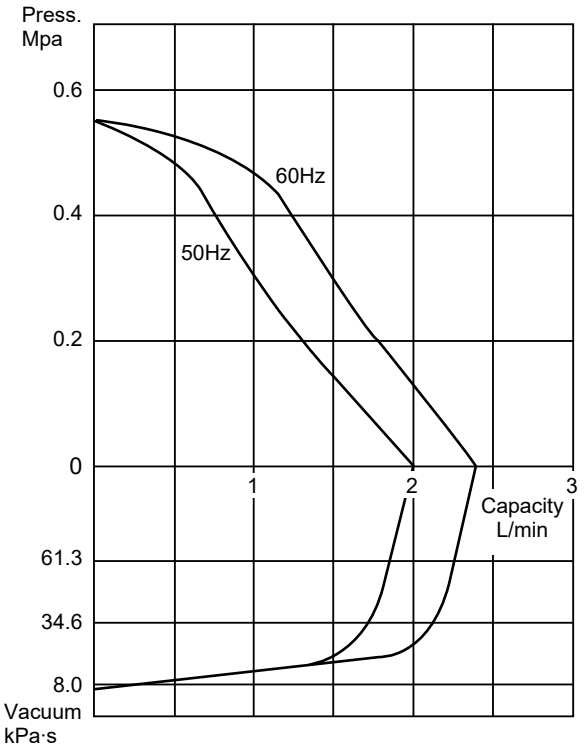
■ MDG-M2T N



■ MDG-M2S N



■ MDG-M2S6

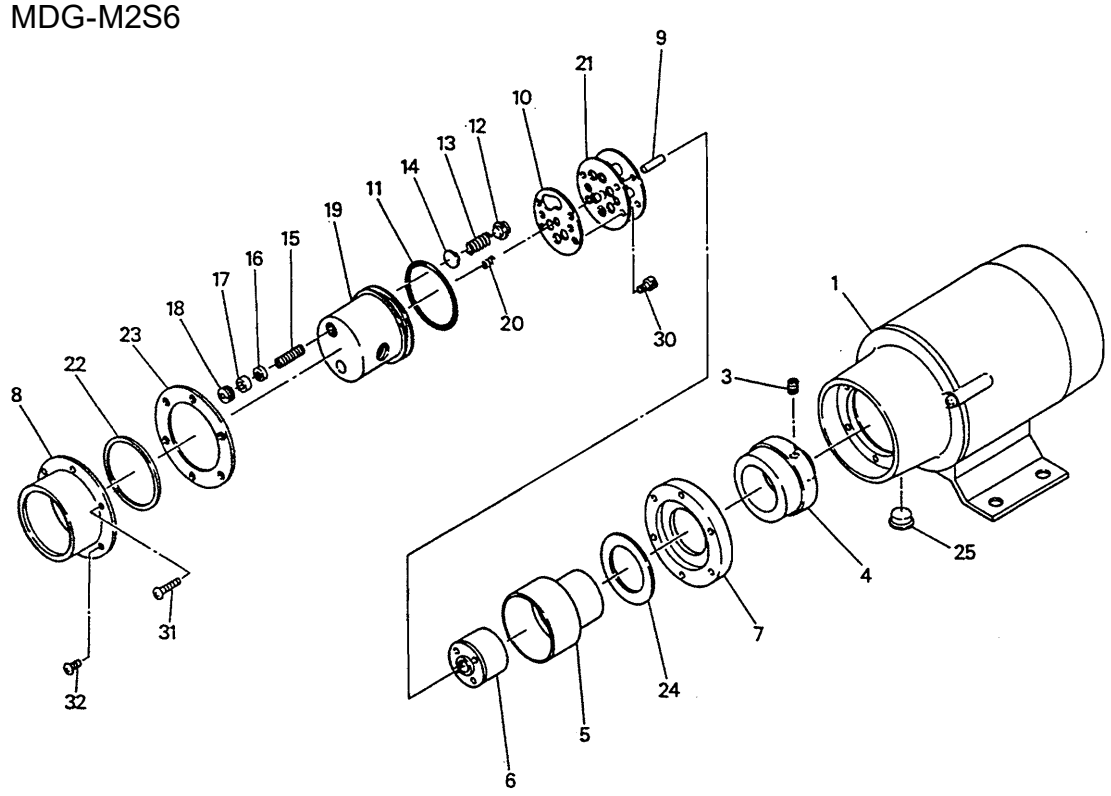


7. Part names

■ Exploded View

● MDG-M2T/S N

● MDG-M2S6

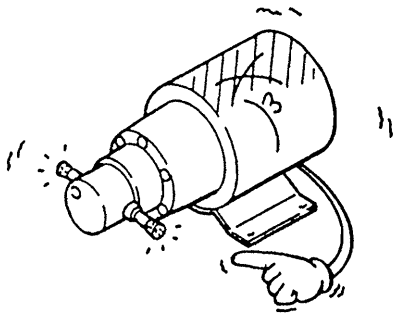


No.	Names	Q'ty	Remarks
1	Motor	1	
3	Set screw	1	M4×6
4	Driving magnet assembly	1	
5	Rear casing	1	
6	Magnet capsule	1	
7	Mounting plate	1	
8	Bracket	1	
9	Drive gear shaft	1	
10	Gasket	1	
11	O ring	1	
12	Relief valve	1	
13	Spring	1	
14	Spring seat	1	
15	Adjusting screw	1	

No.	Names	Q'ty	Remarks
16	Valve gasket	1	
17	Clamp spacer	1	
18	Clamp nut	1	
19	Pump body	1	
20	Shaft spring	1	
21	Gear case unit	1	
22	Packing A	1	
23	Packing B	1	
24	Packing C	1	
25	Plug	1	
30	Hexagon socket head bolt	2	M3×5
31	Hexagon socket pan-head machine screw	3	M3×16
32	Hexagon socket pan-head machine screw	3	M3×8

Installation

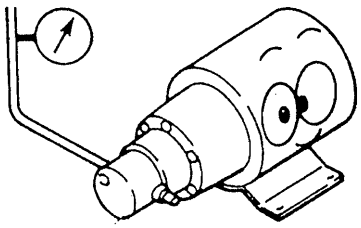
1. Precaution for use



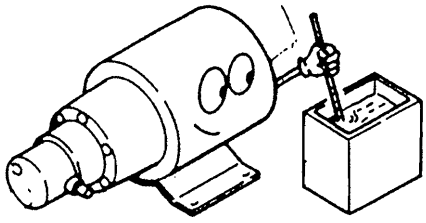
1. Do not operate the pump dry or with the discharge/suction side closed. Otherwise, the gears and bearings will be worn out.

NOTE: If the pump is operated with the discharge side closed, the discharge pressure will be increased and the relief valve will be activated. This will cause the liquid to circulate in the pump chamber. If this happens the temperature will rise rapidly, causing abnormal wear, seizure, etc., between contacting parts.

Discharge pressure



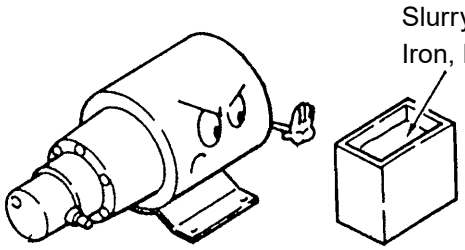
2. The maximum discharge pressure to:
   - the MDG-M2 N model is 0.3MPa.
   - the MDG-M2S6 model is 0.55MPa.



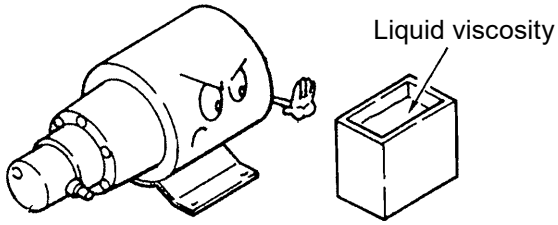
3. Allowable liquid temperature for:
   - the MDG-M2 N model is 0 - 95°C.
   - the MDG-M2S2 model is 0 - 65°C.

   The performance changes depending on the temperature of the liquid used.

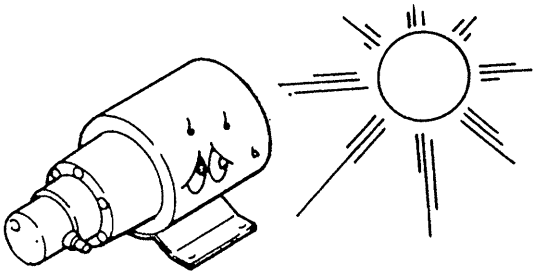
Installation



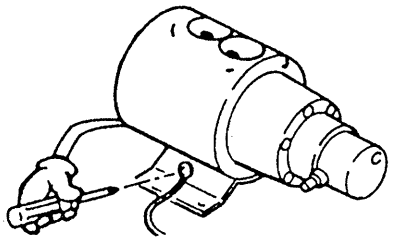
4. Do not transfer the following liquid.
   - Liquid containing powder or iron, nickel, etc. (This pump has powerful magnets.)
   - Slurry liquid
   - Liquid which crystallizes when stationary



5. Do not transfer the higher viscous liquid than the following value.
   - MDG-M2 N model: 30mPa·s
   - MDG-M2S6 model: 50mPa·s

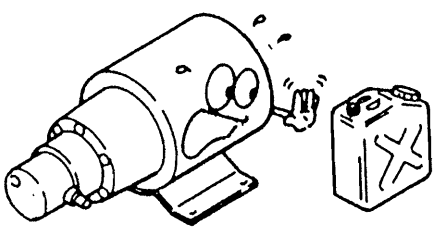


6. Do not cover the motor unit tightly with a cover, etc. Avoid operating the pump at an ambient temperature above 40°C. The relative humidity should be below 85%. Do not splash water on the motor. This may cause an electrical short or burning.



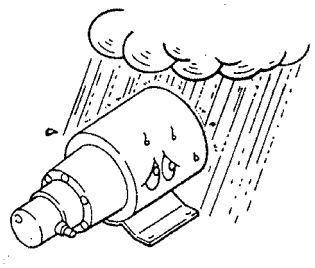
Grounding

7. Always ground the pump with a grounding wire or grounding connection screw (marked E). For the prevention of electric shock, it is recommended that earth leakage beaker also be installed.

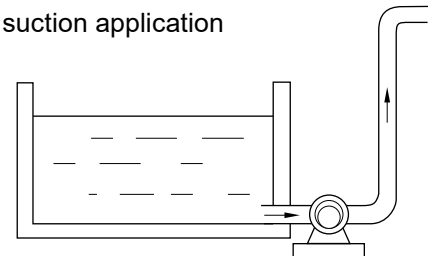


8. To ensure safety, do not place any inflammable material or other dangerous substance near the pump.

2. Installation/Pipework/Wiring

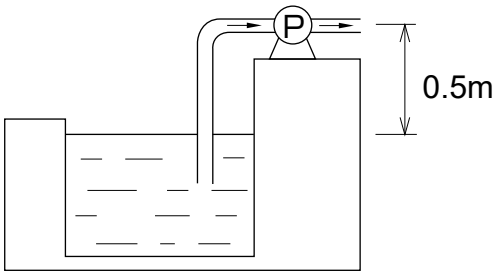


Flooded suction application

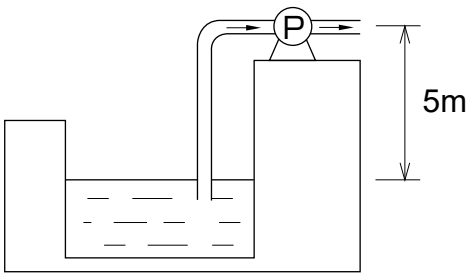


Suction lift application
(In case the pump body is wet)

1. There is no liquid in the suction piping.
   (This is not allowed for the T type.)



2. There is liquid inside the suction piping.



■ Installation

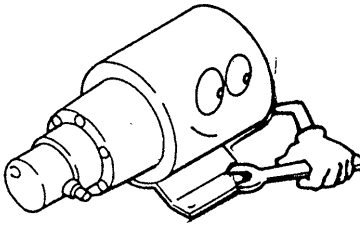
1. Select a location which has
   - an ambient temperature below 40°C.
   - a relative humidity less than 85%.
   - a convenient access for maintenance and checking.

   Do not install a pump outdoors.

2. Install the pump below the level of liquid in the supply tank to prevent dry running (flooded suction).

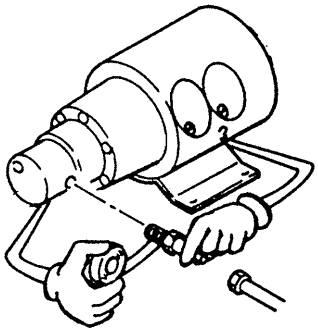
3. If it is necessary to install a S type pump in a position in which the inlet of the pump remains higher than the liquid level (suction lift), refer to the illustrations on the left. In this position, the pump does not suck a liquid unless the pump chamber is wet. (The T type pump does not function on a suction lift.)

4. Use M5 machine screws to anchor the pump. If necessary, fix the pump with rubber mountings so that pump does not cause sympathetic vibration and a loud noise.



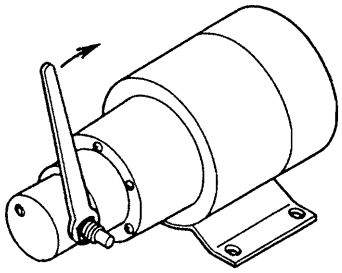
Installation

■ Pipework

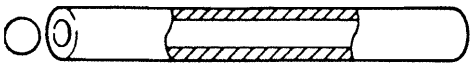


1. In order to reduce the friction resistance of liquid, the piping should be as short and with as few bends as possible.

2. The inlet and outlet joints of the pump should be completely sealed with sealing tape, etc., to prevent them from sucking air. If the sealing is incomplete on the suction side, in particular, air is sucked in and the performance of the pump is lowered.

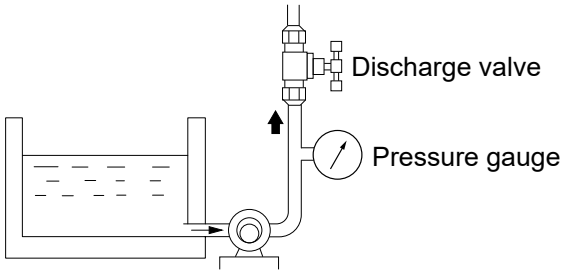


3. When screwing the joint to the pump, hold the pump body rather than the motor by hand. Do not apply excessive force on the motor and pump attachment section. Insert a 6mm OD round bar into the hole positioned slightly lower than the center of the face of the pump body and hold the round bar so that the excessive force applied to the pump body will be released from there.

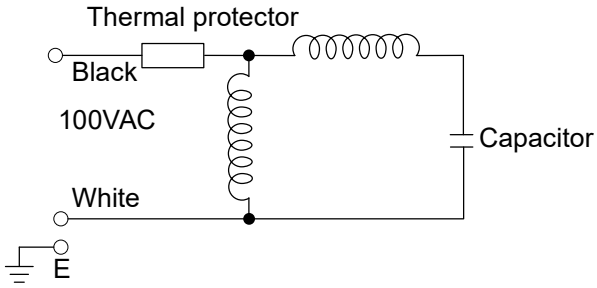


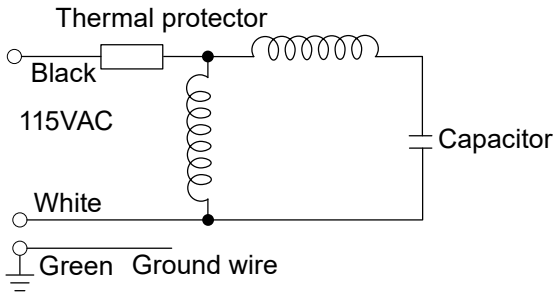


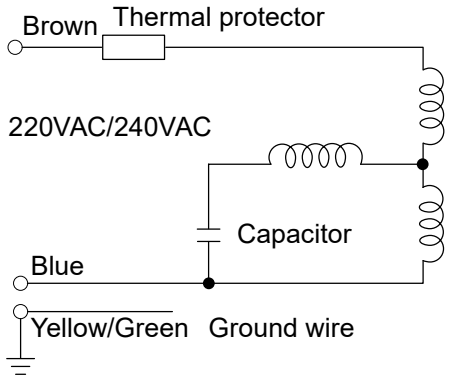
4. For connection, use a thick tube which can withstand pump pressure. Since the tube on the suction side, in particular, tends to be crushed by sucking force, the use of a Teflon tube or something similar is recommended. (When handling hot liquid, special care should be taken.)



5. Attach a pressure gauge on the discharge piping to set the pressure of the relief valve. This attachment also helps in the early detection of pump abnormality.



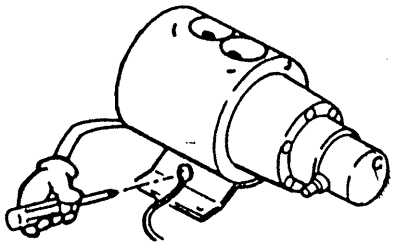




■ Wiring

1. Use proper wiring elements. Wiring should be carried out in accordance with the technical standard of the electric installation and interior wiring regulations. See the diagram on the left.

2. Make sure to include a ground wire or a ground terminal in the wiring.



Grounding

● Rated Electric Current Value and Starting Current value

50/60Hz

Model of Pump	Voltage (V)	Rated Current (A)	Starting Current (A)
MDG-M2T100N MDG-M2S100N	1 phase AC100	0.5/0.5	0.9/0.9
MDG-M2S6B100	1 phase AC100	0.82/0.82	1.8/1.9
MDG-M2S6B220	1 phase AC220 - 240	0.34/0.36	0.8/0.9
MDG-M2S6B115	1 phase AC115	0.65/0.69	1.6/1.6

Operation

1. Operation

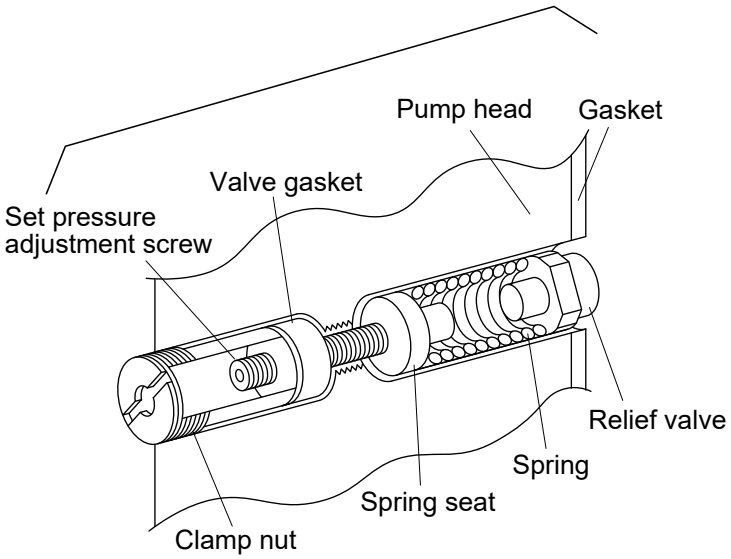
After pump installation, piping, and wiring, follow the start-up procedure described below.

Dry running is strictly prohibited. This will damage the inside of the pump. Never operate the pump with the valves closed. This will wear away the gears.

No.	Item	Remarks
1	Confirmation of piping, wiring, and voltage	● Confirm piping and electrical wiring (see 14-15 pages). ● Confirm that line voltage is appropriate (see the nameplate).
2	Confirmation of valves	● Discharge/suction valves should be fully opened.
3	Confirmation of liquid in pump	● When pump is used by lifting method, prime pumps sufficiently.
4	Starting up	● After confirming items 1 - 3 above, turn ON pump power supply, then check whether liquid is being fed smoothly. If not, immediately turn OFF power supply and eliminate cause of problem. See "Troubleshooting" section on page 18.
5	Operation	● Adjust valve gradually to obtain specified values of discharge, discharge pressure, or degree of vacuum. ● Do not open/close suction port and discharge port suddenly. This may lead to disconnection of magnet coupling, so that gears cannot rotate. If this happens, turn OFF power supply. As motor stops, normal coupling will be restored. ● Do not operate pump with discharge/suction valve completely or almost completely closed. Set operating pressure to at lease 0.1MPa or lower than set value of relief valve pressure.
6	During Operation	● Be careful not to allow any foreign matter to enter pump. Foreign matter may cause gear locking or abnormal wear of gear. ● If earth leakage breaker is actuated, reset it only after carefully examining cause of actuation. Be sure to turn OFF power supply before examining cause.

■ Relief valve set up

● Relief valve mechanism



The MDG-M2 model is equipped with a built-in relief valve. The default setting from shipping is 0.3MPa (MDG-M2S6 model: 0.55MPa). The pressure value can be adjusted within the range of approximately 0.1 - 0.4MPa (MDG-M2S6 model: 0.2 - 0.55MPa). Prior to resetting the pressure, contact us and follow the procedure described below.

1. Loosen the clamp nut with a minus screwdriver.

2. Adjust the pressure to the desired value by turning the set pressure adjustment screw with the attached hexagonal bar wrench. (Watch the pressure gauge installed on the discharge piping in advance for reaching the target value.)

3. Fasten the clamp nut tightly with the minus screwdriver.

Maintenance

1. Troubleshooting

Problem	Cause	Countermeasure
Motor cannot be started.	● Plug is out of socket. ● Contact failure or there is a break in wiring. ● Motor is malfunctioning or wire in motor is broken. ● Earth leakage breaker is activated by leak. ● Breaker is activated due to lack in power capacity.	○ Insert plug into socket. ○ Examine and repair defective part. ○ Repair or replace. ○ Examine and repair or replace. ○ Increase capacity.
Motor stops while in operation.	● Contact failure of wiring ● Thermal protector is activated by overload. ● Earth leakage breaker is activated by leak.	○ Examine and repair defective part. ○ Lower viscosity of liquid or discharge pressure. ○ Examine and repair or replace.
Liquid cannot be pumped up, or capacity is insufficient.	● Dry running without liquid on suction side. ● Air enters through suction side. ● Suction port is crushed. ● Pressure is inlet portion is lowered below liquid saturated vapor pressure. ● Liquid viscosity is too high. ● Valve is closed. ● Piping resistance is too high. ● Gear is worn out.	○ Supply liquid or open suction side valve. ○ Examine suction side piping and repair. ○ Replace with a new and uncrushable pipe. ○ Lower liquid temperature or piping resistance. ○ Lower viscosity. ○ Open valve. ○ Adjust piping. ○ Replace with a new gear.

Maintenance

Problem	Cause	Countermeasure
Magnet coupling disconnects.	● Dry running without liquid on suction side ● Locking due to expanded gear ● Foreign matter sticks to gear. ● Gear is damaged. ● Magnet capsule hits rear casing. ● Valve is closed. ● Piping resistance is too high.	○ Supply liquid or open suction side valve. ○ Lower liquid temperature. ○ Disassemble and remove foreign matter. ○ Replace with new gear case unit. ○ Disassemble and repair or replace parts. ○ Open valve. ○ Adjust piping.
Too much noise or vibration	● Dry running without liquid on suction side ● Foreign matter sticks to gear. ● Gear is damaged. ● Magnet capsule hits rear casing. ● Gear is worn out.	○ Supply liquid or open suction side valve. ○ Disassemble and remove foreign matter. ○ Replace with new gear case unit. ○ Disassemble and repair or replace parts. ○ Replace with new gear.
Liquid leaks.	● O ring is damaged. ● Bolt is loose. ● Corrosion resistance is unsuitable.	○ Replace with new O ring. ○ Fasten tightly again. ○ Select correct pump material.
Self-priming cannot be made.	● Dry running without liquid on suction side ● Air enters through suction side. ● Suction port is crushed. ● Inside of pump is crushed. ● Pressure is inlet portion is lowered below liquid saturated vapor pressure. ● Gear is worn out.	○ Supply liquid or open suction side valve. ○ Examine suction side piping and repair. ○ Replace with new and uncrushable pipe. ○ Supply liquid through discharge side or suction side. ○ Lower liquid temperature or piping resistance. ○ Replace with new gear.

2. Maintenance & Inspection

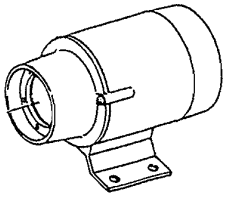
■ Daily inspection

Pay attention to the following points while the pump is in operation. If you notice any abnormal or dangerous conditions, suspend operation immediately and take the appropriate measures. See the "Troubleshooting" section on page 18 for details. In addition, observe the replacement timing specified for each wear part.

No.	Check Point	Remarks	Check method
1	Is pump lifting liquid properly?	● Whether liquid is being transferred. ● Whether suction and discharge pressures are at normal levels.	● Flow meter or visual check ● Collation with nameplate
2	Is there abnormal noise or vibration?	● If pump does not function normally, abnormal noise or vibration tends to be generated. ● Base on which pump is mounted sometimes becomes resonant to increase noise. If separation of pump from base decrease noise, anti-vibration measure such as attaching anti-vibration rubber mounts to pump should be taken.	● Visual check and hearing check
3	Is liquid leaking or air being sucked out from joints of pump?	● Clamp connections more tightly. ● If many air bubbles are found in discharged liquid, air is being sucked out. Examine piping and clamp connection more closely.	● Visual check
4	Is temperature of pump/motor surface, etc., abnormally high?	● Pump unit surface temperature is same as that of liquid handled. ● Temperature of motor surface is within about 40°C above ambient temperature. Sometimes it is too hot to touch, but it is normal if temperature is within this range.	● By touch or by thermometer

3. Spare & Wear parts

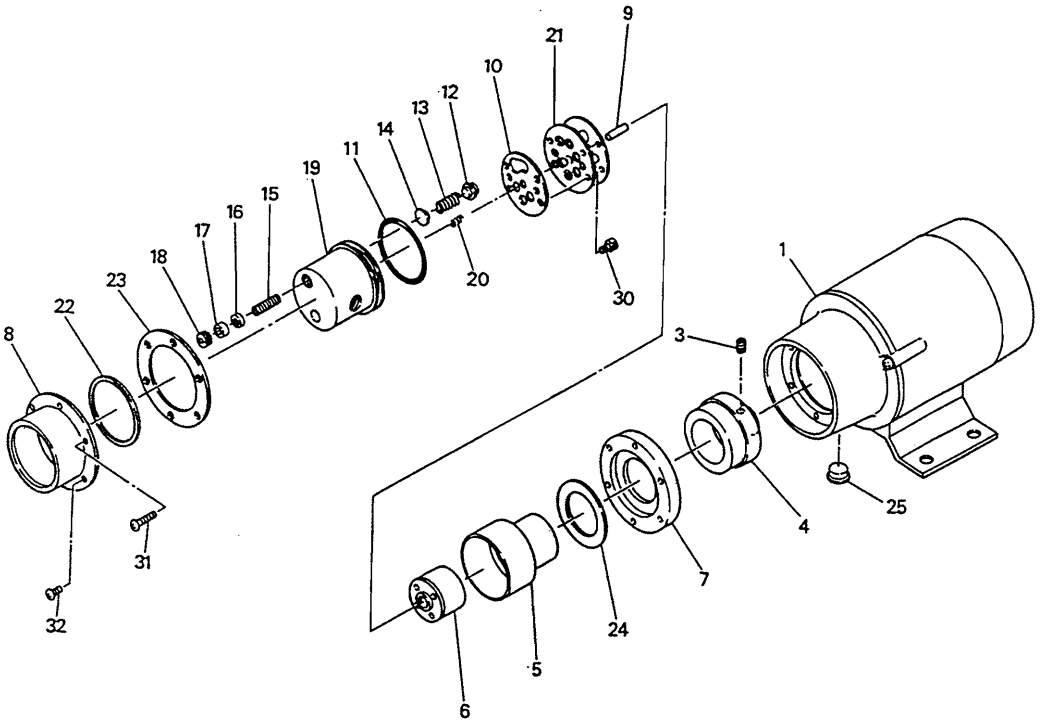
Replace the following wear parts at the time shown on the table below. Contact your nearest distributor for ordering a spare kit.

No.	Parts		Q'ty	Time to be re-placed	Spare kit type
21	Gear case unit		1 set	5,000 hours	● SK-M2S for models: MDG-M2SN MDG-M2S6 ● SK-M2T for model: MDG-M2TN
9	Drive gear shaft		1	5,000 hours	
10	Gasket		1	5,000 hours and every time pump is disassembled.	
11	O ring		1		
1	Motor		1	10,000 hours	

Note: When the above replacement time passes, the initial flow rate goes down by 20% based on pumping clear water at ambient temperature and discharge pressure of 0.2MPa (0.5MPa for the MDG-MS26 model). The time to be replaced depends on the characteristics, temperature of pumped liquid and on the pump operating condition.

4. Disassembly & Assembly

■ Disassembling Procedure



1. Unscrew the three screws (31) to detach the pump unit from the motor unit (1).
2. Unscrew the three screws (32) to remove the mounting plate (7), packing B (23), bracket (8), and packing A (22).
3. Detach the rear casing (5) and packing C (24) from the pump body (19).
   NOTE: Be careful because there may still be liquid in the rear casing.
4. Detach the magnet capsule (6) from the drive gear shaft (9). The detached magnet capsule should be kept in clean and dust-free place not to attract iron powder.
5. Use a hexagonal bar wrench (nominal size 2.5) to unscrew the two bolts (30) to remove the gear case unit (21), gasket (10), drive gear shaft (9), shaft spring (20), relief valve (12,13,14), and pump body (19) in this order. Handle the parts carefully so as not to damage them. After washing them, keep them stored in a dust-free place.

■ Assembling Procedure

1. Insert the shaft spring (20), drive gear shaft (9), and relief valve (12, 13, 14) into the pump body (19).
2. Mount the gasket (10) and gear case unit (21), fitting the hole position to that on the pump body.
3. Fix the gear case unit onto the pump body by tightening the two bolts (30). (The tightening torque recommended is 0.6 N·m.) When tightening the bolts, push the drive gear shaft inside with the thumb and give the same torque to the two bolts (30). After that, check whether the drive shaft moves up and down.
4. Insert the magnet capsule (6) into the drive gear shaft. Then rotate the magnet capsule by hand to check whether the gear in the gear case unit rotates smoothly.
5. Mount the rear casing (5), packing C (24), packing B (23), mounting plate (7), packing A (22), and bracket (8) in the sequence shown in the disassembled view. Then, tighten the three screws (32). (The tightening torque recommended is 0.6 N·m.)
6. Fix the assembled pump body on the motor (1) using three screws (31).

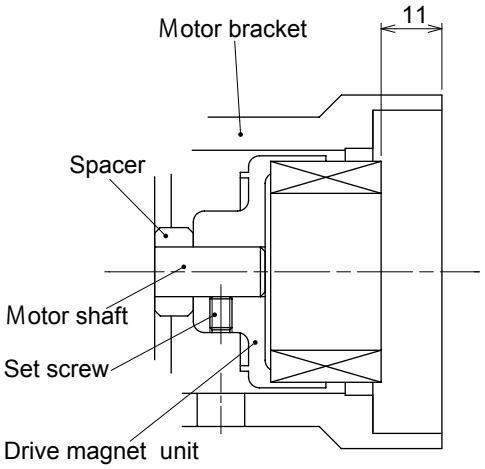
■ Assembly of the motor to the pump

If a customer mounts the pump and the motor bracket to the motor, follow the instructions below.

⚠CAUTION
• Be sure to turn off power to stop the motor and related devices before work. • Before the motor bracket is mounted to the motor, make sure that the motor size is correct. • To avoid personal injury, do not place the drive magnet unit near any metal part or tool.

1. Mount the motor bracket to the motor and tighten them up with the screws.

2. Do not allow foreign matters such as iron pieces to stick to the magnet capsule unit. Insert the spacer to the motor shaft. Slide the drive magnet unit onto the motor shaft straight without excessive force. Check the distance between the end faces of the drive magnet and the bracket is 11mm (see the figure below) and secure them with the set screw and the Loctite #222.



M2S6

3. Mount the pump to the motor bracket and secure them by 0.8N·m with the three M3×16 screws. Magnetic force of the pump is strong. Be careful not to catch the finger in parts. See the arrow mark on the pump head for the correct direction of the liquid flow.

EC DECLARATION OF CONFORMITY

A copy of the original Declaration of Conformity

(SUPPLIER'S NAME)

WE

IWAKI CO.,LTD.

(ADDRESS)

6-6 2-CHOME KANDA-SUDACHO CHIYODA-KU TOKYO JAPAN

(PRODUCT)

DECLARE UNDER OUR SOLE RESPONSIBILITY THAT THE PRODUCTS

MAGNETIC DRIVE GEAR PUMP

(MODEL NAME)

MDG SERIES

TO WHICH THIS DECLARATION RELATES ARE IN CONFORMITY WITH THE FOLLOWING STANDARDS OR DIRECTIVES AS FAR AS APPLICABLE

(DIRECTIVES)

MACHINERY DIRECTIVE 2006/42/EC (ANNEX IIA)
RoHS DIRECTIVE 2011/65/EU

NOTE: THIS PRODUCT IS INTENDED FOR FITTING INTO ANOTHER MACHINE OR INSTALLATION. CONFORMITY WITH THE DIRECTIVE 2014/30/EU SHOULD BE ESTABLISHED BY THE END PRODUCT.

(STANDARDS)

EN ISO12100: 2010 EN809: 1998 + A1: 2009 EN IEC63000: 2018

(A PERSON WHO IS AUTHORISED TO COMPILE THE TECHNICAL FILE IN THE COMMUNITY)

IWAKI EUROPE GMBH
SIEMENSRING 115 D-47877 WILLICH GERMANY

NOTE: THIS DECLARATION BECOMES INVALID IF TECHNICAL OR OPERATIONAL MODIFICATIONS ARE INTRODUCED WITHOUT THE MANUFACTURER'S CONSENT.

T. Sawada.

TSUTOMU SAWADA
SENIOR GENERAL MANAGER,
QUALITY ASSURANCE HEAD OFFICE

Tokyo, Dec. 18, 2023

(PLACE AND DATE OF ISSUE) **(NAME AND SIGNATURE OR EQUIVALENT MARKING OF AUTHORIZED PERSON)**

DOCUMENT NO. IS-51K-527-4

CE conformity

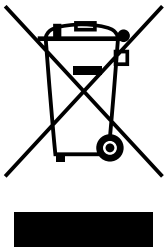
■ **Information on CE conformity of pump units when the motor is fitted by the customer (dealer/operator)**

We hereby confirm the CE conformity of our pump unit provided that the following criteria about intended use are satisfied as described in this instruction manual:

- Motor conformity in accordance with any relevant EC directives which are currently effective.
- The dimensions of a required motor flange and shaft must fit the specified pump.
- The motor must be installed to the pump according to this instruction manual.
- Guaranteed grounding
- The pump must not be repainted over our original upper coating.

Any reseller or dealer who connects the pump with a motor and markets it as a complete unit must conform to all relevant EC directives. In such cases, the reseller or dealer then becomes the manufacturer.

Waste Electrical and Electronic Equipment (WEEE)



In accordance with the European Directive 2012/19/EU on waste electrical and electronic equipment, this product features the crossed-out wheelie bin symbol. When this product is disposed of in household wastes, toxic components included in it can cause major environmental and human health problems. Use appropriate waste collection systems for recovery and recycling. Contact your local distributor or nearest Iwaki company for the detailed collection systems.

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