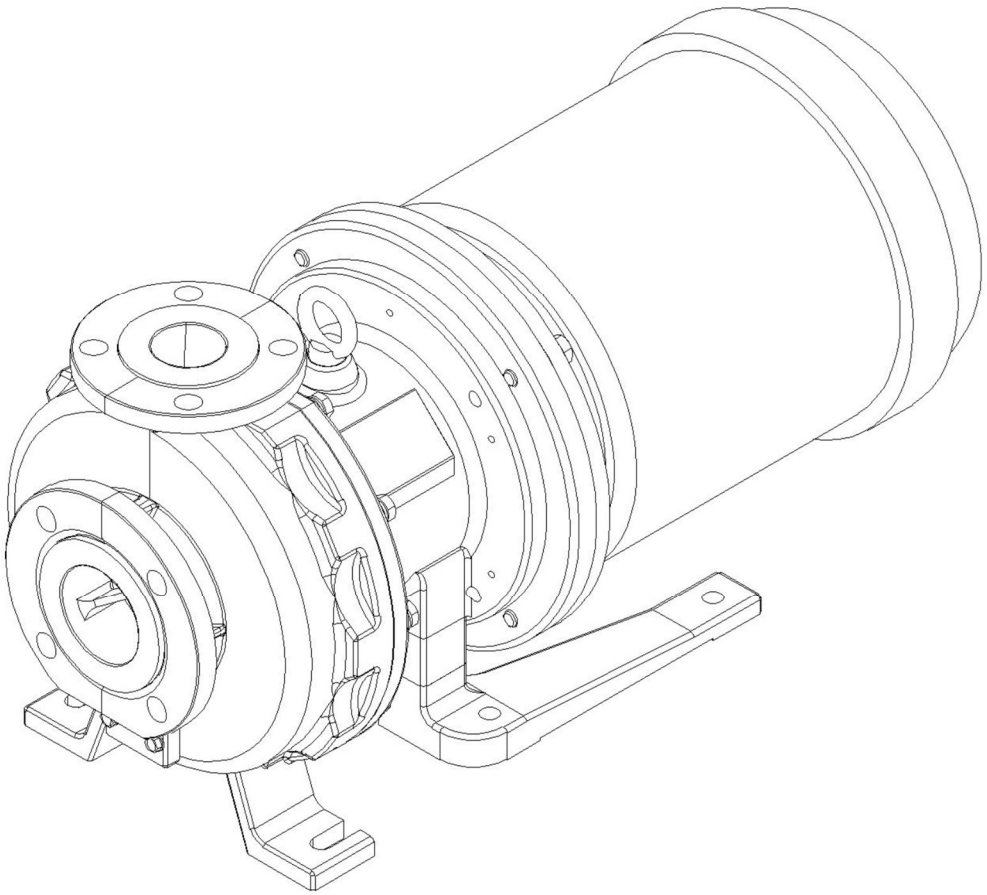
Corrosion-resistant horizontal magnet drive pump

CHEMI-FREE

INSTRUCTION MANUAL

YD-GSR series

Version: 230405



World Chemical Co.,Ltd.

Preface

Thank you very much for purchasing our horizontal magnet pump “YD-GSR series”. Regarding the using the pump, make sure to read this instruction manual to the end and use the pump safety and efficiently for a long time.

Store this manual where it can be easily accessed for checking anytime.

Table of contents

Safety precaution

The following procedures are intended to protect you from personal injury and/or property damage.

- The following symbols classify the degree of danger and explain the damages that could occur when its contents are ignored or the pump is used improperly.
- Safety rules to be observed are classified and explained under the following symbols. (The following are examples of picture displays)

Warning	Non-compliance can lead to fatal or serious injury.
Caution	Non-compliance can lead to some injury and/or property damage.

	This symbol cautions people to be careful.
	This symbol signifies that this action must not be taken.
	This symbol indicates that the action must be taken.

⚠ Warning

① Dangerous liquid and surrounding

When using pumps which transfer dangerous liquid or in potentially explosive atmospheres (only explosion- proof type), make sure to perform the daily inspection not to leak liquid while observing the facility standards set forth by law. The pump operation under an abnormal condition like liquid leakage causes a tragedy like personal injury, explosion or fire. Follow the instructions of your supplier or the liquid manufacturer about handling the liquid.

② Prohibition on the use of damaged or modified pumps

Using damaged of modified pumps may cause personal injury, electric shock or the pump damage. It is out of our warranty, so never use it.

③ Caution in transporting and lifting pumps

Make sure to use the hoist bolt when lifting pumps with it. If pumps do not own the hoist bolt, lift them by a belt sling with care of the weight balance. The qualified person should perform this work with a sling strong enough. The weight of the even lightest pump is over 100kg. Carrying pumps by hands may cause an accident, so stop it as possible.

④ Prohibition on the operation when the power is on

Do not inspect or disassemble pumps or motors when applying power. It causes to get caught in the rotor or personal injury like electric shock. Take a multiple safety measure like a handy switch of the pump as well as the main or operation switch.

⑤ Connection with an earth wire

The operation of pumps without connecting an earth wire may cause electric shock. Make sure to connect it by a qualified person according to the electric equipment technical standards and interior wiring regulations.

⑥ Protection of the power supply cord.

Stretching, pinching or damaging power or motor codes causes fire or electric shock by the damaged cable. Attach the terminal box cover in the right place after wiring the motor.

⑦ Ground-fault Interrupter (GFI)

The operation of pumps without a ground fault interrupter may cause electric shock. Apply circuit breakers or over-current protection devices to prevent electric accidents or the motor damaged.

⑧ Caution in removing pumps

When removing pumps from plumbing, make sure to close the suction and discharge valves no to leak liquid. As the direct contacting with liquid may be harmful, always wear protective gears when operating.

Caution

① Prohibition on the unauthorized use

Do not use pumps with a specification except for the indication on the nameplate. Install pumps after checking especially the motor specification (phase, voltage and frequency). Wrong use may cause personal injury or the pump or peripheral equipment damaged.

② Restriction on handlers

Carry, install, wire, operate and maintain pumps by experts who have full knowledge of pumps.

③ Caution when unpacked

Checking the upside down, unpack. When wooden crates are unpacked, be careful not to get injured by nails and wood.

④ Ventilation

Obstructions which prevent ventilation around the pump make the motor overheat, so do not put it. Handling toxic or odorous liquid causes the risk of symptoms of poisoning. Install pumps in well-ventilated place.

⑤ Repair and return

When repairing damaged pumps, contact your supplier or us. If the pump is returned by courier, clean the inside and outside of the pump with water, check no liquid adhered and pack it with a plastic bag.

⑥ Resin parts

Pumps consist of resin parts. Pumps are damaged by strong impact, causing personal injury. Do no hit and climb on it. Besides, attach piping supports to prevent to apply a load directly.

⑦ Pump start-up

Make sure to check the rotational direction at the first time of the pump start-up. At the time, open the suction and discharge valves and check no liquid leakage at the pipe connection. As the air is released from the piping and the pump is full of liquid, turn on the switch instantly to check the rotational direction. If the three-phase motor rotates in reverse, rewire the pump after switching two of the three wires. Perform this wiring after surely turning off the power supply for safety.

⑧ Disposal of pump

Disposing pumps, handle them as the industrial wastes according to the appropriate law after cleaning adhered liquid.

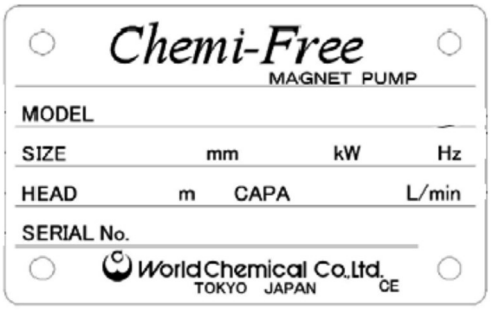
⑨ Leak protection

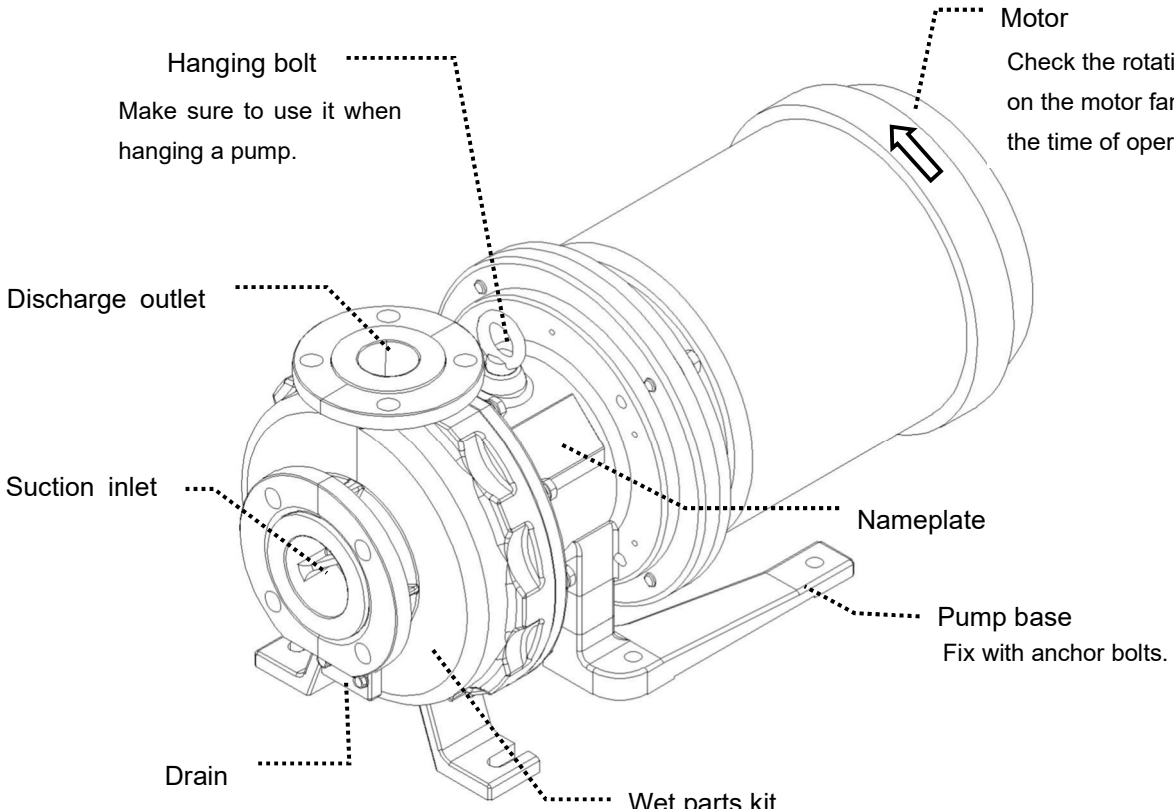
In case make sure to take appropriate preventative measures in consideration of liquid leakage from pumps and piping damaged.

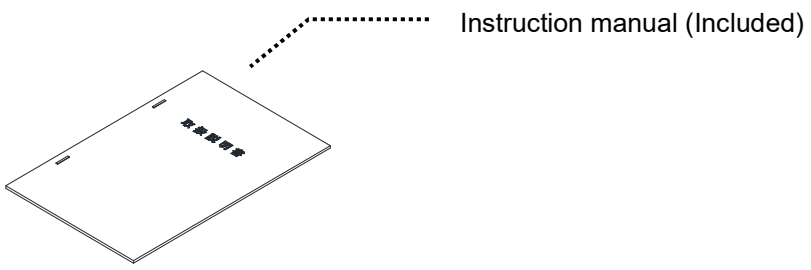
Unpacking check

Check as follows and contact your supplier if you have any questions.

1. The indication in the nameplate (model, THD, capacity, motor specification and voltage) is the same as your order.
2. All accessary is stocked with.
3. There is no damage and loosen bolts for transportation.







Model description

YD –	50	07	GSR	3	–	CP	–	KD	5	1	–	165	–	M	V
	(1)	(2)	(3)	(4)		(5)		(6)	(7)	(8)		(9)		(10)	(11)

(1) Discharge bore
40: Suction 50A x Discharge 40A
50: Suction 65A x Discharge 50A
65: Suction 80A x Discharge 65A

(2) Motor output (2P)
05: 3.7kW 15: 11kW
07: 5.5kW 20: 15kW
10: 7.5kW

(3) Model
GSR: Horizontal magnet drive pump

(4) Motor type
3: High efficiency (IE3)
1: Increased safety / pressure and explosion-proof or overseas-made motor

(5) Pump material
CP: Carbon fiber reinforced polypropylene

(6) Bearing / O-ring material
KD: SiC / FPM (Dai-el)
KE: SiC / EPDM

(7) Frequency
5: 50Hz
6: 60Hz

(8) Limit of S.G. in use
0-9: 1.0 – 1.9
G: 2.0 and over

(9) Impeller size
125 – 175: Impeller bore dimension (mm)

(10) Motor specification
No mark: Totally enclosed outdoor high efficiency (IE3)
M: Increased safety / pressure and explosion-proof or overseas-made motor

(11) Motor voltage
No mark: 3 phase 200/220V
V: 3 phase 380/400/440V

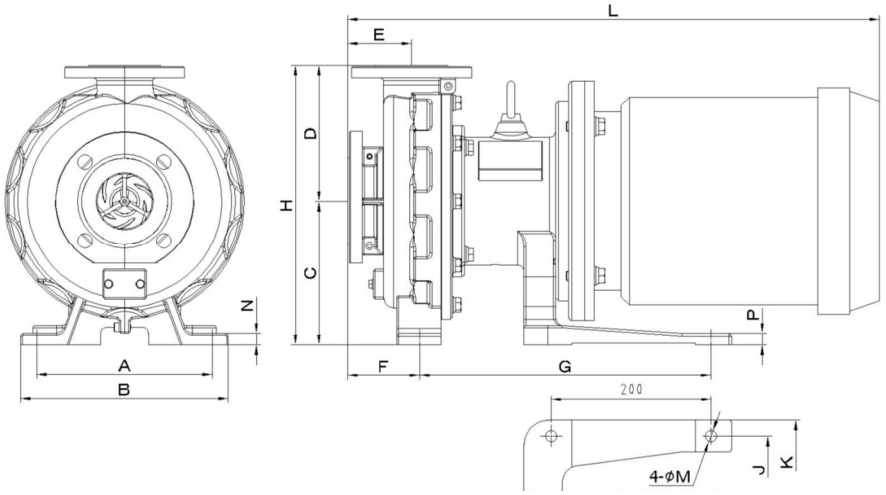
Specification

Model	Frequency	Suction bore x Discharge ore	Impeller size	Capacity	THD	Motor output	
YD-40**GSR	50Hz	50A x 40A	175	250	32	5.5kW 7.5kW	
			170		30		
			165		28.5		
			160		27		
			155		25	3.7kW	
			150		23		
			145		21.5		
			140		19.5		
			135		17		
			130		15		
			125		13.5		
	60Hz		165	250	42	7.5kW	
			160		39.5		
			155		36.5		
			150		34	5.5kW	
			145		31.5		
			140		29.5		
			135		26	3.7kW	
			130		23.5		
			125		21		
YD-50**GSR	50Hz	65A x 50A	170	500	25.5	5.5kW 7.5kW	
			165		23.5		
			160		22		
			155		20		
			150		18	3.7kW	
			145		16.5		
			140		15		
			135		13		
			130		11		
	60Hz		160	500	33.5	7.5kW	
			155		31		
			150		29		
			145		26.5	5.5kW	
			140		24		
			135		21.5		
			130		18.5	3.7kW	
YD-65**GSR	50Hz	80A X 65A	165	1000	28	11kW	15kW
	60Hz		140		28		

The range of liquid temperature in use: 0 – 90 degrees. (Depending on the quality)

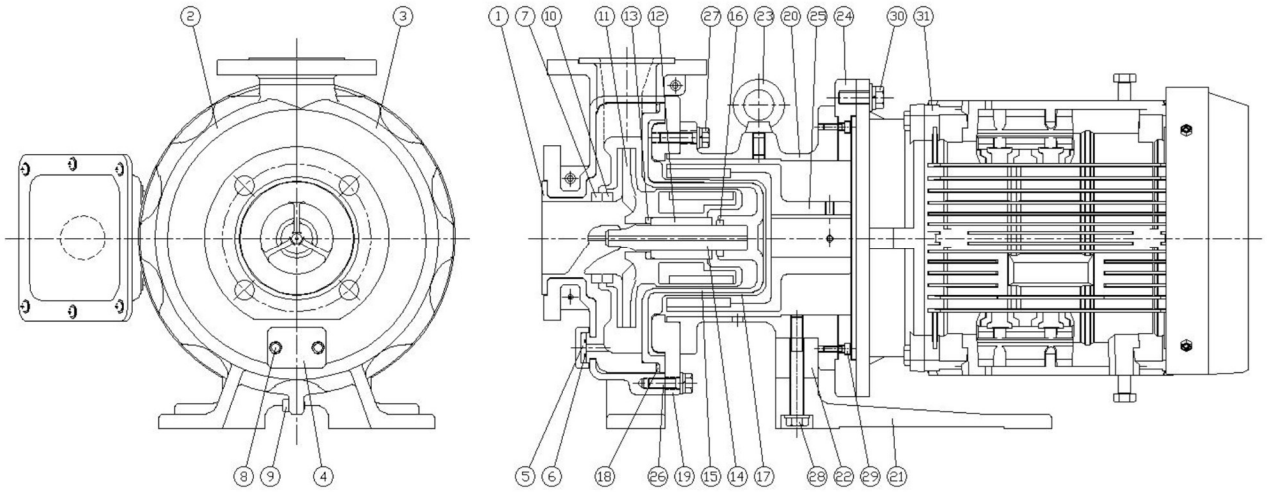
*Contact us when the pump is used for the liquid that the temperature is 80 degrees and over.

Outline dimension



Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Weight
4005GSR	220	260	180	170	80	90	365	350	190	230	605	Φ15	14	14	78kg
4007GSR											666				107kg
4010GSR															111kg
5005GSR											605				79kg
5007GSR											666				108kg
5010GSR															112kg
6515GSR	240	280	220	180	100	135	442	400	300	350	847	Φ15	16	20	174kg
6520GSR															185kg

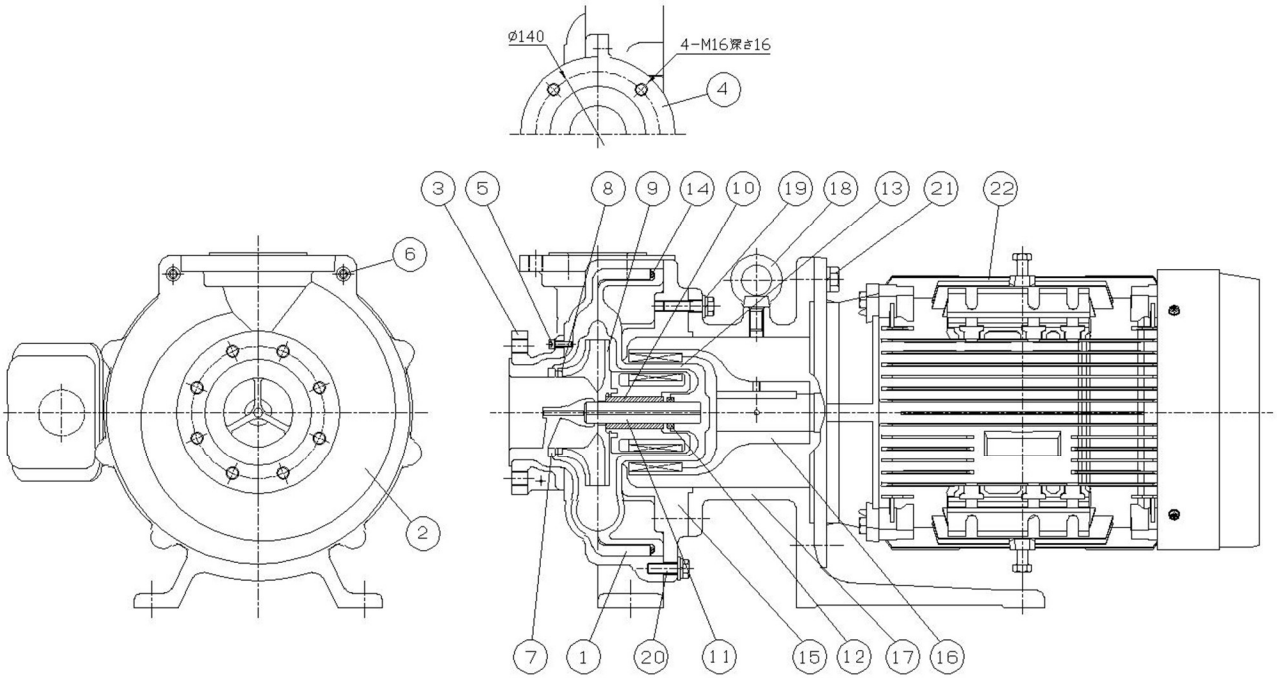
Part's name / structure YD-40/50GSR



NO.	Parts name	Qty	Material	Set
1	Front casing	1	CFR PP	Casing set
2	Casing cover (Left)	1	FC200	
3	Casing cover (Right)	1	FC200	
4	Drain cover	1	SS400	
5	Drain plate	1	CFR PP	
6	O-ring for drain plate (P-11)	1	EPDM/FPM	
7	Liner ring	1	SiC	
8	Hex. bolt for drain cover (M6*20)	2	SUS304	
9	Hex. socket head cap bolt for casing cover (M6*15)	4	SUS304	
10	Mouth ring	1	CFR PTFE	Impeller set
11	Impeller	1	CFR PP/ETFE + Rear earth magnet	
12	Bearing	1	SiC	
13	Lock collar	1	PVDF	
14	Shaft	1	SiC	Rear casing set
15	Rear casing	1	CFR PP	
16	Rear thrust ring	1	SiC	
17	Rear casing cover	1	GFR PC	
18	O-ring for casing (AS568-448)	1	EPDM/FPM	
19	Rear casing support	1	FC200	
20	Bracket	1	FC200	
21	Base	1	FC200	
22	Base biscuit	2	SS400	
23	Hanging bolt	1	SS	
24	Mounting plate	1	FC200	
25	Outer magnet	1	S45C + Rear earth magnet	
26	Hex. bolt for casing (M10*35)	10	SUS304	
27	Hex. bolt for bracket (M10*40)	4	SUS304	
28	Hex. bolt for base (M12*95)	2	SUS304	
29	Hex. socket head cap bolt for mounting plate (M6*15)	6	SUS304	
30	Hex. bolt for motor (M12*35)	4	SUS304	
31	Motor	1		

*No.24 and 29 parts are used for the pump (5.5kW and over).

YD-65GSR



NO.	Parts name	Qty	Material	Set
1	Front casing	1	CFR PP	Casing set
2	Casing cover	1	FC200	
3	Suction flange	2	FC200	
4	Discharge flange	1	FC200	
5	Hex. socket head cap bolt for suction flange (M6*20)	6	SUS304	
6	Hex. socket head cap bolt for discharge flange (M10*15)	2	SUS304	
7	Liner ring	1	SiC	
8	Mouth ring	1	CFR PTFE	Impeller set
9	Impeller	1	CFR PP + Rear earth magnet	
10	Bearing	1	SiC	
11	Shaft	1	SiC	Rear casing set
12	Rear thrust ring	1	SiC	
13	Rear casing	1	CFR PP	
14	O-ring for casing (AS568-453)	1	EPDM/FPM	
15	Rear casing support	1	FC200	
16	Outer magnet	1	S45C + Rear earth magnet	
17	Bracket	1	FC200	
18	Hanging bolt	1	SS	
19	Hex. bolt for bracket (M12*50)	4	SUS304	
20	Hex. bolt for casing (M12*40)	9	SUS304	
21	Hex. bolt for motor (M16*40)	4	SUS304	
22	Motor	1		

Cautions in handling

The magnet force of the pump is powerful, so it requires scrupulous attentions for handling the pump other than the normal prohibitions like dry running or inverse rotated operation.

1. People with a pacemaker and other electronic device for maintaining bodily functions do not use the pump. The inside magnets are several times more powerful than ordinary magnets used every day.
2. Do not place your hands between the magnets. If there are knives, scissors or heavy iron masses nearby, they are attracted instantly. It causes that hands are held or the plastic covered the magnets is cracked by the impact.
3. Do not place USB sticks or magnetic tapes near the pump, because they are easily magnetized.

✧ Prohibited on conventional magnet pumps

1. Dry running

   Dry running generates friction heat at sliding parts like the shaft and bearing, and the plastic parts around them become deformed. As the result, the impeller eccentrically rotates and the pump does not work properly causing the pump damaged.

   - The operation without liquid makes the pump dry running.

2. Liquid with slurry

   Basically, do not use magnet drive pumps for liquid with slurry. Even if it is thin liquid with slurry, the pump and parts are damaged causing the life shortened.

   (If using the pump for liquid with slurry, ask us in advance.)

3. Cavitation*

   If the pump is used at the state with cavitation, it causes the pump vibration, the basic performance degradation or damage inside the casing.

   The causes may be that suction pipes are long, thin, has many bending, the liquid is high temperature or strainers are clogged.

4. Corrosion

   The pump is mainly made of carbon fiber reinforced polypropylene (CFR PP). When purchasing the pump, consider the corrosion resistance against liquid to select the pump. The pump life may be shortened depending on the liquid type and temperature. If the liquid or condition in use is changed, make sure to ask us.

   - CFR PP Limit of temperature: 0 – 90 degrees
     If using the pump for liquid that the temperature is 80 degrees and more, ask us.

   Unsuitable liquid: Nitric acid, Strong sulfuric acid, Chromic acid, Strong hydrofluoric acid, Sodium hypochlorite, etc.

* Cavitation

It is a phenomenon that the inside of liquid partly become low pressure and generates bubbles by the action of liquid. (When bubbles are burst, impact, noise and vibration are generated. It erodes the wall and reduces the performance.)

Cautions in installing / plumbing

1. Cautions in installing

(1) If much air enters in a pump during operation, pumping failure occurs causing the damage.

- Set the height from the suction inlet for the liquid level in a tank 500 mm and more.
- Do not make places where air stays or up and down piping in the suction pipes.
- Arrange the suction pipe to have a gradient of 1/100 mm and more facing the pump.
- Use suction pipes whose bore is bigger than the pump's bore. If the bore is different, arrange the top of the pipe level off.

(2) Place a strainer at the suction inlet to prevent foreign objects in.
In such case, clean the strainer periodically to prevent clogging and minimize the resistance loss.

(3) It is recommended to place check valves at the discharge outlet to prevent "water hammer". Place a bypass under the valves to release air.

- The discharge pipe is long and the total head is 10 m and more.
- The end of the discharge pipe is 9 m and higher than the liquid level in a tank.
- The piping condition is that two and more pumps are installed in parallel.

(4) Create bending and expansion joints not to leak liquid by pipe heat expansion for liquid temperature.

(5) The main parts inside the pump are made of resin. Handle the pump carefully not to have an impact.

(6) Arrange the pipe flange and pump flange parallel. Do not tighten bolts excessively.
M16 bolt = Recommended torque: 19.6N・m (200kgf・cm)

(7) Make sure to use the accessory hex. bolts (M16*45) for the discharge flange (Only YD-65GSR). If long bolts are used, it may cause the pump damage or sealing failure of the flange.

(8) When plumbing, match to the pump assembly dimension. If not, the pump casing may be damaged.

(9) Do not use woven fabric or resin gaskets when plumbing. Use rubber gaskets for sealing, because the surface of sealing is made of resin.

(10) Make sure to fix the pump mounting with anchor bolts

2. Prohibition on applying a piping load

(1) Receive the piping load in the piping support.

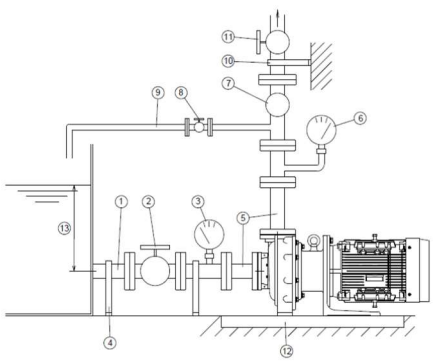
(2) If the piping is possibly expanded by high temperature liquid, it is concerned that the pump is damaged by expansion. Install the extendable or flexible joint to prevent the load to the pump at the expansion.

(3) Do not use metal pipes as much as possible and use resin pipes.

3. Drain ditch

(1) Arrange a drain ditch that liquid goes to a waste liquid tank when liquid leaks.

(2) If it is impossible to make the drain ditch, set a drain pan instead.



1) Suction pipe (Bore: D)
2) Sluice valve
3) Compound gauge
4) Piping support
5) Expansion joints
6) Pressure gauge
7) Check valve
8) Sluice valve
9) Air release pipe
10) Piping support
8) Sluice valve
12) Drain ditch
13) Liquid level 500 mm and more

☐ Suction pipe

1. Be the same bore of the suction pipe and the pump bore.
2. Regarding the length of the suction pipe, check the available NPSH and set it more than the pump necessary NPSH.
   If the available NPSH is less than the necessary one, it may cause cavitation and the pump damage.
3. Place the inlet of the suction pipe 500 mm far and more from the liquid level to prevent to involve air.
4. Do not make spaces where air stays in the suction pipe and install it at low grade facing to the pump.

☐ Discharge pipe

1. Be the same bore of the discharge pipe and the pump bore as much as possible.
   If the bore is smaller, the flow rate may reduce to increase the loss resistance of the pipe.
2. In such case, install check valves to prevent “water hammer”.
   - The discharge pipe is long and the total head is 10 m and more.
   - The actual head (from the liquid level in a tank and end of the discharge pipe) is 9 m and more.
   - Install two and more pumps in parallel.
3. Install check valves on the discharge pipe for maintenance.
4. Install a pressure gauge to check the pump operational condition for daily check.

Cautions in operating

1. Before operation
   (1) Clean pipes and the inside of a tank firmly.
   If dirt and foreign objects enter the pump, the performance reduces and it causes the damage.
   (2) Open the suction / discharge valves of the pump and pour priming liquid to release air.
   In this time, check no liquid leakage from the pump.
   (3) Check that the flange bolts are firmly tightened and connected.
   If the bolts are loosened, liquid may leak and cause personal injuries or other equipment damages.
   (4) Check the rotational direction.
   If the three phase motor rotates in reverse, switch two of three wires and reconnect them.
   The correct rotational direction is clockwise as viewed from the motor fan.
   (5) Use the voltage which is indicated on the nameplate.
2. Do not run dry
   The sliding parts are cooled by itself circulation. The operation without liquid may generate heat and cause the pump damage. If perchance the pump runs dry, leave the pump one hour and more without pouring liquid. When hot parts are rapidly cooled by sudden liquid, unrepairable damage may occur.
3. Liquid seal operation by mistake (suction & discharge valves closed)
   The operation with suction & discharge valves closed makes the inside of the pump high pressure due to high temperature. If the pump is disassembled in this situation, steam and hot water are spilled out. Mare sure to check that the temperature is enough low and do it. If the inside of the pump is damaged by the liquid seal operation, the completed pump may have to be replaced.

4. Temperature range of liquid in use

   The steam pressure, viscosity and corrosiveness are changed depending on the liquid temperature. Use the pump under the condition with consideration of them.

   Temperature range: 0 to 90 degrees

   *When using the pump for liquid that the temperature is 80 degrees and more, ask us.

5. Change of the specific gravity and viscosity of liquid in use

   When the specific gravity and viscosity of liquid is changed, the pump performance and shaft power are changed depending on the liquid condition. Use the pump with consideration of them.

6. Change of the condition for use

   The pump is produced by discussed the specification before purchasing. If the condition is changed, consult us.

7. Step-out of the magnet coupling

   If a magnet coupling steps out, stop the operation within one minute. The operation continues with the magnet stepped out reduce the magnet force.

8. Surface temperature of the bracket

   The surface temperature may increase during operation, so wear heavy groves when touching the pump or do not touch the pump 30 minutes from the pump outage.

9. Pressure limit

   Do not exceed the pressure limit of the pump discharge as follows.

Model	YD-40**GSR	YD-50**GSR	YD-65**GSR
Pressure limit (MPa)	0.85MPa	0.77MPa	0.50MPa

10. Bubbly liquid

    If the liquid used is prone to bubbled, the pump performance is dramatically decreased, so consider carefully before using it.

11. Intermittent operation

    Frequent starting and stopping prematurely damage the pump. Keep the frequency 6 times or less per an hour. However, if the liquid used has a high specific gravity and the discharge amount is less than 100L/min., start and stop the pump once per an hour. If it is repeated more than this, the durability of the pump is decreased earlier and it may lead to damage.

12. Minimum flow rate

    Operate the pump that the capacity is greater than the following values.

Model	Minimum operable flow rate
YD-40/50/65GSR	50L/min

13. When resuming the operation after a long period to rest

    Liquid inside the pump may have decreased, so inject liquid used just in case.

Maintenance / Consumable parts

1. Daily check

(1) Check no vibration and abnormal noise of the pump and run smoothly.

(2) Compare the current value during operation with rated current value of the motor to confirm that the operating load is normal. Check that the discharge pressure, capacity and current value during operation are not abnormality compared to before.

(3) Check the liquid level in a suction tank. (An operation without liquid in a tank leads to damage to the pump.)

2. Periodical check

(1) Recommended period of periodical check:
Check every 12 months or every 10,000 hours, whichever comes first.

(2) If the installation location is changed or the pump is moved for repair, make sure to completely drain the liquid and wash the pump with water to ensure safety.

3. Check the parts as follows periodically and replace them if necessary.

Parts name	Parts No.		Check details
	YD-40/50GSR	YD-65GSR	
Bearing	No. 12	No. 10	*Check no cracks and damage. *Check that the clearance between the bearing and shaft becomes larger. →Replace if the impeller moves right and left (even if slightly) to the shaft.
Shaft	No. 14	No. 11	*Check no cracks and damage.
Impeller	No. 11	No. 9	*Check that the surface around the impeller has no wear, scratches and damage.
Rear casing set	No. 15	No. 13	*Check no wear, scratches and damage in and out the rear casing.
Casing set	No. 1 – 9	No. 1 – 7	*Check no foreign objects inside.
O-ring	No. 6, 18	No. 14	*Check that the rubber does not harden and lose its elasticity due to deterioration and swelling.

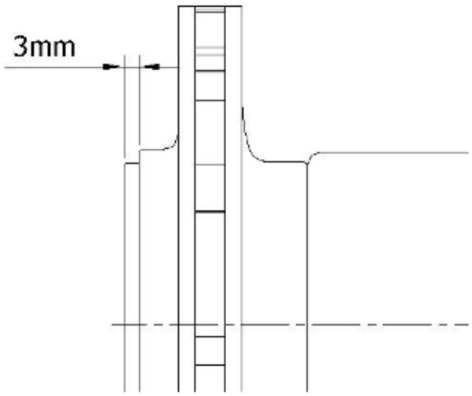
4. Replacement of consumable parts

Replace the following parts as a set.

Set	YD-40/50GSR	YD-65GSR
Front casing set	No.1:Front casing+No.2&3:Casing cover+No.4:Drain cover+No.5:Drain plate+No.6:O-ring+No.7:Liner ring+ No.8:Hex. socket head cap bolt+ No.9:Hex. bolt	No.1:Front casing+No.2:Casing cover+ No.3:Suction flange+No.4:Discharge flange+No.5&6:Hex. socket head cap bolt+No.7:Liner ring
Impeller set	No.10:Mouth ring+No.11:Impeller+ No.12:Bearing+No.13:Lock collar	No.8:Mouth ring+No.9: Impeller+ No.10:Bearing
Rear casing set	No.14:Shaft+No.15:Rear casing+ No.16:Rear thrust ring	No.11:Shaft+No.12:Rear thrust ring+ No.13:Rear casing

5. Wear limit of Mouth ring, Bearing and Shaft (Time for replacement)

Check the amount of wear on the inner diameter of the impeller mouth ring, bearing and the outer diameter of the shaft during regular maintenance, and replace it with the new one as a set if it is below the limit value.



Model	Height of Mouth ring	
	New	Wear limit
YD-GSR in common	3mm	1mm

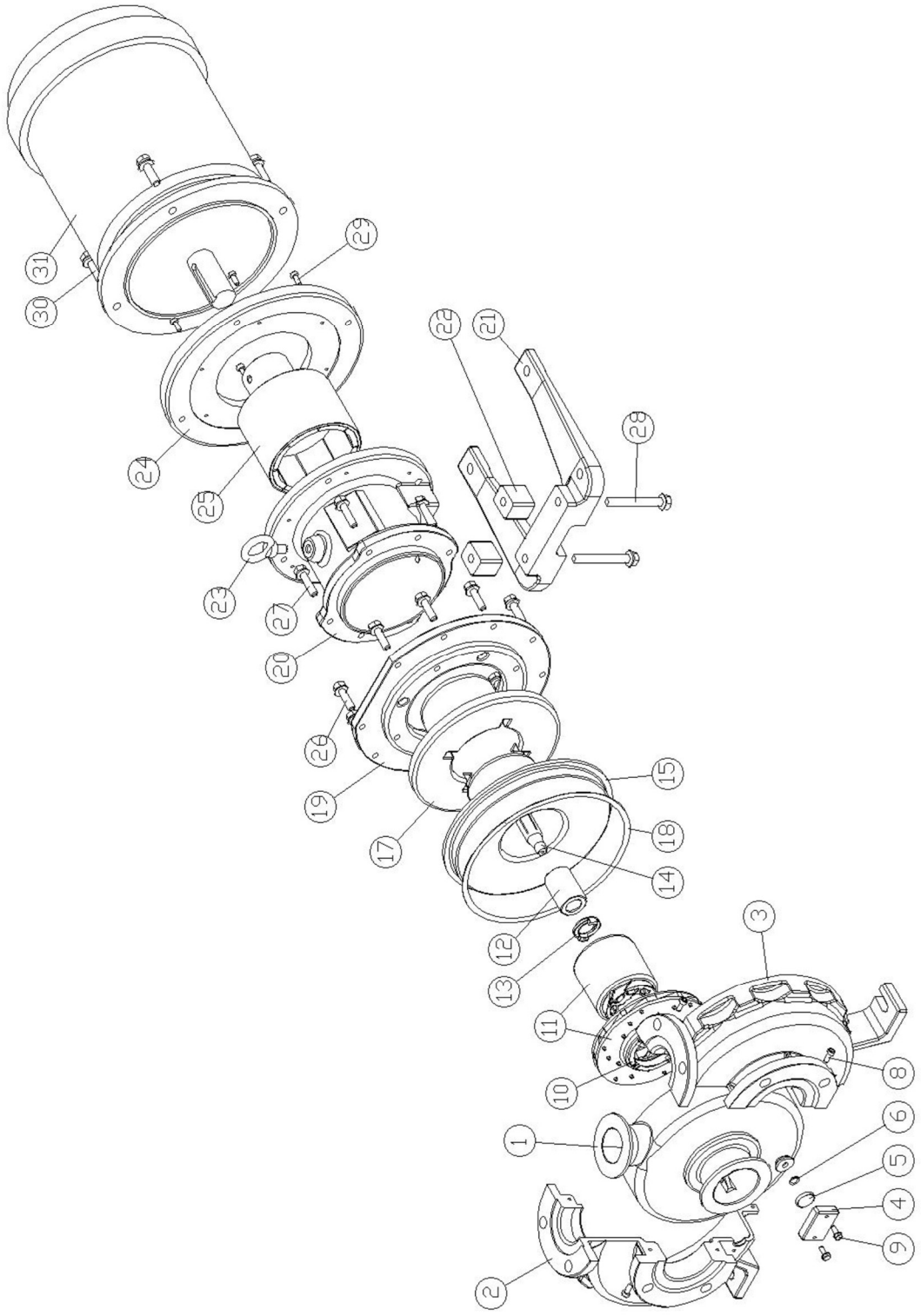
*If the contact area with the liner ring is in uneven or the material has deteriorated, replace it with the new one.

Model	Bearing inner diameter		Shaft outer diameter	
	New	Wear limit	New	Wear limit
YD-GSR in common	24mm	25mm	24mm	23mm

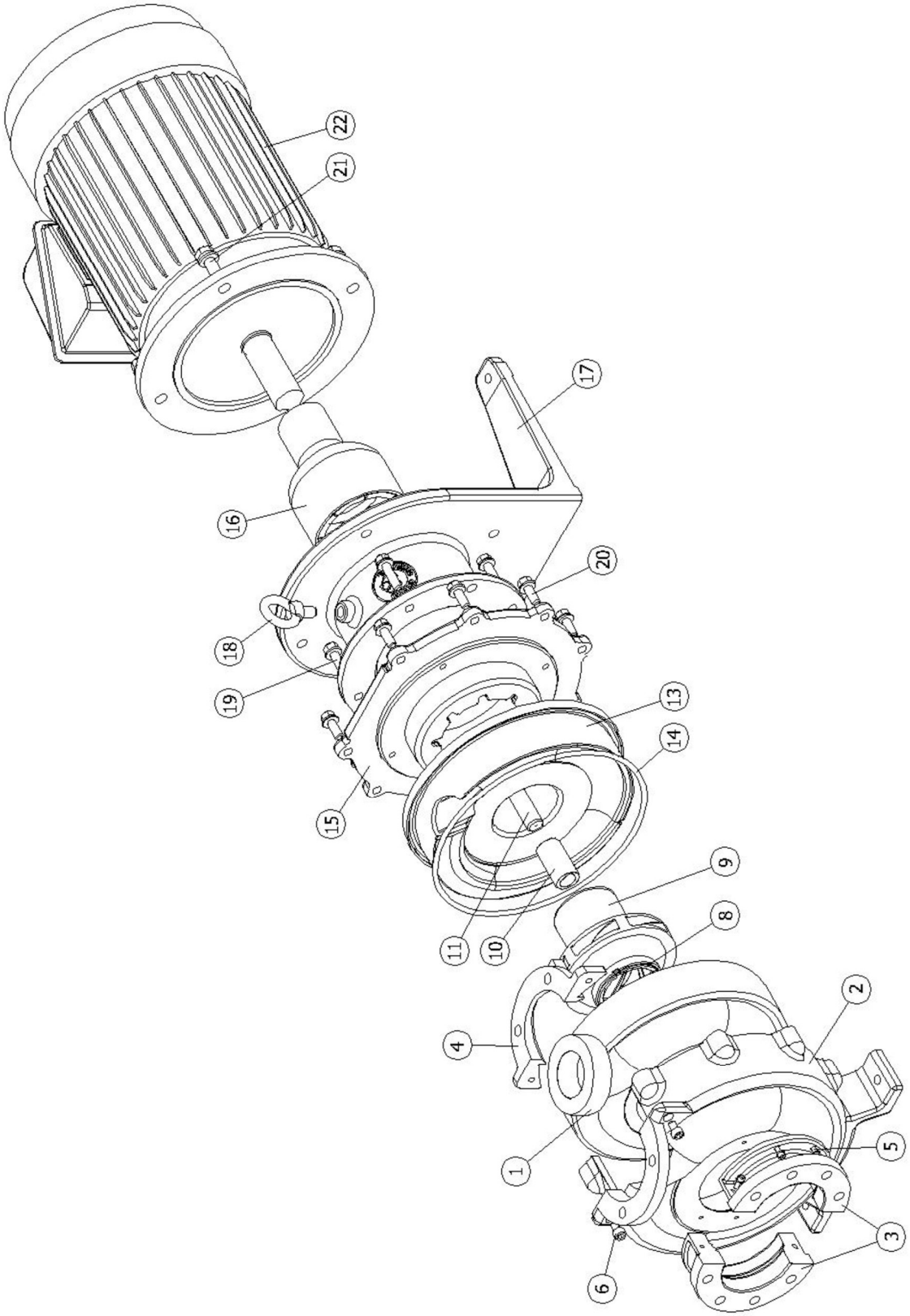
*The above table shows the wear limit of the bearing and shaft.

Even if each wear limit is below the wear limit as above, if the maximum clearance when the bearing and shaft are combined exceeds 1mm, replace it with the new one.

• Exploded view [YD-40/50GSR]



• Exploded view [YD-65GSR]

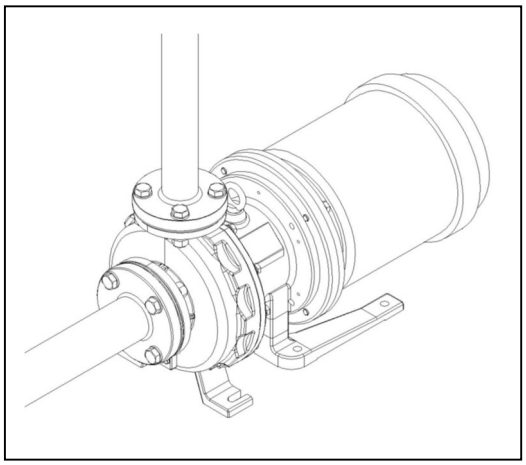


Disassembly / Assembly

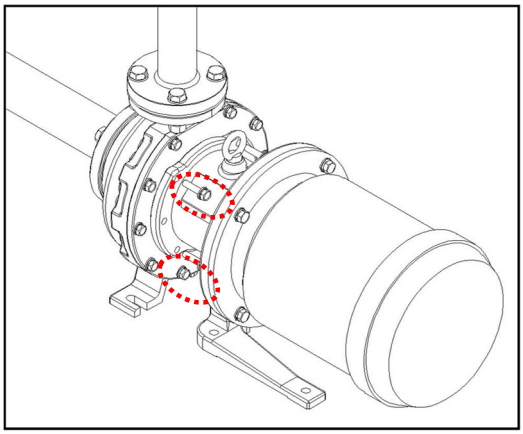
The magnet force used in the pump is powerful, to be careful of the handling when disassembling and assembling. Disassemble and assemble with the suction and discharge valves completely closed.

1. Disassembling procedure

(1) Before disassembling, secure the workspace around the pump to disassemble and disassemble properly. Always wear protective gears (Gloves, goggle, etc.) when working.



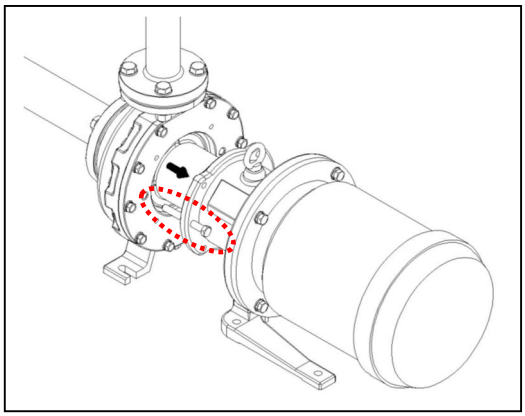
(2) Remove 4 hex. bolts (No. 19) to fix the rear casing support and bracket.
[Tools used]
* YD-40/50GSR (No.27): 17 mm wrench
* YD-65GSR (No.19): 19 mm wrench



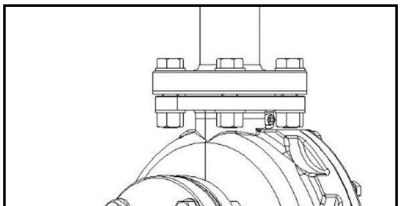
(3) Attach jack bolts (Full thread: 2 pcs) to the bracket and pull out the motor backward to separate from the pump.

⚠ The pump and motor have a strong holding force due to the magnetic force of the magnet. Be careful not to pinch fingers while working.

⚠ When the suction & discharge piping is made of plastic, firstly remove them and push the pump by jack bolts to separate from the motor.
* YD-40/50GSR : Hex. bolt M12x100
* YD-65GSR : Hex. bolt M16x100



(4) Remove the drain cover and plate to drain



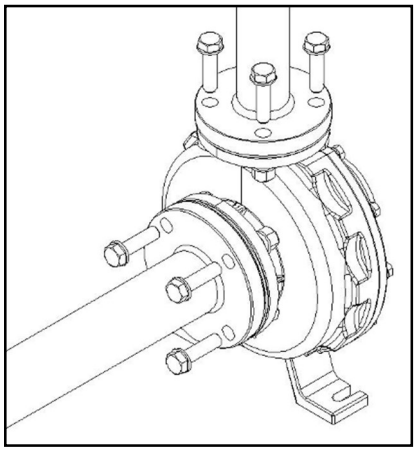
residual liquid. (Only YD-40/50GSR)

⚠ Direct contact with chemicals may cause harm, so make sure to wear protective equipment when working.

[Tools used]

10mm wrench

(5) Remove bolts which fix the suction & discharge flange.



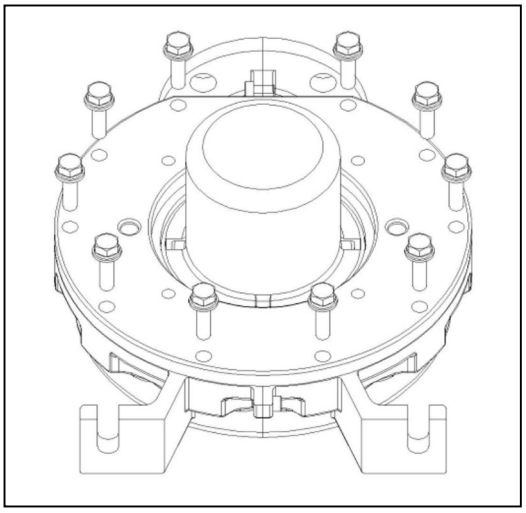
⚠ At this time, be aware that the liquid remaining in the casing and piping may flow out.

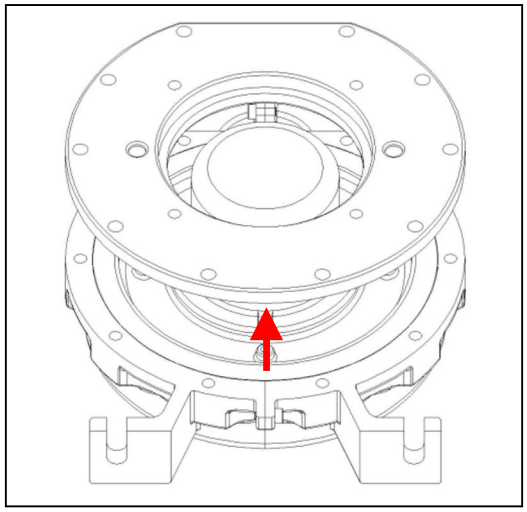
[Tools used]

24mm wrench and socket wrench

(6) After removing residual liquid from the casing, lay the pump on its side with the suction inlet down. (Protect the suction inlet with clothes not to be damaged.)

Remove hex. bolts to fix the rear casing cover and support to separate the rear casing support.



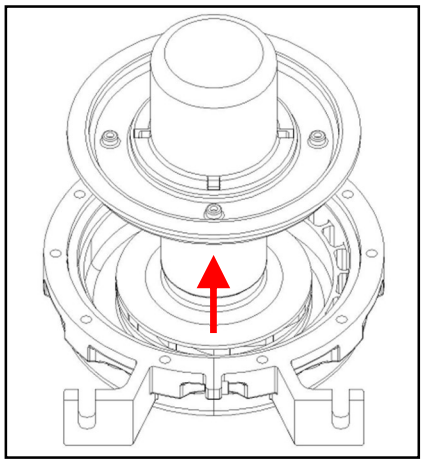


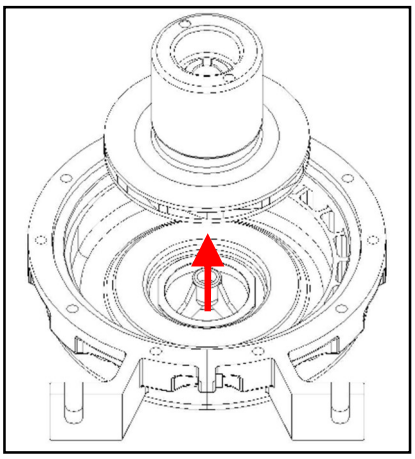
[Tools used]

* YD-40/50GSR (No. 26: 10 pcs) : 17 mm wrench
* YD-65GSR (No. 20: 9 pcs) : 19 mm wrench

(7) Remove the rear casing and impeller.

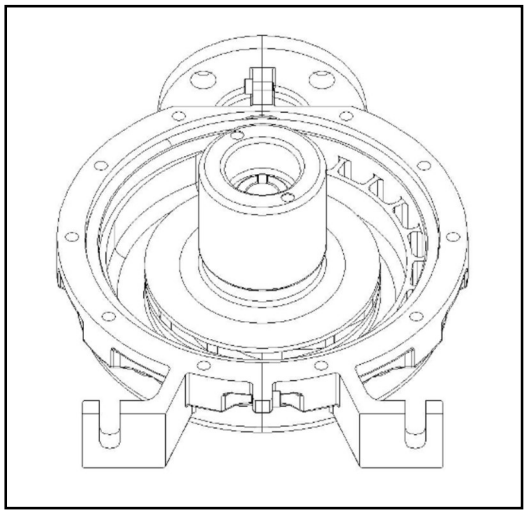
Be careful not to scratch or shock each part, especially the SiC parts.





2. Assembling procedure

Make sure to check the sliding parts and O-rings for dust and scratches. If iron powder adheres to the impeller magnets, make sure to remove it.



(1) Set gently so that the liner ring surface of the front casing and the mouth ring surface of the impeller are in contact with each other. After setting, rotate the impeller by hand to check that it rotates smoothly.

Insert the O-ring into the front casing.

[O-ring]

* YD-40/50GSR : No.18
* YD-65GSR : No.14

(2) Gently insert the rear casing shaft into the impeller bearing.

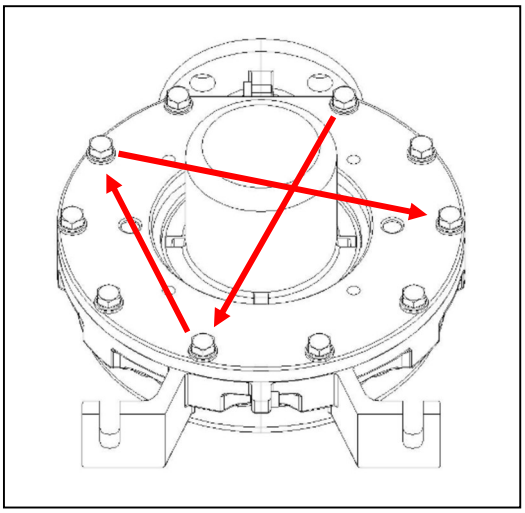
Insert carefully so as not to cause chipping in SiC shafts and bearings.

Attach the rear casing support to the rear casing and fix it with a hexagon bolt.

Be careful not to pinch your fingers as the magnetic force of the impeller magnets attracts the rear casing support.

[Tools used]

* YD-40/50GSR (No.26: 10 pcs) : 17 mm wrench
* YD-65GSR (No.20: 9 pcs) : 19 mm wrench



Bolt tightening torque
30 N・m

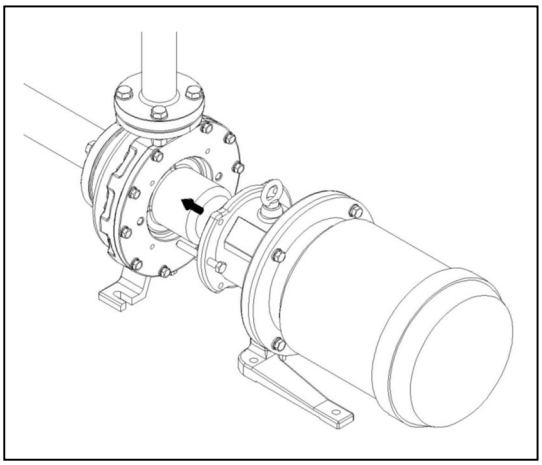
Tighten diagonally

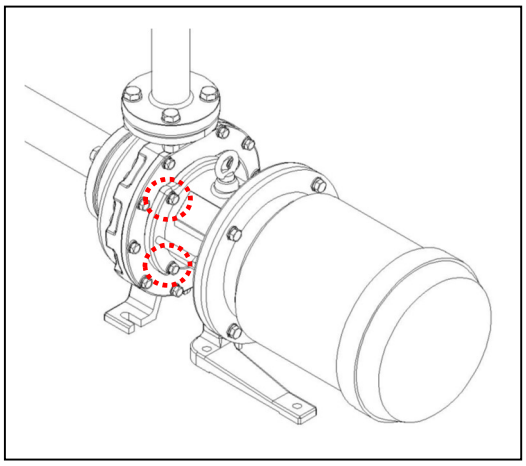
(3) After connecting the suction and discharge pipes, bring the motor closer to the pump with the jack bolts fully extended.

⚠ The pump and motor have a strong holding force due to the magnetic force of magnets, so be careful not to get your fingers caught.

⚠ Do not forget to attach the gasket when connecting the suction and discharge flanges.

Loosen the jack bolts toward the motor. When the rear casing support and bracket come in contact, fix them with four hex bolts.



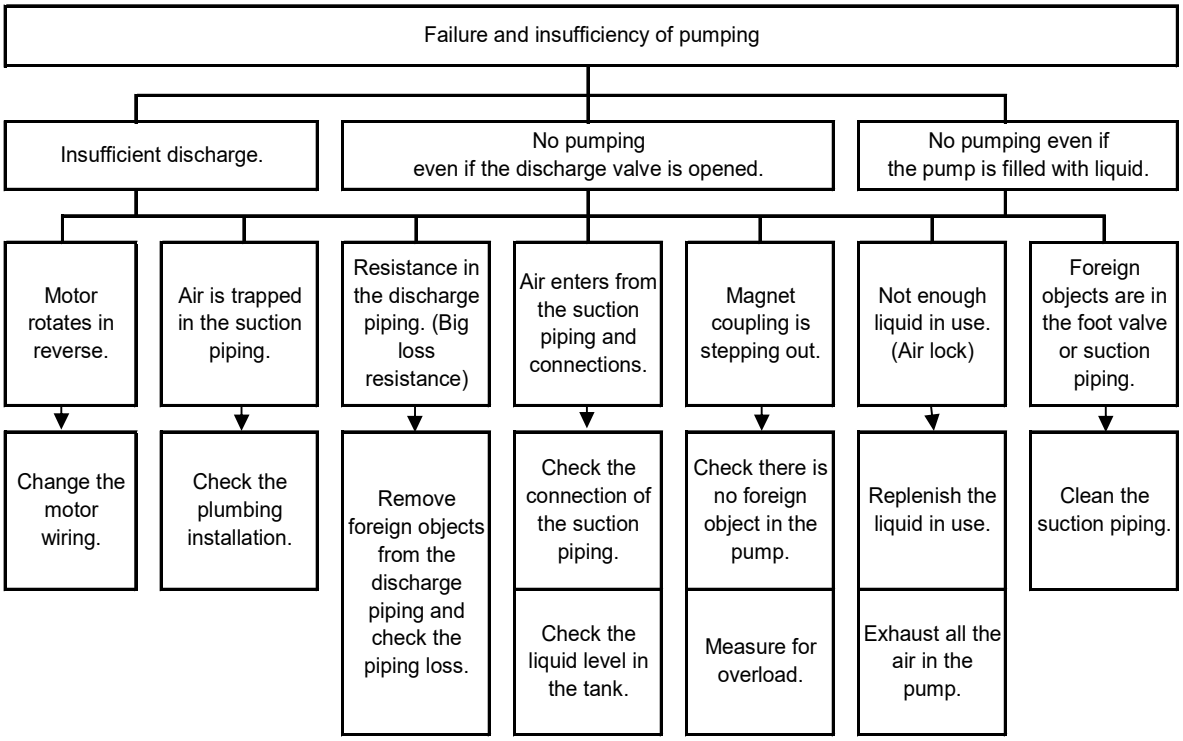


[Tools used]

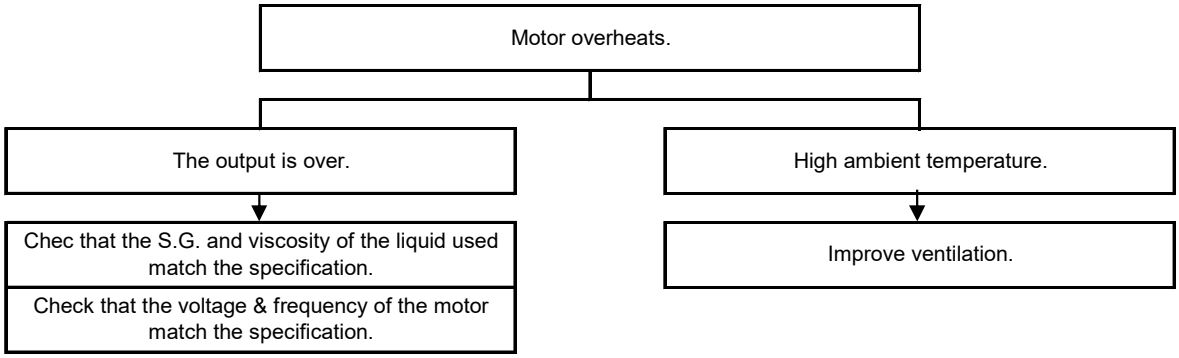
* YD-40/50GSR (No.27) : 17 mm wrench
* YD-65GSR (No.19) : 19 mm wrench

Troubleshooting

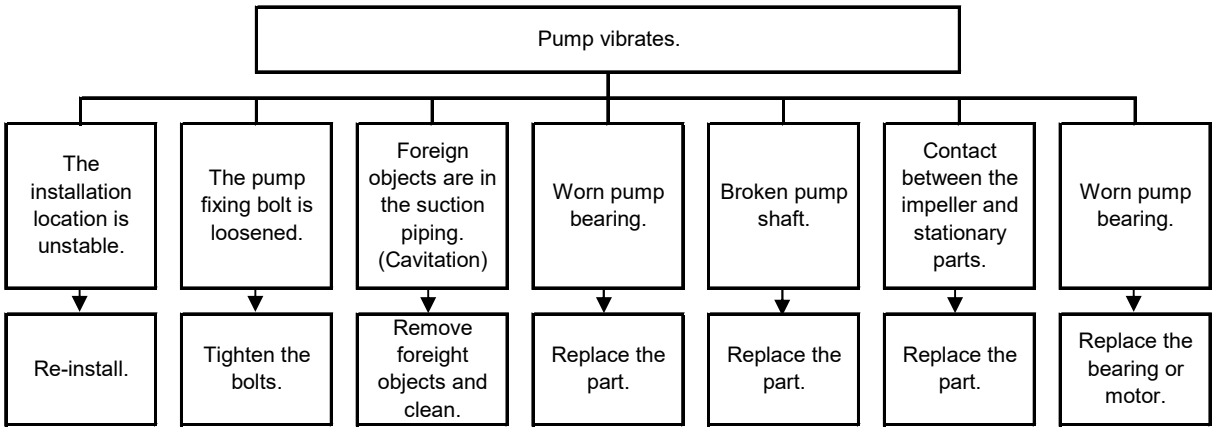
1. Failure and insufficiency of pumping.



2. Motor overheats.



3. Pump vibrates.



Warranty / Repair

1. Warranty period and coverage
   (1) The warranty period is 12 months from dispatched from our factory.
   (2) During warranty period, if the pump breaks down or is damaged at the use under the condition instructed in this manual due to manufacturing defect(s), the failure parts are repaired free of charge.
   (3) Even if the failure occurs within the warranty period, the followings are repaired or replaced for compensation in principle.
   - Breakdown or damage due to different use or safekeeping from the instructions in this manual.
   - Breakdown or damage due to incorrect use or unjust repair or modification.
   - Breakdown or damage as result of pollution, salt damage, gas damage, abnormal voltage or undesigned power (voltage, frequency) as well as fire, earthquake, flood disaster, lightning strike or other natural disaster.
   - Abrasion or degradation of consumable parts like a gasket or O-ring.
   - Breakdown or damage during transportation, for relocation or fall after your purchase

   (4) We cannot be responsible for the break down or damage of the customer-specified pump.
   (5) Irregularities or breakdowns due to chemical or hydrodynamic corrosion by liquid are not covered under the warranty. The material chosen at the time of the contract is only a recommendation. We do not guarantee the chemical resistance of the material.
   (6) If the determination of the cause for the breakdown or damage is questionable, it attributes to the negotiation between the customer and us.
   (7) Expenses or other damage incurred as a result of breakdowns at the use under the different condition from the instruction in this manual are not covered under the warranty.
2. Repair

Notice:

For repairs, contact the supplier. Pack and return the wet parts kit after washing thoroughly.

If irregularities are detected during operation, stop the operation immediately for check. (Refer to the section on “troubleshooting”).

(1) Consult your supplier or us for repair.
(2) Read this manual again and re-check before requesting repair.
(3) When visiting to a distance location for repair, the travel expenses are charged.
(4) Inform the followings when requesting repair.
- Model name and serial number
- Use duration and condition
- Damages parts and condition
- Liquid (Name, Specific gravity, Temperature, Slurry)

If liquid leaks during transportation, it is very dangerous, so make sure to clean inside thoroughly. When ordering replaced parts, specify the name in the parts name list (P8, 9). Although, inform the parts’ number and material, too.

Installation record

Model:	
Purchase date:	Serial number:
Start date:	Supplier:

Ver.20240819

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