NIKKISO

MAGPON

MAGNET DRIVE CENTRIFUGAL PUMP

SERIES CPT

INSTRUCTION MANUAL

SHUN EIKO CO., LTD.

Licenced by **NIKKISO EIKO CO., LTD**

■ Preface

Thank you very much for your purchase of our NIKKISO MAGPON.

The Instruction Manual gives a detailed description on the operational procedure. We hope you will read through this Instruction Manual carefully to gain mastery of the handling procedure of this pump so that you may maintain this pump at the best conditions without any trouble or disorder for many years to come.

Upon receiving the pump, please make certain the followings：

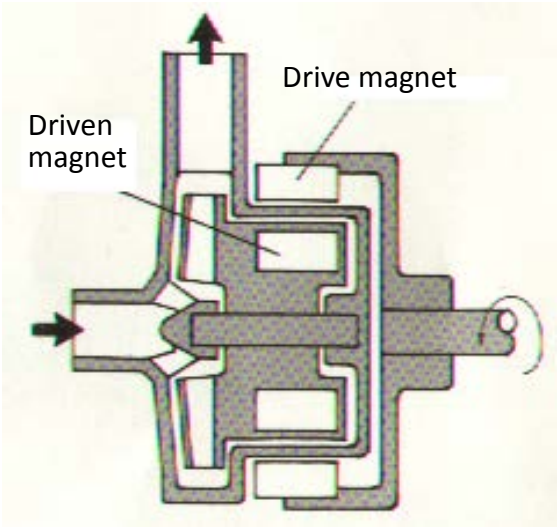
1) Confirm the Name Plate
   - Model No.
   - Phases(1 φ or 3 φ), Voltage, Frequency (50Hz or 60Hz)
   - Others
2) Whether any loosen bolts and nuts, and damaged parts during transportation are observed or not.
3) Whether lacked accessories or parts exist or not.

In case incorrect pump or any damage or lack is observed, please contact immediately NIKKISO EIKO or Distributor.

■ Principle of MAGPON

As illustrated in the sketch, the impeller of which a permanent ferrite magnet has been built in is driven by means of rotating of a drive magnet connected with motor.

The pump section and motor section are completely separated without any shaft sealing device as in conventional centrifugal pumps so that no leakage may be achieved.



■ Specification

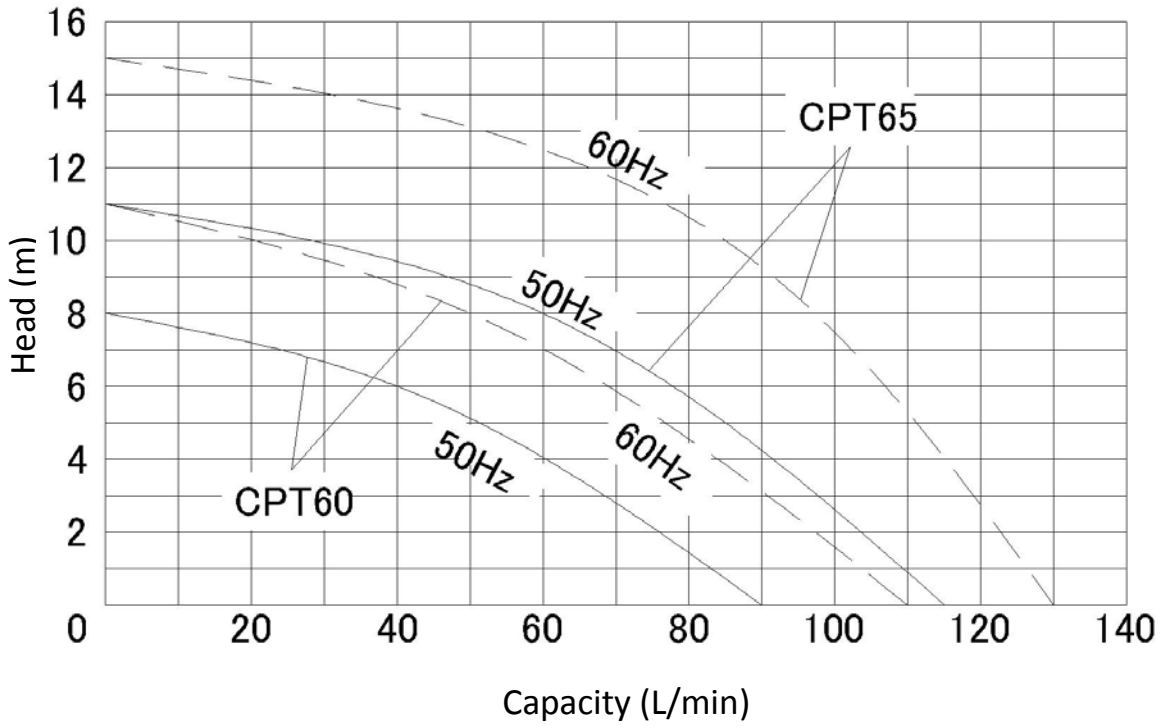
Model	Suction/ Discharge	Capacity L/min	Total head (M)	Std.capacity (m-l/min)	Motor(w)		Weight (kg)
CPT60	φ 25 / φ 25 PT1"(Male) or PS1"(Female) / 3/4"(Male)	90 / 110	8 / 11	6.5-40 / 8.5-50	200w	1 φ 110 / 220V 3 φ 220 / 380 / 440V	12.5
CPT65		115 / 130	11 / 15	8-60 / 10-85	300w		12.5

- Based on clean water at ambient temp.(50 / 60 Hz)
- Allowable liquid temp.: 0 – 80°C

Allowable liquid viscosity and specific gravity are consulted by NIKKISO EIKO or Distributor.

■ **Performance curve** (Clean water at ambient temperature)

CPT60, CPT65



■ **Caution for operation**

1. Dry running is strictly prohibited.
2. Following liquids can not be used.
   - ★ Liquid containing iron and nickel powder.
   - ★ Liquid containing slurry.
   - ★ Liquid which swell or corrode polypropylene, Viton and Ceramics, such as,
   - ● Gasoline, Kerosene and other paraffin group hydrocarbons.
   - ● Trichloroethylene, Carbon tetrachloride and other halogen hydrocarbons.
   - ● Sorts of ether and lower ester, solvents and others.
3. Be sure the earthing, and to provide earth-leakage circuit-breaker.
4. Put the inflammables or combustibles apart from the pump.

■ Installation

1. Well ventilated and dry part is recommended to install the pump.
2. Any direction is available to install the pump, but the discharge port has to face upwards so that the air in the casing could be discharged easily.
   (Direction of the pump is changeable by means of turning of pump casing in every 60 degree.)
3. This pump is not self-priming pump and positive suction is most recommendable. In case minus suction is unavoidable, provide a foot valve at the end of suction pipe and prime enough before starting to fill the pump casing and suction piping with liquid.
4. Enough space to maintain the pump is to be required.

■ Piping

1. The piping should be of anti-corrosive, PVC hose and the like, and as short as possible.
2. Keep free from the stress to the pump due to piping works.
3. Use the reliable hose to line pressure, especially at the suction side of which is to be not crushed (squeezed) under suction pressure.
4. Tighten the hose firmly with hose band, especially more careful attention should be taken not to leak air into suction side piping.
5. Suction piping is recommended to rise at 1 / 100 or more slope to exhaust air from it.
   Adequate piping size should be decided as to port size of the pump.
6. Suction / Discharge hose joints are accompanied with CPT60 & CPT65 as a standard parts.

	Hose Joint	Screw Joint
CPT60, 65	φ 25 mm / φ 25 mm	G1”(female) / Rc¾”(male)

■ Wiring

Wiring works shall be performed correctly based on the Rules and / or Recommendations.
Imperfect wiring or earthing works may cause troublesome.

■ Inspection of pump before starting operation

After completion of installation, wiring and piping for the pump, recheck the following 3 points carefully and start operation.

1. Check whether the size of wire is pertinent or not.
2. Check whether the fuse, which is correct in capacity, has been provided or not.
3. Check whether the pump is filled with liquid or not.
   Dry running of the pump is strictly prohibited.

■ Operation

1. Prime enough to fill the pump and piping with liquid, and fully close discharge valve. In case suction valve is provided, fully open it.
2. Switch-on in a moment to check whether the pump may rotate or not, and rotating direction for 3 phases motor. Correct rotating direction is counter clockwise form the pump side as shown on motor cover by arrow mark. Cooling fan of motor shows rotating direction through the slits of rear cover.
3. When the pump reaches at specified revolution, open gradually discharge valve to make continuous operation.
4. Check and confirm whether abnormal phenomena in pressure, current, vibration, noise etc. exist or not.
5. In case that check valve on discharge line is not provided, gradually close the discharge valve and then switch-off to stop pump operation.

■ Maintenance

Before start work on maintenance, be sure to switch-off electric source concerned.

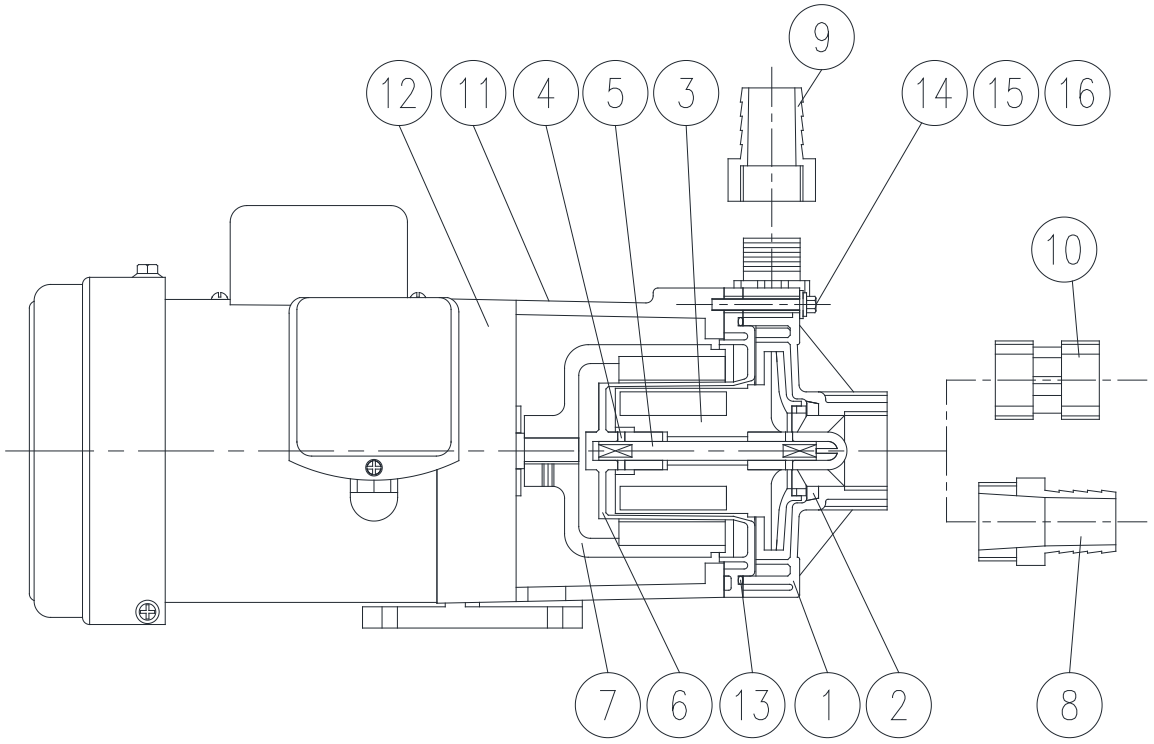
1. Electric current, discharge pressure and capacity, vibration, noise etc. are to be checked as daily routine.
   In case that some abnormal data are observed more or less, earliest countermeasure to eliminate those abnormalities is most recommendable.
2. In case of allowing the discharge valve to be closed during long time operation, shaft bearings and other sliding parts might be seized up.
3. Very frequent start and shut down operation might cause some damage on pump. 5-6 times start and shut down hourly will be limited to keep the pump at good condition.
4. When electricity failure happened, circuit-breaker must be switched off not to cause some accident in human and process when failure recovered.
5. In case that idle for extended period is expected, pump is to be thoroughly flushed out, especially in cold season, remained water may freeze to brake pump casing.

■ Trouble shooting

Condition	Cause	Remedites
Motor does not start.	* Broken motor. * Incorrect or broken wiring.	* Repair or replace. * Check and repair.
Water is not pumped Or shortage of flow.	* Operating without liquid. * Air exists in the pump. * Suck air from suction side. * Squeezing of suction hose. * Reverse rotation. * Leakage from discharge line. * Worn or corroded bearing or mouth(impeller) ring. * Too much pressure drops in pump system. * Too high discharge head. * Too high suction head. * High temperature or volatile liquids.	* Prime or forced to suck. * Discharge air completely. * Check and tighten the hose. * Replace it with better one. * Make wiring correct. * Check and repair. * Check and replace. *Check and modify system design.
Over current.	* High viscous or high dense liquids. * Foreign matters be stuck on the impeller. * Impeller and pump casing touch each others. * Impeller damaged.	*Check and make the design proper. * Make it clean. * Replace. * Replace.
Big noise or Vibration.	* Operating without liquid. * Incorrect installation. * Too much flow resulted. * Impeller damaged. * Foreign matters exist in pump.	* Prime enough or make suction positive. * Install firmly. * Adjust the discharge valve. * Replace. * Make it clean.
Leakage.	* “O” Ring damaged.	* Replace.

■ Parts list

CPT60, 65



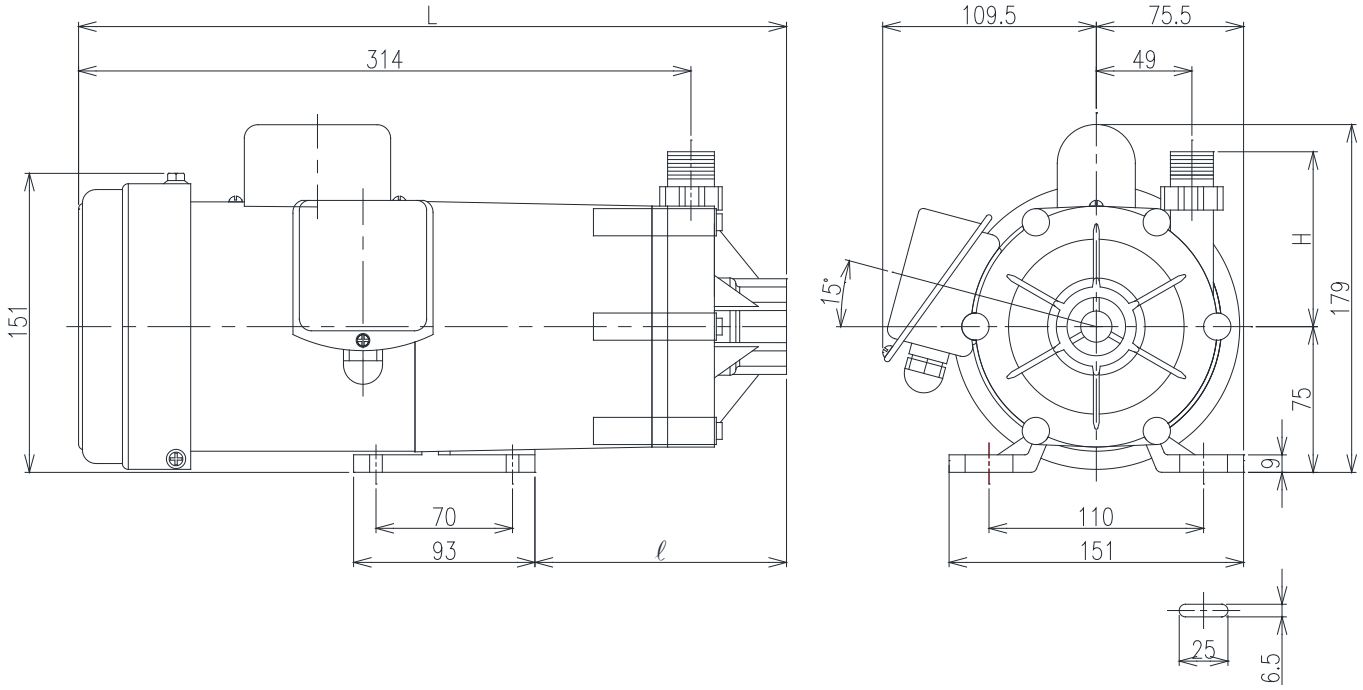
No.	Parts Name	Std.Material	Q'ty	No.	Parts Name	Std.Material	Q'ty
(1)	Pump Casing	PP(20% Glass)	1	(9)	Joint B	PP	1
(2)	Liner ring	Alumina ceramics	1	(10)	Screw joint	PP	1
(3)	Impeller assy		1	(11)	Name plate	SUS430	1
(4)	Thrust washer	Alumina ceramics	2	(12)	Motor		1
(5)	Shaft	Alumina ceramics	1	(13)	O Ring	FPM or EPDM	1
(6)	Rear casing	PP	1	(14)	Hexagon head bolt	SUS304	6
(7)	Drive magnet assy	Ferrite / FC20	1	(15)	Spring washer	SUS304	6
(8)	Joint A	PP	1	(16)	Plain washer	SUS304	6

※CPT60 / 65 Standard: Screw joint(NO.10).

Option: Joint A(NO.8) with joint B(NO.9).

■ Outline drawing

CPT60 / 65



Unit : mm

	Suction Side	Discharge Side	L	ℓ	H
Joint	1”Female	3/4”Male	363	129	90
	1”Male	3/4”Male	391	157	90
	1”Hose	3/4”Hose	405	171	123

■ Warranty

This provision, if attached to the quotation, constitutes a quotation together with the specifications, and you are deemed to have approved each item described below as a part of the contract unless a written separate agreement has been made when the contract has been concluded. Even if part of this provision will not be applied by agreement with you, other items except for the associated items shall still become effective.

Warranty provision SHUN EIKO CO., LTD.

1. Warranty

1) Our warranty period based on this provision shall be one year from the delivery date of the object product from us.
2) If our product to be delivered has any failure due to a cause which is clearly judged to be based on a defect of our manufacturing or material, we will assume responsibility for this failure.

2. Limit of warranty

If it is confirmed by both you and us that any defect or trouble has occurred due to any of the following items, we will be free from warranty responsibility based on this provision and the other responsibility of any nature and any kind.

1) If the object product was used under conditions different from our handling instructions, or specifications or the other normal usage.
2) If installation, piping, operation, running, repair or rework of the object product was improperly or inaccurately carried out by any person other than us.
3) If the object product was used for purpose or by usage not specified in the specifications or the product instruction manual.
4) If any failure or damage was caused due to chemical or fluid frictional corrosion by liquid to be handled.
5) If any failure or damage was caused due to a fact that there exists a defect in material of a part which does not directly contact the handling liquid which cannot be found by a normal technical level in the manufacturing process of the object product.
6) If any failure or damage was caused due to use of parts which we do not manufacture or do not specify.
7) If the object product was broken by frost in another status which is not under conditions that the tank discharge port is opened and water is discharged and then the inside is dried.
8) If occurrence of vibration and pressure increase in the piping system of the object product executed by us is due to another factor in the related system.

3. Content of warranty

Our warranty for the object product shall be limited to repair of defective parts or offering of replacement products by us. Please note that we will provide or replace parts such as packing, gaskets, bearings and filtering sand which have consumable characteristics at a charge even in the warranty period. If our technician is dispatched to the specified place and the defective parts are repaired or replaced by the technician based on your request, expense to dispatch our technician shall be separately paid. We will assume no responsibility of any nature and any kind for damages such as passive damage or indirect damage, spillover damage other than contracted objects and damage caused by nuclear accidents in addition to the Article 2

Repair

If you find any abnormality during use of this pump, immediately stop operation and inspect whether it is due to failure. Refer to the section of “Causes of failure and remedy”.

1) When requesting repair, contact the dealer from which you ordered, or our nearest headquarters, branch or sales office listed on the back cover.
2) When requesting repair, inform us of “Pump model No. and serial No. described on the nameplate,” “Operating period and operating status” and “Failure location and its situation.”
3) When returning the pump to us for repair, make sure to sufficiently clean the inside of the pump before returning it because it is dangerous that the handled liquid remaining in the pump flows out during transportation.