11 June/2022/R3 | June/2022-23/L1/0000 | VC : 700277 | SAP NO. 2000018068

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SHAKTI PUMPS (INDIA) LIMITED

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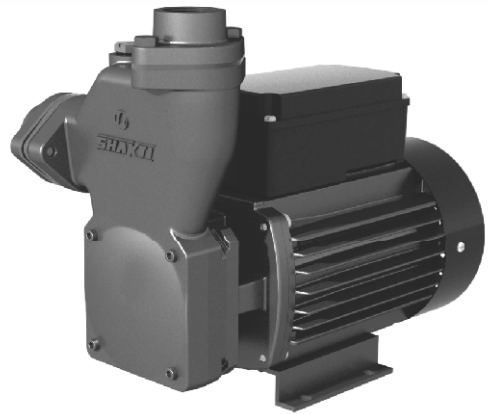
SHAKTI®

PUMPING LIFE

INSTALLATION & OPERATING INSTRUCTIONS



SELF PRIMING PUMP (CRP SERIES)

SHAKTI
PUMPING LIFE

CONTENTS PAGE NO.

All specification & information are given with good intent , errors are possible and product may be subject to change without notice. Pictures may be differ from actual product depending upon local market requirement & regulation.

Thanks for choosing our company's products.
Please read the user's manual carefully before operation.

⚠ Warnings!

1.Before operation, make sure that the electric pump is properly grounded.
2.Do not touch the electric pump while it is running.
3.Do not run the electric pump without water.

1. PRODUCT OVERVIEW

Centrifugal-type Clean Water Pumps(Hereinafter referred to as pump) mainly consists of water pump, seal, and motor. The motor is asynchronous; the pump has the structure of centrifugal impeller and volute-casing with large capacity, stable operation and low noise. Single mechanical seal is applied between the water pump and the motor, anti-water ring which is rotating on the shaft will assist the water splash and the isolation , "0"rings for all the static joints are applied. The pump, a kind of highly efficient energy-saving, hygienic, safe and ideal house-hold electric pump characterized by small size, light weight, compact structure, simple and convenient installation, can be widely applied in farm irrigation, spray irrigation, garden spray irrigation, vegetable greenhouse water supply, aquaculture water supply and drainage, well water lift, tap water pressurization and other occasions such as water for family life.

2. DELIVERY

The pumps are tested 100 % before leaving the factory. The test includes a function test where the pump performance is measured to ensure that the pump meets the requirements of relevant standards. Test certificates are available from Shakti.

3. CONDITIONS FOR USE

The pump will work normally and continuously under the following conditions:
1. Temperature does not exceed +40 °C.
2. PH value of medium is within the range of 6.5 8.5.
3. Volume ratio of solid-containing impurities in medium does not exceed 0.1%, particle size is not more than 0.2mm;
4. Performance parameters of the pump refer to the parameters indicated on the nameplate as a reference;
5. The pump must be applied under the conditions indicated on the name plate.

4. ELECTRICAL CONNECTION

The electrical connection must be carried out by a qualified electrician in accordance with local regulations.

⚠ Warning

Before removing the terminal box cover and before removing/dismantling the pump, make sure that the power supply has been switched off.
The pump must be connected to an external mains switch.
The operating voltage and frequency are stated on the nameplate. Make sure that the motor is suitable for the power supply of the installation site.
The electrical connection should be carried out as shown in the wiring diagram inside th e terminal box cover.

⚠ Warning

Whenever powered equipment is used in explosive surroundings, the rules and regulations generally or specifically imposed by the relevant responsible authorities of trade organization must be observed.

4.1 Motor protection

Three-phase motors must be connected to a motor-protective circuit breaker. Carry out the electrical connection as shown in the wiring diagram on the back side of the terminal box cover.

⚠ Warning

Before starting any repair work on motors incorporating a thermal switch or thermistors, make sure that the motor cannot restart automatically after cooling.

4.2 Frequency converter operation

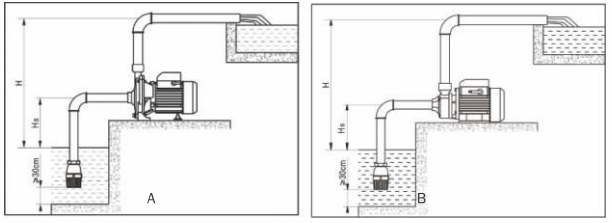
All three-phase motors can be connected to a frequency converter. Frequency converter operation will often expose the motor insulation system to a heavier load and cause the motor to be more noisy than usual due to eddy currents caused by voltage peaks.
A large motor driven via a frequency converter will be loaded by bearing currents.

5. INSTALLATION AND PRECAUTIONS

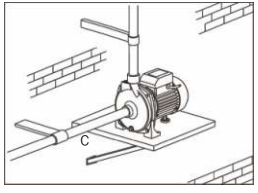
1. Prior to installation and application, it is necessary to overall check and make sure that there exists no damages of the pump during the transportation and storage. Such as the cables, plugs and etc. are in good conditions or not. In case of any damages, it is necessary to call professional staffs immediately to make replacements or repairs before using.

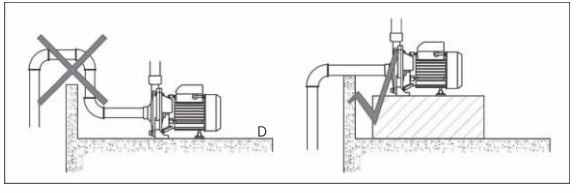
2. During the installation, it is necessary to fix the whole machine properly, use steel pipe or hose (should not be too soft so as not to be sucked flat) to connect the bottom valve (if the configuration is made available) with the water inlet of electric pump, and it is required that the distance between bottom valve or strainer mesh and water bottom must be more than 30cm so as to avoid the impact on operation due to the suction of impurities into pump chamber.

Moreover, the suction height of the pump should not exceed the suction requirement of the pump. (See Drawing A and B)

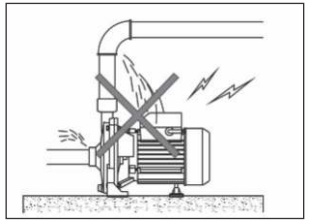


3. Installation of the pump pipelines should be as short as possible, and try to avoid multiple joints. Supporting frame should be arranged at the water inlet and outlet pipelines of the pump. Water inlet and outlet pipelines should not be totally supported by the pump body. (See Drawing C and D)



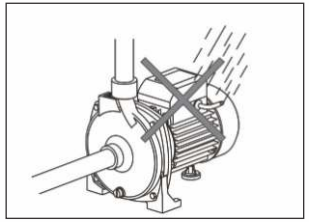


4. Water inlet pipelines and their interfaces should be properly sealed to avoid air leakage. Water outlet pipes should be firmly connected to stop water from splashing on the motor parts and thus cause electric leakage. (See Drawing E).



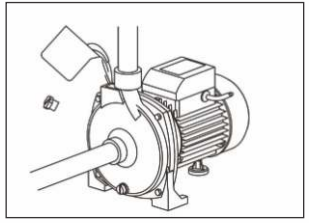
E

5 It is strictly prohibited to let the pump horizontally placed or submerged in water, and it is necessary to stop the electric pump from water splash, high flow water spray, and prevent the winding insulation from being damaged as a result of exposure to moisture. (See Drawing G)



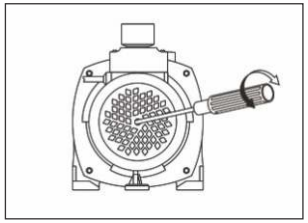
G

6. In the first use of the pump, it is necessary to enable the pump body to be fully injected with water, and tighten the water-injecting screw after the air is totally evacuated. (See Drawing H)

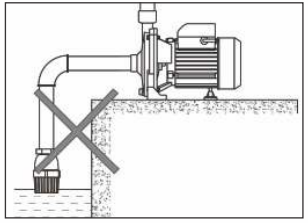


H

7. Please dial the rotating shaft with the straight screwdriver before starting in order to check the pump running is flexible or not, then start the motor to check the motor running is normal or not after the power is supplied, The clockwise rotation is correct when seeing from the fan end. (See Drawing 1)



8. During the operating process of the pump, it is necessary to check the decline of water level, the bottom valve and the end of water inlet pipe exposing to the water surface is prohibited. (See Drawing J)



J

9. When the pump is in operation, and the user wants to adjust the electric pump location or carry out the action of touching the pump, it is necessary to turn off the power at first so as to avoid the occurrence of accident.

6. MAINTENANCE

⚠ Warning
Before starting work on the product, switch off the power supply. Make sure that the power supply cannot be accidentally switched on.

6.1 Pump
The pump is maintenance-free.

6.2 Mechanical shaft seals
Mechanical shaft seals are maintenance-free, working almost without any leakages. If any considerable and increasing seepage occurs, the mechanical shaft seal should be checked immediately. If the sliding surfaces are damaged, the entire shaft seal should be replaced. Mechanical shaft seals should be treated with the greatest care.

6.3 Motor
Check the motor at regular interval s. It is important to keep the motor clean in order to ensure adequate ventilation. If the pump is installed in a dusty environment, it must he cleaned and checked regularly.

7. PERIODS OF INACTIVITY AND FROST PROTECTION

Pumps which are not being used during periods of frost should be drained to avoid damage.

⚠ Warning

Care must be taken to ensure that the escaping liquid does not cause personal injury or damage to the motor or other components. In hot-water installations, special attention should be paid to the risk of personal injury caused by scalding hot water. If the pump is to be drained prior to a long period of inactivity, inject a few drops of silicone oil on the shaft at the bearing bracket. This will prevent the s haft seal faces from seizing up.

8. SERVICE

⚠ Warning

If a pump has been used for a liquid which is injurious to health or toxic, the pump will be classified as contaminated. If Shakti is requested to service such a pump, Shakti must be contacted with details about the pumped liquid, etc. before the pump is returned for service. Otherwise Shakti can refuse to accept the pump for service. Possible costs of returning the pump are paid by the customer.

9. FAULT FINDING

⚠ Warning

Before removing the terminal box cover and before removing/dismantling the Pump make sure that the power supply has been switched off and that it cannot be accidentally switched on again.

TROUBLESHOOTING

Trouble	Main reasons	Solution
Difficult starts	1. Power voltage too low.	1. Adjust voltage to 0.9-1.1 times of the rated value
	2. Pump phase lost.	2 . Check the switch, cable and terminal
	3. Impeller clogged.	3. Adjust clogged part.
	4. Big loss of cable voltage.	4. Select the proper cable.
	5. Stator winding burnt.	5. Rewind and overhaul.
Failed water priming	1. Air exist in pump chamber.	1. Fill enough water to remove air.
	2. Air leakage in inlet pipe.	2. Check joints and pipeline to ensure proper sealing.
	3.Foot valve not opened or clogged seriously, large resistance exist inside pipe.	3. Check whether foot valve keep flexible, remove clogging matter, shorten the inlet pipe.
	4. Air leakage seals inside pump.	4. Adjust the submersible depth or replace airtight packing.
Less flow	1.Pipe too long, head too hight or pipe curve too much.	1.Shorten pipe,use within head head range or change pipe curve.
	2.End valve,strainer,impeller Partly clogged.	2.Remove clogging matter.
	3.Stator worn badly.	3.Replace impeller.
Sudden stops	1. Switch disconnected or fuse burnt.	1. Check whether the head in use or power voltage conform to require-ments and adjust accordingly.
	2. Impeller clogged.	2. Remove the foreign matter
	3. Stator winding burnt.	3. Rewinding and overhaul.
Stator winding burnt	1.Winding turn-to-turn short circuit or short circuit between phases due to mechanical seal leakage.	Remove the troubles, disassemble the winding and rewind according to the original technical requirements, soak and dry the insulated paint or send to the maintenance unit for repair.
	2. Impeller clogged.	
	3.Electric pump starts and stops frequently.	
	4. Electric pump runs in overload.	
	5. Power voltage is too low .	

10. DISPOSAL

Disposal of this product or parts of it must be carried out according to the following guidelines:

1. Use the local public or private waste collection service.

2. In case such waste collection service does not exist or cannot handle the materials used in the product, please deliver the product or any hazardous materials from it to your nearest Shakti service workshop.

WARRANTY CERTIFICATE

Dear Customer,
Congratulation, for purchasing our product.

Pump and Motor are warranted against defects in workmanship and material under normal use, service & specified duty conditions. We provide one time warranty service for twelve months from the date of purchase by the first user.
Shakti Pumps (India) Limited warrants this product to be free from damage/ defects in material and workmanship under normal use and service for Twelve Months from the date of purchase by the first user. The user shall produce valid and original copy of invoice for availing warranty. The user shall carry defective pump set to nearest authorized service center

This warranty does not cover any loss or damage/ defect of any nature resulting from wrong product selection/ improper installation or installation by unauthorized/ untrained person/ sandy condition/ dry running and improper use of the pump sets.
The warranty also does not cover consequential losses/ damages arising due to failure of pump/ motor. Warranty of motor will not be cover for 25 HP and above, if they are running without soft starter.
Our obligation is limited t to recycling or repairing or replacing product/ parts ex-factory. Equipment for repairs should be returned free of cost to us.
The forgoing is subject to the provision that the user does not open the unit and make any change or repair without prior approval of authorized service center during the warranty period.
This warranty excludes every condition whether statutory or otherwise, whatsoever not herein expressly set out.

Customer name: .....Customer's phone:.....

Customer Address: .....

Invoice number: .....Invoice date:.....

Model Name: ..... Model Serial Number:.....

Dealer's Name: ..... Dealer's phone:.....

Dealer's Address:.....

APPROVED BY:

DATE OF ISSUE

17 - 05 - 2016

INSTALLATION REPORT

Customer's Name: - _____

Customer's Address: -_____

Customer's Ph. No.: _____

Dealer's Name: -_____

Dealer's Address:_____

Dealer's Ph. No._____

Pump Model:-_____S.L.No: _____

Project/Application:_____

Pressure In Kg:-_____Flow in m^3/hr:_____

Liquid:-_____Temp.:_____

Voltage:-_____Current:_____

Packing Condition:-_____

Remarks:_____

_____

_____

Date:-_____ _____

Customer's Signature

BOOK-POST

SHAKTI PUMPS (INDIA) LIMITED

Stamp

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