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## INSTALLATION & OPERATING INSTRUCTIONS



SNB/SMB SERIES



## EC DECLARATION OF CONFORMITY

### IN ACCORDANCE WITH LV & RoHS MACHINERY DIRECTIVES UNDER SELF DECLARATION

Product Designation : Submersible Motors / Solar Submersible Motors

Model Reference : Premium, MCIP, SML, MTSF, Solar (0.50 HP to 252.0 HP)

Intended End Use : For Submersible Motors / Solar Submersible Motors to be used for Clean water lifting application.

Conforming to the requirement of the following European Directive :

a) Low Voltage Directive - 2006 / 95 / EC

b) RoHS Directive - 2011 / 65 / EU

Applicable harmonised standards used :

EN 60034-1-2010

We hereby declare that Submersible Motors / Solar Submersible Motors is intended to be incorporated into OR assembled with other machinery to constitute relevant machinery to comply with the Essential Health and Safety requirement of the above-mentioned directives.

This machinery, its components and sub-assemblies shall not be put in to service until the machinery into which it is to be incorporated has been declared in conformity with the provision of the applicable directives.

The criteria for selection, safety requirement of other associated equipment and installation guidelines are detailed in the instruction manual.

- Date of Manufacturer & First CE marking : 10-Dec-2007.
- Date of Review : 5-Nov-2015
- Place of Manufacturer : Shakti Pumps India Ltd, Pithampur.

Issued at : SHAKTI PUMPS (INDIA) LTD.

Pithampur

Marking : **CE**

The above Motor must not be put into service/usage for other than specified in the instruction Manual on Date : 10-Dec-2007.

  
Deo Kumar Thakur  
(Manager-QA)



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## INSTALLATION AND OPERATING INSTRUCTIONS

### 1. Symbols used in this document



**Warning**  
If these safety instructions are not observed, it may result in personal injury.

#### Caution

If these safety instructions are not observed, it may result in malfunction or damage to the equipment.

#### Note

Notes or instructions that make the job easier and ensure safe operation.

### 2. General information

SNB/SMB pump are non-self-priming, single stage, centrifugal volute pumps with axial suction port and radial discharge port.

SNB/SMB pumps (cast iron) comply with EN 733.

### 3. Delivery and handling

#### 3.1 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.

#### 3.2 Handling

Weight: See label on the packing.



**Warning**  
Pump motors as from 4 kW are lifted with base plate & lifting eye must not be used for lifting the entire pump unit. See fig. 3.  
Pumps should be lifted by means of nylon straps and shackles or a hook as shown on figs. 1 & 2.

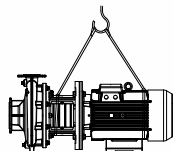


Fig. 1  
Correct lifting of pump without  
base frame

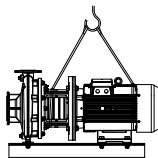


Fig. 2  
Correct lifting of pump with  
base frame

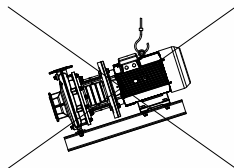


Fig. 3  
Incorrect lifting of pump

## INSTALLATION AND OPERATING INSTRUCTIONS

### 4. Applications

#### 4.1 Pumped liquids

Clean, thin, non-explosive liquids without solid particles or fibres.  
The pumped liquid must not attack the pump materials chemically.

SNB/SMB pumps are used in main fields of application:

- Water supply
- Industrial pressure boosting
- Industrial liquid transfer
- HVAC
- Irrigation

### 5. Mechanical installation

#### 5.1 Preparations before installation

The contractor must inspect the equipment on delivery and make sure that it is stored in such a way that corrosion and damage are avoided. If more than six months will pass before the equipment is put into operation, please consider applying a suitable corrosion inhibitor to the internal pump parts.

Ensure that the corrosion inhibitor used does not affect the rubber parts with which it comes into contact.

Ensure that the corrosion inhibitor can easily be removed.

To prevent water, dust, etc. from entering the pump, all openings must be kept covered until the pipes are fitted. The cost of dismantling the pump during start-up to remove a foreign object can be very high.

Mechanical shaft seals are precision components. If the mechanical shaft seal of a recently installed pump fails, this will normally happen within the first few hours of operation. The main cause of such failures is improper installation of the shaft seals and/or mishandling of the pump during installation.

During transport, the pump must be fastened securely to prevent damage to the shaft and seal caused by excessive vibrations and knocks. The pump must not be lifted by means of the shaft.

#### 5.2 Pump location

The pump should be sited in a well-ventilated, but frost-free location.



**Warning**  
When pumping hot liquids, care should be taken to ensure that persons cannot accidentally come into contact with hot surfaces.  
For inspection and repair, allow suitable clearances for pump or motor removal.

#### Vertical installation

- Pumps fitted with motors up to and including 4 kW require a 0.3 m clearance above the motor.
- Pumps fitted with motors of 5.5 kW and up require at least a 1 meter clearance above the motor to allow the use of lifting equipment.

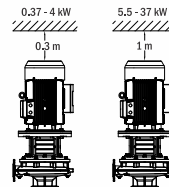


Fig. 4  
Clearance above the motor

## INSTALLATION AND OPERATING INSTRUCTIONS

### Horizontal installation

- Pumps fitted with motors up to and including 4 kW require a 0,3 m clearance behind the motor.
- Pumps fitted with motors of 5,5 kW and up require a 0,3 m clearance behind the motor and at least a 1 meter clearance above the motor to allow the use of lifting equipment.
- SNB/SMB pumps with base frame must have the same clearance as pumps with motors from 5,5 kW above.

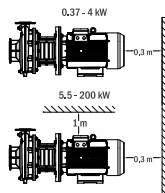


Fig. 5  
Clearance behind the motor

### 5.3 Connection

Arrows on the pump housing show the direction of flow of liquid through the pump.

The pumps can be installed with the motor/pump shaft in all positions between vertical and horizontal, but the motor must never fall below the horizontal plane. Horizontal motors with feet must always be supported.

It is advisable to isolating valves on either side of the pump as this makes it unnecessary to drain the system if the pump needs to be cleaned or repaired.

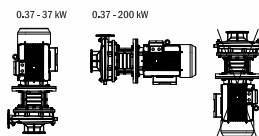


Fig. 6  
Installation positions

### 5.4 Foundation of SNB/SMB pump without base frame

#### Caution

The foundation/installation must be carried out in accordance with the following instructions. Non-compliance may result in functional faults which will damage the pump components!

We recommend that you install the pump on a plane and rigid concrete foundation which is heavy enough to provide permanent support for the entire pump. The foundation must be capable of absorbing any vibration, normal strain or shock. As a rule of thumb, the weight of the concrete foundation should be 1,5 times the weight of the pump. The concrete foundation must have an absolutely level and even surface.

Place the pump on the foundation, and fasten it. See fig. 7.

The foundation length and width should always be 200 mm larger than the length and width of the pump. See fig. 7.

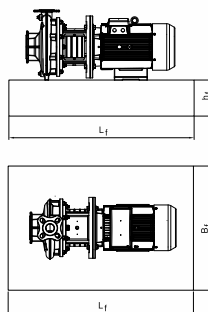


Fig. 7  
Foundation

## INSTALLATION AND OPERATING INSTRUCTIONS



The mass of the foundation must be at least 1,5 times the total mass of the pump. The minimum height of the foundation ( $h_f$ ) can then be calculated:

$$h_f = \frac{m_{\text{pump}} \times 1,5}{L_f \times B_f \times \delta_{\text{concrete}}}$$

The density ( $\delta$ ) of concrete is usually taken as  $2,200 \text{ kg/m}^3$ . In installations where noise-less operation is particularly important, a foundation with a mass up to 5 times that of the pump is recommended. See also 6,7 Vibration dampening on page 6.

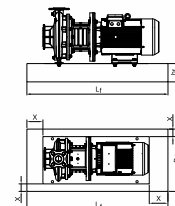


Fig. 8  
Foundation, X = min. 100 mm

### 5.5 Foundation of SNB pump with base frame

We recommend that you install the pump on a plane and rigid concrete foundation which is heavy enough to provide permanent support for the entire pump. The foundation must be capable of absorbing any vibration, normal strain or shock. As a rule of thumb, the weight of the concrete foundation should be 1,5 times the weight of the pump.

The foundation should be 100 mm larger than the base frame on all four sides. See fig. 8.

The minimum height of the foundation ( $h_f$ ) can then be calculated:

$$h_f = \frac{m_{\text{pump}} \times 1,5}{L_f \times B_f \times \delta_{\text{concrete}}}$$

The density ( $\delta$ ) of concrete is usually taken as  $2,200 \text{ kg/m}^3$ .

Place the pump on the foundation, and fasten it. The base frame must be supported under its entire area. See fig. 9.

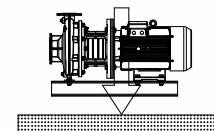


Fig. 9  
Correct foundation

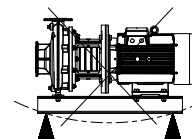


Fig. 10  
Incorrect foundation



## INSTALLATION AND OPERATING INSTRUCTIONS

### 5.6 Pipework

#### 5.6.1 Piping

When installing the pipes, make sure that the pump housing is not stressed by the pipework. The suction and discharge pipes must be of an adequate size, taking the pump inlet pressure into account.

Install the pipes so that air locks are avoided, especially on the suction side of the pump.

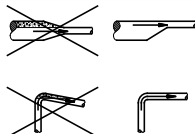


Fig. 11 Pipelines

Fit isolating valves on either side of the pump to avoid having to drain the system if the pump needs to be cleaned or repaired.

Make sure the pipes are adequately supported as close to the pump as possible, both on the suction and the discharge side. The counter flanges should lie true against the pump flanges without being stressed as stress would cause damage to the pump.

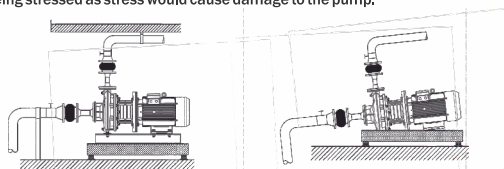


Fig. 12 SNB/SMB Correct pump installation

SNB/SMB incorrect pump installation

#### 5.6.2 Direct mounting in pipework

Pumps fitted with motors up to and including frame size 132 are suitable for direct mounting in supported pipework.

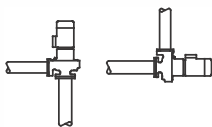


Fig. 13 Direct mounting in pipework

This type of installation does not allow the use of expansion joints.

## INSTALLATION AND OPERATING INSTRUCTIONS

### Note

To ensure quiet operation, the pipes should be suspended from suitable pipe hangers.

#### 5.6.3 Bypass



#### Warning

The pump is not allowed to run against a closed valve as this will cause an increase in temperature/formation of steam in the pump which may cause damage to the pump.

If there is any danger of the pump running against a closed discharge valve, a minimum liquid flow through the pump should be ensured by connecting a bypass or drain to the discharge pipe. The minimum flow rate must be at least 10 % of the maximum flow rate. The flow rate and head are stated on the pump nameplate.

### 5.7 Vibration dampening

#### 5.7.1 Elimination of noise and vibrations

Noise and vibration are generated by the revolutions of the motor and pump and by the flow in pipes and fittings. The effect on the environment is subjective and depends on correct installation and the state of the rest of the system.

Elimination of noise and vibrations is best achieved by means of a concrete foundation, vibration dampers and expansion joints.

See fig. 12.

#### 5.7.2 Vibration dampers

To prevent the transmission of vibrations to buildings, we recommend isolating the pump foundation from building parts by means of vibration dampers.

The selection of the right vibration damper requires the following data:

- Forces transmitted through the damper
- Motor speed, taking speed control, if any, into consideration
- Required dampening in % (suggested value is 70 %).

The selection of vibration damper differs from installation to installation. In certain cases, a wrong damper may increase the vibration level. Vibration dampers should therefore be sized by the supplier of the vibration dampers.

If you install the pump on a foundation with vibration dampers, always fit expansion joints on the pump flanges. This is important to prevent the pump from "hanging" in the flanges.

## INSTALLATION AND OPERATING INSTRUCTIONS

### 6. 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 the 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.

### 6.1 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.

### 6.2 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.

### 7. Commissioning and start-up

Note Do not start the pump until it has been filled with liquid and vented.

#### 7.1 General information



#### Warning

When pumping drinking water, the pump should be flushed through with clean water before startup in order to remove any foreign matters such as preservatives, test liquid or grease.

## INSTALLATION AND OPERATING INSTRUCTIONS

### 7.2 Commissioning

#### 7.2.1 Flushing the pipe system

#### Caution

The pump is not designed to pump liquids containing solid particles such as pipe debris and welding slag. Before starting up the pump, the pipe system must be thoroughly cleaned, flushed and filled with clean water.

The warranty does not cover any damage caused by flushing the pipe system by means of the pump.

#### 7.3 Priming

Closed systems or open systems where the liquid level is above the pump inlet

1. Close the discharge isolating valve and slowly open the isolating valve in the suction pipe. both the pump and the suction pipe should be completely filled with liquid.
2. Slacken the priming plug in order to vent the pump. Once liquid runs out, tighten the priming plug.



#### Warning

Pay attention to the orientation of the priming hole to ensure that the escaping water 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. Suction operation with non-return valve

The suction pipe and the pump must be filled with liquid and vented before the pump is started.

1. Close the discharge isolating valve and slowly open the isolating valve in the suction pipe.
2. Remove the priming plug.
3. Pour liquid through the funnel until the suction pipe and the pump are completely filled with liquid.
4. Fit the priming plug.  
The suction pipe may be filled and vented via the priming plug.

Open systems where the liquid level is below the pump inlet

1. If an isolating valve is fitted on the suction side of the pump, the valve must be fully open.
2. Close the discharge isolating valve and tighten the priming and drain plugs.
3. Connect a manual venting pump instead of a priming device (funnel).
4. A slide valve should be installed between the venting pump and the centrifugal pump in order to protect the venting pump against excessive pressure.
5. Once the slide valve at the manual venting pump has been opened, vent the suction pipe using short, rapid pump strokes until the liquid runs out on the discharge side.
6. Close the valve at the venting pump.

## INSTALLATION AND OPERATING INSTRUCTIONS

### 7.4 Checking the direction of rotation



#### Warning

The pump must be filled with liquid when checking the direction of rotation.

The correct direction of rotation is shown by arrows on the pump housing. Seen from the pump end, the direction of rotation must be counter-clockwise. See g. 14.

### 7.5 Start-up

Before starting the pump, completely open the isolating valve on the suction side of the pump and leave the isolating valve on the discharge side almost closed.

Start the pump.

Vent the pump during start-up by loosening the air vent screw in the pump head/cover until a steady stream of liquid runs out of the vent hole.



#### Warning

Pay attention to the orientation of the vent hole to ensure that the escaping water 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.

When the pipework has been filled with liquid, slowly open the isolating valve on the discharge side until it is completely open.



#### Warning

If the pump is fitted with a motor with an output selected on the basis of a specific maximum flow rate, the motor may be overloaded if the differential pressure is lower than anticipated.

Check the overload by measuring the motor current consumption and comparing the value with the nominal current stated on the motor nameplate. In case of overload, throttle the valve on the discharge side until the motor is no longer overloaded.

It is advisable always to measure the motor current consumption during start-up.

#### Note

At the moment of start, the input current of the pump motor is up to six times higher than the full-load current stated on the motor nameplate.

### 7.6 Shaft seal run-in period

The seal faces are lubricated by the pumped liquid, meaning that there may be a certain amount of leakage from the shaft seal. When the pump is started for the first time, or when a new shaft seal is installed, a certain run-in period is required before the leakage is reduced to an acceptable level. The time required for this depends on the operating conditions, i.e. every time the operating conditions change, a new run-in period will be started.

Under normal conditions, the leaking liquid will evaporate. As a result, no leakage will be detected.

Liquids such as kerosene will not evaporate, and drops will be visible, but this is not a shaft seal failure.

## INSTALLATION AND OPERATING INSTRUCTIONS



### 7.7 Reference readings of monitoring equipment

We recommend taking initial readings of these parameters:

- Inlet and outlet pressure (use pressure gauges).

The readings can be used as reference in case of abnormal operation.

### 8. Maintenance



#### Warning

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

#### 8.1 Pump

The pump is maintenance-free.

#### 8.2 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.

#### 8.3 Motor

Check the motor at regular intervals. 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 be cleaned and checked regularly.

#### 8.4 Lubrication

##### Motor bearings

Motors up to and including frame size 132 have maintenance free, greased-for-life bearings.

Motors larger than frame size 132 should be greased according to the indications on the motor nameplate. Grease spills from the motor may occur.

### 9. Periods of inactivity and frost protection

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

Drain the pump by removing the drain plug (E). See g. 14.

Do not tighten the priming plug or replace the drain plug until the pump is to be used again.



#### 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 shaft seal faces from seizing up.

## INSTALLATION AND OPERATING INSTRUCTIONS

### 10. Measuring instruments

#### 10.1. Pressure gauge and mano-vacuum gauge

To ensure continuous monitoring of the operation, we recommend installing a pressure gauge (on the discharge side) and a mano-vacuum gauge (on the suction side). The pressure gauge taps should only be opened for test purposes. The measuring range of the gauges should be 20% above the maximum pump discharge pressure.

When measuring with pressure gauges on the pump flanges, it should be noted that a pressure gauge does not register dynamic pressure (velocity pressure). On all SNB/SMB pumps, the diameters of the suction and discharge flanges are different which results in different flow velocities at the two flanges.

Consequently, the pressure gauge on the discharge flange will not show the pressure stated in the technical documentation, but a value which may be up to 1.5 bar (approx. 15 metres) lower.

#### 10.2 Ammeter

To check the motor load, we recommend connecting an ammeter.

### 11. 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.

### 12. 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.

## INSTALLATION AND OPERATING INSTRUCTIONS

Fault	Cause	Remedy
1. Pump delivers no or too little liquid.	a) Wrong electrical connection (2 phases).	Check the electrical connection and remedy, if necessary.
	b) Wrong direction of rotation. the power supply.	Inter change two phases of
	c) Air in suction pipe.	Vent the suction pipe or the pump.
	d) Counter-pressure too high. with the data sheet. Check the system for impurities.	Set the duty point in accordance
	e) Inlet pressure too low.	Increase the liquid level on the suction side. Open the isolating valve in the suction pipe. Make sure that all the conditions in section 8.6 Pipework are complied with.
	f) Suction pipe or impeller blocked by impurities.	Clean the suction pipe or pump.
	g) Pump draws in air due to defective seal.	Check the pipeline seals, pump housing gaskets and shaft seals, and replace, if necessary.
	h) Pump draws in air due to liquid level.	Increase the liquid level on the low suction side and keep it as constant as possible.

## INSTALLATION AND OPERATING INSTRUCTIONS

Fault	Cause	Remedy
2. Motor-protective circuit breaker has tripped because the motor is overloaded.	a) Pump blocked by impurities.	Clean the pump.
	b) Pump running above rated duty point.	Set the duty point in accordance with the data sheet.
	c) Density or viscosity of liquid higher than specified when ordering.	If less flow is sufficient, reduce the flow on the discharge Or fit a more side. powerful motor.
	d) Motor-protective circuit breaker overload setting incorrect.	Check the setting of the motor-protective circuit breaker and replace, if necessary.
	e) Motor runs on two phases .	Check the electrical connection. Replace the fuse, if defective.
3. Pump makes too much noise. Pump runs unevenly and vibrates.	a) Inlet pressure too low (cavitation).	Increase the liquid level on the suction side. Open the isolating valve in the suction pipe. Make sure that all the conditions in section 8.6 Pipework are complied with.
	b) Air in suction pipe or pump.	Vent the suction pipe or the pump.
	c) Counter-pressure lower than specified.	Set the duty point in accordance with the data sheet.
	d) Pump draws in air due to low liquid level.	Increase the liquid level on the suction side and keep it as constant as possible.
	e) Impeller out of balance (clogged impeller blades).	Clean and check the impeller.
	f) Inner parts worn.	Replace the defective parts .
	g) Pump stressed by pipework (thus causing starting noise).	Mount the pump so that it is not stressed. Support the pipes.
	h) Defective bearings .	Replace the bearings .
	i) Defective motor fan.	Replace the fan.
	j) Foreign bodies in pump.	Clean the pump.
	k) Frequency converter operation.	See section 10.2 Frequency converter operation .
4. Leaking pump, connections or mechanical shaft seal.	a) Pump stressed by pipe work (thus causing leaks in pump housing or at connections).	Mount the pump so that it is not stressed. Support the pipes.
	b) Pump housing gaskets and gaskets at connections defective.	Replace pump housing gaskets or gaskets at connections.
	c) Mechanical shaft seal dirty or stuck together.	Check and clean the mechanical shaft seal.
	d) Mechanical shaft seal defective.	Replace the mechanical shaft seal.
	e) Shaft surface defective.	Replace the shaft.

## INSTALLATION AND OPERATING INSTRUCTIONS

Fault	Cause	Remedy
5. To high temperature in pump or motor.	a) Air in suction pipe or pump.	Vent the suction pipe or the pump and replenish.
	b) Inlet pres sure too low.	Increase the liquid level on the suction side. Open the isolating valve in the suction pipe. Make sure that all the conditions in section 8.6 Pipework are complied with.
	c) Bearings lubricated with too little, too much or unsuitable lubricant.	Replenish, reduce or replace the lubricant.
	d) Axial pressure too high.	Check the relief holes of the impeller and the lock rings on the suction side.
	e) Motor-protective circuit breaker defective or setting incorrect.	Check the setting of the motor-protective circuit breaker and replace, if necessary.
	f) Motor overloaded.	Reduce the flow rate.

### 13. 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.

## INSTALLATION AND OPERATING INSTRUCTIONS

### DO'S & DON'T

#### DO'S

Before pump installation, should be check following parameter.

- 1 Pump check, remove float gauge from m-seal.
- 2 Check freely rotation of pump by hand.
- 3 Pump feel by water(median).
- 4 Remove the air from pump by Air went screw.
- 5 Put the coupling guard before running pump.
- 6 Maintain D-10

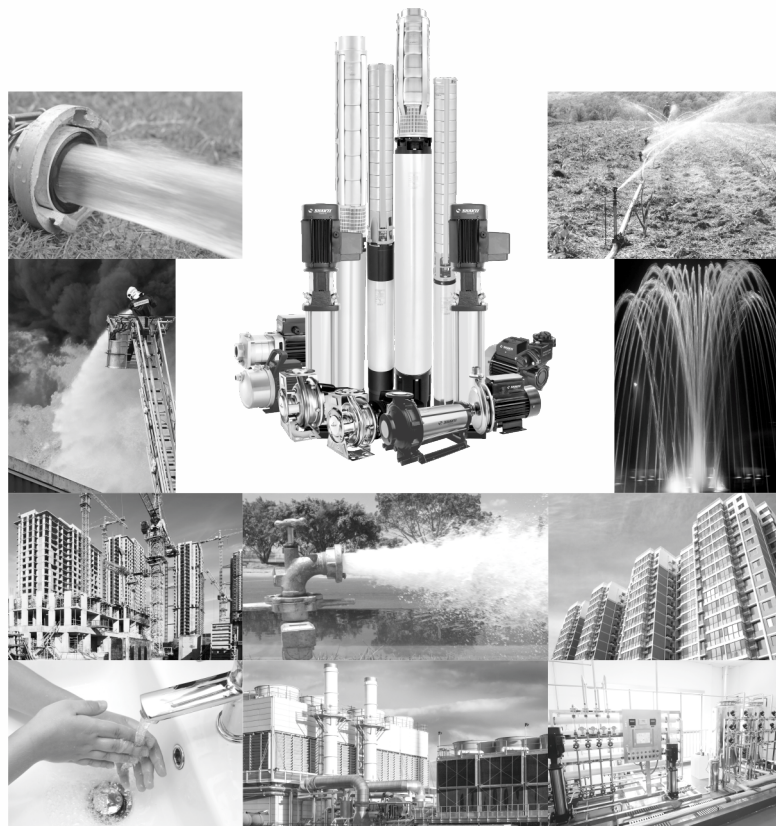
#### DON'T

After installation pump should be checked following parameter.

- 1 Don't run pump without priming.(may cause pump seal damage)
- 2 Don't run pump without coupling guard.
- 3 Without y strainer in suction line pump not installed
- 4 Don't run pump in wrong direction.
- 5 Don't run pump in float down position

# SHAKTI PUMPS

## MEETING WATER NEED OF ANY MAGNITUDE



## INSTALLATION AND OPERATING INSTRUCTIONS

### 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.

Our obligation is limited 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:.....

## INSTALLATION AND OPERATING INSTRUCTIONS



### 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<sup>3</sup>/hr: \_\_\_\_\_

Liquid:- \_\_\_\_\_ Temp.: \_\_\_\_\_

Voltage:- \_\_\_\_\_ Current: \_\_\_\_\_

Packing Condition:- \_\_\_\_\_

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Date:- \_\_\_\_\_

Customer's Signature

**BOOK-POST**

To,  
Plot No. 401, 402, & 413, Industrial Area, Sector - 3,  
Pithampur - 454774, Dist. - Dhar, (M.P.) - INDIA, Fax:  
+91-7292 410645, E-mail: info@shaktipumps.com,  
Visit us at : [www.shaktipumps.com](http://www.shaktipumps.com)

Stamp

