

## Submersible openwell monobloc pumpsets - MONOSUB R





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## 1. Introduction

This pumpset must be operated within the limit values specified for the medium handled, capacity, speed, density, pressure, temperature and the motor rating. The name plate on pump indicates the type of pump size, main operating data and Works Order No. as Sr. No. Please quote this information in all queries, repeat orders and when ordering spare parts

## 2. General

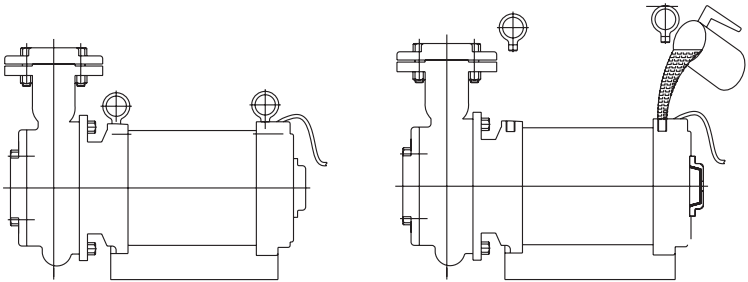
These maintenance free open well submersible mono-bloc pumpsets are noise less in operation, environmental friendly and have high operating efficiency resulting in lower power consumption. No foundation or pump house arrangements are required.

For trouble-free, satisfactory operation, installation should be properly done and maintained.

## 3. Erection and commissioning

### 3.1 Water filling of motor

The motor is to be filled with potable water just before installation. For this remove the two eyebolts fitted on the top of the motor. Fill sufficient quantity of water inside the motor and wait for a few minutes till all the air trapped inside comes out. Top up further till water overflows and then fit the two eyebolts. Do not operate the Pump set under any circumstances without water, as this will cause extensive damage to the parts of the pump.



### 3.2 Safety Instructions

- 3.2.1 Do not use the motor cable to lift or lower the pump set.
- 3.2.2 Do not run the pump set in dry condition. The pump set must always be fully submerged in water during operation.

### 3.3 Electrical checks

#### 3.3.1 Insulation Resistance Test

Once the motor is filled with water, check insulation resistance with a 500 volts megger. A minimum of 50 megaohms insulation resistance should be shown w.r.t. motor casing.

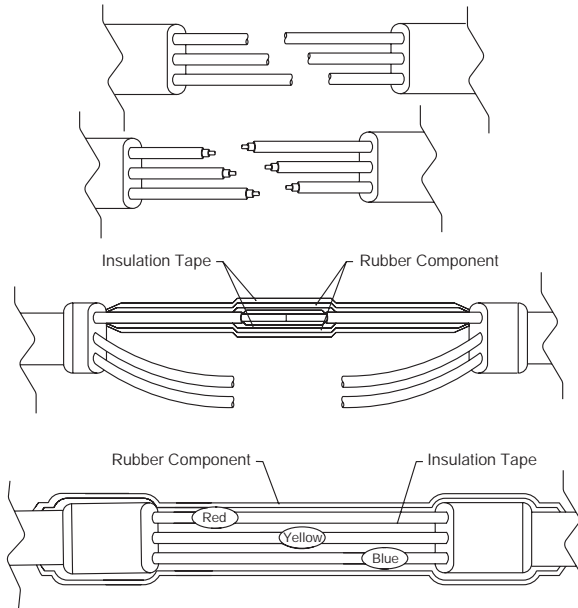
#### 3.3.2 Earthing

Earthing of the motor should be done properly. i.e., body of motor shall be earthed by two separate and distinct connections to earth.

#### 3.3.3 Cable and cable jointing

A proper size cable should be used, additional cable should be connected as per the procedure given below and that the cable joint should be water tight.

- a. To connect the cables, cut off and strip the pump cable and joining cable in a staggered form at regular intervals.
- b. The colors of the leads which are to be joined together must be identical.
- c. Wrap insulation tape to each cable joint and again wrap with rubber tape on the top of it.



d. To ensure proper insulation once again wrap with tape and rubber tape for each joint. Finally wrap the total cable with insulation tape.

### 3.4 Non Return Valve

Non Return valve is mandatory for high head pumpset at delivery side to protect from water hammering problem.

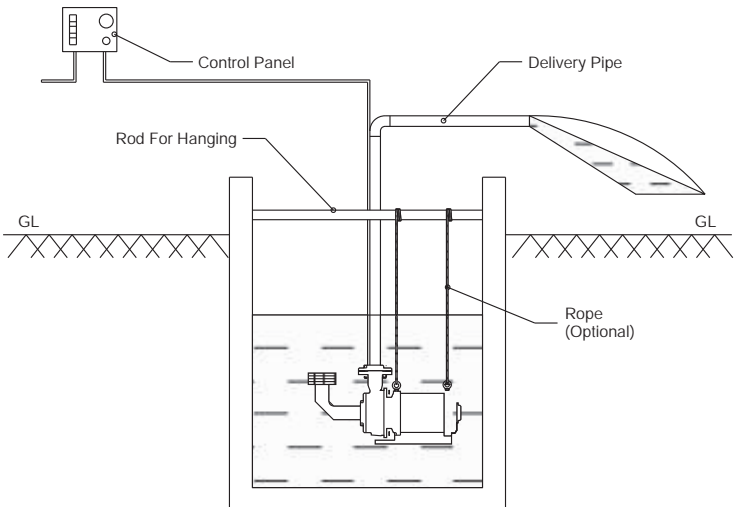
### 3.5 Lowering the pumpset

Lower the pumpset using suitable chains / ropes. For this make use of two eye bolts provided for horizontal installation/suspension The pumpset can also be suspended if the bottom of well is likely to be clogged ( clearance for the pump suction due to slush in the well). Delivery pipe should be properly supported so that weight of pipe is not

anchored on the pump. To prevent damage to the cable during handling and operation see that it is properly anchored and fastened to the delivery pipe.

### 3.6 Pump set installation and delivery pipe connection

- a. Connect the bend to the suction flange of the pump so that it should be in vertical position.
- b. Fit the strainer at the inlet of bend to prevent the entry of foreign particles.
- c. Connect the delivery pipe to the delivery flange.
- d. Tie steel or nylon rope to the two Eyebolts provided on the body and lower the pump set along with the delivery pipe.
- e. Clamp the 3 core cable to the delivery pipe with cable clips at regular intervals.
- f. Allow the pump to rest on the bottom or it can be kept hanging in horizontal condition.



### 3.7 Starters/Control Panel

Connect supply leads, pump set leads to the panel board according to the connection diagram. Keep panel board in a waterproof shelter. For all the 3 Phase pumpsets we recommend the use of starters with built in thermal overload and single phasing preventors. For pumps upto 5.5 Kw Direct On Line (DOL) starters are recommended Above 7.5Kw star/delta starters are recommended.

All Single Phase pumpsets are to be used with control panels supplied along with pumps.

## 4. Starting the pump set

### 4.1 Single phase pumpsets

Press green button on panel board and hold only for 3 seconds. Continuous pressing of ON push button will damage motor windings due to overheating. Minimum time interval between "ON – OFF " should be 5 minutes.

### 4.2 Three phase pumpsets

3-phase pumps sets can be started in the normal mode. Check that motor current, flow and head are within the Name plate values

The pump set is to be run at least once a week to prevent possibility of jamming of the moving parts Thus pump is ready for operation at all times.

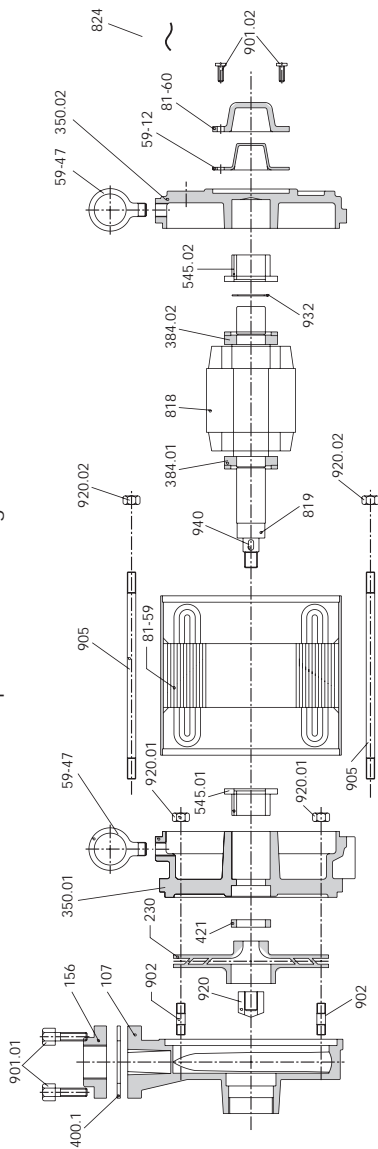


## 5. Trouble Shooting

Problem	Probable cause	Possible remedy
Motor does not Rotate	The clearances between impeller and casing are clogged with foreign particles.	Dismantle and remove obstructions
	No power supply	Check power supply, and panelBoard connections as per Connection diagram
	Low voltage or single phasing conditions	Operate only within voltages range specified on Name plate and ensure balanced 3-phase supply.
	Control panel not functioning because protective devices inside panel are activated. For single phase panels the capacitor could be faulty	For single phase panel Replace capacitors, if found defective.
	Low voltage / speed low	Check supply voltage and operate only if supply conditions are healthy

Problem	Probable cause	Possible remedy
Pump Does not Deliver Water	Wrong direction of rotation	Check the connection: For 3-phase pumpsets interchange any 2 phases
	Wrong selection of Pump	Select proper pumpset
	Obstruction in piping system	Clean the pipes
Pump vibrates is noisy and drawing excessive current	Foreign particles lodged in impeller	Clear the impeller and casing
	Inappropriate pipe fitting	Fit the pipes properly
	Motor axial or radial bearing are damaged or shaft is bent	Replace defective components.
	Sand inside or corrosiveness	Clean the pump impeller and bearing components, replace if needed.
	Rotating parts rubbing against Stationary parts because radial bearing bush is worn out or shaft is bent.	Replace the defective components

## Exploded View - Single Phase



Part No.	Part Name	Part No.	Part Name	Part No.	Part Name
350.01	Bearing housing	824	Cable	940	Key
230	Impeller	819	Shaft	932	Circlip
156	Discharge nozzle	818	Rotor	920.01/02	Hex Nut
107	Discharge Casing	545.01/02	Bearing Bush	920	Hex lock Nut
81-60	Diaphragm Casing	421	Oil Seal	905	Tie bolt
81-59	Stator	400.1	Washer	902	Stud
59-47	Eye Bolt	384.01/02	Thrust Plate	901.02	Hex bolt
59-12	Diaphragm	350.02	Bearing housing	901.01	Hex bolt



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350.01/02	Bearing housing	824	Cable	920.01 ....04	Hex Nut
230	Impeller	819	Shaft	920	Hex lock nut
153	Suction nozzle	818	Rotor	905	Tie Bolt
156	Discharge nozzle	545.01/02	Bearing Bush	902.01/02	Stud
132	Washer	421	Oil Seal	901.03	Bolt
107	Discharge Casing	412	O Ring	901.02	Hex bolt
81-9	Stator	400.1/2	Washer	901.01	Hex bolt
81-77	Balancing Ring	386.01	Thrust bearing ring	900	Cheese head Screw
81-60	Diaphragm casing	384.01/02	Thrust Plate	890	Base Plate
59-47	Eye Bolt	940	Key		
59-12	Diaphragm	932	Circlip		

## WARRANTY

Customer \_\_\_\_\_

Pump Type \_\_\_\_\_

Sr. No. \_\_\_\_\_ Despatch Date : \_\_\_\_\_

1. Our above mentioned products are warranted only against defects in workmanship and material under normal use, service and duty conditions specified.
2. This warranty is limited to a period of 12 months from the date of installation or 18 months from the date of despatch as mentioned above from our works, whichever is earlier.
3. Our obligations shall be limited to rectifying, repairing or replacing defective items, at our Works / Service Stations / Authorised Service Centres provided the purchaser has given immediate written notice. Equipment for repairs should be returned to us, free of cost.
4. The foregoing is subject to the provision that the user does not open the unit and make any change or repair without our prior approval, during the warranty period.
5. This warranty is further subject to the installation and operation of the pump set being carried out as per instructions contained in our booklet of Operating Instructions.
6. Normal use is to be understood when the pump is working under the duty conditions as specified in Order Acceptance.



### Zonal Offices :

- Chennai : Guindy House, 2nd Floor, 95 Anna Salai, 600 032.  
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- Pune : Shree Gurukrupase Unnati, CTS No. 109/15, F.P. No. 54, Prabhat Rd. Lane No. 14, Thorat Colony, 411 004. Tel.: 020-2543 1258 / 59 / 60 Fax : 020-2543 1262
- Raipur : House No. C/40, 1st Floor, Sector-2, Devendra Nagar, C.G.  
Tel.: 0771-4062 556, 2583 921 Fax : 0771-2583 921
- Secunderabad : D.No. 12-13-197, 198, Flat No. 103 & 104, 1st Floor, Pavani Anusuya Towers, Tarnaka 500 017. Tel.: 040-2700 3696 Fax : 040-2700 1725

Technical matter subject to change without notice.



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