

Submersible openwell monobloc pumpsets - MONOSUB RE



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1. General

A proper installation is necessary for trouble-free, satisfactory operation of open well submersible monobloc pumpsets.

Precautions required to be taken during installation of a bore-well submersible pumpsets are also applicable to open well submersible monobloc pumpsets. Specific instructions pertaining to open well submersible pumpsets are given in this installation manual.

Advantages of proper installation

- Noiseless operation - environmental friendly.
- No foundation and pump house arrangements required.
- Maintenance free operation.
- High operating efficiency resulting in lower power consumption.

2. Safety instructions

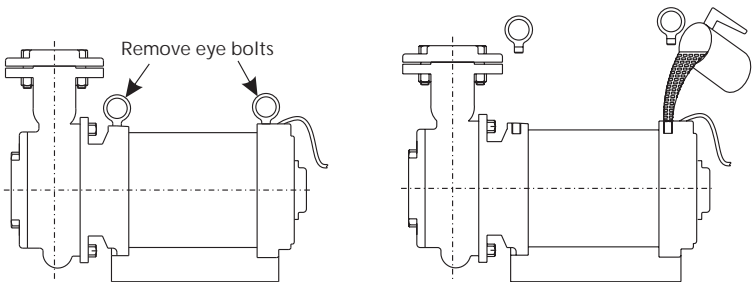
1. Minimum time interval between any consecutive starting or frequent "ON - OFF" should be 5 minutes.
2. The pump must be used for clear, cold, fresh water application only. The motor is to be filled with adequate quantity of clean, cold water before installation. Do not operate the pumpset under any circumstances without water as this will cause extensive damage to the pump components.
3. Do not run the pumpset in dry condition. The pumpset must always be fully submerged in water during operation.
4. Do not use the motor cable to lift or lower the pumpset.
5. The pumpset is to be run at least once every week. This will enable the pump to give instant service at any point of time. If the pumpset is idle for more than a week it might lead to jamming of rotating parts.
6. Use proper gauge wire for connections.

3. Installation

a. Water filling of motor :

The motor is to be filled with potable water just before installation. For water filling, remove both eyebolts fitted on the top of the motor. Ensure that sufficient quantity (as mentioned in the table below) of water is filled inside the motor before re-fitting the two eyebolts.

b. Water filling procedure :



S. No.	Model Name	Water quantity in Ltrs.
1.	MRE 1.0 (S)	1.5
2.	MRE 3.0	2.8

c. Insulation resistance test :

Once the pumpset is filled with water, check insulation resistance with 500 Volts meggar. A minimum of 50 megaohms insulation resistance should be shown by the meggar in R Y B motor leads.

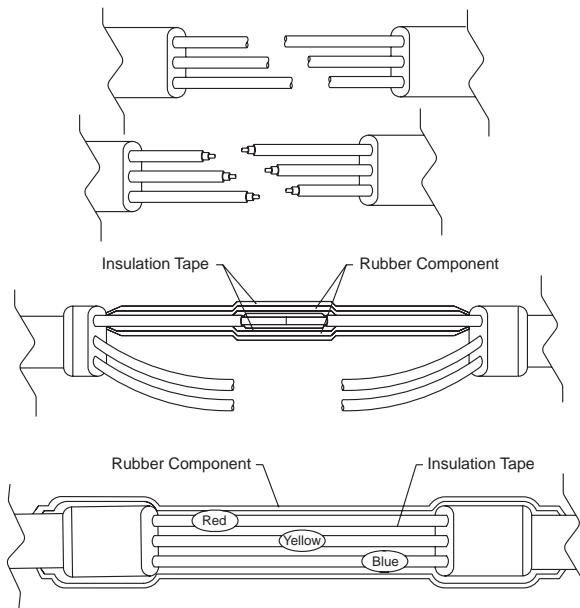
d. Earthing :

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

e. Procedure for cable jointing :

When connecting extra cable beyond standard length supplied along with the pumpsets, it is necessary that the cable joint should be water tight.

- a. To connect the cables, cut off and strip the pump cable and joining cable (purchased one) 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 wind the total cables with insulation tape.



4. Lowering the pump

Lower the pump using suitable chains / ropes. To do so, make use of two eye bolts provided.

Delivery pipe should be properly supported so that weight of pipe is not anchored on the pump.

Take care of cable against damage during handling.

5. Panel board connection

Connect supply leads, pumpset leads to the panel board exactly according the connection diagram. Keep panel board in a waterproof shelter.

Starters / Control Panel :

All Single Phase Monosub range pumpsets must be used with control panels supplied along with pumpset.

For all the Three Phase Monosub Pumpset, we recommended the use of starters with suitable motor protection from overload and single phasing. For pumpsets up to 7.5 HP rating, we recommend the use of Direct On Line (DOL) starters. From 10 HP and above we recommended star/delta starters.

Non Return Valve :

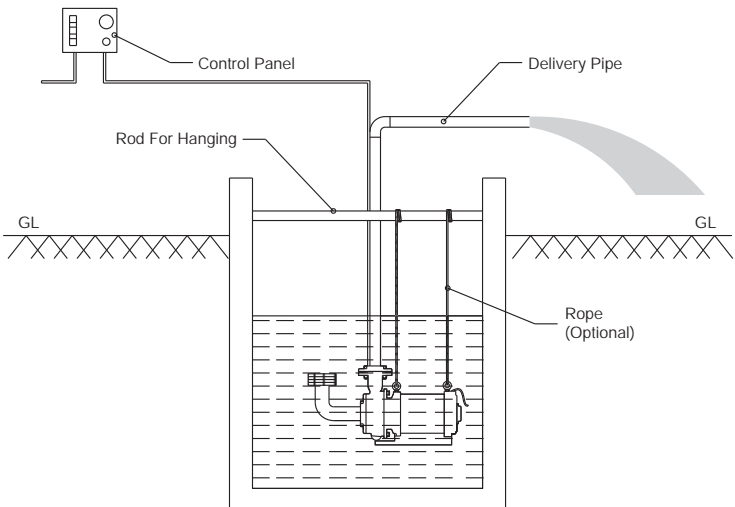
Non return valve is must for high head pumpsets on delivery side to protect from water-hammer.

6. Installation

Depending on the required ground clearance for the pump suction (due to slush in the well) Horizontal installation is to be made. For this purpose, ready to use support foot and two eye bolts are supplied along with the pumpset.

Pumpset installation and delivery pipe connection

- a. Connect the bend to the suction flange of the pump in such a way, so that it comes in vertical position.
- b. Fit the strainer to the open end of the bend so as to prevent the entry of foreign particles.
- c. Connect the delivery pipe to the delivery flange.
- d. The Steel or Nylon rope to the two eye bolts provided on the body and lower the pumpset 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 hanging and keep in horizontally.

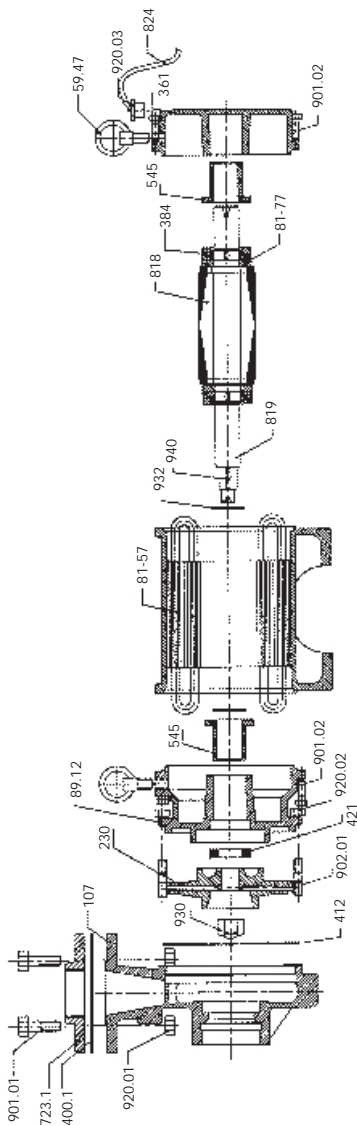


7. Trouble shooting :

Problems with its probable causes	Remedies
<p>Motor does not rotate</p> <ul style="list-style-type: none"> • No power supply • Rotating parts rubbing against stationary parts. • Low voltage • Panel board not functioning 	<ul style="list-style-type: none"> • Check power supply and panel board connections as per connection diagram. Correct if not proper. • Check the radial bearing wear shaft bend. Replace worn-out, bent components. • Operate only at safe voltages. • Check capacitors, replace if needed.
<p>Pump does not deliver water</p> <ul style="list-style-type: none"> • Low voltage / speed low • Wrong direction of rotation • Wrong selection of pump • Obstruction in piping system 	<ul style="list-style-type: none"> • Check supply voltage. • Check the connection : Change the connection as per the connection diagram. • Select proper pumpset. • Clean the pipes.
<p>Pump vibrates / noisy</p> <ul style="list-style-type: none"> • Damaged motor bearing • Foreign particles are stuck in impeller vanes • Inappropriate pipe fitting 	<ul style="list-style-type: none"> • Replace the bearings. • Clear the impeller. • Fit the pipes properly.

Problems with its probable causes	Remedies
<p>Pump drawing excessive current</p> <ul style="list-style-type: none"> • Rotating parts rubbing against stationary parts • Damaged motor thrust bearing • Sand inside or corrosiveness 	<ul style="list-style-type: none"> • Check radial bearings, shaft bend. Replace worn-out, bent components. • Replace, if needed. • Clean the pump impeller and bearing components, replace if needed.

Exploded View - Three Phase



Part No.	Part Name	Part No.	Part Name	Part No.	Part Name
107	Delivery casing	59.47	Eye bolt	901.1	D. Flange bolt
230	Impeller	723.1	Discharge flange	901.02	Hex. bolt
361	End cover	818	Rotor	902.01	Casing stud
384	Thrust pad	819	Shaft	920.01	M12 - Hex. nut
400.1	D. F. Washer	81-57	Stator	920.02	M10 - Hex. nut
412	O-ring	81-77	Balancing ring	902.03	Pg11 - Nut
421	Oil seal	824	Cable	930	Lock nut
545	LTB bush	89.12	Bracket	932	Circlip
				940	Key

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.

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- Chandigarh : S.C.O. 80-81, Sector 8-C, Madhya Marg, 160 008.
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- Jaipur : 2nd Floor, C Block, Anjali Chambers, 10, Raj Bhavan Road, Civil Lines, 302 001.
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- 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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