



**OPERATION &
MAINTENANCE MANUAL**

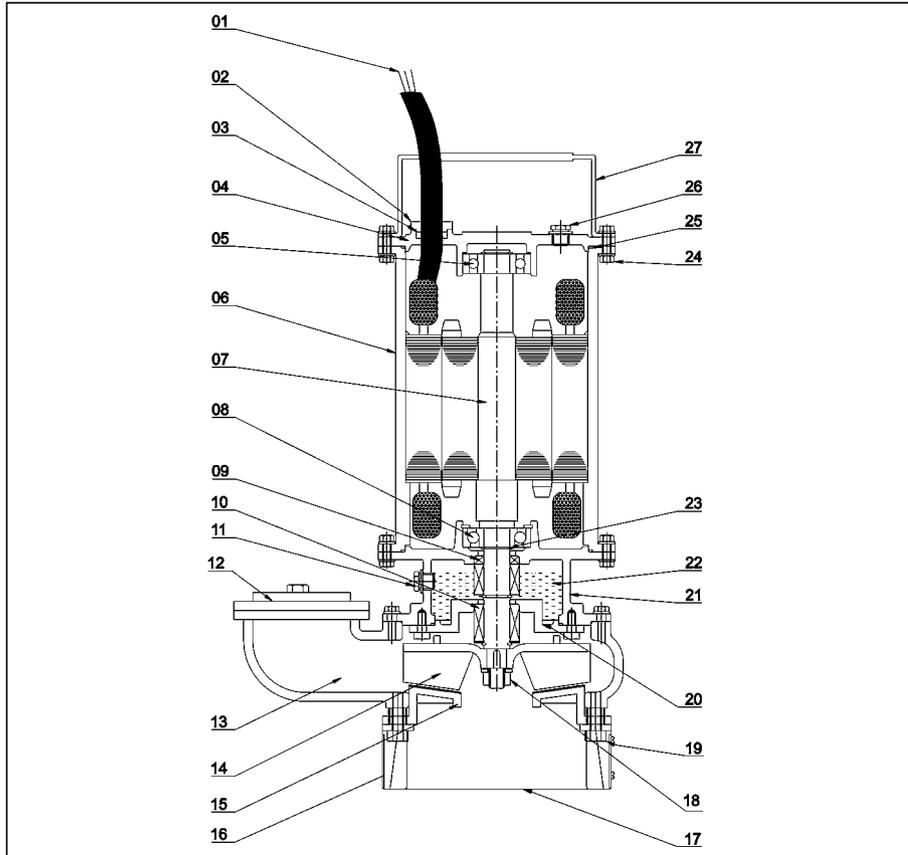
**PORTABLE
SUBMERSIBLE PUMP**



**MBH[®]
PUMPS**

A Mark of Quality

CROSS SECTION DRAWING



No.	DESCRIPTION
01	CABLE
02	GLAND COVER
03	CABLE GROMMET
04	TOP COVER
05	BALL BEARING (N.D.E.)
06	STATOR
07	ROTOR SHAFT
08	BALL BEARING (D.E.)
09	MECH. SEAL (UPPER)
10	MECH. SEAL (LOWER)
11	OIL PLUG
12	DELIVERY FLANGE
13	VOLUTE
14	IMPELLER

No.	DESCRIPTION
15	SPIRAL PLATE (WEAR PLATE)
16	STRAINER
17	BOTTOM PLATE
18	IMPELLER LOCK NUT
19	ADJUSTING SCREW
20	MECH. SEAL COVER
21	OIL CHAMBER
22	OIL
23	EXTERNAL CIRCLIP
24	HEX BOLT
25	'O' RING
26	PLUG
27	PUMP HANDLE

CONSTRUCTION OF PORTABLE SUBMERSIBLE PUMP SET

'MBH' Portable submersible pumps are of close coupled compact design and have pump below and motor above construction hence sump cleaning is possible to the minimum level. These are powered by squirrel cage induction dry motor suitable for operation at 230 Volts & 400 / 440 Volts, 1 Phase / 3 Phase, 50 Hz., A.C. Supply. Being a submersible pump it saves a lot of cost of construction as compare to other conventional pumps & also provides noise free operation. Pumps are fitted with high efficiency free flow impeller for smooth and economical pumping operation. Since these pumps work under pumping liquid suction and are always flooded hence there is no need of priming or suction pipe. Pumps are fitted with double mechanical seal to separate motor chamber from oil chamber and oil chamber from liquid being pumped. Only single phase pumps are provided with float for water level control.

RECOMMENDATIONS

1. Follow maintenance schedule strictly, so as to avoid costly repairs in the long run.
2. Ensure that pump set is connected properly to the control panel.
3. Portable installation of pump can be done with the help of flexible hose pipe and pump is supposed to pump out liquid.
4. If pumping media available is falling short of the pump capacity, it will result in spurt, which is harmful for the pump. In such a case reduce discharge by throttling.
5. Ensure that pump rotates in correct direction (clockwise). Counter clockwise rotation will result in lower discharge and increased wear. At the instant the pump is started, it should give an anticlockwise jerk. The rotation of impeller should match the arrow on the pump casing. In case of reverse rotation the current consumption will rise and the pump set will produce unwanted noise.
6. Avoid too many creases in the hosepipe, which results in the increase friction losses. Use the shortest possible delivery line.
7. Protect cable from damage during storage, transportation and operation. A damaged cable may give shock or burn the motor.
8. Always earth the unit, before starting.
9. Never hoist the pump set up or down by the connecting cable.
10. Use NRV if pipe length is more than 4.5 mtr.

PRECAUTIONS FOR LONG STORAGE

Clean the pumping set with fresh water and wipe the cable. Put pump set in a cool, dry place in vertical position and cable wrapped be put on top of the pump.

Do not leave cable on the floor where it is likely to get damaged.

WARNING

1. Ensure that pump set rotates in the correct direction of rotation.
2. Always operate pump set with the original control panel supplied by the manufacturer.
3. Protect the cable from damage.
4. Ensure proper earthing of the pump set before starting.

MAINTENANCE

'MBH' made portable submersible pump set is totally maintenance free. However oil in the seal chamber is to be checked every six months and needs to be replaced if quality gets deteriorated or it is to be changed after one year or 5000 working hours whichever is early.

List of standard oil is as under.

- ◆ BPCL - Hydrol 46 / Turbo 46
- ◆ HPCI - Hylube 30 / milcy 40
- ◆ IOC - Servo super 10

TROUBLE SHOOTING CHART

Pump fails to deliver.	The discharge is too low.	The line current is excessive.	The total head is too low.	The power consumption is excessive.	Noisy operation of pump.																																							
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						<table border="1"> <thead> <tr> <th>CAUSE</th> <th>REMEDY</th> </tr> </thead> <tbody> <tr> <td>• The pump delivers against an excessively high discharge pressure.</td> <td>Open the isolating valve further, until the duty point conditions have been attained.</td> </tr> <tr> <td>• The pump and / or piping are incompletely vented.</td> <td>Vent the pump & system completely.</td> </tr> <tr> <td>• Suction line or impeller clogged.</td> <td>Remove deposits in the pump & piping.</td> </tr> <tr> <td>• Reverse rotation.</td> <td>Change over two of the phase leads of the power supply cable.</td> </tr> <tr> <td>• Excessive wear of the pump internals.</td> <td>Replace worn components by new one.</td> </tr> <tr> <td>• Operating Voltage too low.</td> <td>Check the supply terminals.</td> </tr> <tr> <td>• The motor is running on two phase only.</td> <td>Replace the defective fuse, check the cable connection.</td> </tr> <tr> <td>• The rotor is out of balance.</td> <td>Clean the rotor, Rebalance the rotor dynamically.</td> </tr> <tr> <td>• The motor refuses to run because there is no voltage.</td> <td>Check the electrical system, inform the supply authority.</td> </tr> <tr> <td>• The pump is silted up.</td> <td>Clean out the inlet, Pump components & check valve.</td> </tr> <tr> <td>• Defective motor or cable.</td> <td>Please consult our works.</td> </tr> <tr> <td>• Defective riser pipe.</td> <td>Replace defective lengths of riser pipe by new ones, fit new gasket.</td> </tr> <tr> <td>• Excessive drop in liquid level during operation.</td> <td>Please consult our works.</td> </tr> <tr> <td>• The isolating valve in the discharge line is not fully open.</td> <td>Open the valve fully.</td> </tr> <tr> <td>• Excessive amount of air or gas in the liquid pumped.</td> <td>Check the operating parameters with reference to duty point. & correctness of submergence.</td> </tr> <tr> <td>• Defective Ammeter.</td> <td>Replace with new one.</td> </tr> <tr> <td>• Defective radial bearing in the motor.</td> <td>Please consult our works.</td> </tr> <tr> <td>• Vibration caused by improper installation.</td> <td>Correct the installation.</td> </tr> </tbody> </table>	CAUSE	REMEDY	• The pump delivers against an excessively high discharge pressure.	Open the isolating valve further, until the duty point conditions have been attained.	• The pump and / or piping are incompletely vented.	Vent the pump & system completely.	• Suction line or impeller clogged.	Remove deposits in the pump & piping.	• Reverse rotation.	Change over two of the phase leads of the power supply cable.	• Excessive wear of the pump internals.	Replace worn components by new one.	• Operating Voltage too low.	Check the supply terminals.	• The motor is running on two phase only.	Replace the defective fuse, check the cable connection.	• The rotor is out of balance.	Clean the rotor, Rebalance the rotor dynamically.	• The motor refuses to run because there is no voltage.	Check the electrical system, inform the supply authority.	• The pump is silted up.	Clean out the inlet, Pump components & check valve.	• Defective motor or cable.	Please consult our works.	• Defective riser pipe.	Replace defective lengths of riser pipe by new ones, fit new gasket.	• Excessive drop in liquid level during operation.	Please consult our works.	• The isolating valve in the discharge line is not fully open.	Open the valve fully.	• Excessive amount of air or gas in the liquid pumped.	Check the operating parameters with reference to duty point. & correctness of submergence.	• Defective Ammeter.	Replace with new one.	• Defective radial bearing in the motor.	Please consult our works.	• Vibration caused by improper installation.	Correct the installation.
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MBH[®] PUMPS

GUARANTEE

PORTABLE SUBMERSIBLE PUMP

The pump is guaranteed against defects in material and workmanship under normal use and service for the period of 15 months from the date of purchase or 12 months from the date of commissioning, whichever is less.

The General terms and conditions for above guarantee are :

1. This guarantee is valid only if the pump is operated strictly as per the Instructions given in the user guide attached herewith.
2. Our obligation shall be limited to rectifying; repairing or replacing defective items, ex-works/service station/Authorized Service Center, provided the purchaser has given immediate written notice. The equipment for repairs should be returned to us duly packed, on pre-paid freight basis.

Model : _____ Pump Sr. No. _____

Customer Name : _____

Address : _____

Date of Purchase / Bill No.: _____

Dealers Name : _____

Signature : _____ Date : _____

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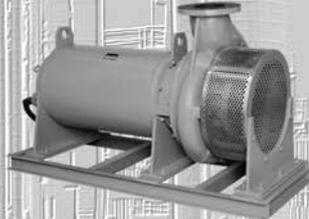
Our Product Range



**SUBMERSIBLE
SEWAGE
PUMP**



**POLDER /
DEWATERING
PUMP**



**SUBMERGED
CENTRIFUGAL PUMP**



**HORIZONTAL SPLIT
CASING PUMP**



**CENTRIFUGAL
BACK PULL OUT PUMP**



*An ISO 9001
Certified Company*

**MBH[®]
PUMPS**

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