

MBH[®] PUMPS

**Instruction, Installation, Operation
and Maintenance Manual**

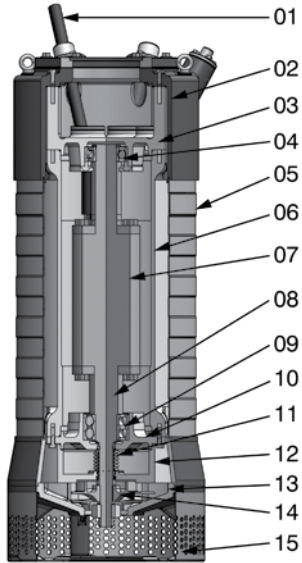
DEWATERING PUMP



**ISO 9001
Certified Company**

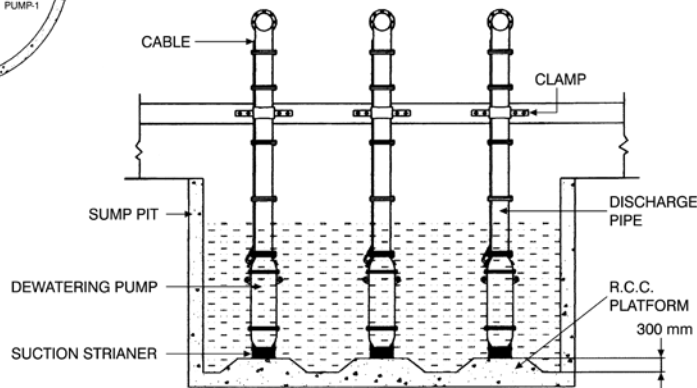
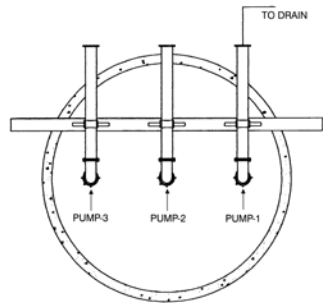
A Mark of Quality

CROSS SECTION DRAWING



NO.	DESCRIPTION	MATERIAL
01	POWER & CONTROL CABLE	EPR INSU. SHEATHED
02	DISCHARGE OUT LET	ALUMINIUM
03	TOP BRG. COVER	ALUMINIUM
04	BALL BEARING (N.D.E.)	FAG. (GREASE LUB.)
05	BODY JACKET	S.S. 304
06	STATOR BODY	ALUMINIUM
07	ROTOR COMPLETE	ALU. DYE-CAST
08	ROTOR SHAFT	S.S. 410
09	BALL BEARING (D.E.)	FAG.(GREASE LUB.)
10	BRG. HOUSING	ALUMINIUM
11	DUAL FACE MECH. SEAL	CR / SS & TC / TC
12	SEAL PLATE	ALUMINIUM
13	GUIDE VANE	ALUMINIUM
14	IMPELLER	S.S. HIGH CROME
15	STRAINER	MS FABRICATED
#	FASTENER	S.S. 304
Note: M.O.C. Showing Major Parts Only		

INSTALLATION



INTRODUCTION

MBH Dewatering Pumps are portable pumping units which have pump below and motor above construction. These are powered by squirrel cage induction motor suitable for 400/440 volts, 3 Phase, 50 Hz, AC supply which is totally enclosed. (and with class 'f' insulation and IP 68 enclosure). The pump motor unit of close coupled construction and the double casing design provides effective water cooling of the motor by following water around the motor casing. The motor is sealed by special Mechanical seal so that the pumping water does not enter the motor chamber and damage the motor. All parts are made from specially selected material and processed to ensure long life under arduous operating condition.

RECOMMENDATIONS

1. Follow maintenance schedule strictly, so as to avoid costly repairs in the long run.
2. A good quality motor starter must be used. (Preferably with an ammeter) as it is the life-line of a dewatering pump set.
3. Install the pump on planks or suspend it from a rope a few inches above the bottom surface. If pump thrown down to sump, it might dig in to sludge, resulting in decreased capacity and increased wearing.
4. If water available is falling short of the pump capacity, it will result in spurting, which is harmful for the pump. In such a case reduce discharge by throttling.
5. Ensure that pump rotates in correct condition (clockwise). Counter clockwise rotation results in lower discharge and increased wear. At the instant of starting dewatering, pump should anticlockwise jerk.
6. Observe that the strainer does not get clogged by leaves, suspended material or any other debris.
7. Avoid too many creases in the hose-pipe which results in increased friction losses. Use the shortest possible delivery line.
8. Protect cable from damage-during storage, transportation and operation. A damaged cable may give shock or burn the motor.
9. Always earth the unit, before starting.

PRECAUTION FOR LONG STORAGE

Clean pump set with fresh water and wipe the cable. Put pump set in cool, dry and shaded place in vertical position and cable wrapped and put on top of the pump. Do not leave cable on the floor where it is likely to get damaged.

WARNING

- Always operate the pump with a reliable motor starter, which must be regularly maintained and properly set.
- Protect the cable from damage.
- Ensure that the pump set is earthed, before starting.

MAINTENANCE


- Every 250 hrs. – Remove only base, clean impeller & guide vane
- Every 1000 hr. – Examine Sealing arrangement for wear or damage change Sealing chamber oil.

SALIENT FEATURES

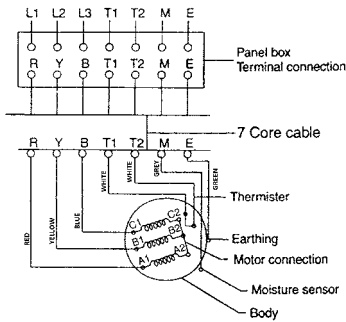
Highlights of Submersible Dewatering Pumps in comparison with Centrifugal Pumps

No.	SUBMERSIBLE DEWATERING PUMPS	CENTRIFUGAL SURFACE PUMPS
01	Could completely / partially be submerged in water.	Not possible, since motor not sealed and is wound with enamelled winding wire.
02	Due to high portability, no permanent structure is needed. A simple pit / tank filled with water is quite sufficient and could be discharged with flexible rubber / PVC pipe / M. S. pipe.	The nature of pump needs permanent structure, suction pipe, foot valve, etc. making it cumbersome.
03	An absolutely trouble-free compact design pump.	a) Gland leakage, b) Air locking & c) Foot valve choking (clogging) are regular and needs constant attention.
04	Self-priming (submerged).	Priming is necessary.
05	Needs no extra man-power.	Constant attention is a must.
06	Quite a long life.	Needs regular replacement of parts. Particularly, horizontal pumps need proper alignment and periodical check-up is a must.
07	Here, the impeller is semi-open / closed type and motor portion is completely sealed with mechanical seal. Hence, entering of silt / mud / sand particles / scales etc. is eliminated. Even bearing portion is safe. Particles upto 25 mm size could pass through along with water.	--

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		
						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 and 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 ones
		•				Operating voltage too low	Check the supply terminals inform the supply authorities
		•	•			The motor is running on two phases 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
•	•					Defective motor or cable	Please consult our works
•	•		•			Defective riser pipe (pipe & gasket)	Replace defective lengths or riser pipe by new ones, fit new gaskets
	•					Abnormal (excessive) drop in the liquid level during operation	Please consult our works
	•	•	•			The Star-Delta motor remains stuck at the star stage during start-up	Check the switchgear / control panel
	•					The isolating valve in the discharge line is not fully open	Open the valve fully
		•				Defective ammeter	Replace with new one
		•				The insulation resistance of the winding is inadequate (The minimum resistance in warm condition during operation should be 1000 ohms/volt of operating volt)	Please consult our works
		•	•	•		Bearings are damaged in the motor	Change the bearings
				•		Vibration caused by improper installation	Rectify the installation

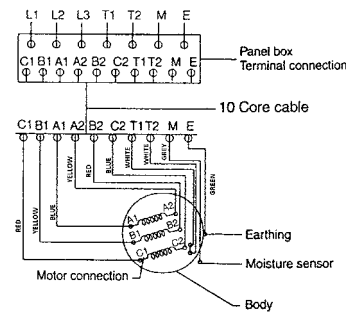
CABLE CONNECTION OF MOTOR TO CONTROL PANEL



(1) D.O.L. CONNECTION

7 LEAD CABLE OR 4+4 LEAD CABLE

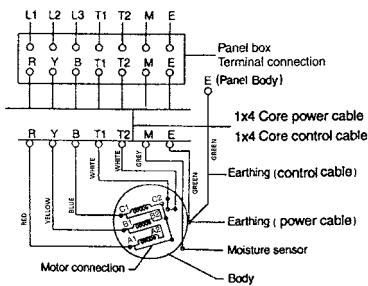
R, Y, B : Power Lead
M : Moisture Lead
T1, T2 : Thermister Lead
E : Earthing Lead
L1, L2, L3 : Incoming Supply



(2) STAR-DELTA CONNECTION

10 LEAD CABLE OR
4+4+4 LEAD CABLE

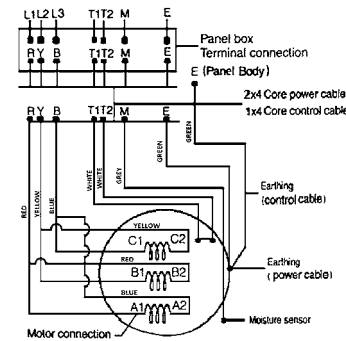
A1, B1, C1 : Power Lead
A2, B2, C2 : Power Lead
M : Moisture Lead
T1, T2 : Thermister Lead
E : Earthing Lead
L1, L2, L3 : Incoming Supply



(3) A.T.S. CONNECTION

4 CORE POWER CABLE &
4 CORE CONTROL CABLE

R, Y, B : Power Lead
M : Moisture Lead
T1, T2 : Thermister Lead
E : Earthing Lead
L1, L2, L3 : Incoming Supply



(4) A.T.S. CONNECTION 2 PARALLEL POWER CABLE

4 CORE POWER CABLE &
4 CORE CONTROL CABLE

R, Y, B : Power Lead
M : Moisture Lead
T1, T2 : Thermister Lead
E : Earthing Lead
L1, L2, L3 : Incoming Supply

MBH[®] PUMPS

WARRANTY

DEWATERING PUMP

The Pump is warranty 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 warranty are :

1. The warranty is valid only if the pump is operated strictly as per the instructions given in the user guide attached herewith.
2. Our obligation is 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 : _____

mbh pumps (gujarat) pvt. ltd.

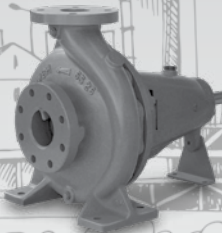
14, G.I.D.C. Naroda Indl. Estate, Ahmedabad-382 330, India.

Phone : 079-2282 3066 / 2282 1018

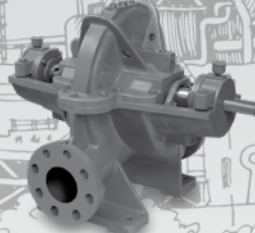
E-mail : marketing@mbhpumps.com
exports@mbhpumps.com

Website : www.mbhumps.com

OTHER PRODUCTS



**CENTRIFUGAL
BACKPULL OUT PUMP**



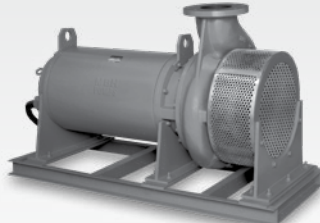
**HORIZONTAL
SPLIT CASING PUMP**



**SUBMERSIBLE
SEWAGE PUMP**



**PORTABLE
SUBMERSIBLE PUMP**



**SUBMERGED
CENTRIFUGAL PUMP**



**POLDER
PUMP**



ISO 9001
Certified Company

MBH[®] **PUMPS**

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