



**OPERATION &
MAINTENANCE MANUAL**

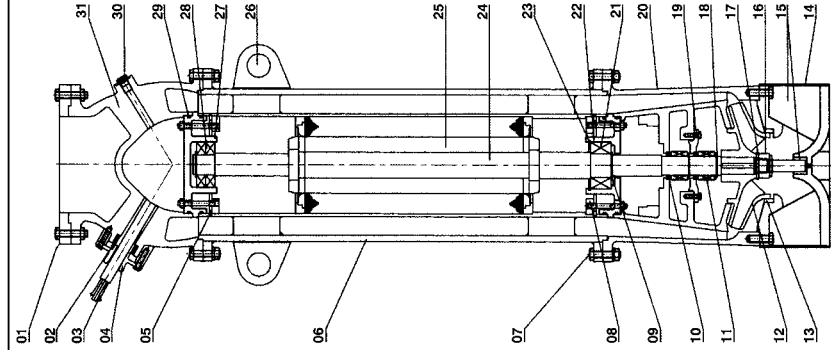
DEWATERING PUMP



**MBH[®]
PUMPS**

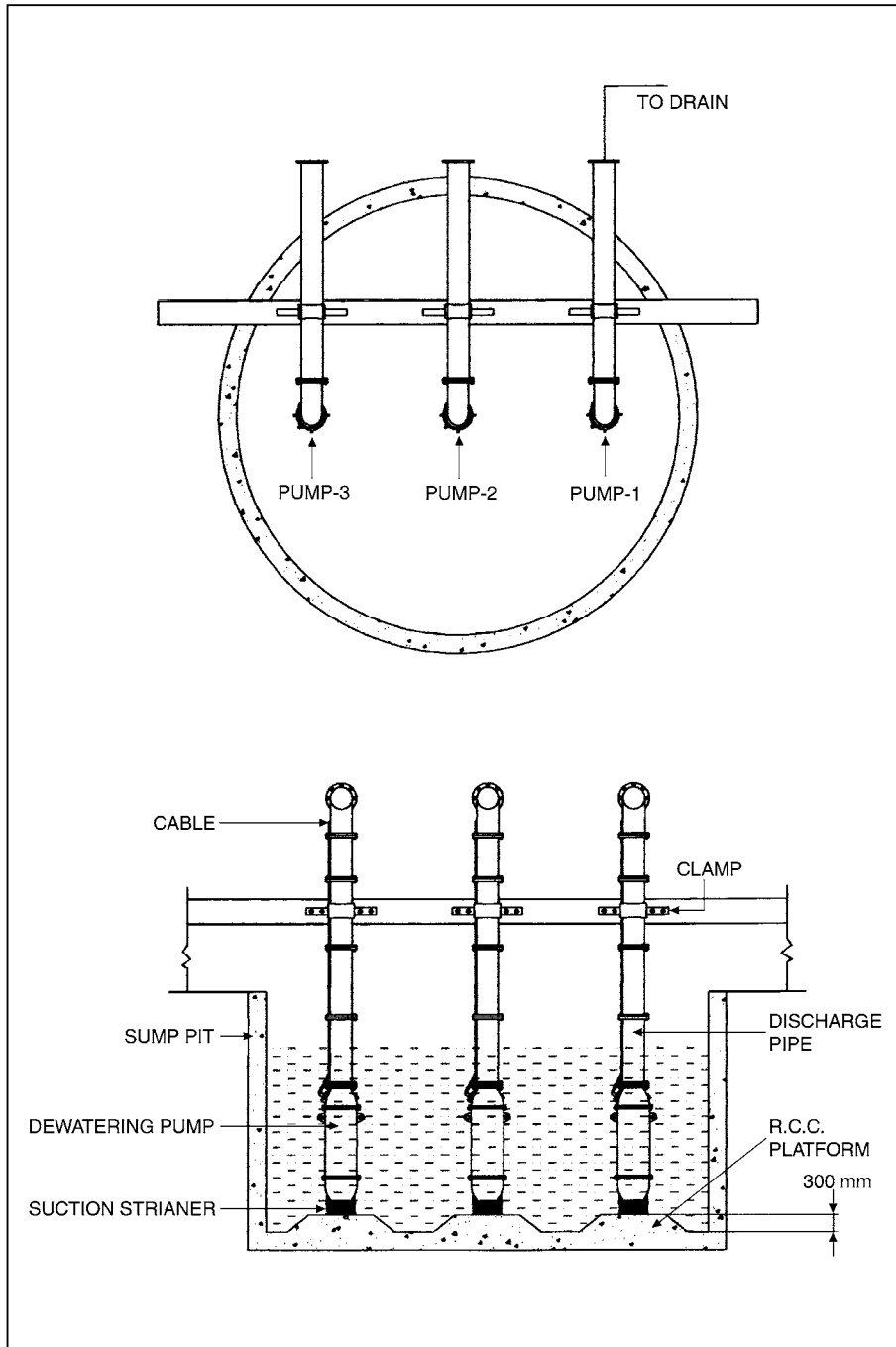
A Mark of Quality

CROSS SECTION DRAWING



No.	DESCRIPTION	MATERIAL
01	DELIVERY FLANGE	C.I./M.S.
02	CABLE GROMMET	Ni. RUBBER
03	CABLE	STD.
04	GLNAD COVER	C.I. IS210FG260
05	STATOR CIRCLIP	SPRING STEEL
06	STATOR	M.S.FAB. + SI STAMPING
07	HARDWARE SET	M.S.
08	COMMON FLANGE	M.S.
09	BRG. ROTOR CIRCLIP	SPRING STEEL
10	MECH. SEAL UPPER	TC / TC
11	MECH. SEAL LOWER	Cr./Cr. MO STEEL
12	IMPELLER	C.I./S.S.
13	NECK RING	G.M.
14	SUCTION STRAINER	S.S.
15	BASE WITH BUSH	M.S. / NI. RUBBER
16	LOCKING NUT	S.S.
17	IMPELLER WASHER	S.S.
18	ROTOR CIRCLIP	SPRING STEEL
19	MECH. SEAL COVER	C.I. IS210FG260
20	BYPASS	C.I. IS210FG260
21	BALL BEARING (D.E.)	STD.
22	LOWER BRG. HOUSING	C.I. IS210FG260
23	LOWER BRG. HOUS. CIRCLIP	SPRING STEEL
24	ROTOR SHAFT	S.S. 410
25	ROTOR	SS +SI STAMPING
26	HOLDING HOOK	M.S.
27	UPPER BRG. HOUSING	C.I. IS210FG260
28	BALL BEARING (N.F.E.)	STD.
29	"O" RING	NI. RUBBER
30	DRAIN PLUG	G.M.
31	DELIVERY OUTLET	C.I. IS210FG260

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. The motor windings are water and oil resistant and ingress of water or moisture inside the motor due to seal failure or other reason will not render the pump inoperative. The pump motor unit of close coupled construction and the double casing design provides effective water cooling of the motor by flowing 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 is thrown down into sump, it might dig into 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 direction (clockwise). Counter clockwise rotation results in lower discharge and increased wear. At the instant of starting dewatering, pump should give 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.

Though all the Dewatering pumpsets are prefilled upto plug level with transformer oil at our works prior to despatch, it is possible that some of the oil may leak through during transit-handling. It is therefore advisable to check oil level before commissioning and starting the pumpset.

“MBH” DEWATERING PUMP

- Model :
- Motor H.P. :
- Supply : 400/440 Volts 3 Phase, 50 Hz. AC
- Starting : Direct Online or A.T.S.

WARNING

- Before starting the pump, fill the motor to plug level with moisture free transformer oil.
- 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 100 hrs. - Check oil level in motor
- Every 250 hrs. - Remove only base, clean impeller & guide vane
- Every 500 hrs. - Change motor oil
- Every 1000 hrs. - Examine sealing arrangement for wear or damage
Change sealing chamber oil

OILS

- Motor - Transformer oil Cr.BSS 148-1950 or ‘POWEROIL’ mfd. by special oil refineries to IS:335
- Quantity - 4 to 5 ltrs. (Model D-2)
12 to 13 ltrs. (D-3)
17 to 18 ltrs. (D-4)
- Sealing Chamber - CASTROL or Equivalent Cr. SAE 250 or SERVO 250 mfd. by I.O.C.
- Quantity - 150 to 250 CC (D-2)
300 CC (D-3 / D-4 99)


SALIENT FEATURES

Highlights of Submersible Dewatering Pumps in comparison with Centrifugal Pumps

No.	SUBMERSIBLE DEWATERING PUMPS	CENTRIFUGAL 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	 DEWATERING PUMP	
	•					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.

MBH[®] PUMPS

GUARANTEE

DEWATERING 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. The guarantee 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 : _____

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MBH[®] PUMPS

DEWATERING PUMP



These Pumps are submersible type, hence do not require pump house. The Pump motor unit is close coupled construction and the double casing design provides an effective water cooling to the motor by water flowing around the motor casing.

TECHNICAL SPECIFICATIONS :

Head : upto 100 mtrs.
Capacity : upto 1500 cu.mtr./hr.
Stage : One / Two
Lubrication : Oil
HP : 1.5 to 250
RPM : 2900 / 1450
Bearing : Ball Bearing
Seal : Mechanical Seal
Impeller : Stainless Steel / Cast Iron

APPLICATIONS :

- Dewatering Trenches
- Building Construction Sites & Pits
- Dam Sites
- Mines

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SEWAGE
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**SUBMERGED
CENTRIFUGAL
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**CENTRIFUGAL
BACK PULL
OUT PUMP**



ISO 9001:2008
Certified Company

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