MPHMDW SERIES

Ni-HARD

submersible slurry pumps

Versatile, really robust and definitely mobile

We move SOLIDS

IntMPE Pumps

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Ni-HARD
submersible slurry pumps

The Ni-HARD series submersible slurry pumps for rugged usage
Slurry revival is an essential part of day-to-day operations in a wide range of industries, such as mining, ore dressing, sand contracting, ash handling and steel milling. The applications in these industries make heavy demands on slurry pumps, particularly in terms of the cost incurred when it comes to wear and tear, repairs and maintenance. In Ni-HARD series of pumps the wet end, indeed all wear parts, are made of Ni-HARD which provides complete wear protection.

Higher pump efficiency over time
State-of-the-art technology makes INTMPE Ni-HARD series pumps extremely efficient & highly dependable. Innovative features such as the unique adjusting Impeller clearance system provides low cost of ownership.

Less downtime
The excellent Solid handling capability of our channel-impeller pumps guarantees maximum operating time and substantial reductions in maintenance costs caused by pump jamming or clogging.

Lifelong reliability
The NI-HARD series pumps are designed for continuous pumping under the most difficult operating conditions. The well-proven design is based on our long experience in the waste water and slurry related industries.

Why submersible ?
The submersible concept offers numerous benefits over dry-mounted pumps. As it doesn't require any support superstructure, it requires less space for operation and is very easy to install. Being submersible means its flood-proof. Operating underwater also means quiet operation. On top of that, the time for maintenance can be greatly reduced.

The Ni-Hard Series Submersible pumps are made to operate over the complete pump curve, not just one specific duty point. This means that the pump can be used in numerous applications within its range, instead of being "one pump-one application".

Applications

1. Coal mines and washery

2. Steel plant
Steel continuos casting & hot rolling mills; Slag granulation; Benification plant; SMS

3. Power
Coal Handling plant; Ash handling plant; Balance of plant

4. River cleaning
Dredging

5. Hydro power
Turbine sumps; Sump cleaning

6. Minerals processing
Smelters

7. Mining
Coal; Manganese; Zinc; Iron Ore; Nickel; Gold; Gypsum; Silica

8. Tunneling and construction
Dewatering and piling

Installations

Ni-HARD
submersible slurry pumps

Utkal Alumina Rayagada (Aluminium Smelter)
60 HP Submersible slurry pumps (2 units)

NTPC Vindhyachal (Power Plant)
40 HP submersible slurry pump (2 units)

Sterlite Copper (Copper Smelter)
75 HP submersible slurry pump (1 unit)

JSW Energy (Baspa Stage II Hydroelectric Power Station)
40 HP submersible slurry pump (1 unit)

Sembcorp (2640 MW Thermal Power Complex)
40 HP submersible slurry pump (1 unit)

Sterlile Copper (Copper smelter plant)
40 HP submersible slurry pump (1 unit)
10 HP submersible slurry pump (1 unit)

NTPC Singrauli (Thermal Power)
85 HP submersible slurry pump (2 units)

Tata Sukinda (Steel Mines)
10 HP submersible slurry pump (1 unit)

Udupi Power Corporation Ltd.
(Thermal power - seawater intake)
120 HP submersible slurry pump (1 unit)

Krishnapatnam - BGR Energy Ltd. (Contractor)
(Desalination Plant)
40 HP submersible slurry pump (4 units)

Design

Bearings
The bearing arrangements with double angular contact ball bearings with deep groove ball bearings give the best resistance to the radial and axial thrust load combination & generously oversized to give extended life when pumping high specific gravity slurries.

Moisture Detection Probe
The moisture detector indicates any moisture penetration into the motor.

Thermal Motor Protection
Built-in temperature sensors enable tripping of the motor if the temperature rises above 110 deg. C and restarts at 90 deg. C, giving complete dry run protection.

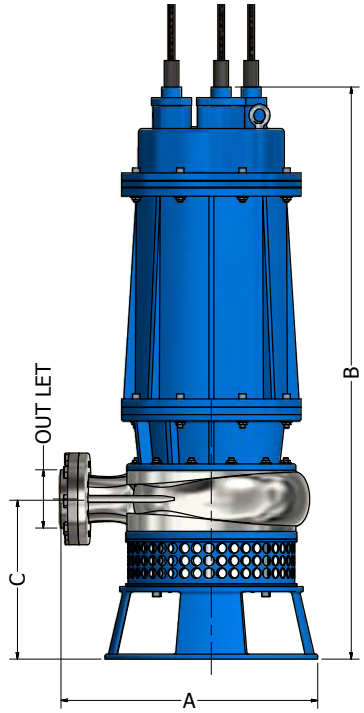
Double Mechanical Seals
All pumps have as standard equipment double mechanical seals which seal off the motor from the pump section. The seal has seal faces made from silicon carbide for long life. The design of the oil chamber ensures efficient cooling of the seals.

Shaft with Rotor
Rotor is designed with two cage such that it take care of starting torque to handle thick slurry and A shaft with a die-cast rotor on the motor side and a shaft protection sleeve on the pump side, ensures better life for the shaft. The compact seal arrangement has minimised shaft over-hang and consequently minimises shaft deflection.

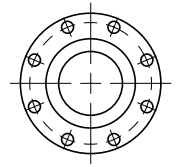
Wet Parts
Wet parts like volute, impeller & agitator are of Ni-hard or SS 316 depend on slurry to be handled & impeller is open type such that there is no chance to block the pump.

Cable
The cable has a special triple protection with waterproof insulation as such is much more resistant against damage. The IP68 rated cable gland seals against both the inner and outer sheathes. It is almost impossible for water to ingress to the electrical connections.

GA Drawing

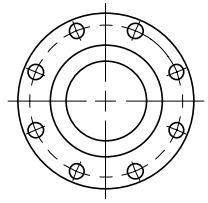


100 mm PUMP
(DIN-24255-733)



Ø 18 x 8 HOLES
P.C.D. 180

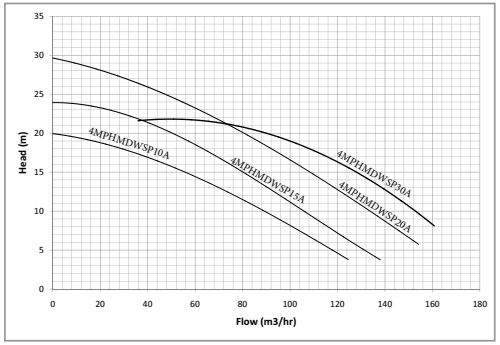
150 mm PUMP
(DIN-24255-733)

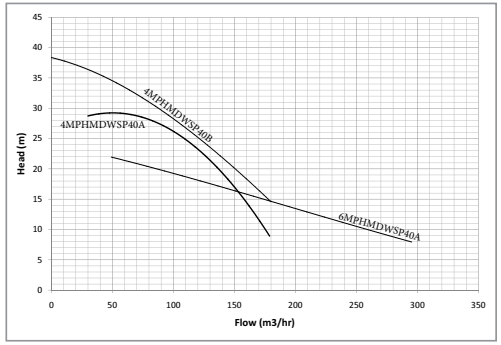


Ø 22 x 8 HOLES
P.C.D. 240

All Dimension are in mm

Model	HP	A	B	C	Outlet (in)	Outlet (mm)	Weight
4MPHMDWSP10A	10	500	1001	300	4	100	210
4MPHMDWSP15A	15	500	1066	300	4	100	230
4MPHMDWSP20A	20	500	1107	300	4	100	325
4MPHMDWSP30A	30	590	1312	370	4	100	355
4MPHMDWSP40A	40	610	1330	375	4	100	590
4MPHMDWSP40B	40	610	1330	375	4	100	590
4MPHMDWSP50A	50	610	1330	375	4	100	625
4MPHMDWSP60A	60	610	1390	375	4	100	640
6MPHMDWSP40A	40	597	1445	380	6	150	590
6MPHMDWSP50A	50	597	1445	380	6	150	625
6MPHMDWSP60A	60	597	1505	380	6	150	640
6MPHMDWSP75A	75	652	1452	392	6	150	650
6MPHMDWSP85A	85	652	1486	392	6	150	725



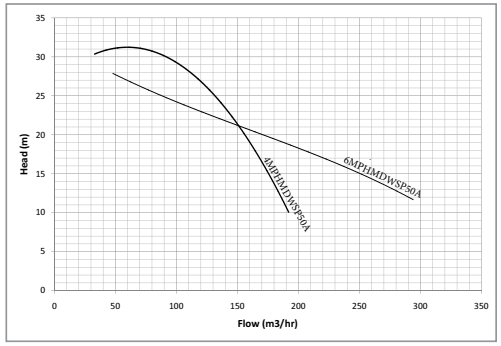


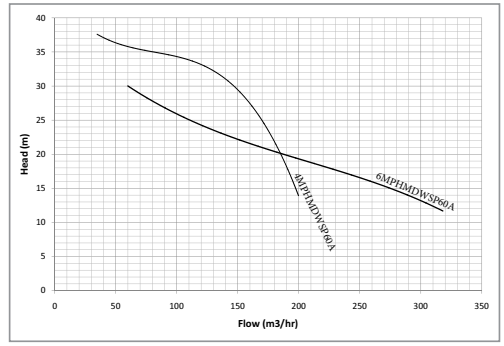
Performance Curves 50 Hz

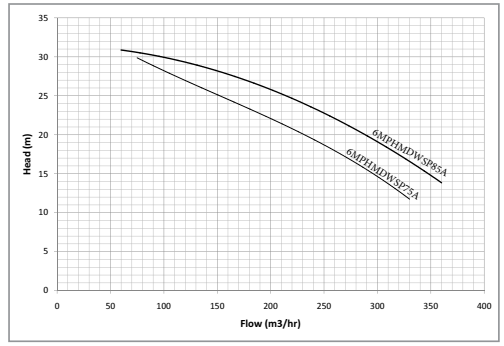
Ni-HARD

submersible slurry pumps

IntMPE Pumps



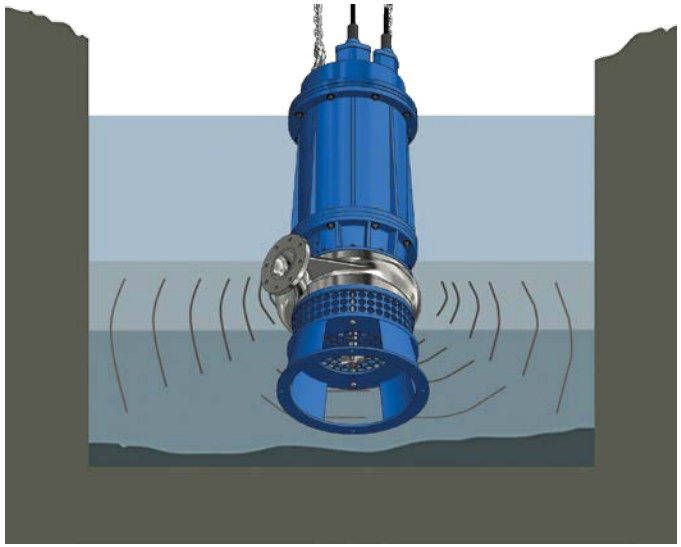




Specifications

MODEL	4MPHMDWSP10A	4MPHMDWSP15A	4MPHMDWSP20A	4MPHMDWSP30A	4MPHMDWSP40A	4MPHMDWSP40B	4MPHMDWSP50A	4MPHMDWSP60A	6MPHMDWSP40A	6MPHMDWSP50A	6MPHMDWSP60A	6MPHMDWSP75A	6MPHMDWSP85A
Power	7.5 kW / 10 HP	11 kW / 15 HP	15 kW / 20 HP	22 kW / 30 HP	30 kW / 40HP	30 kW / 40HP	30 kW / 40 HP	37kW / 50 HP	37 kW / 50 HP	44.5 kW / 60 HP	44.5 kW / 60 HP	52 kW / 70 HP	63 kW / 85 HP
Speed	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450
Max solid content	50%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%
Max specific gravity kg/L	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Max particle size	34 mm	34 mm	34 mm	38 mm	38 mm	38 mm	38 mm	38 mm	38 mm	45 mm	45 mm	45 mm	45 mm
Max slurry temperature	90 c	90 c	90 c	90 c	90 c	90 c	90 c	90 c	90 c	90 c	90 c	90 c	90 c
Max flow m^3/hr - Qmax	105 m^3/hr	130 m^3/hr	145 m^3/hr	185 m^3/hr	200 m^3/hr	180 m^3/hr	300 m^3/hr	200 m^3/hr	192 m^3/hr	205 m^3/hr	320 m^3/hr	330 m^3/hr	359 $m^3$3/hr
max head - Hmax	14 m	24 m	28 m	24 m	30 m	38 m	22 m	24 m	32 m	28 m	30 m	30 m	32 m
Max efficiency Duty point	8 m	18 m	20 m	20 m	18 m	26 m	16 m	20 m	22 m	22 m	22 m	20 m	22 m
Max submergence depth	28 m	28 m	28 m	28 m	28 m	28 m	28 m	28 m	28 m	28 m	28 m	28 m	28 m
Cable length	10 m	10 m	10 m	10 m	10 m	10 m	10 m	10 m	10 m	10 m	10 m	10 m	10 m

Agitator Details

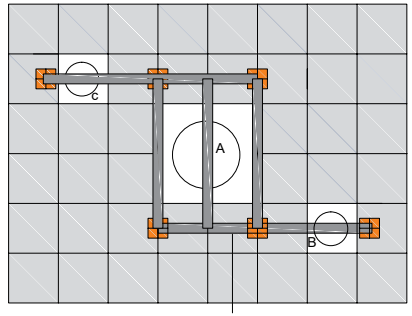


Ni-hard slurry pump is fitted with agitator which eliminates solids accumulating on the sump floor and can significantly reduce maintenance costs resulting from digging out sumps and downtime due to solids building up and choking off the suction of conventional pumps. it is because of Agitator blade that the highest efficiency in material mixing can be achieved.

Heavy duty blades situated in Front of the pump's suction agitates, chops, cuts shreds incoming solids such as metal, plastic, wood, solid waste prior to them entering the impeller. The Agitator eliminates the pump and system from getting clogged.

Pontoon Slurry Sucker

Ni-HARD
submersible slurry pumps



A Slurry Pump
B Dewatering Pump
C Jetting Pump

Chain Pulley Attachment

PLAN

The Slurry Sucker units incorporate pumps from DC series and Ni-HARD Series, which are used for dewatering and slurry applications. Selection of the pump will be determined by the type of the operation and could include either dewatering pumps, where agitation of the slurry is required, or Ni-hard slurry pumps where there is a need to remove slurry from Ash ponds in power plants or dredging at the Shore.

* Can be Fully customized for your project requirements

Accessories

Hose

INTMPE recommends all its submersible slurry pumps are suspended on chains, followed by a length of reinforced flexible slurry hose pipe, before connecting to any rigid pipe. This enables the pump to operate correctly when it is in thick heavy slurries, as when the pump is started and slurry has settled around it there is chance of vibrations. As the pump is suspended on chains, the vibration doesn't harm the pump and the surrounding structure, allowing standing water to get to the impeller.

Hoses are supplied with PN 16 flanges on both ends as standard.

Lifting Chains

Custom made lifting chains are recommended so the slurry pump is lifted from a single point. this means that the pump remains vertical at all times, and is not lifted on an angle, which can happen on site if only one of the lifting points is used. Additionally when starting the pump when it is submerged in settled slurry it allows the pump to vibrate as described above.

As it is a submersible pump the shackles and chain unit come in a galvanised finish to minimise corrosion and maximise working life.

The chain unit is supplied with two shackles to couple it directly to the Pump.

Control Panel

We understand the Investment a customer is making in buying our Submersible Ni-Hard series pumps and for getting optimum output of your investment, we recommend you to opt for our Control Max series Control panels.

The fully automatic control panel has Two main modes of operation.

1. **Manual mode**
   The operation can start Stop the pump as required.

2. **Automatic with level control switches or Float switch**
   When the high level Sensor is activated, the pump will start. When the low current relay senses the drop in power the pump will stop.

In option to these we can also offer Fully automated PLC based Control panels with Timer Start Features.

All panels Protect against :

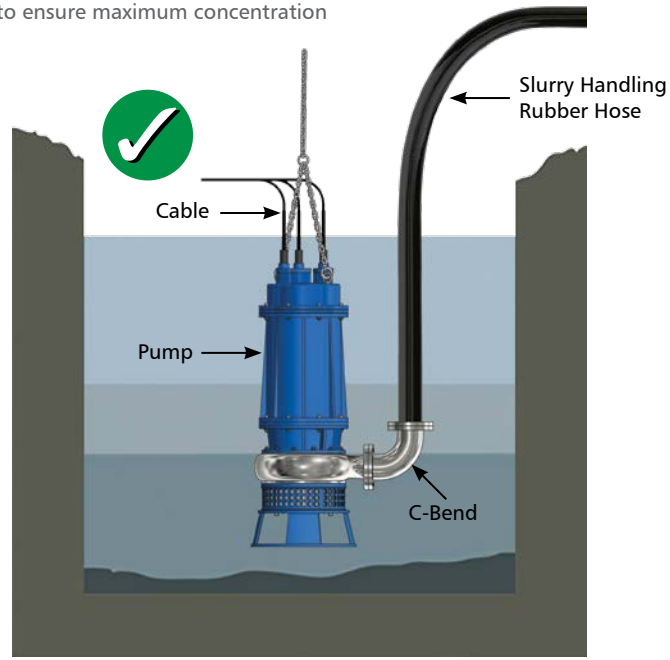
- Earth leakage faults - damage to the cable or pump
- current overload of the pump
- Phase imbalance - voltage variation of the incoming supply phases
- phase rotation - to ensure the pump runs in the correct direction
- phase loss- the loss of one or more of the incoming phases
- under voltage - if the incoming voltage is too low
- over voltage - if the incoming voltage is too high

Best Operating Practice

To ensure that you get the best performance from your Submersible Slurry Pump, we recommend that you follow the best practice procedures laid out on this page.

Correct Installation Example

- A good water to slurry ratio
- Sump level control - If the sump empties, the pump should switch itself off via the automatic control panel. The pump will switch on via a float switch or timer when the level rises.
- Pump should not exceed 20 starts per hour.
- The pump should be suspended by chains at least 200 mm from base of the sump to ensure maximum concentration of solids pumped.

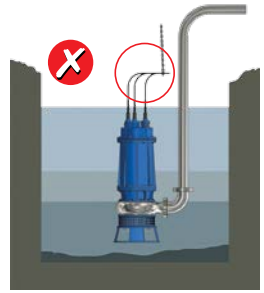


Power Supply & Servicing

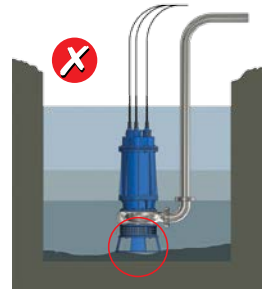
Always ensure that the pump is correctly connected and protected by using Fully Automatic Control System with Earth Fault Leakage Protection.

The pump should be inspected as per the recommendations in the operating and maintenance manual.

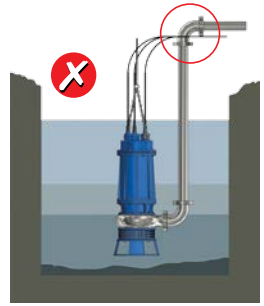
Incorrect Installation Examples



Correct Lifting
When moving or suspending the pump, always use certified lifting equipment. Never lift or suspend the pump using the power cable.



Pump Positioning
When pumping heavy slurries, always suspend the pump with the certified lifting equipment 200 mm minimum above the bottom of the sump. Do not let the pump sit on the bottom of the sump.



Heavy Duty Flexible Hose Usage
When pumping heavy slurries, always suspend the pump with the certified lifting equipment 200 mm minimum above the bottom of the sump. Do not connect the pump directly to a rigid pipe.

Vertical Positioning
For the best operation of the pump and inducer, ensure that the pump is suspended in a vertical position.

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