



Enriching Lives

VERTICAL PUMPS

TYPE - BHR / BHQ / BHM / BHK / BHM_a / BHA



Vertical turbine pumps are single stage or multistage in construction. These pumps can be installed in wet pit and dry pit arrangements. Vertical wet pit pumps are used on boreholes, open wells, rivers and lakes etc. They are designed to operate without being affected by large fluctuations of the water level and are of compact construction. Submerged Impellers allow the pump to be started without need of priming.

Component Description and Features:

Suction Bell (Bell Mouth):

Suction Bells are designed for smooth entry of liquid from the sump into impeller eye. For good performance from a centrifugal pump the liquid must continuously accelerate up to the eye of the impeller. Generally the bell mouth is cast/ fabricated.

Impeller:

The function of Impeller is to impart Kinetic energy to the fluid to be pumped. These impellers have vanes with double curvature. The Impellers are of Mixed flow, Francis vane type & Axial flow type, which are accurately machined, balanced and finished smooth by hand in water passages.

Shaft Bearings:

These are centrally located into the Bowl / bearing spider. These are neoprene rubber lined with an outer shell of brass or steel. Also composite type bearings are used depending on application and liquid properties. These can be lubricated by the water being pumped. If the water being pumped is not suitable for lubrication, then external clear water is used. In case of Oil lubrication bronze bearings are used. Grease lubrication is used in typical application.

Discharge Head:

Discharge heads are provided when the pump discharge is above pump floor level. This part directs the flow from column pipe to delivery pipeline. The total weight of pump is supported by discharge head, which is fixed on foundation plate.

Discharge Tee:

The discharge tee is provided when the pump discharge is below pump floor level. The flow is directed from vertical to horizontal through a smooth elbow, causing minimum friction loss.

Thrust Bearing:

Axial thrust developed by pump & weight of rotating component are taken by a thrust bearing. These are of Pad type or antifriction type. The thrust bearing unit is fixed on discharge head/ lower stool.

Non-reverse Ratchet Arrangement:

If the pump or the motor bearings are suitable only for unidirectional operation, non reverse ratchet arrangement can be provided to prevent reverse rotation of pump due to back flow of the water in case of pump trip. Due to rotation of pump and with centrifugal action the ratchet pins gets lifted up and the NRR arrangement comes in action. When the speed is reduced or the pump stops the ratchet pins get engaged with ratchet cover teeth and the pump stops rotating in opposite direction.

Range:

- Delivery size: up to 2200 mm.
- Capacity: up to 55,000 m³/hr
- Head: up to 240 meters

Types:

- Turbine
- Mixed Flow
- Axial Flow
- Propeller

Applications:

- Flood control
- Dry dock
- Nuclear & thermal power station
- Water supply
- Fertilizer plants and process industries
- Irrigation schemes
- Sewage handling
- Fire fighting and offshore platforms
- Condensate extraction



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