

Pioneering for You

wilo

Wilo-Vertical Turbine Pumps



Test Bed

Latest facility for ensuring outgoing product quality of international standards in terms of hydraulics performance, vibrations as well noise level.

Facility & Capabilities

- Large pump test bed for flows up to 60000 m³/hr
- EOT crane capacity 60 ton
- Standard pump test bed for end suction, horizontal Split case pumps flows up to 30000 m³/hr
- NPSH_{req.} testing capable for flows to 60000 m³/hr
- Full speed tests up to 4.5 Mega Watt
- Testing capability of a complete engine driven pump



Expertise comes in all sizes

Vertical Turbine Pumps

Technical Data

- **Series** : CNE, VMF, VMP*, VAF*, VDF VMFO**
- **Flow Range** : up to 600000 m³/hr
- **Head Range** : up to 450 m
- **Operating Temp.:** up to 80°C, Higher on request
- **Installation** : Above floor, below floor
- **Trust Bearing Lubrication** : Grease, oil
- **Line Shaft Bearing Lubrication** : Self, forced (external)
- **Bowl Assembly** : Pull out or Non-pull out

Material of Construction

- **Impeller** : Cast iron, bronze, stainless steel, Ni-CI
Cast steel, duplex, super duplex
- **Diffuser** : Cast iron, stainless steel, Ni-CI
Cast steel, duplex, super duplex
- **Shaft** : Stainless steel (EN8, EN19, SS304,
SS410, SS410H, SS316L, UNS)
- **Shaft sleeve** : Carbon steel (EN8), stainless steel
(SS304, SS410, SS410H, SS316L, UNS)
- **Casing wearing** : Cast iron, stainless steel, Ni-CI
- **Intermediate bearing** : FINOCOT, THORDON, FEROFORM
Cut-less rubber
- **Bell mouth** : Cast iron, stainless steel, Ni-CI, cast
steel, duplex, super duplex
- **¹RM pipes** : Mild steel, stainless steel
- **²DBMS** : Mild steel, stainless steel

¹RM pipes : Rising Main Pipe

²DBMS : Delivery Bend cum Motor Stool

*** Pumps with material combinations available upon request

Customer Benefits

- Space saving
- Engineered product: PUMps are available in variety of materials and construction to meet exact customer requirement.
- High pump efficiency delivered with high flow.

Product Certifications and Approvals

- All Vertical Turbine Pumps are certified with CE
- EAC (for Russians countries)

Applications

Wilo Vertical Turbine pump is normally used in high-flow applications

- Water supply (drinking water, raw water intake and sea water)
- Irrigation
- Fire fighting
- Cooling water of power plants
- Flood control

Customer Benefits

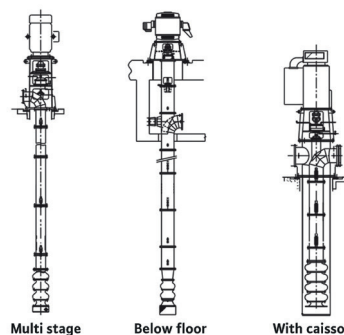
- Space saving
- Engineered product: PUMps are available in variety of materials and construction to meet exact customer requirement.
- High pump efficiency delivered with high flow.

Prime Mover

- Vertical Turbine Pumps can be driven with:

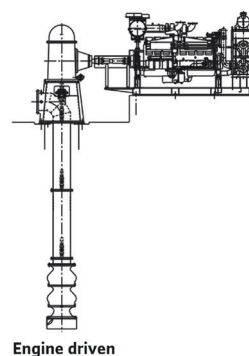
Electric motor:

Pump are supplied with flange mounted solid or hollow shaft vertical motors conforming to IE1/IE2/IE3 standards/NEMA norms, IP55 protection class, High voltage motors in TEFC/CACA/CACW designs and others customized design on request.

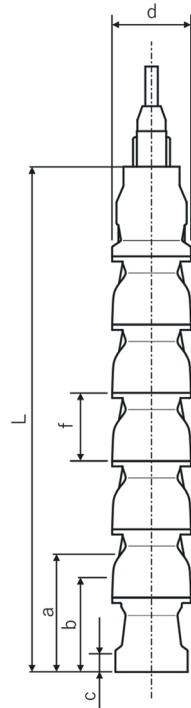


Diesel Engine:

Radiator cooled/heat exchanger cooled options as per the requirement with the right angled gear box.



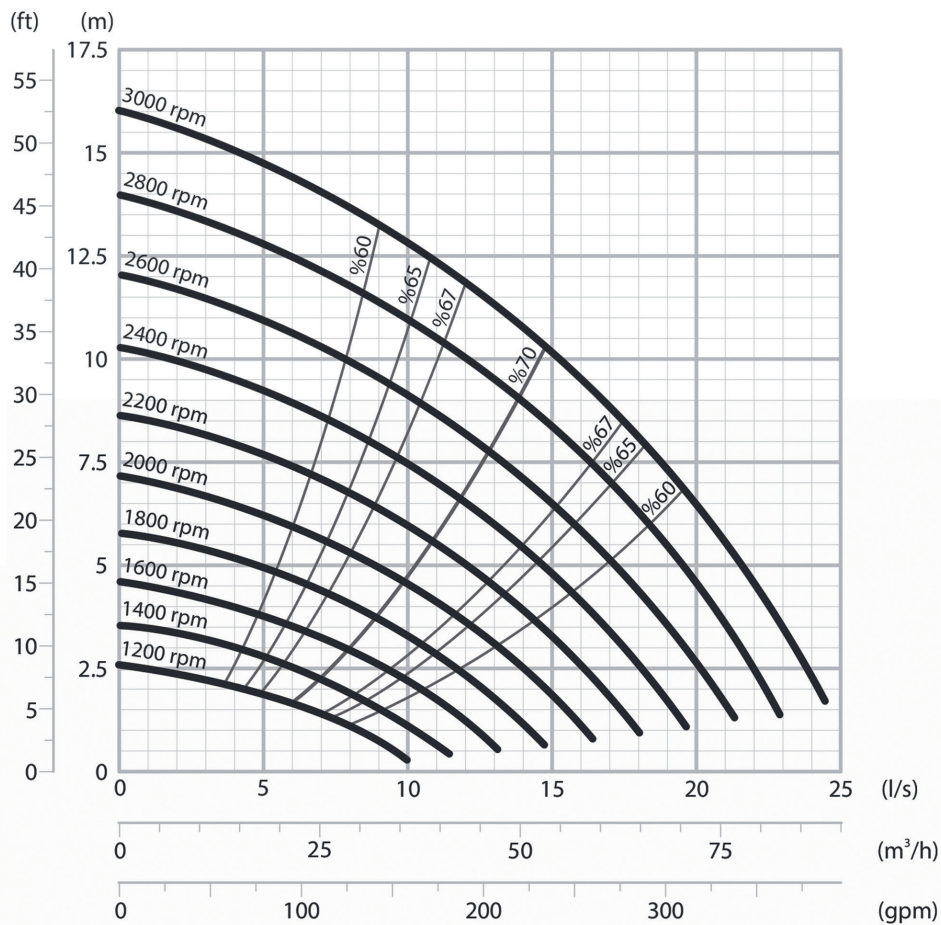
Vertical Turbine – VDP 0633



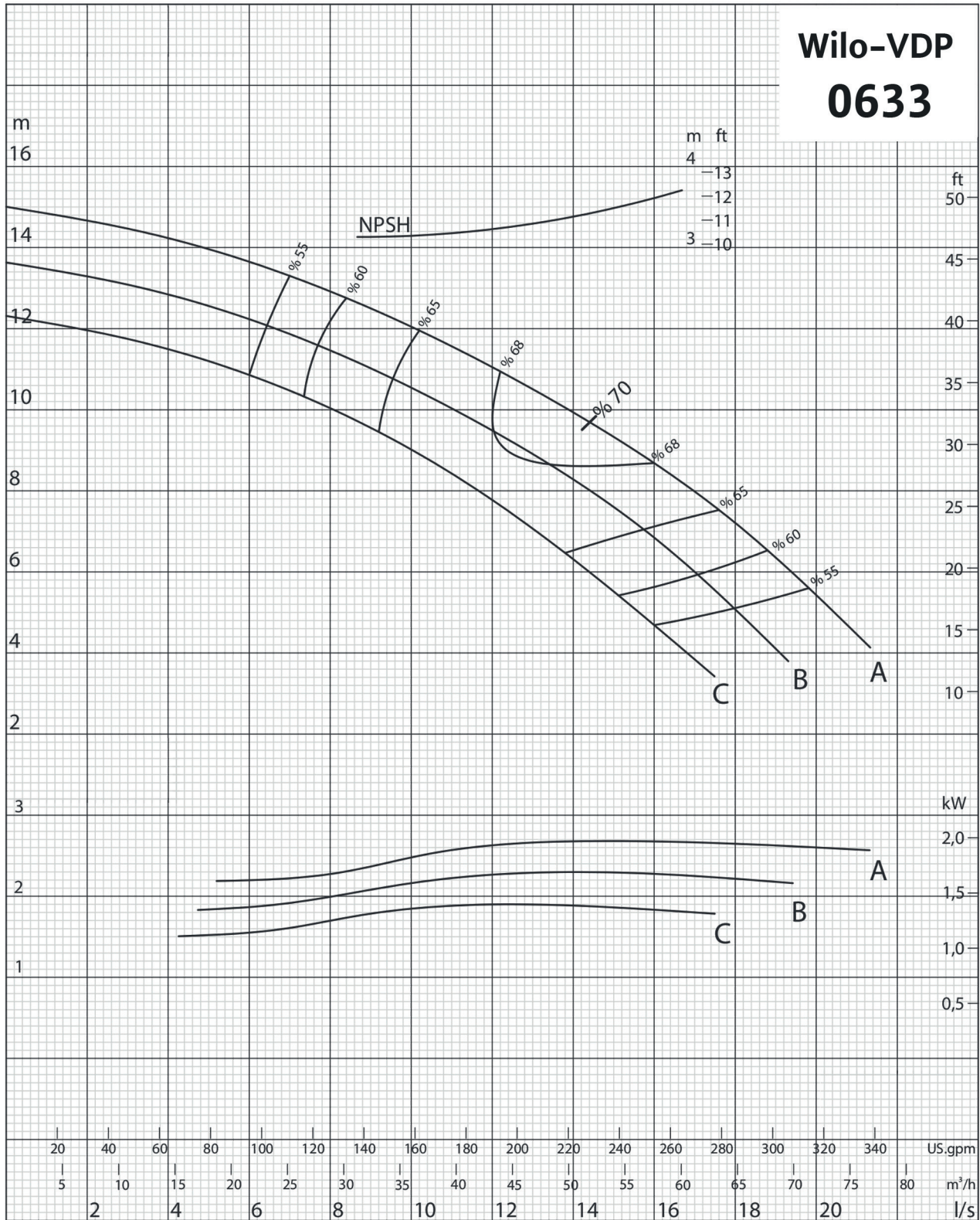
Material of Construction

- **Impeller** : Cast iron (ASTM A48 Class 30 B)
Bronze (ASTM B 145 4A)
- **Bowl** : Cast iron (ASTM A48 Class 30B)
- **Shaft** : Stainless steel (ASTM A582 Type 416 - 420)
- **Impeller lock collet** : Stainless steel (ASTM A582 Type 416-420)
Carbon steel (ASTM A108-61 GR 1035)
- **Lineshafts** : Stainless steel (ASTM A582 Type 416 - 420)
Carbon steel (ASTM A108-61 GR 1035)
- **Lineshafts coupling** : Stainless steel (ASTM A582 Type 416 - 420)
Carbon steel (ASTM A108-61 GR 1035)

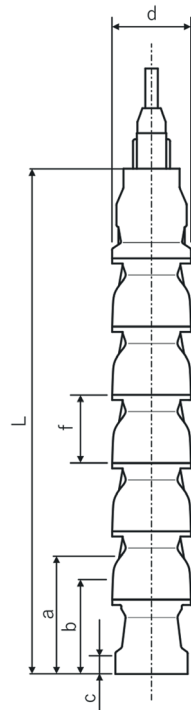
Dimension (mm)						
a	b	c	d	e	f	L
330	177,8	35	144	435	130	e+(no. of stages-1)xf



Performance Curve - VDP 0633



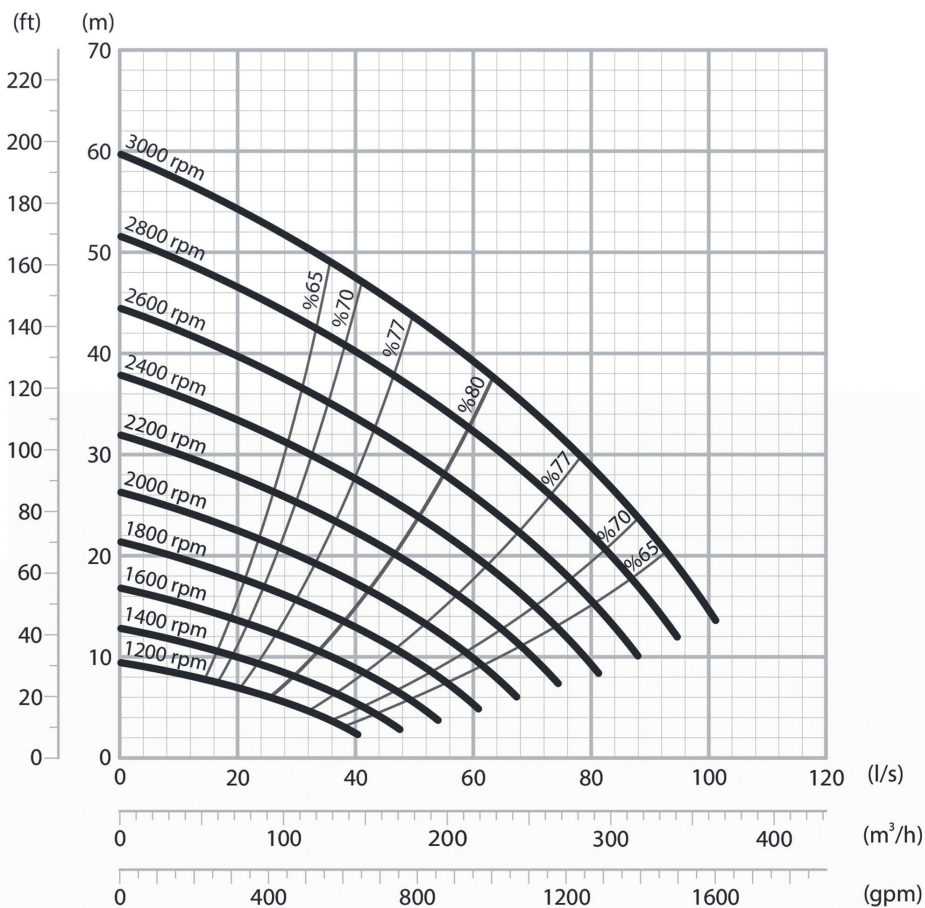
Vertical Turbine – VDP 1032



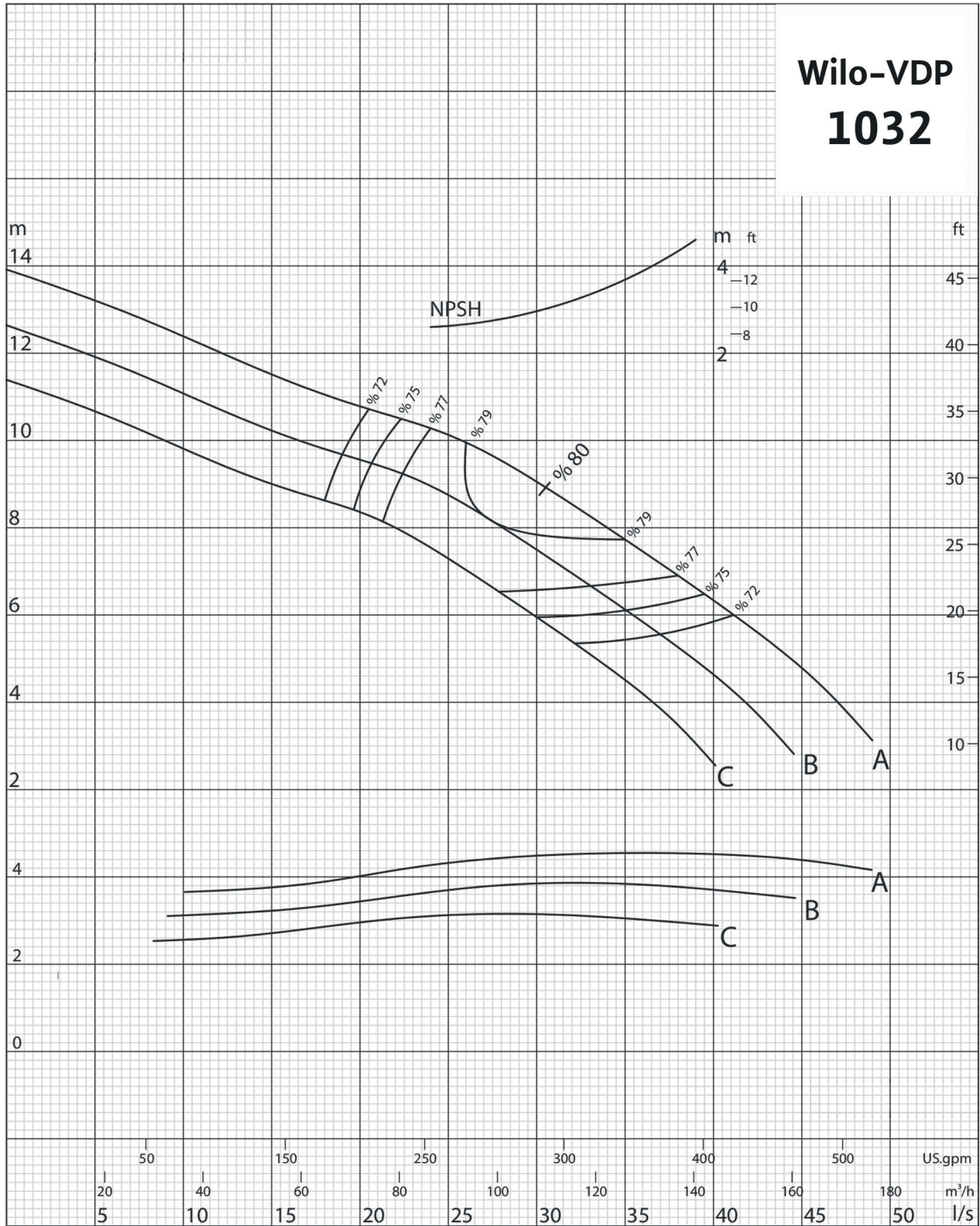
Material of Construction

- **Impeller** : Cast iron (ASTM A48 Class 30 B)
Bronze (ASTM B 145 4A)
- **Bowl** : Cast iron (ASTM A48 Class 30B)
- **Shaft** : Stainless steel (ASTM A582 Type 416 - 420)
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Carbon steel (ASTM A108-61 GR 1035)

Dimension (mm)						
a	b	c	d	e	f	L
533	280	42	238	618	212,7	e+(no. of stages-1)xf



Performance Curve - VDP 1032



Rigid Adjustable Coupling Assembly

Ensure efficient torque transmission with minimal losses & providing flexibility in alignment.

Electric Motor

Fitted with thrust bearing to take care of pump axial thrust. Optionally thrust bearing can be located in discharge bend assembly

Discharge Bend

Houses Non reverser ratchet, Sealing and bearing arrangement coupling and fabricated delivery bend that ensures smooth flow, Flange rating as per customer request. Below floor discharge also available

Stuffing Box Assembly

Ensures sealing of water from discharge bend. Optionally mechanical seal can be used inside the stuffing box.

G. L. Floor Level

Flanged Column

Provided with strengthening ribs

Solid Sleeve Coupling

Assembly for positive coupling of the shaft. The coupling is provided with split rings for transmitting the axial thrust and keys for torque.

Line Shaft

Suitable for transmission of torque & axial thrust

Intermediate Bearing Assembly

Line shaft bearing with sleeve & bearing retainer

Wearing Ring

Replaceable wearing ring as standard

Impeller & Diffuser Bowl

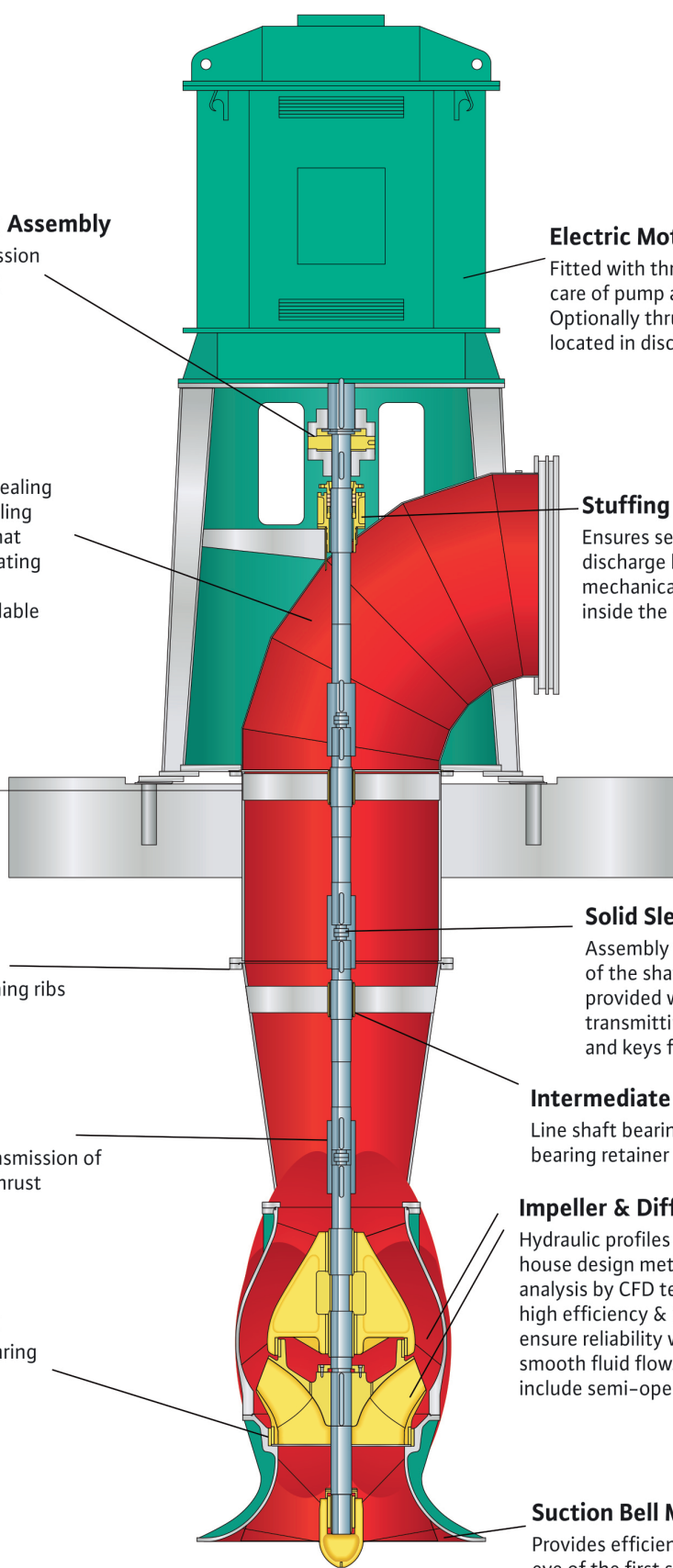
Hydraulic profiles designed using in house design methods and flow analysis by CFD technology ensuring high efficiency & precision cast to ensure reliability with passages for smooth fluid flow. Design variants include semi-open impeller.

Suction Bell Mouth

Provides efficient flow into the eye of the first stage impeller.

Note:

Pump shown is actual model of 2000 VMF
Non reverse switch is provided to prevent reverse rotation.
Optionally non reverse ratchet available

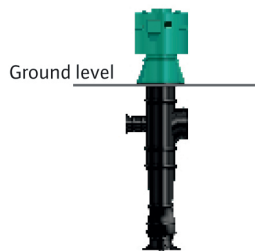


Product Installations

- Above Floor Installation:
Discharge bend is above ground level



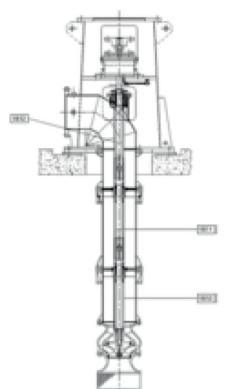
- Below Floor Installation:
Discharge bend is below ground level
Thrust block arrangement is provided at the back of the discharge bend to absorb the thrust generated due to change in direction of flow in discharge bend



Product Variants

With Shaft tube

- In case of contaminated liquid causing objectionable fast wear of intermediate bearings
- Rotating assembly is protected by means of shaft tube
- Fresh water/lubricating fluid is injected in the shaft tube

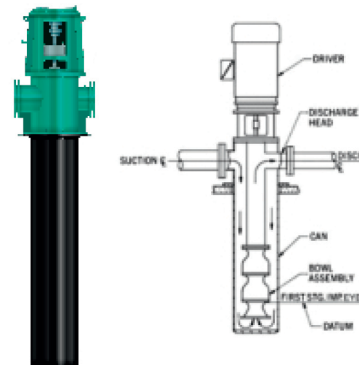


1810, 1811 & 1812 are shaft protection tube

Constructional Variant

Vertical Turbine Pump with Cassian/Canister

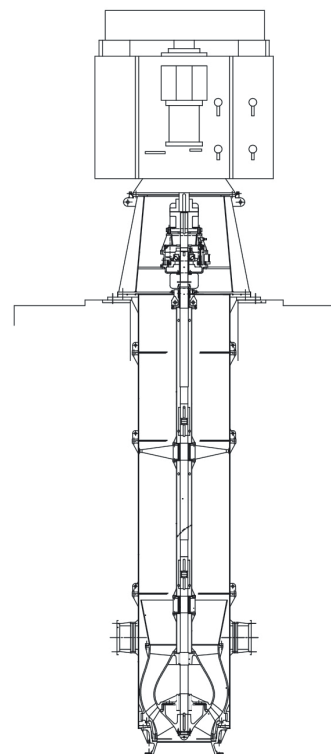
- This type of arrangement is typically used in condensate extraction
- In this pump body [i.e. bowl assembly, intermediate pipes] is placed in side a canister/barrel
- NPSHa is very less in such applications



Design Features

Bowl Pull out

Maintenance friendly design where the pump hydraulics can be taken out for repairs without disturbing pipe arrangement.



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