

Propeller Pump Series ALLPRO® PT



Utilization and main fields of application

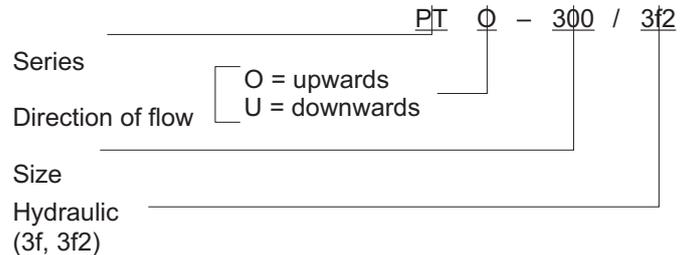
For pumping sewage containing nitrate or activated sludge from the nitrification basin to the denitrification basin (recirculation). Further for circulating or accelerating liquids in sewage engineering, clarification plants, environmental and process engineering or other industrial applications.

Performance data ①

Delivery flow	Q	up to 4.500 m³/h
Delivery head	H	up to 1,5 m
Liquid temperature	t	up to 100 °C
Delivery branch nominal width	DN _d	200 up to 700 mm

① The limits quoted are maximums. Figures may be lower depending on specified technical execution. The mentioned performance data are to be considered as a product and performance abstract only. The particular operating limits can be taken from the quotation or order acknowledgement.

Abbreviation



Design

Vertical propeller pump. In the inlet area the pump casing is designed for exceptionally favourable hydraulic conditions. Guiding ribs, arranged in the pump casing, ensure very good flow-in conditions at the propeller blades. The bearing carrier, arranged between suspension pipe and propeller head, contains the maintenance-free, wear-resistant sliding bearing, lubricated by the pumped medium.

Depending upon the delivery heads the propeller is equipped with three or more blades. They are spatially arcuated, hydraulically optimized and insensitive to dirt. For liquids containing fibres a fibre-repelling version is used.

For the absorption of the axial thrust a grease-lubricated antifriction bearing is located into the motor stool and above the maximum liquid level. Distance of bearings and shaft design are adapted for subcritical running in all working orders.

The pumps can be provided for both directions of flow. Due to the type of installation - drive of pump outside of the flooded area - a shaft sealing is not necessary.

For protection against splashing water a thrower is arranged below the axial bearing. For standard installation depth corresponding to the individual pump size please

refer to installation plan on page 6.

Installation

The pump has to be installed vertically. During the installation into the settling or collecting basin the pump casing has to be feeded in the supporting plate. In the upper area of the suspension pipe the pump unit is guided horizontally by an additional support. In case of revisions there is no work below the liquid level necessary.

Materials

Denomination	Material design ①	
Propeller blade	Chrome-nickel-steel	
Impeller hub	Chrome-nickel-steel	
Pump casing	Steel	Chrome-nickel-steel
Suspension pipe	Steel	Chrome-nickel-steel
Pump shaft	Chrome-nickel-steel	
Sliding bearing	SiC	
Supporting plate	Steel	Chrome-nickel-steel
Support	Steel	Chrome-nickel-steel

① Adapted to the field of application the pumps also can be supplied with other material combinations.

Drive

Standard pump drives are dry-mounted, surface-cooled three-phase IEC motors running at constant speed and equipped with overhead guard, utilizing the IMV1 mounting style.

A speed adjustment via gear unit resp. by pole-changing or frequency-controlled electric motors is possible. If the rates of flow are alternating, speed-controlled drives ensure an energy efficient operation of the pump.

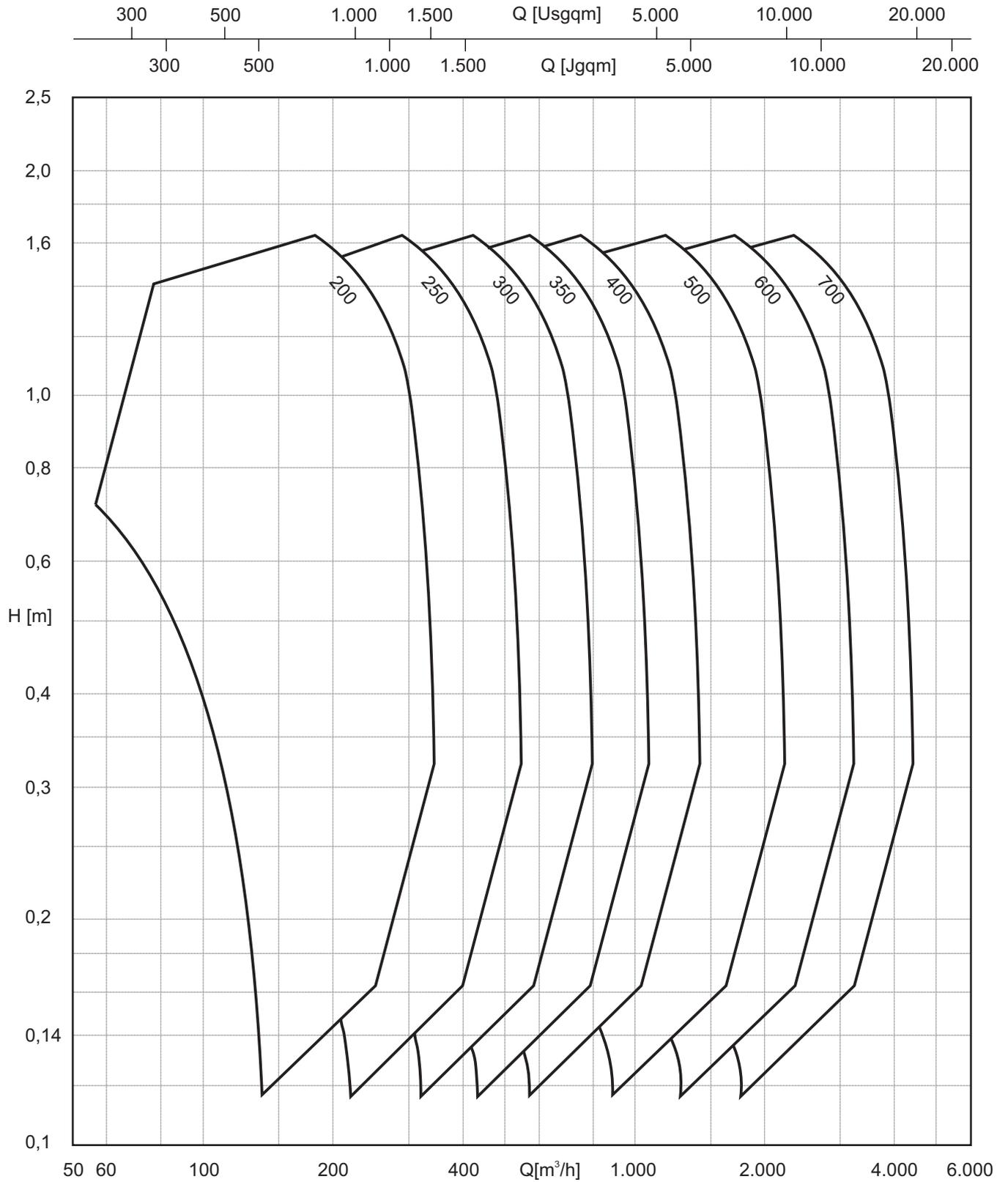
Explosion protection

The pump fulfills the requirements according to EU explosion-protection directive 2014/34/EU (ATEX 100a) for devices in device class II, category 2 G. Classification into temperature classes according to EN 13463-1 depends on the temperature of the pumped liquid. Refer to the proposal or order documentation for the maximum permissible liquid temperature for the respective temperature classes.

Note: When operating the pump in category 2, suitable measures must be provided to prevent impermissible warming of the pump surfaces in the event of disturbance.



Performance graph



Total performance range per size with due regard to all permissible speeds.
For exact performance data please refer to the individual characteristics.

Advantages

► **Affordable**

Standard motor of pump outside of flooded area.

► **Low maintenance**

Lifetime grease-lubricated antifriction bearing.

► **Long service life**

Maintenance-free, wear resistant sliding bearing, lubricated by pumped liquid.

► **Easy to assemble**

Supporting plate and cone-shaped insertion aid for safe mounting and demounting of pump and pipeline. Without screwing.

► **Economical**

Optimum adaption of speed of rotation/rating with gear unit, pole-changing or frequency-controlled electric motors.

► **Reliable in operations**

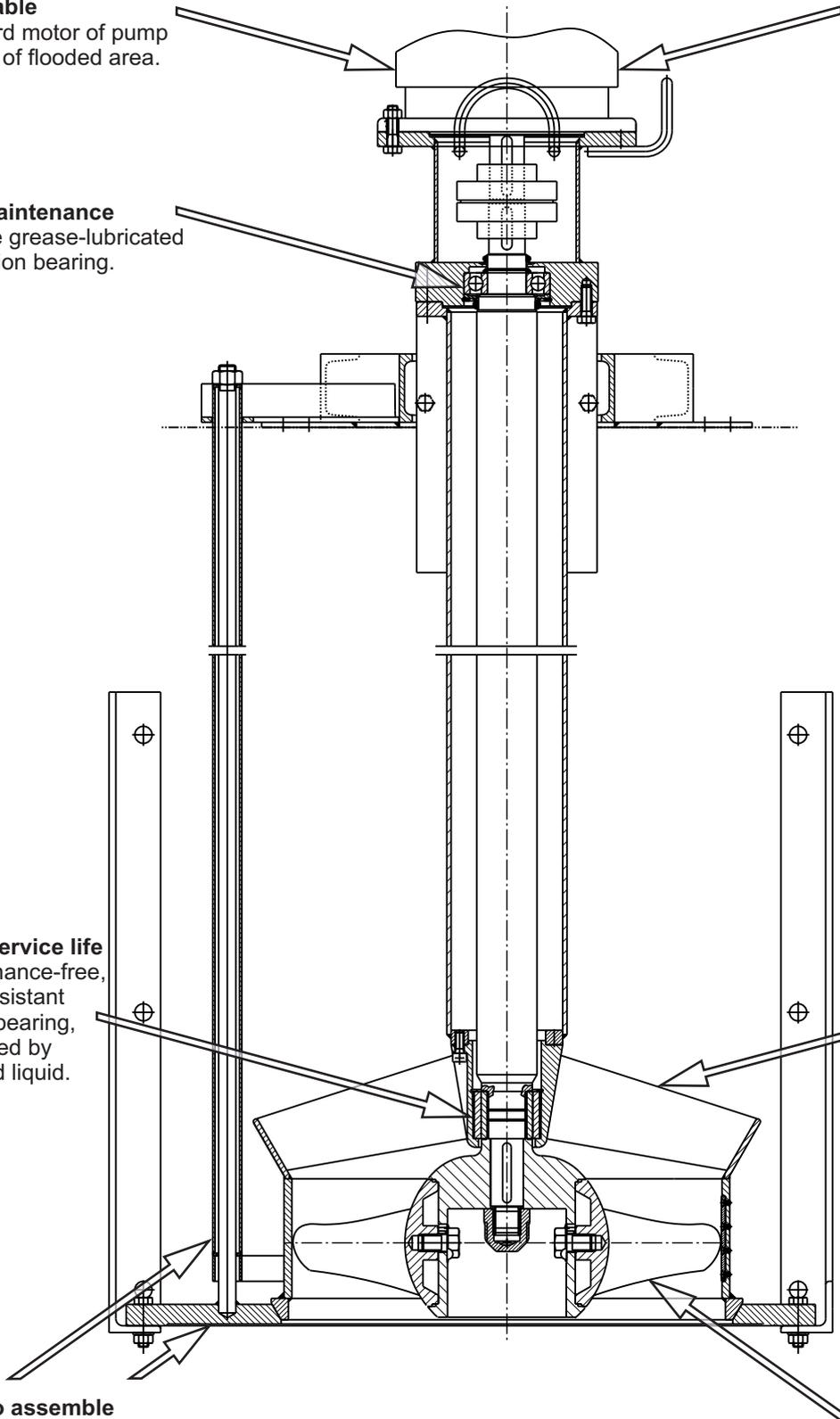
Pump without shaft sealing.

► **Efficient**

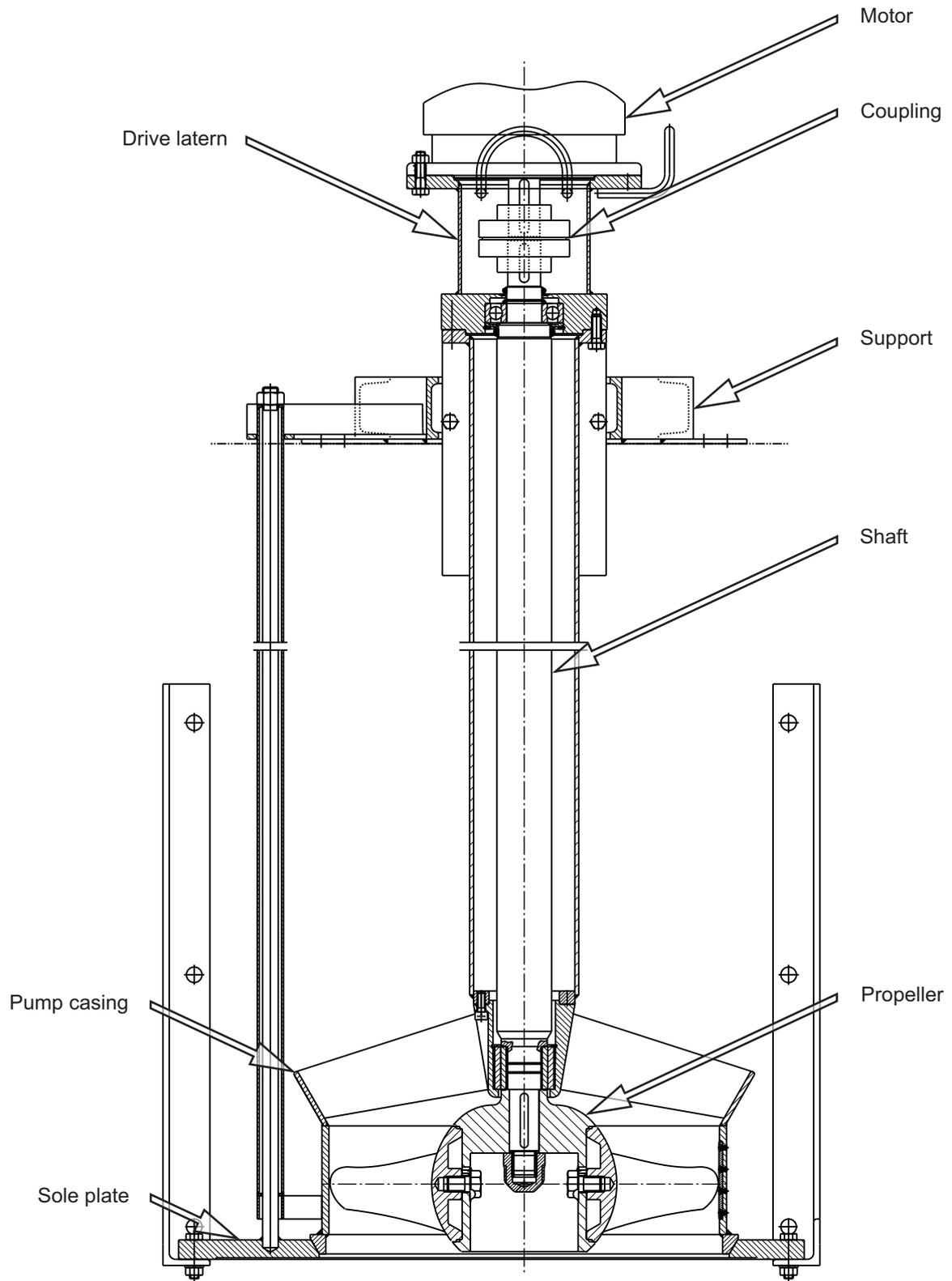
Inlet area designed for exceptionally favourable hydraulic conditions. (incl. guiding ribs).

► **Process optimized**

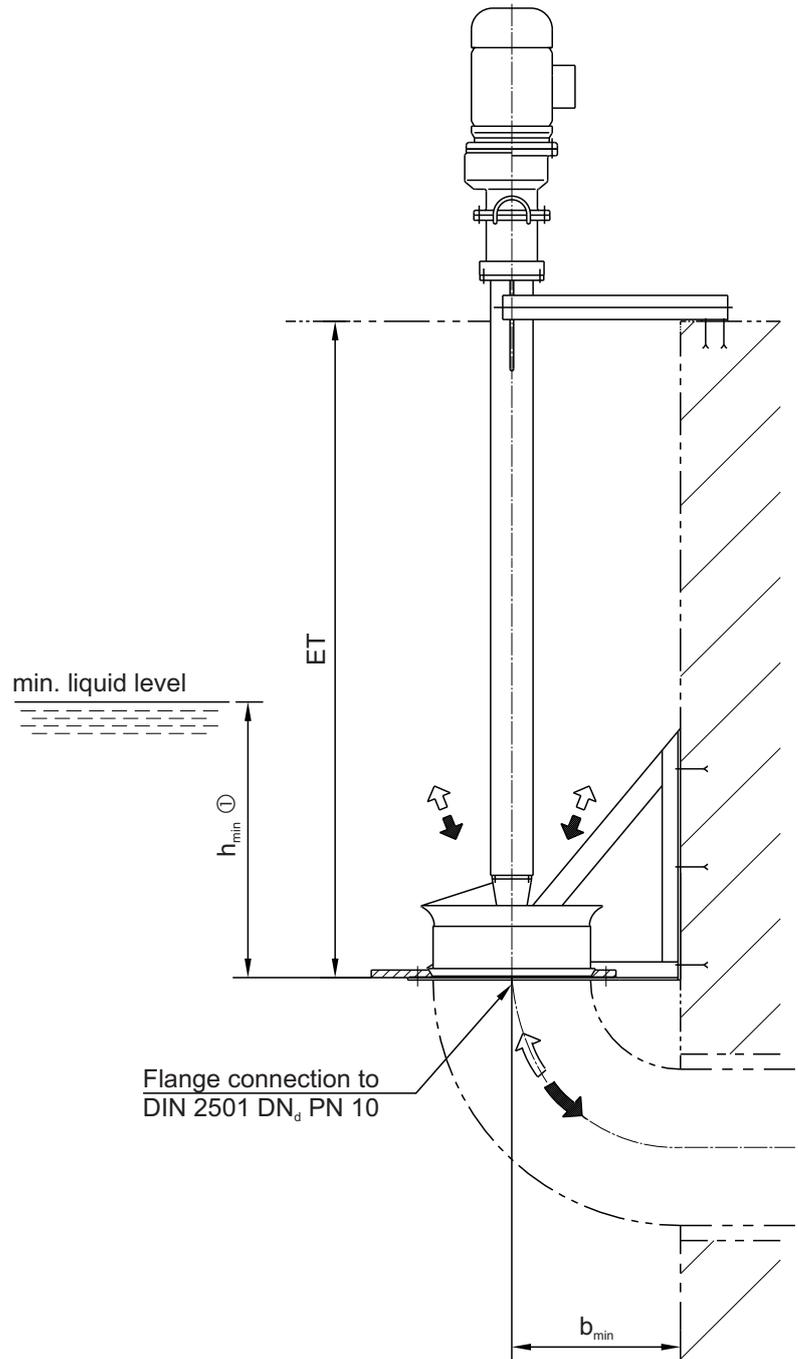
Specially arcuated fibre-repelling propeller blades, insensitive to dirt with optional cutting edge.



Assembly



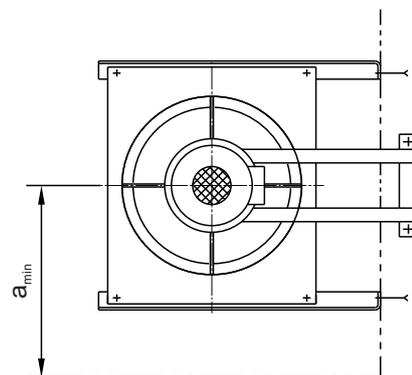
Installation



Dimensions in mm.

Size	DN _d	ET ②	a _{min}	b _{min}
200	200	1600	300	300
250	250	1625	375	375
300	300	1650	450	450
350	350	1675	525	525
400	400	1700	600	600
500	500	1750	750	750
600	600	1800	900	900
700	700	1850	1050	1050

- ① h_{min} is specified in the proposal according to the operating specifications.
- ② Custom immersion depths possible. Please discuss with your contact.



Centrifugal Pumps

► Features

Pump capacities acc. to DIN EN 733 or DIN EN 22 858. Additional sizes enlarge the EN-performance range. Series construction acc. to the modular system. Single-stage or multistage pumps in block- or inline-design; pumps with magnetic coupling, pumps for heat transfer oil and hot water.

► Pumped liquids

Neutral or aggressive, pure, with solids content or contaminated, cold or hot, toxic or harmful to the environment.

► Performance data

Q up to 2,400 m³/h, H up to 250 m.

Propeller Pumps

► Features

For large flows at relatively small delivery heads. Horizontal, vertical, submerged and elbow casing pumps.

► Pumped liquids

Neutral or aggressive, pure or contaminated, cold or hot.

► Performance data

Q up to 50,000 m³/h, H up to 20 m.

Self-Priming Side Channel Pumps

► Features

Self-priming side channel segmental-type pumps.

► Pumped liquids

Neutral or aggressive, pure or contaminated, cold or hot, toxic, harmful to the environment.

► Performance data

Q up to 35 m³/h, H up to 350 m.

Three-Screw Pumps

► Features

Three-screw, self-priming, very good efficiencies, very low noise level. The pumping process is continuous, nearly without pulsation and without turbulences. Self-priming, for horizontal and vertical installation, submerged pumps and pumps with magnetic drive.

► Pumped liquids

Oils or other lubricating, not lubricating or sparingly lubricating liquids.

► Performance data

Q up to 7,500 l/min, p_d up to 280 bar.

Two-Screw Pumps

► Features

Two-screw, double-entry, self-priming, high suction power due to low NPSH-values, adapted for dry running.

► Pumped liquids

Oils or other lubricating, not lubricating or sparingly lubricating liquids.

► Performance data

Q up to 1,300 m³/h, p_d up to 40 bar.

Progressing Cavity Pumps

► Features

Single-stage or multistage, self-priming. The pumping is continuous, nearly without pulsation and without turbulences, crushing or demixing.

► Pumped liquids

For pumping and dosing liquids of low to high viscosity; pasty, neutral or aggressive, pure or abrasive, gaseous or tending to froth, also with fibrous and so-lids content.

► Performance data

Q up to 7,500 l/min, p_d up to 36 bar.

Rotary Lobe Pumps

► Features

Hermetically sealed pumps with no welded parts, sealing systems adapted to the liquid, sterile cleaning possible.

► Pumped liquids

For pumping and dosing liquids of low to high viscosity; pasty, neutral or aggressive, pure or abrasive, especially in the food and pharma industry.

► Performance data

Q up to 1,666 l/min, p_d up to 20 bar.

Peristaltic Pumps

► Features

Dry self-priming, without seals and valves.

► Pumped liquids

For pumping and dosing liquids of low to high viscosity; pasty, neutral or aggressive, pure or abrasive, gaseous or tending to froth, also with fibrous and solids content.

► Performance data

Q up to 60 m³/h, p_d up to 16 bar.

Macerators

► Features

Impeller with exchangeable, highly wear resistant milling cutters.

► Pumped liquids

For milling of fibres and solids (wood, textiles, glass etc.) that are contained in the liquids to be pumped and making them pumpable.

► Performance data

Q up to 160 m³/h, p_d up to 10 bar.

Successful in important branches

Decades of experience and branch-specific know-how ensure solutions that are practical and dependable. In addition to individual units with a motor or with a free shaft end, you can get complete systems and customer-specific cast parts from ALLWEILER GmbH. You are not just investing in machines with ALLWEILER GmbH. You are also profiting from de-cades of know-how about applications and processes in your branch.

You will find pumps and systems by ALLWEILER GmbH in the following sectors:

► Marine and Offshore

Made of particularly corrosion-resistant, saltwater-proof materials and in accordance with specific standards (shock testing, national marine, international classifications etc.).

► Power Generation

Block and twin units for fuel and water injection in gas and steam turbines.
For fuel supply, injection and lubricating oil supply in power plants.

► Water and Wastewater

Pumps for water treatment (dry substance up to 45 %), macerators, which make it possible to pump liquids that are high in fibre and solids.

► Bioenergy

Materials resistant to aggressive intermediate and final products. Pumps for every step in the process.

► Process Engineering and Chemical Industry (ATEX-conformity)

Shaft bearing, shaft seal and material designs in accordance with the chemical characteristics of the pumped liquid. Magnetic coupling for hermetically sealed pumps.

► Oil and Gas

Pumps with a wide viscosity range, high pressure and large capacity.

► Building Industry

Special units for oil furnace and lift systems. Oil submersible pumps for all types of hydraulic machines.

► Food and Pharmaceutical

Stainless steel pumps with CIP and SIP design, EHEDG and FDA certified. Especially for the careful pumping and dosing of even sticky, pasty and solids-rich liquids.

► Machine Tool

Designed for large capacity or a high discharge pressure; resistant to contaminants and foreign matters. Especially for cooling lubricant supply.

► Pulp and Paper

Pumps with extremely high availability (24 hours; 365 days) and many sizes, starting with small dosing pumps and ranging to large kaolin feeding pumps.

► Heat Transfer

In supply circuits, circulating systems and heating circuits for pumping of hot water and heat transfer oil up to 207 °C and 450 °C.

Subject to technical alterations.

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