Grupa Powen-Wafapomp SA

PUMPS TYPE B, B-P10

Pumps type B i B-P10 (BB1) are impeller pumps, centrifugal, double suction, with closed impellers. Standard B pumps are widely used in industries such as power and heating, mining, municipal water supply. B-P10 pumps are produced in accordance to the latest edition of norm API610 (ISO 13709) and ATEX directive, are widely used in rafineries, petrochemical and chemical plants. They are designed for continuous work, for pumping various liquids with a wide range of physico-chemical parameters.

Construction

Centrifugal double suction pump B has a casing divided in a horizontal plane passing through the axis of the rotating assembly. The suction flange and discharge flange are drawn horizontally and are located in the lower part of the casing. Due to the use of a double stream impaller, there is no axial force. The use of a double spiral in the discharge chamber minimizes the occurrence of radial force. The shaft is placed in rolling bearings lubricated with oil or oil lubricant. Sealing of the shaft in the stuffing boxes can be done by the use of gland packing or by front mechanical seals. Pumps B-P10 are identical pumps in terms of construction like standard B pumps however, they are characterized by a strong and compact structure adapted to the harshest working conditions in petrochemical processes.

Special designs:
BV pumps are a variant of B pumps, made in vertical version. They're based on the same hydraulics. Pump casing as well as bearing housings are divided in a vertical plane passing through the shaft axis. The resulting axial force is transmitted by thrust bearings lubricated with lubricating oil. Shaft sealing in stuffing box is achieved by face mechanical seals.

Parameters

Efficiency: Q = up to 11000 m^3/h
Height of lifting: H = up to 175 m
Project pressure: p up to 37 bar for t=20 °C (for pumps B)
p do 51 fpr t=20 °C (for pumps B-P10)
Temperature: t from +5 °C to 150 °C (for pumps B)
t from -70 °C to 250 °C (for pumps B-P10)
Discharge flanges: Dn = from 200 mm to 900 mm

Standards

Standard:
PN-EN ISO 5199
(latest editions)

PN-EN ISO 9905
(latest editions)

Process:
API 610 / ISO 13709 (latest editions)
ATEX Directive 2014/34/UE
ANSI / ASME (#150; #300) or DIN / EN (PN40) – connection flanges
API682 (latest edition) - mechanical seal

API 610 / ISO 13709
latest editions

ANSI / ASME (#150; #300)
or DIN / EN (PN40)
connection flanges

API682 (latest editions)
mechanical seal

ATEX Directive
2014/34/UE

Working slots
protected with replaceable high durability sealing rings

Ribbed bearing housings, capacious oil sumps
temperature increase no more than 20 °C

Bearings durability
Durability up to 250000h.

Large gland chambers
Compatible with the cooperation of seals according to API682 lastest edition.

Rigid shaft
Shaft deflection no more than 0.05mm, optimal and long-lasting work of bearings and mechanical seals

API 610 / ISO 13709
Full compliance with the latest edidion of norms

Casing is foot or centerline mounted
Guaranteed maximum stability of work in high temperature.

Double suction impeller
Relief of longitudinal force, symmetrical load system

Spiral double collective channels
Radial force minimization

Flanges arranged in line
Easy assembly and access

Casing divided in horizontal axis
Easy and quick access to impeller assembly without the need to disassemble the engine

Bearing housings
In versions for lubricating oil

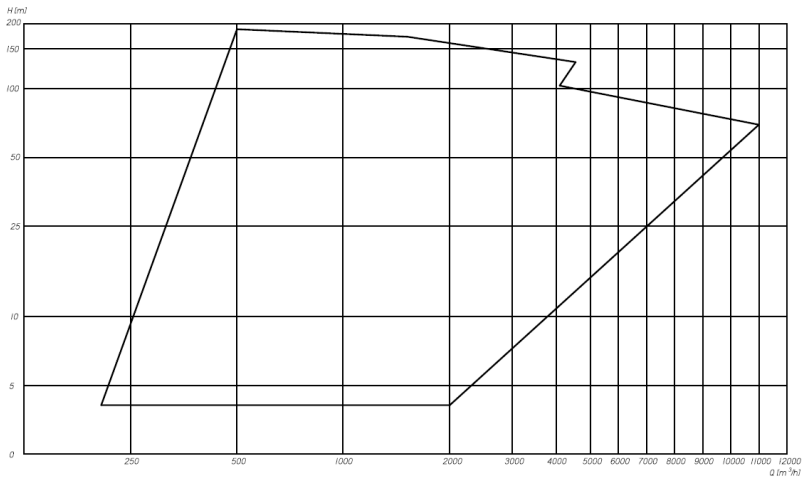
Materials of construction (Compliant with API 610 – Table H.1)

	Material class API (11 edition) Pumps B - standard		Material class API (12 edition) Pumps B – standard and Pumps B-P10 -process						
Part name	**I-1**	**I-2**	**S-1**	**S-5**	**S-6**	**S-8**	**C-6**	**A-8**	**D-1 i D-2**
Pump casing / cover	Cast iron	Cast iron	CS	CS	CS	CS	12% CR	316L AUS	Duplex / S Duplex
Impeller	Cast iron	Bronze	Cast iron	CS	12% CR	316 AUS	12% CR	316L AUS	Duplex / S Duplex
Seal ring	Cast iron	Bronze	Cast iron	12% CR+H	12% CR+H	316 AUS+HF	12% CR+H	316L AUS +HF	Duplex / S Duplex + H
Shaft	Carbon steel,	Carbon steel	CS	AISI 4140	12% CR	316L AUS	12% CR	Duplex	Duplex / S Duplex
Bearing housing	Cast iron, CS, 12% CR		CS						

CS-cast iron/carbon steel; AISI4140-alloy steel; 12%CR-cast iron/chrome steel; 316AUS-Cast iron/austenitic stell >2% Mo; S.Duplex – Super Duplex; +H –hardened; +HF-hard faces

Possibility to make other alloys including NACE compliant materials. Material combination on request.

Range of operation



Application
Standard - pumps B:

- Water supply – drinking water and river water
- Sewerage – sewege and feces
- Power plants and CHP Plants – cooing water, distric heating,
- Sugar factories – barometric water, cooling and float water,
- Mining – rinding water i hydro transport water
- Water Peak and Flow Power Plants – process water, network water
- Petrochemical and chemical industry– cooling water
- General and chemical industry – industrial water, ice water, cooling water

Application
Process - pumps B-P10:

- Refineries and petrochemicals - refining, production and distribution of petroleum
- Chemical and gas industry – hydrocarbons, process and ice water
- Oil pipelines – petroleum, liquid fuels

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