

MODERN TECHNOLOGIES AND LONG - TERM EXPERIENCE

■ NPB



CENTRIFUGAL PUMPS FOR MILK

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17.02	

Application

Pumps NPB are ideally suited to applications in food-stuff industry with pumping stuffs of good liquidity, as milk, fluid dairy products, juice, cider, wort, water containing carbon dioxide, and so on. Those pumps may be also applied to chemical industry for pumping solutions, acids, hydroxide, solutions of acid, alkaline and neutral salts, water treatment plants, pharmaceutical industry, and so on. A pumped liquid must not contain mechanical impurities.

Max. temperature of a pumped liquid 100 °C

Max. kinematic viscosity of a pumped liquid 75 mm².s⁻¹

Max. density of a pumped liquid 1,050 kg.m⁻³

Construction

Pumps are of centrifugal single-stage horizontal type, close-coupled with an electric motor, so they form a package unit of a small size, easy transferable. Pump-set sits on three feet, two of which are adjustable in vertical direction facilitating floor unevenness levelling.

Pump casing may be easy and fast dismantled with unlocking a tightening sleeve, so there direct access to the impeller may be ensured within its cleaning, with no problems.

Impeller has been provided with drilled direct channels to ensure its easy cleaning.

As a shaft sealing a mechanical sedis used. Its reliable sealing effect guarantees the shaft sealing of hygienic unexceptionable character and tightness.

Models 50-NPB-160-12-YC-04 and 65-NPB-160-16-YC-04 are provided with a single mechanical seal suitable for the normal and the widest field of that pump applications.

Models 50-NPB-180-10-YC-04, 50-NPB-150-12.5-YC-04 and 65-NPB-160-16-YC-03 are provided with a single mechanical seal and radial lip seal. Space between them is to be flooded with clean water to prevent air sucking-in and heat dissipation from the seal, simultaneously. Those pumps may be used for pumping from evaporators, that is from vacuum.

Electric motor is of three-phase asynchronous squirrel-cage two-pole type (enclosed type, surface air cooling), the shaft of which is supported on rolling-contact bearings with long-term grease charge. The motor is covered with removable protective enclosure of stainless sheet.

Material options

Pump main parts are of following constructional materials:

Pump casing - stainless steel (Cr 17-20 %, Ni 8-11 %)

Impeller - stainless steel (Cr 17-20 %, Ni 8-11 %)

Shaft - stainless steel (Cr 17-20 %, Ni 8-11 %)

Partition - stainless steel (Cr 17-20 %, Ni 8-11 %)

Electric motor cover - stainless steel (Cr 17-20 %, Ni 8-11 %)

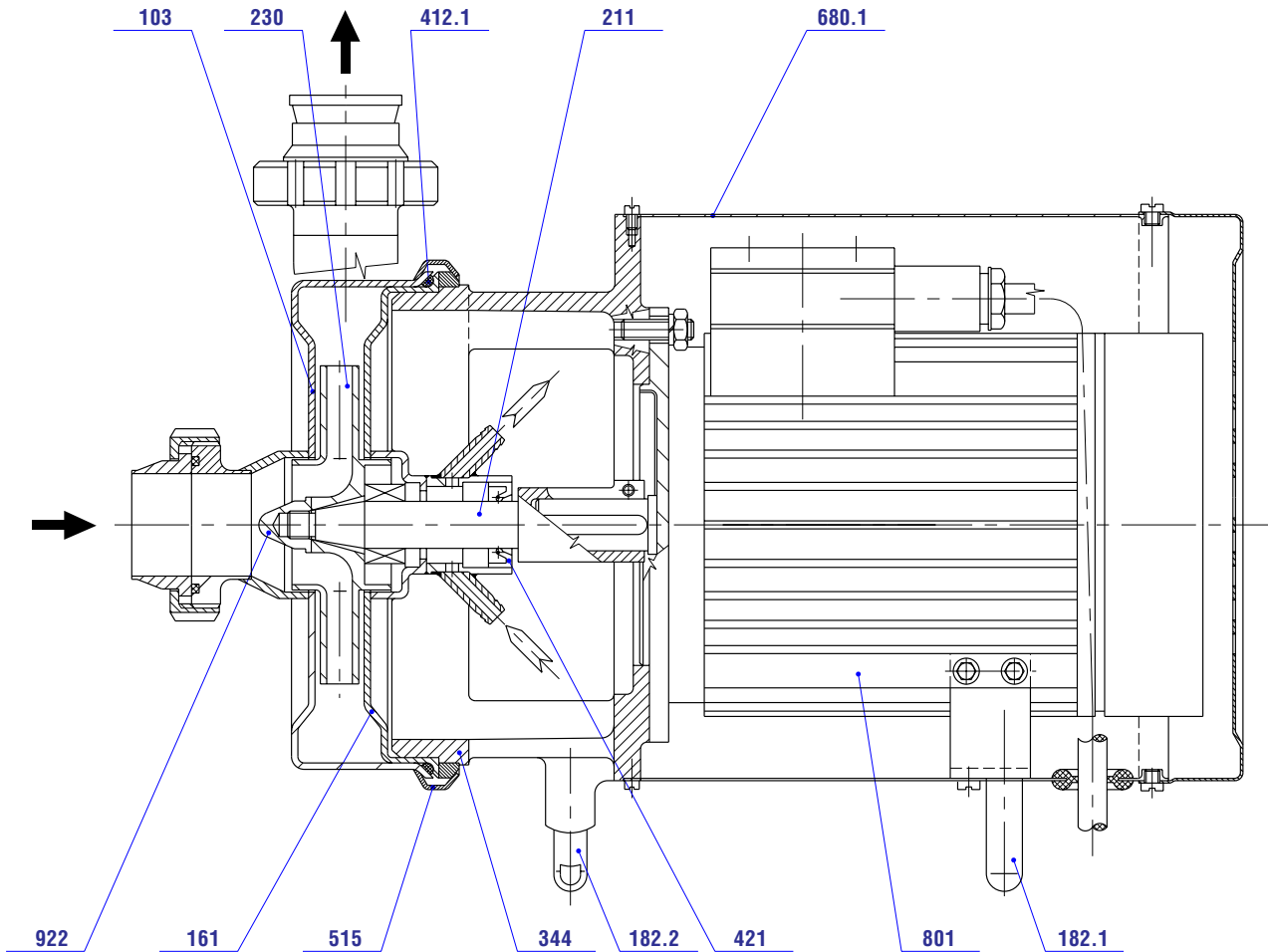
Connection bolts - carbon steel

Orientation of branches

The suction branch is axial, the disobarche on branch is arranged tangetially which may be turned round the pump axis to any positions, according to the concrete situation.

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Informatory sectional arrangement



103	Pump casing
230	Impeller
412.1	Wear ring
211	Shaft
680.1	Electric motor jacket
922	Nut
161	Partition

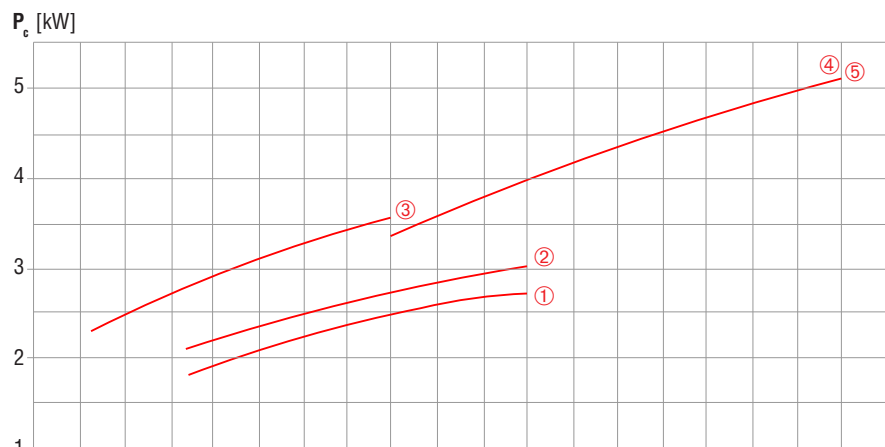
515	Sleeve coupling
344	Spacer
182.2	Foot
801	Electric motor
182.1	Rigid foot
421	Lip seal

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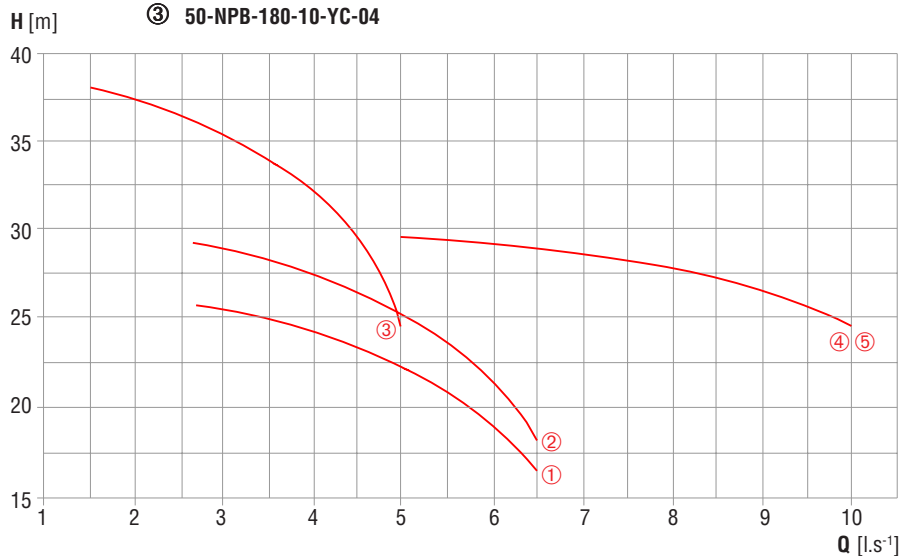
Performance data

Pump-set model		50-NPB-150-12,5	50-NPB-160-12	50-NPB-180-10	65-NPB-160-16
Pump					
Suction branch	DN (mm)	50	50	50	65
Discharge branch	DN (mm)	50	50	50	65
Max. permissible pressure on discharge side	p_v (bar)	4.5	4.5	4.5	4.5
Electric motor - type					
Power output	P (kW)	2,2	3	3	5,5
Speed of rotation	n (min^{-1})	2865	2850	2850	2910
Voltage	U (V)	400	400	400	400
Frequency	f (Hz)	50	50	50	50
Pump-set covering		IP 54	IP 54	IP 54	IP 54
Pump-set weight	m (kg)	34	46	46	72

Parameters Q; H have been specified for clean water with temperature of 20 °C, viscosity 1 $\text{mm}^2\cdot\text{s}^{-1}$ and density 1,000 $\text{kg}\cdot\text{m}^{-3}$. With pumping viscous liquids those parameters may change in dependence on viscosity values; that is - with higher viscosity values there parameters Q; H may drop, and power input rise. However, power output of electric motors may be specified for pumping liquids up to the limit viscosity value.

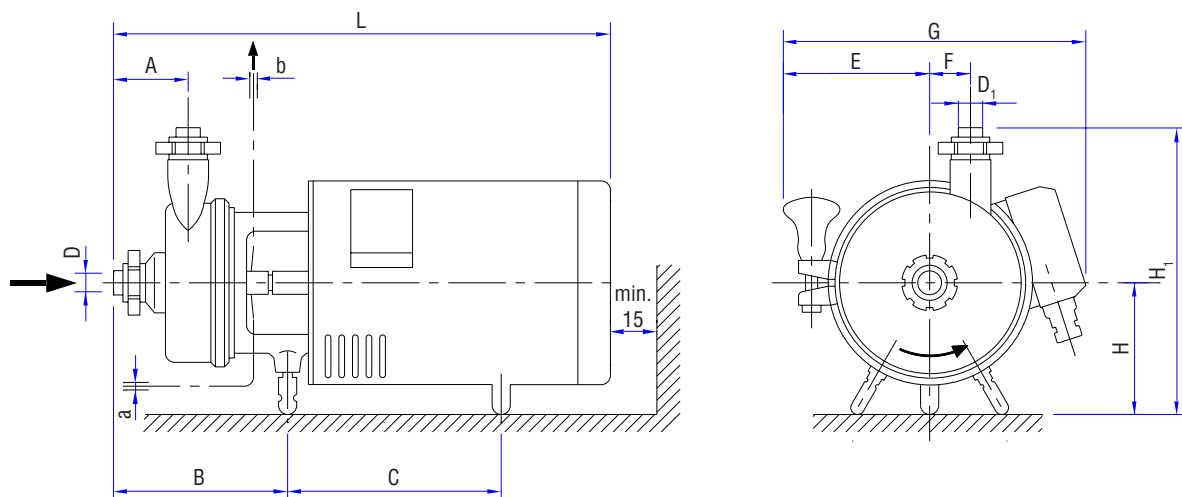


- ① 50-NPB-150-12,5-YC-04
- ② 50-NPB-160-12-YC-04
- ③ 50-NPB-180-10-YC-04
- ④ 65-NPB-160-16-YC-03
- ⑤ 65-NPB-160-16-YC-04



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Dimensions



Pump-set model	A	B	C	E	F	G	H	H1	L	Branches		a	b
										D	D ₁		
50-NPB-150-12,5-YC-04	100	203	200	171	92	298	165	359	525	50	50	8	8
50-NPB-160-12-YC-04	100	180	204	171	92	309	180	374	550	50	50	-	-
50-NPB-180-10-YC-04	100	213	204	171	92	309	180	374	583	50	50	8	8
65-NPB-160-16-YC-03	91	211	262	192	94	405	190	421	658	65	65	8	8
65-NPB-160-16-YC-04	91	211	262	192	94	405	190	421	658	65	65	-	-

Dimensions are in mm.

a supply of flushing water into mechanical seal with pressures up to 1 bar, flushing water volume ranging from 0.08 to 0.2 l.s⁻¹.

b drain of flushing water out of mechanical seal.