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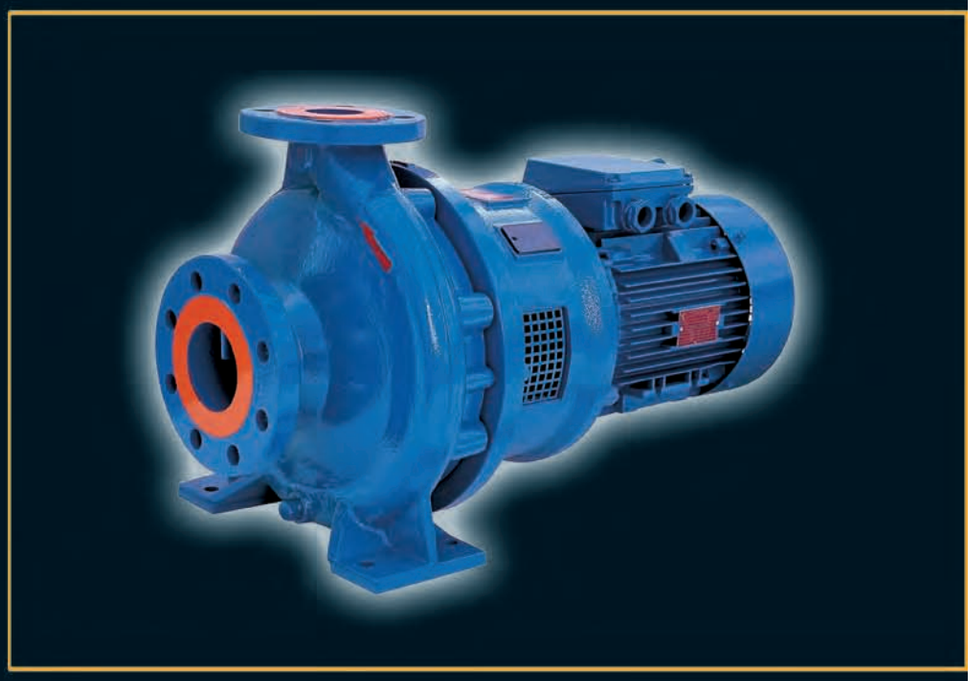
VOGEL - Blockpumps

Design LSB

with Hydraulics according to ISO 2858



Engineered for life

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VOGEL series LSB are horizontal block pumps based on hydraulic according to ISO 2858 / EN 22858 (form model LSN) with close coupled TEFC motors according to IEC design B 5.

Frame mounted version, model LSN refer to brochure 1200.1.B.

Pump sizes up to DN 600 (24“) and capacities up to 4600 m³/h (20250 USgpm), model LS, refer to brochure 1300.1.B.

Performance

Capacity up to	450m³/h	(1980USgpm)
Head up to	150m	(492feet)
Speed up to	2950/3550min^{-1}	(2950/3550rpm)

Pump Sizes

DN 25 up to DN 150 (1“ up to 6“) Discharge

Temperature

-40 °C up to + 140 °C (-40°F up to +280°F)

Casing Pressure

up to 16bar (235psig)
Pump sizes 50-32-315, 65-40-315, 80-50-315 up to 25bar (363psig)

Volute casing pumps for higher capacities, pump sizes up to DN 600 (24‘‘) and capacities up to 4600m³/h (20.250 USgpm) refer to design LS - brochure 1300.1.B.

Motors

Standard IEC TEFC electric motors, design B 5
Power range 2950min^{-1} up to 37kW and 1450min^{-1} up to 30kW
Protection IP 55, insulation class F

Liquids

Clean and slightly contaminated fluids
(without bigger solids)
Cold and hot water
Condensate and VE water
Oil, brine, caustic and acid
Suspensions

Applications

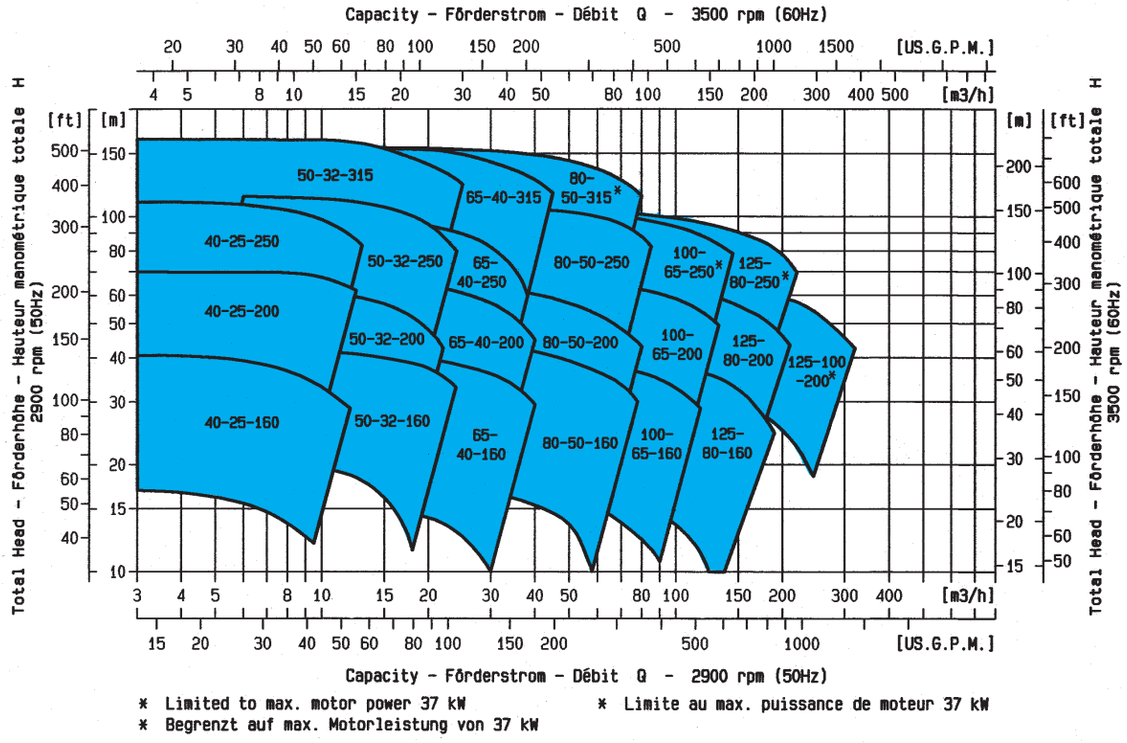
Water supply and water treatment
Cooling water supply
Hot water circulation
District heating
General industry
Food and beverage industry
Filter systems, ultra filtration
Coolant filtration
Parts washing machines
Galvanisation and painting systems

Materials

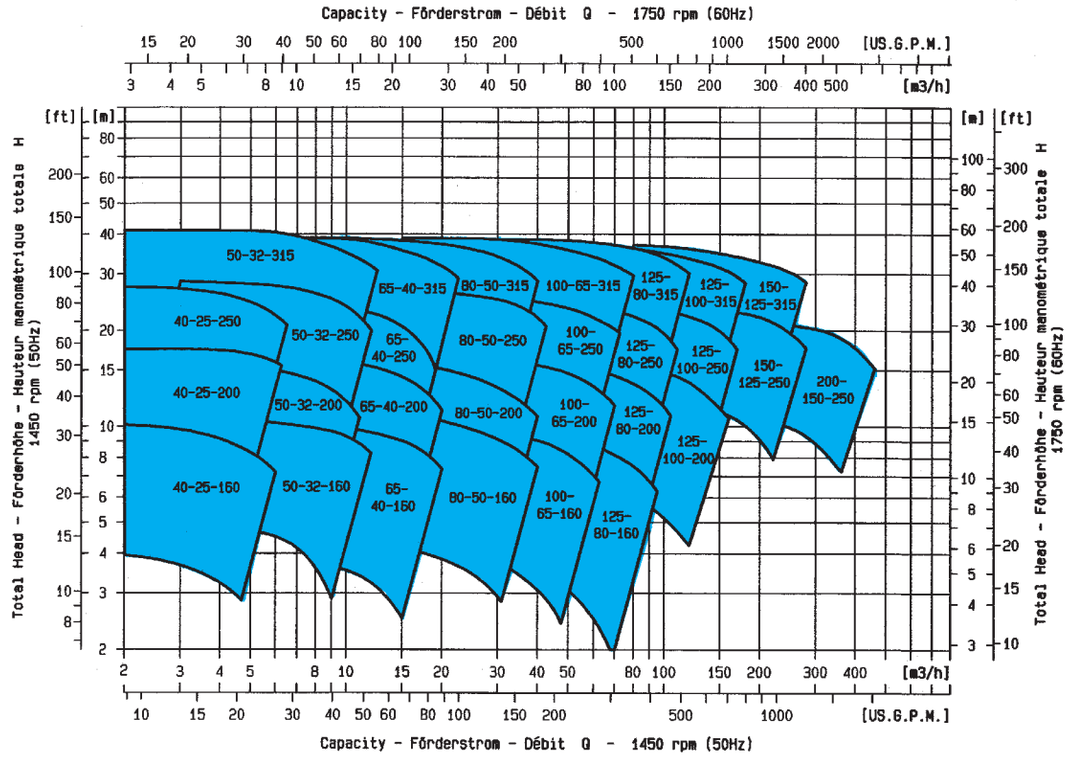
Ductile iron - 0.7043
Stainless steel - 1.4408
Duplex - 1.4517

Blockpumps - Design LSB - with Hydraulics according to ISO 2858

Performance 2950min^{-1}, 50Hz / 3550min^{-1}, 60Hz



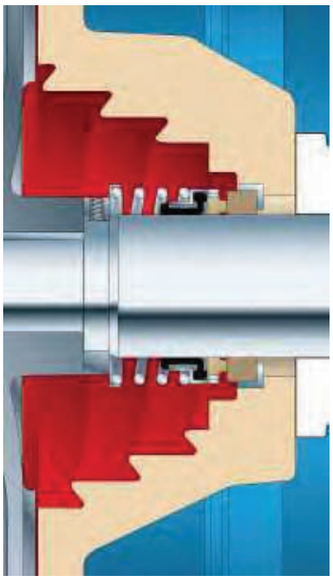
Performance 1450min^{-1}, 50Hz / 1750min^{-1}, 60Hz



Blockpumps - Design LSB - with Hydraulics according to ISO 2858

Cyclone Seal Chamber

- The patented design of the cyclone seal chamber improves the life time of the mechanical seal.
- Spiral grooves in the big conical seal chamber avoid contamination of the sealing environment by solids.
- Enlarged clearance and the big volume improve cooling and lubrication of the mechanical seal.
- The self venting design prevents the accummulation of gas (vapor) in the sealing environment.
- Seal chamber installation dimensions in accordance with ISO 3096 / DIN 24960.



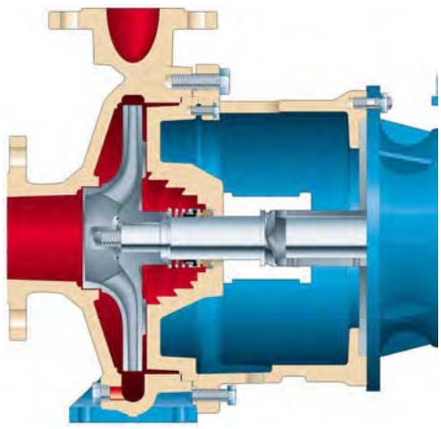
Shaft Sealing

- The correct seal selection is essential for the life time of the mechanical seal. The flexible sealing system allows seal selection according to customer requirements for individual seal designs and seal brands.
- Standard seal chamber with installing dimensions according to ISO 3096 (DIN 24960) combined with the features of the cyclone seal chamber design.
- Optional Vogel mechanical seals with Quench possible.

Blockpumps - Design LSB - with Hydraulics according to ISO 2858

Compact Design

- Simplyfies installation, lower installation costs.
- No alignment of pump unit required.
- Stub shaft made of Duplex (1.4462) and motor adapters for standard IEC motors design B 5.
- Dimensions of the block version reduced by 30% compared with frame mounted pumps.
- Ideal for OEMs or installation under space limited site conditions.



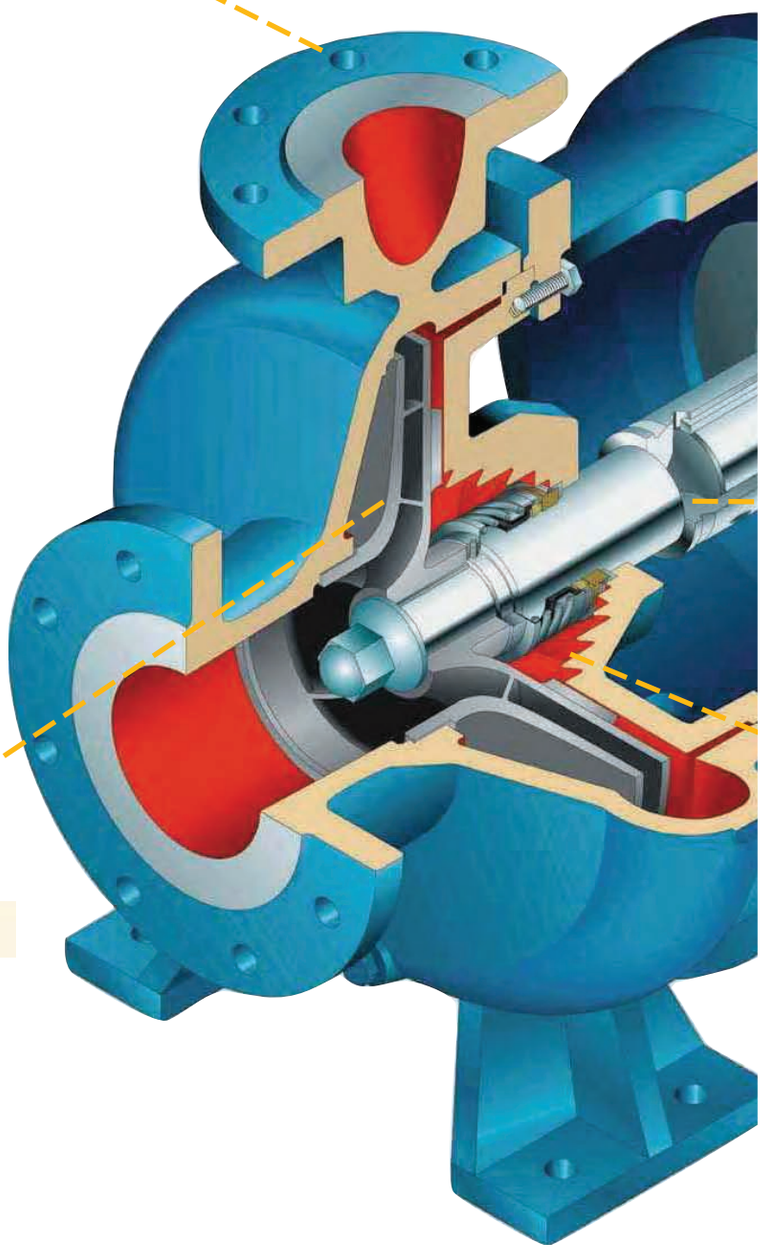
Motors

- Standard IEC TEFC motors
- Design B 5
- Voltage / Frequency
  - 380-415 V / 50 Hz
  - 460 V / 60 Hz
- Protection IP 55
- Insulation class F (temperature according to B)
- Standard motors for operation with frequency inverters and HYDROVAR.

Blockpumps - Design LSB - with Hydraulics according to ISO 2858

Heavy Duty Casing

- Casted heavy duty, foot supported design provides maximum resistance to pipe loads
- Minimum 3mm corrosion allowance maximizes pump life
- Standard 3/8"-NPT casing drain for safe and simple maintenance
- ISO 2858 dimensions for easy installation in all systems

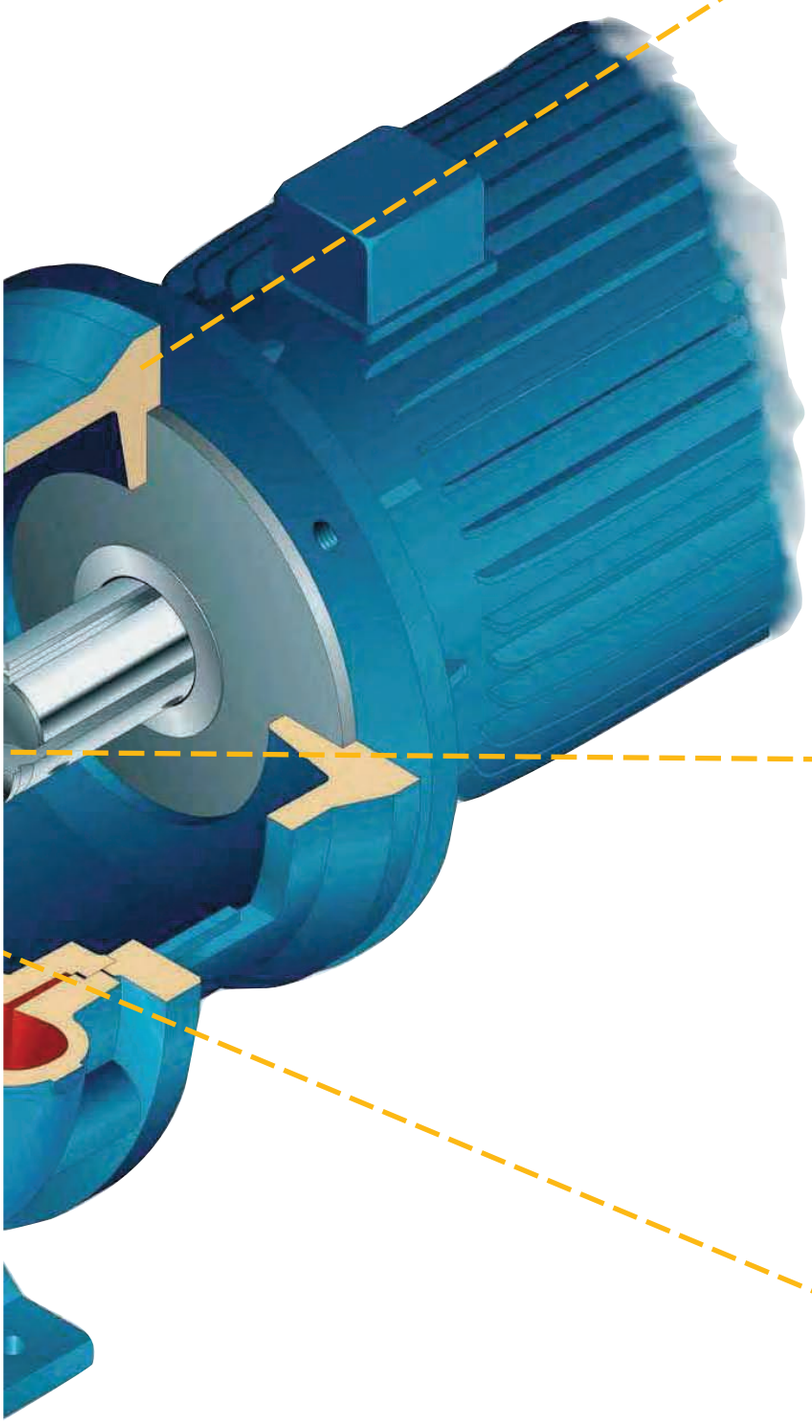


Impeller

- Precision cast, enclosed impeller design for maximum performance and low NPSH
- Back vanes or balance holes reduce axial thrust and seal pressures for extended seal and motor life
- Key driven to prevent spin offs caused by mis-wiring
- Optional wear rings renew pump performance and extend pump life

Corresponds to ISO 5199 and ISO 2858 for maximum reliability and easy installation.
Superior hydraulic design for maximum performance and extended mechancial reliability.

Standard design with improved reliability



Motor Latern

- Precision machined fits maintain alignment between pump end and motor eliminating costly pre-alignment during installation
- Couplings and baseplates are not required reducing capital costs
- Compact, space saving arrangement ideal for OEM or space constrained installations

Stub Shaft

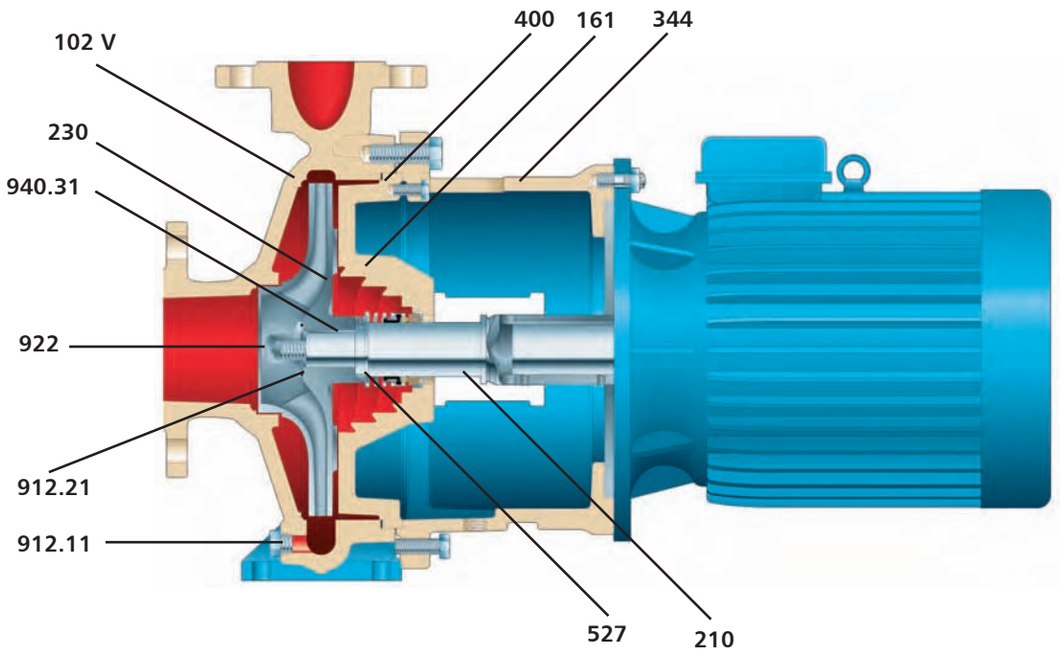
- Stub shaft directly mounted on motor shaft, rigid one piece design for optimized radial run out
- Standard duplex SS (1.4462) construction for maximum corrosion resistance

Engineered Seal Chamber

- Patented cyclone seal chamber keeps solids and vapors out of the seal area for extended seal life
- Tapered bore design enhances lubrication and cooling of seal faces often eliminating the need for external flush connections
- Can be fitted with standard DIN 24960 L_{1ku} seals

Blockpumps - Design LSB - with Hydraulics according to ISO 2858

Part and Material List



Item Number	Part Name	Ductile Iron (NL)	DI/316ss (VL)	316ss (VV)	Duplex SS (WW)
102 V	Casing	Ductile Iron		316ss	Duplex SS
161	Seal Chamber	Ductile Iron		316ss	Duplex SS
210	Stub Shaft	Duplex 1.4462			
230	Impeller	Cast Iron	316ss		Duplex SS
344	Motor Lantern	Ductile Iron			
400	Case Gasket	Non-Asbestos Aramid Fiber			
527	Fixing Ring	Duplex SS (1.4462)			
912.11	Case Drain Plug	316ss			
912.21	O-ring, Impeller Nut	Teflon			
922	Impeller Nut	Duplex SS			
940.31	Impeller Key	Duplex SS (1.4462)			

Cast Material Specifications

		Approximate Equivalent	
	ICB Standard	**DIN**	**ASTM**
Cast Iron	EN-GJL-250	0.6025	A48 class 35B
Ductile Iron	EN-GJS-400-18-LT	0.7043	A536 Gr. 60-40-18
Stainless Steel	1.4408	1.4408	A743 CF8M
Duplex SS	1.4517	1.4517	A744 CD4MCu

Blockpumps - Design LSB and HYDROVAR

HYDROVAR - Pumping System Solutions

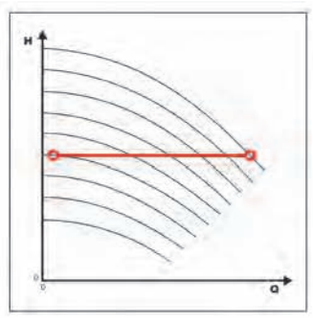
By optimizing the pump performance according to system demand high potential of savings are achievable.

- Energy savings up to 70%.
- Increasing reliability and improved life time due to controlled operating conditions avoid dry run, head losses and cavitation.
- Reduced hydraulic forces improve bearing and mechanical seal life time.
- Lower installation costs due to elimination of control valves as well as pannels and controllers.

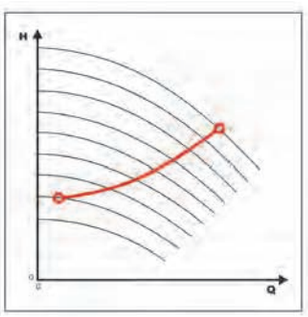
HYDROVAR - Advantages

- Patented microprocessor based pump controller for variable speed operation, specifically developed for pump operation.
- Easy start up without programming simplyfies installation.
- **Hydrovar Smart:** Hydrovar functions and features without power limitation, combination with all standard frequency inverters possible.

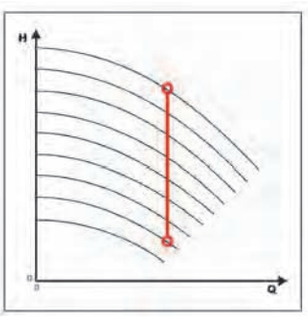
HYDROVAR - Operating options



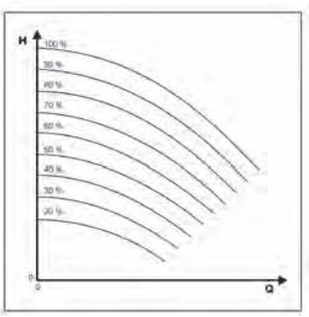
Constant Pressure



System Characteristics



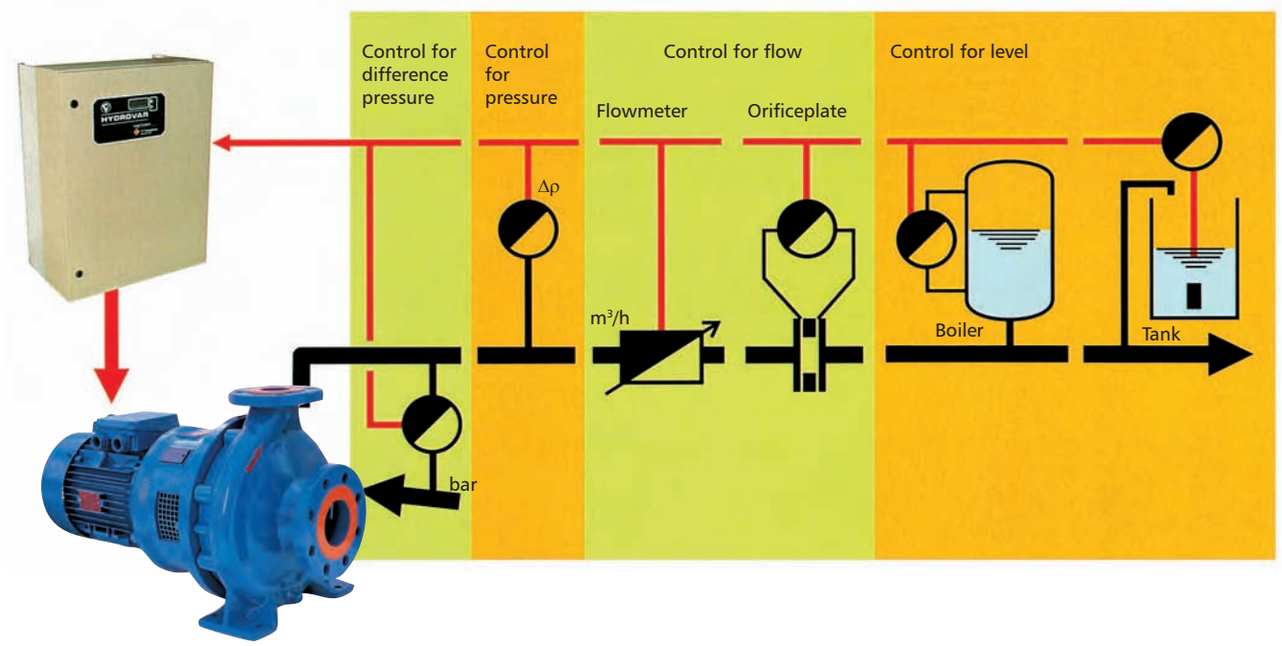
Constant Flow



Actuator Mode

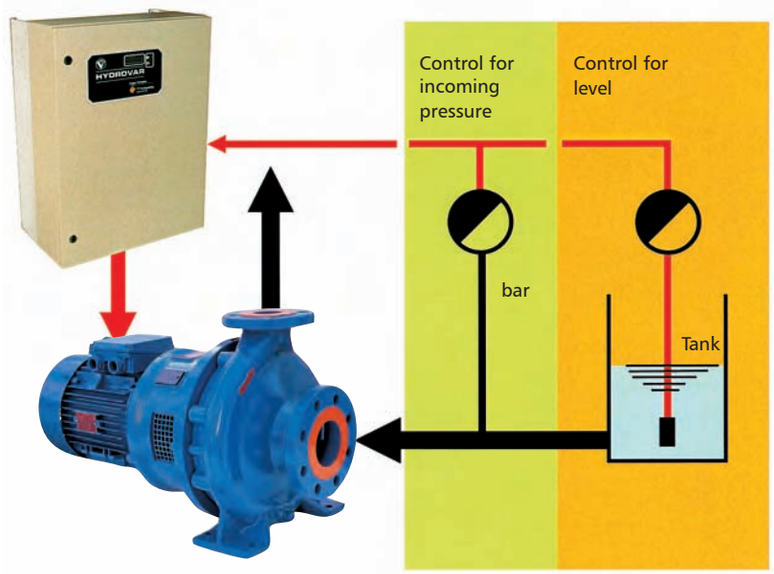
Blockpumps - Design LSB and HYDROVAR

Hydrovar: Controller Mode „Normal”



At controller mode „normal” the operating frequency will be increased in case the measurement signal decreases.

Hydrovar: Controller „Invers”



At controller mode „invers” the operating frequency will be decreased in case the measurement signal decreases.