



# Blockpumps

## Vogel Series LSB

WITH HYDRAULICS ACCORDING TO ISO 2858

# Technical Data

## Performance:

- Capacity up to 450m<sup>3</sup>/h (1540USgpm)
- Head up to 150m (280feet)
- Speed up to 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 +284°F)

## Casing Pressure

- 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 4600m<sup>3</sup>/h (20250 USgpm) refer to design LS.

## Motors:

- Standard IEC TEFC electric motors, design B 5 power range 2950rpm up to 37kW and 1450rpm up to 30kW protection IP 55, insulation class F

## Liquids:

- Clean and slightly contaminated fluids (without bigger solids)
- Cold and hot water
- Condensate and desalinated water
- Oil, brine, caustics and acids
- Suspensions

## Materials:

- Ductile iron - 0.7043
- Stainless steel - 1.4408
- Duplex - 1.4517



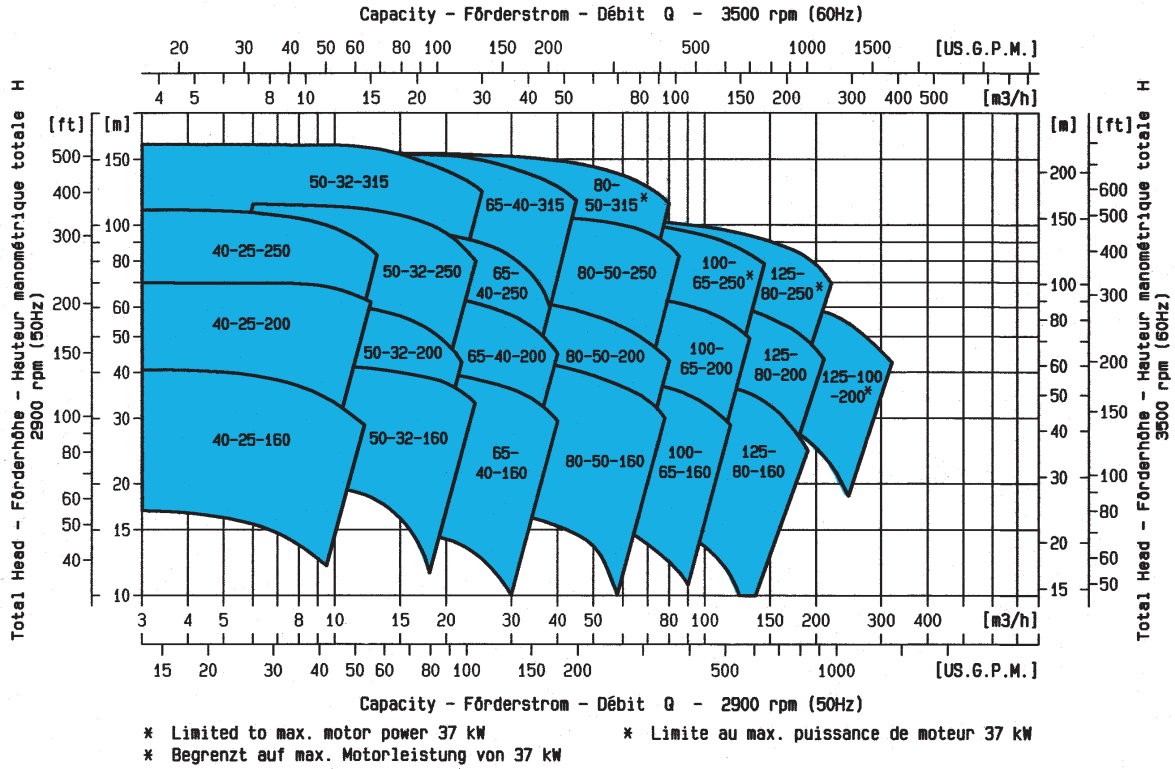
Model LSB is a horizontal block pump based on hydraulics according to ISO 2858 / EN 22858 (from model LSN) with close coupled TEFC motor according to IEC design B 5.

## Applications:

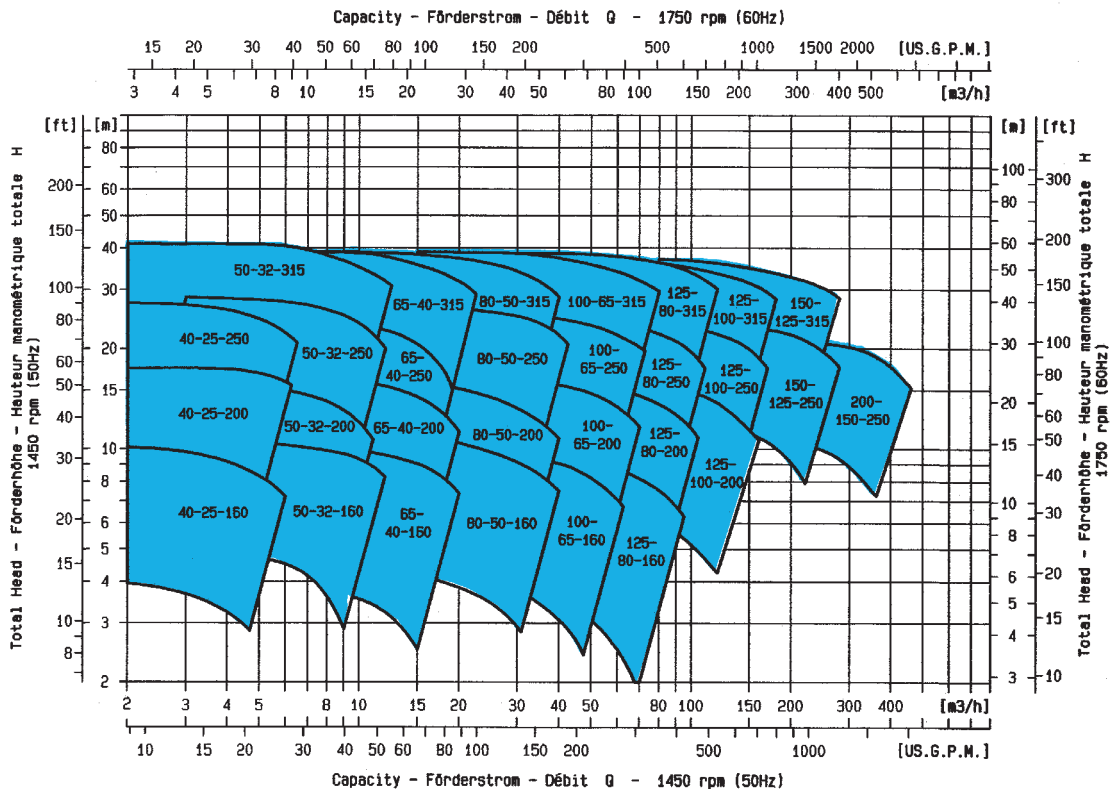
- Water supply and water treatment
- Cooling water supply
- Hot water circulation
- District heating
- General industry
- Food and beverage industry
- Filter systems, ultra filtration
- Coolant filtration
- Parts washing machines
- Galvanisation and painting systems

Frame mounted version, model LSN refer to separate brochure

## Performance 2950rpm, 50Hz / 3550rpm, 60Hz



## Performance 1450rpm, 50Hz / 1750rpm, 60Hz



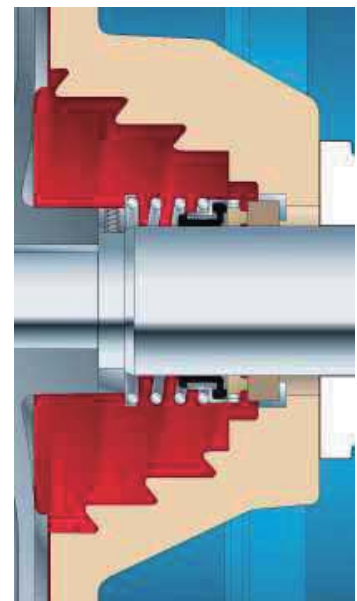
# Cyclone Seal Chamber

- 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 sealing environment by solids.
- Enlarged clearance and big volume improve cooling and lubrication of the mechanical seal.
- The self venting design prevents the accumulation of gas (vapor) in the sealing environment.
- Seal chamber installation dimensions in accordance with ISO 3096 / EN 12756



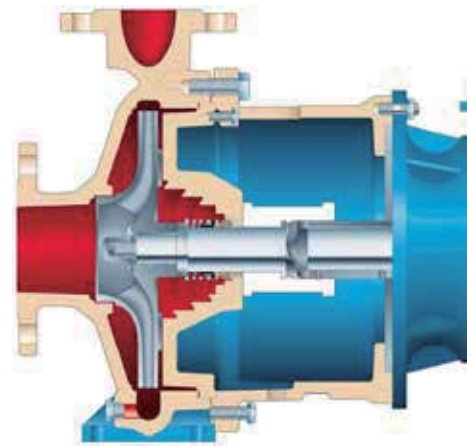
# Shaft Sealing

- 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 installation dimensions according to ISO 3096 (EN 12756) combined with the features of the cyclone seal chamber design.
- Optional mechanical seals with Quench..



# Compact Design

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

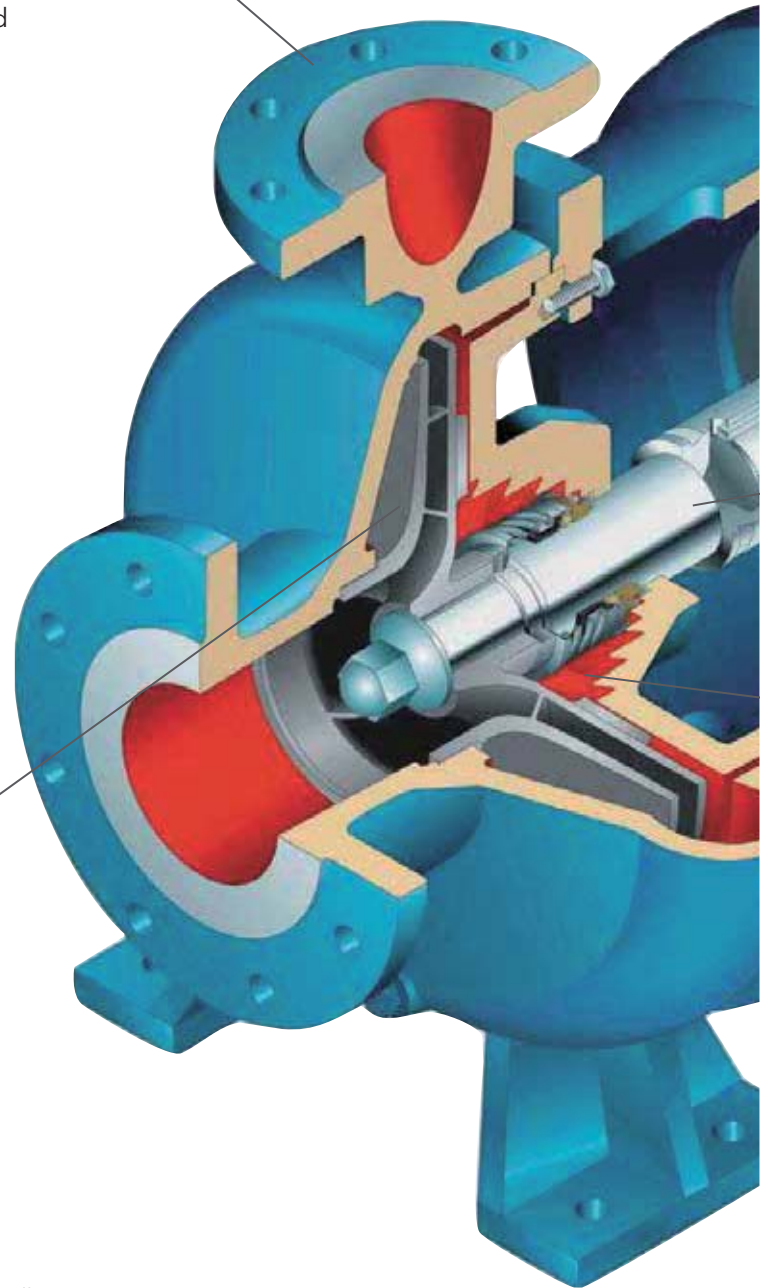


## Heavy Duty Casing

- Casted heavy duty, foot supported design provides maximum resistance against 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 and interchangeability

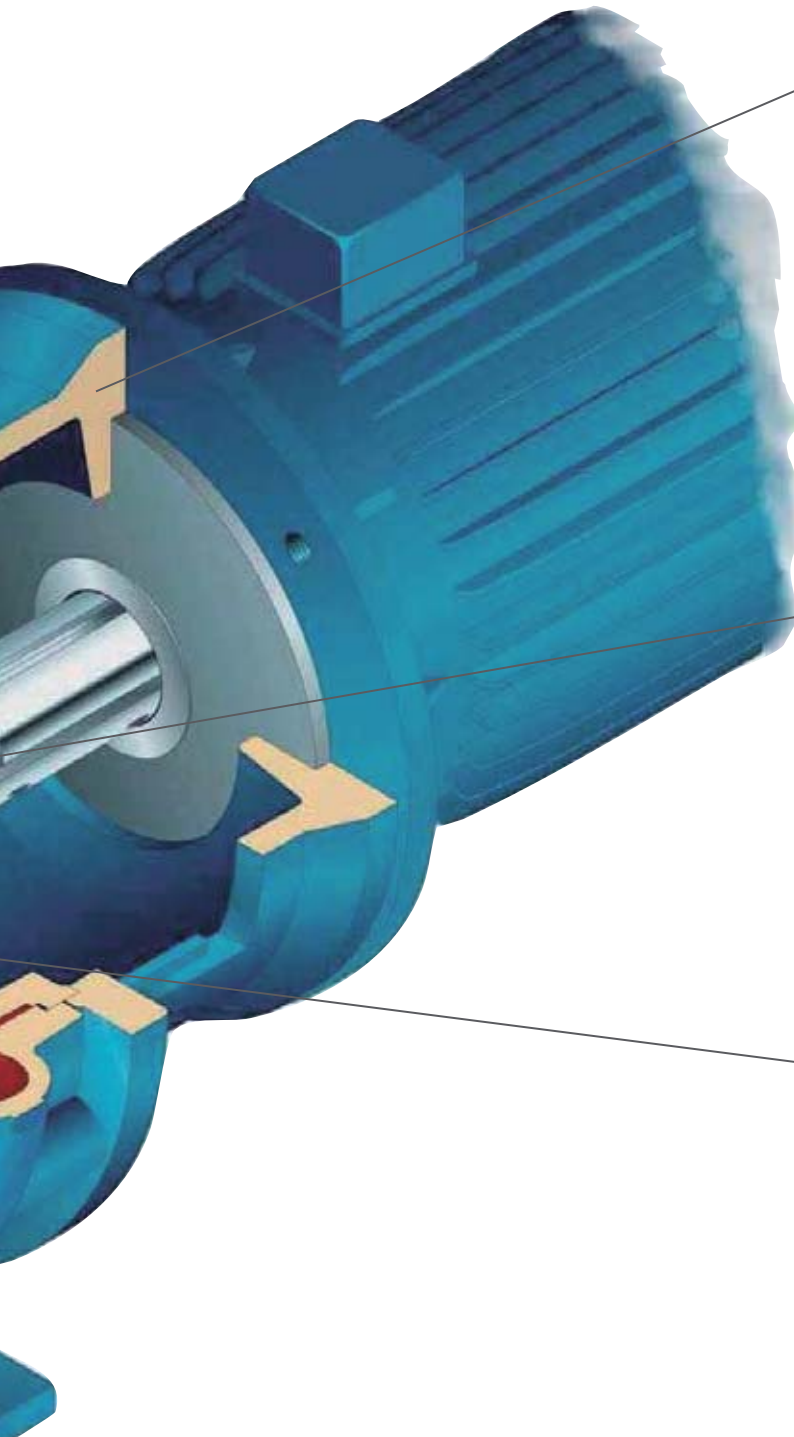
## Impeller

- 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 secure maximum reliability
- 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 mechanical reliability.*

# Standard design with improved reliability



## Motor Adapter

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- Precision machined fits maintain alignment between pump end and motor eliminating costly pre-alignment during installation
- Couplings and baseplates are not required, thus reducing capital costs
- Compact, space saving arrangement ideal for OEMs or space constrained installations
- Motor connection for standard IEC (B5) motors

## Stub Shaft

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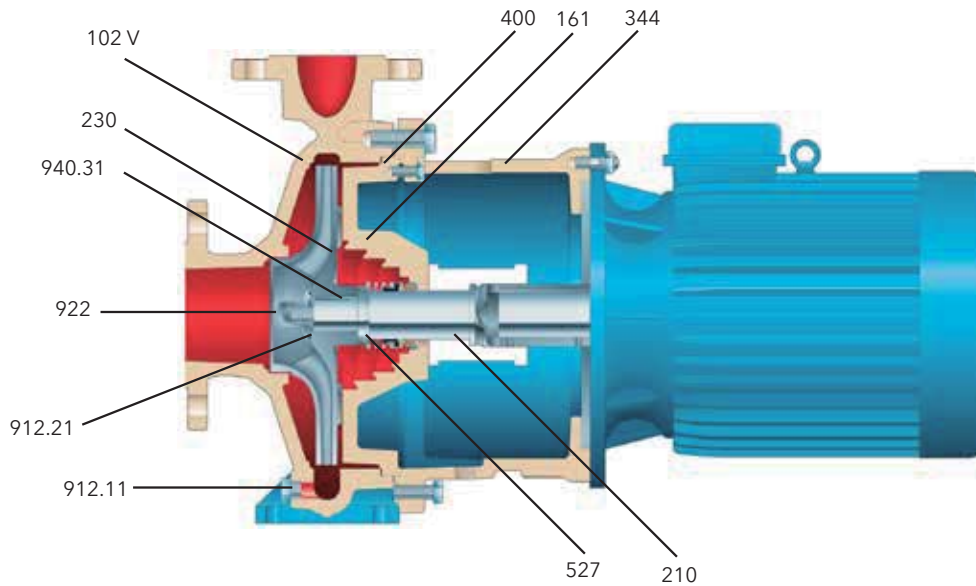
- Stub shaft directly mounted on motor shaft, rigid one piece design for optimized radial run out
- Standard Duplex SS (1.4462) construction for maximum corrosion resistance

## Engineered Seal Chamber

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- 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
- Mechanical seal according to EN 12756, design U, version K (former DN 24960, L<sub>1k</sub>)

# 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 (0.7043)			
400	Casing Gasket	Non-Asbestos Aramid Fiber			
527	Fixing Ring	Duplex SS (1.4462)			
912.11	Casing Drain Plug	316ss			
912.21	O-ring, Impeller Nut	Teflon			
922	Impeller Nut	Duplex SS			
940.31	Impeller Key	Duplex SS (1.4517)			

## Cast Material Specifications

Cast material	Standard	Equivalent Materials	
		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



# LSB and HYDROVAR

## Pumping System Solutions

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

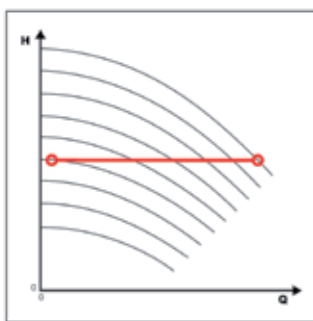
- Energy savings up to 70%.
- Increasing reliability and improved life time due to controlled operating conditions avoid dry run, head losses and cavitation.
- Reduced hydraulic forces improve bearing and mechanical seal life time.
- Lower installation costs due to elimination of control valves as well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

## Advantages

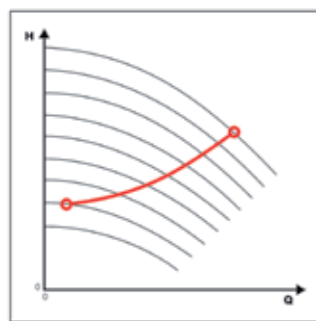
- Patented microprocessor based pump controller for variable speed operation, specifically developed for pump operation.
- Easy start up, without programming, simplifies installation.
- **Hydrovar Smart:** Hydrovar function and features without power limitation, combination with all standard frequency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



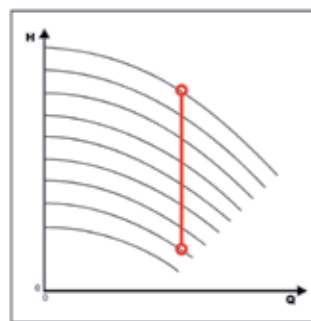
## Operating Options



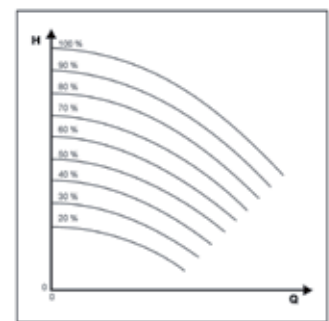
Constant Pressure



System Characteristics

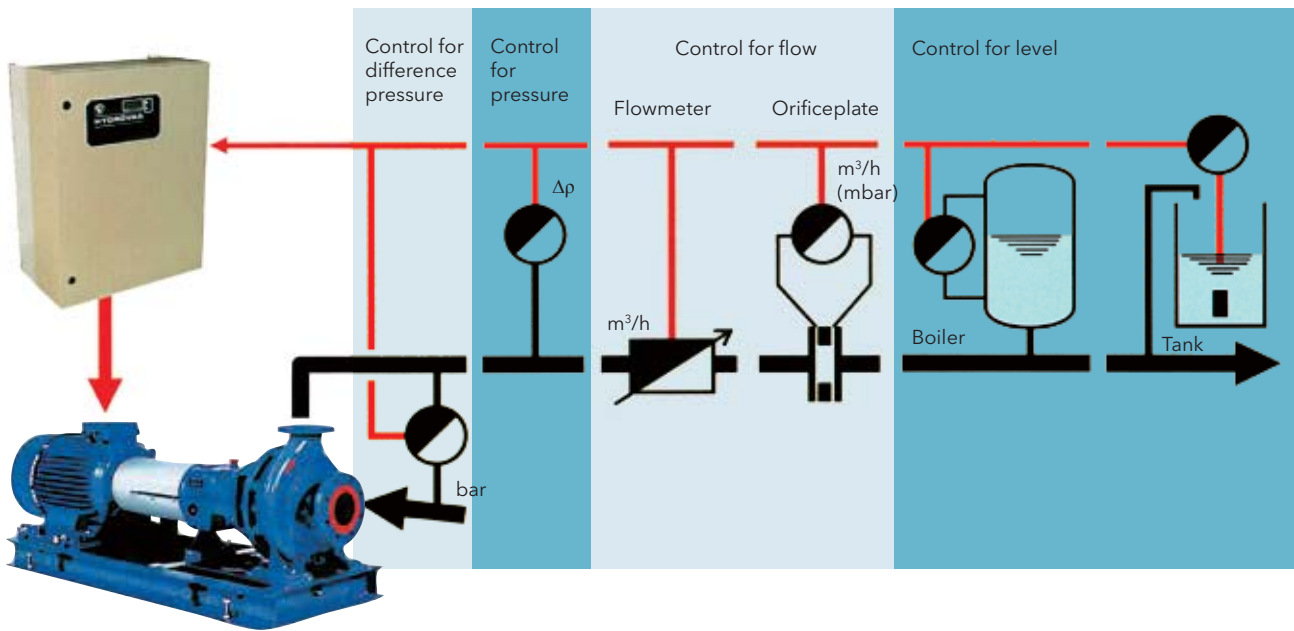


Constant Flow



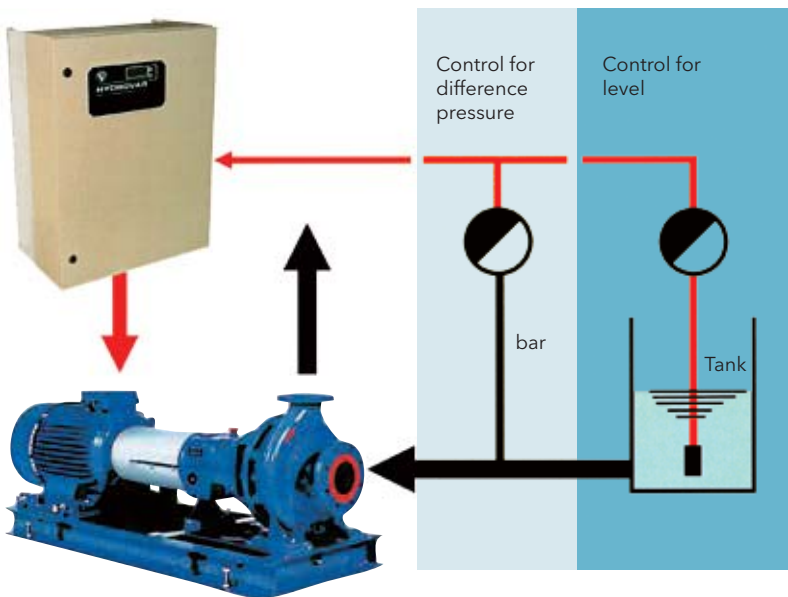
Actuator Mode

## Controller Mode „Normal“



At controller mode „normal“ the operating frequency increases in case of decreasing signal measuring.

## Controller Mode „Invers“



At controller mode „invers“ the operating frequency decreases in case of decreasing signal measuring.

For more detailed information of HYDROVAR refer to separate brochure.

# Program Extension

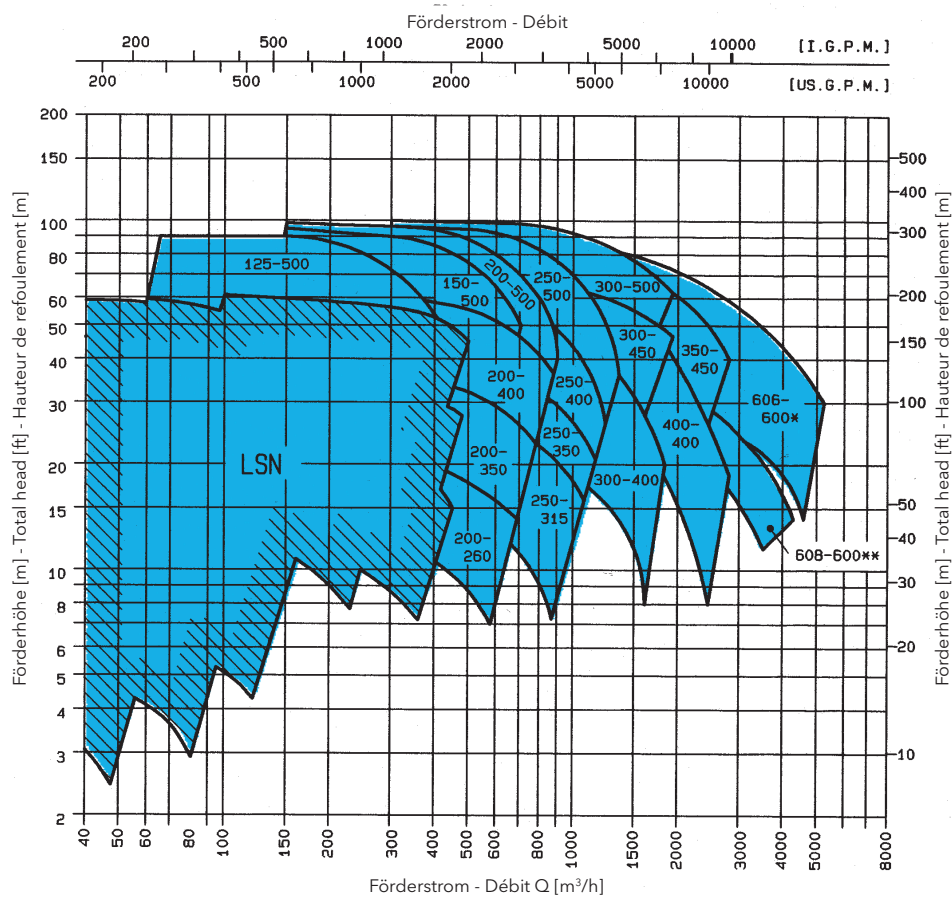
## Volute Casing Pumps LSN

- Frame mounted pumps according to ISO 2858 and ISO 5199
- Pump sizes DN 25 up to DN 150 (1"-6")
- Temperatures up to 180oC (350oF)
- Refer to separate brochure



## Volute Casing Pumps - Design LS

- Extended performance range to model LSN, pump sizes up to DN 600 (24")
- Capacities up to 4600 m³/h (20250USgpm)
- Refer to separate brochure



# Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're 12,500 people unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

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