



VOGEL PUMPEN

HYDROVAR®

Blockpumps - Design LSB with Hydraulics according ISO 2858



ITT Industries
Engineered for life

Blockpumps - Design LSB - with Hydraulics according ISO 2858



VOGEL model LSB are horizontal block pumps based on hydraulic acc. ISO 2858 / EN 22858 (form model LSN) with close coupled TEFC motors acc. 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 450 m³/h (1980 USgpm)
 Head up to 150 m (492 feet)
 Speed up to 2950/3550 min⁻¹ (2950/3550 rpm)

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

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

Motors

Std. IEC TEFC electric motors, design B 5
 Power range 2950 min⁻¹ up to 37 kW and 1450 min⁻¹ up to 30 kW
 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

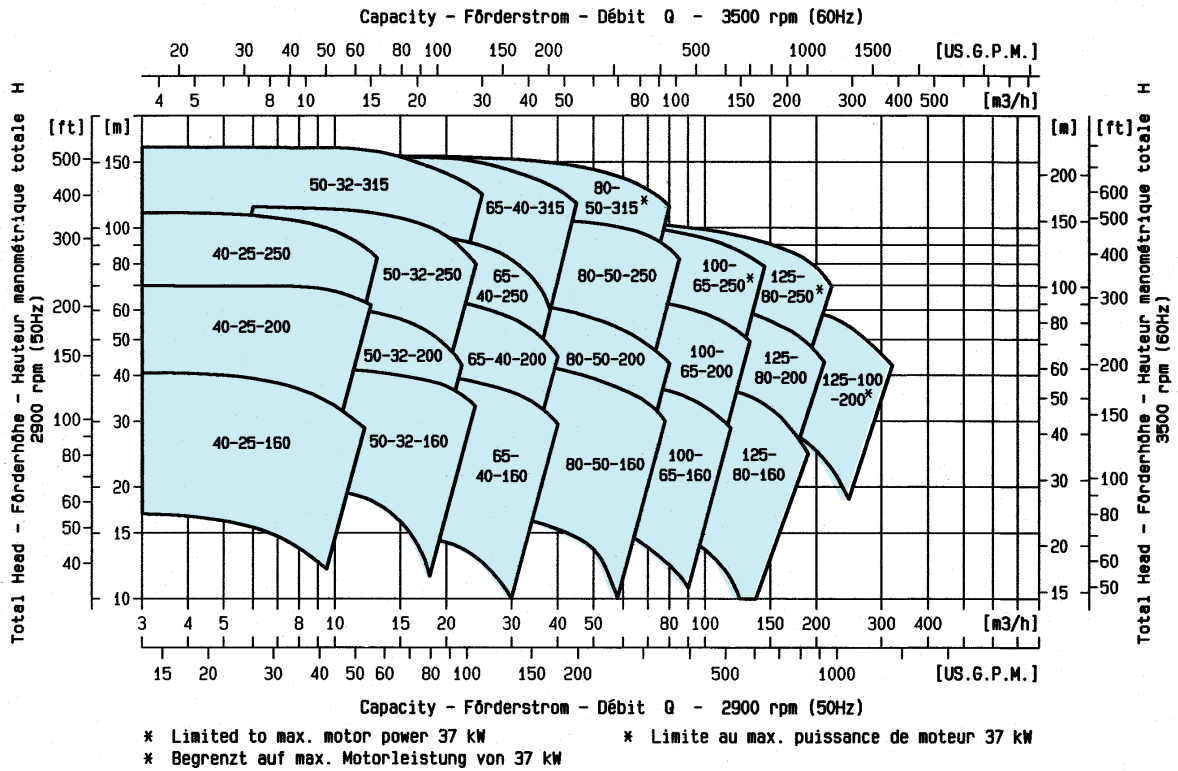
Water supply and water treatment
 Cooling water supply
 Hot water circulation
 District heating
 General industry
 Food and beverage industry
 Filter systems, ultra filtration
 Coolant filtration
 Parts washing machines
 Galvanisation and painting systems

Materials

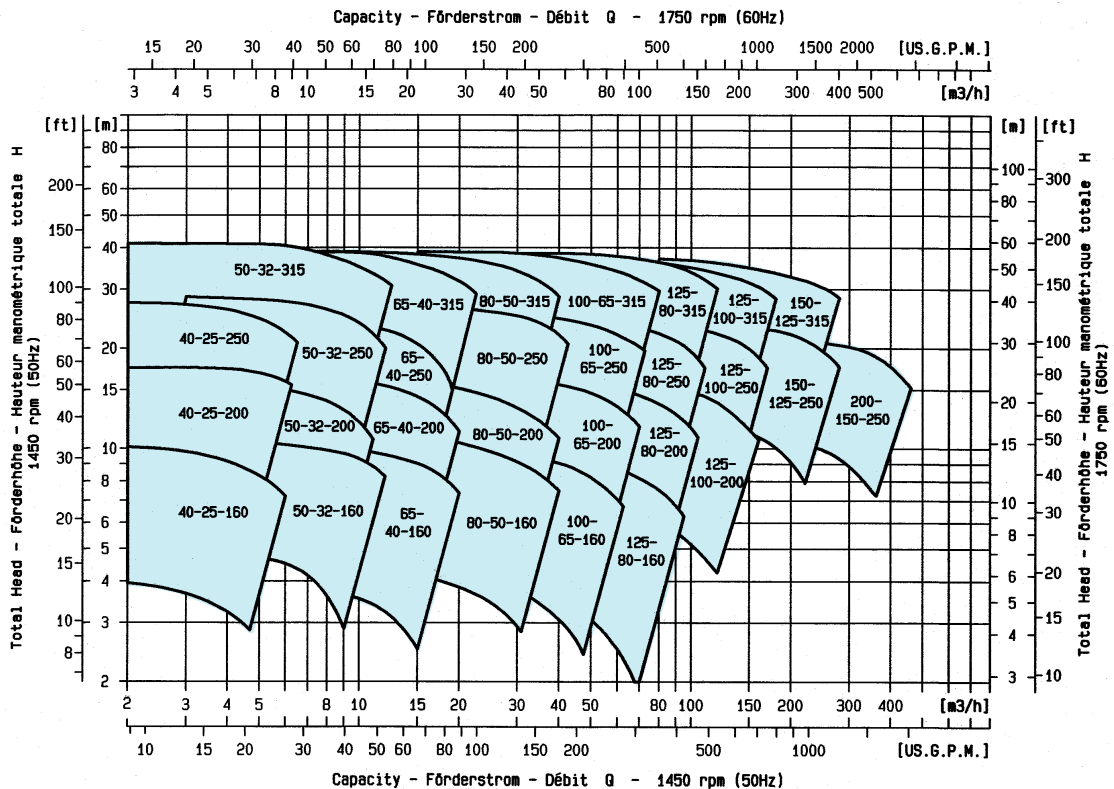
Ductile iron - 0.7043
 Stainless steel - 1.4408
 Duplex - 1.4517

Blockpumps - Design LSB - with Hydraulics according ISO 2858

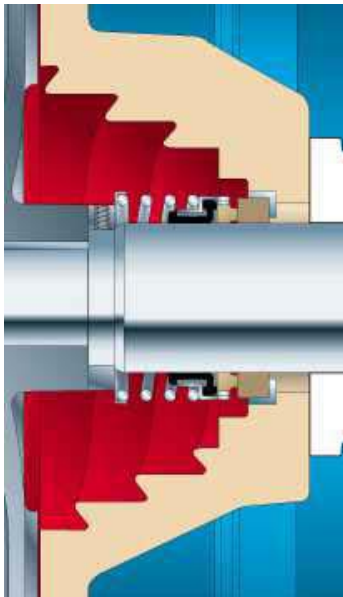
Performance 2950 min⁻¹, 50 Hz / 3550 min⁻¹, 60 Hz



Performance 1450 min⁻¹, 50 Hz / 1750 min⁻¹, 60 Hz



Blockpumps - Design LSB - with Hydraulics according 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 accumulation of gas (vapour) in the sealing environment.
- Seal chamber installation dimensions in accordance with ISO 3096 / DIN 24960.

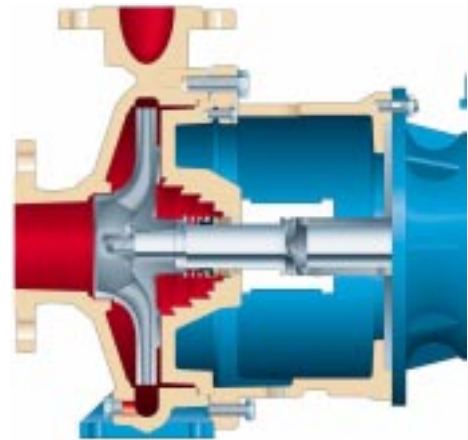
Shaft Sealing

- The correct seal selection is essential for the life time of the mechanical seal. The flexible sealing system allows seal selection according customer requirements for individual seal designs and seal brands.
- Standard seal chamber with installing dimensions according 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 ISO 2858

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 the block version reduced down to 30% compared with frame mounted pumps.
- Ideal for OEM's 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 acc. B)
- Standard motors for operation with frequency inverters and HYDROVAR.



Blockpumpen - Baureihe LSB - mit Hydrauliken nach ISO 2858

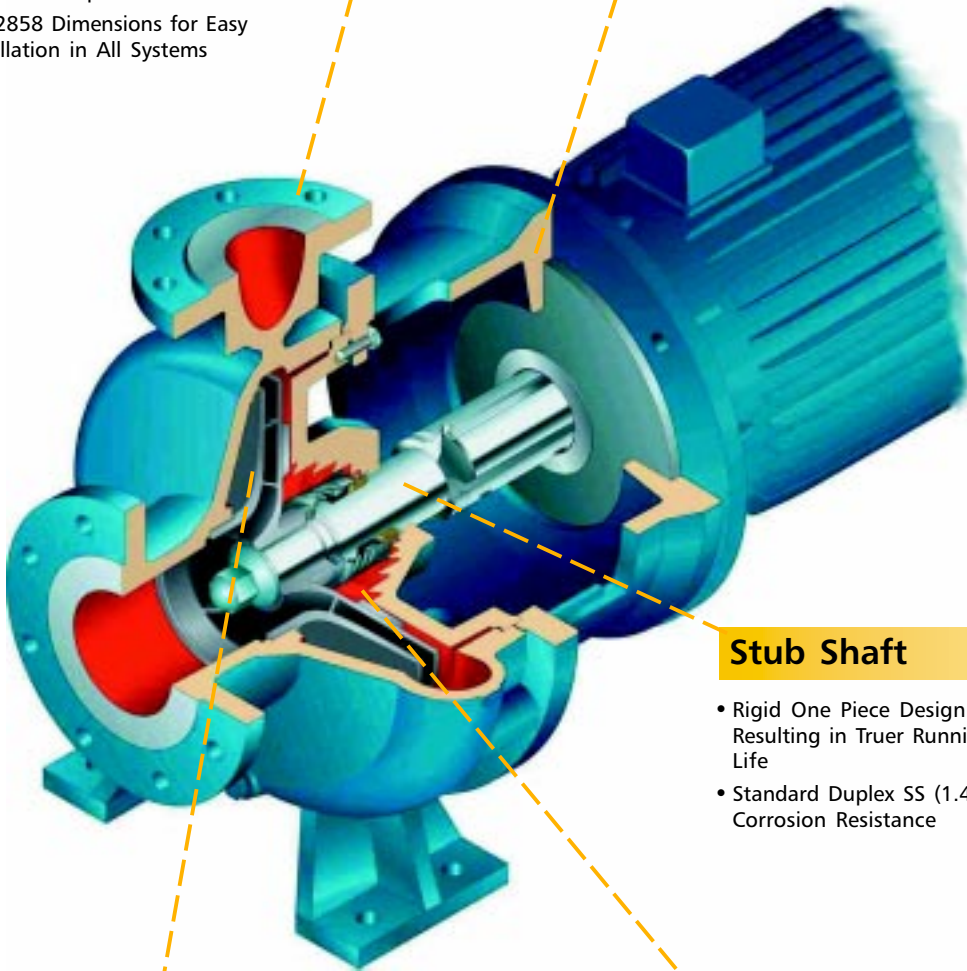
Standardausführung, die Betriebssicherheit bietet

Heavy Duty Casing

- Casted Heavy Duty, Foot Supported Design Provides Maximum Resistance to Pipe Loads
- Minimum 3 mm 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

Motor Lantern

- 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

- Rigid One Piece Design Eliminates Tolerance Stack-Ups Resulting in Truer Running Seal Faces for Extended Seal Life
- Standard Duplex SS (1.4462) Construction for Maximum Corrosion Resistance

Impeller

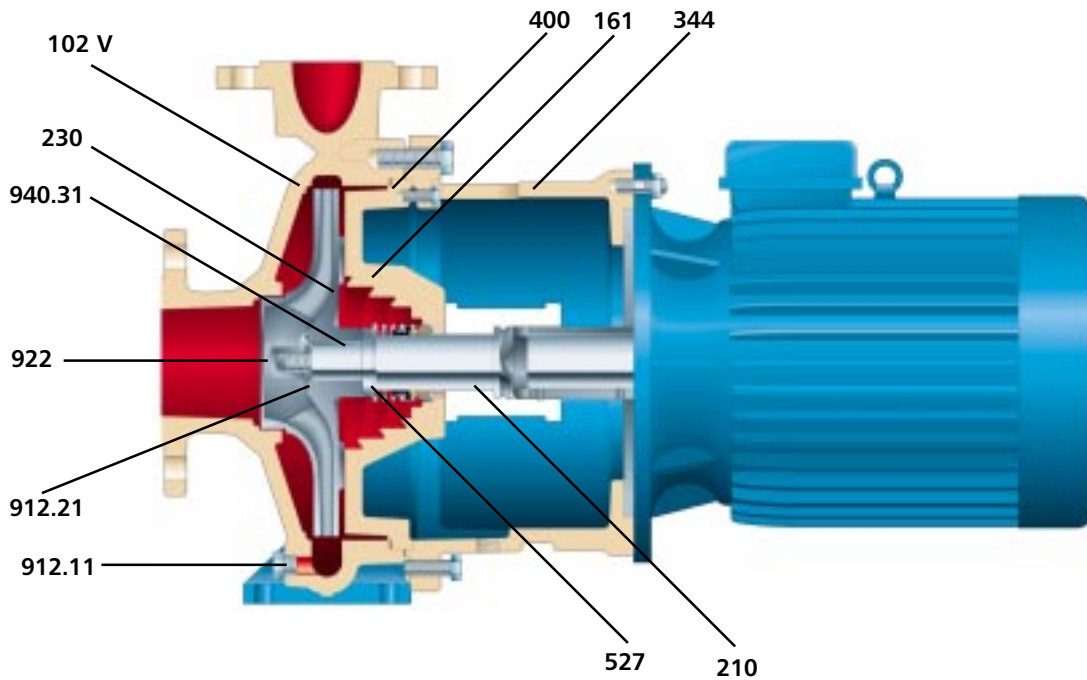
- Precision Cast, Enclosed Impeller Design for Maximum Performance and Low NPSHr
- Back Vanes or Balance Holes Reduce Axial Thrust and Seal Pressures for Extended Seal and Motor Life
- Key Driven To Prevent Spin Offs Caused By Mis-wiring
- Optional Wear Rings Renew Pump Performance and Extend Pump Life

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 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

	IC-B Standard	Approximate Equivalent	
		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 system demand high potential of savings are achievable.

- Energy savings up to 50%.
- Increasing reliability and improved life time due to controlled operating conditions, avoids 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.

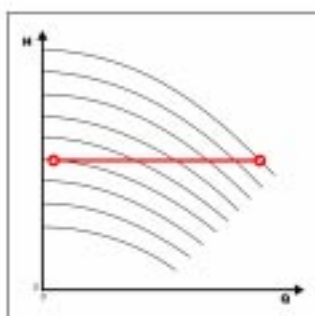


HYDROVAR - Advantages

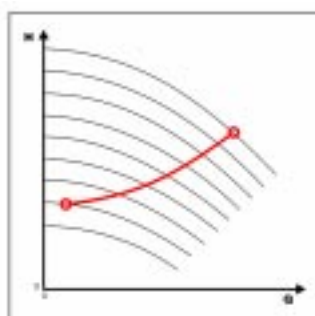
- Patented microprocessor based pump controller for variable speed operation, specifically developed for pump operation.
- Easy start up without programming, simplifies installation.
- Power range up to 45 kW.
- **Hydrovar Smart:** Hydrovar functions and features without power limitation, combination with all std. frequency inverters possible.



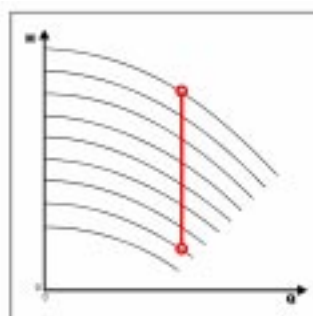
HYDROVAR - Operating options



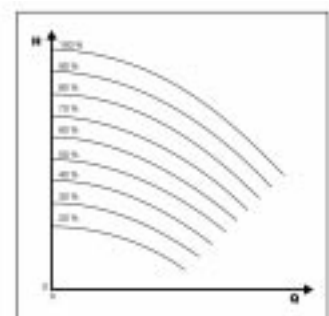
Constant Pressure



System characteristics



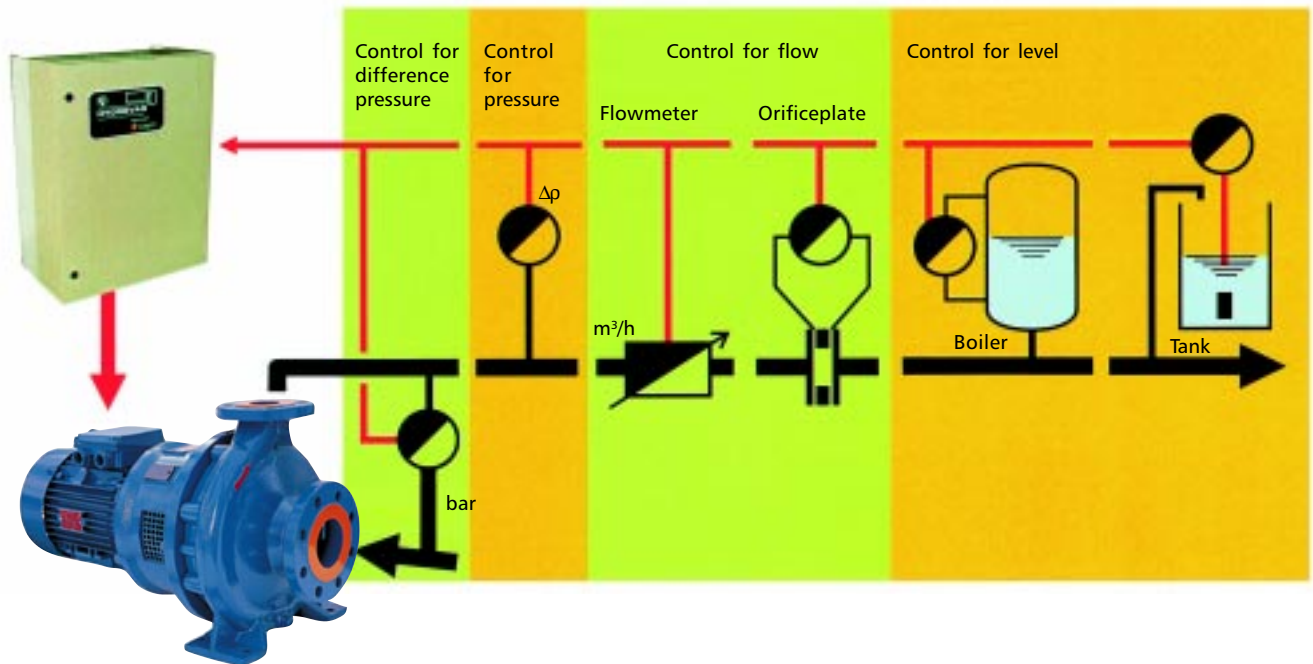
Constant Flow



Actuator Mode

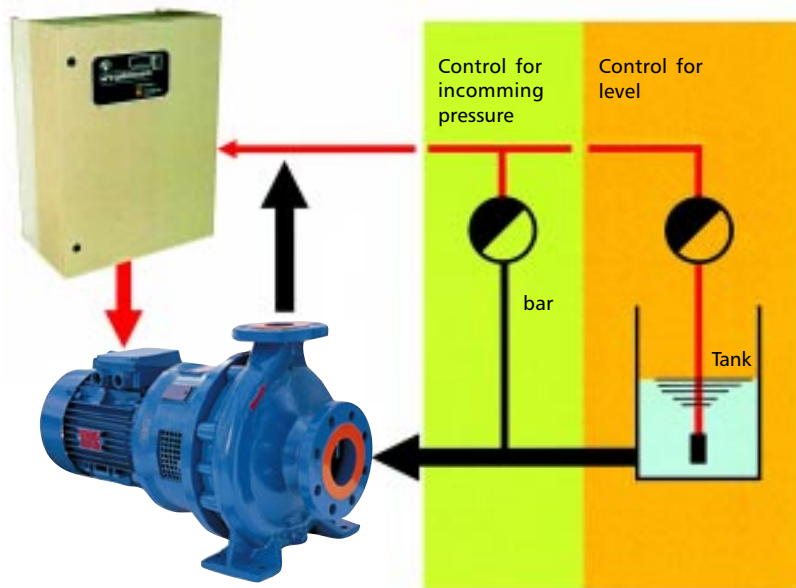
Blockpumps - Design LSB and HYDROVAR

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.

For more detailed information of HYDROVAR refer to brochure 5810-7 e.

Blockpumps - Design LSB - Program Extension

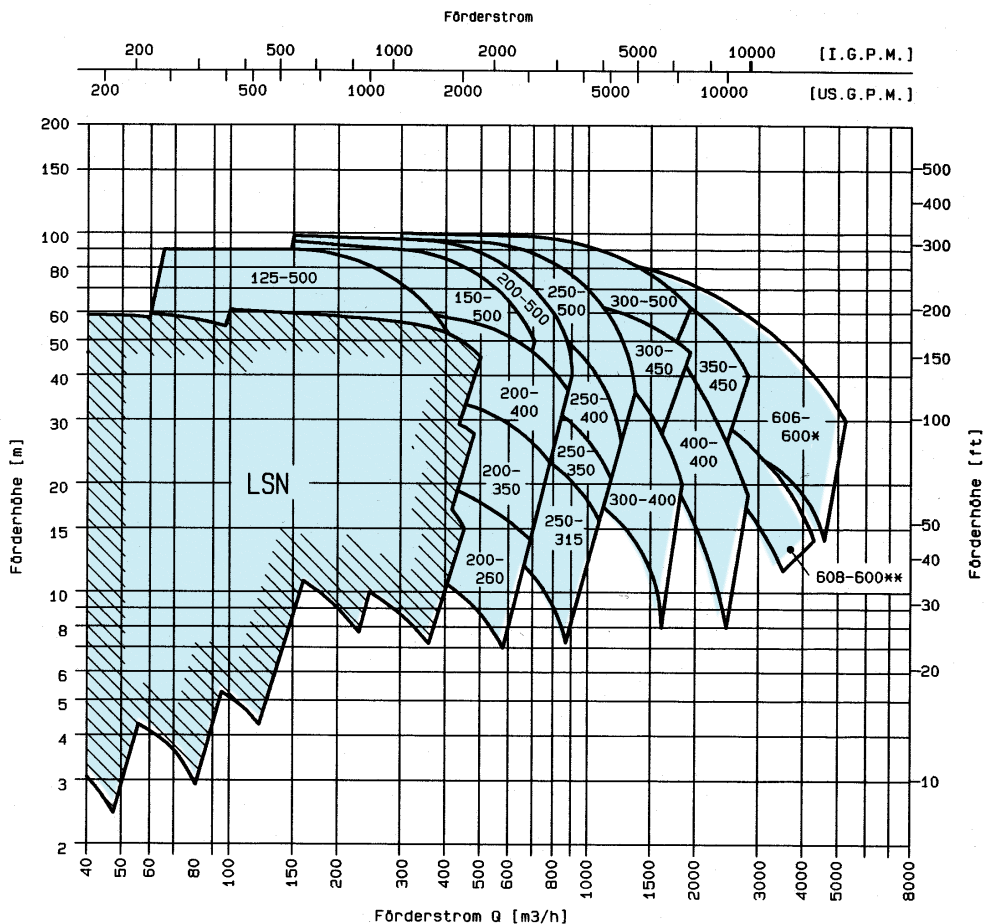
Volute Casing Pumps LSN

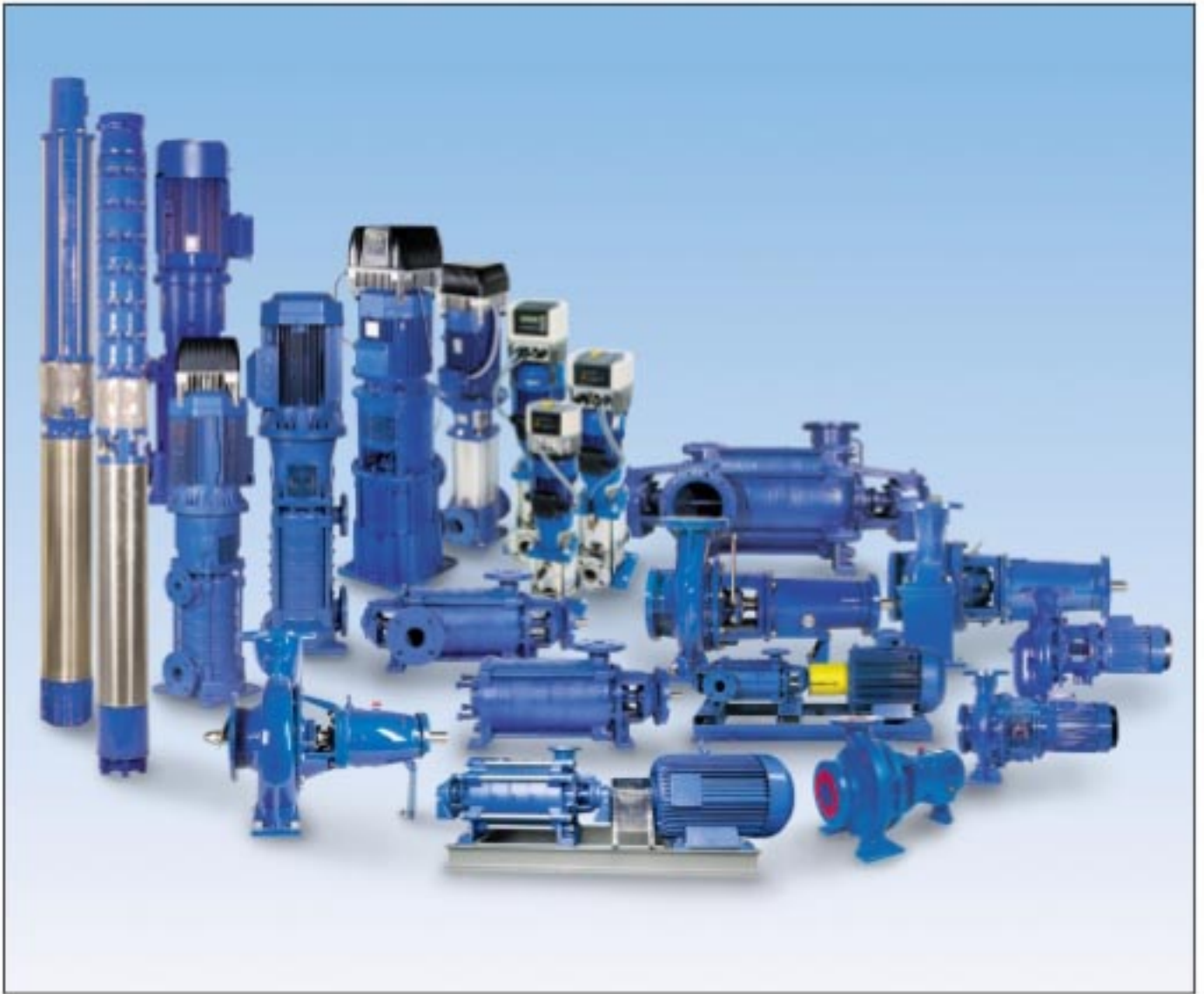
- Frame mounted pumps according ISO 2858 and ISO 5199
- Pump sizes DN 25 up to DN 150 (1"-6")
- Temperatures up to 180°C (350°F)
- Refer to brochure 1200.1.B



Volute Casing Pumps - Design LS

- Extension of the performance range of model LSN, sizes up to DN 600 (24")
- Capacities up to 4600 m³/h (20250 USgpm)
- Refer to brochure 1300.1.B





www.vogel-pumpen.com
www.hydrovar.com

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Liability of manufacturer and/or supplier
The mentioned limits of operation and/or application are only a general information and may not be applied for every case. The permitted range of operation and/or application for the specific case is to be obtained from our acknowledgement of order and/or the instructions for installation, operation and maintenance, sent with the goods.

