

# Inline Pumps

LR/LMR & LRZ/LMZ, LER & LEZ

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**VOGEL PUMPEN**

a xylem brand

# Technical Data

## Performance:

- Capacity up to 350m<sup>3</sup>/h (1540USgpm)
- Head up to 85m (280feet)
- Speed up to 2950rpm

## Pump sizes:

- DN 40 up to DN 150 (1 1/2" up to 6") discharge, sizes DN 200 up to DN 300 (8" up to 12"), refer to design LER / LEZ, see extension program

## Temperature of pumped liquid:

- max. 140°C (284°F)

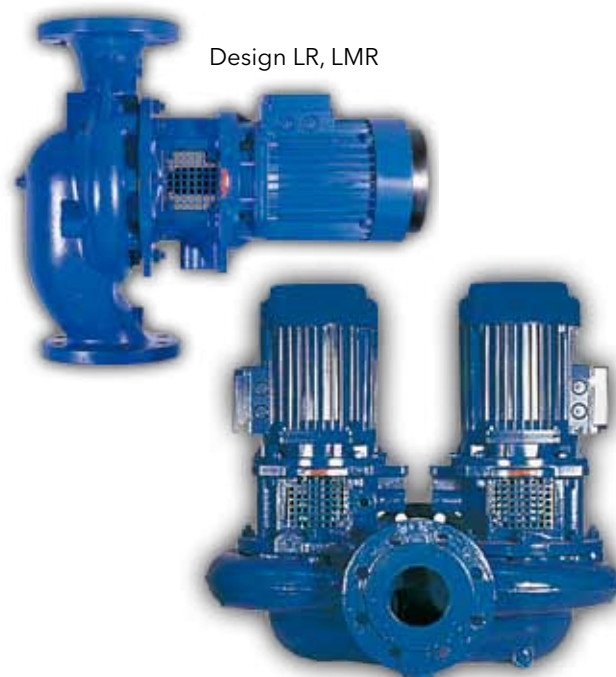
## Casing pressure:

- Design LR / LRZ:  
16bar/120°C or 13bar/140°C
- Design LMR/LMZ:  
16bar/120°C or 13bar/140°C

## Materials:

Design	Code	Size	Impeller	Casing, Seal chamber	Wear rings	Motor adapter	Shaft
LR LRZ	VN	40-125 up to 80-160	1.4404	0.6020	1.4402	0.6020	1.4401
	NN	80-200 up to 100-250	0.6020				
	SN		CC 480 K		1)		
LMR LMZ	NN	DN 125 up to DN 150	0.6025	0.6025	1)	0.6025	1.4021
	SN	2)	CC 480 K				

1) optional 0.6020 or 0.6025



Design LR, LMR

Design LMZ

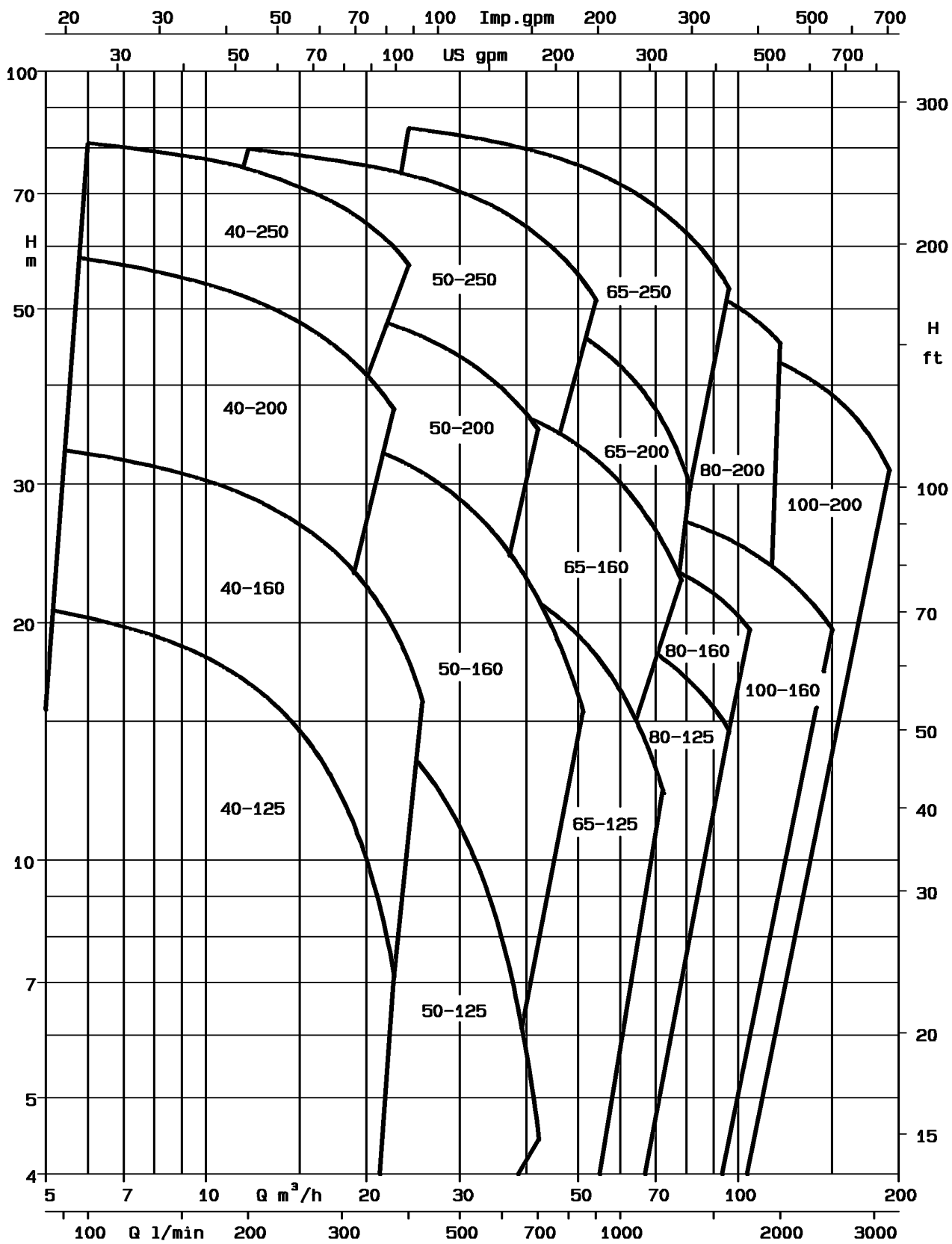
## Liquids:

- Clean and slightly contaminated fluids (without bigger solids)
- Cold and hot water
- Condensate
- Water-Glycol mixtures

## Applications:

- Water supply and water treatment
- Cooling and hot water supply in industries and building services
- Filter systems

# Performance 2900rpm, Design LR

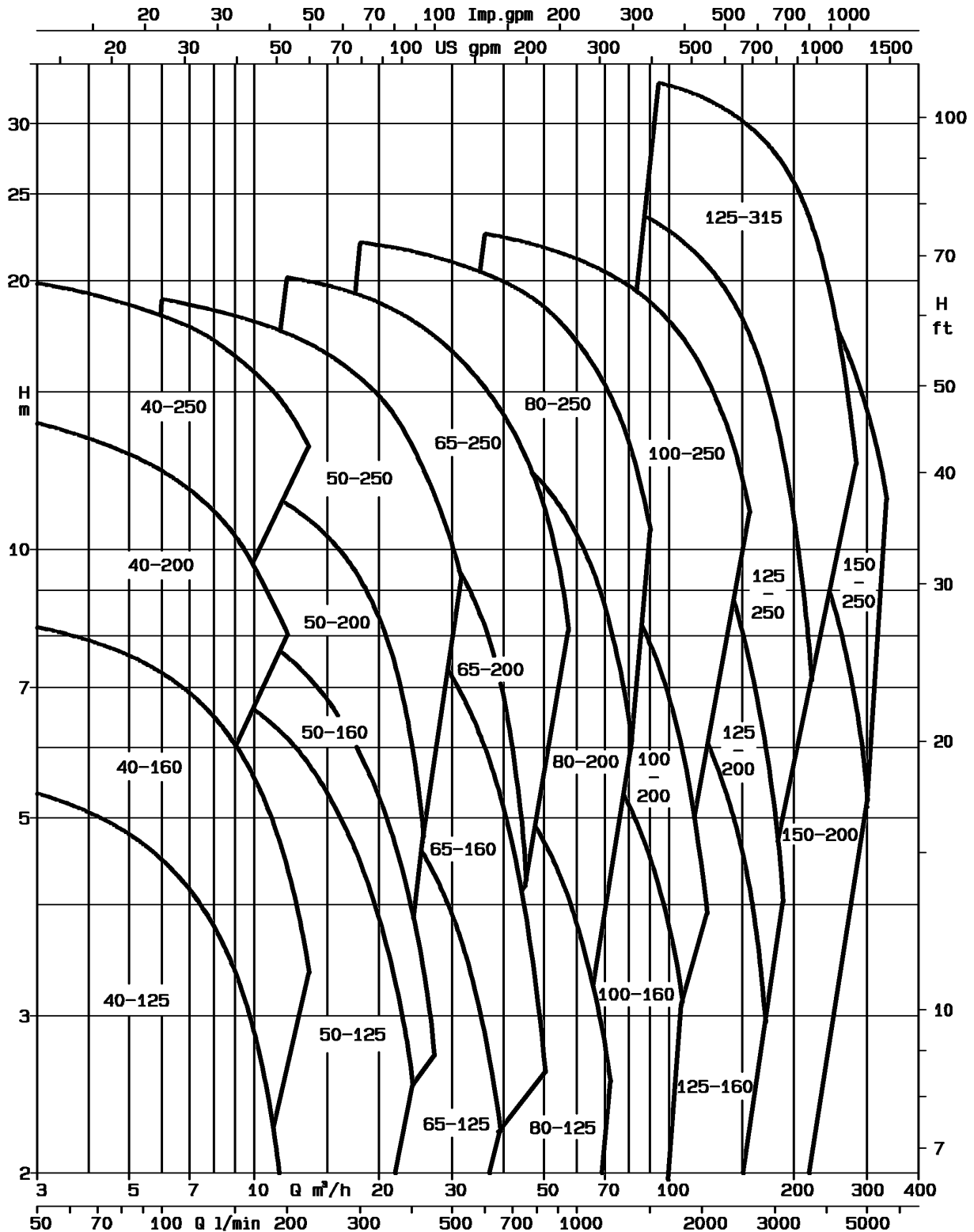




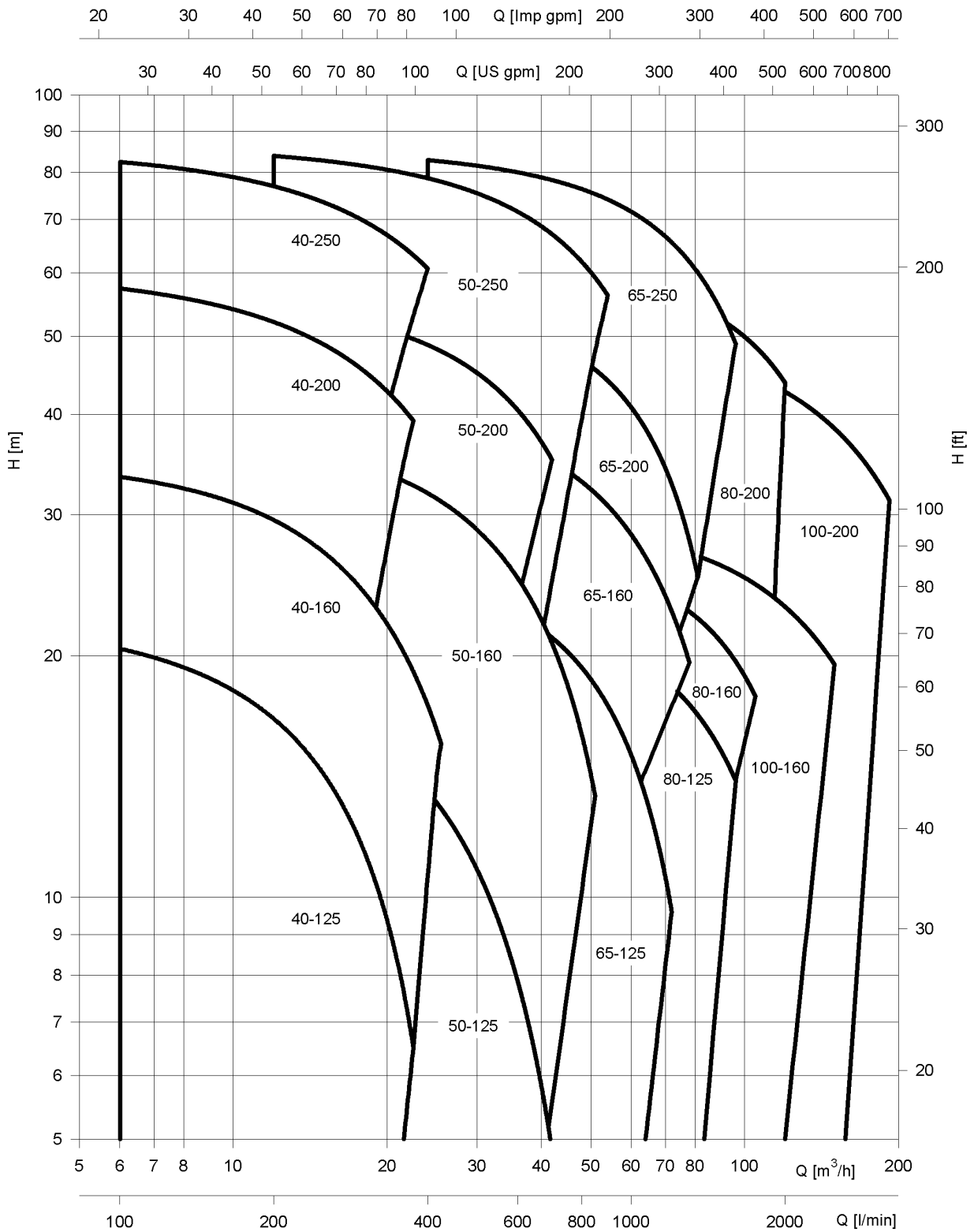
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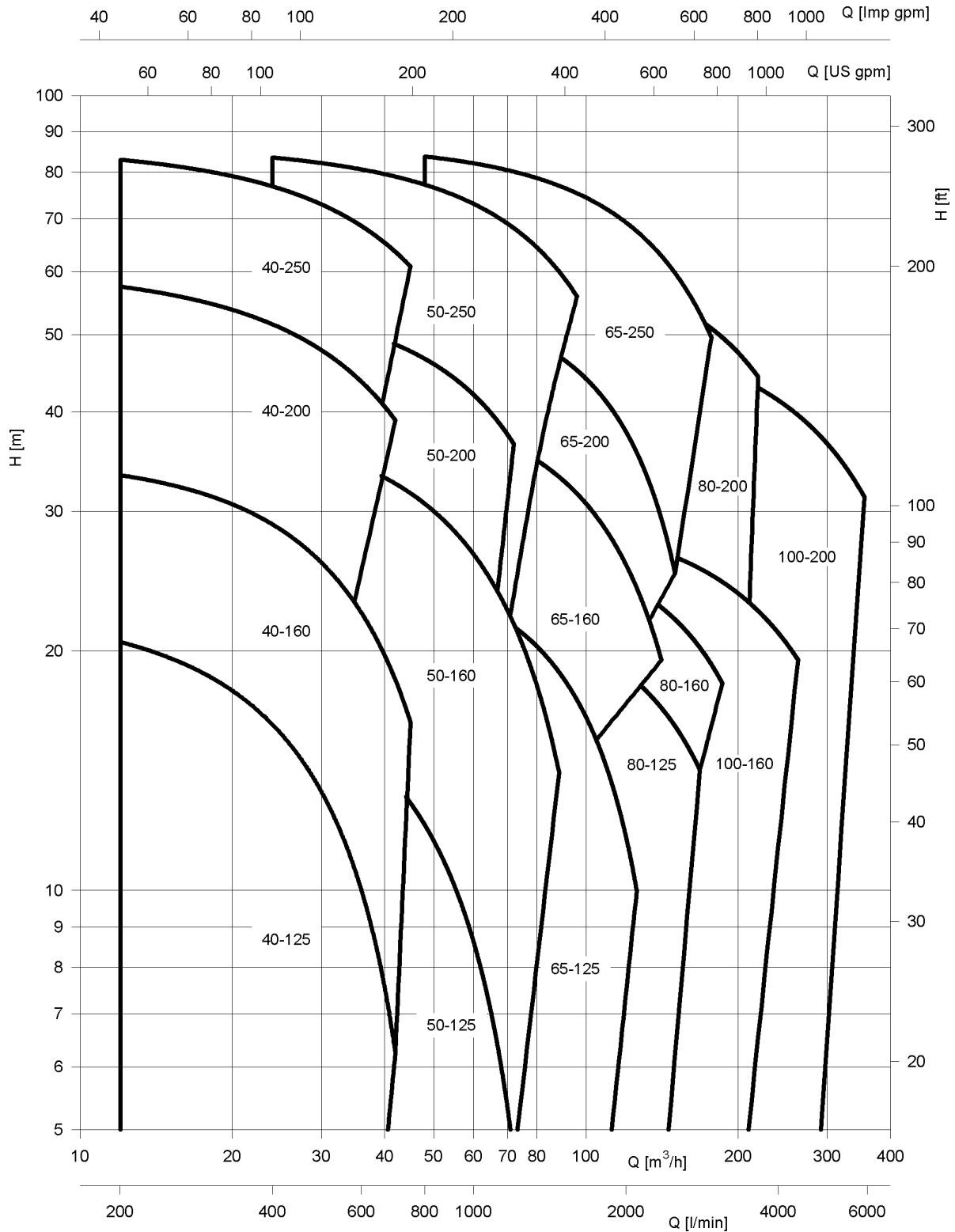
### Performance 1450rpm, Design LR / LMR



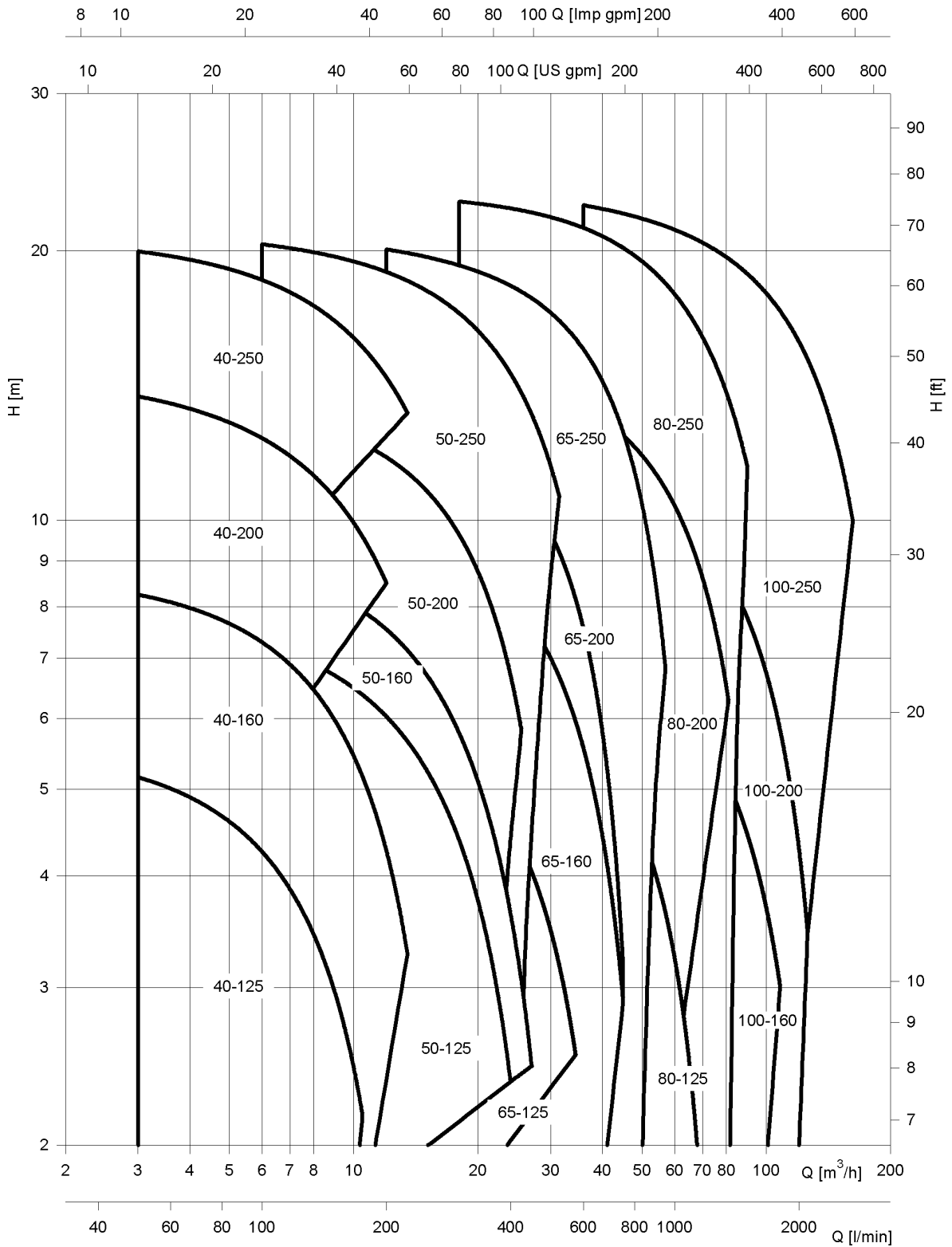
# Performance 2900rpm, Design LRZ - Single operation



Performance 2900rpm, Design LRZ - Parallel operation



# Performance 1450rpm, Design LRZ - Single operation



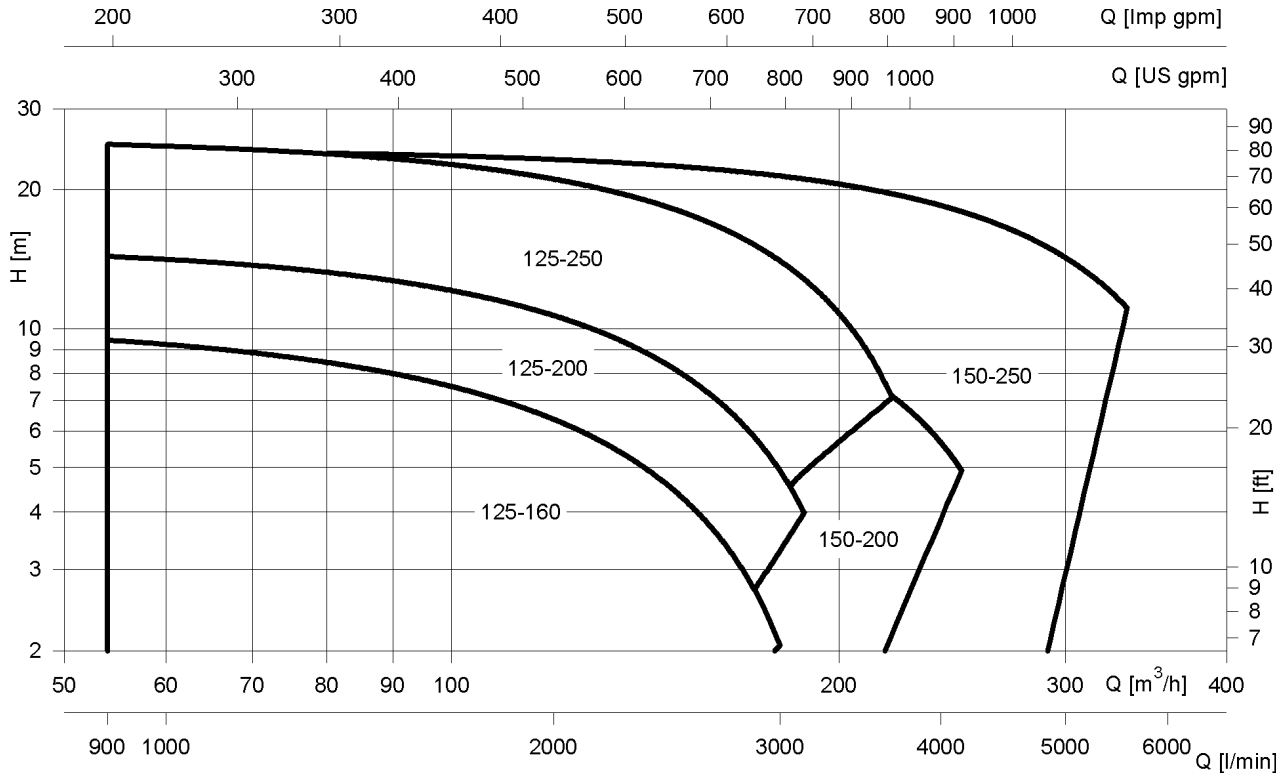
Performance 1450rpm, Design LRZ - Parallel operation



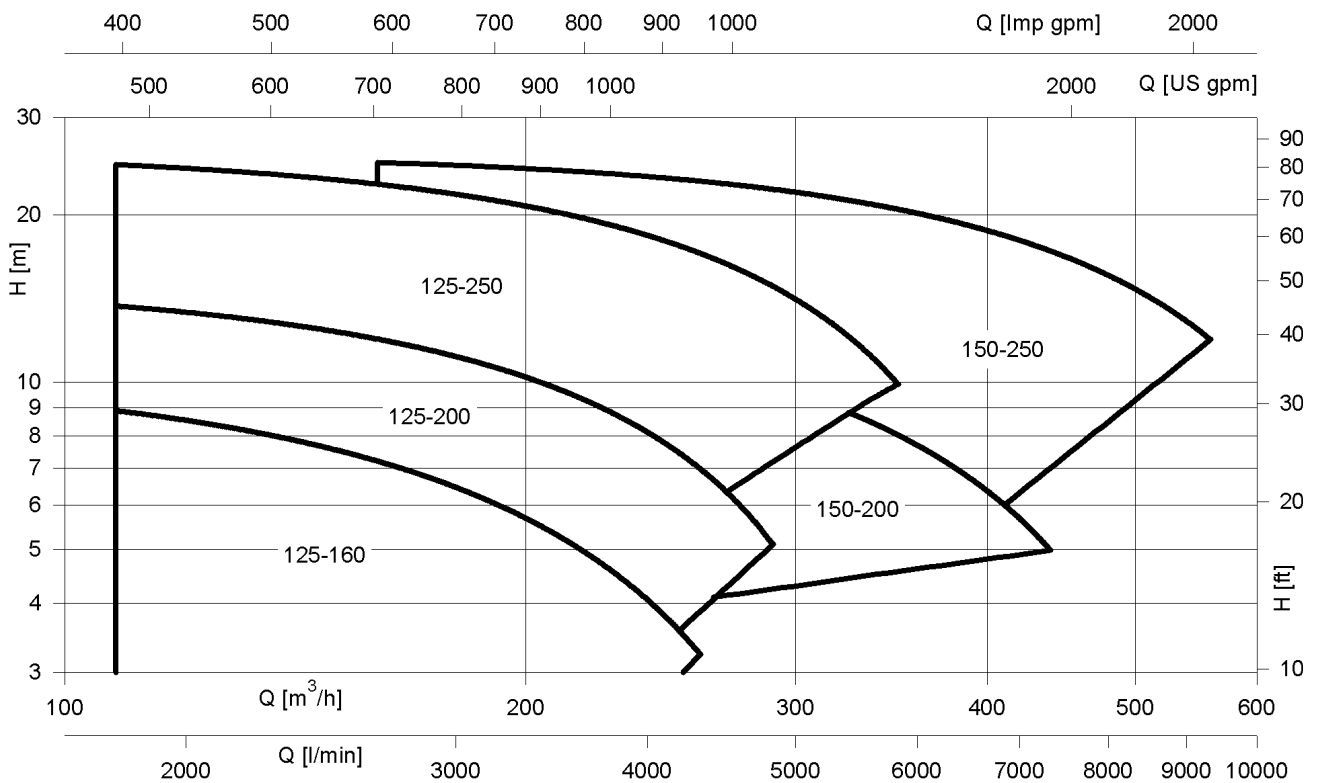


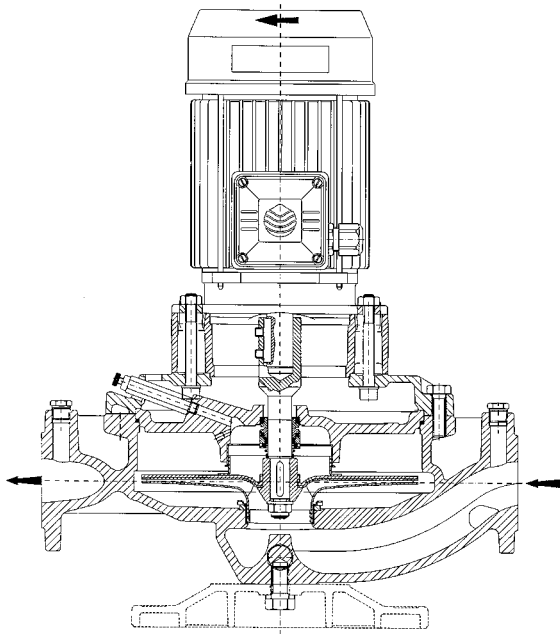
# Performance 1450rpm, Design LMZ

## Single operation

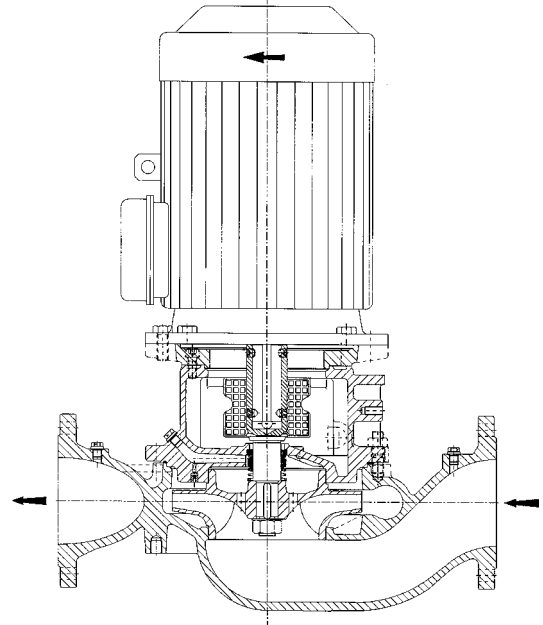


## Parallel operation





Design LR

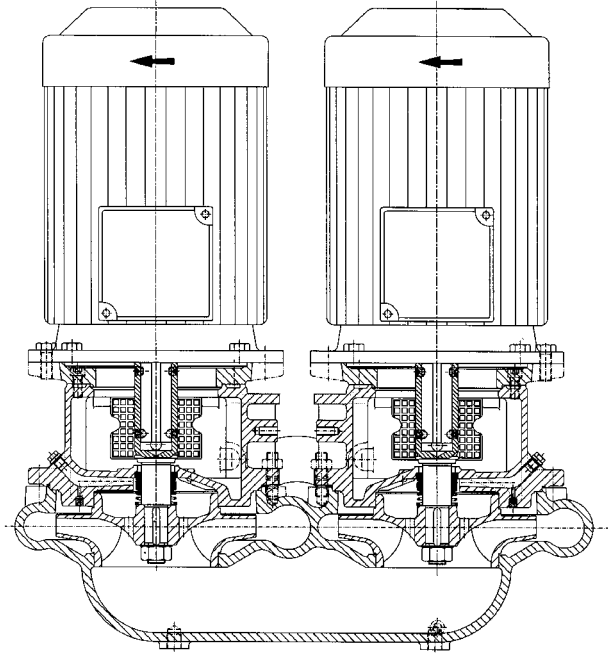
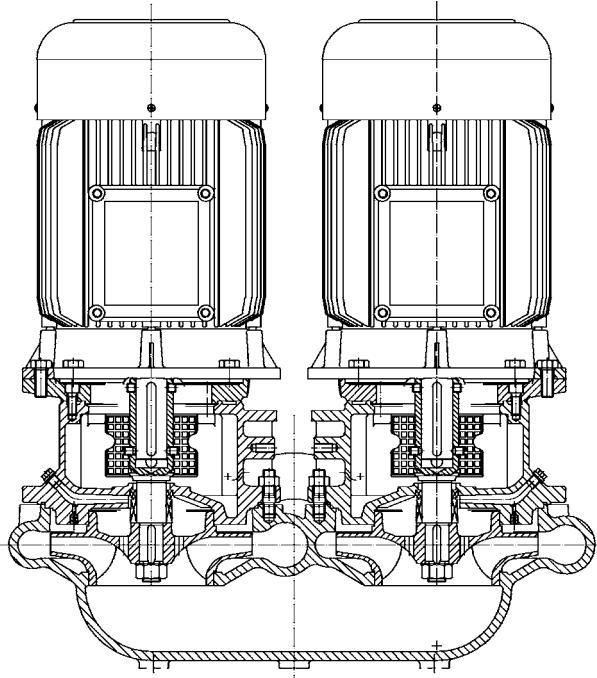


Design LMR

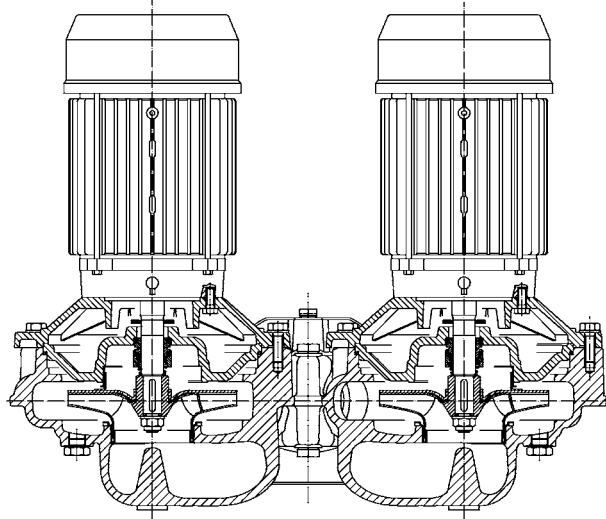
### Design features LR, LMR:

- Single stage volute casing pump in Inline design with direct mounted standard IEC Norm Motor.
- Meeting the requirements according to ISO 9908
- High efficiency enclosed impeller. Sizes 40-125 up to 80-160 standard made of stainless steel 1.4404, stamped and laser welded. Sizes 80-200 up to 150-250 standard cast iron, optional bronze.
- Casing in solid design. Suction and discharge Inline. Flanges DN 40 up to DN 150 standard PN 16.
- Seal chamber dimensioned according to EN 3096
- Large open conical seal chamber, selfventing with internal circulation for proper lubrication and cooling of the seal. Ribs in the seal chamber prevent the accumulation of air or gas in the area of the seal faces and reduce wear caused by solids in the fluid.
- Shaft sealing by means of single, unbalanced mechanical seal according to EN 12756, design U, version k (former DIN 24 960, I1k).
- Standard mechanical seal materials: Carbon - Silicon Carbide (SiC) - EPDM (BQ1EGG), optional elastomers in FPM (Viton®) (BQ1VGG). As option also available in SiC - SiC - FPM (Viton®) (Q1Q1VGG).
- Solid motor adapter made of cast iron for direct connection to standard IEC Norm Motors, design B5/V1.
- Pump shaft designed as stub shaft and completely made of stainless steel for long lifetime, directly connected to the motor shaft.

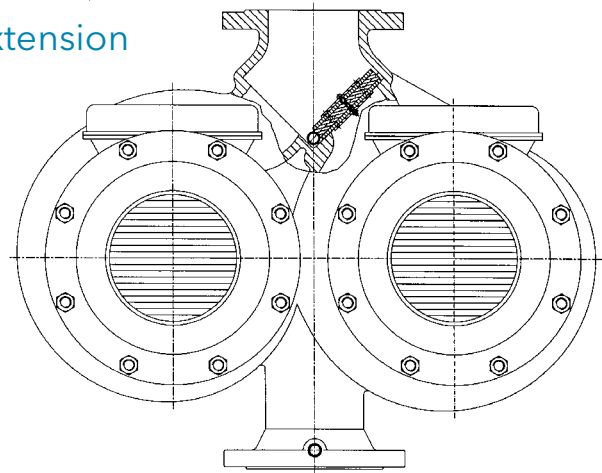
## With stub shaft and standard motor



## Close-coupled with special motor shaft extension



Design LRZ



Design LMZ

## Design features LRZ / LMZ:

- Single stage volute casing pump in Inline twin design with direct mounted standard IEC Motor.
- Operation and stand-by pump in a one casing with integrated automatic reversing flap.
- Identical drive unit for both pumps (impeller and motor) and also identical with the single Inline pump LMR.
- Other features identical with series LMR.

# Extension Program

## Performance:

- Capacity up to 1000m<sup>3</sup>/h (4400USgpm)
- Head up to 80m (262feet)
- Speed up to 2950rpm

## Pump Sizes:

- DN 100 up to DN 300 (4" up to 12") discharge

## Temperature of pumped liquid:

- max. 150 °C (302 °F)

## Casing pressure:

- Design LER/LEZ: 10bar/120 °C
- Design LERS: 16bar/150 °C

## Liquids:

- Clean and slightly contaminated fluids (without bigger solids)
- Cold and hot water
- Condensate
- Water-Glycol mixtures

## Applications:

- Water supply and water treatment
- Cooling and hot water supply in industries and building services
- Filter systems



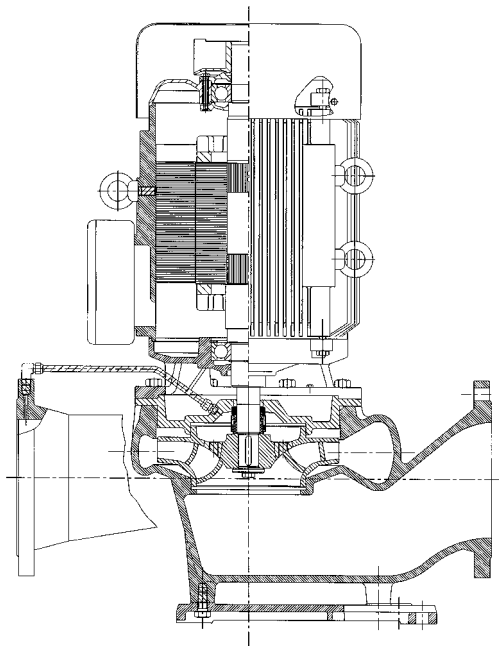
Design LER



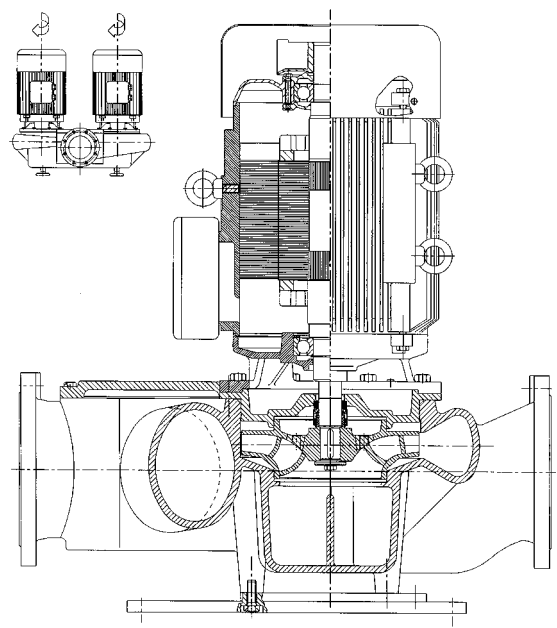
Design LEZ

## Materials:

Design	Size	Code	Impeller	Casing, Seal Chamber	Wear rings	Motor adapter	Shaft
LER LERS	DN 100 up to DN 250	NN	0.6020	0.6020	without	0.6020	1.4460
		NL	0.6020	0.7040			
	DN 300	LN	0.7040	0.6020			
		LL		0.7040			
LEZ	DN 125 up to DN 250	NN	0.6020	0.6020			
		NL		0.7040			



Design LER



Design LEZ

### Design features LER / LEZ:

- Single stage volute casing pump in Inline design with direct mounted motor with extended motor shaft.
- Design LER Single Inline Pump
- Design LERZ Twin-Inline Pump. Operation and stand-by pump in one casing with integrated automatic reversing flap.
- Meeting the requirements according to ISO 9908
- High efficiency enclosed impeller. Standard made of cast iron, optional bronze.
- Casing in solid design. Flanges standard PN 10, optional for design LERS, PN 16.

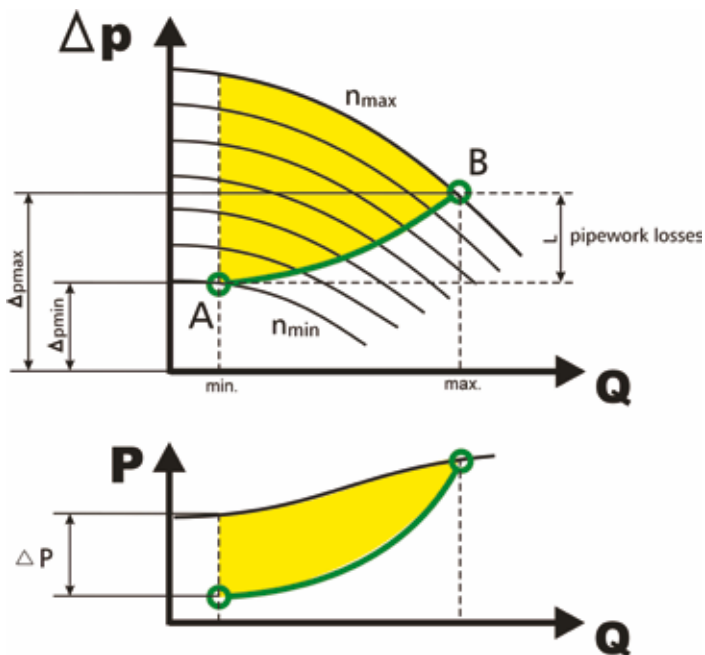
# Inline Pumps and HYDROVAR

## HYDROVAR application example - Control along a system curve

In closed systems for heating or cooling applications most of pressure has to be built up to overcome high friction losses in the system.

By controlling the provided pressure of the pump along the system curve and the actual demand, energy savings up to 70% can be realized.

This system characteristic can be programmed in the HYDROVAR without requiring additional external flow measurement devices.



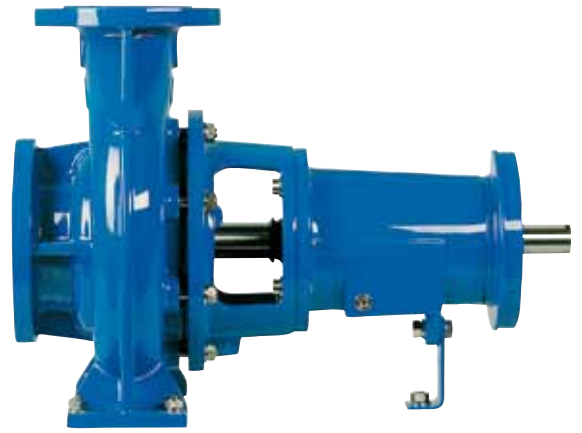
Instead of the costly differential pressure measurement the HYDROVAR can use 2 separate pressure sensors. The differential pressure for the control loop is internally calculated in the HYDROVAR.



# Program Extension

## Volute Casing Pumps LN / L:

- Single stage volute casing pump according to EN 733 / ISO 9908
- Sizes from DN 32 up to DN 150 (1 1/4" up to 6")
- Capacities up to 600m<sup>3</sup>/h (2640USgpm)
- Head up to 100m (328feet)



Design L

## Blockpumps LMN / LM:

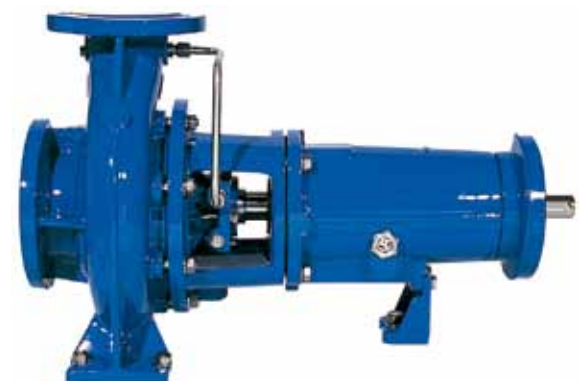
- Horizontal single stage blockpump with direct mounted IEC-Standard motor
- Sizes from DN 32 up to DN 150 (1 1/4" up to 6")
- Capacities up to 500m<sup>3</sup>/h (660USgpm)
- Head up to 95m (312feet)
- Motor sizes up to 55kW (75hp)



Design LM

## Volute Casing Pumps LS:

- Extension of the performance range of model LN/L
- Horizontal design according to ISO 5199
- Sizes from DN 125 up to DN 600 (5" up to 24")
- Capacities up to 4600m<sup>3</sup>/h (20250USgpm)
- Head up to 100m (328feet)



Design LS

# Xylem |'zīləm|

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

We're 12,000 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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