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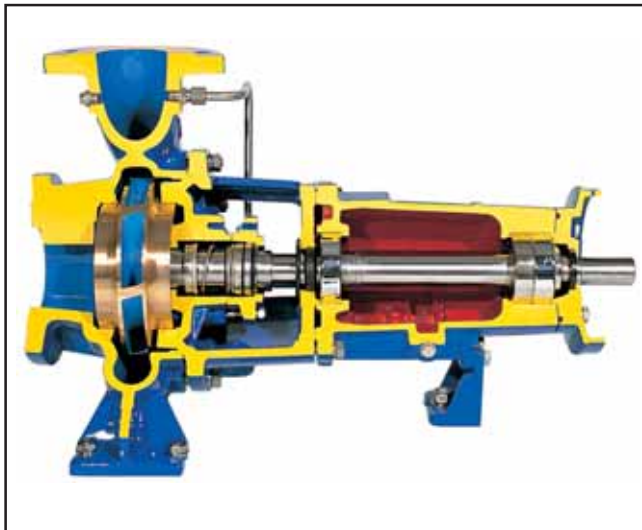
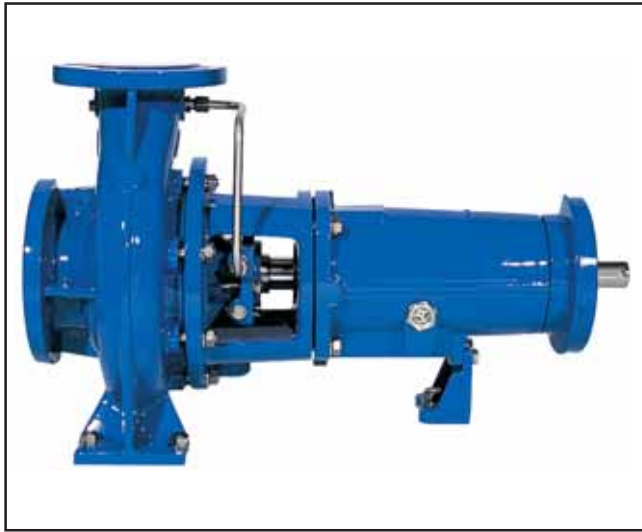
Vogel Pumpen

# Vogel - Endsuction Pumps

Design LS, LC, LCP



*Engineered for life*

**VOGEL - Endsuction Pumps, Design LS**

**Performance Range:**

Capacity up to 4.600 m<sup>3</sup>/h (20.250 USgpm)  
 Head up to 170 m (560 feet)  
 Speed up to 1750 min<sup>-1</sup> (1750 r.p.m.)

**Sizes:**

DN 125 up to DN 600 (5" up to 24") discharge  
 Size DN 32 up to DN 150 (1 1/4" up to 6")  
 refer to design IC, brochure 7102.1.B  
 design LSN, brochure 1200.1.B

**Temperature:**

max. 180°C (350° F)

**Casing pressure:**

up to 16 bar (170/230 psig)

For higher casing pressures refer to design LC/LCP page 6

**Handled liquids:**

Clean or slightly contaminated liquids  
 (without bigger solids)  
 Cold and hot water  
 Condensate and deionate  
 Oil brine and acid  
 Paper stock suspensions up to 1,2%

**Applications:**

General industry  
 Chemical industry  
 Steel mills and mining  
 Sugar industry  
 Pulp and paper mills

**Materials:**

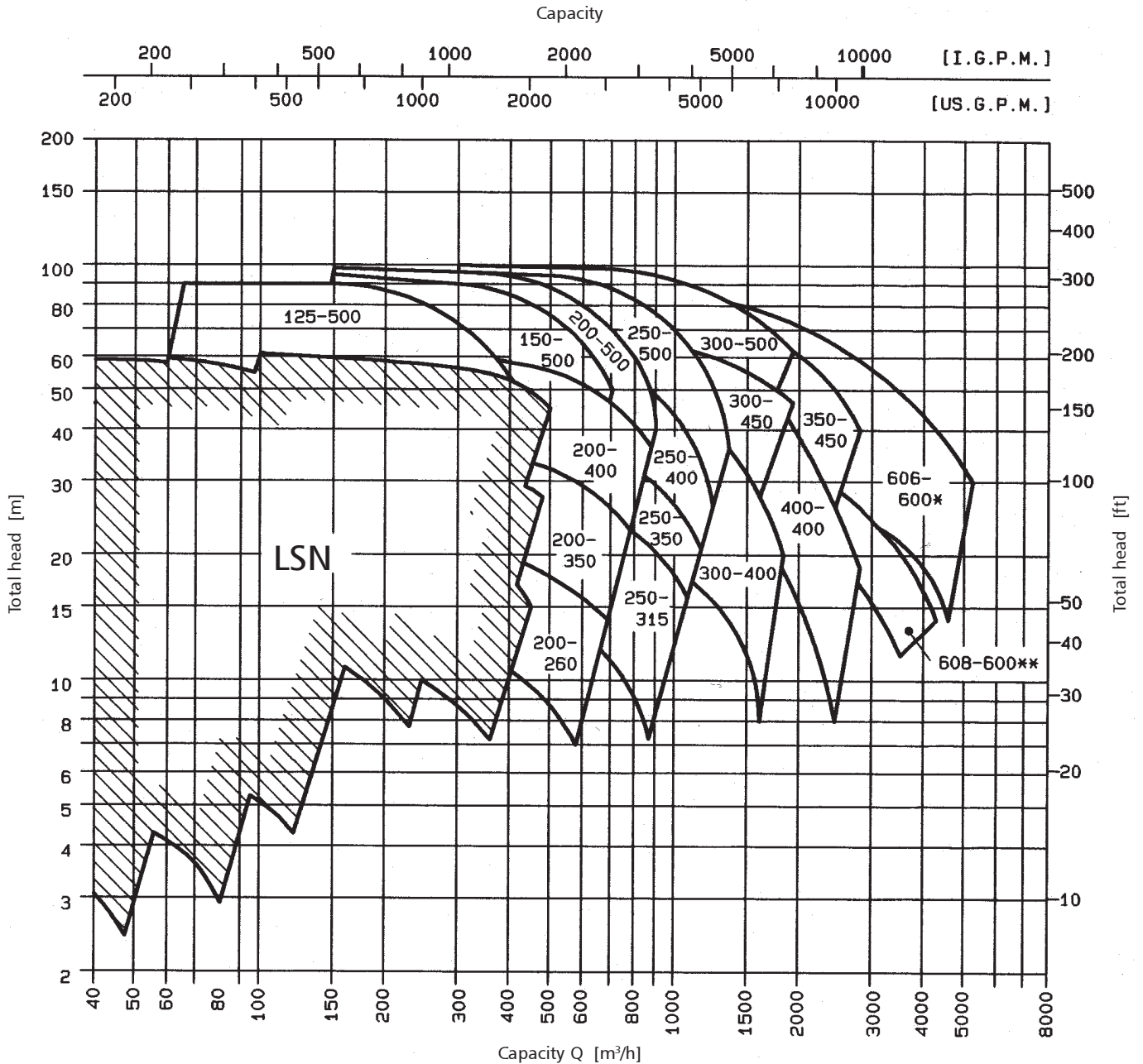
Mat. code	Impeller	Casing, Casing cover	Wear rings	Bearing frame	Shaft	Shaft sleeve
NL	Cast iron 0.6025	Ductile iron 0.7040	Cast iron 0.6025	Cast iron 0.6025	Stainless steel 1.4021	Stainless steel 1.4021
SL	Bronze CC480 K					
VL	Stainless steel 1.4408					
NF	Cast iron 0.6025	Carbon steel 1.0619	Duplex 1.4462/ 1.4517	Cast iron 0.6025	Stainless steel 1.4021	Stainless steel 1.4021
SF	Bronze CC480 K					
VF	Stainless steel 1.4408					
VV	Stainless steel 1.4408	Stainless steel 1.4408	Duplex 1.4462/ 1.4517	Cast iron 0.6025	Stainless steel 1.4021	Stainless steel 1.4021
WW	Duplex 1.4517	Duplex 1.4517				

Other materials upon request

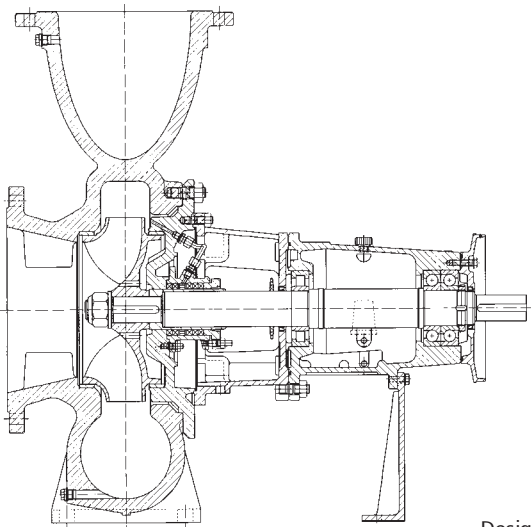
**VOGEL - Endsuction Pumps, Design LS**

Performance Range:

1450 r.p.m, 950 r.p.m, 750 r.p.m.



Design IC refer to brochures 7102.1.B, design LSN refer to brochures 1200.1.B.

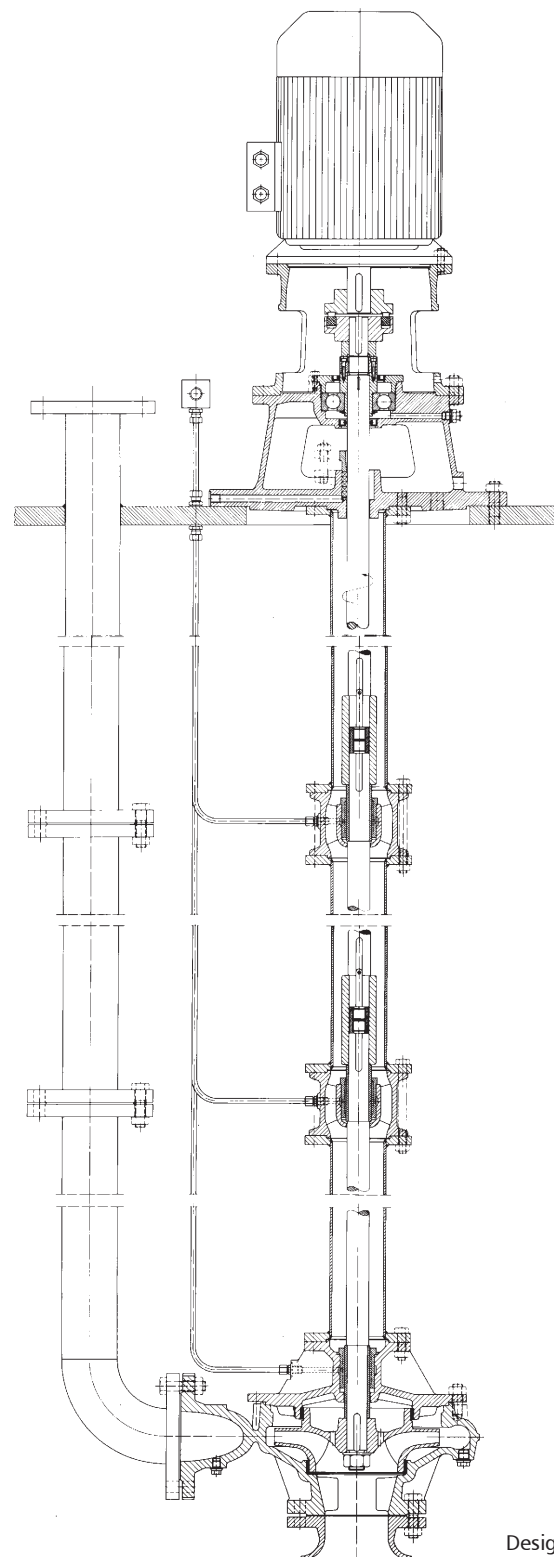
**VOGEL - Endsuction Pumps, Design LS**
**Design Variations:**


Design LS

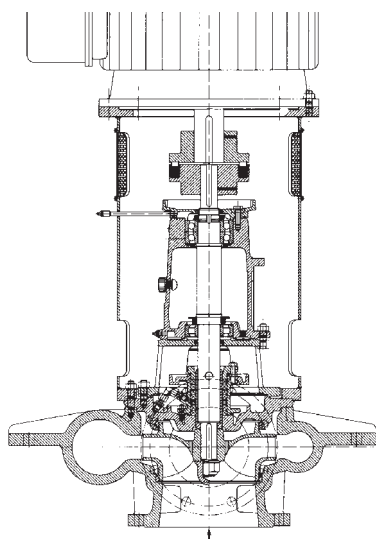
**Design LS:**

Horizontal single stage endsuction pump with closed impeller and oil lubricated bearing frame. Process design, back pull out for easy maintenance. Disassembly of impeller and bearing frame without dismantling of the pump casing and motor possible (spacer type coupling required). Suction branch axial, discharge radial upwards (optional horizontal possible).

Drive by electric motor and flexible coupling arranged on common base plate.



Design LT



Design LSV

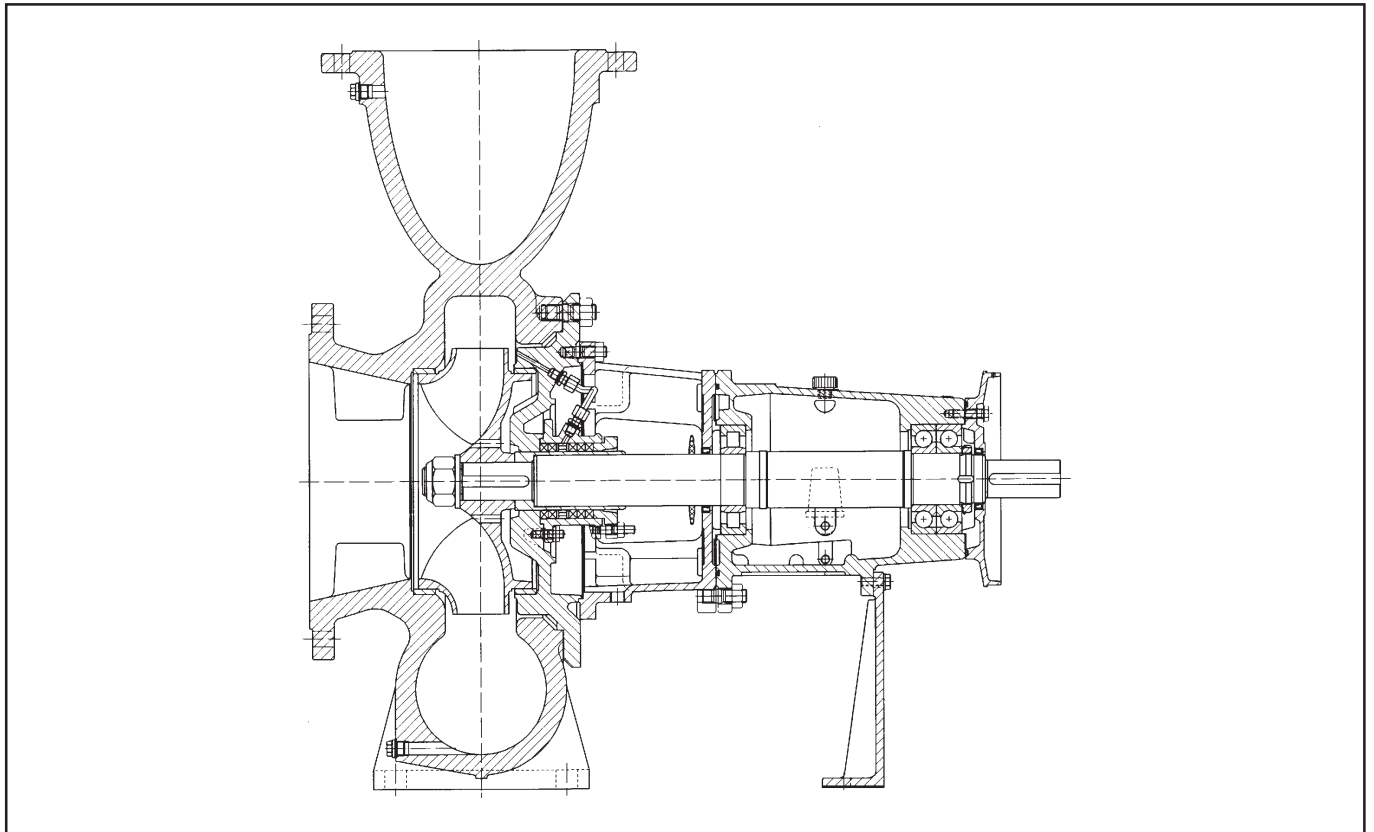
**Design LSV:**

Vertical design with short shaft for dry installation. Bearing frame with grease lubricated antifriction bearings. Motor/lantern welded design, drives IEC electric motors, design V1 and flexible coupling.

**Design LT:**

Vertical line shaft version. Bearing frame and motor above pit for dry installation. Pumpend flooded by the handled liquid. Radial bearings sleeve bearings lubricated by the handled liquid or with external clean water lubrication.

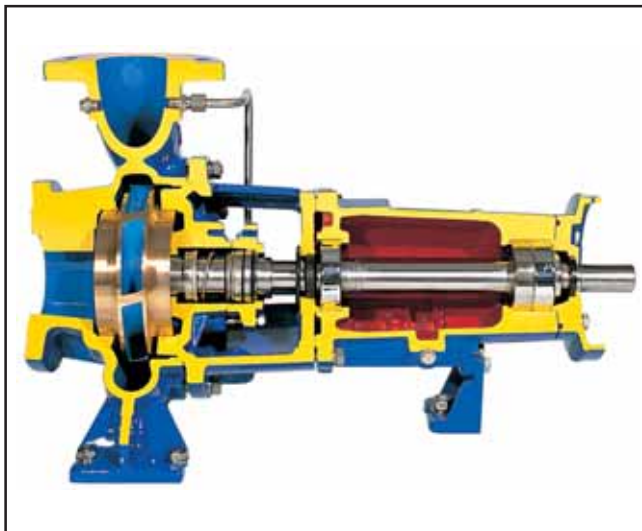
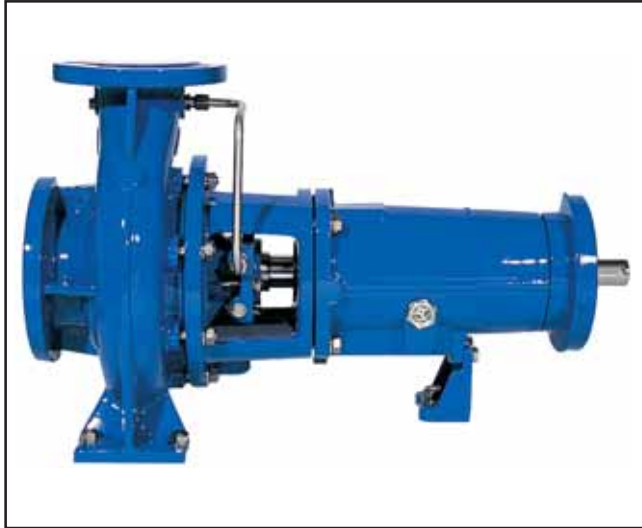
Installation length up to 10 m.

**VOGEL - Endsuction Pumps, Design LS**


- Horizontal single stage endsuction pump with closed impeller.
- Process design, back pull out for easy and safe maintenance. Disassembly of impeller and bearing frame without dismantling of the pump casing and motor possible (spacer type coupling required).
- Thrust bearing at drive side (pair of angular contact bearings) for high load capability in both directions, roller bearing at pump side.
- Solid shaft dimension for low shaft deflection and heavy duty oil lubricated bearings for continuous operation.
- For all stainless version dry shaft design, shaft and threads protected by closed impeller nut and shaft sleeve.
- Distance between bearings bigger than impeller overhung.
- Shaft sealing stuffing box with internal or external flush or cooled stuffing box. Mechanical seals acc. EN 12756 (DIN 24960), inner single mechanical seal, double mechanical seals or cartridge seals.

**VOGEL - Endsuction Pumps, Design LC, LCP**

Design LC casing foot mounted  
 Design LCP with centerline casing feet


**Performance Range:**

Capacity up to 2.800 m<sup>3</sup>/h (20.250 USgpm)  
 Head up to 100 m (330 feet)  
 Speed up to 1750 min<sup>-1</sup> (1750 r.p.m.)

**Sizes:**

DN 125 up to DN 400 (5" up to 24") discharge  
 Pumps size DN 32 up to DN 150 (1 1/4" up to 6")  
 refer to design ICP, brochure 7300.1.B.  
 design LSN, brochure 1200.1.B

**Temperature:**

Design LC max. 180°C (350° F)  
 Design LCP max. 210°C (410° F)

**Casing pressure:**

Design LC, LCP  
 max. 25 bar (360psig)

**Handled liquids:**

Clean and slightly contaminated liquids  
 (without bigger solids)  
 Cold and hot water  
 Condensate and deionate  
 Oil brine and acid

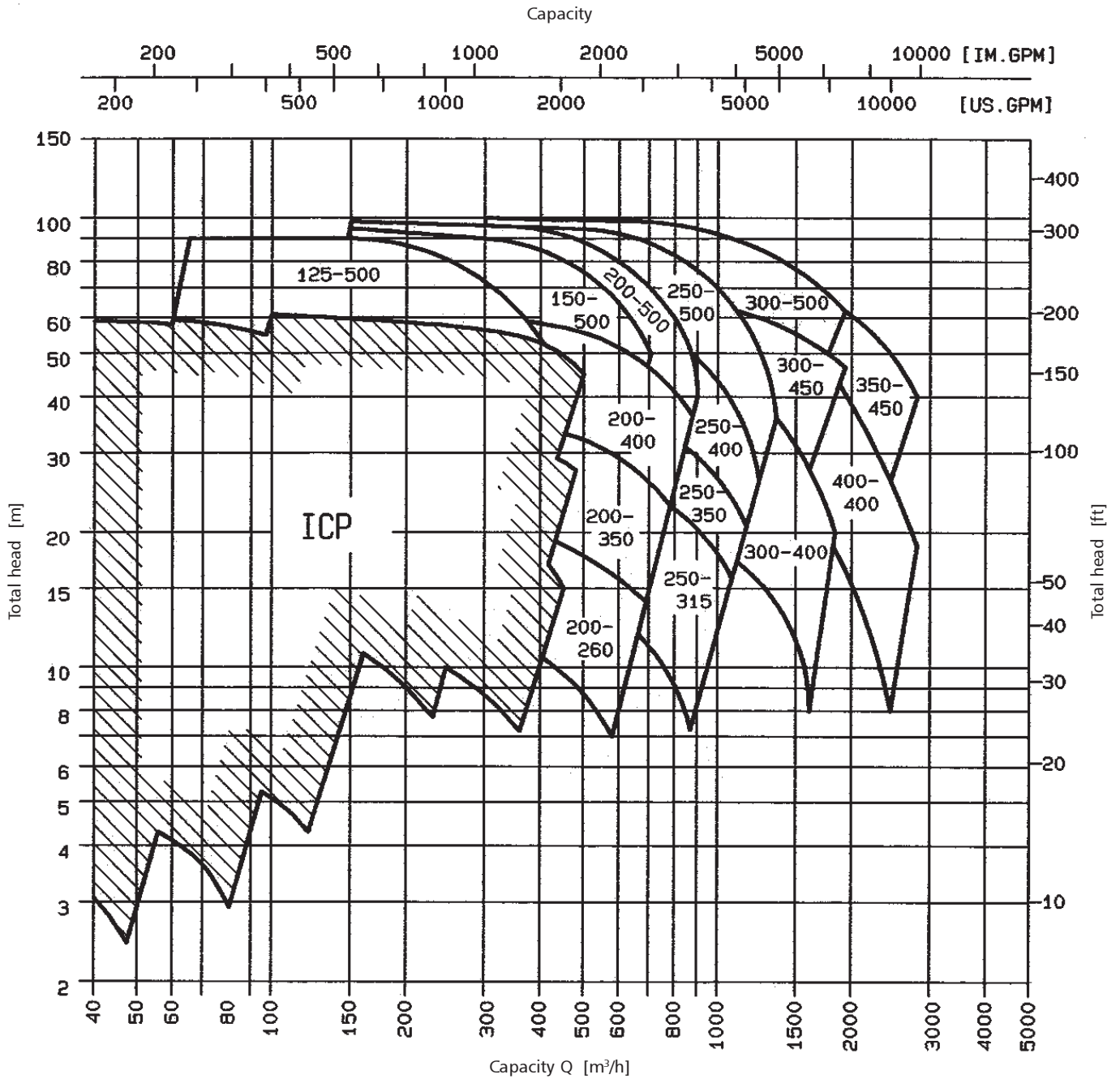
**Applications:**

General industry, power stations  
 District heating  
 Chemical industry  
 Sugar mills  
 Pulp and paper mills

**Materials:**

Mat. Code	Impeller	Casing, Casing cover	Wear rings	Bearing frame	Shaft	Shaft sleeve
NL	Cast iron 0.6025	Ductile iron 0.7040	Cast iron 0.6025	Cast iron 0.6025	Stainless steel 1.4021	Stainless steel 1.4021
VL	Stainless steel 1.4408					
NF	Cast iron 0.6025	Carbon steel 1.0619	Duplex 1.4462/ 1.4517	Cast iron 0.6025	Stainless steel 1.4021	Duplex 1.4462
VF	Stainless steel 1.4408					
VV	Stainless steel 1.4408	Stainless steel 1.4408	Duplex 1.4462/ 1.4517	Cast iron 0.6025	Stainless steel 1.4021	Duplex 1.4462
WW	Duplex 1.4517	Duplex 1.4517				

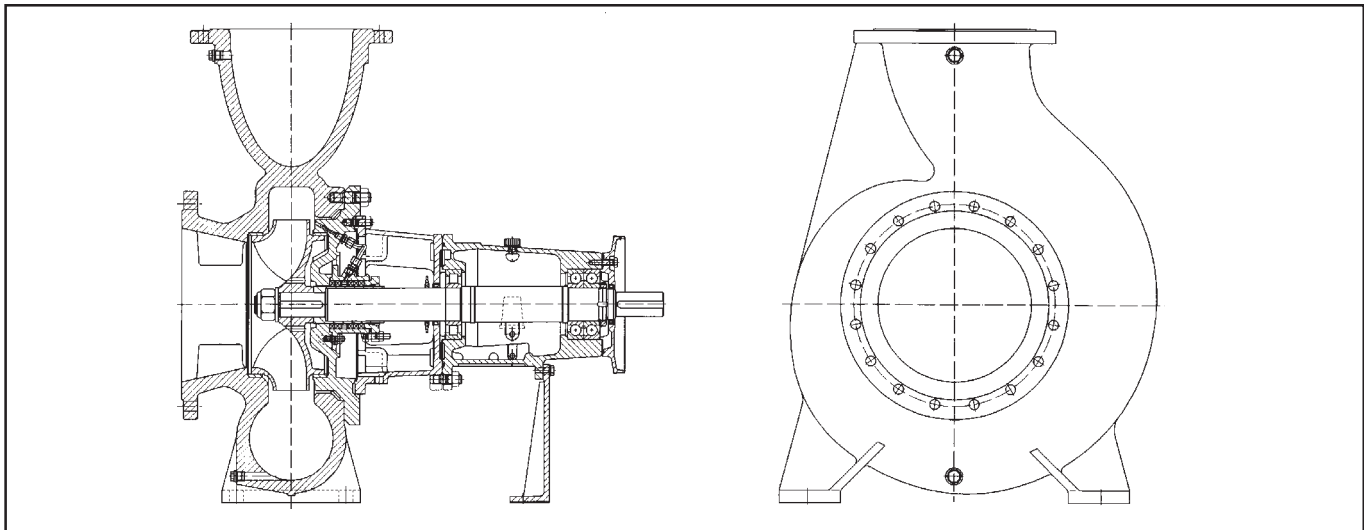
Other materials upon request

**VOGEL - Endsuction Pumps, Design LC, LCP**
**Performance Range:**
**1450 r.p.m, 950 r.p.m, 750 r.p.m.**


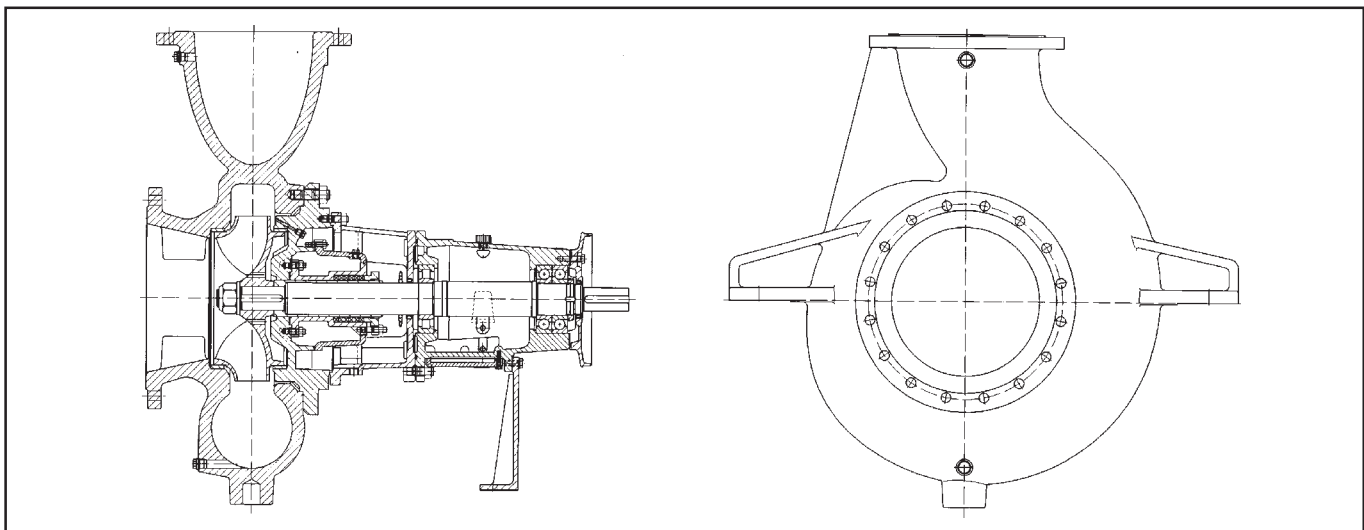
Design ICP refer to brochures 7300.1.B.

**VOGEL - Endsuction Pumps, Design LC, LCP**
**Design LC:**

Foot mounted casing design for operating temperatures up to max. 180°C (350°F) / 25 bar (360 psig).

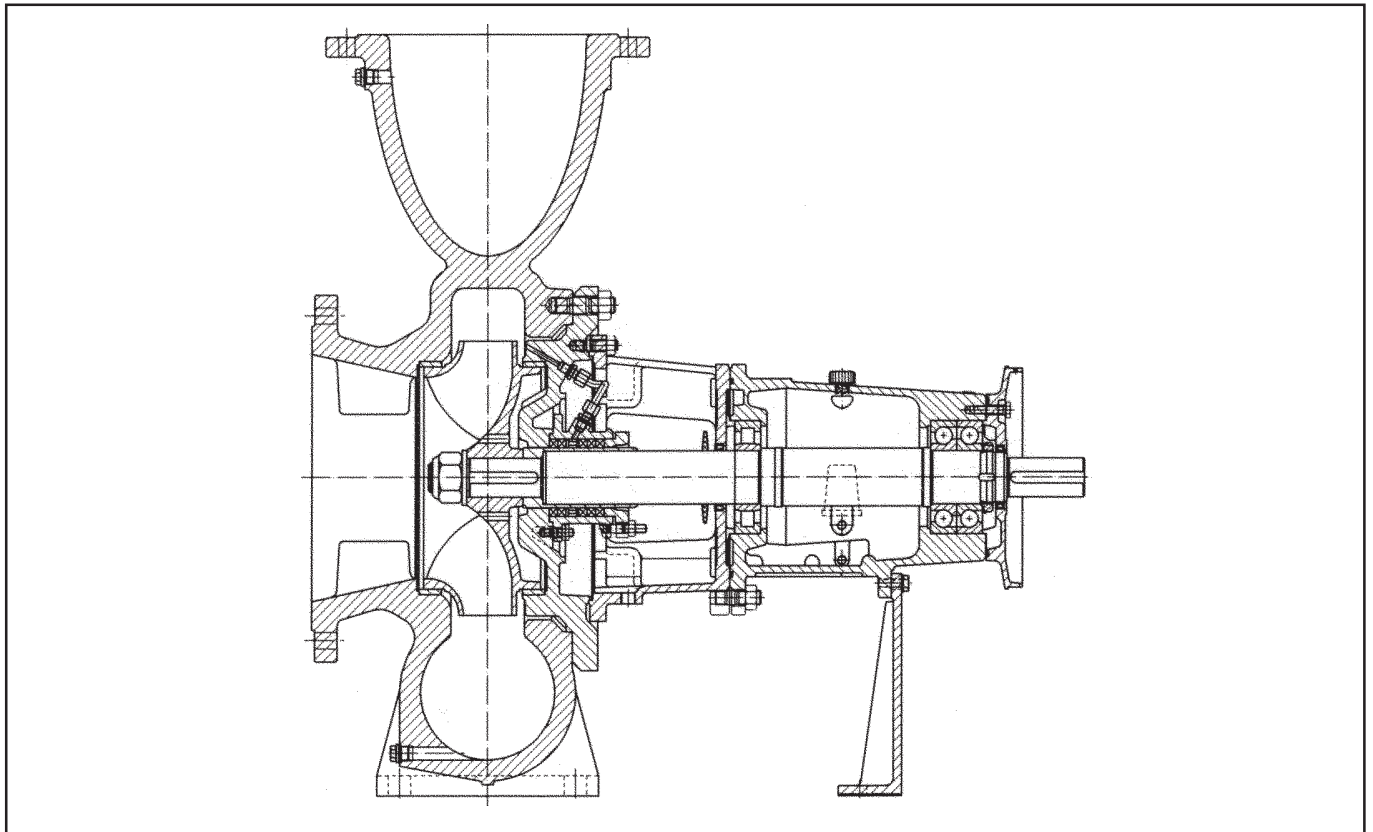

**Design LCP:**

Process design with centerline casing feet for operating temperatures up to max. 210°C (410°F) / 25 bar (360 psig).

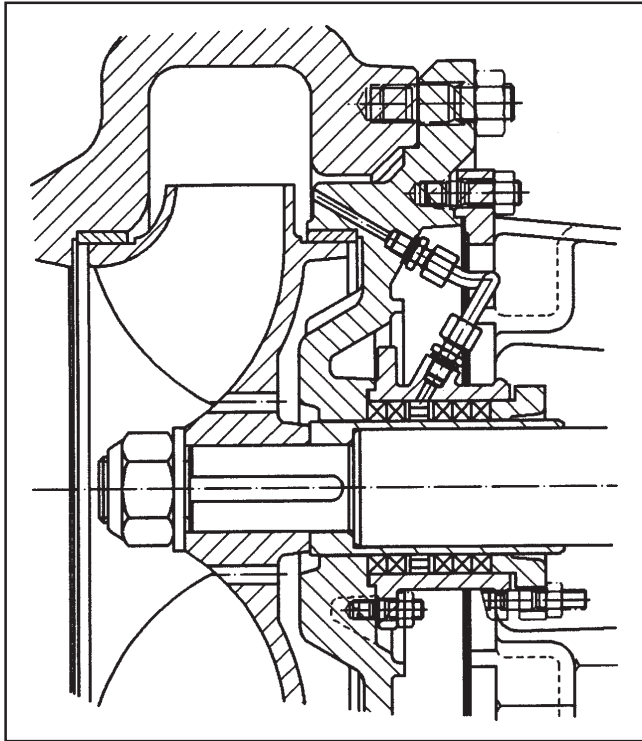


Due to the centerline casing feet and the additional support feet a negative influence on the coupling alignment caused by thermal expansion of the casing at high operating temperatures is avoided.

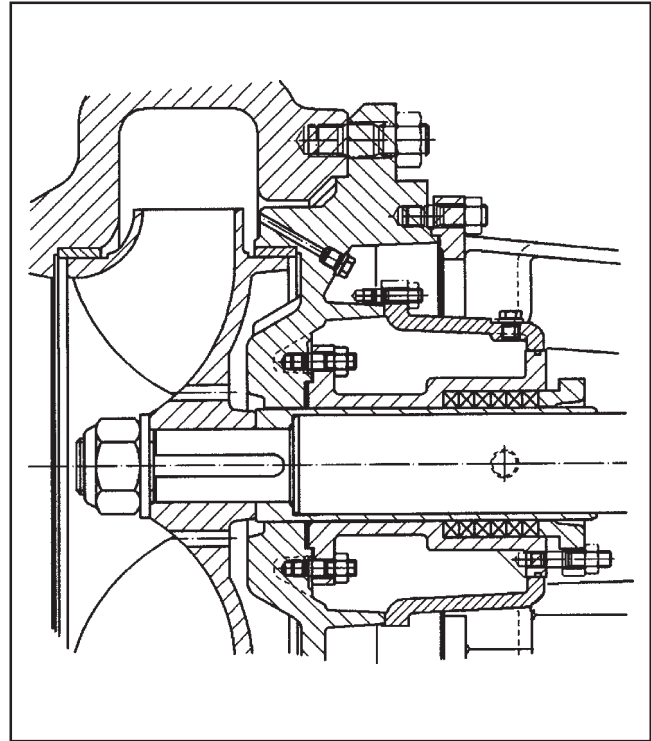
At operating temperatures above 180°C (350°F) oil sump cooling of the bearing frames is required.

**VOGEL - Endsuction Pumps, Design LC, LCP**


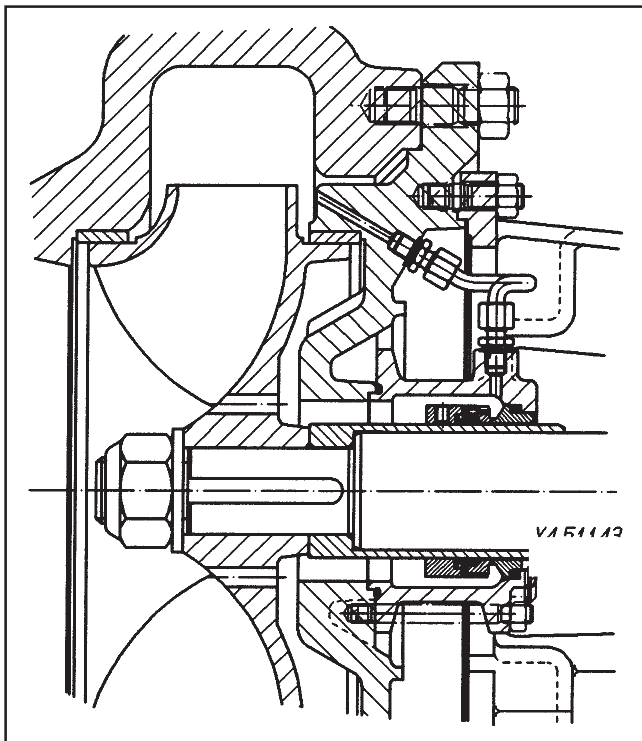
- Horizontal single stage endsuction pumps with closed impeller.
- Design IC with foot mounted casing for operating temperatures up to 180°C (350°F).  
Design LCP with centerline casing feet for operating temperatures up to 210°C (410°F).
- Process design, back pull out for easy and safe maintenance. Disassembly of impeller and bearing frame without dismantling of the pump casing and motor possible (spacer type coupling required).
- Thrust bearing at drive side (pair of angular contact bearings) for high load capability in both directions, roller bearing at pump side.
- Solid shaft dimension for low shaft deflection and heavy duty oil lubricated bearings for continuous operation.
- For all stainless version dry shaft design, shaft and threads protected by closed impeller nut and shaft sleeve.
- Distance between bearings bigger than impeller overhung.
- Shaft sealing stuffing box with internal or external flush or cooled stuffing box. Mechanical seals acc. to EN 12756 (DIN 24960), inner single mechanical seal, double mechanical seals or cartridge seals.

**VOGEL - Endsuction Pumps, Design LS, LC, LCP**
**Shaft sealing:**


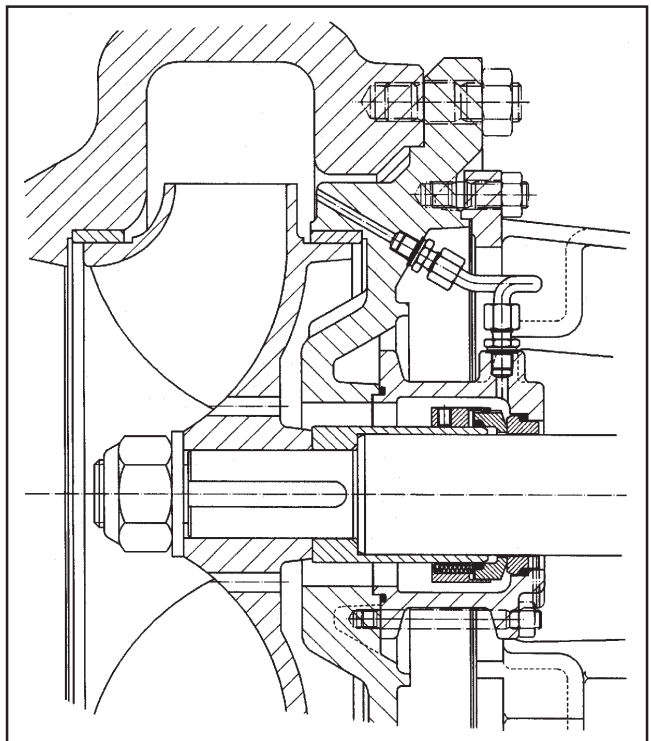
Design LS, LC, LCP  
 Stuffing box optional with internal  
 or external flush for  
 temperatures up to 140°C (280°F)



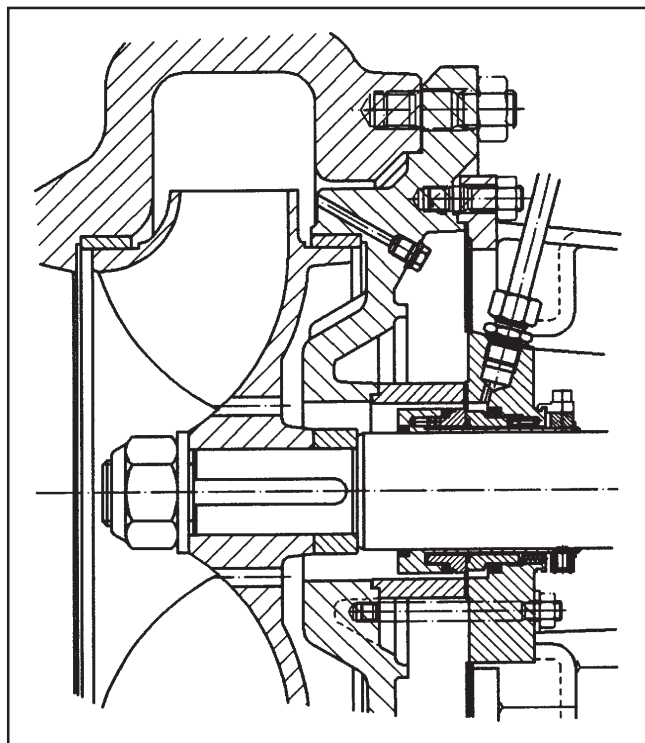
Design LS, LC, LCP  
 Stuffing box with cooling jacket  
 for temperatures up to 180°C (350°F)



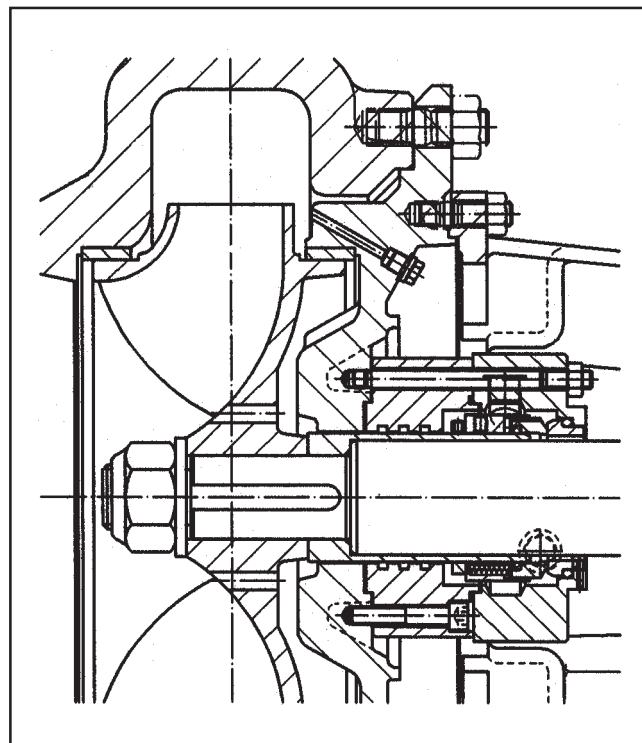
Design LS  
 Single mechanical seal  
 acc. to EN 12756 (DN 24960) unbalanced



Design LS, LC, LCP  
 Single mechanical seal  
 acc. to EN 12756 (DN 24960) balanced

**VOGEL - Endsuction Pumps, Design LS, LC, LCP**
**Shaft sealing:**


**Design LS, LC, LCP**  
 Cartridge seal single  
 Optional single with quench and double  
 seals available



**Design LS, LC, LCP**  
 Single balanced mechanical seal  
 in „dead end“ configuration  
 for hot water applications

**Pumpenfabrik ERNST VOGEL GmbH**

**A-2000 Stockerau**

Ernst Vogel-Straße 2

Telefon: +43-2266-604

Telefax: +43-2266-65311

E-Mail: [info@vogel.itt.com](mailto:info@vogel.itt.com)

[www.vogel-pumpen.com](http://www.vogel-pumpen.com)

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.

Liste 1300.1.B

12/2006-e



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