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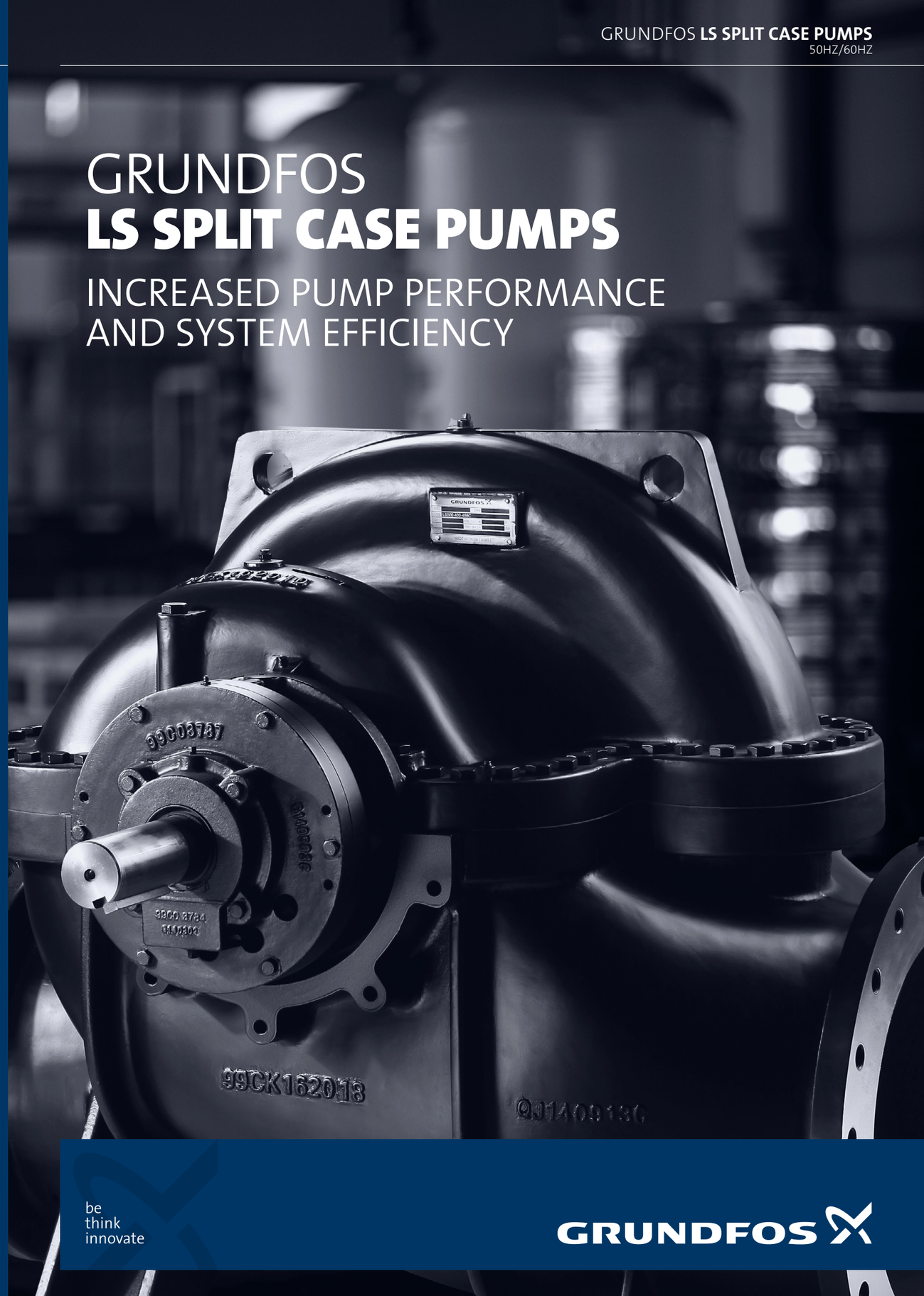
98862660 0818/RS/4010661-BrandBox

GRUNDFOS Holding A/S
Poul Due Jensens Vej 7
DK-8850 Bjerringbro
Tel: +45 87 50 14 00
www.grundfos.com

GRUNDFOS

GRUNDFOS
LS SPLIT CASE PUMPS

INCREASED PUMP PERFORMANCE AND SYSTEM EFFICIENCY



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GRUNDFOS

HIGH EFFICIENCY SPLIT-CASE PUMPS

GRUNDFOS LS LONG-COUPLED, HORIZONTAL SPLIT-CASE, DOUBLE SUCTION PUMPS, ARE SINGLE-STAGE, NON-SELF-PRIMING, CENTRIFUGAL VOLUTE PUMPS.

The LS pumps are designed for three segments applications and manufactured according to the highest Grundfos quality standards. These high efficiency pumps have a wide efficiency range and very low NPSHr, which ensures safe and economic operation even when the actual flow deviates from the designed duty point.

APPLICATIONS

BUILDING SYSTEM:

- AIR CONDITIONING
- HEATING SYSTEMS
- CHILLED WATER SYSTEM
- WATER CONDENSING SYSTEM
- COOLING TOWERS
- DISTRICT ENERGY

INDUSTRY:

- INDUSTRIAL PROCESS SYSTEM
- INDUSTRIAL HEATING
- BOILER FEED SYSTEM
- INDUSTRIAL CONDENSING SYSTEM
- SEAWATER DESALINATION

WATER SUPPLY:

- WATER INTAKE
- WATER BOOSTING
- WATER TRANSPORTATION
- BACKWASHING
- IRRIGATION

QUALITY DESIGN AND VERSATILE

Grundfos LS pumps are in-line design with a radial suction port and radial discharge port. The flanges are in accordance with DIN standard. Pump performance is in accordance with ISO9906 G2.

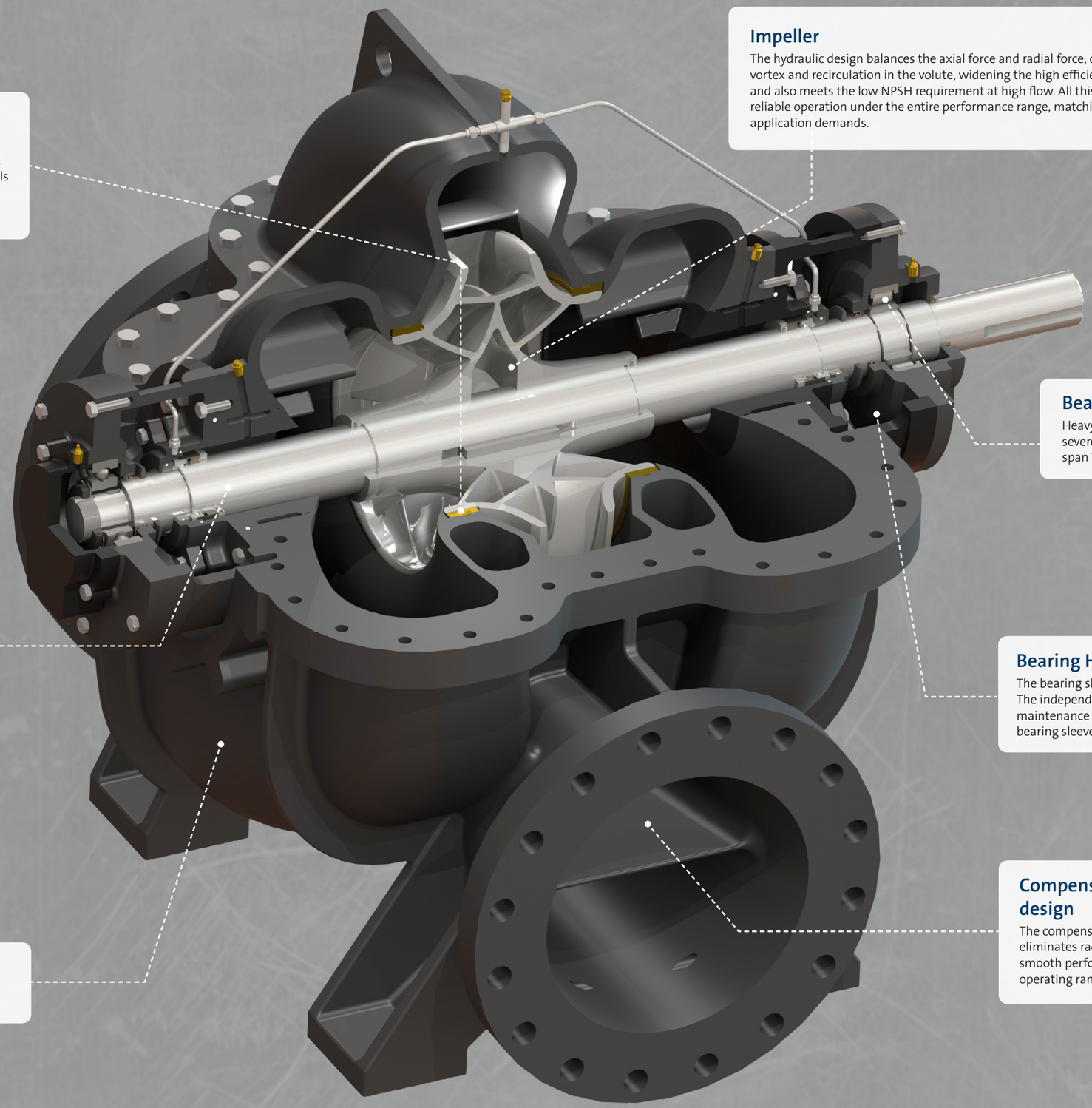
High efficiency
LS pumps have a very high efficiency, not only at the rated flow but also within a wide flow range. The pump retains high efficiency even when the actual flow deviates by +/-20% of rated flow. The feature enables the system to operate at high efficiency when pumps have to operate in parallel, which fits precisely the specific application at the different segments, variable duty points and wide demands for flow range.

Double volute design
The compensated double-volute design virtually eliminates radial forces on the shaft and ensures smooth performance throughout the entire operating range.

Low NPSHr
NPSHr of the LS pumps at rated point is about 5m and this fits most customer demands. In addition, Grundfos provides customised solutions for special requirements.

WHAT MAKES THE LS PUMP SO GOOD

THE DETAILS



Wear ring

Replaceable wear ring design helps to solve the efficiency drop problem after long-term operation. The wear ring can be made from different materials according to customer requirements and the application.

Impeller

The hydraulic design balances the axial force and radial force, decreases the vortex and recirculation in the volute, widening the high efficiency range, and also meets the low NPSH requirement at high flow. All this ensures reliable operation under the entire performance range, matching different application demands.

Bearing

Heavy duty bearing design is for the most severe environments, with average rated life span 100,000 hours.

Shaft

The strength and stiffness of the shaft are strictly calculated to withstand the stress under the harshest operating conditions.

Bearing Housing

The bearing sleeve design makes maintenance easier. The independent bearing housing design enables the maintenance without interfering pump casing and bearing sleeve design makes service even easier

Pump casing

The split-casing enables maintenance of rotating parts without disturbing the pipe lines.

Compensated double volute design

The compensated double-volute design virtually eliminates radial forces on the shaft and ensures smooth performance throughout the entire operating range.

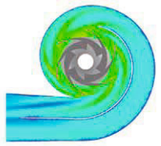
SOLUTION TOOLS FOR OPTIMISED APPLICATION

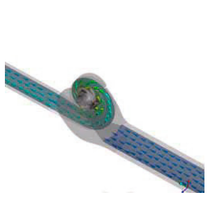
GRUNDFOS USES A RANGE OF SOLUTION TOOLS THAT RESOLVE ISSUES ALREADY AT THE DESIGN STAGE, AND THAT INCREASE PUMP PERFORMANCE AND SYSTEM EFFICIENCY WHEN IN OPERATION, OPTIMISING YOUR APPLICATION.

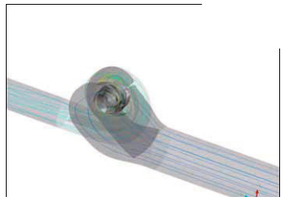
Computational fluid dynamics

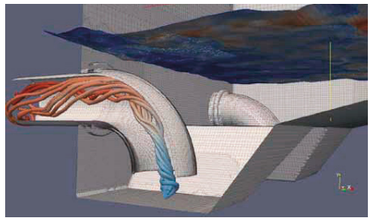
The LS pump's hydraulic components are designed using advanced Computational fluid dynamics (CFD) simulations and the expertise built up by Grundfos over many years. At Grundfos, we use CFD simulations to minimise the risks and cost and time overruns with the design. This is done by:

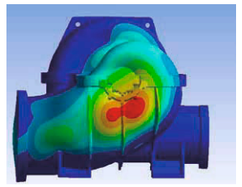
1. Improving the flow system design
2. Identifying critical flow issues and the cause of existing problems
3. Reducing the cost comparing with the investment for physical modelling











LS PUMP DATA

PUMP CONFIGURATIONS

	Standard configuration	Optional configuration
Pump casing	Cast iron	Ductile cast iron / Stainless steel
Impeller	Stainless steel	Bronze / Duplex stainless steel
Shaft	Stainless steel	Duplex stainless steel
Sleeve	Non-Sleeve version	Stainless Steel/Bronze
Wear ring	Bronze	Brass/Cast Iron/Stainless
Shaft seal	Mechanical shaft seal	Stuffing box
Flushing line	Stainless steel	Bronze / Teflon
Low voltage motor	IE3	IE2, IE4
High voltage motor	6 kV, 10 kV	–
Pump direction of rotation	Clockwise and Counter Clockwise	

LS PUMP DATA

Performance area for the LS Split Case Pumps

Motor power:	1.1 – 2240 kw
Flow (Q):	up to 12,000 m3/h
Head:	8 - 210 m
Liquid temperature:	0 - 100° C
Suction port :	DN65 – DN1200
Discharge port:	DN50 -DN800
Operation pressure:	8bar – 25bar
Max. hydraulic efficiency:	91.5 %

Variant delivery type

- Bare shaft pump with common base frame
- Bare shaft pump with separate base frame
- Bare shaft pump without base frame