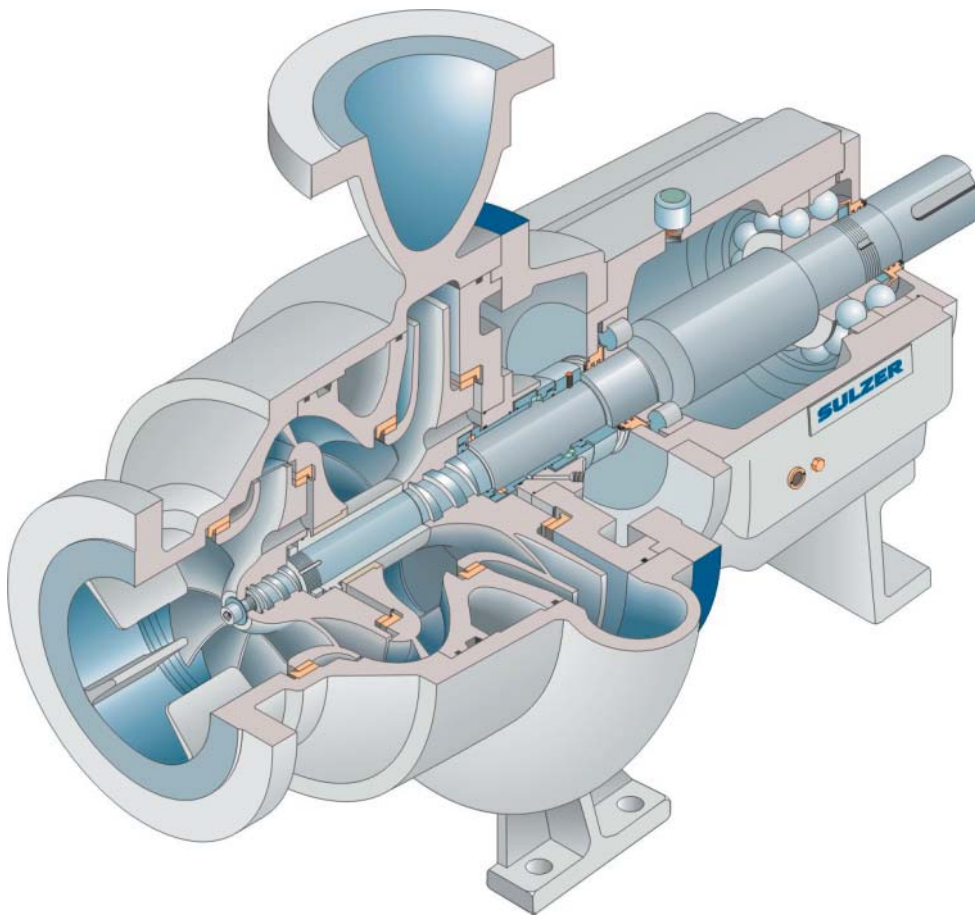


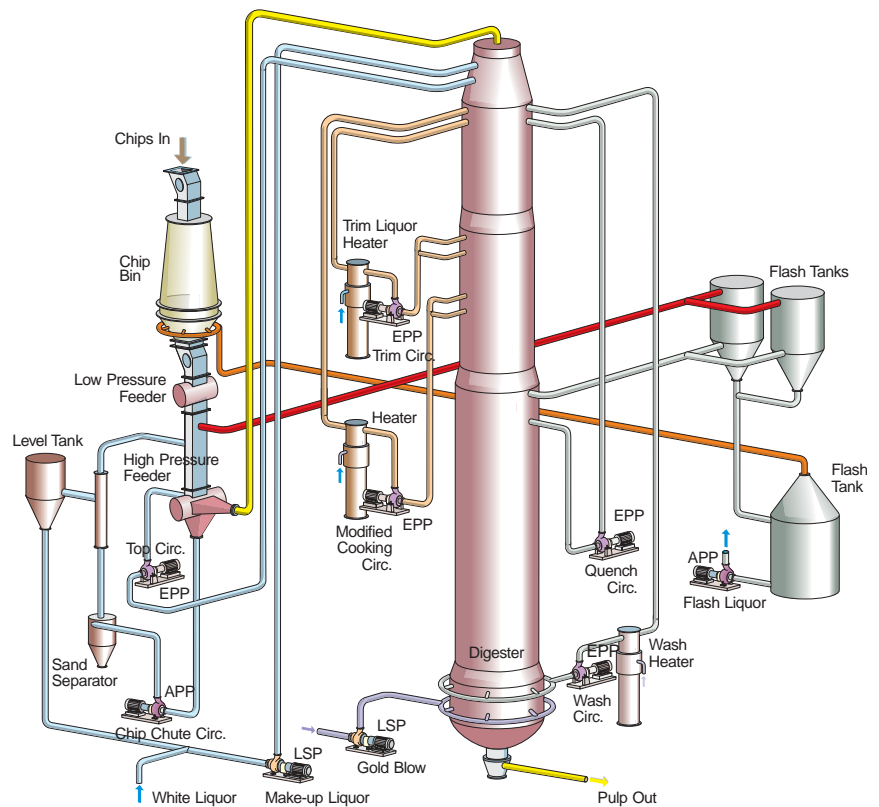
LSP Low Speed High Pressure Pumps



Pumps specially made for digester service

Sulzer Pumps is strongly involved in the pulp and paper industry. We have designed, built and run digesters ourselves and today we supply complete systems and equipment for this industry.

Sulzer Pumps has been manufacturing pumps for over 100 years. Sulzer pumps are running in most of the continuous digesters all around the world. This is why we know the hard conditions and the tough requirements related to pump applications in pulp cooking.



Manufacturing quality

Sulzer Pumps has manufacturing and packaging facilities in 14 countries all over the world and representation in over 150 countries. We also have 50 customer support service centers to serve our customers.

Manufacturing quality starts with the design and manufacture of patterns by CAD-CAM systems and with precise castings from our own foundries. Furthermore, Flexible Manufacturing Systems assure consistently high quality of our products.

An effective quality control procedure includes pressure testing of the casing and a pump test run in the factory test loop. All important performance data, such as flow, head and efficiency are checked. Customers are welcome to witness these tests at our factories.

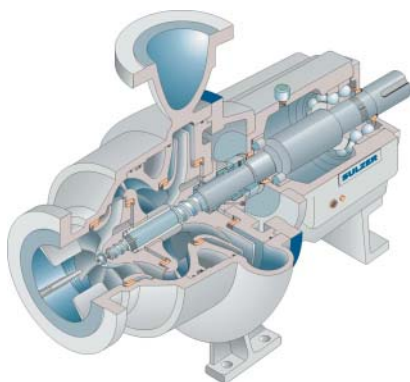


Complete line of pumps for the pulp and paper industry

Sulzer Pumps can supply almost all types of pumps needed in digester service; stock and process pumps, liquor pumps and high pressure pumps. These pumps together with other pump lines, like wear resistant non-clog slurry pumps and low-pulse fan pumps for demanding paper machine headbox

service, offer you the most complete pump program available. Good parts interchangeability within the different pump groups will guarantee a reliable and low cost spare parts inventory. LSP pumps are also well suited for replacing high speed pumps in digester service.

Sulzer Pumps has manufacturing plants in several countries and a worldwide sales and service network. Pumps and spare parts are stocked at various locations for quick and reliable deliveries.

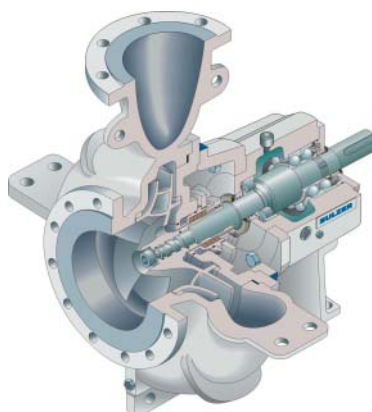


LSP Low Speed High Pressure Pump

for continuous digester feed has a two-stage, end suction, horizontally mounted back pull-out design.

Capabilities

- to 220 m head
- to 300 l/s capacity
- to 180 °C temperature

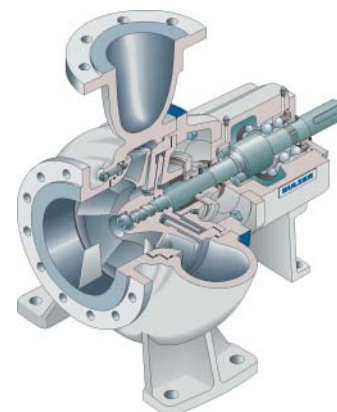


AHLSTAR™ EPP Digester Pump

where the system pressure is high and pressure/temperature shocks occur.

Capabilities

- to 140 m head
- to 1700 l/s capacity
- to 210 °C temperature



AHLSTAR™ APP Process Pumps

for all normal pumping applications in digester service.

Capabilities

- to 160 m head
- to 2000 l/s capacity
- to 180 °C temperature

Design Features and Benefits

Hard-coated wear rings and sleeves protect the casing and impeller against wear for long operational life while maintaining high efficiency. Press fitted to the casing.

The self-venting, top centerline casing prevents air-lock in the top of the casing. The casing also has a 3 mm corrosion allowance for longer operational life.

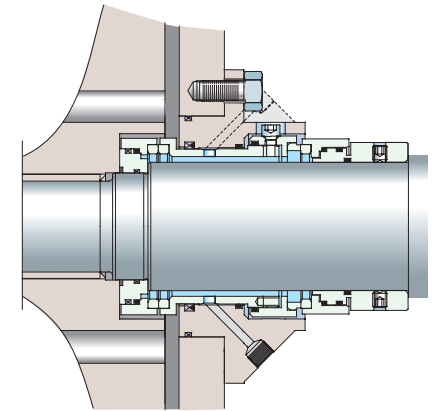
The LSP pump's low speed operation gives it a considerably longer operational life than that of a corresponding high-speed pump. This means increased reliability with less breakdowns and reduced maintenance costs.

Simplified heavy duty bearing unit design, no adjustments needed. Oil or grease lubrication. Uses the same bearing units as AHLSTAR™ pumps APP, EPP, NPP, WPP, ARP and ASP (except the shaft) reducing spare parts inventory.

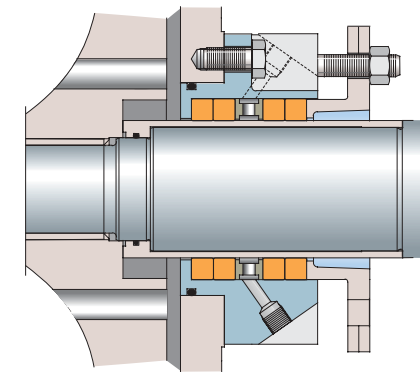
Seal Fittings

Mechanical seals and packings fit the same casing cover reducing spare parts inventory and giving maximum interchangeability.

Ready-fitted mechanical seals designed to be a part of the pump assuring more reliable operation with reduced wear.

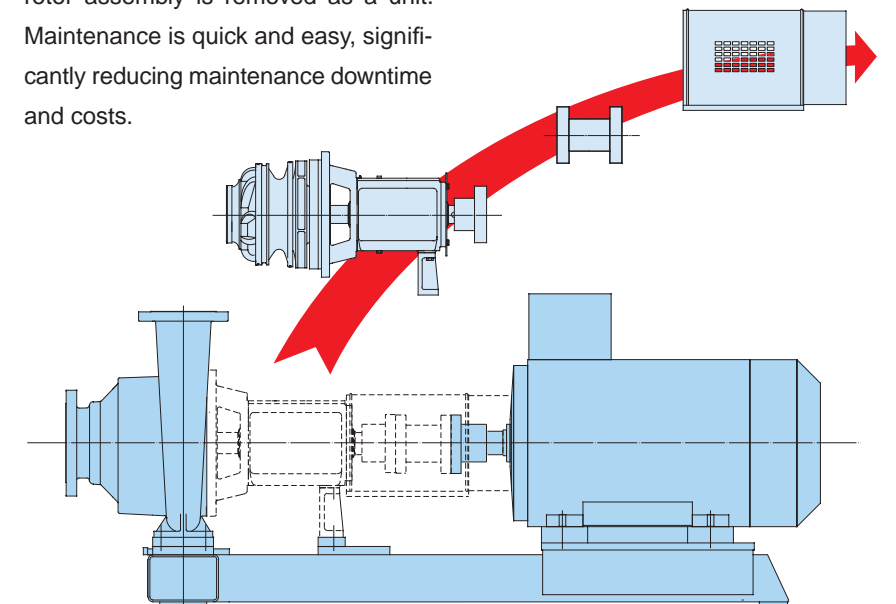


Prepressed packings and split stuffing box gland provide easier service and quicker change of packings.



Back Pull-Out Design

The pump can be opened for inspection without disturbing the piping when the rotor assembly is removed as a unit. Maintenance is quick and easy, significantly reducing maintenance downtime and costs.



Closed impellers provide high efficiency and low NPSHr values. Axial forces are balanced with wear rings and balancing holes resulting in longer bearing life.

Non-contacting bearing protection with the combined advantages of labyrinth ring, deflector and lipseal for long bearing life. Lipseal protects in standstill position.

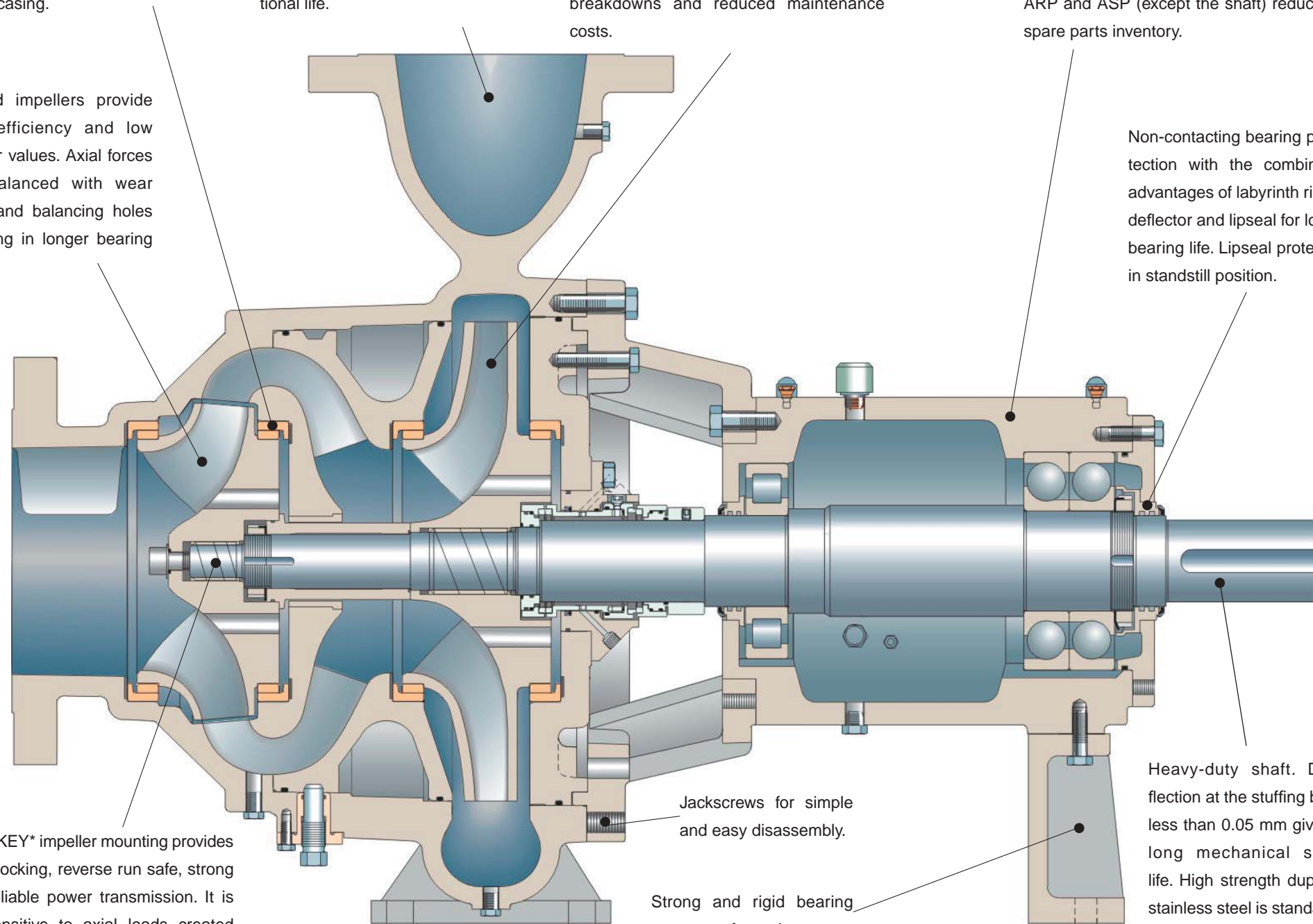
Heavy-duty shaft. Deflection at the stuffing box less than 0.05 mm giving long mechanical seal life. High strength duplex stainless steel is standard shaft material.

Jackscrews for simple and easy disassembly.

Strong and rigid bearing support foot improves mounting stability.

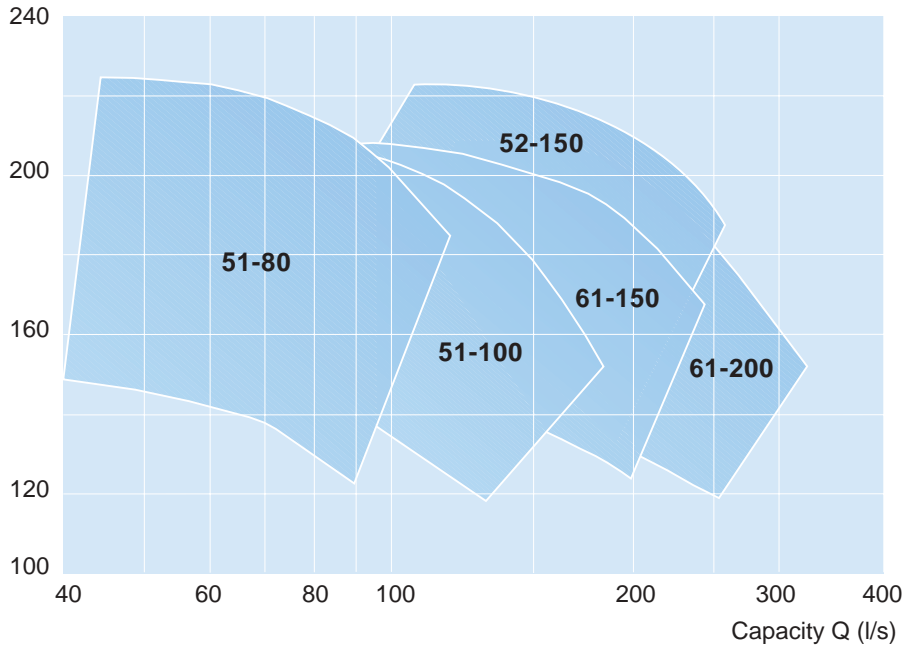
ROTOKEY* impeller mounting provides a self-locking, reverse run safe, strong and reliable power transmission. It is not sensitive to axial loads created during pump operation.

*US Patent 4,863,353



Performance Data

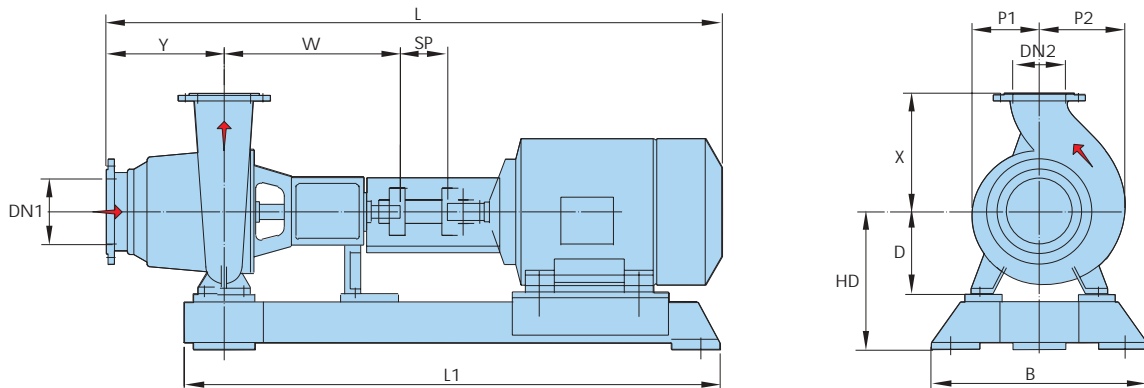
Head H (m)



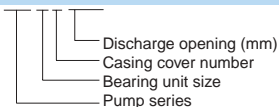
Technical data

Capacity	300 l/s
Head	220 m
Pressure	max 2.5 MPa (25 bar)
Temperature	max 180 °C
Speed	to 1800 rpm
Lubrication	oil or grease

Main Dimensions



Type	DN ₁	DN ₂	Y	W	D	X	P1	P2	SP _{min}	HD*	L*	B*	L1*	Weight kg
LSP51-80	200	80	450	790	400	500	320	370	300	770	3120	1160	2850	1280
LSP51-100	200	100	450	790	400	500	340	380	300	770	3120	1160	2850	1290
LSP52-150	250	150	560	790	450	630	385	440	300	770	3230	1160	2850	1290
LSP61-150	250	150	500	900	400	500	350	410	300	770	3280	1160	2850	1475
LSP61-200	250	200	500	900	400	560	350	410	300	770	3280	1160	2850	1490



All dimensions in mm.
 * Dimensions for the biggest motor normally used.
 Weight without coupling and motor.
 NOTE! Dimensions not to be used for construction.

Materials

Name of part	Stainless steel design	
Volute casing	Duplex Stainless Steel	ASTM A 890 Grade 3A*
Casing cover	Duplex Stainless Steel	ASTM A 890 Grade 3A*
Diffuser	Duplex Stainless Steel	ASTM A 890 Grade 3A*
Impeller	Duplex Stainless Steel	ASTM A 890 Grade 3A*
Shaft	Duplex Stainless Steel	SS2324**
Wear ring	Duplex Stainless Steel	ASTM A 890 Grade 3A* (Hard coated HBN720)
Shaft sleeve	Duplex Stainless Steel	SS2324**
Distance sleeve	Duplex Stainless Steel	ASTM A 890 Grade 3A* (Hard coated HBN720)

Other materials can be delivered on request.

Chemical composition (%)					
	C _{max}	Cr	Ni	Mo	N
*	0.06	24-26	4-6	1.75-2.50	0.15-0.25
**	0.10	23-27	4.5-7	1.30-1.80	–
(comparable to AISI 329)					



Check our worldwide offices at
www.sulzerpumps.com