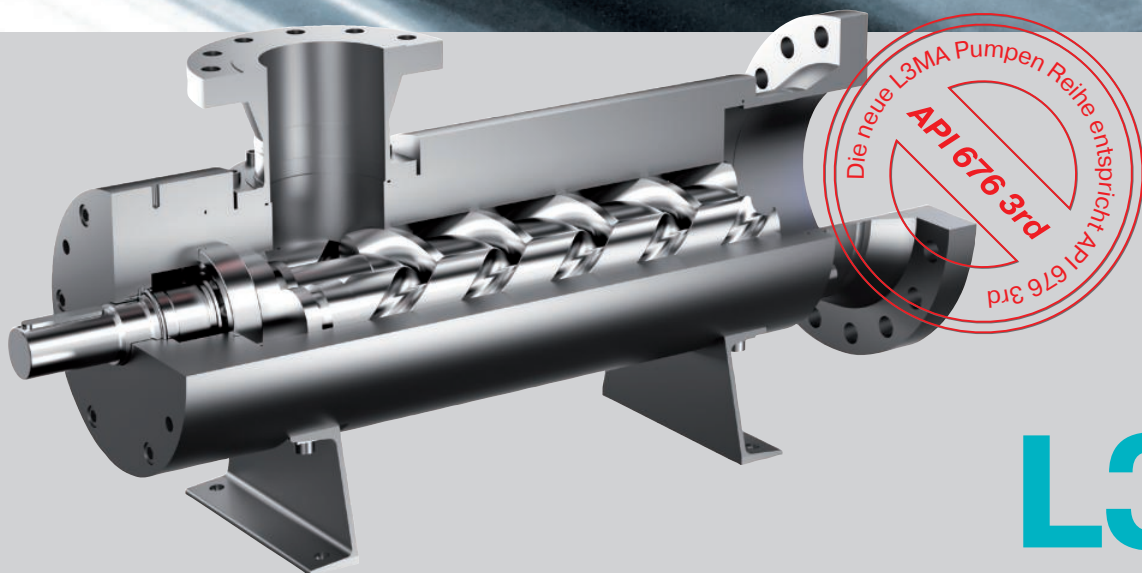
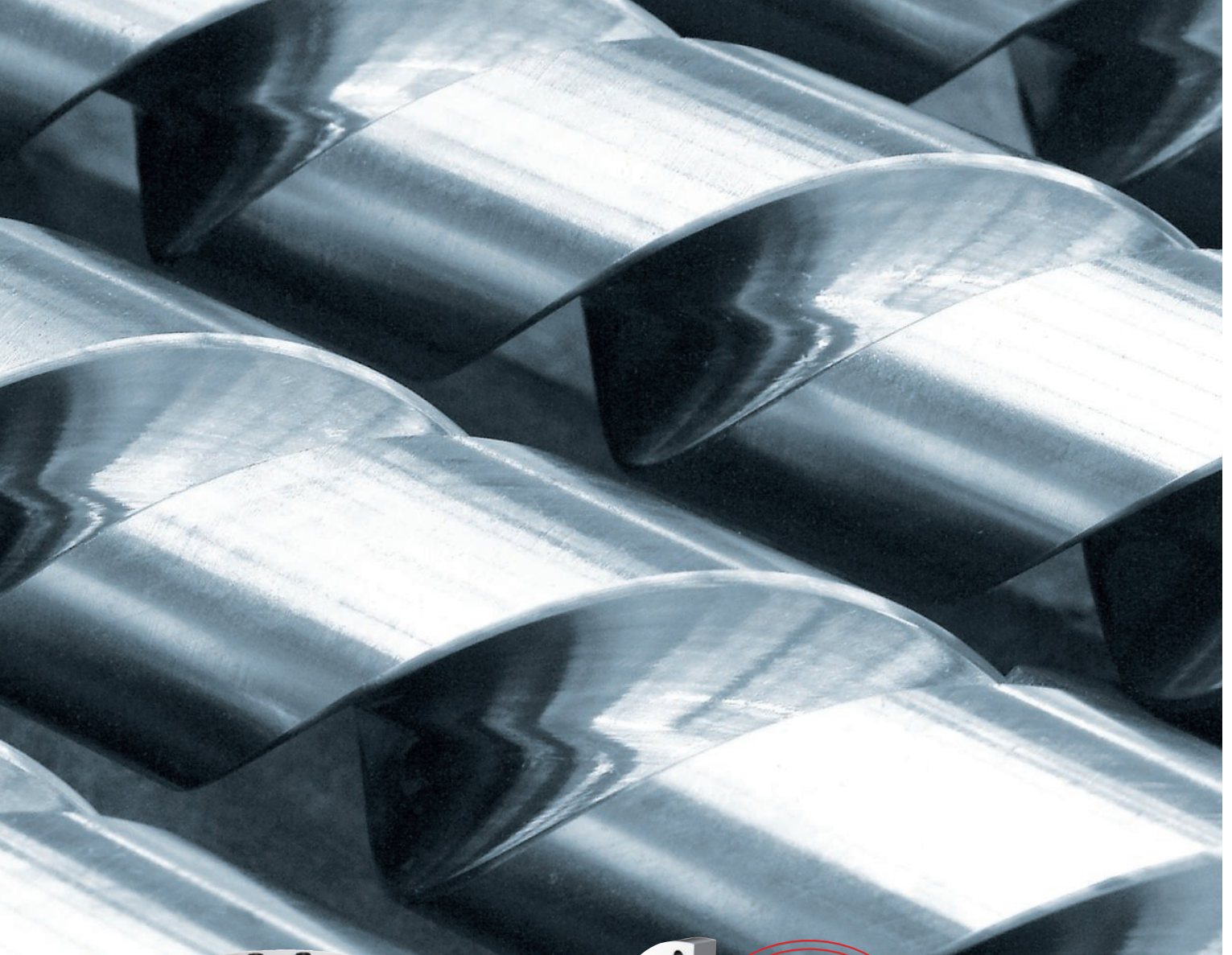


**Leistritz**

LEISTRITZ PUMPEN GMBH

***Leistritz Screw Pumps & Systems***



**L3MA**



# Leistritz Screw Pumps and Systems, Design

## Leistritz Screw Pumps and Systems

Leistritz Pumpen GmbH, with its headquarters in Nuremberg/Germany, has been producing Screw Pumps since 1924. The first Leistritz Screw Pump was developed by Paul Leistritz as Main Lube Oil Pump for bearings of steam turbine generator sets.

Today Leistritz offers the widest product range of Screw Pumps with solutions from bare shaft pumps to complete pump packages, which makes us a perfect partner for the pumping industry.

### DESIGN

The new L3MA pump is an API 676 compliant Triple Screw Pump. It has no separate steel casing with an internal liner for the screw spindles to run in. Due to the use of a new spindle material it is possible to have the spindles run directly in a steel casing, which avoids an expensive construction with a coating in the liner.

Only three static seals, executed as O-ring seals instead of flat gaskets, are used. This eliminates the risk of leakage due to insufficient compressed flat gaskets.

As the rotors are hydro-dynamically balanced, no thrust bearings are required.

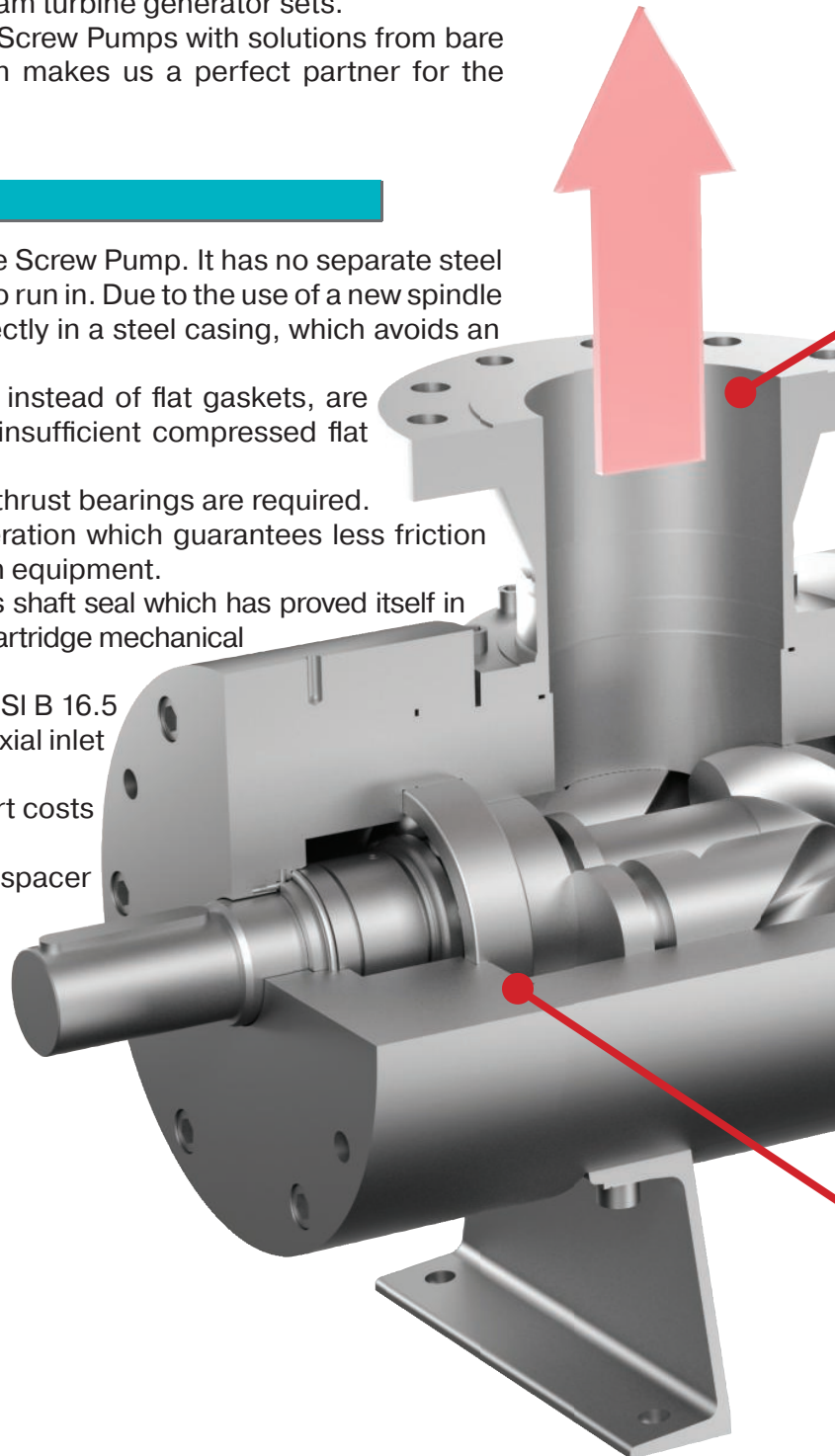
This also leads into a vibration/pulsation free operation which guarantees less friction losses, less pipe stress and no load to downstream equipment.

A single acting mechanical seal has been chosen as shaft seal which has proved itself in thousands of applications. As an option an API 682 cartridge mechanical seal is available.

Suction and discharge flanges are according to ANSI B 16.5 class 300 lbs. The flange locations are defined as axial inlet and top side discharge.

Such compact design will help to reduce spare part costs and reduces maintenance time.

Full assemblies with motor and baseplate and spacer coupling are available as an option.

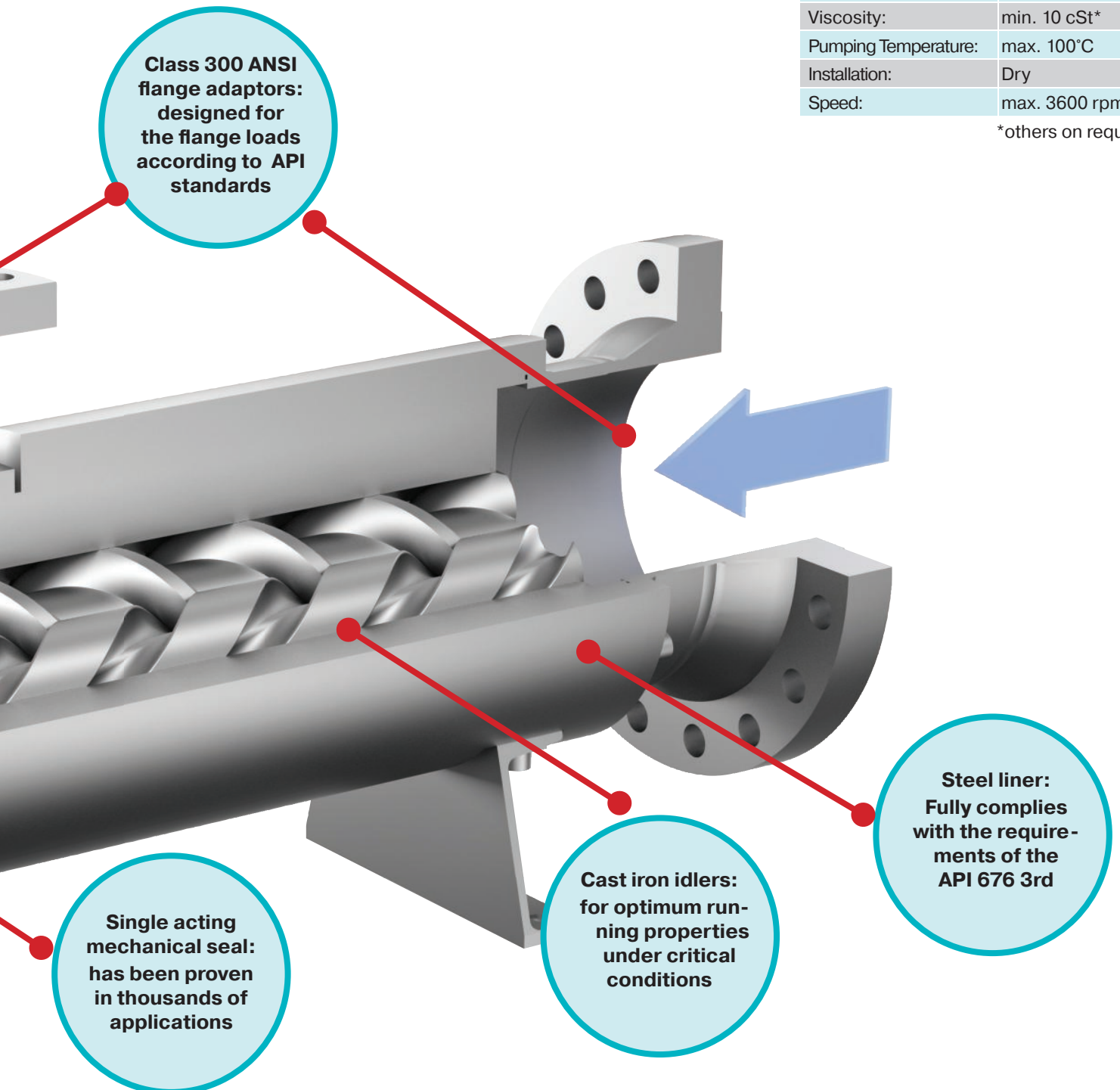


## User Advantages, Materials and Performance Data

### PERFORMANCE DATA

Capacity:	up to 276 m <sup>3</sup> /h
Suction Pressure:	max. 2 bar
Discharge Pressure:	max. 20 bar*
Viscosity:	min. 10 cSt*
Pumping Temperature:	max. 100°C
Installation:	Dry
Speed:	max. 3600 rpm

\*others on request





# Technical Highlights and Applications

## TECHNICAL HIGHLIGHTS

- API 676 compliant
- No special internal coatings required
- Axial inlet for ease of piping
- Single bearing
- Single mechanical seal subjected only to suction pressure, API 682 cartridge seal optional
- Hydro-dynamically balanced rotors – no thrust bearing required
- Quiet operation - No pulsations
- Leistriz quality manufacturing „Made in Germany“!
- Low fluid shear
- High reliability/long service life/low maintenance
- Low NPSH requirement
- Handles entrained gases (advantage vs. centrifugal)
- Positive displacement maintains critical flow in case of back pressure increase (advantage vs. centrifugal)
- High volumetric efficiency (advantage vs. other PD's and centrifugal)

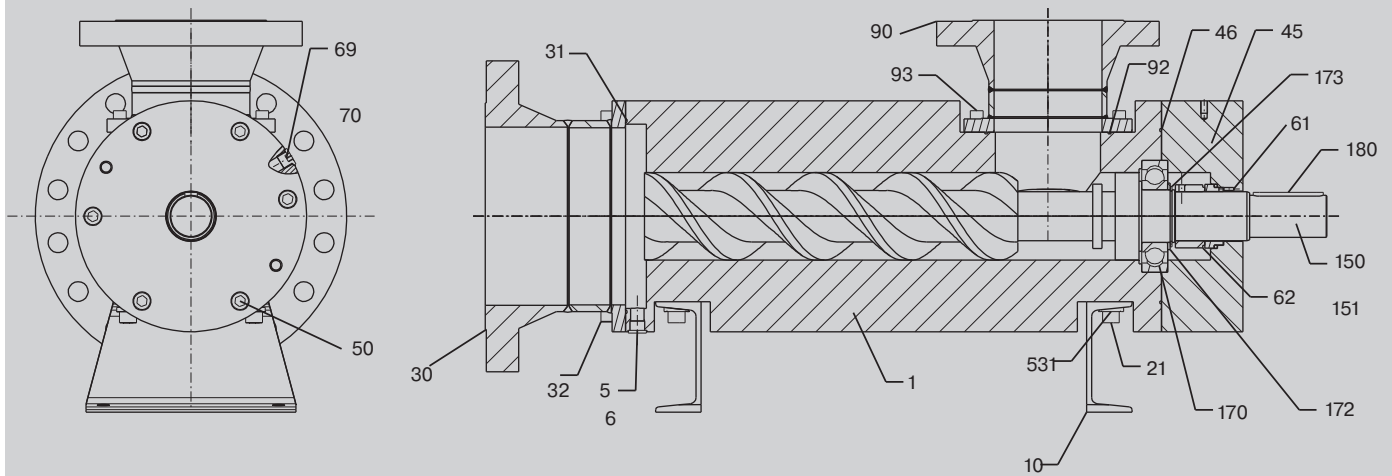
## APPLICATIONS



- Lube oil systems for compressors and turbines
- Seal oil systems
- Hydraulic oil systems
- FPSO applications
- Jacking oil systems

## Sectional Drawing and Parts List

### SECTIONAL DRAWING AND PARTS LIST

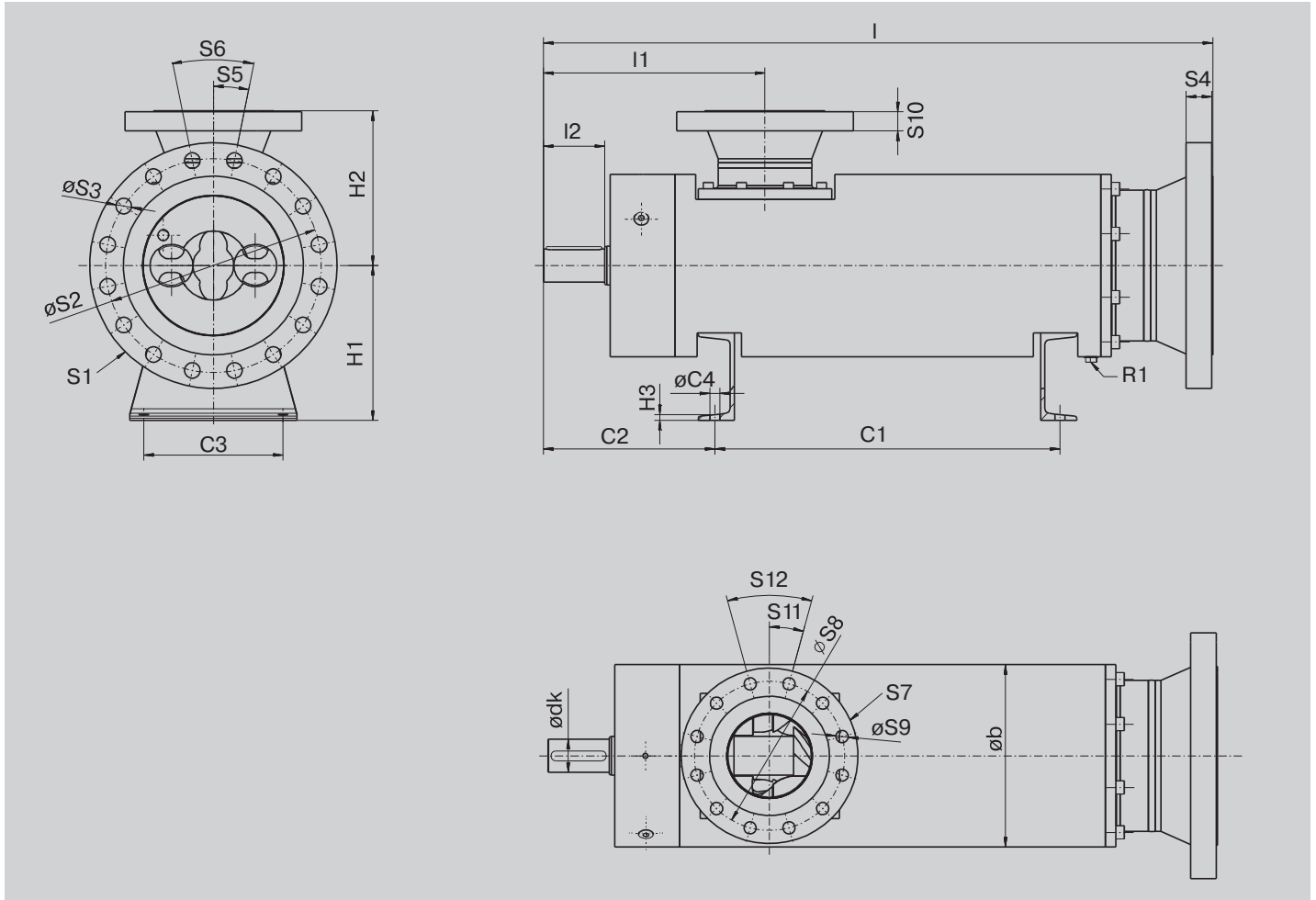


POS.	DESCRIPTION	POS.	DESCRIPTION	POS.	DESCRIPTION	POS.	DESCRIPTION
1	pump body	32	mounting screw	70	sealing ring	172	supporting disk
5	locking screw	45	cover driving side	90	discharge flange	173	circlip
6	sealing ring	46	o-ring	92	o-ring	180	key
10	pump foot	50	mounting screw	93	mounting screw	531	washer
21	mounting screw	61	dowel	150	driving spindle		
30	suction flange	62	mechanical seal	151	idler spindle		
31	o-ring	69	locking screw	170	grooved ball bearing		



# Dimensional Drawing and Pump Dimensions

## DIMENSIONAL DRAWING



## PUMP DIMENSIONS

Pump Size	$\varnothing b$	C1	C2	C3	$\varnothing C4$	H1	H2	H3	L	I1	I2	R1 DIN 910	S1 ANSI	$\varnothing S2$	$\varnothing S3$	S4	S5	S6	S7 ANSI	$\varnothing S8$	$\varnothing S9$	S10	S11	S12	$\varnothing dk$
025	120	92	142	110	13,5	112	155	8	414	142	30	G 1/4	1 1/2" 300 lbs	114,3	4 x 22,3	19	45°	90°	1" 300 lbs	88,9	19	15,9	45°	90°	14
032	120	117	154	110	13,5	112	157	8	456	147	35	G 1/4	1 1/2" 300 lbs	114,3	4 x 22,3	19	45°	90°	1" 300 lbs	88,9	19	15,9	45°	90°	16
038	120	152	154	114	13,5	132	157	8	493	151	35	G 1/4	2" 300 lbs	127	8 x 19	20,7	22,5°	45°	1" 300 lbs	88,9	19	15,9	45°	90°	16
045	140	193	187	110	13,5	132	205	8	579	204	60	G 1/4	3" 300 lbs	168,1	8 x 22,3	26,8	22,5°	45°	1 1/2" 300 lbs	114,3	22,3	19	45°	90°	24
052	140	237	187	110	13,5	132	205	8	623	204	60	G 1/4	3" 300 lbs	168,1	8 x 22,3	26,8	22,5°	45°	1 1/2" 300 lbs	114,3	22,3	19	45°	90°	28
060	160	288	197	114	13,5	160	214	8	684	228	70	G 1/4	3" 300 lbs	168,1	8 x 22,3	26,8	22,5°	45°	2" 300 lbs	127	19	20,7	22,5°	45°	32
070	175	345	202	114	17,5	160	224	8	753	230	70	G 1/4	4" 300 lbs	200,1	8 x 22,3	30,1	22,5°	45°	2" 300 lbs	127	19	20,7	22,5°	45°	38
080	215	411	222	129	17,5	180	243	8	851	285	85	G 1/2	6" 300 lbs	269,7	12 x 22,3	34,9	15°	30°	3" 300 lbs	168,1	22,3	26,8	22,5°	45°	42
090	215	466	228	129	17,5	180	242,5	8	912	297	90	G 1/2	6" 300 lbs	269,7	12 x 22,3	34,9	15°	30°	4" 300 lbs	200,1	22,3	30,1	22,5°	45°	48
100	240	495	283	164	17,5	225	255	9,5	1004	347	110	G 1/2	6" 300 lbs	269,7	12 x 22,3	34,9	15°	30°	4" 300 lbs	200,1	22,3	30,1	22,5°	45°	48
112	260	563	287	204	17,5	225	265	9,5	1091	359	110	G 1/2	8" 300 lbs	330,2	12 x 25,4	39,5	15°	30°	4" 300 lbs	200,1	22,3	30,1	22,5°	45°	55
125	330	620	308	250	18	280	280	10	1201	398	110	G 1/2	10" 300 lbs	387,3	16 x 28,4	46,1	11,25°	22,5°	6" 300 lbs	269,7	22,3	34,9	15°	30°	60

## Flow and Power Data Tables

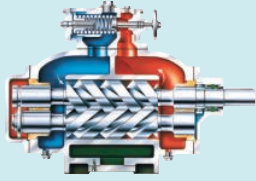
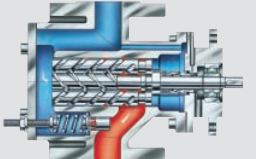
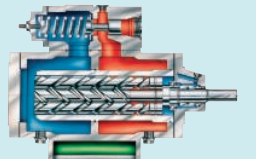
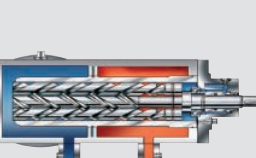
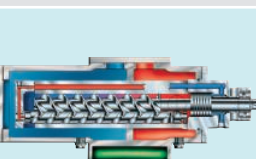
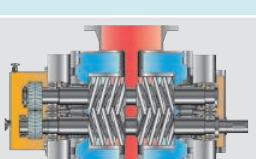
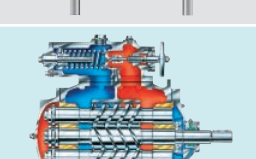
### FLOW AND POWER DATA TABLES

Viscosity = 68 cSt							
Pump Size	Pitch	Flow rate [l/min] @ 1450 1/min			Power [KW] @ 1450 1/min		
		1 bar	10 bar	20 bar	1 bar	10 bar	20 bar
		25	/ 35	13,6	12,3	11,4	0,1
25	/ 50	19,5	17,5	16,3	0,2	0,5	0,9
32	/ 45	29,1	27,1	25,9	0,3	0,7	1,2
32	/ 64	41,4	38,6	36,9	0,4	1,0	1,8
38	/ 60	55,2	52,3	50,5	0,4	1,3	2,3
38	/ 76	69,9	66,2	64,0	0,6	1,7	2,9
45	/ 70	90,8	87,1	84,9	0,7	2,1	3,7
45	/ 90	116,7	112,0	109,1	0,9	2,7	4,7
52	/ 85	147,7	142,9	140,0	1,1	3,4	5,9
52	/ 104	180,8	174,9	171,3	1,3	4,1	7,3
60	/ 96	222,8	216,9	213,4	1,5	5,0	8,8
60	/ 120	278,5	271,2	266,8	1,9	6,2	11,0
70	/ 112	354,7	347,3	342,8	2,3	7,8	13,9
70	/ 140	443,4	434,1	428,6	2,8	9,7	17,4
80	/ 132	544,5	530,0	521,2	3,0	11,3	20,5
80	/ 160	660,0	642,4	631,8	3,7	13,7	24,8
90	/ 152	794,4	775,1	763,4	4,4	16,5	29,9
90	/ 180	940,8	917,9	904,1	5,3	19,5	35,4
100	/ 172	1110,8	1086,0	1070,9	6,2	23,0	41,7
100	/ 200	1291,6	1262,8	1245,3	7,2	26,8	48,5
112	/ 190	1540,6	1509,1	1490,0	8,6	31,9	57,8
112	/ 224	1816,2	1779,1	1756,6	10,1	37,6	68,2
125	/ 210	2122,6	2082,8	2058,7	11,8	43,9	79,6
125	/ 250	2526,9	2479,5	2450,8	14,1	52,3	94,8
140	/ 225	2854,9	2805,9	2776,2	15,9	59,0	107,0
140	/ 280	3552,7	3491,8	3454,8	19,8	73,5	133,2
160	/ 190	3151,2	3102,5	3073,1	17,5	65,1	118,0
160	/ 260	4312,2	4245,6	4205,2	24,0	89,1	161,5
180	/ 185	3885,8	3831,0	3797,9	21,6	80,3	145,4
180	/ 220	4620,9	4555,8	4516,4	25,7	95,4	173,0

Viscosity = 68 cSt							
Pump Size	Pitch	Flow rate [l/min] @ 1750 1/min			Power [KW] @ 1750 1/min		
		1 bar	10 bar	20 bar	1 bar	10 bar	20 bar
		25	/ 35	16,6	15,2	14,4	0,2
25	/ 50	23,7	21,7	20,5	0,3	0,6	1,1
32	/ 45	35,4	33,4	32,1	0,3	0,9	1,5
32	/ 64	50,3	47,4	45,7	0,5	1,3	2,2
38	/ 60	66,9	64,0	62,2	0,6	1,6	2,8
38	/ 76	84,7	81,0	78,8	0,7	2,1	3,6
45	/ 70	109,9	106,2	104,0	0,9	2,6	4,5
45	/ 90	141,3	136,6	133,7	1,1	3,4	5,8
52	/ 85	178,8	173,9	171,0	1,4	4,2	7,3
52	/ 104	218,7	212,8	209,3	1,7	5,1	8,9
60	/ 96	269,5	263,6	260,1	1,9	6,2	10,8
60	/ 120	336,8	329,5	325,1	2,4	7,7	13,5
70	/ 112	428,8	421,4	416,9	2,9	9,6	17,0
70	/ 140	536,0	526,7	521,2	3,7	12,0	21,3
80	/ 132	658,6	644,0	635,2	4,0	13,9	25,0
80	/ 160	798,3	780,7	770,0	4,8	16,9	30,3
90	/ 152	960,6	941,3	929,6	5,8	20,3	36,5
90	/ 180	1137,6	1114,7	1100,9	6,8	24,1	43,2
100	/ 172	1343,0	1318,2	1303,1	8,1	28,4	51,0
100	/ 200	1561,6	1532,8	1515,3	9,4	33,0	59,3
112	/ 190	1862,3	1830,8	1811,7	11,2	39,3	70,6
112	/ 224	2195,6	2158,4	2135,9	13,2	46,4	83,3
125	/ 210	2565,6	2525,7	2501,6	15,4	54,2	97,2
125	/ 250	3054,2	3006,8	2978,1	18,3	64,5	115,7
140	/ 225	3450,2	3401,2	3371,5	20,7	72,8	130,7
140	/ 280	4293,6	4232,6	4195,7	25,7	90,6	162,6
160	/ 190	3807,9	3759,2	3729,7	22,8	80,3	144,1
160	/ 260	5210,8	5144,2	5103,8	31,2	109,9	197,2
180	/ 185	4695,0	4640,2	4607,1	28,1	98,9	177,6
180	/ 220	5583,2	5518,1	5478,7	33,4	117,6	211,2



# Leistritz Screw Pump Programme

Series	Use for	Leistritz Screw Pump	Max. Performance Data			
			Capacity	Differential Pressure	Viscosity	Pumping Temperature
L2	Low pressure duty, suitable for transport of light abrasive and corrosive, high or low viscous fluids with poor or good lubricity.		900 m <sup>3</sup> /h [3.960 gpm]	16 bar [232 psi]	100.000 cSt	280°C [536°F]
L3N	Low pressure duty, suitable for transport of non-abrasive lubricating fluids.		700 m <sup>3</sup> /h [3.100 gpm]	16 bar [232 psi]	15.000 cSt	180°C [356°F]
L3M	Medium pressure duty, suitable for transport of non-abrasive lubricating fluids.		300 m <sup>3</sup> /h [1.320 gpm]	80 bar [1.160 psi]	10.000 cSt	280°C [536°F]
L3H	High pressure duty, suitable for transport of non-abrasive lubricating fluids.		200 m <sup>3</sup> /h [880 gpm]	160 bar [2.320 psi]	10.000 cSt	280°C [536°F]
L3V/U	Ultra high pressure duty suitable for transport of light abrasive and corrosive, high or low viscous fluids with poor or good lubricity.		180 m <sup>3</sup> /h [792 gpm]	280 bar [4.060 psi]	1.000 cSt	280°C [536°F]
L4	Low, medium and high pressure duty, suitable for transport of abrasive/non-abrasive, corrosive/non-corrosive, lubricating/non-lubricating, high or low viscous fluids.		5.000 m <sup>3</sup> /h [22.000 gpm]	150 bar [2.175 psi]	150.000 cSt	350°C [662°F]
L5	Low pressure duty, suitable for transport of light abrasive and corrosive, high or low viscous fluids with poor or good lubricity.		1.700 m <sup>3</sup> /h [7.500 gpm]	10 bar [145 psi]	100.000 cSt	280°C [536°F]

Exceeding operating conditions upon request.

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