Range	LCR 1s	LCR 1	LCR 2	LCR 3	LCR 4	LCR 5	LCR 10
Nominal flow rate [m³/h]	0.8	1	2	3	4	5	10
Temperature range [°C]	-20 to +120	-20 to +120	-20 to +120	-20 to +120	-20 to +120	-20 to +120	-20 to +120
Temperature range [°C] - on request	-40 to +180	-40 to +180	-40 to +180	-40 to +180	-40 to +180	-40 to +180	-40 to +180
Max. Pump efficiency [%]	35	48	48	58	60	66	70
LCR pumps							
Flow range [m³/h]	0.3-1.1	0.7-2.4	1-3.5	1.2-4.5	2-7.9	2.5-8.5	5-13
Max.pressure [bar]	21	22	25	24	22	24	22
High pressure [bar] - on request	-	47	47	47	47	47	47
Motor power [kW]	0.37-1.1	0.37-2.2	0.37-3	0.37-3	0.37-4	0.37-5.5	0.37-7.5
Version							
LCR:							
Cast iron and Stainless steel EN 1.4301/AISI 304	●	●	●	●	●	●	●
LCRI:							
Stainless steel EN 1.4301/AISI 304	●	●	●	●	●	●	●
LCRN:							
Stainless steel EN 1.4401/AISI 316	●	●	●	●	●	●	●
LCR pipe connection							
Oval flange (BSP)	Rp 1	Rp 1	Rp 1	Rp 1	Rp 1¼	Rp 1¼	Rp 1½
Oval flange (BSP) - on request	Rp 1¼	Rp 1¼	Rp 1¼	Rp 1¼	Rp 1	Rp 1	Rp 1¼ Rp 2
Flange	DN 25/ DN 32	DN 25/ DN 32	DN 25/ DN 32	DN 25/ DN 32	DN 25/ DN 32	DN 25/ DN 32	DN 40
Flange - on request	-	-	-	-	-	-	DN 50
LCRI pipe connection							
Flange	DN 25/ DN 32	DN 25/ DN 32	DN 25/ DN 32	DN 25/ DN 32	DN 25/ DN 32	DN 25/ DN 32	DN 40
Flange - on request	-	-	-	-	-	-	DN 50
LCRN pipe connection							
Flange	DN 25/ DN 32	DN 25/ DN 32	DN 25/ DN 32	DN 25/ DN 32	DN 25/ DN 32	DN 25/ DN 32	DN 40
Flange - on request	-	-	-	-	-	-	DN 50

● Recommended version.
●● Alternative version.

Product data

Pump
The LCR pumps are non-self-priming, vertical multistage centrifugal pumps.

The pump consists of a base and a pump head. The chamber stack and the outer sleeve are secured between the pump head and the base by means of tiebolts. The base has suction and discharge connections on the same level (in-line).

All pumps are equipped with a maintenance-free mechanical shaft seal of the cartridge type as standard.

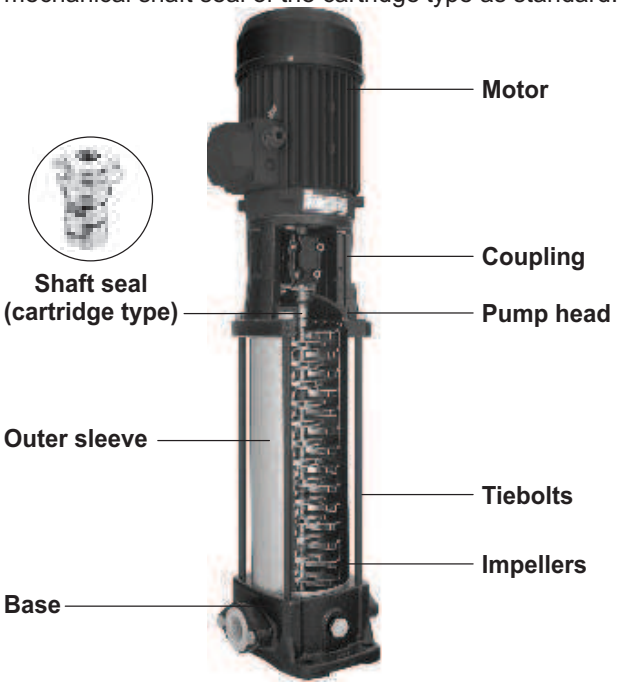


Fig. 2 LCR pump

Motor
LCR, LCRI and LCRN pumps are fitted with a totally enclosed, fan-cooled, 2-pole motor with principal dimensions in accordance with the EN standards.

Electrical tolerances according to EN 60034.

From 0.37 to 2.2 kW Lubi offers LCR pumps fitted with single-phase motors (1 x 220-230/240 V).

Electrical data

LCR, LCRI, LCRN pumps

	LUBI motor
Mounting designation	Up to 4 kW: V 18 From 5.5 kW: V 1
Insulation class	F
Efficiency class	EFF 2
Enclosure class	IP 55
Supply voltage (Tolerance: ±10%)	P_2: 0.37-1.5 kW: 3 x 220-240/380-415 V, 50 Hz P_2: 2.2-45 kW: 3 x 380-415 V, 50 Hz
Supply frequency	50 Hz

Terminal box positions
As standard the terminal box is mounted on the suction side of the pump.

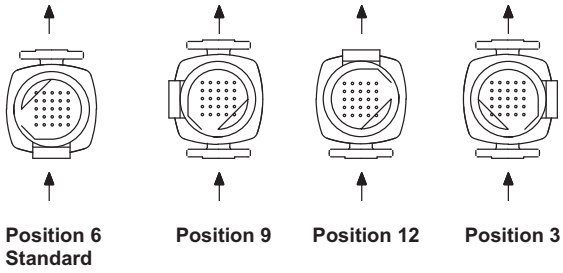


Fig. 3 Terminal box positions

Ambient temperature
If the ambient temperature exceeds 40°C or the pump is installed at an altitude exceeding 1000 m above sea level, the motor must not be fully loaded due to the risk of overheating. Overheating may result from excessive ambient temperature or the low density and consequently low cooling effect of the air.

In such cases, it may be necessary to use a motor with a higher rated output.

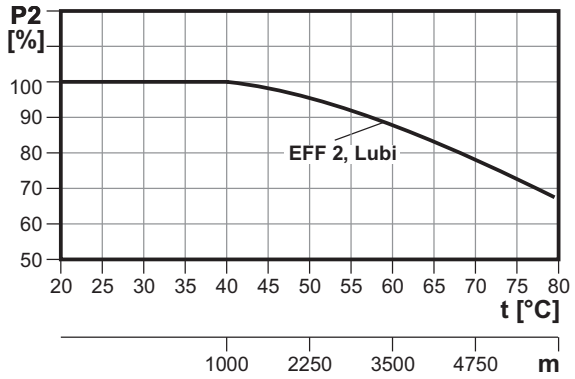


Fig. 4 Relationship between motor output (P2) and ambient temperature

Viscosity
The pumping of liquids with densities or kinematic viscosities higher than those of water will cause a considerable pressure drop, a drop in the hydraulic performance and a rise in the power consumption.

In such situations the pump should be equipped with a larger motor. If in doubt, contact Lubi.

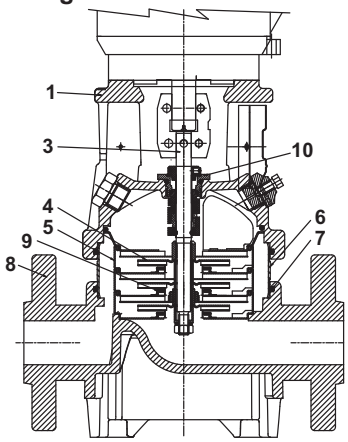
Construction

Vertical multistage centrifugal pumps

LCR, LCRI, LCRN

LCR 1s, 1, 2, 3, 4, 5, 10, 15 and 20

Sectional drawing

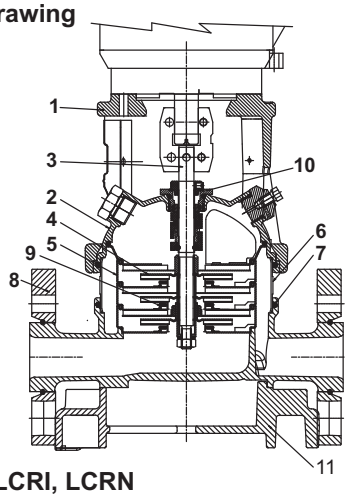


Materials : LCR

Nos.	Designation	Materials	EN/DIN	AISI/ASTM
1	Pump Head	Cast iron EN-GJL-200	EN-JL1030	ASTM 25B
3	Shaft	Stainless steel	1.4401	AISI 316 AISI 431
4	Impeller	Stainless steel	1.4301	AISI 304
5	Chamber	Stainless steel	1.4301	AISI 304
6	Outer sleeve	Stainless steel	1.4301	AISI 304
7	O-ring for outer sleeve	EPDM or FKM		
8	Base	Cast iron EN-GJL-200	EN-JL1030	ASTM 25B
9	Neck ring	PTFE		
10	Shaft seal			
	Rubber parts	EPDM or FKM		

LCRI, LCRN 1s, 1, 2, 3, 4, 5, 10, 15 and 20

Sectional drawing



Materials : LCRI, LCRN

Nos.	Designation	Materials	EN/DIN	AISI/ASTM
1	Pump head	Cast iron EN-GJL-200	EN-JL1030	ASTM 25B
2	Pump head cover	Stainless steel	1.4408	CF 8M eq. to AISI 316
3	Shaft	Stainless steel	1.4401 1.4460	AISI 316 AISI 329
8	Base	Stainless steel	1.4408	CF 8M eq. to AISI 316
9	Neck ring	PTFE		
10	Shaft seal	Cartridge type		
11	Base plate	Cast iron EN-GJL-200	EN-JL1030	ASTM 25B
	Rubber parts	EPDM or FKM		

LCRI

4	Impeller	Stainless steel	1.4301	AISI 304
5	Chamber	Stainless steel	1.4301	AISI 304
6	Outer sleeve	Stainless steel	1.4301	AISI 304
7	O-ring for outer sleeve	EPDM or FKM		

LCRN

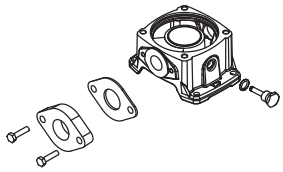
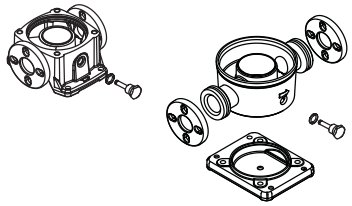
4	Impeller	Stainless steel	1.4401	AISI 316
5	Chamber	Stainless steel	1.4401	AISI 316
6	Outer sleeve	Stainless steel	1.4401	AISI 316
7	O-ring for outer sleeve	EPDM or FKM		

Operating and inlet pressures

Vertical multistage centrifugal pumps

LCR, LCRI, LCRN

Maximum operating pressure and temperature range

	 Oval flange		 DIN flange	
	Max. Permissible operating pressure	**Liquid temperature range**	**Max. Permissible operating pressure**	**Liquid temperature range**
LCR 1s	16 bar	-20°C to +120°C	25 bar	-20°C to +120°C
LCRI, LCRN 1s	-	-	25 bar	-20°C to +120°C
LCR 1	16 bar	-20°C to +120°C	25 bar	-20°C to +120°C
LCRI, LCRN 1	-	-	25 bar	-20°C to +120°C
LCR 2	16 bar	-20°C to +120°C	25 bar	-20°C to +120°C
LCRI, LCRN 2	-	-	25 bar	-20°C to +120°C
LCR 3	16 bar	-20°C to +120°C	25 bar	-20°C to +120°C
LCRI, LCRN 3	-	-	25 bar	-20°C to +120°C
LCR 4	16 bar	-20°C to +120°C	25 bar	-20°C to +120°C
LCRI, LCRN 4	-	-	25 bar	-20°C to +120°C
LCR 5	16 bar	-20°C to +120°C	25 bar	-20°C to +120°C
LCRI, LCRN 5	-	-	25 bar	-20°C to +120°C
LCR 10-1 to 10-16	16 bar	-20°C to +120°C	16 bar	-20°C to +120°C
LCRI 10-1 to 10-16	-	-	16 bar	-20°C to +120°C
LCR, LCRI 10-17 to 10-22	-	-	25 bar	-20°C to +120°C
LCRN 10	-	-	25 bar	-20°C to +120°C
LCR 15-1 to 15-7	10 bar	-20°C to +120°C	-	-
LCR, LCRI 15-1 to 15-10	-	-	16 bar	-20°C to +120°C
LCR, LCRI 15-12 to 15-17	-	-	25 bar	-20°C to +120°C
LCRN 15	-	-	25 abr	-20°C to +120°C
LCR 20-1 to 20-7	10 bar	-20°C to +120°C	-	-
LCR, LCRI 20-1 to 20-10	-	-	16 bar	-20°C to +120°C
LCR, LCRI 20-12 to 20-17	-	-	25 bar	-20°C to +120°C
LCRN 20	-	-	25 bar	-20°C to +120°C
LCR, LCRN 32-1-1 to 32-7	-	-	16 bar	-30°C to +120°C
LCR, LCRN 32-8-2 to 32-14	-	-	30 bar	-30°C to +120°C
LCR, LCRN 45-1-1 to 45-5	-	-	16 bar	-30°C to +120°C
LCR, LCRN 45-6-2 to 45-11	-	-	30 bar	-30°C to +120°C
LCR, LCRN 45-12-2 to 45-13-2	-	-	33 bar	-30°C to +120°C
LCR, LCRN 64-1-1 to 64-5	-	-	16 bar	-30°C to +120°C
LCR, LCRN 64-6-2 to 64-8-1	-	-	30 bar	-30°C to +120°C
LCR, LCRN 90-1-1 to 90-4	-	-	16 bar	-30°C to +120°C
LCR, LCRN 90-5-2 to 90-6	-	-	30 bar	-30°C to +120°C

Operating range of the shaft seal

The operating range of the shaft seal depends on operating pressure, pump type, type of shaft seal and liquid temperature. The following curves apply to clean water and water with anti-freeze liquids.

Shaft seal	Description	Max. Temperature range [°C]
HQQE	O-ring(cartridge) (balanced seal), Sic/Sic, EPDM	-40°C to +120°C
HQQV	O-ring (cartridge) (balanced seal), Sic/Sic, FKM	-20°C to +90°C

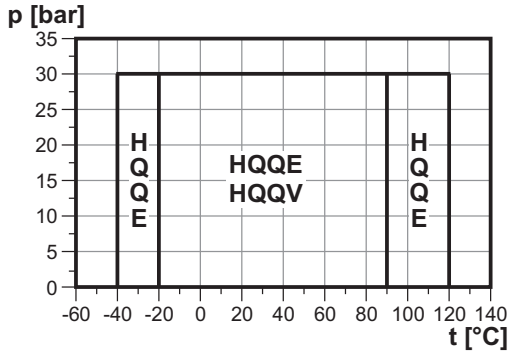


Fig. 5 Operating range of standard shaft seals