

INTRODUCTION

The Lubi **LCR**, **LCRI**, **LCRN** series are non-self-priming, vertical multistage centrifugal pumps.

The vertical in-line design enables the pump to be installed in a horizontal plane single system where the suction and discharge connections are in the same horizontal plane (in-line) and have the same pipe sizes. This design provides a more compact pump design saving space and easy pipe work.

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. All pumps are equipped with a maintenance-free mechanical shaft seal.

These pumps come with various sizes and various numbers of stages to provide the flow and the pressure for different site conditions. These pumps are suitable for a wide variety of applications from pumping of potable water to the pumping of chemicals.

These pumps are available in various material versions according to the pumped liquid.

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, LCRI pumps are suitable for non corrosive liquids.

LCRN pumps are suitable for industrial liquids in systems where all parts in contact with the liquid must be made of high-grade stainless steel.

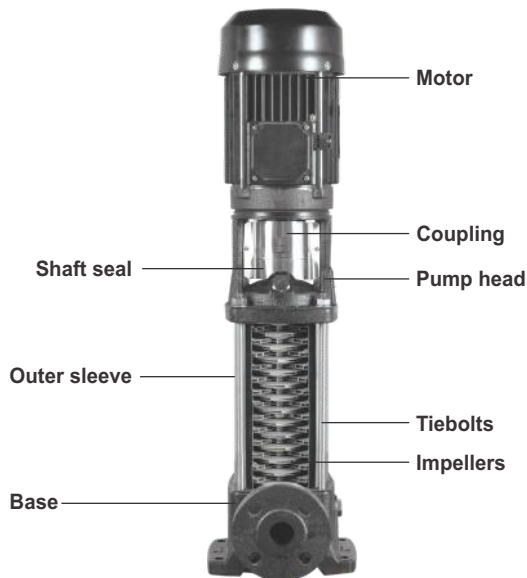


FIG. 1 LCR PUMP

APPLICATIONS

For thin, non-explosive, not containing solid particles or fibers, non-corrosive liquids are suitable.

For liquid transfer, circulation and pressure boosting of cold or hot clean water.

For water supply systems, pressure boosting systems, liquid transfer and irrigation works.

OPERATING CONDITIONS

Flow range : 0.3 to 180 m³/h
 Head range : Up to 320 metres
 Ambient temperature : Max. + 40°C
 Liquid temperature range: -40°C to +120°C

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).

Motor type	: TEFC 2-pole motor
Ratings	: 1 phase - 0.37 to 2.2 kW 3 phase - 0.37 to 75 kW
Rated speed	: 2900 rpm
Mounting designation	: Up to 4 kW - V18 and From 5.5 kW - V1
Enclosure class	: IP 55
Insulation class	: F
Nominal voltage	: 1 phase 220-230/240 V - 0.37 to 2.2 kW 3 phase 220-240/380-415 V - 0.37 to 3 kW 3 phase 380-415 V - 4 to 75 kW
Supply frequency	: 50 Hz
Maximum nos. of starts/hour	: 0.37 to 4 kW - 20, 5.5 to 45 kW - 10, 55 to 75 kW - 5
Direction of rotation	: Anticlockwise as seen from the motor rear end

PUMPED LIQUIDS

Thin non-explosive liquids and not containing solid particles or fibers are suitable. The liquid must also not chemically attack the pump materials.

When pumping liquids with a density and/or viscosity higher than that of water, oversized motors must be used, if required.

Whether a pump is suitable for a particular liquid depends on a number of factors of which the most important are the chloride content, pH value, temperature and content of chemicals, oils etc.

Please note that aggressive liquids (e.g sea water and some acids) may attack or dissolve the protective oxide film of the stainless steel and thus cause corrosion.

The LCR, LCRI, LCRN pump types are suitable for the following liquids.

LCR, LCRI

- Non-corrosive liquids.
- For liquid transfer, circulation and pressure boosting of cold or hot clean water.

LCRN

- Industrial liquids.
- In systems where all parts in contact with the liquid must be made of high-grade stainless steel.

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 table apply to clean water and water with anti-freeze liquids.

SHAFT SEAL	DESCRIPTION	Max. temperature range [°C]
BBQE	Bellow type shaft seal, Carbon/Sic/SS 316/EPDM	-40°C to +120°C
BBQV	Bellow type shaft seal, Carbon/Sic/SS 316/FKM	-40°C to +120°C
HQQE	Cartridge type shaft seal, Sic/Sic/SS 316/EPDM	-40°C to +120°C
HBQE	Cartridge type shaft seal, Carbon/Sic/SS 316/EPDM	0°C to +120°C
HBQV	Cartridge type shaft seal, Carbon/Sic/SS 316/FKM	0°C to +90°C
HQQV	Cartridge type shaft seal, Sic/Sic/SS 316/FKM	-20°C to +90°C

COUNTER FLANGES

COUNTER FLANGES FOR LCR

A set consists of one counter flange of cast iron for threaded & carbon steel for welded connection, one gasket, bolts and nuts.

COUNTER FLANGES FOR LCRI, LCRN

Counter flanges for LCRI pumps are made of stainless steel according to EN 1.4301 (AISI 304) and for LCRN pump are made of stainless steel according to EN 1.4401 (AISI 316).

A set consists of one counter flange, one gasket, bolts and nuts.

SECTIONAL DRAWING & MATERIALS

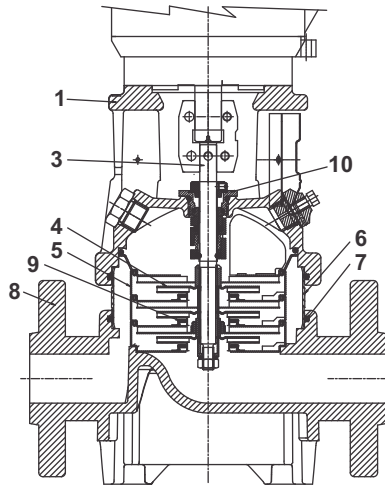


FIG. 2 LCR 1s, 1, 2, 3, 4, 5, 10, 15 AND 20

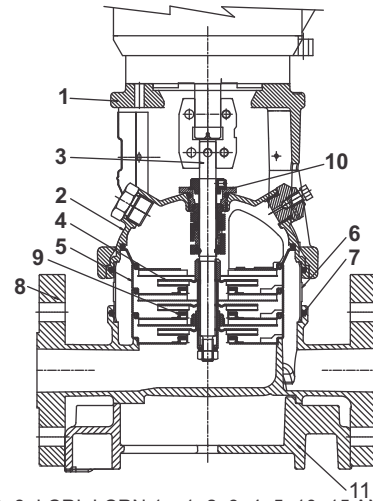


FIG. 3 LCRI, LCRN 1s, 1, 2, 3, 4, 5, 10, 15 AND 20

POS.	COMPONENT	MATERIAL	LCR 1s, 1, 2, 3, 4, 5, 10, 15 & 20		LCRI 1s, 1, 2, 3, 4, 5, 10, 15 & 20		LCRN 1s, 1, 2, 3, 4, 5, 10, 15 & 20	
			EN/DIN	AISI/ASTM	EN/DIN	AISI/ASTM	EN/DIN	AISI/ASTM
1	Pump head	Cast iron EN-GJL-200	EN-JL1030	ASTM 25B	EN-JL1030	ASTM 25B	EN-JL1030	ASTM 25B
2	Pump head cover	Stainless steel	-	-	1.4308	CF 8 eq. to AISI 304	1.4408	CF 8M eq. to AISI 316
3	Shaft	Stainless steel	1.4401	AISI 316 AISI 431	1.4401 1.4460	AISI 316 AISI 329	1.4401 1.4460	AISI 316 AISI 329
4	Impeller	Stainless steel	1.4301	AISI 304	1.4301	AISI 304	1.4401	AISI 316
5	Chamber	Stainless steel	1.4301	AISI 304	1.4301	AISI 304	1.4401	AISI 316
6	Outer sleeve	Stainless steel	1.4301	AISI 304	1.4301	AISI 304	1.4401	AISI 316
7	O-ring for outer sleeve	EPDM or FKM	-	-	-	-	-	-
8	Base	Cast iron EN-GJL-200	EN-JL1030	ASTM 25B	-	-	-	-
		Stainless steel	-	-	1.4308	CF 8 eq. to AISI 304	1.4408	CF 8M eq. to AISI 316
9	Neck ring	PTFE	-	-	-	-	-	-
10	Shaft seal	Bellow/Cartridge type	-	-	-	-	-	-
11	Base plate	Cast iron EN-GJL-200	-	-	EN-JL1030	ASTM 25B	EN-JL1030	ASTM 25B
	Rubber parts	NBR or FKM	-	-	-	-	-	-

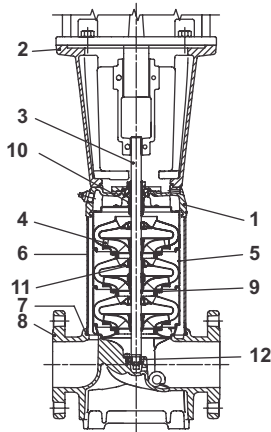


FIG. 4 LCR 32 AND 45

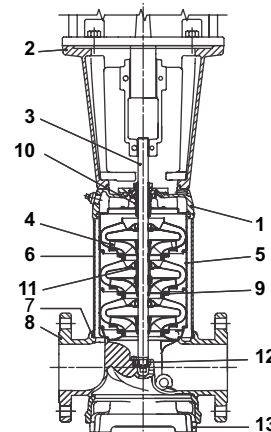


FIG. 5 LCRI, LCRN 32 AND 45

POS.	COMPONENT	MATERIAL	LCR 32 & 45		LCRI 32 & 45		LCRN 32 & 45	
			EN/DIN	AISI/ASTM	EN/DIN	AISI/ASTM	EN/DIN	AISI/ASTM
1	Pump head	Cast iron EN-GJS-500-7	EN-JS1050	ASTM 80-55-06	-	-	-	-
		Stainless steel	-	-	1.4308	CF 8 eq. to AISI 304	1.4408	CF 8M eq. to AISI 316
2	Motor stool	Cast iron EN-GJL-200	EN-JL1030	ASTM 25B	EN-JL1030	ASTM 25B	EN-JL1030	ASTM 25B
3	Shaft	Stainless steel	1.4057	AISI 431	1.4462	-	1.4462	-
4	Impeller	Stainless steel	1.4301	AISI 304	1.4301	AISI 304	1.4401	AISI 316
5	Chamber	Stainless steel	1.4301	AISI 304	1.4301	AISI 304	1.4401	AISI 316
6	Outer sleeve	Stainless steel	1.4301	AISI 304	1.4301	AISI 304	1.4401	AISI 316
7	O-ring for outer sleeve	EPDM or FKM	-	-	-	-	-	-
8	Base	Cast iron EN-GJS-500-7	EN-JS1050	ASTM 80-55-06	-	-	-	-
		Stainless steel	-	-	1.4308	CF 8 eq. to AISI 304	1.4408	CF 8M eq. to AISI 316
9	Neck ring	Carbon-Graphite filled PTFE	-	-	-	-	-	-
10	Shaft seal	Cartridge type	-	-	-	-	-	-
11	Bearing ring	Bronze	-	-	-	-	-	-
		Carbon-Graphite filled PTFE	-	-	-	-	-	-
12	Bottom bearing ring	Sic/Sic	-	-	-	-	-	-
13	Base plate	Cast iron EN-GJS-500-7	-	-	EN-JS1050	ASTM 80-55-06	EN-JS1050	ASTM 80-55-06
	Rubber parts	NBR or FKM	-	-	-	-	-	-

SECTIONAL DRAWING & MATERIALS

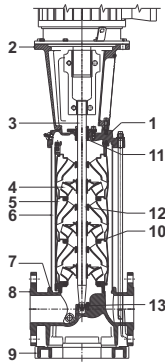


FIG. 6 LCR 120 AND 150

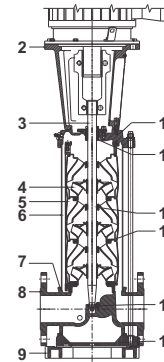
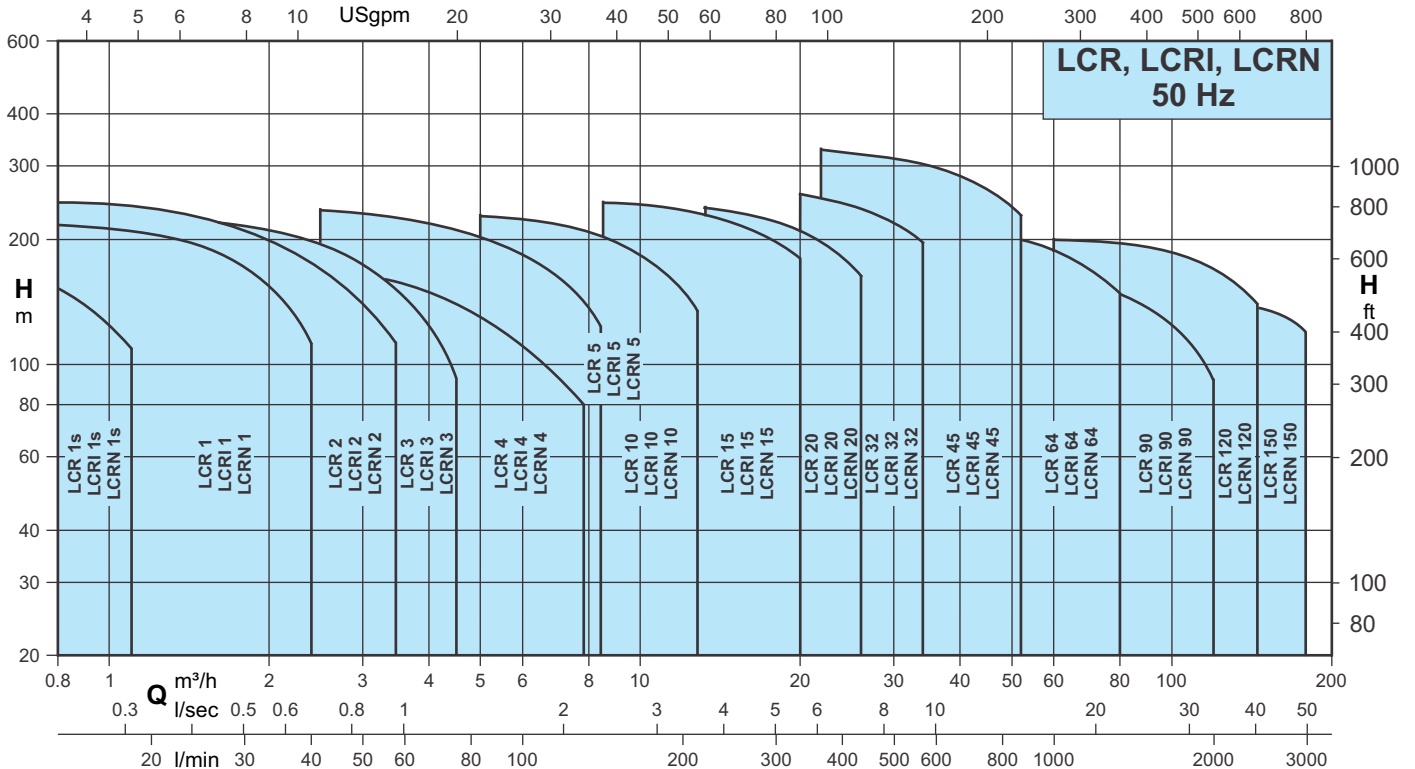


FIG. 7 LCRN 120 AND 150

POS.	COMPONENT	MATERIAL	LCR 120 & 150		LCRN 120 & 150	
			EN/DIN	AISI/ASTM	EN/DIN	AISI/ASTM
1	Pump head	Cast iron EN-GJS-500-7 Stainless steel	EN-JS1050	A 536 65-45-12	-	-
2	Motor stool (11-45 kW)	Cast iron EN-GJL-200	EN-JL1030	A48-30 B	EN-JL1030	CF 8M eq. to AISI 316
	Motor stool (55-75 kW)	Cast iron EN-GJS-500-7	EN-JS1050	A 536 65-45-12	EN-JS1050	A 536 65-45-12
3	Shaft	Stainless steel	1.4057	AISI 431	1.4462 1.4401	
4	Impeller	Stainless steel	1.4301	AISI 304	1.4401	AISI 316
5	Chamber	Stainless steel	1.4301	AISI 304	1.4401	AISI 316
6	Outre sleeve	Stainless steel	1.4301	AISI 304	1.4401	AISI 316
7	O ring for outer sleeve	EPDM or FKM				
8	Base	Cast iron EN-GJS-500-7	EN-JS1050	A 536 65-45-12	-	-
		Stainless steel	-	-	1.4408	CF 8M eq. to AISI 316
9	Base plate	Cast iron EN-GJS-500-7	EN-JS1050	A 536 65-45-12	EN-JS1050	A 536 65-45-12
10	Neck ring	Carbon-Graphite filled PTFE/NBR				
11	Shaft seal*	Cartridge type				
12	Support bearing	Carbon-Graphite filled PTFE				
13	Bearing ring	Tungsten carbide				
14	Base plate	Cast iron EN-GJS-500-7	-	-	EN-JS1050	A 536 65-45-12
	Rubber parts	NBR or FKM				

Note: * Ø22 mm shaft - 11 to 45 kW
Ø32 mm shaft - 55 to 75 kW

PERFORMANCE RANGE



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Product Improvement is a continuous process at 'LUBI'. The data given in this publication is therefore subject to revision.

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