

LCR VERTICAL MULTISTAGE CENTRIFUGAL PUMPS



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 AISI 304
- LCRI: Stainless steel AISI 304
- LCRN: Stainless steel 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.

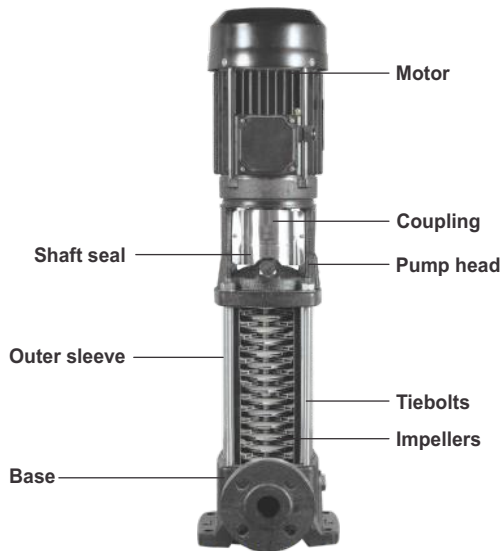


FIG. 1 LCR PUMP

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 : 1.8 to 790 USgpm
- Head range : Up to 995 feet
- Ambient temperature : Max. +104°F
- Liquid temperature range: -22°F to +248°F

MOTOR

LCR, LCRI and LCRN pumps are available with 2 pole NEMAC-face motors complying to meet or exceed the efficiency requirements of the US Energy Policy Act of 1992 (EPAct) and Natural Resources Canada Standards (NRCAN).

- Ratings : 1 phase - 1/3 to 3 HP
3 phase - 1/2 to 100 HP
- Rated speed : 3450 rpm
- Mounting designation : NEMA
- Enclosure class : TEFC - Totally Enclosed Fan Cooled
ODP - Open Drip Proof (on request)
- Insulation class : F & B
- Efficiency class : Standard efficiency
Energy efficient / EPAct (on request)
- Nominal voltage : 1 x 115/208-230 V
3 x 208-230/460 V
- Supply frequency : 60 Hz
- Maximum nos. of starts/hour : 1/3 to 5 HP - 20,
7½ to 60 HP - 10,
75 to 100 HP - 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°F to +248°F
BBQV	Bellow type shaft seal, Carbon/Sic/SS 316/FKM	-40°F to +248°F
HQQE	Cartridge type shaft seal, Sic/Sic/SS 316/EPDM	-40°F to +248°F
HBQE	Cartridge type shaft seal, Carbon/Sic/SS 316/EPDM	+32°F to +248°F
HBQV	Cartridge type shaft seal, Carbon/Sic/SS 316/FKM	+32°F to +194°F
HQQV	Cartridge type shaft seal, Sic/Sic/SS 316/FKM	-4°F to +194°F

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 AISI 304 and for LCRN pump are made of stainless steel according to AISI 316.

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

SECTIONAL DRAWING & MATERIALS

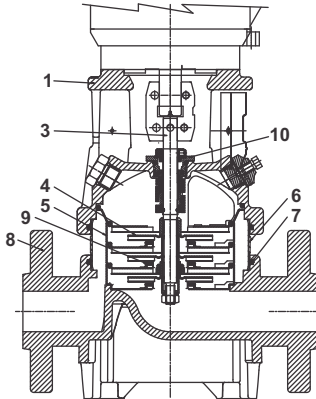


FIG. 2 LCR 1s, 1, 2, 3, 4, 5, 10, 15 & 20

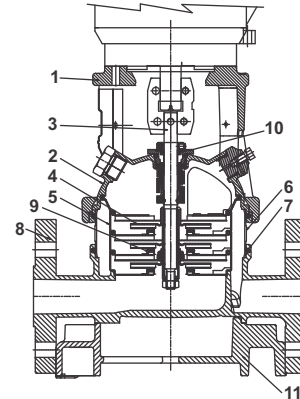


FIG. 3 LCRI, LCRN 1s, 1, 2, 3, 4, 5, 10, 15 & 20

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
			AISI/ASTM	AISI/ASTM	AISI/ASTM
1	Pump head	Cast iron	A 48-30 B	A 48-30 B	A 48-30 B
2	Pump head cover	Stainless steel	-	CF 8 eq. to AISI 304	CF 8M eq. to AISI 316
3	Shaft	Stainless steel	AISI 316 AISI 431	AISI 316 AISI 329	AISI 316 AISI 329
4	Impeller	Stainless steel	AISI 304	AISI 304	AISI 316
5	Chamber	Stainless steel	AISI 304	AISI 304	AISI 316
6	Outer sleeve	Stainless steel	AISI 304	AISI 304	AISI 316
7	O-ring for outer sleeve	EPDM or FKM	-	-	-
8	Base	Cast iron Stainless steel	A 48-30 B -	- CF 8 eq. to AISI 304	- CF 8M eq. to AISI 316
9	Neck ring	PTFE	-	-	-
10	Shaft seal	Bellow type/Cartridge type	-	-	-
11	Base plate	Cast iron/Silicon carbide	-	A 48-30 B	A 48-30 B
	Bearing rings	NBR or FKM	-	-	-
	Rubber parts	-	-	-	-

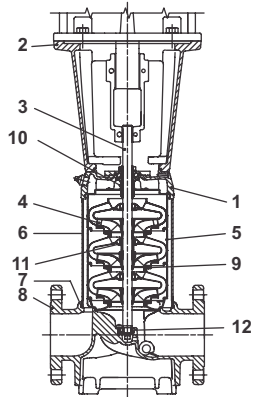


FIG. 4 LCR 32 AND 45

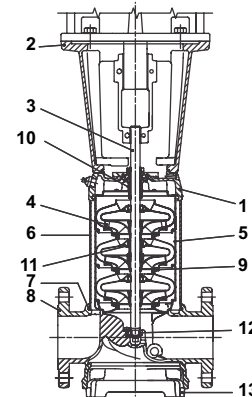


FIG. 5 LCRI, LCRN 32 AND 45

POS.	COMPONENT	MATERIAL	LCR 32 & 45	LCRI 32 & 45	LCRN 32 & 45
			AISI/ASTM	AISI/ASTM	AISI/ASTM
1	Pump head	Ductile iron Stainless steel	A 65-45-12 -	- CF 8 eq. to AISI 304	- CF 8M eq. to AISI 316
2	Motor stool	Cast iron	A 48-30 B	A 48-30 B	A 48-30 B
3	Shaft	Stainless steel	AISI 431	SAF 2205	SAF 2205
4	Impeller	Stainless steel	AISI 304	AISI 304	AISI 316
5	Chamber	Stainless steel	AISI 304	AISI 304	AISI 316
6	Outer sleeve	Stainless steel	AISI 304	AISI 304	AISI 316
7	O ring for outer sleeve	EPDM or FKM	-	-	-
8	Base	Ductile iron Stainless steel	A 65-45-12 -	- CF 8 eq. to AISI 304	- CF 8M eq. to AISI 316
9	Neck ring	Carbon-graphite filled PTFE	-	-	-
10	Shaft seal	Cartridge type	-	-	-
11	Bearing ring	Bronze	-	-	-
12	Bottom bearing ring	Sic/Sic	-	-	-
13	Base plate	Ductile iron	-	A 65-45-12	A 65-45-12
	Rubber parts	NBR or FKM	-	-	-

SECTIONAL DRAWING & MATERIALS

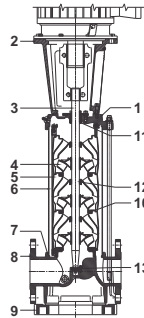


FIG. 6 LCR 120 AND 150

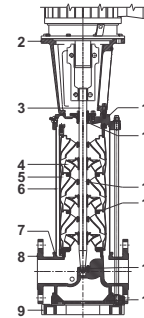
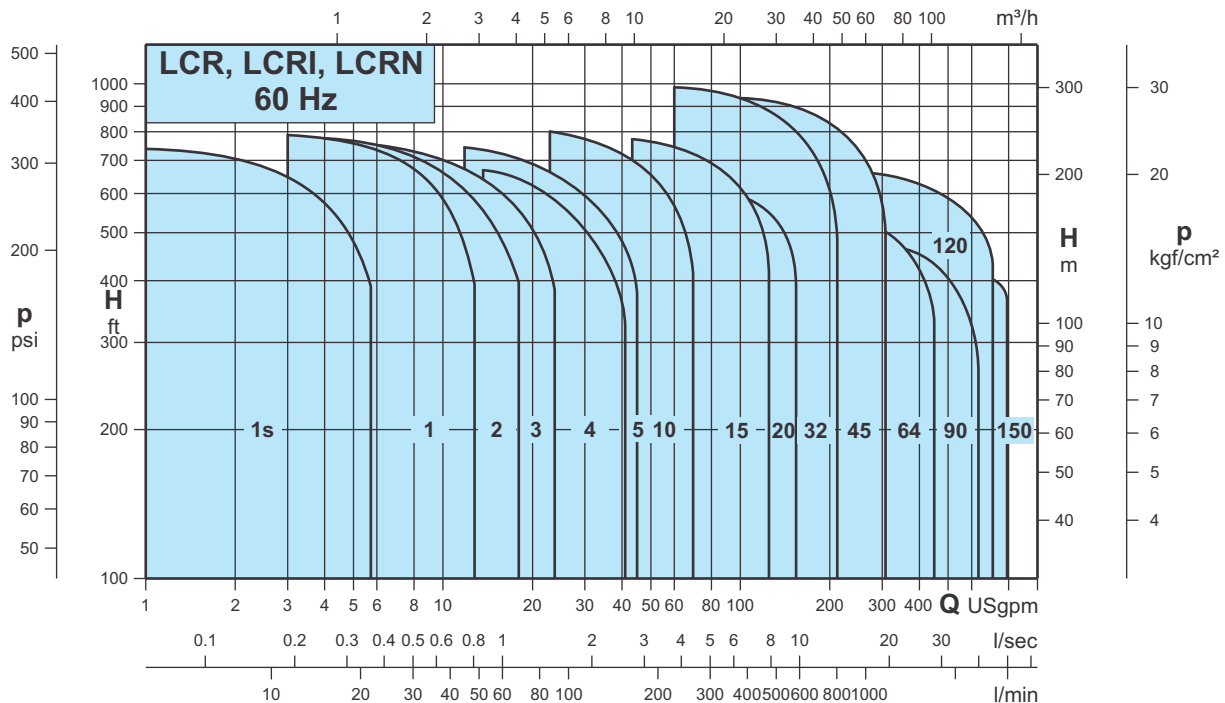


FIG. 7 LCRN 120 AND 150

POS.	COMPONENT	MATERIAL	LCR 120 & 150	LCRN 120 & 150
			AISI/ASTM	AISI/ASTM
1	Pump head	Ductile iron Stainless steel	A 536 65-45-12 -	- CF 8M eq. to AISI 316
2	Motor stool (15-60 HP) Motor stool (75-100 HP)	Cast iron Ductile iron	A48-30 B A 536 65-45-12	A48-30 B A 536 65-45-12
3	Shaft	Stainless steel	AISI 431	SAF 2205
4	Impeller	Stainless steel	AISI 304	AISI 316
5	Chamber	Stainless steel	AISI 304	AISI 316
6	Outre sleeve	Stainless steel	AISI 304	AISI 316
7	O ring for outer sleeve	EPDM or FKM	-	-
8	Base	Ductile iron Stainless steel	A 536 65-45-12 -	- CF 8M eq. to AISI 316
9	Base plate	Ductile iron	A 536 65-45-12	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	Ductile iron	-	A 536 65-45-12
	Rubber parts	NBR or FKM	-	-

Note: * Ø22 mm shaft - 15 to 60 HP
Ø32 mm shaft - 75 to 100 HP.

PERFORMANCE RANGE



LUBI INDUSTRIES LLP

Near Kalyan Mills, Naroda Road, Ahmedabad-380 025, INDIA.

Phone : +91 - 79 - 61700100, Fax No. :+91 - 79 - 61700399.

Sales Enquiries: mktsales@lubipumps.com, expsales@lubipumps.com

www.lubipumps.com



ISO 9001



ISO 14001